



Peace River Area Monitoring Program

2021

Annual Ambient Air Quality Monitoring Report

Report Prepared By:

Peace River Area Monitoring Program

March 27, 2022

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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
CH ₄	Methane
EPEA	Environmental Protection and Enhancement Act
H ₂ S	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
SO ₂	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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March 27, 2022

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RE: 2021 Annual Ambient Air Quality Monitoring Report -PRAMP Airshed

Enclosed is the *2021 Annual Ambient Air Quality Monitoring Report* for the continuous ambient air quality monitoring stations of the Peace River Area Monitoring Program (PRAMP) Airshed regional air quality monitoring network, as operated in the year 2021.

The representative of the Person Responsible for this monitoring program is:

PRAMP Airshed
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This report was prepared by Lily Lin and reviewed by Mike Bisaga of PRAMP Airshed.

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

Listing of Continuous Monitoring Stations and Integrated Sampling Stations

The PRAMP continuous ambient air quality monitoring network stations are:

- 986c Station
- 842b Station
- Reno Station
- AQHI Cadotte Lake

Station ID	Station Name	Latitude	Longitude
1562	986c	56.36980	-116.92500
1561	842b	56.27406	-116.98129
1563	Reno	55.86936	-117.05739
1651	AQHI-Cadotte Lake	56.49022	-116.42739

Calibration Report and Data Submission

Hourly data and calibration reports for 2021 were submitted to Alberta's Ambient Air Data Warehouse for all stations. Data Qualifier Flags used in the monthly reports are summarized below.

Flag	Description	Instrument is operational?	Hour is valid?
P	Power failure	No	No
X	Machine malfunction / recovery	No	No
Y	Maintenance	Yes (unless otherwise noted)	No
K	Recording system failure	No	No
N	Instrument not in service	No	No
NRM	Repeat quality assurance checks	Yes	No
C	Calibration	Yes	No
S	Daily zero/span	Yes	No
Q	Quality assurance	Yes	No

Major Operations and Maintenance Events at Continuous Monitoring Stations During 2021

986c Station:

- There were no exceedances of the AAAQOs at the 986c Station in 2021.
- Precipitation: The AMD 90% operational uptime requirement does not apply to this parameter as this instrumentation was added at the request of the landowner host.
 - The sensor was put offline during the cold-weather season between January and March, and was brought back online in April.
 - Two hundred and thirty-four hours of data collected in April were invalidated due to a sensor malfunction, which was caused by low ambient temperatures. The operational uptime was 66.9%.
 - The existing EML ARG100 tipping bucket rain gauge, s/n: 190114, was removed and replaced by a RM Young 52202 tipping bucket rain gauge, s/n: TB 16325, on June 3. The new rain gauge has a built-in heating component and can work in winter seasons.
 - The RM Young 5520 precipitation sensor, s/n: TB16325, was removed for troubleshooting as it failed the audit check on August 4. The EML ARG100 sensor, s/n: 190114, was installed on August 18. No data were collected between August 4 hour 17 and August 18 hour 16. Three hundred thirty-six hours of downtime were recorded due to this event. The operational uptime was 54.7%.
 - Troubleshooting and maintenance were performed on the precipitation system on September 2. As previous issues traced to the ADAM (analog/digital interface), the ADAM was replaced. The EML ARG100 sensor, s/n: 190114, was removed, and the RM Young 5520 precipitation sensor, s/n: TB16325, was installed and successfully audited on September 2.

842b Station:

- There were no exceedances of the AAAQOs at the 842b Station in 2021.
- The TRS analyzer failed the span check on January 1. On January 5, the convertor-to-analyzer tubing was changed, and the sample orifice was replaced. The analyzer was allowed to stabilize overnight. A post-repair calibration was successfully completed on January 6. The analyzer failed the repeat zero-span on January 23. A successful shut-down calibration could not be achieved on the Thermo 43iQTL TRS analyzer, s/n: 1200736630. On January 28, the analyzer was removed from the site, and a replacement Thermo 43i-TLE TRS analyzer, s/n: 1162460023, was installed and calibrated. Data were invalidated back to the last valid calibration check, which was January 23 hour 2. A total of one hundred fifty-eight hours of downtime were recorded due to the two events. The operational uptime was 78.8%. **AEP reference # 375578.**
- The TRS analyzer failed the daily span check on February 19. A shut-down calibration that was performed on February 23 did not meet the AMD calibration check requirements as the slope was outside acceptance criteria. This failure was caused by low ambient temperatures and the related lack of moisture in the sample air. Extreme cold weather conditions have a

known, detrimental effect on SO₂ scrubber performance causing a delayed and reduced response in the analysis. Scrubber material was renewed, and a post-repair calibration was successfully completed afterwards on February 24. Data were invalidated back to the last valid calibration check, which was February 18. One hundred thirty-eight hours of downtime were recorded due to this event. The operational uptime was 79.5%. **AEP reference #: 376631.**

- On May 12, the BV-supplied Thermo 43i-TLE TRS analyzer, s/n: 1162460023, was removed, and the PRAMP-owned Thermo 43iQTL TRS analyzer, s/n: 1200736630, was installed.

Reno Station:

- There were no exceedances of the AAAQOs at the Reno Station in 2021.
- The TRS analyzer failed the daily span check on February 8 and the as-found points check on February 9. Immediate corrective action was not practicable given the ongoing ambient conditions (low ambient temperatures and low humidity in the sample air). The analyzer passed the daily zero-span check when the ambient temperatures started recovering on February 14. Data were invalidated back to the last valid calibration check, which was February 7. One hundred sixty hours data collected between February 7 and February 14 were discarded due to this event. The analyzer failed the daily span check again on February 19 and the repeat zero-span check on February 20. Troubleshooting was performed on February 23 and a post-repair calibration was completed on February 24. As the analyzer passed the February 23's shut-down calibration, data collected between February 19 and 23 were considered valid. No data were discarded. However, twenty-three hours of downtime were recorded due to maintenance and additional quality checks. The operational uptime was 72.8%. **AEP reference #: 376633.**
- In February, it was noticed that incorrect serial number of the rain gauge system was included in the monthly reports and the calibration reports since the system was installed in October 2020. Instead of TB 1588, the correct s/n of the system is TB15877. As the precipitation parameter was added for PRAMP regional study, data submission to Alberta's Ambient Air Quality Data Warehouse is not required. No data re-submission will be completed for this case.
- The BP sensor malfunctioned on July 10 hour 21. On July 19 hour 17, the MetOne sensor, s/n: R12877, was removed, and the MetOne 092 sensor, s/n: K12864, was installed. Two hundred thirteen hours of downtime were recorded due to this event. The operational uptime was 71.4%. **AEP reference #: 382202.**
- On November 4, the API 100A SO₂ analyzer, s/n: 1502, was removed, and the Thermo 43i-TLESO₂ analyzer, s/n: 1162460023, was installed.

AQHI - Cadotte Lake Station:

- There were no exceedances of the AAAQOs at the AQHI - Cadotte Lake Station in 2021, except PM_{2.5}.
- PM_{2.5}:

- Eight 24-Hour exceedances and seventeen 1-Hour exceedances of PM2.5 were recorded.
- In July, seventeen 1-hr and seven 24-hr exceedances were recorded. The exceedances were believed to be the result of wildfire from north Saskatchewan, given the low wind speeds.
- In August, one 24-hr exceedance was recorded. The exceedance was believed to be the result of BC wildfire.

Date	Time (MST)	Average Period	Pollutant Parameter	Average Value	Units	WS (kph)	WD (deg)	AEP Reference #
10-Jul	-	24-Hour	PM2.5	32.3	µg/m3	6.3	207	381043
14-Jul	17	1-Hour	PM2.5	92	µg/m3	12.6	246	381256
14-Jul	18	1-Hour	PM2.5	140	µg/m3	12.5	255	381256
14-Jul	19	1-Hour	PM2.5	123	µg/m3	8.5	248	381256
14-Jul	20	1-Hour	PM2.5	102	µg/m3	0.5	257	381256
14-Jul	21	1-Hour	PM2.5	91	µg/m3	0.8	62	381256
14-Jul	22	1-Hour	PM2.5	88	µg/m3	0.8	16	381256
14-Jul	-	24-Hour	PM2.5	43.6	µg/m3	6	141	381256
17-Jul	16	1-Hour	PM2.5	110	µg/m3	7.3	88	381256
17-Jul	17	1-Hour	PM2.5	154	µg/m3	7.1	84	381256
17-Jul	18	1-Hour	PM2.5	134	µg/m3	7.9	87	381256
17-Jul	19	1-Hour	PM2.5	92	µg/m3	6.1	90	381256
17-Jul	-	24-Hour	PM2.5	52.2	µg/m3	9.7	87	381256
18-Jul	1	1-Hour	PM2.5	86	µg/m3	4.6	91	381256
18-Jul	2	1-Hour	PM2.5	89	µg/m3	5.4	88	381256
18-Jul	3	1-Hour	PM2.5	94	µg/m3	5.1	87	381256
18-Jul	4	1-Hour	PM2.5	95	µg/m3	5.3	92	381256
18-Jul	5	1-Hour	PM2.5	92	µg/m3	5.9	94	381256
18-Jul	6	1-Hour	PM2.5	91	µg/m3	6.7	93	381256
18-Jul	7	1-Hour	PM2.5	86	µg/m3	6.5	94	381256
18-Jul	-	24-Hour	PM2.5	63.3	µg/m3	5.7	90	381256
19-Jul	-	24-Hour	PM2.5	51.5	µg/m3	5.2	115	381445
20-Jul	-	24-Hour	PM2.5	56.3	µg/m3	4.6	96	381445
21-Jul	-	24-Hour	PM2.5	45.8	µg/m3	4.5	143	381445
03-Aug	-	24-Hour	PM2.5	30.1	µg/m3	2.1	179	382077

- On April 20, the BV-supplied Thermo 43i-TLE TRS analyzer, s/n: 1152940011, was removed, and the PRAMP-owned Teledyne T100U TRS analyzer, s/n: 132, was installed.
- A MetOne 092 BP sensor, s/n: A23927, was audited and installed on June 8. Valid hourly data start being recorded on June 14 hour 9. Operational uptime for this month was 55.0%. As this instrument was installed in the mid month, 90% uptime requirement does not apply and was not considered as a contravention event.

- The TRS analyzer failed the daily zero-span check on August 14 due to a convertor failure. On August 17, the CD Nova CDN-101 convertor, s/n 530, was removed and the CD Nova CDN-101 convertor, s/n 534, was installed. Data were invalidated back to the last valid zero-span check, which was August 13 hour 9. One hundred hours of data were invalidated due to this issue. The operational uptime was 85.3. **AEP reference #: 382077.**
- The monitoring program at Cadotte Lake site was completed on November 23. **Notification-PRAMP-20211122.**

Special Studies

A multi-year integrated sampling program continued operating at 986b station, 986c station, 842b station and Reno station; this program collects air samples using Silco/Summa Canisters which are analyzed in a laboratory for VOCs, reduced sulphur compounds, and methane isotopes. In 2021, the program collected a 1-hour sample of air in a canister when the continuously measured methane (CH₄) and/or non-methane hydrocarbon (NMHC) concentration reached a specified trigger point. The trigger points were 5.5 ppm for methane and 0.3 ppm for non-methane hydrocarbons. Both trigger points were based on real-time monitoring data that were averaged over a 5-minute period. Analysis of these samples were performed by InnoTech Alberta. Analytical results were included in the monthly reports following the month of sample collections.

On February 1, 2021, the methane-triggered canister program was paused pending analysis of the samples collected thus far. The methane triggered program was implemented two years ago with the objective of gathering data to help characterize air quality during elevated methane events (as detected by the continuous monitoring instruments). Over the last two years, PRAMP has collected over 20 samples; this is in the target range set out in the original project plan.

A total of 9 non-methane canister samples were collected in 2021.

Date	Time	Station	Parameter	Concentration (ppm)
08-Jan	11:30	986c	NMHC	0.30
26-Feb	09:10	986c	NMHC	0.30
28-Jun	19:35	842b	NMHC	0.31
29-Jun	18:50	Reno	NMHC	0.32
29-Jun	19:55	986c	NMHC	0.32
29-Jun	20:30	842b	NMHC	0.30
01-Aug	20:20	986c	NMHC	0.35
02-Aug	06:10	986c	NMHC	0.34
15-Dec	17:00	986c	NMHC	0.50

Notes:

Elevated NMHC concentrations were recorded starting June 27 due to extreme hot ambient temperatures. Environment Canada issued a special air quality statement for several parts of Alberta's Central and Southern regions on June 29 amid the ongoing heatwave. The stagnant weather conditions under a high pressure ridge caused pollution to build up. By June 29, all three stations had collected at least one NMHC canister sample. In light of OSM's recent budget reductions and in consideration of the objectives of PRAMP's canister monitoring program, the triggered NMHC canister collection program was temporarily paused until temperatures returned to seasonal values and the air quality statement had been lifted. The triggered canister program was paused between June 30 and July 5

Notification of Changes Made After Monthly Report Issuance

No revisions to historical data previously submitted to the Alberta's Ambient Air Quality Data Warehouse were made during the time this annual report is being prepared.

Deviations from Authorized Monitoring Methods

At the Reno station, nearby trees exceed the height allowed under section 2.3 of the wind speed and wind direction siting criteria in Chapter 3 of the AMD. This non-conformance was documented in the updated station site documents. Further actions are being considered including siting the wind sensor so that it meets AMD Chapter 3 siting requirements, or obtaining written authorization from "The Director" to deviate from AMD Siting requirements.

Certification

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



Lily Lin, Environmental Monitoring Program Manager, PRAMP Airshed

This 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.



Michael Bisaga, Environmental Monitoring Program Manager, PRAMP Airshed

March 27, 2022

1. Summaries of Statistics and Data Qualifier Flag Summaries

1.1 986c Station

Table 1 SO2 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Readings	Monthly Avg. (ppb)	# of 30-day AAAQO Exceedances	Min. 1-hr (ppb)	Max. 1-hr (ppb)	# of 1-hr AAAQO Exceedances	Max. 24-hr (ppb)	# of 24-hr AAAQO Exceedances
January	99.9	704	0.1	0	0	2	0	1	0
February	100.0	637	0.1	0	0	2	0	1	0
March	100.0	706	0.2	0	0	4	0	1	0
April	99.6	682	0.0	0	0	1	0	0	0
May	99.5	705	0.0	0	0	1	0	1	0
June	100.0	684	0.0	0	0	1	0	0	0
July	90.9	641	0.1	0	0	2	0	1	0
August	100.0	707	0.0	0	0	1	0	0	0
September	100.0	683	0.0	0	0	1	0	0	0
October	100.0	705	0.1	0	0	2	0	0	0
November	99.9	683	0.1	0	0	2	0	1	0
December	99.9	707	0.1	0	0	2	0	1	0
Annual	99.1	8244	0.1	0	0	4	0	1	0

Table 2 SO2 2021 Annual Frequency Distribution

Month	Percentage of Readings in Concentration Range (in ppb)				
	0 - 10	11 -50	51 -100	101 - 172	>172
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 3 SO2 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
73	1	0	0	0	4	62	376	0
Total Hours of Downtime		78	Total Hours of Calibration Time		438	Total Hours of Flagged		516

Table 4 TRS 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	Min. 1-hr (ppb)	Max. 1-hr (ppb)	Max. 24-hr (ppb)
January	99.9	704	0.09	0.00	0.35	0.22
February	100.0	637	0.10	0.00	0.51	0.21
March	100.0	706	0.06	0.00	0.66	0.28
April	99.6	682	0.09	0.00	0.94	0.38
May	99.5	703	0.15	0.00	1.08	0.35
June	99.7	682	0.18	0.01	1.10	0.41
July	90.9	640	0.24	0.00	1.15	0.49
August	96.1	679	0.29	0.00	0.92	0.56
September	99.2	677	0.16	0.00	1.81	0.29
October	100.0	705	0.09	0.00	0.49	0.21
November	100.0	684	0.11	0.00	0.67	0.28
December	97.6	690	0.08	0.00	0.43	0.27
Annual	98.5	8189	0.14	0.00	1.81	0.56

Table 5 TRS 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 2	3 - 5	6 - 10	11 - 50	>50
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	99.7%	0.3%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	99.8%	0.2%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	99.7%	0.3%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	99.9%	0.1%	0.0%	0.0%	0.0%

Table 6 TRS 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
73	20	0	0	0	38	66	374	0
Total Hours of Downtime		131	Total Hours of Calibration Time		440	Total Hours of Flagged		571

Table 7 THC 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	99.7	703	1.99	1.83	2.50	2.24
February	100.0	638	1.97	1.82	2.11	2.04
March	100.0	707	1.97	1.89	2.31	2.05
April	96.4	659	1.94	1.83	2.40	2.09
May	99.3	703	1.88	1.81	2.03	1.91
June	99.9	684	1.95	1.76	2.33	2.02
July	90.9	641	1.96	1.86	2.14	2.07
August	99.6	705	2.02	1.90	2.57	2.17
September	100.0	685	2.01	1.92	2.23	2.10
October	99.9	705	2.02	1.94	2.21	2.09
November	100.0	685	2.02	1.93	2.37	2.11
December	98.8	701	2.18	1.94	2.51	2.37
Annual	98.7	8216	1.99	1.76	2.57	2.37

Table 8 THC 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 2	3 - 5	6 - 10	11 - 40	>40
January	99.4%	0.6%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	99.4%	0.6%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	97.6%	2.4%	0.0%	0.0%	0.0%
Annual	99.7%	0.3%	0.0%	0.0%	0.0%

Table 9 THC 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
73	33	3	0	0	6	53	376	0
Total Hours of Downtime		115	Total Hours of Calibration Time		429	Total Hours of Flagged		544

Table 10 CH4 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	99.7	703	1.99	1.83	2.49	2.23
February	100.0	638	1.97	1.82	2.11	2.04
March	100.0	707	1.97	1.89	2.31	2.05
April	96.4	659	1.94	1.83	2.40	2.09
May	99.3	703	1.88	1.81	2.03	1.91
June	99.9	684	1.94	1.76	2.23	1.99
July	90.9	641	1.96	1.86	2.14	2.07
August	99.6	705	2.01	1.90	2.26	2.09
September	100.0	685	2.01	1.92	2.23	2.10
October	99.9	705	2.02	1.94	2.21	2.09
November	100.0	685	2.02	1.93	2.37	2.10
December	98.8	701	2.18	1.94	2.51	2.36
Annual	98.7	8216	1.99	1.76	2.51	2.36

Table 11 CH4 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 2	3 - 5	6 - 10	11 - 20	>20
January	99.6%	0.4%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	98.0%	2.0%	0.0%	0.0%	0.0%
Annual	99.8%	0.2%	0.0%	0.0%	0.0%

Table 12 CH4 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
73	33	3	0	0	6	52	377	0
Total Hours of Downtime		115	Total Hours of Calibration Time		429	Total Hours of Flagged		544

Table 13 NMHC 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	99.7	703	0.00	0.00	0.09	0.00
February	100.0	638	0.00	0.00	0.08	0.00
March	100.0	707	0.00	0.00	0.00	0.00
April	96.4	659	0.00	0.00	0.00	0.00
May	99.3	703	0.00	0.00	0.00	0.00
June	99.9	684	0.01	0.00	0.42	0.06
July	90.9	641	0.00	0.00	0.07	0.01
August	99.6	705	0.01	0.00	0.47	0.09
September	100.0	685	0.00	0.00	0.02	0.00
October	99.9	705	0.00	0.00	0.00	0.00
November	100.0	685	0.00	0.00	0.03	0.00
December	98.8	701	0.00	0.00	0.20	0.01
Annual	98.7	8216	0.00	0.00	0.47	0.09

Table 14 NMHC 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 0.1	0.2 - 0.3	0.4 - 0.9	1 - 2	>2
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	98.4%	1.3%	0.3%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	98.7%	1.1%	0.1%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	99.9%	0.1%	0.0%	0.0%	0.0%
Annual	99.7%	0.2%	0.0%	0.0%	0.0%

Table 15 NMHC 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
73	33	3	0	0	6	5	376	0
Total Hours of Downtime		115	Total Hours of Calibration Time		429	Total Hours of Flagged		544

Table 16 RH 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (%)	Min. 1-hr (%)	Max. 1-hr (%)	Max. 24-hr (%)
January	100.0	744	76.7	43	100	97
February	100.0	672	72.1	39	98	87
March	100.0	744	67.4	26	100	90
April	99.4	716	60.3	23	100	93
May	99.6	741	56.0	11	100	96
June	99.7	718	60.9	20	100	97
July	91.3	679	69.5	24	100	98
August	100.0	744	74.1	26	100	95
September	100.0	720	74.3	29	100	100
October	100.0	744	73.0	22	100	100
November	100.0	720	88.3	15	100	100
December	100.0	744	86.4	53	100	100
Annual	99.2	8686	71.6	11	100	100

Table 17 RH Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
70	2	2	0	0	0	0	0	0
Total Hours of Downtime		74	Total Hours of Calibration Time		0	Total Hours of Flagged		74

Table 18 BP 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (mb)	Min. 1-hr (mb)	Max. 1-hr (mb)	Max. 24-hr (mb)
January	100.0	744	938	914	952	949
February	100.0	672	943	912	970	967
March	100.0	744	937	921	949	946
April	99.4	716	944	923	963	962
May	99.6	741	943	930	952	950
June	99.7	718	939	927	950	948
July	91.3	679	943	932	952	951
August	100.0	744	940	928	949	949
September	100.0	720	937	923	949	947
October	100.0	744	937	919	954	953
November	100.0	720	937	918	955	950
December	100.0	744	936	906	956	954
Annual	99.2	8686	939	906	970	967

Table 19 BP Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
70	2	2	0	0	0	0	0	0
Total Hours of Downtime		74	Total Hours of Calibration Time		0	Total Hours of Flagged		74

Table 20 AT 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (°C)	Min. 1-hr (°C)	Max. 1-hr (°C)	Max. 24-hr (°C)
January	100.0	744	-8.1	-28.3	5.9	2.0
February	100.0	672	-17.1	-37.6	7.2	3.6
March	100.0	744	-3.2	-17.7	10.0	3.8
April	99.4	716	1.9	-13.5	19.1	11.6
May	99.6	741	10.8	-1.8	24.1	18.3
June	99.7	718	17.4	0.0	39.7	30.8
July	91.3	679	17.8	6.3	31.5	25.3
August	100.0	744	15.4	1.3	31.0	23.4
September	100.0	720	11.0	1.9	23.6	16.5
October	100.0	744	3.8	-7.0	15.0	9.6
November	100.0	720	-2.9	-19.3	9.6	3.6
December	100.0	744	-18.8	-38.1	4.6	-3.0
Annual	99.2	8686	2.3	-38.1	39.7	30.8

Table 21 AT Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
70	2	2	0	0	0	0	0	0
Total Hours of Downtime		74	Total Hours of Calibration Time		0	Total Hours of Flagged		74

Table 22 Precipitation 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Total (mm)	Min. Total 1-hr (mm)	Max. Total 1-hr (mm)	Max. Total 24-hr (mm)
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	66.9	482	4.2	0.0	1.0	3.0
May	98.8	735	20.6	0.0	1.8	8.4
June	99.7	717	16.0	0.0	1.4	4.7
July	91.3	679	10.5	0.0	1.6	6.7
August	54.7	406	27.6	0.0	3.8	10.4
September	99.2	713	32.2	0.0	3.4	15.8
October	99.9	743	8.8	0.0	0.6	3.2
November	98.5	709	9.0	0.0	2.2	3.2
December	100.0	744	0.3	0.0	0.1	0.3
Annual	89.9	5928	14.4	0.0	3.8	15.8

Table 23 Precipitation Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
70	19	2	240	335	3	3	0	0
Total Hours of Downtime		669	Total Hours of Calibration Time		3	Total Hours of Flagged		672

Table 24 ST 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (°C)	Min. 1-hr (°C)	Max. 1-hr (°C)	Max. 24-hr (°C)
January	100.0	744	22.2	21.6	23.1	22.7
February	100.0	672	22.7	15.1	24.9	23.4
March	100.0	744	22.2	21.5	24.2	22.6
April	99.4	716	22.4	20.8	24.5	22.9
May	99.6	741	22.7	20.8	24.1	23.1
June	99.7	718	22.9	21.8	24.6	23.8
July	91.3	679	22.5	21.3	24.2	23.2
August	100.0	744	22.6	21.6	24.3	23.4
September	100.0	720	22.6	21.6	24.5	23.5
October	100.0	744	22.0	21.3	23.8	22.5
November	100.0	720	22.0	21.4	23.1	22.4
December	100.0	744	22.4	16.0	23.6	23.4
Annual	99.2	8686	22.4	15.1	24.9	23.8

Table 25 ST Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
70	2	2	0	0	0	0	0	0
Total Hours of Downtime		74	Total Hours of Calibration Time		0	Total Hours of Flagged		74

Table 26 WS 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (kph)	Min. 1-hr (kph)	Max. 1-hr (kph)	Max. 24-hr (kph)
January	100.0	744	4.7	0.0	40.8	24.1
February	100.0	672	3.1	0.0	38.0	28.4
March	100.0	744	4.6	0.7	31.8	20.4
April	99.4	716	2.0	0.2	38.1	18.8
May	99.6	741	2.8	0.1	37.6	23.1
June	99.7	718	4.2	0.0	28.8	20.2
July	91.3	677	1.8	0.5	28.5	20.0
August	100.0	744	2.7	0.4	30.6	17.3
September	100.0	720	5.4	0.8	30.9	18.1
October	100.0	744	5.9	1.2	33.9	19.3
November	100.0	720	4.9	0.4	35.4	23.2
December	100.0	744	4.2	0.5	33.9	16.7
Annual	99.2	8684	3.1	0.0	40.8	28.4

Table 27 WS 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in kph)				
	0 - 6	7 - 15	16 - 29	30 -39	>39
January	24.2%	48.1%	26.3%	1.2%	0.1%
February	29.0%	48.5%	20.2%	2.2%	0.0%
March	16.4%	44.0%	39.0%	0.7%	0.0%
April	25.6%	45.5%	27.5%	1.4%	0.0%
May	19.0%	54.9%	25.0%	1.1%	0.0%
June	31.3%	50.1%	18.5%	0.0%	0.0%
July	27.8%	62.3%	9.9%	0.0%	0.0%
August	29.0%	50.9%	19.9%	0.1%	0.0%
September	29.3%	52.4%	18.1%	0.3%	0.0%
October	17.2%	51.3%	30.1%	1.3%	0.0%
November	26.8%	49.2%	22.5%	1.5%	0.0%
December	33.7%	58.2%	7.1%	0.9%	0.0%
Annual	25.8%	51.3%	22.0%	0.9%	0.0%

Table 28 WS Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
70	2	2	0	0	0	2	0	0
Total Hours of Downtime		74	Total Hours of Calibration Time		2	Total Hours of Flagged		76

1.2 842b Station

Table 29 SO2 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	# of 30-day AAAQO Exceedances	Min. 1-hr (ppb)	Max. 1-hr (ppb)	# of 1-hr AAAQO Exceedances	Max. 24-hr (ppb)	# of 24-hr AAAQO Exceedances
January	100.0	706	0.0	0	0	1	0	0	0
February	100.0	639	0.1	0	0	2	0	1	0
March	99.2	702	0.1	0	0	2	0	1	0
April	98.8	674	0.0	0	0	1	0	0	0
May	99.5	704	0.0	0	0	1	0	0	0
June	91.9	625	0.0	0	0	0	0	0	0
July	100.0	705	0.0	0	0	0	0	0	0
August	100.0	707	0.0	0	0	0	0	0	0
September	98.9	676	0.0	0	0	0	0	0	0
October	99.7	705	0.0	0	0	2	0	0	0
November	100.0	684	0.0	0	0	1	0	1	0
December	100.0	707	0.1	0	0	2	0	0	0
Annual	99.0	8234	0.0	0	0	2	0	1	0

Table 30 SO2 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 10	11 -50	51 -100	101 - 172	>172
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 31 SO2 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
7	73	0	0	0	7	63	376	0
Total Hours of Downtime		87	Total Hours of Calibration Time		439	Total Hours of Flagged		526

Table 32 TRS 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	Min. 1-hr (ppb)	Max. 1-hr (ppb)	Max. 24-hr (ppb)
January	78.8	551	0.67	0.13	2.41	2.10
February	79.5	507	0.22	0.08	0.41	0.33
March	99.2	701	0.13	0.03	0.41	0.19
April	98.3	670	0.10	0.00	1.28	0.20
May	99.2	700	0.17	0.00	0.91	0.39
June	91.9	625	0.29	0.04	1.61	0.46
July	99.9	704	0.35	0.03	1.54	0.55
August	100.0	707	0.29	0.06	1.19	0.54
September	98.9	676	0.22	0.04	0.80	0.44
October	99.9	705	0.21	0.01	0.78	0.38
November	100.0	684	0.25	0.07	0.58	0.43
December	96.6	682	0.30	0.05	0.70	0.58
Annual	95.2	7912	0.27	0.00	2.41	2.10

Table 33 TRS 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 2	3 - 5	6 - 10	11 - 50	>50
January	99.8%	0.2%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 34 TRS 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
7	312	2	0	0	92	71	364	0
Total Hours of Downtime		413	Total Hours of Calibration Time		435	Total Hours of Flagged		848

Table 35 THC 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	100.0	706	1.92	1.79	2.99	2.36
February	100.0	639	2.04	1.90	2.36	2.15
March	99.1	701	1.90	1.80	2.28	2.10
April	95.4	652	1.92	1.80	2.74	2.07
May	99.5	702	1.84	1.72	2.21	1.97
June	91.7	626	1.90	1.71	2.28	2.00
July	100.0	707	1.86	1.77	2.11	2.00
August	100.0	708	1.89	1.79	2.79	2.20
September	97.1	665	1.87	1.79	2.07	1.99
October	100.0	707	1.84	1.78	2.09	1.90
November	99.0	677	1.85	1.71	2.54	2.02
December	99.2	702	1.89	1.80	2.46	2.07
Annual	98.4	8192	1.89	1.71	2.99	2.36

Table 36 THC 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 2	3 - 5	6 - 10	11 - 40	>40
January	98.2%	1.8%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	99.5%	0.5%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	99.2%	0.8%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	99.7%	0.3%	0.0%	0.0%	0.0%
December	99.9%	0.1%	0.0%	0.0%	0.0%
Annual	99.7%	0.3%	0.0%	0.0%	0.0%

Table 37 THC 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
7	114	2	0	0	15	54	376	0
Total Hours of Downtime		138	Total Hours of Calibration Time		430	Total Hours of Flagged		568

Table 38 CH4 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	100.0	706	1.92	1.79	2.80	2.31
February	100.0	639	2.04	1.90	2.36	2.15
March	99.1	701	1.90	1.80	2.27	2.10
April	95.4	652	1.92	1.80	2.65	2.06
May	99.5	702	1.84	1.72	2.21	1.97
June	91.7	626	1.88	1.71	2.24	1.96
July	100.0	707	1.85	1.77	2.11	1.97
August	100.0	708	1.88	1.78	2.55	2.06
September	97.1	665	1.87	1.79	2.07	1.99
October	100.0	707	1.84	1.78	2.09	1.90
November	99.0	677	1.85	1.71	2.54	2.02
December	99.2	702	1.89	1.80	2.46	2.07
Annual	98.4	8192	1.89	1.71	2.80	2.31

Table 39 CH4 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 2	3 - 5	6 - 10	11 - 20	>20
January	98.4%	1.6%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	99.5%	0.5%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	99.6%	0.4%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	99.7%	0.3%	0.0%	0.0%	0.0%
December	99.9%	0.1%	0.0%	0.0%	0.0%
Annual	99.8%	0.2%	0.0%	0.0%	0.0%

Table 40 CH4 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
7	114	2	0	0	15	54	376	0
Total Hours of Downtime		138	Total Hours of Calibration Time		430	Total Hours of Flagged		568

Table 41 NMHC 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	100.0	706	0.00	0.00	0.19	0.05
February	100.0	639	0.00	0.00	0.01	0.00
March	99.1	701	0.00	0.00	0.02	0.00
April	95.4	652	0.00	0.00	0.09	0.01
May	99.5	702	0.00	0.00	0.01	0.00
June	91.7	626	0.01	0.00	0.28	0.10
July	100.0	707	0.01	0.00	0.14	0.07
August	100.0	708	0.01	0.00	0.25	0.13
September	97.1	665	0.00	0.00	0.00	0.00
October	100.0	707	0.00	0.00	0.00	0.00
November	99.0	677	0.00	0.00	0.06	0.00
December	99.2	702	0.00	0.00	0.06	0.00
Annual	98.4	8192	0.00	0.00	0.28	0.13

Table 42 NMHC 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 0.1	0.2 - 0.3	0.4 - 0.9	1 - 2	>2
January	99.3%	0.7%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	98.1%	1.9%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	97.9%	2.1%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	99.6%	0.4%	0.0%	0.0%	0.0%

Table 43 NMHC 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
7	114	2	0	0	15	54	376	0
Total Hours of Downtime		138	Total Hours of Calibration Time		430	Total Hours of Flagged		568

Table 44 RH 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (%)	Min. 1-hr (%)	Max. 1-hr (%)	Max. 24-hr (%)
January	100.0	744	72.0	37	97	91
February	100.0	672	67.8	41	93	80
March	99.3	739	63.8	26	96	84
April	98.9	712	57.6	21	97	88
May	99.5	740	53.1	9	99	91
June	92.2	664	55.6	19	99	93
July	100.0	744	64.5	24	100	95
August	100.0	744	68.5	27	100	91
September	98.9	712	68.9	28	100	96
October	100.0	744	68.3	20	100	98
November	100.0	720	80.5	15	100	100
December	100.0	744	77.3	51	100	91
Annual	99.1	8679	66.5	9	100	100

Table 45 RH Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
7	73	0	0	0	1	0	0	0
Total Hours of Downtime		81	Total Hours of Calibration Time		0	Total Hours of Flagged		81

Table 46 BP 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (mb)	Min. 1-hr (mb)	Max. 1-hr (mb)	Max. 24-hr (mb)
January	100.0	744	936	912	951	948
February	100.0	672	942	912	968	966
March	99.3	739	936	920	948	945
April	98.9	712	943	923	962	960
May	99.5	740	942	929	951	949
June	92.2	664	938	926	949	947
July	100.0	744	942	931	951	950
August	100.0	744	939	927	948	948
September	98.9	712	936	922	948	946
October	100.0	744	936	918	953	951
November	100.0	720	935	917	954	949
December	100.0	744	935	905	955	952
Annual	99.1	8679	938	905	968	966

Table 47 BP Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
7	73	0	0	0	1	0	0	0
Total Hours of Downtime		81	Total Hours of Calibration Time		0	Total Hours of Flagged		81

Table 48 AT 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (°C)	Min. 1-hr (°C)	Max. 1-hr (°C)	Max. 24-hr (°C)
January	100.0	744	-7.9	-29.0	6.1	2.1
February	100.0	672	-17.3	-39.1	6.1	3.4
March	99.3	739	-3.1	-17.9	10.6	3.8
April	98.9	712	1.8	-13.1	19.2	11.8
May	99.5	740	10.9	-2.0	24.0	17.8
June	92.2	664	18.0	0.1	38.5	31.4
July	100.0	744	17.7	4.7	31.2	25.8
August	100.0	744	15.6	2.1	30.7	23.2
September	98.9	712	11.2	1.2	23.8	16.7
October	100.0	744	3.9	-8.1	15.5	9.6
November	100.0	720	-2.9	-18.6	9.8	3.8
December	100.0	744	-18.8	-37.9	4.6	-2.9
Annual	99.1	8679	2.4	-39.1	38.5	31.4

Table 49 AT Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
7	73	0	0	0	1	0	0	0
Total Hours of Downtime		81	Total Hours of Calibration Time		0	Total Hours of Flagged		81

Table 50 Precipitation 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Total (mm)	Min. Total 1-hr (mm)	Max. Total 1-hr (mm)	Max. Total 24-hr (mm)
January	100.0	744	1.5	0.0	0.4	0.8
February	100.0	672	1.3	0.0	0.6	0.6
March	99.3	739	5.4	0.0	0.7	1.5
April	98.9	710	9.9	0.0	1.6	6.2
May	99.5	739	14.9	0.0	1.6	7.2
June	92.2	663	29.0	0.0	3.2	11.9
July	100.0	744	19.6	0.0	3.0	13.7
August	99.9	741	32.5	0.0	2.5	9.6
September	98.9	712	23.3	0.0	2.2	11.3
October	100.0	743	8.9	0.0	0.6	3.8
November	100.0	720	13.2	0.0	1.8	3.8
December	100.0	744	0.2	0.0	0.1	0.2
Annual	99.1	8671	13.3	0.0	3.2	13.7

Table 51 Precipitation Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
7	73	1	0	0	1	7	0	0
Total Hours of Downtime		82	Total Hours of Calibration Time		7	Total Hours of Flagged		89

Table 52 ST 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (°C)	Min. 1-hr (°C)	Max. 1-hr (°C)	Max. 24-hr (°C)
January	100.0	744	22.4	21.1	23.4	22.8
February	100.0	672	22.5	20.4	23.6	23.2
March	99.3	739	22.1	20.9	23.0	22.3
April	98.9	712	22.1	20.9	23.1	22.5
May	99.5	740	22.0	20.8	23.1	22.3
June	92.2	664	22.3	20.6	24.5	23.1
July	100.0	744	22.6	20.7	23.9	23.4
August	100.0	744	22.9	21.0	24.1	23.4
September	98.9	712	22.7	21.5	24.2	23.5
October	100.0	744	22.3	21.0	23.9	22.6
November	100.0	720	22.1	19.5	24.8	22.5
December	100.0	744	22.6	21.1	24.0	23.1
Annual	99.1	8679	22.4	19.5	24.8	23.5

Table 53 ST Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
7	73	0	0	0	1	0	0	0
Total Hours of Downtime		81	Total Hours of Calibration Time		0	Total Hours of Flagged		81

Table 54 WS 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (kph)	Min. 1-hr (kph)	Max. 1-hr (kph)	Max. 24-hr (kph)
January	100.0	744	4.3	0.0	34.0	21.0
February	100.0	672	3.5	0.0	35.0	26.0
March	99.3	739	4.1	0.3	26.3	15.8
April	98.9	712	2.7	0.2	31.3	19.4
May	99.5	740	1.8	0.2	23.2	15.3
June	92.2	664	5.6	0.2	36.1	23.1
July	100.0	742	3.3	0.0	30.6	19.3
August	100.0	744	3.2	0.0	29.1	14.4
September	98.9	712	5.5	0.0	30.1	16.9
October	100.0	744	5.9	0.3	36.9	21.2
November	100.0	720	3.7	0.4	30.6	20.6
December	100.0	744	2.2	0.0	34.8	13.5
Annual	99.1	8677	3.6	0.0	36.9	26.0

Table 55 WS 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in kph)				
	0 - 6	7 - 15	16 - 29	30 -39	>39
January	40.2%	44.0%	15.3%	0.5%	0.0%
February	42.1%	46.0%	11.2%	0.7%	0.0%
March	29.4%	54.3%	16.4%	0.0%	0.0%
April	36.0%	49.9%	13.8%	0.4%	0.0%
May	33.6%	55.4%	10.9%	0.0%	0.0%
June	41.4%	41.0%	17.0%	0.6%	0.0%
July	46.9%	43.0%	10.0%	0.1%	0.0%
August	39.2%	49.2%	11.6%	0.0%	0.0%
September	37.6%	46.1%	16.2%	0.1%	0.0%
October	33.6%	48.8%	16.1%	1.5%	0.0%
November	38.2%	48.1%	13.6%	0.1%	0.0%
December	47.2%	47.6%	4.7%	0.5%	0.0%
Annual	38.8%	47.8%	13.1%	0.4%	0.0%

Table 56 WS Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
7	73	0	0	0	1	2	0	0
Total Hours of Downtime		81	Total Hours of Calibration Time		2	Total Hours of Flagged		83

1.3 Reno Station

Table 57 SO2 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	# of 30-day AAAQO Exceedances	Min. 1-hr (ppb)	Max. 1-hr (ppb)	# of 1-hr AAAQO Exceedances	Max. 24-hr (ppb)	# of 24-hr AAAQO Exceedances
January	99.7	704	0.8	0	0	6	0	2	0
February	100.0	637	0.4	0	0	2	0	1	0
March	100.0	709	0.1	0	0	6	0	1	0
April	99.6	679	0.0	0	0	1	0	0	0
May	100.0	709	0.0	0	0	1	0	0	0
June	100.0	684	0.0	0	0	1	0	0	0
July	100.0	707	0.0	0	0	1	0	0	0
August	100.0	706	0.0	0	0	1	0	0	0
September	100.0	684	0.0	0	0	1	0	0	0
October	99.5	702	0.0	0	0	1	0	0	0
November	98.8	674	0.0	0	0	2	0	0	0
December	100.0	707	0.1	0	0	2	0	1	0
Annual	99.8	8302	0.1	0	0	6	0	2	0

Table 58 SO2 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 10	11 -50	51 -100	101 - 172	>172
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 59 SO2 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
1	4	2	0	0	11	63	377	0
Total Hours of Downtime		18	Total Hours of Calibration Time		440	Total Hours of Flagged		458

Table 60 TRS 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	Min. 1-hr (ppb)	Max. 1-hr (ppb)	Max. 24-hr (ppb)
January	99.6	702	0.16	0.00	0.94	0.38
February	72.8	461	0.17	0.00	2.38	0.55
March	94.0	663	0.18	0.00	0.92	0.36
April	99.6	679	0.18	0.00	2.71	0.40
May	100.0	707	0.20	0.00	1.50	0.48
June	100.0	684	0.35	0.00	5.01	1.16
July	100.0	705	0.41	0.00	5.26	1.29
August	100.0	706	0.41	0.03	10.50	2.20
September	100.0	684	0.36	0.00	3.83	0.93
October	99.9	704	0.28	0.00	4.67	0.78
November	99.2	678	0.25	0.00	1.44	0.58
December	96.8	682	0.25	0.00	0.69	0.35
Annual	96.8	8055	0.27	0.00	10.50	2.20

Table 61 TRS 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 2	3 - 5	6 - 10	11 - 50	>50
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	99.9%	0.1%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	98.1%	1.9%	0.0%	0.0%	0.0%
July	98.3%	1.7%	0.0%	0.0%	0.0%
August	97.9%	1.4%	0.6%	0.1%	0.0%
September	98.7%	1.3%	0.0%	0.0%	0.0%
October	99.0%	1.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	99.3%	0.6%	0.0%	0.0%	0.0%

Table 62 TRS 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
1	205	0	0	0	59	73	367	0
Total Hours of Downtime		265	Total Hours of Calibration Time		440	Total Hours of Flagged		705

Table 63 THC 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (in ppm)	Min. 1-hr (in ppm)	Max. 1-hr (in ppm)	Max. 24-hr (in ppm)
January	99.9	707	1.90	1.77	2.51	2.05
February	93.8	598	1.92	1.83	4.39	2.13
March	100.0	707	2.01	1.80	8.79	3.69
April	99.4	675	1.95	1.80	2.98	2.08
May	99.9	708	1.88	1.80	2.38	1.95
June	100.0	685	1.91	1.76	2.97	2.16
July	99.7	705	1.89	1.79	2.17	1.99
August	100.0	707	1.91	1.76	2.30	2.04
September	100.0	685	1.98	1.92	2.17	2.02
October	99.9	706	1.92	1.85	2.16	2.00
November	99.7	683	1.98	1.87	2.38	2.05
December	100.0	708	2.01	1.92	2.64	2.12
Annual	99.4	8274	1.94	1.76	8.79	3.69

Table 64 THC 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 2	3 - 5	6 - 10	11 - 40	>40
January	99.7%	0.3%	0.0%	0.0%	0.0%
February	98.8%	1.2%	0.0%	0.0%	0.0%
March	95.3%	4.2%	0.4%	0.0%	0.0%
April	99.6%	0.4%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	99.4%	0.6%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	99.3%	0.7%	0.0%	0.0%	0.0%
Annual	99.3%	0.6%	0.0%	0.0%	0.0%

Table 65 THC 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
1	44	1	0	0	7	56	377	0
Total Hours of Downtime		53	Total Hours of Calibration Time		433	Total Hours of Flagged		486

Table 66 CH4 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (in ppm)	Min. 1-hr (in ppm)	Max. 1-hr (in ppm)	Max. 24-hr (in ppm)
January	99.9	707	1.90	1.77	2.51	2.05
February	93.8	598	1.92	1.83	4.37	2.13
March	100.0	707	2.01	1.80	8.72	3.67
April	99.4	675	1.95	1.80	2.98	2.08
May	99.9	708	1.88	1.80	2.38	1.95
June	100.0	685	1.90	1.76	2.95	2.14
July	99.7	705	1.89	1.79	2.17	1.99
August	100.0	707	1.91	1.76	2.30	2.04
September	100.0	685	1.98	1.92	2.17	2.02
October	99.9	706	1.92	1.85	2.16	2.00
November	99.7	683	1.98	1.87	2.38	2.05
December	100.0	708	2.01	1.92	2.64	2.12
Annual	99.4	8274	1.94	1.76	8.72	3.67

Table 67 CH4 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 2	3 - 5	6 - 10	11 - 20	>20
January	99.7%	0.3%	0.0%	0.0%	0.0%
February	98.8%	1.2%	0.0%	0.0%	0.0%
March	95.3%	4.2%	0.4%	0.0%	0.0%
April	99.6%	0.4%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	99.4%	0.6%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	99.3%	0.7%	0.0%	0.0%	0.0%
Annual	99.3%	0.6%	0.0%	0.0%	0.0%

Table 68 CH4 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
1	44	1	0	0	7	56	377	0
Total Hours of Downtime		53	Total Hours of Calibration Time		433	Total Hours of Flagged		486

Table 69 NMHC 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (in ppm)	Min. 1-hr (in ppm)	Max. 1-hr (in ppm)	Max. 24-hr (in ppm)
January	99.9	707	0.00	0.00	0.01	0.00
February	93.8	598	0.00	0.00	0.03	0.00
March	100.0	707	0.00	0.00	0.07	0.01
April	99.4	675	0.00	0.00	0.00	0.00
May	99.9	708	0.00	0.00	0.00	0.00
June	100.0	685	0.01	0.00	0.39	0.08
July	99.7	705	0.00	0.00	0.03	0.00
August	100.0	707	0.00	0.00	0.10	0.02
September	100.0	685	0.00	0.00	0.00	0.00
October	99.9	706	0.00	0.00	0.00	0.00
November	99.7	683	0.00	0.00	0.01	0.00
December	100.0	708	0.00	0.00	0.00	0.00
Annual	99.4	8274	0.00	0.00	0.39	0.08

Table 70 NMHC 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 0.1	0.2 - 0.3	0.4 - 0.9	1 - 2	>2
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	98.4%	1.3%	0.3%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	99.9%	0.1%	0.0%	0.0%	0.0%

Table 71 NMHC 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
1	44	1	0	0	7	56	377	0
Total Hours of Downtime		53	Total Hours of Calibration Time		433	Total Hours of Flagged		486

Table 72 RH 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (%)	Min. 1-hr (%)	Max. 1-hr (%)	Max. 24-hr (%)
January	100.0	744	67.4	34	100	93
February	100.0	672	61.9	40	96	80
March	100.0	744	61.8	25	100	86
April	96.7	696	54.8	18	100	92
May	100.0	744	53.8	9	100	96
June	100.0	720	54.4	13	100	95
July	100.0	744	60.7	19	100	96
August	100.0	744	65.0	18	100	90
September	100.0	720	64.9	27	100	97
October	100.0	744	65.4	17	100	99
November	99.7	718	73.3	15	100	100
December	100.0	744	64.8	42	100	80
Annual	99.7	8734	62.3	9	100	100

Table 73 RH Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
1	25	0	0	0	0	0	0	0
Total Hours of Downtime		26	Total Hours of Calibration Time		0	Total Hours of Flagged		26

Table 74 BP 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (mb)	Min. 1-hr (mb)	Max. 1-hr (mb)	Max. 24-hr (mb)
January	100.0	744	933	909	949	946
February	100.0	672	939	911	965	963
March	100.0	744	933	918	944	942
April	96.7	696	940	921	959	958
May	100.0	744	939	926	948	947
June	100.0	720	936	924	946	944
July	71.4	531	940	930	949	947
August	100.0	744	937	927	947	946
September	100.0	720	935	920	947	945
October	100.0	744	935	916	952	950
November	99.7	718	934	917	953	947
December	100.0	744	934	904	955	952
Annual	97.3	8521	936	904	965	963

Table 75 BP Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
1	238	0	0	0	0	0	0	0
Total Hours of Downtime		239	Total Hours of Calibration Time		0	Total Hours of Flagged		239

Table 76 AT 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (°C)	Min. 1-hr (°C)	Max. 1-hr (°C)	Max. 24-hr (°C)
January	100.0	744	-7.7	-25.3	6.0	1.1
February	100.0	672	-17.2	-37.0	5.4	2.9
March	100.0	744	-3.0	-19.1	13.0	3.6
April	96.7	696	2.1	-13.2	18.4	11.7
May	100.0	744	10.7	-1.3	23.9	17.5
June	100.0	720	17.5	1.0	38.4	30.4
July	100.0	744	17.9	7.0	31.0	25.7
August	100.0	744	15.7	3.8	32.0	23.6
September	100.0	720	11.4	0.7	23.3	16.3
October	100.0	744	3.7	-8.4	15.7	8.7
November	99.7	718	-2.9	-19.9	10.0	4.3
December	100.0	744	-18.3	-37.5	4.6	-1.0
Annual	99.7	8734	2.5	-37.5	38.4	30.4

Table 77 AT Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
1	25	0	0	0	0	0	0	0
Total Hours of Downtime		26	Total Hours of Calibration Time		0	Total Hours of Flagged		26

Table 78 Precipitation 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Total (mm)	Min. Total 1-hr (mm)	Max. Total 1-hr (mm)	Max. Total 24-hr (mm)
January	100.0	744	5.3	0.0	1.0	2.0
February	100.0	672	2.1	0.0	0.4	0.8
March	100.0	744	5.3	0.0	0.6	2.0
April	99.2	714	8.8	0.0	1.9	4.2
May	100.0	741	37.7	0.0	7.6	11.7
June	100.0	719	29.6	0.0	4.3	10.0
July	100.0	744	13.0	0.0	3.0	6.6
August	100.0	742	32.0	0.0	3.0	15.8
September	100.0	720	17.5	0.0	3.4	10.9
October	100.0	744	6.6	0.0	0.9	2.1
November	99.7	717	12.6	0.0	2.1	4.7
December	100.0	744	2.3	0.0	0.8	1.7
Annual	99.9	8745	14.4	0.0	7.6	15.8

Table 79 Precipitation Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
1	7	0	0	0	0	7	0	0
Total Hours of Downtime		8	Total Hours of Calibration Time		7	Total Hours of Flagged		15

Table 80 ST 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (°C)	Min. 1-hr (°C)	Max. 1-hr (°C)	Max. 24-hr (°C)
January	100.0	744	21.7	19.3	23.8	22.3
February	100.0	672	22.3	16.4	24.8	24.0
March	100.0	744	23.5	22.0	24.8	24.0
April	99.7	718	23.3	22.0	24.7	23.8
May	100.0	744	23.5	21.7	24.7	24.0
June	100.0	720	23.3	21.7	27.5	23.9
July	100.0	744	23.2	21.5	24.4	23.9
August	100.0	744	23.3	21.4	24.5	23.9
September	100.0	720	23.4	21.5	24.4	24.0
October	100.0	744	23.3	22.0	24.5	23.7
November	99.7	718	23.0	21.5	24.1	23.5
December	100.0	744	21.7	16.9	26.2	23.8
Annual	100.0	8756	22.9	16.4	27.5	24.0

Table 81 ST Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
1	3	0	0	0	0	0	0	0
Total Hours of Downtime		4	Total Hours of Calibration Time		0	Total Hours of Flagged		4

Table 82 WS 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (kph)	Min. 1-hr (kph)	Max. 1-hr (kph)	Max. 24-hr (kph)
January	100.0	744	3.2	0.1	22.6	11.2
February	100.0	672	2.5	0.1	20.4	14.3
March	100.0	744	2.2	0.1	16.0	9.4
April	96.7	696	1.2	0.0	20.7	12.1
May	100.0	744	1.1	0.3	19.7	13.7
June	100.0	720	3.1	0.0	21.1	15.6
July	100.0	741	2.0	0.0	18.4	11.9
August	100.0	744	2.1	0.0	20.8	11.8
September	100.0	720	4.0	0.1	21.8	9.7
October	100.0	744	3.4	0.1	23.8	11.6
November	99.6	717	2.7	0.1	27.3	15.5
December	100.0	744	2.2	0.0	23.0	10.2
Annual	99.7	8730	2.2	0.0	27.3	15.6

Table 83 WS 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in kph)				
	0 - 6	7 - 15	16 - 29	30 -39	>39
January	52.2%	45.3%	2.6%	0.0%	0.0%
February	58.2%	38.8%	3.0%	0.0%	0.0%
March	57.5%	41.4%	1.1%	0.0%	0.0%
April	60.2%	35.8%	4.0%	0.0%	0.0%
May	59.1%	36.8%	4.0%	0.0%	0.0%
June	69.0%	28.2%	2.8%	0.0%	0.0%
July	72.2%	27.0%	0.8%	0.0%	0.0%
August	68.7%	30.6%	0.7%	0.0%	0.0%
September	67.8%	30.4%	1.8%	0.0%	0.0%
October	57.8%	39.0%	3.2%	0.0%	0.0%
November	57.6%	40.0%	2.4%	0.0%	0.0%
December	58.3%	40.2%	1.5%	0.0%	0.0%
Annual	61.6%	36.1%	2.3%	0.0%	0.0%

Table 84 WS Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
1	25	1	0	0	0	3	0	0
Total Hours of Downtime		27	Total Hours of Calibration Time		3	Total Hours of Flagged		30

1.4 AQHI - Cadotte Lake Station

Table 85 SO2 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	# of 30-day AAAQO Exceedances	Min. 1-hr (ppb)	Max. 1-hr (ppb)	# of 1-hr AAAQO Exceedances	Max. 24-hr (ppb)	# of 24-hr AAAQO Exceedances
January	99.2	700	0.0	0	0	1	0	0	0
February	100.0	638	0.0	0	0	1	0	0	0
March	100.0	707	0.0	0	0	3	0	0	0
April	97.8	667	0.0	0	0	1	0	0	0
May	93.7	661	0.0	0	0	1	0	0	0
June	96.5	658	0.0	0	0	1	0	0	0
July	96.1	676	0.0	0	0	0	0	0	0
August	100.0	707	0.0	0	0	0	0	0	0
September	98.3	671	0.0	0	0	0	0	0	0
October	99.2	701	0.0	0	0	0	0	0	0
November	75.0	514	0.0	0	0	1	0	0	0
December	-	-	-	-	-	-	-	-	-
Annual	96.0	7300	0.0	0	0	3	0	0	0

Table 86 SO2 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 10	11 -50	51 -100	101 - 172	>172
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	-	-	-	-	-
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 87 SO2 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
111	29	1	0	0	2	56	339	0
Total Hours of Downtime		143	Total Hours of Calibration Time		395	Total Hours of Flagged		538

Table 88 TRS 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	Min. 1-hr (ppb)	Max. 1-hr (ppb)	Max. 24-hr (ppb)
January	99.2	699	0.54	0.31	4.10	1.04
February	100.0	637	0.49	0.34	2.92	1.10
March	100.0	706	0.81	0.34	11.74	2.22
April	94.4	643	0.41	0.00	1.92	0.78
May	92.9	654	0.26	0.00	0.80	0.46
June	95.4	650	0.37	0.00	1.56	0.82
July	98.7	693	0.44	0.00	2.80	0.93
August	85.3	604	0.38	0.00	2.13	0.75
September	98.1	669	0.28	0.00	1.02	0.60
October	98.1	693	1.04	0.01	1.63	1.55
November	73.5	503	0.26	0.00	0.70	0.40
December	-	-	-	-	-	-
Annual	94.1	7151	0.48	0.00	11.74	2.22

Table 89 TRS 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 2	3 - 5	6 - 10	11 - 50	>50
January	99.4%	0.6%	0.0%	0.0%	0.0%
February	99.5%	0.5%	0.0%	0.0%	0.0%
March	95.3%	2.7%	1.8%	0.1%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	99.7%	0.3%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	-	-	-	-	-
Annual	99.5%	0.4%	0.2%	0.0%	0.0%

Table 90 TRS 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
110	169	4	0	0	9	62	333	0
Total Hours of Downtime		292	Total Hours of Calibration Time		395	Total Hours of Flagged		687

Table 91 NOx 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	Min. 1-hr (ppb)	Max. 1-hr (ppb)	Max. 24-hr (ppb)
January	97.2	682	2.6	0	29	9
February	100.0	636	1.8	0	22	6
March	100.0	704	1.3	0	22	3
April	97.4	661	0.7	0	8	1
May	93.4	654	0.4	0	14	1
June	96.5	657	0.7	0	9	2
July	99.3	698	0.6	0	6	2
August	100.0	704	0.8	0	7	2
September	98.5	670	0.7	0	7	1
October	99.2	699	1.2	0	9	2
November	75.0	512	2.4	0	22	8
December	-	-	-	-	-	-
Annual	96.0	7277	1.2	0	29	9

Table 92 NOx 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 30	31 - 50	51 - 82	83 - 159	>159
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	-	-	-	-	-
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 93 NOx 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
110	6	6	0	0	16	85	338	0
Total Hours of Downtime		138	Total Hours of Calibration Time		423	Total Hours of Flagged		561

Table 94 NO 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	Min. 1-hr (ppb)	Max. 1-hr (ppb)	Max. 24-hr (ppb)
January	97.2	682	0.6	0	22	3
February	100.0	636	0.4	0	14	2
March	100.0	704	0.1	0	9	1
April	97.4	661	0.1	0	7	0
May	93.4	654	0.1	0	8	1
June	96.5	657	0.1	0	4	1
July	99.3	698	0.1	0	3	1
August	100.0	704	0.1	0	4	1
September	98.5	670	0.2	0	6	1
October	99.2	699	0.3	0	6	1
November	75.0	512	1.0	0	17	5
December	-	-	-	-	-	-
Annual	96.0	7277	0.3	0	22	5

Table 95 NO 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 30	31 - 50	51 - 82	83 - 159	>159
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	-	-	-	-	-
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 96 NO 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
110	6	6	0	0	16	85	338	0
Total Hours of Downtime		138	Total Hours of Calibration Time		423	Total Hours of Flagged		561

Table 97 NO2 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	Min. 1-hr (ppb)	Max. 1-hr (ppb)	# of 1-hr AAAQO Exceedances	Max. 24-hr (ppb)
January	97.2	682	2.0	0	17	0	6
February	100.0	636	1.4	0	15	0	4
March	100.0	704	1.1	0	13	0	2
April	97.4	661	0.6	0	6	0	1
May	93.4	654	0.3	0	6	0	1
June	96.5	657	0.5	0	6	0	1
July	99.3	698	0.5	0	4	0	1
August	100.0	704	0.6	0	5	0	2
September	98.5	670	0.4	0	3	0	1
October	99.2	699	0.9	0	5	0	2
November	75.0	512	1.3	0	16	0	4
December	-	-	-	-	-	-	-
Annual	96.0	7277	0.9	0	17	0	6

Table 98 NO2 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 30	31 - 50	51 - 82	83 - 159	>159
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	-	-	-	-	-
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 99 NO2 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
110	6	6	0	0	16	85	338	0
Total Hours of Downtime		138	Total Hours of Calibration Time		423	Total Hours of Flagged		561

Table 100 O3 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	Min. 1-hr (ppb)	Max. 1-hr (ppb)	# of 1-hr AAAQO Exceedances	Max. 24-hr (ppb)
January	99.2	700	24.2	0	44	0	38
February	100.0	640	26.8	6	45	0	41
March	99.9	707	33.8	10	51	0	43
April	97.5	664	32.3	4	53	0	45
May	93.1	657	34.0	5	58	0	49
June	94.4	644	29.5	3	63	0	45
July	99.3	702	25.6	2	66	0	40
August	100.0	708	23.5	4	49	0	31
September	98.2	671	23.9	4	47	0	34
October	98.9	701	24.3	2	44	0	37
November	75.1	515	16.0	1	34	0	27
December	-	-	-	-	-	-	-
Annual	96.0	7309	26.7	0	66	0	49

Table 101 O3 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 30	31 - 50	51 - 82	83 - 159	>159
January	67.7%	32.3%	0.0%	0.0%	0.0%
February	68.4%	31.6%	0.0%	0.0%	0.0%
March	32.8%	67.0%	0.1%	0.0%	0.0%
April	36.9%	62.3%	0.8%	0.0%	0.0%
May	34.1%	61.5%	4.4%	0.0%	0.0%
June	54.5%	38.5%	7.0%	0.0%	0.0%
July	66.0%	28.9%	5.1%	0.0%	0.0%
August	72.5%	27.5%	0.0%	0.0%	0.0%
September	65.7%	34.3%	0.0%	0.0%	0.0%
October	67.8%	32.2%	0.0%	0.0%	0.0%
November	95.9%	4.1%	0.0%	0.0%	0.0%
December	-	-	-	-	-
Annual	60.2%	38.2%	1.6%	0.0%	0.0%

Table 102 O3 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
110	6	3	0	0	26	50	336	0
Total Hours of Downtime		145	Total Hours of Calibration Time		386	Total Hours of Flagged		531

Table 103 THC 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	94.4	666	1.98	1.89	2.28	2.18
February	100.0	640	1.96	1.86	2.22	2.06
March	100.0	707	1.96	1.88	2.24	2.05
April	91.3	622	1.94	1.83	2.25	2.00
May	93.4	659	1.92	1.85	2.11	1.94
June	96.4	657	1.95	1.83	2.40	2.13
July	96.9	683	1.99	1.88	2.36	2.08
August	100.0	707	1.97	1.86	2.39	2.21
September	98.3	672	1.95	1.89	2.06	2.00
October	99.1	700	1.96	1.90	2.03	1.99
November	74.6	512	1.95	1.90	2.08	2.00
December	-	-	-	-	-	-
Annual	94.9	7225	1.96	1.83	2.40	2.21

Table 104 THC 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 2	3 - 5	6 - 10	11 - 40	>40
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	-	-	-	-	-
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 105 THC 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
110	110	2	0	0	2	52	334	0
Total Hours of Downtime		224	Total Hours of Calibration Time		386	Total Hours of Flagged		610

Table 106 CH4 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	94.4	666	1.97	1.89	2.21	2.14
February	100.0	640	1.96	1.86	2.14	2.06
March	100.0	707	1.96	1.88	2.23	2.04
April	91.3	622	1.93	1.83	2.03	1.96
May	93.4	659	1.91	1.85	1.99	1.93
June	96.4	657	1.93	1.82	2.28	2.00
July	96.9	683	1.98	1.88	2.31	2.03
August	100.0	707	1.97	1.86	2.30	2.10
September	98.3	672	1.95	1.89	2.06	2.00
October	99.1	700	1.96	1.90	2.03	1.99
November	74.6	512	1.95	1.90	2.07	2.00
December	-	-	-	-	-	-
Annual	94.9	7225	1.95	1.82	2.31	2.14

Table 107 CH4 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 2	3 - 5	6 - 10	11 - 20	>20
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	-	-	-	-	-
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 108 CH4 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
110	110	2	0	0	2	52	334	0
Total Hours of Downtime		224	Total Hours of Calibration Time		386	Total Hours of Flagged		610

Table 109 NMHC 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	94.4	666	0.00	0.00	0.16	0.04
February	100.0	640	0.00	0.00	0.18	0.01
March	100.0	707	0.00	0.00	0.19	0.02
April	91.3	622	0.01	0.00	0.26	0.03
May	93.4	659	0.01	0.00	0.21	0.03
June	96.4	657	0.03	0.00	0.25	0.14
July	96.9	683	0.02	0.00	0.16	0.08
August	100.0	707	0.01	0.00	0.21	0.12
September	98.3	672	0.00	0.00	0.03	0.00
October	99.1	700	0.00	0.00	0.00	0.00
November	74.6	512	0.00	0.00	0.02	0.00
December	-	-	-	-	-	-
Annual	94.9	7225	0.01	0.00	0.26	0.14

Table 110 NMHC 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 0.1	0.2 - 0.3	0.4 - 0.9	1 - 2	>2
January	99.8%	0.2%	0.0%	0.0%	0.0%
February	99.8%	0.2%	0.0%	0.0%	0.0%
March	99.9%	0.1%	0.0%	0.0%	0.0%
April	98.9%	1.1%	0.0%	0.0%	0.0%
May	99.8%	0.2%	0.0%	0.0%	0.0%
June	95.7%	4.3%	0.0%	0.0%	0.0%
July	99.6%	0.4%	0.0%	0.0%	0.0%
August	98.0%	2.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	-	-	-	-	-
Annual	99.2%	0.8%	0.0%	0.0%	0.0%

Table 111 NMHC 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
110	110	2	0	0	2	52	334	0
Total Hours of Downtime		224	Total Hours of Calibration Time		386	Total Hours of Flagged		610

Table 112 PM2.5 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ug/m3)	Min. 1-hr (ug/m3)	Max. 1-hr (ug/m3)	# of 1-hr AAAQO Exceedances	Max. 24-hr (ug/m3)	# of 24-hr AAAQO Exceedances
January	99.2	737	4.2	0	52	0	27	0
February	100.0	671	3.0	0	16	0	10	0
March	96.5	717	2.8	0	16	0	5	0
April	97.9	704	3.1	0	22	0	6	0
May	94.0	698	3.6	1	37	0	8	0
June	96.1	691	5.9	1	25	0	18	0
July	77.8	578	20.7	1	154	17	63	7
August	98.7	733	8.6	0	67	0	30	1
September	97.8	700	2.7	0	33	0	6	0
October	99.2	736	3.0	1	9	0	6	0
November	71.3	512	5.8	1	40	0	21	0
December	-	-	-	-	-	-	-	-
Annual	93.5	7477	5.8	0	154	17	63	8

Table 113 PM2.5 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ug/m3)				
	0 - 50	51 - 80	81 - 120	121 - 240	>240
January	99.9%	0.1%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	86.7%	10.4%	2.2%	0.7%	0.0%
August	99.7%	0.3%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	-	-	-	-	-
Annual	98.8%	1.0%	0.2%	0.1%	0.0%

Table 114 PM2.5 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
108	235	1	0	0	0	15	0	0
Total Hours of Downtime		334	Total Hours of Calibration Time		15	Total Hours of Flagged		359

Table 115 RH 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (%)	Min. 1-hr (%)	Max. 1-hr (%)	Max. 24-hr (%)
January	99.2	738	75.9	45	96	93
February	100.0	672	69.5	35	94	79
March	100.0	744	65.2	22	94	86
April	98.1	706	59.2	19	96	88
May	94.6	704	55.8	14	99	85
June	97.2	700	59.6	20	99	91
July	99.5	740	66.6	22	99	92
August	100.0	744	72.7	26	99	91
September	98.9	712	75.7	31	99	96
October	99.3	739	70.3	24	99	98
November	74.9	539	86.0	34	99	99
December	-	-	-	-	-	-
Annual	96.5	7738	68.8	14	99	99

Table 116 RH 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
96	1	2	0	0	0	0	0	0
Total Hours of Downtime		99	Total Hours of Calibration Time		0	Total Hours of Flagged		99

Table 117 BP 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (mb)	Min. 1-hr (mb)	Max. 1-hr (mb)	Max. 24-hr (mb)
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	55.0	396	944	932	954	951
July	99.5	740	947	935	956	955
August	100.0	744	943	931	953	952
September	98.9	712	940	927	952	950
October	99.3	739	941	923	959	957
November	74.9	539	942	926	959	954
December	-	-	-	-	-	-
Annual	87.9	3870	943	923	959	957

Table 118 BP 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
20	1	1	0	321	0	0	0	0
Total Hours of Downtime		343	Total Hours of Calibration Time		0	Total Hours of Flagged		343

Table 119 AT 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (mb)	Min. 1-hr (mb)	Max. 1-hr (mb)	Max. 24-hr (mb)
January	99.2	738	-10.2	-33.3	7.3	1.9
February	100.0	672	-17.8	-43.6	7.9	3.9
March	100.0	744	-3.9	-25.8	13.7	4.0
April	98.1	706	1.1	-17.4	20.3	10.4
May	94.6	704	10.0	-4.4	24.2	18.3
June	97.2	700	17.0	-2.3	40.2	31.0
July	99.5	740	17.0	2.8	33.0	27.4
August	100.0	744	14.7	-1.2	31.6	22.8
September	98.9	712	9.8	-3.2	23.3	15.5
October	99.3	739	2.9	-13.6	15.2	10.1
November	74.9	539	-5.4	-22.2	7.2	1.9
December	-	-	-	-	-	-
Annual	96.5	7738	3.2	-43.6	40.2	31.0

Table 120 AT 2021 Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
96	1	2	0	0	0	0	0	0
Total Hours of Downtime		99	Total Hours of Calibration Time		0	Total Hours of Flagged		99

Table 121 ST 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (°C)	Min. 1-hr (°C)	Max. 1-hr (°C)	Max. 24-hr (°C)
January	99.2	738	23.0	21.1	24.8	23.4
February	100.0	672	23.0	20.7	25.4	23.4
March	100.0	744	23.0	20.8	24.3	23.4
April	98.1	706	22.8	20.1	25.0	23.3
May	94.6	704	22.8	21.1	25.2	23.5
June	97.2	700	22.9	21.2	29.3	24.7
July	99.5	740	22.7	20.9	26.5	23.3
August	100.0	744	22.8	21.4	24.1	23.5
September	98.9	712	22.8	20.9	24.2	23.4
October	99.3	739	22.6	20.8	24.7	23.5
November	75.0	540	22.4	21.3	24.4	23.0
December	-	-	-	-	-	-
Annual	96.5	7739	22.8	20.1	29.3	24.7

Table 122 ST Qualifier Flag Summary

P	X	Y	K	N	NRM	C	S	Q
96	1	2	0	0	0	0	0	0
Total Hours of Downtime		99	Total Hours of Calibration Time		0	Total Hours of Flagged		99

Table 123 WS 2021 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (kph)	Min. 1-hr (kph)	Max. 1-hr (kph)	Max. 24-hr (kph)
January	99.2	738	1.3	0.0	30.6	16.9
February	100.0	672	2.2	0.0	29.5	17.8
March	100.0	744	2.4	0.1	22.5	13.4
April	98.1	706	2.2	0.0	34.3	12.3
May	94.6	704	1.3	0.1	19.7	12.8
June	97.2	700	4.1	0.0	30.6	20.8
July	99.5	737	1.8	0.0	25.9	17.1
August	100.0	744	2.4	0.0	23.7	11.6
September	98.9	712	3.5	0.0	28.0	15.0
October	99.3	739	3.0	0.1	30.1	17.4
November	74.9	539	0.8	0.0	24.9	15.6
December	-	-	-	-	-	-
Annual	96.5	7735	2.0	0.0	34.3	20.8

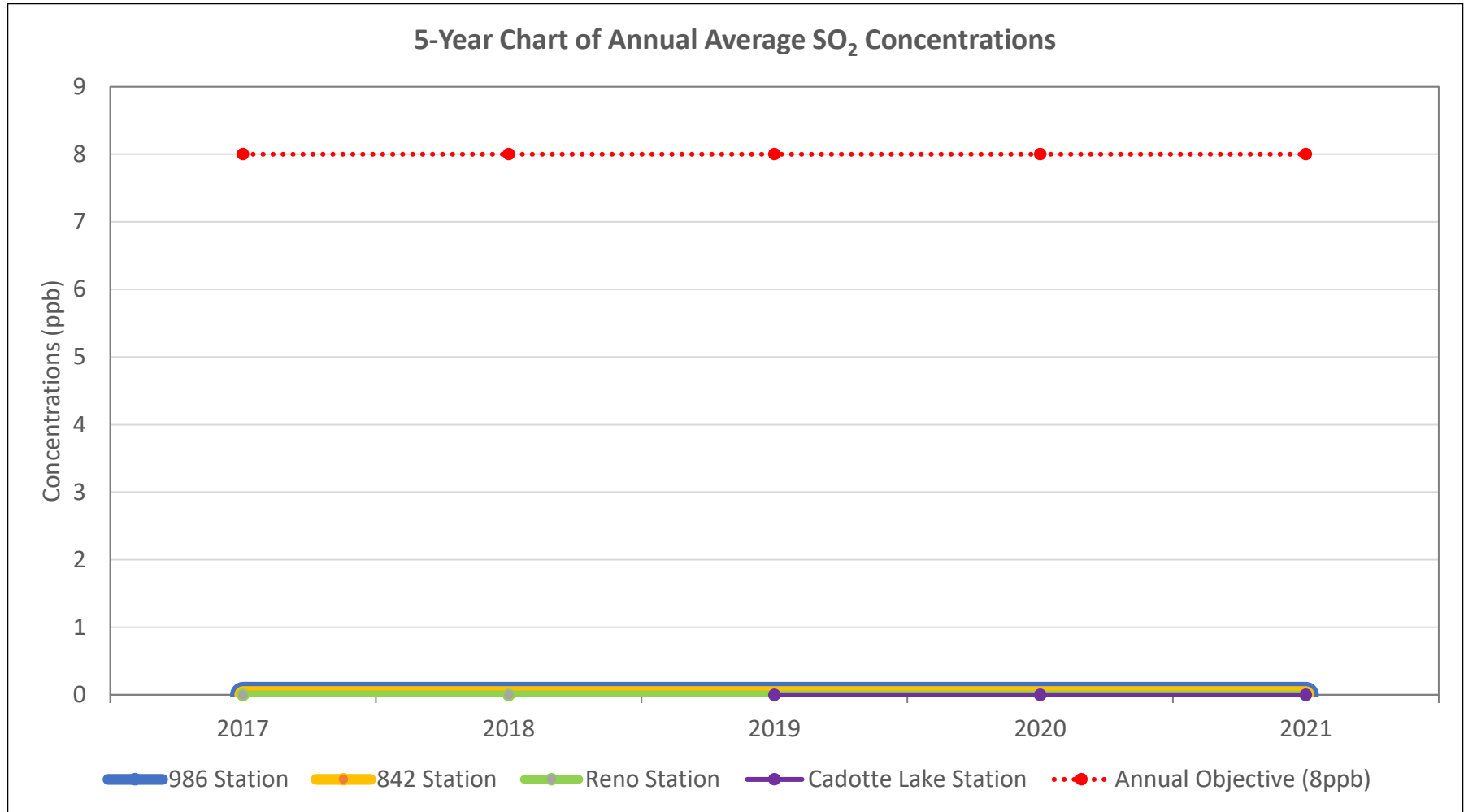
Table 124 WS 2021 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in kph)				
	0 - 6	7 - 15	16 - 29	30 -39	>39
January	63.6%	31.4%	4.7%	0.3%	0.0%
February	61.0%	34.4%	4.5%	0.1%	0.0%
March	49.5%	43.0%	7.5%	0.0%	0.0%
April	58.5%	36.8%	4.2%	0.4%	0.0%
May	52.6%	43.9%	3.6%	0.0%	0.0%
June	51.0%	37.4%	11.4%	0.1%	0.0%
July	54.3%	40.2%	5.6%	0.0%	0.0%
August	59.0%	35.8%	5.2%	0.0%	0.0%
September	60.7%	30.9%	8.4%	0.0%	0.0%
October	52.4%	37.2%	9.9%	0.5%	0.0%
November	70.9%	26.3%	2.8%	0.0%	0.0%
December	-	-	-	-	-
Annual	57.6%	36.1%	6.2%	0.1%	0.0%

Table 125 WS 2021 Qualifier Flag Summary

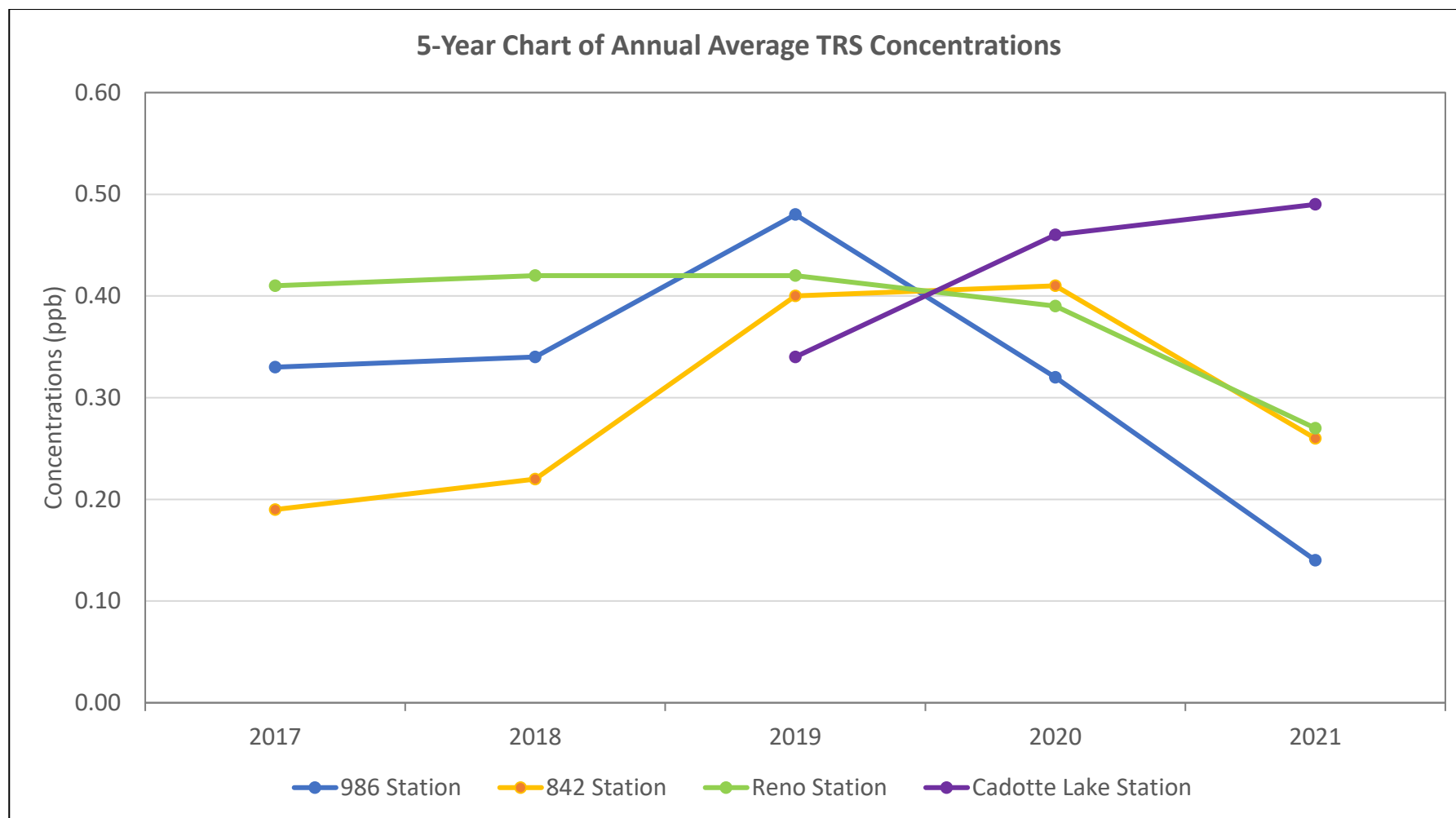
P	X	Y	K	N	NRM	C	S	Q
96	1	2	0	0	0	3	0	0
Total Hours of Downtime		99	Total Hours of Calibration Time		3	Total Hours of Flagged		102

2 5-Year Charts of Annual Average Concentrations



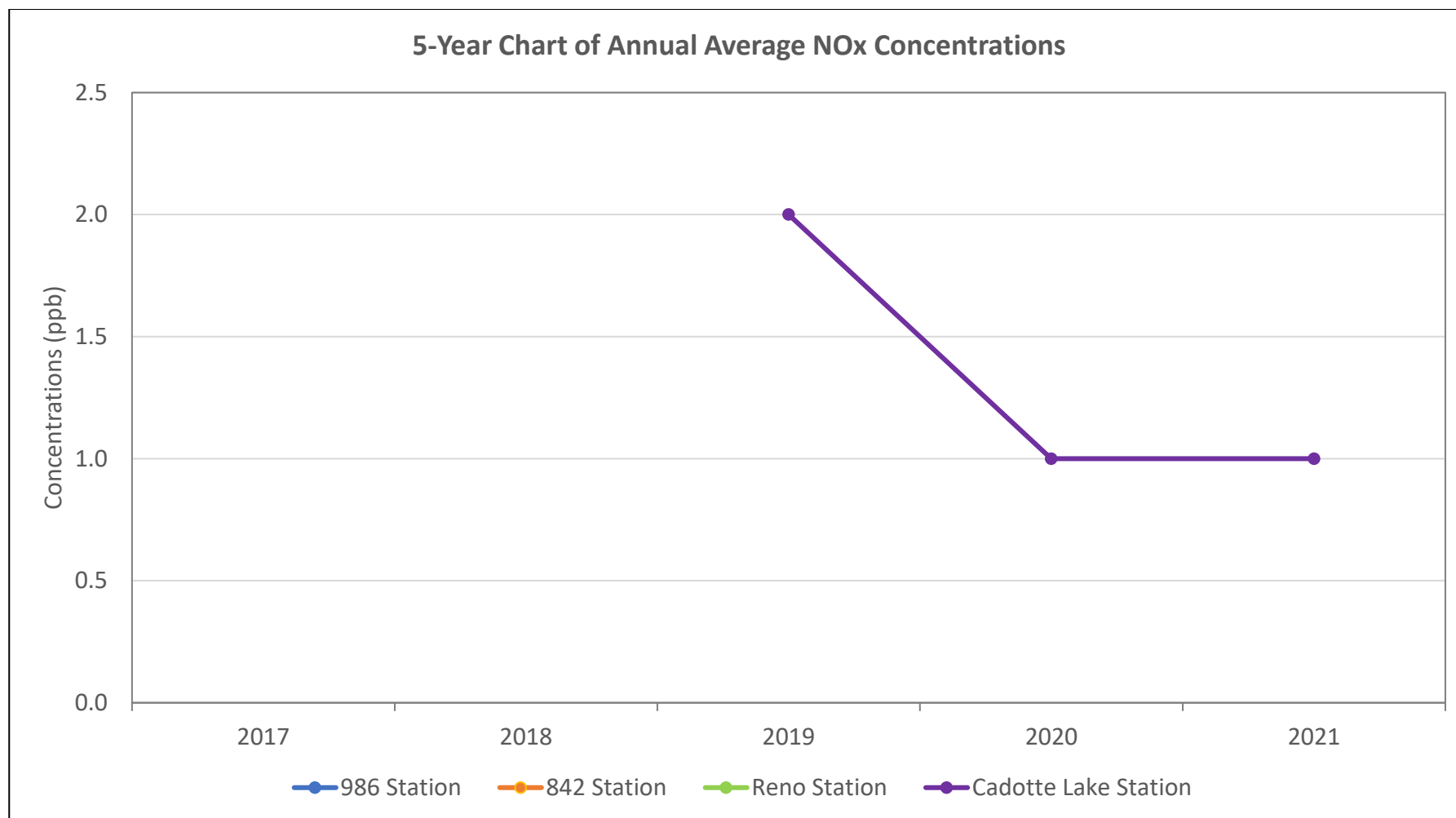
Note:

1. Cadotte Lake Station was installed in October 2019 – no previous data available. 2019 annual average SO₂ concentration for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
2. Cadotte Lake Station was removed in later November 2021. 2021 annual average was calculated based on the monthly averages that were collected from January to November.
3. 2019 average for 986 Station was calculated using both 986b and 986c data.



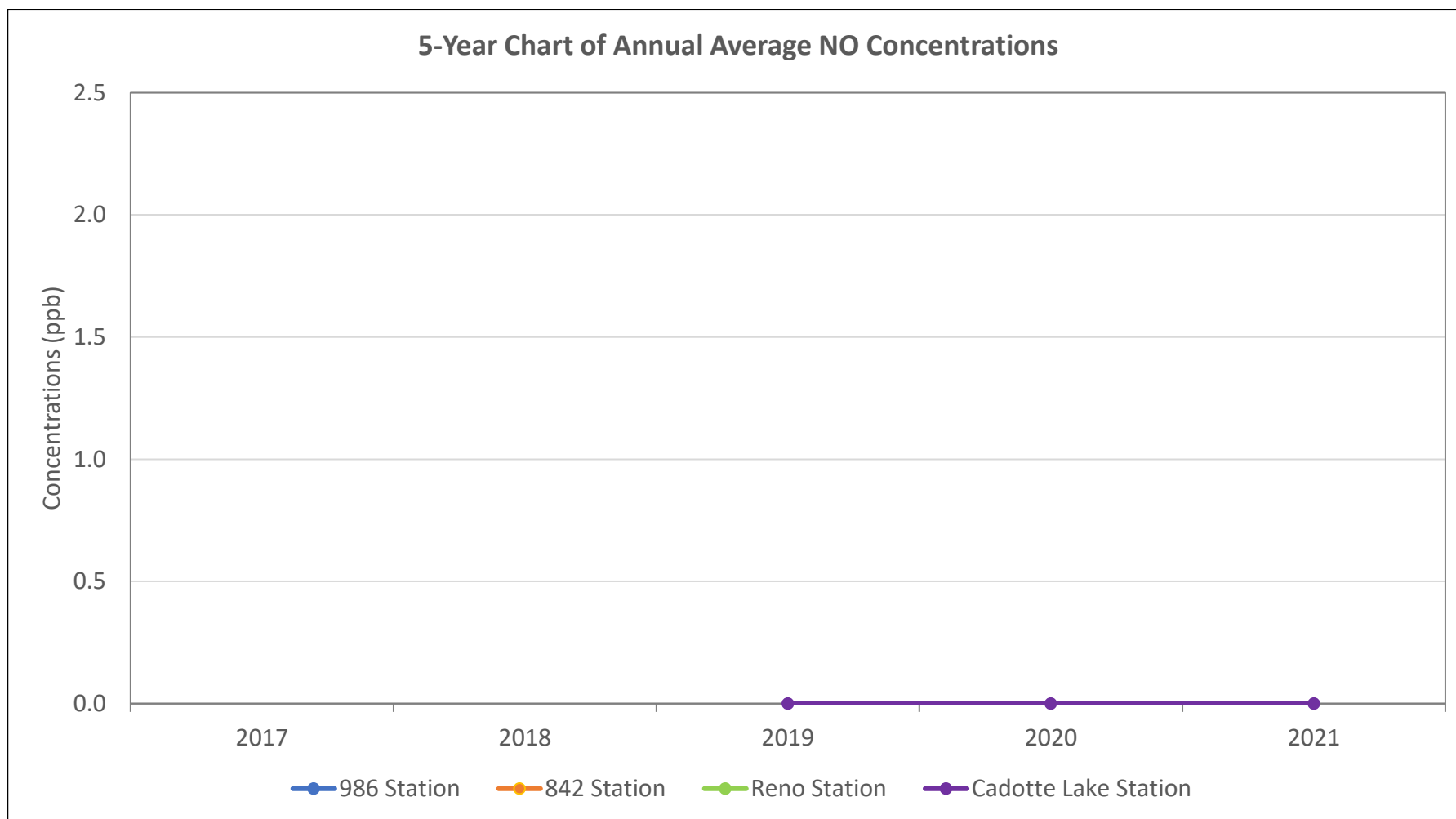
Note:

1. Cadotte Lake Station was installed in October 2019 – no previous data available. 2019 annual average TRS concentration for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
2. Cadotte Lake Station was removed in later November 2021. 2021 annual average was calculated based on the monthly averages that were collected from January to November.
3. 2019 average for 986 Station was calculated using both 986b and 986c data.



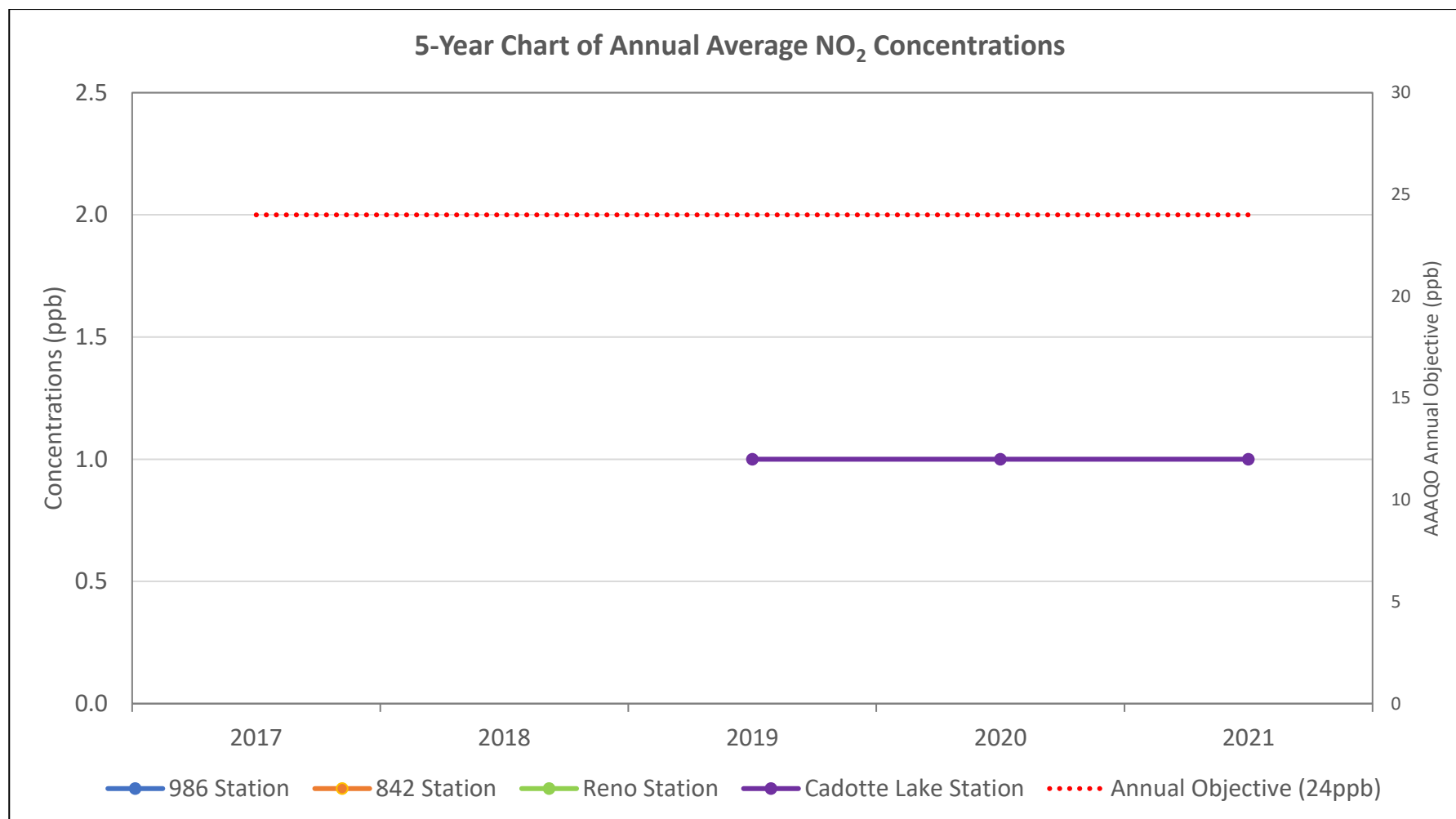
Note:

1. NOx was only monitored at the Cadotte Station Lake Station.
2. Cadotte Lake Station was installed in October 2019 – no previous data available. 2019 annual average NOx concentration for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
3. Cadotte Lake Station was removed in later November 2021. 2021 annual average was calculated based on the monthly averages that were collected from January to November.



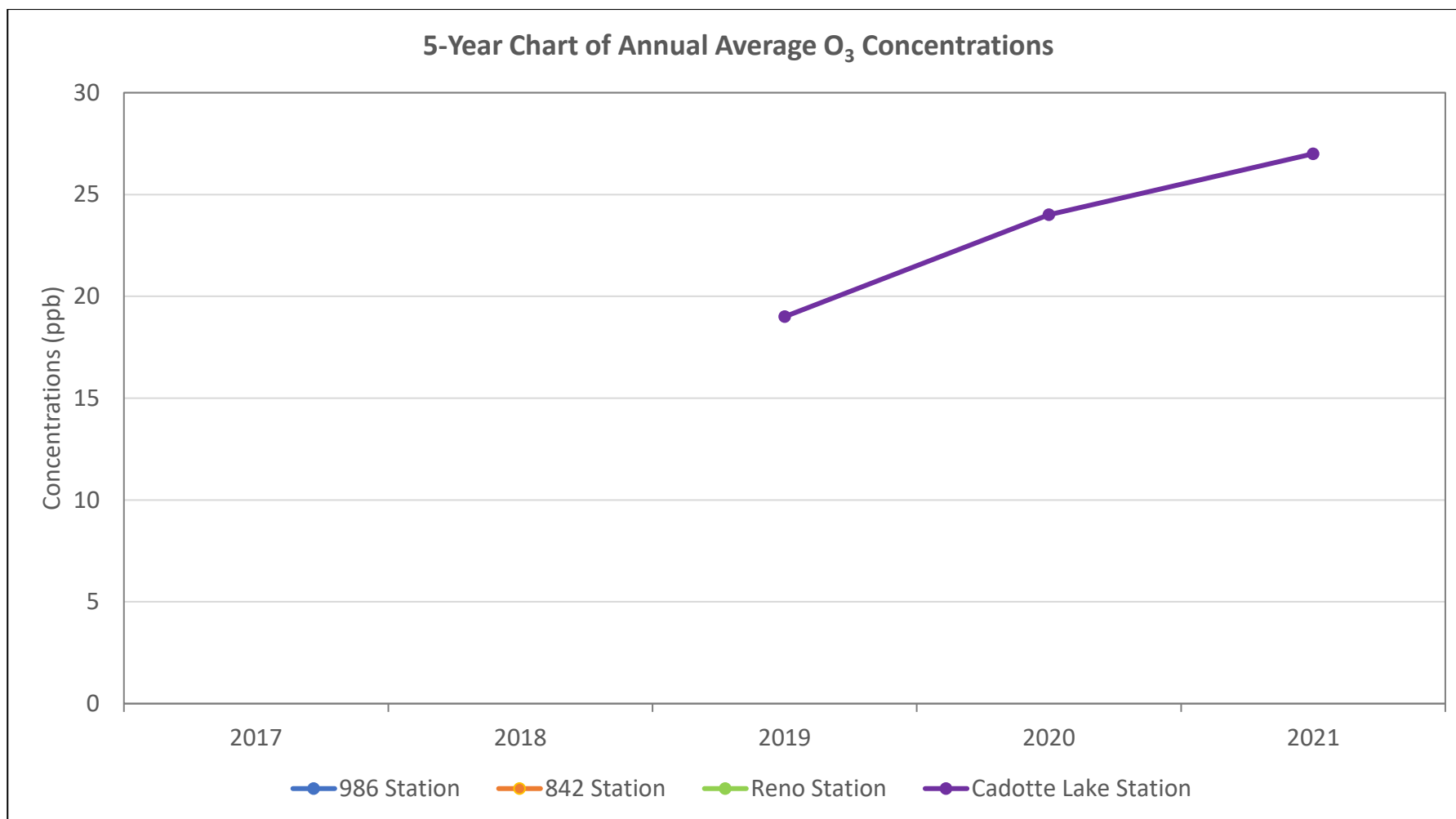
Note:

1. NO was only monitored at the Cadotte Station Lake Station.
2. Cadotte Lake Station was installed in October 2019 – no previous data available. 2019 annual average NO concentration for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
3. Cadotte Lake Station was removed in later November 2021. 2021 annual average was calculated based on the monthly averages that were collected from January to November.



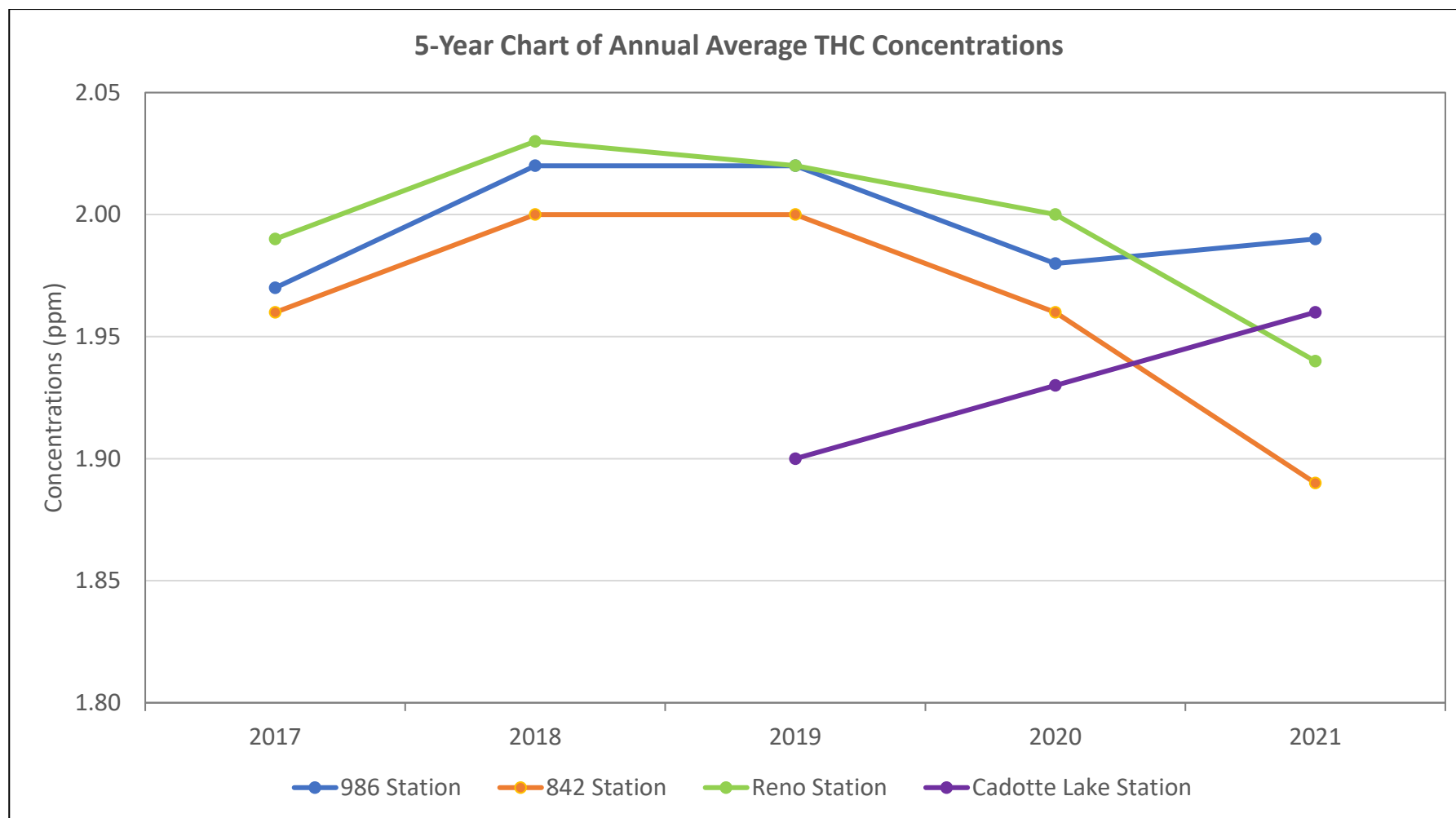
Note:

1. NO₂ was only monitored at the Cadotte Station Lake Station.
2. Cadotte Lake Station was installed in October 2019 – no previous data available. Annual average NO₂ concentration for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
3. Cadotte Lake Station was removed in later November 2021. 2021 annual average was calculated based on the monthly averages that were collected from January to November.



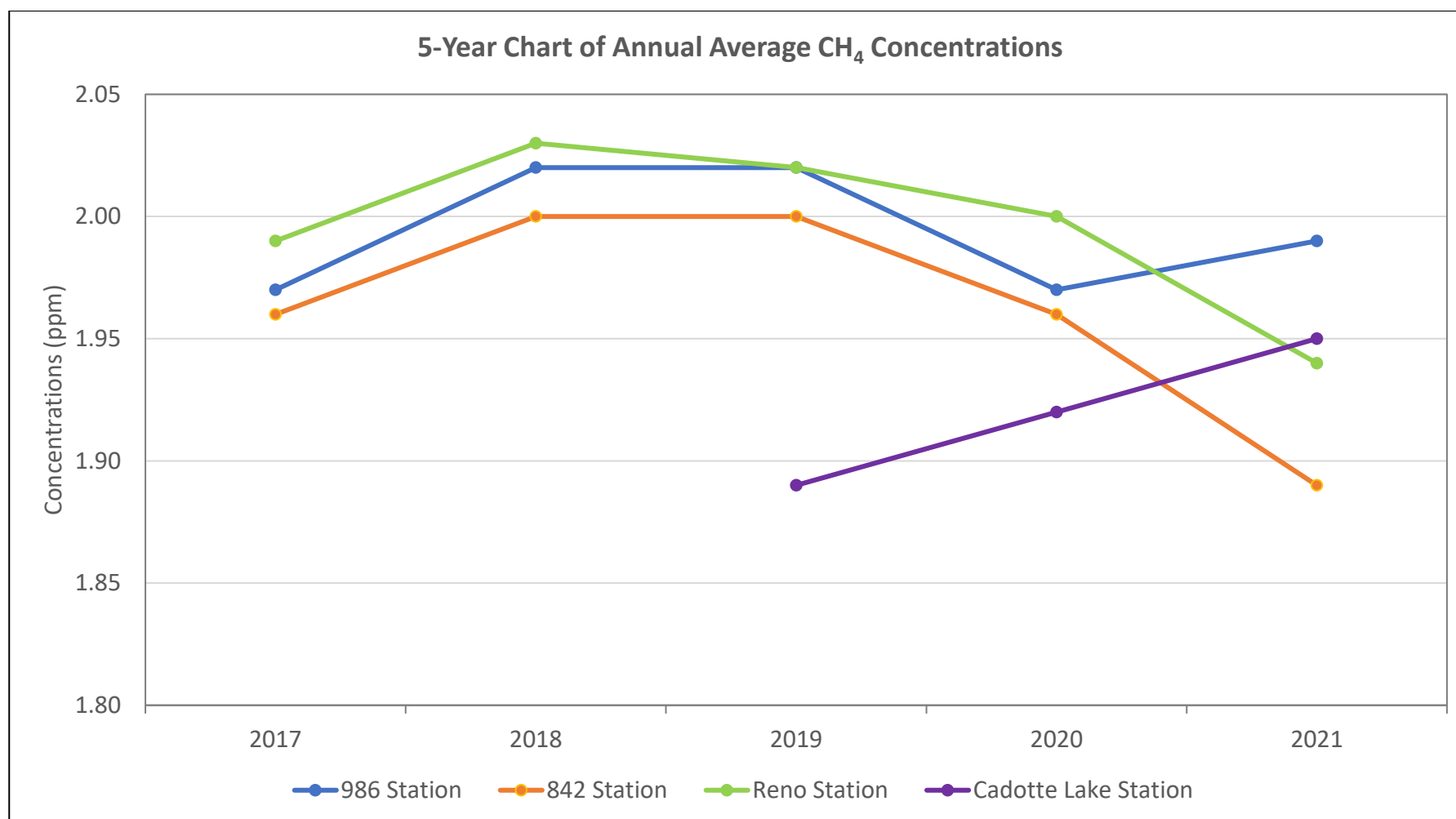
Note:

1. O₃ was only monitored at the Cadotte Lake Station.
2. Cadotte Lake Station was installed in October 2019 – no previous data available. 2019 annual average O₃ concentration for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
3. Cadotte Lake Station was removed in later November 2021. 2021 annual average was calculated based on the monthly averages that were collected from January to November.



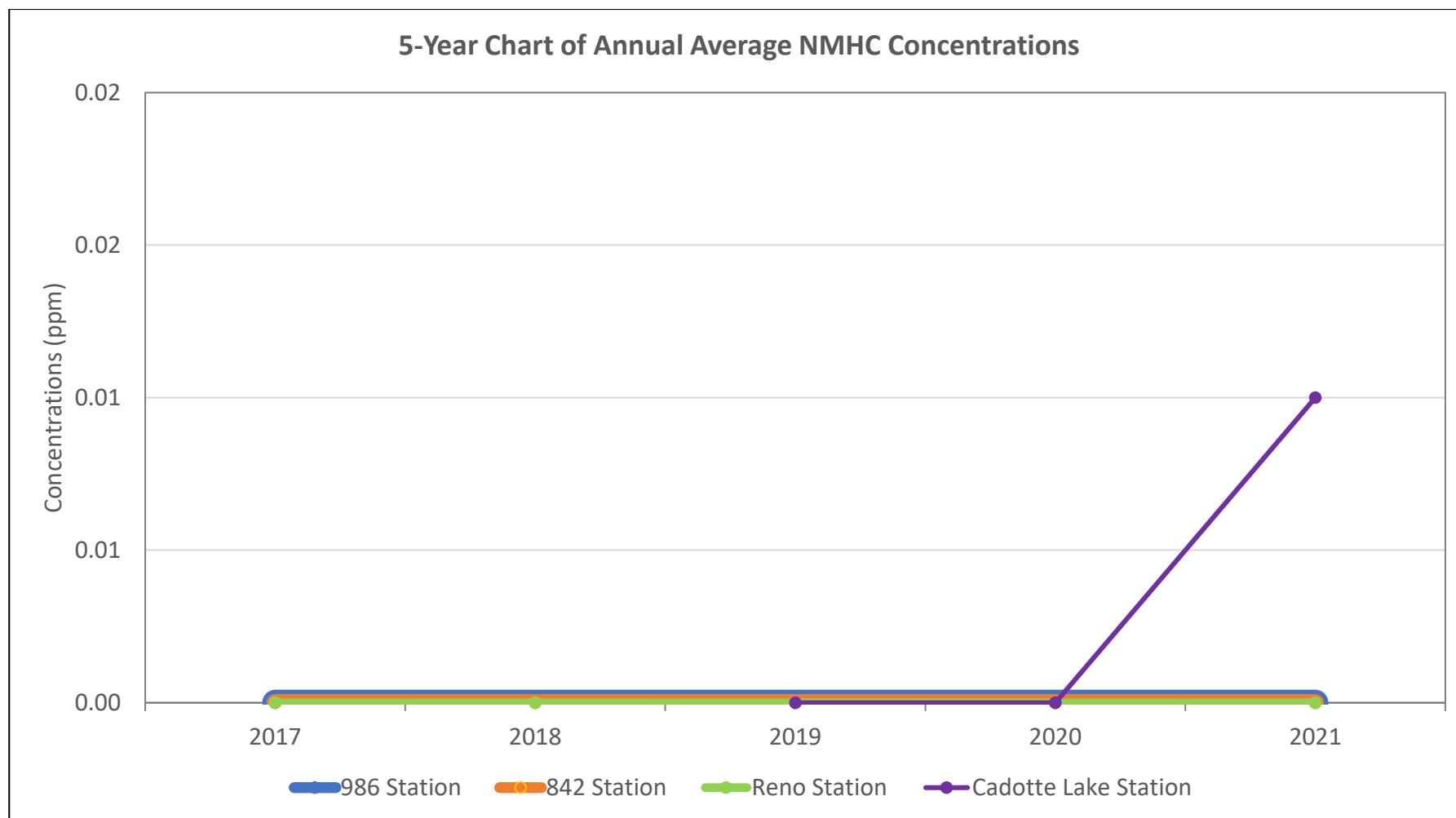
Note:

1. Cadotte Lake Station was installed in October 2019 – no previous data available. 2019 annual average THC concentration for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
2. Cadotte Lake Station was removed in later November 2021. 2021 annual average was calculated based on the monthly averages that were collected from January to November.
3. 2019 average for 986 Station was calculated using both 986b and 986c data.



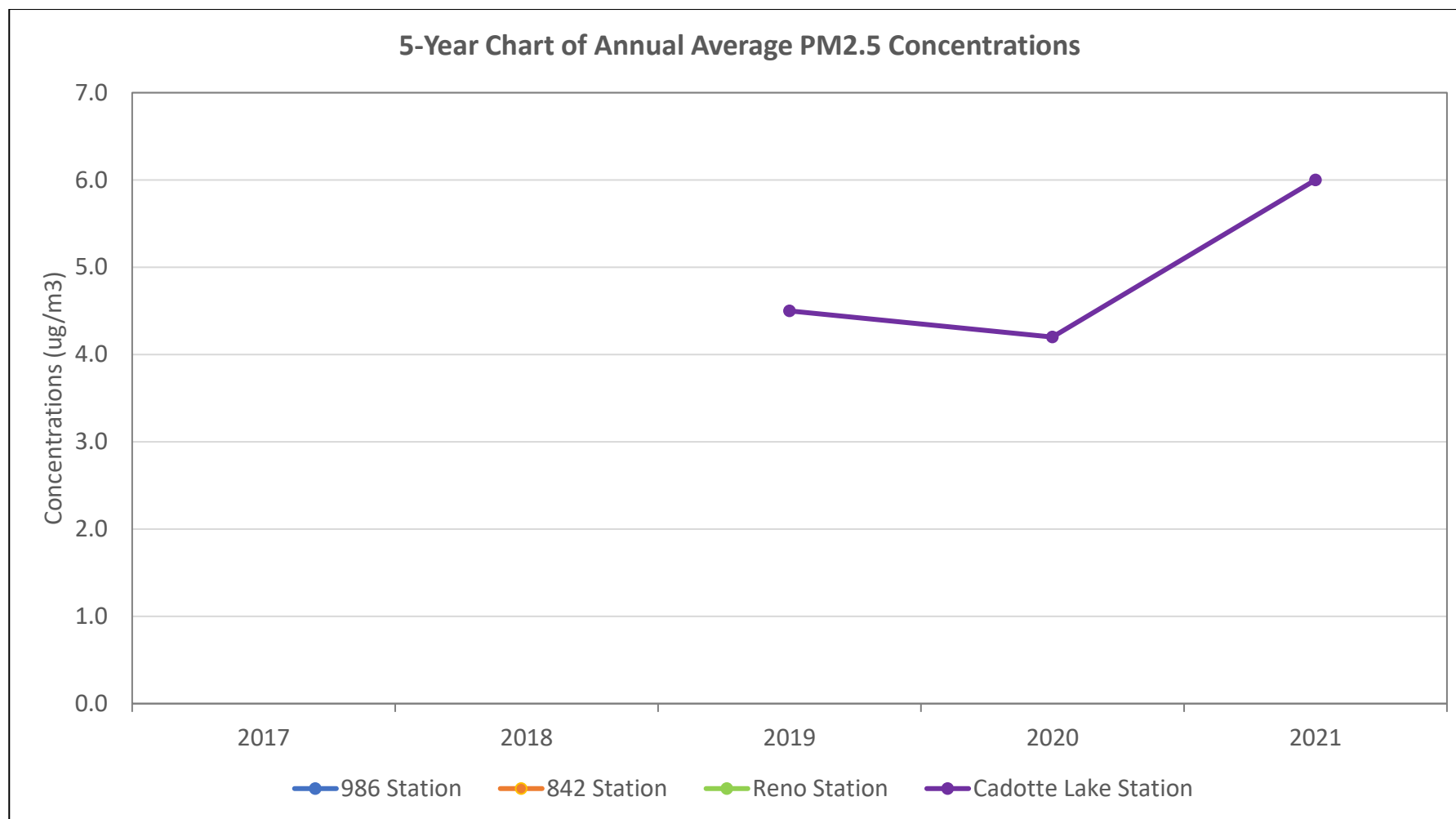
Note:

1. Cadotte Lake Station was installed in October 2019 – no previous data available. 2019 annual average CH₄ concentration for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
2. Cadotte Lake Station was removed in later November 2021. 2021 annual average was calculated based on the monthly averages that were collected from January to November.
3. 2019 average for 986 Station was calculated using both 986b and 986c data.



Note:

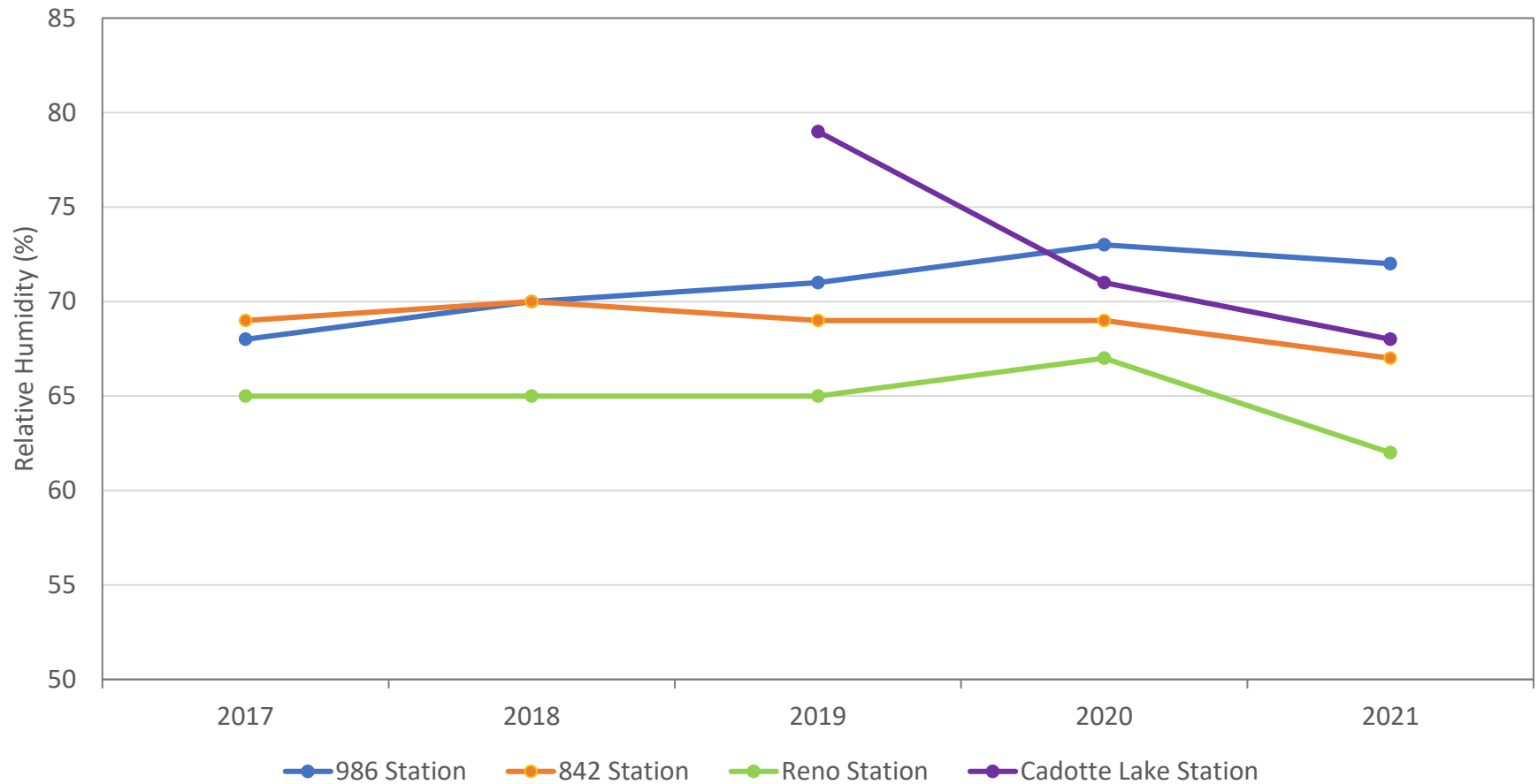
1. Cadotte Lake Station was installed in October 2019 – no previous data available. 2019 annual average NMHC concentration for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
2. Cadotte Lake Station was removed in later November 2021. 2021 annual average was calculated based on the monthly averages that were collected from January to November.
3. 2019 average for 986 Station was calculated using both 986b and 986c data.



Note:

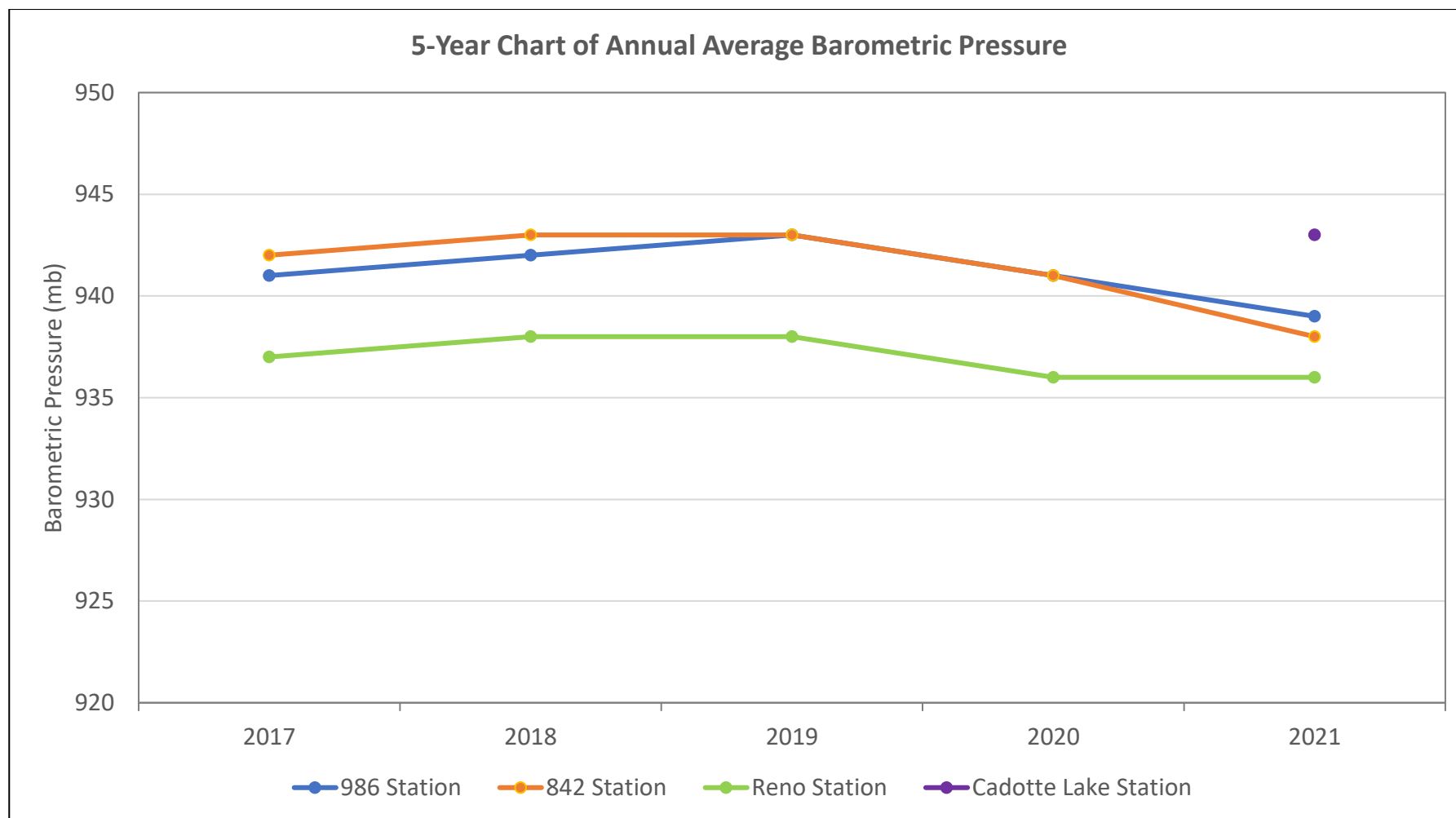
1. PM2.5 was only monitored at the Cadotte Station Lake Station.
2. Cadotte Lake Station was installed in October 2019 – no previous data available. 2019 annual average PM2.5 concentration for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
3. Cadotte Lake Station was removed in later November 2021. 2021 annual average was calculated based on the monthly averages that were collected from January to November.

5-Year Chart of Annual Average Relative Humidity



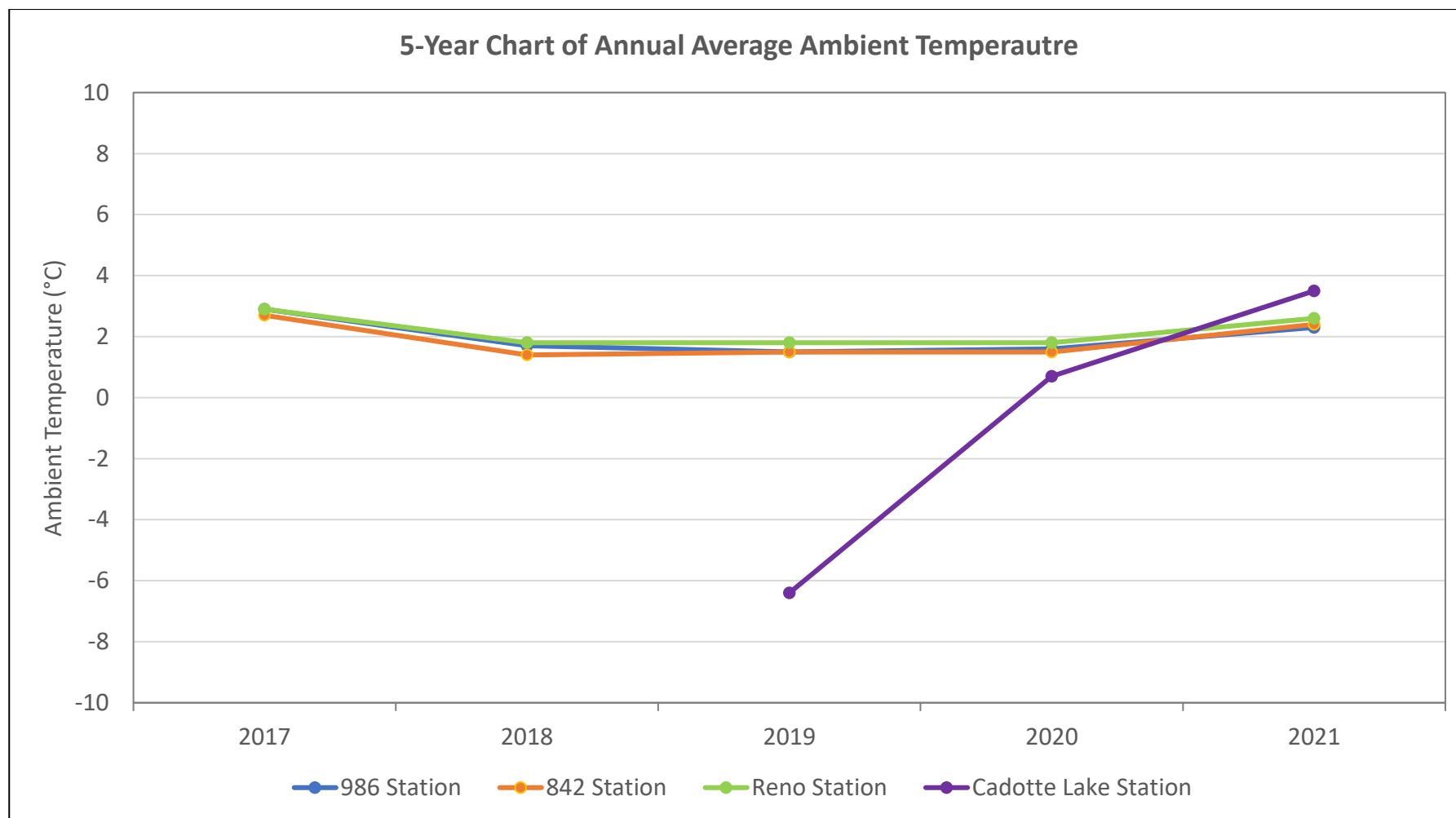
Note:

1. Cadotte Lake Station was installed in October 2019 – no previous data available. 2019 annual average relative humidity for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
2. Cadotte Lake Station was removed in later November 2021. 2021 annual average was calculated based on the monthly averages that were collected from January to November.
3. 2019 average for 986 Station was calculated using both 986b and 986c data.



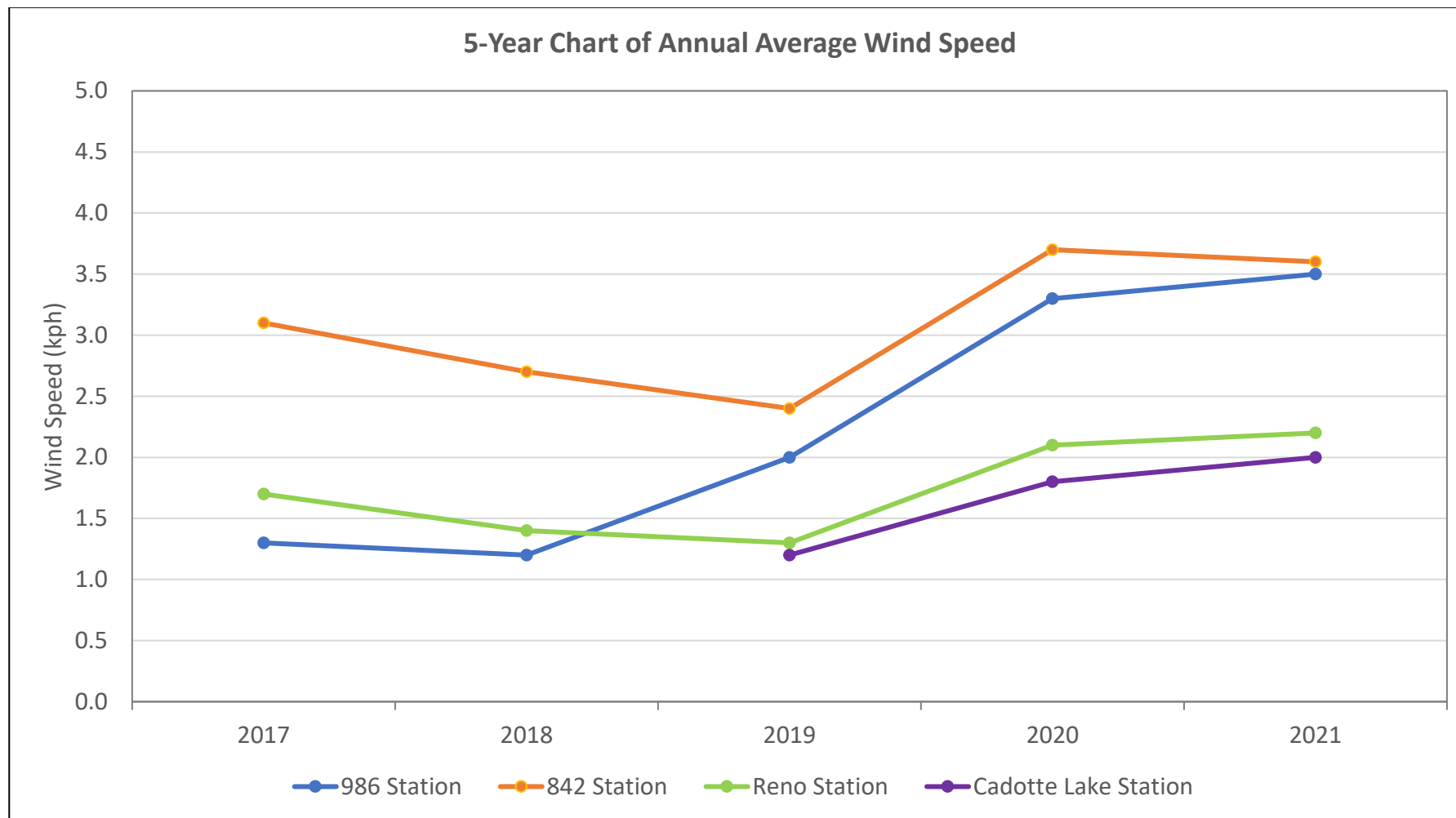
Note:

1. BP sensor was installed at Reno station in 2016 - no previous data available.
2. BP sensor was installed at the Cadotte Lake Station in June 2021 and was removed in November 2021. 2021 annual average was calculated based on the monthly averages that were collected from June to November.
3. 2019 average for 986 Station was calculated using both 986b and 986c data.



Note:

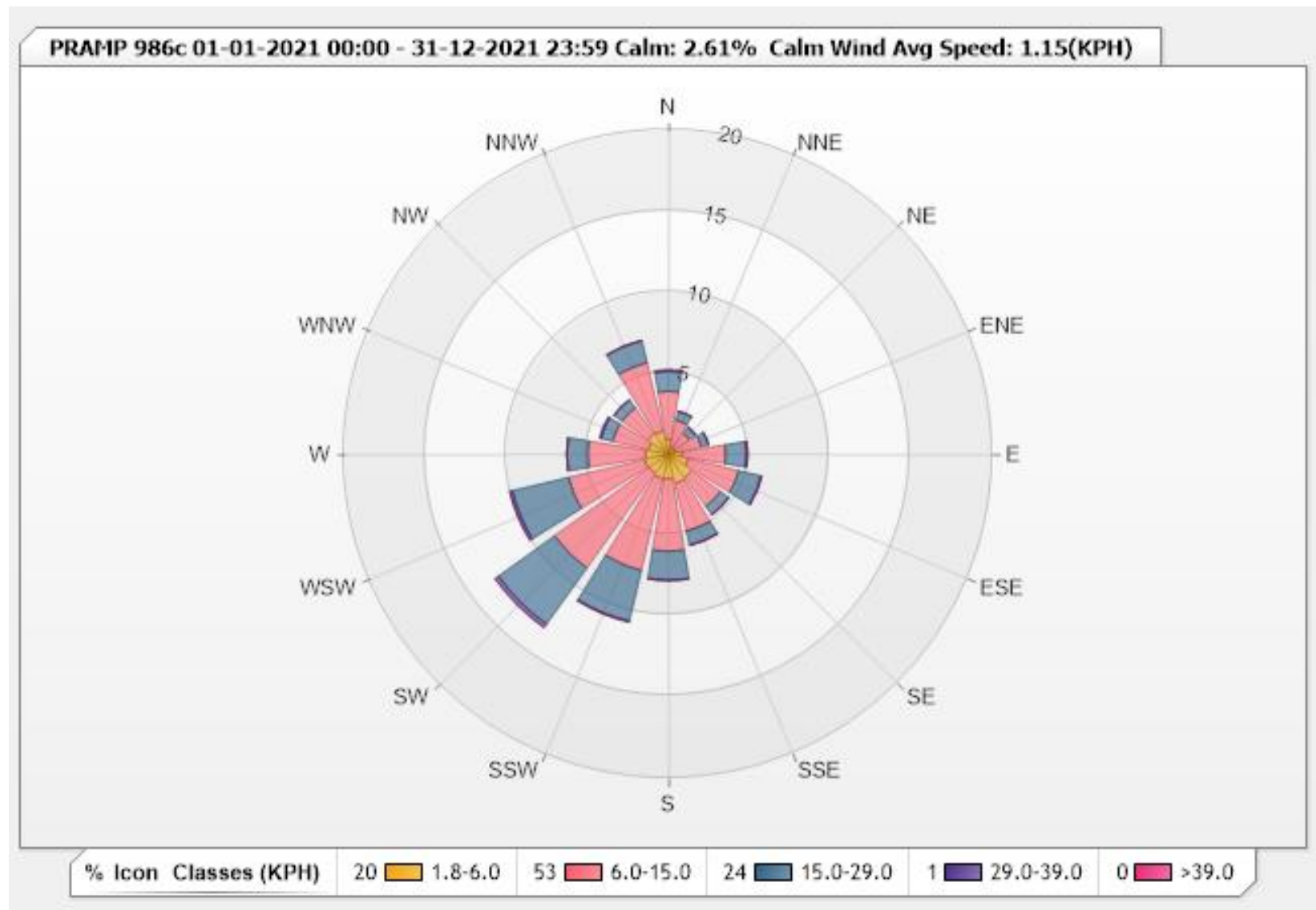
1. Cadotte Lake Station was installed in October 2019 – no previous data available. 2019 annual average ambient temperature concentration for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
2. Cadotte Lake Station was removed in later November 2021. 2021 annual average was calculated based on the monthly averages that were collected from January to November.
3. 2019 average for 986 Station was calculated using both 986b and 986c data.



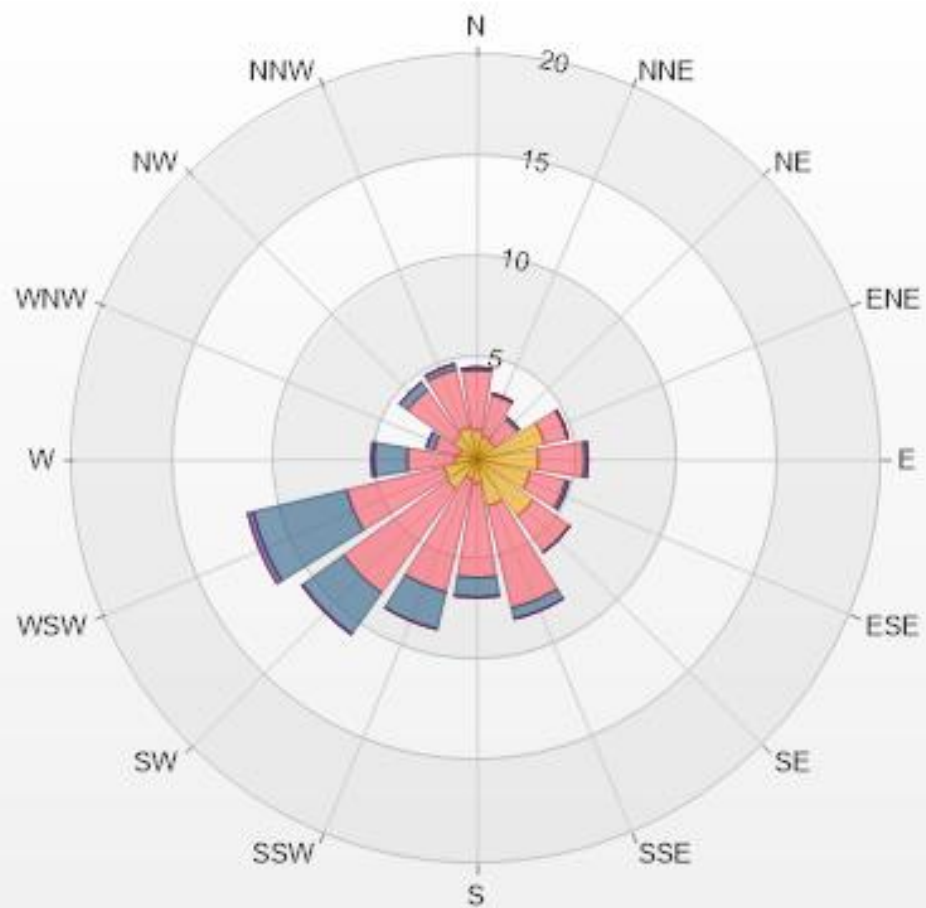
Note:

1. Cadotte Lake Station was installed in October 2019 – no previous data available. 2019 annual average wind speed for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
2. Cadotte Lake Station was removed in later November 2021. 2021 annual average was calculated based on the monthly averages that were collected from January to November.
3. 2019 average for 986 Station was calculated using both 986b and 986c data.

3 Annual Windrose Plots



PRAMP 842b 01-01-2021 00:00 - 31-12-2021 23:59 Calm: 5.90% Calm Wind Avg Speed: 1.04(KPH)



% Icon Classes (KPH)

29 1.8-6.0

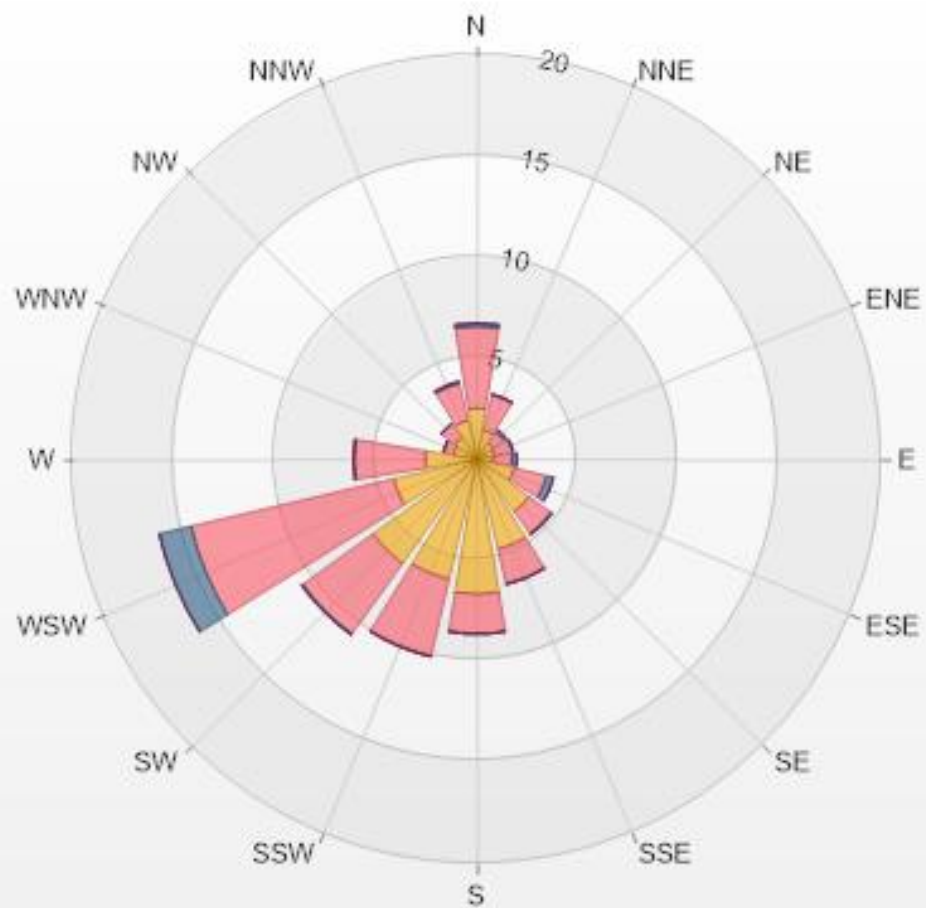
50 6.0-15.0

14 15.0-29.0

0 29.0-39.0

0 >39.0

PRAMP RENO 01-01-2021 00:00 - 31-12-2021 23:59 Calm: 10.21% Calm Wind Avg Speed: 1.03(KPH)



% Icon Classes (KPH)

47 1.8-6.0

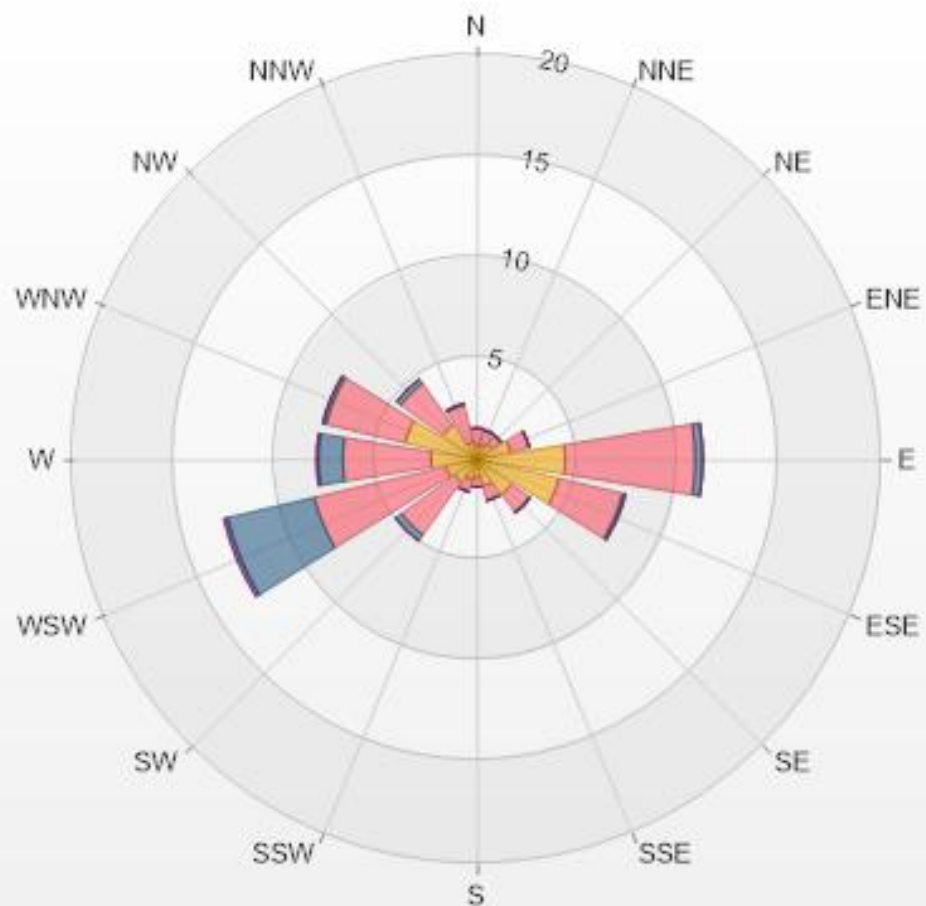
40 6.0-15.0

3 15.0-29.0

0 29.0-39.0

0 >39.0

AQHI Cadotte Lake 01-01-2021 00:00 - 31-12-2021 23:59 Calm: 24.36% Calm Wind Avg Speed: 0.73(KPH)



% Icon Classes (KPH)

30 1.8-6.0

38 6.0-15.0

7 15.0-29.0

0 29.0-39.0

0 >39.0

End of Report

This page, 84 of 84, ends the 2021 Annual Ambient Air Quality Monitoring Report.