



# **Peace Airshed Zone Association**

## **Ambient Air Monitoring Network Summary**

**Continuous Ambient Air Quality Monitoring Program  
Monthly Report  
June 2016**

July 30, 2016

**Alberta Environment**  
 11<sup>th</sup> Floor, Oxbridge Place  
 9820-106 Street  
 Edmonton Alberta T5K 2J6

**RE: Peace Airshed Zone Association (PAZA) – June 2016 Ambient Air Report**

Enclosed is the PAZA Ambient Monitoring Network Report for the month of **June 2016**.

This report is submitted by PAZA on behalf of the industrial member companies to satisfy the requirements of the following facility Operating Approvals:

| Company  | Facility            | LSD             | EPEA Approval Number |
|--|---------------------|-----------------|----------------------|
| Advantage Oil & Gas Ltd.                       | Glacier             | 05-02-076-13-W6 | 262479-00-00         |
| Alberta Power (2000) Ltd.<br>(an ATCO company) | Sturgeon            | SW-06-069-21-W5 | 10283-02-02          |
| ATCO Power Canada                              | Poplar Hill         | 11-19-073-08-W6 | 67774-01-01          |
| ATCO Power Canada                              | Valleyview          | SW-06-069-21-W5 | 147709-01-01         |
| AltaGas Ltd.                                   | Pouce Coupe         | 03-03-081-13-W6 | 247673-00-00         |
|  | Ante Creek          | 02-26-068-25-W5 | 266694-00-00         |
|  | Gordondale          | 16-31-78-11-W6M | 287474-00-00         |
| Apache Canada Ltd.                             | House Mountain      | 01-08-070-10-W5 | 10137-02-02          |
| Birchcliff Energy Ltd.                         | Pouce Coupe         | 03-22-078-12-W6 | 252529-00-00         |
| Canadian Natural Resources Limited             | Bonanza             | 11-25-081-11-W6 | 00000029-01-00       |
|  | Progress/Gordondale | 01-01-077-10-W6 | 00010036-02-00       |
|  | Gold Creek          | 13-26-067-05-W6 | 00010446-02-00       |

| <b>Company</b>                           | <b>Facility</b>                | <b>LSD</b>      | <b>EPEA Approval Number</b> |
|--|--------------------------------|-----------------|-----------------------------|
|  | Teepee Creek                   | SE-2-074-04-W6  | 00001635-02-00              |
|  | Sturgeon/Valleyview            | 02-02-069-22-W5 | 1633-02-00                  |
| Canfor Forest Products                   | Grande Prairie                 | SW-23-071-06-W6 | 152645-01-00                |
| Conocophillips Canada Energy Partnership | Wembley                        | 06-19-073-08-W6 | 00000212-01-00              |
| Devon Canada                             | NW Belloy (Dunvegan)           | 16-36-079-03-W6 | 00009810-02-00              |
|  | Eaglesham (South)              | 02-14-077-25-W5 | 00047669-01-00              |
|  | North Normanville              | 03-36-079-23-W5 | 00047455-01-00              |
|  | West Culp                      | 05-34-078-25-W6 | 00136284-00-00              |
|  | Cecil                          | 08-15-084-08-W6 | 00010032-02-00              |
| Encana Corporation                       | Sexsmith                       | 04-08-075-07-W6 | 00010002-01-00              |
| Enerplus Resources                       | Pouce Coupe                    | SW-06-069-21-W5 | 1464-02-03                  |
| Exshaw Oil Corporation                   | Spirit River                   | 03-10-077-07-W6 | 344521-00-00                |
| Grande Prairie Generation Inc.           | Northern Prairie Power Project | 04-19-073-08-W6 | 00238762-00-00              |
| Long Run Exploration                     | Eaglesham                      | 01-25-076-01-W6 | 00241532-00-00              |
|  | Kakut                          | 14-12-075-03-W6 | 00248469-00-00              |
|  | Donnelly                       | 06-01-077-21-W5 | 00000087-02-00              |
|  | Puskwaskau                     | 03-26-074-01-W6 | 00017524-01-00              |
| Longview Oil Corp.                       | Sunset House                   | 06-22-070-20-W5 | 138884-01-00                |
| Penn West Petroleum Ltd.                 | Tangent                        | 13-29-080-23-W5 | 00001746-02-00              |

| Company                              | Facility                           | LSD             | EPEA Approval Number |
|--------------------------------------|------------------------------------|-----------------|----------------------|
|                                      | Pouce Coupe                        | 16-07-078-11-W6 | 00000614-01-00       |
| Petrus Resources                     | Rycroft                            | 08-25-077-06-W6 | 11351-02-00          |
|                                      | Spirit River                       | 08-34-077-06-W6 | 11096-02-00          |
| Spectra Energy Midstream Corporation | Fourth Creek                       | 16-11-082-09-W6 | 00000263-01-00       |
|                                      | Gordondale                         | 11-26-079-09-W6 | 00011495-01-01       |
|                                      | Pouce Coupe/Bonanza                | 3-23-080-13-W6  | 00070203-01-01       |
| Suncor Energy Inc.                   | Progress                           | 07-22-078-09-W6 | 00011428-02-00       |
| TAQA North Ltd.                      | Valhalla                           | 13-21-076-09-W6 | 00017620-01-00       |
| Veresen Energy                       | Hythe Brainard                     | 11-18-074-12-W6 | 00010910-02-00       |
| Weyerhaeuser Canada                  | Grande Prairie Pulp and Wood Plant | 01-14-070-05-W6 | 00000113-02-00       |

Included in this report is a summary of the monthly continuous monitoring, detailed hourly average reports and multipoint calibration reports of all instruments. Operational summaries can be found on the “Monthly Continuous Data Summary” and “Continuous Network Equipment Summary” pages of the report.

**Continuous Monitoring: Six (6) Stations including Henry Pirker (Grande Prairie), Evergreen Park, Smoky Heights, Beaverlodge, Valleyview, and Rycroft-Portable.**

During the month of **June** the following events were noted:

**Henry Pirker Station:**

- ◆ The measured ambient air quality was within the AAAQO for the Henry Pirker station.
- ◆ All analyzers and sensors at the Henry Pirker station had an operational uptime greater than 90% for the month of June.

**Evergreen Park Station:**

- ◆ The measured ambient air quality was within the AAAQO for the Evergreen Park station.
- ◆ All analyzers and sensors at the Evergreen Park station had an operational uptime greater than 90% for the month of June.

**Smoky Heights Station:**

- ◆ The measured ambient air quality was within the AAAQO for the Smoky Heights station.
- ◆ All analyzers and sensors at the Smoky Heights station had an operational uptime greater than 90% for the month of June.

**Beaverlodge Station:**

- ◆ The measured ambient air quality was within the AAAQO for the Beaverlodge station.
- ◆ All analyzers and sensors at the Beaverlodge station had an operational uptime greater than 90% for the month of June.

**Valleyview Station:**

- ◆ The measured ambient air quality was within the AAAQO for the Valleyview station.
- ◆ All analyzers and sensors at the Valleyview station had an operational uptime greater than 90% for the month of June.

**Rycroft-Portable Station:**

- ◆ The measured ambient air quality was within the AAAQO for the Rycroft-Portable station, with the exception of the PM<sub>2.5</sub> analyzer, which recorded one (1) exceedance of the 1-hour guideline of 80 µg/m<sup>3</sup>:
  - June 21 16:00h 111 µg/m<sup>3</sup> Alberta Environment Reference # 312948
- ◆ All analyzers and sensors at the Rycroft-Portable station had an operational uptime greater than 90% for the month of June.

**Passive Monitoring - 46 Stations throughout the PAZA zone:**

There were five duplicate sites sampled in the month of June: Spirit River, Clairmont Lake, Gold Creek, Jean Cote, and Girouxville 3 (H<sub>2</sub>S). The passive sample analyses were performed by MAXXAM Analytics Inc.

A summary of the passive data collected are reported as follows:

- Monthly average concentrations for SO<sub>2</sub> passives ranged from below detection level to 0.3 ppb, with a mean of 0.1 ppb.
- Monthly average concentrations for NO<sub>2</sub> passives ranged from 0.1 ppb to 3.4 ppb, with a mean of 0.7 ppb.
- Monthly average concentrations for O<sub>3</sub> passives ranged from 21.6 ppb to 38.3 ppb, with a mean of 30.0 ppb.
- Monthly average concentrations for H<sub>2</sub>S passives ranged from 0.1 ppb to 0.3 ppb, with a mean of 0.2 ppb.

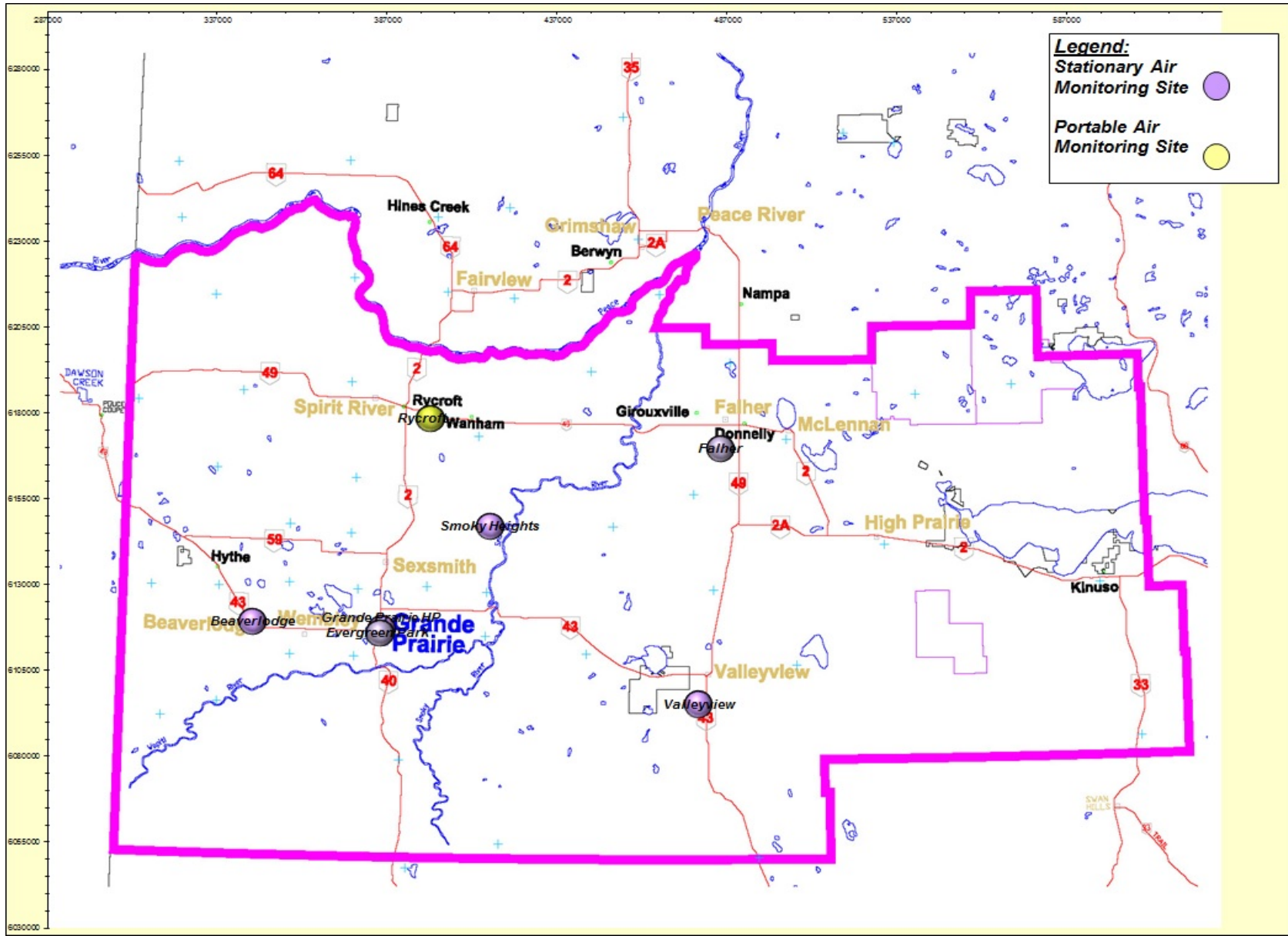
If you have any questions or concerns, please contact Patrick Andersen at 403.505.1041 or the PAZA office at 780.833.4343.

On Behalf of the  
Peace Airshed Zone Association



Patrick Andersen, B.Sc.  
Program Manager

# Location of PAZA Continuous Monitoring Stations



## PAZA Monthly Continuous Data Summary

| Jun-2016 Peace Airshed Zone Association |            |       |                  |                    |            |       | Maximum Recorded Values |              |              |        |        |        |
|---|------------|-------|------------------|--------------------|------------|-------|-------------------------|--------------|--------------|--------|--------|--------|
| Pollutant<br>(units)                    | Objectives |       | Station          | Monthly<br>Average | Exceedence |       | 1-hr                    |              | 24-hr / 8-hr |        |        |        |
|   | 1-hr       | 24-hr |                  |                    | 1-hr       | 24-hr | Conc                    | Day          | Conc         | Day    |        |        |
| SO <sub>2</sub> (ppb)                   | 172        | 48    | Henry Pirker     | 0.0                | 0          | 0     | 2.5                     | Jun-06 14:00 | 0.4          | Jun-06 | 100.0% | Jun-10 |
| SO <sub>2</sub> (ppb)                   | 172        | 48    | Evergreen Park   | 0.1                | 0          | 0     | 1.0                     | Jun-09 11:00 | 0.2          | Jun-19 | 100.0% | Jun-14 |
| SO <sub>2</sub> (ppb)                   | 172        | 48    | Smoky Heights    | 0.3                | 0          | 0     | 15.0                    | Jun-23 00:00 | 1.2          | Jun-22 | 100.0% | Jun-06 |
| SO <sub>2</sub> (ppb)                   | 172        | 48    | Beaverlodge      | 0.1                | 0          | 0     | 2.8                     | Jun-21 23:00 | 0.2          | Jun-20 | 99.4%  | Jun-08 |
| SO <sub>2</sub> (ppb)                   | 172        | 48    | Valleyview       | 0.9                | 0          | 0     | 11.9                    | Jun-15 03:00 | 5.4          | Jun-12 | 100.0% | Jun-15 |
| SO <sub>2</sub> (ppb)                   | 172        | 48    | Falher-Idle      | -                  | 0          | 0     | -                       | -            | -            | -      | -      | -      |
| SO <sub>2</sub> (ppb)                   | 172        | 48    | Rycroft-Portable | 0.3                | 0          | 0     | 3.7                     | Jun-06 10:00 | 1.0          | Jun-20 | 100.0% | Jun-16 |
| NO (ppb)                                |            |       | Henry Pirker     | 0.5                | 0          | 0     | 10.4                    | Jun-29 07:00 | 1.4          | Jun-29 | 100.0% | Jun-10 |
| NO <sub>2</sub> (ppb)                   | 159        | 106   | Henry Pirker     | 2.9                | 0          | 0     | 19.8                    | Jun-08 08:00 | 5.6          | Jun-29 | 100.0% | Jun-10 |
| NO <sub>x</sub> (ppb)                   |            |       | Henry Pirker     | 3.7                | 0          | 0     | 24.0                    | Jun-08 08:00 | 7.4          | Jun-29 | 100.0% | Jun-10 |
| NO (ppb)                                |            |       | Beaverlodge      | 0.2                | 0          | 0     | 4.7                     | Jun-28 08:00 | 0.6          | Jun-29 | 99.4%  | Jun-08 |
| NO <sub>2</sub> (ppb)                   | 159        | 106   | Beaverlodge      | 1.7                | 0          | 0     | 11.0                    | Jun-06 07:00 | 3.4          | Jun-29 | 99.4%  | Jun-08 |
| NO <sub>x</sub> (ppb)                   |            |       | Beaverlodge      | 1.9                | 0          | 0     | 13.8                    | Jun-06 08:00 | 4.0          | Jun-29 | 99.4%  | Jun-08 |
| NO (ppb)                                |            |       | Rycroft-Portable | 0.4                | 0          | 0     | 5.6                     | Jun-08 07:00 | 1.7          | Jun-08 | 100.0% | Jun-16 |
| NO <sub>2</sub> (ppb)                   | 159        | 106   | Rycroft-Portable | 2.3                | 0          | 0     | 22.2                    | Jun-08 01:00 | 8.3          | Jun-08 | 100.0% | Jun-16 |
| NO <sub>x</sub> (ppb)                   |            |       | Rycroft-Portable | 2.6                | 0          | 0     | 25.4                    | Jun-08 01:00 | 10.2         | Jun-08 | 100.0% | Jun-16 |
| O <sub>3</sub> (ppb)                    | 82         |       | Henry Pirker     | 30.2               | 0          | -     | 64.0                    | Jun-05 17:00 | 49.7         | Jun-04 | 100.0% | Jun-10 |
| O <sub>3</sub> (ppb) - 8-hr             |            |       | Henry Pirker     |                    | 0          |       |                         |              | 31.6         | Jun-04 |        | -      |
| O <sub>3</sub> (ppb)                    | 82         |       | Beaverlodge      | 4.0                | 0          | -     | 64.2                    | Jun-04 13:00 | 52.5         | Jun-04 | 99.4%  | Jun-08 |
| O <sub>3</sub> (ppb) - 8-hr             |            |       | Beaverlodge      |                    | 0          |       |                         |              | 61.5         | Jun-04 |        | -      |
| O <sub>3</sub> (ppb)                    | 82         |       | Rycroft-Portable | 30.1               | 0          | -     | 63.7                    | Jun-05 19:00 | 49.8         | Jun-04 | 100.0% | Jun-16 |
| O <sub>3</sub> (ppb) - 8-hr             |            |       | Rycroft-Portable |                    | 0          |       |                         |              | 61.1         | Jun-05 |        | -      |
| CO (ppm)                                | 13         |       | Henry Pirker     | 0.15               | 0          | -     | 0.4                     | Jul-01 00:00 | 0.2          | Jun-29 | 100.0% | Jun-09 |
| CO (ppm) - 8-hr                         |            | 5     | Henry Pirker     |                    | 0          |       |                         |              | 0.2          | Jun-30 |        | -      |



## PAZA Monthly Continuous Data Summary – continued

| Jun-2016                               |    | Peace Airshed Zone Association |                  |       |   |   | Maximum Recorded Values |              |              |        |        |        |  |
|--|----|--------------------------------|------------------|-------|---|---|-------------------------|--------------|--------------|--------|--------|--------|--|
|  |    |                                |                  |       |   |   | 1-hr                    |              | 24-hr / 8-hr |        |        |        |  |
| THC (ppm)                              |    |                                | Henry Pirker     | 1.9   | - | - | 2.4                     | Jul-01 00:00 | 2.1          | Jun-28 | 100.0% | Jun-09 |  |
| CH <sub>4</sub> (ppm)                  |    |                                | Henry Pirker     | 1.9   | - | - | 2.4                     | Jul-01 00:00 | 2.1          | Jun-28 | 100.0% | Jun-09 |  |
| NMHC (ppm)                             |    |                                | Henry Pirker     | 0.0   | - | - | 0.0                     | Jun-16 12:00 | 0.0          | Jun-16 | 100.0% | Jun-09 |  |
| THC (ppm)                              |    |                                | Rycroft-Portable | 1.9   | - | - | 2.1                     | Jun-30 14:00 | 1.9          | Jun-20 | 96.9%  | Jun-26 |  |
| TRS (ppb)                              |    |                                | Henry Pirker     | 0.2   | - | - | 1.3                     | Jun-26 05:00 | 0.4          | Jun-28 | 100.0% | Jun-09 |  |
| TRS (ppb)                              |    |                                | Evergreen Park   | 0.3   | - | - | 2.5                     | Jun-09 12:00 | 0.5          | Jun-09 | 100.0% | Jun-14 |  |
| TRS (ppb)                              |    |                                | Smoky Heights    | 0.1   | - | - | 0.4                     | Jun-29 06:00 | 0.2          | Jun-29 | 90.0%  | Jun-06 |  |
| TRS (ppb)                              |    |                                | Rycroft-Portable | 0.3   | - | - | 1.6                     | Jun-30 13:00 | 0.5          | Jun-27 | 100.0% | Jun-17 |  |
| H <sub>2</sub> S (ppb)                 | 10 | 3                              | Valleyview       | 0.2   | 0 | 0 | 5.8                     | Jun-09 12:00 | 0.6          | Jun-12 | 100.0% | Jun-15 |  |
| H <sub>2</sub> S (ppb)                 | 10 | 3                              | Falher-Idle      | -     | 0 | 0 | -                       | -            | -            | -      | -      | -      |  |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 80 | 30                             | Henry Pirker     | 4.5   | 0 | 0 | 43.5                    | Jul-01 00:00 | 11.0         | Jun-28 | 100.0% | Jun-10 |  |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 80 | 30                             | Evergreen Park   | 3.1   | 0 | 0 | 30.0                    | Jun-07 21:00 | 10.9         | Jun-06 | 99.4%  | Jun-14 |  |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 80 | 30                             | Smoky Heights    | 4.3   | 0 | 0 | 39.5                    | Jun-28 21:00 | 9.3          | Jun-28 | 100.0% | Jun-06 |  |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 80 | 30                             | Beaverlodge      | 4.0   | 0 | 0 | 14.2                    | Jun-29 13:00 | 8.9          | Jun-28 | 99.2%  | Jun-22 |  |
| PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 80 | 30                             | Rycroft-Portable | 2.4   | 1 | 0 | 111.3                   | Jun-21 16:00 | 11.5         | Jun-21 | 98.8%  | Mar-03 |  |
| RH (%)                                 |    |                                | Henry Pirker     | 58.7  | - | - | 89.6                    | Jun-10 06:00 | 86.0         | Jun-09 | 100.0% | -      |  |
| RH (%)                                 |    |                                | Evergreen Park   | 64.8  | - | - | 100.0                   | Jun-10 05:00 | 95.9         | Jun-09 | 99.9%  | -      |  |
| RH (%)                                 |    |                                | Beaverlodge      | 66.2  | - | - | 100.0                   | Jun-09 00:00 | 99.2         | Jun-09 | 99.4%  | -      |  |
| RH (%)                                 |    |                                | Valleyview       | 59.7  | - | - | 99.4                    | Jun-25 06:00 | 92.8         | Jun-09 | 100.0% | -      |  |
| SR (W/m <sup>2</sup> )                 |    |                                | Henry Pirker     | 226.0 | - | - | 811.6                   | Jun-04 13:00 | 316.8        | Jun-04 | 100.0% | -      |  |
| Temp (°C)                              |    |                                | Henry Pirker     | 16.3  | - | - | 28.5                    | Jun-28 15:00 | 21.3         | Jun-27 | 100.0% | -      |  |
| Temp (°C)                              |    |                                | Evergreen Park   | 15.5  | - | - | 28.2                    | Jun-06 16:00 | 19.9         | Jun-21 | 99.9%  | -      |  |
| Temp (°C)                              |    |                                | Smoky Heights    | 15.3  | - | - | 28.1                    | Jun-28 13:00 | 20.2         | Jun-28 | 100.0% | -      |  |
| Temp (°C)                              |    |                                | Beaverlodge      | 15.0  | - | - | 26.6                    | Jun-06 16:00 | 20.1         | Jun-28 | 99.4%  | -      |  |
| Temp (°C)                              |    |                                | Valleyview       | 15.9  | - | - | 28.3                    | Jun-29 14:00 | 20.4         | Jun-06 | 100.0% | -      |  |
| Temp (°C)                              |    |                                | Falher-Idle      | -     | - | - | -                       | -            | -            | -      | -      | -      |  |
| Temp (°C)                              |    |                                | Rycroft-Portable | 16.1  | - | - | 28.6                    | Jun-28 15:00 | 20.8         | Jun-28 | 100.0% | -      |  |

## PAZA Monthly Continuous Data Summary – continued

| Jun-2016       |  | Peace Airshed Zone Association |      |   |   |      | Maximum Recorded Values |      |              |        |   |  |
|----------------|--|--------------------------------|------|---|---|------|-------------------------|------|--------------|--------|---|--|
|                |  |                                |      |   |   |      | 1-hr                    |      | 24-hr / 8-hr |        |   |  |
| WSPD s (km/hr) |  | Henry Pirker                   | 9.5  | - | - | 42.0 | Jun-15 17:00            | 31.7 | Jun-15       | 100.0% | - |  |
| WSPD s (km/hr) |  | Evergreen Park                 | 14.8 | - | - | 63.0 | Jun-15 17:00            | 51.1 | Jun-15       | 99.9%  | - |  |
| WSPD s (km/hr) |  | Smoky Heights                  | 13.9 | - | - | 55.0 | Jun-15 18:00            | 39.0 | Jun-15       | 100.0% | - |  |
| WSPD s (km/hr) |  | Beaverlodge                    | 13.8 | - | - | 59.0 | Jun-15 17:00            | 41.0 | Jun-15       | 99.4%  | - |  |
| WSPD s (km/hr) |  | Valleyview                     | 5.1  | - | - | 23.0 | Jun-12 14:00            | 13.2 | Jun-16       | 100.0% | - |  |
| WSPD s (km/hr) |  | Falher-Idle                    | -    | - | - | -    | -                       | -    | -            | -      | - |  |
| WSPD s (km/hr) |  | Rycroft-Portable               | 10.5 | - | - | 38.0 | Jun-16 17:00            | 31.0 | Jun-16       | 100.0% | - |  |
| WSPD v (km/hr) |  | Henry Pirker                   | 6.5  | - | - | 42.0 | Jun-15 17:00            | 31.5 | Jun-15       | 100.0% | - |  |
| WSPD v (km/hr) |  | Evergreen Park                 | 11.1 | - | - | 63.0 | Jun-15 17:00            | 50.7 | Jun-15       | 99.9%  | - |  |
| WSPD v (km/hr) |  | Smoky Heights                  | 10.4 | - | - | 55.0 | Jun-15 18:00            | 38.8 | Jun-15       | 100.0% | - |  |
| WSPD v (km/hr) |  | Beaverlodge                    | 8.0  | - | - | 59.0 | Jun-15 17:00            | 40.8 | Jun-15       | 99.4%  | - |  |
| WSPD v (km/hr) |  | Valleyview                     | 3.4  | - | - | 23.0 | Jun-12 14:00            | 12.6 | Jun-16       | 100.0% | - |  |
| WSPD v (km/hr) |  | Falher-Idle                    | -    | - | - | -    | -                       | -    | -            | -      | - |  |
| WSPD v (km/hr) |  | Rycroft-Portable               | 6.5  | - | - | 38.0 | Jun-16 17:00            | 30.7 | Jun-16       | 100.0% | - |  |
| WDIR           |  | Henry Pirker                   | SW   | - | - | -    | -                       | -    | -            | 100.0% | - |  |
| WDIR           |  | Evergreen Park                 | WSW  | - | - | -    | -                       | -    | -            | 99.9%  | - |  |
| WDIR           |  | Smoky Heights                  | SW   | - | - | -    | -                       | -    | -            | 100.0% | - |  |
| WDIR           |  | Beaverlodge                    | W    | - | - | -    | -                       | -    | -            | 99.4%  | - |  |
| WDIR           |  | Valleyview                     | W    | - | - | -    | -                       | -    | -            | 100.0% | - |  |
| WDIR           |  | Falher-Idle                    | -    | - | - | -    | -                       | -    | -            | -      | - |  |
| WDIR           |  | Rycroft-Portable               | WSW  | - | - | -    | -                       | -    | -            | 100.0% | - |  |

# Continuous Network Equipment Summary

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## PAZA – Henry Pirker Station

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### General Station Issues

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| Parameter                 | Make    | Model     | Notes                           |
|---------------------------|---------|-----------|---------------------------------|
| SO <sub>2</sub>           | TEI     | 43i       | No operational issues observed. |
| NOx/NO/NO <sub>2</sub>    | TEI     | 42i       | No operational issues observed. |
| O <sub>3</sub>            | TEI     | 49i       | No operational issues observed. |
| CO                        | TEI     | 48C       | No operational issues observed. |
| THC/CH <sub>4</sub> /NMHC | TEI     | 55i       | No operational issues observed. |
| TRS                       | TEI     | 45C/43C   | No operational issues observed. |
| PM <sub>2.5</sub>         | Sharp   | 5030      | No operational issues observed. |
| RH                        | Met One | 083D      | No operational issues observed. |
| ET                        | Met One | 083D      | No operational issues observed. |
| SR                        | Met One | 096-1     | No operational issues observed. |
| WS / WD                   | Met One | 010C/020C | No operational issues observed. |

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**PAZA – Evergreen Park Station**

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**General Station Issues**

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| <b>Parameter</b>  | <b>Make</b>   | <b>Model</b> | <b>Notes</b>   |
|-------------------|---------------|--------------|--|
| SO <sub>2</sub>   | TEI           | 43i          | No operational issues observed.  |
| TRS               | TEI           | 43C          | No operational issues observed.  |
| PM <sub>2.5</sub> | Sharp         | 5030         | The PM <sub>2.5</sub> analyzer returned an uptime of 99.4% due to invalid data being recorded intermittently throughout the month. |
| ET                | Met One/Gill  | 083D         | One hour of data flagged as “not valid” due to invalid data being recorded.  |
| RH                | Met One/Gill  |              | One hour of data flagged as “not valid” due to invalid data being recorded.  |
| WS / WD           | Met One/ Gill |              | One hour of data flagged as “not valid” due to invalid data being recorded.  |

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**PAZA – Smoky Heights Station**

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**General Station Issues**

| <b>Parameter</b>  | <b>Make</b> | <b>Model</b> | <b>Notes</b>  |
|-------------------|-------------|--------------|---|
| SO <sub>2</sub>   | TEI         | 43C          | No operational issues observed.   |
| TRS               | TEI         | 43C          | The TRS analyzer returned an uptime of 90.0% for the month of June, due to analyzer malfunctioning and maintenance. The analyzer was not operational 3 June 10:00 MST through 6 June 17:00 MST. |
| PM <sub>2.5</sub> | Sharp       | 5030         | No operational issues observed.   |
| ET                | Met One     | 083D         | No operational issues observed.   |
| WS / WD           | Met One     | 010C/020C    | No operational issues observed.   |

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**PAZA – Beaverlodge Station**

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**General Station Issues**

Power outage on June 12, data logger malfunction on June 22.

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| <b>Parameter</b>                    | <b>Make</b> | <b>Model</b> | <b>Notes</b>   |
|-------------------------------------|-------------|--------------|--|
| SO <sub>2</sub>                     | TEI         | 43CTL        | Refer to general station issues.   |
| NO <sub>x</sub> /NO/NO <sub>2</sub> | TEI         | 42C          | Refer to general station issues.   |
| O <sub>3</sub>                      | TEI         | 49C          | Refer to general station issues.   |
| PM <sub>2.5</sub>                   | Sharp       | 5030         | The PM <sub>2.5</sub> analyzer returned an uptime of 99.2% for the month of June due to the power outage, two hours of data flagged as “not valid” due to data logger malfunctioning, and maintenance. |
| ET                                  | n/a         | n/a          | Refer to general station issues.   |
| RH                                  | n/a         | n/a          | Refer to general station issues.   |
| WS / WD                             | Blue Sky    | 857          | Refer to general station issues.   |

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**PAZA – Valleyview Station**

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**General Station Issues**

| <b>Parameter</b> | <b>Make</b> | <b>Model</b> | <b>Notes</b>                    |
|------------------|-------------|--------------|---------------------------------|
| SO <sub>2</sub>  | TEI         | 43i          | No operational issues observed. |
| H <sub>2</sub> S | TEI         | 43A          | No operational issues observed. |
| ET               | Gill        | Met Pak 3    | No operational issues observed. |
| RH               | Gill        | Met Pak 3    | No operational issues observed. |
| WS / WD          | Gill        | Met Pak 3    | No operational issues observed. |

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**PAZA – Portable-Rycroft**

**General Station Issues**

| <b>Parameter</b>  | <b>Make</b> | <b>Model</b> | <b>Notes</b>  |
|-------------------|-------------|--------------|---|
| SO <sub>2</sub>   | TEI         | 43i          | No operational issues observed.   |
| NO <sub>x</sub>   | TEI         | 42i          | No operational issues observed.   |
| O <sub>3</sub>    | TEI         | 49i          | No operational issues observed.   |
| TRS               | TEI         | 39C          | No operational issues observed.   |
| THC               | TEI         | 51C          | The THC analyzer returned an uptime of 96.9% for the month of June due to instrument malfunctioning.  |
| PM <sub>2.5</sub> | Sharp       | 5030         | The PM <sub>2.5</sub> analyzer returned an uptime of 98.8% for the month of June due to maintenance and instrument malfunctioning.<br>1 exceedance of the one-hour AAAQG occurred in June. Refer to the attached non-compliance report for details. Reference #312948 |
| ET                | Gill        | Met Pak 3    | No operational issues observed.   |
| WS / WD           | Gill        | Met Pak 3    | No operational issues observed.   |



PAZA

Henry Pirker Station

Monthly Summary Tables, Graphs and  
Roses

## Hourly Averages

Sulphur Dioxide (SO<sub>2</sub>) - ppb

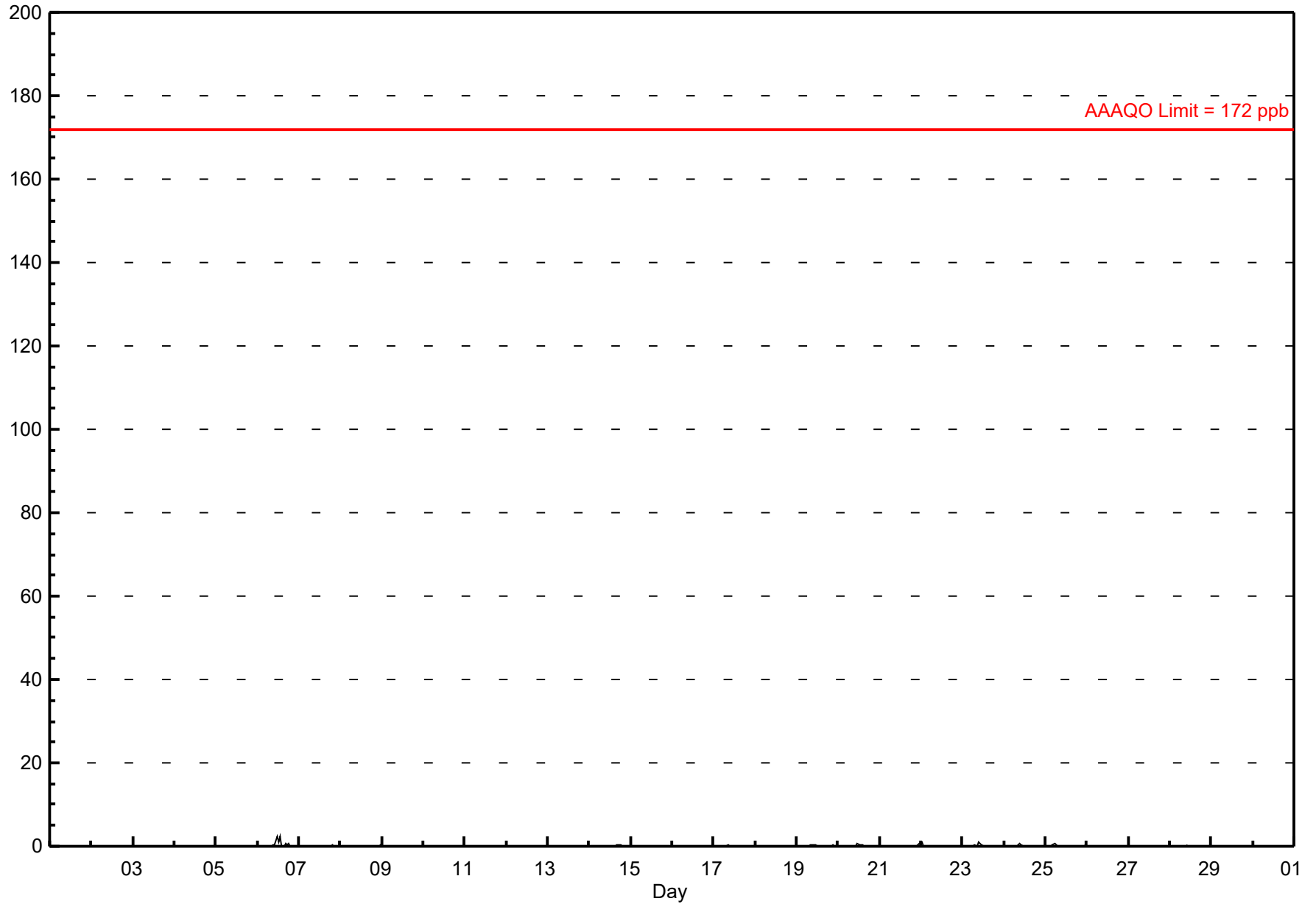
Henry Pirker - June 2016

| Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0<br>Maximum Value: 2.5 ppb on Jun 6 14:00      Maximum Daily Average: 0.4 ppb on Jun 6 |                               | Hours in Service: 720<br>Hours of Data: 685<br>Hours of Missing Data: 35<br>Hours of Calibration: 35<br>Percent Operational Time: 100.0   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |                 |               |
|---|-------------------------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------------|-----------------|---------------|
| Minimum Value: 0 ppb on Jun 1 08:00<br>Maximum Diurnal Average: 0.1 ppb at hour 12<br>Monthly Average: 0.04 ppb                       |                               | Minimum Daily Average: 0.0 ppb on Jun 2<br>Minimum Diurnal Average: 0.0 ppb at hour 4<br>Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.0 Q <sub>3</sub> = 0.0 P <sub>90</sub> = 0.1 P <sub>99</sub> = 0.8 |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |                 |               |
| Day   | Hourly Period Ending At (MST) |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 | Daily Average   | Daily Maximum |
|   | 1                             | 2   | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24              |                 |               |
| 1-Jun   | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.1           |
| 2-Jun   | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.0           |
| 3-Jun   | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.0           |
| 4-Jun   | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.0           |
| 5-Jun   | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | A | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.1           |
| 6-Jun   | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | A | 0 | 0  | 0  | 2  | 1  | 3  | 0  | 0  | 1  | 0  | 1  | 0  | 0  | 0  | 0  | 0               | 0.4             | 2.5           |
| 7-Jun   | 0                             | 0   | 0 | 0 | 0 | 0 | A | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.2           |
| 8-Jun   | 0                             | 0   | 0 | 0 | 0 | A | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.4           |
| 9-Jun   | 0                             | 0   | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.1           |
| 10-Jun  | 0                             | 0   | 0 | A | 0 | 0 | 0 | 0 | C | C  | C  | C  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.1           |
| 11-Jun  | 0                             | 0   | A | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.0           |
| 12-Jun  | 0                             | A   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.0           |
| 13-Jun  | A                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.0           |
| 14-Jun  | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0               | 0.1             | 0.5           |
| 15-Jun  | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0               | 0.0             | 0.0           |
| 16-Jun  | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0               | 0.0             | 0.0           |
| 17-Jun  | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0               | 0.0             | 0.4           |
| 18-Jun  | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0               | 0.0             | 0.0           |
| 19-Jun  | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0               | 0.1             | 0.5           |
| 20-Jun  | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 1  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1             | 0.7           |
| 21-Jun  | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1               | 0.0             | 0.6           |
| 22-Jun  | 1                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.9           |
| 23-Jun  | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 1  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1             | 1.0           |
| 24-Jun  | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1             | 0.8           |
| 25-Jun  | 0                             | 0   | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1             | 0.6           |
| 26-Jun  | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.1           |
| 27-Jun  | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.0           |
| 28-Jun  | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.2           |
| 29-Jun  | 0                             | 0   | 0 | 0 | 0 | 0 | 0 | A | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.1           |
| 30-Jun  | 0                             | 0   | 0 | 0 | 0 | 0 | A | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0             | 0.1           |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Diurnal Average | Diurnal Maximum |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.9             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.2             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.1             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.1             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.3             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.6             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.4             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.2             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.1             | 0.4             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.1             | 1.0             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.1             | 0.8             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.1             | 2.4             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.1             | 1.1             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.1             | 2.5             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.2             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.2             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.6             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.5             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.7             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.2             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.1             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.2             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.4             |               |
|   |                               |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.0             | 0.6             |               |

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb    24-hr 48 ppb    30-day 11 ppb

### Hourly Averages

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Henry Pirker - June 2016



## Hourly Maximums

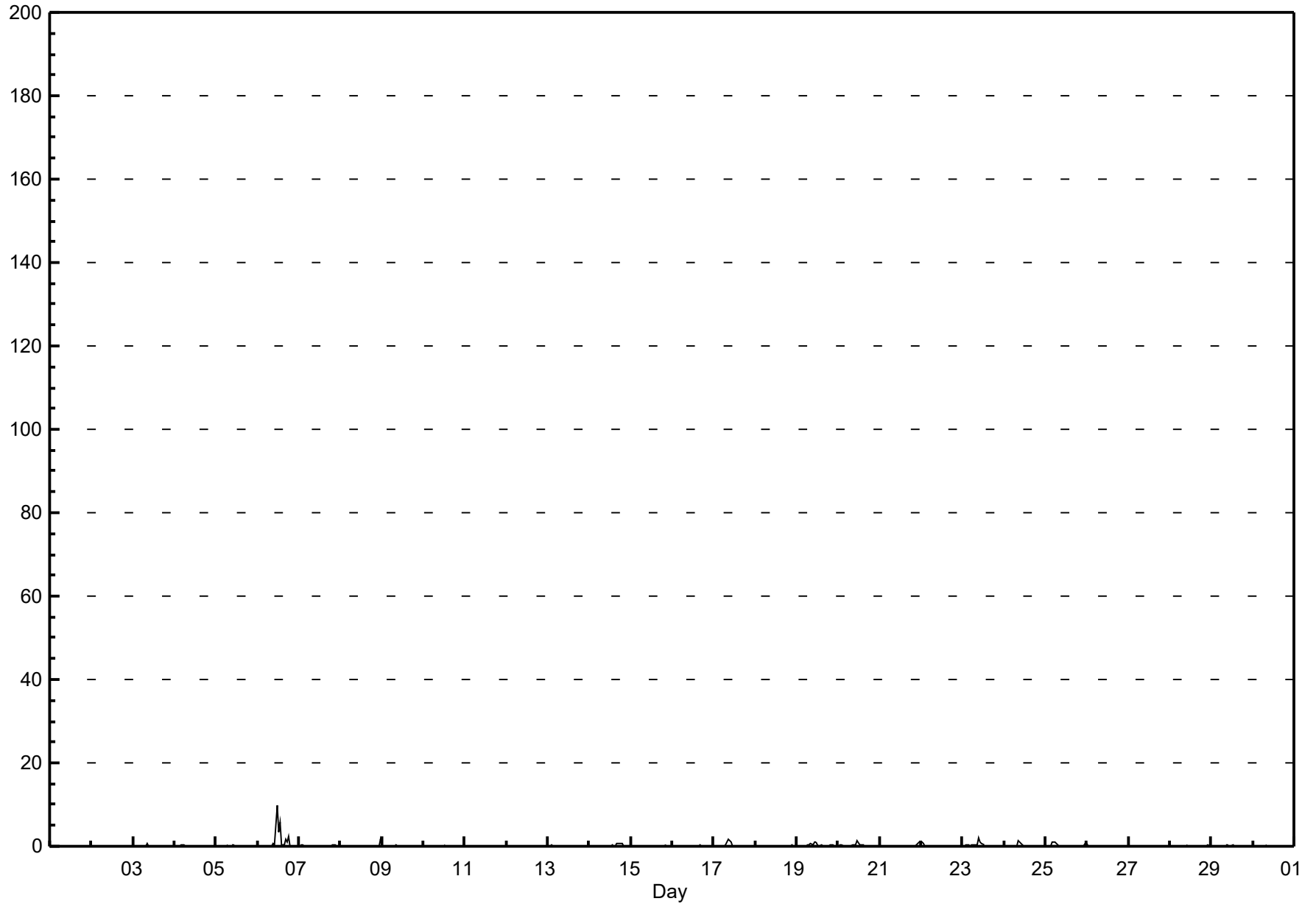
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Henry Pirker - June 2016

| Maximum Value: 9.7 ppb on Jun 6 12:00       |                               | Maximum Daily Average: 1.1 ppb on Jun 6  |     | Hours in Service: 720           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |
|---|-------------------------------|--|-----|---------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|-----------------|--|
| Minimum Value: 0 ppb on Jun 9 14:00         |                               | Minimum Daily Average: 0.0 ppb on Jun 2  |     | Hours of Data: 685              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |
| Maximum Diurnal Average: 0.5 ppb at hour 12 |                               | Minimum Diurnal Average: 0.0 ppb at hour 16  |     | Hours of Missing Data: 35       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |
| Monthly Average: 0.13 ppb                   |                               | Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.0 Q <sub>3</sub> = 0.0 P <sub>90</sub> = 0.3 P <sub>99</sub> = 1.8 |     | Hours of Calibration: 35        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |
|   |                               |  |     | Percent Operational Time: 100.0 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |
| Day   | Hourly Period Ending At (MST) |  |     |                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Daily Average | Daily Maximum   |  |
|   | 1                             | 2  | 3   | 4                               | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |               |                 |  |
| 1-Jun                                       | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.0           | 0.2             |  |
| 2-Jun                                       | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.0           | 0.0             |  |
| 3-Jun                                       | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 1   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.0           | 0.6             |  |
| 4-Jun                                       | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.4             |  |
| 5-Jun                                       | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.3             |  |
| 6-Jun                                       | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | A   | 0   | 1   | 0   | 10  | 3   | 6   | 0   | 0   | 2   | 1   | 2   | 0   | 0   | 0   | 0   | 0   | 1.1           | 9.7             |  |
| 7-Jun                                       | 0                             | 0  | 0   | 0                               | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.4             |  |
| 8-Jun                                       | 0                             | 0  | 0   | 0                               | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 0.1           | 1.8             |  |
| 9-Jun                                       | 0                             | 0  | 0   | 0                               | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.0           | 0.3             |  |
| 10-Jun                                      | 0                             | 0  | 0   | A                               | 0   | 0   | 0   | 0   | C   | C   | C   | C   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.0           | 0.5             |  |
| 11-Jun                                      | 0                             | 0  | A   | 0                               | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.0           | 0.1             |  |
| 12-Jun                                      | 0                             | A  | 0   | 0                               | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.0           | 0.1             |  |
| 13-Jun                                      | A                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0.0           | 0.3             |  |
| 14-Jun                                      | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 0   | 0   | A   | 0   | 0.2           | 0.8             |  |
| 15-Jun                                      | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0.0           | 0.3             |  |
| 16-Jun                                      | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0.0           | 0.3             |  |
| 17-Jun                                      | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 2   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0.2           | 1.6             |  |
| 18-Jun                                      | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0.0           | 0.3             |  |
| 19-Jun                                      | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0.3           | 1.0             |  |
| 20-Jun                                      | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 1.3             |  |
| 21-Jun                                      | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0.1           | 1.0             |  |
| 22-Jun                                      | 1                             | 1  | 0   | 0                               | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 1.1             |  |
| 23-Jun                                      | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 0   | 2   | 1   | 1   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.3           | 2.2             |  |
| 24-Jun                                      | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 1.2             |  |
| 25-Jun                                      | 0                             | 0  | 0   | 0                               | 1   | 1   | 1   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0.2           | 1.0             |  |
| 26-Jun                                      | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.0           | 0.5             |  |
| 27-Jun                                      | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.0           | 0.2             |  |
| 28-Jun                                      | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.3             |  |
| 29-Jun                                      | 0                             | 0  | 0   | 0                               | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.4             |  |
| 30-Jun                                      | 0                             | 0  | 0   | 0                               | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.0           | 0.3             |  |
|   |                               | 0.1  | 0.1 | 0.1                             | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.2 | 0.5 | 0.2 | 0.2 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2           | Diurnal Average |  |
|   |                               | 1.1  | 0.7 | 0.3                             | 0.4 | 0.9 | 0.9 | 0.6 | 0.4 | 1.6 | 2.2 | 1.2 | 9.7 | 3.5 | 5.8 | 0.4 | 0.3 | 1.9 | 1.2 | 2.3 | 0.5 | 0.4 | 0.4 | 0.7 | 1.8           | Diurnal Maximum |  |
| C - Calibration                             |                               | A - Automated Daily Zero Span  |     |                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |

### Hourly Maximums

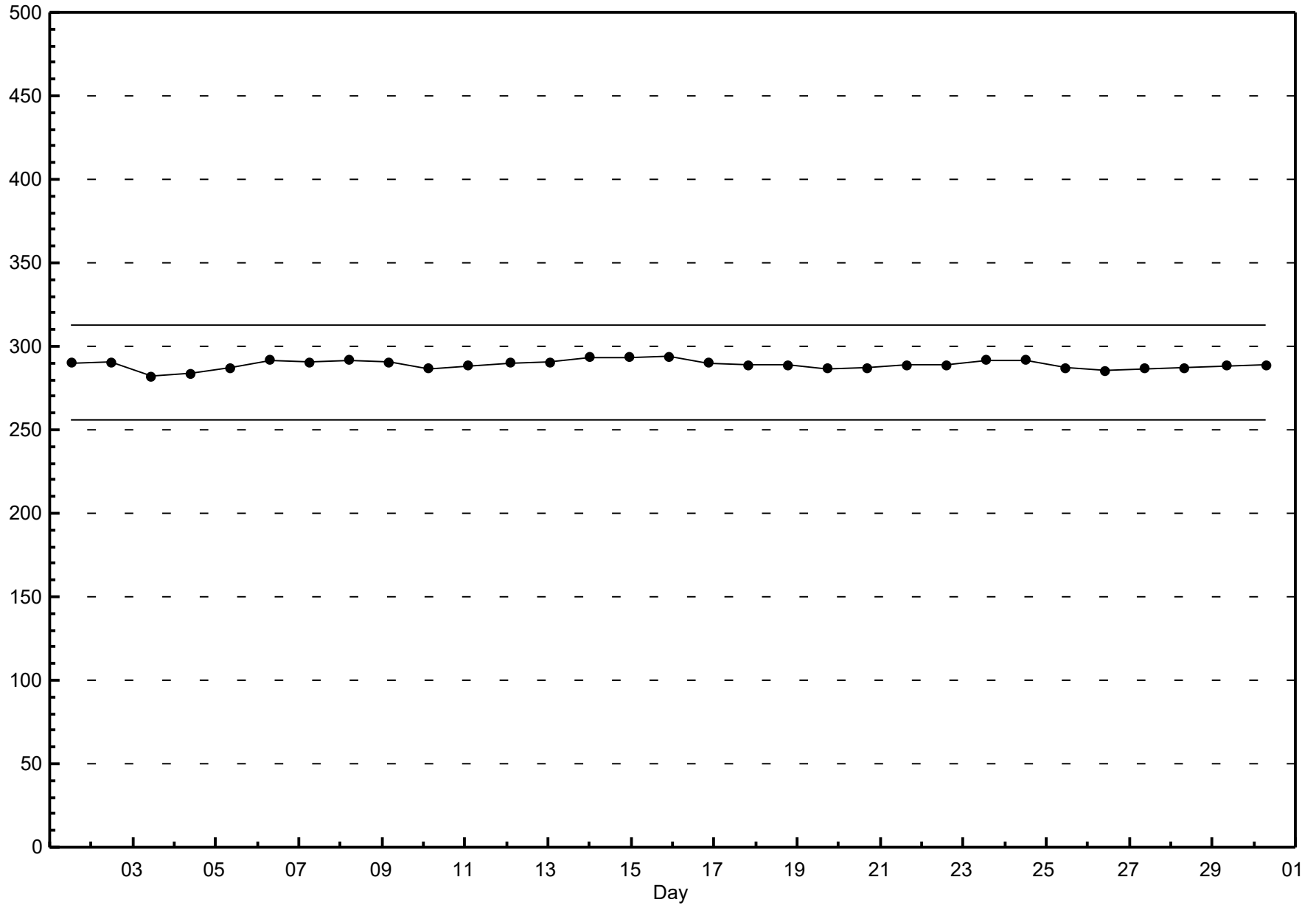
Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Henry Pirker - June 2016





### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Henry Pirker - June 2016



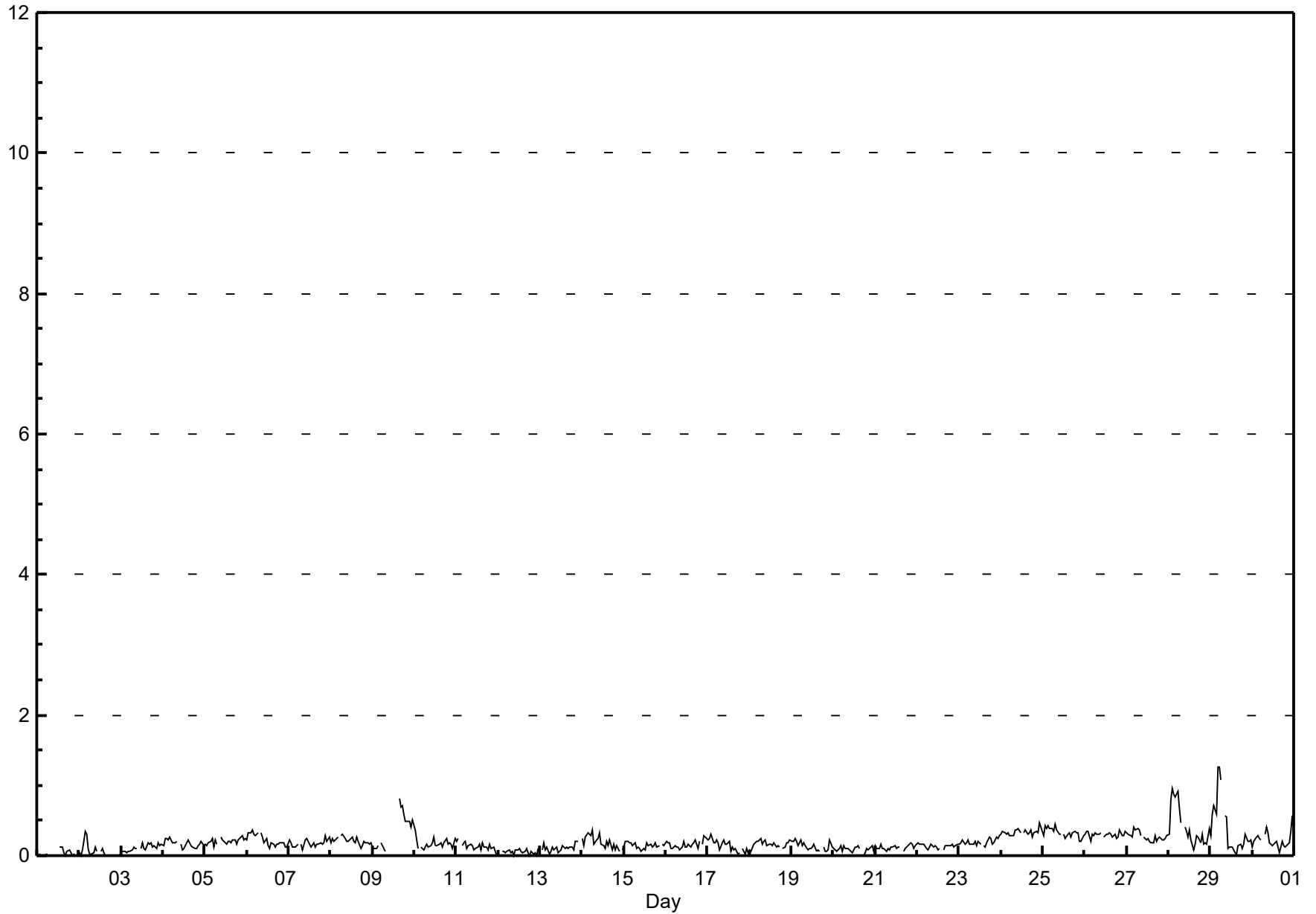
## Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Henry Pirker - June 2016

| Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0<br>Maximum Value: 1.3 ppb on Jun 29 05:00      Maximum Daily Average: 0.4 ppb on Jun 28 |                               | Hours in Service: 720<br>Hours of Data: 682<br>Hours of Missing Data: 38<br>Hours of Calibration: 38<br>Percent Operational Time: 100.0  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |               |               |
|---|-------------------------------|--|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------------|---------------|---------------|
| Minimum Value: 0 ppb on Jun 1 01:00<br>Maximum Diurnal Average: 0.3 ppb at hour 5<br>Monthly Average: 0.19 ppb                          |                               | Minimum Daily Average: 0.0 ppb on Jun 1<br>Minimum Diurnal Average: 0.2 ppb at hour 15<br>Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.1 Median = 0.2 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.3 P <sub>99</sub> = 0.8 |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |               |               |
| Day   | Hourly Period Ending At (MST) |  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 | Daily Average | Daily Maximum |
|   | 1                             | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24              |               |               |
| 1-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.0           | 0.1           |
| 2-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1           | 0.3           |
| 3-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1           | 0.2           |
| 4-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.2           | 0.3           |
| 5-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | A | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.2           | 0.3           |
| 6-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | A | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.2           | 0.4           |
| 7-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | A | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.2           | 0.3           |
| 8-Jun   | 0                             | 0  | 0 | 0 | 0 | A | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.2           | 0.3           |
| 9-Jun   | 0                             | 0  | 0 | 0 | A | 0 | 0 | 0 | C | C  | C  | C  | C  | C  | C  | 1  | 1  | 1  | 1  | 0  | 0  | 0  | 0  | 1               | --            | 0.8           |
| 10-Jun  | 0                             | 0  | 0 | A | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.2           | 0.4           |
| 11-Jun  | 0                             | 0  | A | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1           | 0.2           |
| 12-Jun  | 0                             | A  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1           | 0.1           |
| 13-Jun  | A                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1           | 0.2           |
| 14-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0               | 0.2           | 0.4           |
| 15-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0               | 0.1           | 0.2           |
| 16-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0               | 0.2           | 0.3           |
| 17-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0               | 0.1           | 0.3           |
| 18-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0               | 0.2           | 0.2           |
| 19-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0               | 0.1           | 0.2           |
| 20-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1           | 0.1           |
| 21-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1           | 0.2           |
| 22-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1           | 0.2           |
| 23-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.2           | 0.3           |
| 24-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.3           | 0.5           |
| 25-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.3           | 0.4           |
| 26-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.3           | 0.4           |
| 27-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.3           | 0.4           |
| 28-Jun  | 0                             | 1  | 1 | 1 | 1 | 1 | 1 | 0 | A | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.4           | 1.0           |
| 29-Jun  | 0                             | 1  | 1 | 1 | 1 | 1 | 1 | A | 0 | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.4           | 1.3           |
| 30-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | A | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1               | 0.2           | 0.6           |
| 0.2 0.2 0.2 0.2 0.3 0.2                                     |                               |  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Diurnal Average |               |               |
| 0.4 0.8 1.0 0.9 1.3 1.3 1.1 0.5 0.6 0.5 0.4 0.3 0.4 0.3 0.4 0.8 0.7 0.7 0.6 0.5 0.5 0.5 0.5 0.6   |                               |  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Diurnal Maximum |               |               |
| C - Calibration      A - Automated Daily Zero Span<br>Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb    24-hr 3 ppb        |                               |  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |               |               |



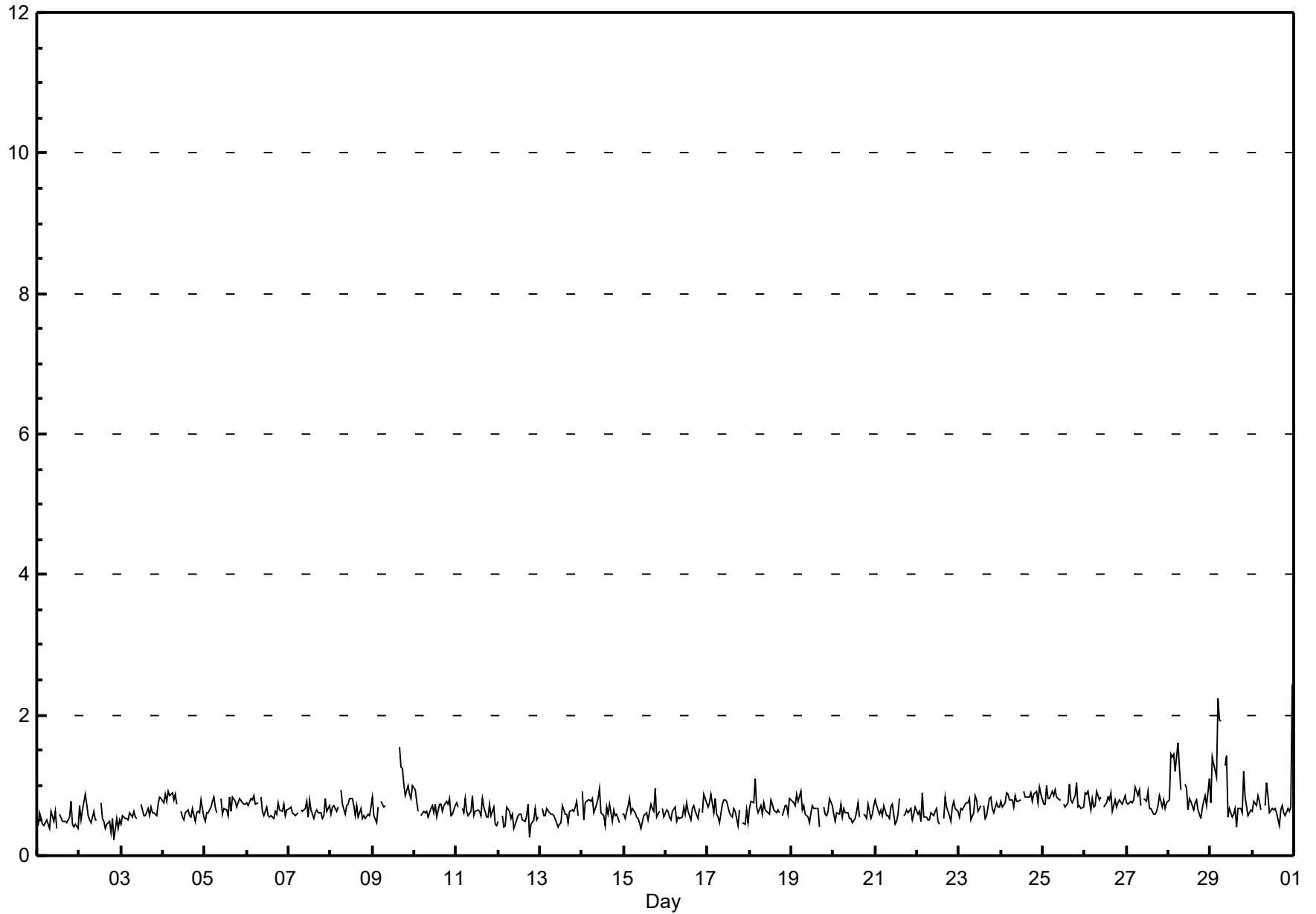


## Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

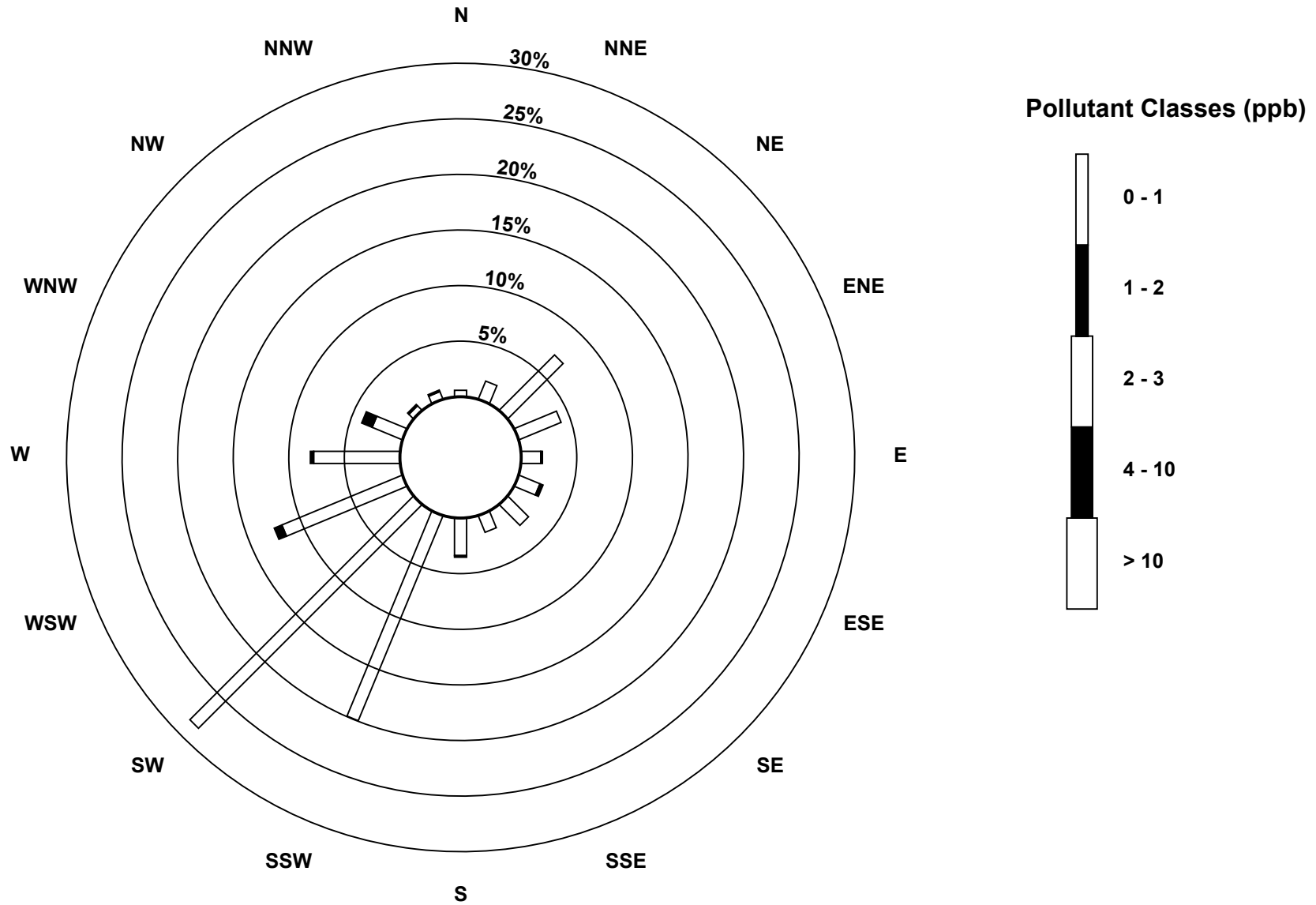
Henry Pirker - June 2016

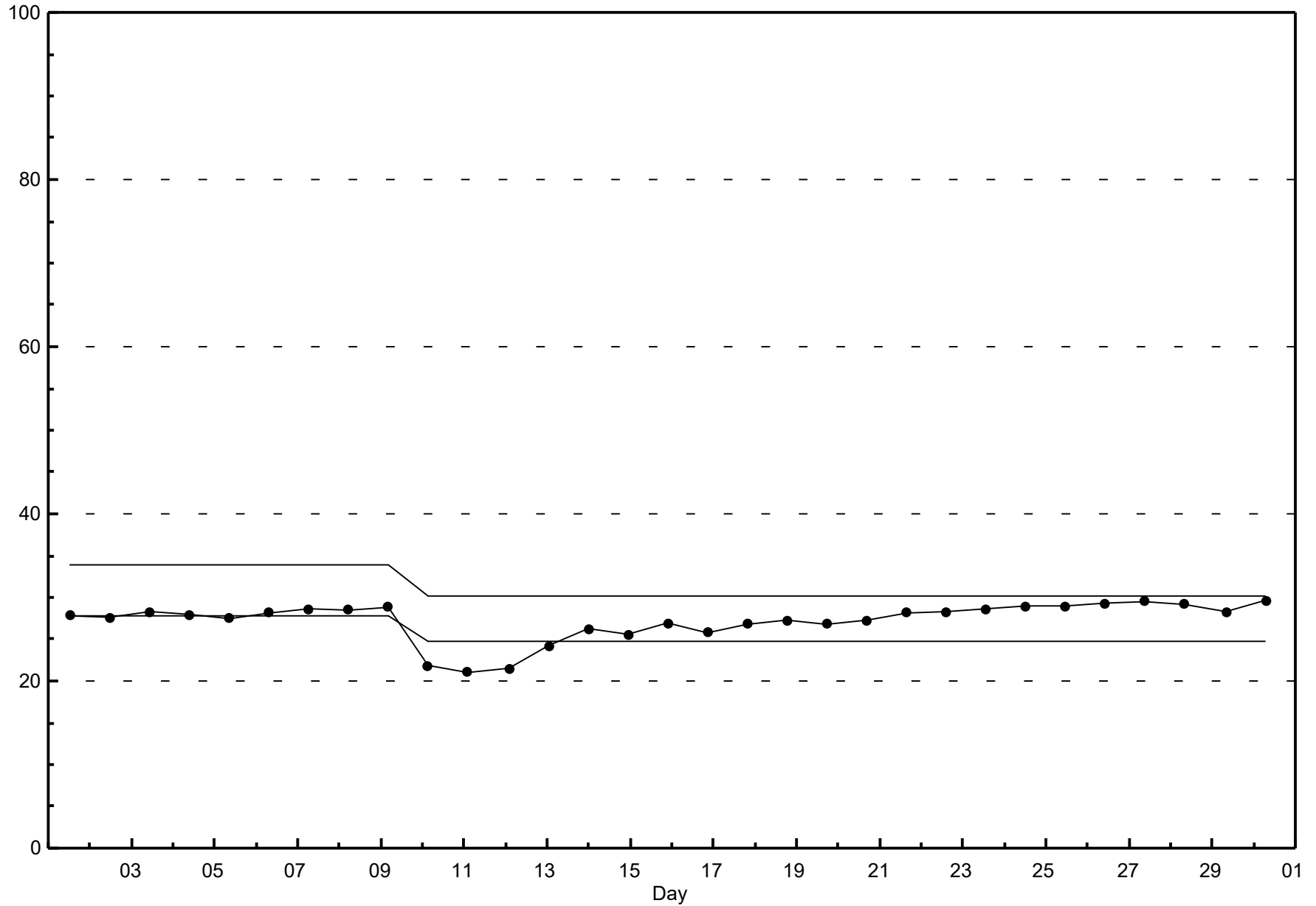
| Maximum Value: 2.4 ppb on Jul 1 00:00      |                               | Maximum Daily Average: 1.0 ppb on Jun 29   |     | Hours in Service: 720           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |
|--|-------------------------------|--|-----|---------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|-----------------|
| Minimum Value: 0 ppb on Jun 2 21:00        |                               | Minimum Daily Average: 0.5 ppb on Jun 1  |     | Hours of Data: 682              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |
| Maximum Diurnal Average: 0.8 ppb at hour 6 |                               | Minimum Diurnal Average: 0.6 ppb at hour 12  |     | Hours of Missing Data: 38       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |
| Monthly Average: 0.69 ppb                  |                               | Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 0.6 Median = 0.7 Q <sub>3</sub> = 0.8 P <sub>90</sub> = 0.9 P <sub>99</sub> = 1.4 |     | Hours of Calibration: 38        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |
|  |                               |  |     | Percent Operational Time: 100.0 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |
| Day  | Hourly Period Ending At (MST) |  |     |                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Daily Average | Daily Maximum   |
|  | 1                             | 2  | 3   | 4                               | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |               |                 |
| 1-Jun                                      | 0                             | 1  | 1   | 0                               | 0   | 1   | 0   | 0   | 1   | 0   | 1   | 0   | A   | 1   | 0   | 0   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0.5           | 0.8             |
| 2-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 0   | 1   | 1   | 0   | A   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 0   | 0   | 0.5           | 0.9             |
| 3-Jun                                      | 0                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.6           | 0.8             |
| 4-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 0.7           | 0.9             |
| 5-Jun                                      | 0                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7           | 0.8             |
| 6-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7           | 0.9             |
| 7-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.6           | 0.8             |
| 8-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7           | 0.9             |
| 9-Jun                                      | 1                             | 1  | 0   | 1                               | A   | 1   | 1   | 1   | C   | C   | C   | C   | C   | C   | C   | 2   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | --            | 1.5             |
| 10-Jun                                     | 1                             | 1  | 1   | A                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7           | 0.9             |
| 11-Jun                                     | 1                             | 1  | A   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 0.6           | 0.8             |
| 12-Jun                                     | 0                             | A  | 1   | 0                               | 0   | 1   | 1   | 1   | 1   | 0   | 0   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 0   | 0   | 1   | 1   | 1   | 1   | 0.5           | 0.7             |
| 13-Jun                                     | A                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.6           | 0.8             |
| 14-Jun                                     | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 0   | A   | 1   | 0.7           | 1.0             |
| 15-Jun                                     | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 0.6           | 1.0             |
| 16-Jun                                     | 1                             | 1  | 1   | 1                               | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 0.6           | 0.9             |
| 17-Jun                                     | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | A   | 0   | 0   | 1   | 0   | 0.6           | 0.9             |
| 18-Jun                                     | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 0.7           | 1.1             |
| 19-Jun                                     | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7           | 0.9             |
| 20-Jun                                     | 1                             | 0  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | A   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 0.6           | 0.8             |
| 21-Jun                                     | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.6           | 0.8             |
| 22-Jun                                     | 1                             | 1  | 0   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | A   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 0.6           | 0.9             |
| 23-Jun                                     | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7           | 0.9             |
| 24-Jun                                     | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8           | 1.0             |
| 25-Jun                                     | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8           | 1.0             |
| 26-Jun                                     | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8           | 0.9             |
| 27-Jun                                     | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8           | 1.0             |
| 28-Jun                                     | 1                             | 1  | 1   | 1                               | 1   | 2   | 1   | 1   | A   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.9           | 1.6             |
| 29-Jun                                     | 1                             | 1  | 1   | 1                               | 2   | 2   | 2   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1.0           | 2.2             |
| 30-Jun                                     | 1                             | 1  | 1   | 1                               | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 2   | 0.8           | 2.4             |
|  |                               | 0.7  | 0.7 | 0.7                             | 0.8 | 0.8 | 0.8 | 0.7 | 0.6 | 0.7 | 0.7 | 0.7 | 0.6 | 0.7 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7           | Diurnal Average |
|  |                               | 0.9  | 1.4 | 1.4                             | 1.4 | 2.2 | 1.9 | 1.9 | 0.9 | 1.3 | 1.4 | 1.0 | 0.8 | 0.9 | 0.9 | 0.8 | 1.5 | 1.3 | 1.2 | 1.0 | 1.2 | 1.0 | 0.9 | 1.0 | 2.4           | Diurnal Maximum |
| C - Calibration                            |                               | A - Automated Daily Zero Span  |     |                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |



**Pollutant Rose**

**Total Reduced Sulphur (TRS) - ppb**  
**Henry Pirker - June 2016**





## Hourly Averages

Nitrogen Dioxide (NO<sub>2</sub>) - ppb

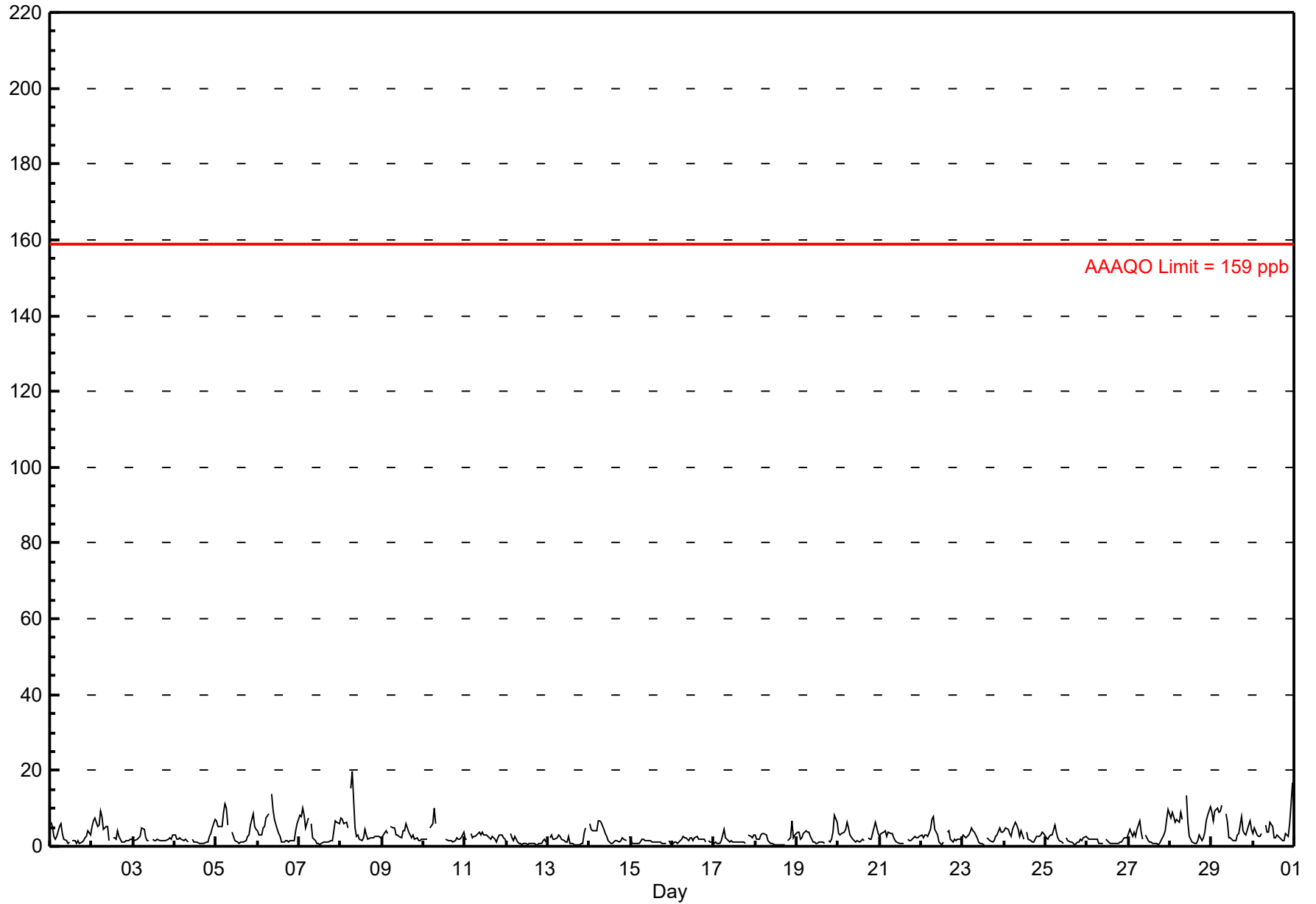
Henry Pirker - June 2016

|  |   |          |                           |       |
|--|---|----------|---------------------------|-------|
| Number of Exceedences (AAAQO):             | 1-hr: 0   | 24-hr: 0 | Hours in Service:         | 720   |
| Maximum Value: 19.8 ppb on Jun 8 08:00     | Maximum Daily Average: 5.6 ppb on Jun 29  |          | Hours of Data:            | 684   |
| Minimum Value: 0 ppb on Jun 18 18:00       | Minimum Daily Average: 1.1 ppb on Jun 12  |          | Hours of Missing Data:    | 36    |
| Maximum Diurnal Average: 5.6 ppb at hour 7 | Minimum Diurnal Average: 1.5 ppb at hour 19   |          | Hours of Calibration:     | 36    |
| Monthly Average: 2.89 ppb                  | Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.8 Q <sub>1</sub> = 1.3 Median = 2.1 Q <sub>3</sub> = 3.7 P <sub>90</sub> = 6.2 P <sub>99</sub> = 11.0 |          | Percent Operational Time: | 100.0 |

| Day    | Hourly Period Ending At (MST) |   |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Daily Average | Daily Maximum |     |
|--------|-------------------------------|---|----|----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------|---------------|-----|
|        | 1                             | 2 | 3  | 4  | 5 | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |               |               |     |
| 1-Jun  | 6                             | 5 | 2  | 2  | 2 | 5  | 6  | 3  | 2  | 1  | 1  | 1  | A  | 2  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 3  | 4  | 3  | 2.6           | 6.5           |     |
| 2-Jun  | 5                             | 7 | 8  | 5  | 6 | 9  | 8  | 5  | 5  | 5  | 2  | A  | 2  | 2  | 2  | 4  | 3  | 1  | 1  | 1  | 1  | 2  | 2  | 2  | 3.8           | 9.5           |     |
| 3-Jun  | 1                             | 1 | 2  | 2  | 3 | 5  | 4  | 2  | 2  | 1  | A  | 2  | 1  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 2  | 3  | 2.0           | 5.0           |     |
| 4-Jun  | 3                             | 2 | 2  | 2  | 2 | 2  | 2  | 1  | 1  | A  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 3  | 3  | 5  | 7  | 2.0           | 7.0           |     |
| 5-Jun  | 7                             | 5 | 5  | 5  | 9 | 11 | 10 | 6  | A  | 4  | 3  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 3  | 3  | 6  | 9  | 5  | 5  | 4.5           | 11.0          |     |
| 6-Jun  | 4                             | 3 | 3  | 5  | 5 | 8  | 9  | A  | 14 | 10 | 7  | 4  | 3  | 2  | 1  | 1  | 2  | 2  | 1  | 1  | 2  | 1  | 4  | 6  | 4.3           | 13.7          |     |
| 7-Jun  | 8                             | 8 | 10 | 8  | 5 | 8  | A  | 6  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 4  | 7  | 6  | 6  | 3.9           | 9.9           |     |
| 8-Jun  | 7                             | 7 | 6  | 6  | 5 | A  | 15 | 20 | 5  | 3  | 3  | 2  | 2  | 2  | 4  | 3  | 2  | 2  | 2  | 2  | 3  | 3  | 3  | 2  | 4.7           | 19.8          |     |
| 9-Jun  | 2                             | 3 | 4  | 3  | A | 5  | 5  | 5  | 3  | 3  | 3  | 2  | 4  | 4  | 6  | 4  | 3  | 2  | 2  | 3  | 2  | 2  | 1  | 2  | 3.2           | 6.1           |     |
| 10-Jun | 2                             | 2 | 2  | A  | 5 | 6  | 10 | 6  | C  | C  | C  | C  | C  | 2  | 1  | 1  | 2  | 1  | 2  | 2  | 2  | 2  | 2  | 4  | 2.9           | 10.0          |     |
| 11-Jun | 2                             | 2 | A  | 3  | 2 | 3  | 3  | 3  | 4  | 3  | 4  | 3  | 3  | 2  | 2  | 2  | 3  | 2  | 1  | 2  | 3  | 3  | 2  | 2  | 2.6           | 3.7           |     |
| 12-Jun | 1                             | A | 3  | 2  | 2 | 3  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 2  | 1  | 1.1           | 3.3           |     |
| 13-Jun | A                             | 2 | 3  | 2  | 2 | 2  | 3  | 3  | 2  | 1  | 1  | 1  | 2  | 1  | 1  | 0  | 1  | 0  | 0  | 1  | 1  | 3  | 5  | A  | 1.7           | 4.7           |     |
| 14-Jun | 6                             | 4 | 4  | 4  | 4 | 7  | 7  | 6  | 4  | 4  | 3  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 2  | 2  | A  | 2  | 3.1           | 6.8           |     |
| 15-Jun | 2                             | 1 | 1  | 1  | 1 | 1  | 2  | 2  | 1  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | A  | 1  | 1  | 1.1           | 1.8           |     |
| 16-Jun | 1                             | 1 | 1  | 1  | 1 | 2  | 3  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 1  | A  | 2  | 1  | 1  | 1.7           | 2.5           |     |
| 17-Jun | 1                             | 1 | 1  | 1  | 1 | 3  | 4  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | A  | 3  | 3  | 2  | 3  | 1.7           | 4.3           |     |
| 18-Jun | 3                             | 2 | 2  | 3  | 3 | 3  | 3  | 2  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 2  | 2  | 7  | 2  | 3  | 1.8           | 6.8           |     |
| 19-Jun | 4                             | 4 | 2  | 2  | 3 | 4  | 4  | 4  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | A  | 2  | 1  | 2  | 4  | 8  | 6  | 2.6           | 8.1           |     |
| 20-Jun | 4                             | 3 | 3  | 4  | 5 | 6  | 5  | 3  | 2  | 1  | 1  | 1  | 1  | 2  | 2  | 1  | A  | 2  | 2  | 2  | 2  | 3  | 6  | 5  | 3             | 3.0           | 6.5 |
| 21-Jun | 3                             | 3 | 4  | 4  | 3 | 4  | 3  | 3  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | A  | 2  | 1  | 1  | 2  | 3  | 2  | 2  | 3  | 2.3           | 4.3           |     |
| 22-Jun | 3                             | 2 | 3  | 3  | 3 | 4  | 7  | 8  | 5  | 3  | 1  | 1  | 0  | 1  | A  | 4  | 4  | 2  | 1  | 2  | 2  | 2  | 2  | 2  | 2.8           | 7.8           |     |
| 23-Jun | 3                             | 3 | 2  | 3  | 4 | 5  | 4  | 4  | 2  | 1  | 1  | 1  | 1  | A  | 2  | 2  | 1  | 1  | 2  | 3  | 3  | 5  | 4  | 4  | 2.6           | 5.0           |     |
| 24-Jun | 4                             | 5 | 5  | 3  | 2 | 4  | 7  | 6  | 5  | 3  | 4  | 2  | A  | 4  | 2  | 2  | 1  | 1  | 2  | 2  | 3  | 3  | 4  | 3  | 3.3           | 6.5           |     |
| 25-Jun | 2                             | 2 | 3  | 3  | 3 | 5  | 4  | 2  | 1  | 1  | 1  | A  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 1  | 2  | 2  | 1.9           | 5.5           |     |
| 26-Jun | 2                             | 2 | 2  | 2  | 2 | 2  | 2  | 1  | 1  | 1  | A  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 2  | 1.4           | 2.3           |     |
| 27-Jun | 3                             | 4 | 3  | 4  | 3 | 5  | 7  | 4  | 2  | A  | 3  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 3  | 4  | 7  | 10 | 3.0           | 9.8           |     |
| 28-Jun | 8                             | 9 | 8  | 6  | 7 | 6  | 9  | 7  | A  | 13 | 6  | 2  | 2  | 2  | 1  | 1  | 1  | 3  | 2  | 2  | 4  | 7  | 8  | 10 | 5.4           | 13.3          |     |
| 29-Jun | 9                             | 7 | 9  | 10 | 9 | 9  | 11 | A  | 9  | 6  | 2  | 2  | 2  | 2  | 2  | 3  | 3  | 8  | 4  | 3  | 3  | 6  | 7  | 4  | 5.6           | 10.9          |     |
| 30-Jun | 4                             | 5 | 3  | 3  | 3 | 3  | A  | 6  | 4  | 4  | 6  | 5  | 2  | 2  | 3  | 2  | 2  | 2  | 2  | 3  | 3  | 6  | 11 | 17 | 4.3           | 16.8          |     |

|     |     |     |      |     |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |                 |  |
|-----|-----|-----|------|-----|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|-----------------|-----------------|--|
| 3.8 | 3.6 | 3.6 | 3.6  | 3.6 | 4.9  | 5.6  | 4.3  | 3.1  | 2.9  | 2.3 | 1.7 | 1.5 | 1.6 | 1.6 | 1.6 | 1.6 | 1.5 | 1.5 | 1.5 | 1.8 | 2.4 | 3.5  | 3.9  | 4.2             | Diurnal Average |  |
| 8.8 | 8.8 | 9.9 | 10.1 | 9.1 | 11.0 | 15.1 | 19.8 | 13.7 | 13.3 | 7.2 | 5.4 | 4.0 | 4.0 | 6.1 | 4.1 | 4.3 | 7.7 | 4.0 | 3.3 | 5.7 | 8.6 | 11.3 | 16.8 | Diurnal Maximum |                 |  |

C - Calibration                      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb    24-hr 106 ppb



## Hourly Maximums

Nitrogen Dioxide (NO<sub>2</sub>) - ppb

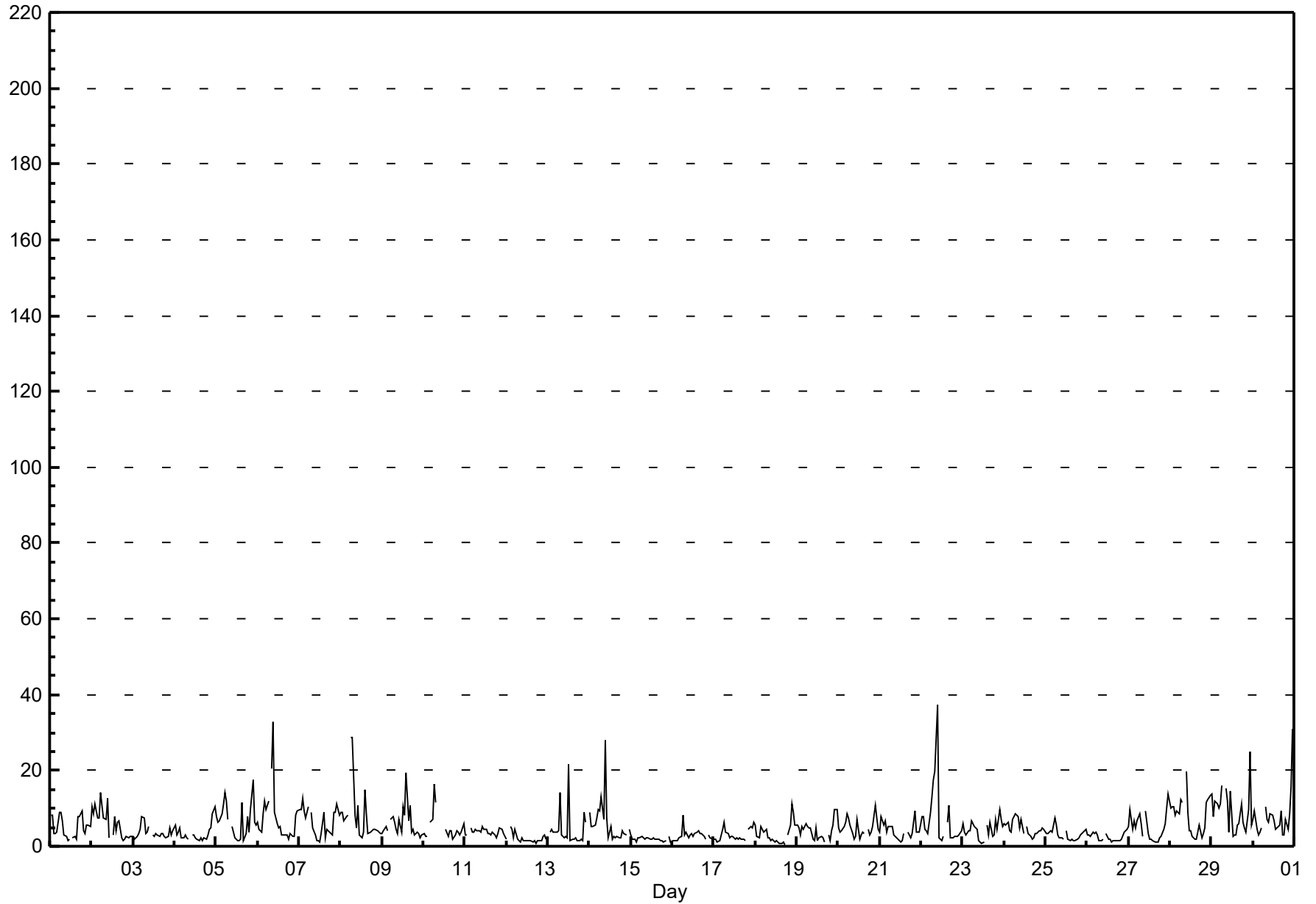
Henry Pirker - June 2016

| Maximum Value: 37.4 ppb on Jun 22 10:00    |                               | Maximum Daily Average: 9.3 ppb on Jun 29  |      | Hours in Service: 720           |      |      |      |      |      |      |      |      |      |      |     |      |      |      |      |     |     |     |      |      |               |                 |      |
|--|-------------------------------|---|------|---------------------------------|------|------|------|------|------|------|------|------|------|------|-----|------|------|------|------|-----|-----|-----|------|------|---------------|-----------------|------|
| Minimum Value: 0 ppb on Jun 18 18:00       |                               | Minimum Daily Average: 1.9 ppb on Jun 15  |      | Hours of Data: 684              |      |      |      |      |      |      |      |      |      |      |     |      |      |      |      |     |     |     |      |      |               |                 |      |
| Maximum Diurnal Average: 8.6 ppb at hour 7 |                               | Minimum Diurnal Average: 3.0 ppb at hour 19   |      | Hours of Missing Data: 36       |      |      |      |      |      |      |      |      |      |      |     |      |      |      |      |     |     |     |      |      |               |                 |      |
| Monthly Average: 5.04 ppb                  |                               | Percentiles: P <sub>1</sub> = 1.0 P <sub>10</sub> = 1.6 Q <sub>1</sub> = 2.4 Median = 3.7 Q <sub>3</sub> = 6.4 P <sub>90</sub> = 9.5 P <sub>99</sub> = 24.2 |      | Hours of Calibration: 36        |      |      |      |      |      |      |      |      |      |      |     |      |      |      |      |     |     |     |      |      |               |                 |      |
|  |                               |   |      | Percent Operational Time: 100.0 |      |      |      |      |      |      |      |      |      |      |     |      |      |      |      |     |     |     |      |      |               |                 |      |
| Day  | Hourly Period Ending At (MST) |   |      |                                 |      |      |      |      |      |      |      |      |      |      |     |      |      |      |      |     |     |     |      |      | Daily Average | Daily Maximum   |      |
|  | 1                             | 2   | 3    | 4                               | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15  | 16   | 17   | 18   | 19   | 20  | 21  | 22  | 23   | 24   |               |                 |      |
| 1-Jun                                      | 8                             | 8   | 3    | 3                               | 4    | 9    | 9    | 7    | 3    | 2    | 2    | 2    | A    | 2    | 3   | 2    | 8    | 8    | 9    | 4   | 3   | 6   | 6    | 5    | 5.1           | 9.5             |      |
| 2-Jun                                      | 11                            | 9   | 11   | 7                               | 7    | 14   | 11   | 7    | 7    | 13   | 2    | A    | 3    | 8    | 4   | 6    | 7    | 2    | 2    | 2   | 3   | 2   | 3    | 3    | 6.3           | 14.1            |      |
| 3-Jun                                      | 3                             | 2   | 3    | 4                               | 5    | 8    | 8    | 3    | 4    | 5    | A    | 3    | 3    | 4    | 3   | 3    | 3    | 3    | 3    | 2   | 3   | 5   | 3    | 4    | 3.7           | 7.9             |      |
| 4-Jun                                      | 6                             | 3   | 4    | 5                               | 2    | 2    | 3    | 2    | 2    | A    | 3    | 3    | 2    | 2    | 1   | 2    | 1    | 2    | 2    | 3   | 4   | 5   | 9    | 11   | 3.5           | 10.6            |      |
| 5-Jun                                      | 8                             | 6   | 7    | 9                               | 11   | 14   | 12   | 7    | A    | 5    | 4    | 2    | 1    | 1    | 2   | 12   | 2    | 4    | 8    | 4   | 10  | 18  | 6    | 6    | 6.8           | 17.6            |      |
| 6-Jun                                      | 6                             | 4   | 4    | 9                               | 12   | 10   | 12   | A    | 21   | 33   | 9    | 6    | 5    | 5    | 3   | 3    | 3    | 3    | 2    | 3   | 3   | 2   | 8    | 9    | 7.6           | 32.9            |      |
| 7-Jun                                      | 10                            | 10  | 13   | 9                               | 7    | 11   | A    | 9    | 5    | 3    | 2    | 1    | 1    | 3    | 9   | 2    | 5    | 4    | 3    | 3   | 9   | 9   | 11   | 8    | 6.4           | 12.7            |      |
| 8-Jun                                      | 9                             | 9   | 7    | 8                               | 8    | A    | 29   | 29   | 8    | 5    | 11   | 3    | 2    | 4    | 15  | 9    | 3    | 4    | 4    | 5   | 5   | 4   | 4    | 3    | 8.1           | 28.6            |      |
| 9-Jun                                      | 3                             | 4   | 5    | 4                               | A    | 7    | 8    | 6    | 4    | 3    | 7    | 4    | 11   | 8    | 19  | 7    | 11   | 4    | 4    | 3   | 4   | 3   | 2    | 3    | 5.9           | 19.2            |      |
| 10-Jun                                     | 3                             | 2   | 3    | A                               | 6    | 7    | 16   | 12   | C    | C    | C    | C    | C    | 5    | 3   | 4    | 4    | 2    | 3    | 4   | 4   | 3   | 4    | 6    | 5.0           | 16.4            |      |
| 11-Jun                                     | 3                             | 3   | A    | 5                               | 4    | 4    | 4    | 4    | 4    | 4    | 5    | 4    | 5    | 4    | 3   | 3    | 4    | 3    | 2    | 3   | 5   | 5   | 3    | 3    | 3.7           | 5.1             |      |
| 12-Jun                                     | 2                             | A   | 5    | 4                               | 2    | 4    | 2    | 2    | 1    | 2    | 1    | 1    | 1    | 1    | 1   | 1    | 1    | 1    | 1    | 1   | 2   | 3   | 3    | 2    | 2.0           | 5.1             |      |
| 13-Jun                                     | A                             | 4   | 5    | 4                               | 4    | 4    | 4    | 14   | 3    | 2    | 3    | 2    | 22   | 1    | 2   | 2    | 2    | 2    | 1    | 2   | 1   | 9   | 6    | A    | 4.5           | 21.8            |      |
| 14-Jun                                     | 9                             | 5   | 5    | 6                               | 7    | 10   | 9    | 13   | 7    | 28   | 8    | 2    | 5    | 2    | 2   | 2    | 3    | 2    | 2    | 4   | 3   | 3   | A    | 5    | 6.2           | 27.8            |      |
| 15-Jun                                     | 3                             | 2   | 2    | 1                               | 2    | 2    | 3    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2   | 2    | 2    | 1    | 1    | 1   | 1   | A   | 3    | 1    | 1.9           | 3.1             |      |
| 16-Jun                                     | 1                             | 2   | 1    | 1                               | 2    | 2    | 8    | 3    | 4    | 2    | 3    | 3    | 3    | 3    | 4   | 4    | 3    | 3    | 3    | 2   | A   | 3   | 2    | 2    | 2.9           | 8.1             |      |
| 17-Jun                                     | 2                             | 2   | 1    | 1                               | 3    | 5    | 6    | 4    | 3    | 2    | 3    | 3    | 2    | 2    | 2   | 2    | 2    | 2    | 1    | A   | 4   | 5   | 5    | 6    | 3.0           | 6.5             |      |
| 18-Jun                                     | 6                             | 3   | 2    | 5                               | 5    | 4    | 5    | 2    | 2    | 1    | 2    | 1    | 1    | 1    | 1   | 1    | 0    | A    | A    | 3   | 5   | 11  | 9    | 6    | 3.4           | 11.3            |      |
| 19-Jun                                     | 6                             | 5   | 3    | 5                               | 5    | 6    | 5    | 5    | 5    | 2    | 2    | 5    | 1    | 2    | 2   | 2    | 1    | A    | A    | 3   | 2   | 4   | 6    | 10   | 10            | 4.1             | 9.6  |
| 20-Jun                                     | 5                             | 4   | 4    | 5                               | 6    | 9    | 7    | 6    | 3    | 2    | 3    | 7    | 2    | 3    | 4   | 3    | A    | A    | 5    | 3   | 4   | 5   | 11   | 7    | 5             | 4.8             | 10.7 |
| 21-Jun                                     | 4                             | 8   | 6    | 7                               | 4    | 5    | 5    | 5    | 3    | 3    | 2    | 2    | 1    | 2    | 3   | A    | 4    | 3    | 2    | 3   | 9   | 4   | 4    | 4    | 4.0           | 9.3             |      |
| 22-Jun                                     | 8                             | 8   | 4    | 4                               | 4    | 9    | 13   | 18   | 20   | 37   | 2    | 2    | 2    | 3    | A   | 6    | 11   | 2    | 2    | 3   | 3   | 3   | 3    | 4    | 7.4           | 37.4            |      |
| 23-Jun                                     | 6                             | 4   | 3    | 4                               | 4    | 7    | 6    | 5    | 4    | 2    | 1    | 1    | 1    | A    | 6   | 3    | 6    | 3    | 3    | 7   | 4   | 10  | 7    | 5    | 4.4           | 9.5             |      |
| 24-Jun                                     | 6                             | 6   | 6    | 4                               | 4    | 7    | 8    | 8    | 8    | 5    | 7    | 3    | A    | 5    | 3   | 3    | 2    | 2    | 3    | 3   | 4   | 4   | 5    | 5    | 4.9           | 8.4             |      |
| 25-Jun                                     | 3                             | 3   | 4    | 4                               | 4    | 8    | 6    | 3    | 2    | 2    | 2    | A    | 4    | 2    | 2   | 2    | 2    | 2    | 2    | 2   | 3   | 3   | 4    | 5    | 3.1           | 7.5             |      |
| 26-Jun                                     | 3                             | 3   | 3    | 4                               | 3    | 4    | 3    | 1    | 1    | 2    | A    | 3    | 2    | 2    | 1   | 2    | 2    | 2    | 2    | 1   | 2   | 4   | 4    | 4    | 2.5           | 4.3             |      |
| 27-Jun                                     | 5                             | 10  | 4    | 7                               | 5    | 7    | 9    | 6    | 3    | A    | 10   | 3    | 2    | 2    | 1   | 1    | 1    | 1    | 2    | 3   | 5   | 6   | 10   | 14   | 5.0           | 13.9            |      |
| 28-Jun                                     | 10                            | 11  | 11   | 8                               | 9    | 8    | 12   | A    | A    | 20   | 9    | 4    | 4    | 3    | 2   | 2    | 4    | 6    | 2    | 3   | 5   | 12  | 12   | 13   | 7.9           | 19.6            |      |
| 29-Jun                                     | 14                            | 8   | 12   | 11                              | 10   | 11   | 16   | A    | 15   | 12   | 4    | 15   | 2    | 3    | 3   | 6    | 6    | 11   | 6    | 5   | 4   | 10  | 25   | 5    | 9.3           | 25.1            |      |
| 30-Jun                                     | 7                             | 9   | 5    | 3                               | 4    | 5    | A    | 10   | 7    | 6    | 9    | 8    | 7    | 4    | 5   | 5    | 9    | 3    | 3    | 7   | 4   | 9   | 16   | 31   | 7.7           | 31.0            |      |
|  |                               | 5.8   | 5.4  | 5.0                             | 5.2  | 5.3  | 6.9  | 8.6  | 7.3  | 5.6  | 7.6  | 4.3  | 3.6  | 3.6  | 3.1 | 3.8  | 3.5  | 3.9  | 3.1  | 3.0 | 3.2 | 4.2 | 6.1  | 6.7  | 6.4           | Diurnal Average |      |
|  |                               | 13.9  | 10.6 | 12.7                            | 11.4 | 11.9 | 14.1 | 28.6 | 28.6 | 20.5 | 37.4 | 11.0 | 14.7 | 21.8 | 8.0 | 19.2 | 11.6 | 11.0 | 11.4 | 9.5 | 7.1 | 9.6 | 17.6 | 25.1 | 31.0          | Diurnal Maximum |      |
| C - Calibration                            |                               | A - Automated Daily Zero Span   |      |                                 |      |      |      |      |      |      |      |      |      |      |     |      |      |      |      |     |     |     |      |      |               |                 |      |



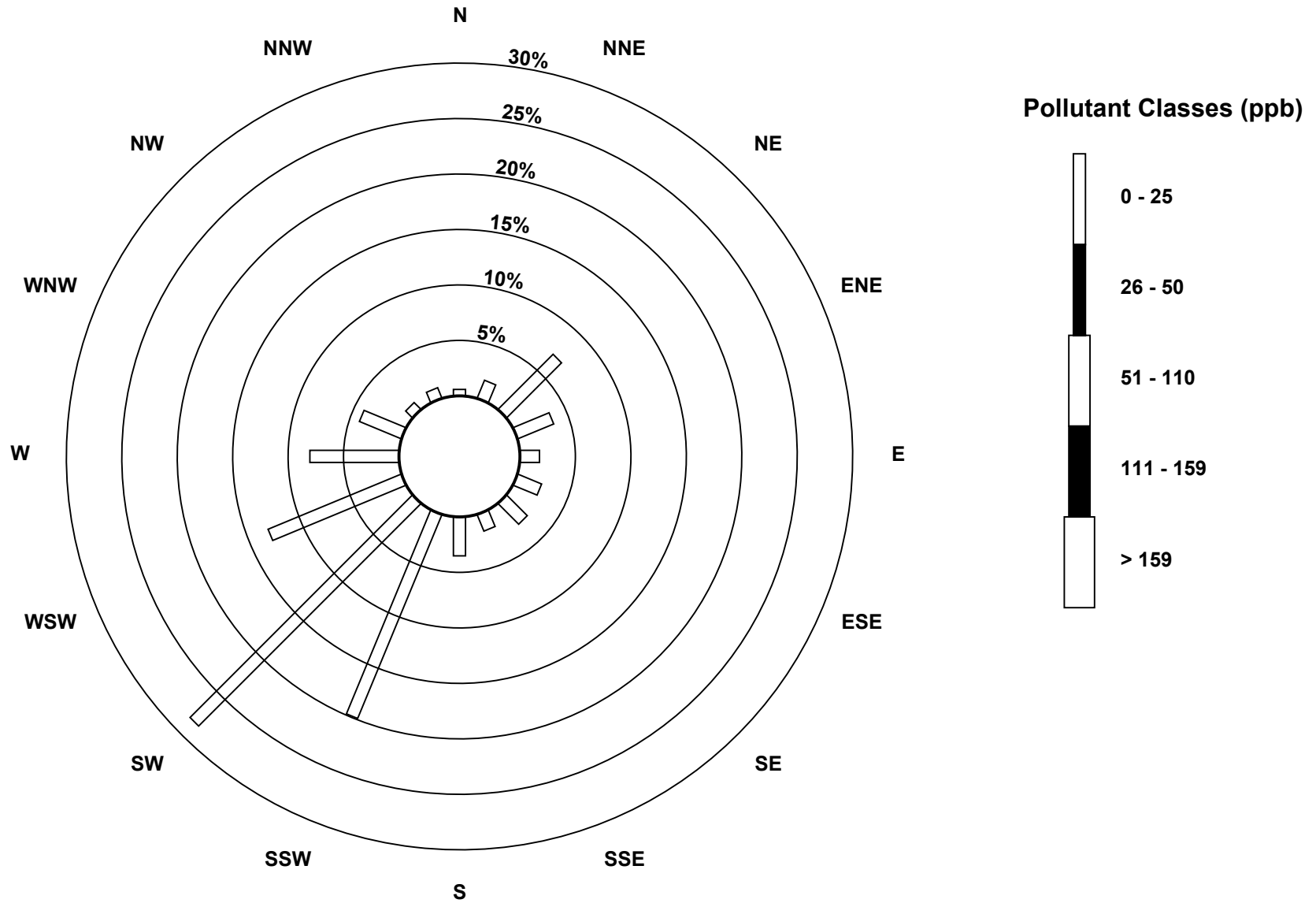
**Hourly Maximums**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Henry Pirker - June 2016**



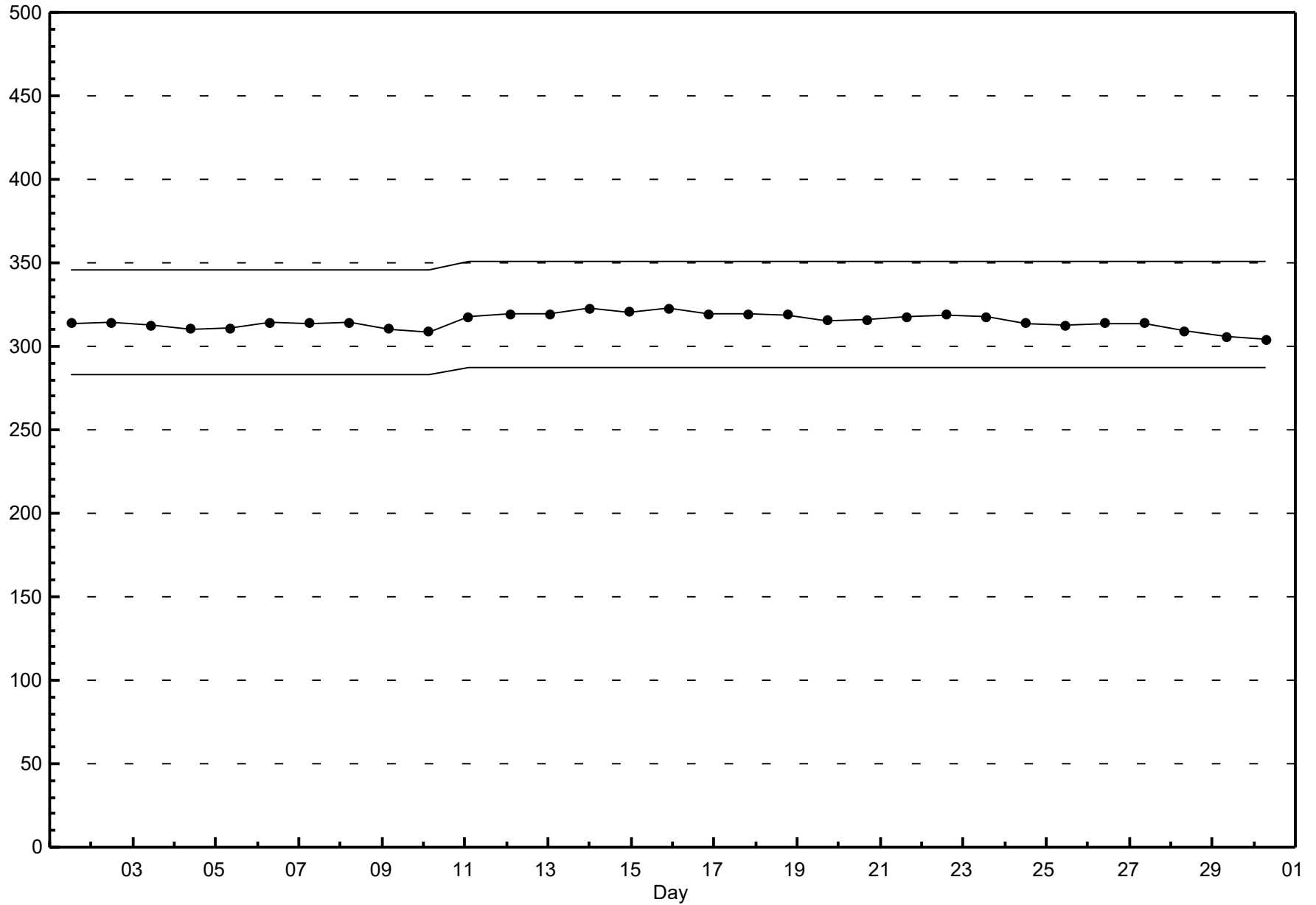
**Pollutant Rose**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Henry Pirker - June 2016**



### Span Responses

**Nitrogen Dioxide (NO<sub>2</sub>)**  
**Henry Pirker - June 2016**



## Hourly Averages

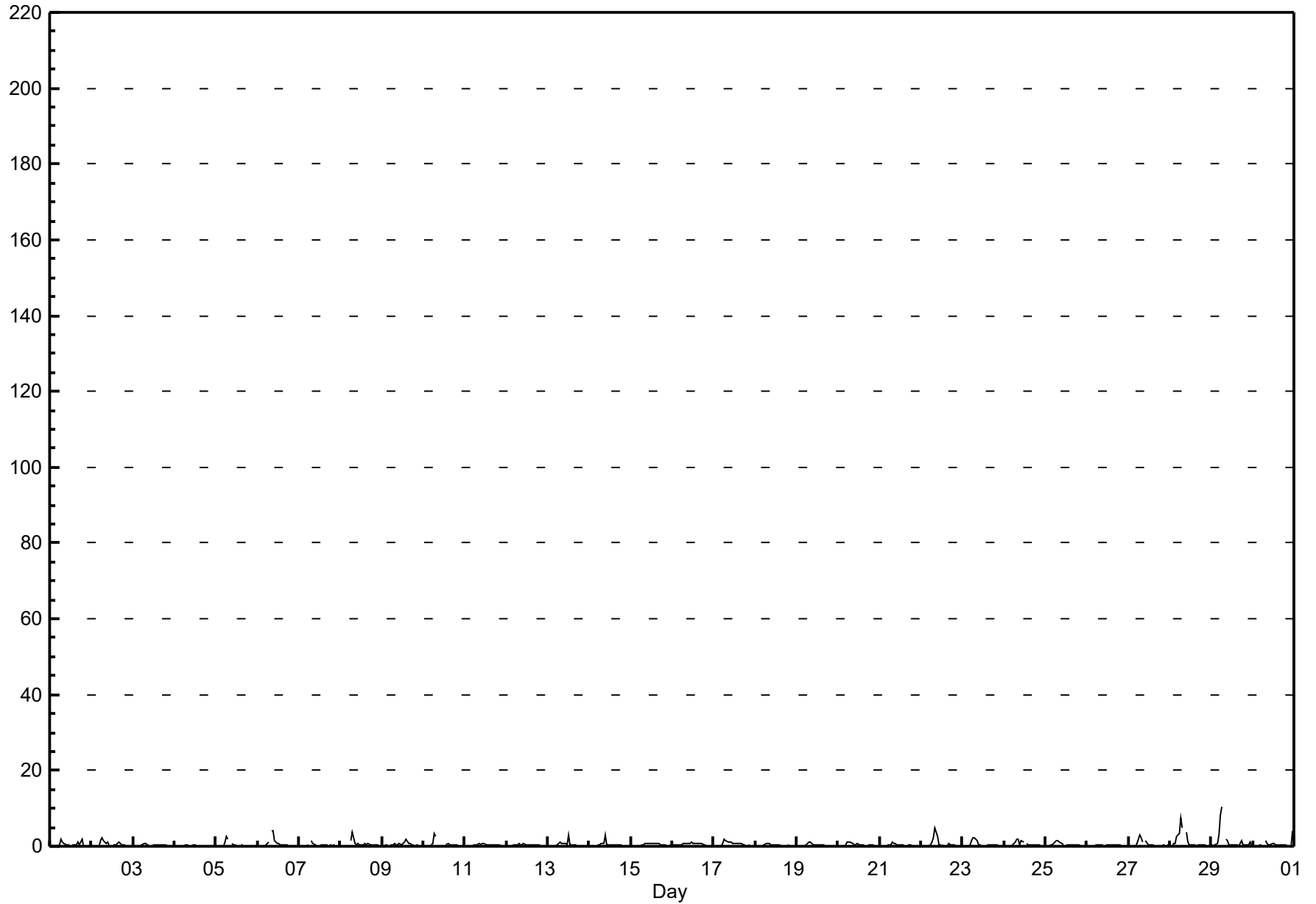
Nitrogen Oxide (NO) - ppb

Henry Pirker - June 2016

| Number of Exceedences (AAQO): 1-hr: 0 24-hr: 0<br>Maximum Value: 10.4 ppb on Jun 29 07:00 Maximum Daily Average: 1.4 ppb on Jun 29 |                               | Hours in Service: 720<br>Hours of Data: 684<br>Hours of Missing Data: 36<br>Hours of Calibration: 36<br>Percent Operational Time: 100.0   |     |     |     |     |     |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |
|--|-------------------------------|---|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|-----------------|--|
| Minimum Value: 0 ppb on Jun 6 23:00<br>Maximum Diurnal Average: 1.7 ppb at hour 7<br>Monthly Average: 0.48 ppb                     |                               | Minimum Daily Average: 0.1 ppb on Jun 4<br>Minimum Diurnal Average: 0.1 ppb at hour 1<br>Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.1 Median = 0.3 Q <sub>3</sub> = 0.5 P <sub>90</sub> = 1.0 P <sub>99</sub> = 4.1 |     |     |     |     |     |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |
| Day  | Hourly Period Ending At (MST) |   |     |     |     |     |     |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Daily Average | Daily Maximum   |  |
|  | 1                             | 2   | 3   | 4   | 5   | 6   | 7   | 8    | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |               |                 |  |
| 1-Jun  | 0                             | 0   | 0   | 0   | 0   | 1   | 2   | 1    | 1   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 1   | 0   | 2   | 0   | 0   | 0   | 0   | 0   | 0.5           | 1.8             |  |
| 2-Jun  | 0                             | 0   | 0   | 0   | 0   | 1   | 2   | 2    | 1   | 1   | 1   | A   | 0   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.5           | 2.1             |  |
| 3-Jun  | 0                             | 0   | 0   | 0   | 0   | 0   | 1   | 1    | 1   | 1   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.3           | 0.9             |  |
| 4-Jun  | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.2             |  |
| 5-Jun  | 0                             | 0   | 0   | 0   | 0   | 1   | 3   | 2    | A   | 1   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.4           | 2.7             |  |
| 6-Jun  | 0                             | 0   | 0   | 0   | 0   | 0   | 1   | A    | 4   | 4   | 1   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.6           | 4.1             |  |
| 7-Jun  | 0                             | 0   | 0   | 0   | 0   | 0   | A   | 1    | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 1.5             |  |
| 8-Jun  | 0                             | 0   | 0   | 0   | 0   | A   | 2   | 4    | 1   | 0   | 1   | 0   | 0   | 0   | 1   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.5           | 3.7             |  |
| 9-Jun  | 0                             | 0   | 0   | 0   | A   | 0   | 0   | 1    | 1   | 0   | 1   | 1   | 1   | 1   | 2   | 1   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0.4           | 1.7             |  |
| 10-Jun   | 0                             | 0   | 0   | A   | 0   | 1   | 3   | 3    | C   | C   | C   | C   | C   | 0   | 1   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0.6 | 3.4           |                 |  |
| 11-Jun   | 0                             | 0   | A   | 0   | 0   | 0   | 0   | 1    | 1   | 1   | 1   | 0   | 1   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.4           | 0.8             |  |
| 12-Jun   | 0                             | A   | 0   | 0   | 0   | 0   | 0   | 1    | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.3           | 0.6             |  |
| 13-Jun   | A                             | 0   | 0   | 0   | 0   | 0   | 1   | 1    | 1   | 1   | 1   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0.4           | 3.0             |  |
| 14-Jun   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 1    | 1   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0.4           | 2.8             |  |
| 15-Jun   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 0   | A   | 0   | 0   | 0.4           | 0.8             |  |
| 16-Jun   | 0                             | 0   | 0   | 0   | 0   | 1   | 1   | 1    | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 0   | A   | 0   | 0   | 0   | 0.5           | 1.0             |  |
| 17-Jun   | 0                             | 0   | 0   | 0   | 0   | 1   | 2   | 2    | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | A   | 0   | 0   | 0   | 0   | 0.6           | 1.9             |  |
| 18-Jun   | 0                             | 0   | 0   | 0   | 0   | 0   | 1   | 1    | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0.3           | 0.7             |  |
| 19-Jun   | 0                             | 0   | 0   | 0   | 0   | 0   | 1   | 1    | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0.3           | 1.1             |  |
| 20-Jun   | 0                             | 0   | 0   | 0   | 0   | 1   | 1   | 1    | 1   | 1   | 0   | 1   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.4           | 1.3             |  |
| 21-Jun   | 0                             | 0   | 0   | 0   | 0   | 0   | 1   | 1    | 1   | 1   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.3           | 1.2             |  |
| 22-Jun   | 0                             | 0   | 0   | 0   | 0   | 0   | 1   | 2    | 5   | 3   | 0   | 0   | 0   | 0   | A   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.7           | 4.7             |  |
| 23-Jun   | 0                             | 0   | 0   | 0   | 0   | 1   | 2   | 2    | 1   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.5           | 2.2             |  |
| 24-Jun   | 0                             | 0   | 0   | 0   | 0   | 0   | 1   | 2    | 2   | 1   | 1   | 1   | A   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.5           | 1.9             |  |
| 25-Jun   | 0                             | 0   | 0   | 0   | 0   | 1   | 1   | 1    | 1   | 1   | 1   | A   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.5           | 1.4             |  |
| 26-Jun   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.5             |  |
| 27-Jun   | 0                             | 0   | 0   | 0   | 0   | 1   | 3   | 2    | 1   | A   | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.5           | 2.9             |  |
| 28-Jun   | 0                             | 0   | 1   | 1   | 3   | 3   | 7   | 5    | A   | 4   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1.2           | 7.4             |  |
| 29-Jun   | 0                             | 0   | 0   | 1   | 3   | 8   | 10  | A    | 2   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 0   | 0   | 1   | 0   | 0   | 0   | 1.4           | 10.4            |  |
| 30-Jun   | 0                             | 0   | 0   | 0   | 0   | 0   | A   | 1    | 1   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.6           | 4.2             |  |
|  |                               | 0.1   | 0.1 | 0.1 | 0.1 | 0.3 | 0.9 | 1.7  | 1.4 | 1.1 | 1.0 | 0.6 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.2 | 0.2 | 0.1 | 0.1 | 0.2           | Diurnal Average |  |
|  |                               | 0.3   | 0.3 | 0.7 | 0.9 | 2.9 | 8.3 | 10.4 | 4.7 | 4.7 | 4.0 | 1.6 | 1.3 | 3.0 | 1.0 | 1.7 | 0.8 | 1.2 | 1.3 | 1.8 | 0.5 | 0.4 | 0.3 | 1.3 | 4.2           | Diurnal Maximum |  |
| C - Calibration  |                               | A - Automated Daily Zero Span   |     |     |     |     |     |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |

**Hourly Averages**

**Nitrogen Oxide (NO) - ppb**  
**Henry Pirker - June 2016**



## Hourly Maximums

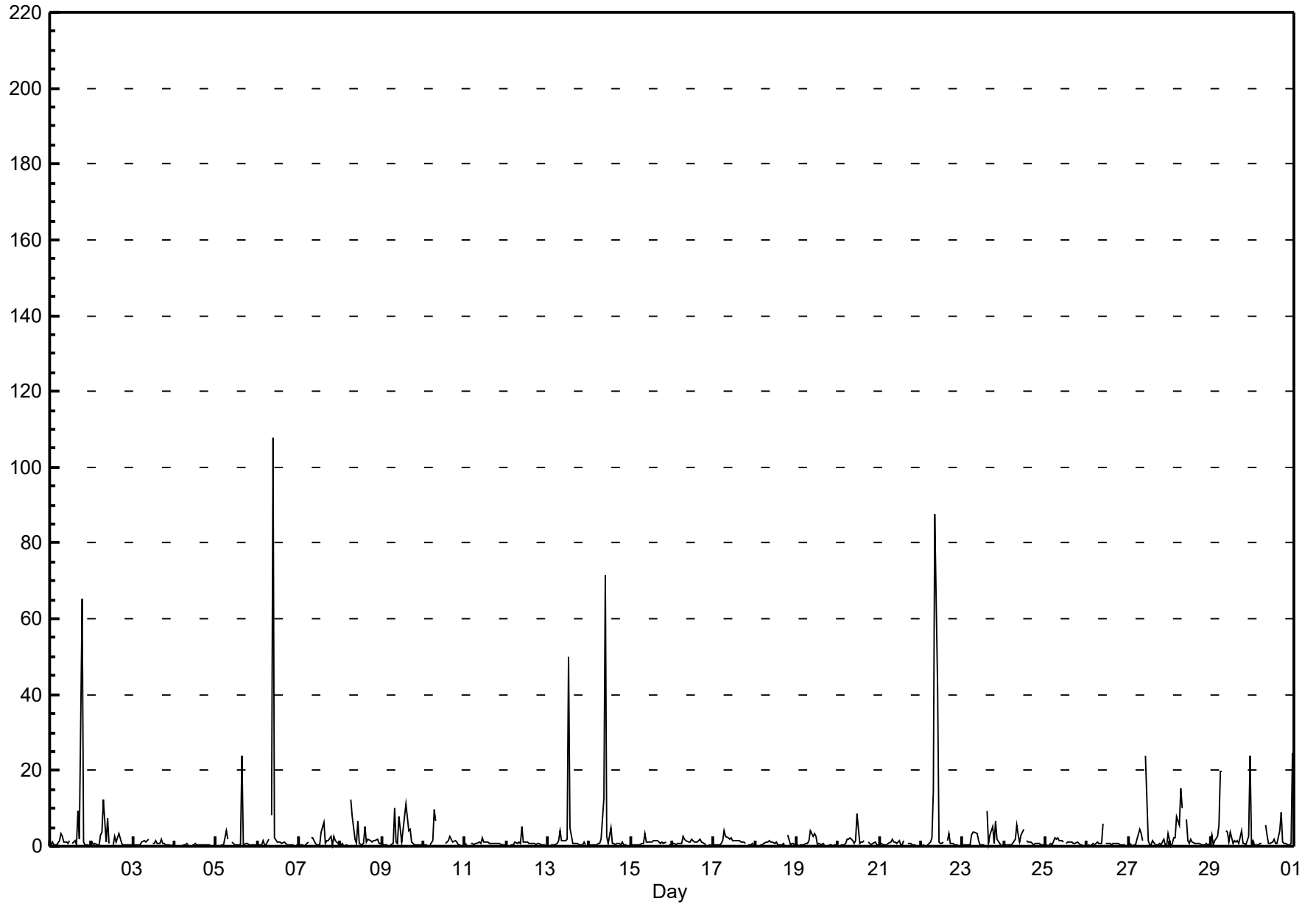
Nitrogen Oxide (NO) - ppb

Henry Pirker - June 2016

| Maximum Value: 107.7 ppb on Jun 6 10:00      |                               | Maximum Daily Average: 6.9 ppb on Jun 22  |     | Hours in Service: 720           |     |     |      |      |      |      |       |      |     |      |     |      |      |     |     |      |     |     |     |      |               |                 |     |     |
|--|-------------------------------|---|-----|---------------------------------|-----|-----|------|------|------|------|-------|------|-----|------|-----|------|------|-----|-----|------|-----|-----|-----|------|---------------|-----------------|-----|-----|
| Minimum Value: 0 ppb on Jun 3 23:00          |                               | Minimum Daily Average: 0.4 ppb on Jun 4   |     | Hours of Data: 684              |     |     |      |      |      |      |       |      |     |      |     |      |      |     |     |      |     |     |     |      |               |                 |     |     |
| Maximum Diurnal Average: 10.1 ppb at hour 10 |                               | Minimum Diurnal Average: 0.4 ppb at hour 2  |     | Hours of Missing Data: 36       |     |     |      |      |      |      |       |      |     |      |     |      |      |     |     |      |     |     |     |      |               |                 |     |     |
| Monthly Average: 2.09 ppb                    |                               | Percentiles: P <sub>1</sub> = 0.2 P <sub>10</sub> = 0.2 Q <sub>1</sub> = 0.3 Median = 0.7 Q <sub>3</sub> = 1.4 P <sub>90</sub> = 3.3 P <sub>99</sub> = 19.0 |     | Hours of Calibration: 36        |     |     |      |      |      |      |       |      |     |      |     |      |      |     |     |      |     |     |     |      |               |                 |     |     |
|  |                               |   |     | Percent Operational Time: 100.0 |     |     |      |      |      |      |       |      |     |      |     |      |      |     |     |      |     |     |     |      |               |                 |     |     |
| Day  | Hourly Period Ending At (MST) |   |     |                                 |     |     |      |      |      |      |       |      |     |      |     |      |      |     |     |      |     |     |     |      | Daily Average | Daily Maximum   |     |     |
|  | 1                             | 2   | 3   | 4                               | 5   | 6   | 7    | 8    | 9    | 10   | 11    | 12   | 13  | 14   | 15  | 16   | 17   | 18  | 19  | 20   | 21  | 22  | 23  | 24   |               |                 |     |     |
| 1-Jun  | 0                             | 1   | 0   | 0                               | 0   | 2   | 3    | 3    | 1    | 1    | 1     | 1    | A   | 1    | 1   | 1    | 9    | 2   | 65  | 1    | 0   | 0   | 0   | 0    | 4.1           | 65.2            |     |     |
| 2-Jun  | 1                             | 0   | 1   | 0                               | 0   | 3   | 4    | 12   | 1    | 7    | 1     | A    | 1   | 2    | 1   | 2    | 3    | 1   | 0   | 0    | 0   | 0   | 0   | 0    | 1.9           | 12.4            |     |     |
| 3-Jun  | 0                             | 0   | 0   | 0                               | 0   | 1   | 1    | 1    | 1    | 2    | A     | 1    | 1   | 2    | 1   | 1    | 2    | 1   | 1   | 0    | 0   | 0   | 0   | 0    | 0.7           | 1.9             |     |     |
| 4-Jun  | 0                             | 0   | 0   | 0                               | 0   | 0   | 0    | 1    | 0    | A    | 1     | 1    | 1   | 0    | 0   | 0    | 0    | 0   | 0   | 0    | 0   | 0   | 0   | 0    | 0.4           | 0.9             |     |     |
| 5-Jun  | 0                             | 0   | 0   | 0                               | 0   | 2   | 4    | 2    | A    | 1    | 1     | 0    | 0   | 0    | 0   | 24   | 0    | 1   | 1   | 0    | 0   | 1   | 0   | 0    | 1.7           | 23.8            |     |     |
| 6-Jun  | 0                             | 0   | 0   | 1                               | 1   | 1   | 2    | A    | 8    | 108  | 2     | 1    | 1   | 1    | 1   | 1    | 1    | 0   | 0   | 0    | 0   | 0   | 0   | 0    | 5.7           | 107.7           |     |     |
| 7-Jun  | 0                             | 0   | 0   | 0                               | 0   | 1   | A    | 2    | 2    | 1    | 0     | 0    | 0   | 4    | 6   | 1    | 2    | 1   | 3   | 0    | 3   | 2   | 1   | 0    | 1.3           | 6.3             |     |     |
| 8-Jun  | 0                             | 1   | 0   | 0                               | 0   | 0   | A    | 12   | 8    | 2    | 1     | 7    | 1   | 0    | 1   | 5    | 1    | 2   | 2   | 1    | 2   | 2   | 1   | 1    | 2.2           | 12.3            |     |     |
| 9-Jun  | 1                             | 0   | 0   | 0                               | 0   | A   | 0    | 1    | 10   | 1    | 1     | 8    | 1   | 5    | 8   | 11   | 4    | 4   | 1   | 1    | 0   | 0   | 0   | 0    | 2.6           | 11.1            |     |     |
| 10-Jun                                       | 0                             | 0   | 0   | A                               | 0   | 1   | 10   | 7    | C    | C    | C     | C    | C   | 1    | 1   | 3    | 2    | 1   | 2   | 1    | 0   | 0   | 0   | 0    | 1.7           | 9.8             |     |     |
| 11-Jun                                       | 1                             | 0   | A   | 1                               | 1   | 0   | 1    | 1    | 1    | 1    | 2     | 1    | 1   | 1    | 1   | 1    | 1    | 1   | 1   | 1    | 1   | 0   | 0   | 0    | 0.8           | 2.2             |     |     |
| 12-Jun                                       | 0                             | A   | 0   | 0                               | 0   | 1   | 1    | 1    | 1    | 5    | 1     | 1    | 1   | 1    | 1   | 1    | 1    | 0   | 1   | 1    | 0   | 0   | 0   | 0    | 0.9           | 5.4             |     |     |
| 13-Jun                                       | A                             | 0   | 0   | 0                               | 0   | 1   | 1    | 4    | 1    | 1    | 1     | 2    | 50  | 5    | 1   | 1    | 1    | 1   | 0   | 0    | 0   | 1   | 0   | A    | 3.3           | 49.9            |     |     |
| 14-Jun                                       | 1                             | 0   | 0   | 0                               | 0   | 1   | 1    | 2    | 13   | 72   | 3     | 1    | 5   | 1    | 1   | 1    | 1    | 1   | 0   | 1    | 0   | 0   | A   | 0    | 4.5           | 71.7            |     |     |
| 15-Jun                                       | 0                             | 0   | 0   | 0                               | 1   | 0   | 1    | 1    | 3    | 1    | 1     | 1    | 1   | 2    | 1   | 1    | 1    | 1   | 1   | 1    | 1   | A   | 0   | 0    | 0.9           | 3.3             |     |     |
| 16-Jun                                       | 1                             | 1   | 0   | 1                               | 1   | 1   | 3    | 2    | 1    | 1    | 1     | 2    | 1   | 1    | 1   | 2    | 2    | 1   | 1   | 1    | 1   | A   | 0   | 0    | 0             | 1.1             | 2.6 |     |
| 17-Jun                                       | 0                             | 0   | 0   | 0                               | 1   | 1   | 4    | 3    | 2    | 2    | 2     | 1    | 1   | 2    | 1   | 1    | 1    | 1   | 1   | 1    | A   | 0   | 0   | 1    | 0             | 1.2             | 4.2 |     |
| 18-Jun                                       | 0                             | 0   | 0   | 0                               | 0   | 1   | 1    | 1    | 1    | 2    | 1     | 1    | 1   | 0    | 1   | 0    | 1    | 0   | 1   | 0    | A   | A   | 3   | 0    | 1             | 0               | 0.7 | 2.8 |
| 19-Jun                                       | 0                             | 0   | 0   | 0                               | 0   | 1   | 1    | 1    | 4    | 3    | 3     | 3    | 0   | 1    | 0   | 1    | 0    | A   | A   | 0    | 0   | 0   | 0   | 0    | 0             | 0.9             | 4.0 |     |
| 20-Jun                                       | 0                             | 0   | 0   | 0                               | 1   | 2   | 2    | 2    | 2    | 1    | 1     | 9    | 1   | 1    | 1   | 1    | A    | 1   | 1   | 0    | 1   | 1   | 0   | 0    | 1.3           | 8.7             |     |     |
| 21-Jun                                       | 0                             | 1   | 0   | 0                               | 0   | 1   | 1    | 2    | 1    | 1    | 1     | 2    | 0   | 0    | 2   | A    | 1    | 1   | 1   | 0    | 0   | 0   | 0   | 0    | 0.7           | 1.8             |     |     |
| 22-Jun                                       | 0                             | 0   | 0   | 0                               | 0   | 1   | 2    | 15   | 87   | 42   | 1     | 1    | 1   | 1    | A   | 1    | 3    | 1   | 1   | 0    | 0   | 0   | 0   | 0    | 6.9           | 87.5            |     |     |
| 23-Jun                                       | 0                             | 0   | 0   | 0                               | 0   | 3   | 4    | 4    | 3    | 1    | 0     | 0    | 0   | A    | 9   | 1    | 3    | 5   | 1   | 7    | 2   | 1   | 0   | 0    | 2.0           | 9.2             |     |     |
| 24-Jun                                       | 0                             | 0   | 0   | 0                               | 0   | 1   | 2    | 5    | 3    | 1    | 3     | 5    | A   | 1    | 1   | 1    | 1    | 0   | 1   | 1    | 1   | 0   | 0   | 0    | 1.2           | 5.4             |     |     |
| 25-Jun                                       | 0                             | 0   | 0   | 1                               | 1   | 2   | 2    | 2    | 2    | 1    | 1     | A    | 1   | 1    | 1   | 1    | 1    | 1   | 1   | 1    | 0   | 0   | 0   | 0    | 0.9           | 2.3             |     |     |
| 26-Jun                                       | 0                             | 0   | 0   | 1                               | 0   | 1   | 1    | 1    | 1    | 6    | A     | 1    | 1   | 1    | 1   | 1    | 1    | 1   | 1   | 0    | 0   | 0   | 0   | 0    | 0.7           | 5.9             |     |     |
| 27-Jun                                       | 1                             | 1   | 0   | 0                               | 0   | 2   | 5    | 3    | 2    | A    | 24    | 2    | 0   | 0    | 2   | 0    | 0    | 0   | 1   | 0    | 2   | 0   | 0   | 3    | 2.1           | 24.0            |     |     |
| 28-Jun                                       | 0                             | 1   | 2   | 2                               | 8   | 6   | 15   | 10   | A    | 7    | 2     | 1    | 2   | 1    | 1   | 1    | 1    | 1   | 0   | 0    | 0   | 1   | 0   | 1    | 2.7           | 15.3            |     |     |
| 29-Jun                                       | 3                             | 0   | 2   | 3                               | 5   | 20  | 20   | A    | 4    | 4    | 1     | 4    | 1   | 1    | 1   | 2    | 1    | 4   | 1   | 1    | 0   | 3   | 24  | 1    | 4.5           | 23.9            |     |     |
| 30-Jun                                       | 2                             | 0   | 0   | 0                               | 1   | 1   | A    | 5    | 3    | 1    | 1     | 1    | 2   | 1    | 1   | 4    | 9    | 1   | 1   | 1    | 0   | 0   | 1   | 25   | 2.6           | 24.8            |     |     |
|  |                               | 0.5   | 0.4 | 0.4                             | 0.5 | 0.8 | 2.0  | 3.7  | 4.0  | 5.7  | 10.1  | 2.7  | 1.6 | 2.9  | 1.4 | 1.9  | 2.0  | 1.9 | 1.1 | 3.0  | 0.9 | 0.6 | 0.6 | 1.1  | 1.3           | Diurnal Average |     |     |
|  |                               | 3.1   | 1.2 | 2.3                             | 2.7 | 7.7 | 19.7 | 19.9 | 14.7 | 87.5 | 107.7 | 24.0 | 8.7 | 49.9 | 7.7 | 11.1 | 23.8 | 9.3 | 5.3 | 65.2 | 6.9 | 2.5 | 2.5 | 23.9 | 24.8          | Diurnal Maximum |     |     |
| C - Calibration                              |                               | A - Automated Daily Zero Span   |     |                                 |     |     |      |      |      |      |       |      |     |      |     |      |      |     |     |      |     |     |     |      |               |                 |     |     |

### Hourly Maximums

**Nitrogen Oxide (NO) - ppb**  
**Henry Pirker - June 2016**



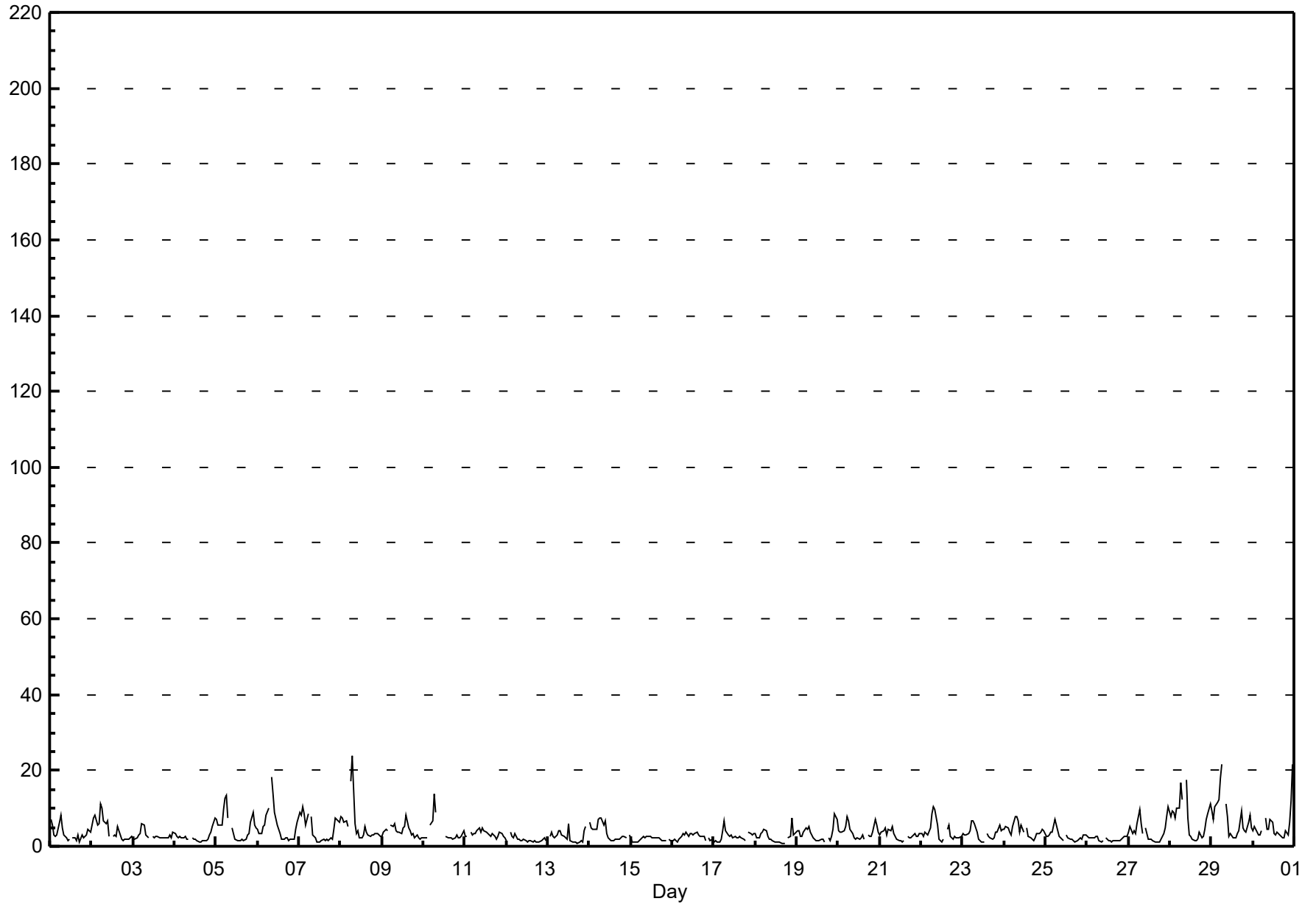
## Hourly Averages

Oxides of Nitrogen (NO<sub>x</sub>) - ppb

Henry Pirker - June 2016

| Number of Exceedences (AAAQO):             |                               | 1-hr: 0    24-hr: 0   |    | Hours in Service:         |    | 720   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                               |               |               |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
|--|-------------------------------|---|----|---------------------------|----|-------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-------------------------------|---------------|---------------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|-----------------|
| Maximum Value: 24.0 ppb on Jun 8 08:00     |                               | Maximum Daily Average: 7.4 ppb on Jun 29  |    | Hours of Data:            |    | 684   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                               |               |               |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| Minimum Value: 1 ppb on Jun 18 18:00       |                               | Minimum Daily Average: 1.8 ppb on Jun 12  |    | Hours of Missing Data:    |    | 36    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                               |               |               |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| Maximum Diurnal Average: 7.7 ppb at hour 7 |                               | Minimum Diurnal Average: 2.1 ppb at hour 19   |    | Hours of Calibration:     |    | 36    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                               |               |               |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| Monthly Average: 3.74 ppb                  |                               | Percentiles: P <sub>1</sub> = 1.0 P <sub>10</sub> = 1.4 Q <sub>1</sub> = 2.0 Median = 2.8 Q <sub>3</sub> = 4.5 P <sub>90</sub> = 7.3 P <sub>99</sub> = 17.1 |    | Percent Operational Time: |    | 100.0 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                               |               |               |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| Day  | Hourly Period Ending At (MST) |   |    |                           |    |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                               | Daily Average | Daily Maximum |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
|  | 1                             | 2   | 3  | 4                         | 5  | 6     | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24                            |               |               |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 1-Jun                                      | 7                             | 6   | 3  | 3                         | 3  | 6     | 8  | 5  | 3  | 2  | 2  | 2  | A  | 2  | 2  | 1  | 3  | 1  | 3  | 2  | 3  | 3  | 4  | 4                             | 3.4           | 8.2           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 2-Jun                                      | 6                             | 7   | 8  | 6                         | 6  | 11    | 10 | 7  | 6  | 7  | 2  | A  | 3  | 3  | 3  | 5  | 4  | 2  | 2  | 2  | 2  | 2  | 2  | 2                             | 4.7           | 11.3          |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 3-Jun                                      | 2                             | 2   | 2  | 3                         | 3  | 6     | 6  | 3  | 2  | 2  | A  | 3  | 2  | 2  | 3  | 2  | 2  | 2  | 2  | 2  | 2  | 3  | 2  | 4                             | 2.8           | 5.8           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 4-Jun                                      | 4                             | 2   | 2  | 3                         | 2  | 2     | 3  | 2  | 2  | A  | 2  | 2  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 2  | 3  | 4  | 5  | 7                             | 2.5           | 7.4           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 5-Jun                                      | 7                             | 5   | 6  | 6                         | 10 | 13    | 13 | 8  | A  | 5  | 3  | 2  | 1  | 1  | 2  | 2  | 2  | 2  | 3  | 3  | 6  | 9  | 6  | 5                             | 5.2           | 13.3          |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 6-Jun                                      | 5                             | 3   | 4  | 5                         | 6  | 8     | 10 | A  | 18 | 14 | 9  | 5  | 4  | 3  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 5  | 6                             | 5.3           | 18.2          |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 7-Jun                                      | 9                             | 8   | 10 | 9                         | 5  | 8     | A  | 8  | 3  | 2  | 1  | 1  | 1  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 5  | 7  | 7  | 7                             | 4.5           | 10.4          |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 8-Jun                                      | 8                             | 7   | 6  | 7                         | 5  | A     | 17 | 24 | 6  | 3  | 4  | 2  | 2  | 3  | 5  | 4  | 3  | 3  | 3  | 3  | 3  | 3  | 3  | 3                             | 5.6           | 24.0          |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 9-Jun                                      | 3                             | 4   | 4  | 4                         | A  | 6     | 5  | 6  | 4  | 4  | 4  | 3  | 5  | 5  | 8  | 5  | 4  | 3  | 3  | 2  | 3  | 2  | 2  | 2                             | 4.0           | 8.1           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 10-Jun                                     | 2                             | 2   | 2  | A                         | 5  | 7     | 14 | 9  | C  | C  | C  | C  | C  | 3  | 2  | 2  | 2  | 2  | 2  | 3  | 2  | 2  | 3  | 4                             | 3.9           | 13.8          |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 11-Jun                                     | 2                             | 2   | A  | 4                         | 3  | 3     | 3  | 4  | 5  | 4  | 5  | 4  | 4  | 3  | 3  | 3  | 4  | 3  | 2  | 3  | 4  | 3  | 3  | 2                             | 3.3           | 4.8           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 12-Jun                                     | 2                             | A   | 4  | 3                         | 2  | 4     | 2  | 2  | 1  | 1  | 2  | 1  | 1  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 1                             | 1.8           | 3.8           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 13-Jun                                     | A                             | 3   | 4  | 2                         | 2  | 3     | 4  | 4  | 3  | 2  | 2  | 2  | 6  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 4  | 5  | A                             | 2.5           | 5.8           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 14-Jun                                     | 7                             | 5   | 5  | 5                         | 5  | 7     | 8  | 7  | 6  | 7  | 3  | 2  | 1  | 2  | 2  | 2  | 2  | 2  | 2  | 3  | 2  | 2  | A  | 3                             | 3.8           | 7.5           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 15-Jun                                     | 2                             | 1   | 1  | 1                         | 1  | 1     | 2  | 2  | 2  | 2  | 3  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 1  | 1  | A  | 2  | 1                             | 1.9           | 2.7           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 16-Jun                                     | 1                             | 2   | 2  | 1                         | 2  | 3     | 4  | 3  | 4  | 3  | 3  | 3  | 3  | 3  | 4  | 3  | 3  | 3  | 3  | 2  | A  | 2  | 2  | 2                             | 2.5           | 3.7           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 17-Jun                                     | 1                             | 2   | 1  | 1                         | 2  | 4     | 7  | 4  | 3  | 3  | 3  | 2  | 2  | 2  | 2  | 3  | 2  | 2  | 2  | A  | 4  | 3  | 3  | 4                             | 2.7           | 6.6           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 18-Jun                                     | 3                             | 2   | 2  | 3                         | 4  | 4     | 4  | 3  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | A  | 2  | 3  | 7  | 3  | 4                             | 2.5           | 7.4           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 19-Jun                                     | 4                             | 4   | 2  | 3                         | 4  | 5     | 5  | 5  | 4  | 2  | 2  | 1  | 1  | 2  | 2  | 2  | 1  | A  | 2  | 2  | 3  | 4  | 9  | 7                             | 3.3           | 8.6           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 20-Jun                                     | 4                             | 4   | 4  | 4                         | 5  | 8     | 7  | 5  | 3  | 2  | 2  | 2  | 2  | 2  | 3  | 2  | A  | 3  | 2  | 3  | 4  | 7  | 5  | 4                             | 3.8           | 7.9           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 21-Jun                                     | 3                             | 4   | 4  | 5                         | 3  | 4     | 4  | 5  | 3  | 2  | 2  | 1  | 1  | 1  | 1  | A  | 3  | 2  | 2  | 3  | 3  | 3  | 3  | 3                             | 2.9           | 5.1           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 22-Jun                                     | 3                             | 3   | 4  | 4                         | 3  | 5     | 9  | 11 | 10 | 6  | 2  | 1  | 1  | 2  | A  | 5  | 5  | 3  | 2  | 3  | 2  | 2  | 2  | 3                             | 3.8           | 10.5          |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 23-Jun                                     | 3                             | 3   | 3  | 4                         | 4  | 7     | 7  | 6  | 4  | 2  | 2  | 1  | 1  | A  | 3  | 3  | 2  | 2  | 2  | 4  | 4  | 5  | 4  | 4                             | 3.5           | 6.7           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 24-Jun                                     | 5                             | 5   | 5  | 4                         | 3  | 5     | 8  | 8  | 7  | 4  | 6  | 4  | A  | 5  | 3  | 2  | 2  | 2  | 2  | 3  | 3  | 4  | 4  | 4                             | 4.2           | 8.0           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 25-Jun                                     | 3                             | 3   | 3  | 4                         | 4  | 7     | 5  | 4  | 3  | 2  | 2  | A  | 3  | 2  | 2  | 2  | 2  | 2  | 1  | 2  | 2  | 2  | 3  | 3                             | 2.8           | 7.1           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 26-Jun                                     | 3                             | 2   | 2  | 2                         | 2  | 3     | 3  | 2  | 1  | 1  | A  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 3  | 3  | 3                             | 1.9           | 2.8           |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 27-Jun                                     | 4                             | 5   | 3  | 4                         | 3  | 6     | 10 | 6  | 3  | A  | 5  | 2  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 2  | 3  | 5  | 8  | 10                            | 3.9           | 10.5          |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 28-Jun                                     | 8                             | 9   | 9  | 7                         | 10 | 10    | 17 | 12 | A  | 17 | 8  | 3  | 3  | 2  | 1  | 1  | 2  | 4  | 2  | 3  | 4  | 7  | 9  | 11                            | 7.0           | 17.4          |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 29-Jun                                     | 9                             | 7   | 10 | 11                        | 12 | 18    | 22 | A  | 11 | 8  | 3  | 3  | 2  | 2  | 2  | 4  | 4  | 9  | 5  | 4  | 4  | 6  | 8  | 5                             | 7.4           | 21.7          |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
| 30-Jun                                     | 4                             | 5   | 4  | 3                         | 3  | 4     | A  | 7  | 5  | 4  | 7  | 6  | 3  | 3  | 4  | 3  | 3  | 2  | 2  | 4  | 3  | 6  | 12 | 21                            | 5.2           | 21.5          |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |
|  |                               |   |    |                           |    |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4.3                           | 4.1           | 4.1           | 4.1  | 4.3  | 6.1  | 7.7  | 6.1  | 4.6  | 4.2  | 3.3 | 2.5 | 2.3 | 2.3 | 2.4 | 2.3 | 2.3 | 2.2 | 2.1 | 2.4 | 2.9 | 4.0 | 4.4  | 4.8  | Diurnal Average |
|  |                               |   |    |                           |    |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 9.5                           | 9.5           | 10.4          | 11.5 | 12.4 | 17.8 | 21.7 | 24.0 | 18.2 | 17.4 | 8.9 | 6.4 | 5.8 | 5.3 | 8.1 | 5.1 | 5.5 | 9.4 | 4.8 | 4.0 | 6.2 | 9.1 | 11.9 | 21.5 | Diurnal Maximum |
| C - Calibration                            |                               |   |    |                           |    |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | A - Automated Daily Zero Span |               |               |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |



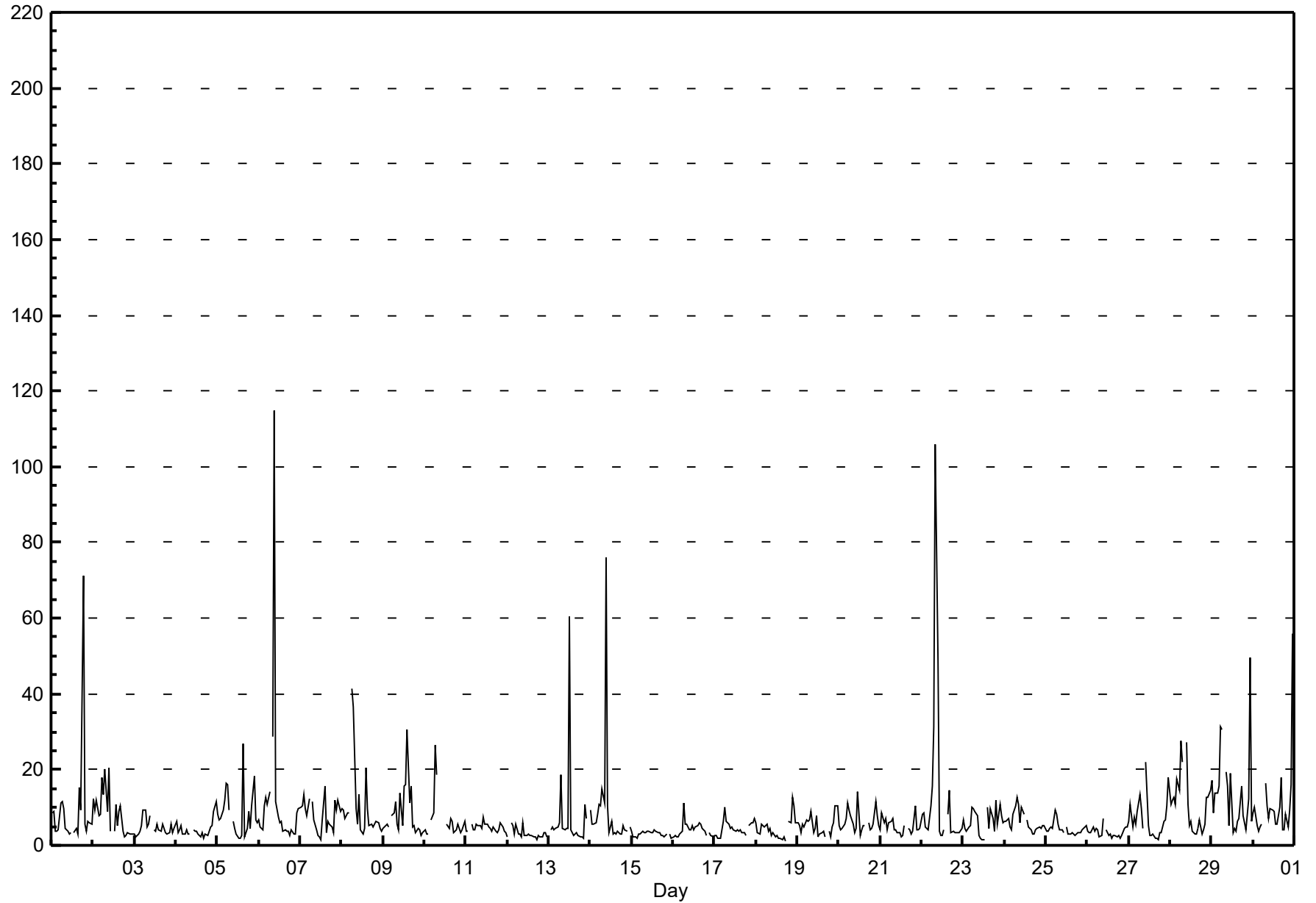


## Hourly Maximums

Oxides of Nitrogen (NO<sub>x</sub>) - ppb

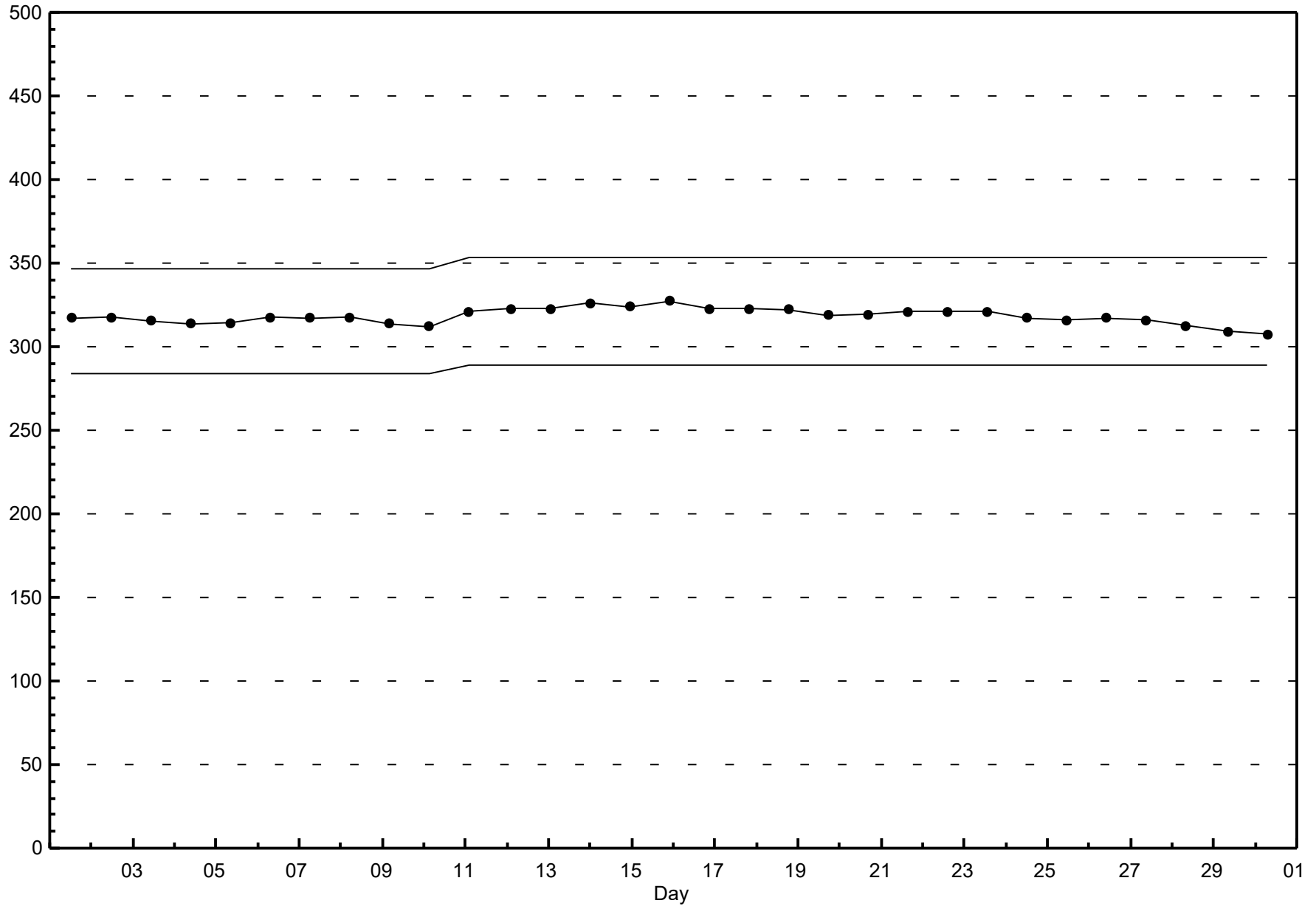
Henry Pirker - June 2016

| Maximum Value: 114.9 ppb on Jun 6 10:00      |                               | Maximum Daily Average: 13.8 ppb on Jun 29  |      | Hours in Service: 720           |      |      |      |      |      |       |       |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |                 |  |
|--|-------------------------------|--|------|---------------------------------|------|------|------|------|------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|-----------------|--|
| Minimum Value: 1 ppb on Jun 18 18:00         |                               | Minimum Daily Average: 3.1 ppb on Jun 15   |      | Hours of Data: 684              |      |      |      |      |      |       |       |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |                 |  |
| Maximum Diurnal Average: 14.9 ppb at hour 10 |                               | Minimum Diurnal Average: 4.3 ppb at hour 20  |      | Hours of Missing Data: 36       |      |      |      |      |      |       |       |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |                 |  |
| Monthly Average: 7.13 ppb                    |                               | Percentiles: P <sub>1</sub> = 1.7 P <sub>10</sub> = 2.6 Q <sub>1</sub> = 3.5 Median = 4.7 Q <sub>3</sub> = 7.9 P <sub>90</sub> = 12.0 P <sub>99</sub> = 47.5 |      | Hours of Calibration: 36        |      |      |      |      |      |       |       |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |                 |  |
|  |                               |  |      | Percent Operational Time: 100.0 |      |      |      |      |      |       |       |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |                 |  |
| Day  | Hourly Period Ending At (MST) |  |      |                                 |      |      |      |      |      |       |       |      |      |      |      |      |      |      |      |      |      |      |      |      | Daily Average   | Daily Maximum   |  |
|  | 1                             | 2  | 3    | 4                               | 5    | 6    | 7    | 8    | 9    | 10    | 11    | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |                 |                 |  |
| 1-Jun  | 9                             | 9  | 4    | 4                               | 4    | 11   | 12   | 10   | 4    | 4     | 3     | 3    | A    | 3    | 4    | 3    | 15   | 9    | 71   | 6    | 4    | 6    | 6    | 6    | 9.1             | 71.4            |  |
| 2-Jun  | 12                            | 9  | 12   | 8                               | 8    | 18   | 13   | 20   | 9    | 20    | 4     | A    | 4    | 11   | 5    | 9    | 10   | 4    | 2    | 3    | 3    | 3    | 3    | 3    | 8.4             | 20.5            |  |
| 3-Jun  | 3                             | 2  | 3    | 4                               | 5    | 9    | 9    | 5    | 6    | 8     | A     | 4    | 4    | 5    | 4    | 4    | 6    | 4    | 3    | 3    | 3    | 6    | 3    | 5    | 4.7             | 9.5             |  |
| 4-Jun  | 6                             | 3  | 4    | 5                               | 3    | 3    | 4    | 3    | 3    | A     | 4     | 4    | 4    | 3    | 2    | 3    | 2    | 3    | 3    | 4    | 5    | 5    | 9    | 12   | 4.2             | 11.6            |  |
| 5-Jun  | 8                             | 7  | 7    | 9                               | 12   | 17   | 16   | 9    | A    | 6     | 5     | 3    | 2    | 2    | 3    | 27   | 2    | 4    | 9    | 4    | 10   | 18   | 7    | 6    | 8.4             | 26.8            |  |
| 6-Jun  | 7                             | 5  | 4    | 10                              | 13   | 11   | 14   | A    | 29   | 115   | 12    | 8    | 6    | 6    | 4    | 4    | 4    | 4    | 3    | 4    | 3    | 3    | 9    | 10   | 12.4            | 114.9           |  |
| 7-Jun  | 10                            | 10   | 13   | 10                              | 8    | 12   | A    | 12   | 7    | 4     | 2     | 2    | 2    | 7    | 16   | 3    | 6    | 6    | 5    | 3    | 12   | 9    | 12   | 9    | 7.9             | 15.6            |  |
| 8-Jun  | 10                            | 9  | 7    | 8                               | 9    | A    | 41   | 36   | 10   | 6     | 13    | 4    | 3    | 4    | 20   | 10   | 5    | 6    | 5    | 6    | 6    | 6    | 4    | 4    | 10.2            | 41.4            |  |
| 9-Jun  | 4                             | 5  | 6    | 5                               | A    | 8    | 8    | 12   | 6    | 4     | 14    | 5    | 16   | 16   | 31   | 11   | 16   | 5    | 5    | 3    | 4    | 4    | 3    | 3    | 8.4             | 30.7            |  |
| 10-Jun                                       | 4                             | 3  | 3    | A                               | 7    | 9    | 27   | 19   | C    | C     | C     | C    | C    | 6    | 4    | 7    | 6    | 3    | 4    | 5    | 4    | 3    | 4    | 6    | 7.0             | 26.6            |  |
| 11-Jun                                       | 4                             | 4  | A    | 5                               | 4    | 4    | 5    | 5    | 5    | 5     | 8     | 6    | 6    | 5    | 4    | 4    | 5    | 4    | 3    | 4    | 6    | 5    | 4    | 3    | 4.7             | 7.6             |  |
| 12-Jun                                       | 2                             | A  | 6    | 5                               | 3    | 6    | 3    | 3    | 2    | 6     | 3     | 3    | 3    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 3    | 4    | 2    | 3.1             | 6.1             |  |
| 13-Jun                                       | A                             | 4  | 5    | 4                               | 4    | 5    | 6    | 19   | 5    | 4     | 4     | 5    | 61   | 4    | 3    | 3    | 3    | 3    | 2    | 2    | 2    | 11   | 7    | A    | 7.5             | 60.5            |  |
| 14-Jun                                       | 9                             | 5  | 5    | 6                               | 8    | 11   | 10   | 15   | 11   | 76    | 10    | 3    | 6    | 3    | 3    | 3    | 4    | 3    | 3    | 5    | 4    | 4    | A    | 5    | 9.3             | 76.0            |  |
| 15-Jun                                       | 4                             | 2  | 2    | 2                               | 3    | 3    | 4    | 3    | 3    | 4     | 4     | 3    | 3    | 4    | 4    | 3    | 3    | 2    | 3    | 2    | 3    | A    | 3    | 2    | 3.1             | 4.0             |  |
| 16-Jun                                       | 2                             | 2  | 2    | 2                               | 3    | 4    | 11   | 5    | 5    | 4     | 4     | 5    | 4    | 5    | 5    | 6    | 6    | 5    | 4    | 3    | A    | 4    | 3    | 2    | 4.2             | 11.3            |  |
| 17-Jun                                       | 3                             | 2  | 2    | 2                               | 4    | 6    | 10   | 6    | 6    | 4     | 5     | 4    | 4    | 4    | 4    | 4    | 3    | 3    | 2    | A    | 5    | 6    | 6    | 7    | 4.5             | 10.2            |  |
| 18-Jun                                       | 6                             | 3  | 3    | 6                               | 5    | 5    | 6    | 4    | 4    | 3     | 3     | 2    | 3    | 2    | 2    | 2    | 2    | 2    | A    | 6    | 6    | 13   | 10   | 6    | 4.4             | 12.6            |  |
| 19-Jun                                       | 6                             | 5  | 4    | 6                               | 5    | 7    | 6    | 7    | 9    | 3     | 4     | 8    | 2    | 3    | 3    | 4    | 2    | A    | 4    | 2    | 5    | 6    | 10   | 10   | 5.3             | 10.3            |  |
| 20-Jun                                       | 5                             | 4  | 4    | 6                               | 7    | 11   | 9    | 8    | 5    | 3     | 4     | 14   | 3    | 4    | 5    | 5    | A    | 6    | 4    | 5    | 6    | 11   | 8    | 5    | 6.3             | 14.3            |  |
| 21-Jun                                       | 4                             | 8  | 6    | 7                               | 4    | 6    | 6    | 7    | 4    | 4     | 3     | 3    | 2    | 2    | 5    | A    | 5    | 4    | 3    | 4    | 10   | 4    | 4    | 4    | 4.9             | 10.3            |  |
| 22-Jun                                       | 8                             | 8  | 5    | 5                               | 4    | 10   | 16   | 31   | 106  | 49    | 4     | 3    | 3    | 4    | A    | 8    | 15   | 3    | 4    | 4    | 3    | 3    | 3    | 5    | 13.2            | 106.0           |  |
| 23-Jun                                       | 7                             | 5  | 4    | 5                               | 5    | 10   | 10   | 9    | 8    | 3     | 2     | 1    | 2    | A    | 10   | 4    | 10   | 7    | 4    | 12   | 6    | 11   | 8    | 6    | 6.4             | 11.8            |  |
| 24-Jun                                       | 6                             | 6  | 7    | 5                               | 4    | 8    | 10   | 13   | 11   | 6     | 10    | 8    | A    | 7    | 5    | 4    | 3    | 3    | 4    | 4    | 5    | 5    | 5    | 5    | 6.3             | 12.5            |  |
| 25-Jun                                       | 4                             | 4  | 4    | 5                               | 5    | 9    | 8    | 6    | 4    | 4     | 3     | A    | 5    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 5    | 4.3             | 9.5             |  |
| 26-Jun                                       | 4                             | 4  | 3    | 5                               | 4    | 4    | 4    | 2    | 2    | 7     | A     | 4    | 3    | 3    | 2    | 3    | 3    | 2    | 3    | 2    | 3    | 5    | 5    | 5    | 3.5             | 7.2             |  |
| 27-Jun                                       | 6                             | 11   | 5    | 7                               | 5    | 9    | 13   | 10   | 4    | A     | 22    | 5    | 2    | 3    | 3    | 2    | 2    | 2    | 3    | 3    | 6    | 7    | 10   | 18   | 6.9             | 22.0            |  |
| 28-Jun                                       | 11                            | 12   | 13   | 11                              | 18   | 15   | 28   | 22   | A    | 27    | 11    | 5    | 6    | 4    | 3    | 3    | 4    | 7    | 3    | 4    | 5    | 13   | 13   | 14   | 10.9            | 27.6            |  |
| 29-Jun                                       | 17                            | 9  | 14   | 14                              | 16   | 31   | 31   | A    | 19   | 16    | 5     | 19   | 3    | 5    | 4    | 6    | 7    | 16   | 8    | 6    | 4    | 12   | 50   | 6    | 13.8            | 49.6            |  |
| 30-Jun                                       | 9                             | 10   | 5    | 4                               | 5    | 6    | A    | 16   | 10   | 7     | 10    | 9    | 9    | 6    | 6    | 10   | 18   | 4    | 4    | 8    | 5    | 9    | 16   | 56   | 10.5            | 55.9            |  |
|  |                               | 6.6  | 5.9  | 5.6                             | 6.0  | 6.4  | 9.2  | 11.3 | 11.1 | 14.9  | 6.6   | 5.4  | 6.2  | 4.7  | 5.9  | 5.5  | 5.9  | 4.4  | 6.1  | 4.3  | 5.0  | 6.9  | 8.1  | 8.0  | Diurnal Average |                 |  |
|  |                               | 17.1   | 11.8 | 13.8                            | 13.7 | 17.6 | 31.2 | 41.4 | 36.5 | 106.0 | 114.9 | 22.0 | 18.9 | 60.5 | 16.1 | 30.7 | 26.8 | 17.8 | 15.8 | 71.4 | 11.8 | 11.9 | 18.4 | 49.6 | 55.9            | Diurnal Maximum |  |
| C - Calibration                              |                               | A - Automated Daily Zero Span  |      |                                 |      |      |      |      |      |       |       |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |                 |  |



### Span Responses

Oxides of Nitrogen (NO<sub>x</sub>)  
Henry Pirker - June 2016

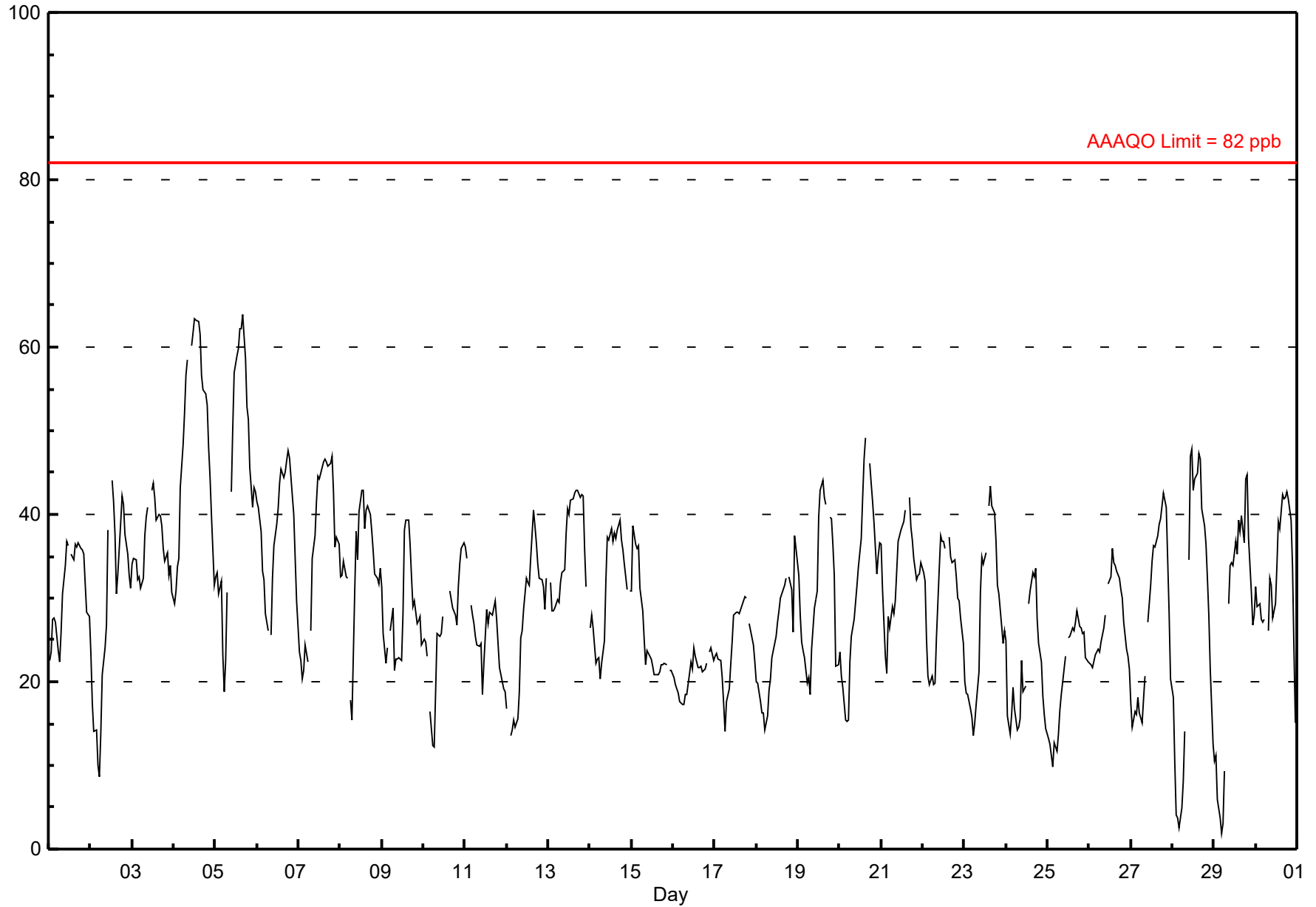


## Hourly Averages

Ozone (O<sub>3</sub>) - ppb

Henry Pirker - June 2016

| Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0                      |                               |    |    |    |    |    |    |    |    | Hours in Service: 720  |    |    |    |    |    |    |    |    |    |                                 |    |    |    |                               |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|--|-------------------------------|----|----|----|----|----|----|----|----|--|----|----|----|----|----|----|----|----|----|---------------------------------|----|----|----|-------------------------------|---------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|
| Maximum Value: 64.0 ppb on Jun 5 17:00                               |                               |    |    |    |    |    |    |    |    | Maximum Daily Average: 49.7 ppb on Jun 4   |    |    |    |    |    |    |    |    |    | Hours of Data: 686              |    |    |    |                               |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Minimum Value: 2 ppb on Jun 29 05:00                                 |                               |    |    |    |    |    |    |    |    | Minimum Daily Average: 20.6 ppb on Jun 25  |    |    |    |    |    |    |    |    |    | Hours of Missing Data: 34       |    |    |    |                               |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Maximum Diurnal Average: 38.4 ppb at hour 16                         |                               |    |    |    |    |    |    |    |    | Minimum Diurnal Average: 20.5 ppb at hour 6  |    |    |    |    |    |    |    |    |    | Hours of Calibration: 34        |    |    |    |                               |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Monthly Average: 30.24 ppb   |                               |    |    |    |    |    |    |    |    | Percentiles: P <sub>1</sub> = 4.5 P <sub>10</sub> = 17.5 Q <sub>1</sub> = 22.6 Median = 30.0 Q <sub>3</sub> = 36.8 P <sub>90</sub> = 42.8 P <sub>99</sub> = 61.5 |    |    |    |    |    |    |    |    |    | Percent Operational Time: 100.0 |    |    |    |                               |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Day  | Hourly Period Ending At (MST) |    |    |    |    |    |    |    |    |  |    |    |    |    |    |    |    |    |    |                                 |    |    |    |                               | Daily Average | Daily Maximum |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|  | 1                             | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10   | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20                              | 21 | 22 | 23 | 24                            |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 1-Jun  | 23                            | 24 | 27 | 28 | 27 | 24 | 22 | 26 | 31 | 34   | 37 | 36 | A  | 35 | 35 | 36 | 36 | 37 | 36 | 36                              | 35 | 32 | 28 | 28                            | 30.9          | 36.7          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 2-Jun  | 23                            | 17 | 14 | 14 | 10 | 9  | 14 | 21 | 24 | 27   | 38 | A  | 44 | 41 | 38 | 31 | 33 | 39 | 42 | 41                              | 38 | 35 | 33 | 31                            | 28.6          | 44.0          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 3-Jun  | 34                            | 35 | 35 | 32 | 32 | 31 | 32 | 37 | 40 | 41   | A  | 43 | 44 | 42 | 39 | 40 | 40 | 39 | 36 | 34                              | 35 | 33 | 34 | 31                            | 36.5          | 43.8          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 4-Jun  | 29                            | 31 | 34 | 35 | 43 | 48 | 52 | 57 | 58 | A  | 60 | 62 | 63 | 63 | 63 | 61 | 57 | 55 | 54 | 53                              | 48 | 44 | 40 | 31                            | 49.7          | 63.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 5-Jun  | 33                            | 33 | 31 | 32 | 23 | 19 | 22 | 31 | A  | 43   | 50 | 57 | 59 | 60 | 62 | 62 | 64 | 59 | 53 | 51                              | 46 | 41 | 43 | 43                            | 44.2          | 64.0          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 6-Jun  | 42                            | 41 | 38 | 33 | 32 | 28 | 26 | A  | 26 | 32   | 36 | 39 | 41 | 44 | 45 | 44 | 45 | 46 | 48 | 47                              | 42 | 40 | 35 | 30                            | 38.3          | 47.6          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 7-Jun  | 24                            | 23 | 20 | 21 | 24 | 22 | A  | 26 | 35 | 37   | 41 | 45 | 44 | 45 | 46 | 47 | 46 | 46 | 46 | 47                              | 43 | 36 | 37 | 36                            | 36.5          | 47.0          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 8-Jun  | 33                            | 33 | 34 | 33 | 32 | A  | 18 | 15 | 31 | 38   | 35 | 40 | 43 | 43 | 38 | 40 | 41 | 40 | 38 | 36                              | 33 | 32 | 32 | 34                            | 34.4          | 42.9          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 9-Jun  | 31                            | 26 | 22 | 24 | A  | 26 | 29 | 21 | 23 | 23   | 22 | 28 | 38 | 39 | 39 | 36 | 33 | 29 | 30 | 27                              | 27 | 28 | 24 | 28.2                          | 39.4          |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 10-Jun   | 25                            | 25 | 23 | A  | 16 | 12 | 12 | 19 | 26 | 25   | 26 | 28 | C  | C  | C  | 31 | 30 | 29 | 28 | 27                              | 31 | 34 | 36 | 37                            | 26.0          | 36.6          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 11-Jun   | 36                            | 35 | A  | 29 | 28 | 27 | 25 | 24 | 24 | 25   | 18 | 22 | 29 | 27 | 28 | 28 | 28 | 30 | 27 | 25                              | 22 | 20 | 19 | 19                            | 25.9          | 36.1          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 12-Jun   | 17                            | A  | 14 | 14 | 15 | 15 | 16 | 19 | 25 | 26   | 29 | 32 | 32 | 31 | 35 | 40 | 39 | 37 | 34 | 32                              | 32 | 31 | 29 | 32                            | 27.2          | 40.5          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 13-Jun   | A                             | 32 | 29 | 28 | 29 | 30 | 29 | 32 | 33 | 33   | 38 | 41 | 40 | 42 | 42 | 42 | 43 | 43 | 42 | 42                              | 42 | 36 | 31 | A                             | 36.3          | 42.9          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 14-Jun   | 26                            | 28 | 26 | 22 | 23 | 23 | 20 | 22 | 25 | 32   | 37 | 37 | 38 | 37 | 38 | 37 | 38 | 39 | 37 | 36                              | 34 | 31 | A  | 31                            | 31.2          | 39.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 15-Jun   | 31                            | 39 | 36 | 36 | 36 | 31 | 29 | 25 | 22 | 24   | 23 | 23 | 22 | 21 | 21 | 21 | 21 | 22 | 22 | 22                              | 22 | A  | 21 | 21                            | 25.7          | 38.6          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 16-Jun   | 20                            | 20 | 19 | 19 | 18 | 17 | 17 | 18 | 18 | 21   | 22 | 21 | 24 | 23 | 22 | 22 | 22 | 21 | 22 | 22                              | A  | 24 | 24 | 23                            | 20.8          | 24.1          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 17-Jun   | 23                            | 23 | 23 | 23 | 21 | 18 | 14 | 18 | 19 | 22   | 25 | 28 | 28 | 28 | 28 | 29 | 29 | 30 | A  | 27                              | 25 | 24 | 22 | 22                            | 24.2          | 30.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 18-Jun   | 20                            | 20 | 18 | 16 | 16 | 14 | 16 | 19 | 20 | 23   | 24 | 25 | 27 | 28 | 30 | 31 | 32 | A  | 32 | 31                              | 26 | 37 | 36 | 25.0                          | 37.5          |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 19-Jun   | 33                            | 28 | 25 | 24 | 23 | 20 | 21 | 18 | 24 | 29   | 30 | 31 | 40 | 43 | 44 | 42 | 41 | A  | 40 | 40                              | 36 | 33 | 22 | 22                            | 30.7          | 44.0          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 20-Jun   | 24                            | 21 | 19 | 15 | 15 | 15 | 22 | 25 | 27 | 30   | 32 | 34 | 37 | 42 | 47 | 49 | A  | 46 | 44 | 42                              | 39 | 33 | 35 | 37                            | 31.7          | 49.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 21-Jun   | 36                            | 31 | 23 | 21 | 28 | 27 | 29 | 28 | 30 | 33   | 37 | 38 | 39 | 39 | 40 | A  | 42 | 38 | 37 | 35                              | 32 | 33 | 33 | 34                            | 33.2          | 42.1          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 22-Jun   | 33                            | 32 | 25 | 21 | 20 | 21 | 20 | 20 | 25 | 34   | 37 | 37 | 37 | 36 | A  | 37 | 35 | 34 | 35 | 33                              | 30 | 30 | 28 | 25                            | 29.6          | 37.4          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 23-Jun   | 20                            | 19 | 18 | 17 | 16 | 14 | 15 | 17 | 21 | 31   | 35 | 34 | 35 | A  | 41 | 43 | 41 | 40 | 37 | 32                              | 30 | 27 | 25 | 26                            | 27.6          | 43.4          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 24-Jun   | 25                            | 16 | 14 | 16 | 19 | 17 | 14 | 15 | 16 | 23   | 19 | 19 | A  | 29 | 31 | 33 | 32 | 34 | 27 | 25                              | 22 | 18 | 16 | 14                            | 21.5          | 33.6          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 25-Jun   | 13                            | 13 | 11 | 10 | 13 | 12 | 14 | 17 | 19 | 21   | 23 | A  | 25 | 25 | 26 | 26 | 27 | 28 | 27 | 26                              | 26 | 26 | 23 | 22                            | 20.6          | 28.4          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 26-Jun   | 22                            | 22 | 22 | 23 | 24 | 24 | 24 | 25 | 26 | 28   | A  | 32 | 33 | 36 | 34 | 34 | 33 | 32 | 31 | 30                              | 27 | 24 | 23 | 22                            | 27.4          | 35.9          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 27-Jun   | 17                            | 15 | 16 | 16 | 18 | 16 | 15 | 18 | 21 | A  | 27 | 32 | 34 | 36 | 36 | 37 | 39 | 40 | 41 | 43                              | 41 | 35 | 28 | 20                            | 27.9          | 42.5          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 28-Jun   | 18                            | 10 | 4  | 4  | 3  | 5  | 8  | 14 | A  | 35   | 47 | 48 | 43 | 44 | 45 | 47 | 47 | 41 | 39 | 36                              | 32 | 28 | 21 | 12                            | 27.5          | 47.9          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 29-Jun   | 11                            | 11 | 6  | 4  | 2  | 3  | 9  | A  | 29 | 34   | 34 | 34 | 37 | 35 | 39 | 38 | 40 | 37 | 44 | 45                              | 37 | 31 | 27 | 28                            | 26.7          | 44.8          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 30-Jun   | 31                            | 29 | 29 | 28 | 27 | 28 | A  | 26 | 32 | 31   | 28 | 29 | 34 | 39 | 38 | 42 | 42 | 42 | 43 | 42                              | 39 | 34 | 24 | 15                            | 32.7          | 42.8          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|  |                               |    |    |    |    |    |    |    |    |  |    |    |    |    |    |    |    |    |    |                                 |    |    |    | 26.0                          | 25.1          | 22.6          | 22.0 | 21.9 | 20.5 | 20.9 | 23.4 | 26.8 | 29.8 | 32.5 | 34.6 | 37.0 | 37.7 | 38.3 | 38.4 | 37.9 | 37.5 | 36.8 | 35.9 | 33.8 | 30.9 | 28.8 | 27.1 | Diurnal Average |
|  |                               |    |    |    |    |    |    |    |    |  |    |    |    |    |    |    |    |    |    |                                 |    |    |    | 41.6                          | 40.9          | 38.0          | 36.0 | 43.3 | 48.3 | 52.1 | 56.6 | 58.4 | 42.8 | 60.2 | 61.7 | 63.3 | 63.2 | 63.1 | 62.2 | 64.0 | 58.7 | 54.5 | 53.1 | 48.0 | 44.5 | 43.2 | 42.7 | Diurnal Maximum |
| C - Calibration  |                               |    |    |    |    |    |    |    |    |  |    |    |    |    |    |    |    |    |    |                                 |    |    |    | A - Automated Daily Zero Span |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82 ppb 24-hr na |                               |    |    |    |    |    |    |    |    |  |    |    |    |    |    |    |    |    |    |                                 |    |    |    |                               |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |



# Hourly Maximums

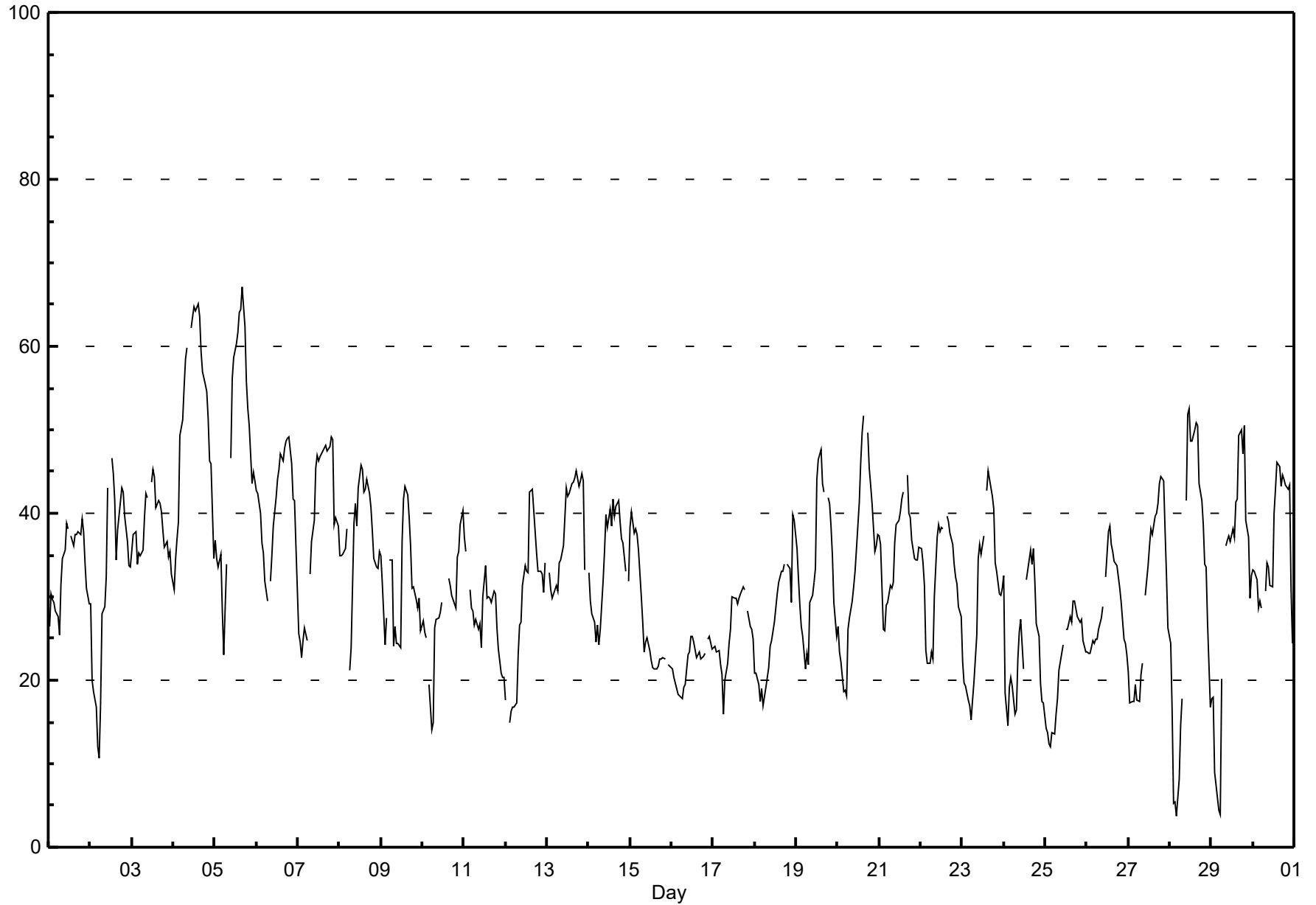
Ozone (O<sub>3</sub>) - ppb

Henry Pirker - June 2016

| Maximum Value: 67.1 ppb on Jun 5 17:00       |                               | Maximum Daily Average: 52.3 ppb on Jun 4   |      | Hours in Service: 720           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |
|--|-------------------------------|--|------|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------|-----------------|
| Minimum Value: 4 ppb on Jun 28 05:00         |                               | Minimum Daily Average: 22.0 ppb on Jun 25  |      | Hours of Data: 686              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |
| Maximum Diurnal Average: 40.9 ppb at hour 15 |                               | Minimum Diurnal Average: 23.1 ppb at hour 6  |      | Hours of Missing Data: 34       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |
| Monthly Average: 32.77 ppb                   |                               | Percentiles: P <sub>1</sub> = 7.9 P <sub>10</sub> = 19.5 Q <sub>1</sub> = 24.9 Median = 32.8 Q <sub>3</sub> = 39.5 P <sub>90</sub> = 45.4 P <sub>99</sub> = 63.5 |      | Hours of Calibration: 34        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |
|  |                               |  |      | Percent Operational Time: 100.0 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |
| Day  | Hourly Period Ending At (MST) |  |      |                                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Daily Average | Daily Maximum   |
|  | 1                             | 2  | 3    | 4                               | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |               |                 |
| 1-Jun  | 26                            | 30   | 30   | 29                              | 28   | 28   | 25   | 32   | 35   | 36   | 39   | 38   | A    | 37   | 36   | 37   | 37   | 38   | 37   | 39   | 38   | 34   | 31   | 29   | 33.5          | 39.3            |
| 2-Jun  | 29                            | 20   | 19   | 17                              | 12   | 11   | 17   | 28   | 29   | 32   | 43   | A    | 47   | 45   | 42   | 34   | 38   | 41   | 43   | 43   | 40   | 37   | 34   | 33   | 31.8          | 46.6            |
| 3-Jun  | 35                            | 38   | 38   | 34                              | 35   | 35   | 36   | 39   | 42   | 42   | A    | 44   | 45   | 44   | 41   | 41   | 41   | 40   | 38   | 36   | 37   | 35   | 35   | 33   | 38.4          | 45.2            |
| 4-Jun  | 31                            | 35   | 37   | 39                              | 49   | 51   | 55   | 58   | 60   | A    | 62   | 64   | 65   | 64   | 65   | 64   | 59   | 57   | 55   | 55   | 51   | 46   | 46   | 35   | 52.3          | 65.1            |
| 5-Jun  | 37                            | 35   | 34   | 35                              | 28   | 23   | 29   | 34   | A    | 47   | 56   | 59   | 60   | 62   | 64   | 64   | 67   | 62   | 56   | 53   | 50   | 44   | 45   | 44   | 47.2          | 67.1            |
| 6-Jun  | 43                            | 42   | 40   | 36                              | 35   | 32   | 30   | A    | 32   | 35   | 38   | 42   | 44   | 45   | 47   | 46   | 48   | 49   | 49   | 49   | 46   | 42   | 42   | 36   | 41.2          | 49.1            |
| 7-Jun  | 26                            | 25   | 23   | 25                              | 26   | 25   | A    | 33   | 37   | 39   | 45   | 47   | 46   | 47   | 48   | 48   | 48   | 47   | 48   | 49   | 49   | 39   | 40   | 39   | 39.0          | 49.1            |
| 8-Jun  | 35                            | 35   | 35   | 36                              | 38   | A    | 21   | 24   | 39   | 41   | 38   | 43   | 46   | 45   | 43   | 43   | 44   | 42   | 41   | 38   | 35   | 34   | 33   | 35   | 37.6          | 45.7            |
| 9-Jun  | 35                            | 32   | 24   | 28                              | A    | 34   | 34   | 24   | 26   | 24   | 24   | 24   | 37   | 42   | 43   | 42   | 40   | 36   | 31   | 31   | 30   | 29   | 30   | 26   | 31.6          | 43.2            |
| 10-Jun                                       | 27                            | 26   | 25   | A                               | 20   | 14   | 15   | 26   | 27   | 27   | 28   | 29   | C    | C    | C    | 32   | 31   | 30   | 29   | 29   | 35   | 35   | 39   | 40   | 28.3          | 40.4            |
| 11-Jun                                       | 37                            | 35   | A    | 31                              | 29   | 28   | 27   | 27   | 26   | 27   | 24   | 30   | 34   | 30   | 30   | 30   | 29   | 31   | 30   | 26   | 24   | 21   | 20   | 20   | 28.1          | 37.1            |
| 12-Jun                                       | 18                            | A  | 15   | 16                              | 17   | 17   | 17   | 23   | 27   | 27   | 31   | 34   | 33   | 33   | 43   | 43   | 40   | 38   | 35   | 33   | 33   | 33   | 31   | 34   | 29.1          | 42.8            |
| 13-Jun                                       | A                             | 33   | 31   | 30                              | 30   | 31   | 31   | 34   | 34   | 36   | 40   | 43   | 42   | 42   | 44   | 44   | 44   | 45   | 43   | 44   | 45   | 44   | 33   | A    | 38.3          | 45.1            |
| 14-Jun                                       | 33                            | 30   | 28   | 27                              | 25   | 27   | 24   | 26   | 32   | 35   | 40   | 38   | 41   | 38   | 42   | 40   | 41   | 42   | 39   | 37   | 36   | 33   | A    | 32   | 34.1          | 41.7            |
| 15-Jun                                       | 38                            | 40   | 38   | 38                              | 38   | 36   | 30   | 27   | 23   | 25   | 25   | 24   | 22   | 22   | 21   | 21   | 22   | 23   | 23   | 23   | 23   | A    | 22   | 22   | 27.1          | 40.1            |
| 16-Jun                                       | 21                            | 20   | 20   | 19                              | 18   | 18   | 18   | 19   | 20   | 23   | 23   | 25   | 25   | 25   | 23   | 23   | 23   | 23   | 23   | 23   | A    | 25   | 25   | 24   | 22.0          | 25.3            |
| 17-Jun                                       | 24                            | 24   | 23   | 24                              | 22   | 21   | 16   | 20   | 22   | 24   | 26   | 30   | 30   | 30   | 29   | 30   | 30   | 31   | 31   | A    | 28   | 26   | 26   | 25   | 25.8          | 31.1            |
| 18-Jun                                       | 21                            | 21   | 20   | 18                              | 19   | 17   | 19   | 20   | 22   | 24   | 25   | 27   | 29   | 30   | 32   | 33   | 33   | 34   | A    | 34   | 33   | 29   | 40   | 39   | 26.8          | 39.8            |
| 19-Jun                                       | 36                            | 32   | 29   | 26                              | 25   | 21   | 23   | 22   | 29   | 30   | 32   | 33   | 44   | 46   | 48   | 44   | 43   | A    | 42   | 41   | 38   | 35   | 29   | 25   | 33.7          | 47.7            |
| 20-Jun                                       | 26                            | 23   | 22   | 19                              | 19   | 18   | 26   | 27   | 29   | 31   | 33   | 36   | 41   | 46   | 50   | 52   | A    | 50   | 45   | 43   | 41   | 35   | 36   | 37   | 34.3          | 51.7            |
| 21-Jun                                       | 37                            | 36   | 26   | 26                              | 29   | 29   | 31   | 31   | 32   | 36   | 39   | 39   | 40   | 42   | 43   | A    | 45   | 40   | 39   | 37   | 35   | 34   | 34   | 36   | 35.5          | 44.6            |
| 22-Jun                                       | 36                            | 34   | 31   | 24                              | 22   | 22   | 23   | 23   | 30   | 37   | 39   | 38   | 38   | 38   | A    | 40   | 39   | 38   | 36   | 34   | 32   | 32   | 29   | 28   | 32.2          | 39.6            |
| 23-Jun                                       | 22                            | 20   | 19   | 18                              | 17   | 15   | 18   | 20   | 25   | 35   | 36   | 35   | 37   | A    | 43   | 45   | 44   | 42   | 40   | 34   | 33   | 30   | 30   | 31   | 30.0          | 45.0            |
| 24-Jun                                       | 33                            | 18   | 15   | 19                              | 20   | 19   | 16   | 16   | 23   | 26   | 27   | 21   | A    | 32   | 33   | 36   | 34   | 36   | 32   | 27   | 25   | 20   | 17   | 17   | 24.4          | 35.7            |
| 25-Jun                                       | 14                            | 14   | 12   | 12                              | 14   | 14   | 16   | 18   | 21   | 23   | 24   | A    | 26   | 26   | 28   | 27   | 29   | 30   | 28   | 27   | 27   | 27   | 25   | 23   | 22.0          | 29.5            |
| 26-Jun                                       | 23                            | 23   | 23   | 25                              | 24   | 25   | 25   | 26   | 27   | 29   | A    | 32   | 38   | 38   | 36   | 35   | 34   | 34   | 32   | 31   | 29   | 25   | 24   | 23   | 28.9          | 38.4            |
| 27-Jun                                       | 21                            | 17   | 18   | 18                              | 20   | 18   | 18   | 21   | 22   | A    | 30   | 34   | 36   | 38   | 37   | 40   | 40   | 41   | 44   | 44   | 44   | 38   | 33   | 26   | 30.3          | 44.4            |
| 28-Jun                                       | 24                            | 16   | 5    | 6                               | 4    | 8    | 15   | 18   | A    | 42   | 52   | 53   | 49   | 49   | 50   | 51   | 50   | 43   | 42   | 39   | 34   | 33   | 27   | 17   | 31.5          | 52.5            |
| 29-Jun                                       | 18                            | 18   | 9    | 6                               | 4    | 4    | 20   | A    | 36   | 37   | 37   | 37   | 38   | 37   | 41   | 42   | 49   | 50   | 47   | 51   | 39   | 37   | 30   | 32   | 31.3          | 50.6            |
| 30-Jun                                       | 33                            | 33   | 32   | 29                              | 30   | 29   | A    | 31   | 34   | 34   | 31   | 31   | 40   | 43   | 46   | 46   | 43   | 45   | 44   | 43   | 43   | 43   | 31   | 24   | 36.4          | 46.1            |
|  |                               | 29.0   | 27.8 | 24.8                            | 24.4 | 24.0 | 23.1 | 24.1 | 26.7 | 30.0 | 32.3 | 35.3 | 36.8 | 39.7 | 39.9 | 40.9 | 40.4 | 40.3 | 39.9 | 38.7 | 37.7 | 36.3 | 33.6 | 31.6 | 29.9          | Diurnal Average |
|  |                               | 42.7   | 42.4 | 40.0                            | 38.9 | 49.3 | 51.1 | 55.0 | 58.4 | 59.9 | 46.7 | 62.2 | 63.6 | 64.8 | 64.3 | 65.1 | 64.4 | 67.1 | 62.3 | 55.8 | 54.6 | 51.4 | 46.3 | 46.0 | 43.8          | Diurnal Maximum |
| C - Calibration                              |                               | A - Automated Daily Zero Span  |      |                                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |

**Hourly Maximums**

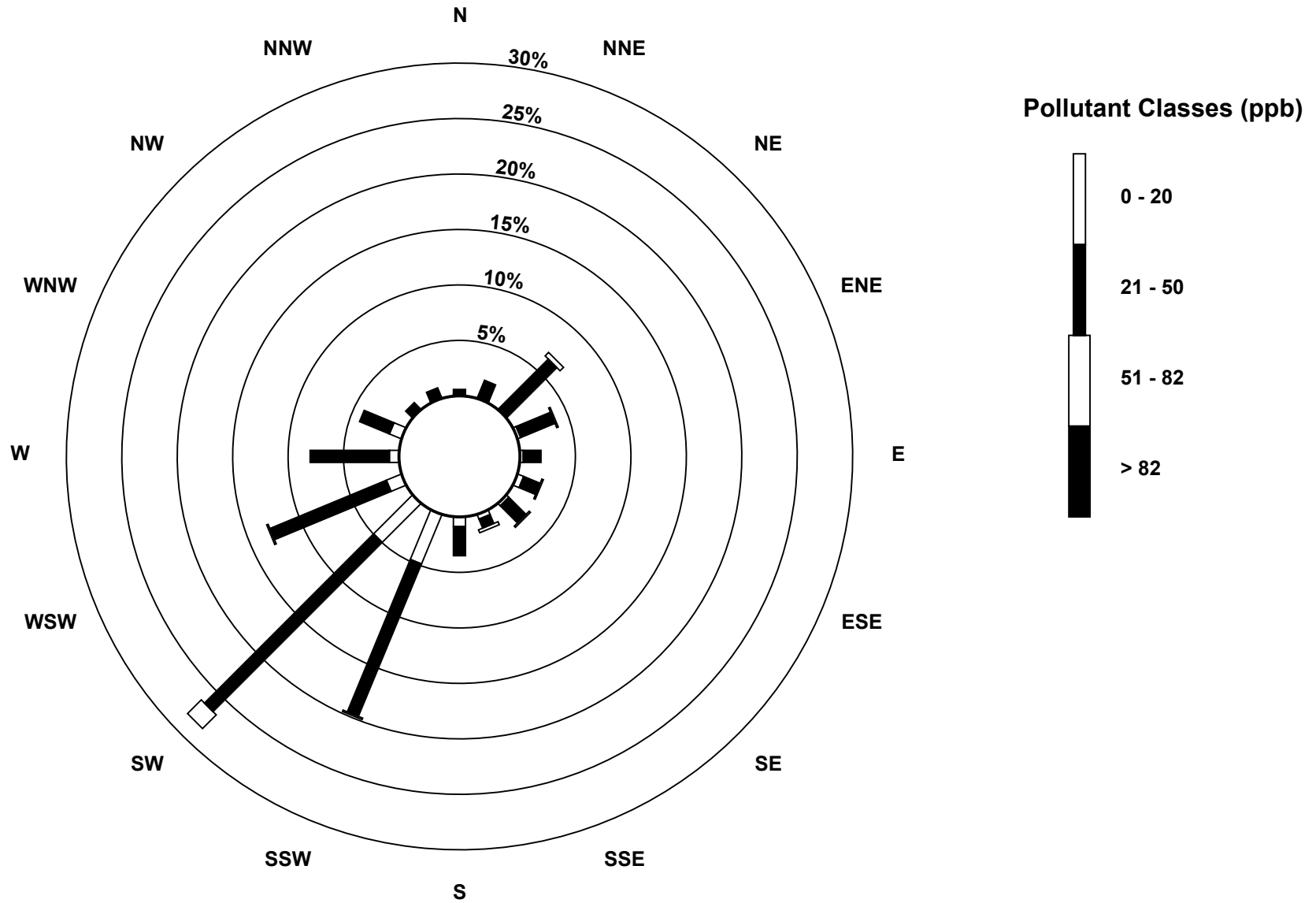
**Ozone (O<sub>3</sub>) - ppb**  
**Henry Pirker - June 2016**





**Pollutant Rose**

Ozone (O<sub>3</sub>) - ppb  
Henry Pirker - June 2016



# Eight Hour Running Averages

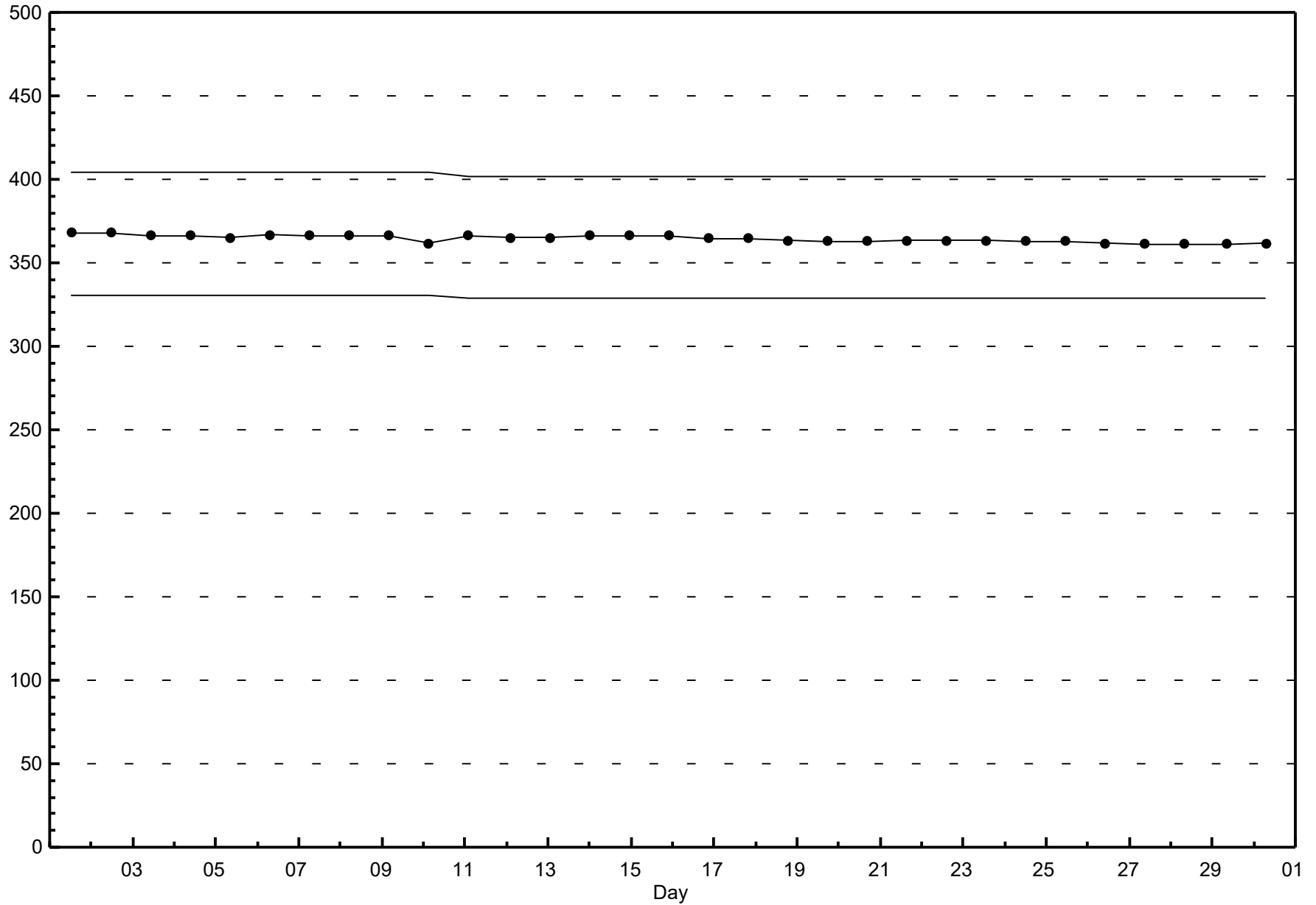
Ozone (O<sub>3</sub>) - ppb

Henry Pirker - June 2016

| Maximum Value: 61.6 ppb on Jun 4 16:00   |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Hours in Service:         | 720   |    |               |
|--|-------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------------------|-------|----|---------------|
| Minimum Value: 6.5 ppb on Jun 29 08:00   |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Hours of Data:            | 714   |    |               |
| Percentiles: P <sub>1</sub> = 9.8 P <sub>10</sub> = 19.2 Q <sub>1</sub> = 23.7 Median = 29.9 Q <sub>3</sub> = 35.9 P <sub>90</sub> = 40.9 P <sub>99</sub> = 59.3 |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Hours of Missing Data:    | 6     |    |               |
|  |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Hours of Calibration:     | 6     |    |               |
|  |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Percent Operational Time: | 100.0 |    |               |
| Day  | Hourly Period Ending At (MST) |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                           |       |    | Daily Maximum |
|  | 1                             | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22                        | 23    | 24 |               |
| 1-Jun  | 29                            | 27 | 26 | 26 | 24 | 24 | 24 | 25 | 26 | 27 | 29 | 30 | 30 | 32 | 33 | 35 | 36 | 36 | 36 | 36 | 36 | 35                        | 35    | 33 | 36.0          |
| 2-Jun  | 32                            | 29 | 27 | 24 | 21 | 18 | 16 | 15 | 15 | 17 | 20 | 20 | 25 | 30 | 33 | 35 | 36 | 38 | 38 | 39 | 38 | 37                        | 36    | 36 | 38.6          |
| 3-Jun  | 37                            | 36 | 35 | 34 | 33 | 33 | 33 | 34 | 34 | 35 | 35 | 37 | 38 | 40 | 41 | 41 | 41 | 41 | 40 | 39 | 38 | 37                        | 36    | 35 | 41.3          |
| 4-Jun  | 34                            | 33 | 33 | 33 | 34 | 36 | 38 | 41 | 45 | 47 | 51 | 54 | 57 | 59 | 61 | 62 | 61 | 61 | 60 | 59 | 57 | 55                        | 52    | 48 | 61.6          |
| 5-Jun  | 45                            | 42 | 39 | 37 | 33 | 30 | 28 | 28 | 27 | 29 | 31 | 35 | 40 | 46 | 52 | 56 | 57 | 59 | 59 | 59 | 57 | 55                        | 52    | 50 | 59.5          |
| 6-Jun  | 47                            | 45 | 43 | 41 | 39 | 38 | 35 | 34 | 32 | 31 | 31 | 31 | 33 | 35 | 38 | 38 | 41 | 43 | 44 | 45 | 45 | 45                        | 43    | 42 | 47.1          |
| 7-Jun  | 39                            | 36 | 33 | 29 | 27 | 25 | 23 | 23 | 25 | 27 | 30 | 33 | 36 | 39 | 40 | 43 | 44 | 45 | 46 | 46 | 46 | 45                        | 43    | 42 | 45.9          |
| 8-Jun  | 40                            | 39 | 37 | 36 | 34 | 34 | 31 | 28 | 28 | 29 | 30 | 31 | 33 | 35 | 39 | 40 | 40 | 40 | 40 | 39 | 37 | 37                        | 36    | 36 | 40.5          |
| 9-Jun  | 34                            | 33 | 31 | 29 | 29 | 28 | 27 | 26 | 24 | 24 | 24 | 24 | 26 | 27 | 29 | 31 | 32 | 33 | 34 | 34 | 33 | 31                        | 29    | 29 | 34.4          |
| 10-Jun   | 28                            | 27 | 26 | 26 | 24 | 22 | 20 | 19 | 19 | 19 | 20 | 21 | 21 | 23 | N  | N  | N  | N  | N  | N  | 29 | 30                        | 31    | 31 | 31.4          |
| 11-Jun   | 32                            | 33 | 34 | 34 | 34 | 32 | 31 | 29 | 28 | 26 | 25 | 24 | 24 | 24 | 25 | 25 | 26 | 26 | 27 | 28 | 27 | 26                        | 25    | 24 | 34.0          |
| 12-Jun   | 22                            | 21 | 19 | 18 | 17 | 16 | 16 | 16 | 17 | 18 | 20 | 22 | 24 | 26 | 29 | 31 | 33 | 34 | 35 | 35 | 35 | 35                        | 34    | 33 | 35.1          |
| 13-Jun   | 33                            | 32 | 31 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 32 | 33 | 34 | 36 | 38 | 39 | 40 | 41 | 42 | 42 | 42 | 42                        | 40    | 40 | 42.3          |
| 14-Jun   | 38                            | 35 | 33 | 30 | 28 | 26 | 24 | 24 | 24 | 24 | 26 | 27 | 29 | 31 | 33 | 35 | 37 | 38 | 38 | 38 | 37 | 36                        | 36    | 35 | 37.7          |
| 15-Jun   | 34                            | 34 | 34 | 34 | 34 | 34 | 34 | 33 | 32 | 30 | 28 | 27 | 25 | 24 | 23 | 22 | 22 | 22 | 22 | 21 | 21 | 22                        | 22    | 22 | 34.3          |
| 16-Jun   | 22                            | 21 | 21 | 20 | 20 | 19 | 19 | 19 | 18 | 18 | 19 | 19 | 20 | 21 | 21 | 22 | 22 | 22 | 22 | 22 | 22 | 22                        | 22    | 22 | 22.4          |
| 17-Jun   | 23                            | 23 | 23 | 23 | 23 | 22 | 21 | 20 | 20 | 20 | 20 | 20 | 21 | 23 | 25 | 26 | 27 | 28 | 29 | 29 | 29 | 28                        | 28    | 27 | 29.0          |
| 18-Jun   | 26                            | 24 | 22 | 22 | 20 | 19 | 18 | 17 | 17 | 18 | 19 | 20 | 21 | 23 | 25 | 26 | 28 | 29 | 29 | 30 | 31 | 31                        | 32    | 32 | 32.4          |
| 19-Jun   | 33                            | 32 | 31 | 30 | 29 | 28 | 26 | 24 | 23 | 23 | 24 | 26 | 29 | 32 | 35 | 37 | 39 | 39 | 40 | 41 | 41 | 39                        | 36    | 33 | 41.3          |
| 20-Jun   | 31                            | 30 | 27 | 24 | 21 | 19 | 19 | 20 | 20 | 21 | 23 | 25 | 28 | 31 | 34 | 37 | 39 | 41 | 43 | 44 | 44 | 43                        | 41    | 39 | 44.0          |
| 21-Jun   | 39                            | 37 | 34 | 32 | 30 | 30 | 29 | 28 | 27 | 27 | 29 | 31 | 32 | 34 | 36 | 37 | 38 | 39 | 39 | 39 | 38 | 37                        | 36    | 36 | 39.1          |
| 22-Jun   | 34                            | 34 | 32 | 30 | 29 | 27 | 26 | 24 | 23 | 23 | 25 | 27 | 29 | 31 | 32 | 35 | 36 | 36 | 36 | 35 | 34 | 33                        | 33    | 31 | 36.2          |
| 23-Jun   | 29                            | 27 | 25 | 23 | 21 | 19 | 18 | 17 | 17 | 19 | 21 | 23 | 25 | 27 | 31 | 34 | 37 | 39 | 39 | 38 | 38 | 36                        | 34    | 32 | 38.8          |
| 24-Jun   | 30                            | 27 | 24 | 22 | 21 | 20 | 18 | 17 | 16 | 17 | 17 | 18 | 17 | 19 | 22 | 24 | 27 | 28 | 29 | 30 | 29 | 28                        | 26    | 24 | 30.2          |
| 25-Jun   | 21                            | 19 | 17 | 15 | 14 | 13 | 12 | 13 | 13 | 14 | 16 | 17 | 19 | 21 | 22 | 24 | 25 | 26 | 27 | 27 | 27 | 26                        | 26    | 26 | 26.6          |
| 26-Jun   | 25                            | 24 | 24 | 23 | 23 | 23 | 23 | 23 | 24 | 24 | 25 | 26 | 27 | 29 | 30 | 32 | 33 | 33 | 33 | 33 | 32 | 31                        | 29    | 28 | 33.4          |
| 27-Jun   | 26                            | 24 | 22 | 20 | 19 | 18 | 17 | 17 | 17 | 17 | 19 | 21 | 23 | 26 | 29 | 32 | 35 | 35 | 37 | 38 | 39 | 39                        | 38    | 36 | 39.1          |
| 28-Jun   | 33                            | 30 | 25 | 20 | 15 | 12 | 9  | 8  | 7  | 10 | 16 | 23 | 29 | 34 | 39 | 44 | 44 | 45 | 44 | 43 | 41 | 39                        | 36    | 32 | 45.2          |
| 29-Jun   | 28                            | 24 | 20 | 16 | 12 | 9  | 7  | 7  | 9  | 12 | 16 | 21 | 26 | 30 | 35 | 35 | 36 | 37 | 38 | 39 | 39 | 39                        | 37    | 36 | 39.4          |
| 30-Jun   | 35                            | 34 | 32 | 30 | 29 | 28 | 29 | 28 | 28 | 29 | 29 | 29 | 30 | 31 | 32 | 34 | 35 | 37 | 39 | 40 | 41 | 40                        | 38    | 35 | 40.9          |
| 47.1 44.9 43.0 40.8 39.1 37.5 37.9 41.1 44.8 46.7 50.5 54.4 57.2 59.4 60.9 61.6 61.4 60.6 59.8 58.8 57.1 54.7 52.4 49.9  |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                           |       |    |               |
| Diurnal Maximums   |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                           |       |    |               |
| N - Not Valid  |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                           |       |    |               |

### Span Responses

Ozone (O<sub>3</sub>)  
Henry Pirker - June 2016



# Hourly Averages

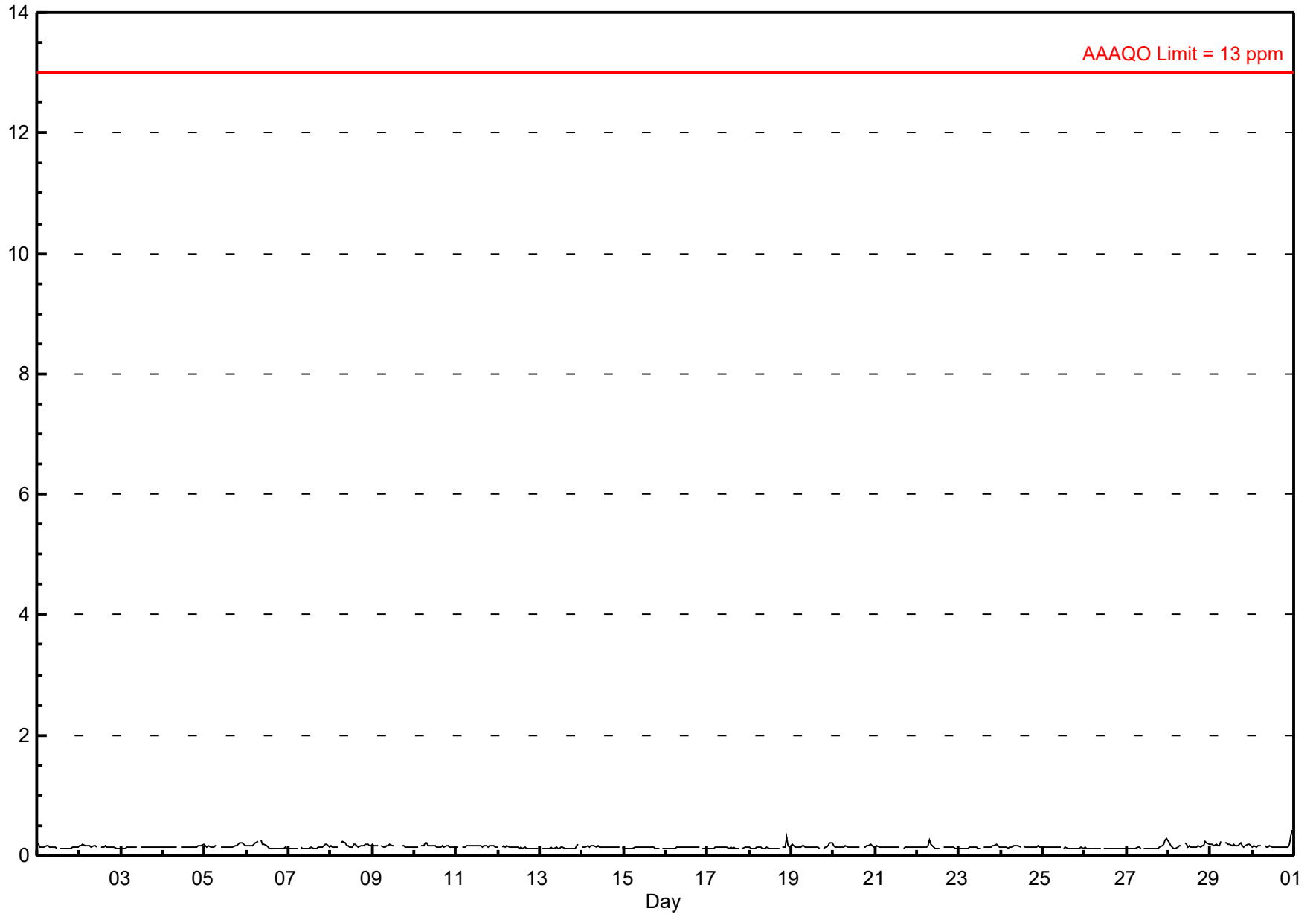
Carbon Monoxide (CO) - ppm

Henry Pirker - June 2016

| Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0<br>Maximum Value: 0.42 ppm on Jul 1 00:00<br>Maximum Daily Average: 0.18 ppm on Jun 29     |                               | Hours in Service: 720<br>Hours of Data: 685<br>Hours of Missing Data: 35<br>Hours of Calibration: 35<br>Percent Operational Time: 100.0  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|--|-------------------------------|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|---------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|
| Minimum Value: 0.1 ppm on Jun 26 14:00<br>Maximum Diurnal Average: 0.17 ppm at hour 23<br>Monthly Average: 0.147 ppm                       |                               | Minimum Daily Average: 0.11 ppm on Jun 26<br>Minimum Diurnal Average: 0.14 ppm at hour 17<br>Percentiles: P <sub>1</sub> = 0.11 P <sub>10</sub> = 0.12 Q <sub>1</sub> = 0.13 Median = 0.14 Q <sub>3</sub> = 0.16 P <sub>90</sub> = 0.17 P <sub>99</sub> = 0.25 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Day  | Hourly Period Ending At (MST) |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      | Daily Average | Daily Maximum |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|  | 1                             | 2  | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24   |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 1-Jun  | 0.2                           | 0.1  | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | A   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1  | 0.1           | 0.14          | 0.21 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 2-Jun  | 0.2                           | 0.2  | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.1 | A   | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1  | 0.1           | 0.15          | 0.18 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 3-Jun  | 0.1                           | 0.1  | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | A   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1  | 0.1           | 0.14          | 0.15 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 4-Jun  | 0.1                           | 0.1  | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | A   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2  | 0.2           | 0.15          | 0.19 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 5-Jun  | 0.2                           | 0.2  | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | A   | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2  | 0.2           | 0.16          | 0.21 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 6-Jun  | 0.2                           | 0.2  | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | A   | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2  | 0.1           | 0.16          | 0.25 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 7-Jun  | 0.1                           | 0.1  | 0.1 | 0.1 | 0.1 | 0.1 | A   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2  | 0.2           | 0.14          | 0.20 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 8-Jun  | 0.2                           | 0.2  | 0.1 | 0.1 | 0.2 | A   | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2  | 0.2           | 0.17          | 0.25 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 9-Jun  | 0.2                           | 0.2  | 0.2 | 0.2 | A   | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | C   | C   | C   | C   | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1  | 0.16          | 0.18          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 10-Jun   | 0.1                           | 0.2  | 0.1 | A   | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.1 | 0.2 | 0.1 | 0.1  | 0.16          | 0.22          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 11-Jun   | 0.2                           | 0.1  | A   | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1  | 0.1           | 0.15          | 0.17 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 12-Jun   | 0.1                           | A  | 0.1 | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1  | 0.1           | 0.14          | 0.17 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 13-Jun   | A                             | 0.1  | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2  | A             | 0.13          | 0.19 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 14-Jun   | 0.1                           | 0.1  | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | A    | 0.1           | 0.15          | 0.17 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 15-Jun   | 0.1                           | 0.1  | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | A   | 0.1 | 0.1  | 0.13          | 0.14          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 16-Jun   | 0.1                           | 0.1  | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | A   | 0.1 | 0.1 | 0.1  | 0.14          | 0.15          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 17-Jun   | 0.1                           | 0.1  | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | A   | 0.1 | 0.1 | 0.1  | 0.13          | 0.15          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 18-Jun   | 0.1                           | 0.1  | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | A   | 0.1 | 0.2 | 0.3 | 0.2  | 0.2           | 0.14          | 0.31 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 19-Jun   | 0.2                           | 0.2  | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | A   | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2  | 0.2           | 0.15          | 0.21 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 20-Jun   | 0.2                           | 0.1  | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | A   | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2  | 0.15          | 0.20          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 21-Jun   | 0.1                           | 0.2  | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | A   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1  | 0.14          | 0.16          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 22-Jun   | 0.1                           | 0.1  | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | A   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1  | 0.14          | 0.26          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 23-Jun   | 0.1                           | 0.1  | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | A   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1  | 0.14          | 0.18          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 24-Jun   | 0.1                           | 0.1  | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | A   | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 | 0.1  | 0.15          | 0.17          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 25-Jun   | 0.1                           | 0.1  | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | A   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1  | 0.13          | 0.14          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 26-Jun   | 0.1                           | 0.1  | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | A   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1  | 0.11          | 0.13          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 27-Jun   | 0.1                           | 0.1  | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | A   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3  | 0.3           | 0.14          | 0.28 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 28-Jun   | 0.2                           | 0.2  | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | A   | 0.2 | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2  | 0.16          | 0.23          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 29-Jun   | 0.2                           | 0.2  | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | A   | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2  | 0.18          | 0.23          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 30-Jun   | 0.2                           | 0.2  | 0.2 | 0.2 | 0.2 | 0.2 | A   | 0.2 | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 | 0.3  | 0.4           | 0.17          | 0.42 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|  |                               |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 0.15 | 0.14          | 0.14          | 0.14 | 0.14 | 0.15 | 0.16 | 0.15 | 0.15 | 0.15 | 0.15 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.15 | 0.16 | 0.17 | 0.16 | Diurnal Average |
|  |                               |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 0.22 | 0.20          | 0.18          | 0.18 | 0.18 | 0.21 | 0.24 | 0.26 | 0.25 | 0.22 | 0.19 | 0.19 | 0.17 | 0.18 | 0.18 | 0.17 | 0.17 | 0.21 | 0.17 | 0.18 | 0.21 | 0.31 | 0.32 | 0.42 | Diurnal Maximum |
| C - Calibration                      A - Automated Daily Zero Span<br>Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 13 ppm 24-hr na |                               |  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |

**Hourly Averages**

**Carbon Monoxide (CO) - ppm**  
**Henry Pirker - June 2016**



# Hourly Maximums

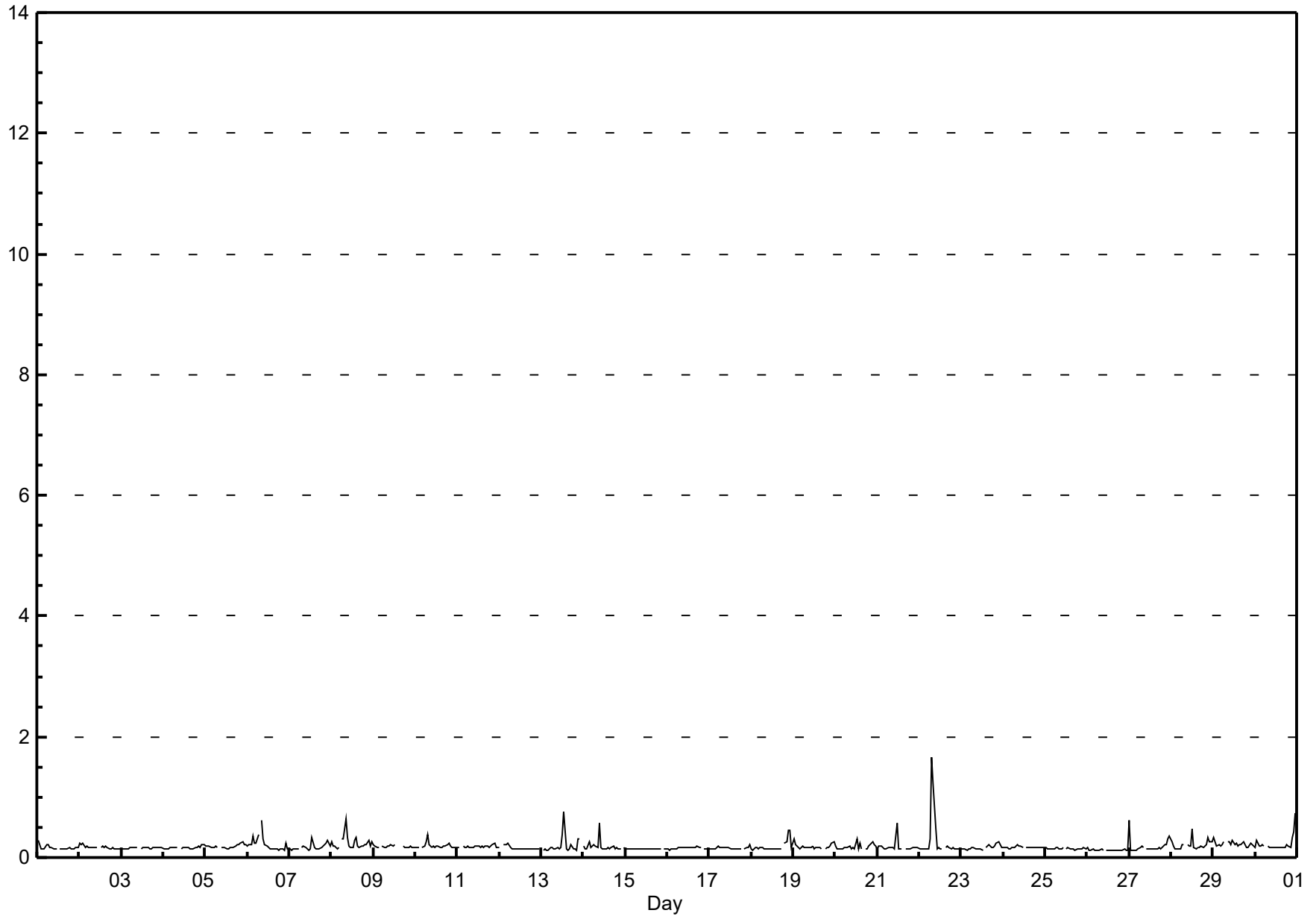
Carbon Monoxide (CO) - ppm

Henry Pirker - June 2016

| Maximum Value: 1.67 ppm on Jun 22 08:00     |                               | Maximum Daily Average: 0.28 ppm on Jun 22   |      | Hours in Service: 720           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
|---|-------------------------------|---|------|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------|-----------------|--|
| Minimum Value: 0.1 ppm on Jun 27 05:00      |                               | Minimum Daily Average: 0.13 ppm on Jun 26   |      | Hours of Data: 685              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
| Maximum Diurnal Average: 0.24 ppm at hour 9 |                               | Minimum Diurnal Average: 0.16 ppm at hour 16  |      | Hours of Missing Data: 35       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
| Monthly Average: 0.182 ppm                  |                               | Percentiles: P <sub>1</sub> = 0.12 P <sub>10</sub> = 0.14 Q <sub>1</sub> = 0.15 Median = 0.16 Q <sub>3</sub> = 0.18 P <sub>90</sub> = 0.23 P <sub>99</sub> = 0.62 |      | Hours of Calibration: 35        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
|   |                               |   |      | Percent Operational Time: 100.0 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
| Day   | Hourly Period Ending At (MST) |   |      |                                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Daily Average | Daily Maximum   |  |
|   | 1                             | 2   | 3    | 4                               | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |               |                 |  |
| 1-Jun                                       | 0.3                           | 0.2   | 0.2  | 0.1                             | 0.1  | 0.2  | 0.2  | 0.2  | 0.2  | 0.1  | 0.1  | 0.1  | A    | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.2  | 0.1  | 0.1  | 0.2  | 0.2  | 0.2  | 0.16          | 0.28            |  |
| 2-Jun                                       | 0.2                           | 0.2   | 0.2  | 0.2                             | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | A    | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.1  | 0.1  | 0.2  | 0.1  | 0.1  | 0.1  | 0.17          | 0.25            |  |
| 3-Jun                                       | 0.1                           | 0.1   | 0.1  | 0.1                             | 0.1  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | A    | 0.1  | 0.2  | 0.2  | 0.2  | 0.1  | 0.1  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.15          | 0.17            |  |
| 4-Jun                                       | 0.1                           | 0.2   | 0.1  | 0.1                             | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | A    | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.16          | 0.21            |  |
| 5-Jun                                       | 0.2                           | 0.2   | 0.2  | 0.2                             | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | A    | 0.2  | 0.2  | 0.2  | 0.1  | 0.1  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.18          | 0.26            |  |
| 6-Jun                                       | 0.2                           | 0.2   | 0.2  | 0.4                             | 0.2  | 0.2  | 0.4  | A    | 0.6  | 0.3  | 0.2  | 0.2  | 0.2  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.2  | 0.22          | 0.63            |  |
| 7-Jun                                       | 0.1                           | 0.1   | 0.1  | 0.1                             | 0.1  | 0.1  | A    | 0.2  | 0.2  | 0.2  | 0.1  | 0.1  | 0.1  | 0.3  | 0.2  | 0.1  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.17          | 0.34            |  |
| 8-Jun                                       | 0.3                           | 0.2   | 0.2  | 0.2                             | 0.2  | A    | 0.3  | 0.3  | 0.6  | 0.3  | 0.2  | 0.2  | 0.2  | 0.3  | 0.3  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.3  | 0.2  | 0.3  | 0.24          | 0.64            |  |
| 9-Jun                                       | 0.2                           | 0.2   | 0.2  | 0.2                             | A    | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | C    | C    | C    | C    | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.18          | 0.22            |  |
| 10-Jun                                      | 0.2                           | 0.2   | 0.2  | A                               | 0.2  | 0.2  | 0.3  | 0.4  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.19          | 0.38            |  |
| 11-Jun                                      | 0.2                           | 0.2   | A    | 0.2                             | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.18          | 0.23            |  |
| 12-Jun                                      | 0.2                           | A   | 0.2  | 0.2                             | 0.2  | 0.2  | 0.2  | 0.1  | 0.1  | 0.2  | 0.2  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.16          | 0.23            |  |
| 13-Jun                                      | A                             | 0.1   | 0.1  | 0.1                             | 0.1  | 0.2  | 0.2  | 0.1  | 0.1  | 0.2  | 0.1  | 0.2  | 0.4  | 0.8  | 0.1  | 0.1  | 0.1  | 0.2  | 0.1  | 0.1  | 0.1  | 0.3  | 0.3  | A    | 0.20          | 0.76            |  |
| 14-Jun                                      | 0.2                           | 0.2   | 0.1  | 0.3                             | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.6  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.1  | A    | 0.2  | 0.19          | 0.56            |  |
| 15-Jun                                      | 0.1                           | 0.1   | 0.1  | 0.1                             | 0.1  | 0.1  | 0.1  | 0.2  | 0.1  | 0.2  | 0.2  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | A    | 0.1  | 0.1  | 0.14          | 0.15            |  |
| 16-Jun                                      | 0.1                           | 0.1   | 0.1  | 0.1                             | 0.1  | 0.1  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | A    | 0.1  | 0.1  | 0.15          | 0.18            |  |
| 17-Jun                                      | 0.1                           | 0.2   | 0.1  | 0.1                             | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | A    | 0.1  | 0.2  | 0.2  | 0.15          | 0.20            |  |
| 18-Jun                                      | 0.1                           | 0.1   | 0.2  | 0.2                             | 0.2  | 0.2  | 0.2  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | A    | 0.2  | 0.3  | 0.5  | 0.4  | 0.2  | 0.18          | 0.46            |  |
| 19-Jun                                      | 0.3                           | 0.2   | 0.2  | 0.2                             | 0.1  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.1  | 0.2  | 0.2  | 0.2  | 0.1  | A    | 0.1  | 0.2  | 0.2  | 0.2  | 0.2  | 0.3  | 0.2  | 0.18          | 0.30            |  |
| 20-Jun                                      | 0.2                           | 0.2   | 0.2  | 0.2                             | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.3  | 0.2  | 0.2  | 0.2  | A    | 0.2  | 0.2  | 0.2  | 0.2  | 0.3  | 0.2  | 0.2  | 0.18          | 0.32            |  |
| 21-Jun                                      | 0.2                           | 0.2   | 0.2  | 0.2                             | 0.1  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.1  | 0.6  | 0.1  | 0.1  | 0.1  | A    | 0.1  | 0.1  | 0.1  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.18          | 0.57            |  |
| 22-Jun                                      | 0.1                           | 0.1   | 0.1  | 0.1                             | 0.1  | 0.2  | 0.3  | 1.7  | 1.2  | 0.5  | 0.1  | 0.2  | 0.1  | 0.2  | A    | 0.2  | 0.2  | 0.2  | 0.1  | 0.2  | 0.1  | 0.1  | 0.1  | 0.1  | 0.28          | 1.67            |  |
| 23-Jun                                      | 0.1                           | 0.1   | 0.1  | 0.1                             | 0.1  | 0.1  | 0.2  | 0.2  | 0.2  | 0.1  | 0.1  | 0.1  | 0.1  | A    | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.3  | 0.2  | 0.2  | 0.16          | 0.26            |  |
| 24-Jun                                      | 0.2                           | 0.2   | 0.2  | 0.1                             | 0.1  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | A    | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.17          | 0.20            |  |
| 25-Jun                                      | 0.2                           | 0.1   | 0.1  | 0.1                             | 0.1  | 0.2  | 0.2  | 0.2  | 0.1  | 0.1  | 0.2  | A    | 0.1  | 0.2  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.2  | 0.1  | 0.15          | 0.17            |  |
| 26-Jun                                      | 0.2                           | 0.1   | 0.1  | 0.1                             | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | A    | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  | 0.13          | 0.17            |  |
| 27-Jun                                      | 0.6                           | 0.1   | 0.1  | 0.1                             | 0.1  | 0.1  | 0.2  | 0.2  | 0.2  | A    | 0.1  | 0.1  | 0.1  | 0.2  | 0.1  | 0.1  | 0.1  | 0.1  | 0.2  | 0.2  | 0.2  | 0.2  | 0.3  | 0.4  | 0.19          | 0.62            |  |
| 28-Jun                                      | 0.3                           | 0.2   | 0.2  | 0.1                             | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | A    | 0.2  | 0.2  | 0.2  | 0.5  | 0.2  | 0.1  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.3  | 0.2  | 0.21          | 0.48            |  |
| 29-Jun                                      | 0.3                           | 0.3   | 0.2  | 0.2                             | 0.2  | 0.2  | 0.3  | A    | 0.2  | 0.3  | 0.2  | 0.3  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.3  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.23          | 0.33            |  |
| 30-Jun                                      | 0.2                           | 0.3   | 0.2  | 0.2                             | 0.2  | 0.2  | A    | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.3  | 0.4  | 0.7  | 0.22          | 0.73            |  |
|   |                               | 0.20  | 0.17 | 0.16                            | 0.17 | 0.16 | 0.17 | 0.19 | 0.23 | 0.24 | 0.20 | 0.17 | 0.18 | 0.18 | 0.19 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.17 | 0.17 | 0.21 | 0.21 | 0.20          | Diurnal Average |  |
|   |                               | 0.62  | 0.28 | 0.23                            | 0.36 | 0.25 | 0.25 | 0.37 | 1.67 | 1.23 | 0.56 | 0.22 | 0.57 | 0.48 | 0.76 | 0.34 | 0.22 | 0.22 | 0.26 | 0.22 | 0.23 | 0.26 | 0.46 | 0.44 | 0.73          | Diurnal Maximum |  |
| C - Calibration                             |                               | A - Automated Daily Zero Span   |      |                                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |

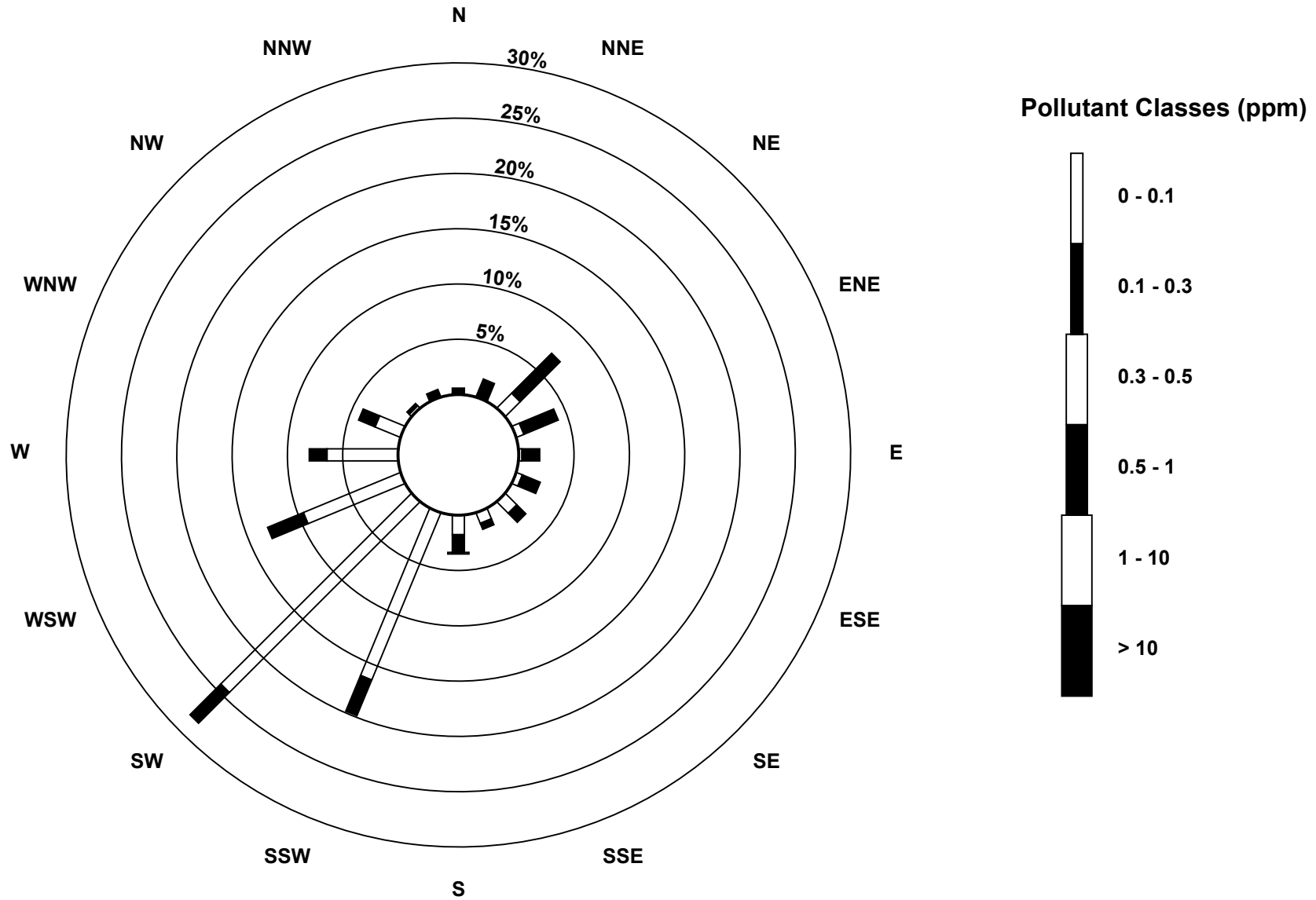
**Hourly Maximums**

**Carbon Monoxide (CO) - ppm**  
**Henry Pirker - June 2016**



**Pollutant Rose**

**Carbon Monoxide (CO) - ppm**  
**Henry Pirker - June 2016**





## Eight Hour Running Averages

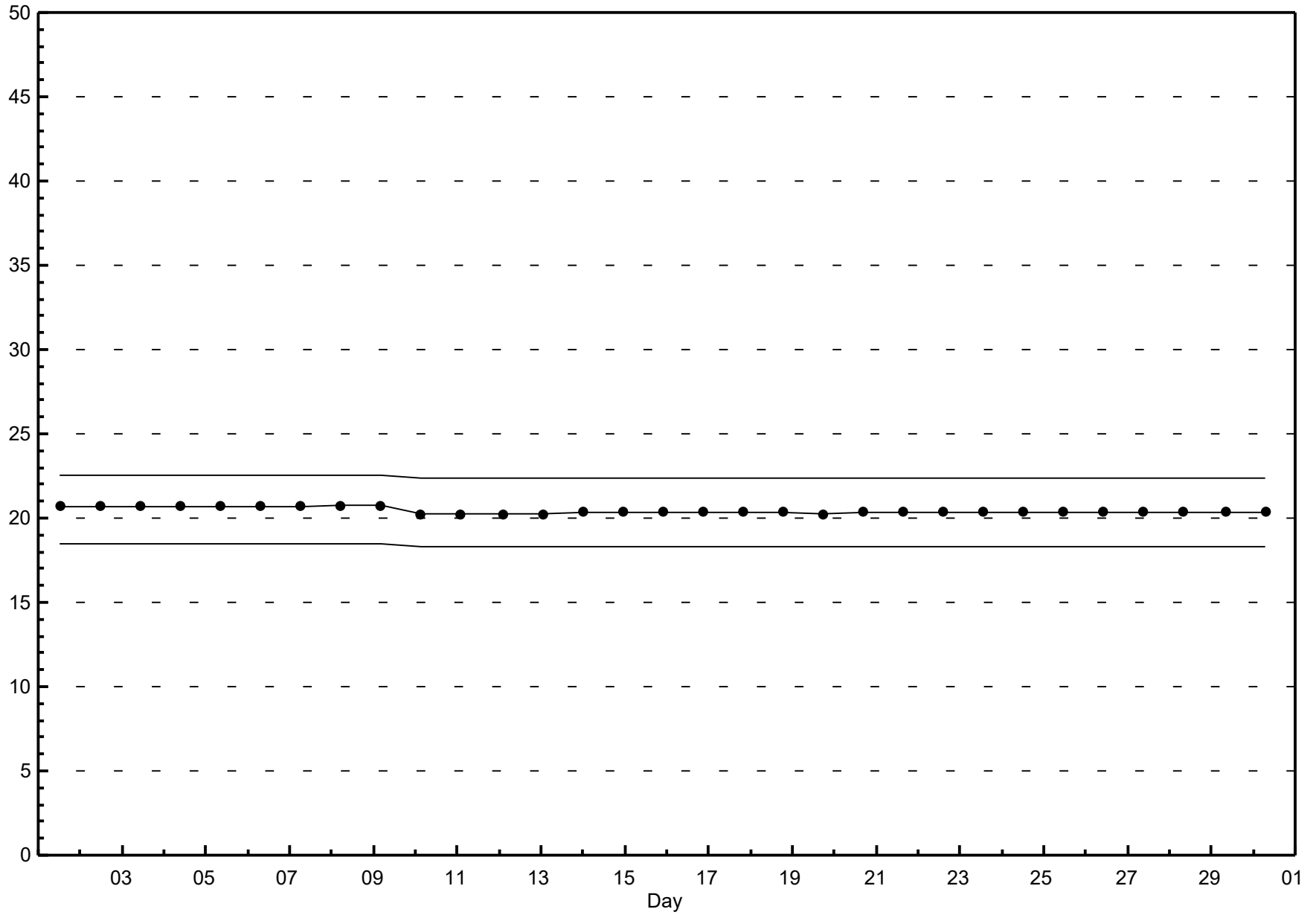
Carbon Monoxide (CO) - ppm

Henry Pirker - June 2016

| Number of Exceedences (AAAQO): 8-hr: 0<br>Maximum Value: 0.21 ppm on Jul 1 00:00  |                               | Hours in Service: 720<br>Hours of Data: 713<br>Hours of Missing Data: 7<br>Hours of Calibration: 7<br>Percent Operational Time: 100.0 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |
|---|-------------------------------|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|
| Minimum Value: 0.11 ppm on Jun 26 18:00   |                               |   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |
| Percentiles: P <sub>1</sub> = 0.11 P <sub>10</sub> = 0.13 Q <sub>1</sub> = 0.13 Median = 0.14 Q <sub>3</sub> = 0.16 P <sub>90</sub> = 0.17 P <sub>99</sub> = 0.20 |                               |   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |
| Day   | Hourly Period Ending At (MST) |   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Daily Maximum |
|   | 1                             | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |               |
| 1-Jun   | 0.2                           | 0.2   | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.18          |
| 2-Jun   | 0.1                           | 0.1   | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.16          |
| 3-Jun   | 0.1                           | 0.1   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.14          |
| 4-Jun   | 0.1                           | 0.1   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.16          |
| 5-Jun   | 0.2                           | 0.2   | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.18          |
| 6-Jun   | 0.2                           | 0.2   | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.21          |
| 7-Jun   | 0.1                           | 0.1   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.15          |
| 8-Jun   | 0.2                           | 0.2   | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.19          |
| 9-Jun   | 0.2                           | 0.2   | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | N   | N   | N   | N   | N   | N   | N   | 0.2 | 0.2 | 0.18          |
| 10-Jun  | 0.2                           | 0.1   | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.18          |
| 11-Jun  | 0.2                           | 0.2   | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.16          |
| 12-Jun  | 0.2                           | 0.2   | 0.2 | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.15          |
| 13-Jun  | 0.1                           | 0.1   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.14          |
| 14-Jun  | 0.1                           | 0.1   | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.16          |
| 15-Jun  | 0.1                           | 0.1   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.14          |
| 16-Jun  | 0.1                           | 0.1   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.15          |
| 17-Jun  | 0.1                           | 0.1   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.14          |
| 18-Jun  | 0.1                           | 0.1   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.17          |
| 19-Jun  | 0.2                           | 0.2   | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.18          |
| 20-Jun  | 0.2                           | 0.2   | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.16          |
| 21-Jun  | 0.2                           | 0.2   | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.16          |
| 22-Jun  | 0.1                           | 0.1   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.16          |
| 23-Jun  | 0.1                           | 0.1   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.16          |
| 24-Jun  | 0.2                           | 0.2   | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.16          |
| 25-Jun  | 0.1                           | 0.1   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.15          |
| 26-Jun  | 0.1                           | 0.1   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.13          |
| 27-Jun  | 0.1                           | 0.1   | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.18          |
| 28-Jun  | 0.2                           | 0.2   | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.19          |
| 29-Jun  | 0.2                           | 0.2   | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.20          |
| 30-Jun  | 0.2                           | 0.2   | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.21          |
| 0.19 0.19 0.19 0.20 0.19 0.19 0.19 0.19 0.20 0.20 0.21 0.20 0.20 0.20 0.19 0.19 0.18 0.18 0.18 0.17 0.17 0.17 0.18 0.21   |                               |   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |
| Diurnal Maximums  |                               |   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |
| N - Not Valid   |                               |   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |
| Alberta Ambient Air Quality Objectives (AAAQO): 8-hr 5 ppm  |                               |   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |

### Span Responses

**Carbon Monoxide (CO)**  
**Henry Pirker - June 2016**



## Hourly Averages

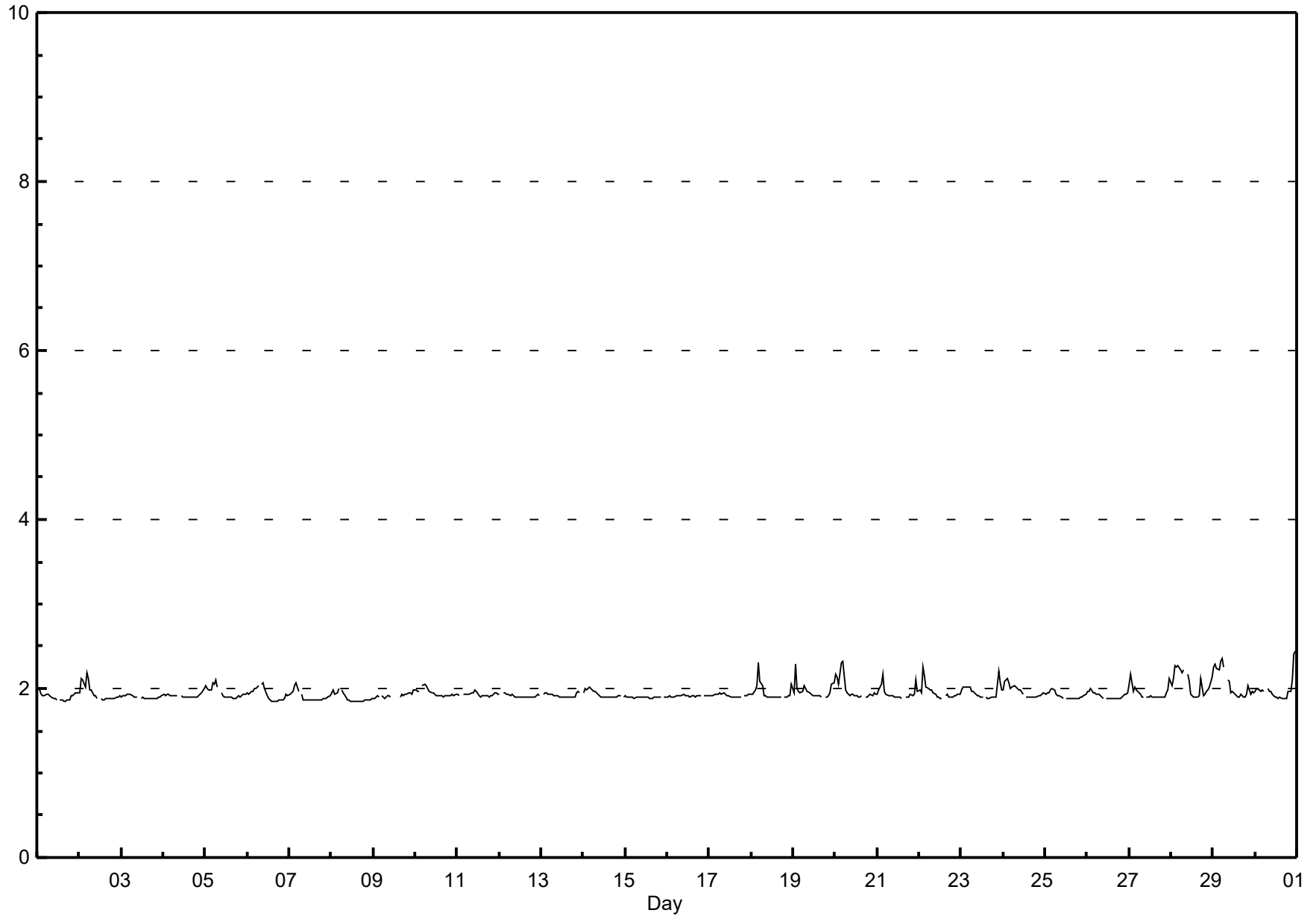
Total Hydrocarbons (THC) - ppm

Henry Pirker - June 2016

| Number of Exceedences (AAAQO):              |                               | 1-hr: 0    24-hr: 0   |      | Hours in Service: 720           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |      |
|---|-------------------------------|---|------|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------|-----------------|------|
| Maximum Value: 2.44 ppm on Jul 1 00:00      |                               | Maximum Daily Average: 2.06 ppm on Jun 28   |      | Hours of Data: 685              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |      |
| Minimum Value: 1.8 ppm on Jun 6 16:00       |                               | Minimum Daily Average: 1.89 ppm on Jun 8  |      | Hours of Missing Data: 35       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |      |
| Maximum Diurnal Average: 2.02 ppm at hour 5 |                               | Minimum Diurnal Average: 1.89 ppm at hour 15  |      | Hours of Calibration: 35        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |      |
| Monthly Average: 1.942 ppm                  |                               | Percentiles: P <sub>1</sub> = 1.85 P <sub>10</sub> = 1.88 Q <sub>1</sub> = 1.90 Median = 1.91 Q <sub>3</sub> = 1.95 P <sub>90</sub> = 2.03 P <sub>99</sub> = 2.31 |      | Percent Operational Time: 100.0 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |      |
| Day   | Hourly Period Ending At (MST) |   |      |                                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Daily Average | Daily Maximum   |      |
|   | 1                             | 2   | 3    | 4                               | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |               |                 |      |
| 1-Jun                                       | 2.0                           | 2.0   | 1.9  | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9           | 1.91            | 2.01 |
| 2-Jun                                       | 2.0                           | 2.1   | 2.1  | 2.0                             | 2.2  | 2.1  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9           | 1.95            | 2.18 |
| 3-Jun                                       | 1.9                           | 1.9   | 1.9  | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.90          | 1.94            |      |
| 4-Jun                                       | 1.9                           | 1.9   | 1.9  | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 1.92          | 1.99            |      |
| 5-Jun                                       | 2.0                           | 2.0   | 2.0  | 2.0                             | 2.1  | 2.1  | 2.1  | 2.0  | A    | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.95          | 2.11            |      |
| 6-Jun                                       | 1.9                           | 1.9   | 2.0  | 2.0                             | 2.0  | 2.0  | 2.0  | A    | 2.1  | 2.1  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.8  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.93          | 2.07            |      |
| 7-Jun                                       | 1.9                           | 1.9   | 2.0  | 2.0                             | 2.1  | 2.0  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.91          | 2.07            |      |
| 8-Jun                                       | 1.9                           | 2.0   | 1.9  | 2.0                             | 2.0  | A    | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.89          | 2.00            |      |
| 9-Jun                                       | 1.9                           | 1.9   | 1.9  | 1.9                             | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | C    | C    | C    | C    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 1.92 | 1.98          |                 |      |
| 10-Jun                                      | 2.0                           | 2.0   | 2.0  | A                               | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.95          | 2.04            |      |
| 11-Jun                                      | 1.9                           | 1.9   | A    | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 1.9  | 1.93          | 1.98            |      |
| 12-Jun                                      | 1.9                           | A   | 2.0  | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.91          | 1.95            |      |
| 13-Jun                                      | A                             | 1.9   | 2.0  | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 2.0  | A    | 1.92          | 1.96            |      |
| 14-Jun                                      | 2.0                           | 2.0   | 2.0  | 2.0                             | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.93          | 2.01            |      |
| 15-Jun                                      | 1.9                           | 1.9   | 1.9  | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.89          | 1.92            |      |
| 16-Jun                                      | 1.9                           | 1.9   | 1.9  | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.91          | 1.93            |      |
| 17-Jun                                      | 1.9                           | 1.9   | 1.9  | 1.9                             | 1.9  | 1.9  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.92          | 1.96            |      |
| 18-Jun                                      | 1.9                           | 1.9   | 2.0  | 2.0                             | 2.3  | 2.1  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 2.0  | 1.95 | 2.31          |                 |      |
| 19-Jun                                      | 2.0                           | 2.3   | 2.0  | 2.0                             | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 2.1  | 2.1  | 1.97 | 2.28          |                 |      |
| 20-Jun                                      | 2.2                           | 2.1   | 2.1  | 2.3                             | 2.3  | 2.1  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.99          | 2.32            |      |
| 21-Jun                                      | 1.9                           | 2.0   | 2.1  | 2.2                             | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.1  | 2.0  | 1.94 | 2.17          |                 |      |
| 22-Jun                                      | 2.0                           | 1.9   | 2.3  | 2.2                             | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.96 | 2.26          |                 |      |
| 23-Jun                                      | 2.0                           | 2.0   | 2.0  | 2.0                             | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.2  | 2.1  | 2.0  | 1.96 | 2.21          |                 |      |
| 24-Jun                                      | 2.0                           | 2.1   | 2.1  | 2.1                             | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.96 | 2.13          |                 |      |
| 25-Jun                                      | 1.9                           | 1.9   | 2.0  | 2.0                             | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.92 | 2.00          |                 |      |
| 26-Jun                                      | 2.0                           | 2.0   | 2.0  | 2.0                             | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.92 | 2.00          |                 |      |
| 27-Jun                                      | 2.0                           | 2.2   | 2.0  | 2.0                             | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.1  | 1.95 | 2.17          |                 |      |
| 28-Jun                                      | 2.0                           | 2.1   | 2.3  | 2.2                             | 2.3  | 2.2  | 2.2  | 2.2  | A    | 2.2  | 2.1  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.1  | 1.9  | 1.9  | 2.0  | 2.0  | 2.1  | 2.06 | 2.28          |                 |      |
| 29-Jun                                      | 2.2                           | 2.3   | 2.2  | 2.2                             | 2.3  | 2.3  | 2.3  | A    | 2.1  | 2.1  | 1.9  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 2.0  | 2.05 | 2.35          |                 |      |
| 30-Jun                                      | 2.0                           | 2.0   | 2.0  | 2.0                             | 2.0  | 2.0  | A    | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 2.1  | 2.4  | 1.99 | 2.44          |                 |      |
|   |                               | 1.97  | 2.00 | 2.01                            | 2.01 | 2.02 | 2.00 | 1.98 | 1.95 | 1.94 | 1.94 | 1.92 | 1.90 | 1.90 | 1.89 | 1.89 | 1.89 | 1.89 | 1.90 | 1.89 | 1.90 | 1.91 | 1.94 | 1.96 | 1.97          | Diurnal Average |      |
|   |                               | 2.25  | 2.28 | 2.27                            | 2.31 | 2.32 | 2.35 | 2.25 | 2.22 | 2.10 | 2.18 | 2.09 | 1.96 | 1.93 | 1.92 | 1.91 | 1.92 | 1.93 | 2.12 | 1.93 | 1.96 | 2.04 | 2.21 | 2.40 | 2.44          | Diurnal Maximum |      |
| C - Calibration                             |                               | A - Automated Daily Zero Span   |      |                                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |      |

**Hourly Averages**

**Total Hydrocarbons (THC) - ppm**  
**Henry Pirker - June 2016**



## Hourly Maximums

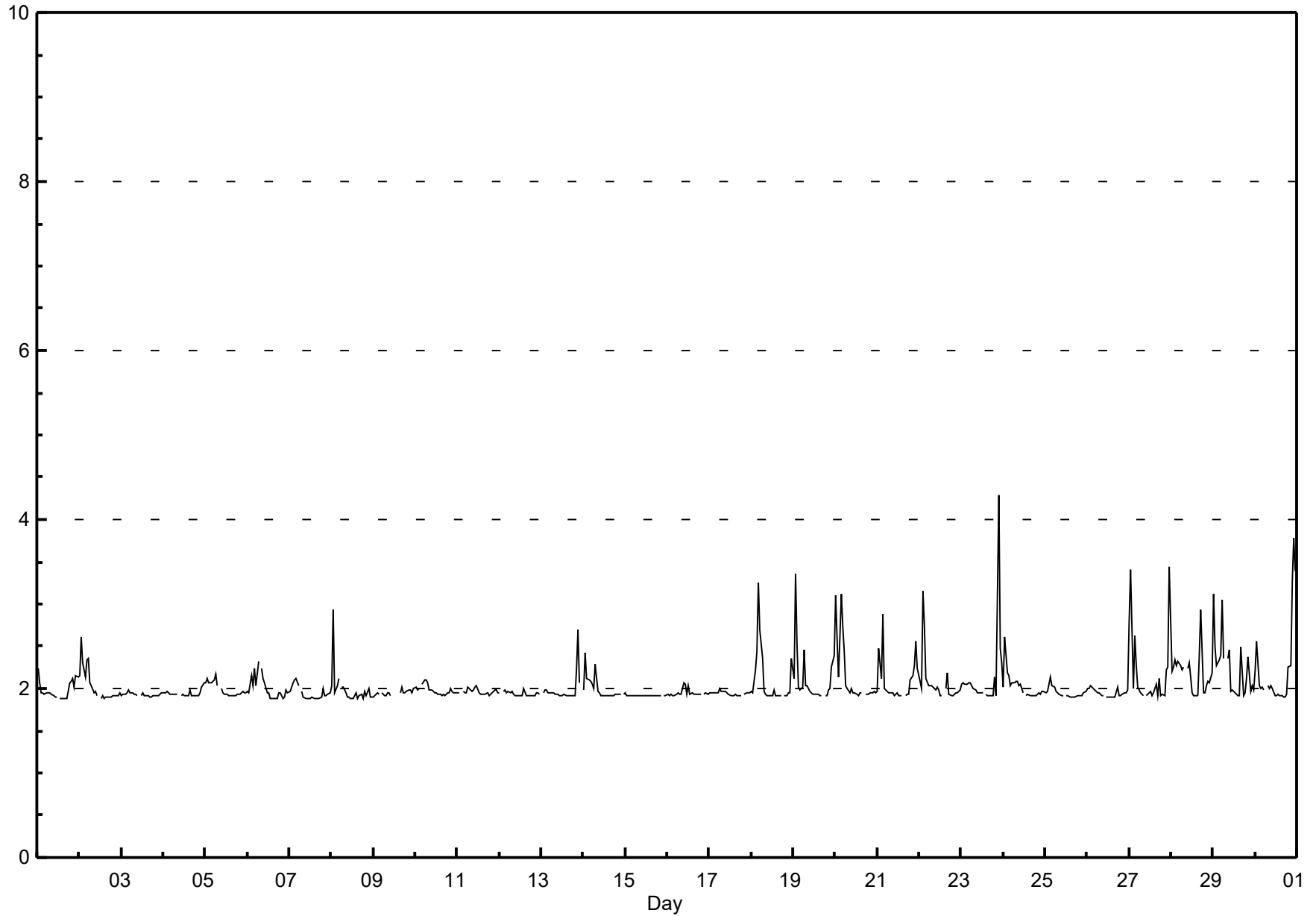
## Total Hydrocarbons (THC) - ppm

### Henry Pirker - June 2016

| Maximum Value: 4.28 ppm on Jun 23 22:00     |                               | Maximum Daily Average: 2.23 ppm on Jun 29   |      | Hours in Service: 720           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |      |
|---|-------------------------------|---|------|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------|-----------------|------|
| Minimum Value: 1.9 ppm on Jun 6 14:00       |                               | Minimum Daily Average: 1.92 ppm on Jun 15   |      | Hours of Data: 685              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |      |
| Maximum Diurnal Average: 2.25 ppm at hour 2 |                               | Minimum Diurnal Average: 1.92 ppm at hour 14  |      | Hours of Missing Data: 35       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |      |
| Monthly Average: 2.027 ppm                  |                               | Percentiles: P <sub>1</sub> = 1.88 P <sub>10</sub> = 1.91 Q <sub>1</sub> = 1.92 Median = 1.94 Q <sub>3</sub> = 2.02 P <sub>90</sub> = 2.23 P <sub>99</sub> = 3.24 |      | Hours of Calibration: 35        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |      |
|   |                               |   |      | Percent Operational Time: 100.0 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |      |
| Day   | Hourly Period Ending At (MST) |   |      |                                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Daily Average | Daily Maximum   |      |
|   | 1                             | 2   | 3    | 4                               | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |               |                 |      |
| 1-Jun                                       | 2.2                           | 2.1   | 2.0  | 1.9                             | 1.9  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.1  | 2.1  | 2.1  | 2.0  | 2.1  | 2.1  | 1.98          | 2.24            |      |
| 2-Jun                                       | 2.2                           | 2.6   | 2.3  | 2.1                             | 2.3  | 2.3  | 2.1  | 2.0  | 1.9  | 2.0  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9           | 2.03            | 2.61 |
| 3-Jun                                       | 1.9                           | 1.9   | 1.9  | 2.0                             | 2.0  | 1.9  | 2.0  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.93          | 1.98            |      |
| 4-Jun                                       | 1.9                           | 1.9   | 2.0  | 2.0                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 2.1  | 1.94          | 2.07            |      |
| 5-Jun                                       | 2.1                           | 2.1   | 2.1  | 2.1                             | 2.1  | 2.1  | 2.2  | 2.0  | A    | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 2.0  | 1.99          | 2.17            |      |
| 6-Jun                                       | 2.0                           | 2.0   | 2.1  | 2.0                             | 2.2  | 2.0  | 2.3  | A    | 2.2  | 2.1  | 2.1  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 1.9  | 1.9  | 1.9  | 2.0  | 1.9  | 2.00          | 2.32            |      |
| 7-Jun                                       | 2.0                           | 2.0   | 2.1  | 2.1                             | 2.1  | 2.0  | A    | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.94          | 2.12            |      |
| 8-Jun                                       | 2.0                           | 2.9   | 1.9  | 2.0                             | 2.1  | A    | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 1.9  | 2.0  | 1.9  | 2.0  | 1.9  | 1.99          | 2.94            |      |
| 9-Jun                                       | 1.9                           | 1.9   | 1.9  | 1.9                             | A    | 1.9  | 1.9  | 1.9  | 2.0  | 1.9  | 1.9  | C    | C    | C    | C    | 1.9  | 2.0  | 1.9  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 1.95          | 2.02            |      |
| 10-Jun                                      | 2.0                           | 2.0   | 2.0  | A                               | 2.1  | 2.1  | 2.1  | 2.1  | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 1.9  | 1.9  | 1.98          | 2.10            |      |
| 11-Jun                                      | 1.9                           | 2.0   | A    | 2.0                             | 2.0  | 1.9  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 2.0  | 1.96          | 2.03            |      |
| 12-Jun                                      | 2.0                           | A   | 2.0  | 2.0                             | 2.0  | 2.0  | 1.9  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.94          | 1.99            |      |
| 13-Jun                                      | A                             | 2.0   | 2.0  | 2.0                             | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.2  | 2.7  | 2.1  | A    | 1.99          | 2.70            |      |
| 14-Jun                                      | 2.0                           | 2.4   | 2.1  | 2.1                             | 2.1  | 2.1  | 2.0  | 2.3  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 2.00          | 2.42            |      |
| 15-Jun                                      | 1.9                           | 1.9   | 1.9  | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.92          | 1.94            |      |
| 16-Jun                                      | 1.9                           | 1.9   | 1.9  | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.1  | 2.1  | 1.9  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.95          | 2.07            |      |
| 17-Jun                                      | 1.9                           | 1.9   | 1.9  | 1.9                             | 1.9  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 2.0  | 1.94          | 1.99            |      |
| 18-Jun                                      | 2.0                           | 2.0   | 2.2  | 2.4                             | 3.3  | 2.7  | 2.4  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 2.4  | 2.09          | 3.26            |      |
| 19-Jun                                      | 2.1                           | 3.3   | 2.5  | 2.0                             | 2.0  | 2.0  | 2.5  | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 2.0  | 2.0  | 2.3  | 2.4  | 2.11          | 3.35            |      |
| 20-Jun                                      | 3.1                           | 2.6   | 2.1  | 3.1                             | 2.7  | 2.4  | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | A    | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 2.0  | 2.0  | 2.15          | 3.11            |      |
| 21-Jun                                      | 2.0                           | 2.5   | 2.1  | 2.9                             | 2.0  | 2.0  | 1.9  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 2.1  | 2.2  | 2.3  | 2.6  | 2.2  | 2.08          | 2.88            |      |
| 22-Jun                                      | 2.1                           | 2.0   | 3.2  | 2.7                             | 2.1  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | A    | 2.0  | 2.2  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 2.08          | 3.16            |      |
| 23-Jun                                      | 2.1                           | 2.1   | 2.1  | 2.1                             | 2.1  | 2.1  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 2.0  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.1  | 1.9  | 4.3  | 2.5  | 2.3  | 2.12          | 4.28            |      |
| 24-Jun                                      | 2.0                           | 2.6   | 2.2  | 2.2                             | 2.0  | 2.1  | 2.1  | 2.1  | 2.1  | 2.0  | 2.1  | 2.0  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 2.0  | 2.03          | 2.61            |      |
| 25-Jun                                      | 2.0                           | 2.0   | 2.1  | 2.1                             | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 1.95          | 2.14            |      |
| 26-Jun                                      | 2.0                           | 2.0   | 2.0  | 2.0                             | 2.0  | 2.0  | 1.9  | 2.0  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 1.94          | 2.03            |      |
| 27-Jun                                      | 2.8                           | 3.4   | 2.0  | 2.6                             | 2.3  | 2.0  | 2.0  | 1.9  | 1.9  | A    | 1.9  | 2.0  | 2.0  | 1.9  | 1.9  | 2.1  | 1.9  | 2.1  | 1.9  | 1.9  | 1.9  | 2.2  | 2.3  | 3.4  | 2.19          | 3.44            |      |
| 28-Jun                                      | 2.2                           | 2.3   | 2.3  | 2.3                             | 2.3  | 2.3  | 2.2  | 2.3  | A    | 2.2  | 2.3  | 2.1  | 2.0  | 1.9  | 1.9  | 1.9  | 2.4  | 2.9  | 1.9  | 2.0  | 2.0  | 2.1  | 2.1  | 2.2  | 2.18          | 2.93            |      |
| 29-Jun                                      | 3.1                           | 2.5   | 2.3  | 2.3                             | 2.4  | 3.1  | 2.4  | A    | 2.4  | 2.5  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 2.5  | 1.9  | 2.0  | 2.1  | 2.4  | 2.0  | 2.0  | 2.0  | 2.0  | 2.23          | 3.11            |      |
| 30-Jun                                      | 2.2                           | 2.6   | 2.0  | 2.0                             | 2.0  | 2.0  | A    | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.3  | 2.3  | 3.3  | 3.8  | 3.4  | 2.22          | 3.77            |      |
|   |                               | 2.12  | 2.25 | 2.11                            | 2.16 | 2.13 | 2.09 | 2.06 | 2.00 | 1.98 | 1.99 | 1.96 | 1.94 | 1.93 | 1.92 | 1.92 | 1.92 | 1.96 | 1.96 | 1.93 | 1.97 | 1.99 | 2.13 | 2.09 | 2.12          | Diurnal Average |      |
|   |                               | 3.11  | 3.40 | 3.16                            | 3.11 | 3.26 | 3.05 | 2.47 | 2.29 | 2.36 | 2.45 | 2.31 | 2.14 | 2.04 | 1.98 | 1.99 | 2.05 | 2.49 | 2.93 | 2.06 | 2.25 | 2.37 | 4.28 | 3.77 | 3.44          | Diurnal Maximum |      |
| C - Calibration                             |                               | A - Automated Daily Zero Span   |      |                                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |      |

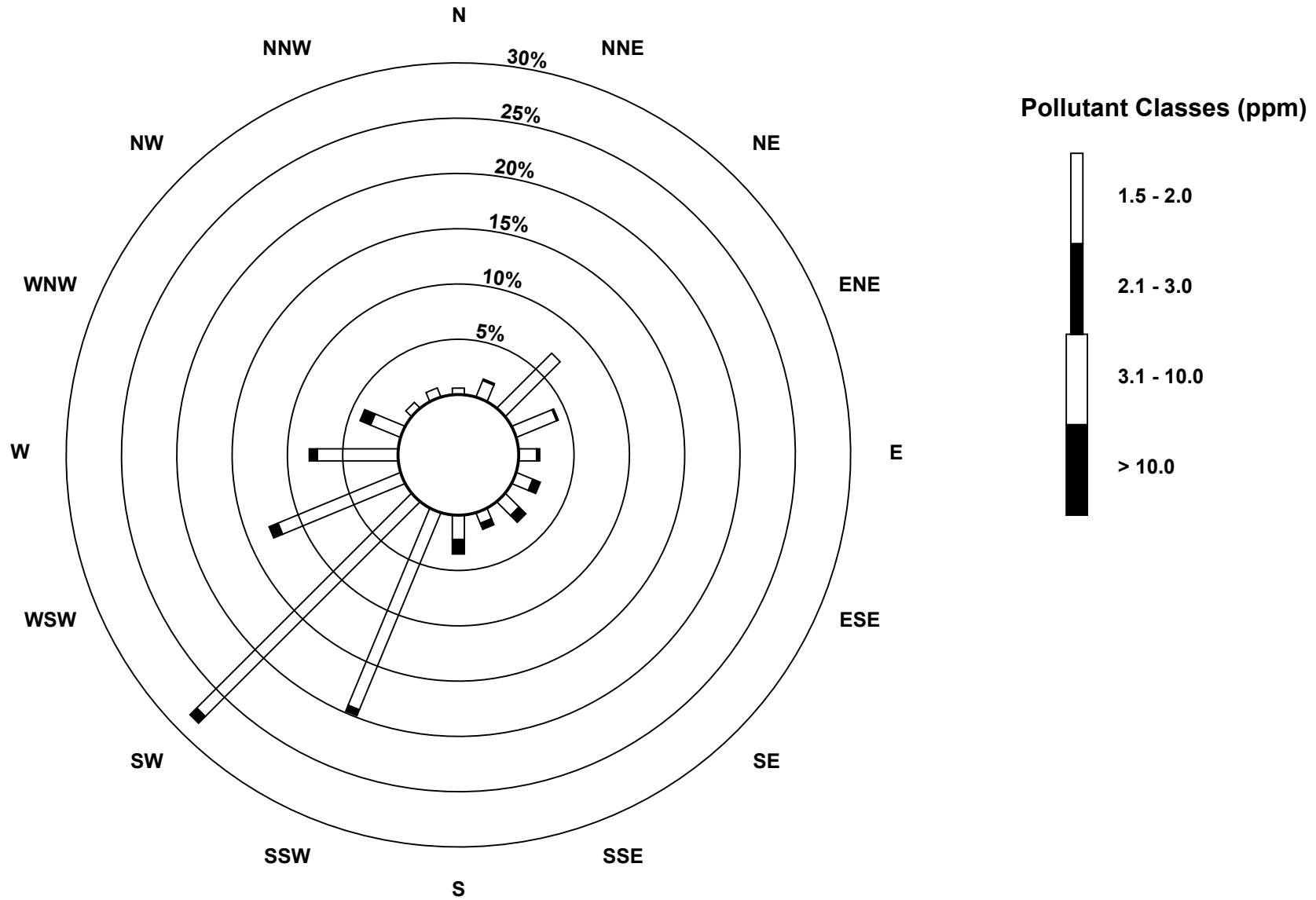
**Hourly Maximums**

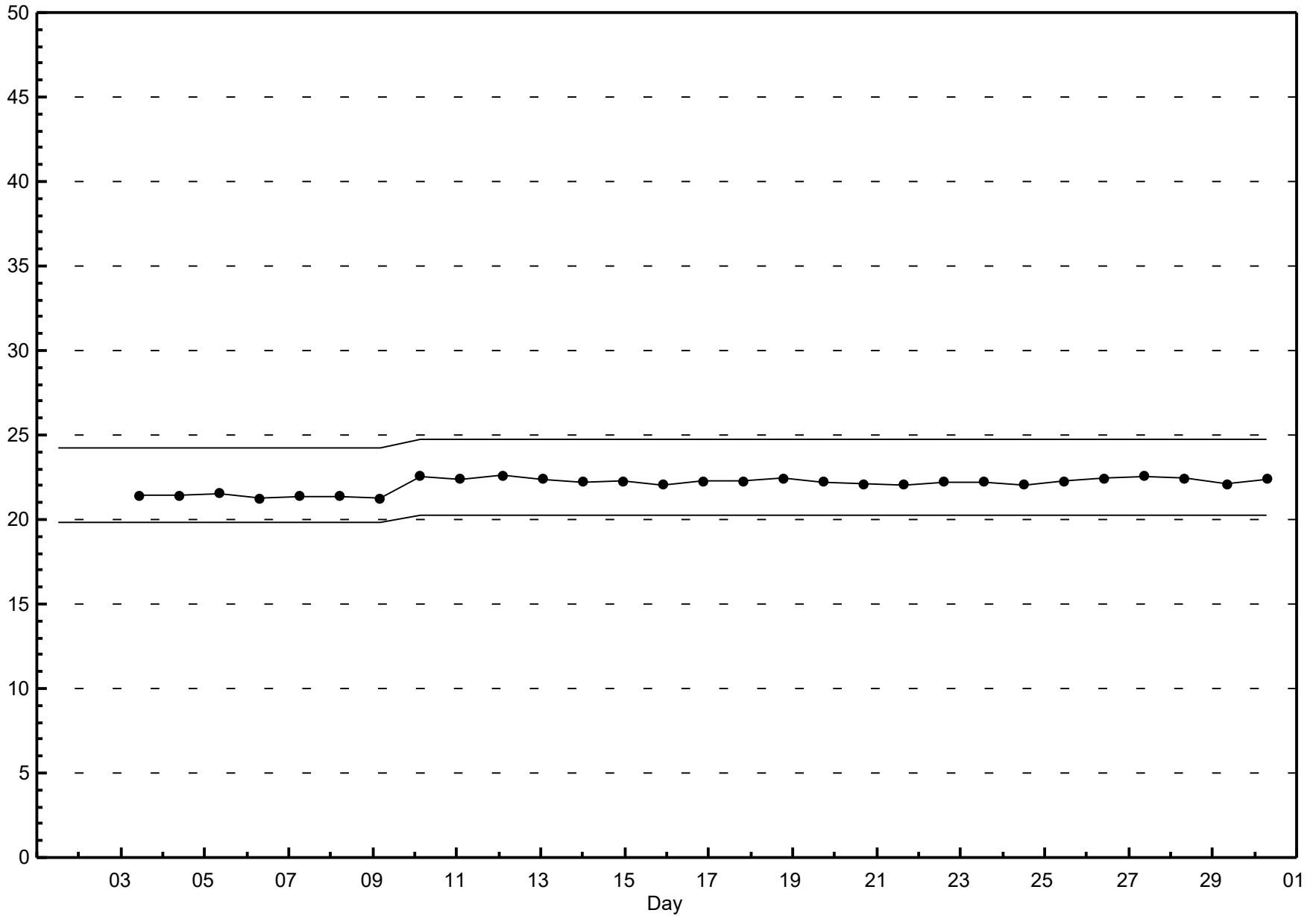
**Total Hydrocarbons (THC) - ppm**  
**Henry Pirker - June 2016**



**Pollutant Rose**

**Total Hydrocarbons (THC) - ppm**  
**Henry Pirker - June 2016**







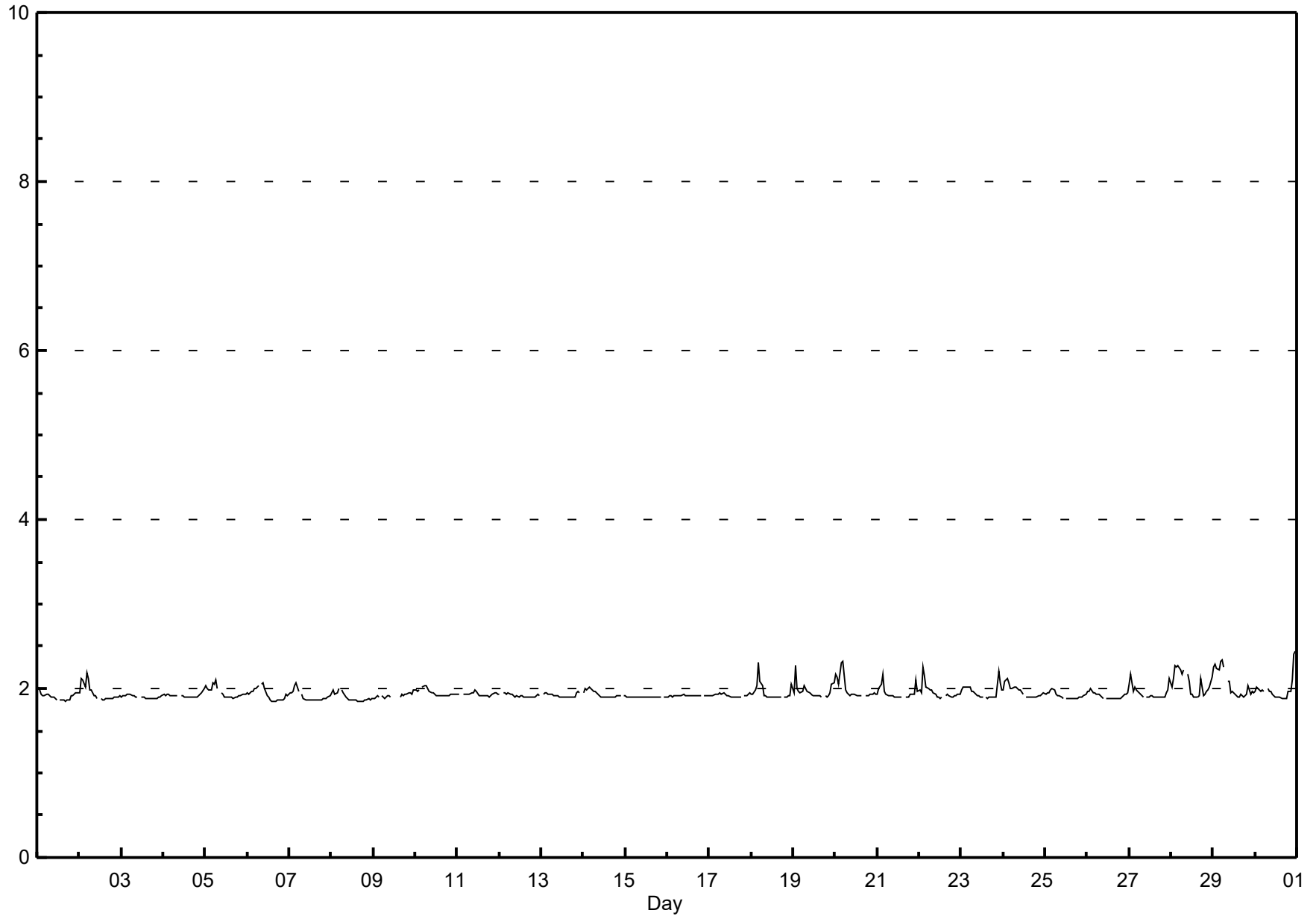
## Hourly Averages

Methane (CH<sub>4</sub>) - ppm  
Henry Pirker - June 2016

| Number of Exceedences (AAQO):               |                               | 1-hr: 0    24-hr: 0   |      | Hours in Service: 720           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |                 |      |
|---|-------------------------------|---|------|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|-----------------|------|
| Maximum Value: 2.44 ppm on Jul 1 00:00      |                               | Maximum Daily Average: 2.06 ppm on Jun 28   |      | Hours of Data: 685              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |                 |      |
| Minimum Value: 1.9 ppm on Jun 6 16:00       |                               | Minimum Daily Average: 1.89 ppm on Jun 8  |      | Hours of Missing Data: 35       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |                 |      |
| Maximum Diurnal Average: 2.02 ppm at hour 5 |                               | Minimum Diurnal Average: 1.89 ppm at hour 15  |      | Hours of Calibration: 35        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |                 |      |
| Monthly Average: 1.943 ppm                  |                               | Percentiles: P <sub>1</sub> = 1.86 P <sub>10</sub> = 1.89 Q <sub>1</sub> = 1.90 Median = 1.92 Q <sub>3</sub> = 1.96 P <sub>90</sub> = 2.03 P <sub>99</sub> = 2.31 |      | Percent Operational Time: 100.0 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |                 |      |
| Day   | Hourly Period Ending At (MST) |   |      |                                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Daily Average   | Daily Maximum   |      |
|   | 1                             | 2   | 3    | 4                               | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |                 |                 |      |
| 1-Jun                                       | 2.0                           | 2.0   | 1.9  | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9             | 1.91            | 2.01 |
| 2-Jun                                       | 2.0                           | 2.1   | 2.1  | 2.0                             | 2.2  | 2.1  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9             | 1.95            | 2.18 |
| 3-Jun                                       | 1.9                           | 1.9   | 1.9  | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.90            | 1.94            |      |
| 4-Jun                                       | 1.9                           | 1.9   | 1.9  | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 1.92            | 1.99            |      |
| 5-Jun                                       | 2.0                           | 2.0   | 2.0  | 2.0                             | 2.1  | 2.1  | 2.1  | 2.0  | A    | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.95            | 2.11            |      |
| 6-Jun                                       | 1.9                           | 1.9   | 2.0  | 2.0                             | 2.0  | 2.0  | 2.0  | A    | 2.0  | 2.1  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.93            | 2.07            |      |
| 7-Jun                                       | 1.9                           | 1.9   | 2.0  | 2.0                             | 2.1  | 2.0  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.91            | 2.06            |      |
| 8-Jun                                       | 1.9                           | 2.0   | 1.9  | 2.0                             | 2.0  | A    | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.89            | 2.00            |      |
| 9-Jun                                       | 1.9                           | 1.9   | 1.9  | 1.9                             | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | C    | C    | C    | C    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 1.9  | 2.0  | 1.92 | 1.98            |                 |      |
| 10-Jun                                      | 2.0                           | 2.0   | 2.0  | A                               | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.95            | 2.04            |      |
| 11-Jun                                      | 1.9                           | 1.9   | A    | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 1.9  | 1.93            | 1.98            |      |
| 12-Jun                                      | 1.9                           | A   | 2.0  | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.92            | 1.95            |      |
| 13-Jun                                      | A                             | 1.9   | 2.0  | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 2.0  | A    | 1.92            | 1.96            |      |
| 14-Jun                                      | 2.0                           | 2.0   | 2.0  | 2.0                             | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.93            | 2.01            |      |
| 15-Jun                                      | 1.9                           | 1.9   | 1.9  | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.90            | 1.92            |      |
| 16-Jun                                      | 1.9                           | 1.9   | 1.9  | 1.9                             | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.91            | 1.93            |      |
| 17-Jun                                      | 1.9                           | 1.9   | 1.9  | 1.9                             | 1.9  | 1.9  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.92            | 1.96            |      |
| 18-Jun                                      | 1.9                           | 1.9   | 2.0  | 2.0                             | 2.3  | 2.1  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 2.0  | 1.95 | 2.31            |                 |      |
| 19-Jun                                      | 2.0                           | 2.3   | 2.0  | 2.0                             | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 2.1  | 2.1  | 1.97 | 2.28            |                 |      |
| 20-Jun                                      | 2.2                           | 2.1   | 2.1  | 2.3                             | 2.3  | 2.1  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.99            | 2.32            |      |
| 21-Jun                                      | 1.9                           | 2.0   | 2.0  | 2.2                             | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.1  | 2.0  | 1.95 | 2.17            |                 |      |
| 22-Jun                                      | 2.0                           | 1.9   | 2.3  | 2.2                             | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.96            | 2.26            |      |
| 23-Jun                                      | 2.0                           | 2.0   | 2.0  | 2.0                             | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.2  | 2.1  | 2.0  | 1.96 | 2.21            |                 |      |
| 24-Jun                                      | 2.0                           | 2.1   | 2.1  | 2.1                             | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.97 | 2.13            |                 |      |
| 25-Jun                                      | 1.9                           | 1.9   | 2.0  | 2.0                             | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.92 | 1.99            |                 |      |
| 26-Jun                                      | 2.0                           | 2.0   | 2.0  | 2.0                             | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.92            | 2.00            |      |
| 27-Jun                                      | 2.0                           | 2.2   | 2.0  | 2.0                             | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | A    | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.1  | 1.95 | 2.16            |                 |      |
| 28-Jun                                      | 2.0                           | 2.1   | 2.3  | 2.2                             | 2.3  | 2.2  | 2.2  | 2.2  | A    | 2.2  | 2.1  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.1  | 1.9  | 1.9  | 2.0  | 2.0  | 2.1  | 2.06 | 2.27            |                 |      |
| 29-Jun                                      | 2.2                           | 2.3   | 2.2  | 2.2                             | 2.3  | 2.3  | 2.3  | A    | 2.1  | 2.1  | 1.9  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 1.9  | 2.0  | 2.05 | 2.35            |                 |      |
| 30-Jun                                      | 2.0                           | 2.0   | 2.0  | 2.0                             | 2.0  | 2.0  | A    | 2.0  | 2.0  | 2.0  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 1.9  | 2.0  | 2.0  | 2.1  | 2.4  | 1.99 | 2.44            |                 |      |
|   |                               | 1.97  | 2.00 | 2.01                            | 2.01 | 2.02 | 2.00 | 1.98 | 1.95 | 1.94 | 1.94 | 1.92 | 1.91 | 1.90 | 1.89 | 1.89 | 1.89 | 1.90 | 1.90 | 1.90 | 1.92 | 1.94 | 1.96 | 1.97 | Diurnal Average |                 |      |
|   |                               | 2.25  | 2.28 | 2.27                            | 2.31 | 2.32 | 2.35 | 2.25 | 2.22 | 2.09 | 2.18 | 2.09 | 1.96 | 1.93 | 1.92 | 1.91 | 1.92 | 1.93 | 2.12 | 1.94 | 1.96 | 2.04 | 2.21 | 2.40 | 2.44            | Diurnal Maximum |      |
| C - Calibration                             |                               | A - Automated Daily Zero Span   |      |                                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |                 |      |

**Hourly Averages**

**Methane (CH<sub>4</sub>) - ppm**  
**Henry Pirker - June 2016**



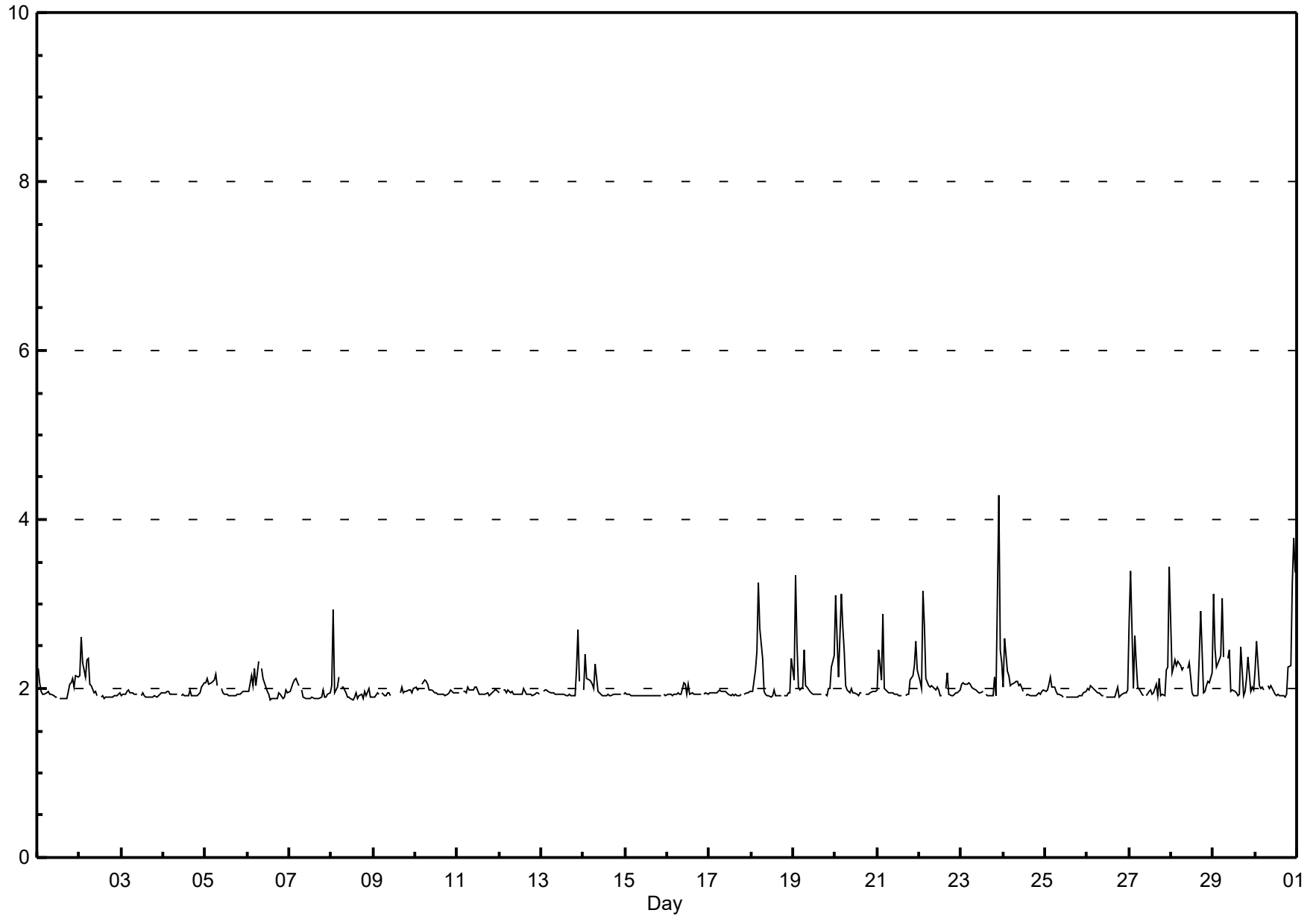
## Hourly Maximums

Methane (CH<sub>4</sub>) - ppm  
Henry Pirker - June 2016

| Maximum Value: 4.29 ppm on Jun 23 22:00     |                               | Maximum Daily Average: 2.23 ppm on Jun 29   |     | Hours in Service: 720           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                               |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|---|-------------------------------|---|-----|---------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------------|---------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|
| Minimum Value: 1.9 ppm on Jun 6 14:00       |                               | Minimum Daily Average: 1.92 ppm on Jun 15   |     | Hours of Data: 685              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                               |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Maximum Diurnal Average: 2.25 ppm at hour 2 |                               | Minimum Diurnal Average: 1.92 ppm at hour 14  |     | Hours of Missing Data: 35       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                               |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Monthly Average: 2.028 ppm                  |                               | Percentiles: P <sub>1</sub> = 1.88 P <sub>10</sub> = 1.91 Q <sub>1</sub> = 1.92 Median = 1.95 Q <sub>3</sub> = 2.02 P <sub>90</sub> = 2.23 P <sub>99</sub> = 3.23 |     | Hours of Calibration: 35        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                               |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|   |                               |   |     | Percent Operational Time: 100.0 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                               |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Day   | Hourly Period Ending At (MST) |   |     |                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                               | Daily Average | Daily Maximum |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|   | 1                             | 2   | 3   | 4                               | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24                            |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 1-Jun                                       | 2.2                           | 2.1   | 2.0 | 1.9                             | 1.9 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.1 | 2.1 | 2.1 | 2.0 | 2.1 | 2.1                           | 1.98          | 2.24          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 2-Jun                                       | 2.2                           | 2.6   | 2.3 | 2.1                             | 2.3 | 2.4 | 2.1 | 2.0 | 1.9 | 2.0 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9                           | 2.03          | 2.61          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 3-Jun                                       | 1.9                           | 1.9   | 1.9 | 2.0                             | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9                           | 1.93          | 1.98          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 4-Jun                                       | 1.9                           | 1.9   | 2.0 | 2.0                             | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 2.1                           | 1.94          | 2.06          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 5-Jun                                       | 2.1                           | 2.1   | 2.1 | 2.1                             | 2.1 | 2.1 | 2.2 | 2.0 | A   | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 2.0                           | 1.99          | 2.17          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 6-Jun                                       | 2.0                           | 2.0   | 2.1 | 2.0                             | 2.2 | 2.0 | 2.3 | A   | 2.2 | 2.1 | 2.1 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 1.9 | 1.9 | 1.9 | 2.0 | 1.9                           | 2.00          | 2.32          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 7-Jun                                       | 2.0                           | 2.0   | 2.1 | 2.1                             | 2.1 | 2.0 | A   | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9                           | 1.94          | 2.12          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 8-Jun                                       | 2.0                           | 2.9   | 2.0 | 2.0                             | 2.1 | A   | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 1.9 | 2.0 | 1.9 | 1.9 | 1.9 | 2.0 | 1.9 | 2.0 | 1.9 | 1.9                           | 1.99          | 2.93          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 9-Jun                                       | 1.9                           | 1.9   | 1.9 | 1.9                             | A   | 1.9 | 1.9 | 1.9 | 2.0 | 1.9 | 1.9 | C   | C   | C   | C   | 1.9 | 2.0 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0                           | 1.95          | 2.01          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 10-Jun                                      | 2.0                           | 2.0   | 2.0 | A                               | 2.1 | 2.1 | 2.1 | 2.1 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 1.9 | 1.9                           | 1.98          | 2.09          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 11-Jun                                      | 1.9                           | 2.0   | A   | 2.0                             | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 2.0                           | 1.96          | 2.02          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 12-Jun                                      | 2.0                           | A   | 2.0 | 2.0                             | 2.0 | 2.0 | 1.9 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9                           | 1.94          | 1.99          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 13-Jun                                      | A                             | 2.0   | 2.0 | 2.0                             | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.2 | 2.7 | 2.1 | A                             | 1.99          | 2.70          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 14-Jun                                      | 2.0                           | 2.4   | 2.1 | 2.1                             | 2.1 | 2.1 | 2.0 | 2.3 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9                           | 2.00          | 2.41          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 15-Jun                                      | 1.9                           | 1.9   | 1.9 | 1.9                             | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9                           | 1.92          | 1.95          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 16-Jun                                      | 1.9                           | 1.9   | 1.9 | 1.9                             | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.1 | 2.0 | 1.9 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 2.0 | 1.9                           | 1.95          | 2.07          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 17-Jun                                      | 1.9                           | 1.9   | 1.9 | 1.9                             | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 2.0                           | 1.94          | 1.99          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 18-Jun                                      | 2.0                           | 2.0   | 2.2 | 2.4                             | 3.3 | 2.7 | 2.4 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 2.4                           | 2.09          | 3.26          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 19-Jun                                      | 2.1                           | 3.3   | 2.5 | 2.0                             | 2.0 | 2.0 | 2.5 | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 2.0 | 2.0 | 2.3 | 2.4                           | 2.11          | 3.35          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 20-Jun                                      | 3.1                           | 2.6   | 2.1 | 3.1                             | 2.7 | 2.4 | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 | 2.0 | 1.9 | 1.9 | 2.0 | 2.0 | A   | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0                           | 2.15          | 3.12          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 21-Jun                                      | 2.0                           | 2.5   | 2.1 | 2.9                             | 2.0 | 2.0 | 1.9 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 2.1 | 2.2 | 2.3 | 2.6 | 2.2                           | 2.08          | 2.88          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 22-Jun                                      | 2.1                           | 2.0   | 3.2 | 2.7                             | 2.1 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | A   | 2.0 | 2.2 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0                           | 2.08          | 3.16          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 23-Jun                                      | 2.0                           | 2.1   | 2.0 | 2.1                             | 2.1 | 2.1 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.1 | 1.9 | 4.3 | 2.5 | 2.3                           | 2.12          | 4.29          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 24-Jun                                      | 2.0                           | 2.6   | 2.2 | 2.2                             | 2.0 | 2.1 | 2.1 | 2.1 | 2.1 | 2.0 | 2.0 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 2.0                           | 2.03          | 2.60          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 25-Jun                                      | 2.0                           | 2.0   | 2.1 | 2.1                             | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0                           | 1.95          | 2.13          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 26-Jun                                      | 2.0                           | 2.0   | 2.0 | 2.0                             | 2.0 | 2.0 | 1.9 | 2.0 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 2.0                           | 1.94          | 2.03          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 27-Jun                                      | 2.8                           | 3.4   | 2.0 | 2.6                             | 2.3 | 2.0 | 2.0 | 1.9 | 1.9 | A   | 1.9 | 2.0 | 2.0 | 1.9 | 2.0 | 2.0 | 1.9 | 2.1 | 1.9 | 1.9 | 1.9 | 2.2 | 2.3 | 3.4                           | 2.19          | 3.45          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 28-Jun                                      | 2.2                           | 2.3   | 2.3 | 2.3                             | 2.3 | 2.3 | 2.2 | 2.3 | A   | 2.2 | 2.3 | 2.1 | 2.0 | 1.9 | 1.9 | 1.9 | 2.4 | 2.9 | 1.9 | 2.0 | 2.0 | 2.1 | 2.1 | 2.2                           | 2.18          | 2.92          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 29-Jun                                      | 3.1                           | 2.5   | 2.3 | 2.3                             | 2.4 | 3.1 | 2.4 | A   | 2.4 | 2.5 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 2.5 | 1.9 | 2.0 | 2.1 | 2.4 | 2.0 | 2.0 | 2.0 | 2.0                           | 2.23          | 3.12          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 30-Jun                                      | 2.2                           | 2.6   | 2.0 | 2.0                             | 2.0 | 2.0 | A   | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.3 | 2.3 | 3.3 | 3.8 | 3.4                           | 2.22          | 3.77          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|   |                               |   |     |                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 2.12                          | 2.25          | 2.11          | 2.16 | 2.13 | 2.09 | 2.06 | 2.00 | 1.98 | 1.99 | 1.96 | 1.94 | 1.93 | 1.92 | 1.92 | 1.92 | 1.96 | 1.96 | 1.93 | 1.97 | 1.99 | 2.13 | 2.09 | 2.12 | Diurnal Average |
|   |                               |   |     |                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 3.12                          | 3.39          | 3.16          | 3.12 | 3.26 | 3.06 | 2.46 | 2.28 | 2.35 | 2.46 | 2.31 | 2.13 | 2.05 | 1.98 | 1.99 | 2.05 | 2.49 | 2.92 | 2.06 | 2.25 | 2.37 | 4.29 | 3.77 | 3.45 | Diurnal Maximum |
| C - Calibration                             |                               |   |     |                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | A - Automated Daily Zero Span |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |

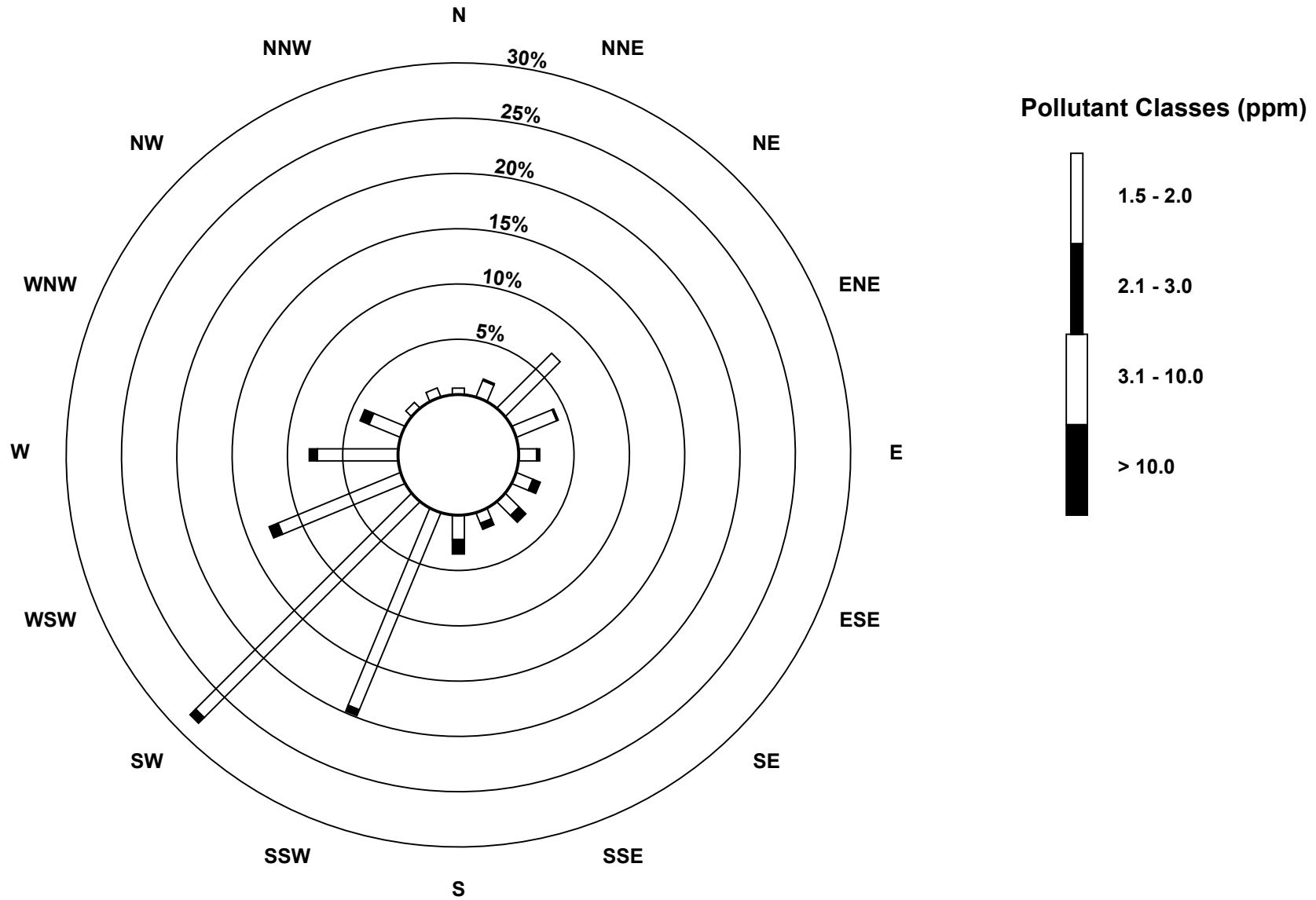
### Hourly Maximums

Methane (CH<sub>4</sub>) - ppm  
Henry Pirker - June 2016



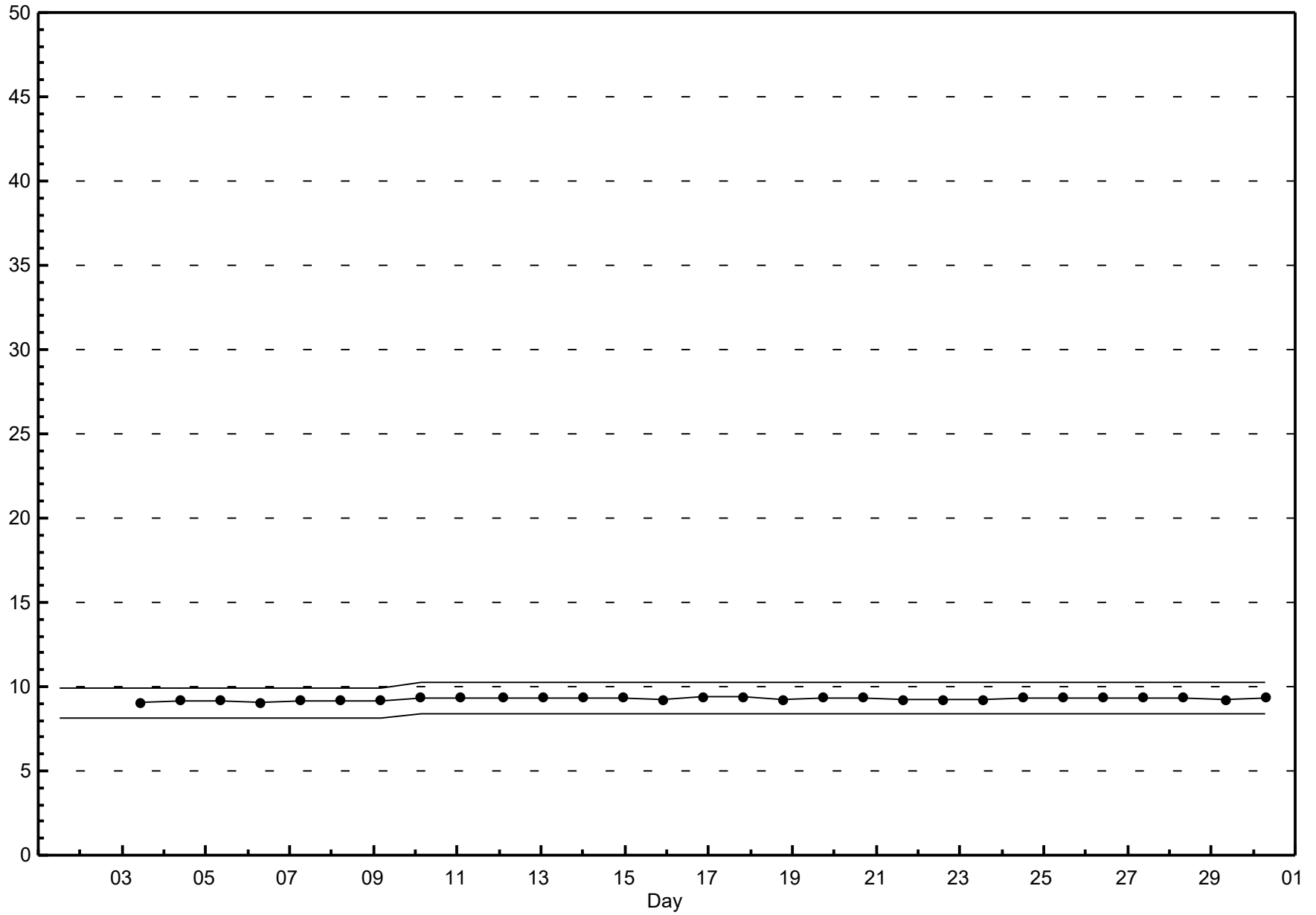
**Pollutant Rose**

**Methane (CH<sub>4</sub>) - ppm**  
**Henry Pirker - June 2016**



### Span Responses

Methane (CH<sub>4</sub>)  
Henry Pirker - June 2016



## Hourly Averages

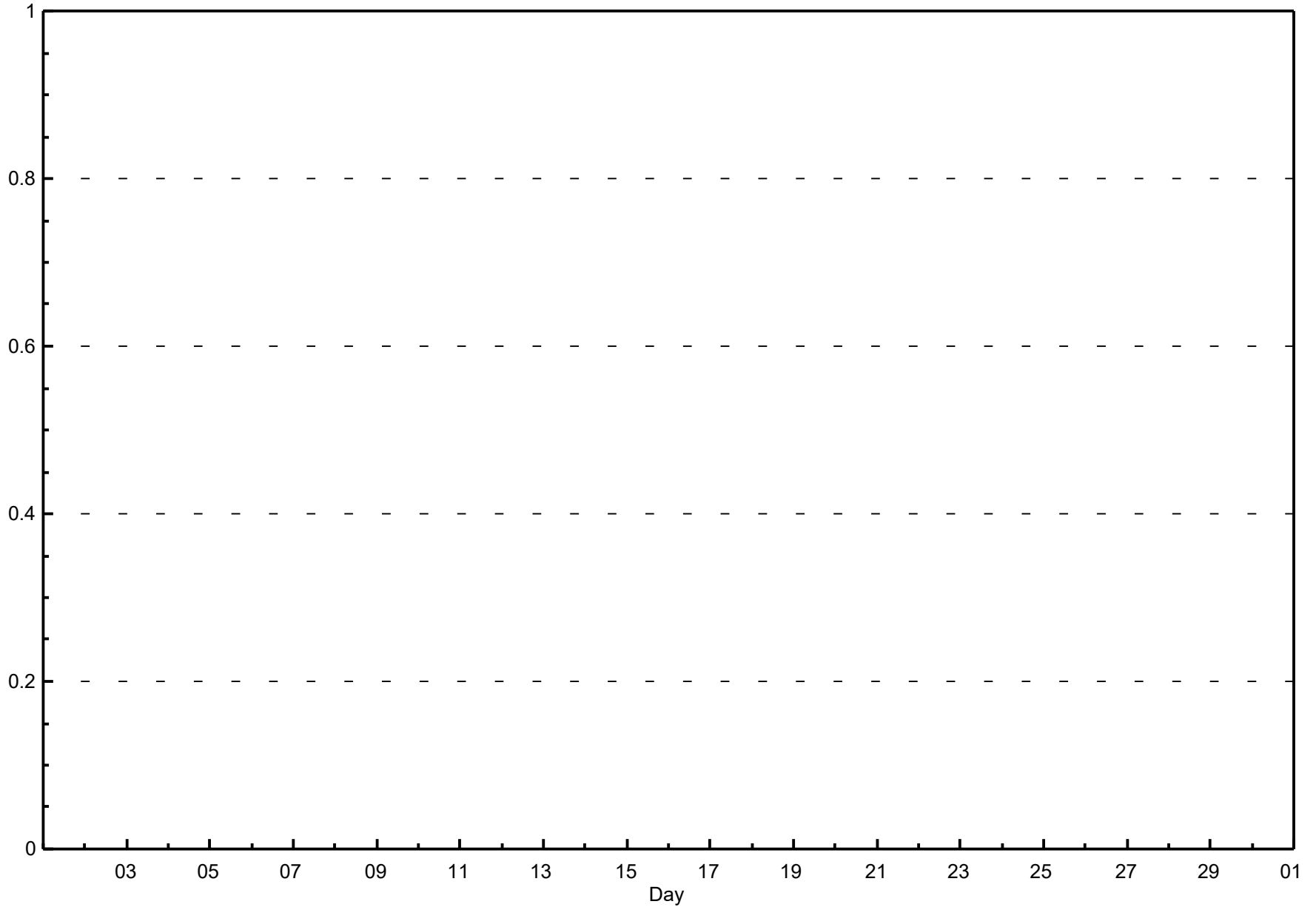
Non Methane Hydrocarbon (NMHC) - ppm

Henry Pirker - June 2016

| Number of Exceedences (AAQO):               |                               | 1-hr: 0   |     | 24-hr: 0                  |     | Hours in Service: |     | 720 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |               |               |      |
|---|-------------------------------|---|-----|---------------------------|-----|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|---------------|---------------|------|
| Maximum Value: 0.00 ppm on Jun 16 12:00     |                               | Maximum Daily Average: 0.00 ppm on Jun 16   |     | Hours of Data:            |     | 685               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |               |               |      |
| Minimum Value: 0.0 ppm on Jun 1 01:00       |                               | Minimum Daily Average: 0.00 ppm on Jun 1  |     | Hours of Missing Data:    |     | 35                |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |               |               |      |
| Maximum Diurnal Average: 0.00 ppm at hour 4 |                               | Minimum Diurnal Average: 0.00 ppm at hour 21  |     | Hours of Calibration:     |     | 35                |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |               |               |      |
| Monthly Average: 0.000 ppm                  |                               | Percentiles: P <sub>1</sub> = 0.00 P <sub>10</sub> = 0.00 Q <sub>1</sub> = 0.00 Median = 0.00 Q <sub>3</sub> = 0.00 P <sub>90</sub> = 0.00 P <sub>99</sub> = 0.00 |     | Percent Operational Time: |     | 100.0             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |               |               |      |
| Day   | Hourly Period Ending At (MST) |   |     |                           |     |                   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      | Daily Average | Daily Maximum |      |
|   | 1                             | 2   | 3   | 4                         | 5   | 6                 | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24   |               |               |      |
| 1-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 2-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 3-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 4-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 5-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 6-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 7-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 8-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 9-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | A                 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 10-Jun                                      | 0.0                           | 0.0   | 0.0 | A                         | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 11-Jun                                      | 0.0                           | 0.0   | A   | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 12-Jun                                      | 0.0                           | A   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 13-Jun                                      | A                             | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 14-Jun                                      | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A    | 0.0           | 0.00          | 0.00 |
| 15-Jun                                      | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0  | 0.0           | 0.00          | 0.00 |
| 16-Jun                                      | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 17-Jun                                      | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0  | 0.0           | 0.00          | 0.00 |
| 18-Jun                                      | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A    | 0.0           | 0.00          | 0.00 |
| 19-Jun                                      | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A    | 0.0           | 0.00          | 0.00 |
| 20-Jun                                      | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0  | 0.0           | 0.00          | 0.00 |
| 21-Jun                                      | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 22-Jun                                      | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 23-Jun                                      | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 24-Jun                                      | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 25-Jun                                      | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 26-Jun                                      | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 27-Jun                                      | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 28-Jun                                      | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 29-Jun                                      | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
| 30-Jun                                      | 0.0                           | 0.0   | 0.0 | 0.0                       | 0.0 | 0.0               | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0  | 0.0           | 0.00          | 0.00 |
|   |                               |   |     |                           |     |                   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 0.00 | 0.00          |               |      |
|   |                               |   |     |                           |     |                   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 0.00 | 0.00          |               |      |

C - Calibration

A - Automated Daily Zero Span





## Hourly Maximums

Non Methane Hydrocarbon (NMHC) - ppm

Henry Pirker - June 2016

| Maximum Value: 0.03 ppm on Jun 3 15:00       |                               | Maximum Daily Average: 0.00 ppm on Jun 3  |     | Hours in Service: 720           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |               |      |
|--|-------------------------------|---|-----|---------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|---------------|---------------|------|
| Minimum Value: 0.0 ppm on Jun 1 02:00        |                               | Minimum Daily Average: 0.00 ppm on Jun 18   |     | Hours of Data: 685              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |               |      |
| Maximum Diurnal Average: 0.00 ppm at hour 15 |                               | Minimum Diurnal Average: 0.00 ppm at hour 18  |     | Hours of Missing Data: 35       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |               |      |
| Monthly Average: 0.001 ppm                   |                               | Percentiles: P <sub>1</sub> = 0.00 P <sub>10</sub> = 0.00 Q <sub>1</sub> = 0.00 Median = 0.00 Q <sub>3</sub> = 0.00 P <sub>90</sub> = 0.00 P <sub>99</sub> = 0.00 |     | Hours of Calibration: 35        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |               |      |
|  |                               |   |     | Percent Operational Time: 100.0 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |               |      |
| Day  | Hourly Period Ending At (MST) |   |     |                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 | Daily Average | Daily Maximum |      |
|  | 1                             | 2   | 3   | 4                               | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24              |               |               |      |
| 1-Jun  | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 2-Jun  | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 3-Jun  | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.03 |
| 4-Jun  | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 5-Jun  | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 6-Jun  | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 7-Jun  | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 8-Jun  | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 9-Jun  | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 10-Jun                                       | 0.0                           | 0.0   | 0.0 | A                               | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 11-Jun                                       | 0.0                           | 0.0   | A   | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 12-Jun                                       | 0.0                           | A   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 13-Jun                                       | A                             | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 14-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A               | 0.0           | 0.00          | 0.00 |
| 15-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0             | 0.0           | 0.00          | 0.00 |
| 16-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0             | 0.0           | 0.00          | 0.00 |
| 17-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 18-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 19-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0             | 0.0           | 0.00          | 0.00 |
| 20-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 21-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 22-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 23-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 24-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 25-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 26-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 27-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 28-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 29-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
| 30-Jun                                       | 0.0                           | 0.0   | 0.0 | 0.0                             | 0.0 | 0.0 | A   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0             | 0.0           | 0.00          | 0.00 |
|  |                               |   |     |                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Diurnal Average |               |               |      |
|  |                               |   |     |                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Diurnal Maximum |               |               |      |

C - Calibration

A - Automated Daily Zero Span

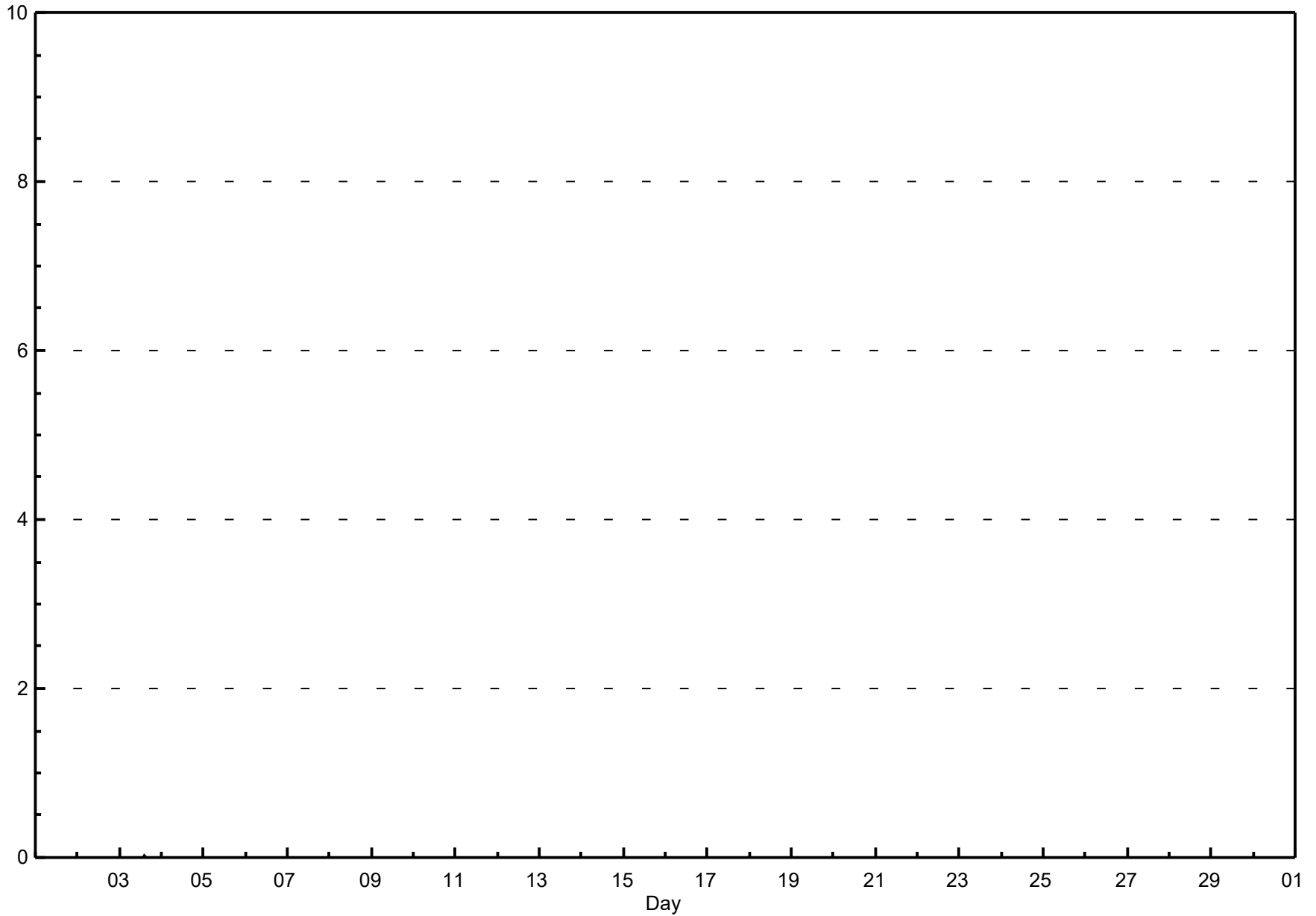


Peace Airshed Zone Association

### Hourly Maximums

Non Methane Hydrocarbon (NMHC) - ppm

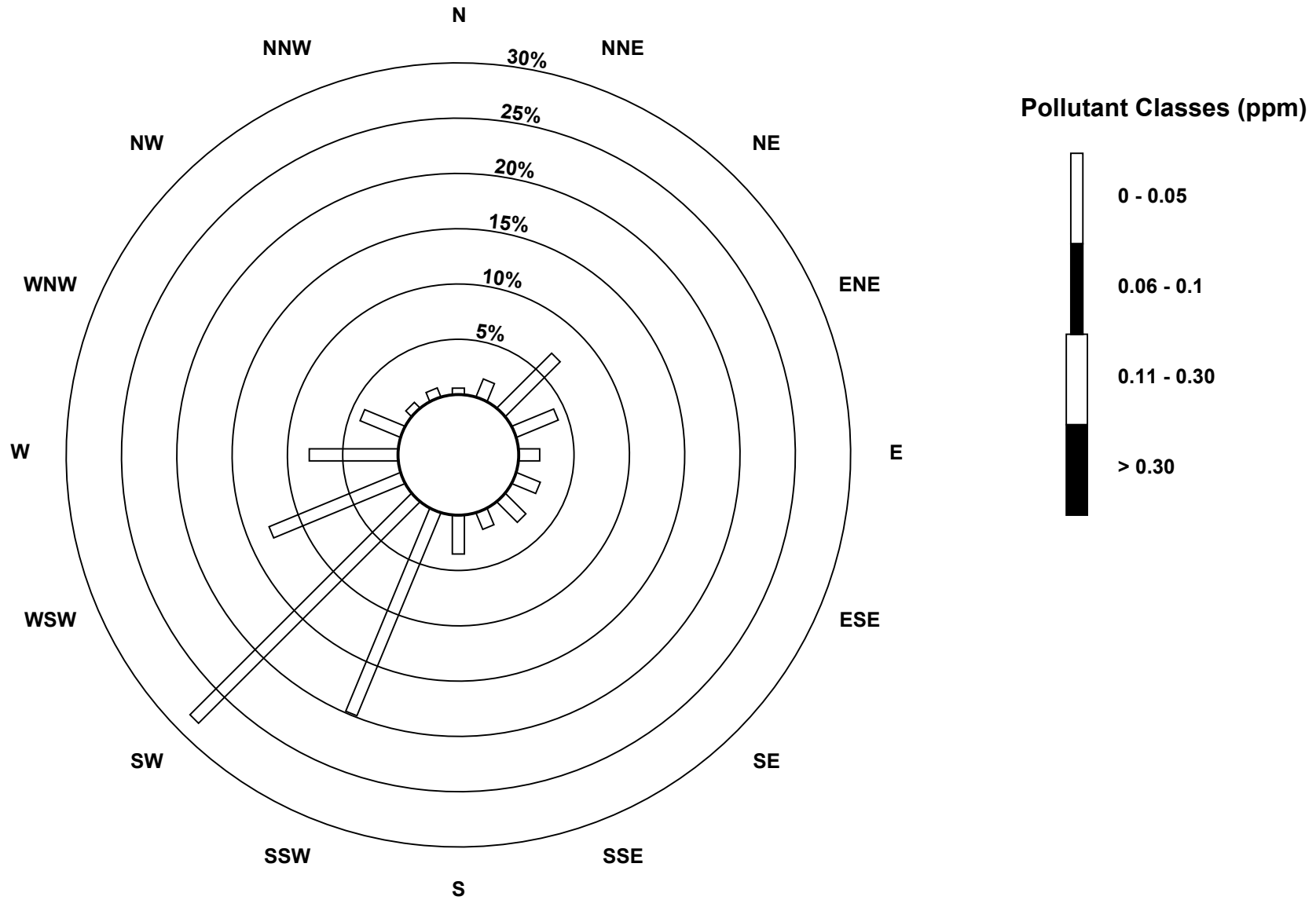
Henry Pirker - June 2016

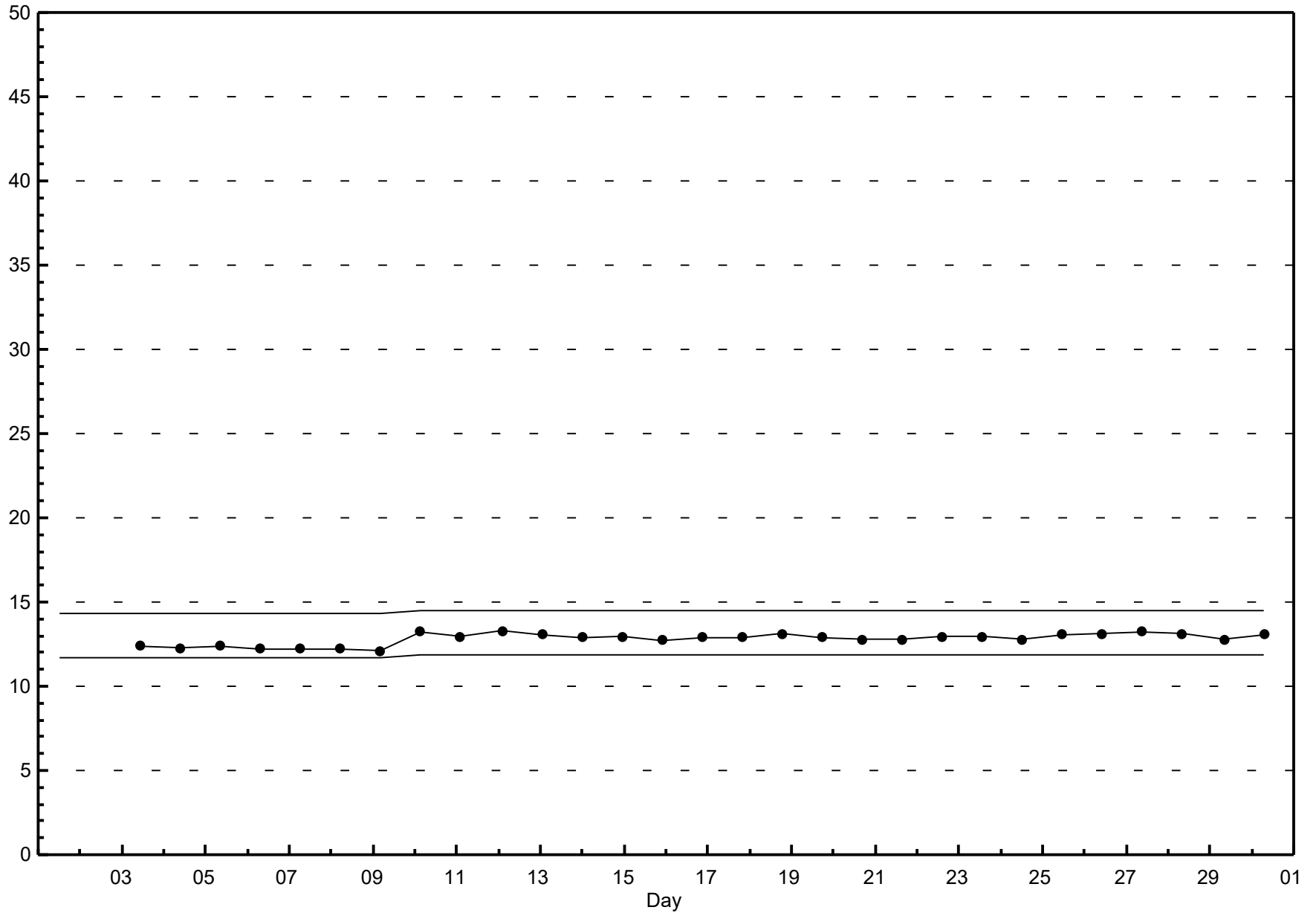


**Pollutant Rose**

**Non Methane Hydrocarbon (NMHC) - ppm**

**Henry Pirker - June 2016**





## Hourly Averages

## Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

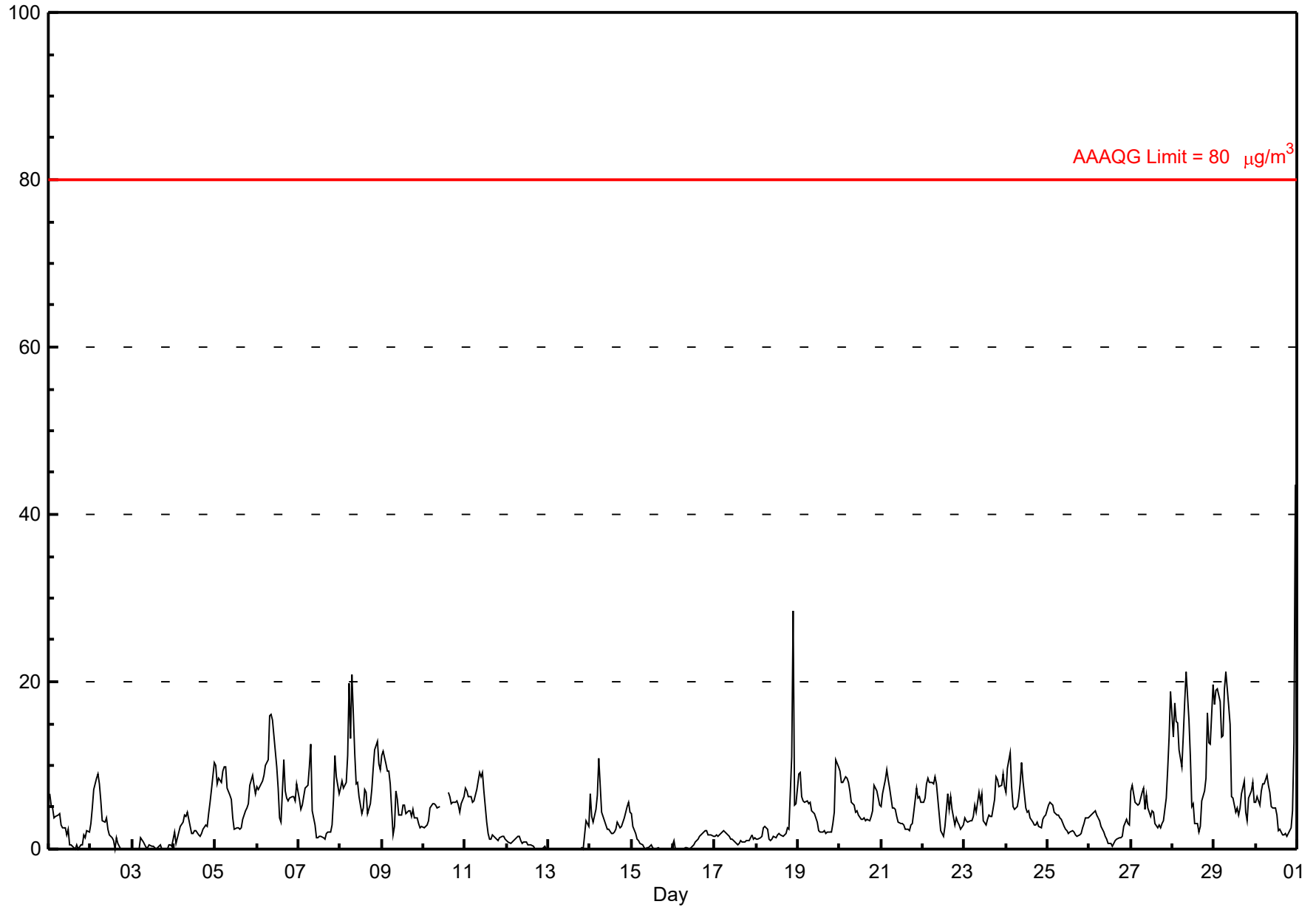
### Henry Pirker - June 2016

|   |   |
|---|---|
| Number of Exceedences: 1-hr: 0 24-hr: 0   | Hours in Service: 720                                   |
| Maximum Value: 43.5 µg/m <sup>3</sup> on Jul 1 00:00  | Maximum Daily Average: 11.0 µg/m <sup>3</sup> on Jun 28 |
| Minimum Value: 0 µg/m <sup>3</sup> on Jun 1 16:00   | Hours of Data: 716                                      |
| Maximum Diurnal Average: 6.6 µg/m <sup>3</sup> at hour 24   | Hours of Missing Data: 4                                |
| Monthly Average: 4.47 µg/m <sup>3</sup>   | Hours of Calibration: 4                                 |
| Minimum Daily Average: 0.3 µg/m <sup>3</sup> on Jun 3   | Percent Operational Time: 100.0                         |
| Minimum Diurnal Average: 2.3 µg/m <sup>3</sup> at hour 14   |   |
| Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.2 Q <sub>1</sub> = 1.6 Median = 3.5 Q <sub>3</sub> = 6.3 P <sub>90</sub> = 9.1 P <sub>99</sub> = 19.5 |   |

| Day    | Hourly Period Ending At (MST) |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Daily Average | Daily Maximum |
|--------|-------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------|---------------|
|        | 1                             | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |               |               |
| 1-Jun  | 7                             | 5  | 5  | 4  | 4  | 4  | 4  | 3  | 3  | 3  | 2  | 2  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 2  | 1  | 2  | 2  | 2.3           | 6.6           |
| 2-Jun  | 3                             | 5  | 7  | 8  | 9  | 8  | 6  | 3  | 3  | 4  | 2  | 2  | 1  | 1  | 0  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 2.7           | 8.9           |
| 3-Jun  | 0                             | 0  | 0  | 0  | 0  | 1  | 1  | 0  | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0.3           | 1.4           |
| 4-Jun  | 2                             | 1  | 1  | 2  | 3  | 3  | 4  | 4  | 4  | 3  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 3  | 3  | 4  | 6  | 7  | 10 | 3.2           | 10.4          |
| 5-Jun  | 10                            | 8  | 8  | 8  | 9  | 10 | 10 | 7  | 6  | 6  | 4  | 2  | 3  | 3  | 2  | 3  | 3  | 5  | 5  | 5  | 8  | 9  | 8  | 7  | 6.2           | 10.0          |
| 6-Jun  | 8                             | 7  | 8  | 8  | 9  | 10 | 11 | 16 | 16 | 15 | 14 | 10 | 7  | 4  | 3  | 11 | 7  | 6  | 6  | 6  | 6  | 6  | 6  | 8  | 8.6           | 16.2          |
| 7-Jun  | 6                             | 5  | 5  | 6  | 7  | 8  | 10 | 13 | 5  | 3  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 2  | 3  | 6  | 11 | 9  | 7  | 4.9           | 12.6          |
| 8-Jun  | 7                             | 8  | 7  | 8  | 11 | 20 | 13 | 21 | 11 | 8  | 8  | 6  | 4  | 5  | 7  | 7  | 4  | 5  | 7  | 10 | 12 | 13 | 10 | 9  | 9.3           | 20.8          |
| 9-Jun  | 11                            | 12 | 10 | 9  | 9  | 8  | 2  | 3  | 7  | 6  | 4  | 4  | 5  | 5  | 4  | 5  | 5  | 4  | 5  | 4  | 4  | 3  | 3  | 3  | 5.5           | 11.7          |
| 10-Jun | 3                             | 3  | 3  | 3  | 5  | 5  | 5  | 5  | 5  | 5  | C  | C  | C  | C  | 7  | 6  | 5  | 6  | 6  | 6  | 5  | 4  | 5  | 6  | 5.0           | 6.9           |
| 11-Jun | 7                             | 7  | 6  | 6  | 6  | 6  | 6  | 7  | 9  | 9  | 9  | 7  | 3  | 2  | 1  | 1  | 2  | 1  | 1  | 1  | 1  | 2  | 2  | 1  | 4.3           | 9.1           |
| 12-Jun | 1                             | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0.6           | 1.5           |
| 13-Jun | 0                             | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 2  | 3  | 3  | 0.3           | 3.4           |
| 14-Jun | 7                             | 4  | 3  | 5  | 7  | 11 | 8  | 4  | 3  | 3  | 2  | 2  | 2  | 2  | 2  | 2  | 3  | 3  | 3  | 3  | 4  | 5  | 6  | 4  | 4.0           | 10.8          |
| 15-Jun | 4                             | 3  | 2  | 1  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0.6           | 4.3           |
| 16-Jun | 1                             | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 1  | 0.8           | 2.2           |
| 17-Jun | 1                             | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 1  | 1  | 1.3           | 2.2           |
| 18-Jun | 1                             | 1  | 1  | 2  | 2  | 3  | 2  | 1  | 1  | 1  | 2  | 1  | 2  | 2  | 2  | 1  | 2  | 2  | 3  | 2  | 11 | 28 | 5  | 5  | 3.5           | 28.5          |
| 19-Jun | 9                             | 9  | 6  | 6  | 6  | 6  | 5  | 6  | 5  | 4  | 4  | 3  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 3  | 4  | 11 | 10 | 4.7           | 10.7          |
| 20-Jun | 9                             | 8  | 8  | 9  | 9  | 8  | 7  | 6  | 5  | 4  | 5  | 4  | 4  | 3  | 4  | 3  | 4  | 3  | 4  | 5  | 8  | 7  | 6  | 5  | 5.7           | 9.4           |
| 21-Jun | 5                             | 7  | 8  | 10 | 8  | 7  | 5  | 5  | 5  | 4  | 3  | 3  | 3  | 3  | 2  | 2  | 2  | 3  | 3  | 4  | 7  | 6  | 6  | 6  | 4.9           | 9.6           |
| 22-Jun | 6                             | 6  | 8  | 8  | 8  | 8  | 8  | 9  | 8  | 4  | 2  | 2  | 2  | 3  | 7  | 5  | 6  | 5  | 3  | 4  | 3  | 3  | 2  | 3  | 5.0           | 8.7           |
| 23-Jun | 4                             | 3  | 3  | 3  | 3  | 4  | 5  | 4  | 7  | 6  | 7  | 3  | 3  | 4  | 4  | 4  | 4  | 6  | 9  | 8  | 8  | 8  | 9  | 7  | 5.2           | 9.0           |
| 24-Jun | 7                             | 10 | 11 | 8  | 5  | 5  | 5  | 6  | 8  | 10 | 8  | 5  | 4  | 5  | 4  | 3  | 3  | 3  | 3  | 3  | 3  | 4  | 4  | 4  | 5.4           | 11.4          |
| 25-Jun | 5                             | 6  | 5  | 5  | 4  | 4  | 4  | 4  | 4  | 3  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 1  | 2  | 2  | 3  | 3  | 4  | 4  | 3.2           | 5.6           |
| 26-Jun | 4                             | 4  | 4  | 5  | 4  | 4  | 3  | 3  | 2  | 2  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 2  | 3  | 4  | 3  | 3  | 2.3           | 4.6           |
| 27-Jun | 7                             | 8  | 6  | 5  | 5  | 5  | 7  | 7  | 5  | 6  | 5  | 4  | 4  | 4  | 3  | 3  | 3  | 3  | 3  | 3  | 6  | 9  | 13 | 19 | 6.0           | 18.8          |
| 28-Jun | 13                            | 17 | 15 | 15 | 12 | 10 | 13 | 18 | 21 | 15 | 11 | 5  | 5  | 3  | 3  | 2  | 3  | 6  | 7  | 8  | 16 | 13 | 13 | 20 | 11.0          | 21.2          |
| 29-Jun | 17                            | 19 | 19 | 18 | 13 | 14 | 19 | 21 | 17 | 15 | 6  | 6  | 4  | 5  | 4  | 5  | 7  | 8  | 4  | 3  | 6  | 7  | 8  | 6  | 10.5          | 21.1          |
| 30-Jun | 6                             | 6  | 5  | 7  | 8  | 8  | 9  | 8  | 7  | 5  | 5  | 5  | 4  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 3  | 5  | 13 | 44 | 6.6           | 43.5          |

|      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |      |     |     |     |     |      |      |      |      |                 |
|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|------|------|------|-----------------|
| 5.7  | 5.8  | 5.7  | 5.7  | 5.7  | 6.1  | 5.9  | 6.2  | 5.6  | 4.9  | 3.9  | 3.0 | 2.5 | 2.3 | 2.4 | 2.6  | 2.6 | 2.7 | 2.9 | 3.1 | 4.4  | 5.5  | 5.4  | 6.6  | Diurnal Average |
| 17.3 | 18.9 | 19.2 | 17.6 | 13.4 | 19.8 | 19.1 | 21.1 | 21.2 | 15.5 | 13.6 | 9.8 | 7.2 | 5.2 | 7.0 | 10.7 | 7.0 | 8.2 | 8.7 | 9.7 | 16.3 | 28.5 | 13.4 | 43.5 | Diurnal Maximum |

C - Calibration  
 Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 µg/m<sup>3</sup> Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 µg/m<sup>3</sup>

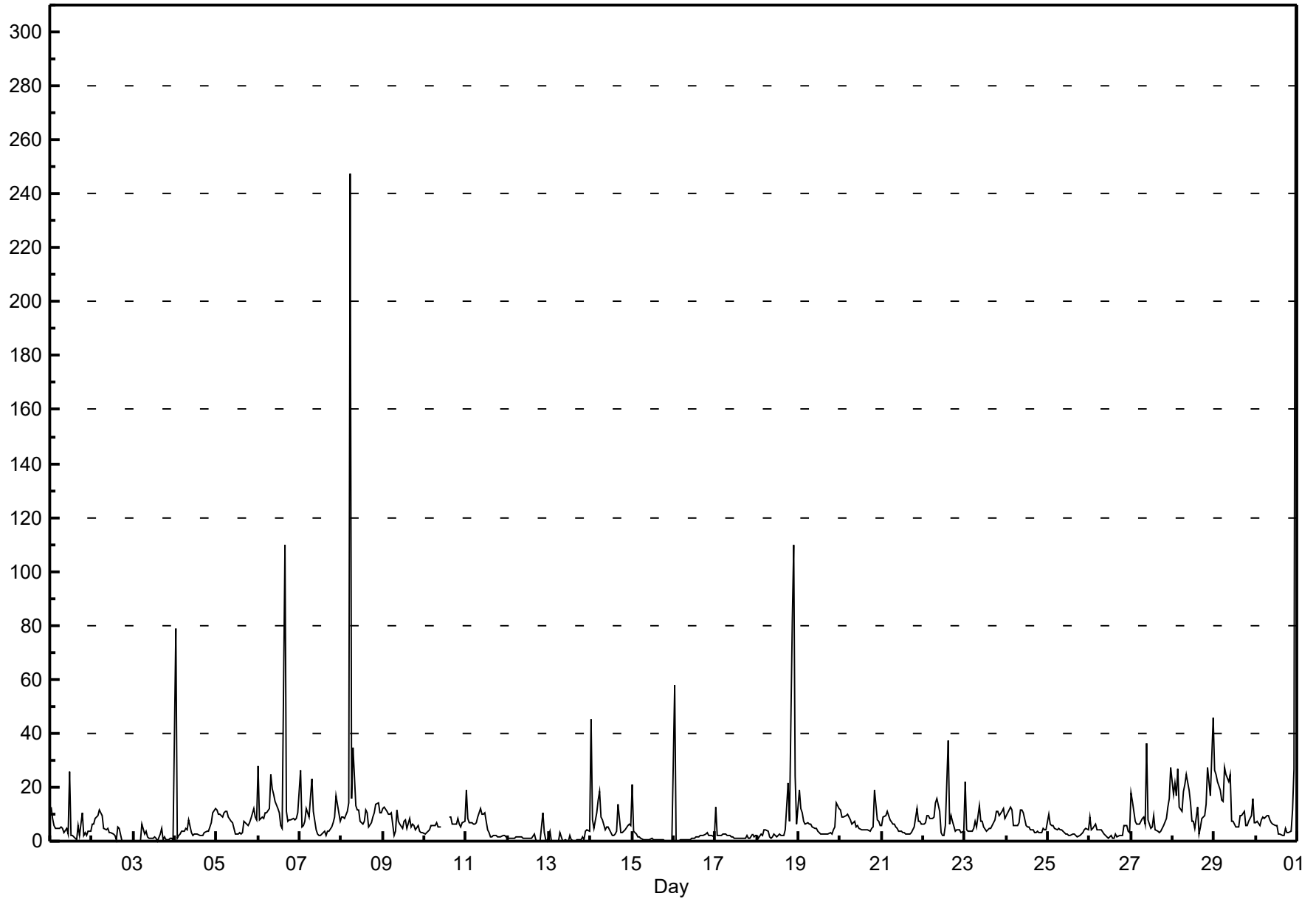


# Hourly Maximums

## Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

Henry Pirker - June 2016

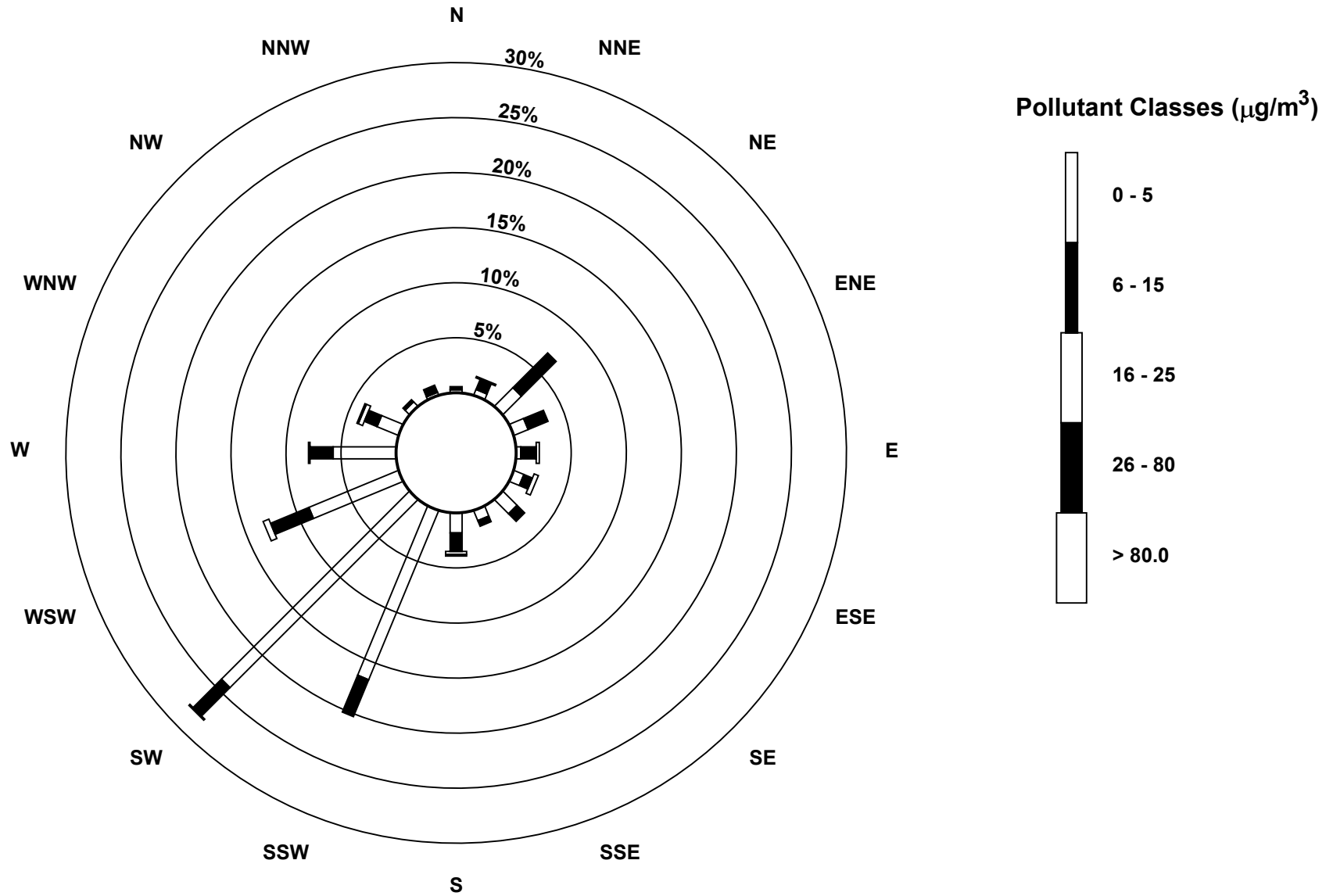
| Maximum Value: 309.3 µg/m <sup>3</sup> on Jul 1 00:00<br>Minimum Value: 0 µg/m <sup>3</sup> on Jun 2 19:00<br>Maximum Diurnal Average: 17.3 µg/m <sup>3</sup> at hour 24<br>Monthly Average: 7.62 µg/m <sup>3</sup> |                               | Maximum Daily Average: 21.2 µg/m <sup>3</sup> on Jun 8<br>Minimum Daily Average: 1.2 µg/m <sup>3</sup> on Jun 13<br>Minimum Diurnal Average: 3.4 µg/m <sup>3</sup> at hour 14<br>Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.9 Q <sub>1</sub> = 2.2 Median = 4.6 Q <sub>3</sub> = 8.7 P <sub>90</sub> = 12.8 P <sub>99</sub> = 44.1 |    | Hours in Service: 720<br>Hours of Data: 716<br>Hours of Missing Data: 4<br>Hours of Calibration: 4<br>Percent Operational Time: 100.0 |    |     |    |    |    |    |    |    |    |    |    |     |    |    |    |    |    |     |    |      |               |               |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
|---|-------------------------------|---|----|---|----|-----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|----|-----|----|------|---------------|---------------|------|------|-------|------|------|------|------|------|------|------|-----|------|-------|------|------|------|------|------|-------|------|-------|-----------------|
| Day   | Hourly Period Ending At (MST) |   |    |   |    |     |    |    |    |    |    |    |    |    |    |     |    |    |    |    |    |     |    |      | Daily Average | Daily Maximum |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
|   | 1                             | 2   | 3  | 4   | 5  | 6   | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16  | 17 | 18 | 19 | 20 | 21 | 22  | 23 | 24   |               |               |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 1-Jun   | 13                            | 8   | 6  | 5   | 5  | 5   | 5  | 5  | 3  | 5  | 3  | 26 | 2  | 2  | 1  | 0   | 6  | 2  | 11 | 2  | 3  | 2   | 4  | 3    | 5.2           | 26.0          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 2-Jun   | 6                             | 6   | 9  | 10  | 12 | 10  | 10 | 5  | 4  | 5  | 3  | 3  | 2  | 2  | 1  | 5   | 5  | 0  | 0  | 0  | 0  | 0   | 0  | 0    | 4.1           | 11.6          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 3-Jun   | 0                             | 0   | 0  | 0   | 0  | 6   | 3  | 4  | 2  | 1  | 1  | 1  | 2  | 1  | 0  | 3   | 5  | 1  | 2  | 1  | 1  | 1   | 1  | 1    | 1.4           | 6.1           |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 4-Jun   | 79                            | 1   | 2  | 3   | 4  | 4   | 5  | 4  | 8  | 3  | 2  | 2  | 3  | 3  | 2  | 2   | 2  | 3  | 3  | 4  | 5  | 7   | 10 | 12   | 7.2           | 78.8          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 5-Jun   | 12                            | 10  | 10 | 9   | 10 | 11  | 11 | 9  | 7  | 7  | 5  | 3  | 3  | 3  | 3  | 3   | 8  | 6  | 6  | 7  | 9  | 12  | 9  | 8    | 7.5           | 11.8          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 6-Jun   | 28                            | 8   | 9  | 9   | 10 | 11  | 12 | 25 | 19 | 18 | 15 | 12 | 11 | 6  | 5  | 110 | 11 | 7  | 8  | 8  | 8  | 8   | 8  | 10   | 15.6          | 110.0         |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 7-Jun   | 26                            | 5   | 6  | 7   | 12 | 9   | 16 | 23 | 11 | 4  | 2  | 2  | 2  | 2  | 3  | 2   | 4  | 3  | 5  | 7  | 9  | 17  | 13 | 7    | 8.4           | 26.4          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 8-Jun   | 9                             | 9   | 9  | 11  | 14 | 247 | 16 | 35 | 13 | 11 | 12 | 7  | 6  | 7  | 11 | 10  | 5  | 7  | 9  | 11 | 14 | 14  | 11 | 10   | 21.2          | 247.4         |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 9-Jun   | 12                            | 12  | 11 | 10  | 10 | 10  | 2  | 4  | 12 | 7  | 6  | 5  | 7  | 8  | 5  | 8   | 5  | 6  | 6  | 4  | 6  | 3   | 3  | 3    | 6.9           | 12.5          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 10-Jun  | 3                             | 3   | 3  | 4   | 6  | 6   | 6  | 7  | 5  | 5  | C  | C  | C  | C  | 9  | 9   | 6  | 6  | 6  | 8  | 6  | 5   | 7  | 7    | 6.0           | 9.0           |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 11-Jun  | 19                            | 9   | 7  | 7   | 6  | 6   | 7  | 9  | 12 | 10 | 10 | 10 | 4  | 3  | 2  | 2   | 2  | 2  | 1  | 1  | 2  | 2   | 2  | 1    | 5.7           | 18.8          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 12-Jun  | 1                             | 1   | 1  | 1   | 1  | 2   | 2  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 3   | 0  | 0  | 0  | 0  | 10 | 3   | 1  | 0    | 1.5           | 10.3          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 13-Jun  | 3                             | 0   | 0  | 0   | 0  | 0   | 3  | 2  | 0  | 1  | 0  | 0  | 2  | 1  | 0  | 0   | 0  | 0  | 1  | 2  | 1  | 4   | 4  | 4    | 1.2           | 4.1           |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 14-Jun  | 45                            | 8   | 5  | 10  | 15 | 19  | 9  | 8  | 4  | 5  | 5  | 4  | 2  | 2  | 3  | 3   | 14 | 3  | 3  | 4  | 4  | 6   | 6  | 6    | 8.1           | 45.0          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 15-Jun  | 21                            | 3   | 3  | 2   | 1  | 1   | 1  | 1  | 0  | 0  | 1  | 1  | 1  | 0  | 1  | 1   | 0  | 0  | 0  | 0  | 0  | 0   | 0  | 0    | 1.6           | 20.9          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 16-Jun  | 58                            | 0   | 0  | 0   | 0  | 0   | 0  | 1  | 1  | 0  | 1  | 1  | 1  | 2  | 2  | 2   | 2  | 2  | 3  | 3  | 2  | 2   | 2  | 2    | 3.6           | 57.9          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 17-Jun  | 12                            | 2   | 2  | 2   | 3  | 3   | 3  | 2  | 2  | 2  | 2  | 1  | 1  | 1  | 1  | 1   | 1  | 1  | 2  | 1  | 1  | 3   | 2  | 2    | 2.2           | 12.5          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 18-Jun  | 2                             | 1   | 2  | 2   | 4  | 4   | 3  | 1  | 1  | 2  | 3  | 2  | 2  | 2  | 2  | 2   | 4  | 13 | 21 | 7  | 82 | 110 | 24 | 6    | 12.7          | 109.8         |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 19-Jun  | 19                            | 12  | 11 | 7   | 6  | 7   | 6  | 6  | 5  | 5  | 4  | 3  | 3  | 3  | 3  | 3   | 2  | 3  | 3  | 2  | 4  | 5   | 14 | 12   | 6.2           | 18.8          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 20-Jun  | 11                            | 9   | 9  | 10  | 10 | 9   | 8  | 7  | 7  | 5  | 6  | 5  | 4  | 4  | 4  | 4   | 4  | 4  | 5  | 5  | 19 | 8   | 7  | 6    | 7.1           | 19.1          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 21-Jun  | 6                             | 9   | 9  | 11  | 10 | 8   | 6  | 6  | 5  | 5  | 4  | 3  | 3  | 3  | 3  | 3   | 3  | 3  | 4  | 5  | 12 | 7   | 7  | 6    | 5.9           | 12.0          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 22-Jun  | 7                             | 7   | 9  | 10  | 8  | 8   | 9  | 14 | 16 | 11 | 3  | 2  | 2  | 6  | 38 | 6   | 10 | 7  | 3  | 4  | 4  | 4   | 3  | 4    | 8.2           | 37.6          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 23-Jun  | 22                            | 4   | 4  | 4   | 4  | 5   | 8  | 5  | 13 | 7  | 7  | 5  | 4  | 4  | 5  | 5   | 6  | 8  | 11 | 11 | 10 | 11  | 12 | 8    | 7.6           | 22.2          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 24-Jun  | 9                             | 10  | 12 | 12  | 6  | 6   | 6  | 7  | 11 | 12 | 11 | 6  | 5  | 5  | 4  | 4   | 3  | 3  | 4  | 3  | 3  | 5   | 4  | 4    | 6.5           | 12.5          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 25-Jun  | 10                            | 6   | 6  | 6   | 5  | 4   | 5  | 4  | 4  | 3  | 3  | 3  | 2  | 2  | 3  | 3   | 2  | 2  | 2  | 3  | 3  | 4   | 5  | 4    | 3.9           | 10.2          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 26-Jun  | 9                             | 4   | 5  | 6   | 4  | 4   | 4  | 4  | 3  | 2  | 2  | 1  | 2  | 1  | 1  | 3   | 2  | 2  | 2  | 2  | 6  | 6   | 4  | 3    | 3.4           | 8.8           |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 27-Jun  | 18                            | 15  | 7  | 6   | 6  | 6   | 8  | 9  | 6  | 36 | 8  | 5  | 5  | 9  | 4  | 3   | 3  | 4  | 5  | 6  | 8  | 13  | 16 | 27   | 9.8           | 36.1          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 28-Jun  | 17                            | 21  | 17 | 27  | 13 | 11  | 18 | 21 | 25 | 19 | 14 | 7  | 8  | 5  | 13 | 3   | 5  | 9  | 9  | 14 | 27 | 22  | 17 | 46   | 16.2          | 45.9          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 29-Jun  | 26                            | 25  | 22 | 19  | 15 | 15  | 27 | 25 | 22 | 25 | 7  | 7  | 5  | 5  | 5  | 9   | 9  | 11 | 6  | 6  | 8  | 10  | 16 | 7    | 13.9          | 27.5          |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
| 30-Jun  | 7                             | 8   | 6  | 8   | 9  | 8   | 10 | 9  | 8  | 7  | 6  | 6  | 6  | 3  | 3  | 2   | 2  | 5  | 3  | 3  | 4  | 12  | 27 | 309  | 19.6          | 309.3         |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |
|   |                               |   |    |   |    |     |    |    |    |    |    |    |    |    |    |     |    |    |    |    |    |     |    | 17.0 | 7.3           | 6.7           | 7.2  | 7.0  | 14.8  | 7.6  | 8.8  | 7.8  | 7.4  | 5.1  | 4.7  | 3.5  | 3.4 | 4.5  | 7.2   | 4.4  | 4.1  | 4.8  | 4.5  | 9.0  | 10.2  | 8.0  | 17.3  | Diurnal Average |
|   |                               |   |    |   |    |     |    |    |    |    |    |    |    |    |    |     |    |    |    |    |    |     |    | 78.8 | 24.7          | 22.0          | 26.8 | 15.4 | 247.4 | 27.5 | 34.6 | 24.7 | 36.1 | 14.7 | 26.0 | 10.8 | 9.4 | 37.6 | 110.0 | 13.6 | 12.6 | 21.4 | 13.7 | 82.0 | 109.8 | 26.8 | 309.3 | Diurnal Maximum |
| C - Calibration   |                               |   |    |   |    |     |    |    |    |    |    |    |    |    |    |     |    |    |    |    |    |     |    |      |               |               |      |      |       |      |      |      |      |      |      |      |     |      |       |      |      |      |      |      |       |      |       |                 |





**Pollutant Rose**

**Particulate Matter 2.5 (PM<sub>2.5</sub>) - μg/m<sup>3</sup>**  
**Henry Pirker - June 2016**





Peace Airshed Zone Association

# Hourly Averages

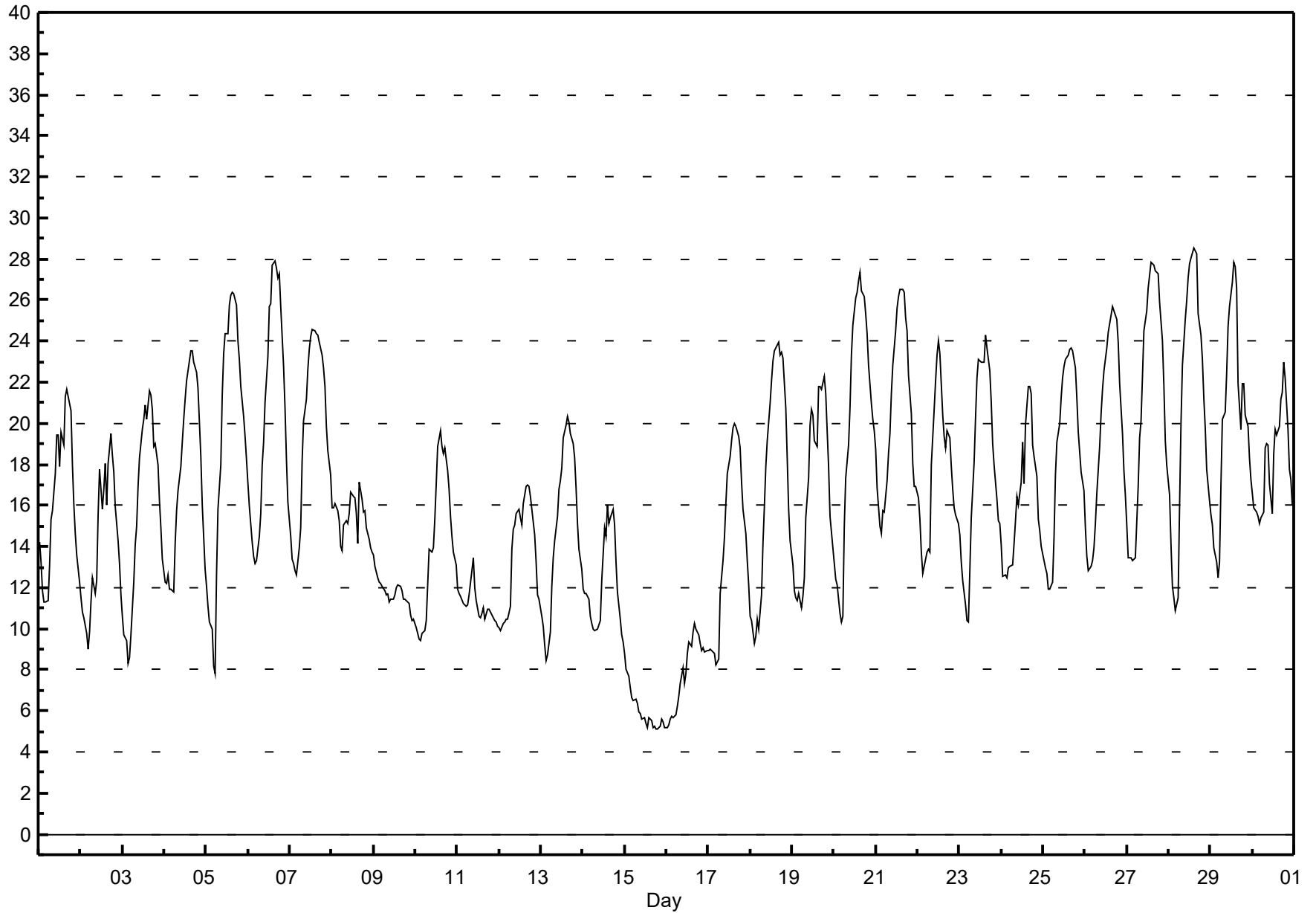
External Temperature (ET) - °C

Henry Pirker - June 2016

|   |  |
|---|--|
| Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0   | Hours in Service: 720                    |
| Maximum Value: 28.5 °C on Jun 28 15:00  | Maximum Daily Average: 21.3 °C on Jun 27 |
| Minimum Value: 5 °C on Jun 15 20:00   | Hours of Data: 720                       |
| Minimum Daily Average: 6.0 °C on Jun 15   | Hours of Missing Data: 0                 |
| Maximum Diurnal Average: 20.7 °C at hour 16   | Hours of Calibration: 0                  |
| Monthly Average: 16.32 °C   | Percent Operational Time: 100.0          |
| Minimum Diurnal Average: 11.2 °C at hour 5  |  |
| Percentiles: P <sub>1</sub> = 5.3 P <sub>10</sub> = 9.9 Q <sub>1</sub> = 12.0 Median = 15.8 Q <sub>3</sub> = 20.2 P <sub>90</sub> = 24.0 P <sub>99</sub> = 27.9 |  |

| Day    | Hourly Period Ending At (MST) |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Daily Average | Daily Maximum |      |
|--------|-------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------|---------------|------|
|        | 1                             | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |               |               |      |
| 1-Jun  | 14                            | 13 | 12 | 11 | 11 | 11 | 13 | 15 | 16 | 18 | 19 | 19 | 18 | 20 | 19 | 21 | 22 | 21 | 21 | 18 | 16 | 15 | 14 | 12 | 16.2          | 21.6          |      |
| 2-Jun  | 11                            | 11 | 11 | 10 | 9  | 10 | 11 | 12 | 12 | 12 | 16 | 18 | 16 | 17 | 18 | 16 | 18 | 20 | 18 | 18 | 16 | 14 | 13 | 12 | 14.1          | 19.5          |      |
| 3-Jun  | 11                            | 10 | 9  | 8  | 9  | 10 | 12 | 14 | 15 | 17 | 18 | 20 | 20 | 21 | 20 | 22 | 21 | 21 | 19 | 19 | 18 | 16 | 15 | 13 | 15.7          | 21.6          |      |
| 4-Jun  | 12                            | 12 | 13 | 12 | 12 | 12 | 14 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 24 | 23 | 23 | 22 | 20 | 18 | 16 | 13 | 17.7          | 23.5          |      |
| 5-Jun  | 12                            | 11 | 10 | 10 | 8  | 8  | 13 | 16 | 18 | 21 | 23 | 24 | 24 | 26 | 26 | 26 | 26 | 26 | 24 | 23 | 22 | 20 | 19 | 18 | 19.0          | 26.4          |      |
| 6-Jun  | 17                            | 16 | 14 | 13 | 13 | 13 | 15 | 16 | 18 | 19 | 21 | 23 | 26 | 26 | 28 | 28 | 28 | 27 | 27 | 26 | 23 | 21 | 18 | 16 | 20.5          | 27.9          |      |
| 7-Jun  | 15                            | 13 | 13 | 13 | 13 | 14 | 15 | 18 | 20 | 21 | 23 | 24 | 24 | 25 | 25 | 24 | 24 | 24 | 23 | 23 | 22 | 20 | 19 | 17 | 19.6          | 24.6          |      |
| 8-Jun  | 16                            | 16 | 16 | 16 | 15 | 14 | 14 | 15 | 15 | 15 | 16 | 17 | 16 | 16 | 16 | 14 | 17 | 16 | 16 | 15 | 14 | 14 | 14 | 14 | 15.4          | 17.1          |      |
| 9-Jun  | 14                            | 13 | 13 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 11 | 11 | 12 | 12 | 12 | 12 | 12 | 11 | 11 | 11 | 11 | 10 | 10 | 10 | 11.7          | 13.6          |      |
| 10-Jun | 10                            | 10 | 10 | 9  | 10 | 10 | 10 | 12 | 14 | 14 | 14 | 15 | 17 | 19 | 20 | 19 | 19 | 19 | 18 | 17 | 15 | 14 | 14 | 13 | 14.2          | 19.6          |      |
| 11-Jun | 12                            | 12 | 12 | 11 | 11 | 11 | 11 | 12 | 13 | 13 | 12 | 11 | 11 | 11 | 11 | 11 | 10 | 11 | 11 | 11 | 11 | 10 | 10 | 10 | 11.2          | 13.4          |      |
| 12-Jun | 10                            | 10 | 10 | 10 | 10 | 10 | 11 | 14 | 15 | 15 | 16 | 16 | 15 | 15 | 16 | 17 | 17 | 17 | 16 | 16 | 15 | 13 | 12 | 11 | 13.7          | 17.0          |      |
| 13-Jun | 11                            | 10 | 9  | 8  | 9  | 10 | 12 | 13 | 14 | 16 | 17 | 17 | 18 | 19 | 20 | 20 | 20 | 20 | 19 | 18 | 17 | 15 | 14 | 13 | 15.0          | 20.3          |      |
| 14-Jun | 12                            | 12 | 12 | 11 | 11 | 10 | 10 | 10 | 10 | 10 | 10 | 12 | 15 | 14 | 16 | 15 | 15 | 16 | 15 | 13 | 12 | 10 | 10 | 9  | 12.2          | 16.1          |      |
| 15-Jun | 9                             | 8  | 8  | 7  | 7  | 7  | 7  | 6  | 6  | 6  | 6  | 6  | 5  | 5  | 6  | 6  | 5  | 5  | 5  | 5  | 5  | 6  | 5  | 5  | 6.0           | 8.8           |      |
| 16-Jun | 5                             | 5  | 6  | 6  | 6  | 6  | 6  | 7  | 7  | 8  | 7  | 8  | 9  | 9  | 9  | 10 | 10 | 10 | 10 | 9  | 9  | 9  | 9  | 9  | 7.9           | 10.2          |      |
| 17-Jun | 9                             | 9  | 9  | 9  | 8  | 8  | 8  | 12 | 13 | 14 | 16 | 18 | 18 | 19 | 20 | 20 | 20 | 19 | 19 | 17 | 16 | 15 | 13 | 12 | 14.3          | 20.0          |      |
| 18-Jun | 11                            | 10 | 9  | 10 | 10 | 10 | 12 | 14 | 16 | 18 | 19 | 21 | 22 | 23 | 24 | 24 | 24 | 23 | 23 | 23 | 21 | 18 | 16 | 14 | 17.3          | 24.0          |      |
| 19-Jun | 13                            | 12 | 11 | 11 | 12 | 11 | 12 | 13 | 15 | 17 | 20 | 21 | 20 | 19 | 19 | 22 | 22 | 22 | 22 | 22 | 21 | 20 | 18 | 15 | 14            | 16.8          | 22.3 |
| 20-Jun | 13                            | 12 | 12 | 11 | 10 | 11 | 15 | 17 | 19 | 21 | 23 | 25 | 26 | 26 | 27 | 27 | 26 | 26 | 25 | 24 | 23 | 21 | 20 | 20 | 20.1          | 27.4          |      |
| 21-Jun | 19                            | 17 | 15 | 15 | 16 | 16 | 17 | 19 | 19 | 21 | 23 | 24 | 26 | 26 | 27 | 27 | 26 | 25 | 25 | 22 | 20 | 18 | 17 | 17 | 20.7          | 26.5          |      |
| 22-Jun | 16                            | 15 | 14 | 13 | 13 | 14 | 14 | 14 | 18 | 21 | 22 | 23 | 24 | 23 | 20 | 19 | 19 | 20 | 19 | 18 | 17 | 16 | 16 | 15 | 17.6          | 24.0          |      |
| 23-Jun | 15                            | 13 | 12 | 11 | 10 | 10 | 13 | 15 | 18 | 20 | 22 | 23 | 23 | 23 | 23 | 24 | 24 | 23 | 21 | 19 | 18 | 16 | 15 | 15 | 17.8          | 24.3          |      |
| 24-Jun | 14                            | 13 | 13 | 12 | 13 | 13 | 13 | 14 | 15 | 16 | 16 | 17 | 19 | 17 | 20 | 22 | 22 | 21 | 19 | 18 | 17 | 15 | 15 | 14 | 16.2          | 21.8          |      |
| 25-Jun | 13                            | 13 | 13 | 12 | 12 | 12 | 14 | 17 | 19 | 20 | 21 | 22 | 23 | 23 | 23 | 24 | 24 | 24 | 23 | 21 | 20 | 19 | 18 | 17 | 18.6          | 23.7          |      |
| 26-Jun | 15                            | 14 | 13 | 13 | 13 | 14 | 15 | 17 | 19 | 20 | 22 | 23 | 24 | 24 | 25 | 25 | 26 | 25 | 25 | 24 | 22 | 19 | 18 | 17 | 19.6          | 25.7          |      |
| 27-Jun | 15                            | 13 | 13 | 13 | 13 | 13 | 17 | 19 | 20 | 22 | 25 | 26 | 27 | 27 | 28 | 28 | 27 | 27 | 26 | 24 | 22 | 19 | 18 | 18 | 21.3          | 27.9          |      |
| 28-Jun | 17                            | 14 | 12 | 11 | 11 | 12 | 16 | 20 | 23 | 25 | 26 | 27 | 28 | 28 | 29 | 28 | 28 | 25 | 24 | 23 | 21 | 20 | 18 | 16 | 20.9          | 28.5          |      |
| 29-Jun | 16                            | 15 | 14 | 13 | 12 | 13 | 17 | 20 | 21 | 22 | 25 | 26 | 27 | 28 | 28 | 27 | 22 | 20 | 22 | 22 | 20 | 20 | 18 | 17 | 20.2          | 27.9          |      |
| 30-Jun | 17                            | 16 | 16 | 15 | 15 | 15 | 16 | 19 | 19 | 19 | 17 | 16 | 19 | 20 | 19 | 20 | 21 | 22 | 23 | 22 | 20 | 18 | 17 | 16 | 18.1          | 23.0          |      |

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |                 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|-----------------|
| 13.1 | 12.3 | 11.7 | 11.3 | 11.2 | 11.4 | 12.8 | 14.6 | 15.9 | 17.1 | 18.2 | 19.1 | 19.7 | 20.1 | 20.5 | 20.7 | 20.7 | 20.3 | 19.8 | 18.9 | 17.5 | 16.1 | 14.9 | 14.0 |  | Diurnal Average |
| 18.8 | 16.9 | 16.1 | 15.8 | 15.7 | 15.7 | 17.2 | 20.2 | 22.8 | 25.1 | 26.0 | 27.1 | 27.7 | 28.1 | 28.5 | 28.4 | 28.3 | 27.4 | 27.3 | 25.9 | 24.0 | 21.9 | 20.2 | 19.6 |  | Diurnal Maximum |



# Hourly Averages

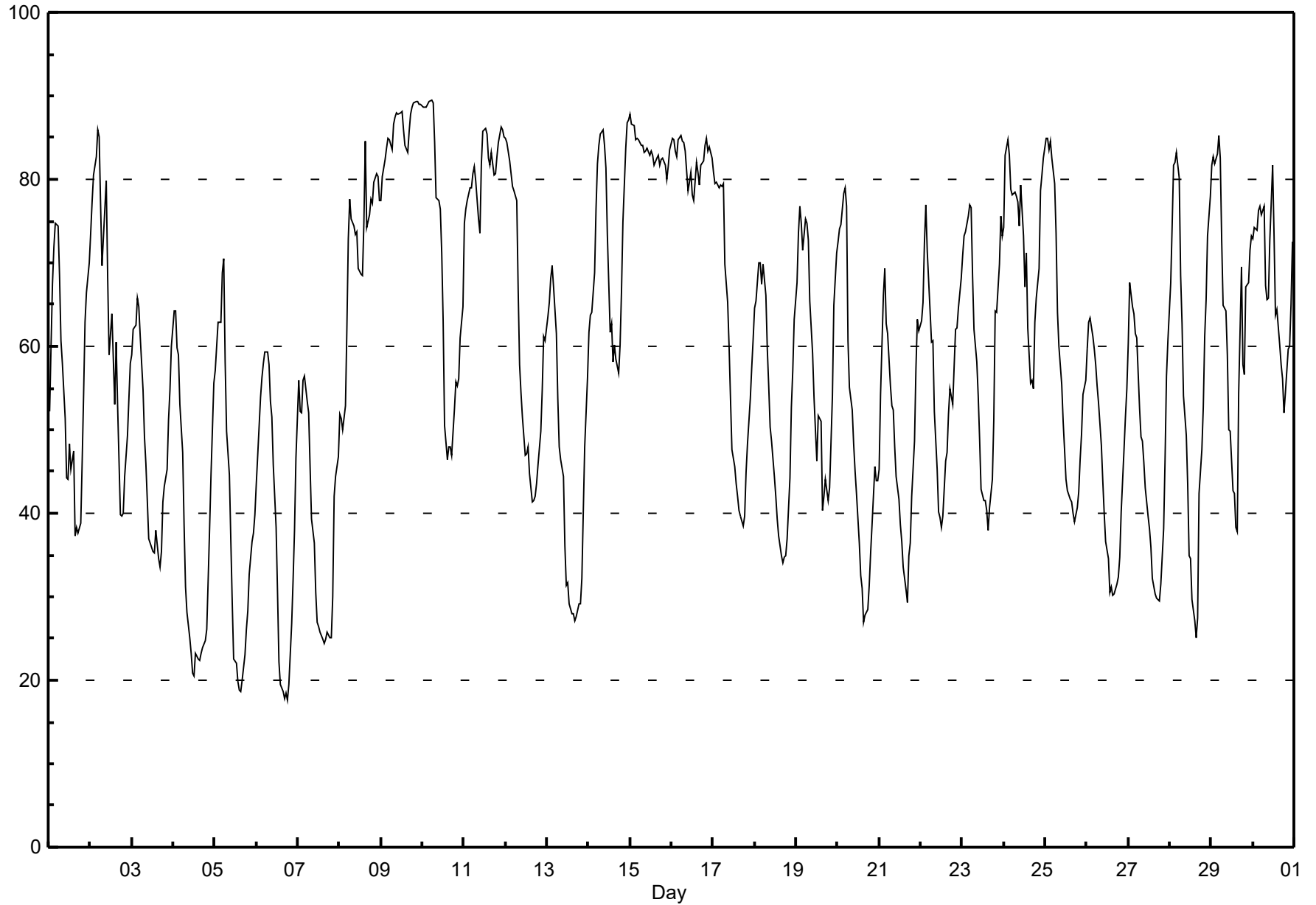
Relative Humidity (RH) - %

Henry Pirker - June 2016

| Number of Exceedences (AAQO): 1-hr: 0 24-hr: 0<br>Maximum Value: 89.6 % on Jun 10 06:00 Maximum Daily Average: 86.0 % on Jun 9  |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Hours in Service: 720<br>Hours of Data: 720  |    |    |    |    |    |               |               |
|---|-------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|----|----|----|----|----|---------------|---------------|
| Minimum Value: 18 % on Jun 6 19:00 Minimum Daily Average: 36.3 % on Jun 4<br>Maximum Diurnal Average: 73.5 % at hour 5 Minimum Diurnal Average: 44.9 % at hour 16<br>Monthly Average: 58.74 % Percentiles: P <sub>1</sub> = 19.3 P <sub>10</sub> = 31.5 Q <sub>1</sub> = 43.8 Median = 59.7 Q <sub>3</sub> = 76.4 P <sub>90</sub> = 83.5 P <sub>99</sub> = 89.0 |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Hours of Missing Data: 0<br>Hours of Calibration: 0<br>Percent Operational Time: 100.0 |    |    |    |    |    |               |               |
| Day   | Hourly Period Ending At (MST) |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |    |    |    |    |    | Daily Average | Daily Maximum |
|   | 1                             | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19   | 20 | 21 | 22 | 23 | 24 |               |               |
| 1-Jun   | 52                            | 60 | 67 | 72 | 75 | 74 | 69 | 61 | 58 | 51 | 44 | 44 | 48 | 45 | 47 | 37 | 38 | 38 | 39   | 46 | 54 | 63 | 67 | 70 | 55.0          | 74.8          |
| 2-Jun   | 74                            | 77 | 81 | 83 | 86 | 85 | 77 | 70 | 76 | 80 | 68 | 59 | 64 | 58 | 53 | 61 | 53 | 40 | 40   | 40 | 44 | 49 | 54 | 58 | 63.7          | 85.9          |
| 3-Jun   | 59                            | 62 | 63 | 66 | 65 | 61 | 55 | 49 | 46 | 41 | 37 | 36 | 35 | 35 | 38 | 35 | 34 | 35 | 41   | 43 | 45 | 51 | 55 | 60 | 47.8          | 65.8          |
| 4-Jun   | 64                            | 64 | 60 | 59 | 53 | 47 | 39 | 31 | 28 | 25 | 23 | 21 | 20 | 23 | 23 | 22 | 23 | 24 | 25   | 26 | 32 | 38 | 45 | 56 | 36.3          | 64.2          |
| 5-Jun   | 57                            | 60 | 63 | 63 | 69 | 70 | 58 | 50 | 45 | 37 | 29 | 23 | 22 | 20 | 19 | 19 | 20 | 23 | 26   | 28 | 33 | 37 | 38 | 40 | 39.5          | 70.5          |
| 6-Jun   | 44                            | 47 | 54 | 56 | 58 | 59 | 59 | 58 | 53 | 52 | 46 | 38 | 31 | 22 | 19 | 19 | 18 | 18 | 18   | 19 | 27 | 32 | 38 | 47 | 38.8          | 59.4          |
| 7-Jun   | 56                            | 52 | 52 | 56 | 56 | 53 | 52 | 46 | 39 | 36 | 30 | 27 | 26 | 26 | 25 | 24 | 25 | 26 | 25   | 25 | 30 | 42 | 44 | 47 | 38.4          | 56.4          |
| 8-Jun   | 52                            | 51 | 50 | 53 | 62 | 73 | 78 | 75 | 74 | 73 | 74 | 69 | 69 | 68 | 75 | 85 | 74 | 76 | 78   | 77 | 80 | 81 | 80 | 77 | 71.0          | 84.6          |
| 9-Jun   | 78                            | 80 | 82 | 84 | 85 | 85 | 84 | 87 | 87 | 88 | 88 | 88 | 88 | 86 | 84 | 83 | 86 | 88 | 89   | 89 | 89 | 89 | 89 | 89 | 86.0          | 89.4          |
| 10-Jun  | 89                            | 89 | 89 | 89 | 89 | 90 | 89 | 84 | 78 | 77 | 76 | 71 | 63 | 51 | 46 | 48 | 48 | 47 | 52   | 56 | 55 | 56 | 61 | 65 | 69.1          | 89.6          |
| 11-Jun  | 75                            | 76 | 77 | 79 | 79 | 81 | 82 | 80 | 75 | 74 | 82 | 86 | 86 | 85 | 82 | 82 | 83 | 81 | 81   | 83 | 84 | 86 | 86 | 85 | 81.2          | 86.2          |
| 12-Jun  | 85                            | 84 | 82 | 81 | 79 | 79 | 77 | 67 | 58 | 54 | 52 | 47 | 47 | 48 | 45 | 41 | 42 | 42 | 44   | 46 | 50 | 55 | 61 | 61 | 59.4          | 85.0          |
| 13-Jun  | 64                            | 65 | 68 | 70 | 67 | 61 | 54 | 48 | 46 | 44 | 36 | 31 | 32 | 29 | 28 | 28 | 27 | 28 | 29   | 29 | 32 | 40 | 48 | 56 | 44.2          | 69.6          |
| 14-Jun  | 62                            | 64 | 64 | 69 | 77 | 82 | 84 | 85 | 86 | 84 | 81 | 73 | 62 | 63 | 58 | 60 | 59 | 57 | 60   | 67 | 75 | 84 | 87 | 87 | 72.0          | 87.1          |
| 15-Jun  | 88                            | 87 | 87 | 85 | 85 | 85 | 84 | 84 | 83 | 83 | 84 | 83 | 83 | 83 | 82 | 83 | 83 | 82 | 82   | 83 | 82 | 80 | 82 | 84 | 83.5          | 87.8          |
| 16-Jun  | 85                            | 85 | 83 | 83 | 85 | 85 | 85 | 84 | 83 | 79 | 80 | 81 | 78 | 77 | 82 | 81 | 79 | 82 | 82   | 84 | 85 | 83 | 84 | 83 | 82.4          | 85.3          |
| 17-Jun  | 81                            | 80 | 80 | 79 | 79 | 79 | 80 | 70 | 65 | 60 | 54 | 48 | 46 | 44 | 42 | 40 | 40 | 39 | 40   | 45 | 48 | 54 | 58 | 61 | 58.7          | 80.8          |
| 18-Jun  | 65                            | 65 | 70 | 70 | 67 | 70 | 66 | 60 | 55 | 50 | 49 | 44 | 42 | 39 | 37 | 35 | 34 | 35 | 35   | 37 | 44 | 53 | 57 | 63 | 51.8          | 70.0          |
| 19-Jun  | 68                            | 74 | 77 | 75 | 72 | 75 | 75 | 73 | 65 | 59 | 54 | 50 | 46 | 52 | 51 | 40 | 42 | 44 | 42   | 43 | 48 | 54 | 65 | 71 | 58.9          | 76.7          |
| 20-Jun  | 73                            | 74 | 75 | 78 | 79 | 77 | 61 | 55 | 52 | 48 | 45 | 42 | 36 | 33 | 31 | 27 | 28 | 29 | 31   | 35 | 39 | 46 | 44 | 44 | 49.2          | 79.1          |
| 21-Jun  | 45                            | 54 | 66 | 69 | 63 | 62 | 55 | 53 | 52 | 48 | 44 | 42 | 39 | 37 | 34 | 31 | 29 | 35 | 37   | 42 | 49 | 57 | 63 | 62 | 48.6          | 69.4          |
| 22-Jun  | 63                            | 65 | 72 | 77 | 71 | 64 | 61 | 61 | 52 | 45 | 40 | 40 | 38 | 40 | 46 | 47 | 52 | 55 | 53   | 58 | 62 | 62 | 65 | 68 | 56.6          | 76.9          |
| 23-Jun  | 71                            | 73 | 74 | 76 | 77 | 77 | 68 | 62 | 58 | 54 | 49 | 43 | 41 | 42 | 40 | 38 | 41 | 44 | 51   | 64 | 64 | 70 | 76 | 73 | 59.4          | 76.9          |
| 24-Jun  | 74                            | 83 | 85 | 83 | 79 | 78 | 78 | 78 | 77 | 74 | 79 | 73 | 67 | 71 | 62 | 56 | 56 | 55 | 63   | 66 | 69 | 79 | 80 | 83 | 72.9          | 84.8          |
| 25-Jun  | 85                            | 85 | 84 | 85 | 82 | 80 | 74 | 64 | 60 | 55 | 51 | 48 | 44 | 43 | 42 | 41 | 40 | 39 | 41   | 43 | 46 | 49 | 54 | 56 | 57.9          | 85.0          |
| 26-Jun  | 60                            | 63 | 63 | 61 | 60 | 58 | 55 | 53 | 48 | 44 | 40 | 37 | 35 | 31 | 31 | 30 | 30 | 31 | 32   | 35 | 40 | 48 | 52 | 55 | 45.5          | 63.3          |
| 27-Jun  | 60                            | 68 | 65 | 64 | 62 | 61 | 53 | 49 | 49 | 46 | 43 | 40 | 38 | 36 | 32 | 30 | 30 | 30 | 30   | 31 | 38 | 46 | 56 | 61 | 46.6          | 67.6          |
| 28-Jun  | 68                            | 74 | 82 | 82 | 83 | 80 | 68 | 63 | 54 | 49 | 43 | 35 | 35 | 30 | 27 | 25 | 28 | 42 | 48   | 53 | 61 | 66 | 73 | 78 | 56.1          | 83.2          |
| 29-Jun  | 82                            | 83 | 82 | 83 | 85 | 83 | 73 | 65 | 64 | 59 | 50 | 50 | 43 | 42 | 38 | 38 | 54 | 70 | 58   | 57 | 67 | 68 | 72 | 73 | 64.1          | 85.3          |
| 30-Jun  | 73                            | 74 | 74 | 76 | 77 | 76 | 77 | 67 | 66 | 66 | 73 | 82 | 73 | 64 | 64 | 60 | 58 | 56 | 52   | 54 | 60 | 60 | 65 | 73 | 67.5          | 81.6          |
|   |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Diurnal Average  |    |    |    |    |    |               |               |
|   |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Diurnal Maximum  |    |    |    |    |    |               |               |

**Hourly Averages**

**Relative Humidity (RH) - %**  
**Henry Pirker - June 2016**

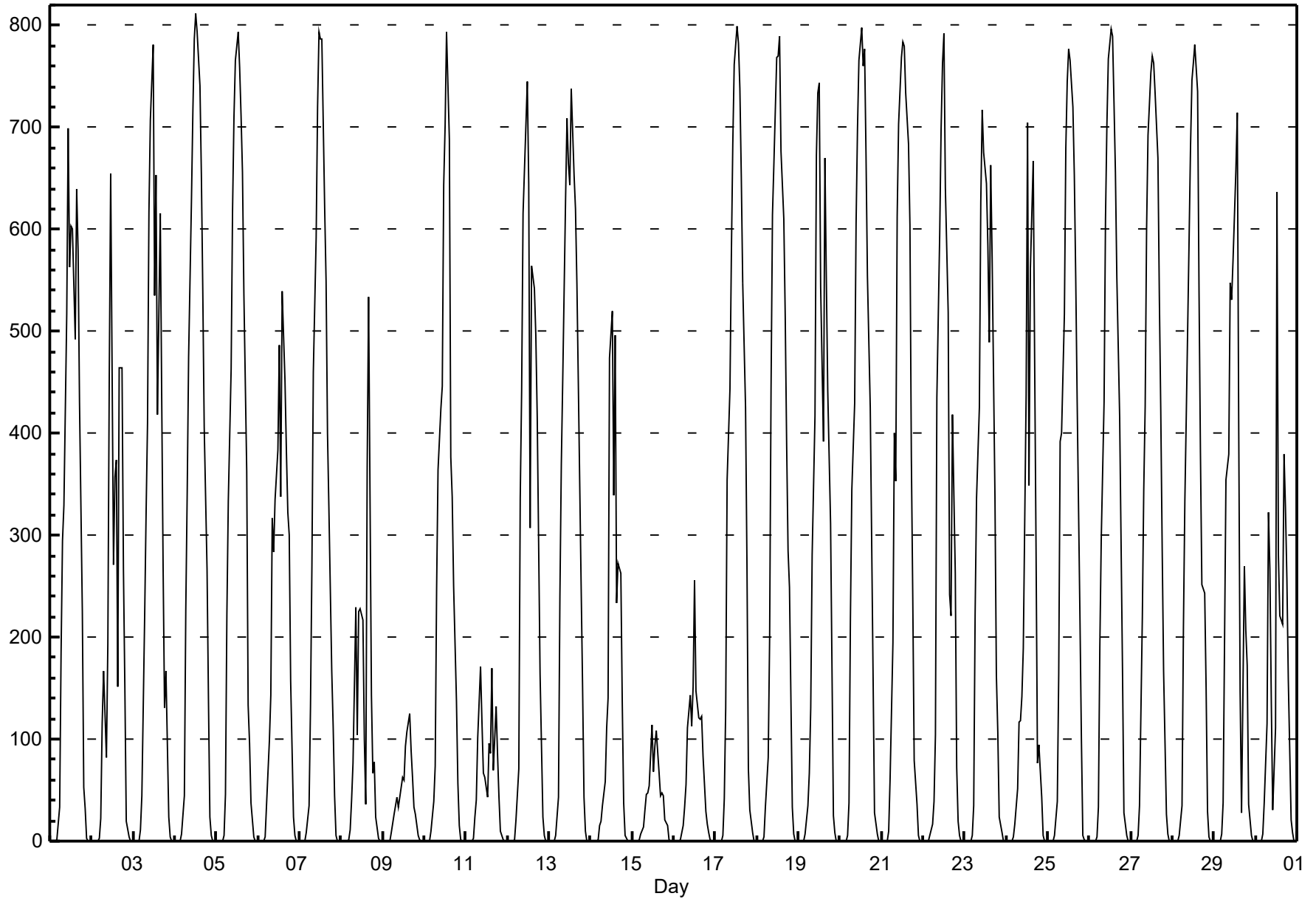


## Hourly Averages

Solar Radiation (SR) - W/m<sup>2</sup>

Henry Pirker - June 2016

| Number of Exceedences (AAQO): 1-hr: 0 24-hr: 0<br>Maximum Value: 811.6 W/m <sup>2</sup> on Jun 4 13:00 Maximum Daily Average: 316.8 W/m <sup>2</sup> on Jun 4   |                               | Hours in Service: 720<br>Hours of Data: 720<br>Hours of Missing Data: 0<br>Hours of Calibration: 0<br>Percent Operational Time: 100.0 |     |     |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |     |     |     |                 |               |
|---|-------------------------------|---|-----|-----|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-----|-----|-----|-----------------|---------------|
| Minimum Value: 0 W/m <sup>2</sup> on Jun 1 01:00 Minimum Daily Average: 34.3 W/m <sup>2</sup> on Jun 15<br>Maximum Diurnal Average: 595.8 W/m <sup>2</sup> at hour 13 Minimum Diurnal Average: 0.0 W/m <sup>2</sup> at hour 3<br>Monthly Average: 226.02 W/m <sup>2</sup> Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 92.6 Q <sub>3</sub> = 424.4 P <sub>90</sub> = 674.1 P <sub>99</sub> = 793.2 |                               |   |     |     |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |     |     |     |                 |               |
| Day   | Hourly Period Ending At (MST) |   |     |     |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |     |     |     | Daily Average   | Daily Maximum |
|   | 1                             | 2   | 3   | 4   | 5    | 6    | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21   | 22  | 23  | 24  |                 |               |
| 1-Jun   | 0                             | 0   | 0   | 0   | 2    | 33   | 185   | 294   | 330   | 517   | 700   | 564   | 603   | 601   | 492   | 640   | 580   | 431   | 225   | 53    | 32   | 3   | 0   | 0   | 261.8           | 699.6         |
| 2-Jun   | 0                             | 0   | 0   | 0   | 3    | 23   | 115   | 167   | 83    | 193   | 456   | 655   | 271   | 357   | 374   | 151   | 464   | 465   | 266   | 151   | 20   | 4   | 0   | 0   | 175.8           | 655.2         |
| 3-Jun   | 0                             | 0   | 0   | 0   | 11   | 44   | 222   | 322   | 410   | 617   | 707   | 781   | 535   | 654   | 419   | 615   | 436   | 269   | 130   | 167   | 23   | 5   | 0   | 0   | 265.3           | 781.3         |
| 4-Jun   | 0                             | 0   | 0   | 0   | 7    | 45   | 226   | 341   | 476   | 628   | 715   | 786   | 812   | 793   | 741   | 653   | 539   | 406   | 267   | 139   | 23   | 5   | 0   | 0   | 316.8           | 811.6         |
| 5-Jun   | 0                             | 0   | 0   | 0   | 6    | 46   | 222   | 333   | 463   | 618   | 711   | 766   | 793   | 758   | 711   | 656   | 537   | 363   | 134   | 96    | 38   | 4   | 0   | 0   | 302.3           | 793.5         |
| 6-Jun   | 0                             | 0   | 0   | 0   | 5    | 36   | 99    | 143   | 317   | 283   | 334   | 384   | 486   | 338   | 539   | 452   | 382   | 323   | 300   | 157   | 23   | 6   | 0   | 0   | 192.0           | 539.4         |
| 7-Jun   | 0                             | 0   | 0   | 0   | 8    | 35   | 132   | 269   | 460   | 592   | 719   | 793   | 786   | 786   | 621   | 549   | 400   | 325   | 167   | 113   | 45   | 6   | 0   | 0   | 283.7           | 793.3         |
| 8-Jun   | 0                             | 0   | 0   | 0   | 2    | 11   | 41    | 76    | 229   | 105   | 226   | 228   | 217   | 100   | 37    | 367   | 534   | 143   | 66    | 78    | 24   | 3   | 0   | 0   | 103.6           | 534.1         |
| 9-Jun   | 0                             | 0   | 0   | 0   | 1    | 8    | 27    | 35    | 43    | 33    | 42    | 63    | 60    | 93    | 107   | 125   | 89    | 62    | 33    | 26    | 5    | 2   | 0   | 0   | 35.6            | 124.6         |
| 10-Jun  | 0                             | 0   | 0   | 0   | 9    | 39   | 74    | 248   | 364   | 424   | 446   | 643   | 701   | 794   | 688   | 377   | 338   | 250   | 137   | 57    | 15   | 1   | 0   | 0   | 233.7           | 794.1         |
| 11-Jun  | 0                             | 0   | 0   | 0   | 3    | 24   | 41    | 101   | 171   | 117   | 67    | 63    | 43    | 95    | 86    | 169   | 69    | 132   | 84    | 44    | 10   | 1   | 0   | 0   | 55.0            | 170.7         |
| 12-Jun  | 0                             | 0   | 0   | 0   | 1    | 21   | 70    | 336   | 442   | 615   | 658   | 745   | 645   | 307   | 564   | 541   | 497   | 416   | 290   | 164   | 23   | 6   | 0   | 0   | 264.2           | 744.8         |
| 13-Jun  | 0                             | 0   | 0   | 0   | 6    | 43   | 241   | 370   | 453   | 629   | 709   | 664   | 643   | 739   | 653   | 620   | 546   | 450   | 249   | 151   | 43   | 10  | 0   | 0   | 300.7           | 738.5         |
| 14-Jun  | 0                             | 0   | 0   | 0   | 2    | 15   | 19    | 34    | 59    | 111   | 140   | 474   | 520   | 339   | 496   | 233   | 272   | 263   | 136   | 38    | 6    | 0   | 0   | 0   | 131.5           | 519.8         |
| 15-Jun  | 0                             | 0   | 0   | 0   | 1    | 7    | 14    | 30    | 46    | 47    | 54    | 114   | 68    | 93    | 108   | 66    | 45    | 47    | 45    | 21    | 15   | 1   | 0   | 0   | 34.3            | 113.7         |
| 16-Jun  | 0                             | 0   | 0   | 0   | 1    | 16   | 33    | 56    | 112   | 144   | 112   | 152   | 256   | 147   | 121   | 120   | 122   | 83    | 29    | 16    | 9    | 1   | 0   | 0   | 63.7            | 255.5         |
| 17-Jun  | 0                             | 0   | 0   | 0   | 6    | 41   | 131   | 355   | 443   | 575   | 684   | 762   | 799   | 782   | 738   | 652   | 547   | 425   | 271   | 71    | 30   | 9   | 0   | 0   | 305.0           | 798.6         |
| 18-Jun  | 0                             | 0   | 0   | 0   | 4    | 33   | 81    | 200   | 445   | 615   | 664   | 768   | 769   | 790   | 676   | 611   | 514   | 389   | 285   | 249   | 33   | 8   | 0   | 0   | 297.3           | 789.6         |
| 19-Jun  | 0                             | 0   | 0   | 0   | 7    | 34   | 67    | 131   | 281   | 417   | 673   | 734   | 743   | 544   | 392   | 670   | 552   | 442   | 312   | 170   | 25   | 8   | 0   | 0   | 258.3           | 742.9         |
| 20-Jun  | 0                             | 0   | 0   | 0   | 6    | 38   | 219   | 344   | 430   | 605   | 699   | 765   | 798   | 760   | 777   | 674   | 555   | 425   | 295   | 161   | 28   | 7   | 0   | 0   | 316.0           | 798.1         |
| 21-Jun  | 0                             | 0   | 0   | 0   | 9    | 61   | 194   | 400   | 352   | 612   | 703   | 769   | 784   | 780   | 734   | 684   | 605   | 377   | 238   | 80    | 37   | 5   | 0   | 0   | 309.4           | 783.6         |
| 22-Jun  | 0                             | 0   | 0   | 0   | 6    | 17   | 39    | 104   | 435   | 595   | 698   | 762   | 792   | 641   | 519   | 242   | 221   | 418   | 262   | 72    | 19   | 5   | 0   | 0   | 243.6           | 792.2         |
| 23-Jun  | 0                             | 0   | 0   | 0   | 5    | 35   | 222   | 337   | 425   | 627   | 717   | 675   | 646   | 583   | 489   | 663   | 573   | 338   | 163   | 107   | 24   | 8   | 0   | 0   | 276.5           | 717.0         |
| 24-Jun  | 0                             | 0   | 0   | 0   | 4    | 17   | 51    | 117   | 118   | 141   | 190   | 438   | 705   | 348   | 562   | 667   | 472   | 285   | 76    | 95    | 43   | 5   | 0   | 0   | 180.6           | 705.2         |
| 25-Jun  | 0                             | 0   | 0   | 0   | 6    | 39   | 163   | 392   | 401   | 517   | 680   | 745   | 777   | 766   | 720   | 653   | 552   | 433   | 217   | 100   | 6    | 2   | 0   | 0   | 298.7           | 776.6         |
| 26-Jun  | 0                             | 0   | 0   | 0   | 4    | 34   | 190   | 296   | 431   | 610   | 703   | 767   | 797   | 789   | 724   | 656   | 553   | 416   | 292   | 169   | 27   | 6   | 0   | 0   | 311.0           | 797.0         |
| 27-Jun  | 0                             | 0   | 0   | 0   | 5    | 34   | 219   | 345   | 427   | 600   | 692   | 753   | 770   | 764   | 734   | 670   | 533   | 423   | 287   | 166   | 26   | 7   | 0   | 0   | 310.7           | 769.7         |
| 28-Jun  | 0                             | 0   | 0   | 0   | 6    | 35   | 210   | 333   | 417   | 591   | 680   | 747   | 763   | 782   | 736   | 539   | 381   | 251   | 244   | 150   | 29   | 5   | 0   | 0   | 287.4           | 781.7         |
| 29-Jun  | 0                             | 0   | 0   | 0   | 7    | 37   | 195   | 354   | 379   | 547   | 530   | 569   | 658   | 714   | 410   | 147   | 28    | 270   | 207   | 173   | 36   | 6   | 0   | 0   | 219.4           | 714.0         |
| 30-Jun  | 0                             | 0   | 0   | 0   | 6    | 38   | 115   | 323   | 267   | 138   | 30    | 111   | 637   | 281   | 221   | 213   | 380   | 326   | 257   | 158   | 20   | 8   | 0   | 0   | 147.1           | 637.0         |
|   | 0.0                           | 0.0   | 0.0 | 0.0 | 4.9  | 31.2 | 128.6 | 239.6 | 323.6 | 428.8 | 504.7 | 574.6 | 595.8 | 543.9 | 506.3 | 469.2 | 410.5 | 321.5 | 198.9 | 113.1 | 24.5 | 4.8 | 0.0 | 0.0 | Diurnal Average |               |
|   | 0.0                           | 0.1   | 0.0 | 0.2 | 10.9 | 61.1 | 240.6 | 400.1 | 475.8 | 629.3 | 719.4 | 793.3 | 811.6 | 794.1 | 776.7 | 684.5 | 604.5 | 464.8 | 311.7 | 249.2 | 45.0 | 9.7 | 0.2 | 0.0 | Diurnal Maximum |               |



# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Henry Pirker - June 2016

| Day    | Hourly Period Ending At (MST) |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Daily Average | Daily Maximum |
|--------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|---------------|
|        | 1                             | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |               |               |
| 1 Spd  | 0                             | 7   | 3   | 6   | 4   | 4   | 6   | 7   | 7   | 8   | 7   | 8   | 9   | 7   | 7   | 7   | 5   | 2   | 3   | 3   | 3   | 5   | 3   | 1   | 3.9           | 9.4           |
| Dir    | 343                           | 276 | 262 | 275 | 251 | 205 | 212 | 216 | 216 | 212 | 222 | 216 | 177 | 234 | 254 | 224 | 291 | 305 | 282 | 230 | 140 | 136 | 141 | 133 | 226.5         | 176.7         |
| 2 Spd  | 1                             | 0   | 1   | 3   | 1   | 2   | 7   | 8   | 6   | 3   | 3   | 5   | 7   | 4   | 9   | 9   | 8   | 19  | 21  | 22  | 21  | 17  | 12  | 7   | 7.3           | 21.9          |
| Dir    | 68                            | 160 | 61  | 111 | 134 | 161 | 182 | 202 | 181 | 234 | 245 | 272 | 269 | 221 | 213 | 166 | 188 | 217 | 214 | 215 | 216 | 216 | 213 | 194 | 209.8         | 215.3         |
| 3 Spd  | 6                             | 8   | 7   | 5   | 6   | 5   | 8   | 17  | 16  | 17  | 17  | 13  | 12  | 14  | 16  | 20  | 24  | 22  | 20  | 17  | 15  | 9   | 8   | 5   | 12.6          | 23.7          |
| Dir    | 187                           | 196 | 196 | 192 | 196 | 202 | 209 | 223 | 220 | 210 | 208 | 209 | 216 | 210 | 219 | 217 | 224 | 226 | 233 | 220 | 209 | 198 | 201 | 198 | 213.7         | 223.6         |
| 4 Spd  | 6                             | 6   | 11  | 10  | 9   | 10  | 12  | 20  | 20  | 21  | 19  | 22  | 21  | 20  | 16  | 16  | 15  | 16  | 16  | 15  | 9   | 10  | 5   | 2   | 13.4          | 21.6          |
| Dir    | 196                           | 193 | 203 | 219 | 232 | 258 | 227 | 217 | 226 | 229 | 226 | 230 | 220 | 228 | 236 | 232 | 228 | 231 | 229 | 229 | 223 | 213 | 225 | 246 | 225.7         | 230.2         |
| 5 Spd  | 3                             | 2   | 2   | 3   | 2   | 1   | 1   | 5   | 5   | 3   | 2   | 3   | 3   | 2   | 2   | 2   | 4   | 6   | 9   | 8   | 6   | 7   | 7   | 6   | 1.2           | 9.1           |
| Dir    | 206                           | 243 | 246 | 255 | 252 | 272 | 236 | 202 | 211 | 197 | 181 | 149 | 149 | 209 | 113 | 125 | 70  | 42  | 47  | 50  | 46  | 52  | 52  | 54  | 79.5          | 47.0          |
| 6 Spd  | 7                             | 7   | 2   | 1   | 1   | 1   | 1   | 1   | 5   | 8   | 9   | 10  | 11  | 13  | 13  | 15  | 18  | 17  | 19  | 18  | 12  | 11  | 8   | 6   | 7.1           | 19.0          |
| Dir    | 55                            | 72  | 82  | 35  | 49  | 60  | 71  | 179 | 220 | 212 | 214 | 226 | 211 | 225 | 238 | 237 | 231 | 233 | 234 | 237 | 245 | 256 | 251 | 282 | 232.7         | 234.0         |
| 7 Spd  | 9                             | 7   | 6   | 2   | 3   | 4   | 2   | 4   | 9   | 10  | 10  | 10  | 9   | 9   | 9   | 11  | 8   | 7   | 4   | 2   | 3   | 5   | 5   | 4   | 4.3           | 11.1          |
| Dir    | 287                           | 292 | 292 | 123 | 132 | 190 | 208 | 232 | 262 | 263 | 252 | 255 | 261 | 277 | 272 | 276 | 283 | 304 | 305 | 43  | 25  | 45  | 41  | 51  | 276.2         | 275.9         |
| 8 Spd  | 1                             | 3   | 4   | 4   | 6   | 2   | 1   | 2   | 6   | 8   | 8   | 11  | 10  | 8   | 6   | 12  | 11  | 9   | 7   | 8   | 7   | 7   | 4   | 6   | 4.9           | 11.5          |
| Dir    | 53                            | 45  | 45  | 99  | 143 | 242 | 348 | 92  | 99  | 69  | 67  | 66  | 52  | 38  | 340 | 13  | 24  | 29  | 359 | 20  | 9   | 29  | 20  | 342 | 38.0          | 12.9          |
| 9 Spd  | 4                             | 5   | 3   | 3   | 5   | 7   | 9   | 12  | 10  | 10  | 11  | 9   | 6   | 10  | 10  | 7   | 8   | 6   | 6   | 5   | 6   | 7   | 4   | 3   | 5.8           | 11.5          |
| Dir    | 310                           | 296 | 276 | 258 | 250 | 250 | 223 | 227 | 252 | 256 | 250 | 248 | 303 | 326 | 330 | 338 | 311 | 289 | 289 | 271 | 278 | 278 | 273 | 252 | 274.4         | 226.9         |
| 10 Spd | 3                             | 2   | 1   | 1   | 1   | 1   | 2   | 4   | 8   | 7   | 9   | 10  | 11  | 13  | 13  | 15  | 13  | 13  | 10  | 9   | 8   | 6   | 7   | 7   | 6.0           | 15.1          |
| Dir    | 254                           | 238 | 274 | 133 | 193 | 288 | 353 | 63  | 72  | 84  | 68  | 62  | 62  | 64  | 54  | 49  | 50  | 52  | 40  | 49  | 126 | 117 | 113 | 84  | 64.8          | 49.3          |
| 11 Spd | 8                             | 9   | 9   | 7   | 6   | 6   | 5   | 1   | 2   | 4   | 7   | 11  | 14  | 17  | 17  | 17  | 17  | 20  | 17  | 12  | 8   | 6   | 6   | 8   | 5.6           | 20.5          |
| Dir    | 56                            | 47  | 53  | 53  | 44  | 57  | 64  | 94  | 204 | 224 | 187 | 199 | 202 | 209 | 214 | 211 | 212 | 221 | 229 | 220 | 216 | 211 | 202 | 215 | 204.8         | 220.7         |
| 12 Spd | 6                             | 7   | 5   | 6   | 5   | 7   | 8   | 16  | 27  | 30  | 27  | 32  | 34  | 31  | 34  | 33  | 32  | 31  | 28  | 26  | 23  | 17  | 8   | 13  | 20.1          | 34.2          |
| Dir    | 212                           | 224 | 217 | 220 | 244 | 219 | 241 | 219 | 215 | 216 | 221 | 229 | 229 | 228 | 224 | 227 | 221 | 222 | 215 | 216 | 215 | 209 | 200 | 212 | 220.9         | 229.2         |
| 13 Spd | 10                            | 13  | 11  | 9   | 10  | 10  | 12  | 13  | 14  | 15  | 17  | 20  | 16  | 11  | 9   | 9   | 8   | 7   | 5   | 3   | 0   | 3   | 4   | 3   | 8.4           | 20.1          |
| Dir    | 197                           | 207 | 205 | 195 | 191 | 215 | 216 | 225 | 217 | 215 | 222 | 234 | 237 | 237 | 227 | 264 | 270 | 281 | 269 | 288 | 137 | 81  | 113 | 139 | 222.5         | 234.0         |
| 14 Spd | 2                             | 0   | 0   | 3   | 4   | 4   | 1   | 8   | 6   | 10  | 9   | 10  | 8   | 7   | 7   | 7   | 6   | 7   | 7   | 10  | 10  | 10  | 11  | 14  | 5.8           | 14.4          |
| Dir    | 285                           | 183 | 258 | 103 | 149 | 115 | 95  | 224 | 246 | 244 | 238 | 254 | 246 | 258 | 253 | 260 | 261 | 268 | 264 | 268 | 268 | 251 | 243 | 226 | 246.8         | 226.1         |
| 15 Spd | 16                            | 21  | 20  | 23  | 22  | 25  | 24  | 26  | 31  | 33  | 32  | 38  | 39  | 41  | 38  | 41  | 42  | 40  | 39  | 37  | 36  | 35  | 30  | 27  | 31.5          | 41.6          |
| Dir    | 223                           | 215 | 217 | 219 | 216 | 216 | 214 | 213 | 213 | 213 | 211 | 211 | 211 | 212 | 210 | 208 | 211 | 210 | 210 | 210 | 213 | 210 | 209 | 213 | 212.1         | 210.8         |
| 16 Spd | 24                            | 22  | 22  | 21  | 17  | 17  | 17  | 18  | 17  | 20  | 18  | 18  | 20  | 19  | 18  | 17  | 19  | 18  | 17  | 13  | 12  | 14  | 14  | 14  | 17.1          | 23.6          |
| Dir    | 211                           | 208 | 213 | 214 | 213 | 212 | 218 | 217 | 220 | 226 | 220 | 217 | 224 | 220 | 221 | 232 | 234 | 229 | 232 | 256 | 257 | 252 | 250 | 249 | 224.6         | 210.9         |
| 17 Spd | 13                            | 13  | 11  | 11  | 11  | 8   | 7   | 9   | 10  | 13  | 14  | 14  | 17  | 17  | 18  | 20  | 21  | 22  | 22  | 17  | 15  | 9   | 8   | 7   | 13.2          | 22.3          |
| Dir    | 247                           | 239 | 241 | 243 | 228 | 219 | 212 | 214 | 209 | 212 | 208 | 214 | 208 | 210 | 203 | 207 | 203 | 221 | 222 | 217 | 217 | 205 | 201 | 208 | 216.5         | 221.0         |
| 18 Spd | 3                             | 5   | 1   | 0   | 3   | 3   | 3   | 6   | 10  | 15  | 12  | 10  | 9   | 7   | 7   | 7   | 7   | 6   | 6   | 3   | 2   | 2   | 8   | 5   | 4.4           | 15.1          |
| Dir    | 191                           | 213 | 128 | 258 | 154 | 113 | 178 | 218 | 214 | 223 | 229 | 241 | 241 | 232 | 243 | 239 | 246 | 265 | 252 | 262 | 270 | 292 | 61  | 145 | 227.8         | 222.8         |
| 19 Spd | 1                             | 2   | 5   | 7   | 7   | 5   | 4   | 5   | 6   | 10  | 10  | 17  | 20  | 16  | 8   | 13  | 13  | 10  | 8   | 6   | 3   | 2   | 2   | 2   | 7.0           | 19.7          |
| Dir    | 237                           | 141 | 221 | 237 | 236 | 235 | 240 | 217 | 240 | 257 | 255 | 260 | 268 | 261 | 260 | 223 | 262 | 269 | 249 | 247 | 224 | 183 | 164 | 174 | 248.1         | 267.7         |
| 20 Spd | 1                             | 3   | 3   | 2   | 2   | 1   | 5   | 9   | 11  | 9   | 5   | 4   | 3   | 3   | 5   | 2   | 5   | 7   | 9   | 8   | 7   | 5   | 6   | 6   | 0.5           | 10.5          |
| Dir    | 172                           | 215 | 218 | 172 | 183 | 208 | 210 | 209 | 217 | 221 | 222 | 222 | 257 | 286 | 298 | 58  | 96  | 52  | 51  | 48  | 52  | 46  | 50  | 49  | 164.2         | 216.9         |
| 21 Spd | 7                             | 2   | 3   | 4   | 7   | 5   | 9   | 9   | 9   | 11  | 11  | 8   | 7   | 8   | 9   | 11  | 12  | 11  | 11  | 7   | 4   | 4   | 3   | 3   | 6.1           | 11.5          |
| Dir    | 41                            | 85  | 303 | 187 | 210 | 201 | 215 | 216 | 227 | 233 | 239 | 260 | 232 | 225 | 227 | 206 | 220 | 218 | 204 | 169 | 261 | 243 | 204 | 210 | 221.2         | 220.0         |
| 22 Spd | 3                             | 4   | 3   | 3   | 4   | 5   | 5   | 3   | 5   | 10  | 11  | 8   | 8   | 12  | 17  | 12  | 11  | 15  | 15  | 10  | 8   | 6   | 5   | 4   | 6.8           | 16.6          |
| Dir    | 210                           | 232 | 135 | 185 | 218 | 225 | 220 | 231 | 231 | 219 | 236 | 243 | 253 | 218 | 182 | 163 | 153 | 200 | 207 | 225 | 187 | 190 | 188 | 228 | 205.5         | 181.6         |



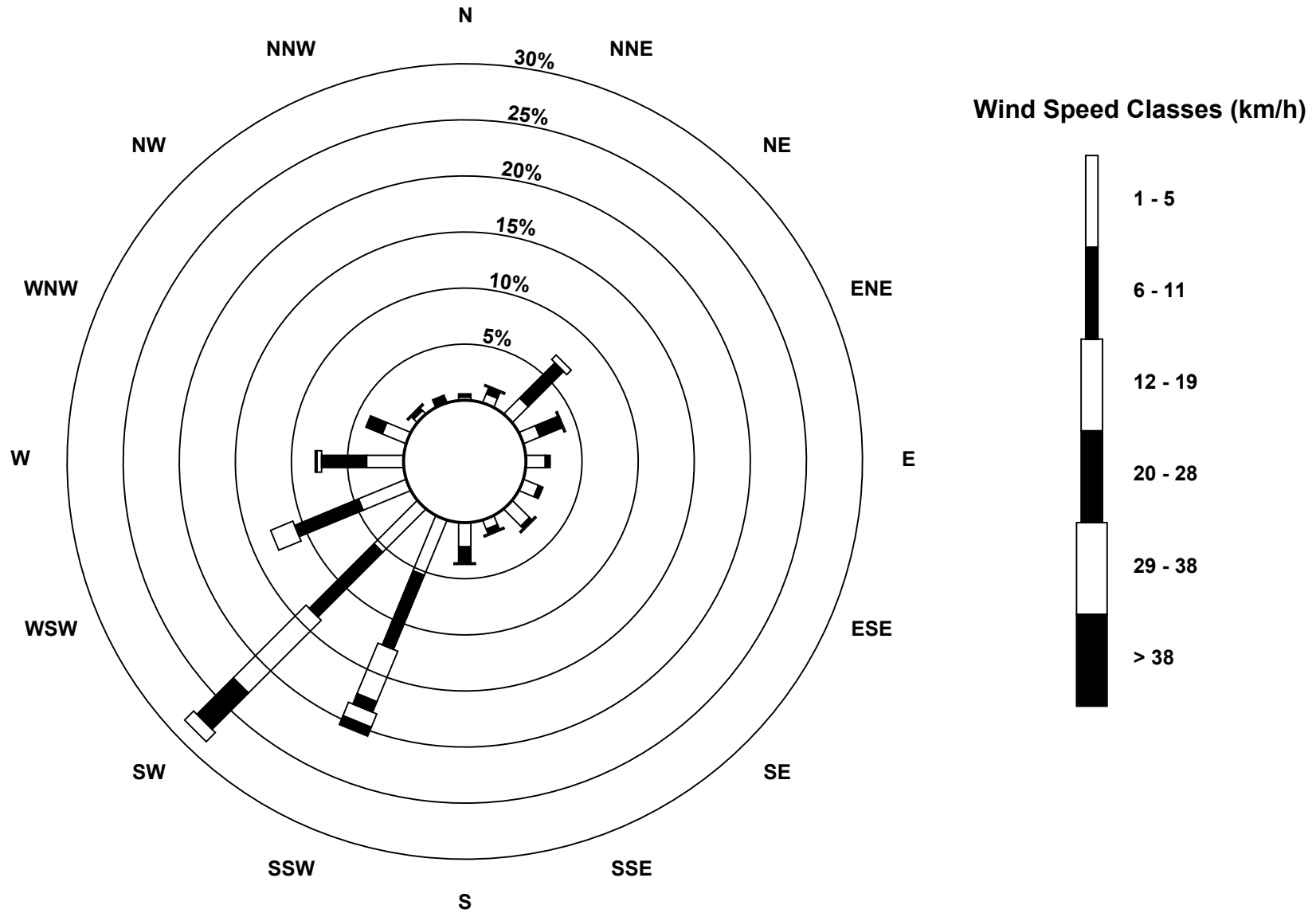
# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Henry Pirker - June 2016

| Day  | Hourly Period Ending At (MST) |   |          |          |          |       |       |       |       |       |       |                                 |       |       |       |       |       |       |       |       |       |       |       |       | Daily Average   | Daily Maximum |
|--|-------------------------------|---|----------|----------|----------|-------|-------|-------|-------|-------|-------|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------|---------------|
|  | 1                             | 2   | 3        | 4        | 5        | 6     | 7     | 8     | 9     | 10    | 11    | 12                              | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |                 |               |
| 23 Spd   | 4                             | 5   | 9        | 7        | 5        | 6     | 6     | 6     | 4     | 4     | 2     | 2                               | 4     | 3     | 3     | 4     | 6     | 7     | 12    | 6     | 3     | 1     | 3     | 2     | 3.3             | 12.3          |
| Dir  | 211                           | 206   | 214      | 215      | 214      | 209   | 228   | 211   | 261   | 243   | 231   | 215                             | 240   | 214   | 258   | 278   | 294   | 303   | 312   | 345   | 28    | 115   | 183   | 236   | 246.7           | 311.8         |
| 24 Spd   | 3                             | 2   | 3        | 4        | 7        | 5     | 6     | 5     | 5     | 5     | 4     | 10                              | 14    | 12    | 10    | 7     | 7     | 7     | 6     | 7     | 10    | 5     | 6     | 7     | 6.3             | 14.2          |
| Dir  | 251                           | 265   | 230      | 206      | 218      | 211   | 206   | 201   | 213   | 243   | 210   | 202                             | 209   | 215   | 221   | 213   | 239   | 237   | 248   | 232   | 220   | 234   | 215   | 227   | 220.4           | 208.7         |
| 25 Spd   | 5                             | 6   | 5        | 4        | 7        | 5     | 5     | 8     | 10    | 13    | 16    | 16                              | 17    | 18    | 20    | 19    | 19    | 16    | 16    | 19    | 14    | 12    | 8     | 7     | 11.7            | 19.8          |
| Dir  | 223                           | 226   | 212      | 204      | 213      | 228   | 236   | 225   | 227   | 234   | 229   | 220                             | 216   | 218   | 216   | 220   | 223   | 249   | 231   | 217   | 216   | 234   | 225   | 196   | 223.2           | 215.6         |
| 26 Spd   | 4                             | 5   | 4        | 5        | 6        | 8     | 11    | 12    | 14    | 17    | 18    | 17                              | 13    | 14    | 14    | 12    | 11    | 11    | 13    | 15    | 12    | 7     | 6     | 5     | 10.5            | 18.2          |
| Dir  | 192                           | 193   | 214      | 224      | 233      | 218   | 210   | 212   | 209   | 208   | 212   | 221                             | 221   | 222   | 208   | 211   | 208   | 212   | 209   | 213   | 211   | 197   | 197   | 203   | 211.9           | 212.4         |
| 27 Spd   | 2                             | 1   | 4        | 4        | 5        | 4     | 4     | 6     | 7     | 6     | 5     | 4                               | 4     | 3     | 4     | 3     | 4     | 3     | 2     | 2     | 5     | 3     | 2     | 1     | 2.4             | 7.1           |
| Dir  | 260                           | 240   | 238      | 221      | 209      | 212   | 207   | 212   | 204   | 215   | 238   | 268                             | 261   | 250   | 212   | 215   | 262   | 252   | 263   | 18    | 65    | 80    | 116   | 18    | 225.2           | 204.0         |
| 28 Spd   | 1                             | 1   | 1        | 2        | 1        | 2     | 2     | 1     | 1     | 1     | 3     | 4                               | 3     | 6     | 6     | 4     | 1     | 12    | 11    | 6     | 2     | 2     | 1     | 2     | 1.1             | 12.0          |
| Dir  | 256                           | 288   | 260      | 284      | 260      | 292   | 254   | 266   | 181   | 182   | 99    | 75                              | 22    | 46    | 65    | 1     | 207   | 225   | 265   | 268   | 254   | 266   | 263   | 301   | 273.1           | 224.9         |
| 29 Spd   | 1                             | 1   | 1        | 0        | 1        | 1     | 1     | 2     | 5     | 4     | 5     | 4                               | 7     | 8     | 10    | 7     | 12    | 6     | 7     | 6     | 5     | 4     | 3     | 4     | 3.5             | 11.9          |
| Dir  | 113                           | 239   | 293      | 242      | 259      | 300   | 120   | 90    | 118   | 81    | 63    | 41                              | 49    | 37    | 60    | 43    | 126   | 65    | 59    | 111   | 123   | 47    | 39    | 58    | 72.3            | 126.3         |
| 30 Spd   | 2                             | 4   | 7        | 9        | 10       | 7     | 3     | 3     | 7     | 9     | 8     | 12                              | 13    | 10    | 9     | 8     | 8     | 5     | 1     | 2     | 4     | 3     | 2     | 1     | 2.1             | 13.1          |
| Dir  | 31                            | 50  | 50       | 50       | 53       | 70    | 203   | 270   | 278   | 216   | 184   | 213                             | 245   | 225   | 221   | 244   | 280   | 289   | 231   | 144   | 210   | 140   | 127   | 185   | 226.6           | 245.4         |
| Spd  | 2.9                           | 3.6   | 3.5      | 3.7      | 4.3      | 4.3   | 5.4   | 7.5   | 8.4   | 9.6   | 9.0   | 9.5                             | 9.3   | 9.0   | 8.8   | 8.4   | 8.5   | 8.9   | 8.5   | 7.1   | 6.1   | 4.5   | 3.4   | 3.4   | Diurnal Average |               |
| Dir  | 220.9                         | 219.2   | 219.9    | 213.4    | 210.9    | 215.4 | 215.4 | 215.8 | 218.8 | 221.2 | 219.5 | 225.5                           | 226.6 | 226.7 | 223.7 | 223.2 | 225.2 | 232.0 | 232.0 | 225.1 | 218.6 | 216.0 | 205.1 | 212.7 | Diurnal Maximum |               |
| Spd  | 23.6                          | 22.2  | 21.6     | 23.2     | 22.4     | 25.0  | 23.7  | 26.1  | 31.0  | 32.9  | 31.6  | 37.8                            | 39.0  | 40.9  | 38.3  | 41.0  | 41.6  | 40.2  | 39.4  | 37.5  | 36.0  | 34.6  | 29.6  | 27.2  | Diurnal Maximum |               |
| Dir  | 210.9                         | 207.7   | 213.4    | 218.6    | 216.3    | 216.2 | 214.0 | 213.2 | 212.6 | 212.8 | 210.8 | 211.0                           | 211.3 | 212.1 | 209.9 | 207.8 | 210.8 | 209.8 | 209.8 | 210.3 | 212.8 | 210.3 | 208.6 | 212.8 | Diurnal Maximum |               |
| Maximum Speed Value: 42 km/h on Jun 15 17:00                                       |                               | Minimum Speed Value: 0 km/h on Jun 2 02:00  |          |          |          |       |       |       |       |       |       | Hours in Service: 720           |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| Maximum Daily Speed Average: 31.5 km/h on Jun 15                                   |                               | Minimum Daily Speed Average: 0.5 km/h on Jun 28   |          |          |          |       |       |       |       |       |       | Hours of Data: 720              |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| Maximum Diurnal Speed Average: 9.6 km/h at hour 10                                 |                               | Minimum Diurnal Speed Average: 2.9 km/h at hour 1   |          |          |          |       |       |       |       |       |       | Hours of Missing Data: 0        |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| Monthly Average Velocity: 6.53 km/h 221.74 deg                                     |                               | Speed Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 2.0 Q <sub>1</sub> = 3.9 Median = 7.1 Q <sub>3</sub> = 11.7 P <sub>90</sub> = 18.4 P <sub>99</sub> = 37.9 |          |          |          |       |       |       |       |       |       | Percent Operational Time: 100.0 |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| All monthly, daily, and diurnal averages have been calculated using vector methods |                               |   |          |          |          |       |       |       |       |       |       |                                 |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| Frequency Distribution   |                               |   |          |          |          |       |       |       |       |       |       |                                 |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
|  |                               | Speed Range (km/h)  |          |          |          |       |       |       |       |       |       |                                 |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| Direction  | 0 to 5                        | 5 to 11   | 11 to 19 | 19 to 28 | 28 to 38 | > 38  | Total |       |       |       |       |                                 |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| North  | 8                             | 7   | 1        | 0        | 0        | 0     | 16    |       |       |       |       |                                 |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| NorthEast  | 24                            | 44  | 6        | 0        | 0        | 0     | 74    |       |       |       |       |                                 |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| East   | 18                            | 9   | 0        | 0        | 0        | 0     | 27    |       |       |       |       |                                 |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| SouthEast  | 29                            | 7   | 2        | 0        | 0        | 0     | 38    |       |       |       |       |                                 |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| South  | 27                            | 35  | 4        | 0        | 0        | 0     | 66    |       |       |       |       |                                 |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| SouthWest  | 70                            | 120   | 109      | 39       | 17       | 7     | 362   |       |       |       |       |                                 |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| West   | 49                            | 59  | 11       | 1        | 0        | 0     | 120   |       |       |       |       |                                 |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| NorthWest  | 9                             | 7   | 1        | 0        | 0        | 0     | 17    |       |       |       |       |                                 |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| Total  | 234                           | 288   | 134      | 40       | 17       | 7     | 720   |       |       |       |       |                                 |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Henry Pirker - June 2016**



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Henry Pirker - June 2016

| Maximum Speed: 42 km/h on Jun 15 17:00   |                               | Maximum Daily Speed Average: 31.7 km/h on Jun 15  |      | Hours in Service: 720           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
|--|-------------------------------|---|------|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|---------------|
| Minimum Speed: 0 km/h on Jun 14 02:00  |                               | Minimum Daily Speed Average: 3.7 km/h on Jun 28   |      | Hours of Data: 720              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| Maximum Diurnal Speed Average: 13.1 km/h at hour 17                                |                               | Minimum Diurnal Speed Average: 5.5 km/h at hour 1   |      | Hours of Missing Data: 0        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| Monthly Average Speed: 9.46 km/h   |                               | Percentiles: P <sub>1</sub> = 0.8 P <sub>10</sub> = 2.3 Q <sub>1</sub> = 4.5 Median = 7.5 Q <sub>3</sub> = 12.2 P <sub>90</sub> = 18.6 P <sub>99</sub> = 38.1 |      | Percent Operational Time: 100.0 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| Day  | Hourly Period Ending At (MST) |   |      |                                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Daily Average   | Daily Maximum |
|  | 1                             | 2   | 3    | 4                               | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |                 |               |
| 1-Jun  | 1                             | 7   | 3    | 6                               | 5    | 4    | 6    | 7    | 7    | 8    | 7    | 9    | 10   | 10   | 8    | 8    | 6    | 4    | 4    | 5    | 4    | 5    | 3    | 2    | 5.8             | 9.9           |
| 2-Jun  | 2                             | 0   | 2    | 3                               | 1    | 2    | 7    | 8    | 7    | 3    | 3    | 6    | 7    | 5    | 10   | 9    | 11   | 19   | 21   | 22   | 21   | 18   | 12   | 8    | 8.6             | 22.1          |
| 3-Jun  | 6                             | 8   | 7    | 5                               | 6    | 6    | 8    | 17   | 16   | 17   | 18   | 14   | 13   | 15   | 17   | 21   | 24   | 22   | 20   | 17   | 15   | 9    | 8    | 6    | 13.1            | 24.3          |
| 4-Jun  | 6                             | 6   | 11   | 10                              | 9    | 10   | 13   | 20   | 20   | 21   | 20   | 22   | 21   | 20   | 17   | 17   | 16   | 17   | 16   | 15   | 10   | 10   | 5    | 2    | 13.9            | 22.1          |
| 5-Jun  | 4                             | 2   | 2    | 3                               | 2    | 2    | 2    | 5    | 5    | 4    | 3    | 4    | 5    | 4    | 4    | 3    | 5    | 7    | 9    | 8    | 6    | 7    | 7    | 7    | 4.5             | 9.2           |
| 6-Jun  | 7                             | 7   | 2    | 1                               | 1    | 1    | 1    | 3    | 5    | 8    | 9    | 10   | 11   | 14   | 14   | 16   | 18   | 18   | 19   | 18   | 12   | 12   | 8    | 7    | 9.3             | 19.3          |
| 7-Jun  | 9                             | 7   | 6    | 2                               | 3    | 4    | 2    | 4    | 10   | 11   | 10   | 10   | 9    | 10   | 10   | 11   | 8    | 8    | 4    | 2    | 3    | 5    | 5    | 4    | 6.6             | 11.4          |
| 8-Jun  | 2                             | 3   | 4    | 4                               | 8    | 3    | 2    | 3    | 6    | 8    | 9    | 12   | 11   | 8    | 9    | 12   | 11   | 9    | 7    | 8    | 7    | 7    | 5    | 6    | 6.7             | 12.0          |
| 9-Jun  | 5                             | 5   | 3    | 3                               | 5    | 7    | 9    | 12   | 10   | 10   | 11   | 9    | 7    | 10   | 11   | 8    | 8    | 6    | 6    | 5    | 6    | 7    | 4    | 3    | 7.2             | 11.6          |
| 10-Jun   | 3                             | 2   | 1    | 0                               | 1    | 1    | 2    | 4    | 8    | 8    | 10   | 11   | 11   | 14   | 14   | 15   | 14   | 13   | 10   | 9    | 8    | 6    | 7    | 7    | 7.6             | 15.4          |
| 11-Jun   | 8                             | 9   | 9    | 7                               | 7    | 6    | 5    | 2    | 3    | 4    | 7    | 11   | 14   | 17   | 17   | 17   | 17   | 21   | 17   | 12   | 8    | 6    | 6    | 8    | 10.0            | 20.7          |
| 12-Jun   | 6                             | 7   | 5    | 6                               | 6    | 7    | 8    | 16   | 27   | 30   | 28   | 33   | 34   | 32   | 34   | 33   | 32   | 31   | 28   | 26   | 23   | 17   | 8    | 14   | 20.5            | 34.4          |
| 13-Jun   | 10                            | 13  | 11   | 10                              | 11   | 10   | 12   | 14   | 15   | 15   | 18   | 20   | 16   | 12   | 9    | 9    | 8    | 7    | 6    | 3    | 0    | 3    | 5    | 4    | 10.0            | 20.4          |
| 14-Jun   | 2                             | 0   | 1    | 3                               | 5    | 5    | 1    | 9    | 6    | 10   | 9    | 10   | 8    | 8    | 7    | 8    | 6    | 7    | 7    | 10   | 10   | 11   | 11   | 15   | 7.0             | 14.6          |
| 15-Jun   | 16                            | 21  | 20   | 23                              | 23   | 25   | 24   | 26   | 31   | 33   | 32   | 38   | 39   | 41   | 39   | 41   | 42   | 40   | 40   | 38   | 36   | 35   | 30   | 27   | 31.7            | 41.8          |
| 16-Jun   | 24                            | 22  | 22   | 21                              | 17   | 17   | 17   | 18   | 17   | 20   | 19   | 19   | 20   | 19   | 18   | 17   | 19   | 18   | 17   | 14   | 12   | 14   | 14   | 14   | 17.8            | 23.8          |
| 17-Jun   | 13                            | 13  | 11   | 11                              | 11   | 8    | 7    | 9    | 10   | 13   | 14   | 15   | 17   | 17   | 19   | 20   | 22   | 23   | 22   | 17   | 15   | 9    | 8    | 7    | 13.8            | 22.6          |
| 18-Jun   | 3                             | 5   | 1    | 1                               | 3    | 3    | 3    | 6    | 10   | 15   | 12   | 11   | 9    | 7    | 8    | 8    | 6    | 6    | 4    | 3    | 2    | 9    | 5    | 6.2  | 15.4            |               |
| 19-Jun   | 2                             | 3   | 5    | 7                               | 7    | 5    | 4    | 5    | 7    | 10   | 10   | 17   | 20   | 16   | 9    | 14   | 13   | 10   | 8    | 6    | 4    | 2    | 2    | 2    | 7.8             | 19.9          |
| 20-Jun   | 1                             | 3   | 3    | 2                               | 2    | 1    | 6    | 9    | 11   | 10   | 6    | 5    | 4    | 4    | 5    | 5    | 6    | 7    | 10   | 8    | 7    | 5    | 6    | 6    | 5.4             | 10.8          |
| 21-Jun   | 7                             | 5   | 4    | 4                               | 7    | 6    | 9    | 10   | 10   | 11   | 11   | 9    | 8    | 9    | 10   | 11   | 12   | 12   | 11   | 7    | 6    | 4    | 3    | 4    | 7.8             | 11.9          |
| 22-Jun   | 4                             | 4   | 3    | 4                               | 5    | 5    | 5    | 3    | 6    | 10   | 11   | 9    | 9    | 13   | 17   | 12   | 12   | 16   | 15   | 10   | 8    | 6    | 5    | 4    | 8.1             | 17.2          |
| 23-Jun   | 4                             | 5   | 9    | 8                               | 5    | 7    | 7    | 6    | 5    | 4    | 3    | 3    | 5    | 4    | 4    | 5    | 7    | 8    | 13   | 7    | 3    | 1    | 4    | 2    | 5.3             | 12.9          |
| 24-Jun   | 3                             | 2   | 4    | 4                               | 7    | 5    | 6    | 5    | 5    | 5    | 4    | 10   | 14   | 12   | 10   | 8    | 8    | 7    | 6    | 7    | 10   | 5    | 6    | 7    | 6.8             | 14.5          |
| 25-Jun   | 6                             | 6   | 5    | 4                               | 7    | 5    | 5    | 8    | 11   | 13   | 16   | 17   | 18   | 19   | 20   | 19   | 19   | 17   | 17   | 19   | 14   | 12   | 8    | 7    | 12.1            | 20.2          |
| 26-Jun   | 4                             | 5   | 5    | 6                               | 6    | 8    | 11   | 13   | 14   | 17   | 19   | 18   | 14   | 14   | 14   | 13   | 12   | 12   | 13   | 15   | 12   | 7    | 6    | 6    | 10.9            | 18.5          |
| 27-Jun   | 3                             | 2   | 4    | 4                               | 5    | 4    | 4    | 6    | 7    | 7    | 5    | 5    | 4    | 4    | 5    | 5    | 5    | 3    | 3    | 3    | 5    | 3    | 2    | 2    | 4.2             | 7.4           |
| 28-Jun   | 1                             | 2   | 1    | 2                               | 1    | 2    | 2    | 1    | 1    | 2    | 4    | 5    | 5    | 6    | 7    | 5    | 5    | 12   | 11   | 6    | 3    | 2    | 1    | 2    | 3.7             | 12.4          |
| 29-Jun   | 2                             | 1   | 1    | 0                               | 1    | 1    | 1    | 2    | 6    | 5    | 6    | 5    | 8    | 6    | 11   | 7    | 14   | 6    | 7    | 7    | 6    | 5    | 3    | 4    | 4.9             | 13.7          |
| 30-Jun   | 2                             | 4   | 7    | 9                               | 10   | 7    | 5    | 4    | 8    | 10   | 9    | 12   | 13   | 11   | 9    | 8    | 8    | 5    | 1    | 3    | 6    | 3    | 2    | 2    | 6.6             | 13.3          |
|  |                               | 5.5   | 6.0  | 5.8                             | 5.8  | 6.2  | 5.9  | 6.4  | 8.4  | 10.1 | 11.4 | 11.4 | 12.5 | 12.8 | 12.8 | 12.8 | 13.1 | 13.0 | 12.5 | 11.0 | 9.4  | 7.9  | 6.7  | 6.4  | Diurnal Average |               |
|  |                               | 23.8  | 22.4 | 21.7                            | 23.4 | 22.6 | 23.9 | 26.3 | 31.1 | 33.1 | 31.8 | 38.0 | 39.2 | 41.2 | 38.6 | 41.3 | 41.8 | 40.5 | 39.7 | 37.7 | 36.2 | 34.8 | 29.9 | 27.4 | Diurnal Maximum |               |
| All monthly, daily, and diurnal averages have been calculated using scalar methods |                               |   |      |                                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |

# Hourly Standard Deviations

Wind Direction (WD) - deg

Henry Pirker - June 2016

| Maximum Value: 94.2 deg on Jun 28 17:00   |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours in Service: 720           |               |
|---|-------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------------------------|---------------|
| Minimum Value: 5.4 deg on Jun 15 02:00  |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours of Data: 720              |               |
| Percentiles: P <sub>1</sub> = 6.0 P <sub>10</sub> = 7.8 Q <sub>1</sub> = 10.2 Median = 14.8 Q <sub>3</sub> = 24.7 P <sub>90</sub> = 46.3 P <sub>99</sub> = 83.4 |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours of Missing Data: 0        |               |
|   |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours of Calibration: 0         |               |
|   |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Percent Operational Time: 100.0 |               |
| Day   | Hourly Period Ending At (MST) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 | Daily Maximum |
|   | 1                             | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24                              |               |
| 1-Jun   | 75                            | 16   | 13   | 8    | 18   | 16   | 11   | 16   | 19   | 17   | 23   | 27   | 18   | 46   | 25   | 25   | 39   | 69   | 55   | 63   | 66   | 16   | 20   | 28                              | 75.3          |
| 2-Jun   | 40                            | 79   | 46   | 30   | 52   | 26   | 20   | 17   | 12   | 30   | 27   | 28   | 21   | 33   | 25   | 15   | 42   | 12   | 9    | 8    | 7    | 7    | 10   | 15                              | 78.7          |
| 3-Jun   | 10                            | 9    | 8    | 9    | 10   | 13   | 14   | 10   | 12   | 14   | 16   | 21   | 23   | 17   | 13   | 10   | 13   | 9    | 11   | 11   | 8    | 9    | 10   | 13                              | 22.5          |
| 4-Jun   | 8                             | 11   | 12   | 12   | 14   | 9    | 15   | 9    | 9    | 11   | 14   | 13   | 13   | 15   | 17   | 13   | 20   | 17   | 10   | 9    | 15   | 8    | 26   | 54                              | 54.0          |
| 5-Jun   | 26                            | 26   | 15   | 16   | 28   | 30   | 38   | 13   | 18   | 22   | 56   | 65   | 61   | 77   | 82   | 65   | 54   | 24   | 9    | 9    | 9    | 6    | 7    | 7                               | 81.8          |
| 6-Jun   | 7                             | 9    | 66   | 26   | 37   | 49   | 57   | 65   | 17   | 13   | 17   | 14   | 13   | 13   | 14   | 16   | 11   | 10   | 11   | 8    | 7    | 8    | 10   | 10                              | 65.8          |
| 7-Jun   | 7                             | 7    | 6    | 41   | 27   | 14   | 34   | 21   | 11   | 15   | 16   | 21   | 21   | 24   | 25   | 13   | 17   | 24   | 25   | 52   | 18   | 10   | 12   | 12                              | 52.3          |
| 8-Jun   | 38                            | 12   | 12   | 25   | 42   | 38   | 74   | 83   | 15   | 17   | 15   | 15   | 13   | 17   | 44   | 16   | 17   | 16   | 21   | 15   | 18   | 12   | 29   | 16                              | 83.2          |
| 9-Jun   | 25                            | 17   | 14   | 17   | 14   | 14   | 15   | 7    | 11   | 9    | 9    | 9    | 27   | 11   | 12   | 15   | 13   | 13   | 11   | 18   | 14   | 8    | 10   | 12                              | 27.2          |
| 10-Jun  | 9                             | 23   | 18   | 89   | 53   | 16   | 22   | 20   | 14   | 19   | 18   | 17   | 16   | 15   | 16   | 12   | 10   | 10   | 11   | 10   | 15   | 12   | 12   | 15                              | 88.8          |
| 11-Jun  | 18                            | 10   | 8    | 9    | 10   | 13   | 17   | 78   | 37   | 28   | 15   | 14   | 12   | 10   | 8    | 9    | 7    | 9    | 11   | 9    | 9    | 10   | 12   | 10                              | 77.9          |
| 12-Jun  | 18                            | 12   | 12   | 16   | 15   | 12   | 11   | 12   | 7    | 8    | 11   | 9    | 7    | 8    | 8    | 7    | 8    | 9    | 7    | 8    | 7    | 10   | 10   | 11                              | 17.7          |
| 13-Jun  | 10                            | 9    | 11   | 10   | 8    | 11   | 9    | 11   | 11   | 13   | 13   | 11   | 13   | 19   | 24   | 22   | 23   | 27   | 20   | 39   | 57   | 52   | 21   | 29                              | 56.6          |
| 14-Jun  | 17                            | 76   | 84   | 23   | 27   | 55   | 46   | 25   | 13   | 11   | 12   | 10   | 13   | 15   | 18   | 18   | 15   | 18   | 11   | 8    | 9    | 9    | 8    | 9                               | 84.4          |
| 15-Jun  | 12                            | 5    | 7    | 7    | 7    | 7    | 7    | 7    | 6    | 6    | 7    | 7    | 7    | 6    | 7    | 7    | 7    | 7    | 7    | 7    | 5    | 6    | 8    | 6                               | 12.1          |
| 16-Jun  | 7                             | 7    | 7    | 6    | 8    | 7    | 7    | 7    | 7    | 6    | 9    | 9    | 8    | 8    | 8    | 9    | 8    | 7    | 7    | 20   | 9    | 7    | 7    | 6                               | 20.2          |
| 17-Jun  | 8                             | 7    | 7    | 9    | 8    | 15   | 9    | 12   | 14   | 12   | 14   | 15   | 14   | 13   | 13   | 13   | 10   | 10   | 9    | 7    | 6    | 10   | 9    | 12                              | 14.8          |
| 18-Jun  | 10                            | 12   | 66   | 82   | 18   | 14   | 39   | 22   | 13   | 12   | 14   | 13   | 17   | 27   | 21   | 20   | 19   | 17   | 15   | 47   | 24   | 20   | 30   | 18                              | 82.3          |
| 19-Jun  | 62                            | 44   | 30   | 11   | 12   | 9    | 9    | 13   | 13   | 12   | 13   | 9    | 9    | 12   | 22   | 15   | 13   | 15   | 12   | 9    | 23   | 9    | 18   | 18                              | 62.0          |
| 20-Jun  | 53                            | 39   | 19   | 31   | 16   | 40   | 21   | 10   | 13   | 13   | 24   | 30   | 43   | 47   | 42   | 86   | 42   | 43   | 10   | 11   | 8    | 7    | 6    | 6                               | 85.9          |
| 21-Jun  | 9                             | 84   | 24   | 42   | 9    | 17   | 13   | 10   | 13   | 11   | 14   | 19   | 22   | 25   | 21   | 19   | 15   | 21   | 15   | 20   | 48   | 28   | 24   | 22                              | 83.8          |
| 22-Jun  | 16                            | 17   | 32   | 27   | 29   | 28   | 18   | 25   | 23   | 15   | 15   | 19   | 21   | 29   | 16   | 11   | 19   | 18   | 15   | 15   | 13   | 11   | 12   | 25                              | 32.2          |
| 23-Jun  | 19                            | 12   | 7    | 10   | 15   | 15   | 18   | 19   | 23   | 29   | 57   | 58   | 40   | 56   | 38   | 45   | 34   | 22   | 18   | 29   | 25   | 74   | 42   | 37                              | 73.9          |
| 24-Jun  | 29                            | 38   | 19   | 21   | 8    | 14   | 14   | 16   | 24   | 21   | 28   | 13   | 12   | 14   | 16   | 25   | 23   | 22   | 12   | 18   | 14   | 16   | 10   | 11                              | 37.7          |
| 25-Jun  | 18                            | 10   | 15   | 14   | 7    | 11   | 13   | 15   | 13   | 13   | 13   | 13   | 12   | 15   | 12   | 13   | 12   | 9    | 13   | 8    | 7    | 15   | 13   | 11                              | 17.5          |
| 26-Jun  | 10                            | 9    | 25   | 29   | 17   | 11   | 9    | 10   | 12   | 9    | 12   | 13   | 19   | 15   | 20   | 19   | 17   | 20   | 13   | 11   | 12   | 8    | 8    | 12                              | 28.7          |
| 27-Jun  | 56                            | 46   | 9    | 20   | 10   | 12   | 14   | 21   | 16   | 18   | 26   | 32   | 47   | 57   | 53   | 57   | 68   | 42   | 72   | 69   | 15   | 20   | 21   | 69                              | 71.6          |
| 28-Jun  | 53                            | 25   | 23   | 22   | 33   | 21   | 39   | 73   | 56   | 49   | 43   | 55   | 54   | 30   | 35   | 50   | 94   | 14   | 10   | 9    | 74   | 36   | 25   | 26                              | 94.2          |
| 29-Jun  | 85                            | 64   | 24   | 87   | 37   | 47   | 78   | 43   | 21   | 31   | 30   | 37   | 25   | 17   | 17   | 16   | 41   | 24   | 10   | 26   | 15   | 20   | 23   | 18                              | 87.3          |
| 30-Jun  | 22                            | 8    | 10   | 8    | 8    | 18   | 56   | 42   | 29   | 26   | 14   | 17   | 9    | 26   | 16   | 17   | 16   | 23   | 67   | 76   | 42   | 33   | 50   | 63                              | 76.1          |
|   | 85.4                          | 83.8 | 84.4 | 88.8 | 53.0 | 54.7 | 78.3 | 83.2 | 55.7 | 49.2 | 56.6 | 65.4 | 61.4 | 76.9 | 81.8 | 85.9 | 94.2 | 69.4 | 71.6 | 76.1 | 73.6 | 73.9 | 49.7 | 69.4                            |               |

PAZA

Evergreen Park Station

Monthly Summary Tables, Graphs and  
Roses

## Hourly Averages

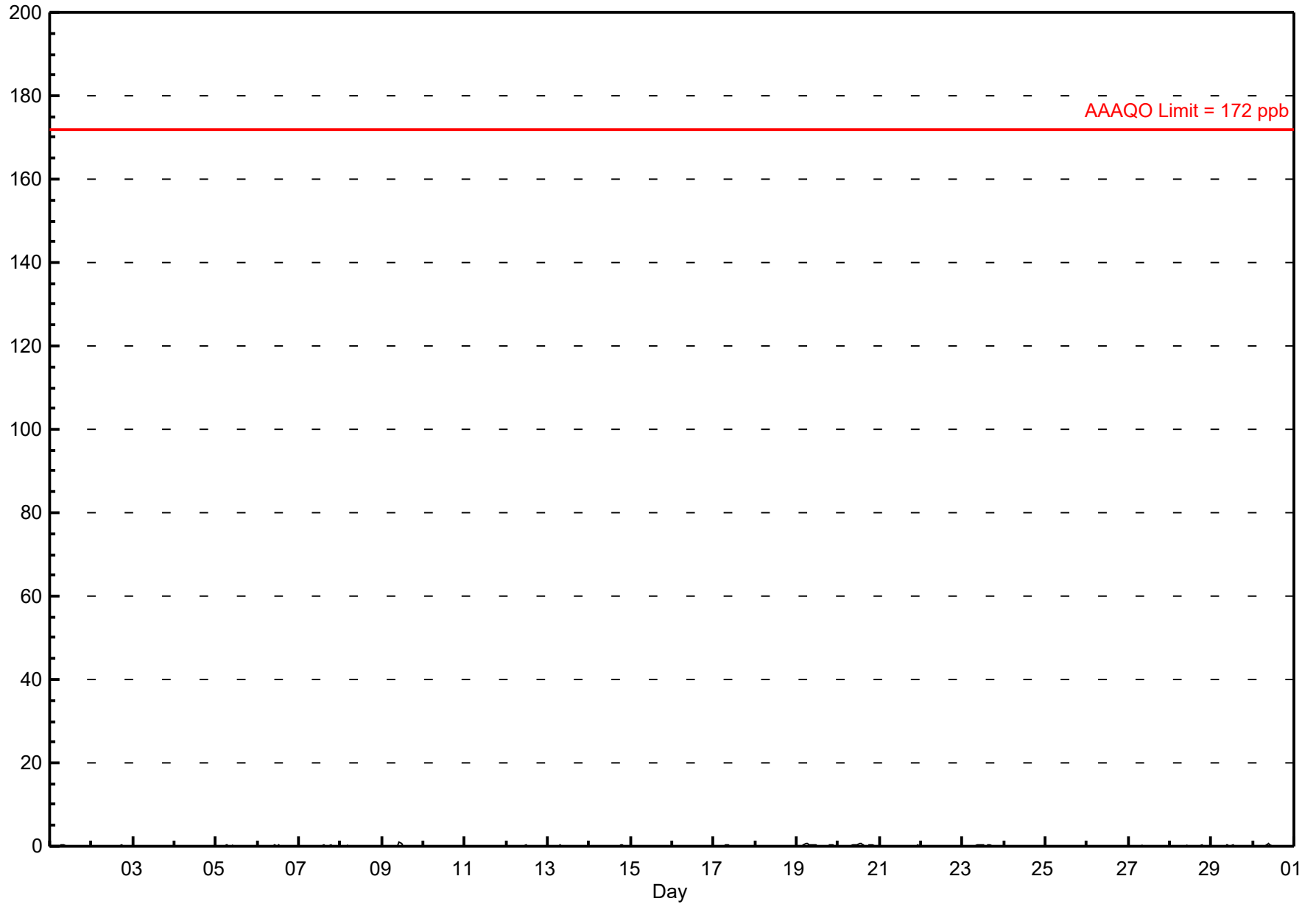
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Evergreen Park - June 2016

| Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0<br>Maximum Value: 1.0 ppb on Jun 9 11:00      Maximum Daily Average: 0.2 ppb on Jun 19 |                               | Hours in Service: 720<br>Hours of Data: 684<br>Hours of Missing Data: 36<br>Hours of Calibration: 36<br>Percent Operational Time: 100.0  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |               |               |     |
|--|-------------------------------|--|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------------|---------------|---------------|-----|
| Minimum Value: 0 ppb on Jun 2 04:00<br>Maximum Diurnal Average: 0.1 ppb at hour 11<br>Monthly Average: 0.07 ppb                        |                               | Minimum Daily Average: 0.0 ppb on Jun 10<br>Minimum Diurnal Average: 0.0 ppb at hour 3<br>Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.0 Q <sub>3</sub> = 0.1 P <sub>90</sub> = 0.2 P <sub>99</sub> = 0.5 |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |               |               |     |
| Day  | Hourly Period Ending At (MST) |  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 | Daily Average | Daily Maximum |     |
|  | 1                             | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24              |               |               |     |
| 1-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.1           | 0.3 |
| 2-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.1           | 0.2 |
| 3-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.0           | 0.2 |
| 4-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.0           | 0.1 |
| 5-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | A | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.0           | 0.3 |
| 6-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | A | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.0           | 0.3 |
| 7-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | A | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.1           | 0.2 |
| 8-Jun  | 0                             | 0  | 0 | 0 | 0 | A | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.1           | 0.2 |
| 9-Jun  | 0                             | 0  | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.1           | 1.0 |
| 10-Jun   | 0                             | 0  | 0 | A | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.0           | 0.0 |
| 11-Jun   | 0                             | 0  | A | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.0           | 0.1 |
| 12-Jun   | 0                             | A  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.1           | 0.4 |
| 13-Jun   | A                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.0           | 0.3 |
| 14-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | C  | C  | C  | C  | C  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A               | 0             | 0.1           | 0.3 |
| 15-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0               | 0             | 0.0           | 0.1 |
| 16-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0               | 0             | 0.0           | 0.1 |
| 17-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0               | 0             | 0.1           | 0.3 |
| 18-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0               | 0             | 0.0           | 0.0 |
| 19-Jun   | 0                             | 0  | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.2           | 0.8 |
| 20-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 1  | 1  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.2           | 0.6 |
| 21-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.1           | 0.3 |
| 22-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.1           | 0.1 |
| 23-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 1  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.2           | 0.5 |
| 24-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.0           | 0.1 |
| 25-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.0           | 0.2 |
| 26-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.0           | 0.1 |
| 27-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.1           | 0.2 |
| 28-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.1           | 0.2 |
| 29-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.1           | 0.2 |
| 30-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | A | 0 | 0 | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0             | 0.1           | 0.6 |
| 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.0 0.1 0.1 0.1 0.1 0.1 0.0 0.0  |                               |  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Diurnal Average |               |               |     |
| 0.1 0.1 0.1 0.1 0.4 0.8 0.8 0.4 0.5 0.6 1.0 0.8 0.6 0.5 0.3 0.3 0.2 0.4 0.4 0.3 0.3 0.2 0.3 0.1  |                               |  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Diurnal Maximum |               |               |     |
| C - Calibration      A - Automated Daily Zero Span   |                               |  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |               |               |     |
| Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb    24-hr 48 ppb    30-day 11 ppb  |                               |  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |               |               |     |

**Hourly Averages**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Evergreen Park - June 2016**



## Hourly Maximums

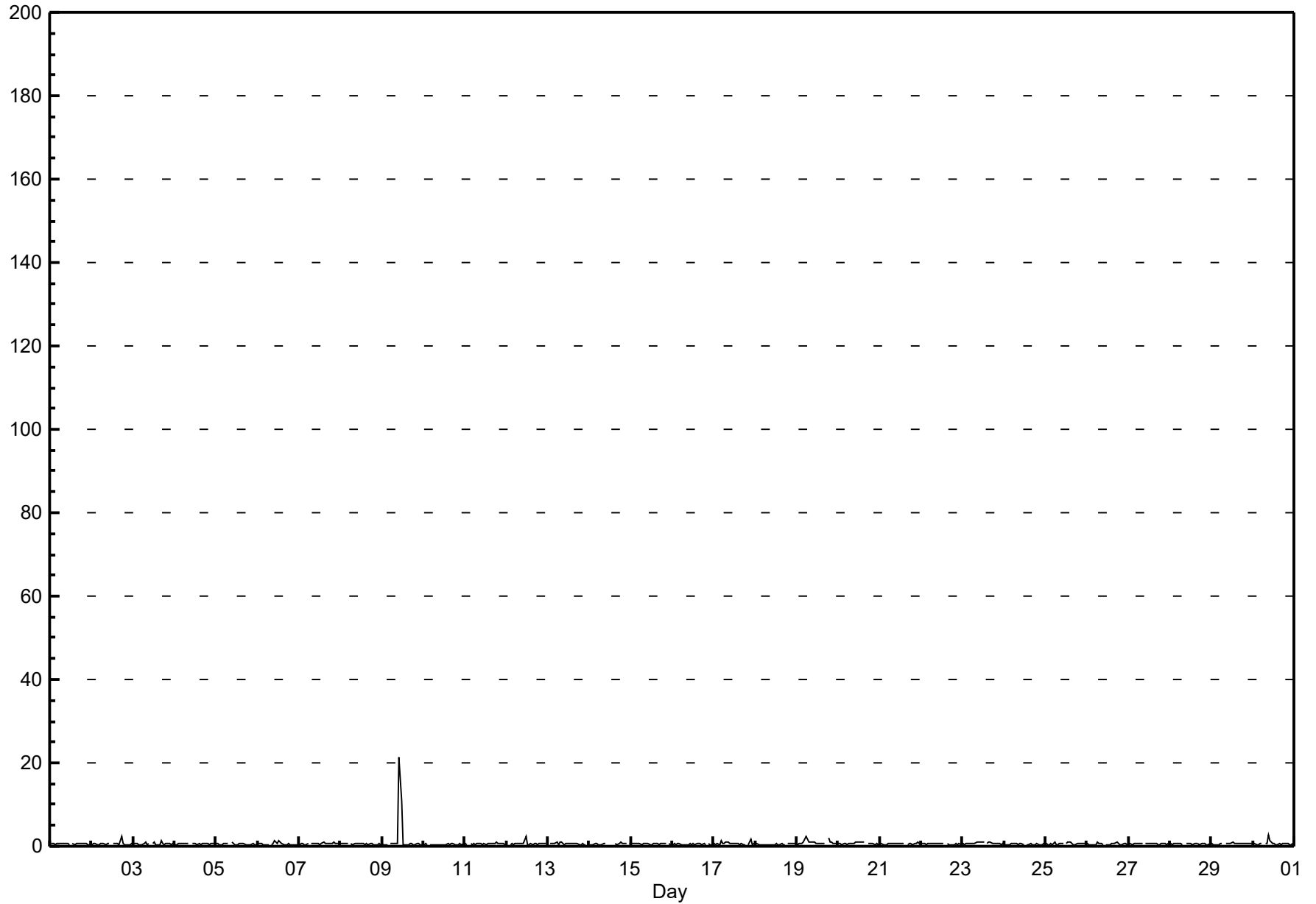
**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Evergreen Park - June 2016**

| Maximum Value: 21.4 ppb on Jun 9 11:00      |                               | Maximum Daily Average: 1.9 ppb on Jun 9  |     | Hours in Service: 720           |     |     |     |     |     |     |     |      |      |     |     |     |     |     |     |     |     |     |     |     |                 |               |  |
|---|-------------------------------|--|-----|---------------------------------|-----|-----|-----|-----|-----|-----|-----|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|---------------|--|
| Minimum Value: 0 ppb on Jun 6 04:00         |                               | Minimum Daily Average: 0.5 ppb on Jun 10   |     | Hours of Data: 684              |     |     |     |     |     |     |     |      |      |     |     |     |     |     |     |     |     |     |     |     |                 |               |  |
| Maximum Diurnal Average: 1.5 ppb at hour 11 |                               | Minimum Diurnal Average: 0.5 ppb at hour 4   |     | Hours of Missing Data: 36       |     |     |     |     |     |     |     |      |      |     |     |     |     |     |     |     |     |     |     |     |                 |               |  |
| Monthly Average: 0.65 ppb                   |                               | Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 0.6 Q <sub>3</sub> = 0.7 P <sub>90</sub> = 0.8 P <sub>99</sub> = 1.9 |     | Hours of Calibration: 36        |     |     |     |     |     |     |     |      |      |     |     |     |     |     |     |     |     |     |     |     |                 |               |  |
|   |                               |  |     | Percent Operational Time: 100.0 |     |     |     |     |     |     |     |      |      |     |     |     |     |     |     |     |     |     |     |     |                 |               |  |
| Day   | Hourly Period Ending At (MST) |  |     |                                 |     |     |     |     |     |     |     |      |      |     |     |     |     |     |     |     |     |     |     |     | Daily Average   | Daily Maximum |  |
|   | 1                             | 2  | 3   | 4                               | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12   | 13   | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |                 |               |  |
| 1-Jun                                       | 1                             | 1  | 1   | 0                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0    | A    | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 0.6             | 0.8           |  |
| 2-Jun                                       | 0                             | 1  | 1   | 0                               | 0   | 1   | 1   | 1   | 0   | 1   | 1   | A    | 1    | 1   | 1   | 1   | 0   | 2   | 1   | 0   | 0   | 0   | 0   | 1   | 0.7             | 2.4           |  |
| 3-Jun                                       | 1                             | 1  | 1   | 0                               | 0   | 0   | 1   | 1   | 0   | 1   | A   | 1    | 1    | 1   | 0   | 0   | 1   | 1   | 0   | 1   | 1   | 1   | 0   | 1   | 0.6             | 1.2           |  |
| 4-Jun                                       | 0                             | 0  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1    | 1    | 0   | 1   | 0   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 0.6             | 0.8           |  |
| 5-Jun                                       | 1                             | 1  | 1   | 0                               | 1   | 1   | 1   | 1   | A   | 1   | 1   | 0    | 0    | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 0   | 1   | 0   | 0   | 0.6             | 0.9           |  |
| 6-Jun                                       | 1                             | 1  | 1   | 0                               | 0   | 0   | 0   | A   | 0   | 1   | 1   | 1    | 1    | 1   | 1   | 0   | 0   | 1   | 1   | 1   | 0   | 0   | 0   | 0   | 0.6             | 1.3           |  |
| 7-Jun                                       | 0                             | 1  | 1   | 1                               | 0   | 1   | A   | 1   | 1   | 1   | 1   | 1    | 1    | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.6             | 0.9           |  |
| 8-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | A   | 1   | 0   | 1   | 1   | 1   | 1    | 1    | 1   | 1   | 1   | 0   | 1   | 1   | 0   | 0   | 0   | 1   | 0   | 0.6             | 0.8           |  |
| 9-Jun                                       | 1                             | 0  | 0   | 0                               | A   | 1   | 1   | 1   | 1   | 1   | 21  | 11   | 0    | 0   | 1   | 1   | 1   | 1   | 0   | 0   | 1   | 1   | 0   | 0   | 1.9             | 21.4          |  |
| 10-Jun                                      | 0                             | 1  | 0   | A                               | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0    | 0   | 1   | 0   | 1   | 1   | 0   | 0   | 0   | 1   | 1   | 1   | 0.5             | 0.6           |  |
| 11-Jun                                      | 1                             | 1  | A   | 1                               | 1   | 1   | 0   | 1   | 1   | 1   | 0   | 1    | 0    | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 0.6             | 0.9           |  |
| 12-Jun                                      | 0                             | A  | 0   | 1                               | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 2    | 0    | 0   | 1   | 0   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 0.7             | 2.4           |  |
| 13-Jun                                      | A                             | 1  | 1   | 1                               | 1   | 1   | 0   | 1   | 1   | 0   | 1   | 1    | 1    | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 1   | 0   | 0   | A   | 0.6             | 1.0           |  |
| 14-Jun                                      | 0                             | 0  | 0   | 1                               | 1   | 1   | 0   | 0   | 1   | 1   | C   | C    | C    | C   | C   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 0.6             | 0.9           |  |
| 15-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 0    | 0    | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | A   | 1   | 0   | 0.6             | 0.8           |  |
| 16-Jun                                      | 0                             | 1  | 0   | 1                               | 1   | 0   | 0   | 0   | 0   | 0   | 1   | 0    | 1    | 0   | 1   | 1   | 1   | 0   | 1   | 0   | A   | 1   | 0   | 0   | 0.5             | 0.7           |  |
| 17-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1    | 1    | 1   | 1   | 0   | 1   | 0   | 0   | A   | 0   | 2   | 0   | 1   | 0.7             | 1.6           |  |
| 18-Jun                                      | 1                             | 1  | 0   | 1                               | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 1    | 0   | 0   | 1   | 0   | 0   | A   | 1   | 1   | 1   | 1   | 1   | 0.5             | 0.7           |  |
| 19-Jun                                      | 0                             | 1  | 1   | 1                               | 1   | 2   | 2   | 1   | 1   | 1   | 1   | 1    | 1    | 1   | 1   | 1   | 1   | A   | 1   | 2   | 1   | 1   | 1   | 1   | 0.9             | 2.2           |  |
| 20-Jun                                      | 1                             | 1  | 0   | 1                               | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1    | 1    | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 0.7             | 1.1           |  |
| 21-Jun                                      | 1                             | 1  | 0   | 0                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1    | 1    | 1   | 1   | A   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.6             | 0.9           |  |
| 22-Jun                                      | 1                             | 1  | 1   | 0                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1    | 1    | 1   | A   | 1   | 0   | 0   | 0   | 1   | 1   | 0   | 1   | 0   | 0.6             | 0.8           |  |
| 23-Jun                                      | 1                             | 0  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1    | 1    | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 0.7             | 1.2           |  |
| 24-Jun                                      | 0                             | 0  | 0   | 0                               | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 0    | A    | 0   | 0   | 1   | 0   | 1   | 0   | 1   | 0   | 0   | 0   | 1   | 0.5             | 0.7           |  |
| 25-Jun                                      | 1                             | 0  | 0   | 1                               | 0   | 1   | 0   | 0   | 1   | 1   | 1   | A    | 1    | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 0.6             | 1.1           |  |
| 26-Jun                                      | 1                             | 0  | 0   | 0                               | 0   | 1   | 1   | 1   | 1   | 0   | A   | 0    | 0    | 0   | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 1   | 1   | 0   | 0.6             | 1.1           |  |
| 27-Jun                                      | 1                             | 1  | 0   | 1                               | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1    | 1    | 1   | 1   | 1   | 1   | 0   | 0   | 1   | 1   | 1   | 0   | 1   | 0.6             | 0.8           |  |
| 28-Jun                                      | 1                             | 0  | 1   | 1                               | 1   | 1   | 1   | 0   | A   | 1   | 1   | 1    | 1    | 0   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 0   | 0   | 1   | 0.6             | 0.8           |  |
| 29-Jun                                      | 1                             | 0  | 0   | 0                               | 0   | 1   | 1   | A   | 1   | 1   | 1   | 1    | 1    | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.6             | 0.9           |  |
| 30-Jun                                      | 1                             | 1  | 0   | 0                               | 1   | 1   | A   | 1   | 1   | 3   | 1   | 1    | 1    | 0   | 0   | 1   | 0   | 1   | 1   | 1   | 1   | 0   | 0   | 1   | 0.7             | 2.6           |  |
|   |                               | 0.5  | 0.5 | 0.5                             | 0.5 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 1.5 | 1.0  | 0.6  | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.5 | 0.6 | Diurnal Average |               |  |
|   |                               | 0.8  | 0.8 | 0.8                             | 0.7 | 1.5 | 2.2 | 1.8 | 1.1 | 1.0 | 2.6 | 21.4 | 10.8 | 1.3 | 1.1 | 1.1 | 0.9 | 1.2 | 2.4 | 2.0 | 1.0 | 0.9 | 1.6 | 0.9 | Diurnal Maximum |               |  |
| C - Calibration                             |                               | A - Automated Daily Zero Span  |     |                                 |     |     |     |     |     |     |     |      |      |     |     |     |     |     |     |     |     |     |     |     |                 |               |  |



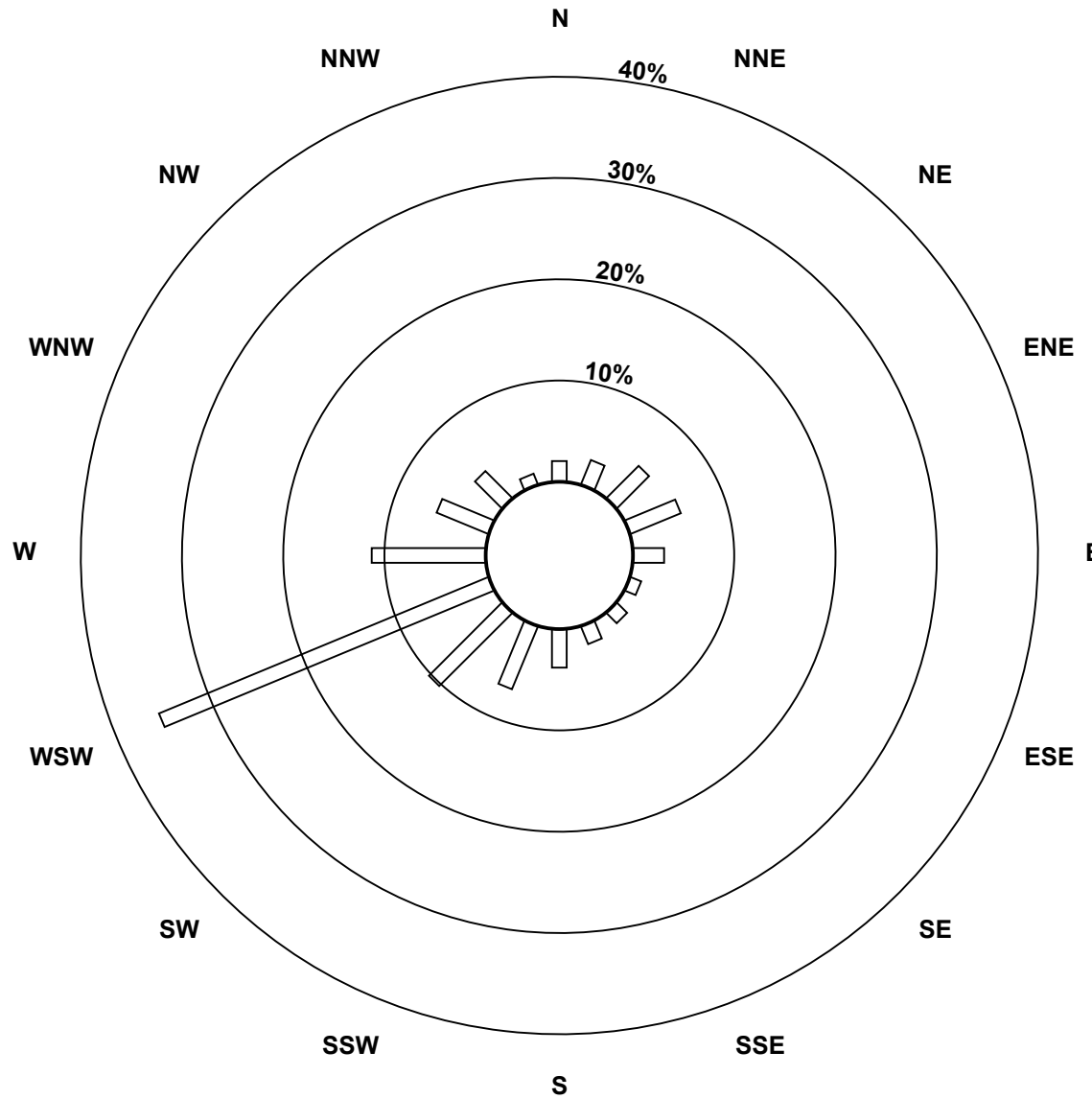
### Hourly Maximums

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Evergreen Park - June 2016**

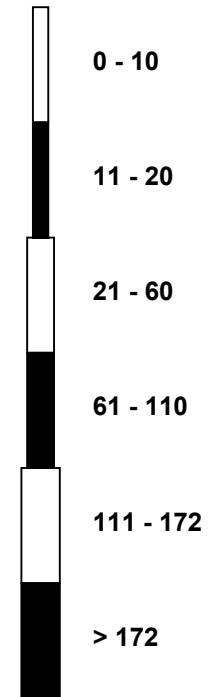


**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Evergreen Park - June 2016**

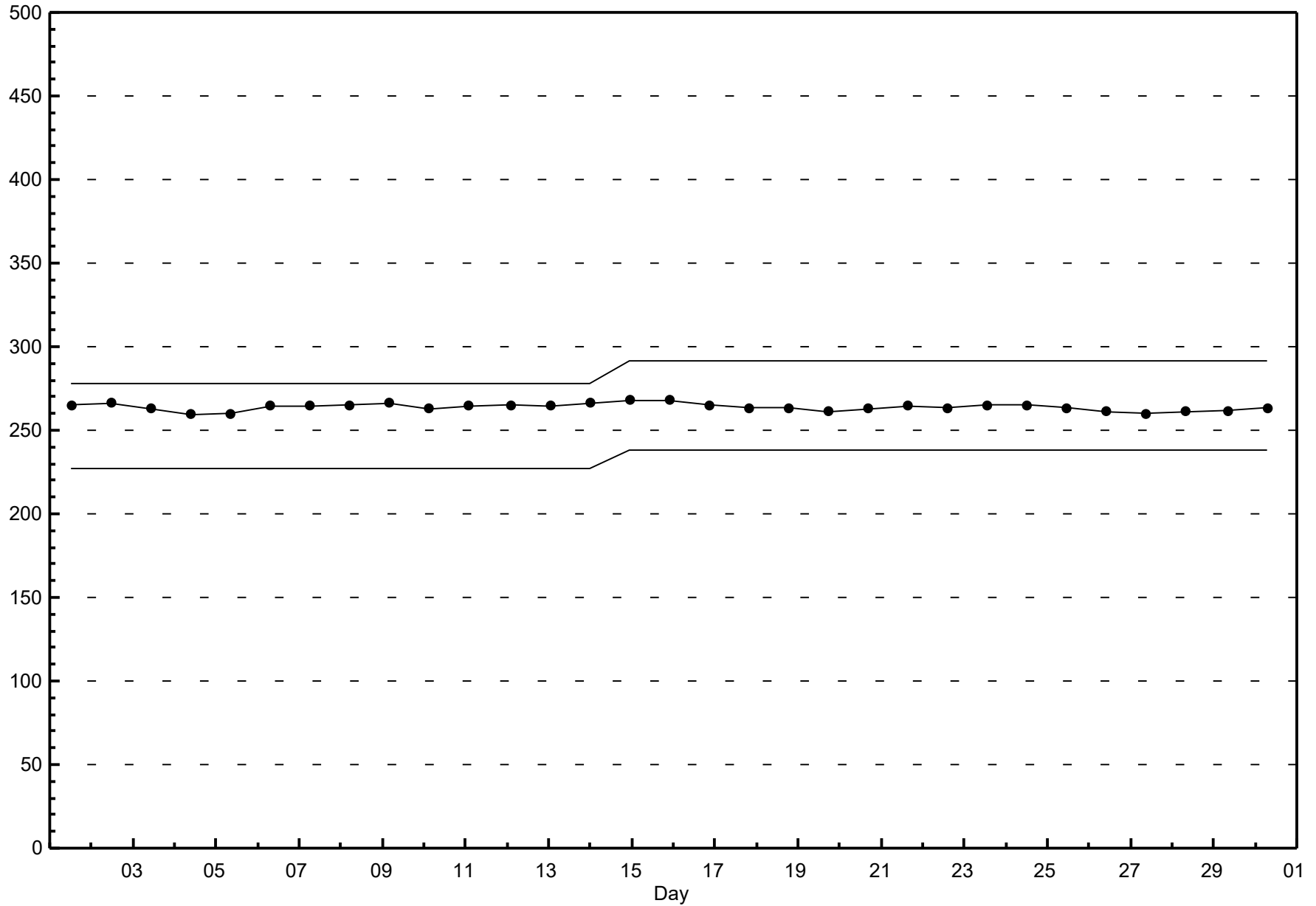


**Pollutant Classes (ppb)**



### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Evergreen Park - June 2016

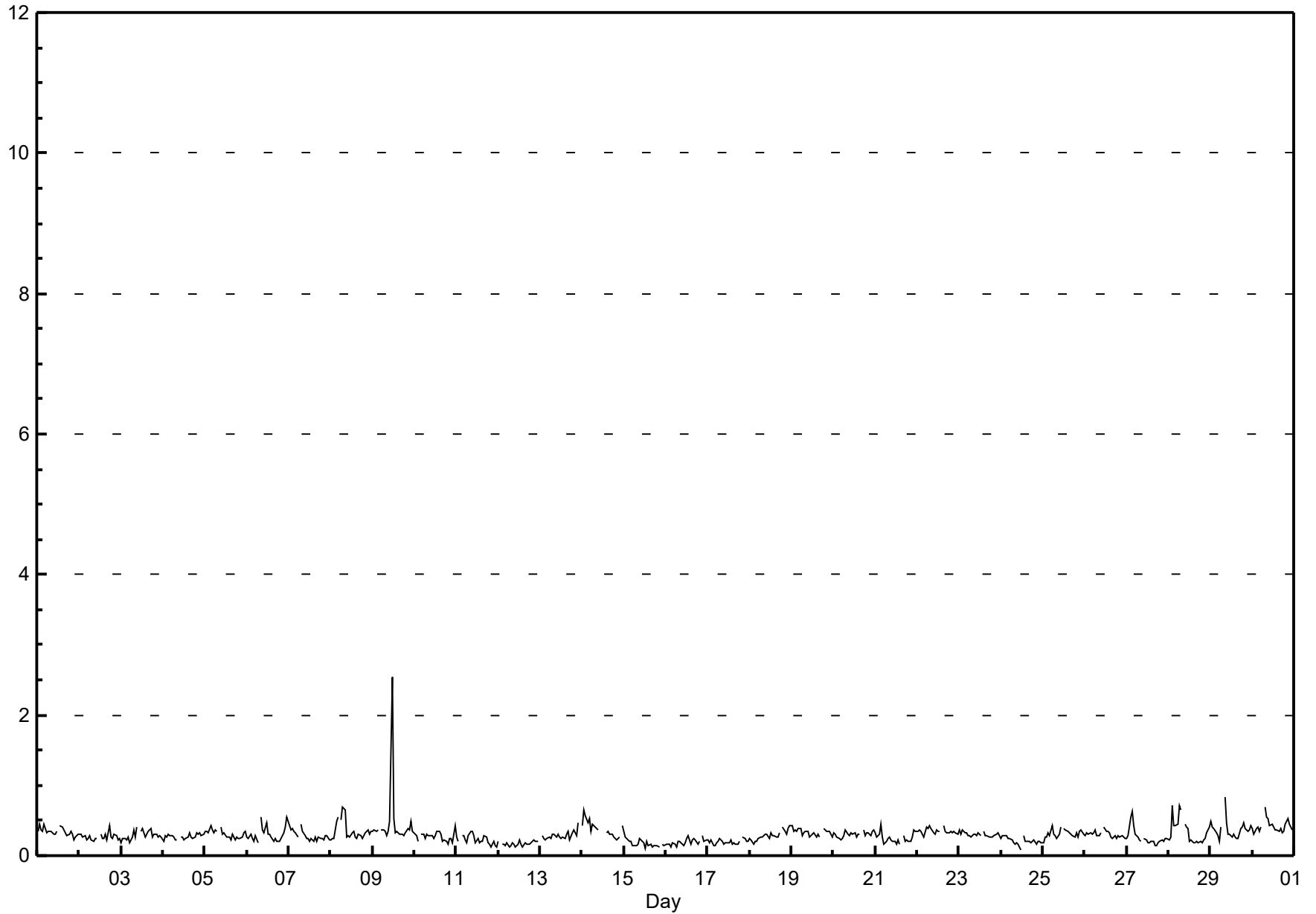


## Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Evergreen Park - June 2016

| Number of Exceedences (AAAQO):                  |                               | 1-hr: 0    24-hr: 0  |     | Hours in Service:         |     | 720   |     |     |     |     |     |             |     |     |     |     |     |     |     |     |     |     |     |     |               |               |                 |                 |  |
|---|-------------------------------|--|-----|---------------------------|-----|-------|-----|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|---------------|-----------------|-----------------|--|
| Maximum Value: 2.5 ppb on Jun 9 12:00           |                               | Maximum Daily Average: 0.5 ppb on Jun 9  |     | Hours of Data:            |     | 685   |     |     |     |     |     |             |     |     |     |     |     |     |     |     |     |     |     |     |               |               |                 |                 |  |
| Minimum Value: 0 ppb on Jun 24 12:00            |                               | Minimum Daily Average: 0.2 ppb on Jun 12   |     | Hours of Missing Data:    |     | 35    |     |     |     |     |     |             |     |     |     |     |     |     |     |     |     |     |     |     |               |               |                 |                 |  |
| Maximum Diurnal Average: 0.4 ppb at hour 12     |                               | Minimum Diurnal Average: 0.3 ppb at hour 19  |     | Hours of Calibration:     |     | 35    |     |     |     |     |     |             |     |     |     |     |     |     |     |     |     |     |     |     |               |               |                 |                 |  |
| Monthly Average: 0.29 ppb                       |                               | Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.2 Q <sub>1</sub> = 0.2 Median = 0.3 Q <sub>3</sub> = 0.3 P <sub>90</sub> = 0.4 P <sub>99</sub> = 0.6 |     | Percent Operational Time: |     | 100.0 |     |     |     |     |     |             |     |     |     |     |     |     |     |     |     |     |     |     |               |               |                 |                 |  |
| Day   | Hourly Period Ending At (MST) |  |     |                           |     |       |     |     |     |     |     |             |     |     |     |     |     |     |     |     |     |     |     |     | Daily Average | Daily Maximum |                 |                 |  |
|   | 1                             | 2  | 3   | 4                         | 5   | 6     | 7   | 8   | 9   | 10  | 11  | 12          | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |               |               |                 |                 |  |
| 1-Jun   | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0           | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3           | 0.5             |                 |  |
| 2-Jun   | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | 0   | A           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3           | 0.4             |                 |  |
| 3-Jun   | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | A   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3           | 0.4             |                 |  |
| 4-Jun   | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | A   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3           | 0.3             |                 |  |
| 5-Jun   | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | A   | 0   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3           | 0.4             |                 |  |
| 6-Jun   | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | A   | 1   | 0   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1             | 0.3           | 0.6             |                 |  |
| 7-Jun   | 0                             | 0  | 0   | 0                         | 0   | 0     | A   | 0   | 0   | 0   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3           | 0.4             |                 |  |
| 8-Jun   | 0                             | 0  | 0   | 0                         | 1   | A     | 1   | 1   | 1   | 0   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.4           | 0.7             |                 |  |
| 9-Jun   | 0                             | 0  | 0   | 0                         | A   | 0     | 0   | 0   | 0   | 0   | 0   | 3           | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.5           | 2.5             |                 |  |
| 10-Jun  | 0                             | 0  | 0   | A                         | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3           | 0.4             |                 |  |
| 11-Jun  | 0                             | 0  | A   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.2           | 0.3             |                 |  |
| 12-Jun  | 0                             | A  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.2           | 0.2             |                 |  |
| 13-Jun  | A                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3           | 0.5             |                 |  |
| 14-Jun  | 0                             | 1  | 1   | 0                         | 1   | 0     | 0   | 0   | 0   | 0   | C   | C           | C   | C   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.4           | 0.7             |                 |  |
| 15-Jun  | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0             | 0.2           | 0.4             |                 |  |
| 16-Jun  | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0             | 0.2           | 0.3             |                 |  |
| 17-Jun  | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0             | 0.2           | 0.3             |                 |  |
| 18-Jun  | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0             | 0.3           | 0.4             |                 |  |
| 19-Jun  | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0             | 0.3           | 0.4             |                 |  |
| 20-Jun  | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0           | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3           | 0.4             |                 |  |
| 21-Jun  | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0           | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.2           | 0.4             |                 |  |
| 22-Jun  | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0           | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3           | 0.4             |                 |  |
| 23-Jun  | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0           | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3           | 0.4             |                 |  |
| 24-Jun  | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0           | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.2           | 0.3             |                 |  |
| 25-Jun  | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | 0   | A           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3           | 0.4             |                 |  |
| 26-Jun  | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | 0   | 0   | 0   | A   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3           | 0.4             |                 |  |
| 27-Jun  | 0                             | 0  | 1   | 1                         | 0   | 0     | 0   | 0   | 0   | A   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3           | 0.6             |                 |  |
| 28-Jun  | 0                             | 0  | 1   | 0                         | 0   | 0     | 1   | 1   | A   | 0   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3           | 0.7             |                 |  |
| 29-Jun  | 0                             | 0  | 0   | 0                         | 0   | 0     | 0   | A   | 1   | 0   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.4           | 0.8             |                 |  |
| 30-Jun  | 0                             | 0  | 0   | 0                         | 0   | 0     | A   | 1   | 1   | 1   | 0   | 0           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0             | 0.4           | 0.7             |                 |  |
|   |                               | 0.3  | 0.3 | 0.3                       | 0.3 | 0.3   | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3         | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3           | 0.3           | Diurnal Average |                 |  |
|   |                               | 0.5  | 0.7 | 0.7                       | 0.6 | 0.5   | 0.4 | 0.7 | 0.7 | 0.8 | 0.5 | 0.5         | 2.5 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5           | 0.5           | 0.5             | Diurnal Maximum |  |
| C - Calibration                                 |                               | A - Automated Daily Zero Span  |     |                           |     |       |     |     |     |     |     |             |     |     |     |     |     |     |     |     |     |     |     |     |               |               |                 |                 |  |
| Alberta Ambient Air Quality Objectives (AAAQO): |                               | 1-hr 10 ppb  |     |                           |     |       |     |     |     |     |     | 24-hr 3 ppb |     |     |     |     |     |     |     |     |     |     |     |     |               |               |                 |                 |  |

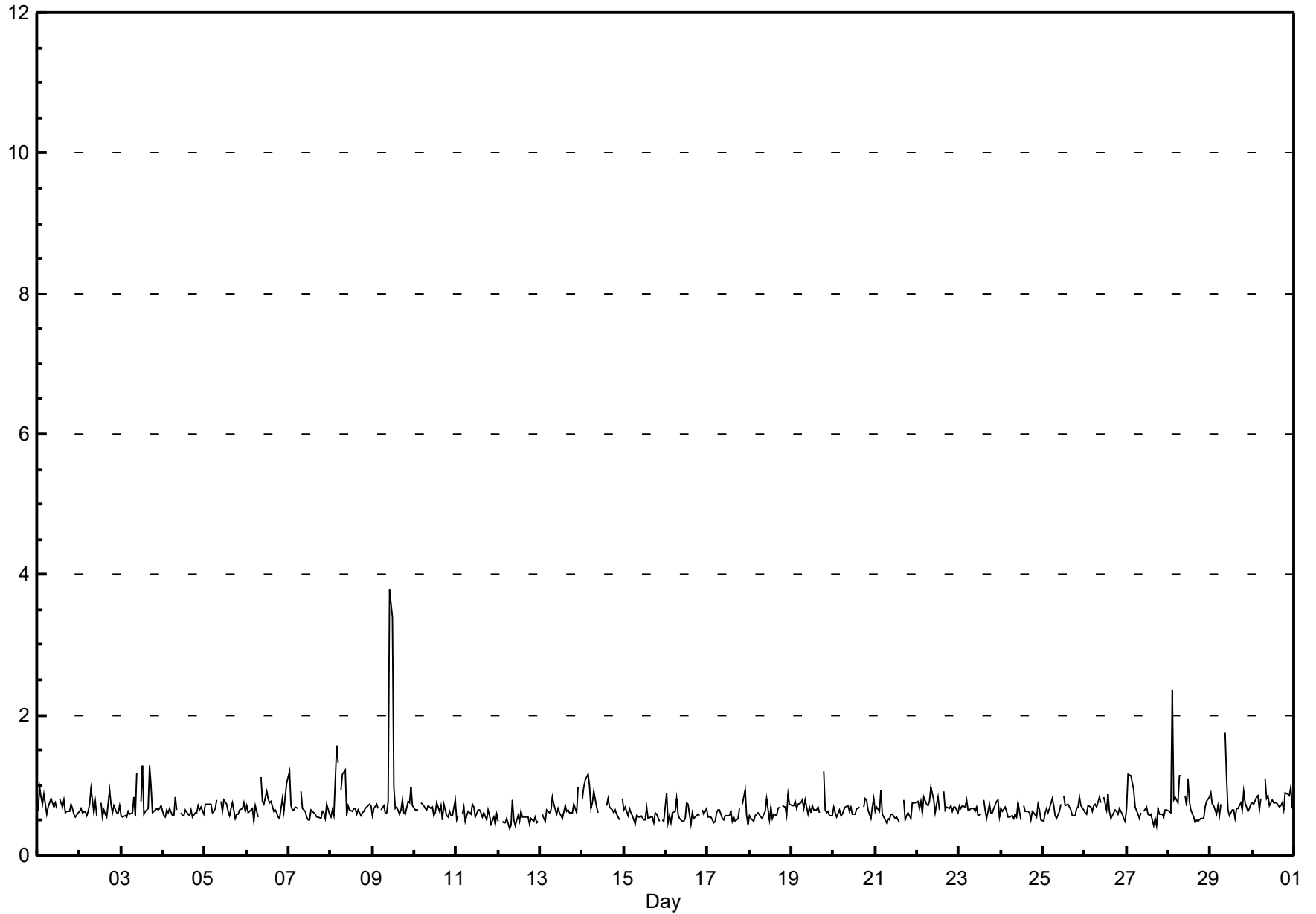


## Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

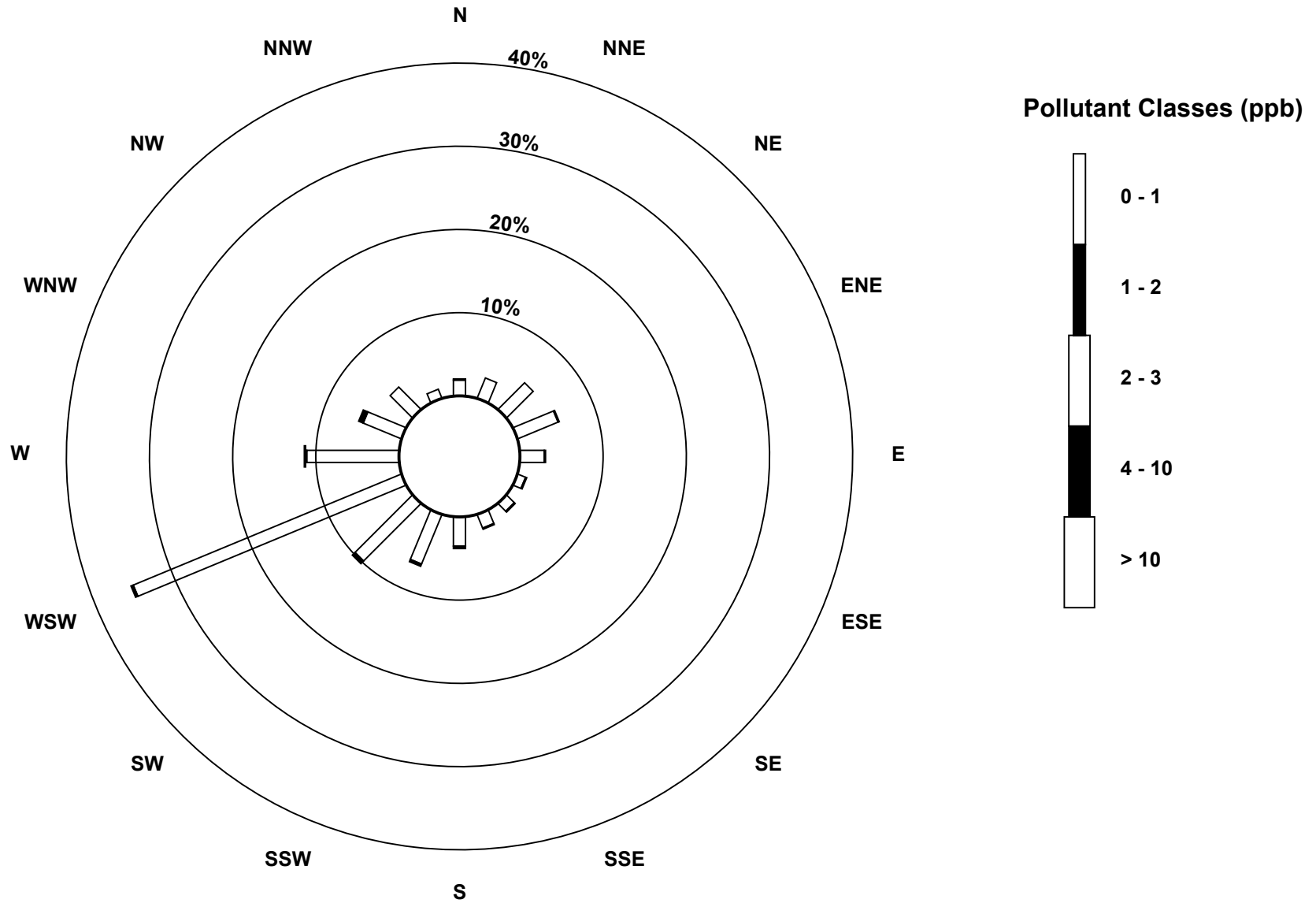
Evergreen Park - June 2016

| Maximum Value: 3.8 ppb on Jun 9 11:00       |                               | Maximum Daily Average: 1.0 ppb on Jun 9  |     | Hours in Service: 720           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |
|---|-------------------------------|--|-----|---------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|-----------------|--|
| Minimum Value: 0 ppb on Jun 12 07:00        |                               | Minimum Daily Average: 0.5 ppb on Jun 12   |     | Hours of Data: 685              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |
| Maximum Diurnal Average: 0.8 ppb at hour 11 |                               | Minimum Diurnal Average: 0.6 ppb at hour 15  |     | Hours of Missing Data: 35       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |
| Monthly Average: 0.68 ppb                   |                               | Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 0.6 Median = 0.6 Q <sub>3</sub> = 0.7 P <sub>90</sub> = 0.8 P <sub>99</sub> = 1.3 |     | Hours of Calibration: 35        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |
|   |                               |  |     | Percent Operational Time: 100.0 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |
| Day   | Hourly Period Ending At (MST) |  |     |                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Daily Average | Daily Maximum   |  |
|   | 1                             | 2  | 3   | 4                               | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |               |                 |  |
| 1-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7           | 1.0             |  |
| 2-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7           | 1.0             |  |
| 3-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7           | 1.3             |  |
| 4-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.6           | 0.8             |  |
| 5-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7           | 0.8             |  |
| 6-Jun                                       | 1                             | 1  | 1   | 1                               | 0   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7           | 1.1             |  |
| 7-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.6           | 1.2             |  |
| 8-Jun                                       | 1                             | 1  | 1   | 2                               | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8           | 1.6             |  |
| 9-Jun                                       | 1                             | 1  | 1   | 1                               | A   | 1   | 1   | 1   | 1   | 1   | 4   | 3   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1.0           | 3.8             |  |
| 10-Jun                                      | 1                             | 1  | 1   | A                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7           | 0.8             |  |
| 11-Jun                                      | 1                             | 1  | A   | 1                               | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 0   | 0.6           | 0.7             |  |
| 12-Jun                                      | 0                             | A  | 0   | 0                               | 0   | 1   | 0   | 0   | 1   | 1   | 0   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 0   | 1   | 0   | 0.5           | 0.8             |  |
| 13-Jun                                      | A                             | 1  | 1   | 0                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.6           | 1.0             |  |
| 14-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | C   | C   | C   | C   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 0.8           | 1.2             |  |
| 15-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 0   | A   | 1   | 0.6           | 0.7             |  |
| 16-Jun                                      | 1                             | 0  | 1   | 0                               | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 0.6           | 0.9             |  |
| 17-Jun                                      | 1                             | 1  | 1   | 0                               | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 0   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 0.6           | 0.9             |  |
| 18-Jun                                      | 1                             | 1  | 0   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 0.6           | 0.9             |  |
| 19-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 0.7           | 1.2             |  |
| 20-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7           | 0.8             |  |
| 21-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 0   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 0   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.6           | 0.9             |  |
| 22-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7           | 1.0             |  |
| 23-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7           | 0.8             |  |
| 24-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.6           | 0.7             |  |
| 25-Jun                                      | 0                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7           | 0.9             |  |
| 26-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7           | 0.9             |  |
| 27-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 0.7           | 1.2             |  |
| 28-Jun                                      | 1                             | 1  | 2   | 1                               | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8           | 2.4             |  |
| 29-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8           | 1.8             |  |
| 30-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8           | 1.1             |  |
|   |                               | 0.7  | 0.7 | 0.7                             | 0.7 | 0.7 | 0.6 | 0.7 | 0.7 | 0.7 | 0.8 | 0.8 | 0.7 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7           | Diurnal Average |  |
|   |                               | 1.2  | 1.2 | 2.4                             | 1.6 | 1.3 | 0.8 | 1.1 | 1.2 | 1.8 | 1.2 | 3.8 | 3.4 | 1.3 | 0.9 | 0.8 | 0.9 | 1.3 | 1.0 | 1.2 | 0.9 | 0.9 | 0.9 | 1.0 | 1.0           | Diurnal Maximum |  |
| C - Calibration                             |                               | A - Automated Daily Zero Span  |     |                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |



**Pollutant Rose**

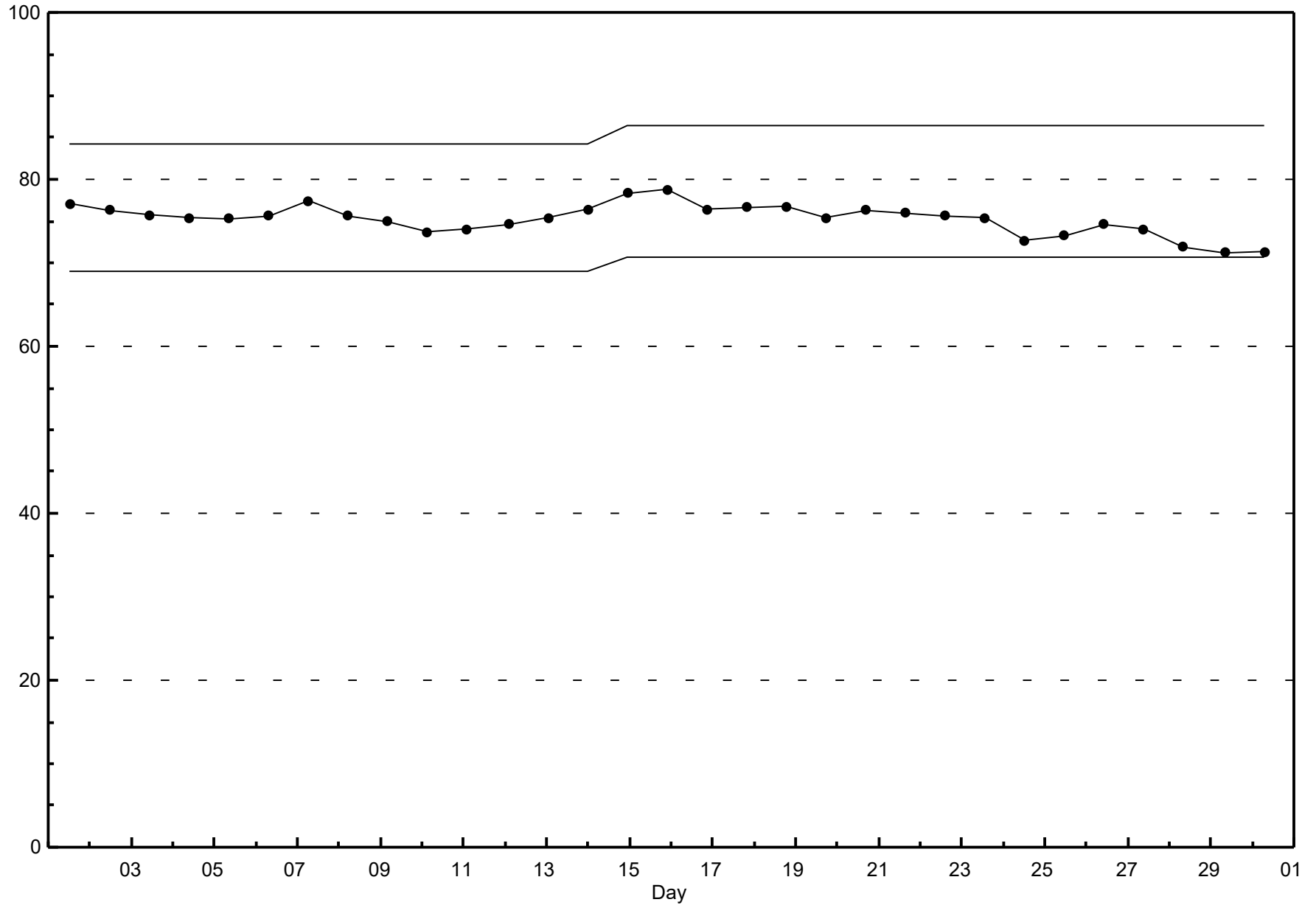
**Total Reduced Sulphur (TRS) - ppb**  
**Evergreen Park - June 2016**





**Span Responses**

**Total Reduced Sulphur (TRS)  
Evergreen Park - June 2016**



## Hourly Averages

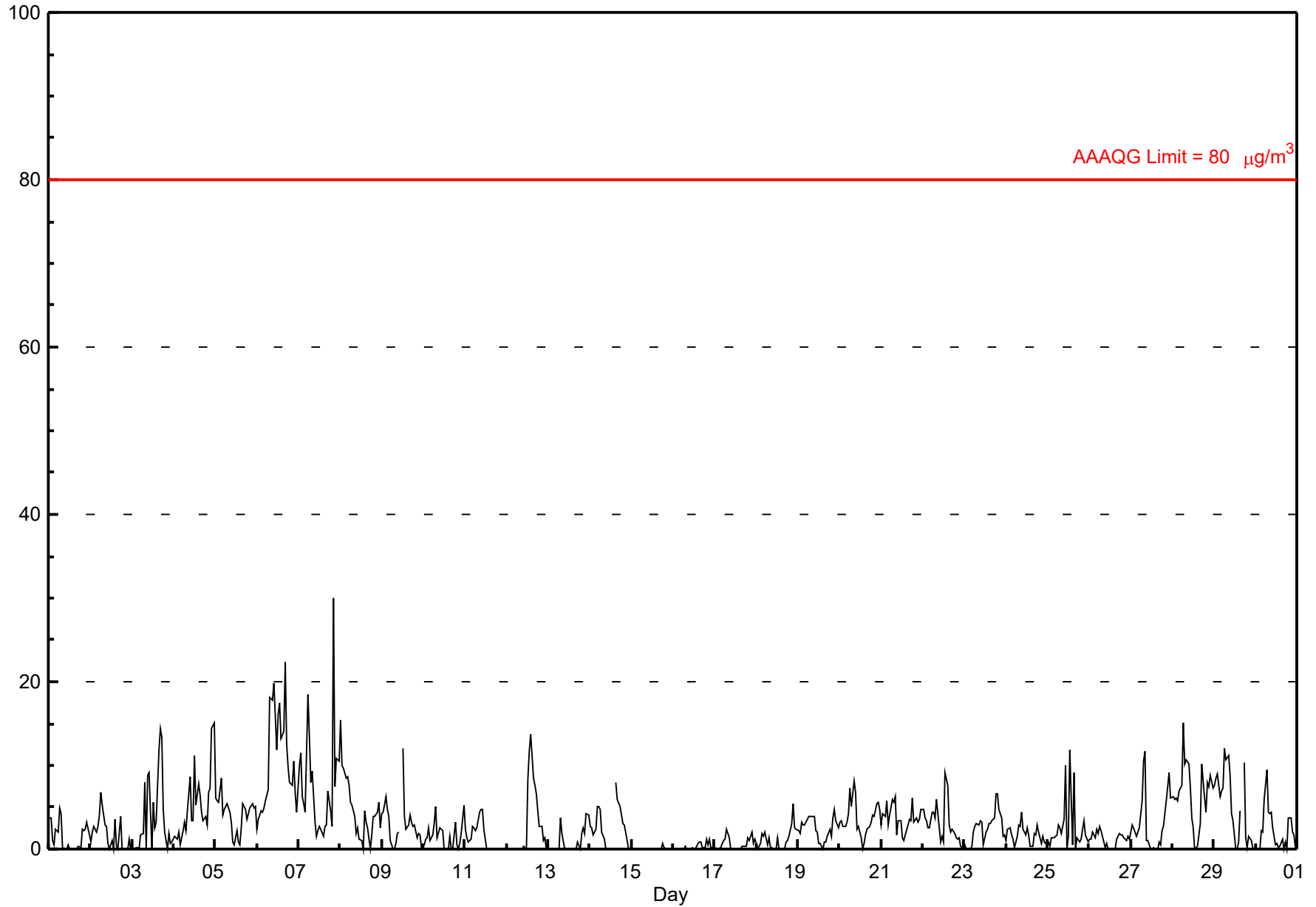
## Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

### Evergreen Park - June 2016

|   |  |
|---|--|
| Number of Exceedences: 1-hr: 0 24-hr: 0   | Hours in Service: 720                                  |
| Maximum Value: 30.0 µg/m <sup>3</sup> on Jun 7 21:00  | Maximum Daily Average: 10.9 µg/m <sup>3</sup> on Jun 6 |
| Minimum Value: 0 µg/m <sup>3</sup> on Jun 1 11:00   | Hours of Data: 713                                     |
| Minimum Daily Average: 0.0 µg/m <sup>3</sup> on Jun 15  | Hours of Missing Data: 7                               |
| Maximum Diurnal Average: 4.6 µg/m <sup>3</sup> at hour 8  | Hours of Calibration: 3                                |
| Monthly Average: 3.06 µg/m <sup>3</sup>   | Percent Operational Time: 99.4                         |
| Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.3 Median = 2.0 Q <sub>3</sub> = 4.2 P <sub>90</sub> = 7.7 P <sub>99</sub> = 17.8 |  |

| Day    | Hourly Period Ending At (MST) |      |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |      |      |      |      | Daily Average | Daily Maximum   |
|--------|-------------------------------|------|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|------|------|------|------|---------------|-----------------|
|        | 1                             | 2    | 3   | 4   | 5   | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19  | 20  | 21   | 22   | 23   | 24   |               |                 |
| 1-Jun  | 4                             | 4    | 1   | 0   | 2   | 2    | 5    | 4    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0   | 2   | 2    | 2    | 3    | 2    | 1.5           | 4.9             |
| 2-Jun  | 1                             | 2    | 3   | 2   | 3   | 4    | 7    | 5    | 3    | 3    | 1    | 0    | 1    | 0    | 4    | 0    | 0    | 4    | 0   | 0   | 0    | 0    | 1    | 0    | 1.8           | 6.8             |
| 3-Jun  | 0                             | 0    | 0   | 0   | 0   | 2    | 2    | 8    | 0    | 9    | 9    | 0    | 6    | 3    | 3    | 12   | 14   | 13   | 5   | 2   | 0    | 2    | 1    | 1    | 3.8           | 14.5            |
| 4-Jun  | 2                             | 1    | 1   | 2   | 0   | 2    | 3    | 2    | 5    | 9    | 3    | 3    | 11   | 5    | 8    | 7    | 4    | 3    | 4   | 3   | 7    | 7    | 14   | 15   | 5.1           | 15.1            |
| 5-Jun  | 6                             | 6    | 6   | 8   | 4   | 5    | 5    | 5    | 4    | 3    | 1    | 1    | 2    | 1    | 1    | 3    | 5    | 5    | 3   | 4   | 5    | 5    | 5    | 5    | 4.1           | 8.4             |
| 6-Jun  | 2                             | 4    | 5   | 4   | 5   | 6    | 7    | 18   | 18   | 18   | 20   | 12   | 16   | 17   | 13   | 14   | 22   | 13   | 10  | 8   | 8    | 11   | 7    | 4    | 10.9          | 22.4            |
| 7-Jun  | 10                            | 12   | 6   | 5   | 4   | 18   | 14   | 8    | 9    | 3    | 2    | 2    | 3    | 2    | 1    | 3    | 3    | 7    | 5   | 3   | 30   | 7    | 11   | 11   | 7.5           | 30.0            |
| 8-Jun  | 15                            | 10   | 10  | 9   | 9   | 8    | 6    | 5    | 4    | 2    | 3    | 1    | 1    | 0    | 5    | 3    | 3    | 0    | 2   | 4   | 4    | 4    | 6    | 3    | 4.7           | 15.4            |
| 9-Jun  | 4                             | 4    | 6   | 5   | 4   | 1    | 0    | 0    | 1    | 2    | 2    | N    | 12   | 4    | 2    | 3    | 4    | 3    | 3   | 3   | 1    | 2    | 2    | 0    | 3.0           | 12.0            |
| 10-Jun | 1                             | 1    | 1   | 3   | 1   | 2    | 3    | 5    | 1    | 2    | 2    | 2    | 0    | 0    | 0    | 1    | 0    | 0    | 3   | 1   | 0    | 1    | 2    | 5    | 1.6           | 5.2             |
| 11-Jun | 2                             | 1    | 1   | 1   | 3   | 3    | 2    | 3    | 4    | 5    | 5    | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 0   | 0   | 0    | 0    | 0    | 0    | 1.3           | 4.8             |
| 12-Jun | 0                             | 0    | 0   | 0   | 0   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 8    | 12   | 14   | 8    | 8    | 7    | 5   | 3   | 3    | 1    | 1    | 0    | 2.9           | 13.7            |
| 13-Jun | 0                             | 0    | 0   | 0   | 0   | 0    | 0    | 4    | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0   | 2   | 2    | 2    | 4    | 4    | 0.9           | 4.3             |
| 14-Jun | 3                             | 3    | 2   | 2   | 5   | 5    | 5    | 2    | 1    | 0    | N    | N    | C    | C    | C    | 8    | 6    | 5    | 4   | 3   | 3    | 1    | 0    | 0    | 3.0           | 8.0             |
| 15-Jun | 0                             | 0    | 0   | 0   | 0   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1   | 0   | 0    | 0    | 0    | 0    | 0.0           | 0.8             |
| 16-Jun | 0                             | 0    | 0   | 0   | 0   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 1    | 0    | 0   | 1   | 0    | 1    | 0    | 0    | 0.3           | 1.1             |
| 17-Jun | 0                             | 0    | 0   | 0   | 1   | 1    | 1    | 2    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0   | 1   | 1    | 2    | 1    | 1    | 0.6           | 2.4             |
| 18-Jun | 1                             | 0    | 1   | 2   | 2   | 2    | 1    | 1    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 1    | 1   | 2   | 3    | 5    | 3    | 2    | 1.1           | 5.4             |
| 19-Jun | 2                             | 2    | 3   | 3   | 3   | 4    | 4    | 4    | 4    | 4    | 2    | 2    | 1    | 1    | 0    | 1    | 1    | 2    | 2   | 1   | 4    | 5    | 3    | 3    | 2.5           | 4.7             |
| 20-Jun | 3                             | 3    | 3   | 3   | 3   | 4    | 7    | 5    | 8    | 7    | 2    | 3    | 1    | 0    | 1    | 2    | 2    | 3    | 3   | 4   | 4    | 5    | 6    | 5    | 3.6           | 8.2             |
| 21-Jun | 3                             | 4    | 4   | 6   | 3   | 4    | 6    | 6    | 6    | 2    | 3    | 3    | 1    | 1    | 2    | 3    | 3    | 3    | 6   | 3   | 4    | 3    | 4    | 5    | 3.7           | 6.2             |
| 22-Jun | 5                             | 4    | 3   | 3   | 3   | 4    | 4    | 4    | 6    | 3    | 1    | 1    | 1    | 9    | 8    | 3    | 2    | 2    | 2   | 1   | 1    | 1    | 0    | 0    | 3.0           | 9.2             |
| 23-Jun | 1                             | 0    | 0   | 0   | 0   | 2    | 3    | 3    | 3    | 3    | 3    | 1    | 2    | 2    | 3    | 3    | 3    | 4    | 7   | 7   | 5    | 4    | 2    | 2    | 2.5           | 6.7             |
| 24-Jun | 1                             | 2    | 3   | 2   | 1   | 0    | 1    | 3    | 3    | 4    | 2    | 2    | 2    | 2    | 0    | 0    | 2    | 2    | 3   | 2   | 1    | 1    | 1    | 1    | 1.7           | 4.5             |
| 25-Jun | 1                             | 0    | 1   | 1   | 1   | 2    | 3    | 2    | 2    | 4    | 10   | 0    | 1    | 12   | 1    | 9    | 0    | 1    | 1   | 1   | 2    | 3    | 2    | 1    | 2.6           | 11.9            |
| 26-Jun | 1                             | 1    | 2   | 1   | 2   | 2    | 3    | 2    | 1    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 1    | 2    | 2   | 2   | 1    | 1    | 1    | 1    | 1.2           | 2.8             |
| 27-Jun | 2                             | 3    | 2   | 2   | 2   | 2    | 6    | 11   | 12   | 1    | 1    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 2   | 3   | 6    | 8    | 9    | 6    | 3.2           | 11.8            |
| 28-Jun | 6                             | 6    | 6   | 6   | 7   | 8    | 15   | 10   | 11   | 10   | 7    | 4    | 3    | 0    | 0    | 2    | 3    | 10   | 6   | 4   | 8    | 7    | 9    | 7    | 6.5           | 15.0            |
| 29-Jun | 8                             | 8    | 9   | 6   | 7   | 7    | 12   | 11   | 11   | 9    | 4    | 3    | 0    | 0    | 1    | 4    | N    | 10   | 1   | 0   | 2    | 1    | 0    | 0    | 5.0           | 12.0            |
| 30-Jun | 0                             | 0    | 0   | 2   | 2   | 6    | 9    | 4    | 4    | 4    | 3    | 0    | 1    | 0    | 0    | 1    | 0    | 1    | 0   | 4   | 4    | 2    | 2    | 0    | 2.1           | 9.4             |
|        | 2.8                           | 2.7  | 2.6 | 2.6 | 2.6 | 3.5  | 4.4  | 4.6  | 4.1  | 3.6  | 3.0  | 1.6  | 2.6  | 2.5  | 2.3  | 3.0  | 3.1  | 3.4  | 2.7 | 2.5 | 3.7  | 3.2  | 3.3  | 2.8  |               | Diurnal Average |
|        | 15.4                          | 11.5 | 9.7 | 8.5 | 8.7 | 18.4 | 15.0 | 18.1 | 18.0 | 17.8 | 19.8 | 11.8 | 16.1 | 17.5 | 13.7 | 14.0 | 22.4 | 13.4 | 9.8 | 8.0 | 30.0 | 10.5 | 14.4 | 15.1 |               | Diurnal Maximum |

C - Calibration    N - Not Valid  
 Alberta Ambient Air Quality Guideline (AAQG): 1-hr 80 µg/m<sup>3</sup>    Alberta Ambient Air Quality Objective (AAQO): 24-hr 30 µg/m<sup>3</sup>

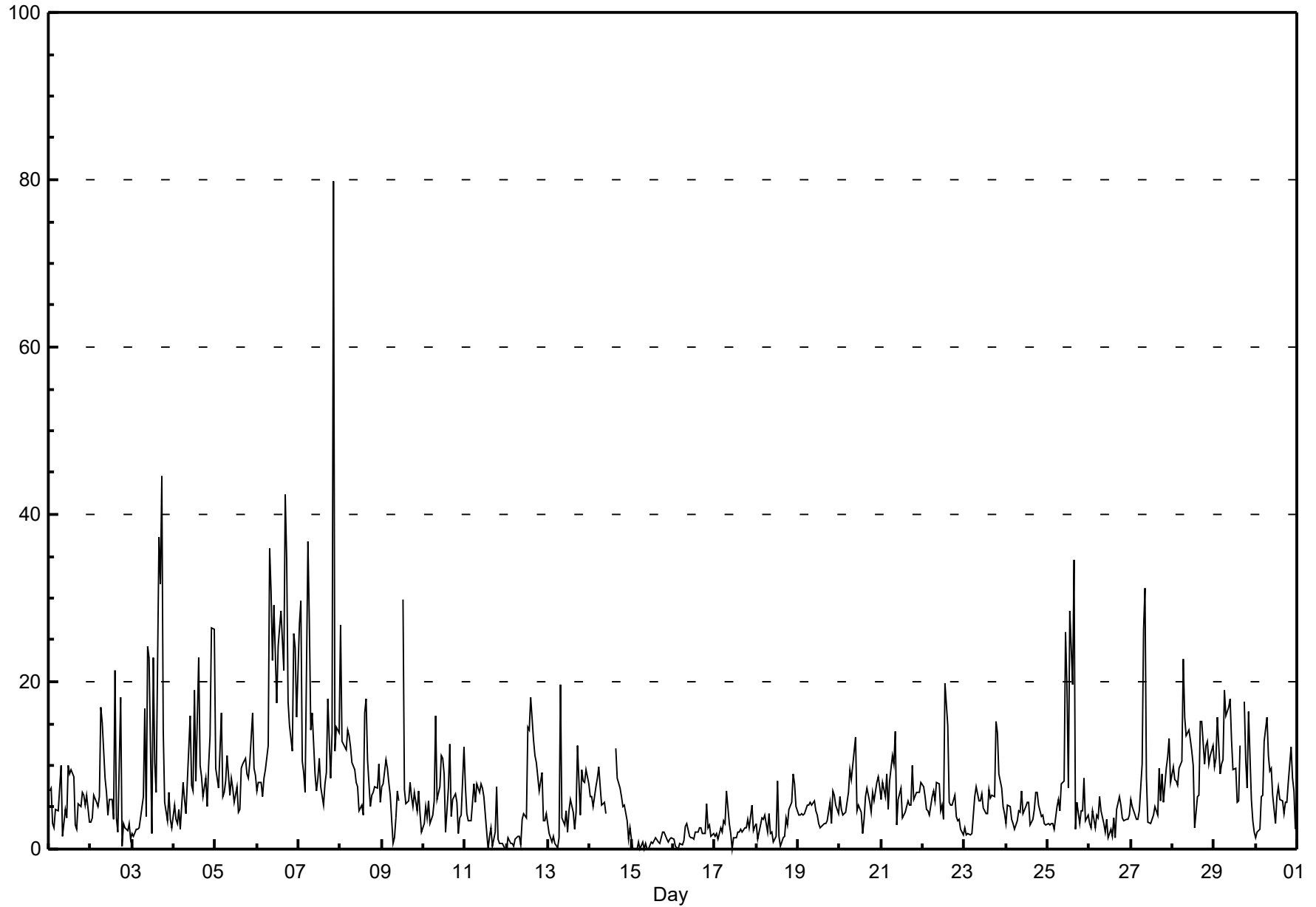


## Hourly Maximums

## Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

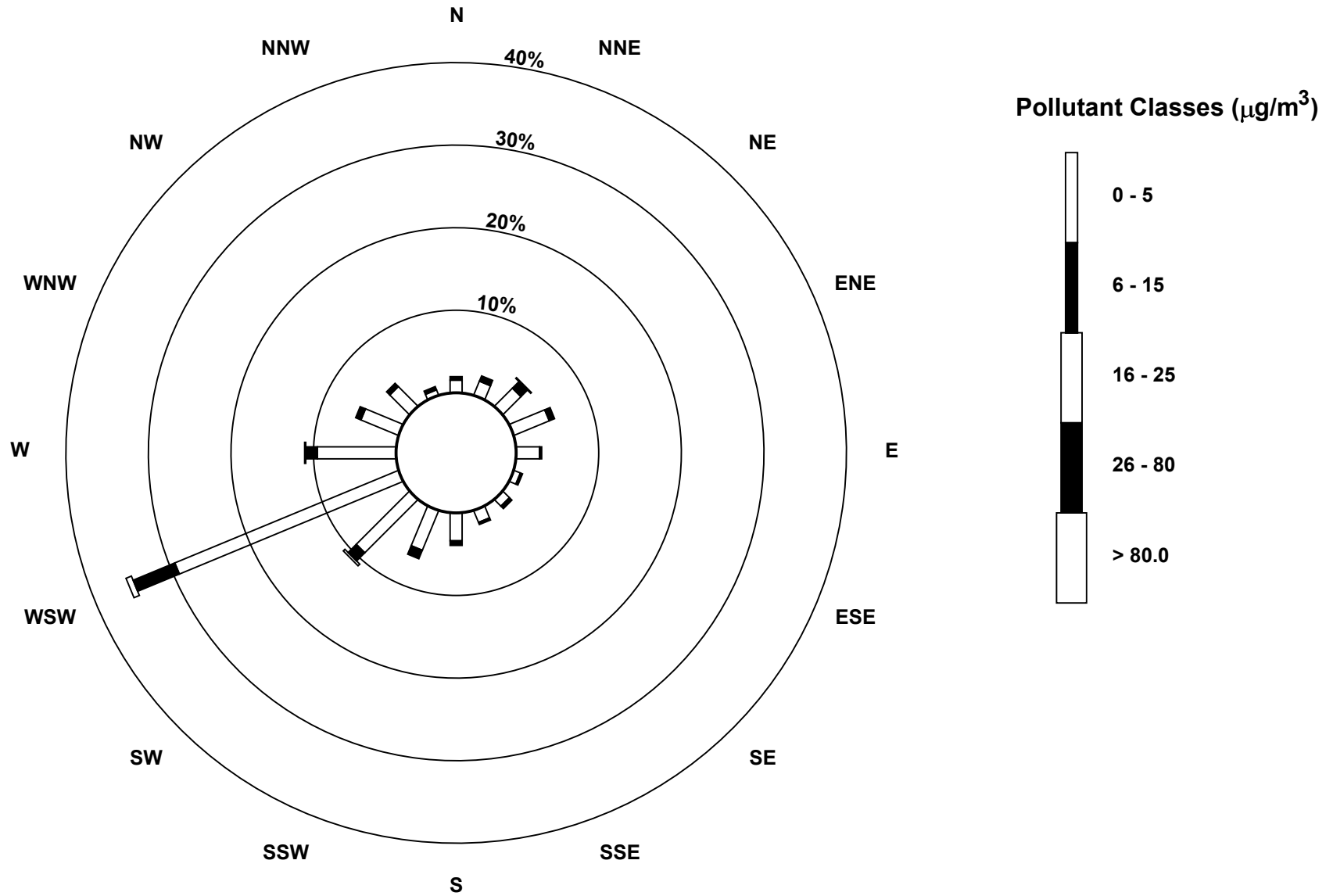
### Evergreen Park - June 2016

| Maximum Value: 79.9 µg/m <sup>3</sup> on Jun 7 21:00      |                               | Maximum Daily Average: 20.1 µg/m <sup>3</sup> on Jun 6   |    | Hours in Service: 720          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |               |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|---|-------------------------------|--|----|--------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------|---------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|
| Minimum Value: 0 µg/m <sup>3</sup> on Jun 11 14:00        |                               | Minimum Daily Average: 0.8 µg/m <sup>3</sup> on Jun 15   |    | Hours of Data: 713             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |               |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Maximum Diurnal Average: 10.1 µg/m <sup>3</sup> at hour 8 |                               | Minimum Diurnal Average: 4.8 µg/m <sup>3</sup> at hour 5   |    | Hours of Missing Data: 7       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |               |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Monthly Average: 7.23 µg/m <sup>3</sup>                   |                               | Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 1.6 Q <sub>1</sub> = 3.1 Median = 5.5 Q <sub>3</sub> = 8.7 P <sub>90</sub> = 14.4 P <sub>99</sub> = 34.0 |    | Hours of Calibration: 3        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |               |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|   |                               |  |    | Percent Operational Time: 99.4 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |               |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Day   | Hourly Period Ending At (MST) |  |    |                                |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |               | Daily Average | Daily Maximum |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|   | 1                             | 2  | 3  | 4                              | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24            |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 1-Jun   | 7                             | 7  | 3  | 3                              | 5  | 5  | 7  | 10 | 2  | 5  | 4  | 10 | 9  | 9  | 3  | 2  | 6  | 5  | 7  | 7  | 5  | 6  | 3  | 5.7           | 9.9           |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 2-Jun   | 3                             | 4  | 6  | 6                              | 5  | 6  | 17 | 15 | 8  | 7  | 4  | 6  | 6  | 4  | 21 | 4  | 2  | 18 | 0  | 3  | 3  | 2  | 3  | 1             | 6.5           | 21.4          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 3-Jun   | 2                             | 2  | 2  | 2                              | 3  | 4  | 6  | 17 | 4  | 24 | 23 | 2  | 23 | 10 | 7  | 37 | 32 | 45 | 14 | 6  | 3  | 7  | 4  | 3             | 11.7          | 44.6          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 4-Jun   | 5                             | 4  | 3  | 5                              | 2  | 8  | 6  | 4  | 8  | 16 | 8  | 7  | 19 | 8  | 23 | 10 | 9  | 6  | 8  | 5  | 10 | 13 | 26 | 26            | 10.0          | 26.5          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 5-Jun   | 10                            | 8  | 7  | 16                             | 6  | 7  | 8  | 11 | 7  | 8  | 7  | 6  | 7  | 4  | 5  | 10 | 10 | 11 | 9  | 8  | 10 | 16 | 10 | 9             | 8.8           | 16.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 6-Jun   | 7                             | 8  | 8  | 6                              | 8  | 9  | 12 | 36 | 31 | 23 | 29 | 17 | 24 | 26 | 28 | 21 | 42 | 35 | 18 | 15 | 12 | 26 | 24 | 16            | 20.1          | 42.4          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 7-Jun   | 27                            | 30   | 11 | 9                              | 7  | 37 | 27 | 14 | 16 | 9  | 7  | 8  | 11 | 7  | 5  | 8  | 9  | 18 | 8  | 14 | 80 | 12 | 15 | 14            | 16.8          | 79.9          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 8-Jun   | 27                            | 13   | 13 | 12                             | 14 | 14 | 12 | 10 | 9  | 8  | 7  | 5  | 5  | 4  | 16 | 18 | 11 | 5  | 6  | 7  | 7  | 7  | 10 | 6             | 10.3          | 26.7          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 9-Jun   | 7                             | 8  | 11 | 10                             | 8  | 7  | 1  | 1  | 4  | 7  | 6  | N  | 30 | 7  | 5  | 6  | 8  | 6  | 5  | 7  | 5  | 7  | 4  | 2             | 7.0           | 29.8          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 10-Jun  | 3                             | 5  | 4  | 6                              | 3  | 4  | 6  | 16 | 6  | 7  | 11 | 11 | 9  | 2  | 7  | 13 | 4  | 6  | 7  | 6  | 2  | 4  | 4  | 12            | 6.5           | 16.0          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 11-Jun  | 7                             | 4  | 3  | 3                              | 6  | 8  | 6  | 8  | 7  | 8  | 7  | 6  | 2  | 0  | 2  | 3  | 0  | 2  | 7  | 1  | 1  | 1  | 0  | 0             | 3.8           | 7.7           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 12-Jun  | 0                             | 1  | 1  | 1                              | 0  | 1  | 2  | 2  | 1  | 3  | 4  | 4  | 15 | 14 | 18 | 13 | 11 | 10 | 9  | 7  | 9  | 3  | 3  | 4             | 5.7           | 18.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 13-Jun  | 2                             | 1  | 1  | 2                              | 1  | 0  | 1  | 20 | 4  | 3  | 5  | 2  | 5  | 6  | 4  | 2  | 4  | 12 | 4  | 9  | 8  | 8  | 9  | 8             | 5.1           | 19.7          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 14-Jun  | 6                             | 6  | 5  | 7                              | 8  | 10 | 7  | 5  | 6  | 4  | N  | N  | C  | C  | C  | 12 | 8  | 7  | 6  | 5  | 5  | 3  | 1  | 3             | 6.2           | 12.1          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 15-Jun  | 1                             | 0  | 0  | 0                              | 1  | 0  | 1  | 0  | 1  | 0  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 1  | 1  | 1  | 1             | 0.8           | 2.1           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 16-Jun  | 1                             | 0  | 0  | 0                              | 1  | 1  | 1  | 3  | 3  | 2  | 1  | 1  | 1  | 2  | 2  | 3  | 3  | 2  | 2  | 6  | 3  | 3  | 2  | 2             | 1.8           | 5.5           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 17-Jun  | 2                             | 2  | 1  | 3                              | 2  | 3  | 3  | 7  | 3  | 2  | 0  | 1  | 1  | 2  | 2  | 2  | 2  | 3  | 3  | 3  | 3  | 5  | 2  | 3             | 2.5           | 7.0           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 18-Jun  | 3                             | 1  | 3  | 4                              | 4  | 4  | 2  | 4  | 2  | 2  | 1  | 2  | 8  | 2  | 0  | 1  | 2  | 4  | 3  | 5  | 6  | 9  | 8  | 5             | 3.5           | 8.9           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 19-Jun  | 4                             | 4  | 4  | 4                              | 4  | 5  | 5  | 6  | 5  | 6  | 5  | 4  | 3  | 3  | 3  | 3  | 3  | 3  | 6  | 3  | 7  | 6  | 5  | 4             | 4.4           | 7.0           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 20-Jun  | 6                             | 5  | 4  | 4                              | 6  | 7  | 9  | 8  | 12 | 13 | 5  | 5  | 4  | 2  | 4  | 6  | 7  | 6  | 4  | 7  | 6  | 8  | 9  | 7             | 6.4           | 13.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 21-Jun  | 6                             | 8  | 6  | 9                              | 5  | 8  | 11 | 10 | 14 | 3  | 6  | 7  | 4  | 4  | 4  | 6  | 5  | 5  | 10 | 6  | 7  | 7  | 7  | 8             | 6.9           | 14.1          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 22-Jun  | 7                             | 6  | 5  | 5                              | 4  | 6  | 7  | 6  | 8  | 8  | 5  | 5  | 4  | 20 | 15 | 6  | 5  | 5  | 6  | 4  | 3  | 4  | 2  | 2             | 6.1           | 19.9          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 23-Jun  | 3                             | 2  | 2  | 2                              | 2  | 4  | 6  | 7  | 6  | 6  | 7  | 5  | 4  | 4  | 7  | 6  | 6  | 6  | 15 | 14 | 9  | 7  | 5  | 4             | 5.8           | 15.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 24-Jun  | 3                             | 5  | 5  | 4                              | 3  | 2  | 3  | 5  | 4  | 7  | 4  | 5  | 6  | 6  | 3  | 4  | 5  | 7  | 7  | 5  | 4  | 4  | 3  | 3             | 4.4           | 7.0           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 25-Jun  | 3                             | 3  | 3  | 3                              | 2  | 5  | 6  | 5  | 8  | 8  | 26 | 19 | 7  | 28 | 20 | 35 | 2  | 6  | 3  | 5  | 5  | 8  | 3  | 4             | 9.0           | 34.6          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 26-Jun  | 3                             | 3  | 5  | 3                              | 4  | 4  | 6  | 5  | 3  | 2  | 4  | 1  | 2  | 2  | 4  | 1  | 5  | 6  | 5  | 4  | 3  | 4  | 4  | 4             | 3.6           | 6.3           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 27-Jun  | 6                             | 5  | 4  | 4                              | 4  | 5  | 10 | 26 | 31 | 9  | 3  | 3  | 4  | 4  | 5  | 4  | 10 | 6  | 9  | 6  | 10 | 11 | 13 | 8             | 8.2           | 31.1          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 28-Jun  | 10                            | 8  | 8  | 8                              | 10 | 11 | 23 | 16 | 14 | 14 | 13 | 12 | 10 | 3  | 6  | 6  | 15 | 15 | 10 | 12 | 13 | 10 | 11 | 12            | 11.3          | 22.8          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 29-Jun  | 10                            | 11   | 16 | 9                              | 10 | 11 | 19 | 16 | 17 | 18 | 13 | 9  | 10 | 6  | 6  | 12 | N  | 18 | 11 | 7  | 16 | 6  | 3  | 2             | 11.1          | 18.9          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 30-Jun  | 1                             | 2  | 2  | 6                              | 6  | 13 | 16 | 11 | 9  | 10 | 6  | 3  | 6  | 7  | 6  | 6  | 4  | 6  | 6  | 8  | 12 | 8  | 7  | 2             | 6.9           | 15.8          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|   |                               |  |    |                                |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 6.1           | 5.5           | 4.9           | 5.1  | 4.8  | 6.9  | 8.3  | 10.1 | 8.4  | 8.0  | 7.6  | 6.0  | 8.3  | 6.8  | 8.2  | 8.7  | 7.9  | 9.5  | 7.0  | 6.5  | 8.9  | 7.2  | 6.9  | 5.9  | Diurnal Average |
|   |                               |  |    |                                |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 27.0          | 29.7          | 15.8          | 16.2 | 14.3 | 36.7 | 27.0 | 36.0 | 31.1 | 24.3 | 29.2 | 19.4 | 29.8 | 28.5 | 28.5 | 37.2 | 42.4 | 44.6 | 17.7 | 14.8 | 79.9 | 25.8 | 26.5 | 26.2 | Diurnal Maximum |
| C - Calibration   |                               |  |    |                                |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | N - Not Valid |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |



**Pollutant Rose**

**Particulate Matter 2.5 (PM<sub>2.5</sub>) - μg/m<sup>3</sup>**  
**Evergreen Park - June 2016**





Peace Airshed Zone Association

# Hourly Averages

External Temperature (ET) - °C

Evergreen Park - June 2016

|   |   |          |                           |      |
|---|---|----------|---------------------------|------|
| Number of Exceedences (AAAQO):              | 1-hr: 0   | 24-hr: 0 | Hours in Service:         | 720  |
| Maximum Value: 28.2 °C on Jun 6 16:00       | Maximum Daily Average: 19.9 °C on Jun 21  |          | Hours of Data:            | 719  |
| Minimum Value: 5 °C on Jun 15 18:00         | Minimum Daily Average: 6.1 °C on Jun 15   |          | Hours of Missing Data:    | 1    |
| Maximum Diurnal Average: 20.1 °C at hour 17 | Minimum Diurnal Average: 10.2 °C at hour 5  |          | Hours of Calibration:     | 0    |
| Monthly Average: 15.53 °C                   | Percentiles: P <sub>1</sub> = 5.4 P <sub>10</sub> = 8.9 Q <sub>1</sub> = 11.4 Median = 14.8 Q <sub>3</sub> = 19.5 P <sub>90</sub> = 23.1 P <sub>99</sub> = 27.1 |          | Percent Operational Time: | 99.9 |

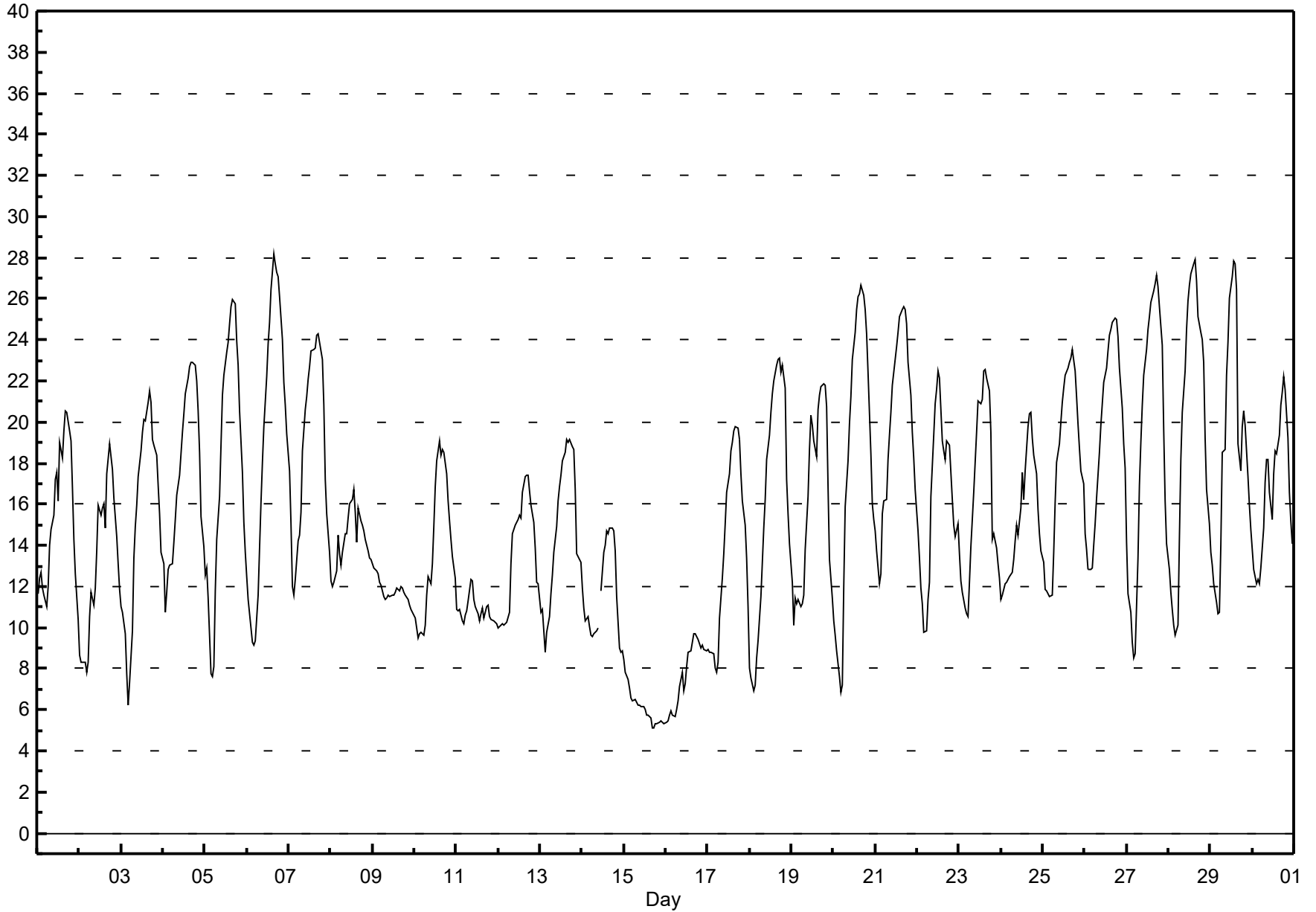
| Day    | Hourly Period Ending At (MST) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Daily Average   | Daily Maximum |
|--------|-------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|---------------|
|        | 1                             | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |                 |               |
| 1-Jun  | 12                            | 12   | 13   | 12   | 12   | 11   | 12   | 14   | 15   | 15   | 17   | 18   | 16   | 19   | 18   | 20   | 21   | 20   | 20   | 19   | 17   | 14   | 13   | 10   | 15.4            | 20.6          |
| 2-Jun  | 9                             | 8    | 8    | 8    | 8    | 8    | 11   | 12   | 11   | 12   | 14   | 16   | 15   | 16   | 16   | 15   | 17   | 19   | 18   | 18   | 16   | 14   | 13   | 12   | 13.1            | 18.9          |
| 3-Jun  | 11                            | 11   | 10   | 8    | 6    | 7    | 10   | 13   | 15   | 16   | 17   | 19   | 19   | 20   | 20   | 21   | 22   | 21   | 19   | 19   | 18   | 17   | 16   | 14   | 15.4            | 21.5          |
| 4-Jun  | 13                            | 11   | 12   | 13   | 13   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 23   | 23   | 23   | 22   | 21   | 19   | 15   | 14   | 17.6            | 22.9          |
| 5-Jun  | 13                            | 13   | 11   | 8    | 8    | 8    | 12   | 14   | 16   | 19   | 21   | 22   | 23   | 24   | 25   | 26   | 26   | 26   | 24   | 23   | 21   | 18   | 15   | 14   | 17.8            | 26.0          |
| 6-Jun  | 12                            | 11   | 10   | 9    | 9    | 9    | 12   | 14   | 16   | 18   | 20   | 22   | 24   | 25   | 26   | 28   | 28   | 27   | 27   | 26   | 24   | 22   | 21   | 19   | 19.2            | 28.2          |
| 7-Jun  | 18                            | 15   | 12   | 12   | 12   | 14   | 15   | 16   | 19   | 21   | 21   | 22   | 23   | 23   | 24   | 24   | 24   | 24   | 23   | 23   | 21   | 17   | 16   | 14   | 18.8            | 24.3          |
| 8-Jun  | 12                            | 12   | 12   | 13   | 15   | 14   | 13   | 14   | 15   | 15   | 15   | 16   | 16   | 17   | 16   | 14   | 16   | 15   | 15   | 14   | 14   | 13   | 13   | 13   | 14.3            | 16.7          |
| 9-Jun  | 13                            | 13   | 13   | 13   | 12   | 12   | 11   | 11   | 11   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 12   | 11   | 11   | 11   | 11   | 11   | 11.8            | 13.1          |
| 10-Jun | 10                            | 10   | 10   | 10   | 10   | 10   | 10   | 12   | 12   | 12   | 13   | 15   | 17   | 18   | 19   | 18   | 19   | 19   | 18   | 16   | 15   | 14   | 13   | 12   | 13.8            | 19.1          |
| 11-Jun | 11                            | 11   | 11   | 10   | 10   | 11   | 11   | 11   | 12   | 12   | 11   | 11   | 11   | 10   | 11   | 11   | 10   | 11   | 11   | 11   | 10   | 10   | 10   | 10   | 10.8            | 12.3          |
| 12-Jun | 10                            | 10   | 10   | 10   | 10   | 10   | 11   | 13   | 15   | 15   | 15   | 15   | 15   | 15   | 17   | 17   | 17   | 17   | 17   | 16   | 15   | 14   | 12   | 12   | 13.7            | 17.4          |
| 13-Jun | 11                            | 11   | 10   | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 17   | 18   | 19   | 19   | 19   | 19   | 19   | 19   | 17   | 14   | 13   | 13   | 14.7            | 19.2          |
| 14-Jun | 12                            | 11   | 10   | 11   | 10   | 10   | 10   | 10   | 10   | 10   | N    | 12   | 14   | 14   | 15   | 15   | 15   | 15   | 15   | 14   | 12   | 9    | 9    | 9    | 11.6            | 14.9          |
| 15-Jun | 8                             | 8    | 7    | 7    | 7    | 6    | 7    | 6    | 6    | 6    | 6    | 6    | 6    | 6    | 6    | 6    | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 6.1             | 8.4           |
| 16-Jun | 5                             | 5    | 6    | 6    | 6    | 6    | 6    | 6    | 7    | 8    | 7    | 7    | 8    | 9    | 9    | 9    | 10   | 10   | 9    | 9    | 9    | 9    | 9    | 9    | 7.7             | 9.7           |
| 17-Jun | 9                             | 9    | 9    | 9    | 8    | 8    | 8    | 10   | 12   | 14   | 15   | 17   | 18   | 19   | 19   | 20   | 20   | 20   | 19   | 17   | 16   | 15   | 13   | 11   | 13.9            | 19.8          |
| 18-Jun | 8                             | 8    | 7    | 7    | 9    | 9    | 11   | 13   | 15   | 16   | 18   | 19   | 20   | 21   | 22   | 23   | 23   | 23   | 22   | 23   | 22   | 17   | 16   | 14   | 16.1            | 23.1          |
| 19-Jun | 12                            | 10   | 11   | 11   | 11   | 11   | 11   | 12   | 14   | 16   | 19   | 20   | 20   | 19   | 18   | 21   | 21   | 22   | 22   | 22   | 21   | 17   | 13   | 11   | 16.1            | 21.8          |
| 20-Jun | 10                            | 10   | 9    | 8    | 7    | 7    | 12   | 16   | 18   | 20   | 21   | 23   | 24   | 25   | 26   | 26   | 27   | 26   | 25   | 24   | 22   | 18   | 16   | 15   | 18.2            | 26.6          |
| 21-Jun | 15                            | 14   | 12   | 13   | 16   | 16   | 16   | 18   | 19   | 21   | 22   | 23   | 24   | 24   | 25   | 25   | 26   | 25   | 25   | 23   | 21   | 19   | 18   | 17   | 19.9            | 25.6          |
| 22-Jun | 15                            | 13   | 12   | 11   | 10   | 10   | 11   | 12   | 16   | 19   | 21   | 22   | 23   | 22   | 19   | 19   | 18   | 19   | 19   | 18   | 16   | 15   | 14   | 15   | 16.2            | 22.5          |
| 23-Jun | 14                            | 12   | 12   | 11   | 11   | 11   | 12   | 14   | 17   | 18   | 20   | 21   | 21   | 21   | 22   | 23   | 22   | 22   | 20   | 14   | 15   | 14   | 13   | 12   | 16.2            | 22.6          |
| 24-Jun | 11                            | 12   | 12   | 12   | 12   | 12   | 13   | 13   | 14   | 15   | 15   | 16   | 18   | 16   | 18   | 20   | 20   | 20   | 19   | 18   | 18   | 16   | 15   | 14   | 15.4            | 20.5          |
| 25-Jun | 13                            | 12   | 12   | 12   | 11   | 12   | 14   | 16   | 18   | 19   | 20   | 21   | 22   | 22   | 23   | 23   | 23   | 24   | 22   | 21   | 20   | 19   | 18   | 17   | 18.0            | 23.5          |
| 26-Jun | 15                            | 14   | 13   | 13   | 13   | 14   | 15   | 16   | 19   | 20   | 21   | 22   | 23   | 23   | 24   | 25   | 25   | 25   | 25   | 24   | 23   | 21   | 19   | 18   | 19.5            | 25.1          |
| 27-Jun | 14                            | 12   | 11   | 9    | 8    | 9    | 13   | 17   | 19   | 21   | 22   | 24   | 25   | 25   | 26   | 26   | 27   | 27   | 27   | 26   | 24   | 20   | 16   | 14   | 19.2            | 27.2          |
| 28-Jun | 13                            | 12   | 11   | 10   | 10   | 10   | 14   | 18   | 20   | 22   | 25   | 26   | 27   | 27   | 28   | 28   | 27   | 25   | 24   | 23   | 19   | 17   | 15   | 15   | 19.8            | 27.9          |
| 29-Jun | 14                            | 13   | 12   | 11   | 11   | 11   | 14   | 18   | 19   | 22   | 24   | 26   | 27   | 28   | 28   | 26   | 19   | 18   | 20   | 21   | 20   | 17   | 16   | 15   | 18.7            | 27.9          |
| 30-Jun | 14                            | 13   | 12   | 12   | 12   | 13   | 15   | 17   | 18   | 18   | 17   | 15   | 17   | 19   | 18   | 19   | 21   | 21   | 22   | 22   | 19   | 17   | 15   | 14   | 16.7            | 22.2          |
|        | 11.9                          | 11.1 | 10.6 | 10.2 | 10.2 | 10.4 | 11.8 | 13.5 | 15.0 | 16.1 | 17.3 | 18.1 | 18.8 | 19.3 | 19.6 | 20.0 | 20.1 | 20.0 | 19.5 | 18.7 | 17.5 | 15.5 | 14.1 | 13.1 | Diurnal Average |               |
|        | 17.6                          | 15.1 | 12.8 | 12.9 | 15.6 | 16.1 | 16.2 | 18.5 | 20.5 | 22.5 | 24.5 | 26.0 | 27.1 | 27.9 | 27.7 | 28.2 | 27.7 | 27.3 | 27.1 | 26.1 | 24.0 | 21.9 | 20.8 | 19.4 | Diurnal Maximum |               |

N - Not Valid

**Hourly Averages**

**External Temperature (ET) - °C**

**Evergreen Park - June 2016**





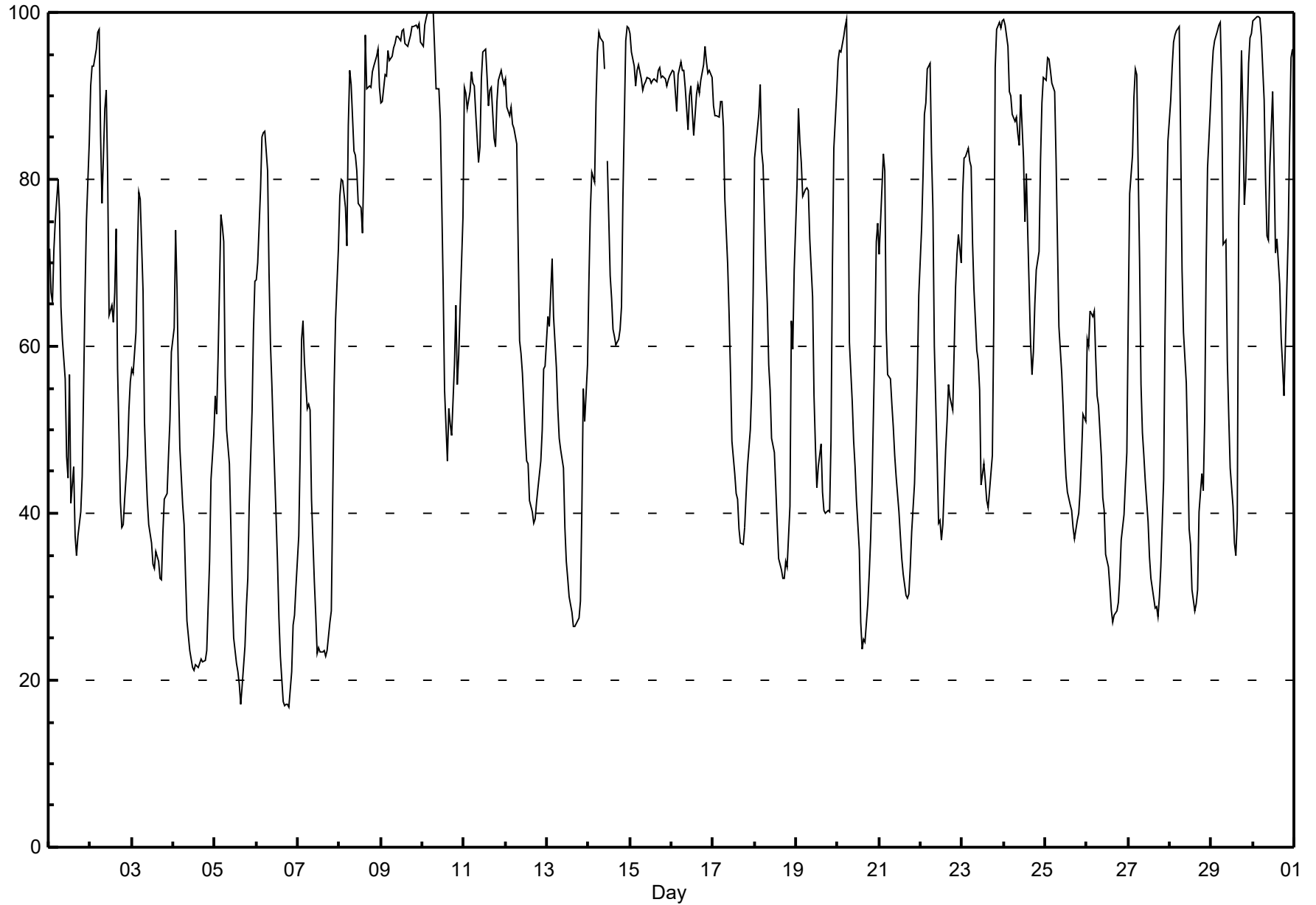
## Hourly Averages

Relative Humidity (RH) - %  
Evergreen Park - June 2016

| Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0<br>Maximum Value: 100.0 % on Jun 10 05:00      Maximum Daily Average: 95.9 % on Jun 9  |                               |    |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    | Hours in Service: 720<br>Hours of Data: 719<br>Hours of Missing Data: 1<br>Hours of Calibration: 0<br>Percent Operational Time: 99.9 |      |      |       |       |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
|--|-------------------------------|----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|--|------|------|-------|-------|------|---------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|--|
| Minimum Value: 17 % on Jun 6 20:00      Minimum Daily Average: 35.3 % on Jun 4<br>Maximum Diurnal Average: 84.6 % at hour 4      Minimum Diurnal Average: 47.5 % at hour 17<br>Monthly Average: 64.78 %      Percentiles: P <sub>1</sub> = 19.0 P <sub>10</sub> = 30.8 Q <sub>1</sub> = 43.1 Median = 64.9 Q <sub>3</sub> = 89.3 P <sub>90</sub> = 95.2 P <sub>99</sub> = 99.2 |                               |    |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |  |      |      |       |       |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| Day  | Hourly Period Ending At (MST) |    |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |  |      |      |       |       |      | Daily Average | Daily Maximum |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
|  | 1                             | 2  | 3   | 4   | 5   | 6   | 7   | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19   | 20   | 21   | 22    | 23    | 24   |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 1-Jun  | 72                            | 66 | 65  | 71  | 75  | 80  | 76  | 65 | 61 | 56 | 47 | 44 | 57 | 41 | 46 | 37 | 35 | 37 | 40   | 44   | 55   | 66    | 75    | 84   | 58.2          | 84.5          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 2-Jun  | 91                            | 94 | 93  | 96  | 98  | 98  | 85  | 77 | 89 | 91 | 80 | 64 | 65 | 63 | 66 | 74 | 57 | 41 | 38   | 39   | 42   | 47    | 52    | 56   | 70.6          | 97.9          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 3-Jun  | 57                            | 57 | 62  | 71  | 78  | 78  | 67  | 51 | 46 | 42 | 39 | 36 | 34 | 33 | 35 | 34 | 32 | 32 | 38   | 42   | 42   | 47    | 51    | 59   | 48.5          | 78.5          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 4-Jun  | 62                            | 74 | 67  | 56  | 48  | 41  | 39  | 33 | 27 | 23 | 23 | 22 | 21 | 22 | 22 | 22 | 23 | 22 | 22   | 24   | 29   | 34    | 44    | 50   | 35.3          | 73.9          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 5-Jun  | 54                            | 52 | 59  | 76  | 74  | 73  | 56  | 50 | 46 | 39 | 30 | 25 | 22 | 21 | 19 | 17 | 19 | 24 | 29   | 32   | 41   | 52    | 62    | 68   | 43.4          | 75.7          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 6-Jun  | 68                            | 70 | 79  | 85  | 86  | 86  | 81  | 69 | 60 | 55 | 50 | 39 | 34 | 28 | 23 | 18 | 17 | 17 | 17   | 17   | 21   | 27    | 28    | 31   | 46.0          | 85.8          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 7-Jun  | 37                            | 48 | 61  | 63  | 58  | 52  | 53  | 52 | 42 | 32 | 28 | 23 | 24 | 23 | 23 | 24 | 23 | 24 | 27   | 28   | 42   | 55    | 63    | 72   | 40.7          | 71.7          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 8-Jun  | 78                            | 80 | 80  | 77  | 72  | 86  | 93  | 91 | 83 | 83 | 81 | 77 | 77 | 74 | 82 | 97 | 91 | 91 | 91   | 93   | 93   | 95    | 96    | 91   | 85.5          | 97.4          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 9-Jun  | 89                            | 89 | 92  | 92  | 95  | 94  | 95  | 96 | 96 | 97 | 97 | 97 | 97 | 98 | 98 | 96 | 96 | 97 | 97   | 98   | 98   | 98    | 99    | 97   | 95.9          | 98.6          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 10-Jun   | 96                            | 99 | 99  | 100 | 100 | 100 | 100 | 96 | 91 | 91 | 87 | 78 | 67 | 55 | 46 | 52 | 51 | 49 | 58   | 65   | 55   | 59    | 65    | 75   | 76.4          | 100.0         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 11-Jun   | 91                            | 90 | 88  | 90  | 93  | 92  | 91  | 88 | 82 | 84 | 92 | 95 | 96 | 92 | 89 | 91 | 91 | 85 | 84   | 89   | 92   | 93    | 92    | 91   | 90.1          | 95.6          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 12-Jun   | 92                            | 89 | 88  | 89  | 87  | 86  | 84  | 72 | 61 | 59 | 57 | 49 | 46 | 46 | 42 | 40 | 39 | 39 | 41   | 43   | 46   | 50    | 57    | 58   | 60.8          | 92.1          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 13-Jun   | 64                            | 62 | 66  | 71  | 64  | 57  | 53  | 49 | 48 | 45 | 38 | 34 | 32 | 30 | 28 | 26 | 27 | 27 | 27   | 30   | 40   | 55    | 51    | 58   | 45.1          | 70.6          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 14-Jun   | 68                            | 76 | 81  | 80  | 89  | 95  | 98  | 97 | 96 | 93 | N  | 82 | 68 | 66 | 62 | 61 | 60 | 61 | 62   | 65   | 78   | 97    | 98    | 98   | 79.7          | 98.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 15-Jun   | 98                            | 95 | 94  | 91  | 93  | 94  | 92  | 91 | 91 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 93 | 93 | 92   | 92   | 92   | 91    | 92    | 92   | 92.5          | 97.5          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 16-Jun   | 93                            | 93 | 90  | 88  | 93  | 94  | 93  | 93 | 91 | 86 | 90 | 91 | 88 | 85 | 90 | 91 | 90 | 92 | 94   | 96   | 94   | 93    | 93    | 92   | 91.4          | 96.0          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 17-Jun   | 89                            | 88 | 88  | 87  | 89  | 89  | 86  | 78 | 70 | 64 | 57 | 49 | 45 | 42 | 42 | 38 | 36 | 36 | 38   | 42   | 46   | 50    | 55    | 66   | 61.3          | 89.4          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 18-Jun   | 82                            | 84 | 88  | 91  | 83  | 82  | 70  | 65 | 58 | 55 | 49 | 47 | 43 | 39 | 35 | 33 | 32 | 32 | 34   | 34   | 41   | 63    | 60    | 69   | 57.0          | 91.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 19-Jun   | 79                            | 89 | 85  | 82  | 78  | 79  | 79  | 79 | 73 | 66 | 54 | 48 | 43 | 46 | 48 | 43 | 40 | 40 | 40   | 40   | 49   | 70    | 84    | 90   | 63.4          | 90.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 20-Jun   | 94                            | 95 | 95  | 97  | 98  | 99  | 85  | 60 | 53 | 49 | 46 | 41 | 36 | 27 | 24 | 25 | 25 | 29 | 33   | 37   | 43   | 61    | 73    | 75   | 58.3          | 99.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 21-Jun   | 71                            | 75 | 83  | 81  | 62  | 57  | 56  | 53 | 50 | 47 | 44 | 40 | 37 | 35 | 33 | 30 | 30 | 30 | 34   | 38   | 43   | 50    | 56    | 66   | 50.1          | 83.0          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 22-Jun   | 74                            | 80 | 88  | 89  | 93  | 94  | 83  | 76 | 60 | 46 | 39 | 39 | 37 | 39 | 48 | 51 | 55 | 54 | 52   | 60   | 67   | 71    | 73    | 70   | 64.1          | 94.0          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 23-Jun   | 78                            | 82 | 83  | 84  | 82  | 82  | 72  | 67 | 60 | 58 | 55 | 43 | 46 | 44 | 41 | 41 | 43 | 47 | 63   | 93   | 98   | 99    | 98    | 99   | 69.1          | 99.0          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 24-Jun   | 99                            | 98 | 96  | 91  | 90  | 88  | 87  | 87 | 85 | 84 | 90 | 83 | 75 | 81 | 74 | 60 | 57 | 59 | 65   | 69   | 71   | 82    | 89    | 92   | 81.4          | 99.1          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 25-Jun   | 92                            | 94 | 94  | 93  | 91  | 91  | 82  | 72 | 62 | 57 | 53 | 48 | 44 | 43 | 41 | 40 | 38 | 37 | 39   | 40   | 43   | 47    | 52    | 51   | 60.2          | 94.5          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 26-Jun   | 61                            | 60 | 64  | 64  | 64  | 59  | 54  | 53 | 47 | 42 | 40 | 35 | 34 | 31 | 29 | 27 | 28 | 28 | 29   | 32   | 37   | 40    | 44    | 47   | 43.7          | 64.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 27-Jun   | 64                            | 78 | 83  | 90  | 93  | 93  | 70  | 55 | 50 | 47 | 44 | 39 | 35 | 32 | 31 | 29 | 29 | 28 | 30   | 34   | 44   | 62    | 76    | 84   | 54.9          | 93.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 28-Jun   | 89                            | 93 | 96  | 97  | 98  | 98  | 85  | 69 | 62 | 56 | 47 | 38 | 36 | 31 | 28 | 29 | 31 | 40 | 45   | 43   | 51   | 70    | 81    | 88   | 62.6          | 98.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 29-Jun   | 93                            | 95 | 97  | 98  | 98  | 99  | 91  | 72 | 73 | 58 | 52 | 45 | 41 | 36 | 35 | 39 | 75 | 95 | 88   | 77   | 80   | 94    | 97    | 98   | 76.1          | 98.8          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 30-Jun   | 99                            | 99 | 100 | 100 | 99  | 97  | 90  | 80 | 73 | 73 | 81 | 90 | 82 | 71 | 73 | 67 | 61 | 58 | 54   | 60   | 73   | 85    | 95    | 96   | 81.5          | 99.6          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
|  |                               |    |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    | 79.2   | 81.5 | 83.4 | 84.6  | 84.1  | 83.7 | 78.2          | 71.2          | 66.2 | 62.3 | 58.0 | 54.5 | 51.8 | 48.8 | 48.1 | 47.5 | 47.5 | 48.2 | 50.1 | 53.2 | 58.3 | 66.7 | 71.7 | 75.5 | Diurnal Average |  |
|  |                               |    |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    | 99.1   | 99.1 | 99.6 | 100.0 | 100.0 | 99.9 | 99.9          | 97.0          | 96.5 | 97.1 | 97.2 | 96.6 | 97.8 | 97.9 | 96.2 | 97.4 | 96.7 | 97.3 | 98.3 | 98.4 | 98.4 | 98.8 | 98.6 | 99.0 | Diurnal Maximum |  |
| N - Not Valid  |                               |    |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |  |      |      |       |       |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |

**Hourly Averages**

**Relative Humidity (RH) - %  
Evergreen Park - June 2016**





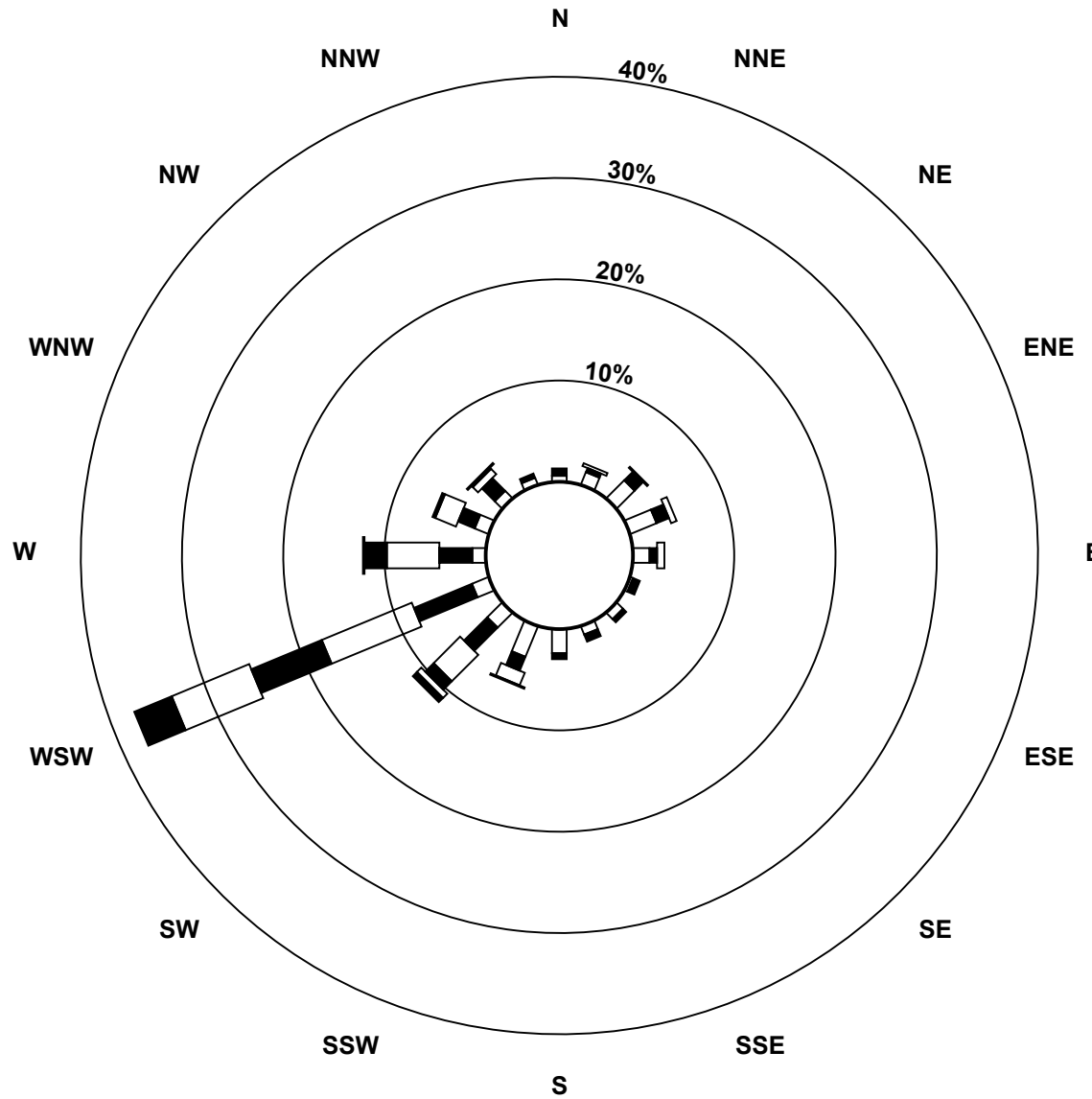
## Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Evergreen Park - June 2016

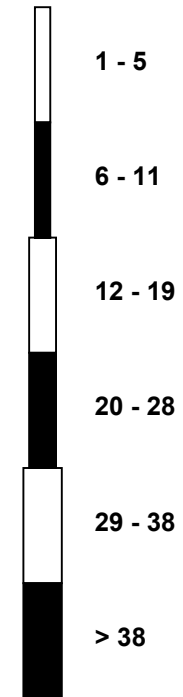
| Day  | Hourly Period Ending At (MST) |  |          |          |          |       |       |       |       |       |       |                                |       |       |       |       |       |       |       |       |       |       |       |       | Daily Average   | Daily Maximum |
|--|-------------------------------|--|----------|----------|----------|-------|-------|-------|-------|-------|-------|--------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------|---------------|
|  | 1                             | 2  | 3        | 4        | 5        | 6     | 7     | 8     | 9     | 10    | 11    | 12                             | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |                 |               |
| 23 Spd   | 6                             | 7  | 9        | 8        | 9        | 9     | 11    | 13    | 8     | 7     | 5     | 6                              | 6     | 4     | 8     | 5     | 3     | 3     | 1     | 7     | 1     | 4     | 2     | 0     | 3.9             | 13.4          |
| Dir  | 234                           | 231  | 226      | 242      | 250      | 242   | 260   | 251   | 280   | 253   | 232   | 269                            | 340   | 315   | 332   | 349   | 20    | 45    | 203   | 32    | 171   | 197   | 260   | 298   | 264.6           | 251.1         |
| 24 Spd   | 2                             | 5  | 6        | 9        | 5        | 6     | 10    | 11    | 12    | 15    | 16    | 19                             | 26    | 21    | 15    | 16    | 10    | 13    | 8     | 13    | 15    | 8     | 6     | 7     | 11.2            | 25.8          |
| Dir  | 201                           | 272  | 255      | 252      | 256      | 253   | 237   | 240   | 251   | 257   | 241   | 242                            | 241   | 247   | 240   | 249   | 272   | 240   | 255   | 249   | 248   | 256   | 241   | 242   | 247.3           | 240.7         |
| 25 Spd   | 6                             | 4  | 5        | 8        | 7        | 5     | 4     | 11    | 21    | 23    | 28    | 30                             | 31    | 30    | 31    | 28    | 26    | 22    | 23    | 28    | 19    | 11    | 6     | 12    | 17.2            | 31.4          |
| Dir  | 261                           | 294  | 278      | 249      | 248      | 286   | 283   | 264   | 262   | 269   | 254   | 247                            | 245   | 248   | 245   | 253   | 253   | 272   | 262   | 247   | 248   | 266   | 270   | 233   | 254.8           | 244.7         |
| 26 Spd   | 4                             | 9  | 7        | 7        | 3        | 9     | 18    | 17    | 23    | 29    | 29    | 27                             | 22    | 24    | 24    | 26    | 21    | 20    | 21    | 21    | 18    | 14    | 9     | 9     | 16.9            | 29.5          |
| Dir  | 222                           | 225  | 228      | 234      | 264      | 246   | 237   | 240   | 237   | 244   | 234   | 250                            | 269   | 256   | 254   | 249   | 252   | 253   | 247   | 247   | 243   | 232   | 222   | 222   | 244.5           | 234.4         |
| 27 Spd   | 2                             | 3  | 1        | 2        | 1        | 0     | 5     | 11    | 14    | 14    | 11    | 8                              | 10    | 11    | 8     | 5     | 6     | 3     | 5     | 5     | 3     | 1     | 0     | 1     | 3.9             | 14.2          |
| Dir  | 211                           | 329  | 189      | 199      | 196      | 187   | 229   | 253   | 258   | 248   | 259   | 255                            | 253   | 296   | 296   | 297   | 302   | 256   | 17    | 41    | 58    | 188   | 199   | 26    | 268.9           | 248.3         |
| 28 Spd   | 0                             | 0  | 0        | 1        | 0        | 1     | 2     | 2     | 4     | 3     | 4     | 4                              | 5     | 10    | 8     | 6     | 4     | 19    | 16    | 15    | 1     | 1     | 0     | 1     | 2.3             | 18.5          |
| Dir  | 111                           | 38   | 197      | 23       | 160      | 183   | 232   | 226   | 232   | 203   | 141   | 110                            | 25    | 5     | 355   | 35    | 292   | 266   | 299   | 316   | 345   | 314   | 352   | 41    | 311.8           | 265.7         |
| 29 Spd   | 1                             | 2  | 1        | 0        | 1        | 2     | 3     | 3     | 5     | 7     | 6     | 3                              | 9     | 12    | 11    | 5     | 17    | 3     | 5     | 5     | 7     | 3     | 3     | 2     | 3.3             | 17.1          |
| Dir  | 185                           | 180  | 41       | 78       | 191      | 47    | 200   | 145   | 166   | 119   | 136   | 75                             | 113   | 86    | 94    | 92    | 193   | 33    | 74    | 146   | 167   | 64    | 85    | 52    | 122.8           | 193.1         |
| 30 Spd   | 2                             | 2  | 4        | 6        | 5        | 4     | 5     | 5     | 8     | 12    | 14    | 16                             | 17    | 18    | 16    | 11    | 7     | 4     | 2     | 5     | 3     | 4     | 1     | 2     | 3.9             | 17.8          |
| Dir  | 24                            | 78   | 61       | 60       | 57       | 86    | 244   | 269   | 301   | 240   | 210   | 240                            | 279   | 243   | 230   | 252   | 302   | 15    | 78    | 157   | 291   | 169   | 159   | 201   | 248.1           | 243.1         |
| Spd  | 5.4                           | 6.2  | 5.7      | 6.5      | 7.4      | 7.6   | 9.6   | 13.1  | 14.4  | 16.1  | 15.5  | 15.2                           | 16.0  | 15.7  | 15.4  | 14.3  | 14.9  | 14.2  | 12.8  | 11.2  | 10.3  | 7.9   | 6.2   | 6.6   | Diurnal Average |               |
| Dir  | 238.7                         | 241.0  | 239.5    | 236.9    | 238.4    | 239.4 | 243.1 | 243.4 | 245.4 | 247.0 | 249.1 | 252.5                          | 254.4 | 252.2 | 253.2 | 248.8 | 249.7 | 255.9 | 259.9 | 256.8 | 246.3 | 240.3 | 234.6 | 237.3 | Diurnal Maximum |               |
| Spd  | 43.2                          | 37.5   | 38.3     | 37.6     | 39.6     | 44.5  | 41.5  | 50.8  | 50.2  | 53.6  | 50.6  | 56.9                           | 60.2  | 60.1  | 59.4  | 60.2  | 63.1  | 59.1  | 62.1  | 56.7  | 56.8  | 55.3  | 49.5  | 45.4  | Diurnal Maximum |               |
| Dir  | 240.0                         | 239.2  | 244.1    | 247.0    | 246.6    | 243.4 | 243.1 | 242.3 | 239.0 | 240.4 | 239.4 | 237.4                          | 240.2 | 238.7 | 235.9 | 234.8 | 234.0 | 234.5 | 238.7 | 239.2 | 240.0 | 238.5 | 240.8 | 242.1 | Diurnal Maximum |               |
| Maximum Speed Value: 63 km/h on Jun 15 17:00                                       |                               | Minimum Speed Value: 0 km/h on Jun 27 06:00  |          |          |          |       |       |       |       |       |       | Hours in Service: 720          |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| Maximum Daily Speed Average: 50.7 km/h on Jun 15                                   |                               | Minimum Daily Speed Average: 1.6 km/h on Jun 28  |          |          |          |       |       |       |       |       |       | Hours of Data: 719             |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| Maximum Diurnal Speed Average: 16.1 km/h at hour 10                                |                               | Minimum Diurnal Speed Average: 5.4 km/h at hour 1  |          |          |          |       |       |       |       |       |       | Hours of Missing Data: 1       |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| Monthly Average Velocity: 11.09 km/h 247.96 deg                                    |                               | Speed Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 2.0 Q <sub>1</sub> = 4.8 Median = 10.6 Q <sub>3</sub> = 19.0 P <sub>90</sub> = 30.2 P <sub>99</sub> = 58.8 |          |          |          |       |       |       |       |       |       | Percent Operational Time: 99.9 |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| All monthly, daily, and diurnal averages have been calculated using vector methods |                               |  |          |          |          |       |       |       |       |       |       |                                |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| N - Not Valid  |                               |  |          |          |          |       |       |       |       |       |       |                                |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| Frequency Distribution   |                               |  |          |          |          |       |       |       |       |       |       |                                |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
|  |                               | Speed Range (km/h)   |          |          |          |       |       |       |       |       |       |                                |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| Direction  | 0 to 5                        | 5 to 11  | 11 to 19 | 19 to 28 | 28 to 38 | > 38  | Total |       |       |       |       |                                |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| North  | 16                            | 9  | 2        | 0        | 0        | 0     | 27    |       |       |       |       |                                |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| NorthEast  | 42                            | 18   | 2        | 0        | 0        | 0     | 62    |       |       |       |       |                                |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| East   | 23                            | 11   | 9        | 0        | 0        | 0     | 43    |       |       |       |       |                                |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| SouthEast  | 10                            | 9  | 0        | 0        | 0        | 0     | 19    |       |       |       |       |                                |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| South  | 43                            | 17   | 2        | 0        | 1        | 0     | 63    |       |       |       |       |                                |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| SouthWest  | 18                            | 44   | 61       | 40       | 53       | 26    | 242   |       |       |       |       |                                |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| West   | 23                            | 49   | 79       | 34       | 13       | 6     | 204   |       |       |       |       |                                |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| NorthWest  | 14                            | 24   | 15       | 5        | 1        | 0     | 59    |       |       |       |       |                                |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |
| Total  | 189                           | 181  | 170      | 79       | 68       | 32    | 719   |       |       |       |       |                                |       |       |       |       |       |       |       |       |       |       |       |       |                 |               |

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Evergreen Park - June 2016**



**Wind Speed Classes (km/h)**



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Evergreen Park - June 2016

| <b>Maximum Speed: 63 km/h on Jun 15 17:00</b>                                      |                               | <b>Maximum Daily Speed Average: 51.1 km/h on Jun 15</b>  |      | Hours in Service: 720<br>Hours of Data: 719<br>Hours of Missing Data: 1  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |
|--|-------------------------------|--|------|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------|-----------------|
| <b>Minimum Speed: 0 km/h on Jun 27 06:00</b>                                       |                               | <b>Minimum Daily Speed Average: 6.0 km/h on Jun 29</b>   |      | Percentiles: P <sub>1</sub> = 0.8 P <sub>10</sub> = 2.7 Q <sub>1</sub> = 5.7 Median = 11.7 Q <sub>3</sub> = 19.9 P <sub>90</sub> = 31.5 P <sub>99</sub> = 59.4 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |
| <b>Maximum Diurnal Speed Average: 21.9 km/h at hour 15</b>                         |                               | <b>Minimum Diurnal Speed Average: 8.1 km/h at hour 3</b> |      | <b>Percent Operational Time: 99.9</b>  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |
| <b>Monthly Average Speed: 14.76 km/h</b>   |                               |  |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |
| Day  | Hourly Period Ending At (MST) |  |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Daily Average | Daily Maximum   |
|  | 1                             | 2  | 3    | 4  | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |               |                 |
| 1-Jun  | 5                             | 11   | 15   | 7  | 6    | 9    | 9    | 12   | 12   | 16   | 16   | 18   | 17   | 19   | 21   | 14   | 14   | 7    | 4    | 4    | 9    | 6    | 3    | 2    | 10.7          | 21.1            |
| 2-Jun  | 2                             | 2  | 3    | 3  | 2    | 5    | 10   | 12   | 8    | 4    | 8    | 12   | 12   | 7    | 14   | 14   | 20   | 32   | 33   | 31   | 26   | 22   | 16   | 14   | 13.0          | 33.2            |
| 3-Jun  | 15                            | 20   | 8    | 7  | 9    | 4    | 11   | 26   | 25   | 30   | 27   | 22   | 26   | 29   | 32   | 31   | 32   | 34   | 28   | 25   | 27   | 18   | 16   | 13   | 21.4          | 33.6            |
| 4-Jun  | 14                            | 7  | 19   | 21   | 24   | 17   | 18   | 32   | 31   | 36   | 33   | 33   | 39   | 36   | 33   | 32   | 31   | 31   | 22   | 19   | 17   | 12   | 5    | 6    | 23.6          | 39.0            |
| 5-Jun  | 6                             | 6  | 4    | 3  | 2    | 4    | 9    | 12   | 10   | 8    | 6    | 8    | 9    | 9    | 9    | 8    | 9    | 12   | 8    | 6    | 4    | 3    | 3    | 3    | 6.7           | 11.8            |
| 6-Jun  | 3                             | 2  | 1    | 1  | 1    | 1    | 1    | 6    | 11   | 12   | 13   | 15   | 21   | 19   | 18   | 22   | 29   | 25   | 24   | 26   | 24   | 18   | 17   | 13   | 13.5          | 29.1            |
| 7-Jun  | 10                            | 3  | 3    | 5  | 6    | 7    | 8    | 5    | 11   | 19   | 20   | 21   | 19   | 18   | 21   | 19   | 14   | 9    | 8    | 4    | 2    | 3    | 3    | 1    | 9.9           | 21.4            |
| 8-Jun  | 4                             | 2  | 1    | 6  | 12   | 7    | 4    | 6    | 7    | 7    | 11   | 14   | 10   | 10   | 14   | 18   | 12   | 10   | 6    | 7    | 8    | 5    | 3    | 7    | 7.9           | 18.1            |
| 9-Jun  | 4                             | 5  | 2    | 6  | 10   | 11   | 15   | 19   | 19   | 14   | 16   | 4    | 10   | 9    | 14   | 12   | 8    | 8    | 11   | 7    | 11   | 9    | 6    | 6    | 9.8           | 18.8            |
| 10-Jun   | 5                             | 4  | 1    | 3  | 1    | 1    | 2    | 5    | 9    | 9    | 11   | 15   | 17   | 16   | 20   | 18   | 15   | 15   | 11   | 8    | 10   | 9    | 8    | 9    | 9.3           | 20.1            |
| 11-Jun   | 6                             | 8  | 7    | 5  | 4    | 3    | 3    | 3    | 8    | 12   | 14   | 24   | 24   | 24   | 30   | 29   | 32   | 34   | 27   | 21   | 14   | 10   | 13   | 18   | 15.6          | 34.0            |
| 12-Jun   | 17                            | 12   | 9    | 7  | 9    | 7    | 14   | 37   | 44   | 42   | 38   | 43   | 47   | 50   | 54   | 46   | 43   | 42   | 41   | 38   | 34   | 27   | 12   | 21   | 30.6          | 53.7            |
| 13-Jun   | 13                            | 25   | 16   | 22   | 22   | 26   | 30   | 30   | 20   | 24   | 23   | 23   | 22   | 19   | 19   | 15   | 14   | 9    | 9    | 4    | 4    | 3    | 9    | 10   | 17.2          | 30.0            |
| 14-Jun   | 3                             | 2  | 3    | 4  | 8    | 6    | 2    | 10   | 8    | 14   | N    | 14   | 15   | 13   | 15   | 15   | 12   | 13   | 11   | 18   | 20   | 21   | 16   | 20   | 11.4          | 20.7            |
| 15-Jun   | 30                            | 37   | 39   | 38   | 40   | 45   | 42   | 51   | 51   | 54   | 51   | 57   | 61   | 61   | 60   | 61   | 63   | 59   | 63   | 57   | 57   | 56   | 50   | 46   | 51.1          | 63.5            |
| 16-Jun   | 44                            | 38   | 34   | 35   | 33   | 33   | 34   | 32   | 33   | 35   | 33   | 32   | 35   | 36   | 32   | 30   | 27   | 28   | 26   | 20   | 16   | 18   | 21   | 19   | 30.1          | 43.6            |
| 17-Jun   | 19                            | 19   | 19   | 17   | 16   | 16   | 16   | 16   | 19   | 20   | 22   | 25   | 29   | 30   | 31   | 36   | 34   | 31   | 29   | 25   | 22   | 13   | 12   | 4    | 21.7          | 36.3            |
| 18-Jun   | 3                             | 5  | 5    | 3  | 4    | 3    | 7    | 3    | 11   | 16   | 23   | 18   | 17   | 17   | 18   | 18   | 16   | 16   | 9    | 11   | 5    | 1    | 12   | 7    | 10.2          | 22.6            |
| 19-Jun   | 3                             | 4  | 8    | 9  | 13   | 13   | 10   | 11   | 14   | 13   | 20   | 23   | 33   | 24   | 14   | 21   | 22   | 19   | 15   | 10   | 6    | 4    | 3    | 3    | 13.0          | 32.7            |
| 20-Jun   | 3                             | 2  | 3    | 1  | 2    | 1    | 2    | 14   | 17   | 15   | 13   | 7    | 8    | 8    | 11   | 10   | 8    | 11   | 12   | 8    | 5    | 2    | 2    | 3    | 7.1           | 17.3            |
| 21-Jun   | 5                             | 4  | 2    | 10   | 13   | 15   | 14   | 14   | 16   | 20   | 19   | 17   | 18   | 16   | 16   | 20   | 23   | 19   | 19   | 14   | 11   | 6    | 5    | 5    | 13.3          | 23.4            |
| 22-Jun   | 4                             | 6  | 7    | 4  | 2    | 1    | 5    | 5    | 7    | 18   | 19   | 18   | 15   | 28   | 29   | 19   | 30   | 31   | 23   | 12   | 13   | 9    | 11   | 8    | 13.4          | 30.6            |
| 23-Jun   | 7                             | 7  | 9    | 8  | 9    | 9    | 12   | 14   | 9    | 9    | 8    | 8    | 8    | 7    | 10   | 10   | 5    | 3    | 5    | 9    | 1    | 5    | 3    | 1    | 7.3           | 13.8            |
| 24-Jun   | 2                             | 6  | 6    | 9  | 5    | 7    | 11   | 11   | 13   | 15   | 16   | 19   | 26   | 21   | 16   | 17   | 12   | 14   | 9    | 13   | 16   | 9    | 7    | 7    | 11.9          | 26.1            |
| 25-Jun   | 6                             | 4  | 5    | 8  | 7    | 5    | 4    | 12   | 22   | 24   | 29   | 31   | 32   | 31   | 32   | 30   | 27   | 23   | 23   | 28   | 20   | 13   | 6    | 12   | 18.1          | 32.1            |
| 26-Jun   | 5                             | 9  | 7    | 7  | 4    | 10   | 18   | 17   | 23   | 30   | 30   | 28   | 24   | 25   | 26   | 27   | 22   | 21   | 21   | 21   | 18   | 14   | 10   | 10   | 17.8          | 30.2            |
| 27-Jun   | 2                             | 4  | 2    | 2  | 1    | 0    | 5    | 12   | 14   | 15   | 12   | 10   | 12   | 13   | 11   | 9    | 9    | 6    | 7    | 5    | 3    | 1    | 1    | 1    | 6.6           | 14.9            |
| 28-Jun   | 1                             | 1  | 1    | 1  | 2    | 1    | 2    | 2    | 4    | 5    | 6    | 8    | 10   | 12   | 11   | 8    | 11   | 19   | 17   | 16   | 4    | 1    | 0    | 1    | 6.0           | 19.3            |
| 29-Jun   | 1                             | 3  | 2    | 2  | 2    | 2    | 3    | 4    | 6    | 8    | 6    | 7    | 12   | 14   | 12   | 6    | 21   | 5    | 6    | 6    | 8    | 3    | 4    | 3    | 6.0           | 21.0            |
| 30-Jun   | 2                             | 3  | 5    | 6  | 5    | 5    | 8    | 8    | 12   | 14   | 15   | 17   | 17   | 19   | 16   | 12   | 8    | 5    | 4    | 5    | 5    | 5    | 3    | 2    | 8.4           | 19.1            |
|  |                               | 8.2  | 8.7  | 8.1  | 8.7  | 9.1  | 9.2  | 11.0 | 14.7 | 16.4 | 18.6 | 19.3 | 19.7 | 21.5 | 21.5 | 21.9 | 20.9 | 20.8 | 19.7 | 17.6 | 16.0 | 13.9 | 10.8 | 9.3  | 9.1           | Diurnal Average |
|  |                               | 43.6   | 37.7 | 38.6   | 38.0 | 40.0 | 44.8 | 41.8 | 51.3 | 50.5 | 53.9 | 51.0 | 57.3 | 60.7 | 60.6 | 59.7 | 60.6 | 63.5 | 59.5 | 62.5 | 57.1 | 57.1 | 55.7 | 49.7 | 45.8          | Diurnal Maximum |
| N - Not Valid  |                               |  |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |
| All monthly, daily, and diurnal averages have been calculated using scalar methods |                               |  |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |

# Hourly Standard Deviations

Wind Direction (WD) - deg  
Evergreen Park - June 2016

| Maximum Value: 98.8 deg on Jun 20 16:00   |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours in Service:         | 720           |  |
|---|-------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------------------|---------------|--|
| Minimum Value: 5.3 deg on Jun 3 23:00   |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours of Data:            | 719           |  |
| Percentiles: P <sub>1</sub> = 6.3 P <sub>10</sub> = 8.4 Q <sub>1</sub> = 12.7 Median = 21.1 Q <sub>3</sub> = 37.8 P <sub>90</sub> = 65.9 P <sub>99</sub> = 92.0 |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours of Missing Data:    | 1             |  |
|   |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours of Calibration:     | 0             |  |
|   |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Percent Operational Time: | 99.9          |  |
| Day   | Hourly Period Ending At (MST) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                           | Daily Maximum |  |
|   | 1                             | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24                        |               |  |
| 1-Jun   | 86                            | 49   | 17   | 15   | 29   | 12   | 20   | 17   | 21   | 16   | 23   | 30   | 22   | 30   | 23   | 38   | 43   | 61   | 49   | 61   | 44   | 43   | 72   | 95                        | 95.3          |  |
| 2-Jun   | 40                            | 91   | 86   | 28   | 46   | 56   | 24   | 20   | 16   | 60   | 34   | 43   | 25   | 38   | 21   | 11   | 23   | 12   | 11   | 9    | 8    | 11   | 11   | 11                        | 91.5          |  |
| 3-Jun   | 9                             | 7    | 13   | 23   | 10   | 67   | 30   | 10   | 12   | 12   | 15   | 20   | 20   | 15   | 17   | 14   | 15   | 13   | 13   | 12   | 8    | 11   | 5    | 6                         | 67.0          |  |
| 4-Jun   | 6                             | 46   | 10   | 7    | 7    | 11   | 18   | 8    | 11   | 11   | 14   | 15   | 14   | 14   | 16   | 15   | 13   | 13   | 18   | 15   | 8    | 9    | 26   | 29                        | 46.3          |  |
| 5-Jun   | 13                            | 13   | 32   | 41   | 86   | 31   | 24   | 22   | 15   | 24   | 73   | 82   | 64   | 55   | 61   | 66   | 68   | 30   | 23   | 24   | 19   | 19   | 17   | 11                        | 86.4          |  |
| 6-Jun   | 16                            | 58   | 73   | 37   | 83   | 80   | 72   | 60   | 14   | 16   | 20   | 15   | 12   | 11   | 23   | 20   | 14   | 15   | 15   | 12   | 13   | 14   | 12   | 12                        | 82.9          |  |
| 7-Jun   | 14                            | 63   | 48   | 18   | 14   | 13   | 41   | 35   | 30   | 25   | 27   | 25   | 37   | 40   | 24   | 24   | 33   | 36   | 30   | 15   | 32   | 10   | 16   | 77                        | 77.3          |  |
| 8-Jun   | 73                            | 21   | 59   | 63   | 35   | 66   | 78   | 26   | 25   | 31   | 23   | 20   | 27   | 28   | 42   | 21   | 25   | 24   | 38   | 21   | 23   | 28   | 34   | 16                        | 77.6          |  |
| 9-Jun   | 27                            | 24   | 52   | 44   | 16   | 20   | 8    | 10   | 19   | 16   | 29   | 37   | 28   | 32   | 17   | 17   | 20   | 15   | 10   | 24   | 13   | 16   | 15   | 18                        | 52.2          |  |
| 10-Jun  | 39                            | 53   | 56   | 43   | 48   | 44   | 30   | 28   | 26   | 39   | 30   | 23   | 26   | 24   | 25   | 23   | 25   | 20   | 23   | 44   | 15   | 17   | 21   | 37                        | 55.8          |  |
| 11-Jun  | 22                            | 21   | 27   | 19   | 22   | 36   | 44   | 71   | 34   | 15   | 12   | 9    | 11   | 11   | 7    | 9    | 7    | 9    | 12   | 8    | 16   | 16   | 9    | 10                        | 71.3          |  |
| 12-Jun  | 8                             | 17   | 18   | 17   | 18   | 18   | 11   | 6    | 8    | 10   | 9    | 11   | 10   | 8    | 10   | 10   | 11   | 12   | 11   | 10   | 9    | 11   | 33   | 10                        | 32.7          |  |
| 13-Jun  | 17                            | 9    | 11   | 11   | 8    | 8    | 7    | 8    | 18   | 14   | 17   | 18   | 20   | 29   | 33   | 37   | 43   | 66   | 39   | 52   | 20   | 34   | 15   | 20                        | 66.5          |  |
| 14-Jun  | 53                            | 92   | 57   | 36   | 32   | 57   | 56   | 20   | 32   | 17   | N    | 23   | 30   | 23   | 26   | 23   | 29   | 28   | 22   | 16   | 27   | 7    | 9    | 14                        | 92.3          |  |
| 15-Jun  | 9                             | 6    | 7    | 8    | 9    | 7    | 7    | 7    | 7    | 6    | 7    | 7    | 7    | 8    | 5    | 7    | 7    | 7    | 7    | 7    | 6    | 7    | 6    | 7                         | 8.8           |  |
| 16-Jun  | 7                             | 7    | 7    | 8    | 7    | 6    | 7    | 7    | 8    | 9    | 8    | 7    | 8    | 8    | 7    | 8    | 8    | 7    | 8    | 35   | 17   | 12   | 12   | 11                        | 35.1          |  |
| 17-Jun  | 12                            | 10   | 10   | 13   | 13   | 9    | 11   | 13   | 14   | 15   | 15   | 12   | 13   | 12   | 14   | 13   | 13   | 14   | 14   | 9    | 7    | 11   | 8    | 55                        | 54.9          |  |
| 18-Jun  | 85                            | 12   | 54   | 60   | 36   | 57   | 18   | 87   | 32   | 30   | 18   | 25   | 25   | 30   | 24   | 30   | 29   | 28   | 24   | 29   | 42   | 74   | 37   | 33                        | 86.5          |  |
| 19-Jun  | 40                            | 93   | 25   | 23   | 14   | 13   | 12   | 11   | 12   | 19   | 23   | 19   | 13   | 19   | 31   | 18   | 19   | 18   | 25   | 23   | 29   | 12   | 34   | 47                        | 92.8          |  |
| 20-Jun  | 22                            | 80   | 62   | 75   | 25   | 88   | 63   | 9    | 10   | 16   | 24   | 69   | 70   | 74   | 59   | 99   | 95   | 44   | 28   | 24   | 19   | 12   | 15   | 14                        | 98.8          |  |
| 21-Jun  | 17                            | 81   | 85   | 29   | 8    | 9    | 16   | 18   | 18   | 17   | 24   | 26   | 29   | 27   | 29   | 23   | 17   | 20   | 13   | 19   | 64   | 71   | 32   | 52                        | 85.4          |  |
| 22-Jun  | 42                            | 38   | 12   | 61   | 73   | 58   | 33   | 25   | 44   | 19   | 24   | 26   | 31   | 25   | 15   | 13   | 13   | 14   | 15   | 24   | 9    | 8    | 8    | 35                        | 73.2          |  |
| 23-Jun  | 34                            | 26   | 15   | 21   | 14   | 16   | 19   | 14   | 30   | 45   | 63   | 54   | 42   | 63   | 49   | 72   | 77   | 45   | 75   | 74   | 65   | 89   | 49   | 68                        | 89.3          |  |
| 24-Jun  | 22                            | 32   | 25   | 13   | 29   | 18   | 12   | 15   | 20   | 18   | 11   | 11   | 10   | 13   | 21   | 19   | 32   | 24   | 18   | 14   | 11   | 16   | 13   | 12                        | 32.0          |  |
| 25-Jun  | 21                            | 19   | 19   | 19   | 20   | 17   | 33   | 23   | 16   | 17   | 15   | 12   | 12   | 16   | 12   | 15   | 15   | 19   | 14   | 9    | 10   | 27   | 24   | 7                         | 33.0          |  |
| 26-Jun  | 17                            | 11   | 8    | 15   | 28   | 13   | 7    | 11   | 9    | 12   | 12   | 16   | 26   | 21   | 18   | 15   | 19   | 19   | 13   | 10   | 8    | 7    | 8    | 21                        | 28.4          |  |
| 27-Jun  | 50                            | 48   | 75   | 48   | 58   | 89   | 31   | 25   | 19   | 18   | 25   | 52   | 48   | 40   | 64   | 64   | 67   | 74   | 49   | 25   | 18   | 78   | 58   | 75                        | 89.1          |  |
| 28-Jun  | 78                            | 83   | 88   | 85   | 88   | 98   | 56   | 63   | 49   | 58   | 55   | 79   | 80   | 42   | 46   | 59   | 77   | 18   | 22   | 15   | 78   | 73   | 70   | 62                        | 98.4          |  |
| 29-Jun  | 90                            | 51   | 77   | 79   | 84   | 51   | 21   | 68   | 34   | 42   | 33   | 76   | 57   | 37   | 31   | 29   | 65   | 60   | 31   | 34   | 30   | 39   | 59   | 37                        | 90.2          |  |
| 30-Jun  | 22                            | 37   | 23   | 22   | 13   | 60   | 68   | 76   | 47   | 25   | 14   | 16   | 18   | 22   | 11   | 30   | 33   | 44   | 64   | 28   | 93   | 48   | 71   | 41                        | 93.0          |  |
|   | 90.2                          | 92.8 | 88.4 | 85.4 | 88.4 | 98.4 | 77.6 | 86.5 | 48.5 | 59.5 | 72.6 | 81.6 | 80.1 | 73.9 | 63.7 | 98.8 | 94.7 | 74.1 | 75.4 | 73.8 | 93.0 | 89.3 | 71.6 | 95.3                      |               |  |
| N - Not Valid   |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                           |               |  |

PAZA

## Smoky Heights Station

Monthly Summary Tables, Graphs and  
Roses



## Hourly Averages

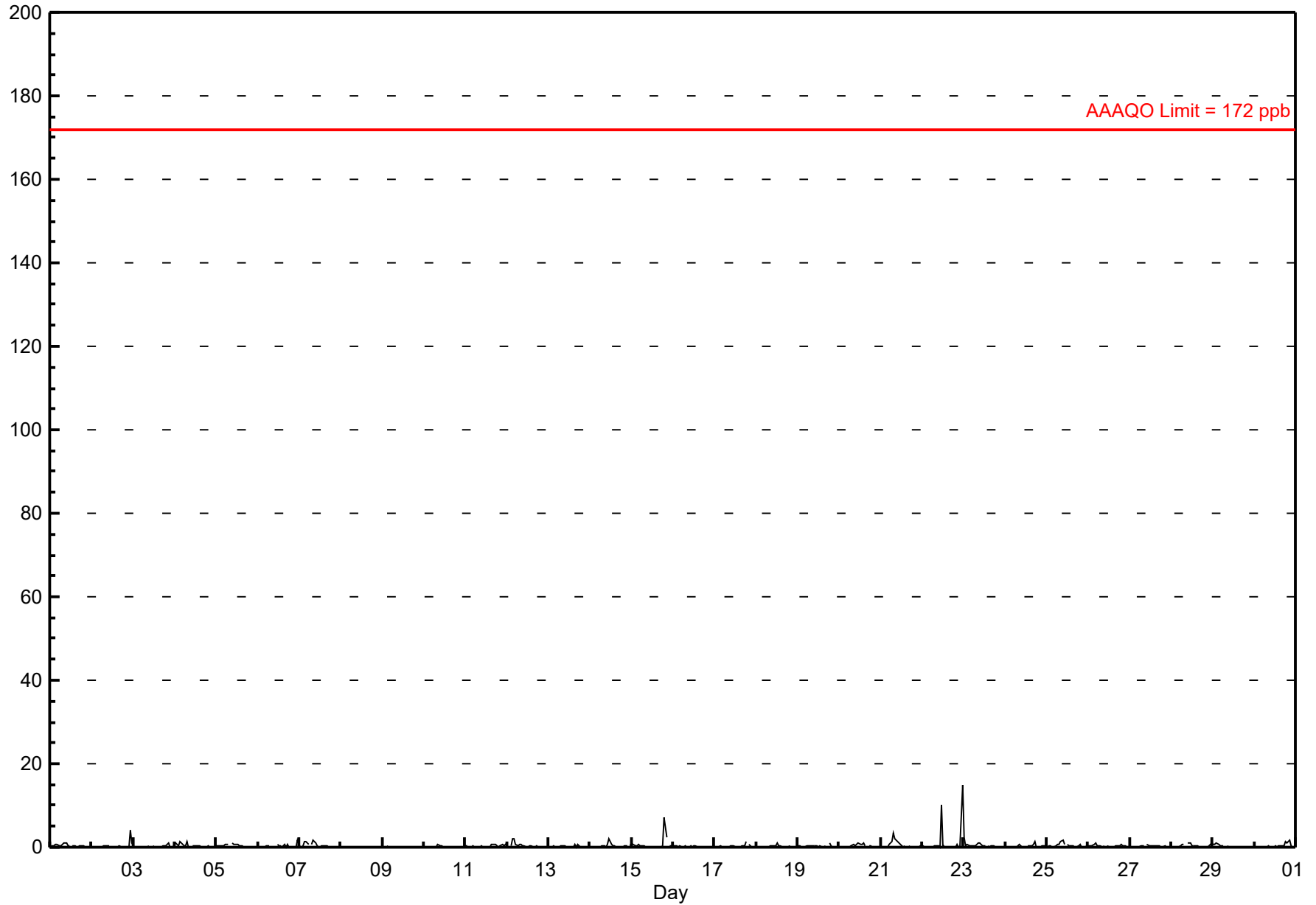
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Smoky Heights - June 2016

|   |  |          |                           |       |
|---|--|----------|---------------------------|-------|
| Number of Exceedences (AAAQO):              | 1-hr: 0  | 24-hr: 0 | Hours in Service:         | 720   |
| Maximum Value: 15.0 ppb on Jun 23 00:00     | Maximum Daily Average: 1.2 ppb on Jun 22   |          | Hours of Data:            | 686   |
| Minimum Value: 0 ppb on Jun 2 07:00         | Minimum Daily Average: 0.0 ppb on Jun 8  |          | Hours of Missing Data:    | 34    |
| Maximum Diurnal Average: 0.8 ppb at hour 24 | Minimum Diurnal Average: 0.1 ppb at hour 22  |          | Hours of Calibration:     | 34    |
| Monthly Average: 0.33 ppb                   | Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.3 P <sub>90</sub> = 0.7 P <sub>99</sub> = 2.3 |          | Percent Operational Time: | 100.0 |

| Day    | Hourly Period Ending At (MST) |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |     |     |     |     |     |     |      | Daily Average   | Daily Maximum   |     |
|--------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----------------|-----------------|-----|
|        | 1                             | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12   | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24   |                 |                 |     |
| 1-Jun  | 0                             | 0   | 0   | 1   | 1   | 0   | 0   | 1   | 1   | 1   | 0   | 0    | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0               | 0.3             | 1.0 |
| 2-Jun  | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0    | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 4    | 1               | 0.3             | 4.0 |
| 3-Jun  | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | A   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0    | 0               | 0.2             | 0.9 |
| 4-Jun  | 1                             | 1   | 0   | 1   | 1   | 0   | 0   | 1   | 0   | 0   | A   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0               | 0.4             | 1.4 |
| 5-Jun  | 0                             | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 0   | A   | 1   | 1    | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0               | 0.3             | 0.9 |
| 6-Jun  | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | A   | C   | C   | C   | 1    | 0   | 0   | 0   | 1   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 2    | 0.3             | 1.6             |     |
| 7-Jun  | 0                             | 0   | 0   | 1   | 1   | 1   | A   | 1   | 2   | 1   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0.4             | 1.8             |     |
| 8-Jun  | 0                             | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0.0             | 0.2             |     |
| 9-Jun  | 0                             | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0.1             | 0.4             |     |
| 10-Jun | 0                             | 0   | 0   | A   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0.1             | 0.7             |     |
| 11-Jun | 0                             | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0   | 0   | 0   | 1   | 1   | 1   | 0   | 0   | 0   | 0   | 1   | 0    | 0.3             | 0.8             |     |
| 12-Jun | 1                             | A   | 0   | 2   | 2   | 1   | 0   | 1   | 1   | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0.5             | 2.2             |     |
| 13-Jun | A                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0   | 0   | 0   | 1   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0    | 0.2             | 0.7             |     |
| 14-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 2    | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A    | 0.3             | 1.9             |     |
| 15-Jun | 1                             | 1   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 7   | 2   | A   | 0    | 0.7             | 7.1             |     |
| 16-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0    | 0.1             | 0.3             |     |
| 17-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 2   | A   | 1   | 0   | 0   | 0    | 0.2             | 1.5             |     |
| 18-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0    | 0.2             | 1.1             |     |
| 19-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0    | 0.2             | 0.9             |     |
| 20-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 1    | 1   | 1   | 1   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0.3             | 1.1             |     |
| 21-Jun | 0                             | 0   | 0   | 0   | 0   | 1   | 2   | 3   | 2   | 2   | 1   | 1    | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0.6             | 3.4             |     |
| 22-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 10   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0    | 1.2             | 15.0            |     |
| 23-Jun | 2                             | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 0    | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0.4             | 2.3             |     |
| 24-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0    | A   | 0   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0    | 0.3             | 1.3             |     |
| 25-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 2   | 1   | A    | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0    | 0.4             | 1.8             |     |
| 26-Jun | 0                             | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | A   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0    | 0.3             | 1.1             |     |
| 27-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 1    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0.2             | 0.6             |     |
| 28-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 1   | 1   | A   | 1   | 1   | 1    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1    | 0.4             | 1.2             |     |
| 29-Jun | 1                             | 1   | 1   | 1   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0.2             | 1.0             |     |
| 30-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 2   | 0   | 0   | 0    | 0.3             | 1.6             |     |
|        | 0.3                           | 0.2 | 0.2 | 0.3 | 0.3 | 0.2 | 0.3 | 0.5 | 0.5 | 0.5 | 0.4 | 0.7  | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.4 | 0.3 | 0.1 | 0.3  | 0.8             | Diurnal Average |     |
|        | 2.3                           | 0.8 | 1.0 | 2.2 | 2.1 | 0.8 | 1.5 | 3.4 | 2.0 | 1.8 | 1.2 | 10.1 | 1.1 | 0.7 | 1.0 | 0.8 | 0.7 | 1.3 | 1.5 | 7.1 | 2.4 | 0.5 | 4.0 | 15.0 | Diurnal Maximum |                 |     |

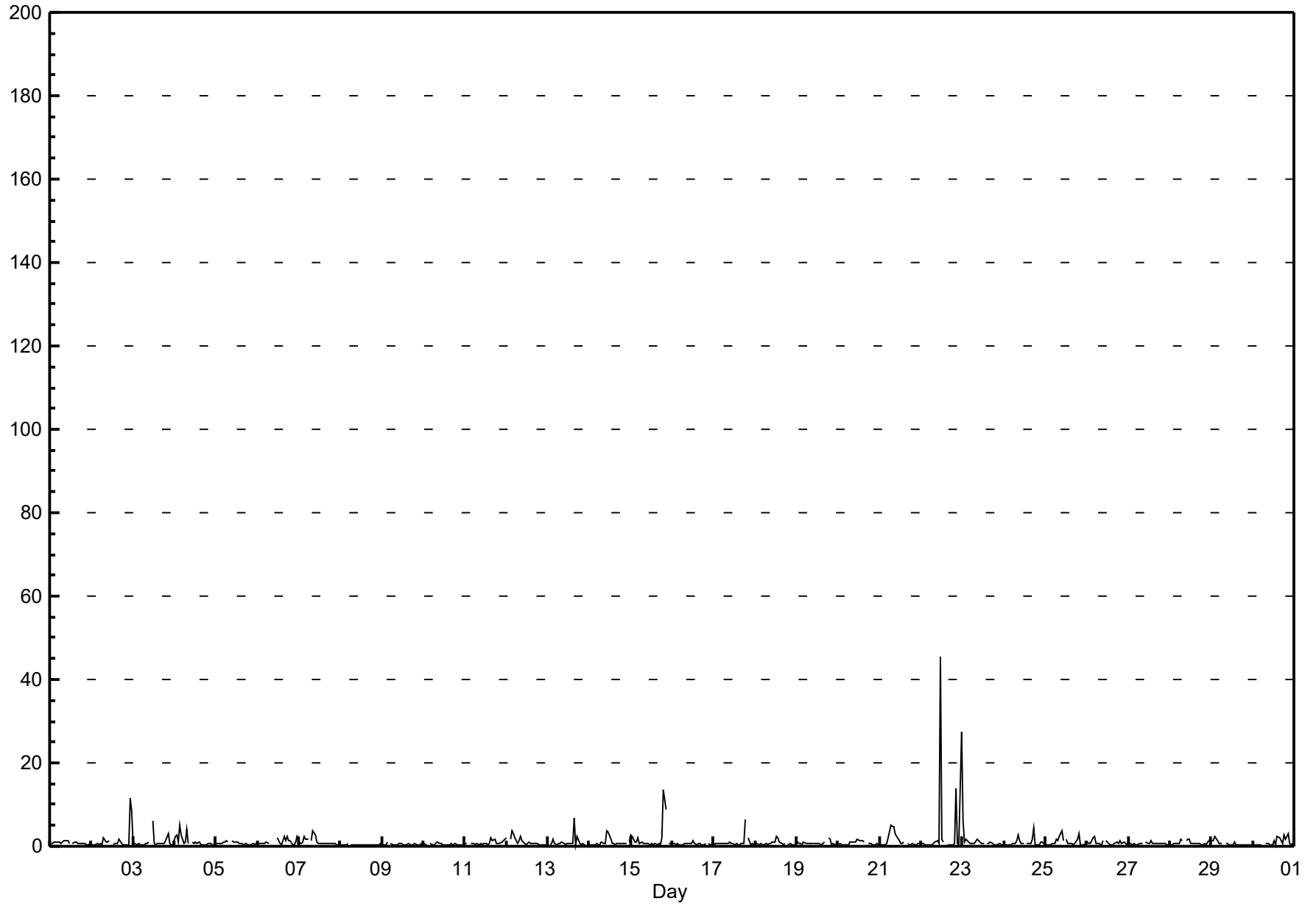
C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb    24-hr 48 ppb    30-day 11 ppb



## Hourly Maximums

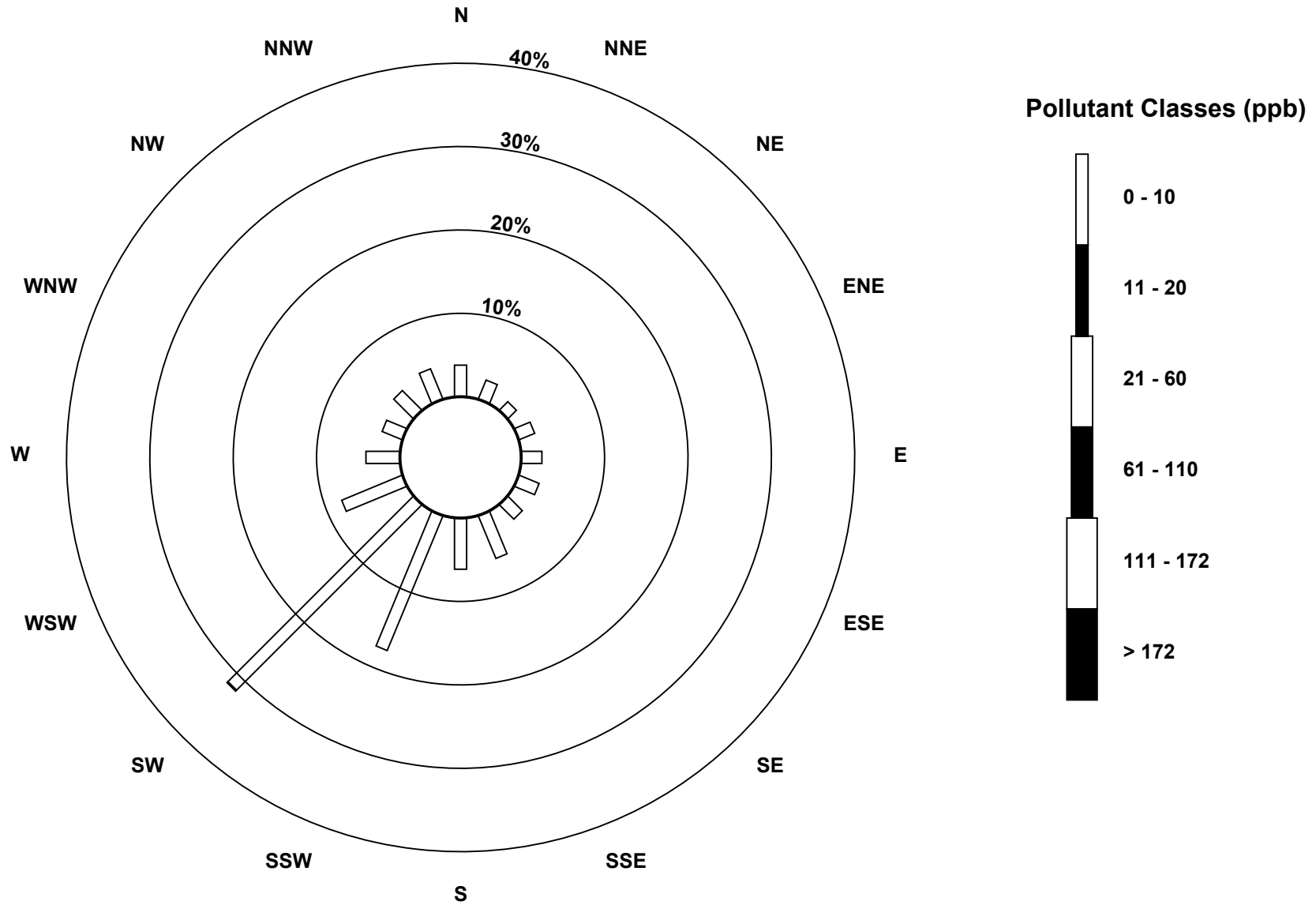
## Sulphur Dioxide (SO<sub>2</sub>) - ppb Smoky Heights - June 2016

| Maximum Value: 45.3 ppb on Jun 22 12:00     |                               | Maximum Daily Average: 4.3 ppb on Jun 22   |     | Hours in Service: 720           |     |     |     |     |     |     |     |      |     |     |     |     |     |     |     |      |      |     |      |      |                 |                 |      |
|---|-------------------------------|--|-----|---------------------------------|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|------|------|-----|------|------|-----------------|-----------------|------|
| Minimum Value: 0 ppb on Jun 8 21:00         |                               | Minimum Daily Average: 0.4 ppb on Jun 8  |     | Hours of Data: 686              |     |     |     |     |     |     |     |      |     |     |     |     |     |     |     |      |      |     |      |      |                 |                 |      |
| Maximum Diurnal Average: 2.7 ppb at hour 12 |                               | Minimum Diurnal Average: 0.6 ppb at hour 22  |     | Hours of Missing Data: 34       |     |     |     |     |     |     |     |      |     |     |     |     |     |     |     |      |      |     |      |      |                 |                 |      |
| Monthly Average: 1.05 ppb                   |                               | Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 0.6 Q <sub>3</sub> = 0.9 P <sub>90</sub> = 1.7 P <sub>99</sub> = 8.5 |     | Hours of Calibration: 34        |     |     |     |     |     |     |     |      |     |     |     |     |     |     |     |      |      |     |      |      |                 |                 |      |
|   |                               |  |     | Percent Operational Time: 100.0 |     |     |     |     |     |     |     |      |     |     |     |     |     |     |     |      |      |     |      |      |                 |                 |      |
| Day   | Hourly Period Ending At (MST) |  |     |                                 |     |     |     |     |     |     |     |      |     |     |     |     |     |     |     |      |      |     |      |      | Daily Average   | Daily Maximum   |      |
|   | 1                             | 2  | 3   | 4                               | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12   | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20   | 21   | 22  | 23   | 24   |                 |                 |      |
| 1-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 2   | 1   | A    | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1    | 0    | 0   | 1    | 0.9  | 1.5             |                 |      |
| 2-Jun                                       | 0                             | 0  | 0   | 1                               | 0   | 1   | 0   | 2   | 1   | 1   | 1   | A    | 0   | 1   | 1   | 1   | 2   | 1   | 0   | 0    | 0    | 0   | 12   | 9    | 1.5             | 11.6            |      |
| 3-Jun                                       | 1                             | 1  | 0   | 1                               | 0   | 0   | 0   | 1   | 1   | 1   | A   | 6    | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1    | 3    | 1   | 0    | 0    | 1.0             | 5.9             |      |
| 4-Jun                                       | 2                             | 3  | 1   | 5                               | 3   | 1   | 1   | 4   | 1   | A   | 1   | 1    | 1   | 1   | 1   | 0   | 0   | 0   | 0   | 1    | 1    | 1   | 0    | 0    | 1.3             | 5.1             |      |
| 5-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | A   | 2   | 1   | 1    | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 0    | 1    | 1   | 0    | 1    | 0.8             | 1.5             |      |
| 6-Jun                                       | 0                             | 1  | 1   | 1                               | 1   | 1   | 1   | A   | C   | C   | C   | 2    | 1   | 1   | 0   | 2   | 1   | 2   | 1   | 1    | 0    | 0   | 1    | 2    | 1.1             | 2.4             |      |
| 7-Jun                                       | 1                             | 1  | 1   | 2                               | 2   | 2   | A   | 1   | 4   | 3   | 1   | 1    | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1    | 1    | 1   | 0    | 0    | 1.1             | 3.7             |      |
| 8-Jun                                       | 0                             | 0  | 1   | 0                               | 1   | A   | 0   | 0   | 0   | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0    | 0   | 0    | 1    | 0.4             | 0.6             |      |
| 9-Jun                                       | 0                             | 0  | 0   | 1                               | A   | 1   | 0   | 0   | 0   | 0   | 1   | 0    | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 1    | 0    | 0   | 0    | 1    | 0.5             | 1.1             |      |
| 10-Jun                                      | 1                             | 0  | 0   | A                               | 1   | 0   | 0   | 1   | 1   | 1   | 1   | 0    | 0   | 0   | 0   | 1   | 0   | 1   | 0   | 1    | 0    | 0   | 0    | 0    | 0.5             | 1.1             |      |
| 11-Jun                                      | 1                             | 1  | A   | 1                               | 1   | 1   | 1   | 1   | 0   | 1   | 0   | 1    | 1   | 0   | 1   | 2   | 1   | 2   | 1   | 1    | 1    | 1   | 1    | 2    | 0.8             | 2.0             |      |
| 12-Jun                                      | 2                             | A  | 2   | 4                               | 3   | 2   | 1   | 1   | 2   | 1   | 1   | 1    | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1    | 0    | 0   | 0    | 0    | 1.2             | 3.8             |      |
| 13-Jun                                      | A                             | 0  | 1   | 2                               | 1   | 0   | 1   | 1   | 1   | 1   | 0   | 1    | 1   | 1   | 1   | 7   | 0   | 3   | 1   | 0    | 1    | 0   | 0    | A    | 1.0             | 6.8             |      |
| 14-Jun                                      | 0                             | 0  | 0   | 0                               | 1   | 0   | 0   | 1   | 1   | 1   | 4   | 3    | 2   | 1   | 1   | 0   | 1   | 1   | 1   | 1    | 1    | 1   | A    | 1    | 0.9             | 3.7             |      |
| 15-Jun                                      | 3                             | 2  | 1   | 1                               | 2   | 1   | 1   | 1   | 1   | 1   | 1   | 1    | 1   | 0   | 1   | 1   | 1   | 0   | 2   | 14   | 9    | A   | 1    | 1    | 1.9             | 13.6            |      |
| 16-Jun                                      | 1                             | 1  | 1   | 1                               | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 1    | 1   | 1   | 0   | 1   | 1   | 0   | 0   | 1    | A    | 1   | 0    | 1    | 0.6             | 1.2             |      |
| 17-Jun                                      | 0                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1    | 0   | 1   | 0   | 0   | 1   | 1   | 7   | A    | 2    | 0   | 1    | 0    | 0.9             | 6.5             |      |
| 18-Jun                                      | 1                             | 1  | 0   | 1                               | 0   | 0   | 1   | 0   | 1   | 1   | 1   | 1    | 2   | 2   | 1   | 1   | 0   | 1   | A   | A    | 1    | 1   | 0    | 0    | 0.7             | 2.4             |      |
| 19-Jun                                      | 1                             | 1  | 1   | 0                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1    | 1   | 0   | 1   | 1   | A   | A   | 2   | 2    | 0    | 1   | 1    | 1    | 0.8             | 2.1             |      |
| 20-Jun                                      | 0                             | 1  | 0   | 0                               | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 2    | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1    | 1    | 0   | 0    | 1    | 0.8             | 1.7             |      |
| 21-Jun                                      | 0                             | 0  | 0   | 0                               | 1   | 2   | 5   | 5   | 5   | 3   | 2   | 1    | 1   | 1   | 1   | A   | 1   | 0   | 0   | 1    | 0    | 0   | 1    | 1    | 1.4             | 4.9             |      |
| 22-Jun                                      | 1                             | 1  | 0   | 0                               | 0   | 0   | 1   | 1   | 1   | 1   | 1   | 45   | 2   | 1   | A   | 0   | 0   | 0   | 0   | 0    | 1    | 14  | 1    | 0    | 27              | 4.3             | 45.3 |
| 23-Jun                                      | 6                             | 1  | 2   | 1                               | 1   | 1   | 1   | 1   | 2   | 1   | 1   | 1    | 1   | A   | 1   | 1   | 1   | 1   | 0   | 1    | 0    | 1   | 0    | 0    | 1.0             | 5.9             |      |
| 24-Jun                                      | 0                             | 0  | 0   | 1                               | 0   | 1   | 1   | 1   | 3   | 1   | 1   | 1    | A   | 1   | 1   | 1   | 2   | 4   | 0   | 0    | 0    | 1   | 1    | 1    | 1.0             | 4.4             |      |
| 25-Jun                                      | 1                             | 0  | 0   | 0                               | 1   | 1   | 2   | 1   | 2   | 4   | 1   | A    | 2   | 1   | 1   | 1   | 0   | 1   | 2   | 3    | 0    | 0   | 0    | 1    | 1.1             | 3.8             |      |
| 26-Jun                                      | 1                             | 1  | 1   | 2                               | 2   | 1   | 1   | 1   | 0   | 2   | A   | 1    | 1   | 0   | 0   | 0   | 1   | 1   | 1   | 1    | 1    | 1   | 1    | 0    | 0.9             | 2.5             |      |
| 27-Jun                                      | 1                             | 1  | 1   | 1                               | 0   | 0   | 1   | 1   | 1   | A   | 1   | 1    | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1    | 1    | 1   | 0    | 0    | 0.7             | 1.3             |      |
| 28-Jun                                      | 0                             | 0  | 1   | 1                               | 1   | 1   | 2   | 1   | A   | 1   | 2   | 2    | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 0    | 1    | 0   | 1    | 2    | 0.8             | 1.8             |      |
| 29-Jun                                      | 1                             | 1  | 2   | 1                               | 1   | 1   | 1   | A   | 1   | 1   | 0   | 0    | 0   | 1   | 0   | 1   | 0   | 0   | 0   | 0    | 0    | 0   | 0    | 0    | 0.7             | 2.5             |      |
| 30-Jun                                      | 0                             | 0  | 0   | 0                               | 0   | 0   | A   | 1   | 1   | 1   | 0   | 0    | 1   | 0   | 2   | 2   | 2   | 1   | 3   | 2    | 3    | 1   | 0    | 1    | 1.0             | 3.0             |      |
|   |                               | 1.0  | 0.7 | 0.7                             | 1.1 | 0.9 | 0.7 | 0.8 | 1.1 | 1.2 | 1.2 | 1.0  | 2.7 | 0.9 | 0.7 | 0.7 | 1.0 | 0.8 | 0.9 | 1.0  | 1.2  | 1.5 | 0.6  | 1.0  | 1.9             | Diurnal Average |      |
|   |                               | 5.9  | 2.7 | 2.5                             | 5.1 | 3.0 | 2.1 | 4.9 | 4.8 | 3.8 | 3.7 | 45.3 | 2.4 | 1.9 | 2.4 | 6.8 | 1.6 | 4.4 | 6.5 | 13.6 | 13.9 | 1.1 | 11.6 | 27.5 | Diurnal Maximum |                 |      |
| C - Calibration                             |                               | A - Automated Daily Zero Span  |     |                                 |     |     |     |     |     |     |     |      |     |     |     |     |     |     |     |      |      |     |      |      |                 |                 |      |



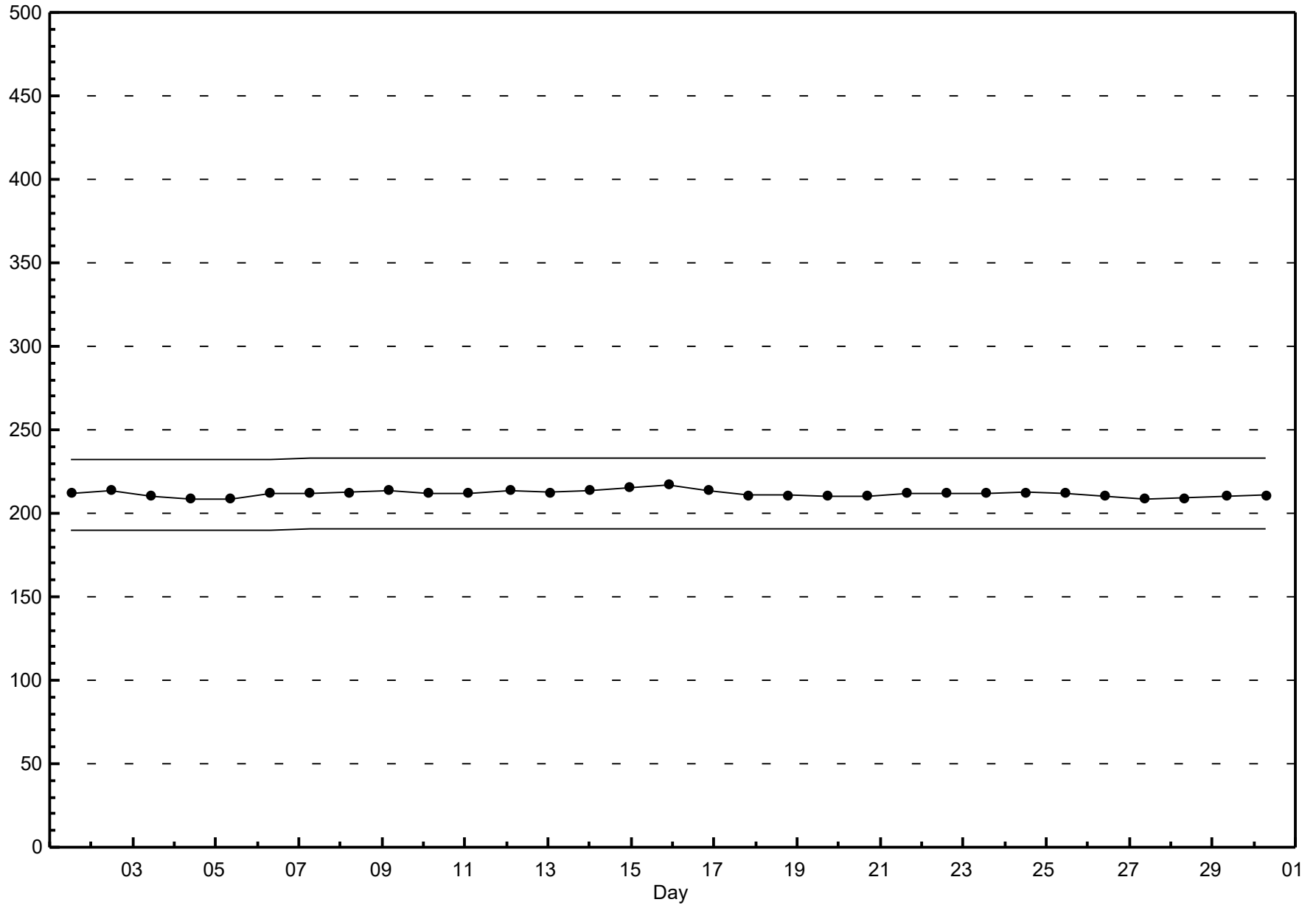
### Pollutant Rose

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Smoky Heights - June 2016



### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Smoky Heights - June 2016

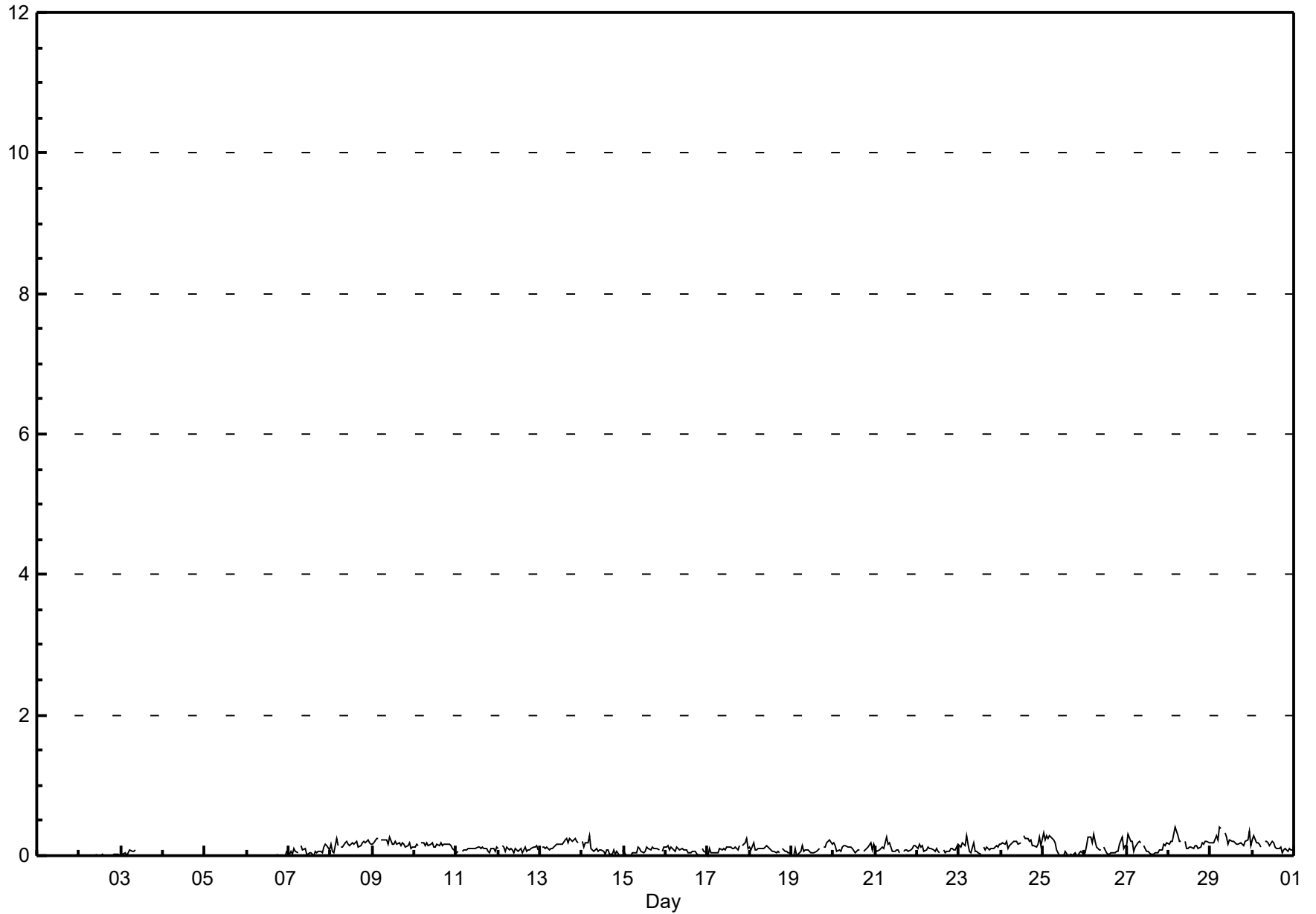


## Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Smoky Heights - June 2016

| Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0<br>Maximum Value: 0.4 ppb on Jun 29 06:00      Maximum Daily Average: 0.2 ppb on Jun 29 |                               | Hours in Service: 720<br>Hours of Data: 613<br>Hours of Missing Data: 107<br>Hours of Calibration: 35<br>Percent Operational Time: 90.0  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |                 |               |     |
|---|-------------------------------|--|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------------|-----------------|---------------|-----|
| Minimum Value: 0 ppb on Jun 1 01:00<br>Maximum Diurnal Average: 0.1 ppb at hour 7<br>Monthly Average: 0.11 ppb                          |                               | Minimum Daily Average: 0.0 ppb on Jun 1<br>Minimum Diurnal Average: 0.1 ppb at hour 18<br>Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.2 P <sub>99</sub> = 0.3 |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |                 |               |     |
| Day   | Hourly Period Ending At (MST) |  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 | Daily Average   | Daily Maximum |     |
|   | 1                             | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24              |                 |               |     |
| 1-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0               | 0.0           | 0.0 |
| 2-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0               | 0.0           | 0.0 |
| 3-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | M  | M  | M  | M  | M  | M  | M  | M  | M  | M  | N  | N  | N  | N  | N               | N               | --            | 0.1 |
| 4-Jun   | N                             | N  | N | N | N | N | N | N | N | N  | N  | N  | N  | N  | N  | N  | N  | N  | N  | N  | N  | N  | N  | N               | N               | --            | --  |
| 5-Jun   | N                             | N  | N | N | N | N | N | N | N | N  | N  | N  | N  | N  | N  | N  | N  | N  | N  | N  | N  | N  | N  | N               | N               | --            | --  |
| 6-Jun   | N                             | N  | N | N | N | N | N | N | N | C  | C  | C  | C  | C  | C  | C  | C  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | --              | 0.1           |     |
| 7-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | A | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1             | 0.2           |     |
| 8-Jun   | 0                             | 0  | 0 | 0 | 0 | A | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.2             | 0.2           |     |
| 9-Jun   | 0                             | 0  | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.2             | 0.3           |     |
| 10-Jun  | 0                             | 0  | 0 | A | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.2             | 0.2           |     |
| 11-Jun  | 0                             | 0  | A | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1             | 0.1           |     |
| 12-Jun  | 0                             | A  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1             | 0.1           |     |
| 13-Jun  | A                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.2             | 0.2           |     |
| 14-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A               | 0.1             | 0.3           |     |
| 15-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0               | 0.1             | 0.1           |     |
| 16-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0               | 0.1             | 0.1           |     |
| 17-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0               | 0.1             | 0.2           |     |
| 18-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0               | 0.1             | 0.2           |     |
| 19-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0               | 0.1             | 0.2           |     |
| 20-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1             | 0.2           |     |
| 21-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1             | 0.3           |     |
| 22-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1             | 0.2           |     |
| 23-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1             | 0.3           |     |
| 24-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.2             | 0.3           |     |
| 25-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1             | 0.3           |     |
| 26-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1             | 0.3           |     |
| 27-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1             | 0.3           |     |
| 28-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.2             | 0.4           |     |
| 29-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | A | 0 | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.2             | 0.4           |     |
| 30-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | A | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0               | 0.1             | 0.3           |     |
|   |                               |  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Diurnal Average | Diurnal Maximum |               |     |
| C - Calibration      M - Maintenance      N - Not Valid      A - Automated Daily Zero Span  |                               |  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |                 |               |     |
| Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb      24-hr 3 ppb  |                               |  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |                 |               |     |





## Hourly Maximums

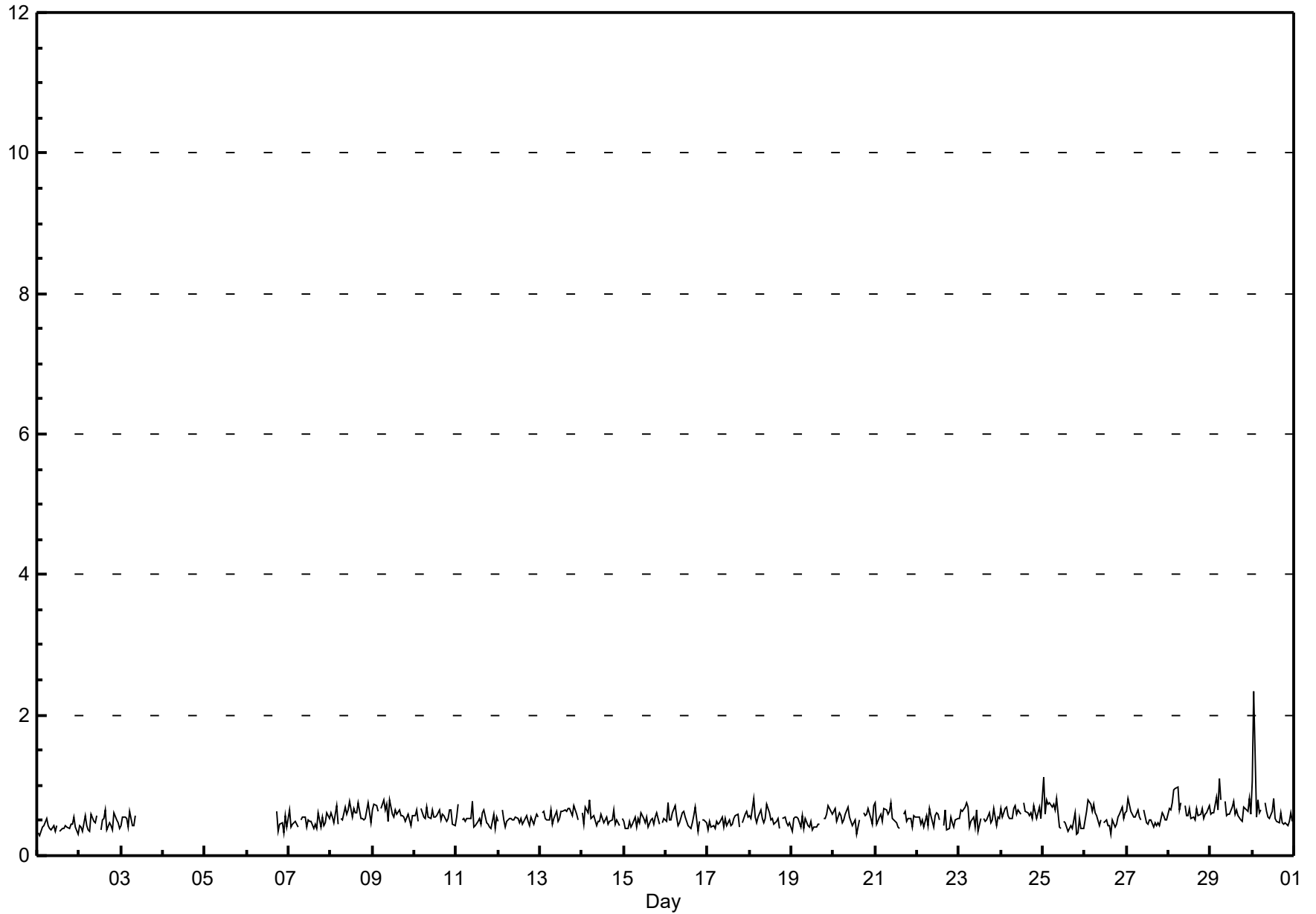
Total Reduced Sulphur (TRS) - ppb

Smoky Heights - June 2016

| Maximum Value: 2.3 ppb on Jun 30 02:00     |                               | Maximum Daily Average: 0.7 ppb on Jun 30   |     | Hours in Service: 720          |     |     |     |               |     |     |     |                               |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |
|--|-------------------------------|--|-----|--------------------------------|-----|-----|-----|---------------|-----|-----|-----|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|---------------|
| Minimum Value: 0 ppb on Jun 1 02:00        |                               | Minimum Daily Average: 0.4 ppb on Jun 1  |     | Hours of Data: 613             |     |     |     |               |     |     |     |                               |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |
| Maximum Diurnal Average: 0.6 ppb at hour 2 |                               | Minimum Diurnal Average: 0.5 ppb at hour 19  |     | Hours of Missing Data: 107     |     |     |     |               |     |     |     |                               |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |
| Monthly Average: 0.55 ppb                  |                               | Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 0.5 Q <sub>3</sub> = 0.6 P <sub>90</sub> = 0.7 P <sub>99</sub> = 0.9 |     | Hours of Calibration: 35       |     |     |     |               |     |     |     |                               |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |
|  |                               |  |     | Percent Operational Time: 90.0 |     |     |     |               |     |     |     |                               |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |
| Day  | Hourly Period Ending At (MST) |  |     |                                |     |     |     |               |     |     |     |                               |     |     |     |     |     |     |     |     |     |     |     |     | Daily Average   | Daily Maximum |
|  | 1                             | 2  | 3   | 4                              | 5   | 6   | 7   | 8             | 9   | 10  | 11  | 12                            | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |                 |               |
| 1-Jun                                      | 0                             | 0  | 0   | 0                              | 0   | 1   | 0   | 0             | 0   | 0   | 0   | 0                             | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0.4             | 0.6           |
| 2-Jun                                      | 0                             | 0  | 0   | 1                              | 0   | 0   | 0   | 1             | 0   | 0   | 1   | A                             | 0   | 1   | 1   | 1   | 0   | 0   | 0   | 0   | 1   | 1   | 0   | 0   | 0.5             | 0.7           |
| 3-Jun                                      | 0                             | 1  | 1   | 1                              | 0   | 1   | 0   | 0             | 1   | M   | M   | M                             | M   | M   | M   | M   | M   | M   | M   | N   | N   | N   | N   | N   | --              | 0.6           |
| 4-Jun                                      | N                             | N  | N   | N                              | N   | N   | N   | N             | N   | N   | N   | N                             | N   | N   | N   | N   | N   | N   | N   | N   | N   | N   | N   | N   | --              | --            |
| 5-Jun                                      | N                             | N  | N   | N                              | N   | N   | N   | N             | N   | N   | N   | N                             | N   | N   | N   | N   | N   | N   | N   | N   | N   | N   | N   | N   | --              | --            |
| 6-Jun                                      | N                             | N  | N   | N                              | N   | N   | N   | N             | N   | C   | C   | C                             | C   | C   | C   | C   | C   | 1   | 0   | 0   | 0   | 0   | 1   | 0   | --              | 0.6           |
| 7-Jun                                      | 1                             | 0  | 0   | 0                              | 0   | 0   | A   | 1             | 1   | 1   | 0   | 1                             | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 0   | 0   | 1   | 1   | 0.5             | 0.7           |
| 8-Jun                                      | 1                             | 1  | 0   | 1                              | 0   | A   | 1   | 1             | 1   | 1   | 1   | 1                             | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 0.6             | 0.8           |
| 9-Jun                                      | 1                             | 1  | 1   | 1                              | A   | 1   | 1   | 1             | 1   | 0   | 1   | 1                             | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 0   | 1   | 0.6             | 0.8           |
| 10-Jun                                     | 1                             | 1  | 0   | A                              | 1   | 1   | 1   | 1             | 1   | 1   | 1   | 1                             | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 0   | 0   | 0.6             | 0.7           |
| 11-Jun                                     | 1                             | 1  | A   | 1                              | 1   | 0   | 1   | 1             | 1   | 1   | 0   | 0                             | 0   | 1   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 0.5             | 0.8           |
| 12-Jun                                     | 0                             | A  | 1   | 1                              | 0   | 0   | 1   | 1             | 1   | 1   | 1   | 1                             | 0   | 1   | 0   | 1   | 1   | 0   | 0   | 1   | 0   | 1   | 1   | 1   | 0.5             | 0.7           |
| 13-Jun                                     | A                             | 1  | 1   | 1                              | 1   | 1   | 1   | 0             | 1   | 1   | 0   | 1                             | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 0.6             | 0.7           |
| 14-Jun                                     | 1                             | 0  | 1   | 1                              | 1   | 1   | 1   | 1             | 0   | 0   | 0   | 1                             | 0   | 1   | 1   | 0   | 0   | 1   | 1   | 0   | 1   | 0   | A   | 1   | 0.5             | 0.8           |
| 15-Jun                                     | 0                             | 0  | 0   | 0                              | 0   | 0   | 1   | 0             | 1   | 0   | 1   | 1                             | 0   | 1   | 0   | 1   | 1   | 0   | 1   | 1   | 0   | A   | 0   | 1   | 0.5             | 0.6           |
| 16-Jun                                     | 0                             | 1  | 1   | 1                              | 1   | 1   | 1   | 0             | 0   | 1   | 1   | 1                             | 0   | 0   | 0   | 0   | 1   | 1   | 0   | 0   | A   | 1   | 1   | 0   | 0.5             | 0.7           |
| 17-Jun                                     | 0                             | 0  | 0   | 0                              | 0   | 0   | 0   | 0             | 1   | 0   | 1   | 0                             | 1   | 0   | 0   | 1   | 1   | 1   | 0   | A   | 0   | 1   | 1   | 1   | 0.5             | 0.6           |
| 18-Jun                                     | 1                             | 1  | 1   | 1                              | 0   | 1   | 1   | 1             | 0   | 1   | 1   | 1                             | 1   | 0   | 0   | 1   | 0   | 1   | 0   | A   | 1   | 0   | 0   | 0   | 0.5             | 0.8           |
| 19-Jun                                     | 0                             | 1  | 1   | 1                              | 1   | 1   | 0   | 1             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 0.5             | 0.7           |
| 20-Jun                                     | 1                             | 1  | 0   | 1                              | 1   | 0   | 1   | 1             | 1   | 1   | 0   | 0                             | 1   | 0   | 0   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 0.5             | 0.7           |
| 21-Jun                                     | 1                             | 0  | 1   | 1                              | 0   | 1   | 1   | 1             | 1   | 1   | 1   | 0                             | 0   | 0   | A   | 1   | 1   | 0   | 1   | 1   | 0   | 1   | 0   | 1   | 0.6             | 0.8           |
| 22-Jun                                     | 1                             | 1  | 0   | 1                              | 0   | 1   | 0   | 1             | 1   | 0   | 1   | 1                             | 1   | 1   | A   | 0   | 1   | 0   | 0   | 1   | 0   | 0   | 1   | 1   | 0.5             | 0.7           |
| 23-Jun                                     | 1                             | 1  | 1   | 1                              | 1   | 1   | 0   | 0             | 1   | 0   | 1   | 0                             | 1   | A   | 1   | 0   | 1   | 1   | 0   | 1   | 1   | 0   | 1   | 1   | 0.5             | 0.7           |
| 24-Jun                                     | 1                             | 1  | 1   | 1                              | 1   | 1   | 1   | 1             | 1   | 1   | 1   | 1                             | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.6             | 0.8           |
| 25-Jun                                     | 1                             | 1  | 1   | 1                              | 1   | 1   | 1   | 1             | 1   | 0   | 0   | A                             | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 1   | 0   | 0   | 0.6             | 1.1           |
| 26-Jun                                     | 1                             | 1  | 1   | 1                              | 1   | 1   | 1   | 1             | 0   | 1   | A   | 0                             | 1   | 0   | 0   | 0   | 1   | 0   | 0   | 1   | 1   | 1   | 1   | 1   | 0.5             | 0.8           |
| 27-Jun                                     | 1                             | 1  | 1   | 1                              | 1   | 1   | 1   | 1             | 1   | A   | 1   | 0                             | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 0.5             | 0.8           |
| 28-Jun                                     | 1                             | 1  | 1   | 1                              | 1   | 1   | 1   | 1             | 1   | 1   | 1   | 1                             | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7             | 1.0           |
| 29-Jun                                     | 1                             | 1  | 1   | 1                              | 1   | 1   | 1   | A             | 1   | 1   | 1   | 1                             | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 0.7             | 1.1           |
| 30-Jun                                     | 1                             | 2  | 1   | 1                              | 1   | 1   | A   | 1             | 1   | 1   | 1   | 1                             | 1   | 1   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.7             | 2.3           |
| 0.6  |                               | 0.6  | 0.6 | 0.6                            | 0.6 | 0.6 | 0.6 | 0.6           | 0.6 | 0.5 | 0.6 | 0.5                           | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | Diurnal Average |               |
| 1.1  |                               | 2.3  | 0.8 | 0.9                            | 0.9 | 1.1 | 0.8 | 0.8           | 0.8 | 0.8 | 0.8 | 0.8                           | 0.8 | 0.8 | 0.7 | 0.7 | 0.8 | 0.7 | 0.6 | 0.7 | 0.7 | 0.8 | 0.8 | 0.7 | Diurnal Maximum |               |
| C - Calibration                            |                               |  |     | M - Maintenance                |     |     |     | N - Not Valid |     |     |     | A - Automated Daily Zero Span |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |

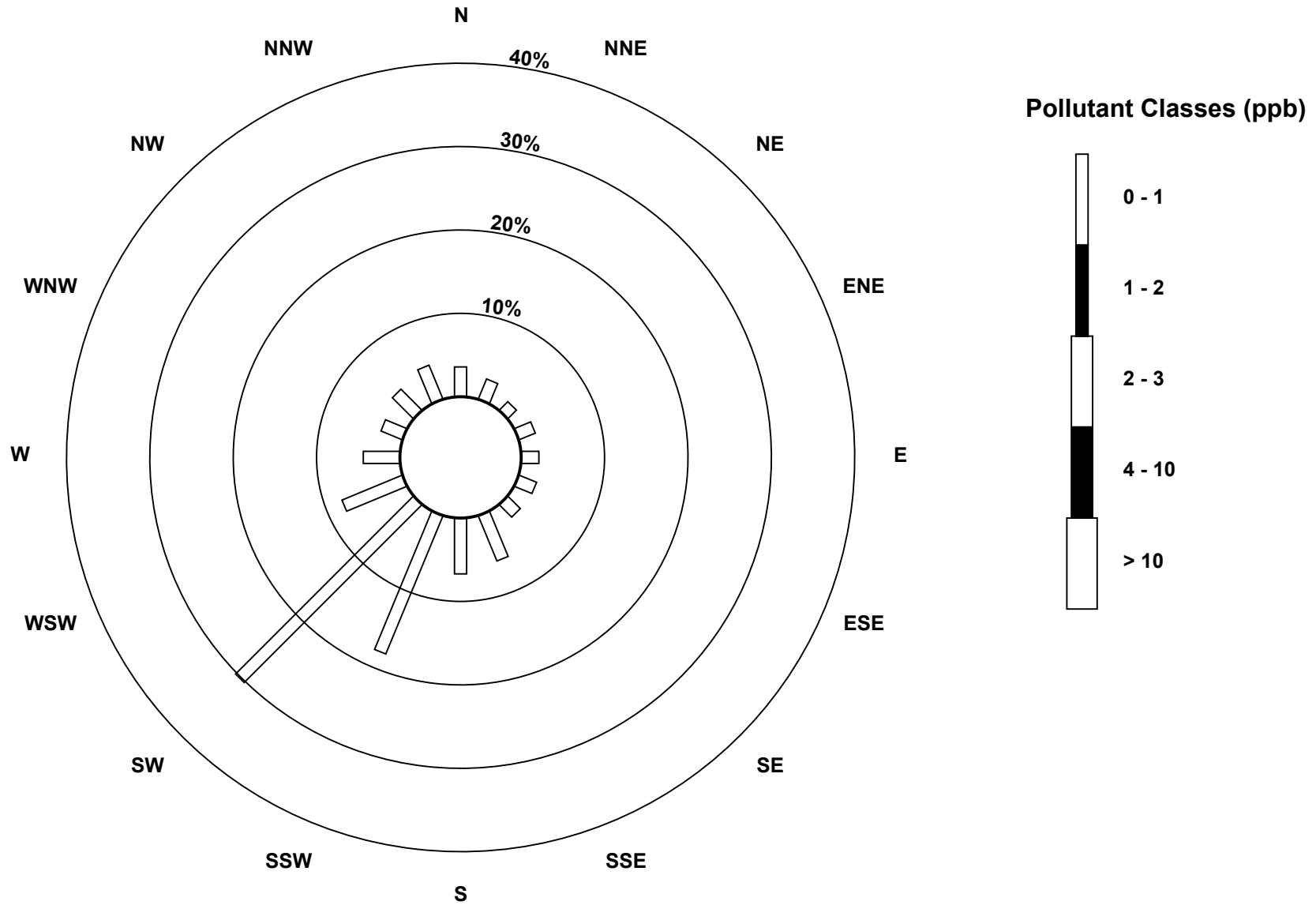
**Hourly Maximums**

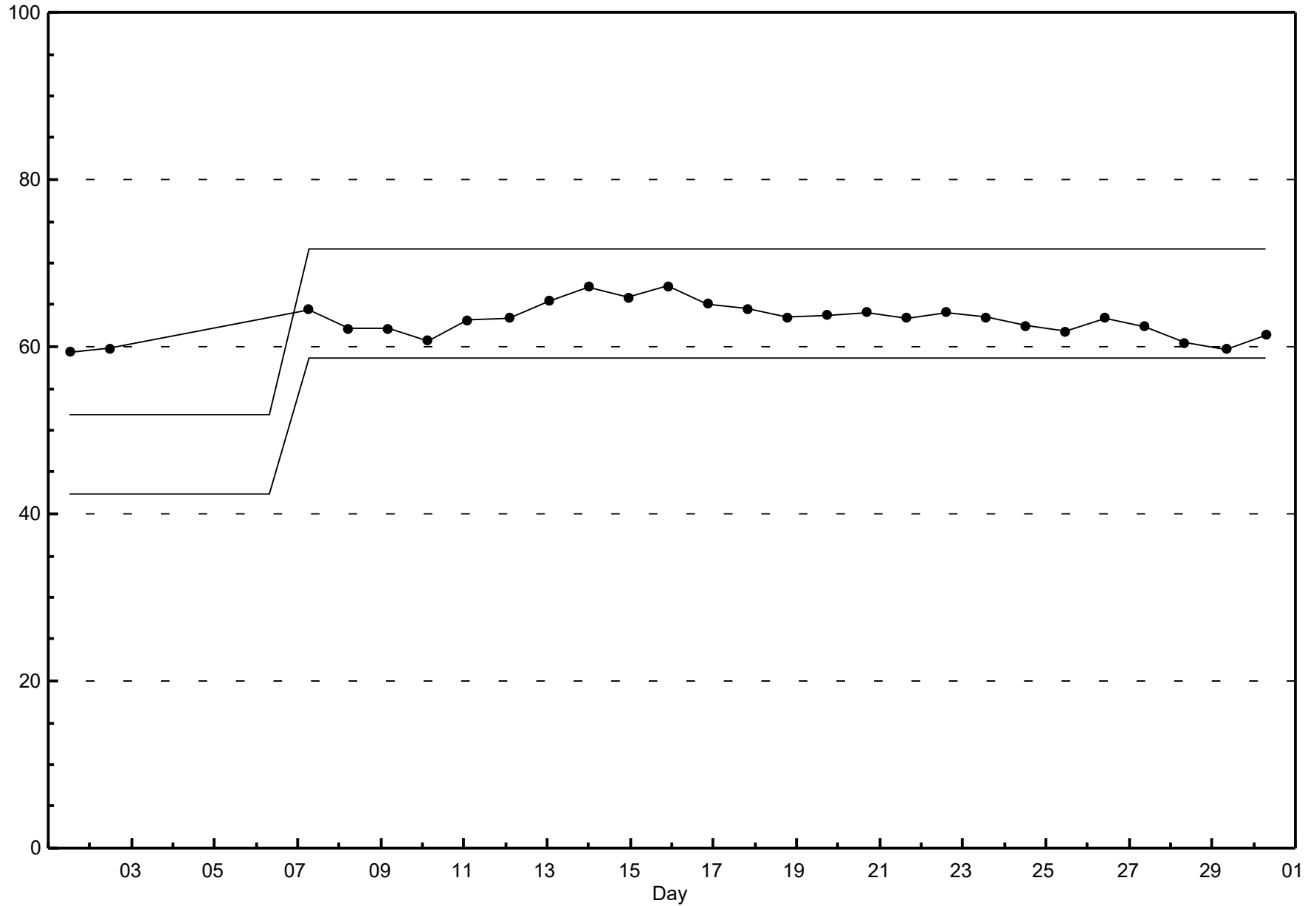
**Total Reduced Sulphur (TRS) - ppb**  
**Smoky Heights - June 2016**



**Pollutant Rose**

**Total Reduced Sulphur (TRS) - ppb**  
**Smoky Heights - June 2016**





## Hourly Averages

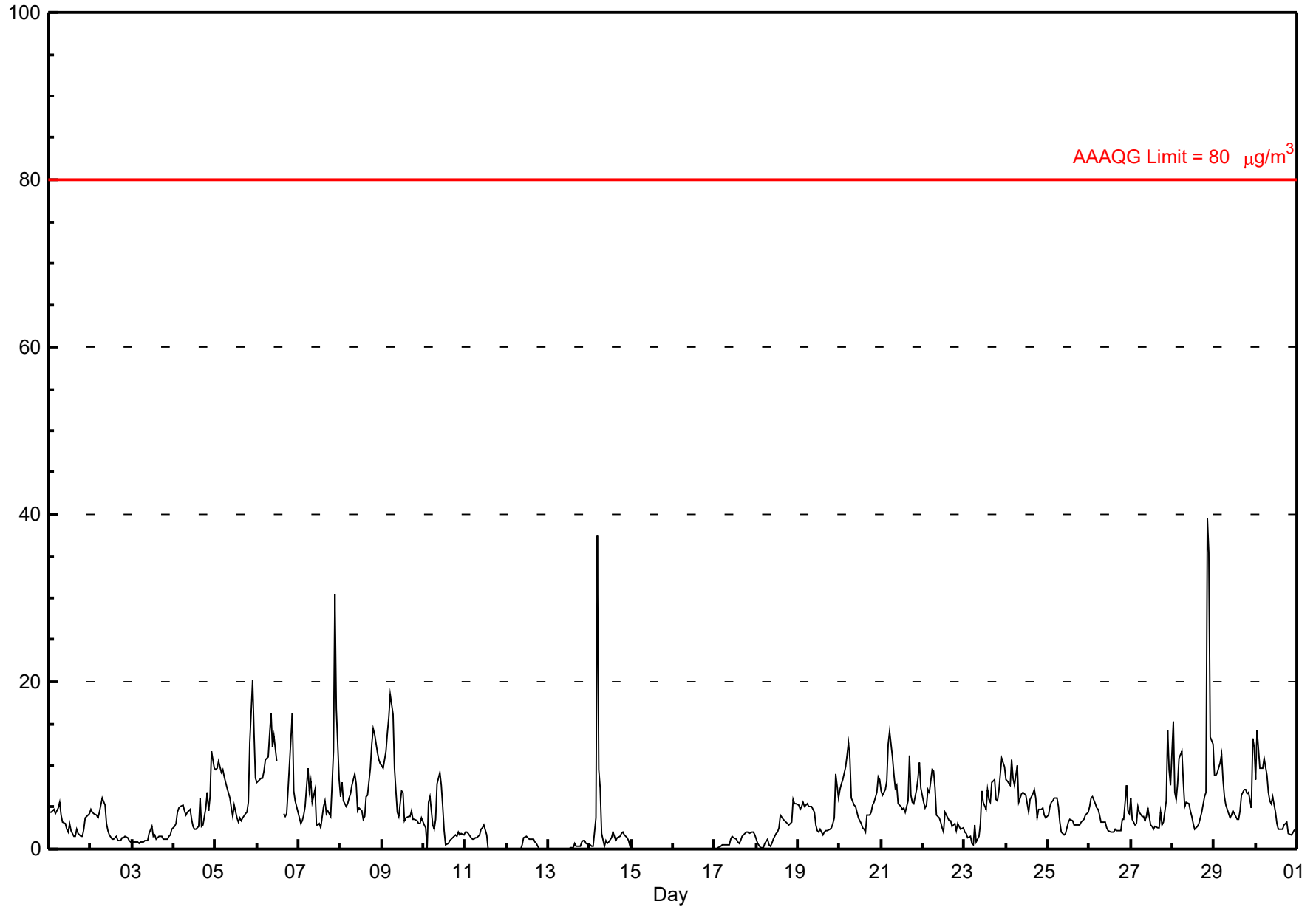
## Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

### Smoky Heights - June 2016

|   |  |
|---|--|
| Number of Exceedences: 1-hr: 0 24-hr: 0   | Hours in Service: 720                                  |
| Maximum Value: 39.5 µg/m <sup>3</sup> on Jun 28 21:00   | Maximum Daily Average: 9.3 µg/m <sup>3</sup> on Jun 28 |
| Minimum Value: 0 µg/m <sup>3</sup> on Jun 11 14:00  | Hours of Data: 717                                     |
| Maximum Diurnal Average: 6.7 µg/m <sup>3</sup> at hour 22   | Hours of Missing Data: 3                               |
| Monthly Average: 4.28 µg/m <sup>3</sup>   | Hours of Calibration: 3                                |
| Minimum Daily Average: 0.0 µg/m <sup>3</sup> on Jun 16  | Percent Operational Time: 100.0                        |
| Minimum Diurnal Average: 2.4 µg/m <sup>3</sup> at hour 14   |  |
| Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 1.4 Median = 3.4 Q <sub>3</sub> = 6.0 P <sub>90</sub> = 9.4 P <sub>99</sub> = 15.7 |  |

| Day    | Hourly Period Ending At (MST) |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |      |     |      |      |      |      |      |      | Daily Average   | Daily Maximum |
|--------|-------------------------------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|------|-----|------|------|------|------|------|------|-----------------|---------------|
|        | 1                             | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13  | 14  | 15  | 16  | 17   | 18  | 19   | 20   | 21   | 22   | 23   | 24   |                 |               |
| 1-Jun  | 4                             | 4    | 5    | 5    | 4    | 5    | 6    | 4    | 3    | 3    | 2    | 2    | 3   | 2   | 2   | 2   | 2    | 2   | 1    | 1    | 2    | 4    | 4    | 4    | 3.2             | 5.7           |
| 2-Jun  | 5                             | 4    | 4    | 4    | 4    | 4    | 5    | 6    | 5    | 3    | 2    | 2    | 1   | 1   | 1   | 2   | 1    | 1   | 1    | 1    | 1    | 1    | 1    | 1    | 2.7             | 6.1           |
| 3-Jun  | 1                             | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 2    | 3    | 1   | 2   | 1   | 1   | 1    | 1   | 1    | 1    | 1    | 2    | 2    | 2    | 1.3             | 2.6           |
| 4-Jun  | 3                             | 3    | 4    | 5    | 5    | 5    | 5    | 4    | 4    | 5    | 4    | 3    | 2   | 2   | 3   | 6   | 3    | 3   | 5    | 7    | 5    | 6    | 12   | 10   | 4.7             | 11.7          |
| 5-Jun  | 9                             | 10   | 10   | 9    | 9    | 9    | 8    | 7    | 6    | 5    | 4    | 5    | 4   | 3   | 4   | 3   | 4    | 4   | 4    | 6    | 13   | 20   | 14   | 8    | 7.5             | 20.2          |
| 6-Jun  | 8                             | 8    | 8    | 8    | 9    | 11   | 11   | 14   | 16   | 12   | 14   | 11   | C   | C   | C   | 4   | 4    | 4   | 7    | 10   | 16   | 7    | 6    | 5    | 9.3             | 16.3          |
| 7-Jun  | 4                             | 3    | 3    | 4    | 5    | 10   | 7    | 8    | 6    | 7    | 3    | 3    | 3   | 3   | 5   | 6   | 4    | 5   | 4    | 8    | 12   | 31   | 17   | 8    | 6.9             | 30.5          |
| 8-Jun  | 6                             | 8    | 6    | 5    | 5    | 6    | 7    | 8    | 9    | 8    | 5    | 5    | 5   | 4   | 4   | 6   | 6    | 10  | 13   | 14   | 14   | 12   | 11   | 10   | 7.7             | 14.3          |
| 9-Jun  | 10                            | 10   | 12   | 14   | 16   | 18   | 16   | 10   | 7    | 4    | 4    | 7    | 7   | 3   | 4   | 4   | 4    | 5   | 4    | 3    | 3    | 3    | 3    | 4    | 7.2             | 18.4          |
| 10-Jun | 3                             | 3    | 0    | 6    | 6    | 3    | 2    | 4    | 8    | 9    | 8    | 5    | 2   | 0   | 1   | 1   | 1    | 1   | 2    | 1    | 2    | 2    | 2    | 2    | 3.0             | 9.1           |
| 11-Jun | 2                             | 2    | 2    | 1    | 1    | 1    | 1    | 1    | 2    | 2    | 3    | 3    | 2   | 0   | 0   | 0   | 0    | 0   | 0    | 0    | 0    | 0    | 0    | 0    | 1.0             | 2.8           |
| 12-Jun | 0                             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 2    | 1   | 1   | 1   | 1   | 1    | 1   | 0    | 0    | 0    | 0    | 0    | 0    | 0.4             | 1.6           |
| 13-Jun | 0                             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0   | 0   | 0   | 1   | 0    | 0   | 0    | 1    | 1    | 1    | 1    | 1    | 0.3             | 1.0           |
| 14-Jun | 0                             | 0    | 0    | 4    | 37   | 9    | 7    | 2    | 0    | 1    | 1    | 1    | 1   | 2   | 2   | 1   | 1    | 1   | 2    | 2    | 2    | 1    | 1    | 0    | 3.4             | 37.5          |
| 15-Jun | 1                             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0   | 0    | 0    | 0    | 0    | 0    | 0    | 0.0             | 0.5           |
| 16-Jun | 0                             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0   | 0    | 0    | 0    | 0    | 0    | 0    | 0.0             | 0.0           |
| 17-Jun | 0                             | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 1    | 1    | 1    | 1    | 1   | 1   | 1   | 1   | 2    | 2   | 2    | 2    | 2    | 2    | 2    | 2    | 1.1             | 2.0           |
| 18-Jun | 1                             | 1    | 0    | 0    | 0    | 1    | 1    | 1    | 0    | 1    | 1    | 2    | 2   | 3   | 4   | 4   | 3    | 3   | 3    | 3    | 3    | 6    | 5    | 5    | 2.2             | 5.9           |
| 19-Jun | 5                             | 5    | 5    | 6    | 5    | 5    | 5    | 5    | 5    | 4    | 3    | 2    | 2   | 2   | 2   | 2   | 2    | 2   | 2    | 3    | 3    | 4    | 9    | 6    | 4.0             | 9.0           |
| 20-Jun | 7                             | 8    | 8    | 10   | 11   | 13   | 11   | 6    | 5    | 5    | 4    | 4    | 3   | 2   | 2   | 2   | 4    | 4   | 4    | 5    | 6    | 7    | 9    | 8    | 6.2             | 12.8          |
| 21-Jun | 7                             | 6    | 7    | 8    | 12   | 14   | 11   | 9    | 7    | 8    | 6    | 5    | 5   | 5   | 4   | 6   | 11   | 6   | 6    | 5    | 7    | 9    | 10   | 7    | 7.6             | 14.1          |
| 22-Jun | 6                             | 5    | 5    | 7    | 7    | 9    | 9    | 7    | 4    | 4    | 3    | 3    | 2   | 4   | 4   | 3   | 3    | 3   | 3    | 2    | 3    | 3    | 2    | 3    | 4.4             | 9.5           |
| 23-Jun | 2                             | 2    | 1    | 2    | 1    | 1    | 3    | 1    | 2    | 3    | 7    | 6    | 5   | 7   | 6   | 6   | 8    | 8   | 6    | 6    | 7    | 11   | 10   | 10   | 4.9             | 10.8          |
| 24-Jun | 8                             | 8    | 8    | 11   | 8    | 8    | 10   | 6    | 6    | 7    | 7    | 6    | 5   | 4   | 6   | 7   | 7    | 6   | 4    | 5    | 5    | 5    | 4    | 4    | 6.4             | 10.8          |
| 25-Jun | 4                             | 5    | 6    | 6    | 6    | 6    | 5    | 3    | 2    | 2    | 2    | 2    | 3   | 4   | 3   | 3   | 3    | 3   | 3    | 3    | 3    | 4    | 4    | 4    | 3.7             | 6.1           |
| 26-Jun | 5                             | 6    | 6    | 5    | 5    | 5    | 4    | 3    | 3    | 3    | 2    | 2    | 2   | 2   | 2   | 2   | 2    | 2   | 2    | 4    | 4    | 8    | 5    | 4    | 3.7             | 7.6           |
| 27-Jun | 6                             | 4    | 3    | 3    | 5    | 4    | 4    | 4    | 3    | 4    | 5    | 3    | 3   | 2   | 3   | 3   | 3    | 4   | 3    | 3    | 6    | 14   | 9    | 8    | 4.5             | 14.2          |
| 28-Jun | 15                            | 7    | 6    | 8    | 11   | 12   | 8    | 5    | 6    | 5    | 5    | 4    | 3   | 2   | 3   | 3   | 4    | 4   | 6    | 7    | 40   | 35   | 13   | 13   | 9.3             | 39.5          |
| 29-Jun | 9                             | 9    | 9    | 10   | 11   | 8    | 6    | 5    | 4    | 4    | 5    | 4    | 4   | 4   | 4   | 5   | 6    | 7   | 7    | 7    | 7    | 5    | 13   | 12   | 6.9             | 13.2          |
| 30-Jun | 8                             | 14   | 10   | 10   | 10   | 11   | 9    | 7    | 6    | 6    | 6    | 4    | 3   | 2   | 2   | 2   | 3    | 3   | 3    | 2    | 2    | 2    | 2    | 2    | 5.4             | 14.3          |
|        | 4.7                           | 4.5  | 4.4  | 5.0  | 6.6  | 6.0  | 5.4  | 4.4  | 4.1  | 3.9  | 3.6  | 3.3  | 2.6 | 2.4 | 2.5 | 2.9 | 3.2  | 3.2 | 3.3  | 3.7  | 5.6  | 6.7  | 5.7  | 4.8  | Diurnal Average |               |
|        | 15.2                          | 14.3 | 11.8 | 13.9 | 37.5 | 18.4 | 16.2 | 13.8 | 16.3 | 12.3 | 13.6 | 10.5 | 6.8 | 7.1 | 6.0 | 6.6 | 11.3 | 9.6 | 12.5 | 14.3 | 39.5 | 35.4 | 16.8 | 12.6 | Diurnal Maximum |               |

C - Calibration  
 Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 µg/m<sup>3</sup> Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 µg/m<sup>3</sup>

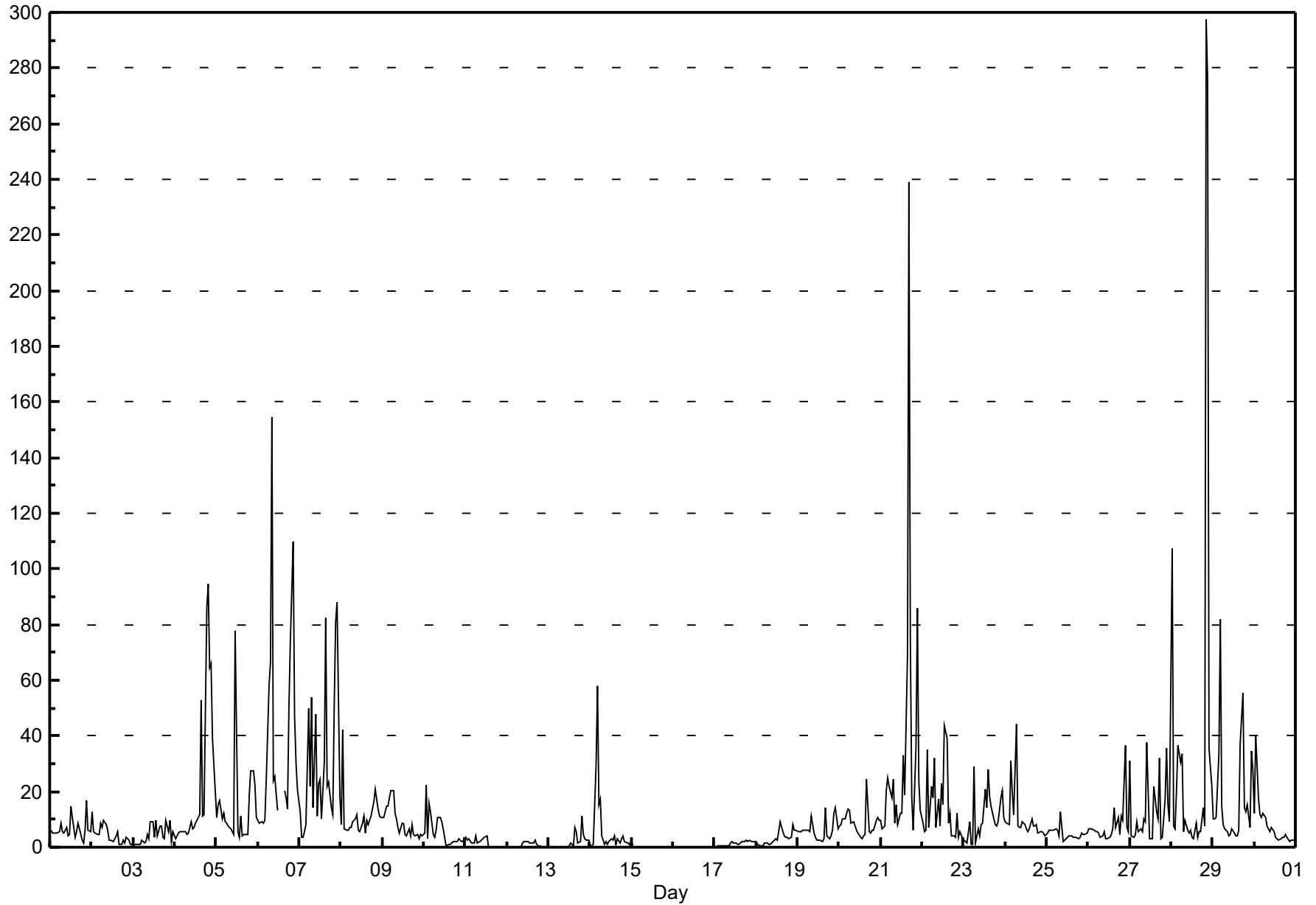


# Hourly Maximums

# Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

## Smoky Heights - June 2016

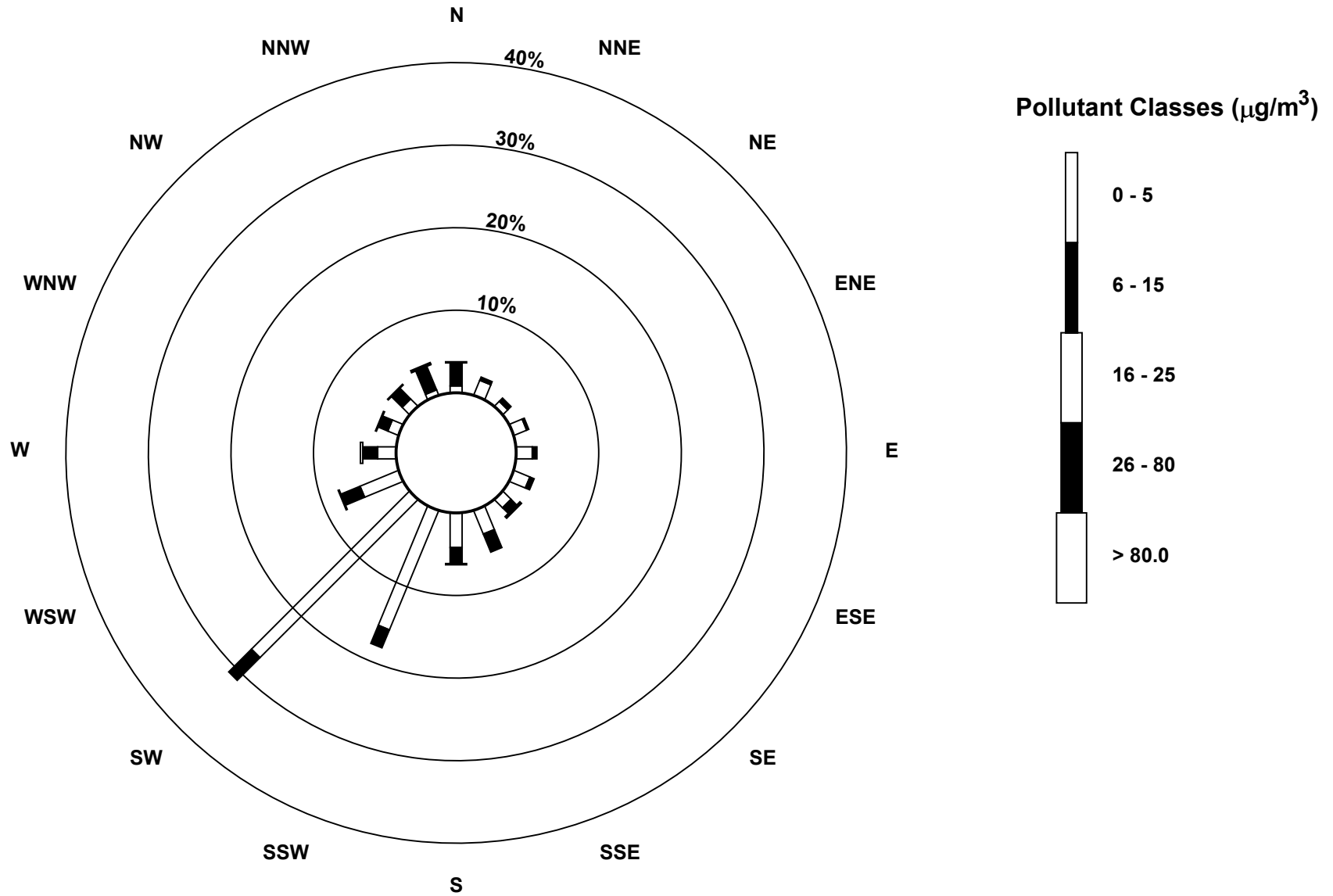
| Maximum Value: 297.3 µg/m <sup>3</sup> on Jun 28 21:00     |                               | Maximum Daily Average: 39.9 µg/m <sup>3</sup> on Jun 28   |      | Hours in Service: 720           |      |      |      |      |      |       |      |      |      |      |      |      |      |       |      |      |      |       |       |      |               |                 |
|--|-------------------------------|---|------|---------------------------------|------|------|------|------|------|-------|------|------|------|------|------|------|------|-------|------|------|------|-------|-------|------|---------------|-----------------|
| Minimum Value: 0 µg/m <sup>3</sup> on Jun 11 14:00         |                               | Minimum Daily Average: 0.0 µg/m <sup>3</sup> on Jun 16  |      | Hours of Data: 717              |      |      |      |      |      |       |      |      |      |      |      |      |      |       |      |      |      |       |       |      |               |                 |
| Maximum Diurnal Average: 26.1 µg/m <sup>3</sup> at hour 22 |                               | Minimum Diurnal Average: 5.5 µg/m <sup>3</sup> at hour 3  |      | Hours of Missing Data: 3        |      |      |      |      |      |       |      |      |      |      |      |      |      |       |      |      |      |       |       |      |               |                 |
| Monthly Average: 11.01 µg/m <sup>3</sup>                   |                               | Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 2.1 Median = 5.4 Q <sub>3</sub> = 10.5 P <sub>90</sub> = 22.6 P <sub>99</sub> = 86.1 |      | Hours of Calibration: 3         |      |      |      |      |      |       |      |      |      |      |      |      |      |       |      |      |      |       |       |      |               |                 |
|  |                               |   |      | Percent Operational Time: 100.0 |      |      |      |      |      |       |      |      |      |      |      |      |      |       |      |      |      |       |       |      |               |                 |
| Day  | Hourly Period Ending At (MST) |   |      |                                 |      |      |      |      |      |       |      |      |      |      |      |      |      |       |      |      |      |       |       |      | Daily Average | Daily Maximum   |
|  | 1                             | 2   | 3    | 4                               | 5    | 6    | 7    | 8    | 9    | 10    | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18    | 19   | 20   | 21   | 22    | 23    | 24   |               |                 |
| 1-Jun  | 6                             | 5   | 5    | 5                               | 5    | 5    | 9    | 5    | 5    | 7     | 4    | 5    | 15   | 10   | 3    | 5    | 9    | 7     | 3    | 2    | 6    | 17    | 6     | 6    | 6.4           | 16.6            |
| 2-Jun  | 13                            | 6   | 5    | 5                               | 4    | 9    | 7    | 9    | 8    | 6     | 2    | 2    | 2    | 3    | 4    | 5    | 1    | 1     | 3    | 2    | 3    | 2     | 1     | 1    | 4.4           | 12.9            |
| 3-Jun  | 1                             | 1   | 1    | 1                               | 1    | 2    | 1    | 2    | 4    | 3     | 9    | 9    | 3    | 10   | 4    | 8    | 8    | 4     | 3    | 10   | 6    | 10    | 2     | 5    | 4.5           | 9.7             |
| 4-Jun  | 3                             | 4   | 5    | 5                               | 6    | 6    | 6    | 5    | 5    | 9     | 7    | 7    | 9    | 10   | 12   | 53   | 11   | 12    | 86   | 95   | 64   | 66    | 39    | 20   | 22.6          | 94.7            |
| 5-Jun  | 11                            | 15  | 17   | 10                              | 12   | 9    | 9    | 8    | 7    | 5     | 5    | 78   | 6    | 3    | 11   | 4    | 4    | 4     | 5    | 19   | 27   | 27    | 22    | 10   | 13.8          | 77.9            |
| 6-Jun  | 9                             | 9   | 9    | 9                               | 10   | 25   | 59   | 67   | 154  | 24    | 26   | 13   | C    | C    | C    | 20   | 18   | 14    | 50   | 74   | 110  | 47    | 31    | 21   | 37.9          | 154.4           |
| 7-Jun  | 13                            | 3   | 4    | 6                               | 8    | 50   | 22   | 54   | 14   | 48    | 11   | 23   | 25   | 10   | 31   | 83   | 22   | 23    | 14   | 12   | 50   | 81    | 88    | 19   | 29.7          | 87.9            |
| 8-Jun  | 8                             | 42  | 7    | 6                               | 6    | 7    | 7    | 9    | 10   | 12    | 6    | 5    | 9    | 11   | 5    | 10   | 8    | 11    | 14   | 16   | 21   | 14    | 11    | 10   | 11.1          | 42.5            |
| 9-Jun  | 11                            | 10  | 15   | 15                              | 18   | 21   | 21   | 12   | 10   | 7     | 5    | 9    | 9    | 4    | 4    | 7    | 4    | 8     | 4    | 4    | 4    | 3     | 5     | 4    | 8.9           | 20.5            |
| 10-Jun   | 5                             | 22  | 3    | 16                              | 13   | 5    | 4    | 6    | 11   | 11    | 9    | 7    | 4    | 1    | 1    | 1    | 1    | 2     | 2    | 2    | 3    | 3     | 2     | 2    | 5.6           | 22.2            |
| 11-Jun   | 3                             | 2   | 3    | 2                               | 1    | 1    | 4    | 2    | 2    | 3     | 3    | 4    | 4    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0     | 0    | 1.4           | 3.9             |
| 12-Jun   | 0                             | 0   | 0    | 0                               | 0    | 0    | 0    | 0    | 0    | 1     | 2    | 2    | 2    | 1    | 1    | 1    | 2    | 1     | 0    | 0    | 0    | 0     | 0     | 0    | 0.7           | 2.4             |
| 13-Jun   | 0                             | 0   | 0    | 0                               | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 1    | 2    | 1    | 7    | 5    | 2     | 2    | 11   | 5    | 3     | 2     | 3    | 1.8           | 11.4            |
| 14-Jun   | 1                             | 0   | 1    | 29                              | 58   | 15   | 17   | 4    | 1    | 2     | 1    | 2    | 3    | 3    | 4    | 1    | 3    | 2     | 3    | 4    | 2    | 2     | 1     | 1    | 6.7           | 57.9            |
| 15-Jun   | 2                             | 0   | 0    | 0                               | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0     | 0    | 0.1           | 2.4             |
| 16-Jun   | 0                             | 0   | 0    | 0                               | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 0     | 0    | 0.0           | 0.0             |
| 17-Jun   | 0                             | 0   | 0    | 0                               | 1    | 1    | 1    | 1    | 1    | 1     | 2    | 2    | 2    | 1    | 1    | 1    | 2    | 2     | 2    | 2    | 2    | 2     | 2     | 2    | 1.4           | 2.4             |
| 18-Jun   | 2                             | 1   | 0    | 0                               | 0    | 2    | 2    | 1    | 1    | 1     | 2    | 3    | 3    | 5    | 9    | 6    | 4    | 4     | 3    | 3    | 4    | 8     | 6     | 6    | 3.2           | 9.0             |
| 19-Jun   | 6                             | 6   | 6    | 6                               | 6    | 6    | 6    | 5    | 11   | 5     | 4    | 2    | 3    | 3    | 2    | 3    | 14   | 4     | 3    | 4    | 6    | 12    | 14    | 7    | 6.0           | 14.4            |
| 20-Jun   | 8                             | 8   | 10   | 10                              | 12   | 14   | 13   | 9    | 9    | 8     | 6    | 5    | 4    | 3    | 4    | 5    | 24   | 5     | 5    | 6    | 6    | 10    | 10    | 10   | 8.5           | 24.5            |
| 21-Jun   | 10                            | 7   | 8    | 20                              | 25   | 22   | 18   | 24   | 9    | 15    | 8    | 12   | 12   | 33   | 19   | 69   | 239  | 75    | 18   | 6    | 36   | 86    | 24    | 13   | 33.7          | 239.2           |
| 22-Jun   | 9                             | 6   | 6    | 35                              | 7    | 22   | 18   | 32   | 7    | 17    | 8    | 23   | 15   | 44   | 39   | 9    | 12   | 4     | 4    | 3    | 12   | 4     | 6     | 3    | 14.4          | 44.0            |
| 23-Jun   | 2                             | 2   | 2    | 9                               | 1    | 1    | 29   | 1    | 7    | 4     | 8    | 9    | 21   | 14   | 28   | 19   | 15   | 10    | 8    | 8    | 9    | 18    | 20    | 11   | 10.7          | 28.8            |
| 24-Jun   | 9                             | 9   | 8    | 31                              | 20   | 12   | 44   | 8    | 7    | 7     | 9    | 8    | 7    | 5    | 7    | 10   | 8    | 8     | 8    | 5    | 5    | 6     | 5     | 4    | 10.4          | 44.2            |
| 25-Jun   | 5                             | 6   | 6    | 6                               | 6    | 7    | 6    | 4    | 13   | 2     | 2    | 3    | 4    | 4    | 4    | 3    | 3    | 4     | 3    | 4    | 5    | 4     | 4     | 5    | 4.7           | 12.7            |
| 26-Jun   | 7                             | 7   | 7    | 6                               | 5    | 5    | 5    | 4    | 4    | 5     | 3    | 3    | 4    | 4    | 7    | 14   | 7    | 11    | 5    | 11   | 10   | 37    | 7     | 5    | 7.6           | 36.6            |
| 27-Jun   | 31                            | 4   | 3    | 4                               | 9    | 6    | 7    | 5    | 10   | 9     | 38   | 3    | 3    | 3    | 22   | 13   | 10   | 32    | 3    | 4    | 17   | 35    | 15    | 9    | 12.4          | 37.6            |
| 28-Jun   | 108                           | 8   | 7    | 20                              | 36   | 30   | 33   | 6    | 10   | 6     | 5    | 6    | 4    | 3    | 9    | 3    | 5    | 5     | 14   | 8    | 297  | 277   | 36    | 22   | 39.9          | 297.3           |
| 29-Jun   | 10                            | 10  | 11   | 34                              | 82   | 15   | 8    | 7    | 5    | 4     | 4    | 7    | 5    | 4    | 4    | 6    | 37   | 55    | 14   | 13   | 15   | 7     | 34    | 28   | 17.5          | 82.0            |
| 30-Jun   | 12                            | 40  | 17   | 12                              | 10   | 12   | 11   | 8    | 7    | 6     | 7    | 6    | 4    | 3    | 3    | 3    | 3    | 4     | 5    | 4    | 2    | 2     | 2     | 3    | 7.7           | 40.1            |
|  |                               | 10.1  | 7.8  | 5.5                             | 10.1 | 12.2 | 10.3 | 12.1 | 9.9  | 11.1  | 7.7  | 6.5  | 8.6  | 6.2  | 6.9  | 8.2  | 12.3 | 16.1  | 10.5 | 9.5  | 11.0 | 24.3  | 26.1  | 13.3 | 7.6           | Diurnal Average |
|  |                               | 107.5   | 42.5 | 17.3                            | 35.1 | 82.0 | 50.1 | 58.6 | 66.7 | 154.4 | 47.6 | 37.6 | 77.9 | 24.7 | 44.0 | 39.3 | 82.5 | 239.2 | 75.0 | 85.7 | 94.7 | 297.3 | 276.6 | 87.9 | 27.6          | Diurnal Maximum |
| C - Calibration  |                               |   |      |                                 |      |      |      |      |      |       |      |      |      |      |      |      |      |       |      |      |      |       |       |      |               |                 |





**Pollutant Rose**

**Particulate Matter 2.5 (PM<sub>2.5</sub>) -  $\mu\text{g}/\text{m}^3$**   
**Smoky Heights - June 2016**

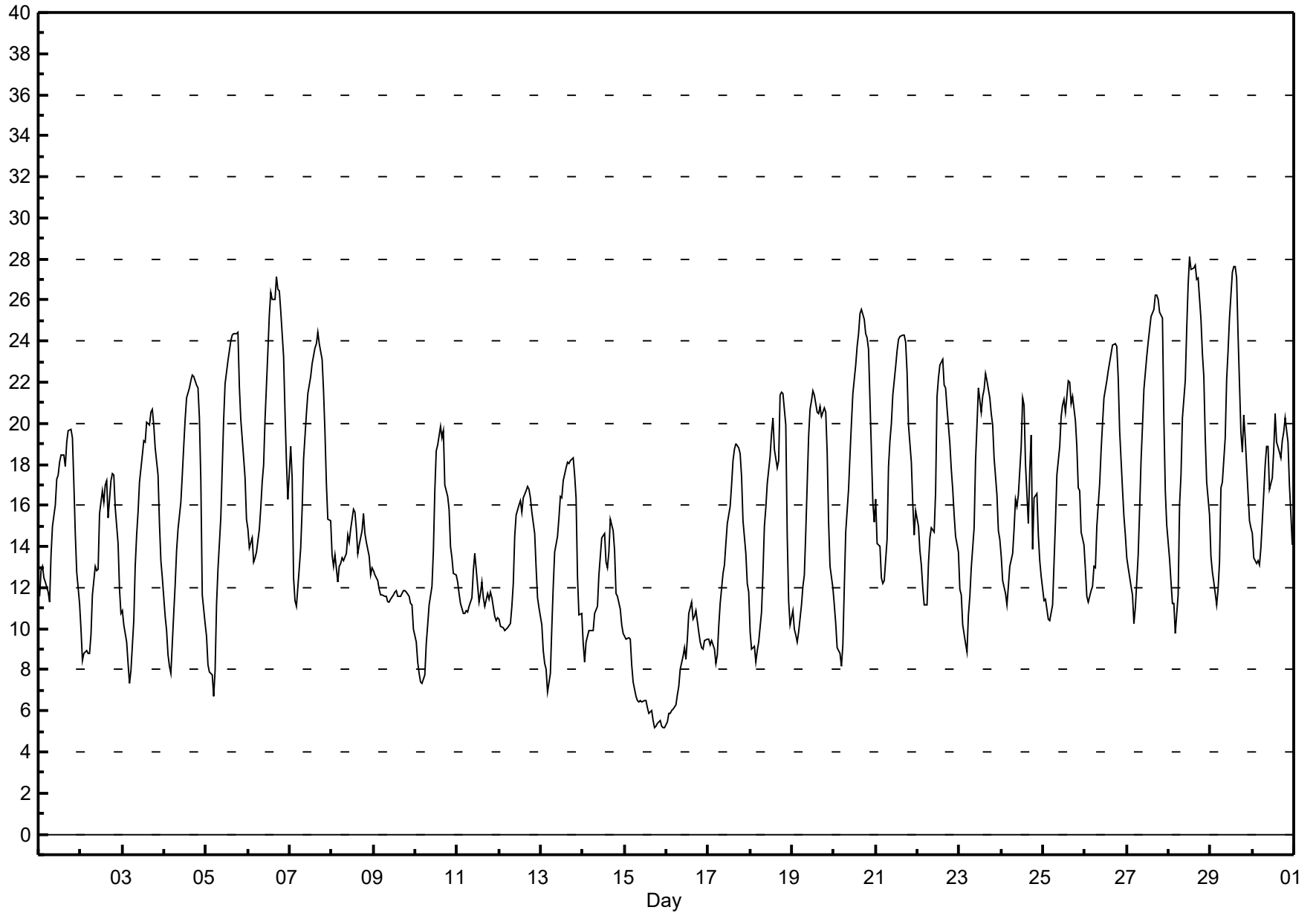


# Hourly Averages

External Temperature (ET) - °C

Smoky Heights - June 2016

| Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0<br>Maximum Value: 28.1 °C on Jun 28 13:00      Maximum Daily Average: 20.2 °C on Jun 28 |                               | Hours in Service: 720<br>Hours of Data: 720<br>Hours of Missing Data: 0<br>Hours of Calibration: 0<br>Percent Operational Time: 100.0   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |               |               |
|---|-------------------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------------|---------------|---------------|
| Minimum Value: 5 °C on Jun 15 23:00<br>Maximum Diurnal Average: 19.6 °C at hour 15<br>Monthly Average: 15.32 °C                         |                               | Minimum Daily Average: 6.7 °C on Jun 15<br>Minimum Diurnal Average: 9.9 °C at hour 5<br>Percentiles: P <sub>1</sub> = 5.5 P <sub>10</sub> = 9.2 Q <sub>1</sub> = 11.3 Median = 14.6 Q <sub>3</sub> = 19.1 P <sub>90</sub> = 22.8 P <sub>99</sub> = 27.3 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |               |               |
| Day   | Hourly Period Ending At (MST) |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 | Daily Average | Daily Maximum |
|   | 1                             | 2   | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24              |               |               |
| 1-Jun   | 12                            | 13  | 13 | 12 | 12 | 12 | 11 | 14 | 15 | 16 | 17 | 17 | 18 | 18 | 18 | 18 | 19 | 20 | 20 | 19 | 17 | 15 | 13 | 11              | 15.4          | 19.7          |
| 2-Jun   | 10                            | 8   | 9  | 9  | 9  | 9  | 10 | 12 | 13 | 13 | 13 | 16 | 17 | 16 | 17 | 17 | 15 | 17 | 18 | 17 | 16 | 14 | 12 | 11              | 13.2          | 17.5          |
| 3-Jun   | 11                            | 10  | 9  | 8  | 7  | 8  | 10 | 13 | 15 | 16 | 17 | 18 | 19 | 19 | 20 | 20 | 21 | 21 | 20 | 19 | 17 | 15 | 13 | 12              | 15.0          | 20.6          |
| 4-Jun   | 11                            | 10  | 9  | 8  | 8  | 11 | 12 | 14 | 15 | 16 | 17 | 19 | 20 | 21 | 22 | 22 | 22 | 22 | 22 | 22 | 20 | 17 | 12 | 10              | 15.9          | 22.3          |
| 5-Jun   | 10                            | 8   | 8  | 8  | 7  | 8  | 11 | 13 | 15 | 18 | 20 | 22 | 23 | 24 | 24 | 24 | 24 | 24 | 24 | 22 | 20 | 18 | 17 | 15              | 17.0          | 24.4          |
| 6-Jun   | 15                            | 14  | 14 | 13 | 13 | 14 | 15 | 16 | 17 | 18 | 20 | 24 | 25 | 26 | 26 | 26 | 27 | 27 | 26 | 25 | 23 | 21 | 18 | 16              | 20.0          | 27.1          |
| 7-Jun   | 19                            | 17  | 12 | 11 | 11 | 13 | 14 | 16 | 18 | 20 | 21 | 22 | 22 | 23 | 24 | 24 | 24 | 24 | 23 | 22 | 20 | 17 | 15 | 15              | 18.7          | 24.4          |
| 8-Jun   | 14                            | 13  | 14 | 12 | 13 | 13 | 13 | 13 | 14 | 15 | 14 | 15 | 16 | 16 | 15 | 14 | 14 | 15 | 16 | 15 | 14 | 14 | 13 | 13              | 14.0          | 15.8          |
| 9-Jun   | 13                            | 13  | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 11 | 11 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 11 | 10 | 10              | 11.7          | 12.9          |
| 10-Jun  | 9                             | 8   | 8  | 7  | 7  | 8  | 9  | 10 | 11 | 12 | 14 | 17 | 19 | 19 | 20 | 19 | 20 | 17 | 16 | 16 | 14 | 13 | 13 | 13              | 13.3          | 19.9          |
| 11-Jun  | 12                            | 12  | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 13 | 14 | 13 | 11 | 12 | 12 | 12 | 11 | 12 | 11 | 12 | 12 | 11 | 10 | 11              | 11.5          | 13.6          |
| 12-Jun  | 10                            | 10  | 10 | 10 | 10 | 10 | 10 | 11 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 17 | 17 | 17 | 16 | 16 | 15 | 13 | 12 | 11              | 13.4          | 16.9          |
| 13-Jun  | 10                            | 9   | 8  | 8  | 7  | 8  | 10 | 12 | 14 | 14 | 15 | 16 | 16 | 17 | 18 | 18 | 18 | 18 | 18 | 18 | 16 | 13 | 11 | 11              | 13.5          | 18.3          |
| 14-Jun  | 9                             | 8   | 9  | 10 | 10 | 10 | 10 | 11 | 11 | 13 | 14 | 14 | 15 | 13 | 13 | 14 | 15 | 15 | 14 | 12 | 12 | 11 | 10 | 10              | 11.7          | 15.3          |
| 15-Jun  | 10                            | 10  | 10 | 10 | 8  | 7  | 7  | 7  | 6  | 6  | 6  | 6  | 6  | 6  | 6  | 6  | 6  | 5  | 5  | 5  | 6  | 5  | 5  | 5               | 6.7           | 9.6           |
| 16-Jun  | 5                             | 6   | 6  | 6  | 6  | 6  | 7  | 7  | 8  | 9  | 9  | 8  | 9  | 11 | 11 | 10 | 11 | 11 | 10 | 9  | 9  | 9  | 9  | 9               | 8.5           | 11.3          |
| 17-Jun  | 9                             | 9   | 9  | 9  | 8  | 9  | 10 | 11 | 13 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 19 | 19 | 19 | 17 | 15 | 14 | 12 | 12              | 13.6          | 19.0          |
| 18-Jun  | 10                            | 9   | 9  | 8  | 9  | 9  | 11 | 13 | 15 | 16 | 17 | 18 | 20 | 20 | 19 | 18 | 18 | 21 | 22 | 21 | 20 | 15 | 11 | 10              | 15.0          | 21.5          |
| 19-Jun  | 11                            | 10  | 10 | 9  | 10 | 11 | 12 | 13 | 15 | 19 | 21 | 21 | 22 | 21 | 21 | 20 | 21 | 20 | 21 | 21 | 19 | 15 | 13 | 12              | 16.1          | 21.6          |
| 20-Jun  | 11                            | 10  | 9  | 9  | 8  | 9  | 12 | 15 | 17 | 18 | 20 | 21 | 23 | 24 | 24 | 25 | 26 | 25 | 24 | 24 | 24 | 19 | 16 | 15              | 17.9          | 25.5          |
| 21-Jun  | 16                            | 14  | 14 | 13 | 12 | 12 | 14 | 18 | 19 | 20 | 21 | 23 | 24 | 24 | 24 | 24 | 24 | 24 | 22 | 20 | 18 | 16 | 15 | 16              | 18.7          | 24.3          |
| 22-Jun  | 15                            | 14  | 13 | 12 | 11 | 11 | 13 | 14 | 15 | 15 | 17 | 21 | 22 | 23 | 23 | 22 | 22 | 21 | 19 | 18 | 17 | 16 | 15 | 14              | 16.7          | 23.1          |
| 23-Jun  | 12                            | 12  | 10 | 9  | 9  | 11 | 12 | 13 | 15 | 18 | 20 | 22 | 21 | 21 | 22 | 22 | 22 | 21 | 20 | 20 | 18 | 16 | 15 | 14              | 16.5          | 22.4          |
| 24-Jun  | 13                            | 12  | 12 | 11 | 12 | 13 | 14 | 15 | 16 | 16 | 16 | 19 | 21 | 21 | 18 | 15 | 18 | 19 | 14 | 16 | 17 | 15 | 13 | 13              | 15.4          | 21.3          |
| 25-Jun  | 11                            | 11  | 11 | 10 | 10 | 11 | 13 | 15 | 17 | 19 | 20 | 21 | 21 | 21 | 22 | 22 | 21 | 21 | 20 | 19 | 17 | 17 | 15 | 14              | 16.7          | 22.1          |
| 26-Jun  | 13                            | 12  | 11 | 12 | 12 | 13 | 13 | 15 | 17 | 19 | 20 | 21 | 22 | 23 | 23 | 23 | 24 | 24 | 24 | 22 | 20 | 17 | 15 | 15              | 17.9          | 23.9          |
| 27-Jun  | 13                            | 13  | 12 | 12 | 10 | 11 | 14 | 16 | 18 | 20 | 22 | 23 | 24 | 25 | 25 | 26 | 26 | 26 | 26 | 25 | 25 | 20 | 17 | 15              | 19.3          | 26.3          |
| 28-Jun  | 13                            | 12  | 11 | 11 | 10 | 12 | 16 | 17 | 20 | 22 | 25 | 27 | 28 | 27 | 28 | 28 | 27 | 27 | 25 | 23 | 22 | 19 | 17 | 16              | 20.2          | 28.1          |
| 29-Jun  | 14                            | 13  | 12 | 11 | 12 | 13 | 17 | 17 | 19 | 22 | 24 | 25 | 27 | 28 | 28 | 27 | 24 | 20 | 19 | 20 | 19 | 17 | 15 | 15              | 19.1          | 27.7          |
| 30-Jun  | 15                            | 13  | 13 | 13 | 13 | 14 | 17 | 18 | 19 | 19 | 17 | 17 | 19 | 20 | 19 | 19 | 18 | 19 | 20 | 20 | 19 | 17 | 16 | 14              | 17.0          | 20.5          |
|   |                               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Diurnal Average |               |               |
|   |                               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Diurnal Maximum |               |               |
|   |                               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |               |               |



# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Smoky Heights - June 2016

| Day    | Hourly Period Ending At (MST) |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Daily Average | Daily Maximum |
|--------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|---------------|
|        | 1                             | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |               |               |
| 1 Spd  | 1                             | 3   | 2   | 12  | 8   | 4   | 7   | 7   | 5   | 6   | 9   | 12  | 9   | 15  | 20  | 18  | 14  | 7   | 8   | 7   | 6   | 7   | 9   | 5   | 6.3           | 20.3          |
| Dir    | 214                           | 282 | 293 | 282 | 300 | 320 | 138 | 132 | 155 | 182 | 194 | 209 | 216 | 195 | 229 | 210 | 233 | 222 | 209 | 188 | 143 | 167 | 212 | 163 | 209.4         | 229.5         |
| 2 Spd  | 5                             | 2   | 2   | 3   | 4   | 2   | 7   | 12  | 19  | 21  | 17  | 13  | 18  | 18  | 17  | 19  | 20  | 17  | 20  | 24  | 22  | 23  | 16  | 18  | 13.5          | 24.5          |
| Dir    | 243                           | 223 | 195 | 111 | 191 | 207 | 154 | 192 | 204 | 204 | 233 | 239 | 231 | 216 | 217 | 228 | 221 | 201 | 203 | 213 | 215 | 218 | 225 | 220 | 214.7         | 212.8         |
| 3 Spd  | 22                            | 22  | 19  | 19  | 11  | 10  | 16  | 24  | 31  | 33  | 28  | 32  | 30  | 28  | 33  | 34  | 32  | 33  | 33  | 30  | 21  | 15  | 14  | 16  | 24.2          | 33.7          |
| Dir    | 215                           | 214 | 214 | 203 | 231 | 212 | 201 | 215 | 220 | 222 | 223 | 228 | 219 | 226 | 217 | 220 | 217 | 227 | 222 | 227 | 217 | 210 | 204 | 206 | 218.5         | 220.0         |
| 4 Spd  | 14                            | 13  | 8   | 10  | 6   | 18  | 16  | 25  | 30  | 30  | 31  | 25  | 29  | 33  | 33  | 31  | 28  | 26  | 24  | 16  | 10  | 11  | 8   | 11  | 19.7          | 33.0          |
| Dir    | 205                           | 207 | 212 | 214 | 210 | 221 | 232 | 228 | 225 | 224 | 222 | 219 | 221 | 227 | 233 | 235 | 233 | 236 | 234 | 255 | 282 | 279 | 244 | 236 | 229.3         | 233.4         |
| 5 Spd  | 13                            | 15  | 16  | 16  | 16  | 6   | 6   | 7   | 6   | 5   | 4   | 5   | 6   | 5   | 7   | 6   | 7   | 6   | 4   | 5   | 4   | 5   | 5   | 1   | 2.2           | 16.2          |
| Dir    | 241                           | 233 | 239 | 236 | 235 | 201 | 134 | 138 | 121 | 109 | 102 | 96  | 95  | 63  | 121 | 127 | 126 | 83  | 85  | 46  | 6   | 353 | 15  | 318 | 178.3         | 236.3         |
| 6 Spd  | 3                             | 3   | 3   | 4   | 4   | 6   | 6   | 7   | 13  | 11  | 14  | 16  | 26  | 27  | 24  | 14  | 27  | 28  | 29  | 25  | 21  | 16  | 16  | 15  | 13.2          | 28.8          |
| Dir    | 352                           | 351 | 104 | 166 | 156 | 178 | 196 | 184 | 184 | 188 | 193 | 202 | 232 | 227 | 235 | 222 | 234 | 228 | 239 | 238 | 242 | 244 | 262 | 264 | 226.4         | 233.2         |
| 7 Spd  | 22                            | 14  | 8   | 10  | 7   | 11  | 17  | 17  | 18  | 19  | 19  | 19  | 18  | 12  | 9   | 8   | 5   | 7   | 6   | 5   | 2   | 2   | 4   | 5   | 8.6           | 22.4          |
| Dir    | 273                           | 264 | 189 | 208 | 183 | 220 | 222 | 220 | 219 | 221 | 223 | 222 | 223 | 225 | 254 | 257 | 257 | 352 | 351 | 332 | 355 | 342 | 340 | 326 | 236.8         | 272.8         |
| 8 Spd  | 4                             | 4   | 3   | 4   | 2   | 8   | 4   | 9   | 6   | 9   | 7   | 6   | 8   | 12  | 10  | 9   | 14  | 11  | 13  | 10  | 8   | 9   | 9   | 8   | 4.6           | 14.4          |
| Dir    | 340                           | 349 | 323 | 259 | 315 | 145 | 160 | 142 | 152 | 116 | 73  | 23  | 23  | 27  | 8   | 351 | 3   | 6   | 5   | 9   | 345 | 340 | 341 | 334 | 12.3          | 3.0           |
| 9 Spd  | 8                             | 9   | 8   | 7   | 7   | 9   | 9   | 10  | 9   | 10  | 8   | 9   | 14  | 17  | 13  | 9   | 7   | 10  | 12  | 5   | 7   | 7   | 2   | 2   | 7.1           | 16.5          |
| Dir    | 328                           | 326 | 327 | 306 | 293 | 277 | 269 | 284 | 300 | 307 | 324 | 341 | 332 | 323 | 323 | 313 | 265 | 252 | 248 | 221 | 252 | 279 | 171 | 157 | 298.6         | 323.1         |
| 10 Spd | 2                             | 1   | 3   | 5   | 5   | 2   | 2   | 4   | 4   | 3   | 6   | 7   | 9   | 18  | 11  | 12  | 10  | 10  | 2   | 4   | 7   | 5   | 7   | 7   | 3.4           | 17.8          |
| Dir    | 287                           | 135 | 223 | 233 | 244 | 25  | 23  | 18  | 40  | 54  | 56  | 16  | 58  | 94  | 76  | 44  | 63  | 108 | 205 | 208 | 39  | 74  | 161 | 126 | 75.4          | 94.0          |
| 11 Spd | 10                            | 6   | 6   | 7   | 8   | 7   | 7   | 6   | 6   | 4   | 2   | 6   | 11  | 18  | 26  | 26  | 27  | 29  | 21  | 16  | 17  | 16  | 10  | 13  | 7.1           | 28.9          |
| Dir    | 113                           | 71  | 341 | 0   | 29  | 27  | 27  | 18  | 23  | 36  | 143 | 182 | 164 | 186 | 218 | 228 | 228 | 224 | 227 | 229 | 237 | 226 | 220 | 212 | 219.8         | 224.4         |
| 12 Spd | 14                            | 11  | 13  | 13  | 13  | 18  | 22  | 22  | 20  | 34  | 45  | 50  | 49  | 50  | 49  | 51  | 48  | 44  | 39  | 37  | 31  | 22  | 20  | 21  | 30.5          | 51.3          |
| Dir    | 214                           | 197 | 212 | 216 | 220 | 210 | 214 | 218 | 225 | 229 | 230 | 230 | 229 | 223 | 221 | 224 | 220 | 220 | 216 | 218 | 214 | 208 | 210 | 209 | 220.5         | 224.1         |
| 13 Spd | 22                            | 19  | 22  | 19  | 14  | 15  | 17  | 27  | 32  | 32  | 27  | 22  | 21  | 23  | 17  | 17  | 14  | 12  | 7   | 7   | 7   | 2   | 3   | 3   | 16.1          | 31.6          |
| Dir    | 211                           | 211 | 212 | 223 | 206 | 207 | 213 | 215 | 220 | 217 | 216 | 217 | 222 | 221 | 221 | 231 | 221 | 213 | 196 | 183 | 138 | 213 | 315 | 260 | 215.5         | 220.5         |
| 14 Spd | 5                             | 5   | 3   | 3   | 6   | 5   | 3   | 12  | 17  | 14  | 11  | 12  | 8   | 6   | 15  | 14  | 11  | 16  | 5   | 5   | 4   | 8   | 16  | 15  | 7.1           | 16.6          |
| Dir    | 230                           | 183 | 158 | 174 | 135 | 133 | 312 | 253 | 238 | 240 | 217 | 210 | 235 | 340 | 240 | 235 | 228 | 227 | 240 | 108 | 304 | 298 | 263 | 235 | 234.4         | 238.2         |
| 15 Spd | 14                            | 14  | 8   | 19  | 28  | 34  | 38  | 37  | 39  | 44  | 43  | 45  | 46  | 46  | 51  | 48  | 50  | 55  | 50  | 49  | 48  | 45  | 41  | 40  | 38.8          | 54.9          |
| Dir    | 230                           | 213 | 200 | 217 | 222 | 221 | 223 | 219 | 222 | 221 | 218 | 218 | 217 | 216 | 220 | 213 | 215 | 220 | 219 | 222 | 221 | 221 | 221 | 220 | 219.2         | 220.1         |
| 16 Spd | 38                            | 37  | 33  | 32  | 29  | 26  | 25  | 24  | 24  | 20  | 23  | 26  | 28  | 27  | 25  | 23  | 24  | 28  | 30  | 26  | 27  | 21  | 26  | 27  | 25.9          | 38.1          |
| Dir    | 222                           | 221 | 221 | 221 | 221 | 217 | 219 | 221 | 219 | 224 | 230 | 217 | 213 | 217 | 244 | 245 | 246 | 252 | 257 | 260 | 260 | 253 | 262 | 261 | 233.6         | 222.3         |
| 17 Spd | 29                            | 24  | 19  | 17  | 15  | 13  | 16  | 15  | 16  | 17  | 24  | 23  | 24  | 27  | 28  | 30  | 31  | 33  | 29  | 27  | 20  | 12  | 13  | 15  | 19.8          | 32.9          |
| Dir    | 262                           | 256 | 249 | 234 | 248 | 254 | 282 | 268 | 252 | 212 | 206 | 203 | 208 | 210 | 209 | 207 | 208 | 204 | 216 | 221 | 218 | 218 | 212 | 214 | 224.4         | 204.5         |
| 18 Spd | 13                            | 14  | 9   | 8   | 10  | 7   | 7   | 11  | 18  | 19  | 18  | 16  | 15  | 17  | 8   | 4   | 11  | 7   | 4   | 2   | 1   | 14  | 6   | 10  | 6.8           | 18.7          |
| Dir    | 224                           | 229 | 199 | 183 | 190 | 165 | 181 | 198 | 210 | 204 | 212 | 46  | 215 | 212 | 242 | 293 | 217 | 230 | 211 | 66  | 37  | 21  | 114 | 230 | 208.3         | 203.8         |
| 19 Spd | 15                            | 9   | 10  | 8   | 9   | 7   | 4   | 3   | 6   | 1   | 3   | 3   | 19  | 20  | 33  | 23  | 18  | 16  | 15  | 16  | 13  | 10  | 10  | 7   | 9.7           | 32.8          |
| Dir    | 230                           | 215 | 223 | 220 | 224 | 229 | 177 | 155 | 169 | 166 | 88  | 88  | 274 | 286 | 238 | 226 | 210 | 204 | 213 | 211 | 214 | 218 | 234 | 151 | 224.1         | 237.9         |
| 20 Spd | 7                             | 6   | 7   | 8   | 7   | 9   | 10  | 13  | 16  | 17  | 15  | 14  | 13  | 12  | 11  | 6   | 6   | 4   | 8   | 5   | 4   | 3   | 5   | 5   | 6.3           | 16.9          |
| Dir    | 178                           | 187 | 162 | 162 | 173 | 163 | 161 | 191 | 201 | 203 | 204 | 201 | 200 | 197 | 214 | 143 | 149 | 112 | 92  | 82  | 65  | 351 | 348 | 352 | 181.6         | 203.1         |
| 21 Spd | 5                             | 2   | 0   | 4   | 3   | 6   | 8   | 11  | 17  | 17  | 14  | 12  | 13  | 12  | 15  | 14  | 13  | 15  | 14  | 17  | 16  | 10  | 6   | 0   | 9.3           | 17.3          |
| Dir    | 88                            | 83  | 16  | 168 | 208 | 204 | 217 | 218 | 217 | 217 | 212 | 201 | 191 | 192 | 207 | 208 | 208 | 208 | 191 | 167 | 173 | 210 | 259 | 323 | 200.9         | 217.2         |
| 22 Spd | 3                             | 6   | 4   | 5   | 8   | 5   | 9   | 15  | 19  | 13  | 4   | 16  | 17  | 14  | 18  | 27  | 25  | 23  | 26  | 22  | 11  | 13  | 10  | 7   | 12.7          | 27.2          |
| Dir    | 244                           | 233 | 161 | 175 | 178 | 158 | 165 | 219 | 223 | 207 | 175 | 226 | 225 | 217 | 200 | 213 | 202 | 202 | 212 | 220 | 217 | 176 | 206 | 216 | 207.9         | 212.9         |



Peace Airshed Zone Association

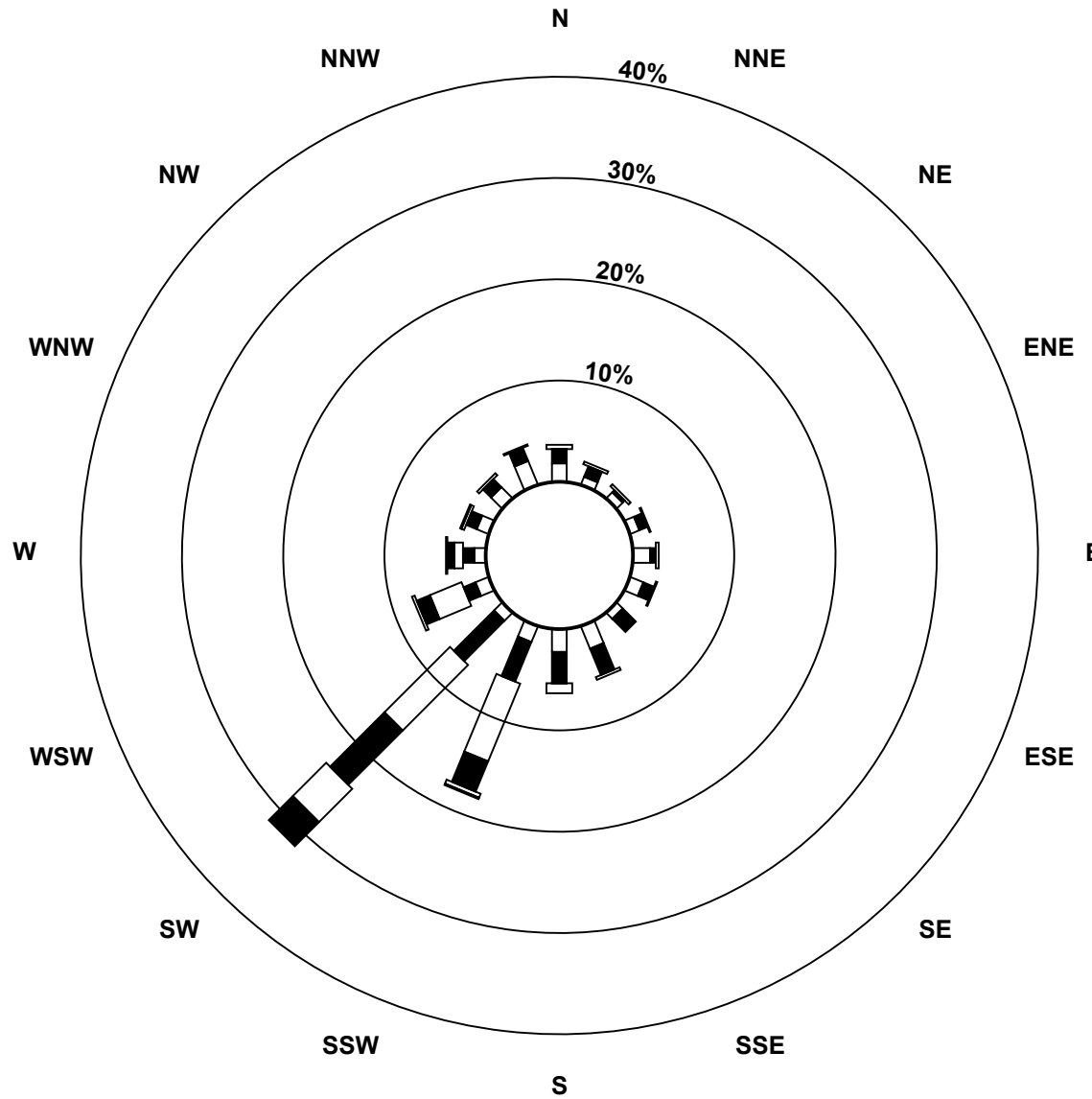
# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Smoky Heights - June 2016

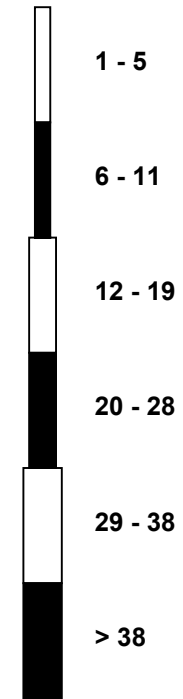
| Day  | Hourly Period Ending At (MST) |                    |          |          |          |       |       |       |       |       |       |       |       |       |       |       |       |  |       |       |       |       |       |                           | Daily Average   | Daily Maximum |
|--|-------------------------------|--------------------|----------|----------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|-------|-------|-------|-------|-------|---------------------------|-----------------|---------------|
|  | 1                             | 2                  | 3        | 4        | 5        | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18   | 19    | 20    | 21    | 22    | 23    | 24                        |                 |               |
| 23 Spd   | 6                             | 6                  | 4        | 7        | 5        | 5     | 6     | 4     | 6     | 4     | 4     | 2     | 7     | 5     | 5     | 3     | 7     | 9  | 13    | 10    | 5     | 4     | 6     | 4                         | 2.0             | 13.1          |
| Dir  | 215                           | 236                | 183      | 177      | 169      | 180   | 165   | 161   | 203   | 144   | 147   | 149   | 201   | 287   | 216   | 280   | 308   | 325  | 352   | 339   | 327   | 280   | 146   | 230                       | 230.2           | 352.4         |
| 24 Spd   | 5                             | 4                  | 3        | 2        | 1        | 2     | 2     | 6     | 5     | 6     | 10    | 6     | 5     | 4     | 25    | 17    | 13    | 5  | 8     | 8     | 8     | 9     | 11    | 4                         | 5.0             | 24.6          |
| Dir  | 246                           | 239                | 273      | 248      | 301      | 94    | 248   | 315   | 331   | 300   | 264   | 288   | 327   | 221   | 217   | 225   | 227   | 175  | 120   | 182   | 208   | 226   | 235   | 174                       | 232.3           | 216.6         |
| 25 Spd   | 7                             | 9                  | 13       | 13       | 8        | 4     | 8     | 13    | 14    | 20    | 20    | 19    | 20    | 19    | 20    | 24    | 17    | 16   | 15    | 15    | 11    | 15    | 11    | 9                         | 13.7            | 23.7          |
| Dir  | 192                           | 211                | 236      | 228      | 218      | 201   | 215   | 217   | 218   | 219   | 224   | 213   | 213   | 222   | 219   | 249   | 249   | 243  | 226   | 252   | 251   | 246   | 220   | 228                       | 227.4           | 249.2         |
| 26 Spd   | 5                             | 6                  | 10       | 14       | 11       | 13    | 11    | 13    | 23    | 24    | 23    | 21    | 20    | 20    | 21    | 20    | 17    | 15   | 14    | 10    | 11    | 12    | 12    | 14                        | 14.8            | 24.2          |
| Dir  | 197                           | 178                | 221      | 227      | 207      | 213   | 202   | 207   | 215   | 215   | 222   | 220   | 216   | 202   | 209   | 217   | 214   | 212  | 210   | 214   | 220   | 236   | 244   | 240                       | 216.0           | 215.4         |
| 27 Spd   | 14                            | 16                 | 6        | 5        | 6        | 7     | 9     | 8     | 10    | 10    | 8     | 10    | 12    | 12    | 9     | 9     | 4     | 2  | 4     | 4     | 2     | 2     | 6     | 7                         | 6.3             | 16.0          |
| Dir  | 238                           | 234                | 199      | 149      | 157      | 160   | 152   | 155   | 187   | 205   | 192   | 174   | 190   | 220   | 231   | 206   | 190   | 173  | 114   | 89    | 177   | 204   | 244   | 252                       | 197.3           | 234.4         |
| 28 Spd   | 2                             | 3                  | 1        | 3        | 3        | 1     | 1     | 4     | 3     | 5     | 4     | 3     | 2     | 6     | 4     | 4     | 4     | 3  | 5     | 3     | 1     | 3     | 3     | 4                         | 1.2             | 5.9           |
| Dir  | 269                           | 297                | 196      | 275      | 243      | 260   | 1     | 93    | 133   | 107   | 98    | 117   | 27    | 5     | 341   | 11    | 345   | 19   | 345   | 11    | 132   | 312   | 323   | 344                       | 2.8             | 5.2           |
| 29 Spd   | 1                             | 1                  | 1        | 1        | 7        | 2     | 2     | 6     | 5     | 3     | 3     | 2     | 5     | 8     | 13    | 12    | 15    | 17   | 4     | 5     | 1     | 5     | 3     | 4                         | 2.0             | 17.4          |
| Dir  | 324                           | 292                | 326      | 274      | 281      | 293   | 90    | 87    | 66    | 61    | 106   | 52    | 59    | 72    | 80    | 111   | 67    | 193  | 0     | 352   | 273   | 263   | 333   | 346                       | 70.1            | 192.6         |
| 30 Spd   | 4                             | 5                  | 4        | 4        | 4        | 7     | 6     | 5     | 7     | 8     | 12    | 21    | 18    | 14    | 22    | 18    | 12    | 9  | 7     | 7     | 7     | 5     | 2     | 1                         | 5.3             | 21.7          |
| Dir  | 340                           | 354                | 336      | 345      | 355      | 355   | 6     | 171   | 158   | 111   | 164   | 215   | 241   | 214   | 211   | 221   | 230   | 221  | 203   | 220   | 220   | 180   | 159   | 193                       | 216.4           | 211.2         |
| Spd  | 8.1                           | 7.5                | 6.5      | 7.5      | 6.7      | 6.7   | 7.2   | 9.7   | 12.4  | 12.7  | 12.6  | 12.2  | 13.8  | 13.4  | 16.3  | 15.1  | 14.0  | 13.9   | 11.6  | 10.3  | 8.8   | 7.8   | 7.7   | 7.6                       | Diurnal Average |               |
| Dir  | 231.1                         | 227.6              | 222.0    | 219.5    | 219.5    | 210.7 | 209.5 | 212.6 | 215.5 | 214.0 | 215.0 | 217.0 | 221.4 | 219.7 | 222.8 | 223.9 | 222.5 | 220.7  | 222.7 | 225.3 | 226.6 | 232.5 | 233.0 | 229.8                     | Diurnal Maximum |               |
| Spd  | 38.1                          | 37.4               | 33.5     | 31.9     | 29.2     | 33.9  | 38.3  | 37.0  | 39.4  | 43.9  | 44.9  | 50.1  | 49.0  | 49.9  | 51.0  | 51.3  | 49.7  | 54.9   | 50.2  | 49.4  | 48.0  | 44.6  | 40.7  | 40.0                      | Diurnal Maximum |               |
| Dir  | 222.3                         | 220.8              | 220.6    | 221.5    | 221.2    | 220.6 | 222.8 | 219.4 | 222.1 | 220.7 | 230.2 | 230.3 | 228.9 | 223.5 | 219.6 | 224.1 | 215.5 | 220.1  | 219.1 | 222.3 | 220.8 | 221.2 | 221.0 | 220.3                     | Diurnal Maximum |               |
| Maximum Speed Value: 55 km/h on Jun 15 18:00                                       |                               |                    |          |          |          |       |       |       |       |       |       |       |       |       |       |       |       | Minimum Speed Value: 0 km/h on Jun 22 00:00  |       |       |       |       |       | Hours in Service:         |                 | 720           |
| Maximum Daily Speed Average: 38.8 km/h on Jun 15                                   |                               |                    |          |          |          |       |       |       |       |       |       |       |       |       |       |       |       | Minimum Daily Speed Average: 1.2 km/h on Jun 28  |       |       |       |       |       | Hours of Data:            |                 | 720           |
| Maximum Diurnal Speed Average: 16.3 km/h at hour 15                                |                               |                    |          |          |          |       |       |       |       |       |       |       |       |       |       |       |       | Minimum Diurnal Speed Average: 6.5 km/h at hour 3  |       |       |       |       |       | Hours of Missing Data:    |                 | 0             |
| Monthly Average Velocity: 10.38 km/h 221.17 deg                                    |                               |                    |          |          |          |       |       |       |       |       |       |       |       |       |       |       |       | Speed Percentiles: P <sub>1</sub> = 0.9 P <sub>10</sub> = 3.3 Q <sub>1</sub> = 5.6 Median = 10.4 Q <sub>3</sub> = 17.9 P <sub>90</sub> = 27.7 P <sub>99</sub> = 49.6 |       |       |       |       |       | Percent Operational Time: |                 | 100.0         |
| All monthly, daily, and diurnal averages have been calculated using vector methods |                               |                    |          |          |          |       |       |       |       |       |       |       |       |       |       |       |       |  |       |       |       |       |       |                           |                 |               |
| Frequency Distribution   |                               |                    |          |          |          |       |       |       |       |       |       |       |       |       |       |       |       |  |       |       |       |       |       |                           |                 |               |
|  |                               | Speed Range (km/h) |          |          |          |       |       |       |       |       |       |       |       |       |       |       |       |  |       |       |       |       |       |                           |                 |               |
| Direction  | 0 to 5                        | 5 to 11            | 11 to 19 | 19 to 28 | 28 to 38 | > 38  | Total |       |       |       |       |       |       |       |       |       |       |  |       |       |       |       |       |                           |                 |               |
| North  | 28                            | 20                 | 5        | 0        | 0        | 0     | 53    |       |       |       |       |       |       |       |       |       |       |  |       |       |       |       |       |                           |                 |               |
| NorthEast  | 14                            | 11                 | 4        | 0        | 0        | 0     | 29    |       |       |       |       |       |       |       |       |       |       |  |       |       |       |       |       |                           |                 |               |
| East   | 20                            | 11                 | 3        | 0        | 0        | 0     | 34    |       |       |       |       |       |       |       |       |       |       |  |       |       |       |       |       |                           |                 |               |
| SouthEast  | 13                            | 29                 | 0        | 0        | 0        | 0     | 42    |       |       |       |       |       |       |       |       |       |       |  |       |       |       |       |       |                           |                 |               |
| South  | 27                            | 49                 | 27       | 3        | 0        | 0     | 106   |       |       |       |       |       |       |       |       |       |       |  |       |       |       |       |       |                           |                 |               |
| SouthWest  | 19                            | 56                 | 124      | 85       | 38       | 27    | 349   |       |       |       |       |       |       |       |       |       |       |  |       |       |       |       |       |                           |                 |               |
| West   | 17                            | 18                 | 16       | 11       | 2        | 0     | 64    |       |       |       |       |       |       |       |       |       |       |  |       |       |       |       |       |                           |                 |               |
| NorthWest  | 23                            | 17                 | 3        | 0        | 0        | 0     | 43    |       |       |       |       |       |       |       |       |       |       |  |       |       |       |       |       |                           |                 |               |
| Total  | 161                           | 211                | 182      | 99       | 40       | 27    | 720   |       |       |       |       |       |       |       |       |       |       |  |       |       |       |       |       |                           |                 |               |

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Smoky Heights - June 2016**



**Wind Speed Classes (km/h)**



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Smoky Heights - June 2016

| <b>Maximum Speed: 55 km/h on Jun 15 18:00</b>                                      |                               | <b>Maximum Daily Speed Average: 39.0 km/h on Jun 15</b>  |      | Hours in Service: 720<br>Hours of Data: 720<br>Hours of Missing Data: 0  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
|--|-------------------------------|--|------|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------|-----------------|--|
| <b>Minimum Speed: 1 km/h on Jun 29 03:00</b>                                       |                               | <b>Minimum Daily Speed Average: 3.9 km/h on Jun 28</b>   |      | Percentiles: P <sub>1</sub> = 1.9 P <sub>10</sub> = 4.1 Q <sub>1</sub> = 6.4 Median = 11.1 Q <sub>3</sub> = 18.3 P <sub>90</sub> = 27.9 P <sub>99</sub> = 49.9 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
| <b>Maximum Diurnal Speed Average: 20.5 km/h at hour 15</b>                         |                               | <b>Minimum Diurnal Speed Average: 9.0 km/h at hour 3</b> |      | <b>Percent Operational Time: 100.0</b>   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
| <b>Monthly Average Speed: 13.91 km/h</b>   |                               |  |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
| Day  | Hourly Period Ending At (MST) |  |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Daily Average | Daily Maximum   |  |
|  | 1                             | 2  | 3    | 4  | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |               |                 |  |
| 1-Jun  | 3                             | 5  | 5    | 12   | 9    | 6    | 7    | 7    | 6    | 7    | 10   | 13   | 10   | 16   | 21   | 18   | 15   | 9    | 8    | 8    | 6    | 8    | 10   | 6    | 9.4           | 20.7            |  |
| 2-Jun  | 5                             | 3  | 3    | 4  | 4    | 4    | 7    | 12   | 19   | 21   | 17   | 13   | 18   | 19   | 17   | 19   | 21   | 17   | 21   | 25   | 22   | 23   | 16   | 18   | 14.5          | 24.7            |  |
| 3-Jun  | 22                            | 22   | 19   | 20   | 12   | 12   | 16   | 25   | 31   | 33   | 28   | 32   | 31   | 29   | 33   | 34   | 32   | 33   | 33   | 30   | 21   | 15   | 14   | 16   | 24.7          | 34.1            |  |
| 4-Jun  | 14                            | 13   | 8    | 11   | 7    | 18   | 16   | 25   | 31   | 30   | 31   | 26   | 30   | 33   | 34   | 31   | 28   | 26   | 24   | 16   | 10   | 11   | 9    | 11   | 20.7          | 33.7            |  |
| 5-Jun  | 13                            | 15   | 16   | 16   | 16   | 8    | 6    | 7    | 6    | 5    | 5    | 5    | 7    | 7    | 9    | 8    | 8    | 7    | 5    | 5    | 4    | 5    | 5    | 3    | 8.0           | 16.3            |  |
| 6-Jun  | 3                             | 5  | 4    | 5  | 4    | 6    | 7    | 7    | 13   | 12   | 14   | 17   | 27   | 28   | 25   | 14   | 28   | 28   | 29   | 26   | 21   | 16   | 16   | 15   | 15.3          | 29.0            |  |
| 7-Jun  | 22                            | 14   | 9    | 10   | 8    | 12   | 17   | 17   | 19   | 19   | 19   | 20   | 19   | 13   | 11   | 9    | 7    | 8    | 6    | 5    | 3    | 2    | 4    | 5    | 11.5          | 22.4            |  |
| 8-Jun  | 5                             | 5  | 4    | 5  | 5    | 10   | 7    | 10   | 6    | 10   | 8    | 6    | 9    | 12   | 10   | 9    | 15   | 11   | 13   | 11   | 8    | 9    | 9    | 8    | 8.5           | 14.8            |  |
| 9-Jun  | 8                             | 9  | 9    | 7  | 7    | 9    | 9    | 11   | 9    | 10   | 8    | 9    | 14   | 17   | 13   | 9    | 7    | 10   | 12   | 7    | 8    | 7    | 5    | 3    | 9.1           | 16.7            |  |
| 10-Jun   | 2                             | 2  | 3    | 5  | 6    | 3    | 2    | 4    | 4    | 5    | 6    | 7    | 11   | 18   | 12   | 12   | 11   | 13   | 3    | 6    | 8    | 8    | 7    | 7    | 6.9           | 18.1            |  |
| 11-Jun   | 10                            | 7  | 6    | 7  | 8    | 7    | 7    | 6    | 6    | 5    | 3    | 7    | 14   | 18   | 26   | 27   | 27   | 29   | 21   | 16   | 17   | 16   | 10   | 13   | 13.1          | 29.0            |  |
| 12-Jun   | 15                            | 11   | 13   | 13   | 13   | 18   | 22   | 22   | 20   | 34   | 45   | 50   | 49   | 50   | 49   | 52   | 48   | 44   | 40   | 37   | 31   | 22   | 20   | 21   | 30.9          | 51.5            |  |
| 13-Jun   | 22                            | 20   | 22   | 19   | 14   | 15   | 17   | 27   | 32   | 32   | 27   | 23   | 22   | 23   | 18   | 17   | 14   | 13   | 8    | 7    | 7    | 2    | 4    | 8    | 17.2          | 31.9            |  |
| 14-Jun   | 6                             | 5  | 4    | 4  | 6    | 7    | 7    | 12   | 17   | 14   | 12   | 12   | 10   | 8    | 15   | 14   | 12   | 16   | 8    | 5    | 5    | 8    | 16   | 16   | 10.0          | 16.7            |  |
| 15-Jun   | 14                            | 14   | 8    | 20   | 29   | 34   | 38   | 37   | 40   | 44   | 43   | 45   | 46   | 46   | 51   | 48   | 50   | 55   | 50   | 50   | 48   | 45   | 41   | 40   | 39.0          | 55.0            |  |
| 16-Jun   | 38                            | 37   | 34   | 32   | 29   | 26   | 25   | 24   | 24   | 21   | 23   | 26   | 28   | 28   | 25   | 23   | 24   | 28   | 30   | 27   | 27   | 21   | 26   | 27   | 27.3          | 38.2            |  |
| 17-Jun   | 29                            | 24   | 19   | 17   | 15   | 13   | 17   | 15   | 16   | 18   | 24   | 23   | 24   | 27   | 28   | 30   | 31   | 33   | 29   | 27   | 20   | 12   | 13   | 15   | 21.7          | 33.1            |  |
| 18-Jun   | 13                            | 14   | 9    | 8  | 10   | 7    | 7    | 12   | 18   | 19   | 18   | 30   | 15   | 18   | 12   | 5    | 11   | 8    | 4    | 3    | 2    | 15   | 9    | 10   | 11.6          | 29.9            |  |
| 19-Jun   | 15                            | 9  | 10   | 8  | 9    | 7    | 4    | 3    | 7    | 4    | 5    | 5    | 20   | 21   | 33   | 23   | 18   | 16   | 15   | 16   | 13   | 10   | 10   | 7    | 12.0          | 33.3            |  |
| 20-Jun   | 7                             | 6  | 7    | 8  | 7    | 9    | 10   | 13   | 16   | 17   | 15   | 14   | 13   | 12   | 11   | 7    | 7    | 7    | 8    | 5    | 4    | 3    | 5    | 5    | 9.0           | 17.1            |  |
| 21-Jun   | 5                             | 2  | 2    | 5  | 5    | 6    | 8    | 11   | 17   | 17   | 14   | 13   | 14   | 12   | 16   | 15   | 14   | 15   | 15   | 17   | 16   | 11   | 7    | 6    | 10.9          | 17.5            |  |
| 22-Jun   | 4                             | 7  | 4    | 5  | 9    | 6    | 9    | 15   | 19   | 14   | 6    | 17   | 17   | 14   | 18   | 27   | 26   | 24   | 26   | 22   | 13   | 13   | 11   | 7    | 13.8          | 27.5            |  |
| 23-Jun   | 7                             | 6  | 5    | 7  | 5    | 5    | 6    | 5    | 7    | 5    | 5    | 5    | 7    | 7    | 7    | 5    | 8    | 9    | 15   | 10   | 5    | 4    | 6    | 6    | 6.5           | 15.5            |  |
| 24-Jun   | 6                             | 5  | 5    | 3  | 3    | 3    | 3    | 6    | 5    | 6    | 10   | 7    | 6    | 7    | 25   | 18   | 13   | 13   | 10   | 9    | 8    | 9    | 12   | 5    | 8.2           | 24.8            |  |
| 25-Jun   | 7                             | 10   | 13   | 13   | 9    | 5    | 8    | 13   | 14   | 20   | 20   | 19   | 20   | 19   | 20   | 25   | 17   | 17   | 15   | 16   | 11   | 15   | 11   | 9    | 14.4          | 24.7            |  |
| 26-Jun   | 6                             | 7  | 10   | 14   | 12   | 13   | 11   | 14   | 23   | 24   | 23   | 21   | 21   | 21   | 22   | 20   | 18   | 16   | 14   | 11   | 11   | 12   | 12   | 14   | 15.3          | 24.4            |  |
| 27-Jun   | 15                            | 16   | 9    | 6  | 6    | 7    | 9    | 8    | 11   | 11   | 9    | 10   | 12   | 12   | 10   | 9    | 6    | 4    | 4    | 4    | 2    | 3    | 6    | 7    | 8.2           | 16.1            |  |
| 28-Jun   | 3                             | 3  | 2    | 4  | 3    | 2    | 2    | 4    | 4    | 5    | 4    | 4    | 4    | 4    | 7    | 6    | 6    | 4    | 3    | 5    | 3    | 4    | 4    | 4    | 3.9           | 6.5             |  |
| 29-Jun   | 2                             | 2  | 1    | 3  | 7    | 3    | 2    | 6    | 5    | 4    | 4    | 3    | 6    | 10   | 14   | 12   | 15   | 19   | 9    | 6    | 3    | 5    | 4    | 5    | 6.2           | 19.3            |  |
| 30-Jun   | 5                             | 5  | 5    | 4  | 5    | 7    | 6    | 8    | 9    | 9    | 14   | 21   | 19   | 16   | 22   | 18   | 12   | 9    | 7    | 8    | 7    | 6    | 2    | 2    | 9.4           | 22.1            |  |
|  |                               | 10.8   | 10.1 | 9.0  | 9.8  | 9.4  | 9.6  | 10.4 | 12.9 | 15.1 | 15.9 | 15.7 | 16.8 | 18.0 | 18.9 | 20.5 | 18.9 | 18.2 | 18.0 | 16.2 | 14.5 | 12.3 | 11.4 | 10.8 | 10.6          | Diurnal Average |  |
|  |                               | 38.2   | 37.5 | 33.5   | 31.9 | 29.3 | 34.0 | 38.4 | 37.1 | 39.5 | 44.0 | 45.1 | 50.4 | 49.4 | 50.1 | 51.2 | 51.5 | 50.0 | 55.0 | 50.3 | 49.5 | 48.1 | 44.7 | 40.8 | 40.1          | Diurnal Maximum |  |
| All monthly, daily, and diurnal averages have been calculated using scalar methods |                               |  |      |  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |

# Hourly Standard Deviations

Wind Direction (WD) - deg  
Smoky Heights - June 2016

| Maximum Value: 95.0 deg on Jun 1 01:00   |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours in Service:         | 720   |               |
|--|-------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------------------|-------|---------------|
| Minimum Value: 2.3 deg on Jun 26 04:00   |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours of Data:            | 720   |               |
| Percentiles: P <sub>1</sub> = 3.0 P <sub>10</sub> = 4.8 Q <sub>1</sub> = 7.5 Median = 12.8 Q <sub>3</sub> = 26.5 P <sub>90</sub> = 51.9 P <sub>99</sub> = 87.4 |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours of Missing Data:    | 0     |               |
|  |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours of Calibration:     | 0     |               |
|  |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Percent Operational Time: | 100.0 |               |
| Day  | Hourly Period Ending At (MST) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                           |       | Daily Maximum |
|  | 1                             | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23                        | 24    |               |
| 1-Jun  | 95                            | 82   | 77   | 28   | 11   | 61   | 11   | 11   | 35   | 38   | 27   | 19   | 32   | 19   | 12   | 14   | 23   | 36   | 23   | 29   | 12   | 29   | 28                        | 35    | 95.0          |
| 2-Jun  | 13                            | 34   | 36   | 42   | 20   | 52   | 15   | 10   | 6    | 6    | 10   | 15   | 14   | 13   | 13   | 12   | 11   | 9    | 16   | 8    | 4    | 4    | 4                         | 5     | 52.1          |
| 3-Jun  | 5                             | 4    | 4    | 8    | 18   | 26   | 9    | 6    | 7    | 8    | 10   | 10   | 9    | 13   | 9    | 10   | 8    | 8    | 7    | 7    | 5    | 4    | 4                         | 7     | 25.9          |
| 4-Jun  | 13                            | 6    | 20   | 13   | 53   | 6    | 7    | 7    | 6    | 7    | 9    | 14   | 14   | 11   | 11   | 13   | 11   | 9    | 6    | 15   | 8    | 7    | 22                        | 10    | 52.8          |
| 5-Jun  | 5                             | 5    | 3    | 6    | 3    | 43   | 17   | 11   | 20   | 26   | 35   | 40   | 40   | 59   | 46   | 46   | 29   | 26   | 38   | 16   | 12   | 9    | 21                        | 80    | 79.6          |
| 6-Jun  | 48                            | 42   | 61   | 29   | 35   | 25   | 15   | 7    | 10   | 14   | 9    | 22   | 9    | 10   | 9    | 13   | 10   | 6    | 7    | 7    | 4    | 4    | 6                         | 5     | 60.7          |
| 7-Jun  | 3                             | 13   | 34   | 7    | 37   | 14   | 6    | 6    | 7    | 9    | 11   | 10   | 13   | 18   | 50   | 36   | 65   | 26   | 15   | 9    | 26   | 27   | 11                        | 9     | 65.4          |
| 8-Jun  | 19                            | 13   | 50   | 41   | 76   | 51   | 64   | 27   | 16   | 25   | 29   | 23   | 15   | 13   | 22   | 14   | 13   | 12   | 11   | 14   | 17   | 12   | 12                        | 8     | 76.2          |
| 9-Jun  | 9                             | 11   | 14   | 15   | 9    | 10   | 15   | 9    | 12   | 8    | 12   | 10   | 10   | 9    | 9    | 10   | 26   | 16   | 12   | 59   | 7    | 49   | 84                        | 33    | 83.9          |
| 10-Jun   | 53                            | 64   | 26   | 13   | 35   | 47   | 24   | 19   | 28   | 55   | 23   | 29   | 38   | 11   | 31   | 15   | 22   | 46   | 59   | 44   | 46   | 50   | 9                         | 15    | 64.1          |
| 11-Jun   | 7                             | 38   | 17   | 21   | 9    | 13   | 14   | 13   | 15   | 46   | 69   | 32   | 46   | 14   | 7    | 6    | 5    | 5    | 5    | 7    | 5    | 5    | 8                         | 4     | 69.1          |
| 12-Jun   | 7                             | 4    | 7    | 5    | 5    | 3    | 5    | 6    | 6    | 8    | 5    | 5    | 7    | 5    | 5    | 6    | 7    | 6    | 5    | 5    | 5    | 5    | 6                         | 6     | 8.1           |
| 13-Jun   | 5                             | 6    | 7    | 9    | 5    | 11   | 11   | 4    | 7    | 8    | 10   | 13   | 13   | 11   | 15   | 13   | 15   | 17   | 20   | 22   | 9    | 63   | 45                        | 65    | 64.5          |
| 14-Jun   | 13                            | 29   | 37   | 48   | 24   | 43   | 69   | 5    | 7    | 10   | 10   | 11   | 60   | 38   | 8    | 12   | 13   | 7    | 76   | 35   | 34   | 20   | 5                         | 21    | 76.1          |
| 15-Jun   | 15                            | 16   | 34   | 16   | 14   | 4    | 4    | 4    | 4    | 5    | 4    | 4    | 5    | 4    | 4    | 5    | 5    | 4    | 4    | 4    | 4    | 3    | 4                         | 3     | 33.9          |
| 16-Jun   | 3                             | 3    | 4    | 3    | 4    | 3    | 5    | 4    | 5    | 7    | 10   | 5    | 6    | 8    | 6    | 5    | 6    | 7    | 7    | 6    | 5    | 8    | 5                         | 6     | 10.2          |
| 17-Jun   | 4                             | 4    | 5    | 6    | 4    | 8    | 10   | 14   | 11   | 14   | 8    | 8    | 7    | 9    | 9    | 9    | 8    | 6    | 9    | 5    | 4    | 7    | 2                         | 4     | 14.3          |
| 18-Jun   | 5                             | 3    | 20   | 9    | 8    | 18   | 15   | 12   | 10   | 8    | 12   | 87   | 17   | 20   | 60   | 32   | 24   | 21   | 28   | 59   | 68   | 28   | 54                        | 12    | 86.5          |
| 19-Jun   | 9                             | 13   | 8    | 5    | 9    | 5    | 20   | 50   | 43   | 88   | 59   | 53   | 27   | 13   | 13   | 10   | 11   | 12   | 6    | 5    | 4    | 9    | 10                        | 22    | 88.0          |
| 20-Jun   | 8                             | 15   | 12   | 7    | 9    | 8    | 5    | 8    | 8    | 8    | 11   | 11   | 12   | 15   | 14   | 40   | 55   | 53   | 11   | 5    | 8    | 20   | 6                         | 17    | 54.9          |
| 21-Jun   | 22                            | 59   | 92   | 27   | 56   | 17   | 17   | 8    | 9    | 8    | 12   | 14   | 16   | 14   | 13   | 14   | 11   | 8    | 17   | 6    | 7    | 20   | 25                        | 92    | 92.2          |
| 22-Jun   | 53                            | 12   | 20   | 14   | 11   | 27   | 12   | 11   | 4    | 18   | 43   | 12   | 11   | 19   | 14   | 8    | 13   | 10   | 6    | 5    | 37   | 7    | 16                        | 11    | 52.9          |
| 23-Jun   | 36                            | 22   | 20   | 9    | 25   | 26   | 16   | 25   | 27   | 45   | 38   | 84   | 19   | 62   | 54   | 65   | 23   | 14   | 33   | 20   | 22   | 31   | 26                        | 41    | 83.7          |
| 24-Jun   | 24                            | 14   | 62   | 66   | 84   | 66   | 52   | 14   | 27   | 17   | 12   | 47   | 52   | 80   | 9    | 17   | 8    | 68   | 36   | 21   | 6    | 9    | 25                        | 47    | 83.5          |
| 25-Jun   | 15                            | 12   | 4    | 3    | 19   | 17   | 8    | 7    | 8    | 8    | 9    | 9    | 8    | 10   | 10   | 16   | 7    | 12   | 4    | 16   | 16   | 10   | 8                         | 4     | 18.8          |
| 26-Jun   | 33                            | 24   | 7    | 2    | 11   | 5    | 8    | 12   | 6    | 7    | 9    | 13   | 14   | 14   | 12   | 15   | 15   | 10   | 6    | 6    | 8    | 6    | 8                         | 4     | 32.9          |
| 27-Jun   | 3                             | 3    | 57   | 28   | 15   | 10   | 5    | 12   | 14   | 19   | 26   | 18   | 17   | 18   | 23   | 23   | 53   | 75   | 36   | 17   | 17   | 39   | 7                         | 3     | 75.3          |
| 28-Jun   | 55                            | 39   | 89   | 32   | 50   | 71   | 75   | 22   | 20   | 20   | 40   | 37   | 88   | 26   | 72   | 60   | 38   | 51   | 8    | 14   | 79   | 25   | 57                        | 22    | 88.8          |
| 29-Jun   | 73                            | 87   | 58   | 89   | 14   | 45   | 51   | 14   | 23   | 37   | 31   | 60   | 43   | 35   | 19   | 11   | 14   | 26   | 68   | 16   | 90   | 32   | 54                        | 47    | 89.5          |
| 30-Jun   | 23                            | 18   | 26   | 11   | 31   | 11   | 14   | 63   | 38   | 22   | 29   | 7    | 15   | 27   | 11   | 5    | 7    | 10   | 11   | 13   | 7    | 27   | 55                        | 76    | 76.1          |
|  | 95.0                          | 86.9 | 92.2 | 88.9 | 83.5 | 71.2 | 74.6 | 62.8 | 43.2 | 88.0 | 69.1 | 86.5 | 87.6 | 79.6 | 72.2 | 65.4 | 65.4 | 75.3 | 76.1 | 58.9 | 89.5 | 62.7 | 83.9                      | 91.7  |               |



PAZA

Beaverlodge Station

Monthly Summary Tables, Graphs and  
Roses

## Hourly Averages

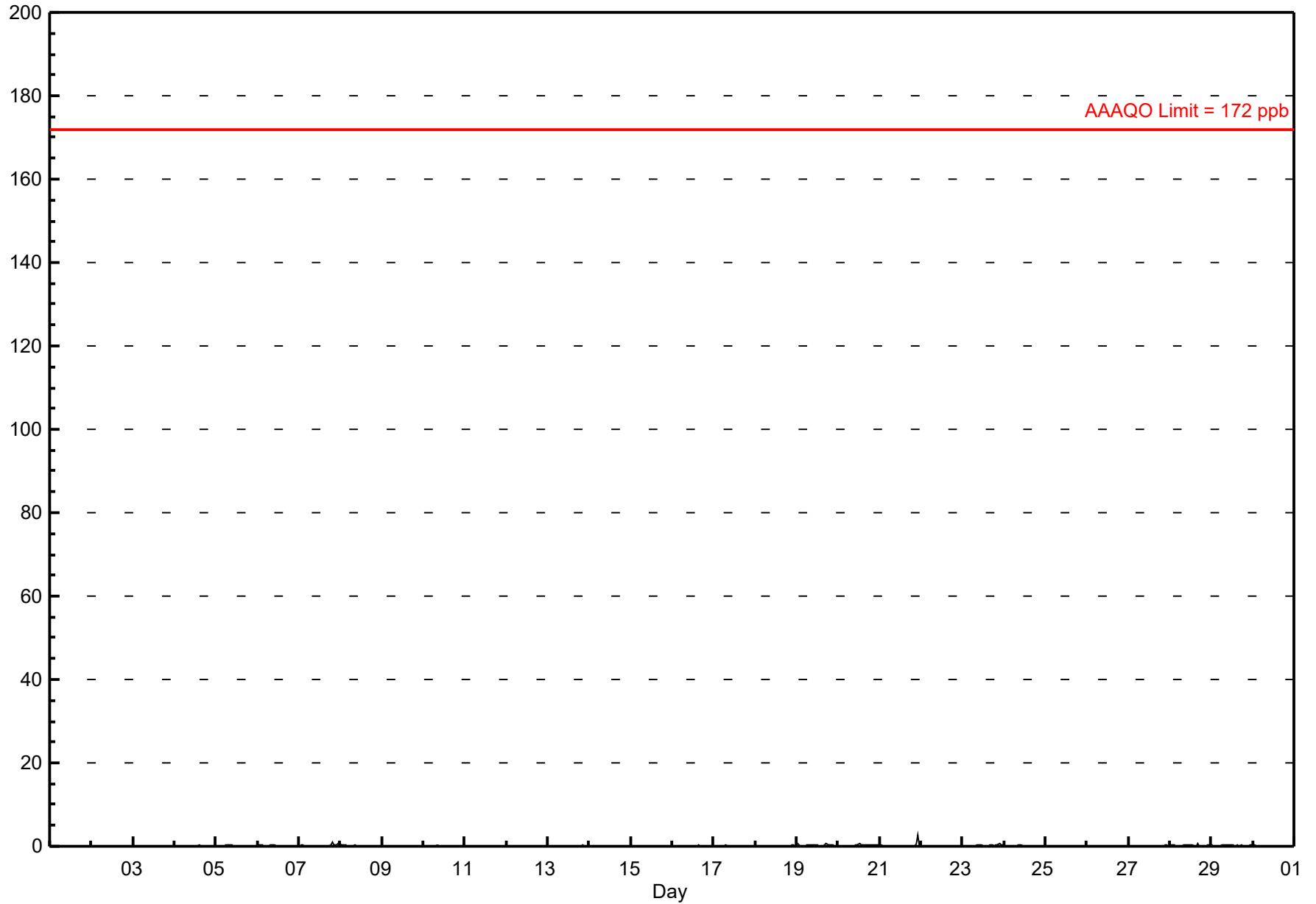
### Sulphur Dioxide (SO<sub>2</sub>) - ppb

### Beaverlodge - June 2016

| Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0  |                               |   |   |   |   |   |   |   |   |    |    | Hours in Service: 720  |    |    |    |    |    |               |    |    |    |    |    |                               |               |               |  |  |  |
|--|-------------------------------|---|---|---|---|---|---|---|---|----|----|--|----|----|----|----|----|---------------|----|----|----|----|----|-------------------------------|---------------|---------------|--|--|--|
| Maximum Value: 2.8 ppb on Jun 21 23:00   |                               |   |   |   |   |   |   |   |   |    |    | Maximum Daily Average: 0.2 ppb on Jun 20   |    |    |    |    |    |               |    |    |    |    |    |                               |               |               |  |  |  |
| Minimum Value: 0 ppb on Jun 1 17:00  |                               |   |   |   |   |   |   |   |   |    |    | Hours of Data: 683   |    |    |    |    |    |               |    |    |    |    |    |                               |               |               |  |  |  |
| Maximum Diurnal Average: 0.2 ppb at hour 23  |                               |   |   |   |   |   |   |   |   |    |    | Hours of Missing Data: 37  |    |    |    |    |    |               |    |    |    |    |    |                               |               |               |  |  |  |
| Monthly Average: 0.10 ppb  |                               |   |   |   |   |   |   |   |   |    |    | Hours of Calibration: 33   |    |    |    |    |    |               |    |    |    |    |    |                               |               |               |  |  |  |
| Minimum Daily Average: 0.0 ppb on Jun 12   |                               |   |   |   |   |   |   |   |   |    |    | Percent Operational Time: 99.4   |    |    |    |    |    |               |    |    |    |    |    |                               |               |               |  |  |  |
| Minimum Diurnal Average: 0.1 ppb at hour 6   |                               |   |   |   |   |   |   |   |   |    |    | Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.0 Q <sub>3</sub> = 0.1 P <sub>90</sub> = 0.2 P <sub>99</sub> = 0.6 |    |    |    |    |    |               |    |    |    |    |    |                               |               |               |  |  |  |
| Day  | Hourly Period Ending At (MST) |   |   |   |   |   |   |   |   |    |    |  |    |    |    |    |    |               |    |    |    |    |    |                               | Daily Average | Daily Maximum |  |  |  |
|  | 1                             | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12   | 13 | 14 | 15 | 16 | 17 | 18            | 19 | 20 | 21 | 22 | 23 | 24                            |               |               |  |  |  |
| 1-Jun  | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.0           | 0.1           |  |  |  |
| 2-Jun  | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.0           | 0.1           |  |  |  |
| 3-Jun  | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.0           | 0.0           |  |  |  |
| 4-Jun  | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.0           | 0.2           |  |  |  |
| 5-Jun  | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.1           | 0.2           |  |  |  |
| 6-Jun  | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.2           | 0.4           |  |  |  |
| 7-Jun  | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 1  | 0  | 0  | 1                             | 0.2           | 1.0           |  |  |  |
| 8-Jun  | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | C  | C  | C  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.1           | 0.3           |  |  |  |
| 9-Jun  | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.1           | 0.1           |  |  |  |
| 10-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.1           | 0.2           |  |  |  |
| 11-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.1           | 0.1           |  |  |  |
| 12-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | P  | P  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.0           | 0.0           |  |  |  |
| 13-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.1           | 0.3           |  |  |  |
| 14-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.1           | 0.1           |  |  |  |
| 15-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.0           | 0.0           |  |  |  |
| 16-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.1           | 0.2           |  |  |  |
| 17-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.0           | 0.2           |  |  |  |
| 18-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.1           | 0.3           |  |  |  |
| 19-Jun   | 1                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.2           | 0.6           |  |  |  |
| 20-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.2           | 0.6           |  |  |  |
| 21-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 1  | 3  | 0                             | 0.2           | 2.8           |  |  |  |
| 22-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | N  | N  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.0           | 0.1           |  |  |  |
| 23-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 1  | 0  | 0                             | 0.2           | 0.7           |  |  |  |
| 24-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.1           | 0.3           |  |  |  |
| 25-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.0           | 0.1           |  |  |  |
| 26-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.0           | 0.0           |  |  |  |
| 27-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.1           | 0.3           |  |  |  |
| 28-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.2           | 0.7           |  |  |  |
| 29-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.2           | 0.3           |  |  |  |
| 30-Jun   | 0                             | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0  | 0  | 0  | 0  | 0  | 0                             | 0.1           | 0.2           |  |  |  |
| 0.1 0.1 0.1 0.1 -- 0.1 |                               |   |   |   |   |   |   |   |   |    |    | Diurnal Average  |    |    |    |    |    |               |    |    |    |    |    |                               |               |               |  |  |  |
| 0.5 0.4 0.3 0.3 -- 0.2 0.2 0.2 0.3 0.4 0.4 0.5 0.6 0.4 0.4 0.5 0.7 0.6 0.4 0.9 0.4 0.7 2.8 1.0     |                               |   |   |   |   |   |   |   |   |    |    | Diurnal Maximum  |    |    |    |    |    |               |    |    |    |    |    |                               |               |               |  |  |  |
| C - Calibration  |                               |   |   |   |   |   |   |   |   |    |    | P - Power Failure  |    |    |    |    |    | N - Not Valid |    |    |    |    |    | A - Automated Daily Zero Span |               |               |  |  |  |
| Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb                                       |                               |   |   |   |   |   |   |   |   |    |    | 24-hr 48 ppb   |    |    |    |    |    | 30-day 11 ppb |    |    |    |    |    |                               |               |               |  |  |  |

### Hourly Averages

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Beaverlodge - June 2016



# Hourly Maximums

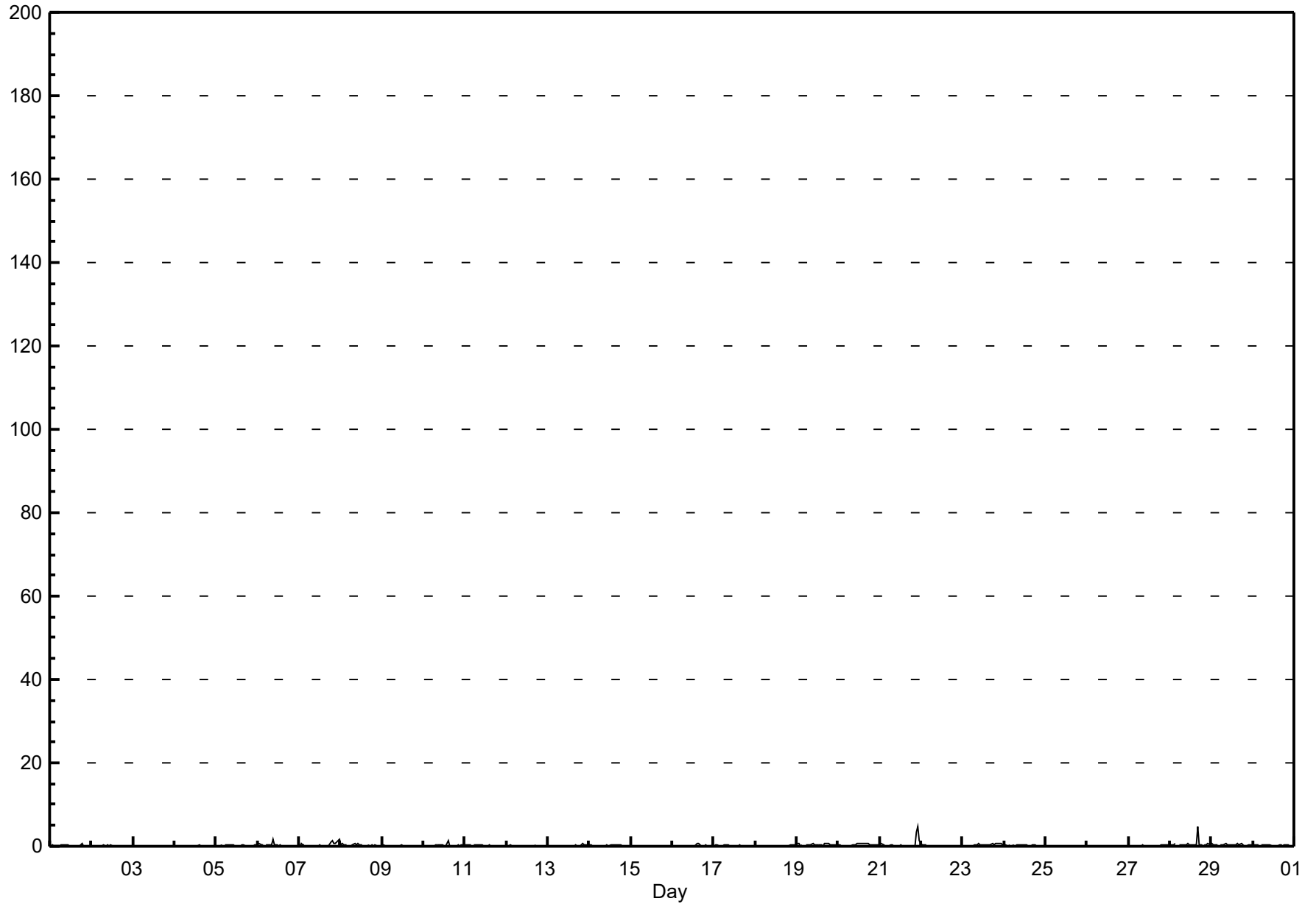
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Beaverlodge - June 2016

| Maximum Value: 4.6 ppb on Jun 21 23:00      |                               | Maximum Daily Average: 0.6 ppb on Jun 21   |     | Hours in Service: 720          |     |               |     |     |     |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |               |     |     |                 |     |                 |
|---|-------------------------------|--|-----|--------------------------------|-----|---------------|-----|-----|-----|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|---------------|-----|-----|-----------------|-----|-----------------|
| Minimum Value: 0 ppb on Jun 17 23:00        |                               | Minimum Daily Average: 0.1 ppb on Jun 26   |     | Hours of Data: 683             |     |               |     |     |     |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |               |     |     |                 |     |                 |
| Maximum Diurnal Average: 0.4 ppb at hour 23 |                               | Minimum Diurnal Average: 0.2 ppb at hour 6   |     | Hours of Missing Data: 37      |     |               |     |     |     |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |               |     |     |                 |     |                 |
| Monthly Average: 0.23 ppb                   |                               | Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.4 P <sub>99</sub> = 1.3 |     | Hours of Calibration: 33       |     |               |     |     |     |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |               |     |     |                 |     |                 |
|   |                               |  |     | Percent Operational Time: 99.4 |     |               |     |     |     |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |               |     |     |                 |     |                 |
| Day   | Hourly Period Ending At (MST) |  |     |                                |     |               |     |     |     |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Daily Average | Daily Maximum |     |     |                 |     |                 |
|   | 1                             | 2  | 3   | 4                              | 5   | 6             | 7   | 8   | 9   | 10                            | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |               |               |     |     |                 |     |                 |
| 1-Jun                                       | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.6           |     |     |                 |     |                 |
| 2-Jun                                       | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.2           |     |     |                 |     |                 |
| 3-Jun                                       | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.2           |     |     |                 |     |                 |
| 4-Jun                                       | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.4           |     |     |                 |     |                 |
| 5-Jun                                       | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.3           |     |     |                 |     |                 |
| 6-Jun                                       | 1                             | 1  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 2                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.3           | 1.6           |     |     |                 |     |                 |
| 7-Jun                                       | 0                             | 1  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 2   | 1   | 1   | 1   | 2   | 0.4           | 1.8           |     |     |                 |     |                 |
| 8-Jun                                       | 0                             | 1  | 0   | 0                              | A   | 0             | 0   | 0   | 1   | 0                             | 1   | 0   | 0   | C   | C   | C   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.3           | 0.7           |     |     |                 |     |                 |
| 9-Jun                                       | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.2           |     |     |                 |     |                 |
| 10-Jun                                      | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 1.3           |     |     |                 |     |                 |
| 11-Jun                                      | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.3           |     |     |                 |     |                 |
| 12-Jun                                      | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | P   | P   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.2           |     |     |                 |     |                 |
| 13-Jun                                      | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0.2           | 0.6           |     |     |                 |     |                 |
| 14-Jun                                      | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.4           |     |     |                 |     |                 |
| 15-Jun                                      | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.2           |     |     |                 |     |                 |
| 16-Jun                                      | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.6           |     |     |                 |     |                 |
| 17-Jun                                      | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.4           |     |     |                 |     |                 |
| 18-Jun                                      | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.5           |     |     |                 |     |                 |
| 19-Jun                                      | 1                             | 1  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 1                             | 0   | 0   | 1   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 0   | 0   | 0   | 0   | 0.4           | 0.8           |     |     |                 |     |                 |
| 20-Jun                                      | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0.3           | 0.7           |     |     |                 |     |                 |
| 21-Jun                                      | 0                             | 1  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 5   | 1   | 0.6           | 4.6           |     |     |                 |     |                 |
| 22-Jun                                      | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | N   | N   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.2           |     |     |                 |     |                 |
| 23-Jun                                      | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 1                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 1   | 1   | 1   | 0   | 0.3           | 0.8           |     |     |                 |     |                 |
| 24-Jun                                      | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.4           |     |     |                 |     |                 |
| 25-Jun                                      | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.2           |     |     |                 |     |                 |
| 26-Jun                                      | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.2           |     |     |                 |     |                 |
| 27-Jun                                      | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.4           |     |     |                 |     |                 |
| 28-Jun                                      | 0                             | 0  | 0   | 1                              | A   | 0             | 0   | 0   | 0   | 0                             | 1   | 0   | 0   | 0   | 0   | 0   | 5   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0.5           | 4.6           |     |     |                 |     |                 |
| 29-Jun                                      | 1                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 1   | 0                             | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0.4           | 0.6           |     |     |                 |     |                 |
| 30-Jun                                      | 0                             | 0  | 0   | 0                              | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.4           |     |     |                 |     |                 |
|   |                               | 0.2  | 0.2 | 0.2                            | 0.2 | --            | 0.2 | 0.2 | 0.2 | 0.2                           | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2           | 0.2           | 0.2 | 0.3 | 0.4             | 0.3 | Diurnal Average |
|   |                               | 0.8  | 0.7 | 0.4                            | 0.6 | --            | 0.3 | 0.3 | 0.4 | 0.6                           | 1.6 | 0.5 | 0.7 | 0.7 | 0.6 | 1.3 | 0.6 | 4.6 | 0.8 | 1.1 | 1.5 | 0.8 | 3.2 | 4.6 | 1.8           | 0.2           | 0.4 | 0.3 | Diurnal Maximum |     |                 |
| C - Calibration                             |                               | P - Power Failure  |     |                                |     | N - Not Valid |     |     |     | A - Automated Daily Zero Span |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |               |     |     |                 |     |                 |

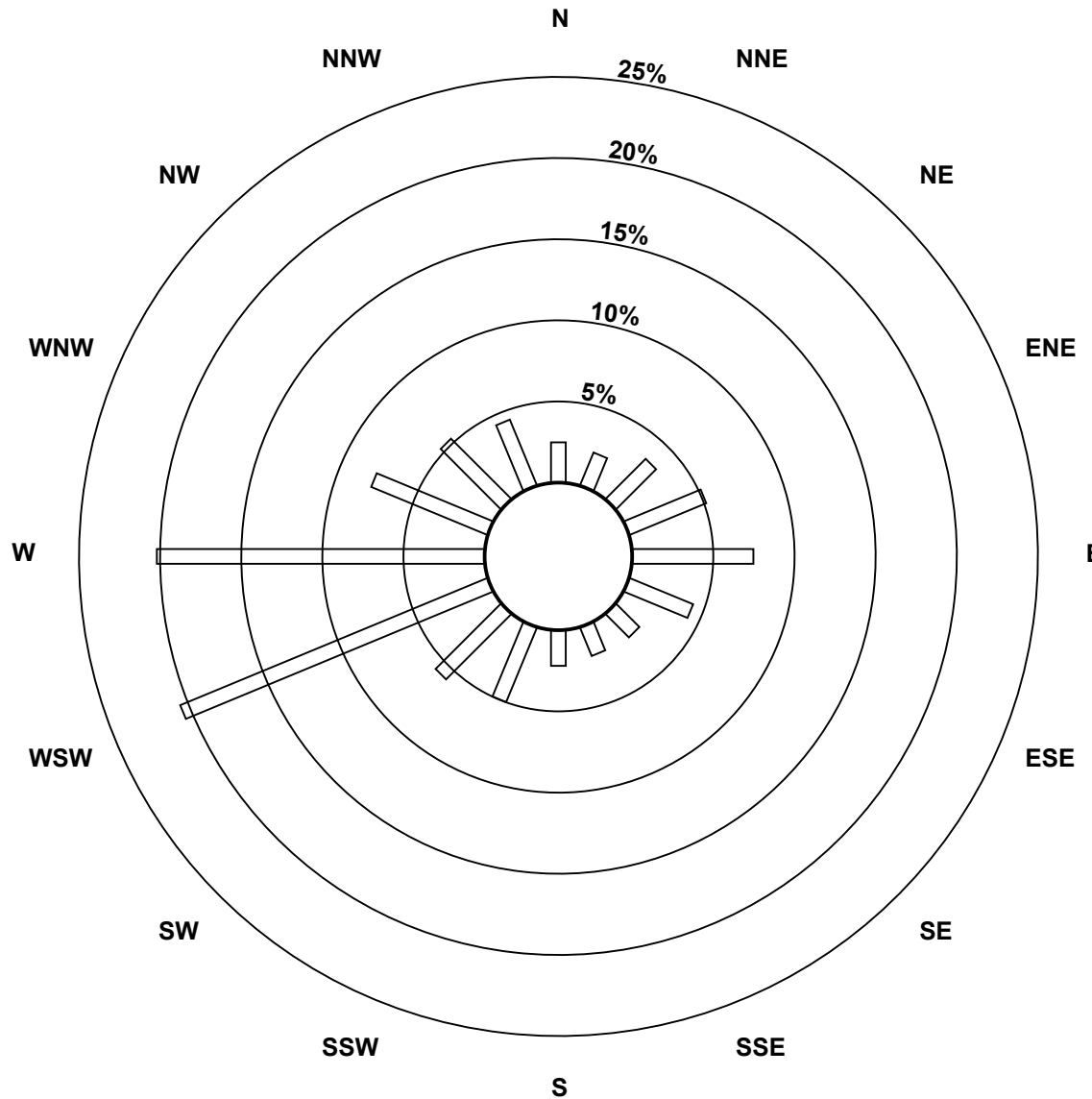
### Hourly Maximums

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Beaverlodge - June 2016

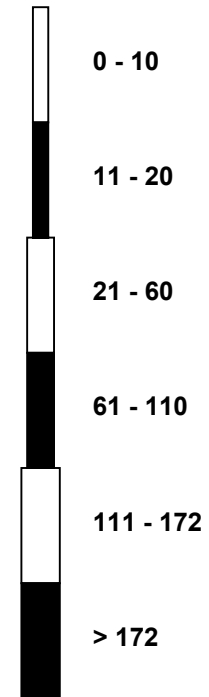


**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Beaverlodge - June 2016**

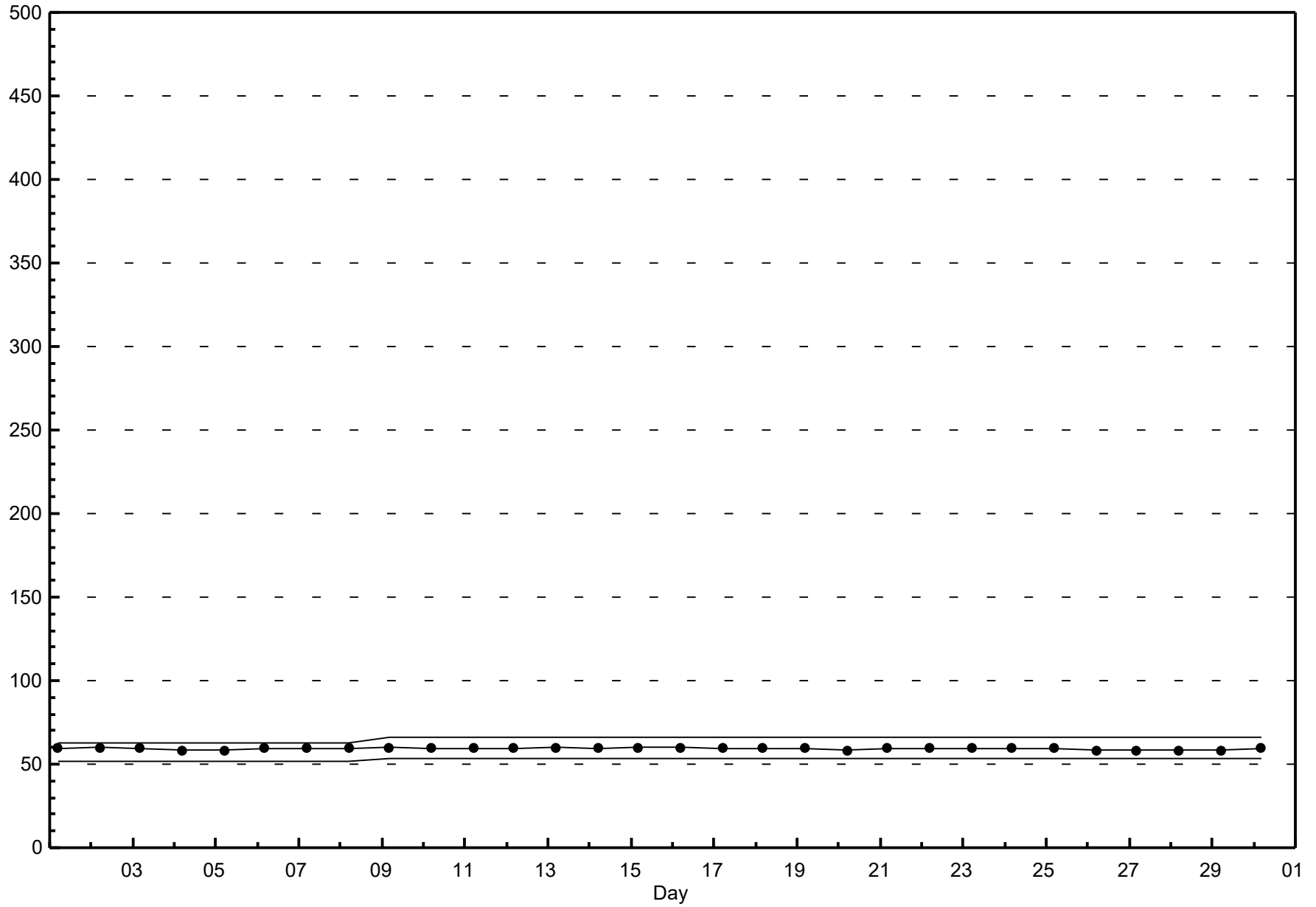


**Pollutant Classes (ppb)**



### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Beaverlodge - June 2016



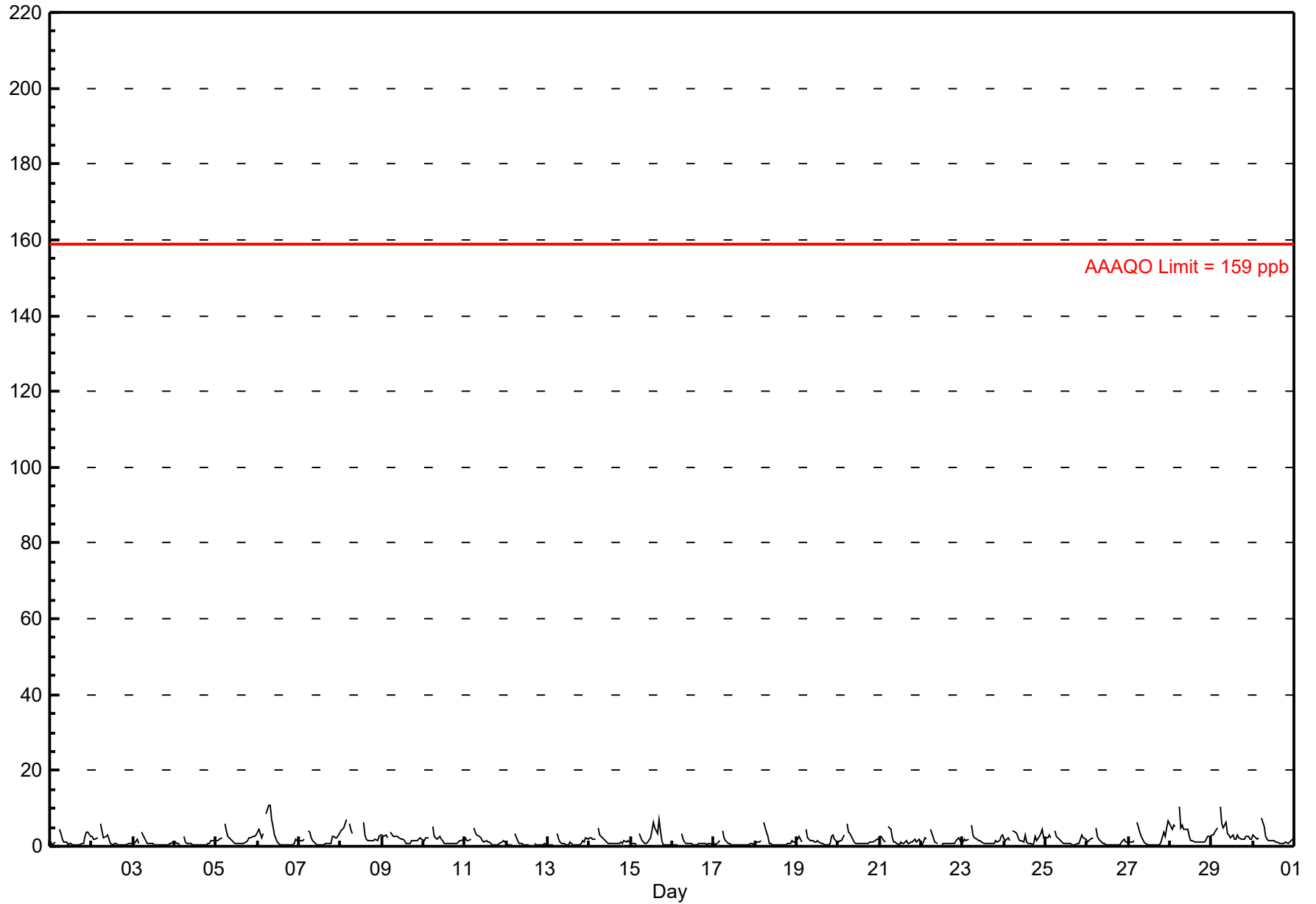
## Hourly Averages

Nitrogen Dioxide (NO<sub>2</sub>) - ppb

Beaverlodge - June 2016

| Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0<br>Maximum Value: 11.0 ppb on Jun 6 07:00      Maximum Daily Average: 3.4 ppb on Jun 29 |                               | Hours in Service: 720<br>Hours of Data: 681<br>Hours of Missing Data: 39<br>Hours of Calibration: 35<br>Percent Operational Time: 99.4  |   |   |   |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |                 |               |
|---|-------------------------------|---|---|---|---|----|----|----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------------|-----------------|---------------|
| Minimum Value: 0 ppb on Jun 12 20:00<br>Maximum Diurnal Average: 5.2 ppb at hour 6<br>Monthly Average: 1.69 ppb                         |                               | Minimum Daily Average: 0.7 ppb on Jun 12<br>Minimum Diurnal Average: 0.8 ppb at hour 18<br>Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.6 Median = 1.2 Q <sub>3</sub> = 2.2 P <sub>90</sub> = 3.7 P <sub>99</sub> = 7.2 |   |   |   |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |                 |               |
| Day   | Hourly Period Ending At (MST) |   |   |   |   |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 | Daily Average   | Daily Maximum |
|   | 1                             | 2   | 3 | 4 | 5 | 6  | 7  | 8  | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24              |                 |               |
| 1-Jun   | 1                             | 0   | 1 | 1 | A | 5  | 3  | 2  | 1 | 1  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 2  | 4  | 4  | 2  | 1.4             | 4.6             |               |
| 2-Jun   | 3                             | 2   | 2 | 2 | A | 6  | 4  | 2  | 3 | 3  | 2  | 1  | 1  | 1  | 0  | 0  | 0  | 0  | 1  | 1  | 1  | 1  | 1  | 1.6             | 5.8             |               |
| 3-Jun   | 1                             | 1   | 2 | 1 | A | 4  | 2  | 1  | 1 | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 1  | 1  | 0.9             | 3.8             |               |
| 4-Jun   | 1                             | 1   | 1 | 1 | A | 3  | 1  | 1  | 1 | 1  | 1  | 0  | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 1  | 1  | 2  | 2  | 1               | 0.8             | 2.8           |
| 5-Jun   | 1                             | 2   | 2 | 2 | A | 6  | 4  | 3  | 2 | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 3  | 3  | 3               | 1.9             | 5.9           |
| 6-Jun   | 4                             | 4   | 2 | 3 | A | 9  | 11 | 11 | 7 | 5  | 3  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 2  | 2               | 3.0             | 11.0          |
| 7-Jun   | 1                             | 1   | 1 | 2 | A | 4  | 4  | 2  | 1 | 1  | 1  | 0  | 0  | 0  | 0  | 1  | 1  | 1  | 1  | 3  | 2  | 2  | 2  | 3               | 1.6             | 4.2           |
| 8-Jun   | 4                             | 5   | 5 | 7 | A | 6  | 4  | 3  | C | C  | C  | C  | C  | 6  | 3  | 2  | 1  | 1  | 2  | 2  | 2  | 3  | 3  | 3               | 3.4             | 7.2           |
| 9-Jun   | 3                             | 2   | 3 | 2 | A | 4  | 3  | 2  | 3 | 2  | 2  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 2  | 2  | 2  | 2               | 2.0             | 3.7           |
| 10-Jun  | 1                             | 2   | 2 | 2 | A | 5  | 3  | 2  | 2 | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 2               | 1.6             | 5.1           |
| 11-Jun  | 2                             | 2   | 2 | 2 | A | 5  | 4  | 3  | 3 | 2  | 2  | 1  | 1  | 1  | 1  | 0  | 0  | 0  | 0  | 1  | 1  | 1  | 1  | 1               | 1.6             | 4.8           |
| 12-Jun  | 1                             | 1   | 0 | 1 | A | 3  | 1  | 1  | 1 | 1  | 1  | 0  | 0  | P  | P  | 1  | 0  | 0  | 0  | 0  | 0  | 1  | 0  | 0               | 0.7             | 3.2           |
| 13-Jun  | 0                             | 1   | 0 | 1 | A | 3  | 2  | 1  | 1 | 1  | 1  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 1  | 2  | 2  | 2               | 0.9             | 3.3           |
| 14-Jun  | 2                             | 2   | 2 | 2 | A | 5  | 3  | 2  | 2 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 1  | 1  | 1               | 1.5             | 4.9           |
| 15-Jun  | 1                             | 1   | 1 | 0 | A | 3  | 1  | 1  | 1 | 1  | 1  | 2  | 4  | 6  | 5  | 3  | 7  | 4  | 2  | 0  | 0  | 0  | 0  | 0               | 2.0             | 7.0           |
| 16-Jun  | 0                             | 0   | 0 | 0 | A | 3  | 2  | 1  | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 0               | 0.8             | 3.4           |
| 17-Jun  | 1                             | 0   | 1 | 2 | A | 4  | 2  | 2  | 1 | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 1  | 1               | 0.8             | 3.9           |
| 18-Jun  | 1                             | 1   | 1 | 2 | A | 6  | 4  | 3  | 1 | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 1  | 1  | 1               | 1.2             | 6.4           |
| 19-Jun  | 2                             | 3   | 2 | 1 | A | 5  | 2  | 2  | 2 | 2  | 1  | 1  | 2  | 1  | 1  | 1  | 0  | 0  | 0  | 1  | 3  | 3  | 2  | 1               | 1.6             | 4.6           |
| 20-Jun  | 1                             | 1   | 1 | 3 | A | 6  | 4  | 3  | 2 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 2               | 1.6             | 6.1           |
| 21-Jun  | 3                             | 3   | 1 | 1 | A | 5  | 4  | 2  | 1 | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 1  | 1  | 2               | 1.6             | 5.2           |
| 22-Jun  | 1                             | 1   | 2 | 2 | A | 4  | 4  | 2  | 1 | 1  | N  | N  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 1               | 1.4             | 4.3           |
| 23-Jun  | 1                             | 2   | 2 | 2 | A | 6  | 3  | 2  | 2 | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 3  | 3               | 1.7             | 5.6           |
| 24-Jun  | 2                             | 1   | 2 | 1 | A | 4  | 4  | 3  | 2 | 2  | 1  | 1  | 3  | 1  | 1  | 1  | 1  | 1  | 3  | 1  | 3  | 3  | 5  | 2               | 2.1             | 4.6           |
| 25-Jun  | 2                             | 2   | 3 | 2 | A | 4  | 3  | 2  | 2 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 3  | 2  | 2               | 1.6             | 4.2           |
| 26-Jun  | 1                             | 2   | 2 | 2 | A | 5  | 3  | 2  | 1 | 1  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 2  | 1  | 1               | 1.2             | 4.7           |
| 27-Jun  | 1                             | 1   | 1 | 2 | A | 6  | 4  | 2  | 2 | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 4  | 3  | 5  | 7  | 1.9             | 6.8             |               |
| 28-Jun  | 5                             | 4   | 6 | 5 | A | 11 | 5  | 6  | 5 | 4  | 4  | 3  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 3  | 3               | 3.3             | 10.6          |
| 29-Jun  | 3                             | 3   | 4 | 5 | A | 11 | 6  | 5  | 6 | 4  | 3  | 2  | 3  | 2  | 2  | 3  | 2  | 2  | 2  | 2  | 3  | 3  | 2  | 2               | 3.4             | 10.5          |
| 30-Jun  | 3                             | 2   | 2 | 2 | A | 7  | 5  | 3  | 2 | 2  | 1  | 1  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2               | 1.9             | 7.4           |
|   |                               |   |   |   |   |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Diurnal Average | Diurnal Maximum |               |
| C - Calibration      P - Power Failure      N - Not Valid      A - Automated Daily Zero Span  |                               |   |   |   |   |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |                 |               |
| Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb      24-hr 106 ppb   |                               |   |   |   |   |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |                 |               |





## Hourly Maximums

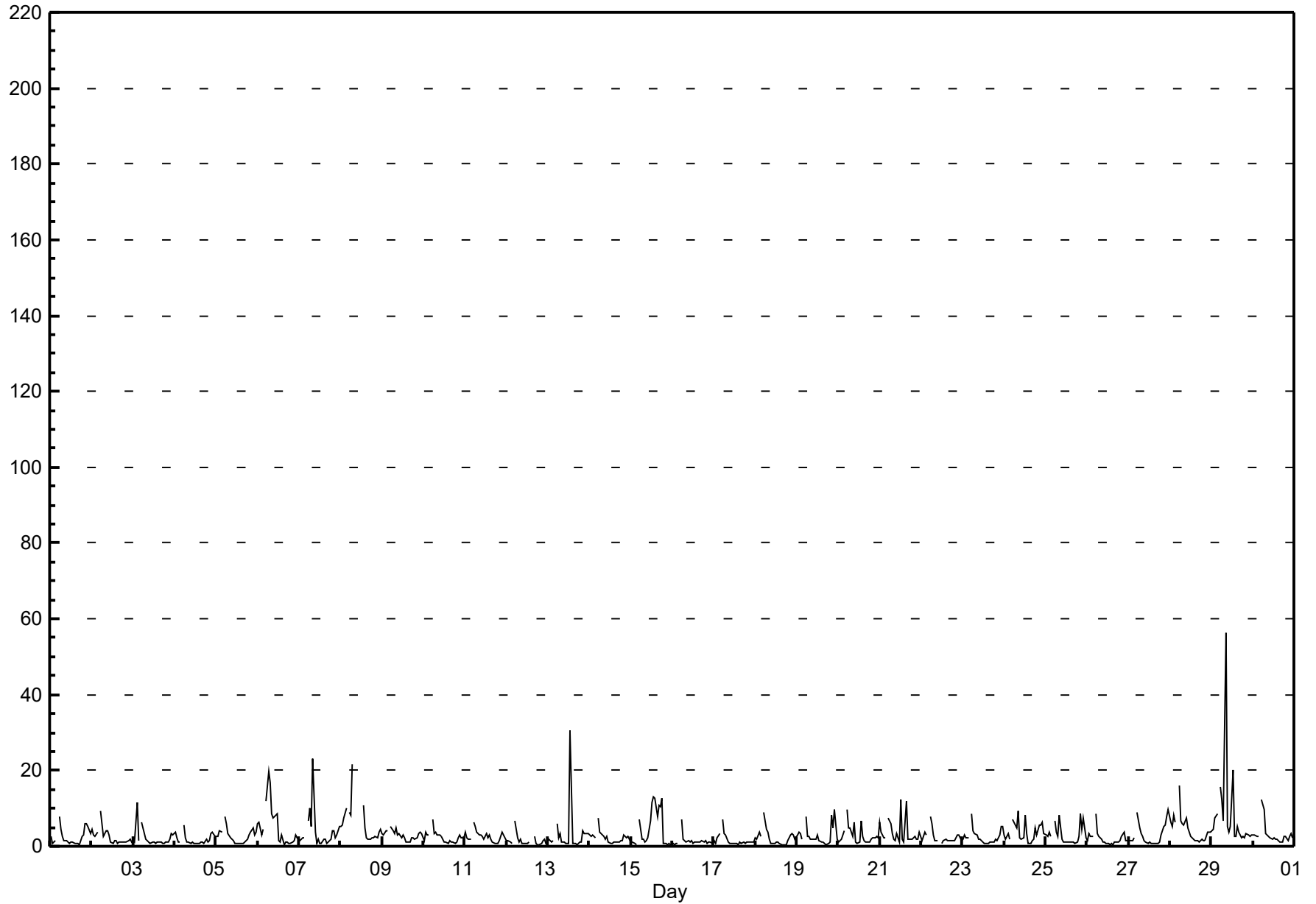
Nitrogen Dioxide (NO<sub>2</sub>) - ppb

Beaverlodge - June 2016

| Maximum Value: 56.2 ppb on Jun 29 09:00    |                               | Maximum Daily Average: 8.0 ppb on Jun 29  |     | Hours in Service: 720          |      |               |      |      |      |                               |     |     |     |      |      |      |      |      |      |      |     |     |     |     |               |                 |  |
|--|-------------------------------|---|-----|--------------------------------|------|---------------|------|------|------|-------------------------------|-----|-----|-----|------|------|------|------|------|------|------|-----|-----|-----|-----|---------------|-----------------|--|
| Minimum Value: 0 ppb on Jun 18 17:00       |                               | Minimum Daily Average: 1.3 ppb on Jun 16  |     | Hours of Data: 681             |      |               |      |      |      |                               |     |     |     |      |      |      |      |      |      |      |     |     |     |     |               |                 |  |
| Maximum Diurnal Average: 8.3 ppb at hour 6 |                               | Minimum Diurnal Average: 1.4 ppb at hour 18   |     | Hours of Missing Data: 39      |      |               |      |      |      |                               |     |     |     |      |      |      |      |      |      |      |     |     |     |     |               |                 |  |
| Monthly Average: 3.07 ppb                  |                               | Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 0.8 Q <sub>1</sub> = 1.1 Median = 2.0 Q <sub>3</sub> = 3.4 P <sub>90</sub> = 6.7 P <sub>99</sub> = 15.7 |     | Hours of Calibration: 35       |      |               |      |      |      |                               |     |     |     |      |      |      |      |      |      |      |     |     |     |     |               |                 |  |
|  |                               |   |     | Percent Operational Time: 99.4 |      |               |      |      |      |                               |     |     |     |      |      |      |      |      |      |      |     |     |     |     |               |                 |  |
| Day  | Hourly Period Ending At (MST) |   |     |                                |      |               |      |      |      |                               |     |     |     |      |      |      |      |      |      |      |     |     |     |     | Daily Average | Daily Maximum   |  |
|  | 1                             | 2   | 3   | 4                              | 5    | 6             | 7    | 8    | 9    | 10                            | 11  | 12  | 13  | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21  | 22  | 23  | 24  |               |                 |  |
| 1-Jun                                      | 3                             | 1   | 1   | 2                              | A    | 8             | 4    | 3    | 2    | 2                             | 1   | 1   | 1   | 1    | 1    | 1    | 1    | 1    | 3    | 3    | 6   | 6   | 5   | 3   | 2.5           | 7.7             |  |
| 2-Jun                                      | 5                             | 3   | 3   | 4                              | A    | 9             | 6    | 3    | 4    | 4                             | 3   | 1   | 1   | 1    | 2    | 1    | 1    | 1    | 1    | 1    | 1   | 2   | 2   | 1   | 2.6           | 9.3             |  |
| 3-Jun                                      | 2                             | 1   | 11  | 2                              | A    | 6             | 3    | 2    | 2    | 1                             | 1   | 1   | 1   | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1   | 2   | 3   | 3   | 2.1           | 11.4            |  |
| 4-Jun                                      | 4                             | 2   | 1   | 1                              | A    | 6             | 2    | 1    | 1    | 1                             | 1   | 1   | 1   | 1    | 1    | 1    | 1    | 1    | 2    | 1    | 1   | 3   | 4   | 3   | 1.8           | 5.6             |  |
| 5-Jun                                      | 3                             | 3   | 4   | 4                              | A    | 8             | 6    | 3    | 2    | 2                             | 1   | 1   | 1   | 1    | 1    | 1    | 1    | 1    | 2    | 3    | 4   | 5   | 3   | 4   | 2.7           | 8.0             |  |
| 6-Jun                                      | 6                             | 6   | 3   | 5                              | A    | 12            | 20   | 17   | 9    | 8                             | 8   | 8   | 2   | 1    | 3    | 0    | 1    | 1    | 1    | 1    | 1   | 2   | 3   | 2   | 5.1           | 19.8            |  |
| 7-Jun                                      | 2                             | 2   | 2   | 2                              | A    | 7             | 10   | 5    | 23   | 4                             | 1   | 2   | 1   | 1    | 2    | 2    | 1    | 1    | 2    | 4    | 4   | 2   | 3   | 5   | 3.8           | 23.0            |  |
| 8-Jun                                      | 5                             | 6   | 7   | 10                             | A    | 9             | 8    | 22   | C    | C                             | C   | C   | C   | 11   | 5    | 2    | 2    | 2    | 2    | 2    | 3   | 2   | 4   | 4   | 5.9           | 21.5            |  |
| 9-Jun                                      | 3                             | 3   | 4   | 4                              | A    | 5             | 4    | 3    | 5    | 3                             | 3   | 2   | 3   | 2    | 1    | 1    | 1    | 2    | 2    | 2    | 2   | 3   | 4   | 3   | 3.0           | 5.2             |  |
| 10-Jun                                     | 2                             | 4   | 3   | 3                              | A    | 7             | 3    | 4    | 3    | 3                             | 2   | 2   | 1   | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 2   | 3   | 2   | 2   | 2.3           | 7.2             |  |
| 11-Jun                                     | 4                             | 2   | 2   | 2                              | A    | 6             | 5    | 4    | 3    | 3                             | 3   | 2   | 3   | 2    | 3    | 2    | 1    | 1    | 1    | 1    | 1   | 4   | 3   | 2   | 2.6           | 6.4             |  |
| 12-Jun                                     | 1                             | 1   | 1   | 1                              | A    | 7             | 2    | 1    | 2    | 1                             | 1   | 1   | 1   | 1    | P    | P    | 3    | 1    | 1    | 1    | 1   | 1   | 2   | 1   | 1.5           | 6.8             |  |
| 13-Jun                                     | 2                             | 2   | 1   | 2                              | A    | 6             | 2    | 3    | 1    | 1                             | 1   | 1   | 1   | 31   | 1    | 1    | 1    | 0    | 1    | 1    | 4   | 3   | 3   | 3   | 3.2           | 30.8            |  |
| 14-Jun                                     | 3                             | 3   | 3   | 2                              | A    | 7             | 4    | 3    | 3    | 2                             | 3   | 1   | 1   | 1    | 1    | 1    | 1    | 1    | 2    | 1    | 3   | 2   | 3   | 2   | 2.3           | 7.3             |  |
| 15-Jun                                     | 1                             | 1   | 1   | 1                              | A    | 7             | 2    | 2    | 1    | 1                             | 2   | 7   | 12  | 13   | 12   | 8    | 11   | 10   | 13   | 1    | 1   | 1   | 1   | 0   | 4.7           | 12.9            |  |
| 16-Jun                                     | 1                             | 0   | 1   | 1                              | A    | 7             | 2    | 1    | 1    | 1                             | 1   | 1   | 1   | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1   | 1   | 1   | 1   | 1.3           | 7.0             |  |
| 17-Jun                                     | 1                             | 1   | 2   | 3                              | A    | 7             | 3    | 3    | 1    | 1                             | 1   | 1   | 1   | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1   | 1   | 1   | 1   | 1.6           | 7.0             |  |
| 18-Jun                                     | 2                             | 2   | 4   | 3                              | A    | 9             | 5    | 4    | 2    | 1                             | 1   | 1   | 1   | 1    | 0    | 0    | 1    | 1    | 2    | 3    | 3   | 3   | 2   | 2   | 2.1           | 9.1             |  |
| 19-Jun                                     | 3                             | 4   | 4   | 2                              | A    | 8             | 3    | 3    | 2    | 2                             | 2   | 2   | 3   | 2    | 1    | 1    | 1    | 1    | 1    | 1    | 8   | 5   | 10  | 2   | 2.9           | 9.6             |  |
| 20-Jun                                     | 1                             | 2   | 2   | 4                              | A    | 10            | 5    | 5    | 2    | 6                             | 1   | 1   | 1   | 7    | 2    | 1    | 1    | 1    | 1    | 2    | 2   | 2   | 3   | 2   | 2.8           | 9.9             |  |
| 21-Jun                                     | 6                             | 4   | 2   | 2                              | A    | 7             | 6    | 3    | 2    | 2                             | 3   | 1   | 12  | 2    | 1    | 12   | 2    | 2    | 2    | 2    | 3   | 2   | 2   | 4   | 3.7           | 12.2            |  |
| 22-Jun                                     | 2                             | 3   | 4   | 3                              | A    | 8             | 6    | 3    | 2    | 1                             | N   | N   | 1   | 2    | 2    | 1    | 1    | 1    | 2    | 2    | 2   | 3   | 3   | 1   | 2.5           | 7.9             |  |
| 23-Jun                                     | 2                             | 3   | 2   | 2                              | A    | 9             | 4    | 3    | 3    | 2                             | 2   | 1   | 1   | 1    | 1    | 1    | 1    | 1    | 2    | 1    | 3   | 5   | 5   | 2.5 | 8.6           |                 |  |
| 24-Jun                                     | 3                             | 2   | 3   | 2                              | A    | 7             | 6    | 5    | 9    | 2                             | 2   | 2   | 8   | 3    | 1    | 1    | 1    | 2    | 5    | 3    | 6   | 6   | 6   | 3   | 3.8           | 9.2             |  |
| 25-Jun                                     | 3                             | 3   | 4   | 3                              | A    | 7             | 4    | 3    | 8    | 2                             | 1   | 1   | 1   | 1    | 1    | 1    | 1    | 1    | 3    | 8    | 5   | 8   | 2   | 3.0 | 8.5           |                 |  |
| 26-Jun                                     | 2                             | 3   | 3   | 2                              | A    | 9             | 3    | 2    | 2    | 1                             | 1   | 1   | 1   | 1    | 1    | 1    | 1    | 1    | 2    | 3    | 4   | 2   | 1   | 2.0 | 8.5           |                 |  |
| 27-Jun                                     | 2                             | 2   | 1   | 2                              | A    | 9             | 5    | 3    | 3    | 1                             | 1   | 1   | 1   | 1    | 1    | 1    | 1    | 1    | 3    | 5    | 6   | 8   | 10  | 2.9 | 9.7           |                 |  |
| 28-Jun                                     | 7                             | 5   | 8   | 7                              | A    | 16            | 7    | 6    | 6    | 7                             | 5   | 4   | 3   | 2    | 1    | 1    | 2    | 1    | 2    | 2    | 1   | 3   | 4   | 4   | 4.4           | 15.9            |  |
| 29-Jun                                     | 4                             | 4   | 7   | 8                              | A    | 16            | 12   | 7    | 56   | 5                             | 4   | 5   | 20  | 2    | 3    | 5    | 4    | 2    | 3    | 2    | 3   | 3   | 3   | 3   | 8.0           | 56.2            |  |
| 30-Jun                                     | 3                             | 3   | 3   | 3                              | A    | 12            | 10   | 4    | 3    | 2                             | 2   | 2   | 2   | 2    | 2    | 1    | 1    | 1    | 3    | 3    | 2   | 3   | 3   | 2   | 3.1           | 12.2            |  |
|  |                               | 2.8   | 2.6 | 3.2                            | 3.0  | --            | 8.3  | 5.4  | 4.4  | 5.6                           | 2.5 | 2.1 | 1.9 | 2.9  | 3.2  | 1.8  | 1.8  | 1.5  | 1.4  | 1.9  | 1.8 | 2.9 | 3.0 | 3.5 | 2.8           | Diurnal Average |  |
|  |                               | 6.5   | 6.3 | 11.4                           | 10.2 | --            | 15.9 | 19.8 | 21.5 | 56.2                          | 7.6 | 7.8 | 8.5 | 20.3 | 30.8 | 12.5 | 12.0 | 10.6 | 10.3 | 12.6 | 4.0 | 8.5 | 6.1 | 9.6 | 9.7           | Diurnal Maximum |  |
| C - Calibration                            |                               | P - Power Failure   |     |                                |      | N - Not Valid |      |      |      | A - Automated Daily Zero Span |     |     |     |      |      |      |      |      |      |      |     |     |     |     |               |                 |  |

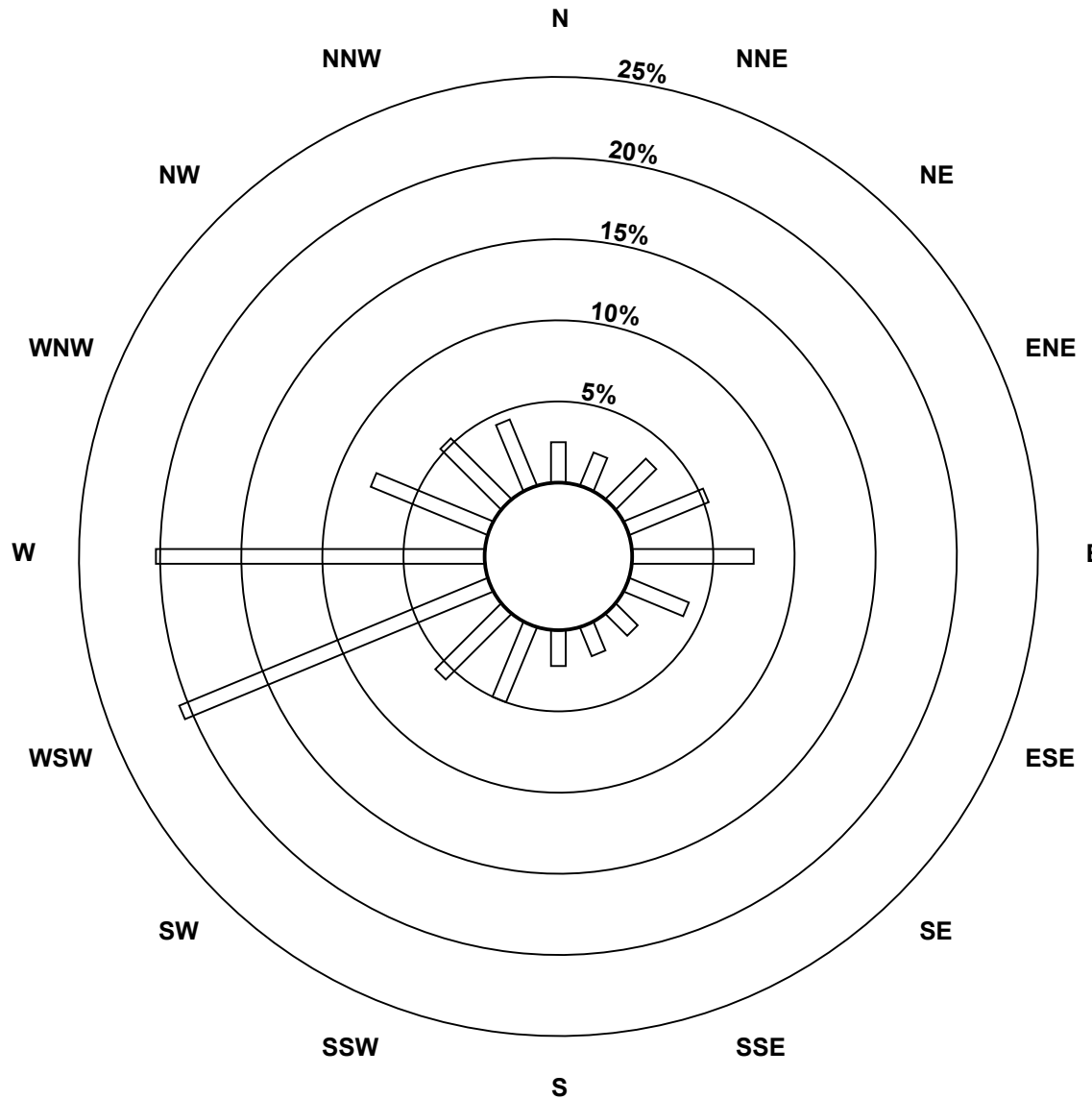
**Hourly Maximums**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Beaverlodge - June 2016**

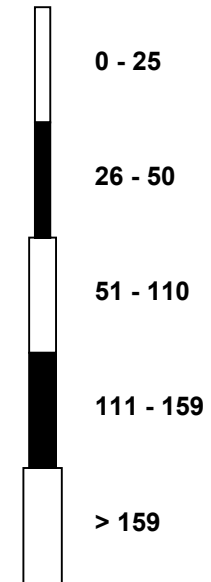


**Pollutant Rose**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Beaverlodge - June 2016**

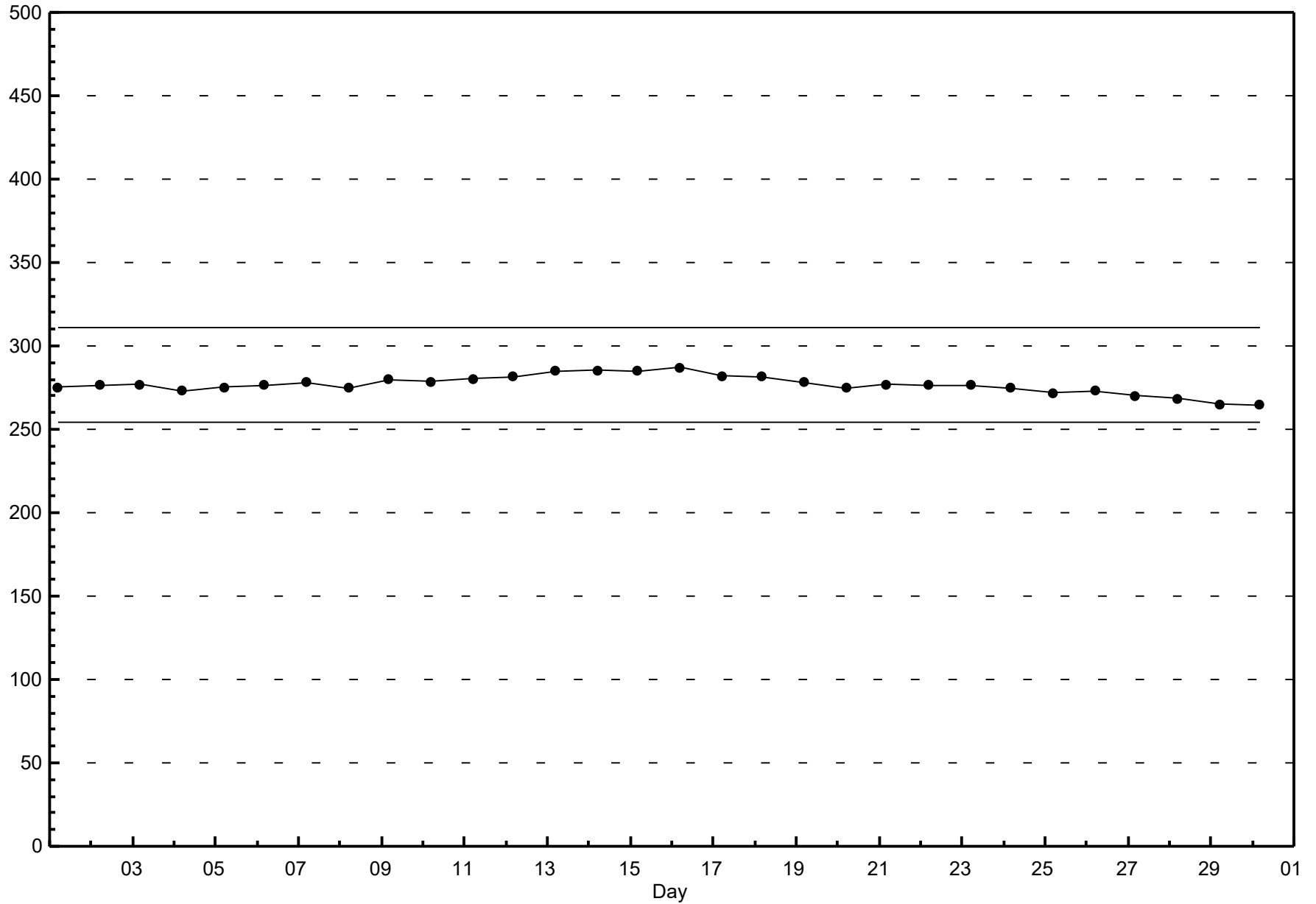


**Pollutant Classes (ppb)**



### Span Responses

**Nitrogen Dioxide (NO<sub>2</sub>)**  
**Beaverlodge - June 2016**



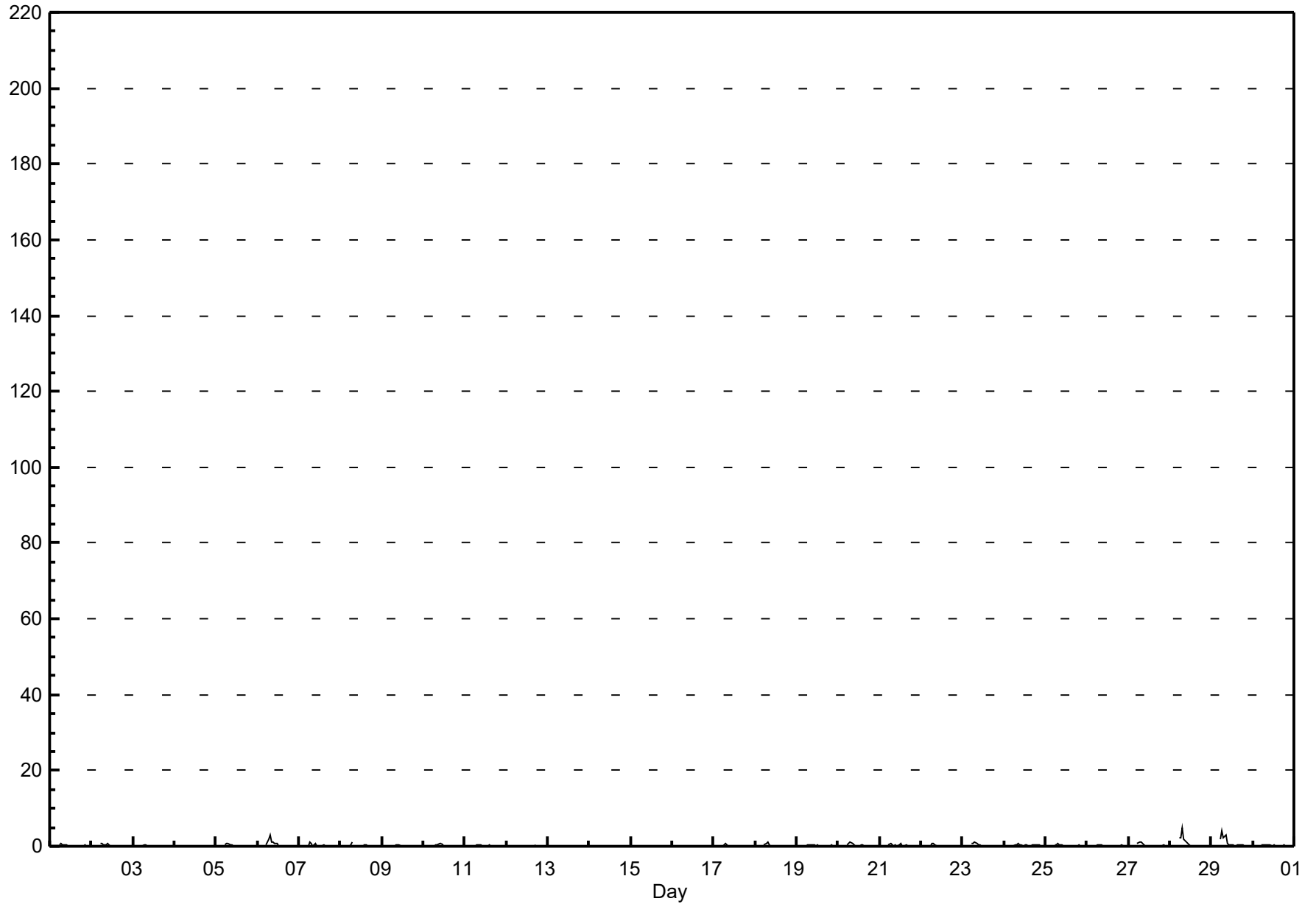
## Hourly Averages

**Nitrogen Oxide (NO) - ppb**  
**Beaverlodge - June 2016**

| Number of Exceedences (AAQO): 1-hr: 0 24-hr: 0<br>Maximum Value: 4.7 ppb on Jun 28 08:00 Maximum Daily Average: 0.6 ppb on Jun 29 |                               | Hours in Service: 720<br>Hours of Data: 681<br>Hours of Missing Data: 39<br>Hours of Calibration: 35<br>Percent Operational Time: 99.4   |     |     |     |               |     |     |     |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |
|---|-------------------------------|--|-----|-----|-----|---------------|-----|-----|-----|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|-----------------|--|
| Minimum Value: 0 ppb on Jun 7 01:00<br>Maximum Diurnal Average: 0.8 ppb at hour 8<br>Monthly Average: 0.19 ppb                    |                               | Minimum Daily Average: 0.0 ppb on Jun 13<br>Minimum Diurnal Average: 0.0 ppb at hour 4<br>Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.4 P <sub>99</sub> = 2.0 |     |     |     |               |     |     |     |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |
| Day   | Hourly Period Ending At (MST) |  |     |     |     |               |     |     |     |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Daily Average | Daily Maximum   |  |
|   | 1                             | 2  | 3   | 4   | 5   | 6             | 7   | 8   | 9   | 10                            | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |               |                 |  |
| 1-Jun   | 0                             | 0  | 0   | 0   | A   | 0             | 1   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.8             |  |
| 2-Jun   | 0                             | 0  | 0   | 0   | A   | 1             | 1   | 0   | 0   | 1                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.6             |  |
| 3-Jun   | 0                             | 0  | 0   | 0   | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.3             |  |
| 4-Jun   | 0                             | 0  | 0   | 0   | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.1             |  |
| 5-Jun   | 0                             | 0  | 0   | 0   | A   | 0             | 1   | 1   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.6             |  |
| 6-Jun   | 0                             | 0  | 0   | 0   | A   | 0             | 2   | 3   | 1   | 1                             | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.4           | 2.9             |  |
| 7-Jun   | 0                             | 0  | 0   | 0   | A   | 0             | 1   | 1   | 0   | 1                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 1.2             |  |
| 8-Jun   | 0                             | 0  | 0   | 0   | A   | 0             | 0   | 1   | C   | C                             | C   | C   | C   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 1.2             |  |
| 9-Jun   | 0                             | 0  | 0   | 0   | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.2             |  |
| 10-Jun  | 0                             | 0  | 0   | 0   | A   | 0             | 0   | 0   | 0   | 1                             | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.7             |  |
| 11-Jun  | 0                             | 0  | 0   | 0   | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.4             |  |
| 12-Jun  | 0                             | 0  | 0   | 0   | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | P   | P   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.3             |  |
| 13-Jun  | 0                             | 0  | 0   | 0   | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.0           | 0.1             |  |
| 14-Jun  | 0                             | 0  | 0   | 0   | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.1             |  |
| 15-Jun  | 0                             | 0  | 0   | 0   | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.2             |  |
| 16-Jun  | 0                             | 0  | 0   | 0   | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.2             |  |
| 17-Jun  | 0                             | 0  | 0   | 0   | A   | 0             | 0   | 1   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.6             |  |
| 18-Jun  | 0                             | 0  | 0   | 0   | A   | 0             | 1   | 1   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 1.0             |  |
| 19-Jun  | 0                             | 0  | 0   | 0   | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.3             |  |
| 20-Jun  | 0                             | 0  | 0   | 0   | A   | 0             | 1   | 1   | 1   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 1.2             |  |
| 21-Jun  | 0                             | 0  | 0   | 0   | A   | 0             | 1   | 0   | 0   | 0                             | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.7             |  |
| 22-Jun  | 0                             | 0  | 0   | 0   | A   | 0             | 1   | 1   | 0   | 0                             | N   | N   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.6             |  |
| 23-Jun  | 0                             | 0  | 0   | 0   | A   | 1             | 1   | 1   | 1   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 1.0             |  |
| 24-Jun  | 0                             | 0  | 0   | 0   | A   | 0             | 0   | 0   | 1   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.9             |  |
| 25-Jun  | 0                             | 0  | 0   | 0   | A   | 0             | 0   | 1   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.7             |  |
| 26-Jun  | 0                             | 0  | 0   | 0   | A   | 0             | 0   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.1           | 0.5             |  |
| 27-Jun  | 0                             | 0  | 0   | 0   | A   | 1             | 1   | 1   | 1   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 1.1             |  |
| 28-Jun  | 0                             | 0  | 0   | 0   | A   | 2             | 2   | 5   | 2   | 1                             | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.6           | 4.7             |  |
| 29-Jun  | 0                             | 0  | 0   | 0   | A   | 2             | 4   | 2   | 3   | 1                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.6           | 4.3             |  |
| 30-Jun  | 0                             | 0  | 0   | 0   | A   | 0             | 1   | 0   | 0   | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.2           | 0.5             |  |
|   |                               | 0.0  | 0.0 | 0.0 | 0.0 | --            | 0.3 | 0.7 | 0.8 | 0.5                           | 0.3 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1           | Diurnal Average |  |
|   |                               | 0.1  | 0.1 | 0.1 | 0.1 | --            | 2.1 | 4.3 | 4.7 | 3.0                           | 1.1 | 0.9 | 0.7 | 0.7 | 0.2 | 0.3 | 0.2 | 0.5 | 0.2 | 0.5 | 0.2 | 0.4 | 0.2 | 0.1 | 0.1           | Diurnal Maximum |  |
| C - Calibration   |                               | P - Power Failure  |     |     |     | N - Not Valid |     |     |     | A - Automated Daily Zero Span |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |                 |  |

**Hourly Averages**

**Nitrogen Oxide (NO) - ppb**  
**Beaverlodge - June 2016**



## Hourly Maximums

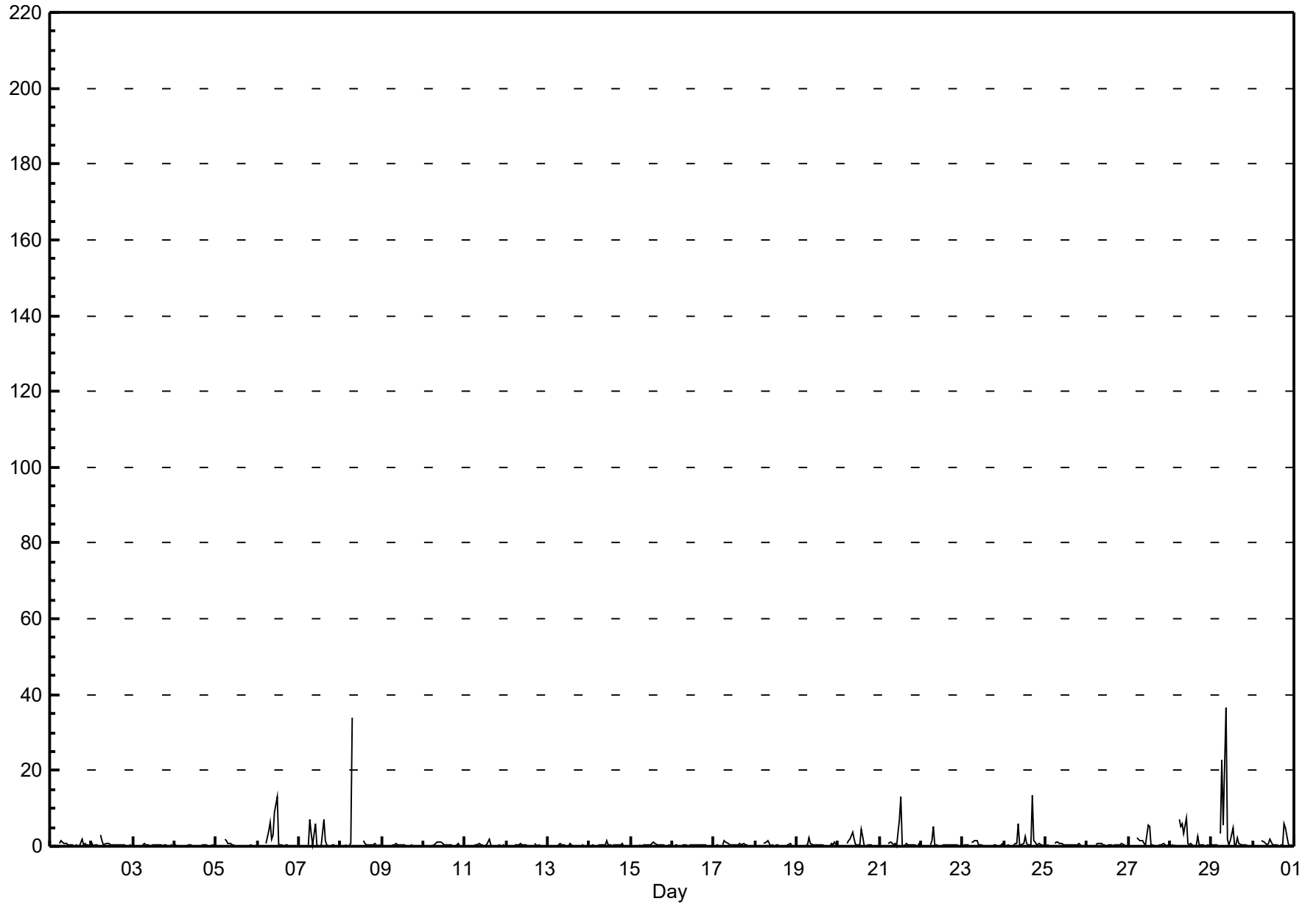
## Nitrogen Oxide (NO) - ppb Beaverlodge - June 2016

| Maximum Value: 36.6 ppb on Jun 29 09:00    |                               | Maximum Daily Average: 3.6 ppb on Jun 29   |     | Hours in Service: 720          |                   |    |     |      |      |               |     |     |      |      |                               |     |     |      |     |     |     |     |     |     |                 |                 |  |
|--|-------------------------------|--|-----|--------------------------------|-------------------|----|-----|------|------|---------------|-----|-----|------|------|-------------------------------|-----|-----|------|-----|-----|-----|-----|-----|-----|-----------------|-----------------|--|
| Minimum Value: 0 ppb on Jun 13 01:00       |                               | Minimum Daily Average: 0.2 ppb on Jun 4  |     | Hours of Data: 681             |                   |    |     |      |      |               |     |     |      |      |                               |     |     |      |     |     |     |     |     |     |                 |                 |  |
| Maximum Diurnal Average: 2.7 ppb at hour 8 |                               | Minimum Diurnal Average: 0.2 ppb at hour 2   |     | Hours of Missing Data: 39      |                   |    |     |      |      |               |     |     |      |      |                               |     |     |      |     |     |     |     |     |     |                 |                 |  |
| Monthly Average: 0.75 ppb                  |                               | Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.1 Median = 0.3 Q <sub>3</sub> = 0.4 P <sub>90</sub> = 1.0 P <sub>99</sub> = 7.5 |     | Hours of Calibration: 35       |                   |    |     |      |      |               |     |     |      |      |                               |     |     |      |     |     |     |     |     |     |                 |                 |  |
|  |                               |  |     | Percent Operational Time: 99.4 |                   |    |     |      |      |               |     |     |      |      |                               |     |     |      |     |     |     |     |     |     |                 |                 |  |
| Day  | Hourly Period Ending At (MST) |  |     |                                |                   |    |     |      |      |               |     |     |      |      |                               |     |     |      |     |     |     |     |     |     | Daily Average   | Daily Maximum   |  |
|  | 1                             | 2  | 3   | 4                              | 5                 | 6  | 7   | 8    | 9    | 10            | 11  | 12  | 13   | 14   | 15                            | 16  | 17  | 18   | 19  | 20  | 21  | 22  | 23  | 24  |                 |                 |  |
| 1-Jun                                      | 0                             | 0  | 0   | 0                              | A                 | 1  | 1   | 1    | 1    | 1             | 1   | 0   | 0    | 0    | 0                             | 0   | 0   | 0    | 2   | 0   | 1   | 0   | 0   | 0   | 0.5             | 2.1             |  |
| 2-Jun                                      | 1                             | 0  | 0   | 0                              | A                 | 3  | 1   | 0    | 1    | 1             | 1   | 0   | 0    | 0    | 0                             | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0.5             | 2.9             |  |
| 3-Jun                                      | 0                             | 0  | 0   | 0                              | A                 | 0  | 1   | 0    | 0    | 0             | 0   | 0   | 0    | 0    | 0                             | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0.3             | 0.6             |  |
| 4-Jun                                      | 0                             | 0  | 0   | 0                              | A                 | 0  | 0   | 0    | 0    | 0             | 0   | 0   | 0    | 0    | 0                             | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0.2             | 0.3             |  |
| 5-Jun                                      | 0                             | 0  | 0   | 0                              | A                 | 2  | 1   | 1    | 1    | 0             | 0   | 0   | 0    | 0    | 0                             | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0.3             | 2.0             |  |
| 6-Jun                                      | 0                             | 0  | 0   | 0                              | A                 | 1  | 4   | 6    | 2    | 3             | 9   | 13  | 0    | 0    | 0                             | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 1.8             | 13.1            |  |
| 7-Jun                                      | 0                             | 0  | 0   | 0                              | A                 | 0  | 7   | 4    | 1    | 6             | 0   | 0   | 0    | 0    | 7                             | 2   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 1.2             | 7.2             |  |
| 8-Jun                                      | 0                             | 0  | 0   | 0                              | A                 | 0  | 1   | 34   | C    | C             | C   | C   | C    | 2    | 1                             | 0   | 0   | 0    | 0   | 0   | 1   | 0   | 0   | 0   | 2.2             | 33.8            |  |
| 9-Jun                                      | 0                             | 0  | 0   | 0                              | A                 | 0  | 0   | 0    | 1    | 0             | 0   | 0   | 0    | 0    | 0                             | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0.2             | 0.6             |  |
| 10-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 0  | 0   | 1    | 1    | 1             | 1   | 1   | 0    | 0    | 0                             | 0   | 0   | 0    | 0   | 0   | 0   | 1   | 0   | 0   | 0.4             | 1.1             |  |
| 11-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 0  | 0   | 0    | 1    | 0             | 0   | 0   | 0    | 1    | 2                             | 1   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0.3             | 1.8             |  |
| 12-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 0  | 1   | 0    | 1    | 0             | 0   | 0   | 0    | 0    | P                             | P   | 1   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0.3             | 0.6             |  |
| 13-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 0  | 0   | 1    | 0    | 0             | 0   | 0   | 0    | 1    | 0                             | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0.2             | 0.7             |  |
| 14-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 0  | 0   | 0    | 0    | 0             | 2   | 0   | 0    | 0    | 0                             | 0   | 0   | 0    | 0   | 1   | 0   | 0   | 0   | 0   | 0.2             | 1.7             |  |
| 15-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 0  | 0   | 0    | 0    | 0             | 0   | 0   | 1    | 1    | 1                             | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0.3             | 1.1             |  |
| 16-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 0  | 0   | 0    | 0    | 0             | 0   | 1   | 0    | 0    | 0                             | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0.3             | 0.5             |  |
| 17-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 0  | 1   | 1    | 1    | 0             | 0   | 0   | 0    | 0    | 0                             | 1   | 0   | 1    | 0   | 0   | 0   | 0   | 0   | 0   | 0.4             | 1.4             |  |
| 18-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 1  | 1   | 2    | 1    | 0             | 0   | 0   | 0    | 0    | 0                             | 0   | 0   | 0    | 0   | 0   | 1   | 0   | 0   | 0   | 0.4             | 1.6             |  |
| 19-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 0  | 0   | 2    | 1    | 0             | 0   | 0   | 0    | 0    | 0                             | 0   | 0   | 0    | 0   | 0   | 1   | 0   | 1   | 0   | 0.4             | 2.3             |  |
| 20-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 1  | 1   | 2    | 4    | 2             | 0   | 1   | 0    | 5    | 3                             | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0.9             | 4.6             |  |
| 21-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 1  | 1   | 1    | 1    | 1             | 0   | 7   | 13   | 1    | 0                             | 1   | 1   | 0    | 0   | 0   | 0   | 0   | 0   | 1   | 1.2             | 13.2            |  |
| 22-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 0  | 1   | 5    | 0    | 0             | N   | N   | 0    | 0    | 0                             | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0.5             | 5.2             |  |
| 23-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 1  | 1   | 1    | 2    | 0             | 1   | 0   | 0    | 0    | 0                             | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 1   | 0.5             | 1.6             |  |
| 24-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 0  | 1   | 1    | 6    | 1             | 0   | 1   | 2    | 1    | 0                             | 0   | 13  | 2    | 1   | 0   | 1   | 0   | 0   | 0   | 1.4             | 13.3            |  |
| 25-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 1  | 1   | 1    | 1    | 1             | 0   | 0   | 0    | 0    | 1                             | 0   | 0   | 0    | 0   | 1   | 0   | 0   | 0   | 0   | 0.4             | 1.1             |  |
| 26-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 0  | 1   | 1    | 1    | 0             | 0   | 0   | 0    | 0    | 0                             | 0   | 0   | 0    | 0   | 0   | 1   | 0   | 0   | 0   | 0.3             | 0.8             |  |
| 27-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 2  | 1   | 1    | 1    | 1             | 0   | 6   | 5    | 0    | 0                             | 0   | 0   | 0    | 0   | 0   | 1   | 0   | 0   | 0   | 1.0             | 5.7             |  |
| 28-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 7  | 5   | 6    | 3    | 7             | 1   | 0   | 1    | 0    | 0                             | 3   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 1.6             | 7.4             |  |
| 29-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 3  | 23  | 6    | 37   | 2             | 1   | 1   | 5    | 0    | 0                             | 2   | 1   | 1    | 0   | 0   | 0   | 0   | 0   | 0   | 3.6             | 36.6            |  |
| 30-Jun                                     | 0                             | 0  | 0   | 0                              | A                 | 1  | 1   | 1    | 0    | 1             | 2   | 0   | 0    | 0    | 0                             | 0   | 0   | 0    | 6   | 5   | 1   | 0   | 0   | 0   | 0.9             | 6.1             |  |
|  |                               | 0.2  | 0.2 | 0.2                            | 0.2               | -- | 0.9 | 2.0  | 2.7  | 2.3           | 1.1 | 0.8 | 1.2  | 1.1  | 0.5                           | 0.6 | 0.4 | 0.8  | 0.3 | 0.5 | 0.4 | 0.4 | 0.2 | 0.2 | Diurnal Average |                 |  |
|  |                               | 0.7  | 0.5 | 0.4                            | 0.4               | -- | 7.1 | 22.8 | 33.8 | 36.6          | 7.4 | 8.8 | 13.1 | 13.2 | 4.6                           | 7.0 | 2.2 | 13.3 | 1.6 | 6.1 | 4.8 | 0.9 | 0.4 | 0.9 | 0.7             | Diurnal Maximum |  |
| C - Calibration                            |                               |  |     |                                | P - Power Failure |    |     |      |      | N - Not Valid |     |     |      |      | A - Automated Daily Zero Span |     |     |      |     |     |     |     |     |     |                 |                 |  |



### Hourly Maximums

**Nitrogen Oxide (NO) - ppb**  
**Beaverlodge - June 2016**

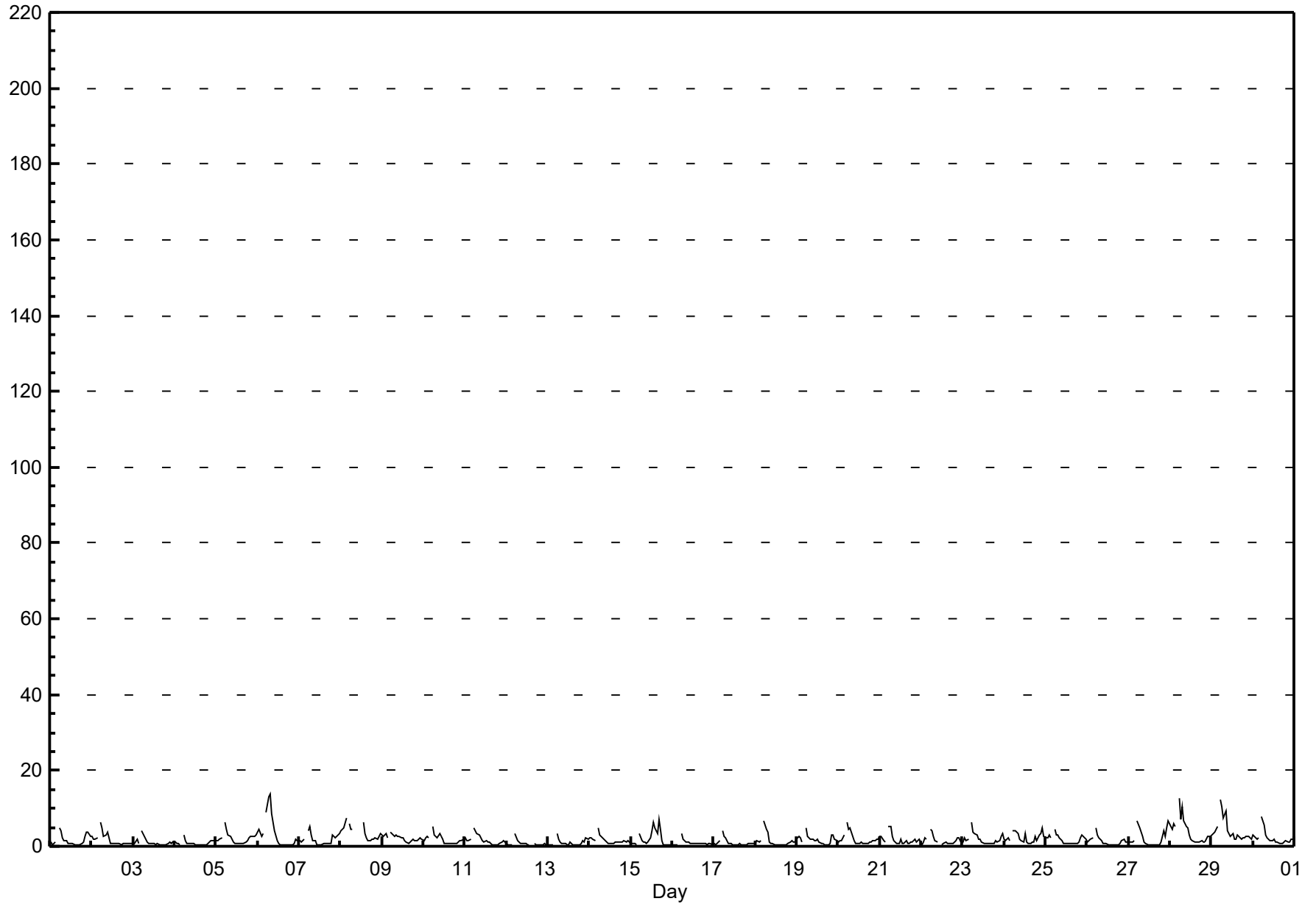


## Hourly Averages

Oxides of Nitrogen (NO<sub>x</sub>) - ppb

Beaverlodge - June 2016

| Number of Exceedences (AAQO): 1-hr: 0 24-hr: 0<br>Maximum Value: 13.8 ppb on Jun 6 08:00 Maximum Daily Average: 4.0 ppb on Jun 29 |                               | Hours in Service: 720<br>Hours of Data: 681<br>Hours of Missing Data: 39<br>Hours of Calibration: 35<br>Percent Operational Time: 99.4  |   |   |                   |    |    |    |   |               |    |    |    |    |                               |    |    |    |    |    |    |    |    |     |               |               |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
|---|-------------------------------|---|---|---|-------------------|----|----|----|---|---------------|----|----|----|----|-------------------------------|----|----|----|----|----|----|----|----|-----|---------------|---------------|-----|----|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|
| Minimum Value: 0 ppb on Jun 12 20:00<br>Maximum Diurnal Average: 5.6 ppb at hour 6<br>Monthly Average: 1.87 ppb                   |                               | Minimum Daily Average: 0.7 ppb on Jun 12<br>Minimum Diurnal Average: 0.9 ppb at hour 18<br>Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 0.7 Median = 1.3 Q <sub>3</sub> = 2.4 P <sub>90</sub> = 4.1 P <sub>99</sub> = 9.2 |   |   |                   |    |    |    |   |               |    |    |    |    |                               |    |    |    |    |    |    |    |    |     |               |               |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| Day   | Hourly Period Ending At (MST) |   |   |   |                   |    |    |    |   |               |    |    |    |    |                               |    |    |    |    |    |    |    |    |     | Daily Average | Daily Maximum |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
|   | 1                             | 2   | 3 | 4 | 5                 | 6  | 7  | 8  | 9 | 10            | 11 | 12 | 13 | 14 | 15                            | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24  |               |               |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 1-Jun   | 1                             | 1   | 1 | 1 | A                 | 5  | 4  | 2  | 2 | 1             | 1  | 1  | 1  | 1  | 0                             | 0  | 0  | 0  | 1  | 1  | 3  | 4  | 4  | 3   | 1.6           | 4.9           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 2-Jun   | 3                             | 2   | 2 | 2 | A                 | 6  | 5  | 3  | 3 | 4             | 2  | 1  | 1  | 1  | 1                             | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1   | 1.8           | 6.5           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 3-Jun   | 1                             | 1   | 2 | 1 | A                 | 4  | 2  | 2  | 1 | 1             | 1  | 1  | 1  | 1  | 1                             | 1  | 1  | 0  | 0  | 1  | 1  | 1  | 1  | 1   | 1.0           | 4.0           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 4-Jun   | 1                             | 1   | 1 | 1 | A                 | 3  | 1  | 1  | 1 | 1             | 1  | 1  | 0  | 0  | 1                             | 1  | 0  | 0  | 0  | 1  | 1  | 2  | 2  | 1   | 0.9           | 2.8           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 5-Jun   | 1                             | 2   | 2 | 2 | A                 | 6  | 5  | 3  | 2 | 2             | 1  | 1  | 1  | 1  | 1                             | 1  | 1  | 1  | 1  | 2  | 3  | 3  | 3  | 3   | 2.0           | 6.3           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 6-Jun   | 4                             | 5   | 2 | 3 | A                 | 9  | 13 | 14 | 8 | 6             | 4  | 2  | 1  | 1  | 0                             | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 2  | 2   | 3.4           | 13.8          |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 7-Jun   | 1                             | 1   | 1 | 2 | A                 | 4  | 5  | 3  | 2 | 1             | 1  | 1  | 0  | 0  | 1                             | 1  | 1  | 1  | 1  | 3  | 3  | 2  | 2  | 3   | 1.8           | 5.1           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 8-Jun   | 4                             | 5   | 5 | 7 | A                 | 6  | 5  | 5  | C | C             | C  | C  | C  | 6  | 3                             | 2  | 2  | 2  | 2  | 2  | 2  | 3  | 3  | 3   | 3.6           | 7.3           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 9-Jun   | 3                             | 3   | 3 | 2 | A                 | 4  | 3  | 3  | 3 | 3             | 3  | 2  | 2  | 2  | 1                             | 1  | 1  | 2  | 2  | 2  | 2  | 2  | 2  | 2   | 2.2           | 3.8           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 10-Jun  | 1                             | 2   | 2 | 2 | A                 | 5  | 3  | 3  | 2 | 3             | 3  | 2  | 1  | 1  | 1                             | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 2   | 1.8           | 5.2           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 11-Jun  | 2                             | 2   | 2 | 2 | A                 | 5  | 4  | 3  | 3 | 2             | 2  | 1  | 2  | 1  | 1                             | 1  | 0  | 0  | 0  | 0  | 1  | 1  | 1  | 1   | 1.7           | 4.9           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 12-Jun  | 1                             | 1   | 0 | 1 | A                 | 3  | 2  | 1  | 1 | 1             | 1  | 1  | 0  | 0  | P                             | P  | 1  | 0  | 0  | 0  | 0  | 0  | 1  | 0   | 0.7           | 3.3           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 13-Jun  | 0                             | 0   | 0 | 0 | A                 | 3  | 2  | 1  | 1 | 1             | 1  | 1  | 0  | 1  | 0                             | 0  | 0  | 0  | 0  | 1  | 2  | 1  | 2  | 2   | 0.9           | 3.3           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 14-Jun  | 2                             | 2   | 2 | 2 | A                 | 5  | 3  | 3  | 2 | 1             | 1  | 1  | 1  | 1  | 1                             | 1  | 1  | 1  | 1  | 1  | 2  | 1  | 1  | 1   | 1.6           | 4.9           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 15-Jun  | 1                             | 1   | 1 | 0 | A                 | 3  | 1  | 1  | 1 | 1             | 1  | 2  | 4  | 6  | 5                             | 3  | 7  | 4  | 2  | 0  | 0  | 0  | 0  | 0   | 2.1           | 7.1           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 16-Jun  | 0                             | 0   | 0 | 0 | A                 | 3  | 2  | 1  | 1 | 1             | 1  | 1  | 1  | 1  | 1                             | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 0   | 0.8           | 3.5           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 17-Jun  | 1                             | 0   | 1 | 2 | A                 | 4  | 3  | 2  | 1 | 1             | 1  | 1  | 0  | 0  | 0                             | 1  | 0  | 1  | 0  | 0  | 1  | 1  | 1  | 1   | 0.9           | 4.1           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 18-Jun  | 1                             | 1   | 1 | 2 | A                 | 7  | 4  | 4  | 1 | 1             | 1  | 1  | 1  | 0  | 0                             | 0  | 0  | 0  | 0  | 1  | 1  | 2  | 1  | 1   | 1.4           | 6.7           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 19-Jun  | 2                             | 3   | 2 | 1 | A                 | 5  | 2  | 2  | 2 | 2             | 1  | 1  | 2  | 1  | 1                             | 1  | 1  | 0  | 0  | 1  | 3  | 3  | 2  | 1   | 1.7           | 4.7           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 20-Jun  | 1                             | 1   | 1 | 3 | A                 | 6  | 4  | 5  | 3 | 1             | 1  | 1  | 1  | 1  | 1                             | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 2   | 1.8           | 6.4           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 21-Jun  | 3                             | 3   | 1 | 1 | A                 | 5  | 5  | 3  | 1 | 1             | 1  | 1  | 2  | 1  | 1                             | 2  | 1  | 1  | 1  | 1  | 2  | 1  | 1  | 2   | 1.8           | 5.4           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 22-Jun  | 0                             | 1   | 2 | 2 | A                 | 4  | 4  | 3  | 1 | 1             | N  | N  | 1  | 1  | 1                             | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 1   | 1.5           | 4.4           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 23-Jun  | 1                             | 2   | 2 | 2 | A                 | 6  | 4  | 3  | 3 | 2             | 2  | 1  | 1  | 1  | 1                             | 1  | 1  | 1  | 1  | 2  | 1  | 2  | 3  | 3   | 1.9           | 6.2           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 24-Jun  | 2                             | 1   | 2 | 1 | A                 | 4  | 4  | 4  | 3 | 2             | 2  | 1  | 3  | 1  | 1                             | 1  | 1  | 1  | 3  | 2  | 3  | 3  | 5  | 2   | 2.3           | 4.7           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 25-Jun  | 2                             | 2   | 3 | 2 | A                 | 4  | 3  | 3  | 2 | 2             | 1  | 1  | 1  | 1  | 1                             | 1  | 1  | 1  | 1  | 2  | 3  | 2  | 2  | 2   | 1.8           | 4.3           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 26-Jun  | 1                             | 2   | 2 | 2 | A                 | 5  | 3  | 2  | 1 | 1             | 1  | 1  | 0  | 0  | 0                             | 0  | 0  | 1  | 1  | 1  | 2  | 1  | 1  | 1   | 1.3           | 4.8           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 27-Jun  | 1                             | 1   | 1 | 2 | A                 | 7  | 5  | 4  | 3 | 1             | 1  | 1  | 1  | 0  | 0                             | 0  | 1  | 0  | 1  | 1  | 4  | 3  | 5  | 7   | 2.1           | 6.9           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 28-Jun  | 5                             | 5   | 6 | 5 | A                 | 13 | 7  | 10 | 7 | 5             | 5  | 3  | 2  | 2  | 1                             | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 3  | 3   | 3.9           | 12.7          |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 29-Jun  | 3                             | 3   | 4 | 5 | A                 | 12 | 10 | 7  | 9 | 4             | 3  | 2  | 3  | 2  | 2                             | 3  | 3  | 2  | 2  | 2  | 3  | 3  | 2  | 2   | 4.0           | 12.3          |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
| 30-Jun  | 3                             | 3   | 2 | 2 | A                 | 8  | 6  | 3  | 2 | 2             | 2  | 1  | 2  | 1  | 1                             | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2   | 2.1           | 7.8           |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |
|   |                               |   |   |   |                   |    |    |    |   |               |    |    |    |    |                               |    |    |    |    |    |    |    |    | 1.8 | 1.8           | 1.9           | 2.1 | -- | 5.6  | 4.1  | 3.4  | 2.5 | 1.9 | 1.4 | 1.1 | 1.2 | 1.2 | 1.0 | 0.9 | 1.0 | 0.9 | 0.9 | 1.1 | 1.5 | 1.7 | 1.9 | 1.8 | Diurnal Average |
|   |                               |   |   |   |                   |    |    |    |   |               |    |    |    |    |                               |    |    |    |    |    |    |    |    | 5.2 | 4.6           | 5.8           | 7.3 | -- | 12.7 | 13.0 | 13.8 | 9.4 | 6.2 | 5.0 | 2.9 | 4.2 | 6.4 | 5.0 | 3.3 | 7.1 | 4.3 | 2.7 | 2.9 | 4.0 | 3.8 | 5.0 | 6.9 | Diurnal Maximum |
| C - Calibration   |                               |   |   |   | P - Power Failure |    |    |    |   | N - Not Valid |    |    |    |    | A - Automated Daily Zero Span |    |    |    |    |    |    |    |    |     |               |               |     |    |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |



## Hourly Maximums

Oxides of Nitrogen (NO<sub>x</sub>) - ppb

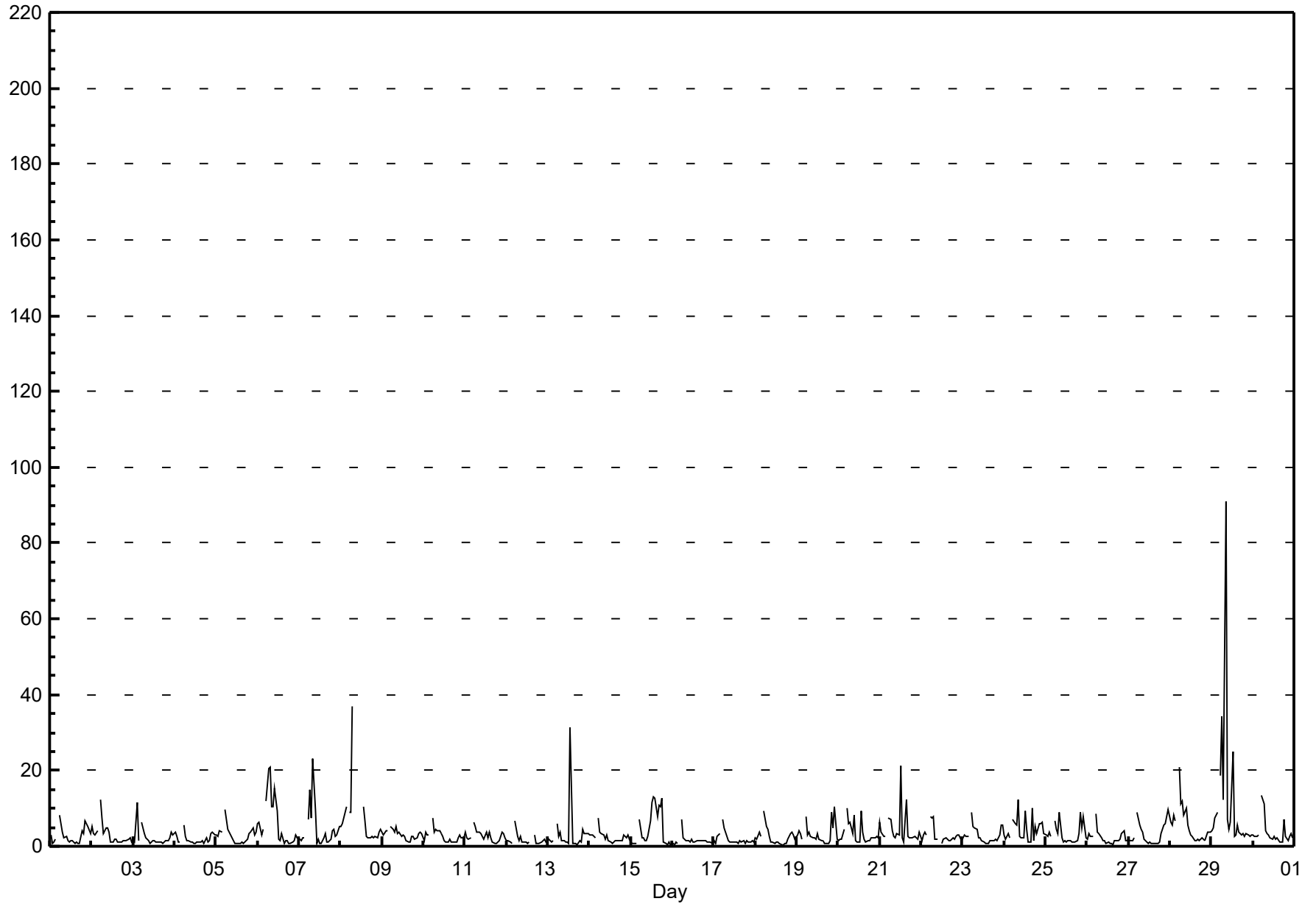
Beaverlodge - June 2016

| Maximum Value: 91.1 ppb on Jun 29 09:00    |                               | Maximum Daily Average: 11.3 ppb on Jun 29   |     | Hours in Service: 720          |      |               |      |      |      |                               |      |      |     |      |      |      |      |      |      |      |     |     |     |      |               |                 |  |
|--|-------------------------------|---|-----|--------------------------------|------|---------------|------|------|------|-------------------------------|------|------|-----|------|------|------|------|------|------|------|-----|-----|-----|------|---------------|-----------------|--|
| Minimum Value: 0 ppb on Jun 13 18:00       |                               | Minimum Daily Average: 1.5 ppb on Jun 16  |     | Hours of Data: 681             |      |               |      |      |      |                               |      |      |     |      |      |      |      |      |      |      |     |     |     |      |               |                 |  |
| Maximum Diurnal Average: 8.9 ppb at hour 6 |                               | Minimum Diurnal Average: 1.6 ppb at hour 18   |     | Hours of Missing Data: 39      |      |               |      |      |      |                               |      |      |     |      |      |      |      |      |      |      |     |     |     |      |               |                 |  |
| Monthly Average: 3.57 ppb                  |                               | Percentiles: P <sub>1</sub> = 0.6 P <sub>10</sub> = 0.9 Q <sub>1</sub> = 1.4 Median = 2.3 Q <sub>3</sub> = 3.8 P <sub>90</sub> = 7.5 P <sub>99</sub> = 20.6 |     | Hours of Calibration: 35       |      |               |      |      |      |                               |      |      |     |      |      |      |      |      |      |      |     |     |     |      |               |                 |  |
|  |                               |   |     | Percent Operational Time: 99.4 |      |               |      |      |      |                               |      |      |     |      |      |      |      |      |      |      |     |     |     |      |               |                 |  |
| Day  | Hourly Period Ending At (MST) |   |     |                                |      |               |      |      |      |                               |      |      |     |      |      |      |      |      |      |      |     |     |     |      | Daily Average | Daily Maximum   |  |
|  | 1                             | 2   | 3   | 4                              | 5    | 6             | 7    | 8    | 9    | 10                            | 11   | 12   | 13  | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21  | 22  | 23  | 24   |               |                 |  |
| 1-Jun                                      | 3                             | 1   | 1   | 2                              | A    | 8             | 6    | 4    | 2    | 3                             | 2    | 1    | 1   | 2    | 1    | 1    | 1    | 1    | 4    | 3    | 7   | 6   | 5   | 3    | 2.9           | 8.3             |  |
| 2-Jun                                      | 5                             | 3   | 3   | 4                              | A    | 12            | 8    | 3    | 5    | 5                             | 4    | 1    | 1   | 2    | 2    | 1    | 1    | 1    | 1    | 1    | 1   | 2   | 2   | 1    | 3.1           | 12.1            |  |
| 3-Jun                                      | 2                             | 1   | 12  | 2                              | A    | 6             | 4    | 2    | 2    | 1                             | 1    | 1    | 1   | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1   | 2   | 4   | 3    | 2.3           | 11.6            |  |
| 4-Jun                                      | 4                             | 3   | 1   | 1                              | A    | 6             | 2    | 1    | 1    | 1                             | 1    | 1    | 1   | 1    | 1    | 1    | 1    | 1    | 2    | 1    | 2   | 3   | 4   | 3    | 1.9           | 5.7             |  |
| 5-Jun                                      | 3                             | 3   | 4   | 4                              | A    | 10            | 7    | 4    | 3    | 2                             | 2    | 1    | 1   | 1    | 1    | 1    | 1    | 1    | 2    | 3    | 4   | 5   | 3   | 4    | 3.0           | 9.8             |  |
| 6-Jun                                      | 6                             | 6   | 3   | 5                              | A    | 12            | 20   | 21   | 10   | 10                            | 15   | 9    | 2   | 1    | 3    | 1    | 1    | 1    | 1    | 1    | 1   | 1   | 3   | 2    | 6.0           | 20.9            |  |
| 7-Jun                                      | 2                             | 2   | 2   | 2                              | A    | 7             | 15   | 7    | 23   | 10                            | 1    | 2    | 1   | 1    | 2    | 3    | 1    | 1    | 2    | 4    | 5   | 2   | 3   | 5    | 4.5           | 23.2            |  |
| 8-Jun                                      | 5                             | 6   | 7   | 10                             | A    | 9             | 9    | 37   | C    | C                             | C    | C    | C   | 10   | 7    | 3    | 2    | 2    | 3    | 2    | 3   | 2   | 4   | 5    | 7.0           | 37.0            |  |
| 9-Jun                                      | 4                             | 3   | 4   | 4                              | A    | 5             | 4    | 4    | 5    | 3                             | 4    | 3    | 3   | 3    | 1    | 1    | 1    | 3    | 2    | 2    | 2   | 3   | 4   | 3    | 3.1           | 5.3             |  |
| 10-Jun                                     | 2                             | 4   | 3   | 3                              | A    | 8             | 4    | 5    | 4    | 4                             | 3    | 2    | 1   | 1    | 1    | 2    | 1    | 1    | 1    | 1    | 2   | 3   | 2   | 2    | 2.6           | 7.5             |  |
| 11-Jun                                     | 4                             | 2   | 2   | 2                              | A    | 6             | 5    | 4    | 4    | 3                             | 3    | 2    | 4   | 2    | 4    | 2    | 1    | 1    | 1    | 1    | 2   | 4   | 3   | 2    | 2.8           | 6.4             |  |
| 12-Jun                                     | 2                             | 1   | 1   | 1                              | A    | 7             | 3    | 1    | 3    | 1                             | 1    | 1    | 1   | 1    | P    | P    | 3    | 1    | 1    | 1    | 1   | 2   | 2   | 1    | 1.6           | 6.8             |  |
| 13-Jun                                     | 2                             | 2   | 1   | 2                              | A    | 6             | 3    | 4    | 1    | 1                             | 1    | 1    | 1   | 31   | 1    | 1    | 1    | 0    | 1    | 1    | 5   | 3   | 4   | 3    | 3.3           | 31.4            |  |
| 14-Jun                                     | 3                             | 3   | 3   | 2                              | A    | 7             | 4    | 3    | 3    | 2                             | 3    | 1    | 1   | 1    | 1    | 1    | 1    | 1    | 2    | 1    | 3   | 2   | 3   | 2    | 2.4           | 7.4             |  |
| 15-Jun                                     | 1                             | 1   | 1   | 1                              | A    | 7             | 2    | 2    | 1    | 1                             | 2    | 7    | 12  | 13   | 13   | 8    | 11   | 10   | 13   | 1    | 1   | 1   | 1   | 1    | 4.7           | 13.0            |  |
| 16-Jun                                     | 1                             | 1   | 1   | 1                              | A    | 7             | 2    | 2    | 2    | 2                             | 1    | 2    | 1   | 1    | 1    | 1    | 1    | 2    | 1    | 2    | 1   | 1   | 1   | 1    | 1.5           | 7.0             |  |
| 17-Jun                                     | 2                             | 1   | 3   | 3                              | A    | 7             | 5    | 4    | 2    | 1                             | 1    | 1    | 1   | 1    | 1    | 2    | 1    | 2    | 1    | 2    | 1   | 1   | 1   | 1    | 1.9           | 7.0             |  |
| 18-Jun                                     | 2                             | 2   | 4   | 3                              | A    | 9             | 5    | 5    | 3    | 1                             | 1    | 1    | 1   | 1    | 1    | 1    | 1    | 1    | 1    | 2    | 3   | 4   | 3   | 2    | 2.4           | 9.3             |  |
| 19-Jun                                     | 3                             | 4   | 3   | 2                              | A    | 8             | 3    | 4    | 3    | 2                             | 2    | 2    | 3   | 2    | 1    | 1    | 1    | 1    | 1    | 1    | 9   | 5   | 11  | 2    | 3.2           | 10.6            |  |
| 20-Jun                                     | 1                             | 2   | 2   | 4                              | A    | 10            | 6    | 7    | 3    | 8                             | 2    | 1    | 1   | 9    | 4    | 2    | 1    | 1    | 1    | 2    | 2   | 2   | 3   | 2    | 3.3           | 10.0            |  |
| 21-Jun                                     | 6                             | 4   | 3   | 3                              | A    | 8             | 7    | 4    | 3    | 2                             | 4    | 3    | 21  | 2    | 1    | 12   | 3    | 2    | 2    | 2    | 3   | 2   | 2   | 4    | 4.4           | 21.2            |  |
| 22-Jun                                     | 2                             | 3   | 4   | 3                              | A    | 8             | 7    | 8    | 2    | 2                             | N    | N    | 1   | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2   | 3   | 3   | 1    | 2.9           | 7.9             |  |
| 23-Jun                                     | 2                             | 3   | 3   | 3                              | A    | 9             | 5    | 5    | 5    | 2                             | 2    | 1    | 1   | 1    | 1    | 1    | 1    | 1    | 2    | 2    | 1   | 3   | 6   | 5    | 2.8           | 8.8             |  |
| 24-Jun                                     | 3                             | 2   | 3   | 2                              | A    | 7             | 6    | 6    | 12   | 3                             | 2    | 2    | 9   | 5    | 1    | 1    | 10   | 2    | 5    | 3    | 6   | 6   | 6   | 3    | 4.6           | 12.2            |  |
| 25-Jun                                     | 3                             | 3   | 4   | 3                              | A    | 7             | 5    | 3    | 9    | 2                             | 1    | 1    | 1   | 2    | 1    | 1    | 1    | 1    | 1    | 3    | 9   | 5   | 8   | 2    | 3.3           | 8.9             |  |
| 26-Jun                                     | 2                             | 4   | 3   | 2                              | A    | 9             | 4    | 3    | 2    | 2                             | 1    | 1    | 1   | 1    | 1    | 1    | 1    | 2    | 2    | 2    | 3   | 4   | 2   | 2    | 2.2           | 8.6             |  |
| 27-Jun                                     | 2                             | 2   | 2   | 2                              | A    | 9             | 6    | 5    | 4    | 2                             | 1    | 1    | 1   | 1    | 1    | 1    | 1    | 1    | 1    | 3    | 6   | 6   | 8   | 10   | 3.2           | 9.8             |  |
| 28-Jun                                     | 6                             | 6   | 8   | 7                              | A    | 21            | 11   | 12   | 8    | 10                            | 6    | 4    | 3   | 3    | 1    | 2    | 2    | 1    | 2    | 2    | 2   | 3   | 4   | 4    | 5.5           | 21.1            |  |
| 29-Jun                                     | 4                             | 5   | 7   | 9                              | A    | 19            | 34   | 12   | 91   | 7                             | 4    | 6    | 25  | 3    | 3    | 6    | 4    | 3    | 3    | 3    | 3   | 3   | 3   | 3    | 11.3          | 91.1            |  |
| 30-Jun                                     | 3                             | 3   | 3   | 3                              | A    | 14            | 11   | 4    | 3    | 3                             | 2    | 2    | 3   | 2    | 2    | 1    | 1    | 1    | 7    | 2    | 2   | 3   | 4   | 2    | 3.5           | 13.5            |  |
|  |                               | 2.9   | 2.7 | 3.3                            | 3.1  | --            | 8.9  | 7.0  | 6.2  | 7.5                           | 3.4  | 2.6  | 2.2 | 3.6  | 3.5  | 2.1  | 2.1  | 2.0  | 1.6  | 2.3  | 2.0 | 3.1 | 3.1 | 3.6  | 2.8           | Diurnal Average |  |
|  |                               | 6.5   | 6.2 | 11.6                           | 10.5 | --            | 21.1 | 34.1 | 37.0 | 91.1                          | 10.5 | 15.4 | 9.4 | 24.8 | 31.4 | 12.5 | 12.3 | 10.7 | 10.3 | 12.7 | 4.3 | 9.0 | 6.1 | 10.6 | 9.8           | Diurnal Maximum |  |
| C - Calibration                            |                               | P - Power Failure   |     |                                |      | N - Not Valid |      |      |      | A - Automated Daily Zero Span |      |      |     |      |      |      |      |      |      |      |     |     |     |      |               |                 |  |

**Hourly Maximums**

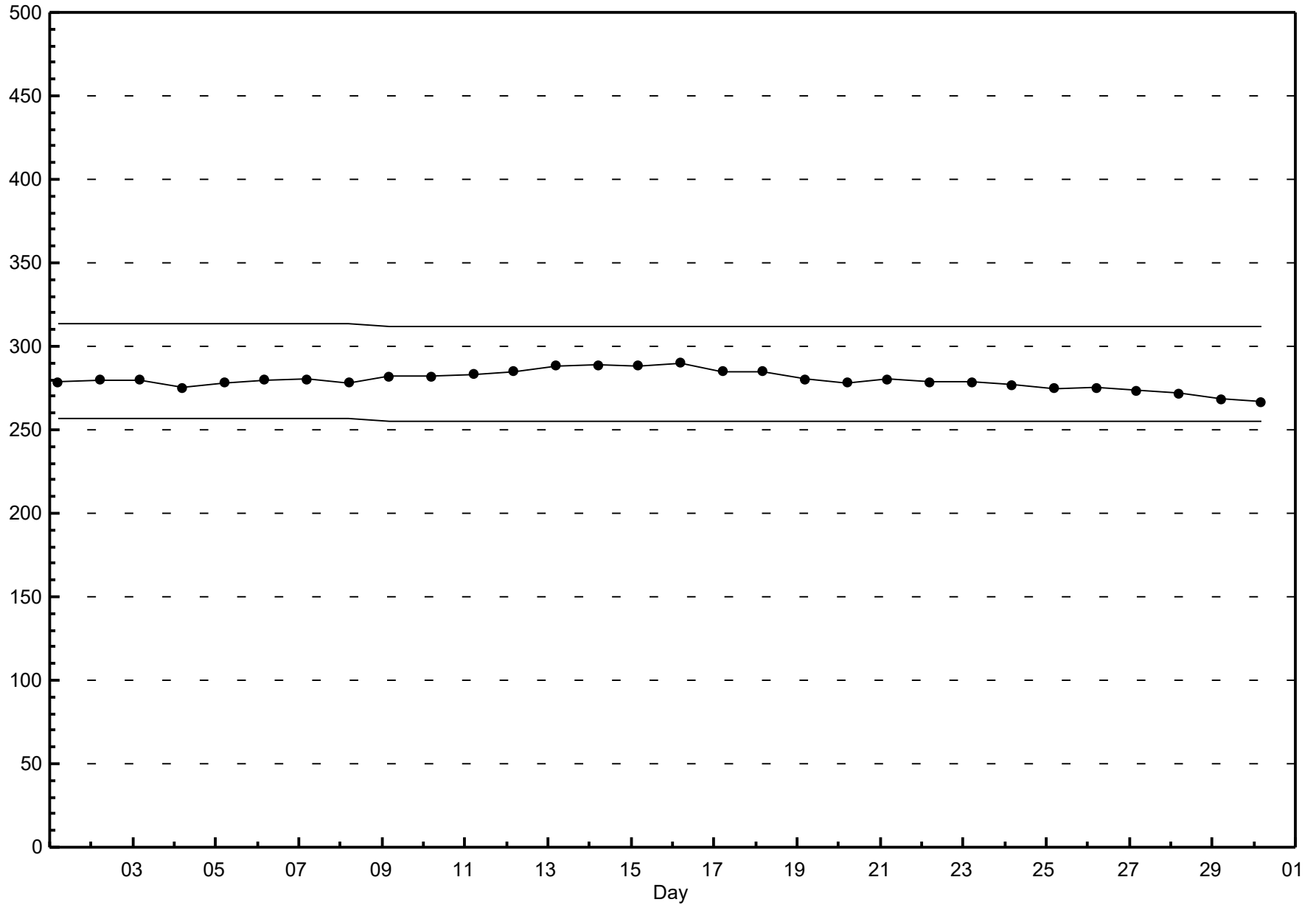
**Oxides of Nitrogen (NO<sub>x</sub>) - ppb**

**Beaverlodge - June 2016**



### Span Responses

Oxides of Nitrogen (NO<sub>x</sub>)  
Beaverlodge - June 2016



# Hourly Averages

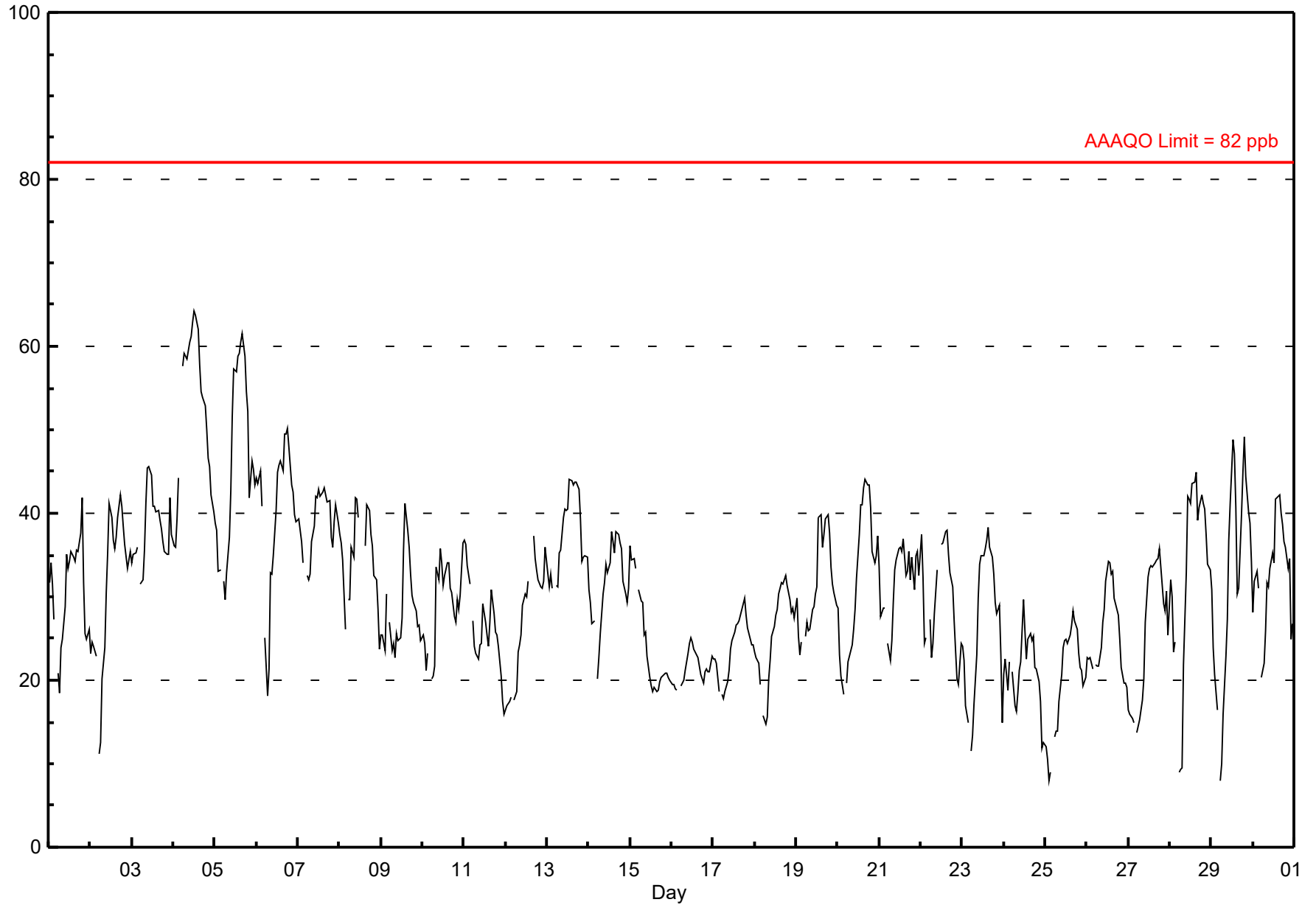
Ozone (O<sub>3</sub>) - ppb

Beaverlodge - June 2016

| Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0<br>Maximum Value: 64.2 ppb on Jun 4 13:00 Maximum Daily Average: 52.5 ppb on Jun 4   |                               |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    | Hours in Service: 720<br>Hours of Data: 683<br>Hours of Missing Data: 37<br>Hours of Calibration: 33<br>Percent Operational Time: 99.4 |    |    |    |    |                   |               |               |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
|--|-------------------------------|----|----|----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|--|----|----|----|----|-------------------|---------------|---------------|------|---------------|------|------|------|-------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|--|
| Minimum Value: 8 ppb on Jun 25 03:00 Minimum Daily Average: 19.8 ppb on Jun 25<br>Maximum Diurnal Average: 37.0 ppb at hour 15 Minimum Diurnal Average: 22.4 ppb at hour 7<br>Monthly Average: 30.98 ppb Percentiles: P <sub>1</sub> = 10.2 P <sub>10</sub> = 19.5 Q <sub>1</sub> = 23.8 Median = 31.0 Q <sub>3</sub> = 36.6 P <sub>90</sub> = 42.5 P <sub>99</sub> = 60.3 |                               |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |  |    |    |    |    |                   |               |               |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| Day  | Hourly Period Ending At (MST) |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |  |    |    |    |    |                   | Daily Average | Daily Maximum |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
|  | 1                             | 2  | 3  | 4  | 5 | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19   | 20 | 21 | 22 | 23 | 24                |               |               |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 1-Jun  | 32                            | 34 | 32 | 27 | A | 21 | 18 | 24 | 25 | 29 | 35 | 33 | 34 | 35 | 34 | 36 | 35 | 38 | 42   | 32 | 26 | 25 | 26 | 30.8              | 41.9          |               |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 2-Jun  | 23                            | 25 | 24 | 23 | A | 11 | 13 | 20 | 24 | 31 | 35 | 41 | 40 | 37 | 36 | 37 | 39 | 42 | 41   | 39 | 36 | 33 | 34 | 35                | 31.3          | 42.2          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 3-Jun  | 34                            | 35 | 35 | 36 | A | 32 | 32 | 36 | 41 | 45 | 46 | 45 | 41 | 41 | 40 | 40 | 39 | 38 | 37   | 35 | 35 | 35 | 42 | 38                | 38.1          | 45.6          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 4-Jun  | 36                            | 36 | 39 | 44 | A | 58 | 59 | 59 | 58 | 61 | 61 | 63 | 64 | 64 | 62 | 58 | 55 | 54 | 53   | 50 | 47 | 46 | 42 | 40                | 52.5          | 64.2          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 5-Jun  | 39                            | 38 | 33 | 33 | A | 32 | 30 | 33 | 37 | 43 | 52 | 57 | 57 | 59 | 59 | 60 | 62 | 59 | 55   | 52 | 42 | 46 | 45 | 43                | 46.3          | 61.5          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 6-Jun  | 44                            | 43 | 45 | 41 | A | 25 | 18 | 21 | 33 | 33 | 35 | 40 | 45 | 46 | 46 | 45 | 50 | 50 | 50   | 48 | 43 | 43 | 40 | 39                | 40.1          | 50.2          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 7-Jun  | 39                            | 38 | 37 | 34 | A | 33 | 32 | 33 | 37 | 38 | 42 | 42 | 43 | 42 | 43 | 43 | 42 | 41 | 41   | 37 | 36 | 39 | 41 | 39                | 38.8          | 43.0          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 8-Jun  | 38                            | 36 | 34 | 26 | A | 30 | 30 | 36 | 35 | 42 | 42 | 40 | C  | C  | C  | 36 | 41 | 40 | 37   | 36 | 33 | 32 | 29 | 24                | 34.8          | 41.8          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 9-Jun  | 25                            | 25 | 23 | 30 | A | 27 | 24 | 24 | 23 | 26 | 25 | 25 | 27 | 36 | 41 | 38 | 36 | 33 | 30   | 29 | 28 | 26 | 27 | 25                | 28.4          | 41.2          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 10-Jun   | 25                            | 24 | 21 | 23 | A | 20 | 21 | 22 | 34 | 32 | 36 | 34 | 31 | 33 | 34 | 34 | 31 | 31 | 28   | 27 | 30 | 29 | 30 | 36                | 28.9          | 36.4          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 11-Jun   | 37                            | 36 | 34 | 31 | A | 27 | 24 | 23 | 23 | 24 | 24 | 29 | 27 | 25 | 24 | 27 | 31 | 28 | 26   | 25 | 24 | 20 | 17 | 16                | 26.3          | 36.8          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 12-Jun   | 16                            | 17 | 17 | 18 | A | 18 | 19 | 23 | 24 | 25 | 29 | 30 | 30 | 32 | P  | P  | 37 | 34 | 33   | 32 | 31 | 31 | 32 | 36                | 26.9          | 37.2          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 13-Jun   | 33                            | 31 | 33 | 31 | A | 31 | 31 | 35 | 36 | 39 | 41 | 40 | 40 | 44 | 44 | 43 | 44 | 44 | 43   | 39 | 34 | 35 | 35 | 35                | 37.4          | 44.0          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 14-Jun   | 31                            | 29 | 27 | 27 | A | 20 | 23 | 26 | 30 | 32 | 34 | 33 | 34 | 38 | 37 | 35 | 38 | 38 | 36   | 36 | 32 | 30 | 29 | 31                | 31.5          | 37.8          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 15-Jun   | 36                            | 34 | 35 | 33 | A | 31 | 30 | 29 | 25 | 26 | 23 | 20 | 19 | 19 | 19 | 19 | 19 | 20 | 20   | 21 | 21 | 21 | 20 | 20                | 24.3          | 36.1          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 16-Jun   | 20                            | 19 | 19 | 19 | A | 19 | 20 | 20 | 21 | 23 | 24 | 25 | 25 | 24 | 23 | 23 | 22 | 21 | 20   | 21 | 21 | 21 | 21 | 23                | 21.5          | 25.0          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 17-Jun   | 23                            | 23 | 22 | 19 | A | 18 | 18 | 19 | 20 | 21 | 24 | 25 | 26 | 27 | 27 | 27 | 28 | 29 | 30   | 28 | 26 | 25 | 24 | 24                | 23.9          | 29.8          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 18-Jun   | 23                            | 23 | 22 | 20 | A | 16 | 15 | 16 | 20 | 22 | 25 | 26 | 28 | 29 | 30 | 32 | 32 | 32 | 33   | 31 | 30 | 28 | 29 | 27                | 25.6          | 32.6          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 19-Jun   | 30                            | 25 | 23 | 25 | A | 25 | 27 | 26 | 26 | 28 | 29 | 30 | 31 | 40 | 40 | 36 | 37 | 39 | 40   | 38 | 34 | 32 | 30 | 29                | 31.3          | 39.8          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 20-Jun   | 29                            | 23 | 21 | 18 | A | 20 | 22 | 23 | 24 | 26 | 29 | 32 | 37 | 41 | 41 | 43 | 44 | 43 | 43   | 41 | 35 | 34 | 35 | 37                | 32.3          | 44.0          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 21-Jun   | 33                            | 28 | 29 | 29 | A | 24 | 22 | 25 | 29 | 33 | 34 | 36 | 36 | 36 | 37 | 33 | 33 | 35 | 32   | 35 | 31 | 35 | 35 | 33                | 31.9          | 37.0          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 22-Jun   | 37                            | 32 | 24 | 25 | A | 27 | 23 | 24 | 28 | 33 | N  | N  | 36 | 36 | 38 | 38 | 35 | 33 | 31   | 27 | 24 | 20 | 20 | 24                | 29.4          | 38.0          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 23-Jun   | 24                            | 22 | 17 | 15 | A | 11 | 13 | 17 | 23 | 30 | 34 | 35 | 35 | 36 | 37 | 38 | 36 | 35 | 33   | 29 | 28 | 29 | 23 | 15                | 26.8          | 38.3          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 24-Jun   | 21                            | 22 | 19 | 22 | A | 21 | 17 | 16 | 18 | 21 | 22 | 30 | 26 | 23 | 25 | 26 | 25 | 25 | 21   | 21 | 20 | 17 | 12 | 13                | 21.0          | 29.7          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 25-Jun   | 12                            | 11 | 8  | 9  | A | 13 | 14 | 14 | 17 | 21 | 24 | 25 | 25 | 24 | 25 | 27 | 28 | 27 | 26   | 23 | 22 | 21 | 19 | 20                | 19.8          | 28.3          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 26-Jun   | 23                            | 23 | 23 | 21 | A | 22 | 22 | 22 | 24 | 27 | 28 | 32 | 34 | 34 | 33 | 33 | 30 | 29 | 28   | 25 | 22 | 20 | 20 | 19                | 25.7          | 34.2          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 27-Jun   | 16                            | 16 | 15 | 15 | A | 14 | 15 | 16 | 18 | 20 | 27 | 32 | 33 | 34 | 34 | 34 | 34 | 35 | 36   | 34 | 29 | 28 | 31 | 25                | 25.7          | 35.8          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 28-Jun   | 32                            | 30 | 23 | 25 | A | 9  | 9  | 10 | 22 | 33 | 42 | 42 | 41 | 44 | 44 | 45 | 39 | 41 | 42   | 41 | 40 | 38 | 34 | 33                | 33.0          | 44.9          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 29-Jun   | 31                            | 24 | 21 | 16 | A | 8  | 10 | 16 | 23 | 27 | 37 | 41 | 49 | 47 | 41 | 30 | 31 | 40 | 45   | 49 | 44 | 40 | 39 | 34                | 32.3          | 49.2          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 30-Jun   | 28                            | 32 | 33 | 31 | A | 20 | 22 | 26 | 32 | 31 | 33 | 35 | 34 | 42 | 42 | 42 | 40 | 39 | 37   | 36 | 33 | 35 | 25 | 27                | 32.8          | 42.1          |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
|  |                               |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |  |    |    |    |    | 29.0              | 27.9          | 26.3          | 25.6 | --            | 22.8 | 22.4 | 24.4 | 27.7                          | 30.8 | 33.5 | 35.2 | 35.5 | 36.7 | 37.0 | 36.4 | 36.4 | 36.3 | 35.5 | 34.3 | 31.4 | 30.5 | 29.5 | 28.9 | Diurnal Average |  |
|  |                               |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |  |    |    |    |    | 44.2              | 43.5          | 45.1          | 44.2 | --            | 57.6 | 59.1 | 58.7 | 58.4                          | 60.6 | 61.3 | 62.9 | 64.2 | 63.8 | 62.0 | 60.4 | 61.5 | 58.8 | 54.6 | 52.2 | 46.6 | 46.3 | 45.3 | 43.4 | Diurnal Maximum |  |
| C - Calibration  |                               |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |  |    |    |    |    | P - Power Failure |               |               |      | N - Not Valid |      |      |      | A - Automated Daily Zero Span |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82 ppb 24-hr na   |                               |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |  |    |    |    |    |                   |               |               |      |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |

### Hourly Averages

Ozone (O<sub>3</sub>) - ppb  
Beaverlodge - June 2016





# Hourly Maximums

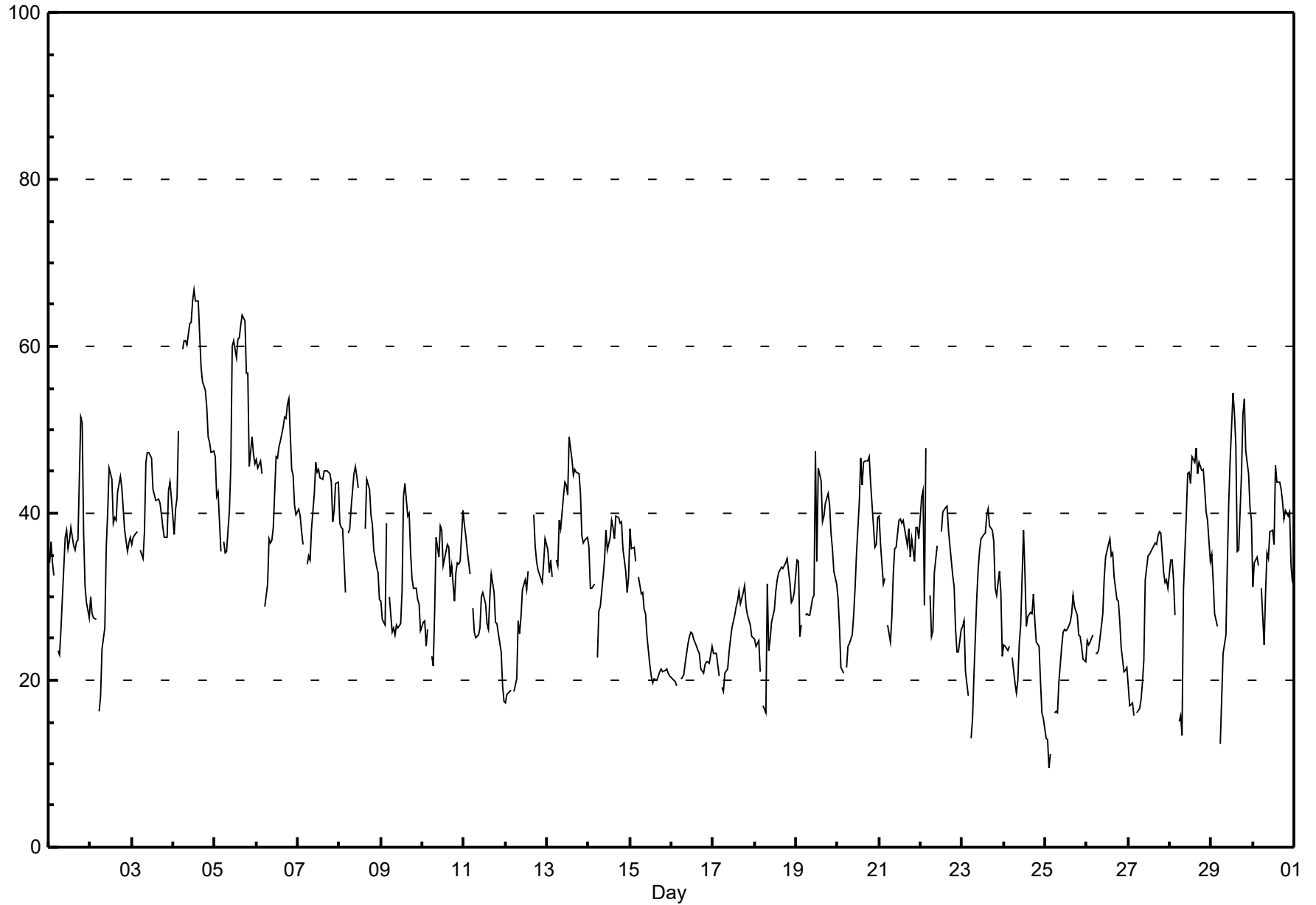
Ozone (O<sub>3</sub>) - ppb

Beaverlodge - June 2016

| Maximum Value: 66.7 ppb on Jun 4 13:00       |                               | Maximum Daily Average: 55.4 ppb on Jun 4  |      | Hours in Service: 720          |      |    |               |      |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
|--|-------------------------------|---|------|--------------------------------|------|----|---------------|------|------|------|------|-------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|---------------|-----------------|--|
| Minimum Value: 10 ppb on Jun 25 03:00        |                               | Minimum Daily Average: 21.9 ppb on Jun 25   |      | Hours of Data: 683             |      |    |               |      |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
| Maximum Diurnal Average: 39.5 ppb at hour 14 |                               | Minimum Diurnal Average: 25.6 ppb at hour 7   |      | Hours of Missing Data: 37      |      |    |               |      |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
| Monthly Average: 33.95 ppb                   |                               | Percentiles: P <sub>1</sub> = 14.8 P <sub>10</sub> = 21.1 Q <sub>1</sub> = 26.3 Median = 34.1 Q <sub>3</sub> = 39.8 P <sub>90</sub> = 46.1 P <sub>99</sub> = 62.9 |      | Hours of Calibration: 33       |      |    |               |      |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
|  |                               |   |      | Percent Operational Time: 99.4 |      |    |               |      |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
| Day  | Hourly Period Ending At (MST) |   |      |                                |      |    |               |      |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      | Daily Average | Daily Maximum   |  |
|  | 1                             | 2   | 3    | 4                              | 5    | 6  | 7             | 8    | 9    | 10   | 11   | 12                            | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |               |                 |  |
| 1-Jun  | 34                            | 37  | 34   | 33                             | A    | 23 | 23            | 26   | 30   | 37   | 38   | 36                            | 37   | 38   | 36   | 36   | 37   | 37   | 52   | 51   | 38   | 31   | 29   | 27   | 34.8          | 51.5            |  |
| 2-Jun  | 30                            | 28  | 27   | 27                             | A    | 16 | 18            | 24   | 26   | 36   | 40   | 45                            | 44   | 39   | 40   | 39   | 43   | 44   | 43   | 40   | 38   | 35   | 36   | 37   | 34.7          | 45.5            |  |
| 3-Jun  | 36                            | 37  | 38   | 38                             | A    | 36 | 35            | 38   | 46   | 47   | 47   | 47                            | 43   | 42   | 42   | 42   | 41   | 40   | 38   | 37   | 37   | 43   | 44   | 42   | 40.6          | 47.3            |  |
| 4-Jun  | 37                            | 41  | 42   | 50                             | A    | 60 | 61            | 61   | 60   | 63   | 63   | 65                            | 67   | 65   | 65   | 61   | 57   | 56   | 55   | 53   | 49   | 49   | 47   | 47   | 55.4          | 66.7            |  |
| 5-Jun  | 47                            | 42  | 42   | 35                             | A    | 37 | 35            | 35   | 40   | 46   | 60   | 61                            | 59   | 61   | 61   | 63   | 64   | 63   | 57   | 57   | 46   | 49   | 47   | 46   | 50.1          | 63.7            |  |
| 6-Jun  | 46                            | 45  | 46   | 45                             | A    | 29 | 32            | 37   | 36   | 37   | 38   | 47                            | 47   | 48   | 49   | 50   | 52   | 51   | 53   | 54   | 45   | 45   | 41   | 40   | 44.0          | 53.7            |  |
| 7-Jun  | 40                            | 40  | 38   | 36                             | A    | 34 | 35            | 34   | 38   | 42   | 46   | 45                            | 45   | 44   | 44   | 45   | 45   | 45   | 45   | 44   | 39   | 40   | 44   | 44   | 41.4          | 46.2            |  |
| 8-Jun  | 39                            | 38  | 38   | 31                             | A    | 38 | 38            | 41   | 45   | 46   | 44   | 43                            | C    | C    | C    | 38   | 44   | 43   | 40   | 39   | 36   | 34   | 33   | 30   | 38.8          | 45.5            |  |
| 9-Jun  | 29                            | 27  | 27   | 39                             | A    | 30 | 26            | 26   | 25   | 27   | 26   | 27                            | 31   | 42   | 44   | 40   | 40   | 35   | 32   | 31   | 31   | 30   | 29   | 26   | 31.3          | 43.6            |  |
| 10-Jun                                       | 27                            | 27  | 24   | 26                             | A    | 23 | 22            | 28   | 37   | 35   | 39   | 38                            | 34   | 35   | 36   | 36   | 32   | 34   | 30   | 33   | 34   | 34   | 34   | 40   | 32.0          | 40.4            |  |
| 11-Jun                                       | 39                            | 37  | 36   | 33                             | A    | 29 | 26            | 25   | 25   | 26   | 30   | 31                            | 29   | 27   | 26   | 30   | 33   | 31   | 27   | 27   | 26   | 23   | 19   | 17   | 28.3          | 38.7            |  |
| 12-Jun                                       | 17                            | 18  | 19   | 19                             | A    | 19 | 20            | 27   | 26   | 28   | 31   | 32                            | 31   | 33   | P    | P    | 40   | 36   | 34   | 33   | 32   | 32   | 34   | 37   | 28.4          | 39.8            |  |
| 13-Jun                                       | 36                            | 33  | 34   | 32                             | A    | 34 | 34            | 39   | 38   | 42   | 44   | 43                            | 42   | 49   | 46   | 45   | 45   | 45   | 45   | 42   | 37   | 36   | 37   | 37   | 39.9          | 49.2            |  |
| 14-Jun                                       | 36                            | 31  | 31   | 31                             | A    | 23 | 28            | 29   | 32   | 34   | 38   | 36                            | 37   | 39   | 38   | 37   | 40   | 39   | 39   | 39   | 36   | 33   | 31   | 32   | 34.3          | 39.6            |  |
| 15-Jun                                       | 38                            | 36  | 36   | 34                             | A    | 32 | 30            | 30   | 28   | 28   | 25   | 22                            | 21   | 20   | 20   | 20   | 20   | 21   | 21   | 21   | 21   | 21   | 21   | 21   | 25.6          | 38.1            |  |
| 16-Jun                                       | 20                            | 20  | 20   | 19                             | A    | 20 | 20            | 21   | 22   | 24   | 25   | 26                            | 26   | 25   | 24   | 24   | 23   | 21   | 21   | 22   | 22   | 22   | 22   | 24   | 22.3          | 25.8            |  |
| 17-Jun                                       | 23                            | 23  | 23   | 21                             | A    | 19 | 19            | 21   | 21   | 23   | 25   | 26                            | 28   | 29   | 30   | 31   | 29   | 30   | 31   | 29   | 28   | 27   | 25   | 25   | 25.5          | 31.4            |  |
| 18-Jun                                       | 25                            | 24  | 25   | 21                             | A    | 17 | 16            | 32   | 24   | 25   | 27   | 29                            | 31   | 32   | 33   | 34   | 33   | 34   | 34   | 35   | 32   | 29   | 30   | 30   | 28.2          | 34.6            |  |
| 19-Jun                                       | 34                            | 34  | 25   | 27                             | A    | 28 | 28            | 28   | 28   | 30   | 30   | 47                            | 34   | 45   | 44   | 39   | 40   | 41   | 42   | 41   | 38   | 36   | 33   | 32   | 34.9          | 47.4            |  |
| 20-Jun                                       | 30                            | 26  | 22   | 21                             | A    | 22 | 24            | 24   | 25   | 28   | 31   | 35                            | 41   | 47   | 43   | 46   | 46   | 46   | 47   | 44   | 41   | 36   | 36   | 39   | 34.8          | 46.8            |  |
| 21-Jun                                       | 40                            | 36  | 31   | 32                             | A    | 27 | 25            | 28   | 33   | 36   | 36   | 39                            | 39   | 39   | 39   | 37   | 36   | 38   | 35   | 37   | 34   | 38   | 38   | 37   | 35.2          | 39.7            |  |
| 22-Jun                                       | 42                            | 43  | 29   | 48                             | A    | 30 | 25            | 26   | 33   | 36   | N    | N                             | 38   | 40   | 41   | 41   | 38   | 36   | 33   | 31   | 26   | 23   | 23   | 26   | 33.7          | 47.7            |  |
| 23-Jun                                       | 26                            | 27  | 21   | 18                             | A    | 13 | 15            | 21   | 30   | 33   | 36   | 37                            | 37   | 38   | 40   | 41   | 38   | 38   | 37   | 31   | 30   | 33   | 30   | 23   | 30.2          | 40.5            |  |
| 24-Jun                                       | 24                            | 24  | 24   | 24                             | A    | 23 | 20            | 18   | 20   | 24   | 27   | 38                            | 33   | 26   | 28   | 28   | 28   | 30   | 27   | 25   | 24   | 20   | 16   | 15   | 24.6          | 38.0            |  |
| 25-Jun                                       | 13                            | 13  | 10   | 11                             | A    | 16 | 16            | 16   | 20   | 24   | 26   | 26                            | 26   | 26   | 27   | 28   | 30   | 29   | 28   | 25   | 25   | 24   | 23   | 22   | 21.9          | 30.1            |  |
| 26-Jun                                       | 25                            | 24  | 25   | 25                             | A    | 23 | 23            | 24   | 26   | 28   | 32   | 35                            | 36   | 37   | 35   | 35   | 32   | 30   | 29   | 27   | 24   | 21   | 21   | 22   | 27.8          | 37.0            |  |
| 27-Jun                                       | 19                            | 17  | 17   | 16                             | A    | 16 | 17            | 18   | 20   | 22   | 32   | 35                            | 35   | 35   | 36   | 36   | 36   | 37   | 38   | 38   | 33   | 32   | 32   | 31   | 28.2          | 37.8            |  |
| 28-Jun                                       | 34                            | 34  | 32   | 28                             | A    | 15 | 16            | 13   | 31   | 40   | 45   | 45                            | 44   | 47   | 46   | 48   | 45   | 46   | 45   | 45   | 43   | 40   | 39   | 34   | 37.2          | 47.8            |  |
| 29-Jun                                       | 35                            | 32  | 28   | 26                             | A    | 12 | 18            | 23   | 25   | 34   | 41   | 46                            | 54   | 52   | 48   | 35   | 36   | 45   | 52   | 54   | 48   | 45   | 41   | 39   | 37.8          | 54.4            |  |
| 30-Jun                                       | 31                            | 34  | 35   | 34                             | A    | 31 | 24            | 30   | 35   | 35   | 38   | 38                            | 36   | 46   | 44   | 44   | 43   | 41   | 39   | 40   | 40   | 40   | 34   | 32   | 36.7          | 45.8            |  |
|  |                               | 31.8  | 31.0 | 29.3                           | 29.3 | -- | 25.8          | 25.6 | 28.1 | 30.9 | 33.8 | 36.6                          | 38.6 | 38.1 | 39.5 | 39.4 | 38.9 | 38.9 | 38.8 | 38.3 | 37.4 | 34.4 | 33.4 | 32.3 | 31.8          | Diurnal Average |  |
|  |                               | 46.8  | 45.5 | 46.3                           | 49.8 | -- | 59.6          | 60.7 | 60.7 | 60.1 | 62.7 | 62.9                          | 65.4 | 66.7 | 65.5 | 65.3 | 62.6 | 63.7 | 63.0 | 56.8 | 56.8 | 49.2 | 49.2 | 47.3 | 47.5          | Diurnal Maximum |  |
| C - Calibration                              |                               | P - Power Failure   |      |                                |      |    | N - Not Valid |      |      |      |      | A - Automated Daily Zero Span |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |

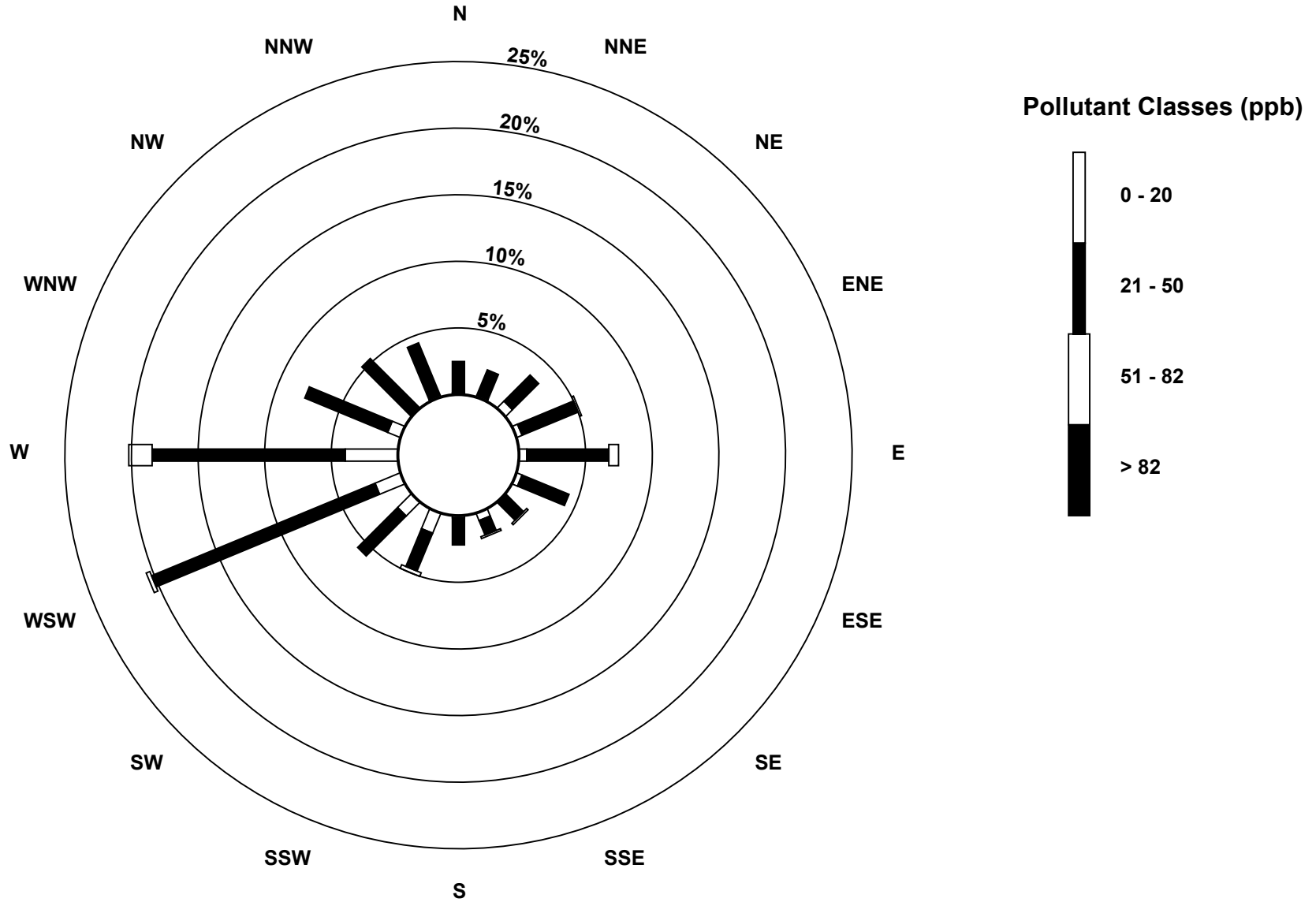
### Hourly Maximums

Ozone (O<sub>3</sub>) - ppb  
Beaverlodge - June 2016



**Pollutant Rose**

**Ozone (O<sub>3</sub>) - ppb**  
**Beaverlodge - June 2016**



# Eight Hour Running Averages

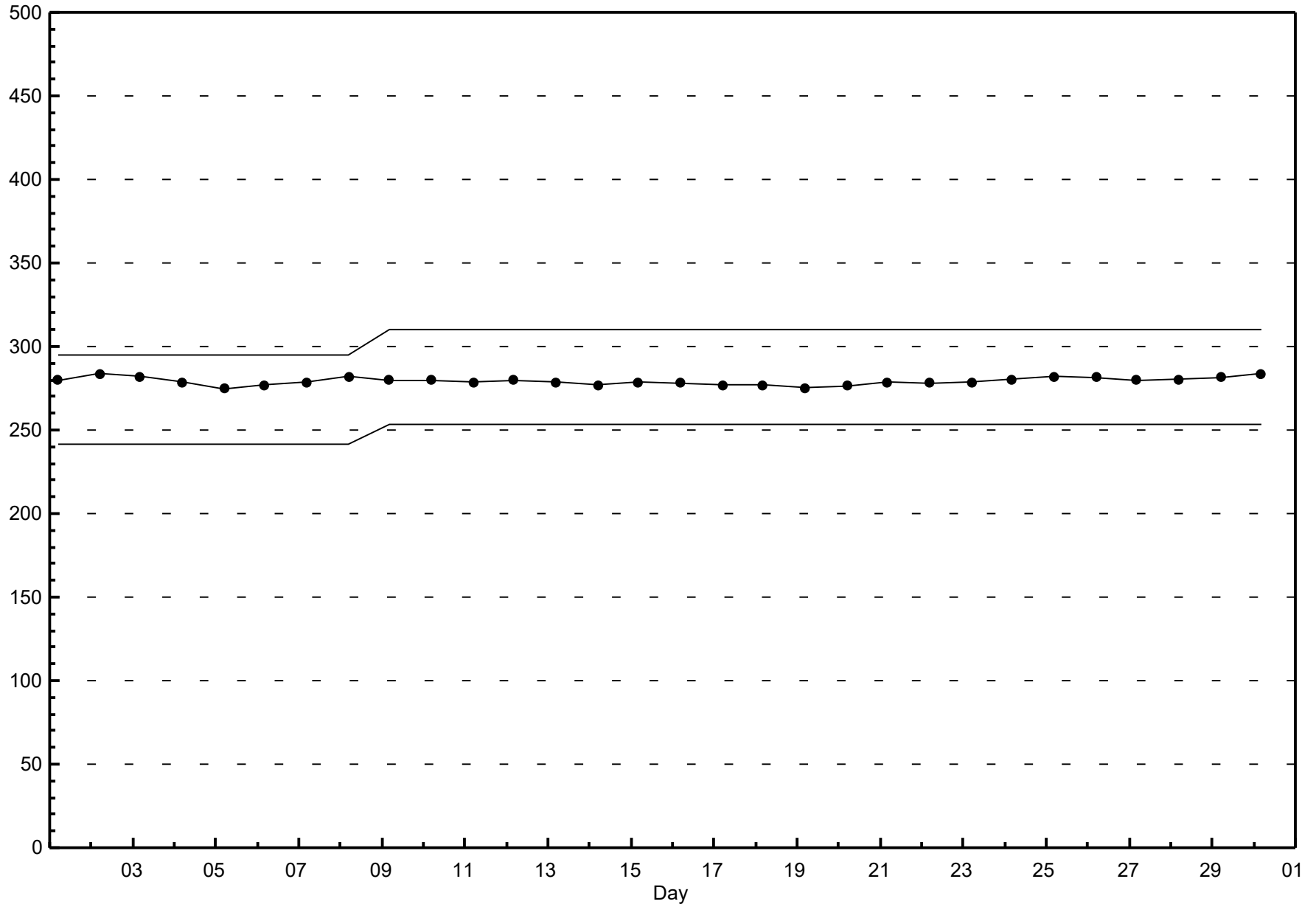
Ozone (O<sub>3</sub>) - ppb

Beaverlodge - June 2016

| Maximum Value: 61.5 ppb on Jun 4 15:00  |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Hours in Service:         | 720   |    |      |               |
|---|-------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------------------|-------|----|------|---------------|
| Minimum Value: 11.1 ppb on Jun 25 06:00   |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Hours of Data:            | 713   |    |      |               |
| Percentiles: P <sub>1</sub> = 13.7 P <sub>10</sub> = 20.2 Q <sub>1</sub> = 24.5 Median = 30.7 Q <sub>3</sub> = 35.9 P <sub>90</sub> = 41.2 P <sub>99</sub> = 59.6 |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Hours of Missing Data:    | 7     |    |      |               |
|   |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Hours of Calibration:     | 7     |    |      |               |
|   |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Percent Operational Time: | 100.0 |    |      |               |
| Day   | Hourly Period Ending At (MST) |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                           |       |    |      | Daily Maximum |
|   | 1                             | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21                        | 22    | 23 | 24   |               |
| 1-Jun   | 32                            | 32 | 32 | 31 | 30 | 29 | 27 | 27 | 26 | 25 | 26 | 27 | 27 | 29 | 31 | 33 | 34 | 35 | 35 | 36 | 36                        | 35    | 33 | 32   | 36.2          |
| 2-Jun   | 31                            | 29 | 28 | 25 | 24 | 22 | 21 | 20 | 20 | 21 | 22 | 25 | 27 | 30 | 33 | 35 | 37 | 38 | 39 | 39 | 38                        | 38    | 38 | 38   | 39.1          |
| 3-Jun   | 37                            | 36 | 35 | 35 | 35 | 35 | 34 | 34 | 35 | 37 | 38 | 39 | 40 | 41 | 42 | 42 | 42 | 41 | 40 | 39 | 38                        | 37    | 38 | 37   | 42.4          |
| 4-Jun   | 37                            | 37 | 37 | 38 | 39 | 42 | 44 | 47 | 50 | 54 | 57 | 60 | 60 | 61 | 61 | 61 | 61 | 60 | 59 | 57 | 55                        | 53    | 50 | 48   | 61.5          |
| 5-Jun   | 46                            | 44 | 42 | 40 | 39 | 37 | 35 | 34 | 34 | 34 | 37 | 40 | 42 | 46 | 50 | 53 | 56 | 58 | 58 | 58 | 56                        | 54    | 53 | 51   | 58.4          |
| 6-Jun   | 48                            | 46 | 45 | 44 | 44 | 41 | 37 | 34 | 32 | 31 | 29 | 29 | 31 | 34 | 37 | 40 | 42 | 45 | 46 | 47 | 47                        | 47    | 46 | 45   | 48.3          |
| 7-Jun   | 44                            | 43 | 41 | 39 | 39 | 37 | 36 | 35 | 35 | 35 | 35 | 37 | 37 | 39 | 40 | 41 | 42 | 42 | 42 | 42 | 41                        | 40    | 40 | 40   | 44.0          |
| 8-Jun   | 39                            | 38 | 38 | 36 | 36 | 35 | 33 | 33 | 32 | 33 | 34 | 36 | 36 | 37 | N  | N  | N  | N  | N  | N  | 37                        | 37    | 36 | 34   | 39.0          |
| 9-Jun   | 32                            | 30 | 28 | 28 | 27 | 26 | 26 | 26 | 25 | 25 | 25 | 25 | 26 | 28 | 30 | 32 | 33 | 33 | 34 | 34 | 34                        | 33    | 31 | 29   | 33.9          |
| 10-Jun  | 28                            | 27 | 26 | 25 | 25 | 24 | 23 | 22 | 24 | 25 | 27 | 28 | 29 | 30 | 32 | 33 | 33 | 33 | 32 | 31 | 31                        | 30    | 30 | 30   | 33.4          |
| 11-Jun  | 31                            | 32 | 32 | 33 | 33 | 33 | 32 | 30 | 28 | 27 | 25 | 25 | 25 | 25 | 25 | 26 | 27 | 27 | 27 | 27 | 26                        | 26    | 25 | 23   | 33.3          |
| 12-Jun  | 22                            | 20 | 19 | 18 | 17 | 17 | 17 | 18 | 19 | 21 | 22 | 24 | 25 | 27 | 28 | 28 | 31 | 32 | 33 | 33 | 33                        | 33    | 33 | 33   | 33.4          |
| 13-Jun  | 33                            | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 40 | 41 | 42 | 43 | 43 | 43 | 42                        | 41    | 40 | 39   | 42.8          |
| 14-Jun  | 37                            | 35 | 33 | 32 | 31 | 29 | 27 | 26 | 26 | 26 | 27 | 28 | 29 | 31 | 33 | 34 | 35 | 36 | 36 | 36 | 36                        | 35    | 34 | 34   | 36.9          |
| 15-Jun  | 34                            | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 31 | 30 | 28 | 26 | 25 | 24 | 23 | 21 | 20 | 20 | 19 | 19 | 20                        | 20    | 20 | 20   | 33.5          |
| 16-Jun  | 20                            | 20 | 20 | 20 | 20 | 20 | 19 | 19 | 20 | 20 | 21 | 22 | 22 | 23 | 23 | 24 | 24 | 23 | 23 | 22 | 22                        | 21    | 21 | 21   | 23.6          |
| 17-Jun  | 21                            | 22 | 22 | 22 | 22 | 21 | 21 | 20 | 20 | 20 | 20 | 21 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 28                        | 27    | 27 | 27   | 27.7          |
| 18-Jun  | 26                            | 25 | 24 | 23 | 23 | 22 | 20 | 19 | 19 | 19 | 20 | 21 | 23 | 25 | 27 | 28 | 29 | 30 | 31 | 31 | 31                        | 31    | 31 | 30   | 30.9          |
| 19-Jun  | 30                            | 29 | 28 | 27 | 27 | 26 | 26 | 26 | 25 | 26 | 27 | 27 | 28 | 30 | 31 | 33 | 34 | 35 | 37 | 38 | 38                        | 37    | 36 | 35   | 37.9          |
| 20-Jun  | 34                            | 32 | 29 | 27 | 26 | 24 | 23 | 22 | 22 | 22 | 23 | 25 | 27 | 29 | 32 | 34 | 37 | 39 | 41 | 42 | 42                        | 41    | 40 | 39   | 41.8          |
| 21-Jun  | 38                            | 36 | 34 | 33 | 32 | 31 | 29 | 27 | 27 | 27 | 28 | 29 | 30 | 31 | 33 | 34 | 35 | 35 | 35 | 35 | 34                        | 34    | 34 | 34   | 37.8          |
| 22-Jun  | 34                            | 34 | 33 | 32 | 32 | 31 | 29 | 28 | 26 | 26 | 27 | N  | 29 | 30 | 33 | 35 | 36 | 36 | 35 | 34 | 33                        | 31    | 28 | 27   | 36.1          |
| 23-Jun  | 25                            | 24 | 22 | 21 | 20 | 19 | 18 | 17 | 17 | 18 | 21 | 23 | 25 | 28 | 31 | 33 | 35 | 36 | 36 | 35 | 34                        | 33    | 31 | 28   | 35.7          |
| 24-Jun  | 27                            | 25 | 23 | 22 | 22 | 20 | 20 | 20 | 19 | 19 | 20 | 21 | 21 | 22 | 23 | 24 | 25 | 25 | 25 | 24 | 23                        | 23    | 21 | 19   | 26.6          |
| 25-Jun  | 18                            | 16 | 14 | 13 | 12 | 11 | 11 | 12 | 12 | 14 | 16 | 18 | 19 | 21 | 22 | 24 | 25 | 26 | 26 | 26 | 25                        | 25    | 24 | 23   | 25.9          |
| 26-Jun  | 23                            | 22 | 22 | 21 | 21 | 22 | 22 | 22 | 22 | 23 | 24 | 25 | 26 | 28 | 29 | 31 | 31 | 32 | 31 | 31 | 29                        | 27    | 26 | 24   | 31.6          |
| 27-Jun  | 22                            | 21 | 19 | 18 | 17 | 16 | 16 | 15 | 16 | 16 | 18 | 20 | 22 | 24 | 27 | 29 | 31 | 33 | 34 | 34 | 34                        | 33    | 33 | 31   | 34.1          |
| 28-Jun  | 31                            | 31 | 29 | 28 | 28 | 25 | 22 | 20 | 18 | 19 | 21 | 24 | 26 | 30 | 35 | 39 | 41 | 42 | 42 | 42 | 41                        | 40    | 39 | 42.2 |               |
| 29-Jun  | 38                            | 35 | 33 | 30 | 28 | 24 | 20 | 18 | 17 | 17 | 20 | 23 | 26 | 31 | 35 | 37 | 38 | 39 | 41 | 42 | 41                        | 40    | 40 | 40   | 41.5          |
| 30-Jun  | 40                            | 39 | 37 | 35 | 34 | 31 | 29 | 27 | 28 | 28 | 28 | 29 | 29 | 32 | 34 | 36 | 37 | 38 | 39 | 39 | 39                        | 38    | 36 | 34   | 40.0          |
| 48.3 46.4 45.2 43.8 44.1 41.8 44.2 47.3 50.5 54.0 57.1 59.8 60.3 61.1 61.5 61.4 60.9 60.0 59.0 57.8 55.9 54.4 52.6 50.5   |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                           |       |    |      |               |
| Diurnal Maximums  |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                           |       |    |      |               |
| N - Not Valid   |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                           |       |    |      |               |

### Span Responses

Ozone (O<sub>3</sub>)  
Beaverlodge - June 2016



## Hourly Averages

## Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

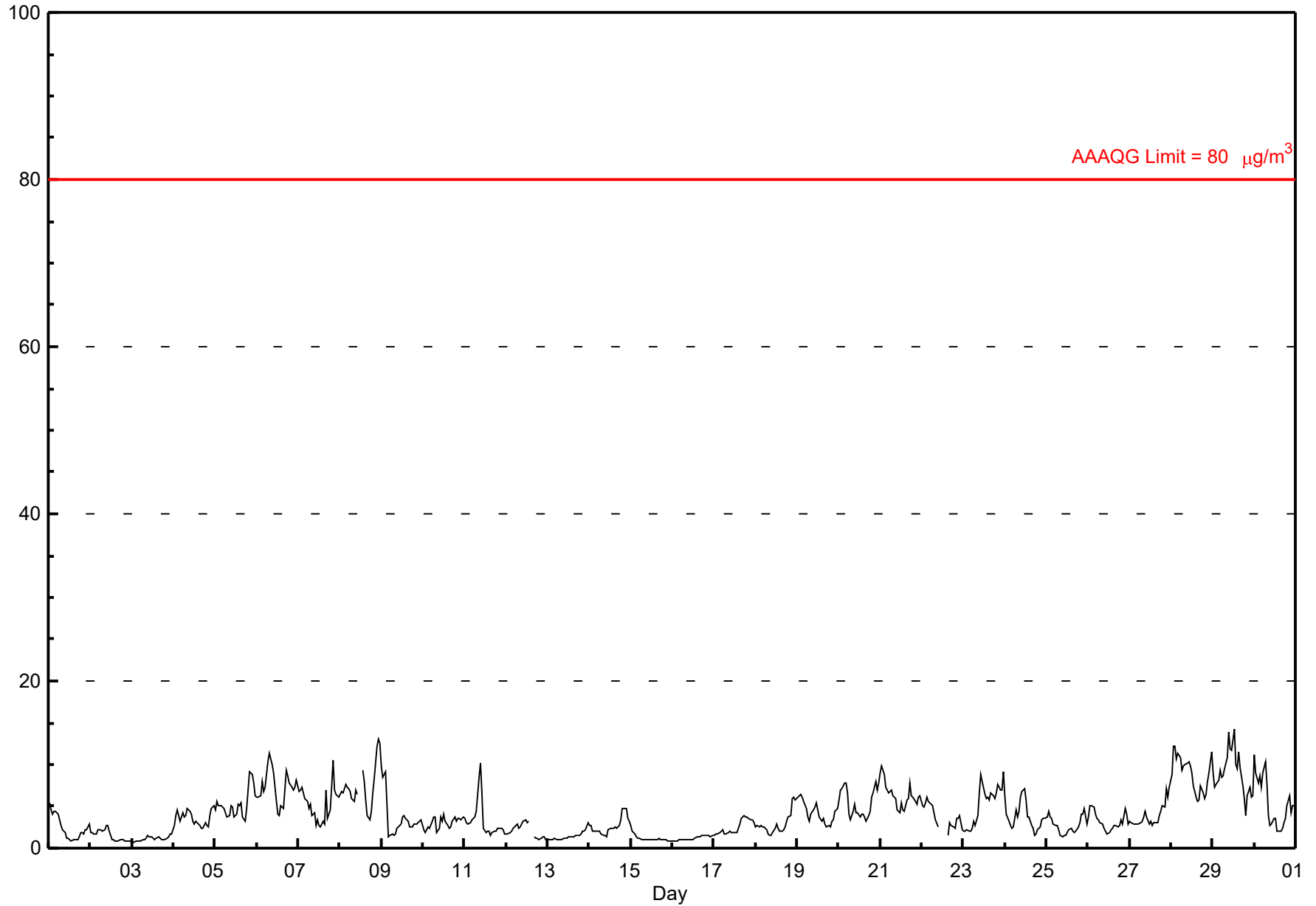
### Beaverlodge - June 2016

|   |  |
|---|--|
| Number of Exceedences: 1-hr: 0 24-hr: 0   | Hours in Service: 720                                  |
| Maximum Value: 14.2 µg/m <sup>3</sup> on Jun 29 13:00   | Maximum Daily Average: 8.9 µg/m <sup>3</sup> on Jun 28 |
| Minimum Value: 1 µg/m <sup>3</sup> on Jun 3 02:00   | Hours of Data: 711                                     |
| Maximum Diurnal Average: 4.7 µg/m <sup>3</sup> at hour 24   | Hours of Missing Data: 9                               |
| Monthly Average: 3.98 µg/m <sup>3</sup>   | Hours of Calibration: 3                                |
| Minimum Daily Average: 1.1 µg/m <sup>3</sup> on Jun 3   | Percent Operational Time: 99.2                         |
| Minimum Diurnal Average: 3.2 µg/m <sup>3</sup> at hour 16   |  |
| Percentiles: P <sub>1</sub> = 0.8 P <sub>10</sub> = 1.1 Q <sub>1</sub> = 2.0 Median = 3.3 Q <sub>3</sub> = 5.6 P <sub>90</sub> = 7.8 P <sub>99</sub> = 12.0 |  |

| Day    | Hourly Period Ending At (MST) |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Daily Average | Daily Maximum |
|--------|-------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------|---------------|
|        | 1                             | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |               |               |
| 1-Jun  | 5                             | 5  | 4  | 4  | 4  | 4  | 3  | 3  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 2  | 2  | 2  | 3  | 2.4           | 5.4           |
| 2-Jun  | 2                             | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 3  | 3  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1.5           | 2.7           |
| 3-Jun  | 1                             | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 1.1           | 1.8           |
| 4-Jun  | 3                             | 4  | 5  | 4  | 3  | 4  | 4  | 4  | 5  | 4  | 4  | 3  | 3  | 3  | 3  | 3  | 2  | 2  | 3  | 3  | 3  | 4  | 5  | 5  | 3.5           | 5.0           |
| 5-Jun  | 5                             | 6  | 5  | 5  | 5  | 5  | 4  | 4  | 4  | 5  | 5  | 4  | 4  | 5  | 5  | 5  | 4  | 3  | 5  | 7  | 9  | 9  | 8  | 6  | 5.3           | 9.1           |
| 6-Jun  | 6                             | 6  | 6  | 8  | 7  | 7  | 10 | 11 | 11 | 10 | 9  | 6  | 4  | 4  | 5  | 5  | 7  | 9  | 9  | 8  | 7  | 7  | 7  | 8  | 7.4           | 11.4          |
| 7-Jun  | 7                             | 7  | 7  | 7  | 6  | 6  | 5  | 5  | 4  | 4  | 3  | 3  | 3  | 2  | 3  | 3  | 7  | 4  | 5  | 7  | 11 | 7  | 6  | 6  | 5.3           | 10.5          |
| 8-Jun  | 6                             | 7  | 7  | 8  | 7  | 7  | 7  | 6  | 6  | 7  | 6  | M  | M  | 9  | 8  | 6  | 4  | 3  | 4  | 7  | 8  | 12 | 13 | 12 | 7.3           | 13.1          |
| 9-Jun  | 10                            | 9  | 9  | 5  | 1  | 1  | 2  | 1  | 2  | 2  | 2  | 3  | 4  | 4  | 3  | 3  | 3  | 3  | 3  | 3  | 3  | 3  | 3  | 3  | 3.6           | 9.8           |
| 10-Jun | 2                             | 2  | 2  | 2  | 2  | 3  | 4  | 4  | 2  | 2  | 4  | 3  | 4  | 3  | 3  | 2  | 2  | 3  | 4  | 3  | 3  | 4  | 3  | 4  | 3.0           | 4.0           |
| 11-Jun | 4                             | 3  | 3  | 3  | 3  | 4  | 4  | 4  | 8  | 10 | 7  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 3.3           | 10.1          |
| 12-Jun | 2                             | 2  | 2  | 2  | 2  | 3  | 3  | 2  | 3  | 3  | 3  | 3  | 3  | 3  | P  | P  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2.1           | 3.3           |
| 13-Jun | 1                             | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 2  | 2  | 2  | 3  | 1.4           | 3.0           |
| 14-Jun | 3                             | 3  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 1  | 2  | 2  | 2  | 2  | 2  | 2  | 3  | 3  | 5  | 5  | 5  | 4  | 3  | 2.6           | 4.8           |
| 15-Jun | 3                             | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1.2           | 2.7           |
| 16-Jun | 1                             | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 1  | 1  | 1  | 1  | 1  | 1.2           | 1.5           |
| 17-Jun | 2                             | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 3  | 4  | 4  | 4  | 4  | 4  | 3  | 3  | 3  | 2.5           | 3.8           |
| 18-Jun | 2                             | 3  | 3  | 3  | 3  | 3  | 2  | 2  | 1  | 2  | 2  | 2  | 3  | 2  | 2  | 2  | 2  | 3  | 3  | 4  | 4  | 6  | 6  | 6  | 2.9           | 6.0           |
| 19-Jun | 6                             | 6  | 6  | 6  | 6  | 5  | 4  | 3  | 4  | 5  | 5  | 5  | 5  | 4  | 3  | 4  | 3  | 3  | 3  | 3  | 3  | 3  | 4  | 5  | 4.3           | 6.5           |
| 20-Jun | 6                             | 7  | 7  | 8  | 8  | 7  | 4  | 3  | 4  | 5  | 4  | 4  | 4  | 4  | 4  | 4  | 3  | 4  | 4  | 6  | 7  | 8  | 7  | 8  | 5.4           | 7.9           |
| 21-Jun | 9                             | 10 | 9  | 7  | 7  | 7  | 7  | 6  | 6  | 6  | 5  | 4  | 5  | 5  | 4  | 6  | 6  | 8  | 6  | 6  | 6  | 5  | 6  | 6  | 6.3           | 9.8           |
| 22-Jun | 5                             | 5  | 5  | 6  | 6  | 5  | 5  | 4  | 3  | 2  | N  | N  | C  | C  | C  | 1  | 3  | 3  | 3  | 2  | 4  | 4  | 4  | 2  | 3.9           | 6.1           |
| 23-Jun | 2                             | 2  | 2  | 2  | 2  | 2  | 3  | 3  | 4  | 7  | 9  | 8  | 6  | 6  | 6  | 6  | 7  | 6  | 6  | 7  | 8  | 7  | 7  | 9  | 5.3           | 9.2           |
| 24-Jun | 6                             | 4  | 3  | 3  | 2  | 3  | 5  | 4  | 4  | 6  | 7  | 7  | 6  | 4  | 4  | 3  | 2  | 1  | 2  | 2  | 3  | 3  | 4  | 4  | 3.8           | 7.2           |
| 25-Jun | 4                             | 4  | 4  | 4  | 3  | 3  | 3  | 2  | 1  | 1  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 3  | 4  | 4  | 5  | 3  | 2.7           | 4.8           |
| 26-Jun | 4                             | 5  | 5  | 5  | 4  | 4  | 3  | 3  | 3  | 2  | 2  | 2  | 2  | 2  | 3  | 3  | 3  | 3  | 3  | 3  | 3  | 5  | 4  | 3  | 3.2           | 5.0           |
| 27-Jun | 3                             | 3  | 3  | 3  | 3  | 3  | 3  | 3  | 4  | 4  | 4  | 3  | 3  | 3  | 3  | 3  | 3  | 4  | 4  | 5  | 5  | 7  | 6  | 7  | 3.9           | 7.3           |
| 28-Jun | 9                             | 12 | 12 | 11 | 11 | 11 | 9  | 10 | 10 | 10 | 10 | 10 | 9  | 8  | 6  | 6  | 6  | 7  | 7  | 6  | 6  | 8  | 9  | 11 | 8.9           | 12.2          |
| 29-Jun | 9                             | 7  | 8  | 8  | 9  | 8  | 9  | 10 | 11 | 14 | 12 | 12 | 14 | 10 | 9  | 12 | 10 | 7  | 6  | 4  | 6  | 7  | 6  | 6  | 8.9           | 14.2          |
| 30-Jun | 11                            | 9  | 8  | 9  | 7  | 9  | 10 | 8  | 4  | 3  | 3  | 4  | 4  | 2  | 2  | 2  | 2  | 3  | 4  | 5  | 6  | 4  | 5  | 5  | 5.4           | 11.3          |

|      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |      |     |     |     |     |      |      |      |      |                 |  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|------|-----|-----|-----|-----|------|------|------|------|-----------------|--|
| 4.6  | 4.6  | 4.5  | 4.4  | 4.1  | 4.1  | 4.1  | 3.8  | 3.9  | 4.3  | 4.1  | 3.7  | 3.6  | 3.4 | 3.3 | 3.2  | 3.2 | 3.3 | 3.4 | 3.8 | 4.3  | 4.6  | 4.6  | 4.7  | Diurnal Average |  |
| 11.3 | 12.1 | 12.2 | 10.7 | 11.4 | 10.9 | 10.3 | 11.4 | 10.9 | 14.0 | 11.8 | 11.8 | 14.2 | 9.9 | 9.5 | 11.5 | 9.6 | 9.3 | 8.6 | 7.8 | 10.5 | 12.3 | 13.1 | 12.5 | Diurnal Maximum |  |

C - Calibration      P - Power Failure      M - Maintenance      N - Not Valid  
 Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 µg/m<sup>3</sup>      Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 µg/m<sup>3</sup>





Peace Airshed Zone Association

# Hourly Maximums

Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

Beaverlodge - June 2016

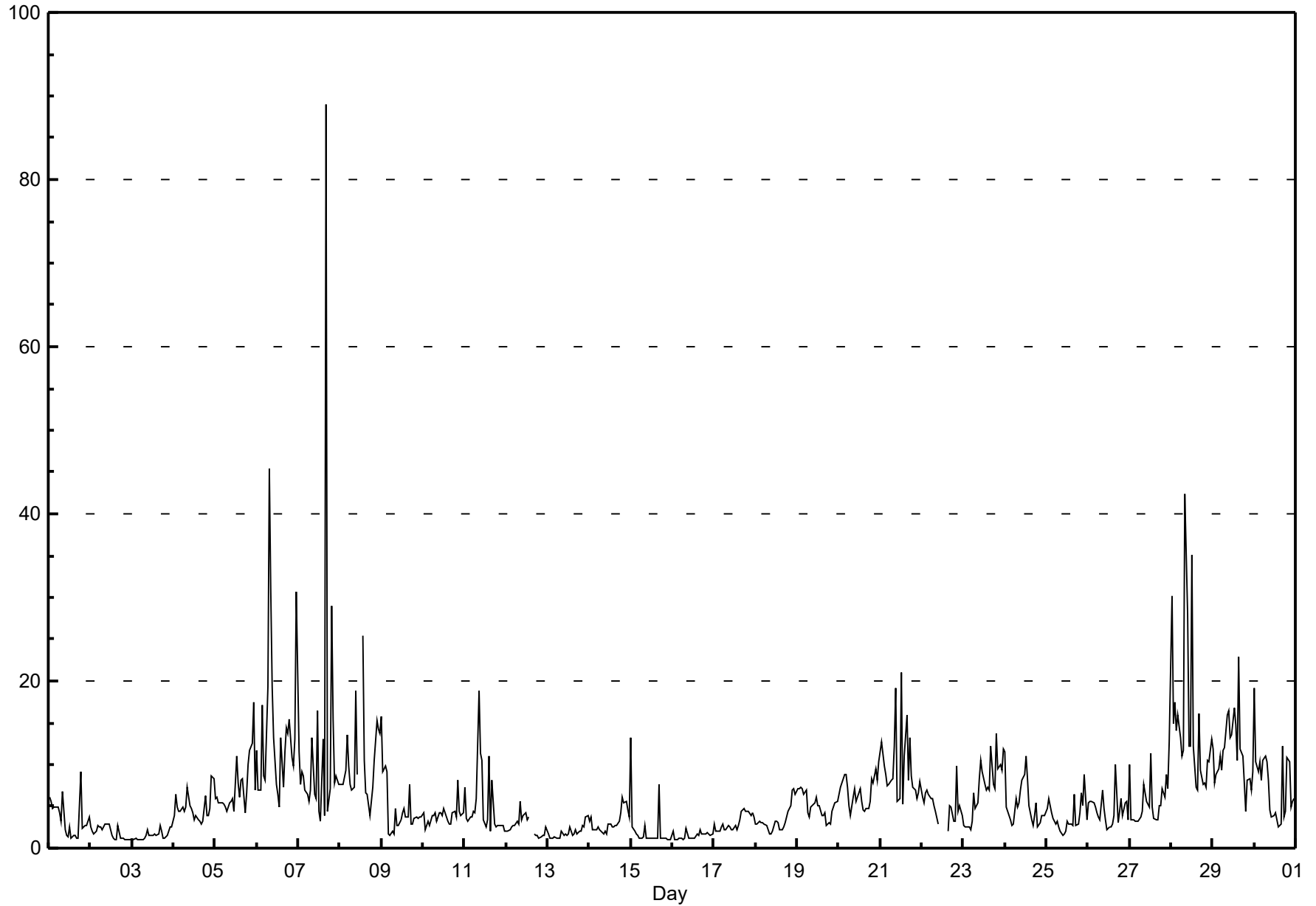
|   |  |                                |
|---|--|--------------------------------|
| Maximum Value: 88.9 µg/m <sup>3</sup> on Jun 7 17:00      | Maximum Daily Average: 15.3 µg/m <sup>3</sup> on Jun 28  | Hours in Service: 720          |
| Minimum Value: 1 µg/m <sup>3</sup> on Jun 3 00:00         | Minimum Daily Average: 1.5 µg/m <sup>3</sup> on Jun 16   | Hours of Data: 711             |
| Maximum Diurnal Average: 8.8 µg/m <sup>3</sup> at hour 17 | Minimum Diurnal Average: 4.5 µg/m <sup>3</sup> at hour 18  | Hours of Missing Data: 9       |
| Monthly Average: 5.84 µg/m <sup>3</sup>                   | Percentiles: P <sub>1</sub> = 1.0 P <sub>10</sub> = 1.5 Q <sub>1</sub> = 2.5 Median = 4.2 Q <sub>3</sub> = 7.4 P <sub>90</sub> = 11.5 P <sub>99</sub> = 29.8 | Hours of Calibration: 3        |
|   |  | Percent Operational Time: 99.2 |

| Day    | Hourly Period Ending At (MST) |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Daily Average | Daily Maximum |
|--------|-------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------|---------------|
|        | 1                             | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |               |               |
| 1-Jun  | 6                             | 6  | 5  | 5  | 5  | 5  | 4  | 3  | 7  | 2  | 1  | 1  | 2  | 1  | 1  | 1  | 1  | 1  | 9  | 2  | 2  | 3  | 3  | 4  | 3.5           | 9.2           |
| 2-Jun  | 2                             | 2  | 2  | 2  | 3  | 3  | 3  | 2  | 3  | 3  | 3  | 3  | 2  | 1  | 1  | 1  | 3  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1.9           | 3.0           |
| 3-Jun  | 1                             | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 2  | 1  | 2  | 2  | 2  | 3  | 2  | 1  | 1  | 1  | 2  | 2  | 2  | 1.6           | 2.7           |
| 4-Jun  | 4                             | 6  | 5  | 4  | 4  | 5  | 4  | 5  | 7  | 5  | 5  | 4  | 3  | 4  | 3  | 3  | 3  | 3  | 6  | 4  | 4  | 5  | 9  | 8  | 4.8           | 8.6           |
| 5-Jun  | 6                             | 6  | 5  | 5  | 5  | 5  | 5  | 4  | 5  | 6  | 6  | 4  | 11 | 8  | 6  | 8  | 8  | 4  | 7  | 10 | 12 | 13 | 17 | 7  | 7.3           | 17.4          |
| 6-Jun  | 12                            | 7  | 7  | 17 | 9  | 8  | 19 | 45 | 31 | 19 | 13 | 8  | 6  | 5  | 13 | 7  | 12 | 14 | 14 | 15 | 11 | 10 | 13 | 31 | 14.4          | 45.4          |
| 7-Jun  | 12                            | 8  | 9  | 9  | 7  | 6  | 6  | 7  | 13 | 6  | 6  | 16 | 4  | 3  | 13 | 4  | 89 | 4  | 7  | 29 | 15 | 8  | 9  | 8  | 12.4          | 88.9          |
| 8-Jun  | 8                             | 8  | 8  | 9  | 13 | 10 | 8  | 7  | 7  | 19 | 9  | M  | M  | 25 | 11 | 7  | 6  | 4  | 6  | 7  | 11 | 15 | 14 | 14 | 10.2          | 25.5          |
| 9-Jun  | 16                            | 9  | 10 | 9  | 2  | 2  | 2  | 2  | 5  | 3  | 3  | 3  | 4  | 5  | 4  | 4  | 8  | 3  | 3  | 3  | 4  | 3  | 4  | 4  | 4.7           | 15.7          |
| 10-Jun | 4                             | 2  | 3  | 3  | 3  | 4  | 4  | 4  | 3  | 4  | 4  | 4  | 5  | 4  | 3  | 3  | 3  | 4  | 4  | 4  | 8  | 4  | 4  | 4  | 3.9           | 8.1           |
| 11-Jun | 7                             | 3  | 3  | 4  | 4  | 4  | 4  | 6  | 19 | 11 | 11 | 3  | 2  | 3  | 11 | 2  | 8  | 3  | 2  | 3  | 3  | 3  | 3  | 2  | 5.2           | 18.9          |
| 12-Jun | 2                             | 2  | 2  | 2  | 3  | 3  | 3  | 3  | 6  | 3  | 4  | 4  | 3  | 4  | P  | P  | 2  | 2  | 1  | 1  | 1  | 2  | 2  | 2  | 2.6           | 5.7           |
| 13-Jun | 2                             | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 1  | 2  | 1  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 3  | 2  | 4  | 4  | 1.9           | 3.9           |
| 14-Jun | 3                             | 4  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 3  | 3  | 2  | 2  | 3  | 3  | 3  | 4  | 6  | 5  | 6  | 5  | 4  | 3.1           | 6.1           |
| 15-Jun | 13                            | 2  | 2  | 2  | 2  | 1  | 1  | 1  | 3  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 8  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2.2           | 13.3          |
| 16-Jun | 2                             | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 1.5           | 2.4           |
| 17-Jun | 3                             | 2  | 2  | 2  | 2  | 3  | 2  | 2  | 3  | 2  | 2  | 2  | 3  | 2  | 3  | 3  | 4  | 5  | 4  | 4  | 4  | 4  | 4  | 4  | 3.1           | 4.7           |
| 18-Jun | 3                             | 3  | 3  | 3  | 3  | 3  | 3  | 2  | 2  | 2  | 2  | 3  | 3  | 3  | 2  | 2  | 2  | 3  | 4  | 4  | 5  | 7  | 7  | 6  | 3.4           | 7.1           |
| 19-Jun | 7                             | 7  | 7  | 7  | 6  | 7  | 4  | 4  | 5  | 5  | 5  | 6  | 5  | 5  | 4  | 4  | 4  | 3  | 3  | 3  | 4  | 5  | 5  | 6  | 5.1           | 7.4           |
| 20-Jun | 6                             | 7  | 8  | 9  | 9  | 7  | 5  | 4  | 6  | 7  | 6  | 6  | 7  | 6  | 5  | 4  | 5  | 5  | 6  | 8  | 8  | 10 | 8  | 10 | 6.7           | 10.3          |
| 21-Jun | 12                            | 13 | 10 | 9  | 7  | 8  | 8  | 8  | 12 | 19 | 6  | 6  | 21 | 5  | 11 | 16 | 8  | 13 | 9  | 7  | 7  | 6  | 7  | 8  | 9.8           | 21.1          |
| 22-Jun | 6                             | 5  | 7  | 7  | 6  | 6  | 6  | 5  | 4  | 3  | N  | N  | C  | C  | C  | 2  | 5  | 5  | 3  | 3  | 10 | 4  | 5  | 4  | 5.1           | 9.8           |
| 23-Jun | 3                             | 2  | 2  | 2  | 2  | 3  | 7  | 5  | 5  | 8  | 11 | 9  | 8  | 7  | 7  | 7  | 12 | 8  | 7  | 14 | 10 | 10 | 9  | 12 | 7.1           | 13.7          |
| 24-Jun | 12                            | 5  | 4  | 3  | 3  | 3  | 6  | 5  | 5  | 7  | 8  | 9  | 11 | 8  | 5  | 3  | 3  | 4  | 5  | 2  | 3  | 4  | 4  | 4  | 5.3           | 11.5          |
| 25-Jun | 5                             | 6  | 5  | 4  | 3  | 3  | 3  | 2  | 2  | 2  | 2  | 2  | 3  | 3  | 3  | 3  | 6  | 3  | 3  | 4  | 7  | 5  | 9  | 3  | 3.8           | 8.8           |
| 26-Jun | 5                             | 6  | 6  | 5  | 5  | 4  | 4  | 3  | 7  | 5  | 3  | 2  | 2  | 2  | 3  | 4  | 10 | 3  | 4  | 6  | 4  | 5  | 6  | 3  | 4.6           | 10.1          |
| 27-Jun | 10                            | 3  | 3  | 3  | 3  | 3  | 4  | 4  | 8  | 7  | 6  | 5  | 11 | 5  | 3  | 3  | 3  | 5  | 5  | 7  | 6  | 9  | 7  | 13 | 5.8           | 12.8          |
| 28-Jun | 30                            | 15 | 17 | 14 | 16 | 13 | 11 | 12 | 42 | 28 | 12 | 12 | 35 | 12 | 7  | 7  | 16 | 9  | 8  | 8  | 7  | 11 | 10 | 13 | 15.3          | 42.5          |
| 29-Jun | 12                            | 8  | 9  | 10 | 11 | 9  | 12 | 12 | 16 | 16 | 13 | 14 | 17 | 15 | 11 | 23 | 12 | 11 | 8  | 4  | 8  | 8  | 7  | 9  | 11.4          | 22.8          |
| 30-Jun | 19                            | 10 | 9  | 10 | 8  | 11 | 11 | 10 | 8  | 5  | 4  | 4  | 4  | 3  | 2  | 3  | 12 | 4  | 4  | 11 | 10 | 5  | 6  | 6  | 7.5           | 19.1          |

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|--|
| 7.7  | 5.4  | 5.3  | 5.6  | 5.0  | 4.8  | 5.1  | 5.8  | 8.1  | 6.9  | 5.2  | 5.0  | 6.6  | 5.2  | 5.1  | 4.6  | 8.8  | 4.5  | 4.8  | 6.0  | 5.9  | 5.7  | 6.2  | 6.6  | Diurnal Average |  |
| 30.2 | 15.0 | 17.4 | 17.2 | 16.0 | 13.3 | 19.3 | 45.4 | 42.5 | 28.0 | 13.3 | 16.4 | 35.1 | 25.5 | 13.3 | 22.8 | 88.9 | 14.5 | 13.8 | 28.9 | 15.5 | 15.2 | 17.4 | 30.7 | Diurnal Maximum |  |

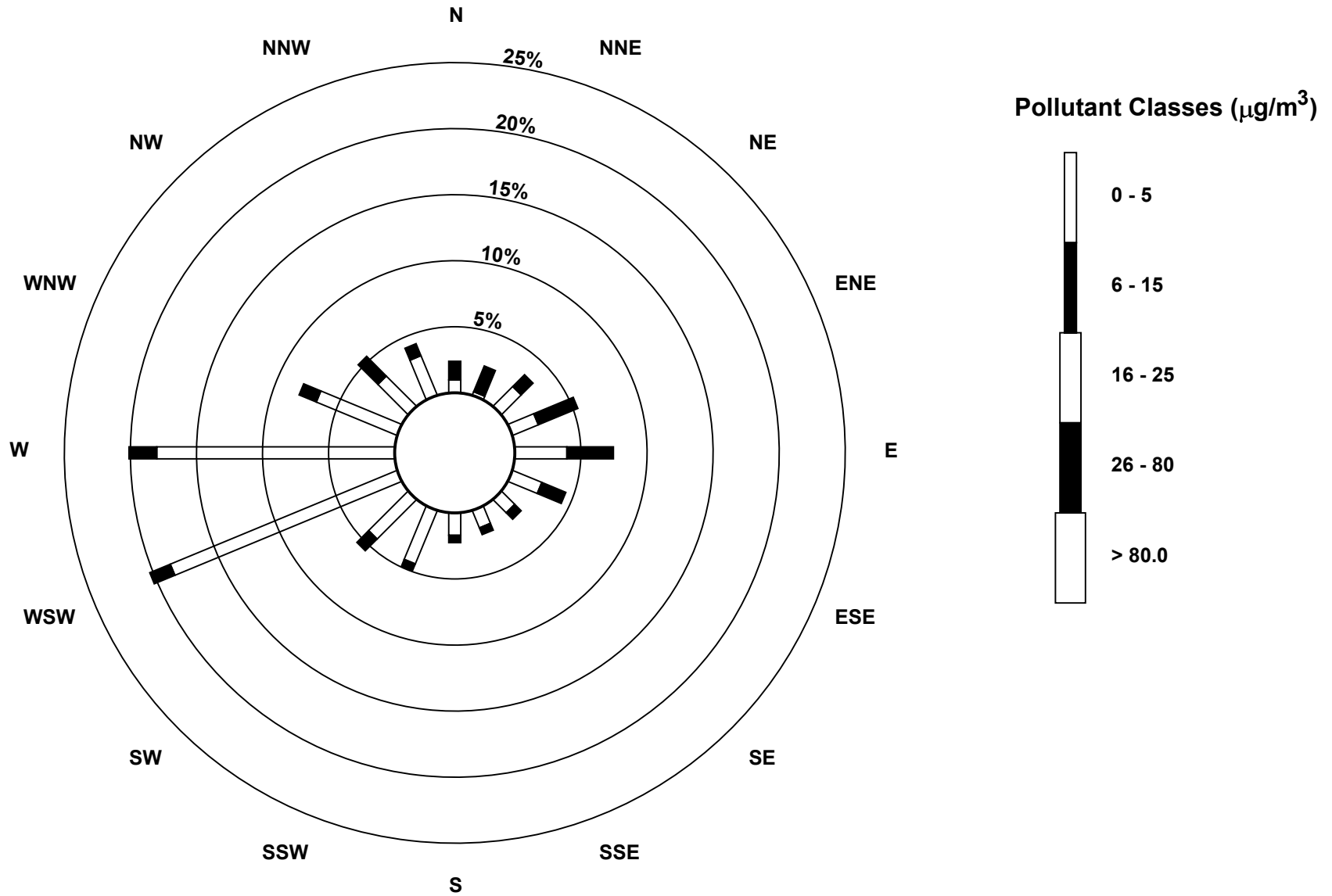
C - Calibration      P - Power Failure      M - Maintenance      N - Not Valid





**Pollutant Rose**

**Particulate Matter 2.5 (PM<sub>2.5</sub>) -  $\mu\text{g}/\text{m}^3$**   
**Beaverlodge - June 2016**

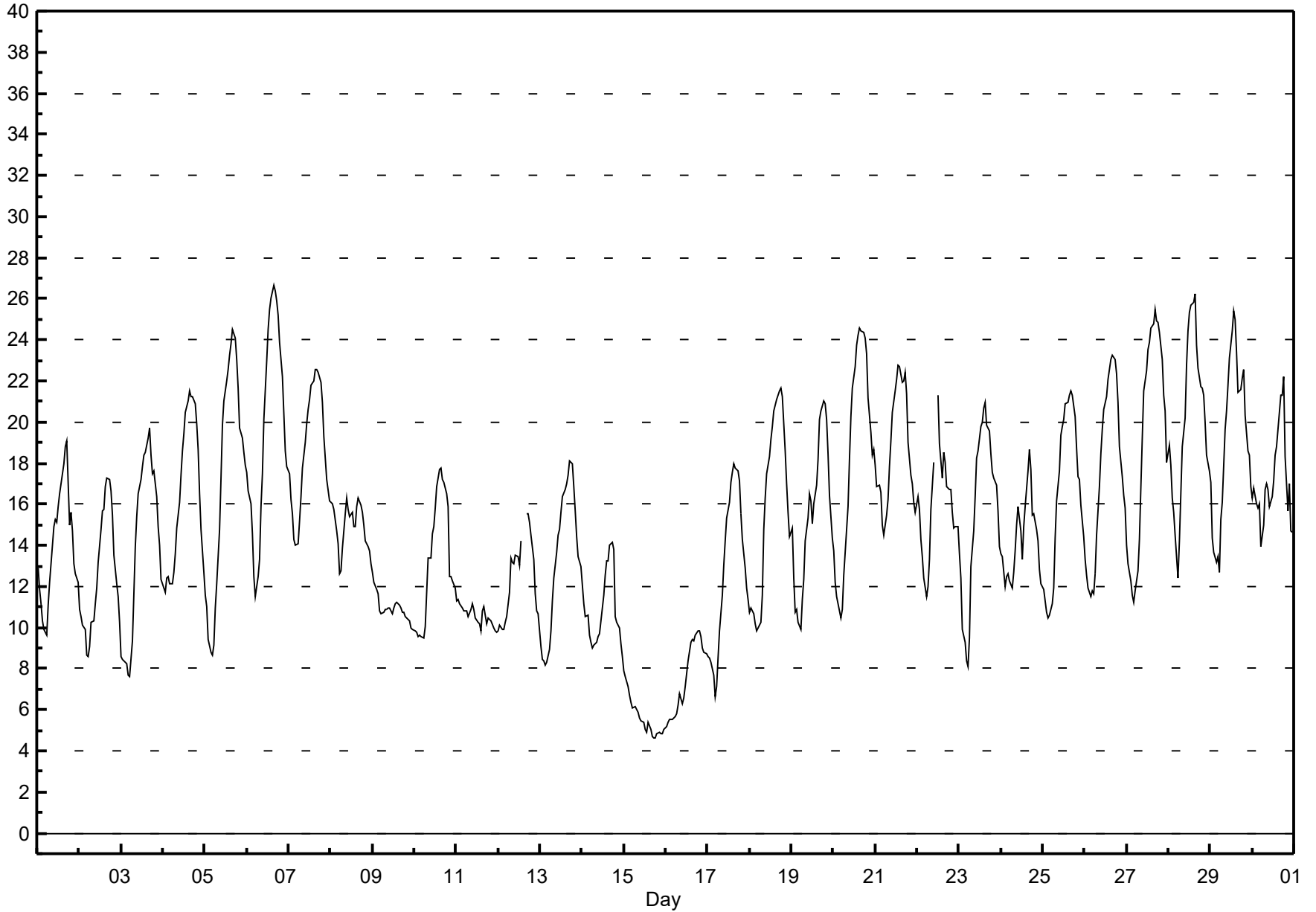


## Hourly Averages

External Temperature (ET) - °C

Beaverlodge - June 2016

| Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 |                               |    |    |    |    |    |    |    |    | Hours in Service: 720   |    |    |    |    |    |    |    |    |    |                                |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|---|-------------------------------|----|----|----|----|----|----|----|----|---|----|----|----|----|----|----|----|----|----|--------------------------------|----|----|----|------|---------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|
| Maximum Value: 26.6 °C on Jun 6 16:00           |                               |    |    |    |    |    |    |    |    | Maximum Daily Average: 20.1 °C on Jun 28  |    |    |    |    |    |    |    |    |    | Hours of Data: 716             |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Minimum Value: 5 °C on Jun 15 19:00             |                               |    |    |    |    |    |    |    |    | Minimum Daily Average: 5.6 °C on Jun 15   |    |    |    |    |    |    |    |    |    | Hours of Missing Data: 4       |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Maximum Diurnal Average: 18.9 °C at hour 16     |                               |    |    |    |    |    |    |    |    | Minimum Diurnal Average: 10.5 °C at hour 6  |    |    |    |    |    |    |    |    |    | Hours of Calibration: 0        |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Monthly Average: 14.98 °C                       |                               |    |    |    |    |    |    |    |    | Percentiles: P <sub>1</sub> = 4.8 P <sub>10</sub> = 9.3 Q <sub>1</sub> = 11.1 Median = 14.8 Q <sub>3</sub> = 18.4 P <sub>90</sub> = 21.7 P <sub>99</sub> = 25.6 |    |    |    |    |    |    |    |    |    | Percent Operational Time: 99.4 |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Day   | Hourly Period Ending At (MST) |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |                                |    |    |    |      | Daily Average | Daily Maximum |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|   | 1                             | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10  | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20                             | 21 | 22 | 23 | 24   |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 1-Jun   | 13                            | 12 | 11 | 10 | 10 | 10 | 11 | 12 | 13 | 15  | 15 | 15 | 16 | 16 | 17 | 18 | 19 | 19 | 15 | 16                             | 15 | 13 | 13 | 12   | 14.0          | 19.1          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 2-Jun   | 11                            | 11 | 10 | 10 | 9  | 9  | 9  | 10 | 10 | 11  | 12 | 13 | 15 | 16 | 16 | 17 | 17 | 17 | 17 | 16                             | 13 | 12 | 11 | 10   | 12.6          | 17.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 3-Jun   | 9                             | 8  | 8  | 8  | 8  | 8  | 9  | 12 | 14 | 15  | 16 | 17 | 18 | 18 | 19 | 19 | 20 | 18 | 17 | 18                             | 16 | 15 | 14 | 12   | 14.1          | 19.7          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 4-Jun   | 12                            | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 15 | 16  | 17 | 19 | 19 | 20 | 21 | 21 | 21 | 21 | 21 | 20                             | 19 | 17 | 15 | 13   | 16.4          | 21.5          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 5-Jun   | 12                            | 11 | 9  | 9  | 9  | 9  | 11 | 12 | 15 | 17  | 20 | 21 | 22 | 23 | 23 | 24 | 25 | 24 | 23 | 22                             | 20 | 19 | 19 | 18   | 17.3          | 24.5          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 6-Jun   | 18                            | 17 | 16 | 15 | 12 | 11 | 12 | 13 | 16 | 17  | 20 | 23 | 24 | 25 | 26 | 27 | 26 | 26 | 25 | 24                             | 22 | 20 | 19 | 18   | 19.8          | 26.6          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 7-Jun   | 17                            | 16 | 16 | 14 | 14 | 14 | 15 | 16 | 18 | 19  | 20 | 21 | 21 | 22 | 22 | 23 | 23 | 22 | 22 | 21                             | 19 | 18 | 17 | 16   | 18.6          | 22.6          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 8-Jun   | 16                            | 16 | 16 | 15 | 14 | 13 | 13 | 14 | 16 | 16  | 16 | 15 | 16 | 15 | 15 | 16 | 16 | 16 | 15 | 14                             | 14 | 14 | 13 | 13   | 14.9          | 16.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 9-Jun   | 13                            | 12 | 12 | 12 | 11 | 11 | 11 | 11 | 11 | 11  | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11                             | 10 | 10 | 10 | 10   | 11.0          | 12.7          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 10-Jun  | 10                            | 10 | 10 | 10 | 10 | 10 | 10 | 12 | 13 | 13  | 15 | 15 | 16 | 17 | 18 | 18 | 17 | 17 | 16 | 16                             | 13 | 12 | 12 | 12   | 13.3          | 17.8          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 11-Jun  | 11                            | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11  | 11 | 10 | 10 | 10 | 11 | 11 | 10 | 10 | 10 | 10                             | 10 | 10 | 10 | 10   | 10.6          | 11.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 12-Jun  | 10                            | 10 | 10 | 10 | 10 | 11 | 12 | 13 | 13 | 13  | 14 | 13 | 13 | 14 | P  | P  | 16 | 16 | 15 | 14                             | 13 | 12 | 11 | 11   | 12.4          | 15.6          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 13-Jun  | 9                             | 8  | 8  | 8  | 8  | 9  | 10 | 11 | 12 | 14  | 15 | 15 | 16 | 16 | 17 | 17 | 17 | 18 | 18 | 17                             | 16 | 14 | 13 | 13   | 13.4          | 18.1          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 14-Jun  | 12                            | 11 | 11 | 11 | 10 | 9  | 9  | 9  | 9  | 10  | 10 | 10 | 12 | 13 | 13 | 13 | 14 | 14 | 14 | 11                             | 10 | 10 | 9  | 9    | 10.9          | 14.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 15-Jun  | 8                             | 8  | 7  | 7  | 6  | 6  | 6  | 6  | 6  | 6   | 5  | 5  | 5  | 5  | 5  | 5  | 5  | 5  | 5  | 5                              | 5  | 5  | 5  | 5    | 5.6           | 7.9           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 16-Jun  | 5                             | 5  | 6  | 6  | 6  | 6  | 6  | 6  | 7  | 6   | 7  | 7  | 8  | 8  | 9  | 9  | 9  | 10 | 10 | 10                             | 10 | 9  | 9  | 9    | 7.6           | 9.8           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 17-Jun  | 9                             | 8  | 8  | 8  | 7  | 7  | 9  | 10 | 12 | 13  | 14 | 15 | 16 | 17 | 18 | 18 | 18 | 18 | 17 | 16                             | 14 | 13 | 12 | 11   | 12.8          | 17.9          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 18-Jun  | 11                            | 11 | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 15  | 16 | 18 | 18 | 19 | 20 | 21 | 21 | 21 | 22 | 22                             | 21 | 19 | 17 | 16   | 14            | 16.0          | 21.7 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 19-Jun  | 15                            | 12 | 11 | 11 | 10 | 10 | 10 | 11 | 12 | 14  | 15 | 16 | 16 | 15 | 16 | 17 | 18 | 20 | 21 | 21                             | 21 | 20 | 18 | 16   | 14            | 15.6          | 21.0 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 20-Jun  | 14                            | 12 | 12 | 11 | 10 | 11 | 13 | 14 | 16 | 18  | 20 | 22 | 23 | 24 | 24 | 25 | 24 | 24 | 24 | 23                             | 21 | 19 | 18 | 19   | 18.4          | 24.6          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 21-Jun  | 18                            | 17 | 17 | 17 | 15 | 15 | 15 | 16 | 18 | 19  | 20 | 22 | 22 | 23 | 23 | 22 | 22 | 22 | 22 | 21                             | 19 | 17 | 17 | 16   | 16            | 18.7          | 22.8 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 22-Jun  | 16                            | 16 | 14 | 13 | 12 | 12 | 12 | 13 | 16 | 18  | N  | N  | 21 | 19 | 17 | 19 | 18 | 17 | 17 | 17                             | 16 | 15 | 15 | 15   | 15.8          | 21.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 23-Jun  | 14                            | 12 | 10 | 9  | 8  | 8  | 9  | 13 | 15 | 16  | 18 | 19 | 20 | 20 | 21 | 21 | 20 | 20 | 18 | 18                             | 17 | 17 | 16 | 14   | 15.5          | 21.0          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 24-Jun  | 14                            | 13 | 12 | 13 | 13 | 12 | 12 | 13 | 14 | 15  | 16 | 15 | 13 | 15 | 16 | 18 | 19 | 18 | 15 | 16                             | 15 | 14 | 13 | 12   | 14.3          | 18.6          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 25-Jun  | 12                            | 11 | 11 | 10 | 11 | 11 | 12 | 14 | 16 | 18  | 19 | 20 | 20 | 21 | 21 | 21 | 22 | 21 | 20 | 19                             | 17 | 17 | 16 | 14   | 16.5          | 21.5          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 26-Jun  | 13                            | 13 | 12 | 12 | 12 | 12 | 13 | 14 | 17 | 18  | 20 | 21 | 21 | 22 | 23 | 23 | 23 | 23 | 22 | 21                             | 19 | 17 | 16 | 16   | 17.6          | 23.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 27-Jun  | 14                            | 13 | 12 | 12 | 11 | 12 | 13 | 14 | 17 | 19  | 22 | 22 | 24 | 24 | 25 | 25 | 25 | 25 | 24 | 23                             | 21 | 21 | 18 | 18   | 19.2          | 25.5          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 28-Jun  | 19                            | 18 | 16 | 16 | 14 | 12 | 14 | 17 | 19 | 20  | 23 | 24 | 25 | 26 | 26 | 26 | 24 | 23 | 22 | 22                             | 21 | 20 | 18 | 18   | 20.1          | 26.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 29-Jun  | 17                            | 14 | 14 | 13 | 13 | 13 | 15 | 16 | 20 | 21  | 22 | 23 | 24 | 25 | 25 | 23 | 21 | 22 | 22 | 23                             | 20 | 19 | 18 | 17   | 19.2          | 25.4          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 30-Jun  | 16                            | 17 | 16 | 16 | 16 | 14 | 15 | 17 | 17 | 17  | 16 | 16 | 17 | 18 | 19 | 20 | 21 | 21 | 22 | 18                             | 16 | 17 | 15 | 15   | 17.2          | 22.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|   |                               |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |                                |    |    |    | 12.9 | 12.2          | 11.6          | 11.2 | 10.7 | 10.5 | 11.4 | 12.6 | 14.1 | 15.2 | 16.1 | 16.7 | 17.4 | 18.0 | 18.5 | 18.9 | 18.9 | 18.7 | 18.1 | 17.3 | 16.0 | 15.1 | 14.2 | 13.4 | Diurnal Average |
|   |                               |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |                                |    |    |    | 18.9 | 17.9          | 16.9          | 16.6 | 16.0 | 14.5 | 15.5 | 16.7 | 19.6 | 20.6 | 22.8 | 24.4 | 25.4 | 25.7 | 26.1 | 26.6 | 26.4 | 25.9 | 25.2 | 24.4 | 23.1 | 21.3 | 20.5 | 18.6 | Diurnal Maximum |
| P - Power Failure      N - Not Valid            |                               |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |                                |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |



## Hourly Averages

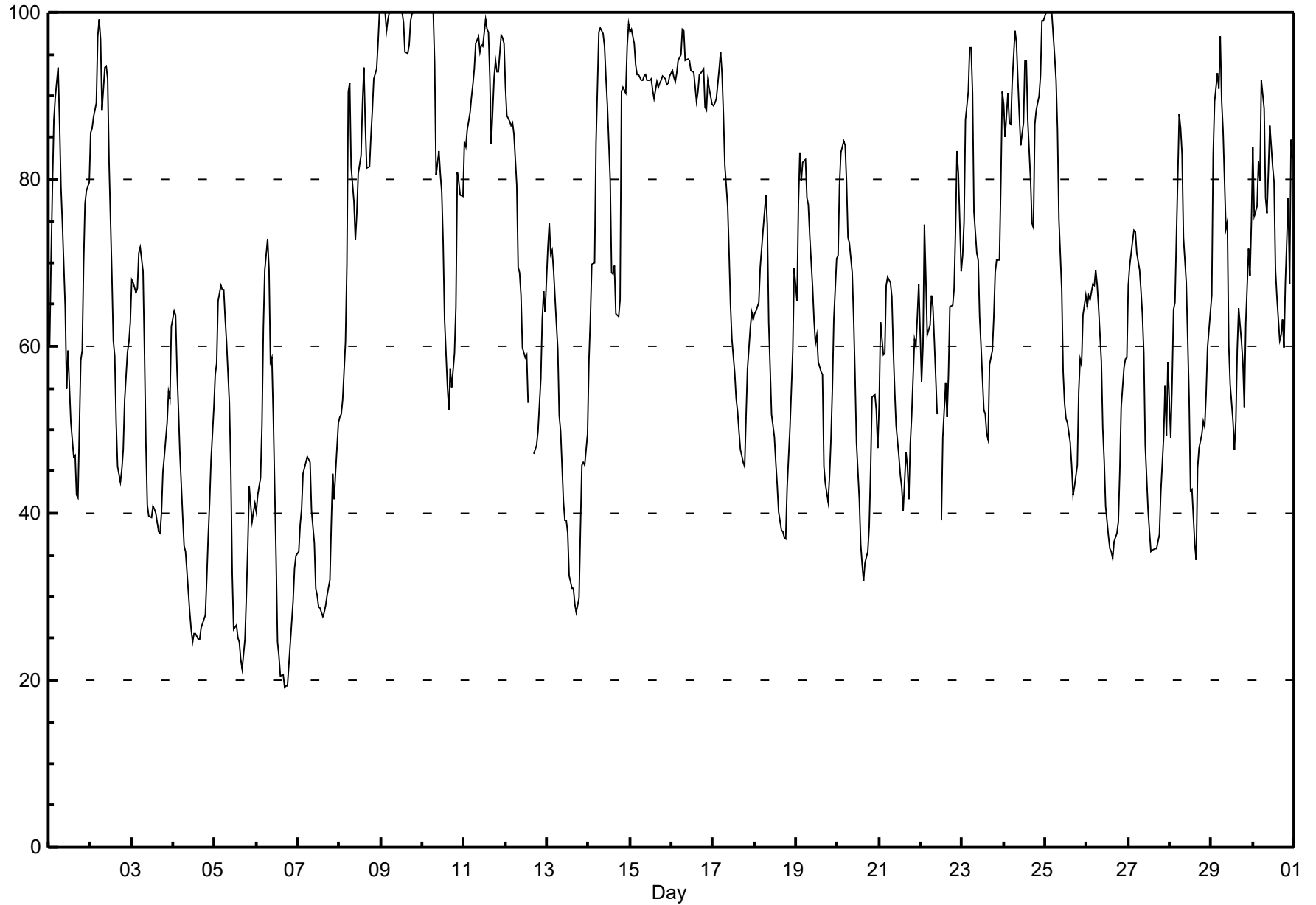
Relative Humidity (RH) - %

Beaverlodge - June 2016

| Number of Exceedences (AAQO): 1-hr: 0 24-hr: 0<br>Maximum Value: 100.0 % on Jun 9 00:00 Maximum Daily Average: 99.2 % on Jun 9   |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    | Hours in Service: 720<br>Hours of Data: 716<br>Hours of Missing Data: 4<br>Hours of Calibration: 0<br>Percent Operational Time: 99.4 |    |    |     |     |     |     |     |               |               |
|--|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|--|----|----|-----|-----|-----|-----|-----|---------------|---------------|
| Minimum Value: 19 % on Jun 6 17:00 Minimum Daily Average: 37.5 % on Jun 4<br>Maximum Diurnal Average: 81.8 % at hour 6 Minimum Diurnal Average: 51.6 % at hour 17<br>Monthly Average: 66.22 % Percentiles: P <sub>1</sub> = 22.4 P <sub>10</sub> = 36.9 Q <sub>1</sub> = 49.1 Median = 65.5 Q <sub>3</sub> = 87.0 P <sub>90</sub> = 94.8 P <sub>99</sub> = 100.0 |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |  |    |    |     |     |     |     |     |               |               |
| Day  | Hourly Period Ending At (MST) |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |  |    |    |     |     |     |     |     | Daily Average | Daily Maximum |
|  | 1                             | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15 | 16 | 17   | 18 | 19 | 20  | 21  | 22  | 23  | 24  |               |               |
| 1-Jun  | 60                            | 70  | 79  | 87  | 90  | 93  | 87  | 79  | 75  | 65  | 55  | 59  | 55  | 51  | 47 | 47 | 42   | 42 | 58 | 60  | 70  | 77  | 79  | 80  | 66.9          | 93.4          |
| 2-Jun  | 86                            | 86  | 87  | 89  | 97  | 99  | 97  | 88  | 93  | 94  | 92  | 82  | 69  | 61  | 59 | 51 | 46   | 44 | 45 | 48  | 54  | 59  | 60  | 63  | 72.8          | 99.1          |
| 3-Jun  | 68                            | 68  | 67  | 67  | 71  | 72  | 69  | 59  | 49  | 41  | 40  | 40  | 41  | 41  | 40 | 38 | 38   | 40 | 45 | 47  | 51  | 55  | 54  | 62  | 52.4          | 71.9          |
| 4-Jun  | 64                            | 64  | 57  | 53  | 47  | 40  | 36  | 35  | 33  | 28  | 26  | 25  | 26  | 26  | 25 | 25 | 26   | 27 | 28 | 32  | 37  | 41  | 46  | 53  | 37.5          | 64.2          |
| 5-Jun  | 57                            | 58  | 65  | 67  | 67  | 67  | 63  | 60  | 53  | 45  | 33  | 26  | 27  | 25  | 25 | 23 | 21   | 25 | 30 | 36  | 43  | 39  | 40  | 41  | 43.2          | 67.4          |
| 6-Jun  | 40                            | 42  | 44  | 50  | 62  | 69  | 73  | 69  | 58  | 59  | 52  | 34  | 25  | 23  | 21 | 21 | 19   | 19 | 19 | 22  | 27  | 30  | 33  | 35  | 39.5          | 72.9          |
| 7-Jun  | 36                            | 39  | 41  | 45  | 45  | 47  | 46  | 46  | 40  | 36  | 31  | 30  | 29  | 29  | 28 | 28 | 29   | 30 | 32 | 39  | 45  | 42  | 45  | 51  | 37.8          | 50.9          |
| 8-Jun  | 51                            | 52  | 54  | 61  | 70  | 91  | 92  | 82  | 77  | 73  | 76  | 81  | 83  | 89  | 93 | 87 | 81   | 81 | 85 | 88  | 92  | 93  | 96  | 100 | 80.3          | 100.0         |
| 9-Jun  | 100                           | 100 | 100 | 98  | 99  | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 99 | 95 | 95   | 96 | 99 | 100 | 100 | 100 | 100 | 100 | 99.2          | 100.0         |
| 10-Jun   | 100                           | 100 | 100 | 100 | 100 | 100 | 100 | 94  | 81  | 83  | 81  | 79  | 72  | 63  | 55 | 52 | 57   | 55 | 59 | 65  | 81  | 80  | 78  | 78  | 79.7          | 100.0         |
| 11-Jun   | 84                            | 84  | 86  | 88  | 90  | 91  | 93  | 96  | 97  | 95  | 96  | 96  | 99  | 98  | 98 | 92 | 84   | 92 | 94 | 93  | 93  | 97  | 97  | 96  | 93.0          | 99.2          |
| 12-Jun   | 91                            | 88  | 87  | 87  | 87  | 85  | 79  | 69  | 69  | 66  | 60  | 59  | 59  | 53  | P  | P  | 47   | 48 | 48 | 50  | 56  | 63  | 67  | 64  | 67.3          | 91.1          |
| 13-Jun   | 72                            | 75  | 71  | 71  | 69  | 63  | 60  | 52  | 50  | 41  | 39  | 39  | 38  | 33  | 31 | 31 | 29   | 28 | 30 | 38  | 46  | 46  | 46  | 49  | 47.8          | 74.8          |
| 14-Jun   | 58                            | 63  | 70  | 70  | 84  | 91  | 98  | 98  | 97  | 96  | 92  | 89  | 80  | 69  | 69 | 70 | 64   | 64 | 66 | 91  | 91  | 90  | 96  | 99  | 81.4          | 98.6          |
| 15-Jun   | 98                            | 98  | 96  | 94  | 92  | 93  | 92  | 92  | 92  | 93  | 92  | 92  | 92  | 91  | 90 | 92 | 91   | 91 | 92 | 92  | 92  | 91  | 92  | 92  | 92.6          | 98.0          |
| 16-Jun   | 93                            | 92  | 92  | 93  | 94  | 95  | 98  | 98  | 94  | 94  | 94  | 93  | 93  | 93  | 89 | 91 | 93   | 93 | 93 | 89  | 88  | 92  | 91  | 89  | 92.6          | 98.0          |
| 17-Jun   | 89                            | 89  | 90  | 93  | 95  | 93  | 88  | 82  | 77  | 71  | 65  | 61  | 57  | 54  | 52 | 50 | 48   | 46 | 46 | 51  | 57  | 62  | 64  | 63  | 68.4          | 95.3          |
| 18-Jun   | 64                            | 64  | 65  | 70  | 72  | 74  | 78  | 75  | 63  | 58  | 52  | 49  | 46  | 43  | 40 | 38 | 38   | 37 | 37 | 43  | 50  | 55  | 59  | 69  | 55.8          | 78.1          |
| 19-Jun   | 65                            | 77  | 83  | 80  | 82  | 82  | 78  | 77  | 73  | 67  | 63  | 60  | 61  | 58  | 57 | 57 | 46   | 44 | 41 | 45  | 49  | 55  | 63  | 71  | 63.9          | 83.2          |
| 20-Jun   | 71                            | 79  | 83  | 85  | 84  | 80  | 73  | 72  | 69  | 63  | 56  | 49  | 42  | 36  | 34 | 32 | 34   | 35 | 38 | 45  | 54  | 54  | 52  | 48  | 57.1          | 84.6          |
| 21-Jun   | 53                            | 63  | 59  | 59  | 67  | 68  | 68  | 66  | 60  | 55  | 50  | 47  | 45  | 43  | 40 | 47 | 46   | 42 | 48 | 52  | 61  | 60  | 64  | 68  | 55.4          | 68.3          |
| 22-Jun   | 56                            | 60  | 75  | 68  | 61  | 63  | 66  | 65  | 61  | 52  | N   | N   | 39  | 49  | 56 | 52 | 57   | 65 | 65 | 67  | 74  | 83  | 81  | 69  | 62.8          | 83.5          |
| 23-Jun   | 71                            | 75  | 87  | 91  | 96  | 96  | 90  | 76  | 71  | 70  | 64  | 60  | 52  | 52  | 50 | 49 | 58   | 59 | 63 | 69  | 70  | 70  | 79  | 91  | 71.2          | 95.8          |
| 24-Jun   | 89                            | 85  | 90  | 87  | 87  | 91  | 98  | 96  | 92  | 88  | 84  | 87  | 94  | 94  | 87 | 80 | 75   | 74 | 87 | 88  | 90  | 92  | 99  | 99  | 88.9          | 99.0          |
| 25-Jun   | 100                           | 100 | 100 | 100 | 100 | 95  | 92  | 86  | 75  | 67  | 57  | 53  | 51  | 51  | 48 | 46 | 42   | 43 | 46 | 55  | 59  | 58  | 64  | 66  | 68.9          | 100.0         |
| 26-Jun   | 65                            | 66  | 66  | 67  | 67  | 69  | 67  | 65  | 58  | 50  | 46  | 41  | 37  | 36  | 35 | 35 | 37   | 38 | 39 | 45  | 53  | 57  | 58  | 59  | 52.4          | 69.2          |
| 27-Jun   | 67                            | 70  | 73  | 74  | 74  | 71  | 69  | 67  | 64  | 59  | 48  | 40  | 38  | 35  | 36 | 36 | 36   | 37 | 37 | 43  | 49  | 55  | 49  | 58  | 53.5          | 73.9          |
| 28-Jun   | 49                            | 56  | 64  | 65  | 73  | 88  | 86  | 83  | 73  | 68  | 61  | 54  | 43  | 36  | 34 | 45 | 48   | 49 | 51 | 50  | 54  | 60  | 64  | 64  | 58.3          | 87.8          |
| 29-Jun   | 66                            | 83  | 89  | 93  | 91  | 97  | 89  | 86  | 74  | 75  | 60  | 56  | 51  | 48  | 51 | 60 | 65   | 60 | 58 | 53  | 63  | 72  | 68  | 75  | 70.1          | 97.2          |
| 30-Jun   | 84                            | 76  | 77  | 82  | 80  | 92  | 89  | 78  | 76  | 81  | 87  | 82  | 80  | 69  | 66 | 61 | 61   | 63 | 60 | 68  | 78  | 67  | 85  | 82  | 75.9          | 91.8          |
| 71.6 74.0 76.6 77.8 79.8 81.8 80.5 76.4 71.5 67.8 63.9 60.7 57.4 55.1 53.5 52.3 51.6 52.3 54.7 58.7 64.1 66.4 68.9 71.1<br>100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 99.9 98.7 97.6 95.1 96.1 98.9 99.8 100.0 100.0 100.0 100.0 100.0  |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    | Diurnal Average<br>Diurnal Maximum   |    |    |     |     |     |     |     |               |               |
| P - Power Failure      N - Not Valid   |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |  |    |    |     |     |     |     |     |               |               |

**Hourly Averages**

**Relative Humidity (RH) - %**  
**Beaverlodge - June 2016**



## Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Beaverlodge - June 2016

| Day    | Hourly Period Ending At (MST) |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Daily Average | Daily Maximum |
|--------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|---------------|
|        | 1                             | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |               |               |
| 1 Spd  | 11                            | 12  | 4   | 1   | 2   | 3   | 1   | 4   | 5   | 8   | 13  | 9   | 18  | 13  | 9   | 8   | 5   | 2   | 9   | 6   | 5   | 3   | 2   | 4   | 4.1           | 17.5          |
| Dir    | 310                           | 325 | 332 | 183 | 260 | 254 | 157 | 199 | 205 | 197 | 255 | 240 | 279 | 268 | 306 | 307 | 300 | 331 | 248 | 60  | 240 | 155 | 148 | 51  | 272           | 279           |
| 2 Spd  | 2                             | 2   | 4   | 2   | 3   | 2   | 6   | 5   | 4   | 4   | 8   | 9   | 14  | 18  | 21  | 31  | 28  | 26  | 31  | 32  | 26  | 21  | 22  | 19  | 12.6          | 32.2          |
| Dir    | 82                            | 48  | 56  | 62  | 267 | 34  | 217 | 217 | 201 | 251 | 305 | 295 | 271 | 273 | 269 | 268 | 262 | 252 | 243 | 242 | 247 | 248 | 250 | 246 | 256           | 242           |
| 3 Spd  | 10                            | 5   | 8   | 10  | 10  | 4   | 10  | 13  | 24  | 30  | 36  | 36  | 33  | 38  | 36  | 38  | 34  | 40  | 33  | 27  | 22  | 19  | 22  | 16  | 22.8          | 39.8          |
| Dir    | 227                           | 231 | 239 | 247 | 237 | 234 | 233 | 238 | 248 | 261 | 257 | 263 | 262 | 261 | 253 | 253 | 254 | 263 | 271 | 254 | 247 | 244 | 251 | 251 | 254           | 263           |
| 4 Spd  | 16                            | 15  | 20  | 25  | 22  | 29  | 28  | 31  | 30  | 31  | 36  | 32  | 26  | 27  | 26  | 29  | 29  | 30  | 27  | 20  | 11  | 9   | 4   | 3   | 22.9          | 35.6          |
| Dir    | 252                           | 257 | 250 | 255 | 270 | 269 | 265 | 259 | 257 | 262 | 259 | 257 | 259 | 264 | 280 | 277 | 262 | 263 | 264 | 268 | 276 | 270 | 292 | 298 | 263           | 259           |
| 5 Spd  | 1                             | 4   | 4   | 2   | 5   | 4   | 2   | 3   | 4   | 4   | 1   | 2   | 2   | 6   | 7   | 9   | 12  | 16  | 11  | 9   | 10  | 9   | 9   | 12  | 4.9           | 15.5          |
| Dir    | 91                            | 64  | 97  | 121 | 58  | 50  | 110 | 198 | 205 | 245 | 203 | 206 | 164 | 131 | 80  | 81  | 94  | 86  | 81  | 78  | 91  | 80  | 84  | 98  | 92            | 86            |
| 6 Spd  | 6                             | 4   | 6   | 2   | 3   | 5   | 2   | 7   | 4   | 6   | 7   | 20  | 22  | 25  | 36  | 35  | 39  | 37  | 38  | 33  | 26  | 15  | 10  | 8   | 14.1          | 39.1          |
| Dir    | 119                           | 118 | 80  | 188 | 257 | 45  | 282 | 309 | 208 | 214 | 238 | 251 | 249 | 254 | 263 | 255 | 260 | 262 | 263 | 266 | 272 | 290 | 298 | 330 | 262           | 260           |
| 7 Spd  | 9                             | 10  | 6   | 8   | 10  | 9   | 12  | 12  | 20  | 20  | 22  | 16  | 12  | 11  | 9   | 8   | 9   | 11  | 7   | 6   | 6   | 7   | 10  | 10  | 6.4           | 21.9          |
| Dir    | 336                           | 323 | 323 | 314 | 321 | 304 | 284 | 289 | 293 | 281 | 271 | 280 | 300 | 329 | 333 | 359 | 23  | 55  | 83  | 92  | 58  | 58  | 62  | 91  | 322           | 271           |
| 8 Spd  | 9                             | 5   | 5   | 4   | 10  | 2   | 6   | 8   | 4   | 11  | 15  | 15  | 13  | 4   | 16  | 13  | 23  | 19  | 15  | 10  | 10  | 6   | 4   | 5   | 8.0           | 22.8          |
| Dir    | 86                            | 101 | 108 | 177 | 192 | 58  | 39  | 21  | 114 | 136 | 102 | 92  | 97  | 98  | 58  | 82  | 77  | 83  | 78  | 52  | 64  | 76  | 120 | 330 | 85            | 77            |
| 9 Spd  | 7                             | 7   | 8   | 13  | 10  | 9   | 13  | 16  | 14  | 16  | 17  | 18  | 15  | 15  | 22  | 17  | 15  | 12  | 11  | 11  | 11  | 8   | 8   | 8   | 11.0          | 22.2          |
| Dir    | 9                             | 346 | 312 | 306 | 296 | 265 | 281 | 285 | 289 | 297 | 299 | 300 | 331 | 353 | 3   | 355 | 347 | 331 | 314 | 311 | 328 | 347 | 332 | 339 | 320           | 3             |
| 10 Spd | 6                             | 3   | 3   | 3   | 1   | 5   | 8   | 3   | 12  | 13  | 16  | 21  | 27  | 28  | 25  | 23  | 25  | 24  | 20  | 18  | 11  | 3   | 8   | 11  | 10.9          | 28.0          |
| Dir    | 339                           | 322 | 267 | 334 | 197 | 351 | 33  | 72  | 121 | 128 | 117 | 121 | 101 | 94  | 98  | 109 | 93  | 93  | 90  | 109 | 174 | 138 | 130 | 124 | 104           | 94            |
| 11 Spd | 19                            | 23  | 20  | 16  | 12  | 7   | 5   | 8   | 8   | 10  | 13  | 15  | 7   | 6   | 6   | 22  | 30  | 21  | 17  | 18  | 15  | 9   | 7   | 6   | 5.2           | 29.6          |
| Dir    | 99                            | 89  | 97  | 106 | 107 | 116 | 181 | 220 | 276 | 271 | 259 | 266 | 256 | 242 | 220 | 254 | 264 | 269 | 268 | 269 | 273 | 260 | 232 | 214 | 242           | 264           |
| 12 Spd | 8                             | 9   | 6   | 5   | 8   | 8   | 13  | 26  | 34  | 35  | 38  | 38  | 32  | 43  | P   | P   | 46  | 44  | 40  | 33  | 27  | 22  | 20  | 21  | 25.0          | 46.4          |
| Dir    | 251                           | 266 | 265 | 294 | 288 | 267 | 250 | 259 | 249 | 244 | 253 | 250 | 249 | 259 | P   | P   | 260 | 259 | 260 | 256 | 246 | 243 | 245 | 253 | 255           | 260           |
| 13 Spd | 15                            | 18  | 15  | 17  | 19  | 29  | 22  | 19  | 21  | 31  | 29  | 26  | 25  | 20  | 19  | 14  | 10  | 4   | 7   | 10  | 7   | 6   | 7   | 8   | 12.3          | 30.8          |
| Dir    | 244                           | 247 | 254 | 241 | 243 | 237 | 246 | 250 | 247 | 253 | 255 | 251 | 240 | 273 | 288 | 301 | 327 | 300 | 0   | 39  | 49  | 52  | 44  | 60  | 259           | 253           |
| 14 Spd | 3                             | 6   | 1   | 3   | 2   | 5   | 10  | 5   | 7   | 7   | 8   | 12  | 13  | 6   | 10  | 9   | 9   | 12  | 13  | 6   | 13  | 13  | 13  | 14  | 6.7           | 14.5          |
| Dir    | 185                           | 248 | 342 | 358 | 133 | 154 | 260 | 207 | 259 | 241 | 248 | 288 | 290 | 252 | 292 | 307 | 290 | 307 | 302 | 336 | 333 | 322 | 304 | 284 | 288           | 284           |
| 15 Spd | 28                            | 26  | 28  | 33  | 31  | 29  | 32  | 34  | 33  | 42  | 50  | 52  | 54  | 54  | 50  | 51  | 59  | 54  | 49  | 40  | 41  | 41  | 39  | 33  | 40.8          | 59.0          |
| Dir    | 268                           | 271 | 267 | 268 | 266 | 265 | 264 | 263 | 256 | 259 | 260 | 259 | 258 | 255 | 254 | 257 | 259 | 261 | 264 | 264 | 265 | 267 | 267 | 267 | 262           | 257           |
| 16 Spd | 31                            | 31  | 30  | 28  | 27  | 27  | 29  | 22  | 27  | 23  | 23  | 27  | 29  | 27  | 28  | 25  | 24  | 20  | 18  | 21  | 19  | 17  | 17  | 21  | 24.4          | 31.2          |
| Dir    | 265                           | 266 | 269 | 269 | 273 | 274 | 274 | 279 | 276 | 274 | 271 | 280 | 275 | 277 | 280 | 280 | 274 | 282 | 276 | 286 | 297 | 290 | 291 | 287 | 277           | 266           |
| 17 Spd | 20                            | 18  | 17  | 10  | 8   | 11  | 11  | 10  | 16  | 20  | 25  | 27  | 28  | 28  | 32  | 31  | 33  | 32  | 31  | 26  | 17  | 14  | 12  | 8   | 19.2          | 32.6          |
| Dir    | 289                           | 280 | 279 | 287 | 295 | 294 | 290 | 267 | 240 | 242 | 236 | 241 | 240 | 243 | 243 | 244 | 243 | 252 | 258 | 249 | 248 | 247 | 250 | 250 | 254           | 243           |
| 18 Spd | 10                            | 7   | 5   | 4   | 4   | 3   | 6   | 6   | 15  | 18  | 19  | 16  | 13  | 10  | 10  | 13  | 14  | 13  | 9   | 4   | 10  | 10  | 8   | 4   | 8.2           | 19.0          |
| Dir    | 237                           | 248 | 240 | 193 | 185 | 208 | 210 | 208 | 253 | 253 | 262 | 268 | 271 | 295 | 279 | 273 | 269 | 290 | 304 | 340 | 298 | 308 | 300 | 359 | 268           | 262           |
| 19 Spd | 3                             | 6   | 9   | 7   | 3   | 6   | 7   | 6   | 7   | 12  | 14  | 11  | 17  | 10  | 13  | 11  | 15  | 10  | 7   | 7   | 5   | 3   | 3   | 3   | 6.3           | 16.9          |
| Dir    | 3                             | 264 | 263 | 261 | 293 | 343 | 327 | 333 | 303 | 322 | 321 | 337 | 327 | 325 | 258 | 253 | 274 | 277 | 302 | 281 | 246 | 73  | 65  | 88  | 301           | 327           |
| 20 Spd | 2                             | 3   | 3   | 2   | 1   | 1   | 3   | 8   | 7   | 8   | 9   | 9   | 5   | 5   | 7   | 9   | 12  | 13  | 13  | 11  | 10  | 7   | 9   | 8   | 3.8           | 12.9          |
| Dir    | 86                            | 92  | 62  | 99  | 154 | 113 | 203 | 217 | 225 | 238 | 243 | 235 | 206 | 168 | 143 | 140 | 117 | 110 | 102 | 94  | 94  | 80  | 90  | 77  | 132           | 110           |
| 21 Spd | 4                             | 7   | 12  | 6   | 10  | 7   | 4   | 8   | 14  | 15  | 12  | 16  | 16  | 15  | 14  | 13  | 15  | 17  | 14  | 15  | 6   | 10  | 8   | 3   | 8.4           | 17.2          |
| Dir    | 296                           | 289 | 312 | 251 | 246 | 238 | 192 | 220 | 232 | 248 | 245 | 242 | 239 | 251 | 273 | 229 | 242 | 247 | 227 | 310 | 287 | 32  | 22  | 355 | 256           | 247           |
| 22 Spd | 10                            | 10  | 3   | 7   | 10  | 9   | 6   | 7   | 11  | 14  | N   | N   | 11  | 19  | 14  | 14  | 22  | 28  | 12  | 10  | 13  | 7   | 2   | 6   | 9.7           | 27.7          |
| Dir    | 302                           | 233 | 181 | 233 | 260 | 247 | 204 | 224 | 234 | 250 | N   | N   | 280 | 205 | 203 | 177 | 191 | 228 | 256 | 226 | 227 | 227 | 280 | 290 | 229           | 228           |



Peace Airshed Zone Association

# Hourly Averages

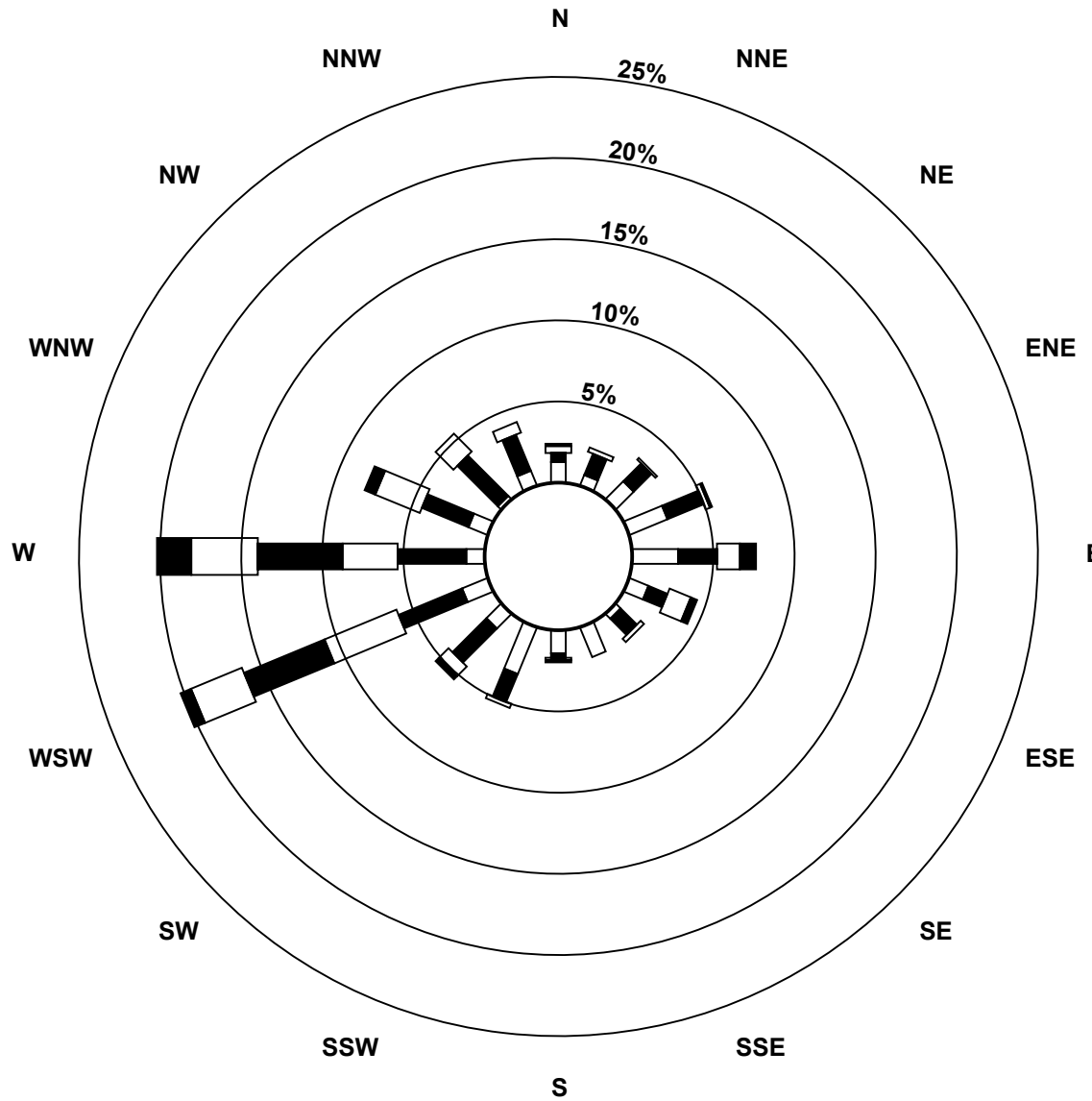
Wind Speed (km/h)  
Wind Direction (deg)  
Beaverlodge - June 2016

| Day  | Hourly Period Ending At (MST) |  |          |   |          |      |       |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Daily Average   | Daily Maximum |
|--|-------------------------------|--|----------|---|----------|------|-------|--------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|---------------|
|  | 1                             | 2  | 3        | 4   | 5        | 6    | 7     | 8                              | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |                 |               |
| 23 Spd   | 7                             | 4  | 6        | 7   | 3        | 5    | 4     | 1                              | 6    | 4    | 3    | 3    | 5    | 6    | 3    | 8    | 12   | 13   | 15   | 11   | 6    | 2    | 2    | 3    | 2.9             | 15.4          |
| Dir  | 265                           | 245  | 119      | 251   | 76       | 196  | 195   | 263                            | 317  | 349  | 6    | 315  | 69   | 68   | 90   | 23   | 36   | 18   | 18   | 25   | 26   | 6    | 352  | 340  | 15              | 18            |
| 24 Spd   | 7                             | 10   | 8        | 6   | 8        | 9    | 8     | 6                              | 7    | 10   | 7    | 3    | 4    | 7    | 7    | 10   | 10   | 8    | 3    | 7    | 8    | 4    | 4    | 2    | 4.5             | 10.4          |
| Dir  | 346                           | 322  | 294      | 320   | 311      | 310  | 297   | 272                            | 270  | 301  | 280  | 288  | 162  | 188  | 196  | 205  | 194  | 224  | 226  | 250  | 259  | 266  | 212  | 216  | 265             | 301           |
| 25 Spd   | 1                             | 3  | 3        | 2   | 2        | 3    | 3     | 2                              | 8    | 16   | 26   | 27   | 28   | 26   | 28   | 25   | 26   | 24   | 23   | 15   | 8    | 5    | 6    | 5    | 11.5            | 28.2          |
| Dir  | 174                           | 59   | 65       | 84  | 80       | 56   | 56    | 168                            | 267  | 264  | 267  | 259  | 255  | 255  | 258  | 266  | 276  | 273  | 265  | 248  | 268  | 268  | 239  | 218  | 263             | 258           |
| 26 Spd   | 4                             | 6  | 4        | 3   | 5        | 8    | 8     | 14                             | 15   | 24   | 23   | 21   | 20   | 21   | 19   | 20   | 22   | 23   | 23   | 18   | 11   | 7    | 6    | 2    | 12.9            | 24.3          |
| Dir  | 215                           | 212  | 186      | 155   | 202      | 207  | 210   | 214                            | 228  | 245  | 249  | 252  | 272  | 263  | 246  | 238  | 237  | 240  | 244  | 244  | 244  | 239  | 240  | 202  | 240             | 245           |
| 27 Spd   | 3                             | 3  | 3        | 2   | 2        | 2    | 6     | 7                              | 6    | 6    | 8    | 7    | 4    | 4    | 1    | 4    | 5    | 8    | 7    | 5    | 6    | 5    | 6    | 3    | 1.0             | 7.8           |
| Dir  | 57                            | 95   | 110      | 97  | 100      | 159  | 192   | 201                            | 218  | 227  | 261  | 261  | 256  | 275  | 258  | 109  | 91   | 46   | 52   | 87   | 127  | 63   | 53   | 61   | 126             | 261           |
| 28 Spd   | 6                             | 2  | 1        | 5   | 3        | 2    | 3     | 2                              | 3    | 5    | 3    | 6    | 8    | 8    | 7    | 4    | 16   | 16   | 13   | 8    | 7    | 8    | 4    | 2    | 1.5             | 16.3          |
| Dir  | 66                            | 32   | 74       | 43  | 30       | 275  | 51    | 192                            | 219  | 189  | 162  | 112  | 120  | 120  | 113  | 143  | 264  | 321  | 351  | 9    | 13   | 18   | 84   | 258  | 32              | 321           |
| 29 Spd   | 8                             | 3  | 3        | 3   | 5        | 1    | 1     | 4                              | 3    | 5    | 10   | 11   | 12   | 16   | 15   | 2    | 2    | 13   | 10   | 9    | 10   | 9    | 7    | 10   | 4.9             | 16.2          |
| Dir  | 307                           | 27   | 8        | 22  | 31       | 45   | 218   | 253                            | 156  | 174  | 134  | 95   | 98   | 91   | 109  | 95   | 218  | 145  | 125  | 135  | 105  | 77   | 78   | 84   | 104             | 91            |
| 30 Spd   | 9                             | 9  | 10       | 10  | 10       | 8    | 10    | 15                             | 14   | 14   | 9    | 3    | 7    | 16   | 12   | 4    | 4    | 9    | 5    | 0    | 1    | 1    | 3    | 4    | 1.7             | 15.6          |
| Dir  | 79                            | 77   | 77       | 75  | 105      | 236  | 320   | 319                            | 294  | 239  | 265  | 160  | 305  | 288  | 274  | 244  | 76   | 47   | 85   | 185  | 41   | 199  | 86   | 61   | 326             | 288           |
| Spd  | 3.9                           | 4.2  | 3.3      | 4.3   | 4.6      | 5.6  | 6.7   | 8.2                            | 10.6 | 12.9 | 13.8 | 13.0 | 11.6 | 11.5 | 10.1 | 10.6 | 12.1 | 11.1 | 10.0 | 7.9  | 6.8  | 4.5  | 3.8  | 2.9  | Diurnal Average |               |
| Dir  | 279                           | 276  | 272      | 265   | 263      | 263  | 261   | 257                            | 253  | 254  | 258  | 258  | 261  | 260  | 264  | 258  | 259  | 265  | 268  | 267  | 266  | 278  | 273  | 277  | Diurnal Maximum |               |
| Spd  | 30.7                          | 31.2   | 29.6     | 32.9  | 31.1     | 29.1 | 32.1  | 33.8                           | 33.5 | 42.3 | 49.5 | 51.9 | 53.5 | 54.0 | 49.6 | 50.6 | 59.0 | 54.3 | 49.0 | 40.5 | 40.8 | 40.6 | 39.1 | 33.4 | Diurnal Maximum |               |
| Dir  | 265                           | 266  | 269      | 268   | 266      | 265  | 264   | 263                            | 249  | 259  | 260  | 259  | 259  | 258  | 255  | 254  | 257  | 259  | 261  | 264  | 264  | 265  | 267  | 267  | Diurnal Maximum |               |
| Maximum Speed Value: 59 km/h on Jun 15 17:00                                       |                               | Minimum Speed Value: 0 km/h on Jun 30 20:00        |          | Hours in Service: 720   |          |      |       |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| Maximum Daily Speed Average: 40.8 km/h on Jun 15                                   |                               | Minimum Daily Speed Average: 1.0 km/h on Jun 27    |          | Hours of Data: 716  |          |      |       |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| Maximum Diurnal Speed Average: 13.8 km/h at hour 11                                |                               | Minimum Diurnal Speed Average: 2.9 km/h at hour 24 |          | Hours of Missing Data: 4  |          |      |       |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| Monthly Average Velocity: 8.02 km/h 262.4 deg                                      |                               |  |          | Speed Percentiles: P <sub>1</sub> = 0.9 P <sub>10</sub> = 3.0 Q <sub>1</sub> = 5.7 Median = 9.9 Q <sub>3</sub> = 18.8 P <sub>90</sub> = 28.5 P <sub>99</sub> = 49.0 |          |      |       | Percent Operational Time: 99.4 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| All monthly, daily, and diurnal averages have been calculated using vector methods |                               |  |          |   |          |      |       |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| P - Power Failure N - Not Valid  |                               |  |          |   |          |      |       |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| Frequency Distribution   |                               |  |          |   |          |      |       |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
|  | Speed Range (km/h)            |  |          |   |          |      |       |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| Direction  | 0 to 5                        | 5 to 11  | 11 to 19 | 19 to 28  | 28 to 38 | > 38 | Total |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| North  | 13                            | 15   | 6        | 1   | 0        | 0    | 35    |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| NorthEast  | 27                            | 23   | 4        | 0   | 0        | 0    | 54    |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| East   | 28                            | 32   | 18       | 10  | 1        | 0    | 89    |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| SouthEast  | 15                            | 14   | 7        | 1   | 0        | 0    | 37    |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| South  | 28                            | 10   | 2        | 1   | 0        | 0    | 41    |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| SouthWest  | 21                            | 50   | 22       | 22  | 8        | 0    | 123   |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| West   | 19                            | 48   | 55       | 60  | 47       | 22   | 251   |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| NorthWest  | 10                            | 48   | 26       | 2   | 0        | 0    | 86    |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |
| Total  | 161                           | 240  | 140      | 97  | 56       | 22   | 716   |                                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |               |

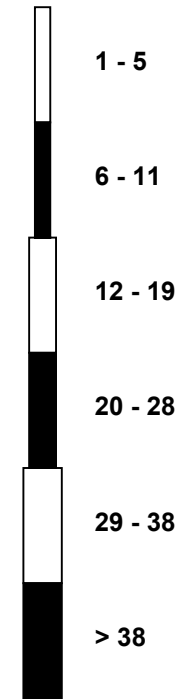


**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Beaverlodge - June 2016**



**Wind Speed Classes (km/h)**



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Beaverlodge - June 2016

| <b>Maximum Speed: 59 km/h on Jun 15 17:00</b>  |                               | <b>Maximum Daily Speed Average: 41.0 km/h on Jun 15</b>  |      | Hours in Service: 720<br>Hours of Data: 716<br>Hours of Missing Data: 4 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |
|--|-------------------------------|--|------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------|-----------------|
| <b>Minimum Speed: 1 km/h on Jun 30 21:00</b>   |                               | <b>Minimum Daily Speed Average: 5.7 km/h on Jun 27</b>   |      | Percent Operational Time: 99.4  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |
| <b>Maximum Diurnal Speed Average: 21.0 km/h at hour 17</b>   |                               | <b>Minimum Diurnal Speed Average: 9.0 km/h at hour 5</b>   |      |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |
| <b>Monthly Average Speed: 13.81 km/h</b>   |                               | Percentiles: P <sub>1</sub> = 2.3 P <sub>10</sub> = 4.0 Q <sub>1</sub> = 6.4 Median = 10.3 Q <sub>3</sub> = 19.4 P <sub>90</sub> = 28.9 P <sub>99</sub> = 49.2 |      |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |
| Day  | Hourly Period Ending At (MST) |  |      |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Daily Average | Daily Maximum   |
|  | 1                             | 2  | 3    | 4   | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |               |                 |
| 1-Jun  | 11                            | 12   | 4    | 3   | 2    | 4    | 2    | 4    | 6    | 9    | 13   | 10   | 19   | 14   | 10   | 9    | 7    | 5    | 11   | 6    | 6    | 5    | 4    | 4    | 7.5           | 18.9            |
| 2-Jun  | 4                             | 3  | 5    | 3   | 5    | 7    | 6    | 6    | 4    | 5    | 8    | 9    | 15   | 19   | 22   | 31   | 29   | 26   | 31   | 32   | 26   | 21   | 22   | 19   | 14.9          | 32.4            |
| 3-Jun  | 10                            | 5  | 8    | 10  | 10   | 4    | 10   | 13   | 24   | 31   | 37   | 37   | 34   | 39   | 37   | 38   | 34   | 40   | 33   | 28   | 23   | 19   | 22   | 16   | 23.4          | 40.2            |
| 4-Jun  | 16                            | 15   | 20   | 25  | 22   | 29   | 28   | 31   | 30   | 32   | 36   | 33   | 27   | 27   | 27   | 29   | 29   | 31   | 27   | 20   | 11   | 9    | 6    | 5    | 23.6          | 36.1            |
| 5-Jun  | 4                             | 4  | 4    | 4   | 5    | 4    | 3    | 3    | 4    | 4    | 4    | 5    | 6    | 8    | 8    | 10   | 13   | 16   | 12   | 9    | 10   | 9    | 9    | 12   | 7.1           | 16.0            |
| 6-Jun  | 7                             | 6  | 6    | 4   | 3    | 5    | 3    | 8    | 5    | 6    | 8    | 21   | 22   | 25   | 37   | 35   | 39   | 38   | 38   | 33   | 26   | 15   | 10   | 8    | 17.0          | 39.3            |
| 7-Jun  | 9                             | 10   | 6    | 8   | 10   | 10   | 12   | 12   | 20   | 21   | 22   | 17   | 12   | 12   | 11   | 10   | 10   | 12   | 8    | 6    | 7    | 8    | 10   | 10   | 11.4          | 22.5            |
| 8-Jun  | 9                             | 6  | 7    | 5   | 11   | 6    | 7    | 8    | 7    | 12   | 16   | 15   | 14   | 5    | 16   | 14   | 23   | 19   | 15   | 10   | 11   | 8    | 4    | 7    | 10.6          | 23.1            |
| 9-Jun  | 7                             | 7  | 9    | 13  | 10   | 9    | 13   | 16   | 14   | 17   | 17   | 18   | 15   | 16   | 22   | 17   | 15   | 12   | 11   | 11   | 11   | 8    | 8    | 8    | 12.7          | 22.4            |
| 10-Jun   | 7                             | 4  | 3    | 4   | 4    | 7    | 8    | 4    | 13   | 14   | 17   | 22   | 27   | 28   | 25   | 23   | 26   | 24   | 20   | 22   | 12   | 5    | 9    | 12   | 14.1          | 28.3            |
| 11-Jun   | 19                            | 23   | 20   | 16  | 13   | 8    | 6    | 8    | 9    | 10   | 13   | 15   | 8    | 7    | 7    | 22   | 30   | 21   | 17   | 18   | 15   | 9    | 7    | 6    | 13.6          | 29.7            |
| 12-Jun   | 8                             | 9  | 6    | 6   | 8    | 8    | 13   | 26   | 34   | 35   | 39   | 38   | 32   | 44   | F    | F    | 47   | 44   | 40   | 33   | 27   | 22   | 20   | 21   | 25.4          | 46.9            |
| 13-Jun   | 15                            | 18   | 15   | 17  | 19   | 29   | 22   | 20   | 21   | 31   | 29   | 27   | 25   | 21   | 20   | 15   | 11   | 6    | 8    | 10   | 7    | 6    | 7    | 8    | 17.0          | 31.1            |
| 14-Jun   | 5                             | 7  | 2    | 4   | 6    | 5    | 12   | 7    | 8    | 7    | 9    | 12   | 13   | 7    | 11   | 10   | 9    | 12   | 14   | 9    | 13   | 14   | 13   | 15   | 9.3           | 14.6            |
| 15-Jun   | 28                            | 26   | 28   | 33  | 31   | 29   | 32   | 34   | 33   | 42   | 50   | 52   | 54   | 54   | 50   | 51   | 59   | 54   | 49   | 41   | 41   | 41   | 39   | 34   | 41.0          | 59.2            |
| 16-Jun   | 31                            | 31   | 30   | 28  | 28   | 27   | 29   | 24   | 27   | 23   | 23   | 27   | 29   | 27   | 28   | 25   | 24   | 20   | 18   | 21   | 19   | 17   | 17   | 21   | 24.8          | 31.3            |
| 17-Jun   | 20                            | 18   | 17   | 10  | 8    | 11   | 11   | 10   | 16   | 20   | 25   | 27   | 28   | 28   | 32   | 31   | 33   | 33   | 31   | 26   | 18   | 14   | 12   | 8    | 20.3          | 32.9            |
| 18-Jun   | 10                            | 7  | 6    | 4   | 4    | 3    | 6    | 6    | 15   | 18   | 19   | 16   | 14   | 11   | 11   | 14   | 15   | 13   | 10   | 6    | 10   | 10   | 8    | 8    | 10.2          | 19.4            |
| 19-Jun   | 4                             | 7  | 9    | 7   | 5    | 7    | 7    | 6    | 7    | 12   | 15   | 12   | 17   | 11   | 14   | 12   | 16   | 11   | 7    | 7    | 5    | 3    | 3    | 4    | 8.7           | 17.5            |
| 20-Jun   | 3                             | 3  | 3    | 3   | 2    | 2    | 3    | 8    | 7    | 8    | 10   | 10   | 8    | 8    | 9    | 10   | 12   | 13   | 13   | 11   | 10   | 7    | 9    | 8    | 7.4           | 13.2            |
| 21-Jun   | 9                             | 8  | 12   | 11  | 10   | 7    | 4    | 9    | 14   | 15   | 13   | 18   | 16   | 16   | 15   | 14   | 15   | 17   | 15   | 15   | 7    | 10   | 8    | 4    | 11.7          | 17.5            |
| 22-Jun   | 12                            | 11   | 4    | 8   | 10   | 10   | 7    | 7    | 12   | 14   | N    | N    | 12   | 20   | 15   | 14   | 23   | 28   | 13   | 10   | 13   | 7    | 5    | 6    | 11.9          | 28.0            |
| 23-Jun   | 8                             | 5  | 19   | 20  | 4    | 6    | 5    | 3    | 7    | 5    | 5    | 4    | 6    | 7    | 5    | 9    | 12   | 13   | 15   | 11   | 7    | 3    | 3    | 6    | 7.8           | 19.6            |
| 24-Jun   | 8                             | 10   | 8    | 6   | 8    | 9    | 8    | 6    | 7    | 11   | 8    | 5    | 5    | 7    | 7    | 11   | 11   | 9    | 4    | 7    | 8    | 4    | 5    | 4    | 7.3           | 10.8            |
| 25-Jun   | 2                             | 3  | 3    | 3   | 3    | 3    | 3    | 2    | 8    | 16   | 26   | 27   | 28   | 27   | 29   | 26   | 27   | 25   | 23   | 15   | 9    | 5    | 6    | 5    | 13.4          | 28.6            |
| 26-Jun   | 4                             | 6  | 4    | 3   | 5    | 8    | 8    | 14   | 16   | 24   | 23   | 21   | 21   | 22   | 20   | 20   | 22   | 23   | 23   | 19   | 11   | 7    | 7    | 3    | 13.9          | 24.5            |
| 27-Jun   | 4                             | 3  | 3    | 3   | 3    | 2    | 6    | 7    | 6    | 6    | 9    | 9    | 6    | 7    | 5    | 8    | 7    | 8    | 7    | 6    | 6    | 5    | 6    | 4    | 5.7           | 9.0             |
| 28-Jun   | 6                             | 3  | 3    | 5   | 5    | 4    | 5    | 3    | 3    | 5    | 3    | 7    | 9    | 9    | 8    | 4    | 18   | 17   | 14   | 8    | 7    | 9    | 5    | 3    | 6.7           | 17.6            |
| 29-Jun   | 8                             | 5  | 5    | 5   | 6    | 3    | 3    | 4    | 3    | 6    | 10   | 11   | 13   | 17   | 15   | 2    | 8    | 13   | 11   | 9    | 11   | 9    | 8    | 10   | 8.2           | 16.6            |
| 30-Jun   | 9                             | 9  | 10   | 10  | 12   | 9    | 11   | 16   | 15   | 15   | 11   | 4    | 7    | 16   | 12   | 5    | 7    | 9    | 5    | 6    | 1    | 4    | 4    | 5    | 8.8           | 16.0            |
|  |                               | 9.8  | 9.5  | 9.4   | 9.3  | 9.0  | 9.1  | 9.8  | 10.8 | 13.1 | 15.9 | 17.8 | 18.2 | 18.0 | 18.6 | 18.2 | 17.9 | 21.0 | 20.4 | 18.1 | 15.5 | 12.9 | 10.4 | 9.9  | 9.4           | Diurnal Average |
|  |                               | 30.8   | 31.3 | 29.7  | 32.9 | 31.1 | 29.3 | 32.2 | 34.0 | 33.6 | 42.4 | 49.7 | 52.0 | 53.7 | 54.1 | 49.8 | 50.7 | 59.2 | 54.4 | 49.1 | 40.6 | 40.9 | 40.7 | 39.1 | 33.5          | Diurnal Maximum |
| P - Power Failure      N - Not Valid<br>All monthly, daily, and diurnal averages have been calculated using scalar methods |                               |  |      |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |

# Hourly Standard Deviations

Wind Direction (WD) - deg

Beaverlodge - June 2016

| Maximum Value: 97.2 deg on Jun 29 07:00  |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours in Service:         | 720           |
|--|-------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------------------|---------------|
| Minimum Value: 2.8 deg on Jun 2 22:00  |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours of Data:            | 716           |
| Percentiles: P <sub>1</sub> = 3.3 P <sub>10</sub> = 4.8 Q <sub>1</sub> = 7.5 Median = 13.8 Q <sub>3</sub> = 28.4 P <sub>90</sub> = 53.8 P <sub>99</sub> = 88.8 |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours of Missing Data:    | 4             |
|  |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours of Calibration:     | 0             |
|  |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Percent Operational Time: | 99.4          |
| Day  | Hourly Period Ending At (MST) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                           | Daily Maximum |
|  | 1                             | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24                        |               |
| 1-Jun  | 9                             | 7    | 56   | 76   | 60   | 50   | 72   | 47   | 41   | 26   | 21   | 19   | 24   | 21   | 43   | 25   | 57   | 81   | 85   | 21   | 75   | 51   | 46   | 15                        | 85.3          |
| 2-Jun  | 80                            | 67   | 24   | 42   | 55   | 71   | 22   | 28   | 19   | 45   | 14   | 26   | 18   | 14   | 15   | 7    | 12   | 9    | 4    | 5    | 3    | 3    | 3    | 4                         | 80.3          |
| 3-Jun  | 8                             | 49   | 27   | 9    | 9    | 24   | 9    | 7    | 8    | 9    | 8    | 9    | 12   | 8    | 10   | 8    | 7    | 8    | 7    | 9    | 4    | 6    | 4    | 4                         | 49.2          |
| 4-Jun  | 3                             | 6    | 3    | 5    | 8    | 5    | 4    | 5    | 7    | 8    | 9    | 10   | 16   | 13   | 13   | 10   | 11   | 10   | 6    | 5    | 9    | 25   | 63   | 60                        | 63.3          |
| 5-Jun  | 93                            | 21   | 29   | 57   | 19   | 14   | 57   | 24   | 18   | 41   | 77   | 79   | 85   | 54   | 46   | 39   | 14   | 15   | 7    | 4    | 7    | 8    | 5    | 3                         | 92.9          |
| 6-Jun  | 35                            | 45   | 5    | 58   | 39   | 13   | 48   | 28   | 50   | 20   | 17   | 13   | 9    | 10   | 7    | 9    | 7    | 7    | 5    | 6    | 5    | 9    | 12   | 23                        | 58.4          |
| 7-Jun  | 15                            | 4    | 10   | 6    | 5    | 9    | 8    | 13   | 7    | 12   | 15   | 24   | 22   | 27   | 39   | 38   | 29   | 11   | 13   | 12   | 8    | 11   | 5    | 10                        | 39.1          |
| 8-Jun  | 6                             | 14   | 50   | 32   | 32   | 85   | 23   | 7    | 50   | 19   | 12   | 11   | 8    | 45   | 16   | 27   | 9    | 11   | 12   | 10   | 19   | 74   | 48   | 42                        | 85.3          |
| 9-Jun  | 13                            | 11   | 15   | 9    | 13   | 8    | 10   | 5    | 6    | 6    | 5    | 15   | 11   | 20   | 7    | 7    | 10   | 16   | 6    | 18   | 9    | 19   | 11   | 8                         | 19.8          |
| 10-Jun   | 12                            | 32   | 32   | 19   | 85   | 41   | 5    | 50   | 15   | 12   | 14   | 8    | 11   | 9    | 11   | 15   | 16   | 5    | 4    | 37   | 35   | 61   | 30   | 8                         | 84.7          |
| 11-Jun   | 5                             | 6    | 6    | 8    | 5    | 12   | 29   | 12   | 19   | 7    | 8    | 6    | 40   | 91   | 78   | 5    | 6    | 4    | 7    | 4    | 6    | 11   | 11   | 10                        | 91.3          |
| 12-Jun   | 12                            | 7    | 9    | 18   | 9    | 7    | 7    | 6    | 5    | 6    | 7    | 6    | 5    | 8    | P    | P    | 9    | 7    | 6    | 5    | 4    | 3    | 4    | 7                         | 17.6          |
| 13-Jun   | 11                            | 5    | 8    | 3    | 4    | 4    | 5    | 14   | 12   | 7    | 11   | 13   | 10   | 18   | 20   | 24   | 28   | 63   | 34   | 9    | 6    | 6    | 9    | 12                        | 63.1          |
| 14-Jun   | 53                            | 16   | 72   | 44   | 72   | 36   | 29   | 76   | 7    | 14   | 39   | 13   | 18   | 35   | 27   | 24   | 31   | 12   | 19   | 41   | 8    | 10   | 9    | 23                        | 75.8          |
| 15-Jun   | 4                             | 5    | 4    | 4    | 4    | 6    | 5    | 5    | 5    | 5    | 4    | 4    | 4    | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 5                         | 6.1           |
| 16-Jun   | 4                             | 4    | 4    | 5    | 5    | 5    | 9    | 46   | 4    | 6    | 5    | 6    | 5    | 5    | 6    | 5    | 4    | 5    | 6    | 6    | 5    | 5    | 5    | 5                         | 46.5          |
| 17-Jun   | 4                             | 6    | 4    | 7    | 6    | 5    | 6    | 18   | 7    | 7    | 7    | 6    | 10   | 9    | 10   | 10   | 8    | 8    | 8    | 4    | 4    | 4    | 4    | 8                         | 17.7          |
| 18-Jun   | 10                            | 31   | 21   | 16   | 14   | 17   | 8    | 16   | 15   | 14   | 14   | 18   | 24   | 29   | 25   | 19   | 20   | 18   | 21   | 41   | 9    | 6    | 65   | 56                        | 64.8          |
| 19-Jun   | 36                            | 24   | 13   | 6    | 43   | 27   | 10   | 19   | 15   | 10   | 11   | 22   | 16   | 24   | 25   | 15   | 20   | 26   | 18   | 22   | 8    | 63   | 24   | 28                        | 63.0          |
| 20-Jun   | 27                            | 23   | 13   | 27   | 48   | 49   | 18   | 8    | 13   | 16   | 17   | 25   | 50   | 58   | 53   | 34   | 15   | 14   | 7    | 4    | 7    | 5    | 4    | 4                         | 58.2          |
| 21-Jun   | 80                            | 64   | 13   | 58   | 12   | 10   | 12   | 15   | 8    | 10   | 13   | 24   | 15   | 26   | 14   | 19   | 11   | 8    | 23   | 9    | 15   | 11   | 19   | 69                        | 80.3          |
| 22-Jun   | 51                            | 22   | 50   | 33   | 7    | 26   | 22   | 14   | 11   | 15   | N    | N    | 22   | 24   | 16   | 10   | 13   | 8    | 18   | 16   | 3    | 7    | 52   | 21                        | 52.2          |
| 23-Jun   | 26                            | 26   | 71   | 89   | 48   | 33   | 25   | 89   | 23   | 46   | 58   | 71   | 48   | 28   | 70   | 28   | 10   | 13   | 7    | 6    | 35   | 49   | 49   | 57                        | 89.3          |
| 24-Jun   | 35                            | 6    | 18   | 8    | 7    | 10   | 10   | 12   | 12   | 17   | 34   | 59   | 49   | 23   | 11   | 13   | 16   | 69   | 90   | 18   | 9    | 32   | 43   | 58                        | 89.9          |
| 25-Jun   | 82                            | 59   | 10   | 26   | 28   | 9    | 16   | 42   | 8    | 8    | 9    | 9    | 9    | 13   | 9    | 13   | 12   | 9    | 6    | 4    | 21   | 12   | 21   | 24                        | 81.5          |
| 26-Jun   | 19                            | 27   | 21   | 33   | 19   | 10   | 9    | 6    | 18   | 6    | 10   | 14   | 15   | 16   | 16   | 13   | 8    | 5    | 4    | 3    | 4    | 7    | 21   | 58                        | 58.0          |
| 27-Jun   | 49                            | 40   | 31   | 38   | 38   | 32   | 9    | 9    | 16   | 22   | 39   | 40   | 78   | 65   | 96   | 76   | 42   | 19   | 16   | 29   | 6    | 24   | 7    | 49                        | 96.3          |
| 28-Jun   | 8                             | 67   | 70   | 15   | 85   | 68   | 64   | 28   | 38   | 21   | 46   | 28   | 21   | 28   | 27   | 38   | 31   | 15   | 22   | 14   | 12   | 26   | 41   | 44                        | 85.2          |
| 29-Jun   | 19                            | 69   | 58   | 61   | 45   | 94   | 97   | 38   | 37   | 29   | 15   | 13   | 16   | 14   | 20   | 40   | 82   | 13   | 18   | 10   | 23   | 6    | 15   | 14                        | 97.2          |
| 30-Jun   | 8                             | 5    | 8    | 6    | 49   | 27   | 18   | 13   | 21   | 46   | 42   | 47   | 38   | 13   | 13   | 46   | 69   | 18   | 37   | 87   | 24   | 80   | 51   | 14                        | 87.2          |
|  | 92.9                          | 68.7 | 72.1 | 89.3 | 85.2 | 94.0 | 97.2 | 89.0 | 50.4 | 46.1 | 76.8 | 79.4 | 84.8 | 91.3 | 96.3 | 76.5 | 81.6 | 81.2 | 89.9 | 87.2 | 75.0 | 80.1 | 64.8 | 68.9                      |               |
| P - Power Failure      N - Not Valid   |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                           |               |

**PAZA**  
**Valleyview Station**  
**Monthly Summary Tables, Graphs and**  
**Roses**

## Hourly Averages

Sulphur Dioxide (SO<sub>2</sub>) - ppb

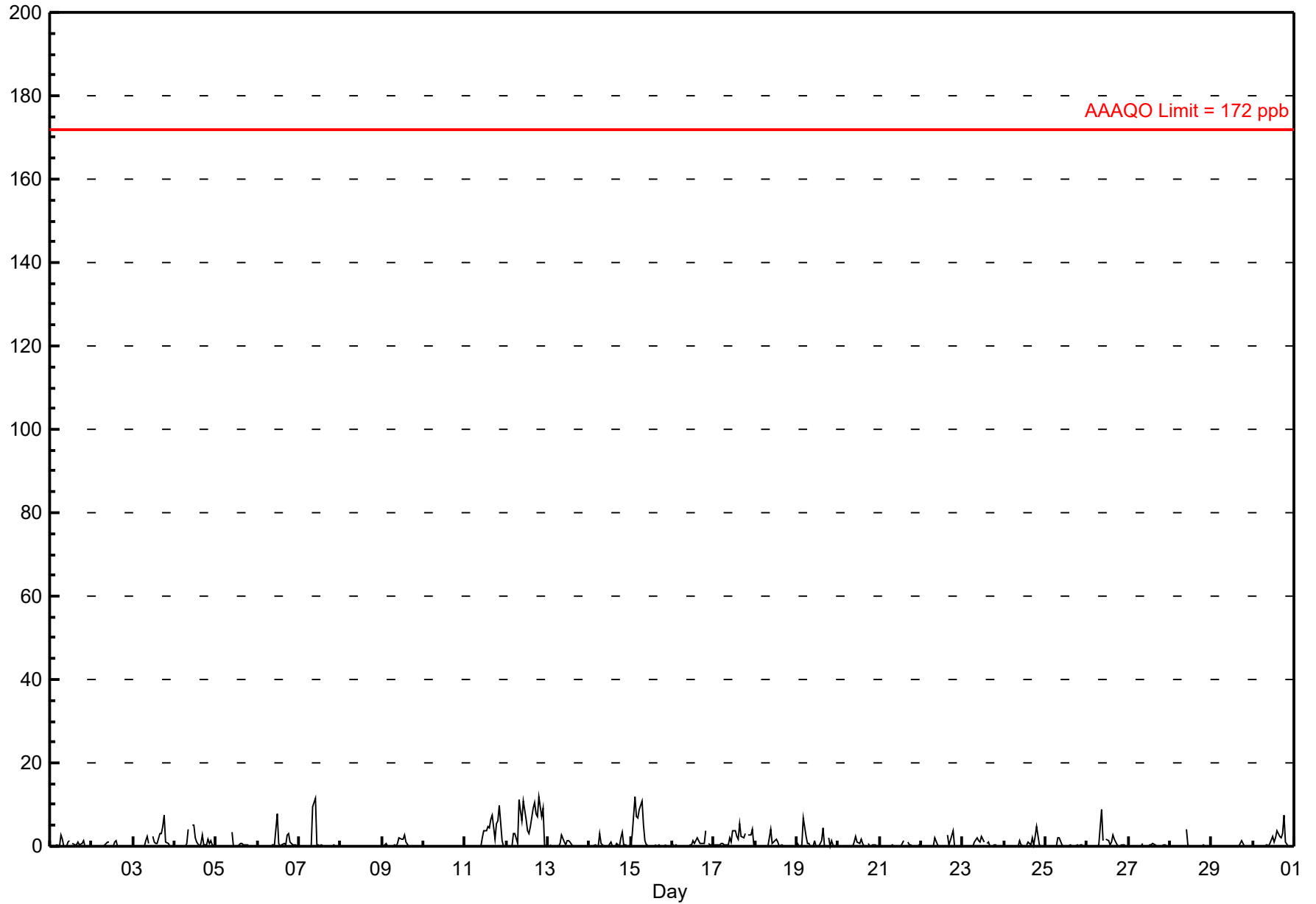
Valleyview - June 2016

|  |   |          |                           |       |
|--|---|----------|---------------------------|-------|
| Number of Exceedences (AAAQO):             | 1-hr: 0   | 24-hr: 0 | Hours in Service:         | 720   |
| Maximum Value: 11.9 ppb on Jun 15 03:00    | Maximum Daily Average: 5.4 ppb on Jun 12  |          | Hours of Data:            | 686   |
| Minimum Value: 0 ppb on Jun 1 02:00        | Minimum Daily Average: 0.0 ppb on Jun 10  |          | Hours of Missing Data:    | 34    |
| Maximum Diurnal Average: 1.7 ppb at hour 9 | Minimum Diurnal Average: 0.1 ppb at hour 1  |          | Hours of Calibration:     | 34    |
| Monthly Average: 0.87 ppb                  | Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.7 P <sub>90</sub> = 2.7 P <sub>99</sub> = 10.5 |          | Percent Operational Time: | 100.0 |

| Day    | Hourly Period Ending At (MST) |   |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     | Daily Average | Daily Maximum |
|--------|-------------------------------|---|----|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|---------------|---------------|
|        | 1                             | 2 | 3  | 4 | 5 | 6 | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24  |               |               |
| 1-Jun  | 0                             | 0 | 0  | 0 | 0 | 0 | 3  | 2  | 0  | 0  | 1  | 1  | A  | 1  | 0  | 0  | 1  | 0  | 1  | 1  | 0  | 0  | 0  | 0   | 0.5           | 2.9           |
| 2-Jun  | 0                             | 0 | 0  | 0 | 0 | 0 | 0  | 0  | 1  | 1  | 1  | A  | 0  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.2           | 1.4           |
| 3-Jun  | 0                             | 0 | 0  | 0 | 0 | 0 | 0  | 1  | 2  | 1  | A  | 2  | 1  | 1  | 1  | 3  | 3  | 5  | 7  | 1  | 1  | 0  | 0  | 1.3 | 7.5           |               |
| 4-Jun  | 0                             | 0 | 0  | 0 | 0 | 0 | 0  | 1  | 4  | A  | 5  | 5  | 2  | 1  | 0  | 1  | 3  | 0  | 0  | 2  | 1  | 1  | 0  | 1.2 | 5.2           |               |
| 5-Jun  | 0                             | 0 | 0  | 0 | 0 | 0 | 0  | 0  | A  | 3  | 0  | 0  | 0  | 0  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0.3 | 3.4           |               |
| 6-Jun  | 0                             | 0 | 0  | 0 | 0 | 0 | 0  | A  | 0  | 0  | 0  | 8  | 1  | 0  | 0  | 1  | 0  | 3  | 3  | 1  | 0  | 0  | 0  | 0.8 | 7.8           |               |
| 7-Jun  | 0                             | 0 | 0  | 0 | 0 | 0 | A  | 0  | 10 | 11 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1.0 | 11.4          |               |
| 8-Jun  | 0                             | 0 | 0  | 0 | 0 | A | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0.0 | 0.1           |               |
| 9-Jun  | 0                             | 0 | 1  | 0 | A | 0 | 0  | 0  | 0  | 1  | 2  | 2  | 2  | 3  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0.5 | 2.8           |               |
| 10-Jun | 0                             | 0 | 0  | A | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0.0 | 0.1           |               |
| 11-Jun | 0                             | 0 | A  | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 2  | 4  | 4  | 5  | 5  | 7  | 7  | 2  | 5  | 6  | 10 | 1  | 0  | 2.5 | 9.9           |               |
| 12-Jun | 0                             | A | 0  | 0 | 3 | 3 | 1  | 11 | 9  | 6  | 11 | 6  | 4  | 3  | 5  | 9  | 11 | 8  | 7  | 12 | 7  | 9  | 0  | 5.4 | 11.9          |               |
| 13-Jun | A                             | 0 | 0  | 0 | 0 | 0 | 0  | 1  | 3  | 1  | 0  | 1  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0.4 | 2.8           |               |
| 14-Jun | 0                             | 0 | 0  | 0 | 0 | 0 | 3  | 1  | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 0  | 1  | 0  | 2  | 4  | 0  | 0  | A  | 0.5 | 3.5           |               |
| 15-Jun | 0                             | 3 | 12 | 7 | 7 | 9 | 11 | 5  | 1  | 0  | 0  | C  | C  | C  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 2.9 | 11.9          |               |
| 16-Jun | 0                             | 0 | 0  | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 2  | 1  | 1  | 1  | 1  | 4  | A  | 1  | 0  | 0.6 | 3.7           |               |
| 17-Jun | 0                             | 0 | 0  | 0 | 1 | 1 | 0  | 0  | 0  | 2  | 1  | 4  | 4  | 2  | 2  | 6  | 2  | 2  | 3  | A  | 3  | 3  | 4  | 1.8 | 5.6           |               |
| 18-Jun | 0                             | 0 | 0  | 0 | 0 | 0 | 0  | 0  | 2  | 4  | 1  | 1  | 2  | 1  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0.5 | 4.1           |               |
| 19-Jun | 1                             | 0 | 0  | 0 | 7 | 2 | 1  | 1  | 0  | 0  | 1  | 0  | 0  | 0  | 1  | 5  | 0  | A  | 2  | 0  | 1  | 0  | 0  | 1.0 | 6.6           |               |
| 20-Jun | 0                             | 0 | 0  | 0 | 0 | 0 | 0  | 0  | 0  | 1  | 2  | 1  | 1  | 2  | 1  | 0  | A  | 1  | 0  | 0  | 0  | 0  | 0  | 0.4 | 2.3           |               |
| 21-Jun | 0                             | 0 | 0  | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | A  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0.2 | 1.3           |               |
| 22-Jun | 0                             | 0 | 0  | 0 | 0 | 0 | 0  | 0  | 2  | 0  | 0  | 0  | 0  | 0  | A  | 3  | 0  | 1  | 4  | 0  | 0  | 0  | 0  | 0.5 | 3.6           |               |
| 23-Jun | 0                             | 0 | 0  | 0 | 0 | 0 | 0  | 1  | 2  | 1  | 1  | 2  | 1  | A  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0.5 | 2.4           |               |
| 24-Jun | 0                             | 0 | 0  | 0 | 0 | 0 | 0  | 0  | 0  | 1  | 0  | 0  | A  | 0  | 1  | 0  | 2  | 0  | 2  | 5  | 0  | 0  | 0  | 0.6 | 4.6           |               |
| 25-Jun | 0                             | 0 | 0  | 0 | 0 | 0 | 0  | 2  | 2  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0.3 | 1.9           |               |
| 26-Jun | 0                             | 0 | 0  | 0 | 0 | 0 | 0  | 0  | 9  | 1  | A  | 2  | 1  | 0  | 1  | 3  | 2  | 0  | 0  | 0  | 0  | 0  | 0  | 0.9 | 8.7           |               |
| 27-Jun | 0                             | 0 | 0  | 0 | 0 | 0 | 0  | 0  | 1  | A  | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0.2 | 0.7           |               |
| 28-Jun | 0                             | 0 | 0  | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0.3 | 4.2           |               |
| 29-Jun | 0                             | 0 | 0  | 0 | 0 | 0 | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 0  | 0  | 0  | 0  | 0.1 | 1.4           |               |
| 30-Jun | 0                             | 0 | 0  | 0 | 0 | 0 | A  | 0  | 0  | 0  | 1  | 2  | 1  | 2  | 4  | 2  | 2  | 3  | 7  | 1  | 0  | 0  | 0  | 1.2 | 7.4           |               |

|     |     |      |     |     |     |      |      |     |      |      |     |     |     |     |     |      |     |     |      |     |     |     |     |                 |  |
|-----|-----|------|-----|-----|-----|------|------|-----|------|------|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|-----|-----|-----------------|--|
| 0.1 | 0.1 | 0.5  | 0.3 | 0.6 | 0.5 | 0.7  | 0.9  | 1.7 | 1.5  | 1.1  | 1.6 | 1.0 | 0.9 | 1.0 | 1.5 | 1.3  | 1.0 | 1.6 | 1.3  | 0.9 | 0.6 | 0.2 | 0.1 | Diurnal Average |  |
| 0.6 | 2.6 | 11.9 | 7.2 | 6.9 | 8.9 | 10.8 | 11.2 | 9.6 | 11.4 | 10.9 | 7.8 | 3.8 | 4.6 | 4.8 | 9.0 | 10.6 | 7.8 | 7.5 | 11.9 | 9.9 | 9.1 | 4.1 | 0.5 | Diurnal Maximum |  |

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb    24-hr 48 ppb    30-day 11 ppb



## Hourly Maximums

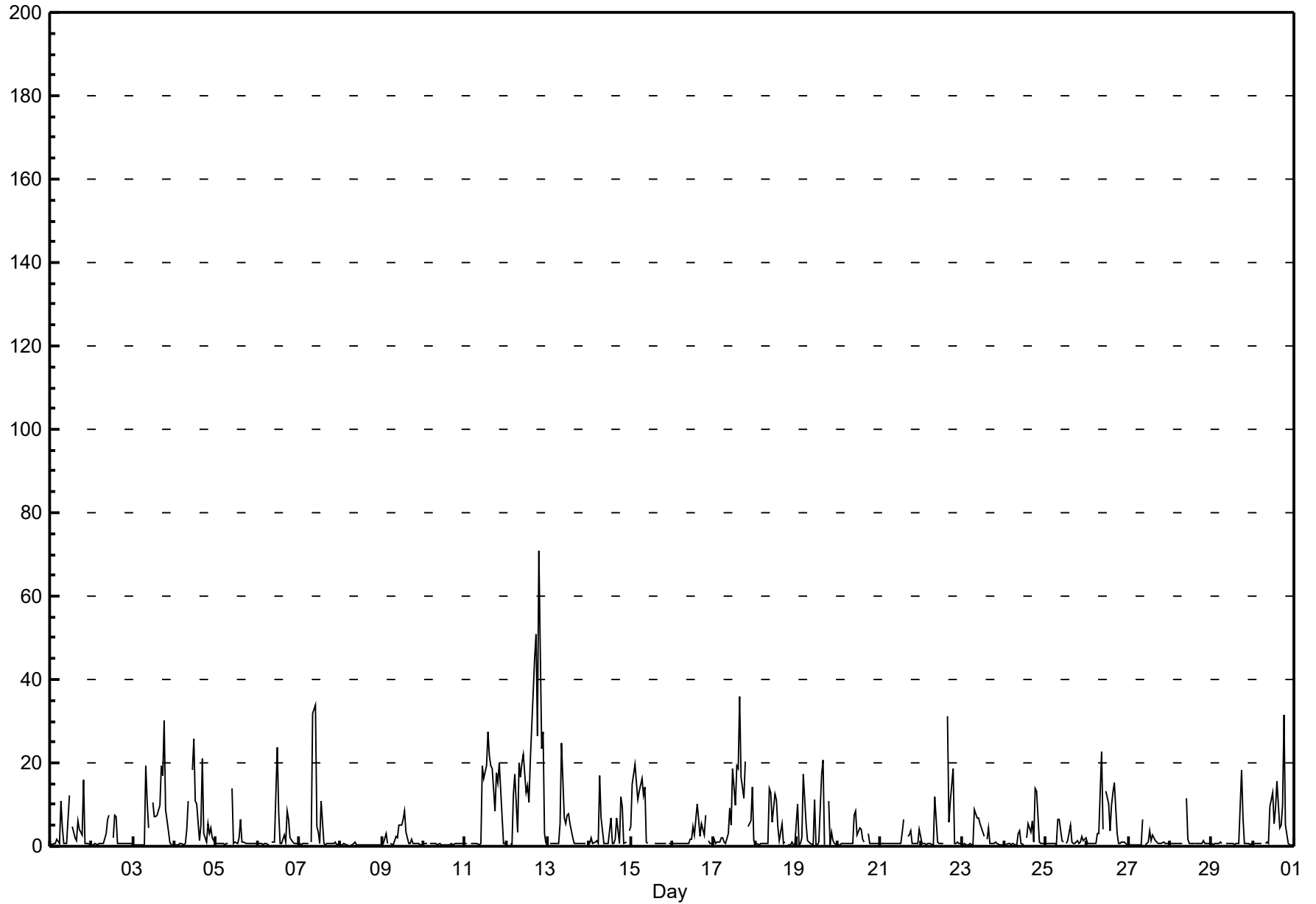
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Valleyview - June 2016

| Maximum Value: 70.8 ppb on Jun 12 20:00     |                               | Maximum Daily Average: 19.9 ppb on Jun 12  |    | Hours in Service: 720           |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                               |               |               |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
|---|-------------------------------|--|----|---------------------------------|----|------|----|------|----|------|----|------|----|------|----|------|----|------|----|------|----|------|----|-------------------------------|---------------|---------------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|-----|--|
| Minimum Value: 0 ppb on Jun 9 23:00         |                               | Minimum Daily Average: 0.5 ppb on Jun 8  |    | Hours of Data: 686              |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                               |               |               |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| Maximum Diurnal Average: 7.4 ppb at hour 19 |                               | Minimum Diurnal Average: 0.8 ppb at hour 24  |    | Hours of Missing Data: 34       |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                               |               |               |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| Monthly Average: 3.93 ppb                   |                               | Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 0.5 Median = 0.6 Q <sub>3</sub> = 4.2 P <sub>90</sub> = 12.8 P <sub>99</sub> = 31.4 |    | Hours of Calibration: 34        |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                               |               |               |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
|   |                               |  |    | Percent Operational Time: 100.0 |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                               |               |               |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| Day   | Hourly Period Ending At (MST) |  |    |                                 |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |                               | Daily Average | Daily Maximum |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
|   | 1                             | 2  | 3  | 4                               | 5  | 6    | 7  | 8    | 9  | 10   | 11 | 12   | 13 | 14   | 15 | 16   | 17 | 18   | 19 | 20   | 21 | 22   | 23 | 24                            |               |               |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 1-Jun                                       | 1                             | 0  | 1  | 1                               | 2  | 1    | 11 | 4    | 1  | 1    | 6  | 12   | A  | 5    | 2  | 1    | 6  | 4    | 3  | 16   | 1  | 1    | 1  | 0                             | 3.4           | 16.0          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 2-Jun                                       | 0                             | 0  | 1  | 0                               | 1  | 1    | 1  | 1    | 3  | 6    | 7  | A    | 2  | 7    | 7  | 1    | 1  | 1    | 1  | 1    | 1  | 1    | 1  | 1                             | 1.9           | 7.5           |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 3-Jun                                       | 1                             | 0  | 0  | 0                               | 0  | 0    | 0  | 19   | 10 | 4    | A  | 10   | 7  | 7    | 8  | 10   | 19 | 17   | 30 | 9    | 4  | 1    | 0  | 0                             | 7.0           | 30.1          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 4-Jun                                       | 0                             | 1  | 1  | 1                               | 1  | 0    | 1  | 4    | 11 | A    | 18 | 26   | 11 | 10   | 1  | 5    | 21 | 3    | 1  | 6    | 3  | 5    | 2  | 1                             | 5.7           | 25.9          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 5-Jun                                       | 1                             | 1  | 1  | 1                               | 1  | 0    | 1  | 1    | A  | 14   | 1  | 1    | 1  | 2    | 7  | 1    | 1  | 1    | 1  | 1    | 1  | 1    | 1  | 1                             | 1.5           | 14.0          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 6-Jun                                       | 1                             | 1  | 1  | 0                               | 1  | 1    | 0  | A    | 1  | 1    | 1  | 24   | 8  | 1    | 1  | 3    | 1  | 9    | 7  | 2    | 1  | 1    | 1  | 1                             | 2.8           | 23.8          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 7-Jun                                       | 1                             | 0  | 1  | 1                               | 1  | 1    | A  | 1    | 32 | 34   | 5  | 4    | 1  | 11   | 1  | 0    | 1  | 1    | 1  | 1    | 1  | 1    | 1  | 1                             | 4.2           | 33.9          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 8-Jun                                       | 1                             | 1  | 1  | 0                               | 0  | A    | 0  | 0    | 1  | 0    | 0  | 0    | 0  | 1    | 0  | 0    | 0  | 0    | 0  | 0    | 1  | 1    | 1  | 0                             | 0.5           | 1.0           |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 9-Jun                                       | 1                             | 1  | 3  | 1                               | A  | 1    | 0  | 1    | 3  | 2    | 5  | 5    | 6  | 9    | 4  | 1    | 1  | 2    | 1  | 1    | 1  | 1    | 0  | 0                             | 2.0           | 8.5           |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 10-Jun                                      | 1                             | 1  | 1  | A                               | 1  | 1    | 1  | 1    | 0  | 1    | 0  | 0    | 0  | 0    | 0  | 0    | 1  | 0    | 1  | 1    | 1  | 1    | 1  | 1                             | 0.5           | 0.5           |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 11-Jun                                      | 1                             | 1  | A  | 1                               | 1  | 1    | 1  | 1    | 1  | 1    | 19 | 16   | 19 | 27   | 22 | 19   | 19 | 9    | 18 | 15   | 20 | 7    | 1  | 1                             | 9.4           | 27.3          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 12-Jun                                      | 0                             | A  | 1  | 0                               | 13 | 17   | 3  | 20   | 17 | 20   | 22 | 13   | 15 | 10   | 21 | 37   | 45 | 51   | 27 | 71   | 23 | 27   | 3  | 1                             | 19.9          | 70.8          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 13-Jun                                      | A                             | 1  | 1  | 1                               | 1  | 1    | 1  | 5    | 25 | 7    | 6  | 7    | 8  | 6    | 2  | 1    | 1  | 1    | 1  | 1    | 1  | 1    | 1  | A                             | 3.3           | 24.6          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 14-Jun                                      | 1                             | 2  | 1  | 1                               | 2  | 1    | 17 | 7    | 1  | 1    | 1  | 1    | 7  | 1    | 1  | 2    | 7  | 1    | 12 | 10   | 1  | 1    | A  | 4                             | 3.3           | 16.9          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 15-Jun                                      | 5                             | 15   | 20 | 15                              | 11 | 13   | 16 | 12   | 14 | 1    | 1  | C    | C  | C    | 1  | 1    | 1  | 1    | 1  | 1    | 1  | A    | 1  | 1                             | 6.4           | 19.8          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 16-Jun                                      | 1                             | 1  | 1  | 1                               | 1  | 1    | 1  | 1    | 1  | 1    | 2  | 2    | 5  | 3    | 10 | 7    | 2  | 5    | 3  | 7    | A  | 1    | 1  | 1                             | 2.4           | 10.2          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 17-Jun                                      | 2                             | 1  | 1  | 1                               | 2  | 2    | 1  | 1    | 3  | 9    | 5  | 19   | 10 | 19   | 19 | 36   | 17 | 11   | 20 | A    | 5  | 6    | 14 | 1                             | 8.9           | 35.8          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 18-Jun                                      | 1                             | 1  | 0  | 1                               | 1  | 1    | 1  | 1    | 14 | 13   | 6  | 12   | 11 | 5    | 1  | 6    | 1  | 1    | A  | 1    | 1  | 1    | 0  | 0                             | 3.3           | 13.9          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 19-Jun                                      | 10                            | 0  | 1  | 2                               | 17 | 5    | 1  | 1    | 1  | 0    | 11 | 0    | 0  | 1    | 17 | 21   | 0  | A    | 11 | 0    | 3  | 1    | 1  | 0                             | 4.7           | 20.6          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 20-Jun                                      | 1                             | 1  | 1  | 1                               | 1  | 1    | 1  | 1    | 1  | 7    | 8  | 3    | 4  | 4    | 2  | 1    | A  | 3    | 1  | 1    | 1  | 1    | 1  | 1                             | 1.8           | 8.4           |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 21-Jun                                      | 1                             | 1  | 1  | 1                               | 1  | 1    | 1  | 1    | 1  | 1    | 1  | 1    | 3  | 7    | A  | 2    | 3  | 4    | 1  | 1    | 1  | 1    | 1  | 4                             | 1.4           | 6.6           |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 22-Jun                                      | 1                             | 1  | 1  | 0                               | 1  | 1    | 0  | 0    | 12 | 1    | 1  | 1    | 1  | 1    | A  | 31   | 6  | 11   | 19 | 1    | 1  | 1    | 1  | 1                             | 3.9           | 31.1          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 23-Jun                                      | 0                             | 1  | 0  | 0                               | 1  | 0    | 0  | 9    | 7  | 7    | 5  | 4    | 2  | A    | 2  | 4    | 1  | 1    | 1  | 1    | 1  | 0    | 0  | 0                             | 2.1           | 8.7           |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 24-Jun                                      | 0                             | 0  | 1  | 1                               | 0  | 1    | 0  | 0    | 3  | 4    | 1  | 0    | A  | 2    | 5  | 4    | 6  | 1    | 14 | 13   | 1  | 1    | 1  | 1                             | 2.6           | 13.9          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 25-Jun                                      | 1                             | 1  | 1  | 1                               | 1  | 1    | 0  | 7    | 6  | 1    | 1  | A    | 1  | 1    | 5  | 1    | 1  | 1    | 1  | 1    | 1  | 2    | 1  | 2                             | 1.6           | 6.6           |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 26-Jun                                      | 1                             | 1  | 1  | 1                               | 1  | 1    | 3  | 3    | 23 | 4    | A  | 13   | 10 | 4    | 10 | 13   | 15 | 3    | 1  | 1    | 1  | 1    | 1  | 1                             | 4.7           | 22.7          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 27-Jun                                      | 1                             | 1  | 1  | 0                               | 1  | 1    | 1  | 1    | 6  | A    | 1  | 1    | 4  | 2    | 3  | 1    | 1  | 1    | 1  | 1    | 1  | 1    | 1  | 1                             | 1.2           | 6.3           |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 28-Jun                                      | 1                             | 1  | 1  | 1                               | 1  | 1    | 1  | 1    | A  | 12   | 2  | 1    | 1  | 1    | 1  | 1    | 1  | 1    | 1  | 1    | 1  | 1    | 1  | 1                             | 1.2           | 11.6          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 29-Jun                                      | 1                             | 0  | 1  | 1                               | 1  | 1    | 1  | A    | 1  | 1    | 1  | 1    | 1  | 0    | 1  | 1    | 1  | 18   | 7  | 1    | 1  | 1    | 0  | 1                             | 1.6           | 18.4          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 30-Jun                                      | 1                             | 1  | 1  | 1                               | 1  | 1    | A  | 1    | 1  | 1    | 9  | 13   | 6  | 9    | 16 | 4    | 5  | 10   | 32 | 5    | 1  | 1    | 0  | 0                             | 5.1           | 31.5          |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |
| 1.0   |                               | 1.1  |    | 1.3                             |    | 1.1  |    | 2.0  |    | 1.8  |    | 2.3  |    | 3.7  |    | 7.0  |    | 5.5  |    | 5.2  |    | 7.0  |    | 5.2                           |               | 5.4           |  | 6.0  |  | 7.3  |  | 6.2  |  | 5.8  |  | 7.4  |  | 5.7  |  | 2.6  |  | 2.3  |  | 1.2  |  | 0.8 |  |
| 10.2  |                               | 14.7   |    | 19.8                            |    | 15.4 |    | 17.3 |    | 17.3 |    | 16.9 |    | 20.1 |    | 32.0 |    | 33.9 |    | 22.0 |    | 25.9 |    | 19.2                          |               | 27.3          |  | 21.8 |  | 36.8 |  | 44.9 |  | 50.8 |  | 31.5 |  | 70.8 |  | 23.5 |  | 27.5 |  | 14.4 |  | 4.1 |  |
| C - Calibration                             |                               |  |    |                                 |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    | A - Automated Daily Zero Span |               |               |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |      |  |     |  |

**Hourly Maximums**

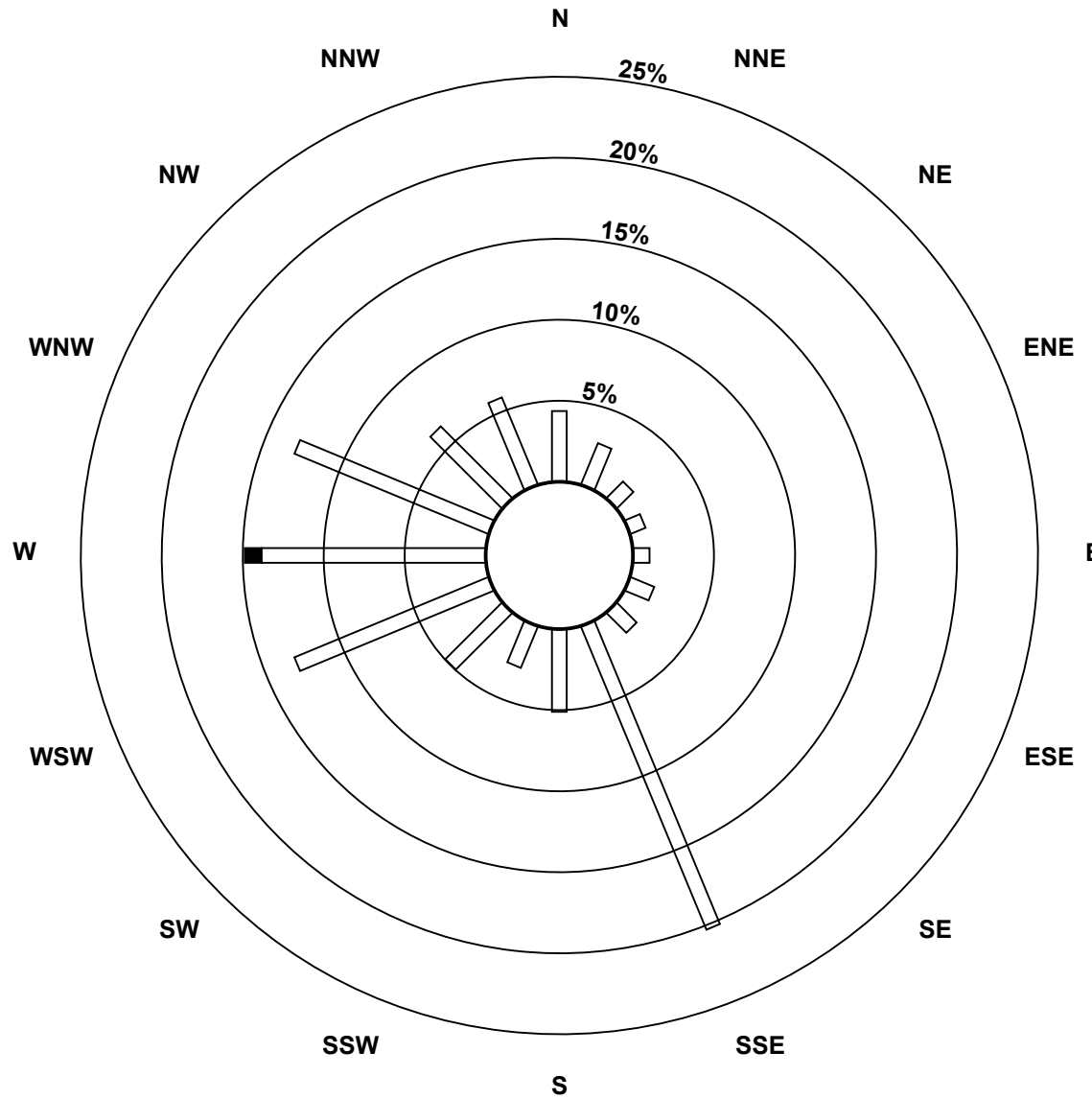
**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Valleyview - June 2016**



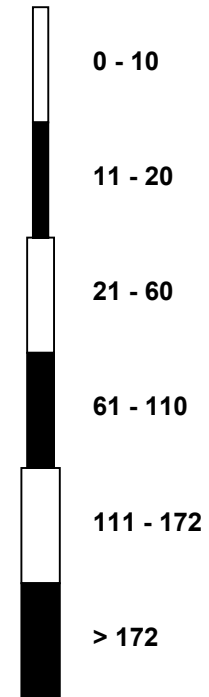


**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Valleyview - June 2016**

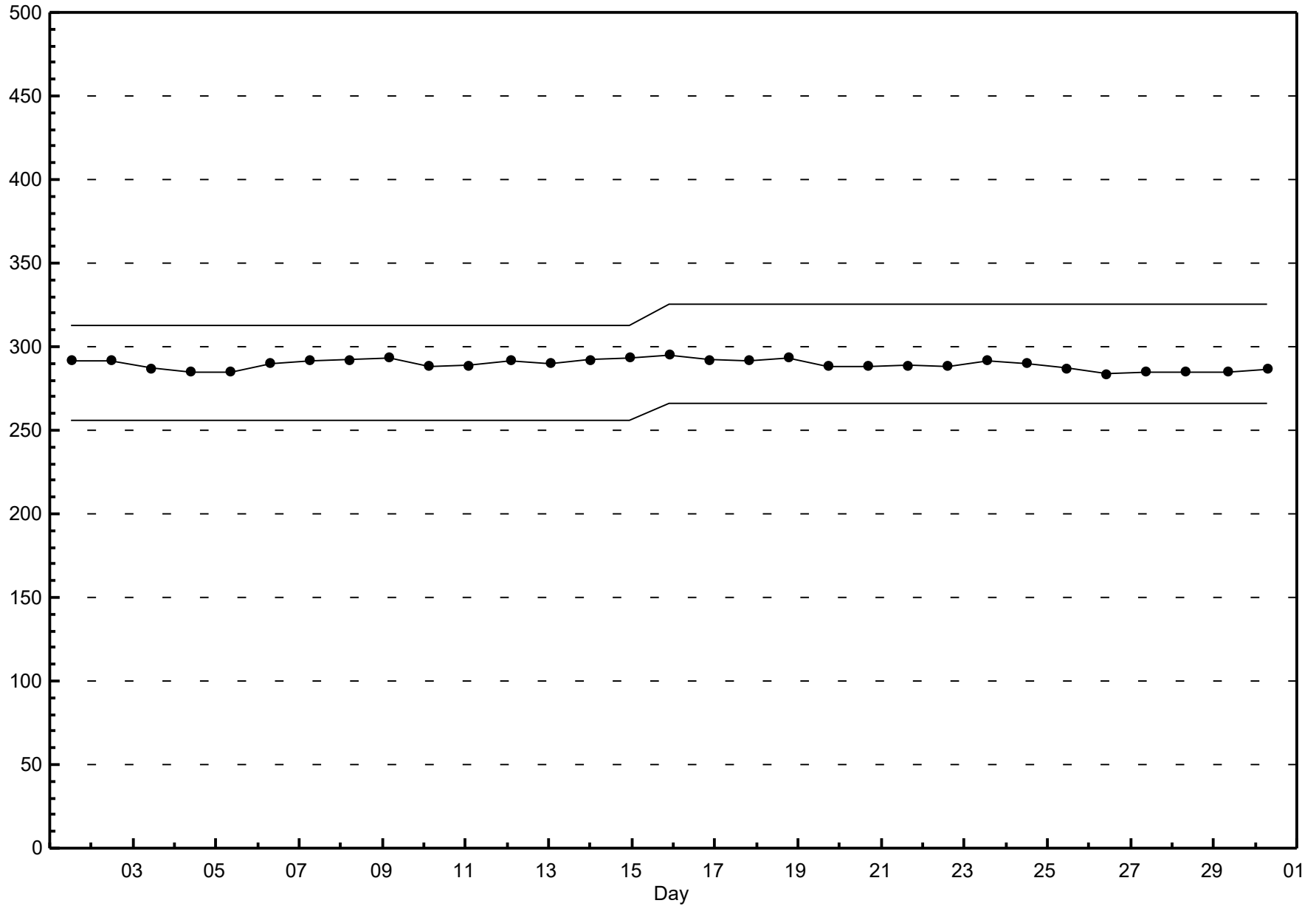


**Pollutant Classes (ppb)**



### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Valleyview - June 2016



## Hourly Averages

## Hydrogen Sulphide (H<sub>2</sub>S) - ppb

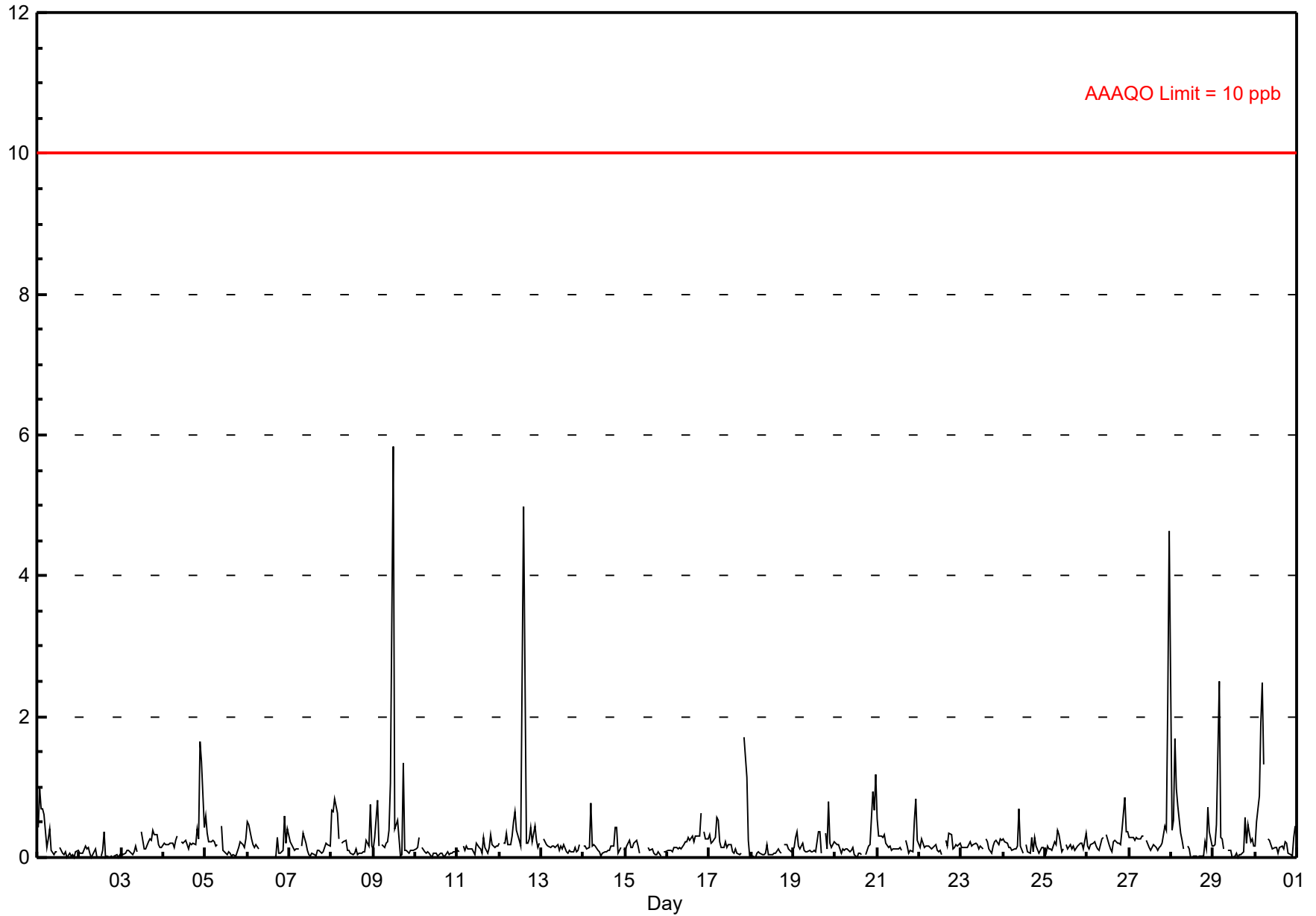
### Valleyview - June 2016

|   |  |          |                           |       |
|---|--|----------|---------------------------|-------|
| Number of Exceedences (AAQO):               | 1-hr: 0  | 24-hr: 0 | Hours in Service:         | 720   |
| Maximum Value: 5.8 ppb on Jun 9 12:00       | Maximum Daily Average: 0.6 ppb on Jun 12   |          | Hours of Data:            | 685   |
| Minimum Value: 0 ppb on Jun 1 22:00         | Minimum Daily Average: 0.1 ppb on Jun 2  |          | Hours of Missing Data:    | 35    |
| Maximum Diurnal Average: 0.4 ppb at hour 24 | Minimum Diurnal Average: 0.1 ppb at hour 13  |          | Hours of Calibration:     | 35    |
| Monthly Average: 0.24 ppb                   | Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.4 P <sub>99</sub> = 2.1 |          | Percent Operational Time: | 100.0 |

| Day    | Hourly Period Ending At (MST) |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Daily Average | Daily Maximum |     |
|--------|-------------------------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------|---------------|-----|
|        | 1                             | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |               |               |     |
| 1-Jun  | 0                             | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.2           | 1.0 |
| 2-Jun  | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.1           | 0.4 |
| 3-Jun  | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.2           | 0.4 |
| 4-Jun  | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 2  | 1  | 0             | 0.3           | 1.6 |
| 5-Jun  | 1                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.2           | 0.6 |
| 6-Jun  | 1                             | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 0             | 0.2           | 0.6 |
| 7-Jun  | 0                             | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.1           | 0.3 |
| 8-Jun  | 1                             | 1 | 1 | 1 | 0 | A | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 0  | 0             | 0.3           | 0.8 |
| 9-Jun  | 0                             | 0 | 1 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 1  | 6  | 0  | 0  | 1  | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0             | 0.6           | 5.8 |
| 10-Jun | 0                             | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.1           | 0.3 |
| 11-Jun | 0                             | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.1           | 0.3 |
| 12-Jun | 0                             | A | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1  | 0  | 0  | 0  | 3  | 5  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.6           | 5.0 |
| 13-Jun | A                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.1           | 0.3 |
| 14-Jun | 0                             | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.2           | 0.8 |
| 15-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | C  | C  | C  | C  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0             | 0.1           | 0.3 |
| 16-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | A  | 0  | 0  | 0             | 0.2           | 0.6 |
| 17-Jun | 0                             | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 2  | 1  | 0  | 0             | 0.3           | 1.7 |
| 18-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0             | 0.1           | 0.2 |
| 19-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 1  | 0  | 0  | 0             | 0.2           | 0.8 |
| 20-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 1             | 0.2           | 1.2 |
| 21-Jun | 1                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 0             | 0.2           | 0.8 |
| 22-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.2           | 0.4 |
| 23-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.2           | 0.3 |
| 24-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.2           | 0.7 |
| 25-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.2           | 0.4 |
| 26-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 0  | 0             | 0.2           | 0.9 |
| 27-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 2  | 5             | 0.5           | 4.6 |
| 28-Jun | 0                             | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 0  | 0             | 0.3           | 1.7 |
| 29-Jun | 0                             | 0 | 0 | 3 | 0 | 0 | 0 | A | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0             | 0.3           | 2.5 |
| 30-Jun | 0                             | 1 | 1 | 2 | 2 | 1 | A | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.4           | 2.5 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |     |                 |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|-----|-----------------|--|
| 0.2 | 0.3 | 0.3 | 0.4 | 0.3 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.1 | 0.2 | 0.3 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3             | 0.4 | Diurnal Average |  |
| 0.7 | 1.0 | 1.7 | 2.5 | 2.5 | 1.3 | 0.3 | 0.4 | 0.5 | 0.7 | 1.1 | 5.8 | 0.4 | 2.6 | 5.0 | 0.4 | 0.3 | 1.3 | 0.6 | 0.6 | 1.7 | 1.6 | 2.2 | 4.6 | Diurnal Maximum |     |                 |  |

C - Calibration                      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAQO): 1-hr 10 ppb    24-hr 3 ppb



## Hourly Maximums

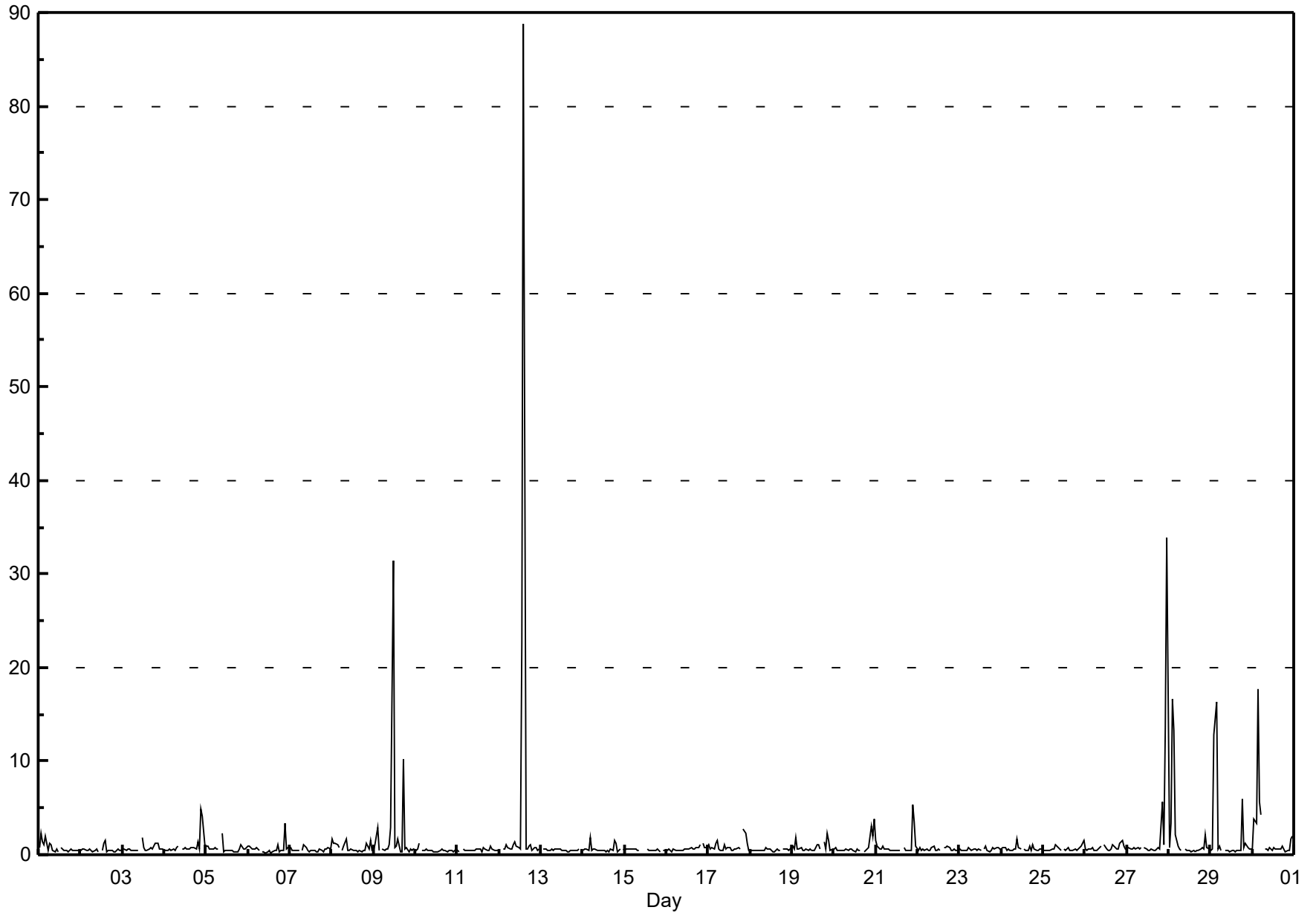
Hydrogen Sulphide (H<sub>2</sub>S) - ppb

Valleyview - June 2016

| Maximum Value: 88.7 ppb on Jun 12 15:00     |                               | Maximum Daily Average: 5.5 ppb on Jun 12  |     | Hours in Service: 720           |      |     |     |     |     |     |     |     |      |     |      |      |     |     |      |     |     |     |     |      |               |                 |  |
|---|-------------------------------|---|-----|---------------------------------|------|-----|-----|-----|-----|-----|-----|-----|------|-----|------|------|-----|-----|------|-----|-----|-----|-----|------|---------------|-----------------|--|
| Minimum Value: 0 ppb on Jun 6 11:00         |                               | Minimum Daily Average: 0.5 ppb on Jun 10  |     | Hours of Data: 685              |      |     |     |     |     |     |     |     |      |     |      |      |     |     |      |     |     |     |     |      |               |                 |  |
| Maximum Diurnal Average: 3.6 ppb at hour 15 |                               | Minimum Diurnal Average: 0.5 ppb at hour 13   |     | Hours of Missing Data: 35       |      |     |     |     |     |     |     |     |      |     |      |      |     |     |      |     |     |     |     |      |               |                 |  |
| Monthly Average: 1.11 ppb                   |                               | Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 0.6 Q <sub>3</sub> = 0.7 P <sub>90</sub> = 1.2 P <sub>99</sub> = 16.3 |     | Hours of Calibration: 35        |      |     |     |     |     |     |     |     |      |     |      |      |     |     |      |     |     |     |     |      |               |                 |  |
|   |                               |   |     | Percent Operational Time: 100.0 |      |     |     |     |     |     |     |     |      |     |      |      |     |     |      |     |     |     |     |      |               |                 |  |
| Day   | Hourly Period Ending At (MST) |   |     |                                 |      |     |     |     |     |     |     |     |      |     |      |      |     |     |      |     |     |     |     |      | Daily Average | Daily Maximum   |  |
|   | 1                             | 2   | 3   | 4                               | 5    | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13   | 14  | 15   | 16   | 17  | 18  | 19   | 20  | 21  | 22  | 23  | 24   |               |                 |  |
| 1-Jun                                       | 1                             | 2   | 1   | 1                               | 2    | 0   | 1   | 1   | 0   | 0   | 1   | 0   | A    | 1   | 0    | 0    | 0   | 0   | 1    | 0   | 0   | 0   | 0   | 0    | 0.8           | 2.2             |  |
| 2-Jun                                       | 0                             | 1   | 1   | 1                               | 0    | 1   | 0   | 0   | 0   | 1   | 0   | A   | 0    | 1   | 1    | 0    | 1   | 0   | 0    | 0   | 0   | 1   | 0   | 0    | 0.5           | 1.5             |  |
| 3-Jun                                       | 1                             | 1   | 0   | 1                               | 1    | 1   | 0   | 0   | 0   | 0   | A   | 2   | 1    | 1   | 0    | 1    | 1   | 1   | 1    | 1   | 1   | 1   | 1   | 0.7  | 1.9           |                 |  |
| 4-Jun                                       | 1                             | 1   | 0   | 1                               | 1    | 1   | 0   | 1   | 1   | A   | 1   | 1   | 1    | 1   | 1    | 1    | 1   | 1   | 1    | 1   | 1   | 5   | 4   | 1    | 1.0           | 4.8             |  |
| 5-Jun                                       | 1                             | 1   | 1   | 1                               | 1    | 1   | 1   | 1   | A   | 2   | 0   | 1   | 0    | 1   | 0    | 0    | 0   | 0   | 0    | 1   | 1   | 1   | 1   | 0.7  | 2.2           |                 |  |
| 6-Jun                                       | 1                             | 1   | 1   | 1                               | 1    | 1   | 0   | A   | 0   | 0   | 0   | 0   | 0    | 0   | 0    | 0    | 0   | 1   | 0    | 0   | 0   | 3   | 1   | 1    | 0.6           | 3.3             |  |
| 7-Jun                                       | 1                             | 0   | 1   | 1                               | 0    | 0   | A   | 0   | 1   | 1   | 0   | 0   | 0    | 0   | 0    | 0    | 0   | 1   | 0    | 0   | 1   | 1   | 1   | 1    | 0.5           | 1.0             |  |
| 8-Jun                                       | 2                             | 1   | 1   | 1                               | 1    | A   | 0   | 1   | 2   | 0   | 1   | 0   | 1    | 0   | 0    | 0    | 0   | 0   | 0    | 0   | 1   | 1   | 2   | 0    | 0.8           | 1.7             |  |
| 9-Jun                                       | 0                             | 1   | 3   | 1                               | A    | 1   | 0   | 1   | 1   | 1   | 3   | 31  | 1    | 1   | 2    | 0    | 0   | 10  | 1    | 1   | 0   | 1   | 0   | 1    | 2.6           | 31.4            |  |
| 10-Jun                                      | 0                             | 1   | 1   | A                               | 0    | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0    | 0   | 0    | 1    | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0.5  | 1.2           |                 |  |
| 11-Jun                                      | 0                             | 0   | A   | 1                               | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1    | 1   | 0    | 1    | 1   | 0   | 0    | 1   | 1   | 1   | 0   | 0    | 0.5           | 0.9             |  |
| 12-Jun                                      | 1                             | A   | 1   | 1                               | 1    | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1    | 23  | 89   | 1    | 1   | 1   | 1    | 1   | 1   | 1   | 1   | 1    | 5.5           | 88.7            |  |
| 13-Jun                                      | A                             | 1   | 1   | 1                               | 1    | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 0    | 0   | 1    | 0    | 0   | 0   | 0    | 0   | 0   | 0   | 1   | A    | 0.5           | 0.7             |  |
| 14-Jun                                      | 0                             | 1   | 1   | 0                               | 2    | 1   | 1   | 1   | 0   | 1   | 0   | 0   | 0    | 0   | 1    | 0    | 1   | 1   | 2    | 1   | 0   | 1   | A   | 1    | 0.6           | 1.8             |  |
| 15-Jun                                      | 0                             | 1   | 1   | 1                               | 1    | 1   | 1   | 0   | 0   | C   | C   | C   | C    | 1   | 0    | 0    | 0   | 0   | 1    | 1   | 0   | A   | 0   | 0    | 0.5           | 0.7             |  |
| 16-Jun                                      | 1                             | 1   | 1   | 0                               | 1    | 0   | 0   | 1   | 1   | 1   | 1   | 1   | 1    | 1   | 1    | 1    | 1   | 1   | 1    | 1   | 1   | A   | 1   | 1    | 0.6           | 1.2             |  |
| 17-Jun                                      | 1                             | 1   | 1   | 1                               | 1    | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1    | 0   | 0    | 1    | 1   | 1   | 1    | A   | 3   | 2   | 1   | 0    | 0.9           | 2.8             |  |
| 18-Jun                                      | 0                             | 0   | 1   | 0                               | 0    | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 0    | 0   | 0    | 1    | 0   | 0   | A    | A   | 1   | 1   | 0   | 1    | 0.5           | 0.8             |  |
| 19-Jun                                      | 1                             | 1   | 2   | 1                               | 1    | 1   | 0   | 0   | 1   | 1   | 1   | 0   | 0    | 0   | 1    | 1    | 1   | A   | 1    | 1   | 2   | 2   | 0   | 1    | 0.8           | 2.3             |  |
| 20-Jun                                      | 1                             | 1   | 1   | 0                               | 0    | 0   | 0   | 1   | 1   | 1   | 1   | 0   | 0    | 1   | 0    | 1    | A   | 0   | 1    | 1   | 1   | 3   | 2   | 4    | 0.9           | 3.8             |  |
| 21-Jun                                      | 1                             | 1   | 1   | 1                               | 1    | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 0    | 0   | 0    | A    | 1   | 1   | 0    | 1   | 0   | 5   | 4   | 1    | 1.0           | 5.3             |  |
| 22-Jun                                      | 0                             | 1   | 1   | 1                               | 1    | 1   | 1   | 0   | 1   | 1   | 0   | 0   | 1    | 0   | A    | 1    | 1   | 1   | 1    | 1   | 1   | 1   | 1   | 1    | 0.6           | 1.0             |  |
| 23-Jun                                      | 1                             | 1   | 0   | 0                               | 0    | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 0    | A   | 1    | 1    | 0   | 0   | 0    | 1   | 1   | 1   | 1   | 1    | 0.6           | 0.9             |  |
| 24-Jun                                      | 1                             | 1   | 1   | 0                               | 1    | 0   | 0   | 1   | 1   | 2   | 1   | 1   | A    | 1   | 1    | 0    | 1   | 1   | 1    | 1   | 1   | 0   | 0   | 1    | 0.7           | 1.7             |  |
| 25-Jun                                      | 0                             | 0   | 0   | 0                               | 1    | 1   | 1   | 1   | 1   | 1   | 0   | A   | 1    | 0   | 1    | 1    | 0   | 0   | 1    | 0   | 1   | 1   | 1   | 2    | 0.6           | 1.6             |  |
| 26-Jun                                      | 1                             | 0   | 1   | 1                               | 1    | 1   | 1   | 0   | 1   | 1   | A   | 1   | 1    | 0   | 0    | 1    | 1   | 1   | 1    | 1   | 1   | 2   | 1   | 1    | 0.7           | 1.6             |  |
| 27-Jun                                      | 1                             | 1   | 1   | 1                               | 1    | 1   | 1   | 1   | 1   | A   | 1   | 1   | 0    | 0   | 1    | 0    | 0   | 1   | 1    | 1   | 6   | 1   | 14  | 34   | 2.9           | 33.9            |  |
| 28-Jun                                      | 1                             | 3   | 17  | 13                              | 2    | 1   | 1   | 0   | A   | 1   | 1   | 0   | 0    | 0   | 1    | 0    | 0   | 0   | 1    | 1   | 1   | 2   | 1   | 1    | 2.1           | 16.6            |  |
| 29-Jun                                      | 0                             | 1   | 13  | 16                              | 1    | 1   | 0   | A   | 0   | 1   | 0   | 0   | 1    | 0   | 0    | 0    | 0   | 0   | 6    | 1   | 1   | 1   | 1   | 1    | 2.0           | 16.4            |  |
| 30-Jun                                      | 1                             | 4   | 3   | 18                              | 6    | 4   | A   | 1   | 1   | 1   | 1   | 1   | 1    | 1   | 1    | 1    | 1   | 1   | 1    | 0   | 0   | 0   | 2   | 2    | 2.1           | 17.8            |  |
|   |                               | 0.7   | 0.9 | 1.8                             | 2.2  | 0.9 | 0.7 | 0.5 | 0.6 | 0.6 | 0.7 | 0.6 | 1.7  | 0.5 | 1.3  | 3.6  | 0.5 | 0.6 | 0.9  | 0.8 | 0.7 | 1.0 | 1.3 | 1.4  | 1.9           | Diurnal Average |  |
|   |                               | 1.7   | 3.7 | 16.6                            | 17.8 | 5.7 | 4.3 | 1.2 | 1.1 | 1.7 | 2.2 | 3.0 | 31.4 | 0.8 | 22.7 | 88.7 | 1.1 | 1.0 | 10.3 | 6.0 | 1.3 | 5.6 | 5.3 | 13.6 | 33.9          | Diurnal Maximum |  |
| C - Calibration                             |                               | A - Automated Daily Zero Span   |     |                                 |      |     |     |     |     |     |     |     |      |     |      |      |     |     |      |     |     |     |     |      |               |                 |  |

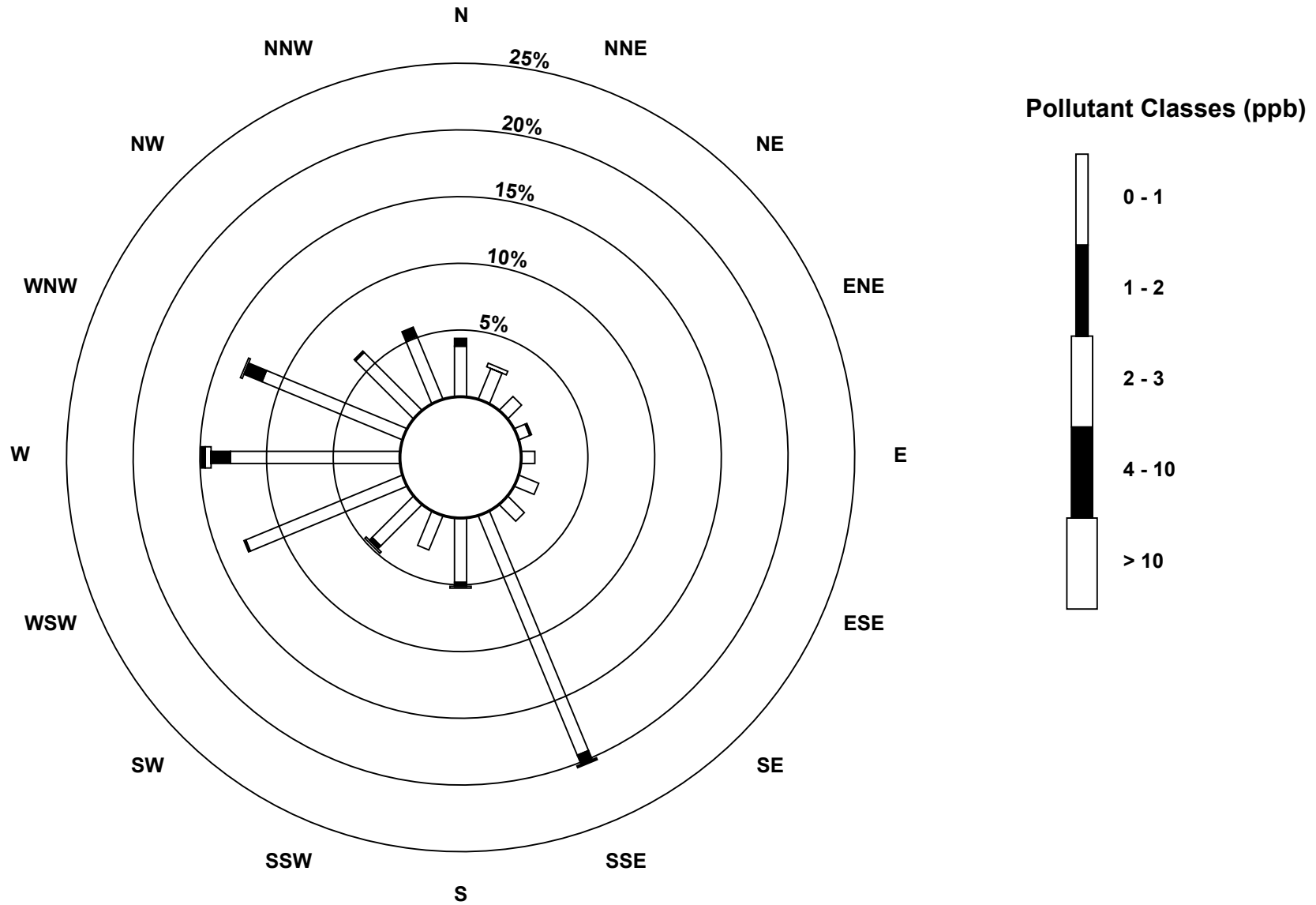
**Hourly Maximums**

**Hydrogen Sulphide (H<sub>2</sub>S) - ppb**  
**Valleyview - June 2016**



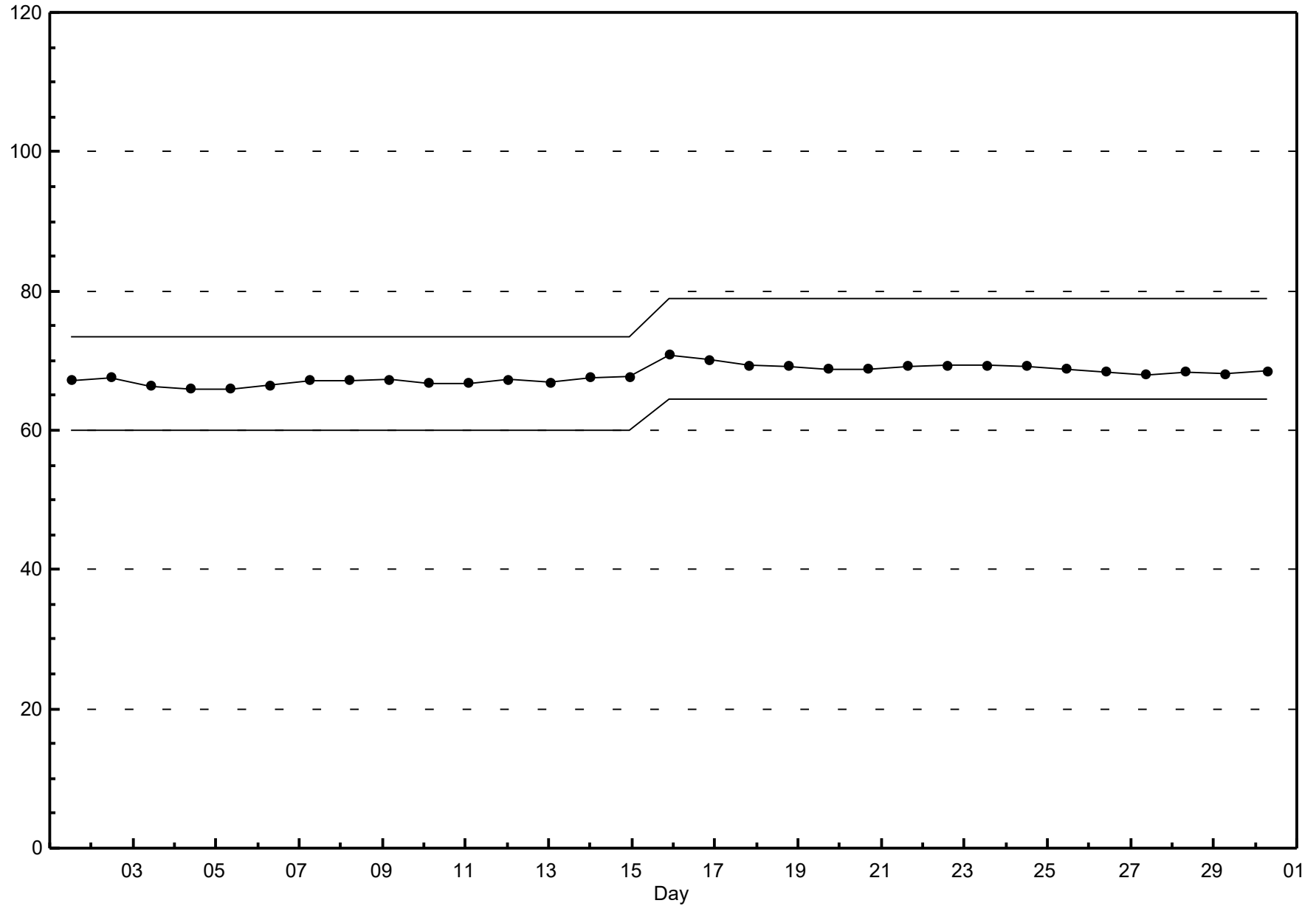
**Pollutant Rose**

**Hydrogen Sulphide (H<sub>2</sub>S) - ppb**  
**Valleyview - June 2016**



### Span Responses

Hydrogen Sulphide (H<sub>2</sub>S)  
Valleyview - June 2016



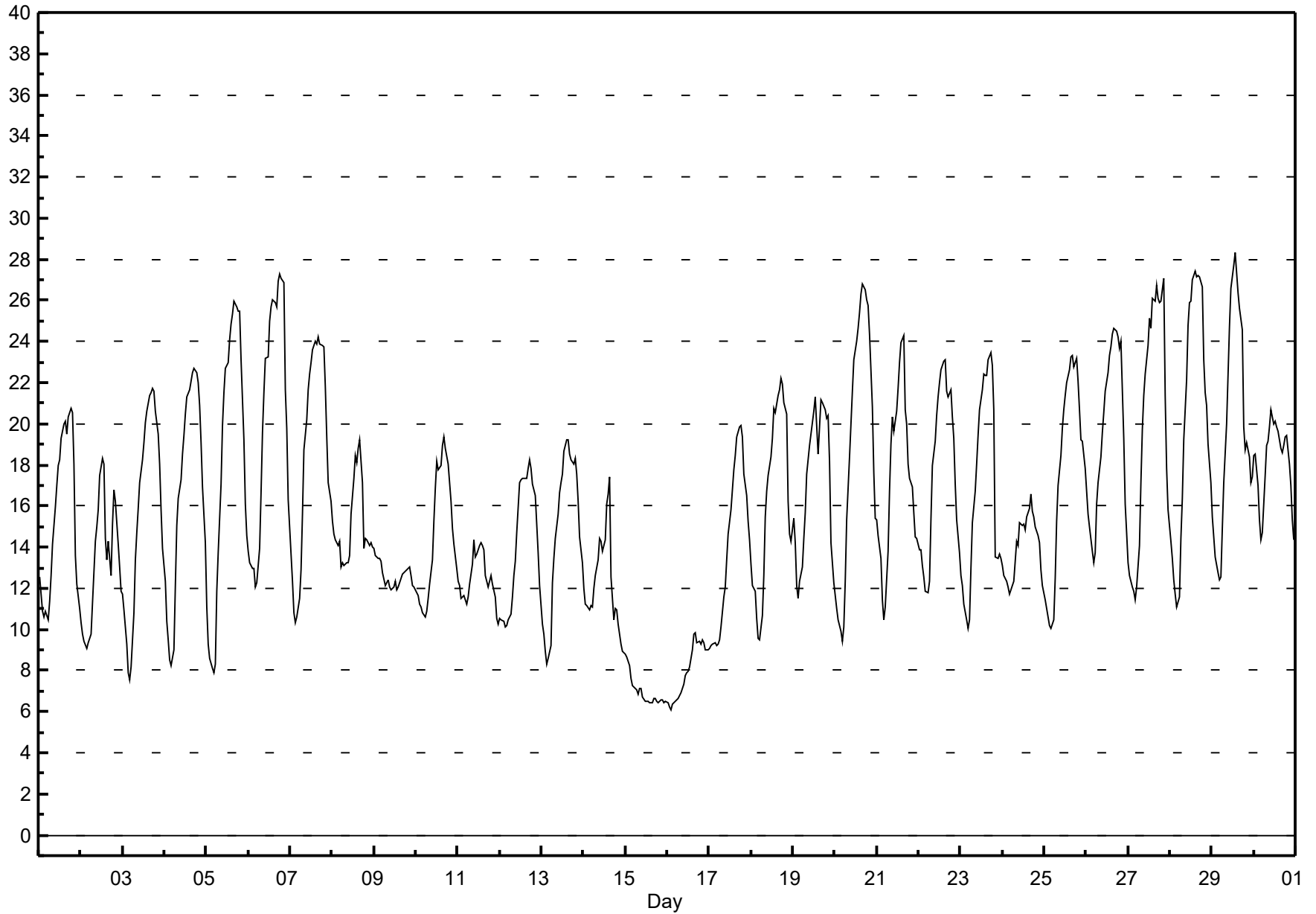


## Hourly Averages

External Temperature (ET) - °C

Valleyview - June 2016

| Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0   |                               | Hours in Service: 720                   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|---|-------------------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|------|---------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|
| Maximum Value: 28.3 °C on Jun 29 14:00  |                               | Maximum Daily Average: 20.4 °C on Jun 6 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Minimum Value: 6 °C on Jun 16 03:00   |                               | Hours of Data: 720                      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Maximum Diurnal Average: 20.1 °C at hour 16   |                               | Hours of Missing Data: 0                |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Monthly Average: 15.91 °C   |                               | Hours of Calibration: 0                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Minimum Daily Average: 7.0 °C on Jun 15   |                               | Percent Operational Time: 100.0         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Minimum Diurnal Average: 10.6 °C at hour 5  |                               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Percentiles: P <sub>1</sub> = 6.4 P <sub>10</sub> = 9.4 Q <sub>1</sub> = 12.1 Median = 15.1 Q <sub>3</sub> = 19.8 P <sub>90</sub> = 23.2 P <sub>99</sub> = 27.1 |                               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| Day   | Hourly Period Ending At (MST) |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |      | Daily Average | Daily Maximum |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|   | 1                             | 2                                       | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24   |               |               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 1-Jun   | 13                            | 12                                      | 11 | 11 | 11 | 10 | 11 | 13 | 14 | 16 | 17 | 18 | 18 | 19 | 20 | 20 | 19 | 20 | 21 | 21 | 18 | 14 | 12 | 11   | 15.4          | 20.8          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 2-Jun   | 10                            | 10                                      | 9  | 9  | 9  | 10 | 10 | 11 | 14 | 15 | 16 | 17 | 18 | 18 | 14 | 13 | 14 | 13 | 15 | 17 | 16 | 14 | 13 | 12   | 13.3          | 18.4          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 3-Jun   | 12                            | 11                                      | 9  | 8  | 8  | 8  | 11 | 13 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 21 | 22 | 22 | 22 | 21 | 20 | 18 | 16 | 14   | 15.8          | 21.7          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 4-Jun   | 12                            | 10                                      | 9  | 8  | 8  | 9  | 12 | 15 | 16 | 17 | 19 | 19 | 20 | 21 | 22 | 22 | 23 | 23 | 22 | 22 | 21 | 19 | 17 | 14   | 16.8          | 22.7          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 5-Jun   | 11                            | 9                                       | 9  | 8  | 8  | 8  | 12 | 14 | 17 | 20 | 21 | 23 | 23 | 24 | 25 | 25 | 26 | 26 | 25 | 25 | 23 | 19 | 16 | 15   | 18.0          | 26.0          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 6-Jun   | 14                            | 13                                      | 13 | 13 | 12 | 12 | 14 | 17 | 20 | 21 | 23 | 23 | 25 | 26 | 26 | 26 | 26 | 27 | 27 | 27 | 27 | 22 | 20 | 16   | 20.4          | 27.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 7-Jun   | 14                            | 12                                      | 11 | 10 | 11 | 12 | 13 | 16 | 19 | 20 | 22 | 22 | 23 | 24 | 24 | 24 | 24 | 24 | 24 | 22 | 19 | 17 | 16 | 16   | 18.6          | 24.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 8-Jun   | 15                            | 15                                      | 14 | 14 | 14 | 13 | 13 | 13 | 13 | 13 | 14 | 16 | 17 | 18 | 18 | 19 | 19 | 17 | 14 | 14 | 14 | 14 | 14 | 14   | 15.1          | 19.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 9-Jun   | 14                            | 14                                      | 13 | 13 | 13 | 13 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 13 | 13 | 13 | 13 | 13 | 12 | 12   | 12.6          | 14.0          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 10-Jun  | 12                            | 12                                      | 11 | 11 | 11 | 11 | 11 | 11 | 12 | 13 | 15 | 17 | 18 | 18 | 18 | 19 | 19 | 19 | 18 | 17 | 16 | 15 | 14 | 13   | 14.7          | 19.4          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 11-Jun  | 12                            | 12                                      | 12 | 12 | 11 | 11 | 12 | 12 | 13 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 13 | 12 | 12 | 13 | 12 | 12 | 11 | 10   | 12.5          | 14.4          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 12-Jun  | 11                            | 10                                      | 10 | 10 | 10 | 10 | 11 | 12 | 13 | 13 | 15 | 17 | 17 | 17 | 17 | 17 | 18 | 18 | 18 | 17 | 17 | 15 | 14 | 12   | 14.2          | 18.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 13-Jun  | 10                            | 10                                      | 9  | 8  | 9  | 9  | 12 | 13 | 14 | 16 | 17 | 17 | 18 | 19 | 19 | 19 | 19 | 18 | 18 | 18 | 18 | 16 | 15 | 13   | 14.7          | 19.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 14-Jun  | 12                            | 11                                      | 11 | 11 | 11 | 11 | 12 | 13 | 13 | 14 | 14 | 14 | 14 | 16 | 17 | 17 | 13 | 10 | 11 | 11 | 10 | 9  | 9  | 9    | 12.3          | 17.4          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 15-Jun  | 9                             | 9                                       | 8  | 8  | 7  | 7  | 7  | 7  | 7  | 7  | 7  | 7  | 7  | 6  | 6  | 6  | 7  | 7  | 6  | 6  | 7  | 7  | 6  | 6    | 7.0           | 8.8           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 16-Jun  | 6                             | 6                                       | 6  | 6  | 6  | 7  | 7  | 7  | 7  | 7  | 8  | 8  | 8  | 8  | 9  | 10 | 10 | 9  | 9  | 9  | 9  | 9  | 9  | 9    | 8.0           | 9.9           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 17-Jun  | 9                             | 9                                       | 9  | 9  | 9  | 9  | 9  | 10 | 12 | 12 | 13 | 15 | 16 | 17 | 18 | 18 | 19 | 20 | 20 | 19 | 18 | 16 | 15 | 14   | 14.1          | 19.9          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 18-Jun  | 13                            | 12                                      | 12 | 11 | 10 | 10 | 11 | 13 | 15 | 17 | 17 | 18 | 19 | 21 | 21 | 21 | 22 | 22 | 22 | 21 | 20 | 16 | 15 | 14   | 16.4          | 22.2          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 19-Jun  | 15                            | 14                                      | 12 | 12 | 12 | 13 | 14 | 16 | 18 | 19 | 20 | 20 | 21 | 21 | 19 | 20 | 21 | 21 | 21 | 20 | 20 | 18 | 14 | 12   | 17.2          | 21.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 20-Jun  | 12                            | 11                                      | 10 | 10 | 9  | 10 | 12 | 15 | 18 | 20 | 22 | 23 | 24 | 25 | 25 | 26 | 27 | 27 | 26 | 26 | 24 | 21 | 18 | 15   | 19.0          | 26.8          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 21-Jun  | 15                            | 15                                      | 13 | 11 | 10 | 11 | 14 | 17 | 19 | 20 | 20 | 21 | 22 | 23 | 24 | 24 | 21 | 20 | 18 | 17 | 17 | 16 | 15 | 14   | 17.4          | 24.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 22-Jun  | 14                            | 14                                      | 13 | 13 | 12 | 12 | 12 | 15 | 18 | 19 | 20 | 21 | 22 | 23 | 23 | 23 | 22 | 21 | 22 | 20 | 19 | 17 | 15 | 14   | 17.7          | 23.1          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 23-Jun  | 13                            | 12                                      | 11 | 10 | 10 | 10 | 13 | 15 | 17 | 18 | 19 | 21 | 22 | 22 | 22 | 22 | 23 | 23 | 23 | 21 | 14 | 13 | 14 | 13   | 16.8          | 23.5          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 24-Jun  | 13                            | 13                                      | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 14 | 15 | 15 | 15 | 15 | 16 | 17 | 16 | 15 | 15 | 15 | 14 | 13 | 12 | 12   | 14.0          | 16.6          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 25-Jun  | 11                            | 11                                      | 11 | 10 | 10 | 10 | 12 | 15 | 17 | 18 | 20 | 21 | 21 | 22 | 23 | 23 | 23 | 23 | 23 | 22 | 21 | 19 | 19 | 18   | 17.7          | 23.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 26-Jun  | 17                            | 16                                      | 15 | 14 | 13 | 14 | 16 | 17 | 18 | 20 | 21 | 22 | 22 | 23 | 24 | 24 | 25 | 24 | 24 | 24 | 24 | 19 | 16 | 15   | 19.4          | 24.6          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 27-Jun  | 13                            | 13                                      | 12 | 12 | 11 | 12 | 14 | 17 | 20 | 21 | 22 | 24 | 25 | 25 | 26 | 26 | 27 | 26 | 26 | 26 | 27 | 21 | 18 | 16   | 20.0          | 27.1          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 28-Jun  | 14                            | 13                                      | 12 | 12 | 11 | 12 | 14 | 16 | 19 | 22 | 25 | 26 | 26 | 27 | 27 | 27 | 27 | 27 | 27 | 23 | 22 | 21 | 19 | 17   | 20.3          | 27.4          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 29-Jun  | 15                            | 15                                      | 14 | 13 | 12 | 13 | 15 | 17 | 20 | 22 | 25 | 27 | 28 | 28 | 27 | 26 | 26 | 25 | 20 | 19 | 19 | 18 | 17 | 17   | 19.9          | 28.3          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
| 30-Jun  | 18                            | 19                                      | 17 | 15 | 14 | 15 | 17 | 19 | 19 | 20 | 21 | 20 | 20 | 20 | 20 | 19 | 19 | 19 | 19 | 19 | 18 | 17 | 15 | 14   | 18.1          | 20.7          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|   |                               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 12.7 | 12.1          | 11.4          | 10.8 | 10.6 | 10.8 | 12.2 | 13.8 | 15.5 | 16.7 | 17.6 | 18.5 | 19.2 | 19.8 | 19.9 | 20.1 | 20.0 | 19.7 | 19.4 | 18.9 | 18.0 | 16.1 | 14.6 | 13.5 | Diurnal Average |
|   |                               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 18.5 | 18.5          | 17.0          | 15.3 | 14.3 | 14.7 | 17.5 | 18.9 | 20.0 | 22.3 | 24.8 | 26.6 | 27.7 | 28.3 | 27.4 | 27.2 | 27.2 | 27.2 | 27.3 | 27.1 | 27.1 | 21.7 | 19.8 | 17.8 | Diurnal Maximum |



# Hourly Averages

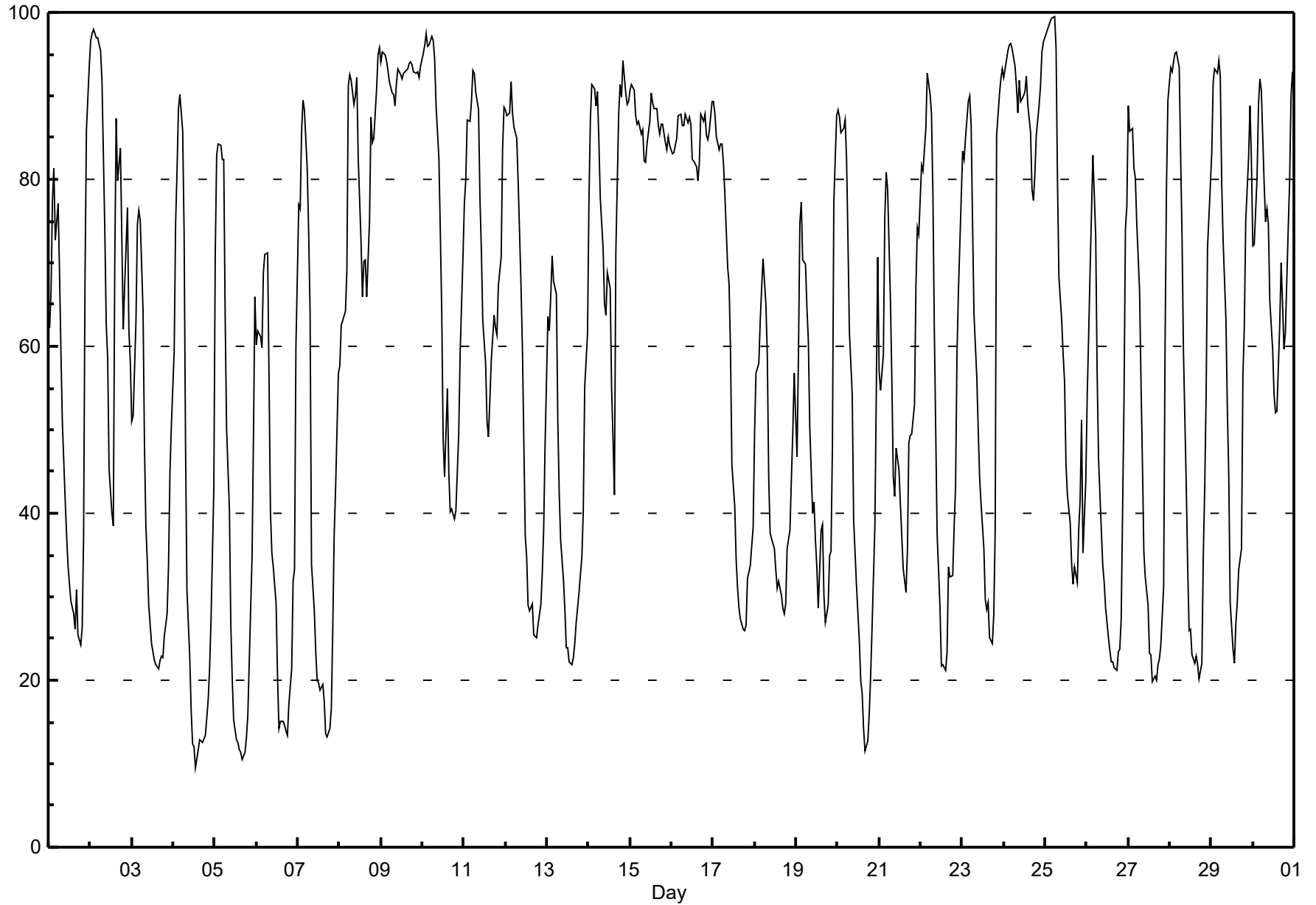
Relative Humidity (RH) - %

Valleyview - June 2016

| Number of Exceedences (AAQO): 1-hr: 0 24-hr: 0 |                               | Maximum Value: 99.4 % on Jun 25 06:00  |      | Maximum Daily Average: 92.8 % on Jun 9     |      | Hours in Service: 720   |      | Hours of Data: 720 |      | Hours of Missing Data: 0 |      | Hours of Calibration: 0 |      | Percent Operational Time: 100.0 |      |      |      |      |      |      |      |      |      |      |               |                 |  |
|--|-------------------------------|--|------|--|------|---|------|--------------------|------|--------------------------|------|-------------------------|------|---------------------------------|------|------|------|------|------|------|------|------|------|------|---------------|-----------------|--|
| Minimum Value: 10 % on Jun 4 14:00             |                               | Minimum Daily Average: 37.2 % on Jun 4 |      | Minimum Diurnal Average: 38.6 % at hour 14 |      | Percentiles: P <sub>1</sub> = 12.0 P <sub>10</sub> = 22.7 Q <sub>1</sub> = 33.8 Median = 63.0 Q <sub>3</sub> = 85.6 P <sub>90</sub> = 92.0 P <sub>99</sub> = 97.2 |      |                    |      |                          |      |                         |      |                                 |      |      |      |      |      |      |      |      |      |      |               |                 |  |
| Day  | Hourly Period Ending At (MST) |  |      |  |      |   |      |                    |      |                          |      |                         |      |                                 |      |      |      |      |      |      |      |      |      |      | Daily Average | Daily Maximum   |  |
| 1-Jun  | 62                            | 67                                     | 77   | 81   | 73   | 77  | 69   | 59                 | 51   | 41                       | 37   | 34                      | 31   | 30                              | 28   | 26   | 31   | 25   | 24   | 26   | 37   | 68   | 86   | 94   | 51.5          | 93.6            |  |
| 2-Jun  | 97                            | 97                                     | 98   | 97   | 97   | 96  | 95   | 92                 | 74   | 63                       | 59   | 45                      | 40   | 39                              | 70   | 87   | 80   | 84   | 73   | 62   | 67   | 77   | 62   | 58   | 75.3          | 97.9            |  |
| 3-Jun  | 51                            | 52                                     | 63   | 74   | 76   | 75  | 64   | 48                 | 38   | 34                       | 29   | 24                      | 23   | 22                              | 22   | 21   | 22   | 23   | 23   | 25   | 28   | 34   | 45   | 50   | 40.4          | 76.3            |  |
| 4-Jun  | 59                            | 75                                     | 81   | 89   | 90   | 86  | 73   | 48                 | 31   | 23                       | 16   | 12                      | 12   | 10                              | 12   | 13   | 13   | 13   | 13   | 15   | 18   | 21   | 27   | 43   | 37.2          | 90.2            |  |
| 5-Jun  | 71                            | 83                                     | 84   | 84   | 82   | 82  | 64   | 50                 | 41   | 27                       | 20   | 15                      | 13   | 12                              | 12   | 11   | 11   | 11   | 13   | 16   | 22   | 35   | 49   | 66   | 40.6          | 84.2            |  |
| 6-Jun  | 60                            | 62                                     | 61   | 60   | 69   | 71  | 71   | 56                 | 40   | 35                       | 34   | 29                      | 21   | 14                              | 15   | 15   | 15   | 14   | 13   | 17   | 21   | 32   | 33   | 60   | 38.3          | 71.2            |  |
| 7-Jun  | 77                            | 76                                     | 86   | 89   | 88   | 81  | 73   | 64                 | 34   | 28                       | 23   | 20                      | 20   | 19                              | 19   | 17   | 14   | 13   | 14   | 17   | 26   | 37   | 43   | 57   | 43.2          | 89.5            |  |
| 8-Jun  | 58                            | 63                                     | 63   | 64   | 69   | 91  | 93   | 92                 | 89   | 90                       | 92   | 83                      | 73   | 66                              | 70   | 70   | 66   | 75   | 88   | 84   | 85   | 91   | 95   | 96   | 79.3          | 95.7            |  |
| 9-Jun  | 94                            | 95                                     | 95   | 94   | 93   | 92  | 90   | 90                 | 89   | 92                       | 93   | 93                      | 92   | 93                              | 93   | 93   | 94   | 94   | 93   | 93   | 93   | 93   | 92   | 94   | 92.8          | 95.2            |  |
| 10-Jun   | 95                            | 96                                     | 97   | 96   | 96   | 97  | 97   | 94                 | 89   | 83                       | 74   | 64                      | 49   | 44                              | 55   | 45   | 40   | 41   | 39   | 40   | 45   | 49   | 59   | 71   | 69.0          | 97.4            |  |
| 11-Jun   | 77                            | 80                                     | 87   | 87   | 89   | 93  | 93   | 90                 | 88   | 78                       | 71   | 63                      | 58   | 51                              | 49   | 54   | 58   | 64   | 62   | 61   | 67   | 71   | 84   | 89   | 73.5          | 93.1            |  |
| 12-Jun   | 88                            | 88                                     | 88   | 92   | 88   | 86  | 85   | 80                 | 74   | 67                       | 60   | 37                      | 35   | 29                              | 28   | 29   | 25   | 25   | 25   | 27   | 29   | 33   | 38   | 48   | 54.3          | 91.7            |  |
| 13-Jun   | 63                            | 62                                     | 66   | 71   | 68   | 66  | 51   | 42                 | 37   | 32                       | 28   | 24                      | 24   | 22                              | 22   | 23   | 24   | 27   | 31   | 33   | 35   | 40   | 55   | 61   | 42.0          | 70.9            |  |
| 14-Jun   | 77                            | 87                                     | 91   | 91   | 89   | 90  | 85   | 78                 | 72   | 65                       | 64   | 69                      | 67   | 55                              | 49   | 42   | 71   | 88   | 91   | 90   | 94   | 90   | 89   | 89   | 78.1          | 94.2            |  |
| 15-Jun   | 91                            | 91                                     | 91   | 88   | 87   | 87  | 85   | 86                 | 82   | 82                       | 84   | 87                      | 90   | 89                              | 88   | 88   | 87   | 85   | 87   | 87   | 84   | 84   | 85   | 84   | 86.7          | 91.4            |  |
| 16-Jun   | 83                            | 83                                     | 84   | 85   | 88   | 88  | 86   | 86                 | 88   | 87                       | 87   | 87                      | 82   | 82                              | 82   | 80   | 82   | 88   | 87   | 88   | 85   | 85   | 86   | 89   | 85.3          | 89.4            |  |
| 17-Jun   | 89                            | 88                                     | 85   | 83   | 84   | 84  | 82   | 78                 | 69   | 67                       | 59   | 46                      | 41   | 34                              | 31   | 29   | 27   | 26   | 26   | 27   | 32   | 34   | 36   | 38   | 54.1          | 89.3            |  |
| 18-Jun   | 49                            | 57                                     | 58   | 63   | 67   | 70  | 65   | 59                 | 44   | 38                       | 37   | 36                      | 33   | 31                              | 32   | 30   | 29   | 28   | 29   | 36   | 38   | 44   | 50   | 57   | 45.0          | 70.5            |  |
| 19-Jun   | 47                            | 59                                     | 75   | 77   | 70   | 70  | 65   | 61                 | 50   | 40                       | 41   | 37                      | 34   | 29                              | 38   | 39   | 30   | 27   | 29   | 35   | 35   | 48   | 77   | 88   | 50.0          | 87.7            |  |
| 20-Jun   | 88                            | 87                                     | 86   | 86   | 87   | 82  | 73   | 62                 | 54   | 39                       | 35   | 31                      | 25   | 20                              | 18   | 14   | 12   | 13   | 16   | 20   | 26   | 38   | 55   | 71   | 47.5          | 88.4            |  |
| 21-Jun   | 57                            | 55                                     | 59   | 75   | 81   | 79  | 65   | 56                 | 44   | 42                       | 48   | 45                      | 41   | 37                              | 33   | 31   | 36   | 48   | 49   | 50   | 53   | 67   | 74   | 73   | 54.2          | 80.9            |  |
| 22-Jun   | 82                            | 81                                     | 84   | 86   | 93   | 90  | 88   | 78                 | 62   | 37                       | 33   | 29                      | 22   | 22                              | 21   | 23   | 34   | 32   | 33   | 38   | 43   | 59   | 66   | 78   | 54.7          | 92.7            |  |
| 23-Jun   | 83                            | 82                                     | 85   | 89   | 90   | 86  | 75   | 64                 | 56   | 50                       | 44   | 41                      | 36   | 30                              | 28   | 29   | 25   | 24   | 28   | 38   | 85   | 90   | 92   | 93   | 60.3          | 93.3            |  |
| 24-Jun   | 92                            | 93                                     | 95   | 96   | 96   | 96  | 94   | 91                 | 88   | 92                       | 89   | 90                      | 91   | 92                              | 89   | 86   | 79   | 77   | 80   | 85   | 89   | 91   | 95   | 97   | 90.2          | 96.5            |  |
| 25-Jun   | 97                            | 98                                     | 99   | 99   | 99   | 99  | 96   | 80                 | 68   | 63                       | 59   | 56                      | 46   | 42                              | 39   | 34   | 32   | 34   | 32   | 38   | 41   | 51   | 35   | 44   | 61.7          | 99.4            |  |
| 26-Jun   | 54                            | 61                                     | 69   | 83   | 78   | 73  | 57   | 47                 | 38   | 34                       | 32   | 29                      | 25   | 24                              | 22   | 22   | 22   | 21   | 23   | 24   | 27   | 54   | 74   | 77   | 44.5          | 82.9            |  |
| 27-Jun   | 89                            | 86                                     | 86   | 81   | 80   | 75  | 67   | 56                 | 46   | 36                       | 32   | 29                      | 23   | 23                              | 20   | 21   | 20   | 22   | 23   | 24   | 31   | 60   | 79   | 89   | 49.9          | 89.4            |  |
| 28-Jun   | 93                            | 93                                     | 94   | 95   | 95   | 93  | 83   | 73                 | 59   | 43                       | 33   | 26                      | 26   | 23                              | 22   | 23   | 22   | 20   | 22   | 35   | 43   | 54   | 72   | 79   | 55.1          | 95.2            |  |
| 29-Jun   | 83                            | 92                                     | 93   | 93   | 94   | 92  | 80   | 73                 | 63   | 52                       | 45   | 29                      | 24   | 22                              | 27   | 29   | 33   | 36   | 57   | 63   | 75   | 83   | 89   | 82   | 62.8          | 94.2            |  |
| 30-Jun   | 72                            | 72                                     | 80   | 89   | 92   | 91  | 79   | 75                 | 76   | 75                       | 65   | 60                      | 54   | 52                              | 52   | 62   | 70   | 65   | 60   | 62   | 74   | 80   | 90   | 93   | 72.5          | 92.8            |  |
|  |                               | 76.1                                   | 78.7 | 82.0                                       | 84.6 | 85.0  | 84.7 | 78.1               | 70.3 | 61.2                     | 54.5 | 50.9                    | 45.6 | 41.7                            | 38.6 | 39.6 | 39.6 | 40.1 | 41.5 | 42.8 | 45.2 | 51.1 | 59.7 | 67.1 | 73.6          | Diurnal Average |  |
|  |                               | 97.5                                   | 98.0 | 98.5                                       | 98.9 | 99.3  | 99.4 | 96.5               | 94.4 | 89.0                     | 91.8 | 93.2                    | 92.5 | 92.0                            | 92.7 | 93.0 | 93.1 | 93.9 | 94.0 | 93.7 | 92.9 | 94.2 | 92.8 | 95.3 | 96.5          | Diurnal Maximum |  |

**Hourly Averages**

**Relative Humidity (RH) - %**  
**Valleyview - June 2016**





# Hourly Averages

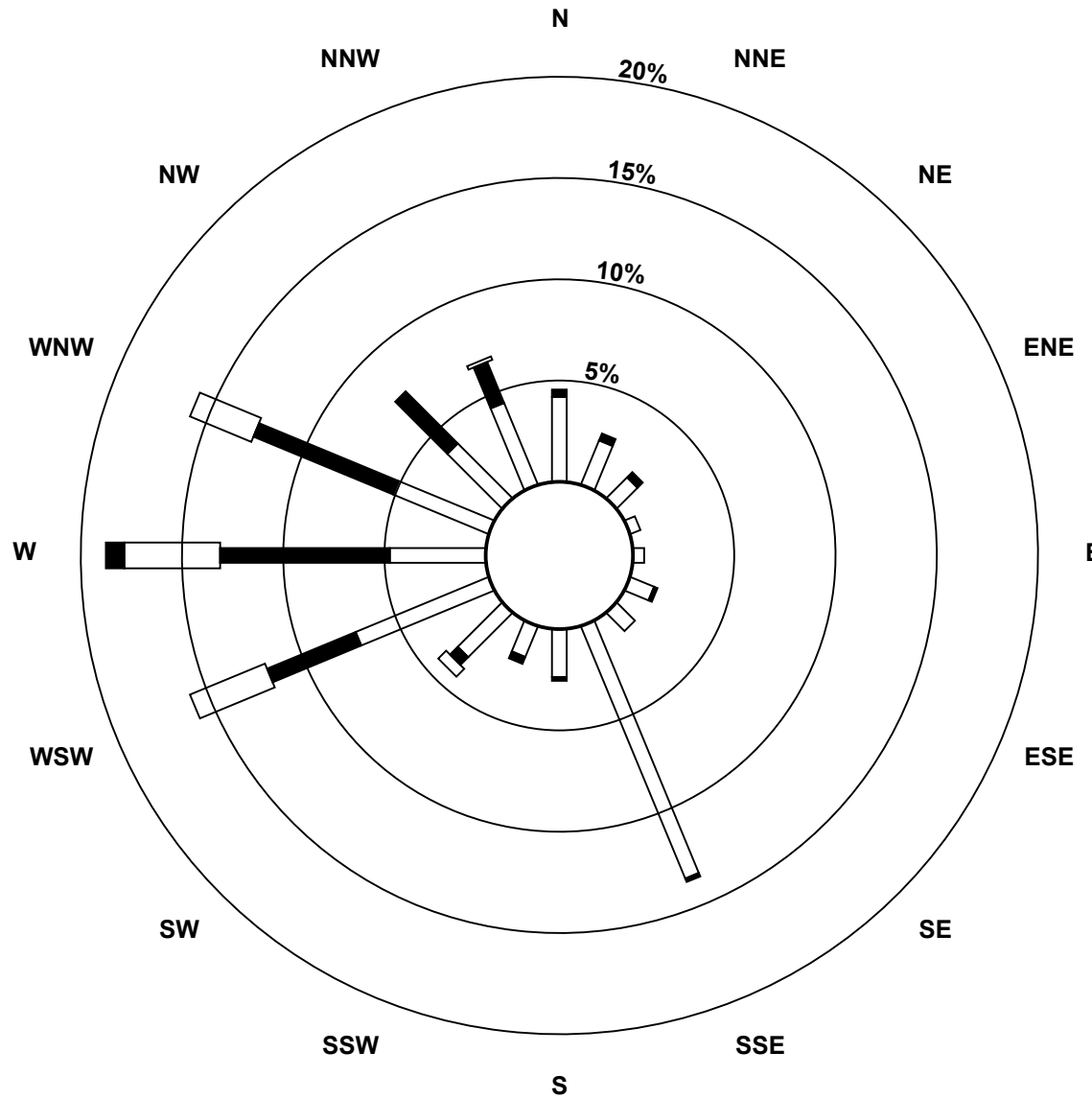
Wind Speed (km/h)  
Wind Direction (deg)  
Valleyview - June 2016

| Day  | Hourly Period Ending At (MST) |  |          |          |          |      |       |      |      |      |      |      |      |      |      |      |      |                                 |      |      |      |      |      |      | Daily Average   | Daily Maximum |
|--|-------------------------------|--|----------|----------|----------|------|-------|------|------|------|------|------|------|------|------|------|------|---------------------------------|------|------|------|------|------|------|-----------------|---------------|
|  | 1                             | 2  | 3        | 4        | 5        | 6    | 7     | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18                              | 19   | 20   | 21   | 22   | 23   | 24   |                 |               |
| 23 Spd   | 1                             | 1  | 1        | 0        | 1        | 1    | 1     | 1    | 2    | 2    | 1    | 1    | 1    | 1    | 3    | 3    | 3    | 3                               | 4    | 1    | 2    | 1    | 0    | 1    | 0.4             | 4.2           |
| Dir  | 159                           | 169  | 161      | 167      | 167      | 156  | 159   | 186  | 241  | 238  | 269  | 41   | 31   | 56   | 290  | 351  | 344  | 332                             | 338  | 279  | 158  | 125  | 100  | 151  | 312             | 338           |
| 24 Spd   | 1                             | 0  | 0        | 0        | 1        | 1    | 1     | 0    | 1    | 2    | 2    | 3    | 2    | 4    | 4    | 4    | 8    | 9                               | 3    | 2    | 1    | 0    | 0    | 1    | 1.5             | 9.4           |
| Dir  | 167                           | 180  | 167      | 226      | 149      | 162  | 160   | 158  | 200  | 254  | 164  | 230  | 244  | 249  | 247  | 250  | 286  | 286                             | 275  | 251  | 155  | 154  | 172  | 159  | 251             | 286           |
| 25 Spd   | 1                             | 1  | 1        | 1        | 1        | 1    | 1     | 3    | 7    | 8    | 9    | 9    | 11   | 12   | 10   | 11   | 13   | 9                               | 10   | 8    | 2    | 3    | 9    | 4    | 5.3             | 12.7          |
| Dir  | 159                           | 160  | 153      | 152      | 153      | 140  | 156   | 266  | 279  | 286  | 302  | 306  | 317  | 294  | 296  | 295  | 298  | 305                             | 297  | 321  | 323  | 260  | 284  | 245  | 294             | 298           |
| 26 Spd   | 1                             | 1  | 0        | 0        | 1        | 0    | 1     | 1    | 8    | 11   | 10   | 8    | 6    | 5    | 7    | 4    | 7    | 9                               | 8    | 7    | 1    | 1    | 1    | 1    | 3.4             | 11.0          |
| Dir  | 190                           | 147  | 166      | 167      | 154      | 149  | 198   | 222  | 270  | 283  | 268  | 279  | 276  | 258  | 258  | 267  | 299  | 307                             | 323  | 322  | 290  | 181  | 170  | 160  | 281             | 283           |
| 27 Spd   | 1                             | 1  | 1        | 1        | 2        | 2    | 2     | 1    | 2    | 2    | 4    | 3    | 2    | 2    | 1    | 3    | 1    | 4                               | 4    | 2    | 0    | 0    | 0    | 0    | 0.3             | 4.1           |
| Dir  | 159                           | 157  | 162      | 165      | 160      | 156  | 153   | 158  | 265  | 248  | 255  | 246  | 232  | 330  | 274  | 25   | 10   | 358                             | 7    | 16   | 162  | 104  | 227  | 166  | 269             | 358           |
| 28 Spd   | 0                             | 0  | 0        | 0        | 0        | 0    | 0     | 1    | 1    | 1    | 1    | 1    | 3    | 2    | 2    | 5    | 6    | 5                               | 5    | 4    | 2    | 1    | 0    | 1    | 1.1             | 5.6           |
| Dir  | 165                           | 188  | 292      | 158      | 268      | 102  | 206   | 159  | 150  | 128  | 89   | 346  | 2    | 345  | 15   | 7    | 353  | 354                             | 5    | 290  | 288  | 328  | 163  | 189  | 349             | 353           |
| 29 Spd   | 0                             | 0  | 0        | 0        | 0        | 0    | 0     | 1    | 1    | 1    | 0    | 2    | 3    | 2    | 5    | 6    | 3    | 3                               | 4    | 1    | 0    | 0    | 0    | 2    | 0.8             | 5.7           |
| Dir  | 168                           | 158  | 189      | 183      | 272      | 174  | 152   | 141  | 187  | 167  | 179  | 161  | 151  | 138  | 106  | 106  | 95   | 238                             | 333  | 33   | 343  | 142  | 170  | 149  | 130             | 106           |
| 30 Spd   | 5                             | 0  | 0        | 0        | 1        | 1    | 1     | 1    | 3    | 1    | 2    | 12   | 8    | 10   | 9    | 8    | 4    | 5                               | 4    | 1    | 1    | 0    | 0    | 0    | 2.4             | 12.4          |
| Dir  | 146                           | 152  | 265      | 11       | 26       | 327  | 93    | 132  | 237  | 157  | 228  | 273  | 277  | 258  | 264  | 280  | 297  | 283                             | 263  | 213  | 163  | 168  | 4    | 169  | 263             | 273           |
| Spd  | 1.4                           | 1.4  | 1.5      | 1.4      | 1.7      | 1.6  | 1.8   | 2.3  | 4.2  | 4.9  | 5.0  | 5.5  | 5.4  | 5.8  | 5.7  | 4.9  | 5.1  | 5.5                             | 4.5  | 3.6  | 2.7  | 2.3  | 2.5  | 1.8  | Diurnal Average |               |
| Dir  | 240                           | 249  | 261      | 255      | 250      | 251  | 252   | 261  | 265  | 271  | 273  | 277  | 282  | 280  | 282  | 288  | 283  | 287                             | 286  | 278  | 269  | 264  | 264  | 252  | Diurnal Maximum |               |
| Spd  | 18.3                          | 17.1   | 15.9     | 14.1     | 17.4     | 17.1 | 18.1  | 18.9 | 19.3 | 18.1 | 13.3 | 20.3 | 19.9 | 22.7 | 21.1 | 20.0 | 18.2 | 17.9                            | 17.6 | 15.7 | 15.2 | 18.9 | 15.5 | 17.9 | Diurnal Maximum |               |
| Dir  | 249                           | 252  | 252      | 246      | 264      | 266  | 267   | 263  | 255  | 246  | 275  | 270  | 262  | 269  | 276  | 266  | 264  | 268                             | 274  | 269  | 238  | 243  | 241  | 246  | Diurnal Maximum |               |
| Maximum Speed Value: 23 km/h on Jun 12 14:00                                       |                               | Minimum Speed Value: 0 km/h on Jun 27 21:00  |          |          |          |      |       |      |      |      |      |      |      |      |      |      |      | Hours in Service: 720           |      |      |      |      |      |      |                 |               |
| Maximum Daily Speed Average: 12.6 km/h on Jun 16                                   |                               | Minimum Daily Speed Average: 0.1 km/h on Jun 5   |          |          |          |      |       |      |      |      |      |      |      |      |      |      |      | Hours of Data: 720              |      |      |      |      |      |      |                 |               |
| Maximum Diurnal Speed Average: 5.8 km/h at hour 14                                 |                               | Minimum Diurnal Speed Average: 1.4 km/h at hour 4  |          |          |          |      |       |      |      |      |      |      |      |      |      |      |      | Hours of Missing Data: 0        |      |      |      |      |      |      |                 |               |
| Monthly Average Velocity: 3.36 km/h 273.6 deg                                      |                               | Speed Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 1.0 Median = 2.7 Q <sub>3</sub> = 7.4 P <sub>90</sub> = 11.7 P <sub>99</sub> = 18.7 |          |          |          |      |       |      |      |      |      |      |      |      |      |      |      | Percent Operational Time: 100.0 |      |      |      |      |      |      |                 |               |
| All monthly, daily, and diurnal averages have been calculated using vector methods |                               |  |          |          |          |      |       |      |      |      |      |      |      |      |      |      |      |                                 |      |      |      |      |      |      |                 |               |
| Frequency Distribution   |                               |  |          |          |          |      |       |      |      |      |      |      |      |      |      |      |      |                                 |      |      |      |      |      |      |                 |               |
|  |                               | Speed Range (km/h)   |          |          |          |      |       |      |      |      |      |      |      |      |      |      |      |                                 |      |      |      |      |      |      |                 |               |
| Direction  | 0 to 5                        | 5 to 11  | 11 to 19 | 19 to 28 | 28 to 38 | > 38 | Total |      |      |      |      |      |      |      |      |      |      |                                 |      |      |      |      |      |      |                 |               |
| North  | 49                            | 9  | 1        | 0        | 0        | 0    | 59    |      |      |      |      |      |      |      |      |      |      |                                 |      |      |      |      |      |      |                 |               |
| NorthEast  | 18                            | 4  | 0        | 0        | 0        | 0    | 22    |      |      |      |      |      |      |      |      |      |      |                                 |      |      |      |      |      |      |                 |               |
| East   | 18                            | 2  | 0        | 0        | 0        | 0    | 20    |      |      |      |      |      |      |      |      |      |      |                                 |      |      |      |      |      |      |                 |               |
| SouthEast  | 76                            | 1  | 0        | 0        | 0        | 0    | 77    |      |      |      |      |      |      |      |      |      |      |                                 |      |      |      |      |      |      |                 |               |
| South  | 132                           | 3  | 0        | 0        | 0        | 0    | 135   |      |      |      |      |      |      |      |      |      |      |                                 |      |      |      |      |      |      |                 |               |
| SouthWest  | 57                            | 10   | 15       | 0        | 0        | 0    | 82    |      |      |      |      |      |      |      |      |      |      |                                 |      |      |      |      |      |      |                 |               |
| West   | 67                            | 88   | 57       | 6        | 0        | 0    | 218   |      |      |      |      |      |      |      |      |      |      |                                 |      |      |      |      |      |      |                 |               |
| NorthWest  | 51                            | 49   | 7        | 0        | 0        | 0    | 107   |      |      |      |      |      |      |      |      |      |      |                                 |      |      |      |      |      |      |                 |               |
| Total  | 468                           | 166  | 80       | 6        | 0        | 0    | 720   |      |      |      |      |      |      |      |      |      |      |                                 |      |      |      |      |      |      |                 |               |

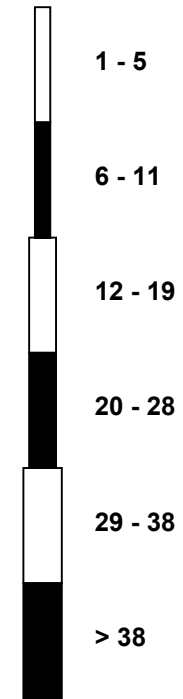
**Wind Rose**

**Wind Speed (WS) (km/h)**

**Valleyview - June 2016**



**Wind Speed Classes (km/h)**



## Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Valleyview - June 2016

| Maximum Speed: 23 km/h on Jun 12 14:00             |                               | Maximum Daily Speed Average: 13.2 km/h on Jun 16   |    | Hours in Service: 720           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |                 |               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--|-------------------------------|--|----|---------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------------|-----------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Minimum Speed: 0 km/h on Jun 27 21:00              |                               | Minimum Daily Speed Average: 1.8 km/h on Jun 5   |    | Hours of Data: 720              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |                 |               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Maximum Diurnal Speed Average: 8.0 km/h at hour 14 |                               | Minimum Diurnal Speed Average: 2.3 km/h at hour 2  |    | Hours of Missing Data: 0        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |                 |               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Monthly Average Speed: 5.09 km/h                   |                               | Percentiles: P <sub>1</sub> = 0.2 P <sub>10</sub> = 0.6 Q <sub>1</sub> = 1.3 Median = 3.6 Q <sub>3</sub> = 7.9 P <sub>90</sub> = 12.0 P <sub>99</sub> = 18.9 |    | Percent Operational Time: 100.0 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |                 |               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Day  | Hourly Period Ending At (MST) |  |    |                                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 | Daily Average   | Daily Maximum |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  | 1                             | 2  | 3  | 4                               | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24              |                 |               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1-Jun  | 0                             | 0  | 1  | 1                               | 2  | 2  | 5  | 7  | 6  | 6  | 7  | 7  | 7  | 6  | 4  | 5  | 4  | 5  | 3  | 3  | 4  | 6  | 1  | 1               | 3.8             | 7.2           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 2-Jun  | 1                             | 0  | 1  | 1                               | 1  | 1  | 1  | 2  | 4  | 4  | 4  | 4  | 6  | 5  | 5  | 2  | 6  | 3  | 2  | 4  | 1  | 1  | 5  | 3               | 2.8             | 6.2           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 3-Jun  | 5                             | 3  | 1  | 1                               | 1  | 2  | 2  | 4  | 9  | 10 | 10 | 12 | 12 | 11 | 10 | 12 | 13 | 12 | 11 | 9  | 5  | 3  | 0  | 1               | 6.7             | 12.7          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 4-Jun  | 1                             | 1  | 1  | 1                               | 2  | 1  | 1  | 3  | 10 | 14 | 14 | 14 | 17 | 17 | 18 | 16 | 13 | 14 | 12 | 10 | 7  | 5  | 3  | 1               | 8.1             | 17.9          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 5-Jun  | 1                             | 1  | 1  | 1                               | 1  | 1  | 1  | 2  | 2  | 2  | 3  | 4  | 5  | 4  | 3  | 2  | 2  | 3  | 2  | 1  | 0  | 1  | 0  | 0               | 1.8             | 5.4           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 6-Jun  | 0                             | 1  | 0  | 0                               | 1  | 1  | 0  | 0  | 4  | 4  | 4  | 9  | 11 | 13 | 10 | 7  | 5  | 2  | 1  | 0  | 0  | 2  | 2  | 1               | 3.3             | 13.1          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 7-Jun  | 1                             | 0  | 1  | 1                               | 1  | 1  | 1  | 1  | 5  | 6  | 9  | 8  | 8  | 8  | 10 | 11 | 11 | 8  | 5  | 2  | 2  | 1  | 2  | 1               | 4.3             | 11.0          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 8-Jun  | 2                             | 2  | 2  | 1                               | 2  | 1  | 3  | 5  | 5  | 5  | 5  | 4  | 6  | 5  | 3  | 6  | 6  | 13 | 8  | 4  | 2  | 2  | 2  | 5               | 4.2             | 13.4          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 9-Jun  | 3                             | 3  | 4  | 4                               | 5  | 7  | 8  | 8  | 9  | 8  | 7  | 7  | 8  | 11 | 8  | 5  | 3  | 5  | 6  | 4  | 2  | 4  | 3  | 1               | 5.5             | 10.9          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 10-Jun   | 2                             | 0  | 1  | 2                               | 3  | 2  | 1  | 1  | 1  | 1  | 2  | 4  | 3  | 4  | 1  | 2  | 1  | 2  | 3  | 2  | 2  | 3  | 2  | 2               | 2.1             | 4.3           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 11-Jun   | 2                             | 1  | 2  | 1                               | 1  | 1  | 2  | 1  | 2  | 6  | 12 | 10 | 11 | 14 | 17 | 16 | 17 | 12 | 11 | 13 | 13 | 12 | 11 | 5               | 8.1             | 17.2          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 12-Jun   | 3                             | 2  | 2  | 1                               | 7  | 7  | 6  | 9  | 13 | 12 | 11 | 21 | 20 | 23 | 22 | 20 | 19 | 18 | 18 | 16 | 14 | 11 | 5  | 1               | 11.7            | 23.2          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 13-Jun   | 1                             | 2  | 2  | 2                               | 2  | 1  | 2  | 5  | 7  | 8  | 6  | 9  | 7  | 7  | 7  | 7  | 7  | 4  | 4  | 2  | 3  | 2  | 2  | 4               | 4.2             | 8.7           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 14-Jun   | 2                             | 1  | 1  | 3                               | 1  | 1  | 2  | 3  | 3  | 6  | 6  | 6  | 8  | 8  | 7  | 8  | 7  | 5  | 9  | 3  | 3  | 6  | 8  | 4               | 4.6             | 8.8           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 15-Jun   | 5                             | 9  | 10 | 12                              | 18 | 17 | 18 | 19 | 20 | 18 | 13 | 8  | 6  | 7  | 8  | 9  | 10 | 13 | 12 | 12 | 16 | 19 | 16 | 18              | 13.1            | 19.6          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 16-Jun   | 19                            | 17   | 16 | 14                              | 13 | 11 | 12 | 11 | 12 | 13 | 13 | 13 | 13 | 14 | 15 | 13 | 13 | 11 | 13 | 14 | 13 | 13 | 12 | 10              | 13.2            | 18.6          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 17-Jun   | 9                             | 13   | 15 | 13                              | 11 | 11 | 10 | 9  | 9  | 10 | 9  | 9  | 10 | 10 | 11 | 10 | 8  | 11 | 11 | 10 | 7  | 9  | 6  | 6               | 9.9             | 15.1          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 18-Jun   | 1                             | 1  | 1  | 1                               | 1  | 2  | 2  | 2  | 5  | 9  | 10 | 8  | 6  | 5  | 5  | 6  | 5  | 5  | 4  | 2  | 10 | 6  | 11 | 4.7             | 11.2            |               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 19-Jun   | 6                             | 1  | 4  | 2                               | 3  | 3  | 5  | 6  | 6  | 7  | 9  | 10 | 10 | 12 | 12 | 14 | 11 | 7  | 4  | 4  | 0  | 1  | 0  | 6.1             | 13.6            |               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 20-Jun   | 0                             | 1  | 1  | 1                               | 1  | 1  | 3  | 2  | 1  | 6  | 4  | 4  | 5  | 4  | 3  | 2  | 2  | 3  | 3  | 1  | 1  | 1  | 1  | 1               | 2.1             | 5.9           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 21-Jun   | 1                             | 1  | 1  | 0                               | 0  | 1  | 3  | 3  | 2  | 3  | 3  | 2  | 2  | 2  | 4  | 6  | 6  | 5  | 7  | 2  | 1  | 1  | 1  | 4               | 2.5             | 6.8           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 22-Jun   | 2                             | 2  | 1  | 2                               | 2  | 2  | 2  | 2  | 2  | 8  | 8  | 7  | 7  | 7  | 7  | 9  | 12 | 10 | 8  | 8  | 4  | 1  | 1  | 1               | 4.7             | 11.9          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 23-Jun   | 1                             | 1  | 1  | 1                               | 1  | 1  | 1  | 1  | 2  | 3  | 3  | 3  | 3  | 2  | 4  | 4  | 4  | 4  | 4  | 5  | 3  | 1  | 1  | 2               | 2.2             | 4.8           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 24-Jun   | 1                             | 1  | 1  | 0                               | 1  | 1  | 1  | 0  | 1  | 2  | 2  | 3  | 3  | 4  | 4  | 4  | 8  | 10 | 3  | 2  | 1  | 0  | 1  | 1               | 2.2             | 9.6           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 25-Jun   | 1                             | 1  | 1  | 1                               | 1  | 1  | 1  | 4  | 8  | 8  | 9  | 9  | 11 | 12 | 11 | 12 | 13 | 10 | 11 | 9  | 3  | 4  | 9  | 4               | 6.5             | 13.1          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 26-Jun   | 1                             | 1  | 0  | 0                               | 1  | 0  | 2  | 2  | 8  | 11 | 10 | 8  | 7  | 6  | 8  | 5  | 8  | 9  | 8  | 7  | 1  | 1  | 1  | 1               | 4.4             | 11.3          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 27-Jun   | 1                             | 1  | 1  | 1                               | 2  | 2  | 2  | 1  | 3  | 3  | 4  | 4  | 3  | 4  | 3  | 3  | 2  | 5  | 4  | 2  | 0  | 0  | 0  | 0               | 2.2             | 4.6           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 28-Jun   | 0                             | 0  | 0  | 0                               | 0  | 0  | 0  | 1  | 1  | 1  | 1  | 1  | 2  | 4  | 3  | 4  | 6  | 6  | 6  | 5  | 5  | 2  | 1  | 0               | 2.2             | 6.0           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 29-Jun   | 1                             | 0  | 0  | 0                               | 0  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 3  | 3  | 2  | 6  | 6  | 3  | 6  | 6  | 3  | 0  | 1  | 2               | 2.1             | 6.4           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 30-Jun   | 5                             | 1  | 0  | 1                               | 1  | 1  | 1  | 2  | 3  | 2  | 4  | 13 | 9  | 10 | 9  | 8  | 4  | 5  | 4  | 1  | 1  | 0  | 0  | 0               | 3.6             | 13.0          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  |                               |  |    |                                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Diurnal Average | Diurnal Maximum |               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|  |                               |  |    |                                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2.6             | 2.3             | 2.4           | 2.4 | 2.8 | 2.7 | 3.2 | 3.9 | 5.5 | 6.6 | 6.8 | 7.5 | 7.7 | 8.0 | 7.9 | 7.8 | 7.7 | 7.6 | 6.9 | 5.4 | 4.0 | 3.9 | 3.5 | 3.1 | 18.6 | 17.3 | 16.1 | 14.4 | 17.7 | 17.3 | 18.4 | 19.2 | 19.6 | 18.4 | 13.7 | 20.7 | 20.5 | 23.2 | 21.6 | 20.5 | 18.7 | 18.4 | 17.9 | 16.0 | 15.8 | 19.2 | 15.9 | 18.1 |

All monthly, daily, and diurnal averages have been calculated using scalar methods



## Hourly Standard Deviations

**Wind Direction (WD) - deg**

**Valleyview - June 2016**

| <b>Maximum Value: 96.0 deg on Jun 29 11:00</b>   |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours in Service: 720<br>Hours of Data: 720<br>Hours of Missing Data: 0<br>Hours of Calibration: 0<br>Percent Operational Time: 100.0 |      |
|--|-------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|------|
| <b>Minimum Value: 6.9 deg on Jun 27 07:00</b>  |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |      |
| Percentiles: P <sub>1</sub> = 8.8 P <sub>10</sub> = 11.5 Q <sub>1</sub> = 16.0 Median = 27.3 Q <sub>3</sub> = 48.7 P <sub>90</sub> = 71.5 P <sub>99</sub> = 89.7 |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |   |      |
| Day  | Hourly Period Ending At (MST) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Daily Maximum   |      |
|  | 1                             | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24  |      |
| 1-Jun  | 87                            | 63   | 89   | 88   | 82   | 45   | 32   | 15   | 21   | 31   | 36   | 42   | 28   | 43   | 74   | 56   | 42   | 39   | 52   | 31   | 30   | 20   | 50   | 21  | 88.7 |
| 2-Jun  | 13                            | 72   | 77   | 29   | 69   | 50   | 54   | 23   | 59   | 43   | 51   | 73   | 45   | 21   | 48   | 17   | 40   | 38   | 34   | 35   | 26   | 34   | 22   | 24  | 76.6 |
| 3-Jun  | 13                            | 28   | 13   | 24   | 15   | 22   | 16   | 49   | 14   | 20   | 26   | 18   | 19   | 27   | 22   | 17   | 19   | 18   | 12   | 13   | 27   | 26   | 21   | 51  | 51.1 |
| 4-Jun  | 28                            | 27   | 80   | 25   | 74   | 48   | 20   | 63   | 18   | 15   | 15   | 17   | 15   | 16   | 13   | 12   | 21   | 21   | 15   | 12   | 9    | 16   | 48   | 91  | 90.7 |
| 5-Jun  | 21                            | 13   | 19   | 11   | 24   | 30   | 62   | 14   | 59   | 54   | 67   | 80   | 54   | 85   | 68   | 77   | 86   | 47   | 30   | 40   | 36   | 44   | 75   | 53  | 85.5 |
| 6-Jun  | 66                            | 41   | 77   | 42   | 55   | 82   | 76   | 59   | 30   | 17   | 45   | 16   | 19   | 15   | 21   | 23   | 14   | 73   | 39   | 34   | 60   | 67   | 17   | 44  | 82.5 |
| 7-Jun  | 24                            | 39   | 51   | 29   | 38   | 27   | 35   | 49   | 24   | 24   | 20   | 29   | 33   | 36   | 22   | 21   | 15   | 17   | 12   | 17   | 25   | 80   | 45   | 83  | 83.2 |
| 8-Jun  | 69                            | 69   | 89   | 71   | 34   | 83   | 79   | 52   | 52   | 34   | 48   | 25   | 25   | 41   | 34   | 29   | 21   | 21   | 38   | 90   | 44   | 52   | 77   | 13  | 89.8 |
| 9-Jun  | 24                            | 43   | 25   | 19   | 11   | 15   | 12   | 16   | 14   | 12   | 13   | 14   | 13   | 11   | 36   | 18   | 31   | 19   | 14   | 23   | 18   | 18   | 23   | 30  | 43.4 |
| 10-Jun   | 64                            | 60   | 43   | 36   | 19   | 59   | 54   | 66   | 51   | 85   | 63   | 49   | 47   | 50   | 39   | 87   | 50   | 16   | 13   | 11   | 12   | 9    | 11   | 22  | 87.1 |
| 11-Jun   | 38                            | 50   | 32   | 56   | 41   | 44   | 52   | 49   | 38   | 40   | 20   | 16   | 15   | 16   | 12   | 12   | 11   | 10   | 11   | 13   | 11   | 11   | 16   | 36  | 56.4 |
| 12-Jun   | 32                            | 29   | 26   | 24   | 22   | 19   | 27   | 12   | 11   | 12   | 14   | 11   | 13   | 12   | 12   | 12   | 13   | 14   | 10   | 11   | 10   | 10   | 30   | 31  | 31.7 |
| 13-Jun   | 21                            | 11   | 18   | 14   | 13   | 28   | 33   | 40   | 26   | 33   | 41   | 32   | 32   | 42   | 56   | 42   | 13   | 13   | 15   | 35   | 13   | 25   | 60   | 33  | 60.4 |
| 14-Jun   | 82                            | 84   | 87   | 27   | 40   | 34   | 57   | 33   | 36   | 34   | 21   | 16   | 15   | 26   | 21   | 33   | 71   | 25   | 14   | 55   | 35   | 22   | 15   | 33  | 87.4 |
| 15-Jun   | 27                            | 18   | 11   | 10   | 11   | 9    | 10   | 9    | 10   | 11   | 19   | 35   | 31   | 25   | 25   | 26   | 26   | 27   | 21   | 25   | 21   | 11   | 15   | 12  | 34.8 |
| 16-Jun   | 12                            | 9    | 9    | 13   | 12   | 14   | 12   | 16   | 16   | 11   | 10   | 10   | 11   | 9    | 12   | 12   | 11   | 10   | 9    | 10   | 11   | 10   | 12   | 12  | 16.2 |
| 17-Jun   | 15                            | 11   | 11   | 11   | 10   | 10   | 11   | 14   | 22   | 23   | 24   | 22   | 19   | 27   | 23   | 35   | 27   | 15   | 14   | 11   | 10   | 9    | 9    | 11  | 34.9 |
| 18-Jun   | 26                            | 10   | 14   | 12   | 7    | 8    | 7    | 11   | 53   | 22   | 19   | 31   | 47   | 84   | 31   | 44   | 32   | 27   | 22   | 15   | 11   | 17   | 41   | 19  | 84.2 |
| 19-Jun   | 59                            | 82   | 61   | 62   | 33   | 55   | 28   | 27   | 21   | 15   | 33   | 20   | 22   | 17   | 10   | 20   | 15   | 15   | 16   | 17   | 19   | 30   | 24   | 45  | 82.2 |
| 20-Jun   | 50                            | 9    | 43   | 14   | 9    | 13   | 10   | 14   | 39   | 29   | 45   | 49   | 64   | 48   | 81   | 53   | 81   | 55   | 37   | 26   | 47   | 85   | 70   | 59  | 84.8 |
| 21-Jun   | 24                            | 14   | 44   | 59   | 62   | 22   | 9    | 13   | 20   | 35   | 14   | 28   | 23   | 74   | 55   | 43   | 78   | 48   | 49   | 28   | 51   | 92   | 57   | 57  | 91.9 |
| 22-Jun   | 63                            | 49   | 44   | 26   | 13   | 10   | 12   | 30   | 58   | 20   | 23   | 26   | 28   | 29   | 32   | 34   | 25   | 13   | 23   | 21   | 26   | 31   | 44   | 36  | 62.8 |
| 23-Jun   | 28                            | 28   | 27   | 26   | 29   | 25   | 29   | 69   | 65   | 52   | 87   | 75   | 76   | 69   | 59   | 47   | 55   | 62   | 13   | 81   | 57   | 44   | 62   | 16  | 87.4 |
| 24-Jun   | 29                            | 44   | 44   | 43   | 15   | 28   | 29   | 38   | 53   | 49   | 26   | 32   | 50   | 34   | 45   | 26   | 15   | 11   | 34   | 46   | 26   | 23   | 29   | 37  | 53.2 |
| 25-Jun   | 11                            | 15   | 18   | 23   | 18   | 30   | 20   | 50   | 17   | 18   | 16   | 19   | 18   | 18   | 20   | 19   | 16   | 13   | 19   | 26   | 75   | 55   | 11   | 16  | 74.8 |
| 26-Jun   | 28                            | 19   | 22   | 25   | 24   | 20   | 51   | 73   | 21   | 13   | 21   | 24   | 30   | 47   | 38   | 42   | 23   | 20   | 19   | 13   | 58   | 28   | 20   | 32  | 72.6 |
| 27-Jun   | 13                            | 19   | 10   | 9    | 8    | 8    | 7    | 17   | 72   | 64   | 34   | 54   | 59   | 85   | 87   | 57   | 84   | 31   | 28   | 27   | 82   | 76   | 80   | 79  | 86.8 |
| 28-Jun   | 35                            | 64   | 64   | 58   | 81   | 60   | 75   | 25   | 27   | 64   | 65   | 79   | 57   | 64   | 79   | 46   | 23   | 23   | 15   | 28   | 37   | 38   | 70   | 29  | 80.9 |
| 29-Jun   | 58                            | 64   | 76   | 82   | 67   | 54   | 79   | 43   | 43   | 64   | 96   | 40   | 30   | 45   | 25   | 24   | 28   | 72   | 65   | 81   | 91   | 59   | 41   | 16  | 96.0 |
| 30-Jun   | 13                            | 88   | 85   | 96   | 71   | 40   | 73   | 21   | 49   | 43   | 54   | 18   | 24   | 11   | 16   | 14   | 18   | 20   | 24   | 48   | 16   | 61   | 90   | 68  | 95.8 |
|  | 86.9                          | 87.6 | 89.0 | 95.8 | 81.9 | 83.0 | 79.3 | 72.6 | 72.1 | 84.6 | 96.0 | 80.5 | 75.7 | 85.2 | 86.8 | 87.1 | 85.5 | 73.4 | 64.8 | 89.8 | 91.1 | 91.9 | 90.1 | 90.7  |      |

PAZA

Portable – Rycroft Station

Monthly Summary Tables, Graphs and  
Roses

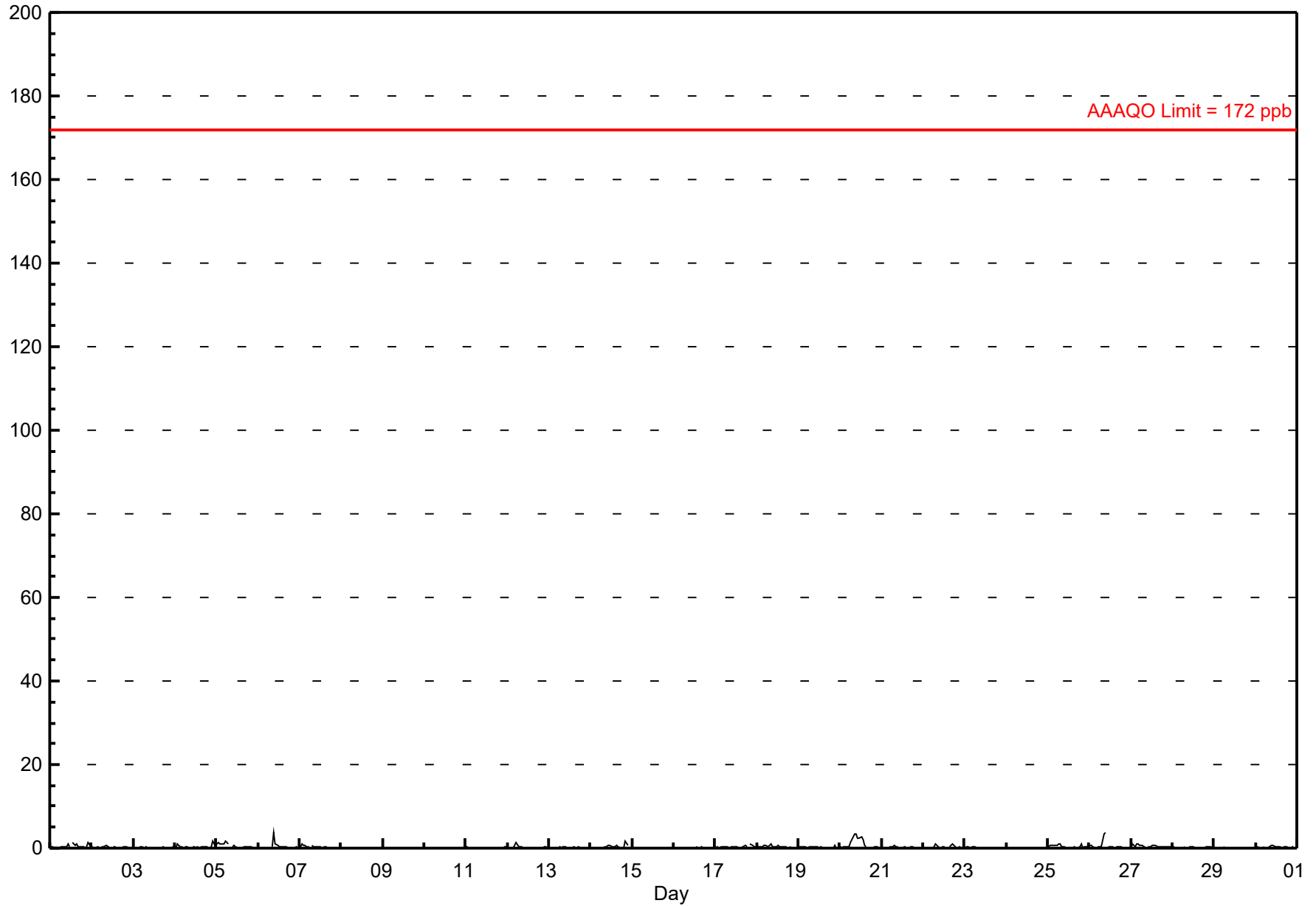
## Hourly Averages

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Portable Rycroft - June 2016**

| <b>Number of Exceedences (AAAQO):</b> 1-hr: 0 24-hr: 0<br><b>Maximum Value:</b> 3.7 ppb on Jun 6 10:00 <b>Maximum Daily Average:</b> 1.0 ppb on Jun 20        |                               | <b>Hours in Service:</b> 720<br><b>Hours of Data:</b> 685<br><b>Hours of Missing Data:</b> 35<br><b>Hours of Calibration:</b> 35<br><b>Percent Operational Time:</b> 100.0   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |               |               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
|---|-------------------------------|--|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|---------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|--|
| <b>Minimum Value:</b> 0 ppb on Jun 1 06:00<br><b>Maximum Diurnal Average:</b> 0.6 ppb at hour 10<br><b>Monthly Average:</b> 0.25 ppb                          |                               | <b>Minimum Daily Average:</b> 0.0 ppb on Jun 24<br><b>Minimum Diurnal Average:</b> 0.1 ppb at hour 24<br><b>Percentiles:</b> P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.3 P <sub>90</sub> = 0.6 P <sub>99</sub> = 2.3 |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |               |               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| Day   | Hourly Period Ending At (MST) |  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     | Daily Average | Daily Maximum |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
|   | 1                             | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24  |               |               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 1-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 1  | 0  | A  | 1  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 0   | 0.4           | 1.3           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 2-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.2           | 0.8           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 3-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.1           | 0.3           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 4-Jun   | 0                             | 1  | 1 | 0 | 0 | 0 | 0 | 0 | 0 | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 2  | 0   | 0.3           | 1.8           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 5-Jun   | 1                             | 1  | 1 | 1 | 1 | 2 | 1 | 1 | A | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.6           | 1.7           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 6-Jun   | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | A | 0 | 4  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.4           | 3.7           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 7-Jun   | 0                             | 1  | 1 | 1 | 0 | 0 | A | 1 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.3           | 1.0           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 8-Jun   | 0                             | 0  | 0 | 0 | 0 | A | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.0           | 0.1           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 9-Jun   | 0                             | 0  | 0 | 0 | A | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.0           | 0.1           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 10-Jun  | 0                             | 0  | 0 | A | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.0           | 0.2           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 11-Jun  | 0                             | 0  | A | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.1           | 0.3           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 12-Jun  | 0                             | A  | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.2           | 1.2           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 13-Jun  | A                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A   | 0.1           | 0.3           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 14-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1  | 1  | 1  | 1  | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 2  | 1  | A  | 0   | 0.3           | 1.6           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 15-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0   | 0.0           | 0.1           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 16-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | C  | C  | C  | C  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0   | 0.1           | 0.5           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 17-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 0  | A  | 1  | 1  | 0  | 0  | 0   | 0.3           | 1.0           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 18-Jun  | 0                             | 0  | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | A  | A  | 0  | 0  | 0  | 0   | 0.4           | 0.9           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 19-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 1  | 0  | 0   | 0.2           | 0.8           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 20-Jun  | 0                             | 0  | 0 | 0 | 0 | 1 | 1 | 2 | 3 | 3  | 2  | 2  | 3  | 2  | 1  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 1.0           | 3.3           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 21-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.2           | 0.6           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 22-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0  | 0  | 0  | 0  | 0  | A  | 0  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0   | 0.2           | 1.1           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 23-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.1           | 0.4           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 24-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.0           | 0.0           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 25-Jun  | 0                             | 1  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 0  | 0   | 0.4           | 0.9           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 26-Jun  | 1                             | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.5           | 3.7           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 27-Jun  | 0                             | 1  | 0 | 1 | 1 | 1 | 1 | 1 | 0 | A  | 0  | 1  | 1  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.5           | 1.1           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 28-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.2           | 0.4           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 29-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | 0 | A | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.1           | 0.3           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
| 30-Jun  | 0                             | 0  | 0 | 0 | 0 | 0 | A | 0 | 0 | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0.3           | 0.6           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
|   |                               |  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.2 | 0.3           | 0.2           | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.5 | 0.6 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | Diurnal Average |  |
|   |                               |  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1.0 | 1.4           | 1.1           | 1.2 | 1.1 | 1.7 | 1.3 | 1.9 | 3.5 | 3.7 | 2.3 | 2.4 | 2.6 | 2.0 | 0.8 | 1.0 | 0.6 | 1.1 | 0.4 | 0.9 | 1.6 | 0.8 | 1.8 | 0.3 | Diurnal Maximum |  |
| <b>C - Calibration</b> <b>A - Automated Daily Zero Span</b><br><b>Alberta Ambient Air Quality Objectives (AAAQO):</b> 1-hr 172 ppb 24-hr 48 ppb 30-day 11 ppb |                               |  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |               |               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |

### Hourly Averages

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Portable Rycroft - June 2016



# Hourly Maximums

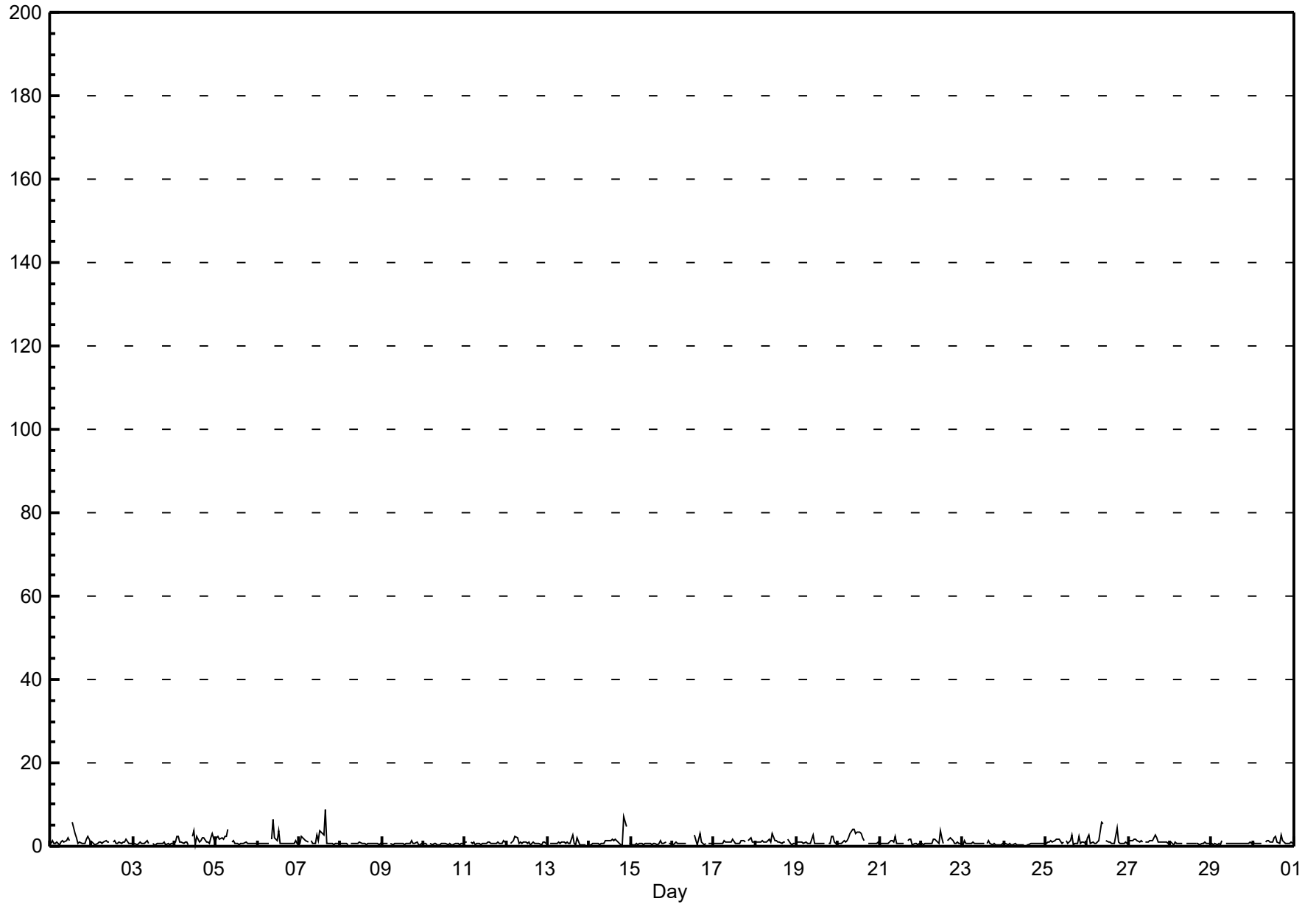
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Portable Rycroft - June 2016

| Maximum Value: 8.7 ppb on Jun 7 16:00       |                               | Maximum Daily Average: 1.8 ppb on Jun 20   |     | Hours in Service: 720           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |     |
|---|-------------------------------|--|-----|---------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|---------------|-----|
| Minimum Value: 0 ppb on Jun 9 01:00         |                               | Minimum Daily Average: 0.5 ppb on Jun 24   |     | Hours of Data: 685              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |     |
| Maximum Diurnal Average: 1.5 ppb at hour 10 |                               | Minimum Diurnal Average: 0.7 ppb at hour 24  |     | Hours of Missing Data: 35       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |     |
| Monthly Average: 1.03 ppb                   |                               | Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 0.7 Median = 0.8 Q <sub>3</sub> = 1.1 P <sub>90</sub> = 1.8 P <sub>99</sub> = 4.4 |     | Hours of Calibration: 35        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |     |
|   |                               |  |     | Percent Operational Time: 100.0 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |     |
| Day   | Hourly Period Ending At (MST) |  |     |                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Daily Average   | Daily Maximum |     |
|   | 1                             | 2  | 3   | 4                               | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |                 |               |     |
| 1-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | 0   | 1   | 1   | 1   | 1   | 2   | 1   | A   | 6   | 3   | 2   | 1   | 1   | 1   | 1   | 1   | 2   | 2   | 1   | 1.4             | 5.8           |     |
| 2-Jun                                       | 1                             | 1  | 0   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 2   | 1   | 1   | 1   | 0.9             | 1.6           |     |
| 3-Jun                                       | 1                             | 1  | 0   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 0   | 0   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 0   | 1   | 1   | 0.7             | 1.2           |     |
| 4-Jun                                       | 1                             | 2  | 2   | 1                               | 1   | 1   | 1   | 1   | 0   | A   | 2   | 4   | 0   | 2   | 1   | 1   | 2   | 2   | 1   | 1   | 1   | 2   | 3   | 1   | 1.5             | 3.6           |     |
| 5-Jun                                       | 2                             | 2  | 2   | 2                               | 2   | 2   | 2   | 4   | A   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1.3             | 4.2           |     |
| 6-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | A   | 2   | 6   | 2   | 1   | 4   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1.3             | 6.3           |     |
| 7-Jun                                       | 1                             | 2  | 2   | 2                               | 1   | 1   | A   | 1   | 1   | 1   | 3   | 1   | 4   | 3   | 3   | 9   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1.7             | 8.7           |     |
| 8-Jun                                       | 1                             | 1  | 1   | 1                               | 0   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 0.6             | 0.9           |     |
| 9-Jun                                       | 0                             | 1  | 1   | 1                               | A   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 1   | 0.6             | 1.2           |     |
| 10-Jun                                      | 1                             | 1  | 0   | A                               | 1   | 1   | 1   | 1   | 0   | 0   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 0   | 1   | 1   | 1   | 0   | 1   | 1   | 0.6             | 0.8           |     |
| 11-Jun                                      | 1                             | 1  | A   | 1                               | 1   | 1   | 0   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7             | 1.2           |     |
| 12-Jun                                      | 1                             | A  | 1   | 1                               | 1   | 2   | 2   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 0.9             | 2.4           |     |
| 13-Jun                                      | A                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 3   | 1   | 0   | 2   | 0   | 0   | 0   | 0   | 1   | A   | 0.8             | 2.8           |     |
| 14-Jun                                      | 0                             | 0  | 1   | 1                               | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 2   | 1   | 2   | 1   | 1   | 0   | 0   | 7   | 5   | A   | 1   | 1.4             | 7.2           |     |
| 15-Jun                                      | 1                             | 0  | 0   | 1                               | 0   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 0.6             | 1.3           |     |
| 16-Jun                                      | 0                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | C   | C   | C   | C   | 3   | 0   | 2   | 3   | 1   | 0   | 1   | A   | 1   | 1   | 1   | 1.0             | 3.1           |     |
| 17-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 2   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 2   | 1   | 1               | 1.0           | 1.9 |
| 18-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 2   | 1   | 3   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 2   | 1   | 0   | 1               | 1.1           | 3.2 |
| 19-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 3   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 2   | 2   | 1               | 1.0           | 2.8 |
| 20-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 2   | 3   | 4   | 4   | 3   | 3   | 3   | 3   | 2   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1               | 1.8           | 4.2 |
| 21-Jun                                      | 0                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 2   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 2   | 2   | 0   | 1   | 1   | 0   | 1   | 1.0             | 2.4           |     |
| 22-Jun                                      | 1                             | 0  | 1   | 1                               | 1   | 1   | 1   | 2   | 2   | 1   | 1   | 4   | 2   | 1   | A   | 1   | 2   | 2   | 1   | 1   | 1   | 1   | 1   | 1   | 1               | 1.2           | 3.9 |
| 23-Jun                                      | 0                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 0   | 1   | 0   | 0   | 0   | 1   | 1   | 0.7             | 1.4           |     |
| 24-Jun                                      | 1                             | 1  | 1   | 1                               | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.5             | 0.8           |     |
| 25-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 2   | 2   | 2   | 1   | 1   | A   | 1   | 1   | 1   | 3   | 0   | 1   | 1   | 2   | 1   | 1   | 1   | 1   | 1.2             | 2.8           |     |
| 26-Jun                                      | 2                             | 3  | 1   | 1                               | 1   | 1   | 1   | 1   | 6   | 6   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 4   | 1   | 1   | 1   | 1   | 1   | 1   | 1.6             | 5.9           |     |
| 27-Jun                                      | 1                             | 1  | 1   | 2                               | 2   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 3   | 2   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1.3             | 2.8           |     |
| 28-Jun                                      | 1                             | 1  | 0   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8             | 1.1           |     |
| 29-Jun                                      | 1                             | 0  | 1   | 0                               | 1   | 0   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7             | 1.2           |     |
| 30-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 2   | 2   | 1   | 1   | 3   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1.1             | 2.5           |     |
| 0.8   |                               | 1.0  | 0.8 | 0.9                             | 0.9 | 0.9 | 1.0 | 1.2 | 1.3 | 1.5 | 1.2 | 1.2 | 1.2 | 1.3 | 1.1 | 1.3 | 1.0 | 1.1 | 0.8 | 0.8 | 1.0 | 1.0 | 0.9 | 0.7 | Diurnal Average |               |     |
| 1.9   |                               | 2.9  | 2.2 | 1.9                             | 1.8 | 2.4 | 2.3 | 4.2 | 5.9 | 6.3 | 3.2 | 3.9 | 3.8 | 5.8 | 2.9 | 8.7 | 3.1 | 4.4 | 1.8 | 2.3 | 7.2 | 4.7 | 3.0 | 1.0 | Diurnal Maximum |               |     |
| C - Calibration                             |                               | A - Automated Daily Zero Span  |     |                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |     |

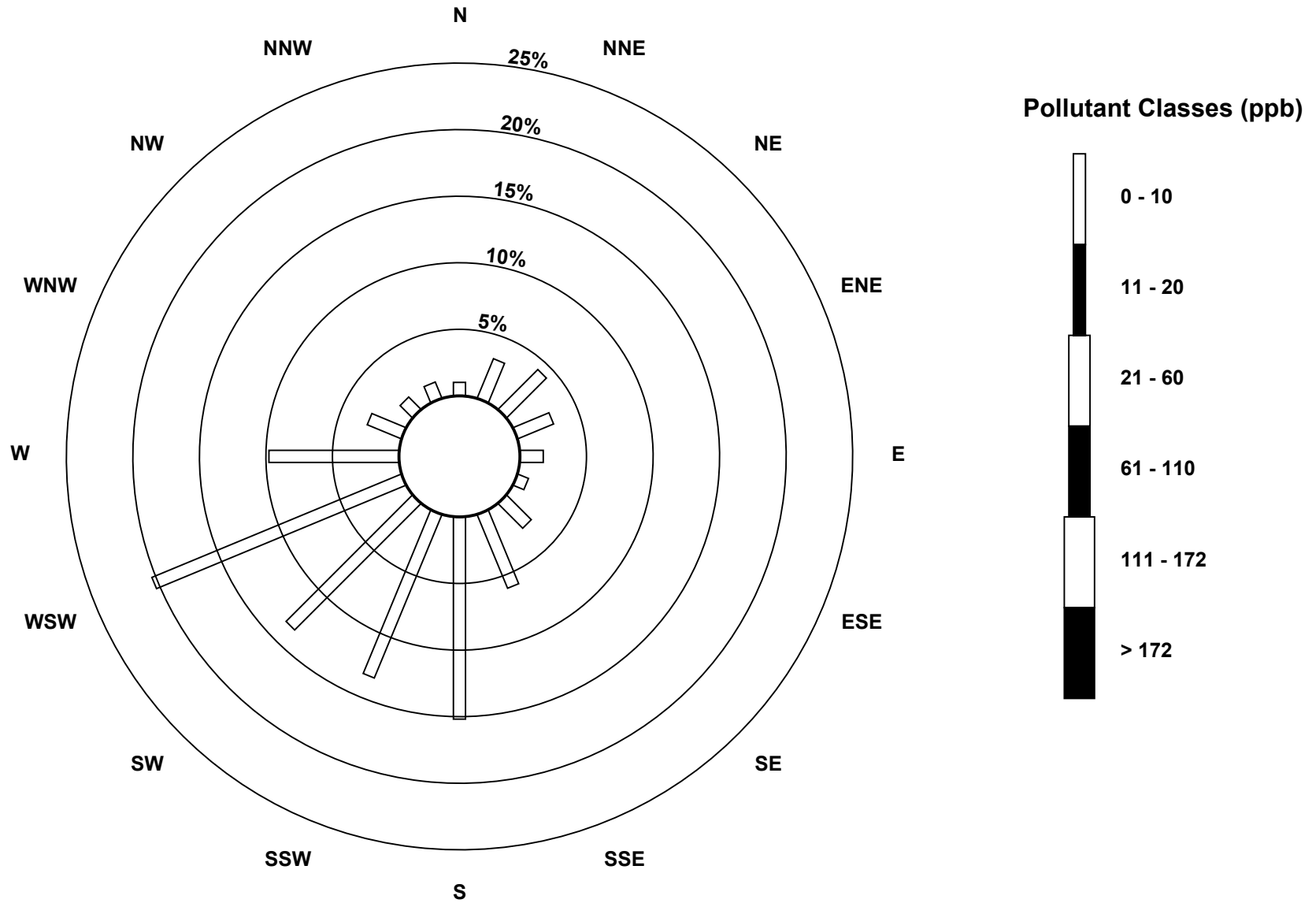
**Hourly Maximums**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Portable Rycroft - June 2016**



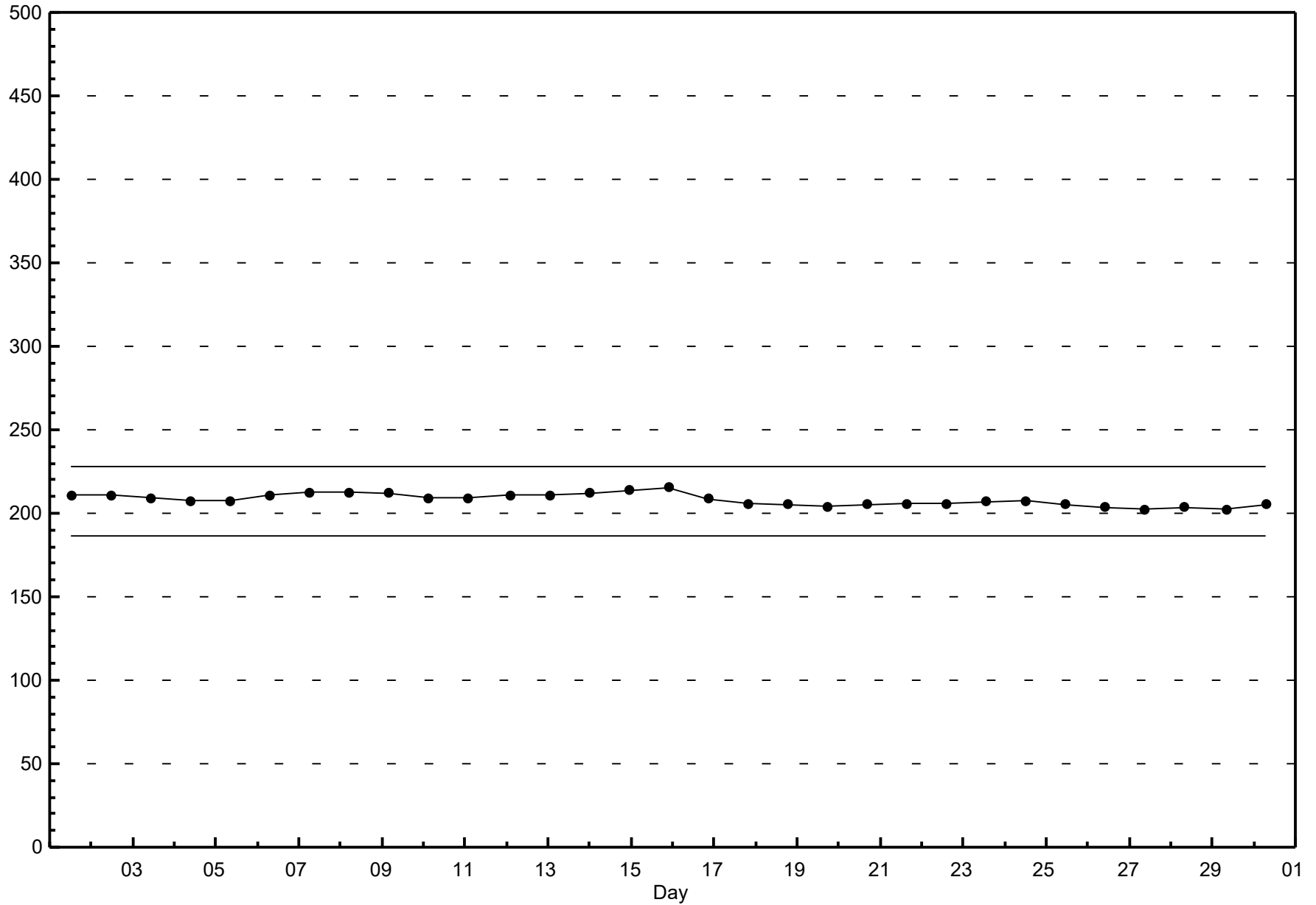
**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Portable Rycroft - June 2016**



### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Portable Rycroft - June 2016





## Hourly Averages

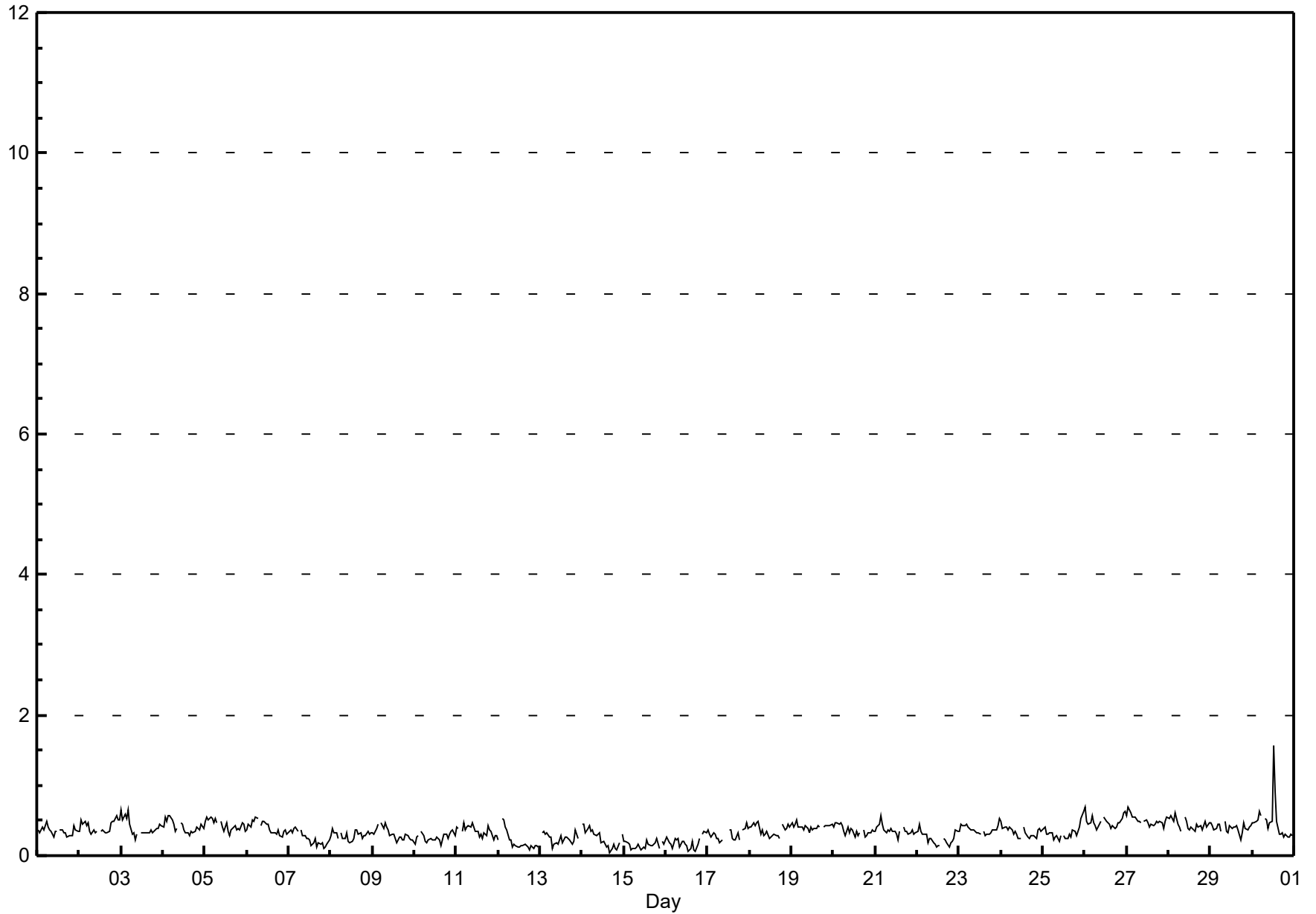
Total Reduced Sulphur (TRS) - ppb

Portable Rycroft - June 2016

|  |  |          |                           |       |
|--|--|----------|---------------------------|-------|
| Number of Exceedences (AAAQO):             | 1-hr: 0  | 24-hr: 0 | Hours in Service:         | 720   |
| Maximum Value: 1.6 ppb on Jun 30 13:00     | Maximum Daily Average: 0.5 ppb on Jun 27   |          | Hours of Data:            | 686   |
| Minimum Value: 0 ppb on Jun 14 17:00       | Minimum Daily Average: 0.2 ppb on Jun 15   |          | Hours of Missing Data:    | 34    |
| Maximum Diurnal Average: 0.4 ppb at hour 5 | Minimum Diurnal Average: 0.3 ppb at hour 17  |          | Hours of Calibration:     | 34    |
| Monthly Average: 0.34 ppb                  | Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.2 Q <sub>1</sub> = 0.3 Median = 0.3 Q <sub>3</sub> = 0.4 P <sub>90</sub> = 0.5 P <sub>99</sub> = 0.6 |          | Percent Operational Time: | 100.0 |

| Day    | Hourly Period Ending At (MST) |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Daily Average | Daily Maximum   |     |
|--------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|-----------------|-----|
|        | 1                             | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |               |                 |     |
| 1-Jun  | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0.3           | 0.5             |     |
| 2-Jun  | 0                             | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 0             | 0.4             | 0.6 |
| 3-Jun  | 1                             | 1   | 1   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.4             | 0.7 |
| 4-Jun  | 0                             | 1   | 0   | 1   | 1   | 1   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.4             | 0.6 |
| 5-Jun  | 0                             | 1   | 1   | 1   | 1   | 0   | 1   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.4             | 0.5 |
| 6-Jun  | 0                             | 0   | 0   | 1   | 0   | 1   | 1   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.4             | 0.6 |
| 7-Jun  | 0                             | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.2             | 0.4 |
| 8-Jun  | 0                             | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3             | 0.4 |
| 9-Jun  | 0                             | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3             | 0.5 |
| 10-Jun | 0                             | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3             | 0.4 |
| 11-Jun | 0                             | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.4             | 0.5 |
| 12-Jun | 0                             | A   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.2             | 0.5 |
| 13-Jun | A                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A             | 0.2             | 0.4 |
| 14-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0             | 0.2             | 0.4 |
| 15-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0             | 0.2             | 0.2 |
| 16-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0             | 0.2             | 0.3 |
| 17-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | C   | C   | C   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0             | 0.3             | 0.5 |
| 18-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0             | 0.4             | 0.5 |
| 19-Jun | 0                             | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0             | 0.4             | 0.5 |
| 20-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.4             | 0.5 |
| 21-Jun | 0                             | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.4             | 0.6 |
| 22-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.2             | 0.4 |
| 23-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1             | 0.4             | 0.5 |
| 24-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.3             | 0.5 |
| 25-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1             | 0.3             | 0.6 |
| 26-Jun | 1                             | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | A   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1             | 0.5             | 0.7 |
| 27-Jun | 1                             | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 0   | 0   | A   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1             | 0.5             | 0.7 |
| 28-Jun | 1                             | 1   | 1   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.4             | 0.6 |
| 29-Jun | 0                             | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.4             | 0.5 |
| 30-Jun | 0                             | 0   | 0   | 0   | 1   | 1   | A   | 1   | 1   | 0   | 0   | 0   | 2   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0             | 0.5             | 1.6 |
|        | 0.4                           | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4           | Diurnal Average |     |
|        | 0.7                           | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 | 0.6 | 0.5 | 0.6 | 1.6 | 0.9 | 0.5 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6           | Diurnal Maximum |     |

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb    24-hr 3 ppb



## Hourly Maximums

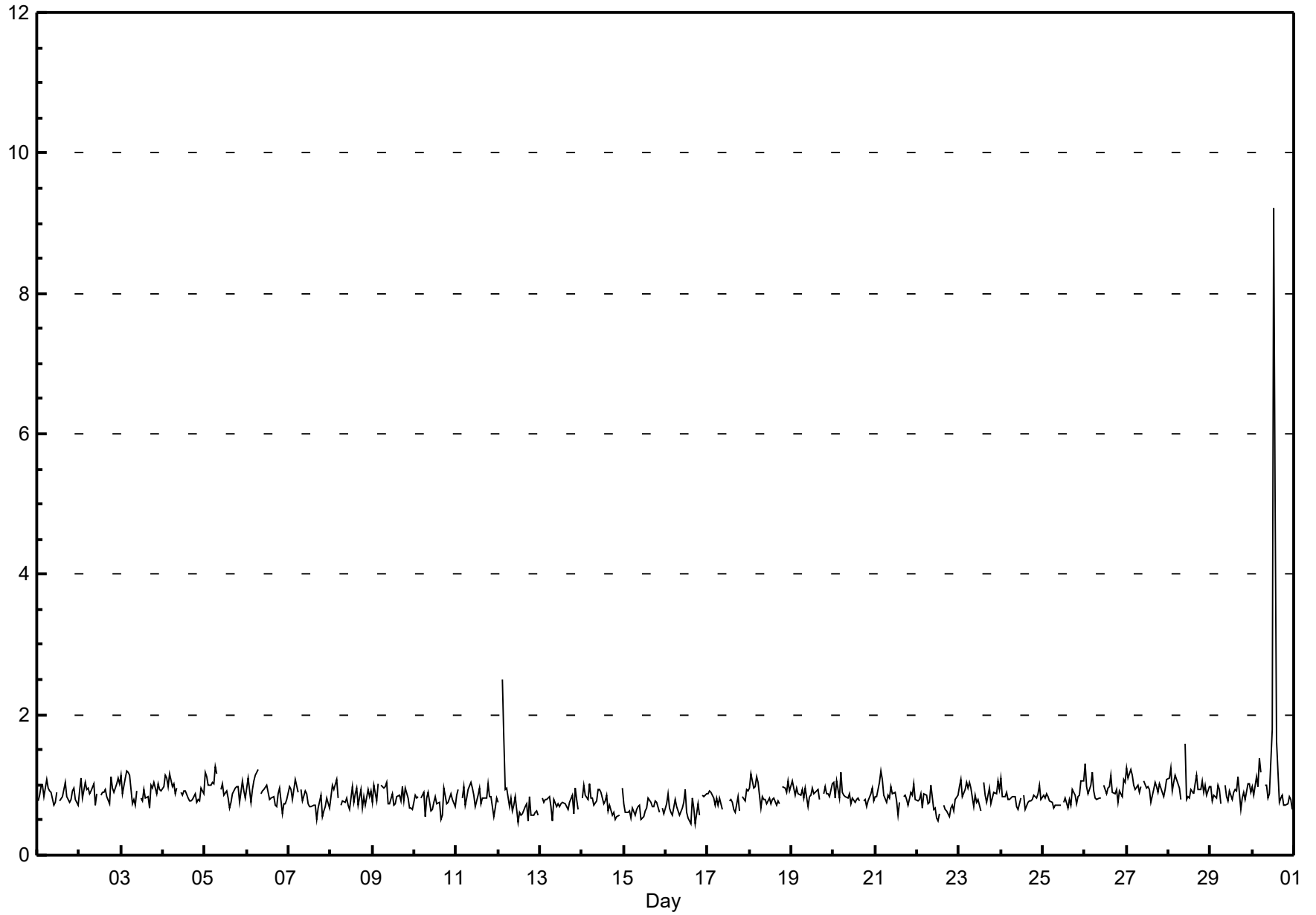
Total Reduced Sulphur (TRS) - ppb

Portable Rycroft - June 2016

| Maximum Value: 9.2 ppb on Jun 30 13:00      |                               | Maximum Daily Average: 1.5 ppb on Jun 30   |     | Hours in Service: 720           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |  |
|---|-------------------------------|--|-----|---------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|---------------|--|
| Minimum Value: 0 ppb on Jun 16 15:00        |                               | Minimum Daily Average: 0.7 ppb on Jun 15   |     | Hours of Data: 686              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |  |
| Maximum Diurnal Average: 1.1 ppb at hour 13 |                               | Minimum Diurnal Average: 0.8 ppb at hour 17  |     | Hours of Missing Data: 34       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |  |
| Monthly Average: 0.87 ppb                   |                               | Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 0.7 Q <sub>1</sub> = 0.7 Median = 0.8 Q <sub>3</sub> = 0.9 P <sub>90</sub> = 1.0 P <sub>99</sub> = 1.6 |     | Hours of Calibration: 34        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |  |
|   |                               |  |     | Percent Operational Time: 100.0 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |  |
| Day   | Hourly Period Ending At (MST) |  |     |                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Daily Average   | Daily Maximum |  |
|   | 1                             | 2  | 3   | 4                               | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |                 |               |  |
| 1-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.9             | 1.1           |  |
| 2-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.9             | 1.1           |  |
| 3-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.9             | 1.2           |  |
| 4-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.9             | 1.2           |  |
| 5-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1.0             | 1.3           |  |
| 6-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.9             | 1.2           |  |
| 7-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8             | 1.1           |  |
| 8-Jun                                       | 1                             | 1  | 1   | 1                               | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8             | 1.1           |  |
| 9-Jun                                       | 1                             | 1  | 1   | 1                               | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8             | 1.0           |  |
| 10-Jun                                      | 1                             | 1  | 1   | A                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8             | 1.0           |  |
| 11-Jun                                      | 1                             | 1  | A   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8             | 1.0           |  |
| 12-Jun                                      | 1                             | A  | 3   | 2                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8             | 2.5           |  |
| 13-Jun                                      | A                             | 1  | 1   | 1                               | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 0.7             | 1.0           |  |
| 14-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 0.8             | 1.0           |  |
| 15-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 0.7             | 0.8           |  |
| 16-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 0   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 0.7             | 0.9           |  |
| 17-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | C   | C   | C   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 0.8             | 0.9           |  |
| 18-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 0.9             | 1.2           |  |
| 19-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 0.9             | 1.1           |  |
| 20-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8             | 1.2           |  |
| 21-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.9             | 1.2           |  |
| 22-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.7             | 1.0           |  |
| 23-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.9             | 1.1           |  |
| 24-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8             | 1.1           |  |
| 25-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.8             | 1.1           |  |
| 26-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.9             | 1.3           |  |
| 27-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1.0             | 1.2           |  |
| 28-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | 1   | 1   | A   | 2   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1.0             | 1.6           |  |
| 29-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 0.9             | 1.1           |  |
| 30-Jun                                      | 1                             | 1  | 1   | 1                               | 1   | 1   | A   | 1   | 1   | 1   | 1   | 2   | 9   | 5   | 2   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1.5             | 9.2           |  |
|   |                               | 0.9  | 0.9 | 1.0                             | 1.0 | 1.0 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 1.1 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | Diurnal Average |               |  |
|   |                               | 1.3  | 1.2 | 2.5                             | 1.7 | 1.4 | 1.2 | 1.3 | 1.2 | 1.0 | 1.6 | 1.1 | 1.8 | 9.2 | 5.1 | 1.6 | 1.1 | 1.1 | 1.0 | 1.1 | 1.0 | 1.0 | 1.1 | 1.1 | Diurnal Maximum |               |  |
| C - Calibration                             |                               | A - Automated Daily Zero Span  |     |                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |               |  |

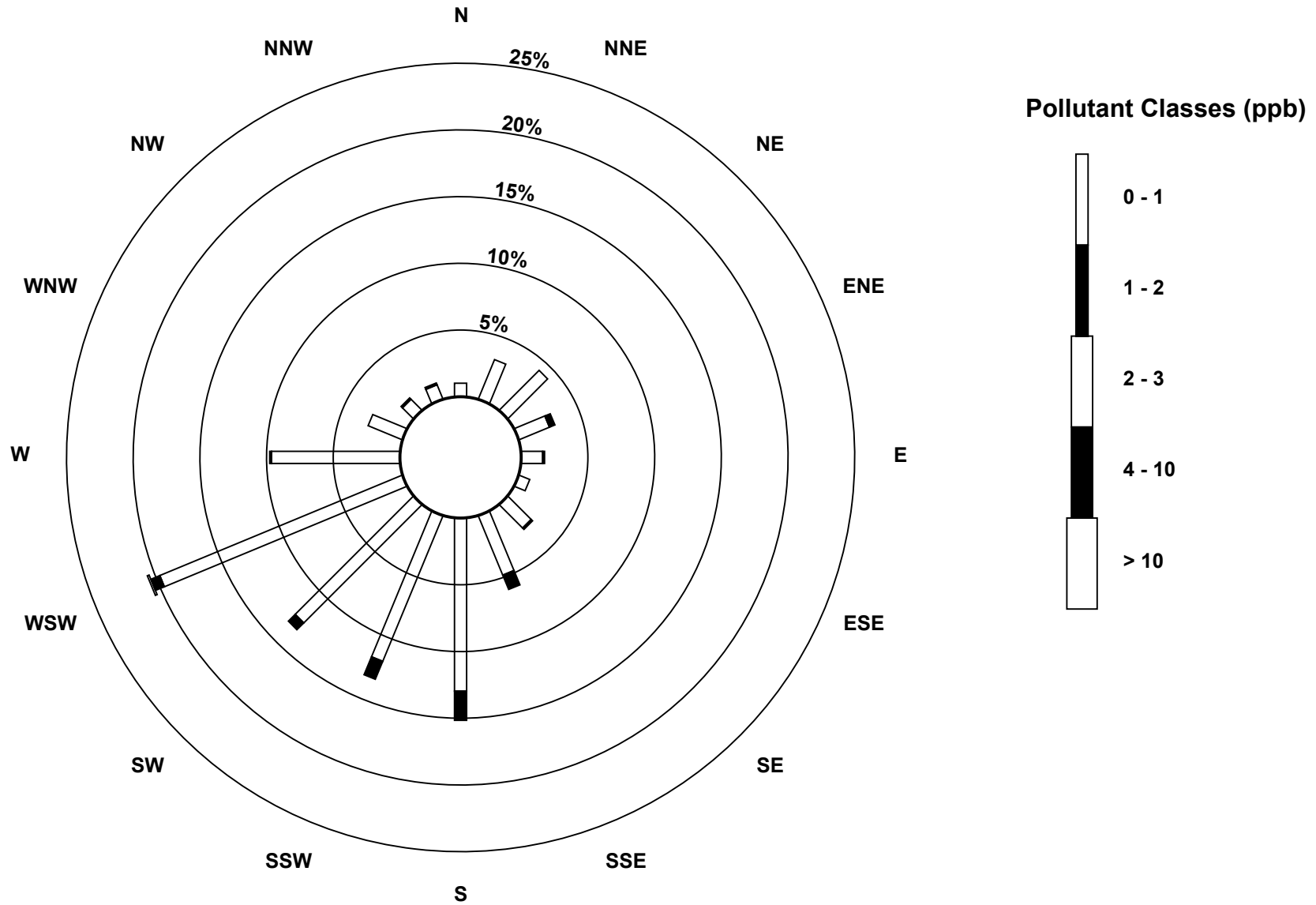
**Hourly Maximums**

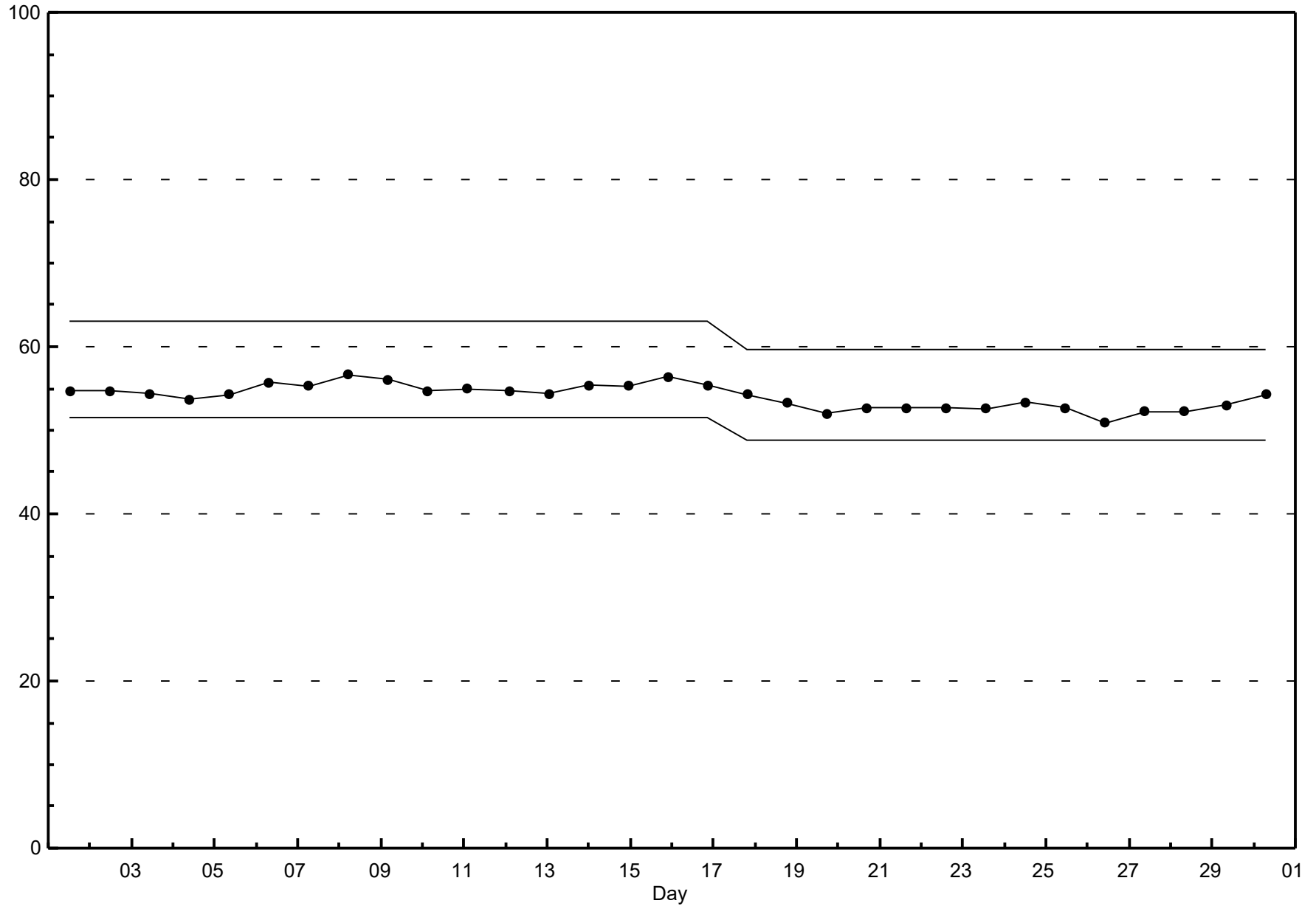
**Total Reduced Sulphur (TRS) - ppb**  
**Portable Rycroft - June 2016**



**Pollutant Rose**

**Total Reduced Sulphur (TRS) - ppb**  
**Portable Rycroft - June 2016**





## Hourly Averages

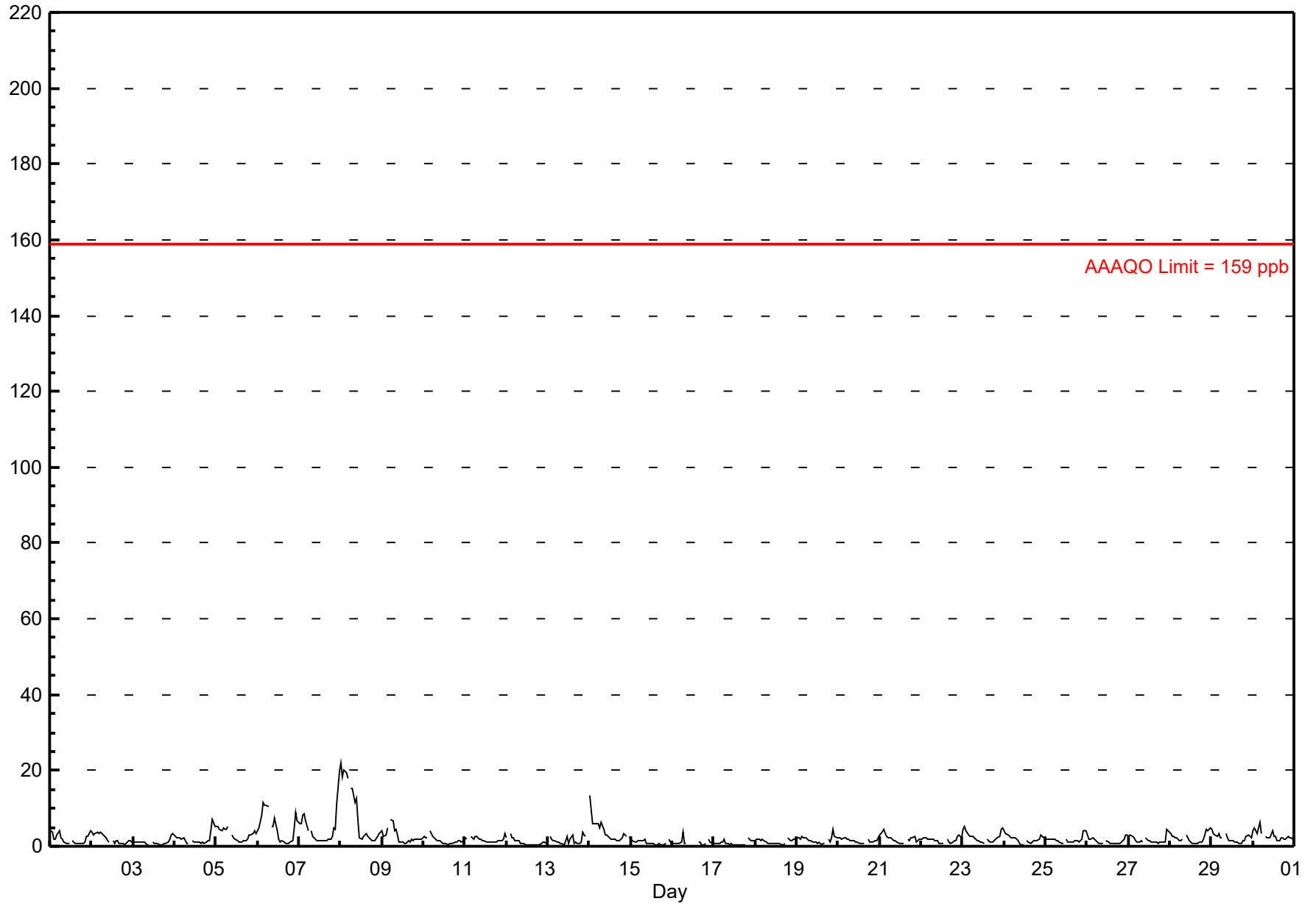
Nitrogen Dioxide (NO<sub>2</sub>) - ppb

Portable Rycroft - June 2016

|  |   |          |                           |       |
|--|---|----------|---------------------------|-------|
| Number of Exceedences (AAQO):              | 1-hr: 0   | 24-hr: 0 | Hours in Service:         | 720   |
| Maximum Value: 22.2 ppb on Jun 8 01:00     | Maximum Daily Average: 8.3 ppb on Jun 8   |          | Hours of Data:            | 683   |
| Minimum Value: 0 ppb on Jun 17 18:00       | Minimum Daily Average: 0.8 ppb on Jun 17  |          | Hours of Missing Data:    | 37    |
| Maximum Diurnal Average: 4.0 ppb at hour 1 | Minimum Diurnal Average: 1.0 ppb at hour 16   |          | Hours of Calibration:     | 37    |
| Monthly Average: 2.26 ppb                  | Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.7 Q <sub>1</sub> = 1.0 Median = 1.6 Q <sub>3</sub> = 2.5 P <sub>90</sub> = 4.3 P <sub>99</sub> = 14.4 |          | Percent Operational Time: | 100.0 |

| Day    | Hourly Period Ending At (MST) |      |      |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      | Daily Average   | Daily Maximum |
|--------|-------------------------------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|-----------------|---------------|
|        | 1                             | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23   | 24   |                 |               |
| 1-Jun  | 4                             | 4    | 2    | 2    | 3    | 4    | 2    | 2    | 1    | 1    | 1   | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 3   | 3    | 4    | 1.8             | 4.1           |
| 2-Jun  | 4                             | 3    | 3    | 4    | 3    | 4    | 3    | 3    | 2    | 2    | 1   | A   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 2   | 1    | 1    | 1.9             | 3.9           |
| 3-Jun  | 1                             | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 0    | 0    | A   | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 2   | 3    | 3    | 1.0             | 3.2           |
| 4-Jun  | 2                             | 2    | 2    | 2    | 2    | 2    | 1    | 1    | 1    | A    | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 4   | 7    | 5    | 1.9             | 7.0           |
| 5-Jun  | 5                             | 5    | 4    | 4    | 5    | 4    | 4    | 5    | A    | 3    | 2   | 2   | 1   | 1   | 1   | 1   | 1   | 2   | 2   | 3   | 3   | 4   | 4    | 4    | 3.1             | 5.3           |
| 6-Jun  | 4                             | 5    | 8    | 12   | 11   | 11   | 10   | A    | 5    | 5    | 8   | 4   | 2   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 5   | 9    | 7    | 5.0             | 11.5          |
| 7-Jun  | 6                             | 6    | 8    | 8    | 7    | 4    | A    | 4    | 3    | 2    | 2   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 3   | 5   | 4   | 11   | 20   | 4.5             | 19.6          |
| 8-Jun  | 22                            | 18   | 20   | 19   | 18   | A    | 15   | 15   | 11   | 13   | 7   | 2   | 2   | 2   | 3   | 3   | 3   | 2   | 2   | 1   | 1   | 2   | 4    | 4    | 8.3             | 22.2          |
| 9-Jun  | 4                             | 3    | 3    | 5    | A    | 7    | 7    | 4    | 5    | 3    | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 2   | 1   | 2   | 2   | 2   | 2    | 2    | 2.6             | 7.1           |
| 10-Jun | 3                             | 2    | 2    | A    | 4    | 3    | 2    | 2    | 2    | 1    | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1   | 2   | 2   | 1    | 2    | 1.5             | 4.2           |
| 11-Jun | 2                             | 2    | A    | 3    | 2    | 2    | 2    | 3    | 2    | 2    | 2   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 2    | 3    | 1.7             | 3.3           |
| 12-Jun | 2                             | A    | 4    | 2    | 2    | 2    | 2    | 1    | 1    | 1    | 1   | 0   | 1   | 0   | 0   | 1   | 0   | 0   | 0   | 1   | 1   | 1   | 1    | 1    | 1.1             | 3.5           |
| 13-Jun | A                             | 3    | 2    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1   | 3   | 1   | 2   | 3   | 1   | 1   | 1   | 1   | 1   | 4   | 3   | 3    | A    | 1.6             | 3.7           |
| 14-Jun | 13                            | 10   | 6    | 6    | 6    | 6    | 5    | 6    | 5    | 3    | 3   | 3   | 2   | 2   | 2   | 2   | 2   | 1   | 2   | 2   | 3   | 2   | A    | 3    | 4.1             | 13.4          |
| 15-Jun | 2                             | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 2    | 1    | 1   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 0   | 0   | 1   | A   | 2    | 1    | 1.0             | 1.8           |
| 16-Jun | 1                             | 1    | 1    | 1    | 1    | 1    | 4    | 1    | 1    | C    | C   | C   | C   | C   | C   | 1   | 1   | 1   | 1   | 1   | A   | 2   | 1    | 1    | --              | 3.9           |
| 17-Jun | 1                             | 1    | 1    | 1    | 1    | 1    | 2    | 1    | 1    | 1    | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | A   | 2   | 2   | 1    | 1    | 0.8             | 2.4           |
| 18-Jun | 2                             | 2    | 2    | 1    | 2    | 1    | 1    | 1    | 1    | 1    | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 2   | 2   | 1   | 2    | 2    | 1.2             | 2.1           |
| 19-Jun | 2                             | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 1    | 1    | 1   | 1   | 1   | 0   | 1   | 1   | A   | A   | 2   | 1   | 2   | 5   | 3    | 2    | 1.8             | 4.6           |
| 20-Jun | 2                             | 2    | 2    | 2    | 2    | 2    | 2    | 1    | 1    | 1    | 1   | 1   | 1   | 1   | 1   | A   | 2   | 1   | 1   | 1   | 1   | 2   | 1    | 2    | 1.5             | 2.4           |
| 21-Jun | 3                             | 3    | 5    | 4    | 3    | 2    | 2    | 2    | 2    | 2    | 1   | 1   | 1   | 1   | 1   | A   | 2   | 1   | 2   | 2   | 3   | 1   | 1    | 2    | 2.0             | 4.5           |
| 22-Jun | 2                             | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 1    | 1    | 1   | 1   | 1   | 1   | A   | 2   | 1   | 1   | 1   | 1   | 2   | 3   | 3    | 2    | 1.7             | 3.1           |
| 23-Jun | 4                             | 5    | 4    | 3    | 3    | 2    | 2    | 2    | 2    | 2    | 1   | 1   | 1   | A   | 2   | 2   | 1   | 1   | 1   | 2   | 2   | 3   | 5    | 5    | 2.4             | 5.3           |
| 24-Jun | 4                             | 3    | 3    | 2    | 2    | 2    | 2    | 2    | 1    | 1    | 1   | 1   | A   | 2   | 1   | 1   | 1   | 1   | 1   | 1   | 2   | 3   | 2    | 2    | 1.8             | 4.2           |
| 25-Jun | 2                             | 2    | 2    | 2    | 2    | 2    | 1    | 1    | 1    | 1    | 1   | A   | 2   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 2   | 2   | 4    | 4    | 1.7             | 4.2           |
| 26-Jun | 3                             | 2    | 2    | 2    | 2    | 1    | 1    | 1    | 1    | 1    | A   | 2   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 2   | 3    | 3    | 1.4             | 3.1           |
| 27-Jun | 3                             | 3    | 3    | 2    | 2    | 1    | 1    | 1    | 1    | 1    | A   | 2   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 4    | 4    | 1.8             | 4.4           |
| 28-Jun | 3                             | 3    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 3   | 2   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 2   | 3   | 4   | 4    | 5    | 2.1             | 4.8           |
| 29-Jun | 4                             | 3    | 3    | 3    | 3    | 2    | 2    | A    | A    | 3    | 2   | 2   | 2   | 2   | 1   | 1   | 1   | 1   | 1   | 2   | 2   | 3   | 2    | 2    | 2.2             | 4.3           |
| 30-Jun | 4                             | 5    | 3    | 5    | 6    | 3    | A    | 3    | 2    | 2    | 2   | 4   | 3   | 3   | 2   | 1   | 2   | 2   | 2   | 2   | 3   | 2   | 2    | 2    | 2.9             | 6.2           |
|        | 4.0                           | 3.6  | 3.5  | 3.6  | 3.5  | 2.8  | 3.0  | 2.6  | 2.1  | 2.0  | 1.8 | 1.4 | 1.2 | 1.1 | 1.1 | 1.0 | 1.1 | 1.1 | 1.2 | 1.4 | 1.9 | 2.5 | 3.2  | 3.4  | Diurnal Average |               |
|        | 22.2                          | 18.4 | 20.1 | 19.3 | 17.9 | 10.9 | 15.2 | 15.2 | 11.5 | 12.7 | 7.6 | 4.2 | 2.8 | 2.7 | 2.8 | 3.2 | 2.7 | 2.3 | 2.2 | 2.8 | 4.8 | 5.0 | 11.2 | 19.6 | Diurnal Maximum |               |

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAQO): 1-hr 159 ppb    24-hr 106 ppb





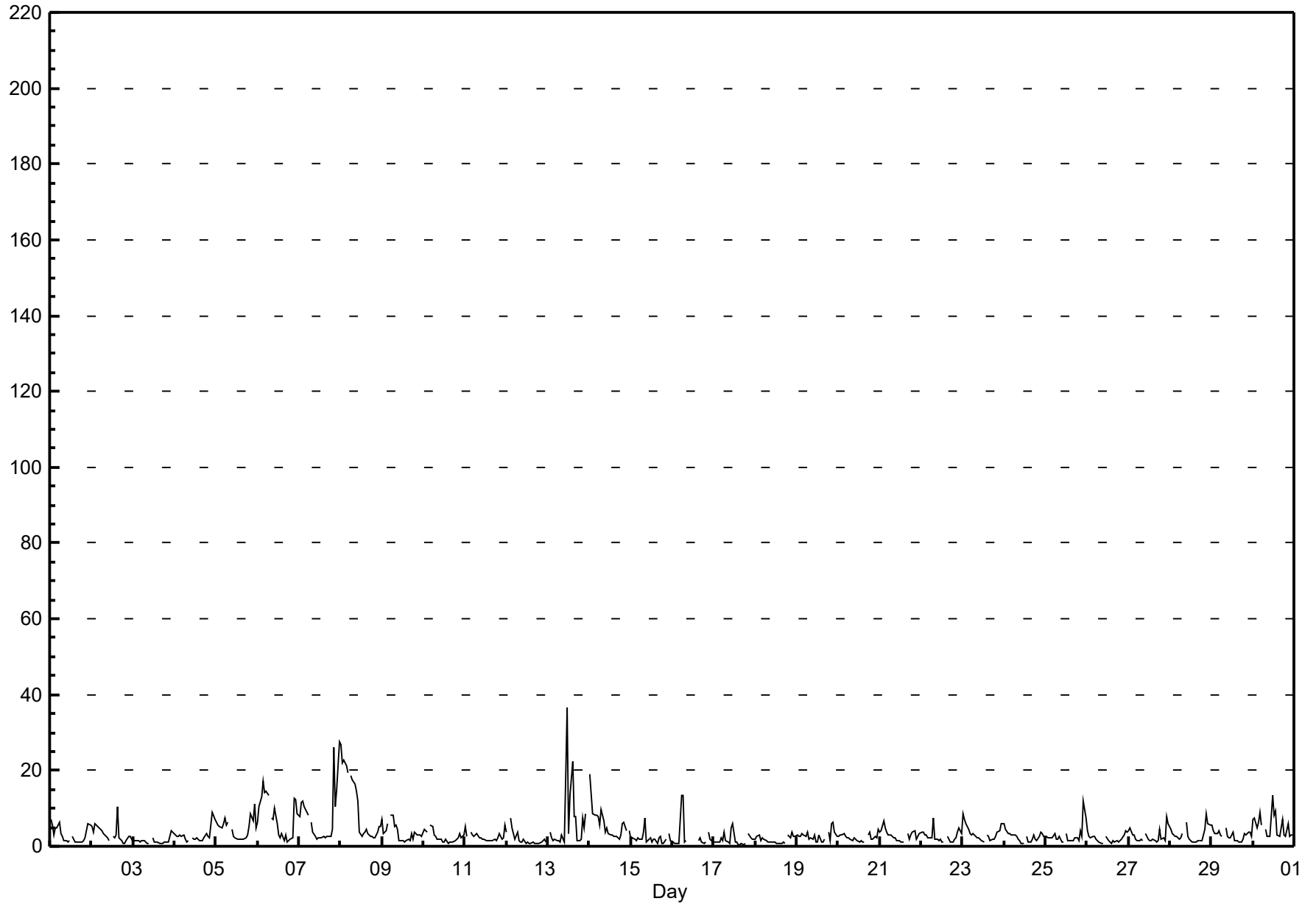
## Hourly Maximums

Nitrogen Dioxide (NO<sub>2</sub>) - ppb  
Portable Rycroft - June 2016

| Maximum Value: 36.5 ppb on Jun 13 12:00    |                               | Maximum Daily Average: 10.3 ppb on Jun 8  |      | Hours in Service: 720           |      |      |      |      |      |      |      |      |      |     |      |      |      |     |     |     |     |      |      |      |                 |                 |     |
|--|-------------------------------|---|------|---------------------------------|------|------|------|------|------|------|------|------|------|-----|------|------|------|-----|-----|-----|-----|------|------|------|-----------------|-----------------|-----|
| Minimum Value: 0 ppb on Jun 17 16:00       |                               | Minimum Daily Average: 1.5 ppb on Jun 3   |      | Hours of Data: 683              |      |      |      |      |      |      |      |      |      |     |      |      |      |     |     |     |     |      |      |      |                 |                 |     |
| Maximum Diurnal Average: 5.7 ppb at hour 1 |                               | Minimum Diurnal Average: 1.9 ppb at hour 18   |      | Hours of Missing Data: 37       |      |      |      |      |      |      |      |      |      |     |      |      |      |     |     |     |     |      |      |      |                 |                 |     |
| Monthly Average: 3.60 ppb                  |                               | Percentiles: P <sub>1</sub> = 0.6 P <sub>10</sub> = 1.1 Q <sub>1</sub> = 1.5 Median = 2.5 Q <sub>3</sub> = 3.9 P <sub>90</sub> = 7.1 P <sub>99</sub> = 21.6 |      | Hours of Calibration: 37        |      |      |      |      |      |      |      |      |      |     |      |      |      |     |     |     |     |      |      |      |                 |                 |     |
|  |                               |   |      | Percent Operational Time: 100.0 |      |      |      |      |      |      |      |      |      |     |      |      |      |     |     |     |     |      |      |      |                 |                 |     |
| Day  | Hourly Period Ending At (MST) |   |      |                                 |      |      |      |      |      |      |      |      |      |     |      |      |      |     |     |     |     |      |      |      | Daily Average   | Daily Maximum   |     |
|  | 1                             | 2   | 3    | 4                               | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14  | 15   | 16   | 17   | 18  | 19  | 20  | 21  | 22   | 23   | 24   |                 |                 |     |
| 1-Jun                                      | 7                             | 6   | 3    | 5                               | 5    | 6    | 3    | 3    | 1    | 1    | 1    | 1    | A    | 2   | 1    | 1    | 1    | 1   | 1   | 1   | 2   | 4    | 6    | 6    | 3.1             | 7.1             |     |
| 2-Jun                                      | 5                             | 4   | 6    | 5                               | 5    | 5    | 4    | 3    | 3    | 2    | 1    | A    | 3    | 2   | 3    | 10   | 2    | 1   | 1   | 1   | 2   | 3    | 2    | 2    | 3.3             | 10.3            |     |
| 3-Jun                                      | 1                             | 1   | 1    | 1                               | 1    | 1    | 1    | 1    | 1    | 1    | A    | 2    | 1    | 1   | 1    | 1    | 1    | 1   | 1   | 1   | 1   | 3    | 4    | 4    | 1.5             | 4.0             |     |
| 4-Jun                                      | 3                             | 3   | 3    | 3                               | 3    | 3    | 2    | 1    | 1    | A    | 2    | 2    | 2    | 2   | 1    | 2    | 2    | 2   | 4   | 3   | 2   | 6    | 9    | 7    | 2.9             | 9.1             |     |
| 5-Jun                                      | 6                             | 6   | 5    | 5                               | 6    | 8    | 5    | 6    | A    | 4    | 3    | 2    | 2    | 2   | 2    | 2    | 2    | 2   | 3   | 5   | 9   | 7    | 11   | 5    | 4.7             | 11.0            |     |
| 6-Jun                                      | 6                             | 10  | 13   | 17                              | 14   | 14   | 13   | A    | 8    | 7    | 10   | 6    | 3    | 2   | 3    | 2    | 3    | 1   | 1   | 2   | 2   | 13   | 12   | 9    | 7.5             | 17.0            |     |
| 7-Jun                                      | 8                             | 11  | 12   | 10                              | 10   | 8    | A    | 6    | 4    | 3    | 2    | 2    | 2    | 2   | 2    | 3    | 2    | 3   | 4   | 26  | 10  | 15   | 28   | 7.7  | 27.7            |                 |     |
| 8-Jun                                      | 27                            | 22  | 23   | 21                              | 19   | A    | 19   | 18   | 16   | 14   | 12   | 4    | 3    | 3   | 4    | 4    | 3    | 3   | 2   | 2   | 2   | 4    | 5    | 5    | 10.3            | 26.9            |     |
| 9-Jun                                      | 7                             | 3   | 4    | 6                               | A    | 8    | 8    | 5    | 6    | 4    | 2    | 1    | 1    | 1   | 2    | 2    | 2    | 3   | 2   | 4   | 3   | 3    | 3    | 2    | 3.6             | 8.2             |     |
| 10-Jun                                     | 4                             | 4   | 4    | A                               | 6    | 5    | 3    | 2    | 2    | 2    | 2    | 2    | 1    | 1   | 2    | 1    | 1    | 1   | 1   | 2   | 2   | 4    | 2    | 3    | 2.4             | 5.7             |     |
| 11-Jun                                     | 5                             | 3   | A    | 4                               | 3    | 3    | 3    | 3    | 2    | 2    | 2    | 2    | 2    | 1   | 1    | 1    | 2    | 2   | 2   | 2   | 3   | 2    | 2    | 6    | 2.5             | 5.6             |     |
| 12-Jun                                     | 4                             | A   | 7    | 5                               | 3    | 2    | 4    | 2    | 1    | 1    | 2    | 1    | 1    | 1   | 1    | 1    | 1    | 1   | 1   | 1   | 1   | 1    | 2    | 1    | 1.9             | 7.5             |     |
| 13-Jun                                     | A                             | 4   | 2    | 2                               | 2    | 1    | 2    | 1    | 3    | 1    | 18   | 37   | 3    | 14  | 22   | 8    | 8    | 1   | 2   | 2   | 7   | 5    | 8    | A    | 6.9             | 36.5            |     |
| 14-Jun                                     | 19                            | 14  | 9    | 8                               | 8    | 8    | 6    | 10   | 7    | 4    | 5    | 3    | 3    | 3   | 3    | 3    | 2    | 2   | 3   | 6   | 6   | 4    | A    | 4    | 6.0             | 19.1            |     |
| 15-Jun                                     | 2                             | 2   | 2    | 1                               | 2    | 2    | 2    | 4    | 7    | 1    | 1    | 2    | 1    | 2   | 2    | 1    | 2    | 3   | 1   | 1   | 2   | A    | 3    | 1    | 2.1             | 7.3             |     |
| 16-Jun                                     | 1                             | 1   | 1    | 1                               | 1    | 13   | 14   | 1    | 1    | C    | C    | C    | C    | C   | C    | 2    | 2    | 1   | 1   | 1   | A   | 4    | 2    | 1    | --              | 13.5            |     |
| 17-Jun                                     | 1                             | 1   | 1    | 1                               | 2    | 1    | 4    | 1    | 1    | 1    | 5    | 6    | 1    | 1   | 1    | 0    | 1    | 1   | 1   | 1   | A   | 3    | 2    | 2    | 2               | 1.7             | 6.1 |
| 18-Jun                                     | 2                             | 3   | 3    | 2                               | 2    | 2    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1   | 1    | 1    | 1    | 1   | 1   | 1   | A   | 3    | 2    | 4    | 3               | 1.7             | 3.8 |
| 19-Jun                                     | 3                             | 3   | 3    | 3                               | 3    | 3    | 3    | 4    | 2    | 2    | 2    | 3    | 1    | 1   | 3    | 1    | 1    | 2   | A   | 4   | 2   | 6    | 6    | 4    | 3               | 2.7             | 6.2 |
| 20-Jun                                     | 3                             | 3   | 3    | 3                               | 3    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 1    | 1   | 1    | 1    | A    | A   | 3   | 4   | 2   | 2    | 3    | 2    | 4               | 2.3             | 4.3 |
| 21-Jun                                     | 4                             | 4   | 7    | 5                               | 4    | 3    | 3    | 3    | 2    | 2    | 2    | 1    | 1    | 1   | 1    | A    | 3    | 2   | 3   | 4   | 4   | 2    | 2    | 3    | 2.9             | 6.8             |     |
| 22-Jun                                     | 4                             | 4   | 3    | 3                               | 2    | 2    | 2    | 7    | 2    | 2    | 1    | 2    | 1    | 1   | A    | 3    | 2    | 1   | 1   | 2   | 2   | 4    | 5    | 3    | 2.6             | 7.5             |     |
| 23-Jun                                     | 8                             | 7   | 6    | 4                               | 3    | 3    | 3    | 3    | 2    | 2    | 2    | 2    | 1    | A   | 3    | 3    | 2    | 2   | 2   | 3   | 4   | 4    | 6    | 6    | 3.5             | 8.5             |     |
| 24-Jun                                     | 6                             | 5   | 3    | 3                               | 3    | 3    | 3    | 3    | 2    | 1    | 1    | 1    | A    | 3   | 1    | 1    | 2    | 3   | 2   | 2   | 3   | 4    | 3    | 3    | 2.6             | 6.0             |     |
| 25-Jun                                     | 3                             | 2   | 2    | 2                               | 2    | 3    | 2    | 2    | 3    | 1    | 1    | A    | 3    | 2   | 2    | 1    | 1    | 2   | 2   | 2   | 4   | 3    | 12   | 7    | 2.8             | 11.9            |     |
| 26-Jun                                     | 4                             | 3   | 2    | 2                               | 3    | 2    | 1    | 1    | 1    | 1    | A    | 3    | 1    | 1   | 1    | 1    | 1    | 2   | 1   | 1   | 2   | 3    | 4    | 4    | 2.0             | 4.3             |     |
| 27-Jun                                     | 4                             | 5   | 3    | 3                               | 2    | 2    | 1    | 2    | 2    | A    | 3    | 2    | 2    | 1   | 2    | 2    | 1    | 1   | 4   | 2   | 2   | 1    | 8    | 6    | 2.7             | 8.0             |     |
| 28-Jun                                     | 4                             | 3   | 3    | 3                               | 3    | 2    | 2    | 3    | A    | 6    | 3    | 2    | 1    | 1   | 1    | 1    | 1    | 1   | 2   | 3   | 4   | 8    | 6    | 6    | 3.1             | 8.5             |     |
| 29-Jun                                     | 5                             | 4   | 3    | 3                               | 4    | 3    | 3    | A    | 5    | 3    | 2    | 2    | 4    | 2   | 1    | 2    | 1    | 1   | 2   | 3   | 3   | 4    | 4    | 3    | 2.9             | 5.4             |     |
| 30-Jun                                     | 7                             | 8   | 5    | 6                               | 9    | 6    | A    | 4    | 3    | 3    | 3    | 13   | 8    | 9   | 3    | 3    | 5    | 7   | 3   | 3   | 6   | 3    | 3    | 3    | 5.3             | 13.4            |     |
|  |                               | 5.7   | 5.1  | 4.9                             | 4.8  | 4.6  | 4.3  | 3.6  | 3.2  | 2.8  | 3.4  | 3.9  | 2.0  | 2.4 | 2.4  | 2.1  | 2.0  | 1.9 | 2.0 | 2.3 | 4.1 | 4.2  | 5.2  | 4.8  | Diurnal Average |                 |     |
|  |                               | 26.9  | 21.8 | 22.9                            | 21.2 | 19.4 | 14.4 | 18.8 | 17.6 | 16.2 | 14.4 | 18.2 | 36.5 | 8.3 | 13.5 | 22.4 | 10.3 | 7.8 | 7.0 | 4.4 | 6.1 | 26.2 | 12.8 | 14.8 | 27.7            | Diurnal Maximum |     |
| C - Calibration                            |                               | A - Automated Daily Zero Span   |      |                                 |      |      |      |      |      |      |      |      |      |     |      |      |      |     |     |     |     |      |      |      |                 |                 |     |

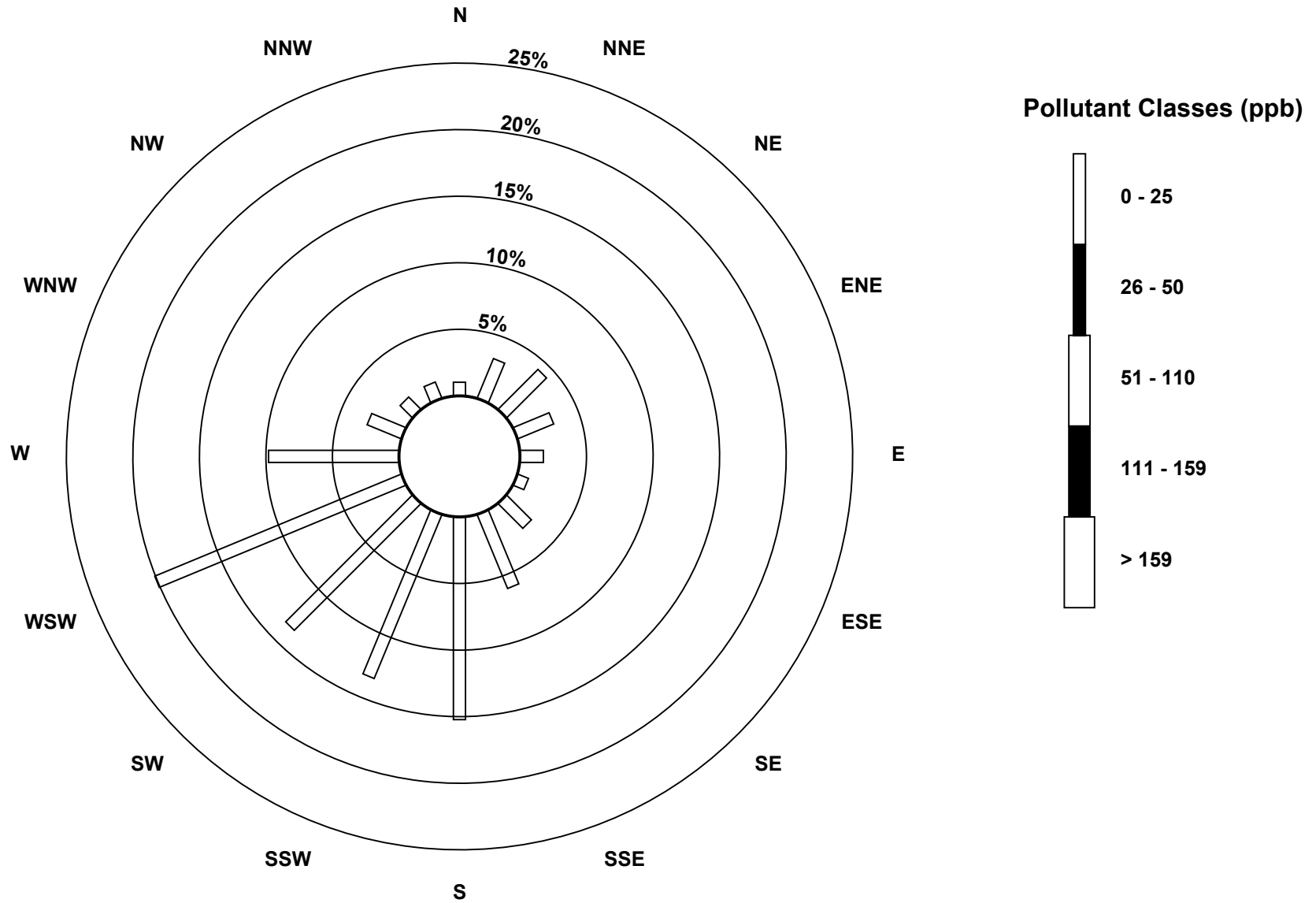
**Hourly Maximums**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Portable Rycroft - June 2016**



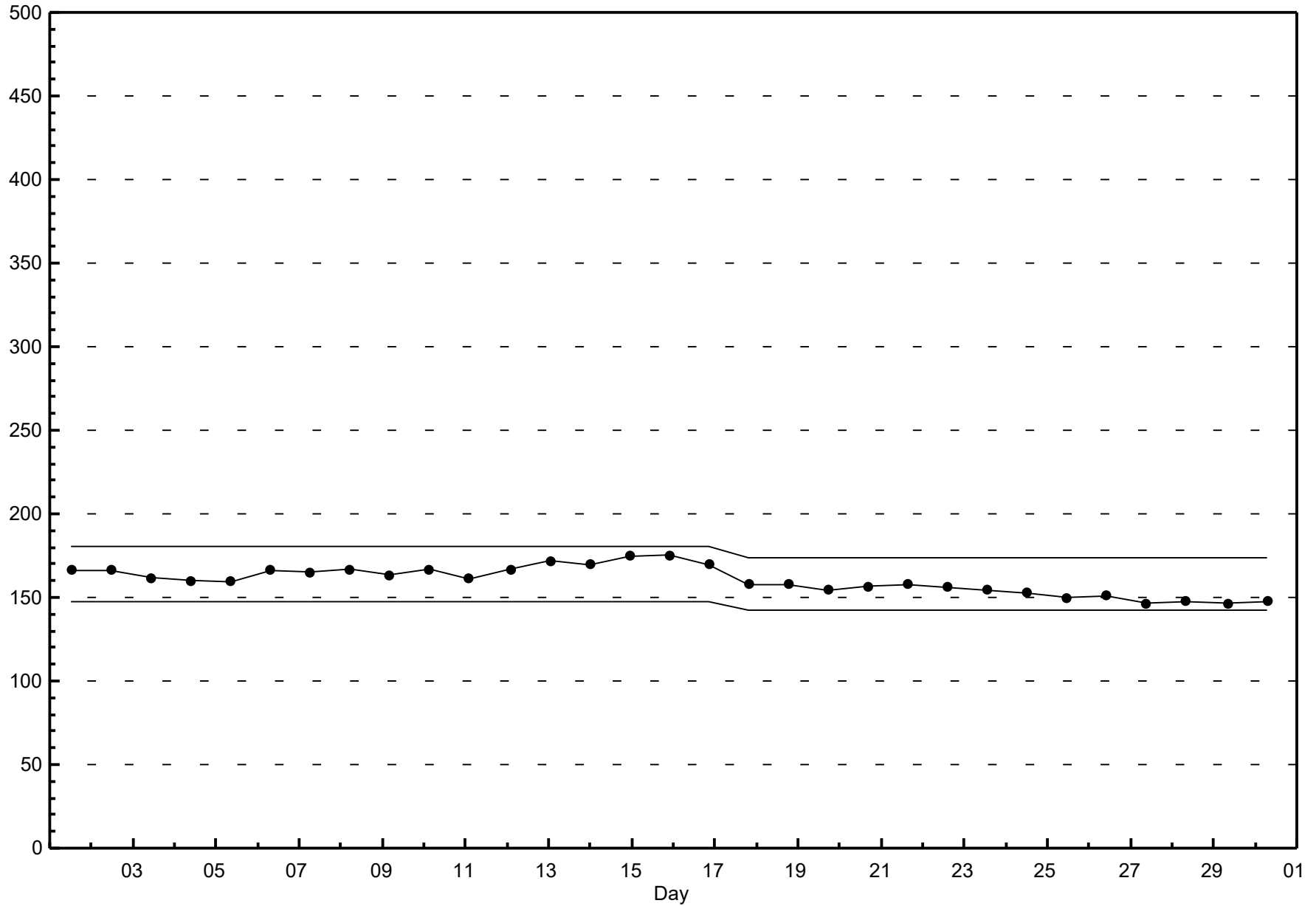
**Pollutant Rose**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Portable Rycroft - June 2016**



### Span Responses

Nitrogen Dioxide (NO<sub>2</sub>)  
Portable Rycroft - June 2016





Peace Airshed Zone Association

# Hourly Averages

Nitrogen Oxide (NO) - ppb  
 Portable Rycroft - June 2016

|  |  |          |                           |       |
|--|--|----------|---------------------------|-------|
| Number of Exceedences (AAQO):              | 1-hr: 0  | 24-hr: 0 | Hours in Service:         | 720   |
| Maximum Value: 5.6 ppb on Jun 8 07:00      | Maximum Daily Average: 1.7 ppb on Jun 8  |          | Hours of Data:            | 683   |
| Minimum Value: 0 ppb on Jun 16 19:00       | Minimum Daily Average: 0.2 ppb on Jun 15   |          | Hours of Missing Data:    | 37    |
| Maximum Diurnal Average: 0.9 ppb at hour 7 | Minimum Diurnal Average: 0.2 ppb at hour 22  |          | Hours of Calibration:     | 37    |
| Monthly Average: 0.37 ppb                  | Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.2 Median = 0.2 Q <sub>3</sub> = 0.4 P <sub>90</sub> = 0.6 P <sub>99</sub> = 4.0 |          | Percent Operational Time: | 100.0 |

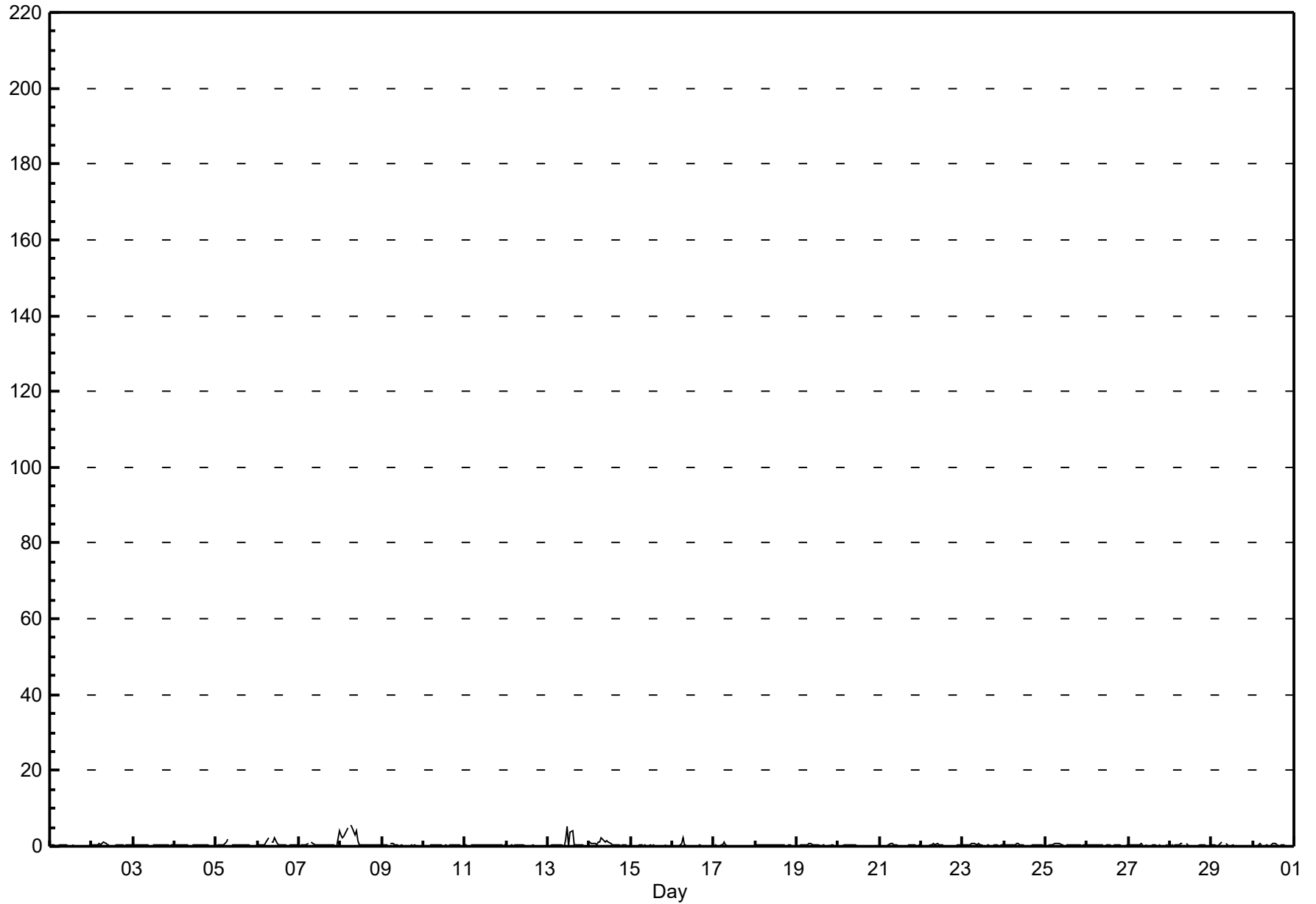
| Day    | Hourly Period Ending At (MST) |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Daily Average | Daily Maximum |     |
|--------|-------------------------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------|---------------|-----|
|        | 1                             | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |               |               |     |
| 1-Jun  | 0                             | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.2           | 0.5 |
| 2-Jun  | 0                             | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.4           | 1.2 |
| 3-Jun  | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.3           | 0.4 |
| 4-Jun  | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.3           | 0.4 |
| 5-Jun  | 0                             | 0 | 0 | 0 | 0 | 1 | 1 | 2 | A | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.4           | 1.7 |
| 6-Jun  | 0                             | 0 | 0 | 0 | 0 | 1 | 2 | A | 1 | 1  | 2  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.6           | 2.2 |
| 7-Jun  | 0                             | 0 | 1 | 0 | 0 | 1 | A | 1 | 1 | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 4             | 0.6           | 4.1 |
| 8-Jun  | 3                             | 2 | 3 | 4 | 5 | A | 6 | 5 | 3 | 4  | 1  | 0  | 0  | 0  | 0  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 1.7           | 5.6 |
| 9-Jun  | 0                             | 0 | 0 | 0 | A | 1 | 1 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.3           | 0.6 |
| 10-Jun | 0                             | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.2           | 0.4 |
| 11-Jun | 0                             | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.3           | 0.5 |
| 12-Jun | 0                             | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.2           | 0.4 |
| 13-Jun | A                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 2  | 5  | 0  | 4  | 4  | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.9           | 5.2 |
| 14-Jun | 1                             | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 1  | 1  | 1  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.7           | 2.2 |
| 15-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0             | 0.2           | 0.3 |
| 16-Jun | 0                             | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | C  | C  | C  | C  | C  | C  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0             | --            | 2.3 |
| 17-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0             | 0.2           | 1.0 |
| 18-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.3           | 0.4 |
| 19-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.3           | 0.6 |
| 20-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.2           | 0.5 |
| 21-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.3           | 0.7 |
| 22-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1  | 0  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.2           | 0.8 |
| 23-Jun | 0                             | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1  | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.4           | 0.8 |
| 24-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0  | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.3           | 0.6 |
| 25-Jun | 0                             | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0  | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.3           | 0.9 |
| 26-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.2           | 0.4 |
| 27-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | A  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.3           | 0.7 |
| 28-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 1 | 1 | A | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.3           | 0.9 |
| 29-Jun | 0                             | 0 | 0 | 0 | 0 | 1 | 1 | A | 1 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.2           | 1.1 |
| 30-Jun | 0                             | 0 | 0 | 0 | 1 | 1 | A | 0 | 1 | 0  | 0  | 1  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0             | 0.3           | 0.9 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |     |                 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|-----|-----------------|
| 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.5 | 0.9 | 0.8 | 0.6 | 0.5 | 0.5 | 0.5 | 0.3 | 0.4 | 0.4 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2             | 0.3 | Diurnal Average |
| 2.8 | 2.4 | 2.6 | 4.0 | 4.8 | 1.3 | 5.6 | 4.8 | 2.9 | 4.0 | 2.1 | 5.2 | 0.9 | 3.8 | 4.3 | 0.4 | 0.6 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.4 | 0.4 | 4.1 | Diurnal Maximum |     |                 |

C - Calibration                      A - Automated Daily Zero Span

**Hourly Averages**

**Nitrogen Oxide (NO) - ppb**  
**Portable Rycroft - June 2016**



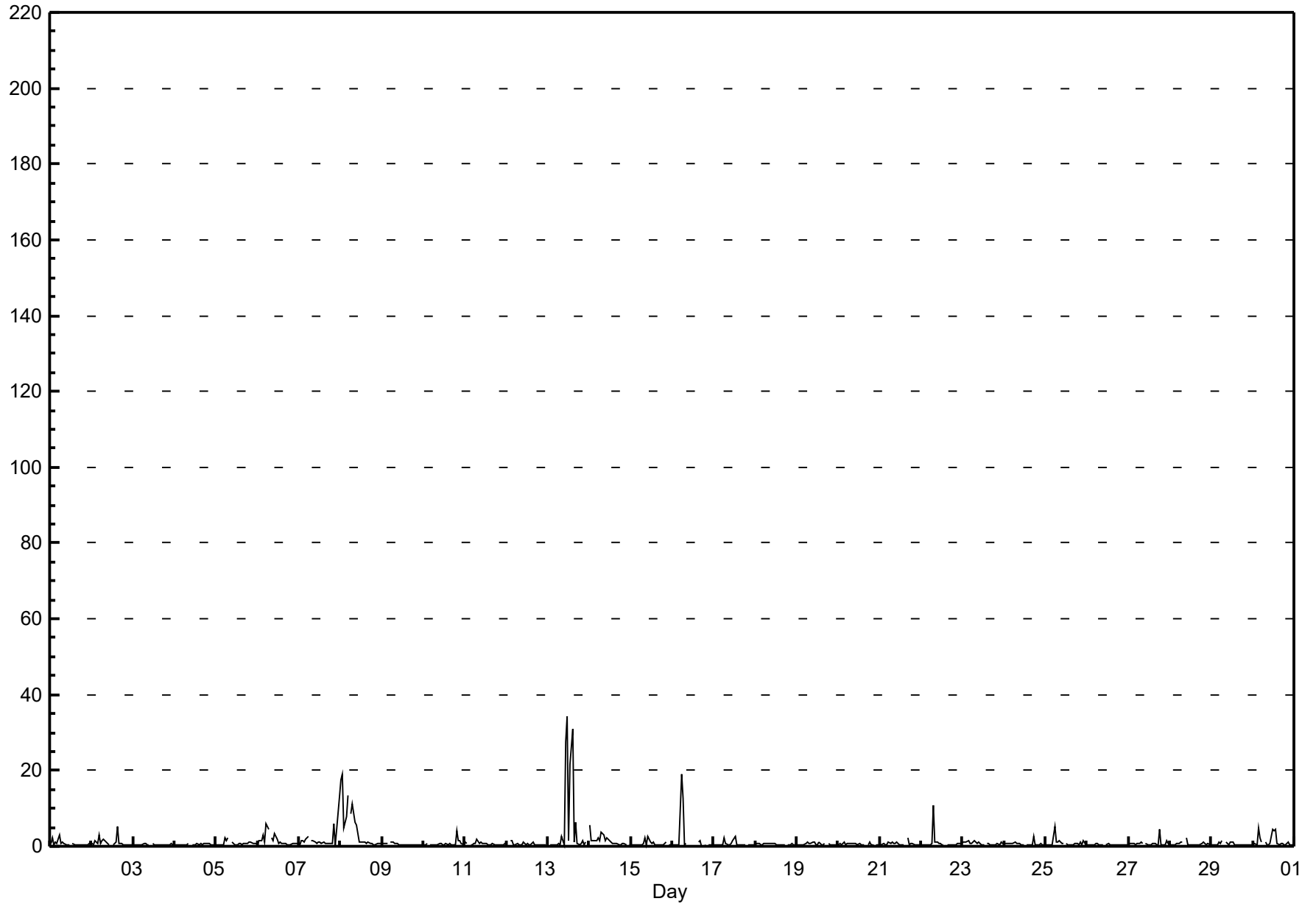
## Hourly Maximums

Nitrogen Oxide (NO) - ppb  
Portable Rycroft - June 2016

| Maximum Value: 34.2 ppb on Jun 13 12:00     |                               | Maximum Daily Average: 6.1 ppb on Jun 13  |     | Hours in Service: 720           |      |      |      |      |     |     |      |      |     |      |      |     |     |     |     |     |     |     |     |      |                 |               |  |
|---|-------------------------------|---|-----|---------------------------------|------|------|------|------|-----|-----|------|------|-----|------|------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----------------|---------------|--|
| Minimum Value: 0 ppb on Jun 16 19:00        |                               | Minimum Daily Average: 0.5 ppb on Jun 26  |     | Hours of Data: 683              |      |      |      |      |     |     |      |      |     |      |      |     |     |     |     |     |     |     |     |      |                 |               |  |
| Maximum Diurnal Average: 2.1 ppb at hour 12 |                               | Minimum Diurnal Average: 0.5 ppb at hour 22   |     | Hours of Missing Data: 37       |      |      |      |      |     |     |      |      |     |      |      |     |     |     |     |     |     |     |     |      |                 |               |  |
| Monthly Average: 1.15 ppb                   |                               | Percentiles: P <sub>1</sub> = 0.2 P <sub>10</sub> = 0.3 Q <sub>1</sub> = 0.4 Median = 0.5 Q <sub>3</sub> = 0.9 P <sub>90</sub> = 1.6 P <sub>99</sub> = 16.9 |     | Hours of Calibration: 37        |      |      |      |      |     |     |      |      |     |      |      |     |     |     |     |     |     |     |     |      |                 |               |  |
|   |                               |   |     | Percent Operational Time: 100.0 |      |      |      |      |     |     |      |      |     |      |      |     |     |     |     |     |     |     |     |      |                 |               |  |
| Day   | Hourly Period Ending At (MST) |   |     |                                 |      |      |      |      |     |     |      |      |     |      |      |     |     |     |     |     |     |     |     |      | Daily Average   | Daily Maximum |  |
|   | 1                             | 2   | 3   | 4                               | 5    | 6    | 7    | 8    | 9   | 10  | 11   | 12   | 13  | 14   | 15   | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24   |                 |               |  |
| 1-Jun                                       | 1                             | 2   | 0   | 1                               | 1    | 3    | 1    | 1    | 1   | 1   | 1    | 0    | A   | 1    | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1    | 0.8             | 3.0           |  |
| 2-Jun                                       | 1                             | 0   | 2   | 1                               | 3    | 1    | 1    | 2    | 1   | 1   | 0    | A    | 0   | 1    | 1    | 5   | 1   | 1   | 1   | 0   | 0   | 0   | 0   | 0    | 1.0             | 5.1           |  |
| 3-Jun                                       | 0                             | 0   | 0   | 0                               | 0    | 0    | 1    | 1    | 0   | 1   | A    | 1    | 0   | 1    | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1    | 0.5             | 0.7           |  |
| 4-Jun                                       | 0                             | 0   | 0   | 0                               | 0    | 1    | 1    | 0    | 1   | A   | 1    | 1    | 0   | 1    | 0    | 1   | 1   | 1   | 1   | 1   | 1   | 0   | 0   | 0    | 0.5             | 0.8           |  |
| 5-Jun                                       | 0                             | 1   | 0   | 0                               | 1    | 2    | 2    | 2    | A   | 1   | 1    | 1    | 0   | 1    | 1    | 0   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1    | 0.9             | 2.4           |  |
| 6-Jun                                       | 1                             | 1   | 1   | 3                               | 1    | 6    | 5    | A    | 2   | 2   | 3    | 2    | 1   | 1    | 1    | 1   | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1    | 1.5             | 6.0           |  |
| 7-Jun                                       | 1                             | 2   | 2   | 1                               | 2    | 2    | A    | 2    | 1   | 1   | 1    | 1    | 1   | 1    | 1    | 1   | 1   | 1   | 1   | 1   | 6   | 0   | 4   | 13   | 2.0             | 13.2          |  |
| 8-Jun                                       | 17                            | 19  | 5   | 8                               | 14   | A    | 9    | 11   | 6   | 6   | 3    | 1    | 1   | 1    | 1    | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1    | 4.7             | 18.9          |  |
| 9-Jun                                       | 1                             | 1   | 1   | 1                               | A    | 1    | 1    | 1    | 1   | 1   | 0    | 0    | 0   | 0    | 0    | 0   | 0   | 1   | 0   | 1   | 0   | 0   | 0   | 0    | 0.6             | 1.2           |  |
| 10-Jun                                      | 1                             | 0   | 1   | A                               | 1    | 0    | 0    | 0    | 0   | 1   | 1    | 0    | 0   | 1    | 0    | 1   | 0   | 0   | 1   | 4   | 1   | 2   | 1   | 0    | 0.8             | 3.9           |  |
| 11-Jun                                      | 1                             | 1   | A   | 1                               | 0    | 1    | 1    | 2    | 1   | 1   | 1    | 1    | 1   | 0    | 0    | 0   | 1   | 0   | 1   | 0   | 0   | 0   | 0   | 1    | 0.6             | 1.7           |  |
| 12-Jun                                      | 0                             | A   | 2   | 1                               | 0    | 0    | 1    | 0    | 0   | 0   | 1    | 0    | 1   | 0    | 0    | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0    | 0.6             | 1.6           |  |
| 13-Jun                                      | A                             | 0   | 0   | 0                               | 0    | 0    | 1    | 0    | 3   | 0   | 28   | 34   | 2   | 22   | 31   | 1   | 6   | 1   | 1   | 1   | 1   | 0   | 1   | A    | 6.1             | 34.2          |  |
| 14-Jun                                      | 5                             | 2   | 2   | 2                               | 1    | 2    | 2    | 4    | 3   | 1   | 2    | 2    | 1   | 1    | 1    | 1   | 1   | 1   | 0   | 1   | 1   | 0   | A   | 0    | 1.5             | 5.4           |  |
| 15-Jun                                      | 0                             | 0   | 0   | 0                               | 0    | 0    | 0    | 1    | 2   | 0   | 3    | 1    | 1   | 1    | 0    | 0   | 0   | 0   | 0   | 0   | 1   | A   | 0   | 0    | 0.7             | 2.5           |  |
| 16-Jun                                      | 0                             | 0   | 0   | 0                               | 0    | 19   | 13   | 1    | 1   | C   | C    | C    | C   | C    | C    | 1   | 1   | 0   | 0   | 0   | 0   | A   | 0   | 0    | --              | 18.8          |  |
| 17-Jun                                      | 0                             | 0   | 0   | 0                               | 0    | 0    | 2    | 1    | 0   | 0   | 1    | 2    | 2   | 0    | 0    | 0   | 0   | 0   | 0   | 0   | A   | 0   | 0   | 0    | 0.6             | 2.5           |  |
| 18-Jun                                      | 0                             | 1   | 1   | 0                               | 0    | 1    | 1    | 1    | 1   | 1   | 1    | 1    | 0   | 0    | 0    | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 0    | 0.5             | 0.8           |  |
| 19-Jun                                      | 0                             | 0   | 0   | 0                               | 1    | 1    | 1    | 1    | 1   | 1   | 1    | 0    | 1   | 1    | 0    | 0   | 1   | A   | 1   | 0   | 0   | 0   | 0   | 0    | 0.6             | 1.2           |  |
| 20-Jun                                      | 0                             | 1   | 0   | 1                               | 0    | 1    | 1    | 1    | 1   | 1   | 1    | 0    | 1   | 0    | 0    | 0   | A   | 0   | 1   | 0   | 0   | 0   | 0   | 0    | 0.5             | 1.1           |  |
| 21-Jun                                      | 0                             | 0   | 1   | 1                               | 0    | 1    | 1    | 1    | 1   | 1   | 1    | 0    | 0   | 0    | 0    | A   | 2   | 0   | 1   | 1   | 0   | 0   | 0   | 0    | 0.7             | 2.4           |  |
| 22-Jun                                      | 0                             | 0   | 0   | 0                               | 0    | 0    | 1    | 11   | 1   | 1   | 1    | 1    | 0   | 0    | A    | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 1    | 0.9             | 10.9          |  |
| 23-Jun                                      | 1                             | 1   | 1   | 1                               | 1    | 1    | 1    | 2    | 1   | 1   | 1    | 1    | 0   | A    | 1    | 1   | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 1    | 0.8             | 1.6           |  |
| 24-Jun                                      | 1                             | 1   | 1   | 1                               | 1    | 1    | 1    | 1    | 1   | 1   | 0    | 1    | A   | 0    | 0    | 0   | 0   | 0   | 2   | 0   | 0   | 0   | 1   | 0    | 0.7             | 2.5           |  |
| 25-Jun                                      | 0                             | 0   | 0   | 0                               | 0    | 5    | 1    | 1    | 2   | 1   | 1    | A    | 1   | 0    | 0    | 0   | 0   | 1   | 1   | 0   | 1   | 0   | 1   | 0    | 0.9             | 5.2           |  |
| 26-Jun                                      | 0                             | 0   | 0   | 0                               | 1    | 1    | 1    | 1    | 1   | 0   | A    | 0    | 1   | 0    | 0    | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0    | 0.5             | 0.9           |  |
| 27-Jun                                      | 0                             | 1   | 1   | 1                               | 0    | 1    | 1    | 1    | 1   | 1   | A    | 1    | 0   | 0    | 0    | 1   | 1   | 0   | 0   | 4   | 0   | 0   | 2   | 1    | 0.8             | 4.4           |  |
| 28-Jun                                      | 0                             | 0   | 0   | 0                               | 1    | 1    | 1    | 1    | 1   | 1   | A    | 2    | 0   | 0    | 0    | 0   | 0   | 0   | 1   | 1   | 1   | 0   | 1   | 0    | 0.6             | 2.1           |  |
| 29-Jun                                      | 0                             | 0   | 0   | 0                               | 1    | 1    | 2    | A    | 1   | 1   | 1    | 1    | 1   | 1    | 0    | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0    | 0.6             | 1.6           |  |
| 30-Jun                                      | 1                             | 1   | 0   | 5                               | 2    | 1    | A    | 1    | 1   | 0   | 1    | 5    | 4   | 5    | 1    | 0   | 1   | 1   | 0   | 0   | 1   | 0   | 0   | 0    | 1.4             | 4.8           |  |
| 1.3   |                               | 1.3   | 0.8 | 1.1                             | 1.2  | 1.9  | 1.8  | 1.8  | 1.2 | 1.0 | 2.0  | 2.1  | 0.9 | 1.5  | 1.6  | 0.7 | 0.8 | 0.5 | 0.7 | 0.6 | 0.8 | 0.5 | 0.7 | 0.9  | Diurnal Average |               |  |
| 17.4  |                               | 18.9  | 4.8 | 7.7                             | 13.6 | 18.8 | 12.8 | 11.2 | 6.5 | 5.6 | 27.7 | 34.2 | 4.1 | 21.8 | 31.0 | 5.1 | 6.3 | 2.5 | 4.4 | 3.9 | 5.9 | 1.6 | 4.4 | 13.2 | Diurnal Maximum |               |  |
| C - Calibration                             |                               | A - Automated Daily Zero Span   |     |                                 |      |      |      |      |     |     |      |      |     |      |      |     |     |     |     |     |     |     |     |      |                 |               |  |

**Hourly Maximums**

**Nitrogen Oxide (NO) - ppb**  
**Portable Rycroft - June 2016**





## Hourly Averages

## Oxides of Nitrogen (NO<sub>x</sub>) - ppb

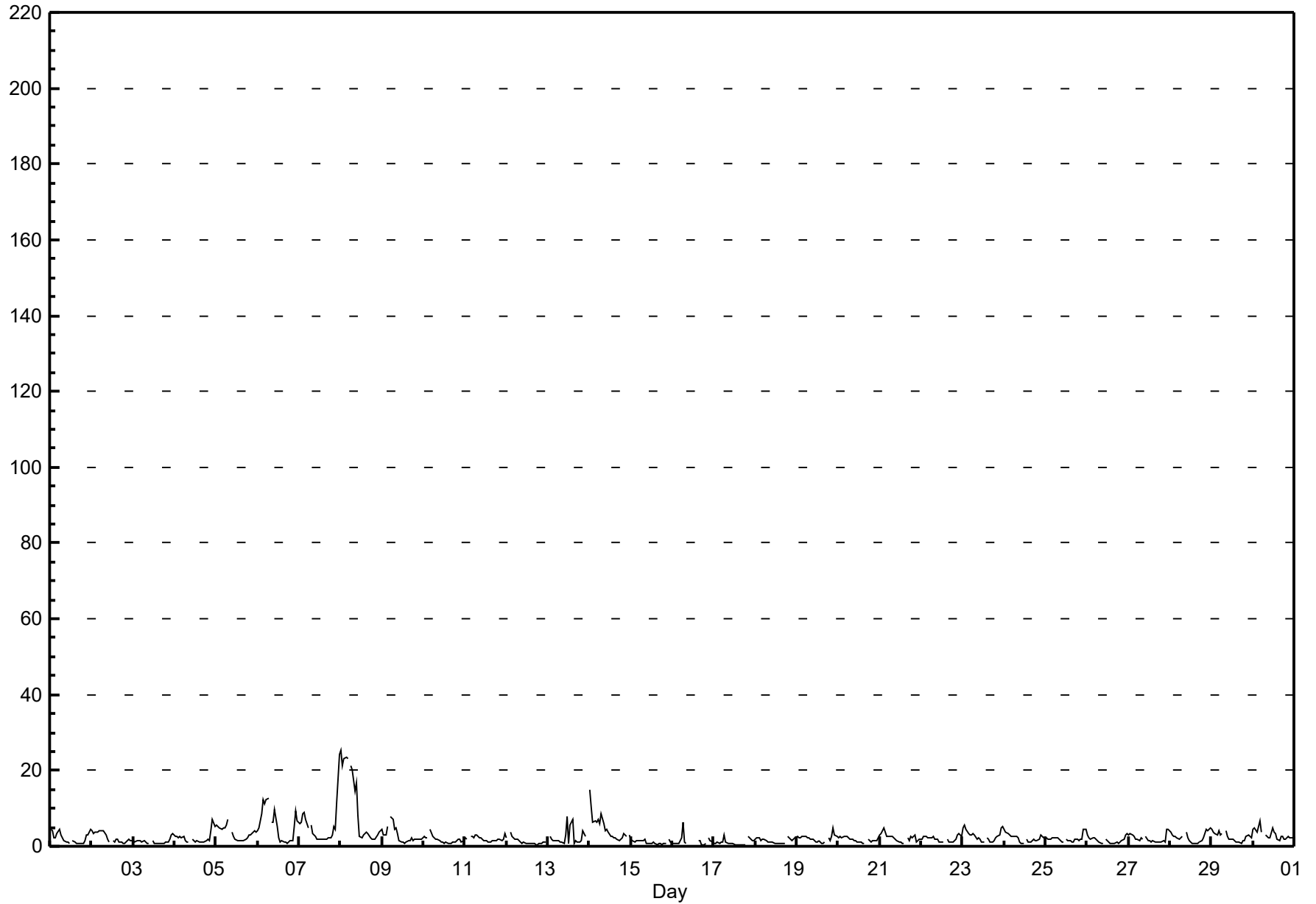
### Portable Rycroft - June 2016

|  |   |          |                           |       |
|--|---|----------|---------------------------|-------|
| Number of Exceedences (AAAQO):             | 1-hr: 0   | 24-hr: 0 | Hours in Service:         | 720   |
| Maximum Value: 25.4 ppb on Jun 8 01:00     | Maximum Daily Average: 10.2 ppb on Jun 8  |          | Hours of Data:            | 683   |
| Minimum Value: 0 ppb on Jun 17 18:00       | Minimum Daily Average: 1.0 ppb on Jun 17  |          | Hours of Missing Data:    | 37    |
| Maximum Diurnal Average: 4.3 ppb at hour 1 | Minimum Diurnal Average: 1.2 ppb at hour 16   |          | Hours of Calibration:     | 37    |
| Monthly Average: 2.63 ppb                  | Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.8 Q <sub>1</sub> = 1.2 Median = 1.9 Q <sub>3</sub> = 2.8 P <sub>90</sub> = 4.7 P <sub>99</sub> = 21.1 |          | Percent Operational Time: | 100.0 |

| Day    | Hourly Period Ending At (MST) |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Daily Average | Daily Maximum |
|--------|-------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------|---------------|
|        | 1                             | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |               |               |
| 1-Jun  | 4                             | 4  | 2  | 2  | 3  | 4  | 3  | 2  | 1  | 1  | 1  | 1  | A  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 3  | 3  | 4  | 2.1           | 4.4           |
| 2-Jun  | 4                             | 3  | 4  | 4  | 4  | 4  | 4  | 4  | 3  | 2  | 1  | A  | 2  | 1  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 1  | 2.3           | 4.2           |
| 3-Jun  | 1                             | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | A  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 3  | 3  | 1.3           | 3.5           |
| 4-Jun  | 3                             | 3  | 2  | 3  | 2  | 2  | 2  | 1  | 1  | A  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 4  | 7  | 5  | 2.2           | 7.2           |
| 5-Jun  | 5                             | 5  | 5  | 5  | 5  | 5  | 6  | 7  | A  | 4  | 3  | 2  | 1  | 1  | 1  | 1  | 2  | 2  | 2  | 3  | 3  | 4  | 4  | 4  | 3.5           | 7.0           |
| 6-Jun  | 4                             | 5  | 8  | 12 | 11 | 12 | 13 | A  | 7  | 6  | 10 | 5  | 2  | 1  | 2  | 1  | 1  | 1  | 1  | 1  | 2  | 5  | 9  | 7  | 5.5           | 12.8          |
| 7-Jun  | 6                             | 6  | 9  | 9  | 7  | 5  | A  | 5  | 4  | 3  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 3  | 5  | 4  | 11 | 24 | 5.1           | 24.1          |
| 8-Jun  | 25                            | 21 | 23 | 24 | 23 | A  | 21 | 20 | 14 | 17 | 8  | 2  | 2  | 3  | 3  | 4  | 3  | 2  | 2  | 2  | 2  | 3  | 4  | 4  | 10.2          | 25.4          |
| 9-Jun  | 4                             | 3  | 3  | 5  | A  | 8  | 7  | 5  | 5  | 3  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 1  | 2  | 2  | 2  | 2  | 2  | 2  | 2.8           | 7.7           |
| 10-Jun | 3                             | 2  | 2  | A  | 4  | 3  | 2  | 2  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 2  | 1  | 2  | 1.7           | 4.4           |
| 11-Jun | 2                             | 2  | A  | 3  | 2  | 2  | 3  | 3  | 2  | 2  | 2  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 2  | 2  | 4  | 2.0           | 3.5           |
| 12-Jun | 2                             | A  | 4  | 3  | 2  | 2  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1.3           | 3.9           |
| 13-Jun | A                             | 3  | 2  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 3  | 8  | 1  | 6  | 7  | 1  | 1  | 1  | 1  | 1  | 4  | 3  | 3  | A  | 2.4           | 8.0           |
| 14-Jun | 15                            | 10 | 6  | 7  | 6  | 7  | 6  | 9  | 6  | 4  | 4  | 4  | 3  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 4  | 3  | A  | 3  | 4.8           | 14.8          |
| 15-Jun | 2                             | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 0  | 1  | 1  | A  | 2  | 1  | 1  | 1.1           | 2.0           |
| 16-Jun | 1                             | 1  | 1  | 1  | 1  | 2  | 6  | 1  | 1  | C  | C  | C  | C  | C  | C  | 1  | 1  | 1  | 0  | 1  | A  | 2  | 1  | 1  | --            | 6.2           |
| 17-Jun | 1                             | 1  | 1  | 1  | 1  | 1  | 3  | 1  | 1  | 1  | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | A  | 3  | 2  | 2  | 1  | 1.0           | 2.9           |
| 18-Jun | 2                             | 2  | 2  | 2  | 2  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | A  | 2  | 2  | 2  | 2  | 2  | 1.4           | 2.4           |
| 19-Jun | 3                             | 2  | 2  | 3  | 3  | 3  | 3  | 2  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | A  | 2  | 1  | 2  | 5  | 3  | 2  | 2.0           | 4.8           |
| 20-Jun | 2                             | 3  | 2  | 3  | 3  | 2  | 2  | 2  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | A  | 2  | 1  | 1  | 1  | 2  | 1  | 2  | 1.7           | 2.6           |
| 21-Jun | 3                             | 3  | 5  | 4  | 3  | 3  | 3  | 3  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | A  | 2  | 2  | 3  | 2  | 3  | 1  | 2  | 2  | 2.2           | 4.7           |
| 22-Jun | 2                             | 3  | 2  | 2  | 2  | 2  | 2  | 3  | 2  | 2  | 1  | 1  | 1  | 1  | A  | 2  | 1  | 1  | 1  | 1  | 2  | 3  | 3  | 2  | 1.9           | 3.3           |
| 23-Jun | 5                             | 6  | 4  | 3  | 3  | 3  | 3  | 3  | 2  | 2  | 2  | 1  | 1  | A  | 2  | 2  | 1  | 1  | 2  | 2  | 3  | 3  | 5  | 5  | 2.8           | 5.7           |
| 24-Jun | 5                             | 4  | 3  | 3  | 3  | 3  | 3  | 3  | 2  | 1  | 1  | 1  | A  | 2  | 1  | 1  | 1  | 2  | 2  | 1  | 2  | 3  | 3  | 2  | 2.2           | 4.6           |
| 25-Jun | 2                             | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 2  | 1  | 1  | A  | 2  | 1  | 1  | 1  | 1  | 2  | 2  | 1  | 2  | 2  | 5  | 4  | 2.0           | 4.5           |
| 26-Jun | 3                             | 2  | 2  | 2  | 2  | 2  | 1  | 1  | 1  | 1  | A  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 3  | 3  | 1.6           | 3.4           |
| 27-Jun | 3                             | 3  | 3  | 2  | 2  | 2  | 2  | 2  | 2  | A  | 3  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 5  | 4  | 2.0           | 4.6           |
| 28-Jun | 4                             | 3  | 3  | 3  | 2  | 2  | 2  | 3  | A  | 4  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 2  | 3  | 4  | 4  | 5  | 2.4           | 4.9           |
| 29-Jun | 5                             | 4  | 3  | 3  | 4  | 3  | 3  | A  | 4  | 2  | 2  | 2  | 2  | 1  | 1  | 1  | 1  | 1  | 2  | 2  | 3  | 3  | 3  | 2  | 2.4           | 4.5           |
| 30-Jun | 4                             | 5  | 4  | 5  | 7  | 4  | A  | 3  | 3  | 2  | 2  | 5  | 4  | 3  | 2  | 2  | 3  | 3  | 2  | 2  | 3  | 2  | 2  | 2  | 3.2           | 6.9           |

|      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |      |      |                 |  |
|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|-----------------|--|
| 4.3  | 3.9  | 3.9  | 4.0  | 4.0  | 3.3  | 3.9  | 3.3  | 2.7  | 2.6  | 2.2 | 1.9 | 1.4 | 1.5 | 1.4 | 1.2 | 1.3 | 1.3 | 1.4 | 1.6 | 2.1 | 2.6 | 3.3  | 3.7  | Diurnal Average |  |
| 25.4 | 21.1 | 23.0 | 23.6 | 23.0 | 12.3 | 21.1 | 20.3 | 14.5 | 16.8 | 9.7 | 8.0 | 3.6 | 5.7 | 7.1 | 3.6 | 3.3 | 2.6 | 2.5 | 3.1 | 5.1 | 5.4 | 11.4 | 24.1 | Diurnal Maximum |  |

C - Calibration                      A - Automated Daily Zero Span



## Hourly Maximums

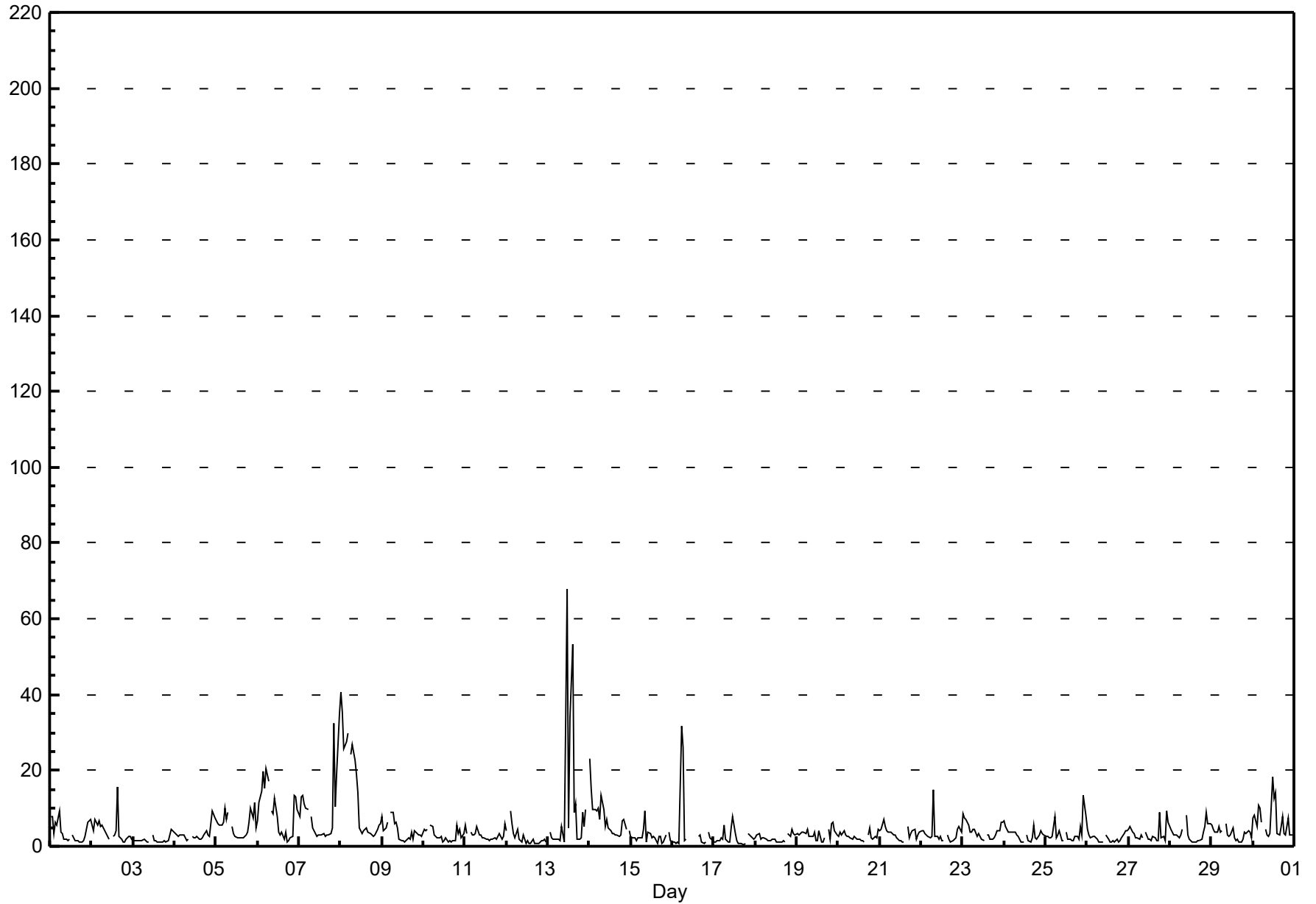
Oxides of Nitrogen (NO<sub>x</sub>) - ppb

Portable Rycroft - June 2016

| Maximum Value: 67.7 ppb on Jun 13 12:00    |                               | Maximum Daily Average: 13.9 ppb on Jun 8  |      | Hours in Service: 720           |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |      |      |      |      |                 |               |     |
|--|-------------------------------|---|------|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|------|------|------|------|-----------------|---------------|-----|
| Minimum Value: 1 ppb on Jun 17 18:00       |                               | Minimum Daily Average: 1.8 ppb on Jun 3   |      | Hours of Data: 683              |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |      |      |      |      |                 |               |     |
| Maximum Diurnal Average: 6.6 ppb at hour 1 |                               | Minimum Diurnal Average: 2.3 ppb at hour 18   |      | Hours of Missing Data: 37       |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |      |      |      |      |                 |               |     |
| Monthly Average: 4.49 ppb                  |                               | Percentiles: P <sub>1</sub> = 0.7 P <sub>10</sub> = 1.3 Q <sub>1</sub> = 1.8 Median = 2.9 Q <sub>3</sub> = 4.6 P <sub>90</sub> = 8.8 P <sub>99</sub> = 33.7 |      | Hours of Calibration: 37        |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |      |      |      |      |                 |               |     |
|  |                               |   |      | Percent Operational Time: 100.0 |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |      |      |      |      |                 |               |     |
| Day  | Hourly Period Ending At (MST) |   |      |                                 |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |      |      |      |      | Daily Average   | Daily Maximum |     |
|  | 1                             | 2   | 3    | 4                               | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18  | 19  | 20  | 21   | 22   | 23   | 24   |                 |               |     |
| 1-Jun                                      | 8                             | 8   | 3    | 6                               | 5    | 9    | 4    | 3    | 2    | 2    | 1    | 2    | A    | 3    | 1    | 1    | 1    | 1   | 1   | 1   | 2    | 4    | 6    | 7    | 3.7             | 9.1           |     |
| 2-Jun                                      | 6                             | 4   | 7    | 5                               | 7    | 5    | 5    | 5    | 3    | 3    | 2    | A    | 3    | 3    | 4    | 16   | 3    | 2   | 1   | 1   | 2    | 3    | 3    | 2    | 4.1             | 15.6          |     |
| 3-Jun                                      | 1                             | 1   | 2    | 1                               | 2    | 1    | 2    | 1    | 1    | 1    | A    | 3    | 1    | 1    | 1    | 1    | 1    | 1   | 1   | 1   | 2    | 3    | 5    | 4    | 1.8             | 4.6           |     |
| 4-Jun                                      | 3                             | 3   | 3    | 3                               | 3    | 3    | 2    | 1    | 2    | A    | 3    | 2    | 2    | 3    | 2    | 2    | 2    | 3   | 4   | 3   | 3    | 6    | 9    | 7    | 3.3             | 9.4           |     |
| 5-Jun                                      | 7                             | 6   | 5    | 5                               | 6    | 10   | 7    | 9    | A    | 5    | 3    | 3    | 2    | 2    | 2    | 2    | 2    | 3   | 4   | 6   | 10   | 7    | 11   | 5    | 5.4             | 11.4          |     |
| 6-Jun                                      | 7                             | 12  | 15   | 20                              | 15   | 21   | 17   | A    | 9    | 8    | 13   | 8    | 4    | 3    | 4    | 2    | 4    | 1   | 2   | 2   | 3    | 14   | 13   | 10   | 8.9             | 20.6          |     |
| 7-Jun                                      | 8                             | 13  | 13   | 11                              | 10   | 10   | A    | 8    | 5    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3   | 3   | 5   | 33   | 11   | 19   | 35   | 9.2             | 35.2          |     |
| 8-Jun                                      | 41                            | 35  | 26   | 28                              | 30   | A    | 24   | 27   | 23   | 19   | 14   | 5    | 3    | 4    | 4    | 5    | 4    | 3   | 3   | 3   | 3    | 4    | 6    | 6    | 13.9            | 40.8          |     |
| 9-Jun                                      | 8                             | 4   | 5    | 6                               | A    | 9    | 9    | 6    | 6    | 5    | 2    | 2    | 1    | 1    | 2    | 2    | 2    | 4   | 2   | 4   | 3    | 3    | 3    | 3    | 4.0             | 9.0           |     |
| 10-Jun                                     | 4                             | 4   | 5    | A                               | 6    | 5    | 3    | 3    | 2    | 2    | 2    | 1    | 1    | 2    | 1    | 1    | 1    | 1   | 2   | 5   | 3    | 4    | 2    | 3    | 2.9             | 5.7           |     |
| 11-Jun                                     | 6                             | 3   | A    | 4                               | 3    | 3    | 3    | 5    | 3    | 3    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2   | 2   | 3   | 4    | 2    | 2    | 6    | 3.0             | 6.0           |     |
| 12-Jun                                     | 4                             | A   | 9    | 6                               | 4    | 2    | 4    | 2    | 1    | 1    | 3    | 1    | 1    | 1    | 1    | 2    | 1    | 1   | 1   | 1   | 1    | 1    | 2    | 1    | 2.2             | 9.2           |     |
| 13-Jun                                     | A                             | 4   | 2    | 2                               | 2    | 2    | 2    | 1    | 5    | 1    | 34   | 68   | 5    | 34   | 54   | 9    | 11   | 2   | 2   | 2   | 9    | 5    | 10   | A    | 12.0            | 67.7          |     |
| 14-Jun                                     | 23                            | 15  | 10   | 10                              | 9    | 10   | 7    | 13   | 10   | 5    | 7    | 5    | 4    | 4    | 3    | 3    | 3    | 2   | 3   | 7   | 7    | 4    | A    | 4    | 7.3             | 23.2          |     |
| 15-Jun                                     | 2                             | 2   | 2    | 2                               | 2    | 2    | 2    | 4    | 9    | 1    | 4    | 3    | 2    | 3    | 2    | 1    | 2    | 3   | 1   | 1   | 3    | A    | 4    | 1    | 2.6             | 9.4           |     |
| 16-Jun                                     | 1                             | 1   | 1    | 1                               | 1    | 32   | 26   | 2    | 2    | C    | C    | C    | C    | C    | C    | 3    | 3    | 1   | 1   | 1   | A    | 4    | 2    | 1    | --              | 31.7          |     |
| 17-Jun                                     | 1                             | 1   | 2    | 2                               | 2    | 2    | 6    | 2    | 1    | 1    | 5    | 8    | 3    | 1    | 1    | 1    | 1    | 1   | 1   | 1   | A    | 4    | 3    | 2    | 2               | 2.2           | 7.7 |
| 18-Jun                                     | 2                             | 3   | 4    | 2                               | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 1    | 1    | 1    | 1    | 1    | 1    | 1   | 1   | 3   | 3    | 4    | 3    | 3    | 2.1             | 4.3           |     |
| 19-Jun                                     | 3                             | 3   | 3    | 4                               | 4    | 3    | 5    | 3    | 3    | 3    | 4    | 2    | 2    | 4    | 1    | 1    | 2    | A   | A   | 4   | 2    | 6    | 6    | 4    | 3               | 3.2           | 6.5 |
| 20-Jun                                     | 3                             | 4   | 3    | 4                               | 3    | 3    | 3    | 2    | 2    | 3    | 2    | 2    | 2    | 2    | 2    | 1    | A    | A   | 3   | 5   | 2    | 2    | 3    | 2    | 4               | 2.6           | 4.8 |
| 21-Jun                                     | 4                             | 4   | 7    | 5                               | 4    | 4    | 4    | 3    | 3    | 3    | 2    | 2    | 2    | 1    | 1    | A    | 5    | 2   | 3   | 4   | 4    | 2    | 3    | 4    | 3.3             | 6.9           |     |
| 22-Jun                                     | 4                             | 4   | 3    | 3                               | 3    | 2    | 2    | 15   | 3    | 3    | 2    | 2    | 2    | 1    | A    | 3    | 2    | 1   | 1   | 2   | 2    | 5    | 5    | 4    | 3.3             | 15.1          |     |
| 23-Jun                                     | 9                             | 8   | 7    | 6                               | 4    | 4    | 5    | 5    | 3    | 3    | 2    | 2    | 1    | A    | 3    | 3    | 2    | 2   | 2   | 3   | 4    | 4    | 6    | 6    | 4.1             | 8.7           |     |
| 24-Jun                                     | 7                             | 5   | 4    | 4                               | 4    | 4    | 4    | 3    | 3    | 2    | 1    | 1    | A    | 3    | 1    | 1    | 2    | 6   | 2   | 2   | 3    | 4    | 3    | 3    | 3.1             | 6.9           |     |
| 25-Jun                                     | 3                             | 3   | 2    | 2                               | 3    | 8    | 2    | 3    | 4    | 2    | 2    | A    | 4    | 2    | 2    | 2    | 1    | 3   | 3   | 2   | 5    | 3    | 13   | 8    | 3.5             | 13.4          |     |
| 26-Jun                                     | 5                             | 3   | 2    | 3                               | 3    | 2    | 2    | 1    | 1    | 1    | A    | 3    | 2    | 1    | 1    | 2    | 1    | 2   | 1   | 1   | 2    | 3    | 4    | 4    | 2.2             | 4.6           |     |
| 27-Jun                                     | 4                             | 5   | 4    | 3                               | 2    | 2    | 2    | 3    | 2    | A    | 4    | 2    | 2    | 2    | 3    | 2    | 1    | 1   | 9   | 2   | 3    | 2    | 9    | 6    | 3.3             | 9.2           |     |
| 28-Jun                                     | 4                             | 4   | 3    | 3                               | 2    | 3    | 5    | A    | A    | 8    | 3    | 2    | 1    | 1    | 1    | 1    | 1    | 2   | 2   | 4   | 5    | 9    | 6    | 6    | 3.5             | 8.8           |     |
| 29-Jun                                     | 6                             | 5   | 4    | 4                               | 5    | 4    | 4    | A    | A    | 6    | 3    | 3    | 3    | 5    | 2    | 1    | 2    | 1   | 1   | 2   | 4    | 3    | 4    | 2    | 3.4             | 6.0           |     |
| 30-Jun                                     | 7                             | 8   | 5    | 11                              | 10   | 6    | A    | 5    | 3    | 3    | 3    | 18   | 13   | 14   | 3    | 3    | 5    | 8   | 3   | 3   | 7    | 3    | 3    | 3    | 6.5             | 18.3          |     |
| 6.6  |                               | 6.1   | 5.5  | 5.7                             | 5.4  | 5.9  | 5.8  | 5.1  | 4.2  | 3.6  | 4.7  | 5.8  | 2.8  | 3.7  | 3.9  | 2.6  | 2.5  | 2.3 | 2.5 | 2.8 | 4.8  | 4.5  | 5.8  | 5.3  | Diurnal Average |               |     |
| 40.8                                       |                               | 35.5  | 25.7 | 27.7                            | 29.9 | 31.7 | 26.2 | 26.7 | 22.8 | 19.1 | 33.8 | 67.7 | 12.5 | 33.7 | 53.5 | 15.6 | 11.3 | 7.9 | 8.8 | 6.7 | 32.5 | 13.6 | 19.4 | 35.2 | Diurnal Maximum |               |     |
| C - Calibration                            |                               | A - Automated Daily Zero Span   |      |                                 |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |      |      |      |      |                 |               |     |

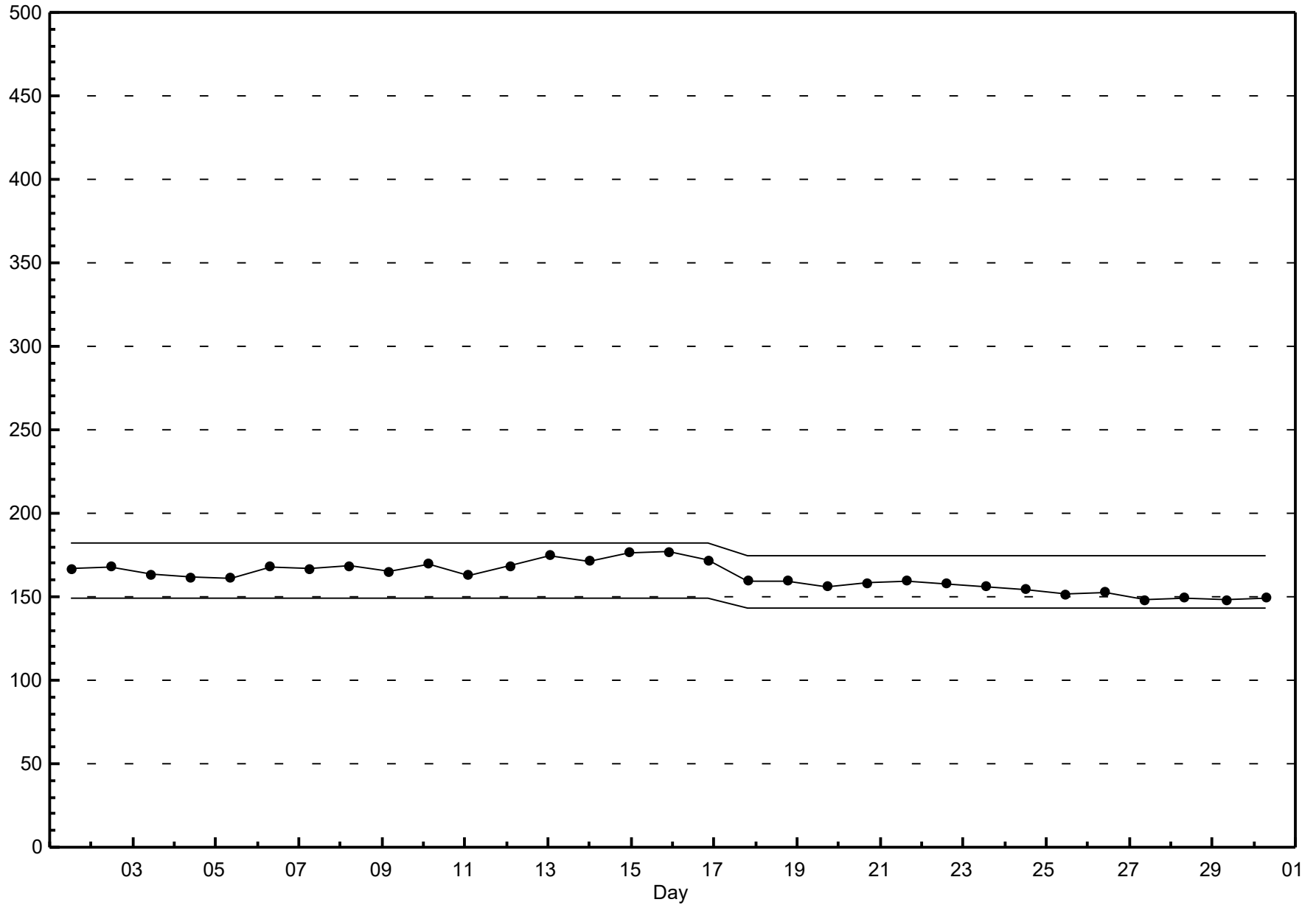
**Hourly Maximums**

**Oxides of Nitrogen (NO<sub>x</sub>) - ppb**  
**Portable Rycroft - June 2016**



### Span Responses

Oxides of Nitrogen (NO<sub>x</sub>)  
Portable Rycroft - June 2016



## Hourly Averages

Ozone (O<sub>3</sub>) - ppb

Portable Rycroft - June 2016

|  |  |          |                           |       |
|--|--|----------|---------------------------|-------|
| Number of Exceedences (AAAQO):               | 1-hr: 0  | 24-hr: 0 | Hours in Service:         | 720   |
| Maximum Value: 63.7 ppb on Jun 5 19:00       | Maximum Daily Average: 49.8 ppb on Jun 4   |          | Hours of Data:            | 685   |
| Minimum Value: 4 ppb on Jun 8 05:00          | Minimum Daily Average: 19.0 ppb on Jun 25  |          | Hours of Missing Data:    | 35    |
| Maximum Diurnal Average: 38.9 ppb at hour 16 | Minimum Diurnal Average: 20.0 ppb at hour 5  |          | Hours of Calibration:     | 35    |
| Monthly Average: 30.13 ppb                   | Percentiles: P <sub>1</sub> = 9.7 P <sub>10</sub> = 15.7 Q <sub>1</sub> = 22.4 Median = 29.8 Q <sub>3</sub> = 36.8 P <sub>90</sub> = 43.7 P <sub>99</sub> = 61.2 |          | Percent Operational Time: | 100.0 |

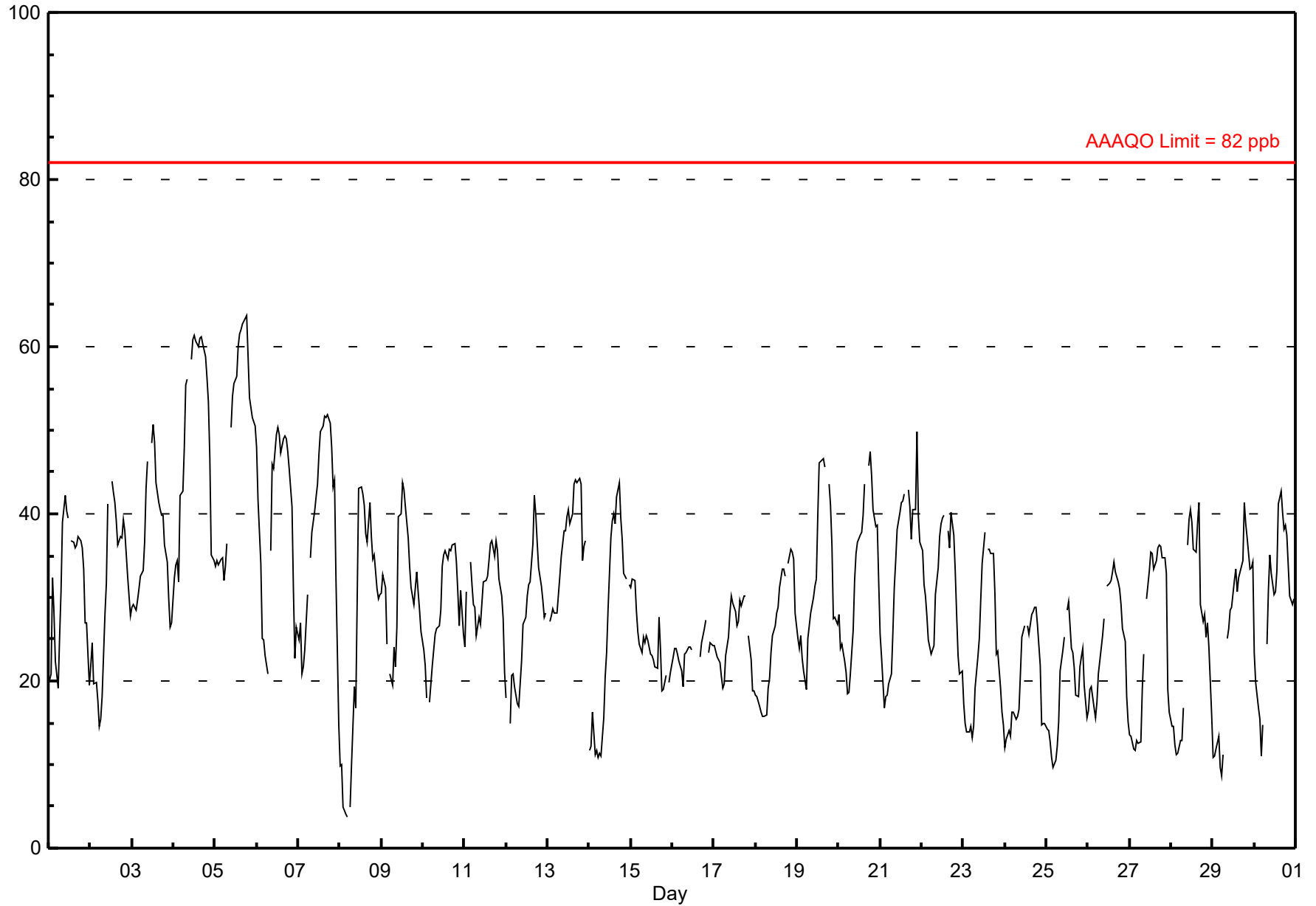
| Day    | Hourly Period Ending At (MST) |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Daily Average | Daily Maximum |
|--------|-------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------|---------------|
|        | 1                             | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |               |               |
| 1-Jun  | 20                            | 21 | 32 | 28 | 22 | 19 | 25 | 31 | 39 | 42 | 40 | 40 | A  | 37 | 37 | 36 | 36 | 37 | 37 | 36 | 33 | 27 | 27 | 20 | 31.4          | 42.2          |
| 2-Jun  | 22                            | 25 | 20 | 20 | 18 | 15 | 15 | 18 | 28 | 32 | 41 | A  | 44 | 43 | 41 | 39 | 36 | 37 | 37 | 39 | 38 | 33 | 30 | 28 | 30.3          | 44.0          |
| 3-Jun  | 29                            | 29 | 28 | 30 | 31 | 33 | 33 | 37 | 43 | 46 | A  | 48 | 51 | 49 | 44 | 41 | 40 | 40 | 40 | 36 | 34 | 30 | 26 | 27 | 36.8          | 50.7          |
| 4-Jun  | 32                            | 34 | 34 | 32 | 42 | 43 | 48 | 55 | 56 | A  | 59 | 61 | 61 | 61 | 60 | 61 | 61 | 60 | 59 | 56 | 53 | 47 | 35 | 34 | 49.8          | 61.4          |
| 5-Jun  | 34                            | 34 | 34 | 35 | 35 | 32 | 34 | 36 | A  | 50 | 54 | 56 | 56 | 60 | 61 | 62 | 63 | 63 | 64 | 59 | 54 | 51 | 51 | 50 | 49.1          | 63.7          |
| 6-Jun  | 48                            | 42 | 34 | 25 | 25 | 23 | 21 | A  | 36 | 46 | 45 | 49 | 50 | 49 | 47 | 49 | 49 | 49 | 48 | 45 | 41 | 31 | 23 | 26 | 39.2          | 50.3          |
| 7-Jun  | 25                            | 27 | 21 | 22 | 24 | 30 | A  | 35 | 38 | 40 | 42 | 44 | 47 | 50 | 51 | 52 | 52 | 52 | 51 | 48 | 43 | 44 | 32 | 15 | 38.4          | 51.8          |
| 8-Jun  | 10                            | 10 | 5  | 4  | 4  | A  | 5  | 10 | 19 | 17 | 30 | 43 | 43 | 42 | 41 | 38 | 37 | 41 | 37 | 35 | 35 | 31 | 30 | 30 | 25.9          | 43.2          |
| 9-Jun  | 30                            | 33 | 31 | 24 | A  | 21 | 19 | 24 | 22 | 26 | 40 | 40 | 44 | 43 | 41 | 37 | 34 | 31 | 30 | 29 | 33 | 31 | 28 | 26 | 31.2          | 43.7          |
| 10-Jun | 24                            | 22 | 18 | A  | 17 | 22 | 24 | 26 | 26 | 27 | 28 | 34 | 35 | 36 | 35 | 36 | 36 | 36 | 36 | 34 | 31 | 27 | 31 | 26 | 28.9          | 36.4          |
| 11-Jun | 24                            | 31 | A  | 34 | 31 | 29 | 29 | 25 | 28 | 27 | 29 | 32 | 32 | 34 | 36 | 37 | 35 | 37 | 36 | 32 | 30 | 27 | 21 | 21 | 30.9          | 36.9          |
| 12-Jun | 18                            | A  | 15 | 21 | 21 | 19 | 17 | 17 | 20 | 22 | 27 | 28 | 30 | 32 | 32 | 36 | 42 | 40 | 37 | 34 | 31 | 30 | 28 | 28 | 27.1          | 42.2          |
| 13-Jun | A                             | 27 | 28 | 29 | 28 | 28 | 30 | 32 | 35 | 38 | 38 | 40 | 41 | 39 | 40 | 43 | 44 | 44 | 44 | 44 | 34 | 36 | 37 | A  | 36.3          | 44.2          |
| 14-Jun | 12                            | 12 | 16 | 11 | 12 | 11 | 11 | 11 | 16 | 21 | 23 | 28 | 37 | 39 | 40 | 39 | 42 | 44 | 40 | 37 | 33 | 32 | A  | 31 | 26.0          | 43.7          |
| 15-Jun | 31                            | 32 | 32 | 28 | 26 | 24 | 23 | 25 | 25 | 25 | 25 | 23 | 23 | 22 | 21 | 28 | 24 | 19 | 19 | 21 | A  | 20 | 21 | 21 | 24.4          | 32.2          |
| 16-Jun | 23                            | 24 | 24 | 23 | 22 | 21 | 19 | 23 | 23 | 24 | 24 | 24 | C  | C  | C  | C  | 23 | 25 | 26 | 27 | A  | 23 | 25 | 24 | 23.6          | 27.3          |
| 17-Jun | 24                            | 24 | 23 | 22 | 21 | 19 | 20 | 23 | 25 | 28 | 30 | 29 | 28 | 27 | 27 | 30 | 29 | 30 | 30 | A  | 25 | 23 | 19 | 19 | 25.0          | 30.2          |
| 18-Jun | 18                            | 18 | 17 | 16 | 16 | 16 | 16 | 19 | 20 | 23 | 25 | 27 | 28 | 29 | 31 | 33 | 33 | 33 | A  | 34 | 36 | 35 | 35 | 28 | 25.5          | 35.7          |
| 19-Jun | 25                            | 24 | 25 | 23 | 21 | 19 | 25 | 27 | 28 | 30 | 31 | 32 | 40 | 46 | 46 | 47 | 46 | A  | 44 | 41 | 36 | 27 | 28 | 27 | 32.1          | 46.6          |
| 20-Jun | 28                            | 24 | 24 | 22 | 21 | 18 | 19 | 21 | 26 | 32 | 35 | 37 | 37 | 38 | 40 | 43 | A  | 46 | 47 | 45 | 41 | 38 | 39 | 32 | 32.8          | 47.5          |
| 21-Jun | 26                            | 23 | 17 | 18 | 18 | 20 | 21 | 26 | 31 | 34 | 38 | 40 | 41 | 41 | 42 | A  | 43 | 41 | 37 | 41 | 41 | 50 | 40 | 37 | 33.3          | 49.8          |
| 22-Jun | 36                            | 32 | 30 | 28 | 25 | 23 | 24 | 24 | 30 | 34 | 37 | 39 | 40 | 40 | A  | 38 | 36 | 40 | 38 | 33 | 28 | 23 | 21 | 21 | 31.2          | 40.1          |
| 23-Jun | 17                            | 15 | 14 | 14 | 15 | 13 | 15 | 19 | 23 | 25 | 30 | 34 | 38 | A  | 36 | 36 | 35 | 35 | 31 | 23 | 24 | 19 | 16 | 15 | 23.5          | 37.8          |
| 24-Jun | 12                            | 13 | 14 | 13 | 16 | 16 | 15 | 16 | 17 | 21 | 25 | 27 | A  | 27 | 26 | 28 | 28 | 29 | 29 | 27 | 22 | 15 | 15 | 15 | 20.2          | 28.8          |
| 25-Jun | 14                            | 14 | 13 | 11 | 10 | 10 | 12 | 15 | 21 | 24 | 25 | A  | 28 | 30 | 24 | 23 | 22 | 18 | 18 | 22 | 23 | 24 | 19 | 16 | 19.0          | 29.5          |
| 26-Jun | 17                            | 19 | 19 | 17 | 16 | 17 | 21 | 22 | 25 | 27 | A  | 31 | 32 | 32 | 33 | 34 | 33 | 32 | 31 | 29 | 26 | 25 | 18 | 15 | 24.9          | 34.2          |
| 27-Jun | 13                            | 13 | 12 | 12 | 13 | 13 | 13 | 19 | 23 | A  | 30 | 33 | 35 | 35 | 33 | 34 | 36 | 36 | 36 | 35 | 35 | 33 | 19 | 16 | 25.1          | 36.3          |
| 28-Jun | 15                            | 15 | 12 | 11 | 11 | 13 | 13 | 17 | A  | 36 | 39 | 40 | 39 | 36 | 35 | 39 | 41 | 29 | 27 | 28 | 25 | 27 | 24 | 16 | 25.6          | 41.3          |
| 29-Jun | 11                            | 11 | 12 | 13 | 10 | 9  | 11 | A  | 25 | 26 | 28 | 29 | 32 | 33 | 31 | 32 | 33 | 34 | 41 | 39 | 37 | 33 | 33 | 34 | 26.1          | 41.3          |
| 30-Jun | 23                            | 20 | 17 | 15 | 11 | 15 | A  | 24 | 31 | 35 | 33 | 30 | 31 | 33 | 41 | 43 | 40 | 38 | 39 | 37 | 30 | 30 | 29 | 30 | 29.4          | 42.7          |

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|
| 22.8 | 23.0 | 21.4 | 20.8 | 20.0 | 20.4 | 20.7 | 24.2 | 27.8 | 30.7 | 34.1 | 36.3 | 38.7 | 38.6 | 38.3 | 38.9 | 38.4 | 37.9 | 37.5 | 36.1 | 33.6 | 31.2 | 27.7 | 25.1 | Diurnal Average |
| 48.0 | 41.7 | 34.4 | 34.6 | 42.2 | 42.7 | 47.9 | 55.4 | 56.0 | 50.3 | 58.5 | 60.9 | 61.4 | 60.7 | 61.5 | 62.0 | 62.7 | 63.3 | 63.7 | 58.8 | 53.9 | 51.4 | 51.0 | 50.4 | Diurnal Maximum |

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82 ppb    24-hr na

### Hourly Averages

Ozone (O<sub>3</sub>) - ppb  
Portable Rycroft - June 2016



# Hourly Maximums

Ozone (O<sub>3</sub>) - ppb

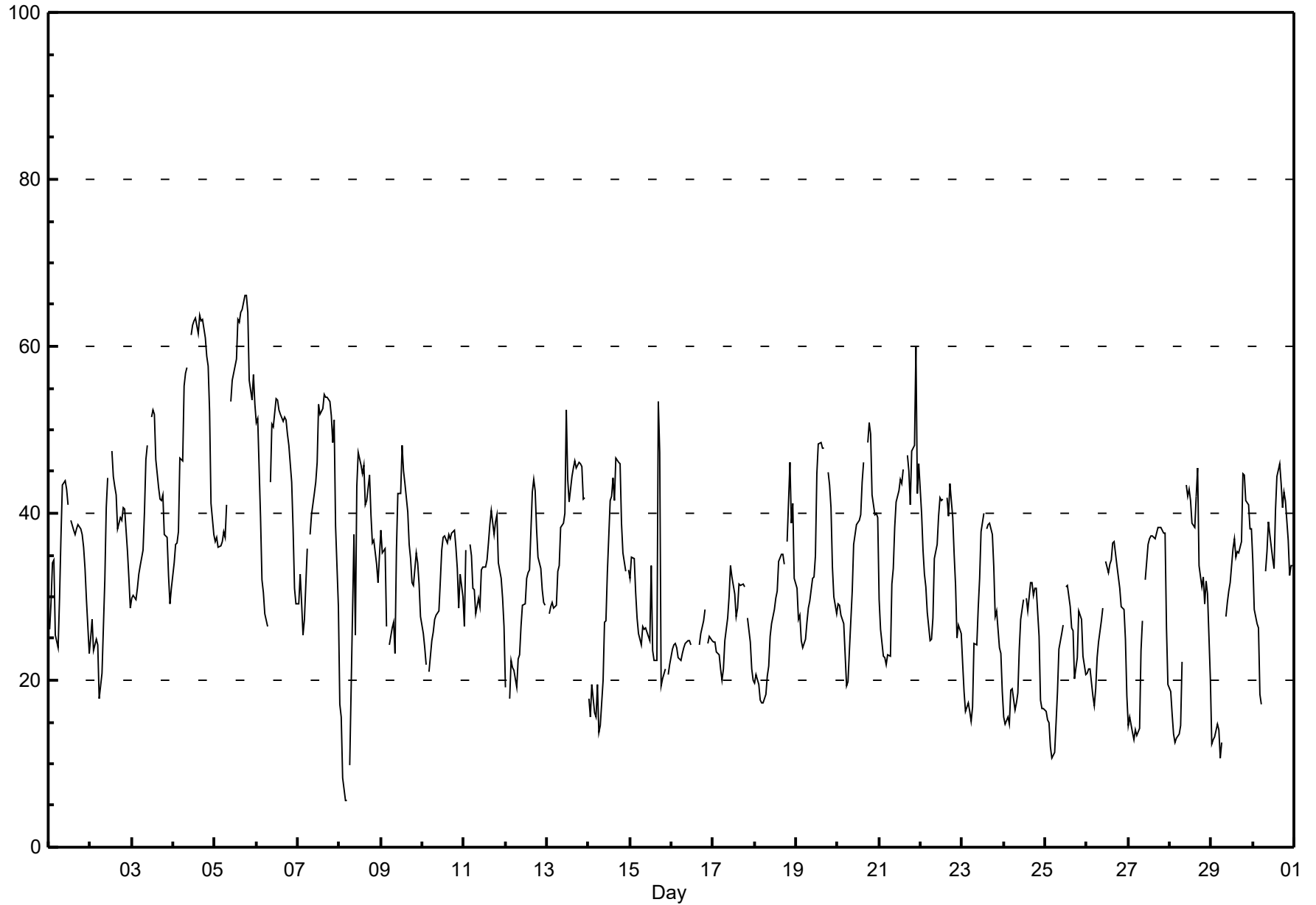
Portable Rycroft - June 2016

| Maximum Value: 66.2 ppb on Jun 5 18:00       |                               | Maximum Daily Average: 52.9 ppb on Jun 4  |      | Hours in Service: 720           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
|--|-------------------------------|---|------|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------|-----------------|--|
| Minimum Value: 6 ppb on Jun 8 04:00          |                               | Minimum Daily Average: 21.9 ppb on Jun 25   |      | Hours of Data: 685              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
| Maximum Diurnal Average: 41.9 ppb at hour 17 |                               | Minimum Diurnal Average: 22.7 ppb at hour 5   |      | Hours of Missing Data: 35       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
| Monthly Average: 33.26 ppb                   |                               | Percentiles: P <sub>1</sub> = 11.8 P <sub>10</sub> = 18.7 Q <sub>1</sub> = 25.0 Median = 32.7 Q <sub>3</sub> = 40.5 P <sub>90</sub> = 47.8 P <sub>99</sub> = 63.2 |      | Hours of Calibration: 35        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
|  |                               |   |      | Percent Operational Time: 100.0 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |
| Day  | Hourly Period Ending At (MST) |   |      |                                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Daily Average | Daily Maximum   |  |
|  | 1                             | 2   | 3    | 4                               | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   |               |                 |  |
| 1-Jun  | 26                            | 29  | 34   | 34                              | 25   | 24   | 30   | 37   | 43   | 44   | 43   | 41   | A    | 39   | 38   | 38   | 38   | 39   | 38   | 37   | 36   | 33   | 30   | 23   | 34.8          | 43.9            |  |
| 2-Jun  | 25                            | 27  | 24   | 25                              | 24   | 18   | 19   | 21   | 32   | 41   | 44   | A    | 47   | 44   | 43   | 42   | 38   | 40   | 39   | 41   | 41   | 35   | 32   | 29   | 33.5          | 47.4            |  |
| 3-Jun  | 30                            | 30  | 30   | 31                              | 33   | 34   | 36   | 40   | 46   | 48   | A    | 51   | 52   | 52   | 47   | 43   | 42   | 42   | 42   | 37   | 37   | 33   | 29   | 31   | 38.9          | 52.4            |  |
| 4-Jun  | 34                            | 36  | 36   | 38                              | 47   | 46   | 55   | 57   | 57   | A    | 61   | 63   | 63   | 63   | 62   | 64   | 63   | 63   | 61   | 59   | 58   | 52   | 41   | 37   | 52.9          | 63.6            |  |
| 5-Jun  | 37                            | 37  | 36   | 36                              | 37   | 38   | 37   | 41   | A    | 53   | 56   | 57   | 58   | 63   | 63   | 64   | 64   | 66   | 66   | 64   | 56   | 54   | 57   | 53   | 51.9          | 66.2            |  |
| 6-Jun  | 51                            | 51  | 40   | 32                              | 30   | 28   | 27   | A    | 44   | 51   | 50   | 54   | 54   | 52   | 52   | 51   | 52   | 51   | 50   | 48   | 44   | 38   | 31   | 29   | 43.8          | 53.7            |  |
| 7-Jun  | 29                            | 33  | 29   | 25                              | 27   | 36   | A    | 38   | 40   | 42   | 44   | 46   | 53   | 52   | 53   | 54   | 54   | 54   | 53   | 52   | 49   | 51   | 38   | 29   | 42.6          | 54.3            |  |
| 8-Jun  | 17                            | 16  | 8    | 6                               | 6    | A    | 10   | 19   | 37   | 25   | 43   | 47   | 46   | 45   | 46   | 41   | 41   | 45   | 40   | 36   | 37   | 34   | 32   | 35   | 30.9          | 47.3            |  |
| 9-Jun  | 38                            | 35  | 36   | 26                              | A    | 24   | 26   | 27   | 23   | 36   | 42   | 42   | 48   | 45   | 44   | 40   | 36   | 35   | 32   | 31   | 35   | 34   | 32   | 28   | 34.6          | 48.1            |  |
| 10-Jun                                       | 26                            | 24  | 22   | A                               | 21   | 25   | 26   | 27   | 28   | 28   | 32   | 36   | 37   | 37   | 36   | 37   | 37   | 38   | 38   | 36   | 33   | 29   | 33   | 30   | 31.1          | 37.9            |  |
| 11-Jun                                       | 26                            | 36  | A    | 36                              | 35   | 31   | 31   | 28   | 30   | 29   | 33   | 34   | 34   | 36   | 39   | 40   | 37   | 39   | 40   | 34   | 32   | 30   | 26   | 33.5 | 40.3          |                 |  |
| 12-Jun                                       | 19                            | A   | 18   | 22                              | 22   | 21   | 19   | 23   | 23   | 26   | 29   | 29   | 32   | 33   | 33   | 43   | 44   | 43   | 38   | 35   | 33   | 31   | 29   | 29   | 29.3          | 44.1            |  |
| 13-Jun                                       | A                             | 28  | 29   | 29                              | 29   | 29   | 33   | 34   | 38   | 39   | 40   | 52   | 44   | 41   | 44   | 45   | 46   | 45   | 46   | 46   | 46   | 42   | 42   | A    | 39.5          | 52.4            |  |
| 14-Jun                                       | 18                            | 16  | 19   | 16                              | 16   | 19   | 14   | 15   | 20   | 27   | 27   | 33   | 42   | 42   | 44   | 41   | 47   | 46   | 46   | 39   | 35   | 33   | A    | 33   | 29.9          | 46.7            |  |
| 15-Jun                                       | 32                            | 35  | 35   | 31                              | 28   | 26   | 24   | 27   | 26   | 26   | 26   | 25   | 34   | 24   | 22   | 22   | 53   | 47   | 19   | 20   | 21   | A    | 21   | 22   | 28.0          | 53.3            |  |
| 16-Jun                                       | 24                            | 24  | 24   | 24                              | 23   | 22   | 23   | 24   | 24   | 25   | 25   | 24   | C    | C    | C    | C    | 24   | 26   | 27   | 28   | A    | 24   | 25   | 25   | 24.6          | 28.4            |  |
| 17-Jun                                       | 25                            | 25  | 23   | 23                              | 21   | 20   | 21   | 25   | 27   | 30   | 34   | 32   | 30   | 28   | 29   | 32   | 31   | 32   | 31   | A    | 27   | 25   | 21   | 20   | 26.6          | 33.8            |  |
| 18-Jun                                       | 20                            | 21  | 20   | 18                              | 17   | 17   | 18   | 20   | 22   | 25   | 27   | 28   | 30   | 31   | 34   | 35   | 35   | 34   | A    | 37   | 46   | 39   | 41   | 32   | 28.1          | 46.1            |  |
| 19-Jun                                       | 31                            | 27  | 28   | 25                              | 24   | 25   | 27   | 29   | 29   | 32   | 32   | 35   | 45   | 48   | 48   | 48   | 48   | A    | 45   | 43   | 41   | 34   | 30   | 28   | 34.9          | 48.5            |  |
| 20-Jun                                       | 29                            | 29  | 28   | 27                              | 23   | 19   | 20   | 24   | 31   | 36   | 37   | 39   | 39   | 40   | 44   | 46   | A    | 48   | 51   | 50   | 42   | 40   | 40   | 39   | 35.7          | 50.9            |  |
| 21-Jun                                       | 30                            | 26  | 23   | 23                              | 22   | 23   | 23   | 31   | 33   | 38   | 41   | 43   | 44   | 44   | 45   | A    | 47   | 45   | 41   | 47   | 48   | 60   | 42   | 46   | 37.6          | 60.0            |  |
| 22-Jun                                       | 40                            | 36  | 33   | 31                              | 28   | 25   | 25   | 27   | 35   | 36   | 40   | 42   | 42   | 42   | A    | 42   | 40   | 44   | 39   | 35   | 31   | 25   | 27   | 26   | 34.3          | 43.6            |  |
| 23-Jun                                       | 22                            | 19  | 16   | 17                              | 16   | 15   | 17   | 24   | 24   | 29   | 32   | 38   | 40   | A    | 38   | 39   | 39   | 37   | 34   | 28   | 28   | 24   | 23   | 19   | 26.9          | 40.0            |  |
| 24-Jun                                       | 16                            | 15  | 16   | 15                              | 19   | 19   | 16   | 17   | 18   | 24   | 27   | 30   | A    | 30   | 28   | 32   | 32   | 30   | 31   | 31   | 25   | 18   | 17   | 17   | 22.7          | 31.7            |  |
| 25-Jun                                       | 16                            | 15  | 15   | 12                              | 11   | 11   | 15   | 19   | 24   | 26   | 27   | A    | 31   | 31   | 29   | 26   | 26   | 20   | 23   | 28   | 28   | 27   | 23   | 21   | 21.9          | 31.4            |  |
| 26-Jun                                       | 21                            | 21  | 21   | 18                              | 17   | 19   | 23   | 25   | 27   | 29   | A    | 34   | 33   | 34   | 34   | 36   | 37   | 34   | 32   | 31   | 29   | 28   | 25   | 18   | 27.2          | 36.5            |  |
| 27-Jun                                       | 15                            | 16  | 14   | 13                              | 14   | 13   | 14   | 24   | 27   | A    | 32   | 36   | 37   | 37   | 37   | 37   | 38   | 38   | 38   | 38   | 38   | 38   | 26   | 19   | 27.8          | 38.4            |  |
| 28-Jun                                       | 19                            | 16  | 14   | 13                              | 13   | 14   | 15   | 22   | A    | 43   | 42   | 43   | 41   | 39   | 38   | 42   | 45   | 34   | 31   | 32   | 29   | 32   | 30   | 20   | 29.0          | 45.5            |  |
| 29-Jun                                       | 12                            | 13  | 13   | 15                              | 14   | 11   | 13   | A    | 28   | 29   | 31   | 32   | 36   | 37   | 35   | 35   | 35   | 37   | 45   | 45   | 42   | 41   | 38   | 38   | 29.2          | 44.7            |  |
| 30-Jun                                       | 34                            | 28  | 27   | 26                              | 18   | 17   | A    | 33   | 35   | 39   | 37   | 35   | 33   | 40   | 44   | 46   | 44   | 41   | 42   | 41   | 37   | 32   | 34   | 34   | 34.8          | 45.9            |  |
|  |                               | 26.2  | 26.3 | 24.4                            | 23.7 | 22.7 | 23.1 | 23.4 | 27.7 | 31.2 | 34.2 | 37.0 | 39.3 | 41.7 | 41.0 | 41.0 | 41.5 | 41.9 | 41.0 | 40.0 | 39.2 | 37.4 | 35.1 | 31.7 | 28.8          | Diurnal Average |  |
|  |                               | 50.8  | 51.4 | 39.5                            | 37.7 | 46.5 | 46.3 | 55.3 | 56.9 | 57.4 | 53.3 | 61.3 | 62.5 | 63.1 | 63.3 | 62.9 | 64.1 | 64.5 | 66.2 | 66.1 | 64.0 | 57.5 | 60.0 | 56.5 | 53.1          | Diurnal Maximum |  |
| C - Calibration                              |                               | A - Automated Daily Zero Span   |      |                                 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |               |                 |  |



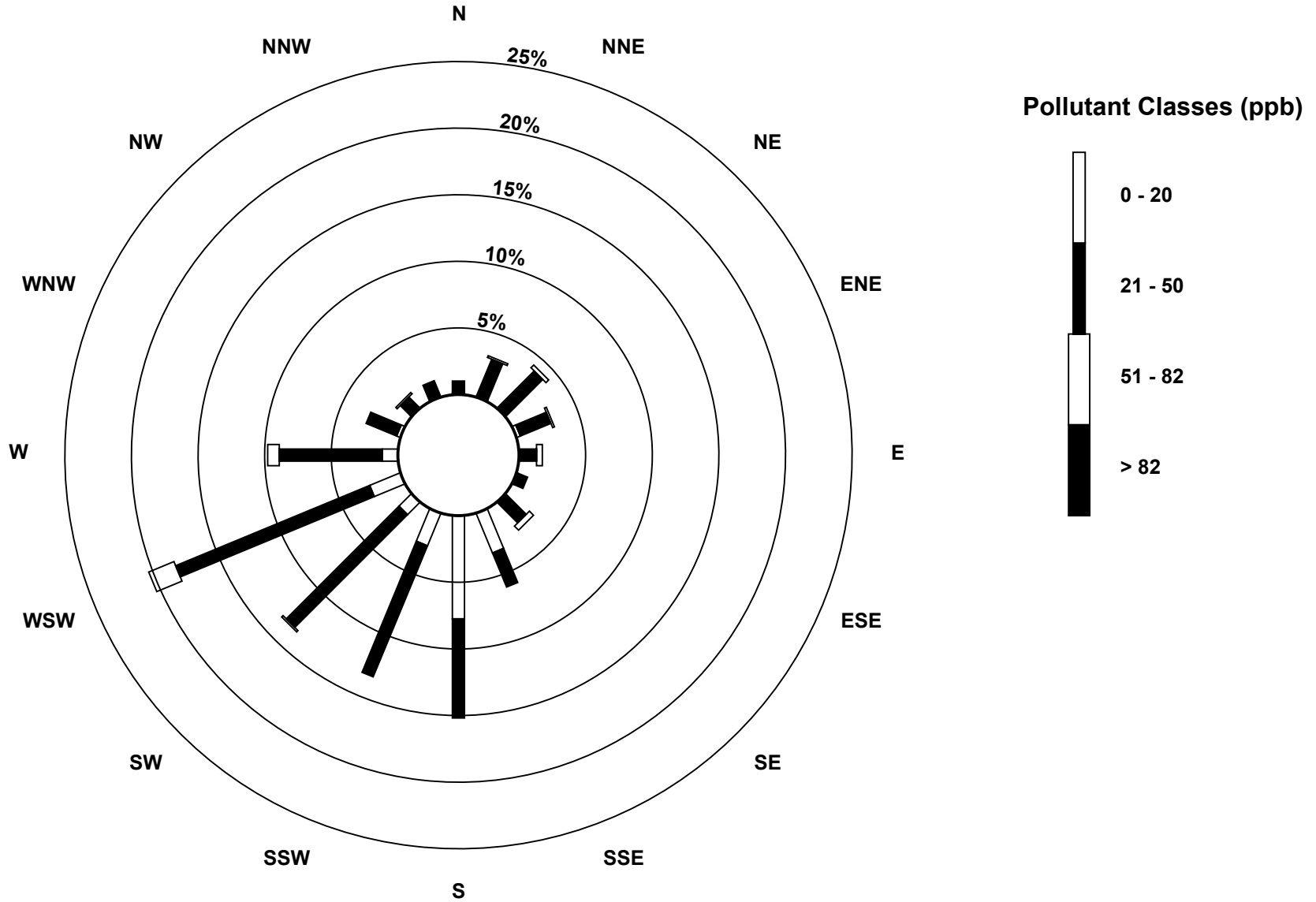
**Hourly Maximums**

**Ozone (O<sub>3</sub>) - ppb**  
**Portable Rycroft - June 2016**



### Pollutant Rose

Ozone ( $O_3$ ) - ppb  
Portable Rycroft - June 2016



# Eight Hour Running Averages

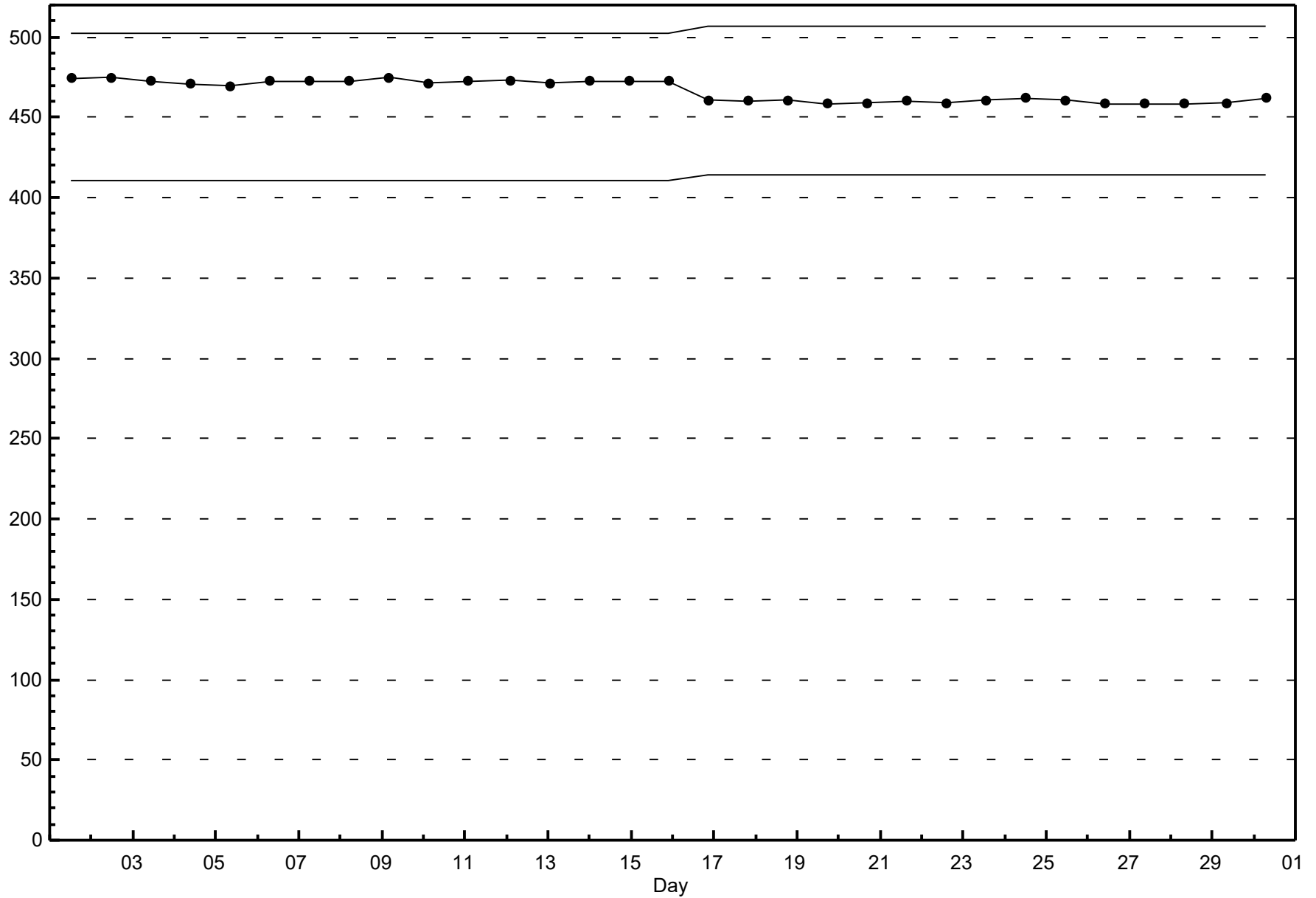
Ozone (O<sub>3</sub>) - ppb

Portable Rycroft - June 2016

| <b>Maximum Value: 61.1 ppb on Jun 5 20:00</b>   |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Hours in Service: 720<br>Hours of Data: 712         |    |    |                  |               |
|---|-------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|----|------------------|---------------|
| <b>Minimum Value: 6.8 ppb on Jun 8 08:00</b>  |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Hours of Missing Data: 8<br>Hours of Calibration: 8 |    |    |                  |               |
| Percentiles: P <sub>1</sub> = 12.0 P <sub>10</sub> = 18.3 Q <sub>1</sub> = 23.1 Median = 29.6 Q <sub>3</sub> = 35.7 P <sub>90</sub> = 41.9 P <sub>99</sub> = 59.6 |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Percent Operational Time: 100.0                     |    |    |                  |               |
| Day   | Hourly Period Ending At (MST) |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |                  | Daily Maximum |
|   | 1                             | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21  | 22 | 23 | 24               |               |
| 1-Jun   | 29                            | 28 | 27 | 27 | 26 | 25 | 24 | 25 | 27 | 30 | 31 | 32 | 34 | 36 | 38 | 39 | 38 | 38 | 37 | 37 | 36  | 35 | 34 | 32               | 38.6          |
| 2-Jun   | 30                            | 28 | 26 | 24 | 22 | 21 | 19 | 19 | 20 | 21 | 23 | 24 | 28 | 32 | 35 | 38 | 39 | 40 | 40 | 40 | 39  | 38 | 36 | 35               | 40.3          |
| 3-Jun   | 34                            | 33 | 32 | 31 | 30 | 30 | 30 | 31 | 33 | 35 | 36 | 39 | 42 | 44 | 45 | 46 | 46 | 45 | 44 | 43 | 41  | 38 | 36 | 34               | 46.0          |
| 4-Jun   | 33                            | 32 | 32 | 31 | 32 | 34 | 37 | 40 | 43 | 44 | 48 | 52 | 55 | 57 | 59 | 60 | 61 | 61 | 61 | 60 | 59  | 57 | 54 | 51               | 60.6          |
| 5-Jun   | 47                            | 44 | 41 | 38 | 36 | 34 | 34 | 34 | 34 | 37 | 39 | 42 | 46 | 50 | 53 | 57 | 58 | 59 | 61 | 61 | 61  | 60 | 58 | 57               | 61.1          |
| 6-Jun   | 55                            | 52 | 49 | 44 | 41 | 37 | 34 | 31 | 29 | 30 | 32 | 35 | 39 | 42 | 46 | 47 | 48 | 49 | 49 | 48 | 47  | 45 | 42 | 39               | 55.1          |
| 7-Jun   | 36                            | 33 | 30 | 27 | 25 | 25 | 25 | 26 | 28 | 30 | 33 | 36 | 39 | 42 | 43 | 45 | 47 | 49 | 50 | 50 | 50  | 49 | 47 | 42               | 50.2          |
| 8-Jun   | 37                            | 32 | 26 | 20 | 15 | 11 | 7  | 7  | 8  | 9  | 13 | 18 | 24 | 26 | 31 | 34 | 36 | 39 | 40 | 39 | 38  | 37 | 35 | 35               | 40.3          |
| 9-Jun   | 34                            | 33 | 32 | 31 | 30 | 29 | 27 | 26 | 25 | 24 | 25 | 27 | 29 | 32 | 35 | 37 | 38 | 39 | 37 | 36 | 35  | 33 | 32 | 30               | 38.7          |
| 10-Jun  | 29                            | 28 | 26 | 26 | 24 | 22 | 22 | 22 | 22 | 23 | 24 | 25 | 28 | 29 | 31 | 32 | 33 | 34 | 35 | 35 | 35  | 34 | 33 | 32               | 35.5          |
| 11-Jun  | 31                            | 30 | 29 | 29 | 29 | 29 | 29 | 29 | 30 | 29 | 29 | 29 | 29 | 29 | 30 | 31 | 32 | 34 | 34 | 35 | 35  | 35 | 34 | 32               | 35.0          |
| 12-Jun  | 30                            | 29 | 26 | 23 | 22 | 20 | 19 | 18 | 18 | 19 | 20 | 21 | 23 | 24 | 26 | 28 | 31 | 33 | 35 | 35 | 35  | 35 | 34 | 34               | 35.5          |
| 13-Jun  | 32                            | 31 | 29 | 29 | 28 | 28 | 28 | 29 | 30 | 31 | 32 | 34 | 35 | 37 | 38 | 39 | 40 | 41 | 42 | 42 | 42  | 41 | 41 | 40               | 42.3          |
| 14-Jun  | 36                            | 31 | 27 | 23 | 19 | 16 | 12 | 12 | 13 | 14 | 14 | 17 | 20 | 23 | 27 | 30 | 34 | 37 | 39 | 40 | 39  | 38 | 38 | 37               | 39.7          |
| 15-Jun  | 35                            | 34 | 33 | 31 | 30 | 29 | 29 | 28 | 27 | 26 | 25 | 25 | 24 | 24 | 24 | 23 | 24 | 24 | 23 | 22 | 22  | 22 | 22 | 22               | 35.4          |
| 16-Jun  | 21                            | 21 | 22 | 22 | 22 | 22 | 22 | 23 | 23 | 23 | 23 | 23 | 23 | N  | N  | N  | N  | N  | N  | N  | N   | N  | 25 | 25               | 24.8          |
| 17-Jun  | 25                            | 25 | 24 | 24 | 23 | 23 | 22 | 22 | 22 | 23 | 24 | 24 | 25 | 26 | 27 | 28 | 29 | 29 | 29 | 29 | 28  | 28 | 27 | 25               | 28.8          |
| 18-Jun  | 23                            | 22 | 20 | 19 | 18 | 17 | 17 | 17 | 17 | 18 | 19 | 20 | 22 | 23 | 25 | 27 | 29 | 30 | 31 | 32 | 33  | 34 | 34 | 33               | 34.1          |
| 19-Jun  | 32                            | 31 | 30 | 29 | 27 | 25 | 24 | 24 | 24 | 25 | 26 | 27 | 29 | 32 | 35 | 38 | 40 | 41 | 43 | 44 | 44  | 41 | 38 | 35               | 44.1          |
| 20-Jun  | 33                            | 32 | 29 | 27 | 25 | 24 | 23 | 22 | 22 | 23 | 24 | 26 | 28 | 31 | 33 | 36 | 38 | 39 | 41 | 42 | 43  | 43 | 43 | 41               | 42.9          |
| 21-Jun  | 39                            | 36 | 32 | 29 | 26 | 24 | 22 | 21 | 22 | 23 | 26 | 29 | 31 | 34 | 37 | 38 | 40 | 41 | 41 | 41 | 41  | 42 | 42 | 41               | 42.0          |
| 22-Jun  | 40                            | 39 | 38 | 36 | 35 | 31 | 29 | 28 | 27 | 27 | 28 | 30 | 31 | 33 | 35 | 37 | 38 | 38 | 39 | 38 | 36  | 34 | 32 | 30               | 40.1          |
| 23-Jun  | 28                            | 24 | 22 | 19 | 17 | 16 | 15 | 15 | 16 | 17 | 19 | 22 | 25 | 26 | 29 | 32 | 33 | 35 | 35 | 33 | 31  | 30 | 27 | 25               | 35.0          |
| 24-Jun  | 22                            | 19 | 17 | 16 | 15 | 15 | 14 | 15 | 15 | 16 | 17 | 19 | 20 | 21 | 22 | 24 | 26 | 27 | 28 | 28 | 27  | 25 | 24 | 22               | 27.6          |
| 25-Jun  | 21                            | 19 | 17 | 15 | 13 | 13 | 12 | 12 | 13 | 15 | 16 | 17 | 20 | 22 | 24 | 25 | 25 | 24 | 23 | 23 | 22  | 22 | 21 | 20               | 25.1          |
| 26-Jun  | 20                            | 20 | 20 | 19 | 18 | 17 | 18 | 18 | 20 | 21 | 21 | 23 | 25 | 27 | 29 | 31 | 32 | 32 | 32 | 32 | 31  | 30 | 29 | 26               | 32.5          |
| 27-Jun  | 24                            | 21 | 19 | 17 | 15 | 14 | 13 | 13 | 15 | 15 | 17 | 20 | 24 | 27 | 30 | 32 | 34 | 34 | 35 | 35 | 35  | 35 | 33 | 31               | 35.2          |
| 28-Jun  | 28                            | 25 | 22 | 19 | 17 | 14 | 13 | 13 | 13 | 16 | 20 | 24 | 28 | 32 | 35 | 38 | 38 | 37 | 36 | 34 | 33  | 32 | 30 | 27               | 38.3          |
| 29-Jun  | 23                            | 21 | 19 | 17 | 15 | 13 | 12 | 11 | 13 | 15 | 18 | 20 | 23 | 26 | 29 | 30 | 31 | 32 | 33 | 35 | 35  | 35 | 36 | 36               | 35.7          |
| 30-Jun  | 35                            | 33 | 30 | 27 | 23 | 21 | 19 | 18 | 19 | 21 | 23 | 26 | 28 | 31 | 32 | 35 | 36 | 36 | 37 | 38 | 38  | 37 | 36 | 34               | 37.8          |
| 55.1 52.4 48.7 44.5 40.8 37.3 36.5 40.1 43.1 44.4 47.8 52.0 54.7 57.3 59.0 59.8 60.5 60.5 60.7 61.1 60.8 59.7 58.4 56.9   |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    | Diurnal Maximums |               |
| N - Not Valid   |                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |    |                  |               |

### Span Responses

Ozone (O<sub>3</sub>)  
Portable Rycroft - June 2016





Peace Airshed Zone Association

# Hourly Averages

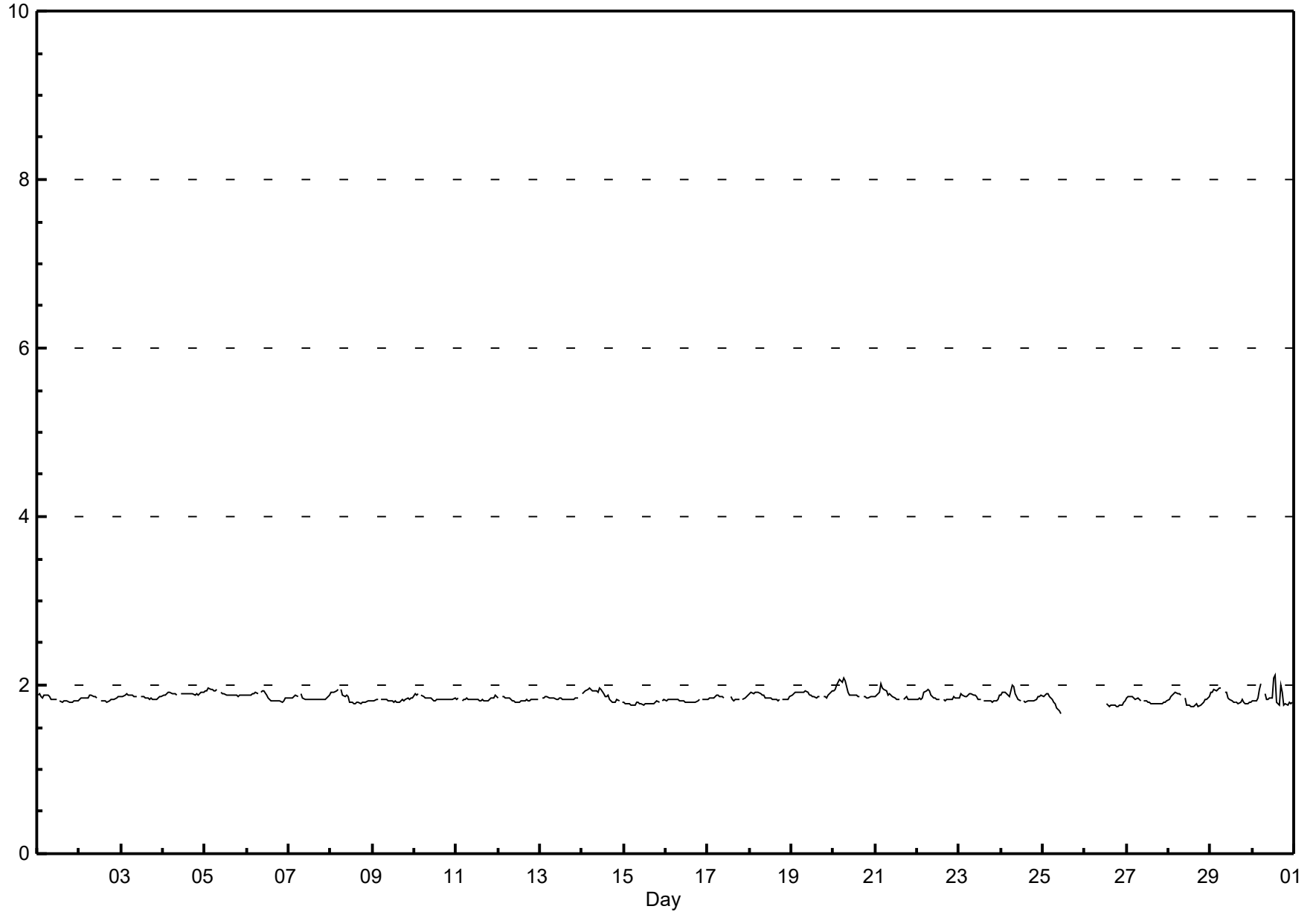
Total Hydrocarbons (THC) - ppm

Portable Rycroft - June 2016

| Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0   |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Hours in Service: 720                     |               |               |
|---|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|---------------|---------------|
| Maximum Value: 2.12 ppm on Jun 30 14:00   |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Maximum Daily Average: 1.92 ppm on Jun 20 |               |               |
| Minimum Value: 1.7 ppm on Jun 25 11:00  |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Hours of Data: 663                        |               |               |
| Maximum Diurnal Average: 1.90 ppm at hour 5   |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Hours of Missing Data: 57                 |               |               |
| Monthly Average: 1.850 ppm  |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Hours of Calibration: 35                  |               |               |
| Minimum Daily Average: 1.78 ppm on Jun 15   |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Percent Operational Time: 96.9            |               |               |
| Minimum Diurnal Average: 1.82 ppm at hour 16  |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |               |               |
| Percentiles: P <sub>1</sub> = 1.75 P <sub>10</sub> = 1.79 Q <sub>1</sub> = 1.82 Median = 1.84 Q <sub>3</sub> = 1.88 P <sub>90</sub> = 1.92 P <sub>99</sub> = 2.04 |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |               |               |
| Day   | Hourly Period Ending At (MST) |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   | Daily Average | Daily Maximum |
|   | 1                             | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |               |               |
| 1-Jun   | 1.9                           | 1.9 | 1.9 | 1.8 | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | A   | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8                                       | 1.83          | 1.90          |
| 2-Jun   | 1.8                           | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | A   | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9                                       | 1.84          | 1.89          |
| 3-Jun   | 1.9                           | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9                                       | 1.86          | 1.89          |
| 4-Jun   | 1.9                           | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9                                       | 1.90          | 1.92          |
| 5-Jun   | 1.9                           | 1.9 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9                                       | 1.90          | 1.96          |
| 6-Jun   | 1.9                           | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8                                       | 1.86          | 1.93          |
| 7-Jun   | 1.8                           | 1.8 | 1.8 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9                                       | 1.84          | 1.90          |
| 8-Jun   | 1.9                           | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8                                       | 1.84          | 1.95          |
| 9-Jun   | 1.8                           | 1.8 | 1.8 | 1.8 | A   | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9                                       | 1.82          | 1.86          |
| 10-Jun  | 1.9                           | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8                                       | 1.84          | 1.89          |
| 11-Jun  | 1.8                           | 1.8 | A   | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.9                                       | 1.83          | 1.87          |
| 12-Jun  | 1.9                           | A   | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8                                       | 1.83          | 1.87          |
| 13-Jun  | A                             | 1.8 | 1.8 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | A   | 1.84          | 1.86          |
| 14-Jun  | 1.9                           | 1.9 | 1.9 | 1.9 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | A   | 1.8                                       | 1.89          | 1.97          |
| 15-Jun  | 1.8                           | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | A   | 1.8 | 1.8                                       | 1.78          | 1.82          |
| 16-Jun  | 1.8                           | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | A   | 1.8 | 1.8                                       | 1.82          | 1.84          |
| 17-Jun  | 1.8                           | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | C   | C   | C   | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | A   | 1.8 | 1.9 | 1.9                                       | 1.85          | 1.88          |
| 18-Jun  | 1.9                           | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | A   | 1.8 | 1.8 | 1.8 | 1.9                                       | 1.86          | 1.92          |
| 19-Jun  | 1.9                           | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.9                                       | 1.89          | 1.93          |
| 20-Jun  | 1.9                           | 1.9 | 2.0 | 2.1 | 2.0 | 2.0 | 2.1 | 2.1 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9                                       | 1.92          | 2.09          |
| 21-Jun  | 1.9                           | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | A   | 1.8 | 1.8 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8                                       | 1.87          | 2.02          |
| 22-Jun  | 1.8                           | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 2.0 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | A   | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9                                       | 1.85          | 1.95          |
| 23-Jun  | 1.9                           | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | A   | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9                                       | 1.85          | 1.90          |
| 24-Jun  | 1.9                           | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 1.9 | 1.9 | 1.8 | 1.8 | A   | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.9                                       | 1.86          | 1.99          |
| 25-Jun  | 1.9                           | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | A   | N   | N   | N   | N   | N   | N   | N   | N   | N   | N   | N   | N   | --            | 1.89          |
| 26-Jun  | N                             | N   | N   | N   | N   | N   | N   | N   | N   | N   | C   | C   | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 1.8 | 1.8 | 1.8 | 1.8 | --  | 1.81          |               |
| 27-Jun  | 1.8                           | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | A   | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8                                       | 1.81          | 1.87          |
| 28-Jun  | 1.8                           | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9                                       | 1.82          | 1.91          |
| 29-Jun  | 1.9                           | 1.9 | 2.0 | 1.9 | 2.0 | 2.0 | 2.0 | A   | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8                                       | 1.86          | 1.97          |
| 30-Jun  | 1.8                           | 1.8 | 1.8 | 1.8 | 1.9 | 2.0 | A   | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 2.1 | 2.1 | 1.8 | 1.8 | 2.0 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8                                       | 1.86          | 2.12          |
| 1.86 1.87 1.88 1.89 1.90 1.89 1.89 1.88 1.86 1.85 1.84 1.84 1.84 1.83 1.82 1.82 1.82 1.82 1.82 1.82 1.82 1.82 1.83 1.84 1.85                                      |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Diurnal Average                           |               |               |
| 1.94 1.94 2.00 2.07 2.05 2.04 2.09 2.06 1.94 1.93 1.97 1.96 2.09 2.12 1.90 1.90 1.99 1.92 1.89 1.89 1.88 1.91 1.92 1.93   |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Diurnal Maximum                           |               |               |
| C - Calibration N - Not Valid A - Automated Daily Zero Span   |                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |               |               |

**Hourly Averages**

**Total Hydrocarbons (THC) - ppm**  
**Portable Rycroft - June 2016**



## Hourly Maximums

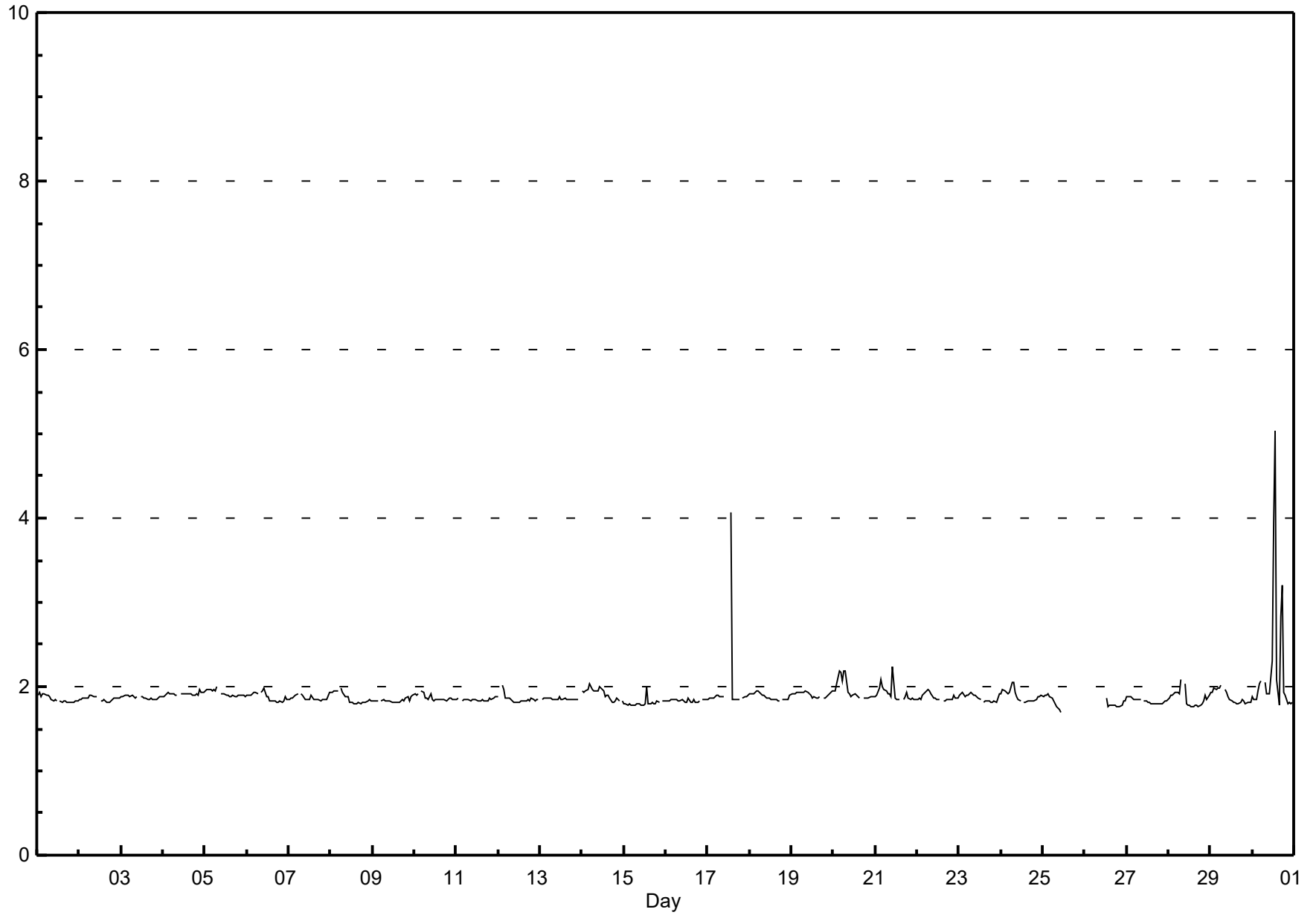
Total Hydrocarbons (THC) - ppm

Portable Rycroft - June 2016

| Maximum Value: 5.03 ppm on Jun 30 14:00      |                               | Maximum Daily Average: 2.25 ppm on Jun 30   |     | Hours in Service:         | 720  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |               |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
|--|-------------------------------|---|-----|---------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|---------------|---------------|------|------|------|-------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|--|
| Minimum Value: 1.7 ppm on Jun 25 11:00       |                               | Minimum Daily Average: 1.81 ppm on Jun 15   |     | Hours of Data:            | 663  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |               |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| Maximum Diurnal Average: 2.04 ppm at hour 14 |                               | Minimum Diurnal Average: 1.83 ppm at hour 16  |     | Hours of Missing Data:    | 57   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |               |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| Monthly Average: 1.887 ppm                   |                               | Percentiles: P <sub>1</sub> = 1.77 P <sub>10</sub> = 1.81 Q <sub>1</sub> = 1.83 Median = 1.86 Q <sub>3</sub> = 1.90 P <sub>90</sub> = 1.95 P <sub>99</sub> = 2.22 |     | Hours of Calibration:     | 35   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |               |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
|  |                               |   |     | Percent Operational Time: | 96.9 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               |               |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| Day  | Hourly Period Ending At (MST) |   |     |                           |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               | Daily Average | Daily Maximum |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
|  | 1                             | 2   | 3   | 4                         | 5    | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24            |               |               |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 1-Jun  | 1.9                           | 1.9   | 1.9 | 1.9                       | 1.9  | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | A   | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8           | 1.8           | 1.85          | 1.93 |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 2-Jun  | 1.8                           | 1.8   | 1.9 | 1.9                       | 1.9  | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.9           | 1.9           | 1.86          | 1.90 |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 3-Jun  | 1.9                           | 1.9   | 1.9 | 1.9                       | 1.9  | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.9 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.9           | 1.87          | 1.91          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 4-Jun  | 1.9                           | 1.9   | 1.9 | 1.9                       | 1.9  | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 1.9 | 1.9           | 1.91          | 1.96          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 5-Jun  | 1.9                           | 2.0   | 2.0 | 2.0                       | 2.0  | 2.0 | 2.0 | 2.0 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9           | 1.92          | 2.01          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 6-Jun  | 1.9                           | 1.9   | 1.9 | 1.9                       | 1.9  | 1.9 | 1.9 | A   | 1.9 | 1.9 | 2.0 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9           | 1.88          | 1.98          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 7-Jun  | 1.9                           | 1.9   | 1.9 | 1.9                       | 1.9  | 1.9 | A   | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9           | 1.87          | 1.93          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 8-Jun  | 1.9                           | 1.9   | 1.9 | 1.9                       | 2.0  | A   | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.8           | 1.87          | 1.98          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 9-Jun  | 1.8                           | 1.8   | 1.8 | 1.8                       | A    | 1.8 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.8 | 1.9 | 1.8 | 1.9 | 1.9 | 1.9           | 1.84          | 1.89          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 10-Jun                                       | 1.9                           | 1.9   | 1.9 | A                         | 1.9  | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.8 | 1.8           | 1.87          | 1.94          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 11-Jun                                       | 1.8                           | 1.9   | A   | 1.8                       | 1.8  | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9           | 1.85          | 1.89          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 12-Jun                                       | 1.9                           | A   | 2.0 | 2.0                       | 1.9  | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8           | 1.85          | 2.02          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 13-Jun                                       | A                             | 1.9   | 1.9 | 1.9                       | 1.9  | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | A             | 1.86          | 1.88          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 14-Jun                                       | 2.0                           | 1.9   | 2.0 | 2.0                       | 2.0  | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.9 | 1.8 | A   | 1.8           | 1.92          | 2.04          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 15-Jun                                       | 1.8                           | 1.8   | 1.8 | 1.8                       | 1.8  | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 2.0 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | A   | 1.8 | 1.8           | 1.81          | 1.99          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 16-Jun                                       | 1.8                           | 1.8   | 1.8 | 1.8                       | 1.8  | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | A   | 1.8 | 1.8           | 1.83          | 1.86          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 17-Jun                                       | 1.9                           | 1.9   | 1.9 | 1.9                       | 1.9  | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | C   | C   | C   | 4.1 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | A   | 1.9 | 1.9 | 1.9           | 1.98          | 4.07          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 18-Jun                                       | 1.9                           | 1.9   | 1.9 | 1.9                       | 1.9  | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | A   | 1.8 | 1.8 | 1.8 | 1.9           | 1.88          | 1.95          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 19-Jun                                       | 1.9                           | 1.9   | 1.9 | 1.9                       | 1.9  | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9           | 1.91          | 1.95          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 20-Jun                                       | 1.9                           | 2.0   | 2.0 | 2.2                       | 2.2  | 2.1 | 2.2 | 2.2 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A   | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9           | 1.96          | 2.19          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 21-Jun                                       | 1.9                           | 1.9   | 2.0 | 2.1                       | 2.0  | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 2.2 | 1.9 | 1.8 | 1.8 | 1.8 | A   | 1.8 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.8           | 1.92          | 2.23          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 22-Jun                                       | 1.8                           | 1.9   | 1.8 | 1.9                       | 1.9  | 1.9 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | A   | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.9           | 1.87          | 1.96          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 23-Jun                                       | 1.9                           | 1.9   | 1.9 | 1.9                       | 1.9  | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | A   | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9           | 1.87          | 1.94          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 24-Jun                                       | 1.9                           | 2.0   | 1.9 | 1.9                       | 1.9  | 1.9 | 2.0 | 2.0 | 1.9 | 1.9 | 1.8 | 1.8 | A   | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.9           | 1.89          | 2.05          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 25-Jun                                       | 1.9                           | 1.9   | 1.9 | 1.9                       | 1.9  | 1.9 | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | A   | N   | N   | N   | N   | N   | N   | N   | N   | N   | N   | N   | N             | --            | 1.91          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 26-Jun                                       | N                             | N   | N   | N                         | N    | N   | N   | N   | N   | N   | C   | C   | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8           | --            | 1.87          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 27-Jun                                       | 1.9                           | 1.9   | 1.9 | 1.9                       | 1.9  | 1.9 | 1.9 | 1.8 | 1.8 | A   | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8           | 1.83          | 1.89          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 28-Jun                                       | 1.9                           | 1.9   | 1.9 | 1.9                       | 1.9  | 1.9 | 1.9 | 2.1 | A   | 2.0 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.8 | 1.9           | 1.86          | 2.08          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 29-Jun                                       | 1.9                           | 1.9   | 2.0 | 2.0                       | 2.0  | 2.0 | 2.0 | A   | 2.0 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8           | 1.88          | 2.02          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
| 30-Jun                                       | 1.9                           | 1.8   | 1.9 | 2.0                       | 2.0  | 2.1 | A   | 2.0 | 1.9 | 1.9 | 1.9 | 2.3 | 4.0 | 5.0 | 2.1 | 1.8 | 2.8 | 3.2 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8           | 2.25          | 5.03          |      |      |      |                               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |
|  |                               |   |     |                           |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 1.89          | 1.89          | 1.91          | 1.92 | 1.92 | 1.91 | 1.92                          | 1.88 | 1.88 | 1.87 | 1.87 | 1.93 | 2.04 | 1.84 | 1.83 | 1.87 | 1.88 | 1.84 | 1.84 | 1.84 | 1.84 | 1.85 | 1.86 | 1.87 | Diurnal Average |  |
|  |                               |   |     |                           |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 1.95          | 1.97          | 2.04          | 2.18 | 2.17 | 2.07 | 2.19                          | 2.18 | 1.96 | 2.03 | 2.23 | 2.30 | 3.95 | 5.03 | 2.09 | 1.91 | 2.83 | 3.20 | 1.93 | 1.91 | 1.89 | 1.96 | 1.94 | 1.95 | Diurnal Maximum |  |
| C - Calibration                              |                               |   |     |                           |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | N - Not Valid |               |               |      |      |      | A - Automated Daily Zero Span |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                 |  |

**Hourly Maximums**

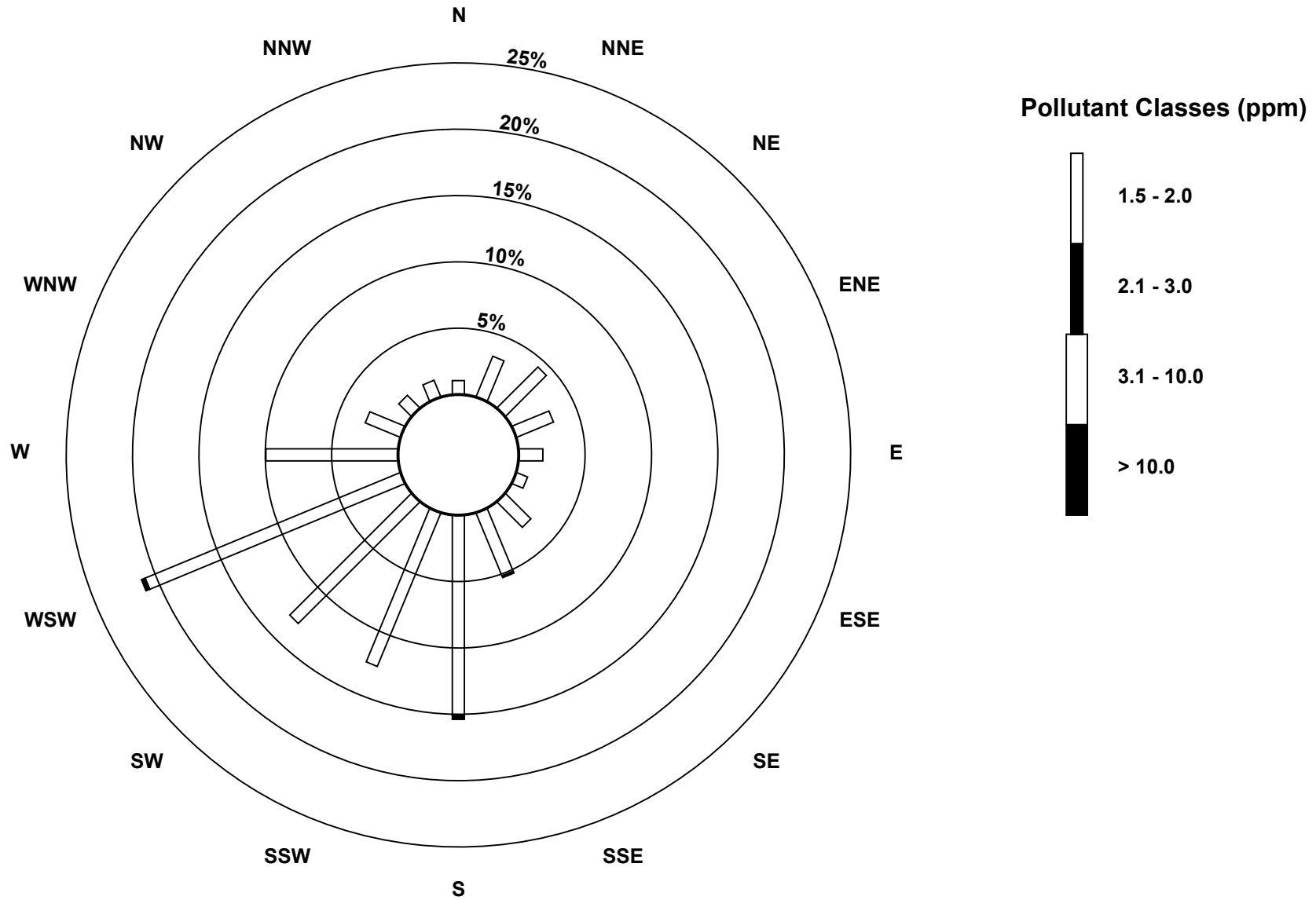
**Total Hydrocarbons (THC) - ppm**  
**Portable Rycroft - June 2016**





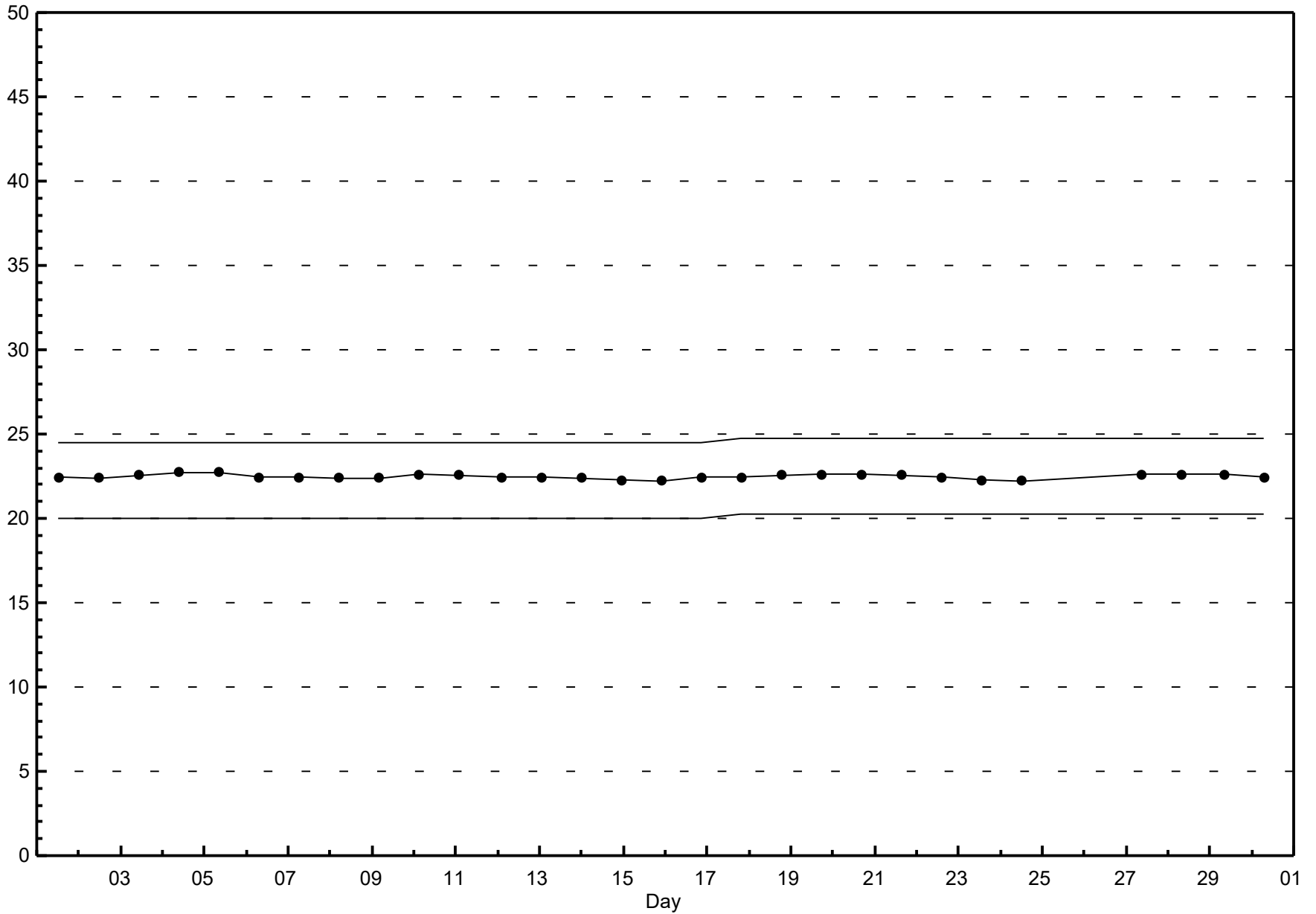
**Pollutant Rose**

**Total Hydrocarbons (THC) - ppm**  
**Portable Rycroft - June 2016**



**Span Responses**

**Total Hydrocarbons (THC)  
Portable Rycroft - June 2016**



## Hourly Averages

PM2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

Portable Rycroft - June 2016

|  |   |
|--|---|
| Number of Exceedences: 1-hr: 1 24-hr: 0  | Hours in Service: 720                                   |
| Maximum Value: 111.3 µg/m <sup>3</sup> on Jun 21 16:00   | Maximum Daily Average: 11.5 µg/m <sup>3</sup> on Jun 21 |
| Minimum Value: 0 µg/m <sup>3</sup> on Jun 1 09:00  | Hours of Data: 711                                      |
| Minimum Daily Average: 0.2 µg/m <sup>3</sup> on Jun 18   | Hours of Missing Data: 9                                |
| Maximum Diurnal Average: 5.2 µg/m <sup>3</sup> at hour 16  | Hours of Calibration: 0                                 |
| Monthly Average: 2.37 µg/m <sup>3</sup>  | Percent Operational Time: 98.8                          |
| Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 1.7 Q <sub>3</sub> = 3.3 P <sub>90</sub> = 4.9 P <sub>99</sub> = 8.5 |   |

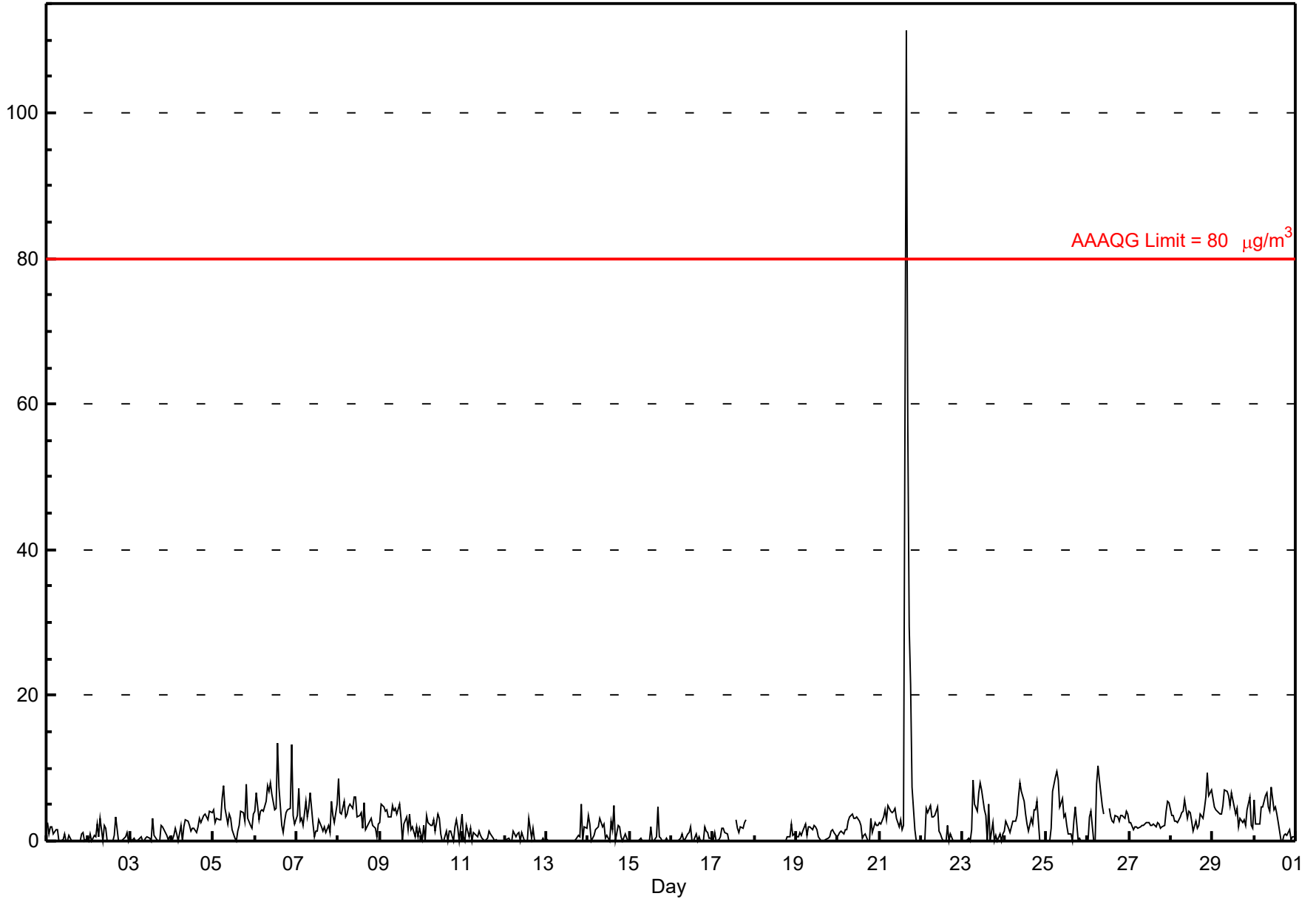
| Day    | Hourly Period Ending At (MST) |   |   |   |   |   |    |   |   |    |    |    |    |    |    |     |    |    |    |    |    |    |    |    | Daily Average | Daily Maximum |
|--------|-------------------------------|---|---|---|---|---|----|---|---|----|----|----|----|----|----|-----|----|----|----|----|----|----|----|----|---------------|---------------|
|        | 1                             | 2 | 3 | 4 | 5 | 6 | 7  | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16  | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |               |               |
| 1-Jun  | 3                             | 1 | 2 | 2 | 1 | 2 | 2  | 0 | 0 | 0  | 1  | 0  | 0  | 1  | 0  | 0   | 0  | 0  | 0  | 0  | 1  | 1  | 0  | 0  | 0.7           | 2.5           |
| 2-Jun  | 0                             | 1 | 0 | 1 | 1 | 2 | 1  | 3 | 0 | 2  | 2  | 0  | 0  | 0  | 0  | 1   | 3  | 0  | 0  | 0  | 0  | 1  | 1  | 0  | 0.8           | 3.2           |
| 3-Jun  | 1                             | 0 | 0 | 0 | 0 | 0 | 1  | 0 | 0 | 0  | 1  | 0  | 0  | 3  | 1  | 0   | 0  | 0  | 2  | 2  | 1  | 1  | 0  | 1  | 0.6           | 3.1           |
| 4-Jun  | 0                             | 1 | 2 | 1 | 0 | 2 | 0  | 2 | 3 | 3  | 2  | 1  | 2  | 2  | 1  | 2   | 3  | 3  | 3  | 4  | 3  | 3  | 4  | 4  | 2.1           | 4.0           |
| 5-Jun  | 4                             | 3 | 3 | 3 | 3 | 6 | 8  | 4 | 2 | 4  | 3  | 2  | 0  | 0  | 1  | 2   | 4  | 4  | 3  | 8  | 3  | 2  | 2  | 4  | 3.2           | 7.9           |
| 6-Jun  | 4                             | 7 | 3 | 4 | 4 | 4 | 5  | 8 | 7 | 8  | 7  | 4  | 5  | 14 | 7  | 2   | 1  | 3  | 4  | 4  | 5  | 13 | 4  | 2  | 5.3           | 13.5          |
| 7-Jun  | 4                             | 7 | 3 | 3 | 2 | 5 | 3  | 4 | 7 | 2  | 1  | 1  | 1  | 3  | 2  | 1   | 2  | 1  | 2  | 1  | 6  | 4  | 3  | 5  | 3.1           | 7.3           |
| 8-Jun  | 9                             | 4 | 4 | 5 | 3 | 4 | 5  | 5 | 4 | 6  | 6  | 3  | 3  | 4  | 2  | 5   | 2  | 2  | 3  | 3  | 2  | 2  | 1  | 2  | 3.7           | 8.6           |
| 9-Jun  | 3                             | 5 | 5 | 4 | 4 | 3 | 3  | 5 | 4 | 5  | 4  | 5  | 3  | 0  | 2  | 3   | 1  | 4  | 2  | 2  | 1  | 2  | 1  | 2  | 3.0           | 5.1           |
| 10-Jun | 0                             | 2 | 0 | 4 | 3 | 2 | 2  | 3 | 1 | 4  | 3  | 1  | 0  | 0  | 1  | 0   | 1  | 1  | 0  | 2  | 3  | 2  | 0  | 4  | 1.6           | 3.6           |
| 11-Jun | 1                             | 0 | 2 | 1 | 2 | 0 | 1  | 1 | 1 | 1  | 1  | 0  | 0  | 0  | 0  | 1   | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0.6           | 2.1           |
| 12-Jun | 0                             | 0 | 0 | 0 | 0 | 1 | 1  | 1 | 1 | 0  | 1  | 0  | 0  | 0  | 3  | 0   | 2  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0.5           | 3.2           |
| 13-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0  | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0  | 0  | 1  | 1  | 5  | 0  | 2  | 2  | 0.4           | 5.0           |
| 14-Jun | 4                             | 2 | 0 | 1 | 2 | 2 | 2  | 3 | 2 | 2  | 0  | 1  | 0  | 3  | 2  | 5   | 0  | 2  | 2  | 1  | 0  | 1  | 0  | 0  | 1.5           | 4.9           |
| 15-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0  | 0 | 0 | 0  | 0  | 0  | 2  | 0  | 0  | 0   | 5  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0.4           | 4.6           |
| 16-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 1  | 0 | 0 | 1  | 1  | 2  | 0  | 0  | 1  | 0   | 1  | 0  | 0  | 2  | 1  | 1  | 0  | 0  | 0.5           | 1.9           |
| 17-Jun | 0                             | 1 | 0 | 0 | 1 | 2 | 2  | 1 | 1 | 0  | M  | M  | M  | 3  | 2  | 1   | 2  | 2  | 2  | 3  | N  | N  | N  | N  | --            | 3.0           |
| 18-Jun | 0                             | 0 | 0 | 0 | 0 | 0 | 0  | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0  | 0  | 0  | 1  | 1  | 2  | 1  | 1  | 0.2           | 2.3           |
| 19-Jun | 1                             | 1 | 1 | 1 | 1 | 2 | 1  | 2 | 2 | 1  | 2  | 2  | 2  | 1  | 0  | 0   | 0  | 0  | 0  | 1  | 1  | 2  | 1  | 1  | 1.1           | 2.3           |
| 20-Jun | 1                             | 1 | 1 | 1 | 1 | 1 | 3  | 3 | 4 | 3  | 3  | 3  | 3  | 2  | 0  | 1   | 1  | 0  | 0  | 3  | 1  | 3  | 2  | 2  | 1.9           | 3.7           |
| 21-Jun | 2                             | 2 | 3 | 4 | 3 | 5 | 4  | 4 | 4 | 5  | 3  | 2  | 3  | 2  | 2  | 111 | 57 | 29 | 21 | 7  | 1  | 0  | 0  | 0  | 11.5          | 111.3         |
| 22-Jun | 0                             | 0 | 0 | 4 | 4 | 5 | 3  | 3 | 4 | 5  | 1  | 1  | 0  | 0  | 0  | 2   | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 1.4           | 4.9           |
| 23-Jun | 0                             | 0 | 0 | 0 | 0 | 2 | 8  | 5 | 4 | 7  | 8  | 7  | 4  | 4  | 0  | 5   | 0  | 3  | 0  | 1  | 0  | 1  | 0  | 1  | 2.5           | 8.3           |
| 24-Jun | 1                             | 3 | 2 | 1 | 2 | 3 | 3  | 4 | 6 | 8  | 7  | 6  | 4  | 2  | 1  | 3   | 2  | 4  | 4  | 5  | 0  | 0  | 0  | 0  | 3.0           | 8.1           |
| 25-Jun | 0                             | 0 | 0 | 2 | 7 | 9 | 9  | 8 | 5 | 6  | 3  | 4  | 2  | 1  | 1  | 0   | 3  | 5  | 0  | 0  | 0  | 0  | 0  | 0  | 2.7           | 9.5           |
| 26-Jun | 0                             | 3 | 4 | 0 | 0 | 8 | 10 | 8 | 5 | 4  | M  | M  | 5  | 3  | 3  | 3   | 4  | 3  | 3  | 4  | 4  | 3  | 4  | 4  | 3.8           | 10.3          |
| 27-Jun | 2                             | 3 | 1 | 2 | 2 | 2 | 2  | 2 | 2 | 2  | 3  | 3  | 2  | 2  | 2  | 2   | 2  | 2  | 2  | 2  | 2  | 4  | 6  | 5  | 2.5           | 5.5           |
| 28-Jun | 3                             | 3 | 3 | 3 | 3 | 3 | 4  | 4 | 6 | 3  | 4  | 4  | 3  | 1  | 3  | 2   | 2  | 4  | 3  | 5  | 6  | 9  | 6  | 7  | 3.9           | 9.3           |
| 29-Jun | 6                             | 5 | 4 | 4 | 4 | 4 | 5  | 7 | 7 | 6  | 5  | 7  | 5  | 4  | 4  | 2   | 3  | 2  | 3  | 2  | 4  | 6  | 2  | 2  | 4.2           | 7.0           |
| 30-Jun | 6                             | 2 | 2 | 2 | 5 | 5 | 6  | 7 | 5 | 4  | 7  | 4  | 5  | 4  | 3  | 0   | 0  | 1  | 1  | 1  | 2  | 0  | 1  | 1  | 3.0           | 7.4           |

|     |     |     |     |     |     |      |     |     |     |     |     |     |      |     |       |      |      |      |     |     |      |     |     |                 |  |
|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|------|-----|-------|------|------|------|-----|-----|------|-----|-----|-----------------|--|
| 1.8 | 1.9 | 1.5 | 1.8 | 1.9 | 2.8 | 3.2  | 3.3 | 2.9 | 3.1 | 2.8 | 2.3 | 1.8 | 1.9  | 1.5 | 5.2   | 3.4  | 2.6  | 2.1  | 2.1 | 1.8 | 2.2  | 1.4 | 1.7 | Diurnal Average |  |
| 8.6 | 7.3 | 4.6 | 5.4 | 6.8 | 8.7 | 10.3 | 8.5 | 6.9 | 8.1 | 8.0 | 6.9 | 4.6 | 13.5 | 7.5 | 111.3 | 57.4 | 29.4 | 21.4 | 7.9 | 6.0 | 13.3 | 6.3 | 6.9 | Diurnal Maximum |  |

M - Maintenance      N - Not Valid  
 Alberta Ambient Air Quality Guideline (AAQG): 1-hr 80 µg/m<sup>3</sup>      Alberta Ambient Air Quality Objective (AAQO): 24-hr 30 µg/m<sup>3</sup>

### Hourly Averages

PM2.5 (PM<sub>2.5</sub>) -  $\mu\text{g}/\text{m}^3$   
Portable Rycroft - June 2016



## Hourly Maximums

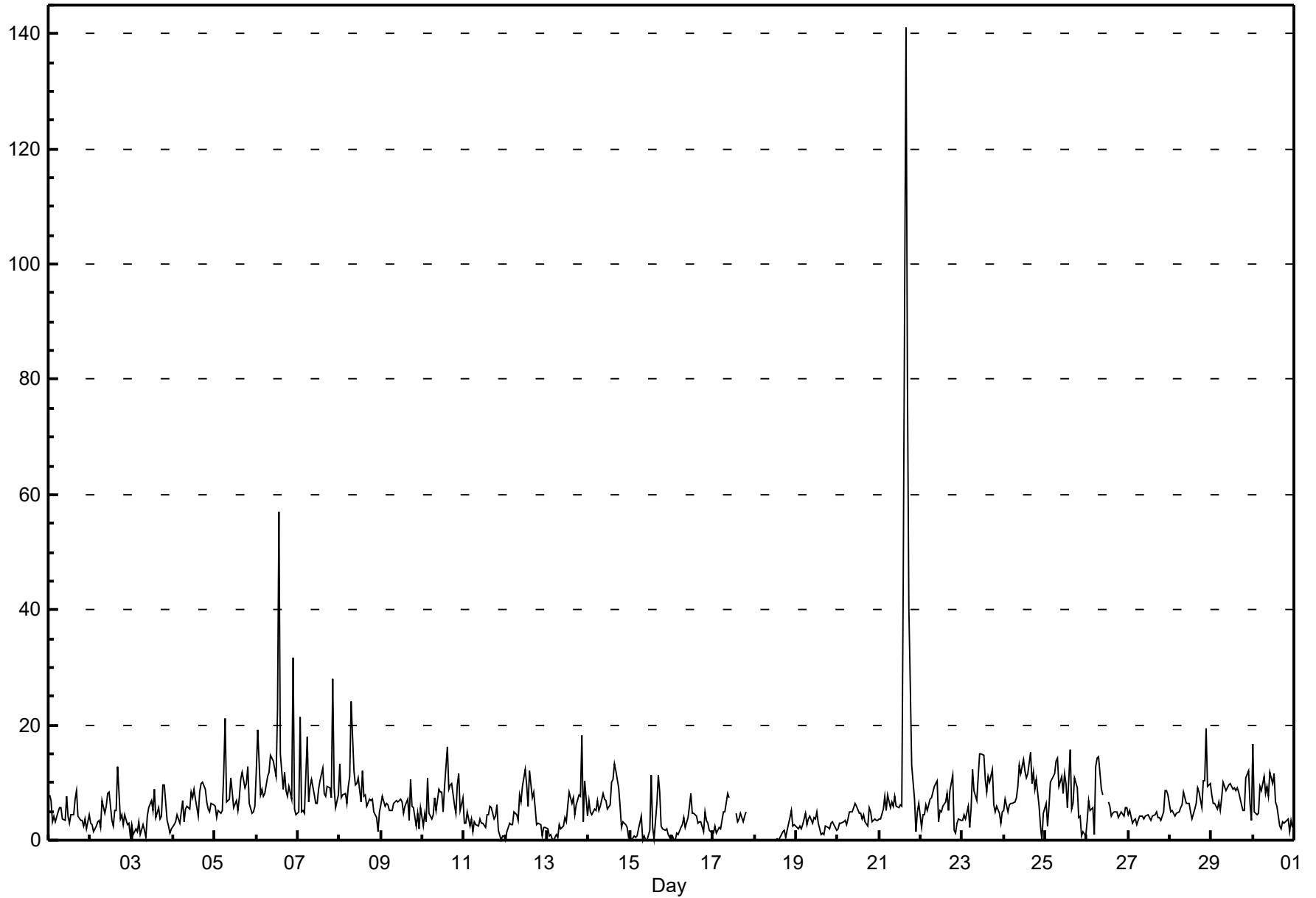
PM2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

Portable Rycroft - June 2016

| Maximum Value: 141.1 µg/m <sup>3</sup> on Jun 21 16:00     |                               | Maximum Daily Average: 18.6 µg/m <sup>3</sup> on Jun 21  |   | Hours in Service: 720          |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
|--|-------------------------------|--|---|--------------------------------|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|----|----|----|------|---------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|-----|-----------------|
| Minimum Value: 0 µg/m <sup>3</sup> on Jun 11 22:00         |                               | Minimum Daily Average: 0.9 µg/m <sup>3</sup> on Jun 18   |   | Hours of Data: 711             |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| Maximum Diurnal Average: 11.3 µg/m <sup>3</sup> at hour 16 |                               | Minimum Diurnal Average: 3.8 µg/m <sup>3</sup> at hour 23  |   | Hours of Missing Data: 9       |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| Monthly Average: 6.31 µg/m <sup>3</sup>                    |                               | Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 1.6 Q <sub>1</sub> = 3.1 Median = 5.1 Q <sub>3</sub> = 8.0 P <sub>90</sub> = 11.0 P <sub>99</sub> = 25.8 |   | Hours of Calibration: 0        |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
|  |                               |  |   | Percent Operational Time: 98.8 |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| Day  | Hourly Period Ending At (MST) |  |   |                                |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    |      | Daily Average | Daily Maximum |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
|  | 1                             | 2  | 3 | 4                              | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16  | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24   |               |               |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 1-Jun  | 8                             | 7  | 3 | 4                              | 3  | 5  | 6  | 6  | 4  | 3  | 8  | 4  | 3  | 4  | 5  | 7   | 9  | 4  | 3  | 3  | 2  | 4  | 2  | 4    | 4.6           | 8.6           |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 2-Jun  | 3                             | 3  | 1 | 3                              | 3  | 4  | 2  | 7  | 5  | 6  | 8  | 8  | 4  | 3  | 5  | 5   | 13 | 4  | 5  | 3  | 4  | 3  | 3  | 1    | 4.3           | 12.8          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 3-Jun  | 3                             | 1  | 2 | 2                              | 3  | 1  | 3  | 2  | 1  | 4  | 6  | 7  | 5  | 9  | 4  | 6   | 4  | 4  | 10 | 10 | 3  | 3  | 1  | 2    | 3.9           | 9.7           |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 4-Jun  | 3                             | 3  | 4 | 4                              | 3  | 7  | 3  | 5  | 6  | 5  | 8  | 7  | 9  | 7  | 4  | 8   | 10 | 10 | 9  | 7  | 5  | 5  | 6  | 6    | 6.1           | 10.0          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 5-Jun  | 6                             | 4  | 5 | 5                              | 5  | 12 | 21 | 7  | 7  | 11 | 8  | 6  | 7  | 5  | 7  | 11  | 12 | 9  | 10 | 13 | 6  | 5  | 5  | 6    | 8.0           | 21.2          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 6-Jun  | 12                            | 19   | 8 | 9                              | 8  | 8  | 11 | 12 | 15 | 14 | 14 | 11 | 23 | 57 | 15 | 9   | 12 | 9  | 8  | 9  | 7  | 32 | 5  | 4    | 13.7          | 57.0          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 7-Jun  | 5                             | 21   | 5 | 5                              | 5  | 18 | 7  | 9  | 11 | 8  | 6  | 6  | 9  | 10 | 13 | 8   | 7  | 9  | 9  | 7  | 28 | 9  | 6  | 8    | 9.6           | 28.0          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 8-Jun  | 13                            | 7  | 8 | 8                              | 6  | 9  | 11 | 24 | 12 | 10 | 10 | 11 | 7  | 12 | 8  | 8   | 6  | 7  | 7  | 7  | 5  | 4  | 2  | 5    | 8.6           | 24.0          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 9-Jun  | 6                             | 8  | 6 | 6                              | 6  | 5  | 5  | 6  | 7  | 7  | 7  | 7  | 7  | 5  | 6  | 7   | 3  | 10 | 6  | 6  | 3  | 5  | 2  | 6    | 5.8           | 10.5          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 10-Jun   | 2                             | 5  | 3 | 11                             | 5  | 4  | 4  | 7  | 5  | 9  | 8  | 8  | 5  | 9  | 16 | 9   | 10 | 10 | 6  | 5  | 9  | 12 | 5  | 7    | 7.3           | 16.2          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 11-Jun   | 3                             | 3  | 5 | 2                              | 4  | 2  | 3  | 3  | 2  | 4  | 3  | 3  | 2  | 4  | 4  | 6   | 6  | 4  | 4  | 6  | 2  | 0  | 1  | 1    | 3.2           | 6.1           |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 12-Jun   | 0                             | 2  | 3 | 3                              | 3  | 5  | 4  | 3  | 8  | 7  | 9  | 12 | 9  | 6  | 12 | 7   | 8  | 6  | 3  | 3  | 3  | 1  | 2  | 2    | 5.1           | 12.2          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 13-Jun   | 2                             | 1  | 1 | 0                              | 0  | 1  | 1  | 3  | 2  | 2  | 4  | 3  | 6  | 8  | 6  | 7   | 4  | 6  | 8  | 8  | 18 | 3  | 10 | 4    | 4.6           | 18.2          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 14-Jun   | 7                             | 5  | 5 | 5                              | 5  | 7  | 5  | 6  | 8  | 7  | 7  | 5  | 6  | 10 | 11 | 13  | 12 | 9  | 6  | 2  | 3  | 3  | 2  | 1    | 6.3           | 13.2          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 15-Jun   | 1                             | 0  | 1 | 1                              | 1  | 2  | 4  | 0  | 1  | 0  | 0  | 2  | 11 | 2  | 0  | 6   | 11 | 8  | 2  | 2  | 2  | 2  | 1  | 0    | 2.5           | 11.3          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 16-Jun   | 1                             | 0  | 0 | 1                              | 1  | 2  | 3  | 4  | 2  | 4  | 6  | 8  | 5  | 5  | 4  | 3   | 3  | 3  | 1  | 5  | 3  | 3  | 2  | 1    | 2.9           | 8.1           |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 17-Jun   | 1                             | 2  | 1 | 2                              | 2  | 3  | 5  | 5  | 8  | 7  | M  | M  | M  | 5  | 3  | 4   | 5  | 3  | 4  | 5  | N  | N  | N  | N    | --            | 8.2           |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 18-Jun   | 0                             | 0  | 0 | 0                              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1   | 2  | 2  | 1  | 2  | 4  | 5  | 3  | 3    | 0.9           | 5.2           |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 19-Jun   | 2                             | 2  | 2 | 2                              | 3  | 5  | 3  | 4  | 4  | 3  | 4  | 4  | 5  | 3  | 1  | 1   | 1  | 2  | 2  | 2  | 3  | 3  | 3  | 2    | 2.7           | 4.9           |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 20-Jun   | 2                             | 3  | 3 | 3                              | 3  | 3  | 4  | 5  | 5  | 6  | 6  | 6  | 5  | 5  | 4  | 4   | 3  | 3  | 6  | 5  | 3  | 4  | 3  | 4    | 4.0           | 6.3           |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 21-Jun   | 4                             | 4  | 5 | 8                              | 5  | 8  | 6  | 7  | 6  | 8  | 6  | 6  | 6  | 6  | 44 | 141 | 80 | 40 | 27 | 13 | 7  | 1  | 5  | 6    | 18.6          | 141.1         |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 22-Jun   | 2                             | 4  | 4 | 6                              | 5  | 7  | 7  | 8  | 9  | 10 | 3  | 5  | 5  | 6  | 7  | 8   | 5  | 9  | 11 | 2  | 1  | 3  | 4  | 3    | 5.7           | 11.3          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 23-Jun   | 4                             | 4  | 4 | 6                              | 2  | 6  | 12 | 9  | 7  | 11 | 15 | 15 | 15 | 11 | 8  | 11  | 10 | 12 | 6  | 5  | 6  | 5  | 3  | 5    | 8.0           | 15.1          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 24-Jun   | 5                             | 7  | 5 | 6                              | 6  | 6  | 7  | 7  | 9  | 13 | 12 | 14 | 12 | 11 | 11 | 15  | 10 | 12 | 9  | 10 | 6  | 2  | 0  | 5    | 8.4           | 15.3          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 25-Jun   | 6                             | 2  | 6 | 10                             | 11 | 12 | 14 | 14 | 9  | 11 | 8  | 12 | 10 | 6  | 16 | 5   | 6  | 11 | 9  | 4  | 4  | 1  | 2  | 1    | 7.9           | 15.8          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 26-Jun   | 3                             | 7  | 5 | 6                              | 1  | 13 | 14 | 15 | 9  | 8  | M  | M  | 7  | 6  | 4  | 5   | 5  | 5  | 4  | 4  | 5  | 4  | 6  | 6    | 6.4           | 14.6          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 27-Jun   | 4                             | 5  | 3 | 3                              | 4  | 3  | 4  | 4  | 4  | 4  | 4  | 4  | 4  | 4  | 4  | 5   | 5  | 4  | 4  | 4  | 5  | 9  | 9  | 8    | 4.6           | 8.7           |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 28-Jun   | 5                             | 5  | 5 | 4                              | 5  | 5  | 6  | 6  | 8  | 6  | 6  | 6  | 5  | 4  | 5  | 6   | 9  | 8  | 6  | 10 | 10 | 19 | 9  | 10   | 7.1           | 19.5          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 29-Jun   | 8                             | 6  | 6 | 5                              | 7  | 5  | 7  | 10 | 8  | 9  | 10 | 10 | 9  | 9  | 9  | 9   | 8  | 6  | 5  | 5  | 11 | 12 | 6  | 3    | 7.7           | 12.0          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
| 30-Jun   | 17                            | 5  | 4 | 5                              | 9  | 9  | 11 | 8  | 9  | 8  | 12 | 10 | 11 | 7  | 6  | 3   | 2  | 3  | 3  | 3  | 4  | 1  | 3  | 2    | 6.4           | 16.7          |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |
|  |                               |  |   |                                |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    | 4.6  | 4.8           | 3.8           | 4.5  | 4.1  | 5.8  | 6.4  | 6.9  | 6.4  | 6.8  | 7.1  | 7.2  | 7.2  | 7.9  | 8.1  | 11.3  | 9.4  | 7.8  | 6.4  | 5.7  | 6.0  | 5.6  | 3.8  | 4.0 | Diurnal Average |
|  |                               |  |   |                                |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    | 16.7 | 21.5          | 7.9           | 10.9 | 10.7 | 17.9 | 21.2 | 24.0 | 14.9 | 14.2 | 14.9 | 15.1 | 22.6 | 57.0 | 43.8 | 141.1 | 79.9 | 40.2 | 27.0 | 13.1 | 28.0 | 31.7 | 10.4 | 9.9 | Diurnal Maximum |
| M - Maintenance      N - Not Valid                         |                               |  |   |                                |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    |      |               |               |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |     |                 |

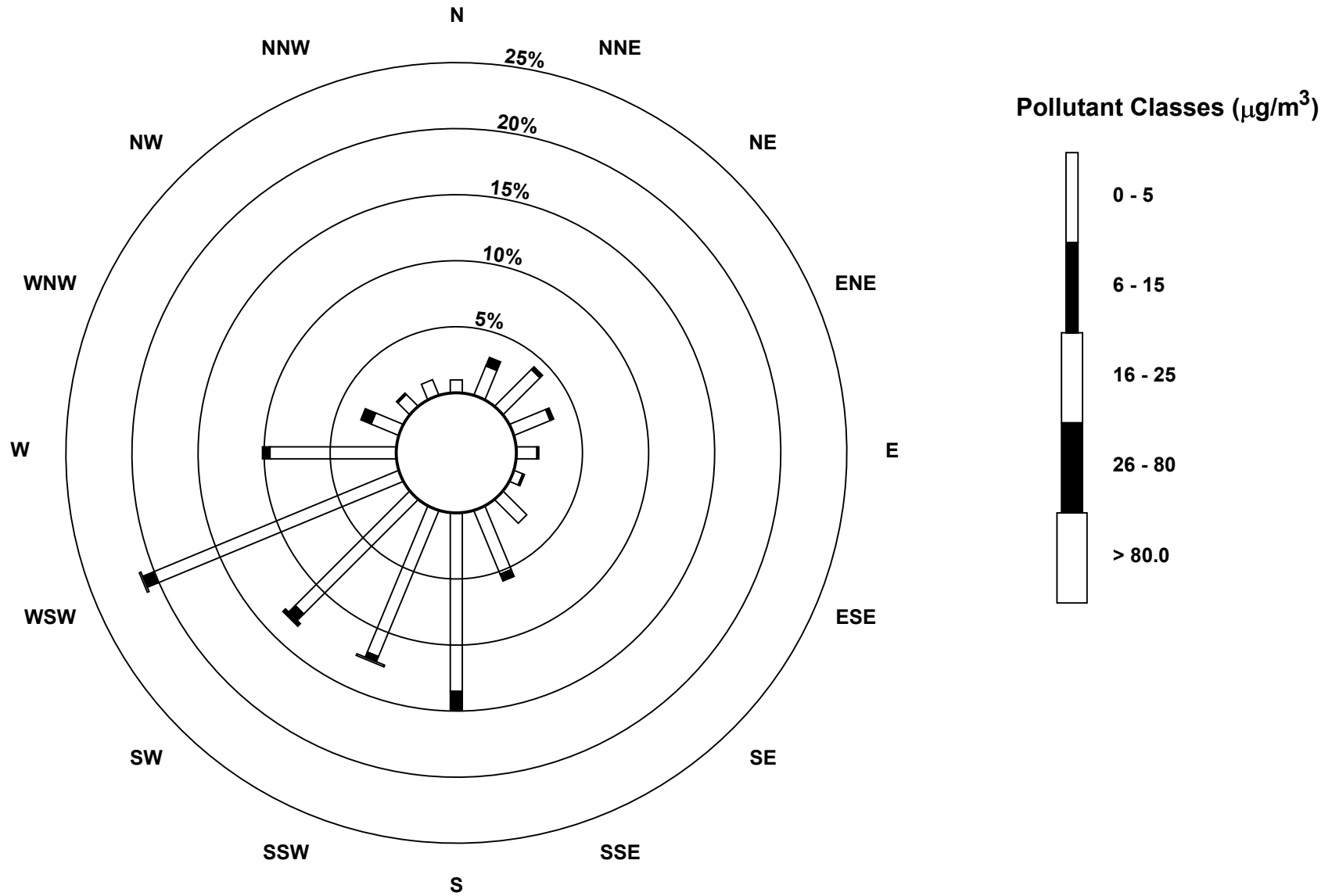
### Hourly Maximums

PM2.5 (PM<sub>2.5</sub>) -  $\mu\text{g}/\text{m}^3$   
Portable Rycroft - June 2016



**Pollutant Rose**

**PM<sub>2.5</sub> (PM<sub>2.5</sub>) -  $\mu\text{g}/\text{m}^3$   
Portable Rycroft - June 2016**





Peace Airshed Zone Association

# Hourly Averages

External Temperature (ET) - °C

Portable Rycroft - June 2016

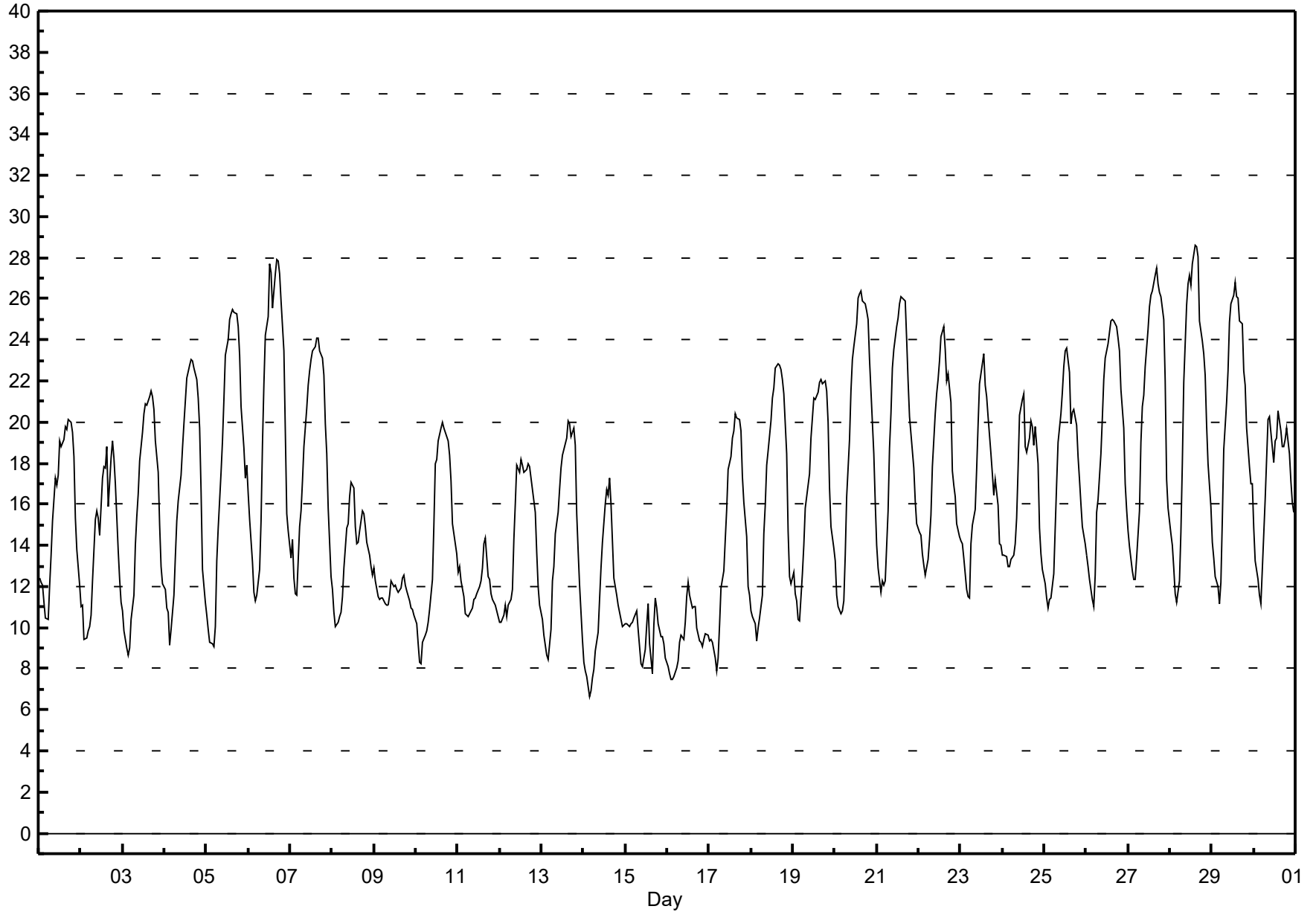
| Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0<br>Maximum Value: 28.6 °C on Jun 28 15:00      Maximum Daily Average: 20.8 °C on Jun 28 |                               | Hours in Service: 720<br>Hours of Data: 720<br>Hours of Missing Data: 0<br>Hours of Calibration: 0<br>Percent Operational Time: 100.0   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |               |               |
|---|-------------------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------------|---------------|---------------|
| Minimum Value: 7 °C on Jun 14 04:00<br>Maximum Diurnal Average: 20.7 °C at hour 16<br>Monthly Average: 16.13 °C                         |                               | Minimum Daily Average: 9.5 °C on Jun 16<br>Minimum Diurnal Average: 10.4 °C at hour 5<br>Percentiles: P <sub>1</sub> = 7.8 P <sub>10</sub> = 10.1 Q <sub>1</sub> = 11.6 Median = 15.3 Q <sub>3</sub> = 20.0 P <sub>90</sub> = 23.6 P <sub>99</sub> = 27.7 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 |               |               |
| Day   | Hourly Period Ending At (MST) |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                 | Daily Average | Daily Maximum |
|   | 1                             | 2   | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24              |               |               |
| 1-Jun   | 12                            | 12  | 12 | 11 | 10 | 10 | 12 | 13 | 15 | 17 | 17 | 17 | 19 | 19 | 19 | 20 | 20 | 20 | 20 | 20 | 18 | 15 | 14 | 12              | 15.7          | 20.2          |
| 2-Jun   | 11                            | 11  | 9  | 9  | 10 | 10 | 11 | 12 | 15 | 16 | 15 | 14 | 17 | 18 | 18 | 19 | 16 | 18 | 19 | 18 | 17 | 14 | 12 | 11              | 14.3          | 19.1          |
| 3-Jun   | 11                            | 10  | 9  | 9  | 9  | 10 | 12 | 14 | 15 | 17 | 18 | 20 | 20 | 21 | 21 | 21 | 22 | 21 | 21 | 19 | 18 | 15 | 13 | 12              | 15.7          | 21.5          |
| 4-Jun   | 12                            | 11  | 11 | 9  | 10 | 12 | 13 | 15 | 16 | 17 | 19 | 20 | 21 | 22 | 23 | 23 | 23 | 23 | 22 | 21 | 20 | 17 | 13 | 11              | 16.8          | 23.0          |
| 5-Jun   | 11                            | 10  | 9  | 9  | 9  | 10 | 13 | 15 | 18 | 19 | 21 | 23 | 24 | 25 | 25 | 25 | 25 | 25 | 25 | 23 | 21 | 19 | 17 | 18              | 18.3          | 25.5          |
| 6-Jun   | 17                            | 15  | 13 | 12 | 11 | 12 | 13 | 15 | 19 | 22 | 24 | 25 | 28 | 27 | 26 | 27 | 28 | 28 | 27 | 26 | 23 | 19 | 16 | 15              | 20.3          | 27.9          |
| 7-Jun   | 13                            | 14  | 12 | 12 | 12 | 15 | 16 | 17 | 19 | 21 | 22 | 22 | 23 | 23 | 24 | 24 | 24 | 23 | 23 | 22 | 20 | 18 | 16 | 13              | 18.7          | 24.1          |
| 8-Jun   | 12                            | 11  | 10 | 10 | 11 | 11 | 12 | 13 | 15 | 15 | 16 | 17 | 17 | 15 | 14 | 14 | 15 | 16 | 16 | 15 | 14 | 13 | 13 | 13              | 13.6          | 17.1          |
| 9-Jun   | 13                            | 12  | 12 | 11 | 11 | 11 | 11 | 11 | 11 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 12 | 12 | 11 | 11 | 11 | 11              | 11.7          | 12.9          |
| 10-Jun  | 10                            | 9   | 8  | 8  | 9  | 10 | 10 | 10 | 11 | 12 | 15 | 18 | 18 | 19 | 20 | 20 | 20 | 19 | 19 | 18 | 17 | 15 | 15 | 14              | 14.4          | 20.0          |
| 11-Jun  | 13                            | 13  | 12 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 12 | 12 | 12 | 13 | 14 | 14 | 13 | 12 | 12 | 11 | 11 | 11 | 11              | 11.8          | 14.3          |
| 12-Jun  | 10                            | 10  | 11 | 11 | 11 | 11 | 11 | 12 | 14 | 16 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 17 | 17 | 16 | 14 | 12 | 11              | 14.4          | 18.2          |
| 13-Jun  | 10                            | 10  | 9  | 9  | 8  | 10 | 12 | 13 | 15 | 16 | 17 | 18 | 18 | 19 | 19 | 20 | 20 | 19 | 20 | 19 | 16 | 14 | 12 | 9               | 14.6          | 20.0          |
| 14-Jun  | 8                             | 8   | 8  | 7  | 7  | 8  | 8  | 9  | 10 | 11 | 13 | 14 | 16 | 17 | 16 | 17 | 16 | 12 | 12 | 12 | 11 | 10 | 10 | 10              | 11.3          | 17.3          |
| 15-Jun  | 10                            | 10  | 10 | 10 | 10 | 10 | 11 | 10 | 9  | 8  | 8  | 9  | 10 | 11 | 9  | 8  | 10 | 11 | 11 | 10 | 10 | 10 | 9  | 9               | 9.8           | 11.5          |
| 16-Jun  | 8                             | 8   | 7  | 7  | 8  | 8  | 8  | 9  | 10 | 9  | 10 | 11 | 12 | 12 | 11 | 11 | 11 | 10 | 9  | 9  | 9  | 9  | 10 | 10              | 9.5           | 12.2          |
| 17-Jun  | 9                             | 9   | 9  | 9  | 8  | 8  | 10 | 12 | 13 | 14 | 16 | 18 | 18 | 19 | 20 | 20 | 20 | 20 | 20 | 17 | 16 | 14 | 12 | 12              | 14.3          | 20.4          |
| 18-Jun  | 11                            | 11  | 10 | 9  | 10 | 10 | 12 | 15 | 16 | 18 | 19 | 20 | 21 | 22 | 23 | 23 | 23 | 23 | 22 | 21 | 18 | 15 | 13 | 12              | 16.5          | 22.9          |
| 19-Jun  | 13                            | 12  | 11 | 10 | 10 | 13 | 14 | 16 | 16 | 17 | 19 | 20 | 21 | 21 | 21 | 22 | 22 | 22 | 22 | 22 | 20 | 17 | 15 | 14              | 17.1          | 22.0          |
| 20-Jun  | 13                            | 12  | 11 | 11 | 11 | 11 | 14 | 16 | 19 | 21 | 23 | 24 | 25 | 26 | 26 | 26 | 26 | 26 | 25 | 25 | 23 | 20 | 18 | 16              | 19.5          | 26.4          |
| 21-Jun  | 14                            | 13  | 12 | 12 | 12 | 12 | 16 | 19 | 20 | 23 | 24 | 25 | 25 | 26 | 26 | 26 | 26 | 24 | 22 | 20 | 19 | 18 | 16 | 15              | 19.3          | 26.1          |
| 22-Jun  | 15                            | 15  | 14 | 13 | 13 | 13 | 14 | 15 | 18 | 20 | 21 | 22 | 23 | 24 | 25 | 24 | 22 | 22 | 21 | 18 | 17 | 16 | 15 | 14              | 18.1          | 24.7          |
| 23-Jun  | 14                            | 14  | 13 | 12 | 11 | 11 | 14 | 15 | 16 | 18 | 20 | 22 | 23 | 23 | 22 | 21 | 20 | 18 | 17 | 16 | 17 | 16 | 14 | 14              | 16.8          | 23.3          |
| 24-Jun  | 14                            | 14  | 13 | 13 | 13 | 13 | 14 | 14 | 15 | 18 | 20 | 21 | 21 | 19 | 19 | 19 | 20 | 20 | 19 | 20 | 18 | 15 | 14 | 13              | 16.6          | 21.4          |
| 25-Jun  | 12                            | 11  | 11 | 11 | 11 | 13 | 15 | 17 | 19 | 20 | 21 | 23 | 23 | 24 | 22 | 20 | 20 | 21 | 20 | 18 | 17 | 16 | 15 | 14              | 17.3          | 23.6          |
| 26-Jun  | 14                            | 13  | 12 | 11 | 11 | 13 | 16 | 16 | 18 | 20 | 22 | 23 | 24 | 24 | 25 | 25 | 25 | 25 | 24 | 23 | 22 | 20 | 17 | 16              | 19.1          | 25.0          |
| 27-Jun  | 15                            | 14  | 13 | 12 | 12 | 13 | 16 | 19 | 21 | 21 | 23 | 25 | 26 | 26 | 26 | 27 | 27 | 27 | 26 | 26 | 25 | 22 | 17 | 16              | 20.6          | 27.5          |
| 28-Jun  | 15                            | 14  | 13 | 12 | 11 | 12 | 15 | 18 | 22 | 26 | 27 | 27 | 27 | 28 | 29 | 29 | 28 | 25 | 24 | 23 | 22 | 20 | 18 | 16              | 20.8          | 28.6          |
| 29-Jun  | 14                            | 13  | 12 | 12 | 11 | 12 | 15 | 19 | 21 | 22 | 25 | 26 | 26 | 27 | 26 | 26 | 26 | 25 | 25 | 22 | 22 | 20 | 18 | 17              | 19.8          | 26.8          |
| 30-Jun  | 15                            | 13  | 12 | 12 | 11 | 13 | 16 | 18 | 20 | 20 | 20 | 18 | 19 | 19 | 21 | 20 | 19 | 19 | 19 | 20 | 18 | 17 | 16 | 16              | 17.1          | 20.6          |
| 12.3 11.7 11.0 10.5 10.4 11.3 12.8 14.3 15.9 17.3 18.5 19.4 20.3 20.6 20.6 20.7 20.6 20.2 19.6 18.8 17.5 15.6 14.0 13.1                 |                               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Diurnal Average |               |               |
| 16.5 15.3 13.6 13.0 13.0 14.9 16.2 19.0 21.9 25.7 26.7 27.1 27.7 27.7 28.6 28.6 28.0 27.9 27.2 26.1 25.0 22.0 18.5 17.9                 |                               |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Diurnal Maximum |               |               |



**Hourly Averages**

**External Temperature (ET) - °C**

**Portable Rycroft - June 2016**



## Hourly Averages

Wind Speed (km/h)  
 Wind Direction (deg)  
 Portable Rocroft - June 2016

| Day    | Hourly Period Ending At (MST) |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Daily Average | Daily Maximum |
|--------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|---------------|
|        | 1                             | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |               |               |
| 1 Spd  | 5                             | 7   | 12  | 4   | 3   | 1   | 3   | 5   | 4   | 3   | 5   | 7   | 9   | 12  | 6   | 6   | 7   | 5   | 4   | 5   | 4   | 6   | 3   | 7   | 4.5           | 11.9          |
| Dir    | 169                           | 244 | 247 | 251 | 251 | 212 | 194 | 171 | 176 | 203 | 265 | 221 | 226 | 248 | 209 | 230 | 230 | 183 | 187 | 174 | 138 | 157 | 148 | 173 | 212.0         | 246.9         |
| 2 Spd  | 6                             | 6   | 2   | 5   | 5   | 5   | 6   | 6   | 5   | 8   | 9   | 8   | 9   | 12  | 19  | 16  | 17  | 16  | 12  | 16  | 10  | 4   | 11  | 10  | 8.4           | 19.0          |
| Dir    | 153                           | 146 | 188 | 181 | 153 | 183 | 176 | 184 | 195 | 194 | 205 | 219 | 215 | 220 | 246 | 240 | 232 | 233 | 226 | 229 | 227 | 211 | 183 | 187 | 212.4         | 246.0         |
| 3 Spd  | 11                            | 8   | 8   | 7   | 10  | 11  | 10  | 8   | 22  | 25  | 26  | 20  | 16  | 13  | 15  | 15  | 23  | 18  | 15  | 14  | 12  | 7   | 7   | 10  | 13.1          | 26.2          |
| Dir    | 187                           | 195 | 192 | 196 | 192 | 196 | 200 | 208 | 233 | 233 | 240 | 234 | 232 | 221 | 205 | 222 | 232 | 229 | 223 | 200 | 194 | 194 | 182 | 176 | 216.1         | 240.2         |
| 4 Spd  | 9                             | 10  | 8   | 6   | 6   | 7   | 11  | 27  | 32  | 25  | 21  | 22  | 18  | 24  | 28  | 32  | 35  | 34  | 32  | 27  | 17  | 8   | 5   | 6   | 17.7          | 34.8          |
| Dir    | 181                           | 180 | 191 | 196 | 223 | 204 | 223 | 237 | 241 | 240 | 244 | 245 | 241 | 249 | 251 | 248 | 252 | 254 | 256 | 258 | 237 | 226 | 201 | 186 | 240.3         | 251.9         |
| 5 Spd  | 8                             | 9   | 11  | 8   | 6   | 4   | 2   | 7   | 6   | 2   | 1   | 2   | 4   | 5   | 5   | 5   | 7   | 7   | 4   | 1   | 1   | 2   | 3   | 1.6 | 10.6          |               |
| Dir    | 174                           | 170 | 171 | 171 | 172 | 177 | 259 | 261 | 289 | 264 | 278 | 322 | 25  | 280 | 34  | 52  | 99  | 84  | 73  | 80  | 129 | 133 | 131 | 98  | 151.0         | 171.0         |
| 6 Spd  | 3                             | 2   | 4   | 2   | 3   | 3   | 2   | 1   | 3   | 4   | 13  | 16  | 23  | 21  | 14  | 8   | 12  | 14  | 11  | 13  | 17  | 9   | 5   | 7   | 6.7           | 22.6          |
| Dir    | 84                            | 53  | 37  | 88  | 32  | 73  | 60  | 51  | 160 | 227 | 261 | 255 | 255 | 240 | 235 | 226 | 228 | 207 | 210 | 228 | 238 | 230 | 194 | 187 | 232.3         | 255.5         |
| 7 Spd  | 7                             | 10  | 7   | 6   | 6   | 11  | 4   | 15  | 21  | 22  | 25  | 22  | 19  | 17  | 16  | 16  | 15  | 12  | 12  | 14  | 3   | 4   | 5   | 2   | 10.4          | 25.1          |
| Dir    | 194                           | 231 | 188 | 180 | 204 | 243 | 260 | 248 | 266 | 274 | 265 | 260 | 255 | 257 | 255 | 260 | 261 | 259 | 276 | 307 | 31  | 134 | 155 | 193 | 254.8         | 265.2         |
| 8 Spd  | 7                             | 3   | 2   | 6   | 2   | 1   | 1   | 1   | 1   | 7   | 4   | 6   | 6   | 7   | 10  | 12  | 22  | 22  | 19  | 16  | 16  | 8   | 10  | 5   | 6.0           | 22.3          |
| Dir    | 172                           | 186 | 151 | 164 | 187 | 71  | 240 | 2   | 62  | 20  | 57  | 124 | 102 | 69  | 36  | 42  | 35  | 40  | 35  | 26  | 34  | 11  | 17  | 8   | 43.7          | 40.1          |
| 9 Spd  | 7                             | 11  | 7   | 7   | 9   | 10  | 9   | 11  | 11  | 10  | 17  | 19  | 23  | 16  | 6   | 4   | 7   | 7   | 9   | 13  | 12  | 5   | 6   | 5   | 7.1           | 23.1          |
| Dir    | 333                           | 330 | 316 | 287 | 281 | 271 | 282 | 289 | 288 | 323 | 9   | 353 | 343 | 347 | 284 | 212 | 234 | 240 | 235 | 247 | 241 | 261 | 232 | 267 | 299.5         | 343.4         |
| 10 Spd | 5                             | 3   | 3   | 3   | 2   | 3   | 3   | 3   | 3   | 0   | 3   | 11  | 11  | 12  | 9   | 15  | 18  | 19  | 16  | 13  | 8   | 7   | 4   | 4   | 4.6           | 19.5          |
| Dir    | 240                           | 165 | 181 | 222 | 234 | 237 | 236 | 245 | 171 | 0   | 50  | 26  | 47  | 63  | 87  | 46  | 46  | 48  | 59  | 59  | 60  | 161 | 131 | 143 | 63.0          | 48.4          |
| 11 Spd | 3                             | 3   | 7   | 13  | 10  | 10  | 11  | 11  | 12  | 10  | 13  | 13  | 11  | 11  | 9   | 4   | 11  | 17  | 19  | 17  | 13  | 13  | 9   | 3   | 3.2           | 18.9          |
| Dir    | 145                           | 84  | 65  | 56  | 37  | 39  | 51  | 38  | 40  | 50  | 47  | 46  | 32  | 20  | 34  | 21  | 277 | 274 | 264 | 248 | 238 | 237 | 236 | 219 | 4.4           | 264.0         |
| 12 Spd | 4                             | 5   | 4   | 15  | 9   | 6   | 4   | 6   | 7   | 12  | 16  | 24  | 25  | 32  | 35  | 35  | 33  | 29  | 28  | 21  | 14  | 9   | 10  | 11  | 16.1          | 35.4          |
| Dir    | 185                           | 189 | 237 | 245 | 230 | 217 | 239 | 193 | 211 | 228 | 233 | 234 | 233 | 234 | 235 | 237 | 235 | 230 | 230 | 227 | 222 | 215 | 193 | 195 | 228.6         | 236.5         |
| 13 Spd | 10                            | 9   | 10  | 9   | 9   | 9   | 9   | 9   | 11  | 15  | 13  | 12  | 9   | 8   | 8   | 7   | 7   | 9   | 7   | 6   | 5   | 3   | 1   | 1   | 7.0           | 15.2          |
| Dir    | 195                           | 194 | 194 | 193 | 189 | 193 | 199 | 205 | 218 | 230 | 229 | 229 | 219 | 210 | 231 | 221 | 230 | 262 | 287 | 275 | 295 | 30  | 50  | 228 | 219.6         | 230.3         |
| 14 Spd | 6                             | 7   | 6   | 4   | 2   | 3   | 2   | 4   | 4   | 8   | 13  | 12  | 15  | 12  | 11  | 9   | 4   | 10  | 8   | 14  | 17  | 23  | 23  | 18  | 7.4           | 22.9          |
| Dir    | 178                           | 165 | 177 | 207 | 176 | 172 | 204 | 256 | 197 | 216 | 274 | 276 | 271 | 259 | 243 | 226 | 61  | 43  | 237 | 243 | 254 | 253 | 261 | 273 | 247.7         | 261.3         |
| 15 Spd | 15                            | 15  | 14  | 11  | 11  | 12  | 12  | 16  | 9   | 10  | 11  | 9   | 12  | 24  | 16  | 16  | 5   | 29  | 35  | 30  | 25  | 28  | 26  | 30  | 16.1          | 35.4          |
| Dir    | 273                           | 275 | 284 | 282 | 276 | 267 | 270 | 239 | 213 | 200 | 200 | 202 | 235 | 242 | 210 | 190 | 215 | 258 | 257 | 242 | 238 | 242 | 241 | 240 | 244.0         | 257.2         |
| 16 Spd | 31                            | 33  | 31  | 30  | 28  | 28  | 26  | 30  | 30  | 27  | 28  | 29  | 32  | 35  | 35  | 36  | 38  | 34  | 33  | 32  | 30  | 26  | 32  | 28  | 30.7          | 37.9          |
| Dir    | 238                           | 239 | 239 | 240 | 241 | 243 | 244 | 249 | 249 | 244 | 242 | 246 | 251 | 255 | 253 | 254 | 256 | 258 | 260 | 261 | 258 | 257 | 256 | 255 | 249.9         | 256.1         |
| 17 Spd | 28                            | 28  | 25  | 22  | 22  | 11  | 15  | 16  | 16  | 16  | 14  | 10  | 10  | 12  | 9   | 12  | 10  | 18  | 25  | 18  | 13  | 4   | 4   | 4   | 14.4          | 28.3          |
| Dir    | 257                           | 256 | 257 | 255 | 254 | 235 | 251 | 251 | 244 | 239 | 240 | 224 | 204 | 194 | 214 | 228 | 225 | 230 | 236 | 236 | 235 | 198 | 193 | 193 | 239.7         | 256.7         |
| 18 Spd | 7                             | 2   | 3   | 6   | 5   | 6   | 6   | 5   | 4   | 11  | 12  | 8   | 7   | 8   | 13  | 11  | 15  | 15  | 14  | 12  | 10  | 4   | 7   | 7   | 5.7           | 14.6          |
| Dir    | 177                           | 260 | 192 | 187 | 183 | 170 | 171 | 191 | 208 | 266 | 257 | 253 | 243 | 269 | 270 | 269 | 265 | 270 | 263 | 269 | 2   | 128 | 167 | 181 | 244.1         | 270.2         |
| 19 Spd | 6                             | 6   | 4   | 3   | 5   | 3   | 6   | 9   | 18  | 17  | 16  | 25  | 29  | 29  | 19  | 20  | 21  | 21  | 14  | 9   | 5   | 4   | 8   | 8   | 11.4          | 29.0          |
| Dir    | 209                           | 184 | 191 | 193 | 190 | 195 | 235 | 240 | 261 | 258 | 252 | 253 | 272 | 249 | 236 | 251 | 254 | 253 | 242 | 232 | 226 | 205 | 167 | 167 | 242.8         | 271.5         |
| 20 Spd | 6                             | 0   | 2   | 7   | 7   | 7   | 7   | 7   | 7   | 9   | 10  | 5   | 4   | 4   | 5   | 5   | 6   | 6   | 4   | 2   | 1   | 3   | 5   | 4   | 4.0           | 9.7           |
| Dir    | 154                           | 62  | 120 | 167 | 167 | 177 | 173 | 182 | 182 | 258 | 260 | 201 | 196 | 246 | 192 | 176 | 172 | 165 | 153 | 131 | 125 | 139 | 138 | 159 | 182.2         | 260.1         |
| 21 Spd | 3                             | 5   | 3   | 4   | 5   | 6   | 4   | 6   | 7   | 5   | 6   | 8   | 8   | 5   | 6   | 8   | 7   | 12  | 6   | 8   | 7   | 21  | 8   | 5   | 5.7           | 21.2          |
| Dir    | 191                           | 192 | 222 | 197 | 171 | 157 | 170 | 258 | 269 | 266 | 258 | 254 | 243 | 220 | 216 | 212 | 222 | 231 | 243 | 243 | 229 | 247 | 292 | 316 | 235.5         | 247.0         |
| 22 Spd | 3                             | 5   | 6   | 7   | 8   | 9   | 9   | 7   | 6   | 4   | 14  | 15  | 14  | 12  | 8   | 9   | 13  | 14  | 11  | 9   | 9   | 8   | 4   | 4   | 7.0           | 14.6          |
| Dir    | 145                           | 174 | 153 | 176 | 178 | 175 | 181 | 185 | 230 | 285 | 267 | 258 | 254 | 256 | 245 | 209 | 191 | 191 | 199 | 192 | 180 | 243 | 196 | 242 | 212.6         | 258.3         |



Peace Airshed Zone Association

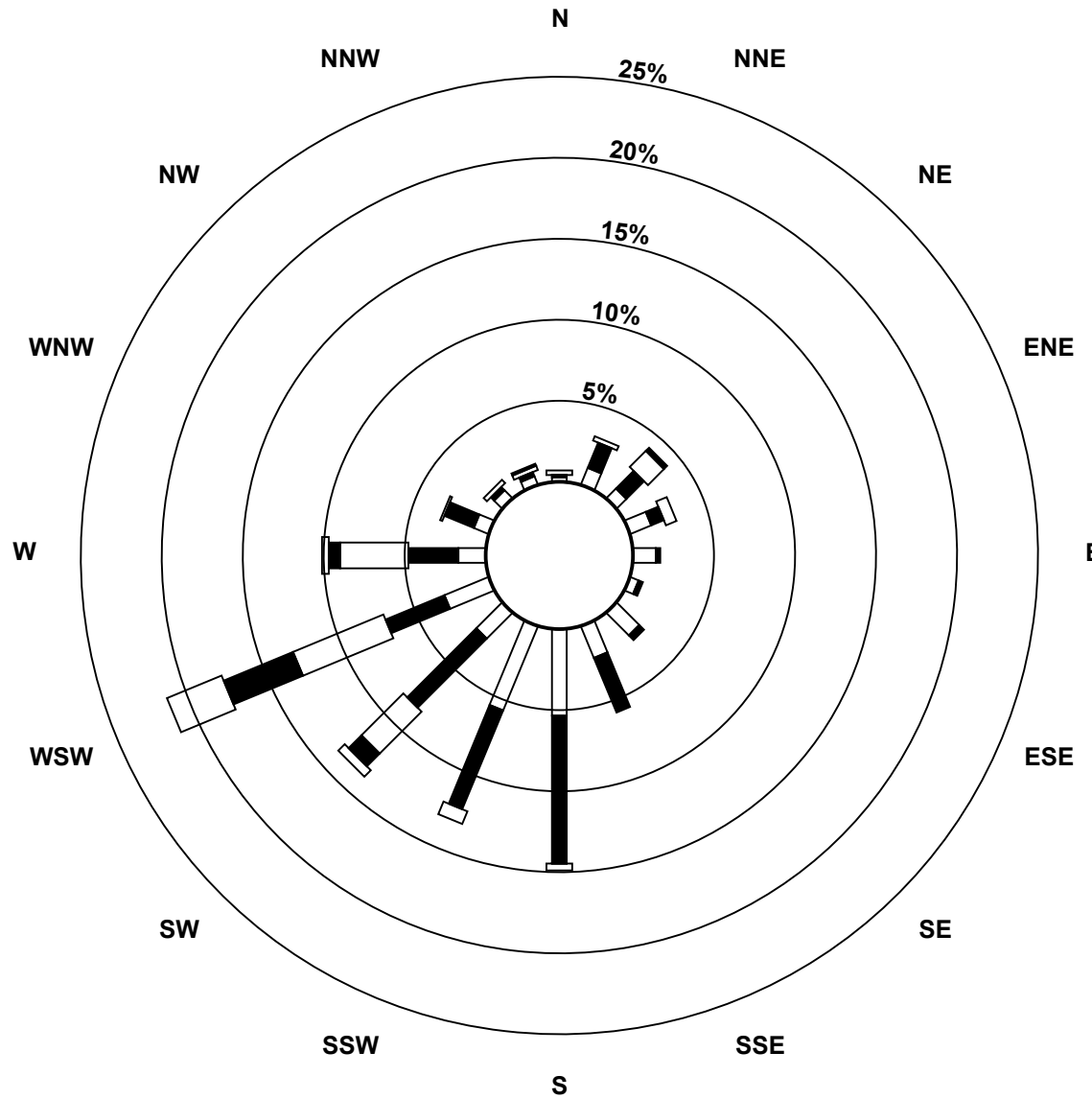
# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Portable Rocroft - June 2016

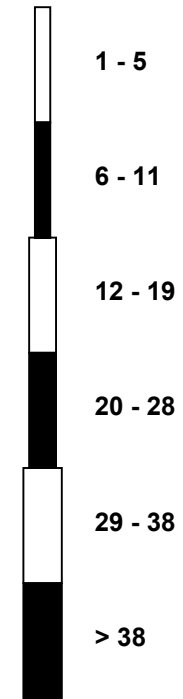
| Day  | Hourly Period Ending At (MST) |                    |          |          |          |       |       |       |       |       |       |       |       |       |       |       |       |   |       |       |       |       |       |                                 | Daily Average   | Daily Maximum |
|--|-------------------------------|--------------------|----------|----------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---|-------|-------|-------|-------|-------|---------------------------------|-----------------|---------------|
|  | 1                             | 2                  | 3        | 4        | 5        | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18  | 19    | 20    | 21    | 22    | 23    | 24                              |                 |               |
| 23 Spd   | 4                             | 5                  | 3        | 4        | 5        | 5     | 3     | 6     | 6     | 6     | 5     | 3     | 4     | 7     | 10    | 7     | 15    | 12  | 14    | 2     | 4     | 2     | 7     | 6                               | 4.4             | 14.6          |
| Dir  | 213                           | 241                | 195      | 164      | 167      | 166   | 244   | 274   | 271   | 246   | 249   | 285   | 320   | 290   | 271   | 256   | 321   | 333   | 276   | 336   | 266   | 221   | 255   | 251                             | 268.3           | 321.2         |
| 24 Spd   | 3                             | 7                  | 6        | 8        | 7        | 6     | 7     | 9     | 7     | 2     | 2     | 6     | 5     | 2     | 3     | 3     | 5     | 4   | 7     | 5     | 2     | 2     | 5     | 6                               | 3.4             | 8.6           |
| Dir  | 266                           | 253                | 254      | 262      | 259      | 277   | 265   | 267   | 286   | 301   | 283   | 289   | 251   | 338   | 126   | 80    | 211   | 193   | 185   | 189   | 201   | 198   | 186   | 167                             | 243.7           | 267.3         |
| 25 Spd   | 6                             | 6                  | 6        | 6        | 6        | 6     | 4     | 4     | 16    | 16    | 16    | 17    | 14    | 14    | 8     | 9     | 7     | 4   | 5     | 7     | 6     | 4     | 5     | 3                               | 6.7             | 16.7          |
| Dir  | 171                           | 180                | 179      | 180      | 176      | 174   | 166   | 214   | 257   | 261   | 258   | 263   | 257   | 265   | 206   | 194   | 195   | 195   | 214   | 221   | 234   | 221   | 249   | 193                             | 227.7           | 262.6         |
| 26 Spd   | 5                             | 6                  | 6        | 7        | 6        | 9     | 9     | 9     | 7     | 8     | 7     | 7     | 7     | 8     | 8     | 8     | 14    | 17  | 16    | 10    | 3     | 2     | 6     | 6                               | 5.6             | 16.8          |
| Dir  | 154                           | 150                | 157      | 152      | 149      | 163   | 182   | 189   | 198   | 197   | 200   | 216   | 191   | 194   | 195   | 228   | 263   | 261   | 258   | 301   | 329   | 170   | 172   | 161                             | 207.3           | 261.2         |
| 27 Spd   | 6                             | 5                  | 7        | 7        | 7        | 6     | 6     | 6     | 8     | 12    | 9     | 5     | 6     | 6     | 8     | 7     | 3     | 3   | 3     | 2     | 1     | 2     | 3     | 5                               | 4.1             | 11.6          |
| Dir  | 214                           | 181                | 153      | 167      | 165      | 182   | 176   | 234   | 255   | 260   | 250   | 215   | 236   | 244   | 266   | 272   | 287   | 195   | 209   | 181   | 147   | 99    | 182   | 186                             | 217.3           | 259.9         |
| 28 Spd   | 7                             | 8                  | 8        | 7        | 8        | 8     | 7     | 4     | 2     | 1     | 4     | 5     | 6     | 7     | 5     | 1     | 0     | 9   | 3     | 2     | 4     | 2     | 4     | 6                               | 1.6             | 9.2           |
| Dir  | 176                           | 166                | 172      | 177      | 176      | 174   | 174   | 174   | 258   | 337   | 17    | 31    | 50    | 26    | 8     | 83    | 321   | 17  | 68    | 257   | 286   | 206   | 173   | 179                             | 154.0           | 17.5          |
| 29 Spd   | 7                             | 8                  | 6        | 5        | 8        | 6     | 3     | 2     | 4     | 7     | 8     | 10    | 11    | 11    | 14    | 17    | 14    | 10  | 9     | 3     | 4     | 2     | 5     | 5                               | 4.0             | 16.9          |
| Dir  | 173                           | 172                | 174      | 164      | 184      | 181   | 179   | 318   | 21    | 22    | 22    | 22    | 29    | 41    | 43    | 49    | 60    | 110   | 145   | 69    | 66    | 113   | 61    | 83                              | 73.6            | 49.4          |
| 30 Spd   | 3                             | 1                  | 1        | 1        | 3        | 7     | 6     | 6     | 5     | 4     | 1     | 19    | 18    | 18    | 12    | 18    | 13    | 10  | 7     | 5     | 4     | 5     | 3     | 4                               | 4.9             | 19.3          |
| Dir  | 208                           | 110                | 179      | 246      | 321      | 58    | 65    | 162   | 226   | 242   | 195   | 245   | 256   | 256   | 237   | 247   | 257   | 262   | 258   | 245   | 189   | 179   | 108   | 78                              | 242.2           | 244.6         |
| Spd  | 5.7                           | 5.3                | 4.9      | 5.2      | 4.8      | 4.6   | 4.5   | 6.5   | 7.6   | 7.9   | 8.2   | 8.4   | 8.4   | 9.2   | 8.3   | 8.0   | 8.2   | 8.3   | 9.2   | 8.1   | 5.8   | 5.5   | 4.8   | 4.9                             | Diurnal Average |               |
| Dir  | 206.8                         | 214.6              | 212.0    | 210.6    | 211.4    | 206.3 | 217.7 | 233.6 | 243.7 | 248.8 | 253.8 | 252.8 | 254.7 | 251.4 | 241.2 | 239.0 | 247.8 | 248.8   | 245.3 | 245.8 | 240.6 | 229.1 | 218.1 | 211.9                           | Diurnal Maximum |               |
| Spd  | 30.7                          | 32.7               | 31.3     | 30.0     | 28.2     | 28.4  | 26.5  | 30.1  | 32.1  | 27.0  | 27.6  | 28.6  | 31.9  | 35.1  | 35.4  | 36.1  | 37.9  | 34.3  | 35.4  | 31.9  | 29.9  | 27.6  | 32.5  | 29.7                            | Diurnal Maximum |               |
| Dir  | 238.2                         | 238.8              | 239.1    | 240.2    | 240.9    | 243.1 | 243.7 | 249.0 | 240.6 | 243.9 | 242.5 | 245.6 | 251.4 | 255.2 | 235.1 | 254.4 | 256.1 | 258.3   | 257.2 | 261.1 | 258.1 | 241.6 | 256.0 | 240.1                           | Diurnal Maximum |               |
| Maximum Speed Value: 38 km/h on Jun 16 17:00                                       |                               |                    |          |          |          |       |       |       |       |       |       |       |       |       |       |       |       | Minimum Speed Value: 0 km/h on Jun 28 17:00   |       |       |       |       |       | Hours in Service: 720           |                 |               |
| Maximum Daily Speed Average: 30.7 km/h on Jun 16                                   |                               |                    |          |          |          |       |       |       |       |       |       |       |       |       |       |       |       | Minimum Daily Speed Average: 1.6 km/h on Jun 5  |       |       |       |       |       | Hours of Data: 720              |                 |               |
| Maximum Diurnal Speed Average: 9.2 km/h at hour 19                                 |                               |                    |          |          |          |       |       |       |       |       |       |       |       |       |       |       |       | Minimum Diurnal Speed Average: 4.5 km/h at hour 7   |       |       |       |       |       | Hours of Missing Data: 0        |                 |               |
| Monthly Average Velocity: 6.49 km/h 236.67 deg                                     |                               |                    |          |          |          |       |       |       |       |       |       |       |       |       |       |       |       | Speed Percentiles: P <sub>1</sub> = 1.0 P <sub>10</sub> = 2.9 Q <sub>1</sub> = 4.8 Median = 7.4 Q <sub>3</sub> = 13.0 P <sub>90</sub> = 21.6 P <sub>99</sub> = 34.7 |       |       |       |       |       | Percent Operational Time: 100.0 |                 |               |
| All monthly, daily, and diurnal averages have been calculated using vector methods |                               |                    |          |          |          |       |       |       |       |       |       |       |       |       |       |       |       |   |       |       |       |       |       |                                 |                 |               |
| Frequency Distribution   |                               |                    |          |          |          |       |       |       |       |       |       |       |       |       |       |       |       |   |       |       |       |       |       |                                 |                 |               |
|  |                               | Speed Range (km/h) |          |          |          |       |       |       |       |       |       |       |       |       |       |       |       |   |       |       |       |       |       |                                 |                 |               |
| Direction  | 0 to 5                        | 5 to 11            | 11 to 19 | 19 to 28 | 28 to 38 | > 38  | Total |       |       |       |       |       |       |       |       |       |       |   |       |       |       |       |       |                                 |                 |               |
| North  | 7                             | 9                  | 4        | 1        | 0        | 0     | 21    |       |       |       |       |       |       |       |       |       |       |   |       |       |       |       |       |                                 |                 |               |
| NorthEast  | 17                            | 18                 | 18       | 4        | 0        | 0     | 57    |       |       |       |       |       |       |       |       |       |       |   |       |       |       |       |       |                                 |                 |               |
| East   | 16                            | 7                  | 0        | 0        | 0        | 0     | 23    |       |       |       |       |       |       |       |       |       |       |   |       |       |       |       |       |                                 |                 |               |
| SouthEast  | 23                            | 14                 | 0        | 0        | 0        | 0     | 37    |       |       |       |       |       |       |       |       |       |       |   |       |       |       |       |       |                                 |                 |               |
| South  | 59                            | 125                | 9        | 0        | 0        | 0     | 193   |       |       |       |       |       |       |       |       |       |       |   |       |       |       |       |       |                                 |                 |               |
| SouthWest  | 37                            | 76                 | 50       | 23       | 16       | 0     | 202   |       |       |       |       |       |       |       |       |       |       |   |       |       |       |       |       |                                 |                 |               |
| West   | 20                            | 50                 | 57       | 19       | 22       | 0     | 168   |       |       |       |       |       |       |       |       |       |       |   |       |       |       |       |       |                                 |                 |               |
| NorthWest  | 10                            | 6                  | 3        | 0        | 0        | 0     | 19    |       |       |       |       |       |       |       |       |       |       |   |       |       |       |       |       |                                 |                 |               |
| Total  | 189                           | 305                | 141      | 47       | 38       | 0     | 720   |       |       |       |       |       |       |       |       |       |       |   |       |       |       |       |       |                                 |                 |               |

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Portable Rycroft - June 2016**



**Wind Speed Classes (km/h)**



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Portable Rycroft - June 2016

| <b>Maximum Speed: 38 km/h on Jun 16 17:00</b>                                      |                               | <b>Maximum Daily Speed Average: 31.0 km/h on Jun 16</b>   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours in Service: 720           |      |      |      |      |               |                 |  |
|--|-------------------------------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------------------------|------|------|------|------|---------------|-----------------|--|
| <b>Minimum Speed: 1 km/h on Jun 20 21:00</b>                                       |                               | <b>Minimum Daily Speed Average: 5.6 km/h on Jun 28</b>  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours of Data: 720              |      |      |      |      |               |                 |  |
| <b>Maximum Diurnal Speed Average: 15.0 km/h at hour 18</b>                         |                               | <b>Minimum Diurnal Speed Average: 7.3 km/h at hour 7</b>  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours of Missing Data: 0        |      |      |      |      |               |                 |  |
| <b>Monthly Average Speed: 10.51 km/h</b>   |                               | Percentiles: P <sub>1</sub> = 1.8 P <sub>10</sub> = 3.7 Q <sub>1</sub> = 5.4 Median = 7.9 Q <sub>3</sub> = 13.3 P <sub>90</sub> = 21.9 P <sub>99</sub> = 35.1 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Percent Operational Time: 100.0 |      |      |      |      |               |                 |  |
| Day  | Hourly Period Ending At (MST) |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |      |      |      |      | Daily Average | Daily Maximum   |  |
|  | 1                             | 2   | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20                              | 21   | 22   | 23   | 24   |               |                 |  |
| 1-Jun  | 5                             | 8   | 12   | 5    | 3    | 2    | 3    | 5    | 4    | 5    | 7    | 8    | 10   | 12   | 8    | 7    | 8    | 6    | 5    | 5                               | 4    | 6    | 4    | 7    | 6.1           | 12.1            |  |
| 2-Jun  | 6                             | 6   | 2    | 6    | 5    | 6    | 6    | 6    | 5    | 8    | 9    | 8    | 10   | 13   | 19   | 16   | 17   | 16   | 13   | 16                              | 10   | 4    | 11   | 10   | 9.5           | 19.3            |  |
| 3-Jun  | 11                            | 8   | 8    | 7    | 10   | 11   | 10   | 9    | 22   | 25   | 26   | 20   | 17   | 14   | 16   | 16   | 24   | 18   | 15   | 14                              | 12   | 7    | 7    | 10   | 14.1          | 26.4            |  |
| 4-Jun  | 9                             | 10  | 8    | 6    | 6    | 7    | 12   | 27   | 32   | 26   | 22   | 22   | 19   | 24   | 28   | 33   | 35   | 34   | 32   | 27                              | 17   | 8    | 5    | 6    | 18.9          | 35.2            |  |
| 5-Jun  | 8                             | 9   | 11   | 8    | 6    | 4    | 2    | 8    | 7    | 4    | 4    | 5    | 6    | 7    | 7    | 8    | 7    | 8    | 8    | 4                               | 1    | 2    | 2    | 3    | 5.7           | 10.6            |  |
| 6-Jun  | 3                             | 3   | 4    | 3    | 3    | 3    | 2    | 3    | 4    | 7    | 13   | 16   | 23   | 21   | 14   | 9    | 12   | 14   | 11   | 14                              | 17   | 10   | 5    | 7    | 9.3           | 23.2            |  |
| 7-Jun  | 7                             | 10  | 7    | 6    | 7    | 12   | 6    | 15   | 21   | 23   | 25   | 22   | 19   | 18   | 16   | 16   | 16   | 13   | 13   | 14                              | 4    | 4    | 5    | 2    | 12.6          | 25.5            |  |
| 8-Jun  | 8                             | 5   | 5    | 6    | 3    | 3    | 4    | 4    | 8    | 7    | 5    | 7    | 7    | 8    | 10   | 12   | 22   | 22   | 19   | 16                              | 16   | 9    | 10   | 6    | 9.3           | 22.4            |  |
| 9-Jun  | 8                             | 11  | 8    | 7    | 9    | 10   | 10   | 11   | 11   | 11   | 18   | 19   | 23   | 16   | 8    | 4    | 7    | 8    | 9    | 13                              | 12   | 5    | 6    | 6    | 10.4          | 23.1            |  |
| 10-Jun   | 5                             | 3   | 3    | 3    | 2    | 3    | 3    | 4    | 3    | 3    | 4    | 12   | 12   | 12   | 10   | 16   | 18   | 20   | 16   | 13                              | 8    | 7    | 5    | 4    | 7.9           | 19.8            |  |
| 11-Jun   | 3                             | 4   | 8    | 13   | 10   | 10   | 11   | 11   | 12   | 10   | 13   | 13   | 11   | 11   | 9    | 5    | 12   | 17   | 19   | 17                              | 13   | 13   | 9    | 4    | 10.7          | 19.0            |  |
| 12-Jun   | 4                             | 5   | 4    | 16   | 9    | 7    | 5    | 6    | 8    | 12   | 17   | 25   | 26   | 32   | 36   | 36   | 34   | 29   | 28   | 21                              | 14   | 9    | 10   | 11   | 16.7          | 35.6            |  |
| 13-Jun   | 10                            | 9   | 10   | 9    | 9    | 9    | 9    | 9    | 11   | 16   | 13   | 12   | 9    | 8    | 9    | 9    | 9    | 10   | 8    | 7                               | 6    | 4    | 2    | 1    | 8.7           | 15.5            |  |
| 14-Jun   | 6                             | 7   | 7    | 5    | 3    | 4    | 2    | 5    | 5    | 9    | 13   | 12   | 15   | 13   | 11   | 10   | 13   | 11   | 8    | 14                              | 17   | 23   | 23   | 18   | 10.5          | 22.9            |  |
| 15-Jun   | 15                            | 15  | 14   | 11   | 11   | 12   | 12   | 16   | 10   | 10   | 11   | 9    | 14   | 24   | 17   | 16   | 8    | 29   | 36   | 30                              | 25   | 28   | 27   | 30   | 17.9          | 35.6            |  |
| 16-Jun   | 31                            | 33  | 31   | 30   | 28   | 28   | 27   | 30   | 30   | 27   | 28   | 29   | 32   | 35   | 35   | 36   | 38   | 34   | 33   | 32                              | 30   | 26   | 33   | 28   | 31.0          | 38.0            |  |
| 17-Jun   | 28                            | 28  | 25   | 22   | 22   | 11   | 15   | 16   | 16   | 17   | 14   | 10   | 10   | 12   | 9    | 12   | 10   | 18   | 25   | 19                              | 13   | 4    | 4    | 4    | 15.2          | 28.3            |  |
| 18-Jun   | 7                             | 4   | 3    | 6    | 5    | 6    | 6    | 5    | 4    | 12   | 13   | 9    | 8    | 9    | 14   | 12   | 15   | 15   | 14   | 12                              | 15   | 5    | 8    | 7    | 8.8           | 14.9            |  |
| 19-Jun   | 7                             | 6   | 4    | 3    | 5    | 3    | 6    | 9    | 19   | 17   | 16   | 25   | 29   | 29   | 19   | 21   | 22   | 21   | 14   | 9                               | 5    | 4    | 8    | 8    | 12.8          | 29.4            |  |
| 20-Jun   | 6                             | 4   | 3    | 8    | 7    | 7    | 7    | 7    | 7    | 10   | 10   | 7    | 5    | 5    | 6    | 6    | 7    | 6    | 5    | 2                               | 1    | 3    | 5    | 4    | 5.7           | 10.0            |  |
| 21-Jun   | 4                             | 5   | 3    | 6    | 5    | 6    | 4    | 6    | 7    | 6    | 7    | 9    | 8    | 8    | 7    | 8    | 7    | 12   | 7    | 8                               | 8    | 22   | 8    | 10   | 7.4           | 21.7            |  |
| 22-Jun   | 4                             | 6   | 6    | 7    | 8    | 9    | 9    | 7    | 7    | 5    | 14   | 15   | 15   | 13   | 9    | 9    | 13   | 14   | 11   | 9                               | 9    | 9    | 5    | 4    | 9.1           | 15.2            |  |
| 23-Jun   | 5                             | 5   | 6    | 5    | 5    | 5    | 4    | 7    | 6    | 7    | 6    | 5    | 6    | 8    | 11   | 8    | 16   | 13   | 14   | 3                               | 5    | 3    | 7    | 6    | 6.9           | 16.3            |  |
| 24-Jun   | 4                             | 7   | 6    | 8    | 7    | 6    | 7    | 9    | 7    | 3    | 4    | 7    | 5    | 8    | 4    | 4    | 7    | 5    | 7    | 5                               | 2    | 2    | 5    | 6    | 5.7           | 8.6             |  |
| 25-Jun   | 6                             | 6   | 6    | 6    | 7    | 6    | 4    | 5    | 16   | 16   | 17   | 17   | 14   | 14   | 8    | 9    | 7    | 5    | 5    | 7                               | 6    | 5    | 5    | 3    | 8.4           | 17.0            |  |
| 26-Jun   | 5                             | 6   | 6    | 7    | 6    | 9    | 9    | 9    | 8    | 8    | 7    | 7    | 8    | 8    | 9    | 10   | 14   | 17   | 17   | 11                              | 3    | 2    | 6    | 6    | 8.3           | 17.1            |  |
| 27-Jun   | 7                             | 6   | 7    | 7    | 7    | 6    | 6    | 7    | 8    | 12   | 9    | 5    | 7    | 8    | 8    | 8    | 4    | 4    | 4    | 2                               | 1    | 2    | 3    | 5    | 6.0           | 11.9            |  |
| 28-Jun   | 8                             | 8   | 8    | 7    | 8    | 8    | 7    | 4    | 2    | 2    | 4    | 5    | 6    | 7    | 6    | 4    | 5    | 10   | 3    | 4                               | 4    | 3    | 4    | 6    | 5.6           | 9.9             |  |
| 29-Jun   | 7                             | 8   | 6    | 5    | 8    | 6    | 3    | 3    | 5    | 7    | 8    | 10   | 11   | 11   | 14   | 17   | 14   | 11   | 9    | 4                               | 5    | 3    | 6    | 5    | 7.8           | 17.1            |  |
| 30-Jun   | 4                             | 2   | 2    | 2    | 4    | 8    | 6    | 6    | 6    | 4    | 6    | 19   | 19   | 18   | 13   | 19   | 14   | 10   | 7    | 5                               | 4    | 5    | 3    | 4    | 7.8           | 19.4            |  |
|  |                               | 8.0   | 8.2  | 7.9  | 8.1  | 7.6  | 7.6  | 7.3  | 8.9  | 10.3 | 10.9 | 12.1 | 13.0 | 13.5 | 14.2 | 13.0 | 13.2 | 14.5 | 15.0 | 13.8                            | 12.0 | 9.6  | 7.9  | 8.0  | 7.8           | Diurnal Average |  |
|  |                               | 30.8  | 32.8 | 31.3 | 30.1 | 28.2 | 28.4 | 26.5 | 30.1 | 32.2 | 27.0 | 27.7 | 28.7 | 32.2 | 35.2 | 35.5 | 36.2 | 38.0 | 34.4 | 35.6                            | 31.9 | 29.9 | 27.6 | 32.5 | 29.7          | Diurnal Maximum |  |
| All monthly, daily, and diurnal averages have been calculated using scalar methods |                               |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 |      |      |      |      |               |                 |  |

# Hourly Standard Deviations

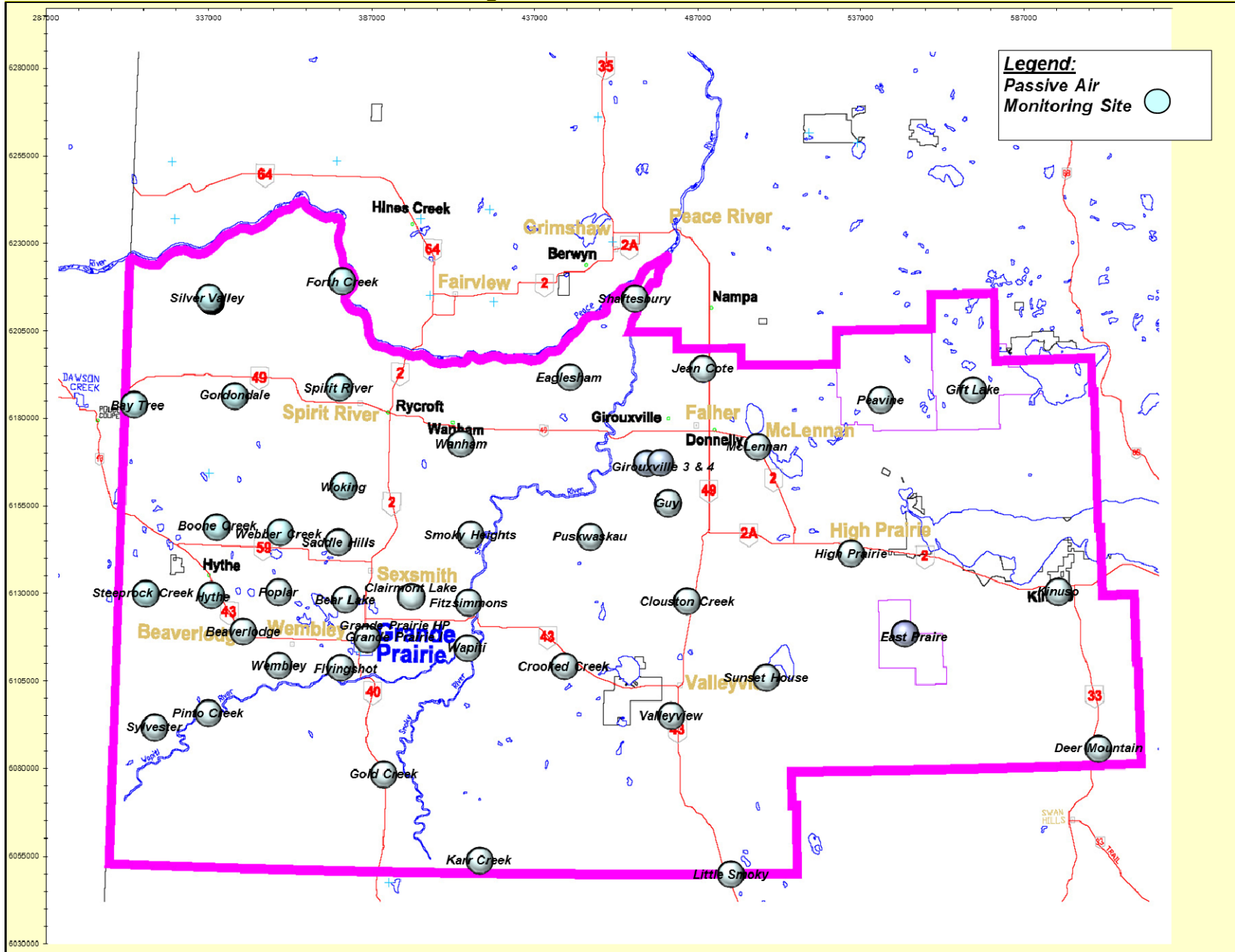
Wind Direction (WD) - deg  
 Portable Rycroft - June 2016

| Maximum Value: 100.2 deg on Jun 10 10:00   |                               |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours in Service: 720           |               |
|--|-------------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------------------------|---------------|
| Minimum Value: 2.5 deg on Jun 28 02:00   |                               |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours of Data: 720              |               |
| Percentiles: P <sub>1</sub> = 2.8 P <sub>10</sub> = 5.0 Q <sub>1</sub> = 7.9 Median = 13.9 Q <sub>3</sub> = 28.0 P <sub>90</sub> = 46.6 P <sub>99</sub> = 84.7 |                               |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours of Missing Data: 0        |               |
|  |                               |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Hours of Calibration: 0         |               |
|  |                               |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      | Percent Operational Time: 100.0 |               |
| Day  | Hourly Period Ending At (MST) |      |      |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                                 | Daily Maximum |
|  | 1                             | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9     | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24                              |               |
| 1-Jun  | 12                            | 36   | 14   | 23   | 25   | 73   | 21   | 17   | 29    | 51   | 49   | 31   | 28   | 19   | 41   | 39   | 34   | 30   | 45   | 13   | 14   | 15   | 25   | 11                              | 73.0          |
| 2-Jun  | 12                            | 19   | 25   | 14   | 13   | 16   | 10   | 8    | 17    | 11   | 12   | 15   | 15   | 19   | 11   | 10   | 11   | 10   | 12   | 6    | 7    | 12   | 5    | 5                               | 25.4          |
| 3-Jun  | 5                             | 5    | 5    | 8    | 6    | 5    | 8    | 10   | 11    | 7    | 8    | 11   | 16   | 17   | 15   | 13   | 11   | 10   | 12   | 7    | 5    | 5    | 6    | 4                               | 17.2          |
| 4-Jun  | 4                             | 4    | 9    | 7    | 11   | 14   | 17   | 6    | 5     | 6    | 14   | 13   | 14   | 10   | 11   | 9    | 9    | 7    | 6    | 5    | 4    | 12   | 8    | 11                              | 16.5          |
| 5-Jun  | 4                             | 5    | 3    | 6    | 12   | 15   | 76   | 16   | 23    | 75   | 87   | 82   | 74   | 50   | 60   | 69   | 50   | 32   | 17   | 25   | 51   | 64   | 56   | 30                              | 87.2          |
| 6-Jun  | 27                            | 73   | 19   | 54   | 49   | 28   | 23   | 80   | 31    | 51   | 14   | 10   | 14   | 10   | 6    | 25   | 23   | 11   | 9    | 12   | 5    | 24   | 7    | 6                               | 79.6          |
| 7-Jun  | 5                             | 11   | 8    | 26   | 25   | 55   | 66   | 7    | 12    | 12   | 11   | 14   | 15   | 19   | 18   | 17   | 16   | 17   | 17   | 16   | 31   | 27   | 10   | 20                              | 66.3          |
| 8-Jun  | 9                             | 60   | 90   | 13   | 72   | 76   | 80   | 91   | 86    | 18   | 45   | 28   | 33   | 24   | 21   | 9    | 7    | 7    | 7    | 7    | 5    | 13   | 17   | 40                              | 91.3          |
| 9-Jun  | 24                            | 10   | 16   | 9    | 10   | 4    | 23   | 10   | 9     | 32   | 7    | 6    | 5    | 7    | 40   | 24   | 12   | 48   | 7    | 8    | 6    | 31   | 26   | 37                              | 47.9          |
| 10-Jun   | 14                            | 35   | 15   | 38   | 45   | 29   | 41   | 46   | 33    | 100  | 50   | 13   | 23   | 22   | 33   | 16   | 11   | 10   | 9    | 8    | 25   | 19   | 33   | 21                              | 100.2         |
| 11-Jun   | 33                            | 51   | 20   | 5    | 10   | 6    | 5    | 4    | 11    | 7    | 7    | 7    | 10   | 8    | 14   | 38   | 32   | 13   | 5    | 8    | 8    | 4    | 5    | 33                              | 50.9          |
| 12-Jun   | 10                            | 17   | 28   | 9    | 8    | 20   | 39   | 18   | 17    | 13   | 11   | 9    | 10   | 6    | 5    | 7    | 6    | 6    | 5    | 6    | 7    | 8    | 9    | 5                               | 39.3          |
| 13-Jun   | 5                             | 5    | 5    | 5    | 5    | 5    | 8    | 8    | 13    | 12   | 14   | 16   | 17   | 18   | 27   | 43   | 40   | 31   | 34   | 37   | 21   | 29   | 77   | 37                              | 76.6          |
| 14-Jun   | 22                            | 12   | 27   | 33   | 44   | 37   | 27   | 42   | 22    | 23   | 17   | 11   | 12   | 16   | 23   | 18   | 83   | 48   | 22   | 5    | 6    | 4    | 3    | 9                               | 82.6          |
| 15-Jun   | 9                             | 5    | 6    | 4    | 5    | 5    | 5    | 10   | 16    | 6    | 7    | 8    | 29   | 5    | 18   | 9    | 44   | 6    | 4    | 4    | 6    | 3    | 3    | 3                               | 44.3          |
| 16-Jun   | 3                             | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3     | 4    | 5    | 5    | 6    | 4    | 4    | 4    | 4    | 3    | 3    | 3    | 3    | 3    | 3    | 3                               | 6.4           |
| 17-Jun   | 3                             | 2    | 2    | 3    | 3    | 8    | 5    | 6    | 6     | 7    | 10   | 17   | 18   | 10   | 12   | 13   | 13   | 7    | 5    | 4    | 7    | 18   | 14   | 13                              | 17.8          |
| 18-Jun   | 8                             | 58   | 11   | 7    | 9    | 8    | 7    | 13   | 32    | 17   | 23   | 29   | 37   | 32   | 17   | 18   | 15   | 11   | 9    | 7    | 59   | 29   | 21   | 9                               | 58.7          |
| 19-Jun   | 17                            | 8    | 19   | 16   | 12   | 17   | 20   | 16   | 11    | 8    | 10   | 6    | 10   | 8    | 11   | 12   | 11   | 7    | 11   | 11   | 9    | 21   | 5    | 4                               | 21.3          |
| 20-Jun   | 11                            | 89   | 65   | 23   | 8    | 5    | 6    | 7    | 10    | 31   | 17   | 41   | 57   | 56   | 49   | 44   | 34   | 31   | 37   | 34   | 66   | 18   | 13   | 23                              | 88.5          |
| 21-Jun   | 13                            | 9    | 20   | 46   | 16   | 11   | 26   | 21   | 14    | 35   | 46   | 30   | 28   | 59   | 26   | 25   | 17   | 9    | 24   | 27   | 32   | 13   | 17   | 64                              | 64.0          |
| 22-Jun   | 48                            | 22   | 14   | 7    | 5    | 6    | 5    | 7    | 30    | 29   | 14   | 18   | 16   | 19   | 37   | 23   | 7    | 8    | 10   | 11   | 8    | 21   | 32   | 25                              | 48.1          |
| 23-Jun   | 25                            | 23   | 65   | 68   | 9    | 13   | 33   | 16   | 26    | 28   | 42   | 66   | 56   | 36   | 19   | 24   | 38   | 17   | 7    | 53   | 64   | 52   | 34   | 10                              | 67.9          |
| 24-Jun   | 68                            | 11   | 13   | 5    | 6    | 18   | 4    | 6    | 13    | 61   | 61   | 37   | 47   | 78   | 38   | 37   | 47   | 41   | 10   | 13   | 24   | 27   | 5    | 11                              | 78.3          |
| 25-Jun   | 9                             | 5    | 5    | 4    | 13   | 10   | 13   | 25   | 7     | 10   | 10   | 12   | 19   | 14   | 17   | 7    | 10   | 16   | 25   | 17   | 38   | 24   | 16   | 16                              | 38.4          |
| 26-Jun   | 18                            | 8    | 10   | 7    | 8    | 8    | 6    | 8    | 10    | 12   | 19   | 28   | 23   | 23   | 20   | 40   | 21   | 11   | 9    | 27   | 34   | 23   | 8    | 19                              | 40.2          |
| 27-Jun   | 31                            | 32   | 9    | 5    | 8    | 14   | 8    | 26   | 32    | 16   | 29   | 38   | 43   | 45   | 28   | 33   | 64   | 44   | 42   | 23   | 46   | 33   | 13   | 6                               | 63.6          |
| 28-Jun   | 10                            | 2    | 3    | 5    | 4    | 3    | 8    | 19   | 71    | 44   | 31   | 28   | 24   | 30   | 33   | 83   | 82   | 22   | 33   | 85   | 16   | 36   | 35   | 8                               | 85.3          |
| 29-Jun   | 5                             | 8    | 4    | 12   | 5    | 7    | 45   | 57   | 34    | 13   | 12   | 14   | 14   | 16   | 11   | 10   | 18   | 26   | 9    | 35   | 40   | 63   | 16   | 22                              | 62.6          |
| 30-Jun   | 49                            | 58   | 54   | 51   | 40   | 20   | 18   | 17   | 34    | 36   | 82   | 6    | 11   | 14   | 15   | 14   | 6    | 8    | 20   | 23   | 13   | 8    | 18   | 31                              | 82.0          |
| 68.3   | 88.5                          | 89.9 | 67.9 | 72.0 | 76.4 | 80.1 | 91.3 | 86.2 | 100.2 | 87.2 | 82.0 | 73.9 | 78.3 | 60.5 | 82.9 | 82.6 | 47.9 | 44.5 | 85.3 | 66.0 | 64.3 | 76.6 | 64.0 |                                 |               |

# PAZA

## Monthly Passive Data Summary

# Location of PAZA Passive Monitoring Stations





## PAZA Passive Results for June 2016

| Station Number    | Station Name     | SO2<br>ppb | O3<br>ppb | NO2<br>ppb | H2S<br>ppb | Site<br>Legal    |
|-------------------|------------------|------------|-----------|------------|------------|------------------|
| <b>Duplicates</b> |                  |            |           |            |            |                  |
| 9a                | Spirit River     | 0.4        | 29.5      | 0.9        |            |                  |
| 9b                | Spirit River     | 0.2        | 28.8      | 1.1        |            |                  |
| 28a               | Clairmont Lake   | 0.1        | 33.4      | 0.9        |            |                  |
| 28b               | Clairmont Lake   | 0.1        | 32.5      | 1.4        |            |                  |
| 32a               | Gold Creek       | 0.0        | 19.9      | 0.6        |            |                  |
| 32b               | Gold Creek       | 0.1        | 28.1      | 0.5        |            |                  |
| 35a               | Jean Cote        | 0.1        | 29.6      | 1.4        |            |                  |
| 35b               | Jean Cote        | 0.1        | 29.4      | 1.2        |            |                  |
| 63a               | Girouxville 3    |            |           |            | 0.1        |                  |
| 63b               | Girouxville 3    |            |           |            | 0.1        |                  |
| 1                 | Silver Valley    | 0.2        | N/S       | 0.7        |            | 08-27-081-11 W6M |
| 2                 | Bay Tree         | 0.1        | 30.0      | 0.2        |            | 13-16-078-13 W6M |
| 3                 | Fourth Creek     | 0.1        | 32.0      | 0.3        |            | 04-13-082-07 W6M |
| 4                 | Gordondale       | 0.3        | 29.6      | 0.9        |            | 04-34-078-10 W6M |
| 5                 | Boone Creek      | 0.1        | 26.2      | 0.3        |            | 16-36-074-11 W6M |
| 7                 | Steeprock Creek  | 0.1        | 29.3      | N/S        |            | 09-35-072-13 W6M |
| 9                 | Spirit River     | 0.3        | 29.2      | 1.0        |            | 08-12-079-07 W6M |
| 10                | Woking           | 0.2        | 28.5      | 0.4        |            | 01-13-076-07 W6M |
| 11                | Webber Creek     | 0.1        | 30.0      | 0.8        |            | 09-36-074-09 W6M |
| 12                | Hythe            | 0.1        | 30.2      | 0.5        |            | 14-36-072-11 W6M |
| 14                | Sylvester        | 0.0        | 26.3      | 0.3        |            | 08-06-069-12 W6M |
| 16                | Beaverlodge      | 0.1        | 32.7      | 0.4        |            | 15-36-071-10 W6M |
| 17                | Poplar           | 0.2        | 30.5      | 1.3        |            | 13-06-073-08 W6M |
| 18                | Saddle Hills     | 0.2        | 28.5      | 0.5        |            | 04-25-074-07 W6M |
| 19                | Wanham           | 0.3        | 36.5      | 0.3        |            | 16-22-077-03 W6M |
| 20                | Shaftesbury      | 0.1        | 29.3      | 0.7        |            | 04-03-082-23 W5M |
| 21                | Eaglesham        | 0.1        | 27.1      | 0.8        |            | 16-21-079-25 W5M |
| 23                | Bear Lake        | 0.1        | 31.8      | 1.1        |            | 15-31-072-06 W6M |
| 24                | Wembley          | 0.2        | 31.9      | 1.4        |            | 12-31-070-08 W6M |
| 25                | Pinto Creek      | 0.1        | 34.2      | 0.2        |            | 04-24-069-11 W6M |
| 26                | Flyingshot       | 0.1        | 34.5      | 0.7        |            | 15-36-070-07 W6M |
| 27                | Grande Prairie I | 0.1        | 36.4      | 1.6        |            | 08-15-071-06 W6M |

## PAZA Passive Results for June 2016 (Continued)

|    |                   |     |      |     |     |                  |
|----|-------------------|-----|------|-----|-----|------------------|
| 28 | Clairmont Lake    | 0.1 | 32.9 | 1.2 |     | 09-06-073-04 W6M |
| 29 | Smoky Heights     | 0.3 | 34.0 | 0.4 |     | 04-06-075-02 W6M |
| 30 | Fitzsimmons       | 0.1 | 25.1 | 0.7 |     | 15-36-072-03 W6M |
| 32 | Gold Creek        | 0.1 | 24.0 | 0.6 |     | 06-33-067-05 W6M |
| 33 | Wapiti            | 0.1 | 27.9 | 0.6 |     | 02-25-071-03 W6M |
| 34 | Puskwaskau        | 0.1 | 21.6 | 0.2 |     | 15-35-074-25 W5M |
| 35 | Jean Cote         | 0.1 | 29.5 | 1.3 |     | 12-35-079-21 W5M |
| 36 | Guy               | 0.1 | 30.2 | 3.4 |     | 03-04-076-22 W5M |
| 37 | Crooked Creek     | 0.0 | 29.6 | 0.4 |     | 16-01-071-26 W5M |
| 38 | Karr Creek        | 0.1 | 28.3 | 0.5 |     | 10-16-065-02 W6M |
| 39 | Clouston Creek    | 0.1 | 30.1 | 1.1 |     | 12-01-073-22 W5M |
| 40 | McLennan          | 0.2 | 35.0 | 1.6 |     | 03-29-077-19 W5M |
| 41 | Valleyview        | 0.1 | 31.1 | 0.5 |     | 09-30-069-22 W5M |
| 42 | Sunset House      | 0.1 | 38.3 | 0.5 |     | 05-32-070-19 W5M |
| 43 | High Prairie      | 0.1 | 30.8 | 0.6 |     | 16-13-074-17 W5M |
| 44 | Peavine           | 0.1 | 25.6 | 0.1 |     | 03-05-079-15 W5M |
| 45 | Gift Lake         | 0.1 | 25.4 | 0.1 | 0.1 | 10-07-079-12 W5M |
| 46 | Little Smoky      | 0.0 | 28.0 | 0.9 |     | 12-01-065-21 W5M |
| 47 | Kinuso            | 0.0 | 27.8 | 0.2 |     | 12-10-073-10 W5M |
| 65 | Deer Mountain 2   | 0.1 | 26.6 | 0.2 |     | 15-22-068-09 W5M |
| 49 | Grande Prairie HP | 0.1 | 36.0 | 1.1 |     | 17-26-071-06 W6M |
| 50 | East Prairie      | 0.1 | 28.4 | BDL |     | 13-02-072-15 W5M |
| 63 | Girouxville 3     |     |      |     | 0.1 | 14-02-077-23 W5M |
| 64 | Girouxville 4     |     |      |     | 0.3 | 4-08-077-22 W5M  |

\*BDL = Below Detection Level

\*NS - No sample

## Passive Summary for June 2016

| Stats | Sulphur Dioxide<br>SO <sub>2</sub> | Ozone<br>O <sub>3</sub> | Nitrogen Dioxide<br>NO <sub>2</sub> | Hydrogen Sulphide<br>H <sub>2</sub> S |
|-------|------------------------------------|-------------------------|-------------------------------------|---------------------------------------|
|       | ppb                                | ppb                     | ppb                                 | ppb                                   |

| Passive Summary for June 2016 (PAZA Zone) |                          |                           |                        |                            |
|---|--------------------------|---------------------------|------------------------|----------------------------|
| <b>Mean</b>                               | <b>0.1</b>               | <b>30.0</b>               | <b>0.7</b>             | <b>0.2</b>                 |
| <b>Standard Deviation</b>                 | <b>0.1</b>               | <b>3.6</b>                | <b>0.6</b>             | <b>0.1</b>                 |
| <b>Minimum</b>                            | <b>BDL</b>               | <b>21.6</b>               | <b>0.1</b>             | <b>0.1</b>                 |
| <b>Minimum At</b>                         | <b>Sylvester (#14)</b>   | <b>Puskwaskau (#34)</b>   | <b>Gift Lake (#45)</b> | <b>Gift Lake (#45)</b>     |
| <b>Maximum</b>                            | <b>0.3</b>               | <b>38.3</b>               | <b>3.4</b>             | <b>0.3</b>                 |
| <b>Maximum At</b>                         | <b>Spirit River (#9)</b> | <b>Sunset House (#42)</b> | <b>Guy (#36)</b>       | <b>Girouxville 4 (#64)</b> |

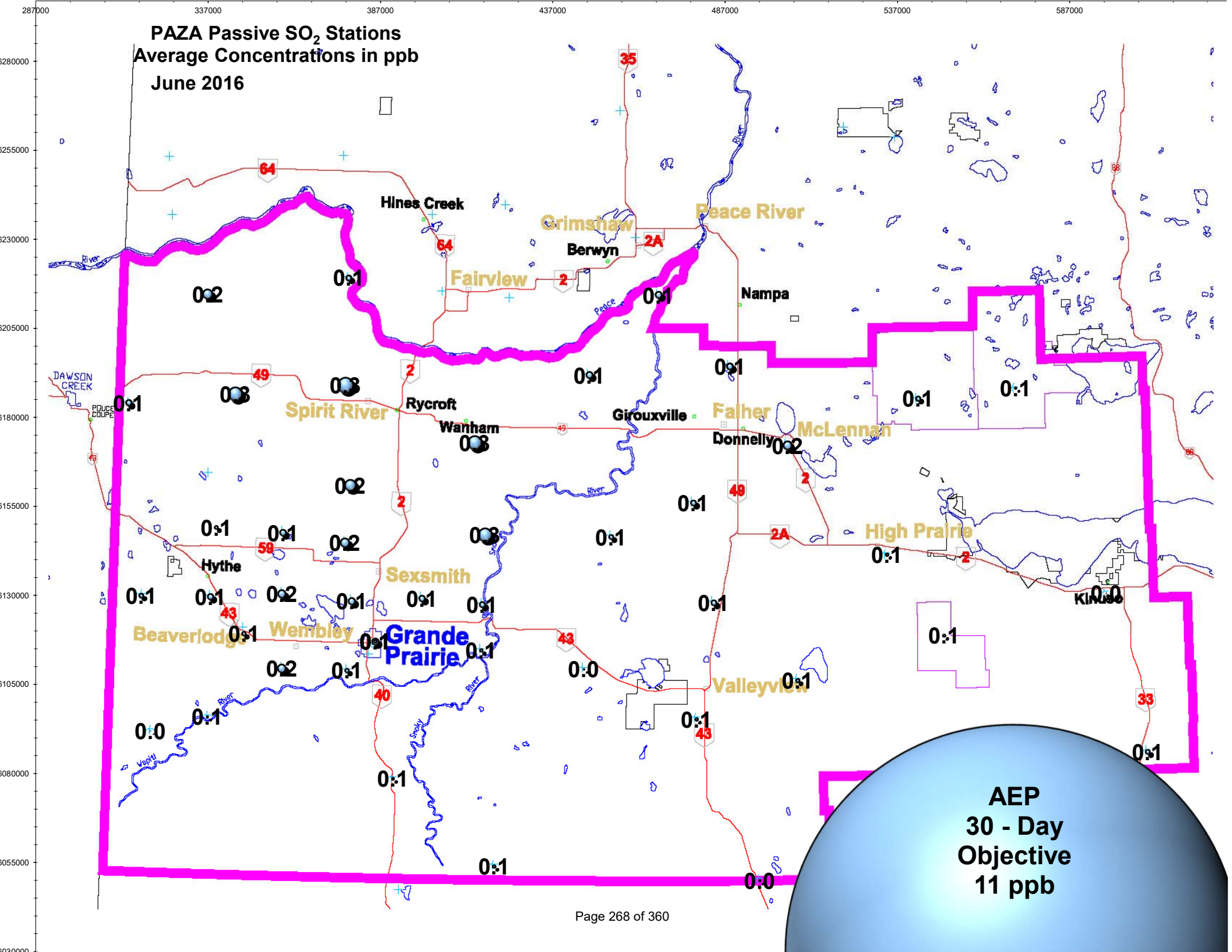
### Comparison between Continuous and Passive monitoring at Beaverlodge (passive #16 Beaverlodge)

|                                 | SO <sub>2</sub> | O <sub>3</sub> | NO <sub>2</sub> |
|---------------------------------|-----------------|----------------|-----------------|
| <b>PAZA Beaverlodge station</b> | <b>0.1</b>      | <b>33.7</b>    | <b>1.8</b>      |
| <b>PAZA Beaverlodge passive</b> | <b>0.1</b>      | <b>32.7</b>    | <b>0.4</b>      |

### Comparison between Continuous and Passive monitoring at Henry Pirker (passive #49 Grande Prairie HP)

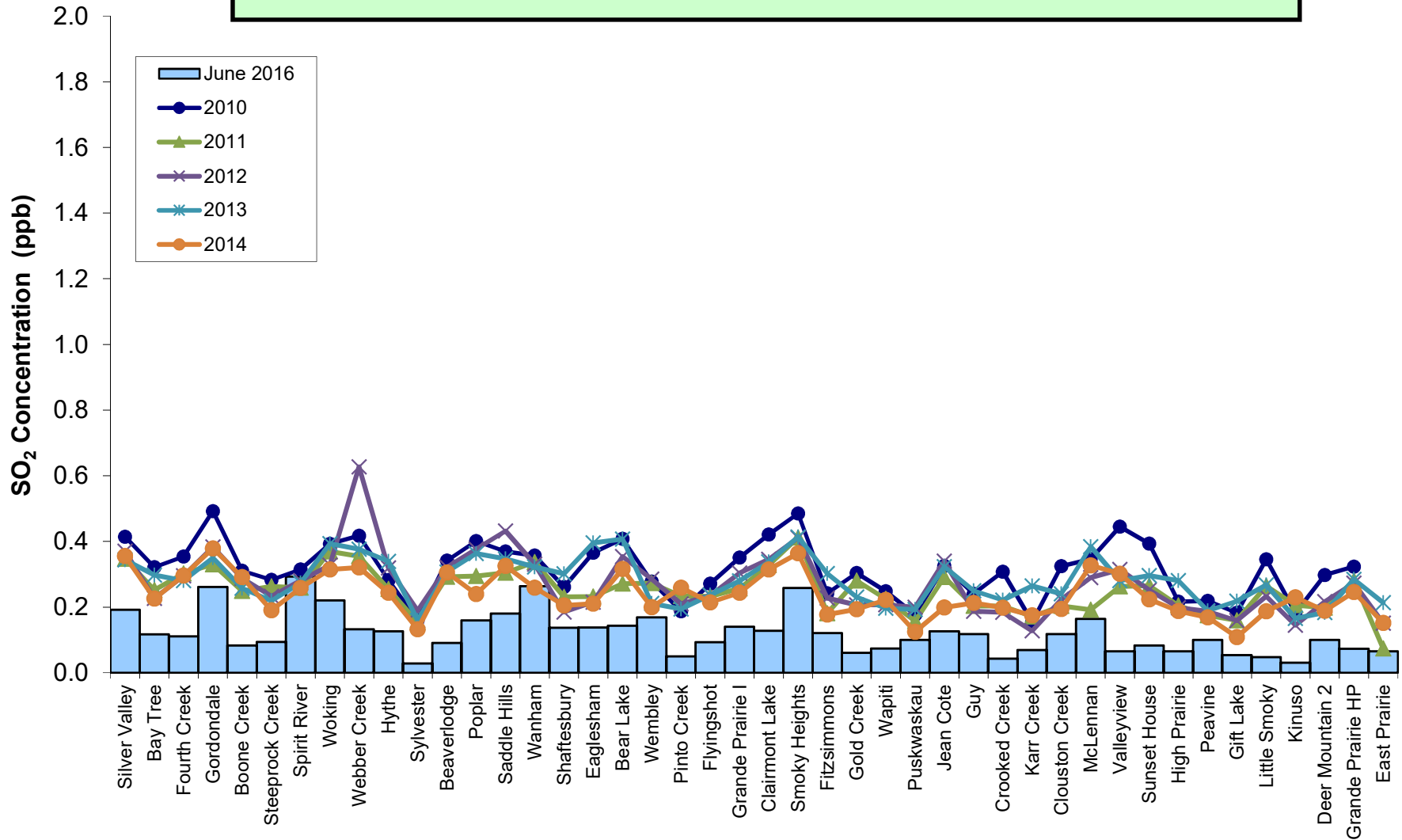
|                                    | SO <sub>2</sub> | O <sub>3</sub> | NO <sub>2</sub> |
|------------------------------------|-----------------|----------------|-----------------|
| <b>PAZA Henry Pirker station</b>   | <b>0.1</b>      | <b>29.6</b>    | <b>4.2</b>      |
| <b>PAZA Grande Prairie passive</b> | <b>0.1</b>      | <b>36.0</b>    | <b>1.1</b>      |

**PAZA Passive SO<sub>2</sub> Stations**  
**Average Concentrations in ppb**  
**June 2016**



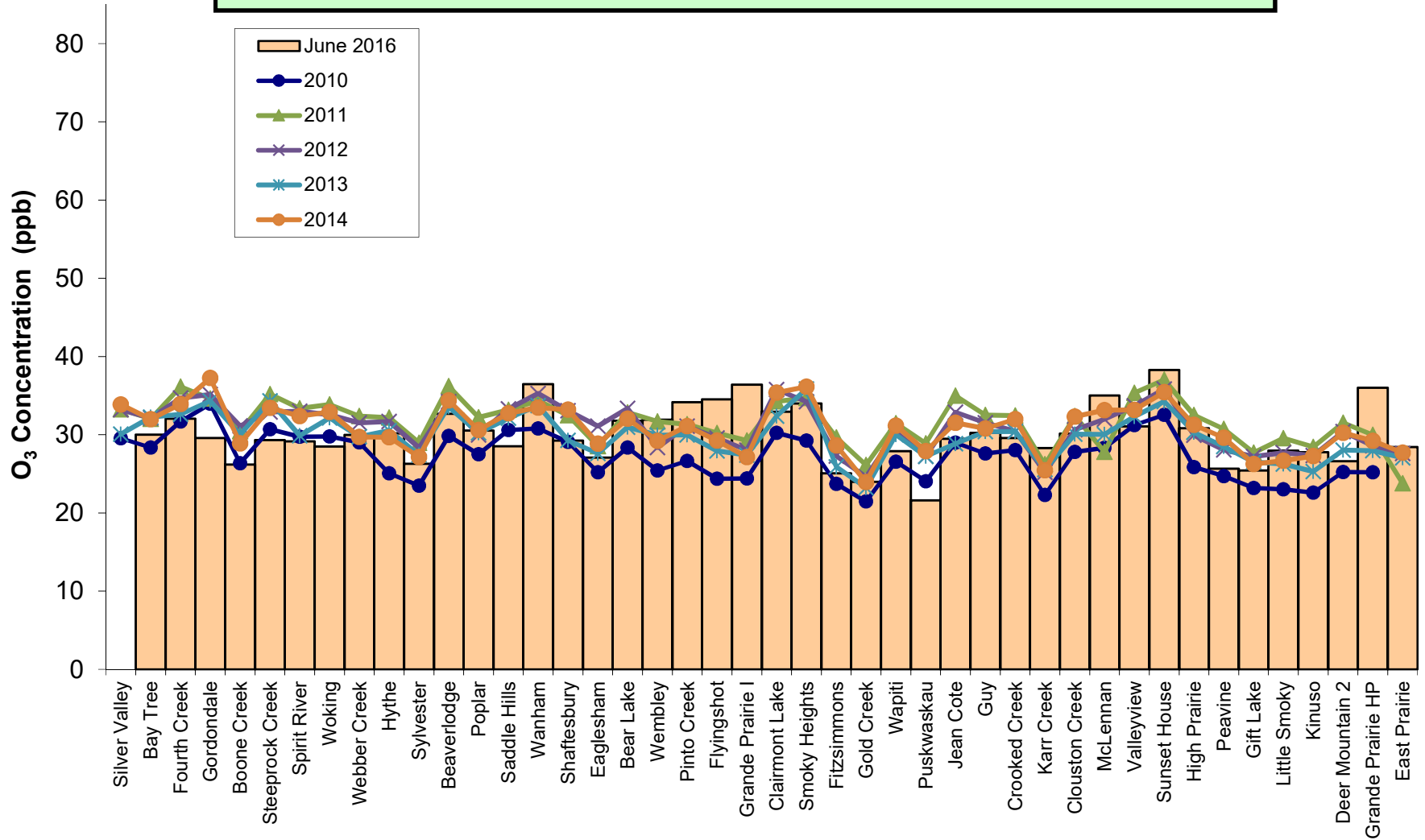
**AEP**  
**30 - Day**  
**Objective**  
**11 ppb**

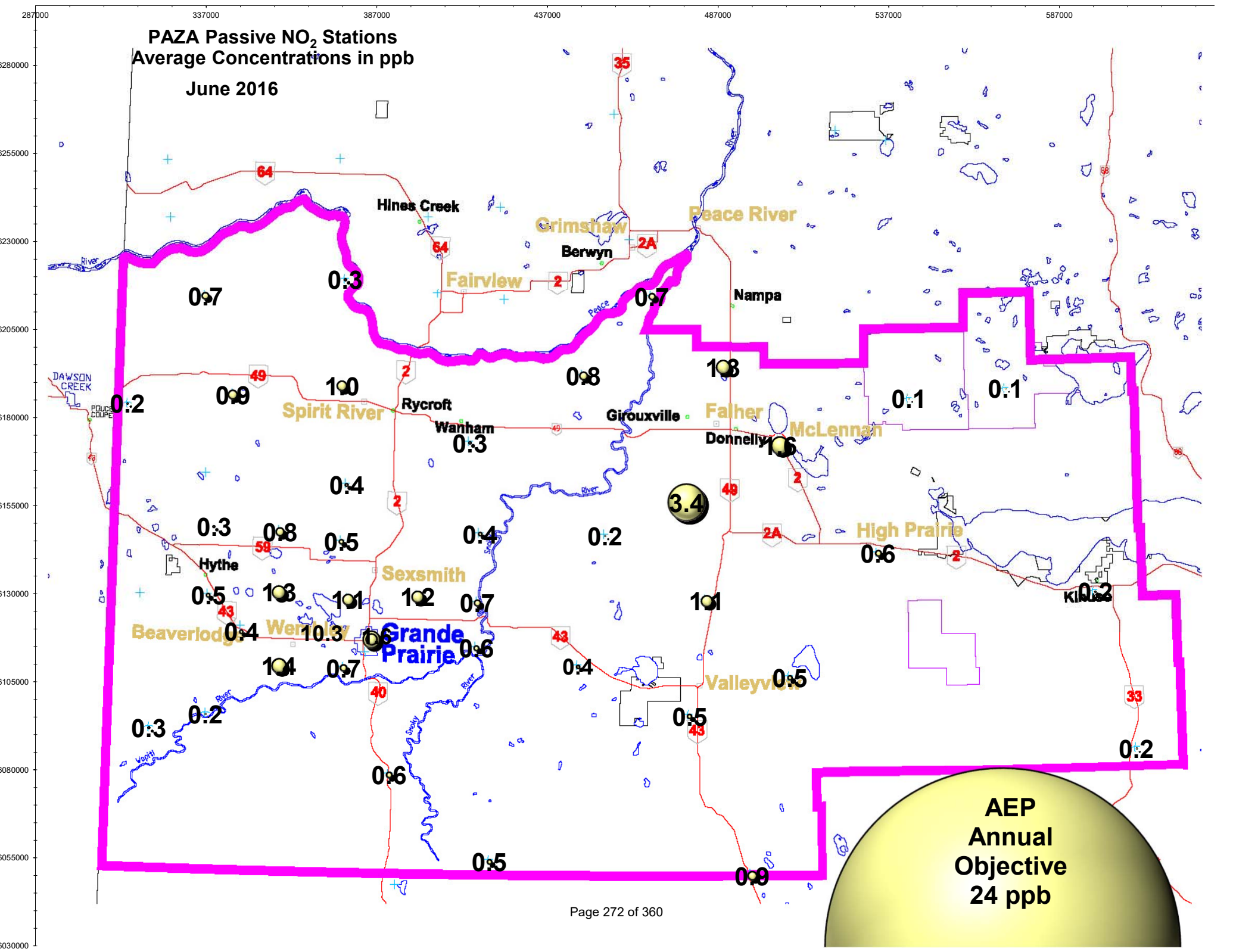
**Alberta Ambient Air Quality Objective - 30-day Objective is 11 ppb**



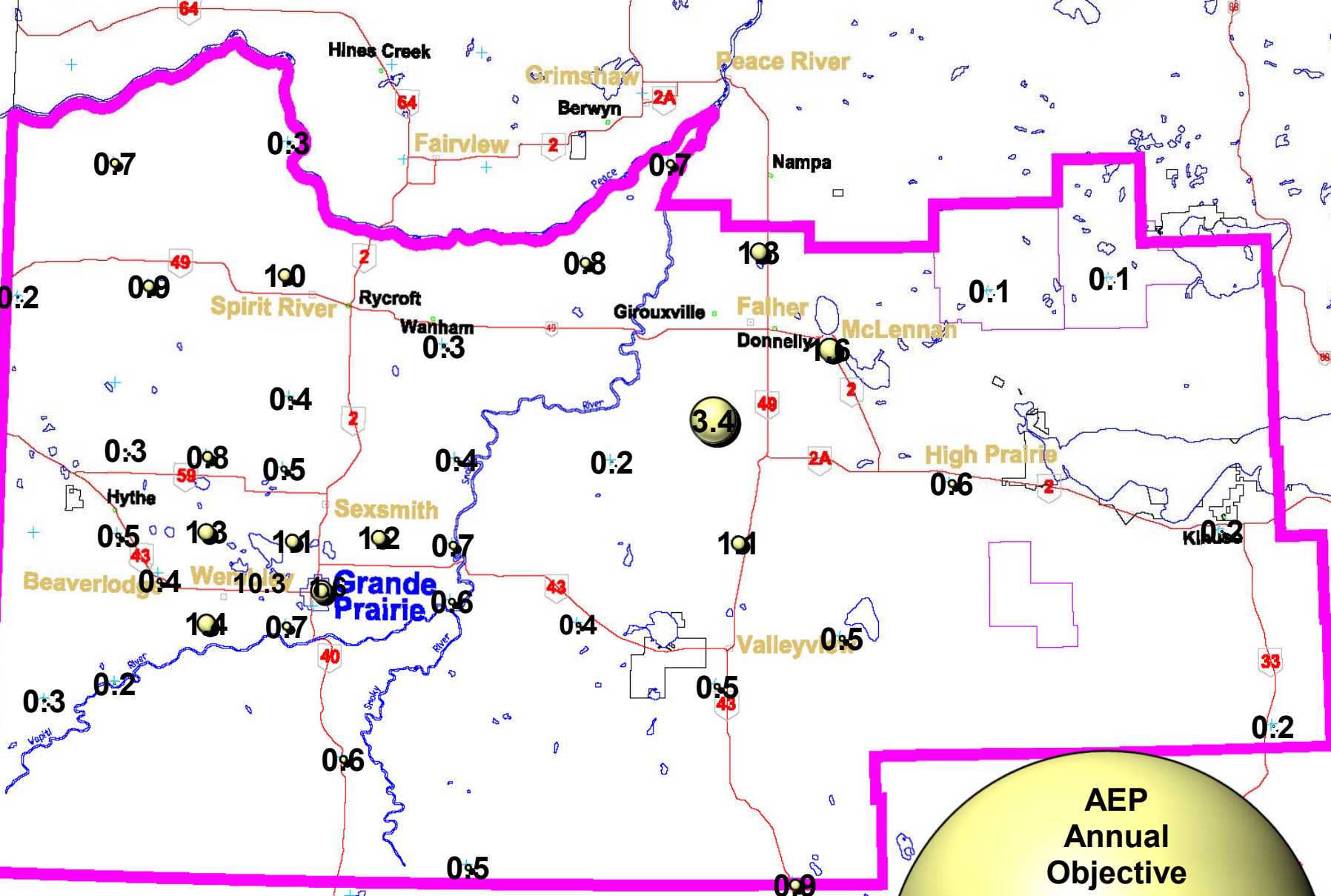


## Alberta Ambient Air Quality Objective - No Annual O<sub>3</sub> Objective





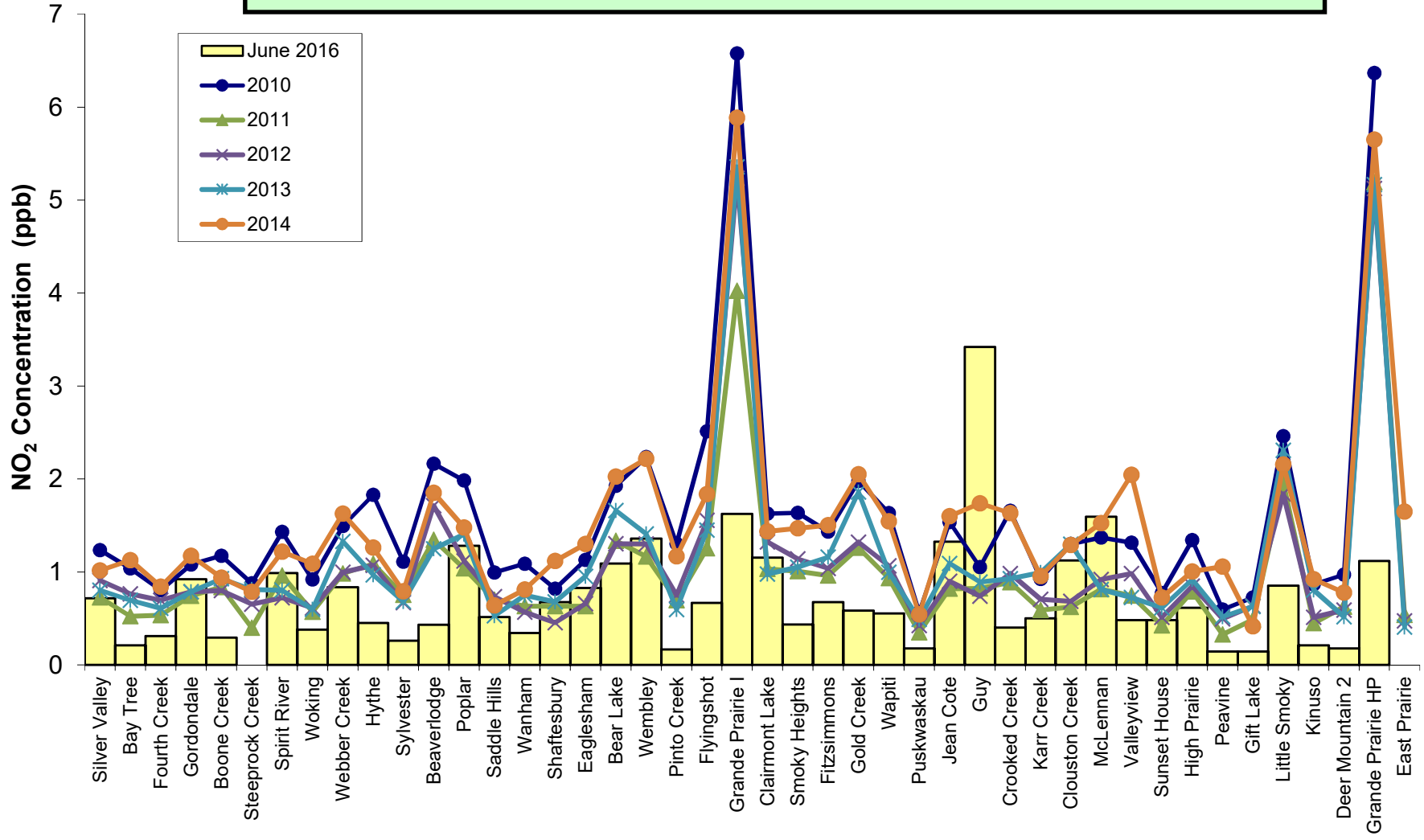
**PAZA Passive NO<sub>2</sub> Stations**  
**Average Concentrations in ppb**  
**June 2016**



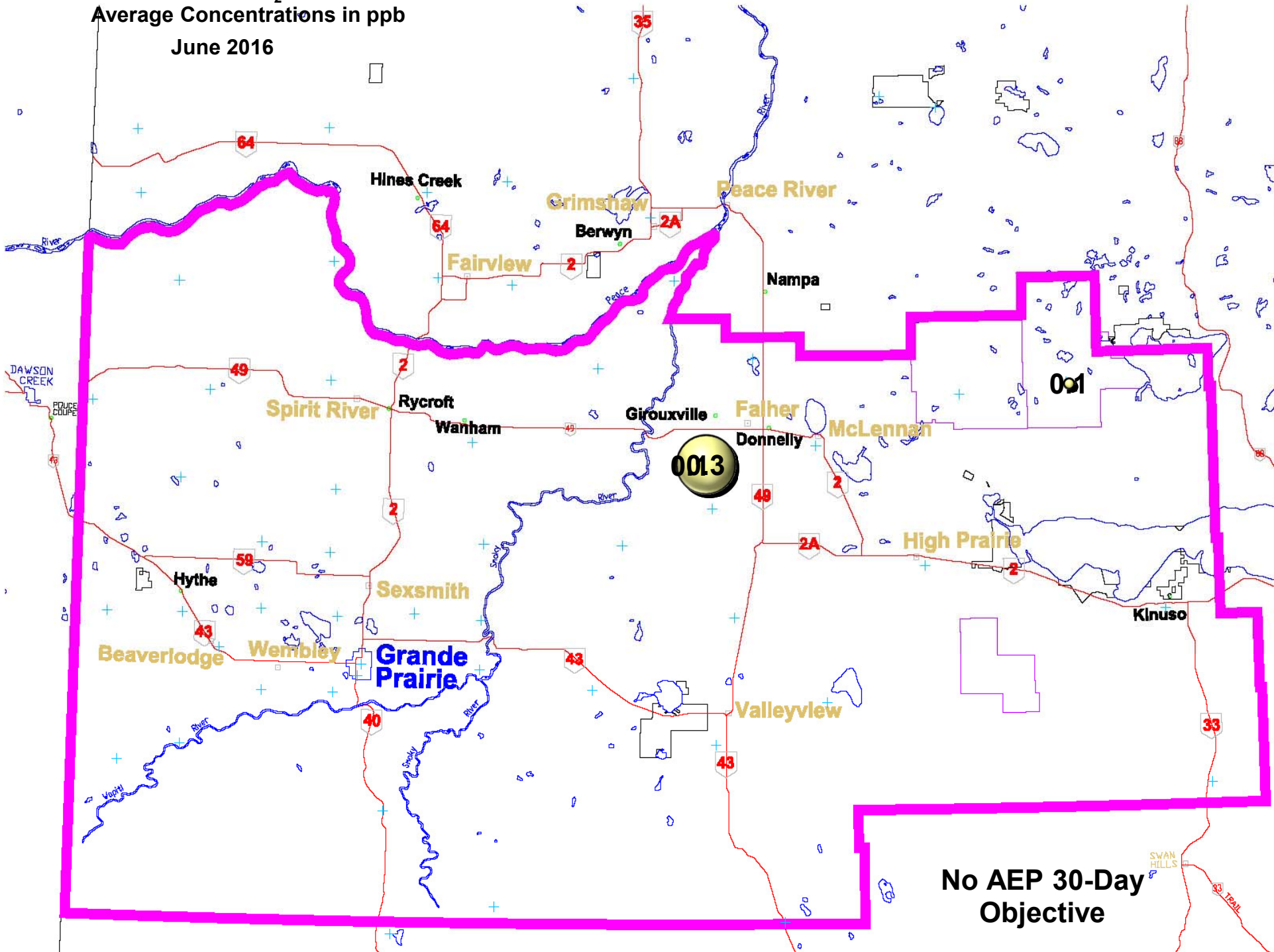
**AEP**  
**Annual**  
**Objective**  
**24 ppb**



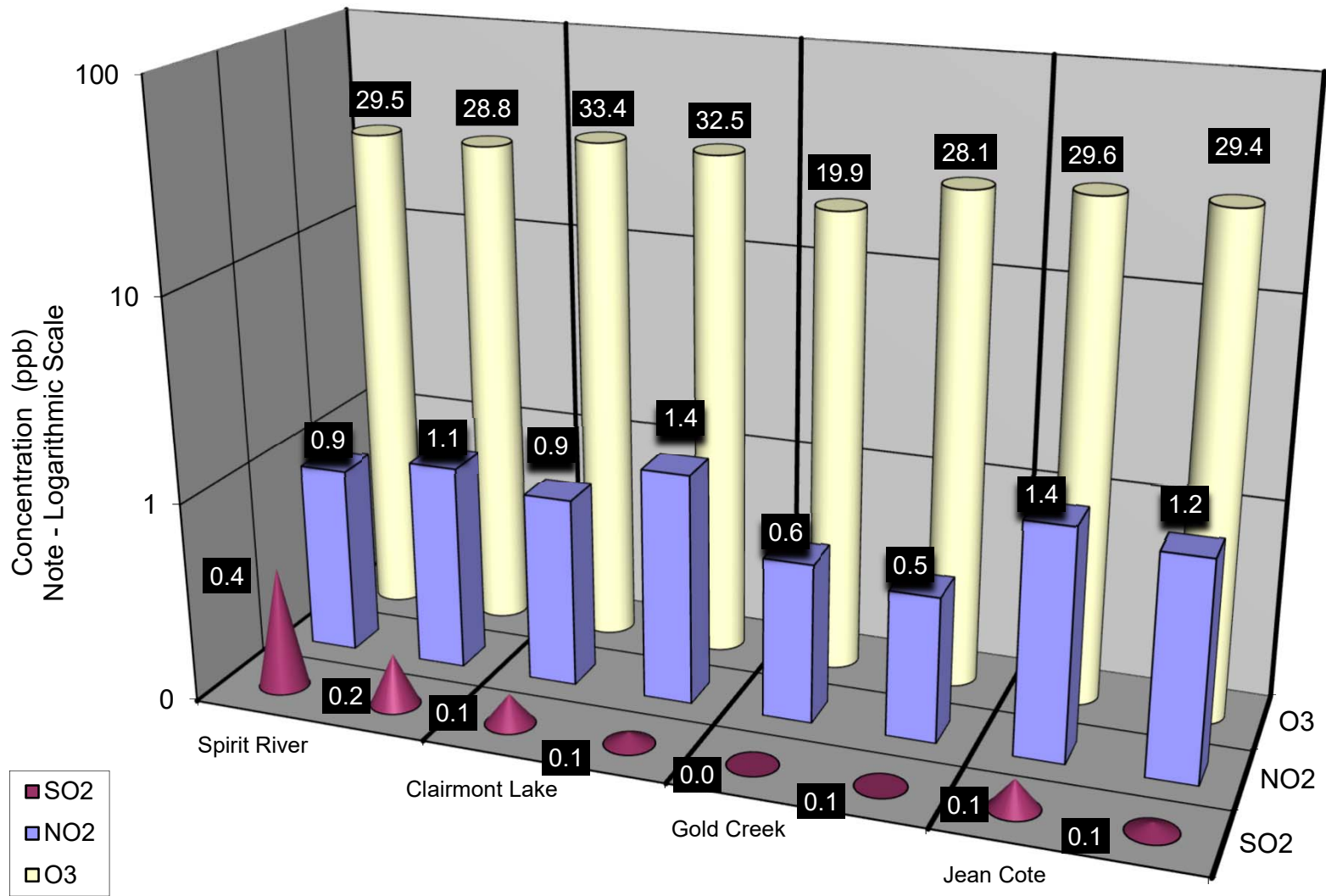
**Alberta Ambient Air Quality Objective - Annual NO<sub>2</sub> Objective is 24 ppb**



**PAZA Passive H<sub>2</sub>S Stations  
Average Concentrations in ppb  
June 2016**



**No AEP 30-Day  
Objective**



Duplicate Summary Chart

# June 2016 Calibration Reports

**PAZA - Henry Pirker Station with the following calibrations:**

**SO<sub>2</sub>, NO, NO<sub>2</sub>, NO<sub>x</sub>, O<sub>3</sub>, CO, THC, TRS, PM<sub>2.5</sub>**

**PAZA – Evergreen Park Station with the following calibrations:**

**SO<sub>2</sub>, TRS, PM<sub>2.5</sub>**

**PAZA – Smoky Heights Station with the following calibrations:**

**SO<sub>2</sub>, TRS, PM<sub>2.5</sub>**

**PAZA – Beaverlodge Station with the following calibrations:**

**SO<sub>2</sub>, NO, NO<sub>2</sub>, NO<sub>x</sub>, O<sub>3</sub>, PM<sub>2.5</sub>**

**PAZA – Valleyview Station with the following calibrations:**

**SO<sub>2</sub> & H<sub>2</sub>S**

**PAZA – Rycroft Station with the following calibrations:**

**SO<sub>2</sub>, NO, NO<sub>2</sub>, NO<sub>x</sub>, O<sub>3</sub>, THC, TRS**

# Calibration Report



AIR QUALITY MONITORING

Parameter SO2

Air Monitoring Network PAZA

## Station Information

|                      |   |                                  |                                  |
|----------------------|---|----------------------------------|----------------------------------|
| Calibration Date     | June 10, 2016                               | Previous Calibration             | May 2, 2016                      |
| Station Number       | 1   | Station Location                 | Henry Pirker                     |
| Reason:              | <input checked="" type="checkbox"/> Routine | <input type="checkbox"/> Install | <input type="checkbox"/> Removal |
|                      |   |                                  | <input type="checkbox"/> Other:  |
| Start Time (MST)     | 8:50  | End Time (MST)                   | 11:25                            |
| Barometric Pressure  | 728.000 mm                                  | Station Temperature              | 21.0 Deg C                       |
| Calibrator           | EnviroNics                                  | Serial Number                    | 6586                             |
| Cal Gas Conc         | 49.7 ppm                                    | Cal Gas Cert Date                | October 5, 2018                  |
|                      |   | Cal Gas Cylinder #               | LL103793                         |
| DACS make            | CR3000                                      | DACS serial No.                  | 5408                             |
| DACS voltage range   | 0 - 1 volt                                  | DACS channel #                   | 10                               |
|                      | Before                                      |                                  | After                            |
| Calculated slope     | 0.993629                                    | Calculated slope                 | 0.989153                         |
| Calculated intercept | 1.380484                                    | Calculated intercept             | 0.884810                         |
| Analyzer make        | TEI 43I-TLE                                 | Analyzer serial #                | 1507864682 (AMU 2006)            |

|                     | before  |       | after   |       |
|---------------------|---------|-------|---------|-------|
| Concentration range | 0 - 500 | ppb   | 0 - 500 | ppb   |
| Background          | 1.52    |       | 1.52    |       |
| Coefficient         | 0.977   |       | 0.977   |       |
| Pressure            | 672.5   | mm Hg | 670.4   | mm Hg |
| Flow                | 0.444   | lpm   | 0.441   | lpm   |
| Lamp intensity      | 82      | Hz    | 82      | Hz    |

## Calibration Data

| Dilution air flow rate (cc/min) | Source gas flow rate (cc/min) | Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) |
|---------------------------------|-------------------------------|-------------------------------------|------------------------------------|---------------------------|
| 4996                            | 0.00                          | 0.0                                 | 0.1                                | N/A                       |
| 4998                            | 39.94                         | 394.0                               | 398.1                              | 0.9897                    |
| 4997                            | 19.99                         | 198.0                               | 198.3                              | 0.9986                    |
| 4999                            | 9.89                          | 98.1                                | 97.6                               | 1.0055                    |
|                                 |                               |                                     |                                    |                           |
| 4996                            | 0.00                          | 0.0                                 | 0.1                                | As Found Zero             |
| 4996                            | 39.93                         | 394.1                               | 398.1                              | As Found Span             |
| Average Correction Factor       |                               |                                     |                                    | 0.9979                    |

Calculated value of As Found Response: 396.8 ppb      Percent Change of As Found: -0.7%

|           | before calibration |     | after calibration |     |
|-----------|--------------------|-----|-------------------|-----|
| Auto zero | 0.1                | ppb | 0.1               | ppb |
| Auto span | 284.8              | ppb | 287.8             | ppb |

Notes: No adjustment made

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Calibration Performed By: Dmytro Dolotii

# Calibration Summary



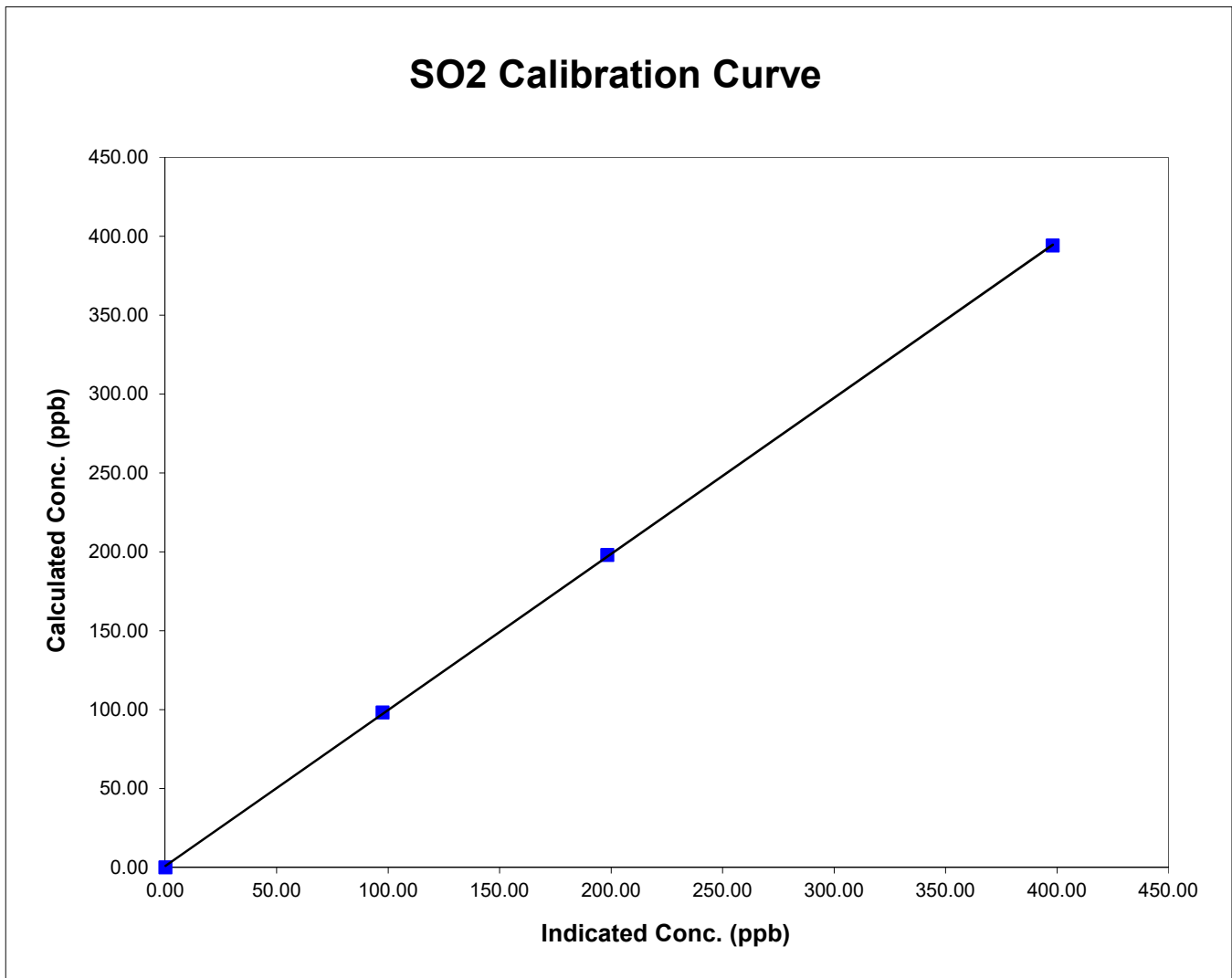
Parameter SO2  
 Air Monitoring Network PAZA

### Station Information

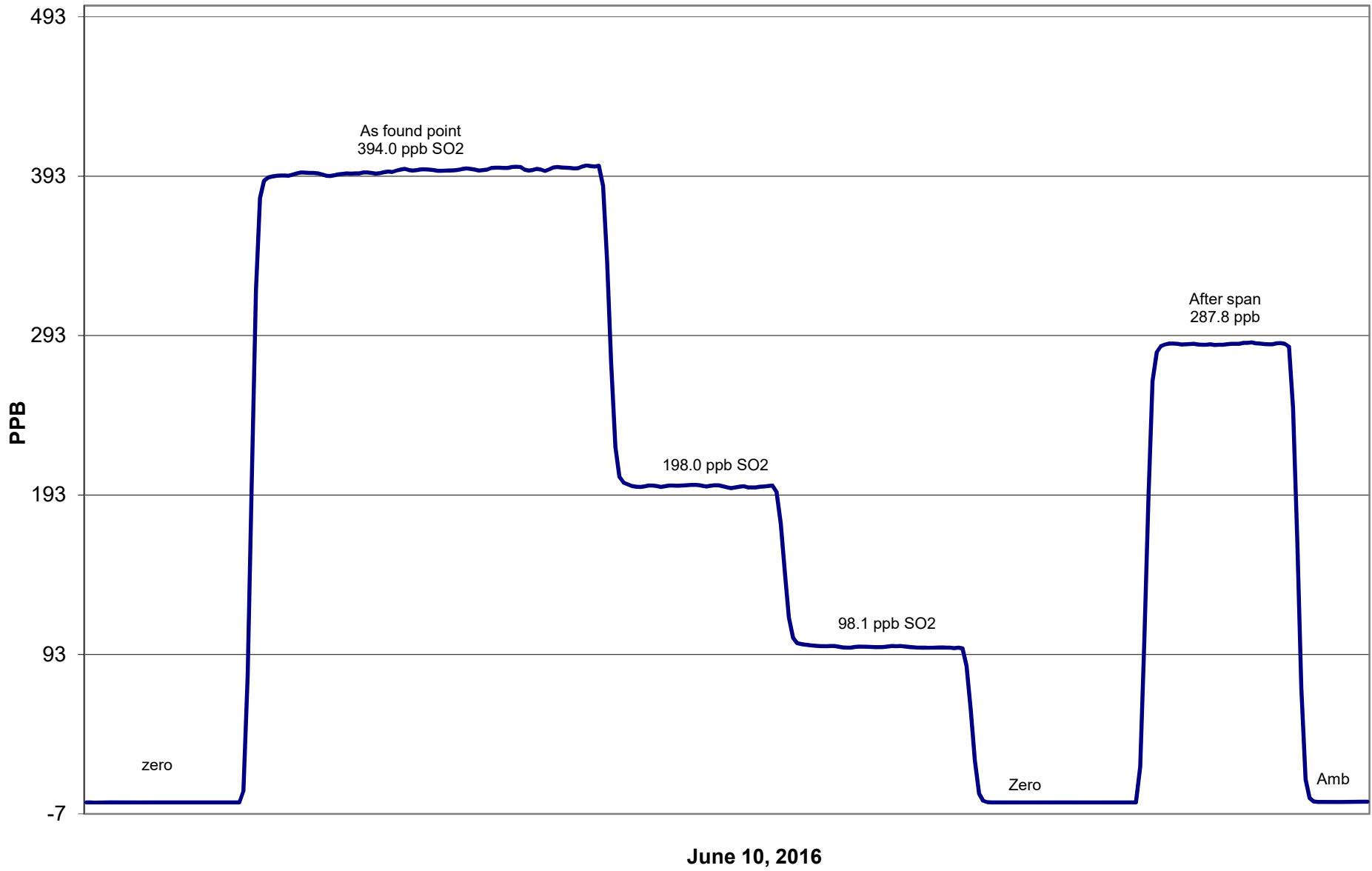
|                     |               |                      |                       |
|---------------------|---------------|----------------------|-----------------------|
| Calibration Date    | June 10, 2016 | Previous Calibration | May 2, 2016           |
| Station Number      | 1             | Station Location     | Henry Pirker          |
| Start Time (MST)    | 8:50          | End Time (MST)       | 11:25                 |
| Analyzer make/model | TEI 43I-TLE   | Analyzer serial #    | 1507864682 (AMU 2006) |

### Calibration Data

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |          |
|-------------------------------------|------------------------------------|---------------------------|-------------------------|----------|
| 0.0                                 | 0.1                                | N/A                       | Correlation Coefficient | 0.999965 |
| 394.0                               | 398.1                              | 0.9897                    |                         |          |
| 198.0                               | 198.3                              | 0.9986                    | Slope                   | 0.989153 |
| 98.1                                | 97.6                               | 1.0055                    |                         |          |
|                                     |                                    |                           | Intercept               | 0.884810 |



# SO2 Calibration



# Calibration Report

Parameter **NO<sub>x</sub>-NO-NO<sub>2</sub>**  
 Air Monitoring Network **PAZA**



## Station Information

|                              |                |                      |                    |
|------------------------------|----------------|----------------------|--------------------|
| Calibration Date             | June 10, 2016  | Previous Calibration | May 2, 2016        |
| Station Number               | 1              | Station Location     | Henry Pirker       |
| Reason:                      | <b>Routine</b> | Installation         | Removal            |
| Start Time (MST)             | 8:50           | End Time (MST)       | 12:55              |
| Barometric Pressure          | 721.000 mm     | Station Temperature  | 21.0 Deg C         |
| Calibrator                   | EnviroNics     | Serial Number        | 906535067(AMU 197) |
| NO Cal Gas Conc              | 50.9 ppm       | Cal Gas Expiry Date  | October 5, 2018    |
| NO <sub>x</sub> Cal Gas Conc | 51.2 ppm       | Cal Gas Serial #     | LL103793           |

## DACS Information

|           |        |                 |      |
|-----------|--------|-----------------|------|
| DACS make | CR3000 | DACS serial No. | 5408 |
|-----------|--------|-----------------|------|

| Parameter     |             | NO2       | NOx       | NO        |
|---------------|-------------|-----------|-----------|-----------|
| Before        | Data Slope  | 1.005084  | 1.003926  | 0.998324  |
|               | Data Offset | 0.364654  | 0.702426  | 0.346181  |
| After         | Data Slope  | 1.002705  | 1.004354  | 0.997813  |
|               | Data Offset | 0.314781  | 0.239074  | -0.000959 |
| Channel #     |             | 8         | 6         | 7         |
| Voltage Range |             | 0 - 5 VDC | 0 - 5 VDC | 0 - 5 VDC |

## Analyzer Information

|                     |     |                   |           |
|---------------------|-----|-------------------|-----------|
| Analyzer make/model | 42i | Analyzer serial # | 906535087 |
|---------------------|-----|-------------------|-----------|

| Test Point                  | before  |       | after   |       |
|-----------------------------|---------|-------|---------|-------|
| Concentration range         | 0 - 500 | ppb   | 0 - 500 | ppb   |
| NO offset                   | 6.0     | mV    | 6.6     | mV    |
| NO <sub>x</sub> bkgnd       | 6.4     | mV    | 6.1     | mV    |
| NO coefficient              | 0.941   |       | 0.960   |       |
| NO <sub>x</sub> coefficient | 1.000   |       | 1.000   |       |
| NO2 conv temp               | 325.8   | Deg C | 325.8   | Deg C |
| Cooler Temp                 | -2.9    | Deg C | -2.9    | Deg C |
| PMT Volt                    | -844.3  | mV    | -844.3  | mV    |
| R Cell Press                | 167.4   | in Hg | 168.3   | in Hg |
| Sample Flow                 | 0.614   | LPM   | 0.612   | LPM   |

Notes: Span adjustment made



# Calibration Report



Parameter **NOX-NO-NO2**  
 Air Monitoring Network **PAZA**

## Station Information

Calibration Date: June 10, 2016 Station Location: Henry Pirker

## Calibration Data

|      | Dilution flow rate (ccm) | Source gas flow rate (ccm) | Calculated NOx conc (ppb) | Calculated NO conc (ppb) | Calculated NO2 conc (ppb) | Indicated NOx conc (ppb) | Indicated NO conc (ppb) | Indicated NO2 conc (ppb) | NOx Correction factor     | NO Correction factor |        |
|------|--------------------------|----------------------------|---------------------------|--------------------------|---------------------------|--------------------------|-------------------------|--------------------------|---------------------------|----------------------|--------|
| zero | 4996                     | 0.00                       | 0.0                       | 0.0                      | 0.0                       | 0.1                      | 0.5                     | 0.0                      | N/A                       | N/A                  |        |
| 1    | 4997                     | 39.96                      | 406.2                     | 403.8                    | 2.4                       | 404.4                    | 405.1                   | -0.1                     | 1.0045                    | 0.9969               |        |
| 2    | 4998                     | 19.95                      | 203.6                     | 202.4                    | 1.2                       | 202.3                    | 202.2                   | -0.1                     | 1.0064                    | 1.0006               |        |
| 3    | 4997                     | 9.94                       | 101.6                     | 101.0                    | 0.6                       | 100.6                    | 101.0                   | 0.0                      | 1.0107                    | 1.0009               |        |
| AFZ  | 4996                     | 0.00                       | 0.0                       | 0.0                      | 0.0                       | 0.1                      | 0.5                     | 0.0                      | 0.0000                    | 0.0000               |        |
| AFS  | 4996                     | 39.92                      | 405.9                     | 403.5                    | 0.8                       | 396.1                    | 396.7                   | -0.1                     | 1.0247                    | 1.0171               |        |
|      |                          |                            |                           |                          |                           |                          |                         |                          | Average Correction Factor | 1.0072               | 0.9995 |

As Found Concentrations: NO<sub>x</sub>= 398.2 NO= 395.8 As Found Percent Change NO<sub>x</sub>= -1.9% NO= -1.9%

## GPT Calibration Data

Dilution Flow 4995 ccm Source Gas Flow 39.93 ccm

| O3 Setpoint (ppb) | Indicated NO high point (ppb) | Indicated NO drop conc (ppb) | Calculated NO2 conc (ppb) | Indicated NOx conc (ppb) | Indicated NO conc (ppb) | Indicated NO2 conc (ppb) | NOx Correction factor     | NO Correction factor | NO2 Correction factor | Converter Efficiency |       |
|-------------------|-------------------------------|------------------------------|---------------------------|--------------------------|-------------------------|--------------------------|---------------------------|----------------------|-----------------------|----------------------|-------|
| 0                 | 0.5                           | 0.5                          | 0.0                       | 0.1                      | 0.5                     | 0.0                      | N/A                       | N/A                  | N/A                   | N/A                  |       |
| NO point          | 406.9                         | 406.9                        | 0.0                       | 406.4                    | 406.9                   | -0.2                     | 1.0012                    | 1.0000               | N/A                   | N/A                  |       |
| 300               | 406.9                         | 71.1                         | 335.8                     | 406.4                    | 71.1                    | 334.9                    | 1.0011                    | 1.0000               | 1.0028                | 99.7%                |       |
| 200               | 406.9                         | 179.5                        | 227.4                     | 406.6                    | 179.5                   | 226.2                    | 1.0007                    | 1.0000               | 1.0051                | 99.5%                |       |
| 100               | 406.9                         | 295.6                        | 111.3                     | 406.9                    | 295.6                   | 110.3                    | 0.9999                    | 1.0000               | 1.0089                | 99.1%                |       |
|                   |                               |                              |                           |                          |                         |                          | Average Correction Factor | 1.0006               | 1.0000                | 1.0056               | 99.4% |

## AIC Data

| Parameter | Previous calibration |       |     |     | Current calibration |       |     |     |
|-----------|----------------------|-------|-----|-----|---------------------|-------|-----|-----|
|           | NOx                  | NO2   | NO  |     | NOx                 | NO2   | NO  |     |
| Auto zero | 0.0                  | 0.0   | 0.5 | ppb | 0.1                 | 0.0   | 0.5 | ppb |
| Auto span | 314.7                | 311.4 | 3.0 | ppb | 318.8               | 315.3 | 3.3 | ppb |

Calibration Performed By: Dmytro Dolotii

# Calibration Summary



Parameter NO<sub>2</sub>

Air Monitoring Network PAZA

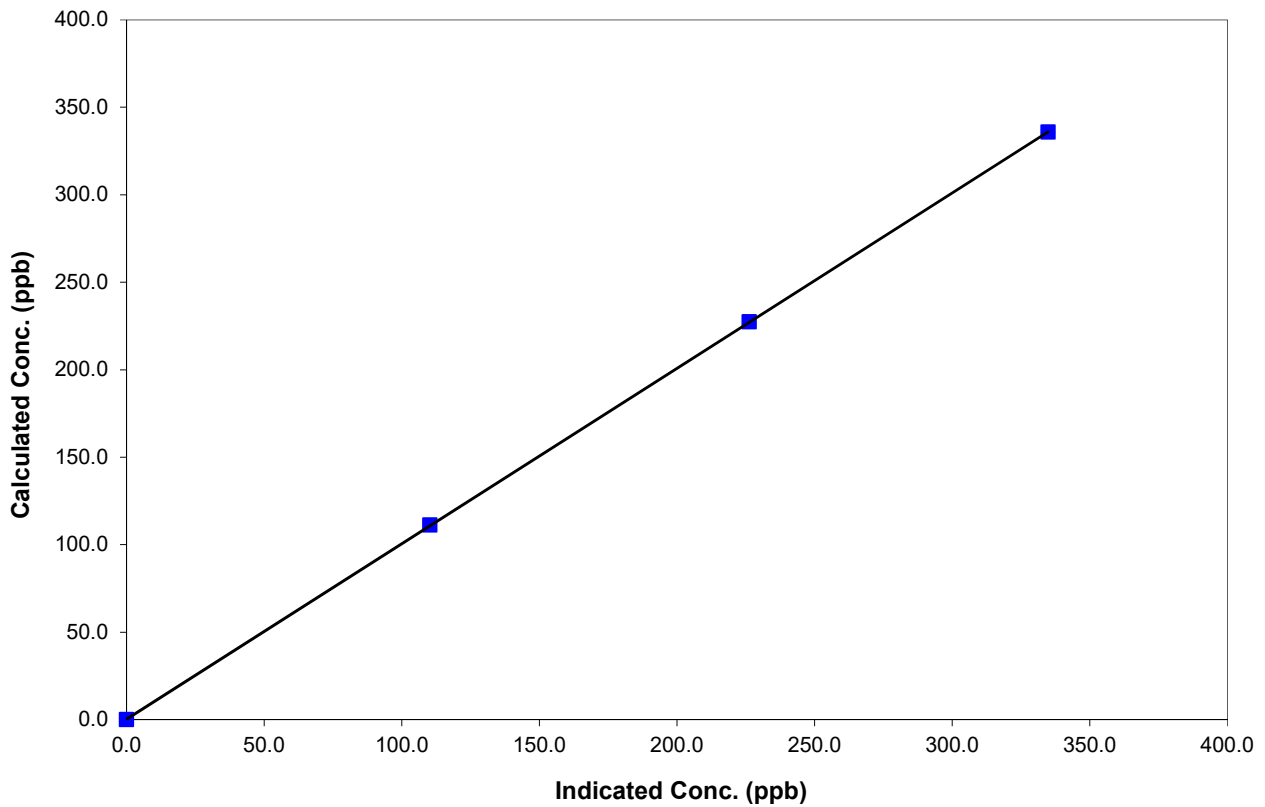
### Station Information

|                  |               |                      |              |
|------------------|---------------|----------------------|--------------|
| Calibration Date | June 10, 2016 | Previous Calibration | May 2, 2016  |
| Station Number   | 1             | Station Location     | Henry Pirker |
| Start Time (MST) | 8:50          | End Time (MST)       | 12:55        |
| Analyzer make    | 42i           | Analyzer serial #    | 906535087    |

### Calibration Data

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |          |
|----------------------------|------------------------------------|---------------------------|-------------------------|----------|
| 0.0                        | 0.0                                | N/A                       | Correlation Coefficient | 0.999994 |
| 335.8                      | 334.9                              | 1.0028                    |                         |          |
| 227.4                      | 226.2                              | 1.0051                    | Slope                   | 1.002705 |
| 111.3                      | 110.3                              | 1.0089                    |                         |          |
|                            |                                    |                           | Intercept               | 0.314781 |

**NO<sub>2</sub> Calibration Curve**



# Calibration Summary



Parameter NO<sub>x</sub>

Air Monitoring Network PAZA

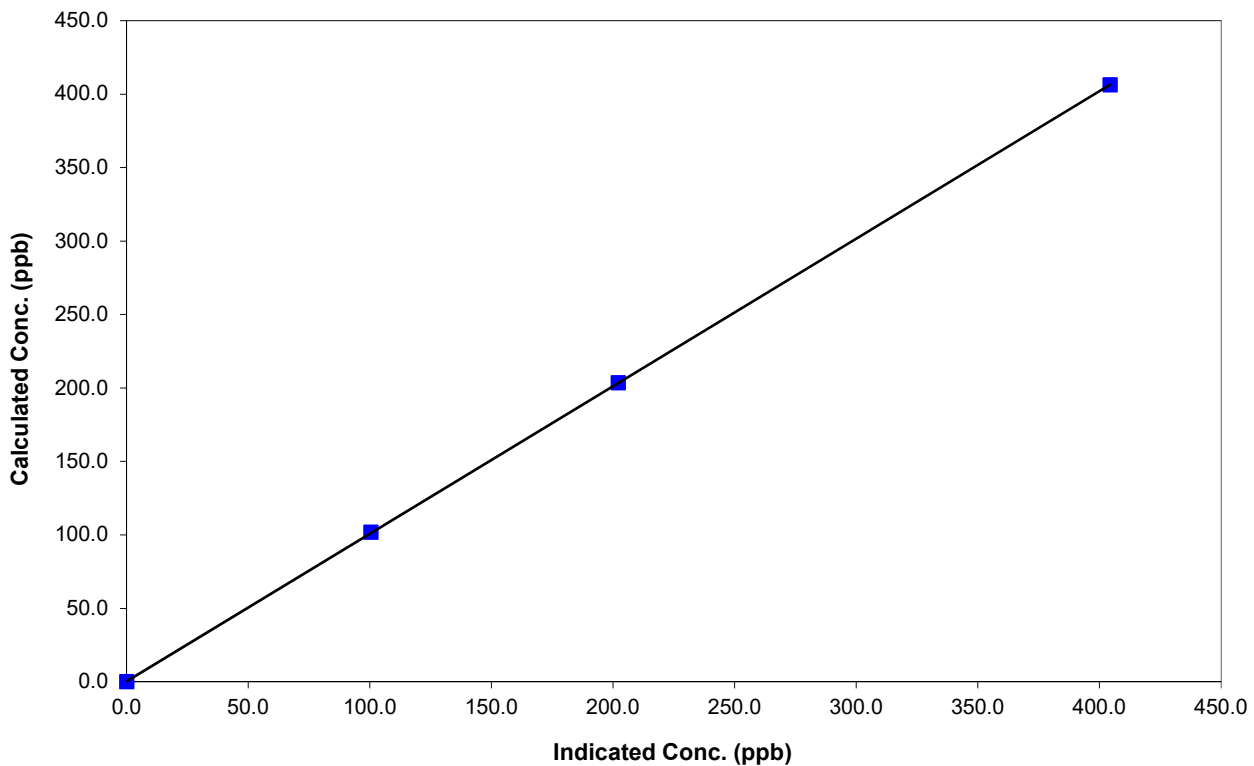
## Station Information

|                  |               |                      |              |
|------------------|---------------|----------------------|--------------|
| Calibration Date | June 10, 2016 | Previous Calibration | May 2, 2016  |
| Station Number   | 1             | Station Location     | Henry Pirker |
| Start Time (MST) | 8:50          | End Time (MST)       | 12:55        |
| Analyzer make    | 42i           | Analyzer serial #    | 906535087    |

## Calibration Data

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |          |
|----------------------------|------------------------------------|---------------------------|-------------------------|----------|
| 0.0                        | 0.1                                | N/A                       | Correlation Coefficient | 0.999996 |
| 406.2                      | 404.4                              | 1.0045                    |                         |          |
| 203.6                      | 202.3                              | 1.0064                    | Slope                   | 1.004354 |
| 101.6                      | 100.6                              | 1.0107                    |                         |          |
|                            |                                    |                           |                         |          |
|                            |                                    |                           | Intercept               | 0.239074 |

## NO<sub>x</sub> Calibration Curve



# Calibration Summary



Parameter NO

Air Monitoring Network PAZA

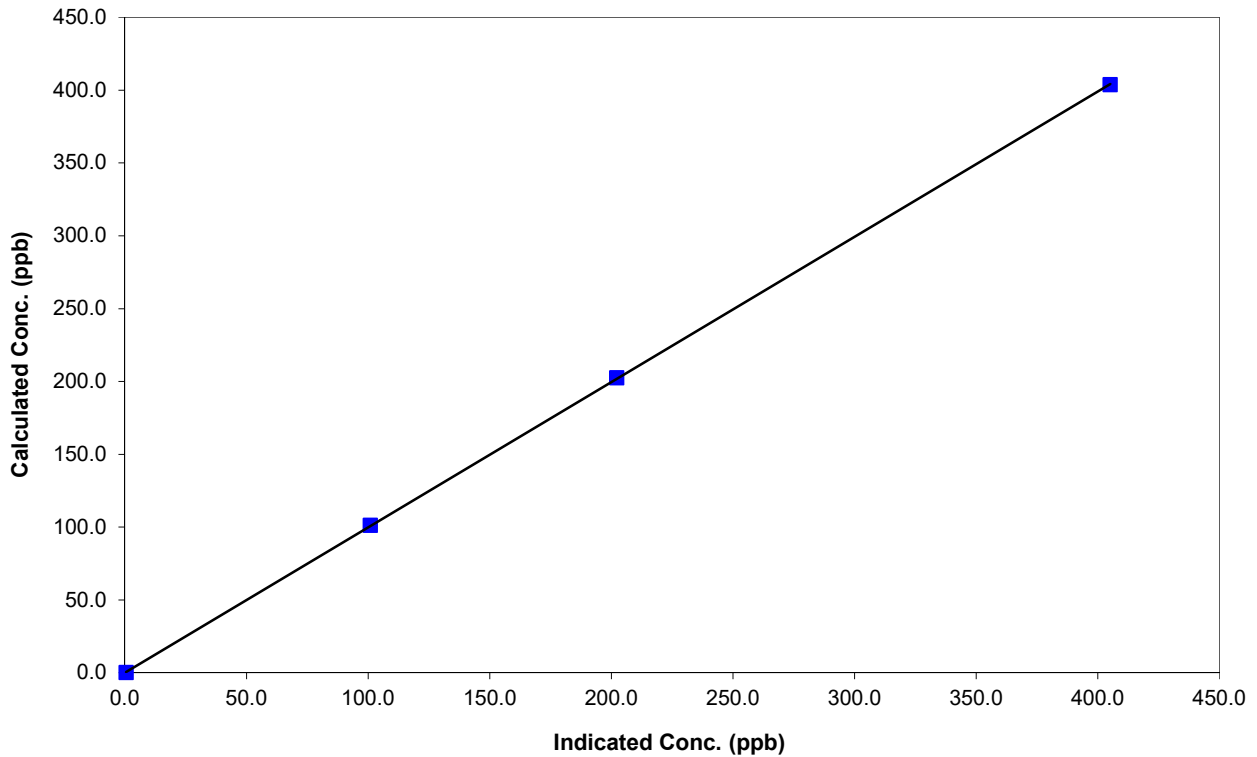
## Station Information

|                  |               |                      |              |
|------------------|---------------|----------------------|--------------|
| Calibration Date | June 10, 2016 | Previous Calibration | May 2, 2016  |
| Station Number   | 1             | Station Location     | Henry Pirker |
| Start Time (MST) | 8:50          | End Time (MST)       | 12:55        |
| Analyzer make    | 42i           | Analyzer serial #    | 906535087    |

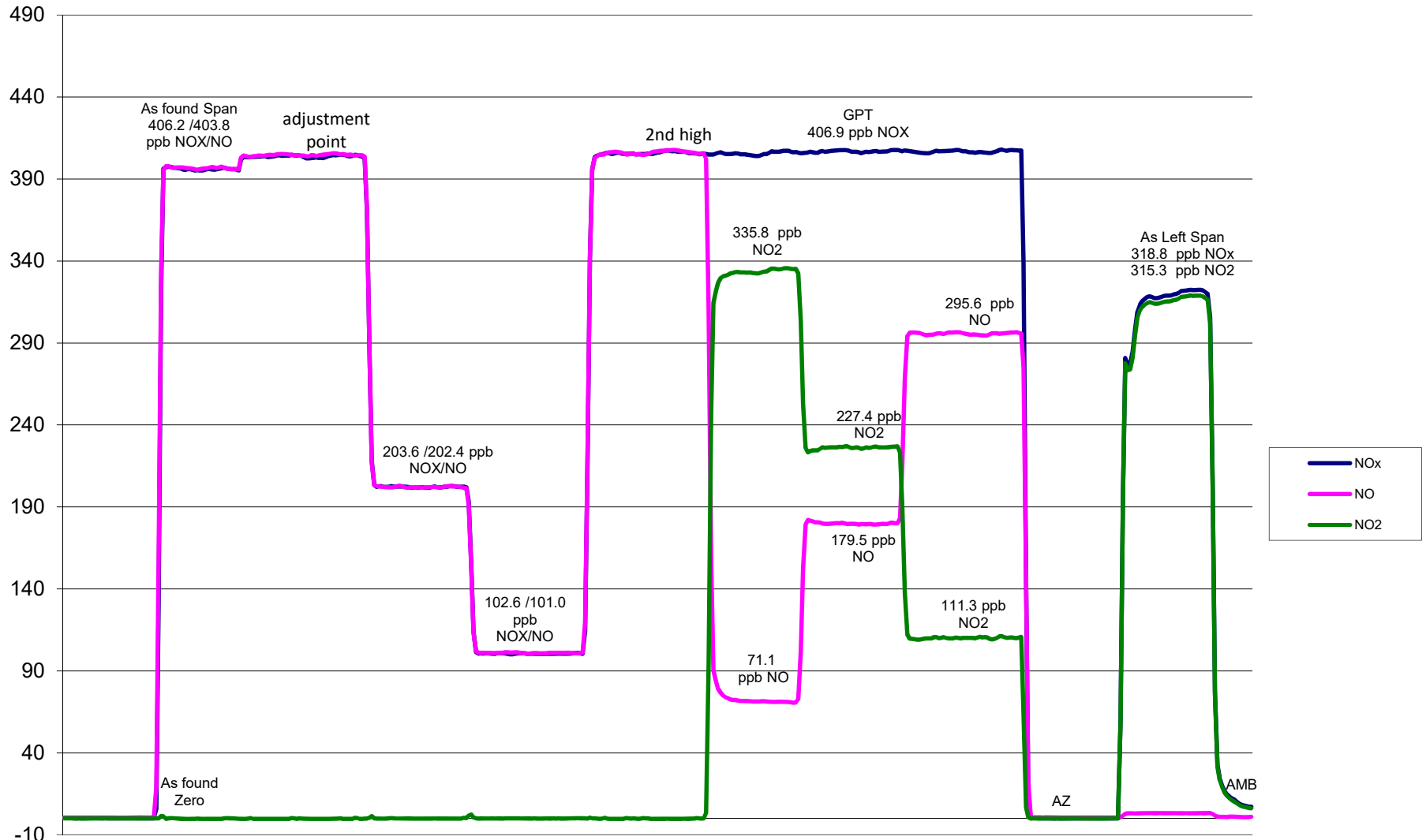
## Calibration Data

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |           |
|----------------------------|------------------------------------|---------------------------|-------------------------|-----------|
| 0.0                        | 0.5                                | N/A                       | Correlation Coefficient | 0.999991  |
| 403.8                      | 405.1                              | 0.9969                    |                         |           |
| 202.4                      | 202.2                              | 1.0006                    | Slope                   | 0.997813  |
| 101.0                      | 101.0                              | 1.0009                    |                         |           |
|                            |                                    |                           |                         |           |
|                            |                                    |                           | Intercept               | -0.000959 |

## NO Calibration Curve



# NO<sub>x</sub> Calibration

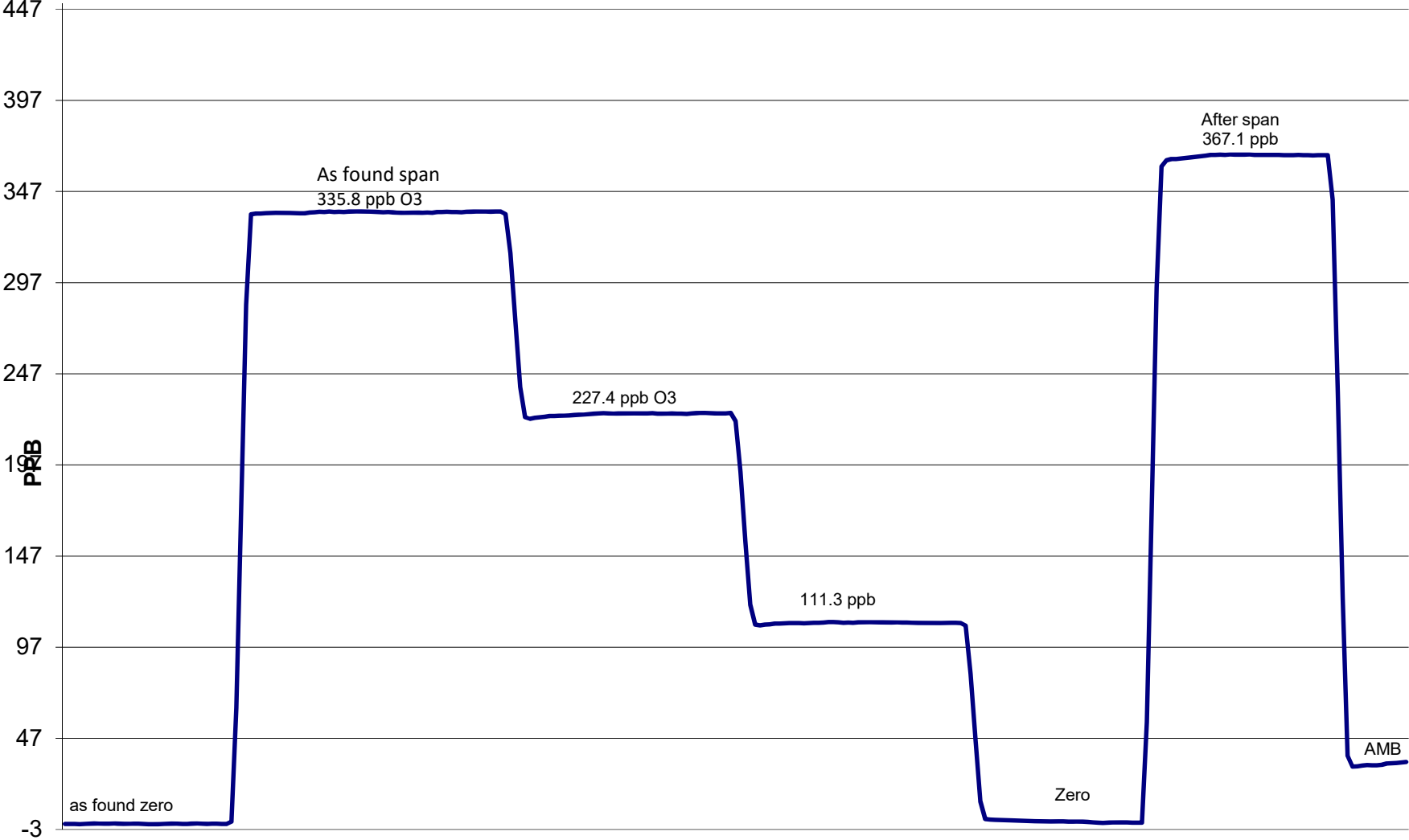


June 10, 2016





# O3 Calibration



June 10, 2016



# Calibration Report



AIR QUALITY MONITORING

Parameter CO

Air Monitoring Network PAZA

## Station Information

|                      |   |                                  |                                  |
|----------------------|---|----------------------------------|----------------------------------|
| Calibration Date     | June 9, 2016                                | Previous Calibration             | May 3, 2016                      |
| Station Number       | 1   | Station Location                 | Henry Pirker                     |
| Reason:              | <input checked="" type="checkbox"/> Routine | <input type="checkbox"/> Install | <input type="checkbox"/> Removal |
|                      |   | <input type="checkbox"/> Other:  |                                  |
| Start Time (MST)     | 13:45:00 PM                                 | End Time (MST)                   | 16:25:00 PM                      |
| Barometric Pressure  | 726.0 mm/hg                                 | Station Temperature              | 21.0 Deg C                       |
| Calibrator           | EnviroNics 6100                             | Serial Number                    | 6586                             |
| Cal Gas Conc         | 2906 ppm                                    | Cal Gas Expiry Date              | 7/7/2023                         |
|                      |   | Cal Gas Cylinder #               | LL109096                         |
| DACS make            | CR3000                                      | DACS serial No.                  | 5408                             |
| DACS voltage range   | 0 - 5 volt                                  | DACS channel #                   | 9                                |
|                      | <b>Before</b>                               |                                  | <b>After</b>                     |
| Calculated slope     | 0.999377                                    | Calculated slope                 | 1.008010                         |
| Calculated intercept | -0.210734                                   | Calculated intercept             | -0.178105                        |
| Analyzer make        | Model 48I-TLE                               | Analyzer serial #                | 1408761378                       |

|                     | before |       | after  |       |
|---------------------|--------|-------|--------|-------|
| Concentration range | 0 - 50 | ppm   | 0 - 50 | ppm   |
| CO zero setting     | 5.477  |       | 5.761  |       |
| CO span setting     | 1.047  |       | 1.047  |       |
| Sample pressure     | 692.6  | mm Hg | 690.2  | mm Hg |
| Sample Flow         | 0.448  | LPM   | 0.447  | LPM   |

## Calibration Data

| Dilution air flow rate (cc/min) | Source gas flow rate (cc/min) | Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---------------------------------|-------------------------------|-------------------------------------|------------------------------------|---------------------------|
| 4995                            | 0.00                          | 0.00                                | 0.00                               | N/A                       |
| 4999                            | 69.80                         | 40.02                               | 39.76                              | 1.0064                    |
| 4998                            | 34.97                         | 20.19                               | 20.35                              | 0.9924                    |
| 4995                            | 17.96                         | 10.41                               | 10.66                              | 0.9767                    |
| 4995                            | 0.00                          | 0.00                                | 0.26                               | As Found Zero             |
| 4995                            | 69.80                         | 40.05                               | 40.44                              | As Found Span             |
| Average Correction Factor       |                               |                                     |                                    | 0.9918                    |

Calculated value of As Found Response: 39.940 ppm      Percent Change of As Found: 0.3%

|           | before calibration |     | after calibration |     |
|-----------|--------------------|-----|-------------------|-----|
| Auto zero | 0.07               | ppm | 0.01              | ppm |
| Auto span | 20.44              | ppm | 20.27             | ppm |

Notes: Zero adjustment made

Calibration Performed By: Dmytro Dolotii

# Calibration Summary



Parameter CO  
 Air Monitoring Network PAZA

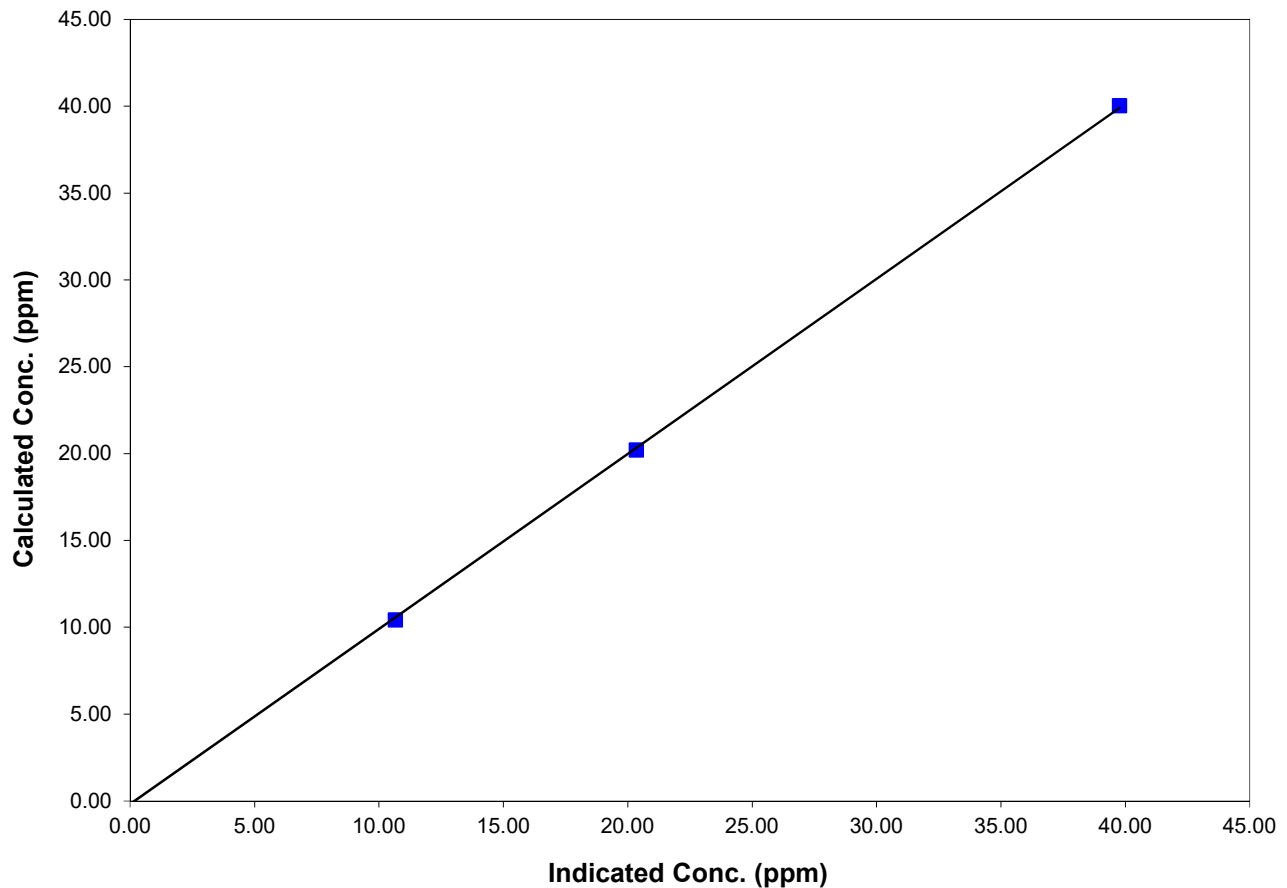
### Station Information

|                     |               |                      |              |
|---------------------|---------------|----------------------|--------------|
| Calibration Date    | June 9, 2016  | Previous Calibration | May 3, 2016  |
| Station Number      | 1             | Station Location     | Henry Pirker |
| Start Time (MST)    | 13:45:00 PM   | End Time (MST)       | 16:25:00 PM  |
| Analyzer make/model | Model 48I-TLE | Analyzer serial #    | 1408761378   |

### Calibration Data

| Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |          |
|-------------------------------------|------------------------------------|---------------------------|-------------------------|----------|
| 0.000                               | -0.004                             | N/A                       | Correlation Coefficient | 0.999897 |
| 40.017                              | 39.764                             | 1.0064                    |                         |          |
| 20.191                              | 20.346                             | 0.9924                    | Slope                   | 1.008010 |
| 10.411                              | 10.660                             | 0.9767                    |                         |          |
|                                     |                                    |                           |                         |          |

## CO Calibration Curve



# CO Calibration



June 9, 2016

# Calibration Report



Parameter CH4 / NMHC / THC

Air Monitoring Network PAZA

## Station Information

|                  |   |                                  |                                  |
|------------------|---|----------------------------------|----------------------------------|
| Calibration Date | June 9, 2016                                | Previous Calibration             | May 3, 2016                      |
| Station Number   | 1   | Station Location                 | Henry Pirker                     |
| Reason:          | <input checked="" type="checkbox"/> Routine | <input type="checkbox"/> Install | <input type="checkbox"/> Removal |
|                  |   |                                  | <input type="checkbox"/> Other:  |

|                     |                    |                     |             |
|---------------------|--------------------|---------------------|-------------|
| Start Time (MST)    | 12:10              | End Time (MST)      | 14:35:00 PM |
| Barometric Pressure | 726.00 mm/hg       | Station Temperature | 21.0 Deg C  |
| Calibrator          | EnviroNics 6103    | Serial Number       | 6586        |
| Cal Gas CH4 Conc    | 386 ppm CH4        | Cal Gas Expiry Date | 3/28/2014   |
| Cal Gas C3H8 Conc   | 207 569.25 ppm CH4 | Cal Gas Cylinder #  | LL34318     |
| DACS make           | CR3000             | DACS serial No.     | 5408        |
| DACS voltage range  | 0 - 5 volt         | DACS channel #      | SE 11,12,13 |

Analyzer make TEI 551 Analyzer serial # 1134650658

|                     | before                       |     | after                        |                 |
|---------------------|------------------------------|-----|------------------------------|-----------------|
| Concentration range | 0-20 (CH4, NMHC); 0-40 (THC) | ppm | 0-20 (CH4, NMHC); 0-40 (THC) | ppm             |
| Air pressure        | 27.8                         | PSI | 27.8                         | PSI             |
| Fuel pressure       | 42.1                         | PSI | 42.1                         | PSI             |
| Carrier pressure    | 30.3                         | PSI | 30.3                         | PSI             |
| CH4 cal factor      | 6.24                         |     | 6.26                         | E <sup>-4</sup> |
| NMHC cal factor     | 2.61                         |     | 2.84                         | E <sup>-4</sup> |
| Rt                  | 12.74                        | Sec | 12.74                        | Sec             |
| Pk Index            | 23.22                        |     | 23.22                        |                 |

## CH4 Calibration Data

| Dilution air flow rate (cc/min) | Source gas flow rate (cc/min) | Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---------------------------------|-------------------------------|-------------------------------------|------------------------------------|---------------------------|
| 1995                            | 0.00                          | 0.00                                | 0.02                               | N/A                       |
| 1997                            | 68.96                         | 12.88                               | 12.91                              | 0.9979                    |
| 1998                            | 40.99                         | 7.76                                | 7.77                               | 0.9990                    |
| 1999                            | 15.97                         | 3.06                                | 3.06                               | 0.9996                    |
| 1995                            | 0.00                          | 0.00                                | 0.02                               | As Found Zero             |
| 1995                            | 68.93                         | 12.89                               | 12.64                              | As Found Span             |
| Average Correction Factor       |                               |                                     |                                    | 0.9988                    |

Calculated value of As Found Response: 12.616 ppm Percent Change of As Found: 2.1%

|                      | Before   |                      | After     |
|----------------------|----------|----------------------|-----------|
| Calculated slope     | 0.998962 | Calculated slope     | 0.999114  |
| Calculated intercept | 0.005264 | Calculated intercept | -0.008403 |

## Final Zero/Span Data

|           | before calibration |     | after calibration |     |
|-----------|--------------------|-----|-------------------|-----|
| Auto zero | 0.03               | ppm | 0.03              | ppm |
| Auto span | 9.02               | ppm | 9.33              | ppm |

**NMHC Calibration Data**

| Dilution air flow rate (cc/min) | Source gas flow rate (cc/min) | Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---------------------------------|-------------------------------|-------------------------------------|------------------------------------|---------------------------|
| 1995                            | 0.00                          | 0.00                                | 0.02                               | N/A                       |
| 1997                            | 68.96                         | 19.00                               | 19.01                              | 0.9998                    |
| 1998                            | 40.99                         | 11.44                               | 11.78                              | 0.9714                    |
| 1999                            | 15.97                         | 4.51                                | 4.97                               | 0.9086                    |
|                                 |                               |                                     |                                    |                           |
| 1995                            | 0.00                          | 0.00                                | 0.02                               | As Found Zero             |
| 1995                            | 68.93                         | 19.01                               | 17.95                              | As Found Span             |
| Average Correction Factor       |                               |                                     |                                    | 0.9599                    |

Calculated value of As Found Response: 17.728 ppm      Percent Change of As Found: 6.8%

|                      | <u>Before</u> |                      | <u>After</u> |
|----------------------|---------------|----------------------|--------------|
| Calculated slope     | 0.996224      | Calculated slope     | 1.004767     |
| Calculated intercept | -0.134373     | Calculated intercept | -0.246211    |

**Final Zero/Span Data**

|           | before calibration |     | after calibration |     |
|-----------|--------------------|-----|-------------------|-----|
| Auto zero | 0.02               | ppm | 0.02              | ppm |
| Auto span | 13.11              | ppm | 13.16             | ppm |

**THC Calibration Data**

| Dilution air flow rate (cc/min) | Source gas flow rate (cc/min) | Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---------------------------------|-------------------------------|-------------------------------------|------------------------------------|---------------------------|
| 1995                            | 0.00                          | 0.00                                | 0.03                               | N/A                       |
| 1997                            | 68.96                         | 31.89                               | 31.89                              | 0.9999                    |
| 1998                            | 40.99                         | 19.20                               | 19.53                              | 0.9834                    |
| 1999                            | 15.97                         | 7.57                                | 8.01                               | 0.9453                    |
|                                 |                               |                                     |                                    |                           |
| 1995                            | 0.00                          | 0.00                                | 0.03                               | As Found Zero             |
| 1995                            | 68.93                         | 31.90                               | 30.57                              | As Found Span             |
| Average Correction Factor       |                               |                                     |                                    | 0.9762                    |

Calculated value of As Found Response: 30.344 ppm      Percent Change of As Found: 4.9%

|                      | <u>Before</u> |                      | <u>After</u> |
|----------------------|---------------|----------------------|--------------|
| Calculated slope     | 0.997650      | Calculated slope     | 1.003261     |
| Calculated intercept | -0.119521     | Calculated intercept | -0.248183    |

**Final Zero/Span Data**

|           | before calibration |     | after calibration |     |
|-----------|--------------------|-----|-------------------|-----|
| Auto zero | 0.02               | ppm | 0.02              | ppm |
| Auto span | 22.13              | ppm | 22.49             | ppm |

Notes: Span adjustment made

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Calibration Performed By: Dmytro Dolotii

# Calibration Summary



Parameter CH4  
 Air Monitoring Network PAZA

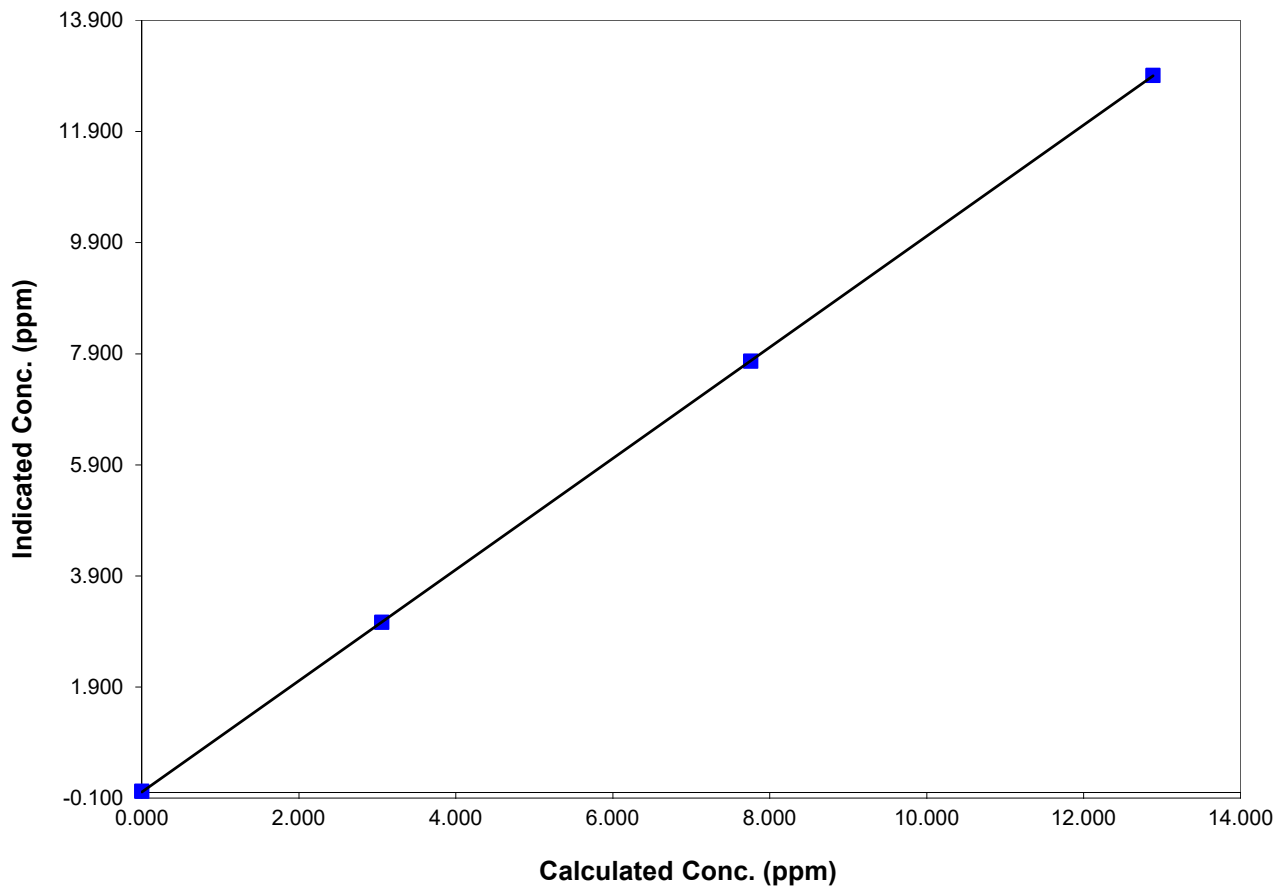
### Station Information

|                     |              |                      |              |
|---------------------|--------------|----------------------|--------------|
| Calibration Date    | June 9, 2016 | Previous Calibration | May 3, 2016  |
| Station Number      | 1            | Station Location     | Henry Pirker |
| Start Time (MST)    | 12:10        | End Time (MST)       | 14:35:00 PM  |
| Analyzer make/model | TEI 55I      | Analyzer serial #    | 1134650658   |

### Calibration Data

| Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |           |
|-------------------------------------|------------------------------------|---------------------------|-------------------------|-----------|
| 0.000                               | 0.019                              | N/A                       | Correlation Coefficient | 0.999997  |
| 12.884                              | 12.911                             | 0.9979                    |                         |           |
| 7.760                               | 7.767                              | 0.9990                    | Slope                   | 0.999114  |
| 3.059                               | 3.061                              | 0.9996                    |                         |           |
|                                     |                                    |                           | Intercept               | -0.008403 |

## CH4 Calibration Data





# Calibration Summary



Parameter THC  
 Air Monitoring Network PAZA

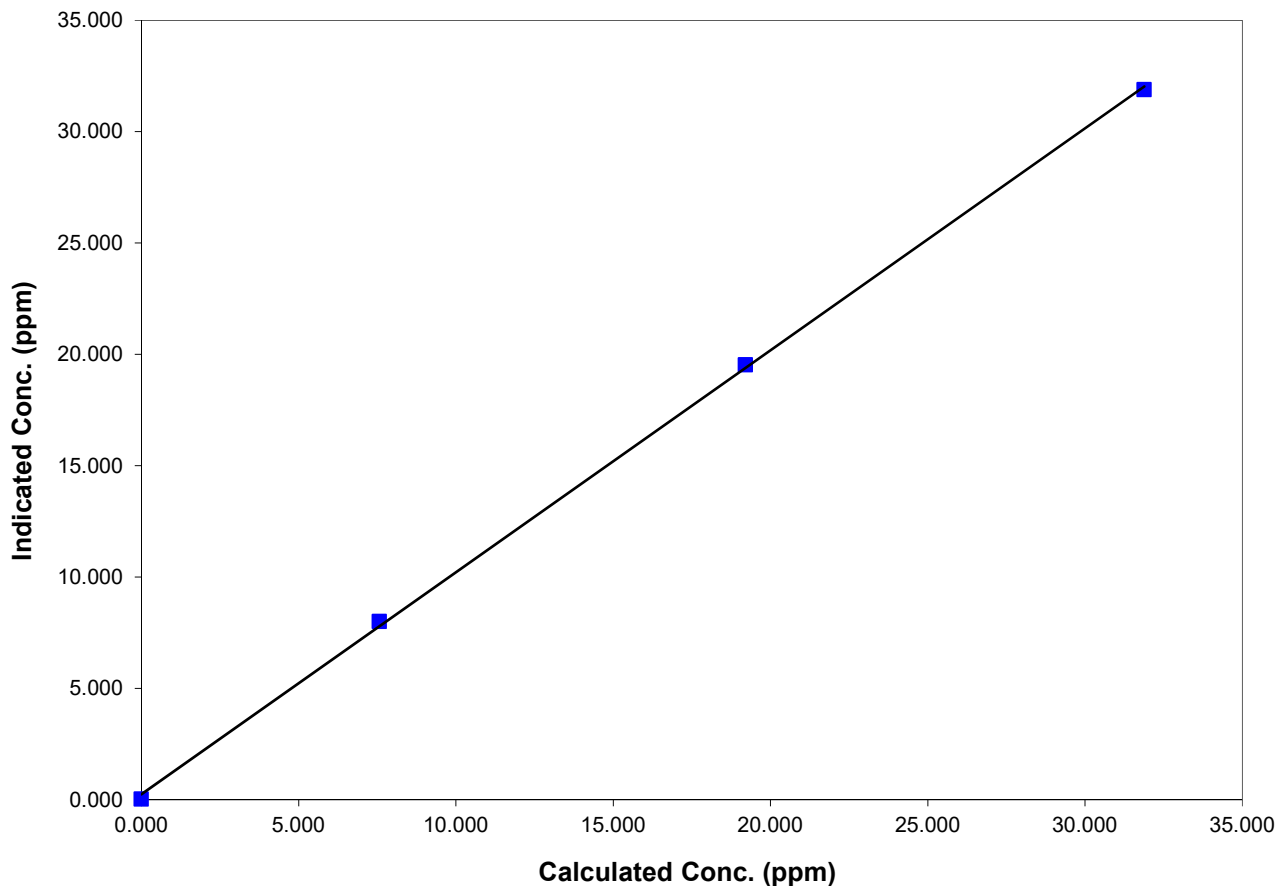
### Station Information

|                     |              |                      |              |
|---------------------|--------------|----------------------|--------------|
| Calibration Date    | June 9, 2016 | Previous Calibration | May 3, 2016  |
| Station Number      | 1            | Station Location     | Henry Pirker |
| Start Time (MST)    | 12:10        | End Time (MST)       | 14:35:00 PM  |
| Analyzer make/model | TEI 55I      | Analyzer serial #    | 1134650658   |

### Calibration Data

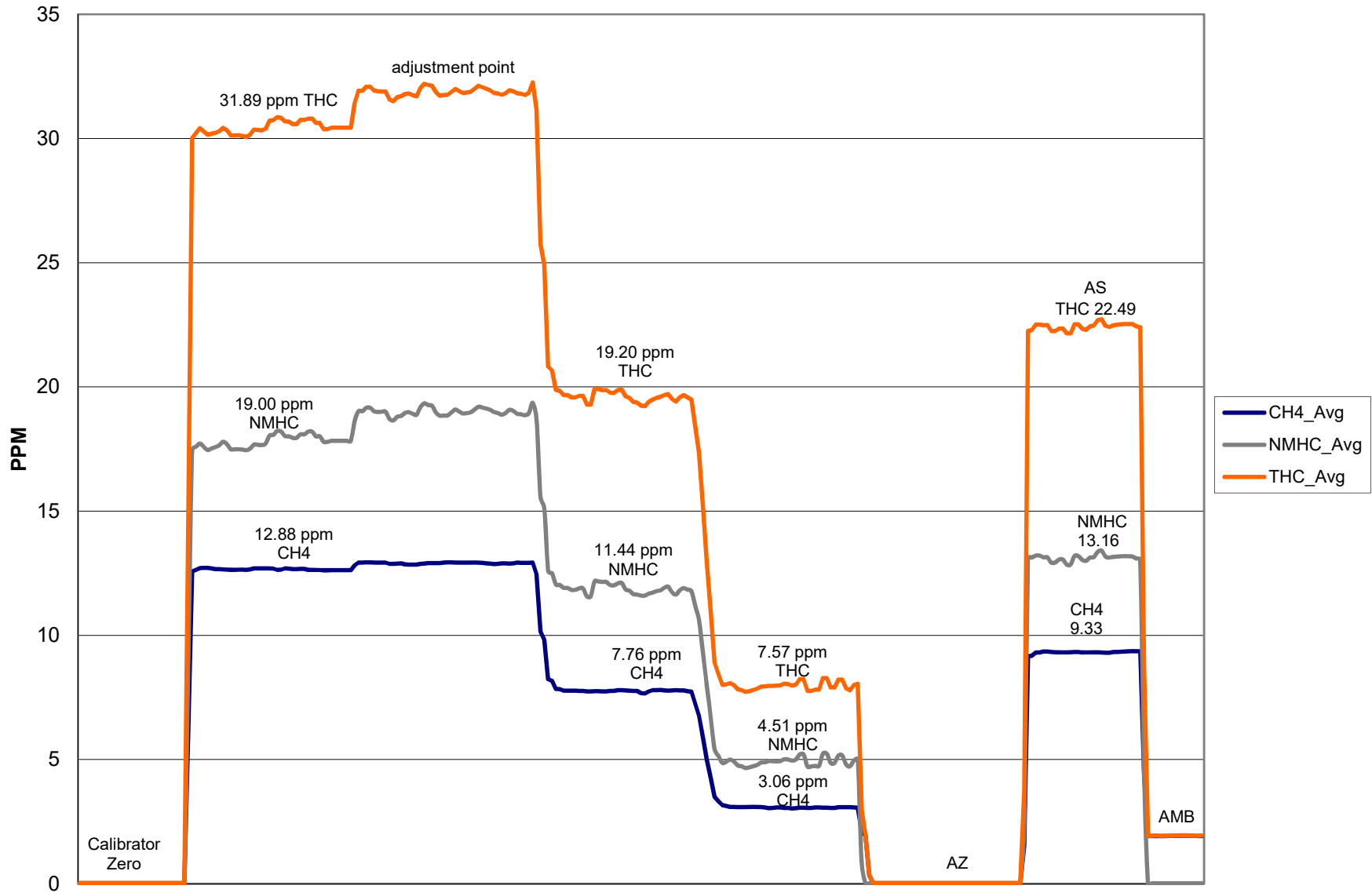
| Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |           |
|-------------------------------------|------------------------------------|---------------------------|-------------------------|-----------|
| 0.000                               | 0.032                              | N/A                       | Correlation Coefficient | 0.999773  |
| 31.885                              | 31.890                             | 0.9999                    |                         |           |
| 19.203                              | 19.528                             | 0.9834                    | Slope                   | 1.003261  |
| 7.571                               | 8.009                              | 0.9453                    |                         |           |
|                                     |                                    |                           | Intercept               | -0.248183 |

## THC Calibration Data





# THC/CH<sub>4</sub>/NMHC Calibration



# Calibration Report



Parameter TR5  
 Air Monitoring Network PAZA

## Station Information

|                      |                |                      |              |
|----------------------|----------------|----------------------|--------------|
| Calibration Date     | June 9, 2016   | Previous Calibration | May 3, 2016  |
| Station Number       | 1              | Station Location     | Henry Pirker |
| Reason:              | <b>Routine</b> | Install              | Removal      |
|                      |                |                      | Other:       |
| Start Time (MST)     | 8:55           | End Time (MST)       | 15:05:00 PM  |
| Barometric Pressure  | 726.00 mm/Hg   | Station Temperature  | 21.0 Deg C   |
| Calibrator           | Enviroics 6103 | Serial Number        | 6586         |
| Cal Gas Conc         | 10.2 ppb       | Cal Gas Expiry Date  | 02/23/2019   |
|                      |                | Cal Gas Cylinder #   | EY0000380    |
| DACS make            | CR3000         | DACS serial No.      | 5408         |
| DACS voltage range   | 0 - 1 volt     | DACS channel #       | 9            |
|                      | Before         |                      | After        |
| Calculated slope     | 0.990291       | Calculated slope     | 0.987062     |
| Calculated intercept | 0.586037       | Calculated intercept | -0.392416    |
| Analyzer make        | TEI 45C        | Analyzer serial #    | 630718528    |

|                     | before  |       | after   |       |
|---------------------|---------|-------|---------|-------|
| Concentration range | 0 - 100 | ppb   | 0 - 100 | ppb   |
| Coefficient         | 0.997   |       | 0.997   |       |
| Background          | 20.5    |       | 20.5    |       |
| Pressure            | 661.8   | mm Hg | 660.5   | mm Hg |
| Flow                | 0.444   | ccm   | 0.443   | ccm   |
| Lamp Voltage        | 904     | v     | 904     | v     |

| Dilution air flow rate (cc/min) | Source gas flow rate (cc/min) | Calculated concentration (ppb) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---------------------------------|-------------------------------|-------------------------------------|------------------------------------|---------------------------|
| 4997                            | 0.00                          | 0.00                                | 0.27                               | N/A                       |
| 4999                            | 39.97                         | 80.91                               | 82.30                              | 0.9831                    |
| 4999                            | 19.98                         | 40.61                               | 41.63                              | 0.9754                    |
| 6998                            | 10.01                         | 14.56                               | 15.25                              | 0.9546                    |
| 4997                            | 0.00                          | 0.00                                | -0.09                              | As Found Zero             |
| 4997                            | 39.93                         | 80.86                               | 82.47                              | As Found Span             |
| Average Correction Factor       |                               |                                     |                                    | 0.9710                    |

Calculated value of As Found Response: 82.3 ppb      Percent Change of As Found: -1.8%

|           | before calibration |     | after calibration |     |
|-----------|--------------------|-----|-------------------|-----|
| Auto zero | 0.18               | ppb | 0.27              | ppb |
| Auto span | 31.85              | ppb | 32.48             | ppb |

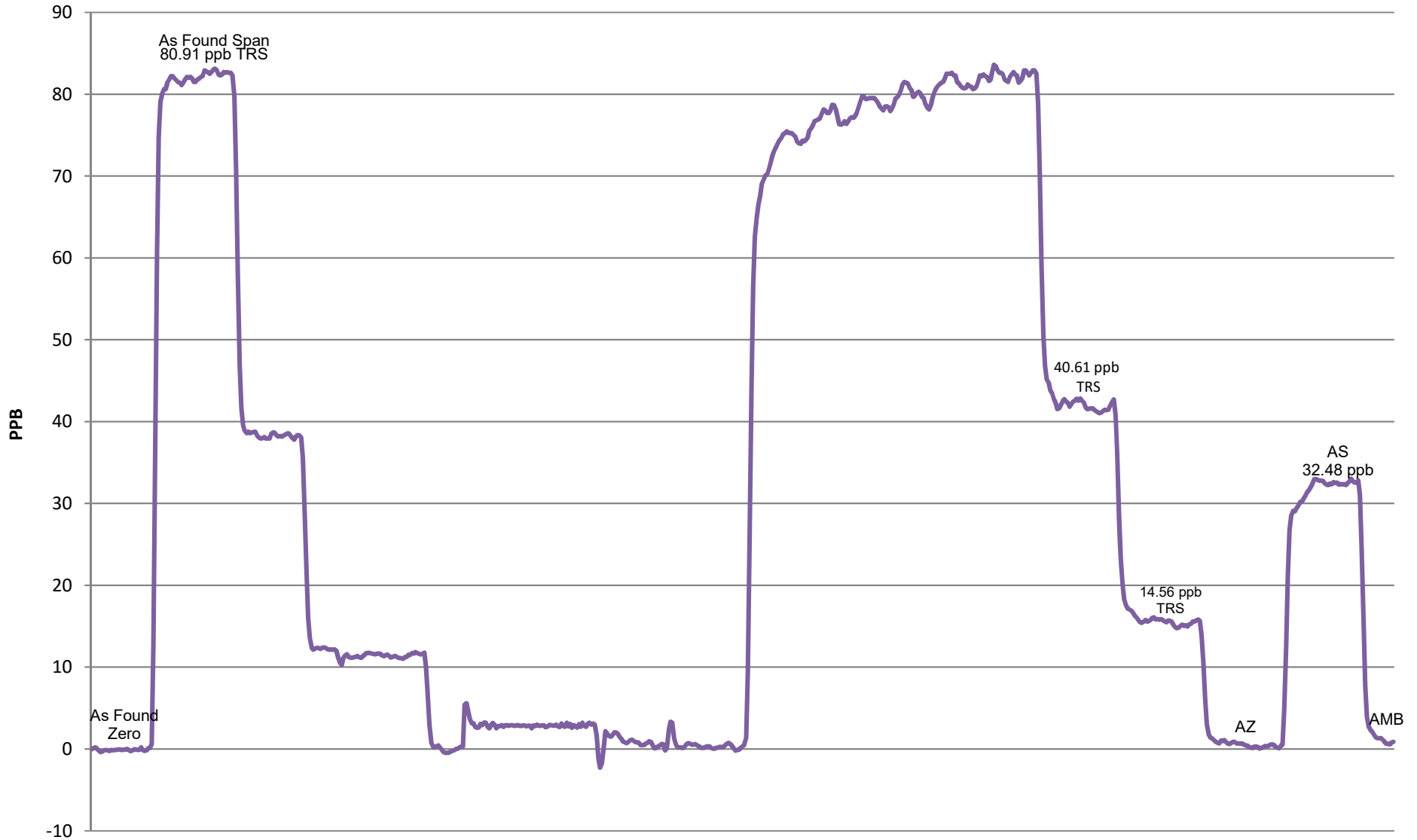
Notes: On the first cal attempt got non-linear response, replaced scrubber and one of the broken fittings in the ozydizer, on the second attempt left 80% point run longer to let the new scrubber to stabilize.

Skipped on scrubber check because the new Sox material was installed.

Calibration Performed By: Dmytro Dolotii



# TRS Calibration



June 9, 2016

# SHARP 5030 PM2.5 Calibration



STATION: Henry Pirker  
 LOCATION: Muskoseepi park  
 START TIME (MST): 10:00

OPERATOR: Dmytro Dolotii  
 DATE: June 10 2016  
 END TIME (MST): 15:05:00 PM

MONITOR INFO / PARAMETER VALUES:

|               |            |                    |           |
|---------------|------------|--------------------|-----------|
| Make/Model    | SHARP 5030 | Audit Device Model | Delta cal |
| Configuration | PM 2.5     | Audit Device S/N   | AMU 1789  |
| Serial Number | AMU 1860   | Certification Date | 01-Oct-15 |

AUDIT / CALIBRATION RESULTS:

|                      | Ambient Temp.<br>(°C) | Ambient Pres.<br>(mbar) | Leak Check<br>(L/min) | Flow Rate<br>(lpm) | Time settings<br>(hh:mm) |
|----------------------|-----------------------|-------------------------|-----------------------|--------------------|--------------------------|
| <i>As Found Data</i> |                       |                         |                       |                    |                          |
| Audit values (I)     | 18.6                  | 937                     | 16.70                 | 16.67              | 13:30:00 PM              |
| MEASURED ( AF )      | 18.8                  | 937                     | 16.70                 | 16.74              | 13:30:00 PM              |
| AF Difference (AF-I) | 0.2                   | 0                       | 0.00                  | 0.07               | 0:01                     |
| <i>Adjusted Data</i> |                       |                         |                       |                    |                          |
| MEASURED ( M )       | 18.8                  | 937                     | 16.70                 | 16.73              | 13:32 PM                 |
| Adj Difference (M-I) | 0.2                   | 0                       | 0.00                  | 0.06               | 0:01                     |
| <b>LIMITS</b>        | <b>± 4.0 °C</b>       | <b>6.7 mbar</b>         | <b>1.0 L/min</b>      | <b>± 1.0 L/min</b> | <b>±2 min</b>            |

Sample Head Inspect/Cleaning: Cleaned sample head

Status of sampling tape: 60% full

Nozzle Inspection / cleanliness: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

Foil calibration Old value 6938 New value 6989

Nephelometer zero. Analog as found = 0.0 No aduustment required

# Calibration Report



Parameter SO<sub>2</sub>  
 Air Monitoring Network PAZA

## Station Information

|                       |   |                                  |                                  |
|-----------------------|---|----------------------------------|----------------------------------|
| Calibration Date      | June 14 2016                                | Previous Calibration             | May 13 2016                      |
| Station Number        | 2   | Station Location                 | Evergreen Park                   |
| Reason:               | <input checked="" type="checkbox"/> Routine | <input type="checkbox"/> Install | <input type="checkbox"/> Removal |
|                       |   | <input type="checkbox"/> Other:  |                                  |
| Start Time (MST)      | 10:37                                       | End Time (MST)                   |                                  |
| Barometric Pressure   | 0.920 ATM                                   | Station Temperature              | 21.0 Deg C                       |
| Calibrator            | EnviroNics                                  | Serial Number                    | 6586                             |
| Cal Gas Concentration | 49.7 ppm                                    | Cal Gas Expiry Date              | 10/5/2018                        |
| Correction factor     | 0.031167                                    | Cal Gas Cylinder #               | LL103793                         |
| DACS make             | CR3000                                      | DACS serial No.                  | 5236                             |
| DACS voltage range    | 0 - 5 volt                                  | DACS channel #                   | 6                                |
|                       | <u>Before</u>                               |                                  | <u>After</u>                     |
| Calculated slope      | 0.988653                                    | Calculated slope                 | 0.988653                         |
| Calculated intercept  | 0.890879                                    | Calculated intercept             | 0.890879                         |
| Analyzer make         | Teco 43i                                    | Analyzer serial #                | 701120008                        |

|                     | before  |       | after   |       |
|---------------------|---------|-------|---------|-------|
| Concentration range | 0 - 500 | ppb   | 0 - 500 | ppb   |
| Background          | 11.9    |       | 11.9    |       |
| coefficient         | 1.257   |       | 1.257   |       |
| Lamp Voltage        | 831     | volts | 831     | volts |
| Chamber Temp        | 830     | Deg C | 45      | Deg C |
| Perm Gas Temp       | 45      | Deg C | 45      | Deg C |
| Pressure            | 661.3   | mm Hg | 663.1   | mm Hg |
| Sample Flow         | 0.446   | ccm   | 0.446   | ccm   |
| Lamp Intensity      | 89      | %     | 89      | %     |

| Dilution air flow rate (cc/min) | Corrected gas flow rate (cc/min) | Calculated concentration (ppb) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---------------------------------|----------------------------------|-------------------------------------|------------------------------------|---------------------------|
| 4996                            | 0.0                              | 0.00                                | 0.5                                | N/A                       |
| 4998                            | 39.95                            | 394.1                               | 398.5                              | 0.9891                    |
| 4998                            | 19.96                            | 197.7                               | 198.3                              | 0.9970                    |
| 4997                            | 9.99                             | 99.2                                | 98.0                               | 1.0115                    |
|                                 |                                  |                                     |                                    |                           |
| 4996                            | 0.0                              | 0.0                                 | 0.5                                | As Found Zero             |
| 4996                            | 39.93                            | 394.9                               | 398.5                              | As Found Span             |
| Average Correction Factor       |                                  |                                     |                                    | 0.9992                    |

Calculated value of As Found Response: 394.308 ppm      Percent Change of As Found: 0.1%

|           | before calibration |     | after calibration |     |
|-----------|--------------------|-----|-------------------|-----|
| Auto zero | 0.6                | ppm | 0.6               | ppm |
| Auto span | 256.2              | ppm | 256.2             | ppm |

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA

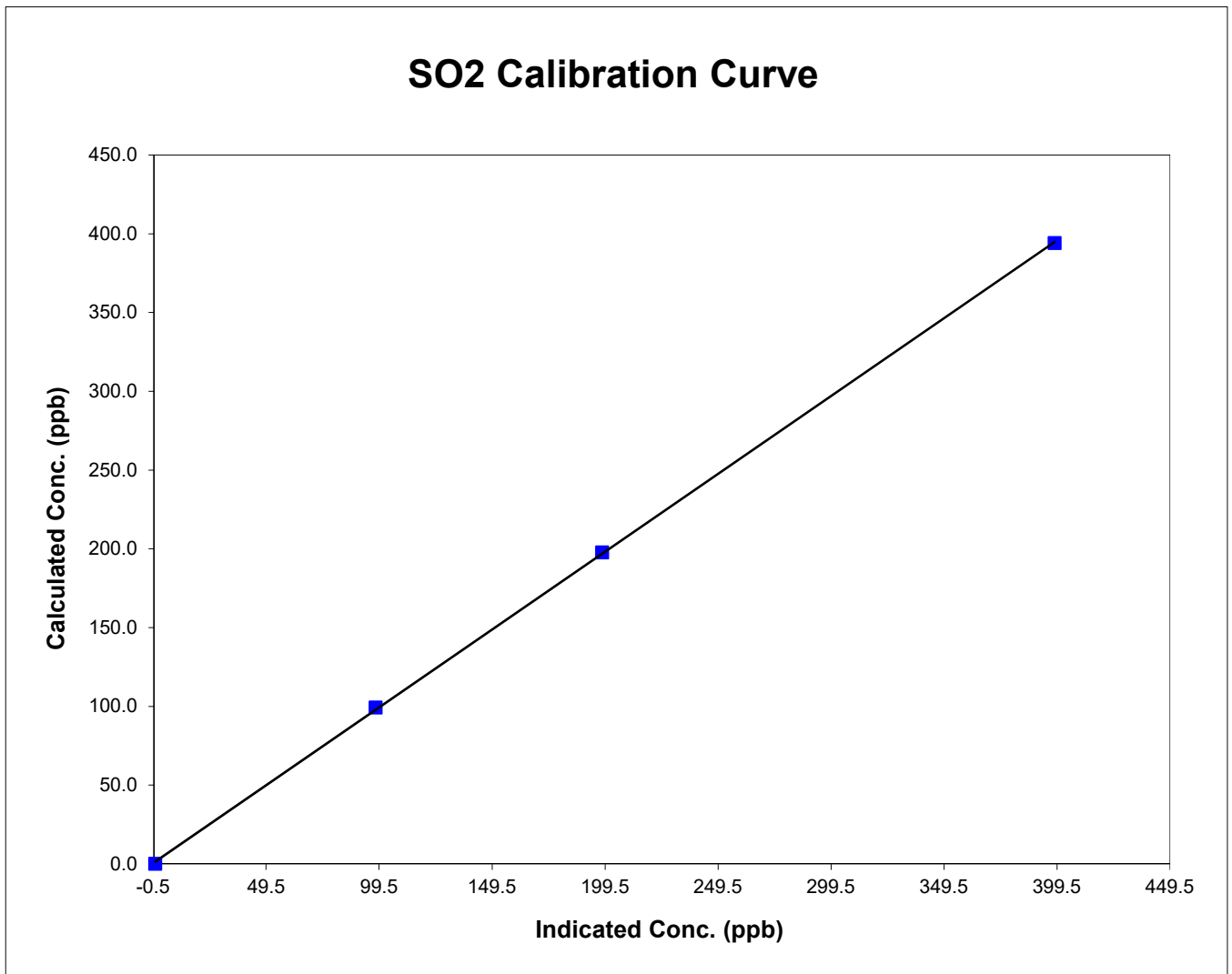


### Station Information

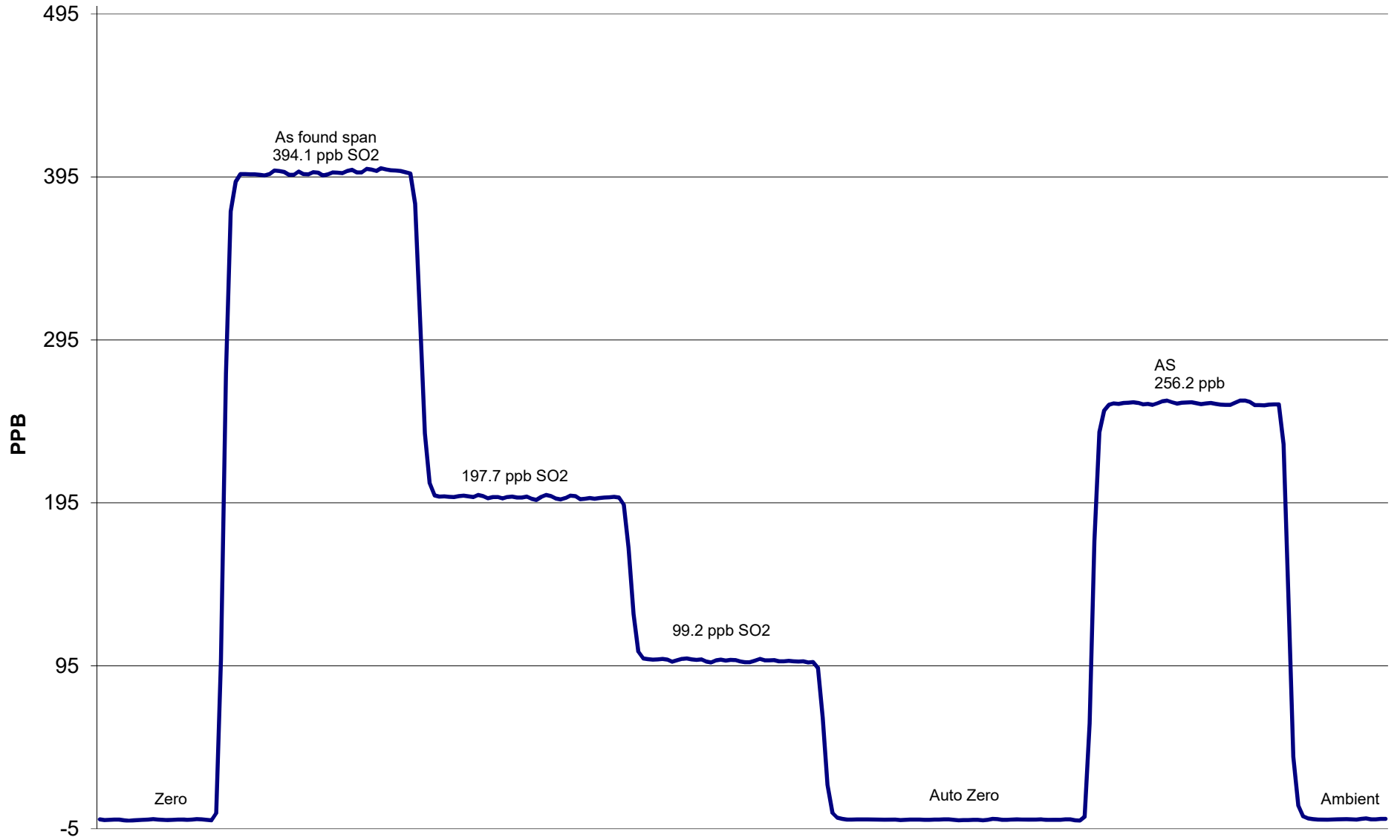
|                     |             |                      |                |
|---------------------|-------------|----------------------|----------------|
| Calibration Date    | June14 2016 | Previous Calibration | May 13 2016    |
| Station Number      | 2           | Station Location     | Evergreen Park |
| Start Time (MST)    | 10:37       | End Time (MST)       | 0:00           |
| Analyzer make/model | Teco 43i    | Analyzer serial #    | 701120008      |

### Calibration Data

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |          |
|-------------------------------------|------------------------------------|---------------------------|-------------------------|----------|
| 0.0                                 | 0.5                                | N/A                       | Correlation Coefficient | 0.999942 |
| 394.1                               | 398.5                              | 0.9891                    |                         |          |
| 197.7                               | 198.3                              | 0.9970                    | Slope                   | 0.988653 |
| 99.2                                | 98.0                               | 1.0115                    |                         |          |
|                                     |                                    |                           | Intercept               | 0.890879 |
|                                     |                                    |                           |                         |          |



# SO2 Calibration



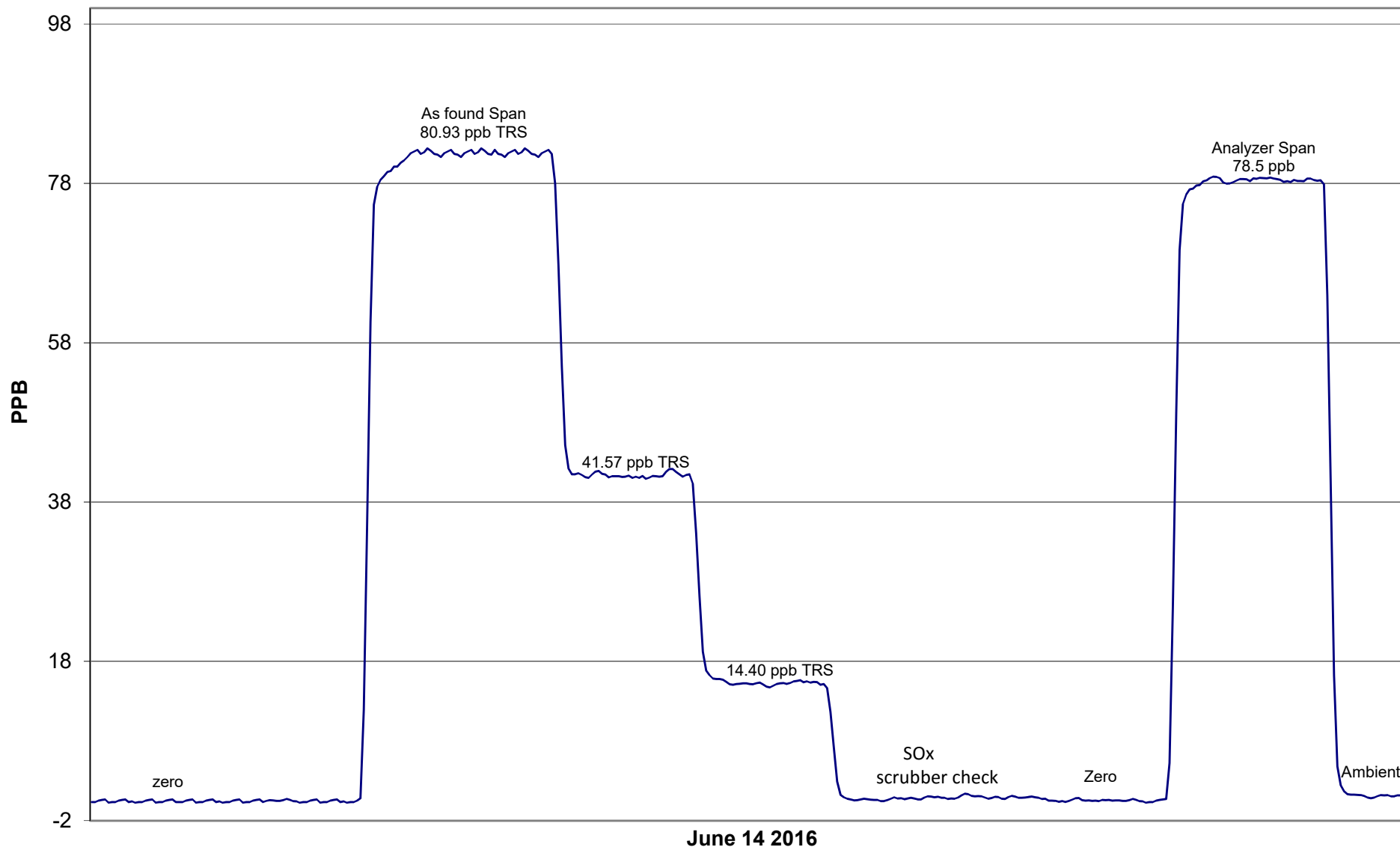
June 14 2016







# TRS Calibration



# AB TEOM PM2.5 Calibration



STATION: Evergreen Park  
 LOCATION: PAZA - Grande Prairie

OPERATOR: Dmytro Dolotii  
 DATE: 14-Jun-16

MONITOR INFO / PARAMETER VALUES:

|                                  |             |
|----------------------------------|-------------|
| Make/Model                       | TEOM AB     |
| Configuration                    | PM2.5       |
| Serial Number                    | 21554       |
| Site Number                      | 2           |
| Inlet Type                       | PM 10 / SCC |
| FAdj. Main Setting               | 1.000       |
| FAdj. Aux. Setting               | 1.000       |
| T-Case Indicated / Set Point     | 40/40       |
| T-Air Indicated / Set Point      | 40/40       |
| T-Cap Indicated / Set Point      | 40/40       |
| Splitter Assembly Alignment (cm) | 15.5        |

( vs. specified depth of 15.5 cm from top of flow tube to top of concentric 1/2 in. tube )

RECENT CALIBRATION AND AUDIT HISTORY

|                      |                 |
|----------------------|-----------------|
| Previous Audit       |                 |
| Previous Calibration | <u>4-Feb-15</u> |

|                       |      |
|-----------------------|------|
| PUMP CAPACITY CHECK * | PASS |
|-----------------------|------|

\* capacity test or pump on timed test utilized to verify pump integrity  
 "FAIL" indicates that pump requires service.

| LEAK CHECK    | Indicated Flow (lpm) |                 |
|---------------|----------------------|-----------------|
|               | Main                 | Auxiliary       |
| PUMP ON       | 0.006                | 0.110           |
| PUMP OFF      | 0.002                | 0.010           |
| NET           | 0.004                | 0.100           |
| <b>LIMITS</b> | <b>&lt;0.15</b>      | <b>&lt;0.60</b> |

|                  | Ambient Temp. (°C) | Ambient Pres. (atm) | Ko *             | Bypass flow (lpm)  | Sample flow (lpm)  |
|------------------|--------------------|---------------------|------------------|--------------------|--------------------|
| SET POINT ( S )  | na                 | na                  | 16198            | 13.67              | 3.000              |
| INDICATED ( I )  | 15.2               | 0.913               | <del>16198</del> | 13.66              | 2.990              |
| MEASURED ( AF )  | 14.9               | 0.914               | <del>16198</del> | 13.68              | 2.930              |
| MEASURED ( M )   | 14.9               | 0.914               | 16250            | 13.68              | 2.930              |
| DIFFERENCE (M-I) | -0.3               | 0.001               | 0.3%             | 0.01               | -0.07              |
| <b>LIMITS</b>    | <b>± 2 ° C</b>     | <b>± 0.005 atm</b>  | <b>± 2.5 %</b>   | <b>± 1.0 L/min</b> | <b>± 0.2 L/min</b> |

*As Found Data*  
*Adjusted Data*

Ko Audit Filter data      Weight: 0.11014      Serial #: CVK 2123

COMMENTS: Pass.

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Sample Head Inspection/Cleaning:      Large In Line Filter Inspection & Or Cleaning:

# Calibration Report



Parameter SO<sub>2</sub>

Air Monitoring Network PAZA

## Station Information

|                       |   |                                  |                                  |
|-----------------------|---|----------------------------------|----------------------------------|
| Calibration Date      | June 6, 2016                                | Previous Calibration             | May 18, 2016                     |
| Station Number        | 3   | Station Location                 | Smokey Heights                   |
| Reason:               | <input checked="" type="checkbox"/> Routine | <input type="checkbox"/> Install | <input type="checkbox"/> Removal |
|                       |   |                                  | <input type="checkbox"/> Other:  |
| Start Time (MST)      | 8:35  | End Time (MST)                   | 10:40                            |
| Barometric Pressure   | 0.927 ATM                                   | Station Temperature              | 20.0 Deg C                       |
| Calibrator            | EnviroNics                                  | Serial Number                    | 3474                             |
| Cal Gas Concentration | 49.7 ppm                                    | Cal Gas Cert Date                | 11/5/2018                        |
| Correction factor     | 0.031511                                    | Cal Gas Cylinder #               | LL103793                         |
| DACS make             | CR3000                                      | DACS serial No.                  | 5238                             |
| DACS voltage range    | 0 - 5 volt                                  | DACS channel #                   | 6                                |
|                       | <u>Before</u>                               |                                  | <u>After</u>                     |
| Calculated slope      | 1.007355                                    | Calculated slope                 | 0.997376                         |
| Calculated intercept  | 1.396029                                    | Calculated intercept             | 0.491883                         |
| Analyzer make         | Teco 43i                                    | Analyzer serial #                | 701120009                        |

|                     | before  |       | after   |       |
|---------------------|---------|-------|---------|-------|
| Concentration range | 0 - 500 | ppb   | 0 - 500 | ppb   |
| Background          | 12.7    |       | 12.8    |       |
| coefficient         | 0.939   |       | 0.939   |       |
| Lamp Voltage        | 939     | volts | 939     | volts |
| Chamber Temp        | 45      | Deg C | 45      | Deg C |
| Perm Gas Temp       | 45      | Deg C | 45      | Deg C |
| Pressure            | 665.7   | mm Hg | 666.1   | mm Hg |
| Sample Flow         | 0.445   | lpm   | 0.446   | lpm   |
| Lamp Intensity      | 88      | %     | 88      | %     |

| Dilution air flow rate (cc/min) | Corrected gas flow rate (cc/min) | Calculated concentration (ppb) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---------------------------------|----------------------------------|-------------------------------------|------------------------------------|---------------------------|
| 4996                            | 0.0                              | 0.00                                | 0.4                                | N/A                       |
| 4998                            | 39.95                            | 394.11                              | 394.9                              | 0.9979                    |
| 4998                            | 19.98                            | 197.89                              | 198.0                              | 0.9995                    |
| 4998                            | 9.99                             | 99.14                               | 97.7                               | 1.0152                    |
|                                 |                                  |                                     |                                    |                           |
| 4996                            | 0.0                              | 0.00                                | 0.4                                | As Found Zero             |
| 4998                            | 39.95                            | 394.11                              | 394.9                              | As Found Span             |
| Average Correction Factor       |                                  |                                     |                                    | 1.0042                    |

Calculated value of As Found Response: 398.809 ppm      Percent Change of As Found: -1.2%

|           | before calibration |     | after calibration |     |
|-----------|--------------------|-----|-------------------|-----|
| Auto zero | 0.4                | ppb | 0.5               | ppb |
| Auto span | 209.5              | ppb | 211.9             | ppb |

Notes: No adjustmet made

Calibration Performed By: Dmytro Dolotii, Grover Christiansen

# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA

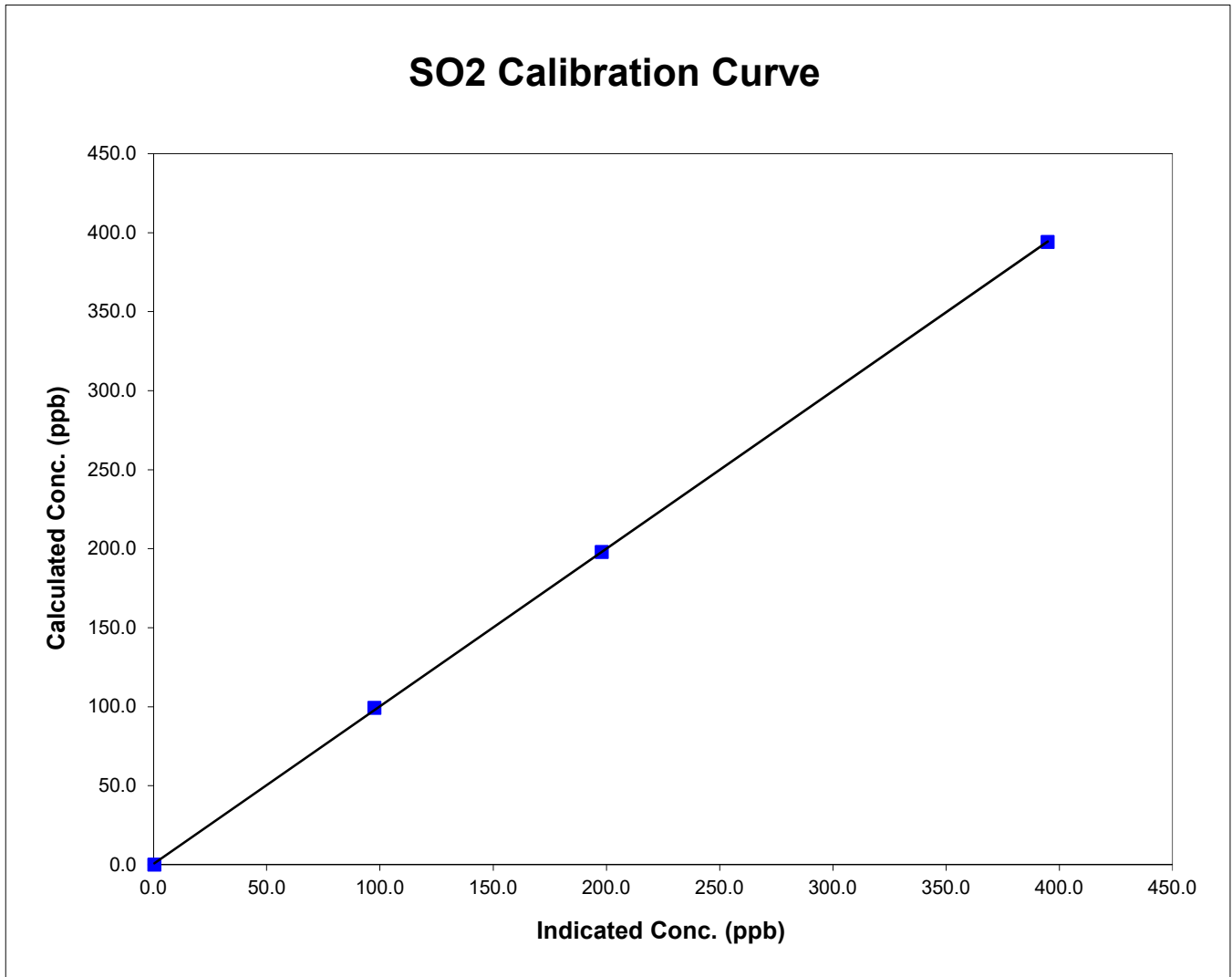


### Station Information

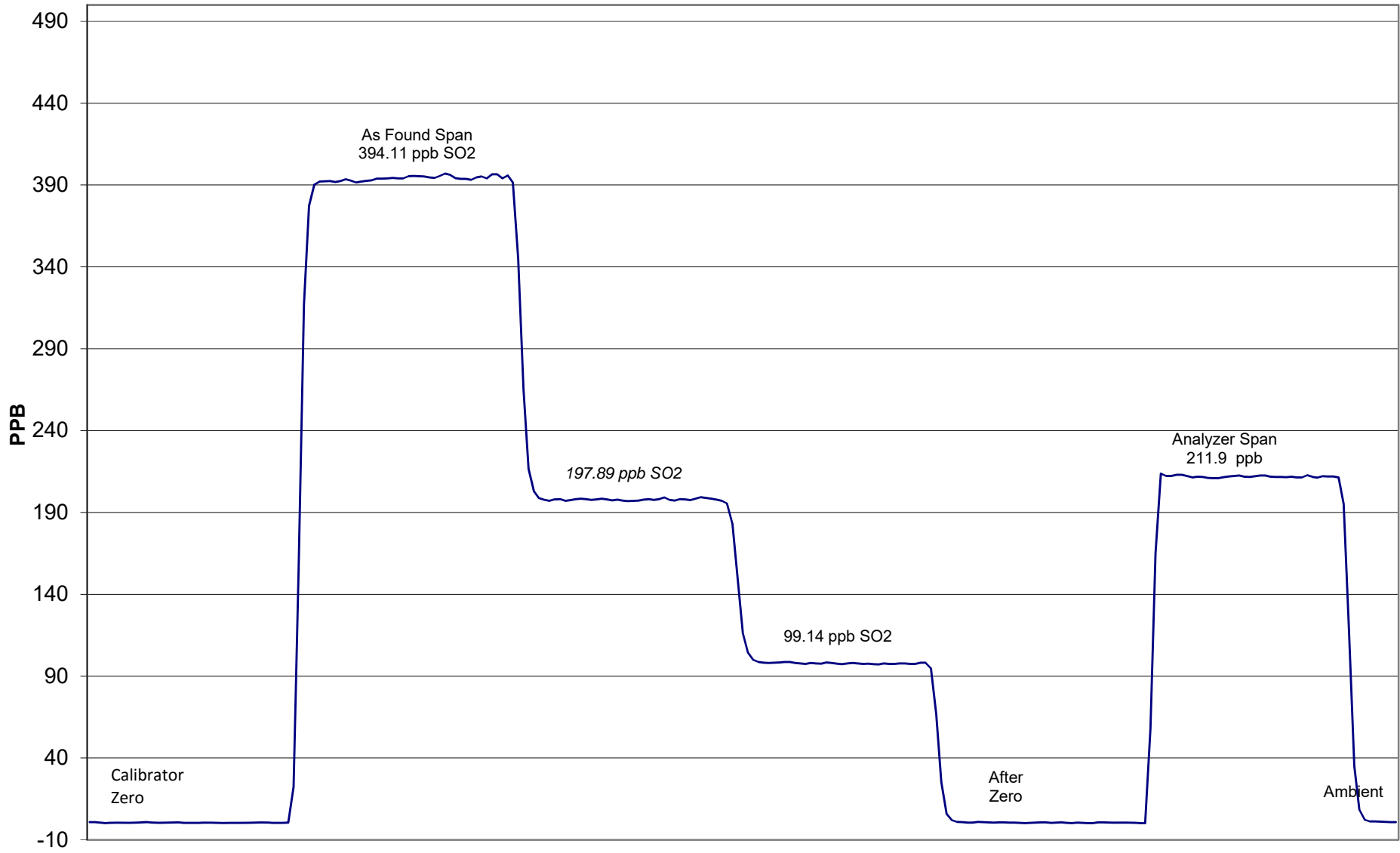
|                     |              |                      |                |
|---------------------|--------------|----------------------|----------------|
| Calibration Date    | June 6, 2016 | Previous Calibration | May 18, 2016   |
| Station Number      | 3            | Station Location     | Smokey Heights |
| Start Time (MST)    | 8:35         | End Time (MST)       | 10:40          |
| Analyzer make/model | Teco 43i     | Analyzer serial #    | 701120009      |

### Calibration Data

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |          |
|-------------------------------------|------------------------------------|---------------------------|-------------------------|----------|
| 0.0                                 | 0.4                                | N/A                       | Correlation Coefficient | 0.999971 |
| 394.1                               | 394.9                              | 0.9979                    |                         |          |
| 197.9                               | 198.0                              | 0.9995                    | Slope                   | 0.997376 |
| 99.1                                | 97.7                               | 1.0152                    |                         |          |
|                                     |                                    |                           | Intercept               | 0.491883 |
|                                     |                                    |                           |                         |          |



# Smokey Heights SO<sub>2</sub> Calibration



June 6, 2016

# Calibration Report



AIR QUALITY MONITORING

Parameter TRS

Air Monitoring Network PAZA

## Station Information

|                      |                                  |   |                                  |
|----------------------|----------------------------------|---|----------------------------------|
| Calibration Date     | June 6, 2016                     | Previous Calibration                        | May 31, 2016                     |
| Station Number       | 3                                | Station Location                            | Smokey Heights                   |
| Reason:              | <input type="checkbox"/> Routine | <input checked="" type="checkbox"/> Install | <input type="checkbox"/> Removal |
|                      |                                  |   | <input type="checkbox"/> Other:  |
| Start Time (MST)     | 9:00                             | End Time (MST)                              | PM                               |
| Barometric Pressure  | 0.927 ATM                        | Station Temperature                         | 20.0 Deg C                       |
| Calibrator           | Envionics                        | Serial Number                               | 3474                             |
| Cal Gas Conc         | 10.32 ppm                        | Cal Gas Expiry Date                         | 7/8/2016                         |
| Correction factor    | 0.031511                         | Cal Gas Cylinder #                          | BLM00586                         |
| DACS make            | CR3000                           | DACS serial No.                             | 5238                             |
| DACS voltage range   | 0 - 5 volt                       | DACS channel #                              | 5                                |
|                      | Before                           |   | After                            |
| Calculated slope     | 0.981065                         | Calculated slope                            | 0.981019                         |
| Calculated intercept | 0.742332                         | Calculated intercept                        | 0.743957                         |
| Analyzer make        | TEI Model 43I APSAA              | Analyzer serial #                           | 1153630151                       |

|                     | before |       | after |       |
|---------------------|--------|-------|-------|-------|
| Concentration range | 100    | ppb   | 100   | ppb   |
| Background          | 14.7   | ppb   | 14.2  | ppb   |
| coefficient         | 1.098  |       | 1.021 |       |
| Lamp Voltage        | 795    | volts | 801   | volts |
| Chamber Temp        | 45     | Deg C | 45    | Deg C |
| Perm Gas Temp       | 45     | Deg C | 45    | Deg C |
| Pressure            | 678.9  | mm Hg | 761   | mm Hg |
| Sample Flow         | 0.425  | lpm   | 0.418 | lpm   |
| Lamp Intensity      | 90     | mv    | 90    | mv    |

| Dilution air flow rate (cc/min) | Corrected gas flow rate (cc/min) | Calculated concentration (ppb) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---------------------------------|----------------------------------|-------------------------------------|------------------------------------|---------------------------|
| 4990                            | 0.0                              | 0.00                                | 0.0                                | N/A                       |
| 4989                            | 39.85                            | 81.78                               | 83.0                               | 0.9854                    |
| 4987                            | 19.91                            | 41.04                               | 40.6                               | 1.0104                    |
| 4990                            | 9.92                             | 20.48                               | 19.4                               | 1.0557                    |
| 4990                            | 9.92                             |                                     | 0.1                                | Sox test                  |
| 4990                            | 0.0                              | 0.00                                | 0.0                                | As Found Zero             |
| 4989                            | 39.85                            | 81.78                               | 68.6                               | As Found Span             |
| Average Correction Factor       |                                  |                                     |                                    | 1.0171                    |

Calculated value of As Found Response: 67.98 ppm      Percent Change of As Found: 16.9%

|           | before calibration |     | after calibration |     |
|-----------|--------------------|-----|-------------------|-----|
| Auto zero | 0.4                | ppm | 0.1               | ppm |
| Auto span | 47.2               | ppm | 72.5              | ppm |

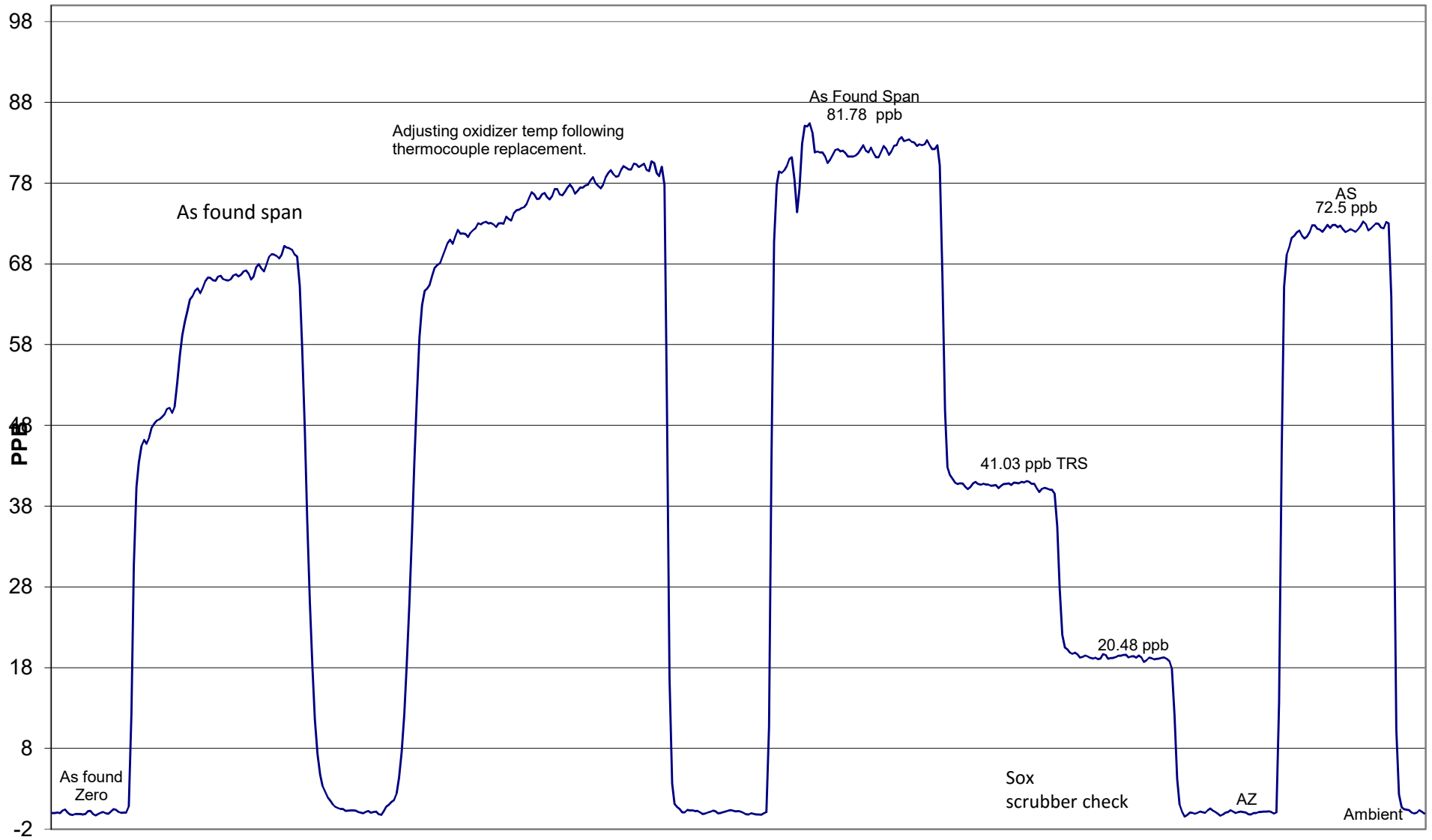
Notes: PMT & regular adjustment along with oxydizer tem adjust were done

Calibration Performed By: Grover Christiansen





# Smokey Heights TRS Calibration

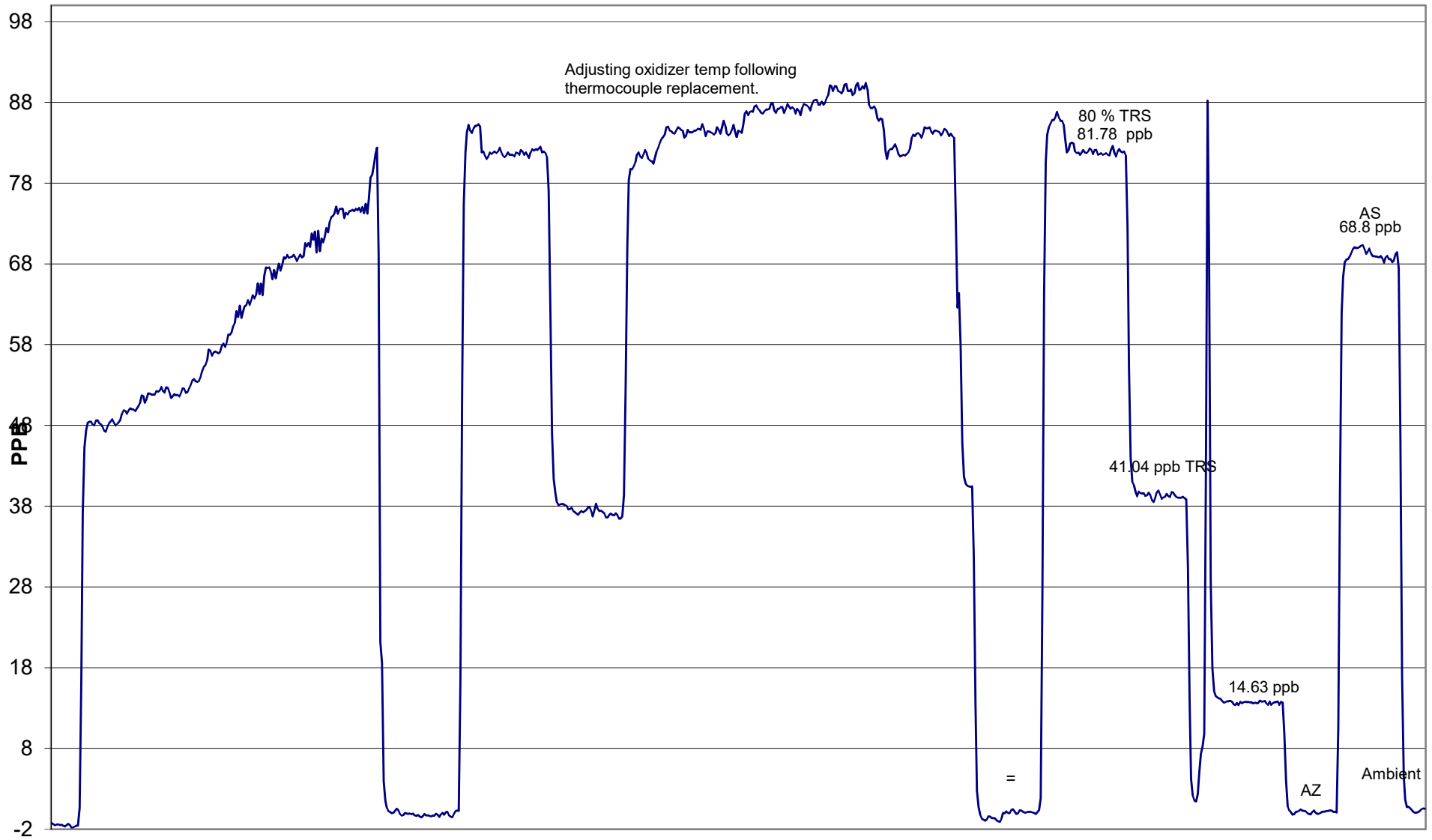


June 6, 2016





# Smokey Heights TRS Calibration



June 6, 2016

# SHARP 5030 PM2.5 Calibration



STATION: Smokey Heights  
 LOCATION: Smokey Heights  
 START TIME (MST): 12:30

OPERATOR: Grover Christiansen/Dmytro Dc  
 DATE: June 6 2016  
 END TIME (MST): 15:00:PM

MONITOR INFO / PARAMETER VALUES:

|               |            |                    |           |
|---------------|------------|--------------------|-----------|
| Make/Model    | SHARP 5030 | Audit Device Model | Delta cal |
| Configuration | PM 2.5     | Audit Device S/N   | AMU 2024  |
| Serial Number | CM-0271    | Certification Date | 16-May-15 |

AUDIT / CALIBRATION RESULTS:

|                      | Ambient Temp.<br>(°C) | Ambient Pres.<br>(mbar) | Leak Check<br>(L/min) | Flow Rate<br>(lpm) | Time settings<br>(hh:mm) |
|----------------------|-----------------------|-------------------------|-----------------------|--------------------|--------------------------|
| <i>As Found Data</i> |                       |                         |                       |                    |                          |
| Audit values (I)     | 25.3                  | 922                     | 16.67                 | 16.66              | 14:17                    |
| MEASURED ( AF )      | 24.7                  | 923                     | 16.10                 | 16.10              | 14:07                    |
| AF Difference (AF-I) | -0.6                  | 1                       | 0.57                  | -0.56              | 2:24                     |
| <i>Adjusted Data</i> |                       |                         |                       |                    |                          |
| MEASURED ( M )       | 24.7                  | 923                     | 16.65                 | 16.65              | 14:20:00 PM              |
| Adj Difference (M-I) | -0.6                  | 1                       | -0.02                 | -0.01              | 0:01                     |
| <b>LIMITS</b>        | <b>± 4.0 °C</b>       | <b>6.7 mbar</b>         | <b>1.0 L/min</b>      | <b>± 1.0 L/min</b> | <b>±2 min</b>            |

Sample Head Inspect/Cleaning: Cleaned sample head

Status of sampling tape: 40% full

Nozzle Inspection / cleanliness: Good

COMMENTS: Full installation cal performed.

Foil calibration Old value 7080 New value 7093

Nephelometer zero. Analog as found = 1.4. After adjustment=0.1

# Calibration Report



Parameter SO2

Air Monitoring Network PAZA

## Station Information

|                       |   |                                  |                                  |
|-----------------------|---|----------------------------------|----------------------------------|
| Calibration Date      | June 8, 2016                                | Previous Calibration             | May 11, 2016                     |
| Station Number        | 4   | Station Location                 | Beaverlodge                      |
| Reason:               | <input checked="" type="checkbox"/> Routine | <input type="checkbox"/> Install | <input type="checkbox"/> Removal |
|                       |   | <input type="checkbox"/> Other:  |                                  |
| Start Time (MST)      | 13:50:00 PM                                 | End Time (MST)                   | 15:55:00 PM                      |
| Barometric Pressure   | 0.928 atm                                   | Station Temperature              | 20.0 Deg C                       |
| Calibrator            | EnviroNics                                  | Serial Number                    | 6586                             |
| Cal Gas Concentration | 10.5 ppm                                    | Cal Gas Expiry Date              | 1/12/2019                        |
| Gas Cert Reference    | FF16108                                     |                                  |                                  |
| DACS make             | CR3000                                      | DACS serial No.                  | 5237                             |
| DACS voltage range    | 0 - 5 volt                                  | DACS channel #                   | 5                                |
|                       | <u>Before</u>                               |                                  | <u>After</u>                     |
| DACS Scale High       | 100   | DACS slope                       | 100                              |
| DACS Scale Low        | 0   | DACS intercept                   | 0                                |
| Calculated slope      | 1.001988                                    | Calculated slope                 | 1.011988                         |
| Calculated intercept  | -0.171338                                   | Calculated intercept             | -0.290359                        |
| Analyzer make         | TEI Model 43i-TLE                           | Analyzer serial #                | 713021137                        |

|                     | before  |       | after   |       |
|---------------------|---------|-------|---------|-------|
| Concentration range | 0 - 100 | ppb   | 0 - 100 | ppb   |
| Background          | 2.55    |       | 2.52    |       |
| Coefficient         | 0.969   |       | 0.969   |       |
| PMT                 | -768.5  | V     | -768.1  | V     |
| UV Lamp Voltage     | 1102    | V     | 1109    | V     |
| Chamber Temp        | 44.9    | Deg C | 45      | Deg C |
| Pressure            | 658     | mm Hg | 662.8   | mm Hg |
| Sample Flow         | 0.458   | LPM   | 0.463   | LPM   |
| Lamp Intensity      | 96      | %     | 96      | %     |

## Calibration Data

| Dilution air flow rate (cc/min) | Source gas flow rate (cc/min) | Calculated concentration (ppb) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---------------------------------|-------------------------------|-------------------------------------|------------------------------------|---------------------------|
| 4995                            | 0.00                          | 0.0                                 | 0.2                                | N/A                       |
| 4998                            | 39.95                         | 83.3                                | 82.5                               | 1.0096                    |
| 4996                            | 19.98                         | 41.8                                | 41.8                               | 1.0010                    |
| 4994                            | 9.99                          | 21.0                                | 21.0                               | 0.9973                    |
| 4994                            | 0.00                          | 0.0                                 | 0.2                                | As found zero             |
| 4994                            | 39.92                         | 83.3                                | 82.5                               | As found span             |
| Average Correction Factor       |                               |                                     |                                    | 1.0026                    |

Calculated value of As Found Response: 82.277 ppm      Percent Change of As Found: 1.2%

|           | before calibration |     | after calibration |     |
|-----------|--------------------|-----|-------------------|-----|
| Auto zero | 0.0                | ppb | -0.1              | ppb |
| Auto span | 57.5               | ppb | 60.2              | ppb |

Notes: No adjustment made

# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA



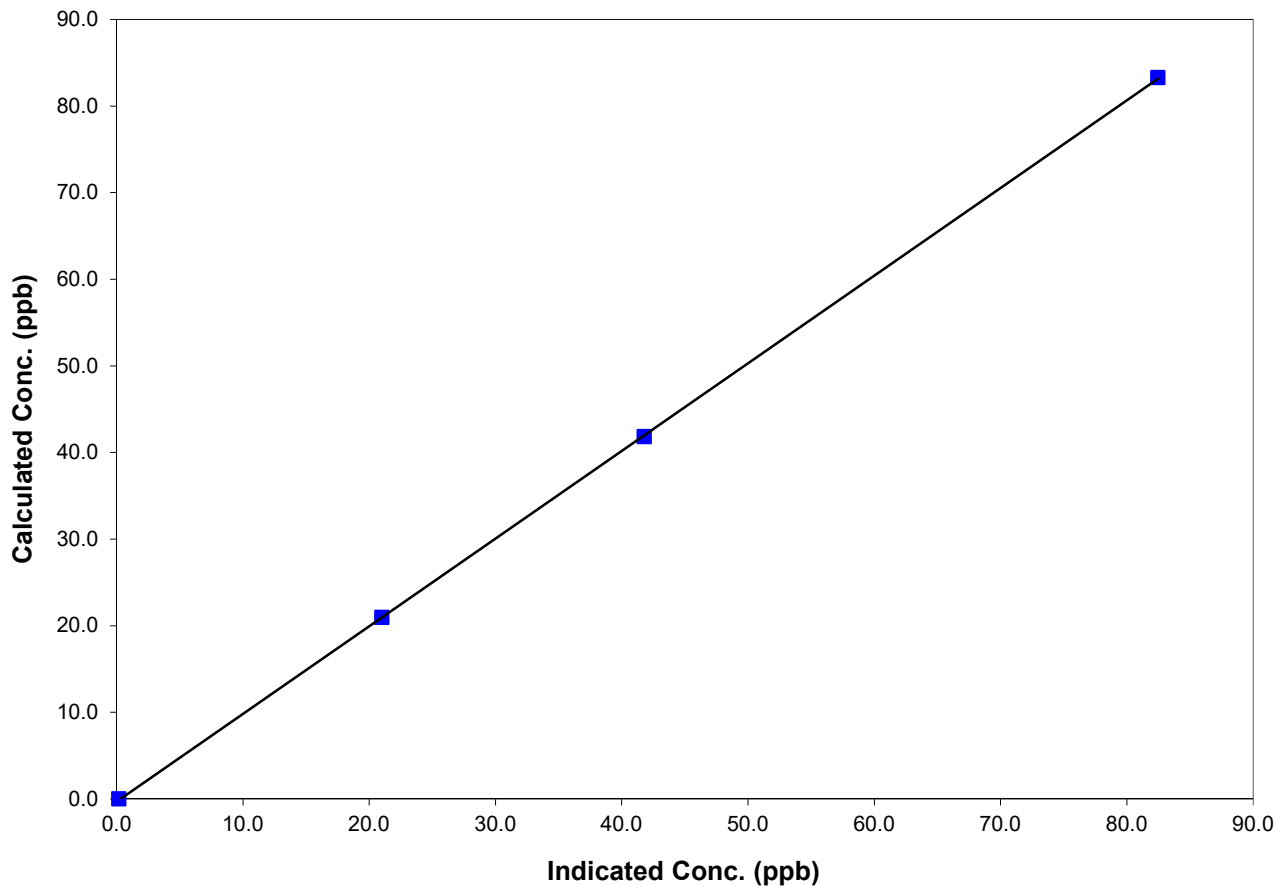
## Station Information

|                     |                   |                      |              |
|---------------------|-------------------|----------------------|--------------|
| Calibration Date    | June 8, 2016      | Previous Calibration | May 11, 2016 |
| Station Number      | 4                 | Station Location     | Beaverlodge  |
| Start Time (MST)    | 13:50:00 PM       | End Time (MST)       | 15:55:00 PM  |
| Analyzer make/model | TEI Model 43i-TLE | Analyzer serial #    | 713021137    |

## Calibration Data

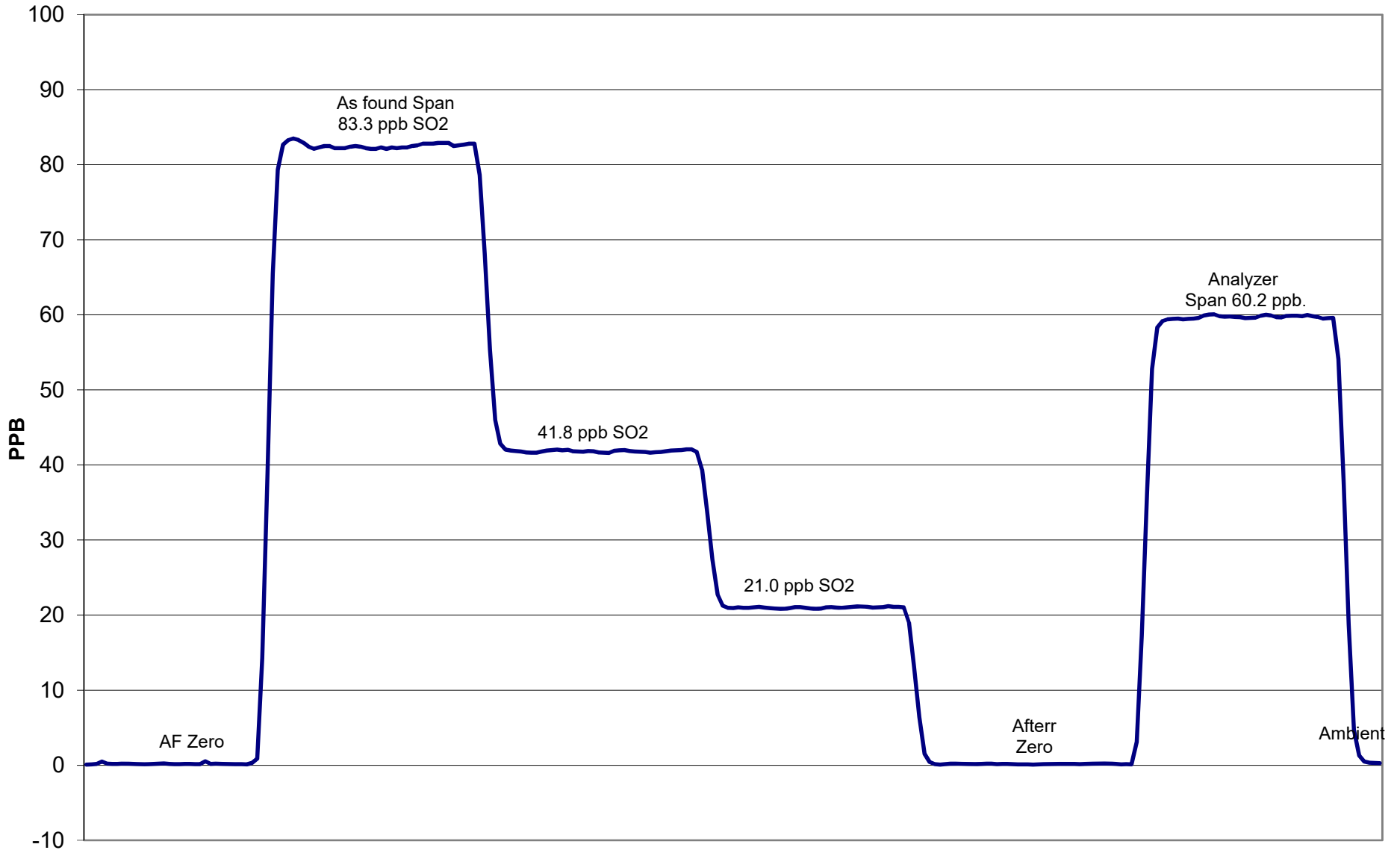
| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |           |
|-------------------------------------|------------------------------------|---------------------------|-------------------------|-----------|
| 0.0                                 | 0.2                                | N/A                       | Correlation Coefficient | 0.999987  |
| 83.3                                | 82.5                               | 1.0096                    |                         |           |
| 41.8                                | 41.8                               | 1.0010                    | Slope                   | 1.011988  |
| 21.0                                | 21.0                               | 0.9973                    |                         |           |
|                                     |                                    |                           | Intercept               | -0.290359 |
|                                     |                                    |                           |                         |           |

## SO2 Calibration Curve





# SO2 Calibration



June 8, 2016



# Calibration Report



Parameter **NOX-NO-NO2**  
 Air Monitoring Network **PAZA**

## Station Information

Calibration Date: June 8, 2016 Station Location: Beaverlodge

## Calibration Data

|      | Dilution flow rate (ccm) | Source gas flow rate (ccm) | Calculated NOx conc (ppb) | Calculated NO conc (ppb) | Calculated NO2 conc (ppb) | Indicated NOx conc (ppb) | Indicated NO conc (ppb) | Indicated NO2 conc (ppb) | NOx Correction factor     | NO Correction factor |        |
|------|--------------------------|----------------------------|---------------------------|--------------------------|---------------------------|--------------------------|-------------------------|--------------------------|---------------------------|----------------------|--------|
| zero | 4995                     | 0.00                       | 0.0                       | 0.0                      | 0.0                       | 0.3                      | 0.0                     | 0.1                      | N/A                       | N/A                  |        |
| 1    | 4998                     | 39.99                      | 406.4                     | 404.0                    | 2.4                       | 406.8                    | 404.4                   | 1.6                      | 0.9991                    | 0.9992               |        |
| 2    | 4997                     | 19.98                      | 203.9                     | 202.7                    | 1.2                       | 203.6                    | 201.7                   | 1.0                      | 1.0015                    | 1.0049               |        |
| 3    | 4999                     | 9.99                       | 102.1                     | 101.5                    | 0.6                       | 101.0                    | 100.4                   | 0.4                      | 1.0107                    | 1.0107               |        |
| AFZ  | 4995                     | 0.00                       | 0.0                       | 0.0                      | 0.0                       | 0.3                      | 0.0                     | 0.1                      | 0.0000                    | 0.0000               |        |
| AFS  | 4995                     | 39.92                      | 405.9                     | 403.6                    | 0.8                       | 391.5                    | 388.8                   | 2.0                      | 1.0368                    | 1.0381               |        |
|      |                          |                            |                           |                          |                           |                          |                         |                          | Average Correction Factor | 1.0037               | 1.0049 |

As Found Concentrations: NO<sub>x</sub>= 391.5 NO= 389.4 As Found Percent Change NO<sub>x</sub>= -3.6% NO= -3.5%

## GPT Calibration Data

Dilution Flow 4995 ccm Source Gas Flow 39.93 ccm

| O3 Setpoint (ppb) | Indicated NOx high point (ppb) | Indicated NO drop conc (ppb) | Calculated NO2 conc (ppb) | Indicated NOx conc (ppb) | Indicated NO conc (ppb) | Indicated NO2 conc (ppb) | NOx Correction factor     | NO Correction factor | NO2 Correction factor | Converter Efficiency |        |
|-------------------|--------------------------------|------------------------------|---------------------------|--------------------------|-------------------------|--------------------------|---------------------------|----------------------|-----------------------|----------------------|--------|
| 0                 | 0.0                            | 0.0                          | 0.0                       | 0.3                      | 0.0                     | 0.1                      | N/A                       | N/A                  | N/A                   | N/A                  |        |
| NO point          | 404.0                          | 404.0                        | 0.0                       | 405.9                    | 404.0                   | 1.1                      | 0.9953                    | 1.0000               | N/A                   | N/A                  |        |
| 300               | 404.0                          | 71.1                         | 332.9                     | 406.7                    | 71.1                    | 334.6                    | 0.9935                    | 1.0000               | 0.9950                | 100.5%               |        |
| 200               | 404.0                          | 179.5                        | 224.5                     | 407.6                    | 179.5                   | 227.2                    | 0.9912                    | 1.0000               | 0.9881                | 101.2%               |        |
| 100               | 404.0                          | 294.4                        | 109.6                     | 407.1                    | 294.4                   | 112.0                    | 0.9925                    | 1.0000               | 0.9786                | 102.2%               |        |
|                   |                                |                              |                           |                          |                         |                          | Average Correction Factor | 0.9924               | 1.0000                | 0.9872               | 101.3% |

## AIC Data

| Parameter | Previous calibration |       |     |     | Current calibration |       |     |     |
|-----------|----------------------|-------|-----|-----|---------------------|-------|-----|-----|
|           | NOx                  | NO2   | NO  |     | NOx                 | NO2   | NO  |     |
| Auto zero | -0.1                 | -0.2  | 0.0 | ppb | -0.1                | -0.2  | 0.0 | ppb |
| Auto span | 283.3                | 280.5 | 2.0 | ppb | 290.9               | 287.9 | 2.2 | ppb |

Calibration Performed By: Dmytro Dolotii

# Calibration Summary



Parameter NO<sub>2</sub>

Air Monitoring Network PAZA

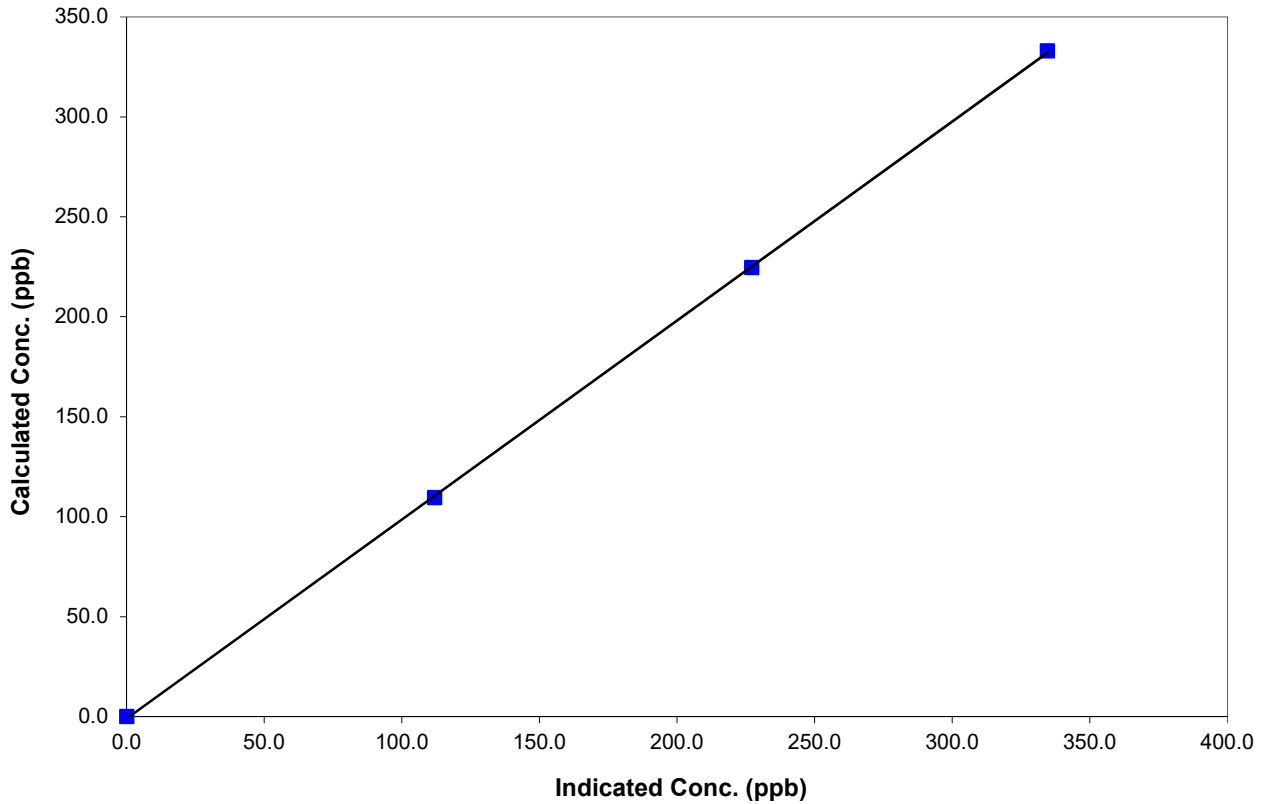
## Station Information

|                  |              |                      |              |
|------------------|--------------|----------------------|--------------|
| Calibration Date | June 8, 2016 | Previous Calibration | May 11, 2016 |
| Station Number   | 4            | Station Location     | Beaverlodge  |
| Start Time (MST) | 8:50         | End Time (MST)       | 13:20:00 PM  |
| Analyzer make    | TEI 42i      | Analyzer serial #    | 906535068    |

## Calibration Data

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |           |
|----------------------------|------------------------------------|---------------------------|-------------------------|-----------|
| 0.0                        | 0.1                                | N/A                       | Correlation Coefficient | 0.999957  |
| 332.9                      | 334.6                              | 0.9950                    |                         |           |
| 224.5                      | 227.2                              | 0.9881                    | Slope                   | 0.995545  |
| 109.6                      | 112.0                              | 0.9786                    |                         |           |
|                            |                                    |                           |                         |           |
|                            |                                    |                           | Intercept               | -0.977138 |

### NO<sub>2</sub> Calibration Curve



# Calibration Summary



Parameter NO<sub>x</sub>

Air Monitoring Network PAZA

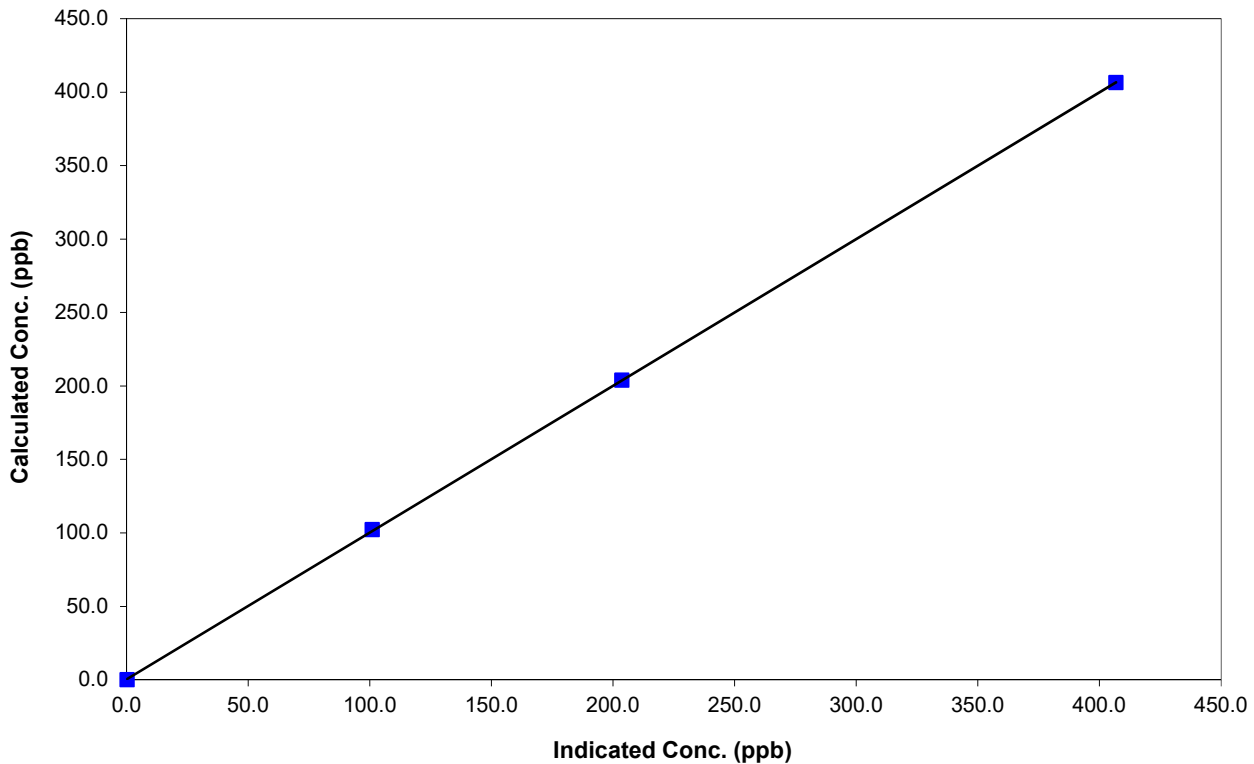
## Station Information

|                  |              |                      |              |
|------------------|--------------|----------------------|--------------|
| Calibration Date | June 8, 2016 | Previous Calibration | May 11, 2016 |
| Station Number   | 4            | Station Location     | Beaverlodge  |
| Start Time (MST) | 8:50         | End Time (MST)       | 13:20:00 PM  |
| Analyzer make    | TEI 42i      | Analyzer serial #    | 906535068    |

## Calibration Data

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |          |
|----------------------------|------------------------------------|---------------------------|-------------------------|----------|
| 0.0                        | 0.3                                | N/A                       | Correlation Coefficient | 0.999986 |
| 406.4                      | 406.8                              | 0.9991                    |                         |          |
| 203.9                      | 203.6                              | 1.0015                    | Slope                   | 0.998832 |
| 102.1                      | 101.0                              | 1.0107                    |                         |          |
|                            |                                    |                           | Intercept               | 0.374850 |

## NO<sub>x</sub> Calibration Curve



# Calibration Summary



Parameter NO  
 Air Monitoring Network PAZA

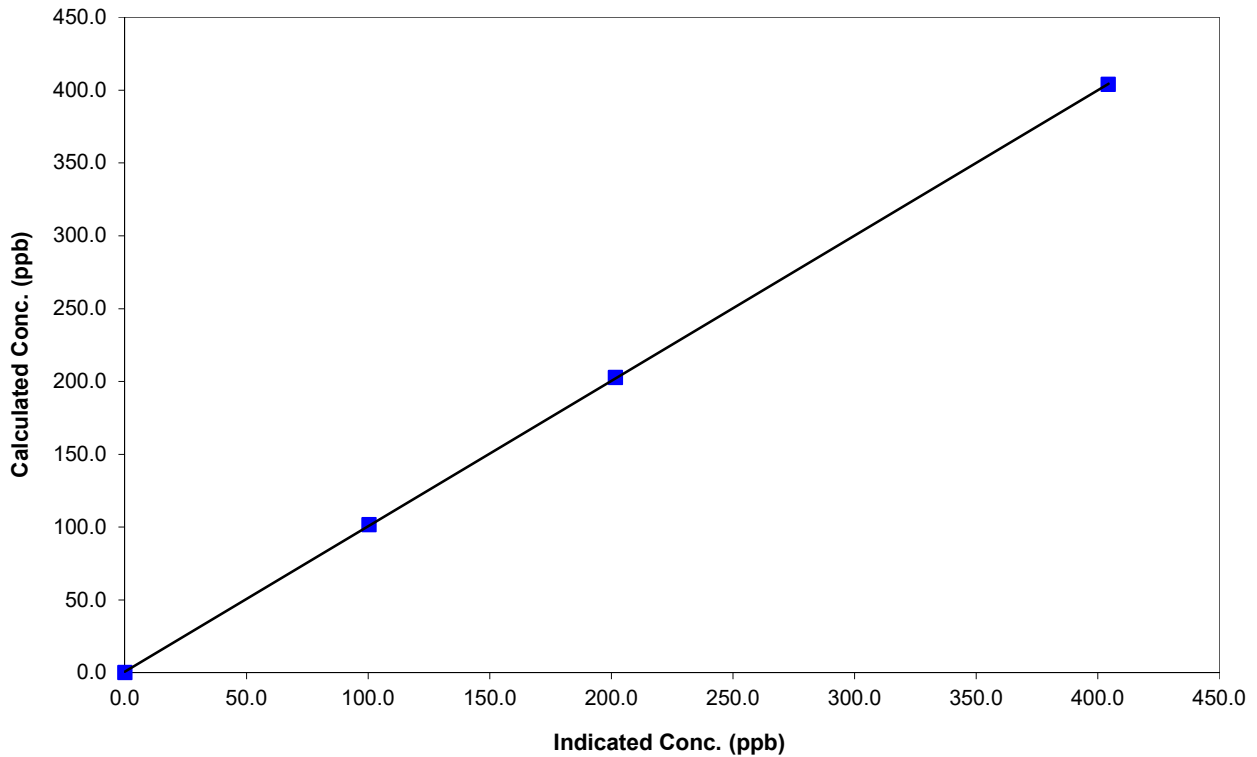
## Station Information

|                  |              |                      |              |
|------------------|--------------|----------------------|--------------|
| Calibration Date | June 8, 2016 | Previous Calibration | May 11, 2016 |
| Station Number   | 4            | Station Location     | Beaverlodge  |
| Start Time (MST) | 8:50         | End Time (MST)       | 13:20:00 PM  |
| Analyzer make    | TEI 42i      | Analyzer serial #    | 906535068    |

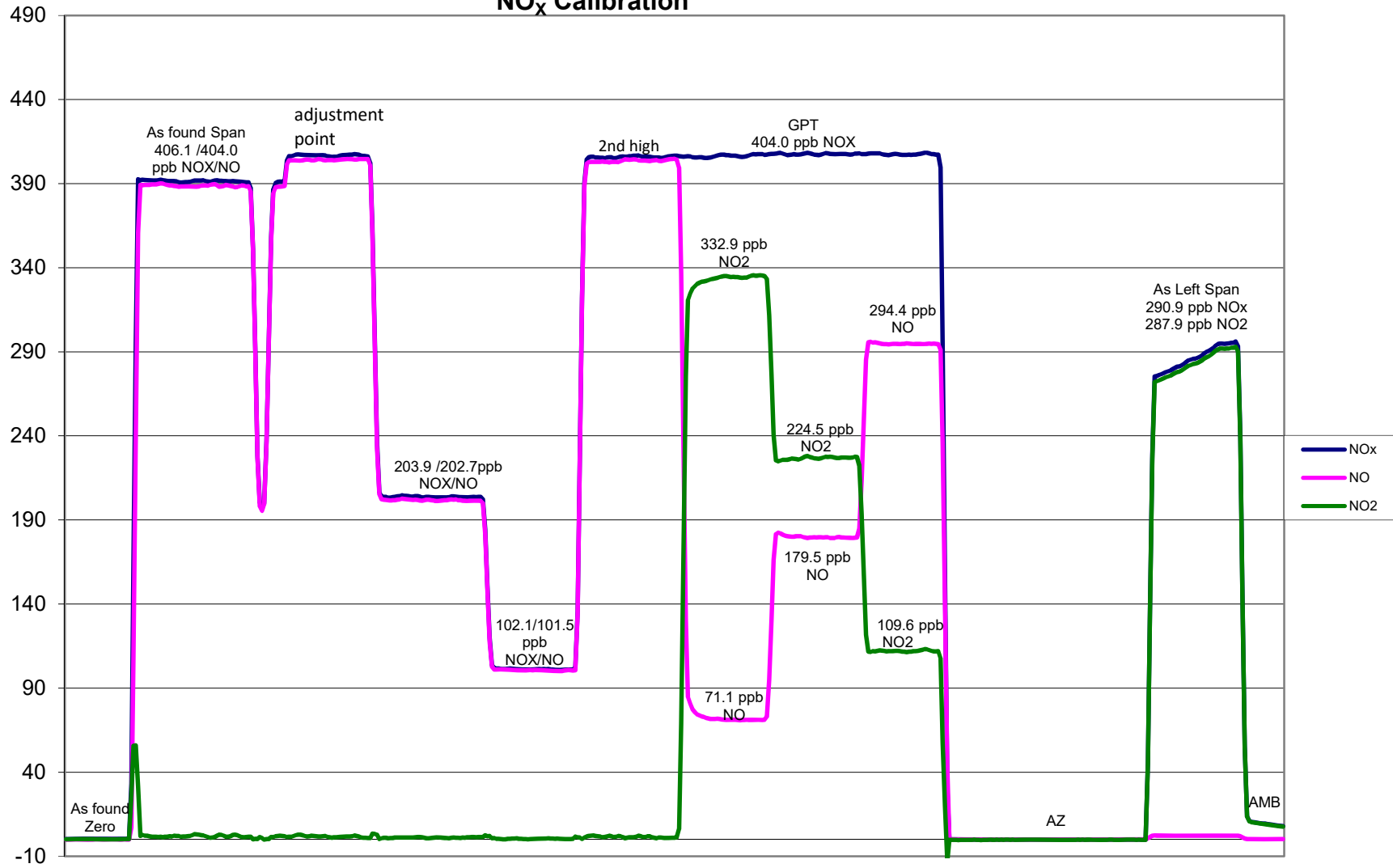
## Calibration Data

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |          |
|----------------------------|------------------------------------|---------------------------|-------------------------|----------|
| 0.0                        | 0.0                                | N/A                       | Correlation Coefficient | 0.999985 |
| 404.0                      | 404.4                              | 0.9992                    |                         |          |
| 202.7                      | 201.7                              | 1.0049                    |                         |          |
| 101.5                      | 100.4                              | 1.0107                    | Slope                   | 0.998556 |
|                            |                                    |                           | Intercept               | 0.684026 |

## NO Calibration Curve



# NO<sub>x</sub> Calibration



June 8, 2016

# Calibration Report



Parameter 03

Air Monitoring Network PAZA

## Station Information

|                       |   |                                  |                                  |
|-----------------------|---|----------------------------------|----------------------------------|
| Calibration Date      | <u>June 8, 2016</u>                         | Previous Calibration             | <u>May 11, 2016</u>              |
| Station Number        | <u>4</u>                                    | Station Location                 | <u>Beaverlodge</u>               |
| Reason:               | <input checked="" type="checkbox"/> Routine | <input type="checkbox"/> Install | <input type="checkbox"/> Removal |
|                       |   | <input type="checkbox"/> Other:  |                                  |
| Start Time (MST)      | <u>11:50</u>                                | End Time (MST)                   | <u>14:35:00 PM</u>               |
| Barometric Pressure   | <u>0.928 atm</u>                            | Station Temperature              | <u>20.0 Deg C</u>                |
| Calibrator            | <u>Envionics</u>                            | Serial Number                    | <u>6586</u>                      |
| Cal Gas Concentration | <u>NA</u>                                   | Cal Gas Expiry Date              | <u>NA</u>                        |
| DACS make             | <u>CR3000</u>                               | DACS serial No.                  | <u>5237</u>                      |
| DACS voltage range    | <u>0 - 5 volt</u>                           | DACS channel #                   | <u>9</u>                         |
|                       | <u>Before</u>                               |                                  | <u>After</u>                     |
| Calculated slope      | <u>0.985947</u>                             | Calculated slope                 | <u>0.998519</u>                  |
| Calculated intercept  | <u>0.290575</u>                             | Calculated intercept             | <u>0.369326</u>                  |
| Analyzer make         | <u>Teco 49i</u>                             | Analyzer serial #                | <u>1136451236,AMU 1879</u>       |

|                     | before      |       | after       |       |
|---------------------|-------------|-------|-------------|-------|
| Concentration range | 0 - 500     | ppb   | 0 - 500     | ppb   |
| offset              | -0.30       | ppb   | -0.30       | ppb   |
| slope               | 1.090       |       | 1.061       |       |
| Lamp temp           | 53.8        | mV    | 53.8        | mV    |
| Lamp Intensity A/B  | 48227/53708 | mV    | 48211/53697 | mV    |
| Pressure            | 677.2       | mm Hg | 674.2       | mm Hg |
| Flow A              | 0.788       | LPM   | 0.785       | LPM   |
| Flow B              | 0.738       | LPM   | 0.737       | LPM   |

## Calibration Data

| Dilution air flow rate (cc/min) | Calibrator Setting | Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---------------------------------|--------------------|-------------------------------------|------------------------------------|---------------------------|
| 5035                            | 0.00               | 0.0                                 | 0.3                                | N/A                       |
| 5035                            | 0.30               | 332.9                               | 333.9                              | 0.9969                    |
| 5035                            | 0.20               | 224.5                               | 223.3                              | 1.0056                    |
| 5035                            | 0.10               | 109.6                               | 109.0                              | 1.0051                    |
|                                 |                    |                                     |                                    |                           |
| 5035                            | 0.00               | 0.0                                 | 0.3                                | As found zero             |
| 5035                            | 0.30               | 332.9                               | 333.9                              | As found span             |
| Average Correction Factor       |                    |                                     |                                    | 1.0025                    |

Calculated value of As Found Response: 329.3 ppm      Percent Change of As Found: -1.1%

|           | before calibration |     | after calibration |     |
|-----------|--------------------|-----|-------------------|-----|
| Auto zero | 0.6                | ppb | 0.5               | ppb |
| Auto span | 265.4              | ppb | 270.8             | ppb |

Notes: Span adjustment made

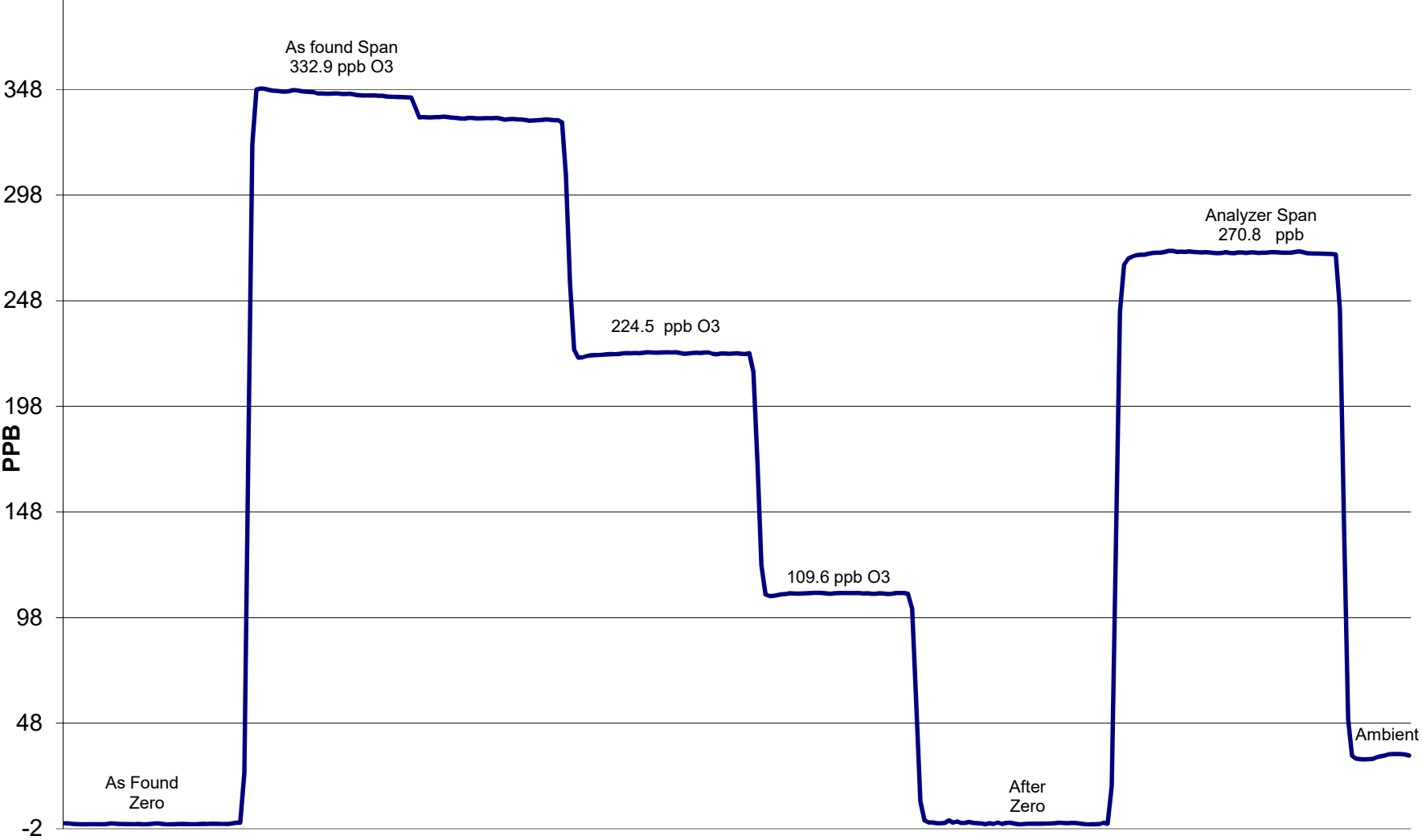
On the after zero span compared calibrator zero with internal analyzer zero, as a result saw couple minor spikes in internal zero-could be a zero valve issue. Will be addressed on the next visit

Calibration Performed By: Dmytro Dolotii





# O3 Calibration



June 8, 2016

# SHARP 5030 PM2.5 Calibration



STATION: Beaverlodge  
 LOCATION: Beaverlodge agriculture centre  
 START TIME (MST): 10:00

OPERATOR: Dmytro Dolotii  
 DATE: June 22 2016  
 END TIME (MST): 15:31:00 PM

MONITOR INFO / PARAMETER VALUES:

|               |            |                    |           |
|---------------|------------|--------------------|-----------|
| Make/Model    | SHARP 5030 | Audit Device Model | Delta cal |
| Configuration | PM 2.5     | Audit Device S/N   | AMU 1789  |
| Serial Number | AMU 1969   | Certification Date | 01-Oct-15 |

AUDIT / CALIBRATION RESULTS:

|   | Ambient Temp.<br>(°C) | Ambient Pres.<br>(mbar) | Leak Check<br>(L/min) | Flow Rate<br>(lpm) | Time settings<br>(hh:mm) |
|---|-----------------------|-------------------------|-----------------------|--------------------|--------------------------|
| Audit values (I)                        | 19.0                  | 925                     | 16.67                 | 16.67              | 14:40:00 PM              |
| <i>As Found Data</i><br>MEASURED ( AF ) | 18.0                  | 925                     | 16.50                 | 16.73              | 14:44:00 PM              |
| AF Difference (AF-I)                    | -1.0                  | 0                       | 0.17                  | 0.06               | 0:01                     |
| <i>Adjusted Data</i><br>MEASURED ( M )  | 18.0                  | 925                     | 16.50                 | 16.72              | 14:40:00 PM              |
| Adj Difference (M-I)                    | -1.0                  | 0                       | -0.17                 | 0.05               | 0:01                     |
| <b>LIMITS</b>                           | <b>± 4.0 °C</b>       | <b>6.7 mbar</b>         | <b>1.0 L/min</b>      | <b>± 1.0 L/min</b> | <b>±2 min</b>            |

Sample Head Inspect/Cleaning: Cleaned sample head

Status of sampling tape: 90% full

Nozzle Inspection / cleanliness: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

Foil calibration Old value 6995 New value 7008

Nephelometer zero. Analog as found = 0.7 adsuted conc = -0.0

# Calibration Report



AIR QUALITY MONITORING

Parameter SO2

Air Monitoring Network PAZA

## Station Information

|                       |   |                                  |                                  |
|-----------------------|---|----------------------------------|----------------------------------|
| Calibration Date      | June 15 2016                                | Previous Calibration             | May 9 2016                       |
| Station Number        | 6   | Station Location                 | Valleyview                       |
| Reason:               | <input checked="" type="checkbox"/> Routine | <input type="checkbox"/> Install | <input type="checkbox"/> Removal |
|                       |   | <input type="checkbox"/> Other:  |                                  |
| Start Time (MST)      | 11:40                                       | End Time (MST)                   | 13:55:00 PM                      |
| Barometric Pressure   | 0.927 atm                                   | Station Temperature              | 20.5 Deg C                       |
| Calibrator            | EnviroNics                                  | Serial Number                    | 3016                             |
| Cal Gas Concentration | 49.7 ppm                                    | Cal Gas Exp Date                 | November 5, 2018                 |
| Gas Cylinder Num.     | LL103793                                    |                                  |                                  |
| DACS make             | CR3000                                      | DACS serial No.                  | 5409                             |
| DACS voltage range    | 0 - 5 volt                                  | DACS channel #                   | 4                                |
|                       | <u>Before</u>                               |                                  | <u>After</u>                     |
| DACS Scale High       | 500   | DACS slope                       | 500                              |
| DACS Scale Low        | 0   | DACS intercept                   | 0                                |
| Calculated slope      | 1.001323                                    | Calculated slope                 | 1.000076                         |
| Calculated intercept  | 0.559616                                    | Calculated intercept             | 0.065676                         |
| Analyzer make         | TEI 43C                                     | Analyzer serial #                | 609716239                        |

|                     | before |       | after |       |
|---------------------|--------|-------|-------|-------|
| Concentration range | 0-500  | ppb   | 0-500 | ppb   |
| Background          | 16     |       | 16    |       |
| Coefficient         | 1.031  |       | 1.031 |       |
| UV Lamp Voltage     | 732    | LPM   | 732   | LPM   |
| Chamber Temp        | 43     | V     | 43    | V     |
| Perm Gas Temp       | 45     | C     | 45    | C     |
| Pressure            | 658.3  | in Hg | 662.7 | in Hg |
| Sample Flow         | 0.478  | LPM   | 0.483 | LPM   |
| Lamp Intensity      | 47780  | Hz    | 47800 | Hz    |

## Calibration Data

| Dilution air flow rate (cc/min) | Source gas flow rate (cc/min) | Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---------------------------------|-------------------------------|-------------------------------------|------------------------------------|---------------------------|
| 4995                            | 0.00                          | 0.0                                 | 1.0                                | N/A                       |
| 4997                            | 39.93                         | 394.0                               | 394.5                              | 0.9988                    |
| 4999                            | 19.99                         | 197.9                               | 197.2                              | 1.0039                    |
| 4995                            | 9.95                          | 98.8                                | 97.8                               | 1.0103                    |
| 4995                            | 0.00                          | 0.0                                 | 1.0                                | As found zero             |
| 4995                            | 39.93                         | 394.2                               | 394.5                              | As found span             |
| Average Correction Factor       |                               |                                     |                                    | 1.0043                    |

Calculated value of As Found Response: 394.6 ppm      Percent Change of As Found: -0.1%

|           | before calibration |     | after calibration |     |
|-----------|--------------------|-----|-------------------|-----|
| Auto zero | 0.9                | ppm | 0.8               | ppm |
| Auto span | 285.2              | ppm | 294.3             | ppm |

Notes: No adjustment made

# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA



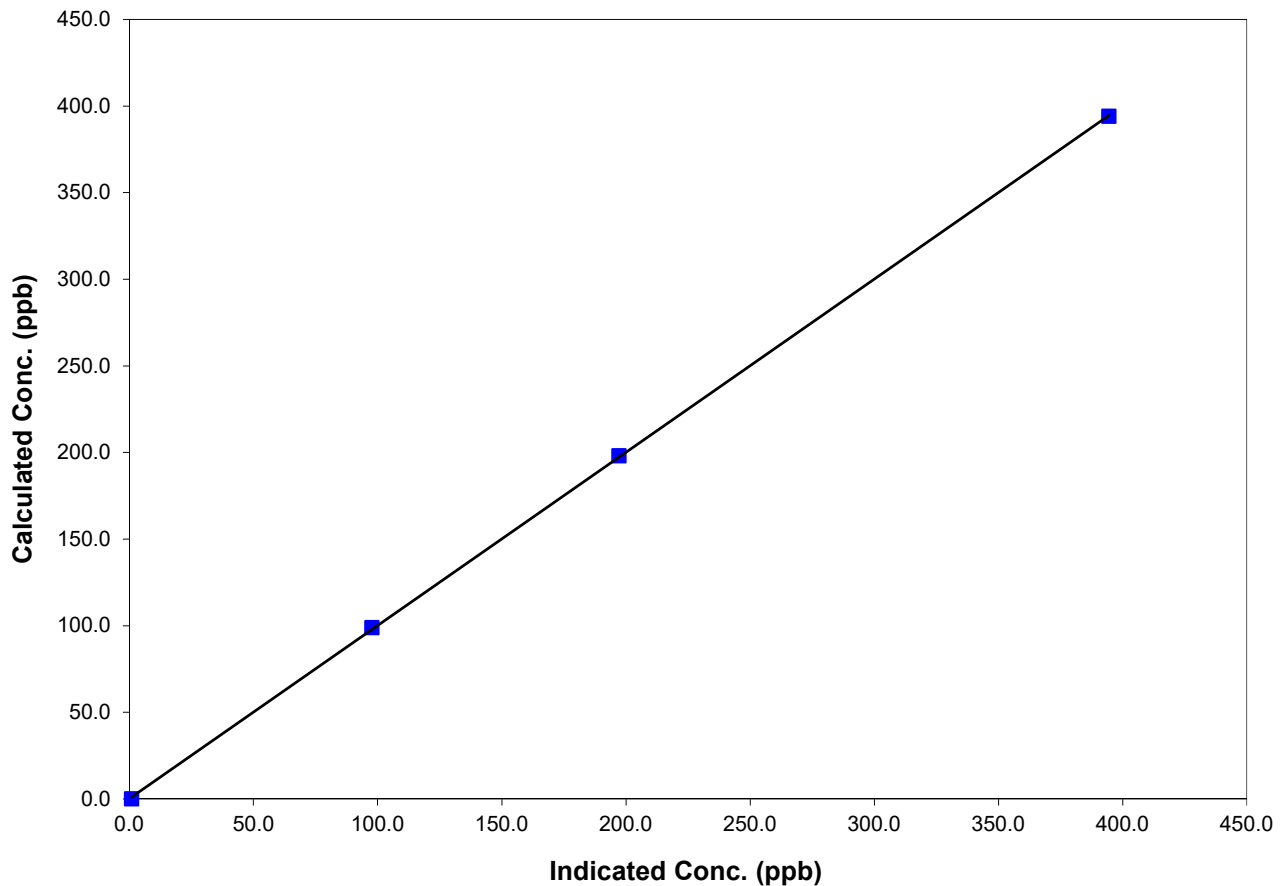
### Station Information

|                     |              |                      |             |
|---------------------|--------------|----------------------|-------------|
| Calibration Date    | June 15 2016 | Previous Calibration | May 9 2016  |
| Station Number      | 6            | Station Location     | Valleyview  |
| Start Time (MST)    | 11:40        | End Time (MST)       | 13:55:00 PM |
| Analyzer make/model | TEI 43C      | Analyzer serial #    | 609716239   |

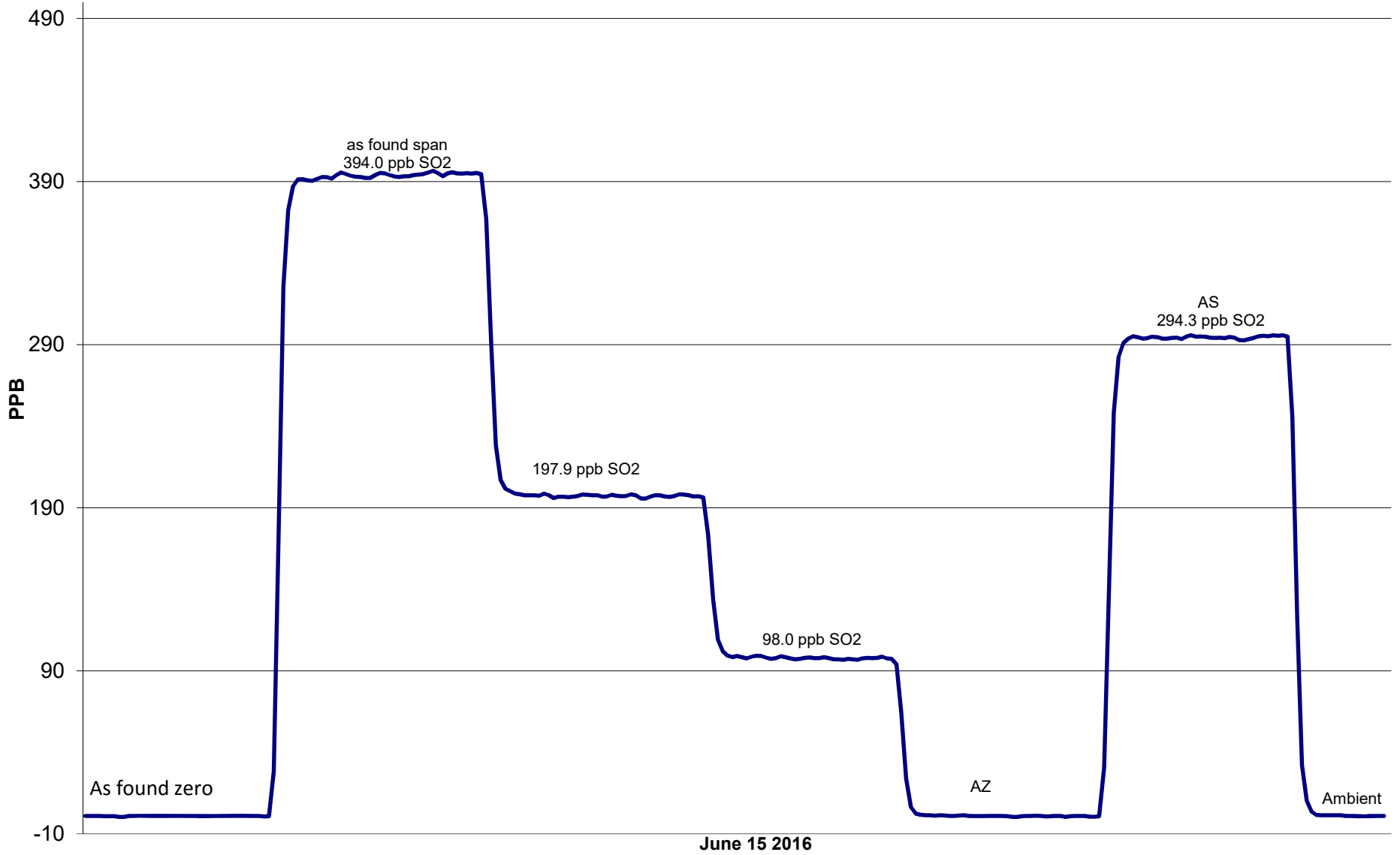
### Calibration Data

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |          |
|-------------------------------------|------------------------------------|---------------------------|-------------------------|----------|
| 0.0                                 | 1.0                                | N/A                       |                         |          |
| 394.0                               | 394.5                              | 0.9988                    | Correlation Coefficient | 0.999968 |
| 197.9                               | 197.2                              | 1.0039                    |                         |          |
| 98.8                                | 97.8                               | 1.0103                    | Slope                   | 1.000076 |
|                                     |                                    |                           | Intercept               | 0.065676 |

## SO2 Calibration Curve



### SO2 Calibration

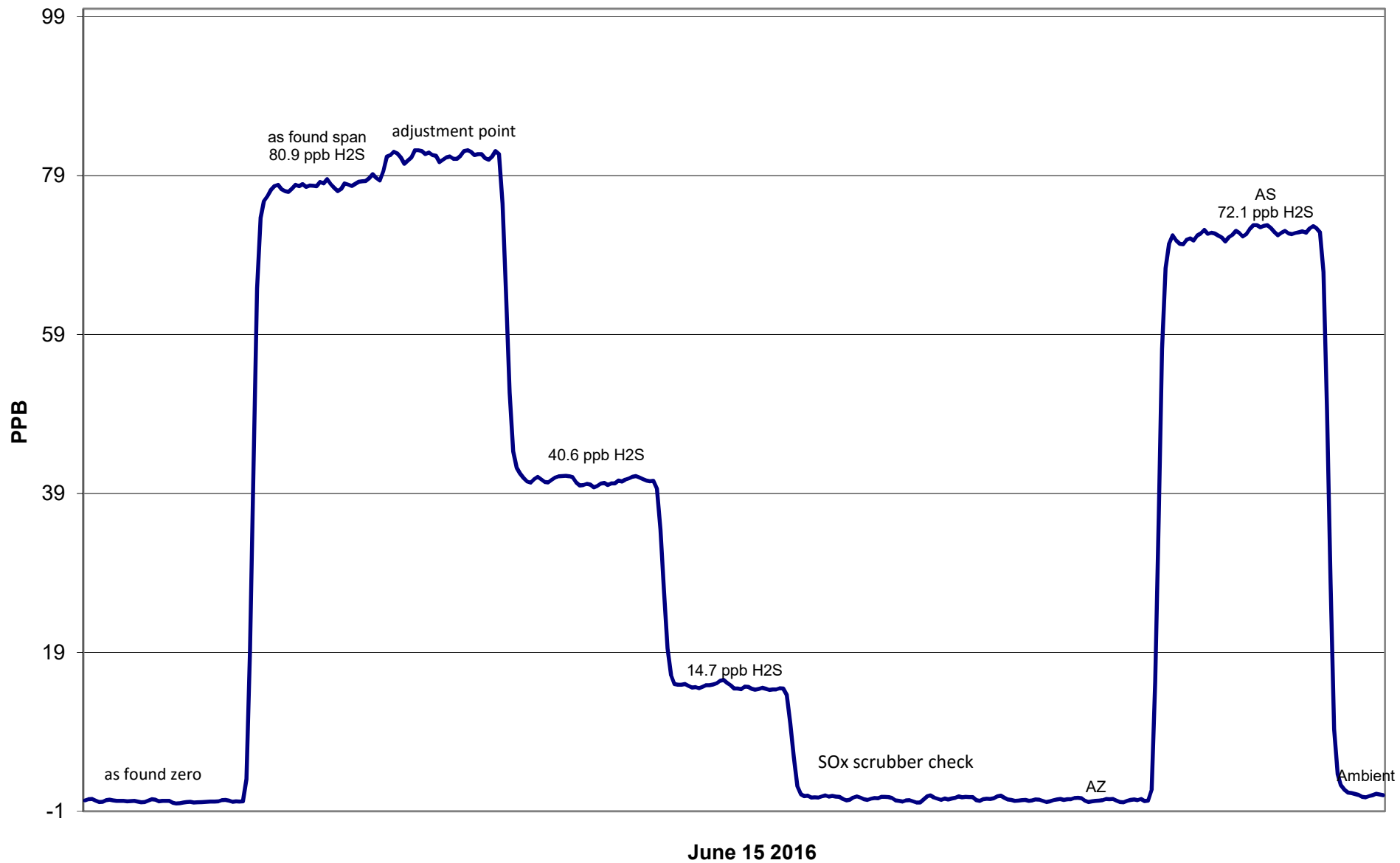








## H2S Calibration



# Calibration Report



**AIR QUALITY MONITORING**

Parameter SO2  
Air Monitoring Network \_\_\_\_\_

PAZA

## Station Information

|                       |   |                                  |                                  |
|-----------------------|---|----------------------------------|----------------------------------|
| Calibration Date      | June 16, 2016                               | Previous Calibration             | May 5, 2016                      |
| Station Number        | 10  | Station Location                 | Clairmont                        |
| Reason:               | <input checked="" type="checkbox"/> Routine | <input type="checkbox"/> Install | <input type="checkbox"/> Removal |
|                       |   | <input type="checkbox"/> Other:  |                                  |
| Start Time (MST)      | 9:40  | End Time (MST)                   | 12:15                            |
| Barometric Pressure   | 0.929 Atm                                   | Station Temperature              | 21.0 Deg C                       |
| Calibrator            | EnviroNics 6103                             | Serial Number                    | 6586                             |
| Cal Gas Concentration | 49.8 ppm                                    | Cal Gas Expiry Date              | 3/10/2017                        |
| Gas Cert Reference    | LL119493                                    |                                  |                                  |
| DACS make             | CR3000                                      | DACS serial No.                  | 5407                             |
| DACS voltage range    | 0 - 5 Volt                                  | DACS channel #                   | 2                                |
|                       | <u>Before</u>                               |                                  | <u>After</u>                     |
| DACS Scale High       | 500   | DACS slope                       | 500                              |
| DACS Scale Low        | 0   | DACS intercept                   | 0                                |
| Calculated slope      | 0.985134                                    | Calculated slope                 | 1.000511                         |
| Calculated intercept  | 1.178760                                    | Calculated intercept             | 1.252912                         |
| Analyzer make         | TEI 43C                                     | Analyzer serial #                | 436610005                        |

|                     | before |       | after |       |
|---------------------|--------|-------|-------|-------|
| Concentration range | 0-500  | ppb   | 0-500 | ppb   |
| Background          | 24     |       | 23.6  |       |
| Coefficient         | 1.077  |       | 1.058 |       |
| UV Lamp Voltage     | 888    | V     | 887   | V     |
| Chamber Temp        | 44.3   | C     | 44.2  | C     |
| Perm Gas Temp       | 45     | C     | 45    | C     |
| Pressure            | 669.3  | mm Hg | 669.2 | mm Hg |
| Sample Flow         | 0.466  | LPM   | 0.466 | LPM   |
| Lamp Intesity       | 30284  | Hz    | 30289 | Hz    |

## Calibration Data

| Dilution air flow rate (cc/min) | Source gas flow rate (cc/min) | Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---------------------------------|-------------------------------|-------------------------------------|------------------------------------|---------------------------|
| 4998                            | 0.00                          | 0.0                                 | 0.1                                | N/A                       |
| 4996                            | 39.95                         | 395.1                               | 394.5                              | 1.0015                    |
| 4997                            | 19.98                         | 198.3                               | 195.6                              | 1.0137                    |
| 4999                            | 9.94                          | 98.8                                | 96.7                               | 1.0223                    |
| 4998                            | 0.00                          | 0.0                                 | 0.1                                | As found zero             |
| 4999                            | 39.93                         | 394.6                               | 402.2                              | As found span             |
| Average Correction Factor       |                               |                                     |                                    | 1.0125                    |

Calculated value of As Found Response: 397.309 ppm      Percent Change of As Found: -0.7%

|           | before calibration |     | after calibration |     |
|-----------|--------------------|-----|-------------------|-----|
| Auto zero | 0.3                | ppm | 0.3               | ppm |
| Auto span | 207.6              | ppm | 208.2             | ppm |

Notes: Span adjustment made

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# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA



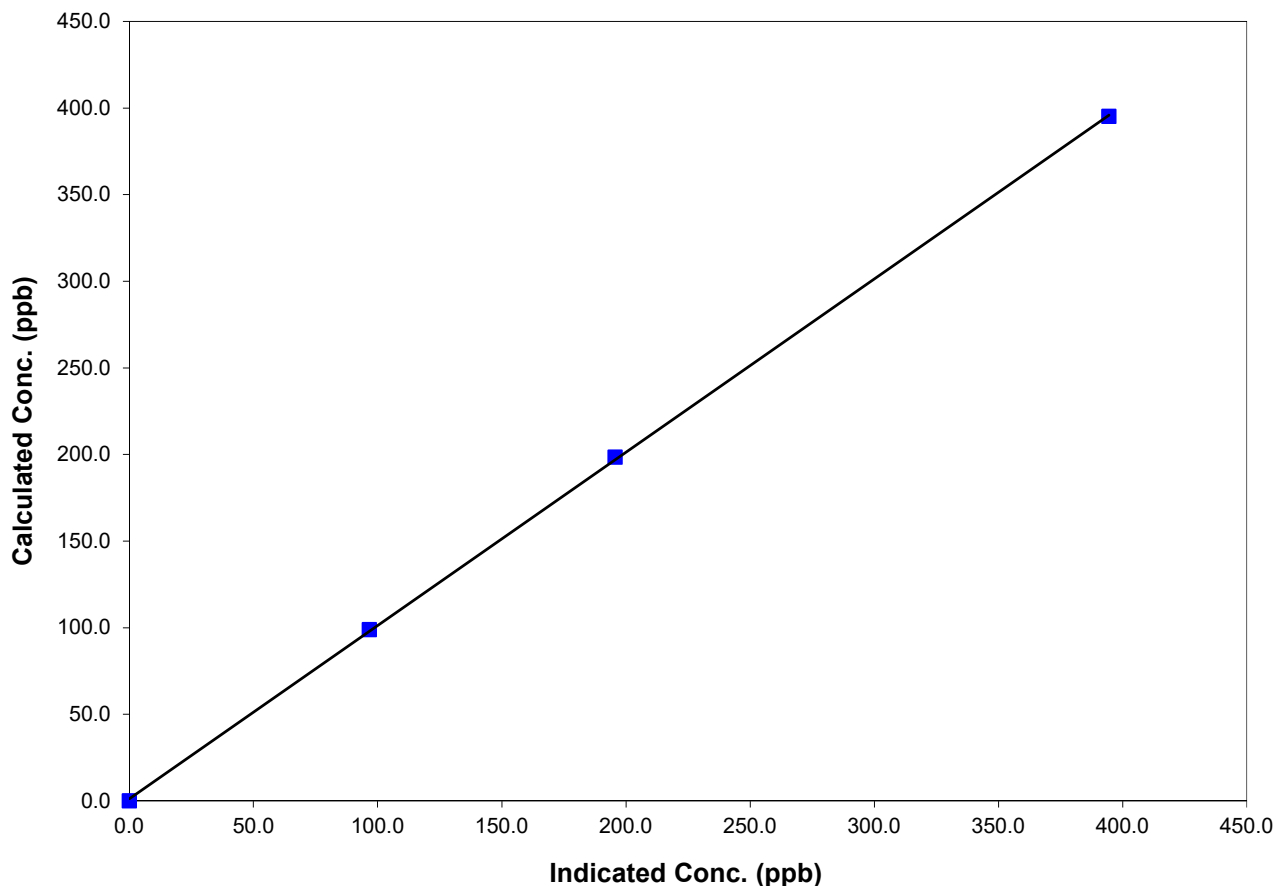
### Station Information

|                     |               |                      |             |
|---------------------|---------------|----------------------|-------------|
| Calibration Date    | June 16, 2016 | Previous Calibration | May 5, 2016 |
| Station Number      | 10            | Station Location     | Clairmont   |
| Start Time (MST)    | 9:40          | End Time (MST)       | 12:15       |
| Analyzer make/model | TEI 43C       | Analyzer serial #    | 436610005   |

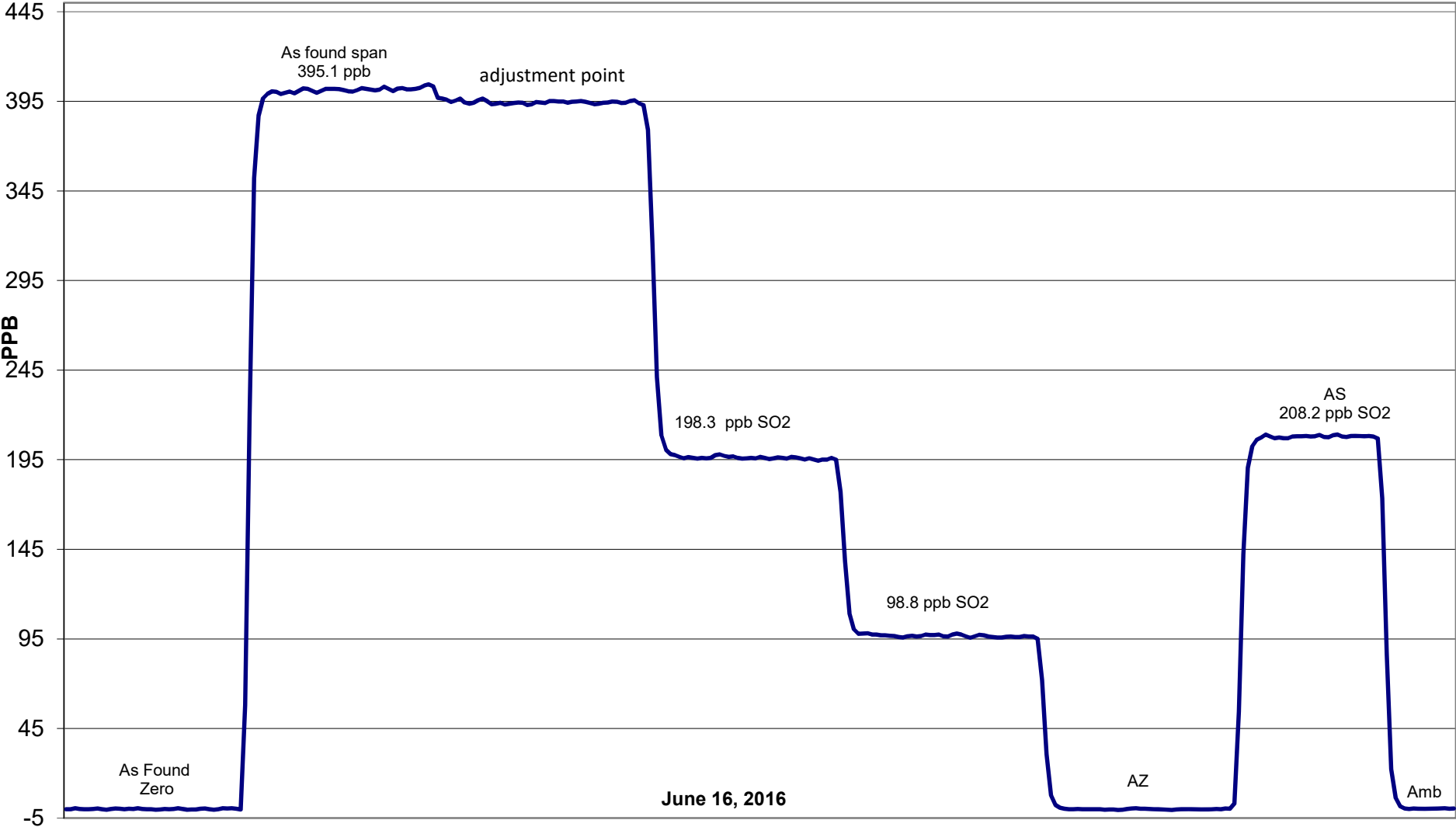
### Calibration Data

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |          |
|-------------------------------------|------------------------------------|---------------------------|-------------------------|----------|
| 0.0                                 | 0.1                                | N/A                       | Correlation Coefficient | 0.999942 |
| 395.1                               | 394.5                              | 1.0015                    |                         |          |
| 198.3                               | 195.6                              | 1.0137                    | Slope                   | 1.000511 |
| 98.8                                | 96.7                               | 1.0223                    |                         |          |
|                                     |                                    |                           | Intercept               | 1.252912 |
|                                     |                                    |                           |                         |          |

## SO2 Calibration Curve



# SO2 Calibration





# Calibration Report



Parameter **NOX-NO-NO2**  
 Air Monitoring Network **PAZA**

## Station Information

Calibration Date: June 16, 2016 Station Location: Rycroft

## Calibration Data

|                           | Dilution flow rate (ccm) | Source gas flow rate (ccm) | Calculated NOx conc (ppb) | Calculated NO conc (ppb) | Calculated NO2 conc (ppb) | Indicated NOx conc (ppb) | Indicated NO conc (ppb) | Indicated NO2 conc (ppb) | NOx Correction factor | NO Correction factor |
|---------------------------|--------------------------|----------------------------|---------------------------|--------------------------|---------------------------|--------------------------|-------------------------|--------------------------|-----------------------|----------------------|
| zero                      | 4994                     | 0.00                       | 0.0                       | 0.0                      | 0.0                       | -0.6                     | -0.3                    | -0.4                     | N/A                   | N/A                  |
| 1                         | 4995                     | 39.92                      | 405.9                     | 403.6                    | 2.4                       | 402.4                    | 401.0                   | -0.5                     | 1.0088                | 1.0063               |
| 2                         | 4994                     | 19.96                      | 203.8                     | 202.6                    | 1.2                       | 198.4                    | 198.1                   | -0.6                     | 1.0271                | 1.0231               |
| 3                         | 4998                     | 9.98                       | 102.0                     | 101.4                    | 0.6                       | 98.5                     | 98.7                    | -0.4                     | 1.0356                | 1.0273               |
| AFZ                       | 4994                     | 0.00                       | 0.0                       | 0.0                      | 0.0                       | -0.6                     | -0.3                    | -0.4                     | 0.0000                | 0.0000               |
| AFS                       | 4999                     | 39.92                      | 405.6                     | 403.2                    | 0.8                       | 412.9                    | 411.7                   | -0.7                     | 0.9824                | 0.9795               |
| Average Correction Factor |                          |                            |                           |                          |                           |                          |                         |                          | 1.0238                | 1.0189               |

As Found Concentrations: NO<sub>x</sub>= 416.7 NO= 413.7 As Found Percent Change NO<sub>x</sub>= 2.7% NO= 2.6%

## GPT Calibration Data

Dilution Flow 4995 ccm Source Gas Flow 39.93 ccm

| O3 Setpoint (ppb)         | Indicated NOx high point (ppb) | Indicated NO drop conc (ppb) | Calculated NO2 conc (ppb) | Indicated NOx conc (ppb) | Indicated NO conc (ppb) | Indicated NO2 conc (ppb) | NOx Correction factor | NO Correction factor | NO2 Correction factor | Converter Efficiency |
|---------------------------|--------------------------------|------------------------------|---------------------------|--------------------------|-------------------------|--------------------------|-----------------------|----------------------|-----------------------|----------------------|
| 0                         | -0.3                           | -0.3                         | 0.0                       | -0.6                     | -0.3                    | -0.4                     | N/A                   | N/A                  | N/A                   | N/A                  |
| NO point                  | 396.6                          | 396.6                        | 0.0                       | 397.8                    | 396.6                   | -0.9                     | 0.9970                | 1.0000               | N/A                   | N/A                  |
| 300                       | 396.6                          | 66.1                         | 330.4                     | 398.1                    | 66.1                    | 330.3                    | 0.9961                | 1.0000               | 1.0005                | 99.9%                |
| 200                       | 396.6                          | 173.4                        | 223.2                     | 399.2                    | 173.4                   | 223.7                    | 0.9935                | 1.0000               | 0.9978                | 100.2%               |
| 100                       | 396.6                          | 287.1                        | 109.5                     | 397.7                    | 287.1                   | 108.5                    | 0.9972                | 1.0000               | 1.0097                | 99.0%                |
| Average Correction Factor |                                |                              |                           |                          |                         |                          | 0.9956                | 1.0000               | 1.0027                | 99.7%                |

## AIC Data

| Parameter | Previous calibration |       |      |     | Current calibration |       |      |     |
|-----------|----------------------|-------|------|-----|---------------------|-------|------|-----|
|           | NOx                  | NO2   | NO   |     | NOx                 | NO2   | NO   |     |
| Auto zero | -0.5                 | -0.2  | -0.2 | ppb | -0.7                | -0.4  | -0.5 | ppb |
| Auto span | 163.3                | 161.8 | 0.9  | ppb | 160.5               | 158.8 | 0.8  | ppb |

Calibration Performed By: Dmytro Dolotii

# Calibration Summary



Parameter NO<sub>2</sub>

Air Monitoring Network PAZA

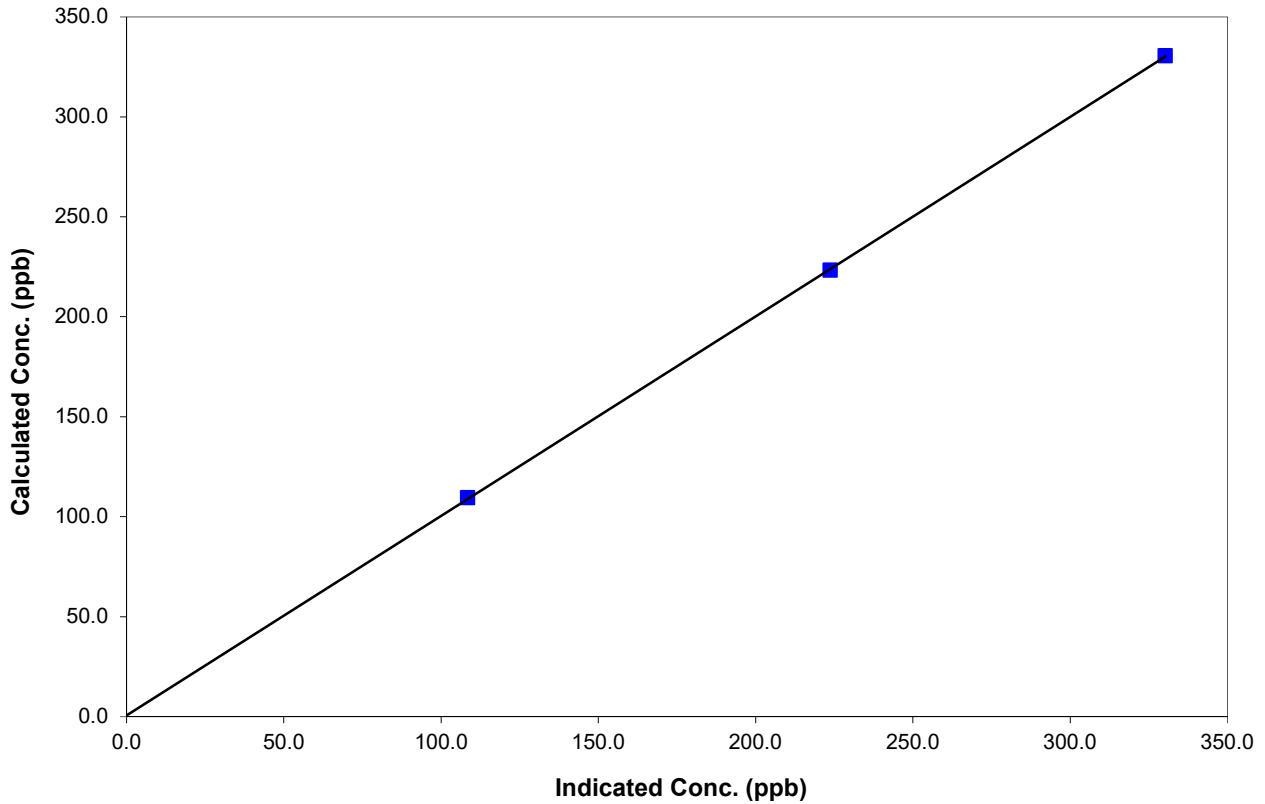
## Station Information

|                  |               |                      |             |
|------------------|---------------|----------------------|-------------|
| Calibration Date | June 16, 2016 | Previous Calibration | May 5, 2016 |
| Station Number   | 10            | Station Location     | Rycroft     |
| Start Time (MST) | 9:45          | End Time (MST)       | 14:00:00 PM |
| Analyzer make    | TEI 42i       | Analyzer serial #    | 0701120011  |

## Calibration Data

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |          |
|----------------------------|------------------------------------|---------------------------|-------------------------|----------|
| 0.0                        | -0.4                               | N/A                       | Correlation Coefficient | 0.999985 |
| 330.4                      | 330.3                              | 1.0005                    |                         |          |
| 223.2                      | 223.7                              | 0.9978                    | Slope                   | 0.997829 |
| 109.5                      | 108.5                              | 1.0097                    |                         |          |
|                            |                                    |                           |                         |          |

**NO<sub>2</sub> Calibration Curve**



# Calibration Summary



Parameter NO<sub>x</sub>

Air Monitoring Network PAZA

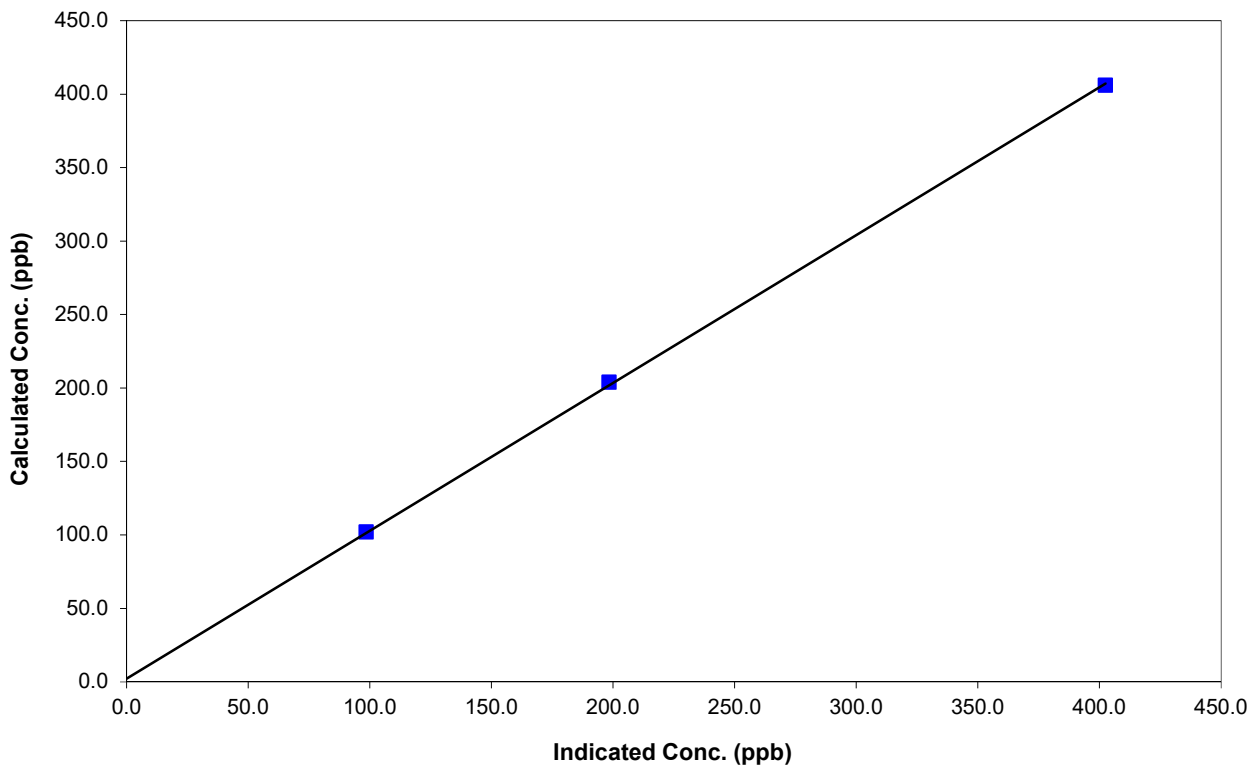
## Station Information

|                  |               |                      |             |
|------------------|---------------|----------------------|-------------|
| Calibration Date | June 16, 2016 | Previous Calibration | May 5, 2016 |
| Station Number   | 10            | Station Location     | Rycroft     |
| Start Time (MST) | 9:45          | End Time (MST)       | 14:00:00 PM |
| Analyzer make    | TEI 42i       | Analyzer serial #    | 0701120011  |

## Calibration Data

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |          |
|----------------------------|------------------------------------|---------------------------|-------------------------|----------|
| 0.0                        | -0.6                               | N/A                       | Correlation Coefficient | 0.999908 |
| 405.9                      | 402.4                              | 1.0088                    |                         |          |
| 203.8                      | 198.4                              | 1.0271                    | Slope                   | 1.006380 |
| 102.0                      | 98.5                               | 1.0356                    |                         |          |
|                            |                                    |                           |                         |          |
|                            |                                    |                           | Intercept               | 2.138174 |

## NO<sub>x</sub> Calibration Curve





# Calibration Summary



Parameter NO  
 Air Monitoring Network PAZA

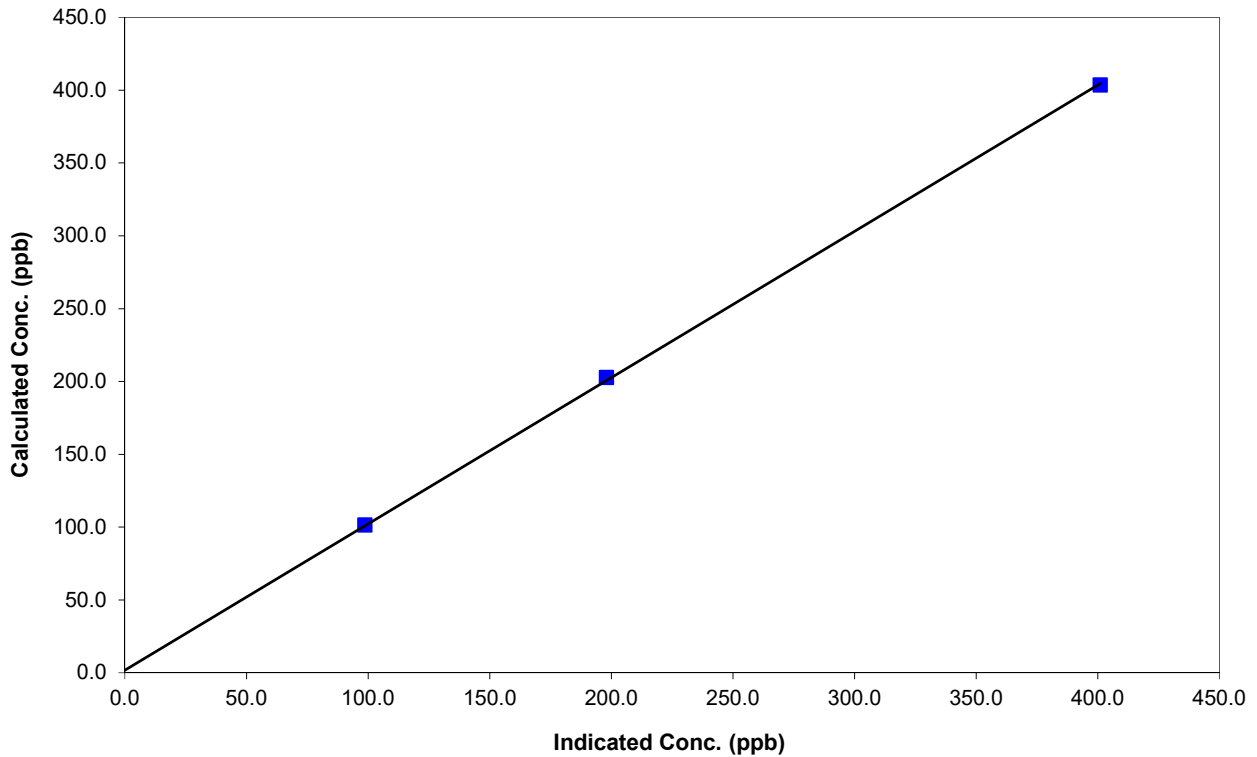
## Station Information

|                  |               |                      |             |
|------------------|---------------|----------------------|-------------|
| Calibration Date | June 16, 2016 | Previous Calibration | May 5, 2016 |
| Station Number   | 10            | Station Location     | Rycroft     |
| Start Time (MST) | 9:45          | End Time (MST)       | 14:00:00 PM |
| Analyzer make    | TEI 42i       | Analyzer serial #    | 0701120011  |

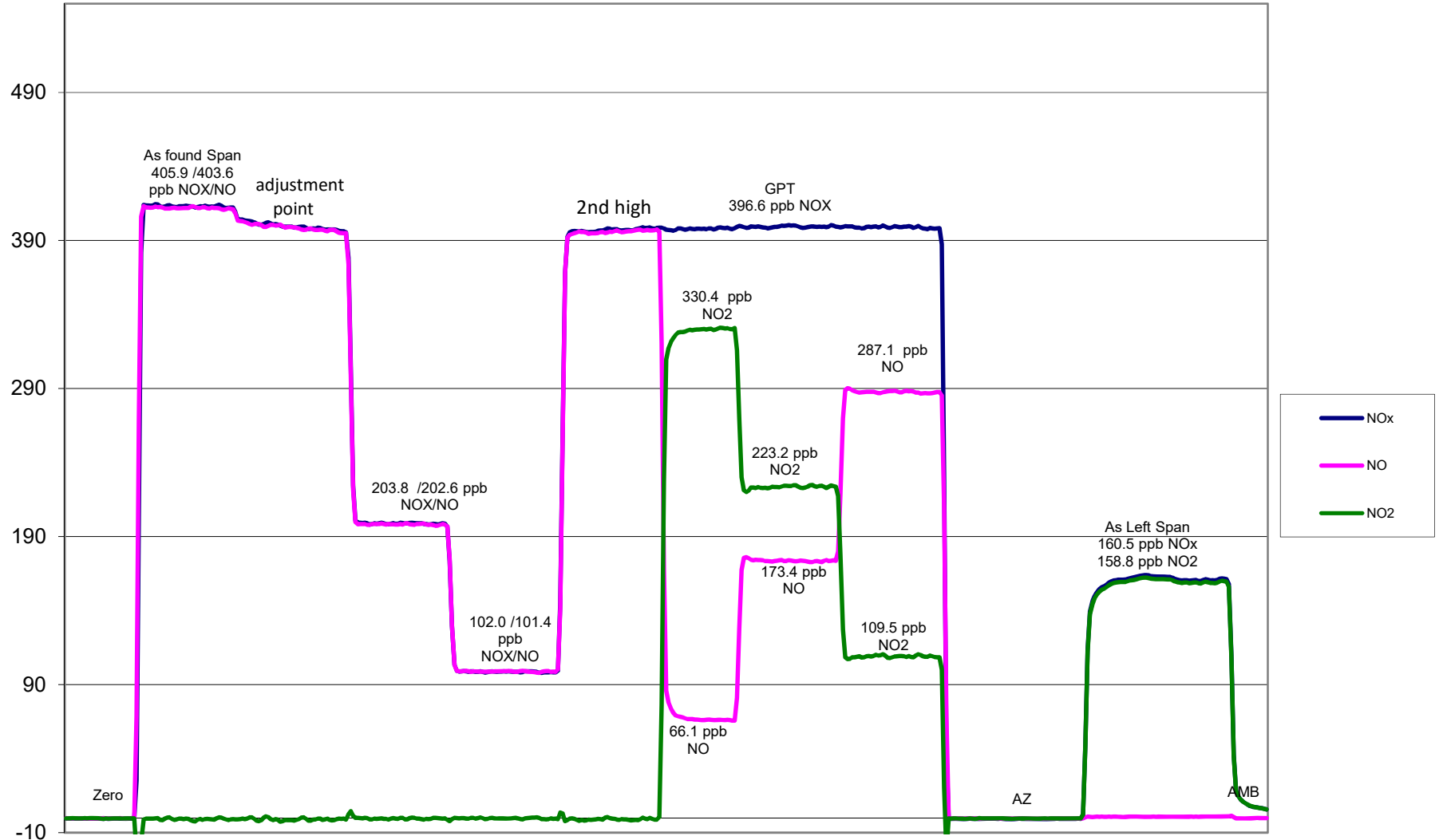
## Calibration Data

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |          |
|----------------------------|------------------------------------|---------------------------|-------------------------|----------|
| 0.0                        | -0.3                               | N/A                       | Correlation Coefficient | 0.999921 |
| 403.6                      | 401.0                              | 1.0063                    |                         |          |
| 202.6                      | 198.1                              | 1.0231                    |                         |          |
| 101.4                      | 98.7                               | 1.0273                    |                         |          |
|                            |                                    |                           | Slope                   | 1.004732 |
|                            |                                    |                           | Intercept               | 1.708379 |

## NO Calibration Curve



# NO<sub>x</sub> Calibration



June 16, 2016

# Calibration Report



AIR QUALITY MONITORING

Parameter 03

Air Monitoring Network PAZA

## Station Information

|                      |                                  |   |                                  |
|----------------------|----------------------------------|---|----------------------------------|
| Calibration Date     | June 16 2016                     | Previous Calibration                        | May 5 2016                       |
| Station Number       | 10                               | Station Location                            | Rycroft                          |
| Reason:              | <input type="checkbox"/> Routine | <input checked="" type="checkbox"/> Install | <input type="checkbox"/> Removal |
|                      |                                  | <input type="checkbox"/> Other:             |                                  |
| Start Time (MST)     | 12:40                            | End Time (MST)                              | 15:40:00 PM                      |
| Barometric Pressure  | 0.929 atm                        | Station Temperature                         | 21.0 Deg C                       |
| Calibrator           | Envionics 6103                   | Serial Number                               | 6586                             |
| DACS make            | CR3000                           | DACS serial No.                             | 5407                             |
| DACS voltage range   | 0 - 5 Volts                      | DACS channel #                              | 6                                |
|                      | Before                           |   | After                            |
| Calculated slope     | 0.991704                         | Calculated slope                            | 0.999563                         |
| Calculated intercept | 1.688310                         | Calculated intercept                        | 0.496297                         |
| Analyzer make        | Model 49-I                       | Analyzer serial #                           | 1153630156                       |

|                     | before |       | after  |       |
|---------------------|--------|-------|--------|-------|
| Concentration range | 0-500  | ppb   | 0-500  | ppb   |
| Offset              | -0.6   | ppb   | -0.6   | ppb   |
| Span                | 0.994  |       | 0.994  |       |
| Cell A intensity    | 97110  | Hz    | 97110  | Hz    |
| Cell B intensity    | 128897 | Hz    | 128897 | Hz    |
| Pressure            | 690.10 | in Hg | 690.10 | in Hg |
| CellA Flow          | 0.690  | ccm   | 0.690  | ccm   |
| Cell B Flow         | 0.688  | cmm   | 0.688  | cmm   |

## Calibration Data

| Dilution air flow rate (cc/min) | Source gas flow rate (cc/min) | Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---------------------------------|-------------------------------|-------------------------------------|------------------------------------|---------------------------|
| 5015                            | 0.00                          | 0.0                                 | 0.3                                | N/A                       |
| 5020                            | 0.30                          | 330.4                               | 331.2                              | 0.9977                    |
| 5025                            | 0.20                          | 223.2                               | 221.4                              | 1.0083                    |
| 5020                            | 0.10                          | 109.5                               | 108.6                              | 1.0085                    |
| 5015                            | 0.00                          | 0.0                                 | -0.6                               | As found zero             |
| 5020                            | 0.30                          | 330.4                               | 336.0                              | As found span             |
| Average Correction Factor       |                               |                                     |                                    | 1.0048                    |

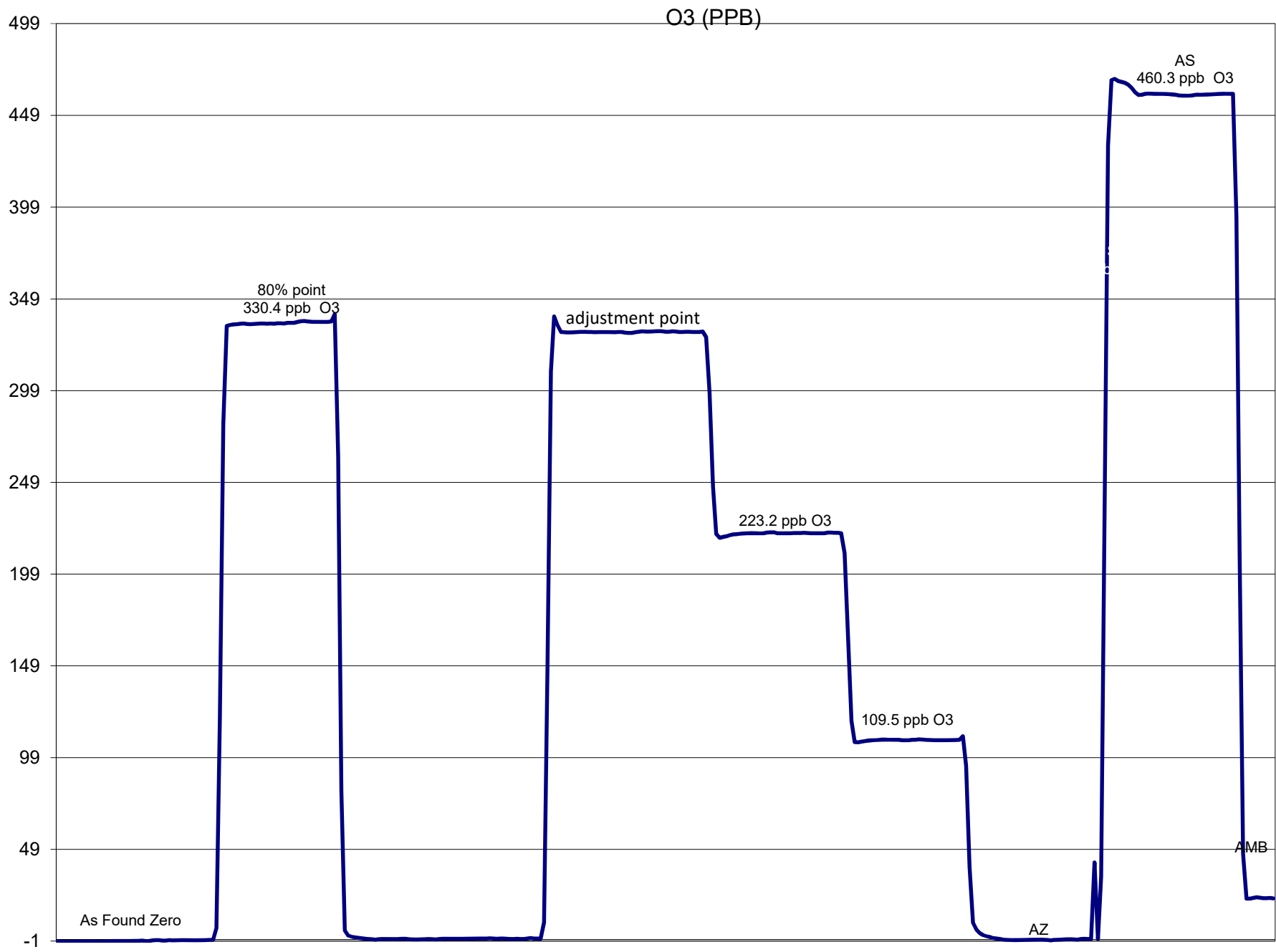
Calculated value of As Found Response: 335.5 ppm      Percent Change of As Found: 1.6%

|           | before calibration |     | after calibration |     |
|-----------|--------------------|-----|-------------------|-----|
| Auto zero | 0.3                | ppb | -0.2              | ppb |
| Auto span | 455.1              | ppb | 460.3             | ppb |

Notes: Zero & span adjustment made

Calibration Performed By: Dmytro Dolotii





June 16 2016

# Calibration Report



Parameter THC  
 Air Monitoring Network PAZA

### Station Information

|                       |   |                                  |                                  |
|-----------------------|---|----------------------------------|----------------------------------|
| Calibration Date      | June 17, 2016                               | Previous Calibration             | May 6, 2016                      |
| Station Number        | 10  | Station Location                 | Rycroft Rover                    |
| Reason:               | <input checked="" type="checkbox"/> Routine | <input type="checkbox"/> Install | <input type="checkbox"/> Removal |
|                       |   | <input type="checkbox"/> Other:  |                                  |
| Start Time (MST)      | 11:00                                       | End Time (MST)                   | 13:25:00 PM                      |
| Barometric Pressure   | 0.925 ATM                                   | Station Temperature              | 21.0 Deg C                       |
| Calibrator            | EnviroNics 6103                             | Serial Number                    | 6586                             |
| Cal Gas Concentration | 404 ppm CH4/ 201 ppm C3H8                   | Cal Gas Expiry Date              | 3/28/2014                        |
| Cal Gas CH4 equiv     | 956.75 ppm                                  | Cal Gas Cylinder #               | LL34989                          |
| DACS make             | CR3000                                      | DACS serial No.                  | 5407                             |
| DACS voltage range    | 0 - 1 volt                                  | DACS channel #                   | 12                               |
|                       | <u>Before</u>                               |                                  | <u>After</u>                     |
| Calculated slope      | 0.994643                                    | Calculated slope                 | 0.994075                         |
| Calculated intercept  | 0.159637                                    | Calculated intercept             | 0.186416                         |
| Analyzer make         | TEI Model 51C-LT                            | Analyzer serial #                | 51CLT-79009-390                  |

|                     | before |         | after  |         |
|---------------------|--------|---------|--------|---------|
| Concentration range | 0 - 25 | ppm     | 0 - 25 | ppm     |
| THC sample pressure | 6.50   | psi     | 6.50   | psi     |
| THC zero counts     | 1510   | capture | 1510   | capture |
| THC span counts     | 11040  | capture | 11040  | capture |
| THC zero offset     | 2273   | capture | 2273   | capture |
| THC span offset     | 2267   | capture | 2267   | capture |

### Calibration Data

| Dilution air flow rate (cc/min) | Source gas flow rate (cc/min) | Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---------------------------------|-------------------------------|-------------------------------------|------------------------------------|---------------------------|
| 2993                            | 0.00                          | 0.00                                | 0.02                               | N/A                       |
| 2998                            | 69.93                         | 21.81                               | 21.83                              | 0.9990                    |
| 2997                            | 29.94                         | 9.46                                | 9.18                               | 1.0304                    |
| 2998                            | 9.97                          | 3.17                                | 2.87                               | 1.1061                    |
|                                 |                               |                                     |                                    |                           |
| 2993                            | 0.00                          | 0.00                                | 0.02                               | As Found Zero             |
| 2996                            | 69.93                         | 21.82                               | 21.83                              | As Found Span             |
| Average Correction Factor       |                               |                                     |                                    | 1.0452                    |

Calculated value of As Found Response: 21.857 ppm      Percent Change of As Found: -0.2%

|           | before calibration |     | after calibration |     |
|-----------|--------------------|-----|-------------------|-----|
| Auto zero | 0.04               | ppm | 0.02              | ppm |
| Auto span | 22.57              | ppm | 22.53             | ppm |

Notes: NO adjustment made  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

# Calibration Summary

Parameter THC  
 Air Monitoring Network PAZA



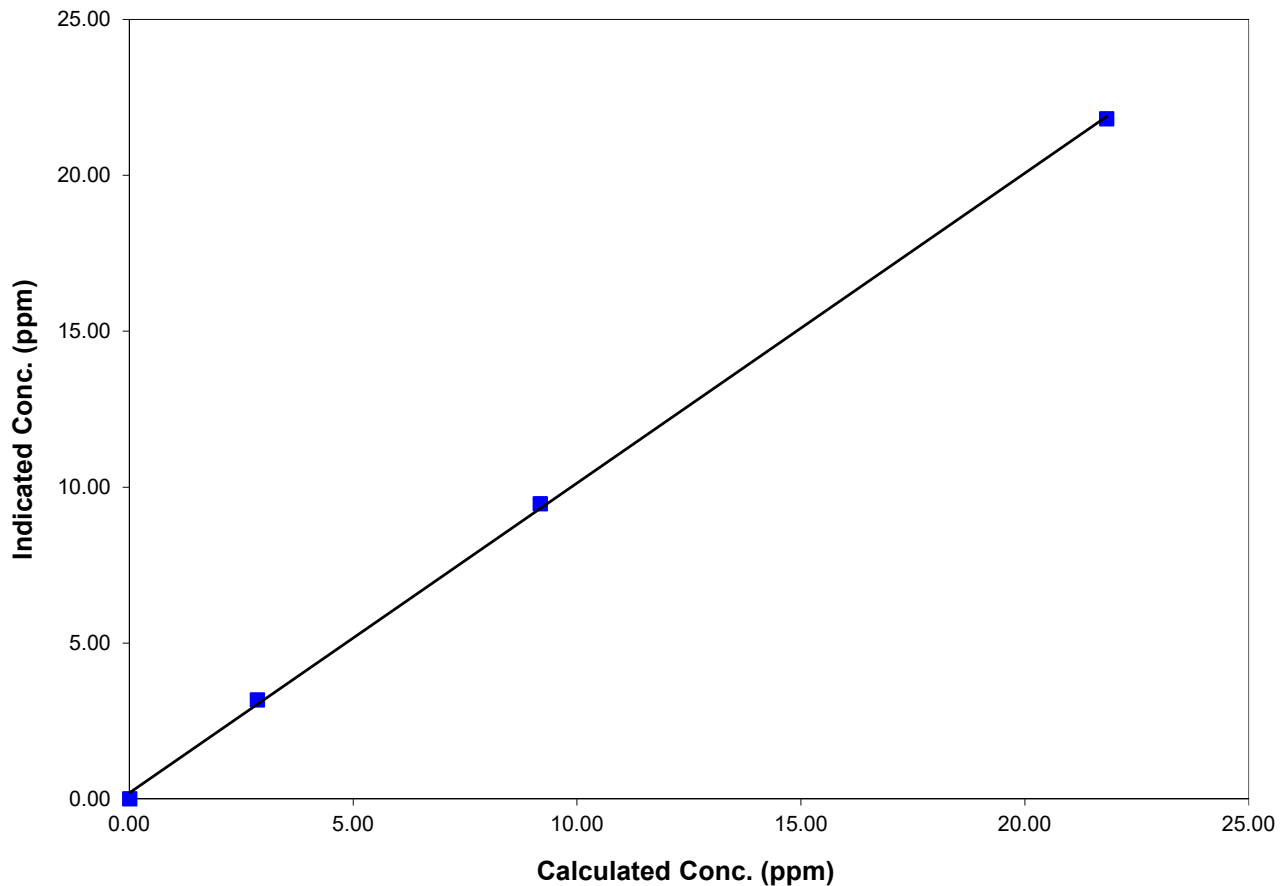
### Station Information

|                     |                  |                      |                 |
|---------------------|------------------|----------------------|-----------------|
| Calibration Date    | June 17, 2016    | Previous Calibration | May 6, 2016     |
| Station Number      | 10               | Station Location     | Rycroft Rover   |
| Start Time (MST)    | 11:00            | End Time (MST)       | 13:25:00 PM     |
| Analyzer make/model | TEI Model 51C-LT | Analyzer serial #    | 51CLT-79009-390 |

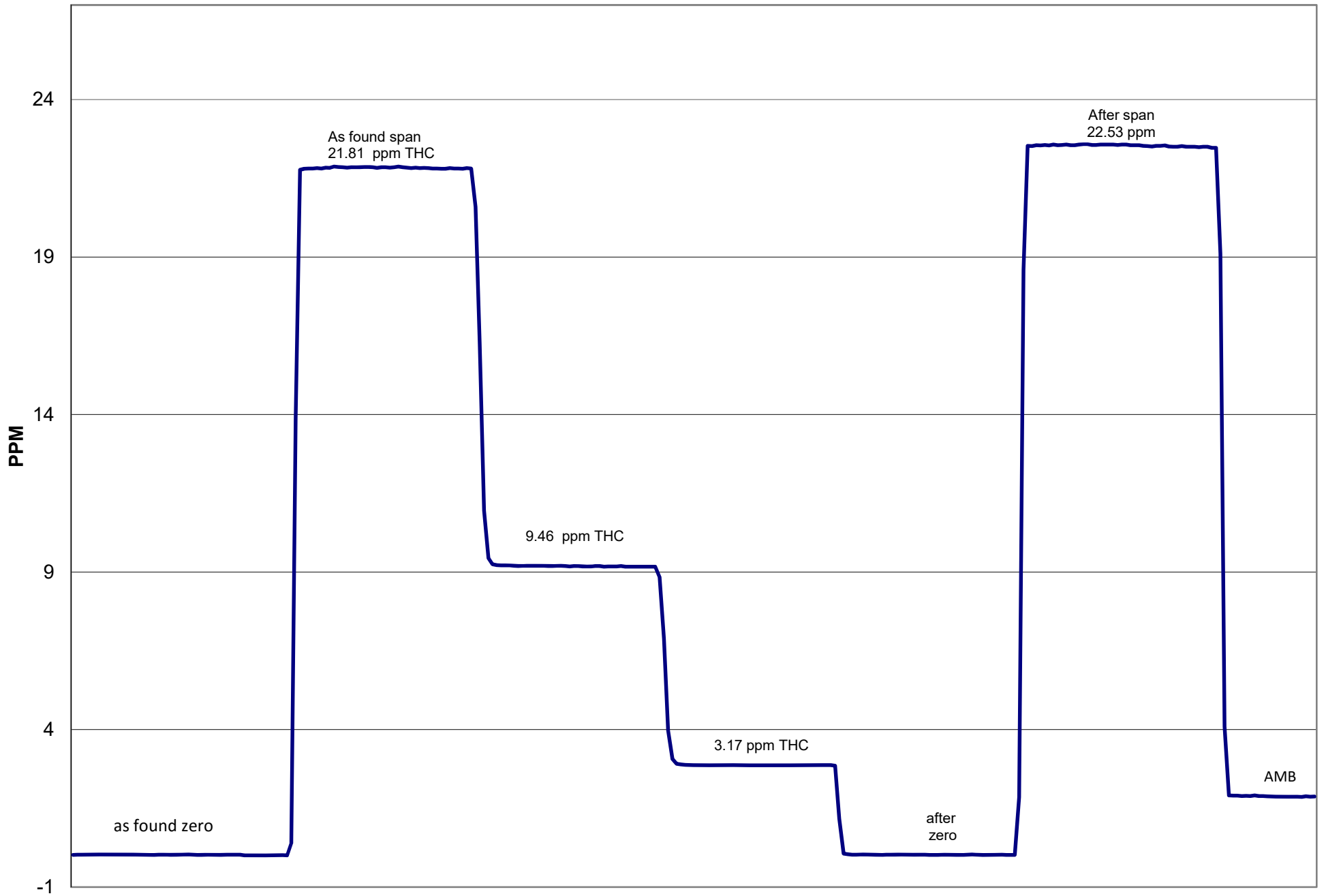
### Calibration Data

| Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |          |
|-------------------------------------|------------------------------------|---------------------------|-------------------------|----------|
| 0.000                               | 0.016                              | N/A                       | Correlation Coefficient | 0.999687 |
| 21.81                               | 21.83                              | 0.9990                    |                         |          |
| 9.46                                | 9.18                               | 1.0304                    | Slope                   | 0.994075 |
| 3.17                                | 2.87                               | 1.1061                    |                         |          |
|                                     |                                    |                           | Intercept               | 0.186416 |

## THC Calibration Curve



# THC Calibration





# Calibration Report



Parameter THC  
 Air Monitoring Network PAZA

### Station Information

|                       |   |                                  |                                  |
|-----------------------|---|----------------------------------|----------------------------------|
| Calibration Date      | June 26, 2016                               | Previous Calibration             | June 17, 2016                    |
| Station Number        | 10  | Station Location                 | Rycroft Rover                    |
| Reason:               | <input checked="" type="checkbox"/> Routine | <input type="checkbox"/> Install | <input type="checkbox"/> Removal |
|                       |   | <input type="checkbox"/> Other:  |                                  |
| Start Time (MST)      | 9:40  | End Time (MST)                   | 12:25                            |
| Barometric Pressure   | 0.925 ATM                                   | Station Temperature              | 21.0 Deg C                       |
| Calibrator            | EnviroNics 6103                             | Serial Number                    | 6586                             |
| Cal Gas Concentration | 404 ppm CH4/ 201 ppm C3H8                   | Cal Gas Expiry Date              | 3/28/2014                        |
| Cal Gas CH4 equiv     | 956.75 ppm                                  | Cal Gas Cylinder #               | LL34989                          |
| DACS make             | CR3000                                      | DACS serial No.                  | 5407                             |
| DACS voltage range    | 0 - 1 volt                                  | DACS channel #                   | 12                               |
|                       | <u>Before</u>                               |                                  | <u>After</u>                     |
| Calculated slope      | 0.994643                                    | Calculated slope                 | 1.003289                         |
| Calculated intercept  | 0.159637                                    | Calculated intercept             | 0.192663                         |
| Analyzer make         | TEI Model 51C-LT                            | Analyzer serial #                | 51CLT-79009-390                  |

|                     | before |         | after  |         |
|---------------------|--------|---------|--------|---------|
| Concentration range | 0 - 25 | ppm     | 0 - 25 | ppm     |
| THC sample pressure | 6.50   | psi     | 6.50   | psi     |
| THC zero counts     | 1510   | capture | 1510   | capture |
| THC span counts     | 11040  | capture | 11040  | capture |
| THC zero offset     | 2273   | capture | 2273   | capture |
| THC span offset     | 2267   | capture | 2267   | capture |

### Calibration Data

| Dilution air flow rate (cc/min) | Source gas flow rate (cc/min) | Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---------------------------------|-------------------------------|-------------------------------------|------------------------------------|---------------------------|
| 2996                            | 0.00                          | 0.00                                | -0.02                              | N/A                       |
| 2998                            | 69.96                         | 21.82                               | 21.63                              | 1.0088                    |
| 2997                            | 29.98                         | 9.48                                | 9.12                               | 1.0395                    |
| 2998                            | 9.99                          | 3.18                                | 2.87                               | 1.1088                    |
|                                 |                               |                                     |                                    |                           |
| 2996                            | 0.00                          | 0.00                                | 0.02                               | As Found Zero             |
| 2996                            | 69.93                         | 21.82                               | 21.63                              | As Found Span             |
| Average Correction Factor       |                               |                                     |                                    | 1.0524                    |

Calculated value of As Found Response: 21.648 ppm      Percent Change of As Found: 0.8%

|           | before calibration |     | after calibration |     |
|-----------|--------------------|-----|-------------------|-----|
| Auto zero | 0.04               | ppm | 0.03              | ppm |
| Auto span | 22.57              | ppm | 22.23             | ppm |

Notes: NO adjustment made  
 Hydrogen cylinder changed

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# Calibration Summary



Parameter THC  
 Air Monitoring Network PAZA

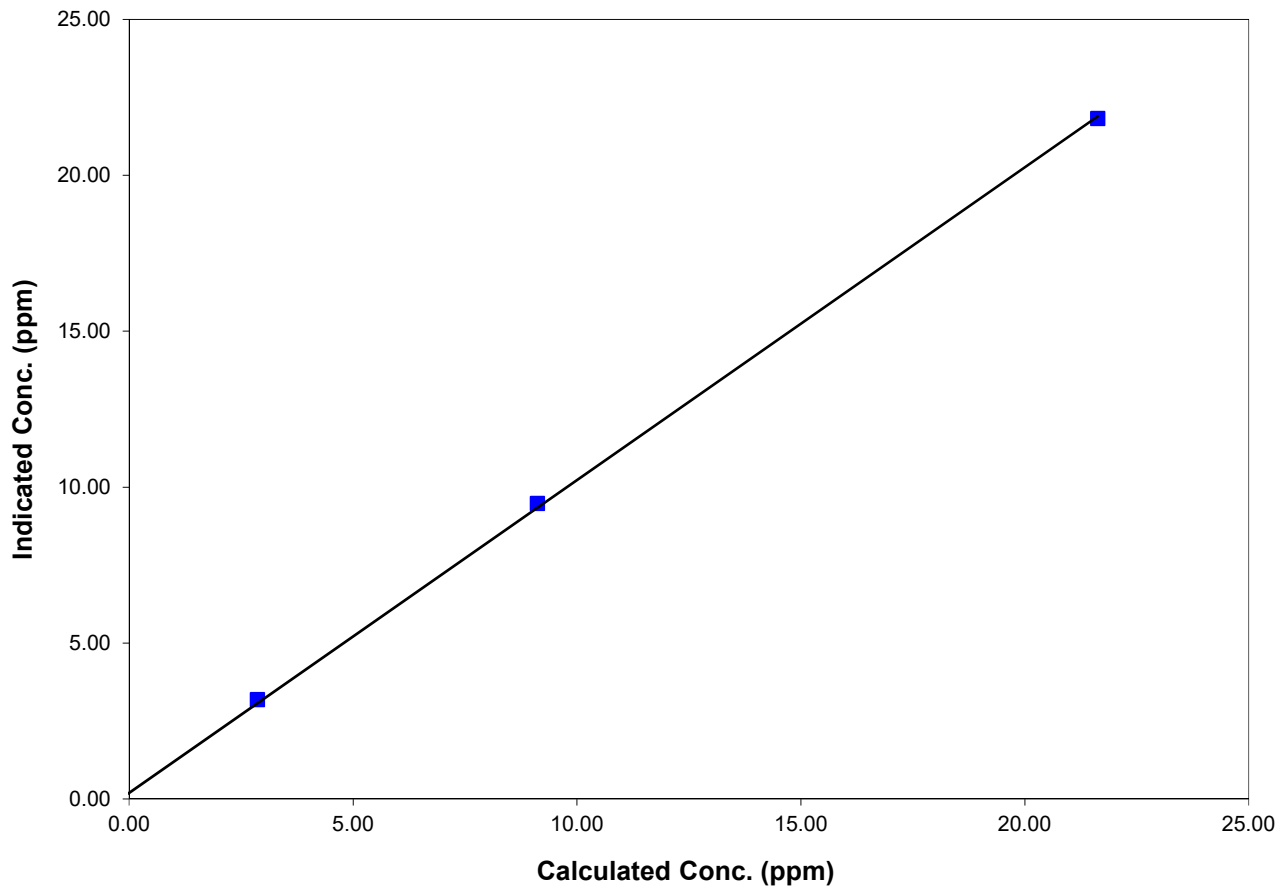
### Station Information

|                     |                  |                      |                 |
|---------------------|------------------|----------------------|-----------------|
| Calibration Date    | June 26, 2016    | Previous Calibration | June 17, 2016   |
| Station Number      | 10               | Station Location     | Rycroft Rover   |
| Start Time (MST)    | 9:40             | End Time (MST)       | 12:25           |
| Analyzer make/model | TEI Model 51C-LT | Analyzer serial #    | 51CLT-79009-390 |

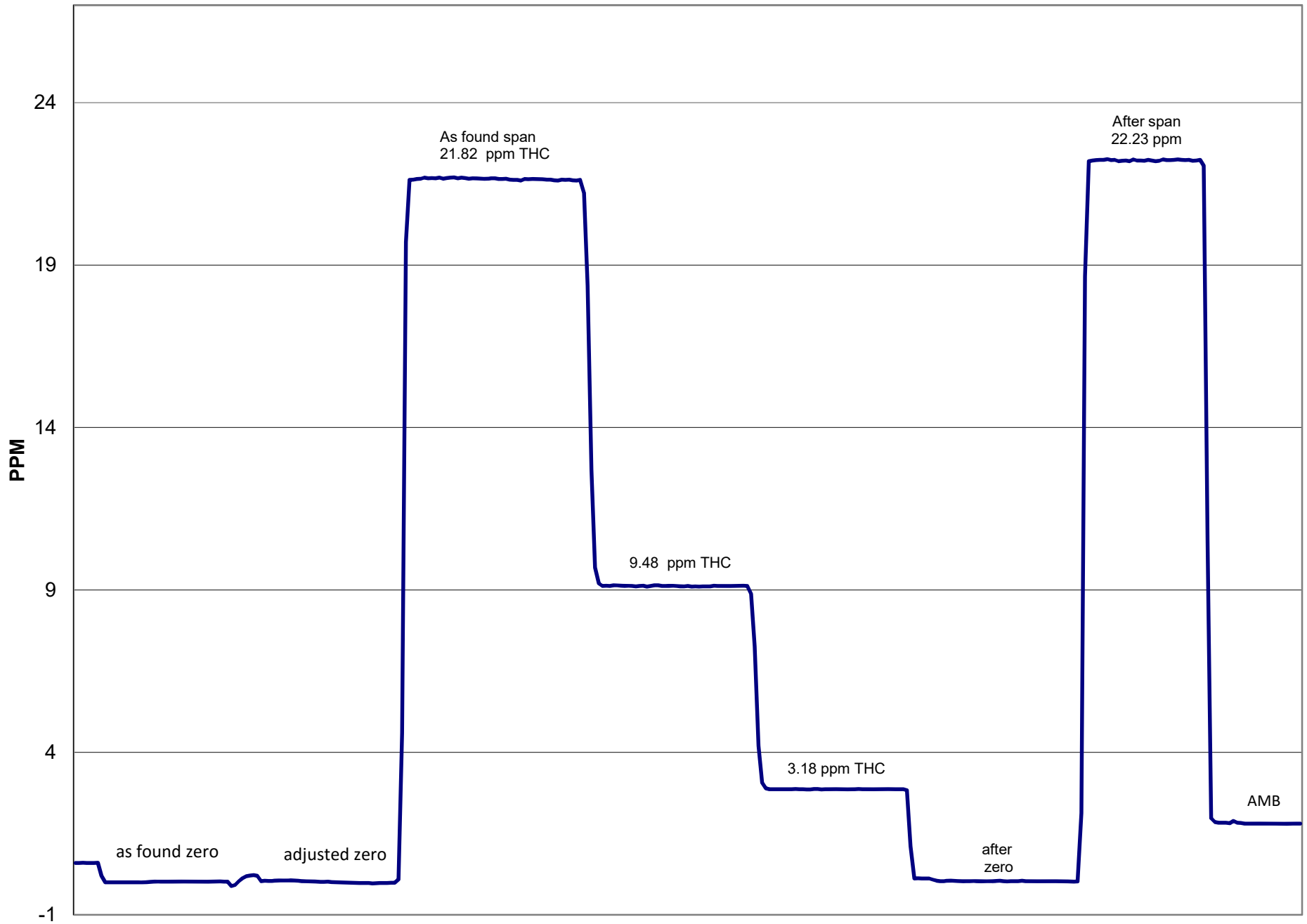
### Calibration Data

| Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation  |          |
|-------------------------------------|------------------------------------|---------------------------|-------------------------|----------|
| 0.000                               | -0.018                             | N/A                       |                         |          |
| 21.82                               | 21.63                              | 1.0088                    | Correlation Coefficient | 0.999760 |
| 9.48                                | 9.12                               | 1.0395                    |                         |          |
| 3.18                                | 2.87                               | 1.1088                    | Slope                   | 1.003289 |
|                                     |                                    |                           | Intercept               | 0.192663 |

## THC Calibration Curve



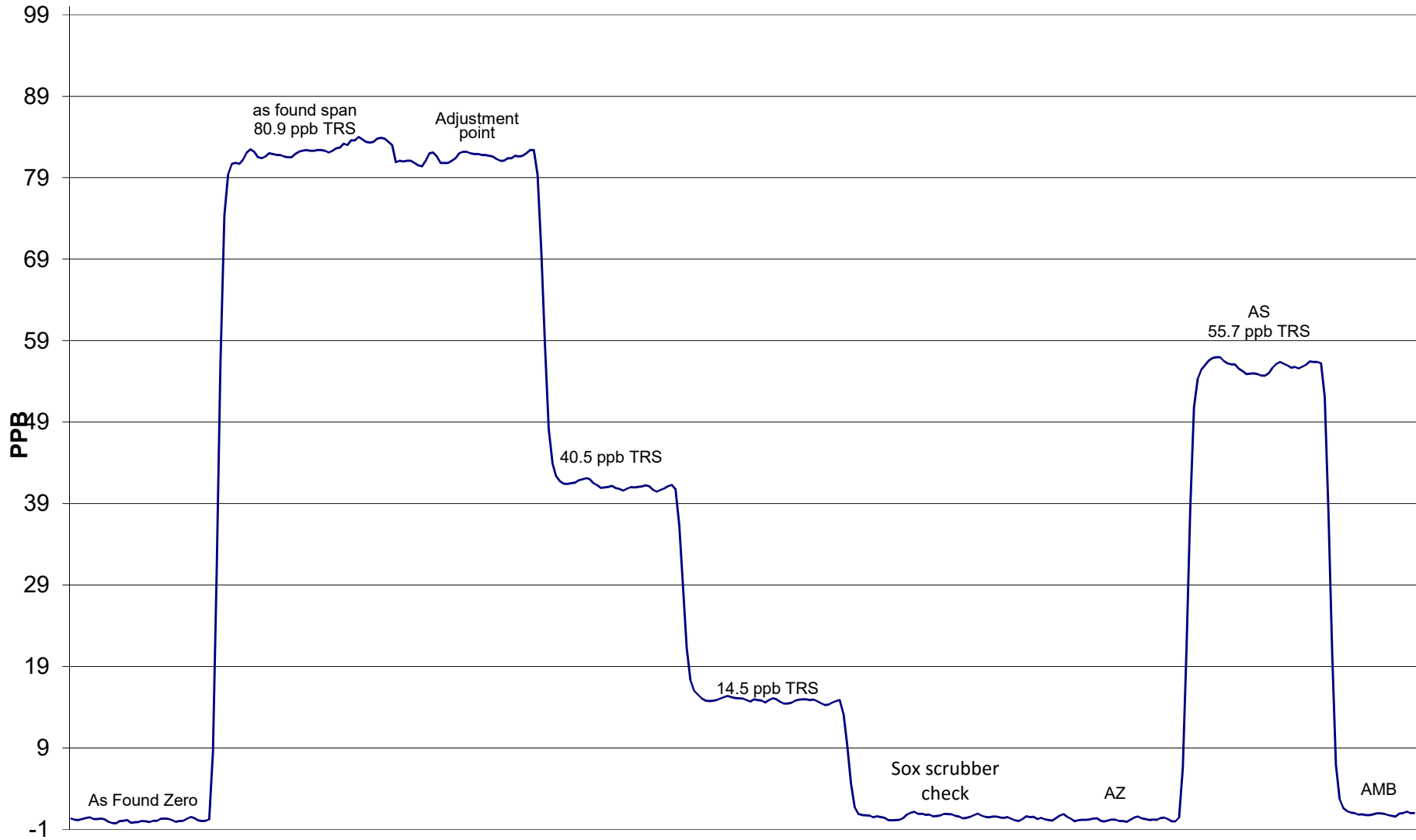
# THC Calibration







# TRS Calibration



June 17, 2016

# PAZA

## **ALBERTA ENVIRONMENT AND PARKS INCIDENCE REPORT**

### **June 2016**

## Air Monitoring Directive Exceedance Report

**Alberta Environmental Monitoring, Evaluation and Reporting Agency**  
**Energy & Environmental Response**  
 111 Twin Atria Building  
 4999 – 98<sup>th</sup> Avenue  
 Edmonton, Alberta T6B 2X3  
[erc.environment@gov.ab.ca](mailto:erc.environment@gov.ab.ca)  
 Phone: (780) 422-4505  
 Fax: (780) 427-1044

|  |                         |  |                         |
|--|-------------------------|--|-------------------------|
| <b>Reference Number:</b><br>312948   |                         | <b>Reported To (AESRD Contact):</b> Steven |                         |
| <b>Date &amp; Time Incident Reported to AESRD:</b>   | June 22 2016 08:35      | <b>Reported By:</b>                        | Dmytro Dolotii          |
| <b>Reported on Behalf of:</b>  | PAZA                    | <b>Approval Number (if applicable):</b>    | N/A                     |
| <b>Location(s) of Incident:</b> Rycroft Rover station  |                         |  |                         |
| <b>Start Date &amp; Time of Incident:</b>  | June 21, 2016 15:00 MST | <b>End Date &amp; Time of Incident:</b>    | June 21, 2016 16:00 MST |
| <b>Reason or Nature of Incident:</b>   |                         |  |                         |
| The PM <sub>2.5</sub> analyzer (TEOM) within the Rycroft station, currently located on Secure Energy property in Rycroft AB, exceeded the AENV 1 hour average PM <sub>2.5</sub> guideline (80 µg/m <sup>3</sup> ) as detailed below:<br><b>15:00-16:00 MST, June 21 2016:</b><br><b>PM2.5 111.3 µg/m3 WS: 7.6 km/hr, WD: 211.9 degrees, Temp: 26.0 C</b> |                         |  |                         |
| <b>Immediate Actions Taken:</b>  |                         |  |                         |
| Confirmed validity of data and called in the exceedance to AEMERA<br>Called Sam Purvis at Secure Energy to inquire about any activity that occurred near monitoring trailer that may have contributed to the PM2.5 hourly exceedance.  |                         |  |                         |
| <b>Investigation Details:</b>  |                         |  |                         |
| Spraying for weed control was done in the area when exceedance occurred. ATV's and other equipment were used to spray for weed control. This activity created road dust from gravel road located within 50 feet of monitoring trailer causing an elevated reading for PM 2.5.  |                         |  |                         |
| <b>Actions Taken to Prevent Reoccurrence (if any):</b>   |                         |  |                         |
| Sam Purvis to notify WSP AQM department next time any work which could cause an exceedance or adversely affect the monitoring parameters is done in the area.  |                         |  |                         |
| <b>Additional Actions Required (if any):</b>   |                         |  |                         |
| N/A  |                         |  |                         |
| <b>Report Completed By:</b>  | Dmytro Dolotii          | <b>Date Report Submitted:</b>              | June 22 2016            |
| <b>7-Day Letter Due Date:</b>  | June 29 2016            |  |                         |