



## Peace River Area Monitoring Program

# JUNE 2023

## Monthly Ambient Air Quality Monitoring Report

### PRAMP-202306-V01

**Operation and Maintenance:**  
Bureau Veritas Canada

**Data Validation and Report:**  
Peace River Area Monitoring Program

August 30, 2023

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## LIST OF ACRONYMS

AAAQOs	Alberta Ambient Air Quality Objectives
AEP	Alberta Environment and Parks
AMD	Air Monitoring Directive
AT	Ambient Temperature
BP	Barometric Pressure
CH4	Methane
EPEA	Environmental Protection and Enhancement Act
H2S	Hydrogen Sulphide
kph	kilometers per hour
mb	millibar
mm	millimeter
NMHC	Non-Methane Hydrocarbons
ppb	parts per billion
ppm	parts per million
PRAMP	Peace River Area Monitoring Program
RH	Relative Humidity
SO2	Sulphur Dioxide
ST	Station Temperature
THC	Total Hydrocarbons
TRS	Total Reduced Sulphur
VWD	Vector Wind Direction
VWS	Vector Wind Speed
WD	Wind Direction
WS	Wind Speed
°C	Degrees Celsius



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July 17, 2023

**RE: PRAMP – June 2023 Monthly Ambient Air Quality Monitoring Report**

Enclosed is the June 2023 Monthly Ambient Air Quality Monitoring Report for the continuous ambient air quality monitoring stations of the Peace River Area Monitoring Program (PRAMP) regional air quality monitoring network.

The representative of the Person Responsible for this monitoring program is

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This report has been prepared, review and submitted by Michael Bisaga & Lily Lin of the PRAMP Airshed. This report is also submitted on behalf of the industrial member companies to satisfy the requirements of the facility operating approvals.

PRAMP Airshed has retained the services of Bureau Veritas Canada to conduct continuous ambient monitoring on its behalf.

## NETWORK STATION SUMMARY

### Listing of Continuous Monitoring Stations

The PRAMP continuous ambient air quality monitoring network stations are:

- 986-C Station
- 842-B Station
- Reno-B Station
- AQHI Grimshaw
- Peace River Complex (PRC) Station

Station ID	Station Name	Latitude	Longitude
1562	986-C	56.36980	-116.92500
1561	842-B	56.27406	-116.98129
1563	Reno-B	55.890868	-117.137080
1689	AQHI-Grimshaw	56.18657	-117.604994
1698	PRC	56.38257	-116.769283

### Listing of Intermittent Monitoring Stations

- VOC Canister Sampling Station
  - 986-C Station
  - 842-B Station
  - Reno-B Station

### Listing of PRAMP member with EPEA Facility Operating Approval

Company	Facility	Approval No.
Canadian Natural Upgrading Limited	Peace River Complex	1642-03-00

### Calibration and Data Submission

Hourly data and calibration reports for June 2023 were submitted to Alberta's Ambient Air Data Warehouse through ETS for the 986-C station, 842-B station, Reno-B station, PRC station and AQHI-Grimshaw station.

## Monitoring Notes during the Month of June 2023

### 986-C Station

- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable.
- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement.
- **TRS:** The TRS convertor failed to recover after June 7's power outage. On June 9, the BV's CD Nova CDN101 convertor, s/n: 552, was removed, and the PRAMP's CD Nova CDN101 convertor, s/n: 530, was installed. Forty-five hours of downtime were recorded due to this event.

### 842-B Station

- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable.
- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement.
- No major operational issues were recorded this month.

### Reno-B Station

- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable.
- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement.
- All gas parameters: Due to the failure of the Envidas poll manager program on June 7, the scheduled daily zero-span checks results were lost. The datalogger was remotely reset on June 7 hour 16. June 8's zero-span checks ran as scheduled. All analyzers passed the check requirements.

### PRC Station

- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable.
- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement.
- No major operational issues were recorded this month.

### AQHI – Grimshaw Station

- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement, except O3 (24.7%). **AEPA reference #: 417907.**
- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) and /or Alberta Ambient Air Quality Guidelines (AAAGs) where applicable, except PM2.5. Eighty-seven 1-hour PM2.5 exceedances and eleven 24-hour PM2.5 exceedances were recorded this month. Both nearby and distant wildfires contributed to intense local wildfire smoke conditions and numerous PM2.5 exceedances measured by PRAMP.

Date	Time (MST)	Parameter	Average Period	Concentration (µg/m3)	Wind speed (km/hr)	Wind Direction	Reference #
03-Jun	20	PM2.5	1-Hour	83	7.6	81° (E)	414422
03-Jun	21	PM2.5	1-Hour	102	7.4	52° (NE)	414422
03-Jun	22	PM2.5	1-Hour	119	8.5	52° (NE)	414422
03-Jun	23	PM2.5	1-Hour	88	18.0	136° (SE)	414422
03-Jun	-	PM2.5	24-Hour	54	10.4	98° (E)	414422
07-Jun	3	PM2.5	1-Hour	84	10.7	228° (SW)	414725
07-Jun	4	PM2.5	1-Hour	106	1.7	256° (WSW)	414725
07-Jun	5	PM2.5	1-Hour	126	4.4	227° (SW)	414725
07-Jun	8	PM2.5	1-Hour	105	9.1	289° (WNW)	414725
07-Jun	9	PM2.5	1-Hour	116	10.0	299° (WNW)	414725
07-Jun	10	PM2.5	1-Hour	99	9.5	270° (W)	414725
07-Jun	21	PM2.5	1-Hour	191	10.1	3° (N)	414725
07-Jun	22	PM2.5	1-Hour	253	8.6	7° (N)	414725
07-Jun	23	PM2.5	1-Hour	239	10.0	253° (WSW)	414725
07-Jun	-	PM2.5	24-Hour	82	9.4	271° (W)	414725
08-Jun	0	PM2.5	1-Hour	234	5.8	6° (N)	414725
08-Jun	1	PM2.5	1-Hour	220	6.8	1° (N)	414725
08-Jun	2	PM2.5	1-Hour	160	8.2	2° (N)	414725
08-Jun	3	PM2.5	1-Hour	88	9.7	6° (N)	414725
08-Jun	-	PM2.5	24-Hour	69	9.1	59° (ENE)	414725
09-Jun	-	PM2.5	24-Hour	48	7.9	81° (E)	414725
10-Jun	7	PM2.5	1-Hour	92	6.1	142° (SE)	414725
10-Jun	8	PM2.5	1-Hour	147	10.6	160° (SSE)	414725
10-Jun	9	PM2.5	1-Hour	118	12.9	185° (S)	414725
10-Jun	10	PM2.5	1-Hour	91	8.6	197° (SSW)	414725
10-Jun	14	PM2.5	1-Hour	84	14.8	234° (SW)	414725
10-Jun	15	PM2.5	1-Hour	159	15.5	238° (SW)	414725
10-Jun	16	PM2.5	1-Hour	263	15.0	258° (WSW)	414725
10-Jun	17	PM2.5	1-Hour	314	13.5	262° (W)	414725
10-Jun	18	PM2.5	1-Hour	332	11.2	280° (W)	414725
10-Jun	19	PM2.5	1-Hour	279	11.9	267° (W)	414725
10-Jun	20	PM2.5	1-Hour	210	4.4	237° (SW)	414725
10-Jun	21	PM2.5	1-Hour	197	3.2	268° (W)	414725
10-Jun	22	PM2.5	1-Hour	167	3.3	260° (WSW)	414725
10-Jun	23	PM2.5	1-Hour	185	12.9	176° (S)	414725
10-Jun	-	PM2.5	24-Hour	133	9.1	197° (SSW)	414725
11-Jun	0	PM2.5	1-Hour	214	7.2	297° (WNW)	414725
11-Jun	1	PM2.5	1-Hour	229	6.8	299° (WNW)	414725
11-Jun	2	PM2.5	1-Hour	234	7.7	290° (WNW)	414725



Date	Time (MST)	Parameter	Average Period	Concentration (µg/m3)	Wind speed (km/hr)	Wind Direction	Reference #
11-Jun	3	PM2.5	1-Hour	190	7.6	295° (WNW)	414725
11-Jun	4	PM2.5	1-Hour	106	9.7	304° (WNW)	414725
11-Jun	5	PM2.5	1-Hour	137	9.2	315° (NW)	414725
11-Jun	6	PM2.5	1-Hour	163	5.4	325° (NW)	414725
11-Jun	7	PM2.5	1-Hour	179	4.9	3° (N)	414725
11-Jun	8	PM2.5	1-Hour	132	6.0	5° (N)	414725
11-Jun	14	PM2.5	1-Hour	83	10.2	201° (SSW)	414725
11-Jun	15	PM2.5	1-Hour	87	9.6	237° (SW)	414725
11-Jun	16	PM2.5	1-Hour	91	9.7	260° (WSW)	414725
11-Jun	17	PM2.5	1-Hour	83	11.5	254° (WSW)	414725
11-Jun	20	PM2.5	1-Hour	87	8.5	257° (WSW)	414725
11-Jun	23	PM2.5	1-Hour	152	4.3	254° (S)	414725
11-Jun	-	PM2.5	24-Hour	115	7.6	295° (WNW)	414725
12-Jun	0	PM2.5	1-Hour	204	6.6	23° (NNE)	415194
12-Jun	1	PM2.5	1-Hour	208	5.3	20° (NNE)	415194
12-Jun	2	PM2.5	1-Hour	205	5.3	12° (NNE)	415194
12-Jun	3	PM2.5	1-Hour	211	5.7	22° (NNE)	415194
12-Jun	4	PM2.5	1-Hour	210	4.8	32° (NNE)	415194
12-Jun	5	PM2.5	1-Hour	198	5.6	45° (NE)	415194
12-Jun	6	PM2.5	1-Hour	196	3.5	53° (NE)	415194
12-Jun	7	PM2.5	1-Hour	193	3.4	58° (ENE)	415194
12-Jun	8	PM2.5	1-Hour	186	3.1	77° (ENE)	415194
12-Jun	9	PM2.5	1-Hour	175	5.0	129° (SE)	415194
12-Jun	10	PM2.5	1-Hour	159	10.4	147° (SE)	415194
12-Jun	11	PM2.5	1-Hour	147	10.9	154° (SSE)	415194
12-Jun	12	PM2.5	1-Hour	121	8.9	165° (SSE)	415194
12-Jun	13	PM2.5	1-Hour	102	9.2	197° (SSW)	415194
12-Jun	14	PM2.5	1-Hour	177	13.4	200° (SSW)	415194
12-Jun	15	PM2.5	1-Hour	145	13.3	210° (SSW)	415194
12-Jun	16	PM2.5	1-Hour	97	13.1	227° (SW)	415194
12-Jun	17	PM2.5	1-Hour	92	10.7	194° (SSW)	415194
12-Jun	18	PM2.5	1-Hour	104	12.6	186° (S)	415194
12-Jun	19	PM2.5	1-Hour	87	10.0	224° (SW)	415194
12-Jun	-	PM2.5	24-Hour	137	7.4	170° (SSE)	415194
13-Jun	6	PM2.5	1-Hour	329	8.1	1° (N)	415194
13-Jun	7	PM2.5	1-Hour	375	8.8	352° (N)	415194
13-Jun	8	PM2.5	1-Hour	264	10.8	347° (NNW)	415194
13-Jun	9	PM2.5	1-Hour	254	10.4	347° (NNW)	415194
13-Jun	10	PM2.5	1-Hour	233	9.8	354° (N)	415194

Date	Time (MST)	Parameter	Average Period	Concentration (µg/m3)	Wind speed (km/hr)	Wind Direction	Reference #
13-Jun	11	PM2.5	1-Hour	229	9.1	351° (N)	415194
13-Jun	12	PM2.5	1-Hour	228	10.7	356° (N)	415194
13-Jun	13	PM2.5	1-Hour	245	12.4	348° (NNW)	415194
13-Jun	14	PM2.5	1-Hour	230	12.0	341° (NNW)	415194
13-Jun	15	PM2.5	1-Hour	241	11.6	342° (NNW)	415194
13-Jun	16	PM2.5	1-Hour	251	10.0	348° (NNW)	415194
13-Jun	17	PM2.5	1-Hour	190	12.3	355° (N)	415194
13-Jun	18	PM2.5	1-Hour	166	14.8	0° (N)	415194
13-Jun	19	PM2.5	1-Hour	107	15.0	360° (N)	415194
13-Jun	-	PM2.5	24-Hour	153	9.9	352° (N)	415194
14-Jun	8	PM2.5	1-Hour	137	12.0	338° (NNW)	415194
14-Jun	9	PM2.5	1-Hour	134	15.6	349° (NNW)	415194
14-Jun	10	PM2.5	1-Hour	136	14.6	349° (NNW)	415194
14-Jun	11	PM2.5	1-Hour	115	12.9	347° (NNW)	415194
14-Jun	12	PM2.5	1-Hour	84	14.6	352° (N)	415194
14-Jun	-	PM2.5	24-Hour	57	11.2	343° (NNW)	415194
15-Jun	-	PM2.5	24-Hour	37	7.8	286° (WNNW)	415194
27-Jun	13	PM2.5	1-Hour	82	5.0	333° (NNW)	415805
27-Jun	14	PM2.5	1-Hour	85	5.4	319° (NW)	415805
27-Jun	-	PM2.5	24-Hour	33	4.0	339° (NNW)	415805

- No major operational issues were recorded this month.

### VOCs Canister Sampling Program

- The canister sampling program collects a 1-hour sample of air when the continuously measured non-methane hydrocarbon (NMHC) concentration reaches a specified trigger point. The current trigger point is 0.3 ppm for non-methane hydrocarbons. The trigger point is based on real-time monitoring data that are averaged over a 5-minute period.
- The canister sample collection systems are in place at Station 986-C, 842-B, and the Reno-B Station; a canister sample collection system is not part of the suite of instruments currently deployed at both the PRC station and the AQHI-Grimshaw station.
- Sample analysis and analytical results were prepared and provided by InnoTech Alberta.
- One canister event was recorded at the 986-C station at 13:45 on June 30, at concentration of 0.34ppm.

## Revisions to Alberta's Ambient Air Quality Data Warehouse

No revisions to historical data previously submitted to the Alberta's Ambient Air Quality Data Warehouse were made this month.

## Deviations from Authorized Monitoring Methods

No deviations from authorized monitoring methods were recorded this month.

## Disclaimer

Baseline corrections were performed on the 1-minute data. 5-minute and hourly data were calculated based on the post-baseline correction 1-minute data set. Data verification/validation were then performed on the 5-minute and hourly data. Hourly data that are included in this report are the post-validation hourly data set.

Equipment calibration / maintenance records were provided by Bureau Veritas.

## Certification

This report was prepared and submitted by Lily Lin in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).



Lily Lin, Technical Program Manager, PRAMP Airshed

This report was reviewed by Michael Bisaga in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).

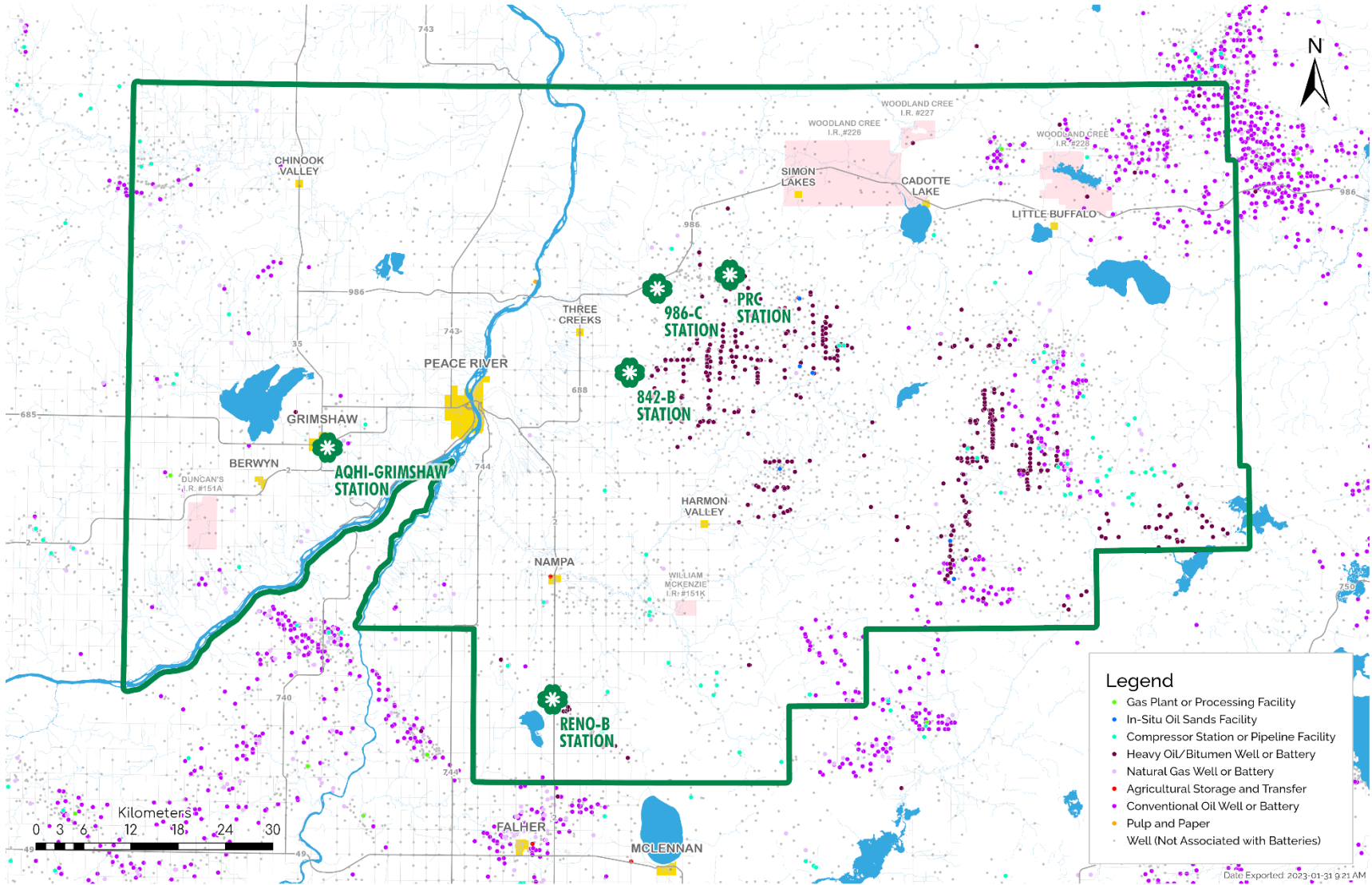
I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization and reporting requirements. I also certify that at the time of this report's submission, all air data have been electronically uploaded to Alberta's Ambient Air Quality Data Warehouse as required by the AMD. Uploading of VOC data from the canister sampling program was not required at the time of completing this report.



Michael Bisaga, Technical Program Manager, PRAMP Airshed

July 17, 2023

# Map of PRAMP Continuous Monitoring Network



# CONTINUOUS NETWORK EQUIPMENT AND MONITORING RESULTS SUMMARY

## Equipment Operation Summary

Parameter	Equipment Operational Summary
<b>SO2</b>  Thermo 43iQTL #1193585646	<ul style="list-style-type: none"> <li>• Eleven hours of downtime were recorded due to power outages on June 7 and June 19.</li> <li>• The analyzer failed the daily zero-span check on June 7. A repeat zero-span check was initiated on June 7 hour 17 to investigate the drift. The analyzer failed both June 7's repeat zero-span check and June 8's scheduled zero-span check. A successful multi-point calibration was completed on June 9 to correct the drift. One hour of downtime was recorded due to the additional quality check.</li> <li>• A repeat zero-span check was initiated on June 21 to investigate the span drift. The analyzer passed the check requirements. No further actions were requirement after this point. One hour of downtime was recorded due to this event.</li> </ul>
<b>TRS</b>  Thermo 43iQTL #1191833341  TRS convertor CD Nova CDN-101 #552 (BV-supplied) #530	<ul style="list-style-type: none"> <li>• Eleven hours of downtime were recorded due to power outages on June 7 and June 19.</li> <li>• The TRS convertor failed to recover after June 7's power outage. On June 9, the BV's CD Nova CDN101 convertor, s/n: 552, was removed, and the PRAMP's CD Nova CDN101 convertor, s/n: 530, was installed. Forty-five hours of downtime were recorded due to this event.</li> </ul>
<b>THC/CH4/NMHC</b>  Thermo 55i #1433563261  Zero air generator API T701 #80	<ul style="list-style-type: none"> <li>• Eleven hours of downtime were recorded due to power outages on June 7 and June 19. Two hours of downtime were recorded after power outages as the analyzer required time to recover from the power events.</li> <li>• A successful monthly calibration was performed on June 9.</li> </ul>
<b>RH</b>  Rotronic HC2-S3 #20626912	<ul style="list-style-type: none"> <li>• Eleven hours of downtime were recorded due to power outages on June 7 and June 19.</li> <li>• The RH probe was checked on June 9. The probe passed the check requirements.</li> </ul>
<b>BP</b>  MetOne 092 #Y23358	<ul style="list-style-type: none"> <li>• Eleven hours of downtime were recorded due to power outages on June 7 and June 19.</li> <li>• The BP sensor was checked on June 9. The sensor passed the check requirements.</li> </ul>

Parameter	Equipment Operational Summary
<b>AT</b> Rotronic HC2-S3 #20626912	<ul style="list-style-type: none"> <li>• Eleven hours of downtime were recorded due to power outages on June 7 and June 19.</li> <li>• The AT probe was checked on June 9. The probe passed the check requirements.</li> </ul>
<b>ST</b> COMET #18961918	<ul style="list-style-type: none"> <li>• No operational issues were identified this month.</li> <li>• Eleven hours of downtime were recorded due to power outages on June 7 and June 19.</li> </ul>
<b>Precipitation</b> RM Young 52202 #TB 16325	<ul style="list-style-type: none"> <li>• Eleven hours of downtime were recorded due to power outages on June 7 and June 19.</li> <li>• The precipitation gauge was checked on June 9. The unit passed the check requirements.</li> <li>•</li> </ul>
<b>WS/ WD</b> RM Young 05305AQ #180340	<ul style="list-style-type: none"> <li>• Wind direction data contained in this report represents where the wind is coming from.</li> <li>• The annual wind system calibration was completed on August 5, 2022.</li> <li>• The anemometer sensors were check on June 9. The wind system passed the check requirements.</li> <li>• Eleven hours of downtime were recorded due to power outages on June 7 and June 19.</li> </ul>



### Monitored Data Summary for 986-C Station

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.1	0	4	Jun 8 at hr 7	17.7	ENE	0.6	Jun 29	98.2	93.4
TRS (ppb)	-	-	-	-	-	-	0.56	0.06	1.68	Jun 29 at hr 9	20.8	SSW	1.02	Jun 29	92.2	87.9
THC (ppm)	-	-	-	-	-	-	2.00	1.86	2.31	Jun 2 at hr 5	3.2	ESE	2.08	Jun 2	98.2	93.4
CH4 (ppm)	-	-	-	-	-	-	2.00	1.86	2.31	Jun 2 at hr 5	3.2	ESE	2.08	Jun 2	98.2	93.4
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.03	Jun 30 at hr 13	26.4	WSW	0.00	Jun 30	98.2	93.4
RH (%)	-	-	-	-	-	-	59.6	17	100	Jun 11 at hr 4	3.4	SSE	92.5	Jun 25	98.5	98.5
BP (millibar)	-	-	-	-	-	-	940	931	947	Jun 2 at hr 7	0.5	W	946	Jun 2	98.5	98.5
Ext. Temp. (°C)	-	-	-	-	-	-	16.4	2.8	28.6	Jun 9 at hr 15	26.5	E	21.9	Jun 9	98.5	98.5
Stn. Temp. (°C)	-	-	-	-	-	-	23.1	22.3	24.3	Jun 8 at hr 23	14.8	ESE	23.6	Jun 9	98.5	98.5
Precipitation (mm)*	-	-	-	-	-	-	25.2	0.0	8.6	Jun 25 at hr 1	12.4	N	17.2	Jun 25	98.5	98.5
WSV (km/hr)	-	-	-	-	-	-	1.1	0.5	38.5	Jun 19 at hr 16	38.5	NNE	26.6	Jun 19	98.5	98.5
WDV (sector)	-	-	-	-	-	-	204 (SSW)	-	-	-	-	-	-	-	98.5	98.5

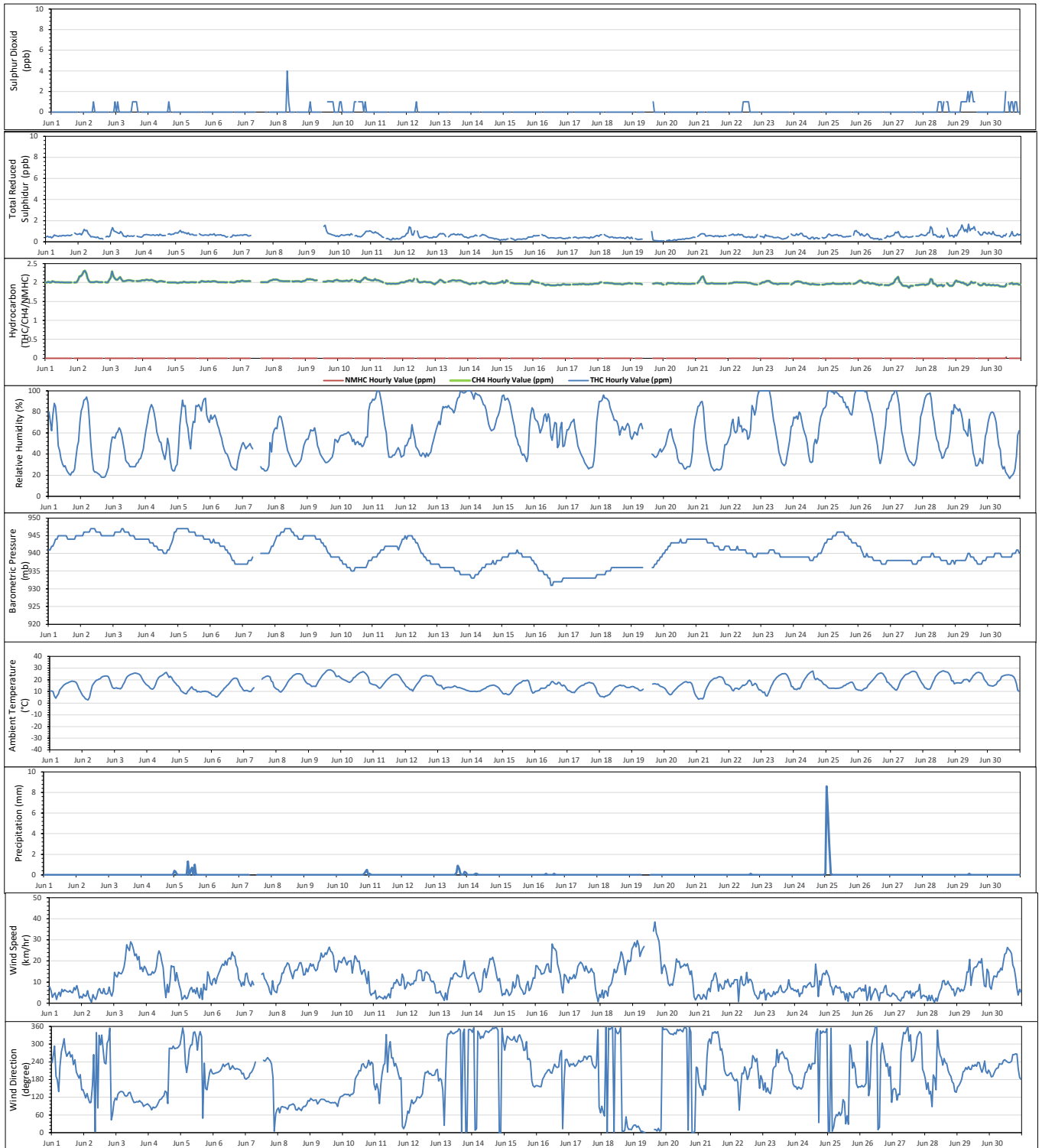
1- Date/ Time given is the first minimum and maximum value that was recorded

\* Data represents the total (sum) for the indicated time frame

### Alberta Ambient Air Quality Objectives (AAAQOs) Exceedances

The measured ambient air quality was within the AAAQOs for all monitored parameters.

Timeseries Chart of Hourly Average for the month of Jun 2023 - 986-C Station



## 842-B Station

### Equipment Operation Summary

Parameter	Equipment Operational Summary
<p><b>SO2</b></p> <p>Thermo 43iQTL #1200736629</p>	<ul style="list-style-type: none"> <li>• A successful monthly calibration was performed on June 1.</li> <li>• Twenty-eight hours of downtime were recorded due to power outages on June 7, June19 and June 20. Repeat zero-span checks were initiated after power was restored to confirm the analyzer’s functionality. Three hours of downtime were recorded due to the additional quality checks.</li> <li>• June 18 ‘s scheduled zero-span check (hour 0) was interrupted due to power issues. A successful repeat zero-span check was completed on June 18 hour 6. One hour of downtime was recorded due to this event.</li> </ul>
<p><b>TRS</b></p> <p>Thermo 43iQTL #1200736630</p> <p>TRS Convertor CD Nova CDN-101 #583</p>	<ul style="list-style-type: none"> <li>• A monthly calibration was attempted on June 1, but the calibration results was determined invalid due to a technician error. The calibration was repeated on June 2. Data collected between the two calibrations were considered invalid and were discarded. Twenty-two hours of downtime were recorded.</li> <li>• Twenty-eight hours of downtime were recorded due to power outages on June 7, June19 and June 20. Repeat zero-span checks were initiated after power was restored to confirm the analyzer’s functionality. Three hours of downtime were recorded due to the additional quality checks.</li> <li>• June 18 ‘s scheduled zero-span check (hour 0) was interrupted due to power issues. A successful repeat zero-span check was completed on June 18 hour 6. One hour of downtime was recorded due to this event.</li> </ul>
<p><b>THC/CH4/NMHC</b></p> <p>Thermo 55i #1314057759</p> <p>H2 Generator HG300 #190567058</p>	<ul style="list-style-type: none"> <li>• A successful monthly calibration was performed on June 1.</li> <li>• Twenty-eight hours of downtime were recorded due to power outages on June 7, June19 and June 20. Repeat zero-span checks were initiated after power was restored to confirm the analyzer’s functionality. Three hours of downtime were recorded due to the additional quality checks.</li> <li>• June 18 ‘s scheduled zero-span check (hour 0) was interrupted due to power issues. A successful repeat zero-span check was completed on June 18 hour 6. One hour of downtime was recorded due to this event.</li> </ul>

Parameter	Equipment Operational Summary
<b>RH</b> Rotronic HC2-S3 #20370767	<ul style="list-style-type: none"> <li>• The RH probe was checked on June 1. The probe passed the check requirements.</li> <li>• Twenty-eight hours of downtime were recorded due to power outages on June 7, June19 and June 20.</li> </ul>
<b>BP</b> MetOne 092 #Y23362	<ul style="list-style-type: none"> <li>• The BP sensor was checked on June 1. The sensor passed the check requirements.</li> <li>• Twenty-eight hours of downtime were recorded due to power outages on June 7, June19 and June 20.</li> </ul>
<b>AT</b> Rotronic HC2-S3 #20370767	<ul style="list-style-type: none"> <li>• The AT probe was checked on June 1. The probe passed the check requirements.</li> <li>• Twenty-eight hours of downtime were recorded due to power outages on June 7, June19 and June 20.</li> </ul>
<b>ST</b> COMET #20790297	<ul style="list-style-type: none"> <li>• Twenty-eight hours of downtime were recorded due to power outages on June 7, June19 and June 20.</li> </ul>
<b>Precipitation</b> RM Young 52202 #TB 15878	<ul style="list-style-type: none"> <li>• The precipitation gauge was checked on June 1. The sensor passed the check requirements.</li> <li>• Twenty-eight hours of downtime were recorded due to power outages on June 7, June19 and June 20.</li> </ul>
<b>WS/ WD</b> RM Young 05305AQ #174802	<ul style="list-style-type: none"> <li>• Wind direction data contained in this report represents where the wind is coming from.</li> <li>• The annual wind system calibration was completed on August 3, 2022.</li> <li>• The anemometer sensors were check on June 1. Both the wind speed sensor and wind direction sensor passed the check requirements.</li> <li>• Twenty-eight hours of downtime were recorded due to power outages on June 7, June19 and June 20.</li> </ul>

### Monitored Data Summary for 842-B Station

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	1	Jun 2 at hr 7	1.4	N	0.2	Jun 22	95.6	90.7
TRS (ppb)	-	-	-	-	-	-	0.67	0.25	1.75	Jun 4 at hr 4	7.9	E	1.01	Jun 4	92.5	87.9
THC (ppm)	-	-	-	-	-	-	2.02	1.93	3.05	Jun 9 at hr 7	7.2	E	2.14	Jun 4	95.6	90.7
CH4 (ppm)	-	-	-	-	-	-	2.02	1.93	3.03	Jun 9 at hr 7	7.2	E	2.11	Jun 9	95.6	90.7
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.19	Jun 4 at hr 4	7.9	E	0.05	Jun 4	95.6	90.7
RH (%)	-	-	-	-	-	-	64.4	19	100	Jun 1 at hr 4	1.1	SE	95.8	Jun 25	96.1	96.1
BP (millibar)	-	-	-	-	-	-	939	931	946	Jun 2 at hr 7	1.4	N	945	Jun 2	96.1	96.1
Ext. Temp. (°C)	-	-	-	-	-	-	16.8	2.5	29.7	Jun 9 at hr 15	10.4	E	22.9	Jun 9	96.1	96.1
Stn. Temp. (°C)	-	-	-	-	-	-	22.4	21.2	23.8	Jun 1 at hr 7	5.8	WSW	23.0	Jun 25	96.1	96.1
Precipitation (mm)*	-	-	-	-	-	-	12.0	0.0	1.5	Jun 25 at hr 1	5.9	N	4.4	Jun 5	96.1	96.1
WSV (km/hr)	-	-	-	-	-	-	2.2	0.0	27.8	Jun 30 at hr 14	27.8	WSW	16.1	Jun 16	96.1	96.1
WDV (sector)	-	-	-	-	-	-	240 (WSW)	-	-	-	-	-	-	-	96.1	96.1

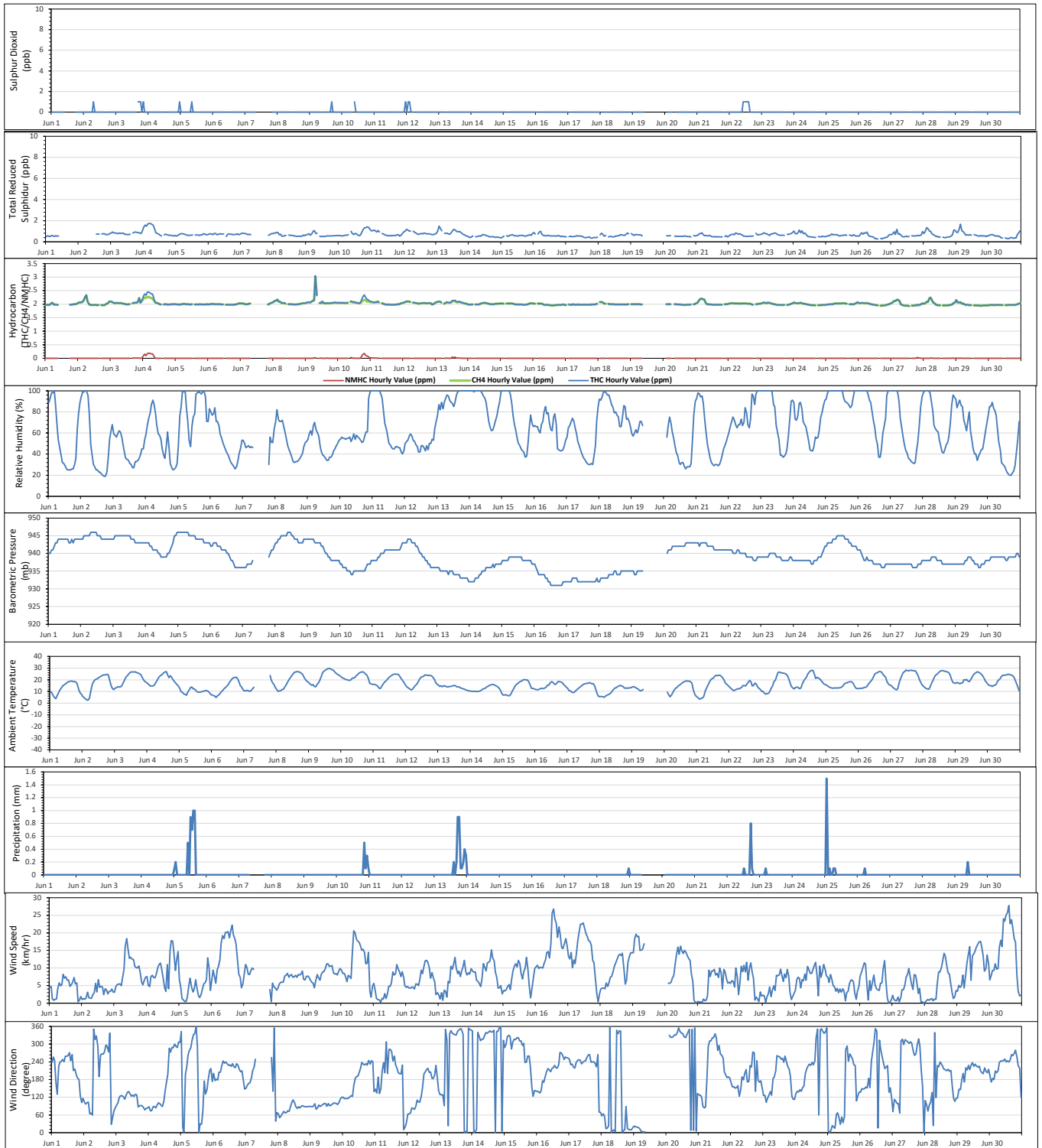
1- Date/ Time given is the first minimum and maximum value that was recorded

\* Data represents the total (sum) for the indicated time frame

### Alberta Ambient Air Quality Objectives (AAAQOs) Exceedances

The measured ambient air quality was within the AAAQOs for all monitored parameters.

Timeseries Chart of Hourly Average for the month of Jun 2023 - 842-B Station



## Reno-B Station

### Equipment Operation Summary

Parameter	Equipment Operational Summary
<p><b>SO2</b></p> <p>Thermo 43iQTL #12101910505</p>	<ul style="list-style-type: none"> <li>• Due to datalogger errors, no data were collected from May 31 hour 14 to June 1 hour 8. The datalogger was remotely reset to correct the issue. Nine hours of downtime were recorded this month.</li> <li>• Due to the failure of the Envidas poll manager program on June 7, data collected between hour 11 and hour 16 were lost, including the scheduled daily zero-span checks results. Seven hours of downtime were recorded.</li> <li>• A successful monthly calibration was performed on June 22.</li> </ul>
<p><b>TRS</b></p> <p>Thermo 43iQTL #12101910504</p> <p><b>TRS Convertor</b> CD Nova CDN-101 #590</p>	<ul style="list-style-type: none"> <li>• Due to datalogger errors, no data were collected from May 31 hour 14 to June 1 hour 8. The datalogger was remotely reset to correct the issue. Nine hours of downtime were recorded this month.</li> <li>• Due to the failure of the Envidas poll manager program on June 7, data collected between hour 11 and hour 16 were lost, including the scheduled daily zero-span checks results. Seven hours of downtime were recorded.</li> <li>• A successful monthly calibration was performed on June 22.</li> </ul>
<p><b>THC/CH4/NMHC</b></p> <p>Thermo 55i #1505664392</p> <p>H2 Generator HG300 #210467069</p>	<ul style="list-style-type: none"> <li>• Due to datalogger errors, no data were collected from May 31 hour 14 to June 1 hour 8. The datalogger was remotely reset to correct the issue. Nine hours of downtime were recorded this month.</li> <li>• Due to the failure of the Envidas poll manager program on June 7, data collected between hour 11 and hour 16 were lost, including the scheduled daily zero-span checks results. Seven hours of downtime were recorded.</li> <li>• A successful monthly calibration was performed on June 22.</li> </ul>
<p><b>RH</b></p> <p>Rotronic HC2-S3 #20467597</p>	<ul style="list-style-type: none"> <li>• Due to datalogger errors, no data were collected from May 31 hour 14 to June 1 hour 8. The datalogger was remotely reset to correct the issue. Nine hours of downtime were recorded this month.</li> <li>• Due to datalogger errors, seventeen hours of data were lost this month.</li> <li>• The RH probe was checked on June 22. The probe passed the check requirements.</li> </ul>

Parameter	Equipment Operational Summary
<b>BP</b>  MetOne 092 #A17940	<ul style="list-style-type: none"> <li>• Due to datalogger errors, no data were collected from May 31 hour 14 to June 1 hour 8. The datalogger was remotely reset to correct the issue. Nine hours of downtime were recorded this month.</li> <li>• Due to datalogger errors, seventeen hours of data were lost this month.</li> <li>• The BP sensor was checked on June 22. The sensor passed the check requirements.</li> </ul>
<b>AT</b>  Rotronic HC2-S3 #20467597	<ul style="list-style-type: none"> <li>• Due to datalogger errors, no data were collected from May 31 hour 14 to June 1 hour 8. The datalogger was remotely reset to correct the issue. Nine hours of downtime were recorded this month.</li> <li>• Due to datalogger errors, seventeen hours of data were lost this month.</li> <li>• The AT probe was checked on June 22. The probe passed the check requirements.</li> </ul>
<b>ST</b>  COMET #NA	<ul style="list-style-type: none"> <li>• Due to datalogger errors, no data were collected from May 31 hour 14 to June 1 hour 8. The datalogger was remotely reset to correct the issue. Nine hours of downtime were recorded this month.</li> <li>• Due to datalogger errors, eight hours of data were lost this month.</li> </ul>
<b>Precipitation</b>  RM Young 52202 #TB 15877	<ul style="list-style-type: none"> <li>• Due to datalogger errors, no data were collected from May 31 hour 14 to June 1 hour 8. The datalogger was remotely reset to correct the issue. Nine hours of downtime were recorded this month.</li> <li>• Due to datalogger errors, twelve hours of data were lost this month.</li> <li>• The precipitation gauge was checked and tested on June 22. The unit passed the check requirements.</li> </ul>
<b>WS/ WD</b>  RM Young 05305AQ #174795	<ul style="list-style-type: none"> <li>• Wind direction data contained in this report represents where the wind is coming from.</li> <li>• The annual wind system calibration was completed on November 23, 2022.</li> <li>• The anemometer sensors were check on June 22. The wind sensors passed the check requirements.</li> <li>• Due to datalogger errors, no data were collected from May 31 hour 14 to June 1 hour 8. The datalogger was remotely reset to correct the issue. Nine hours of downtime were recorded this month.</li> <li>• Due to datalogger errors, seventeen hours of data were lost this month.</li> </ul>



### Monitored Data Summary for Reno-B Station

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.1	0	9	Jun 2 at hr 22	8.2	E	0.6	Jun 2	97.8	92.8
TRS (ppb)	-	-	-	-	-	-	0.38	0.09	5.94	Jun 2 at hr 22	8.2	E	0.90	Jun 8	97.8	92.8
THC (ppm)	-	-	-	-	-	-	1.96	1.88	2.53	Jun 4 at hr 4	15.4	E	2.01	Jun 10	97.8	92.8
CH4 (ppm)	-	-	-	-	-	-	1.96	1.88	2.53	Jun 4 at hr 4	15.4	E	2.01	Jun 10	97.8	92.8
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	Jun 1 at hr 9	5.7	W	0.00	Jun 2	97.8	92.8
RH (%)	-	-	-	-	-	-	61.6	18	100	Jun 13 at hr 21	15.4	N	91.4	Jun 25	96.4	96.4
BP (millibar)	-	-	-	-	-	-	938	931	946	Jun 5 at hr 0	11.2	NNW	944	Jun 5	96.4	96.4
Ext. Temp. (°C)	-	-	-	-	-	-	16.3	4.9	28.7	Jun 9 at hr 14	19.6	ESE	22.8	Jun 9	96.4	96.4
Stn. Temp. (°C)	-	-	-	-	-	-	23.4	21.8	24.6	Jun 4 at hr 4	15.4	E	23.9	Jun 4	97.6	97.6
Precipitation (mm)*	-	-	-	-	-	-	23.6	0.0	4.6	Jun 24 at hr 22	22.1	NW	7.3	Jun 24	97.1	97.1
WSV (km/hr)	-	-	-	-	-	-	1.9	0.0	38.5	Jun 4 at hr 17	38.5	WNW	20.9	Jun 4	96.4	96.4
WDV (sector)	-	-	-	-	-	-	242 (WSW)	-	-	-	-	-	-	-	96.4	96.4

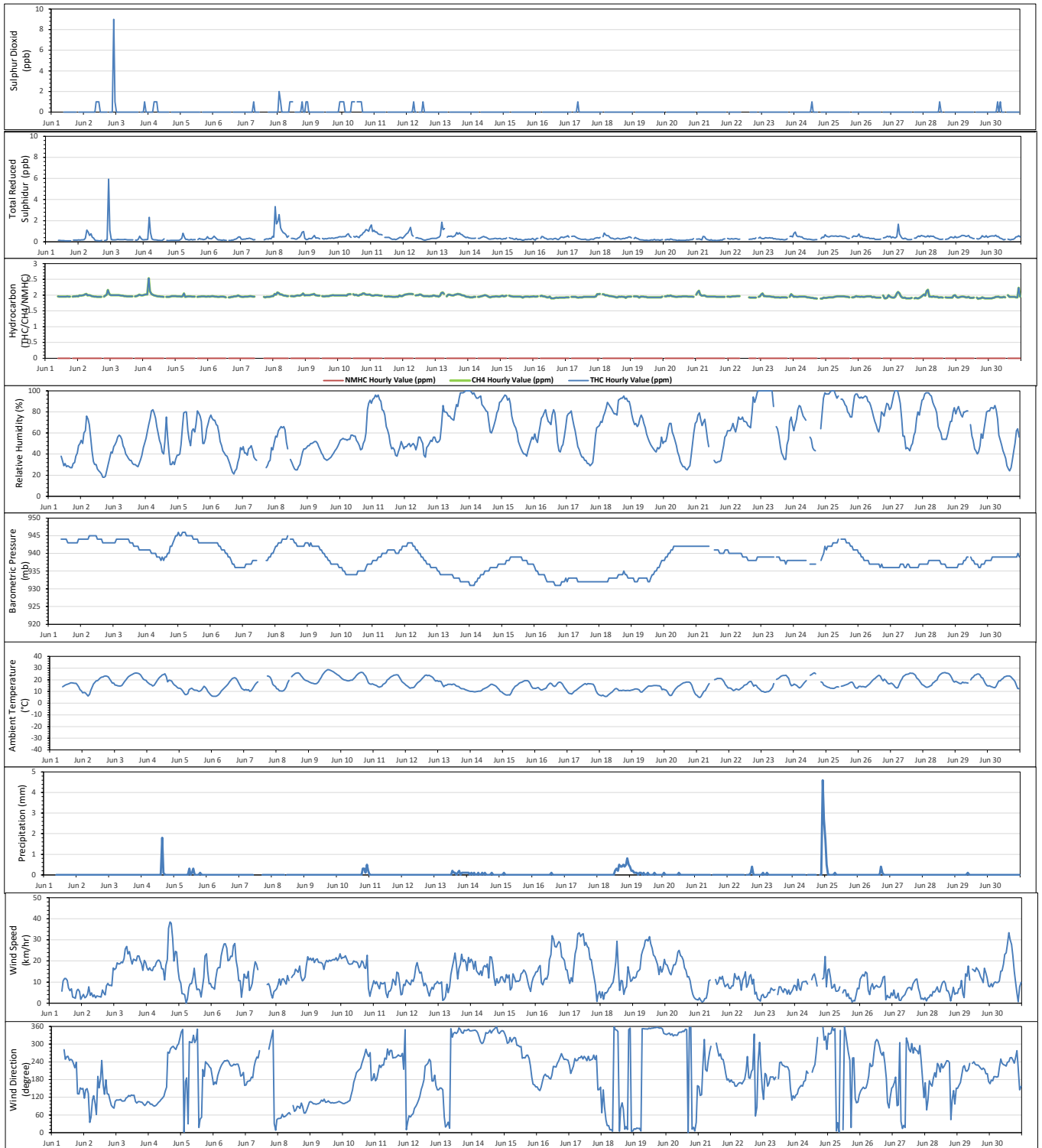
1- Date/ Time given is the first minimum and maximum value that was recorded

\* Data represents the total (sum) for the indicated time frame

### Alberta Ambient Air Quality Objectives (AAAQOs) Exceedances

The measured ambient air quality was within the AAAQOs for all monitored parameters.

Timeseries Chart of Hourly Average for the month of Jun 2023 - Reno-B Station



Equipment Operation Summary

Parameter	Equipment Operational Summary
<b>SO2</b>  Thermo 43i #1034746225	<ul style="list-style-type: none"> <li>• A successful monthly calibration was performed on June 21.</li> <li>• No operational issues were identified.</li> </ul>
<b>H2S</b>  Thermo 450i #1308857354	<ul style="list-style-type: none"> <li>• A successful monthly calibration was performed on June 21.</li> <li>• No operational issues were identified.</li> </ul>
<b>TRS</b>  Thermo 450i #1034746224  TRS Convertor CD Nova CDN-101 #506	<ul style="list-style-type: none"> <li>• A successful monthly calibration was performed on June 21.</li> <li>• No operational issues were identified.</li> </ul>
<b>THC/CH4/NMHC</b>  Thermo 55i #1034745845  H2 Generator HG300 #211067076	<ul style="list-style-type: none"> <li>• A successful monthly calibration was performed on June 21.</li> <li>• No operational issues were identified.</li> </ul>
<b>RH</b>  Rotronic HC2-S3 #20558318	<ul style="list-style-type: none"> <li>• The RH sensor was checked on June 21. The sensor passed the check requirements.</li> <li>• No operational issues were identified.</li> </ul>
<b>BP</b>  MetOne 092 #B19577	<ul style="list-style-type: none"> <li>• The BP sensor was checked on June 21. The sensor passed the check requirements.</li> <li>• No operational issues were identified.</li> </ul>
<b>AT</b>  Rotronic HC2-S3 #20558318	<ul style="list-style-type: none"> <li>• The AT sensor was checked on June 21. The sensor passed the check requirements.</li> <li>• No operational issues were identified.</li> </ul>
<b>ST</b>  Canadian Natural #NA	<ul style="list-style-type: none"> <li>• No operational issues were identified.</li> </ul>

Parameter	Equipment Operational Summary
WS/ WD  RM Young 05305VK #129612	<ul style="list-style-type: none"><li>• Wind direction data contained in this report represents where the wind is coming from.</li><li>• The annual wind system calibration was completed on August 17, 2022.</li><li>• The anemometer sensors were checked on June 21. The sensors passed the check requirements.</li><li>• No operational issues were identified.</li></ul>

### Monitored Data Summary for Peace River Complex (PRC) Station

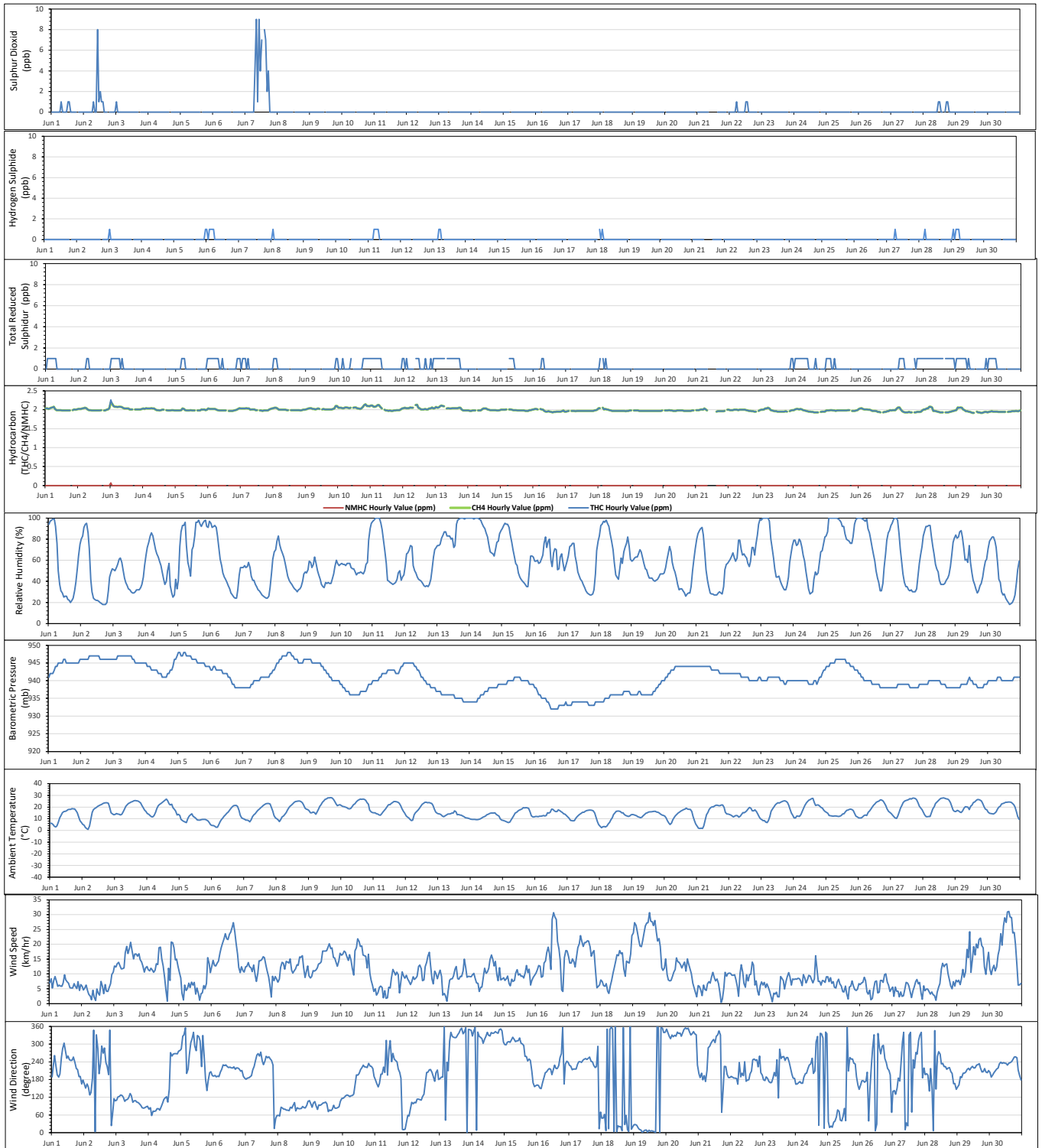
Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.1	0	9	Jun 7 at hr 8	9.6	W	2.4	Jun 7	100.0	94.8
H2S (ppb)	10	3	-	0	0	-	0.0	0	1	Jun 3 at hr 0	12.7	ESE	0.0	Jun 1	100.0	94.8
TRS (ppb)	-	-	-	-	-	-	0.2	0	1	Jun 1 at hr 1	8.4	SW	1.0	Jun 28	100.0	94.8
THC (ppm)	-	-	-	-	-	-	2.00	1.92	2.26	Jun 3 at hr 0	12.7	ESE	2.06	Jun 10	100.0	94.8
CH4 (ppm)	-	-	-	-	-	-	2.00	1.92	2.19	Jun 3 at hr 0	12.7	ESE	2.06	Jun 10	100.0	94.8
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.07	Jun 3 at hr 0	12.7	ESE	0.00	Jun 3	100.0	94.8
RH (%)	-	-	-	-	-	-	59.8	18	100	Jun 11 at hr 2	2.8	SSE	91.5	Jun 25	100.0	100.0
BP (millibar)	-	-	-	-	-	-	941	932	948	Jun 5 at hr 0	10.6	WNW	946	Jun 2	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	16.2	0.9	28.1	Jun 9 at hr 16	18.5	ENE	21.9	Jun 10	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	23.0	21.6	26.3	Jun 1 at hr 18	6.7	SW	24.3	Jun 1	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	2.3	0.4	31.1	Jun 30 at hr 14	31.1	SW	22.9	Jun 19	100.0	100.0
WDV (sector)	-	-	-	-	-	-	226 (SW)	-	-	-	-	-	-	-	100.0	100.0

1- Date/ Time given is the first minimum and maximum value that was recorded

### Alberta Ambient Air Quality Objectives (AAAQOs) Exceedances

The measured ambient air quality was within the AAAQOs for all monitored parameters.

Timeseries Chart of Hourly Average for the month of Jun 2023 - Peace River Complex (PRC) Station



**Equipment Operation Summary**

Parameter	Equipment Operational Summary
<p><b>SO2</b></p> <p>Teledyne T100 #722</p>	<ul style="list-style-type: none"> <li>• A successful monthly calibration was performed on June 6.</li> <li>• No operational issues were identified this month.</li> </ul>
<p><b>TRS</b></p> <p>Teledyne T100U #132</p> <p>TRS Convertor CD Nova CDN-101 #576</p>	<ul style="list-style-type: none"> <li>• The monthly calibration was attempted on June 6. The analyzer passed the as-found points check, but it failed the low point check. Maintenance/troubleshooting were commenced, which included changing scrubber beads and cleaning the converter’s quartz tube. The analyzer was allowed to stabilize overnight. A successful post-repair calibration was completed on June 7. Because the analyzer passed the June 5’s zero-span check and the June 6’s as-found points check, data collected before the maintenance were considered valid. However, twenty-four hours of downtime were recorded due to the maintenance activity.</li> <li>• Due to COMMS issue with analyzer, data collected on June 15 hour 5 and hour 6 were lost. Two hours of downtime were recorded.</li> </ul>
<p><b>NOx/NO/NO2</b></p> <p>Teledyne T200 #837</p>	<ul style="list-style-type: none"> <li>• A repeat zero-span check was initiated on June 1 to assess span drift. Two hours of downtime were recorded due to the additional quality check. The span responses were either close to or exceeded the lower acceptable limit between June 1 and June 5. The drift was suspected to be related to smoke contamination.</li> <li>• Following the shut-down calibration on June 6, the analyzer was put offline for cleaning and maintenance. A successful post-repair calibration was completed on June 7. As the analyzer passed the June 6’s shut-down calibration, data collected between June 1 and June 6 were considered valid. Twenty-one hours of downtime were recorded due to the maintenance activity.</li> <li>• The channels were put offline on June 8 in order to perform a GPT check for the ozone calibration. Two hours of downtime were recorded.</li> </ul>
<p><b>THC/CH4/NMHC</b></p> <p>Thermo 55i #1191032505</p> <p>H2 Generator AMA HG300 #190567059</p>	<ul style="list-style-type: none"> <li>• A successful monthly calibration was performed on June 6.</li> <li>• No operational issues were identified this month.</li> </ul>

Parameter	Equipment Operational Summary
<b>O3</b>  Teledyne T400 #824	<ul style="list-style-type: none"> <li>The monthly calibration was attempted on June 8. The analyzer passed the as-found points check, but it failed the low point check due to abrupt change in lamp signal. In order to correct the issue, an adjustment was made to the UV preamp board. A successful post-repair calibration was completed afterwards. Because the analyzer passed June 7's zero-span check and June 8's as-found points check, data collected before the maintenance were considered valid. However, four hours of downtime were recorded due to the maintenance activity.</li> <li>PRAMP's Teledyne T400 analyzer, s/n: 824, failed the shut-down calibration on July 12 due to unstable/noisy readings. The analyzer also had a warning for lamp signal displayed on the screen., the analyzer was removed on July 12. In the absence of a clear point of failure, data were discarded back to the last valid multi-point calibration check, which was June 8. Five hundred forty-two hours of data were discarded.</li> </ul>
<b>PM2.5</b>  Teledyne T640 #3189	<ul style="list-style-type: none"> <li>A successful annual audit/maintenance was completed on June 7.</li> <li>No operational issues were identified this month.</li> </ul>
<b>RH</b>  Vaisala HMP155 #N2910506	<ul style="list-style-type: none"> <li>The RH probe was checked on June 7. The Probe passed the check requirements.</li> <li>No operational issues were identified this month.</li> </ul>
<b>BP</b>  MetOne 092 #A2397	<ul style="list-style-type: none"> <li>The BP sensor was checked on June 7. The sensor passed the check requirements.</li> <li>No operational issues were identified this month.</li> </ul>
<b>AT</b>  Vaisala HMP155 #N2910506	<ul style="list-style-type: none"> <li>The AT prober was checked on June 7. The probe passed the check requirements.</li> <li>No operational issues were identified this month.</li> </ul>
<b>ST</b>  COMET #NA	<ul style="list-style-type: none"> <li>No operational issues were identified this month.</li> </ul>
<b>WS/ WD</b>  RM Young 05305AQ #174801	<ul style="list-style-type: none"> <li>Wind direction data contained in this report represents where the wind is coming from.</li> <li>The last annual wind system calibration was completed on July 12, 2022.</li> <li>The anemometer sensors were check on June 7. Both the wind speed sensor and wind direction sensor passed the check requirements.</li> <li>No operational issues were identified this month.</li> </ul>



### Monitored Data Summary for AQHI - Grimshaw Station

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	1	Jun 2 at hr 22	6.3	NE	0.1	Jun 3	100.0	94.8
TRS (ppb)	-	-	-	-	-	-	0.19	0.00	2.24	Jun 10 at hr 22	3.3	WSW	0.55	Jun 10	96.4	91.5
NOx (ppb)	-	-	-	-	-	-	3.6	0	26	Jun 2 at hr 5	2.8	NNW	7.3	Jun 2	96.5	90.7
NO (ppb)	-	-	-	-	-	-	0.8	0	8	Jun 2 at hr 5	2.8	NNW	2.1	Jun 16	96.5	90.7
NO2 (ppb)	159	-	-	0	-	-	2.8	0	18	Jun 2 at hr 5	2.8	NNW	6.5	Jun 2	96.5	90.7
O3 (ppb)	76	-	-	0	-	-	NA	5.7	62.3	Jun 3 at hr 15	14.2	SE	45.3	Jun 3	24.7	23.6
THC (ppm)	-	-	-	-	-	-	2.02	1.94	2.39	Jun 13 at hr 7	8.8	N	2.12	Jun 10	100.0	95.0
CH4 (ppm)	-	-	-	-	-	-	2.02	1.94	2.20	Jun 13 at hr 7	8.8	N	2.08	Jun 10	100.0	95.0
NMHC (ppm)	-	-	-	-	-	-	0.01	0.00	0.20	Jun 21 at hr 18	10	SSW	0.04	Jun 13	100.0	95.0
PM2.5 (µg/m3)	80	29	-	87	11	-	39.5	1	375	Jun 13 at hr 7	8.8	N	153.0	Jun 13	100.0	99.7
RH (%)	-	-	-	-	-	-	52.7	18	99	Jun 26 at hr 4	1.7	SE	81.6	Jun 13	100.0	100.0
BP (millibar)	-	-	-	-	-	-	940	932	948	Jun 5 at hr 0	4.1	NNE	946	Jun 5	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	17.4	6.6	30.9	Jun 9 at hr 15	9.2	ESE	22.9	Jun 9	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	23.4	21.5	26.5	Jun 8 at hr 16	11.6	ENE	23.7	Jun 9	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	9.8	0.4	30.3	Jun 19 at hr 13	30.3	N	23.4	Jun 19	100.0	100.0
WDV (sector)	-	-	-	-	-	-	301 (WNW)	-	-	-	-	-	-	-	100.0	100.0

1- Date/ Time given is the first minimum and maximum value that was recorded

NA: Hourly average is not available as less than 75% of valid data for the month were collected.

**Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) Exceedances**

The following exceedances of AAAQO and AAAQO were observed at the AQHI - Grimshaw Station.

Date	Time (MST)	Parameter	Average Period	AAAQOs / AAAQGs	Concentration	Wind speed	Wind Direction	Reference #
Jun 3	20	PM2.5	1-Hour	80 µg/m3	83 µg/m3	7.6 km/hr	81° (E)	414422
Jun 3	21	PM2.5	1-Hour	80 µg/m3	102 µg/m3	7.4 km/hr	52° (NE)	414422
Jun 3	22	PM2.5	1-Hour	80 µg/m3	119 µg/m3	8.5 km/hr	52° (NE)	414422
Jun 3	23	PM2.5	1-Hour	80 µg/m3	88 µg/m3	18.0 km/hr	136° (SE)	414422
Jun 3	-	PM2.5	24-Hour	29 µg/m3	54 µg/m3	10.4 km/hr	98° (E)	414422
Jun 7	3	PM2.5	1-Hour	80 µg/m3	84 µg/m3	10.7 km/hr	228° (SW)	414725
Jun 7	4	PM2.5	1-Hour	80 µg/m3	106 µg/m3	1.7 km/hr	256° (WSW)	414725
Jun 7	5	PM2.5	1-Hour	80 µg/m3	126 µg/m3	4.4 km/hr	227° (SW)	414725
Jun 7	8	PM2.5	1-Hour	80 µg/m3	105 µg/m3	9.1 km/hr	289° (WNW)	414725
Jun 7	9	PM2.5	1-Hour	80 µg/m3	116 µg/m3	10.0 km/hr	299° (WNW)	414725
Jun 7	10	PM2.5	1-Hour	80 µg/m3	99 µg/m3	9.5 km/hr	270° (W)	414725
Jun 7	21	PM2.5	1-Hour	80 µg/m3	191 µg/m3	10.1 km/hr	3° (N)	414725
Jun 7	22	PM2.5	1-Hour	80 µg/m3	253 µg/m3	8.6 km/hr	7° (N)	414725
Jun 7	23	PM2.5	1-Hour	80 µg/m3	239 µg/m3	10.0 km/hr	253° (WSW)	414725
Jun 7	-	PM2.5	24-Hour	29 µg/m3	82 µg/m3	9.4 km/hr	271° (W)	414725
Jun 8	0	PM2.5	1-Hour	80 µg/m3	234 µg/m3	5.8 km/hr	6° (N)	414725
Jun 8	1	PM2.5	1-Hour	80 µg/m3	220 µg/m3	6.8 km/hr	1° (N)	414725
Jun 8	2	PM2.5	1-Hour	80 µg/m3	160 µg/m3	8.2 km/hr	2° (N)	414725
Jun 8	3	PM2.5	1-Hour	80 µg/m3	88 µg/m3	9.7 km/hr	6° (N)	414725
Jun 8	-	PM2.5	24-Hour	29 µg/m3	69 µg/m3	9.1 km/hr	59° (ENE)	414725
Jun 9	-	PM2.5	24-Hour	29 µg/m3	48 µg/m3	7.9 km/hr	81° (E)	414725
Jun 10	7	PM2.5	1-Hour	80 µg/m3	92 µg/m3	6.1 km/hr	142° (SE)	414725
Jun 10	8	PM2.5	1-Hour	80 µg/m3	147 µg/m3	10.6 km/hr	160° (SSE)	414725
Jun 10	9	PM2.5	1-Hour	80 µg/m3	118 µg/m3	12.9 km/hr	185° (S)	414725
Jun 10	10	PM2.5	1-Hour	80 µg/m3	91 µg/m3	8.6 km/hr	197° (SSW)	414725
Jun 10	14	PM2.5	1-Hour	80 µg/m3	84 µg/m3	14.8 km/hr	234° (SW)	414725
Jun 10	15	PM2.5	1-Hour	80 µg/m3	159 µg/m3	15.5 km/hr	238° (SW)	414725
Jun 10	16	PM2.5	1-Hour	80 µg/m3	263 µg/m3	15.0 km/hr	258° (WSW)	414725
Jun 10	17	PM2.5	1-Hour	80 µg/m3	314 µg/m3	13.5 km/hr	262° (W)	414725
Jun 10	18	PM2.5	1-Hour	80 µg/m3	332 µg/m3	11.2 km/hr	280° (W)	414725

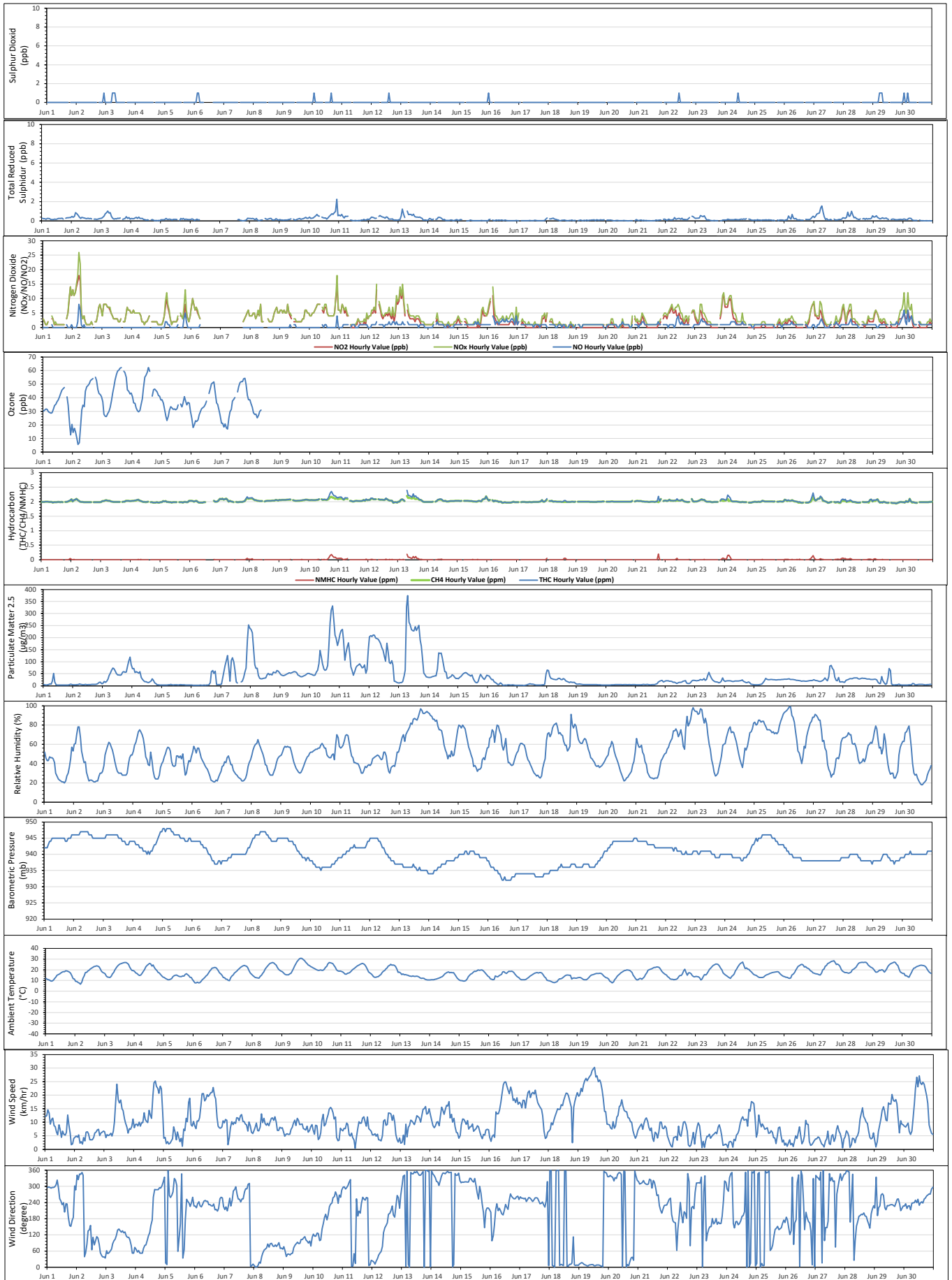
Date	Time (MST)	Parameter	Average Period	AAQOs / AAQGs	Concentration	Wind speed	Wind Direction	Reference #
Jun 10	19	PM2.5	1-Hour	80 µg/m3	279 µg/m3	11.9 km/hr	267° (W)	414725
Jun 10	20	PM2.5	1-Hour	80 µg/m3	210 µg/m3	4.4 km/hr	237° (SW)	414725
Jun 10	21	PM2.5	1-Hour	80 µg/m3	197 µg/m3	3.2 km/hr	268° (W)	414725
Jun 10	22	PM2.5	1-Hour	80 µg/m3	167 µg/m3	3.3 km/hr	260° (WSW)	414725
Jun 10	23	PM2.5	1-Hour	80 µg/m3	185 µg/m3	12.9 km/hr	176° (S)	414725
Jun 10	-	PM2.5	24-Hour	29 µg/m3	133 µg/m3	9.1 km/hr	197° (SSW)	414725
Jun 11	0	PM2.5	1-Hour	80 µg/m3	214 µg/m3	7.2 km/hr	297° (WNW)	414725
Jun 11	1	PM2.5	1-Hour	80 µg/m3	229 µg/m3	6.8 km/hr	299° (WNW)	414725
Jun 11	2	PM2.5	1-Hour	80 µg/m3	234 µg/m3	7.7 km/hr	290° (WNW)	414725
Jun 11	3	PM2.5	1-Hour	80 µg/m3	190 µg/m3	7.6 km/hr	295° (WNW)	414725
Jun 11	4	PM2.5	1-Hour	80 µg/m3	106 µg/m3	9.7 km/hr	304° (WNW)	414725
Jun 11	5	PM2.5	1-Hour	80 µg/m3	137 µg/m3	9.2 km/hr	315° (NW)	414725
Jun 11	6	PM2.5	1-Hour	80 µg/m3	163 µg/m3	5.4 km/hr	325° (NW)	414725
Jun 11	7	PM2.5	1-Hour	80 µg/m3	179 µg/m3	4.9 km/hr	3° (N)	414725
Jun 11	8	PM2.5	1-Hour	80 µg/m3	132 µg/m3	6.0 km/hr	5° (N)	414725
Jun 11	14	PM2.5	1-Hour	80 µg/m3	83 µg/m3	10.2 km/hr	201° (SSW)	414725
Jun 11	15	PM2.5	1-Hour	80 µg/m3	87 µg/m3	9.6 km/hr	237° (SW)	414725
Jun 11	16	PM2.5	1-Hour	80 µg/m3	91 µg/m3	9.7 km/hr	260° (WSW)	414725
Jun 11	17	PM2.5	1-Hour	80 µg/m3	83 µg/m3	11.5 km/hr	254° (WSW)	414725
Jun 11	20	PM2.5	1-Hour	80 µg/m3	87 µg/m3	8.5 km/hr	257° (WSW)	414725
Jun 11	23	PM2.5	1-Hour	80 µg/m3	152 µg/m3	4.3 km/hr	254° (S)	414725
Jun 11	-	PM2.5	24-Hour	29 µg/m3	115 µg/m3	7.6 km/hr	295° (WNW)	414725
Jun 12	0	PM2.5	1-Hour	80 µg/m3	204 µg/m3	6.6 km/hr	23° (NNE)	415194
Jun 12	1	PM2.5	1-Hour	80 µg/m3	208 µg/m3	5.3 km/hr	20° (NNE)	415194
Jun 12	2	PM2.5	1-Hour	80 µg/m3	205 µg/m3	5.3 km/hr	12° (NNE)	415194
Jun 12	3	PM2.5	1-Hour	80 µg/m3	211 µg/m3	5.7 km/hr	22° (NNE)	415194
Jun 12	4	PM2.5	1-Hour	80 µg/m3	210 µg/m3	4.8 km/hr	32° (NNE)	415194
Jun 12	5	PM2.5	1-Hour	80 µg/m3	198 µg/m3	5.6 km/hr	45° (NE)	415194
Jun 12	6	PM2.5	1-Hour	80 µg/m3	196 µg/m3	3.5 km/hr	53° (NE)	415194
Jun 12	7	PM2.5	1-Hour	80 µg/m3	193 µg/m3	3.4 km/hr	58° (ENE)	415194
Jun 12	8	PM2.5	1-Hour	80 µg/m3	186 µg/m3	3.1 km/hr	77° (ENE)	415194
Jun 12	9	PM2.5	1-Hour	80 µg/m3	175 µg/m3	5.0 km/hr	129° (SE)	415194
Jun 12	10	PM2.5	1-Hour	80 µg/m3	159 µg/m3	10.4 km/hr	147° (SE)	415194

Date	Time (MST)	Parameter	Average Period	AAQOs / AAQGs	Concentration	Wind speed	Wind Direction	Reference #
Jun 12	11	PM2.5	1-Hour	80 µg/m3	147 µg/m3	10.9 km/hr	154° (SSE)	415194
Jun 12	12	PM2.5	1-Hour	80 µg/m3	121 µg/m3	8.9 km/hr	165° (SSE)	415194
Jun 12	13	PM2.5	1-Hour	80 µg/m3	102 µg/m3	9.2 km/hr	197° (SSW)	415194
Jun 12	14	PM2.5	1-Hour	80 µg/m3	177 µg/m3	13.4 km/hr	200° (SSW)	415194
Jun 12	15	PM2.5	1-Hour	80 µg/m3	145 µg/m3	13.3 km/hr	210° (SSW)	415194
Jun 12	16	PM2.5	1-Hour	80 µg/m3	97 µg/m3	13.1 km/hr	227° (SW)	415194
Jun 12	17	PM2.5	1-Hour	80 µg/m3	92 µg/m3	10.7 km/hr	194° (SSW)	415194
Jun 12	18	PM2.5	1-Hour	80 µg/m3	104 µg/m3	12.6 km/hr	186° (S)	415194
Jun 12	19	PM2.5	1-Hour	80 µg/m3	87 µg/m3	10.0 km/hr	224° (SW)	415194
Jun 12	-	PM2.5	24-Hour	29 µg/m3	137 µg/m3	7.4 km/hr	170° (SSE)	415194
Jun 13	6	PM2.5	1-Hour	80 µg/m3	329 µg/m3	8.1 km/hr	1° (N)	415194
Jun 13	7	PM2.5	1-Hour	80 µg/m3	375 µg/m3	8.8 km/hr	352° (N)	415194
Jun 13	8	PM2.5	1-Hour	80 µg/m3	264 µg/m3	10.8 km/hr	347° (NNW)	415194
Jun 13	9	PM2.5	1-Hour	80 µg/m3	254 µg/m3	10.4 km/hr	347° (NNW)	415194
Jun 13	10	PM2.5	1-Hour	80 µg/m3	233 µg/m3	9.8 km/hr	354° (N)	415194
Jun 13	11	PM2.5	1-Hour	80 µg/m3	229 µg/m3	9.1 km/hr	351° (N)	415194
Jun 13	12	PM2.5	1-Hour	80 µg/m3	228 µg/m3	10.7 km/hr	356° (N)	415194
Jun 13	13	PM2.5	1-Hour	80 µg/m3	245 µg/m3	12.4 km/hr	348° (NNW)	415194
Jun 13	14	PM2.5	1-Hour	80 µg/m3	230 µg/m3	12.0 km/hr	341° (NNW)	415194
Jun 13	15	PM2.5	1-Hour	80 µg/m3	241 µg/m3	11.6 km/hr	342° (NNW)	415194
Jun 13	16	PM2.5	1-Hour	80 µg/m3	251 µg/m3	10.0 km/hr	348° (NNW)	415194
Jun 13	17	PM2.5	1-Hour	80 µg/m3	190 µg/m3	12.3 km/hr	355° (N)	415194
Jun 13	18	PM2.5	1-Hour	80 µg/m3	166 µg/m3	14.8 km/hr	0° (N)	415194
Jun 13	19	PM2.5	1-Hour	80 µg/m3	107 µg/m3	15.0 km/hr	360° (N)	415194
Jun 13	-	PM2.5	24-Hour	29 µg/m3	153 µg/m3	9.9 km/hr	352° (N)	415194
Jun 14	8	PM2.5	1-Hour	80 µg/m3	137 µg/m3	12.0 km/hr	338° (NNW)	415194
Jun 14	9	PM2.5	1-Hour	80 µg/m3	134 µg/m3	15.6 km/hr	349° (NNW)	415194
Jun 14	10	PM2.5	1-Hour	80 µg/m3	136 µg/m3	14.6 km/hr	349° (NNW)	415194
Jun 14	11	PM2.5	1-Hour	80 µg/m3	115 µg/m3	12.9 km/hr	347° (NNW)	415194
Jun 14	12	PM2.5	1-Hour	80 µg/m3	84 µg/m3	14.6 km/hr	352° (N)	415194
Jun 14	-	PM2.5	24-Hour	29 µg/m3	57 µg/m3	11.2 km/hr	343° (NNW)	415194
Jun 15	-	PM2.5	24-Hour	29 µg/m3	37 µg/m3	7.8 km/hr	286° (WNW)	415194
Jun 27	13	PM2.5	1-Hour	80 µg/m3	82 µg/m3	5.0 km/hr	333° (NNW)	415805

Date	Time (MST)	Parameter	Average Period	AAQOs / AAAQGs	Concentration	Wind speed	Wind Direction	Reference #
Jun 27	14	PM2.5	1-Hour	80 µg/m3	85 µg/m3	5.4 km/hr	319° (NW)	415805
Jun 27	-	PM2.5	24-Hour	29 µg/m3	33 µg/m3	4.0 km/hr	339° (NNW)	415805

- The exceedances of the PM2.5 objective and guideline recorded this month were the result of wildfires.

Timeseries Chart of Hourly Average for the month of Jun 2023 - AQHI - Grimshaw Station



## TABLES, CHARTS AND WIND ROSES

## 986-C STATION



**Peace River Area Monitoring Program**

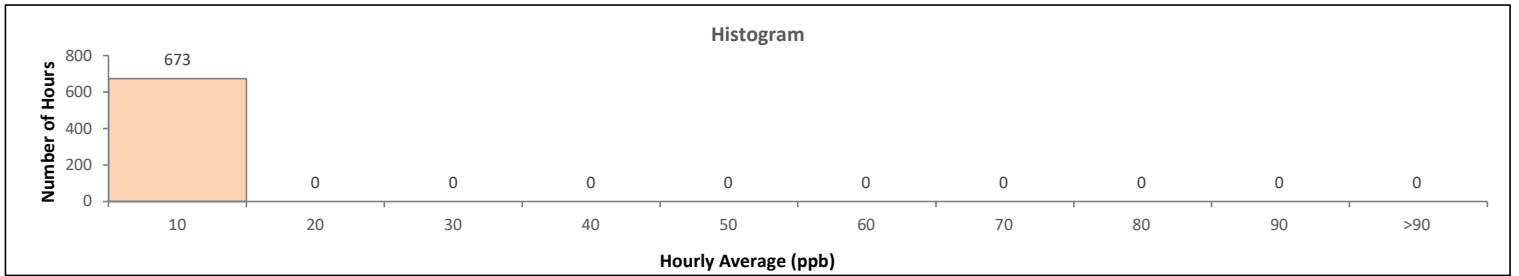
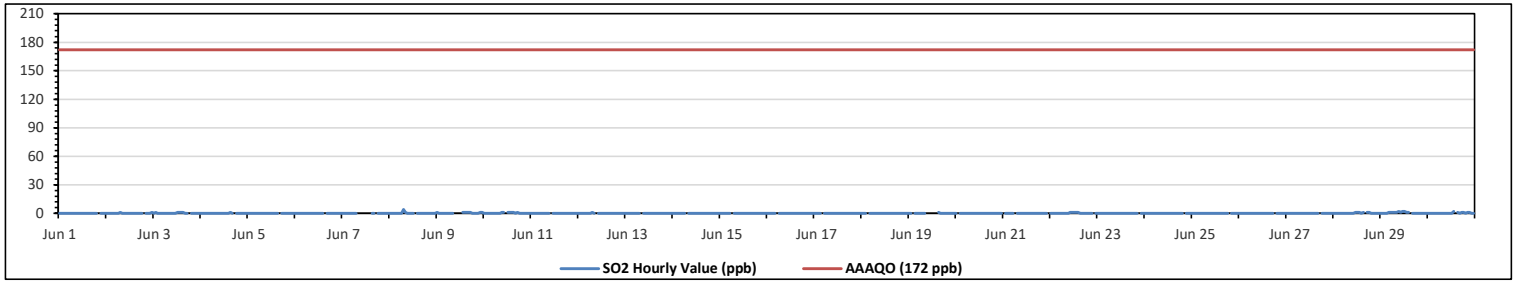
**986-C Station - June 2023**

**Summary of Hourly Averages**

**SULPHUR DIOXIDE (SO<sub>2</sub>) in ppb**

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb																											
Number of 1-Hour Exceedances: 0						Number of 24-Hour Exceedances: 0						30-Day Exceedence: 0															
Maximum Hourly Value: 4 ppb on Jun 8 at hr 7						Hours in Service: 720																					
Maximum Daily Value: 0.6 ppb on Jun 29						Hours of Data: 673																					
Minimum Hourly Value: 0 ppb on Jun 1 at hr 0						Hours of Missing Data: 13																					
Minimum Daily Value: 0.0 ppb on Jun 1						Hours of Calibration: 34																					
Monthly Average: 0.1 ppb						Operational Uptime: 98.2																					
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jun 1	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
Jun 2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0	1
Jun 3	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	S	0	0	0	0	0	0	0	1
Jun 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	S	0	0	0	0	0	0	0	0	0
Jun 5	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
Jun 6	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
Jun 7	0	0	0	0	0	0	0	0	P	P	P	P	P	1	S	0	0	NRM	0	0	0	0	0	0	0	0	0
Jun 8	0	0	0	0	0	0	0	4	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	4
Jun 9	1	0	0	0	0	0	0	0	C	C	C	C	1	1	1	1	1	0	0	0	0	0	0	1	1	0	1
Jun 10	0	0	0	0	0	0	0	0	1	1	S	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1
Jun 11	0	0	0	0	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun 12	0	0	0	0	0	0	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Jun 13	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
Jun 14	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
Jun 15	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
Jun 16	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
Jun 17	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
Jun 18	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
Jun 19	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
Jun 20	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
Jun 21	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	S	0
Jun 22	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	S	0	0
Jun 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0
Jun 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0
Jun 25	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
Jun 26	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
Jun 27	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
Jun 28	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	S	1	1	0	0	0	0	0	0	0	1
Jun 29	0	0	0	0	1	1	1	1	1	2	1	2	2	1	1	S	0	0	0	0	0	0	0	0	0	0	2
Jun 30	0	0	0	0	0	0	0	0	0	0	0	0	0	2	S	1	0	1	1	0	1	1	0	0	0	0	2
Diurnal Maximum	1	1	0	0	1	1	1	4	1	2	1	2	2	2	1	1	1	1	1	0	1	1	1	1	1	1	1
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
C	Monthly Calibration						S	Daily Zero-Span Check						Q	Quality Assurance												
K	Collection Error						ND	No Data (Machine Not in Service)						Y	Routine Maintenance												
X	Invalid Data (Equipment Malfunction /Recovery)						NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)						P	Power Failure												

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

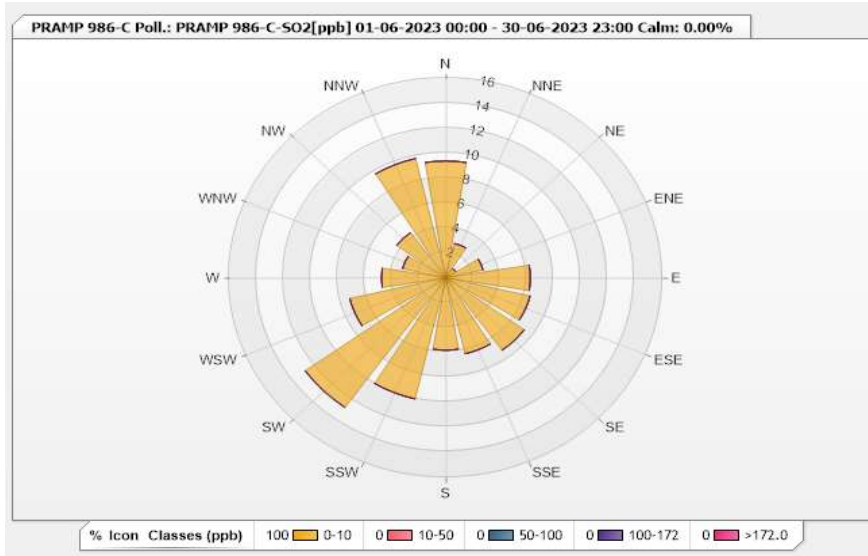


Station: PRAMP 986-C Poll.: PRAMP 986-C-SO2[ppb] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 93.47%      Calm Avg: 0.00 [ppm]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	9.36	0	0	0	0	9.36
NNE	2.82	0	0	0	0	2.82
NE	0.89	0	0	0	0	0.89
ENE	2.82	0	0	0	0	2.82
E	6.24	0	0	0	0	6.24
ESE	6.39	0	0	0	0	6.39
SE	7.13	0	0	0	0	7.13
SSE	6.24	0	0	0	0	6.24
S	5.79	0	0	0	0	5.79
SSW	9.96	0	0	0	0	9.96
SW	12.78	0	0	0	0	12.78
WSW	7.28	0	0	0	0	7.28
W	4.75	0	0	0	0	4.75
WNW	3.27	0	0	0	0	3.27
NW	4.46	0	0	0	0	4.46
NNW	9.81	0	0	0	0	9.81
Summary	100	0	0	0	0	100



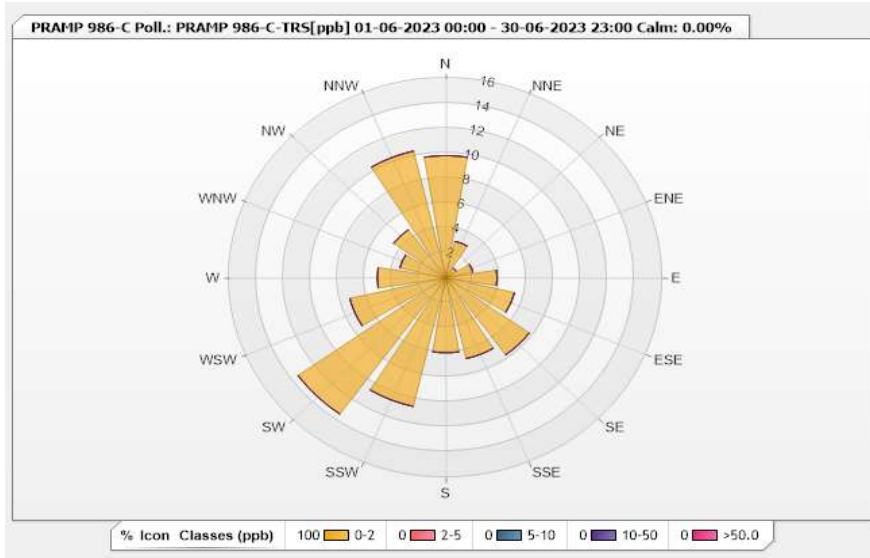


Station: PRAMP 986-C Poll.: PRAMP 986-C-TRS[ppb] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 87.92%      Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	9.79	0	0	0	0	9.79
NNE	3	0	0	0	0	3
NE	0.95	0	0	0	0	0.95
ENE	2.05	0	0	0	0	2.05
E	3.79	0	0	0	0	3.79
ESE	5.21	0	0	0	0	5.21
SE	7.58	0	0	0	0	7.58
SSE	6.64	0	0	0	0	6.64
S	6	0	0	0	0	6
SSW	10.58	0	0	0	0	10.58
SW	13.43	0	0	0	0	13.43
WSW	7.27	0	0	0	0	7.27
W	5.06	0	0	0	0	5.06
WNW	3.48	0	0	0	0	3.48
NW	4.74	0	0	0	0	4.74
NNW	10.43	0	0	0	0	10.43
Summary	100	0	0	0	0	100



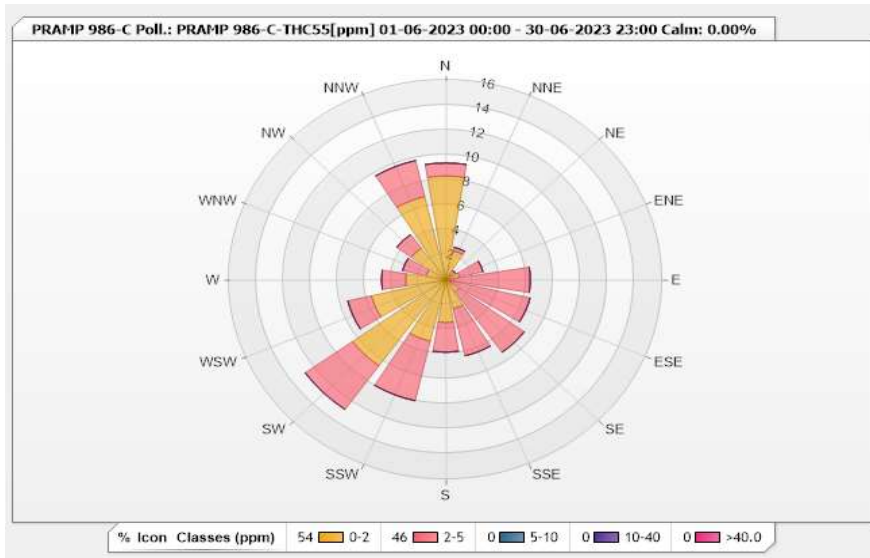


Station: PRAMP 986-C Poll.: PRAMP 986-C-THC55[ppm] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 93.47%      Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	8.32	1.04	0	0	0	9.36
NNE	2.38	0.3	0	0	0	2.68
NE	0.45	0.45	0	0	0	0.9
ENE	1.04	1.78	0	0	0	2.82
E	0.3	5.94	0	0	0	6.24
ESE	0.45	5.94	0	0	0	6.39
SE	1.19	5.94	0	0	0	7.13
SSE	2.38	3.86	0	0	0	6.24
S	3.42	2.38	0	0	0	5.8
SSW	5.05	4.9	0	0	0	9.95
SW	8.47	4.31	0	0	0	12.78
WSW	5.65	1.78	0	0	0	7.43
W	2.97	1.78	0	0	0	4.75
WNW	1.49	1.78	0	0	0	3.27
NW	3.12	1.34	0	0	0	4.46
NNW	6.84	2.97	0	0	0	9.81
Summary	53.52	46.49	0	0	0	100



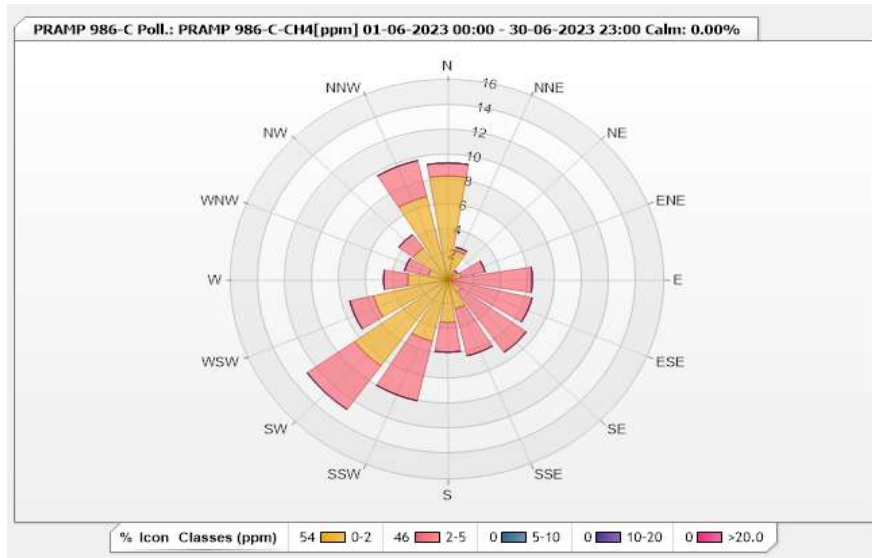


Station: PRAMP 986-C Poll.: PRAMP 986-C-CH4[ppm] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 93.47%      Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	8.32	1.04	0	0	0	9.36
NNE	2.38	0.3	0	0	0	2.68
NE	0.45	0.45	0	0	0	0.9
ENE	1.04	1.78	0	0	0	2.82
E	0.3	5.94	0	0	0	6.24
ESE	0.45	5.94	0	0	0	6.39
SE	1.19	5.94	0	0	0	7.13
SSE	2.38	3.86	0	0	0	6.24
S	3.42	2.38	0	0	0	5.8
SSW	5.05	4.9	0	0	0	9.95
SW	8.47	4.31	0	0	0	12.78
WSW	5.65	1.78	0	0	0	7.43
W	2.97	1.78	0	0	0	4.75
WNW	1.49	1.78	0	0	0	3.27
NW	3.12	1.34	0	0	0	4.46
NNW	6.84	2.97	0	0	0	9.81
Summary	53.52	46.49	0	0	0	100





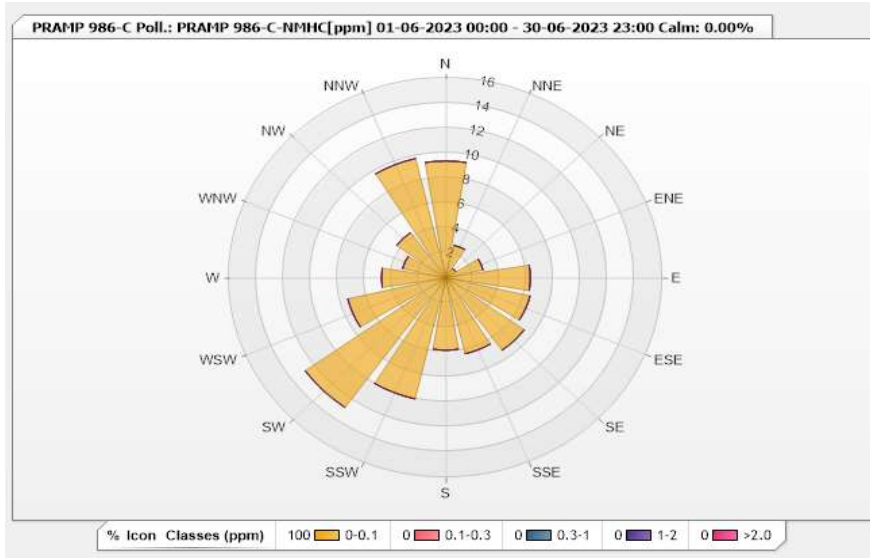


Station: PRAMP 986-C Poll.: PRAMP 986-C-NMHC[ppm] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 93.47%      Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	9.36	0	0	0	0	9.36
NNE	2.67	0	0	0	0	2.67
NE	0.89	0	0	0	0	0.89
ENE	2.82	0	0	0	0	2.82
E	6.24	0	0	0	0	6.24
ESE	6.39	0	0	0	0	6.39
SE	7.13	0	0	0	0	7.13
SSE	6.24	0	0	0	0	6.24
S	5.79	0	0	0	0	5.79
SSW	9.96	0	0	0	0	9.96
SW	12.78	0	0	0	0	12.78
WSW	7.43	0	0	0	0	7.43
W	4.75	0	0	0	0	4.75
WNW	3.27	0	0	0	0	3.27
NW	4.46	0	0	0	0	4.46
NNW	9.81	0	0	0	0	9.81
Summary	100	0	0	0	0	100



Peace River Area Monitoring Program

986-C Station - June 2023  
Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

Maximum Hourly Value:	100	%	on Jun 11 at hr 4	Hours in Service:	720
Maximum Daily Value:	92.5	%	on Jun 25	Hours of Data:	709
Minimum Hourly Value:	17	%	on Jun 30 at hr 16	Hours of Missing Data:	11
Minimum Daily Value:	40.9	%	on Jun 7	Hours of Calibration:	0
Monthly Average:	59.6	%		Operational Uptime:	98.5

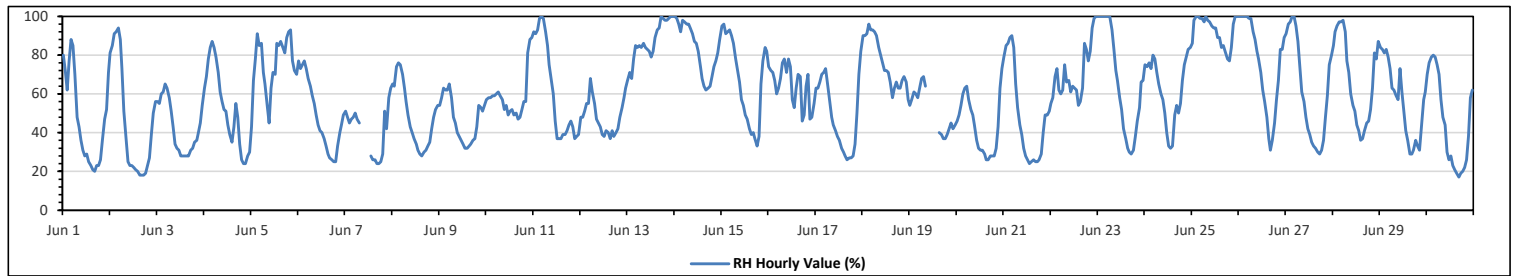
  

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Jun 1	80	72	62	77	88	85	70	48	43	36	31	28	29	25	23	21	20	23	23	26	36	47	52	71	20	88	46.5	
Jun 2	81	85	91	92	94	88	73	51	37	25	23	23	22	21	20	18	18	18	19	23	27	39	50	56	18	94	45.6	
Jun 3	56	55	60	61	65	63	58	51	43	34	32	31	28	28	28	28	28	31	32	35	36	40	45	54	28	65	42.6	
Jun 4	63	69	78	84	87	84	79	71	61	56	52	51	44	39	35	43	55	48	34	26	24	24	28	30	24	87	52.7	
Jun 5	43	67	78	91	85	86	71	65	54	45	63	71	70	86	85	87	84	81	89	92	93	77	72	70	43	93	75.2	
Jun 6	77	73	75	77	73	68	64	59	55	49	44	41	40	37	33	29	27	26	25	25	33	40	44	49	25	77	48.5	
Jun 7	51	48	45	47	48	50	47	45	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	28	26	26	24	24	25	29	51	42	58	63	24	63	40.9
Jun 8	65	64	74	76	75	70	63	56	49	43	40	37	34	31	29	28	30	31	33	35	42	48	52	54	28	76	48.3	
Jun 9	54	58	63	62	62	65	58	48	45	40	38	36	34	32	32	33	34	36	37	43	54	53	51	54	32	65	46.8	
Jun 10	57	58	58	59	59	60	61	59	57	52	54	49	51	52	49	50	47	48	52	56	56	81	88	89	47	89	58.4	
Jun 11	92	91	93	99	100	99	92	85	75	67	60	46	37	37	37	39	39	41	44	46	43	37	38	39	37	100	61.5	
Jun 12	48	48	51	55	55	68	61	55	47	45	43	39	38	41	40	37	41	38	40	42	48	53	58	63	37	68	48.1	
Jun 13	67	71	68	78	85	84	85	84	86	84	83	82	79	82	89	93	94	100	99	98	98	99	100	100	67	100	87.0	
Jun 14	100	99	96	92	98	97	96	96	94	91	87	86	82	74	68	64	62	63	64	69	74	77	81	88	62	100	83.3	
Jun 15	95	96	91	92	93	90	86	78	72	66	57	54	49	47	42	39	40	37	33	38	65	77	84	82	33	96	66.8	
Jun 16	74	72	71	67	60	63	68	76	78	71	78	74	57	53	63	70	69	46	49	64	70	47	48	55	46	78	64.3	
Jun 17	63	63	66	70	71	73	64	56	48	44	41	38	36	32	30	28	26	27	27	28	34	50	70	82	26	82	48.6	
Jun 18	90	90	91	96	93	92	90	84	80	76	72	72	71	66	58	63	66	63	63	67	69	66	57	57	96	96	76.2	
Jun 19	54	57	61	60	58	64	68	69	64	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	40	39	37	37	39	42	45	42	44	37	69	51.1	
Jun 20	46	49	54	60	63	64	57	52	49	44	36	32	31	31	29	26	26	28	28	28	32	43	63	73	26	73	43.5	
Jun 21	79	85	86	89	90	84	65	53	44	39	32	28	26	24	25	26	25	25	26	29	40	49	49	51	24	90	48.7	
Jun 22	55	58	69	73	62	60	62	75	66	67	61	64	63	62	54	56	63	86	83	77	82	94	99	100	54	100	70.5	
Jun 23	100	100	100	100	100	100	100	93	83	72	67	58	52	42	37	32	30	29	31	38	46	53	66	67	29	100	66.5	
Jun 24	75	74	76	73	80	78	71	65	60	57	50	40	33	32	33	49	54	50	55	67	75	79	83	84	32	84	62.2	
Jun 25	86	98	100	100	99	99	97	100	98	97	95	94	94	89	89	84	85	81	78	77	84	96	100	100	77	100	92.5	
Jun 26	100	100	100	100	100	99	99	92	88	82	78	71	62	56	48	37	31	36	45	57	67	83	83	89	31	100	75.1	
Jun 27	91	96	97	100	100	95	87	74	61	56	48	42	39	35	33	32	30	29	31	36	48	59	75	80	29	100	61.4	
Jun 28	85	92	95	97	97	98	92	77	71	60	54	51	44	41	36	37	41	45	46	52	63	81	78	87	36	98	67.5	
Jun 29	84	83	81	83	79	73	63	62	59	57	73	61	51	41	36	29	29	31	36	33	31	43	57	61	29	84	55.7	
Jun 30	70	76	79	80	79	75	70	57	48	44	30	26	28	23	21	19	17	19	20	22	26	38	58	62	17	80	45.3	
Diurnal Maximum	100	100	100	100	100	100	100	100	98	97	95	94	94	89	89	93	94	100	99	98	98	99	100	100				
Diurnal Average	72.7	74.9	77.0	79.7	79.9	79.2	74.0	68.1	62.7	57.3	54.5	50.9	47.3	44.6	42.6	41.9	42.4	42.7	43.5	46.4	52.9	58.8	64.6	68.5				

<b>C</b>	Monthly Calibration	<b>S</b>	Daily Zero-Span Check	<b>Q</b>	Quality Assurance
<b>K</b>	Collection Error	<b>ND</b>	No Data (Machine Not in Service)	<b>Y</b>	Routine Maintenance
<b>X</b>	Invalid Data (Equipment Malfunction/Recovery)	<b>NRM</b>	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b>	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.









**Peace River Area Monitoring Program**

**986-C Station - June 2023**

**Summary of Hourly Averages**

**PRECIPITATION in mm**

Maximum Hourly Value:	8.6 mm	on Jun 25 at hr 1	Hours in Service:	720
Maximum Daily Value:	17.2 mm	on Jun 25	Hours of Data:	709
Minimum Hourly Value:	0.0 mm	on Jun 1 at hr 0	Hours of Missing Data:	11
Minimum Daily Value:	0.0 mm	on Jun 1	Hours of Calibration:	0
Monthly Total:	25.2 mm		Operational Uptime:	98.5

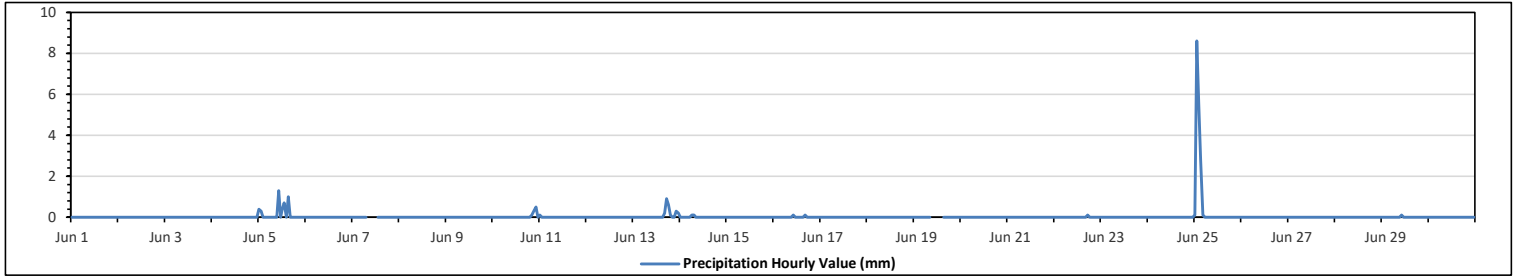
  

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Total	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Jun 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jun 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jun 3	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	0.0	0.0
Jun 4	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	0.0	0.0
Jun 5	0.4	0.3	0	0	0	0	0	0	0	0	0	1.3	0	0.4	0.7	0	1	0	0	0	0	0	0	0	0.0	1.3	4.1
Jun 6	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	0.0	0.0
Jun 7	0	0	0	0	0	0	0	0	0	P	P	P	P	P	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jun 8	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	0.0	0.0
Jun 9	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	0.0	0.0
Jun 10	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	0.5	0.9
Jun 11	0.1	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	0.1	0.1
Jun 12	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	0.0	0.0
Jun 13	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	0.0	0.0
Jun 14	0	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.2
Jun 15	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	0.0	0.0
Jun 16	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.0	0.1	0.2
Jun 17	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	0.0	0.0
Jun 18	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	0.0	0.0
Jun 19	0	0	0	0	0	0	0	0	0	P	P	P	P	P	P	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Jun 20	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	0.0	0.0
Jun 21	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	0.0	0.0
Jun 22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0.0	0.1	0.1
Jun 23	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	0.0	0.0
Jun 24	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	0.0	0.0
Jun 25	0.1	8.6	5.6	2.8	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	8.6	17.2
Jun 26	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	0.0	0.0
Jun 27	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	0.0	0.0
Jun 28	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	0.0	0.0
Jun 29	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1
Jun 30	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	0.0	0.0
Diurnal Maximum	0.4	8.6	5.6	2.8	0.1	0.0	0.1	0.1	0.0	0.0	1.3	0.0	0.4	0.7	0.0	1.0	0.2	0.9	0.6	0.1	0.1	0.3	0.5	0.2			
Diurnal Average	0.0	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	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			

<b>C</b> Monthly Calibration	<b>S</b> Daily Zero-Span Check	<b>Q</b> Quality Assurance
<b>K</b> Collection Error	<b>ND</b> No Data (Machine Not in Service)	<b>Y</b> Routine Maintenance
<b>X</b> InValid Data (Equipment Malfunction /Recovery)	<b>NRM</b> UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b> Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.





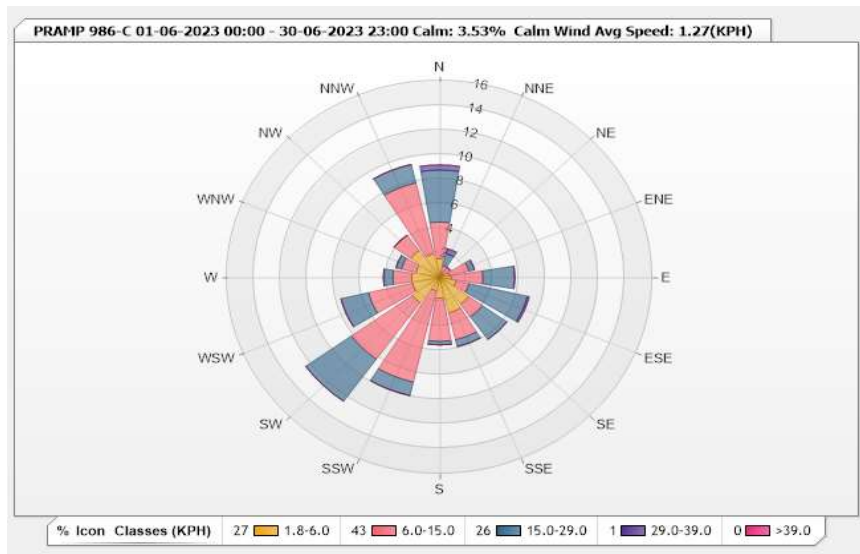


Station: PRAMP 986-C Monitor: WDS [KPH] Monthly: 06-2023

Type: Wind Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm (WS<1.8kph): 3.53% Valid Data: 98.47%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	1.55	2.96	4.23	0.42	0	9.16
NNE	0.28	0.71	0.99	0.42	0	2.4
NE	0.28	0.71	0	0	0	0.99
ENE	0.71	1.55	0.42	0	0	2.68
E	0.85	2.4	2.4	0	0	5.65
ESE	1.27	0.99	4.51	0.14	0	6.91
SE	2.68	1.27	2.26	0	0	6.21
SSE	2.96	2.26	0.56	0	0	5.78
S	1.69	3.53	0.28	0	0	5.5
SSW	1.13	7.62	1.13	0	0	9.88
SW	2.54	5.64	4.23	0	0	12.41
WSW	2.12	3.39	2.12	0	0	7.63
W	2.12	1.41	0.71	0	0	4.24
WNW	1.83	1.13	0.42	0	0	3.38
NW	2.68	1.55	0	0	0	4.23
NNW	1.97	5.92	1.55	0	0	9.44
Summary	26.66	43.04	25.81	0.98	0	96.49



Peace River Area Monitoring Program

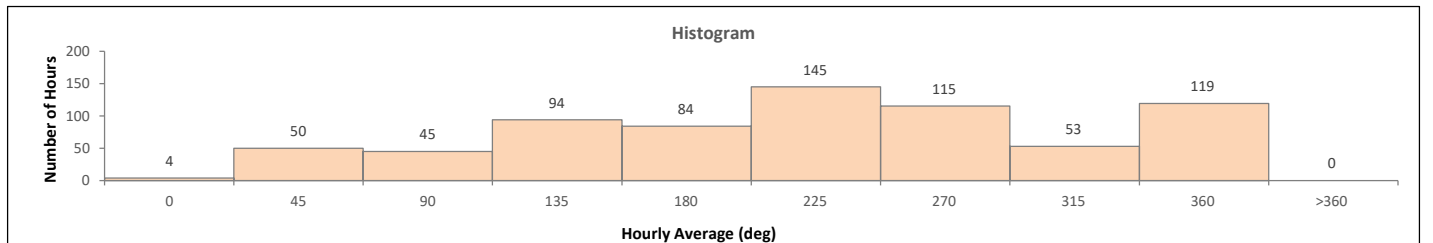
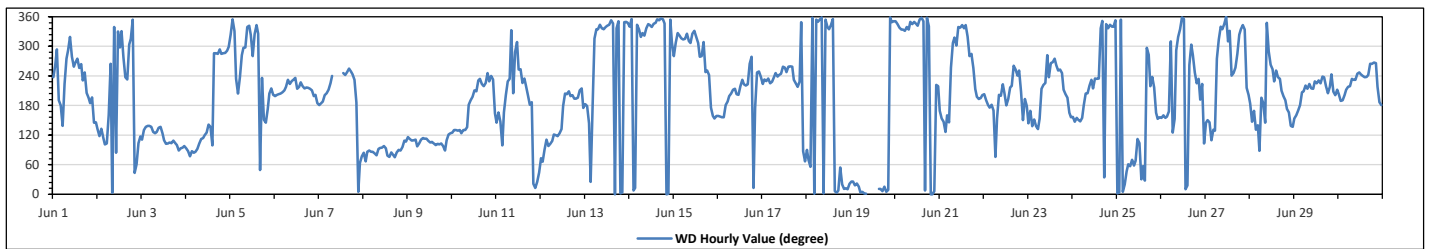
986-C Station - June 2023

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:		204 (SSW) degree																	Hours in Service:		720						
																			Hours of Data:		709						
																			Hours of Missing Data:		11						
																			Hours of Calibration:		0						
																			Operational Uptime:		98.5						
Day	Hourly Period Starting at (MST)																							Daily Average			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant	
Jun 1	SW	W	WNW	S	S	SE	SW	W	WNW	NW	W	WSW	W	W	WSW	W	SW	WSW	SSW	SSW	S	SSW	SE	SE	237	SW	
Jun 2	SE	ESE	SE	ESE	E	ESE	SSE	W	N	NNW	E	NNW	WNW	NNW	W	SW	SW	WNW	NW	N	NE	ENE	ESE	ESE	22	NNE	
Jun 3	ESE	SE	SE	SE	SE	SE	SE	ESE	SE	SE	SE	ESE	ESE	E	ESE	ESE	ESE	ESE	E	E	E	E	E	E	115	ESE	
Jun 4	E	E	ENE	E	E	E	E	ESE	ESE	ESE	ESE	SE	SE	E	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	102	E	
Jun 5	NW	N	NNW	SW	SSW	SW	W	WNW	WNW	NNW	NNW	NW	W	NW	NNW	NW	NE	SW	SSE	SE	S	SSW	SSW	SSW	263	W	
Jun 6	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	SW	SW	SW	SSW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	217	SW	
Jun 7	S	S	S	SSW	SSW	SSW	SW	WSW	P	P	P	P	P	WSW	WSW	WSW	WSW	WSW	WSW	SW	S	N	ENE	ENE	222	SW	
Jun 8	E	ENE	E	E	E	E	E	ENE	E	E	E	E	E	ENE	ENE	E	E	ENE	E	E	E	E	E	ESE	ESE	88	E
Jun 9	ESE	ESE	ESE	ESE	ESE	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	E	E	E	ESE	E	E	ESE	ESE	ESE	ESE	107	ESE	
Jun 10	SE	SE	SE	SE	SE	ESE	SE	SE	SE	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	175	S	
Jun 11	SE	SSE	SE	E	SSE	SSW	SW	SW	NNW	SSW	WNW	NW	WSW	WSW	SW	SW	SW	SSW	S	S	NNE	NNE	NNE	NE	220	SW	
Jun 12	ENE	ENE	E	ESE	E	ESE	ESE	ESE	ESE	SE	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	153	SSE	
Jun 13	S	S	SE	NNE	S	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	N	NNW	N	N	NNW	N	NNW	N	347	NNW	
Jun 14	NNW	N	N	NNE	NNW	NNW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	N	N	NNW	N	N	N	N	349	NNW	
Jun 15	W	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	W	NW	WSW	WSW	WSW	S	SSE	SSE	SSE	SSE	289	WNW	
Jun 16	SSE	SSE	SSE	SSE	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	211	SSW	
Jun 17	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	ENE	241	WSW	
Jun 18	E	ENE	NE	N	N	N	N	N	N	N	N	NNW	NNW	NNW	N	N	N	N	NE	NNE	NNE	NNE	N	NNE	6	N	
Jun 19	NNE	NNE	NNE	NNE	NNE	N	N	N	N	P	P	P	P	P	P	NNE	NNE	N	NNE	N	N	NNW	N	N	10	N	
Jun 20	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	N	NNW	NNW	N	N	N	N	N	NNW	N	N	SW	SW	SSW	348	NNW	
Jun 21	SSE	SSE	SE	SE	SSE	SE	WSW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NW	W	WNW	WSW	SSW	SSW	S	SSW	SSW	281	W		
Jun 22	SSW	S	S	S	S	SSE	ENE	SSE	SSW	SSW	SW	SSW	S	S	SW	SW	W	WSW	WSW	WSW	WSW	SSW	SSE	S	198	SSW	
Jun 23	SE	SSE	SE	SSE	SE	SSE	SSW	SW	SW	W	SW	W	W	W	W	WSW	WSW	WSW	SSW	SSW	SSW	SSE	SSE	214	SSW		
Jun 24	SSE	SE	SSE	SSE	SE	SSE	S	SSW	SSW	SW	SW	SSW	SW	SW	SSW	N	NE	NNW	NNW	NNW	NNW	NNW	NNW	N	290	WNW	
Jun 25	N	N	N	N	NNE	NE	ENE	ENE	ENE	ENE	ESE	ESE	ENE	ENE	NNE	WNW	W	SW	SW	SW	SSE	SSE	SSE	44	NE		
Jun 26	SSE	SSE	SSE	SSE	SSE	NW	SE	SSE	WNW	NW	NNW	N	N	N	NNE	W	WNW	W	WSW	SW	SW	S	SW	ESE	213	SSW	
Jun 27	SE	SSE	SE	ESE	SE	SE	W	NW	NNW	NNW	N	NW	NNW	WSW	WSW	WSW	WNW	NW	NNW	NNW	NNW	NNW	SW	SSW	312	NW	
Jun 28	S	SE	SSE	SE	SE	E	SSW	S	SE	NNW	WNW	W	WSW	SW	WSW	SW	SSW	S	S	SSE	SE	SE	SE	207	SSW		
Jun 29	SSE	SSE	SSE	S	SSW	SSW	SW	SSW	SW	SSW	SSW	SW	SW	SW	WSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	216	SW	
Jun 30	SSW	S	S	SSW	SSW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	SW	WSW	W	W	W	W	W	W	S	S	235	SW	
<b>C</b>	Monthly Calibration																	<b>S</b>	Daily Zero-Span Check		<b>Q</b>	Quality Assurance					
<b>K</b>	Collection Error																	<b>ND</b>	No Data (Machine Not in Service)		<b>Y</b>	Routine Maintenance					
<b>X</b>	Invalid Data (Machine Malfunction/Recovery)																	<b>NRM</b>	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)		<b>P</b>	Power Failure					

Daily Average is shown "\*" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "\*" if minimum data completeness criteria of 75% of days per month is not met.



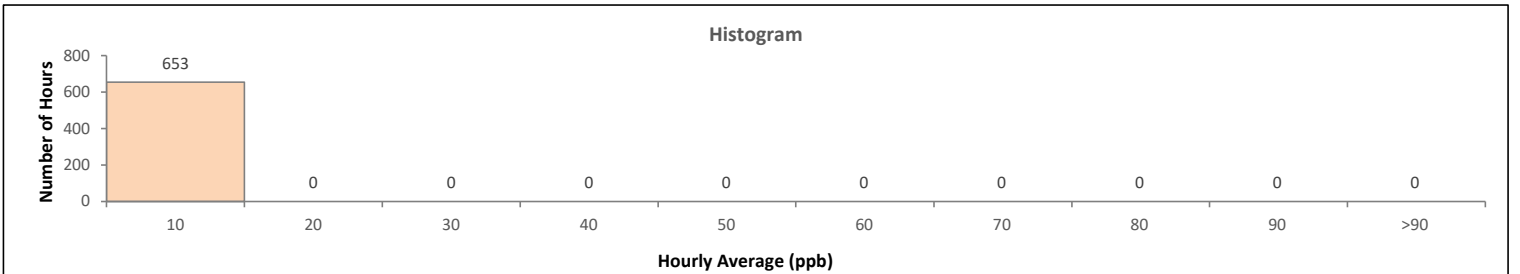
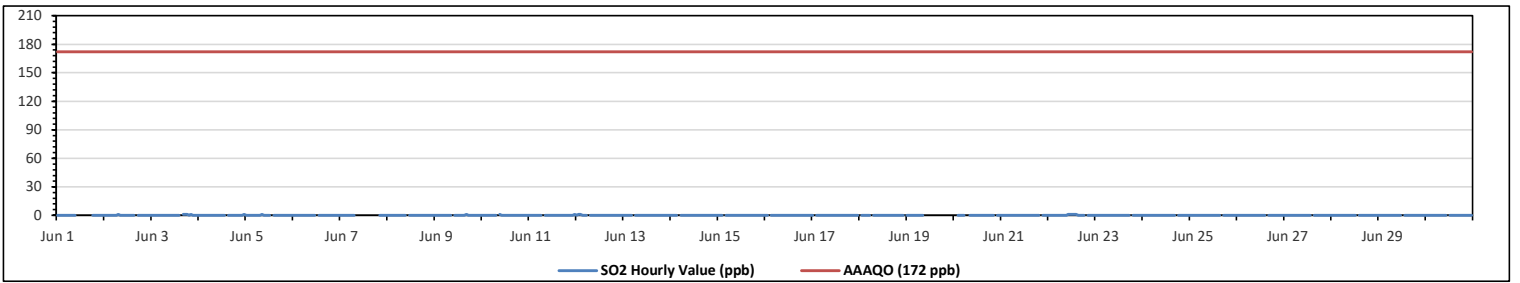


842-B STATION

**Peace River Area Monitoring Program**  
**842-B Station - June 2023**  
**Summary of Hourly Averages**  
**SULPHUR DIOXIDE (SO<sub>2</sub>) in ppb**

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb																																			
Number of 1-Hour Exceedances:						0						Number of 24-Hour Exceedances:						0						30-Day Exceedence:						0					
Maximum Hourly Value:						1 ppb on Jun 2 at hr 7						Hours in Service:						720																	
Maximum Daily Value:						0.2 ppb on Jun 22						Hours of Data:						653																	
Minimum Hourly Value:						0 ppb on Jun 1 at hr 0						Hours of Missing Data:						32																	
Minimum Daily Value:						0.0 ppb on Jun 6						Hours of Calibration:						35																	
Monthly Average:						0.0 ppb						Operational Uptime:						95.6																	
Day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Daily Minimum	Daily Maximum	Daily Average								
Jun 1	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	0	0	0					
Jun 2	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	0	0	0					
Jun 3	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	0	0	0					
Jun 4	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	0	0	0					
Jun 5	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	0	0	0					
Jun 6	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	0	0	0					
Jun 7	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	0	0	0					
Jun 8	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	0	0	0					
Jun 9	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	0	0	0					
Jun 10	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	0	0	0					
Jun 11	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	0	0	0					
Jun 12	0	1	1	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					
Jun 13	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	0	0	0					
Jun 14	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	0	0	0					
Jun 15	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	0	0	0					
Jun 16	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	0	0	0					
Jun 17	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	0	0	0					
Jun 18	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	0	0	0					
Jun 19	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	0	0	0					
Jun 20	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	0	0	0					
Jun 21	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	0	0	0					
Jun 22	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	0	0	0					
Jun 23	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	0	0	0					
Jun 24	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	0	0	0					
Jun 25	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	0	0	0					
Jun 26	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	0	0	0					
Jun 27	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	0	0	0					
Jun 28	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	0	0	0					
Jun 29	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	0	0	0					
Jun 30	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	0	0	0					
Diurnal Maximum	0	1	1	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Diurnal Average	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	0.0	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	0.0	0.0	0.1					
C	Monthly Calibration							S	Daily Zero-Span Check							Q	Quality Assurance																		
K	Collection Error							ND	No Data (Machine Not in Service)							Y	Routine Maintenance																		
X	Invalid Data (Equipment Malfunction /Recovery)							NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)							P	Power Failure																		

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

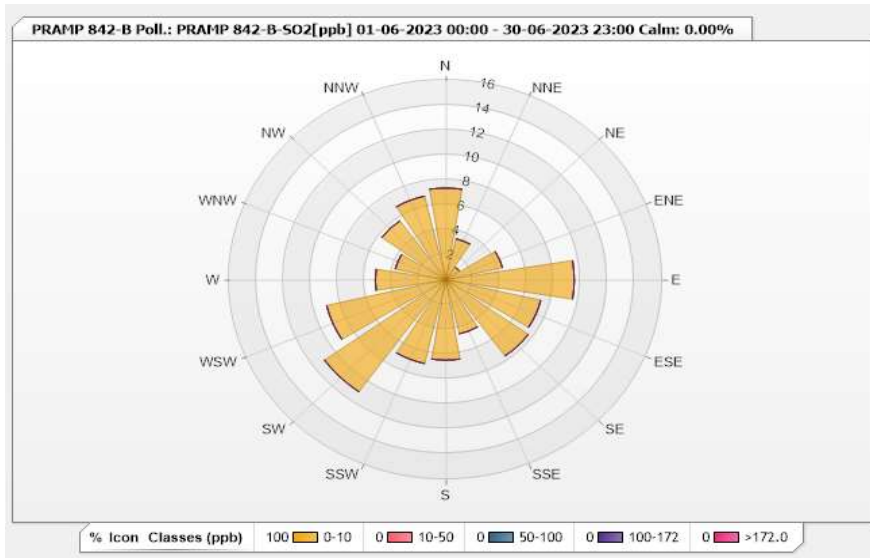


Station: PRAMP 842-B Poll.: PRAMP 842-B-SO2[ppb] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 90.69%      Calm Avg: 0.00 [ppm]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	7.35	0	0	0	0	7.35
NNE	3.37	0	0	0	0	3.37
NE	1.23	0	0	0	0	1.23
ENE	4.29	0	0	0	0	4.29
E	9.49	0	0	0	0	9.49
ESE	7.2	0	0	0	0	7.2
SE	7.5	0	0	0	0	7.5
SSE	4.44	0	0	0	0	4.44
S	6.43	0	0	0	0	6.43
SSW	6.89	0	0	0	0	6.89
SW	11.03	0	0	0	0	11.03
WSW	9.04	0	0	0	0	9.04
W	5.21	0	0	0	0	5.21
WNW	3.83	0	0	0	0	3.83
NW	5.82	0	0	0	0	5.82
NNW	6.89	0	0	0	0	6.89
Summary	100	0	0	0	0	100



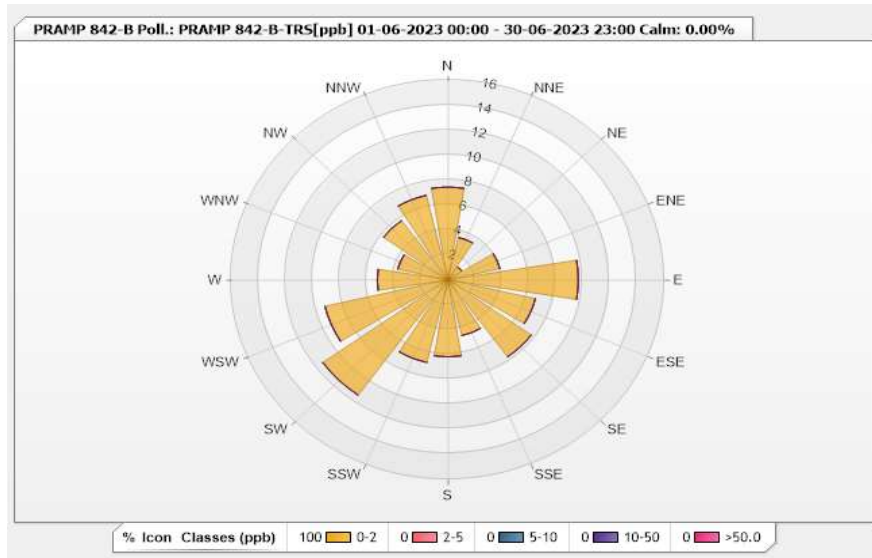


Station: PRAMP 842-B Poll.: PRAMP 842-B-TRS[ppb] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 87.92%      Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	7.42	0	0	0	0	7.42
NNE	3.48	0	0	0	0	3.48
NE	1.26	0	0	0	0	1.26
ENE	3.95	0	0	0	0	3.95
E	9.64	0	0	0	0	9.64
ESE	6.64	0	0	0	0	6.64
SE	7.58	0	0	0	0	7.58
SSE	4.58	0	0	0	0	4.58
S	6.16	0	0	0	0	6.16
SSW	6.79	0	0	0	0	6.79
SW	11.37	0	0	0	0	11.37
WSW	9.32	0	0	0	0	9.32
W	5.21	0	0	0	0	5.21
WNW	3.79	0	0	0	0	3.79
NW	5.85	0	0	0	0	5.85
NNW	6.95	0	0	0	0	6.95
Summary	100	0	0	0	0	100





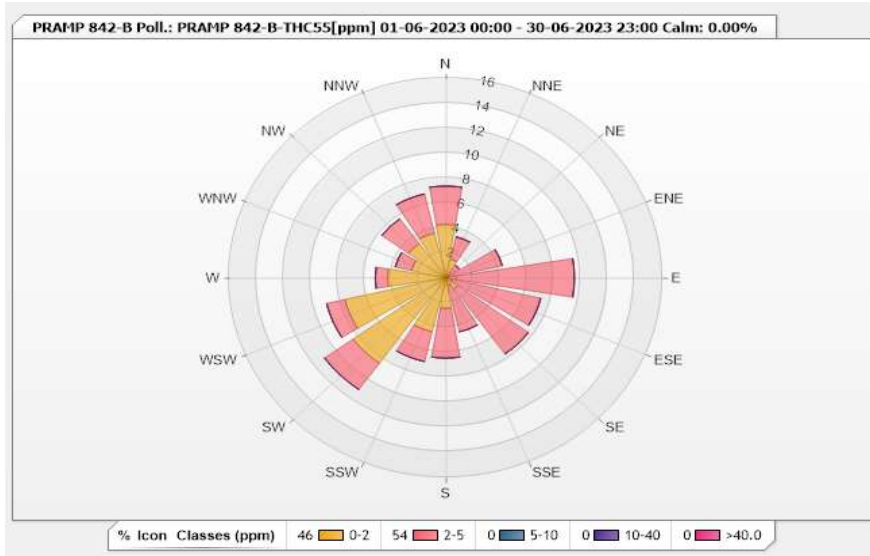


Station: PRAMP 842-B Poll.: PRAMP 842-B-THC55[ppm] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 90.69%      Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	4.29	3.06	0	0	0	7.35
NNE	1.53	1.84	0	0	0	3.37
NE	0	1.23	0	0	0	1.23
ENE	0.15	4.13	0	0	0	4.28
E	0.77	8.73	0	0	0	9.5
ESE	0.46	6.74	0	0	0	7.2
SE	1.07	6.43	0	0	0	7.5
SSE	0.61	3.83	0	0	0	4.44
S	2.45	3.98	0	0	0	6.43
SSW	4.44	2.45	0	0	0	6.89
SW	8.42	2.6	0	0	0	11.02
WSW	7.66	1.38	0	0	0	9.04
W	4.29	0.92	0	0	0	5.21
WNW	2.6	1.23	0	0	0	3.83
NW	3.37	2.45	0	0	0	5.82
NNW	3.68	3.22	0	0	0	6.9
Summary	45.79	54.22	0	0	0	100



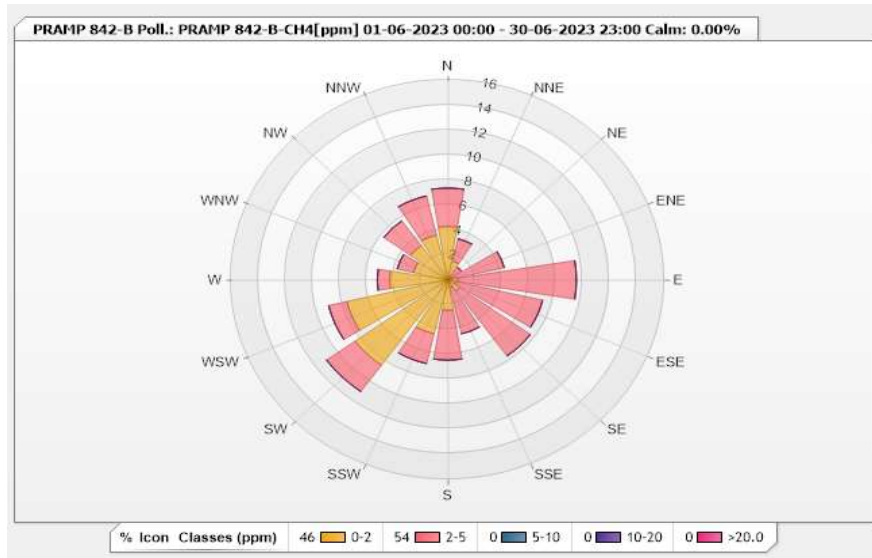


Station: PRAMP 842-B Poll.: PRAMP 842-B-CH4[ppm] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 90.69%      Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	4.29	3.06	0	0	0	7.35
NNE	1.53	1.84	0	0	0	3.37
NE	0	1.23	0	0	0	1.23
ENE	0.15	4.13	0	0	0	4.28
E	0.77	8.73	0	0	0	9.5
ESE	0.61	6.58	0	0	0	7.19
SE	1.07	6.43	0	0	0	7.5
SSE	0.61	3.83	0	0	0	4.44
S	2.45	3.98	0	0	0	6.43
SSW	4.44	2.45	0	0	0	6.89
SW	8.42	2.6	0	0	0	11.02
WSW	7.66	1.38	0	0	0	9.04
W	4.29	0.92	0	0	0	5.21
WNW	2.6	1.23	0	0	0	3.83
NW	3.37	2.45	0	0	0	5.82
NNW	3.68	3.22	0	0	0	6.9
Summary	45.94	54.06	0	0	0	100



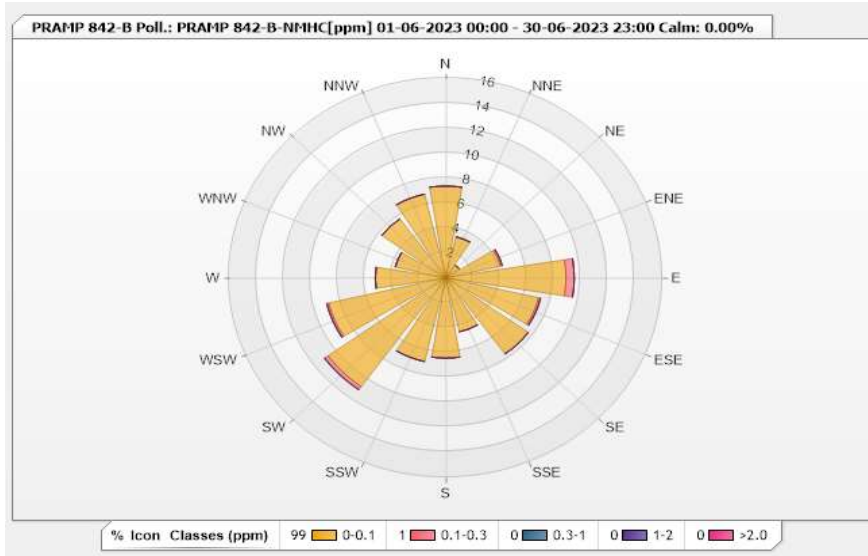


Station: PRAMP 842-B Poll.: PRAMP 842-B-NMHC[ppm] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 90.69%      Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	7.35	0	0	0	0	7.35
NNE	3.37	0	0	0	0	3.37
NE	1.23	0	0	0	0	1.23
ENE	4.13	0.15	0	0	0	4.28
E	8.88	0.61	0	0	0	9.49
ESE	7.04	0.15	0	0	0	7.19
SE	7.5	0	0	0	0	7.5
SSE	4.44	0	0	0	0	4.44
S	6.43	0	0	0	0	6.43
SSW	6.89	0	0	0	0	6.89
SW	10.72	0.31	0	0	0	11.03
WSW	8.88	0.15	0	0	0	9.03
W	5.21	0	0	0	0	5.21
WNW	3.83	0	0	0	0	3.83
NW	5.82	0	0	0	0	5.82
NNW	6.89	0	0	0	0	6.89
Summary	98.61	1.37	0	0	0	100



**Peace River Area Monitoring Program**

**842-B Station - June 2023**

**Summary of Hourly Averages**

**RELATIVE HUMIDITY (RH) in %**

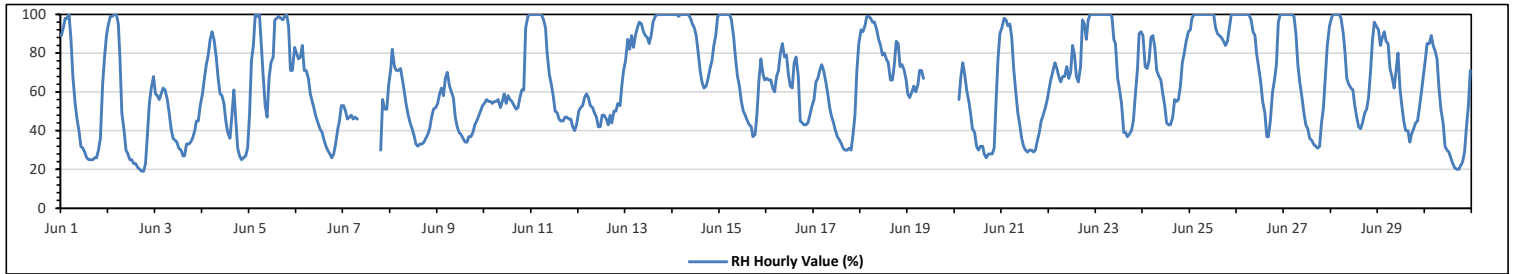
Maximum Hourly Value:	100 %	on Jun 1 at hr 4	Hours in Service:	720
Maximum Daily Value:	95.8 %	on Jun 25	Hours of Data:	692
Minimum Hourly Value:	19	on Jun 2 at hr 17	Hours of Missing Data:	28
Minimum Daily Value:	43.3 %	on Jun 3	Hours of Calibration:	0
Monthly Average:	64.4 %		Operational Uptime:	96.1

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23		
Jun 1	89	93	98	98	100	87	68	54	46	40	32	31	29	26	25	25	25	26	26	30	36	64	78	89	25	100	54.8		
Jun 2	94	99	99	100	100	95	78	49	40	30	28	25	25	23	23	21	20	19	19	23	38	54	62	68	19	100	51.3		
Jun 3	59	58	56	59	62	61	56	49	41	36	35	34	31	30	27	27	33	33	34	36	40	45	45	53	27	62	43.3		
Jun 4	59	67	74	79	87	91	87	78	67	59	58	54	45	39	36	48	61	46	31	27	25	26	27	31	25	91	54.3		
Jun 5	48	76	84	100	99	100	84	70	53	47	67	75	78	97	98	99	98	97	99	100	94	71	71	83	47	100	82.8		
Jun 6	80	77	78	84	71	71	67	59	55	51	47	44	41	39	35	32	30	28	26	28	33	41	45	53	26	84	50.6		
Jun 7	53	50	46	47	48	46	47	46	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	30	56	51	64	NA
Jun 8	71	82	73	71	71	72	66	61	54	48	44	41	37	33	32	33	33	34	36	38	41	47	51	52	32	82	50.9		
Jun 9	54	59	62	58	67	70	63	60	57	47	42	39	38	36	34	34	37	37	39	43	45	48	50	53	34	70	48.8		
Jun 10	54	56	55	55	54	55	55	56	52	55	59	54	58	56	55	53	51	52	57	61	61	93	99	100	51	100	60.7		
Jun 11	100	100	100	100	100	100	97	93	80	69	64	58	50	49	46	45	45	47	47	46	46	42	40	43	40	100	67.0		
Jun 12	50	52	53	57	59	57	53	52	49	47	42	42	48	48	46	43	48	44	50	50	54	53	64	71	42	71	51.3		
Jun 13	76	87	82	89	83	89	93	96	95	91	89	88	85	89	96	99	100	100	100	100	100	100	100	100	76	100	92.8		
Jun 14	100	100	100	99	100	100	100	100	100	98	95	93	89	79	71	65	62	63	67	72	76	84	89	99	62	100	87.5		
Jun 15	100	100	100	100	100	100	97	88	77	68	63	55	50	48	45	43	42	37	38	49	66	77	69	66	37	100	69.9		
Jun 16	67	66	66	62	60	68	71	80	85	78	79	69	63	62	75	78	68	45	44	43	43	44	48	53	43	85	63.2		
Jun 17	56	65	67	71	74	71	65	59	52	48	44	40	37	35	33	31	30	30	31	30	38	48	71	85	30	85	50.5		
Jun 18	92	91	94	99	99	98	96	96	92	87	84	79	80	77	75	66	66	74	86	85	73	74	71	66	66	99	83.3		
Jun 19	59	57	60	63	60	64	71	71	67	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	57	71	NA		
Jun 20	P	P	56	68	75	69	61	55	48	41	39	32	30	32	32	28	26	28	28	28	31	55	77	90	26	90	46.8		
Jun 21	93	98	97	94	95	88	72	61	49	43	36	32	30	29	30	30	29	30	34	39	45	48	52	56	29	98	54.6		
Jun 22	61	66	71	75	72	68	65	68	68	73	67	70	84	79	68	65	73	97	95	87	97	100	100	100	61	100	77.9		
Jun 23	100	100	100	100	100	100	100	100	99	87	85	67	61	54	39	39	37	38	40	45	58	72	90	91	37	100	75.1		
Jun 24	89	73	72	76	88	89	83	71	68	66	59	53	44	43	43	47	56	55	63	75	80	86	91	43	91	67.8			
Jun 25	92	98	100	100	100	100	100	100	100	100	100	100	100	93	90	89	88	86	84	86	93	100	100	100	84	100	95.8		
Jun 26	100	100	100	100	100	100	100	97	91	89	80	72	65	55	49	37	37	45	60	66	74	96	100	100	37	100	79.7		
Jun 27	100	100	100	100	100	99	90	74	65	57	49	43	41	36	35	33	32	31	32	44	52	68	84	94	31	100	65.0		
Jun 28	98	100	100	100	100	98	90	81	67	64	62	61	53	47	42	41	44	49	51	57	70	86	96	94	41	100	73.0		
Jun 29	92	84	88	91	86	85	72	68	62	71	80	62	53	45	40	40	34	38	41	44	45	52	61	68	34	92	62.6		
Jun 30	76	85	85	89	84	81	77	62	51	44	32	30	29	26	23	21	20	20	22	24	29	42	53	71	20	89	49.0		
Diurnal Maximum	100	100	100	100	100	100	100	100	100	100	100	100	100	100	97	98	99	100	100	100	100	100	100	100	100	100	100	100	
Diurnal Average	78.0	80.7	80.5	82.8	83.1	82.4	77.5	71.8	66.6	61.9	59.3	55.1	52.6	50.2	48.0	46.9	47.3	47.5	49.0	50.8	56.3	64.2	70.0	75.3					

<b>C</b>	Monthly Calibration	<b>S</b>	Daily Zero-Span Check	<b>Q</b>	Quality Assurance
<b>K</b>	Collection Error	<b>ND</b>	No Data (Machine Not in Service)	<b>Y</b>	Routine Maintenance
<b>X</b>	InValid Data (Equipment Malfunction /Recovery)	<b>NRM</b>	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b>	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.

Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.











**Peace River Area Monitoring Program**

**842-B Station - June 2023**

**Summary of Hourly Averages**

**PRECIPITATION in mm**

Maximum Hourly Value:	1.5 mm on Jun 25 at hr 1	Hours in Service:	720
Maximum Daily Value:	4.4 mm on Jun 5	Hours of Data:	692
Minimum Hourly Value:	0.0 mm on Jun 1 at hr 0	Hours of Missing Data:	28
Minimum Daily Value:	0.0 mm on Jun 1	Hours of Calibration:	0
Monthly Total:	12.0 mm	Operational Uptime:	96.1

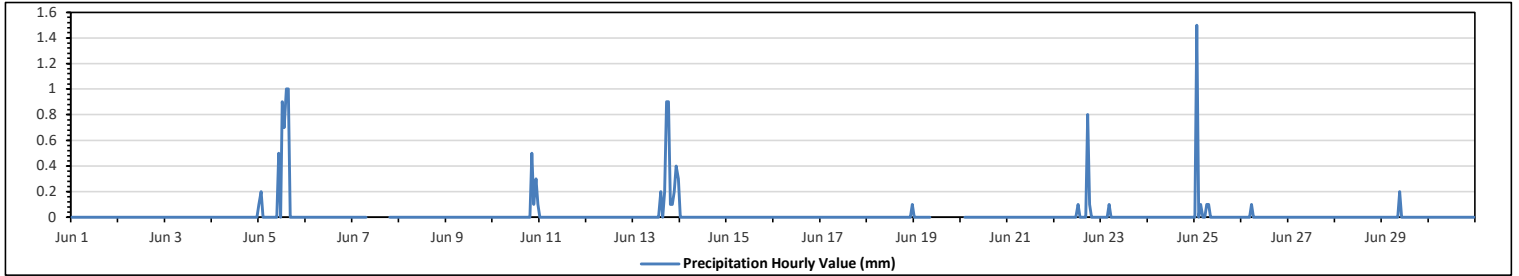
  

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Total				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23			
Jun 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0			
Jun 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0			
Jun 3	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	0.0	0.0			
Jun 4	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	0.0	0.0			
Jun 5	0.1	0.2	0	0	0	0	0	0	0	0	0	0	0.5	0	0.9	0.7	1	1	0	0	0	0	0	0	0.0	1.0	4.4			
Jun 6	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	0.0	0.0			
Jun 7	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	0.0	NA			
Jun 8	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	0.0	0.0			
Jun 9	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	0.0	0.0			
Jun 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.1	0.3	0.1	0.0	0.5	1.0
Jun 11	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	0.0	0.0			
Jun 12	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	0.0	0.0			
Jun 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.2	0.9	0.9	0.1	0.1	0.2	0.4	0.3	0.0	0.9	3.3		
Jun 14	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	0.0	0.0			
Jun 15	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	0.0	0.0			
Jun 16	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	0.0	0.0			
Jun 17	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	0.0	0.0			
Jun 18	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	0.1	0.1			
Jun 19	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	0.0	NA			
Jun 20	P	P	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	0.0			
Jun 21	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	0.0	0.0			
Jun 22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0.8	0.1	0	0	0	0.0	0.8	1.0			
Jun 23	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1			
Jun 24	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	0.0	0.0			
Jun 25	0	1.5	0	0.1	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	1.5	1.8			
Jun 26	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1			
Jun 27	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	0.0	0.0			
Jun 28	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	0.0	0.0			
Jun 29	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2	0.2			
Jun 30	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	0.0	0.0			
Diurnal Maximum	0.1	1.5	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.2	0.5	0.0	0.9	0.7	1.0	1.0	0.2	0.9	0.9	0.1	0.5	0.2	0.4	0.3						
Diurnal Average	0.0	0.1	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	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0						

<b>C</b> Monthly Calibration	<b>S</b> Daily Zero-Span Check	<b>Q</b> Quality Assurance
<b>K</b> Collection Error	<b>ND</b> No Data (Machine Not in Service)	<b>Y</b> Routine Maintenance
<b>X</b> InValid Data (Equipment Malfunction /Recovery)	<b>NRM</b> UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b> Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.



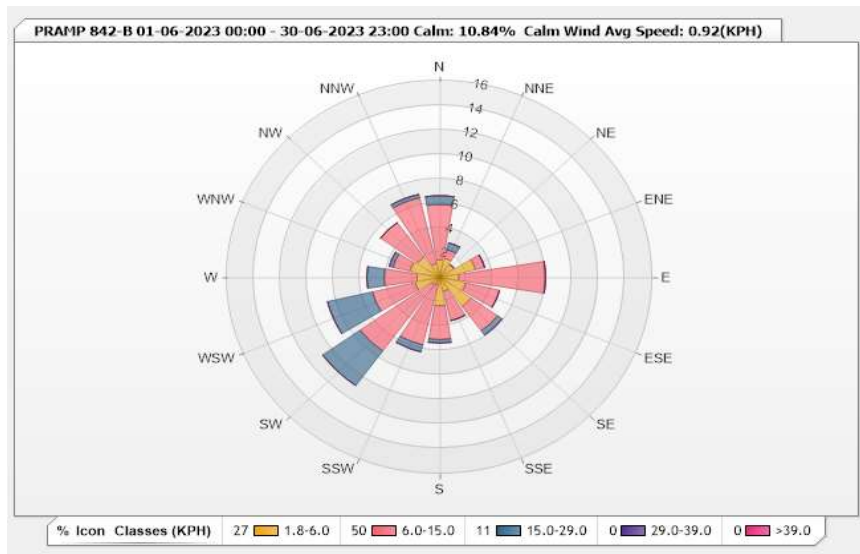


Station: PRAMP 842-B Monitor: WDS [KPH] Monthly: 06-2023

Type: Wind Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm (WS<1.8kph): 10.84%      Valid Data: 96.11%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	1.45	4.48	0.72	0	0	6.65
NNE	1.59	0.72	0.58	0	0	2.89
NE	1.3	0	0	0	0	1.3
ENE	2.75	0.72	0	0	0	3.47
E	1.45	6.5	0	0	0	7.95
ESE	2.02	2.6	0	0	0	4.62
SE	2.89	2.46	0.43	0	0	5.78
SSE	1.16	2.46	0	0	0	3.62
S	2.31	2.75	0.29	0	0	5.35
SSW	0.58	5.06	0.58	0	0	6.22
SW	0.72	6.65	3.47	0	0	10.84
WSW	1.88	3.32	3.47	0	0	8.67
W	1.73	2.46	1.3	0	0	5.49
WNW	2.31	1.3	0.29	0	0	3.9
NW	2.02	3.47	0	0	0	5.49
NNW	1.16	5.49	0.29	0	0	6.94
Summary	27.32	50.44	11.42	0	0	89.18



Peace River Area Monitoring Program

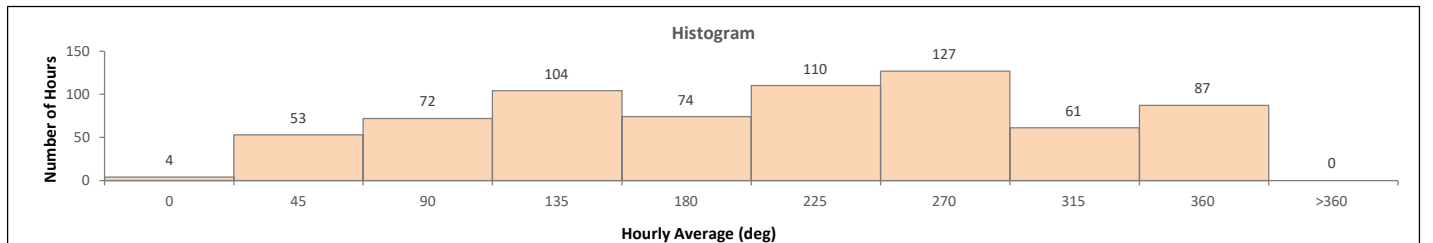
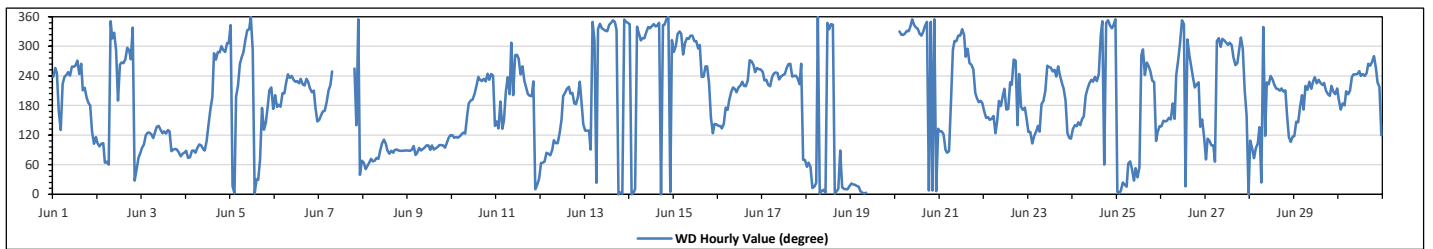
842-B Station - June 2023

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:		240 (WSW) degree															Hours in Service:		720														
																	Hours of Data:		692														
																	Hours of Missing Data:		28														
																	Hours of Calibration:		0														
																	Operational Uptime:		96.1														
Day	Hourly Period Starting at (MST)																							Daily Average									
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant							
Jun 1	WSW	WSW	WSW	SSE	SE	SW	WSW	WSW	WSW	WSW	WSW	W	W	WSW	W	SSW	SW	SSW	S	S	SE	E	ESE	234	SW								
Jun 2	ESE	E	E	ESE	ENE	ENE	ENE	N	NW	NNW	WNW	S	W	W	W	W	WNW	WNW	W	NNW	NNE	NE	ENE	E	312	NW							
Jun 3	E	E	ESE	SE	SE	ESE	ESE	SE	SE	SE	SE	ESE	SE	ESE	SE	E	E	E	E	E	ENE	E	E	116	ESE								
Jun 4	E	ENE	ENE	E	E	E	E	E	E	E	E	ESE	SE	S	SSW	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW	NW	353	N							
Jun 5	NNW	NNE	N	SSW	SW	W	W	WNW	NW	NNW	NNW	N	WNW	N	NNE	NNE	ENE	S	SE	SE	S	SSW	SW	S	265	W							
Jun 6	SSW	S	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	222	SW						
Jun 7	SSE	SSE	SSE	SSE	S	SSW	SSW	WSW	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	WSW	SE	N	NE	ENE	NA	NA			
Jun 8	ENE	NE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ESE	ESE	S	S	SSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	E	E	E	E	E	83	E		
Jun 9	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	ESE	ESE	ESE	ESE	ESE	ESE	97	E	
Jun 10	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SSE	S	S	SSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	194	SSW	
Jun 11	SE	SE	S	SE	SSE	SSW	SW	SSW	NW	SSW	W	W	W	WSW	WSW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	230	SW	
Jun 12	ENE	ENE	ENE	E	E	ENE	E	ESE	ESE	ESE	ESE	SSE	SSW	SSW	SSW	SSW	SSW	S	S	SSW	SW	S	SE	SW	S	SE	169	SSE					
Jun 13	SE	SE	SE	E	N	NW	NNE	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	NNW	N	N	N	N	N	N	N	N	N	N	N	347	NNW	
Jun 14	NNW	N	N	NNE	NNW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	NNW	N	N	N	N	N	N	N	N	N	N	344	NNW	
Jun 15	WNW	WNW	NW	NNW	NW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	WNW	SW	WSW	WSW	SW	SSE	ESE	SE	SE	290	WNW							
Jun 16	SE	SE	SE	SE	S	S	S	SSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	W	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	223	SW		
Jun 17	WSW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	242	WSW		
Jun 18	NE	ENE	NE	NNE	NNE	NNE	N	N	N	N	N	N	NNW	NNW	NNW	NNW	N	NNE	E	NNE	NNE	N	N	NNE	7	N	N	N	N	7	N		
Jun 19	NNE	NNE	NNE	NNE	NNE	N	N	N	N	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA	NA	NA	
Jun 20	P	P	NNW	NW	NW	NW	NNW	NNW	NNW	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	N	N	N	N	N	SE	339	NNW						
Jun 21	SE	SE	ESE	E	E	S	WNW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	W	WNW	W	W	WSW	SSW	SSW	S	S	274	W							
Jun 22	SSE	SSE	SSE	SSE	SSE	SSE	ESE	SE	S	S	SSW	SSW	S	S	SW	SW	W	W	SE	WSW	S	S	S	SSE	188	S							
Jun 23	SE	SE	ESE	ESE	SE	SE	SE	S	S	SSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SSW	S	ESE	ESE	ESE	224	SW						
Jun 24	SE	SE	SE	SE	SE	SSE	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	258	WSW	
Jun 25	N	N	N	NNE	NNE	NNE	ENE	ENE	NE	NNE	NE	NE	W	WNW	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	3	N	N	N	N	3	N	
Jun 26	SE	SSE	SE	SSE	SSE	SSE	S	SSE	WSW	W	NW	N	NNW	NNE	NW	W	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	199	SSW	
Jun 27	ENE	ESE	ESE	E	E	ENE	NW	NW	WNW	NW	NW	NW	NNW	NW	WNW	W	W	WNW	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	299	WNW	
Jun 28	ESE	E	ENE	E	ESE	SE	NNE	NNW	ESE	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	212	SSW	
Jun 29	ESE	SE	SE	S	SSW	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	213	SSW
Jun 30	S	S	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	240	WSW
C	Monthly Calibration							S	Daily Zero-Span Check							Q	Quality Assurance																
K	Collection Error							ND	No Data (Machine Not in Service)							Y	Routine Maintenance																
X	Invalid Data (Machine Malfunction/Recovery)							NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)							P	Power Failure																

Daily Average is shown "\*" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "\*" if minimum data completeness criteria of 75% of days per month is not met.





## RENO -B STATION



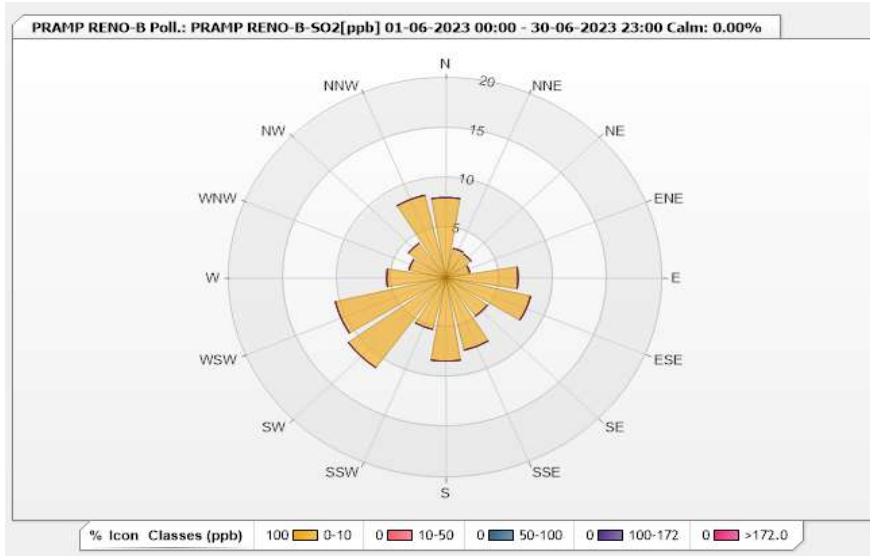


Station: PRAMP RENO-B Poll.: PRAMP RENO-B-SO2[ppb] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 91.53%      Calm Avg: 0.00 [ppm]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	8.04	0	0	0	0	8.04
NNE	3.03	0	0	0	0	3.03
NE	2.88	0	0	0	0	2.88
ENE	2.28	0	0	0	0	2.28
E	6.68	0	0	0	0	6.68
ESE	8.04	0	0	0	0	8.04
SE	4.7	0	0	0	0	4.7
SSE	7.44	0	0	0	0	7.44
S	8.35	0	0	0	0	8.35
SSW	5.31	0	0	0	0	5.31
SW	11.08	0	0	0	0	11.08
WSW	10.47	0	0	0	0	10.47
W	5.46	0	0	0	0	5.46
WNW	3.49	0	0	0	0	3.49
NW	4.25	0	0	0	0	4.25
NNW	8.5	0	0	0	0	8.5
Summary	100	0	0	0	0	100



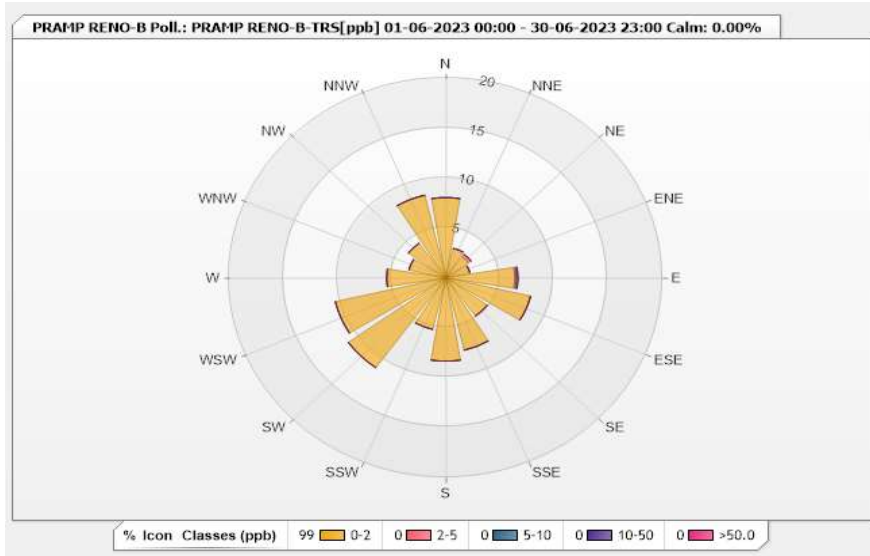


Station: PRAMP RENO-B Poll.: PRAMP RENO-B-TRS[ppb] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 91.53%      Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	8.04	0	0	0	0	8.04
NNE	3.03	0	0	0	0	3.03
NE	2.58	0.3	0	0	0	2.88
ENE	2.28	0	0	0	0	2.28
E	6.37	0.15	0.15	0	0	6.67
ESE	8.04	0	0	0	0	8.04
SE	4.7	0	0	0	0	4.7
SSE	7.44	0	0	0	0	7.44
S	8.35	0	0	0	0	8.35
SSW	5.31	0	0	0	0	5.31
SW	11.08	0	0	0	0	11.08
WSW	10.47	0	0	0	0	10.47
W	5.46	0	0	0	0	5.46
WNW	3.49	0	0	0	0	3.49
NW	4.25	0	0	0	0	4.25
NNW	8.5	0	0	0	0	8.5
Summary	99.39	0.45	0.15	0	0	100



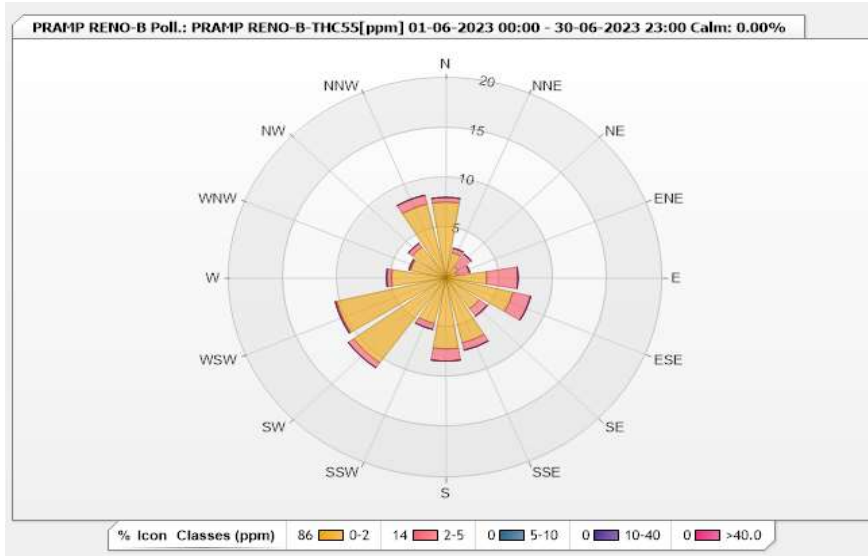


Station: PRAMP RENO-B Poll.: PRAMP RENO-B-THC55[ppm] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 91.53%      Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	7.59	0.46	0	0	0	8.05
NNE	2.58	0.46	0	0	0	3.04
NE	1.37	1.52	0	0	0	2.89
ENE	1.06	1.21	0	0	0	2.27
E	3.79	2.88	0	0	0	6.67
ESE	6.37	1.67	0	0	0	8.04
SE	3.79	0.91	0	0	0	4.7
SSE	6.68	0.76	0	0	0	7.44
S	7.13	1.21	0	0	0	8.34
SSW	4.7	0.61	0	0	0	5.31
SW	10.47	0.61	0	0	0	11.08
WSW	10.32	0.15	0	0	0	10.47
W	5.01	0.46	0	0	0	5.47
WNW	3.34	0.15	0	0	0	3.49
NW	3.79	0.46	0	0	0	4.25
NNW	7.59	0.91	0	0	0	8.5
Summary	85.58	14.43	0	0	0	100



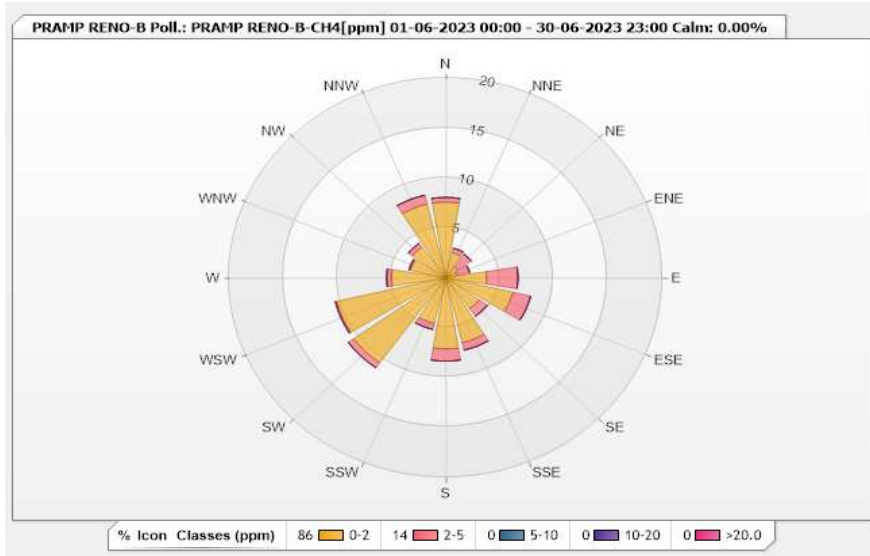


Station: PRAMP RENO-B Poll.: PRAMP RENO-B-CH4[ppm] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 91.53%      Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	7.59	0.46	0	0	0	8.05
NNE	2.58	0.46	0	0	0	3.04
NE	1.37	1.52	0	0	0	2.89
ENE	1.06	1.21	0	0	0	2.27
E	3.79	2.88	0	0	0	6.67
ESE	6.37	1.67	0	0	0	8.04
SE	3.79	0.91	0	0	0	4.7
SSE	6.68	0.76	0	0	0	7.44
S	7.13	1.21	0	0	0	8.34
SSW	4.7	0.61	0	0	0	5.31
SW	10.47	0.61	0	0	0	11.08
WSW	10.32	0.15	0	0	0	10.47
W	5.01	0.46	0	0	0	5.47
WNW	3.34	0.15	0	0	0	3.49
NW	3.79	0.46	0	0	0	4.25
NNW	7.59	0.91	0	0	0	8.5
Summary	85.58	14.43	0	0	0	100





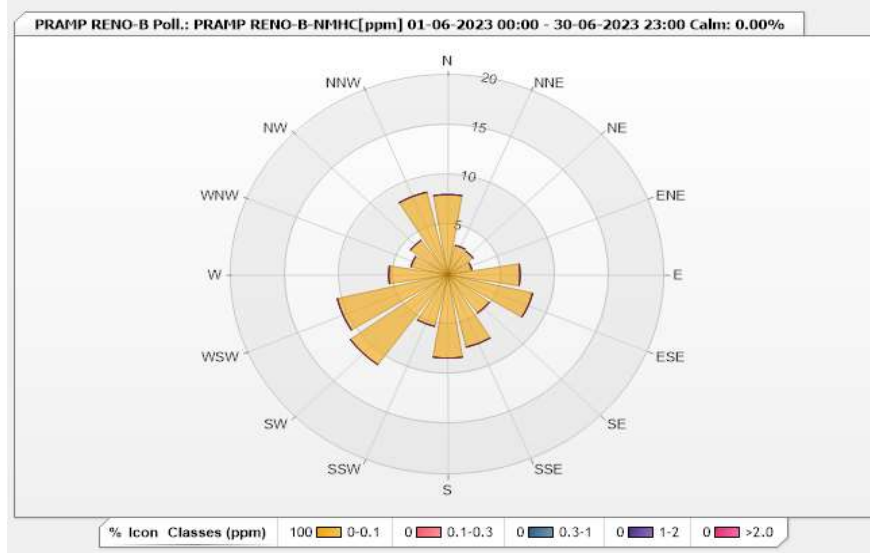


Station: PRAMP RENO-B Poll.: PRAMP RENO-B-NMHC[ppm] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 91.53%      Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	8.04	0	0	0	0	8.04
NNE	3.03	0	0	0	0	3.03
NE	2.88	0	0	0	0	2.88
ENE	2.28	0	0	0	0	2.28
E	6.68	0	0	0	0	6.68
ESE	8.04	0	0	0	0	8.04
SE	4.7	0	0	0	0	4.7
SSE	7.44	0	0	0	0	7.44
S	8.35	0	0	0	0	8.35
SSW	5.31	0	0	0	0	5.31
SW	11.08	0	0	0	0	11.08
WSW	10.47	0	0	0	0	10.47
W	5.46	0	0	0	0	5.46
WNW	3.49	0	0	0	0	3.49
NW	4.25	0	0	0	0	4.25
NNW	8.5	0	0	0	0	8.5
Summary	100	0	0	0	0	100



**Peace River Area Monitoring Program**

**Reno-B Station - June 2023**

**Summary of Hourly Averages**

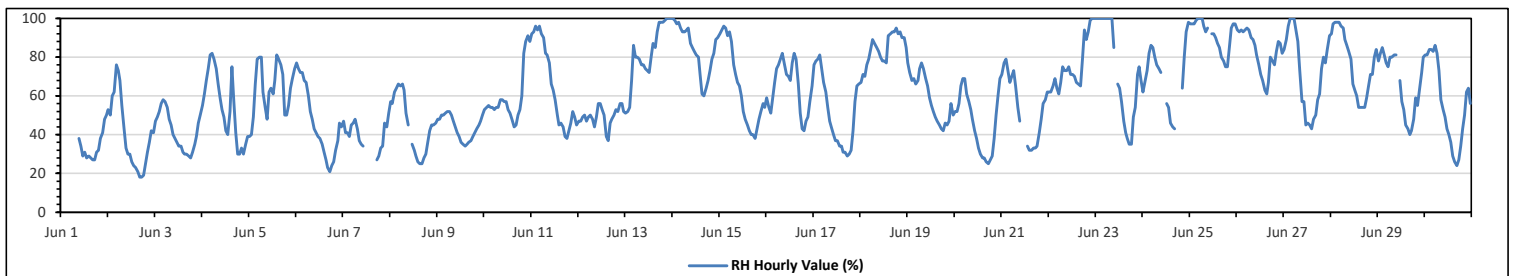
**RELATIVE HUMIDITY (RH) in %**

Maximum Hourly Value:	100 %	on Jun 13 at hr 21	Hours in Service:	720
Maximum Daily Value:	91.4 %	on Jun 25	Hours of Data:	694
Minimum Hourly Value:	18 %	on Jun 2 at hr 16	Hours of Missing Data:	26
Minimum Daily Value:	39.9 %	on Jun 2	Hours of Calibration:	0
Monthly Average:	61.6 %		Operational Uptime:	96.4

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	38	34	29	31	28	29	28	27	27	31	32	38	41	48	50	27	50	NA	
Jun 2	53	50	60	62	76	73	68	55	43	33	30	30	26	24	23	21	18	18	19	25	31	36	42	41	18	76	39.9	
Jun 3	47	49	52	56	58	57	54	48	45	40	38	36	34	34	31	30	30	29	28	31	35	39	46	50	28	58	41.5	
Jun 4	55	61	68	74	81	82	79	74	66	59	53	49	42	40	52	75	57	41	30	30	33	30	35	39	30	82	54.4	
Jun 5	39	40	49	66	79	80	80	62	54	48	48	62	64	61	68	81	79	76	71	50	50	55	64	69	74	39	81	63.4
Jun 6	77	74	72	72	68	67	60	52	48	43	41	39	38	35	31	27	23	21	24	26	32	37	46	44	21	77	45.7	
Jun 7	47	41	41	39	45	46	48	43	37	35	34	K	K	K	K	K	K	K	27	29	33	34	46	44	51	27	51	40.0
Jun 8	57	56	62	64	66	65	66	63	51	45	K	35	32	29	26	25	25	28	30	36	42	45	45	46	25	66	45.2	
Jun 9	48	48	50	50	51	52	52	50	47	44	41	39	36	35	34	35	36	37	39	41	43	45	47	50	34	52	43.8	
Jun 10	53	54	55	54	54	53	54	54	58	58	57	57	53	51	48	44	45	50	53	60	82	88	91	88	44	91	58.9	
Jun 11	92	93	96	94	96	92	90	82	81	77	66	63	58	50	45	46	44	39	38	42	46	52	49	45	38	96	65.7	
Jun 12	47	47	49	50	47	49	50	48	44	49	56	56	53	50	39	37	46	48	50	53	52	56	56	52	37	56	49.3	
Jun 13	51	52	54	68	86	80	80	79	76	76	74	73	72	80	87	85	93	98	98	98	99	100	100	100	51	100	81.6	
Jun 14	100	99	97	98	95	93	93	94	95	87	85	83	81	80	71	61	60	64	68	73	79	82	89	90	60	100	84.0	
Jun 15	92	94	96	95	91	93	88	76	71	67	65	60	52	48	45	42	40	40	38	43	48	52	56	54	38	96	64.4	
Jun 16	59	54	51	59	67	74	76	79	82	76	71	70	68	77	82	79	66	51	43	42	47	49	57	65	42	82	64.3	
Jun 17	76	78	79	81	74	67	62	54	47	44	40	37	37	34	34	31	31	29	30	32	42	57	65	66	29	81	51.1	
Jun 18	67	71	70	76	79	84	89	87	85	83	80	78	78	77	91	92	93	93	95	92	93	90	90	85	67	95	84.1	
Jun 19	77	72	68	69	66	68	74	77	74	69	65	59	55	52	49	47	45	43	42	46	45	47	56	50	42	77	59.0	
Jun 20	52	52	56	65	69	69	61	57	53	48	42	38	33	30	28	28	26	25	27	29	38	50	60	69	25	69	46.0	
Jun 21	71	77	79	73	67	70	73	65	54	47	K	36	K	34	32	32	33	33	34	41	48	56	58	62	32	79	53.4	
Jun 22	62	62	65	69	64	61	67	75	73	73	75	71	71	70	67	66	65	79	94	89	93	99	100	100	61	100	75.4	
Jun 23	100	100	100	100	100	100	100	100	100	100	85	K	66	64	57	47	41	38	35	35	49	54	71	75	68	35	100	73.3
Jun 24	62	68	73	82	86	85	80	76	74	72	K	K	K	56	54	46	44	43	K	K	K	64	80	93	98	43	98	70.3
Jun 25	97	97	97	99	100	100	100	96	93	95	K	92	92	90	87	85	80	78	75	75	85	95	97	97	75	100	91.4	
Jun 26	94	93	94	93	94	95	94	90	89	86	81	76	71	68	63	61	67	80	78	76	83	88	87	82	61	95	82.6	
Jun 27	84	89	96	100	100	100	94	88	73	57	57	45	46	45	43	48	50	58	61	74	80	77	84	91	43	100	72.5	
Jun 28	92	97	98	98	98	96	95	89	86	83	79	66	63	60	54	54	54	54	59	65	71	71	80	84	54	98	76.9	
Jun 29	78	82	85	81	77	75	80	80	81	81	K	68	57	53	45	43	40	42	48	59	55	63	72	80	40	85	66.3	
Jun 30	81	81	84	84	83	86	82	73	58	53	49	43	40	36	29	26	24	27	34	43	50	62	64	56	24	86	56.2	
Diurnal Maximum	100	100	100	100	100	100	100	100	100	95	85	92	92	90	91	92	93	98	98	98	99	100	100	100	100			
Diurnal Average	69.3	70.0	72.3	74.9	76.4	76.3	75.5	71.2	66.8	61.7	57.3	55.6	53.6	51.3	49.6	48.7	47.4	47.1	47.6	51.2	56.6	62.3	66.7	67.6				

<b>C</b> Monthly Calibration	<b>S</b> Daily Zero-Span Check	<b>Q</b> Quality Assurance
<b>K</b> Collection Error	<b>ND</b> No Data (Machine Not in Service)	<b>Y</b> Routine Maintenance
<b>X</b> InValid Data (Equipment Malfunction /Recovery)	<b>NRM</b> UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b> Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.



Peace River Area Monitoring Program

Reno-B Station - June 2023

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

Maximum Hourly Value:	946	mb	on Jun 5 at hr 0	Hours in Service:	720
Maximum Daily Value:	944	mb	on Jun 5	Hours of Data:	694
Minimum Hourly Value:	931	mb	on Jun 14 at hr 0	Hours of Missing Data:	26
Minimum Daily Value:	932	mb	on Jun 17	Hours of Calibration:	0
Monthly Average:	938	mb		Operational Uptime:	96.4

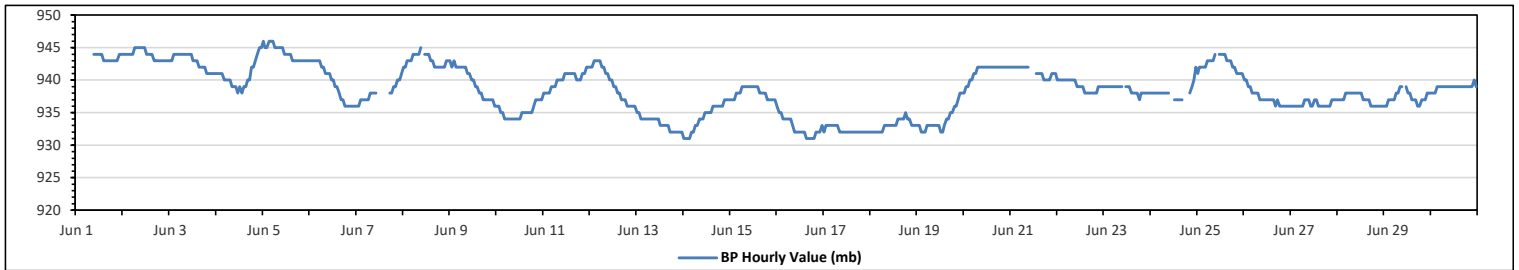
  

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	944	944	944	944	944	943	943	943	943	943	943	943	943	944	944	943	944	NA
Jun 2	944	944	944	944	944	944	945	945	945	945	945	945	944	944	944	944	943	943	943	943	943	943	943	943	943	943	944
Jun 3	943	943	944	944	944	944	944	944	944	944	944	944	943	943	943	943	942	942	942	942	941	941	941	941	941	941	943
Jun 4	941	941	941	941	940	940	940	940	939	939	939	939	938	938	938	939	939	940	940	942	942	943	944	945	945	945	941
Jun 5	946	945	945	946	946	946	945	945	945	945	945	944	944	944	944	943	943	943	943	943	943	943	943	943	943	943	944
Jun 6	943	943	943	943	943	943	942	942	941	941	941	940	940	939	939	938	937	936	936	936	936	936	936	936	936	936	936
Jun 7	936	936	937	937	937	937	937	938	938	938	938	K	K	K	K	K	K	938	938	939	940	940	941	941	941	938	
Jun 8	942	942	943	943	943	944	944	944	944	945	K	944	944	944	943	943	942	942	942	942	942	943	943	943	943	943	943
Jun 9	943	942	943	942	942	942	942	942	941	941	940	940	939	939	938	938	937	937	937	937	937	937	937	937	937	937	940
Jun 10	936	936	935	935	934	934	934	934	934	934	934	934	934	935	935	935	935	935	935	936	937	937	937	937	937	937	935
Jun 11	938	938	938	938	939	939	939	940	940	940	940	941	941	941	941	941	940	940	940	940	941	941	942	942	942	942	940
Jun 12	942	942	943	943	943	943	942	942	941	941	940	940	939	939	938	938	937	937	937	936	936	936	936	936	936	936	939
Jun 13	935	935	934	934	934	934	934	934	934	934	934	934	933	933	933	933	933	932	932	932	932	932	932	932	932	932	933
Jun 14	931	931	931	931	932	932	933	933	934	934	934	935	935	935	935	936	936	936	936	936	936	936	937	937	937	937	934
Jun 15	937	937	937	938	938	938	939	939	939	939	939	939	939	939	939	938	938	938	938	938	937	937	937	937	937	937	938
Jun 16	936	935	935	934	934	934	934	934	933	932	932	932	932	932	932	931	931	931	931	931	932	932	932	932	932	932	933
Jun 17	932	933	933	933	933	933	933	933	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932
Jun 18	932	932	932	932	932	932	932	933	933	933	933	933	933	933	934	934	934	934	935	934	934	933	933	933	933	933	933
Jun 19	933	933	932	932	932	933	933	933	933	933	933	933	932	932	933	934	934	935	935	936	936	937	938	938	938	938	934
Jun 20	938	939	939	940	940	941	941	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	941
Jun 21	942	942	942	942	942	942	942	942	942	942	K	941	K	941	941	941	941	940	940	940	940	941	941	941	941	941	941
Jun 22	940	940	940	940	940	940	940	940	940	940	939	939	939	939	938	938	938	938	938	938	938	938	938	938	938	938	939
Jun 23	939	939	939	939	939	939	939	939	939	939	K	939	939	939	938	938	938	938	937	938	938	938	938	938	938	938	939
Jun 24	938	938	938	938	938	938	938	938	938	938	K	K	937	937	937	937	937	K	K	K	938	938	938	938	938	938	939
Jun 25	941	942	942	942	942	943	943	943	943	944	K	944	944	944	944	943	943	943	942	942	941	941	941	941	941	941	943
Jun 26	940	940	939	939	938	938	938	938	937	937	937	937	937	937	937	937	936	936	936	936	936	936	936	936	936	936	937
Jun 27	936	936	936	936	936	936	936	937	937	937	936	936	937	937	936	936	936	936	936	936	936	937	937	937	937	937	936
Jun 28	937	937	937	937	938	938	938	938	938	938	938	938	938	937	937	937	936	936	936	936	936	936	936	936	936	936	937
Jun 29	936	936	937	937	937	937	938	938	938	939	939	K	939	938	938	937	937	937	936	936	937	937	937	937	937	937	938
Jun 30	938	938	938	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939	940	939	939	939
Diurnal Maximum	946	945	945	946	946	946	945	945	945	945	945	944	944	944	944	943	943	943	943	943	944	944	945	945	945	945	945
Diurnal Average	938	938	939	939	939	939	939	939	939	939	938	939	939	938	938	938	938	938	938	938	938	938	938	939	939	939	939

<b>C</b>	Monthly Calibration	<b>S</b>	Daily Zero-Span Check	<b>Q</b>	Quality Assurance
<b>K</b>	Collection Error	<b>ND</b>	No Data (Machine Not in Service)	<b>Y</b>	Routine Maintenance
<b>X</b>	InValid Data (Equipment Malfunction /Recovery)	<b>NRM</b>	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b>	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.



**Peace River Area Monitoring Program**

**Reno-B Station - June 2023**

**Summary of Hourly Averages**

**AMBIENT TEMPERATURE (AT) in Degree Celsius**

Maximum Hourly Value:	28.7 °C	on Jun 9 at hr 14	Hours in Service:	720
Maximum Daily Value:	22.8 °C	on Jun 9	Hours of Data:	694
Minimum Hourly Value:	4.9 °C	on Jun 21 at hr 2	Hours of Missing Data:	26
Minimum Daily Value:	9.5 °C	on Jun 18	Hours of Calibration:	0
Monthly Average:	16.3 °C		Operational Uptime:	96.4

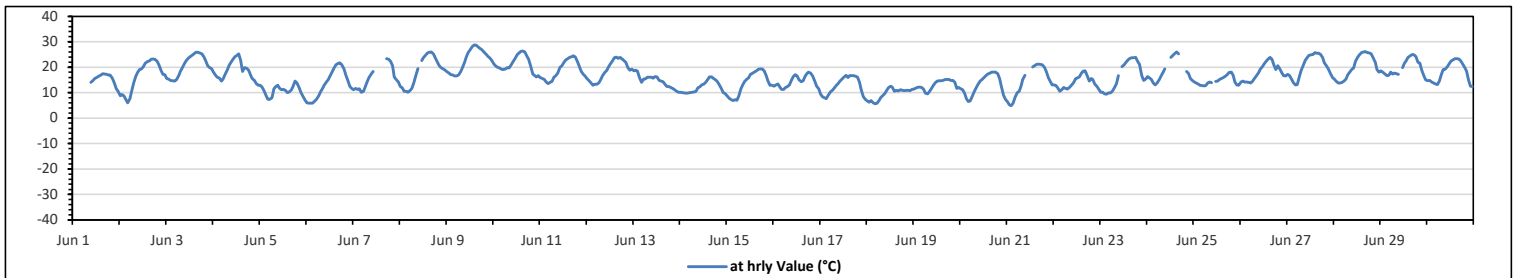
  

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	14	14.7	15.5	15.9	16.4	16.8	17.5	17.4	17.2	17	16.9	15.7	13.9	11.6	10.5	10.5	17.5	NA	
Jun 2	8.8	9.3	8.8	7.3	6	7.6	10.9	13.9	16.3	17.9	19	19.3	20.3	21.6	22.2	22.5	23	23.2	23	22.4	20.8	18.8	17.2	17.1	6.0	23.2	16.6	
Jun 3	15.6	15.3	14.9	14.7	14.6	15.2	16.5	18.5	19.8	21.4	22.6	23.4	24.2	24.7	25.3	25.8	25.8	25.6	25.2	24.1	22.5	20.6	19.9	19.4	14.6	25.8	20.7	
Jun 4	18.1	17	16.1	15.7	14.6	15.3	17.1	18.9	20.7	22	23.1	24.1	24.6	25.2	22.7	18.3	19.8	19.6	18.8	16.9	15.5	14.9	13.6	12.9	12.9	25.2	18.6	
Jun 5	12.9	12.2	10.8	9	7.3	7.4	8.1	11.5	12.4	12.9	11.7	11.1	11.2	10.9	10	10.3	11.1	12.5	14.5	13.7	11.9	9.8	8.5	7.1	7.1	14.5	10.8	
Jun 6	6	5.9	5.9	5.9	6.6	7.4	8.8	10.4	11.7	12.9	14.1	15.2	16.6	18.2	19.7	20.9	21.5	21.7	21	19.3	16.8	14.8	12.5	11.7	5.9	21.7	13.6	
Jun 7	11.1	11.7	11.2	11.5	10.1	10.6	12.2	14.2	15.9	17.4	18.3	K	K	K	K	K	K	K	23.3	23.1	22.2	20.4	16.2	15.2	14.2	10.1	23.3	15.5
Jun 8	12.4	11.9	10.5	10.5	10.2	10.8	11.7	13.8	17	19.4	K	22.6	23.7	24.7	25.6	25.8	26	25.1	23.7	22.2	20.7	19.8	19.3	18.8	10.2	26.0	18.5	
Jun 9	18.2	17.7	17.1	16.9	16.5	16.5	17	18.3	20.1	22	24	25.7	27	28.1	28.7	28.6	28	27.4	26.9	25.9	25.2	24.3	23.6	22.6	16.5	28.7	22.8	
Jun 10	21.4	20.6	20	19.7	19.2	19	19.3	19.8	19.7	20.8	22.1	23.4	24.8	25.6	26.2	26.4	25.9	24.5	23.1	20.5	17.3	16.6	16.2	16.6	16.2	26.4	21.2	
Jun 11	16	15.6	15.2	14.2	13.6	14	14.4	16.1	16.7	17.7	20	20.6	21.8	22.7	23.3	23.8	24.2	24.4	24	22.4	20.4	18.4	17.4	16.5	13.6	24.4	18.9	
Jun 12	15.4	14.7	13.7	12.9	13.3	13.3	13.7	15	16.7	17.9	18.7	20	21.2	22.5	23.7	24	23.5	23.8	23.2	22.6	21.8	19.9	18.9	19.2	12.9	24.0	18.7	
Jun 13	18.6	18.8	18.4	15.7	14	15.3	15.4	16.1	16.1	16.1	15.7	16.3	16.2	14.8	14.5	14.3	13.3	12.4	12.4	12.1	11.6	11.1	10.6	10.2	10.2	18.8	14.6	
Jun 14	10.1	10	9.9	9.7	9.8	10	10.2	10.3	10.6	11.9	12.3	13.1	13.5	14.2	15	16.2	16.2	15.5	15	14.3	13.1	11.7	10	9.6	9.6	16.2	12.2	
Jun 15	8.7	7.8	7.2	6.9	7.2	7	8.8	11.4	13	14.4	15.1	16	17.2	17.6	18.1	18.6	19.2	19.3	19.3	18.6	16.8	14.5	12.9	12.9	6.9	19.3	13.7	
Jun 16	12.5	13	13.4	12.4	11.3	11.3	12	12.4	13.1	14.9	16.3	17.1	16.5	15	14.3	14.7	16.4	17.6	18.1	17.6	16.4	14.5	12.5	11.4	11.3	18.1	14.4	
Jun 17	9.5	8.4	8.1	7.7	9.1	10.3	10.9	11.8	12.8	13.6	14.5	15.3	16.1	16.8	16	16.7	16.6	16.6	16.4	16.1	14	10.8	8.3	7.3	7.3	16.8	12.7	
Jun 18	6.8	6.3	6.9	6	5.6	5.9	6.9	8	8.9	9.6	10.9	12.1	12.5	12	10.6	10.9	10.7	11.1	10.9	10.8	10.9	10.9	10.8	11.2	5.6	12.5	9.5	
Jun 19	11.4	11.8	12.2	12.2	12	11.4	9.7	9.5	10.5	11.7	12.9	13.9	14.6	14.7	14.7	14.9	15.1	15.2	15.2	14.9	14.9	14	11.6	12	9.5	15.2	13.0	
Jun 20	11.5	11.1	9.9	7.6	6.5	6.8	8.7	10.6	12.1	13.4	14.5	15.1	15.9	16.7	17.4	17.7	18.1	18.1	18.1	17.5	15.4	12.1	9	7.4	6.5	18.1	13.0	
Jun 21	6.5	5.2	4.9	5.9	8.2	10	10.6	12.7	15.1	16.8	K	19.1	K	20.1	20.6	21.1	21.2	21.1	21	20	18.2	16	14.4	13	4.9	21.2	14.6	
Jun 22	13	12.8	11.8	10.6	11.3	12.1	11.7	11.4	12.2	13	13.9	15.4	15.8	16.2	17.6	18.4	18.6	16.8	14.5	15.6	15.2	13.4	12.4	11.3	10.6	18.6	14.0	
Jun 23	10.1	10.1	9.5	9.4	9.8	9.8	10.6	12	13.6	16.7	K	20.3	21	21.9	22.9	23.4	23.7	23.7	23.9	22.4	21.1	16.7	14.9	15.3	9.4	23.9	16.6	
Jun 24	16.3	15.8	15.2	13.8	13.1	13.8	15.1	16.7	18	19.3	K	K	23.9	24.6	25.4	26	25.2	K	K	K	18.3	17.6	15.6	14.8	13.1	26.0	18.3	
Jun 25	14.3	13.7	13.4	12.9	12.8	12.6	12.8	13.7	14.1	13.9	K	14.4	14.6	15.1	15.6	16	16.4	17.1	17.9	18.1	16.7	14.1	13.1	12.9	12.6	18.1	14.6	
Jun 26	14.2	14.5	14.1	14.2	14	13.7	14.4	15.6	16.5	17.8	19.3	20.3	21.2	22.2	23.2	23.8	23.1	20.8	19	20.6	19.5	17.9	16.6	16.5	13.7	23.8	18.0	
Jun 27	17.2	16.6	15.3	13.9	13.1	13.2	16.1	18.7	20.8	22.8	23.6	24.6	24.8	25	25.7	25.5	25.5	25	23.9	21.6	20.5	19.3	17.5	15.9	13.1	25.7	20.3	
Jun 28	15.3	14.5	13.7	13.7	14	14.6	15.3	17.1	18	19	19.7	22.4	24	25	25.7	25.9	26.1	25.7	25.6	25.2	23.7	21.8	19	18.1	13.7	26.1	20.1	
Jun 29	18.6	18.1	17.4	16.7	16.8	18.1	17.4	17.7	17.5	17.2	K	19.9	21.6	22.5	23.9	24.4	25	24.9	24.1	21.9	21.6	18.8	16.8	15	15.0	25.0	19.8	
Jun 30	14.7	14.9	14.2	13.8	13.5	13.2	14.5	17.1	19	19.1	20.3	21.2	22.4	22.9	23.3	23.3	23.2	22.5	21.2	20	18.5	15	12.5	12.4	12.4	23.3	18.0	
Diurnal Maximum	21.4	20.6	20.0	19.7	19.2	19.0	19.3	19.8	20.8	22.8	24.0	25.7	27.0	28.1	28.7	28.6	28.0	27.4	26.9	25.9	25.2	24.3	23.6	22.6				
Diurnal Average	13.3	12.9	12.4	11.8	11.5	11.9	12.8	14.2	15.5	16.6	17.4	18.5	19.4	19.9	20.3	20.5	20.7	20.4	20.0	19.2	17.8	15.9	14.4	13.8				

<b>C</b>	Monthly Calibration	<b>S</b>	Daily Zero-Span Check	<b>Q</b>	Quality Assurance
<b>K</b>	Collection Error	<b>ND</b>	No Data (Machine Not in Service)	<b>Y</b>	Routine Maintenance
<b>X</b>	InValid Data (Equipment Malfunction /Recovery)	<b>NRM</b>	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b>	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.



**Peace River Area Monitoring Program**  
**Reno-B Station - June 2023**  
**Summary of Hourly Averages**  
**STATION TEMPERATURE (ST) in Degree Celsius**

Maximum Hourly Value:	24.6 °C	on Jun 4 at hr 4	Hours in Service:	720
Maximum Daily Value:	23.9 °C	on Jun 4	Hours of Data:	703
Minimum Hourly Value:	21.8 °C	on Jun 20 at hr 16	Hours of Missing Data:	17
Minimum Daily Value:	22.7 °C	on Jun 20	Hours of Calibration:	0
Monthly Average:	23.4 °C		Operational Uptime:	97.6

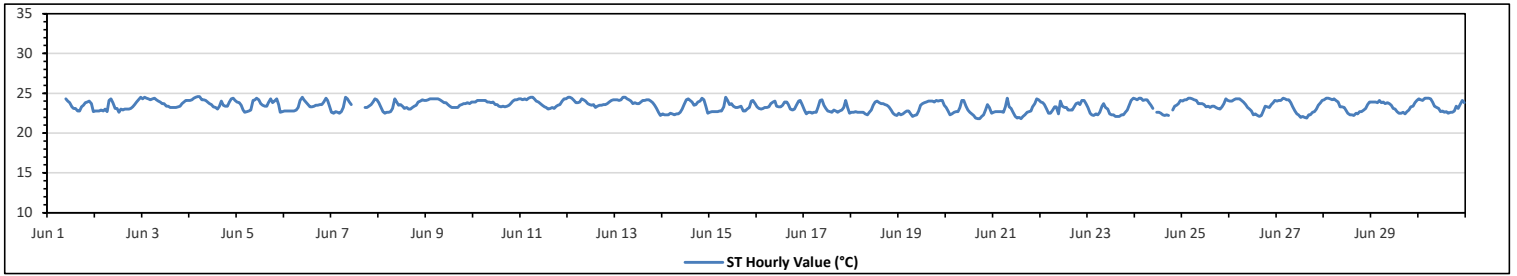
  

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	24.3	24.0	23.8	23.3	23.1	23.1	22.8	22.8	23.3	23.5	23.8	23.9	24.0	23.7	22.7	22.7	24.3	NA	
Jun 2	22.8	22.8	22.8	22.9	22.8	23.0	22.7	24.1	24.3	23.8	23.1	23.1	22.6	23.0	22.9	23.0	23.0	23.0	23.1	23.3	23.6	23.9	24.2	24.5	22.6	24.5	23.3	
Jun 3	24.3	24.5	24.4	24.3	24.2	24.3	24.4	24.2	24.0	23.9	23.7	23.7	23.4	23.4	23.2	23.2	23.2	23.2	23.3	23.4	23.7	23.9	24.1	24.1	23.2	24.5	23.8	
Jun 4	24.1	24.2	24.4	24.5	24.6	24.6	24.2	24.2	24.1	23.9	23.7	23.6	23.3	23.2	23.0	23.4	24.0	23.5	23.4	23.4	23.9	24.3	24.4	24.1	23.0	24.6	23.9	
Jun 5	23.9	23.8	23.5	22.9	22.6	22.7	22.8	22.9	24.1	24.2	24.4	24.2	23.7	23.5	23.4	23.4	23.8	24.3	23.8	24.0	24.3	23.6	22.6	22.7	22.6	24.4	23.5	
Jun 6	22.8	22.8	22.8	22.8	22.8	22.8	22.9	23.2	24.1	24.5	24.2	23.9	23.6	23.5	23.3	23.4	23.5	23.6	23.6	23.9	24.4	24.1	23.4	22.8	24.5	23.5		
Jun 7	22.6	22.5	22.7	22.6	22.5	22.7	23.2	24.5	24.3	23.9	23.6	K	K	K	K	K	K	23.2	23.2	23.4	23.6	23.9	24.3	24.2	22.5	24.5	23.4	
Jun 8	23.8	23.3	22.7	22.5	22.6	22.6	22.7	23.1	24.3	23.9	23.5	23.6	23.4	23.1	23.2	23.0	23.0	23.2	23.4	23.5	23.9	24.0	24.2	24.1	22.5	24.3	23.4	
Jun 9	24.1	24.2	24.3	24.3	24.3	24.3	24.3	24.2	24.0	23.8	23.8	23.6	23.4	23.2	23.2	23.2	23.2	23.5	23.6	23.7	23.7	23.8	23.7	23.9	23.2	24.3	23.8	
Jun 10	23.9	23.9	24.1	24.1	24.1	24.1	24.1	23.9	23.9	23.8	23.9	23.6	23.6	23.4	23.3	23.4	23.3	23.4	23.5	23.7	24.0	24.2	24.2	24.3	23.3	24.3	23.8	
Jun 11	24.3	24.2	24.3	24.2	24.4	24.5	24.5	24.3	24.0	23.9	23.7	23.5	23.3	23.2	23.0	23.1	23.2	23.1	23.4	23.5	23.6	24.0	24.3	24.3	23.0	24.5	23.8	
Jun 12	24.5	24.5	24.4	24.1	23.8	23.8	23.9	24.3	24.2	24.0	23.9	23.7	23.6	23.5	23.6	23.2	23.4	23.5	23.5	23.6	23.6	23.7	23.9	24.1	24.2	23.2	24.5	23.9
Jun 13	24.2	24.2	24.1	24.2	24.5	24.5	24.3	24.2	24.0	23.7	23.8	23.7	23.7	23.9	24.1	24.1	24.2	24.2	24.0	23.8	23.5	23.1	22.6	22.2	22.2	24.5	23.9	
Jun 14	22.4	22.3	22.3	22.3	22.5	22.4	22.3	22.4	22.4	22.6	23.0	23.6	24.2	24.3	24.1	23.9	23.5	23.6	23.9	24.0	24.4	24.2	23.4	22.5	22.3	24.4	23.2	
Jun 15	22.6	22.7	22.7	22.7	22.7	22.8	22.8	23.3	24.5	24.1	23.6	23.7	23.4	23.2	23.2	23.3	23.4	22.8	22.8	23.0	23.2	24.0	24.1	23.7	22.6	24.5	23.3	
Jun 16	23.3	23.1	23.0	23.1	23.2	23.2	23.3	23.7	23.9	24.0	23.4	23.3	23.3	23.5	23.9	23.9	23.6	23.0	22.9	23.0	23.5	24.0	24.1	23.6	22.9	24.1	23.5	
Jun 17	22.9	22.4	22.6	22.6	22.5	22.6	22.6	23.3	24.1	24.2	23.5	23.1	22.8	22.7	22.6	22.9	22.8	22.6	22.8	22.9	23.2	24.1	23.2	22.5	22.4	24.2	23.0	
Jun 18	22.6	22.6	22.7	22.6	22.6	22.6	22.6	22.4	22.3	22.6	22.9	23.5	23.9	24.0	23.8	23.7	23.7	23.6	23.5	23.3	22.9	22.5	22.3	22.2	22.2	24.0	23.0	
Jun 19	22.5	22.3	22.4	22.6	22.8	22.8	22.4	22.1	22.2	22.3	22.8	23.5	23.7	23.8	23.9	24.0	24.0	24.0	23.9	24.1	24.0	24.1	24.1	23.5	22.1	24.1	23.2	
Jun 20	23.2	22.8	22.3	22.4	22.6	22.7	22.7	23.2	24.1	24.1	23.4	22.9	22.6	22.4	22.2	21.9	21.8	21.8	22.1	22.3	22.9	23.6	23.2	22.5	21.8	24.1	22.7	
Jun 21	22.6	22.7	22.7	22.7	22.7	22.6	23.3	24.4	23.3	23.1	22.6	22.1	21.9	22.0	21.8	22.1	22.3	22.6	22.7	22.8	23.3	23.7	24.3	24.2	21.8	24.4	22.9	
Jun 22	23.9	23.8	23.6	23.0	22.5	22.5	22.9	23.3	23.3	22.4	24.0	23.4	23.2	23.2	22.9	22.9	22.9	23.3	23.7	23.8	23.6	24.1	24.1	23.7	22.4	24.1	23.3	
Jun 23	23.2	22.5	22.3	22.2	22.4	22.3	22.6	23.4	23.7	23.2	23.0	22.4	22.3	22.3	22.1	22.1	22.1	22.3	22.3	22.6	22.9	23.5	24.1	24.4	22.1	24.4	22.8	
Jun 24	24.3	24.2	24.4	24.4	24.1	24.2	24.2	23.8	23.5	23.1	K	22.6	22.6	22.5	22.3	22.2	22.3	22.2	K	22.9	23.4	23.5	23.7	24.1	22.2	24.4	23.4	
Jun 25	24.0	24.2	24.2	24.4	24.4	24.3	24.2	24.1	23.7	23.7	23.7	23.6	23.3	23.4	23.2	23.4	23.4	23.2	23.1	23.0	23.3	23.7	24.3	24.1	23.0	24.4	23.7	
Jun 26	24.0	24.0	24.2	24.3	24.3	24.3	24.1	23.9	23.6	23.2	23.0	22.8	22.3	22.4	22.2	22.1	22.2	22.8	23.4	23.3	23.2	23.6	23.8	24.1	22.1	24.3	23.4	
Jun 27	24.0	24.1	24.1	24.4	24.3	24.2	24.2	23.8	23.3	23.2	22.8	22.4	22.3	22.0	22.1	22.0	21.9	22.3	22.3	22.6	22.7	23.0	23.5	23.8	24.1	21.9	24.4	23.2
Jun 28	24.2	24.4	24.4	24.3	24.2	24.3	24.1	23.9	23.3	23.3	23.2	22.9	22.5	22.3	22.3	22.2	22.5	22.4	22.7	22.7	22.9	23.1	23.6	23.9	22.2	24.4	23.3	
Jun 29	23.9	23.9	23.9	23.8	24.1	23.8	23.9	23.7	23.8	23.7	23.5	23.1	23.0	22.7	22.5	22.5	22.6	22.4	22.7	22.9	23.3	23.4	23.8	24.1	22.4	24.1	23.4	
Jun 30	24.3	24.2	24.1	24.4	24.4	24.4	24.3	23.9	23.4	23.2	23.1	22.7	22.8	22.6	22.7	22.5	22.6	22.6	22.8	23.4	23.1	23.6	24.1	23.8	22.5	24.4	23.5	
Diurnal Maximum	24.5	24.5	24.4	24.5	24.6	24.6	24.5	24.5	24.5	24.4	24.2	24.2	24.3	24.1	24.1	24.2	24.3	24.0	24.1	24.4	24.4	24.4	24.4	24.5				
Diurnal Average	23.6	23.5	23.5	23.4	23.4	23.4	23.5	23.6	23.7	23.6	23.5	23.3	23.1	23.1	23.0	23.0	23.1	23.1	23.2	23.3	23.5	23.8	23.8	23.7				

<b>C</b>	Monthly Calibration	<b>S</b>	Daily Zero-Span Check	<b>Q</b>	Quality Assurance
<b>K</b>	Collection Error	<b>ND</b>	No Data (Machine Not in Service)	<b>Y</b>	Routine Maintenance
<b>X</b>	InValid Data (Equipment Malfunction /Recovery)	<b>NRM</b>	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b>	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.



Peace River Area Monitoring Program

Reno-B Station - June 2023  
Summary of Hourly Averages

PRECIPITATION in mm

Maximum Hourly Value:	4.6 mm on Jun 24 at hr 22	Hours in Service:	720
Maximum Daily Value:	7.3 mm on Jun 24	Hours of Data:	699
Minimum Hourly Value:	0.0 mm on Jun 1 at hr 9	Hours of Missing Data:	21
Minimum Daily Value:	0.0 mm on Jun 2	Hours of Calibration:	0
Monthly Total:	23.6 mm	Operational Uptime:	97.1

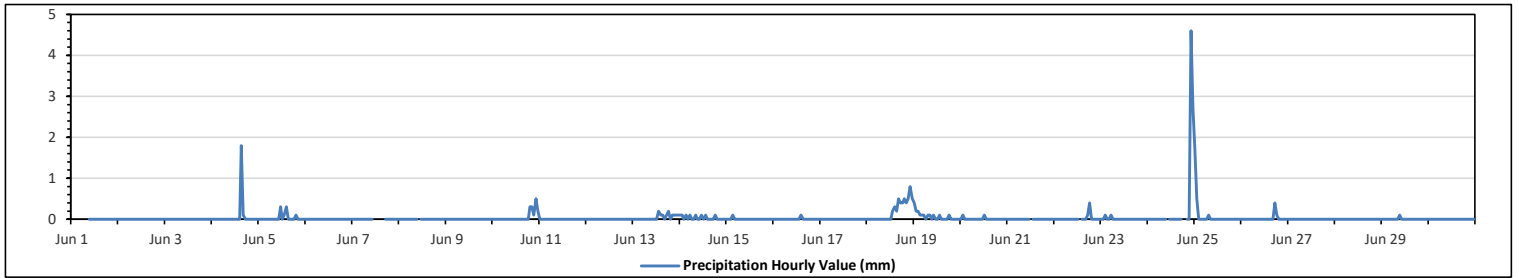
  

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Total		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	NA	
Jun 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Jun 3	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	0.0	0.0	
Jun 4	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	1.8	1.9	
Jun 5	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0.1	0.3	0	0	0	0	0	0.1	0	0	0	0.0	0.3	0.8	
Jun 6	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	0.0	0.0	
Jun 7	0	0	0	0	0	0	0	0	0	0	0	0	K	K	K	K	K	K	0	0	0	0	0	0	0.0	0.0	0.0	
Jun 8	0	0	0	0	0	0	0	0	0	0	0	K	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Jun 9	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	0.0	0.0	
Jun 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.3	0.1	0.5	0.2	0.0	0.5	1.4
Jun 11	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	0.0	0.0	
Jun 12	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	0.0	0.0	
Jun 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.1	0.1	0	0.1	0.2	0	0.1	0.1	0.1	0.1	0.0	0.2	1.1	
Jun 14	0.1	0.1	0	0.1	0	0.1	0	0	0.1	0	0	0.1	0	0.1	0	0	0	0	0.1	0	0	0	0	0	0.0	0.1	0.8	
Jun 15	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1	
Jun 16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1	
Jun 17	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	0.0	0.0	
Jun 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	0.2	0.5	0.4	0.4	0.5	0.4	0.5	0.8	0.5	0.0	0.8	4.7	
Jun 19	0.4	0.2	0.2	0.1	0.1	0.1	0	0.1	0.1	0	0.1	0	0	0.1	0	0	0	0	0.1	0	0	0	0	0	0.0	0.4	1.6	
Jun 20	0	0.1	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.2	
Jun 21	0	0	0	0	0	0	0	0	0	0	0	0	K	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	
Jun 22	0	0	0	0	0	0	0	0	0	0	0	0	0	K	0	0	0	0	0.1	0.4	0	0	0	0	0.0	0.4	0.5	
Jun 23	0	0	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.2	
Jun 24	0	0	0	0	0	0	0	0	0	0	K	0	0	0	0	0	0	0	K	K	0	0	4.6	2.7	0.0	4.6	7.3	
Jun 25	1.7	0.5	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	1.7	2.3	
Jun 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.1	0	0	0	0	0	0.0	0.4	0.5	
Jun 27	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	0.0	0.0	
Jun 28	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	0.0	0.0	
Jun 29	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.1	
Jun 30	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	0.0	0.0	
Diurnal Maximum	1.7	0.5	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.3	0.1	0.2	0.3	1.8	0.5	0.4	0.4	0.5	0.4	0.5	4.6	2.7				
Diurnal Average	0.1	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	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1				

<b>C</b>	Monthly Calibration	<b>S</b>	Daily Zero-Span Check	<b>Q</b>	Quality Assurance
<b>K</b>	Collection Error	<b>ND</b>	No Data (Machine Not in Service)	<b>Y</b>	Routine Maintenance
<b>X</b>	InValid Data (Equipment Malfunction /Recovery)	<b>NRM</b>	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b>	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.



**Peace River Area Monitoring Program**

**Reno-B Station - June 2023**

**Summary of Hourly Averages**

**VECTOR WIND SPEED (VWS) in km/hr**

Maximum Hourly Value:	38.5 kph	on Jun 4 at hr 17	Hours in Service:	720
Maximum Daily Value:	20.9 kph	on Jun 4	Hours of Data:	694
Minimum Hourly Value:	0.0 kph	on Jun 5 at hr 5	Hours of Missing Data:	26
Minimum Daily Value:	5.3 kph	on Jun 27	Hours of Calibration:	0
Monthly Average:	1.9 kph		Operational Uptime:	96.4

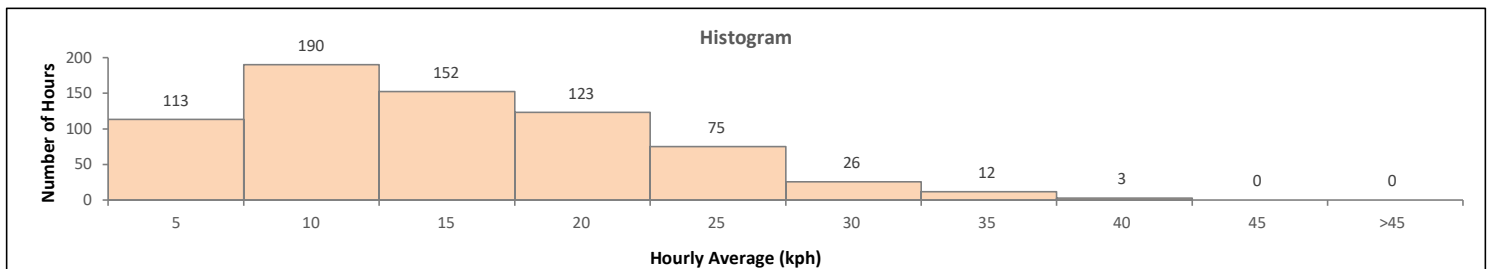
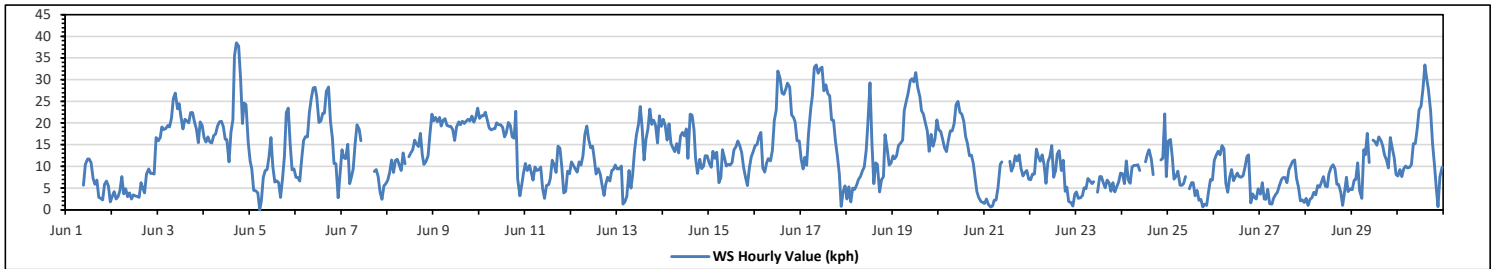
  

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.7	10.5	11.7	11.7	10.8	7.3	5.9	6.8	2.9	2.6	2.3	5.9	6.6	5.5	1.8	1.8	11.7	NA
Jun 2	3.1	4.2	2.5	3.0	4.4	7.7	3.7	4.9	3.0	3.9	2.5	3.5	3.2	3.1	2.9	6.2	4.9	3.9	8.2	9.4	8.4	8.4	8.2	16.7	2.5	16.7	5.4
Jun 3	15.9	16.6	19.1	18.5	18.7	19.5	19.1	21.1	25.6	26.9	23.3	24.5	21.3	18.6	20.9	20.5	20.0	22.4	22.4	20.3	18.6	15.5	20.3	19.4	15.5	26.9	20.4
Jun 4	16.7	15.6	16.8	15.6	15.4	17.1	17.5	19.3	20.3	20.4	19.2	16.3	16.2	11.0	17.9	20.7	35.5	38.5	37.8	30.4	19.9	24.6	24.2	15.5	11.0	38.5	20.9
Jun 5	11.2	9.5	4.5	4.4	3.9	0.0	2.0	7.4	9.1	9.3	12.3	16.6	9.9	6.4	6.7	6.2	2.9	7.1	12.2	22.4	23.4	15.2	9.2	9.4	0.0	23.4	9.2
Jun 6	7.5	7.4	6.6	11.7	16.0	16.9	16.8	22.4	25.6	28.1	28.2	26.1	20.1	20.5	22.3	22.2	27.3	28.3	20.4	16.5	10.7	10.6	2.8	8.3	2.8	28.3	17.6
Jun 7	13.8	12.1	11.8	15.1	6.0	7.4	9.4	15.2	19.6	18.5	15.9	K	K	K	K	K	K	8.8	9.3	7.7	4.0	2.4	5.5	6.0	2.4	19.6	10.5
Jun 8	6.8	8.6	11.5	8.6	11.4	11.6	10.3	9.0	13.1	10.6	K	12.2	13.1	13.8	16.1	15.3	14.6	17.6	12.6	10.5	11.1	12.4	17.6	22.0	6.8	22.0	12.6
Jun 9	20.5	21.3	20.3	21.3	19.3	20.6	21.0	19.4	19.2	19.2	18.5	16.0	19.1	20.3	19.6	20.4	19.9	20.4	20.8	20.5	21.6	20.2	21.3	23.4	16.0	23.4	20.2
Jun 10	21.1	21.7	21.7	22.5	20.7	18.9	18.4	18.6	18.7	20.0	19.6	19.6	19.0	16.8	17.6	20.1	19.4	16.8	16.5	22.7	7.1	3.2	5.9	8.4	3.2	22.7	17.3
Jun 11	10.7	9.1	10.2	8.4	6.8	9.9	9.1	9.3	9.9	4.9	2.6	5.6	5.8	7.2	11.4	10.4	8.6	14.7	14.2	9.8	3.9	4.3	8.9	8.3	2.6	14.7	8.5
Jun 12	11.0	10.2	9.4	8.7	11.0	10.3	12.4	17.4	19.3	16.2	14.3	14.7	11.4	8.2	9.5	8.2	5.6	3.3	5.8	7.5	6.6	9.0	9.3	10.3	3.3	19.3	10.4
Jun 13	9.4	9.4	10.1	1.3	1.8	3.1	9.0	5.0	7.9	13.5	17.2	19.9	23.8	18.9	11.5	16.3	18.6	23.2	19.7	20.6	19.5	15.4	21.7	19.2	1.3	23.8	14.0
Jun 14	20.9	19.5	16.1	19.8	15.3	14.3	13.4	15.3	13.1	17.0	17.8	17.0	18.6	11.9	22.0	21.8	18.5	11.9	8.4	11.6	9.5	10.1	12.4	12.5	8.4	22.0	15.4
Jun 15	10.7	9.8	13.5	11.9	13.3	6.2	7.4	13.9	12.1	10.1	10.5	10.3	10.9	13.9	14.5	15.8	14.8	13.2	9.8	7.5	5.6	9.7	12.2	13.4	5.6	15.8	11.3
Jun 16	14.8	15.0	16.9	17.8	9.7	8.7	10.8	11.8	11.3	13.7	20.6	23.0	32.0	30.3	26.9	26.6	27.9	29.2	28.3	21.9	21.3	20.3	15.9	15.8	8.7	32.0	19.6
Jun 17	11.6	9.4	12.1	10.2	17.7	23.4	26.3	32.8	33.4	31.5	32.6	32.9	27.4	28.8	26.8	26.2	20.7	20.6	15.8	12.5	8.4	0.8	4.2	5.5	0.8	33.4	19.7
Jun 18	2.5	5.3	1.8	5.0	4.7	5.7	7.0	7.6	8.9	9.9	13.6	19.5	29.3	15.5	6.0	10.8	10.5	4.1	6.9	7.7	17.3	14.4	10.3	10.8	1.8	29.3	9.8
Jun 19	12.4	11.8	12.4	14.8	15.4	16.1	22.8	24.9	26.8	29.8	30.2	29.5	31.6	28.2	26.0	22.8	22.0	20.0	18.2	13.5	17.4	14.7	16.3	20.7	11.8	31.6	20.8
Jun 20	18.4	18.1	16.3	14.3	13.4	16.1	18.2	18.2	19.9	24.2	25.0	22.5	22.0	20.4	16.8	15.5	12.4	12.6	10.6	7.1	4.2	2.8	1.9	1.7	1.7	25.0	14.7
Jun 21	1.5	2.5	1.2	0.6	0.9	2.2	2.3	5.1	10.5	11.0	K	10.0	K	11.2	8.9	10.1	12.4	11.3	12.7	9.5	7.8	8.6	9.1	7.1	0.6	12.7	7.1
Jun 22	6.9	8.2	8.2	14.0	12.2	11.2	12.7	10.5	6.1	11.0	12.2	14.8	7.5	9.0	12.8	13.6	9.0	11.4	4.3	5.2	1.9	1.7	0.9	3.6	0.9	14.8	8.7
Jun 23	4.1	2.6	2.8	3.3	5.1	4.9	7.2	6.6	6.0	6.5	K	4.0	7.7	7.7	6.2	5.1	6.8	6.2	4.3	6.3	4.1	5.3	6.4	8.5	2.6	8.5	5.6
Jun 24	8.3	6.0	11.3	6.9	6.1	9.9	10.2	10.2	10.4	9.0	K	K	11.1	12.9	13.9	11.7	8.1	K	K	K	11.5	11.9	22.1	7.7	6.0	22.1	10.5
Jun 25	15.8	16.2	11.9	7.1	7.6	8.9	5.7	5.7	6.0	7.7	K	4.8	6.2	6.2	3.2	4.5	2.2	2.4	0.6	1.3	1.0	4.2	7.0	6.8	0.6	16.2	6.2
Jun 26	11.4	12.6	13.5	12.7	14.8	14.1	6.1	4.0	7.5	9.3	6.7	7.7	8.5	7.7	7.5	7.9	9.9	12.3	12.7	1.6	3.7	2.8	2.5	4.8	1.6	14.8	8.4
Jun 27	3.6	6.2	2.5	2.4	4.7	1.4	1.3	2.6	3.4	4.0	5.5	7.0	7.4	7.4	6.3	9.2	10.2	11.2	11.5	7.2	5.2	2.0	2.3	1.7	1.3	11.5	5.3
Jun 28	2.6	1.0	2.4	2.8	4.0	3.4	5.6	5.2	6.4	7.7	5.4	5.3	8.2	9.8	10.4	9.5	5.9	5.9	4.1	1.0	4.1	7.5	4.2	4.8	1.0	10.4	5.3
Jun 29	4.6	6.8	7.0	10.8	4.4	2.6	13.9	12.7	17.6	10.9	K	16.1	15.7	14.9	16.8	15.9	14.8	12.6	11.5	9.7	16.6	14.2	12.1	8.1	2.6	17.6	11.8
Jun 30	7.8	9.3	7.7	9.5	10.1	9.7	9.8	10.5	15.2	15.3	18.6	23.1	23.9	27.9	33.4	30.1	27.8	22.7	15.2	10.3	4.7	0.7	7.7	9.8	0.7	33.4	15.0
Diurnal Maximum	21.1	21.7	21.7	22.5	20.7	23.4	26.3	32.8	33.4	31.5	32.6	32.9	32.0	30.3	33.4	30.1	35.5	38.5	37.8	30.4	23.4	24.6	24.2	23.4			
Diurnal Average	10.5	10.6	10.4	10.4	10.2	10.4	11.4	12.6	14.0	14.2	16.0	15.5	15.8	14.5	14.6	14.8	14.4	14.3	13.0	11.5	10.2	9.3	10.3	10.4			

<b>C</b> Monthly Calibration	<b>S</b> Daily Zero-Span Check	<b>Q</b> Quality Assurance
<b>K</b> Collection Error	<b>ND</b> No Data (Machine Not in Service)	<b>Y</b> Routine Maintenance
<b>X</b> InValid Data (Equipment Malfunction /Recovery)	<b>NRM</b> UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b> Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.



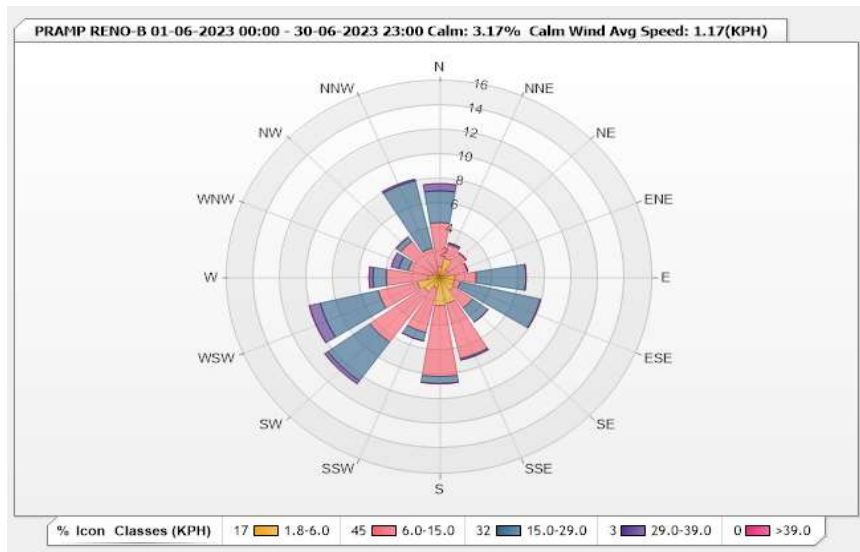


Station: PRAMP RENO-B Monitor: WDS [KPH] Monthly: 06-2023

Type: Wind Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm (WS<1.8kph): 3.17% Valid Data: 96.39%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	0.86	3.6	2.59	0.58	0	7.63
NNE	1.59	1.15	0.14	0	0	2.88
NE	0.72	1.73	0	0	0	2.45
ENE	0.29	1.87	0	0	0	2.16
E	1.15	1.59	3.75	0	0	6.49
ESE	1.15	0.43	6.2	0	0	7.78
SE	1.3	1.73	1.44	0	0	4.47
SSE	2.16	4.61	0.14	0	0	6.91
S	2.31	5.76	0.58	0	0	8.65
SSW	0.86	3.75	0.72	0	0	5.33
SW	1.44	5.04	3.89	0.29	0	10.66
WSW	1.73	3.03	4.47	0.86	0	10.09
W	0.86	3.17	1.01	0.29	0	5.33
WNW	0.58	1.87	0.72	0.58	0	3.75
NW	0.29	3.31	0.43	0	0	4.03
NNW	0.14	2.31	5.62	0.14	0	8.21
Summary	17.43	44.95	31.7	2.74	0	96.82



Peace River Area Monitoring Program

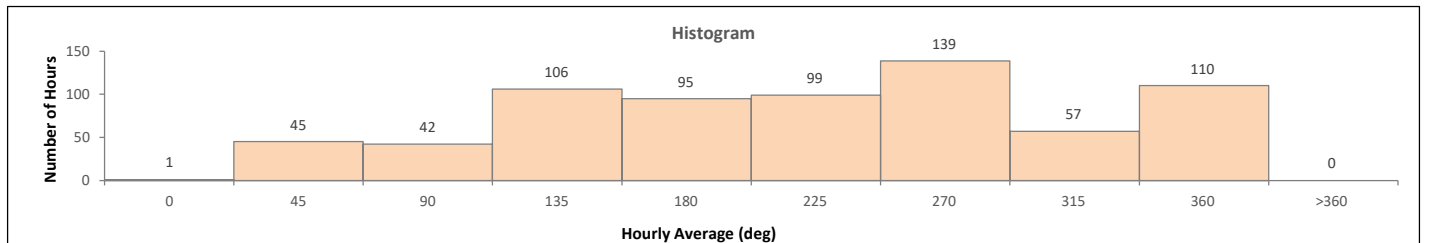
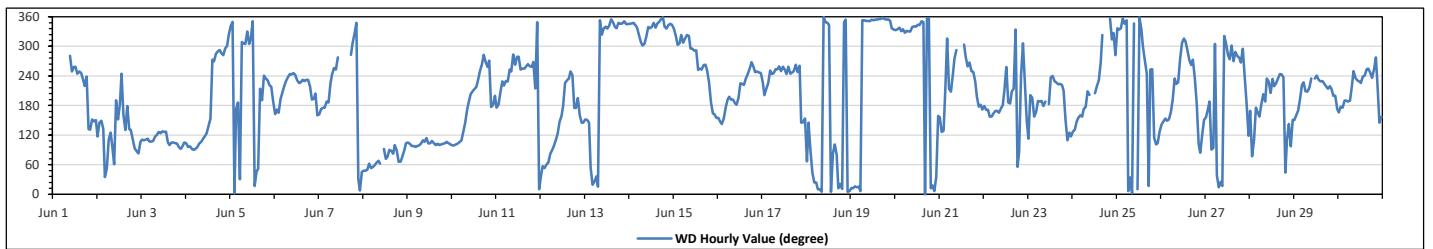
Reno-B Station - June 2023

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:		242 (WSW) degree																Hours in Service:		720									
																		Hours of Data:		694									
																		Hours of Missing Data:		26									
																		Hours of Calibration:		0									
																		Operational Uptime:		96.4									
Day	Hourly Period Starting at (MST)																							Daily Average					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant			
Jun 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	W	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	WSW	SE	SE	SSE	SE	SSE	NA	NA			
Jun 2	ESE	SE	SSE	SE	NE	NE	ESE	SE	E	ENE	S	SSE	S	WSW	SSE	SE	S	SE	SE	ESE	E	E	E	ESE	113	ESE			
Jun 3	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	ESE	SE	SE	SE	ESE	E	ESE	ESE	ESE	E	E	E	E	ESE	111	ESE			
Jun 4	ESE	E	E	E	E	E	E	E	ESE	ESE	ESE	SE	SSE	W	W	WNW	WNW	WNW	WNW	W	WNW	WNW	NW	NW	302	WNW			
Jun 5	NNW	N	N	S	S	NNE	NW	NW	WNW	NNW	WNW	NW	N	NNE	NE	NE	SSW	S	WSW	SW	SW	SW	S	274	W				
Jun 6	SSE	S	SSE	S	SSW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SW	SW	S	SSW	SSW	SSE	226	SSW				
Jun 7	SSE	S	S	S	S	S	SW	WSW	WSW	WSW	W	K	K	K	K	K	K	W	NW	NW	NNW	NNE	N	NE	235	SW			
Jun 8	NE	NE	NE	ENE	NE	NE	ENE	ENE	ENE	ENE	K	E	ENE	ENE	E	E	E	E	E	ENE	ENE	ENE	E	ESE	76	ENE			
Jun 9	ESE	E	E	E	E	E	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	E	E	E	E	E	E	ESE	ESE	E	E	103	ESE			
Jun 10	E	E	E	ESE	ESE	ESE	SE	SE	S	S	SSW	SSW	SSW	SW	SW	WSW	W	W	W	WSW	W	S	S	SSW	182	S			
Jun 11	S	S	SSW	SW	SW	SW	SW	WSW	WSW	WNW	W	W	W	WSW	WSW	WSW	WSW	W	WSW	WSW	W	SSW	NNW	N	249	WSW			
Jun 12	NE	ENE	NE	ENE	ENE	E	E	ESE	ESE	SE	SSE	S	SW	SW	SW	WSW	WSW	S	S	SSW	SSE	SE	SE	129	SE				
Jun 13	SSE	SSE	SE	NE	NNE	NNE	NE	NNE	N	NW	NNW	NNW	NNW	NNW	N	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	NNW	347	NNW			
Jun 14	NNW	NNW	NNW	NNW	NNW	NW	NW	WNW	WNW	NW	NNW	NNW	NNW	NNW	NNW	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	338	NNW			
Jun 15	NNW	NW	WNW	NW	NW	NW	NW	NW	WNW	WNW	NNW	NNW	NNW	WSW	WSW	W	W	WSW	SW	S	SSE	SSE	SSE	278	W				
Jun 16	SSE	SE	SE	SSE	S	S	SSW	S	S	S	S	S	SSW	SW	SW	SW	SW	WSW	WSW	W	WSW	WSW	WSW	WSW	219	SW			
Jun 17	SW	SSW	SSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW	W	SE	SE	248	WSW			
Jun 18	ENE	SE	E	NE	NNE	NNE	N	N	N	N	NNW	NNW	NNW	N	E	E	E	NNE	NNE	NNE	NNW	N	N	N	10	N			
Jun 19	NNE	NNE	NNE	NNE	NNE	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	NNW	NNW	355	N		
Jun 20	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	N	N	N	NNE	NNE	N	NE	SSE	341	NNW			
Jun 21	SSE	SE	SE	SW	NW	SSW	SSW	SSW	WSW	W	WNW	K	WNW	K	WNW	W	WSW	WSW	SW	SSW	S	S	S	249	WSW				
Jun 22	S	S	S	SSE	SSE	SSE	SSE	SSE	SSE	S	S	S	S	S	SSW	SSW	S	S	SSW	SSW	NNW	NE	E	WSW	NW	SW	SE	181	S
Jun 23	ESE	SSW	SSW	SSE	SSE	S	S	S	S	S	K	S	SW	WSW	SW	SW	SW	SW	SSW	SSE	ESE	SE	ESE	ESE	190	S			
Jun 24	SE	SE	SE	SSE	SSE	SSE	S	S	SSW	SSW	K	K	SSW	SW	SW	W	NW	K	K	K	N	NW	NW	W	219	SW			
Jun 25	NNW	NNW	NNW	N	NNW	N	N	NE	N	NNW	K	N	N	NNW	WNW	W	WSW	NNE	WSW	WSW	ESE	E	ESE	SE	352	N			
Jun 26	SE	SE	SSE	SSE	SSE	SSE	S	SW	SW	SW	W	NW	NW	WNW	W	W	W	W	W	W	S	E	E	ESE	SSE	206	SSW		
Jun 27	SSE	SSE	S	E	E	WNW	NE	NNE	NNE	NNE	NW	WNW	W	W	WNW	W	W	W	W	W	W	W	W	W	283	W			
Jun 28	SSE	ENE	ESE	S	SSE	S	SSW	S	SW	SW	SSW	SW	SW	SW	SW	WSW	WSW	SW	NE	ESE	SE	E	SSE	203	SSW				
Jun 29	SSE	SSE	SSE	SSW	SW	SW	SSW	SSW	SSW	SW	SW	K	SW	WSW	SW	SW	SW	SW	SSW	SW	SSW	SSW	SSW	S	215	SSW			
Jun 30	SSE	S	S	S	S	S	S	SW	WSW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW	W	SE	SSE	228	SW			
<b>C</b>	Monthly Calibration																<b>S</b>	Daily Zero-Span Check				<b>Q</b>	Quality Assurance						
<b>K</b>	Collection Error																<b>ND</b>	No Data (Machine Not in Service)				<b>Y</b>	Routine Maintenance						
<b>X</b>	Invalid Data (Machine Malfunction/Recovery)																<b>NRM</b>	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)				<b>P</b>	Power Failure						

Daily Average is shown "\*" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
Monthly Average is shown "\*" if minimum data completeness criteria of 75% of days per month is not met.

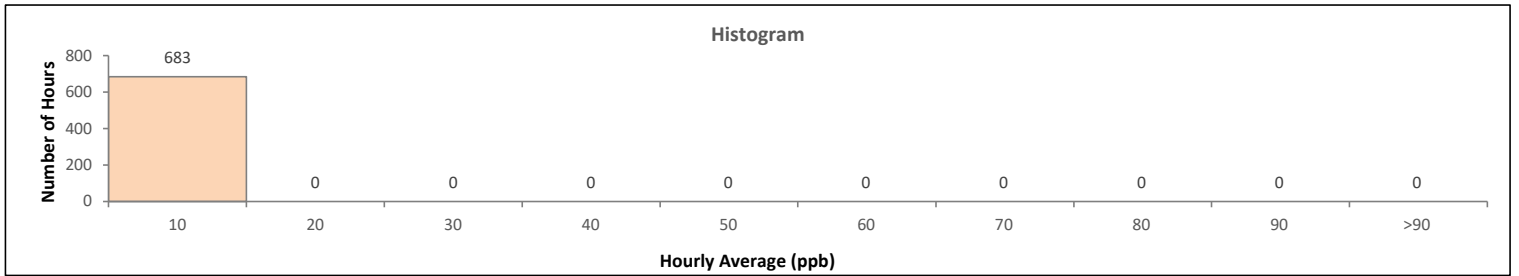
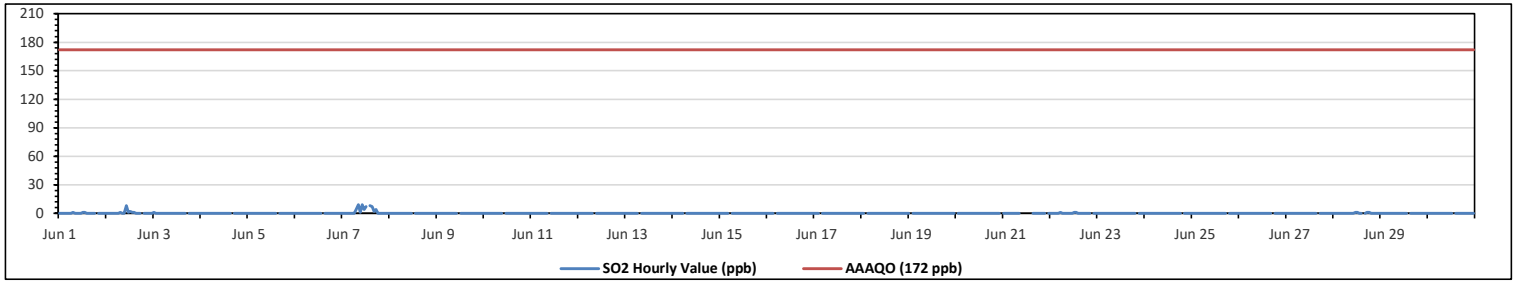




PRC STATION

**Peace River Area Monitoring Program**  
**Peace River Complex (PRC) Station - June 2023**  
**Summary of Hourly Averages**  
**SULPHUR DIOXIDE (SO<sub>2</sub>) in ppb**

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb																												
Number of 1-Hour Exceedances: 0							Number of 24-Hour Exceedances: 0							30-Day Exceedence: 0														
Maximum Hourly Value: 9 ppb on Jun 7 at hr 8														Hours in Service: 720														
Maximum Daily Value: 2.4 ppb on Jun 7														Hours of Data: 683														
Minimum Hourly Value: 0 ppb on Jun 1 at hr 0														Hours of Missing Data: 0														
Minimum Daily Value: 0.0 ppb on Jun 4														Hours of Calibration: 37														
Monthly Average: 0.1 ppb														Operational Uptime: 100.0														
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
Jun 1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	S	0	0	0	0	0	0	1	0.1
Jun 2	0	0	0	0	0	0	0	1	0	0	8	1	2	1	1	0	0	0	S	0	0	0	0	0	0	0	8	0.6
Jun 3	1	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	1	0.0
Jun 4	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
Jun 5	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
Jun 6	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
Jun 7	0	0	0	0	0	0	0	4	9	1	9	4	7	S	8	7	2	4	0	0	0	0	0	0	0	0	9	2.4
Jun 8	0	0	0	0	0	0	0	0	0	0	0	0	S	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jun 9	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
Jun 10	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
Jun 11	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
Jun 12	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
Jun 13	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
Jun 14	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
Jun 15	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
Jun 16	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
Jun 17	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
Jun 18	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
Jun 19	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
Jun 20	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	0.0
Jun 21	0	0	0	0	0	0	0	0	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	NA
Jun 22	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0.1
Jun 23	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
Jun 24	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
Jun 25	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
Jun 26	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
Jun 27	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
Jun 28	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	S	1	1	0	0	0	0	0	0	0	0	1	0.2
Jun 29	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
Jun 30	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
Diurnal Maximum	1	0	0	0	0	1	0	4	9	1	9	4	7	1	8	7	2	4	1	0	0	0	0	0	0			
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.0	0.6	0.2	0.4	0.1	0.3	0.3	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
C	Monthly Calibration							S	Daily Zero-Span Check							Q	Quality Assurance											
X	Collection Error							ND	No Data (Machine Not in Service)							Y	Routine Maintenance											
K	Invalid Data (Equipment Malfunction /Recovery)							NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)							P	Power Failure											
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																												
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																												

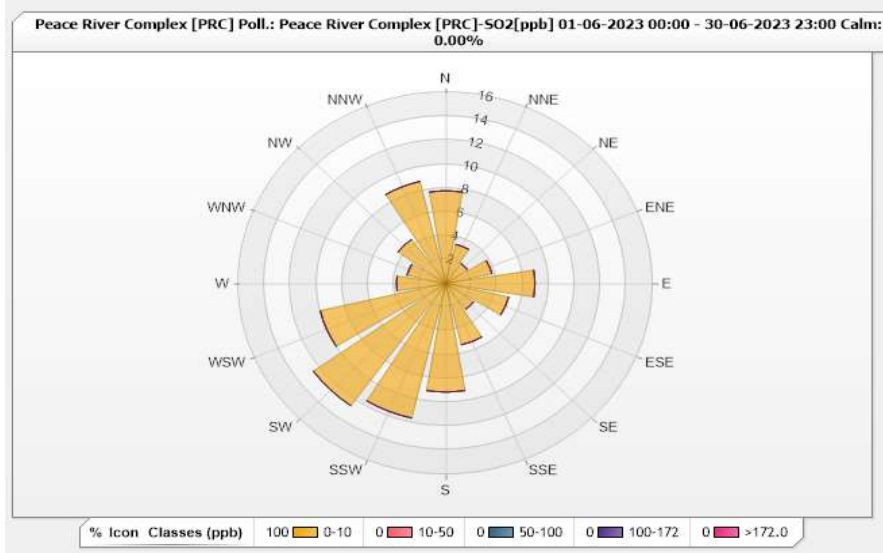


Station: Peace River Complex [PRC] Poll.: Peace River Complex [PRC]-SO2[ppb] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 94.86%      Calm Avg: 0.00 [ppm]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	7.76	0	0	0	0	7.76
NNE	3.37	0	0	0	0	3.37
NE	2.05	0	0	0	0	2.05
ENE	3.66	0	0	0	0	3.66
E	6.88	0	0	0	0	6.88
ESE	4.98	0	0	0	0	4.98
SE	2.64	0	0	0	0	2.64
SSE	5.27	0	0	0	0	5.27
S	9.08	0	0	0	0	9.08
SSW	11.57	0	0	0	0	11.57
SW	12.59	0	0	0	0	12.59
WSW	9.96	0	0	0	0	9.96
W	3.81	0	0	0	0	3.81
WNW	3.07	0	0	0	0	3.07
NW	4.54	0	0	0	0	4.54
NNW	8.78	0	0	0	0	8.78
Summary	100	0	0	0	0	100



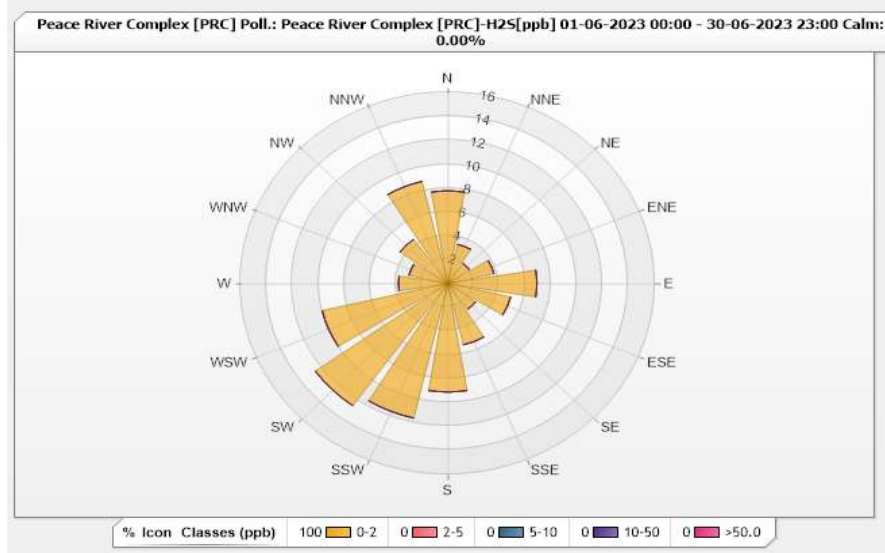


Station: Peace River Complex [PRC] Poll.: Peace River Complex [PRC]-H2S[ppb] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 94.86%      Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	7.76	0	0	0	0	7.76
NNE	3.37	0	0	0	0	3.37
NE	2.05	0	0	0	0	2.05
ENE	3.66	0	0	0	0	3.66
E	6.88	0	0	0	0	6.88
ESE	4.98	0	0	0	0	4.98
SE	2.64	0	0	0	0	2.64
SSE	5.27	0	0	0	0	5.27
S	9.08	0	0	0	0	9.08
SSW	11.57	0	0	0	0	11.57
SW	12.59	0	0	0	0	12.59
WSW	9.96	0	0	0	0	9.96
W	3.81	0	0	0	0	3.81
WNW	3.07	0	0	0	0	3.07
NW	4.54	0	0	0	0	4.54
NNW	8.78	0	0	0	0	8.78
Summary	100	0	0	0	0	100





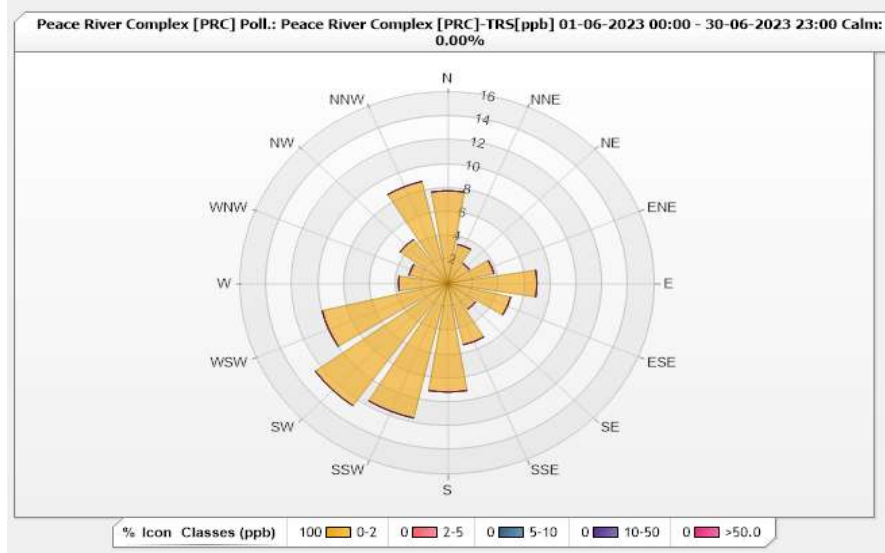


Station: Peace River Complex [PRC] Poll.: Peace River Complex [PRC]-TRS[ppb] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 94.86%      Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	7.76	0	0	0	0	7.76
NNE	3.37	0	0	0	0	3.37
NE	2.05	0	0	0	0	2.05
ENE	3.66	0	0	0	0	3.66
E	6.88	0	0	0	0	6.88
ESE	4.98	0	0	0	0	4.98
SE	2.64	0	0	0	0	2.64
SSE	5.27	0	0	0	0	5.27
S	9.08	0	0	0	0	9.08
SSW	11.57	0	0	0	0	11.57
SW	12.59	0	0	0	0	12.59
WSW	9.96	0	0	0	0	9.96
W	3.81	0	0	0	0	3.81
WNW	3.07	0	0	0	0	3.07
NW	4.54	0	0	0	0	4.54
NNW	8.78	0	0	0	0	8.78
Summary	100	0	0	0	0	100



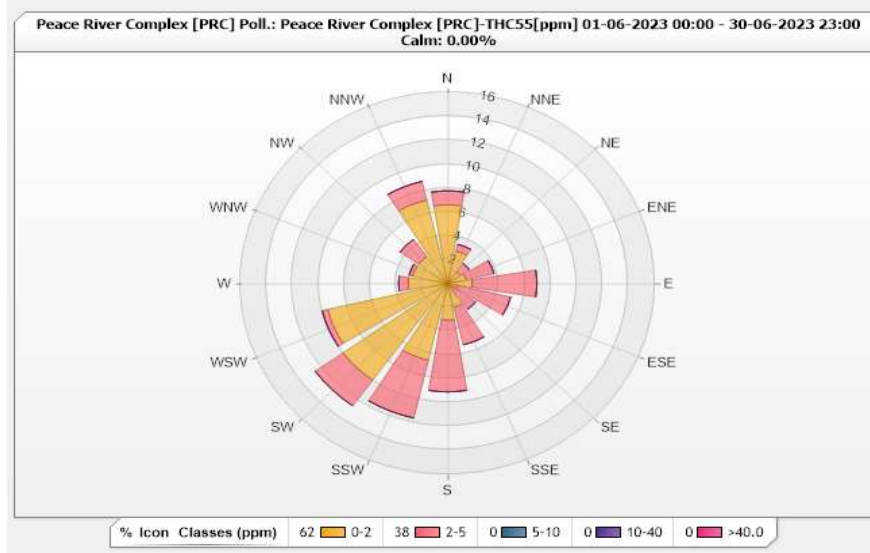


Station: Peace River Complex [PRC] Poll.: Peace River Complex [PRC]-THC55[ppm] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 94.86%      Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	6.59	1.17	0	0	0	7.76
NNE	2.78	0.59	0	0	0	3.37
NE	1.17	0.88	0	0	0	2.05
ENE	1.46	2.2	0	0	0	3.66
E	1.9	4.98	0	0	0	6.88
ESE	0.73	4.25	0	0	0	4.98
SE	0.44	2.2	0	0	0	2.64
SSE	2.05	3.22	0	0	0	5.27
S	3.07	6	0	0	0	9.07
SSW	6.59	4.98	0	0	0	11.57
SW	9.96	2.64	0	0	0	12.6
WSW	9.52	0.44	0	0	0	9.96
W	3.07	0.73	0	0	0	3.8
WNW	2.78	0.29	0	0	0	3.07
NW	2.78	1.76	0	0	0	4.54
NNW	7.17	1.61	0	0	0	8.78
Summary	62.06	37.94	0	0	0	100



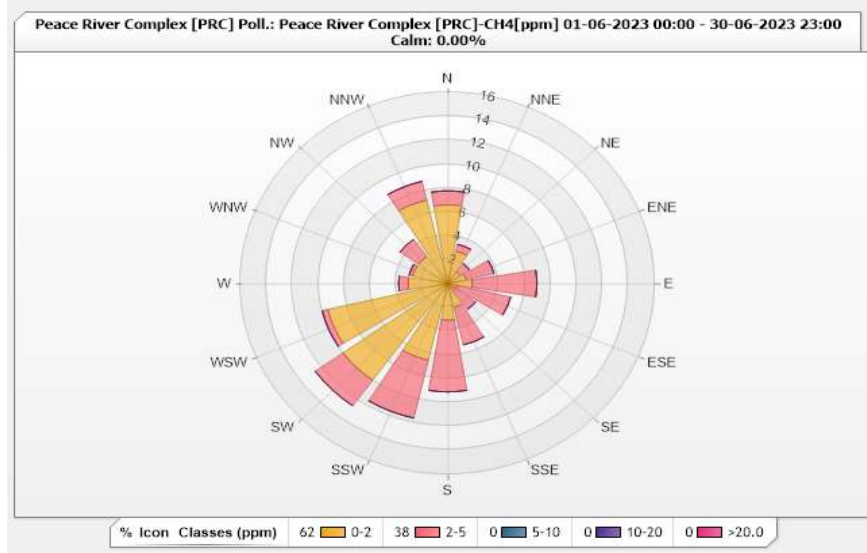


Station: Peace River Complex [PRC] Poll.: Peace River Complex [PRC]-CH4[ppm] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 94.86%      Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	6.59	1.17	0	0	0	7.76
NNE	2.78	0.59	0	0	0	3.37
NE	1.17	0.88	0	0	0	2.05
ENE	1.46	2.2	0	0	0	3.66
E	1.9	4.98	0	0	0	6.88
ESE	0.73	4.25	0	0	0	4.98
SE	0.44	2.2	0	0	0	2.64
SSE	2.05	3.22	0	0	0	5.27
S	3.07	6	0	0	0	9.07
SSW	6.59	4.98	0	0	0	11.57
SW	9.96	2.64	0	0	0	12.6
WSW	9.52	0.44	0	0	0	9.96
W	3.07	0.73	0	0	0	3.8
WNW	2.78	0.29	0	0	0	3.07
NW	2.78	1.76	0	0	0	4.54
NNW	7.17	1.61	0	0	0	8.78
Summary	62.06	37.94	0	0	0	100



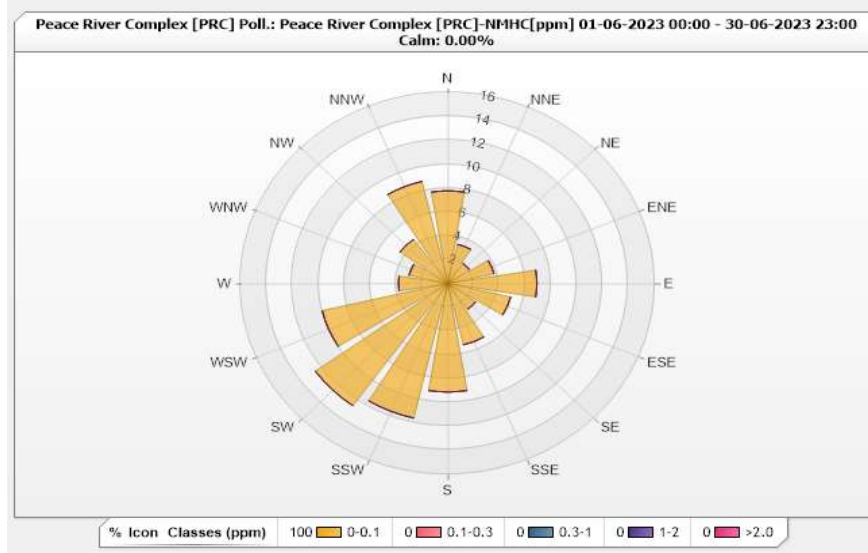


Station: Peace River Complex [PRC] Poll.: Peace River Complex [PRC]-NMHC[ppm] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 94.86%      Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	7.76	0	0	0	0	7.76
NNE	3.37	0	0	0	0	3.37
NE	2.05	0	0	0	0	2.05
ENE	3.66	0	0	0	0	3.66
E	6.88	0	0	0	0	6.88
ESE	4.98	0	0	0	0	4.98
SE	2.64	0	0	0	0	2.64
SSE	5.27	0	0	0	0	5.27
S	9.08	0	0	0	0	9.08
SSW	11.57	0	0	0	0	11.57
SW	12.59	0	0	0	0	12.59
WSW	9.96	0	0	0	0	9.96
W	3.81	0	0	0	0	3.81
WNW	3.07	0	0	0	0	3.07
NW	4.54	0	0	0	0	4.54
NNW	8.78	0	0	0	0	8.78
Summary	100	0	0	0	0	100





**Peace River Area Monitoring Program**  
**Peace River Complex (PRC) Station - June 2023**  
**Summary of Hourly Averages**  
**RELATIVE HUMIDITY (RH) in %**

Maximum Hourly Value:		100 % on Jun 11 at hr 2									Hours in Service:		720				
Maximum Daily Value:		91.5 % on Jun 25									Hours of Data:		720				
Minimum Hourly Value:		18 % on Jun 2 at hr 16									Hours of Missing Data:		0				
Minimum Daily Value:		40.8 % on Jun 7									Hours of Calibration:		0				
Monthly Average:		59.8 %									Operational Uptime:		100.0				

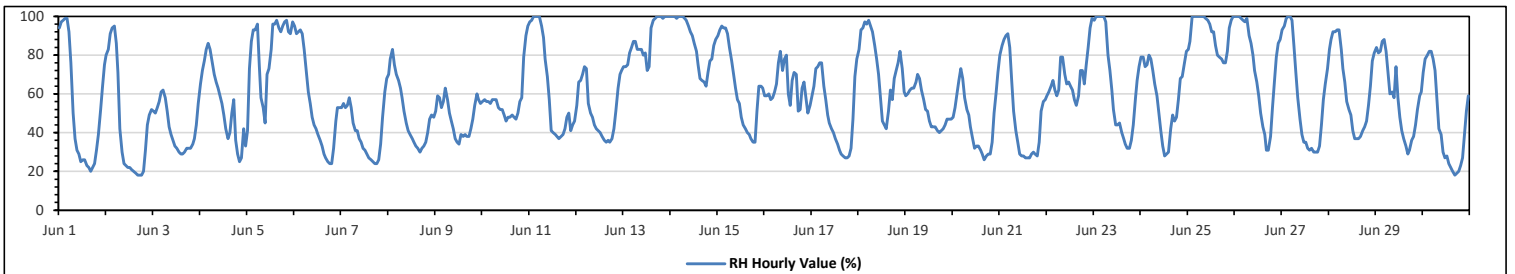
  

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Jun 1	94	97	98	99	99	92	76	50	37	31	29	25	26	26	23	22	20	22	24	31	39	52	64	75	20	99	52.1	
Jun 2	80	83	91	94	95	86	71	42	30	24	23	22	22	21	20	19	<b>18</b>	<b>18</b>	<b>18</b>	20	31	44	49	52	<b>18</b>	95	44.7	
Jun 3	51	50	53	56	61	62	58	51	43	39	36	33	32	30	29	29	30	32	32	32	34	37	44	55	29	62	42.0	
Jun 4	65	72	77	83	86	83	77	70	66	63	59	55	49	42	37	40	50	57	36	29	25	27	42	33	25	86	55.1	
Jun 5	41	73	87	93	93	96	74	58	53	45	70	73	83	96	96	98	94	92	95	97	98	92	91	97	41	98	82.7	
Jun 6	95	91	92	93	91	83	71	61	55	48	44	42	39	36	33	29	27	25	24	24	32	46	53	53	24	95	53.6	
Jun 7	53	55	53	54	58	53	45	41	41	37	35	32	31	29	27	26	25	24	24	26	34	48	61	68	24	68	<b>40.8</b>	
Jun 8	70	78	83	75	70	67	63	58	51	45	41	39	37	35	33	32	30	32	33	35	40	47	49	48	30	83	49.6	
Jun 9	51	59	58	53	56	63	57	50	46	42	37	35	34	39	38	39	38	38	42	47	54	60	57	55	34	63	47.8	
Jun 10	56	57	56	56	55	57	57	57	53	52	52	49	46	48	48	49	48	47	50	56	58	79	90	95	46	95	57.1	
Jun 11	97	98	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	95	89	78	69	57	41	40	39	38	37	38	39	42	48	50	41	44	46	37	<b>100</b>	63.6	
Jun 12	54	66	67	70	74	73	55	50	48	44	42	41	40	38	36	35	36	35	37	42	51	63	70	72	35	74	51.6	
Jun 13	74	74	75	81	84	87	87	83	83	83	80	81	72	74	94	98	99	<b>100</b>	<b>100</b>	<b>100</b>	99	<b>100</b>	<b>100</b>	<b>100</b>	72	<b>100</b>	87.8	
Jun 14	<b>100</b>	<b>100</b>	<b>100</b>	99	<b>100</b>	<b>100</b>	<b>100</b>	99	98	95	92	90	86	82	75	68	67	66	64	71	77	78	85	88	64	<b>100</b>	86.7	
Jun 15	90	93	95	94	94	91	84	77	70	63	57	55	48	44	42	40	39	37	35	35	51	64	64	63	35	95	63.5	
Jun 16	59	59	60	57	58	61	65	76	82	72	78	80	60	54	67	71	70	51	52	63	66	58	50	54	50	82	63.5	
Jun 17	59	64	73	74	76	76	64	57	49	45	42	40	37	34	31	29	28	27	27	28	32	47	69	78	27	78	49.4	
Jun 18	83	93	94	97	96	98	95	92	85	78	70	58	46	44	42	51	62	57	68	72	76	82	73	61	42	98	73.9	
Jun 19	59	60	62	63	63	66	70	68	62	57	52	51	46	43	43	41	40	41	42	44	47	47	47	47	40	70	52.4	
Jun 20	48	53	60	67	73	68	58	52	49	43	37	32	33	33	31	29	26	28	29	29	35	50	60	71	26	73	45.6	
Jun 21	80	85	88	90	91	84	67	51	41	35	29	28	28	27	27	29	30	29	28	35	51	56	57	27	91	49.7		
Jun 22	59	61	64	67	62	59	62	79	79	70	65	66	64	62	57	54	59	72	72	65	75	84	94	99	54	99	68.8	
Jun 23	98	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	97	80	72	62	52	44	44	45	40	37	34	32	32	36	44	58	67	74	32	<b>100</b>	64.5	
Jun 24	79	79	74	75	80	78	72	65	59	50	41	33	28	29	30	42	49	46	48	57	68	69	75	82	28	82	58.7	
Jun 25	83	87	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	99	98	96	92	92	85	80	79	78	76	76	82	94	98	<b>100</b>	76	<b>100</b>	91.5	
Jun 26	<b>100</b>	<b>100</b>	<b>100</b>	99	98	97	99	90	86	80	72	66	59	50	43	39	31	31	38	53	66	79	86	88	31	<b>100</b>	72.9	
Jun 27	93	95	99	<b>100</b>	<b>100</b>	<b>100</b>	98	85	71	58	47	39	35	35	32	31	32	30	30	33	44	57	65	73	30	<b>100</b>	58.8	
Jun 28	83	88	92	92	93	93	83	73	66	56	52	49	41	37	37	37	38	41	43	46	54	64	77	81	37	93	63.2	
Jun 29	84	81	82	87	88	82	71	60	61	58	74	58	48	41	37	33	29	31	36	38	44	52	59	61	29	88	58.1	
Jun 30	71	78	80	82	82	78	72	57	42	39	30	27	28	24	22	20	<b>18</b>	<b>18</b>	19	20	23	27	39	51	59	<b>18</b>	82	45.3
Diurnal Maximum	100	100	100	100	100	100	100	100	100	99	98	96	92	96	96	98	99	100	100	100	99	100	100	100	100	100	100	100
Diurnal Average	73.6	77.6	80.4	81.7	82.5	81.0	74.3	66.9	61.4	55.7	52.8	49.2	45.8	44.2	43.1	42.8	42.7	42.6	43.2	46.1	52.2	60.3	66.3	69.5				

<b>C</b> Monthly Calibration	<b>S</b> Daily Zero-Span Check	<b>Q</b> Quality Assurance
<b>K</b> Collection Error	<b>ND</b> No Data (Machine Not in Service)	<b>Y</b> Routine Maintenance
<b>X</b> InValid Data (Equipment Malfunction /Recovery)	<b>NRM</b> UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b> Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.



**Peace River Area Monitoring Program**  
**Peace River Complex (PRC) Station - June 2023**  
**Summary of Hourly Averages**  
**BAROMETRIC PRESSURE (BP) in millibar**

Maximum Hourly Value:	948	mb	on Jun 5 at hr 0	Hours in Service:	720
Maximum Daily Value:	946	mb	on Jun 2	Hours of Data:	720
Minimum Hourly Value:	932	mb	on Jun 16 at hr 12	Hours of Missing Data:	0
Minimum Daily Value:	934	mb	on Jun 17	Hours of Calibration:	0
Monthly Average:	941	mb		Operational Uptime:	100.0

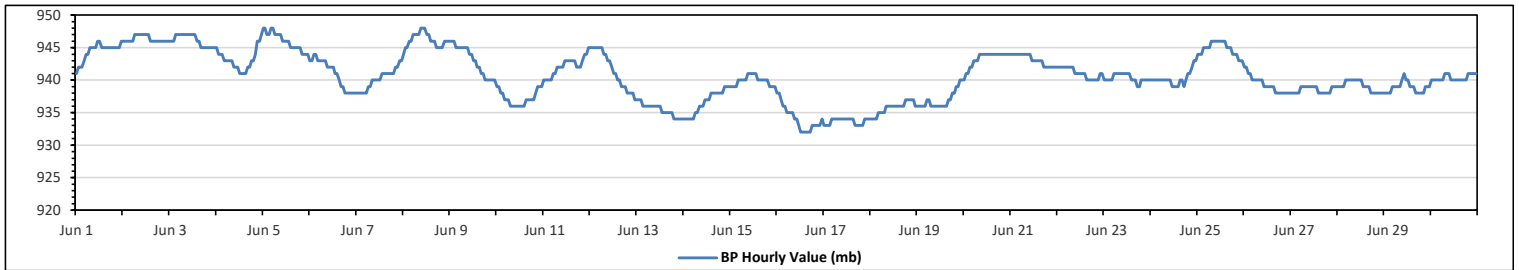
  

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
Jun 1	941	942	942	942	943	944	944	945	945	945	945	946	946	945	945	945	945	945	945	945	945	945	945	946		
Jun 2	946	946	946	946	946	946	947	947	947	947	947	947	947	947	946	946	946	946	946	946	946	946	946	946		
Jun 3	946	946	946	947	947	947	947	947	947	947	947	947	947	947	946	946	945	945	945	945	945	945	945	945		
Jun 4	945	944	944	944	943	943	943	943	943	942	942	942	941	941	941	941	942	942	943	943	944	946	946	947		
Jun 5	948	948	947	947	948	948	947	947	947	947	946	946	946	946	945	945	945	945	945	944	944	944	944	944		
Jun 6	943	943	944	944	943	943	943	943	943	942	942	942	941	941	940	939	939	938	938	938	938	938	938	938		
Jun 7	938	938	938	938	938	939	939	939	940	940	940	940	941	941	941	941	941	941	941	941	942	942	943	943		
Jun 8	944	945	945	946	946	947	947	947	947	948	948	948	947	947	946	946	946	945	945	945	945	946	946	946		
Jun 9	946	946	946	945	945	945	945	945	945	945	944	944	943	943	942	942	941	941	940	940	940	940	940	940		
Jun 10	939	939	938	938	937	937	937	936	936	936	936	936	936	936	936	937	937	937	937	937	938	939	939	939		
Jun 11	940	940	940	940	940	941	941	942	942	942	942	943	943	943	943	943	943	942	942	942	943	944	944	945		
Jun 12	945	945	945	945	945	945	944	944	944	943	943	942	941	941	940	940	939	939	939	938	938	938	938	937		
Jun 13	937	937	937	936	936	936	936	936	936	936	936	936	936	935	935	935	935	935	935	934	934	934	934	934		
Jun 14	934	934	934	934	934	934	935	935	935	936	936	937	937	937	938	938	938	938	938	938	938	939	939	939		
Jun 15	939	939	939	939	940	940	940	940	940	941	941	941	941	941	940	940	940	940	940	940	939	939	939	939		
Jun 16	938	938	937	936	936	935	935	935	935	934	934	933	932	932	932	932	932	932	933	933	933	933	933	934		
Jun 17	933	933	933	933	934	934	934	934	934	934	934	934	934	934	934	933	933	933	933	933	934	934	934	934		
Jun 18	934	934	934	934	935	935	935	935	936	936	936	936	936	936	936	936	936	936	937	937	937	937	937	936		
Jun 19	936	936	936	936	937	937	937	936	936	936	936	936	936	936	936	937	937	937	938	938	939	939	940	940		
Jun 20	940	941	941	942	942	943	943	943	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	943		
Jun 21	944	944	944	944	944	944	944	944	944	944	944	943	943	943	943	943	943	942	942	942	942	942	942	942		
Jun 22	942	942	942	942	942	942	942	942	941	941	941	941	941	941	940	940	940	940	940	940	940	941	941	941		
Jun 23	940	940	940	940	940	941	941	941	941	941	941	941	941	941	940	940	940	939	939	940	940	940	940	940		
Jun 24	940	940	940	940	940	940	940	940	940	940	939	939	939	939	939	940	940	939	940	941	941	942	943	943		
Jun 25	944	944	944	945	945	945	945	946	946	946	946	946	946	946	945	945	945	944	944	944	944	943	943	943		
Jun 26	942	942	941	941	940	940	940	940	940	939	939	939	939	939	939	939	938	938	938	938	938	938	938	938		
Jun 27	938	938	938	938	938	939	939	939	939	939	939	939	939	939	938	938	938	938	938	938	938	939	939	939		
Jun 28	939	939	939	939	940	940	940	940	940	940	940	940	940	940	939	939	939	938	938	938	938	938	938	938		
Jun 29	938	938	938	938	939	939	939	939	939	940	941	940	940	940	939	939	939	938	938	938	938	939	939	939		
Jun 30	940	940	940	940	940	940	941	941	941	940	940	940	940	940	940	940	940	941	941	941	941	941	941	940		
Diurnal Maximum	948	948	947	947	948	948	947	947	947	948	948	948	947	947	946	946	946	946	946	946	946	946	946	947		
Diurnal Average	941	941	941	941	941	941	941	941	941	941	941	941	941	941	940	940	940	940	940	940	940	940	941	941		

<b>C</b>	Monthly Calibration	<b>S</b>	Daily Zero-Span Check	<b>Q</b>	Quality Assurance
<b>K</b>	Collection Error	<b>ND</b>	No Data (Machine Not in Service)	<b>Y</b>	Routine Maintenance
<b>X</b>	InValid Data (Equipment Malfunction /Recovery)	<b>NRM</b>	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b>	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.







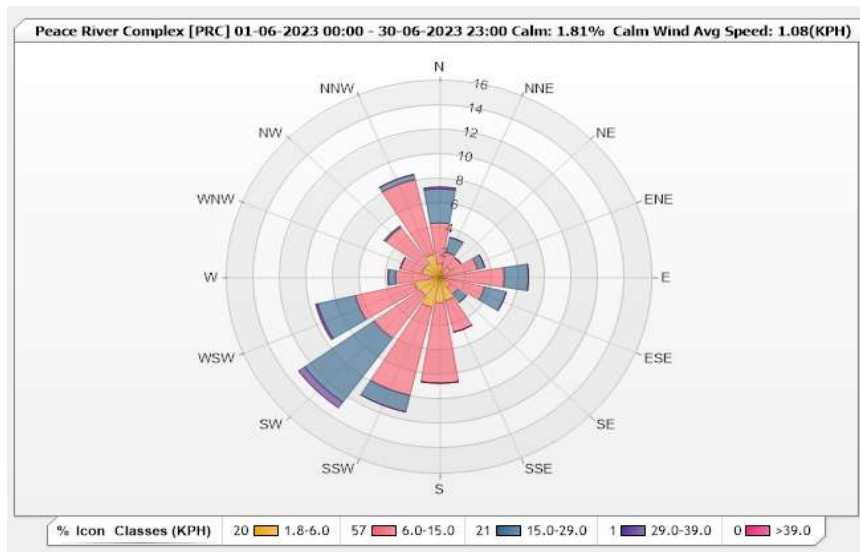


Station: Peace River Complex [PRC] Monitor: WDS [KPH] Monthly: 06-2023

Type: Wind Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm (WS<1.8kph): 1.81% Valid Data: 100.00%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	1.11	3.33	2.78	0.14	0	7.36
NNE	0.42	1.67	1.25	0	0	3.34
NE	0.97	0.97	0	0	0	1.94
ENE	0.28	2.64	0.56	0	0	3.48
E	0.14	4.72	1.81	0	0	6.67
ESE	0.28	3.19	1.67	0	0	5.14
SE	0.97	0.69	0.83	0	0	2.49
SSE	1.94	2.64	0	0	0	4.58
S	2.08	6.53	0	0	0	8.61
SSW	2.5	7.36	1.39	0	0	11.25
SW	1.81	4.31	6.39	0.56	0	13.07
WSW	1.94	4.58	2.92	0.14	0	9.58
W	0.56	2.78	0.56	0	0	3.9
WNW	1.39	1.67	0	0	0	3.06
NW	1.39	3.61	0.14	0	0	5.14
NNW	1.94	6.25	0.42	0	0	8.61
Summary	19.72	56.94	20.72	0.84	0	98.22



**Peace River Area Monitoring Program**  
**Peace River Complex (PRC) Station - June 2023**  
**Summary of Hourly Averages**

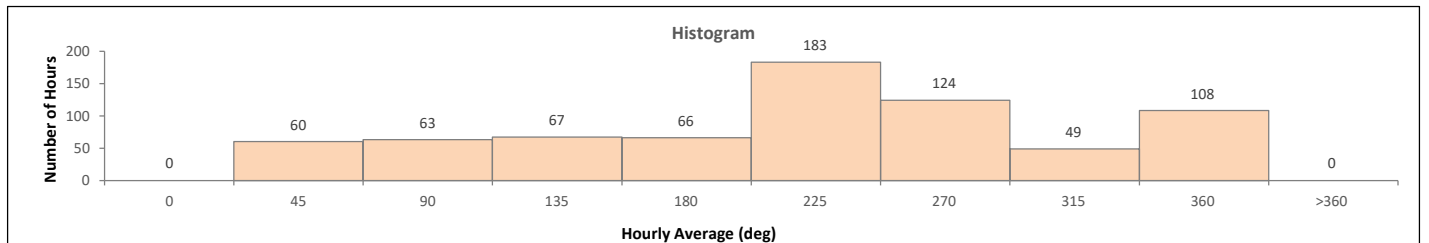
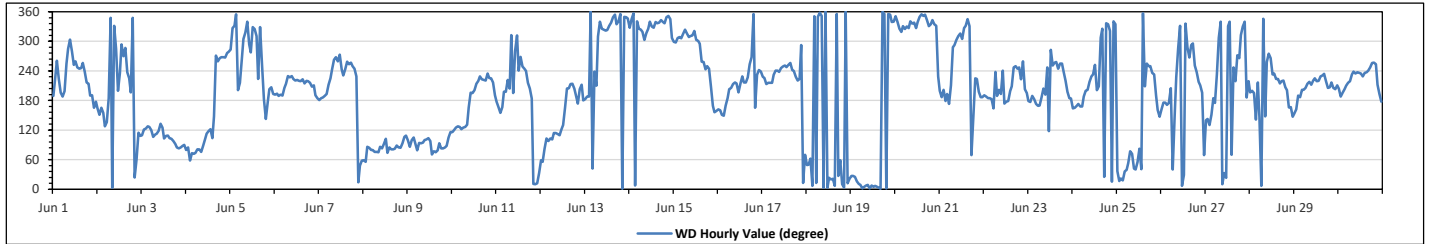
**WIND DIRECTION (VWD) in sector**

Monthly Average:	226 (SW) degree	Hours in Service:	720
		Hours of Data:	720
		Hours of Missing Data:	0
		Hours of Calibration:	0
		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Average			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant	
Jun 1	S	SW	W	SW	SSW	S	SSW	WSW	WNW	WNW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SSW	S	S	SSE	S	229	SW	
Jun 2	SSE	SSE	SSE	SSE	SE	SE	S	NNW	N	NNW	WNW	SSW	SW	WNW	W	WNW	SW	SW	SSW	NNW	NNE	ENE	ESE	ESE	163	SSE	
Jun 3	ESE	ESE	ESE	SE	SE	ESE	ESE	ESE	ESE	SE	SE	ESE	ESE	ESE	ESE	E	E	E	E	E	E	E	E	E	108	ESE	
Jun 4	E	E	ENE	ENE	ENE	ENE	E	E	ENE	E	E	ESE	ESE	ESE	SE	W	WSW	W	W	W	W	W	W	W	86	E	
Jun 5	WNW	NW	NNW	N	SSW	SW	W	WNW	NW	NNW	WNW	W	NNW	NW	NW	SW	NNW	WSW	S	SE	S	SSW	SSW	S	255	WSW	
Jun 6	S	SSW	S	S	S	SSW	SSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SSW	SW	SW	SSW	SSW	S	S	214	SSW	
Jun 7	S	S	S	S	S	SSW	SW	WSW	W	W	WSW	W	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	NNE	NE	ENE	235	SW
Jun 8	ENE	NE	E	E	E	ENE	ENE	ENE	E	E	E	E	ENE	E	E	E	E	E	E	E	E	E	E	E	84	E	
Jun 9	E	E	E	ESE	E	ENE	E	E	E	E	ESE	E	ENE	ENE	ENE	ENE	E	E	E	E	E	E	E	E	91	E	
Jun 10	ESE	ESE	SE	SE	SE	ESE	SE	SE	SE	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	181	S	
Jun 11	S	SSE	SSE	SSE	SSW	SSW	SW	SSW	NW	SSW	W	NW	WSW	W	WSW	WSW	WSW	SW	SSW	S	NNE	N	NNE	NNE	243	WSW	
Jun 12	ENE	NE	E	ESE	E	ESE	E	ESE	ESE	ESE	ESE	ESE	SE	SSE	SSW	SSW	SSW	SSW	SSW	S	S	SSW	SSW	S	154	SSE	
Jun 13	S	S	S	N	NE	WSW	SSW	NW	NNW	NW	NW	NW	NW	NNW	NNW	NNW	N	NNW	NNW	N	N	N	NNW	NNW	335	NNW	
Jun 14	NNW	NNW	N	N	NNW	NW	NW	NW	WNW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	336	NNW	
Jun 15	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	WNW	WNW	WSW	WSW	WSW	WSW	WSW	WSW	SSW	SSE	SSE	282	W	
Jun 16	SSE	SSE	SSE	SSE	SSE	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	SSE	SSW	214	SSW	
Jun 17	SW	SW	SSW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	WNW	NNE	ENE	238	SW
Jun 18	NE	NE	ENE	N	N	NNE	N	N	N	N	N	N	NNE	NNE	NNE	N	N	NNE	ENE	N	N	NNE	NNE	N	14	NNE	
Jun 19	NNE	NNE	NNE	NNE	NNE	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	NNW	NNW	7	N
Jun 20	N	NNW	NW	NW	NNW	NW	NNW	NW	NNW	NNW	NNW	NNW	N	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	338	NNW	
Jun 21	SSW	S	SSW	S	S	SSW	WNW	WNW	WNW	NW	WNW	NW	NNW	NNW	NNW	NNW	NNW	NNW	ENE	SE	SW	SW	SSW	S	253	WSW	
Jun 22	S	S	S	S	S	SSE	SW	S	SSW	S	WSW	S	S	S	SSW	SSW	WSW	WSW	WSW	WSW	WSW	WSW	SSW	SSW	205	SSW	
Jun 23	S	S	S	S	S	SSE	SSE	S	SSW	S	WSW	ESE	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SSW	SSW	S	216	SW	
Jun 24	SSE	SSE	SSE	S	SSE	SSE	S	SSW	SSW	SW	SW	SSW	SSW	SSW	NW	NW	NNE	NNW	NNW	NW	NNE	NNW	NNW	238	SW		
Jun 25	NE	NNE	NNE	NNE	NE	NE	NE	ENE	ENE	NE	NE	NE	E	NE	N	SSW	WSW	WSW	WSW	WSW	SW	S	SSE	SE	43	NE	
Jun 26	SSE	S	S	S	S	SSW	NE	SE	SW	WNW	NNW	N	NNE	NNW	WNW	W	WNW	WNW	WSW	SW	SW	SSW	SSW	ENE	229	SW	
Jun 27	SE	SE	SE	SSE	S	S	SW	NW	NNW	N	NNE	NNE	NNW	NNW	ENE	WSW	SW	W	W	NW	NNW	NNW	S	SW	291	WNW	
Jun 28	SSW	SSW	SSW	SE	SW	SE	N	NNW	SE	WSW	W	W	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSE	SSE	SE	214	SSW	
Jun 29	SSE	SSE	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	213	SSW	
Jun 30	SSW	S	SSW	SSW	SSW	SSW	SW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	SSW	S	S	232	SW	

<b>C</b> Monthly Calibration	<b>S</b> Daily Zero-Span Check	<b>Q</b> Quality Assurance
<b>K</b> Collection Error	<b>ND</b> No Data (Machine Not in Service)	<b>Y</b> Routine Maintenance
<b>X</b> Invalid Data (Machine Malfunction/Recovery)	<b>NRM</b> UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b> Power Failure

Daily Average is shown "\*" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "\*" if minimum data completeness criteria of 75% of days per month is not met.





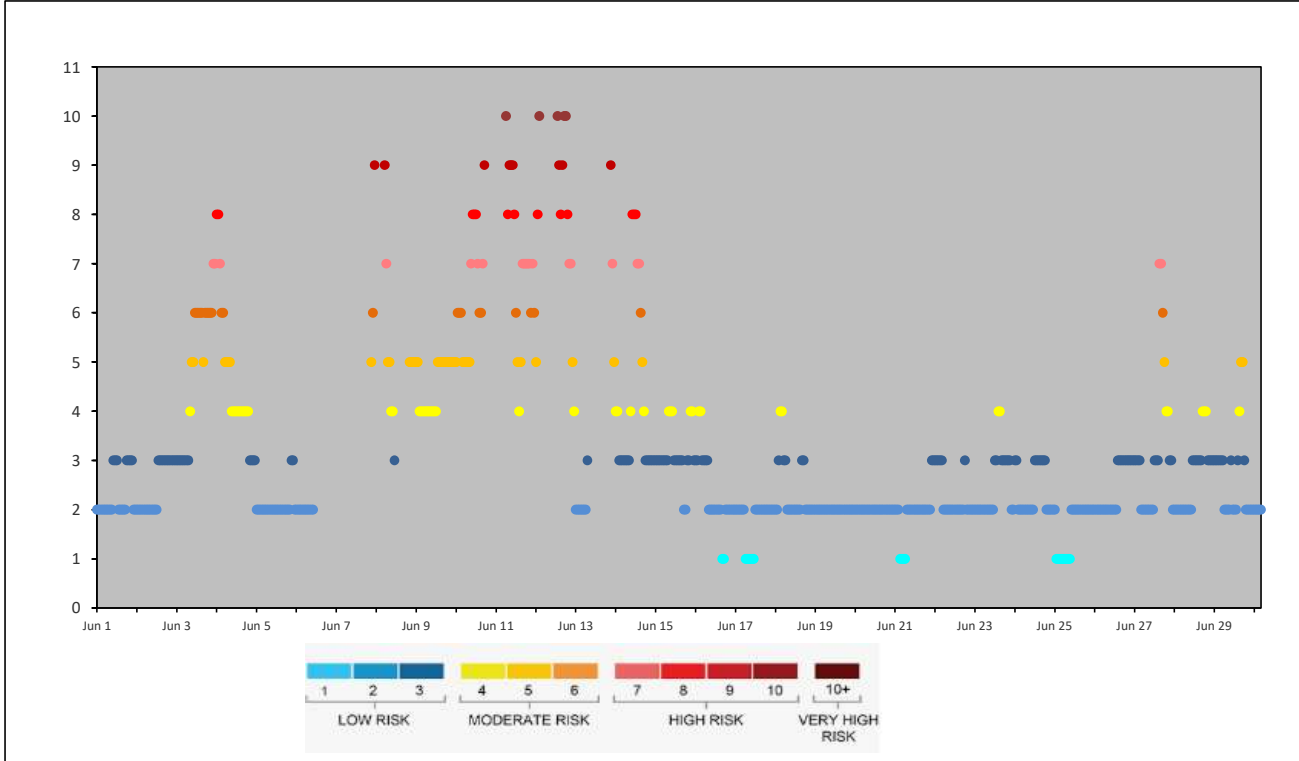


## AQHI GRIMSHAW STATION

**LAKELAND INDUSTRY & COMMUNITY ASSOCIATION**  
**AQHI - Grimshaw Station - June 2023**

**AIR QUALITY HEALTH INDEX**

Day	Hourly Period Starting at (MST)																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Jun 1	2	2	2	2	2	2	2	2	2	2	3	3	3	2	2	2	2	2	3	3	3	3	2	2
Jun 2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3
Jun 3	3	3	3	3	3	3	3	3	4	5	5	6	6	6	6	6	5	6	6	6	6	6	7	7
Jun 4	8	8	7	6	6	5	5	5	5	4	4	4	4	4	4	4	4	4	4	4	3	3	3	3
Jun 5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2
Jun 6	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Jun 7																						5	6	9
Jun 8	10+	10+	10+	10+	10+	9	7	5	5	4	4	3									5	5	5	5
Jun 9	5	5	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5
Jun 10	5	6	6	6	5	5	5	5	5	7	8	8	8	7	6	6	7	9	10+	10+	10+	10+	10+	10+
Jun 11	10+	10+	10+	10+	10+	10+	10+	8	9	9	9	8	6	5	4	5	7	7	7	7	7	6	7	6
Jun 12	5	8	10	10+	10+	10+	10+	10+	10+	10+	10+	10+	10+	10	9	8	9	10	10	8	7	7	5	4
Jun 13	2	2	2	2	2	2	2	3	10+	10+	10+	10+	10+	10+	10+	10+	10+	10+	10+	10+	10+	9	7	5
Jun 14	4	4	3	3	3	3	3	3	3	4	8	8	8	7	7	6	5	4	3	3	3	3	3	3
Jun 15	3	3	3	3	3	3	3	3	4	4	4	3	3	3	3	3	3	2	2	3	3	4	4	3
Jun 16	3	3	4	4	3	3	3	3	2	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2
Jun 17	2	2	2	2	2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2
Jun 18	2	2	3	4	4	3	3	2	2	2	2	2	2	2	2	2	3	3	2	2	2	2	2	2
Jun 19	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Jun 20	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Jun 21	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3
Jun 22	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2
Jun 23	2	2	2	2	2	2	2	2	2	2	2	2	3	3	4	4	3	3	3	3	3	3	2	2
Jun 24	3	3	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	2	2	2	2	2	2
Jun 25	2	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Jun 26	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3
Jun 27	3	3	3	3	2	2	2	2	2	2	2	2	3	3	3	7	7	6	5	4	4	3	3	2
Jun 28	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	4	4	4	3	3	3	3	3
Jun 29	3	3	3	3	3	2	2	2	2	2	3	2	2	2	3	4	5	5	3	2	2	2	2	2
Jun 30	2	2	2	2	2	2	1	1	1	2	2	2	2	2	2	2	3	3	3	3	3	2	2	2



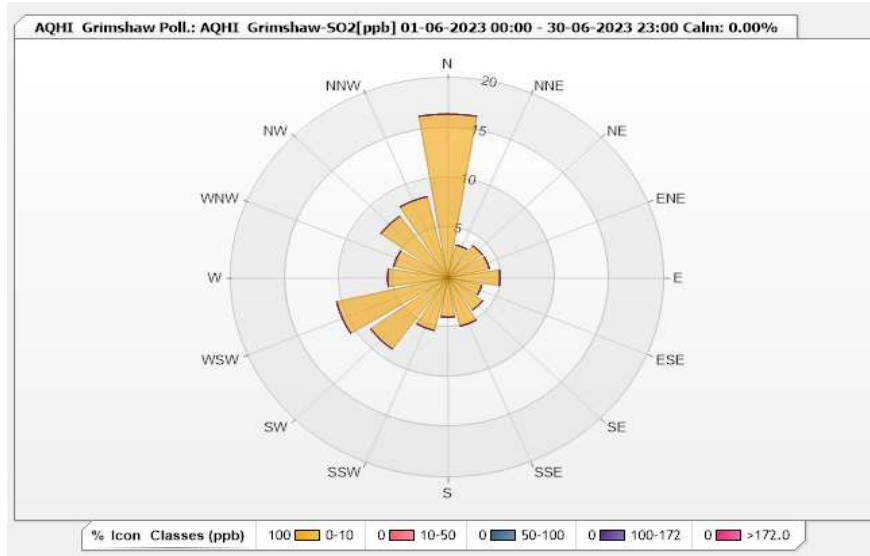


Station: AQHI Grimshaw Poll.: AQHI Grimshaw-SO2[ppb] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 94.86%      Calm Avg: 0.00 [ppm]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	16.4	0	0	0	0	16.4
NNE	3.37	0	0	0	0	3.37
NE	3.95	0	0	0	0	3.95
ENE	3.95	0	0	0	0	3.95
E	4.83	0	0	0	0	4.83
ESE	3.22	0	0	0	0	3.22
SE	3.95	0	0	0	0	3.95
SSE	4.98	0	0	0	0	4.98
S	3.95	0	0	0	0	3.95
SSW	5.42	0	0	0	0	5.42
SW	8.78	0	0	0	0	8.78
WSW	10.54	0	0	0	0	10.54
W	5.56	0	0	0	0	5.56
WNW	5.12	0	0	0	0	5.12
NW	7.61	0	0	0	0	7.61
NNW	8.35	0	0	0	0	8.35
Summary	100	0	0	0	0	100



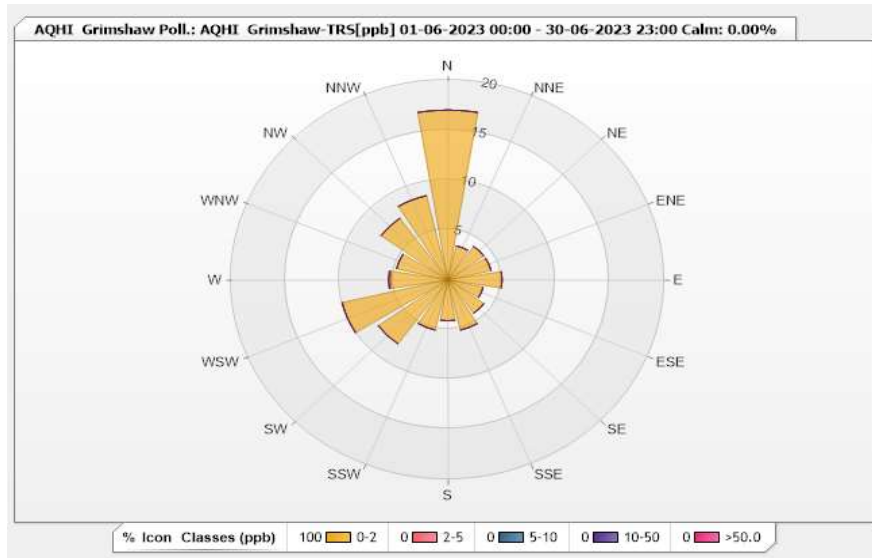


Station: AQHI Grimshaw Poll.: AQHI Grimshaw-TRS[ppb] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 91.53%      Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	17	0	0	0	0	17
NNE	3.49	0	0	0	0	3.49
NE	4.1	0	0	0	0	4.1
ENE	4.1	0	0	0	0	4.1
E	5.01	0	0	0	0	5.01
ESE	3.34	0	0	0	0	3.34
SE	4.1	0	0	0	0	4.1
SSE	5.16	0	0	0	0	5.16
S	4.1	0	0	0	0	4.1
SSW	5.16	0	0	0	0	5.16
SW	7.89	0	0	0	0	7.89
WSW	10.02	0	0	0	0	10.02
W	5.31	0.15	0	0	0	5.46
WNW	4.86	0	0	0	0	4.86
NW	7.59	0	0	0	0	7.59
NNW	8.65	0	0	0	0	8.65
Summary	100	0.15	0	0	0	100



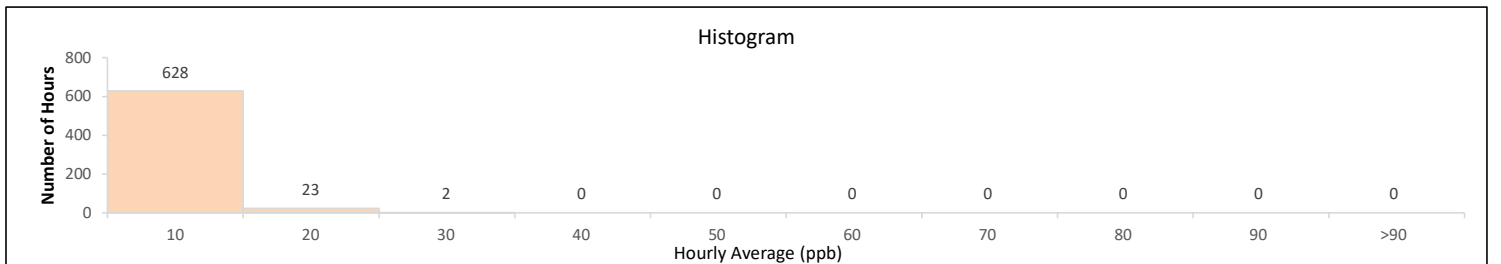
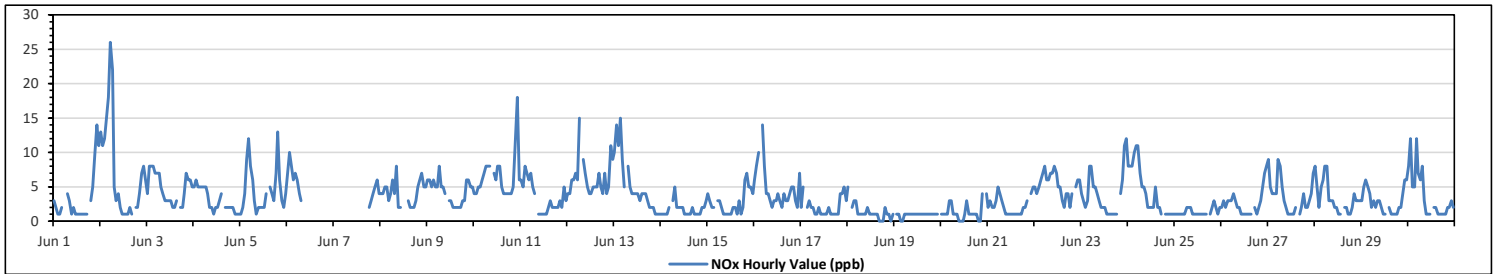
**Peace River Area Monitoring Program**  
**AQHI - Grimshaw Station - June 2023**  
**Summary of Hourly Averages**  
**OXIDES OF NITROGEN (NOx) in ppb**

Maximum Hourly Value:	26	ppb	on Jun 2 at hr 5	Hours in Service:	720
Maximum Daily Value:	7.3	ppb	on Jun 2	Hours of Data:	653
Minimum Hourly Value:	0	ppb	on Jun 18 at hr 16	Hours of Missing Data:	25
Minimum Daily Value:	0.9	ppb	on Jun 19	Hours of Calibration:	42
Monthly Average:	3.6	ppb		Operational Uptime:	96.5

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Jun 1	3	2	1	1	2	NRM	NRM	4	3	1	2	1	1	1	1	1	1	1	S	3	5	10	14	11	1	14	3.3	
Jun 2	13	11	12	15	18	26	22	5	3	4	2	1	1	1	1	2	1	S	2	2	4	7	8	6	1	26	7.3	
Jun 3	4	8	8	8	7	7	7	5	4	3	3	3	2	2	3	4	S	2	2	4	7	6	6	5	2	8	4.7	
Jun 4	5	6	5	5	5	5	4	2	2	1	2	2	3	4	S	2	2	2	2	2	2	1	1	1	1	6	3.0	
Jun 5	1	2	4	9	12	8	6	3	1	2	2	2	2	4	S	5	4	3	7	13	6	3	2	4	1	13	4.6	
Jun 6	7	10	8	6	7	6	4	3	C	C	C	C	C	C	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	3	10	NA	
Jun 7	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	C	C	C	C	C	C	C	C	C	2	3	4	5	6	4	2	6	NA
Jun 8	4	4	5	5	3	4	6	4	8	2	2	S	Y	Y	3	2	2	2	2	3	5	6	7	5	5	2	8	4.1
Jun 9	6	6	5	6	5	5	8	5	5	4	S	3	3	2	2	2	2	2	3	3	6	6	5	5	2	8	4.3	
Jun 10	4	4	5	5	6	7	8	8	8	S	7	6	8	8	5	4	4	4	4	4	4	5	11	18	6	4	18	6.5
Jun 11	6	5	8	7	6	7	5	4	S	1	1	1	1	1	2	3	2	2	2	2	3	2	5	3	1	8	3.4	
Jun 12	4	4	6	6	7	6	15	S	9	7	5	4	4	5	5	5	7	5	4	7	4	5	11	9	4	15	6.3	
Jun 13	10	14	11	15	9	5	S	8	5	4	4	4	4	3	4	4	4	3	2	2	2	1	1	1	1	1	15	5.2
Jun 14	1	1	1	1	2	S	3	5	2	2	2	2	1	1	1	1	2	1	1	1	1	2	2	3	1	5	1.7	
Jun 15	4	3	2	2	S	3	3	2	1	1	1	1	1	2	2	1	3	1	2	6	7	5	5	4	1	7	2.7	
Jun 16	6	8	10	S	14	8	4	4	3	2	3	4	3	2	4	3	3	4	5	5	3	2	7	2	14	4.8		
Jun 17	2	5	S	2	3	2	2	1	1	2	1	1	1	1	2	1	1	1	1	1	4	4	5	3	1	5	2.0	
Jun 18	5	S	2	3	3	1	1	1	1	1	2	1	1	1	1	1	0	0	0	2	1	1	0	1	0	5	1.3	
Jun 19	S	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0.9	
Jun 20	1	1	1	1	3	3	1	1	1	0	0	0	1	3	1	1	1	1	1	0	0	4	S	4	0	4	1.3	
Jun 21	2	3	2	2	3	5	4	3	2	1	1	1	1	1	1	1	1	1	2	2	3	S	4	5	1	5	2.2	
Jun 22	5	4	5	6	7	8	6	6	7	8	7	5	5	3	2	4	4	4	2	4	S	5	6	6	2	8	5.3	
Jun 23	4	3	2	3	8	8	5	5	4	3	2	2	2	1	1	1	1	1	S	4	6	11	12	1	12	3.9		
Jun 24	8	8	8	10	11	11	7	5	5	4	2	2	2	2	5	2	2	1	S	1	1	1	1	1	1	1	11	4.3
Jun 25	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	S	1	2	3	2	1	2	1	3	1.3	
Jun 26	2	3	2	3	3	3	4	3	2	2	1	1	1	1	1	1	1	S	2	1	2	3	5	7	8	1	8	2.7
Jun 27	9	5	4	4	4	9	8	5	3	2	1	1	1	1	1	S	1	2	4	2	2	3	4	7	1	9	3.7	
Jun 28	8	5	2	5	6	8	8	3	3	3	2	2	1	1	S	2	2	1	1	2	4	3	3	3	1	8	3.4	
Jun 29	3	5	6	5	4	2	3	2	3	2	1	1	S	2	1	1	1	1	2	2	4	6	6	6	1	6	2.9	
Jun 30	8	12	5	5	12	7	6	8	3	1	1	1	S	2	2	1	1	1	1	2	2	4	3	2	1	12	3.8	
Diurnal Maximum	13	14	12	15	18	26	22	8	9	7	8	7	8	8	5	5	7	5	7	13	7	11	18	12				
Diurnal Average	4.9	5.1	4.7	5.0	6.1	6.1	5.7	3.9	3.4	2.4	2.2	2.0	2.1	2.2	2.0	2.1	1.8	2.1	3.0	3.5	4.1	5.1	4.8					

**C** Monthly Calibration      **S** Daily Zero-Span Check      **Q** Quality Assurance  
**K** Collection Error      **ND** No Data (Machine Not in Service)      **Y** Routine Maintenance  
**X** InValid Data (Equipment Malfunction /Recovery)      **NRM** UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)      **P** Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

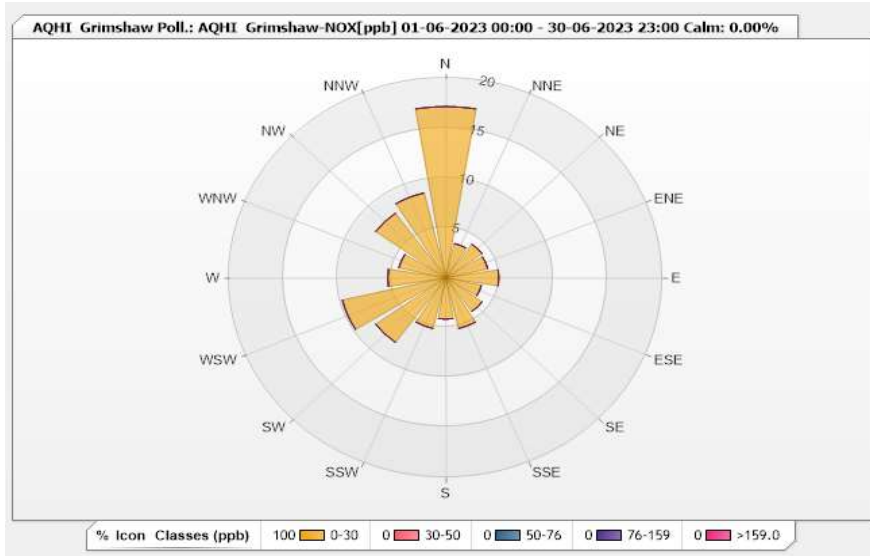


Station: AQHI Grimshaw Poll.: AQHI Grimshaw-NOX[ppb] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 90.69%      Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	17.15	0	0	0	0	17.15
NNE	3.52	0	0	0	0	3.52
NE	4.13	0	0	0	0	4.13
ENE	3.98	0	0	0	0	3.98
E	4.9	0	0	0	0	4.9
ESE	3.37	0	0	0	0	3.37
SE	4.13	0	0	0	0	4.13
SSE	5.21	0	0	0	0	5.21
S	4.13	0	0	0	0	4.13
SSW	5.21	0	0	0	0	5.21
SW	7.96	0	0	0	0	7.96
WSW	9.8	0	0	0	0	9.8
W	5.36	0	0	0	0	5.36
WNW	4.44	0	0	0	0	4.44
NW	7.96	0	0	0	0	7.96
NNW	8.73	0	0	0	0	8.73
Summary	100	0	0	0	0	100





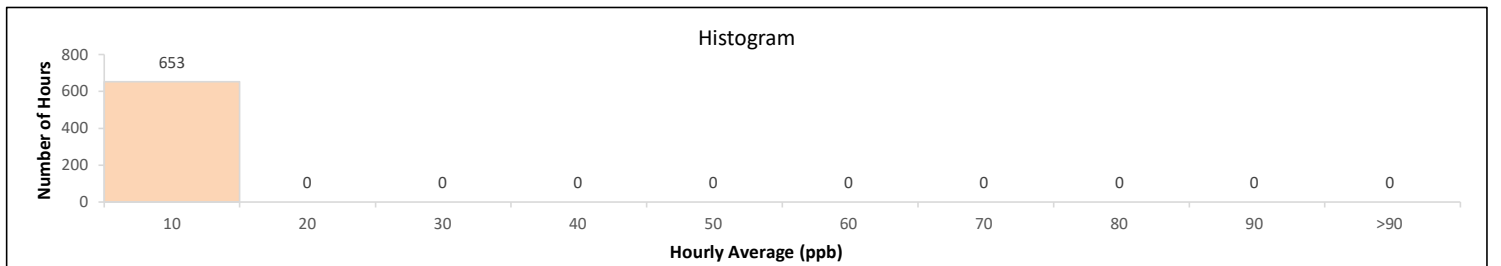
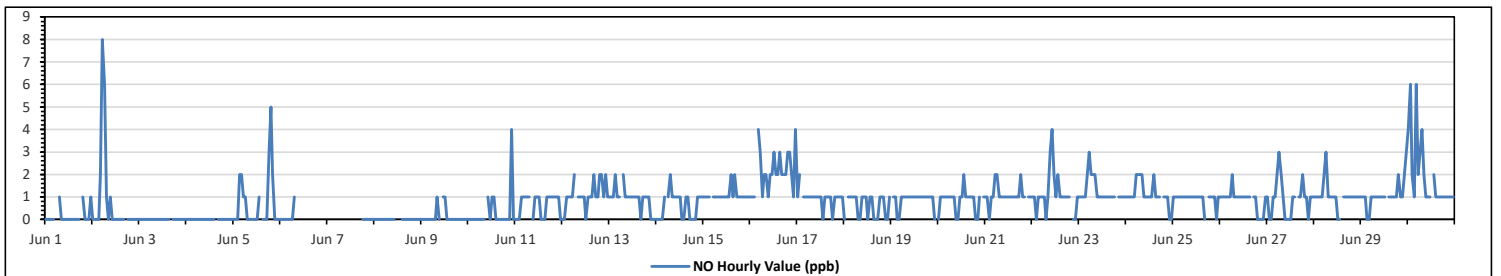
**Peace River Area Monitoring Program**  
**AQHI - Grimshaw Station - June 2023**  
**Summary of Hourly Averages**  
**NITRIC OXIDE (NO) in ppb**

Maximum Hourly Value:	8 ppb	on Jun 2 at hr 5	Hours in Service:	720
Maximum Daily Value:	2.1 ppb	on Jun 16	Hours of Data:	653
Minimum Hourly Value:	0 ppb	on Jun 1 at hr 0	Hours of Missing Data:	25
Minimum Daily Value:	0.0 ppb	on Jun 3	Hours of Calibration:	42
Monthly Average:	0.8 ppb		Operational Uptime:	96.5

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Jun 1	0	0	0	0	0	NRM	NRM	1	0	0	0	0	0	0	0	0	0	0	S	1	0	0	0	1	0	1	0.1
Jun 2	0	0	0	0	2	8	6	1	0	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.8
Jun 3	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	0.0
Jun 4	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
Jun 5	0	0	0	2	2	1	1	0	0	0	0	0	0	1	S	0	0	0	0	3	5	2	0	0	0	0	0.7
Jun 6	0	0	0	0	0	0	0	1	C	C	C	C	C	C	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NA
Jun 7	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NA
Jun 8	0	0	0	0	0	0	0	0	0	0	0	0	S	Y	Y	0	0	0	0	0	0	0	0	0	0	0.0	
Jun 9	0	0	0	0	0	0	0	0	1	0	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
Jun 10	0	0	0	0	0	0	0	0	0	0	S	1	0	1	1	0	0	0	0	0	0	0	0	0	4	0	0.3
Jun 11	0	0	0	1	1	1	1	1	S	0	1	1	1	0	0	0	1	1	1	1	1	1	1	1	0	0	0.7
Jun 12	0	0	1	1	1	1	2	S	1	1	1	1	1	0	1	1	1	2	1	1	2	2	1	2	1	0	1.1
Jun 13	1	1	1	2	1	S	2	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	0	0	0	0	0.9
Jun 14	0	0	0	0	1	S	1	2	1	1	1	1	1	0	0	1	1	0	0	0	0	0	1	1	1	0	0.6
Jun 15	1	1	1	1	S	1	1	1	1	1	1	1	1	1	2	1	2	1	2	1	1	1	1	1	1	1	1.1
Jun 16	1	1	1	S	4	3	1	2	2	1	2	2	3	2	2	3	2	2	2	3	3	2	1	4	1	4	2.1
Jun 17	1	2	S	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	0	1.0
Jun 18	0	S	1	1	1	1	1	0	0	1	1	1	1	0	1	1	0	0	0	1	1	1	0	0	1	0	0.6
Jun 19	S	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0.9
Jun 20	0	1	1	1	1	1	1	1	1	0	0	1	1	2	1	1	1	1	1	1	0	0	1	S	1	0	0.8
Jun 21	1	1	0	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	S	1	1	0	1.1
Jun 22	1	1	0	1	1	1	1	0	1	3	4	2	1	2	1	1	1	1	1	1	1	1	S	0	0	1	1.1
Jun 23	1	1	1	1	2	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1.3
Jun 24	1	1	1	1	1	2	2	2	2	1	1	1	1	1	2	1	1	1	1	S	1	1	1	1	0	0	1.1
Jun 25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	S	1	1	1	1	1	0	1	0	0.9
Jun 26	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	S	1	1	0	0	0	0	0	1	0	0.9
Jun 27	1	0	0	1	1	2	3	2	1	0	0	0	0	1	S	1	1	1	2	1	1	0	1	1	0	0	0.9
Jun 28	1	1	1	1	1	2	3	1	1	1	1	0	0	S	1	1	1	1	1	1	1	1	1	1	1	0	1.0
Jun 29	1	1	1	0	0	1	1	1	1	1	1	1	1	S	1	1	1	1	1	2	1	1	2	3	0	0	1.1
Jun 30	4	6	2	1	6	2	3	4	2	1	1	1	S	2	1	1	1	1	1	1	1	1	1	1	1	1	2.0
Diurnal Maximum	4	6	2	2	6	8	6	4	2	3	4	2	3	2	2	3	2	2	3	5	3	2	4	4	1	6	
Diurnal Average	0.6	0.8	0.5	0.7	1.1	1.4	1.4	1.0	0.9	0.7	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.9	0.9	0.8	0.5	0.6	0.8	1	6	

**C** Monthly Calibration      **S** Daily Zero-Span Check      **Q** Quality Assurance  
**K** Collection Error      **ND** No Data (Machine Not in Service)      **Y** Routine Maintenance  
**X** InValid Data (Equipment Malfunction /Recovery)      **NRM** UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)      **P** Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

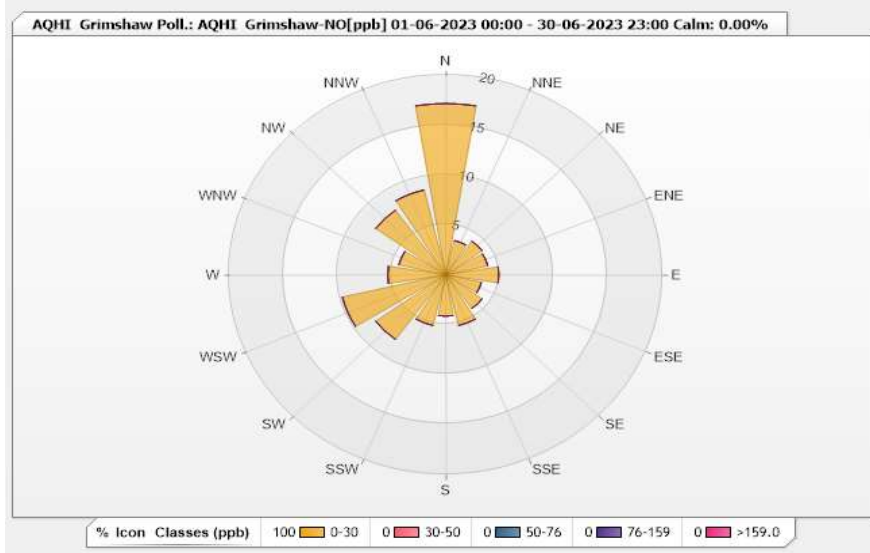


Station: AQHI Grimshaw Poll.: AQHI Grimshaw-NO[ppb] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 90.69%      Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	17.15	0	0	0	0	17.15
NNE	3.52	0	0	0	0	3.52
NE	4.13	0	0	0	0	4.13
ENE	3.98	0	0	0	0	3.98
E	4.9	0	0	0	0	4.9
ESE	3.37	0	0	0	0	3.37
SE	4.13	0	0	0	0	4.13
SSE	5.21	0	0	0	0	5.21
S	4.13	0	0	0	0	4.13
SSW	5.21	0	0	0	0	5.21
SW	7.96	0	0	0	0	7.96
WSW	9.8	0	0	0	0	9.8
W	5.36	0	0	0	0	5.36
WNW	4.44	0	0	0	0	4.44
NW	7.96	0	0	0	0	7.96
NNW	8.73	0	0	0	0	8.73
Summary	100	0	0	0	0	100

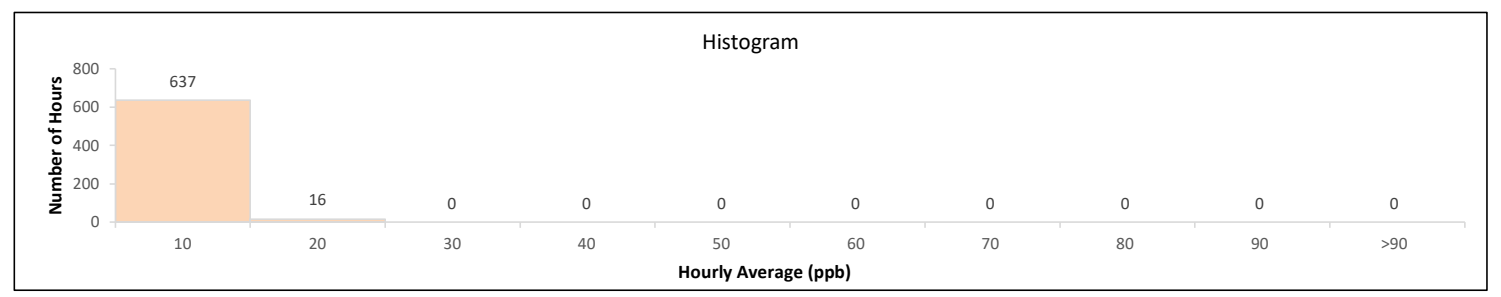
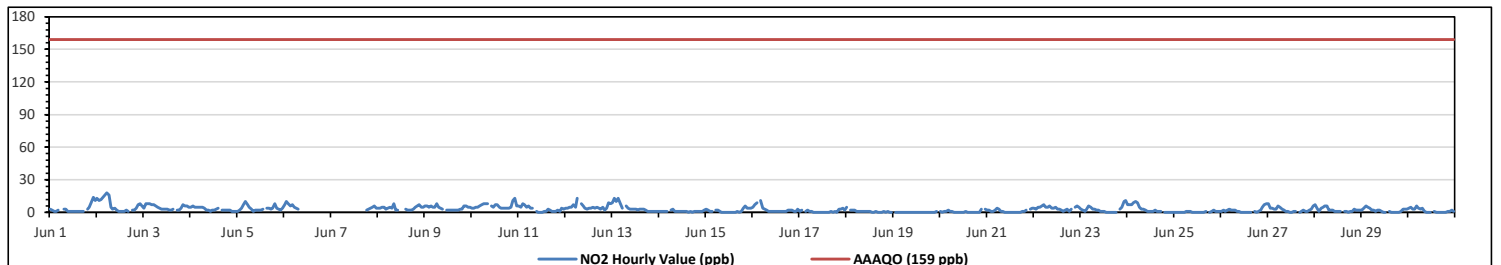


**Peace River Area Monitoring Program**  
**AQHI - Grimshaw Station - June 2023**  
**Summary of Hourly Averages**  
**NITROGEN DIOXIDE (NO<sub>2</sub>) in ppb**

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb																											
Number of 1-Hour Exceedances: 0																											
Maximum Hourly Value: 18 ppb on Jun 2 at hr 5												Hours in Service: 720															
Maximum Daily Value: 6.5 ppb on Jun 2												Hours of Data: 653															
Minimum Hourly Value: 0 ppb on Jun 11 at hr 10												Hours of Missing Data: 25															
Minimum Daily Value: 0.0 ppb on Jun 19												Hours of Calibration: 42															
Monthly Average: 2.8 ppb												Operational Uptime: 96.5															
Day	Hourly Period Starting at (MST)																							Daily	Daily	Daily	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jun 1	3	2	1	1	2	NRM	NRM	3	3	1	1	1	1	1	1	1	1	1	S	3	5	9	14	11	1	14	3.1
Jun 2	13	11	12	14	16	18	16	5	3	4	2	1	1	1	1	2	1	S	2	2	4	7	8	6	1	18	6.5
Jun 3	4	8	8	8	7	7	6	5	4	3	3	3	2	2	3	S	2	2	2	4	7	6	6	5	2	8	4.7
Jun 4	5	6	5	5	5	5	5	4	2	2	1	2	2	3	4	S	2	2	2	2	2	1	1	1	1	6	3.0
Jun 5	1	2	4	7	10	7	5	3	1	2	2	2	2	3	S	4	4	3	4	8	4	3	2	4	1	10	3.8
Jun 6	7	10	8	6	7	5	4	3	C	C	C	C	C	C	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	3	10	NA
Jun 7	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	C	C	C	C	C	C	C	C	2	3	4	5	6	4	2	6	NA
Jun 8	4	4	5	5	3	4	5	4	8	2	2	S	Y	Y	3	2	2	2	3	5	6	7	5	5	2	8	4.1
Jun 9	6	6	5	6	5	5	8	5	4	3	S	S	2	2	2	2	2	3	3	6	6	5	5	2	8	4.1	
Jun 10	4	4	5	5	6	7	8	8	8	S	6	5	7	7	5	4	4	4	4	5	11	13	6	4	13	6.1	
Jun 11	6	5	8	7	5	6	4	4	S	1	0	0	0	0	1	3	2	1	1	2	1	4	3	0	8	2.9	
Jun 12	4	4	5	5	7	5	13	S	8	6	4	3	4	4	5	4	5	4	3	5	2	4	9	8	2	13	5.3
Jun 13	9	13	10	13	8	4	S	6	4	3	3	3	3	2	3	3	3	2	1	1	1	1	1	1	1	13	4.3
Jun 14	1	1	1	1	1	S	2	3	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	2	0	3	1.1
Jun 15	3	2	1	1	S	2	2	1	0	0	0	0	0	0	0	0	1	0	1	4	6	4	4	4	0	6	1.6
Jun 16	5	7	9	S	11	4	3	2	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1	3	1	11	2.7
Jun 17	1	2	S	1	2	1	1	0	0	0	0	0	0	0	0	0	1	0	1	0	3	3	4	2	0	4	1.0
Jun 18	5	S	2	2	2	1	1	1	1	1	1	1	0	0	0	1	0	0	0	1	0	1	0	0	0	5	1.0
Jun 19	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	S	0	1	0.0
Jun 20	1	0	1	1	2	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	S	3	0	3	0.6
Jun 21	2	2	1	1	2	4	3	1	1	0	0	0	0	0	0	0	0	1	1	2	S	3	4	0	4	1.2	
Jun 22	4	3	5	5	6	7	5	5	6	4	4	5	3	3	2	1	2	3	1	3	S	5	6	5	1	7	4.0
Jun 23	3	2	1	3	6	5	3	3	2	2	1	1	1	0	0	0	0	0	0	S	3	5	10	11	0	11	2.7
Jun 24	7	7	7	9	10	9	5	3	3	2	1	1	1	1	2	1	1	1	S	0	0	0	0	0	0	10	3.1
Jun 25	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	S	0	1	2	1	1	1	0	2	0.4
Jun 26	1	2	1	2	3	2	2	1	1	0	0	0	0	0	0	0	S	1	0	1	2	5	7	8	0	8	1.8
Jun 27	8	4	4	3	3	6	5	3	2	1	1	0	0	1	1	S	0	1	2	1	1	2	3	6	0	8	2.5
Jun 28	7	4	1	4	5	6	6	2	2	2	1	1	1	1	1	S	1	1	0	1	3	2	2	2	0	7	2.4
Jun 29	2	4	6	5	4	2	2	1	2	2	1	0	0	0	S	1	0	0	0	0	1	3	3	3	0	6	1.8
Jun 30	4	5	3	3	6	4	3	4	1	0	0	0	0	S	1	0	0	0	0	0	1	1	2	1	0	6	1.7
Diurnal Maximum	13	13	12	14	16	18	16	8	8	6	6	5	7	7	5	4	5	4	4	8	7	11	14	11			
Diurnal Average	4.3	4.3	4.3	4.4	5.1	4.7	4.4	2.9	2.6	1.6	1.3	1.2	1.3	1.4	1.3	1.3	1.3	1.2	1.4	2.0	2.7	3.5	4.4	4.1			

**K** Monthly Calibration      **S** Daily Zero-Span Check      **Q** Quality Assurance  
**C** Collection Error      **ND** No Data (Machine Not in Service)      **Y** Routine Maintenance  
**X** InValid Data (Equipment Malfunction /Recovery)      **NRM** UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)      **P** Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

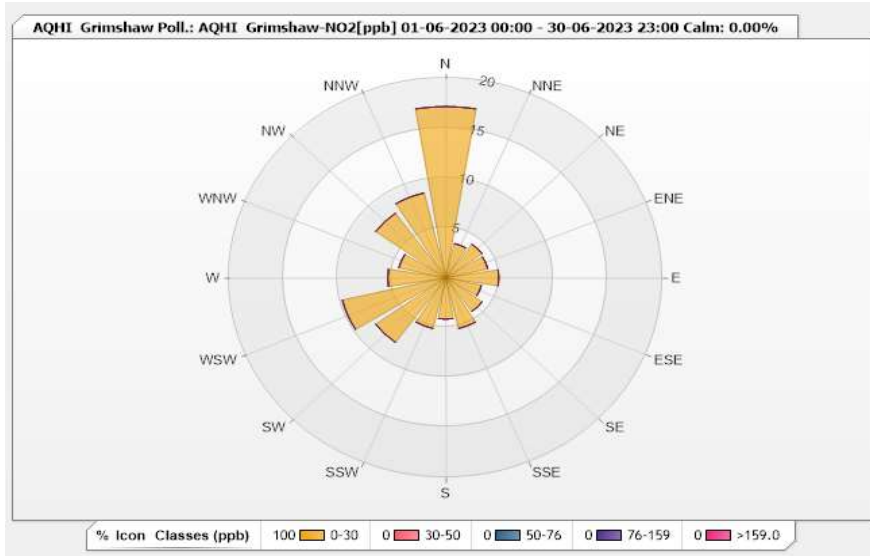


Station: AQHI Grimshaw Poll.: AQHI Grimshaw-NO2[ppb] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 90.69%      Calm Avg: 0.00 [ppm]

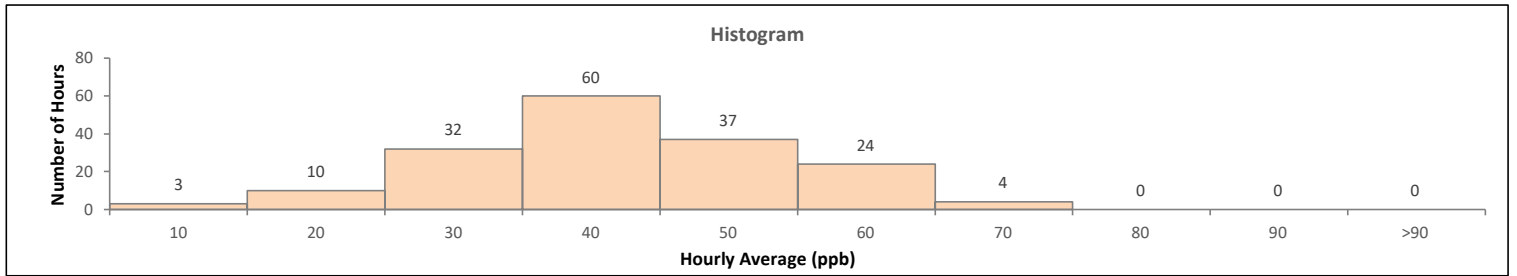
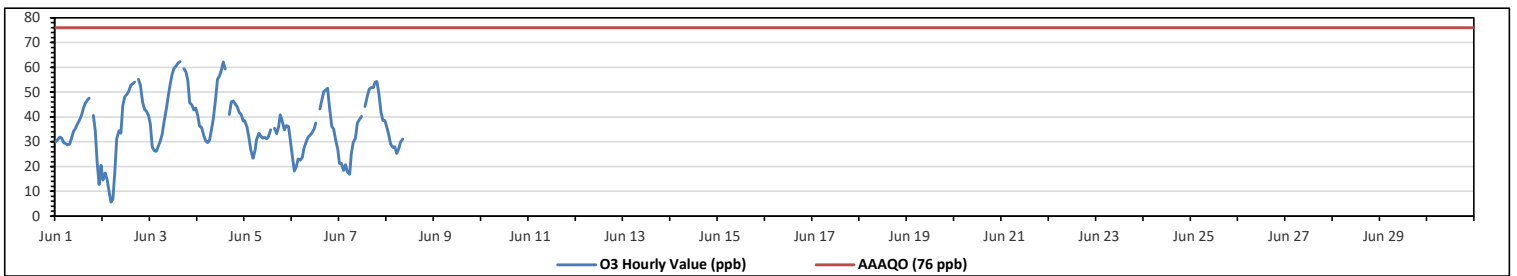
Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	17.15	0	0	0	0	17.15
NNE	3.52	0	0	0	0	3.52
NE	4.13	0	0	0	0	4.13
ENE	3.98	0	0	0	0	3.98
E	4.9	0	0	0	0	4.9
ESE	3.37	0	0	0	0	3.37
SE	4.13	0	0	0	0	4.13
SSE	5.21	0	0	0	0	5.21
S	4.13	0	0	0	0	4.13
SSW	5.21	0	0	0	0	5.21
SW	7.96	0	0	0	0	7.96
WSW	9.8	0	0	0	0	9.8
W	5.36	0	0	0	0	5.36
WNW	4.44	0	0	0	0	4.44
NW	7.96	0	0	0	0	7.96
NNW	8.73	0	0	0	0	8.73
Summary	100	0	0	0	0	100



**Peace River Area Monitoring Program**  
**AQHI - Grimshaw Station - June 2023**  
**Summary of Hourly Averages**  
**OZONE (O<sub>3</sub>) in ppb**

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb																																	
Number of 1-Hour Exceedances: 0																																	
Maximum Hourly Value: 62.3 ppb on Jun 3 at hr 15												Hours in Service: 720																					
Maximum Daily Value: 45.3 ppb on Jun 3												Hours of Data: 170																					
Minimum Hourly Value: 5.7 ppb on Jun 2 at hr 4												Hours of Missing Data: 542																					
Minimum Daily Value: 33.1 ppb on Jun 5												Hours of Calibration: 8																					
Monthly Average: NA ppb												Operational Uptime: 24.7																					
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23						
Jun 1	30.1	30.9	31.8	31.5	29.6	29.2	28.7	29	31.6	34.2	35.3	37.1	38.6	40.6	43.5	45.6	46.7	47.6	S	40.6	34.4	21.6	12.7	20.5	12.7	47.6	33.5						
Jun 2	14.5	17.4	14.8	10	5.7	6.9	17.8	31.2	34.5	33.4	44.7	48.1	49	50.2	52.7	53.4	54.1	S	55.2	52.7	45.9	43.1	42.3	40.8	5.7	55.2	35.6						
Jun 3	37.1	27.9	26.3	26.2	28.3	30.2	33	38	43.3	48.4	53.1	57.1	59.6	60.4	61.7	62.3	S	59.5	58.4	54.9	45.7	44.8	42.8	43.5	26.2	62.3	45.3						
Jun 4	40.6	36.2	35.9	32.6	30.5	29.7	30.6	34.8	39.3	47.4	55.2	56.5	58.8	62.2	59.4	S	41.1	46	46.4	45.3	44.2	41.7	41.1	38.4	29.7	62.2	43.2						
Jun 5	38.5	36	31.8	26.6	23.3	26.4	30.8	33.4	32.4	31.5	31.7	31.2	32	34.8	S	35.4	33.3	36.1	40.9	37.9	34.8	36.5	36.1	30.2	23.3	40.9	33.1						
Jun 6	25	18.2	19.9	23.1	22.5	23.8	27.3	29.9	31.9	32.7	33.5	35.2	37.5	S	43.2	46.8	50.2	51	51.7	43.8	36.2	35.1	30.8	26.8	18.2	51.7	33.7						
Jun 7	21.3	21.3	18.4	20.7	17.8	16.9	25	29.6	31.5	37.5	38.9	40.2	S	44.2	48.3	51.2	51.9	51.9	54	54.3	49.7	41.7	38.6	38.6	16.9	54.3	36.7						
Jun 8	35.8	32.9	29	27.7	28	25.2	27.1	29.9	31	C	NRM	NRM	NRM	NRM	X	X	X	X	X	X	X	X	X	X	25.2	35.8	NA						
Jun 9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Jun 30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-						
Diurnal Maximum	40.6	36.2	35.9	32.6	30.5	30.2	33.0	38.0	43.3	48.4	55.2	57.1	59.6	62.2	61.7	62.3	54.1	59.5	58.4	54.9	49.7	44.8	42.8	43.5									
Diurnal Average	30.4	27.6	26.0	24.8	23.2	23.5	27.5	32.0	34.4	37.9	41.8	43.6	45.9	48.7	51.5	49.1	46.2	48.7	51.1	47.1	41.6	37.8	34.9	34.1									
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance										
X	Collection Error										ND	No Data (Machine Not in Service)										Y	Routine Maintenance					P	Power Failure				
X	Invalid Data (Equipment Malfunction /Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																					

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

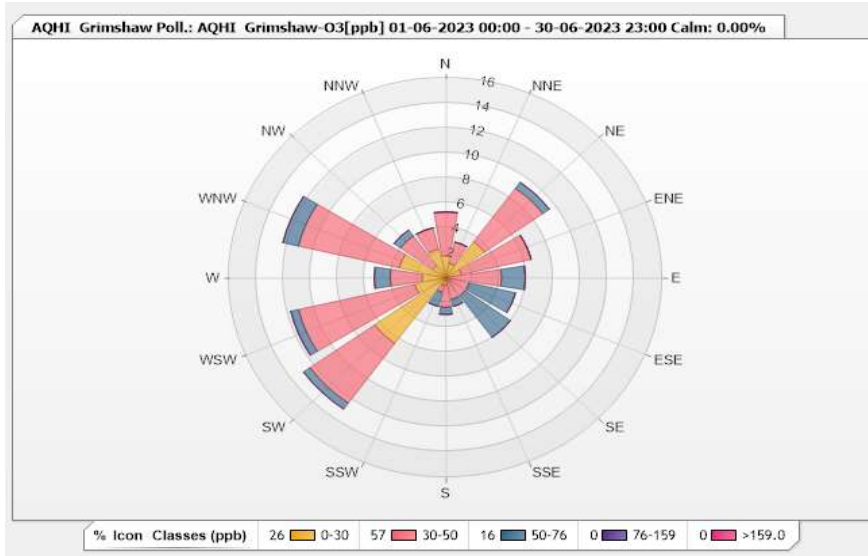


Station: AQHI Grimshaw Poll.: AQHI Grimshaw-O3[ppb] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 23.61%      Calm Avg: 0.00 [ppm]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	1.76	3.53	0	0	0	5.29
NNE	1.18	1.76	0	0	0	2.94
NE	3.53	5.29	0.59	0	0	9.41
ENE	1.18	5.29	0	0	0	6.47
E	0	4.12	1.76	0	0	5.88
ESE	0	1.76	3.53	0	0	5.29
SE	0	1.76	4.12	0	0	5.88
SSE	0	1.76	0.59	0	0	2.35
S	0.59	1.76	0.59	0	0	2.94
SSW	0.59	0.59	1.18	0	0	2.36
SW	6.47	5.88	0.59	0	0	12.94
WSW	2.35	8.82	0.59	0	0	11.76
W	1.76	2.35	1.18	0	0	5.29
WNW	3.53	7.65	1.18	0	0	12.36
NW	1.18	2.94	0.59	0	0	4.71
NNW	2.35	1.76	0	0	0	4.11
Summary	26.47	57.02	16.49	0	0	100



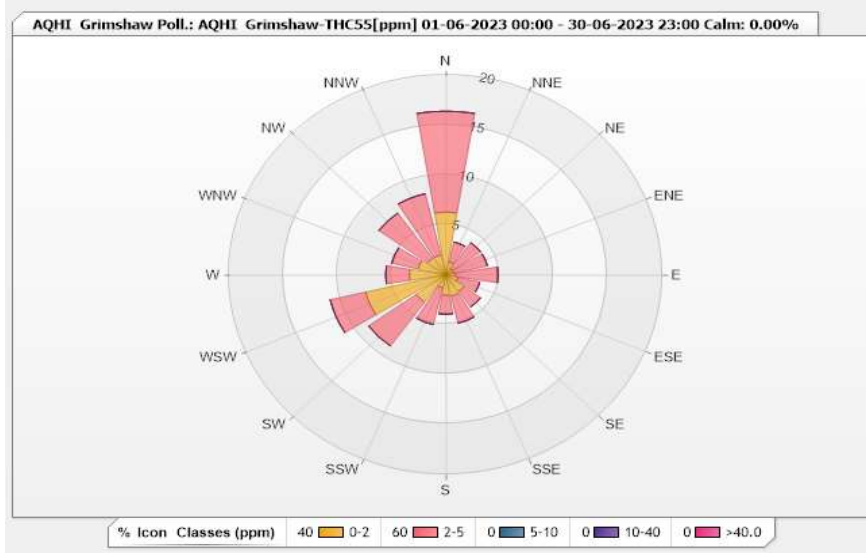


Station: AQHI Grimshaw Poll.: AQHI Grimshaw-THC55[ppm] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 95.00%      Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	6.29	10.09	0	0	0	16.38
NNE	1.32	2.05	0	0	0	3.37
NE	0.73	3.22	0	0	0	3.95
ENE	0.73	3.22	0	0	0	3.95
E	0.88	3.95	0	0	0	4.83
ESE	1.17	2.05	0	0	0	3.22
SE	2.05	1.9	0	0	0	3.95
SSE	2.19	2.78	0	0	0	4.97
S	2.05	1.9	0	0	0	3.95
SSW	1.32	3.8	0	0	0	5.12
SW	3.36	5.41	0	0	0	8.77
WSW	7.6	3.36	0	0	0	10.96
W	3.36	2.19	0	0	0	5.55
WNW	2.63	2.49	0	0	0	5.12
NW	2.05	5.56	0	0	0	7.61
NNW	2.05	6.29	0	0	0	8.34
Summary	39.78	60.26	0	0	0	100





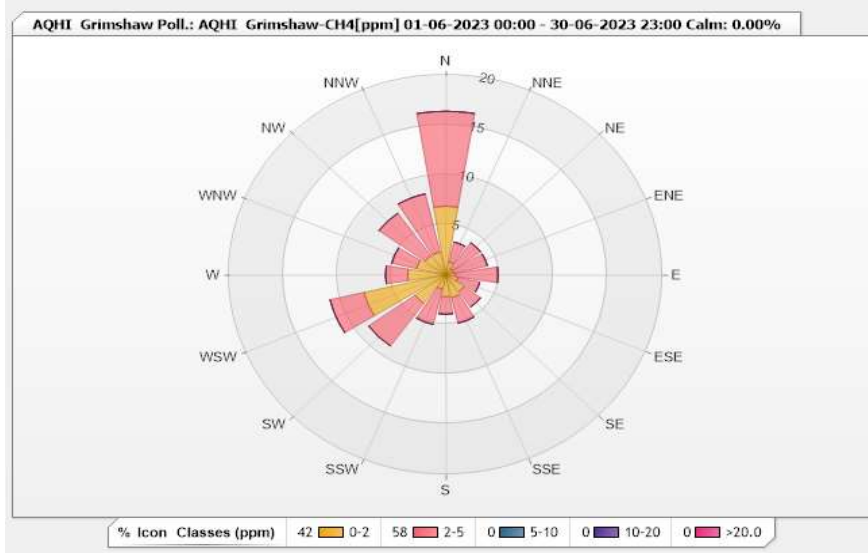


Station: AQHI Grimshaw Poll.: AQHI Grimshaw-CH4[ppm] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 95.00%      Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	6.87	9.5	0	0	0	16.37
NNE	1.32	2.05	0	0	0	3.37
NE	0.73	3.22	0	0	0	3.95
ENE	0.73	3.22	0	0	0	3.95
E	0.88	3.95	0	0	0	4.83
ESE	1.17	2.05	0	0	0	3.22
SE	2.05	1.9	0	0	0	3.95
SSE	2.34	2.63	0	0	0	4.97
S	2.19	1.75	0	0	0	3.94
SSW	1.46	3.65	0	0	0	5.11
SW	3.51	5.26	0	0	0	8.77
WSW	7.75	3.22	0	0	0	10.97
W	3.51	2.05	0	0	0	5.56
WNW	2.78	2.34	0	0	0	5.12
NW	2.34	5.26	0	0	0	7.6
NNW	2.34	5.99	0	0	0	8.33
Summary	41.97	58.04	0	0	0	100



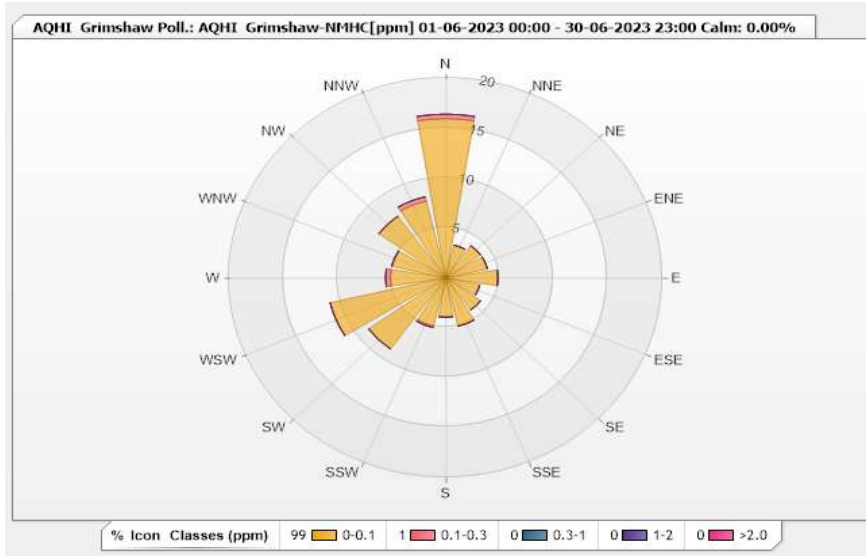


Station: AQHI Grimshaw Poll.: AQHI Grimshaw-NMHC[ppm] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 95.00%      Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	15.94	0.44	0	0	0	16.38
NNE	3.36	0	0	0	0	3.36
NE	3.95	0	0	0	0	3.95
ENE	3.95	0	0	0	0	3.95
E	4.82	0	0	0	0	4.82
ESE	3.22	0	0	0	0	3.22
SE	3.95	0	0	0	0	3.95
SSE	4.97	0	0	0	0	4.97
S	3.95	0	0	0	0	3.95
SSW	4.97	0.15	0	0	0	5.12
SW	8.77	0	0	0	0	8.77
WSW	10.96	0	0	0	0	10.96
W	5.12	0.44	0	0	0	5.56
WNW	5.12	0	0	0	0	5.12
NW	7.6	0	0	0	0	7.6
NNW	7.89	0.44	0	0	0	8.33
Summary	98.54	1.47	0	0	0	100

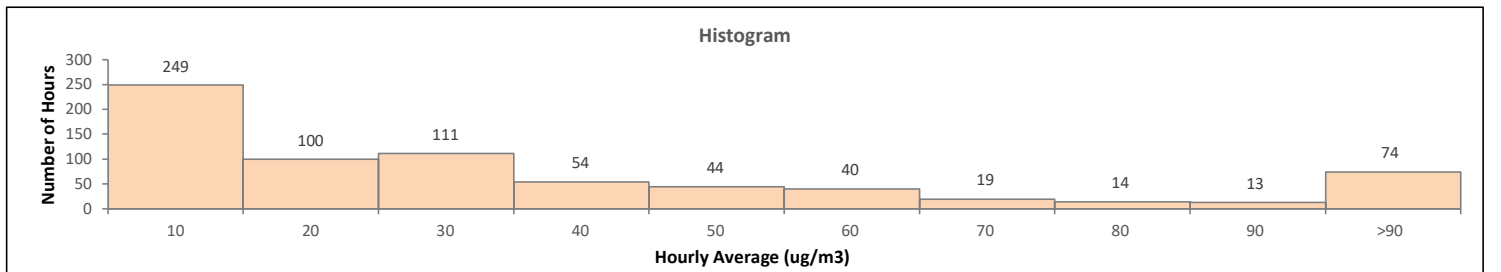
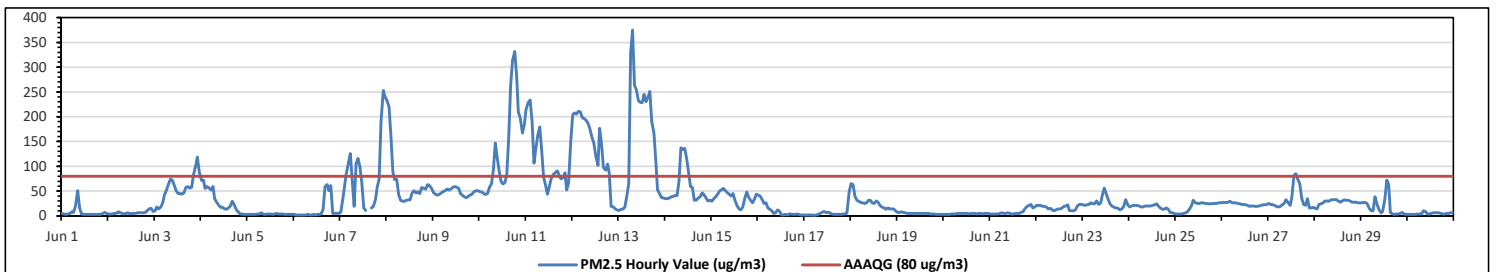


**Peace River Area Monitoring Program**  
**AQHI - Grimshaw Station - June 2023**  
**Summary of Hourly Averages**

**PARTICULATE MATTER 2.5 (PM<sub>2.5</sub>) in µg/m<sup>3</sup>**

Alberta Ambient Air Quality Guideline (AAAQG): 1-Hour 80 µg/m <sup>3</sup> , Alberta Ambient Air Quality Objective (AAAQO): 24-Hour 29 µg/m <sup>3</sup>																																
Number of 1-Hour Exceedances: <b>87</b>												Number of 24-Hour Exceedances: <b>11</b>																				
Maximum Hourly Value: 375 µg/m <sup>3</sup> on Jun 13 at hr 7												Hours in Service: 720																				
Maximum Daily Value: 153.0 µg/m <sup>3</sup> on Jun 13												Hours of Data: 718																				
Minimum Hourly Value: 1 µg/m <sup>3</sup> on Jun 17 at hr 5												Hours of Missing Data: 0																				
Minimum Daily Value: 4 µg/m <sup>3</sup> on Jun 5												Hours of Calibration: 2																				
Monthly Average: 39.5 µg/m <sup>3</sup>												Operational Uptime: 100.0																				
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average						
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23					
Jun 1	5	4	3	4	5	8	7	19	51	16	4	3	3	3	3	3	3	3	3	3	3	5	7	5	3	51	7.2					
Jun 2	4	4	4	5	5	8	6	5	4	5	6	4	5	5	5	6	6	6	6	7	10	14	15	9	4	15	6.4					
Jun 3	10	18	14	18	27	42	53	64	74	71	61	50	45	45	44	46	57	59	56	57	83	102	119	88	10	119	54.3					
Jun 4	71	72	55	59	56	52	59	35	27	21	17	17	14	13	16	20	29	22	12	9	4	4	3	3	3	72	28.8					
Jun 5	3	3	3	3	3	4	4	6	4	3	4	4	4	3	4	5	4	4	3	3	3	3	3	3	3	6	3.6					
Jun 6	3	2	2	2	2	2	2	3	2	2	3	2	3	3	4	13	59	63	51	61	5	5	5	5	2	63	12.7					
Jun 7	7	31	60	84	106	126	71	19	105	116	99	66	16	11	C	C	16	19	34	58	74	191	253	239	7	253	81.9					
Jun 8	234	220	160	88	73	43	31	29	29	31	32	33	46	51	46	49	45	57	55	54	63	61	55	29	234	69.1						
Jun 9	47	44	42	43	46	49	51	54	52	54	57	59	58	55	45	42	38	37	39	42	44	49	51	51	37	59	47.9					
Jun 10	49	48	45	43	45	58	64	92	147	118	91	70	64	67	84	159	263	314	332	279	210	197	167	185	43	332	133.0					
Jun 11	214	229	234	190	106	137	163	179	132	78	62	44	59	76	83	87	91	83	75	77	87	52	67	152	44	234	114.9					
Jun 12	204	208	205	211	210	198	196	193	186	175	159	147	121	102	177	145	97	92	104	87	19	18	14	12	12	211	136.7					
Jun 13	11	13	13	18	40	65	329	375	264	254	233	229	228	245	230	241	251	190	166	107	53	45	37	36	11	375	153.0					
Jun 14	35	35	36	38	39	41	41	69	137	134	136	115	84	59	57	31	32	36	38	46	42	36	30	31	30	137	57.4					
Jun 15	29	35	38	44	50	53	55	51	47	44	40	45	31	20	14	12	17	36	48	38	32	26	34	44	12	55	36.8					
Jun 16	42	40	33	25	26	16	13	10	5	6	12	9	2	2	3	2	4	4	3	3	4	3	2	2	2	42	11.3					
Jun 17	2	2	2	2	2	1	2	3	5	7	9	7	7	6	4	3	3	3	3	3	4	4	6	49	1	49	5.8					
Jun 18	65	63	39	31	29	27	26	25	26	31	21	26	25	30	27	21	18	16	13	16	14	14	14	10	10	65	26.5					
Jun 19	7	7	8	7	6	5	5	5	5	5	5	5	5	5	5	5	4	4	4	3	3	3	3	3	3	8	5.0					
Jun 20	3	3	3	3	4	4	4	5	5	5	5	5	5	4	5	5	4	5	4	5	4	5	5	5	3	5	4.4					
Jun 21	4	4	4	4	4	5	6	5	5	6	5	4	4	5	5	5	7	9	15	19	21	23	16	18	4	23	8.5					
Jun 22	21	21	21	19	19	18	14	15	12	10	12	14	14	15	19	20	22	11	10	10	12	20	23	23	10	23	16.5					
Jun 23	22	21	22	23	26	24	24	30	23	26	42	56	43	32	24	20	17	16	15	12	14	19	33	23	12	56	25.3					
Jun 24	18	20	21	21	21	20	18	18	20	20	20	21	22	24	19	16	13	13	16	13	7	6	5	5	5	24	17.2					
Jun 25	4	4	4	4	5	6	8	14	21	31	27	25	25	26	25	25	24	24	25	25	25	26	26	4	31	19.0						
Jun 26	27	27	27	28	29	26	26	26	25	24	23	23	22	21	19	20	20	19	19	20	21	22	22	23	19	29	23.3					
Jun 27	25	23	22	21	19	18	19	22	25	33	26	21	37	82	85	73	65	36	23	21	35	16	16	17	16	85	32.5					
Jun 28	15	14	23	24	26	29	30	29	32	33	33	33	29	28	30	32	31	31	30	28	28	28	26	26	14	33	27.8					
Jun 29	26	27	27	24	15	10	10	38	22	12	6	9	34	72	63	7	4	3	4	4	5	7	4	3	3	72	18.2					
Jun 30	3	3	3	3	3	4	4	4	10	9	4	4	5	6	6	6	5	4	4	5	5	6	6	6	3	10	4.9					
Diurnal Maximum	234	229	234	211	210	198	329	375	264	254	233	229	228	245	230	241	251	190	166	107	53	45	37	36	11	375	153.0					
Diurnal Average	40.3	41.5	39.1	36.3	34.9	37.6	45.1	48.1	50.1	45.9	42.1	38.3	34.9	37.0	40.1	38.6	42.0	40.2	40.3	37.3	31.0	33.7	35.8	38.6	3	10	4.9					
<b>C</b>	Monthly Calibration											<b>S</b>	Daily Zero-Span Check						<b>Q</b>	Quality Assurance												
<b>K</b>	Collection Error											<b>ND</b>	No Data (Machine Not in Service)						<b>Y</b>	Routine Maintenance						<b>P</b>	Power Failure					
<b>X</b>	Invalid Data (Equipment Malfunction / Recovery)											<b>NRM</b>	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																			

Diurnal Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

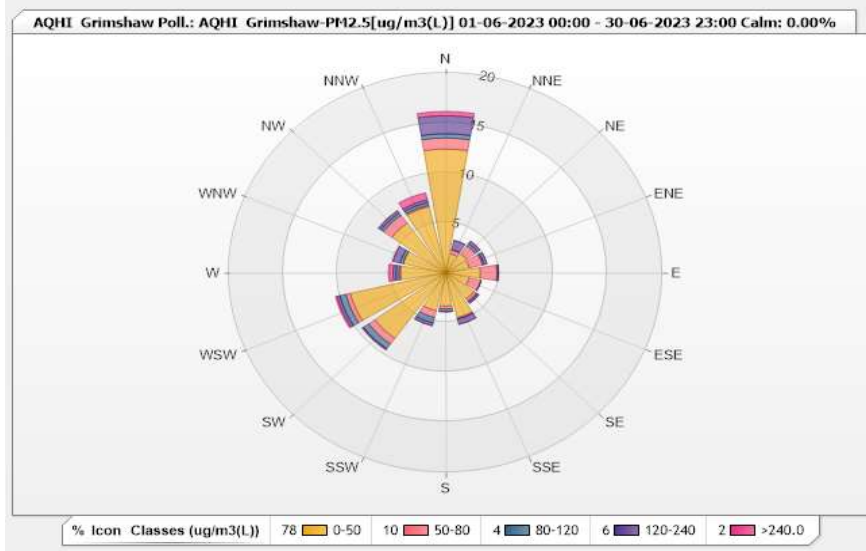


Station: AQHI Grimshaw Poll.: AQHI Grimshaw-PM2.5[ug/m3(L)] Monthly: 06-2023

Type: Pollution Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm: 0.00%      Valid Data: 99.72%      Calm Avg: 0.00 [ppm]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	12.4	1.11	0.42	1.81	0.42	16.16
NNE	1.95	0.42	0	0.97	0	3.34
NE	2.37	0.97	0.28	0.28	0	3.9
ENE	2.23	1.25	0.14	0.28	0	3.9
E	3.2	1.53	0.14	0	0	4.87
ESE	2.23	1.11	0	0	0	3.34
SE	3.2	0.28	0.14	0.14	0	3.76
SSE	4.6	0.14	0	0.56	0	5.3
S	3.34	0.28	0.28	0	0	3.9
SSW	3.9	0.7	0.56	0.28	0	5.44
SW	8.08	0.7	0.56	0.14	0	9.48
WSW	9.05	0.42	0.56	0.28	0.14	10.45
W	4.18	0.14	0.28	0.28	0.42	5.3
WNW	4.04	0	0.28	0.7	0	5.02
NW	6.13	0.97	0.28	0.28	0	7.66
NNW	6.82	0.14	0.28	0.28	0.7	8.22
Summary	77.72	10.16	4.2	6.28	1.68	100



**Peace River Area Monitoring Program**  
**AQHI - Grimshaw Station - June 2023**  
**Summary of Hourly Averages**  
**RELATIVE HUMIDITY (RH) in %**

Maximum Hourly Value:	99 %	on Jun 26 at hr 4	Hours in Service:	720
Maximum Daily Value:	81.6 %	on Jun 13	Hours of Data:	720
Minimum Hourly Value:	18 %	on Jun 30 at hr 15	Hours of Missing Data:	0
Minimum Daily Value:	33.9 %	on Jun 7	Hours of Calibration:	0
Monthly Average:	52.7 %		Operational Uptime:	100.0

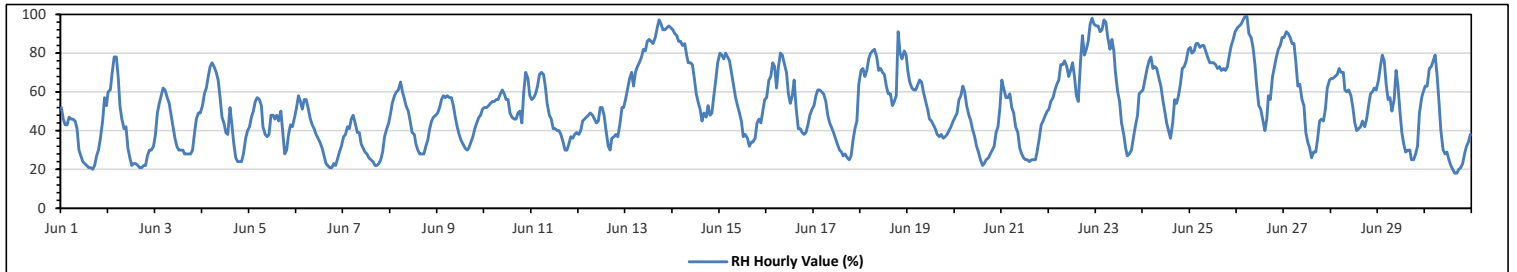
  

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Jun 1	52	46	43	43	47	46	46	45	41	30	27	24	23	22	21	21	20	22	27	30	36	45	57	53	20	57	36.1
Jun 2	60	61	70	78	78	67	53	46	41	42	31	26	22	23	23	22	21	21	22	22	27	30	30	32	21	78	39.5
Jun 3	38	49	54	58	62	61	57	54	48	42	36	32	30	30	30	28	28	28	28	30	40	46	49	49	28	62	42.0
Jun 4	53	59	62	68	73	75	73	70	66	57	47	44	39	38	52	43	33	26	24	24	24	28	36	40	24	75	48.1
Jun 5	42	47	50	55	57	56	53	42	38	37	38	48	48	46	48	45	50	39	28	30	38	43	42	47	28	57	44.5
Jun 6	52	58	55	51	56	56	51	46	43	41	38	36	34	31	27	23	22	21	21	23	22	26	29	32	21	58	37.3
Jun 7	37	38	42	41	46	48	44	39	39	33	31	29	28	26	25	24	22	22	23	25	29	37	41	44	22	48	33.9
Jun 8	49	54	58	60	61	65	60	57	53	50	45	39	38	33	30	28	28	28	32	35	41	45	47	48	28	65	45.2
Jun 9	49	52	56	58	57	58	57	57	53	47	42	38	35	33	31	30	31	34	37	41	44	47	48	51	30	58	45.3
Jun 10	52	52	53	54	55	55	56	56	59	61	59	56	56	49	47	46	46	49	50	44	60	70	67	58	44	70	54.6
Jun 11	56	57	59	63	69	70	69	62	54	48	46	41	41	40	40	38	34	30	30	33	37	36	38	39	30	70	47.1
Jun 12	38	40	45	46	47	48	49	48	46	44	45	52	52	48	39	32	30	36	37	38	37	44	52	52	30	52	43.5
Jun 13	56	62	67	70	63	70	73	75	78	82	81	86	87	86	85	88	93	97	95	92	92	93	94	93	56	97	81.6
Jun 14	92	90	89	86	86	84	85	79	75	75	74	67	59	54	51	45	49	47	53	48	49	58	66	75	45	92	68.2
Jun 15	80	79	77	80	78	76	70	63	57	53	49	45	37	38	36	32	34	34	36	44	46	44	51	56	32	80	54.0
Jun 16	57	66	68	75	73	62	73	80	79	74	70	59	54	58	66	52	41	41	39	38	39	43	48	51	38	80	58.6
Jun 17	53	58	61	61	60	59	55	48	44	42	39	36	33	30	29	27	28	26	25	27	35	41	45	64	25	64	42.8
Jun 18	71	72	68	71	77	80	81	82	78	71	72	70	69	63	59	59	53	55	58	91	80	77	81	79	53	91	71.5
Jun 19	71	65	62	61	61	64	66	65	60	55	51	46	45	43	41	38	37	38	36	37	38	40	42	45	36	71	50.3
Jun 20	47	49	56	58	63	60	53	48	45	41	37	32	29	25	22	23	25	26	28	30	32	39	42	52	22	63	40.1
Jun 21	66	61	57	57	59	52	49	42	39	31	28	26	25	25	24	25	25	25	29	36	43	45	48	50	24	66	40.3
Jun 22	51	55	57	61	64	66	74	74	76	73	68	71	75	68	58	55	76	89	79	82	86	95	98	95	51	98	72.8
Jun 23	94	94	91	92	97	96	88	82	87	81	70	60	55	44	38	31	27	28	30	36	42	48	59	60	27	97	63.8
Jun 24	61	67	72	76	78	72	73	72	67	63	56	50	44	40	36	44	56	54	58	64	72	73	76	82	36	82	62.8
Jun 25	83	80	81	85	85	83	84	84	81	78	75	75	74	72	73	71	72	71	73	79	84	87	91	71	91	91	79.0
Jun 26	93	94	95	97	99	99	90	88	83	74	64	53	51	46	40	46	58	56	68	73	78	82	84	88	40	99	75.0
Jun 27	88	91	90	88	85	85	75	63	64	56	53	39	34	31	26	29	29	36	45	46	45	51	62	66	26	91	57.4
Jun 28	67	67	68	69	72	70	70	61	60	61	58	52	44	40	41	42	45	42	46	53	59	60	62	61	40	72	57.1
Jun 29	66	73	79	76	64	56	57	50	56	71	63	50	39	33	29	30	30	25	25	28	32	49	57	60	25	79	49.9
Jun 30	63	63	72	73	76	79	69	55	40	30	28	29	25	22	20	18	18	20	21	23	28	32	34	38	18	79	40.7
Diurnal Maximum	94	94	95	97	99	99	90	88	87	82	81	86	87	86	85	88	93	97	95	92	92	95	98	95			
Diurnal Average	61.2	63.3	65.2	67.0	68.3	67.3	65.1	61.1	58.3	54.8	50.7	47.0	44.2	41.3	39.5	37.9	38.7	38.9	40.0	43.2	47.0	51.7	55.7	58.4			

<b>C</b> Monthly Calibration	<b>S</b> Daily Zero-Span Check	<b>Q</b> Quality Assurance
<b>K</b> Collection Error	<b>ND</b> No Data (Machine Not in Service)	<b>Y</b> Routine Maintenance
<b>X</b> InValid Data (Equipment Malfunction /Recovery)	<b>NRM</b> UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b> Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.



**Peace River Area Monitoring Program**  
**AQHI - Grimshaw Station - June 2023**  
**Summary of Hourly Averages**  
**BAROMETRIC PRESSURE (BP) in millibar**

Maximum Hourly Value:	948	mb	on Jun 5 at hr 0	Hours in Service:	720
Maximum Daily Value:	946	mb	on Jun 5	Hours of Data:	720
Minimum Hourly Value:	932	mb	on Jun 16 at hr 11	Hours of Missing Data:	0
Minimum Daily Value:	934	mb	on Jun 17	Hours of Calibration:	0
Monthly Average:	940	mb		Operational Uptime:	100.0

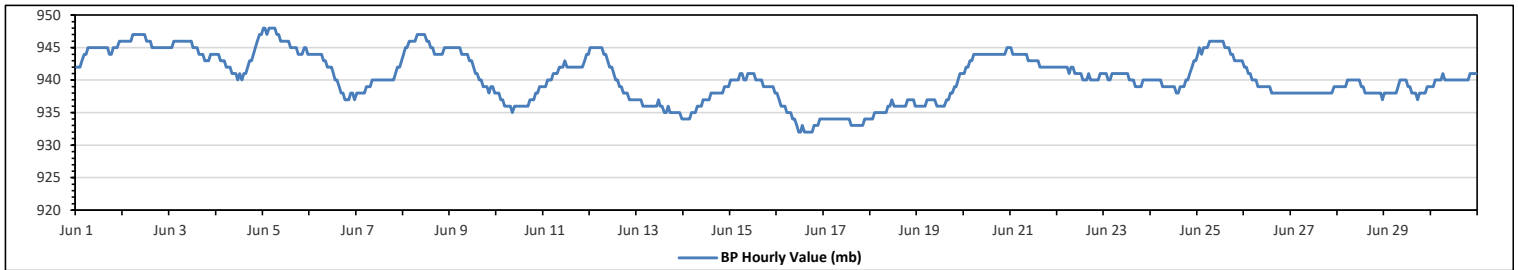
  

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Jun 1	942	942	942	943	944	944	945	945	945	945	945	945	945	945	945	945	944	944	945	945	945	946	946	942	946	944	
Jun 2	946	946	946	946	946	947	947	947	947	947	947	947	946	946	946	945	945	945	945	945	945	945	945	945	947	946	
Jun 3	945	945	946	946	946	946	946	946	946	946	946	946	945	945	945	944	944	944	943	943	943	944	944	943	946	945	
Jun 4	944	944	943	943	943	942	942	942	941	941	941	940	941	940	941	941	942	943	943	944	945	946	947	947	940	947	943
Jun 5	<b>948</b>	<b>948</b>	947	<b>948</b>	<b>948</b>	<b>948</b>	<b>948</b>	947	947	946	946	946	946	946	945	945	945	944	944	944	944	945	945	944	944	<b>948</b>	<b>946</b>
Jun 6	944	944	944	944	944	944	944	943	943	942	942	942	941	940	940	939	938	938	937	937	937	938	938	937	944	941	
Jun 7	938	938	938	938	938	939	939	939	940	940	940	940	940	940	940	940	940	940	940	940	940	941	942	942	938	940	
Jun 8	944	945	945	946	946	946	946	947	947	947	947	947	946	946	945	945	944	944	944	944	944	945	945	944	947	945	
Jun 9	945	945	945	945	945	945	944	944	944	944	943	943	942	941	941	940	940	939	939	939	938	938	939	938	944	942	
Jun 10	938	938	937	937	936	936	936	936	935	936	936	936	936	936	936	936	936	937	937	937	938	938	939	939	935	937	
Jun 11	939	939	940	940	940	941	941	941	942	942	942	943	942	942	942	942	942	942	942	942	942	943	944	944	939	942	
Jun 12	945	945	945	945	945	945	944	944	943	942	942	942	941	940	940	939	939	938	938	938	937	937	937	937	937	941	
Jun 13	937	937	937	936	936	936	936	936	936	936	936	937	936	936	936	935	935	936	935	935	935	935	935	934	934	936	
Jun 14	934	934	934	934	935	935	935	936	936	936	937	937	937	937	938	938	938	938	938	938	938	939	939	939	934	939	
Jun 15	940	940	940	940	941	941	940	940	941	941	941	941	941	940	940	940	940	939	939	939	939	939	939	939	938	940	
Jun 16	938	937	936	936	936	935	935	935	934	934	933	<b>932</b>	<b>932</b>	933	<b>932</b>	<b>932</b>	<b>932</b>	<b>932</b>	<b>932</b>	933	933	933	934	934	<b>932</b>	934	
Jun 17	934	934	934	934	934	934	934	934	934	934	934	934	934	934	933	933	933	933	933	933	933	934	934	934	933	<b>934</b>	
Jun 18	934	934	935	935	935	935	935	935	935	936	936	936	936	936	936	936	936	936	936	937	937	937	937	936	934	937	
Jun 19	936	936	936	936	936	937	937	937	937	937	936	936	936	936	936	937	937	938	938	939	939	940	941	941	936	941	
Jun 20	941	942	942	943	943	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	945	945	941	945	
Jun 21	945	944	944	944	944	944	944	944	944	943	943	943	943	943	943	942	942	942	942	942	942	942	942	942	942	945	
Jun 22	942	942	942	942	942	942	941	942	942	941	941	941	941	940	940	940	941	940	940	940	940	940	941	941	940	942	
Jun 23	941	941	940	940	941	941	941	941	941	941	941	941	941	940	940	940	939	939	939	939	939	940	940	940	939	941	
Jun 24	940	940	940	940	940	940	939	939	939	939	939	939	939	938	938	939	939	939	940	940	941	942	943	943	938	943	
Jun 25	944	945	944	945	945	945	946	946	946	946	946	946	946	946	945	945	945	944	944	943	943	943	943	943	943	946	
Jun 26	942	942	941	941	940	940	940	939	939	939	939	939	939	939	938	938	938	938	938	938	938	938	938	938	938	942	
Jun 27	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	939	939	938	939	
Jun 28	939	939	939	939	939	940	940	940	940	940	940	940	939	939	938	938	938	938	938	938	938	938	938	937	937	940	
Jun 29	938	938	938	938	938	938	938	939	940	940	940	940	940	939	939	938	938	937	938	938	938	938	939	939	937	940	
Jun 30	939	939	940	940	940	941	940	940	940	940	940	940	940	940	940	940	940	940	940	941	941	941	941	939	941		
Diurnal Maximum	948	948	947	948	948	948	948	947	947	947	947	947	946	946	946	945	945	945	945	945	945	946	947	947			
Diurnal Average	941	941	941	941	941	941	941	941	941	941	941	941	940	940	940	940	940	940	940	940	940	940	941	940			

<b>C</b>	Monthly Calibration	<b>S</b>	Daily Zero-Span Check	<b>Q</b>	Quality Assurance
<b>K</b>	Collection Error	<b>ND</b>	No Data (Machine Not in Service)	<b>Y</b>	Routine Maintenance
<b>X</b>	InValid Data (Equipment Malfunction /Recovery)	<b>NRM</b>	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b>	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.





Peace River Area Monitoring Program

AQHI - Grimshaw Station - June 2023

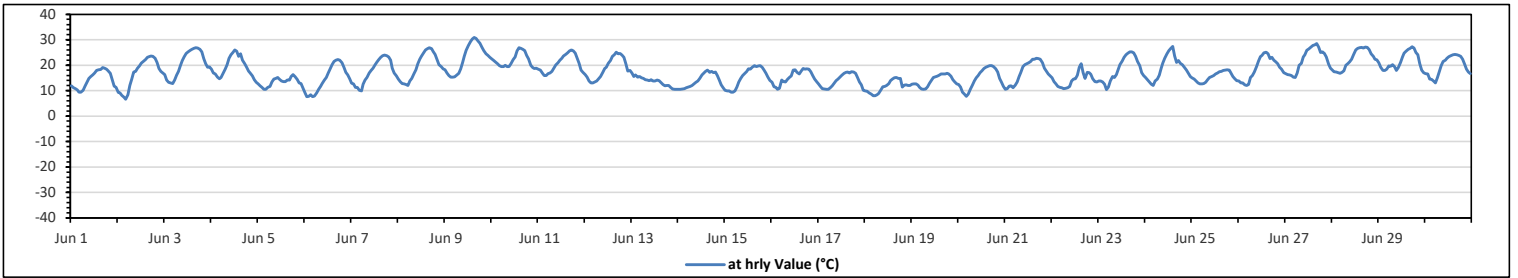
Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

Maximum Hourly Value:	30.9	°C	on Jun 9 at hr 15	Hours in Service:	720
Maximum Daily Value:	22.9	°C	on Jun 9	Hours of Data:	720
Minimum Hourly Value:	6.6	°C	on Jun 2 at hr 4	Hours of Missing Data:	0
Minimum Daily Value:	11.6	°C	on Jun 18	Hours of Calibration:	0
Monthly Average:	17.4	°C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average																	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23																
Jun 1	11.9	11.1	10.8	10.3	9.4	9.4	10.2	11.8	13.3	14.8	15.6	16.2	17	17.9	18.2	18.3	19	18.8	18.5	17.8	16.8	14.3	11.8	11.3	9.4	19.0	14.4																
Jun 2	9.3	9.1	8.2	7.5	6.6	8.3	12	14.5	17.3	17.6	18.9	19.7	20.8	21.5	22.2	23.1	23.3	23.6	23.5	22.8	21.1	18.7	17.6	17	6.6	23.6	16.8																
Jun 3	16.3	14.1	13.3	13	12.8	14.1	16.1	17.6	19.9	21.8	23.3	24.6	25.3	25.8	26.2	26.6	26.9	26.8	26.2	25.2	22.6	20.6	19.2	19.3	12.8	26.9	20.7																
Jun 4	18.4	16.9	16.5	15.3	14.7	15.2	16.7	18.5	20.3	22.7	24.2	25	25.9	25.5	23.4	24.5	22	20.5	19.2	17.7	16.9	15.8	14.3	13.3	13.3	25.9	19.3																
Jun 5	12.7	11.9	11.3	10.6	10.6	11.2	11.7	13.5	14.5	14.9	15.2	14.4	13.8	13.6	13.6	14.2	14.1	15.5	16.3	15.6	14.4	13.1	12.8	11	10.6	16.3	13.4																
Jun 6	9.3	7.7	7.8	8.4	7.7	7.9	9.2	10.6	11.7	12.8	14.2	15.2	16.9	18.6	20.2	21.5	21.9	22.2	22	20.9	19.1	17.2	16.2	14.7	7.7	22.2	14.7																
Jun 7	12.9	12.6	11.3	11.2	10.1	9.8	12.5	14.2	15.2	16.9	17.9	18.9	20.1	21.2	22.2	23	23.7	24	23.7	23.2	21.9	18.8	17	15.8	9.8	24.0	17.4																
Jun 8	14.6	13.6	12.8	12.6	12.4	12.1	13.8	14.9	16.6	18.2	20.5	22.3	23.5	24.9	26	26.5	26.9	26.5	25.4	24.3	22.2	20.3	19.5	18.6	12.1	26.9	19.5																
Jun 9	18.2	17	15.9	15.3	15.3	15.4	16.1	16.8	18.6	21.1	23.5	25.8	27.7	29.1	30.3	30.9	30.5	29.5	28.6	27.1	25.7	24.5	23.8	23	15.3	30.9	22.9																
Jun 10	22.5	21.9	21.2	20.5	19.9	19.4	19.5	20	19.5	19.5	20.5	22.2	23.2	25.6	26.9	26.6	26.2	25.7	23.9	22.5	20	19	18.7	18.9	18.7	26.9	21.8																
Jun 11	18.5	18.1	16.9	16	16	16.7	17	17.6	18.9	20.1	21	21.9	22.8	23.6	24.3	24.9	25.6	26	25.6	24.7	22.8	20.7	18.1	17.2	16.0	26.0	20.6																
Jun 12	16.3	15.3	13.7	13	13.1	13.4	13.7	14.7	15.6	17.2	18.7	19.2	20.7	21.8	23.5	24.2	25.1	24.4	24.6	24	23	20.5	17.7	17.9	13.0	25.1	18.8																
Jun 13	16.9	15.5	16.2	15.3	15.5	15	14.8	14.3	14.1	13.9	14.3	13.8	13.8	14.1	13.9	13.2	12.4	11.9	12.1	12	11.2	10.7	10.5	10.5	10.5	16.9	13.6																
Jun 14	10.5	10.6	10.7	10.8	11.1	11.4	11.7	12.1	12.6	13.3	13.7	14.8	16.2	16.9	17.6	18.1	17.2	17.6	17.1	17.3	15.9	14.1	12.3	11.1	10.5	18.1	13.9																
Jun 15	10.2	9.9	9.9	9.4	9.4	9.8	11.4	13.4	14.9	16	16.6	17.6	18.6	18.5	19.1	19.9	19.5	19.7	19.9	19.2	18	16.8	15.3	14	9.4	19.9	15.3																
Jun 16	13.3	11.5	11.2	10.6	10.9	14.2	13.6	13.4	14.4	15.1	15.8	18	18.2	17.2	16.5	17.7	18.7	18.5	18.6	18.4	17.5	15.9	14.5	13.4	10.6	18.7	15.3																
Jun 17	12.7	11.6	10.8	10.7	10.6	10.6	11.1	11.9	12.9	13.9	14.6	15.3	16.1	16.8	17.2	17.4	17	17.5	17.4	16.8	15.2	13.4	12.3	10.2	10.2	17.5	13.9																
Jun 18	9.9	9.7	9.2	8.6	8.1	8	8.4	8.9	10.3	11.5	11.6	12	12.8	13.9	14.6	15	15.1	14.8	14.9	11.4	12.2	12.3	12.1	12.1	8.0	15.1	11.6																
Jun 19	12.5	12.7	12.7	12.2	11.3	10.7	10.6	10.7	11.5	12.9	14	15.2	15.4	15.7	16.1	16.5	16.5	16.5	16.8	16.5	15.7	14.3	13.4	12.6	10.6	16.8	13.9																
Jun 20	12.4	11.4	9.4	8.6	7.8	8.6	10.7	12.2	13.8	15	16	17.1	17.8	18.7	19.2	19.6	19.9	19.8	19.4	18.6	17.4	14.9	13.3	11.6	7.8	19.9	14.7																
Jun 21	10.5	10.8	11.8	11.9	11.1	12.2	13.5	15.6	17.1	19.4	20.2	20.5	21	21.5	22.3	22.3	22.7	22.6	22.3	20.9	18.9	17.7	16.5	15.8	10.5	22.7	17.5																
Jun 22	15	13.6	12.7	11.6	11.2	11.1	10.8	10.9	11.1	11.7	13.7	14.6	14.7	16.1	19.1	20.5	17.1	14.9	17.2	17.1	16.4	14.7	13.6	13.5	10.8	20.5	14.3																
Jun 23	13.8	13.7	13.4	12.5	10.4	11.4	13.8	15.6	15.2	16.3	18.4	20.3	21.6	23.1	24.1	24.7	25.3	25.3	24.9	23.5	21.5	19.9	17.1	15.9	10.4	25.3	18.4																
Jun 24	15.2	14.3	13.5	12.5	12	13.8	14.6	16.1	18.8	20.8	22.7	24.5	25.7	26.6	27.3	23.6	21.1	21.8	20.7	20.3	19	18	16.8	15.6	12.0	27.3	19.0																
Jun 25	15	14.6	13.8	13	12.7	12.7	12.8	13.3	14.3	15.1	15.6	15.9	16.5	16.9	17.5	17.6	17.9	18	18.2	18	16.7	15.5	14.7	13.9	12.7	18.2	15.4																
Jun 26	13.7	13.1	13	12.3	12	12.4	15.1	15.9	17.4	19.5	21.6	23.3	23.9	24.8	25.1	24.5	22.6	23.1	21.9	21.4	20.6	19.1	18.4	17.1	12.0	25.1	18.8																
Jun 27	16.7	16.3	16.2	15.9	15.3	15.1	17	20	20.7	23.2	24.2	25.8	26.4	27.1	27.8	28	28.5	27.1	25	25.3	24.6	23.2	20.4	18.8	15.1	28.5	22.0																
Jun 28	18	17.5	17.4	17.1	16.8	17.2	17.8	20	20.6	21.3	22.4	24.2	26	26.7	26.9	27	26.8	27.1	27	26.1	24.4	23.5	22.4	22.1	16.8	27.1	22.3																
Jun 29	21	19.2	17.9	17.9	18.4	19.7	19.6	20.2	19.5	17.9	19	21.1	23.2	24.7	25.5	26.2	26.6	27.2	26.8	25	24.2	20.5	18	17.1	17.1	27.2	21.5																
Jun 30	16.6	16.5	14.5	14.4	13.7	13.1	15	17.5	19.8	21.5	21.9	22.8	23.3	23.7	24.1	24.3	24.1	23.9	23.5	22.3	20.4	18.5	17.3	16.6	13.1	24.3	19.6																
Diurnal Maximum	22.5	21.9	21.2	20.5	19.9	19.7	19.6	20.2	20.7	23.2	24.2	25.8	27.7	29.1	30.3	30.9	30.5	29.5	28.6	27.1	25.7	24.5	23.8	23.0																			
Diurnal Average	14.5	13.7	13.1	12.6	12.2	12.7	13.7	14.9	16.0	17.2	18.3	19.4	20.3	21.1	21.7	22.0	21.8	21.7	21.4	20.5	19.2	17.6	16.2	15.3																			
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance																				
K	Collection Error										ND	No Data (Machine Not in Service)										Y	Routine Maintenance										P	Power Failure									
X	Invalid Data (Equipment Malfunction /Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																															

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.



**Peace River Area Monitoring Program**

**AQHI - Grimshaw Station - June 2023**

**Summary of Hourly Averages**

**STATION TEMPERATURE (ST) in Degree Celsius**

Maximum Hourly Value:	26.5 °C	on Jun 8 at hr 16	Hours in Service:	720
Maximum Daily Value:	23.7 °C	on Jun 9	Hours of Data:	720
Minimum Hourly Value:	21.5 °C	on Jun 7 at hr 11	Hours of Missing Data:	0
Minimum Daily Value:	22.6 °C	on Jun 4	Hours of Calibration:	0
Monthly Average:	23.4 °C		Operational Uptime:	100.0

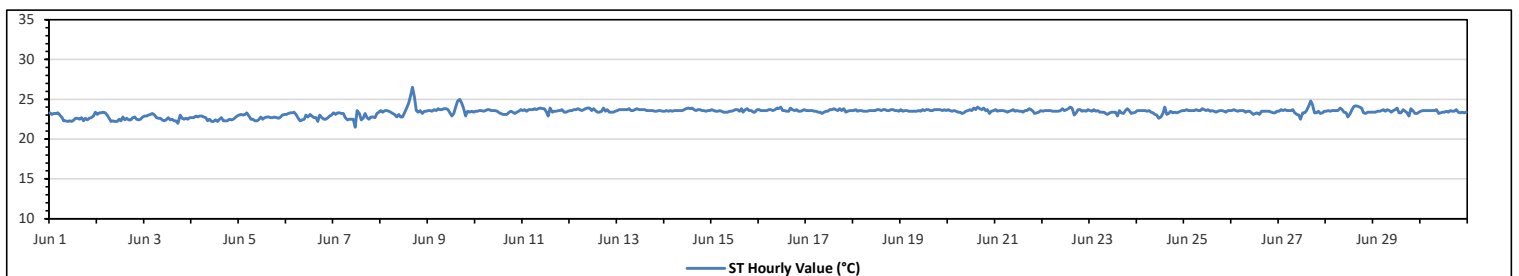
  

Day	Hourly Period Starting at (MST)																							Daily				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average	
Jun 1	23.3	23.1	23.2	23.2	23.3	23.0	22.7	22.3	22.3	22.2	22.3	22.2	22.4	22.6	22.6	22.5	22.7	22.3	22.6	22.4	22.6	22.7	22.9	23.4	22.2	23.4	22.7	
Jun 2	23.1	23.3	23.3	23.4	23.3	23.0	22.6	22.2	22.3	22.2	22.2	22.5	22.3	22.8	22.4	22.6	22.4	22.4	22.7	22.8	22.5	22.4	22.5	22.8	22.2	23.4	22.7	
Jun 3	22.9	22.9	23.0	23.1	23.2	23.0	22.7	22.6	22.6	22.4	22.3	22.4	22.7	22.4	22.5	22.3	22.3	22.0	23.0	22.6	22.5	22.6	22.5	22.7	22.0	23.2	22.6	
Jun 4	22.7	22.7	22.9	22.8	22.9	22.9	22.8	22.7	22.3	22.5	22.2	22.2	22.4	22.2	22.5	22.7	22.3	22.3	22.3	22.5	22.4	22.5	22.7	22.9	22.2	22.9	22.6	
Jun 5	23.0	23.1	23.0	23.1	23.3	22.9	22.5	22.5	22.3	22.3	22.4	22.8	22.5	22.7	22.8	22.8	22.7	22.7	22.8	22.7	22.6	22.8	23.0	23.1	22.3	23.3	22.8	
Jun 6	23.1	23.2	23.3	23.3	23.4	23.1	22.6	22.3	22.4	22.5	23.0	22.8	23.1	22.9	22.7	22.7	22.2	23.0	22.7	22.5	22.5	22.7	22.9	23.0	22.2	23.4	22.8	
Jun 7	23.3	23.1	23.3	23.3	23.2	23.2	22.7	22.4	22.5	22.5	21.5	23.6	23.2	22.4	22.6	23.2	22.7	22.5	22.8	22.8	22.7	23.2	23.4	23.0	21.5	23.6	22.9	
Jun 8	23.6	23.4	23.6	23.6	23.5	23.4	23.2	23.1	22.8	23.1	22.8	22.8	23.3	23.8	24.5	25.4	26.5	25.3	23.6	23.4	23.6	23.2	23.5	23.5	22.8	26.5	23.7	
Jun 9	23.6	23.6	23.5	23.7	23.6	23.8	23.7	23.7	23.8	23.8	23.7	23.3	22.9	23.2	24.0	24.8	25.0	24.5	23.8	22.9	23.5	23.4	23.5	23.4	22.9	25.0	23.7	
Jun 10	23.5	23.5	23.6	23.6	23.5	23.6	23.7	23.7	23.6	23.6	23.6	23.5	23.3	23.2	23.1	23.1	23.4	23.5	23.4	23.2	23.4	23.5	23.7	23.1	23.1	23.7	23.5	
Jun 11	23.6	23.7	23.5	23.7	23.7	23.7	23.8	23.7	23.8	23.9	23.8	23.8	23.4	22.9	23.9	23.4	23.5	23.5	23.6	23.6	23.7	23.4	23.4	23.5	22.9	23.9	23.6	
Jun 12	23.6	23.6	23.7	23.7	23.8	23.7	23.6	23.7	23.8	23.9	23.9	23.6	23.8	23.6	23.4	23.4	23.5	23.9	23.5	23.7	23.4	23.4	23.4	23.5	23.4	23.9	23.6	
Jun 13	23.6	23.7	23.7	23.7	23.7	23.7	23.8	23.6	23.6	23.7	23.8	23.7	23.7	23.7	23.7	23.6	23.6	23.6	23.6	23.5	23.5	23.6	23.6	23.5	23.5	23.8	23.6	
Jun 14	23.5	23.6	23.5	23.6	23.5	23.6	23.6	23.6	23.6	23.6	23.7	23.8	23.9	23.8	23.9	23.7	23.6	23.7	23.7	23.6	23.6	23.5	23.6	23.5	23.5	23.9	23.6	
Jun 15	23.7	23.6	23.5	23.5	23.6	23.5	23.4	23.4	23.4	23.5	23.5	23.6	23.7	23.7	23.5	23.8	23.4	23.7	23.8	23.6	23.6	23.4	23.4	23.7	23.4	23.8	23.6	
Jun 16	23.7	23.6	23.6	23.6	23.6	23.7	23.7	23.6	23.7	23.9	23.8	24.0	23.6	23.6	23.5	23.5	23.9	23.7	23.6	23.7	23.6	23.7	23.5	23.5	23.6	23.7	23.7	
Jun 17	23.6	23.6	23.6	23.6	23.5	23.5	23.4	23.4	23.2	23.4	23.5	23.5	23.7	23.7	23.8	23.7	23.6	23.8	23.6	23.8	23.4	23.5	23.5	23.6	23.5	23.8	23.6	
Jun 18	23.6	23.7	23.5	23.6	23.6	23.5	23.5	23.5	23.6	23.6	23.6	23.6	23.7	23.7	23.6	23.7	23.6	23.7	23.6	23.7	23.7	23.7	23.6	23.5	23.5	23.7	23.6	
Jun 19	23.7	23.5	23.6	23.6	23.5	23.5	23.5	23.5	23.5	23.6	23.5	23.5	23.7	23.6	23.7	23.7	23.6	23.6	23.7	23.7	23.7	23.6	23.7	23.6	23.5	23.7	23.6	
Jun 20	23.7	23.6	23.5	23.6	23.5	23.4	23.4	23.2	23.3	23.5	23.6	23.7	23.6	23.9	23.7	24.0	23.8	23.7	23.9	23.6	23.7	23.2	23.5	23.6	23.2	24.0	23.6	
Jun 21	23.7	23.5	23.6	23.6	23.6	23.5	23.4	23.5	23.6	23.7	23.5	23.6	23.5	23.5	23.4	23.6	23.6	23.8	23.7	23.5	23.2	23.3	23.4	23.6	23.2	23.8	23.5	
Jun 22	23.5	23.6	23.6	23.6	23.6	23.5	23.5	23.5	23.5	23.6	23.8	23.6	23.7	23.8	24.0	23.9	23.0	23.3	23.7	23.7	23.5	23.6	23.5	23.7	23.0	24.0	23.6	
Jun 23	23.6	23.5	23.7	23.5	23.6	23.4	23.4	23.2	23.1	23.3	23.4	23.4	23.4	22.9	23.6	23.3	23.2	23.6	23.8	23.6	23.2	23.3	23.4	22.9	23.8	23.4		
Jun 24	23.6	23.6	23.6	23.6	23.6	23.5	23.6	23.4	23.3	23.1	23.0	22.6	22.8	23.2	24.0	23.1	23.2	23.5	23.3	23.4	23.3	23.4	23.5	23.6	22.6	24.0	23.4	
Jun 25	23.6	23.7	23.6	23.6	23.6	23.6	23.7	23.6	23.6	23.8	23.7	23.6	23.7	23.5	23.6	23.5	23.4	23.5	23.6	23.6	23.5	23.4	23.6	23.6	23.4	23.8	23.6	
Jun 26	23.6	23.7	23.6	23.5	23.6	23.6	23.6	23.4	23.5	23.5	23.3	23.1	23.2	23.3	23.1	23.5	23.5	23.5	23.5	23.4	23.3	23.3	23.5	23.1	23.7	23.4		
Jun 27	23.5	23.7	23.6	23.7	23.6	23.6	23.6	23.6	23.7	23.3	23.1	23.0	22.5	23.3	23.3	23.6	24.2	24.8	24.4	23.3	23.3	23.5	23.2	23.3	23.5	22.5	24.8	23.5
Jun 28	23.5	23.6	23.5	23.6	23.6	23.6	23.6	23.9	23.7	23.4	23.3	22.8	23.1	23.7	24.1	24.2	24.1	24.0	23.9	23.3	23.2	23.4	23.4	23.4	22.8	24.2	23.6	
Jun 29	23.4	23.4	23.5	23.5	23.6	23.7	23.5	23.7	23.6	23.4	23.6	23.7	23.9	23.3	23.3	23.7	23.5	23.3	22.9	23.8	23.6	23.2	23.2	23.4	22.9	23.9	23.5	
Jun 30	23.5	23.6	23.6	23.6	23.6	23.6	23.6	23.7	23.2	23.3	23.4	23.4	23.5	23.4	23.6	23.5	23.5	23.5	23.7	23.4	23.3	23.4	23.3	23.4	23.2	23.7	23.5	
Diurnal Maximum	23.7	23.7	23.7	23.7	23.8	23.8	23.8	23.9	23.8	23.9	23.9	24.0	23.9	23.9	24.5	25.4	26.5	25.3	23.9	23.8	23.7	23.6	23.7	23.7	23.2	23.8	23.5	
Diurnal Average	23.5	23.5	23.5	23.5	23.5	23.4	23.3	23.3	23.2	23.3	23.3	23.2	23.3	23.3	23.4	23.5	23.5	23.5	23.4	23.3	23.3	23.2	23.3	23.4	23.2	23.3	23.4	

<b>C</b>	Monthly Calibration	<b>S</b>	Daily Zero-Span Check	<b>Q</b>	Quality Assurance
<b>K</b>	Collection Error	<b>ND</b>	No Data (Machine Not in Service)	<b>Y</b>	Routine Maintenance
<b>X</b>	InValid Data (Equipment Malfunction /Recovery)	<b>NRM</b>	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b>	Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.



**Peace River Area Monitoring Program**

**AQHI - Grimshaw Station - June 2023**

**Summary of Hourly Averages**

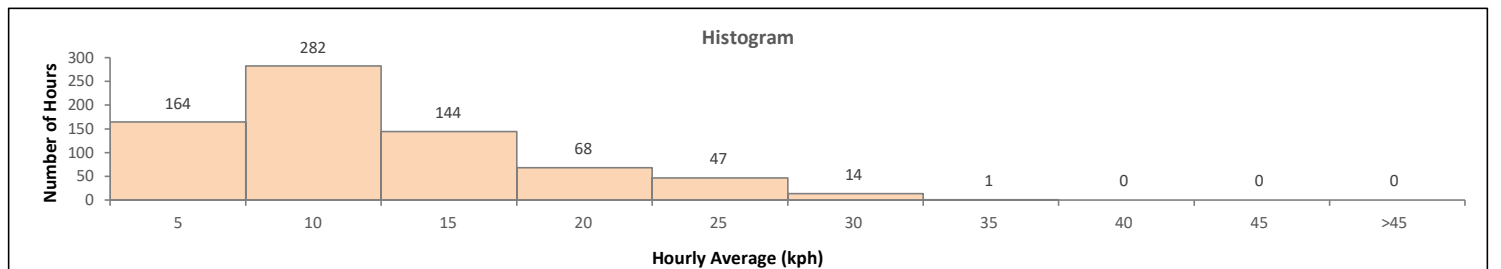
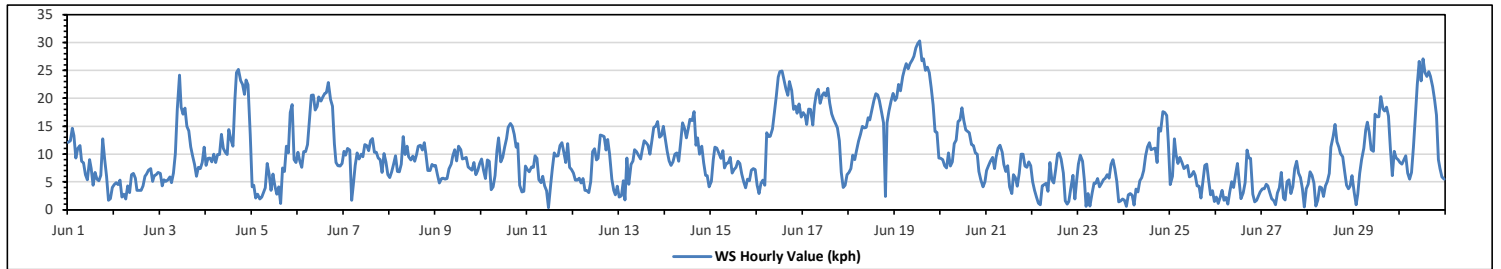
**VECTOR WIND SPEED (VWS) in km/hr**

Maximum Hourly Value:	30.3	kph	on Jun 19 at hr 13	Hours in Service:	720
Maximum Daily Value:	23.4	kph	on Jun 19	Hours of Data:	720
Minimum Hourly Value:	0.4	kph	on Jun 11 at hr 11	Hours of Missing Data:	0
Minimum Daily Value:	4.0	kph	on Jun 27	Hours of Calibration:	0
Monthly Average:	9.8	kph		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Jun 1	12.1	12.4	14.6	13.3	9.3	11.0	11.5	8.7	8.4	6.3	5.4	9.0	7.4	4.4	6.7	5.5	5.2	6.2	12.7	9.1	6.0	1.7	2.0	4.0	1.7	14.6	8.0
Jun 2	4.5	4.9	4.5	5.3	2.3	2.8	1.9	4.3	3.1	6.3	6.5	5.7	3.5	3.5	3.5	4.3	6.0	6.4	7.1	7.4	5.1	6.1	6.3	6.7	1.9	7.4	4.9
Jun 3	6.5	4.3	5.4	5.1	5.3	5.9	4.9	6.6	10.1	18.0	24.1	18.4	17.1	18.2	15.0	14.2	11.3	9.6	8.1	6.0	7.6	7.4	8.5	11.2	4.3	24.1	10.4
Jun 4	8.0	9.2	9.3	8.6	10.0	8.5	9.9	9.9	13.5	11.0	10.3	9.9	14.4	12.5	11.4	19.7	24.6	25.2	23.2	22.5	20.7	23.3	22.4	13.5	8.0	25.2	14.6
Jun 5	4.1	4.4	2.1	2.8	1.9	2.3	3.0	3.9	8.3	6.4	3.5	6.4	4.3	2.8	4.1	1.1	7.5	6.9	11.4	10.2	17.4	18.9	9.0	8.5	1.1	18.9	6.3
Jun 6	10.3	8.7	7.6	10.4	10.4	11.7	16.1	20.5	20.6	17.9	18.5	20.2	19.5	20.2	20.9	21.0	22.8	19.8	18.6	11.8	8.5	7.9	7.8	8.3	7.6	22.8	15.0
Jun 7	10.5	9.8	11.0	10.7	1.7	4.4	8.0	10.2	9.1	10.0	9.5	11.7	11.5	10.6	12.4	12.8	10.3	10.3	9.3	9.0	6.7	10.1	8.6	6.3	1.7	12.8	9.4
Jun 8	5.8	6.8	8.2	9.7	6.9	6.8	8.2	13.1	9.9	11.4	9.5	8.9	9.6	8.7	10.0	11.4	11.6	10.7	12.0	10.0	7.0	7.0	8.1	7.8	5.8	13.1	9.1
Jun 9	8.0	6.3	4.8	5.6	5.7	5.5	5.6	7.3	8.2	9.7	10.8	8.8	11.4	10.8	9.1	9.2	9.4	7.7	7.4	7.1	8.5	6.3	7.0	8.3	4.8	11.4	7.9
Jun 10	9.1	7.1	5.6	8.9	8.7	3.6	4.1	6.1	10.6	12.9	8.6	9.4	11.2	12.8	14.8	15.5	15.0	13.5	11.2	11.9	4.4	3.2	3.3	7.8	3.2	15.5	9.1
Jun 11	7.2	6.8	7.7	7.6	9.7	7.2	5.4	4.9	6.0	4.3	3.4	<b>0.4</b>	4.6	7.3	10.2	9.6	9.7	11.5	12.0	10.3	8.5	11.9	7.6	7.2	<b>0.4</b>	<b>12.0</b>	7.6
Jun 12	6.6	5.3	5.3	5.7	4.8	5.6	3.5	3.4	3.1	5.0	10.4	10.9	8.9	9.2	13.4	13.3	13.1	10.7	12.6	10.0	5.5	3.5	2.7	4.2	2.7	13.4	7.4
Jun 13	2.3	2.5	5.2	1.8	9.3	4.6	8.1	8.8	10.8	10.4	9.8	9.1	10.7	12.4	12.0	11.6	10.0	12.3	14.8	15.0	15.8	13.0	13.3	15.0	1.8	15.8	9.9
Jun 14	12.7	10.5	8.8	8.0	8.6	10.0	10.2	8.7	12.0	15.6	14.6	12.9	14.6	16.2	16.0	17.6	11.6	12.9	10.0	11.4	8.4	6.2	6.1	4.1	4.1	17.6	11.2
Jun 15	5.1	9.0	11.2	11.1	10.2	9.2	10.6	7.5	8.3	8.4	9.4	6.6	7.2	7.6	8.7	8.3	6.4	5.0	3.9	5.5	5.2	7.1	7.4	7.2	3.9	11.2	7.8
Jun 16	4.4	2.9	4.7	5.3	4.4	13.8	13.1	13.2	14.5	17.4	20.4	23.8	24.8	24.9	23.3	21.7	20.5	23.0	21.4	18.0	18.6	17.3	19.0	16.6	2.9	24.9	16.1
Jun 17	17.4	16.9	15.3	18.1	18.0	15.2	18.6	20.9	21.6	19.1	20.6	21.0	20.4	21.8	19.1	17.2	16.2	15.5	14.7	12.4	6.7	4.0	4.4	6.3	4.0	21.8	15.9
Jun 18	6.7	7.4	9.8	9.0	10.7	12.3	13.5	15.0	14.7	14.8	16.5	16.1	18.0	19.6	20.8	20.6	19.6	17.5	15.6	2.4	15.6	17.7	19.6	20.9	2.4	20.9	14.8
Jun 19	19.6	20.1	22.5	21.3	23.9	25.3	26.2	25.3	26.2	26.9	27.5	29.0	29.8	<b>30.3</b>	26.7	27.1	25.0	25.6	24.6	21.9	18.8	14.0	13.9	9.3	9.3	<b>30.3</b>	<b>23.4</b>
Jun 20	9.2	9.0	7.9	7.5	10.2	7.8	8.6	11.9	12.5	15.8	16.1	18.3	16.0	14.3	14.0	13.8	11.7	11.5	10.2	10.0	6.9	5.4	4.1	5.0	4.1	18.3	10.7
Jun 21	7.0	7.9	8.7	9.4	7.4	9.5	11.1	11.6	10.3	8.1	6.9	7.9	4.1	2.9	6.3	5.8	4.2	6.5	10.0	10.0	7.8	7.6	8.6	7.9	2.9	11.6	7.8
Jun 22	5.0	3.5	2.3	1.2	0.9	4.3	4.5	4.7	3.3	8.5	5.4	4.8	7.2	10.0	10.2	9.1	6.6	1.6	1.0	1.5	3.8	6.2	1.9	5.5	0.9	10.2	4.7
Jun 23	8.2	9.8	8.7	5.1	0.6	2.9	0.7	3.0	4.8	4.7	5.6	4.1	4.8	5.4	5.7	6.3	5.7	8.1	9.0	7.3	5.1	1.4	1.6	1.9	0.6	9.8	5.0
Jun 24	1.7	0.6	2.7	2.9	2.6	0.8	3.7	3.2	5.2	5.8	7.0	9.7	11.3	12.0	10.8	10.9	11.1	8.5	14.7	14.1	17.6	17.4	16.9	12.1	0.6	17.6	8.5
Jun 25	4.5	6.0	12.7	10.0	8.3	9.4	8.4	7.4	7.7	8.0	5.9	6.1	6.9	6.2	4.3	4.2	2.1	5.0	8.0	8.2	5.3	2.7	3.4	1.5	1.5	12.7	6.3
Jun 26	2.3	1.1	2.2	3.5	1.7	2.2	1.0	3.2	5.0	4.0	6.3	8.3	4.7	2.0	3.0	4.9	10.7	9.3	9.2	2.8	1.4	1.7	2.4	3.2	1.0	10.7	4.0
Jun 27	3.8	3.8	4.6	4.3	3.1	2.0	1.6	0.9	3.0	3.9	6.7	2.1	1.8	5.0	5.4	2.9	4.1	7.4	8.7	6.6	5.8	3.8	0.5	3.8	0.5	8.7	<b>4.0</b>
Jun 28	4.6	6.8	6.2	4.8	0.7	1.7	4.1	3.9	2.4	4.3	5.1	6.5	11.2	13.1	15.3	12.2	11.2	10.1	9.5	6.9	4.4	3.8	4.2	6.1	0.7	15.3	6.6
Jun 29	3.1	0.9	2.8	6.5	9.0	11.1	14.4	15.7	13.9	10.8	10.5	17.1	16.7	16.7	20.3	18.1	17.7	18.4	16.8	10.9	6.1	10.5	9.3	9.0	0.9	20.3	11.9
Jun 30	8.5	8.2	8.9	9.7	6.6	5.5	6.7	11.2	16.8	22.5	26.6	23.1	27.1	24.6	23.9	24.8	24.0	22.1	19.8	17.0	9.0	7.4	5.9	5.5	5.5	27.1	15.2
Diurnal Maximum	19.6	20.1	22.5	21.3	23.9	25.3	26.2	25.3	26.2	26.9	27.5	29.0	29.8	30.3	26.7	27.1	25.0	25.6	24.6	22.5	20.7	23.3	22.4	20.9			
Diurnal Average	7.3	7.1	7.7	7.8	7.1	7.5	8.2	9.2	10.1	10.9	11.4	11.5	12.0	12.2	12.6	12.5	12.2	12.0	12.3	10.2	8.9	8.5	7.9	7.8			

<b>C</b> Monthly Calibration	<b>S</b> Daily Zero-Span Check	<b>Q</b> Quality Assurance
<b>K</b> Collection Error	<b>ND</b> No Data (Machine Not in Service)	<b>Y</b> Routine Maintenance
<b>X</b> InValid Data (Equipment Malfunction /Recovery)	<b>NRM</b> UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b> Power Failure

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

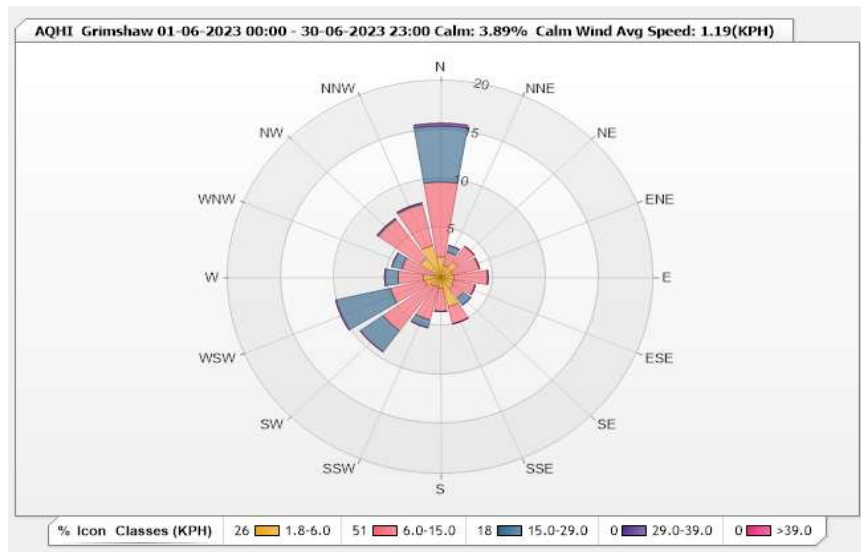


Station: AQHI Grimshaw Monitor: WDS [KPH] Monthly: 06-2023

Type: Wind Rose  
 Direction: Blowing From (Wind Frequency)  
 Time Base: 1 - Hour

Calm (WS<1.8kph): 3.89% Valid Data: 100.00%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	2.08	7.64	5.69	0.28	0	15.69
NNE	1.25	1.39	0.69	0	0	3.33
NE	1.94	1.94	0	0	0	3.88
ENE	1.11	2.64	0	0	0	3.75
E	1.25	3.19	0	0	0	4.44
ESE	1.25	2.08	0	0	0	3.33
SE	1.39	1.25	0.83	0	0	3.47
SSE	3.06	1.81	0	0	0	4.87
S	1.11	2.36	0	0	0	3.47
SSW	0.97	3.47	0.83	0	0	5.27
SW	1.11	5.56	2.64	0	0	9.31
WSW	1.53	3.33	5.28	0	0	10.14
W	1.67	2.36	1.25	0	0	5.28
WNW	0.56	3.19	0.97	0	0	4.72
NW	2.36	4.86	0.14	0	0	7.36
NNW	3.33	4.31	0.14	0	0	7.78
Summary	25.97	51.38	18.46	0.28	0	96.09



Peace River Area Monitoring Program

AQHI - Grimshaw Station - June 2023

Summary of Hourly Averages

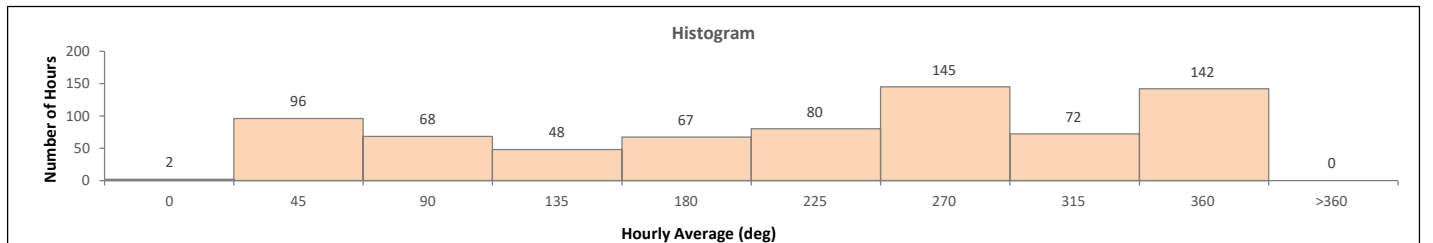
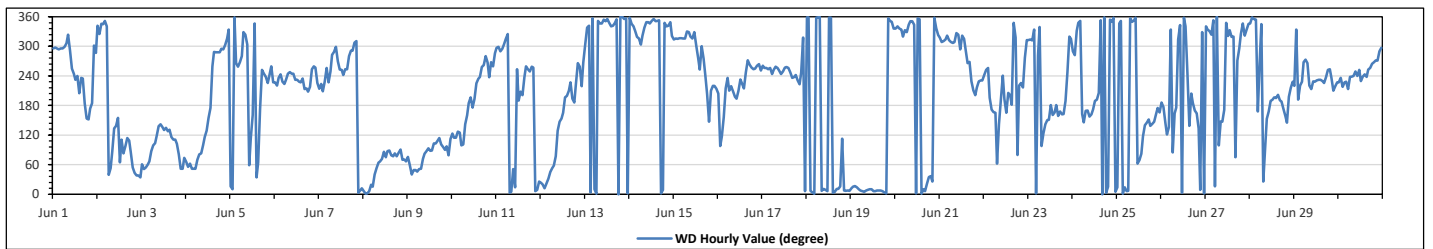
WIND DIRECTION (VWD) in sector

Monthly Average:	301 (WNW) degree	Hours in Service:	720
		Hours of Data:	720
		Hours of Missing Data:	0
		Hours of Calibration:	0
		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Average			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant	
Jun 1	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	WNW	WSW	WSW	SW	WSW	SSW	SW	SW	S	SSE	SSE	S	S	WNW	WNW	259	WSW	
Jun 2	NNW	NW	NNW	NNW	N	NNW	NE	NE	E	SE	SSE	ENE	ESE	E	E	ESE	ESE	E	NE	NE	NE	NE	NE	NE	57	ENE	
Jun 3	ENE	NE	NE	ENE	ENE	E	E	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	E	E	NE	NE	ENE	ENE	98	E	
Jun 4	ENE	NE	ENE	NE	NE	NE	ENE	E	E	E	ESE	SE	SSE	S	WSW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	27	NNE	
Jun 5	NNE	N	N	W	WSW	W	W	NNW	NW	WNW	ENE	ESE	SSE	NNW	NE	ENE	S	WSW	WSW	SW	SW	WSW	WSW	SW	285	WNW	
Jun 6	SW	SW	SW	WSW	SW	SW	SW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	233	SW
Jun 7	SSW	SW	SSW	SW	WSW	SW	WSW	W	WNW	WNW	W	WSW	WSW	WSW	WSW	WSW	W	WNW	WNW	NW	NW	N	N	NNE	271	W	
Jun 8	N	N	N	N	NNE	NNE	NE	NE	ENE	ENE	E	ENE	E	E	ENE	ENE	E	ENE	E	E	ENE	ENE	ENE	ENE	59	ENE	
Jun 9	ENE	ENE	NE	NE	NE	NE	NE	ENE	E	E	E	E	E	ESE	ESE	ESE	ESE	E	E	E	E	E	E	ENE	81	E	
Jun 10	ESE	ESE	ESE	SE	SE	E	E	SE	SSE	S	SSW	S	S	SW	SW	SW	WSW	W	W	W	SW	W	WSW	WNW	197	SSW	
Jun 11	WNW	WNW	WNW	WNW	WNW	NW	NW	N	NE	NNE	WSW	S	SSW	SSW	SSW	SSW	SSW	SSW	S	SW	W	WSW	SW	W	170	SSE	
Jun 12	NNE	NNE	NNE	NNE	NNE	NE	NE	ENE	ENE	SE	SE	SSE	SSE	SSW	SSW	SSW	SSW	S	SW	W	WSW	SW	W	152	SSE		
Jun 13	WNW	NNW	NNW	N	N	N	N	NNW	NNW	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	N	N	N	N	352	N	
Jun 14	N	NNW	NNW	NNW	NW	NW	WNW	NW	NNW	NNW	NNW	NNW	N	N	N	N	N	N	N	NNW	NNW	NNW	NNW	NNW	343	NNW	
Jun 15	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	WNW	W	WSW	WNW	W	SW	SSW	SE	SSW	SW	SSW	SSW	286	WNW	
Jun 16	SSW	E	ESE	SSE	SSW	SW	SSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	W	W	WSW	WSW	WSW	W	W	WSW	225	SW	
Jun 17	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	WSW	SW	WSW	NW	N	254	WSW	
Jun 18	N	N	N	N	N	N	N	N	NNE	N	N	N	N	N	N	N	NNE	NNE	NNE	ESE	N	N	N	N	7	N	
Jun 19	NNE	NNE	NNE	NNE	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	NNW	5	N	
Jun 20	NNW	NNW	NNW	NNW	NW	NNW	NNW	NNW	N	N	NNW	N	N	N	N	N	N	NNE	NE	NE	NNE	N	NNW	NW	353	N	
Jun 21	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NW	NNW	NW	NNW	W	W	SSW	SSW	SSW	SSW	SSW	SSW	SSW	285	WNW	
Jun 22	WSW	WSW	WSW	SSW	S	SSE	SSE	ENE	SE	S	WSW	S	SSE	SSW	S	NNW	NW	E	SW	SW	SW	W	NW	210	SSW		
Jun 23	NW	NW	NW	NNW	N	WNW	E	ESE	SE	SSE	SSE	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S	WSW	NW	NW	192	S		
Jun 24	WNW	W	NNW	NNW	N	SSE	SE	SSE	SSE	SSE	SSE	S	S	S	SSW	N	N	N	N	NNE	N	N	N	331	NNW		
Jun 25	NNE	NNW	N	N	NNE	N	N	N	N	N	N	ENE	ENE	E	ESE	SE	SE	SSE	SE	SE	SSE	S	SSE	65	ENE		
Jun 26	S	S	SE	ESE	SE	NNW	E	SSE	S	NW	NNW	N	N	NNW	WSW	SE	SSW	S	SSE	SSE	SE	N	NNW	152	SSE		
Jun 27	NNW	NNW	NNW	NW	N	NNE	N	E	SE	SE	S	NNW	NW	NNW	NW	ENE	W	WNW	NW	NNW	NW	NNW	NNW	339	NNW		
Jun 28	NNW	N	N	SSE	WSW	NNW	NNE	E	SSE	SSE	S	S	SSW	SSW	S	S	SSE	SE	SSW	SSW	SSW	SSW	SSW	189	S		
Jun 29	SW	NNW	S	SW	SW	W	W	W	SW	SSW	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	SW	SSW	SSW	SSW	235	SW		
Jun 30	SW	SW	SW	SW	SW	SSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	W	W	WNW	WNW	247	WSW	

<b>C</b> Monthly Calibration	<b>S</b> Daily Zero-Span Check	<b>Q</b> Quality Assurance
<b>K</b> Collection Error	<b>ND</b> No Data (Machine Not in Service)	<b>Y</b> Routine Maintenance
<b>X</b> InValid Data (Machine Malfunction /Recovery)	<b>NRM</b> UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	<b>P</b> Power Failure

Daily Average is shown "\*" if minimum data completeness criteria of 75% or 18 hours per day is not met.  
 Monthly Average is shown "\*" if minimum data completeness criteria of 75% of days per month is not met.



Peace River Area Monitoring Program

AQHI - Grimshaw Station - June 2023

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr & WIND DIRECTION (VWD) in sector

Table containing wind speed and direction data for June 2023, including monthly averages, hourly period starting at MST, and a legend for status codes (C, K, X, S, ND, NRM, Q, Y, P).

## END OF REPORT

This page, 151 of 151, ends the June 2023 Monthly Ambient Air Quality Monitoring Report.



## **Peace River Area Monitoring Program**

# **JUNE 2023**

## **Ambient Air Monitoring Calibration Report**

### **- 842-B STATION-**

### **CAL-PRAMP-202306-01561**

**Operation and Maintenance:**

Bureau Veritas Canada

**Data Validation and Report:**

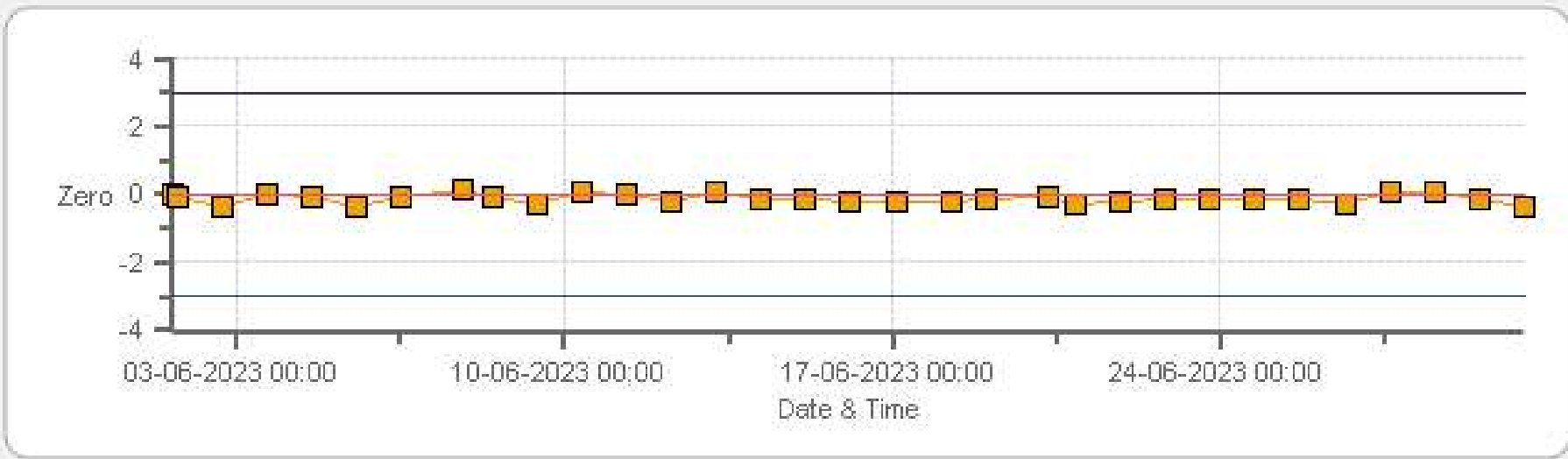
Bureau Veritas Canada

July 17, 2023



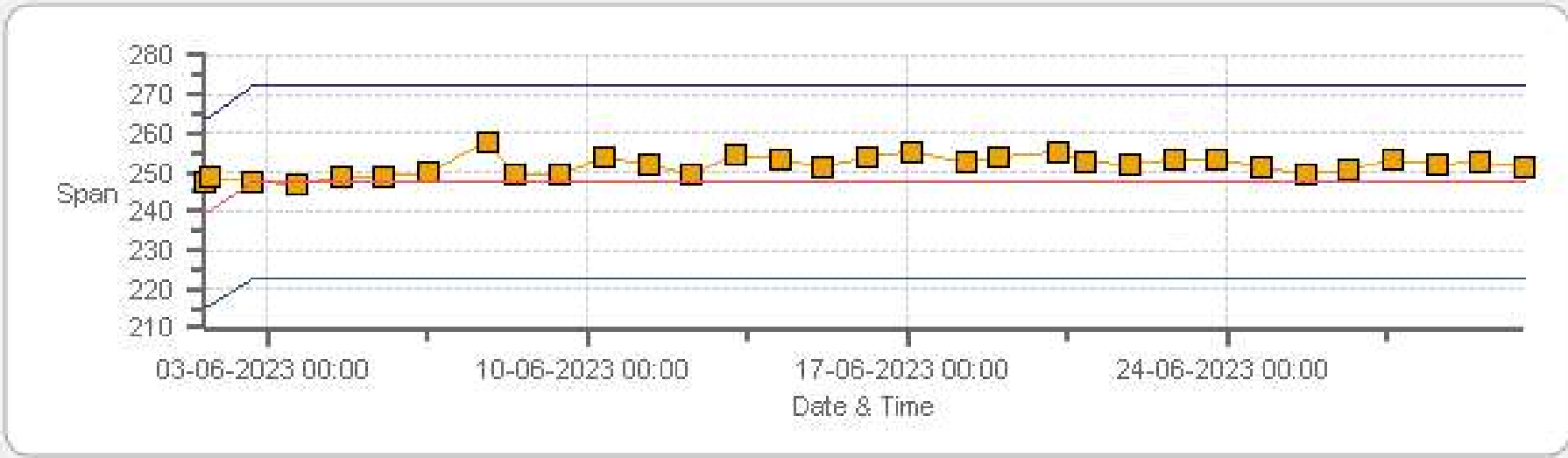
# DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: PRAMP 842-B Monthly: 06-2023 Type: SpanAndZero - Zero



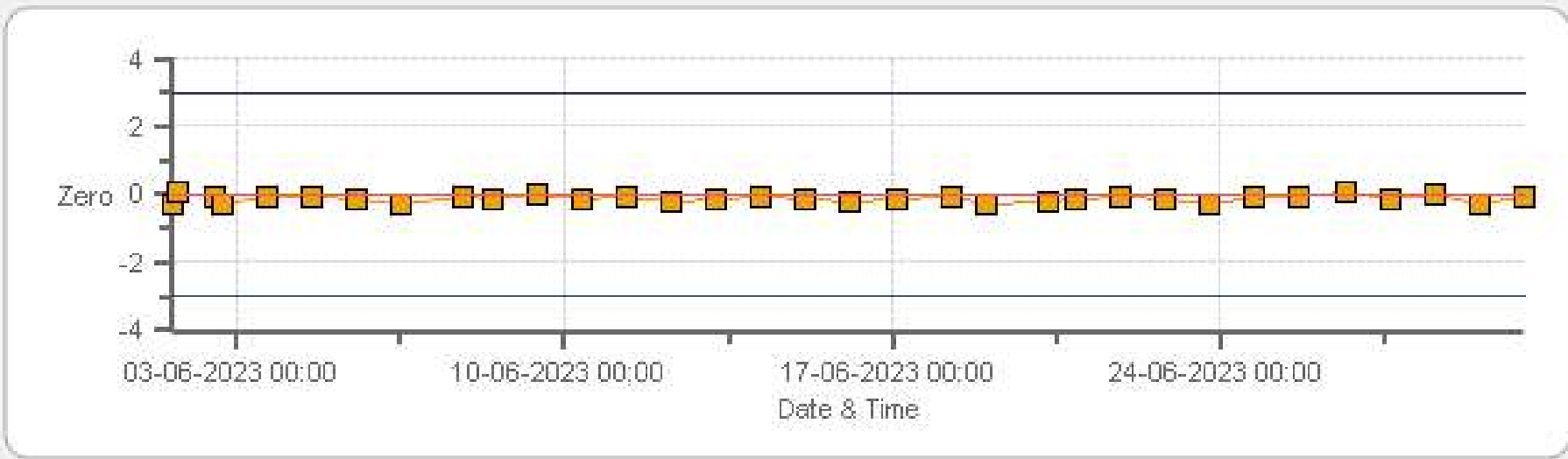
■ Zero    
 — Zero Ref    
 — Zero Low    
 — Zero High

SO2[ppb] Calibration: PRAMP 842-B Monthly: 06-2023 Type: SpanAndZero - Span



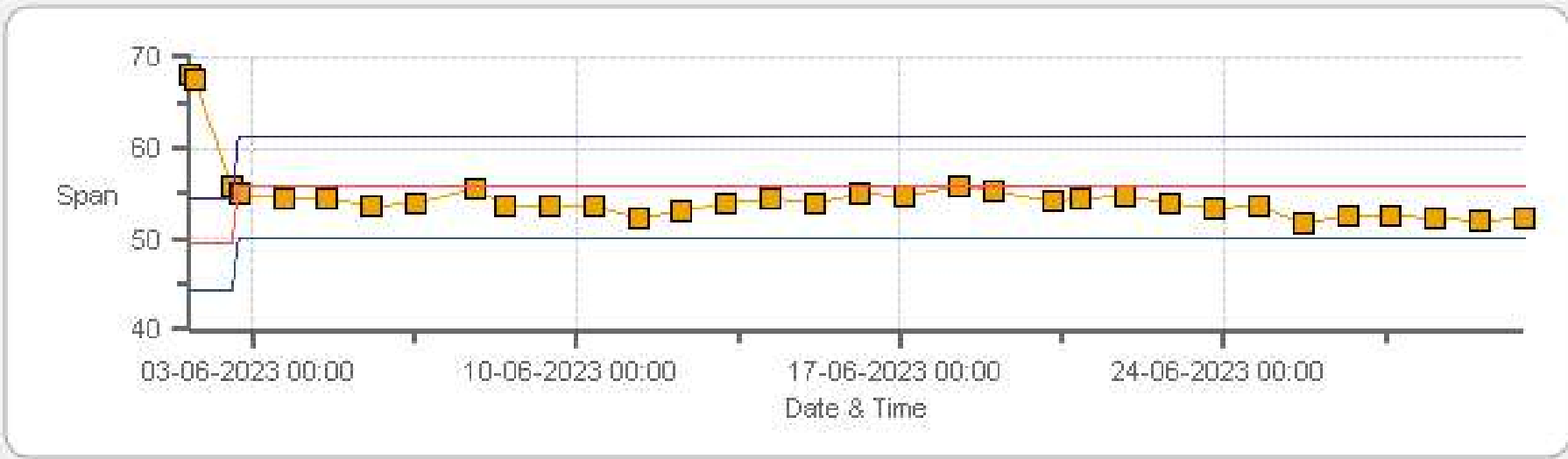
■ Span    
 — SpanRef    
 — Span Low    
 — Span High

TRS[ppb] Calibration: PRAMP 842-B Monthly: 06-2023 Type: SpanAndZero - Zero



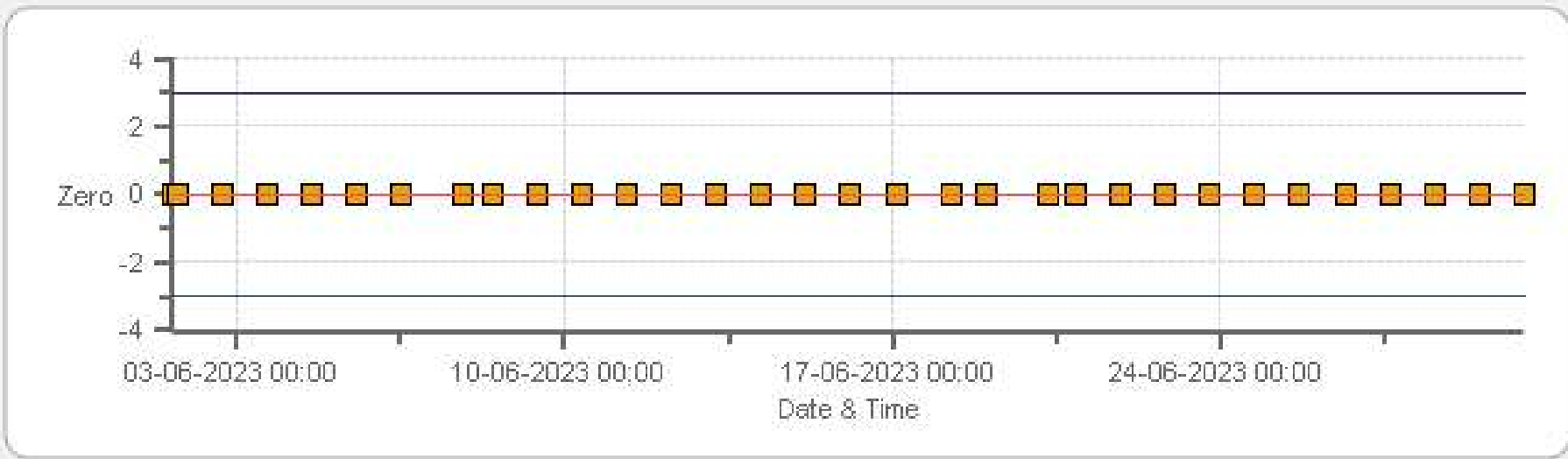
Zero Zero Ref Zero Low Zero High

TRS[ppb] Calibration: PRAMP 842-B Monthly: 06-2023 Type: SpanAndZero - Span



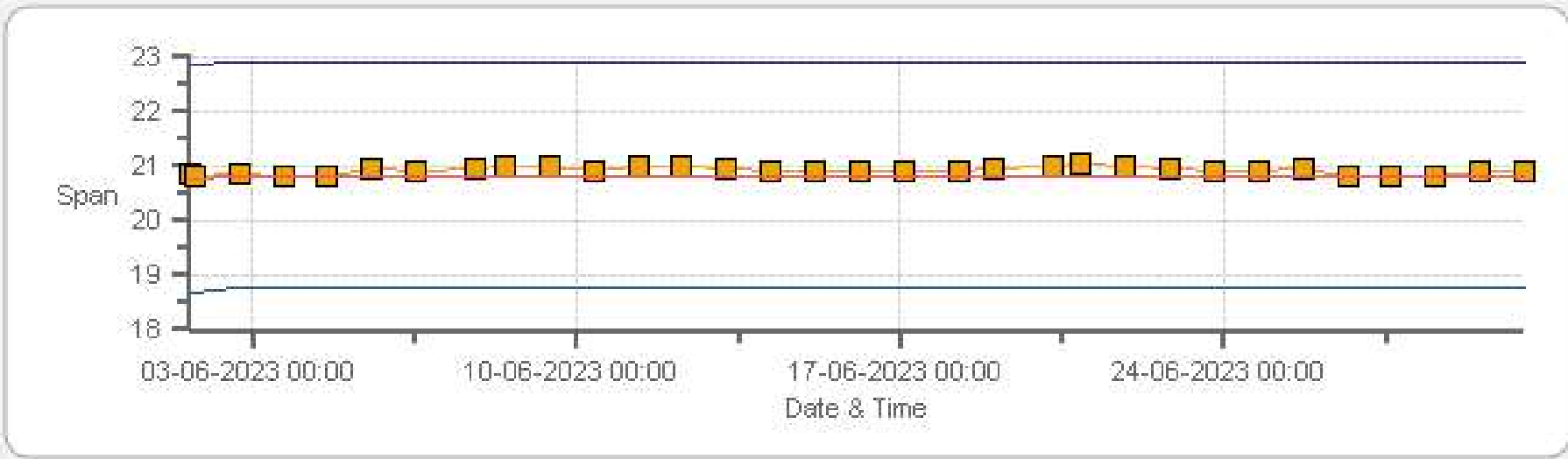
Span SpanRef Span Low Span High

THC55[ppm] Calibration: PRAMP 842-B Monthly: 06-2023 Type: SpanAndZero - Zero



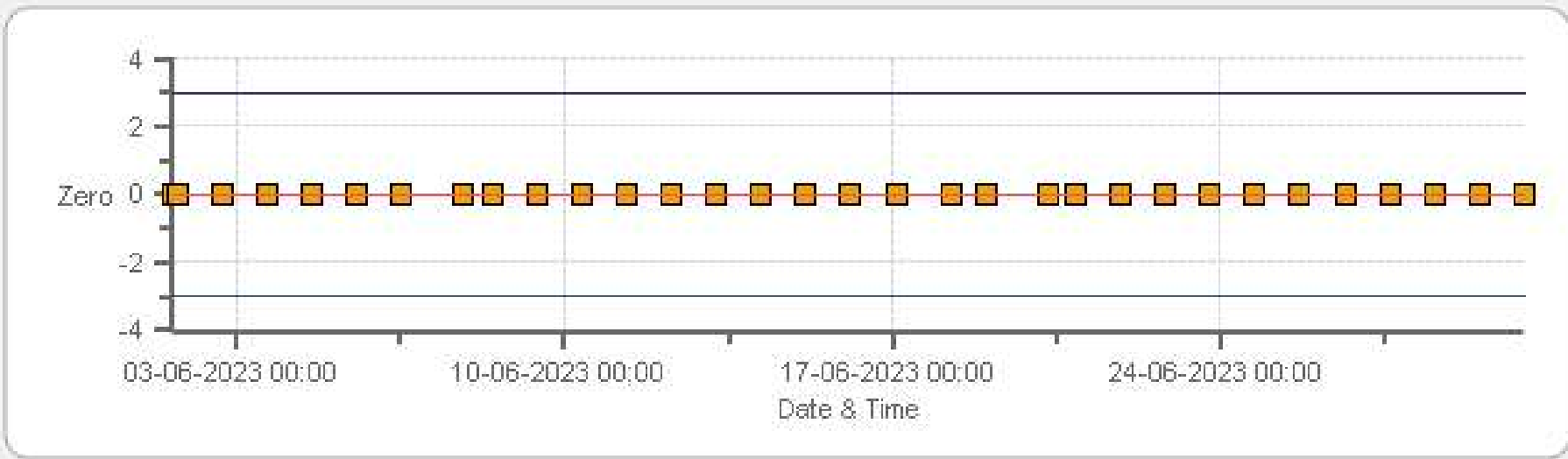
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: PRAMP 842-B Monthly: 06-2023 Type: SpanAndZero - Span



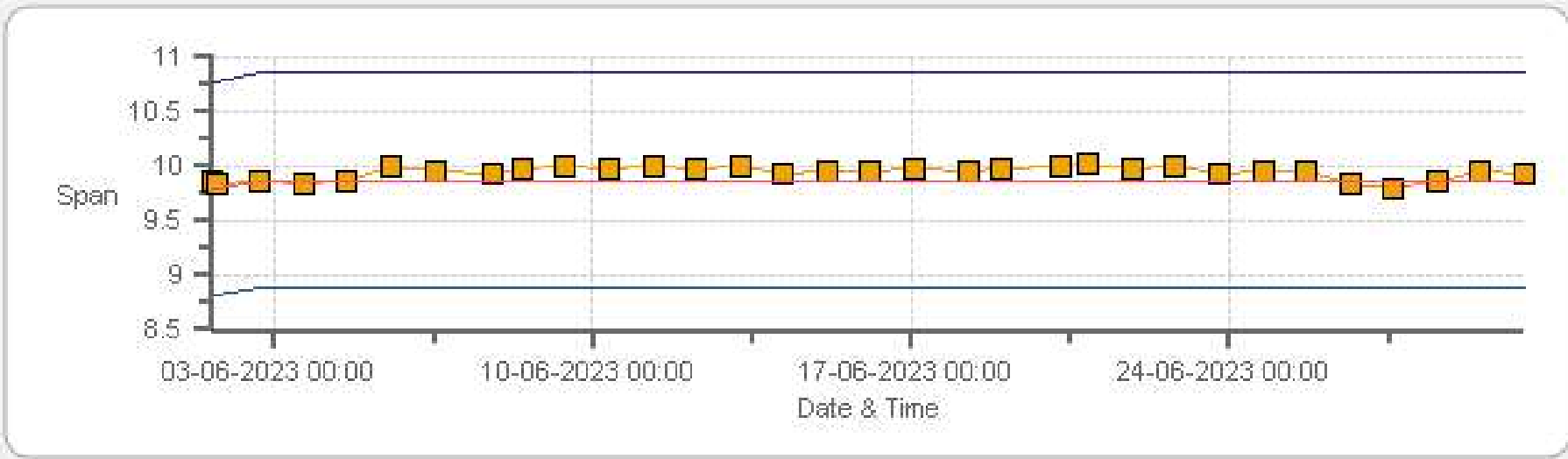
Span Span Ref Span Low Span High

CH4[ppm] Calibration: PRAMP 842-B Monthly: 06-2023 Type: SpanAndZero - Zero



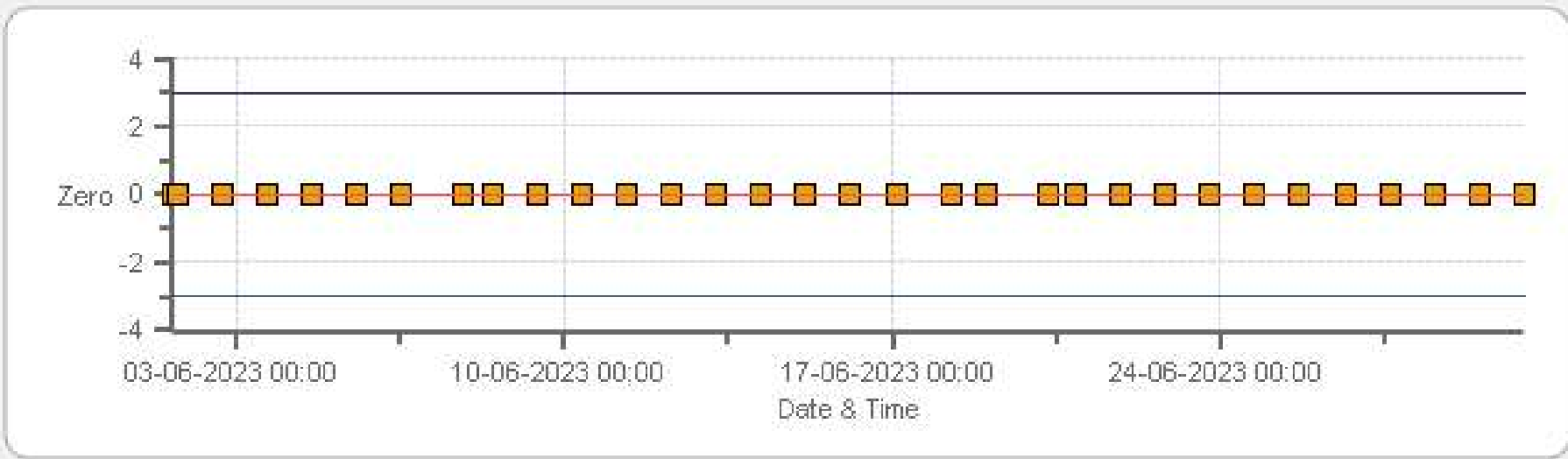
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: PRAMP 842-B Monthly: 06-2023 Type: SpanAndZero - Span



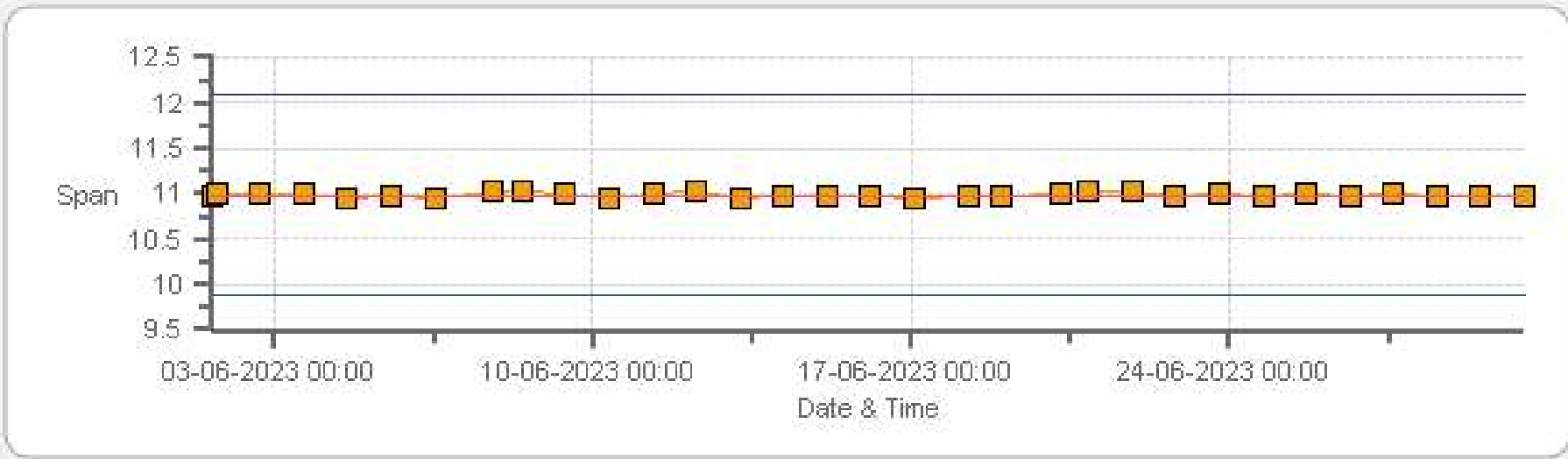
Span Span Ref Span Low Span High

NMHC[ppm] Calibration: PRAMP 842-B Monthly: 06-2023 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: PRAMP 842-B Monthly: 06-2023 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

# MULTI-POINT CALIBRATION RECORDS

# SO2 Analyzer Calibration by Dilution



DATE:	01-Jun-2023	PREVIOUS CALIBRATION DATE:	03-May-2023
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	23.9
LOCATION:	842b	BAROMETRIC (mBar):	944
PURPOSE:	Routine	START TIME (MST):	09:58
PERFORMED BY:	Kevin Sebastian	END TIME (MST):	15:27

## ANALYZER:

MAKE/MODEL	Thermo 43iQTL	RANGE	500 ppb
SERIAL #	1200736629	FLOW (mL/min)	425
INITIAL		FINAL	
BKG/OFFSET	8.4	BKG/OFFSET	9
COEF/SLOPE	1.097	COEF/SLOPE	1.148
Expected (reference) Value	239.9	Expected (reference) Value	247.6

## CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	M701
ID:	58100720	ID:	5004
MFC CALIBRATION DATE:	15-Mar-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL19664	HIGH ID	n/a
CONC (ppm):	25.20	EXPIRY DATE	n/a
CYLINDER (psi):	600	LOW ID	n/a
EXPIRY DATE	03-Jul-2023	EXPIRY DATE	n/a

## CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	390	190	95
RANGE	300 - 400	150 - 200	50 - 100

## SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

## CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
4001	<del>60.60</del>	4001	0.00	-0.5	0	<del>1.051</del>	<del>1.003</del>
3940	60.60	4001	381.68	362.6	380.5	1.051	1.003
3972	28.70	4001	180.76	n/a	181	n/a	0.999
3987	14.30	4001	90.07	n/a	90.5	n/a	0.995

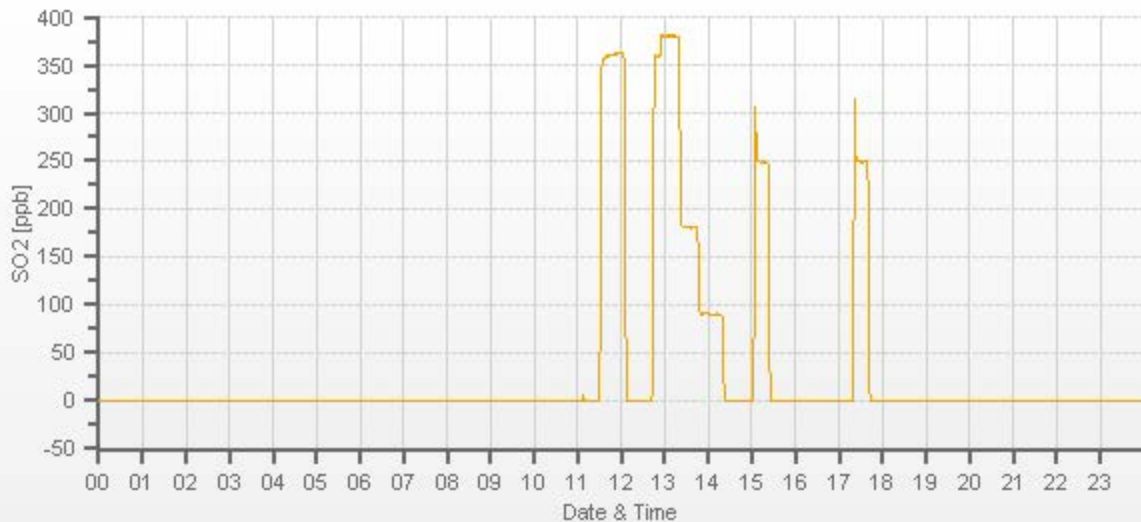
## LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.996	0.1%

## COMMENTS:

Sample filter changed.  
 Incorrect cylinder concentration (25.1 ppm) entered in sheet during calibration. Corrected at review.





# TRS Analyzer Calibration by Dilution



DATE:	01-Jun-2023	PREVIOUS CALIBRATION DATE:	03-May-2023
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	23.9
LOCATION:	842b	BAROMETRIC (mBar):	944
PURPOSE:	Routine	START TIME (MST):	09:58
PERFORMED BY:	Kevin Sebastian	END TIME (MST):	15:27

## ANALYZER:

MAKE/MODEL	Thermo 43iQTL	RANGE	100 ppb
SERIAL #	1200736630	FLOW (mL/min)	374
INITIAL		FINAL	
BKG/OFFSET	14.2	BKG/OFFSET	20.9
COEF/SLOPE	0.942	COEF/SLOPE	1.323
Expected (reference) Value	49.42	Expected (reference) Value	68.05

## CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	M701
ID:	58100720	ID:	5004
MFC CALIBRATION DATE:	15-Mar-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY0002519	HIGH ID	n/a
CONC (ppm):	9.41	EXPIRY DATE	n/a
CYLINDER (psi):	880	LOW ID	n/a
EXPIRY DATE	10-Nov-2023	EXPIRY DATE	n/a

## CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	78	38	19
RANGE	60 - 80	30 - 40	10 - 20

## SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

## CALIBRATION:

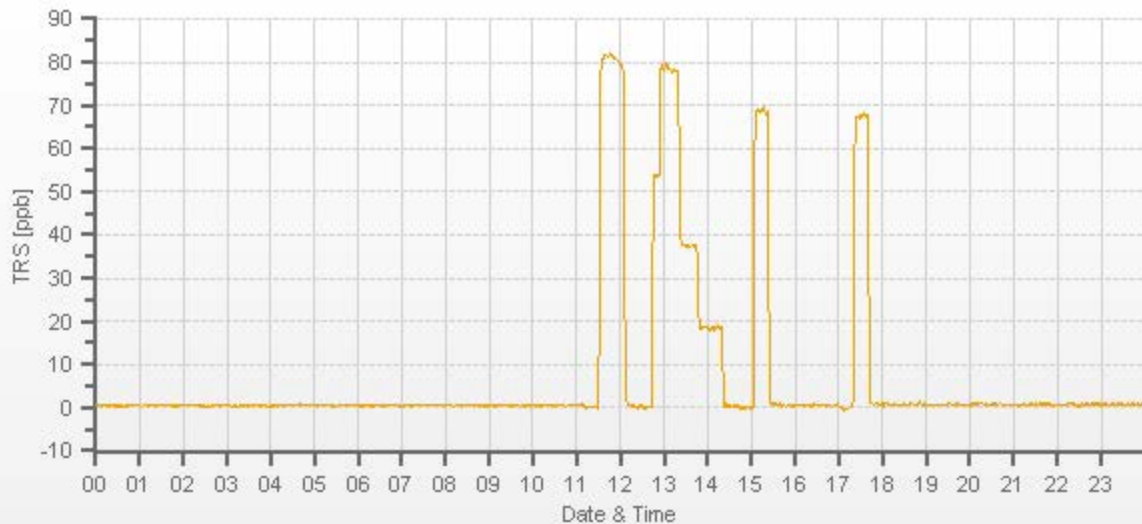
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
3998	<del>33.10</del>	3998	0.00	-0.15	0	<del>0.971</del>	<del>1.000</del>
3968	33.10	4001	77.85	80.03	77.87	0.971	1.000
3985	16.20	4001	38.10	n/a	37.23	n/a	1.023
3993	8.10	4001	19.05	n/a	18.4	n/a	1.035

## LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.002	-0.4%

## COMMENTS:

TRS Converter CDNOVA CDN #583 Sample filter changed
--



# TRS Analyzer Calibration by Dilution



DATE:	02-Jun-2023	PREVIOUS CALIBRATION DATE:	01-Jun-2023
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	21.6
LOCATION:	842b	BAROMETRIC (mBar):	946
PURPOSE:	Repeat	START TIME (MST):	08:12
PERFORMED BY:	Kevin Sebastian	END TIME (MST):	13:08

## ANALYZER:

MAKE/MODEL	Thermo 43iQTL	RANGE	100 ppb
SERIAL #	1200736630	FLOW (mL/min)	374
INITIAL		FINAL	
BKG/OFFSET	20.9	BKG/OFFSET	16.1
COEF/SLOPE	1.323	COEF/SLOPE	1.071
Expected (reference) Value	68.05	Expected (reference) Value	55.71

## CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	M701
ID:	58100720	ID:	5004
MFC CALIBRATION DATE:	15-Mar-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY0002519	HIGH ID	n/a
CONC (ppm):	9.41	EXPIRY DATE	n/a
CYLINDER (psi):	880	LOW ID	n/a
EXPIRY DATE	10-Nov-2023	EXPIRY DATE	n/a

## CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	78	38	19
RANGE	60 - 80	30 - 40	10 - 20

## SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

## CALIBRATION:

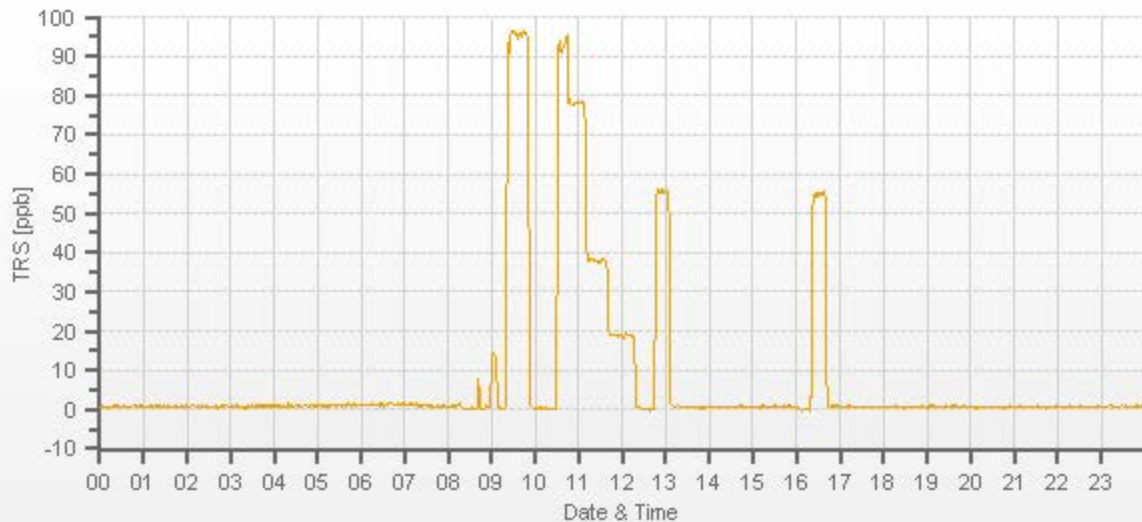
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
4002	<del>33.10</del>	4002	0.00	-0.01	0	<del>0.815</del>	<del>0.999</del>
3970	33.10	4003	77.81	95.43	77.86	0.815	0.999
3987	16.20	4003	38.08	n/a	37.86	n/a	1.006
3995	8.10	4003	19.04	n/a	18.67	n/a	1.020

## LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.002	-0.2%

## COMMENTS:

TRS Converter CDNOVA CDN #583 08:52- 09:09 Calibration Line Error 09:09- As found Zero Restarted 09:23-09:25 Flushed out
---



# Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	01-Jun-2023	PREVIOUS CALIBRATION DATE:	03-May-2023	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	PRAMP	TEMPERATURE (°C):	23.9		Thermo 55i	1314057759	1142
LOCATION:	842b	BAROMETRIC (mBar):	944	PARAMETER:	CH4	NMHC	THC
PURPOSE	Routine	START TIME (MST):	09:58	RANGE (ppm):	20	20	40
PERFORMED BY:	Kevin Sebastian	END TIME (MST):	15:26	PREVIOUS CF:	0.999	1.001	1.000

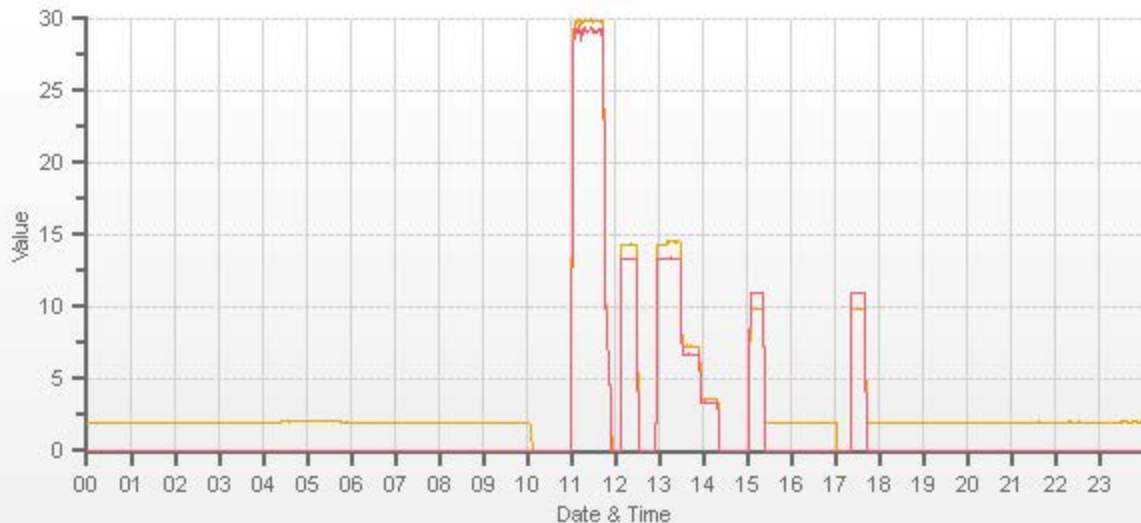
CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	Sabio	MAKE:	Teledyne	CYLINDER ID:	LL28583	HIGH ID:	n/a
MODEL:	2010	MODEL:	M701	CH <sub>4</sub> /C <sub>3</sub> H <sub>8</sub> (ppm):	608.0   203.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	5004	CYLINDER (psi):	300	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Mar-2023	OXIDIZER ID:	Internal	EXPIRY DATE	18-Aug-2029	LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:							
POINT (CH <sub>4</sub> /NMHC)	HIGH	MID	LOW	CH <sub>4</sub> EQUIVILANCE			
TARGET	14	7	3.5	C <sub>3</sub> H <sub>8</sub> as CH <sub>4</sub>		558.3	
RANGE	12 - 16	6 - 8	2 - 4	THC as CH <sub>4</sub>		1166.3	

EXPECTED (REFERENCE) VALUE:							
INITIAL	CH <sub>4</sub>	NMHC	THC	FINAL	CH <sub>4</sub>	NMHC	THC
	9.79	10.98	20.77		9.87	10.98	20.84

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC
3097	<del>X</del>	3097	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>
3023	74.00	3097	14.53	13.34	27.87	14.35	13.35	27.69	14.50	13.34	27.85	1.012	0.999	1.006	1.002	1.000	1.001
3060	37.20	3097	7.30	6.71	14.01	n/a	n/a	n/a	7.26	6.69	14.00	n/a	n/a	n/a	1.006	1.002	1.001
3078	18.60	3097	3.65	3.35	7.00	n/a	n/a	n/a	3.65	3.37	7.04	n/a	n/a	n/a	1.000	0.995	0.995

LINEAR REGRESSION ANALYSIS:				Comments:			
	CORRELATION	SLOPE	INTERCEPT	Sample filter changed 11:42-12:03- As found Zero restarted due to excessive flow in calibration line  Use Zero Chrom? <b>No</b>			
CH <sub>4</sub>	1.000	0.998	0.0%				
NMHC	1.000	1.000	0.0%				
THC	1.000	0.999	0.0%				



CAL-PRAMP-202306-01561

# Meteorological System Checklist



Date:	June 1, 2023		
Technician:	Kevin Sebastian		
Station:	PRAMP 842b		
<b>Unit:</b>	<b>Make:</b>	<b>Model:</b>	<b>Serial #:</b>
Precipitation Sampler:	RM Young	52202	TB 15878
Temperature Sensor:	Rotronic	HC2A-S3	20370767
Barometric Pressure Sensor:	MetOne	92	Y23362
Relative Humidity Sensor:	Rotronic	HC2A-S3	20370767
Anemometer:	RM Young	05305AQ	174802

### PRECIPITATION SENSOR CHECK

Checklist:	Reply:	Comments:
Previous check date:	May 3, 2023	
Is the sensor Level?	yes	
Is the heater operating properly?	yes	
Are the bucket drain holes clean?	yes	(13:29- 13:36)
Is the screen on the housing? (screen should be on between July and September)	yes	
Is the housing clean?	yes	
Is the area around the housing clean and free from obstacles?	yes	

### TIP TEST - Slowly pour water until 10 tips are heard. (10 tips = 1 mm)

# of Tips	Data Logger Response (mm):	Manual Specification = +/- 0.1 mm
10	1.0	0.00

### AMBIENT TEMPERATURE SENSOR CHECK

Previous check date:	May 3, 2023	
Parameter:	Temperature @ 2 metres	
Reference Thermometer ID:	F.S. 11745843 expires June 14, 2023	
Reference Temperature (°C):	20.8	
Station - Ambient Temperature (°C):	20.3	
Temperature Difference (°C):	0.5	

### BAROMETRIC PRESSURE SENSOR CHECK

Previous check date:	May 3, 2023	
Reference Barometer ID:	BRUNTON #05535, Expire: Feb 27, 2024	
Reference Pressure - Units/Reading:	millibar	944.1
Station Pressure - Units/Reading:	millibar	944.3
Pressure Tolerance +/- 15% of error:	802 - 1086	-0.02%

### RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK

Previous check date:	May 3, 2023	
Reference Hygrometer ID:	F.S. 11745843 expires June 14, 2023	
Reference Hygrometer % RH- Reading:	27.80	
Station Hygrometer % RH- Reading:	28.60	
RH Tolerance +/- 15% of difference:	23.63 - 31.97	-2.9%

### ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK

WIND SPEED		WIND DIRECTION	
Previous check date:	May 3, 2023	Previous check date:	May 3, 2023
Wind Speed Observed (kph):	20~30	Wind Direction Observed:	NW
Wind speed on Data Logger (kph):	29	Wind Direction on Data Logger:	NW
		Wind Direction Pass/Fail?:	Pass

Comments





# Meteorological Sensor Audit/Calibration

## Location Information

Company:	PRAMP	Performed By:	Limin Li
Audit Location:	842b	Reviewed By:	Chris Wesson
Audit Date:	August 3, 2022	Start/End Time (mst):	16:30/17:58
Calibration Purpose:	routine annual	Weather Conditions:	Mainly sunny

## Wind Sensor Information

Sensor ID Data:		Sensor Outputs:	
Sensor Make:	RM Young	Velocity Voltage Output Range:	n/a
Sensor Model:	05305AQ	Velocity Unit Output Range:	0-200
Serial #:	174802	Direction Voltage Output Range:	n/a
Previous Cal/Audit Date:	July 4, 2022	Direction Unit Output Range:	0-360

## Wind Calibrator Information

Calibrator I.D. and Expiry Date: RM Young 18802 id# CA03309 expires June 07, 2023

## 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	18.3	18.3	1.007
2000	36.9	36.7	36.7	1.004
3000	55.3	55.1	55.1	1.003
4000	73.7	73.6	73.6	1.002
5000	92.2	92.0	92.0	1.002
6000	110.6	110.5	110.5	1.001
7000	129.0	128.9	128.9	1.001
8000	147.4	147.3	147.3	1.001
9000	165.9	165.8	165.8	1.000
10000	184.3	184.2	184.2	1.001
The audit meets AMD requirements.			Average Correction Factor=	1.002

## Wind Direction Audit Data **\*\*+/- 3° 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	355	1.0	0.0	0.5
30	330	29	334	1.0	-4.0	2.5
60	300	58	305	2.0	-5.0	3.5
90	270	88	275	2.0	-5.0	3.5
120	240	119	244	1.0	-4.0	2.5
150	210	149	212	1.0	-2.0	1.5
180	180	180	180	0.0	0.0	0.0
210	150	211	150	-1.0	0.0	0.5
240	120	243	119	-3.0	1.0	2.0
270	90	275	88	-5.0	2.0	3.5
300	60	305	59	-5.0	1.0	3.0
330	30	333	30	-3.0	0.0	1.5
355	0	355	1	0.0	1.0	0.5
The audit meets AMD requirements.				Average Absolute Degrees Difference=		1.9

## Comments:

Physical inspection completed. No issues.

**END OF REPORT**



## Peace River Area Monitoring Program

# JUNE 2023

## Ambient Air Monitoring Calibration Report

### - 986-C STATION-

### CAL-PRAMP-202306-01562

**Operation and Maintenance:**

Bureau Veritas Canada

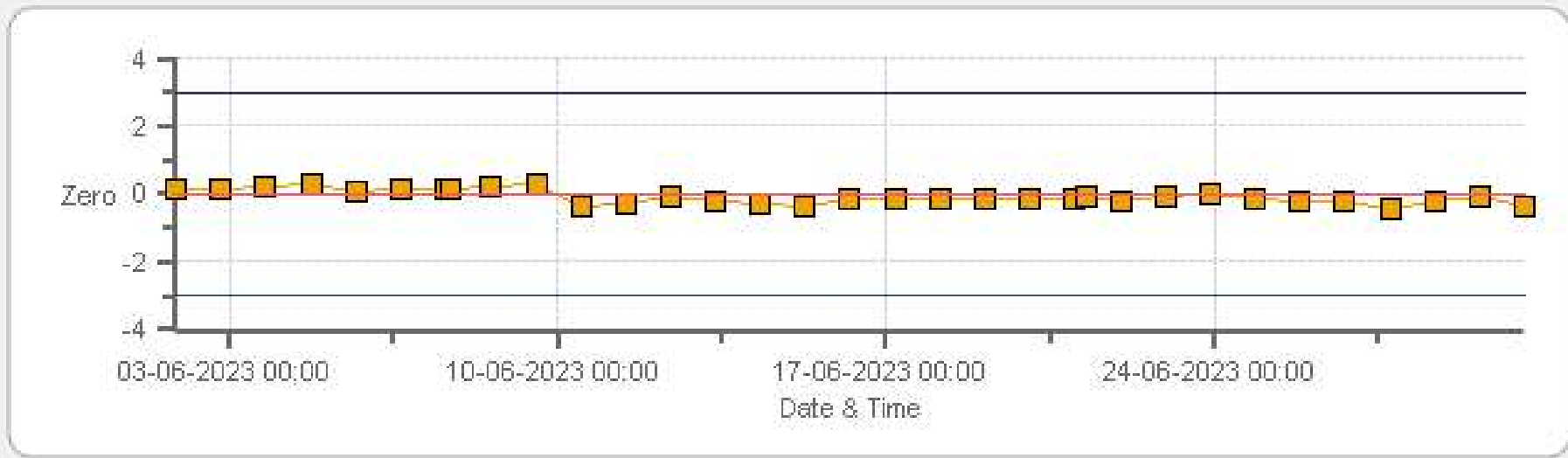
**Data Validation and Report:**

Bureau Veritas Canada

July 17, 2023

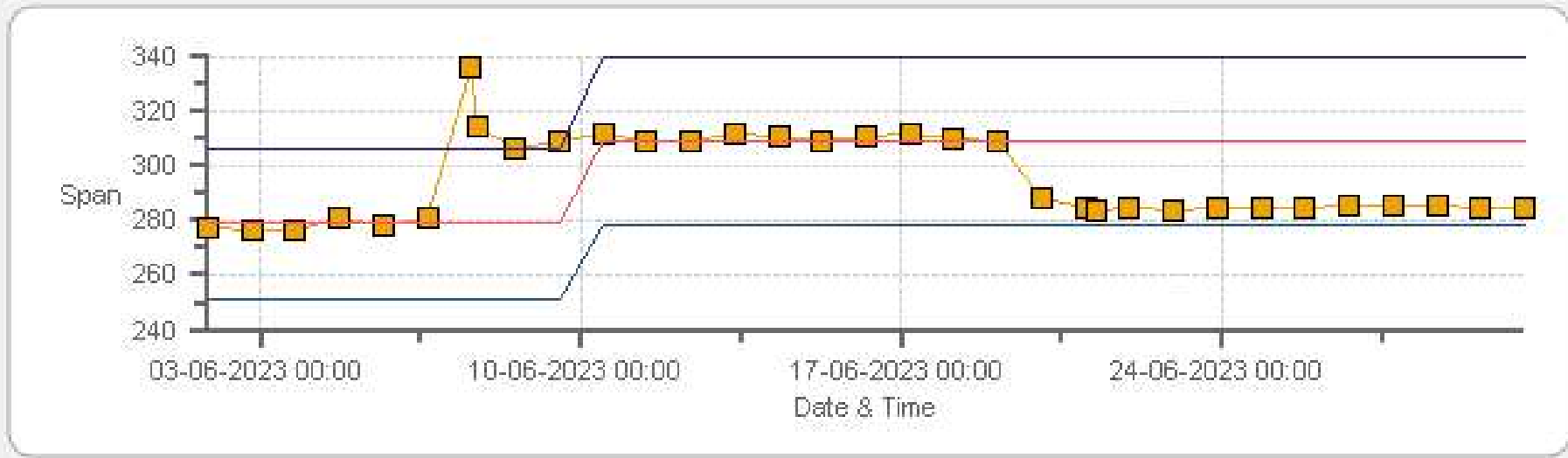
# DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: PRAMP 986-C Monthly: 06-2023 Type: SpanAndZero - Zero



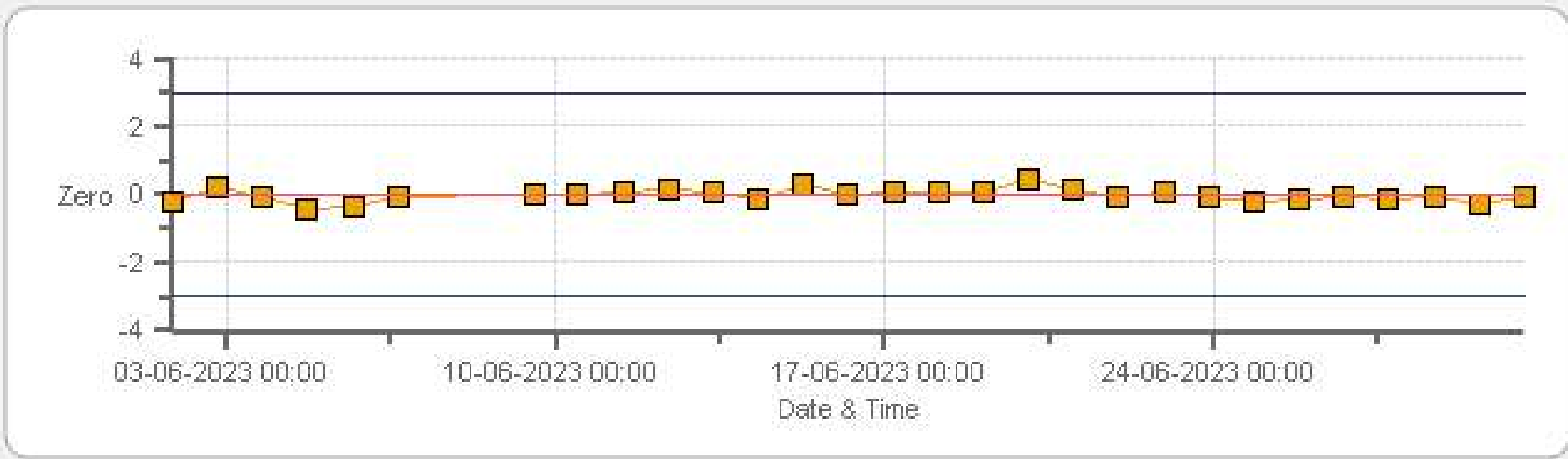
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: PRAMP 986-C Monthly: 06-2023 Type: SpanAndZero - Span



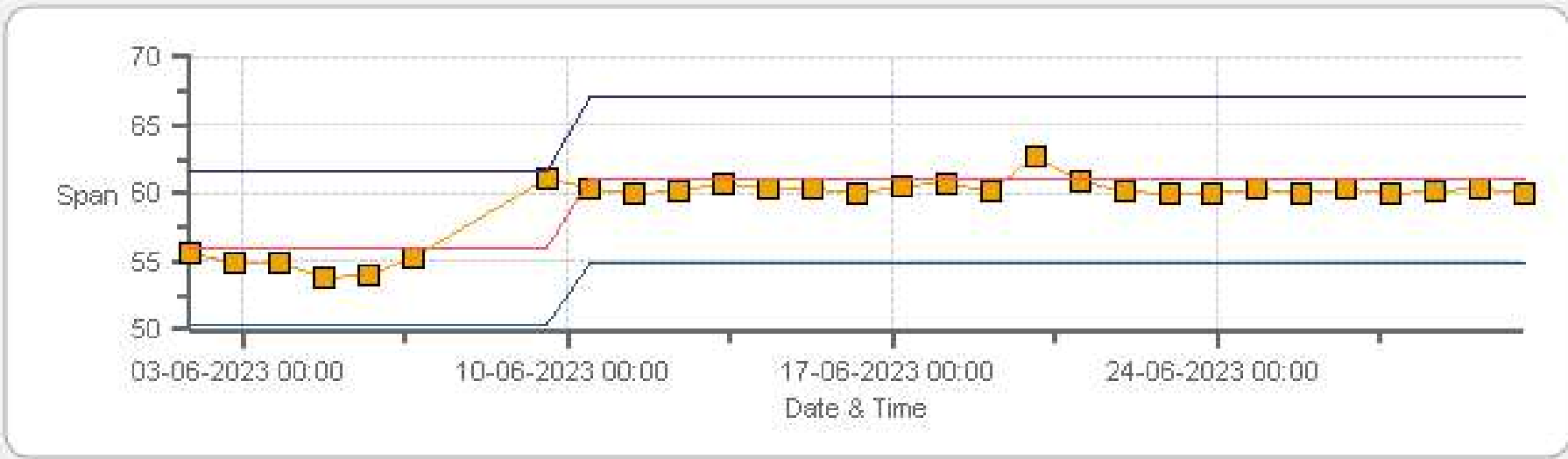
Span SpanRef Span Low Span High

TRS[ppb] Calibration: PRAMP 986-C Monthly: 06-2023 Type: SpanAndZero - Zero



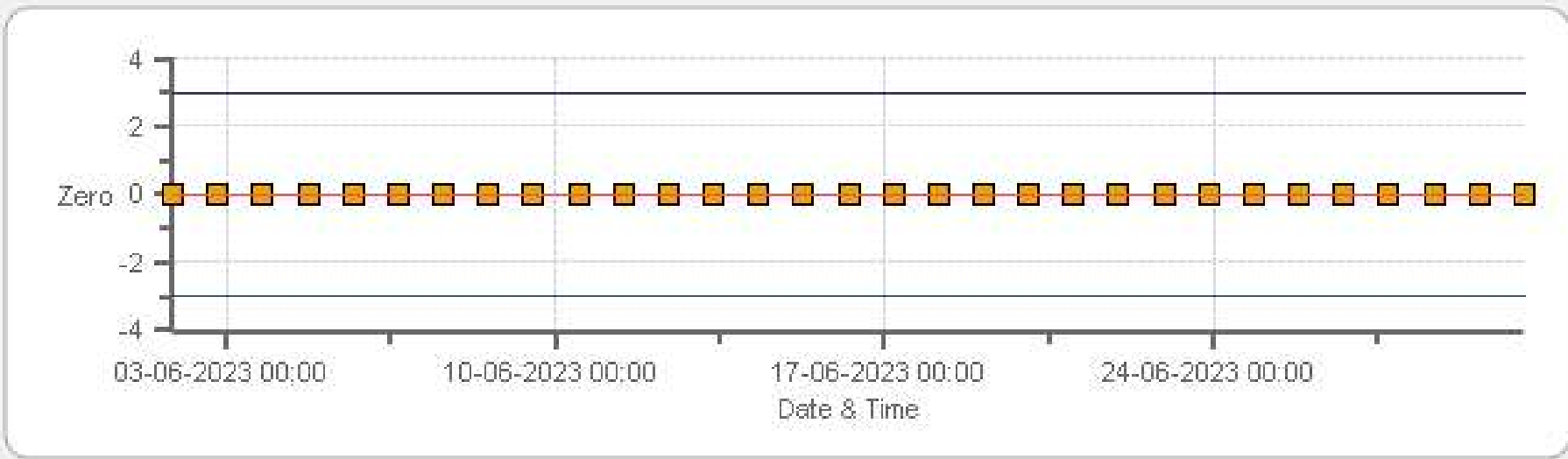
Zero Zero Ref Zero Low Zero High

TRS[ppb] Calibration: PRAMP 986-C Monthly: 06-2023 Type: SpanAndZero - Span



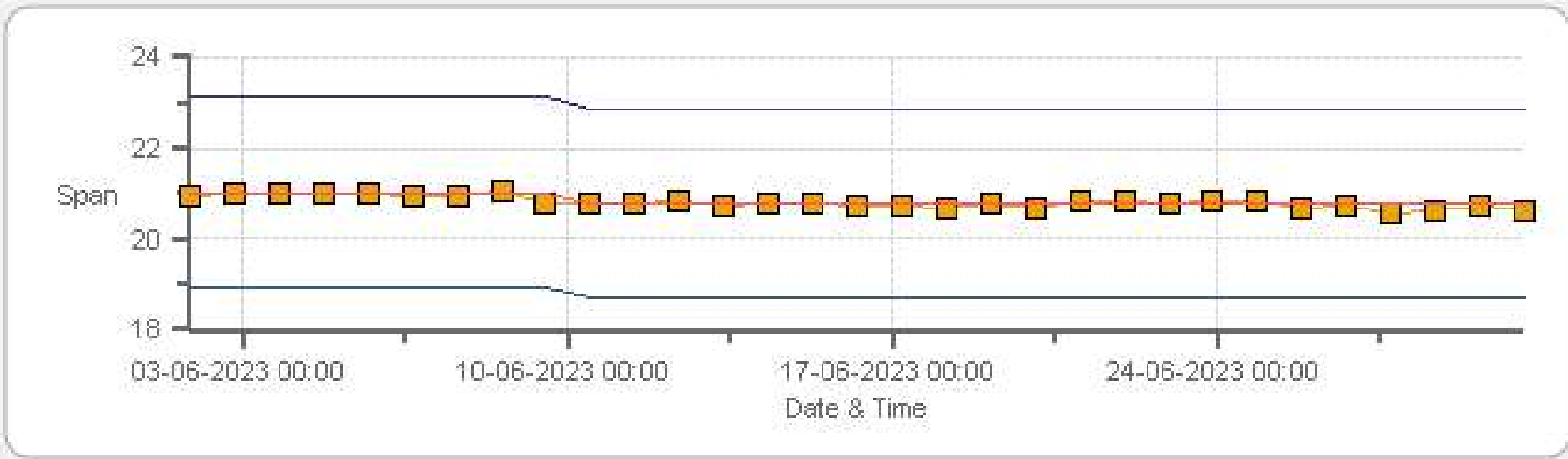
Span SpanRef Span Low Span High

THC55[ppm] Calibration: PRAMP 986-C Monthly: 06-2023 Type: SpanAndZero - Zero



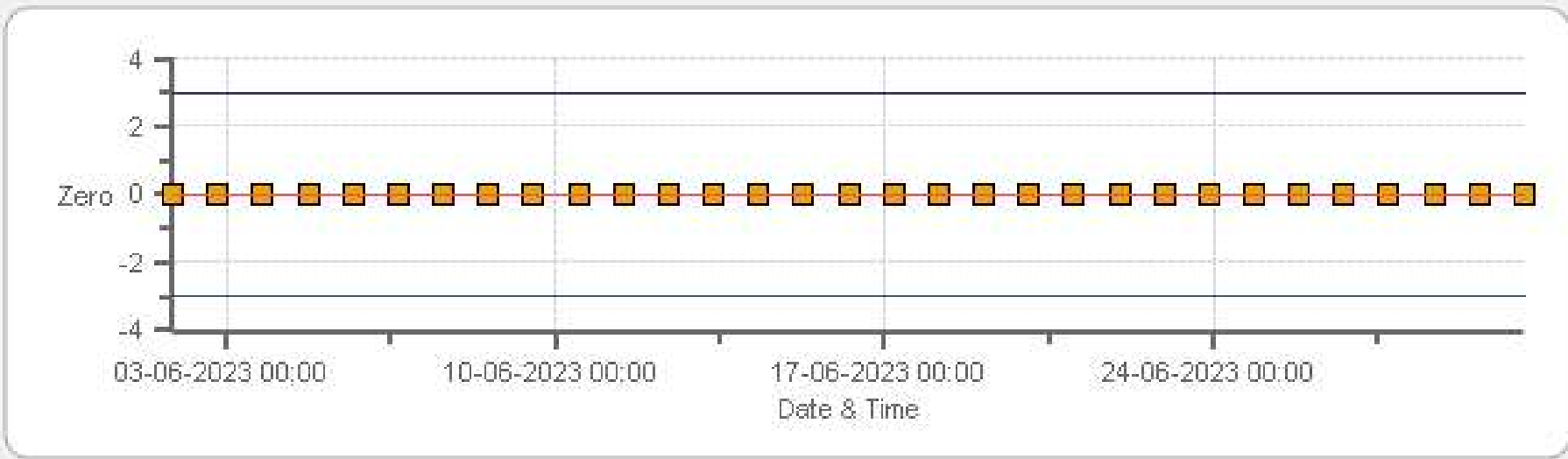
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: PRAMP 986-C Monthly: 06-2023 Type: SpanAndZero - Span



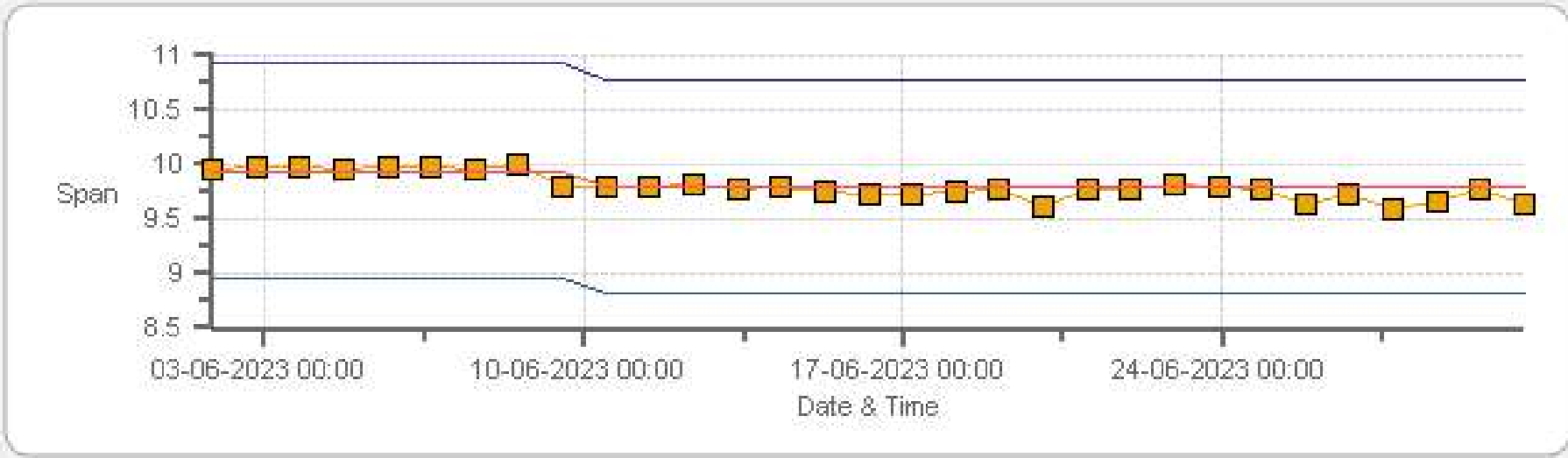
Span Span Ref Span Low Span High

CH4[ppm] Calibration: PRAMP 986-C Monthly: 06-2023 Type: SpanAndZero -Zero



Zero Zero Ref Zero Low Zero High

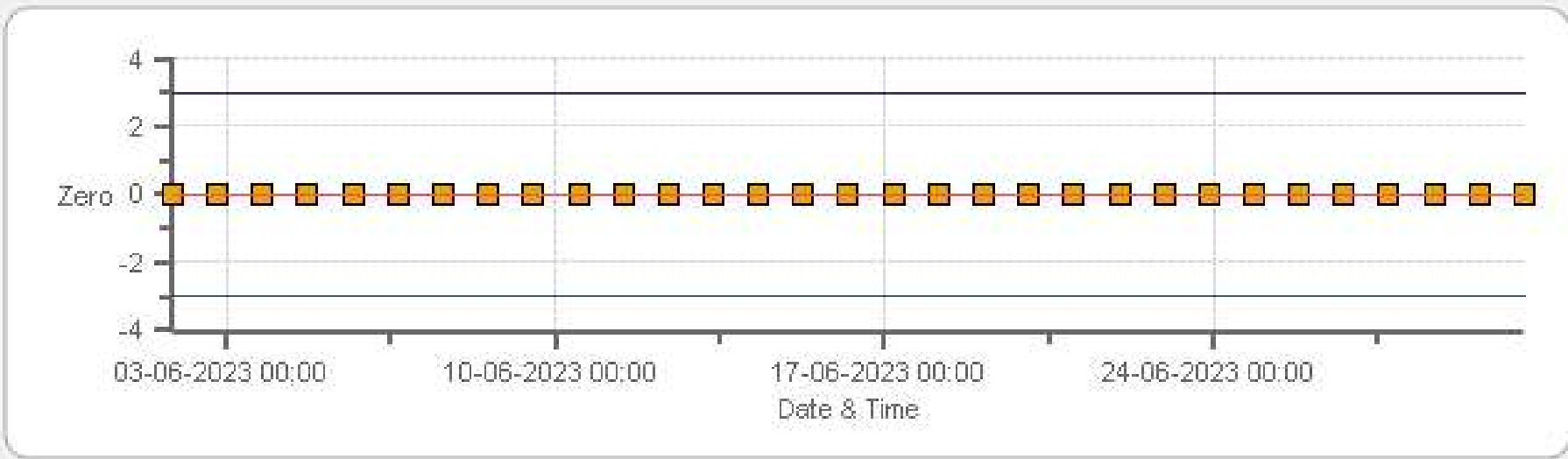
CH4[ppm] Calibration: PRAMP 986-C Monthly: 06-2023 Type: SpanAndZero -Span



Span Span Ref Span Low Span High

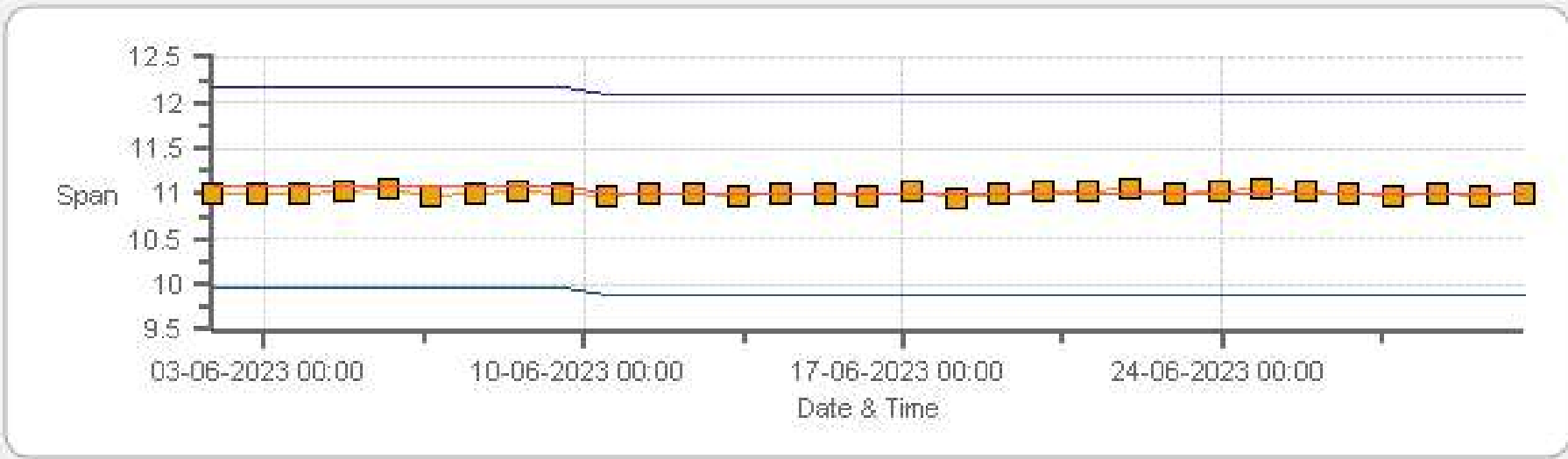


NMHC[ppm] Calibration: PRAMP 986-C Monthly: 06-2023 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: PRAMP 986-C Monthly: 06-2023 Type: SpanAndZero - Span



Span Span Ref Span Low Span High

# MULTI-POINT CALIBRATION RECORDS

# SO2 Analyzer Calibration by Dilution



DATE:	09-Jun-2023	PREVIOUS CALIBRATION DATE:	08-May-2023
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	23.0
LOCATION:	986c	BAROMETRIC (mBar):	944
PURPOSE:	Routine	START TIME (MST):	08:57
PERFORMED BY:	Chris Wesson	END TIME (MST):	13:04

## ANALYZER:

MAKE/MODEL	Thermo 43iQTL	RANGE	500 ppb
SERIAL #	1193585646	FLOW (mL/min)	435
INITIAL		FINAL	
BKG/OFFSET	16.2	BKG/OFFSET	16.6
COEF/SLOPE	1.019	COEF/SLOPE	1.026
Expected (reference) Value	278.8	Expected (reference) Value	308.9

## CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	M701
ID:	75401122	ID:	4568
MFC CALIBRATION DATE:	13-Mar-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY0001923	HIGH ID	n/a
CONC (ppm):	25.10	EXPIRY DATE	n/a
CYLINDER (psi):	1600	LOW ID	n/a
EXPIRY DATE	02-Nov-2025	EXPIRY DATE	n/a

## CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	390	190	95
RANGE	300 - 400	150 - 200	50 - 100

## SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

## CALIBRATION:

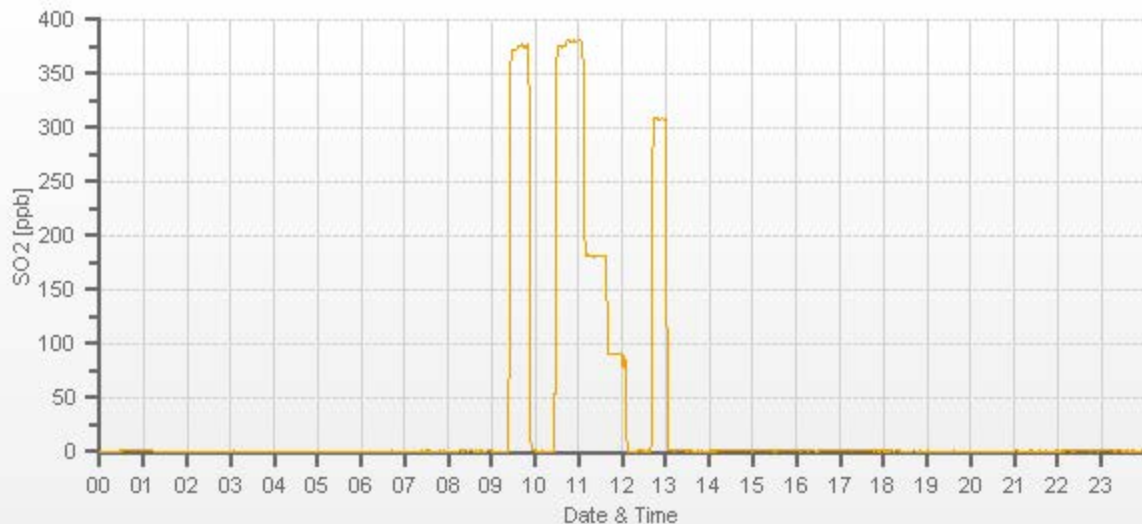
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
3999	<del>60.60</del>	3999	0.00	0	0	<del>1.014</del>	<del>0.999</del>
3939	60.60	4000	380.27	375	380.5	1.014	0.999
3971	28.70	4000	180.09	n/a	181.8	n/a	0.991
3985	14.30	3999	89.75	n/a	90.5	n/a	0.992

## LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	0.1%

## COMMENTS:

Sample filter changed.
------------------------



# TRS Analyzer Calibration by Dilution



DATE:	09-Jun-2023	PREVIOUS CALIBRATION DATE:	n/a
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	n/a
CLIENT:	PRAMP	TEMPERATURE (°C):	24.3
LOCATION:	986C	BAROMETRIC (mBar):	944
PURPOSE:	Install/Post-Repair	START TIME (MST):	09:55
PERFORMED BY:	Chris Wesson	END TIME (MST):	13:04

## ANALYZER:

MAKE/MODEL	Thermo 43iQTL	RANGE	100 ppb
SERIAL #	1191833341	FLOW (mL/min)	421
INITIAL		FINAL	
BKG/OFFSET	n/a	BKG/OFFSET	15.2
COEF/SLOPE	n/a	COEF/SLOPE	0.969
Expected (reference) Value	n/a	Expected (reference) Value	61

## CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	M701
ID:	75401122	ID:	4568
MFC CALIBRATION DATE:	13-Mar-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL131374	HIGH ID	n/a
CONC (ppm):	10.09	EXPIRY DATE	n/a
CYLINDER (psi):	2100	LOW ID	n/a
EXPIRY DATE	03-Jan-2026	EXPIRY DATE	n/a

## CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	78	38	19
RANGE	60 - 80	30 - 40	10 - 20

## SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

## CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
3999	<del>30.90</del>	3999	0.00	n/a	0	<del>n/a</del>	<del>0.996</del>
3969	30.90	4000	77.95	n/a	78.23	n/a	0.996
3985	15.10	4000	38.09	n/a	37.78	n/a	1.008
3992	7.50	3999	18.92	n/a	19.11	n/a	0.990

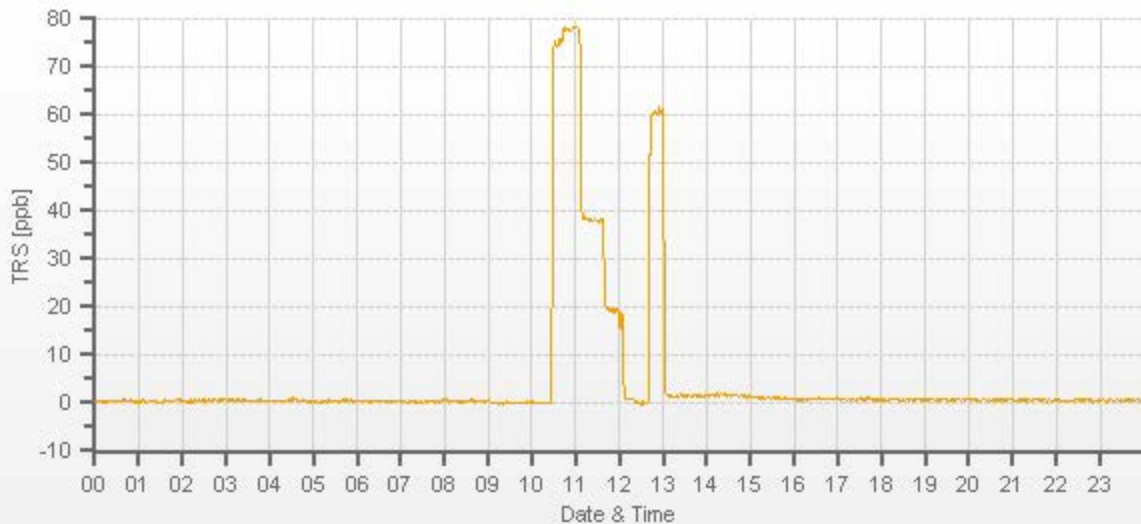
## LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.003	0.0%

## COMMENTS:

TRS Converter CDNOVA CDN101 #530
----------------------------------

TRS[ppb] Station: PRAMP 986-C Daily: 09-06-2023 Type: AVG 1 Min. [1 Min.]



CAL-PRAMP-202306-01562

# Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	09-Jun-2023	PREVIOUS CALIBRATION DATE:	08-May-2023	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	PRAMP	TEMPERATURE (°C):	23.0		Thermo 55i	1433563261	1135
LOCATION:	986C	BAROMETRIC (mBar):	944	PARAMETER:	CH4	NMHC	THC
PURPOSE	Routine	START TIME (MST):	08:57	RANGE (ppm):	20	20	40
PERFORMED BY:	Chris Wesson	END TIME (MST):	12:44	PREVIOUS CF:	0.999	1.000	0.999

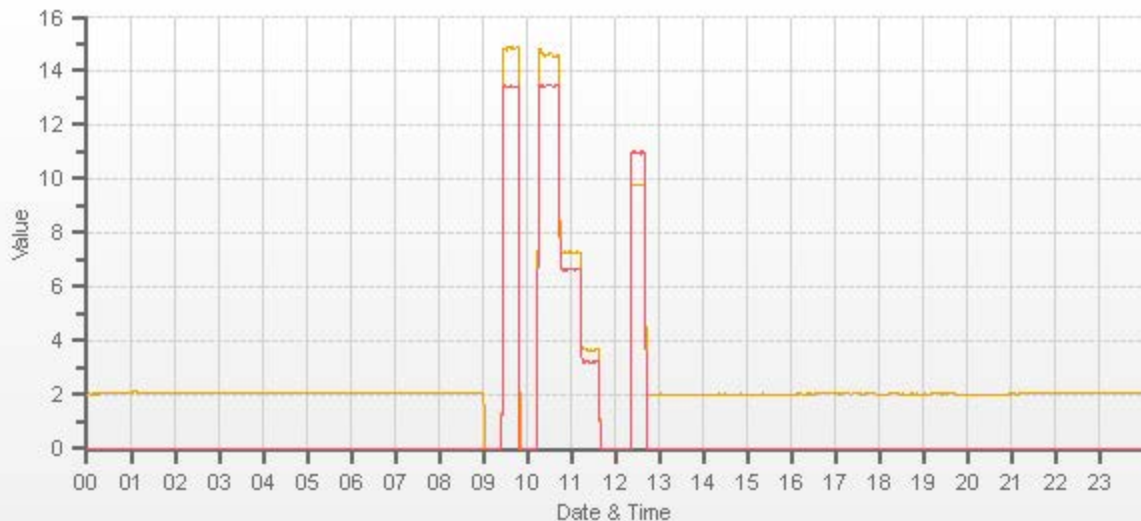
CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	Sabio	MAKE:	Teledyne	CYLINDER ID:	LL68768	HIGH ID:	n/a
MODEL:	2010	MODEL:	M701	CH <sub>4</sub> /C <sub>3</sub> H <sub>8</sub> (ppm):	897.0   301.0	HIGH EXPIRY:	n/a
ID:	26701218	ID:	4568	CYLINDER (psi):	2100	LOW ID:	n/a
MFC CALIBRATION DATE:	15-Mar-2023	OXIDIZER ID:	Internal	EXPIRY DATE	08-Nov-2023	LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:							
POINT (CH <sub>4</sub> /NMHC)	HIGH	MID	LOW	CH <sub>4</sub> EQUIVILANCE			
TARGET	14	7	3.5	C <sub>3</sub> H <sub>8</sub> as CH <sub>4</sub>		827.8	
RANGE	12 - 16	6 - 8	2 - 4	THC as CH <sub>4</sub>		1724.8	

EXPECTED (REFERENCE) VALUE:							
INITIAL	CH <sub>4</sub>	NMHC	THC	FINAL	CH <sub>4</sub>	NMHC	THC
	9.99	11.04	21.03		9.79	10.99	20.79

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC
3250	<del>X</del>	3250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>
3197	52.70	3250	14.55	13.42	27.97	14.84	13.41	28.25	14.53	13.43	27.96	0.980	1.001	0.990	1.001	0.999	1.000
3224	26.40	3250	7.29	6.72	14.01	n/a	n/a	n/a	7.29	6.65	13.94	n/a	n/a	n/a	1.000	1.011	1.005
3236	13.20	3249	3.64	3.36	7.01	n/a	n/a	n/a	3.67	3.23	6.90	n/a	n/a	n/a	0.993	1.041	1.016

LINEAR REGRESSION ANALYSIS:				Comments:			
	CORRELATION	SLOPE	INTERCEPT	Sample filter changed BV analyzer Exchanged H <sub>2</sub> 's deionizer. Use Zero Chrom? <b>No</b>			
CH <sub>4</sub>	1.000	0.998	0.1%				
NMHC	1.000	1.003	-0.3%				
THC	1.000	1.001	-0.1%				



CAL-PRAMP-202306-01562

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CH4 [ppm] NMHC [ppm]



# Meteorological System Checklist



Date:	June 9, 2023		
Technician:	Chris Wesson		
Station:	PRAMP 986c		
<b>Unit:</b>	<b>Make:</b>	<b>Model:</b>	<b>Serial #:</b>
Precipitation Sampler:	RM Young	52202	TB 16325
Temperature Sensor:	Rotronic	HC2-32	20626912
Barometric Pressure Sensor:	MetOne	092	Y23358
Relative Humidity Sensor:	Rotronic	HC2-S3	20626912
Anemometer:	RM Young	05305AQ	180340

### PRECIPITATION SENSOR CHECK

Checklist:	Reply:	Comments:
Previous check date:	May 8, 2023	
Is the sensor Level?	yes	
Is the heater operating properly?	yes	
Are the bucket drain holes clean?	yes	Tested: 11:30-11:37
Is the screen on the housing? (screen should be on between July and September)	yes	
Is the housing clean?	yes	
Is the area around the housing clean and free from obstacles?	yes	

### TIP TEST - Slowly pour water until 10 tips are heard. (10 tips = 1 mm)

# of Tips	Data Logger Response (mm):	Manual Specification = +/- 0.1 mm
10	1.0	0.00

### AMBIENT TEMPERATURE SENSOR CHECK

Previous check date:	May 8, 2023	
Parameter:	Temperature @ 2 metres	
Reference Thermometer ID:	F.S. 11745843 expires June 14, 2023	
Reference Temperature (°C):	24.5	
Station - Ambient Temperature (°C):	25.2	
Temperature Difference (°C):	-0.7	

### BAROMETRIC PRESSURE SENSOR CHECK

Previous check date:	May 8, 2023	
Reference Barometer ID:	DeltaCal DC1 #206578 expires September 20, 2023	
Reference Pressure - Units/Reading:	millibar	944.5
Station Pressure - Units/Reading:	millibar	943
Pressure Tolerance +/- 15% of error:	803 - 1086	0.16%

### RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK

Previous check date:	May 8, 2023	
Reference Hygrometer ID:	F.S. 11745843 expires June 14, 2023	
Reference Hygrometer % RH- Reading:	36.20	
Station Hygrometer % RH- Reading:	35.30	
RH Tolerance +/- 15% of difference:	30.77 - 41.63	2.5%

### ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK

WIND SPEED		WIND DIRECTION	
Previous check date:	May 8, 2023	Previous check date:	May 8, 2023
Wind Speed Observed (kph):	20~30	Wind Direction Observed:	E
Wind speed on Data Logger (kph):	25.1	Wind Direction on Data Logger:	E
		Wind Direction Pass/Fail?:	Pass

Comments

No issues



# Meteorological Sensor Audit/Calibration

## Location Information

Company:	PRAMP	Performed By:	Limin Li
Audit Location:	986C	Reviewed By:	Chris Wesson
Audit Date:	August 5, 2022	Start/End Time (mst):	09:37/10:32
Calibration Purpose:	routine annual	Weather Conditions:	A few clouds

## Wind Sensor Information

Sensor ID Data:		Sensor Outputs:	
Sensor Make:	RM Young	Velocity Voltage Output Range:	n/a
Sensor Model:	05305AQ	Velocity Unit Output Range:	0-180
Serial #:	180340	Direction Voltage Output Range:	n/a
Previous Cal/Audit Date:	July 3, 2021	Direction Unit Output Range:	0-360

## Wind Calibrator Information

Calibrator I.D. and Expiry Date: RM Young 18802 id# CA03309 expires June 07, 2023

## 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	18.3	18.3	1.007
2000	36.9	36.7	36.7	1.004
3000	55.3	55.1	55.1	1.003
4000	73.7	73.6	73.6	1.002
5000	92.2	92.0	92.0	1.002
6000	110.6	110.5	110.5	1.001
7000	129.0	128.9	128.9	1.001
8000	147.4	147.3	147.3	1.001
9000	165.9	165.8	165.8	1.000
10000	184.3	184.2	184.2	1.001
The audit meets AMD requirements.			Average Correction Factor=	1.002

## Wind Direction Audit Data **\*\*+/- 3° 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	2	354	2.0	1.0	1.5
30	330	32	333	-2.0	-3.0	2.5
60	300	61	303	-1.0	-3.0	2.0
90	270	90	273	0.0	-3.0	1.5
120	240	120	242	0.0	-2.0	1.0
150	210	150	210	0.0	0.0	0.0
180	180	180	179	0.0	1.0	0.5
210	150	210	149	0.0	1.0	0.5
240	120	242	120	-2.0	0.0	1.0
270	90	273	90	-3.0	0.0	1.5
300	60	303	61	-3.0	-1.0	2.0
330	30	332	32	-2.0	-2.0	2.0
355	0	354	2	1.0	2.0	1.5
The audit meets AMD requirements.				Average Absolute Degrees Difference=		1.3

## Comments:

Magnetic declination = 15Deg(E)

**END OF REPORT**



## **Peace River Area Monitoring Program**

# **JUNE 2023**

## **Ambient Air Monitoring Calibration Report**

### **- RENO-B STATION-**

### **CAL-PRAMP-202306-01563**

**Operation and Maintenance:**

Bureau Veritas Canada

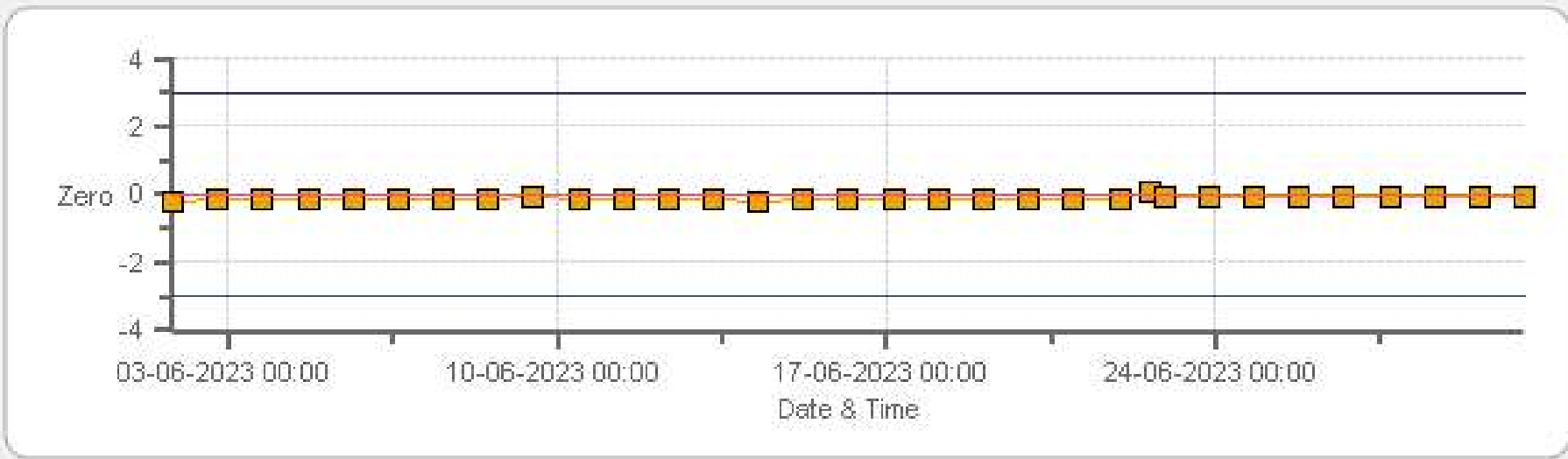
**Data Validation and Report:**

Bureau Veritas Canada

July 17, 2023

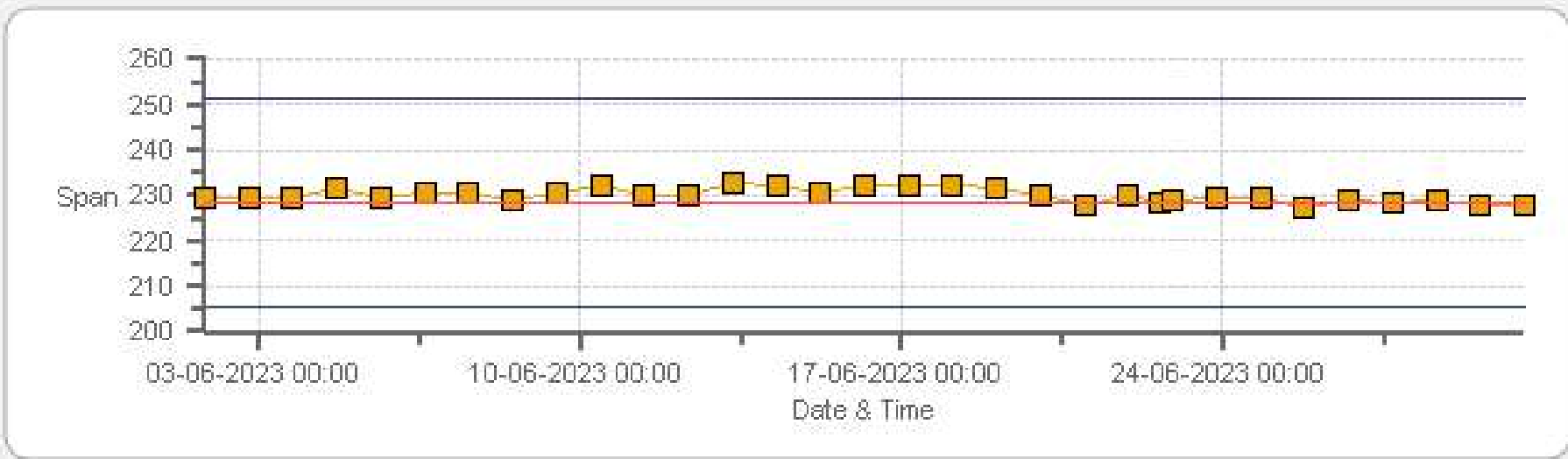
# DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: PRAMP RENO-B Monthly: 06-2023 Type: SpanAndZero - Zero



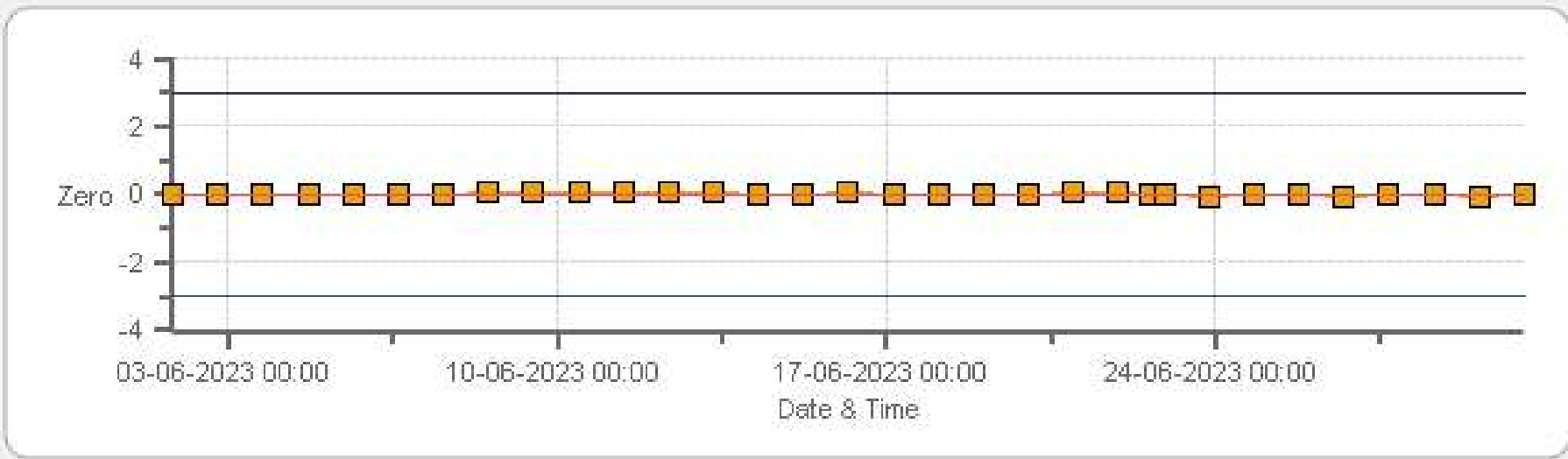
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: PRAMP RENO-B Monthly: 06-2023 Type: SpanAndZero - Span



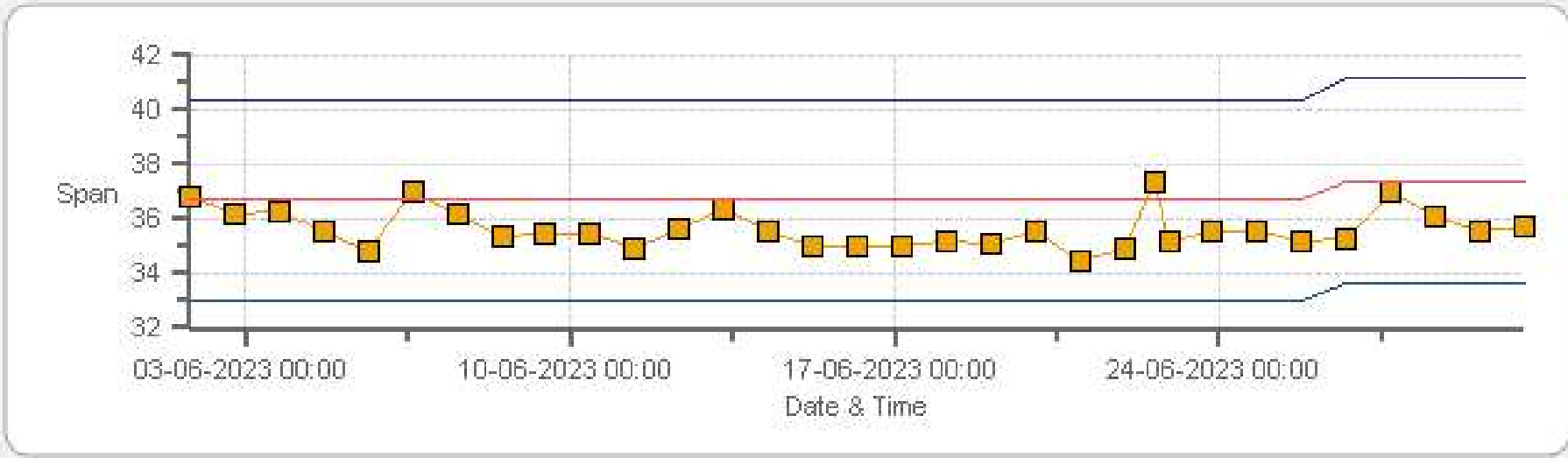
Span SpanRef Span Low Span High

TRS[ppb] Calibration: PRAMP RENO-B Monthly: 06-2023 Type: SpanAndZero - Zero



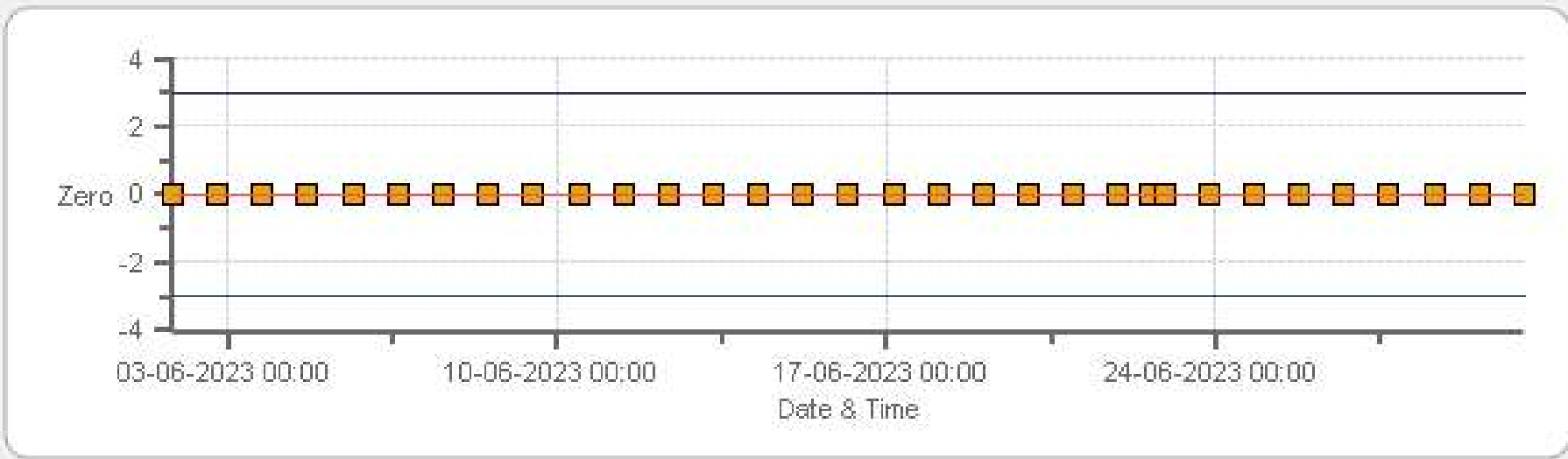
Zero Zero Ref Zero Low Zero High

TRS[ppb] Calibration: PRAMP RENO-B Monthly: 06-2023 Type: SpanAndZero - Span



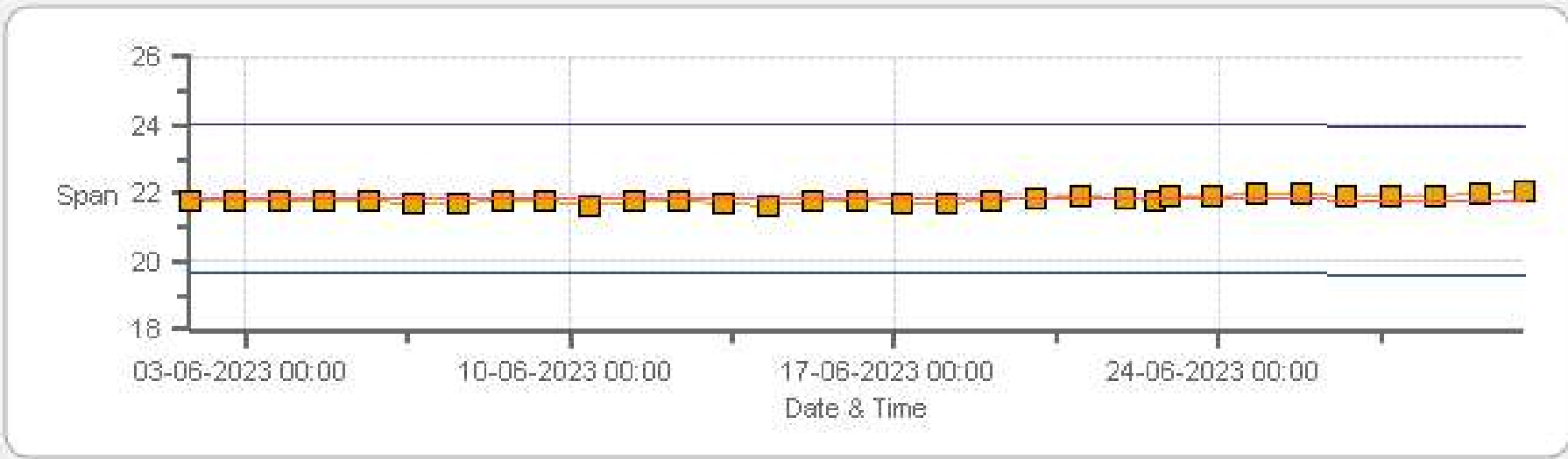
Span Span Ref Span Low Span High

THC55[ppm] Calibration: PRAMP RENO-B Monthly: 06-2023 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

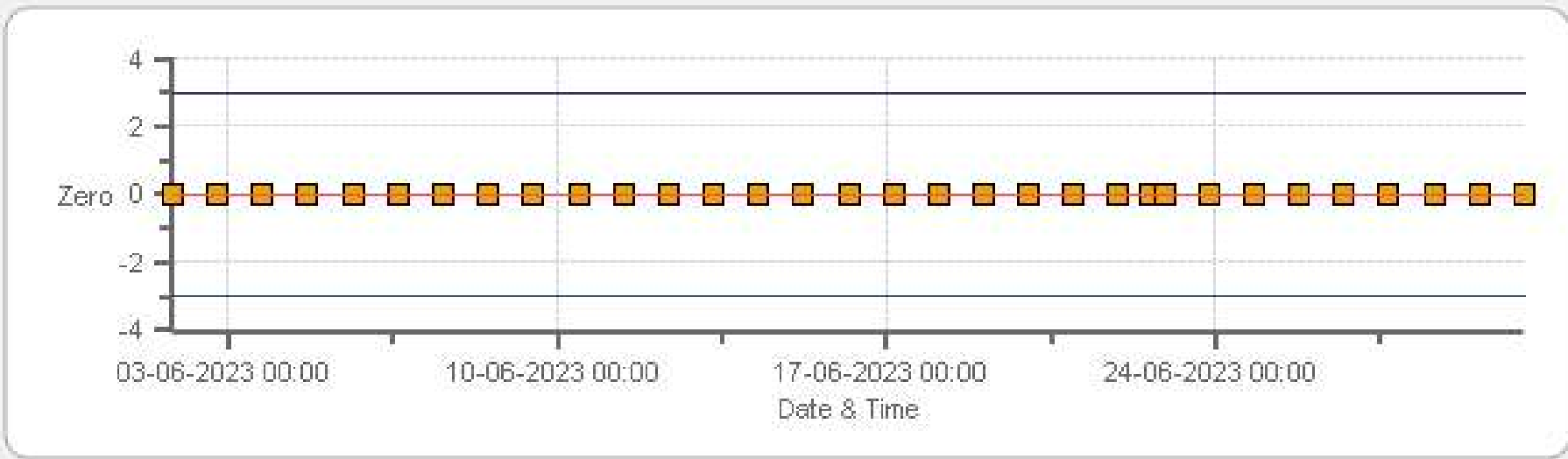
THC55[ppm] Calibration: PRAMP RENO-B Monthly: 06-2023 Type: SpanAndZero - Span



Span Span Ref Span Low Span High

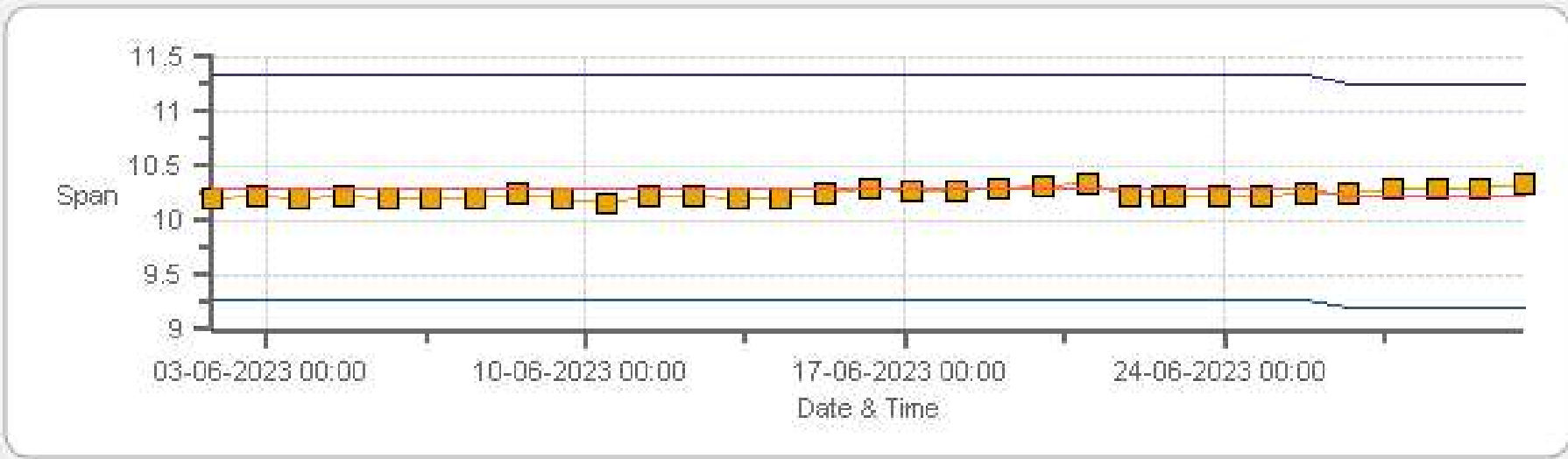


CH4[ppm] Calibration: PRAMP RENO-B Monthly: 06-2023 Type: SpanAndZero - Zero



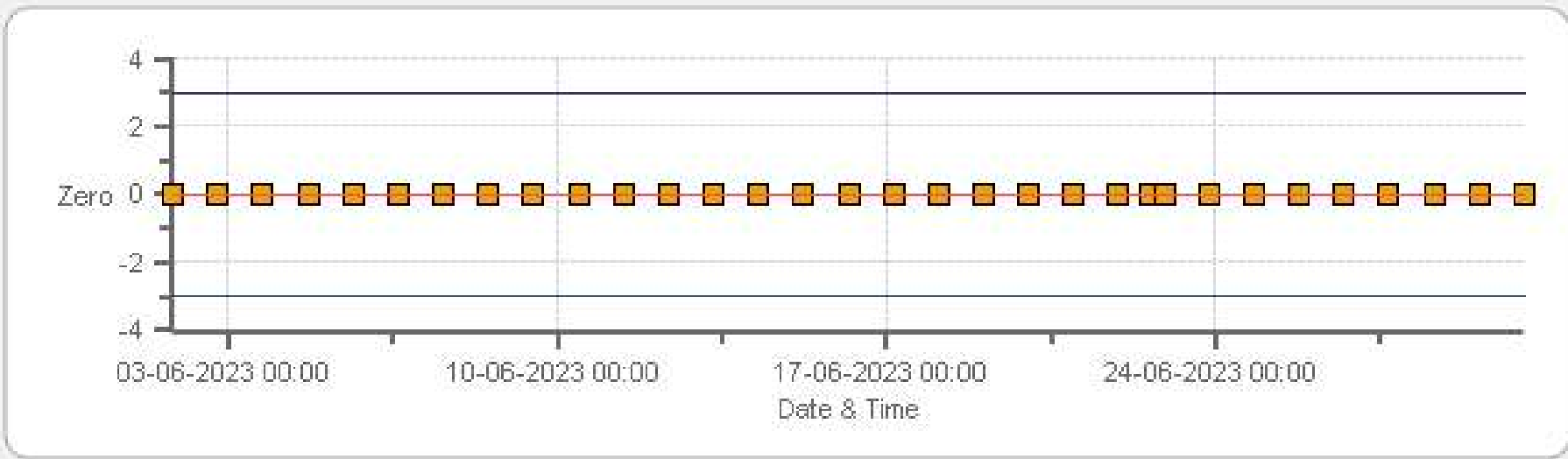
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: PRAMP RENO-B Monthly: 06-2023 Type: SpanAndZero - Span



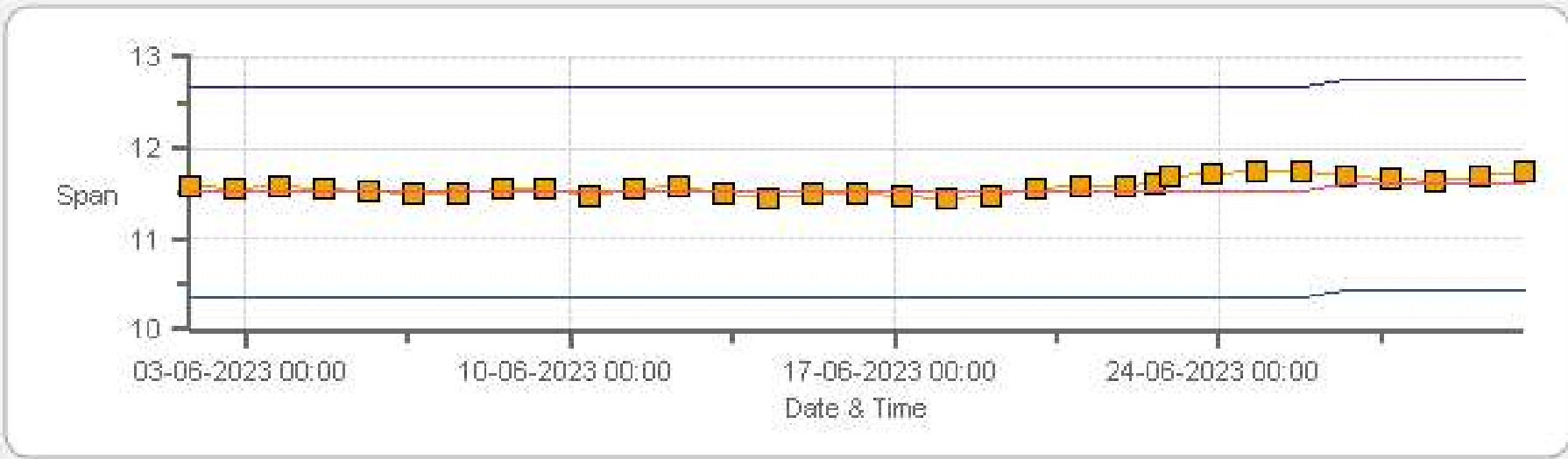
Span Span Ref Span Low Span High

NMHC[ppm] Calibration: PRAMP RENO-B Monthly: 06-2023 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: PRAMP RENO-B Monthly: 06-2023 Type: SpanAndZero - Span



Span Span Ref Span Low Span High

# MULTI-POINT CALIBRATION RECORDS

# SO2 Analyzer Calibration by Dilution



DATE:	22-Jun-2023	PREVIOUS CALIBRATION DATE:	25-May-2023
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.997
CLIENT:	PRAMP	TEMPERATURE (°C):	22.1
LOCATION:	Reno-B	BAROMETRIC (mBar):	939
PURPOSE:	Routine	START TIME (MST):	09:46
PERFORMED BY:	Kevin Sebastian	END TIME (MST):	14:31

## ANALYZER:

MAKE/MODEL	Thermo 43iQTL	RANGE	500 ppb
SERIAL #	12101910505	FLOW (mL/min)	437
INITIAL		FINAL	
BKG/OFFSET	1.23	BKG/OFFSET	1.14
COEF/SLOPE	0.951	COEF/SLOPE	0.944
Expected (reference) Value	228.5	Expected (reference) Value	228.5

## CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	M701
ID:	58100720	ID:	5004
MFC CALIBRATION DATE:	15-Mar-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL19664	HIGH ID	n/a
CONC (ppm):	25.20	EXPIRY DATE	n/a
CYLINDER (psi):	600	LOW ID	n/a
EXPIRY DATE	03-Jul-2023	EXPIRY DATE	n/a

## CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	390	190	95
RANGE	300 - 400	150 - 200	50 - 100

## SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

## CALIBRATION:

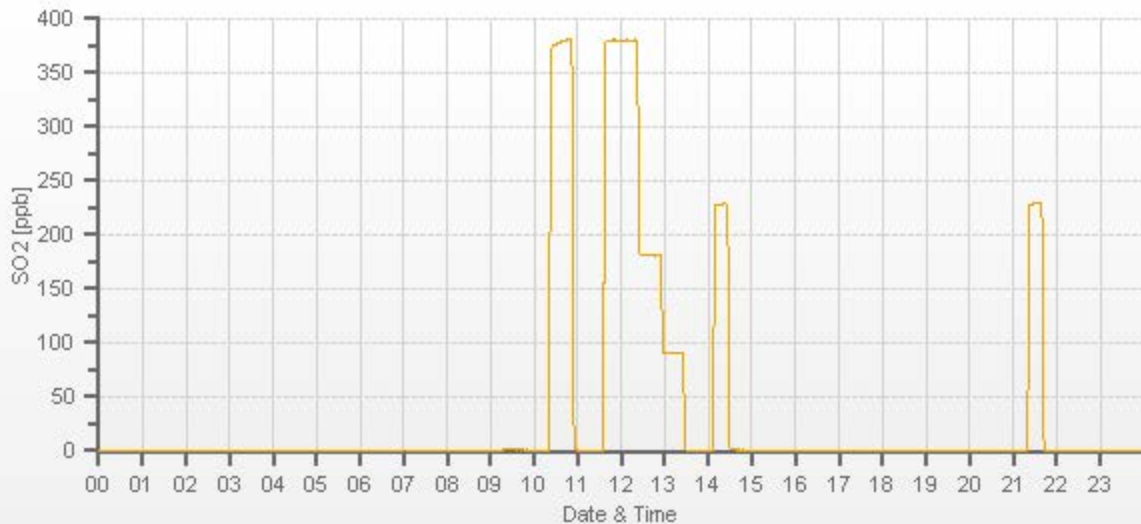
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
4002	<del>60.60</del>	4002	0.00	-0.1	0	<del>1.006</del>	<del>1.004</del>
3941	60.60	4002	381.59	379.4	380.1	1.006	1.004
3971	28.70	4000	180.81	n/a	180.5	n/a	1.002
3986	14.30	4000	90.09	n/a	90.3	n/a	0.998

## LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.996	0.1%

## COMMENTS:

sample filter changed  
 Incorrect cylinder concentration (25.1 ppm) entered in sheet during calibration. Corrected at review.



# TRS Analyzer Calibration by Dilution



DATE:	22-Jun-2023	PREVIOUS CALIBRATION DATE:	25-May-2023
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	0.994
CLIENT:	PRAMP	TEMPERATURE (°C):	22.1
LOCATION:	Reno-B	BAROMETRIC (mBar):	939
PURPOSE:	Routine	START TIME (MST):	09:46
PERFORMED BY:	Kevin Sebastian	END TIME (MST):	14:32

## ANALYZER:

MAKE/MODEL	Thermo 43iQTL	RANGE	100 ppb
SERIAL #	12101910504	FLOW (mL/min)	397
INITIAL		FINAL	
BKG/OFFSET	0.85	BKG/OFFSET	0.91
COEF/SLOPE	0.852	COEF/SLOPE	0.862
Expected (reference) Value	36.71	Expected (reference) Value	37.4

## CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	M701
ID:	58100720	ID:	5004
MFC CALIBRATION DATE:	15-Mar-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY0002519	HIGH ID	n/a
CONC (ppm):	9.41	EXPIRY DATE	n/a
CYLINDER (psi):	1500	LOW ID	n/a
EXPIRY DATE	10-Nov-2023	EXPIRY DATE	n/a

## CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	78	38	19
RANGE	60 - 80	30 - 40	10 - 20

## SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

## CALIBRATION:

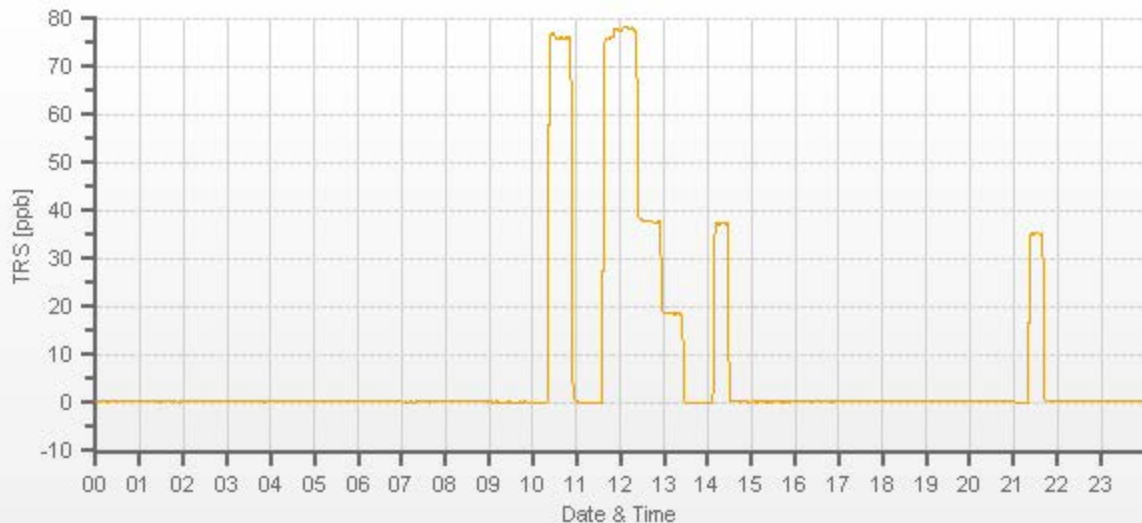
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
4002	<del>33.10</del>	4002	0.00	0.1	0	<del>1.027</del>	<del>0.999</del>
3969	33.10	4002	77.83	75.87	77.94	1.027	0.999
3984	16.20	4000	38.11	n/a	37.61	n/a	1.013
3992	8.10	4000	19.06	n/a	18.69	n/a	1.020

## LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.002	-0.3%

## COMMENTS:

TRS Converter CDNOVA CDN-101 #590.
------------------------------------



# Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	22-Jun-2023	PREVIOUS CALIBRATION DATE:	25-May-2023	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	PRAMP	TEMPERATURE (°C):	22.1		Thermo 55i	1505664392	1114
LOCATION:	Reno-B	BAROMETRIC (mBar):	939	PARAMETER:	CH4	NMHC	THC
PURPOSE:	Routine	START TIME (MST):	09:46	RANGE (ppm):	20	20	40
PERFORMED BY:	Kevin Sebastian	END TIME (MST):	15:07	PREVIOUS CF:	1.000	0.999	1.000

## CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	Sabio	MAKE:	Teledyne	CYLINDER ID:	LL68768	HIGH ID:	n/a
MODEL:	2010	MODEL:	M701	CH <sub>4</sub> /C <sub>3</sub> H <sub>8</sub> (ppm):	897.0   301.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	5004	CYLINDER (psi):	1900	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Mar-2023	OXIDIZER ID:	Internal	EXPIRY DATE	11-Aug-2029	LOW EXPIRY:	n/a

## CALIBRATION PARAMETERS:

POINT (CH <sub>4</sub> /NMHC)	HIGH	MID	LOW	CH <sub>4</sub> EQUIVILANCE	
TARGET	14	7	3.5	C <sub>3</sub> H <sub>8</sub> as CH <sub>4</sub>	827.8
RANGE	12 - 16	6 - 8	2 - 4	THC as CH <sub>4</sub>	1724.8

## EXPECTED (REFERENCE) VALUE:

INITIAL	CH <sub>4</sub>	NMHC	THC	FINAL	CH <sub>4</sub>	NMHC	THC
	10.30	11.52	21.82		10.22	11.60	21.81

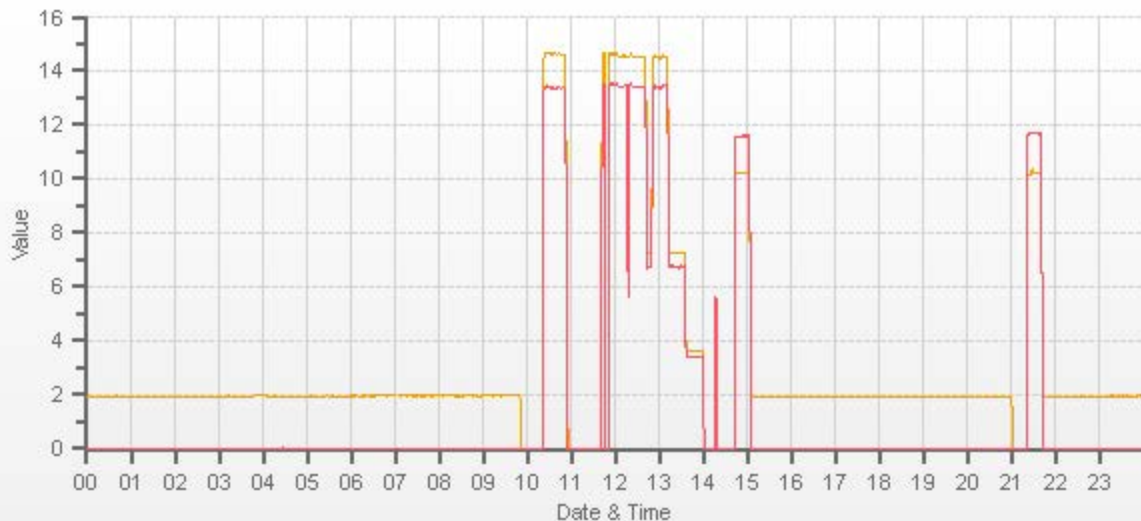
## CALIBRATION:

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC
3098	<del>X</del>	3098	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>
3050	50.30	3100	14.55	13.43	27.99	14.61	13.40	28.01	14.50	13.39	27.89	0.996	1.002	0.999	1.004	1.003	1.003
3075	25.20	3100	7.29	6.73	14.02	n/a	n/a	n/a	7.26	6.74	14.01	n/a	n/a	n/a	1.004	0.998	1.001
3087	12.60	3100	3.65	3.36	7.01	n/a	n/a	n/a	3.62	3.41	7.03	n/a	n/a	n/a	1.007	0.987	0.997

## LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT	Comments: 11:42-11:46 User error 12:50-Adjusted high restarted  Use Zero Chrom? Yes
CH <sub>4</sub>	1.000	0.997	0.0%	
NMHC	1.000	0.996	0.1%	
THC	1.000	0.996	0.1%	





CAL-PRAMP-202306-01563

# Meteorological System Checklist



Date:	June 22, 2023		
Technician:	Kevin Sebastian		
Station:	PRAMP Reno		
<b>Unit:</b>	<b>Make:</b>	<b>Model:</b>	<b>Serial #:</b>
Precipitation Sampler:	RM Young	52202	TB 15877
Temperature Sensor:	Rotronic	HC2-S3	20467597
Barometric Pressure Sensor:	MetOne	92	A17940
Relative Humidity Sensor:	Rotronic	HC2-S3	20467597
Anemometer:	RM Young	05305AQ	174795
<b>PRECIPITATION SENSOR CHECK</b>			
<b>Checklist:</b>	<b>Reply:</b>	<b>Comments:</b>	
Previous check date:	May 25, 2023		
Is the sensor Level?	yes		
Is the heater operating properly?	yes		
Are the bucket drain holes clean?	yes	Audit: 13:12-13:30	
Is the screen on the housing? (screen should be on between July and September)	no		
Is the housing clean?	yes		
Is the area around the housing clean and free from obstacles?	yes		
<b>TIP TEST - Slowly pour water until 10 tip are heard. (10 tips = 1 mm)</b>			
<b># of Tips</b>	<b>Data Logger Response (mm):</b>	<b>Manual Specification = +/- 0.1 mm</b>	
10	1.00	0.00	
<b>AMBIENT TEMPERATURE SENSOR CHECK</b>			
Previous check date:	May 25, 2023		
Parameter:	Temperature @ 2 metres		
Reference Thermometer ID:	FS 160459244 expires June 14, 2023		
Reference Temperature (°C):	17.1		
Station - Ambient Temperature (°C):	16.8		
Temperature Difference (°C):	0.3		
<b>BAROMETRIC PRESSURE SENSOR CHECK</b>			
Previous check date:	May 25, 2023		
Reference Barometer ID:	deltaCal DC1 S/N-206578 expires September 20, 2023		
Reference Pressure - Units/Reading:	millibar	938.5	
Station Pressure - Units/Reading:	millibar	938.4	
Pressure Tolerance +/- 15% of error:	798 - 1079	0.01%	
<b>RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK</b>			
Previous check date:	May 25, 2023		
Reference Hygrometer ID:	FS 160459244 expires June 14, 2023		
Reference Hygrometer % RH- Reading:	65.10		
Station Hygrometer % RH- Reading:	68.50		
RH Tolerance +/- 15% of difference:	55.34 - 74.87	-5.2%	
<b>ANEMOMETER - WIND SPEED &amp; WIND DIRECTION SENSOR CHECK</b>			
<b>WIND SPEED</b>		<b>WIND DIRECTION</b>	
Previous check date:	May 25, 2023	Previous check date:	May 25, 2023
Wind Speed Observed (kph):	10~20	Wind Direction Observed:	SE
Wind speed on Data Logger (kph):	16	Wind Direction on Data Logger:	SE
		Wind Direction Pass/Fail?:	Pass
Comments			



# Meteorological Sensor Audit/Calibration

## Location Information

Company:	PRAMP	Performed By:	Chris Wesson
Audit Location:	Reno-B	Reviewed By:	Limin Li
Audit Date:	November 23, 2022	Start/End Time (mst):	15:40 / 16:44
Calibration Purpose:	installation	Weather Conditions:	Mainly cloudy with clear breaks

## Wind Sensor Information

Sensor ID Data:		Sensor Outputs:	
Sensor Make:	RM Young	Velocity Voltage Output Range:	n/a
Sensor Model:	05305AQ	Velocity Unit Output Range:	0-200
Serial #:	174795	Direction Voltage Output Range:	n/a
Previous Cal/Audit Date:	n/a	Direction Unit Output Range:	0-360

## Wind Calibrator Information

Calibrator I.D. and Expiry Date: RM Young 18802 id# R9133 expires Oct 18, 2024

## 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	18.3	18.3	1.007
2000	36.9	36.7	36.7	1.004
3000	55.3	55.1	55.1	1.003
4000	73.7	73.6	73.6	1.002
5000	92.2	92.0	92.0	1.002
6000	110.6	110.5	110.5	1.001
7000	129.0	128.9	128.9	1.001
8000	147.4	147.3	147.3	1.001
9000	165.9	165.8	165.8	1.000
10000	184.3	184.2	184.2	1.001
The audit meets AMD requirements.			Average Correction Factor=	1.002

## Wind Direction Audit Data **\*\*+/- 3° of the absolute average degrees difference for all points is the limit\*\***

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	0	353	0.0	2.0	1.0
30	330	28	327	2.0	3.0	2.5
60	300	58	298	2.0	2.0	2.0
90	270	89	271	1.0	-1.0	1.0
120	240	119	238	1.0	2.0	1.5
150	210	149	208	1.0	2.0	1.5
180	180	179	178	1.0	2.0	1.5
210	150	208	149	2.0	1.0	1.5
240	120	237	119	3.0	1.0	2.0
270	90	267	89	3.0	1.0	2.0
300	60	297	58	3.0	2.0	2.5
330	30	329	28	1.0	2.0	1.5
355	0	353	0	2.0	0.0	1.0
The audit meets AMD requirements.				Average Absolute Degrees Difference=		1.7

## Comments:

Declination = 15 deg East  
Output via RMY 32400 serial interface

**END OF REPORT**



## Peace River Area Monitoring Program

# JUNE 2023

## Ambient Air Monitoring Calibration Report

### - AQHI - GRIMSHAW STATION-

### CAL-PRAMP-202306-01689

**Operation and Maintenance:**

Bureau Veritas Canada

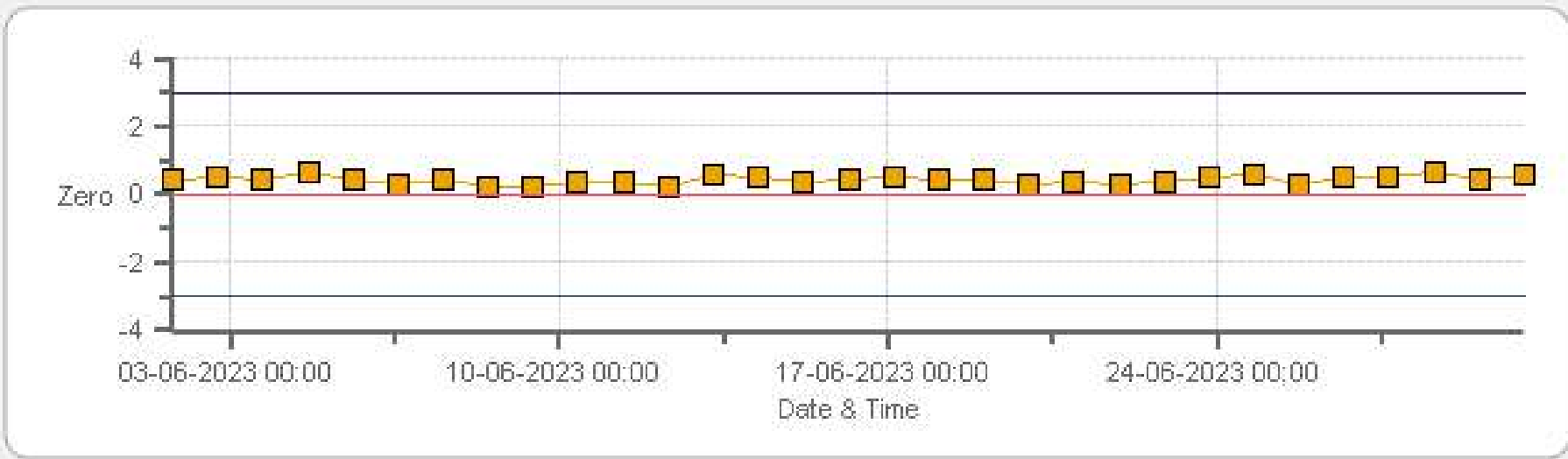
**Data Validation and Report:**

Bureau Veritas Canada

July 17, 2023

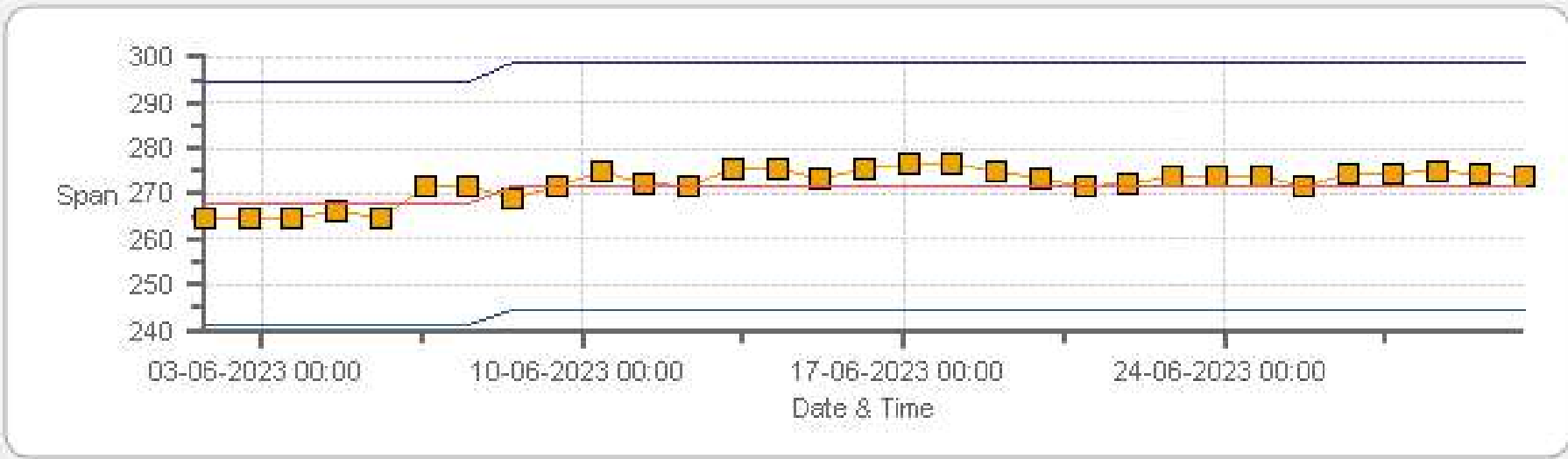
# DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: AQHI Grimshaw Monthly: 06-2023 Type: SpanAndZero - Zero



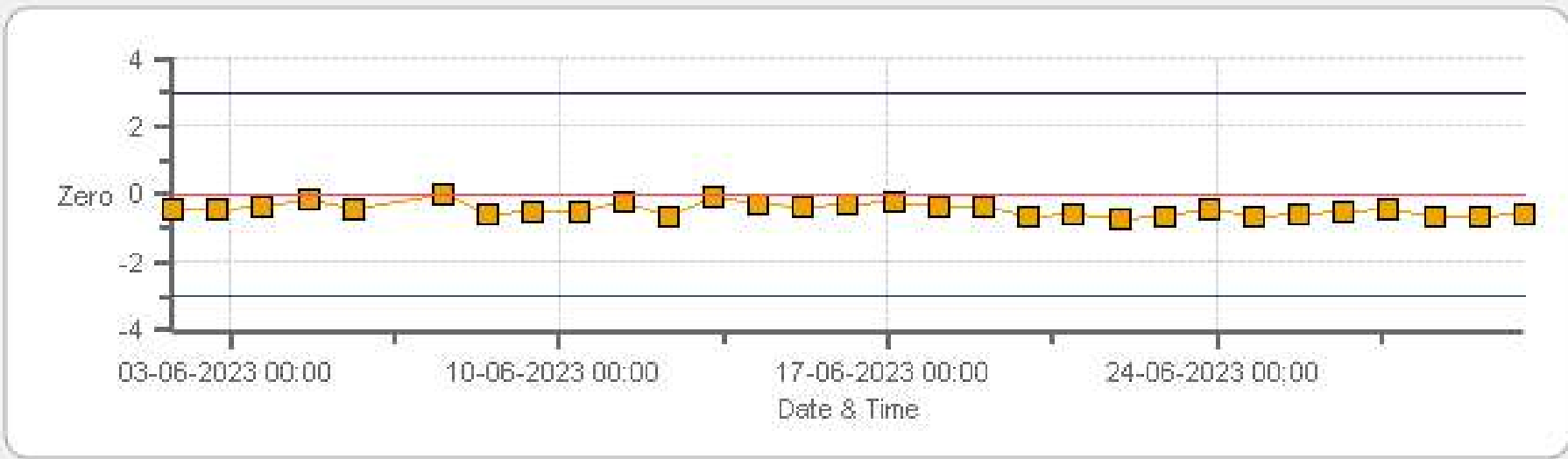
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: AQHI Grimshaw Monthly: 06-2023 Type: SpanAndZero - Span



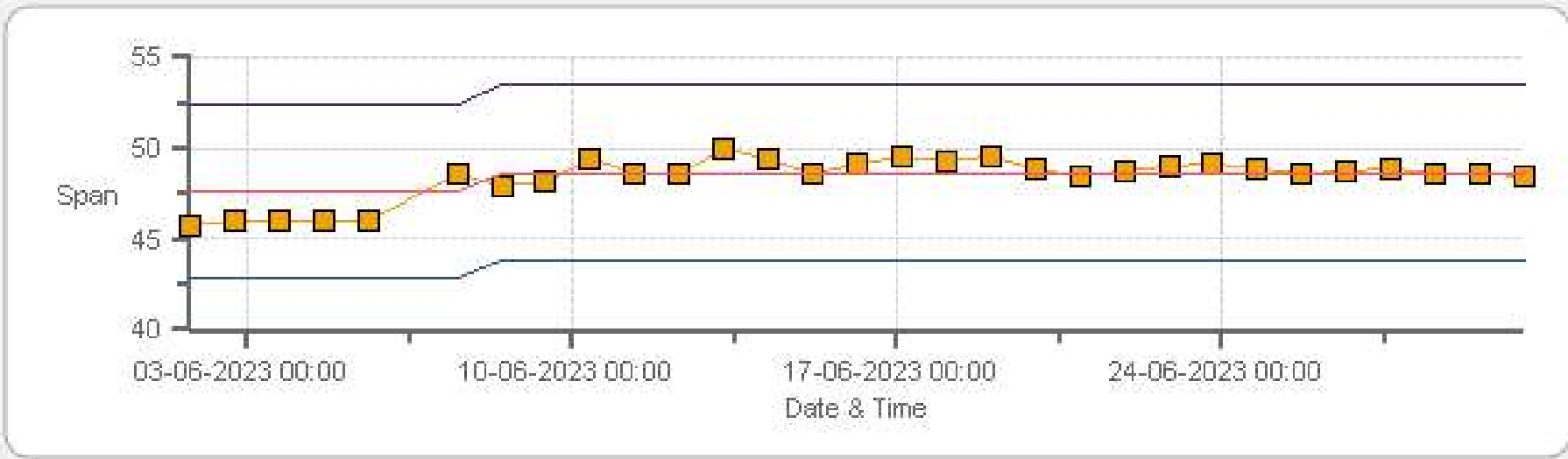
Span Span Ref Span Low Span High

TRS(ppb) Calibration: AQHI Grimshaw Monthly: 06-2023 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

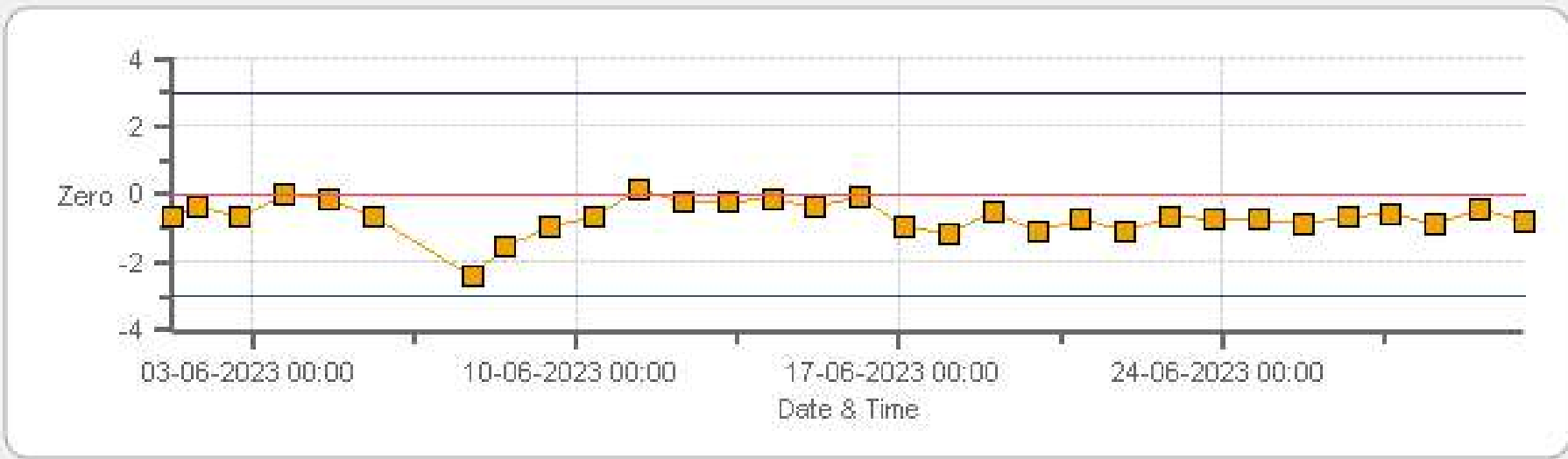
TRS(ppb) Calibration: AQHI Grimshaw Monthly: 06-2023 Type: SpanAndZero - Span



Span Span Ref Span Low Span High

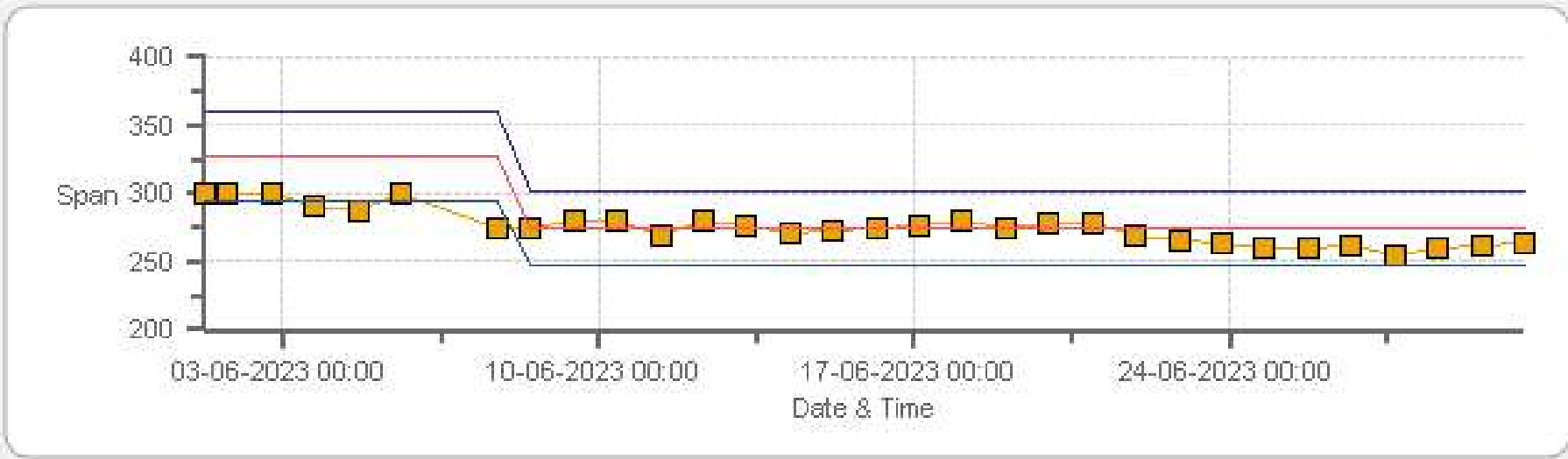


NOX[ppb] Calibration: AQHI Grimshaw Monthly: 06-2023 Type: SpanAndZero - Zero



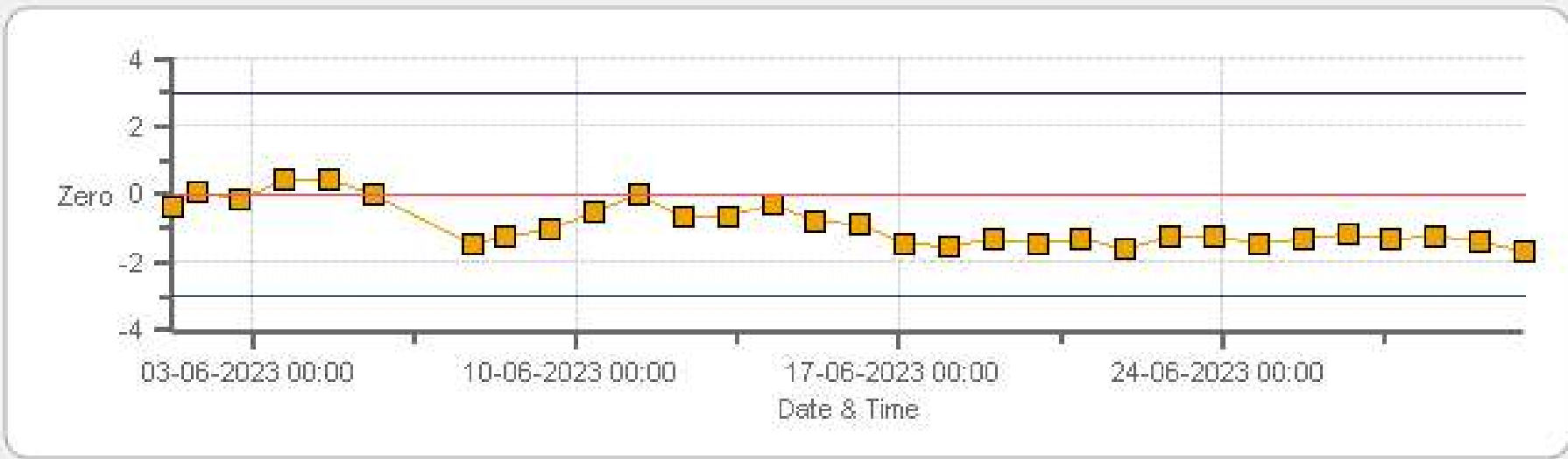
Zero Zero Ref Zero Low Zero High

NOX[ppb] Calibration: AQHI Grimshaw Monthly: 06-2023 Type: SpanAndZero - Span



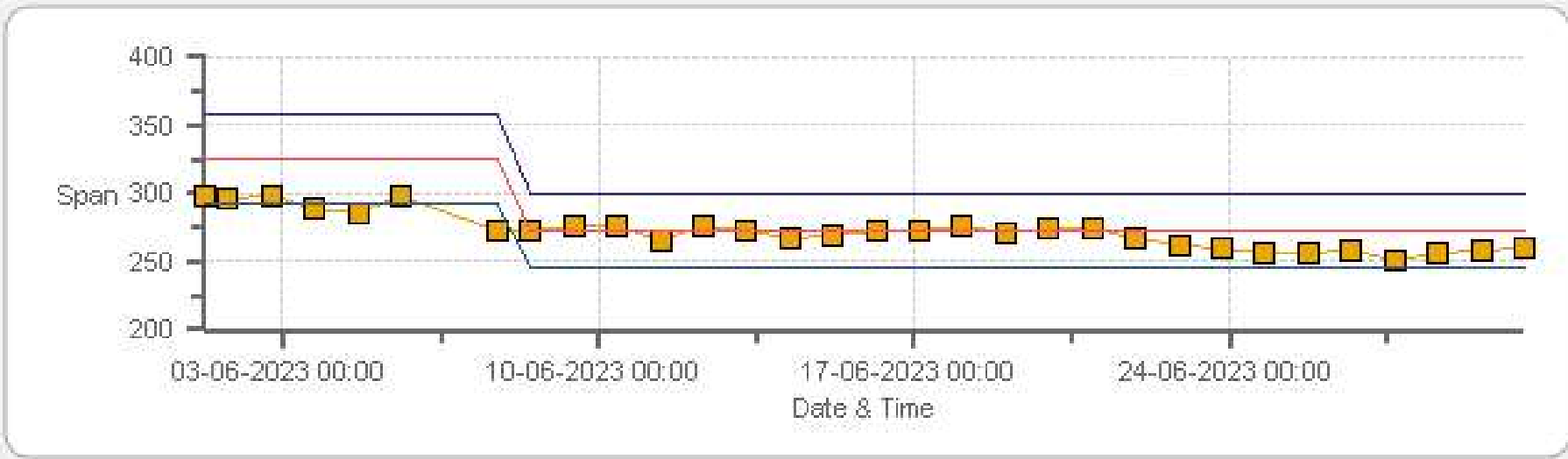
Span Span Ref Span Low Span High

NO2[ppb] Calibration: AQHI Grimshaw Monthly: 06-2023 Type: SpanAndZero - Zero



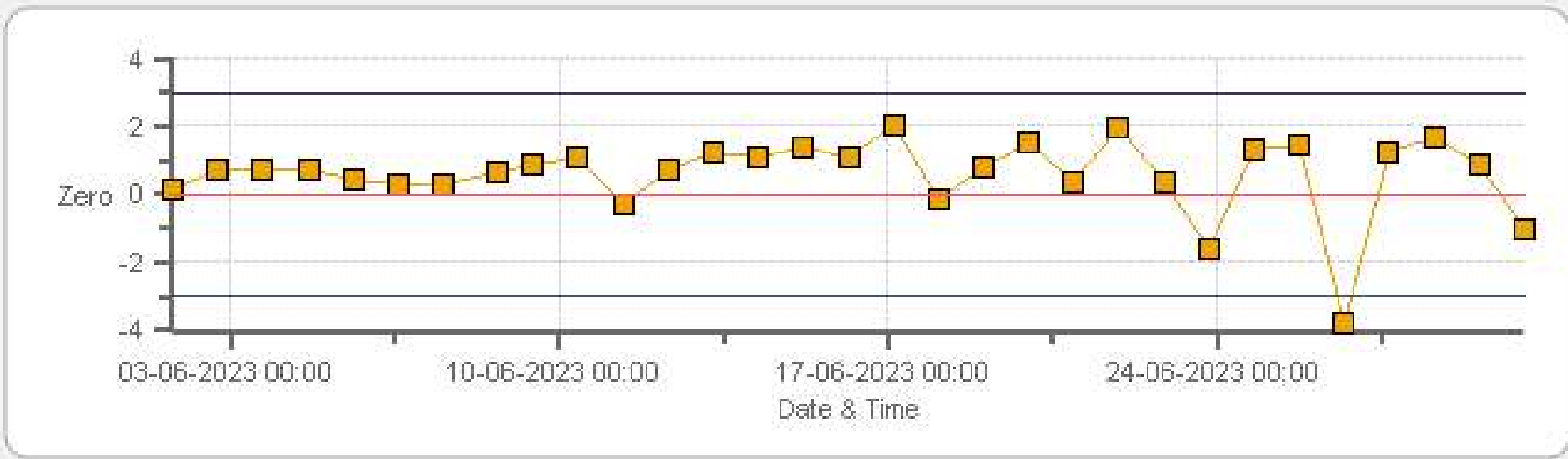
Zero Zero Ref Zero Low Zero High

NO2[ppb] Calibration: AQHI Grimshaw Monthly: 06-2023 Type: SpanAndZero - Span



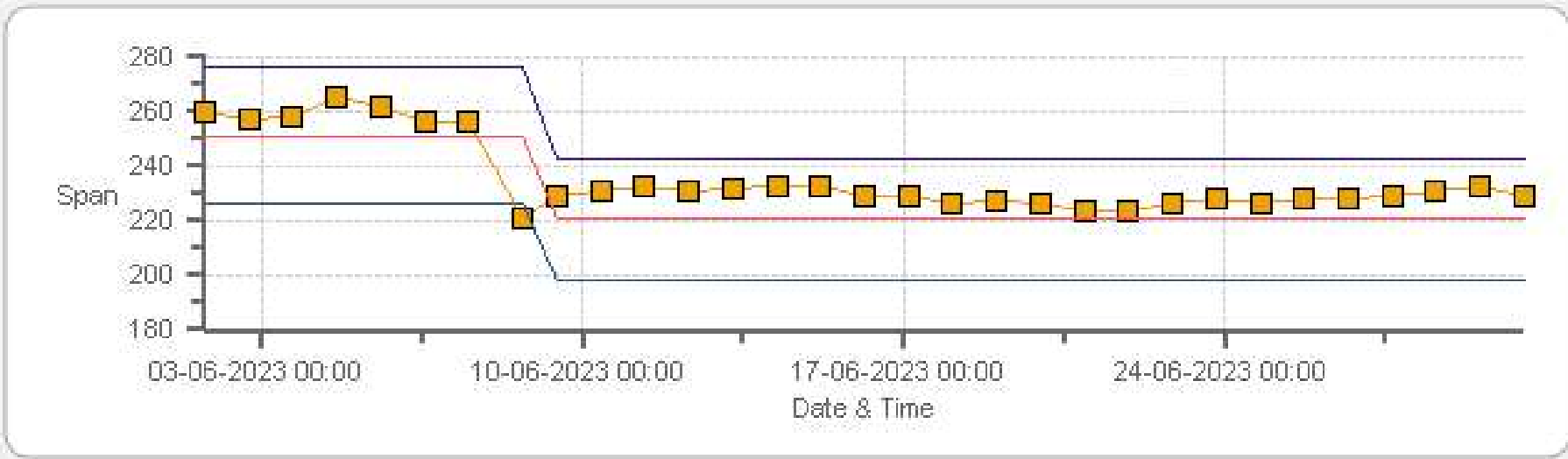
Span Span Ref Span Low Span High

O3[ppb] Calibration: AQHI Grimshaw Monthly: 06-2023 Type: SpanAndZero - Zero



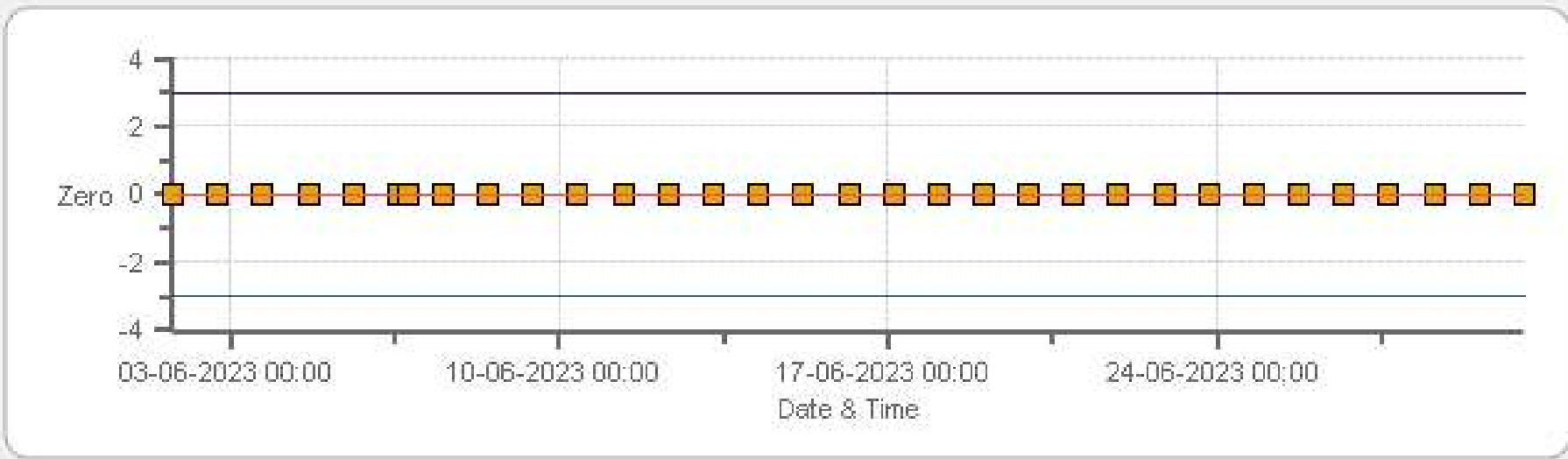
Zero Zero Ref Zero Low Zero High

O3[ppb] Calibration: AQHI Grimshaw Monthly: 06-2023 Type: SpanAndZero - Span



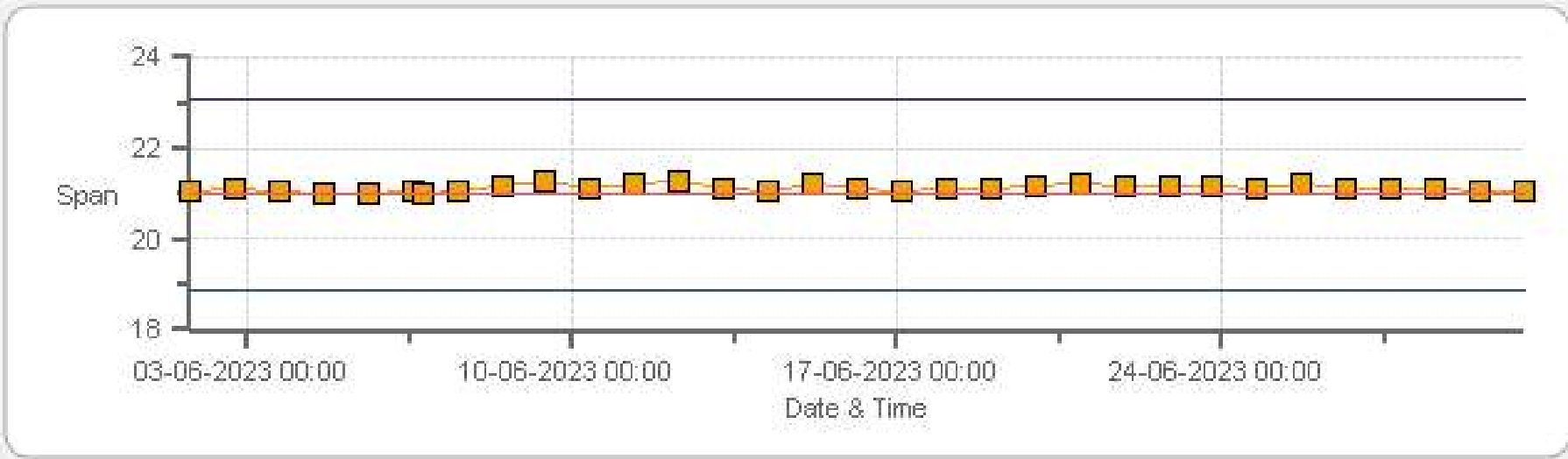
Span SpanRef Span Low Span High

THC55[ppm] Calibration: AQHI Grimshaw Monthly: 06-2023 Type: SpanAndZero - Zero



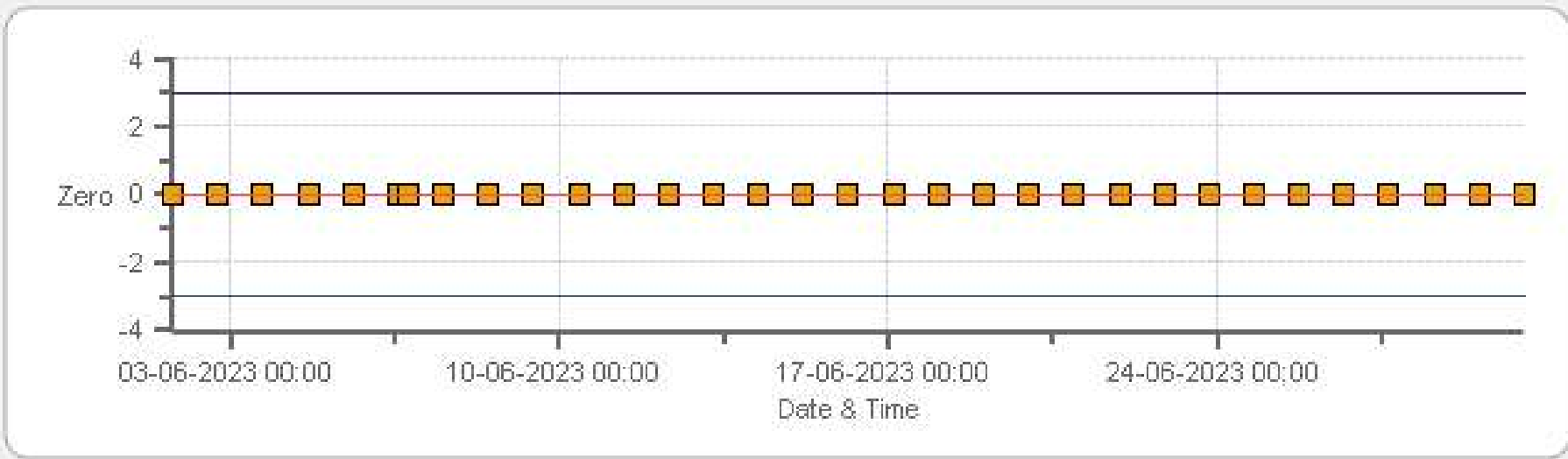
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: AQHI Grimshaw Monthly: 06-2023 Type: SpanAndZero - Span



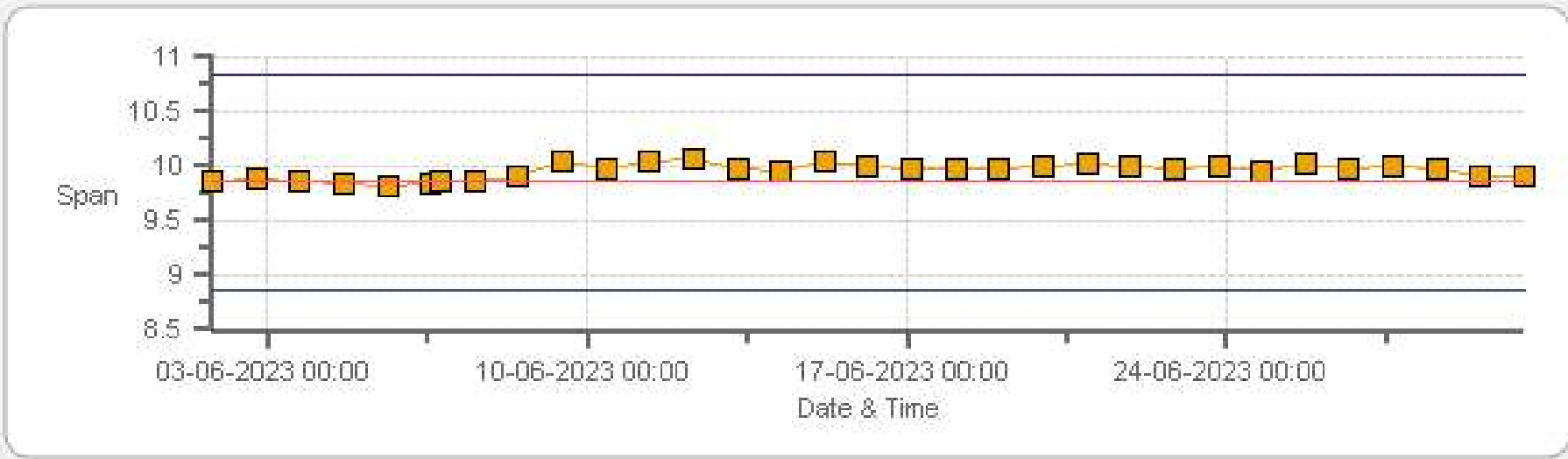
Span Span Ref Span Low Span High

CH4[ppm] Calibration: AQHI Grimshaw Monthly: 06-2023 Type: SpanAndZero - Zero



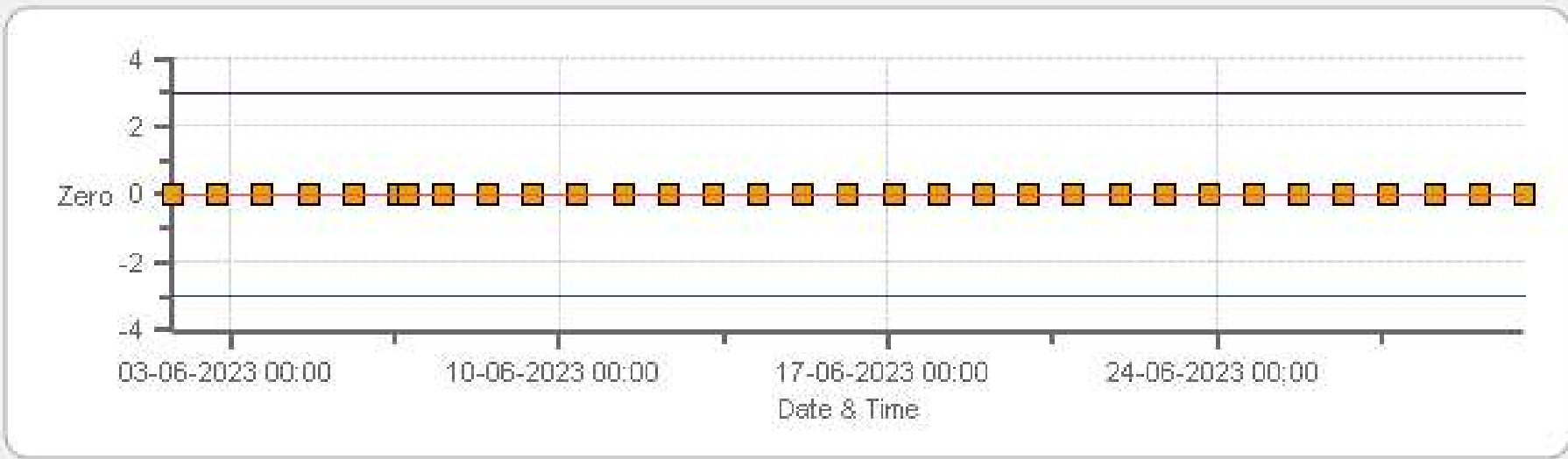
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: AQHI Grimshaw Monthly: 06-2023 Type: SpanAndZero - Span



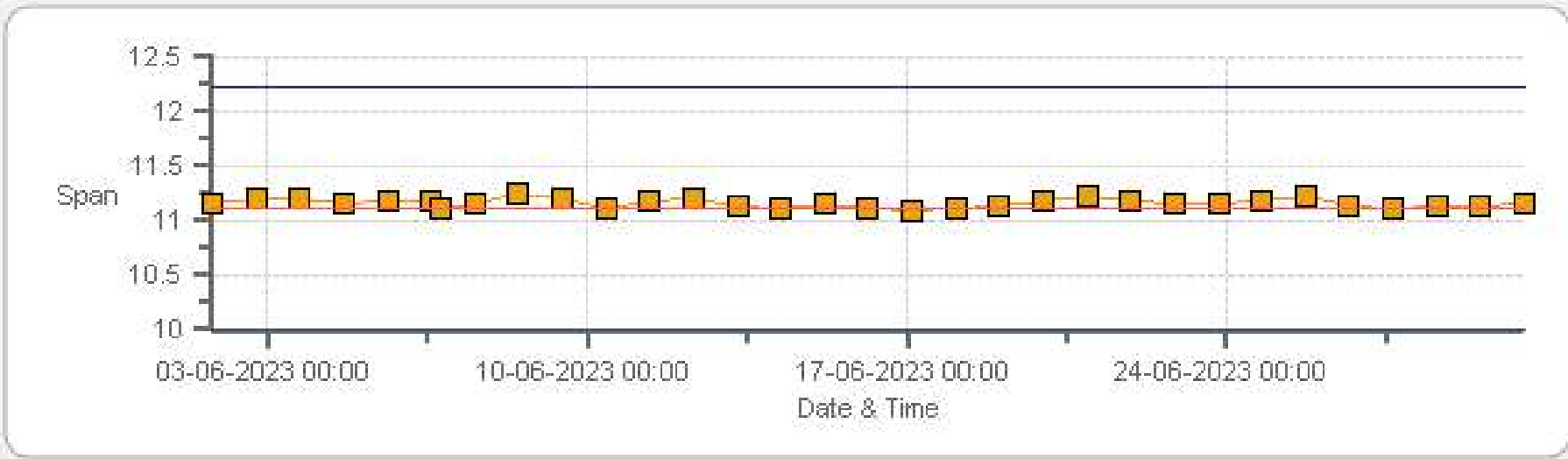
Span Span Ref Span Low Span High

NMHC[ppm] Calibration: AQHI Grimshaw Monthly: 06-2023 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: AQHI Grimshaw Monthly: 06-2023 Type: SpanAndZero - Span



Span Span Ref Span Low Span High

# MULTI-POINT CALIBRATION RECORDS

# SO2 Analyzer Calibration by Dilution



DATE:	06-Jun-2023	PREVIOUS CALIBRATION DATE:	03-May-2023
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	22.9
LOCATION:	Grimshaw	BAROMETRIC (mBar):	943
PURPOSE:	Routine	START TIME (MST):	08:42
PERFORMED BY:	Chris Wesson	END TIME (MST):	14:28

## ANALYZER:

MAKE/MODEL	Teledyne T100	RANGE	500 ppb
SERIAL #	722	FLOW (mL/min)	511
INITIAL		FINAL	
BKG/OFFSET	29.1	BKG/OFFSET	29.8
COEF/SLOPE	0.911	COEF/SLOPE	0.93
Expected (reference) Value	268	Expected (reference) Value	271.6

## CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	M701
ID:	75401122	ID:	4568
MFC CALIBRATION DATE:	13-Mar-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL107286	HIGH ID	n/a
CONC (ppm):	25.10	EXPIRY DATE	n/a
CYLINDER (psi):	900	LOW ID	n/a
EXPIRY DATE	27-Jan-2025	EXPIRY DATE	n/a

## CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	390	190	95
RANGE	300 - 400	150 - 200	50 - 100

## SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

## CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
3999	<del>60.60</del>	3999	0.00	0.3	0	<del>1.022</del>	<del>0.999</del>
3939	60.60	4000	380.27	372.4	380.8	1.022	0.999
3970	28.70	3999	180.14	n/a	179.6	n/a	1.003
3986	14.30	4000	89.73	n/a	89.9	n/a	0.998

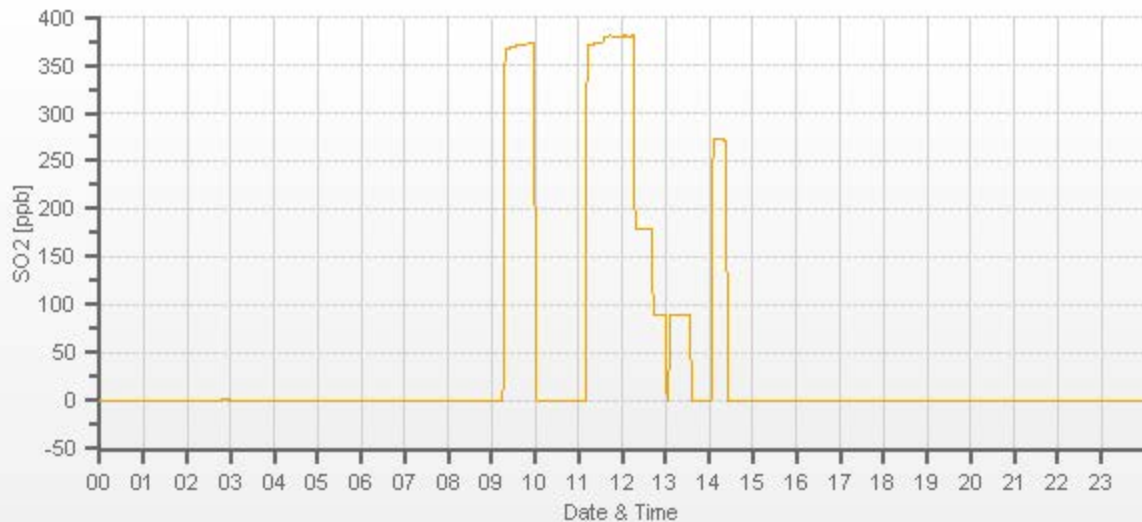
## LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	0.0%

## COMMENTS:

Sample filter changed. 13:00=Daily ZS. Low point restarted.
--





# TRS Analyzer Calibration by Dilution



DATE:	06-Jun-2023	PREVIOUS CALIBRATION DATE:	03-May-2023
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	22.9
LOCATION:	Grimshaw	BAROMETRIC (mBar):	943
PURPOSE:	Removal/Shut-down	START TIME (MST):	08:42
PERFORMED BY:	Chris Wesson	END TIME (MST):	16:16

## ANALYZER:

MAKE/MODEL	Teledyne T100U	RANGE	100 ppb
SERIAL #	132	FLOW (mL/min)	536
INITIAL		FINAL	
BKG/OFFSET	40.9	BKG/OFFSET	n/a
COEF/SLOPE	1.034	COEF/SLOPE	n/a
Expected (reference) Value	47.67	Expected (reference) Value	n/a

## CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	M701
ID:	75401122	ID:	4568
MFC CALIBRATION DATE:	13-Mar-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL131374	HIGH ID	n/a
CONC (ppm):	10.09	EXPIRY DATE	n/a
CYLINDER (psi):	2000	LOW ID	n/a
EXPIRY DATE	03-Jan-2026	EXPIRY DATE	n/a

## CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	78	38	19
RANGE	60 - 80	30 - 40	10 - 20

## SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

## CALIBRATION:

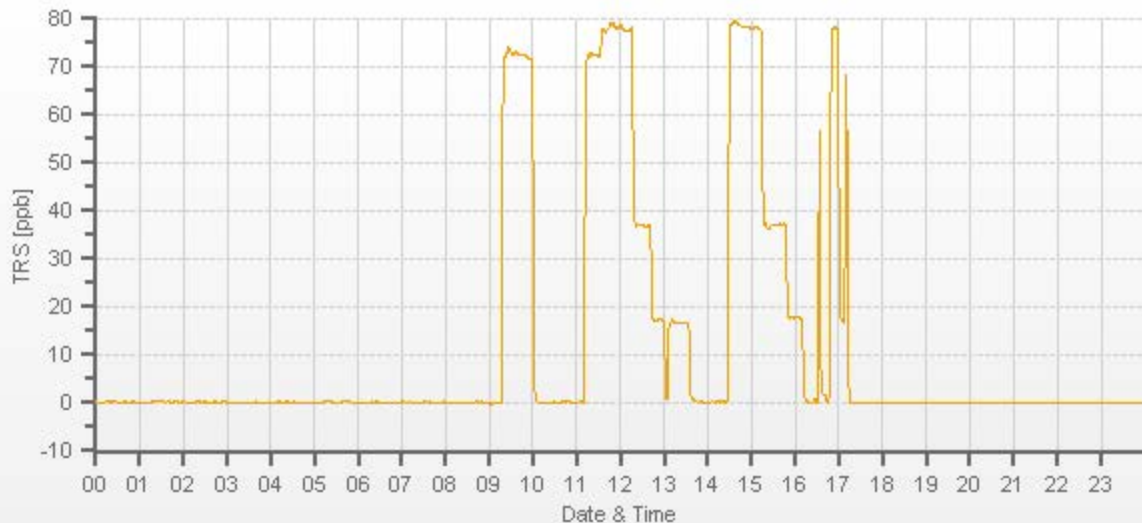
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
3999	<del>30.90</del>	3999	0.00	-0.29	0	<del>1.081</del>	<del>0.998</del>
3968	30.90	3999	77.96	71.83	78.1	1.081	0.998
3984	15.10	3999	38.10	n/a	37.05	n/a	1.028
3993	7.50	4000	18.92	n/a	17.6	n/a	<b>1.075</b>

## LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.925	-0.3%

## COMMENTS:

Converter, CDNova CDN-101 #576.  
 13:00 = daily ZS. Low point restarted  
 Initial attempt fails at low point. Repeated from adjusted zero.  
 2nd attemp fails at low point. Troubleshooting/maintenance started.



# TRS Analyzer Calibration by Dilution



DATE:	07-Jun-2023	PREVIOUS CALIBRATION DATE:	n/a
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	n/a
CLIENT:	PRAMP	TEMPERATURE (°C):	21.8
LOCATION:	Grimshaw	BAROMETRIC (mBar):	940
PURPOSE:	Install/Post-Repair	START TIME (MST):	09:52
PERFORMED BY:	Chris Wesson	END TIME (MST):	13:15

## ANALYZER:

MAKE/MODEL	Teledyne T100U	RANGE	100 ppb
SERIAL #	132	FLOW (mL/min)	536
INITIAL		FINAL	
BKG/OFFSET	n/a	BKG/OFFSET	41.4
COEF/SLOPE	n/a	COEF/SLOPE	1.1
Expected (reference) Value	n/a	Expected (reference) Value	48.63

## CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	M701
ID:	75401122	ID:	4568
MFC CALIBRATION DATE:	13-Mar-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL131374	HIGH ID	n/a
CONC (ppm):	10.09	EXPIRY DATE	n/a
CYLINDER (psi):	2000	LOW ID	n/a
EXPIRY DATE	03-Jan-2026	EXPIRY DATE	n/a

## CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	78	38	19
RANGE	60 - 80	30 - 40	10 - 20

## SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	10:25	SO2 Conc (ppb)	380
END TIME:	10:40	Analyzer Response (ppb)	0.1

## CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
3999	<del>30.90</del>	3999	0.00	n/a	0	<del>n/a</del>	<del>1.000</del>
3968	30.90	3999	77.96	n/a	77.97	n/a	1.000
3984	15.10	3999	38.10	n/a	37.2	n/a	1.024
3993	7.50	4000	18.92	n/a	18.53	n/a	1.021

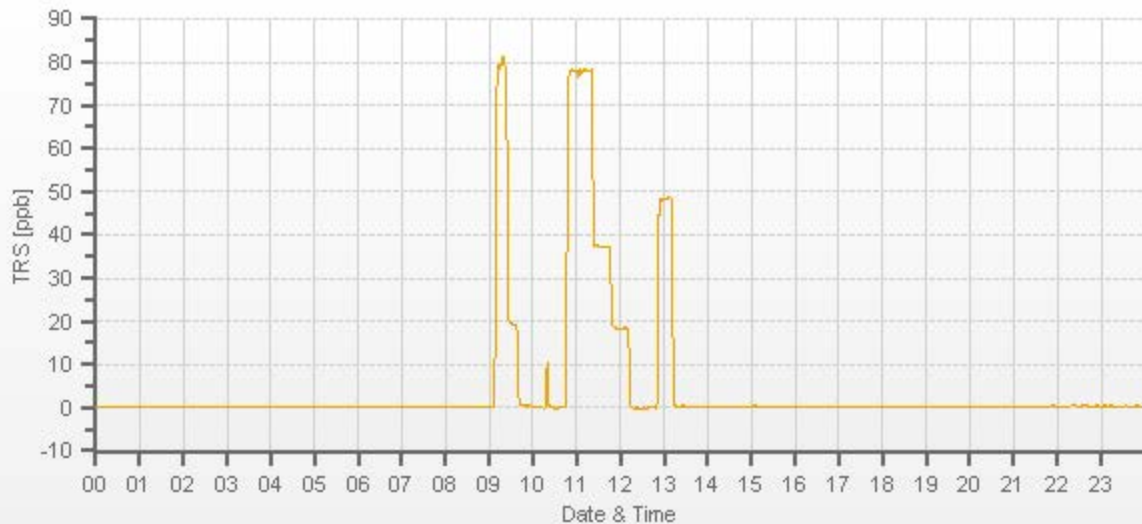
## LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	-0.3%

## COMMENTS:

Converter, CDNova CDN-101 #576. Post-repair following converter maintenance
--

TRS[ppb] Station: AQHI Grimshaw Daily: 07-06-2023 Type: AVG 1 Min. [1 Min.]



CAL-PRAMP-202306-01689

# NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	06-Jun-2023	PREVIOUS CALIBRATION DATE:	03-May-2023	MAKE/MODEL:	Teledyne T200	PREVIOUS CF.	
CLIENT:	PRAMP	TEMPERATURE (°C):	22.9	SERIAL #:	837	NOx	1.000
LOCATION:	Grimshaw	BAROMETRIC (mBar):	943	FLOW (mL/min)	443	NO	1.000
PURPOSE:	Removal/Shut-down	START TIME (MST):	08:42	RANGE (ppb)	500	NO2	1.002
PERFORMED BY:	Chris Wesson	END TIME (MST):	12:55	GPT FOR O3?		No	

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	Sabio	MAKE:	Teledyne	CYLINDER ID:	EY0001013	HIGH ID:	n/a
MODEL:	2010	MODEL:	M701	NO/NOx (PPM):	49.2   49.4	HIGH EXPIRY:	n/a
ID:	26701218	ID:	4568	CYLINDER (psi):	1500	LOW ID:	n/a
MFC CALIBRATION DATE:	15-Mar-2023	OXIDIZER ID:	n/a	EXPIRY DATE	11-Nov-2029	LOW EXPIRY:	n/a

CALIBRATION SETTINGS:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	0.9	0.2	n/a	BKG/OFFSET:	n/a	n/a	n/a
SLOPE/COEF/CE:	1.243	1.213	0.985	SLOPE/COEF/CE:	n/a	n/a	n/a

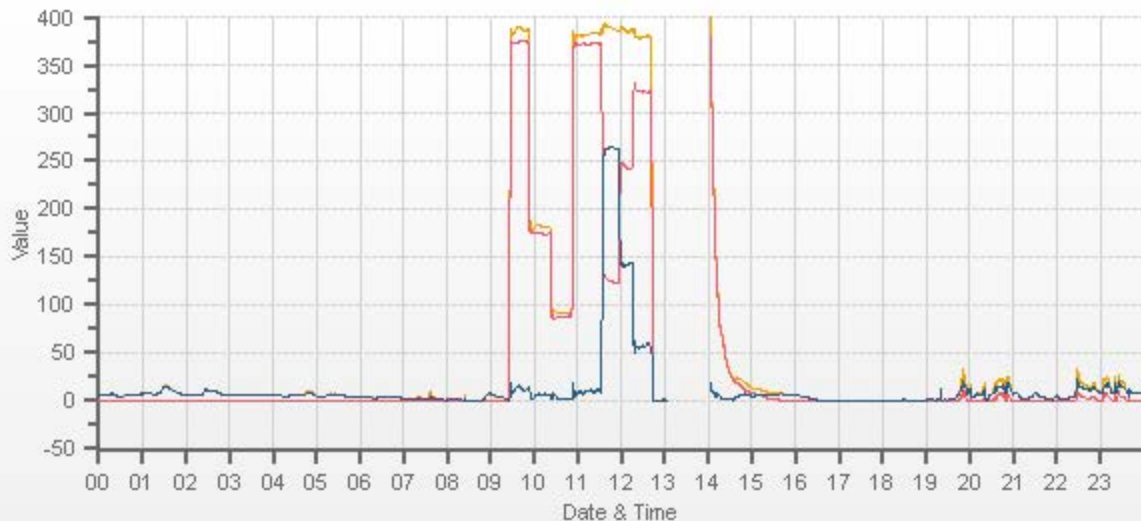
EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	327.9	2.9	325.0		n/a	n/a	n/a

CALIBRATION PARAMETERS:							
POINT	NO TARGET (PPB)		NO2 TARGET (PPB)		NO2 RANGE		O3 POINT
HIGH	380		250		230-265		n/a
MID	180		125		115-150		n/a
LOW	90		45		40-55		n/a
EXTRA 1	n/a		n/a		n/a		n/a

FLOW RATE			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
4999	<del>38.60</del>	4999	0.0	0.0	0.0	-0.9	2.2	3.1	n/a	n/a	n/a	<del>1.013</del>	<del>0.996</del>	<del>1.015</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>
4960	38.60	4999	379.9	381.4	1.5	374.0	385.0	11.1	n/a	n/a	n/a	1.013	0.996	1.015	n/a	n/a	n/a
4982	18.30	5000	180.1	180.8	0.7	173.3	180.3	7.0	n/a	n/a	n/a	1.034	1.015	1.015	n/a	n/a	n/a
4990	9.10	4999	89.6	89.9	0.4	88.4	90.9	2.5	n/a	n/a	n/a	1.003	1.014	1.015	n/a	n/a	n/a

GPT CALIBRATION:											
Point	CALIBRATOR			INDICATED (ppb)			NO DROP / O3 Conc (ppb)	NO2 GAIN (ppb)	NO2 Corr. FACTOR	CONV. EFFICIENCY	
	GAS	TOTAL	O3 SETPOINT	NO	NOx	NO2					
REFERENCE	38.60	4999	0	371.7	382.7	11.1	<del>248.8</del>	<del>251.6</del>	<del>0.989</del>	<del>101.13%</del>	
AS-FOUND HIGH	38.60	4999	260	122.9	385.6	262.7	248.8	251.6	0.989	101.13%	
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
MID	38.60	4999	135	242.0	385.0	143.0	129.7	131.9	0.983	101.70%	
LOW	38.60	4999	48	320.8	380.4	59.6	50.9	48.5	1.049	95.28%	
NO2 adjustment not required.									AVERAGE:	99.37%	

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	0.985	-0.26%	
NOx	1.000	1.004	0.17%	
NO2	1.000	1.025	-0.53%	



CAL-PRAMP-202306-01689

# NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	07-Jun-2023	PREVIOUS CALIBRATION DATE:	n/a	MAKE/MODEL:	Teledyne T200	PREVIOUS CF.	
CLIENT:	PRAMP	TEMPERATURE (°C):	21.5	SERIAL #:	837	NOx	n/a
LOCATION:	Grimshaw	BAROMETRIC (mBar):	940	FLOW (mL/min)	443	NO	n/a
PURPOSE:	Install/Post-Repair	START TIME (MST):	09:54	RANGE (ppb)	500	NO2	n/a
PERFORMED BY:	Chris Wesson	END TIME (MST):	17:57	GPT FOR O3?		Yes	

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	Sabio	MAKE:	Teledyne	CYLINDER ID:	EY0001013	HIGH ID:	n/a
MODEL:	2010	MODEL:	M701	NO/NOx (PPM):	49.2   49.4	HIGH EXPIRY:	n/a
ID:	26701218	ID:	4568	CYLINDER (psi):	1500	LOW ID:	n/a
MFC CALIBRATION DATE:	15-Mar-2023	OXIDIZER ID:	n/a	EXPIRY DATE	11-Nov-2029	LOW EXPIRY:	n/a

CALIBRATION SETTINGS:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	n/a	n/a	n/a	BKG/OFFSET:	1.3	-2.2	n/a
SLOPE/COEF/CE:	n/a	n/a	n/a	SLOPE/COEF/CE:	0.976	0.972	0.984

EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	n/a	n/a	n/a		274.1	2.0	272.1

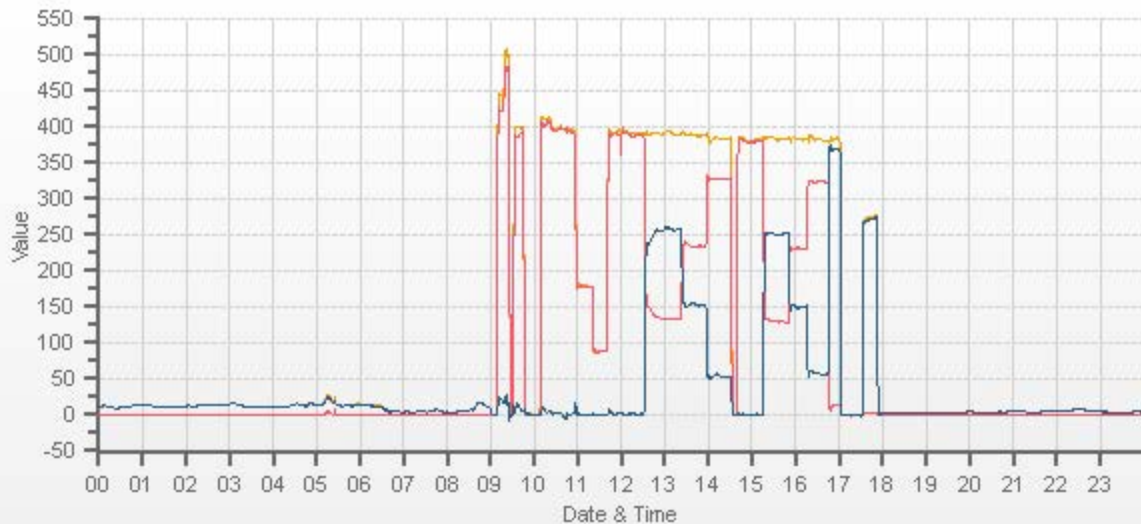
CALIBRATION PARAMETERS:							
POINT	NO TARGET (PPB)		NO2 TARGET (PPB)		NO2 RANGE		O3 POINT
HIGH	395		250		240-275		n/a
MID	180		154		150-157		Mid
LOW	90		54		50-58		Low
EXTRA 1	n/a		340		300-370		High

FLOW RATE			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
4999	<del>40.10</del>	4999	0.0	0.0	0.0	n/a	n/a	n/a	0.0	0.0	0.0	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>
4960	40.10	5000	394.6	396.2	1.6	n/a	n/a	n/a	392.8	394.5	1.8	n/a	n/a	<del>n/a</del>	1.005	1.004	<del>n/a</del>
4982	18.30	5000	180.1	180.8	0.7	n/a	n/a	n/a	177.7	177.3	-0.3	n/a	n/a	<del>n/a</del>	1.013	1.020	<del>n/a</del>
4990	9.20	4999	90.5	90.9	0.4	n/a	n/a	n/a	89.1	88.7	-0.4	n/a	n/a	<del>n/a</del>	1.016	1.025	<del>n/a</del>

GPT CALIBRATION:											
Point	CALIBRATOR			INDICATED (ppb)			NO DROP / O3 Conc (ppb)	NO2 GAIN (ppb)	NO2 Corr. FACTOR	CONV. EFFICIENCY	
	GAS	TOTAL	O3 SETPOINT	NO	NOx	NO2					
REFERENCE	40.10	5000	0	380.7	381.5	0.8	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>	
AS-FOUND HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
ADJUSTED HIGH	40.10	5000	260	129.1	381.4	252.3	251.6	251.5	1.000	99.96%	
MID	40.10	5000	155	230.3	381.2	150.8	150.4	150	1.003	99.73%	
LOW	40.10	5000	58	323.1	379.4	56.3	57.6	55.5	1.038	96.35%	
NO2 COEF/CONVERTER EFFICIENCY ADJUSTED									AVERAGE:	98.68%	

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	0.996	-0.15%	
NOx	1.000	0.997	-0.27%	
NO2	1.000	1.010	-0.49%	
				Post-repair after cleaning/maintenance 12:00 = daily ZS. GPT reference restarted. 1st GPT failed at low. Repeated. Additional point for O3. Setpoint = 375, O3 conc = 367.5





CAL-PRAMP-202306-01689

# Ozone Calibration by Direct GPT



DATE:	08-Jun-2023	PREVIOUS CALIBRATION DATE:	04-May-2023
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	22.8
LOCATION:	Grimshaw	BAROMETRIC (mBar):	947
PURPOSE:	Routine	START TIME (MST):	08:50
PERFORMED BY:	Chris Wesson	END TIME (MST):	12:10

## ANALYZER:

MAKE/MODEL	Teledyne T400	RANGE	500 ppb
SERIAL #	824	FLOW (mL/min)	763
INITIAL		FINAL	
BKG/OFFSET	-1.1	BKG/OFFSET	-1.2
COEF/SLOPE	1.103	COEF/SLOPE	0.991
Expected (reference) Value	251.1	Expected (reference) Value	251.1

## CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	M701
ID:	26701218	ID:	4568
MFC CALIBRATION DATE:	15-Mar-2023	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Direct GPT	
GPT DATE:	07-Jun-2023	GPT END TIME:	17:57

## CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
RANGE	300 - 400	150 - 200	50 - 100

## CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	<del>XXXXXX</del>	5000	0.0	-0.6	0.0	<del>XXXXXX</del>	<del>XXXXXX</del>
5000	<del>XXXXXX</del>	5000	367.5	406.4	365.9	0.903	1.004
5000	<del>XXXXXX</del>	5000	150.4	n/a	146.7	n/a	1.025
5000	<del>XXXXXX</del>	5000	57.6	n/a	53.0	n/a	1.087

## LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	-0.5%

## COMMENTS:

Sample filter changed.375,155,58  
 11:00 - Daily ZS. Adjusted high restarted  
 Fails at low on 1st attempt.Will redo GPT and repeat.

# Ozone Calibration by Direct GPT



DATE:	08-Jun-2023	PREVIOUS CALIBRATION DATE:	08-Jun-2023
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.004
CLIENT:	PRAMP	TEMPERATURE (°C):	24.0
LOCATION:	Grimshaw	BAROMETRIC (mBar):	946
PURPOSE:	Install/Post-Repair	START TIME (MST):	14:25
PERFORMED BY:	Chris Wesson	END TIME (MST):	16:54

## ANALYZER:

MAKE/MODEL	Teledyne T400	RANGE	500 ppb
SERIAL #	824	FLOW (mL/min)	763
INITIAL		FINAL	
BKG/OFFSET	-1.2	BKG/OFFSET	-1.9
COEF/SLOPE	0.991	COEF/SLOPE	0.98
Expected (reference) Value	251.1	Expected (reference) Value	220.7

## CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	M701
ID:	26701218	ID:	4568
MFC CALIBRATION DATE:	15-Mar-2023	OXIDIZER ID:	n/a
CALIBRATION METHOD:		Direct GPT	
GPT DATE:	08-Jun-2023	GPT END TIME:	13:52

## CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
RANGE	300 - 400	150 - 200	50 - 100

## CALIBRATION:

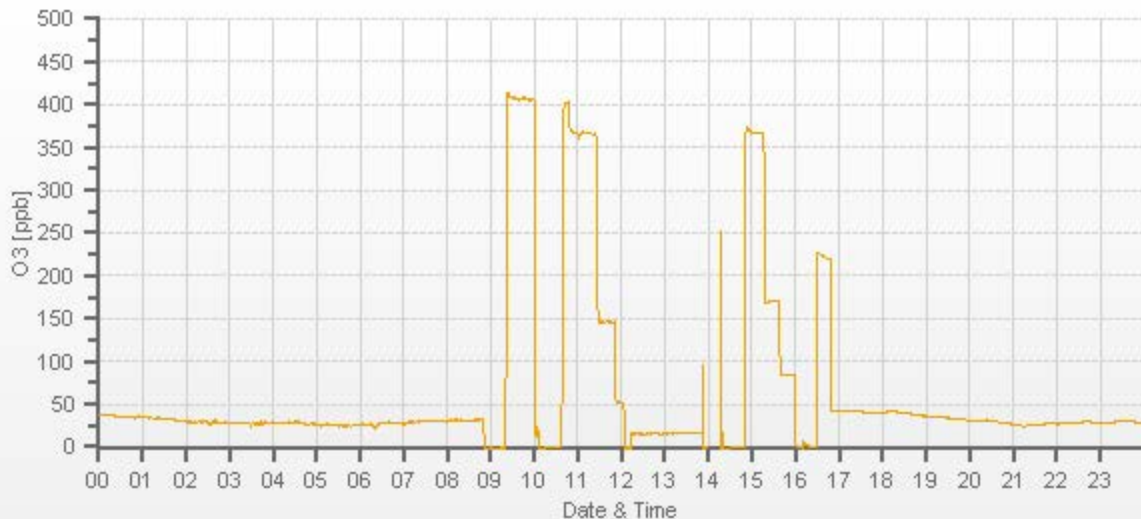
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	<del>                    </del>	5000	0.0	n/a	0.0	<del>                    </del>	<del>                    </del>
5000	<del>                    </del>	5000	368.2	n/a	367.4	n/a	1.002
5000	<del>                    </del>	5000	170.8	n/a	170.8	n/a	1.000
5000	<del>                    </del>	5000	85.6	n/a	84.6	n/a	1.012

## LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.999	0.0%

## COMMENTS:

Analyzer failed after 1st calibration attempt due to low lamp signal.  
Post-repair following adjustment to UV preamp board.



# Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	06-Jun-2023	PREVIOUS CALIBRATION DATE:	03-May-2023	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	PRAMP	TEMPERATURE (°C):	23.3		Thermo 55i	1191032505	1095
LOCATION:	Grimshaw	BAROMETRIC (mBar):	940	PARAMETER:	CH4	NMHC	THC
PURPOSE	As-Found	START TIME (MST):	14:27	RANGE (ppm):	20	20	40
PERFORMED BY:	Chris Wesson	END TIME (MST):	15:19	PREVIOUS CF:	0.998	0.998	0.998

CALIBRATION SYSTEM:							
CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	Sabio	MAKE:	Teledyne	CYLINDER ID:	LL28583	HIGH ID:	n/a
MODEL:	2010	MODEL:	M701	CH <sub>4</sub> /C <sub>3</sub> H <sub>8</sub> (ppm):	608.0   203.0	HIGH EXPIRY:	n/a
ID:	26701218	ID:	4568	CYLINDER (psi):	175	LOW ID:	n/a
MFC CALIBRATION DATE:	15-Mar-2023	OXIDIZER ID:	Internal	EXPIRY DATE	18-Aug-2029	LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:							
POINT (CH <sub>4</sub> /NMHC)	HIGH	MID	LOW	CH <sub>4</sub> EQUIVILANCE			
TARGET	14	7	3.5	C <sub>3</sub> H <sub>8</sub> as CH <sub>4</sub>		558.3	
RANGE	12 - 16	6 - 8	2 - 4	THC as CH <sub>4</sub>		1166.3	

EXPECTED (REFERENCE) VALUE:							
INITIAL	CH <sub>4</sub>	NMHC	THC	FINAL	CH <sub>4</sub>	NMHC	THC
	9.86	11.12	20.98		n/a	n/a	n/a

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC
3250	<del>78.00</del>	3250	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a	<del>1.014</del>	<del>0.998</del>	<del>1.006</del>	<del>n/a</del>	<del>n/a</del>	<del>n/a</del>
3172	78.00	3250	14.59	13.40	27.99	14.39	13.42	27.81	n/a	n/a	n/a	1.014	0.998	1.006	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

LINEAR REGRESSION ANALYSIS:				Comments:			
	CORRELATION	SLOPE	INTERCEPT	<b>H2 = AMA HG300 #190567059</b> <b>As-found with original PRAMP cal gas</b>			
CH <sub>4</sub>	n/a	n/a	n/a				
NMHC	n/a	n/a	n/a				
THC	n/a	n/a	n/a	Use Zero Chrom?		No	

# Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	06-Jun-2023	PREVIOUS CALIBRATION DATE:	03-May-2023	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	PRAMP	TEMPERATURE (°C):	23.0		Thermo 55i	1191032505	1095
LOCATION:	Grimshaw	BAROMETRIC (mBar):	939	PARAMETER:	CH4	NMHC	THC
PURPOSE:	Routine	START TIME (MST):	15:25	RANGE (ppm):	20	20	40
PERFORMED BY:	Chris Wesson	END TIME (MST):	18:53	PREVIOUS CF:	0.998	0.998	0.998

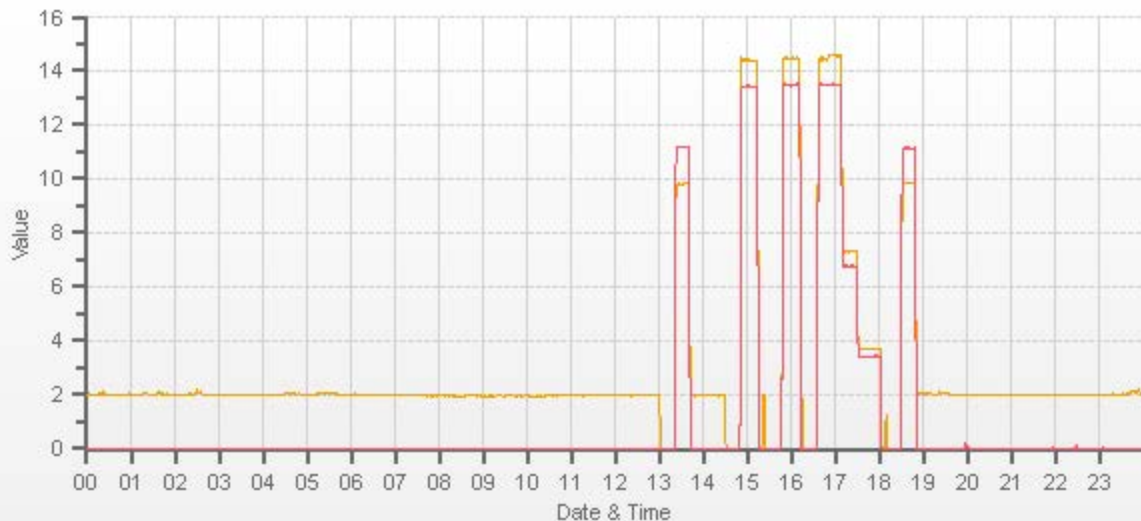
CALIBRATION SYSTEM:							
CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	Sabio	MAKE:	Teledyne	CYLINDER ID:	LL68768	HIGH ID:	n/a
MODEL:	2010	MODEL:	M701	CH <sub>4</sub> /C <sub>3</sub> H <sub>8</sub> (ppm):	897.0   301.0	HIGH EXPIRY:	n/a
ID:	26701218	ID:	4568	CYLINDER (psi):	2100	LOW ID:	n/a
MFC CALIBRATION DATE:	15-Mar-2023	OXIDIZER ID:	Internal	EXPIRY DATE	08-Nov-2029	LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:						
POINT (CH <sub>4</sub> /NMHC)	HIGH	MID	LOW	CH <sub>4</sub> EQUIVILANCE		
TARGET	14	7	3.5	C <sub>3</sub> H <sub>8</sub> as CH <sub>4</sub>		827.8
RANGE	12 - 16	6 - 8	2 - 4	THC as CH <sub>4</sub>		1724.8

EXPECTED (REFERENCE) VALUE:							
INITIAL	CH <sub>4</sub>	NMHC	THC	FINAL	CH <sub>4</sub>	NMHC	THC
	9.86	11.12	20.98		9.86	11.12	20.98

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC
3250	<del>X</del>	3250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>
3197	52.80	3250	14.57	13.45	28.02	14.47	13.51	27.98	14.57	13.47	28.04	1.007	0.995	1.001	1.000	0.998	0.999
3224	26.40	3250	7.29	6.72	14.01	n/a	n/a	n/a	7.33	6.76	14.09	n/a	n/a	n/a	0.994	0.995	0.994
3236	13.20	3249	3.64	3.36	7.01	n/a	n/a	n/a	3.69	3.44	7.14	n/a	n/a	n/a	0.988	0.978	0.981

LINEAR REGRESSION ANALYSIS:				Comments:			
	CORRELATION	SLOPE	INTERCEPT	<b>H2 = AMA HG300 #190567059</b> <b>Routine calibration with new PRAMP cal gas</b>			
CH <sub>4</sub>	1.000	0.999	0.1%				
NMHC	1.000	1.000	0.2%				
THC	1.000	0.999	0.2%	Use Zero Chrom?		No	



CAL-PRAMP-202306-01689



# Teledyne T640 Audit/Calibration

<b>Date/Previous Audit Date:</b>	June 7, 2023	May 4, 2023	<b>Weather Conditions:</b>	Sunny
<b>Company:</b>	PRAMP		<b>Start Time (mst):</b>	13:46
<b>Station:</b>	Grimshaw		<b>End Time (mst):</b>	15:47
<b>Parameter:</b>	PM 2.5	<b>Performed By/Reviewer:</b>	Chris Wesson	Limin Li

<b>Instrument Data:</b>				
<b>Make/Model:</b>	Teledyne T640	<b>Serial Number:</b>	318	
<b>Owner:</b>	PRAMP	<b>Alarms (detail in comments):</b>	Yes	

<b>Reference Standards/I.D./Expiry Date:</b>				
<b>Flow Standard:</b> DeltaCal DC1 #206578, expires Sept 20, 2023		<b>Temperature:</b> DeltaCal DC1 #206578, expires Sept 20, 2023		
<b>Digital Manometer:</b> DeltaCal DC1 #206578, expires Sept 20, 2023		<b>Pressure:</b> DeltaCal DC1 #206578, expires Sept 20, 2023		

<b>DIAGNOSTICS:</b>					
Ambient Pressure (mmHg)	704.1	Ambient Temp (°C)	23.0	ASC Heater Duty (%)	0.0
Box Temp (°C)	27.3	Current PMT HV (V)	1549	LED Temp (°C)	35.72
P3 Value	50	PMT Setting (V)	1554	Pump PWM (%)	38
Sample Flow (L/min)	4.99	Sample RH (%RH)	21.5	Sample Temp (°C)	25.6

Item:	As-found		As-left		Tolerance
	Reference	T640x	Reference	T640x	
Zero Test (Leak Check)	PM10	0.0	0	0.0	0.0 to 0.2
	PM2.5	0.0	0	0.0	
Ambient Pressure (mmHg)	707.0	704.2	707	707	+/- 10 mm Hg
Ambient Temperature (°C)	21.40	22.4	n/a		+/- 2°C
Sample Flow (L/min)	5.24	5.01	5.00	5	+/-5% of T640x (e.g., 4.75 – 5.25 lpm)

<b>Additional Monthly Maintenance :</b>					<b>Completed</b>
				Inlet cleaned?	Yes
				Sample tubing inspected (inner and outer)?	Yes

<b>Quarterly Audit/Calibration:</b>					
SpanDust™ Standard	Peak at Channel		Lot No:		Expiry:
	10.9		100128-050-046		1-31-2025
Item:	Verification:		Calibration (if needed):		Tolerance
	Reference	T640x	Reference	T640x	
Peak Channel	10.9	11.3	10.9	10.9	± 0.5
PMT Setting (V)	n/a	1542	n/a	1546	n/a
Peak Channel Counts:	n/a	4388	n/a	14689	n/a

<b>Additional Checks and Maintenance:</b>					<b>Completed</b>
Every 6 Months	1. Clean Optical Chamber				Yes
	2. Clean RH Sensor				Yes
	3. Clean Temp Sensor				Yes
Every 12 months <small>(or if valve or pump PWM value approaches 80%)</small>	1. New internal Disposable Filter Unit (DFU) [inside front panel]				Yes

**Comments:**

Alert: May 16: Span dev track outside range  
 Replaced ASC heater cable (as per service note) and tested heater function = OK  
 Cleaned sample path, replaced DFU.



# Meteorological System Checklist



Date:	June 7, 2023
Technician:	Chris Wesson
Station:	PRAMP Grimshaw

Unit:	Make:	Model:	Serial #:
Temperature Sensor:	Vaisala	HMP155	N2910506
Barometric Pressure Sensor:	MetOne	92	A2397
Relative Humidity Sensor:	Vaisala	HMP155	N2910506
Anemometer:	RM Young	05305AQ	174801

### AMBIENT TEMPERATURE SENSOR CHECK

Previous check date:	May 4, 2023
Parameter:	Temperature @ 2 metres
Reference Thermometer ID:	F.S. 11745843 expires June 14, 2023
Reference Temperature (°C):	21.4
Station - Ambient Temperature (°C):	21.6
Temperature Difference (°C):	-0.2

### BAROMETRIC PRESSURE SENSOR CHECK

Previous check date:	May 4, 2023		
Reference Barometer ID:	DeltaCal DC1 #206578, expires Sept 20, 2023		
Reference Pressure - Units/Reading:	millibar		941
Station Pressure - Units/Reading:	millibar		940
Pressure Tolerance +/- 15% of error:	800 - 1082		0.11%

### RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK

Previous check date:	May 4, 2023		
Reference Hygrometer ID:	F.S. 11745843 expires June 14, 2023		
Reference Hygrometer % RH- Reading:	24.50		
Station Hygrometer % RH- Reading:	26.70		
RH Tolerance +/- 15% of difference:	20.83 - 28.18		-9.0%

### ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK

WIND SPEED		WIND DIRECTION	
Previous check date:	May 4, 2023	Previous check date:	May 4, 2023
Wind Speed Observed (kph):	5~10	Wind Direction Observed:	SW
Wind speed on Data Logger (kph):	5.3	Wind Direction on Data Logger:	SW
		Wind Direction Pass/Fail?:	Pass

Comments

No issues



# Meteorological Sensor Audit/Calibration

## Location Information

**Company:** Bureau Veritas **Performed By:** Ferdinand Roy  
**Audit Location:** Grimshaw **Reviewed By:** Chris Wesson  
**Audit Date:** July 12, 2022 **Start/End Time (mst):** 13:57 / 16:52  
**Calibration Purpose:** routine annual **Weather Conditions:** Cloudy/Overcast

## Wind Sensor Information

Sensor ID Data:		Sensor Outputs:	
Sensor Make:	RM Young	Velocity Voltage Output Range:	n/a
Sensor Model:	05305AQ	Velocity Unit Output Range:	0-200
Serial #:	174801	Direction Voltage Output Range:	n/a
Previous Cal/Audit Date:	n/a	Direction Unit Output Range:	0-360

## Wind Calibrator Information

**Calibrator I.D. and Expiry Date:** RM Young 18801 id# CA01648 expires August 6, 2022

## 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	18.3	18.3	1.007
2000	36.9	36.7	36.7	1.004
3000	55.3	55.1	55.1	1.003
4000	73.7	73.6	73.6	1.002
5000	92.2	92.0	92.0	1.002
6000	110.6	110.5	110.5	1.001
7000	129.0	128.9	128.9	1.001
8000	147.4	147.3	147.3	1.001
9000	165.9	165.8	165.8	1.000
10000	184.3	184.2	184.2	1.001
The audit meets AMD requirements.			Average Correction Factor=	1.002

## Wind Direction Audit Data **\*\*+/- 3° of the absolute average degrees difference for all points is the limit\*\***

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	0	354	0.2	0.8	0.5
30	330	27	331	3.3	-0.6	2.0
60	300	56	300	3.8	-0.3	2.1
90	270	87	268	2.8	1.9	2.3
120	240	117	236	3.3	4.0	3.7
150	210	147	204	2.6	5.6	4.1
180	180	177	175	3.3	4.6	4.0
210	150	207	145	3.1	4.8	4.0
240	120	238	115	2.4	5.0	3.7
270	90	270	85	0.3	5.1	2.7
300	60	300	57	-0.3	3.1	1.7
330	30	330	26	-0.3	3.6	2.0
355	0	354	0	0.8	0.1	0.5
The audit meets AMD requirements.				Average Absolute Degrees Difference=		2.5

## Comments:

Output via RMY32400 serial interface

**END OF REPORT**



## **Peace River Area Monitoring Program**

# **JUNE 2023**

## **Ambient Air Monitoring Calibration Report**

### **- PEACE RIVER COMPLEX (PRC) STATION-**

### **CAL-PRAMP-202306-01698**

**Operation and Maintenance:**

Bureau Veritas Canada

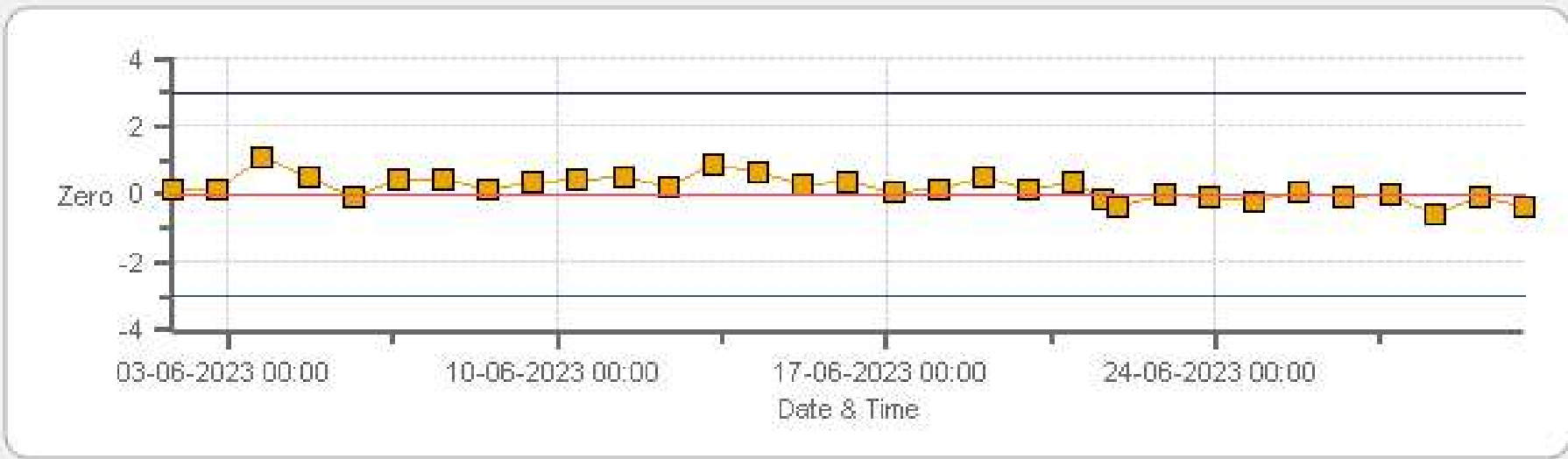
**Data Validation and Report:**

Bureau Veritas Canada

July 17, 2023

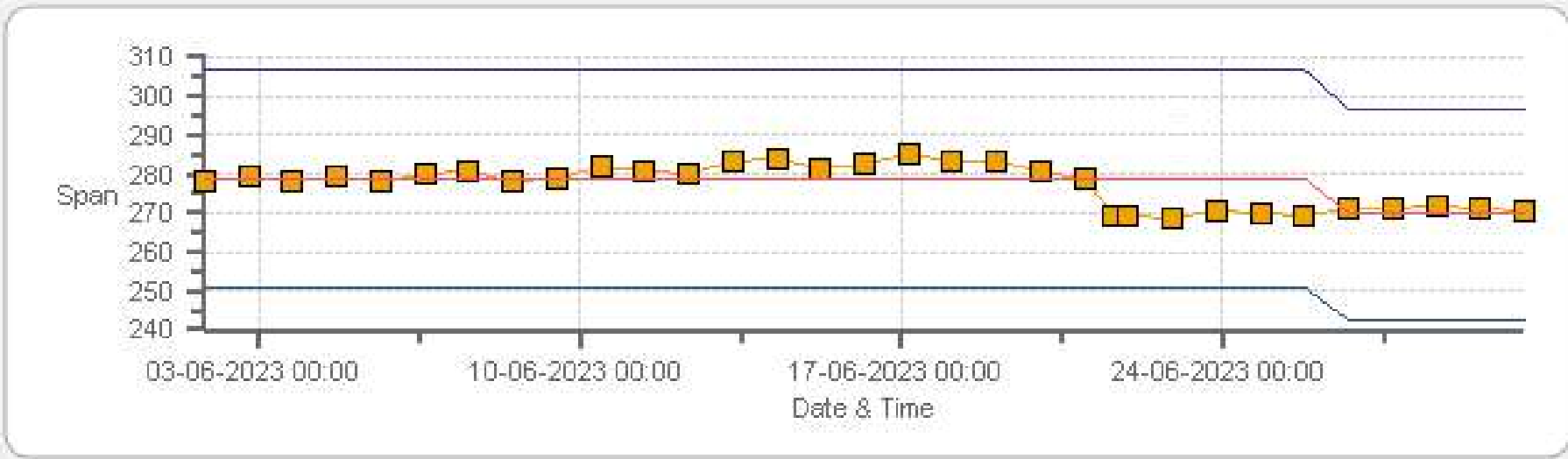
# DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: Peace River Complex [PRC] Monthly: 06-2023 Type: SpanAndZero - Zero



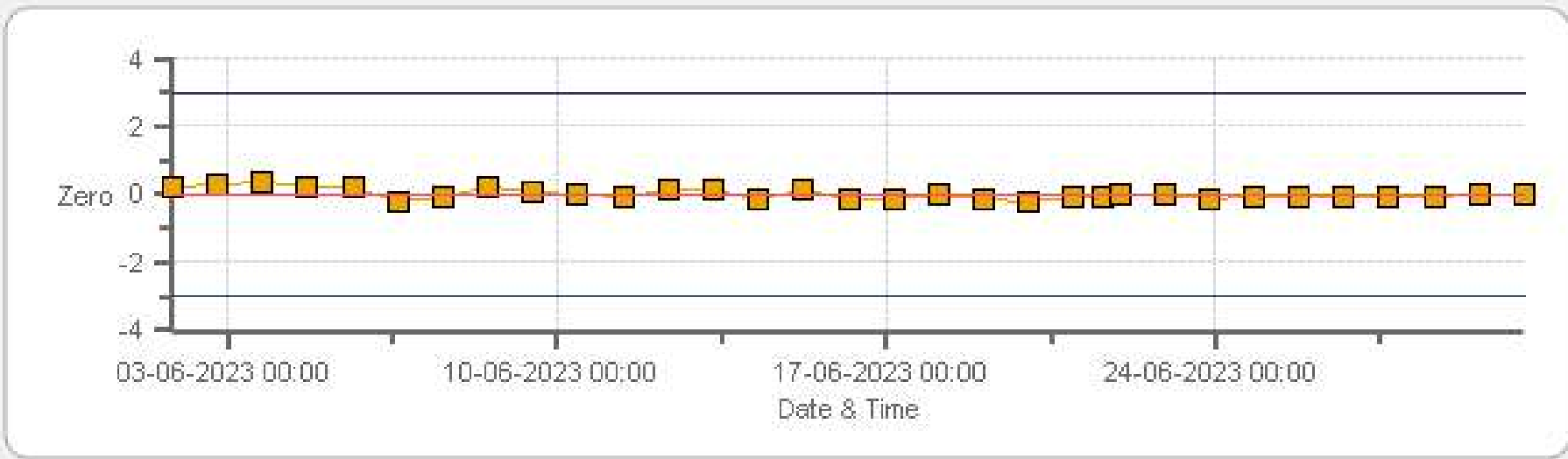
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: Peace River Complex [PRC] Monthly: 06-2023 Type: SpanAndZero - Span



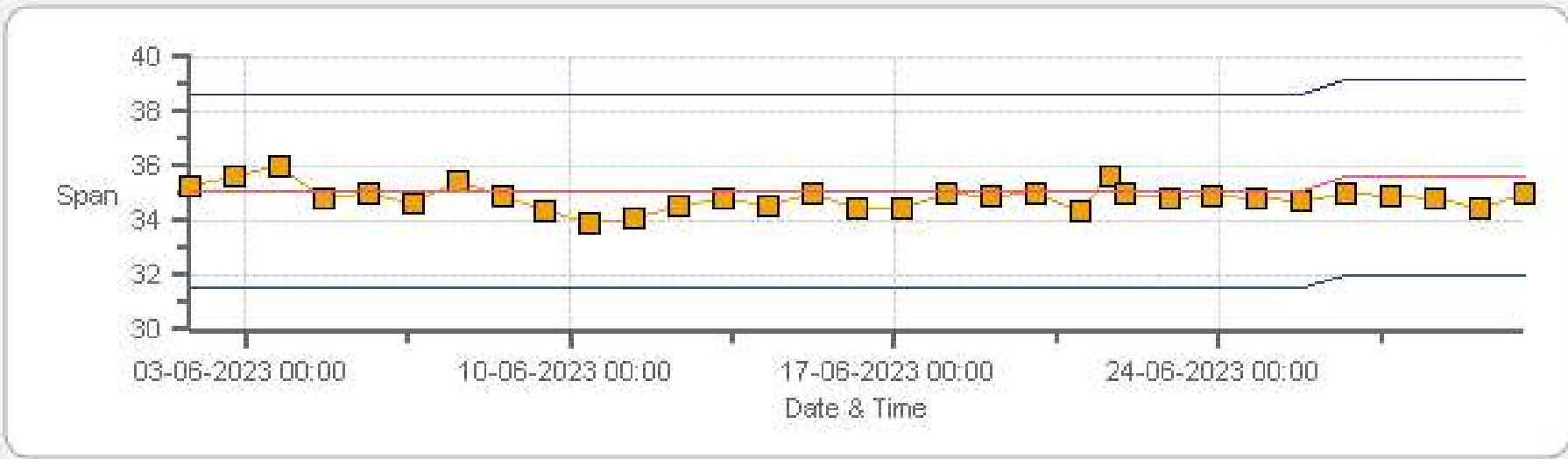
Span Span Ref Span Low Span High

H2S[ppb] Calibration: Peace River Complex [PRC] Monthly: 06-2023 Type: SpanAndZero - Zero



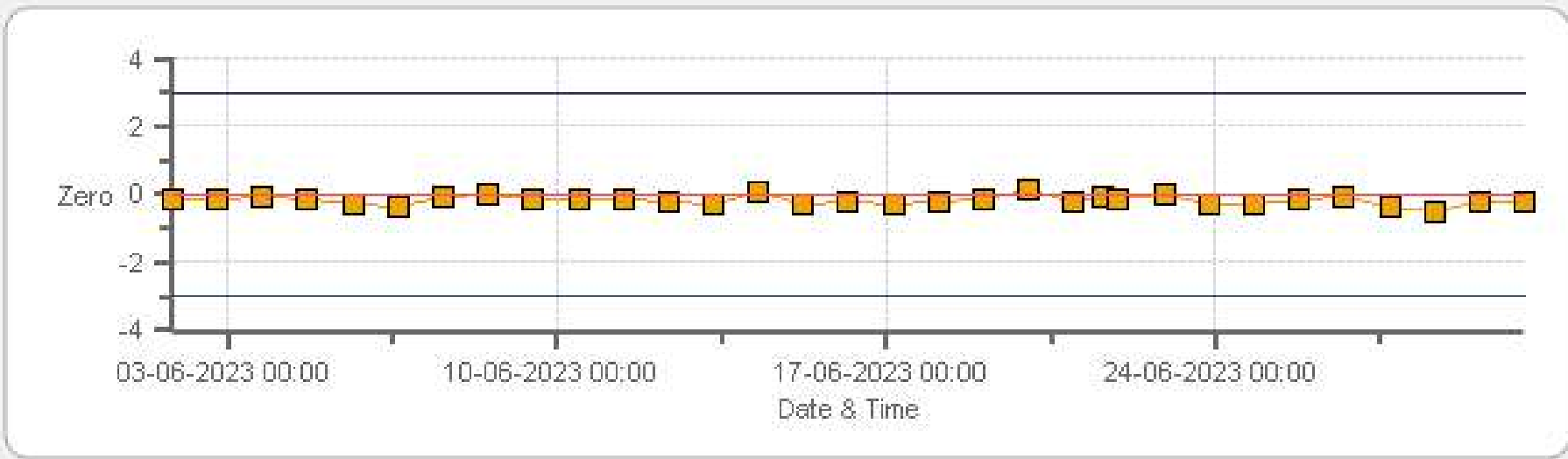
Zero Zero Ref Zero Low Zero High

H2S[ppb] Calibration: Peace River Complex [PRC] Monthly: 06-2023 Type: SpanAndZero - Span



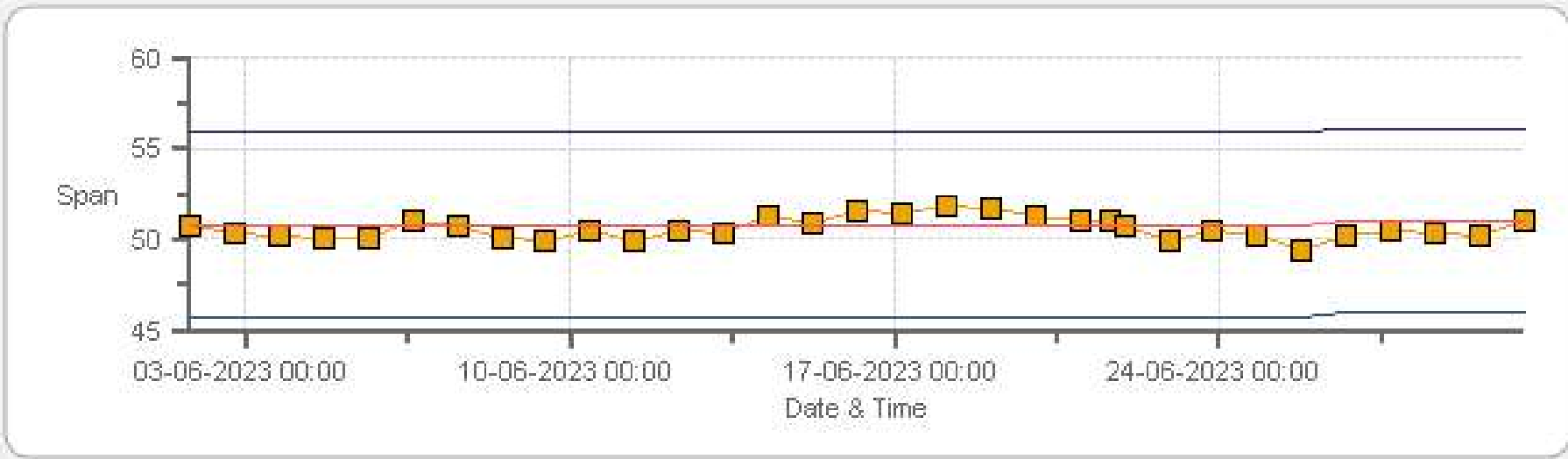
Span Span Ref Span Low Span High

TRS[ppb] Calibration: Peace River Complex [PRC] Monthly: 06-2023 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

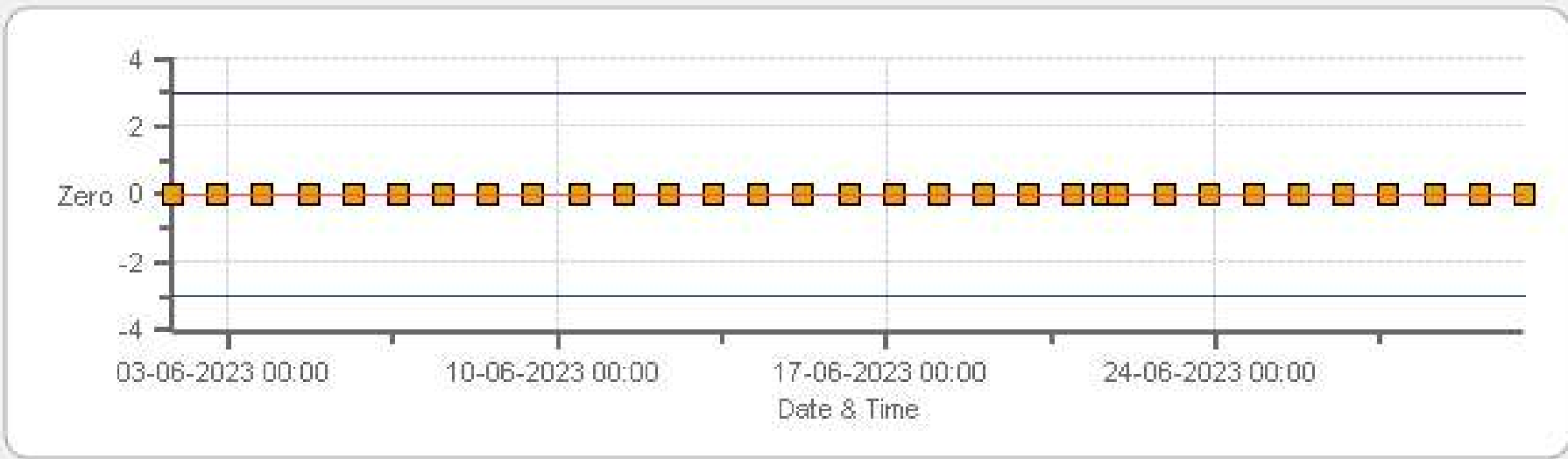
TRS[ppb] Calibration: Peace River Complex [PRC] Monthly: 06-2023 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

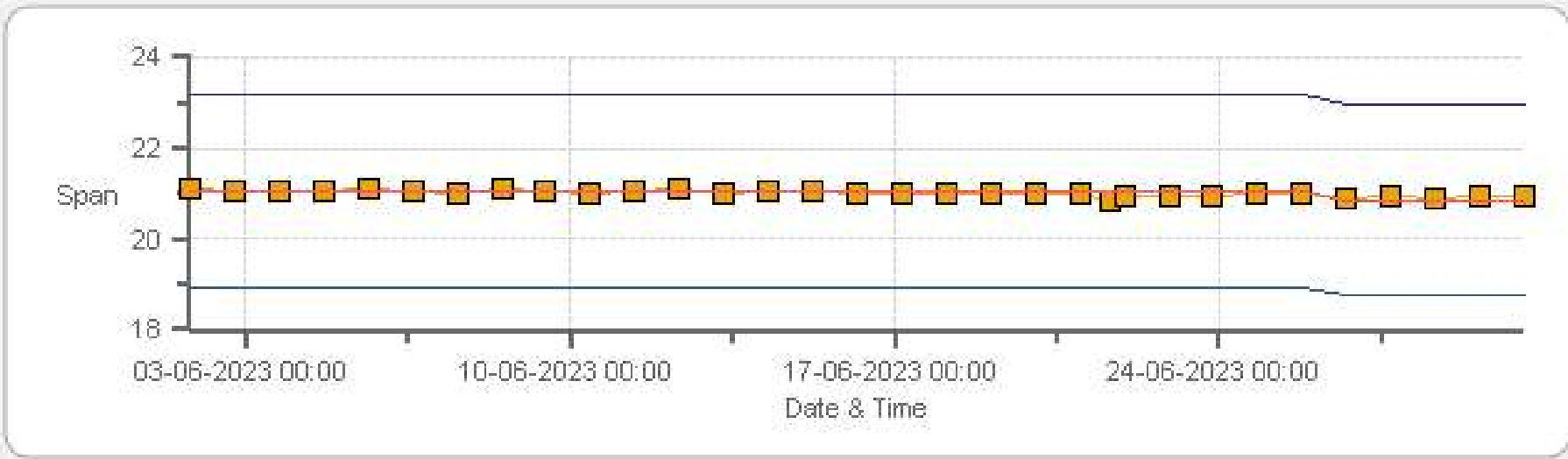


THC55(ppm) Calibration: Peace River Complex [PRC] Monthly: 06-2023 Type: SpanAndZero - Zero



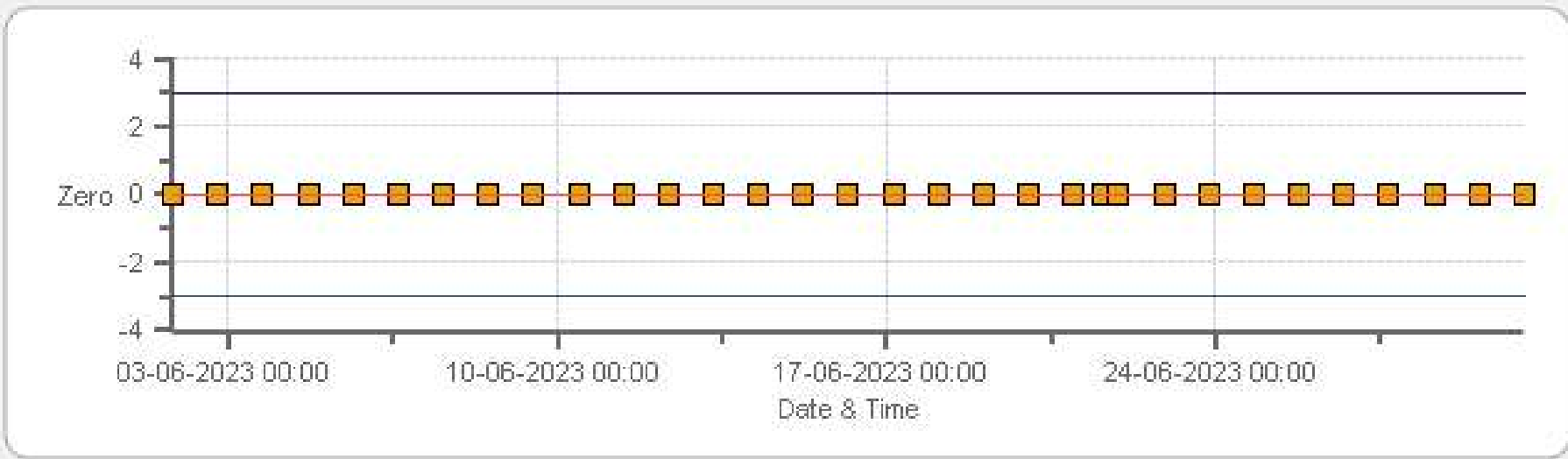
Zero Zero Ref Zero Low Zero High

THC55(ppm) Calibration: Peace River Complex [PRC] Monthly: 06-2023 Type: SpanAndZero - Span



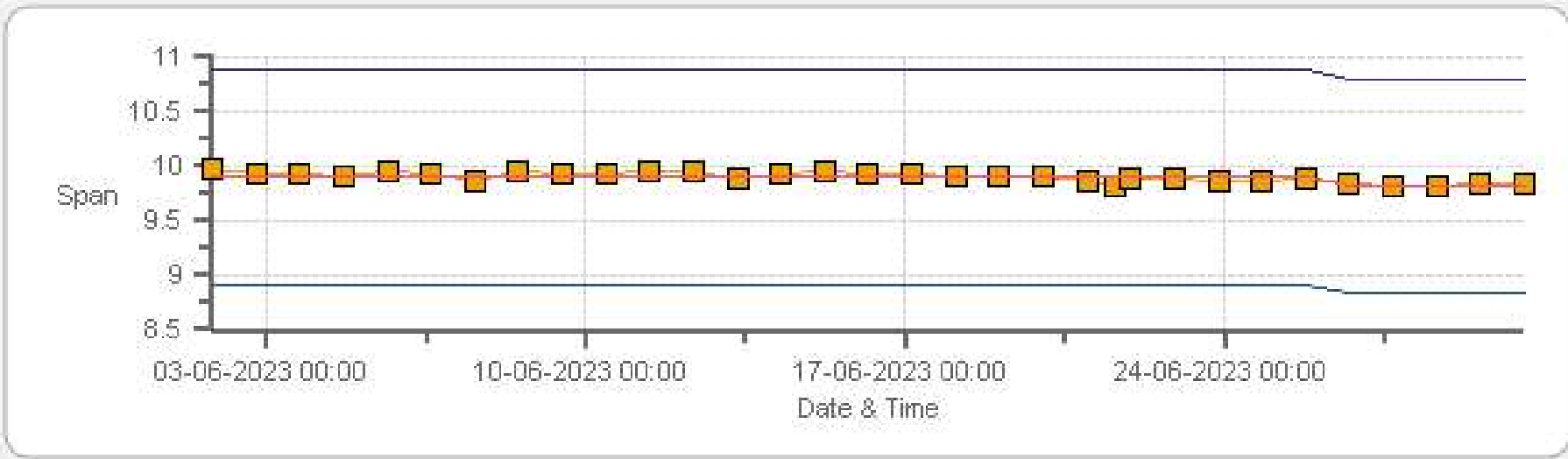
Span Span Ref Span Low Span High

CH4[ppm] Calibration: Peace River Complex [PRC] Monthly: 06-2023 Type: SpanAndZero - Zero



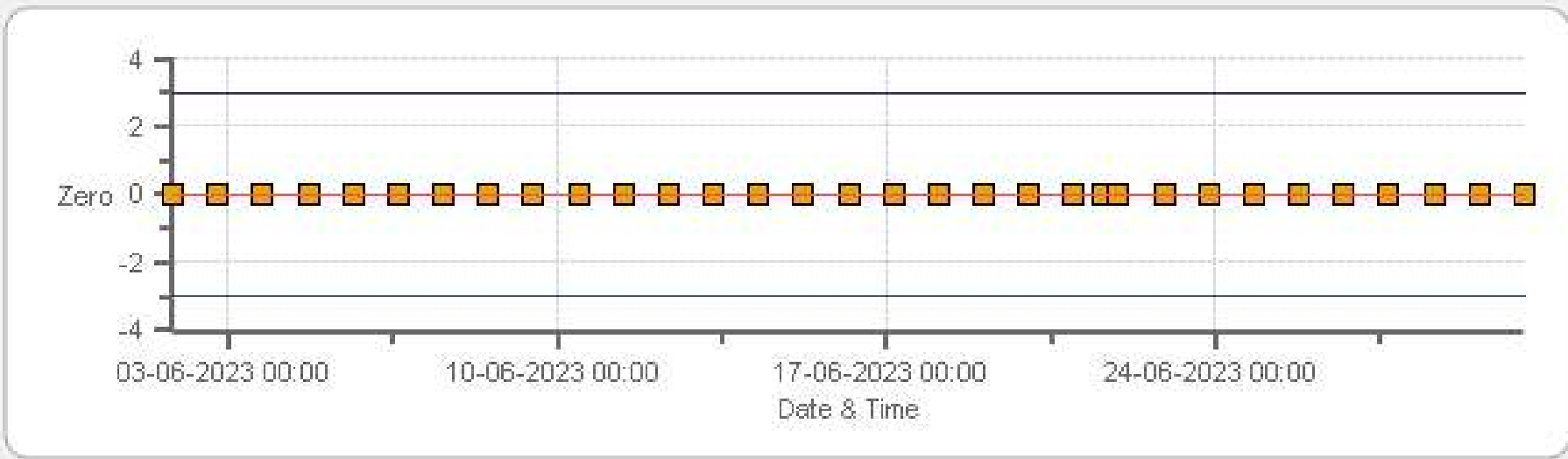
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: Peace River Complex [PRC] Monthly: 06-2023 Type: SpanAndZero - Span



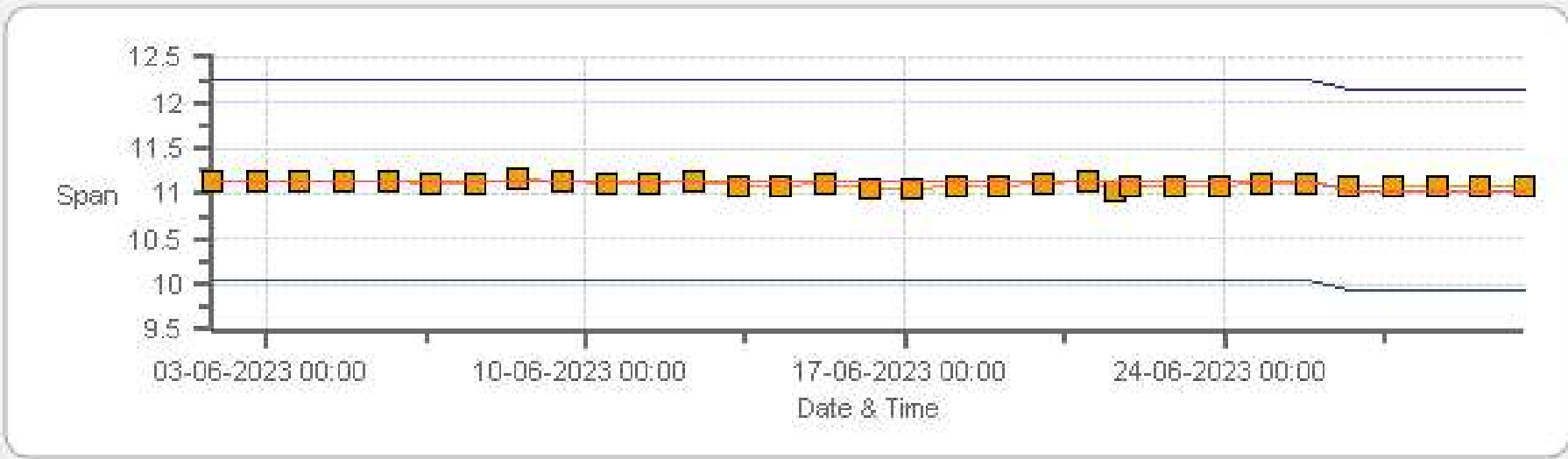
Span Span Ref Span Low Span High

NMHC[ppm] Calibration: Peace River Complex [PRC] Monthly: 06-2023 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: Peace River Complex [PRC] Monthly: 06-2023 Type: SpanAndZero - Span



Span Span Ref Span Low Span High

# MULTI-POINT CALIBRATION RECORDS

# SO2 Analyzer Calibration by Dilution



DATE:	21-Jun-2023	PREVIOUS CALIBRATION DATE:	25-May-2023
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.991
CLIENT:	PRAMP	TEMPERATURE (°C):	24.7
LOCATION:	Peace River Compliance	BAROMETRIC (mBar):	941
PURPOSE:	Routine	START TIME (MST):	09:38
PERFORMED BY:	Kevin Sebastian	END TIME (MST):	14:59

## ANALYZER:

MAKE/MODEL	Thermo 43i	RANGE	500 ppb
SERIAL #	1034746225	FLOW (mL/min)	441
INITIAL		FINAL	
BKG/OFFSET	20.4	BKG/OFFSET	20
COEF/SLOPE	1.176	COEF/SLOPE	1.133
Expected (reference) Value	278.8	Expected (reference) Value	269.6

## CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	M701
ID:	58100720	ID:	5004
MFC CALIBRATION DATE:	15-Mar-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL19664	HIGH ID	n/a
CONC (ppm):	25.20	EXPIRY DATE	n/a
CYLINDER (psi):	600	LOW ID	n/a
EXPIRY DATE	03-Jul-2023	EXPIRY DATE	n/a

## CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	390	190	95
RANGE	300 - 400	150 - 200	50 - 100

## SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

## CALIBRATION:

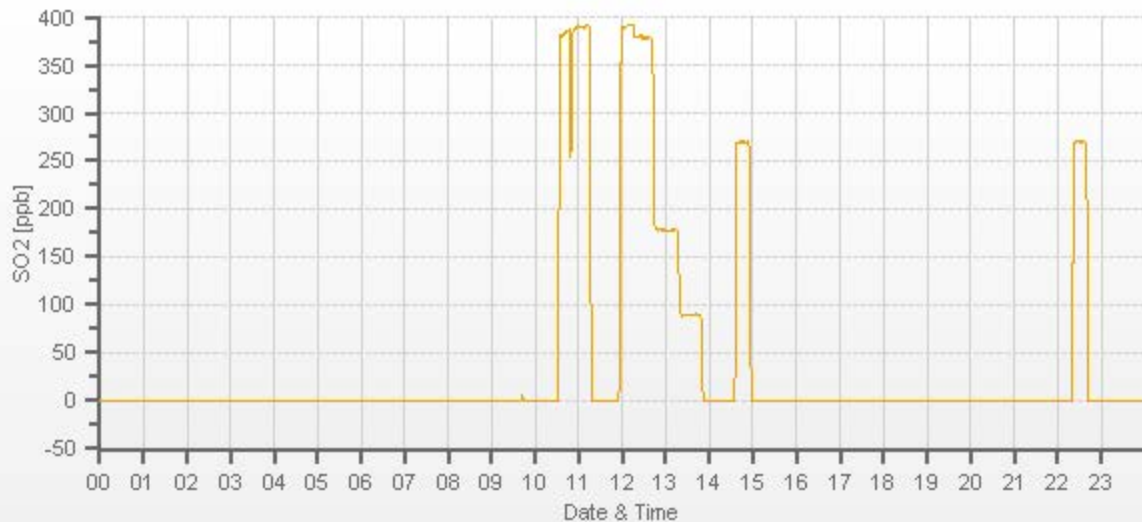
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
4008	<del>60.60</del>	4008	0.00	0.1	0	<del>0.981</del>	<del>1.005</del>
3947	60.60	4008	381.02	388.6	379	0.981	1.005
3969	28.70	3998	180.90	n/a	178.6	n/a	1.013
3994	14.30	4008	89.91	n/a	90.1	n/a	0.998

## LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.994	0.0%

## COMMENTS:

Sample filter changed.  
 10:48-10:51 = regulator flushed  
 Incorrect cylinder concentration (25.1 ppm) entered in sheet during calibration. Corrected at review.



# H2S Analyzer Calibration by Dilution



DATE:	21-Jun-2023	PREVIOUS CALIBRATION DATE:	25-May-2023
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	PRAMP	TEMPERATURE (°C):	25.1
LOCATION:	Peace River Compliance	BAROMETRIC (mBar):	941
PURPOSE:	Routine	START TIME (MST):	09:37
PERFORMED BY:	Kevin Sebastian	END TIME (MST):	14:59

## ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	1308857354	FLOW (mL/min)	955
INITIAL		FINAL	
BKG/OFFSET	14.3	BKG/OFFSET	14.4
COEF/SLOPE	1.01	COEF/SLOPE	1.018
Expected (reference) Value	35.1	Expected (reference) Value	35.6

## CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	M701
ID:	58100720	ID:	4568
MFC CALIBRATION DATE:	15-Mar-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY0002519	HIGH ID	n/a
CONC (ppm):	9.41	EXPIRY DATE	n/a
CYLINDER (psi):	800	LOW ID	n/a
EXPIRY DATE	10-Nov-2023	EXPIRY DATE	n/a

## CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	78	38	19
RANGE	60 - 80	30 - 40	10 - 20

## SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

## CALIBRATION:

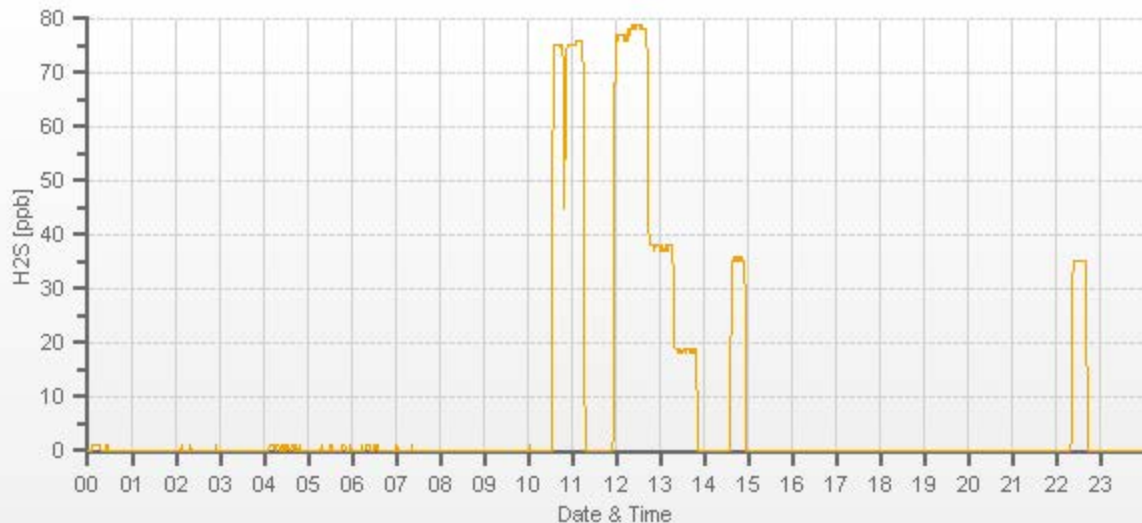
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
4008	<del>33.10</del>	4008	0.00	0	0	<del>1.028</del>	<del>0.995</del>
3975	33.10	4008	77.71	75.6	78.1	1.028	0.995
3992	16.20	4008	38.03	n/a	37.6	n/a	1.012
4000	8.10	4008	19.02	n/a	18.5	n/a	1.028

## LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.007	-0.4%

## COMMENTS:

Sample filter changed 10:48-10:51 Flushed out
---





# TRS Analyzer Calibration by Dilution



DATE:	21-Jun-2023	PREVIOUS CALIBRATION DATE:	25-May-2023
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.002
CLIENT:	PRAMP	TEMPERATURE (°C):	25.4
LOCATION:	Peace River Compliance	BAROMETRIC (mBar):	941
PURPOSE:	Routine	START TIME (MST):	09:37
PERFORMED BY:	Kevin Sebastian	END TIME (MST):	14:59

## ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	1034746224	FLOW (mL/min)	725
INITIAL		FINAL	
BKG/OFFSET	25.3	BKG/OFFSET	25
COEF/SLOPE	1.01	COEF/SLOPE	0.999
Expected (reference) Value	50.78	Expected (reference) Value	51.01

## CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	M701
ID:	58100720	ID:	5004
MFC CALIBRATION DATE:	15-Mar-2023	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY0002519	HIGH ID	n/a
CONC (ppm):	9.41	EXPIRY DATE	n/a
CYLINDER (psi):	800	LOW ID	n/a
EXPIRY DATE	10-Nov-2023	EXPIRY DATE	n/a

## CALIBRATION PARAMETERS:

POINT	HIGH	MID	LOW
TARGET	78	38	19
RANGE	60 - 80	30 - 40	10 - 20

## SCRUBBER CHECK (15 MINS; TRS/H2S ONLY):

START TIME:	n/a	SO2 Conc (ppb)	n/a
END TIME:	n/a	Analyzer Response (ppb)	n/a

## CALIBRATION:

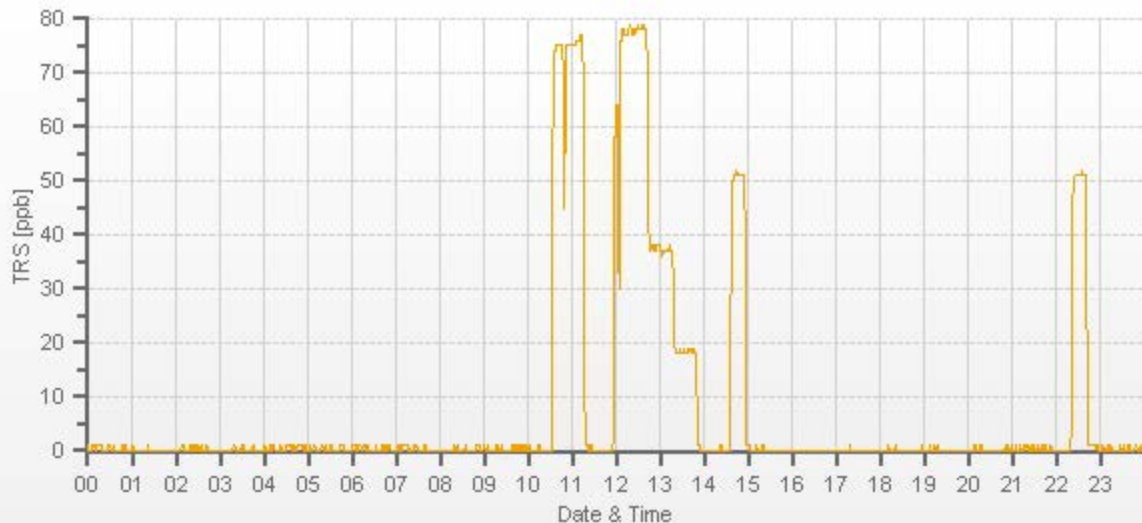
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
4008	<del>33.10</del>	4008	0.00	0.2	0	<del>1.030</del>	<del>0.991</del>
3975	33.10	4008	77.71	75.65	78.44	1.030	0.991
3992	16.20	4008	38.03	n/a	37.53	n/a	1.013
4000	8.10	4008	19.02	n/a	18.6	n/a	1.022

## LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.011	-0.4%

## COMMENTS:

TRS Converter CDNOVA CDN-101 #506. 10:48-10:51 Flushed out 12:03-12:06- Corrected filter line
--



# Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	21-Jun-2023	PREVIOUS CALIBRATION DATE:	25-May-2023	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	PRAMP	TEMPERATURE (°C):	24.6		Thermo 55i	1034745845	1144
LOCATION:	Peace River Compliance	BAROMETRIC (mBar):	941	PARAMETER:	CH4	NMHC	THC
PURPOSE	Routine	START TIME (MST):	09:38	RANGE (ppm):	20	20	40
PERFORMED BY:	Kevin Sebastian	END TIME (MST):	15:00	PREVIOUS CF:	1.000	1.000	1.000

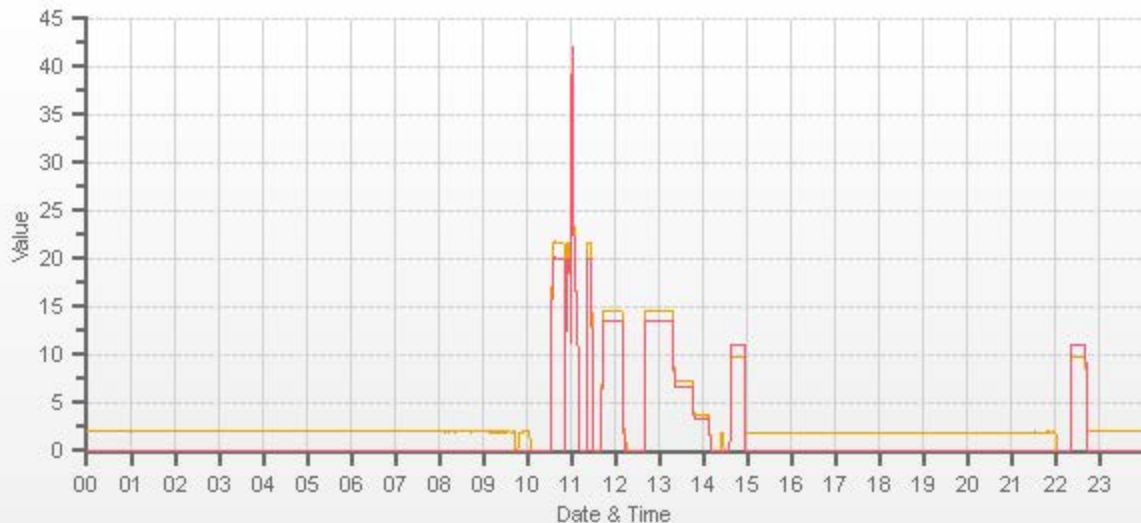
CALIBRATION SYSTEM:							
CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	Sabio	MAKE:	Teledyne	CYLINDER ID:	LL68768	HIGH ID:	n/a
MODEL:	2010	MODEL:	M701	CH <sub>4</sub> /C <sub>3</sub> H <sub>8</sub> (ppm):	897.0   301.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	916	CYLINDER (psi):	1900	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Mar-2023	OXIDIZER ID:	Internal	EXPIRY DATE	22-Dec-2028	LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:							
POINT (CH <sub>4</sub> /NMHC)	HIGH	MID	LOW	CH <sub>4</sub> EQUIVILANCE			
TARGET	14	7	3.5	C <sub>3</sub> H <sub>8</sub> as CH <sub>4</sub>		827.8	
RANGE	12 - 16	6 - 8	2 - 4	THC as CH <sub>4</sub>		1724.8	

EXPECTED (REFERENCE) VALUE:							
INITIAL	CH <sub>4</sub>	NMHC	THC	FINAL	CH <sub>4</sub>	NMHC	THC
	9.90	11.15	21.05		9.82	11.04	20.86

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC	CH <sub>4</sub>	NMHC	THC
3098	<del>50.30</del>	3098	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<del>0.997</del>	<del>0.997</del>	<del>0.996</del>	<del>0.999</del>	<del>0.996</del>	<del>0.998</del>
3049	50.30	3099	14.56	13.44	27.99	14.61	13.48	28.10	14.57	13.49	28.06	0.997	0.997	0.996	0.999	0.996	0.998
3074	25.20	3099	7.29	6.73	14.03	n/a	n/a	n/a	7.28	6.72	13.99	n/a	n/a	n/a	1.002	1.002	1.003
3086	12.60	3099	3.65	3.37	7.01	n/a	n/a	n/a	3.65	3.34	7.01	n/a	n/a	n/a	0.999	1.008	1.000

LINEAR REGRESSION ANALYSIS:				Comments: 09:42-10:02 User Error as found Zero restarted 11:42- As found high restarted due to concentration change.  Use Zero Chrom? No
	CORRELATION	SLOPE	INTERCEPT	
CH <sub>4</sub>	1.000	1.001	0.0%	
NMHC	1.000	1.005	-0.1%	
THC	1.000	1.002	-0.1%	



CAL-PRAMP-202306-01698

# Meteorological System Checklist



Date:	June 21, 2023		
Technician:	Kevin Sebastian		
Station:	Peace River Compliance		
<b>Unit:</b>	<b>Make:</b>	<b>Model:</b>	<b>Serial #:</b>
Temperature Sensor:	Rotronic	HC2-S3	20558318
Barometric Pressure Sensor:	MetOne	092	B19577
Relative Humidity Sensor:	Rotronic	HC2-S3	20558318
Anemometer:	RM Young	05305VK	129612
<b>AMBIENT TEMPERATURE SENSOR CHECK</b>			
Previous check date:	May 25, 2023		
Parameter:	Temperature @ 2 metres		
Reference Thermometer ID:	FS #160459244 expires June 14, 2023		
Reference Temperature (°C):	20.1		
Station - Ambient Temperature (°C):	19.3		
Temperature Difference (°C):	0.8		
<b>BAROMETRIC PRESSURE SENSOR CHECK</b>			
Previous check date:	May 25, 2023		
Reference Barometer ID:	deltaCal DC1 S/N-206578 expires September 20, 2023		
Reference Pressure - Units/Reading:	millibar	940	
Station Pressure - Units/Reading:	millibar	943	
Pressure Tolerance +/- 15% of error:	799 - 1081	-0.32%	
<b>RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK</b>			
Previous check date:	May 25, 2023		
Reference Hygrometer ID:	FS #160459244 expires June 14, 2023		
Reference Hygrometer % RH- Reading:	45.70		
Station Hygrometer % RH- Reading:	29.00		
RH Tolerance +/- 15% of difference:	38.85 - 52.56	36.5%	
<b>ANEMOMETER - WIND SPEED &amp; WIND DIRECTION SENSOR CHECK</b>			
<b>WIND SPEED</b>		<b>WIND DIRECTION</b>	
Previous check date:	May 25, 2023	Previous check date:	May 25, 2023
Wind Speed Observed (kph):	0~5	Wind Direction Observed:	SE
Wind speed on Data Logger (kph):	2.6	Wind Direction on Data Logger:	SE
		Wind Direction Pass/Fail?:	Pass
Comments			
No issues.			



# Meteorological Sensor Audit/Calibration

## Location Information

Company:	PRAMP	Performed By:	Ferdinand Roy
Audit Location:	Peace River Compliance	Reviewed By:	Chris Wesson
Audit Date:	August 17, 2022	Start/End Time (mst):	8:15/9:20
Calibration Purpose:	routine annual	Weather Conditions:	Mainly clear

## Wind Sensor Information

Sensor ID Data:		Sensor Outputs:	
Sensor Make:	RM Young	Velocity Voltage Output Range:	0-1
Sensor Model:	05305VK	Velocity Unit Output Range:	0-200
Serial #:	129612	Direction Voltage Output Range:	0-1
Previous Cal/Audit Date:	June 16, 2021	Direction Unit Output Range:	0-360

## Wind Calibrator Information

Calibrator I.D. and Expiry Date: RM Young 18802 id# CA03309 expires June 7, 2023

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

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.1	0.1	-
1000	18.4	18.5	18.5	0.996
2000	36.9	36.9	37.0	0.998
3000	55.3	55.4	55.4	0.998
4000	73.7	73.9	73.9	0.998
5000	92.2	92.4	92.4	0.997
6000	110.6	110.9	110.9	0.997
7000	129.0	129.5	129.5	0.996
8000	147.4	148.0	148.0	0.996
9000	165.9	166.6	166.6	0.996
10000	184.3	185.1	185.2	0.995
The audit meets AMD requirements.			Average Correction Factor=	0.997

## Wind Direction Audit Data **\*\*+/- 3° 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	354	1.0	1.0	1.0
30	330	29	329	1.0	1.0	1.0
60	300	59	300	1.0	0.0	0.5
90	270	89	271	1.0	-1.0	1.0
120	240	119	241	1.0	-1.0	1.0
150	210	151	212	-1.0	-2.0	1.5
180	180	181	181	-1.0	-1.0	1.0
210	150	211	151	-1.0	-1.0	1.0
240	120	241	120	-1.0	0.0	0.5
270	90	271	89	-1.0	1.0	1.0
300	60	300	59	0.0	1.0	0.5
330	30	329	29	1.0	1.0	1.0
355	0	354	1	1.0	1.0	1.0
The audit meets AMD requirements.				Average Absolute Degrees Difference=		0.9

## Comments:

Physical inspection completed - no issues.

**END OF REPORT**

<b>Parameter</b>	<b>Method &amp; Procedure</b>
<b>SULPHUR DIOXIDE (SO<sub>2</sub>)</b>	<b>Bureau Veritas EMS SOP-00209: Ambient Sulphur Monitoring</b>
<b>HYDROGEN SULPHIDE (H<sub>2</sub>S)</b>	<b>Bureau Veritas EMS SOP-00209: Ambient Sulphur Monitoring</b>
<b>TOTAL HYDROCARBONS (THC), METHANE (CH<sub>4</sub>), NON-METHANE(NMHC)</b>	<b>Bureau Veritas EMS SOP-00001: Methane, Non-Methane Hydrocarbon Analyzer Monitoring</b>
<b>OXIDES OF NITROGEN (NO<sub>x</sub>), NITRIC OXIDE (NO) &amp; NITROGEN DIOXIDE (NO<sub>2</sub>)</b>	<b>Bureau Veritas EMS SOP-00213: Ambient NO/NO<sub>2</sub>/NO<sub>x</sub> Monitoring</b>
<b>OZONE (O<sub>3</sub>)</b>	<b>Bureau Veritas EMS SOP-00212: Ambient O<sub>3</sub> Monitoring</b>
<b>PARTICULATE MATTER &lt; 2.5 MICRONS (PM<sub>2.5</sub>)</b>	<b>Bureau Veritas EMS SOP-00010: Thermo Model 5030 SHARP Monitor &amp; EMS SOP-00015: Teledyne API PM Monitor Model T640</b>
<b>WIND SPEED (WS) &amp; WIND DIRECTION (WD)</b>	<b>Bureau Veritas EMS SOP-00013: RM Young Wind Monitor Calibration</b>
<b>RELATIVE HUMIDITY (RH)</b>	<b>Operation Manual</b>
<b>BAROMETRIC PRESSURE (BP)</b>	<b>Operation Manual</b>
<b>AMBIENT TEMPERATURE (AmbTPX)</b>	<b>Operation Manual</b>
<b>STATION TEMPERATURE (StnTPX)</b>	<b>Operation Manual</b>
<b>PRECIPITATION</b>	<b>Bureau Veritas EMS SOP-00242: Precipitation Collector Installation / Maintenance</b>





**Peace River Area Monitoring Program**

**JUNE 2023**

**Monthly Ambient Air Quality Monitoring Integrated  
Sampling Report**

**PRAMP-202306-INTEGRATED**

July 24, 2023

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E-mail: [prampotech@prampairshed.ca](mailto:prampotech@prampairshed.ca)  
[www.prampairshed.ca](http://www.prampairshed.ca)

**July 24, 2023**

Alberta Environment and Protected Areas (EPA)  
11th Floor, Oxbridge Place  
9820 106 Street  
Edmonton, AB, T5K 2J6

**RE: PRAMP –June 2023 Monthly Ambient Air Quality Monitoring Integrated Sampling Report**

Enclosed is the June 2023 Monthly Ambient Air Quality Monitoring Integrated Sampling Report for the Peace River Area Monitoring Program's (PRAMP) regional air quality monitoring network. This report summarizes monitoring data for samples collected using integrated methods, including volatile organic compounds (NMHC canister sampling program), hydrogen sulphide, and sulphur dioxide (passive sampling program).

The representative of the Person Responsible for this monitoring program is

PRAMP Airshed  
Michael Bisaga / Lily Lin, Technical Program Managers  
Suite 91, 305 – 4625 Varsity Drive NW  
Calgary, AB, T3A 0Z9  
Phone #: 780-226-7068 / 587-225-2248  
E-mail: [prampotech@prampairshed.ca](mailto:prampotech@prampairshed.ca)

This report has been prepared, reviewed and submitted by Michael Bisaga & Lily Lin of the PRAMP Airshed. This report is also submitted on behalf of the industrial member companies to satisfy the requirements of the facility Operating Approvals.

## NETWORK STATION SUMMARY

### Listing of Integrated Sampling Stations

- 986-C Station
- 842-B Station
- Reno-B Station
- Peace River Complex (PRC) Station

Station Name	986-C	842-B	Reno-B	PRC
Station ID	1562	1561	1563	1698
Coordinates	56.36980, -116.92500	56.27406, -116.98129	55.86936, -117.05739	56.38257, -116.769283
NMHC Canister (VOCs)	√	√	√	
Passives: 2-Month exposure (PACs)	√			
Passives: 1-Month Exposure (H <sub>2</sub> S, SO <sub>2</sub> )				√

### Listing of Passives: 1-Month Exposure Sampling Sites

Site ID	Latitude	Longitude
1	56.377841	-116.787142
2	56.378638	-116.780496
3	56.382958	-116.783813
4	56.377044	-116.794220
7	56.384796	-116.780488
8	56.388710	-116.771234
9	56.388943	-116.756205
10	56.388642	-116.797817
11	56.383771	-116.841165
12	56.388962	-116.885263
13	56.390972	-116.822083
14	56.424825	-116.853181

### List of Contractors who performed the air monitoring activities

Sampling Program	Monitoring Activities Conducted By	Sample Analysis Conducted By	Data/Report Prepared By	Electronic Submission Conducted By
NMHC Canister (VOCs)	Bureau Veritas	InnoTech Alberta Inc	PRAMP	PRAMP
Passives: PACs	PRAMP	ECCC	AEP	AEP
Passives: H <sub>2</sub> S, SO <sub>2</sub>	PRAMP	Bureau Veritas	PRAMP	PRAMP

## Monitoring Notes during the Month of June 2023

- **NMHC Canister Sampling Program - Volatile Organic Compounds (VOCs)**
  - The canister sampling program collects a 1-hour sample of air when the continuously measured non-methane hydrocarbon (NMHC) concentration reaches a specified trigger point. The current trigger point is 0.3 ppm for non-methane hydrocarbons. The trigger point is based on real-time monitoring data that are averaged over a 5-minute period.
  - One canister event was recorded at the 986-C station at 13:45 on June 30, at concentration of 0.34 ppm.
  
- **Passive Polycyclic Aromatic Compounds (PACs) Sampling Program**
  - The PAC sampling program began in December 2019, and is designed to collect a 2-month integrated sample.
  - The sample media for sampling period of May - June were installed on April 30, and it was removed on July 10. The sample media for sampling period of July and August are installed the time the May-June media were removed.
  
- **Passives H<sub>2</sub>S, SO<sub>2</sub> Sampling Program**
  - The passive sample filters were installed at the stations on June 1 and were removed on June 30.

## Revisions to Alberta's Ambient Air Quality Data Warehouse

No revisions to historical data previously submitted to the Alberta's Ambient Air Quality Data Warehouse were made this month.

## Deviations from Authorized Monitoring Methods

There were no deviations from authorized monitoring methods.

## Certification

The report was prepared and submitted by Lily Lin in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).



Lily Lin, Technical Program Manager, PRAMP Airshed

The report was reviewed by Mike Bisaga in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).

I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization and reporting requirements. I also certify that at the time of this report's submission, all air data have been electronically uploaded to Alberta ETS as required by the AMD.



Michael Bisaga, Technical Program Manager, PRAMP Airshed

July 24, 2023

## INTEGRATED SAMPLING RESULTS SUMMARY

- NMHC analytical results**

Sample Date/Time	2023-06-30 @13:45							
Canister Sample	Non-methane Hydrocarbon							
Canister ID	32231							
Method	NA-025		Method	NA-024		Method	AC-058	
Maximum Reading (ppmv)	2.0	Methane	Maximum Reading (ppmv)	2.2	Carbonyl sulphide	Maximum Reading (ppmv)	13.1	Acetone

Sample Date/Time	2023-06-30 @13:45							
Canister Sample	Non-methane Hydrocarbon - BLANK							
Canister ID	32204							
Method	NA-025		Method	NA-024		Method	AC-058	
Maximum Reading (ppmv)	-	-	Maximum Reading (ppmv)	-	-	Maximum Reading (ppmv)	0.04	Cyclopentane

- Passive analytical results**

	H <sub>2</sub> S		SO <sub>2</sub>	
Minimum (ppb)	0.17	#12	0.2	#10
Maximum (ppb)	1.19	#13	1.0	#4
Average (ppb)	0.33	-	0.39	-



## ANALYTICAL SAMPLING RESULTS

## NMHC Canisters – VOCs



PEACE RIVER AREA MONITORING PROGRAM

986-C Site - June 2023

Volatile Organic Compounds (VOCs) Results

Sample Date/Time Canister Sample Canister ID		2023-06-30 @13:45 Non-methane Hydrocarbon 32231									
Method		NA-025		Method NA-024		Method AC-058					
Maximum Reading (ppmv)		2.0	Methane	Maximum Reading (ppmv)		2.2	Carbonyl sulphide	Maximum Reading (ppmv)		13.1	Acetone
Parameter	Result (ppmv)	RDL (ppmv)	Parameter	Result (ppbv)	RDL (ppbv)	Parameter	Result (ppbv)	RDL (ppbv)			
1-Butene	< 0.13	0.13	2,5-Dimethylthiophene	< 0.4	0.4	1,1,1-Trichloroethane	< 0.03	0.03			
Acetylene	< 0.10	0.10	2-Ethylthiophene	< 0.3	0.3	1,1,2,2-Tetrachloroethane	< 0.03	0.03			
cis-2-Butene	< 0.05	0.05	2-Methylthiophene	< 0.3	0.3	1,1,2-Trichloroethane	< 0.03	0.03			
Ethane	< 0.1	0.1	3-Methylthiophene	< 0.4	0.4	1,1-Dichloroethane	< 0.03	0.03			
Ethylacetylene	< 0.08	0.08	Butyl mercaptan	< 0.4	0.4	1,1-Dichloroethylene	< 0.03	0.03			
Ethylene	< 0.09	0.09	Carbon disulphide	< 0.3	0.3	1,2,3-Trimethylbenzene	0.07	0.07			
Isobutane	< 0.1	0.1	Carbonyl sulphide	2.2	0.4	1,2,4-Trichlorobenzene	0.6	0.4			
Isobutylene	< 0.1	0.1	Dimethyl disulphide	< 0.3	0.3	1,2,4-Trimethylbenzene	0.07	0.04			
Methane	2.0	0.1	Dimethyl sulphide	< 0.3	0.3	1,2-Dibromoethane	< 0.03	0.03			
n-Butane	< 0.3	0.3	Ethyl mercaptan	< 0.4	0.4	1,2-Dichlorobenzene	0.04	0.04			
n-Propane	< 0.09	0.09	Ethyl sulphide	< 0.4	0.4	1,2-Dichloroethane	< 0.04	0.04			
Propylene	< 0.1	0.1	Hydrogen sulphide	< 0.1	0.1	1,2-Dichloropropane	< 0.04	0.04			
Propyne	< 0.1	0.1	Isobutyl mercaptan	< 0.4	0.4	1,3,5-Trimethylbenzene	< 0.04	0.04			
trans-2-Butene	< 0.12	0.12	Isopropyl mercaptan	< 0.1	0.1	1,3-Butadiene	0.76	0.04			
			Methyl mercaptan	< 0.3	0.3	1,3-Dichlorobenzene	< 0.5	0.5			
			Pentyl mercaptan	< 0.5	0.5	1,4-Dichlorobenzene	< 0.5	0.5			
			Propyl mercaptan	< 0.5	0.5	1,4-Dioxane	< 0.7	0.7			
			tert-Butyl mercaptan	< 0.4	0.4	1-Butene/Isobutylene	2.25	0.08			
			Thiophene	< 0.3	0.3	1-Hexene/2-Methyl-1-pentene	0.23	0.09			
						1-Pentene	0.48	0.04			
						2,2,4-Trimethylpentane	< 0.03	0.03			
						2,2-Dimethylbutane	< 0.03	0.03			
						2,3,4-Trimethylpentane	< 0.03	0.03			
						2,3-Dimethylbutane	< 0.12	0.12			
						2,3-Dimethylpentane	< 0.03	0.03			
						2,4-Dimethylpentane	< 0.04	0.04			
						2-Methylheptane	< 0.03	0.03			
						2-Methylhexane	< 0.04	0.04			
						2-Methylpentane	0.34	0.03			
						3-Methylheptane	< 0.04	0.04			
						3-Methylhexane	< 0.03	0.03			
						3-Methylpentane	< 0.03	0.03			
						Acetone	13.1	0.5			
						Acrolein	3.5	0.4			
						Benzene	1.71	0.04			
						Benzyl chloride	< 0.4	0.4			
						Bromodichloromethane	< 0.04	0.04			
						Bromoform	< 0.03	0.03			
						Bromomethane	< 0.03	0.03			
						Carbon disulfide	0.11	0.03			
						Carbon tetrachloride	0.06	0.03			
						Chlorobenzene	< 0.03	0.03			
						Chloroethane	0.28	0.03			
						Chloroform	< 0.03	0.03			
						Chloromethane	1.75	0.05			
						cis-1,2-Dichloroethene	< 0.03	0.03			
						cis-1,3-Dichloropropene	< 0.04	0.04			
						cis-2-Butene	0.11	0.04			
						cis-2-Pentene	0.13	0.03			
						Cyclohexane	< 0.05	0.05			
						Cyclopentane	0.17	0.03			
						Dibromochloromethane	< 0.03	0.03			
						Ethanol	3.2	0.7			
						Ethyl acetate	< 0.4	0.4			
						Ethylbenzene	0.08	0.04			
						Freon-11	0.18	0.03			
						Freon-113	0.05	0.03			
						Freon-114	< 0.04	0.04			



**PEACE RIVER AREA MONITORING PROGRAM**  
 986-C Site - June 2023  
 Volatile Organic Compounds (VOCs) Results

Sample Date/Time Canister Sample Canister ID		2023-06-30 @13:45 Non-methane Hydrocarbon 32231						
Method		NA-025		Method NA-024		Method AC-058		
Maximum Reading (ppmv)		2.0	Methane	Maximum Reading (ppmv)		2.2	Carbonyl sulphide	
Parameter	Result (ppmv)	RDL (ppmv)	Parameter	Result (ppbv)	RDL (ppbv)	Parameter	Result (ppbv)	RDL (ppbv)
						Freon-12	0.45	0.04
						Hexachloro-1,3-butadiene	< 0.4	0.39
						Isobutane	0.09	0.04
						Isopentane	0.09	0.05
						Isoprene	1.04	0.03
						Isopropyl alcohol	< 0.4	0.4
						Isopropylbenzene	< 0.05	0.05
						m,p-Xylene	0.15	0.05
						m-Diethylbenzene	< 0.03	0.03
						m-Ethyltoluene	0.07	0.04
						Methyl butyl ketone	< 0.5	0.52
						Methyl ethyl ketone	0.8	0.4
						Methyl isobutyl ketone	< 0.4	0.4
						Methyl methacrylate	< 0.10	0.10
						Methyl tert butyl ether	< 0.04	0.04
						Methylcyclohexane	< 0.03	0.03
						Methylcyclopentane	< 0.07	0.07
						Methylene chloride	< 0.4	0.4
						n-Butane	0.26	0.03
						n-Decane	< 0.08	0.08
						n-Dodecane	< 0.4	0.4
						n-Heptane	0.06	0.05
						n-Hexane	0.05	0.04
						n-Nonane	0.06	0.05
						n-Octane	0.13	0.03
						n-Pentane	0.1	0.1
						n-Propylbenzene	< 0.08	0.08
						n-Undecane	< 0.7	0.7
						Naphthalene	< 0.4	0.4
						o-Ethyltoluene	0.03	0.03
						o-Xylene	0.06	0.04
						p-Diethylbenzene	< 0.03	0.03
						p-Ethyltoluene	< 0.05	0.05
						Styrene	0.17	0.05
						Tetrachloroethylene	< 0.03	0.03
						Tetrahydrofuran	< 0.4	0.4
						Toluene	0.6	0.04
						trans-1,2-Dichloroethylene	0.12	0.08
						trans-1,3-Dichloropropylene	< 0.03	0.03
						trans-2-Butene	0.16	0.04
						trans-2-Pentene	0.04	0.03
						Trichloroethylene	< 0.03	0.03
						Vinyl acetate	< 0.4	0.4
						Vinyl chloride	< 0.03	0.03



PEACE RIVER AREA MONITORING PROGRAM

986-C Site - June 2023

Volatile Organic Compounds (VOCs) Results

Sample Date/Time Canister Sample Canister ID			2023-06-30 @13:45 Non-methane Hydrocarbon - BLANK 32204					
Method	NA-025		Method	NA-024		Method	AC-058	
Maximum Reading (ppmv)	-	-	Maximum Reading (ppmv)	-	-	Maximum Reading (ppmv)	0.04 Cyclopentane	
Parameter	Result (ppmv)	RDL (ppmv)	Parameter	Result (ppbv)	RDL (ppbv)	Parameter	Result (ppbv)	RDL (ppbv)
1-Butene	< 0.10	0.1	2,5-Dimethylthiophene	< 0.3	0.3	1,1,1-Trichloroethane	< 0.02	0.02
Acetylene	< 0.08	0.08	2-Ethylthiophene	< 0.2	0.2	1,1,2,2-Tetrachloroethane	< 0.02	0.02
cis-2-Butene	< 0.04	0.04	2-Methylthiophene	< 0.2	0.2	1,1,2-Trichloroethane	< 0.02	0.02
Ethane	< 0.1	0.1	3-Methylthiophene	< 0.3	0.3	1,1-Dichloroethane	< 0.02	0.02
Ethylacetylene	< 0.06	0.06	Butyl mercaptan	< 0.3	0.3	1,1-Dichloroethylene	< 0.02	0.02
Ethylene	< 0.07	0.07	Carbon disulphide	< 0.2	0.2	1,2,3-Trimethylbenzene	< 0.05	0.05
Isobutane	< 0.1	0.1	Carbonyl sulphide	< 0.3	0.3	1,2,4-Trichlorobenzene	< 0.3	0.3
Isobutylene	< 0.1	0.1	Dimethyl disulphide	< 0.2	0.2	1,2,4-Trimethylbenzene	< 0.03	0.03
Methane	< 0.1	0.1	Dimethyl sulphide	< 0.2	0.2	1,2-Dibromoethane	< 0.02	0.02
n-Butane	< 0.2	0.2	Ethyl mercaptan	< 0.3	0.3	1,2-Dichlorobenzene	< 0.03	0.03
n-Propane	< 0.07	0.07	Ethyl sulphide	< 0.3	0.3	1,2-Dichloroethane	< 0.03	0.03
Propylene	< 0.1	0.1	Hydrogen sulphide	< 0.1	0.1	1,2-Dichloropropane	< 0.03	0.03
Propyne	< 0.1	0.1	Isobutyl mercaptan	< 0.3	0.3	1,3,5-Trimethylbenzene	< 0.03	0.03
trans-2-Butene	< 0.09	0.09	Isopropyl mercaptan	< 0.1	0.1	1,3-Butadiene	< 0.03	0.03
			Methyl mercaptan	< 0.2	0.2	1,3-Dichlorobenzene	< 0.4	0.4
			Pentyl mercaptan	< 0.4	0.4	1,4-Dichlorobenzene	< 0.4	0.4
			Propyl mercaptan	< 0.4	0.4	1,4-Dioxane	< 0.5	0.5
			tert-Butyl mercaptan	< 0.3	0.3	1-Butene/Isobutylene	< 0.06	0.06
			Thiophene	< 0.2	0.2	1-Hexene/2-Methyl-1-pentene	< 0.07	0.07
						1-Pentene	< 0.03	0.03
						2,2,4-Trimethylpentane	< 0.02	0.02
						2,2-Dimethylbutane	< 0.02	0.02
						2,3,4-Trimethylpentane	< 0.02	0.02
						2,3-Dimethylbutane	< 0.09	0.09
						2,3-Dimethylpentane	< 0.02	0.02
						2,4-Dimethylpentane	< 0.03	0.03
						2-Methylheptane	< 0.02	0.02
						2-Methylhexane	< 0.03	0.03
						2-Methylpentane	< 0.02	0.02
						3-Methylheptane	< 0.03	0.03
						3-Methylhexane	< 0.02	0.02
						3-Methylpentane	< 0.02	0.02
						Acetone	< 0.4	0.4
						Acrolein	< 0.3	0.3
						Benzene	< 0.03	0.03
						Benzyl chloride	< 0.3	0.3
						Bromodichloromethane	< 0.03	0.03
						Bromoform	< 0.02	0.02
						Bromomethane	< 0.02	0.02
						Carbon disulfide	< 0.02	0.02
						Carbon tetrachloride	< 0.02	0.02
						Chlorobenzene	< 0.02	0.02
						Chloroethane	< 0.02	0.02
						Chloroform	< 0.02	0.02
						Chloromethane	< 0.04	0.04
						cis-1,2-Dichloroethene	< 0.02	0.02
						cis-1,3-Dichloropropene	< 0.03	0.03
						cis-2-Butene	< 0.03	0.03
						cis-2-Pentene	< 0.02	0.02
						Cyclohexane	< 0.04	0.04
						Cyclopentane	<b>0.04</b>	0.02
						Dibromochloromethane	< 0.02	0.02
						Ethanol	< 0.5	0.5
						Ethyl acetate	< 0.3	0.3
						Ethylbenzene	< 0.03	0.03
						Freon-11	< 0.02	0.02
						Freon-113	< 0.02	0.02
						Freon-114	< 0.03	0.03



PEACE RIVER AREA MONITORING PROGRAM

986-C Site - June 2023

Volatile Organic Compounds (VOCs) Results

Sample Date/Time Canister Sample Canister ID		2023-06-30 @13:45 Non-methane Hydrocarbon - BLANK 32204									
Method		NA-025		Method		NA-024		Method		AC-058	
Maximum Reading (ppmv)		-		-		-		Maximum Reading (ppmv)		0.04 Cyclopentane	
Parameter	Result (ppmv)	RDL (ppmv)	Parameter	Result (ppbv)	RDL (ppbv)	Parameter	Result (ppbv)	RDL (ppbv)			
						Freon-12	< 0.03	0.03			
						Hexachloro-1,3-butadiene	< 0.3	0.30			
						Isobutane	< 0.03	0.03			
						Isopentane	< 0.04	0.04			
						Isoprene	< 0.02	0.02			
						Isopropyl alcohol	< 0.3	0.3			
						Isopropylbenzene	< 0.04	0.04			
						m,p-Xylene	< 0.04	0.04			
						m-Diethylbenzene	< 0.02	0.02			
						m-Ethyltoluene	< 0.03	0.03			
						Methyl butyl ketone	< 0.4	0.40			
						Methyl ethyl ketone	< 0.3	0.3			
						Methyl isobutyl ketone	< 0.3	0.3			
						Methyl methacrylate	< 0.08	0.08			
						Methyl tert butyl ether	< 0.03	0.03			
						Methylcyclohexane	< 0.02	0.02			
						Methylcyclopentane	< 0.05	0.05			
						Methylene chloride	< 0.3	0.3			
						n-Butane	< 0.02	0.02			
						n-Decane	< 0.06	0.06			
						n-Dodecane	< 0.3	0.3			
						n-Heptane	< 0.04	0.04			
						n-Hexane	< 0.03	0.03			
						n-Nonane	< 0.04	0.04			
						n-Octane	< 0.02	0.02			
						n-Pentane	< 0.04	0.0			
						n-Propylbenzene	< 0.06	0.06			
						n-Undecane	< 0.5	0.5			
						Naphthalene	< 0.3	0.3			
						o-Ethyltoluene	< 0.02	0.02			
						o-Xylene	< 0.03	0.03			
						p-Diethylbenzene	< 0.02	0.02			
						p-Ethyltoluene	< 0.04	0.04			
						Styrene	< 0.04	0.04			
						Tetrachloroethylene	< 0.02	0.02			
						Tetrahydrofuran	< 0.3	0.3			
						Toluene	< 0.03	0.03			
						trans-1,2-Dichloroethylene	< 0.06	0.06			
						trans-1,3-Dichloropropylene	< 0.02	0.02			
						trans-2-Butene	< 0.03	0.03			
						trans-2-Pentene	< 0.02	0.02			
						Trichloroethylene	< 0.02	0.02			
						Vinyl acetate	< 0.3	0.3			
						Vinyl chloride	< 0.02	0.02			

## Passives

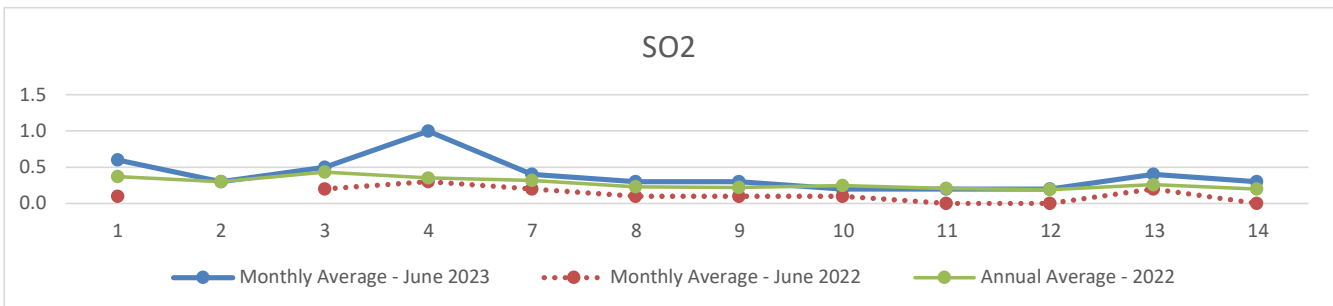
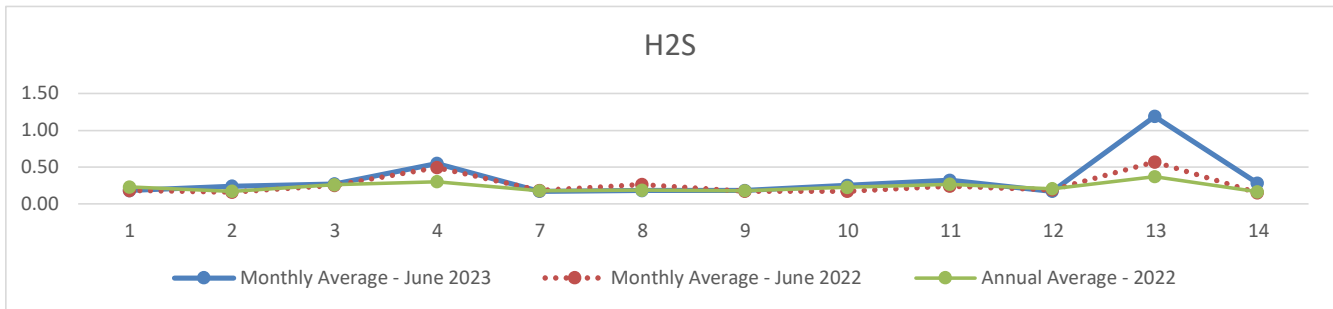


PEACE RIVER AREA MONITORING PROGRAM

PRC Site - June 2023

Passive Results

	H <sub>2</sub> S		SO <sub>2</sub>	
Minimum (ppb)	0.17	#12	0.2	#10
Maximum (ppb)	1.19	#13	1.0	#4
Average (ppb)	0.33	-	0.39	-
No.	Calculated Value		Calculated Value	
1	0.18		0.6	
2	0.24		0.3	
3	0.27		0.5	
4	0.55		1.0	
7	0.17		0.4	
8	0.18		0.3	
9	0.18		0.3	
10	0.25		0.2	
11	0.32		0.2	
12	0.17		0.2	
13	1.19		0.4	
14	0.28		0.3	
Reportable Detection Limit (RDL)	<b>0.02</b>		<b>0.1</b>	





End of Report



## **Peace River Area Monitoring Program**

# **JUNE 2023**

## **Ambient Air Monitoring**

## **Certified Laboratory Analysis Report**

### **LAB-PRAMP-202306**

**Operation and Maintenance:**

Bureau Veritas Canada

**Data Validation and Report:**

Peace River Area Monitoring Program

July 17, 2023

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## NMHC Canister Analytical Results



Highway 16A & 75 Street  
 PO Bag 4000  
 Vegreville, AB, T9C 1T4  
 Environmental Analytical Services  
 Phone: (780) 632-8403 Fax: (780) 632-8620

EAS CANISTER  
 ORDER CUSTOMER FORM

Sample ID: 23070045-001 Priority: Normal



Customer ID: PRAMP  
 Cust Samp ID: PRAMP-986c-202306304NMHC

Date Received- Lab Use Only  
**RECEIVED**  
 JUL 06 2023

**Client Contact Details:**

Contact: Karla Ressor, Michael Bisaga/ Lily Lin  
 Company: PRAMP Airshed  
 PO#:  842b Station  986c Station  Reno Station  
 Address:  842b (Lat. 56.27406N, Long. 116.98129W)  
 986c (Lat. 56.36988N, Long. 116.925636W)  
 Reno (Lat. 55.86936N, Long. 117.05739W)  
 Telephone: 403-8072995, 780-2667068/587-2252248  
 Email: karla@prampairshed.ca, pramptech@prampairshed.ca

**RUSH (Surcharge)**

Invoice Instructions:  
 Send to: officemanager@prampairshed.ca, karla@prampairshed.ca,  
 pramptech@prampairshed.ca Attention: PRAMP Office Manager  
 Any correspondence related to canister analysis, send the information to  
 karla@prampairshed.ca and pramptech@prampairshed.ca

InnoTech Contact: Graham Knox Phone: 780-632-8403 Cell: 780-632-1519  
 Email: Graham.Knox@innotechalberta.ca

Sample ID (PRAMP_station_yyyymmdd) (Find Sample ID from BV's email)	Canister ID (Find canister ID from canister tag)	Sample Description	Date/Time Canister Triggered (Find Date/Time from BV's email)		Analysis Requested
			Date (yyyy/mm/dd)	Time (24 Hr) (MST)	
PRAMP_842b- _____		<input type="checkbox"/> Methane Trigger			* C1C4 Air, VOC Full, RSC Air * Unknowns to be reported * Carbon Isotopic Analysis (if sample is collected from Methane trigger)
PRAMP_986c- <u>2023 0630</u>	<u>32231</u>	<input checked="" type="checkbox"/> NMHC Trigger	<u>2023/6/30</u>	<u>@ 13:50</u>	
PRAMP_Reno- _____		<input type="checkbox"/> Methane Blank <input type="checkbox"/> NMHC Blank <input type="checkbox"/> Expired Canister – No further analysis is required.			

**Sample Collection:**  
 Collected By Lily Lin / Jame Mc (Name) of PRAMP (Company) on 2023-07-04 @ 12:48 (Date/Time) (MST).



Highway 16A & 75 Street  
 PO Bag 4000  
 Vegreville, AB, T9C 1T4  
 Environmental Analytical Services  
 Phone: (780) 632-8403 Fax: (780) 632-8620

**EAS CANISTER**

Sample ID: 23070045-002 Priority: Normal



Customer ID: PRAMP  
 Cust Samp ID: PRAMP-986c-2023-07-04-Blank

Date Received- Lab Use Only  
**RECEIVED**  
**JUL 06 2023**

<b>Client Contact Details:</b> Contact: <u>Karla Ressor, Michael Bisaga/ Lily Lin</u> Company: <u>PRAMP Airshed</u> PO#: <input type="checkbox"/> 842b Station <input checked="" type="checkbox"/> 986c Station <input type="checkbox"/> Reno Station Address: <input type="checkbox"/> 842b (Lat. 56.27406N, Long. 116.98129W) <input checked="" type="checkbox"/> 986c (Lat. 56.36988N, Long. 116.925636W) <input type="checkbox"/> Reno (Lat. 55.86936N, Long. 117.05739W) Telephone: <u>403-8072995, 780-2667068/587-2252248</u> Email: <u>karla@prampairshed.ca, pramptech@prampairshed.ca</u>	<b>RUSH (Surcharge)</b> <input type="checkbox"/> Invoice Instructions: Send to: officemanager@prampairshed.ca, karla@prampairshed.ca, pramptech@prampairshed.ca Attention: PRAMP Office Manager Any correspondence related to canister analysis, send the information to karla@prampairshed.ca and pramptech@prampairshed.ca <hr/> InnoTech Contact: <u>Graham Knox</u> Phone: 780-632-8403 Cell: 780-632-1519 Email: <u>Graham.Knox@innotechalberta.ca</u>
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Sample ID (PRAMP_station_yyyymmdd) <small>(Find Sample ID from BV's email)</small>	Canister ID (Find canister ID from canister tag)	Sample Description	Date/Time Canister Triggered <small>(Find Date/Time from BV's email)</small>		Analysis Requested
			Date (yyyy/mm/dd)	Time (24 Hr) (MST)	
PRAMP_842b- _____	32204	<input type="checkbox"/> Methane Trigger			* C1C4 Air, VOC Full, RSC Air  * Unknowns to be reported  * Carbon Isotopic Analysis (if sample is collected from Methane trigger)
PRAMP_986c- <u>2023-07-04 Blank</u>		<input type="checkbox"/> NMHC Trigger			
PRAMP_Reno- _____		<input type="checkbox"/> Methane Blank <input checked="" type="checkbox"/> NMHC Blank  <input type="checkbox"/> Expired Canister – No further analysis is required.			

**Sample Collection:**  
 Collected By LL / JM (Name) of PRAMP (Company) on 2023-07-04 1250 (Date/Time) (MST).



Canister ID: 32231

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: 1504 on: APR 17 2023

Evacuated: MAY 02 2023 Recertified: \_\_\_\_\_  
(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: PRAMP-986c-2023-06-30

Sampled By: \_\_\_\_\_

Starting Vacuum: -27.1 "Hg

End Pressure: KG  
0 "Hg/psig



Canister ID: 32204

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: 1504 on: APR 21 2023

Evacuated: MAY 02 2023 Recertified: \_\_\_\_\_  
(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: PRAMP-906-20230704  
-BLANK

Sampled By: \_\_\_\_\_

Starting Vacuum: -27.1 "Hg

End Vacuum: -30 "Hg/psig

Sample ID: 23070045-001 Priority: Normal



Customer ID: PRAMP

Cust Samp ID: PRAMP-986c-202306304NMHC

{00004818;6}

## TERMS AND CONDITIONS

The attached document entitled "Chain of Custody Form" is subject to the following Terms and Conditions, unless otherwise specified on the Quotation. InnoTech Alberta's commencement of the Services shall be deemed acceptance of the terms and conditions by the Client.

1. Any proposal contained herein is prepared for the consideration of the Client only. Its contents may not be used or disclosed to any other party without prior written consent of the INNOTECH ALBERTA INC. (hereinafter referred to as "InnoTech Alberta").
2. InnoTech Alberta will perform the Services in accordance with normal professional standards.
3. The delivery time for performance of the Services (as set out on the front page of this Quotation) is approximate and may be changed by InnoTech Alberta giving written notice to the Client.
4. InnoTech Alberta will exercise due care and proficiency in testing items submitted by a Client. InnoTech Alberta shall not, however, be liable to the Client for any damage or loss caused to the item being tested or for any damage, loss or expense caused by any delay in carrying out the test, including any damage, loss or expense resulting from InnoTech Alberta's negligence. InnoTech Alberta shall not be responsible for any damage, which is a natural or necessary result of any testing procedure.
5. For the purposes of this Quotation, Intellectual Property means all information, data, artistic and literary works, concepts, designs, processes, software, algorithms and inventions, including, without limitation, those that could be the subject of patent, copyright, industrial design, trade secret or other forms of protection. Intellectual Property which was owned by either InnoTech Alberta or the Client prior to the signing of this Agreement remains the property of that party. Nothing in this Agreement shall operate as a license, permission or grant of any other rights to either InnoTech Alberta's or the Client's Intellectual Property.
6. All data, reports and other information relating to the Services shall be treated by InnoTech Alberta as the confidential property of the Client, and InnoTech Alberta will use reasonable efforts to ensure that its employees, contractors and agents will not disclose the same to any other person, firm or corporation during the term of this Agreement and for a period of five (5) years after the date of termination of the Agreement. The obligation of confidentiality set out herein shall not apply to any information that was in InnoTech Alberta's possession prior to receipt from the Client or which is or becomes part of the public domain through no act or failure on the part of InnoTech Alberta. The obligation of confidentiality set out in this Section shall not prevent the disclosure of information to any level of government having jurisdiction to make lawful demand therefor, or required to be disclosed by any applicable law. Any records required to be maintained by InnoTech Alberta pursuant to this Agreement are subject to the protection and access provisions of the Freedom of Information and Protection of Privacy Act (Alberta).
7. The reported results of any InnoTech Alberta tests or evaluations performed on samples or items provided by the Client shall be interpreted as being specific to the sample or item tested. InnoTech Alberta makes no representation that any similar or related untested samples or items would produce the same results.
8. The Client shall not use InnoTech Alberta's name in any advertising material, sale offer, news releases, public statements or announcements, whether written or oral relating to the Services or the results thereof, without the prior written consent of InnoTech Alberta.
9. Records, test data, reports and samples, except where shipped to the Client after completion of the work shall be retained by InnoTech Alberta according to InnoTech Alberta's approved Records Retention and Disposition Schedule.
10. Prices quoted are in Canadian Dollars unless otherwise stated in writing and are exclusive of any provincial, municipal, sales, use or goods and services tax.
11. Prices quoted do not include shipping, insurance or cost of consumables. The Client shall be responsible for all costs incurred by InnoTech Alberta in collecting any item for testing and returning the item to the Client after testing and shall be responsible for all necessary incidental costs incurred by InnoTech Alberta in providing the Services. InnoTech Alberta will not be responsible for any damage or loss to items during shipping and it is the responsibility of the Client to arrange and pay for any insurance it deems necessary.
12. Any test samples or other materials supplied by the Client to InnoTech Alberta may, at InnoTech Alberta's option, be returned by InnoTech Alberta to the Client. The Client shall:
  - (a) be responsible for all costs associated with the handling, transportation and disposal of such materials;
  - (b) reimburse InnoTech Alberta for any costs incurred by InnoTech Alberta associated with the handling, transportation and disposal of such materials; and
  - (c) indemnify and hold InnoTech Alberta harmless from any and all claims, damages or actions associated with the handling, transportation and disposal of such materials.
13. The Client shall pay all invoices rendered by InnoTech Alberta to the Client within thirty (30) days from the date of invoice, without deduction or set-off.
14. If the Client fails to pay any amount under this Agreement, such unpaid amount shall bear interest at a rate per month equal to one (1%) percent (or 12.6825% per annum) with interest on overdue interest at the same rate.
15. InnoTech Alberta makes no representation, warranties or conditions, either expressed or implied, statutory or otherwise and does not warrant the quality, state, merchantability or fitness for any purpose of any goods or products to be delivered pursuant to this Agreement. The Client accepts the results of these Services or items tested as is, and acknowledges that any use or interpretation of the information contained is at the Client's own risk.
16. In no event shall InnoTech Alberta be liable for any indirect or consequential damage or loss suffered by the Client, including loss of anticipated profits.
17. The Client shall indemnify and hold harmless InnoTech Alberta from any and all claims, demands, actions and costs (including legal costs on a solicitor-client basis) that may arise out of:
  - (a) any dangerous defect or content in the item being tested, whether apparent or not, which dangerous defect or content was not disclosed in writing to InnoTech Alberta by the Client at the time the item was submitted for testing;
  - (b) differences between those items actually tested and items previously or subsequently produced which are purported to be identical to the item tested; or
  - (c) any use of the tested item or any item incorporating the tested item, whether by the Client or a third party following its return to the Client.The hold harmless shall survive this Agreement.
18. The Client shall, at its own expense and without limiting its liabilities herein, be responsible for insuring its operation in an amount not less than \$2,000,000 inclusive per occurrence, insuring against bodily injury, and property damage including loss of use thereof. Further, the Client is responsible for insuring all owned property directly or indirectly related to this Agreement and InnoTech Alberta shall have no liability for any loss or damage to such property.
19. InnoTech Alberta shall maintain the following insurance: (i) commercial general liability insurance (including cross liability, severability of interests, non-owned automobile liability) in the amount of two million dollars (\$2,000,000.00) per occurrence, and; (ii) professional liability and errors and omissions insurance in the amount of one million dollars (\$1,000,000.00) per claim, and two million dollars (\$2,000,000.00) in the aggregate. In addition, InnoTech Alberta shall maintain all workers' compensation coverage required by applicable laws. Notwithstanding the foregoing, InnoTech Alberta reserves the right to supplement or add insurance coverage from time to time as may be required in its sole discretion. InnoTech Alberta may provide certificates of insurance for coverages outlined in (i) and (ii) above.
20. The Client agrees to comply with all InnoTech Alberta Safety & Security regulations in effect while on InnoTech Alberta premises.
21. This Agreement represents the entire agreement between the parties and shall supersede all prior agreements relative to this transaction.
22. If a party's performance of any of its obligations under this Agreement (excepting only an obligation to pay) is delayed, rendered impossible or impractical, or prevented in whole or in part due to circumstances beyond its reasonable control, including but not limited to acts of God, war, terrorism, labour disputes, pandemics or epidemics, global health emergencies, or governmental action, that party will not be in breach of this Agreement due to the delay or failure in performance occasioned by such event..
23. InnoTech Alberta may assign this Quotation to an "affiliated" (as that term is defined at Section 2 of the Business Corporations Act (Alberta)) or successor entity on written notice to the Client.
24. This Quotation and rights and parties thereto shall be governed by and construed according to the laws of the Province of Alberta. The parties hereby submit to the jurisdiction of the Courts of Alberta.



<p><b>RESULTS:</b> Karla Reesor                      403 807 2995 Peace River Area Monitoring Program Committee</p> <p><b>INVOICE:</b> Office Manager</p>	<p style="text-align: center;"><b>CLIENT SAMPLE ID</b> PRAMP-986c-202306304NMHC</p> <p><b>MATRIX:</b> Ambient Air</p> <p><b>CANISTER ID:</b> 32231 <b>PRIORITY:</b> Normal <b>DESCRIPTION:</b> NMHC Trigger</p> <p><b>DATE SAMPLED:</b> 30-Jun-23      13:50      <b>DATE RECEIVED:</b> 06-Jul-23 <b>REPORT CREATED:</b> 17-Jul-23      <b>REPORT NUMBER:</b> 23070045 <b>VERSION:</b> <span style="color: blue;">Version 01</span></p>
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Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070045-001	1-Butene	K, T, U	< 0.13	ppmv	0.13	NA-025	07-Jul-23
23070045-001	Acetylene	K, T, U	< 0.10	ppmv	0.10	NA-025	07-Jul-23
23070045-001	n-Butane	K, T, U	< 0.3	ppmv	0.3	NA-025	07-Jul-23
23070045-001	cis-2-Butene	K, T, U	< 0.05	ppmv	0.05	NA-025	07-Jul-23
23070045-001	Ethane	K, T, U	< 0.1	ppmv	0.1	NA-025	07-Jul-23
23070045-001	Ethylacetylene	K, T, U	< 0.08	ppmv	0.08	NA-025	07-Jul-23
23070045-001	Ethylene	K, T, U	< 0.09	ppmv	0.09	NA-025	07-Jul-23
23070045-001	Isobutane	K, T, U	< 0.1	ppmv	0.1	NA-025	07-Jul-23
23070045-001	Isobutylene	K, T, U	< 0.1	ppmv	0.1	NA-025	07-Jul-23
23070045-001	Methane		2.0	ppmv	0.1	NA-025	07-Jul-23
23070045-001	n-Propane	K, T, U	< 0.09	ppmv	0.09	NA-025	07-Jul-23
23070045-001	Propylene	K, T, U	< 0.1	ppmv	0.1	NA-025	07-Jul-23
23070045-001	Propyne	K, T, U	< 0.1	ppmv	0.1	NA-025	07-Jul-23
23070045-001	trans-2-Butene	K, T, U	< 0.12	ppmv	0.12	NA-025	07-Jul-23
23070045-001	2,5-Dimethylthiophene	K, T, U	< 0.4	ppbv	0.4	NA-024	06-Jul-23
23070045-001	2-Ethylthiophene	K, T, U	< 0.3	ppbv	0.3	NA-024	06-Jul-23
23070045-001	2-Methylthiophene	K, T, U	< 0.3	ppbv	0.3	NA-024	06-Jul-23

<b>CLIENT SAMPLE ID</b>	<b>CANISTER ID</b>	<b>Matrix</b>	<b>DATE SAMPLED</b>	
PRAMP-986c-202306304NMHC	32231	Ambient Air	30-Jun-23	13:50
<b>DESCRIPTION:</b>	NMHC Trigger			
<b>REPORT NUMBER:</b>	23070045	<b>REPORT CREATED:</b>	17-Jul-23	<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070045-001	3-Methylthiophene	K, T, U	< 0.4	ppbv	0.4	NA-024	06-Jul-23
23070045-001	Butyl mercaptan	K, T, U	< 0.4	ppbv	0.4	NA-024	06-Jul-23
23070045-001	Carbon disulphide	K, T, U	< 0.3	ppbv	0.3	NA-024	06-Jul-23
23070045-001	Carbonyl sulphide		2.2	ppbv	0.4	NA-024	06-Jul-23
23070045-001	Dimethyl disulphide	K, T, U	< 0.3	ppbv	0.3	NA-024	06-Jul-23
23070045-001	Dimethyl sulphide	K, T, U	< 0.3	ppbv	0.3	NA-024	06-Jul-23
23070045-001	Ethyl mercaptan	K, T, U	< 0.4	ppbv	0.4	NA-024	06-Jul-23
23070045-001	Ethyl sulphide	K, T, U	< 0.4	ppbv	0.4	NA-024	06-Jul-23
23070045-001	Hydrogen sulphide	K, T, U	< 0.1	ppbv	0.1	NA-024	06-Jul-23
23070045-001	Isobutyl mercaptan	K, T, U	< 0.4	ppbv	0.4	NA-024	06-Jul-23
23070045-001	Isopropyl mercaptan	K, T, U	< 0.1	ppbv	0.1	NA-024	06-Jul-23
23070045-001	Methyl mercaptan	K, T, U	< 0.3	ppbv	0.3	NA-024	06-Jul-23
23070045-001	Pentyl mercaptan	K, T, U	< 0.5	ppbv	0.5	NA-024	06-Jul-23
23070045-001	Propyl mercaptan	K, T, U	< 0.5	ppbv	0.5	NA-024	06-Jul-23
23070045-001	tert-Butyl mercaptan	K, T, U	< 0.4	ppbv	0.4	NA-024	06-Jul-23
23070045-001	Thiophene/sec-Butyl mercaptan	K, T, U	< 0.3	ppbv	0.3	NA-024	06-Jul-23
23070045-001	1,1,1-Trichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-001	1,1,2-Trichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-001	1,1-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-001	1,1-Dichloroethylene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-001	1,2,3-Trimethylbenzene	I	0.07	ppbv	0.07	AC-058	11-Jul-23
23070045-001	1,2,4-Trichlorobenzene	I	0.6	ppbv	0.4	AC-058	11-Jul-23
23070045-001	1,2,4-Trimethylbenzene	I	0.07	ppbv	0.04	AC-058	11-Jul-23
23070045-001	1,2-Dibromoethane	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23

Report certified by: Andrea Conner, Admin Assistant

Date: July 17, 2023

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at <https://directory.cala.ca/> LAB-PRAMP-202306

<b>CLIENT SAMPLE ID</b>	<b>CANISTER ID</b>	<b>Matrix</b>	<b>DATE SAMPLED</b>
PRAMP-986c-202306304NMHC	32231	Ambient Air	30-Jun-23 13:50
<b>DESCRIPTION:</b>	NMHC Trigger		
<b>REPORT NUMBER:</b>	23070045	<b>REPORT CREATED:</b>	17-Jul-23
			<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23070045-001	1,2-Dichlorobenzene	I	0.04 ppbv	0.04	AC-058	11-Jul-23
23070045-001	1,2-Dichloroethane	K, T, U	< 0.04 ppbv	0.04	AC-058	11-Jul-23
23070045-001	1,2-Dichloropropane	K, T, U	< 0.04 ppbv	0.04	AC-058	11-Jul-23
23070045-001	1,3,5-Trimethylbenzene	K, T, U	< 0.04 ppbv	0.04	AC-058	11-Jul-23
23070045-001	1,3-Butadiene		0.76 ppbv	0.04	AC-058	11-Jul-23
23070045-001	1,3-Dichlorobenzene	K, T, U	< 0.5 ppbv	0.5	AC-058	11-Jul-23
23070045-001	1,4-Dichlorobenzene	K, T, U	< 0.5 ppbv	0.5	AC-058	11-Jul-23
23070045-001	1,4-Dioxane	K, T, U	< 0.7 ppbv	0.7	AC-058	11-Jul-23
23070045-001	1-Butene/Isobutylene		2.25 ppbv	0.08	AC-058	11-Jul-23
23070045-001	1-Hexene/2-Methyl-1-pentene	I	0.23 ppbv	0.09	AC-058	11-Jul-23
23070045-001	1-Pentene		0.48 ppbv	0.04	AC-058	11-Jul-23
23070045-001	2,2,4-Trimethylpentane	K, T, U	< 0.03 ppbv	0.03	AC-058	11-Jul-23
23070045-001	2,2-Dimethylbutane	K, T, U	< 0.03 ppbv	0.03	AC-058	11-Jul-23
23070045-001	2,3,4-Trimethylpentane	K, T, U	< 0.03 ppbv	0.03	AC-058	11-Jul-23
23070045-001	2,3-Dimethylbutane	K, T, U	< 0.12 ppbv	0.12	AC-058	11-Jul-23
23070045-001	2,3-Dimethylpentane	K, T, U	< 0.03 ppbv	0.03	AC-058	11-Jul-23
23070045-001	2,4-Dimethylpentane	K, T, U	< 0.04 ppbv	0.04	AC-058	11-Jul-23
23070045-001	2-Methylheptane	K, T, U	< 0.03 ppbv	0.03	AC-058	11-Jul-23
23070045-001	2-Methylhexane	K, T, U	< 0.04 ppbv	0.04	AC-058	11-Jul-23
23070045-001	2-Methylpentane		0.34 ppbv	0.03	AC-058	11-Jul-23
23070045-001	3-Methylheptane	K, T, U	< 0.04 ppbv	0.04	AC-058	11-Jul-23
23070045-001	3-Methylhexane	K, T, U	< 0.03 ppbv	0.03	AC-058	11-Jul-23
23070045-001	3-Methylpentane	K, T, U	< 0.03 ppbv	0.03	AC-058	11-Jul-23
23070045-001	Acetone		13.1 ppbv	0.5	AC-058	11-Jul-23
23070045-001	Acrolein		3.5 ppbv	0.4	AC-058	11-Jul-23

Report certified by: Andrea Conner, Admin Assistant

Date: July 17, 2023

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at <https://directory.cala.ca/> LAB-PRAMP-202306

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

<b>CLIENT SAMPLE ID</b> PRAMP-986c-202306304NMHC	<b>CANISTER ID</b> 32231	<b>Matrix</b> Ambient Air	<b>DATE SAMPLED</b> 30-Jun-23 13:50
<b>DESCRIPTION:</b> NMHC Trigger			
<b>REPORT NUMBER:</b> 23070045	<b>REPORT CREATED:</b> 17-Jul-23		<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070045-001	Benzene		1.71	ppbv	0.04	AC-058	11-Jul-23
23070045-001	Benzyl chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	11-Jul-23
23070045-001	Bromodichloromethane	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070045-001	Bromoform	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-001	Bromomethane	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-001	Carbon disulfide	I	0.11	ppbv	0.03	AC-058	11-Jul-23
23070045-001	Carbon tetrachloride	I	0.06	ppbv	0.03	AC-058	11-Jul-23
23070045-001	Chlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-001	Chloroethane		0.28	ppbv	0.03	AC-058	11-Jul-23
23070045-001	Chloroform	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-001	Chloromethane		1.75	ppbv	0.05	AC-058	11-Jul-23
23070045-001	cis-1,2-Dichloroethene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-001	cis-1,3-Dichloropropene	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070045-001	cis-2-Butene	I	0.11	ppbv	0.04	AC-058	11-Jul-23
23070045-001	cis-2-Pentene	I	0.13	ppbv	0.03	AC-058	11-Jul-23
23070045-001	Cyclohexane	K, T, U	< 0.05	ppbv	0.05	AC-058	11-Jul-23
23070045-001	Cyclopentane		0.17	ppbv	0.03	AC-058	11-Jul-23
23070045-001	Dibromochloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-001	Ethanol		3.2	ppbv	0.7	AC-058	11-Jul-23
23070045-001	Ethyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	11-Jul-23
23070045-001	Ethylbenzene	I	0.08	ppbv	0.04	AC-058	11-Jul-23
23070045-001	Freon-11		0.18	ppbv	0.03	AC-058	11-Jul-23
23070045-001	Freon-113	I	0.05	ppbv	0.03	AC-058	11-Jul-23
23070045-001	Freon-114	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070045-001	Freon-12		0.45	ppbv	0.04	AC-058	11-Jul-23

Report certified by: Andrea Conner, Admin Assistant

Date: July 17, 2023

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at <https://directory.cala.ca/> LAB-PRAMP-202306

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

<b>CLIENT SAMPLE ID</b> PRAMP-986c-202306304NMHC	<b>CANISTER ID</b> 32231	<b>Matrix</b> Ambient Air	<b>DATE SAMPLED</b> 30-Jun-23 13:50
<b>DESCRIPTION:</b> NMHC Trigger			
<b>REPORT NUMBER:</b> 23070045	<b>REPORT CREATED:</b> 17-Jul-23		<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23070045-001	Hexachloro-1,3-butadiene	K, T, U	< 0.4 ppbv	0.4	AC-058	11-Jul-23
23070045-001	Isobutane	I	0.09 ppbv	0.04	AC-058	11-Jul-23
23070045-001	Isopentane	I	0.09 ppbv	0.05	AC-058	11-Jul-23
23070045-001	Isoprene		1.04 ppbv	0.03	AC-058	11-Jul-23
23070045-001	Isopropyl alcohol	K, T, U	< 0.4 ppbv	0.4	AC-058	11-Jul-23
23070045-001	Isopropylbenzene	K, T, U	< 0.05 ppbv	0.05	AC-058	11-Jul-23
23070045-001	m,p-Xylene	I	0.15 ppbv	0.05	AC-058	11-Jul-23
23070045-001	m-Diethylbenzene	K, T, U	< 0.03 ppbv	0.03	AC-058	11-Jul-23
23070045-001	m-Ethyltoluene	I	0.07 ppbv	0.04	AC-058	11-Jul-23
23070045-001	Methyl butyl ketone	K, T, U	< 0.5 ppbv	0.5	AC-058	11-Jul-23
23070045-001	Methyl ethyl ketone		0.8 ppbv	0.4	AC-058	11-Jul-23
23070045-001	Methyl isobutyl ketone	K, T, U	< 0.4 ppbv	0.4	AC-058	11-Jul-23
23070045-001	Methyl methacrylate	K, T, U	< 0.10 ppbv	0.10	AC-058	11-Jul-23
23070045-001	Methyl tert butyl ether	K, T, U	< 0.04 ppbv	0.04	AC-058	11-Jul-23
23070045-001	Methylcyclohexane	K, T, U	< 0.03 ppbv	0.03	AC-058	11-Jul-23
23070045-001	Methylcyclopentane	K, T, U	< 0.07 ppbv	0.07	AC-058	11-Jul-23
23070045-001	Methylene chloride	K, T, U	< 0.4 ppbv	0.4	AC-058	11-Jul-23
23070045-001	n-Butane		0.26 ppbv	0.03	AC-058	11-Jul-23
23070045-001	n-Decane	K, T, U	< 0.08 ppbv	0.08	AC-058	11-Jul-23
23070045-001	n-Dodecane	K, T, U	< 0.4 ppbv	0.4	AC-058	11-Jul-23
23070045-001	n-Heptane	I	0.06 ppbv	0.05	AC-058	11-Jul-23
23070045-001	n-Hexane	I	0.05 ppbv	0.04	AC-058	11-Jul-23
23070045-001	n-Octane	I	0.13 ppbv	0.03	AC-058	11-Jul-23
23070045-001	n-Pentane	I	0.10 ppbv	0.05	AC-058	11-Jul-23
23070045-001	n-Propylbenzene	K, T, U	< 0.08 ppbv	0.08	AC-058	11-Jul-23

Report certified by: Andrea Conner, Admin Assistant

Date: July 17, 2023

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On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

<b>CLIENT SAMPLE ID</b>	<b>CANISTER ID</b>	<b>Matrix</b>	<b>DATE SAMPLED</b>	
PRAMP-986c-202306304NMHC	32231	Ambient Air	30-Jun-23	13:50
<b>DESCRIPTION:</b>	NMHC Trigger			
<b>REPORT NUMBER:</b>	23070045	<b>REPORT CREATED:</b>	17-Jul-23	<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070045-001	n-Undecane	K, T, U	< 0.7	ppbv	0.7	AC-058	11-Jul-23
23070045-001	Naphthalene	K, T, U	< 0.4	ppbv	0.4	AC-058	11-Jul-23
23070045-001	n-Nonane	I	0.06	ppbv	0.05	AC-058	11-Jul-23
23070045-001	o-Ethyltoluene	I	0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-001	o-Xylene	I	0.06	ppbv	0.04	AC-058	11-Jul-23
23070045-001	p-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-001	p-Ethyltoluene	K, T, U	< 0.05	ppbv	0.05	AC-058	11-Jul-23
23070045-001	Styrene	I	0.17	ppbv	0.05	AC-058	11-Jul-23
23070045-001	Tetrachloroethylene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-001	Tetrahydrofuran	K, T, U	< 0.4	ppbv	0.4	AC-058	11-Jul-23
23070045-001	Toluene		0.60	ppbv	0.04	AC-058	11-Jul-23
23070045-001	trans-1,2-Dichloroethylene	I	0.12	ppbv	0.08	AC-058	11-Jul-23
23070045-001	trans-1,3-Dichloropropylene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-001	trans-2-Butene		0.16	ppbv	0.04	AC-058	11-Jul-23
23070045-001	trans-2-Pentene	I	0.04	ppbv	0.03	AC-058	11-Jul-23
23070045-001	Trichloroethylene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-001	Vinyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	11-Jul-23
23070045-001	Vinyl chloride	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23

Report certified by: Andrea Conner, Admin Assistant

Date: July 17, 2023

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On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

<b>CLIENT SAMPLE ID</b>	<b>CANISTER ID</b>	<b>Matrix</b>	<b>DATE SAMPLED</b>
PRAMP-986c-2023-07-04-Blank	32204	Ambient Air	30-Jun-23
<b>DESCRIPTION:</b>	NMHC Blank		
<b>REPORT NUMBER:</b>	23070045	<b>REPORT CREATED:</b>	17-Jul-23
			<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070045-002	1-Butene	K, T, U	< 0.10	ppmv	0.10	NA-025	07-Jul-23
23070045-002	Acetylene	K, T, U	< 0.08	ppmv	0.08	NA-025	07-Jul-23
23070045-002	n-Butane	K, T, U	< 0.2	ppmv	0.2	NA-025	07-Jul-23
23070045-002	cis-2-Butene	K, T, U	< 0.04	ppmv	0.04	NA-025	07-Jul-23
23070045-002	Ethane	K, T, U	< 0.1	ppmv	0.1	NA-025	07-Jul-23
23070045-002	Ethylacetylene	K, T, U	< 0.06	ppmv	0.06	NA-025	07-Jul-23
23070045-002	Ethylene	K, T, U	< 0.07	ppmv	0.07	NA-025	07-Jul-23
23070045-002	Isobutane	K, T, U	< 0.1	ppmv	0.1	NA-025	07-Jul-23
23070045-002	Isobutylene	K, T, U	< 0.1	ppmv	0.1	NA-025	07-Jul-23
23070045-002	Methane	K, T, U	< 0.1	ppmv	0.1	NA-025	07-Jul-23
23070045-002	n-Propane	K, T, U	< 0.07	ppmv	0.07	NA-025	07-Jul-23
23070045-002	Propylene	K, T, U	< 0.1	ppmv	0.1	NA-025	07-Jul-23
23070045-002	Propyne	K, T, U	< 0.1	ppmv	0.1	NA-025	07-Jul-23
23070045-002	trans-2-Butene	K, T, U	< 0.09	ppmv	0.09	NA-025	07-Jul-23
23070045-002	2,5-Dimethylthiophene	K, T, U	< 0.3	ppbv	0.3	NA-024	06-Jul-23
23070045-002	2-Ethylthiophene	K, T, U	< 0.2	ppbv	0.2	NA-024	06-Jul-23
23070045-002	2-Methylthiophene	K, T, U	< 0.2	ppbv	0.2	NA-024	06-Jul-23
23070045-002	3-Methylthiophene	K, T, U	< 0.3	ppbv	0.3	NA-024	06-Jul-23
23070045-002	Butyl mercaptan	K, T, U	< 0.3	ppbv	0.3	NA-024	06-Jul-23
23070045-002	Carbon disulphide	K, T, U	< 0.2	ppbv	0.2	NA-024	06-Jul-23
23070045-002	Carbonyl sulphide	K, T, U	< 0.3	ppbv	0.3	NA-024	06-Jul-23
23070045-002	Dimethyl disulphide	K, T, U	< 0.2	ppbv	0.2	NA-024	06-Jul-23
23070045-002	Dimethyl sulphide	K, T, U	< 0.2	ppbv	0.2	NA-024	06-Jul-23
23070045-002	Ethyl mercaptan	K, T, U	< 0.3	ppbv	0.3	NA-024	06-Jul-23
23070045-002	Ethyl sulphide	K, T, U	< 0.3	ppbv	0.3	NA-024	06-Jul-23

Report certified by: Andrea Conner, Admin Assistant

Date: July 17, 2023

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at <https://directory.cala.ca/> LAB-PRAMP-202306

<b>CLIENT SAMPLE ID</b>	<b>CANISTER ID</b>	<b>Matrix</b>	<b>DATE SAMPLED</b>
PRAMP-986c-2023-07-04-Blank	32204	Ambient Air	30-Jun-23
<b>DESCRIPTION:</b>	NMHC Blank		
<b>REPORT NUMBER:</b>	23070045	<b>REPORT CREATED:</b>	17-Jul-23
			<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070045-002	Hydrogen sulphide	K, T, U	< 0.1	ppbv	0.1	NA-024	06-Jul-23
23070045-002	Isobutyl mercaptan	K, T, U	< 0.3	ppbv	0.3	NA-024	06-Jul-23
23070045-002	Isopropyl mercaptan	K, T, U	< 0.1	ppbv	0.1	NA-024	06-Jul-23
23070045-002	Methyl mercaptan	K, T, U	< 0.2	ppbv	0.2	NA-024	06-Jul-23
23070045-002	Pentyl mercaptan	K, T, U	< 0.4	ppbv	0.4	NA-024	06-Jul-23
23070045-002	Propyl mercaptan	K, T, U	< 0.4	ppbv	0.4	NA-024	06-Jul-23
23070045-002	tert-Butyl mercaptan	K, T, U	< 0.3	ppbv	0.3	NA-024	06-Jul-23
23070045-002	Thiophene/sec-Butyl mercaptan	K, T, U	< 0.2	ppbv	0.2	NA-024	06-Jul-23
23070045-002	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	11-Jul-23
23070045-002	1,2,4-Trichlorobenzene	I, K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jul-23
23070045-002	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	11-Jul-23
23070045-002	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	11-Jul-23
23070045-002	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	11-Jul-23

Report certified by: Andrea Conner, Admin Assistant

Date: July 17, 2023

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On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca



<b>CLIENT SAMPLE ID</b>	<b>CANISTER ID</b>	<b>Matrix</b>	<b>DATE SAMPLED</b>
PRAMP-986c-2023-07-04-Blank	32204	Ambient Air	30-Jun-23
<b>DESCRIPTION:</b>	NMHC Blank		
<b>REPORT NUMBER:</b>	23070045	<b>REPORT CREATED:</b>	17-Jul-23
			<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070045-002	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	11-Jul-23
23070045-002	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	11-Jul-23
23070045-002	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	11-Jul-23
23070045-002	2,3-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	2-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	2-Methylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	3-Methylhexane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	3-Methylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	Acetone	K, T, U	< 0.4	ppbv	0.4	AC-058	11-Jul-23
23070045-002	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jul-23
23070045-002	Benzene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jul-23
23070045-002	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	Carbon tetrachloride	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23

Report certified by: Andrea Conner, Admin Assistant

Date: July 17, 2023

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On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

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<b>CLIENT SAMPLE ID</b>	<b>CANISTER ID</b>	<b>Matrix</b>	<b>DATE SAMPLED</b>
PRAMP-986c-2023-07-04-Blank	32204	Ambient Air	30-Jun-23
<b>DESCRIPTION:</b>	NMHC Blank		
<b>REPORT NUMBER:</b>	23070045	<b>REPORT CREATED:</b>	17-Jul-23
			<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070045-002	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	Chloromethane	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070045-002	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	Cyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070045-002	Cyclopentane	I	0.04	ppbv	0.02	AC-058	11-Jul-23
23070045-002	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	Ethanol	K, T, U	< 0.5	ppbv	0.5	AC-058	11-Jul-23
23070045-002	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jul-23
23070045-002	Ethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	Freon-11	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	Freon-113	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	Freon-12	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jul-23
23070045-002	Isobutane	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	Isopentane	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070045-002	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jul-23
23070045-002	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070045-002	m,p-Xylene	I, K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070045-002	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23

Report certified by: Andrea Conner, Admin Assistant

Date: July 17, 2023

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On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

<b>CLIENT SAMPLE ID</b>	<b>CANISTER ID</b>	<b>Matrix</b>	<b>DATE SAMPLED</b>
PRAMP-986c-2023-07-04-Blank	32204	Ambient Air	30-Jun-23
<b>DESCRIPTION:</b>	NMHC Blank		
<b>REPORT NUMBER:</b>	23070045	<b>REPORT CREATED:</b>	17-Jul-23
			<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
23070045-002	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	11-Jul-23
23070045-002	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jul-23
23070045-002	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jul-23
23070045-002	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	11-Jul-23
23070045-002	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	Methylcyclohexane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	Methylcyclopentane	K, T, U	< 0.05	ppbv	0.05	AC-058	11-Jul-23
23070045-002	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jul-23
23070045-002	n-Butane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	11-Jul-23
23070045-002	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jul-23
23070045-002	n-Heptane	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070045-002	n-Hexane	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	n-Pentane	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070045-002	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	11-Jul-23
23070045-002	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	11-Jul-23
23070045-002	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jul-23
23070045-002	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070045-002	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jul-23
23070045-002	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jul-23
23070045-002	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23
23070045-002	Styrene	I, K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jul-23

Report certified by: Andrea Conner, Admin Assistant

Date: July 17, 2023

On behalf of: Adam Malcolm, Manager, Chemical Testing

Inquiries: (780) 632 8403

E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at <https://directory.cala.ca/> LAB-PRAMP-202306

<b>CLIENT SAMPLE ID</b> PRAMP-986c-2023-07-04-Blank	<b>CANISTER ID</b> 32204	<b>Matrix</b> Ambient Air	<b>DATE SAMPLED</b> 30-Jun-23
<b>DESCRIPTION:</b> NMHC Blank			
<b>REPORT NUMBER:</b> 23070045	<b>REPORT CREATED:</b> 17-Jul-23		<b>VERSION:</b> Version 01

Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
23070045-002	Tetrachloroethylene	K, T, U	< 0.02 ppbv	0.02	AC-058	11-Jul-23
23070045-002	Tetrahydrofuran	K, T, U	< 0.3 ppbv	0.3	AC-058	11-Jul-23
23070045-002	Toluene	K, T, U	< 0.03 ppbv	0.03	AC-058	11-Jul-23
23070045-002	trans-1,2-Dichloroethylene	K, T, U	< 0.06 ppbv	0.06	AC-058	11-Jul-23
23070045-002	trans-1,3-Dichloropropylene	K, T, U	< 0.02 ppbv	0.02	AC-058	11-Jul-23
23070045-002	trans-2-Butene	K, T, U	< 0.03 ppbv	0.03	AC-058	11-Jul-23
23070045-002	trans-2-Pentene	K, T, U	< 0.02 ppbv	0.02	AC-058	11-Jul-23
23070045-002	Trichloroethylene	K, T, U	< 0.02 ppbv	0.02	AC-058	11-Jul-23
23070045-002	Vinyl acetate	K, T, U	< 0.3 ppbv	0.3	AC-058	11-Jul-23
23070045-002	Vinyl chloride	K, T, U	< 0.02 ppbv	0.02	AC-058	11-Jul-23



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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

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### Revision History

Order ID	Ver	Date	Reason
23070045	01	17-Jul-23	Report created

**Methods**

<b>Method</b>	<b>Description</b>
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
NA-024	Analysis for Reduced Sulfur Compounds in Air Samples
NA-025	Determination of Light Hydrocarbons (C1C4) in Ambient Air by Gas Chromatography Flame Ionization Detector

**List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation**

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

## Qualifiers

### Data Qualifier Translation

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B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank



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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

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### Order Comments

23070045

Send results to [pramptech@prampairshed.ca](mailto:pramptech@prampairshed.ca)





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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

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### Sample Comments



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## ENVIRONMENTAL ANALYTICAL SERVICES

### TEST REPORT

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### **Result Comments**

*Note:*

- 1. Results relate only to items tested and apply to the sample as received.*
- 2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.*

## Passive Sampling Analytical Results



6744 - 50 St. Edmonton AB Canada T6B 3M9

Ph (780) 378-8500, Toll free (800) 386-7247, Fax (780) 378-8699

Bureau Veritas Job Number:

PASSIVE AIR CHAIN OF CUSTODY

Page \_\_\_ of \_\_\_

Invoice To  
 Company Name \_\_\_\_\_  
 Contact Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City/Postal Code \_\_\_\_\_  
 Phone/Fax# \_\_\_\_\_

Report To  
 Name & Email Address  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Service Requested  
 RUSH  
 (Please contact for TAT)  
 REGULAR

Company Name  
**Peace River**  
 Project Name/LSD  
**Peace River**

ANALYTICAL INFORMATION

Analysis Required

Sample ID or Location (LSD)	Sample Start Date (DD/MM/YY)	Time (24 hrs) (HH:MM)	Sample End Date (DD/MM/YY)	Time (HH:MM)	Volume (m3) PM/TSP Only	SO2	H2S	NO2	O3	NH3	PM2.5	PM10	TSP	Dustfall
1	01/06/23	8:00 am	30/06/23	8:30 AM		X	X							
2	↓	↓	↓	↓		X	X							
3						X	X							
4						X	X							
7						X	X							
8						X	X							
9						X	X							
10						X	X							
11						X	X							
12						X	X							
13						X	X							
14						X	X							
Blank						X	X							
Blank						X	X							

Notes/Comments: Client 12521 / Scenario 18009

Sampled By Bo Guerin Phone/Email 618 1880 Received By Bo Guerin Date/Time June 1. 23 Project # CNRLARC  
 Date Shipped \_\_\_\_\_ Signature [Signature] PO# NA 23-0704



Your Project #: 2023/06/01 - 2023/06/30  
Site Location: PEACE RIVER COMPLEX

**Attention: Michael and Lily**

Peace River Area Monitoring Program Committee  
Three Creeks  
Suite 91, 305 –  
4625 Varsity Drive NW  
Calgary, AB  
CANADA T3A0Z9

**Report Date: 2023/07/13**  
Report #: R3363691  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C349512**

**Received: 2023/07/04, 09:30**

Sample Matrix: Air  
# Samples Received: 12

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
H2S Passive Analysis	12	2023/07/07	2023/07/12	PTC SOP-00150	Passive H2S in ATM
SO2 Passive Analysis	12	2023/07/04	2023/07/12	PTC SOP-00149	Passive SO2 in ATM

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Results relate only to the items tested.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Belma Elefante  
Customer Service Associate  
13 Jul 2023 10:47:47

Please direct all questions regarding this Certificate of Analysis to:  
Customer Service Passives,  
Email: PassiveAir@bureauveritas.com  
Phone# (780) 378-8500

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BUREAU  
VERITAS

Bureau Veritas Job #: C349512  
Report Date: 2023/07/13

Peace River Area Monitoring Program Committee  
Client Project #: 2023/06/01 - 2023/06/30  
Site Location: PEACE RIVER COMPLEX  
Sampler Initials: BG

### RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		BTU936	BTU937	BTU938	BTU939	BTU940	BTU941	BTU942		
Sampling Date		2023/06/01 08:00	2023/06/01 08:00	2023/06/01 08:00	2023/06/01 08:00	2023/06/01 08:00	2023/06/01 08:00	2023/06/01 08:00		
	UNITS	1	2	3	4	7	8	9	RDL	QC Batch
<b>Passive Monitoring</b>										
Calculated H2S	ppb	0.18	0.24	0.27	0.55	0.17	0.18	0.18	0.02	B024289
Calculated SO2	ppb	0.6	0.3	0.5	1.0	0.4	0.3	0.3	0.1	B020258
RDL = Reportable Detection Limit										

Bureau Veritas ID		BTU943	BTU944	BTU945	BTU946	BTU947		
Sampling Date		2023/06/01 08:00	2023/06/01 08:00	2023/06/01 08:00	2023/06/01 08:00	2023/06/01 11:00		
	UNITS	10	11	12	13	14	RDL	QC Batch
<b>Passive Monitoring</b>								
Calculated H2S	ppb	0.25	0.32	0.17	1.19	0.28	0.02	B024289
Calculated SO2	ppb	0.2	0.2	0.2	0.4	0.3	0.1	B020258
RDL = Reportable Detection Limit								



**BUREAU  
VERITAS**

Bureau Veritas Job #: C349512  
Report Date: 2023/07/13

Peace River Area Monitoring Program Committee  
Client Project #: 2023/06/01 - 2023/06/30  
Site Location: PEACE RIVER COMPLEX  
Sampler Initials: BG

### GENERAL COMMENTS

Results relate only to the items tested.



BUREAU  
VERITAS

Bureau Veritas Job #: C349512  
Report Date: 2023/07/13

Peace River Area Monitoring Program Committee  
Client Project #: 2023/06/01 - 2023/06/30  
Site Location: PEACE RIVER COMPLEX  
Sampler Initials: BG

### QUALITY ASSURANCE REPORT

QA/QC									
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits	
B020258	OZ	Spiked Blank	Calculated SO2			100	%	90 - 110	
B020258	OZ	Method Blank	Calculated SO2		<0.1		ppb		
B024289	YYA	Spiked Blank	Calculated H2S			100	%	90 - 110	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.





BUREAU  
VERITAS

Bureau Veritas Job #: C349512  
Report Date: 2023/07/13

Peace River Area Monitoring Program Committee  
Client Project #: 2023/06/01 - 2023/06/30  
Site Location: PEACE RIVER COMPLEX  
Sampler Initials: BG

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

---

Yang Liu, Laboratory Supervisor

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End of Report