



Lakeland Industry & Community Association

2020

Annual Ambient Air Quality Monitoring Report

LICA-2020

Report Prepared By:

Lakeland Industry & Community Association

February 7, 2021

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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 |
| LICA | Lakeland Industry & Community Association |
| mb | millibar |
| mm | millimeter |
| NMHC | Non-Methane Hydrocarbons |
| NO | Nitric Oxide |
| NO2 | Nitrogen Dioxide |
| NOx | Oxide of Nitrogen |
| PAC | Polycyclic Aromatic Compounds |
| ppb | parts per billion |
| ppm | parts per million |
| RH | Relative Humidity |
| SO2 | Sulphur Dioxide |
| ST | Station Temperature |
| STDWD | Standard Deviation Wind Direction |
| 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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February 7, 2021

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Edmonton, AB, T5K 2J6
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RE: 2020 Annual Ambient Air Quality Monitoring Report -LICA Airshed

Enclosed is the *2020 Annual Ambient Air Quality Monitoring Report* for the continuous and passive ambient air quality monitoring stations of the LICA Airshed regional air quality monitoring network, as operated in the year 2020.

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

LICA Airshed
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This report was prepared by Lily Lin and reviewed by Mike Blsaga of LICA Airshed.

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

Listing of Continuous Monitoring Stations

| Station Name | | Cold Lake South | Maskwa | St. Lina | Bonnyville East |
|---------------------------------|--------------|-------------------------|---------------------------|---------------------------|---------------------------|
| Station ID | | 1174 | 1248 | 1250 | 1608 |
| Coordinates | | 54.41402, -110.23316 | 54.604935, -110.452637 | 54.215961, -111.503304 | 54.252747, -110.690611 |
| Continuous Monitoring Parameter | SO2 | √ | √ | √ | √ |
| | TRS | √ | | | |
| | H2S | | √ | √ | √ |
| | THC | √ | √ | √ | √ |
| | CH4 | √ | √ | √ | √ |
| | NMHC | √ | √ | √ | √ |
| | NOX | √ | √ | √ | √ |
| | NO | √ | √ | √ | √ |
| | NO2 | √ | √ | √ | √ |
| | O3 | √ | | √ | √ |
| | PM2.5 | √ | | √ | √ |
| | TPX | √ | √ | √ | |
| | RH | √ | √ | √ | |
| | BP | | √ | √ | |
| | PRECIPTATION | | √ | √ | |
| | WS | √ | √ | √ | √ |
| WD | √ | √ | √ | √ | |
| STDWD | √ | √ | √ | √ | |

Listing of Passive Sampling Stations

| Station ID | Name | Latitude | Longitude | Monitored Parameters |
|------------|----------------------------|-----------|-------------|--|
| 3 | Therien | 54.31085 | -111.22607 | H ₂ S, SO ₂ , NO ₂ , O ₃ |
| 4 | Flat Lake | 54.07262 | -111.2051 | SO ₂ , NO ₂ , O ₃ |
| 5 | Lake Eliza | 53.82417 | -111.16605 | H ₂ S, SO ₂ , NO ₂ , O ₃ |
| 6 | Telegraph Creek | 53.74068 | -110.57655 | SO ₂ , NO ₂ , O ₃ |
| 8 | Muriel-Kehewin | 54.0934 | -110.74437 | SO ₂ , NO ₂ , O ₃ |
| 9 | Dupre | 54.33462 | -110.77965 | SO ₂ , NO ₂ , O ₃ |
| 10 | La Corey | 54.49967 | -110.81792 | H ₂ S, SO ₂ , NO ₂ , O ₃ |
| 11 | Wolf lake | 54.69542 | -110.84253 | H ₂ S, SO ₂ , NO ₂ , O ₃ |
| 12 | Foster Creek | 55.03343 | -110.50453 | H ₂ S, SO ₂ , NO ₂ , O ₃ |
| 13 | Primrose | 54.75848 | -110.45217 | H ₂ S, SO ₂ , NO ₂ , O ₃ |
| 14 | Maskwa | 54.60518 | -110.45263 | H ₂ S, SO ₂ , NO ₂ , O ₃ |
| 15 | Ardmore | 54.4067 | -110.46202 | SO ₂ , NO ₂ , O ₃ |
| 16 | Frog Lake | 53.89065 | -110.38418 | H ₂ S, SO ₂ , NO ₂ , O ₃ |
| 17 | Clear Range | 53.55648 | -110.15423 | H ₂ S, SO ₂ , NO ₂ , O ₃ |
| 18 | Fishing Lake | 53.90295 | -110.07623 | H ₂ S, SO ₂ , NO ₂ , O ₃ |
| 19 | Beaverdam | 54.16925 | -110.23285 | SO ₂ , NO ₂ , O ₃ |
| 22 | Cold Lake South (1) | 54.4137 | -110.23285 | H ₂ S, SO ₂ , NO ₂ , O ₃ |
| 23 | Medley-Martineau | 54.7243 | -110.06618 | SO ₂ , NO ₂ , O ₃ |
| 24 | Fort George | 53.8783 | -110.74807 | H ₂ S, SO ₂ , NO ₂ , O ₃ |
| 25 | Burnt Lake | 54.79104 | -110.33424 | H ₂ S, SO ₂ |
| 26 | Mahihkan | 54.63738 | -110.57538 | H ₂ S, SO ₂ |
| 27 | Mahkeses | 54.59014 | -110.38028 | H ₂ S, SO ₂ |
| 28 | Town of Bonnyville | 54.2753 | -110.74065 | SO ₂ , NO ₂ , O ₃ |
| 29 | Cold Lake South (2) | 54.41385 | -110.23283 | H ₂ S, SO ₂ , NO ₂ , O ₃ |
| 32 | St. Lina | 54.21639 | -111.50295 | H ₂ S, SO ₂ , NO ₂ , O ₃ |
| 40 | Portable (Bonnyville-East) | 54.252747 | -110.690611 | H ₂ S, SO ₂ , NO ₂ , O ₃ |

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 |
|-------------------------------|------------------------------------|------------------------------|-------------------------|------------------------------------|
| Continuous Monitoring Station | Bureau Veritas | Bureau Veritas | LICA / Bureau Veritas | LICA |
| Passive | Bureau Veritas | Bureau Veritas | Bureau Veritas | LICA |

Calibration Report and Data Submission

Hourly data and calibration reports for 2020 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 2020

Cold Lake South Station:

- The following exceedances of AAAQOs were observed at Cold Lake South Station:

Table 1 AAAQO Exceedances at Cold Lake South Station

| Date | Time | Avg. Period | Reading (ug/m3) | Wind speed (kph) | Wind Direction | AEP Reference # |
|--------|-------|-------------|-----------------|------------------|----------------|-----------------|
| 05-Dec | 21:00 | 1-Hour | 84 | 1.7 | 67° | 374260 |

- One exceedance of the 1-hour PM_{2.5} objective was recorded in December 2020. This is assumed to be the result of a smoke from home heating from nearby residences.
- The AQM station was off-line between April 21 and April 23 for housekeeping and installation of a new PM analyzer. All gas analyzers were back on-line after installation calibrations were completed on April 24 (Notification-LICA-20200421). A range of sixty-three to eighty-four hours of downtime was recorded due to this event. Because of this shutdown, the 90% operational uptime requirement for all gas parameters was not met this month (AEP Reference #: 365782).
- Meteorological parameters: All the meteorological sensors were connected via RMY32400 translator device on September 25 between hour 8 and hour 12. Changes were made on the datalogger configurations accordingly.
- THC/CH₄/NMHC: The analyzer failed due to probable actuator/valve malfunction on April 27 hour 0. A shut-down calibration could not be achieved on the Thermo 55i analyzer, s/n: 1180030034, before it was removed. The Thermo 55i analyzer, s/n: 1236656107, was installed on April 27. Column conditioning was performed overnight before an installation calibration was completed.
- PM_{2.5}: The Thermo 5030 Sharp unit, s/n: CM-2209, was removed on April 20. A Teledyne T640 unit, s/n: 575, was installed on April 24. The Teledyne T640 monitors and collects both PM_{2.5} and PM₁₀ data. The method changed from light scattering spectrometry and beta attenuation (Thermo 5030 Sharp) to light scattering spectrometry (Teledyne T640). PM₁₀ monitoring is being conducted by LICA for its own purposes (analysis of PM_{2.5}/PM₁₀ ratios and Federal Reference Method data correlation). LICA will not submit PM₁₀ results to the Regulator at this time because the method does not meet Air Monitoring Directive (AMD) requirements; the method meets AMD requirements for PM_{2.5}. PM₁₀ data are available upon request (Notification-LICA-20200519).
- BP: A MetOne 092 sensor, s/n: Y23368, was installed on August 28. Valid hourly data will be collected, starting September 1.
- RH/TPX:
 - The Rotronic Hydroclip-S3 sensor, s/n: PFD919-121406, on September 25 hour 21. A new Rotronic HC2A-S3 sensor, S/n: 61116376, was installed on September 29 hour 18.
 - The Rotronic HC2A-S3 TPX/RH sensor, s/n: 61116376, was removed from the station after a shut down audit on December 21. A Rotronic HC2A-S3 TPX/RH sensor, s/n: 20404750, was installed on December 21. An installation audit was completed on December 22.

- WS/WD/STDWD:
 - The RM Young wind system, s/n: 161466, was removed, and the MetOne wind system, s/n: H10703, was installed on February 25.
 - As the ultrasonic MetOne system, s/n: H10703, has exhibited problematic performance in the past, and as a precautionary measure, the unit was replaced with a BV-supplied RM Young unit, s/n: 32925, on April 17.
 - The BV-supplied RM Young 05305VK wind system, s/n: 32925, was removed, and the LICA-owned RM Young 05305AQ wind system, s/n: 177354, was installed on September 25.

Maskwa Station:

- There were no exceedances of AAAQOs at the Maskwa Station in 2020.
- Uptime was over 90% for all instruments for all months at the Maskwa Station. The operational uptime of May for PM2.5 was 31.2%. As the analyzer was installed in the middle of the month, the AMD 90% operational uptime requirement is not applicable this month.
- THC/CH4/NMHC:
 - Following a successful shut-down calibration on February 11, the Thermo 55i analyzer, s/n: 1236656188, was removed, and the Thermo 55i analyzer, s/n: 1236656107, was installed. The analyzer was left offline for column conditioning overnight. An installation calibration was performed on February 12. Poor sample injections started being recorded on February 14 hour 23. The analyzer failed the scheduled daily calibration check on February 15 hour 6. A complete shut-down calibration was not possible to be performed on the Thermo 55i analyzer, s/n: 1236656107, before it was removed. The Thermo 55i analyzer, s/n: 1180930026, was installed following column conditioning overnight. An installation calibration was performed on February 16. Data were invalidated back to the point when evidence of poor performance started, which was February 14 hour 23.
- PM2.5: The Sharp 5030 analyzer, s/n: CM2209, was installed following an installation calibration on May 22.
- O3: A Thermo 49iQ analyzer, s/n: 1202068570, was installed on September 24. Valid hourly data will be collected, starting October 1.

St. Lina Station:

- There were no exceedances of AAAQOs at the St. Lina Station in 2020.
- Uptime was over 90% for all instruments for all months at the St. Lina Station, except precipitation (41.5% in October, 0.0% in November and 0.0% in December).
- Precipitation: During the site visit on November 11, LICA staff observed that an excessive amount of snow had accumulated in the tipping bucket rain gauge collector funnel. The heater built in the rain gauge was confirmed to be non-functional on November 23. As there were insufficient information available to determine when the heater failed, data collected since ambient temperatures dropped below freezing, which was October 13 hour 21, are considered to be inaccurate and were discarded. A replacement rain gauge has been ordered and

installation is anticipated in January 2021. Due to this event, 435 hours of data were discarded in October. No data were collected in November and December.

- Wind System: On February 26, the BV-supplied RM Young wind system, s/n: 65521, was removed following a shut-down calibration on February 26. The LICA-owned RM Young wind system, s/n: 161466, was installed before an installation calibration was performed.

Bonnyville – East Station:

- The following exceedances of AAAQOs were observed at the Bonnyville - East Station:

Table 2 AAAQO Exceedances at Bonnyville-East Station

| Date | Time | Avg. Period | Reading (ppb) | Wind speed (kph) | Wind Direction | AEP Reference # |
|--------|-------|-------------|---------------|------------------|----------------|-----------------|
| 14-Apr | 2:00 | 1-Hour | 17 | 7.3 | 143° | 365240 |
| 26-Apr | 21:00 | 1-Hour | 14 | 3.6 | 105° | 365778 |
| 27-Apr | 22:00 | 1-Hour | 11 | 8.5 | 140° | 365827 |
| 29-Apr | 0:00 | 1-Hour | 15 | 6.7 | 179° | 365882 |
| 29-Apr | 1:00 | 1-Hour | 12 | 3.3 | 327° | 365882 |
| 30-Apr | 0:00 | 1-Hour | 86 | 9.5 | 139° | 365935 |
| 30-Apr | 1:00 | 1-Hour | 11 | 6.1 | 113° | 365935 |
| 30-Apr | - | 24-Hour | 5 | 13.8 | 355° | 365935 |
| 01-May | 2:00 | 1-Hour | 11 | 23.1 | 287° | 365978 |
| 01-May | 3:00 | 1-Hour | 12 | 19.2 | 290° | 365978 |
| 01-May | 4:00 | 1-Hour | 12 | 15.4 | 283° | 365978 |
| 01-May | - | 24-Hour | 3 | 19.1 | 303° | 365978 |
| 02-May | 21:00 | 1-Hour | 25 | 22.3 | 111° | 366035 |
| 02-May | 22:00 | 1-Hour | 19 | 20.1 | 109° | 366035 |
| 02-May | 23:00 | 1-Hour | 27 | 9.7 | 7° | 366035 |
| 02-May | - | 24-Hour | 3 | 12.7 | 66° | 366035 |
| 03-May | 12:00 | 1-Hour | 12 | 25.1 | 106° | 366060 |
| 03-May | 15:00 | 1-Hour | 12 | 21.7 | 138° | 366060 |
| 03-May | 16:00 | 1-Hour | 12 | 18.4 | 142° | 366060 |
| 03-May | - | 24-Hour | 4 | 21.7 | 98° | 366060 |
| 04-May | 18:00 | 1-Hour | 17 | 14.9 | 114° | 366091 |
| 06-May | 0:00 | 1-Hour | 11 | 6.3 | 96° | 366151 |
| 06-May | 1:00 | 1-Hour | 12 | 8.3 | 106° | 366151 |
| 06-May | 19:00 | 1-Hour | 42 | 12.8 | 118° | 366151 |
| 06-May | 20:00 | 1-Hour | 31 | 12.5 | 110° | 366151 |
| 06-May | 22:00 | 1-Hour | 38 | 12.6 | 117° | 366151 |
| 06-May | 23:00 | 1-Hour | 15 | 10.4 | 149° | 366151 |
| 06-May | - | 24-Hour | 8 | 14.2 | 128° | 366151 |
| 07-May | 2:00 | 1-Hour | 10 | 5.8 | 141° | 366209 |

| | | | | | | |
|--------|-------|---------|----|------|------|--------|
| 07-May | 3:00 | 1-Hour | 12 | 8.8 | 160° | 366209 |
| 07-May | 5:00 | 1-Hour | 13 | 5.3 | 132° | 366209 |
| 11-May | 0:00 | 1-Hour | 23 | 7.9 | 112° | 366337 |
| 11-May | 1:00 | 1-Hour | 19 | 6.9 | 139° | 366337 |
| 11-May | 3:00 | 1-Hour | 15 | 5.9 | 145° | 366337 |
| 11-May | 4:00 | 1-Hour | 31 | 4.9 | 131° | 366337 |
| 11-May | 5:00 | 1-Hour | 15 | 3.1 | 91° | 366337 |
| 11-May | 19:00 | 1-Hour | 22 | 9.6 | 122° | 366337 |
| 11-May | 21:00 | 1-Hour | 32 | 10.3 | 142° | 366337 |
| 11-May | 22:00 | 1-Hour | 37 | 12.4 | 140° | 366337 |
| 11-May | 23:00 | 1-Hour | 33 | 7.2 | 66° | 366337 |
| 11-May | - | 24-Hour | 11 | 7.9 | 115° | 366337 |
| 12-May | 0:00 | 1-Hour | 13 | 12.5 | 152° | 366375 |
| 13-May | 3:00 | 1-Hour | 51 | 3.5 | 133° | 366420 |
| 13-May | 4:00 | 1-Hour | 11 | 3.2 | 155° | 366420 |
| 13-May | - | 24-Hour | 3 | 9.3 | 222° | 366420 |
| 14-May | 23:00 | 1-Hour | 16 | 28.1 | 22° | 366495 |
| 15-May | 0:00 | 1-Hour | 19 | 8.1 | 113° | 366497 |
| 15-May | 1:00 | 1-Hour | 12 | 9.6 | 104° | 366497 |
| 15-May | 3:00 | 1-Hour | 27 | 13.3 | 122° | 366497 |
| 15-May | 4:00 | 1-Hour | 23 | 10 | 132° | 366497 |
| 15-May | 23:00 | 1-Hour | 12 | 14.2 | 211° | 366497 |
| 15-May | - | 24-Hour | 5 | 11 | 135° | 366497 |
| 16-May | 0:00 | 1-Hour | 56 | 6.9 | 103° | 366524 |
| 16-May | 1:00 | 1-Hour | 55 | 7.4 | 111° | 366524 |
| 16-May | 2:00 | 1-Hour | 44 | 5.5 | 107° | 366524 |
| 16-May | 3:00 | 1-Hour | 53 | 2.1 | 136° | 366524 |
| 16-May | 5:00 | 1-Hour | 13 | 4.6 | 83° | 366524 |
| 16-May | 17:00 | 1-Hour | 11 | 12.5 | 151° | 366524 |
| 16-May | 18:00 | 1-Hour | 19 | 12.1 | 86° | 366524 |
| 16-May | - | 24-Hour | 12 | 9.5 | 119° | 366524 |
| 23-May | 19:00 | 1-Hour | 13 | 1.1 | 155° | 366775 |
| 26-May | 1:00 | 1-Hour | 11 | 3.4 | 161° | 366826 |
| 28-May | 21:00 | 1-Hour | 13 | 4.5 | 124° | 366969 |
| 31-May | 2:00 | 1-Hour | 11 | 24.5 | 146° | 367038 |
| 31-May | 3:00 | 1-Hour | 12 | 21.4 | 148° | 367038 |
| 31-May | - | 24-Hour | 4 | 19.4 | 142° | 367038 |
| 02-Jun | 19:00 | 1-Hour | 41 | 7.5 | 150° | 367171 |
| 02-Jun | 20:00 | 1-Hour | 17 | 7.2 | 140° | 367171 |
| 02-Jun | - | 24-Hour | 3 | 9.4 | 255° | 367171 |
| 02-Jul | 8:00 | 1-Hour | 11 | 23.2 | 152° | 368436 |
| 02-Jul | - | 24-Hour | 4 | 14.6 | 150° | 368436 |
| 03-Jul | 23:00 | 1-Hour | 15 | 13.3 | 268° | 368558 |

| | | | | | | |
|--------|-------|---------|----|------|------|--------|
| 04-Jul | 0:00 | 1-Hour | 11 | 1.9 | 112° | 368559 |
| 10-Jul | 3:00 | 1-Hour | 11 | 6.2 | 161° | 368873 |
| 11-Jul | 22:00 | 1-Hour | 11 | 7.8 | 139° | 370425 |
| 20-Jul | 23:00 | 1-Hour | 17 | 9.9 | 272° | 369291 |
| 21-Jul | 1:00 | 1-Hour | 38 | 2.2 | 137° | 369292 |
| 21-Jul | 2:00 | 1-Hour | 21 | 4.3 | 171° | 369292 |
| 21-Jul | 3:00 | 1-Hour | 29 | 2.9 | 138° | 369292 |
| 21-Jul | 4:00 | 1-Hour | 25 | 4.2 | 136° | 369292 |
| 21-Jul | 5:00 | 1-Hour | 13 | 3.2 | 117° | 369292 |
| 21-Jul | 20:00 | 1-Hour | 13 | 10.1 | 147° | 369292 |
| 21-Jul | - | 24-Hour | 8 | 8.8 | 155° | 369292 |
| 22-Jul | 1:00 | 1-Hour | 13 | 2.3 | 210° | 369328 |
| 22-Jul | 5:00 | 1-Hour | 16 | 2.8 | 169° | 369328 |
| 23-Jul | 3:00 | 1-Hour | 12 | 2.8 | 118° | 369373 |
| 23-Jul | 4:00 | 1-Hour | 16 | 3.7 | 30° | 369373 |
| 23-Jul | 5:00 | 1-Hour | 14 | 2.9 | 24° | 369373 |
| 23-Jul | - | 24-Hour | 3 | 3.5 | 14° | 369373 |
| 28-Jul | 2:00 | 1-Hour | 13 | 13.4 | 158° | 369543 |
| 28-Jul | 3:00 | 1-Hour | 12 | 8.2 | 155° | 369543 |
| 28-Jul | 21:00 | 1-Hour | 12 | 9 | 157° | 369543 |
| 28-Jul | 22:00 | 1-Hour | 16 | 4 | 146° | 369543 |
| 28-Jul | - | 24-Hour | 4 | 15 | 164° | 369543 |
| 29-Jul | 2:00 | 1-Hour | 12 | 6.1 | 105° | 369707 |
| 31-Jul | 3:00 | 1-Hour | 11 | 2.5 | 303° | 369707 |
| 31-Jul | 6:00 | 1-Hour | 15 | 1.2 | 218° | 369707 |
| 31-Jul | 7:00 | 1-Hour | 12 | 1.9 | 105° | 369707 |
| 31-Jul | - | 24-Hour | 4 | 2.7 | 137° | 369707 |
| 01-Aug | 5:00 | 1-Hour | 11 | 7.6 | 158° | 369745 |
| 01-Aug | - | 24-Hour | 4 | 13.2 | 150° | 369745 |
| 02-Aug | - | 24-Hour | 4 | 17.8 | 136° | 369786 |
| 05-Aug | 19:00 | 1-Hour | 13 | 8.6 | 149° | 369937 |
| 06-Aug | 3:00 | 1-Hour | 12 | 8 | 155° | 369938 |
| 06-Aug | 4:00 | 1-Hour | 11 | 7.5 | 125° | 369938 |
| 11-Aug | 17:00 | 1-Hour | 10 | 8.4 | 159° | 370210 |
| 11-Aug | 18:00 | 1-Hour | 30 | 7.8 | 152° | 370210 |
| 11-Aug | 19:00 | 1-Hour | 66 | 8.9 | 151° | 370210 |
| 11-Aug | - | 24-Hour | 6 | 11.9 | 126° | 370210 |
| 16-Aug | 19:00 | 1-Hour | 44 | 6.7 | 154° | 370397 |
| 16-Aug | 20:00 | 1-Hour | 20 | 8.1 | 153° | 370397 |
| 16-Aug | 23:00 | 1-Hour | 53 | 5.6 | 186° | 370397 |
| 16-Aug | - | 24-Hour | 7 | 7.2 | 193° | 370397 |
| 17-Aug | 1:00 | 1-Hour | 15 | 5 | 6° | 370398 |
| 17-Aug | 2:00 | 1-Hour | 24 | 1.5 | 118° | 370398 |

| | | | | | | |
|--------|-------|---------|-----|-----|------|--------|
| 17-Aug | 3:00 | 1-Hour | 14 | 2.2 | 54° | 370398 |
| 17-Aug | 4:00 | 1-Hour | 23 | 3 | 81° | 370398 |
| 17-Aug | 5:00 | 1-Hour | 18 | 4 | 141° | 370398 |
| 17-Aug | 6:00 | 1-Hour | 12 | 3.2 | 110° | 370398 |
| 17-Aug | - | 24-Hour | 6 | 2.8 | 160° | 370398 |
| 18-Aug | 21:00 | 1-Hour | 31 | 5.3 | 109° | 370517 |
| 18-Aug | - | 24-Hour | 3 | 3.5 | 199° | 370517 |
| 19-Aug | 2:00 | 1-Hour | 10 | 1.8 | 332° | 370518 |
| 19-Aug | 3:00 | 1-Hour | 13 | 2.7 | 335° | 370518 |
| 20-Aug | 4:00 | 1-Hour | 12 | 1.2 | 26° | 370589 |
| 23-Aug | 21:00 | 1-Hour | 16 | 1.1 | 193° | 370717 |
| 24-Aug | 1:00 | 1-Hour | 14 | 4.1 | 241° | 370718 |
| 24-Aug | 6:00 | 1-Hour | 17 | 5.3 | 55° | 370718 |
| 25-Aug | 8:00 | 1-Hour | 12 | 4.3 | 75° | 370718 |
| 27-Aug | 2:00 | 1-Hour | 26 | 3.8 | 227° | 370863 |
| 04-Sep | 6:00 | 1-Hour | 16 | 2.7 | 196 | 371235 |
| 04-Sep | 20:00 | 1-Hour | 13 | 2.6 | 138 | 371235 |
| 04-Sep | 22:00 | 1-Hour | 103 | 4.6 | 120 | 371235 |
| 04-Sep | 23:00 | 1-Hour | 28 | 1 | 195 | 371235 |
| 04-Sep | - | 24-Hour | 8 | 6.5 | 257 | 371235 |
| 05-Sep | 0:00 | 1-Hour | 34 | 1.9 | 118 | 371236 |
| 05-Sep | 4:00 | 1-Hour | 31 | 2.7 | 123 | 371236 |
| 05-Sep | 6:00 | 1-Hour | 16 | 2.4 | 127 | 371236 |
| 05-Sep | 7:00 | 1-Hour | 88 | 1.6 | 149 | 371236 |
| 05-Sep | - | 24-Hour | 9 | 4.1 | 334 | 371236 |
| 09-Sep | 7:00 | 1-Hour | 17 | 5 | 200 | 371400 |
| 09-Sep | 22:00 | 1-Hour | 19 | 3.3 | 130 | 371400 |
| 09-Sep | 23:00 | 1-Hour | 67 | 2.4 | 155 | 371400 |
| 09-Sep | - | 24-Hour | 5 | 3.5 | 240 | 371400 |
| 10-Sep | 0:00 | 1-Hour | 13 | 2 | 111 | 371401 |
| 10-Sep | 1:00 | 1-Hour | 12 | 0.8 | 143 | 371401 |
| 10-Sep | 2:00 | 1-Hour | 13 | 3.1 | 89 | 371401 |
| 10-Sep | 3:00 | 1-Hour | 11 | 1.3 | 313 | 371401 |
| 10-Sep | 6:00 | 1-Hour | 17 | 6 | 109 | 371401 |
| 10-Sep | 20:00 | 1-Hour | 44 | 5 | 212 | 371401 |
| 10-Sep | - | 24-Hour | 6 | 6.7 | 161 | 371401 |
| 11-Sep | 3:00 | 1-Hour | 48 | 2.3 | 219 | 371452 |
| 13-Sep | 0:00 | 1-Hour | 15 | 1.6 | 139 | 371506 |
| 13-Sep | 3:00 | 1-Hour | 21 | 4 | 119 | 371506 |
| 13-Sep | 5:00 | 1-Hour | 23 | 3.4 | 132 | 371506 |
| 13-Sep | 6:00 | 1-Hour | 23 | 5.9 | 150 | 371506 |
| 13-Sep | 7:00 | 1-Hour | 13 | 8.7 | 144 | 371506 |
| 13-Sep | 12:00 | 1-Hour | 19 | 6.4 | 146 | 371506 |

| | | | | | | |
|--------|-------|---------|-----|------|-----|--------|
| 13-Sep | - | 24-Hour | 7 | 8.8 | 104 | 371506 |
| 16-Sep | 0:00 | 1-Hour | 44 | 3.9 | 101 | 371611 |
| 16-Sep | 1:00 | 1-Hour | 83 | 5.6 | 128 | 371611 |
| 16-Sep | 2:00 | 1-Hour | 43 | 7.7 | 147 | 371611 |
| 16-Sep | 4:00 | 1-Hour | 23 | 14.1 | 154 | 371611 |
| 16-Sep | - | 24-Hour | 10 | 8.6 | 149 | 371611 |
| 17-Sep | 0:00 | 1-Hour | 21 | 5.1 | 154 | 371679 |
| 17-Sep | 1:00 | 1-Hour | 14 | 2.1 | 48 | 371679 |
| 17-Sep | 5:00 | 1-Hour | 14 | 0.5 | 298 | 371679 |
| 17-Sep | 7:00 | 1-Hour | 39 | 2.2 | 105 | 371679 |
| 17-Sep | 19:00 | 1-Hour | 27 | 8.8 | 138 | 371679 |
| 17-Sep | 20:00 | 1-Hour | 47 | 6.7 | 131 | 371679 |
| 17-Sep | 21:00 | 1-Hour | 14 | 11.6 | 151 | 371679 |
| 17-Sep | - | 24-Hour | 8 | 5.8 | 132 | 371679 |
| 18-Sep | 6:00 | 1-Hour | 26 | 11 | 151 | 371728 |
| 18-Sep | 7:00 | 1-Hour | 15 | 15.1 | 150 | 371728 |
| 18-Sep | 8:00 | 1-Hour | 13 | 14 | 149 | 371728 |
| 18-Sep | 18:00 | 1-Hour | 18 | 7 | 121 | 371728 |
| 18-Sep | - | 24-Hour | 6 | 10.1 | 155 | 371728 |
| 19-Sep | 17:00 | 1-Hour | 48 | 1.5 | 233 | 371813 |
| 19-Sep | 20:00 | 1-Hour | 108 | 0.8 | 149 | 371813 |
| 19-Sep | 21:00 | 1-Hour | 65 | 1.1 | 183 | 371813 |
| 19-Sep | - | 24-Hour | 12 | 3.5 | 89 | 371813 |
| 21-Sep | 5:00 | 1-Hour | 104 | 3.3 | 201 | 371847 |
| 21-Sep | 8:00 | 1-Hour | 17 | 1.1 | 209 | 371847 |
| 21-Sep | - | 24-Hour | 6 | 8.2 | 267 | 371847 |
| 22-Sep | 18:00 | 1-Hour | 23 | 7.4 | 140 | 371943 |
| 22-Sep | 20:00 | 1-Hour | 23 | 10.3 | 152 | 371943 |
| 22-Sep | 21:00 | 1-Hour | 36 | 8 | 146 | 371943 |
| 22-Sep | - | 24-Hour | 4 | 3.4 | 172 | 371943 |
| 23-Sep | 1:00 | 1-Hour | 29 | 11.7 | 151 | 371945 |
| 23-Sep | 2:00 | 1-Hour | 19 | 13.3 | 155 | 371945 |
| 23-Sep | 3:00 | 1-Hour | 17 | 14.1 | 154 | 371945 |
| 23-Sep | 4:00 | 1-Hour | 19 | 10 | 143 | 371945 |
| 23-Sep | 7:00 | 1-Hour | 14 | 14.2 | 150 | 371945 |
| 23-Sep | 8:00 | 1-Hour | 14 | 17.7 | 153 | 371945 |
| 23-Sep | 9:00 | 1-Hour | 14 | 20.7 | 149 | 371945 |
| 23-Sep | 14:00 | 1-Hour | 11 | 27.8 | 147 | 371945 |
| 23-Sep | 21:00 | 1-Hour | 17 | 24 | 148 | 371945 |
| 23-Sep | 22:00 | 1-Hour | 20 | 26 | 150 | 371945 |
| 23-Sep | - | 24-Hour | 11 | 19.2 | 145 | 371945 |
| 24-Sep | 0:00 | 1-Hour | 19 | 23.9 | 148 | 372006 |
| 24-Sep | 1:00 | 1-Hour | 20 | 22 | 152 | 372006 |

| | | | | | | |
|--------|-------|---------|-----|------|------|--------|
| 24-Sep | 7:00 | 1-Hour | 64 | 2.4 | 153 | 372006 |
| 24-Sep | - | 24-Hour | 5 | 11.9 | 259 | 372006 |
| 25-Sep | 18:00 | 1-Hour | 26 | 5.9 | 145 | 372110 |
| 25-Sep | 19:00 | 1-Hour | 111 | 5.1 | 108 | 372110 |
| 25-Sep | 20:00 | 1-Hour | 25 | 5.2 | 110 | 372110 |
| 25-Sep | - | 24-Hour | 8 | 9.4 | 253 | 372110 |
| 01-Oct | 0:00 | 1-Hour | 61 | 2.6 | 111° | 372298 |
| 01-Oct | 1:00 | 1-Hour | 70 | 3.5 | 110° | 372298 |
| 01-Oct | 2:00 | 1-Hour | 48 | 2.1 | 125° | 372298 |
| 01-Oct | 3:00 | 1-Hour | 17 | 10 | 153° | 372298 |
| 01-Oct | 5:00 | 1-Hour | 24 | 5.3 | 156° | 372298 |
| 01-Oct | 6:00 | 1-Hour | 19 | 9.9 | 157° | 372298 |
| 01-Oct | 7:00 | 1-Hour | 14 | 10.5 | 157° | 372298 |
| 01-Oct | 12:00 | 1-Hour | 11 | 18.7 | 148° | 372298 |
| 01-Oct | 13:00 | 1-Hour | 11 | 19.3 | 151° | 372298 |
| 01-Oct | 17:00 | 1-Hour | 16 | 10.6 | 149° | 372298 |
| 01-Oct | - | 24-Hour | 15 | 8.1 | 152° | 372298 |
| 02-Oct | 20:00 | 1-Hour | 20 | 4.7 | 64° | 372402 |
| 02-Oct | 21:00 | 1-Hour | 41 | 1.6 | 90° | 372402 |
| 02-Oct | - | 24-Hour | 3 | 6.8 | 306° | 372402 |
| 03-Oct | 2:00 | 1-Hour | 47 | 0.8 | 238° | 372403 |
| 03-Oct | 8:00 | 1-Hour | 10 | 6.6 | 165° | 372403 |
| 03-Oct | 17:00 | 1-Hour | 16 | 10.3 | 159° | 372403 |
| 03-Oct | 18:00 | 1-Hour | 26 | 11.5 | 161° | 372403 |
| 03-Oct | 19:00 | 1-Hour | 13 | 10.2 | 168° | 372403 |
| 03-Oct | - | 24-Hour | 7 | 8.1 | 178° | 372403 |
| 07-Oct | 18:00 | 1-Hour | 21 | 4.9 | 73° | 372568 |
| 07-Oct | 19:00 | 1-Hour | 37 | 3.8 | 119° | 372568 |
| 07-Oct | 20:00 | 1-Hour | 107 | 4.1 | 116° | 372568 |
| 07-Oct | 21:00 | 1-Hour | 60 | 5.5 | 100° | 372568 |
| 07-Oct | - | 24-Hour | 10 | 4.6 | 253° | 372568 |
| 20-Oct | 22:00 | 1-Hour | 12 | 2 | 140° | 372976 |
| 20-Oct | 23:00 | 1-Hour | 16 | 2.7 | 296° | 372976 |
| 21-Oct | 2:00 | 1-Hour | 14 | 1.8 | 135° | 372977 |
| 28-Oct | 17:00 | 1-Hour | 24 | 9.7 | 161° | 373212 |
| 29-Oct | 1:00 | 1-Hour | 10 | 3.9 | 164° | 373213 |
| 02-Nov | 15:00 | 1-Hour | 12 | 9 | 184° | 373329 |
| 02-Nov | 18:00 | 1-Hour | 36 | 6.6 | 160° | 373329 |
| 02-Nov | - | 24-Hour | 4 | 5.5 | 226° | 373329 |
| 03-Nov | 6:00 | 1-Hour | 27 | 3.5 | 274° | 373330 |
| 03-Nov | 7:00 | 1-Hour | 13 | 3.4 | 169° | 373330 |
| 03-Nov | 16:00 | 1-Hour | 15 | 1.7 | 67° | 373330 |
| 03-Nov | 17:00 | 1-Hour | 19 | 5.6 | 134° | 373330 |

| | | | | | | |
|--------|-------|---------|----|------|------|--------|
| 03-Nov | 20:00 | 1-Hour | 38 | 2.4 | 146° | 373330 |
| 03-Nov | - | 24-Hour | 6 | 1 | 231° | 373330 |
| 04-Nov | 0:00 | 1-Hour | 12 | 7.2 | 168° | 373378 |
| 05-Nov | 17:00 | 1-Hour | 23 | 4.5 | 143° | 373456 |
| 05-Nov | 19:00 | 1-Hour | 11 | 5.8 | 145° | 373456 |
| 21-Nov | 0:00 | 1-Hour | 18 | 2.5 | 134° | 373869 |
| 22-Nov | 2:00 | 1-Hour | 32 | 2.8 | 130° | 373878 |
| 30-Nov | 7:00 | 1-Hour | 11 | 2.9 | 109° | 374084 |
| 02-Dec | 23:00 | 1-Hour | 11 | 11.5 | 245° | 374192 |
| 03-Dec | 1:00 | 1-Hour | 31 | 3.1 | 136° | 374193 |
| 05-Dec | 8:00 | 1-Hour | 11 | 6.6 | 249° | 374261 |
| 05-Dec | 9:00 | 1-Hour | 14 | 3 | 205° | 374261 |
| 06-Dec | 22:00 | 1-Hour | 25 | 1.3 | 163° | 374272 |

- Forty-two exceedances of the 24-hour H2S objective and two hundred sixteen exceedances of the 1-hour H2S objective were recorded in 2020. Nearby sewage lagoons are a known source of odours and hydrogen sulphide in the area.
- Uptime was over 90% for all instruments for all months at Bonnyville – East Station.
- The monitoring project at the Bonnyville East location was completed on December 31, 2020. The shut down calibrations were completed on January 5 and 6, 2021 before the monitoring station was removed from the site. The calibration records are included in the December 2020 calibration record package and submitted to ETS.
- H2S: The analyzer failed the scheduled daily span check and the repeat zero-span check on November 24 because the sample pump required maintenance. Following a successful shut-down calibration on November 25, a new sample pump was installed. A successful post-repair calibration was completed afterwards.
- NOx/NO/NO2:
 - As the analyzer has a history of unstable span results, numerous as-found point checks and repeat calibrations have been completed since this analyser was installed. All the check results have demonstrated that this is a problem with the IZS circuit. Data quality were not affected by this issue. As a result of this ongoing problem, the Thermo 42i, s/n: 1180930027, was removed on March 5 for further investigation. The Thermo 42i, s/n: 1173100003, was installed following a successfully installation calibration on March 6.
 - The BV-supplied Thermo 42i analyzer, s/n: 1173100003, was removed and the LICA-owned Thermo 42i analyzer, s/n: 1180930027, was installed on May 11. The LICA-owned analyzer was removed from the field and sent to BV shop for repair in March 2020.
- THC/CH4/NMHC: After a shut-down calibration on June 11, an internal pump was installed. The analyzer was allowed to stabilize overnight before a successful post-repair calibration was completed on June 12.
- RH/AT: A HydroClip 2 Rotronic HC2A-S3 RH/TPX sensor, s/n: 20357518, was installed on August 28. Valid hourly data will be collected, starting September 1.
- BP: A MetOne 092 sensor, s/n: Y23360, was installed on August 28. Valid hourly data will be collected, starting September 1.

Passive Monitoring Summary

27 multi-parameter passive stations were used throughout the LICA Airshed. These stations monitored different combinations of SO₂, NO₂, O₃, and/or H₂S depending on the monitoring objective at a given location. Passive samples, including duplicate samples and blanks, were handled and deployed in accordance with the AMD. Analyses of the passive samples were performed by Bureau Veritas Canada. The full results of these analyses were submitted to Alberta's Ambient Air Data Warehouse in accordance with the AMD.

Passive monitoring data indicated there were no exceedances of applicable AAAQOs for all parameters monitored in 2020.

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 Maskwa 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. Trees within a 100m radius of the station are being removed in 2021.

At the Cold Lake South station, the height of the existing wind sensor tower is shorter than the AMD requirements listed in 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. A new wind tower is being installed at the station in 2021.

Certification

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



Lily Lin, Data & Reporting Specialist, LICA 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, Monitoring Programs Manager, LICA Airshed

February 7, 2021

1. Summaries of Statistics and Data Qualifier Flag Summaries

1.1 Cold Lake South Station

Table 3 SO2 2020 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 | 100.0 | 707 | 0.2 | 0 | 0 | 3 | 0 | 2 | 0 |
| February | 100.0 | 660 | 0.3 | 0 | 0 | 4 | 0 | 1 | 0 |
| March | 100.0 | 707 | 0.2 | 0 | 0 | 3 | 0 | 1 | 0 |
| April | 88.8 | 608 | 0.2 | 0 | 0 | 5 | 0 | 1 | 0 |
| May | 100.0 | 706 | 0.0 | 0 | 0 | 1 | 0 | 0 | 0 |
| June | 100.0 | 684 | 0.0 | 0 | 0 | 2 | 0 | 0 | 0 |
| July | 100.0 | 708 | 0.0 | 0 | 0 | 2 | 0 | 0 | 0 |
| August | 100.0 | 706 | 0.0 | 0 | 0 | 1 | 0 | 0 | 0 |
| September | 100.0 | 684 | 0.1 | 0 | 0 | 2 | 0 | 1 | 0 |
| October | 100.0 | 707 | 0.1 | 0 | 0 | 3 | 0 | 1 | 0 |
| November | 100.0 | 685 | 0.2 | 0 | 0 | 3 | 0 | 1 | 0 |
| December | 100.0 | 707 | 0.3 | 0 | 0 | 4 | 0 | 1 | 0 |
| Annual | 99.1 | 8269 | 0.1 | 0 | 0 | 5 | 0 | 2 | 0 |

Table 4 SO2 2020 Annual Continuous Data Summary

| 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 5 SO2 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|----|-----|------------------------|-----|-----|
| 0 | 0 | 0 | 0 | 75 | 6 | 60 | 374 | 0 |
| Total Hours of Downtime | | 81 | Total Hours of Calibration Time | | 434 | Total Hours of Flagged | | 515 |

Table 6 TRS 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | Max. 24-hr (ppb) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 707 | 0.0 | 0 | 1 | 0 |
| February | 100.0 | 660 | 0.0 | 0 | 1 | 0 |
| March | 99.9 | 706 | 0.0 | 0 | 1 | 0 |
| April | 88.8 | 608 | 0.0 | 0 | 1 | 0 |
| May | 100.0 | 706 | 0.0 | 0 | 2 | 0 |
| June | 100.0 | 684 | 0.1 | 0 | 1 | 1 |
| July | 100.0 | 708 | 0.2 | 0 | 2 | 1 |
| August | 100.0 | 706 | 0.3 | 0 | 3 | 1 |
| September | 100.0 | 684 | 0.1 | 0 | 1 | 0 |
| October | 100.0 | 707 | 0.2 | 0 | 1 | 1 |
| November | 100.0 | 684 | 0.1 | 0 | 1 | 1 |
| December | 100.0 | 707 | 0.0 | 0 | 1 | 0 |
| Annual | 99.1 | 8267 | 0.1 | 0 | 3 | 1 |

Table 7 TRS 2020 Annual Frequency Distribution

| Month | Percentage of 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 | 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 | 99.9% | 0.1% | 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 | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |

Table 8 TRS 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|----|-----|------------------------|-----|-----|
| 0 | 0 | 0 | 0 | 75 | 7 | 62 | 373 | 0 |
| Total Hours of Downtime | | 82 | Total Hours of Calibration Time | | 435 | Total Hours of Flagged | | 517 |

Table 9 NOx 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | Max. 24-hr (ppb) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 705 | 7.9 | 1 | 64 | 18 |
| February | 100.0 | 658 | 6.8 | 0 | 57 | 14 |
| March | 100.0 | 705 | 5.1 | 1 | 51 | 13 |
| April | 88.3 | 603 | 3.4 | 0 | 29 | 7 |
| May | 100.0 | 705 | 2.0 | 0 | 15 | 3 |
| June | 100.0 | 682 | 1.7 | 0 | 15 | 3 |
| July | 100.0 | 707 | 1.7 | 0 | 11 | 3 |
| August | 100.0 | 705 | 2.4 | 0 | 51 | 8 |
| September | 100.0 | 681 | 3.9 | 0 | 61 | 9 |
| October | 100.0 | 706 | 2.5 | 0 | 28 | 9 |
| November | 100.0 | 683 | 6.3 | 0 | 74 | 31 |
| December | 100.0 | 705 | 7.8 | 1 | 64 | 26 |
| Annual | 99.0 | 8245 | 4.3 | 0 | 74 | 31 |

Table 10 NOx 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppb) | | | | |
|-----------|--|---------|---------|----------|------|
| | 0 - 30 | 31 - 50 | 51 - 82 | 83 - 159 | >159 |
| January | 97.6% | 2.1% | 0.3% | 0.0% | 0.0% |
| February | 98.6% | 1.1% | 0.3% | 0.0% | 0.0% |
| March | 98.3% | 1.6% | 0.1% | 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 | 99.3% | 0.6% | 0.1% | 0.0% | 0.0% |
| September | 98.2% | 1.5% | 0.3% | 0.0% | 0.0% |
| October | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| November | 96.9% | 2.8% | 0.3% | 0.0% | 0.0% |
| December | 97.2% | 2.1% | 0.7% | 0.0% | 0.0% |
| Annual | 98.8% | 1.0% | 0.2% | 0.0% | 0.0% |

Table 11 NOx 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|----|-----|------------------------|-----|-----|
| 0 | 0 | 0 | 0 | 73 | 11 | 81 | 374 | 0 |
| Total Hours of Downtime | | 84 | Total Hours of Calibration Time | | 455 | Total Hours of Flagged | | 539 |

Table 15 NO2 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | # of 1-hr AAAQO Exceedances | Max. 24-hr (ppb) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|-----------------------------|------------------|
| January | 100.0 | 705 | 6.6 | 1 | 30 | 0 | 14 |
| February | 100.0 | 658 | 5.8 | 0 | 32 | 0 | 11 |
| March | 100.0 | 705 | 4.3 | 1 | 34 | 0 | 10 |
| April | 88.3 | 603 | 3.0 | 0 | 25 | 0 | 6 |
| May | 100.0 | 705 | 1.8 | 0 | 10 | 0 | 3 |
| June | 100.0 | 682 | 1.5 | 0 | 9 | 0 | 3 |
| July | 100.0 | 707 | 1.5 | 0 | 6 | 0 | 3 |
| August | 100.0 | 705 | 2.4 | 0 | 51 | 0 | 8 |
| September | 100.0 | 681 | 2.2 | 0 | 19 | 0 | 4 |
| October | 100.0 | 706 | 2.0 | 0 | 12 | 0 | 5 |
| November | 100.0 | 683 | 4.7 | 0 | 24 | 0 | 13 |
| December | 100.0 | 705 | 6.3 | 1 | 31 | 0 | 17 |
| Annual | 99.0 | 8245 | 3.5 | 0 | 51 | 0 | 17 |

Table 16 NO2 2020 Annual Frequency Distribution

| Month | Percentage of 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 | 99.5% | 0.5% | 0.0% | 0.0% | 0.0% |
| March | 99.7% | 0.3% | 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 | 99.3% | 0.6% | 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 | 99.9% | 0.1% | 0.0% | 0.0% | 0.0% |

Table 17 NO2 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|----|-----|------------------------|-----|-----|
| 0 | 0 | 0 | 0 | 73 | 11 | 81 | 374 | 0 |
| Total Hours of Downtime | | 84 | Total Hours of Calibration Time | | 455 | Total Hours of Flagged | | 539 |

Table 21 THC 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppm) | Min. 1-hr (ppm) | Max. 1-hr (ppm) | Max. 24-hr (ppm) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 709 | 2.18 | 1.94 | 3.27 | 2.50 |
| February | 99.9 | 660 | 2.14 | 1.92 | 2.78 | 2.33 |
| March | 98.9 | 701 | 2.06 | 1.89 | 2.64 | 2.28 |
| April | 82.5 | 566 | 2.08 | 1.93 | 2.59 | 2.16 |
| May | 100.0 | 707 | 2.00 | 1.90 | 2.47 | 2.08 |
| June | 99.9 | 684 | 2.02 | 1.91 | 2.94 | 2.26 |
| July | 99.9 | 707 | 2.12 | 1.90 | 3.37 | 2.42 |
| August | 100.0 | 707 | 2.16 | 1.94 | 3.49 | 2.46 |
| September | 100.0 | 684 | 2.10 | 1.90 | 2.98 | 2.38 |
| October | 99.2 | 702 | 2.04 | 1.88 | 2.60 | 2.18 |
| November | 99.7 | 681 | 2.13 | 1.97 | 3.11 | 2.42 |
| December | 99.9 | 707 | 2.11 | 1.88 | 2.92 | 2.45 |
| Annual | 98.3 | 8215 | 2.09 | 1.88 | 3.49 | 2.50 |

Table 22 THC 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppm) | | | | |
|-----------|--|-------|--------|---------|------|
| | 0 - 2 | 3 - 5 | 6 - 10 | 11 - 40 | >40 |
| January | 88.4% | 11.6% | 0.0% | 0.0% | 0.0% |
| February | 93.8% | 6.2% | 0.0% | 0.0% | 0.0% |
| March | 98.0% | 2.0% | 0.0% | 0.0% | 0.0% |
| April | 97.3% | 2.7% | 0.0% | 0.0% | 0.0% |
| May | 99.9% | 0.1% | 0.0% | 0.0% | 0.0% |
| June | 97.8% | 2.2% | 0.0% | 0.0% | 0.0% |
| July | 89.3% | 10.7% | 0.0% | 0.0% | 0.0% |
| August | 86.6% | 13.4% | 0.0% | 0.0% | 0.0% |
| September | 93.9% | 6.1% | 0.0% | 0.0% | 0.0% |
| October | 99.3% | 0.7% | 0.0% | 0.0% | 0.0% |
| November | 94.1% | 5.9% | 0.0% | 0.0% | 0.0% |
| December | 95.2% | 4.8% | 0.0% | 0.0% | 0.0% |
| Annual | 94.5% | 5.5% | 0.0% | 0.0% | 0.0% |

Table 23 THC 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|----|-----|---------------------------------|----|-----|------------------------|-----|-----|
| 0 | 49 | 0 | 0 | 77 | 20 | 49 | 374 | 0 |
| Total Hours of Downtime | | 146 | Total Hours of Calibration Time | | 423 | Total Hours of Flagged | | 569 |

Table 24 CH4 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppm) | Min. 1-hr (ppm) | Max. 1-hr (ppm) | Max. 24-hr (ppm) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 709 | 2.16 | 1.94 | 2.74 | 2.40 |
| February | 99.9 | 660 | 2.14 | 1.92 | 2.67 | 2.33 |
| March | 98.9 | 701 | 2.05 | 1.88 | 2.55 | 2.26 |
| April | 82.5 | 566 | 2.07 | 1.93 | 2.57 | 2.15 |
| May | 100.0 | 707 | 2.00 | 1.90 | 2.46 | 2.08 |
| June | 99.9 | 684 | 2.01 | 1.91 | 2.83 | 2.21 |
| July | 99.9 | 707 | 2.11 | 1.90 | 3.28 | 2.35 |
| August | 100.0 | 707 | 2.14 | 1.93 | 3.34 | 2.39 |
| September | 100.0 | 684 | 2.09 | 1.90 | 2.93 | 2.35 |
| October | 99.2 | 702 | 2.04 | 1.88 | 2.58 | 2.17 |
| November | 99.7 | 681 | 2.12 | 1.97 | 3.09 | 2.35 |
| December | 99.9 | 707 | 2.10 | 1.88 | 2.73 | 2.44 |
| Annual | 98.3 | 8215 | 2.09 | 1.88 | 3.34 | 2.44 |

Table 25 CH4 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppm) | | | | |
|-----------|--|-------|--------|---------|------|
| | 0 - 2 | 3 - 5 | 6 - 10 | 11 - 20 | >20 |
| January | 91.5% | 8.5% | 0.0% | 0.0% | 0.0% |
| February | 95.2% | 4.8% | 0.0% | 0.0% | 0.0% |
| March | 99.1% | 0.9% | 0.0% | 0.0% | 0.0% |
| April | 98.6% | 1.4% | 0.0% | 0.0% | 0.0% |
| May | 99.9% | 0.1% | 0.0% | 0.0% | 0.0% |
| June | 98.1% | 1.9% | 0.0% | 0.0% | 0.0% |
| July | 90.1% | 9.9% | 0.0% | 0.0% | 0.0% |
| August | 87.7% | 12.3% | 0.0% | 0.0% | 0.0% |
| September | 95.0% | 5.0% | 0.0% | 0.0% | 0.0% |
| October | 99.3% | 0.7% | 0.0% | 0.0% | 0.0% |
| November | 95.0% | 5.0% | 0.0% | 0.0% | 0.0% |
| December | 95.3% | 4.7% | 0.0% | 0.0% | 0.0% |
| Annual | 95.4% | 4.6% | 0.0% | 0.0% | 0.0% |

Table 26 CH4 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|----|-----|---------------------------------|----|-----|------------------------|-----|-----|
| 0 | 49 | 0 | 0 | 77 | 20 | 49 | 374 | 0 |
| Total Hours of Downtime | | 146 | Total Hours of Calibration Time | | 423 | Total Hours of Flagged | | 569 |

Table 27 NMHC 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppm) | Min. 1-hr (ppm) | Max. 1-hr (ppm) | Max. 24-hr (ppm) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 709 | 0.02 | 0.00 | 0.71 | 0.13 |
| February | 99.9 | 660 | 0.01 | 0.00 | 0.13 | 0.02 |
| March | 98.9 | 701 | 0.01 | 0.00 | 0.22 | 0.02 |
| April | 82.5 | 566 | 0.01 | 0.00 | 0.11 | 0.03 |
| May | 100.0 | 707 | 0.00 | 0.00 | 0.20 | 0.01 |
| June | 99.9 | 684 | 0.00 | 0.00 | 0.33 | 0.05 |
| July | 99.9 | 707 | 0.02 | 0.00 | 0.19 | 0.08 |
| August | 100.0 | 707 | 0.02 | 0.00 | 0.20 | 0.08 |
| September | 100.0 | 684 | 0.01 | 0.00 | 0.18 | 0.04 |
| October | 99.2 | 702 | 0.00 | 0.00 | 0.20 | 0.01 |
| November | 99.7 | 681 | 0.00 | 0.00 | 0.15 | 0.07 |
| December | 99.9 | 707 | 0.00 | 0.00 | 0.26 | 0.07 |
| Annual | 98.3 | 8215 | 0.01 | 0.00 | 0.71 | 0.13 |

Table 28 NMHC 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppm) | | | | |
|-----------|--|-----------|-----------|-------|------|
| | 0 - 0.1 | 0.2 - 0.3 | 0.4 - 0.9 | 1 - 2 | >2 |
| January | 97.5% | 1.8% | 0.7% | 0.0% | 0.0% |
| February | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| March | 99.6% | 0.4% | 0.0% | 0.0% | 0.0% |
| April | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| May | 99.9% | 0.1% | 0.0% | 0.0% | 0.0% |
| June | 99.9% | 0.1% | 0.0% | 0.0% | 0.0% |
| July | 99.2% | 0.8% | 0.0% | 0.0% | 0.0% |
| August | 98.6% | 1.4% | 0.0% | 0.0% | 0.0% |
| September | 99.9% | 0.1% | 0.0% | 0.0% | 0.0% |
| October | 99.9% | 0.1% | 0.0% | 0.0% | 0.0% |
| November | 99.9% | 0.1% | 0.0% | 0.0% | 0.0% |
| December | 98.7% | 1.3% | 0.0% | 0.0% | 0.0% |
| Annual | 99.4% | 0.5% | 0.1% | 0.0% | 0.0% |

Table 29 NMHC 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|----|-----|---------------------------------|----|-----|------------------------|-----|-----|
| 0 | 49 | 0 | 0 | 77 | 20 | 49 | 374 | 0 |
| Total Hours of Downtime | | 146 | Total Hours of Calibration Time | | 423 | Total Hours of Flagged | | 569 |

Table 30 PM2.5 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | 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 | 100.0 | 742 | 4.2 | 0 | 47 | 0 | 12 | 0 |
| February | 100.0 | 695 | 3.6 | 0 | 22 | 0 | 10 | 0 |
| March | 100.0 | 741 | 3.3 | 0 | 30 | 0 | 8 | 0 |
| April | 89.2 | 641 | 3.2 | 0 | 33 | 0 | 7 | 0 |
| May | 100.0 | 742 | 4.9 | 1 | 25 | 0 | 10 | 0 |
| June | 100.0 | 718 | 4.2 | 0 | 23 | 0 | 7 | 0 |
| July | 100.0 | 743 | 4.4 | 1 | 14 | 0 | 10 | 0 |
| August | 100.0 | 743 | 4.7 | 0 | 15 | 0 | 10 | 0 |
| September | 100.0 | 718 | 5.3 | 1 | 52 | 0 | 27 | 0 |
| October | 100.0 | 743 | 3.4 | 0 | 16 | 0 | 7 | 0 |
| November | 100.0 | 719 | 7.5 | 1 | 30 | 0 | 15 | 0 |
| December | 100.0 | 742 | 6.8 | 0 | 84 | 1 | 17 | 0 |
| Annual | 99.1 | 8687 | 4.6 | 0 | 84 | 1 | 27 | 0 |

Table 31 PM2.5 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (ug/m3) | | | | |
|-----------|---|---------|----------|-----------|------|
| | 0 - 50 | 51 - 80 | 81 - 120 | 121 - 240 | >240 |
| 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 | 99.9% | 0.1% | 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% | 0.0% | 0.1% | 0.0% | 0.0% |
| Annual | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |

Table 32 PM2.5 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|----|-----|------------------------|---|----|
| 0 | 0 | 0 | 0 | 76 | 2 | 19 | 0 | 0 |
| Total Hours of Downtime | | 78 | Total Hours of Calibration Time | | 19 | Total Hours of Flagged | | 97 |

Table 33 RH 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (%) | Min. 1-hr (%) | Max. 1-hr (%) | Max. 24-hr (%) |
|-----------|------------------------|---------------|------------------|---------------|---------------|----------------|
| January | 100.0 | 744 | 76.6 | 40 | 100 | 96 |
| February | 100.0 | 696 | 68.0 | 31 | 92 | 82 |
| March | 100.0 | 744 | 65.5 | 28 | 99 | 79 |
| April | 91.3 | 657 | 58.2 | 15 | 100 | 82 |
| May | 100.0 | 744 | 57.6 | 17 | 100 | 93 |
| June | 100.0 | 720 | 69.8 | 25 | 100 | 99 |
| July | 100.0 | 744 | 71.1 | 29 | 100 | 87 |
| August | 100.0 | 744 | 67.6 | 28 | 99 | 86 |
| September | 86.3 | 621 | 74.0 | 26 | 99 | 89 |
| October | 100.0 | 744 | 67.0 | 23 | 96 | 86 |
| November | 100.0 | 720 | 79.5 | 43 | 97 | 91 |
| December | 99.9 | 743 | 77.3 | 39 | 92 | 88 |
| Annual | 98.1 | 8621 | 69.3 | 15 | 100 | 99 |

Table 34 RH 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|----|-----|---------------------------------|----|-----|------------------------|---|-----|
| 0 | 94 | 5 | 0 | 61 | 3 | 0 | 0 | 0 |
| Total Hours of Downtime | | 163 | Total Hours of Calibration Time | | 0 | Total Hours of Flagged | | 163 |

Table 35 BP 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (mb) | Min. 1-hr (mb) | Max. 1-hr (mb) | Max. 24-hr (mb) |
|-----------|------------------------|---------------|-------------------|----------------|----------------|-----------------|
| January | - | - | - | - | - | - |
| February | - | - | - | - | - | - |
| March | - | - | - | - | - | - |
| April | - | - | - | - | - | - |
| May | - | - | - | - | - | - |
| June | - | - | - | - | - | - |
| July | - | - | - | - | - | - |
| August | - | - | - | - | - | - |
| September | 97.4 | 701 | 951 | 928 | 969 | 967 |
| October | 100.0 | 744 | 950 | 922 | 969 | 968 |
| November | 100.0 | 720 | 946 | 925 | 961 | 958 |
| December | 100.0 | 744 | 949 | 927 | 966 | 963 |
| Annual | 99.3 | 2909 | 949 | 922 | 969 | 968 |

Table 36 BP 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|----|----|---------------------------------|---|-----|------------------------|---|----|
| 0 | 14 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hours of Downtime | | 19 | Total Hours of Calibration Time | | 0 | Total Hours of Flagged | | 19 |

Table 41 WS 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (kph) | Min. 1-hr (kph) | Max. 1-hr (kph) | Max. 24-hr (kph) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 744 | 0.9 | 0.0 | 19.6 | 9.2 |
| February | 100.0 | 692 | 1.9 | 0.0 | 21.3 | 13.7 |
| March | 100.0 | 744 | 1.8 | 0.1 | 20.3 | 11.8 |
| April | 91.3 | 654 | 2.1 | 0.2 | 25.0 | 13.2 |
| May | 100.0 | 744 | 1.9 | 0.1 | 19.4 | 13.3 |
| June | 100.0 | 720 | 0.3 | 0.1 | 20.2 | 13.5 |
| July | 100.0 | 744 | 2.4 | 0.3 | 21.3 | 13.1 |
| August | 100.0 | 744 | 3.2 | 0.3 | 22.5 | 14.7 |
| September | 97.5 | 699 | 2.5 | 0.0 | 26.1 | 10.9 |
| October | 100.0 | 744 | 4.3 | 0.0 | 22.8 | 12.8 |
| November | 100.0 | 720 | 1.0 | 0.1 | 16.3 | 7.9 |
| December | 100.0 | 744 | 2.3 | 0.0 | 20.9 | 9.8 |
| Annual | 99.1 | 8693 | 2.1 | 0.0 | 26.1 | 14.7 |

Table 42 WS 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in kph) | | | | |
|-----------|--|--------|---------|---------|------|
| | 0 - 6 | 7 - 15 | 16 - 29 | 30 - 39 | >39 |
| January | 68.7% | 30.8% | 0.5% | 0.0% | 0.0% |
| February | 62.1% | 33.8% | 4.0% | 0.0% | 0.0% |
| March | 32.4% | 64.5% | 3.1% | 0.0% | 0.0% |
| April | 40.1% | 52.4% | 7.5% | 0.0% | 0.0% |
| May | 45.3% | 51.7% | 3.0% | 0.0% | 0.0% |
| June | 42.9% | 55.0% | 2.1% | 0.0% | 0.0% |
| July | 49.3% | 48.4% | 2.3% | 0.0% | 0.0% |
| August | 44.4% | 49.9% | 5.8% | 0.0% | 0.0% |
| September | 56.4% | 39.5% | 4.1% | 0.0% | 0.0% |
| October | 53.1% | 42.2% | 4.7% | 0.0% | 0.0% |
| November | 68.9% | 30.8% | 0.3% | 0.0% | 0.0% |
| December | 74.6% | 22.4% | 3.0% | 0.0% | 0.0% |
| Annual | 53.2% | 43.5% | 3.4% | 0.0% | 0.0% |

Table 43 WS 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|----|----|---------------------------------|----|-----|------------------------|---|----|
| 0 | 14 | 4 | 0 | 61 | 2 | 10 | 0 | 0 |
| Total Hours of Downtime | | 81 | Total Hours of Calibration Time | | 10 | Total Hours of Flagged | | 91 |

Table 47 H2S 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | # of 1-hr AAAQO Exceedances | Max. 24-hr (ppb) | # of 24-hr AAAQO Exceedances |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|-----------------------------|------------------|------------------------------|
| January | 92.9 | 655 | 0.0 | 0 | 1 | 0 | 0 | 0 |
| February | 99.9 | 660 | 0.0 | 0 | 1 | 0 | 0 | 0 |
| March | 99.5 | 703 | 0.0 | 0 | 1 | 0 | 1 | 0 |
| April | 100.0 | 683 | 0.0 | 0 | 3 | 0 | 0 | 0 |
| May | 100.0 | 707 | 0.1 | 0 | 3 | 0 | 1 | 0 |
| June | 100.0 | 684 | 0.1 | 0 | 4 | 0 | 0 | 0 |
| July | 100.0 | 705 | 0.1 | 0 | 5 | 0 | 1 | 0 |
| August | 100.0 | 708 | 0.2 | 0 | 6 | 0 | 1 | 0 |
| September | 99.9 | 682 | 0.1 | 0 | 6 | 0 | 1 | 0 |
| October | 100.0 | 706 | 0.1 | 0 | 4 | 0 | 1 | 0 |
| November | 100.0 | 684 | 0.1 | 0 | 2 | 0 | 1 | 0 |
| December | 100.0 | 707 | 0.1 | 0 | 2 | 0 | 1 | 0 |
| Annual | 99.3 | 8284 | 0.1 | 0 | 6 | 0 | 1 | 0 |

Table 48 H2S 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppb) | | | | |
|-----------|--|-------|--------|---------|------|
| | 0 - 2 | 3 - 5 | 6 - 10 | 11 - 50 | >50 |
| 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 | 99.9% | 0.1% | 0.0% | 0.0% | 0.0% |
| May | 99.7% | 0.3% | 0.0% | 0.0% | 0.0% |
| June | 99.7% | 0.3% | 0.0% | 0.0% | 0.0% |
| July | 99.6% | 0.4% | 0.0% | 0.0% | 0.0% |
| August | 98.7% | 1.1% | 0.1% | 0.0% | 0.0% |
| September | 98.2% | 1.5% | 0.3% | 0.0% | 0.0% |
| October | 99.6% | 0.4% | 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 49 H2S 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|----|----|---------------------------------|---|-----|------------------------|-----|-----|
| 0 | 49 | 1 | 4 | 0 | 5 | 63 | 378 | 0 |
| Total Hours of Downtime | | 59 | Total Hours of Calibration Time | | 441 | Total Hours of Flagged | | 500 |

Table 50 NOx 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | Max. 24-hr (ppb) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 706 | 4.8 | 0 | 35 | 12 |
| February | 100.0 | 660 | 5.7 | 0 | 29 | 10 |
| March | 99.5 | 702 | 3.8 | 0 | 40 | 9 |
| April | 100.0 | 682 | 3.5 | 0 | 33 | 8 |
| May | 100.0 | 705 | 2.7 | 0 | 24 | 7 |
| June | 100.0 | 682 | 2.5 | 0 | 37 | 10 |
| July | 100.0 | 705 | 2.6 | 0 | 18 | 5 |
| August | 100.0 | 706 | 2.7 | 0 | 23 | 7 |
| September | 99.4 | 678 | 3.9 | 0 | 37 | 9 |
| October | 100.0 | 704 | 5.2 | 0 | 37 | 16 |
| November | 100.0 | 682 | 5.6 | 0 | 73 | 14 |
| December | 100.0 | 706 | 7.7 | 0 | 40 | 19 |
| Annual | 99.9 | 8318 | 4.2 | 0 | 73 | 19 |

Table 51 NOx 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppb) | | | | |
|-----------|--|---------|---------|----------|------|
| | 0 - 30 | 31 - 50 | 51 - 82 | 83 - 159 | >159 |
| January | 99.9% | 0.1% | 0.0% | 0.0% | 0.0% |
| February | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| March | 99.6% | 0.4% | 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 | 99.3% | 0.7% | 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 | 99.9% | 0.1% | 0.0% | 0.0% | 0.0% |
| October | 99.1% | 0.9% | 0.0% | 0.0% | 0.0% |
| November | 99.6% | 0.3% | 0.1% | 0.0% | 0.0% |
| December | 99.0% | 1.0% | 0.0% | 0.0% | 0.0% |
| Annual | 99.7% | 0.3% | 0.0% | 0.0% | 0.0% |

Table 52 NOx 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|---|---------------------------------|---|-----|------------------------|-----|-----|
| 0 | 0 | 4 | 4 | 0 | 0 | 78 | 380 | 0 |
| Total Hours of Downtime | | 8 | Total Hours of Calibration Time | | 458 | Total Hours of Flagged | | 466 |

Table 53 NO 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | Max. 24-hr (ppb) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 706 | 0.6 | 0 | 19 | 3 |
| February | 100.0 | 660 | 0.7 | 0 | 11 | 2 |
| March | 99.5 | 702 | 0.6 | 0 | 22 | 2 |
| April | 100.0 | 682 | 0.6 | 0 | 10 | 2 |
| May | 100.0 | 705 | 0.4 | 0 | 8 | 3 |
| June | 100.0 | 682 | 0.5 | 0 | 16 | 3 |
| July | 100.0 | 705 | 0.5 | 0 | 8 | 2 |
| August | 100.0 | 706 | 0.5 | 0 | 13 | 2 |
| September | 99.4 | 678 | 1.0 | 0 | 18 | 3 |
| October | 100.0 | 704 | 1.3 | 0 | 17 | 6 |
| November | 100.0 | 682 | 0.9 | 0 | 48 | 2 |
| December | 100.0 | 706 | 0.9 | 0 | 13 | 3 |
| Annual | 99.9 | 8318 | 0.7 | 0 | 48 | 6 |

Table 54 NO 2020 Annual Frequency Distribution

| Month | Percentage of 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 | 99.9% | 0.1% | 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 55 NO 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|---|---------------------------------|---|-----|------------------------|-----|-----|
| 0 | 0 | 4 | 4 | 0 | 0 | 78 | 380 | 0 |
| Total Hours of Downtime | | 8 | Total Hours of Calibration Time | | 458 | Total Hours of Flagged | | 466 |

Table 56 NO2 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | # of 1-hr AAAQO Exceedances | Max. 24-hr (ppb) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|-----------------------------|------------------|
| January | 100.0 | 706 | 4.2 | 0 | 20 | 0 | 9 |
| February | 100.0 | 660 | 5.0 | 0 | 19 | 0 | 9 |
| March | 99.5 | 702 | 3.2 | 0 | 22 | 0 | 7 |
| April | 100.0 | 682 | 2.9 | 0 | 28 | 0 | 7 |
| May | 100.0 | 705 | 2.3 | 0 | 19 | 0 | 6 |
| June | 100.0 | 682 | 2.0 | 0 | 23 | 0 | 7 |
| July | 100.0 | 705 | 2.1 | 0 | 15 | 0 | 4 |
| August | 100.0 | 706 | 2.2 | 0 | 17 | 0 | 5 |
| September | 99.4 | 678 | 2.9 | 0 | 19 | 0 | 7 |
| October | 100.0 | 704 | 3.8 | 0 | 22 | 0 | 10 |
| November | 100.0 | 682 | 4.7 | 0 | 25 | 0 | 12 |
| December | 100.0 | 706 | 6.8 | 0 | 29 | 0 | 16 |
| Annual | 99.9 | 8318 | 3.5 | 0 | 29 | 0 | 16 |

Table 57 NO2 2020 Annual Frequency Distribution

| Month | Percentage of 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 | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Annual | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |

Table 58 NO2 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|---|---------------------------------|---|-----|------------------------|-----|-----|
| 0 | 0 | 4 | 4 | 0 | 0 | 78 | 380 | 0 |
| Total Hours of Downtime | | 8 | Total Hours of Calibration Time | | 458 | Total Hours of Flagged | | 466 |

Table 59 O3 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | # of 1-hr AAAQO Exceedances | Max. 24-hr (ppb) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|-----------------------------|------------------|
| January | - | - | - | - | - | - | - |
| February | - | - | - | - | - | - | - |
| March | - | - | - | - | - | - | - |
| April | - | - | - | - | - | - | - |
| May | - | - | - | - | - | - | - |
| June | - | - | - | - | - | - | - |
| July | - | - | - | - | - | - | - |
| August | - | - | - | - | - | - | - |
| September | - | - | - | - | - | - | - |
| October | 100.0 | 706 | 20.7 | 1.4 | 37.7 | 0 | 28.2 |
| November | 100.0 | 684 | 20.0 | 0.1 | 32.9 | 0 | 26.8 |
| December | 100.0 | 708 | 20.3 | 0.0 | 38.5 | 0 | 29.2 |
| Annual | 100.0 | 2098 | 20.3 | 0.0 | 38.5 | 0 | 29.2 |

Table 60 O3 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppb) | | | | |
|-----------|--|-------|--------|---------|------|
| | 0 - 2 | 3 - 5 | 6 - 10 | 11 - 40 | >40 |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | - | - | - | - | - |
| May | - | - | - | - | - |
| June | - | - | - | - | - |
| July | - | - | - | - | - |
| August | - | - | - | - | - |
| September | - | - | - | - | - |
| October | 94.2% | 5.8% | 0.0% | 0.0% | 0.0% |
| November | 97.8% | 2.2% | 0.0% | 0.0% | 0.0% |
| December | 93.2% | 6.8% | 0.0% | 0.0% | 0.0% |
| Annual | 95.1% | 4.9% | 0.0% | 0.0% | 0.0% |

Table 61 O3 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|---|---------------------------------|---|-----|------------------------|----|-----|
| 0 | 0 | 0 | 0 | 0 | 0 | 14 | 96 | 0 |
| Total Hours of Downtime | | 0 | Total Hours of Calibration Time | | 110 | Total Hours of Flagged | | 110 |

Table 62 THC 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppm) | Min. 1-hr (ppm) | Max. 1-hr (ppm) | Max. 24-hr (ppm) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 707 | 2.13 | 1.88 | 2.73 | 2.41 |
| February | 90.7 | 595 | 2.07 | 1.89 | 2.37 | 2.21 |
| March | 99.5 | 704 | 1.98 | 1.86 | 2.39 | 2.12 |
| April | 99.3 | 679 | 1.95 | 1.85 | 2.34 | 1.99 |
| May | 99.9 | 705 | 1.95 | 1.87 | 2.21 | 2.00 |
| June | 99.4 | 680 | 1.97 | 1.88 | 2.91 | 2.12 |
| July | 96.5 | 681 | 2.04 | 1.90 | 2.99 | 2.21 |
| August | 99.1 | 702 | 2.07 | 1.91 | 2.75 | 2.25 |
| September | 99.9 | 684 | 2.02 | 1.88 | 2.48 | 2.15 |
| October | 96.9 | 684 | 1.99 | 1.85 | 2.52 | 2.11 |
| November | 97.9 | 670 | 2.01 | 1.87 | 2.49 | 2.29 |
| December | 100.0 | 708 | 2.01 | 1.80 | 3.84 | 2.42 |
| Annual | 98.2 | 8199 | 2.02 | 1.80 | 3.84 | 2.42 |

Table 63 THC 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppm) | | | | |
|-----------|--|-------|--------|---------|------|
| | 0 - 2 | 3 - 5 | 6 - 10 | 11 - 40 | >40 |
| January | 92.4% | 7.6% | 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 | 99.4% | 0.6% | 0.0% | 0.0% | 0.0% |
| July | 96.3% | 3.7% | 0.0% | 0.0% | 0.0% |
| August | 94.2% | 5.8% | 0.0% | 0.0% | 0.0% |
| September | 99.3% | 0.7% | 0.0% | 0.0% | 0.0% |
| October | 99.9% | 0.1% | 0.0% | 0.0% | 0.0% |
| November | 99.4% | 0.6% | 0.0% | 0.0% | 0.0% |
| December | 97.2% | 2.8% | 0.0% | 0.0% | 0.0% |
| Annual | 98.2% | 1.8% | 0.0% | 0.0% | 0.0% |

Table 64 THC 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|-----|-----|---------------------------------|---|-----|------------------------|-----|-----|
| 0 | 106 | 1 | 4 | 0 | 40 | 58 | 376 | 0 |
| Total Hours of Downtime | | 151 | Total Hours of Calibration Time | | 434 | Total Hours of Flagged | | 585 |

Table 65 CH4 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppm) | Min. 1-hr (ppm) | Max. 1-hr (ppm) | Max. 24-hr (ppm) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 707 | 2.13 | 1.88 | 2.73 | 2.41 |
| February | 90.7 | 595 | 2.07 | 1.89 | 2.37 | 2.21 |
| March | 99.5 | 704 | 1.98 | 1.86 | 2.38 | 2.12 |
| April | 99.3 | 679 | 1.95 | 1.85 | 2.18 | 1.99 |
| May | 99.9 | 705 | 1.95 | 1.87 | 2.21 | 2.00 |
| June | 99.4 | 680 | 1.97 | 1.88 | 2.80 | 2.11 |
| July | 96.5 | 681 | 2.04 | 1.90 | 2.86 | 2.20 |
| August | 99.1 | 702 | 2.07 | 1.91 | 2.75 | 2.25 |
| September | 99.9 | 684 | 2.02 | 1.88 | 2.48 | 2.14 |
| October | 96.9 | 684 | 1.99 | 1.85 | 2.41 | 2.11 |
| November | 97.9 | 670 | 2.01 | 1.87 | 2.49 | 2.28 |
| December | 100.0 | 708 | 2.00 | 1.80 | 3.12 | 2.37 |
| Annual | 98.2 | 8199 | 2.01 | 1.80 | 3.12 | 2.41 |

Table 66 CH4 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppm) | | | | |
|-----------|--|-------|--------|---------|------|
| | 0 - 2 | 3 - 5 | 6 - 10 | 11 - 20 | >20 |
| January | 92.4% | 7.6% | 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 | 99.4% | 0.6% | 0.0% | 0.0% | 0.0% |
| July | 96.3% | 3.7% | 0.0% | 0.0% | 0.0% |
| August | 94.3% | 5.7% | 0.0% | 0.0% | 0.0% |
| September | 99.3% | 0.7% | 0.0% | 0.0% | 0.0% |
| October | 99.9% | 0.1% | 0.0% | 0.0% | 0.0% |
| November | 99.4% | 0.6% | 0.0% | 0.0% | 0.0% |
| December | 97.2% | 2.8% | 0.0% | 0.0% | 0.0% |
| Annual | 98.2% | 1.8% | 0.0% | 0.0% | 0.0% |

Table 67 CH4 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|-----|-----|---------------------------------|---|-----|------------------------|-----|-----|
| 0 | 106 | 1 | 4 | 0 | 40 | 58 | 376 | 0 |
| Total Hours of Downtime | | 151 | Total Hours of Calibration Time | | 434 | Total Hours of Flagged | | 585 |

Table 68 NMHC 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppm) | Min. 1-hr (ppm) | Max. 1-hr (ppm) | Max. 24-hr (ppm) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 707 | 0.00 | 0.00 | 0.01 | 0.00 |
| February | 90.7 | 595 | 0.00 | 0.00 | 0.00 | 0.00 |
| March | 99.5 | 704 | 0.00 | 0.00 | 0.02 | 0.00 |
| April | 99.3 | 679 | 0.00 | 0.00 | 0.16 | 0.01 |
| May | 99.9 | 705 | 0.00 | 0.00 | 0.01 | 0.00 |
| June | 99.4 | 680 | 0.00 | 0.00 | 0.11 | 0.01 |
| July | 96.5 | 681 | 0.00 | 0.00 | 0.13 | 0.01 |
| August | 99.1 | 702 | 0.00 | 0.00 | 0.50 | 0.02 |
| September | 99.9 | 684 | 0.00 | 0.00 | 0.15 | 0.02 |
| October | 96.9 | 684 | 0.00 | 0.00 | 0.10 | 0.01 |
| November | 97.9 | 670 | 0.00 | 0.00 | 0.05 | 0.00 |
| December | 100.0 | 708 | 0.00 | 0.00 | 0.72 | 0.05 |
| Annual | 98.2 | 8199 | 0.00 | 0.00 | 0.72 | 0.05 |

Table 69 NMHC 2020 Annual Frequency Distribution

| Month | Percentage of 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 | 99.9% | 0.1% | 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 | 99.7% | 0.1% | 0.1% | 0.0% | 0.0% |
| September | 99.9% | 0.1% | 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 | 99.6% | 0.1% | 0.3% | 0.0% | 0.0% |
| Annual | 99.9% | 0.0% | 0.0% | 0.0% | 0.0% |

Table 70 NMHC 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|-----|-----|---------------------------------|---|-----|------------------------|-----|-----|
| 0 | 106 | 1 | 4 | 0 | 40 | 58 | 376 | 0 |
| Total Hours of Downtime | | 151 | Total Hours of Calibration Time | | 435 | Total Hours of Flagged | | 585 |

Table 71 PM2.5 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | 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 | - | - | - | - | - | - | - | - |
| February | - | - | - | - | - | - | - | - |
| March | - | - | - | - | - | - | - | - |
| April | - | - | - | - | - | - | - | - |
| May | 31.2 | 230 | 3.4 | 0 | 20 | 0 | 7 | 0 |
| June | 100.0 | 718 | 2.9 | 0 | 24 | 0 | 8 | 0 |
| July | 100.0 | 743 | 3.9 | 1 | 31 | 0 | 10 | 0 |
| August | 100.0 | 742 | 3.5 | 0 | 25 | 0 | 9 | 0 |
| September | 99.9 | 718 | 3.3 | 0 | 27 | 0 | 18 | 0 |
| October | 100.0 | 743 | 2.5 | 0 | 20 | 0 | 8 | 0 |
| November | 100.0 | 718 | 5.0 | 0 | 23 | 0 | 13 | 0 |
| December | 100.0 | 742 | 4.2 | 0 | 18 | 0 | 11 | 0 |
| Annual | 91.4 | 5354 | 3.6 | 0 | 31 | 0 | 18 | 0 |

Table 72 PM2.5 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ug/m3) | | | | |
|-----------|--|-----------|-----------|-------|------|
| | 0 - 0.1 | 0.2 - 0.3 | 0.4 - 0.9 | 1 - 2 | >2 |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | - | - | - | - | - |
| 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 73 PM2.5 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|---|---------------------------------|---|-----|------------------------|---|----|
| 0 | 0 | 1 | 0 | 0 | 0 | 13 | 0 | 0 |
| Total Hours of Downtime | | 1 | Total Hours of Calibration Time | | 13 | Total Hours of Flagged | | 14 |

Table 74 RH 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (%) | Min. 1-hr (%) | Max. 1-hr (%) | Max. 24-hr (%) |
|-----------|------------------------|---------------|------------------|---------------|---------------|----------------|
| January | 97.4 | 725 | 81.5 | 40 | 100 | 100 |
| February | 100.0 | 696 | 73.2 | 30 | 99 | 88 |
| March | 99.5 | 740 | 70.7 | 31 | 100 | 87 |
| April | 100.0 | 720 | 61.6 | 15 | 100 | 83 |
| May | 100.0 | 744 | 61.4 | 17 | 100 | 97 |
| June | 100.0 | 720 | 73.8 | 22 | 100 | 100 |
| July | 100.0 | 744 | 76.4 | 29 | 100 | 96 |
| August | 100.0 | 744 | 73.8 | 23 | 100 | 97 |
| September | 99.7 | 718 | 80.5 | 23 | 100 | 99 |
| October | 100.0 | 744 | 75.9 | 25 | 100 | 99 |
| November | 100.0 | 720 | 89.0 | 46 | 100 | 100 |
| December | 100.0 | 744 | 85.6 | 41 | 100 | 98 |
| Annual | 99.7 | 8759 | 75.3 | 15 | 100 | 100 |

Table 75 RH 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|----|----|---------------------------------|---|-----|------------------------|---|----|
| 1 | 19 | 1 | 4 | 0 | 0 | 0 | 0 | 0 |
| Total Hours of Downtime | | 25 | Total Hours of Calibration Time | | 0 | Total Hours of Flagged | | 25 |

Table 76 BP 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (mb) | Min. 1-hr (mb) | Max. 1-hr (mb) | Max. 24-hr (mb) |
|-----------|------------------------|---------------|-------------------|----------------|----------------|-----------------|
| January | 100.0 | 744 | 934 | 911 | 956 | 951 |
| February | 100.0 | 696 | 933 | 912 | 953 | 951 |
| March | 99.5 | 740 | 935 | 911 | 961 | 960 |
| April | 100.0 | 720 | 935 | 920 | 949 | 947 |
| May | 100.0 | 744 | 938 | 916 | 959 | 957 |
| June | 100.0 | 720 | 934 | 917 | 946 | 943 |
| July | 100.0 | 744 | 935 | 924 | 949 | 947 |
| August | 100.0 | 744 | 935 | 918 | 948 | 946 |
| September | 99.7 | 718 | 938 | 914 | 955 | 953 |
| October | 100.0 | 744 | 936 | 909 | 953 | 952 |
| November | 100.0 | 720 | 930 | 909 | 944 | 942 |
| December | 100.0 | 744 | 933 | 911 | 949 | 946 |
| Annual | 99.9 | 8778 | 935 | 909 | 961 | 960 |

Table 77 BP 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|---|---------------------------------|---|-----|------------------------|---|---|
| 1 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 |
| Total Hours of Downtime | | 6 | Total Hours of Calibration Time | | 0 | Total Hours of Flagged | | 0 |

Table 78 AT 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (°C) | Min. 1-hr (°C) | Max. 1-hr (°C) | Max. 24-hr (°C) |
|-----------|------------------------|---------------|-------------------|----------------|----------------|-----------------|
| January | 100.0 | 744 | -14.5 | -37.1 | 5.2 | 0.5 |
| February | 100.0 | 696 | -9.7 | -32.8 | 7.4 | 2.5 |
| March | 99.5 | 740 | -8.6 | -25.1 | 5.1 | -1.2 |
| April | 100.0 | 720 | -0.2 | -27.2 | 20.3 | 12.7 |
| May | 100.0 | 744 | 9.6 | -5.3 | 24.2 | 18.4 |
| June | 100.0 | 720 | 13.7 | 1.8 | 26.3 | 19.8 |
| July | 100.0 | 744 | 17.2 | 7.6 | 30.8 | 23.6 |
| August | 100.0 | 744 | 16.0 | 4.1 | 31.1 | 22.2 |
| September | 99.7 | 718 | 9.7 | -3.1 | 22.2 | 13.2 |
| October | 100.0 | 744 | 0.0 | -11.0 | 20.2 | 13.8 |
| November | 100.0 | 720 | -6.5 | -23.4 | 13.9 | 6.3 |
| December | 100.0 | 744 | -7.8 | -27.1 | 7.9 | 3.4 |
| Annual | 99.9 | 8778 | 1.6 | -37.1 | 31.1 | 23.6 |

Table 79 AT 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|---|---------------------------------|---|-----|------------------------|---|---|
| 1 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 |
| Total Hours of Downtime | | 6 | Total Hours of Calibration Time | | 0 | Total Hours of Flagged | | 6 |

Table 80 ST 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (°C) | Min. 1-hr (°C) | Max. 1-hr (°C) | Max. 24-hr (°C) |
|-----------|------------------------|---------------|-------------------|----------------|----------------|-----------------|
| January | 100.0 | 744 | 20.3 | 19.6 | 21.8 | 20.6 |
| February | 100.0 | 696 | 20.6 | 19.8 | 22.2 | 21.1 |
| March | 99.5 | 740 | 20.7 | 20.0 | 22.9 | 21.3 |
| April | 100.0 | 720 | 21.3 | 20.0 | 23.5 | 22.7 |
| May | 100.0 | 744 | 22.1 | 19.4 | 24.1 | 22.9 |
| June | 100.0 | 720 | 21.2 | 19.1 | 22.8 | 22.3 |
| July | 100.0 | 744 | 23.7 | 21.9 | 25.7 | 25.4 |
| August | 100.0 | 744 | 24.1 | 22.8 | 25.7 | 25.5 |
| September | 99.7 | 718 | 22.8 | 20.9 | 23.9 | 23.4 |
| October | 100.0 | 744 | 22.0 | 19.9 | 24.1 | 23.3 |
| November | 100.0 | 720 | 22.6 | 21.8 | 24.7 | 24.0 |
| December | 100.0 | 744 | 22.4 | 21.6 | 24.4 | 23.9 |
| Annual | 99.9 | 8778 | 22.0 | 19.1 | 25.7 | 25.5 |

Table 81 ST 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|---|---------------------------------|---|-----|------------------------|---|---|
| 1 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 |
| Total Hours of Downtime | | 6 | Total Hours of Calibration Time | | 0 | Total Hours of Flagged | | 6 |

Table 82 Precipitation 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Total (mm) | Min. Total 1-hr (mm) | Max. Total 1-hr (mm) | Max. Total 24-hr (mm) |
|-----------|------------------------|---------------|--------------------|----------------------|----------------------|-----------------------|
| January | 100.0 | 744 | 4.3 | 0.0 | 1.3 | 3.3 |
| February | 100.0 | 696 | 0.9 | 0.0 | 0.3 | 0.4 |
| March | 99.5 | 739 | 3.3 | 0.0 | 0.8 | 2.0 |
| April | 100.0 | 720 | 13.3 | 0.0 | 2.8 | 4.6 |
| May | 100.0 | 744 | 32.4 | 0.0 | 6.9 | 14.9 |
| June | 100.0 | 719 | 132.8 | 0.0 | 4.6 | 1.6 |
| July | 100.0 | 744 | 70.7 | 0.0 | 6.8 | 15.1 |
| August | 100.0 | 744 | 82.5 | 0.0 | 16.3 | 21.6 |
| September | 99.7 | 717 | 13.4 | 0.0 | 2.4 | 0.2 |
| October | 100.0 | 744 | 25.3 | 0.0 | 2.5 | 12.4 |
| November | 100.0 | 720 | 6.5 | 0.0 | 1.4 | 0.1 |
| December | 100.0 | 743 | 1.0 | 0.0 | 0.3 | 0.5 |
| Annual | 99.9 | 8774 | 386.4* | 0.0 | 16.3 | 21.6 |

* Data represents the total (sum) for the year.

Table 83 Precipitation 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|---|---------------------------------|---|-----|------------------------|---|----|
| 1 | 0 | 1 | 4 | 0 | 0 | 4 | 0 | 0 |
| Total Hours of Downtime | | 6 | Total Hours of Calibration Time | | 4 | Total Hours of Flagged | | 10 |

Table 84 WS 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (kph) | Min. 1-hr (kph) | Max. 1-hr (kph) | Max. 24-hr (kph) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 744 | 0.5 | 0.0 | 14.4 | 8.5 |
| February | 100.0 | 696 | 1.5 | 0.1 | 16.8 | 10.6 |
| March | 99.5 | 740 | 0.8 | 0.1 | 13.1 | 9.1 |
| April | 100.0 | 720 | 1.8 | 0.1 | 14.5 | 8.8 |
| May | 100.0 | 744 | 1.4 | 0.1 | 17.3 | 11.2 |
| June | 100.0 | 720 | 0.8 | 0.1 | 13.5 | 8.8 |
| July | 100.0 | 744 | 1.1 | 0.0 | 15.0 | 8.0 |
| August | 100.0 | 744 | 1.8 | 0.0 | 11.2 | 6.9 |
| September | 99.7 | 716 | 1.4 | 0.1 | 13.1 | 7.7 |
| October | 100.0 | 744 | 2.4 | 0.0 | 14.7 | 8.5 |
| November | 100.0 | 720 | 0.6 | 0.0 | 13.4 | 6.8 |
| December | 100.0 | 744 | 1.9 | 0.1 | 12.5 | 6.6 |
| Annual | 99.9 | 8776 | 1.3 | 0.0 | 17.3 | 11.2 |

Table 85 WS 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in kph) | | | | |
|-----------|--|--------|---------|--------|------|
| | 0 - 6 | 7 - 15 | 16 - 29 | 30 -39 | >39 |
| January | 87.0% | 13.0% | 0.0% | 0.0% | 0.0% |
| February | 75.4% | 24.4% | 0.1% | 0.0% | 0.0% |
| March | 57.4% | 42.6% | 0.0% | 0.0% | 0.0% |
| April | 65.6% | 34.4% | 0.0% | 0.0% | 0.0% |
| May | 64.1% | 35.2% | 0.7% | 0.0% | 0.0% |
| June | 81.4% | 18.6% | 0.0% | 0.0% | 0.0% |
| July | 88.4% | 11.6% | 0.0% | 0.0% | 0.0% |
| August | 84.4% | 15.6% | 0.0% | 0.0% | 0.0% |
| September | 82.4% | 17.6% | 0.0% | 0.0% | 0.0% |
| October | 73.0% | 27.0% | 0.0% | 0.0% | 0.0% |
| November | 81.9% | 18.1% | 0.0% | 0.0% | 0.0% |
| December | 87.2% | 12.8% | 0.0% | 0.0% | 0.0% |
| Annual | 77.4% | 22.6% | 0.1% | 0.0% | 0.0% |

Table 86 WS 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|---|---------------------------------|---|-----|------------------------|---|---|
| 1 | 0 | 1 | 4 | 0 | 0 | 2 | 0 | 0 |
| Total Hours of Downtime | | 6 | Total Hours of Calibration Time | | 2 | Total Hours of Flagged | | 8 |

1.3 St. Lina Station

Table 87 SO2 2020 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 | 100.0 | 708 | 0.4 | 0 | 0 | 4 | 0 | 1 | 0 |
| February | 100.0 | 660 | 0.4 | 0 | 0 | 5 | 0 | 2 | 0 |
| March | 100.0 | 708 | 0.2 | 0 | 0 | 3 | 0 | 1 | 0 |
| April | 99.4 | 680 | 0.1 | 0 | 0 | 2 | 0 | 1 | 0 |
| May | 100.0 | 707 | 0.0 | 0 | 0 | 1 | 0 | 0 | 0 |
| June | 99.4 | 680 | 0.0 | 0 | 0 | 2 | 0 | 0 | 0 |
| July | 99.9 | 706 | 0.0 | 0 | 0 | 1 | 0 | 1 | 0 |
| August | 100.0 | 705 | 0.0 | 0 | 0 | 2 | 0 | 0 | 0 |
| September | 99.6 | 680 | 0.0 | 0 | 0 | 2 | 0 | 0 | 0 |
| October | 100.0 | 707 | 0.1 | 0 | 0 | 4 | 0 | 1 | 0 |
| November | 100.0 | 684 | 0.3 | 0 | 0 | 15 | 0 | 2 | 0 |
| December | 99.2 | 702 | 0.3 | 0 | 0 | 6 | 0 | 3 | 0 |
| Annual | 99.8 | 8327 | 0.2 | 0 | 0 | 15 | 0 | 3 | 0 |

Table 88 SO2 2020 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 | 99.9% | 0.1% | 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 89 SO2 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|-----|-----|
| 15 | 2 | 0 | 0 | 0 | 1 | 58 | 381 | 0 |
| Total Hours of Downtime | | 18 | Total Hours of Calibration Time | | 439 | Total Hours of Flagged | | 457 |

Table 90 H2S 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | # of 1-hr AAAQO Exceedances | Max. 24-hr (ppb) | # of 24-hr AAAQO Exceedances |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|-----------------------------|------------------|------------------------------|
| January | 98.8 | 699 | 0.0 | 0 | 2 | 0 | 1 | 0 |
| February | 100.0 | 660 | 0.0 | 0 | 1 | 0 | 0 | 0 |
| March | 100.0 | 708 | 0.0 | 0 | 1 | 0 | 0 | 0 |
| April | 99.3 | 679 | 0.1 | 0 | 2 | 0 | 1 | 0 |
| May | 99.2 | 701 | 0.1 | 0 | 2 | 0 | 1 | 0 |
| June | 99.4 | 680 | 0.1 | 0 | 2 | 0 | 0 | 0 |
| July | 99.9 | 706 | 0.2 | 0 | 2 | 0 | 1 | 0 |
| August | 99.7 | 701 | 0.4 | 0 | 7 | 0 | 1 | 0 |
| September | 99.6 | 681 | 0.2 | 0 | 2 | 0 | 1 | 0 |
| October | 99.1 | 699 | 0.0 | 0 | 1 | 0 | 0 | 0 |
| November | 100.0 | 684 | 0.0 | 0 | 1 | 0 | 0 | 0 |
| December | 99.2 | 702 | 0.0 | 0 | 1 | 0 | 0 | 0 |
| Annual | 99.5 | 8300 | 0.1 | 0 | 7 | 0 | 1 | 0 |

Table 91 H2S 2020 Annual Frequency Distribution

| Month | Percentage of 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 | 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 | 98.7% | 1.0% | 0.3% | 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 92 H2S 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|-----|-----|
| 15 | 2 | 1 | 0 | 0 | 25 | 61 | 380 | 0 |
| Total Hours of Downtime | | 43 | Total Hours of Calibration Time | | 441 | Total Hours of Flagged | | 484 |

Table 93 NOx 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | Max. 24-hr (ppb) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 706 | 3.4 | 0 | 19 | 9 |
| February | 100.0 | 658 | 3.5 | 0 | 17 | 10 |
| March | 100.0 | 706 | 2.2 | 0 | 11 | 6 |
| April | 99.4 | 680 | 1.3 | 0 | 9 | 3 |
| May | 100.0 | 705 | 1.3 | 0 | 6 | 3 |
| June | 99.3 | 678 | 1.2 | 0 | 6 | 3 |
| July | 99.9 | 704 | 1.0 | 0 | 11 | 2 |
| August | 100.0 | 703 | 1.0 | 0 | 8 | 2 |
| September | 99.6 | 679 | 1.1 | 0 | 10 | 3 |
| October | 100.0 | 706 | 0.9 | 0 | 9 | 3 |
| November | 100.0 | 682 | 3.3 | 0 | 30 | 10 |
| December | 99.2 | 701 | 4.1 | 0 | 22 | 13 |
| Annual | 99.8 | 8308 | 2.0 | 0 | 30 | 13 |

Table 94 NOx 2020 Annual Frequency Distribution

| Month | Percentage of 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 | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Annual | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |

Table 95 NOx 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|-----|-----|
| 15 | 2 | 0 | 0 | 0 | 2 | 76 | 381 | 0 |
| Total Hours of Downtime | | 19 | Total Hours of Calibration Time | | 457 | Total Hours of Flagged | | 476 |

Table 96 NO 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | Max. 24-hr (ppb) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 706 | 0.2 | 0 | 9 | 1 |
| February | 100.0 | 658 | 0.3 | 0 | 6 | 1 |
| March | 100.0 | 706 | 0.2 | 0 | 4 | 1 |
| April | 99.4 | 680 | 0.1 | 0 | 1 | 0 |
| May | 100.0 | 705 | 0.0 | 0 | 2 | 0 |
| June | 99.3 | 678 | 0.0 | 0 | 1 | 0 |
| July | 99.9 | 704 | 0.0 | 0 | 8 | 0 |
| August | 100.0 | 703 | 0.0 | 0 | 5 | 0 |
| September | 99.6 | 679 | 0.1 | 0 | 8 | 1 |
| October | 100.0 | 706 | 0.1 | 0 | 2 | 0 |
| November | 100.0 | 682 | 0.2 | 0 | 6 | 1 |
| December | 99.2 | 701 | 0.3 | 0 | 8 | 2 |
| Annual | 99.8 | 8308 | 0.1 | 0 | 9 | 2 |

Table 97 NO 2020 Annual Frequency Distribution

| Month | Percentage of 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 | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Annual | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |

Table 98 NO 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|-----|-----|
| 15 | 2 | 0 | 0 | 0 | 2 | 76 | 381 | 0 |
| Total Hours of Downtime | | 19 | Total Hours of Calibration Time | | 457 | Total Hours of Flagged | | 476 |

Table 99 NO2 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | # of 1-hr AAAQO Exceedances | Max. 24-hr (ppb) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|-----------------------------|------------------|
| January | 100.0 | 706 | 3.2 | 0 | 19 | 0 | 8 |
| February | 100.0 | 658 | 3.3 | 0 | 13 | 0 | 9 |
| March | 100.0 | 706 | 2.0 | 0 | 9 | 0 | 5 |
| April | 99.4 | 680 | 1.3 | 0 | 7 | 0 | 3 |
| May | 100.0 | 705 | 1.2 | 0 | 6 | 0 | 3 |
| June | 99.3 | 678 | 1.1 | 0 | 5 | 0 | 3 |
| July | 99.9 | 704 | 1.0 | 0 | 5 | 0 | 2 |
| August | 100.0 | 703 | 0.9 | 0 | 7 | 0 | 2 |
| September | 99.6 | 679 | 1.0 | 0 | 4 | 0 | 3 |
| October | 100.0 | 706 | 0.8 | 0 | 7 | 0 | 3 |
| November | 100.0 | 682 | 3.0 | 0 | 28 | 0 | 9 |
| December | 99.2 | 701 | 3.8 | 0 | 22 | 0 | 11 |
| Annual | 99.8 | 8308 | 1.9 | 0 | 28 | 0 | 11 |

Table 100 NO2 2020 Annual Frequency Distribution

| Month | Percentage of 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 | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Annual | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |

Table 101 NO2 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|-----|-----|
| 15 | 2 | 0 | 0 | 0 | 2 | 76 | 381 | 0 |
| Total Hours of Downtime | | 19 | Total Hours of Calibration Time | | 457 | Total Hours of Flagged | | 476 |

Table 102 O3 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | # of 1-hr AAAQO Exceedances | Max. 24-hr (ppb) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|-----------------------------|------------------|
| January | 100.0 | 708 | 30.5 | 8.9 | 44.1 | 0 | 41.2 |
| February | 100.0 | 660 | 35.7 | 18.7 | 50.7 | 0 | 46.8 |
| March | 100.0 | 708 | 39.0 | 16.7 | 63.0 | 0 | 50.5 |
| April | 99.4 | 680 | 43.6 | 21.5 | 61.4 | 0 | 52.0 |
| May | 99.9 | 706 | 35.9 | 11.8 | 57.1 | 0 | 47.9 |
| June | 99.4 | 680 | 28.3 | 8.0 | 48.1 | 0 | 37.1 |
| July | 99.9 | 706 | 23.2 | 4.5 | 45.5 | 0 | 33.5 |
| August | 100.0 | 706 | 25.4 | 7.4 | 49.7 | 0 | 35.3 |
| September | 98.9 | 677 | 24.1 | 5.6 | 47.7 | 0 | 35.8 |
| October | 100.0 | 707 | 27.2 | 12.4 | 42.6 | 0 | 37.1 |
| November | 100.0 | 684 | 26.4 | 1.5 | 37.5 | 0 | 35.3 |
| December | 99.2 | 701 | 28.5 | 5.1 | 41.7 | 0 | 38.2 |
| Annual | 99.7 | 8323 | 30.7 | 1.5 | 63.0 | 0 | 52.0 |

Table 103 O3 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppb) | | | | |
|-----------|--|---------|---------|----------|------|
| | 0 - 30 | 31 - 50 | 51 - 82 | 83 - 159 | >159 |
| January | 47.9% | 52.1% | 0.0% | 0.0% | 0.0% |
| February | 19.8% | 79.8% | 0.3% | 0.0% | 0.0% |
| March | 18.4% | 75.1% | 6.5% | 0.0% | 0.0% |
| April | 4.1% | 82.4% | 13.5% | 0.0% | 0.0% |
| May | 25.9% | 69.3% | 4.8% | 0.0% | 0.0% |
| June | 59.1% | 40.9% | 0.0% | 0.0% | 0.0% |
| July | 80.2% | 19.8% | 0.0% | 0.0% | 0.0% |
| August | 76.1% | 23.9% | 0.0% | 0.0% | 0.0% |
| September | 78.1% | 21.9% | 0.0% | 0.0% | 0.0% |
| October | 71.6% | 28.4% | 0.0% | 0.0% | 0.0% |
| November | 70.9% | 29.1% | 0.0% | 0.0% | 0.0% |
| December | 55.8% | 44.2% | 0.0% | 0.0% | 0.0% |
| Annual | 50.7% | 47.2% | 2.1% | 0.0% | 0.0% |

Table 104 O3 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|-----|-----|
| 15 | 1 | 0 | 0 | 0 | 8 | 57 | 380 | 0 |
| Total Hours of Downtime | | 24 | Total Hours of Calibration Time | | 437 | Total Hours of Flagged | | 461 |

Table 105 THC 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppm) | Min. 1-hr (ppm) | Max. 1-hr (ppm) | Max. 24-hr (ppm) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 708 | 2.09 | 1.95 | 2.65 | 2.40 |
| February | 99.7 | 658 | 2.03 | 1.88 | 2.44 | 2.24 |
| March | 99.9 | 707 | 1.99 | 1.88 | 2.26 | 2.10 |
| April | 91.4 | 625 | 1.95 | 1.86 | 2.13 | 2.04 |
| May | 100.0 | 707 | 1.92 | 1.82 | 2.08 | 1.97 |
| June | 96.3 | 657 | 1.91 | 1.82 | 2.20 | 2.04 |
| July | 96.2 | 681 | 1.97 | 1.84 | 2.43 | 2.12 |
| August | 91.5 | 645 | 2.00 | 1.84 | 2.45 | 2.12 |
| September | 99.2 | 677 | 1.98 | 1.85 | 2.40 | 2.29 |
| October | 99.7 | 705 | 1.93 | 1.83 | 2.29 | 2.00 |
| November | 91.4 | 624 | 1.97 | 1.85 | 2.45 | 2.18 |
| December | 99.1 | 701 | 1.93 | 1.80 | 2.22 | 2.06 |
| Annual | 97.0 | 8095 | 1.97 | 1.80 | 2.65 | 2.40 |

Table 106 THC 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppm) | | | | |
|-----------|--|-------|--------|---------|------|
| | 0 - 2 | 3 - 5 | 6 - 10 | 11 - 40 | >40 |
| January | 96.0% | 4.0% | 0.0% | 0.0% | 0.0% |
| February | 99.8% | 0.2% | 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 | 99.9% | 0.1% | 0.0% | 0.0% | 0.0% |
| August | 99.5% | 0.5% | 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 | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Annual | 99.6% | 0.4% | 0.0% | 0.0% | 0.0% |

Table 107 THC 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|-----|-----|---------------------------------|---|-----|------------------------|-----|-----|
| 15 | 221 | 0 | 3 | 0 | 21 | 56 | 373 | 0 |
| Total Hours of Downtime | | 260 | Total Hours of Calibration Time | | 429 | Total Hours of Flagged | | 689 |

Table 108 CH4 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppm) | Min. 1-hr (ppm) | Max. 1-hr (ppm) | Max. 24-hr (ppm) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 708 | 2.09 | 1.95 | 2.65 | 2.40 |
| February | 99.7 | 658 | 2.03 | 1.88 | 2.44 | 2.24 |
| March | 99.9 | 707 | 1.99 | 1.88 | 2.26 | 2.10 |
| April | 91.4 | 625 | 1.95 | 1.86 | 2.13 | 2.04 |
| May | 100.0 | 707 | 1.92 | 1.82 | 2.08 | 1.97 |
| June | 96.3 | 657 | 1.91 | 1.82 | 2.20 | 2.04 |
| July | 96.2 | 681 | 1.97 | 1.84 | 2.43 | 2.12 |
| August | 91.5 | 645 | 2.00 | 1.84 | 2.45 | 2.12 |
| September | 99.2 | 677 | 1.98 | 1.85 | 2.40 | 2.29 |
| October | 99.7 | 705 | 1.93 | 1.83 | 2.29 | 2.00 |
| November | 91.4 | 624 | 1.97 | 1.85 | 2.45 | 2.18 |
| December | 99.1 | 701 | 1.93 | 1.80 | 2.22 | 2.06 |
| Annual | 97.0 | 8095 | 1.97 | 1.80 | 2.65 | 2.40 |

Table 109 CH4 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppm) | | | | |
|-----------|--|-------|--------|---------|------|
| | 0 - 2 | 3 - 5 | 6 - 10 | 11 - 20 | >20 |
| January | 96.0% | 4.0% | 0.0% | 0.0% | 0.0% |
| February | 99.8% | 0.2% | 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 | 99.9% | 0.1% | 0.0% | 0.0% | 0.0% |
| August | 99.5% | 0.5% | 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 | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Annual | 99.6% | 0.4% | 0.0% | 0.0% | 0.0% |

Table 110 CH4 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|-----|-----|---------------------------------|---|-----|------------------------|-----|-----|
| 15 | 221 | 0 | 3 | 0 | 21 | 56 | 373 | 0 |
| Total Hours of Downtime | | 260 | Total Hours of Calibration Time | | 429 | Total Hours of Flagged | | 689 |

Table 111 NMHC 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppm) | Min. 1-hr (ppm) | Max. 1-hr (ppm) | Max. 24-hr (ppm) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 708 | 0.00 | 0.00 | 0.00 | 0.00 |
| February | 99.7 | 658 | 0.00 | 0.00 | 0.00 | 0.00 |
| March | 99.9 | 707 | 0.00 | 0.00 | 0.01 | 0.00 |
| April | 91.4 | 625 | 0.00 | 0.00 | 0.00 | 0.00 |
| May | 100.0 | 707 | 0.00 | 0.00 | 0.00 | 0.00 |
| June | 96.3 | 657 | 0.00 | 0.00 | 0.01 | 0.00 |
| July | 96.2 | 681 | 0.00 | 0.00 | 0.00 | 0.00 |
| August | 91.5 | 645 | 0.00 | 0.00 | 0.00 | 0.00 |
| September | 99.2 | 677 | 0.00 | 0.00 | 0.01 | 0.00 |
| October | 99.7 | 705 | 0.00 | 0.00 | 0.00 | 0.00 |
| November | 91.4 | 624 | 0.00 | 0.00 | 0.00 | 0.00 |
| December | 99.1 | 701 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | 97.0 | 8095 | 0.00 | 0.00 | 0.01 | 0.00 |

Table 112 NMHC 2020 Annual Frequency Distribution

| Month | Percentage of 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 | 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 113 NMHC 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|-----|-----|---------------------------------|---|-----|------------------------|-----|-----|
| 15 | 221 | 0 | 3 | 0 | 21 | 56 | 373 | 0 |
| Total Hours of Downtime | | 260 | Total Hours of Calibration Time | | 429 | Total Hours of Flagged | | 689 |

Table 114 PM2.5 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | 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 | 100.0 | 743 | 5.4 | 0 | 46 | 0 | 21 | 0 |
| February | 100.0 | 694 | 5.1 | 0 | 22 | 0 | 15 | 0 |
| March | 100.0 | 742 | 4.2 | 0 | 21 | 0 | 10 | 0 |
| April | 99.6 | 715 | 3.8 | 0 | 25 | 0 | 11 | 0 |
| May | 100.0 | 741 | 4.3 | 0 | 16 | 0 | 9 | 0 |
| June | 99.3 | 714 | 3.5 | 0 | 24 | 0 | 9 | 0 |
| July | 99.9 | 742 | 3.9 | 0 | 35 | 0 | 10 | 0 |
| August | 100.0 | 741 | 5.1 | 0 | 24 | 0 | 15 | 0 |
| September | 99.7 | 717 | 4.3 | 0 | 36 | 0 | 21 | 0 |
| October | 100.0 | 743 | 3.5 | 0 | 19 | 0 | 9 | 0 |
| November | 100.0 | 719 | 6.9 | 0 | 33 | 0 | 17 | 0 |
| December | 99.2 | 736 | 6.2 | 0 | 24 | 0 | 15 | 0 |
| Annual | 99.8 | 8747 | 4.7 | 0 | 46 | 0 | 21 | 0 |

Table 115 PM2.5 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ug/m3) | | | | |
|-----------|--|---------|----------|-----------|------|
| | 0 - 50 | 51 - 80 | 81 - 120 | 121 - 240 | >240 |
| 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 116 PM2.5 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|---|----|
| 15 | 2 | 0 | 0 | 0 | 0 | 20 | 0 | 0 |
| Total Hours of Downtime | | 17 | Total Hours of Calibration Time | | 20 | Total Hours of Flagged | | 37 |

Table 117 RH 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (%) | Min. 1-hr (%) | Max. 1-hr (%) | Max. 24-hr (%) |
|-----------|------------------------|---------------|------------------|---------------|---------------|----------------|
| January | 100.0 | 744 | 78.3 | 38 | 98 | 96 |
| February | 100.0 | 696 | 70.0 | 31 | 97 | 89 |
| March | 100.0 | 744 | 68.8 | 31 | 96 | 82 |
| April | 99.6 | 717 | 56.3 | 21 | 97 | 80 |
| May | 100.0 | 744 | 57.9 | 22 | 100 | 97 |
| June | 99.3 | 715 | 73.5 | 30 | 99 | 98 |
| July | 99.9 | 743 | 74.5 | 40 | 100 | 90 |
| August | 100.0 | 744 | 67.8 | 36 | 99 | 89 |
| September | 99.7 | 718 | 70.4 | 26 | 99 | 92 |
| October | 100.0 | 744 | 69.4 | 32 | 98 | 93 |
| November | 100.0 | 720 | 80.0 | 33 | 97 | 93 |
| December | 99.2 | 738 | 76.2 | 35 | 96 | 92 |
| Annual | 99.8 | 8767 | 70.3 | 21 | 100 | 98 |

Table 118 RH 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|---|----|
| 16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hours of Downtime | | 17 | Total Hours of Calibration Time | | 0 | Total Hours of Flagged | | 17 |

Table 119 BP 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (mb) | Min. 1-hr (mb) | Max. 1-hr (mb) | Max. 24-hr (mb) |
|-----------|------------------------|---------------|-------------------|----------------|----------------|-----------------|
| January | 100.0 | 744 | 916 | 895 | 936 | 933 |
| February | 100.0 | 696 | 916 | 895 | 934 | 933 |
| March | 100.0 | 744 | 918 | 896 | 943 | 941 |
| April | 99.6 | 717 | 918 | 904 | 930 | 929 |
| May | 100.0 | 744 | 919 | 900 | 938 | 937 |
| June | 99.3 | 715 | 915 | 903 | 926 | 924 |
| July | 99.9 | 743 | 916 | 904 | 928 | 926 |
| August | 100.0 | 744 | 916 | 902 | 927 | 925 |
| September | 99.7 | 718 | 919 | 898 | 936 | 934 |
| October | 100.0 | 744 | 919 | 893 | 936 | 935 |
| November | 100.0 | 720 | 913 | 893 | 927 | 924 |
| December | 99.2 | 738 | 917 | 895 | 931 | 928 |
| Annual | 99.8 | 8767 | 917 | 893 | 943 | 941 |

Table 120 BP 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|---|----|
| 16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hours of Downtime | | 17 | Total Hours of Calibration Time | | 0 | Total Hours of Flagged | | 17 |

Table 121 AT 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (°C) | Min. 1-hr (°C) | Max. 1-hr (°C) | Max. 24-hr (°C) |
|-----------|------------------------|---------------|-------------------|----------------|----------------|-----------------|
| January | 100.0 | 744 | -14.2 | -35.8 | 3.9 | 0.5 |
| February | 100.0 | 696 | -8.8 | -29.2 | 7.4 | 2.6 |
| March | 100.0 | 744 | -8.1 | -21.5 | 4.1 | 0.5 |
| April | 99.6 | 717 | 0.4 | -21.9 | 19.4 | 13.5 |
| May | 100.0 | 744 | 10.2 | 0.1 | 23.3 | 17.5 |
| June | 99.3 | 715 | 13.6 | 3.4 | 25.8 | 19.1 |
| July | 99.9 | 743 | 17.0 | 9.7 | 29.4 | 23.1 |
| August | 100.0 | 744 | 16.2 | 3.0 | 29.9 | 23.1 |
| September | 99.7 | 718 | 11.0 | 0.0 | 26.1 | 16.9 |
| October | 100.0 | 744 | 0.7 | -13.9 | 19.3 | 14.9 |
| November | 100.0 | 720 | -5.3 | -18.8 | 13.7 | 10.3 |
| December | 99.2 | 738 | -6.7 | -25.3 | 7.4 | 3.3 |
| Annual | 99.8 | 8767 | 2.2 | -35.8 | 29.9 | 23.1 |

Table 122 AT 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|---|----|
| 16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hours of Downtime | | 17 | Total Hours of Calibration Time | | 0 | Total Hours of Flagged | | 17 |

Table 123 ST 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (°C) | Min. 1-hr (°C) | Max. 1-hr (°C) | Max. 24-hr (°C) |
|-----------|------------------------|---------------|-------------------|----------------|----------------|-----------------|
| January | 100.0 | 744 | 20.9 | 17.1 | 22.8 | 22.2 |
| February | 100.0 | 696 | 21.2 | 20.1 | 23.4 | 22.3 |
| March | 100.0 | 744 | 21.4 | 20.0 | 23.3 | 22.6 |
| April | 99.6 | 717 | 22.0 | 20.3 | 24.1 | 23.6 |
| May | 100.0 | 744 | 22.8 | 20.5 | 25.0 | 24.0 |
| June | 99.3 | 715 | 22.4 | 18.6 | 25.0 | 24.3 |
| July | 99.9 | 743 | 23.0 | 21.4 | 24.7 | 24.0 |
| August | 100.0 | 744 | 24.2 | 20.3 | 26.8 | 25.8 |
| September | 99.7 | 718 | 21.1 | 17.8 | 28.4 | 22.0 |
| October | 100.0 | 744 | 20.3 | 17.5 | 30.3 | 23.8 |
| November | 100.0 | 720 | 22.1 | 20.4 | 24.6 | 23.8 |
| December | 99.2 | 738 | 22.0 | 20.3 | 23.2 | 23.0 |
| Annual | 99.8 | 8767 | 21.9 | 17.1 | 30.3 | 25.8 |

Table 124 ST 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|---|----|
| 16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hours of Downtime | | 17 | Total Hours of Calibration Time | | 0 | Total Hours of Flagged | | 17 |

Table 125 Precipitation 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Total (mm) | Min. Total 1-hr (mm) | Max. Total 1-hr (mm) | Max. Total 24-hr (mm) |
|-----------|------------------------|---------------|--------------------|----------------------|----------------------|-----------------------|
| January | 100.0 | 744 | 20.7 | 0.0 | 1.8 | 8.6 |
| February | 100.0 | 696 | 19.6 | 0.0 | 2.1 | 5.4 |
| March | 100.0 | 744 | 12.0 | 0.0 | 1.8 | 6.6 |
| April | 99.6 | 717 | 8.6 | 0.0 | 1.6 | 4.6 |
| May | 100.0 | 744 | 67.5 | 0.0 | 7.7 | 19.8 |
| June | 99.3 | 714 | 146.6 | 0.0 | 6.3 | 2.1 |
| July | 99.9 | 743 | 57.9 | 0.0 | 10.7 | 15.4 |
| August | 95.3 | 708 | 14.9 | 0.0 | 3.8 | 13.9 |
| September | 99.7 | 717 | 2.4 | 0.0 | 1.2 | 0.1 |
| October | 41.5 | 309 | 7.2 | 0.0 | 1.0 | 6.3 |
| November | 0.0 | 0 | - | - | - | - |
| December | 0.0 | 0 | - | - | - | - |
| Annual | 77.9 | 6836 | 357.4* | 0.0 | 10.7 | 19.8 |

* Data represents the total (sum) for the year.

Table 126 Precipitation 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|------|------|---------------------------------|---|-----|------------------------|---|------|
| 10 | 1935 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| Total Hours of Downtime | | 1945 | Total Hours of Calibration Time | | 3 | Total Hours of Flagged | | 1948 |

Table 127 WS 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (kph) | Min. 1-hr (kph) | Max. 1-hr (kph) | Max. 24-hr (kph) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 100.0 | 744 | 1.7 | 0.0 | 24.9 | 16.1 |
| February | 100.0 | 692 | 5.2 | 0.5 | 29.7 | 20.4 |
| March | 100.0 | 744 | 2.0 | 0.2 | 27.2 | 18.2 |
| April | 99.6 | 717 | 5.5 | 1.4 | 32.0 | 19.0 |
| May | 100.0 | 744 | 2.2 | 0.6 | 24.7 | 20.5 |
| June | 99.3 | 715 | 1.3 | 0.5 | 32.2 | 16.9 |
| July | 99.9 | 743 | 4.2 | 1.2 | 22.5 | 15.4 |
| August | 100.0 | 744 | 5.0 | 1.4 | 29.2 | 18.7 |
| September | 99.7 | 718 | 4.4 | 0.3 | 31.3 | 17.8 |
| October | 100.0 | 744 | 6.3 | 1.3 | 27.0 | 19.4 |
| November | 100.0 | 720 | 3.5 | 1.1 | 29.0 | 15.3 |
| December | 99.2 | 738 | 1.3 | 1.3 | 27.6 | 14.4 |
| Annual | 99.8 | 8763 | 3.6 | 0.0 | 32.2 | 20.5 |

Table 128 WS 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in kph) | | | | |
|-----------|--|--------|---------|--------|------|
| | 0 - 6 | 7 - 15 | 16 - 29 | 30 -39 | >39 |
| January | 19.4% | 66.3% | 14.4% | 0.0% | 0.0% |
| February | 7.8% | 70.7% | 21.4% | 0.1% | 0.0% |
| March | 9.0% | 65.9% | 25.1% | 0.0% | 0.0% |
| April | 7.3% | 67.2% | 25.0% | 0.6% | 0.0% |
| May | 10.9% | 66.0% | 23.1% | 0.0% | 0.0% |
| June | 23.5% | 65.0% | 11.3% | 0.1% | 0.0% |
| July | 23.0% | 68.5% | 8.5% | 0.0% | 0.0% |
| August | 16.8% | 65.5% | 17.7% | 0.0% | 0.0% |
| September | 17.8% | 71.0% | 11.0% | 0.1% | 0.0% |
| October | 11.2% | 68.5% | 20.3% | 0.0% | 0.0% |
| November | 14.0% | 69.6% | 16.4% | 0.0% | 0.0% |
| December | 13.1% | 72.4% | 14.5% | 0.0% | 0.0% |
| Annual | 14.5% | 68.0% | 17.4% | 0.1% | 0.0% |

Table 129 WS 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|---|----|
| 16 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Total Hours of Downtime | | 17 | Total Hours of Calibration Time | | 4 | Total Hours of Flagged | | 21 |

1.4 Bonnyville – East Station

Table 130 SO2 2020 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 | 99.7 | 705 | 0.3 | 0 | 0 | 4 | 0 | 2 | 0 |
| February | 100.0 | 660 | 0.5 | 0 | 0 | 3 | 0 | 1 | 0 |
| March | 100.0 | 708 | 0.3 | 0 | 0 | 3 | 0 | 1 | 0 |
| April | 100.0 | 683 | 0.2 | 0 | 0 | 3 | 0 | 1 | 0 |
| May | 100.0 | 707 | 0.0 | 0 | 0 | 1 | 0 | 0 | 0 |
| June | 100.0 | 685 | 0.1 | 0 | 0 | 2 | 0 | 1 | 0 |
| July | 100.0 | 707 | 0.1 | 0 | 0 | 2 | 0 | 0 | 0 |
| August | 98.4 | 694 | 0.1 | 0 | 0 | 2 | 0 | 0 | 0 |
| September | 100.0 | 684 | 0.1 | 0 | 0 | 1 | 0 | 0 | 0 |
| October | 100.0 | 706 | 0.1 | 0 | 0 | 4 | 0 | 0 | 0 |
| November | 100.0 | 685 | 0.4 | 0 | 0 | 8 | 0 | 2 | 0 |
| December | 100.0 | 707 | 0.4 | 0 | 0 | 3 | 0 | 2 | 0 |
| Annual | 99.8 | 8331 | 0.2 | 0 | 0 | 8 | 0 | 2 | 0 |

Table 131 SO2 2020 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 132 SO2 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|-----|-----|
| 13 | 0 | 1 | 0 | 0 | 0 | 59 | 380 | 0 |
| Total Hours of Downtime | | 14 | Total Hours of Calibration Time | | 439 | Total Hours of Flagged | | 453 |

Table 133 H2S 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | # of 1-hr AAAQO Exceedances | Max. 24-hr (ppb) | # of 24-hr AAAQO Exceedances |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|-----------------------------|------------------|------------------------------|
| January | 99.1 | 701 | 0.3 | 0 | 6 | 0 | 1 | 0 |
| February | 98.4 | 649 | 0.3 | 0 | 6 | 0 | 1 | 0 |
| March | 99.3 | 703 | 0.3 | 0 | 7 | 0 | 1 | 0 |
| April | 100.0 | 683 | 0.5 | 0 | 86 | 7 | 5 | 1 |
| May | 100.0 | 706 | 2.4 | 0 | 56 | 49 | 12 | 9 |
| June | 100.0 | 685 | 0.6 | 0 | 41 | 2 | 3 | 1 |
| July | 100.0 | 706 | 1.7 | 0 | 38 | 25 | 8 | 5 |
| August | 98.4 | 693 | 2.0 | 0 | 66 | 25 | 7 | 6 |
| September | 100.0 | 684 | 3.8 | 0 | 111 | 63 | 12 | 14 |
| October | 100.0 | 706 | 1.5 | 0 | 107 | 26 | 15 | 4 |
| November | 99.2 | 679 | 0.9 | 0 | 38 | 13 | 6 | 2 |
| December | 100.0 | 707 | 0.4 | 0 | 31 | 5 | 3 | 0 |
| Annual | 99.5 | 8302 | 1.2 | 0 | 111 | 215 | 15 | 42 |

Table 134 H2S 2020 Annual Frequency Distribution

| Month | Percentage of 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 | 98.8% | 1.1% | 0.2% | 0.0% | 0.0% |
| March | 96.7% | 2.8% | 0.4% | 0.0% | 0.0% |
| April | 95.9% | 2.5% | 0.6% | 0.9% | 0.1% |
| May | 81.9% | 7.4% | 4.0% | 6.2% | 0.6% |
| June | 95.8% | 3.4% | 0.6% | 0.3% | 0.0% |
| July | 82.9% | 9.5% | 4.1% | 3.5% | 0.0% |
| August | 82.0% | 9.4% | 5.3% | 3.0% | 0.3% |
| September | 82.2% | 5.1% | 3.5% | 7.9% | 1.3% |
| October | 92.2% | 2.1% | 2.3% | 2.8% | 0.6% |
| November | 92.6% | 3.1% | 2.4% | 1.9% | 0.0% |
| December | 95.2% | 3.1% | 1.0% | 0.7% | 0.0% |
| Annual | 91.3% | 4.1% | 2.0% | 2.3% | 0.2% |

Table 135 H2S 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|-----|-----|
| 13 | 0 | 1 | 0 | 0 | 27 | 61 | 380 | 0 |
| Total Hours of Downtime | | 41 | Total Hours of Calibration Time | | 441 | Total Hours of Flagged | | 482 |

Table 136 NOx 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | Max. 24-hr (ppb) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 99.7 | 703 | 5.8 | 1 | 101 | 15 |
| February | 99.0 | 652 | 4.9 | 0 | 61 | 12 |
| March | 97.7 | 685 | 3.4 | 0 | 49 | 9 |
| April | 99.9 | 682 | 2.2 | 0 | 19 | 5 |
| May | 98.8 | 696 | 1.8 | 0 | 62 | 5 |
| June | 100.0 | 683 | 2.0 | 0 | 24 | 4 |
| July | 100.0 | 706 | 2.0 | 0 | 95 | 6 |
| August | 98.4 | 692 | 1.6 | 0 | 68 | 5 |
| September | 100.0 | 683 | 2.1 | 0 | 22 | 4 |
| October | 100.0 | 705 | 2.4 | 0 | 102 | 7 |
| November | 100.0 | 683 | 5.3 | 0 | 47 | 17 |
| December | 100.0 | 705 | 4.9 | 1 | 26 | 11 |
| Annual | 99.5 | 8275 | 3.2 | 0 | 102 | 17 |

Table 137 NOx 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppb) | | | | |
|-----------|--|---------|---------|----------|------|
| | 0 - 30 | 31 - 50 | 51 - 82 | 83 - 159 | >159 |
| January | 98.7% | 1.0% | 0.0% | 0.3% | 0.0% |
| February | 99.7% | 0.2% | 0.2% | 0.0% | 0.0% |
| March | 99.9% | 0.1% | 0.0% | 0.0% | 0.0% |
| April | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| May | 99.7% | 0.0% | 0.3% | 0.0% | 0.0% |
| June | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| July | 99.6% | 0.0% | 0.1% | 0.3% | 0.0% |
| August | 99.7% | 0.0% | 0.3% | 0.0% | 0.0% |
| September | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| October | 99.9% | 0.0% | 0.0% | 0.1% | 0.0% |
| November | 99.6% | 0.4% | 0.0% | 0.0% | 0.0% |
| December | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Annual | 99.7% | 0.1% | 0.1% | 0.1% | 0.0% |

Table 138 NOx 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|-----|-----|
| 13 | 0 | 18 | 0 | 0 | 17 | 82 | 379 | 0 |
| Total Hours of Downtime | | 48 | Total Hours of Calibration Time | | 461 | Total Hours of Flagged | | 509 |

Table 139 NO 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | Max. 24-hr (ppb) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 99.7 | 703 | 1.0 | 0 | 77 | 6 |
| February | 99.0 | 652 | 0.7 | 0 | 46 | 4 |
| March | 97.7 | 685 | 0.6 | 0 | 32 | 2 |
| April | 99.9 | 682 | 0.2 | 0 | 10 | 2 |
| May | 98.8 | 696 | 0.2 | 0 | 49 | 2 |
| June | 100.0 | 683 | 0.2 | 0 | 17 | 1 |
| July | 100.0 | 706 | 0.4 | 0 | 84 | 3 |
| August | 98.4 | 692 | 0.3 | 0 | 54 | 3 |
| September | 100.0 | 683 | 0.2 | 0 | 15 | 1 |
| October | 100.0 | 705 | 0.3 | 0 | 87 | 4 |
| November | 100.0 | 683 | 0.7 | 0 | 40 | 4 |
| December | 100.0 | 705 | 0.3 | 0 | 10 | 1 |
| Annual | 99.5 | 8275 | 0.4 | 0 | 87 | 6 |

Table 140 NO 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppb) | | | | |
|-----------|--|---------|---------|----------|------|
| | 0 - 30 | 31 - 50 | 51 - 82 | 83 - 159 | >159 |
| January | 99.7% | 0.0% | 0.3% | 0.0% | 0.0% |
| February | 99.7% | 0.3% | 0.0% | 0.0% | 0.0% |
| March | 99.9% | 0.1% | 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 | 99.6% | 0.1% | 0.1% | 0.1% | 0.0% |
| August | 99.7% | 0.1% | 0.1% | 0.0% | 0.0% |
| September | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| October | 99.9% | 0.0% | 0.0% | 0.1% | 0.0% |
| November | 99.9% | 0.1% | 0.0% | 0.0% | 0.0% |
| December | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Annual | 99.8% | 0.1% | 0.0% | 0.0% | 0.0% |

Table 141 NO 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|-----|-----|
| 13 | 0 | 18 | 0 | 0 | 17 | 82 | 379 | 0 |
| Total Hours of Downtime | | 48 | Total Hours of Calibration Time | | 461 | Total Hours of Flagged | | 509 |

Table 142 NO2 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | # of 1-hr AAAQO Exceedances | Max. 24-hr (ppb) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|-----------------------------|------------------|
| January | 99.7 | 703 | 4.8 | 1 | 28 | 0 | 12 |
| February | 99.0 | 652 | 4.2 | 0 | 22 | 0 | 9 |
| March | 97.7 | 685 | 2.8 | 0 | 19 | 0 | 7 |
| April | 99.9 | 682 | 2.0 | 0 | 13 | 0 | 4 |
| May | 98.8 | 696 | 1.6 | 0 | 16 | 0 | 3 |
| June | 100.0 | 683 | 1.7 | 0 | 8 | 0 | 3 |
| July | 100.0 | 706 | 1.6 | 0 | 34 | 0 | 4 |
| August | 98.4 | 692 | 1.3 | 0 | 14 | 0 | 4 |
| September | 100.0 | 683 | 1.9 | 0 | 15 | 0 | 4 |
| October | 100.0 | 705 | 2.1 | 0 | 16 | 0 | 5 |
| November | 100.0 | 683 | 4.5 | 0 | 26 | 0 | 13 |
| December | 100.0 | 705 | 4.5 | 1 | 21 | 0 | 10 |
| Annual | 99.5 | 8275 | 2.8 | 0 | 34 | 0 | 13 |

Table 143 NO2 2020 Annual Frequency Distribution

| Month | Percentage of 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 | 99.9% | 0.1% | 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 144 NO2 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|-----|-----|
| 13 | 0 | 18 | 0 | 0 | 17 | 82 | 379 | 0 |
| Total Hours of Downtime | | 48 | Total Hours of Calibration Time | | 461 | Total Hours of Flagged | | 509 |

Table 145 O3 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppb) | Min. 1-hr (ppb) | Max. 1-hr (ppb) | # of 1-hr AAAQO Exceedances | Max. 24-hr (ppb) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|-----------------------------|------------------|
| January | 99.7 | 705 | 27.0 | 0.4 | 43.4 | 0 | 40.9 |
| February | 100.0 | 661 | 34.2 | 10.4 | 48.6 | 0 | 44.5 |
| March | 100.0 | 709 | 37.1 | 6.3 | 59.1 | 0 | 47.5 |
| April | 100.0 | 684 | 41.6 | 16.7 | 62.5 | 0 | 51.2 |
| May | 100.0 | 706 | 34.8 | 13.1 | 56.6 | 0 | 45.6 |
| June | 98.9 | 677 | 28.0 | 8.6 | 49.8 | 0 | 38.4 |
| July | 99.2 | 701 | 23.0 | 2.3 | 55.8 | 0 | 33.5 |
| August | 98.4 | 695 | 24.5 | 3.5 | 51.9 | 0 | 33.3 |
| September | 100.0 | 685 | 21.8 | 1.8 | 45.5 | 0 | 34.0 |
| October | 100.0 | 708 | 24.4 | 4.5 | 39.4 | 0 | 33.1 |
| November | 100.0 | 684 | 23.5 | 0.6 | 36.9 | 0 | 35.0 |
| December | 100.0 | 707 | 26.7 | 5.5 | 40.5 | 0 | 36.6 |
| Annual | 99.7 | 8322 | 28.9 | 0.4 | 62.5 | 0 | 51.2 |

Table 146 O3 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppb) | | | | |
|-----------|--|---------|---------|----------|------|
| | 0 - 30 | 31 - 50 | 51 - 82 | 83 - 159 | >159 |
| January | 66.4% | 33.6% | 0.0% | 0.0% | 0.0% |
| February | 29.2% | 70.8% | 0.0% | 0.0% | 0.0% |
| March | 21.3% | 73.9% | 4.8% | 0.0% | 0.0% |
| April | 11.1% | 76.8% | 12.1% | 0.0% | 0.0% |
| May | 34.1% | 60.8% | 5.1% | 0.0% | 0.0% |
| June | 61.4% | 38.6% | 0.0% | 0.0% | 0.0% |
| July | 81.0% | 18.7% | 0.3% | 0.0% | 0.0% |
| August | 78.3% | 21.6% | 0.1% | 0.0% | 0.0% |
| September | 85.1% | 14.9% | 0.0% | 0.0% | 0.0% |
| October | 81.9% | 18.1% | 0.0% | 0.0% | 0.0% |
| November | 81.1% | 18.9% | 0.0% | 0.0% | 0.0% |
| December | 68.0% | 32.0% | 0.0% | 0.0% | 0.0% |
| Annual | 58.3% | 39.9% | 1.9% | 0.0% | 0.0% |

Table 147 O3 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|-----|-----|
| 13 | 0 | 1 | 0 | 0 | 14 | 54 | 380 | 0 |
| Total Hours of Downtime | | 28 | Total Hours of Calibration Time | | 434 | Total Hours of Flagged | | 462 |

Table 148 THC 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppm) | Min. 1-hr (ppm) | Max. 1-hr (ppm) | Max. 24-hr (ppm) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 99.5 | 704 | 2.22 | 1.92 | 5.97 | 2.86 |
| February | 100.0 | 660 | 2.13 | 1.91 | 3.69 | 2.61 |
| March | 100.0 | 709 | 2.09 | 1.93 | 5.28 | 2.59 |
| April | 98.3 | 674 | 2.07 | 1.93 | 3.56 | 2.39 |
| May | 100.0 | 706 | 2.02 | 1.90 | 2.69 | 2.15 |
| June | 96.8 | 662 | 1.99 | 1.85 | 2.52 | 2.13 |
| July | 100.0 | 707 | 2.06 | 1.86 | 3.45 | 2.33 |
| August | 98.1 | 693 | 2.13 | 1.94 | 3.43 | 2.44 |
| September | 99.7 | 683 | 2.13 | 1.92 | 3.05 | 2.50 |
| October | 100.0 | 707 | 2.05 | 1.89 | 2.77 | 2.36 |
| November | 100.0 | 684 | 2.13 | 1.92 | 4.59 | 2.95 |
| December | 100.0 | 707 | 2.10 | 1.88 | 5.48 | 2.79 |
| Annual | 99.4 | 8296 | 2.09 | 1.85 | 5.97 | 2.95 |

Table 149 THC 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppm) | | | | |
|-----------|--|-------|--------|---------|------|
| | 0 - 2 | 3 - 5 | 6 - 10 | 11 - 40 | >40 |
| January | 87.6% | 12.2% | 0.1% | 0.0% | 0.0% |
| February | 94.1% | 5.9% | 0.0% | 0.0% | 0.0% |
| March | 96.5% | 3.5% | 0.0% | 0.0% | 0.0% |
| April | 97.2% | 2.8% | 0.0% | 0.0% | 0.0% |
| May | 98.4% | 1.6% | 0.0% | 0.0% | 0.0% |
| June | 98.9% | 1.1% | 0.0% | 0.0% | 0.0% |
| July | 94.3% | 5.7% | 0.0% | 0.0% | 0.0% |
| August | 93.4% | 6.6% | 0.0% | 0.0% | 0.0% |
| September | 91.4% | 8.6% | 0.0% | 0.0% | 0.0% |
| October | 98.2% | 1.8% | 0.0% | 0.0% | 0.0% |
| November | 91.5% | 8.5% | 0.0% | 0.0% | 0.0% |
| December | 95.2% | 4.7% | 0.1% | 0.0% | 0.0% |
| Annual | 94.7% | 5.3% | 0.0% | 0.0% | 0.0% |

Table 150 THC 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|----|----|---------------------------------|---|-----|------------------------|-----|-----|
| 13 | 13 | 24 | 0 | 0 | 5 | 55 | 378 | 0 |
| Total Hours of Downtime | | 55 | Total Hours of Calibration Time | | 433 | Total Hours of Flagged | | 488 |

Table 151 CH4 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppm) | Min. 1-hr (ppm) | Max. 1-hr (ppm) | Max. 24-hr (ppm) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 99.5 | 704 | 2.21 | 1.92 | 5.77 | 2.86 |
| February | 100.0 | 660 | 2.13 | 1.91 | 3.69 | 2.61 |
| March | 100.0 | 709 | 2.09 | 1.93 | 5.28 | 2.59 |
| April | 98.3 | 674 | 2.07 | 1.93 | 3.56 | 2.39 |
| May | 100.0 | 706 | 2.02 | 1.90 | 2.69 | 2.15 |
| June | 96.8 | 662 | 1.99 | 1.85 | 2.52 | 2.13 |
| July | 100.0 | 707 | 2.06 | 1.86 | 3.45 | 2.33 |
| August | 98.1 | 693 | 2.13 | 1.94 | 3.43 | 2.44 |
| September | 99.7 | 683 | 2.13 | 1.92 | 3.05 | 2.50 |
| October | 100.0 | 707 | 2.05 | 1.89 | 2.77 | 2.36 |
| November | 100.0 | 684 | 2.13 | 1.92 | 4.59 | 2.95 |
| December | 100.0 | 707 | 2.10 | 1.88 | 5.48 | 2.79 |
| Annual | 99.4 | 8296 | 2.09 | 1.85 | 5.77 | 2.95 |

Table 152 CH4 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppm) | | | | |
|-----------|--|-------|--------|---------|------|
| | 0 - 2 | 3 - 5 | 6 - 10 | 11 - 20 | >20 |
| January | 87.6% | 12.2% | 0.1% | 0.0% | 0.0% |
| February | 94.1% | 5.9% | 0.0% | 0.0% | 0.0% |
| March | 96.5% | 3.5% | 0.0% | 0.0% | 0.0% |
| April | 97.2% | 2.8% | 0.0% | 0.0% | 0.0% |
| May | 98.4% | 1.6% | 0.0% | 0.0% | 0.0% |
| June | 98.9% | 1.1% | 0.0% | 0.0% | 0.0% |
| July | 94.3% | 5.7% | 0.0% | 0.0% | 0.0% |
| August | 93.4% | 6.6% | 0.0% | 0.0% | 0.0% |
| September | 91.4% | 8.6% | 0.0% | 0.0% | 0.0% |
| October | 98.3% | 1.7% | 0.0% | 0.0% | 0.0% |
| November | 91.5% | 8.5% | 0.0% | 0.0% | 0.0% |
| December | 95.3% | 4.5% | 0.1% | 0.0% | 0.0% |
| Annual | 94.7% | 5.2% | 0.0% | 0.0% | 0.0% |

Table 153 CH4 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|----|----|---------------------------------|---|-----|------------------------|-----|-----|
| 13 | 13 | 24 | 0 | 0 | 5 | 55 | 378 | 0 |
| Total Hours of Downtime | | 55 | Total Hours of Calibration Time | | 433 | Total Hours of Flagged | | 488 |

Table 154 NMHC 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (ppm) | Min. 1-hr (ppm) | Max. 1-hr (ppm) | Max. 24-hr (ppm) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 99.5 | 704 | 0.00 | 0.00 | 0.19 | 0.01 |
| February | 100.0 | 660 | 0.00 | 0.00 | 0.03 | 0.00 |
| March | 100.0 | 709 | 0.00 | 0.00 | 0.04 | 0.00 |
| April | 98.3 | 674 | 0.00 | 0.00 | 0.00 | 0.00 |
| May | 100.0 | 706 | 0.00 | 0.00 | 0.01 | 0.00 |
| June | 96.8 | 662 | 0.00 | 0.00 | 0.00 | 0.00 |
| July | 100.0 | 707 | 0.00 | 0.00 | 0.10 | 0.00 |
| August | 98.1 | 693 | 0.00 | 0.00 | 0.08 | 0.00 |
| September | 99.7 | 683 | 0.00 | 0.00 | 0.00 | 0.00 |
| October | 100.0 | 707 | 0.00 | 0.00 | 0.18 | 0.01 |
| November | 100.0 | 684 | 0.00 | 0.00 | 0.01 | 0.00 |
| December | 100.0 | 707 | 0.00 | 0.00 | 0.09 | 0.00 |
| Annual | 99.4 | 8296 | 0.00 | 0.00 | 0.19 | 0.01 |

Table 155 NMHC 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ppm) | | | | |
|-----------|--|-----------|-----------|-------|------|
| | 0 - 0.1 | 0.2 - 0.3 | 0.4 - 0.9 | 1 - 2 | >2 |
| 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 | 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 | 99.9% | 0.1% | 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 156 NMHC 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|----|----|---------------------------------|---|-----|------------------------|-----|-----|
| 13 | 13 | 24 | 0 | 0 | 5 | 55 | 378 | 0 |
| Total Hours of Downtime | | 55 | Total Hours of Calibration Time | | 433 | Total Hours of Flagged | | 488 |

Table 157 PM2.5 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | 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 | 95.4 | 709 | 5.8 | 0 | 34 | 0 | 15 | 0 |
| February | 100.0 | 695 | 4.5 | 0 | 49 | 0 | 11 | 0 |
| March | 100.0 | 741 | 4.2 | 0 | 29 | 0 | 10 | 0 |
| April | 100.0 | 718 | 4.3 | 1 | 34 | 0 | 8 | 0 |
| May | 100.0 | 742 | 4.7 | 0 | 24 | 0 | 10 | 0 |
| June | 100.0 | 718 | 3.9 | 0 | 31 | 0 | 8 | 0 |
| July | 100.0 | 743 | 3.6 | 0 | 27 | 0 | 9 | 0 |
| August | 98.4 | 731 | 4.0 | 1 | 29 | 0 | 11 | 0 |
| September | 100.0 | 718 | 4.7 | 0 | 40 | 0 | 25 | 0 |
| October | 100.0 | 742 | 3.3 | 0 | 26 | 0 | 8 | 0 |
| November | 100.0 | 719 | 7.2 | 1 | 28 | 0 | 19 | 0 |
| December | 100.0 | 743 | 6.5 | 0 | 23 | 0 | 17 | 0 |
| Annual | 99.5 | 8719 | 4.7 | 0 | 49 | 0 | 25 | 0 |

Table 158 PM2.5 2020 Annual Frequency Distribution

| Month | Percentage of Readings in Concentration Range (in ug/m3) | | | | |
|-----------|--|---------|----------|-----------|------|
| | 0 - 50 | 51 - 80 | 81 - 120 | 121 - 240 | >240 |
| 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 | 99.7% | 0.3% | 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 159 PM2.5 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|----|----|---------------------------------|---|-----|------------------------|---|----|
| 13 | 32 | 1 | 0 | 0 | 0 | 19 | 0 | 0 |
| Total Hours of Downtime | | 46 | Total Hours of Calibration Time | | 19 | Total Hours of Flagged | | 65 |

Table 160 RH 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (%) | Min. 1-hr (%) | Max. 1-hr (%) | Max. 24-hr (%) |
|-----------|------------------------|---------------|------------------|---------------|---------------|----------------|
| January | - | - | - | - | - | - |
| February | - | - | - | - | - | - |
| March | - | - | - | - | - | - |
| April | - | - | - | - | - | - |
| May | - | - | - | - | - | - |
| June | - | - | - | - | - | - |
| July | - | - | - | - | - | - |
| August | - | - | - | - | - | - |
| September | 100.0 | 720 | 70.9 | 22 | 100 | 86 |
| October | 100.0 | 744 | 71.5 | 26 | 100 | 94 |
| November | 100.0 | 720 | 84.7 | 45 | 100 | 97 |
| December | 100.0 | 744 | 80.8 | 46 | 100 | 97 |
| Annual | 100.0 | 2928 | 77.0 | 22 | 100 | 97 |

Table 161 RH 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|---|---------------------------------|---|-----|------------------------|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hours of Downtime | | 0 | Total Hours of Calibration Time | | 0 | Total Hours of Flagged | | 0 |

Table 162 BP 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (mb) | Min. 1-hr (mb) | Max. 1-hr (mb) | Max. 24-hr (mb) |
|-----------|------------------------|---------------|-------------------|----------------|----------------|-----------------|
| January | - | - | - | - | - | - |
| February | - | - | - | - | - | - |
| March | - | - | - | - | - | - |
| April | - | - | - | - | - | - |
| May | - | - | - | - | - | - |
| June | - | - | - | - | - | - |
| July | - | - | - | - | - | - |
| August | - | - | - | - | - | - |
| September | 100.0 | 720 | 949 | 926 | 967 | 965 |
| October | 100.0 | 744 | 948 | 920 | 967 | 966 |
| November | 100.0 | 720 | 943 | 922 | 958 | 956 |
| December | 100.0 | 744 | 947 | 925 | 963 | 960 |
| Annual | 100.0 | 2928 | 947 | 920 | 967 | 966 |

Table 163 BP 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|---|---------------------------------|---|-----|------------------------|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hours of Downtime | | 0 | Total Hours of Calibration Time | | 0 | Total Hours of Flagged | | 0 |

Table 164 AT 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (°C) | Min. 1-hr (°C) | Max. 1-hr (°C) | Max. 24-hr (°C) |
|-----------|------------------------|---------------|-------------------|----------------|----------------|-----------------|
| January | - | - | - | - | - | - |
| February | - | - | - | - | - | - |
| March | - | - | - | - | - | - |
| April | - | - | - | - | - | - |
| May | - | - | - | - | - | - |
| June | - | - | - | - | - | - |
| July | - | - | - | - | - | - |
| August | - | - | - | - | - | - |
| September | 100.0 | 720 | 11.1 | -0.3 | 25.4 | 15.8 |
| October | 100.0 | 744 | 1.1 | -11.0 | 20.1 | 15.8 |
| November | 100.0 | 720 | -5.6 | -21.4 | 11.9 | 7.4 |
| December | 100.0 | 744 | -7.1 | -25.2 | 7.9 | 4.2 |
| Annual | 100.0 | 2928 | -0.1 | -25.2 | 25.4 | 15.8 |

Table 165 AT 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|---|---------------------------------|---|-----|------------------------|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hours of Downtime | | 0 | Total Hours of Calibration Time | | 0 | Total Hours of Flagged | | 0 |

Table 166 ST 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (°C) | Min. 1-hr (°C) | Max. 1-hr (°C) | Max. 24-hr (°C) |
|-----------|------------------------|---------------|-------------------|----------------|----------------|-----------------|
| January | 99.7 | 742 | 24.1 | 20.2 | 25.6 | 24.9 |
| February | 100.0 | 696 | 23.7 | 20.0 | 25.9 | 24.8 |
| March | 100.0 | 744 | 23.3 | 15.6 | 26.4 | 24.9 |
| April | 100.0 | 720 | 23.4 | 20.6 | 26.0 | 24.4 |
| May | 100.0 | 744 | 23.3 | 19.7 | 26.2 | 24.6 |
| June | 100.0 | 720 | 23.1 | 20.2 | 25.2 | 23.7 |
| July | 100.0 | 744 | 22.9 | 19.6 | 24.4 | 23.5 |
| August | 98.4 | 732 | 22.9 | 19.7 | 24.8 | 24.1 |
| September | 100.0 | 720 | 23.6 | 20.3 | 26.4 | 24.6 |
| October | 100.0 | 744 | 24.0 | 20.3 | 26.5 | 25.3 |
| November | 100.0 | 720 | 23.3 | 19.4 | 25.1 | 24.6 |
| December | 100.0 | 744 | 23.2 | 20.1 | 25.3 | 24.8 |
| Annual | 99.8 | 8770 | 23.4 | 15.6 | 26.5 | 25.3 |

Table 167 ST 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|---|----|
| 13 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hours of Downtime | | 14 | Total Hours of Calibration Time | | 0 | Total Hours of Flagged | | 14 |

Table 168 WS 2020 Annual Continuous Data Summary

| Month | Operational Uptime (%) | # of Readings | Monthly Avg. (kph) | Min. 1-hr (kph) | Max. 1-hr (kph) | Max. 24-hr (kph) |
|-----------|------------------------|---------------|--------------------|-----------------|-----------------|------------------|
| January | 99.7 | 742 | 2.1 | 0.1 | 32.5 | 20.9 |
| February | 100.0 | 696 | 4.6 | 0.2 | 38.9 | 24.4 |
| March | 100.0 | 744 | 2.2 | 0.3 | 40.6 | 24.5 |
| April | 100.0 | 720 | 6.7 | 0.3 | 38.1 | 24.9 |
| May | 100.0 | 744 | 3.1 | 0.7 | 40.0 | 32.4 |
| June | 100.0 | 720 | 1.3 | 0.8 | 43.6 | 26.1 |
| July | 100.0 | 744 | 4.8 | 0.1 | 31.1 | 22.9 |
| August | 98.4 | 732 | 5.9 | 0.3 | 49.9 | 29.2 |
| September | 100.0 | 720 | 5.1 | 0.3 | 39.3 | 22.7 |
| October | 100.0 | 741 | 8.1 | 0.0 | 39.0 | 27.0 |
| November | 100.0 | 720 | 1.7 | 0.3 | 35.2 | 18.7 |
| December | 100.0 | 744 | 5.5 | 0.2 | 34.9 | 17.4 |
| Annual | 99.8 | 8767 | 4.3 | 0.0 | 49.9 | 32.4 |

Table 169 WS 2020 Qualifier Flag Summary

| Month | Percentage of Readings in Concentration Range (in kph) | | | | |
|-----------|--|--------|---------|---------|------|
| | 0 - 6 | 7 - 15 | 16 - 29 | 30 - 39 | >39 |
| January | 25.6% | 50.3% | 23.5% | 0.7% | 0.0% |
| February | 20.7% | 55.2% | 21.8% | 2.3% | 0.0% |
| March | 22.7% | 42.1% | 33.6% | 1.5% | 0.1% |
| April | 17.6% | 49.6% | 27.9% | 4.9% | 0.0% |
| May | 15.2% | 42.7% | 38.3% | 3.5% | 0.3% |
| June | 17.9% | 46.1% | 33.6% | 2.1% | 0.3% |
| July | 23.1% | 50.4% | 25.9% | 0.5% | 0.0% |
| August | 16.4% | 47.3% | 32.4% | 3.7% | 0.3% |
| September | 20.1% | 47.2% | 29.9% | 2.8% | 0.0% |
| October | 15.7% | 47.4% | 33.5% | 3.5% | 0.0% |
| November | 25.8% | 51.0% | 22.6% | 0.6% | 0.0% |
| December | 29.8% | 53.6% | 14.4% | 2.2% | 0.0% |
| Annual | 20.9% | 48.6% | 28.1% | 2.3% | 0.1% |

Table 170 WS 2020 Qualifier Flag Summary

| P | X | Y | K | N | NRM | C | S | Q |
|-------------------------|---|----|---------------------------------|---|-----|------------------------|---|----|
| 13 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 |
| Total Hours of Downtime | | 14 | Total Hours of Calibration Time | | 3 | Total Hours of Flagged | | 17 |

1.5 Passive Stations

Table 171 SO2 Summary Statistics for Passive Stations

| Parameter: SO2 (ppb) | | | | | | |
|----------------------|----------------|---------|----------|---------|-----------|--------------|
| Station | Annual Average | Maximum | Month | Minimum | Month | # of Samples |
| 3 | 0.4 | 0.8 | February | 0.2 | May | 12 |
| 3 DUP | 0.2 | 0.2 | - | 0.2 | - | 1 |
| 4 | 0.5 | 1.1 | December | 0.2 | June | 12 |
| 4 DUP | 0.3 | 0.3 | - | 0.3 | - | 1 |
| 5 | 0.4 | 0.8 | December | 0.2 | May | 12 |
| 5 DUP | 0.5 | 0.5 | - | 0.5 | - | 1 |
| 6 | 0.5 | 0.7 | February | 0.2 | April | 12 |
| 6 DUP | 0.6 | 0.6 | - | 0.6 | - | 1 |
| 8 | 0.6 | 0.8 | November | 0.2 | October | 12 |
| 8 DUP | 0.6 | 0.6 | - | 0.6 | - | 2 |
| 9 | 0.4 | 0.8 | January | 0.2 | April | 12 |
| 9 DUP | 0.7 | 0.8 | - | 0.6 | - | 2 |
| 10 | 0.3 | 0.6 | January | 0.2 | April | 12 |
| 10 DUP | 0.4 | 0.6 | - | 0.2 | - | 2 |
| 11 | 0.4 | 0.8 | January | 0.2 | June | 11 |
| 11 DUP | 0.5 | 0.6 | - | 0.3 | - | 2 |
| 12 | 0.5 | 0.9 | December | 0.2 | August | 6 |
| 12 DUP | 0.5 | 0.5 | - | 0.3 | - | 1 |
| 13 | <0.6 | 1.1 | January | 0.5 | June | 12 |
| 13 DUP | 0.7 | 0.9 | - | <0.1 | - | 2 |
| 14 | 1.3 | 2.3 | December | 0.4 | June | 12 |
| 14 DUP | 1.9 | 2.1 | - | 0.6 | - | 2 |
| 15 | 0.4 | 0.7 | February | 1.6 | May | 12 |
| 15 DUP | 0.6 | 0.6 | - | 0.2 | - | 2 |
| 16 | 0.4 | 0.7 | January | 0.5 | May | 12 |
| 16 DUP | 0.5 | 0.5 | - | 0.2 | - | 2 |
| 17 | 0.5 | 1.0 | January | 0.5 | October | 12 |
| 17 DUP | 0.6 | 0.6 | - | 0.2 | - | 2 |
| 18 | <0.3 | 0.5 | January | <0.1 | June | 12 |
| 18 DUP | 0.4 | 0.5 | - | 0.3 | - | 2 |
| 19 | <0.4 | 0.7 | December | <0.1 | June | 12 |
| 19 DUP | 0.5 | 0.7 | - | 0.3 | - | 2 |
| 22 | 0.3 | 0.5 | January | 0.2 | May | 12 |
| 22 DUP | 0.4 | 0.5 | - | 0.3 | - | 2 |
| 23 | <0.3 | 0.5 | January | <0.1 | September | 12 |
| 23 DUP | - | - | - | - | - | 0 |
| 24 | 0.4 | 0.8 | February | 0.2 | April | 12 |
| 24 DUP | 0.2 | 0.2 | - | 0.2 | - | 1 |
| 25 | NA | NA | - | NA | - | 0 |
| 25DUP | NA | NA | - | NA | - | 0 |
| 26 | 0.8 | 1.2 | December | 0.4 | July | 12 |
| 26 DUP | 0.8 | 0.8 | - | 0.8 | - | 1 |
| 27 | 1.2 | 2.1 | December | 0.4 | June | 12 |
| 27 DUP | 0.5 | 0.5 | - | 0.5 | - | 1 |
| 28 | 0.5 | 0.7 | December | 0.2 | July | 9 |

| | | | | | | |
|---------------|------|-----|-----------|------|------|----|
| 28 DUP | NA | NA | - | NA | - | 0 |
| 29 | <0.3 | 0.5 | January | <0.1 | June | 12 |
| 29 DUP | 0.1 | 0.1 | - | 0.1 | - | 1 |
| 32 | 0.4 | 0.8 | February | 0.2 | | 12 |
| 32 DUP | 0.1 | 0.1 | - | 0.1 | - | 1 |
| 40 | 1.0 | 1.5 | September | 0.5 | June | 12 |
| 40 DUP | 0.7 | 0.7 | - | 0.7 | - | 1 |

Notes:

- Results from passive samples and their duplicates were compared; all data were ± 0.6 ppb of each other throughout the year.
- No samples were collected at station 11 in March due to deep snow that made access to the station impossible. The samples were collected on April 29. Two-month sample collection were counted.
- No samples were collected at station 12 between January and June as LICA did not have security clearance to access to the Cold Lake Air Weapons Range. Access to the station was gained and the sample filter was installed in June for the July's sampling period.
- No samples were collected at station 25 in 2020 as the field technician has not completed the necessary safety orientation for the CNRL Primrose/Burnt Lake site and access is not permitted.
- Station 28: The passive samples were collected from the March 2020 installation. Duplicate sample was scheduled to be taken at this station in June. Due to access to the station was closed (gate locked), no duplicate was collected.
- The sample blanks indicated no apparent contamination throughout the year.

Table 172 NO2 Summary Statistics for Passive Stations

| Parameter: NO2 (ppb) | | | | | | |
|-----------------------------|-----------------------|----------------|--------------|----------------|--------------|---------------------|
| Station | Annual Average | Maximum | Month | Minimum | Month | # of Samples |
| 3 | 0.9 | 2.5 | December | 0.2 | March | 12 |
| 3 DUP | 0.2 | 0.2 | - | 0.2 | - | 1 |
| 4 | <0.8 | 3.0 | December | <0.1 | March | 12 |
| 4 DUP | <0.1 | <0.1 | - | <0.1 | - | 1 |
| 5 | 0.7 | 2.3 | December | 0.1 | March | 12 |
| 5 DUP | 0.1 | 0.1 | - | 0.1 | - | 1 |
| 6 | 2.5 | 6.7 | December | 0.9 | March | 12 |
| 6 DUP | 1.2 | 1.2 | - | 1.2 | - | 1 |
| 8 | <0.8 | 2.0 | December | <0.1 | March | 12 |
| 8 DUP | 0.3 | 0.3 | - | 0.3 | - | 1 |
| 9 | 1.0 | 2.5 | December | 0.1 | March | 12 |
| 9 DUP | 0.7 | 0.7 | - | 0.7 | - | 1 |
| 10 | 2.6 | 8.1 | December | 0.8 | March | 12 |
| 10 DUP | 1.3 | 1.3 | - | 1.3 | - | 1 |
| 11 | <0.6 | 1.6 | December | <0.1 | April | 11 |
| 11 DUP | 0.2 | 0.2 | - | 0.2 | - | 1 |
| 12 | <0.6 | 1.5 | December | <0.1 | August | 6 |
| 12 DUP | 0.2 | 0.2 | - | 0.2 | - | 1 |
| 13 | 0.7 | 1.9 | December | 0.1 | March | 12 |
| 13 DUP | 0.3 | 0.3 | - | 0.3 | - | 1 |
| 14 | 1.4 | 3.9 | December | 0.3 | March | 12 |
| 14 DUP | 0.8 | 0.8 | - | 0.8 | - | 1 |
| 15 | 1.1 | 3.0 | December | 0.1 | March | 12 |
| 15 DUP | - | - | - | - | - | 0 |
| 16 | 1.1 | 3.3 | December | 0.2 | March | 12 |
| 16 DUP | 0.4 | 0.4 | - | 0.4 | - | 1 |
| 17 | 1.0 | 2.4 | December | 0.2 | March | 12 |
| 17 DUP | 0.8 | 0.8 | - | 0.8 | - | 1 |
| 18 | <0.8 | 2.0 | December | <0.1 | March | 12 |
| 18 DUP | 0.7 | 0.7 | - | 0.7 | - | 1 |
| 19 | <0.8 | 2.4 | December | <0.1 | March | 12 |
| 19 DUP | 0.8 | 0.8 | - | 0.8 | - | 1 |
| 22 | 1.5 | 3.5 | December | 0.3 | March | 12 |
| 22 DUP | 2.1 | 2.1 | - | 2.1 | - | 1 |
| 23 | <0.3 | 1.3 | December | <0.1 | January | 12 |
| 23 DUP | 1.0 | 1.0 | - | 1.0 | - | 1 |
| 24 | 2.0 | 5.9 | December | 0.5 | March | 12 |
| 24 DUP | 3.2 | 3.2 | - | 3.2 | - | 1 |
| 28 | 3.2 | 6.0 | December | 0.3 | June | 9 |
| 28 DUP | 6.3 | 7.0 | - | 5.7 | - | 2 |
| 29 | 1.5 | 4.1 | December | 0.4 | June | 12 |
| 29 DUP | 3.3 | 3.7 | - | 2.8 | - | 2 |
| 32 | <0.7 | 2.0 | December | <0.1 | April | 12 |
| 32 DUP | 1.1 | 1.1 | - | 1.1 | - | 1 |
| 40 | 1.2 | 2.7 | December | 0.4 | March | 12 |
| 40 DUP | 1.9 | 1.9 | - | 1.9 | - | 1 |

Notes:

- Results from passive samples and their duplicates were compared; all data are ± 0.7 ppb of each other throughout the year.
- No samples were collected at station 11 in March due to deep snow that made access to the station impossible. The samples were collected on April 29. Two-month sample collection were counted.
- No samples were collected at station 12 between January and June as LICA did not have security clearance to access to the Cold Lake Air Weapons Range. Access to the station was gained and the sample filter was installed in June for the July's sampling period.
- Station 28: The passive samples were collected from the March 2020 installation. Duplicate sample was scheduled to be taken at this station in June. Due to access to the station was closed (gate locked), no duplicate was collected.
- The sample blanks indicated no apparent contamination throughout the year.

Table 173 O3 Summary Statistics for Passive Stations

| Parameter: O3 (ppb) | | | | | | |
|----------------------------|-----------------------|----------------|--------------|----------------|--------------|---------------------|
| Station | Annual Average | Maximum | Month | Minimum | Month | # of Samples |
| 3 | 28.8 | 39.0 | February | 19.2 | July | 12 |
| 3 DUP | 45.4 | 45.4 | - | 45.4 | - | 1 |
| 4 | 32.6 | 49.1 | February | 23.7 | July | 12 |
| 4 DUP | 48.2 | 48.2 | - | 48.2 | - | 1 |
| 5 | 27.9 | 40.5 | March | 20.7 | August | 12 |
| 5 DUP | 31.9 | 31.9 | - | 31.9 | - | 1 |
| 6 | 27.2 | 43.4 | February | 17.6 | July | 12 |
| 6 DUP | 28.7 | 28.7 | - | 28.7 | - | 1 |
| 8 | 31.4 | 46.5 | May | 22.0 | September | 12 |
| 8 DUP | 40.1 | 40.1 | - | 40.1 | - | 1 |
| 9 | 28.3 | 41.8 | March | 19.5 | July | 12 |
| 9 DUP | 34.0 | 34.0 | - | 34.0 | - | 1 |
| 10 | 24.0 | 37.8 | March | 14.5 | October | 12 |
| 10 DUP | 24.8 | 24.8 | - | 24.8 | - | 1 |
| 11 | 23.1 | 32.9 | May | 14.3 | September | 11 |
| 11 DUP | 19.3 | 19.3 | - | 19.3 | - | 1 |
| 12 | 22.5 | 27.7 | October | 16.7 | September | 6 |
| 12 DUP | 20.8 | 20.8 | - | 20.8 | - | 1 |
| 13 | 24.4 | 36.6 | March | 15.5 | July | 12 |
| 13 DUP | 18.9 | 18.9 | - | 18.9 | - | 1 |
| 14 | 26.1 | 34.8 | March | 15.9 | September | 12 |
| 14 DUP | 21.1 | 21.1 | - | 21.1 | - | 1 |
| 15 | 26.1 | 39.5 | March | 17.7 | July | 12 |
| 15 DUP | NA | NA | - | NA | - | 0 |
| 16 | 24.7 | 38.1 | March | 16.2 | July | 12 |
| 16 DUP | 18.8 | 18.8 | - | 18.8 | - | 1 |
| 17 | 32.5 | 46.0 | February | 22.9 | August | 12 |
| 17 DUP | 17.1 | 17.1 | - | 17.1 | - | 1 |
| 18 | 25.1 | 40.4 | March | 16.9 | July | 12 |
| 18 DUP | 16.5 | 16.5 | - | 16.5 | - | 1 |
| 19 | 30.0 | 38.8 | March | 22.3 | October | 12 |
| 19 DUP | 25.6 | 25.6 | - | 25.6 | - | 1 |
| 22 | 25.8 | 35.2 | May | 18.4 | September | 12 |
| 22 DUP | 23.1 | 23.1 | - | 23.1 | - | 1 |
| 23 | 23.0 | 36.0 | March | 12.5 | September | 12 |
| 23 DUP | 20.1 | 20.1 | - | 20.1 | - | 1 |
| 24 | 28.8 | 42.5 | March | 19.8 | September | 12 |
| 24 DUP | 32.2 | 32.2 | - | 32.2 | - | 1 |
| 28 | 24.1 | 30.8 | February | 20.4 | September | 9 |
| 28 DUP | 26.3 | 28.1 | - | 24.5 | - | 2 |
| 29 | 26.5 | 33.8 | March | 18.0 | September | 12 |
| 29 DUP | 27.3 | 31.2 | - | 23.3 | - | 2 |
| 32 | 31.8 | 50.8 | February | 24.7 | September | 12 |
| 32 DUP | 45.2 | 45.2 | - | 45.2 | - | 1 |
| 40 | 33.1 | 40.6 | March | 21.3 | October | 12 |
| 40 DUP | 40.1 | 40.1 | - | 40.1 | - | 1 |

Notes:

- Results from passive samples and their duplicates were compared; all data are ± 9.4 ppb of each other throughout the year.
- No samples were collected at station 11 in March due to deep snow that made access to the station impossible. The samples were collected on April 29. Two-month sample collection were counted.
- No samples were collected at station 12 between January and June as LICA did not have security clearance to access to the Cold Lake Air Weapons Range. Access to the station was gained and the sample filter was installed in June for the July's sampling period.
- Station 28: The passive samples were collected from the March 2020 installation. Duplicate sample was scheduled to be taken at this station in June. Due to access to the station was closed (gate locked), no duplicate was collected.
- The sample blanks indicated no apparent contamination throughout the year.

Table 174 H2S Summary Statistics for Passive Stations

| Parameter: H2S (ppb) | | | | | | |
|----------------------|----------------|---------|-----------|---------|----------|--------------|
| Station | Annual Average | Maximum | Month | Minimum | Month | # of Samples |
| 3 | 0.19 | 0.32 | July | 0.09 | April | 12 |
| 3 DUP | 0.19 | 0.19 | - | 0.19 | - | 1 |
| 5 | 0.30 | 0.73 | August | 0.14 | April | 12 |
| 5 DUP | 0.50 | 0.50 | - | 0.50 | - | 1 |
| 10 | 0.17 | 0.33 | August | 0.07 | April | 12 |
| 10 DUP | 0.26 | 0.26 | - | 0.26 | - | 1 |
| 11 | 0.13 | 0.19 | December | 0.07 | April | 11 |
| 11 DUP | 0.15 | 0.15 | - | 0.15 | - | 1 |
| 12 | 0.13 | 0.20 | December | 0.08 | October | 6 |
| 12 DUP | 0.14 | 0.14 | - | 0.14 | - | 1 |
| 13 | 0.13 | 0.24 | December | 0.06 | April | 12 |
| 13 DUP | 0.10 | 0.10 | - | 0.10 | - | 1 |
| 14 | 0.23 | 0.32 | September | 0.12 | April | 12 |
| 14 DUP | 0.24 | 0.31 | - | 0.16 | - | 2 |
| 16 | 0.19 | 0.33 | August | 0.11 | April | 12 |
| 16 DUP | 0.15 | 0.17 | - | 0.14 | - | 2 |
| 17 | 0.41 | 1.09 | August | 0.15 | December | 12 |
| 17 DUP | 0.24 | 0.26 | - | 0.22 | - | 2 |
| 18 | 0.15 | 0.23 | August | 0.07 | March | 12 |
| 18 DUP | 0.14 | 0.15 | - | 0.13 | - | 2 |
| 22 | 0.17 | 0.39 | August | 0.08 | March | 12 |
| 22 DUP | 0.13 | 0.17 | - | 0.09 | - | 2 |
| 24 | 0.23 | 0.52 | August | 0.08 | March | 12 |
| 24 DUP | 0.17 | 0.24 | - | 0.09 | - | 2 |
| 25 | NA | NA | - | NA | - | 0 |
| 25 DUP | NA | NA | - | NA | - | 0 |
| 26 | 0.26 | 0.90 | December | 0.12 | April | 12 |
| 26 DUP | 0.46 | 0.79 | - | 0.12 | - | 2 |
| 27 | 0.63 | 1.81 | August | 0.11 | March | 12 |
| 27 DUP | 0.22 | 0.22 | - | 0.22 | - | 1 |
| 29 | 0.17 | 0.38 | August | 0.06 | April | 12 |
| 29 DUP | 0.11 | 0.11 | - | 0.11 | - | 1 |
| 32 | 0.22 | 0.46 | August | 0.09 | April | 12 |
| 32 DUP | 0.12 | 0.12 | - | 0.12 | - | 1 |
| 40 | 1.95 | 5.48 | September | 0.37 | February | 12 |
| 40 DUP | 1.53 | 1.53 | - | 1.53 | - | 1 |

Notes:

- Results from passive samples and their duplicates were compared; all data are ± 0.05 ppb of each other throughout the year.
- No samples were collected at station 11 in March due to deep snow that made access to the station impossible. The samples were collected on April 29. Two-month sample collection were counted.
- No samples were collected at station 12 between January and June as LICA did not have security clearance to access to the Cold Lake Air Weapons Range. Access to the station was gained and the

sample filter was installed in June for the July's sampling period.

- No samples were collected at station 25 in 2020 as the field technician has not completed the necessary safety orientation for the CNRL Primrose/Burnt Lake site and access is not permitted.
- The sample blanks indicated no apparent contamination throughout the year.

Table 175 Summary of AAAQO Exceedances at Passive Stations

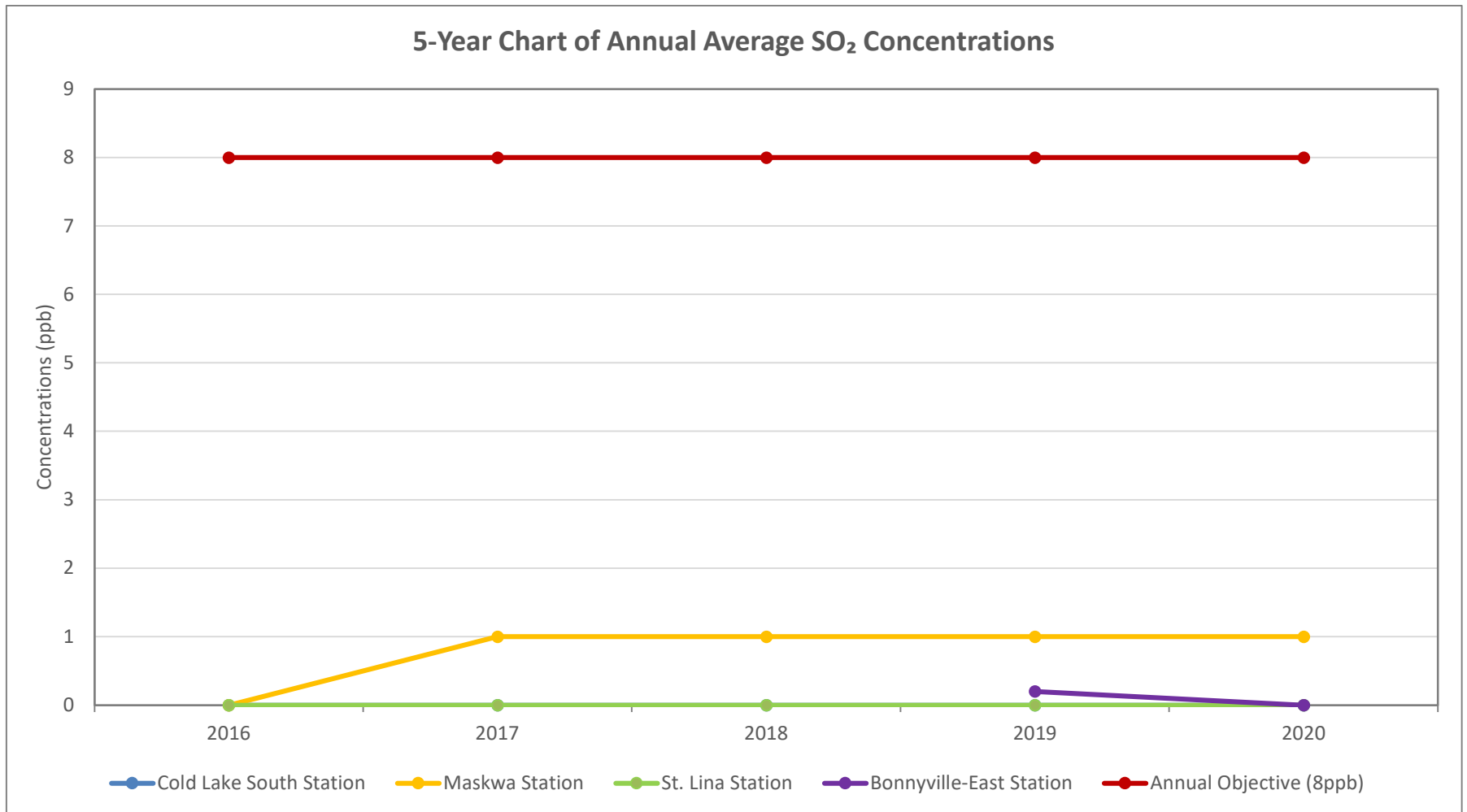
| SO2 (ppb) 30-Day Objective: 11 ppb | |
|---|---------------------------------|
| Month | # Stations of Exceedance |
| January | 0 |
| February | 0 |
| March | 0 |
| April | 0 |
| May | 0 |
| June | 0 |
| July | 0 |
| August | 0 |
| September | 0 |
| October | 0 |
| November | 0 |
| December | 0 |
| Total | 0 |

| SO2 (ppb) Annual Objective: 8.0 ppb | |
|--|-------------------------|
| Year | AAAQO Exceedance |
| 2020 | 0 |

| NO2 (ppb) Annual Objective: 24 ppb | |
|---|-------------------------|
| Year | AAAQO Exceedance |
| 2020 | 0 |

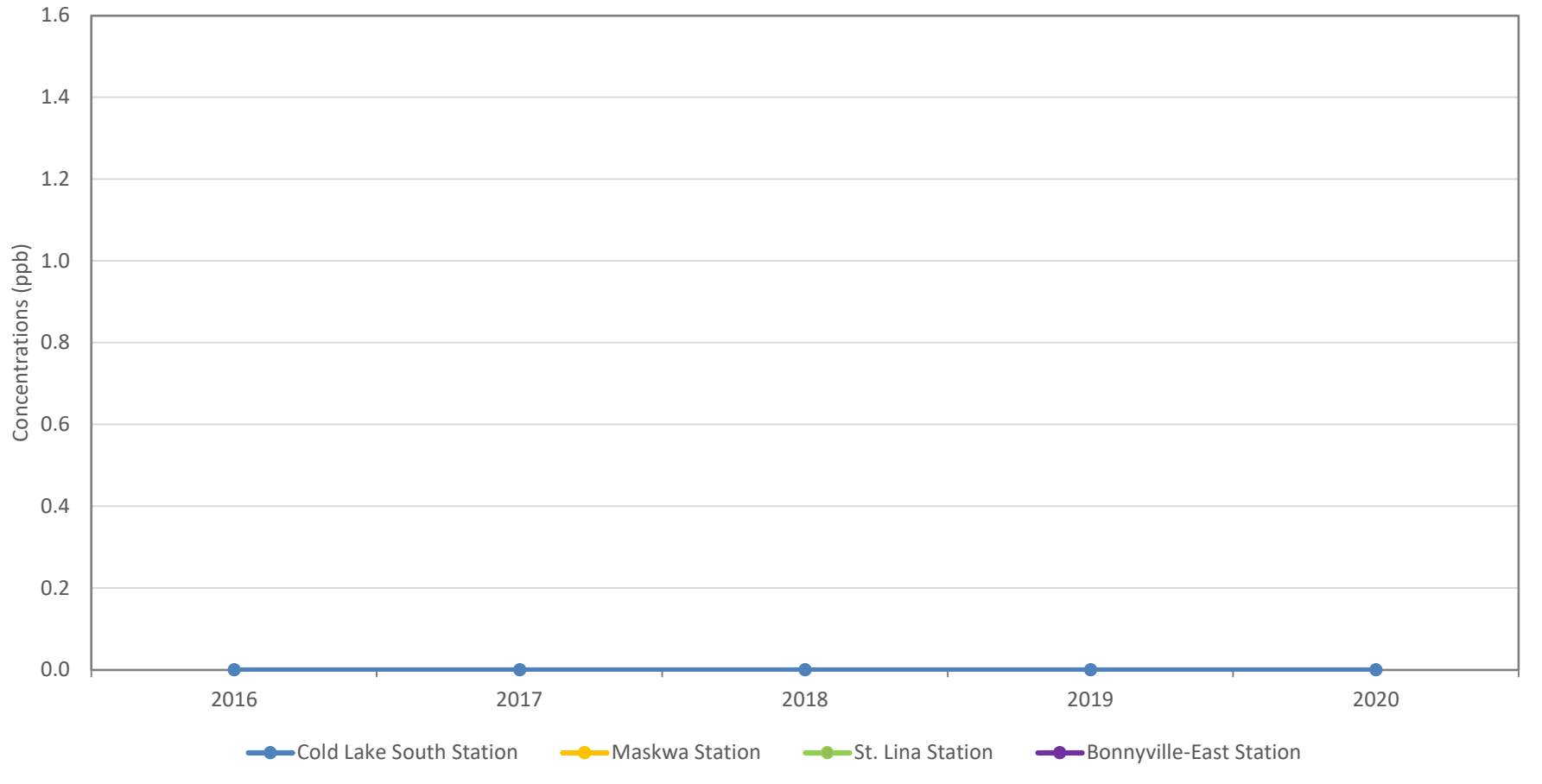
2. 5-Year Charts of Annual Average Concentrations

2.1 Continuous Stations



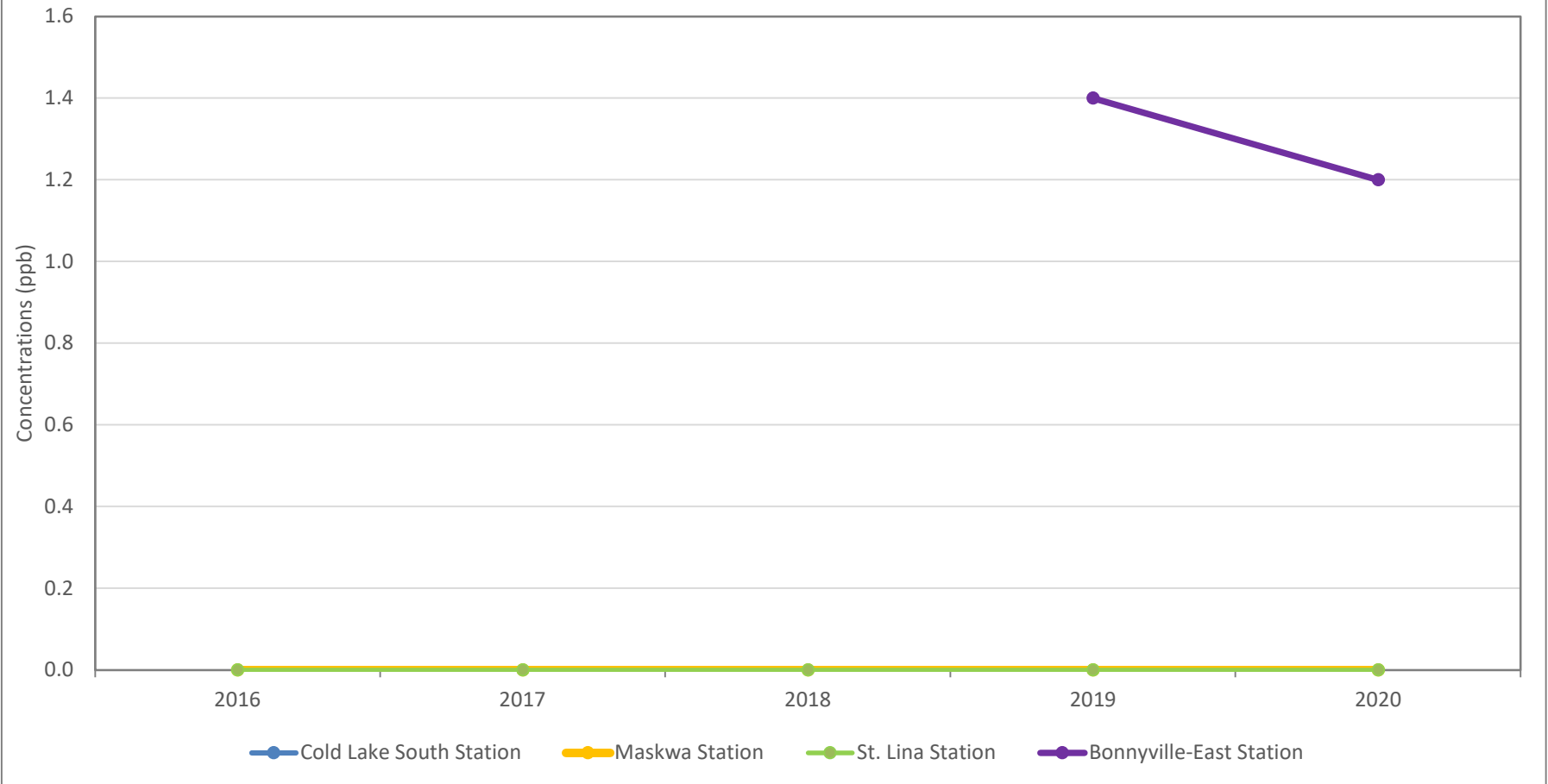
Note: Bonnyville-East Station was not installed in until November 2018 – no previous data available.

5-Year Chart of Annual Average TRS Concentrations



Note: TRS was only monitored at Cold Lake South Station.

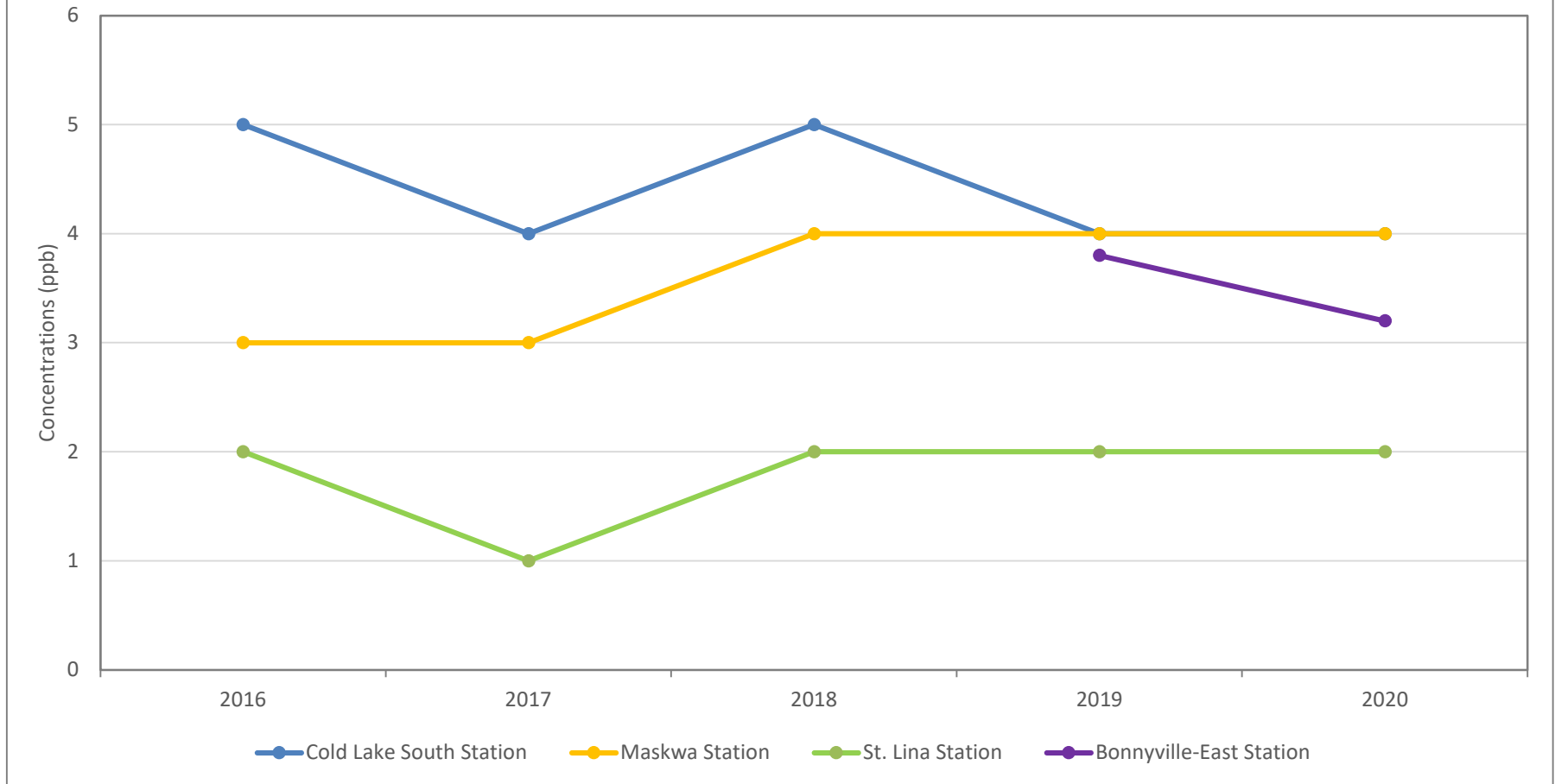
5-Year Chart of Annual Average H2S Concentrations



Note:

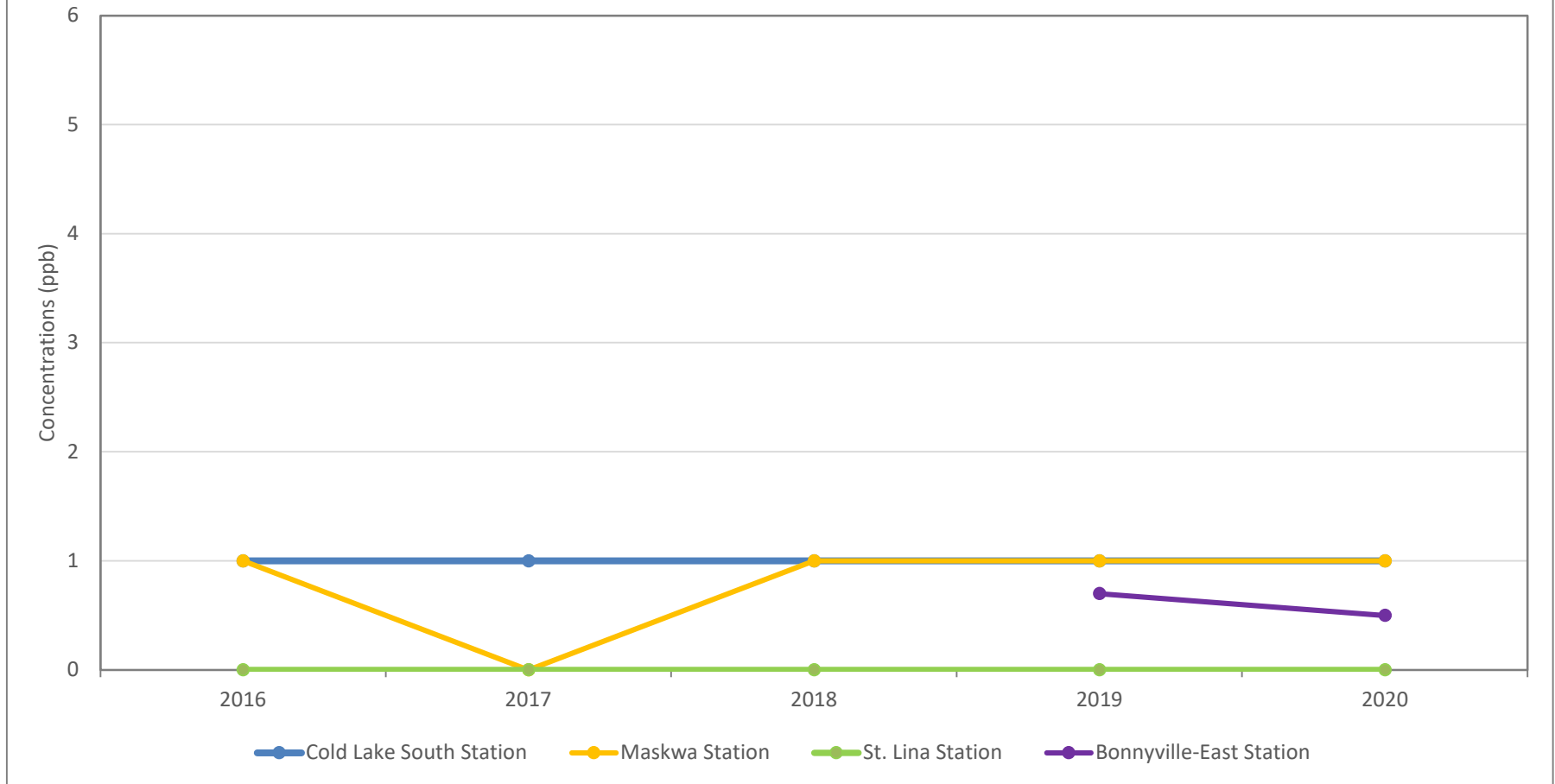
1. Bonnyville-East Station was not installed until November 2018 – no previous data available.
2. H2S was not monitored at Cold Lake South Station.

5-Year Chart of Annual Average NOx Concentrations



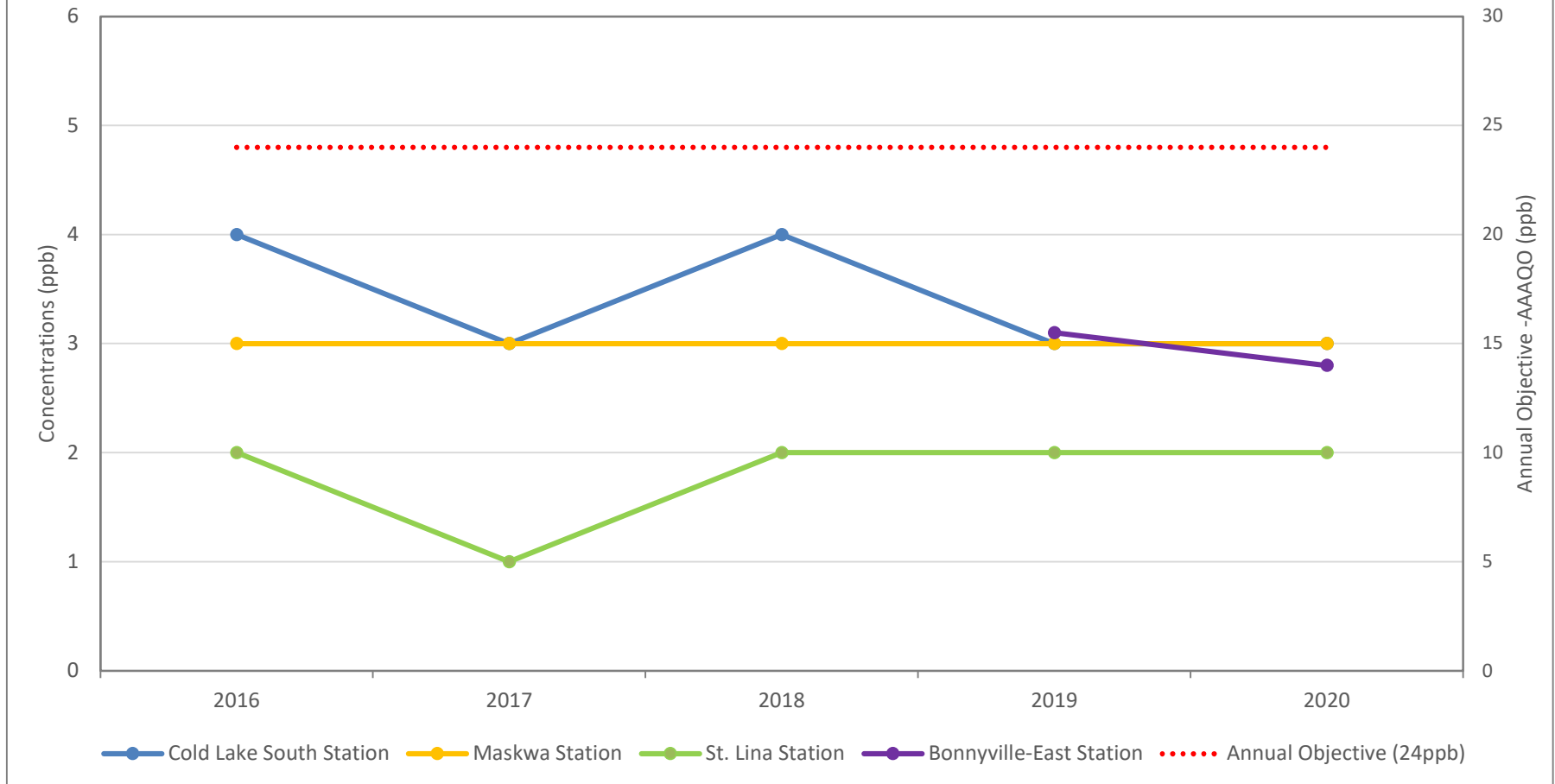
Note: Bonnyville-East Station was not installed in until November 2018 – no previous data available.

5-Year Chart of Annual Average NO Concentrations



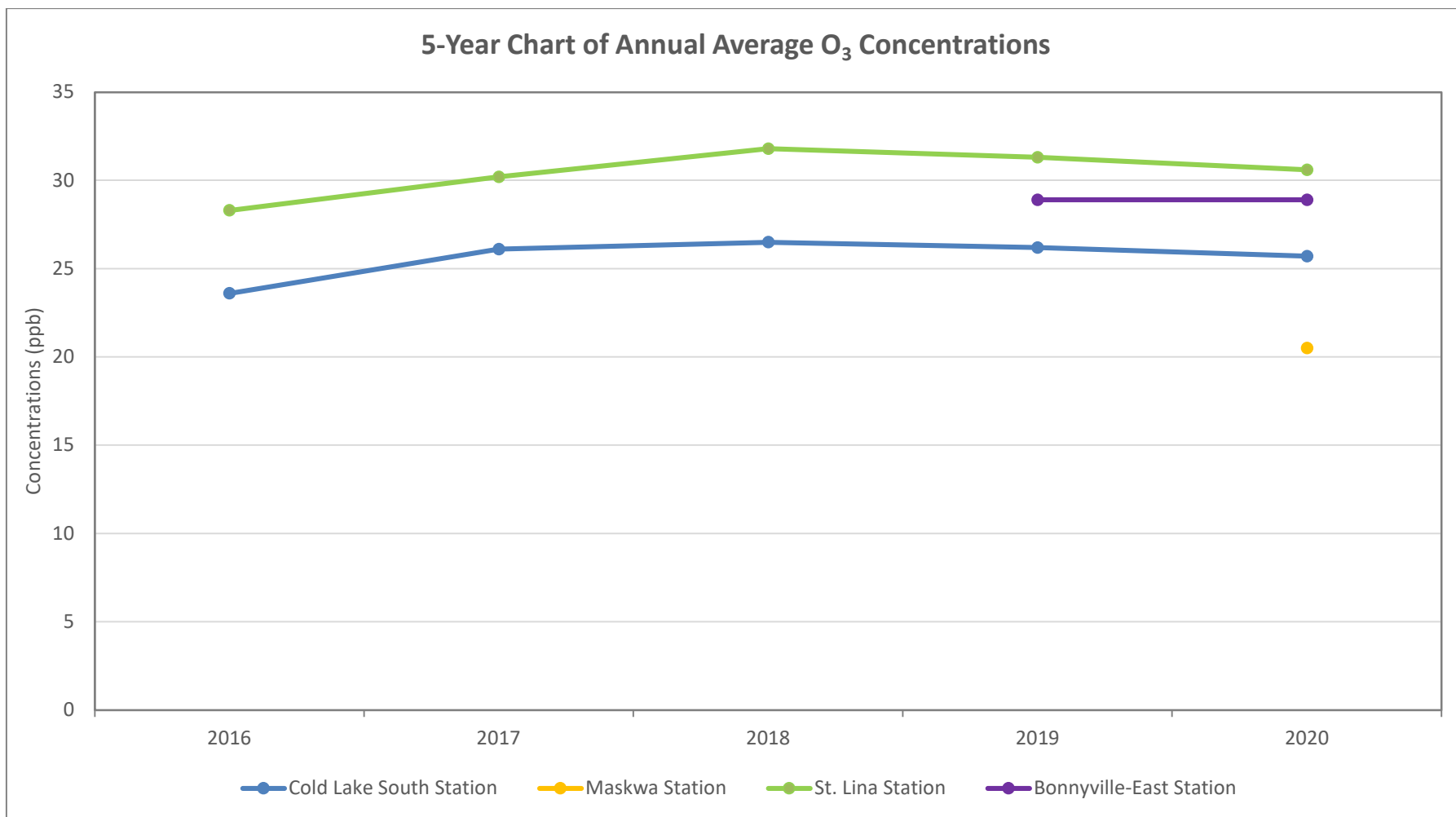
Note: Bonnyville-East Station was not installed in until November 2018 – no previous data available.

5-Year Chart of Annual Average NO₂ Concentrations



Note:

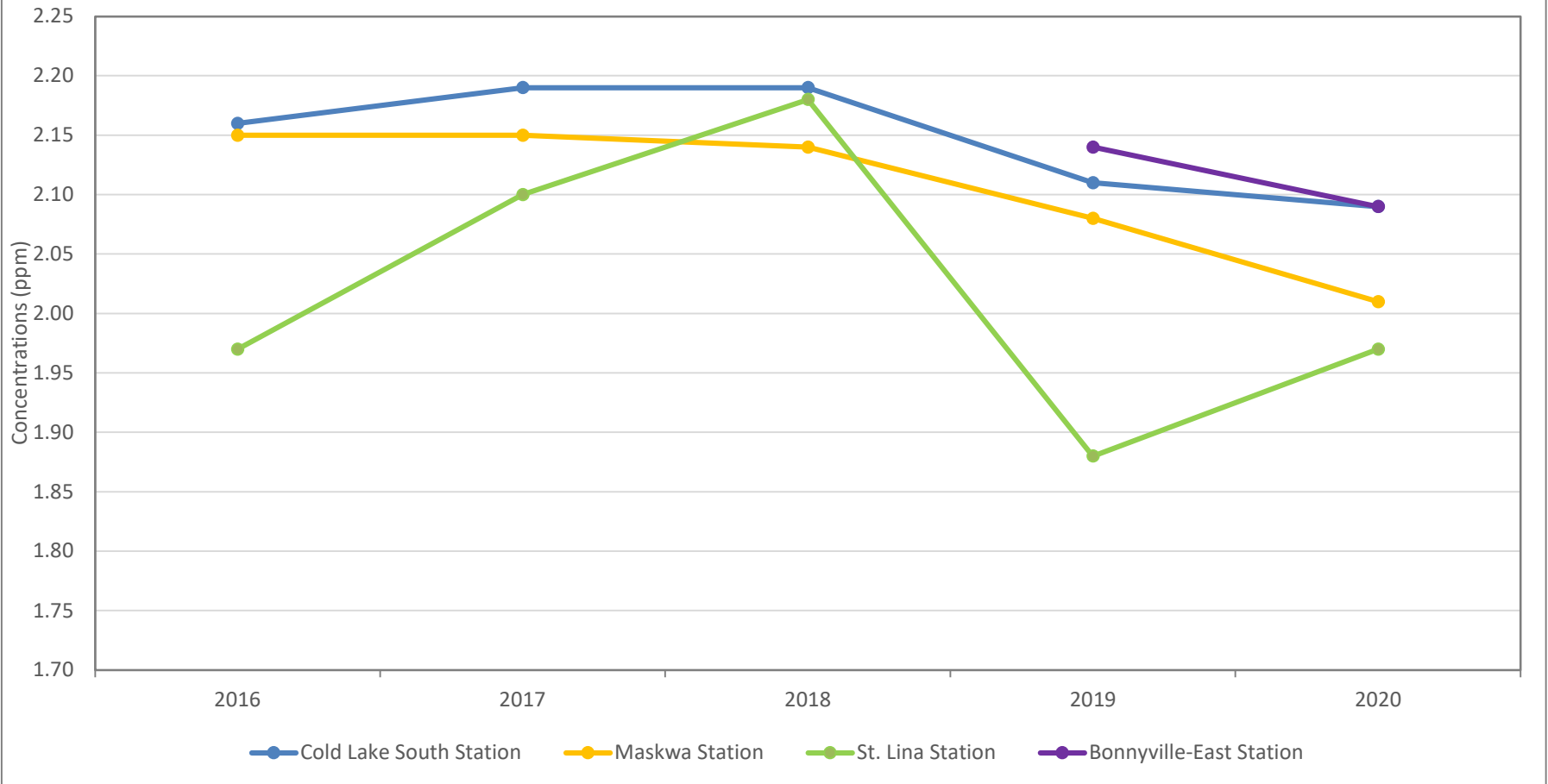
1. Bonnyville-East Station was not installed until November 2018 – no previous data available.
2. Alberta Ambient Air Quality Objective (AAAQO) is graphed on the secondary y-axis.



Note:

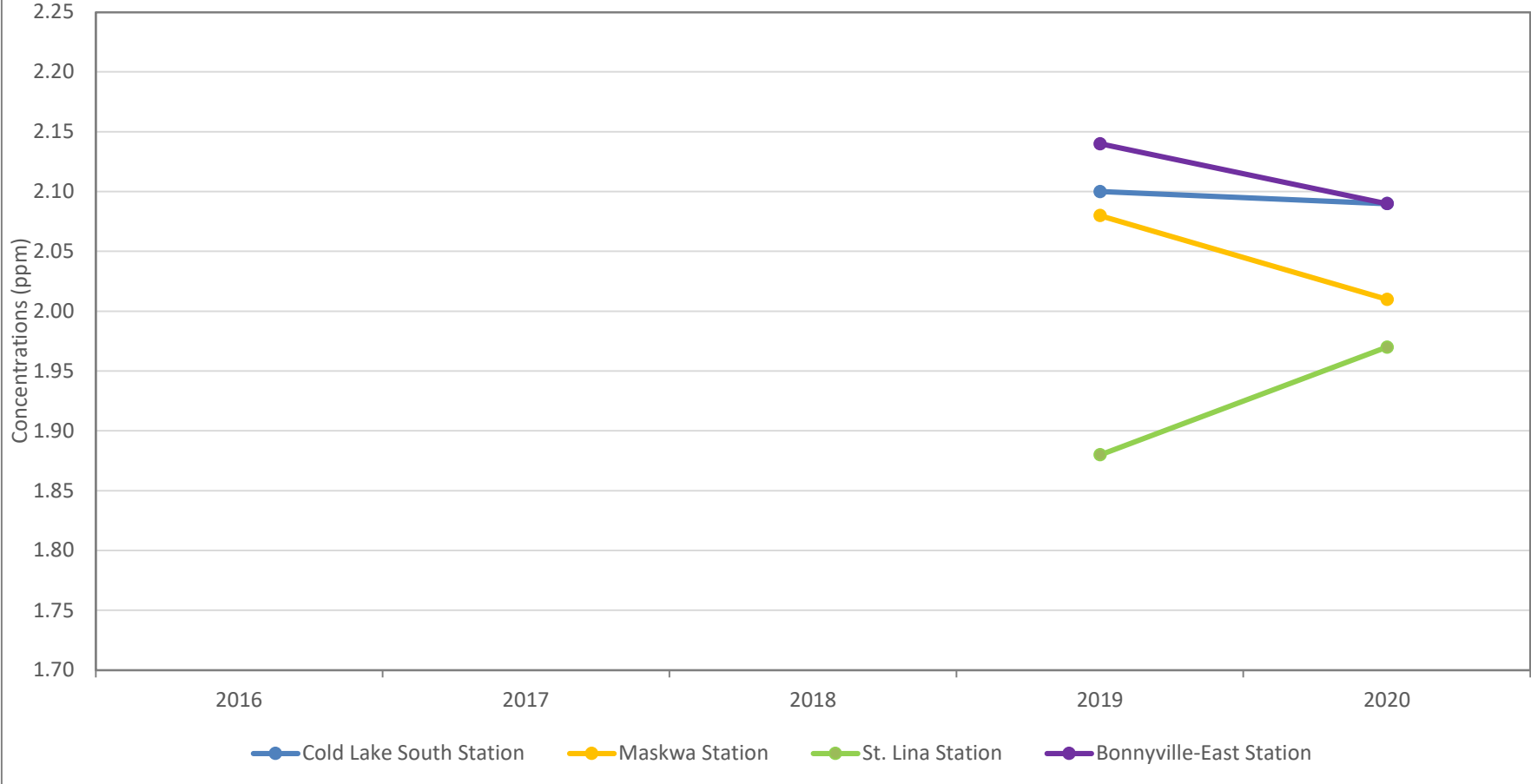
1. Bonnyville-East Station was not installed in until November 2018 – no previous data available.
2. O₃ was not monitored at Maskwa Station until October 2020 – no previous data available.

5-Year Chart of Annual Average THC Concentrations



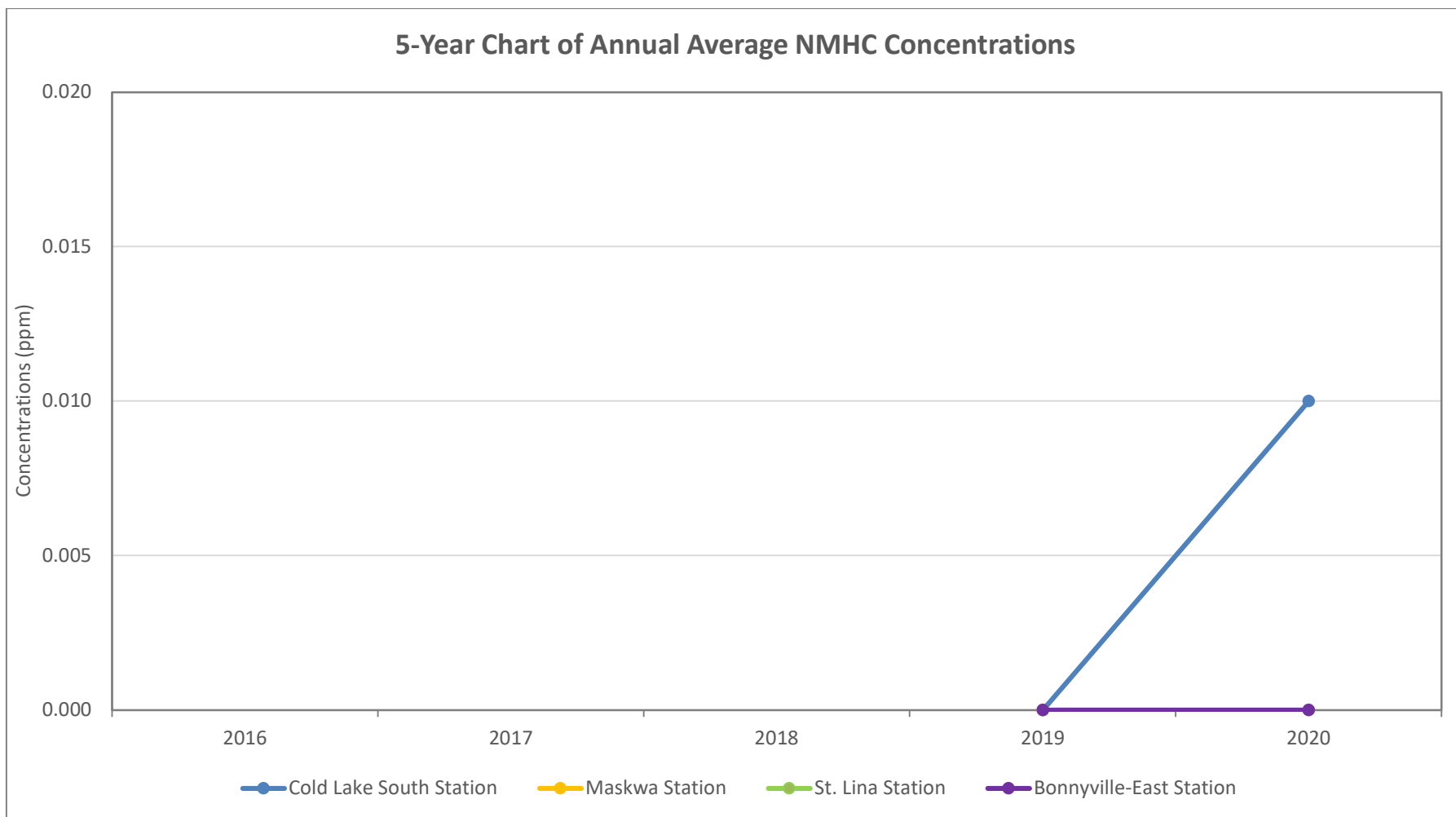
Note: Bonnyville-East Station was not installed in until November 2018 – no previous data available.

5-Year Chart of Annual Average CH₄ Concentrations



Note:

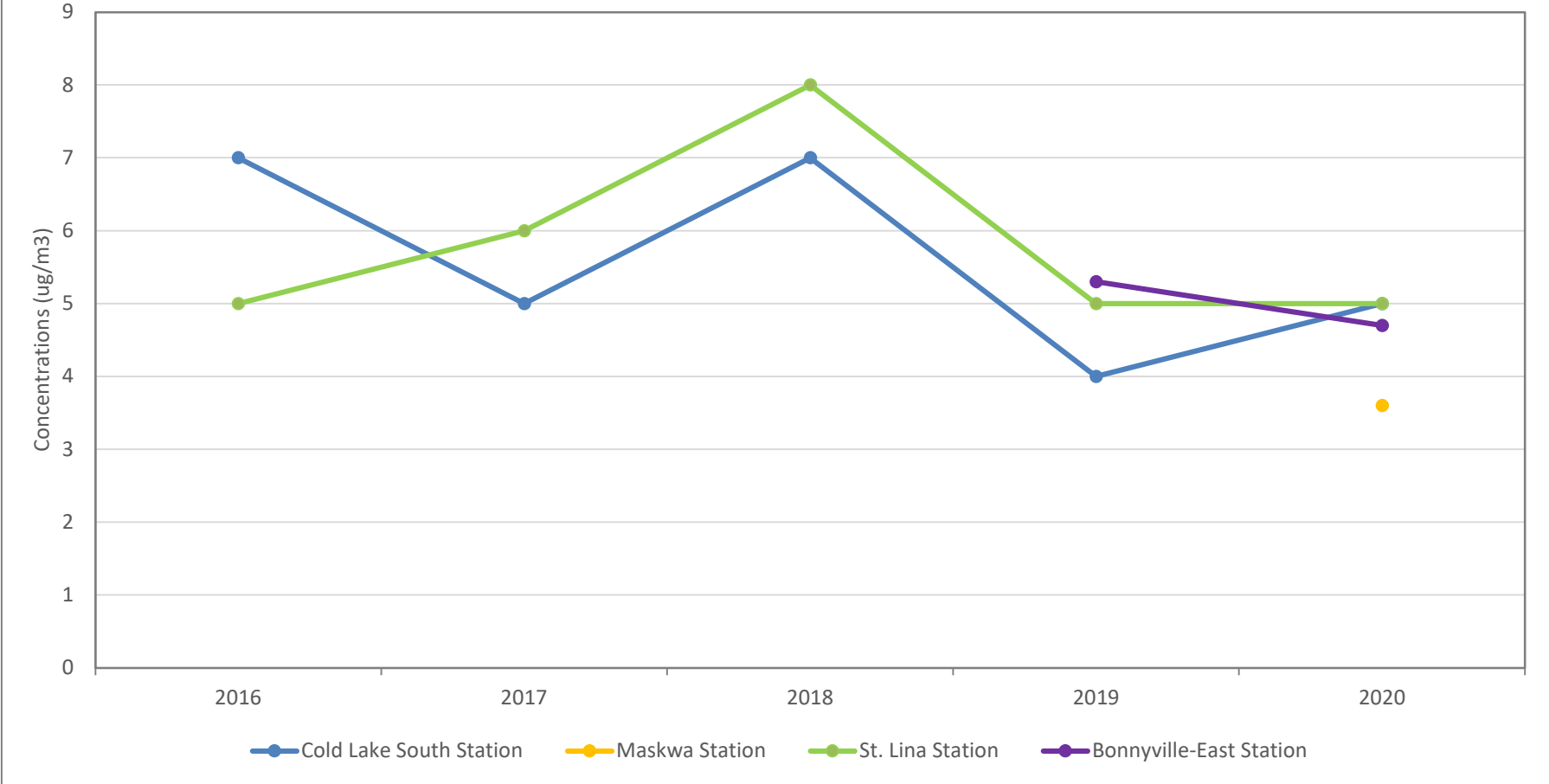
- 1. Bonnyville-East Station was not installed in until November 2018 – no previous data available.
- 2. HC analyzer for CH₄ channel was not installed in Cold Lake South, Maskwa and St. Lina until 2020 – no previous data available.



Note:

1. Bonnyville-East Station was not installed in until 2018 – no previous data available.
2. HC analyzer for CH₄ channel was not installed in Cold Lake South, Maskwa and St. Lina until 2020 – no previous data available.

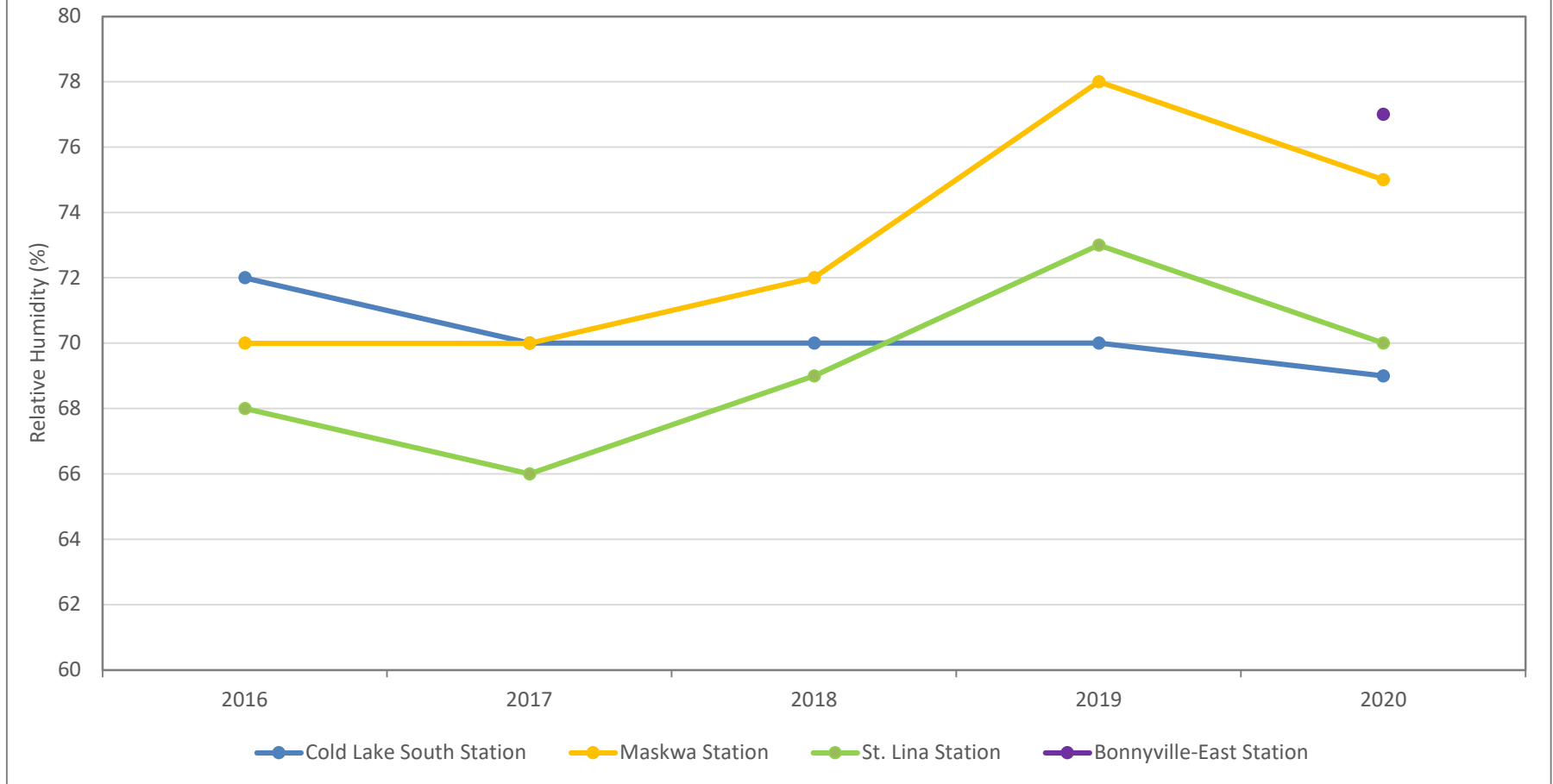
5-Year Chart of Annual Average PM2.5 Concentrations



Note:

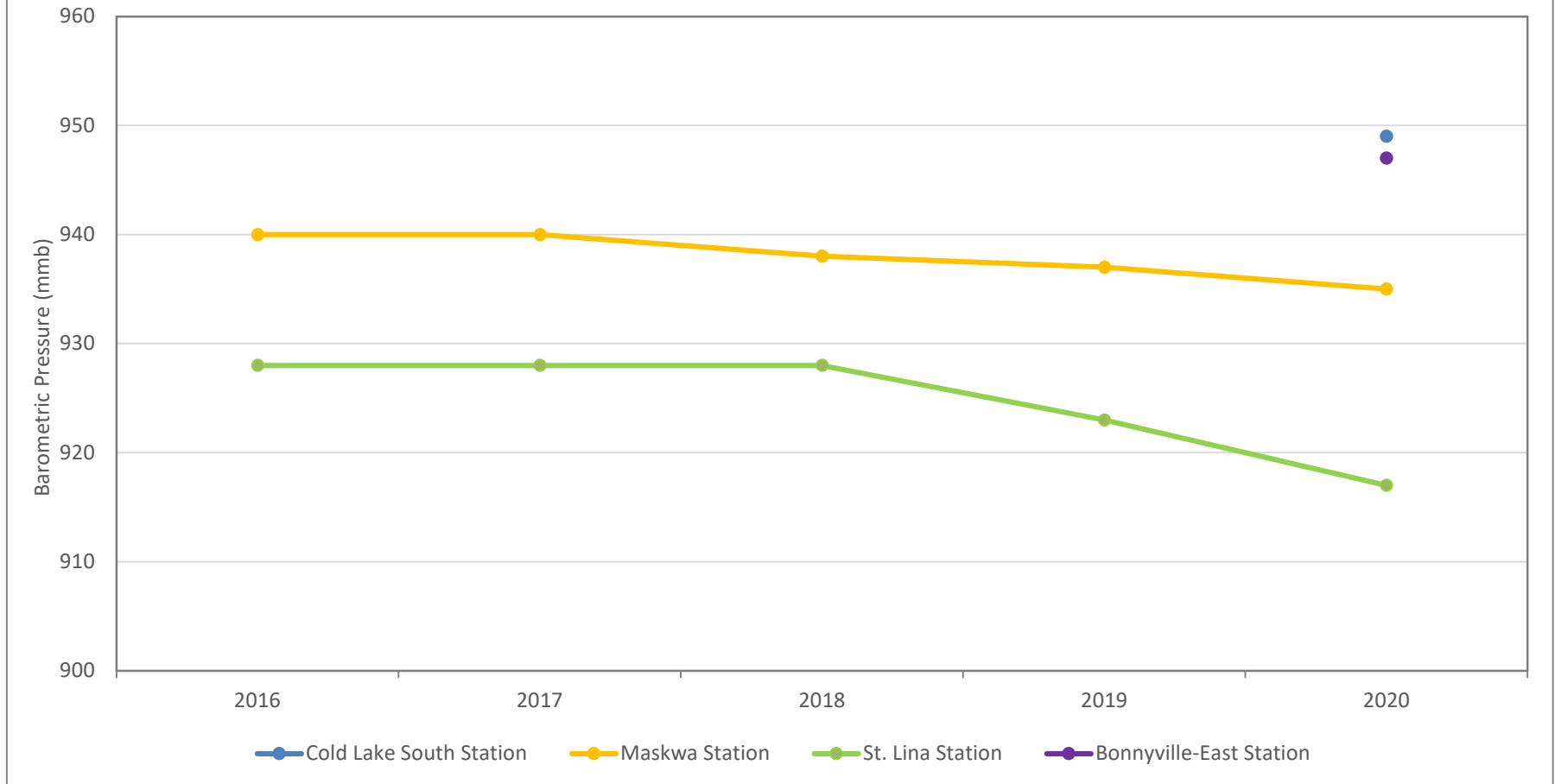
- 1. Bonnyville-East Station was not installed in until November 2018 – no previous data available.
- 2. PM2.5 was not monitored at Maskwa until June 2020 – no previous data available.

5-Year Chart of Annual Average Relative Humidity



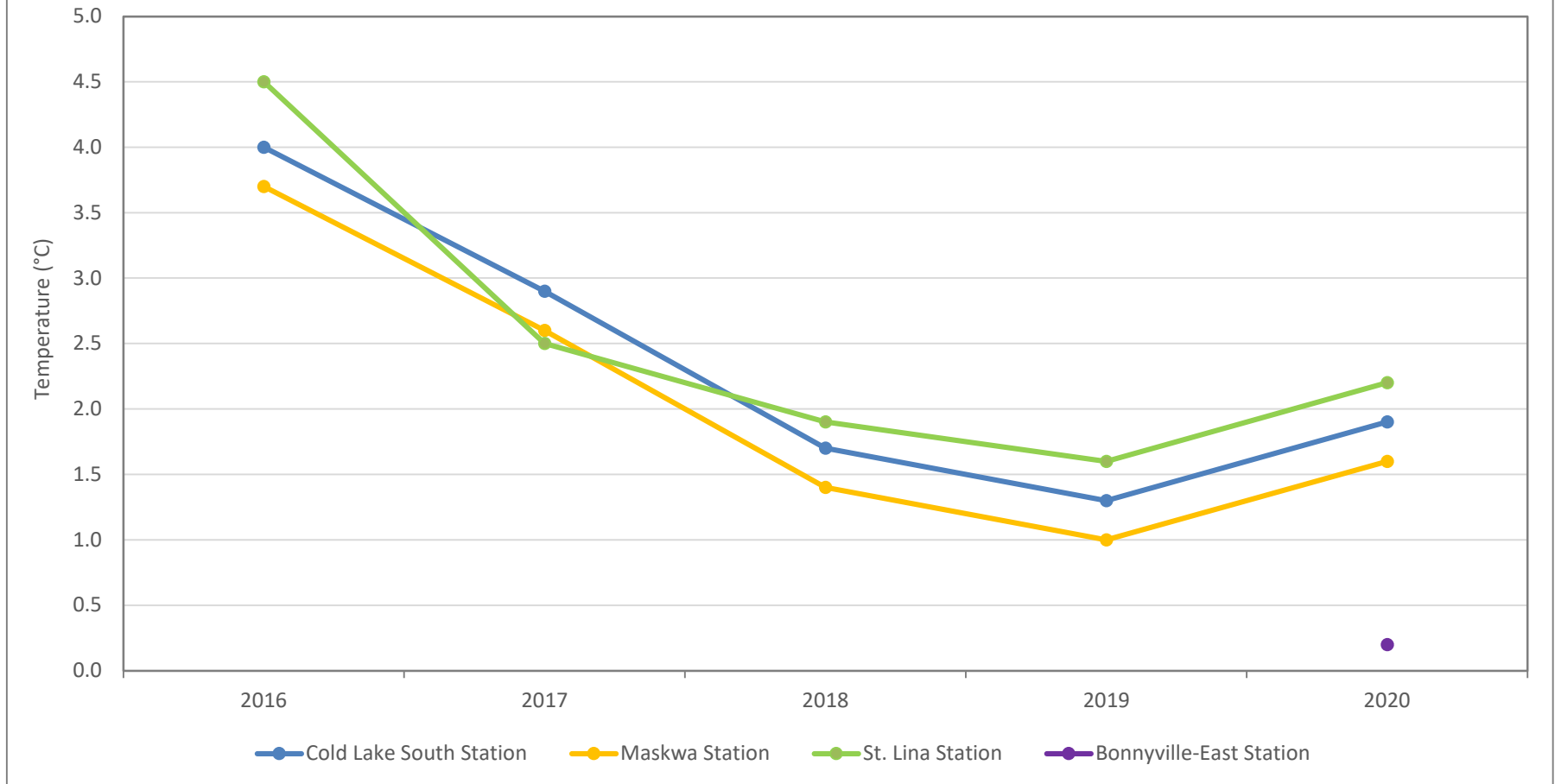
Note: RH was not monitored at Bonnyville-East Station until September 2020 – no previous data available.

5-Year Chart of Annual Average Barometric Pressure

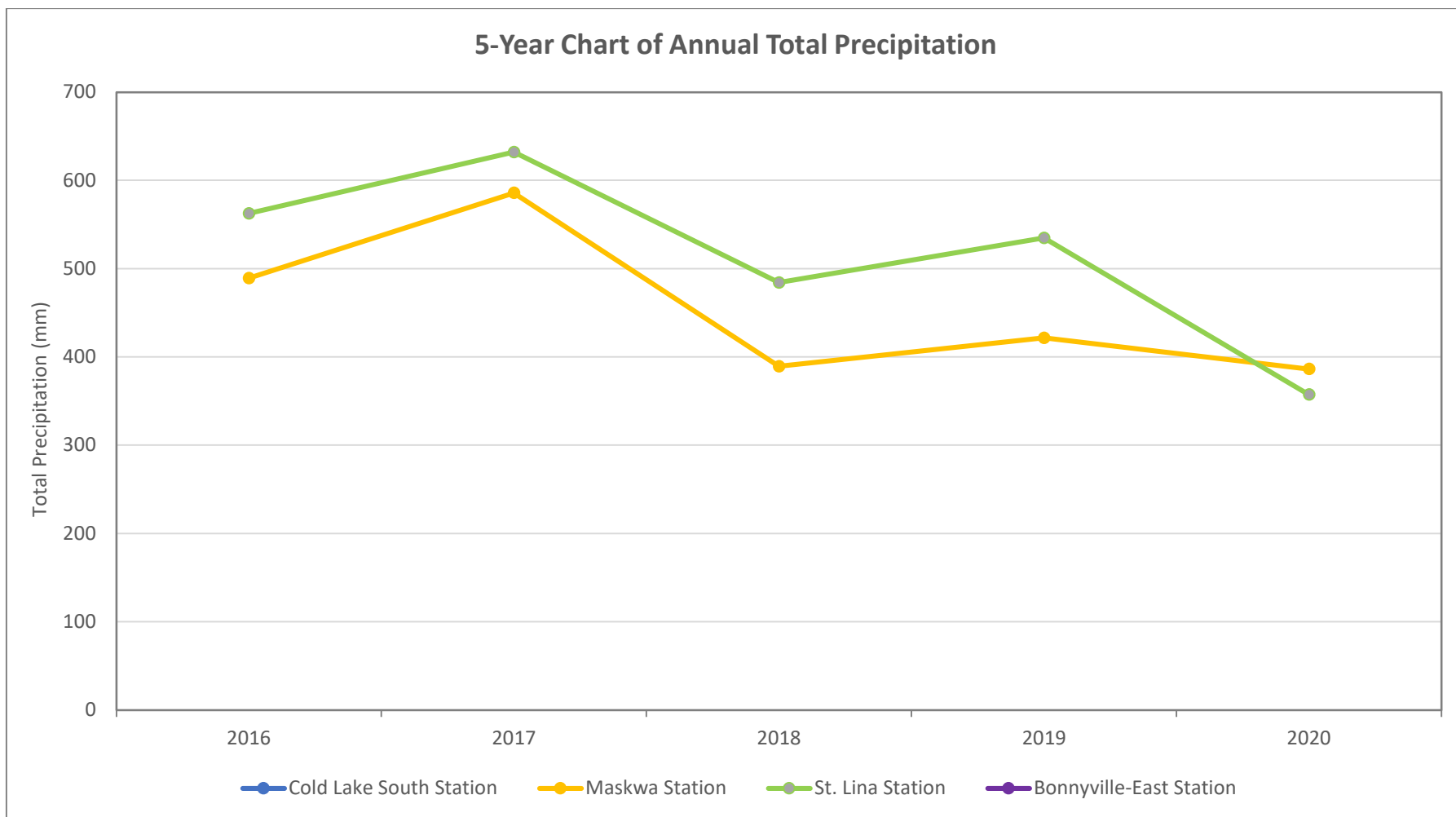


Note: BP was not monitored at Cold Lake South Station and Bonnyville-East Station until September 2020 – no previous data available.

5-Year Chart of Annual Average Temperature

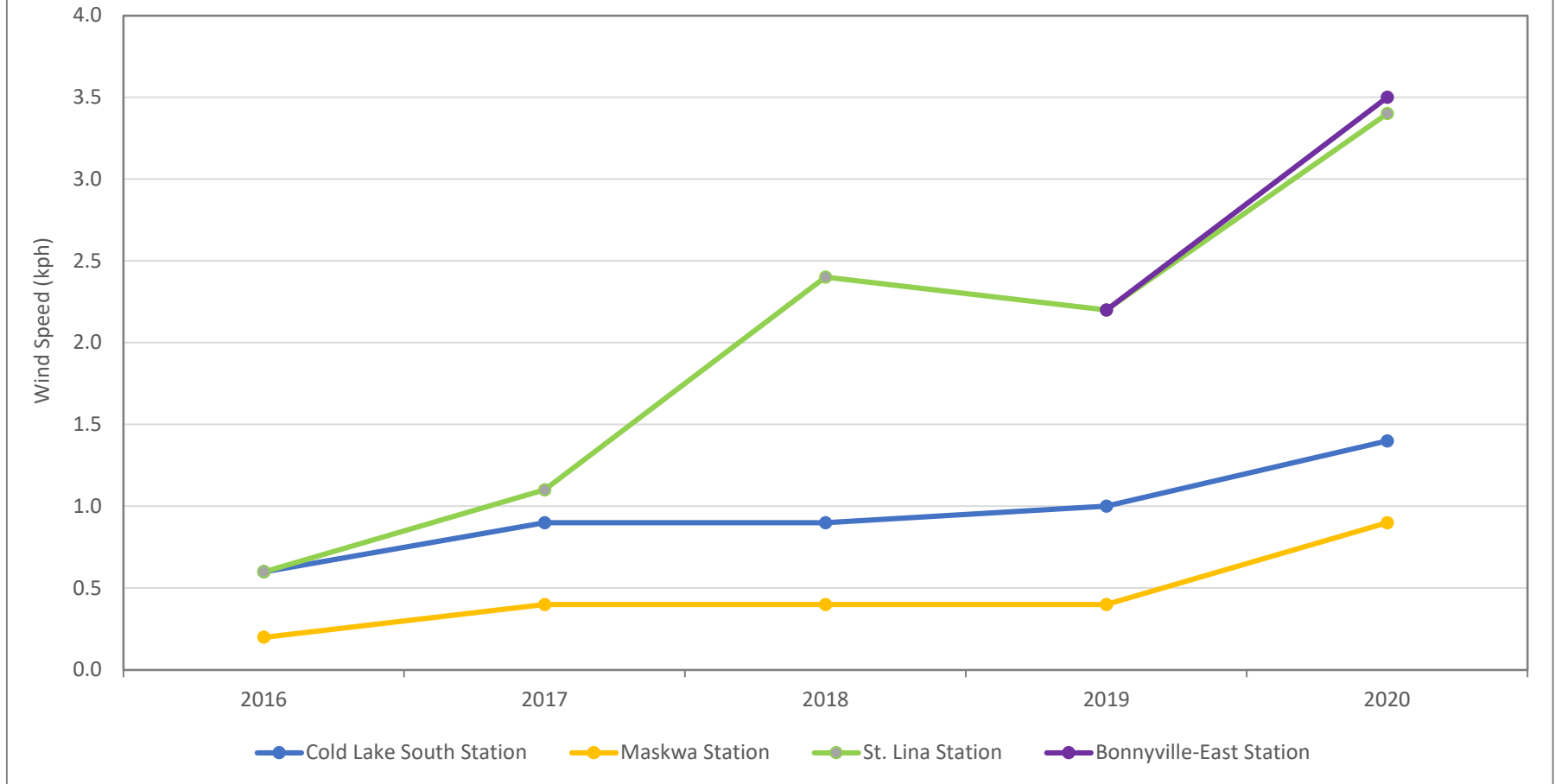


Note: Temperature was not monitored at Bonnyville-East Station until September 2020 – no previous data available.



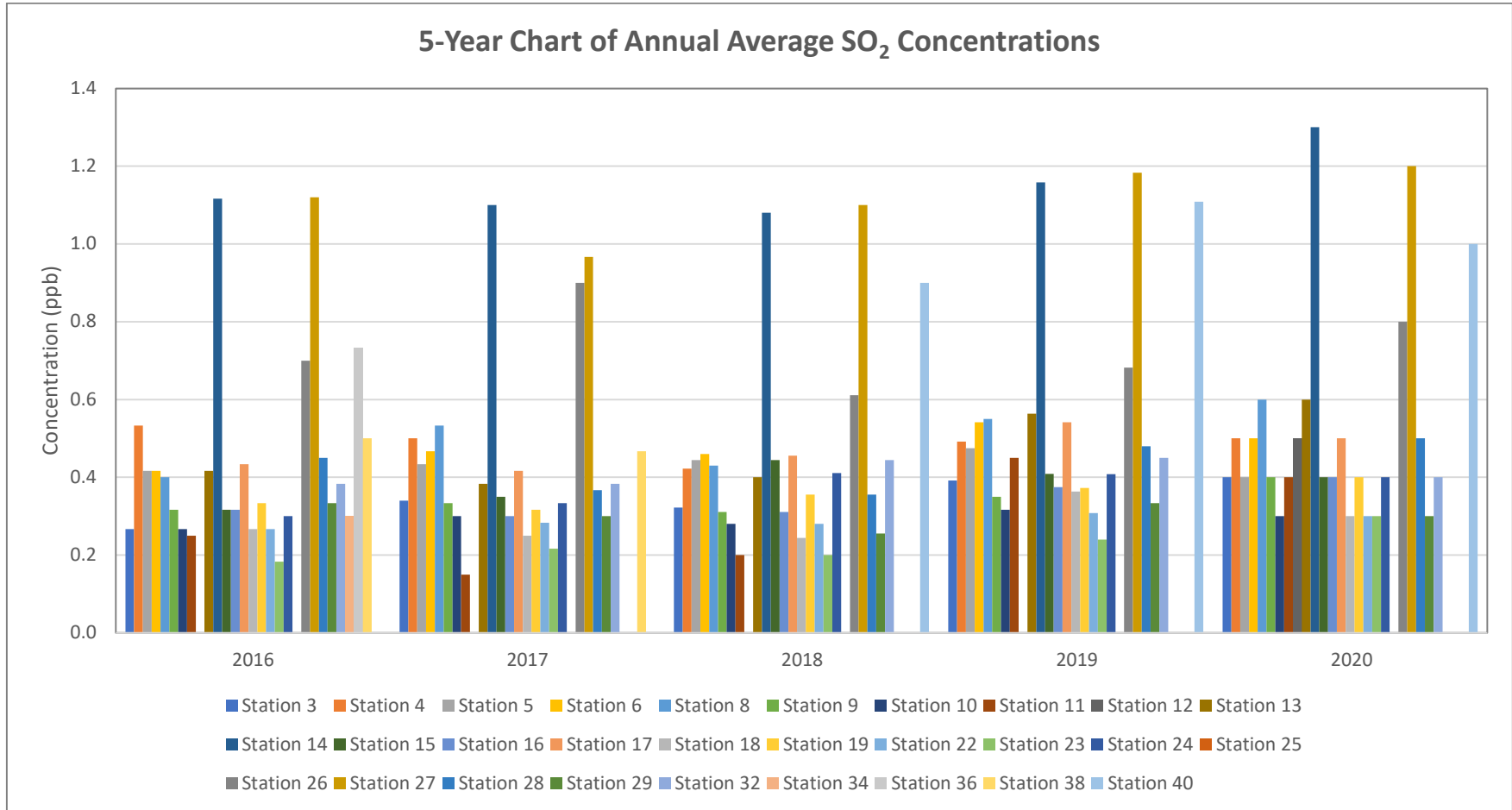
Note: Precipitation was not monitored at Cold Lake South Station and Bonnyville-East Station.

5-Year Chart of Annual Average Wind Speed

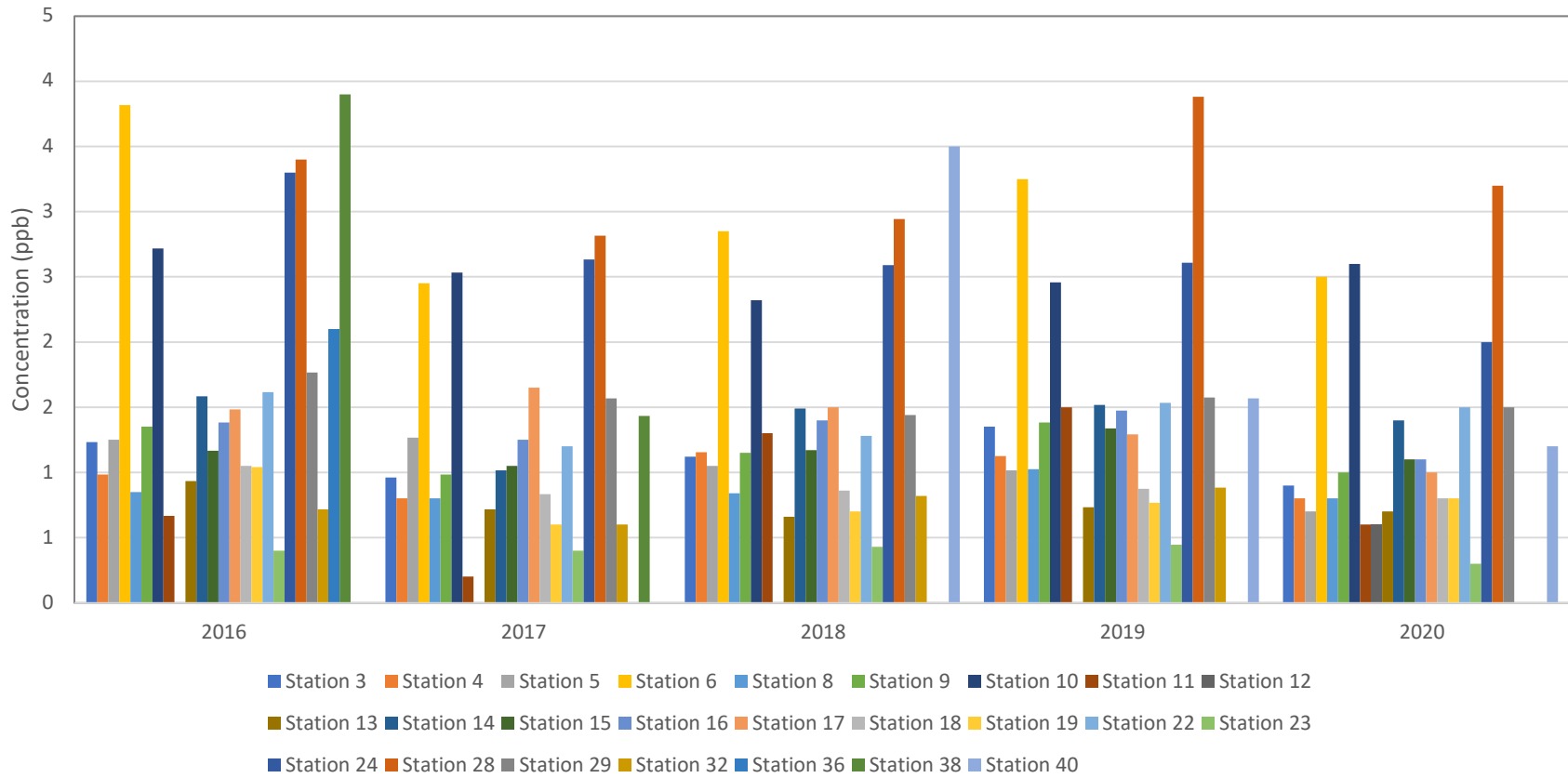


Note: Bonnyville-East Station was not installed in until November 2018 – no previous data available.

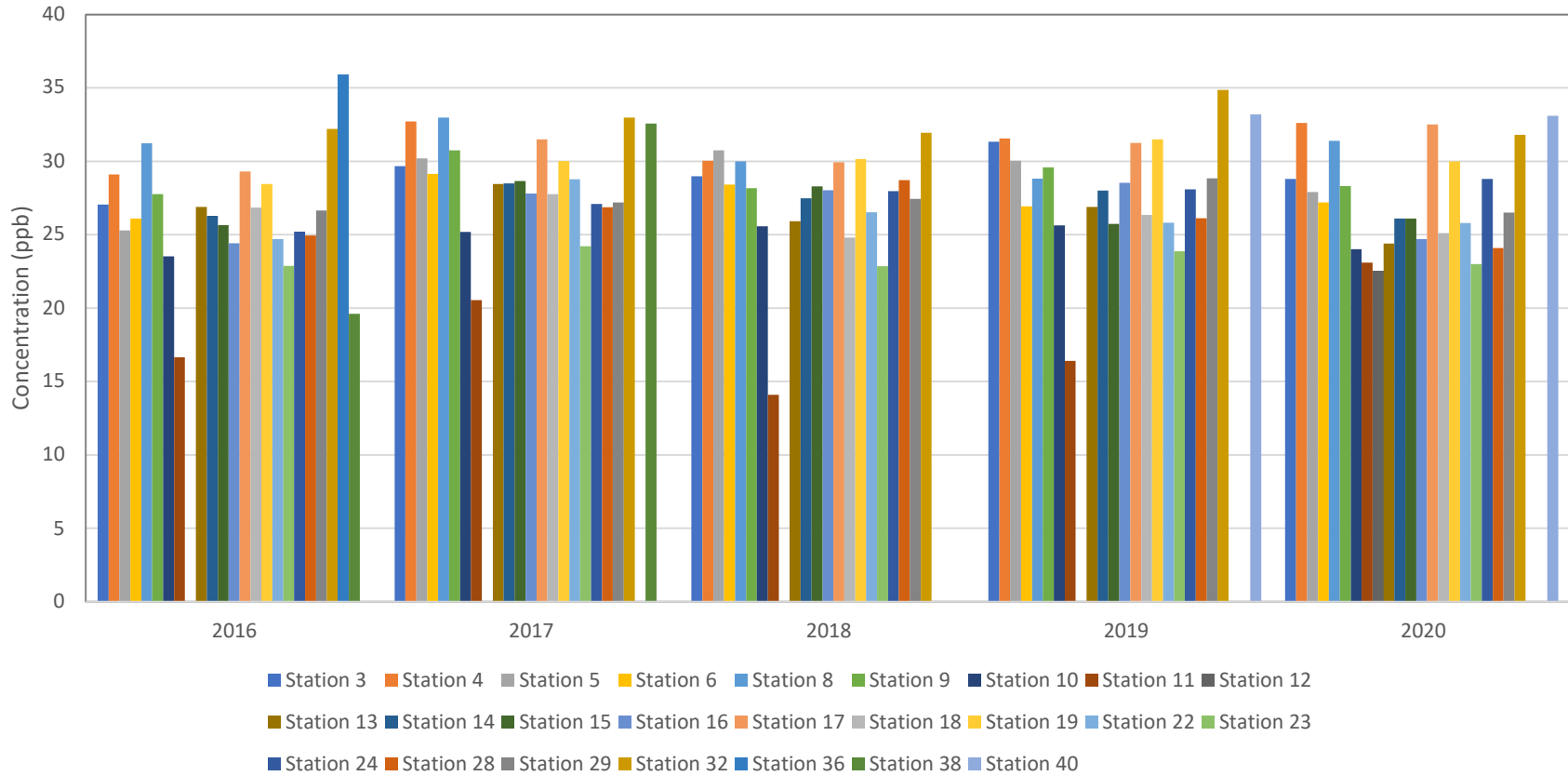
2.2 Passive Stations



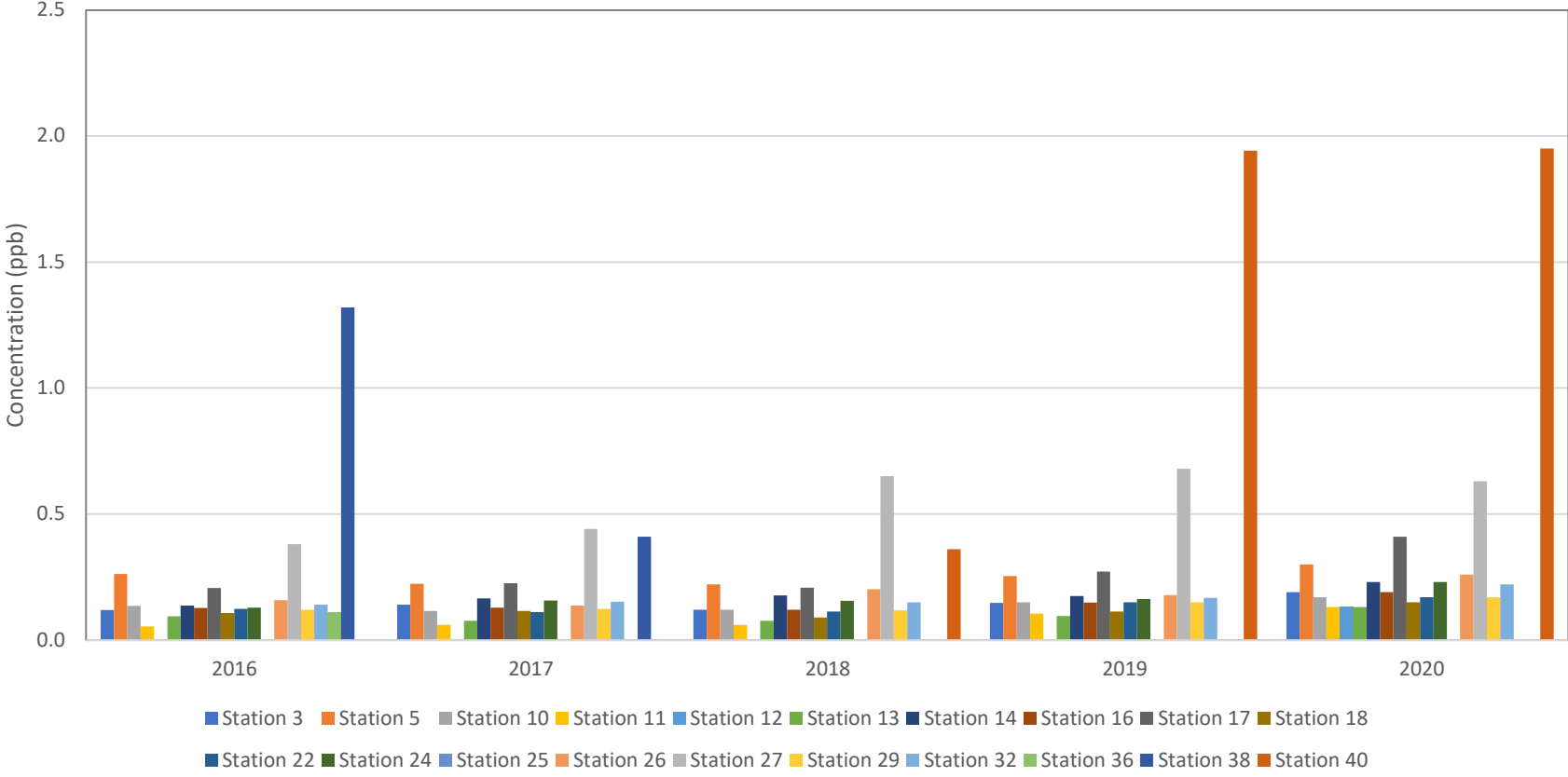
5-Year Chart of Annual Average NO₂ Concentrations



5-Year Chart of Annual Average O₃ Concentrations

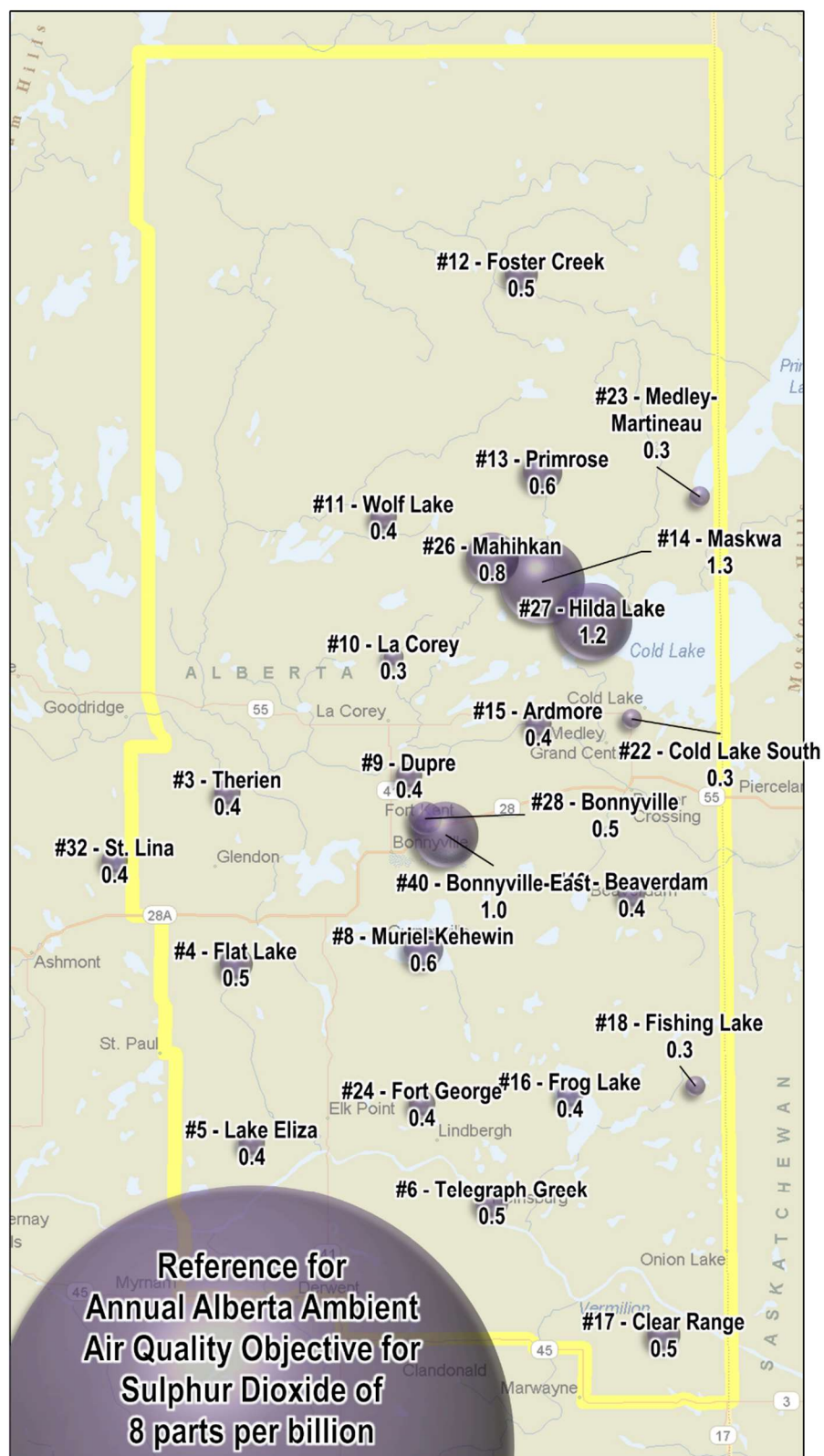


5-Year Chart of Annual Average H₂S Concentrations

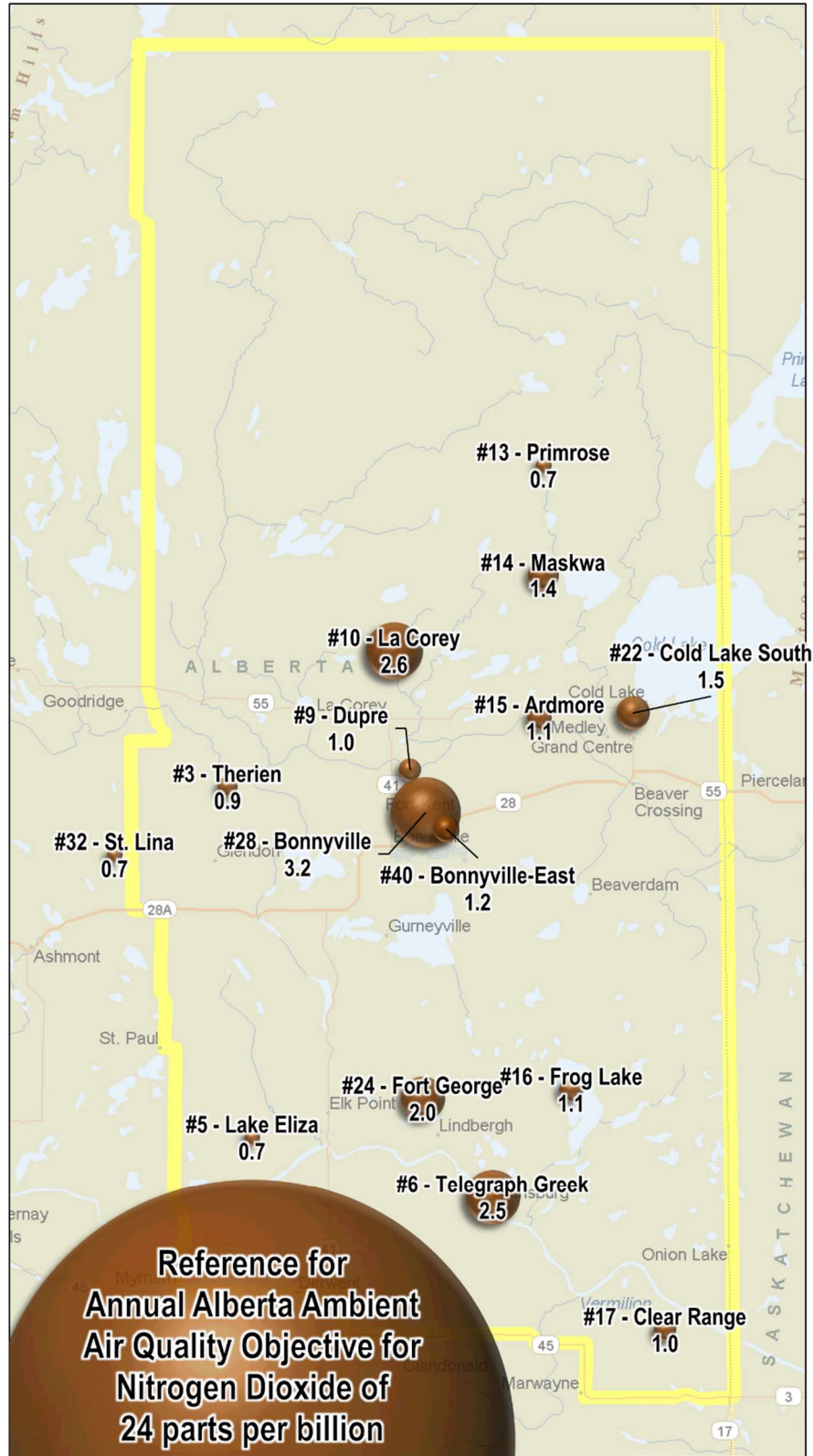


3. Spatial Plots of Annual Average Results from Passive Samplers

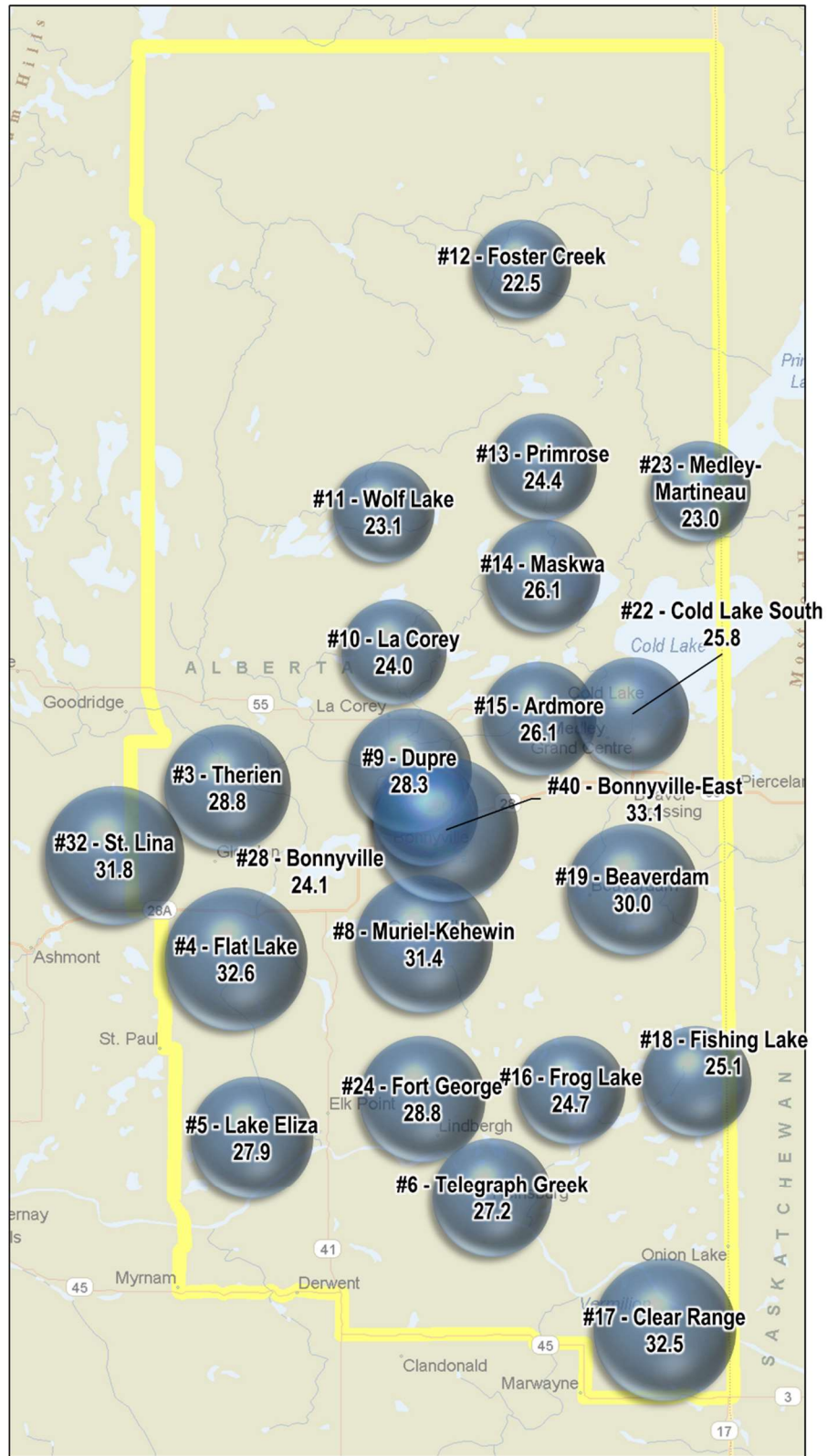
Sulphur Dioxide



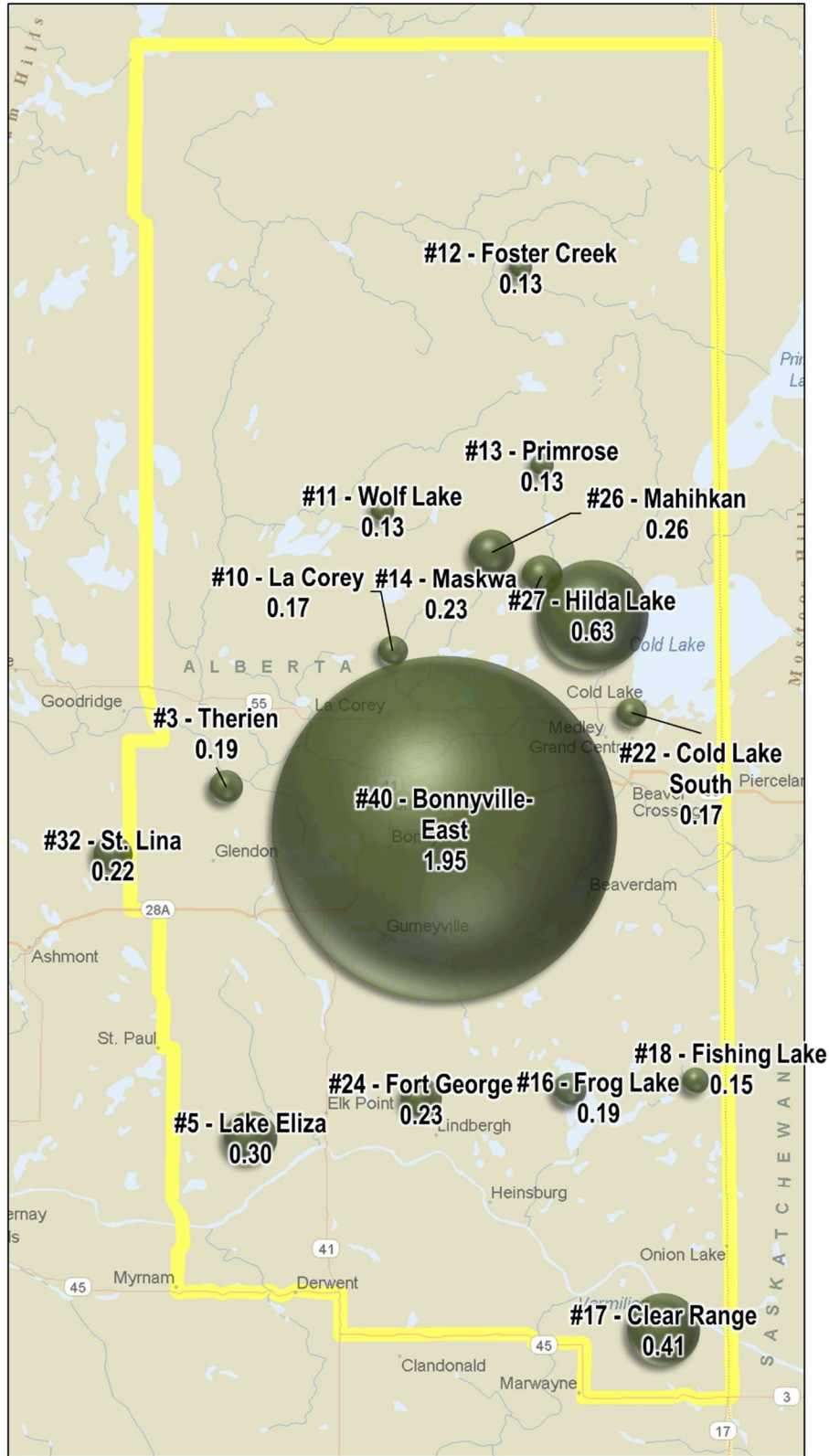
Nitrogen Dioxide



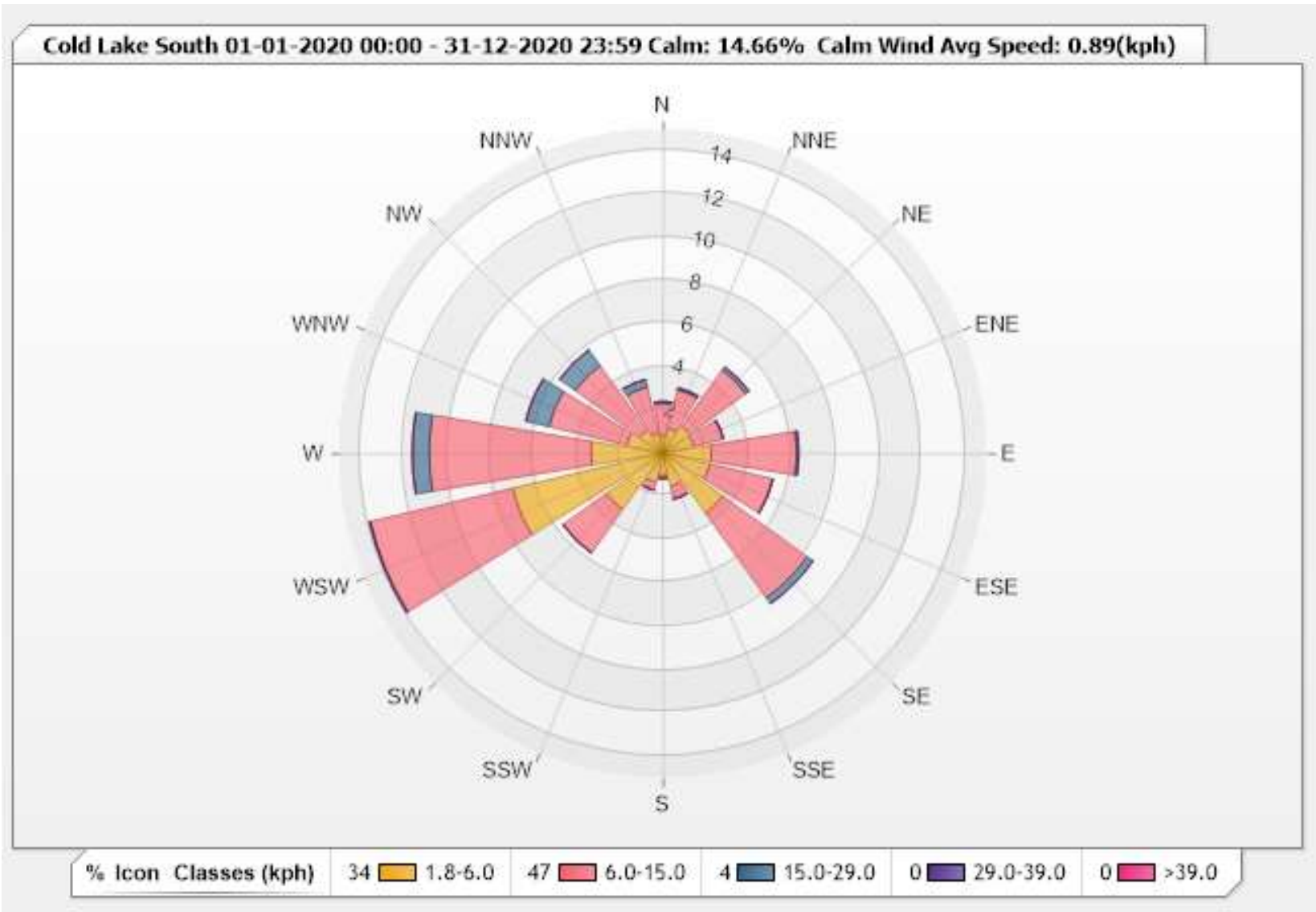
Ozone



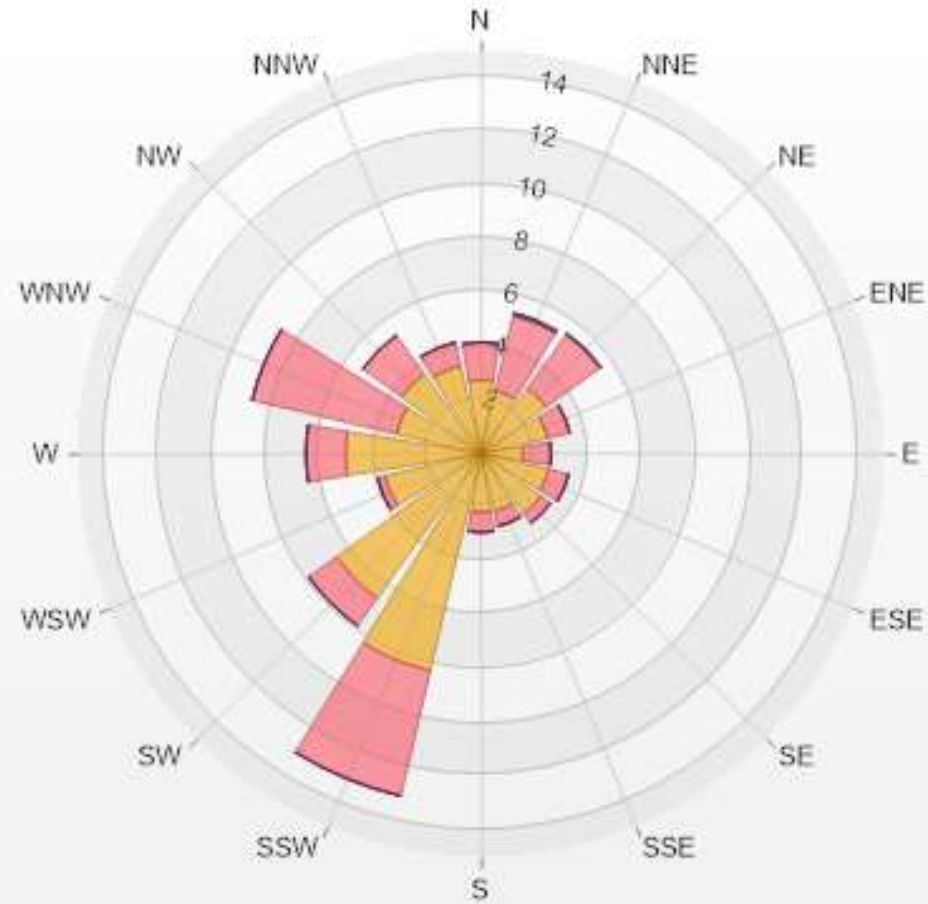
Hydrogen Sulphide



4. Annual Windrose Plots

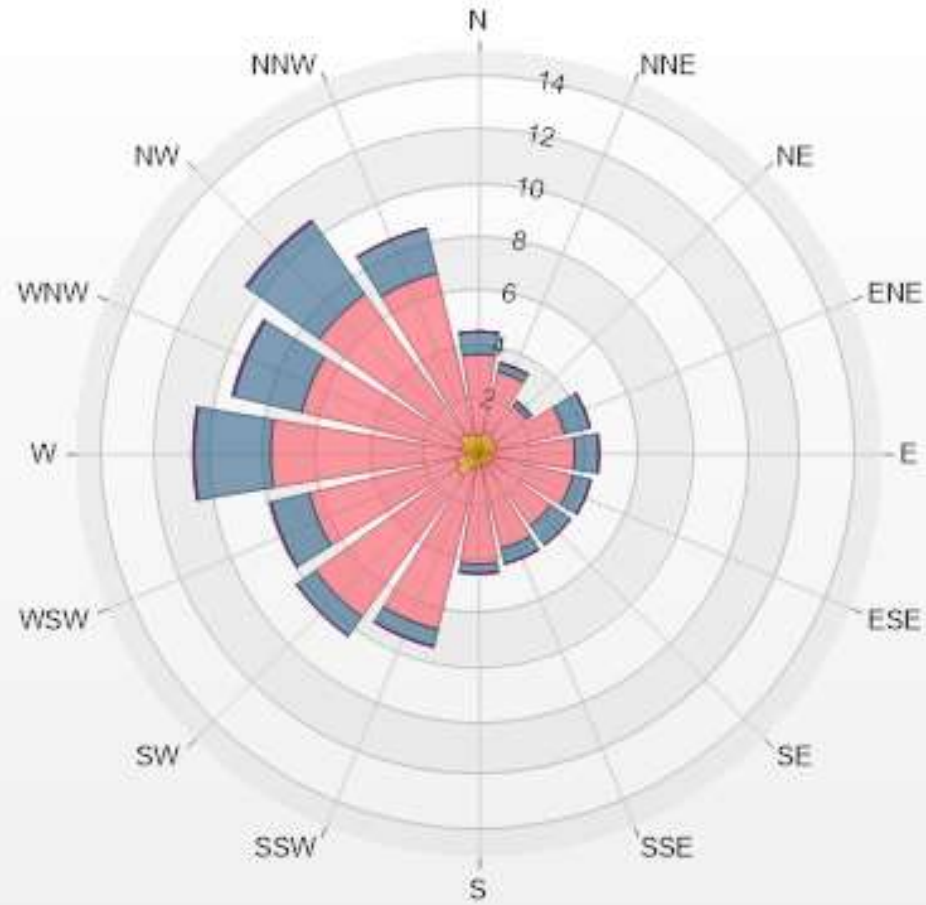


Maskwa 01-01-2020 00:00 - 31-12-2020 23:59 Calm: 17.17% Calm Wind Avg Speed: 0.93(kph)



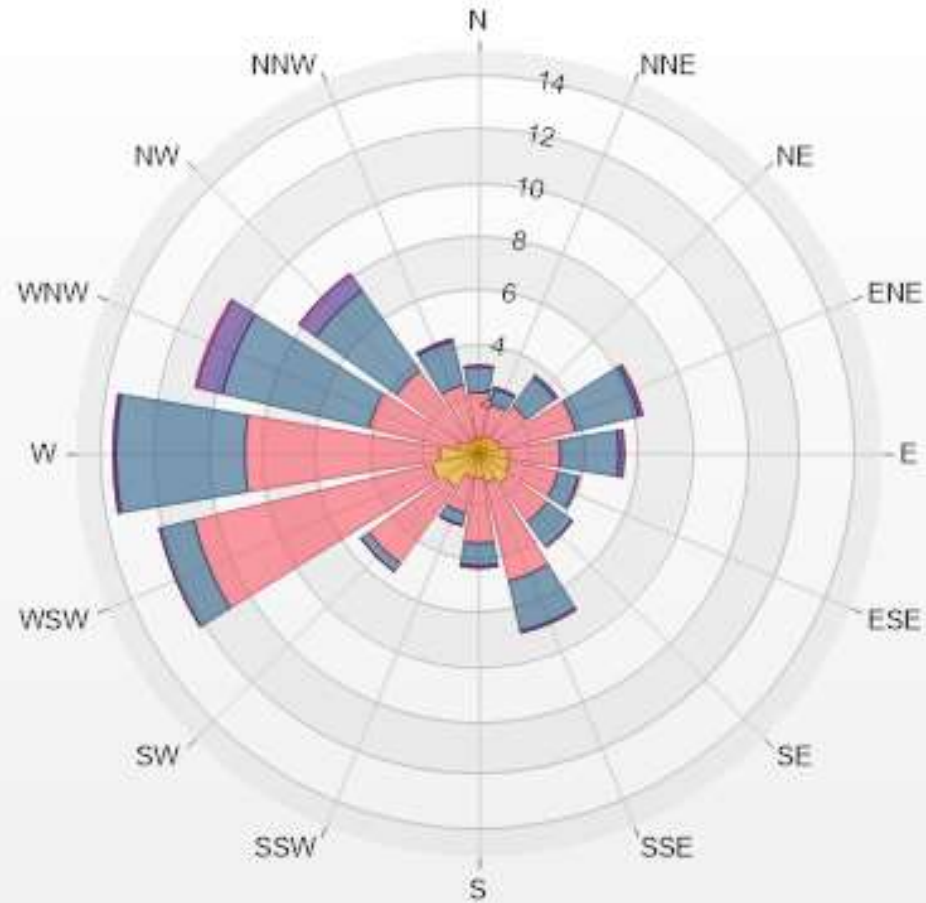
| % Icon | Classes (kph) | 56 | 27 | 0 | 0 | 0 |
|--------|---------------|----|----|---|---|---|
| | 1.8-6.0 | | | | | |
| | 6.0-15.0 | | | | | |
| | 15.0-29.0 | | | | | |
| | 29.0-39.0 | | | | | |
| | >39.0 | | | | | |

St. Lina 01-01-2020 00:00 - 31-12-2020 23:59 Calm: 1.00% Calm Wind Avg Speed: 0.90(kph)



| % Icon | Classes (kph) | 11 | 69 | 19 | 0 | 0 |
|--------|---------------|----|----|----|---|---|
| | 1.8-6.0 | | | | | |
| | 6.0-15.0 | | | | | |
| | 15.0-29.0 | | | | | |
| | 29.0-39.0 | | | | | |
| | >39.0 | | | | | |

Bonnyville East 01-01-2020 00:00 - 31-12-2020 23:59 Calm: 2.67% Calm Wind Avg Speed: 1.13(kph)



| % Icon | Classes (kph) | 16 | 49 | 30 | 3 | 0 |
|--|---------------|----|----|----|---|---|
|  | 1.8-6.0 | 16 | 49 | 30 | 3 | 0 |
|  | 6.0-15.0 | | | | | |
|  | 15.0-29.0 | | | | | |
|  | 29.0-39.0 | | | | | |
|  | >39.0 | | | | | |

End of Report

This page, 124 of 124, ends the 2020 Annual Ambient Air Quality Monitoring Report.