
# Peace AirShed Zone Association

## Ambient Air Monitoring Network Summary

### Continuous Ambient Air Quality Monitoring Program
### Monthly Report
### July 2010

**Operations and Reporting**

FOCUS
AIR QUALITY MONITORING

PASZA
Peace AirShed Zone Association

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September 7, 2010

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**RE: Peace Airshed Zone Association (PASZA) – July 2010 Ambient Air Report**

Enclosed is the PASZA Ambient Monitoring Network Report for the month of **July 2010**.

**Continuous Monitoring:** **Six (6) Stations including Henry Pirker (Grande Prairie), Evergreen Park, Smoky Heights, Beaverlodge, Kinuso (portable), Bonanza (portable) and Valleyview.**

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 Summary" and "Continuous Monitoring" pages of the report.

During the month of July the following events were noted:

**Henry Pirker Station:**
- The measured ambient air quality was within the Alberta Ambient Air Quality Objectives (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 July.

**Evergreen Park Station:**
- The measured ambient air quality was within the AAAQO for the Evergreen Park station.
- All analyzers / sensors at the Evergreen Park station had an operational uptime greater than 90% for the month of July.

**Smoky Heights Station:**
- The measured ambient air quality was within the AAAQO for the Smoky Heights station.
- All analyzers / sensors at the Smoky Heights station had an operational uptime greater than 90% for the month of July.

**Beaverlodge Station:**
- The measured ambient air quality was within the AAAQO for the Beaverlodge station.
- All analyzers / sensors at the Beaverlodge station had an operational uptime greater than 90% for the month of July.

**Portable – Bonanza Station:**
- The measured ambient air quality was within the AAAQO for the Bonanza station.
- All analyzers / sensors at the Bonanza station had an operational uptime greater than 90% for the month of July.

**Valleyview Station:**

- The measured ambient air quality was within the AAAQO for the Valleyview station.
- All analyzers / sensors at the Valleyview station had an operational uptime greater than 90% for the month of July.
- A new station shelter was installed the week of July 6th, removal calibrations were performed on July 6th, new station shelter was installed (old one removed) and installation calibrations were completed on July 8th.

**Passive Monitoring - 43 Stations throughout the PASZA zone:**

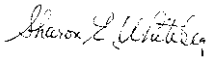
There were four duplicate sites sampled in the month of July: Steeprock Creek, Saddle Hills, Wapiti and Gift Lake. The passive sample analyses were performed by MAXXAM Analytics Inc.

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

- Monthly average concentrations for $SO_2$ passives ranged from 0.1 ppb to 1.0 ppb, with a mean of 0.2 ppb.
- Monthly average concentrations for $NO_2$ passives ranged from 0.2 ppb to 1.5 ppb, with a mean of 0.6 ppb.
- Monthly average concentrations for $O_3$ passives ranged from 16.2 ppb to 28.9 ppb, with a mean of 21.9 ppb.

If you have any questions or concerns, please contact Shelly Pruden, PASZA Program Manager at 780.833.4343 or 780.882.4071.

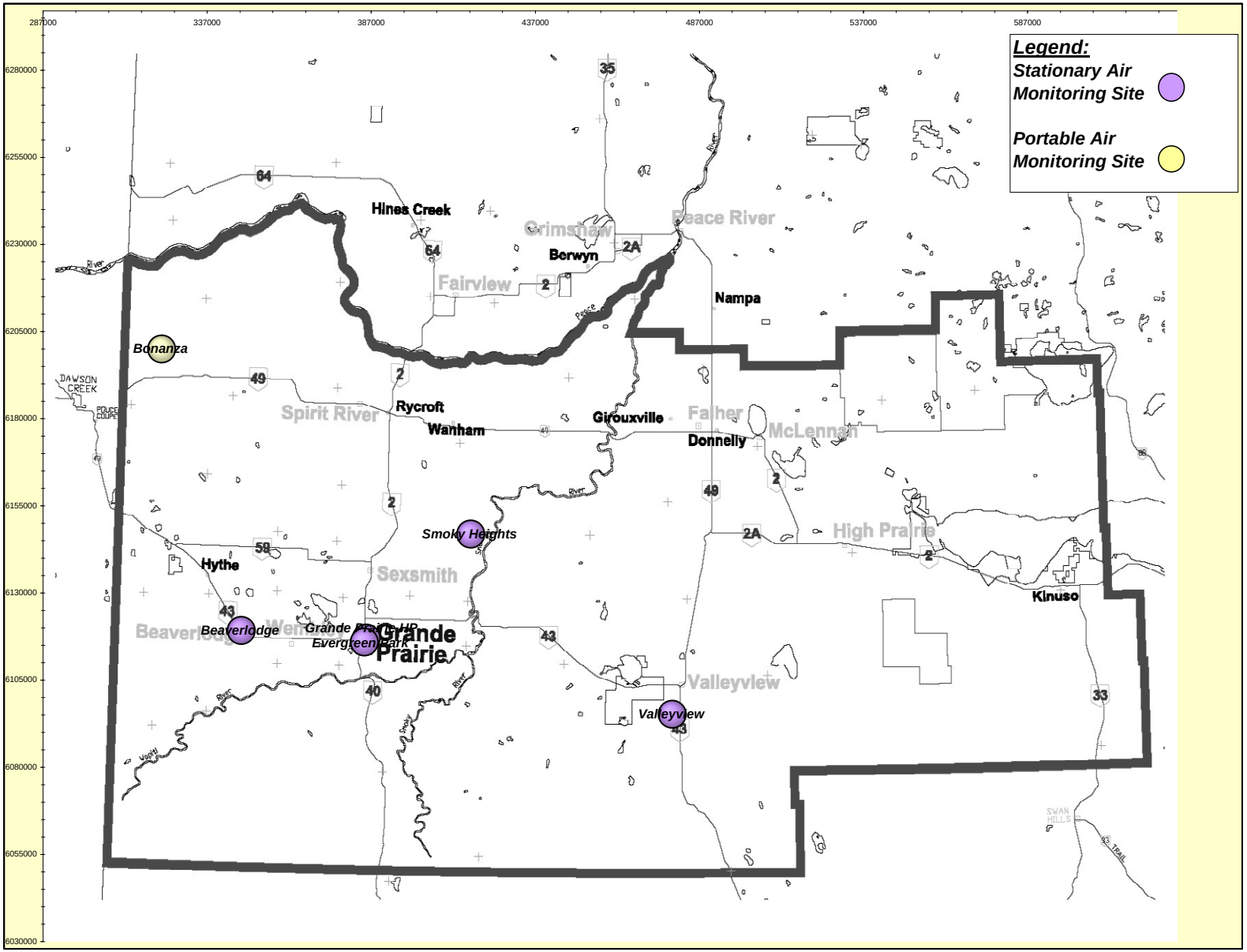
On Behalf of the,
Peace Airshed Zone Association



Shelly Pruden
Program Manager

Sharon Whiteley, B.Sc..
FOCUS AQM Data Specialist

## Location of PASZA Continuous Monitoring Stations



# PASZA Monthly Continuous Data Summary

| Jul-2010 | Peace Airshed Zone Assocation | | | | | | Maximum Recorded Values | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1-hr | | 24-hr / 8-hr | | |
| Pollutant (units) | Objectives 1-hr | Objectives 24-hr | Station | Monthly Average | Exceedence 1-hr | Exceedence 24-hr | Conc | Day | Conc | Day | Operational Time (%) |
| $SO_2$ (ppb) | 172 | 57 | Henry Pirker | 0.2 | 0 | 0 | 4.0 | Jul-14 04:00 | 0.8 | Jul-28 | 100.0% |
| $SO_2$ (ppb) | 172 | 57 | Evergreen Park | 0.3 | 0 | 0 | 7.9 | Jul-15 10:00 | 1.4 | Jul-14 | 99.7% |
| $SO_2$ (ppb) | 172 | 57 | Smoky Heights | 0.3 | 0 | 0 | 5.8 | Jul-14 04:00 | 0.7 | Jul-28 | 99.9% |
| $SO_2$ (ppb) | 172 | 57 | Beaverlodge | 0.3 | 0 | 0 | 4.4 | Jul-10 11:00 | 0.8 | Jul-10 | 100.0% |
| $SO_2$ (ppb) | 172 | 57 | Portable-Bonanza | 0.3 | 0 | 0 | 1.8 | Jul-09 21:00 | 0.7 | Jul-28 | 100.0% |
| $SO_2$ (ppb) | 172 | 57 | Valleyview | 0.7 | 0 | 0 | 8.4 | Jul-16 21:00 | 2.9 | Jul-14 | 100.0% |
| NO (ppb) | | | Henry Pirker | 0.8 | 0 | 0 | 25.1 | Jul-21 08:00 | 2.9 | Jul-27 | 100.0% |
| $NO_2$ (ppb) | 212 | 106 | Henry Pirker | 4.0 | 0 | 0 | 20.7 | Jul-08 23:00 | 8.6 | Jul-28 | 100.0% |
| $NO_X$ (ppb) | | | Henry Pirker | 4.9 | 0 | 0 | 44.0 | Jul-21 08:00 | 10.6 | Jul-28 | 100.0% |
| NO (ppb) | | | Beaverlodge | 0.3 | 0 | 0 | 7.6 | Jul-27 08:00 | 0.8 | Jul-27 | 100.0% |
| $NO_2$ (ppb) | 212 | 106 | Beaverlodge | 1.7 | 0 | 0 | 9.5 | Jul-21 06:00 | 3.2 | Jul-28 | 100.0% |
| $NO_X$ (ppb) | | | Beaverlodge | 2.0 | 0 | 0 | 13.6 | Jul-07 08:00 | 3.8 | Jul-28 | 100.0% |
| NO (ppb) | | | Portable-Bonanza | 0.5 | 0 | 0 | 37.4 | Jul-06 09:00 | 1.9 | Jul-06 | 100.0% |
| $NO_2$ (ppb) | 212 | 106 | Portable-Bonanza | 1.7 | 0 | 0 | 17.2 | Jul-06 09:00 | 3.5 | Jul-30 | 100.0% |
| $NO_X$ (ppb) | | | Portable-Bonanza | 2.3 | 0 | 0 | 54.9 | Jul-06 09:00 | 4.4 | Jul-30 | 100.0% |
| $O_3$ (ppb) | 82 | | Henry Pirker | 25.2 | 0 | - | 61.1 | Jul-28 15:00 | 38.0 | Jul-31 | 100.0% |
| $O_3$ (ppb) - 8-hr | | | Henry Pirker | | 0 | | | | 53.9 | Jul-31 | |
| $O_3$ (ppb) | 82 | | Beaverlodge | 24.3 | 0 | - | 51.7 | Jul-31 17:00 | 37.2 | Jul-31 | 100.0% |
| $O_3$ (ppb) - 8-hr | | | Beaverlodge | | 0 | | | | 49.6 | Jul-31 | |
| $O_3$ (ppb) | 82 | | Portable-Bonanza | 23.7 | 0 | - | 55.2 | Jul-31 17:00 | 33.9 | Jul-31 | 99.9% |
| $O_3$ (ppb) - 8-hr | | | Portable-Bonanza | | 0 | | | | 52.7 | Jul-31 | |
| CO (ppm) | 13 | | Henry Pirker | 0.14 | 0 | - | 0.4 | Jul-08 00:00 | 0.2 | Jul-08 | 100.0% |
| CO (ppm) - 8-hr | 5 | | Henry Pirker | | 0 | | | | 0.3 | Jul-08 | |
| THC (ppm) | | | Henry Pirker | 1.96 | - | - | 3.1 | Jul-31 06:00 | 2.1 | Jul-31 | 100.0% |
| TRS (ppb) | | | Henry Pirker | 0.2 | - | - | 1.2 | Jul-08 00:00 | 0.4 | Jul-09 | 100.0% |
| TRS (ppb) | | | Evergreen Park | 0.5 | - | - | 1.1 | Jul-17 04:00 | 0.7 | Jul-28 | 99.7% |
| TRS (ppb) | | | Smoky Heights | 0.4 | - | - | 1.3 | Jul-09 07:00 | 0.5 | Jul-09 | 99.9% |
| TRS (ppb) | | | Portable-Bonanza | 0.5 | - | - | 1.1 | Jul-08 08:00 | 0.6 | Jul-07 | 100.0% |
| $H_2S$ (ppb) | 10 | 3 | Valleyview | 0.1 | 0 | 0 | 0.8 | Jul-04 17:00 | 0.2 | Jul-14 | 100.0% |

# PASZA Monthly Continuous Data Summary – continued

| Jul-2010 | Peace Airshed Zone Assocation | | | | | | Maximum Recorded Values | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1-hr | | 24-hr / 8-hr | | |
| **PM2.5 (µg/m3)** | 80 | 30 | Henry Pirker | 6.2 | 0 | 0 | 23.7 | Jul-28 13:00 | 14.0 | Jul-29 | 99.9% |
| **PM2.5 (µg/m3)** | 80 | 30 | Evergreen Park | 5.2 | 0 | 0 | 28.7 | Jul-21 17:00 | 11.2 | Jul-29 | 99.1% |
| **PM2.5 (µg/m3)** | 80 | 30 | Smoky Heights | 3.9 | 0 | 0 | 79.9 | Jul-25 22:00 | 9.4 | Jul-28 | 99.5% |
| **PM2.5 (µg/m3)** | 80 | 30 | Beaverlodge | 7.4 | 0 | 0 | 23.2 | Jul-29 19:00 | 17.0 | Jul-29 | 99.5% |
| **RH (%)** | | | Henry Pirker | 54.3 | - | - | 91.2 | Jul-29 06:00 | 76.7 | Jul-13 | 100.0% |
| **RH (%)** | | | Evergreen Park | 55.0 | - | - | 97.1 | Jul-29 06:00 | 80.1 | Jul-13 | 95.7% |
| **RH (%)** | | | Beaverlodge | 53.3 | - | - | 95.7 | Jul-27 06:00 | 76.9 | Jul-13 | 100.0% |
| **RH (%)** | | | Valleyview | 60.7 | - | - | 97.4 | Jul-20 05:00 | 85.6 | Jul-13 | 100.0% |
| **SR ($W/m^2$)** | | | Henry Pirker | 218.9 | - | - | 809.2 | Jul-14 13:00 | 280.4 | Jul-01 | 100.0% |
| **Temp (°C)** | | | Henry Pirker | 17.9 | - | - | 30.9 | Jul-08 17:00 | 23.3 | Jul-08 | 100.0% |
| **Temp (°C)** | | | Evergreen Park | 17.6 | - | - | 30.4 | Jul-08 20:00 | 22.4 | Jul-08 | 95.7% |
| **Temp (°C)** | | | Smoky Heights | 17.5 | - | - | 29.8 | Jul-28 16:00 | 22.4 | Jul-08 | 99.5% |
| **Temp (°C)** | | | Beaverlodge | 17.3 | - | - | 31.1 | Jul-08 18:00 | 23.1 | Jul-08 | 100.0% |
| **Temp (°C)** | | | Portable-Bonanza | 18.1 | - | - | 31.1 | Jul-08 20:00 | 22.8 | Jul-08 | 100.0% |
| **Temp (°C)** | | | Valleyview | 16.5 | - | - | 28.6 | Jul-28 18:00 | 19.9 | Jul-09 | 100.0% |
| **WSPD s (km/hr)** | | | Henry Pirker | 12.2 | - | - | 33.0 | Jul-12 08:00 | 21.2 | Jul-24 | 100.0% |
| **WSPD s (km/hr)** | | | Evergreen Park | 8.3 | - | - | 24.0 | Jul-03 17:00 | 15.2 | Jul-01 | 100.0% |
| **WSPD s (km/hr)** | | | Smoky Heights | 15.4 | - | - | 45.0 | Jul-24 12:00 | 26.9 | Jul-01 | 99.5% |
| **WSPD s (km/hr)** | | | Beaverlodge | 13.8 | - | - | 45.0 | Jul-24 13:00 | 29.3 | Jul-24 | 100.0% |
| **WSPD s (km/hr)** | | | Portable-Bonanza | 14.4 | - | - | 47.0 | Jul-24 12:00 | 31.4 | Jul-01 | 100.0% |
| **WSPD s (km/hr)** | | | Valleyview | 6.9 | - | - | 22.0 | Jul-13 08:00 | 14.3 | Jul-13 | 100.0% |
| **WSPD v (km/hr)** | | | Henry Pirker | 8.7 | - | - | 33.0 | Jul-12 08:00 | 20.2 | Jul-24 | 100.0% |
| **WSPD v (km/hr)** | | | Evergreen Park | 6.2 | - | - | 24.0 | Jul-03 17:00 | 14.4 | Jul-01 | 100.0% |
| **WSPD v (km/hr)** | | | Smoky Heights | 10.7 | - | - | 45.0 | Jul-24 12:00 | 26.3 | Jul-01 | 99.5% |
| **WSPD v (km/hr)** | | | Beaverlodge | 9.2 | - | - | 45.0 | Jul-24 13:00 | 28.7 | Jul-24 | 100.0% |
| **WSPD v (km/hr)** | | | Portable-Bonanza | 9.5 | - | - | 46.0 | Jul-24 13:00 | 30.3 | Jul-01 | 100.0% |
| **WSPD v (km/hr)** | | | Valleyview | 4.0 | - | - | 22.0 | Jul-13 08:00 | 13.4 | Jul-13 | 100.0% |
| **WDIR** | | | Henry Pirker | W | - | - | - | - | - | - | 100.0% |
| **WDIR** | | | Evergreen Park | W | - | - | - | - | - | - | 100.0% |
| **WDIR** | | | Smoky Heights | W | - | - | - | - | - | - | 99.5% |
| **WDIR** | | | Beaverlodge | W | - | - | - | - | - | - | 100.0% |
| **WDIR** | | | Portable-Bonanza | WSW | - | - | - | - | - | - | 100.0% |
| **WDIR** | | | Valleyview | WNW | - | - | - | - | - | - | 100.0% |

# Continuous Network Equipment Summary

**PASZA – Henry Pirker Station**

**General Station Issues**

Routine monthly calibrations were performed on July 13th ($SO_2$, $NO_X$ & $O_3$) and July 14th (TRS, CO & THC).

| Parameter | Make | Model | Notes |
|---|---|---|---|
| $SO_2$ | TEI | 43C | No operational issues observed. |
| NOx/NO/$NO_2$ | TEI | 42C | No operational issues observed. |
| $O_3$ | TEI | 49C | No operational issues observed. |
| CO | TEI | 48C | No operational issues observed. |
| THC | TEI | 51-CLT | No operational issues observed. |
| TRS | TEI | 45C/43C | No operational issues observed. |
| $PM_{2.5}$ | R&P | 1400AB | One (1) hour was flagged for maintenance (due to tech activity around station). |
| 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 | Met One | 010C | No operational issues observed. On July 9th a wind instrument calibration was performed. |
| WD | Met One | 020C | No operational issues observed. On July 9th a wind instrument calibration was performed. |

## PASZA – Evergreen Park Station

**General Station Issues**

Routine monthly calibrations were performed on July 1st ($SO_2$, TRS & $PM_{2.5}$). A DACS/ Communication error occurred on July 30th to August 3rd which affected two channels (relative humidity & external temperature). On July 12th a break in occurred at the station – it appears nothing was tampered with (station was only used for shelter), however a police report was filed.

| Parameter | Make | Model | Notes |
|---|---|---|---|
| $SO_2$ | TEI | 43i | Span on July 29th was outside the target range – reason unknown. No other operational issues observed. |
| TRS | TEI | 43C | Spans were outside the target July 7th -10th, 12th, 16th – 18th, 20th and 22nd -27th, perm tube to be replaced (on order). Two (2) hours were flagged for maintenance on July 12th – to repair perm tube housing. |
| $PM_{2.5}$ | R&P | 1400AB | One (1) hour was flagged for maintenance on July 1st (filter change). A total of six (6) hours were flagged for baseline drift. |
| ET | Met One/Gill | 083D | Thirty-two (32) hours were flagged for above noted DACS error. |
| RH | Met One/Gill | | Thirty-two (32) hours were flagged for above noted DACS error. |
| WS | Met One/ Gill | 010C | No operational issues observed. |
| WD | Met One/ Gill | 020C | No operational issues observed. |

## PASZA – Smoky Heights Station

**General Station Issues**

Routine monthly calibrations were performed on July 16th (TRS & $SO_2$).

| Parameter | Make | Model | Notes |
|---|---|---|---|
| $SO_2$ | TEI | 43C | One (1) hour was flagged invalid – due to tech activity at the station on July 27th. No other operational issues observed. |
| TRS | TEI | 43C | One (1) hour was flagged invalid – due to tech activity at the station on July 27th. No other operational issues observed. |
| $PM_{2.5}$ | R&P | 1400AB | A total of three (3) hours were flagged for baseline drift. One (1) hour was flagged invalid – due to tech activity at the station on July 27th. |
| ET | Met One | 083D | One (1) hour was flagged invalid – due to tech activity at the station on July 27th. Three (3) hours were flagged for maintenance on the met system (temperature, wind speed & wind direction) due to animal activity chewing through the cables. Wiring was redone to fix the issue. |
| WS | Met One | 010C | One (1) hour was flagged invalid – due to tech activity at the station on July 27th. Three (3) hours were flagged for maintenance on the met system (temperature, wind speed & wind direction) due to animal activity chewing through the cables. Wiring was redone to fix the issue. |
| WD | Met One | 020C | One (1) hour was flagged invalid – due to tech activity at the station on July 27th. Three (3) hours were flagged for maintenance on the met system (temperature, wind speed & wind direction) due to animal activity chewing through the cables. Wiring was redone to fix the issue. |

## PASZA – Beaverlodge Station

**General Station Issues**

Routine monthly calibrations were performed on July 5th ($SO_2$, $O_3$ & $NO_X$ & $PM_{2.5}$).

| Parameter | Make | Model | Notes |
|---|---|---|---|
| $SO_2$ | TEI | 43CTL | Spans wer outside the target on July 13th & 14th - a second calibration was performed on July 15th to ensure analyzer integrity. |
| NOx/NO/$NO_2$ | TEI | 42C | No operational issues observed. |
| $O_3$ | TEI | 49C | No operational issues observed. |
| $PM_{2.5}$ | R&P | 1400AB | A total of four (4) hours were flagged due to power bumps. |
| ET | n/a | n/a | No operational issues observed. |
| RH | n/a | n/a | No operational issues observed. |
| WS | Blue Sky | 857 | No operational issues observed. |
| WD | Blue Sky | 857 | No operational issues observed. |

## PASZA – Bonanza (Portable) Station

**General Station Issues**

Routine monthly calibrations were performed on July 20th ($SO_2$, TRS & $NO_X$) and July 21st ($NO_X$ & $O_3$).

| Parameter | Make | Model | Notes |
|---|---|---|---|
| $SO_2$ | TEI | 43C | No operational issues observed. |
| TRS | TEI | 43C | No operational issues observed. |
| NOx/NO/$NO_2$ | TEI | 42I | No operational issues observed. |
| $O_3$ | TEI | 49C | A power bump resulted in one (1) hour of invalid data. No other operational issues observed. |
| ET | Met One | | No operational issues observed. |
| WS | Met One | | No operational issues observed. |
| WD | Met One | | No operational issues observed. |

## PASZA – Valleyview Station

**General Station Issues**

Routine monthly calibrations were performed in the first week of July ($SO_2$ & $H_2S$) due to the new shelter replacement. Removal calibrations were performed on July 6th, a new shelter was installed and installation calibrations occurred on July 8th. Due to the shelter changeout the Valleyview station was not in service from July 6th 17:00 to July 8th 13:00.

| Parameter | Make | Model | Notes |
|---|---|---|---|
| $SO_2$ | TEI | 43i | No operational issues observed other than above noted shelter replacement event – twenty-nine (29) hours were flagged not in service. |
| $H_2S$ | TEI | 43A | No operational issues observed other than above noted shelter replacement event – twenty-nine (29) hours were flagged not in service. |
| ET | Gill | Met Pak 3 | No operational issues observed other than above noted shelter replacement event – forty (40) hours were flagged not in service. |
| RH | Gill | Met Pak 3 | No operational issues observed other than above noted shelter replacement event – forty-one (41) hours were flagged not in service. |
| WS | Gill | Met Pak 3 | No operational issues observed other than above noted shelter replacement event – forty (40) hours were flagged not in service. |
| WD | Gill | Met Pak 3 | No operational issues observed other than above noted shelter replacement event – forty (40) hours were flagged not in service. |

# PASZA
# Henry Pirker Station
## Monthly Summary Tables, Graphs and Roses

PASZA
Peace Airshed Zone Association

# Hourly Averages

## Sulphur Dioxide ($SO_2$) - ppb

## Henry Pirker - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 4.0 ppb on Jul 14 04:00 Maximum Daily Average: 0.8 ppb on Jul 28

Minimum Value: 0 ppb on Jul 1 01:00 Minimum Daily Average: 0.0 ppb on Jul 29
Maximum Diurnal Average: 0.4 ppb at hour 9 Minimum Diurnal Average: 0.0 ppb at hour 19
Monthly Average: 0.16 ppb Percentiles: $P_1$ = 0.0 $P_{10}$ = 0.0 $Q_1$ = 0.0 Median = 0.0 $Q_3$ = 0.1 $P_{90}$ = 0.5 $P_{99}$ = 1.9

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 709 |
| Hours of Missing Data: | 35 |
| Hours of Calibration: | 35 |
| Percent Operational Time: | 100.0 |

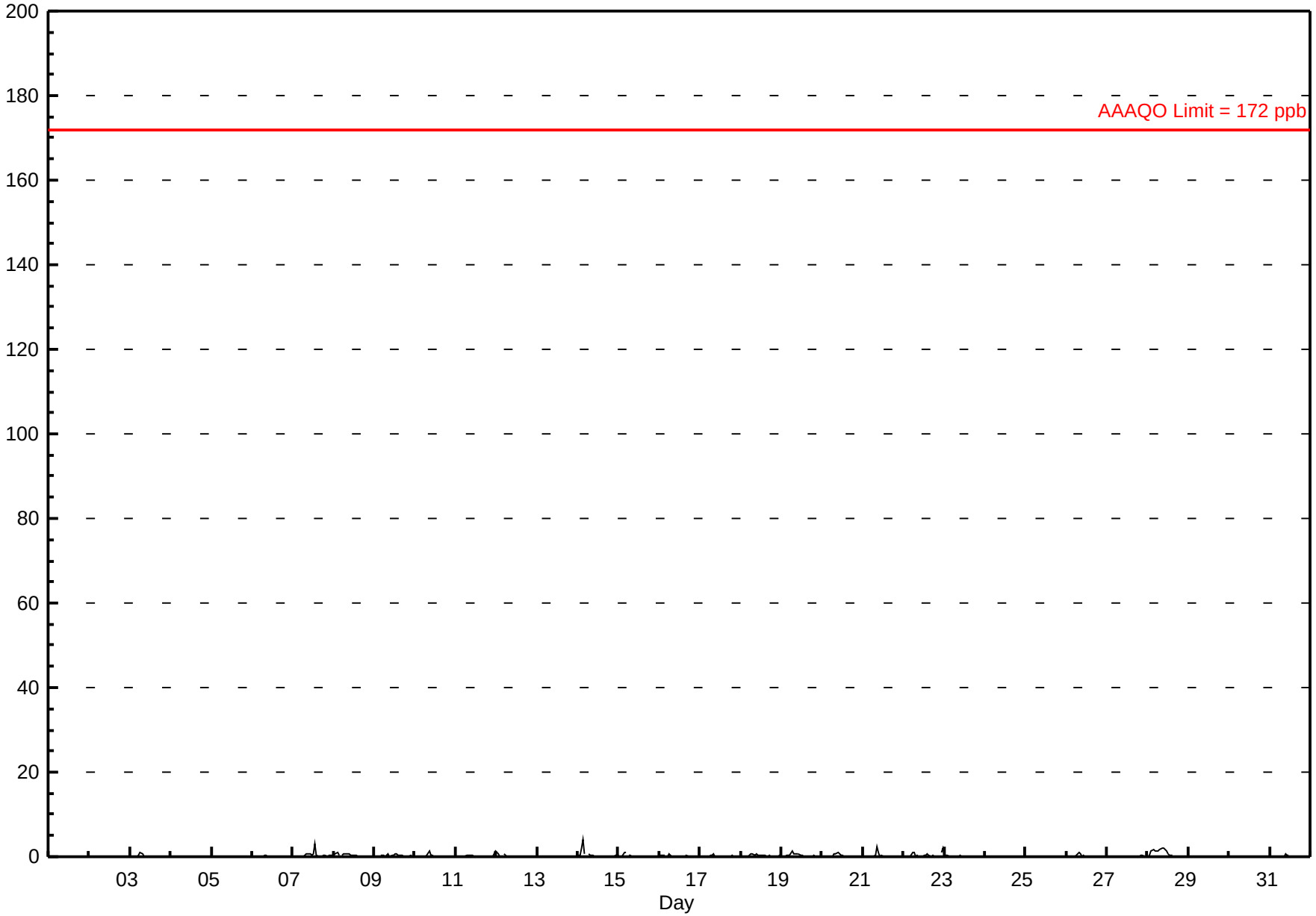
| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily Average | Daily Maximum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | |
| 1-Jul | 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 |
| 2-Jul | 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 |
| 3-Jul | 0 | A | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 1.0 |
| 4-Jul | 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 | 0.1 |
| 5-Jul | 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 | 0.2 |
| 6-Jul | 0 | 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 |
| 7-Jul | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 3.1 |
| 8-Jul | 0 | 1 | 1 | 0 | A | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.9 |
| 9-Jul | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.6 |
| 10-Jul | 0 | 0 | 0 | 0 | 0 | A | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 1.4 |
| 11-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 | 1.5 |
| 12-Jul | 1 | 1 | 0 | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.9 |
| 13-Jul | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | C | C | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0.1 |
| 14-Jul | 0 | 0 | 2 | 4 | 1 | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.4 | 4.0 |
| 15-Jul | 0 | 0 | 0 | 1 | 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 1.0 |
| 16-Jul | 0 | 0 | 0 | 0 | A | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.6 |
| 17-Jul | 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 | 0.6 |
| 18-Jul | 0 | 0 | A | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.5 |
| 19-Jul | 0 | A | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 1.4 |
| 20-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0.2 | 0.9 |
| 21-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0.2 | 2.2 |
| 22-Jul | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | A | 1 | 2 | 0.3 | 2.2 |
| 23-Jul | 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 |
| 24-Jul | 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 | 0.1 |
| 25-Jul | 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 | 0.1 |
| 26-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.9 |
| 27-Jul | 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 | 0.2 |
| 28-Jul | 0 | 0 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 2.1 |
| 29-Jul | 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 |
| 30-Jul | 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 | 0.2 |
| 31-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.6 |
| | 0.1 | 0.1 | 0.2 | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.3 | 0.2 | 0.2 | 0.1 | 0.2 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.2 | Diurnal Average | |
| | 0.9 | 0.7 | 2.1 | 4.0 | 1.5 | 1.2 | 1.4 | 1.7 | 2.2 | 2.0 | 1.8 | 1.3 | 0.6 | 3.1 | 0.6 | 0.3 | 0.3 | 0.3 | 0.2 | 0.3 | 0.2 | 0.2 | 1.0 | 2.2 | Diurnal Maximum | |

C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 57 ppb

## Hourly Averages

**Sulphur Dioxide ($SO_2$) - ppb**

**Henry Pirker - July 2010**



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# Hourly Maximums

## Sulphur Dioxide ($SO_2$) - ppb

## Henry Pirker - July 2010

Maximum Value: 7.4 ppb on Jul 14 04:00

Maximum Daily Average: 1.4 ppb on Jul 14

Minimum Value: 0 ppb on Jul 14 13:00

Minimum Daily Average: 0.1 ppb on Jul 1

Maximum Diurnal Average: 0.9 ppb at hour 9

Minimum Diurnal Average: 0.3 ppb at hour 20

Monthly Average: 0.53 ppb

Percentiles: $P_1 = 0.0$ $P_{10} = 0.1$ $Q_1 = 0.2$ Median = 0.4 $Q_3 = 0.6$ $P_{90} = 1.0$ $P_{99} = 3.1$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 709 |
| Hours of Missing Data: | 35 |
| 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-Jul | 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 | 0.2 |
| 2-Jul | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.5 |
| 3-Jul | 0 | A | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 1.6 |
| 4-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0.2 | 0.6 |
| 5-Jul | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0.3 | 0.6 |
| 6-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.8 |
| 7-Jul | 0 | 0 | 0 | 0 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 5 | 6 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1.0 | 5.7 |
| 8-Jul | 0 | 1 | 1 | 1 | A | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.8 | 1.8 |
| 9-Jul | 0 | 0 | 0 | A | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0.6 | 1.3 |
| 10-Jul | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 | 2.5 |
| 11-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 0.6 | 3.0 |
| 12-Jul | 2 | 1 | 1 | A | 2 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0.5 | 2.1 |
| 13-Jul | 1 | 0 | A | 0 | 1 | 1 | 0 | 1 | C | C | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.5 |
| 14-Jul | 0 | 1 | 7 | 7 | 1 | A | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 3 | 1.4 | 7.4 |
| 15-Jul | 0 | 0 | 0 | 3 | 3 | A | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.5 | 2.9 |
| 16-Jul | 1 | 1 | 1 | 1 | A | 0 | 3 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0.6 | 3.0 |
| 17-Jul | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0.5 | 2.0 |
| 18-Jul | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0.6 | 1.1 |
| 19-Jul | 0 | A | 1 | 3 | 3 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1.0 | 3.6 |
| 20-Jul | A | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | A | 0.6 | 1.6 |
| 21-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0.5 | 3.6 |
| 22-Jul | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | A | 3 | 5 | 1.0 | 4.7 |
| 23-Jul | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0.4 | 1.2 |
| 24-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 1 | 0 | 0 | 0.2 | 0.7 |
| 25-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 1 | 0 | 0.1 | 0.6 |
| 26-Jul | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | A | 1 | 0 | 0 | 0 | 0 | 0 | 0.6 | 5.1 |
| 27-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0.3 | 0.6 |
| 28-Jul | 0 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 2 | 2 | 1 | 1 | 1 | A | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1.1 | 2.6 |
| 29-Jul | 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 |
| 30-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.7 |
| 31-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.9 |
| | 0.4 | 0.4 | 0.6 | 0.8 | 0.7 | 0.5 | 0.8 | 0.9 | 0.9 | 0.7 | 0.6 | 0.5 | 0.5 | 0.5 | 0.4 | 0.3 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.6 | 0.6 | Diurnal Average | |
| | 1.5 | 1.3 | 7.4 | 7.4 | 3.2 | 2.6 | 3.6 | 5.1 | 3.6 | 2.5 | 2.1 | 2.0 | 4.6 | 5.7 | 1.2 | 1.2 | 1.0 | 1.2 | 0.7 | 0.9 | 0.6 | 0.9 | 3.4 | 4.7 | Diurnal Maximum | |

C - Calibration

A - Automated Daily Zero Span

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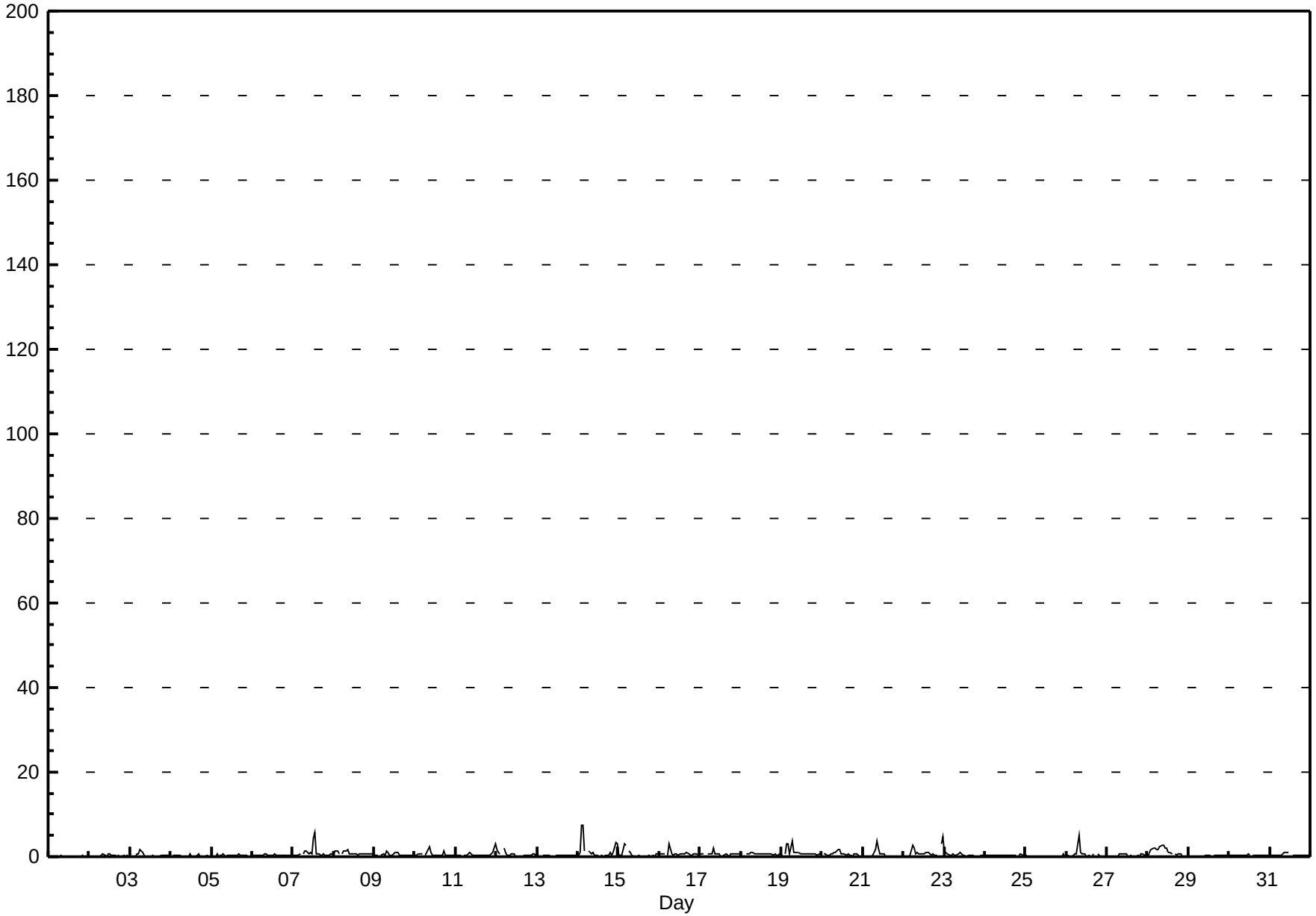
# Hourly Maximums

**Sulphur Dioxide ($SO_2$) - ppb**

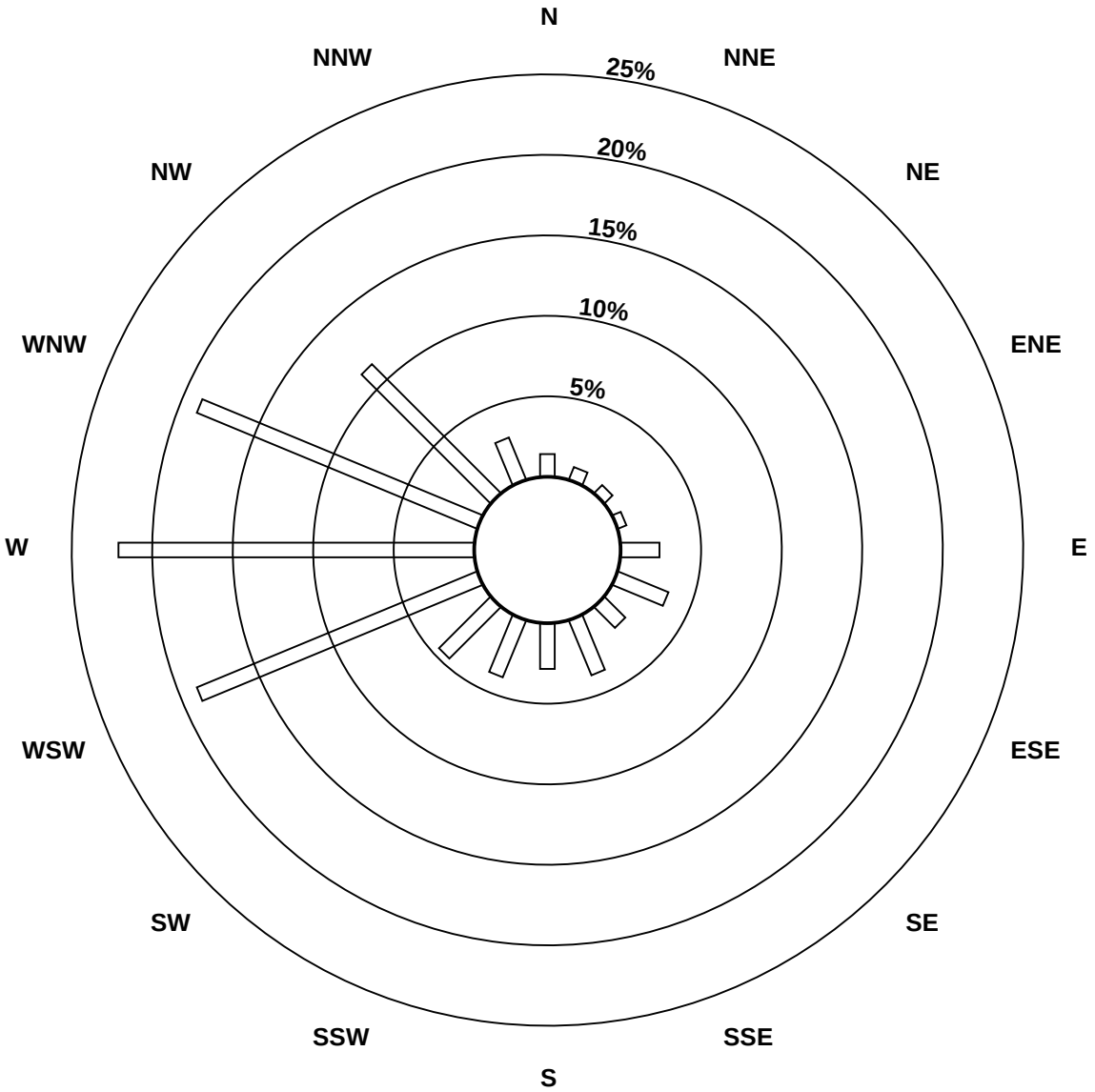
**Henry Pirker - July 2010**



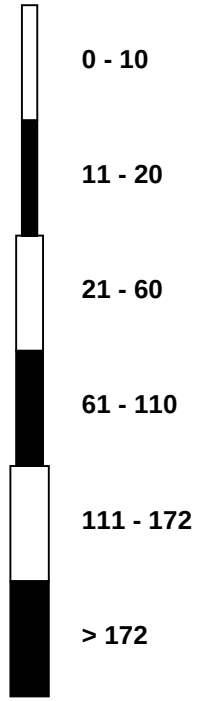
# Pollutant Rose

**Sulphur Dioxide ($SO_2$) - ppb**

**Henry Pirker - July 2010**




**Pollutant Classes (ppb)**



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# Hourly Averages

## Total Reduced Sulphur (TRS) - ppb

## Henry Pirker - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 1.2 ppb on Jul 8 00:00 Maximum Daily Average: 0.4 ppb on Jul 9

Minimum Value: 0 ppb on Jul 1 15:00 Minimum Daily Average: 0.0 ppb on Jul 2
Maximum Diurnal Average: 0.2 ppb at hour 6 Minimum Diurnal Average: 0.1 ppb at hour 17
Monthly Average: 0.16 ppb Percentiles: $P_1 = 0.0$ $P_{10} = 0.0$ $Q_1 = 0.1$ Median = 0.1 $Q_3 = 0.2$ $P_{90} = 0.3$ $P_{99} = 0.7$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 709 |
| Hours of Missing Data: | 35 |
| Hours of Calibration: | 35 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Daily Average | Daily Maximum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Jul | 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 | 0.2 |
| 2-Jul | 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 |
| 3-Jul | 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 | 0.2 |
| 4-Jul | 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 | 0.2 |
| 5-Jul | 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 | 0.3 |
| 6-Jul | 0 | 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 |
| 7-Jul | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 | 1.2 |
| 8-Jul | 1 | 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 |
| 9-Jul | 1 | 1 | 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 1.0 |
| 10-Jul | 0 | 0 | 1 | 1 | 1 | A | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.7 |
| 11-Jul | 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-Jul | 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 | 0.2 |
| 13-Jul | 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 |
| 14-Jul | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | C | C | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.2 |
| 15-Jul | 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 |
| 16-Jul | 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 | 0.2 |
| 17-Jul | 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 | 0.3 |
| 18-Jul | 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 | 0.3 |
| 19-Jul | 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 | 0.2 |
| 20-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0.2 | 0.4 |
| 21-Jul | 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 |
| 22-Jul | 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 |
| 23-Jul | 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 |
| 24-Jul | 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 | 0.3 |
| 25-Jul | 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 | 0.2 |
| 26-Jul | 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 | 0.4 |
| 27-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.5 |
| 28-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.6 |
| 29-Jul | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.8 |
| 30-Jul | 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 | 0.3 |
| 31-Jul | 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 | 0.5 |
| | 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 | 0.1 | 0.2 | 0.2 | Diurnal Average | |
| | 1.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 0.6 | 0.6 | 0.5 | 0.3 | 0.3 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 1.2 | Diurnal Maximum | |

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

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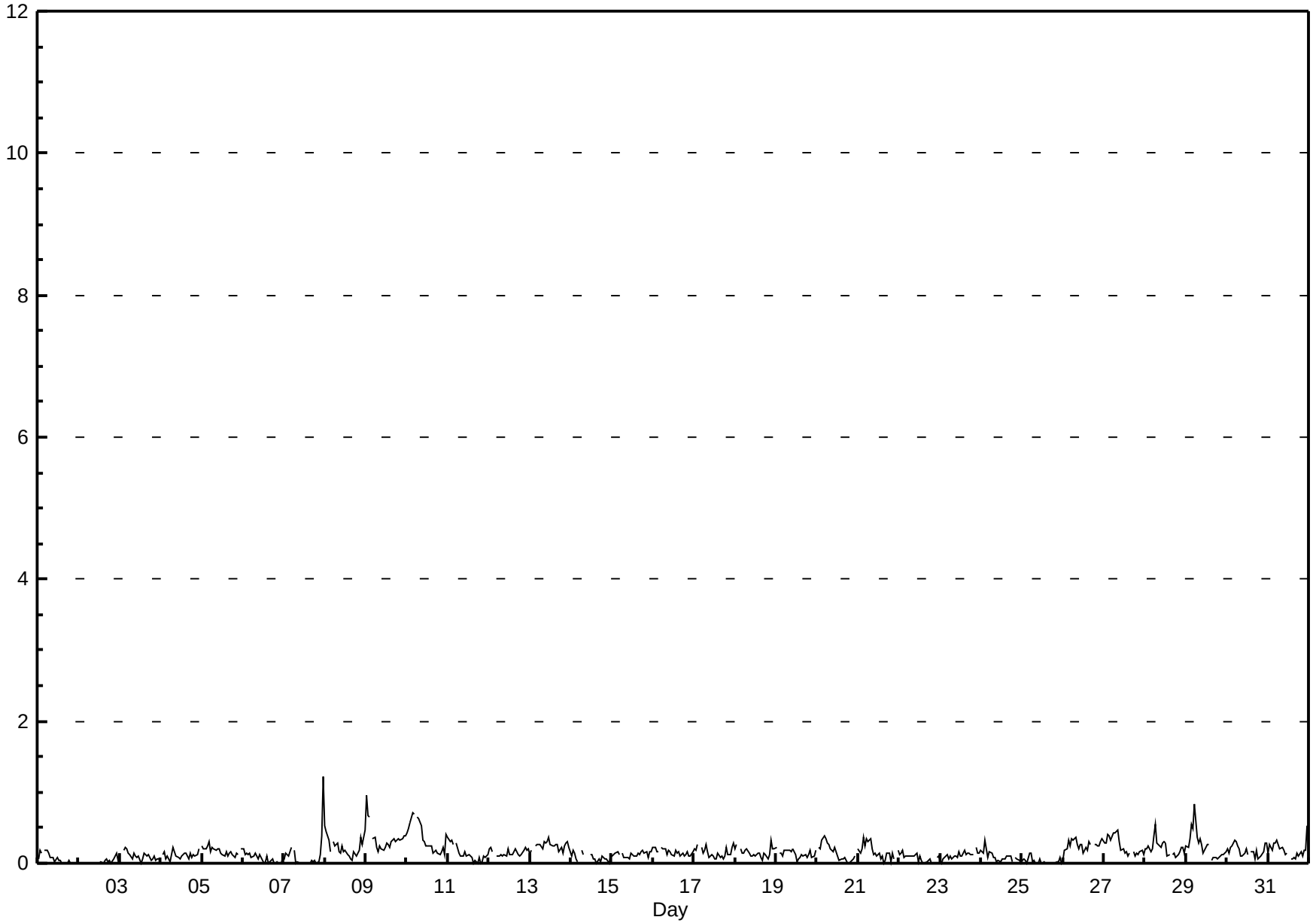
## Hourly Averages

**Total Reduced Sulphur (TRS) - ppb**

**Henry Pirker - July 2010**



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# Hourly Maximums

## Total Reduced Sulphur (TRS) - ppb

## Henry Pirker - July 2010

Maximum Value: 2.9 ppb on Jul 8 00:00

Maximum Daily Average: 1.0 ppb on Jul 10

Minimum Value: 0 ppb on Jul 2 11:00

Minimum Daily Average: 0.7 ppb on Jul 2

Maximum Diurnal Average: 0.9 ppb at hour 24

Minimum Diurnal Average: 0.7 ppb at hour 17

Monthly Average: 0.83 ppb

Percentiles: $P_1 = 0.5$ $P_{10} = 0.6$ $Q_1 = 0.7$ Median = 0.8 $Q_3 = 0.9$ $P_{90} = 1.0$ $P_{99} = 1.4$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 709 |
| Hours of Missing Data: | 35 |
| 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-Jul | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0.7 | 1.1 |
| 2-Jul | 1 | 1 | A | 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 |
| 3-Jul | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.8 | 1.3 |
| 4-Jul | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 0.8 | 1.1 |
| 5-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 0.9 | 1.3 |
| 6-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0.7 | 1.1 |
| 7-Jul | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 0.9 | 2.9 |
| 8-Jul | 2 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 0.9 | 1.7 |
| 9-Jul | 2 | 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 | 1.8 |
| 10-Jul | 1 | 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 | 1.4 |
| 11-Jul | 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 | 1.1 |
| 12-Jul | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.0 |
| 13-Jul | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.1 |
| 14-Jul | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.8 | 1.0 |
| 15-Jul | 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 | 1.0 |
| 16-Jul | 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 | 1.1 |
| 17-Jul | 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 |
| 18-Jul | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.1 |
| 19-Jul | 1 | A | 1 | 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 |
| 20-Jul | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | A | 0.8 | 1.1 |
| 21-Jul | 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 | 1.1 |
| 22-Jul | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 0.7 | 1.0 |
| 23-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 0.8 | 1.0 |
| 24-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 0.8 | 1.1 |
| 25-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 0.7 | 0.9 |
| 26-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.2 |
| 27-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.2 |
| 28-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.4 |
| 29-Jul | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.8 |
| 30-Jul | 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 |
| 31-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 0.9 | 1.8 |
| | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.8 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | Diurnal Average | |
| | 1.8 | 1.2 | 1.3 | 1.4 | 1.4 | 1.8 | 1.4 | 1.3 | 1.2 | 1.3 | 1.2 | 1.4 | 1.1 | 1.0 | 1.0 | 1.0 | 0.9 | 1.1 | 1.2 | 1.3 | 1.1 | 1.2 | 1.8 | 2.9 | Diurnal Maximum | |

C - Calibration

A - Automated Daily Zero Span

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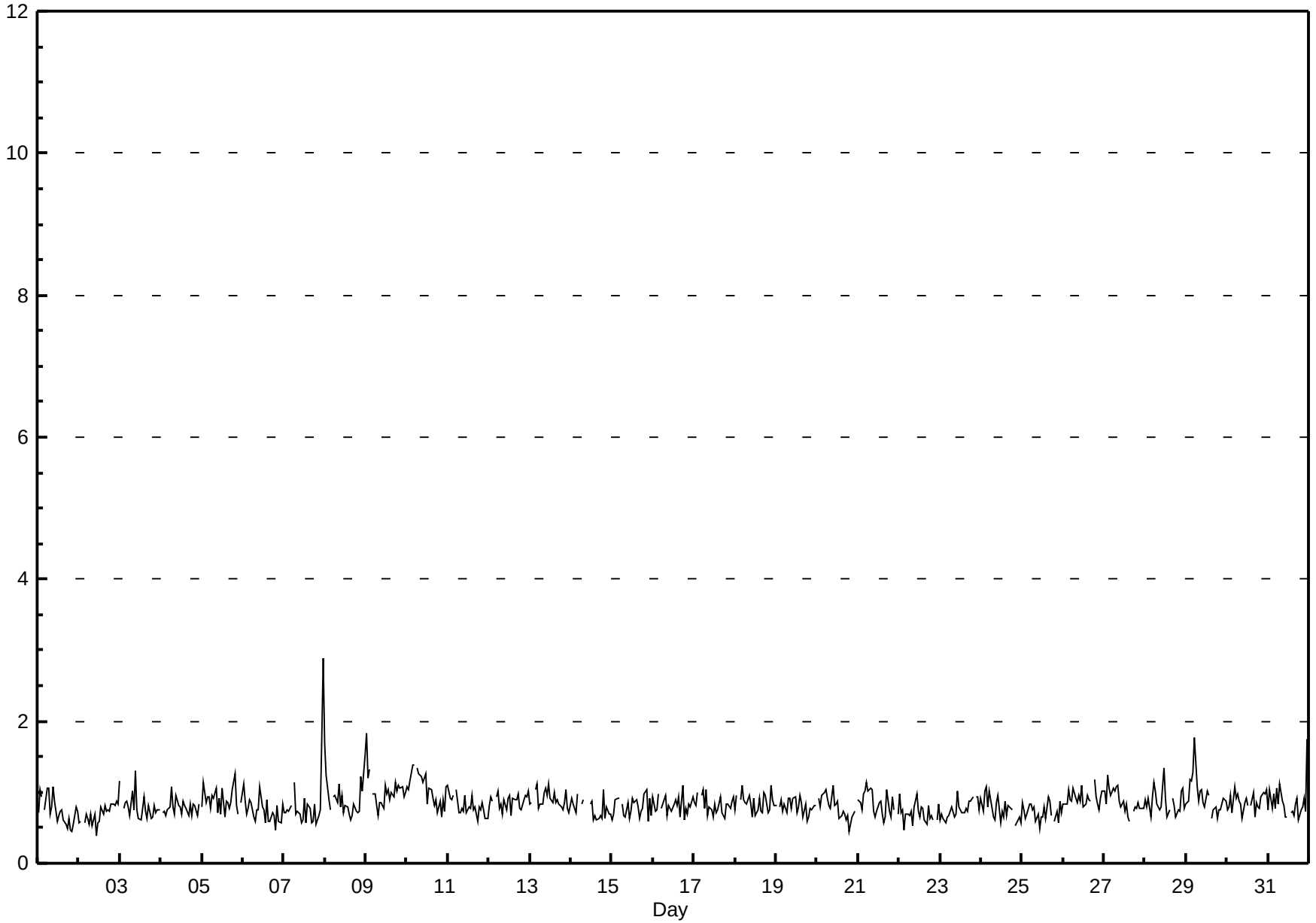
## Hourly Maximums

**Total Reduced Sulphur (TRS) - ppb**

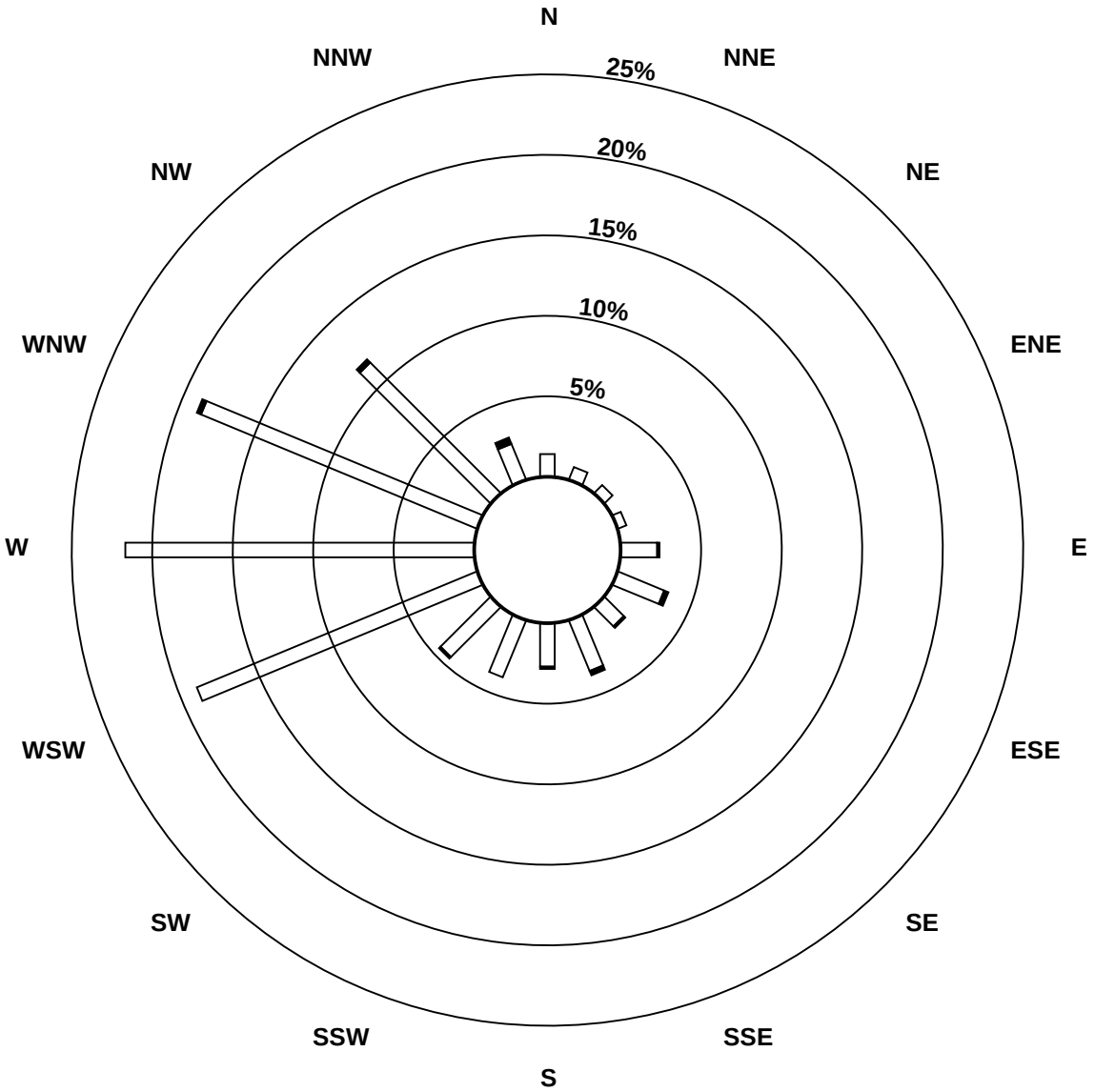
**Henry Pirker - July 2010**



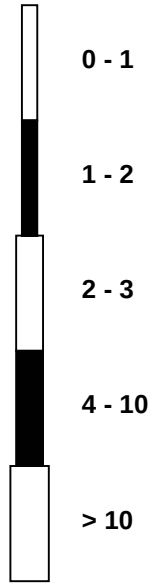
# Pollutant Rose

**Total Reduced Sulphur (TRS) - ppb**

**Henry Pirker - July 2010**




**Pollutant Classes (ppb)**



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# Hourly Averages

## Nitrogen Dioxide ($NO_2$) - ppb

## Henry Pirker - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 20.7 ppb on Jul 8 23:00 Maximum Daily Average: 8.6 ppb on Jul 28

Minimum Value: 1 ppb on Jul 13 01:00 Minimum Daily Average: 1.1 ppb on Jul 4
Maximum Diurnal Average: 7.9 ppb at hour 6 Minimum Diurnal Average: 1.7 ppb at hour 15
Monthly Average: 3.95 ppb Percentiles: $P_1 = 0.8$ $P_{10} = 1.1$ $Q_1 = 1.5$ Median = 2.7 $Q_3 = 5.2$ $P_{90} = 8.6$ $P_{99} = 14.6$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 704 |
| Hours of Missing Data: | 40 |
| Hours of Calibration: | 40 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Daily Average | Daily Maximum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Jul | 2 | 2 | 1 | A | 3 | 5 | 4 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 4 | 4 | 2.0 | 4.9 |
| 2-Jul | 3 | 2 | A | 4 | 4 | 5 | 5 | 3 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2.2 | 4.9 |
| 3-Jul | 1 | A | 4 | 3 | 3 | 4 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1.7 | 3.9 |
| 4-Jul | A | 3 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1.1 | 2.6 |
| 5-Jul | 3 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 4 | 3 | A | 3 | 1.9 | 4.5 |
| 6-Jul | 2 | 2 | 2 | 2 | 3 | 6 | 8 | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 7 | 8 | 9 | 3.1 | 8.6 |
| 7-Jul | 7 | 7 | 9 | 9 | 11 | A | 14 | 6 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 8 | 11 | 17 | 5.2 | 17.2 |
| 8-Jul | 10 | 7 | 6 | 6 | A | 13 | 7 | 7 | 6 | 7 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 14 | 21 | 15 | 6.0 | 20.7 |
| 9-Jul | 11 | 8 | 12 | A | 11 | 15 | 10 | 6 | C | C | C | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 4 | 2 | 2 | 5.7 | 15.0 |
| 10-Jul | 3 | 3 | 4 | 3 | 4 | A | 6 | 6 | 5 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 3 | 5 | 6 | 8 | 3.5 | 7.8 |
| 11-Jul | 6 | 6 | 7 | 7 | A | 7 | 7 | 5 | 4 | 4 | 3 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 3 | 7 | 12 | 5 | 4.2 | 12.1 |
| 12-Jul | 4 | 3 | 1 | A | 4 | 3 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.7 | 4.3 |
| 13-Jul | 1 | 1 | A | 2 | 1 | 2 | 2 | 2 | C | C | C | C | C | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 6 | 6 | 4 | 2.5 | 6.4 |
| 14-Jul | 4 | 4 | 3 | 4 | 7 | A | 11 | 6 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 3.5 | 10.8 |
| 15-Jul | 6 | 5 | 5 | 5 | 7 | A | 11 | 6 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3.3 | 11.1 |
| 16-Jul | 2 | 2 | 3 | 4 | A | 8 | 6 | 4 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 1 | 1 | 1 | 3 | 5 | 3 | 3 | 2.6 | 7.8 |
| 17-Jul | 6 | 7 | 7 | A | 9 | 8 | 6 | 5 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 7 | 11 | 12 | 4.2 | 12.1 |
| 18-Jul | 14 | 5 | A | 5 | 5 | 6 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 3 | 4 | 5 | 5 | 8 | 4 | 5 | 3.8 | 14.0 |
| 19-Jul | 4 | A | 7 | 6 | 6 | 7 | 6 | 5 | 5 | 4 | 4 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 4 | 4 | 5 | 5 | 5 | 5 | 4.2 | 7.4 |
| 20-Jul | A | 8 | 7 | 7 | 11 | 13 | 8 | 6 | 6 | 5 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 5 | A | 4.9 | 13.4 |
| 21-Jul | 7 | 7 | 10 | 14 | 11 | 12 | 14 | 19 | 8 | 4 | 3 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 4 | 4 | A | 6 | 6.3 | 19.0 |
| 22-Jul | 5 | 6 | 9 | 4 | 5 | 9 | 12 | 11 | 8 | 7 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 2 | 2 | 2 | 4 | A | 4 | 4 | 4.8 | 12.3 |
| 23-Jul | 3 | 4 | 3 | 3 | 3 | 6 | 6 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | A | 9 | 10 | 6 | 3.4 | 9.5 |
| 24-Jul | 7 | 4 | 5 | 4 | 4 | 3 | 5 | 4 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 1 | 1 | A | 3 | 3 | 2 | 1 | 2.6 | 6.8 |
| 25-Jul | 1 | 2 | 1 | 1 | 2 | 4 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 3 | 4 | 4 | 3 | 4 | 1.9 | 4.4 |
| 26-Jul | 3 | 5 | 5 | 4 | 7 | 11 | 13 | 7 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 3 | 2 | 4 | 6 | 4 | 9 | 4.1 | 12.5 |
| 27-Jul | 7 | 7 | 10 | 7 | 10 | 10 | 9 | 12 | 13 | 8 | 3 | 2 | 1 | 1 | 1 | 1 | A | 3 | 3 | 3 | 9 | 8 | 5 | 3 | 5.8 | 12.9 |
| 28-Jul | 3 | 3 | 5 | 7 | 10 | 17 | 20 | 16 | 14 | 14 | 14 | 11 | 8 | 6 | 5 | A | 5 | 4 | 4 | 5 | 6 | 8 | 6 | 5 | 8.6 | 20.1 |
| 29-Jul | 4 | 7 | 9 | 8 | 10 | 13 | 14 | 11 | 10 | 6 | 4 | 5 | 4 | 3 | A | 5 | 4 | 5 | 4 | 5 | 4 | 6 | 5 | 7 | 6.6 | 13.6 |
| 30-Jul | 4 | 4 | 6 | 9 | 10 | 11 | 13 | 9 | 5 | 5 | 4 | 3 | 3 | A | 5 | 3 | 4 | 5 | 3 | 4 | 7 | 9 | 9 | 7 | 6.1 | 13.1 |
| 31-Jul | 4 | 4 | 4 | 4 | 6 | 12 | 12 | 8 | 4 | 2 | 2 | 1 | A | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 6 | 10 | 10 | 8 | 4.8 | 12.1 |
| | 4.8 | 4.5 | 5.3 | 5.0 | 6.1 | 7.9 | 7.9 | 6.0 | 4.3 | 3.3 | 2.5 | 2.1 | 1.8 | 1.7 | 1.7 | 1.8 | 1.9 | 1.9 | 2.0 | 2.4 | 3.6 | 5.4 | 5.7 | 5.6 | Diurnal Average | |
| | 14.0 | 8.3 | 11.7 | 13.7 | 11.4 | 17.2 | 20.1 | 19.0 | 13.9 | 14.4 | 14.3 | 11.0 | 7.9 | 5.6 | 5.0 | 4.8 | 4.8 | 4.9 | 4.5 | 5.2 | 8.6 | 13.7 | 20.7 | 17.2 | Diurnal Maximum | |

C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 212 ppb 24-hr 106 ppb

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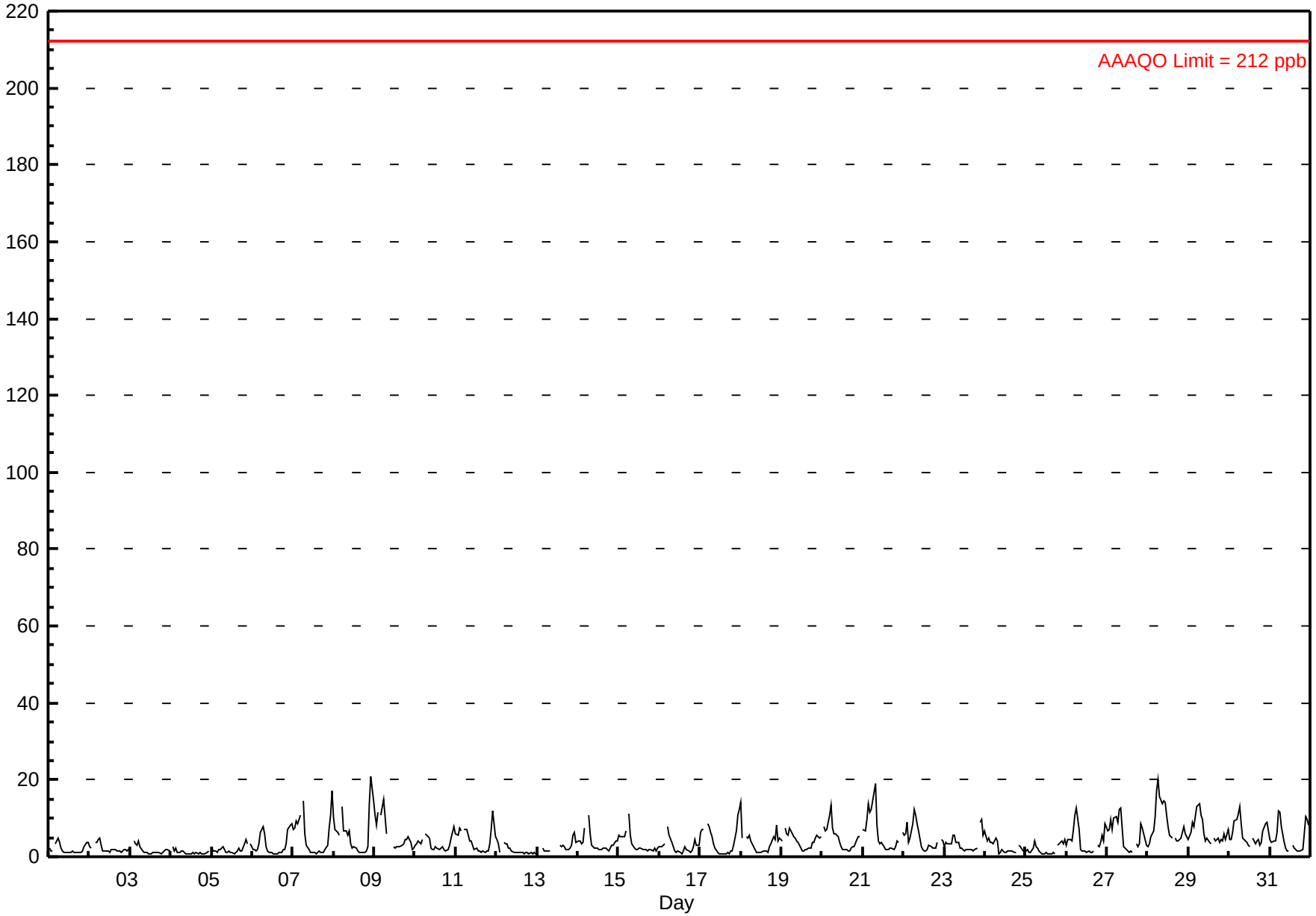
# Hourly Averages

## Nitrogen Dioxide ($NO_2$) - ppb

## Henry Pirker - July 2010



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# Hourly Maximums

## Nitrogen Dioxide ($NO_2$) - ppb

## Henry Pirker - July 2010

Maximum Value: 34.8 ppb on Jul 23 09:00

Maximum Daily Average: 12.7 ppb on Jul 28

Minimum Value: 1 ppb on Jul 13 01:00

Minimum Daily Average: 1.8 ppb on Jul 4

Maximum Diurnal Average: 10.8 ppb at hour 6

Minimum Diurnal Average: 3.1 ppb at hour 15

Monthly Average: 6.24 ppb

Percentiles: $P_1$ = 1.5 $P_{10}$ = 2.0 $Q_1$ = 2.9 Median = 4.5 $Q_3$ = 8.3 $P_{90}$ = 13.1 $P_{99}$ = 22.6

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 704 |
| Hours of Missing Data: | 40 |
| Hours of Calibration: | 40 |
| 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-Jul | 3 | 3 | 2 | A | 4 | 6 | 5 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 5 | 5 | 2.9 | 6.0 |
| 2-Jul | 3 | 3 | A | 5 | 4 | 7 | 6 | 5 | 2 | 3 | 3 | 4 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 3 | 2 | 3 | 3.4 | 7.5 |
| 3-Jul | 2 | A | 5 | 4 | 4 | 5 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 3 | 3 | 3 | 2 | 2.5 | 4.8 |
| 4-Jul | A | 4 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | A | 1.8 | 4.4 |
| 5-Jul | 4 | 3 | 2 | 2 | 3 | 3 | 4 | 3 | 2 | 2 | 12 | 2 | 2 | 1 | 2 | 3 | 4 | 2 | 3 | 5 | 6 | 5 | A | 5 | 3.6 | 11.7 |
| 6-Jul | 3 | 2 | 2 | 3 | 8 | 10 | 11 | 10 | 5 | 2 | 3 | 3 | 2 | 2 | 1 | 1 | 2 | 2 | 3 | 3 | 5 | 11 | 11 | 10 | 5.0 | 11.0 |
| 7-Jul | 9 | 11 | 13 | 11 | 15 | A | 16 | 12 | 4 | 8 | 2 | 1 | 8 | 11 | 1 | 3 | 2 | 2 | 1 | 4 | 8 | 10 | 15 | 24 | 8.4 | 24.0 |
| 8-Jul | 15 | 8 | 7 | 7 | A | 18 | 9 | 10 | 8 | 13 | 6 | 5 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 5 | 4 | 25 | 24 | 19 | 8.9 | 25.0 |
| 9-Jul | 14 | 9 | 14 | A | 15 | 18 | 16 | 9 | C | C | C | 4 | 3 | 6 | 4 | 5 | 7 | 5 | 10 | 9 | 11 | 10 | 3 | 4 | 8.9 | 17.9 |
| 10-Jul | 4 | 5 | 5 | 4 | 7 | A | 8 | 8 | 7 | 3 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 3 | 2 | 4 | 5 | 7 | 8 | 10 | 5.0 | 10.5 |
| 11-Jul | 8 | 9 | 9 | 11 | A | 8 | 8 | 7 | 5 | 5 | 3 | 2 | 3 | 2 | 4 | 2 | 2 | 2 | 2 | 2 | 5 | 10 | 21 | 14 | 6.6 | 21.3 |
| 12-Jul | 5 | 4 | 3 | A | 7 | 4 | 6 | 4 | 5 | 4 | 4 | 2 | 2 | 3 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 3.1 | 6.6 |
| 13-Jul | 1 | 1 | A | 4 | 2 | 2 | 2 | 2 | C | C | C | C | C | 4 | 3 | 3 | 3 | 3 | 2 | 3 | 5 | 9 | 8 | 5 | 3.5 | 9.2 |
| 14-Jul | 5 | 5 | 4 | 7 | 13 | A | 13 | 13 | 4 | 3 | 3 | 4 | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 4 | 4 | 5 | 6 | 5.3 | 13.3 |
| 15-Jul | 8 | 7 | 7 | 8 | 8 | A | 14 | 12 | 7 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 5.2 | 14.4 |
| 16-Jul | 3 | 3 | 4 | 4 | A | 11 | 9 | 5 | 3 | 3 | 3 | 14 | 2 | 1 | 3 | 5 | 4 | 2 | 2 | 3 | 3 | 7 | 4 | 5 | 4.7 | 13.9 |
| 17-Jul | 9 | 10 | 8 | A | 11 | 10 | 9 | 8 | 4 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 3 | 1 | 2 | 3 | 6 | 10 | 18 | 16 | 6.3 | 17.9 |
| 18-Jul | 20 | 7 | A | 7 | 8 | 12 | 5 | 6 | 3 | 2 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 4 | 5 | 10 | 10 | 10 | 6 | 6 | 6.0 | 20.3 |
| 19-Jul | 5 | A | 9 | 8 | 10 | 10 | 8 | 7 | 6 | 5 | 27 | 4 | 3 | 3 | 4 | 5 | 4 | 7 | 6 | 5 | 6 | 7 | 7 | 6 | 7.1 | 27.3 |
| 20-Jul | A | 13 | 14 | 9 | 15 | 17 | 11 | 7 | 8 | 6 | 6 | 3 | 2 | 3 | 3 | 3 | 6 | 3 | 6 | 4 | 7 | 7 | 13 | A | 7.7 | 16.6 |
| 21-Jul | 11 | 10 | 13 | 16 | 13 | 14 | 20 | 23 | 17 | 6 | 5 | 7 | 4 | 2 | 3 | 3 | 4 | 4 | 3 | 4 | 9 | 8 | A | 10 | 9.2 | 23.4 |
| 22-Jul | 7 | 8 | 11 | 5 | 8 | 14 | 17 | 14 | 14 | 11 | 7 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | A | 7 | 6 | 7.2 | 16.9 |
| 23-Jul | 4 | 5 | 4 | 4 | 4 | 9 | 9 | 5 | 35 | 3 | 12 | 5 | 7 | 5 | 3 | 3 | 4 | 3 | 3 | 4 | A | 12 | 13 | 8 | 7.2 | 34.8 |
| 24-Jul | 10 | 7 | 6 | 6 | 5 | 5 | 6 | 8 | 1 | 3 | 3 | 2 | 2 | 3 | 3 | 4 | 3 | 2 | 2 | A | 4 | 5 | 3 | 2 | 4.3 | 10.4 |
| 25-Jul | 2 | 3 | 3 | 2 | 4 | 5 | 4 | 3 | 3 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | A | 5 | 6 | 6 | 5 | 10 | 3.5 | 9.9 |
| 26-Jul | 5 | 7 | 5 | 6 | 9 | 14 | 14 | 11 | 3 | 3 | 6 | 2 | 2 | 3 | 2 | 2 | 2 | A | 5 | 3 | 6 | 11 | 5 | 12 | 6.1 | 14.4 |
| 27-Jul | 11 | 9 | 11 | 11 | 12 | 12 | 10 | 17 | 15 | 11 | 4 | 3 | 2 | 2 | 3 | 2 | A | 5 | 4 | 5 | 22 | 17 | 8 | 3 | 8.8 | 22.4 |
| 28-Jul | 3 | 4 | 6 | 9 | 15 | 23 | 23 | 23 | 19 | 18 | 20 | 14 | 16 | 7 | 6 | A | 7 | 10 | 7 | 7 | 17 | 14 | 15 | 9 | 12.7 | 22.9 |
| 29-Jul | 6 | 9 | 11 | 9 | 16 | 16 | 18 | 21 | 16 | 12 | 7 | 7 | 7 | 8 | A | 7 | 6 | 10 | 7 | 6 | 7 | 12 | 7 | 10 | 10.3 | 20.9 |
| 30-Jul | 11 | 7 | 19 | 16 | 11 | 15 | 19 | 10 | 8 | 6 | 7 | 7 | 7 | A | 8 | 5 | 6 | 8 | 4 | 6 | 11 | 11 | 14 | 9 | 9.9 | 18.7 |
| 31-Jul | 8 | 6 | 5 | 6 | 11 | 21 | 19 | 9 | 6 | 3 | 2 | 2 | A | 6 | 4 | 4 | 3 | 7 | 6 | 4 | 11 | 12 | 11 | 11 | 7.8 | 21.4 |
| | 7.0 | 6.4 | 7.4 | 6.9 | 8.7 | 10.8 | 10.7 | 9.2 | 7.6 | 5.3 | 5.6 | 4.0 | 3.6 | 3.5 | 3.1 | 3.3 | 3.4 | 3.7 | 3.7 | 4.3 | 6.8 | 8.6 | 8.6 | 8.1 | Diurnal Average | |
| | 20.3 | 13.4 | 18.5 | 16.0 | 16.4 | 22.9 | 22.7 | 23.4 | 34.8 | 17.9 | 27.3 | 14.3 | 15.7 | 11.2 | 8.3 | 7.2 | 6.9 | 9.9 | 9.9 | 10.4 | 22.4 | 25.0 | 24.0 | 24.0 | Diurnal Maximum | |

C - Calibration

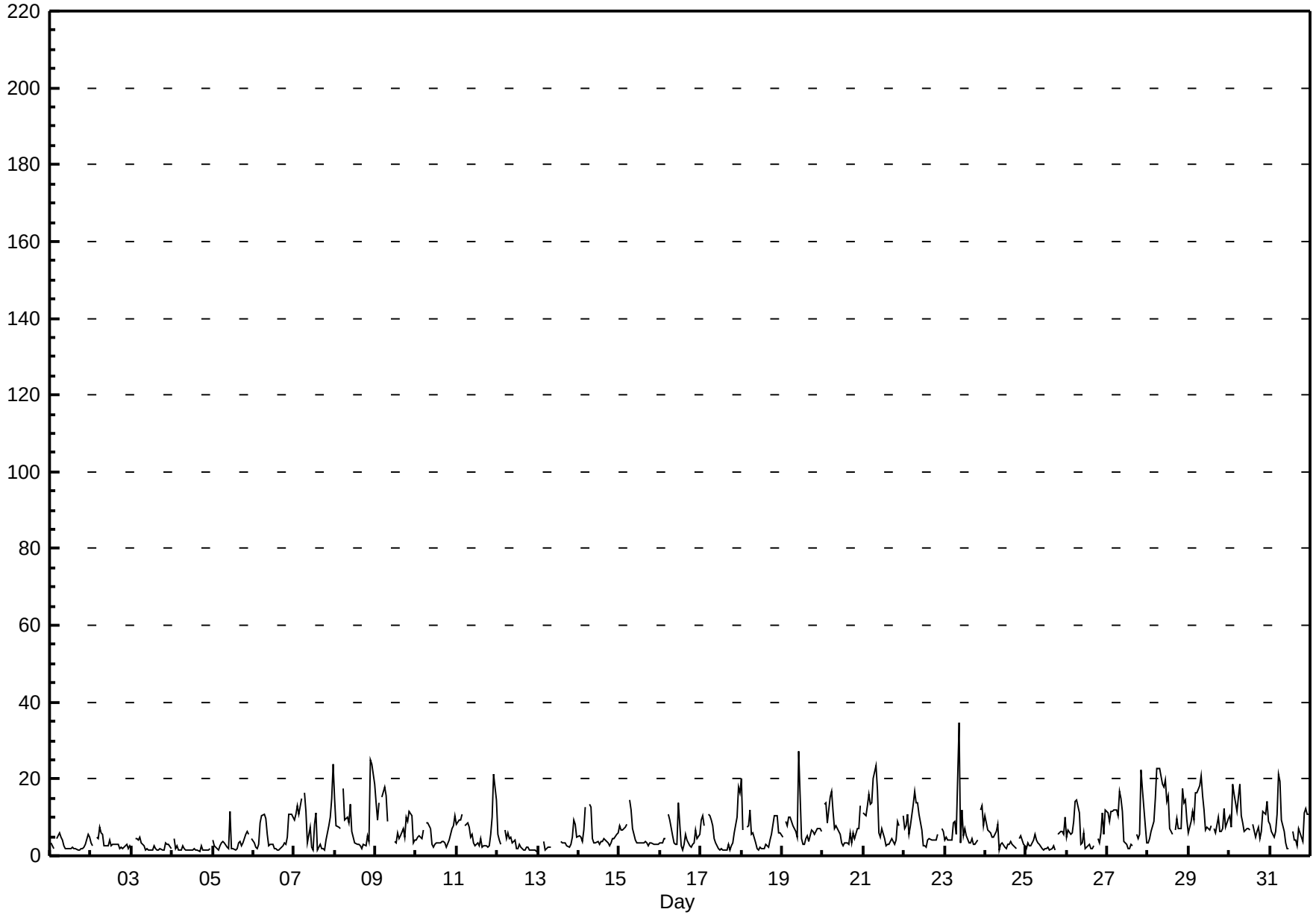
A - Automated Daily Zero Span

PASZA
Peace Airshed Zone Association

# Hourly Maximums

**Nitrogen Dioxide ($NO_2$) - ppb**

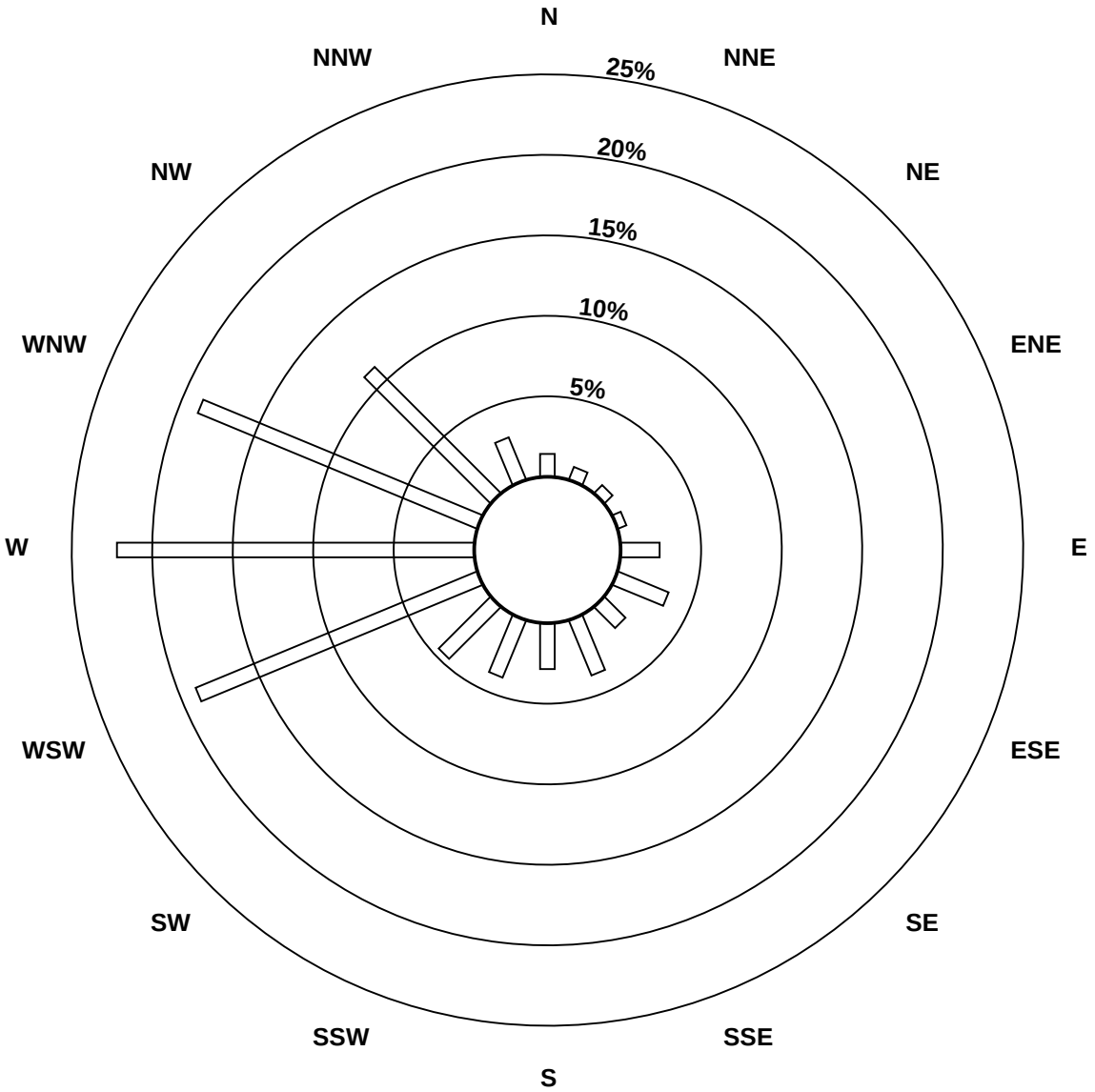
**Henry Pirker - July 2010**



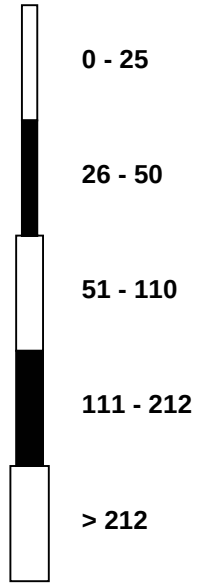
# Pollutant Rose

**Nitrogen Dioxide ($NO_2$) - ppb**

**Henry Pirker - July 2010**




**Pollutant Classes (ppb)**



# Hourly Averages

## Nitrogen Oxide (NO) - ppb

## Henry Pirker - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 25.1 ppb on Jul 21 08:00 Maximum Daily Average: 2.9 ppb on Jul 27

Minimum Value: 0 ppb on Jul 1 02:00 Minimum Daily Average: 0.2 ppb on Jul 18
Maximum Diurnal Average: 3.6 ppb at hour 7 Minimum Diurnal Average: 0.0 ppb at hour 24
Monthly Average: 0.77 ppb Percentiles: $P_1$ = 0.0 $P_{10}$ = 0.0 $Q_1$ = 0.0 Median = 0.3 $Q_3$ = 0.7 $P_{90}$ = 1.6 $P_{99}$ = 7.8

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 704 |
| Hours of Missing Data: | 40 |
| Hours of Calibration: | 40 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Daily Average | Daily Maximum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Jul | 0 | 0 | 0 | A | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 1.3 |
| 2-Jul | 0 | 0 | A | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0.6 | 1.6 |
| 3-Jul | 0 | A | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.7 |
| 4-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0.3 | 0.6 |
| 5-Jul | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | A | 0 | 0.6 | 3.1 |
| 6-Jul | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 | 4.1 |
| 7-Jul | 0 | 0 | 0 | 0 | 1 | A | 11 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.7 | 11.0 |
| 8-Jul | 0 | 0 | 0 | 0 | A | 4 | 2 | 3 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 | 4.2 |
| 9-Jul | 0 | 0 | 0 | A | 1 | 5 | 4 | 2 | C | C | C | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 5.4 |
| 10-Jul | 0 | 0 | 0 | 0 | 0 | A | 1 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 2.3 |
| 11-Jul | 0 | 0 | 0 | 0 | A | 1 | 2 | 2 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 | 2.2 |
| 12-Jul | 0 | 0 | 0 | A | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 1.2 |
| 13-Jul | 0 | 0 | A | 0 | 0 | 0 | 0 | 1 | C | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0.4 | 0.7 |
| 14-Jul | 0 | 1 | 0 | 0 | 3 | A | 6 | 4 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1.1 | 6.2 |
| 15-Jul | 0 | 0 | 0 | 0 | 0 | A | 6 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 5.8 |
| 16-Jul | 0 | 0 | 0 | 0 | A | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 2.3 |
| 17-Jul | 0 | 0 | 0 | A | 0 | 2 | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 3.1 |
| 18-Jul | 0 | 0 | A | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 1.1 |
| 19-Jul | 0 | A | 0 | 0 | 0 | 1 | 2 | 3 | 3 | 2 | 3 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 2.9 |
| 20-Jul | A | 0 | 0 | 0 | 1 | 5 | 4 | 4 | 5 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 1.1 | 5.2 |
| 21-Jul | 0 | 0 | 0 | 1 | 1 | 7 | 14 | 25 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 2.4 | 25.1 |
| 22-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0.4 | 1.6 |
| 23-Jul | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | A | 0 | 0 | 0 | 0.8 | 2.6 |
| 24-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0.3 | 1.4 |
| 25-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0.2 | 1.1 |
| 26-Jul | 0 | 0 | 0 | 0 | 0 | 5 | 9 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 1.0 | 8.9 |
| 27-Jul | 0 | 0 | 0 | 0 | 3 | 8 | 7 | 20 | 20 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2.9 | 20.3 |
| 28-Jul | 0 | 0 | 0 | 0 | 0 | 5 | 13 | 6 | 4 | 6 | 7 | 4 | 1 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.1 | 12.9 |
| 29-Jul | 0 | 0 | 0 | 0 | 1 | 5 | 5 | 3 | 4 | 2 | 1 | 1 | 1 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.0 | 5.3 |
| 30-Jul | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | A | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 2.3 |
| 31-Jul | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 2 | 1 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 2.6 |
| | 0.0 | 0.0 | 0.1 | 0.1 | 0.5 | 2.2 | 3.6 | 3.5 | 2.3 | 1.3 | 0.9 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.2 | 0.1 | 0.1 | 0.1 | 0.0 | Diurnal Average | |
| | 0.4 | 0.5 | 0.3 | 0.8 | 3.4 | 8.1 | 14.4 | 25.1 | 19.6 | 6.1 | 6.6 | 3.8 | 1.4 | 0.9 | 1.0 | 1.0 | 1.0 | 0.8 | 0.7 | 0.8 | 0.6 | 0.4 | 0.4 | 0.4 | Diurnal Maximum | |

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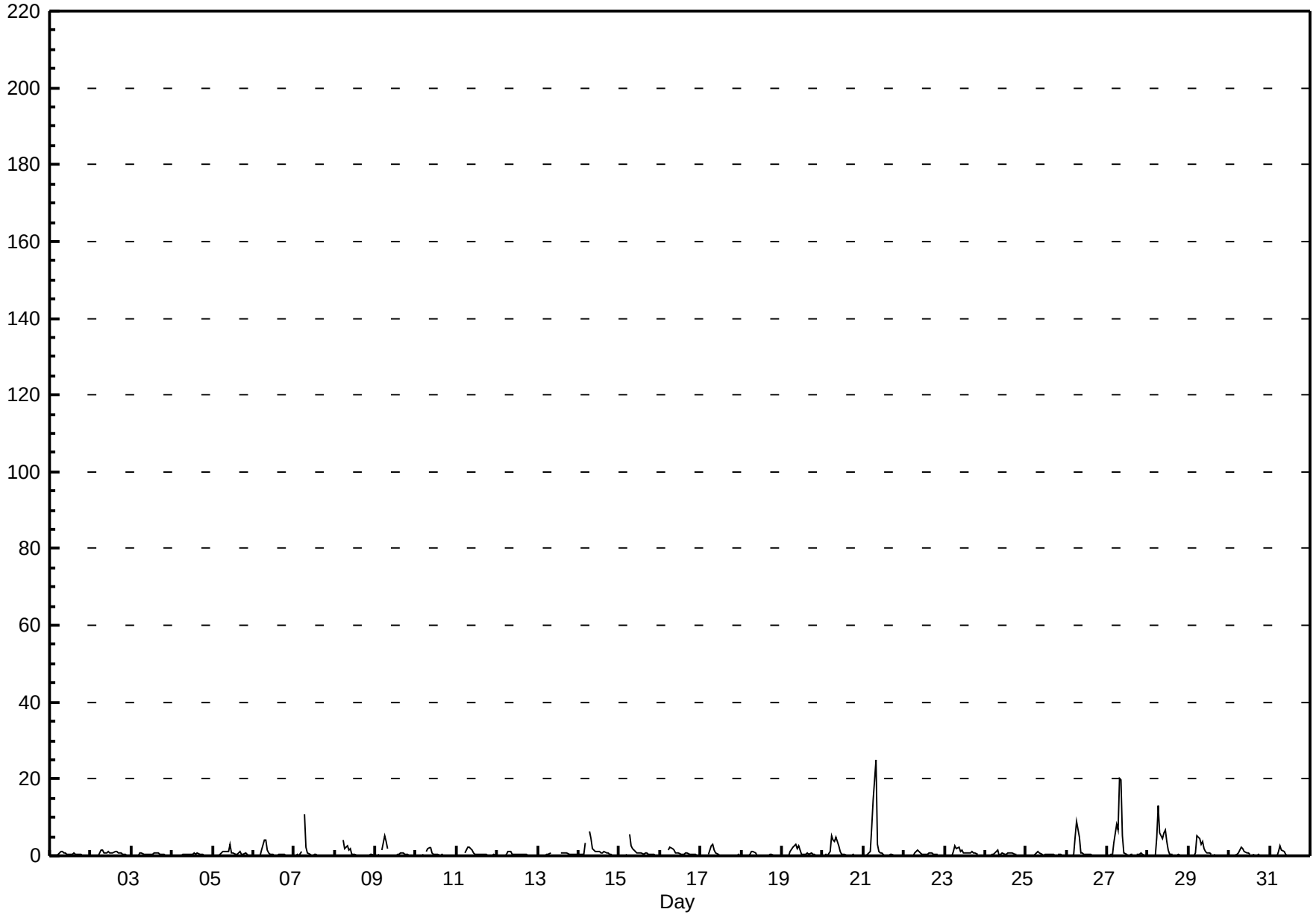
## Hourly Averages

**Nitrogen Oxide (NO) - ppb**

**Henry Pirker - July 2010**



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# Hourly Maximums

## Nitrogen Oxide (NO) - ppb

## Henry Pirker - July 2010

Maximum Value: 43.2 ppb on Jul 21 08:00

Maximum Daily Average: 6.2 ppb on Jul 27

Minimum Value: 0 ppb on Jul 22 00:00

Minimum Daily Average: 0.7 ppb on Jul 4

Maximum Diurnal Average: 7.6 ppb at hour 8

Minimum Diurnal Average: 0.4 ppb at hour 24

Monthly Average: 2.42 ppb

Percentiles: $P_1$ = 0.0 $P_{10}$ = 0.0 $Q_1$ = 0.5 Median = 1.0 $Q_3$ = 2.0 $P_{90}$ = 5.5 $P_{99}$ = 29.0

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 704 |
| Hours of Missing Data: | 40 |
| Hours of Calibration: | 40 |
| 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-Jul | 1 | 0 | 0 | A | 0 | 2 | 2 | 3 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0.9 | 2.8 |
| 2-Jul | 0 | 0 | A | 0 | 1 | 1 | 2 | 3 | 2 | 2 | 10 | 4 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1.7 | 9.8 |
| 3-Jul | 0 | A | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.8 | 1.6 |
| 4-Jul | A | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 0.7 | 1.1 |
| 5-Jul | 1 | 1 | 0 | 0 | 1 | 5 | 3 | 2 | 12 | 2 | 20 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | A | 1 | 2.7 | 19.5 |
| 6-Jul | 1 | 0 | 0 | 0 | 1 | 4 | 8 | 7 | 4 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1.6 | 7.7 |
| 7-Jul | 1 | 1 | 2 | 1 | 10 | A | 15 | 6 | 1 | 5 | 1 | 1 | 8 | 14 | 0 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 3.0 | 15.0 |
| 8-Jul | 1 | 0 | 0 | 1 | A | 40 | 3 | 10 | 3 | 5 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 1 | 2 | 0 | 3.3 | 39.9 |
| 9-Jul | 1 | 2 | 1 | A | 22 | 12 | 10 | 4 | C | C | C | 1 | 1 | 4 | 3 | 5 | 5 | 1 | 1 | 1 | 4 | 1 | 1 | 2 | 4.0 | 21.8 |
| 10-Jul | 1 | 1 | 1 | 1 | 2 | A | 2 | 3 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1.0 | 4.4 |
| 11-Jul | 0 | 1 | 1 | 2 | A | 1 | 5 | 3 | 3 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 5 | 0 | 1.5 | 5.1 |
| 12-Jul | 0 | 0 | 0 | A | 0 | 1 | 3 | 3 | 3 | 2 | 9 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1.4 | 8.9 |
| 13-Jul | 0 | 0 | A | 0 | 0 | 1 | 1 | 2 | C | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.8 | 1.7 |
| 14-Jul | 1 | 1 | 0 | 2 | 12 | A | 15 | 15 | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 3.0 | 15.2 |
| 15-Jul | 0 | 0 | 0 | 0 | 1 | A | 9 | 9 | 22 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2.6 | 21.9 |
| 16-Jul | 0 | 0 | 0 | 0 | A | 3 | 4 | 3 | 2 | 2 | 2 | 13 | 2 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1.8 | 12.6 |
| 17-Jul | 1 | 1 | 0 | A | 1 | 3 | 5 | 6 | 2 | 1 | 1 | 0 | 1 | 0 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 4 | 2 | 1.7 | 5.9 |
| 18-Jul | 1 | 0 | A | 0 | 0 | 1 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0.7 | 3.0 |
| 19-Jul | 0 | A | 0 | 0 | 1 | 2 | 4 | 4 | 4 | 3 | 28 | 1 | 1 | 7 | 2 | 6 | 1 | 9 | 2 | 1 | 1 | 0 | 0 | 0 | 3.4 | 27.8 |
| 20-Jul | A | 1 | 4 | 0 | 7 | 9 | 6 | 5 | 8 | 4 | 2 | 1 | 1 | 1 | 1 | 0 | 4 | 1 | 2 | 1 | 0 | 0 | 1 | A | 2.9 | 9.1 |
| 21-Jul | 2 | 4 | 1 | 2 | 2 | 16 | 32 | 43 | 10 | 2 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | A | 0 | 5.4 | 43.2 |
| 22-Jul | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 1 | 4 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 0 | 0 | 1.1 | 4.5 |
| 23-Jul | 0 | 1 | 0 | 0 | 0 | 3 | 4 | 3 | 43 | 2 | 29 | 6 | 13 | 13 | 2 | 2 | 3 | 2 | 1 | 1 | A | 0 | 1 | 0 | 5.6 | 43.1 |
| 24-Jul | 1 | 0 | 0 | 0 | 1 | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | A | 0 | 0 | 0 | 0 | 1.0 | 4.0 |
| 25-Jul | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 0 | 1 | 0.8 | 2.0 |
| 26-Jul | 1 | 0 | 0 | 0 | 1 | 12 | 15 | 11 | 1 | 7 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 0 | 0 | 0 | 1 | 2.8 | 15.4 |
| 27-Jul | 1 | 0 | 1 | 1 | 10 | 25 | 11 | 35 | 29 | 11 | 1 | 1 | 1 | 1 | 1 | 1 | A | 2 | 1 | 1 | 3 | 1 | 0 | 1 | 6.2 | 35.2 |
| 28-Jul | 1 | 2 | 1 | 1 | 3 | 17 | 25 | 14 | 13 | 8 | 13 | 8 | 9 | 1 | 1 | A | 0 | 0 | 3 | 2 | 1 | 0 | 1 | 0 | 5.5 | 24.8 |
| 29-Jul | 0 | 0 | 0 | 0 | 5 | 13 | 10 | 19 | 8 | 4 | 2 | 2 | 6 | 3 | A | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3.4 | 19.0 |
| 30-Jul | 0 | 0 | 1 | 1 | 1 | 1 | 4 | 4 | 3 | 2 | 2 | 5 | 9 | A | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 3 | 0 | 2.0 | 9.0 |
| 31-Jul | 0 | 0 | 0 | 0 | 1 | 6 | 5 | 3 | 2 | 1 | 0 | 0 | A | 3 | 7 | 2 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1.7 | 6.8 |
| | 0.5 | 0.5 | 0.6 | 0.5 | 3.0 | 6.8 | 6.9 | 7.6 | 6.8 | 2.8 | 4.9 | 2.1 | 2.4 | 2.4 | 1.5 | 1.6 | 1.3 | 1.4 | 1.1 | 0.8 | 0.8 | 0.5 | 0.8 | 0.4 | Diurnal Average | |
| | 1.8 | 4.0 | 4.0 | 2.5 | 21.8 | 39.9 | 31.7 | 43.2 | 43.1 | 11.4 | 29.1 | 12.6 | 12.9 | 14.3 | 6.8 | 6.1 | 4.5 | 9.1 | 3.4 | 2.0 | 3.8 | 1.5 | 4.9 | 2.0 | Diurnal Maximum | |

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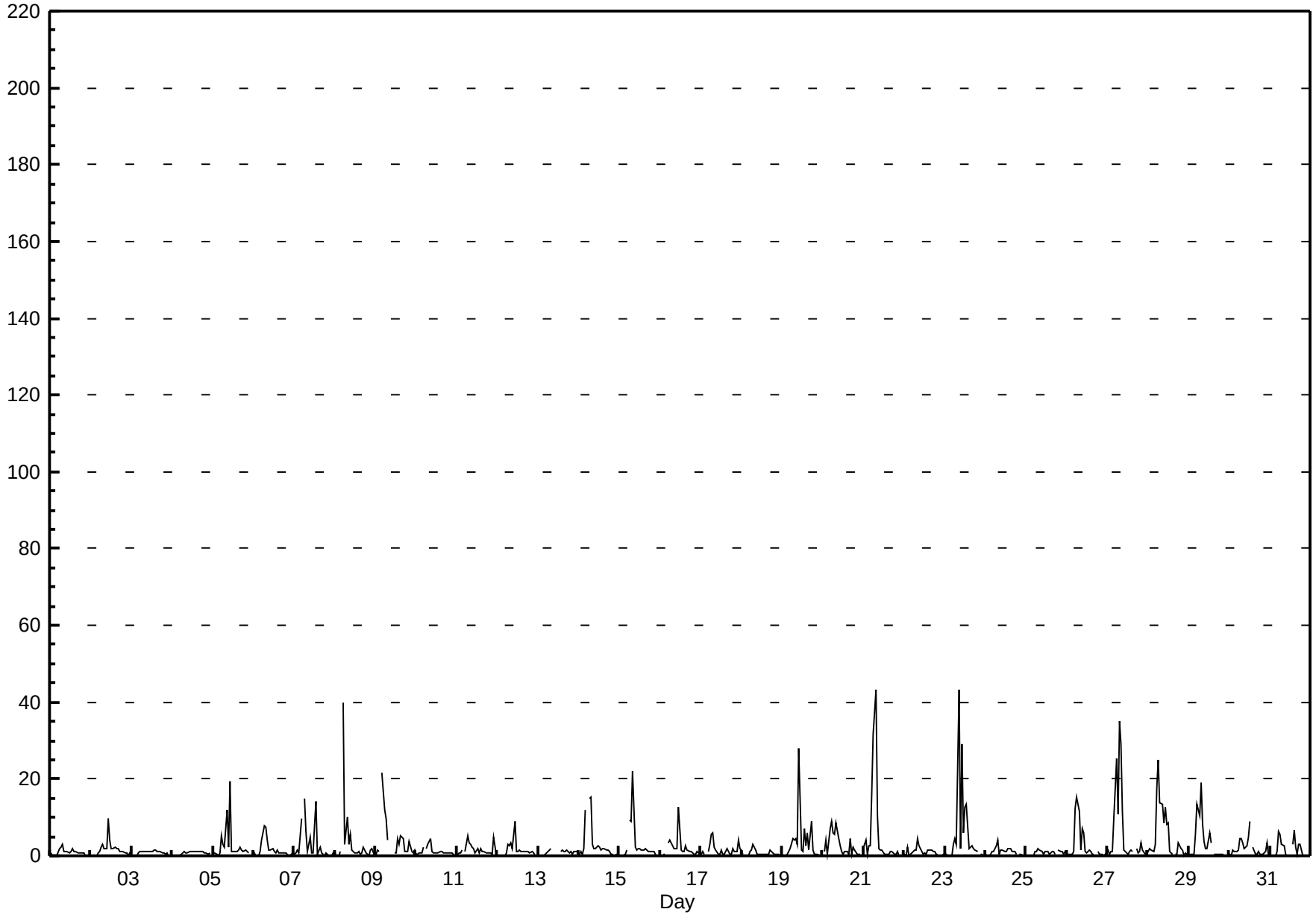
# Hourly Maximums

**Nitrogen Oxide (NO) - ppb**

**Henry Pirker - July 2010**



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# Hourly Averages

## Oxides of Nitrogen ($NO_X$) - ppb

## Henry Pirker - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 44.0 ppb on Jul 21 08:00 Maximum Daily Average: 10.6 ppb on Jul 28

Minimum Value: 1 ppb on Jul 13 01:00 Minimum Daily Average: 1.6 ppb on Jul 4
Maximum Diurnal Average: 11.7 ppb at hour 7 Minimum Diurnal Average: 2.2 ppb at hour 15
Monthly Average: 4.89 ppb Percentiles: $P_1 = 0.9$ $P_{10} = 1.4$ $Q_1 = 1.9$ Median = 3.4 $Q_3 = 6.0$ $P_{90} = 9.9$ $P_{99} = 21.9$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 704 |
| Hours of Missing Data: | 40 |
| Hours of Calibration: | 40 |
| 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-Jul | 3 | 2 | 2 | A | 4 | 6 | 6 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 3 | 4 | 4 | 2.6 | 6.4 |
| 2-Jul | 3 | 2 | A | 4 | 4 | 6 | 7 | 5 | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3.1 | 7.0 |
| 3-Jul | 2 | A | 4 | 4 | 4 | 5 | 4 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2.3 | 5.0 |
| 4-Jul | A | 3 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | A | 1.6 | 2.9 |
| 5-Jul | 3 | 2 | 2 | 1 | 2 | 3 | 3 | 4 | 3 | 2 | 5 | 2 | 2 | 1 | 2 | 2 | 4 | 2 | 2 | 4 | 5 | 4 | A | 4 | 2.8 | 5.5 |
| 6-Jul | 2 | 2 | 2 | 2 | 4 | 9 | 13 | 11 | 5 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 4 | 8 | 9 | 10 | 4.1 | 13.0 |
| 7-Jul | 8 | 9 | 11 | 10 | 13 | A | 27 | 9 | 4 | 3 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 3 | 9 | 12 | 20 | 6.6 | 27.3 |
| 8-Jul | 12 | 8 | 7 | 6 | A | 19 | 9 | 10 | 8 | 9 | 4 | 3 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 3 | 16 | 24 | 17 | 7.4 | 23.8 |
| 9-Jul | 12 | 10 | 13 | A | 14 | 22 | 16 | 9 | C | C | C | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 6 | 5 | 6 | 5 | 2 | 3 | 7.4 | 22.3 |
| 10-Jul | 4 | 4 | 5 | 4 | 5 | A | 8 | 8 | 8 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 4 | 6 | 7 | 9 | 4.4 | 8.9 |
| 11-Jul | 7 | 6 | 9 | 8 | A | 8 | 10 | 8 | 7 | 6 | 4 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 8 | 14 | 6 | 5.4 | 14.0 |
| 12-Jul | 5 | 4 | 1 | A | 4 | 4 | 5 | 4 | 4 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2.3 | 4.9 |
| 13-Jul | 1 | 1 | A | 3 | 2 | 2 | 2 | 2 | C | C | C | C | C | 4 | 3 | 4 | 3 | 3 | 2 | 3 | 3 | 6 | 7 | 4 | 3.0 | 6.7 |
| 14-Jul | 4 | 5 | 3 | 4 | 10 | A | 17 | 10 | 5 | 4 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 4 | 4 | 4.6 | 16.9 |
| 15-Jul | 6 | 5 | 5 | 5 | 7 | A | 17 | 8 | 5 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4.2 | 16.9 |
| 16-Jul | 2 | 2 | 3 | 4 | A | 9 | 8 | 5 | 4 | 2 | 2 | 2 | 2 | 1 | 2 | 4 | 3 | 2 | 1 | 2 | 3 | 5 | 3 | 3 | 3.2 | 9.1 |
| 17-Jul | 6 | 7 | 7 | A | 9 | 9 | 9 | 8 | 5 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 7 | 11 | 12 | 4.7 | 12.2 |
| 18-Jul | 14 | 5 | A | 5 | 5 | 6 | 5 | 4 | 3 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 3 | 4 | 5 | 5 | 8 | 4 | 5 | 4.0 | 14.4 |
| 19-Jul | 4 | A | 7 | 6 | 6 | 8 | 8 | 8 | 8 | 6 | 7 | 3 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 6 | 5 | 5 | 4.9 | 8.4 |
| 20-Jul | A | 8 | 7 | 7 | 12 | 19 | 12 | 10 | 11 | 8 | 5 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 5 | A | 6.1 | 18.6 |
| 21-Jul | 7 | 7 | 10 | 14 | 12 | 20 | 29 | 44 | 11 | 5 | 4 | 4 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 4 | 4 | A | 6 | 8.7 | 44.0 |
| 22-Jul | 5 | 6 | 9 | 4 | 5 | 9 | 13 | 12 | 10 | 8 | 3 | 2 | 2 | 2 | 2 | 4 | 3 | 3 | 3 | 2 | 4 | A | 4 | 4 | 5.1 | 12.9 |
| 23-Jul | 3 | 4 | 3 | 3 | 3 | 7 | 8 | 6 | 6 | 3 | 4 | 2 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | A | 9 | 10 | 6 | 4.2 | 9.6 |
| 24-Jul | 7 | 4 | 5 | 4 | 4 | 4 | 6 | 5 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | A | 3 | 3 | 2 | 1 | 2.9 | 6.9 |
| 25-Jul | 1 | 2 | 1 | 1 | 2 | 4 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 3 | 4 | 4 | 4 | 5 | 2.2 | 4.7 |
| 26-Jul | 3 | 5 | 5 | 4 | 7 | 16 | 21 | 12 | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | A | 3 | 3 | 4 | 6 | 4 | 9 | 5.1 | 21.5 |
| 27-Jul | 7 | 7 | 10 | 7 | 13 | 18 | 16 | 33 | 32 | 13 | 3 | 2 | 2 | 1 | 2 | 1 | A | 4 | 3 | 3 | 9 | 8 | 5 | 3 | 8.8 | 32.5 |
| 28-Jul | 3 | 3 | 5 | 7 | 11 | 22 | 33 | 22 | 18 | 21 | 21 | 15 | 9 | 6 | 5 | A | 5 | 4 | 4 | 5 | 6 | 8 | 6 | 5 | 10.6 | 32.9 |
| 29-Jul | 4 | 7 | 9 | 8 | 11 | 18 | 18 | 14 | 13 | 8 | 5 | 6 | 4 | 4 | A | 5 | 4 | 5 | 4 | 5 | 4 | 6 | 5 | 7 | 7.6 | 18.4 |
| 30-Jul | 4 | 4 | 6 | 9 | 10 | 12 | 14 | 11 | 7 | 6 | 4 | 3 | 3 | A | 5 | 4 | 4 | 5 | 3 | 4 | 7 | 9 | 9 | 7 | 6.6 | 14.4 |
| 31-Jul | 4 | 4 | 4 | 4 | 6 | 13 | 14 | 9 | 5 | 2 | 2 | 2 | A | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 6 | 10 | 10 | 8 | 5.1 | 14.1 |
| | 5.1 | 4.7 | 5.6 | 5.2 | 6.9 | 10.4 | 11.7 | 9.8 | 6.7 | 4.6 | 3.5 | 2.7 | 2.4 | 2.2 | 2.2 | 2.3 | 2.4 | 2.4 | 2.4 | 2.8 | 4.0 | 5.8 | 6.1 | 6.0 | Diurnal Average | |
| | 14.4 | 9.6 | 13.5 | 14.5 | 13.6 | 22.3 | 32.9 | 44.0 | 32.4 | 20.5 | 20.9 | 14.8 | 9.2 | 6.1 | 5.3 | 5.1 | 4.9 | 5.2 | 5.5 | 5.3 | 9.2 | 15.9 | 23.8 | 19.5 | Diurnal Maximum | |

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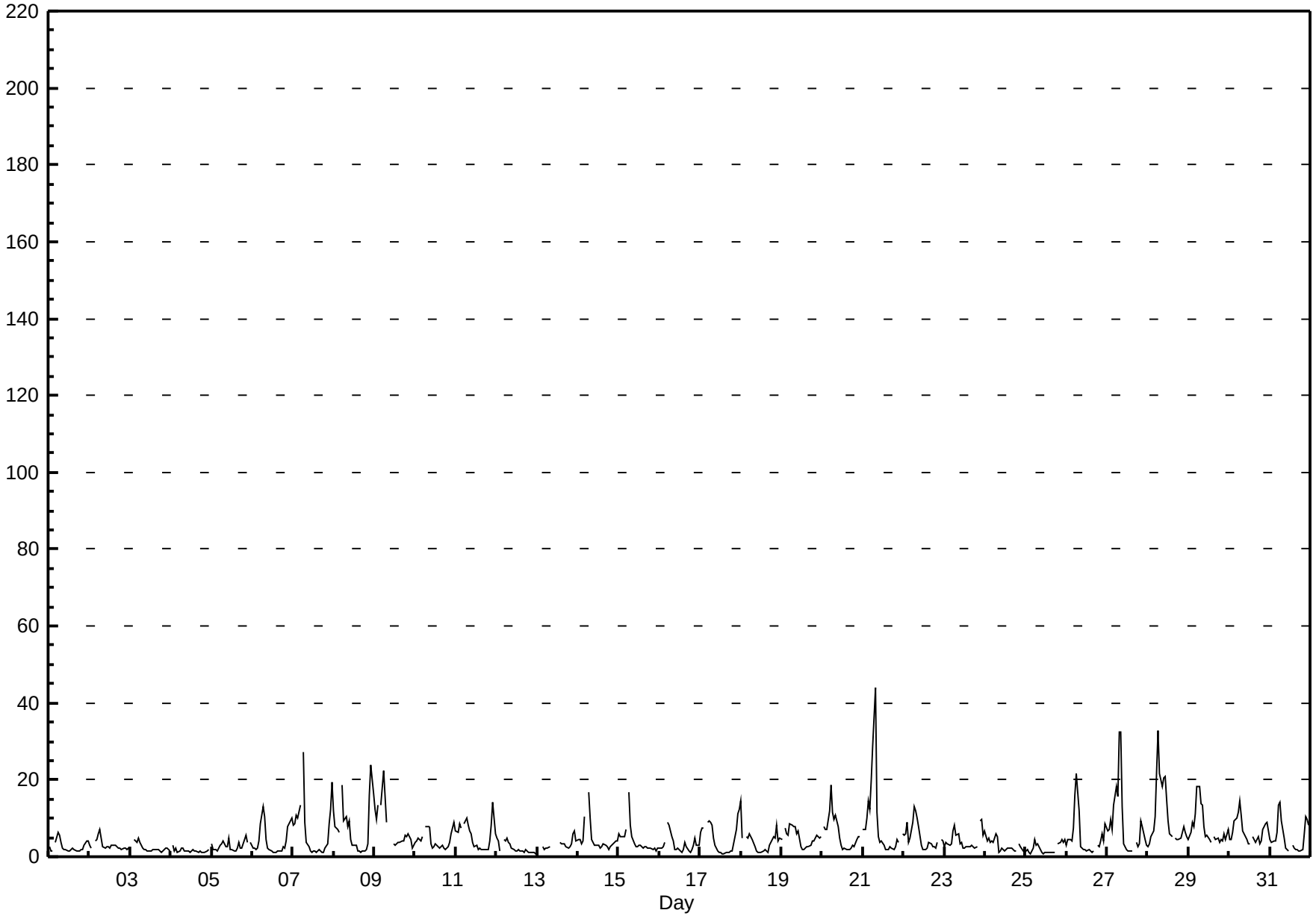
## Hourly Averages

**Oxides of Nitrogen ($NO_X$) - ppb**

**Henry Pirker - July 2010**



PASZA
Peace Airshed Zone Association

# Hourly Maximums

## Oxides of Nitrogen ($NO_X$) - ppb

## Henry Pirker - July 2010

Maximum Value: 77.7 ppb on Jul 23 09:00

Maximum Daily Average: 17.7 ppb on Jul 28

Minimum Value: 1 ppb on Jul 13 01:00

Minimum Daily Average: 2.7 ppb on Jul 4

Maximum Diurnal Average: 17.8 ppb at hour 6

Minimum Diurnal Average: 4.6 ppb at hour 15

Monthly Average: 8.69 ppb

Percentiles: $P_1$ = 1.6 $P_{10}$ = 2.8 $Q_1$ = 3.8 Median = 5.7 $Q_3$ = 10.7 $P_{90}$ = 17.5 $P_{99}$ = 45.1

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 704 |
| Hours of Missing Data: | 40 |
| Hours of Calibration: | 40 |
| 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-Jul | 4 | 3 | 2 | A | 5 | 8 | 7 | 7 | 4 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 4 | 7 | 6 | 4.0 | 8.2 |
| 2-Jul | 4 | 3 | A | 6 | 5 | 10 | 8 | 9 | 4 | 5 | 9 | 9 | 4 | 5 | 6 | 5 | 5 | 3 | 4 | 3 | 4 | 4 | 3 | 3 | 5.3 | 10.1 |
| 3-Jul | 2 | A | 5 | 5 | 5 | 6 | 5 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 2 | 3 | 4 | 3 | 3 | 2 | 3.5 | 6.2 |
| 4-Jul | A | 5 | 2 | 3 | 2 | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 2 | 3 | A | 2.7 | 4.9 |
| 5-Jul | 5 | 3 | 2 | 2 | 3 | 7 | 7 | 6 | 13 | 4 | 30 | 4 | 3 | 3 | 3 | 6 | 6 | 4 | 5 | 7 | 8 | 7 | A | 6 | 6.3 | 30.4 |
| 6-Jul | 4 | 3 | 2 | 3 | 11 | 15 | 20 | 18 | 10 | 4 | 5 | 5 | 3 | 3 | 2 | 3 | 3 | 3 | 5 | 4 | 6 | 13 | 12 | 12 | 7.0 | 19.7 |
| 7-Jul | 11 | 13 | 16 | 13 | 26 | A | 33 | 19 | 5 | 13 | 3 | 2 | 18 | 27 | 2 | 5 | 3 | 3 | 2 | 5 | 9 | 11 | 17 | 28 | 12.4 | 33.2 |
| 8-Jul | 18 | 9 | 8 | 9 | A | 60 | 13 | 19 | 12 | 21 | 9 | 7 | 4 | 4 | 5 | 3 | 2 | 5 | 3 | 7 | 4 | 29 | 29 | 21 | 13.1 | 59.8 |
| 9-Jul | 16 | 12 | 16 | A | 36 | 31 | 27 | 14 | C | C | C | 5 | 4 | 10 | 8 | 11 | 12 | 6 | 13 | 11 | 16 | 13 | 4 | 6 | 13.5 | 36.3 |
| 10-Jul | 5 | 6 | 7 | 5 | 10 | A | 11 | 12 | 12 | 5 | 3 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 3 | 5 | 7 | 8 | 9 | 12 | 6.5 | 12.4 |
| 11-Jul | 10 | 11 | 11 | 13 | A | 10 | 14 | 12 | 8 | 8 | 5 | 3 | 6 | 4 | 7 | 4 | 4 | 3 | 3 | 3 | 6 | 11 | 29 | 16 | 8.7 | 28.8 |
| 12-Jul | 6 | 4 | 3 | A | 7 | 6 | 10 | 8 | 8 | 5 | 13 | 3 | 3 | 5 | 4 | 3 | 3 | 4 | 4 | 2 | 3 | 2 | 2 | 1 | 4.7 | 12.6 |
| 13-Jul | 1 | 1 | A | 4 | 2 | 3 | 3 | 4 | C | C | C | C | C | 5 | 4 | 4 | 4 | 3 | 3 | 4 | 5 | 10 | 9 | 5 | 4.3 | 9.8 |
| 14-Jul | 5 | 6 | 4 | 8 | 24 | A | 28 | 28 | 7 | 6 | 6 | 6 | 5 | 5 | 5 | 6 | 5 | 5 | 3 | 4 | 5 | 4 | 6 | 6 | 8.1 | 27.6 |
| 15-Jul | 8 | 6 | 7 | 8 | 9 | A | 24 | 21 | 28 | 6 | 5 | 5 | 5 | 5 | 4 | 6 | 5 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 7.8 | 28.1 |
| 16-Jul | 3 | 3 | 5 | 4 | A | 14 | 13 | 8 | 5 | 5 | 5 | 26 | 4 | 2 | 4 | 8 | 5 | 3 | 3 | 3 | 4 | 7 | 5 | 5 | 6.4 | 25.6 |
| 17-Jul | 9 | 11 | 8 | A | 11 | 13 | 14 | 13 | 6 | 5 | 3 | 2 | 3 | 1 | 2 | 4 | 4 | 2 | 3 | 5 | 6 | 11 | 19 | 16 | 7.6 | 19.2 |
| 18-Jul | 21 | 7 | A | 7 | 8 | 12 | 7 | 9 | 4 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 2 | 5 | 6 | 10 | 11 | 11 | 6 | 6 | 6.6 | 21.5 |
| 19-Jul | 5 | A | 9 | 7 | 11 | 11 | 12 | 11 | 11 | 7 | 51 | 6 | 4 | 8 | 7 | 11 | 4 | 15 | 7 | 6 | 6 | 7 | 7 | 6 | 10.0 | 51.2 |
| 20-Jul | A | 14 | 18 | 9 | 22 | 25 | 17 | 12 | 16 | 11 | 8 | 4 | 3 | 4 | 5 | 3 | 10 | 4 | 7 | 6 | 7 | 7 | 14 | A | 10.4 | 25.4 |
| 21-Jul | 13 | 14 | 14 | 18 | 15 | 29 | 51 | 66 | 28 | 8 | 6 | 8 | 5 | 3 | 3 | 3 | 4 | 5 | 3 | 4 | 9 | 8 | A | 10 | 14.4 | 65.9 |
| 22-Jul | 7 | 8 | 12 | 5 | 8 | 14 | 18 | 15 | 18 | 13 | 8 | 3 | 3 | 2 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | A | 7 | 7 | 8.1 | 18.3 |
| 23-Jul | 4 | 5 | 4 | 4 | 4 | 11 | 13 | 8 | 78 | 5 | 41 | 11 | 18 | 15 | 5 | 6 | 7 | 5 | 5 | 5 | A | 12 | 13 | 8 | 12.5 | 77.7 |
| 24-Jul | 10 | 7 | 6 | 6 | 6 | 6 | 9 | 12 | 2 | 4 | 4 | 3 | 3 | 4 | 5 | 6 | 4 | 3 | 3 | A | 4 | 6 | 3 | 2 | 5.2 | 12.2 |
| 25-Jul | 2 | 3 | 2 | 2 | 4 | 6 | 5 | 5 | 4 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 4 | 2 | A | 7 | 7 | 7 | 6 | 10 | 4.2 | 10.4 |
| 26-Jul | 5 | 7 | 5 | 6 | 10 | 27 | 30 | 23 | 4 | 10 | 12 | 3 | 3 | 4 | 3 | 2 | 3 | A | 5 | 4 | 6 | 12 | 6 | 12 | 8.8 | 29.6 |
| 27-Jul | 12 | 9 | 12 | 12 | 21 | 37 | 21 | 51 | 44 | 23 | 5 | 3 | 2 | 3 | 4 | 3 | A | 7 | 5 | 6 | 25 | 18 | 8 | 4 | 14.6 | 51.2 |
| 28-Jul | 4 | 6 | 8 | 10 | 15 | 40 | 47 | 37 | 32 | 25 | 30 | 22 | 24 | 8 | 6 | A | 7 | 10 | 11 | 7 | 19 | 14 | 15 | 9 | 17.7 | 47.3 |
| 29-Jul | 6 | 9 | 11 | 9 | 22 | 30 | 27 | 40 | 24 | 15 | 8 | 10 | 9 | 12 | A | 8 | 6 | 10 | 7 | 6 | 7 | 13 | 7 | 9 | 13.3 | 39.7 |
| 30-Jul | 11 | 7 | 20 | 17 | 12 | 17 | 22 | 14 | 12 | 8 | 9 | 12 | 15 | A | 10 | 5 | 7 | 8 | 5 | 6 | 12 | 11 | 16 | 9 | 11.6 | 22.2 |
| 31-Jul | 8 | 6 | 5 | 6 | 12 | 28 | 24 | 12 | 8 | 4 | 2 | 2 | A | 9 | 9 | 7 | 3 | 10 | 9 | 4 | 11 | 12 | 11 | 11 | 9.4 | 27.8 |
| | 7.6 | 7.0 | 8.1 | 7.6 | 11.7 | 17.8 | 17.6 | 16.8 | 14.3 | 8.1 | 10.2 | 6.1 | 5.9 | 5.8 | 4.6 | 4.9 | 4.8 | 5.1 | 4.8 | 5.1 | 7.6 | 9.3 | 9.6 | 8.8 | Diurnal Average | |
| | 21.5 | 14.2 | 20.0 | 18.2 | 36.3 | 59.8 | 51.5 | 65.9 | 77.7 | 25.3 | 51.2 | 25.6 | 23.8 | 27.0 | 10.3 | 11.2 | 12.0 | 15.5 | 12.6 | 10.7 | 25.2 | 28.7 | 28.8 | 27.8 | Diurnal Maximum | |

C - Calibration

A - Automated Daily Zero Span

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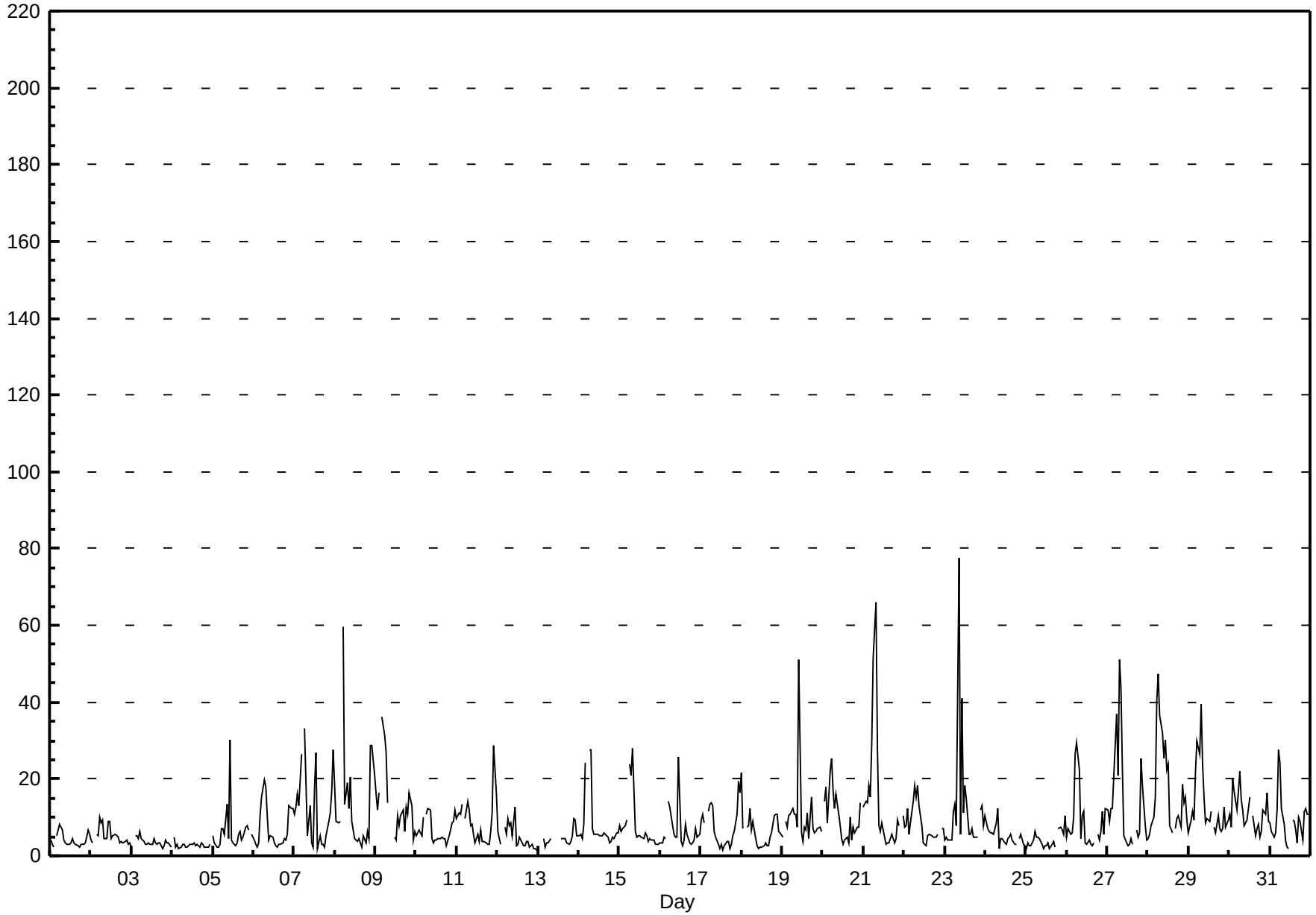
## Hourly Maximums

**Oxides of Nitrogen ($NO_X$) - ppb**

**Henry Pirker - July 2010**



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# Hourly Averages

## Ozone ($O_3$) - ppb

## Henry Pirker - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 61.1 ppb on Jul 28 15:00 Maximum Daily Average: 38.0 ppb on Jul 31

Minimum Value: 2 ppb on Jul 27 05:00 Minimum Daily Average: 16.0 ppb on Jul 13
Maximum Diurnal Average: 34.0 ppb at hour 14 Minimum Diurnal Average: 13.0 ppb at hour 6
Monthly Average: 25.19 ppb Percentiles: $P_1$ = 4.3 $P_{10}$ = 12.9 $Q_1$ = 18.2 Median = 24.5 $Q_3$ = 31.5 $P_{90}$ = 38.4 $P_{99}$ = 53.9

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 710 |
| Hours of Missing Data: | 34 |
| 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-Jul | 23 | 24 | 25 | A | 23 | 20 | 21 | 23 | 26 | 27 | 29 | 32 | 33 | 32 | 31 | 31 | 32 | 32 | 32 | 32 | 29 | 26 | 24 | 23 | 27.4 | 33.1 |
| 2-Jul | 23 | 25 | A | 22 | 21 | 19 | 19 | 21 | 22 | 21 | 22 | 23 | 23 | 23 | 22 | 22 | 22 | 22 | 21 | 21 | 20 | 19 | 19 | 19 | 21.4 | 24.6 |
| 3-Jul | 19 | A | 16 | 14 | 14 | 13 | 16 | 19 | 21 | 23 | 25 | 25 | 26 | 26 | 25 | 25 | 25 | 26 | 26 | 26 | 26 | 24 | 24 | 26 | 22.3 | 26.4 |
| 4-Jul | A | 26 | 26 | 24 | 25 | 24 | 20 | 18 | 18 | 19 | 19 | 19 | 20 | 21 | 20 | 20 | 20 | 19 | 19 | 18 | 17 | 16 | 15 | A | 20.1 | 26.2 |
| 5-Jul | 12 | 18 | 18 | 16 | 12 | 12 | 12 | 12 | 15 | 18 | 22 | 25 | 27 | 27 | 29 | 27 | 24 | 23 | 23 | 21 | 21 | 21 | A | 20 | 19.8 | 28.5 |
| 6-Jul | 20 | 20 | 20 | 20 | 18 | 16 | 13 | 16 | 21 | 25 | 27 | 27 | 27 | 28 | 29 | 30 | 30 | 33 | 34 | 35 | 33 | 24 | 17 | 12 | 24.0 | 35.1 |
| 7-Jul | 13 | 12 | 8 | 10 | 6 | A | 6 | 20 | 29 | 34 | 35 | 34 | 34 | 35 | 36 | 38 | 39 | 40 | 40 | 38 | 35 | 29 | 24 | 12 | 26.4 | 40.4 |
| 8-Jul | 17 | 18 | 22 | 22 | A | 10 | 19 | 23 | 33 | 37 | 42 | 42 | 45 | 44 | 40 | 39 | 39 | 40 | 39 | 39 | 39 | 23 | 11 | 15 | 30.3 | 44.6 |
| 9-Jul | 15 | 15 | 8 | A | 9 | 6 | 16 | 24 | 31 | 33 | 35 | 35 | 37 | 40 | 37 | 36 | 36 | 36 | 31 | 31 | 30 | 29 | 31 | 30 | 27.5 | 40.0 |
| 10-Jul | 26 | 22 | 20 | 19 | 16 | A | 16 | 16 | 24 | 31 | 32 | 34 | 38 | 41 | 43 | 47 | 49 | 43 | 42 | 39 | 31 | 26 | 23 | 19 | 30.3 | 49.0 |
| 11-Jul | 20 | 18 | 14 | 13 | A | 12 | 10 | 13 | 16 | 19 | 24 | 29 | 26 | 26 | 25 | 27 | 29 | 32 | 34 | 35 | 30 | 24 | 16 | 25 | 22.4 | 34.9 |
| 12-Jul | 24 | 25 | 36 | A | 31 | 29 | 26 | 26 | 26 | 27 | 28 | 28 | 30 | 28 | 26 | 22 | 21 | 21 | 21 | 23 | 20 | 20 | 20 | 19 | 25.0 | 35.6 |
| 13-Jul | 20 | 19 | A | 15 | 15 | 14 | 13 | 13 | 12 | 12 | 14 | 15 | C | C | 17 | 18 | 19 | 20 | 22 | 21 | 20 | 16 | 11 | 10 | 16.0 | 21.7 |
| 14-Jul | 8 | 8 | 8 | 8 | 5 | A | 7 | 14 | 18 | 21 | 22 | 22 | 24 | 26 | 26 | 27 | 30 | 28 | 26 | 27 | 27 | 27 | 25 | 25 | 20.0 | 29.5 |
| 15-Jul | 20 | 20 | 17 | 17 | 15 | A | 12 | 19 | 26 | 29 | 31 | 33 | 33 | 34 | 35 | 33 | 32 | 31 | 30 | 29 | 28 | 26 | 26 | 25 | 26.1 | 34.6 |
| 16-Jul | 23 | 21 | 20 | 18 | A | 15 | 16 | 19 | 22 | 23 | 23 | 24 | 25 | 25 | 25 | 23 | 23 | 23 | 23 | 21 | 18 | 16 | 17 | 17 | 20.9 | 25.2 |
| 17-Jul | 12 | 9 | 7 | A | 7 | 9 | 13 | 16 | 22 | 26 | 28 | 27 | 29 | 29 | 29 | 30 | 31 | 31 | 31 | 30 | 29 | 24 | 18 | 15 | 21.8 | 31.3 |
| 18-Jul | 9 | 20 | A | 18 | 19 | 19 | 18 | 22 | 27 | 33 | 36 | 37 | 37 | 37 | 37 | 35 | 35 | 34 | 31 | 27 | 26 | 24 | 26 | 22 | 27.4 | 37.3 |
| 19-Jul | 21 | A | 16 | 18 | 18 | 14 | 16 | 17 | 20 | 22 | 29 | 32 | 34 | 33 | 33 | 36 | 36 | 36 | 33 | 29 | 27 | 27 | 24 | 22 | 25.8 | 36.3 |
| 20-Jul | A | 14 | 14 | 10 | 6 | 5 | 11 | 14 | 15 | 24 | 32 | 37 | 37 | 37 | 40 | 42 | 43 | 44 | 46 | 46 | 41 | 32 | 29 | A | 28.1 | 45.8 |
| 21-Jul | 23 | 20 | 10 | 3 | 5 | 3 | 6 | 9 | 26 | 31 | 35 | 43 | 49 | 46 | 45 | 41 | 35 | 38 | 39 | 36 | 32 | 33 | A | 27 | 27.5 | 49.3 |
| 22-Jul | 23 | 20 | 15 | 29 | 24 | 19 | 14 | 18 | 23 | 25 | 33 | 35 | 35 | 35 | 33 | 30 | 30 | 30 | 29 | 28 | 25 | A | 19 | 16 | 25.5 | 35.1 |
| 23-Jul | 17 | 15 | 15 | 15 | 15 | 12 | 13 | 15 | 19 | 23 | 27 | 29 | 32 | 31 | 26 | 25 | 23 | 24 | 25 | 24 | A | 16 | 13 | 16 | 20.4 | 31.8 |
| 24-Jul | 14 | 16 | 14 | 14 | 14 | 17 | 22 | 29 | 36 | 36 | 36 | 34 | 32 | 31 | 32 | 32 | 32 | 32 | 33 | A | 31 | 28 | 30 | 30 | 27.2 | 36.3 |
| 25-Jul | 28 | 27 | 26 | 25 | 23 | 19 | 20 | 19 | 21 | 23 | 24 | 26 | 26 | 27 | 27 | 27 | 27 | 26 | A | 22 | 18 | 16 | 16 | 16 | 23.0 | 28.5 |
| 26-Jul | 17 | 13 | 12 | 11 | 7 | 3 | 4 | 10 | 20 | 25 | 27 | 30 | 31 | 29 | 31 | 31 | 31 | A | 29 | 29 | 25 | 21 | 21 | 14 | 20.5 | 31.3 |
| 27-Jul | 13 | 11 | 6 | 8 | 2 | 3 | 5 | 6 | 8 | 20 | 30 | 34 | 36 | 36 | 35 | 36 | A | 38 | 38 | 40 | 32 | 29 | 27 | 23 | 22.4 | 39.8 |
| 28-Jul | 23 | 24 | 25 | 23 | 18 | 8 | 6 | 13 | 18 | 20 | 24 | 35 | 51 | 59 | 61 | A | 57 | 51 | 48 | 44 | 47 | 39 | 30 | 32 | 32.9 | 61.1 |
| 29-Jul | 27 | 22 | 16 | 14 | 7 | 3 | 8 | 13 | 18 | 23 | 35 | 38 | 45 | 48 | A | 51 | 51 | 47 | 54 | 44 | 42 | 37 | 38 | 29 | 30.9 | 53.9 |
| 30-Jul | 30 | 25 | 21 | 14 | 8 | 14 | 15 | 17 | 24 | 32 | 36 | 38 | 39 | A | 43 | 44 | 42 | 39 | 42 | 38 | 30 | 24 | 20 | 22 | 28.6 | 44.1 |
| 31-Jul | 30 | 30 | 28 | 24 | 21 | 14 | 14 | 16 | 25 | 38 | 45 | 48 | A | 52 | 54 | 54 | 54 | 54 | 55 | 55 | 51 | 41 | 36 | 35 | 38.0 | 55.3 |
| | 19.7 | 19.3 | 17.2 | 16.5 | 14.4 | 13.0 | 13.8 | 17.2 | 22.0 | 25.8 | 29.2 | 31.4 | 33.1 | 34.0 | 33.1 | 32.6 | 33.3 | 33.2 | 33.2 | 31.6 | 29.3 | 25.3 | 22.4 | 21.2 | Diurnal Average | |
| | 29.7 | 30.5 | 35.6 | 28.5 | 30.6 | 28.6 | 26.2 | 29.0 | 36.3 | 38.2 | 45.3 | 48.3 | 50.6 | 59.0 | 61.1 | 54.3 | 57.4 | 54.0 | 54.5 | 55.3 | 50.6 | 40.9 | 38.2 | 35.0 | Diurnal Maximum | |

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

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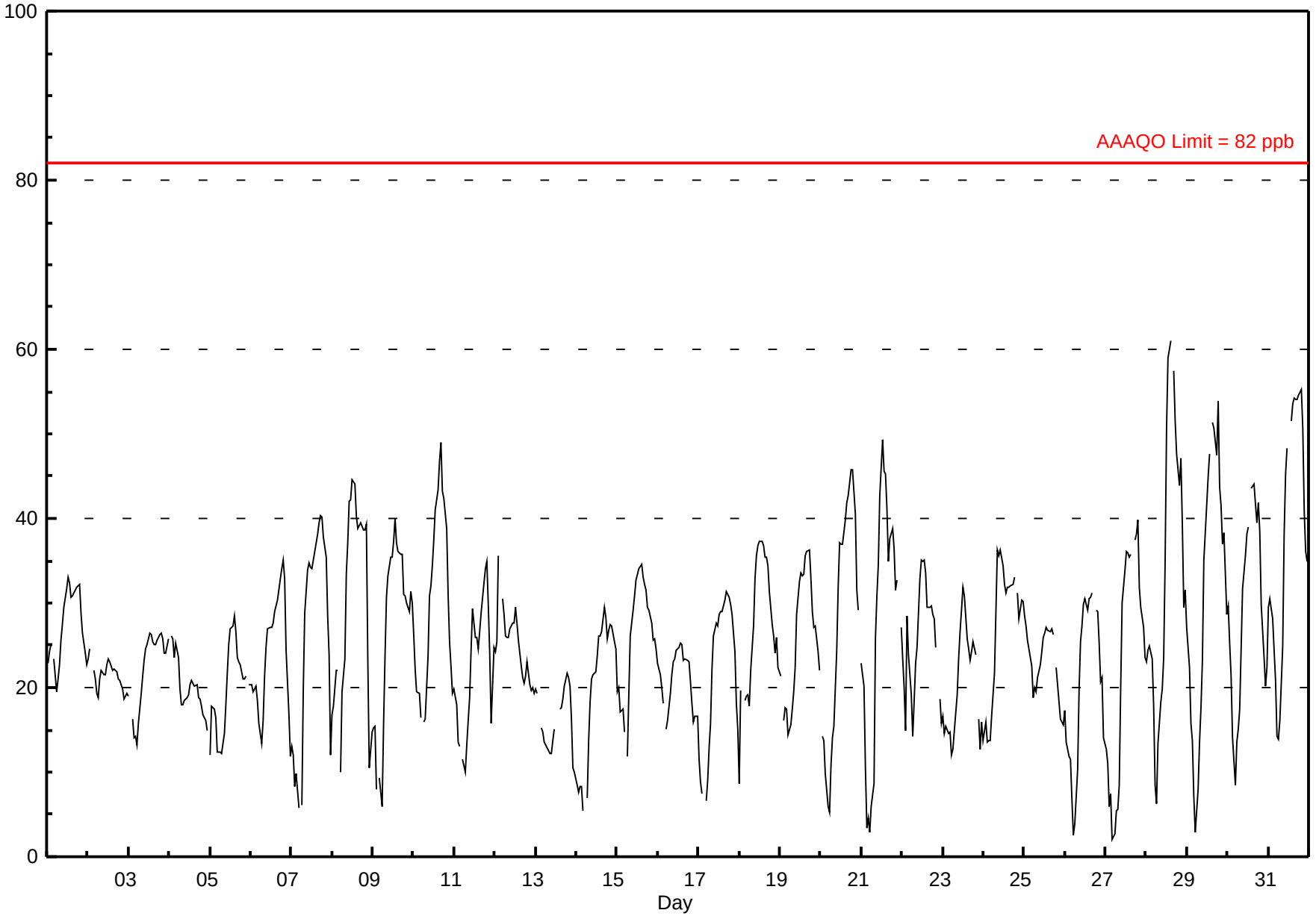
# Hourly Averages

**Ozone ($O_3$) - ppb**

**Henry Pirker - July 2010**



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# Hourly Maximums

## Ozone ($O_3$) - ppb

## Henry Pirker - July 2010

Maximum Value: 66.9 ppb on Jul 29 18:00

Maximum Daily Average: 41.4 ppb on Jul 31

Minimum Value: 4 ppb on Jul 21 06:00

Minimum Daily Average: 17.4 ppb on Jul 13

Maximum Diurnal Average: 36.0 ppb at hour 18

Minimum Diurnal Average: 16.1 ppb at hour 6

Monthly Average: 27.82 ppb

Percentiles: $P_1$ = 6.4 $P_{10}$ = 15.5 $Q_1$ = 20.5 Median = 26.8 $Q_3$ = 34.3 $P_{90}$ = 41.2 $P_{99}$ = 58.0

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 710 |
| Hours of Missing Data: | 34 |
| 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-Jul | 24 | 25 | 26 | A | 25 | 21 | 23 | 25 | 27 | 29 | 31 | 35 | 34 | 35 | 32 | 32 | 32 | 33 | 34 | 34 | 32 | 28 | 26 | 24 | 29.0 | 35.1 |
| 2-Jul | 25 | 25 | A | 24 | 22 | 21 | 20 | 23 | 23 | 23 | 23 | 24 | 24 | 25 | 23 | 23 | 23 | 22 | 22 | 22 | 21 | 19 | 21 | 20 | 22.6 | 25.5 |
| 3-Jul | 20 | A | 18 | 16 | 15 | 15 | 18 | 21 | 23 | 24 | 25 | 26 | 28 | 27 | 27 | 26 | 26 | 27 | 27 | 27 | 27 | 25 | 26 | 26 | 23.5 | 27.8 |
| 4-Jul | A | 28 | 27 | 25 | 26 | 25 | 22 | 19 | 18 | 19 | 20 | 20 | 21 | 23 | 21 | 22 | 22 | 20 | 19 | 19 | 18 | 18 | 18 | A | 21.4 | 27.7 |
| 5-Jul | 15 | 20 | 18 | 18 | 14 | 13 | 13 | 13 | 16 | 20 | 25 | 27 | 28 | 28 | 29 | 29 | 27 | 25 | 24 | 23 | 23 | 23 | A | 22 | 21.5 | 29.4 |
| 6-Jul | 21 | 21 | 21 | 22 | 20 | 20 | 18 | 20 | 24 | 26 | 28 | 28 | 29 | 29 | 30 | 31 | 33 | 36 | 37 | 37 | 36 | 32 | 21 | 15 | 26.4 | 37.1 |
| 7-Jul | 17 | 18 | 12 | 12 | 9 | A | 11 | 26 | 32 | 37 | 36 | 35 | 35 | 37 | 38 | 40 | 41 | 42 | 41 | 41 | 40 | 32 | 28 | 19 | 29.6 | 41.7 |
| 8-Jul | 20 | 20 | 24 | 24 | A | 17 | 23 | 29 | 38 | 43 | 44 | 45 | 47 | 47 | 44 | 40 | 41 | 41 | 40 | 40 | 42 | 37 | 20 | 19 | 34.1 | 47.1 |
| 9-Jul | 17 | 17 | 12 | A | 15 | 10 | 23 | 30 | 32 | 35 | 37 | 37 | 43 | 41 | 40 | 38 | 38 | 39 | 36 | 41 | 35 | 34 | 35 | 31 | 31.3 | 42.9 |
| 10-Jul | 30 | 26 | 23 | 22 | 18 | A | 20 | 20 | 31 | 33 | 33 | 37 | 40 | 45 | 45 | 50 | 52 | 48 | 45 | 44 | 35 | 27 | 24 | 21 | 33.6 | 51.8 |
| 11-Jul | 21 | 20 | 15 | 14 | A | 13 | 11 | 16 | 18 | 22 | 29 | 31 | 29 | 27 | 27 | 29 | 31 | 34 | 36 | 37 | 34 | 28 | 21 | 28 | 25.0 | 36.9 |
| 12-Jul | 26 | 31 | 38 | A | 32 | 31 | 28 | 28 | 27 | 29 | 29 | 30 | 30 | 30 | 27 | 25 | 22 | 22 | 23 | 24 | 21 | 22 | 21 | 20 | 26.9 | 38.4 |
| 13-Jul | 20 | 20 | A | 16 | 15 | 15 | 14 | 13 | 13 | 13 | 15 | 16 | C | C | 18 | 19 | 20 | 23 | 23 | 23 | 22 | 20 | 15 | 11 | 17.4 | 23.2 |
| 14-Jul | 10 | 9 | 10 | 9 | 9 | A | 11 | 17 | 20 | 22 | 23 | 24 | 26 | 28 | 27 | 28 | 32 | 30 | 30 | 28 | 29 | 29 | 28 | 26 | 22.0 | 32.0 |
| 15-Jul | 24 | 22 | 19 | 21 | 17 | A | 14 | 23 | 30 | 31 | 33 | 35 | 35 | 36 | 37 | 35 | 34 | 33 | 31 | 31 | 29 | 27 | 27 | 26 | 28.1 | 37.0 |
| 16-Jul | 24 | 22 | 21 | 19 | A | 18 | 19 | 21 | 23 | 24 | 25 | 26 | 26 | 26 | 26 | 26 | 25 | 24 | 24 | 22 | 20 | 18 | 19 | 19 | 22.5 | 26.4 |
| 17-Jul | 15 | 12 | 9 | A | 9 | 10 | 15 | 19 | 25 | 27 | 29 | 29 | 30 | 30 | 30 | 31 | 32 | 32 | 33 | 32 | 31 | 28 | 23 | 21 | 24.1 | 33.5 |
| 18-Jul | 15 | 22 | A | 19 | 21 | 21 | 19 | 27 | 31 | 36 | 37 | 38 | 38 | 38 | 38 | 37 | 37 | 40 | 34 | 33 | 30 | 30 | 30 | 24 | 30.2 | 39.9 |
| 19-Jul | 25 | A | 23 | 20 | 20 | 16 | 17 | 19 | 23 | 28 | 32 | 35 | 36 | 35 | 35 | 38 | 38 | 38 | 38 | 31 | 31 | 29 | 28 | 24 | 28.6 | 38.2 |
| 20-Jul | A | 20 | 19 | 11 | 9 | 9 | 13 | 18 | 19 | 30 | 36 | 40 | 39 | 39 | 42 | 43 | 45 | 46 | 49 | 48 | 48 | 34 | 31 | A | 31.3 | 48.9 |
| 21-Jul | 27 | 23 | 21 | 7 | 7 | 4 | 10 | 18 | 30 | 33 | 37 | 52 | 53 | 48 | 47 | 45 | 36 | 40 | 40 | 40 | 35 | 34 | A | 29 | 31.2 | 53.0 |
| 22-Jul | 27 | 23 | 26 | 31 | 28 | 23 | 20 | 24 | 28 | 30 | 36 | 37 | 37 | 37 | 37 | 32 | 31 | 32 | 31 | 31 | 28 | A | 20 | 17 | 28.9 | 37.4 |
| 23-Jul | 17 | 16 | 17 | 15 | 16 | 14 | 14 | 17 | 22 | 26 | 29 | 32 | 33 | 33 | 27 | 26 | 25 | 26 | 27 | 25 | A | 20 | 16 | 17 | 22.3 | 33.4 |
| 24-Jul | 16 | 18 | 15 | 15 | 15 | 20 | 25 | 35 | 37 | 37 | 38 | 37 | 34 | 33 | 33 | 34 | 33 | 33 | 34 | A | 33 | 30 | 32 | 32 | 29.2 | 37.9 |
| 25-Jul | 30 | 28 | 27 | 25 | 25 | 22 | 21 | 20 | 23 | 24 | 26 | 27 | 28 | 28 | 28 | 28 | 28 | 27 | A | 24 | 21 | 19 | 17 | 17 | 24.5 | 29.9 |
| 26-Jul | 19 | 16 | 13 | 13 | 8 | 5 | 6 | 17 | 23 | 27 | 29 | 32 | 32 | 32 | 32 | 32 | 32 | A | 30 | 30 | 28 | 25 | 23 | 21 | 22.9 | 32.4 |
| 27-Jul | 16 | 15 | 8 | 10 | 6 | 5 | 9 | 8 | 14 | 27 | 33 | 36 | 37 | 37 | 36 | 37 | A | 39 | 40 | 42 | 40 | 32 | 29 | 25 | 25.4 | 41.9 |
| 28-Jul | 24 | 25 | 26 | 25 | 20 | 17 | 11 | 21 | 21 | 21 | 30 | 41 | 57 | 63 | 66 | A | 61 | 60 | 50 | 50 | 54 | 51 | 34 | 35 | 37.5 | 65.9 |
| 29-Jul | 31 | 28 | 20 | 17 | 11 | 7 | 14 | 22 | 25 | 31 | 39 | 41 | 47 | 50 | A | 54 | 54 | 67 | 59 | 47 | 44 | 41 | 43 | 34 | 36.1 | 66.9 |
| 30-Jul | 33 | 27 | 25 | 20 | 13 | 22 | 18 | 20 | 31 | 34 | 39 | 41 | 42 | A | 49 | 48 | 45 | 44 | 44 | 43 | 37 | 26 | 26 | 28 | 32.9 | 49.0 |
| 31-Jul | 33 | 35 | 31 | 27 | 24 | 21 | 21 | 19 | 35 | 45 | 47 | 51 | A | 53 | 55 | 56 | 55 | 55 | 56 | 58 | 56 | 44 | 39 | 36 | 41.4 | 58.2 |
| | 22.2 | 21.9 | 20.1 | 18.5 | 16.8 | 16.1 | 16.9 | 21.0 | 25.3 | 28.6 | 31.5 | 33.7 | 35.2 | 35.9 | 35.0 | 34.5 | 35.1 | 36.0 | 35.3 | 34.2 | 32.7 | 28.8 | 25.5 | 23.8 | Diurnal Average | |
| | 33.0 | 35.1 | 38.4 | 30.8 | 32.0 | 31.4 | 27.9 | 34.8 | 37.7 | 44.8 | 46.8 | 52.3 | 56.6 | 63.3 | 65.9 | 56.2 | 60.9 | 66.9 | 58.5 | 58.2 | 56.3 | 50.5 | 42.9 | 36.3 | Diurnal Maximum | |

C - Calibration

A - Automated Daily Zero Span

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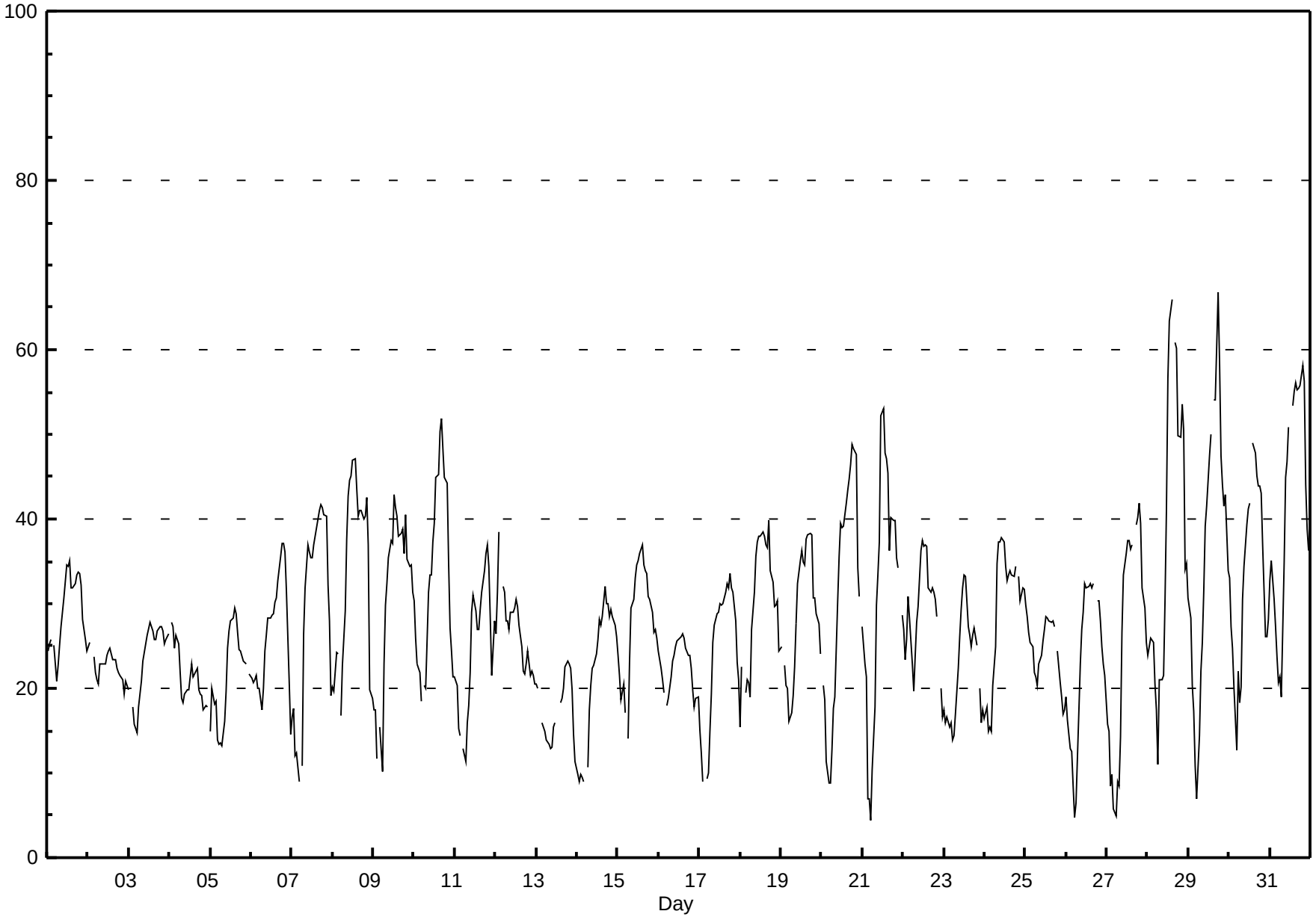
# Hourly Maximums

**Ozone ($O_3$) - ppb**

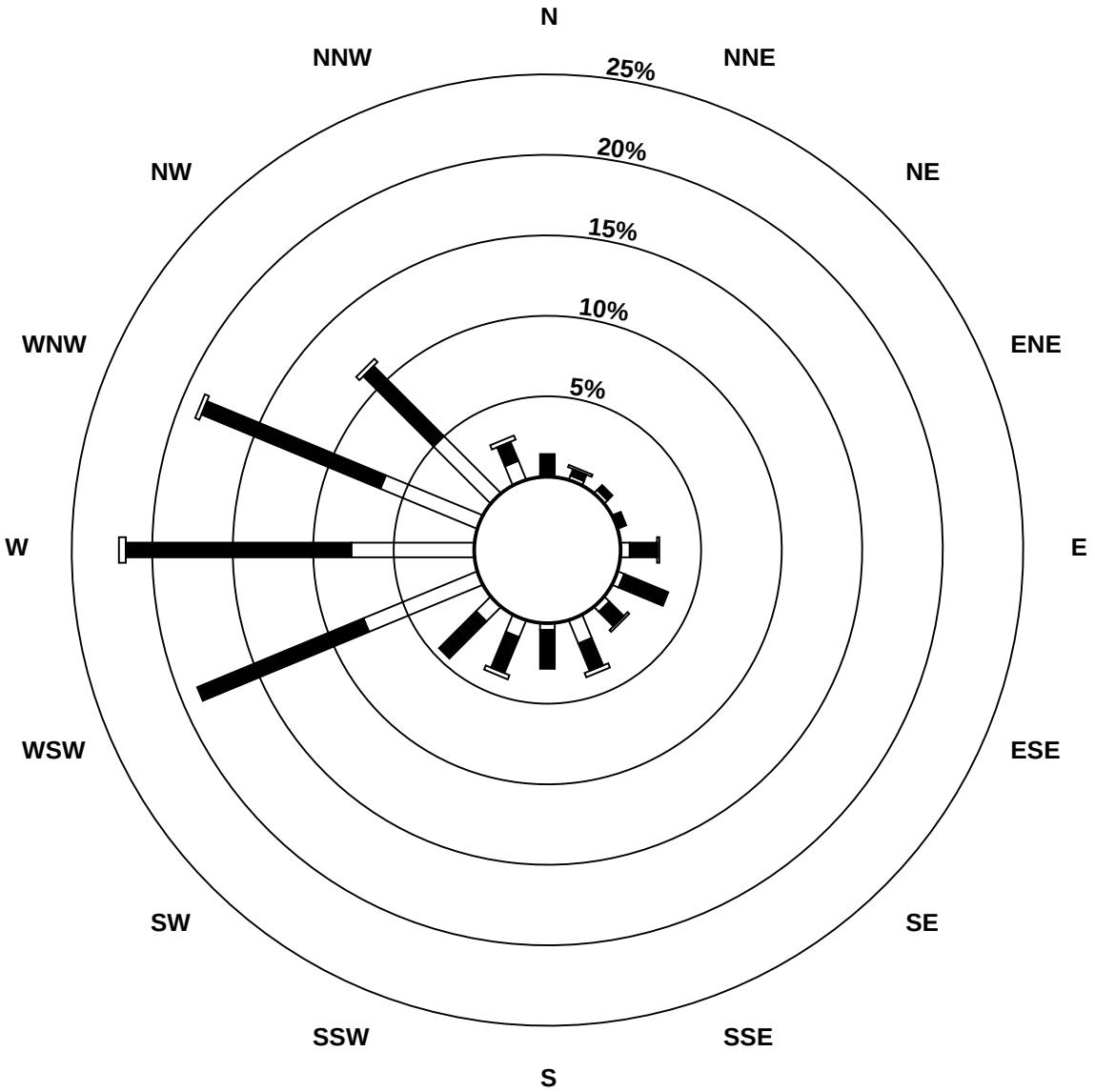
**Henry Pirker - July 2010**



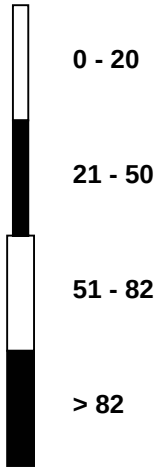
# Pollutant Rose

**Ozone ($O_3$) - ppb**

**Henry Pirker - July 2010**




**Pollutant Classes (ppb)**



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# Eight Hour Running Averages

## Ozone ($O_3$) - ppb

## Henry Pirker - July 2010

Maximum Value: 53.9 ppb on Jul 31 20:00

Minimum Value: 6.1 ppb on Jul 27 09:00

Percentiles: $P_1$ = 9.4 $P_{10}$ = 14.6 $Q_1$ = 19.1 Median = 24.1 $Q_3$ = 29.8 $P_{90}$ = 36.6 $P_{99}$ = 51.3

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 744 |
| Hours of Missing Data: | 0 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Maximum |
| 1-Jul | 26 | 26 | 25 | 24 | 24 | 23 | 22 | 23 | 23 | 24 | 24 | 25 | 26 | 28 | 29 | 30 | 31 | 31 | 32 | 32 | 31 | 31 | 30 | 29 | 31.8 |
| 2-Jul | 28 | 27 | 26 | 25 | 23 | 22 | 22 | 21 | 21 | 21 | 21 | 21 | 21 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 21 | 21 | 20 | 27.7 |
| 3-Jul | 20 | 20 | 19 | 18 | 17 | 16 | 16 | 16 | 16 | 17 | 18 | 20 | 21 | 23 | 24 | 25 | 25 | 25 | 26 | 26 | 26 | 25 | 25 | 25 | 25.8 |
| 4-Jul | 25 | 26 | 25 | 25 | 25 | 25 | 24 | 23 | 23 | 22 | 21 | 20 | 20 | 19 | 19 | 20 | 20 | 20 | 20 | 20 | 19 | 19 | 18 | 18 | 25.5 |
| 5-Jul | 16 | 16 | 16 | 16 | 15 | 15 | 14 | 14 | 14 | 14 | 15 | 16 | 18 | 20 | 22 | 24 | 25 | 25 | 26 | 25 | 24 | 24 | 23 | 22 | 25.5 |
| 6-Jul | 21 | 21 | 20 | 20 | 20 | 19 | 18 | 18 | 18 | 19 | 20 | 20 | 22 | 23 | 25 | 27 | 28 | 29 | 30 | 31 | 31 | 31 | 30 | 27 | 31.4 |
| 7-Jul | 25 | 23 | 19 | 16 | 13 | 11 | 10 | 11 | 13 | 16 | 20 | 23 | 27 | 28 | 32 | 34 | 36 | 37 | 37 | 38 | 38 | 37 | 35 | 32 | 37.8 |
| 8-Jul | 29 | 27 | 24 | 22 | 20 | 18 | 17 | 19 | 21 | 24 | 27 | 30 | 32 | 36 | 38 | 40 | 41 | 41 | 41 | 40 | 40 | 37 | 33 | 30 | 41.3 |
| 9-Jul | 27 | 24 | 21 | 18 | 14 | 11 | 12 | 13 | 16 | 18 | 22 | 24 | 27 | 31 | 34 | 36 | 36 | 37 | 36 | 35 | 35 | 33 | 32 | 32 | 36.6 |
| 10-Jul | 31 | 29 | 27 | 26 | 24 | 24 | 21 | 19 | 19 | 20 | 22 | 24 | 27 | 29 | 32 | 36 | 39 | 41 | 42 | 43 | 42 | 40 | 37 | 34 | 42.8 |
| 11-Jul | 30 | 27 | 24 | 20 | 19 | 17 | 15 | 14 | 14 | 14 | 15 | 18 | 19 | 20 | 22 | 24 | 26 | 27 | 28 | 29 | 30 | 29 | 28 | 28 | 30.3 |
| 12-Jul | 28 | 27 | 27 | 26 | 26 | 26 | 28 | 28 | 28 | 29 | 27 | 27 | 27 | 27 | 27 | 27 | 26 | 25 | 24 | 24 | 23 | 22 | 21 | 21 | 28.5 |
| 13-Jul | 21 | 20 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 13 | 13 | 13 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 19 | 18 | 17 | 20.5 |
| 14-Jul | 16 | 14 | 13 | 11 | 9 | 8 | 8 | 8 | 10 | 12 | 14 | 16 | 18 | 19 | 22 | 23 | 25 | 25 | 26 | 27 | 27 | 27 | 27 | 27 | 27.2 |
| 15-Jul | 26 | 25 | 24 | 22 | 21 | 20 | 18 | 17 | 18 | 19 | 21 | 24 | 26 | 27 | 30 | 32 | 33 | 33 | 33 | 32 | 31 | 30 | 29 | 28 | 32.8 |
| 16-Jul | 27 | 26 | 25 | 23 | 23 | 21 | 20 | 19 | 19 | 19 | 20 | 20 | 21 | 22 | 23 | 24 | 24 | 24 | 24 | 24 | 23 | 22 | 21 | 20 | 27.1 |
| 17-Jul | 18 | 16 | 14 | 14 | 12 | 11 | 10 | 10 | 12 | 14 | 17 | 18 | 21 | 24 | 26 | 28 | 29 | 29 | 30 | 30 | 30 | 29 | 28 | 26 | 30.0 |
| 18-Jul | 23 | 22 | 21 | 19 | 18 | 17 | 17 | 18 | 20 | 22 | 24 | 26 | 29 | 31 | 33 | 35 | 36 | 36 | 36 | 34 | 33 | 31 | 30 | 28 | 36.2 |
| 19-Jul | 27 | 26 | 23 | 22 | 21 | 19 | 18 | 17 | 17 | 18 | 19 | 21 | 23 | 25 | 28 | 30 | 32 | 34 | 34 | 34 | 33 | 32 | 31 | 29 | 34.2 |
| 20-Jul | 28 | 25 | 23 | 20 | 17 | 14 | 12 | 11 | 11 | 12 | 15 | 18 | 22 | 26 | 30 | 33 | 36 | 39 | 41 | 42 | 42 | 42 | 40 | 40 | 42.2 |
| 21-Jul | 37 | 34 | 29 | 23 | 17 | 13 | 10 | 10 | 10 | 12 | 15 | 20 | 25 | 30 | 35 | 39 | 41 | 41 | 42 | 41 | 39 | 37 | 36 | 34 | 41.9 |
| 22-Jul | 33 | 30 | 27 | 25 | 24 | 22 | 21 | 20 | 20 | 21 | 23 | 24 | 25 | 27 | 30 | 31 | 32 | 33 | 32 | 31 | 30 | 29 | 27 | 25 | 32.5 |
| 23-Jul | 23 | 21 | 19 | 17 | 16 | 15 | 15 | 14 | 15 | 16 | 17 | 19 | 21 | 24 | 25 | 26 | 27 | 27 | 27 | 26 | 25 | 23 | 21 | 20 | 27.0 |
| 24-Jul | 19 | 18 | 16 | 15 | 14 | 15 | 16 | 17 | 20 | 23 | 25 | 28 | 30 | 32 | 33 | 34 | 33 | 33 | 32 | 32 | 32 | 32 | 31 | 31 | 33.7 |
| 25-Jul | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 23 | 22 | 22 | 22 | 22 | 22 | 23 | 24 | 25 | 26 | 26 | 27 | 26 | 25 | 23 | 22 | 20 | 30.5 |
| 26-Jul | 19 | 17 | 16 | 15 | 14 | 12 | 10 | 10 | 10 | 12 | 13 | 16 | 19 | 22 | 25 | 28 | 29 | 30 | 30 | 30 | 29 | 28 | 27 | 24 | 30.2 |
| 27-Jul | 22 | 20 | 17 | 15 | 12 | 10 | 8 | 7 | 6 | 7 | 10 | 14 | 18 | 22 | 26 | 29 | 32 | 35 | 36 | 37 | 36 | 35 | 34 | 32 | 37.0 |
| 28-Jul | 31 | 30 | 28 | 26 | 24 | 22 | 19 | 18 | 17 | 17 | 16 | 18 | 22 | 28 | 35 | 38 | 44 | 48 | 52 | 53 | 53 | 50 | 45 | 43 | 53.0 |
| 29-Jul | 40 | 36 | 32 | 28 | 23 | 19 | 16 | 14 | 13 | 13 | 15 | 18 | 23 | 29 | 31 | 37 | 42 | 45 | 48 | 49 | 48 | 47 | 45 | 43 | 48.5 |
| 30-Jul | 40 | 37 | 33 | 29 | 25 | 22 | 20 | 18 | 17 | 18 | 20 | 23 | 27 | 29 | 33 | 37 | 39 | 40 | 41 | 41 | 40 | 38 | 35 | 32 | 41.1 |
| 31-Jul | 31 | 30 | 28 | 26 | 25 | 24 | 23 | 22 | 22 | 23 | 25 | 28 | 29 | 34 | 40 | 45 | 49 | 52 | 53 | 54 | 53 | 52 | 50 | 48 | 53.9 |
| | 40.0 | 37.3 | 33.2 | 29.5 | 27.2 | 26.4 | 27.9 | 28.1 | 28.3 | 28.5 | 27.4 | 29.6 | 31.5 | 35.8 | 39.7 | 45.1 | 49.3 | 51.6 | 52.9 | 53.9 | 53.5 | 52.2 | 50.0 | 47.6 | |
| | Diurnal Maximums | | | | | | | | | | | | | | | | | | | | | | | | |

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# Hourly Averages

## Carbon Monoxide (CO) - ppm

## Henry Pirker - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 0.43 ppm on Jul 8 00:00 Maximum Daily Average: 0.20 ppm on Jul 8

Minimum Value: 0.1 ppm on Jul 24 17:00 Minimum Daily Average: 0.07 ppm on Jul 25
Maximum Diurnal Average: 0.17 ppm at hour 23 Minimum Diurnal Average: 0.12 ppm at hour 18
Monthly Average: 0.142 ppm Percentiles: $P_1 = 0.05$ $P_{10} = 0.10$ $Q_1 = 0.11$ Median = 0.14 $Q_3 = 0.16$ $P_{90} = 0.20$ $P_{99} = 0.28$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 710 |
| Hours of Missing Data: | 34 |
| Hours of Calibration: | 34 |
| Percent Operational Time: | 100.0 |

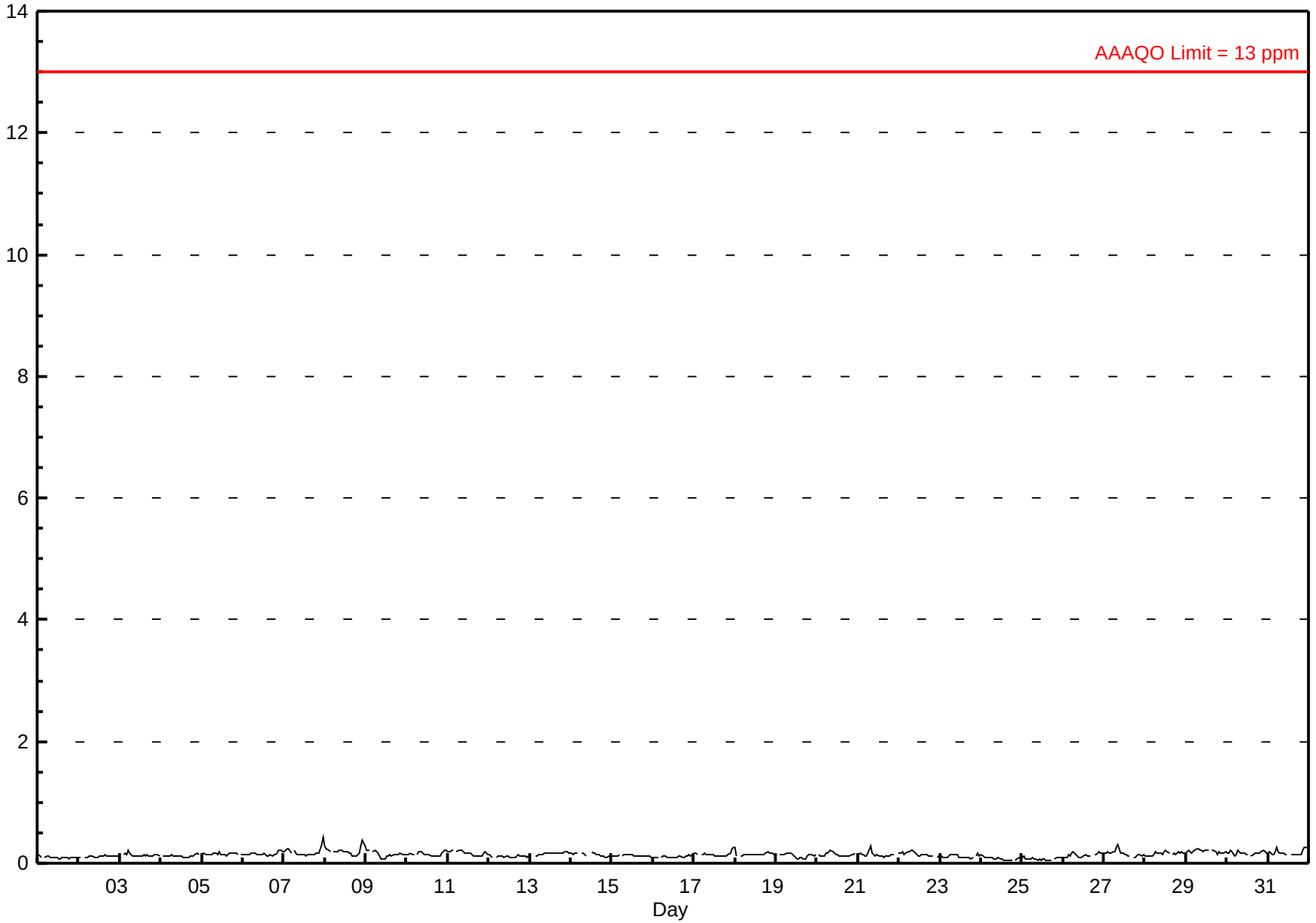
| Day | Hourly Period Ending At (MST) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Daily Average | Daily Maximum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Jul | 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 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.10 | 0.14 |
| 2-Jul | 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 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.11 | 0.14 |
| 3-Jul | 0.1 | A | 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 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.13 | 0.21 |
| 4-Jul | 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 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | A | 0.12 | 0.16 |
| 5-Jul | 0.1 | 0.2 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 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 | A | 0.1 | 0.15 | 0.18 |
| 6-Jul | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.15 | 0.21 |
| 7-Jul | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | A | 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 | 0.2 | 0.2 | 0.2 | 0.3 | 0.4 | 0.19 | 0.43 |
| 8-Jul | 0.3 | 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 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.4 | 0.3 | 0.20 | 0.38 |
| 9-Jul | 0.2 | 0.2 | 0.2 | A | 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 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.15 | 0.22 |
| 10-Jul | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | A | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.16 | 0.21 |
| 11-Jul | 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 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.17 | 0.22 |
| 12-Jul | 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 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.11 | 0.13 |
| 13-Jul | 0.1 | 0.1 | A | 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 | 0.16 | 0.20 |
| 14-Jul | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | A | 0.2 | 0.2 | 0.1 | 0.1 | C | C | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.14 | 0.18 |
| 15-Jul | 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 | 0.1 | 0.1 | 0.1 | 0.1 | 0.13 | 0.15 |
| 16-Jul | 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 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.11 | 0.14 |
| 17-Jul | 0.2 | 0.2 | 0.1 | A | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.15 | 0.25 |
| 18-Jul | 0.3 | 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 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.15 | 0.25 |
| 19-Jul | 0.1 | A | 0.1 | 0.1 | 0.1 | 0.1 | 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 | 0.12 | 0.17 |
| 20-Jul | A | 0.1 | 0.1 | 0.1 | 0.1 | 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 | A | 0.14 | 0.20 |
| 21-Jul | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 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 | 0.2 | 0.14 | 0.28 |
| 22-Jul | 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 | A | 0.1 | 0.1 | 0.15 | 0.22 |
| 23-Jul | 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 | 0.2 | 0.1 | 0.12 | 0.17 |
| 24-Jul | 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 | 0.1 | 0.08 | 0.14 |
| 25-Jul | 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 | 0.1 | 0.1 | 0.07 | 0.12 |
| 26-Jul | 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 | 0.1 | 0.1 | 0.1 | A | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.13 | 0.19 |
| 27-Jul | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 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 | 0.1 | 0.1 | 0.16 | 0.31 |
| 28-Jul | 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 | A | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.16 | 0.21 |
| 29-Jul | 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 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.19 | 0.24 |
| 30-Jul | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | A | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.17 | 0.21 |
| 31-Jul | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | A | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.18 | 0.27 |
| | 0.15 | 0.15 | 0.15 | 0.14 | 0.13 | 0.15 | 0.16 | 0.16 | 0.15 | 0.14 | 0.14 | 0.13 | 0.13 | 0.13 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.13 | 0.14 | 0.16 | 0.17 | 0.16 | Diurnal Average | |
| | 0.28 | 0.23 | 0.23 | 0.24 | 0.20 | 0.27 | 0.24 | 0.28 | 0.31 | 0.23 | 0.21 | 0.21 | 0.21 | 0.20 | 0.17 | 0.20 | 0.20 | 0.20 | 0.17 | 0.20 | 0.20 | 0.28 | 0.38 | 0.43 | Diurnal Maximum | |

C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 13 ppm 24-hr na

# Hourly Averages

**Carbon Monoxide (CO) - ppm**

**Henry Pirker - July 2010**



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# Hourly Maximums

## Carbon Monoxide (CO) - ppm

## Henry Pirker - July 2010

Maximum Value: 1.06 ppm on Jul 28 12:00

Maximum Daily Average: 0.29 ppm on Jul 28

Minimum Value: 0.1 ppm on Jul 24 19:00

Minimum Daily Average: 0.11 ppm on Jul 24

Maximum Diurnal Average: 0.22 ppm at hour 6

Minimum Diurnal Average: 0.15 ppm at hour 14

Monthly Average: 0.189 ppm

Percentiles: $P_1$ = 0.10 $P_{10}$ = 0.12 $Q_1$ = 0.15 Median = 0.17 $Q_3$ = 0.21 $P_{90}$ = 0.26 $P_{99}$ = 0.58

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 710 |
| Hours of Missing Data: | 34 |
| 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-Jul | 0.2 | 0.2 | 0.2 | A | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.13 | 0.25 |
| 2-Jul | 0.1 | 0.1 | A | 0.1 | 0.1 | 0.1 | 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 | 0.2 | 0.2 | 0.2 | 0.14 | 0.17 |
| 3-Jul | 0.2 | A | 0.2 | 0.3 | 0.2 | 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 | 0.2 | 0.2 | 0.18 | 0.37 |
| 4-Jul | A | 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 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | A | 0.16 | 0.22 |
| 5-Jul | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.2 | 0.9 | 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 | 0.23 | 0.94 |
| 6-Jul | 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 | 0.3 | 0.3 | 0.3 | 0.2 | 0.19 | 0.26 |
| 7-Jul | 0.2 | 0.3 | 0.3 | 0.4 | 0.2 | A | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.6 | 0.24 | 0.56 |
| 8-Jul | 0.4 | 0.3 | 0.3 | 0.2 | A | 0.3 | 0.3 | 0.3 | 0.2 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.5 | 0.5 | 0.4 | 0.26 | 0.45 |
| 9-Jul | 0.3 | 0.4 | 0.3 | A | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.8 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.24 | 0.77 |
| 10-Jul | 0.1 | 0.2 | 0.3 | 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 | 0.3 | 0.3 | 0.3 | 0.18 | 0.26 |
| 11-Jul | 0.2 | 0.3 | 0.3 | 0.3 | A | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.2 | 0.20 | 0.28 |
| 12-Jul | 0.2 | 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 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.14 | 0.18 |
| 13-Jul | 0.1 | 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 | 0.3 | 0.2 | 0.2 | 0.19 | 0.26 |
| 14-Jul | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | A | 0.2 | 0.2 | 0.2 | 0.2 | C | C | 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 | 0.21 |
| 15-Jul | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | A | 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 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.15 | 0.20 |
| 16-Jul | 0.1 | 0.1 | 0.1 | 0.1 | A | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.13 | 0.20 |
| 17-Jul | 0.2 | 0.2 | 0.2 | A | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.3 | 0.3 | 0.19 | 0.34 |
| 18-Jul | 0.4 | 0.2 | A | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.18 | 0.44 |
| 19-Jul | 0.2 | A | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.4 | 0.4 | 0.2 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.19 | 0.44 |
| 20-Jul | A | 0.2 | 0.2 | 0.1 | 0.2 | 0.6 | 0.2 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 | 0.3 | 0.2 | A | 0.20 | 0.65 |
| 21-Jul | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.3 | 0.4 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | A | 0.2 | 0.18 | 0.37 |
| 22-Jul | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | A | 0.2 | 0.2 | 0.19 | 0.26 |
| 23-Jul | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | A | 0.2 | 0.3 | 0.2 | 0.14 | 0.25 |
| 24-Jul | 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 | A | 0.1 | 0.1 | 0.2 | 0.2 | 0.11 | 0.21 |
| 25-Jul | 0.3 | 0.4 | 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 | 0.2 | 0.2 | 0.2 | 0.13 | 0.40 |
| 26-Jul | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.4 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | A | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.18 | 0.35 |
| 27-Jul | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.3 | 1.0 | 0.4 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | A | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.1 | 0.3 | 0.24 | 0.99 |
| 28-Jul | 0.1 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 1.1 | 0.9 | 0.2 | 0.2 | A | 0.2 | 0.2 | 0.2 | 0.9 | 0.3 | 0.2 | 0.2 | 0.2 | 0.29 | 1.06 |
| 29-Jul | 0.2 | 0.3 | 0.3 | 0.2 | 0.3 | 0.3 | 0.3 | 0.4 | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.2 | A | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.2 | 0.2 | 0.25 | 0.38 |
| 30-Jul | 0.2 | 0.2 | 0.4 | 0.4 | 0.2 | 0.2 | 0.3 | 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 | 0.3 | 0.3 | 0.2 | 0.22 | 0.41 |
| 31-Jul | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 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 | 0.3 | 0.3 | 0.3 | 0.3 | 0.22 | 0.32 |
| | 0.20 | 0.21 | 0.19 | 0.18 | 0.17 | 0.22 | 0.20 | 0.21 | 0.21 | 0.18 | 0.20 | 0.19 | 0.18 | 0.15 | 0.18 | 0.16 | 0.16 | 0.16 | 0.16 | 0.19 | 0.19 | 0.21 | 0.21 | 0.21 | Diurnal Average | |
| | 0.44 | 0.40 | 0.41 | 0.40 | 0.35 | 0.65 | 0.31 | 0.38 | 0.99 | 0.44 | 0.94 | 1.06 | 0.91 | 0.22 | 0.77 | 0.28 | 0.25 | 0.26 | 0.23 | 0.88 | 0.31 | 0.45 | 0.45 | 0.56 | Diurnal Maximum | |

C - Calibration

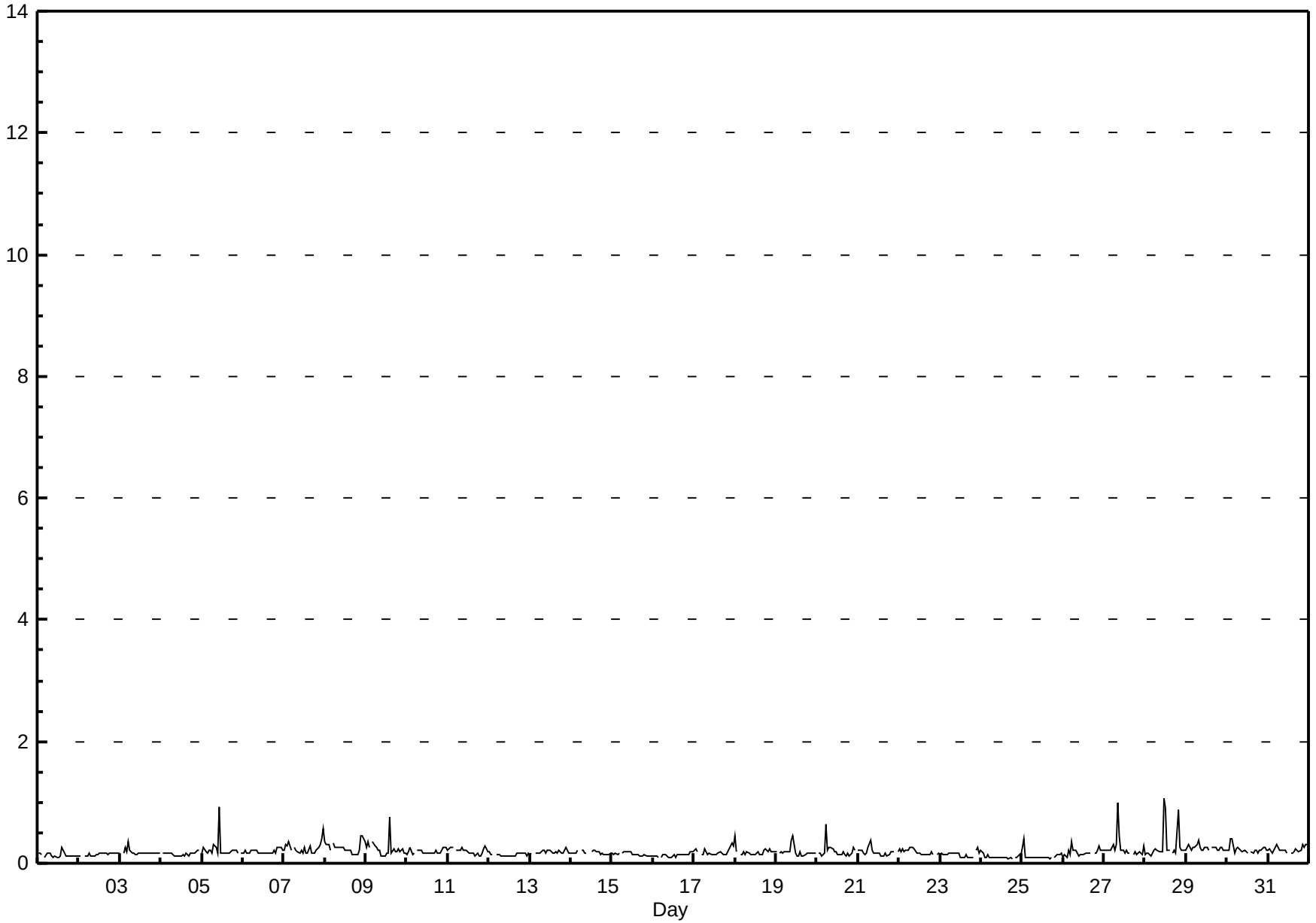
A - Automated Daily Zero Span

PASZA
Pasco Airshed Zone Association

# Hourly Maximums

**Carbon Monoxide (CO) - ppm**

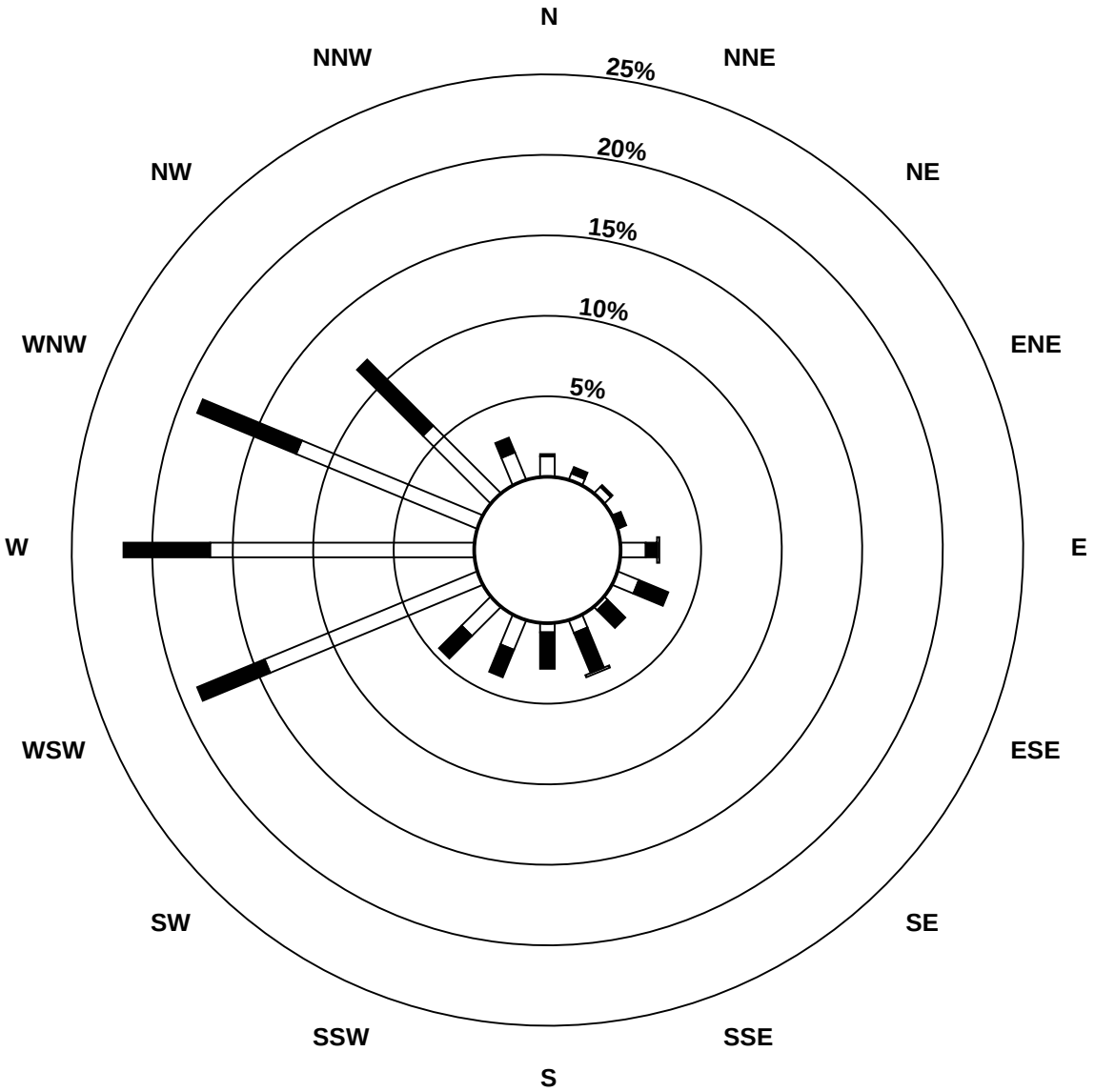
**Henry Pirker - July 2010**



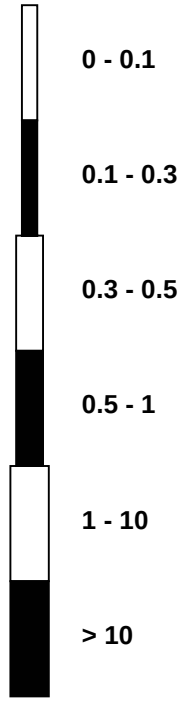
# Pollutant Rose

**Carbon Monoxide (CO) - ppm**

**Henry Pirker - July 2010**




**Pollutant Classes (ppm)**



PASZA
Peace Airshed Zone Association

# Eight Hour Running Averages

## Carbon Monoxide (CO) - ppm

## Henry Pirker - July 2010

Number of Exceedences (AAAQO): 8-hr: 0
Maximum Value: 0.27 ppm on Jul 8 05:00

Minimum Value: 0.05 ppm on Jul 24 21:00

Percentiles: $P_1$ = 0.06 $P_{10}$ = 0.10 $Q_1$ = 0.12 Median = 0.14 $Q_3$ = 0.16 $P_{90}$ = 0.18 $P_{99}$ = 0.24

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 742 |
| Hours of Missing Data: | 2 |
| Hours of Calibration: | 2 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Maximum |
| 1-Jul | 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 |
| 2-Jul | 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 |
| 3-Jul | 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 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.15 |
| 4-Jul | 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 |
| 5-Jul | 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 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.16 |
| 6-Jul | 0.2 | 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 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.17 |
| 7-Jul | 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 | 0.2 | 0.2 | 0.2 | 0.22 |
| 8-Jul | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 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 | 0.2 | 0.2 | 0.2 | 0.27 |
| 9-Jul | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 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 | 0.26 |
| 10-Jul | 0.1 | 0.1 | 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 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.17 |
| 11-Jul | 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 |
| 12-Jul | 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 |
| 13-Jul | 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 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.17 |
| 14-Jul | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | N | N | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.17 |
| 15-Jul | 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-Jul | 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 | 0.12 |
| 17-Jul | 0.1 | 0.1 | 0.1 | 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 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.16 |
| 18-Jul | 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 | 0.2 | 0.2 | 0.2 | 0.2 | 0.18 |
| 19-Jul | 0.2 | 0.2 | 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 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.16 |
| 20-Jul | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.17 |
| 21-Jul | 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 |
| 22-Jul | 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 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.19 |
| 23-Jul | 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 |
| 24-Jul | 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 | 0.12 |
| 25-Jul | 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 | 0.08 |
| 26-Jul | 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 | 0.16 |
| 27-Jul | 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 |
| 28-Jul | 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 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.18 |
| 29-Jul | 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 | 0.21 |
| 30-Jul | 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 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.18 |
| 31-Jul | 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 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.20 |
| | 0.24 | 0.25 | 0.25 | 0.26 | 0.27 | 0.26 | 0.25 | 0.21 | 0.20 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.20 | 0.20 | 0.20 | 0.19 | 0.19 | 0.19 | 0.18 | 0.18 | 0.22 | |
| | Diurnal Maximums | | | | | | | | | | | | | | | | | | | | | | | | |

N - Not Valid
Alberta Ambient Air Quality Objectives (AAAQO): 8-hr 5 ppm

PASZA
Peace Airshed Zone Association

# Hourly Averages

## Total Hydrocarbons (THC) - ppm

## Henry Pirker - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 3.05 ppm on Jul 31 06:00 Maximum Daily Average: 2.09 ppm on Jul 31

Minimum Value: 1.8 ppm on Jul 14 11:00 Minimum Daily Average: 1.90 ppm on Jul 13
Maximum Diurnal Average: 2.09 ppm at hour 6 Minimum Diurnal Average: 1.90 ppm at hour 19
Monthly Average: 1.958 ppm Percentiles: $P_1$ = 1.84 $P_{10}$ = 1.88 $Q_1$ = 1.90 Median = 1.92 $Q_3$ = 1.97 $P_{90}$ = 2.09 $P_{99}$ = 2.39

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 707 |
| Hours of Missing Data: | 37 |
| 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-Jul | 2.0 | 1.9 | 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 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 1.96 | 2.03 |
| 2-Jul | 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 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.93 | 2.01 |
| 3-Jul | 1.9 | A | 1.9 | 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 | 1.9 | 1.9 | 1.9 | 1.9 | 1.95 | 2.26 |
| 4-Jul | 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 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A | 1.90 | 1.94 |
| 5-Jul | 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 | 2.0 | 1.9 | 1.9 | 1.9 | A | 1.9 | 1.92 | 1.96 |
| 6-Jul | 1.9 | 1.9 | 1.9 | 1.9 | 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 | 2.0 | 2.1 | 2.1 | 1.95 | 2.09 |
| 7-Jul | 2.1 | 2.1 | 2.4 | 2.5 | 2.2 | A | 2.2 | 2.1 | 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 | 2.1 | 2.4 | 2.7 | 2.08 | 2.71 |
| 8-Jul | 2.4 | 2.2 | 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 | 2.1 | 2.3 | 2.2 | 2.01 | 2.40 |
| 9-Jul | 2.2 | 2.1 | 2.2 | A | 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 | 1.9 | 2.0 | 1.9 | 1.9 | 1.9 | 1.97 | 2.21 |
| 10-Jul | 1.9 | 1.9 | 2.0 | 1.9 | 1.9 | A | 1.9 | 2.1 | 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 | 1.92 | 2.09 |
| 11-Jul | 2.0 | 2.0 | 2.0 | 2.2 | A | 2.2 | 2.1 | 2.1 | 2.1 | 2.0 | 2.1 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 1.97 | 2.21 |
| 12-Jul | 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 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.91 | 2.02 |
| 13-Jul | 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 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.90 | 2.00 |
| 14-Jul | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 | C | C | C | C | C | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.90 | 1.95 |
| 15-Jul | 2.0 | 1.9 | 2.0 | 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 | 1.91 | 2.01 |
| 16-Jul | 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 | 2.0 | 1.9 | 1.9 | 1.92 | 2.03 |
| 17-Jul | 1.9 | 2.0 | 2.2 | A | 2.1 | 2.2 | 2.1 | 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 | 2.0 | 2.0 | 1.97 | 2.24 |
| 18-Jul | 2.1 | 2.0 | 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 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.93 | 2.10 |
| 19-Jul | 1.9 | A | 2.1 | 2.1 | 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 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.95 | 2.15 |
| 20-Jul | A | 2.0 | 2.0 | 2.1 | 2.2 | 2.1 | 2.0 | 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 | 1.9 | 1.9 | 2.0 | A | 1.98 | 2.17 |
| 21-Jul | 2.0 | 2.1 | 2.1 | 2.2 | 2.2 | 2.2 | 2.2 | 2.3 | 2.1 | 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 | A | 1.9 | 2.01 | 2.26 |
| 22-Jul | 1.9 | 2.0 | 2.2 | 1.9 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A | 1.9 | 1.9 | 1.91 | 2.22 |
| 23-Jul | 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 | 1.8 | 1.9 | 1.9 | A | 1.9 | 2.1 | 2.0 | 1.91 | 2.09 |
| 24-Jul | 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 | 1.9 | 1.9 | 1.9 | 1.9 | A | 1.9 | 1.9 | 2.1 | 2.0 | 1.92 | 2.07 |
| 25-Jul | 2.1 | 2.1 | 1.9 | 1.9 | 1.9 | 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 | 2.0 | 1.9 | 2.0 | 2.0 | 1.95 | 2.11 |
| 26-Jul | 2.0 | 2.0 | 2.0 | 2.6 | 2.1 | 2.2 | 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 | 2.0 | 1.99 | 2.59 |
| 27-Jul | 2.1 | 2.1 | 2.2 | 2.1 | 2.2 | 2.3 | 2.2 | 2.2 | 2.2 | 2.1 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 1.9 | 1.9 | 2.04 | 2.26 |
| 28-Jul | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.1 | 2.4 | 2.2 | 2.0 | 2.1 | 2.1 | 2.1 | 2.0 | 2.0 | 2.0 | A | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 2.01 | 2.39 |
| 29-Jul | 1.9 | 2.0 | 2.0 | 2.0 | 2.2 | 2.2 | 2.1 | 2.2 | 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 | 1.98 | 2.22 |
| 30-Jul | 1.9 | 2.0 | 2.0 | 2.0 | 2.1 | 2.2 | 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 | 2.0 | 2.0 | 1.94 | 2.16 |
| 31-Jul | 2.0 | 2.4 | 1.9 | 2.1 | 2.5 | 3.0 | 2.4 | 2.1 | 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 | 2.0 | 2.0 | 2.5 | 2.09 | 3.05 |
| | 2.00 | 2.01 | 2.02 | 2.04 | 2.04 | 2.09 | 2.03 | 2.01 | 1.96 | 1.94 | 1.92 | 1.91 | 1.91 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.91 | 1.95 | 1.98 | 2.00 | Diurnal Average | |
| | 2.40 | 2.37 | 2.36 | 2.59 | 2.50 | 3.05 | 2.42 | 2.26 | 2.22 | 2.07 | 2.09 | 2.11 | 2.01 | 1.99 | 1.97 | 1.95 | 1.94 | 1.95 | 1.96 | 1.95 | 1.97 | 2.12 | 2.37 | 2.71 | Diurnal Maximum | |

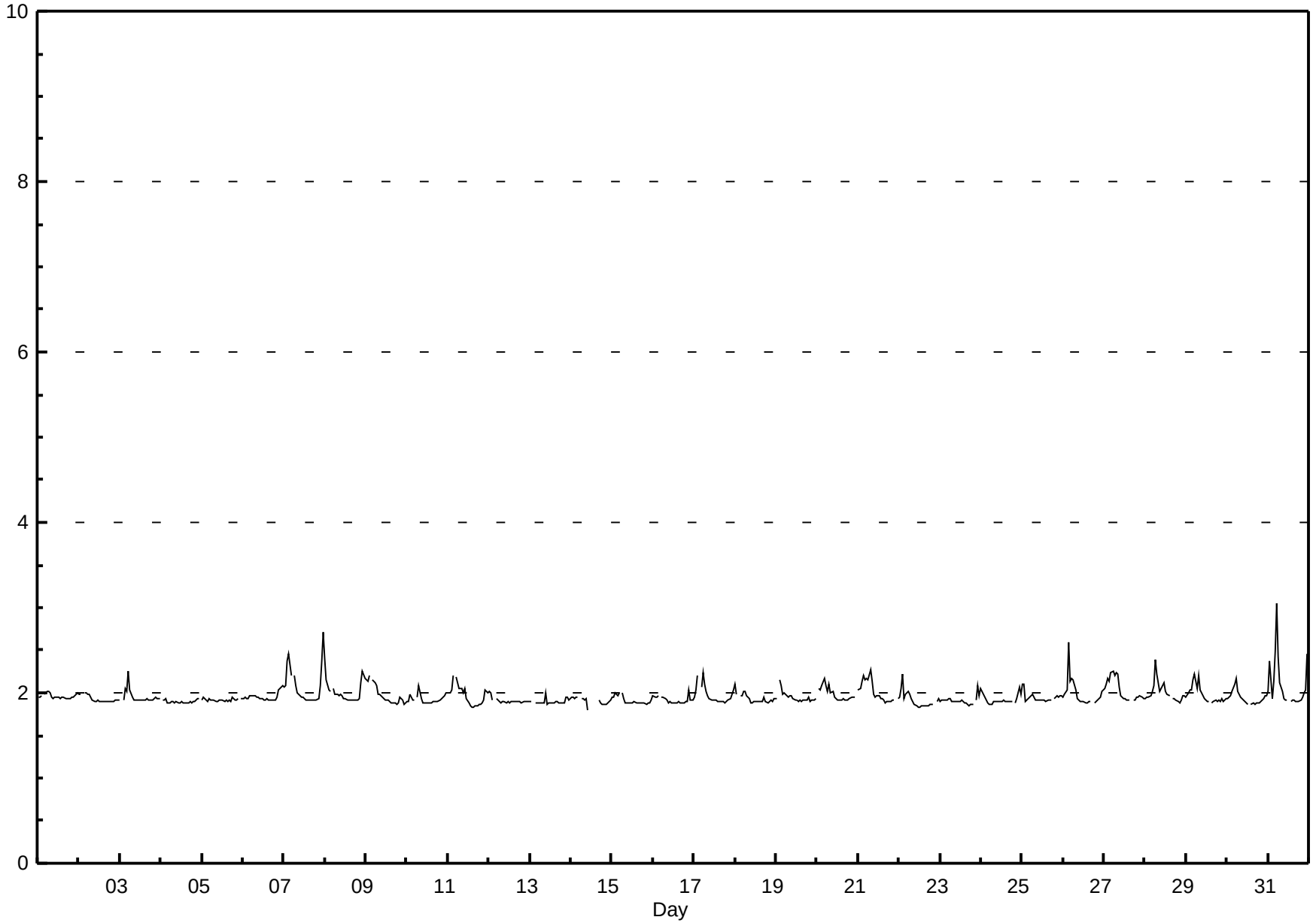
C - Calibration A - Automated Daily Zero Span

PASZA
Peace Airshed Zone Association

## Hourly Averages

**Total Hydrocarbons (THC) - ppm**

**Henry Pirker - July 2010**



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Peace Airshed Zone Association

# Hourly Maximums

## Total Hydrocarbons (THC) - ppm

## Henry Pirker - July 2010

Maximum Value: 3.59 ppm on Aug 1 00:00

Maximum Daily Average: 2.27 ppm on Jul 31

Minimum Value: 1.8 ppm on Jul 22 12:00

Minimum Daily Average: 1.93 ppm on Jul 4

Maximum Diurnal Average: 2.20 ppm at hour 6

Minimum Diurnal Average: 1.92 ppm at hour 17

Monthly Average: 2.023 ppm

Percentiles: $P_1$ = 1.87 $P_{10}$ = 1.90 $Q_1$ = 1.92 Median = 1.96 $Q_3$ = 2.04 $P_{90}$ = 2.21 $P_{99}$ = 3.05

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 707 |
| Hours of Missing Data: | 37 |
| 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-Jul | 2.0 | 2.0 | 2.0 | A | 2.1 | 2.1 | 2.1 | 2.0 | 2.0 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | 1.99 | 2.08 |
| 2-Jul | 2.0 | 2.0 | A | 2.1 | 2.1 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 2.1 | 1.9 | 1.9 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.96 | 2.06 |
| 3-Jul | 1.9 | A | 1.9 | 2.3 | 2.3 | 2.6 | 2.1 | 2.0 | 2.0 | 1.9 | 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 | 1.9 | 2.01 | 2.59 |
| 4-Jul | A | 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 | 1.9 | 1.9 | 1.9 | 2.0 | 1.9 | 1.9 | 2.0 | 2.1 | 2.0 | A | 1.93 | 2.05 |
| 5-Jul | 2.0 | 2.1 | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 2.2 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 1.9 | 1.9 | 2.0 | A | 2.0 | 1.97 | 2.18 |
| 6-Jul | 2.0 | 2.0 | 2.0 | 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 | 2.0 | 1.9 | 2.0 | 2.1 | 2.1 | 2.2 | 1.98 | 2.15 |
| 7-Jul | 2.1 | 2.1 | 3.1 | 3.0 | 2.2 | A | 2.3 | 2.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 2.2 | 3.0 | 3.4 | 2.23 | 3.42 |
| 8-Jul | 3.1 | 2.3 | 2.1 | 2.1 | A | 2.1 | 2.0 | 2.4 | 2.1 | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.2 | 2.4 | 2.3 | 2.11 | 3.08 |
| 9-Jul | 2.2 | 2.2 | 2.3 | A | 2.2 | 2.2 | 2.2 | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.1 | 2.0 | 1.9 | 2.0 | 2.03 | 2.32 |
| 10-Jul | 2.0 | 1.9 | 2.2 | 1.9 | 1.9 | A | 2.1 | 2.3 | 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 | 2.0 | 2.0 | 2.0 | 1.96 | 2.26 |
| 11-Jul | 2.0 | 2.0 | 2.1 | 2.7 | A | 2.3 | 2.1 | 2.2 | 2.1 | 2.1 | 2.1 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.1 | 2.1 | 2.04 | 2.72 |
| 12-Jul | 2.1 | 2.0 | 2.0 | A | 2.0 | 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 | 1.9 | 1.9 | 1.93 | 2.10 |
| 13-Jul | 1.9 | 1.9 | A | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.2 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.2 | 2.1 | 1.9 | 1.94 | 2.24 |
| 14-Jul | 2.1 | 2.0 | 1.9 | 2.0 | 2.0 | A | 1.9 | 2.0 | 2.0 | 2.2 | 1.9 | C | C | C | C | C | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 1.95 | 2.17 |
| 15-Jul | 2.0 | 2.0 | 2.0 | 2.0 | 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 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.94 | 2.05 |
| 16-Jul | 2.1 | 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 | 1.9 | 1.9 | 1.9 | 1.9 | 2.3 | 2.0 | 2.0 | 1.96 | 2.25 |
| 17-Jul | 2.0 | 2.1 | 2.6 | A | 2.1 | 2.4 | 2.3 | 2.1 | 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 | 2.0 | 2.0 | 2.1 | 2.03 | 2.55 |
| 18-Jul | 2.1 | 2.0 | A | 2.0 | 2.0 | 2.2 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.2 | 2.2 | 1.9 | 2.0 | 2.0 | 1.9 | 2.0 | 2.00 | 2.23 |
| 19-Jul | 2.0 | A | 2.3 | 2.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 | 2.0 | 1.9 | 2.0 | 1.9 | 2.0 | 2.0 | 2.0 | 2.5 | 1.9 | 1.9 | 1.9 | 2.0 | 2.02 | 2.46 |
| 20-Jul | A | 2.2 | 2.1 | 2.2 | 2.3 | 2.2 | 2.0 | 2.4 | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | A | 2.04 | 2.43 |
| 21-Jul | 2.3 | 2.1 | 2.2 | 2.3 | 2.2 | 2.2 | 2.2 | 2.4 | 2.4 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | A | 1.9 | 2.07 | 2.41 |
| 22-Jul | 2.1 | 2.2 | 2.3 | 2.0 | 2.2 | 2.2 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 | 1.8 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A | 1.9 | 2.0 | 1.98 | 2.35 |
| 23-Jul | 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 | 1.9 | 1.9 | A | 2.0 | 2.2 | 2.1 | 1.94 | 2.18 |
| 24-Jul | 2.2 | 2.1 | 2.0 | 2.0 | 2.0 | 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 | 1.9 | A | 1.9 | 2.0 | 2.3 | 2.2 | 1.98 | 2.34 |
| 25-Jul | 2.7 | 3.3 | 1.9 | 1.9 | 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 | 2.0 | 2.1 | 2.0 | 2.0 | 2.0 | 2.05 | 3.28 |
| 26-Jul | 2.0 | 2.0 | 2.3 | 3.0 | 2.3 | 2.3 | 2.3 | 2.1 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | A | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.1 | 2.06 | 3.03 |
| 27-Jul | 2.1 | 2.2 | 2.3 | 2.3 | 2.3 | 2.4 | 2.3 | 2.3 | 2.3 | 2.2 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | A | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 | 2.09 | 2.38 |
| 28-Jul | 2.0 | 2.3 | 2.5 | 2.1 | 2.1 | 2.2 | 2.6 | 2.8 | 2.1 | 2.1 | 2.1 | 2.2 | 2.1 | 2.0 | 2.0 | A | 2.0 | 2.0 | 1.9 | 1.9 | 2.4 | 2.1 | 2.0 | 2.1 | 2.15 | 2.78 |
| 29-Jul | 2.0 | 2.1 | 2.1 | 2.1 | 2.3 | 2.4 | 2.1 | 2.4 | 2.4 | 2.2 | 2.0 | 2.0 | 1.9 | 1.9 | A | 1.9 | 1.9 | 2.0 | 2.0 | 1.9 | 1.9 | 2.2 | 1.9 | 2.0 | 2.08 | 2.40 |
| 30-Jul | 2.0 | 2.0 | 2.1 | 2.1 | 2.2 | 2.7 | 2.1 | 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 | 2.1 | 2.0 | 2.01 | 2.70 |
| 31-Jul | 2.3 | 2.7 | 2.0 | 2.6 | 3.3 | 3.3 | 2.6 | 2.2 | 2.1 | 2.0 | 1.9 | 1.9 | A | 1.9 | 1.9 | 1.9 | 1.9 | 2.0 | 1.9 | 1.9 | 2.0 | 2.0 | 2.1 | 3.6 | 2.27 | 3.59 |
| | 2.11 | 2.12 | 2.15 | 2.17 | 2.13 | 2.20 | 2.09 | 2.10 | 2.02 | 1.99 | 1.96 | 1.95 | 1.93 | 1.93 | 1.93 | 1.92 | 1.92 | 1.94 | 1.93 | 1.95 | 1.97 | 2.02 | 2.06 | 2.12 | Diurnal Average | |
| | 3.08 | 3.28 | 3.12 | 3.04 | 3.26 | 3.34 | 2.62 | 2.78 | 2.40 | 2.24 | 2.18 | 2.18 | 2.06 | 2.01 | 2.02 | 2.02 | 2.01 | 2.21 | 2.17 | 2.46 | 2.41 | 2.25 | 3.04 | 3.59 | Diurnal Maximum | |

C - Calibration

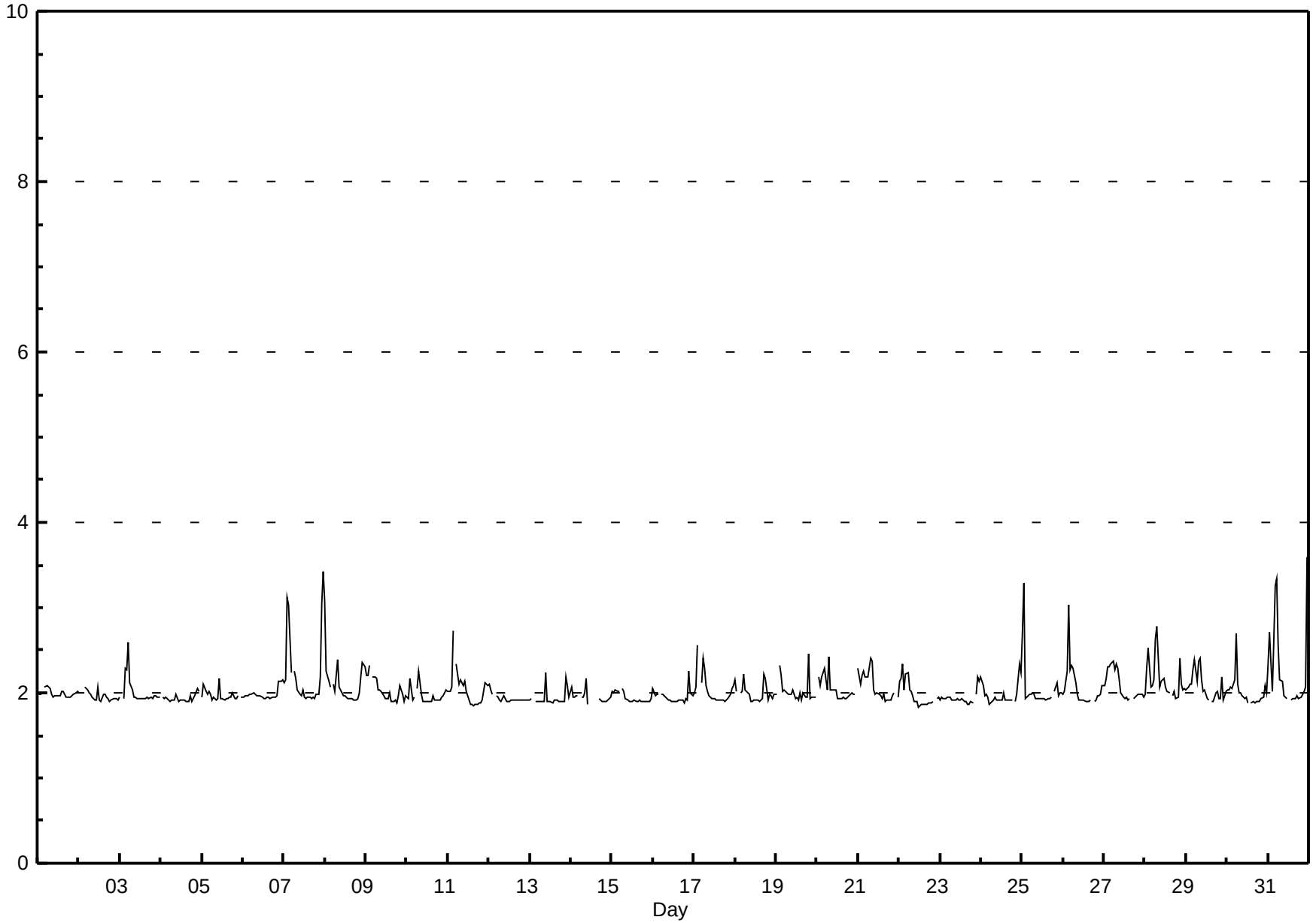
A - Automated Daily Zero Span

PASZA
Peace Airshed Zone Association

## Hourly Maximums

**Total Hydrocarbons (THC) - ppm**

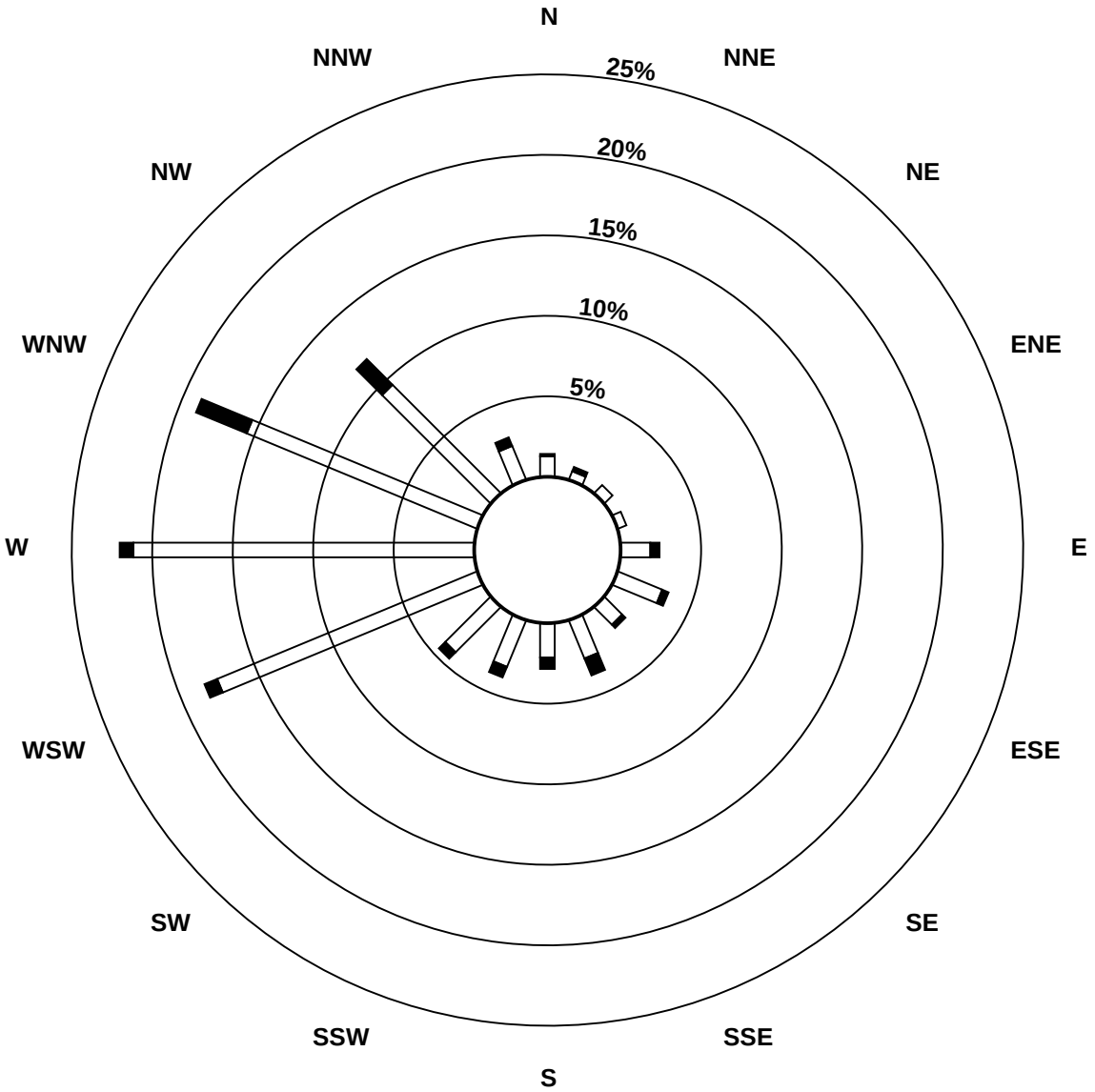
**Henry Pirker - July 2010**



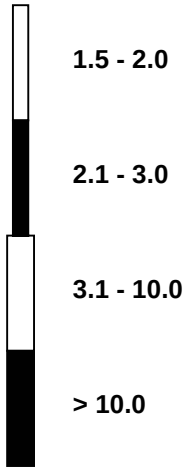
# Pollutant Rose

**Total Hydrocarbons (THC) - ppm**

**Henry Pirker - July 2010**




**Pollutant Classes (ppm)**



PASZA
Peace Airshed Zone Association

# Hourly Averages

## Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

## Henry Pirker - July 2010

Number of Exceedences: 1-hr: 0 24-hr: 0
Maximum Value: 23.7 $\mu g/m^3$ on Jul 28 13:00
Maximum Daily Average: 14.0 $\mu g/m^3$ on Jul 29

Minimum Value: 0 $\mu g/m^3$ on Jul 1 07:00
Maximum Diurnal Average: 7.4 $\mu g/m^3$ at hour 24
Monthly Average: 6.16 $\mu g/m^3$
Minimum Daily Average: 1.9 $\mu g/m^3$ on Jul 2
Minimum Diurnal Average: 5.3 $\mu g/m^3$ at hour 19
Percentiles: $P_1 = 0.0$ $P_{10} = 1.5$ $Q_1 = 2.9$ Median = 5.2 $Q_3 = 8.5$ $P_{90} = 12.2$ $P_{99} = 20.1$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 743 |
| Hours of Missing Data: | 1 |
| Hours of Calibration: | 0 |
| 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-Jul | 13 | 2 | 1 | 1 | 3 | 1 | 0 | 4 | 1 | 0 | 1 | 1 | 0 | 2 | 4 | 2 | 6 | 5 | 3 | 4 | 1 | 2 | 2 | 2 | 2.5 | 12.7 |
| 2-Jul | 1 | 2 | 2 | 2 | 1 | 2 | 3 | 3 | 0 | 0 | 2 | 2 | 2 | 3 | 0 | 1 | 1 | 2 | 3 | 4 | 3 | 3 | 2 | 2 | 1.9 | 4.4 |
| 3-Jul | 4 | 1 | 3 | 3 | 2 | 3 | 3 | 2 | 1 | 3 | 3 | 1 | 1 | 1 | 2 | 3 | 4 | 3 | 3 | 4 | 4 | 2 | 3 | 1 | 2.5 | 4.1 |
| 4-Jul | 2 | 2 | 3 | 4 | 2 | 2 | 2 | 1 | 2 | 20 | 4 | 3 | 4 | 4 | 2 | 3 | 1 | 0 | 1 | 0 | 1 | 2 | 1 | 2 | 2.8 | 20.1 |
| 5-Jul | 1 | 2 | 1 | 0 | 1 | 1 | 0 | 1 | 2 | 2 | 4 | 5 | 3 | 2 | 0 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 3 | 4 | 2.2 | 5.5 |
| 6-Jul | 4 | 4 | 2 | 3 | 4 | 4 | 3 | 7 | 6 | 3 | M | 3 | 4 | 5 | 7 | 5 | 4 | 7 | 4 | 4 | 3 | 6 | 7 | 10 | 4.7 | 9.6 |
| 7-Jul | 9 | 9 | 11 | 8 | 6 | 10 | 12 | 13 | 6 | 6 | 5 | 7 | 5 | 4 | 4 | 5 | 7 | 7 | 5 | 6 | 6 | 10 | 12 | 16 | 7.8 | 16.5 |
| 8-Jul | 18 | 14 | 12 | 7 | 6 | 8 | 9 | 10 | 8 | 11 | 17 | 14 | 9 | 9 | 8 | 9 | 9 | 10 | 8 | 6 | 7 | 10 | 12 | 20 | 10.5 | 20.1 |
| 9-Jul | 23 | 17 | 17 | 18 | 15 | 17 | 18 | 17 | 12 | 9 | 11 | 15 | 13 | 13 | 8 | 9 | 14 | 11 | 13 | 15 | 5 | 12 | 6 | 11 | 13.4 | 23.4 |
| 10-Jul | 6 | 4 | 5 | 5 | 4 | 5 | 5 | 7 | 7 | 8 | 6 | 7 | 5 | 7 | 13 | 9 | 2 | 2 | 4 | 4 | 9 | 10 | 6 | 9 | 6.3 | 13.2 |
| 11-Jul | 10 | 9 | 11 | 13 | 11 | 11 | 11 | 14 | 9 | 12 | 15 | 11 | 11 | 7 | 5 | 9 | 2 | 1 | 8 | 10 | 8 | 3 | 3 | 8 | 8.8 | 15.4 |
| 12-Jul | 10 | 6 | 8 | 0 | 7 | 2 | 5 | 6 | 5 | 1 | 3 | 2 | 2 | 2 | 6 | 2 | 2 | 4 | 2 | 3 | 0 | 0 | 2 | 1 | 3.3 | 9.7 |
| 13-Jul | 1 | 1 | 1 | 0 | 1 | 0 | 3 | 3 | 4 | 5 | 3 | 4 | 4 | 5 | 4 | 4 | 6 | 6 | 7 | 6 | 5 | 7 | 7 | 6 | 3.9 | 7.5 |
| 14-Jul | 4 | 6 | 4 | 5 | 2 | 8 | 5 | 6 | 6 | 5 | 7 | 5 | 3 | 4 | 4 | 7 | 2 | 0 | 0 | 5 | 6 | 5 | 5 | 5 | 4.6 | 8.2 |
| 15-Jul | 6 | 5 | 7 | 5 | 6 | 6 | 7 | 7 | 7 | 5 | 7 | 4 | 2 | 5 | 2 | 7 | 4 | 4 | 4 | 2 | 4 | 2 | 2 | 2 | 4.6 | 6.9 |
| 16-Jul | 1 | 3 | 3 | 2 | 2 | 3 | 2 | 3 | 4 | 3 | 2 | 1 | 3 | 2 | 3 | 4 | 4 | 4 | 3 | 5 | 4 | 4 | 5 | 3 | 3.1 | 4.8 |
| 17-Jul | 3 | 5 | 5 | 4 | 4 | 4 | 4 | 6 | 4 | 4 | 3 | 4 | 3 | 1 | 2 | 4 | 7 | 3 | 2 | 4 | 4 | 5 | 10 | 13 | 4.5 | 13.1 |
| 18-Jul | 14 | 10 | 5 | 5 | 5 | 4 | 5 | 4 | 3 | 7 | 5 | 7 | 5 | 6 | 5 | 6 | 6 | 7 | 7 | 5 | 6 | 6 | 7 | 5 | 6.0 | 13.7 |
| 19-Jul | 6 | 6 | 4 | 5 | 7 | 5 | 8 | 6 | 7 | 7 | 8 | 8 | 4 | 5 | 6 | 5 | 2 | 5 | 5 | 5 | 6 | 5 | 2 | 4 | 5.5 | 8.0 |
| 20-Jul | 5 | 6 | 8 | 7 | 5 | 6 | 4 | 5 | 5 | 6 | 6 | 7 | 6 | 6 | 5 | 6 | 7 | 6 | 5 | 8 | 7 | 8 | 7 | 9 | 6.2 | 8.8 |
| 21-Jul | 10 | 9 | 9 | 9 | 10 | 6 | 7 | 13 | 15 | 12 | 10 | 9 | 8 | 9 | 9 | 8 | 8 | 6 | 4 | 5 | 8 | 9 | 7 | 11 | 8.8 | 15.1 |
| 22-Jul | 9 | 8 | 11 | 10 | 6 | 7 | 8 | 8 | 6 | 4 | 4 | 5 | 5 | 3 | 4 | 3 | 5 | 2 | 5 | 2 | 5 | 2 | 4 | 3 | 5.5 | 11.2 |
| 23-Jul | 1 | 2 | 3 | 3 | 4 | 3 | 2 | 2 | 4 | 6 | 3 | 4 | 1 | 4 | 0 | 6 | 11 | 0 | 1 | 9 | 8 | 3 | 1 | 9 | 3.8 | 10.6 |
| 24-Jul | 4 | 5 | 5 | 2 | 4 | 2 | 2 | 3 | 4 | 7 | 6 | 6 | 3 | 4 | 7 | 0 | 7 | 6 | 0 | 2 | 5 | 2 | 3 | 3 | 3.8 | 7.3 |
| 25-Jul | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 4 | 3 | 2 | 2 | 1 | 3 | 1 | 8 | 1 | 0 | 2 | 9 | 4 | 0 | 7 | 8 | 8 | 3.3 | 9.1 |
| 26-Jul | 6 | 5 | 4 | 3 | 4 | 6 | 10 | 10 | 7 | 2 | 3 | 4 | 0 | 3 | 5 | 2 | 6 | 5 | 1 | 9 | 6 | 7 | 8 | 7 | 5.0 | 10.0 |
| 27-Jul | 6 | 8 | 8 | 8 | 5 | 6 | 7 | 5 | 9 | 9 | 11 | 7 | 9 | 0 | 6 | 6 | 0 | 6 | 11 | 13 | 10 | 4 | 12 | 10 | 7.5 | 13.3 |
| 28-Jul | 12 | 10 | 10 | 10 | 13 | 13 | 14 | 18 | 18 | 13 | 18 | 21 | 24 | 19 | 18 | 22 | 16 | 16 | 10 | 5 | 0 | 1 | 4 | 8 | 13.0 | 23.7 |
| 29-Jul | 9 | 9 | 9 | 8 | 11 | 11 | 10 | 10 | 13 | 12 | 20 | 16 | 17 | 18 | 19 | 17 | 18 | 20 | 12 | 16 | 18 | 15 | 13 | 13 | 14.0 | 20.5 |
| 30-Jul | 13 | 13 | 13 | 13 | 12 | 14 | 15 | 17 | 18 | 16 | 14 | 11 | 10 | 10 | 8 | 8 | 10 | 12 | 12 | 10 | 10 | 11 | 10 | 10 | 12.1 | 18.1 |
| 31-Jul | 9 | 8 | 8 | 5 | 7 | 8 | 9 | 9 | 8 | 10 | 11 | 9 | 8 | 5 | 8 | 9 | 8 | 10 | 9 | 11 | 9 | 13 | 14 | 15 | 9.2 | 14.8 |
| | 7.2 | 6.2 | 6.3 | 5.5 | 5.6 | 5.8 | 6.3 | 7.2 | 6.7 | 6.8 | 7.1 | 6.6 | 5.8 | 5.5 | 5.9 | 5.9 | 5.8 | 5.5 | 5.3 | 6.1 | 5.6 | 5.8 | 6.1 | 7.4 | Diurnal Average | |
| | 23.4 | 17.0 | 17.1 | 18.1 | 15.4 | 17.3 | 17.7 | 17.5 | 18.1 | 20.1 | 20.5 | 21.2 | 23.7 | 18.8 | 19.0 | 21.5 | 18.0 | 19.6 | 13.4 | 16.0 | 18.3 | 15.4 | 14.3 | 20.1 | Diurnal Maximum | |

M - Maintenance
Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 $\mu g/m^3$ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 $\mu g/m^3$

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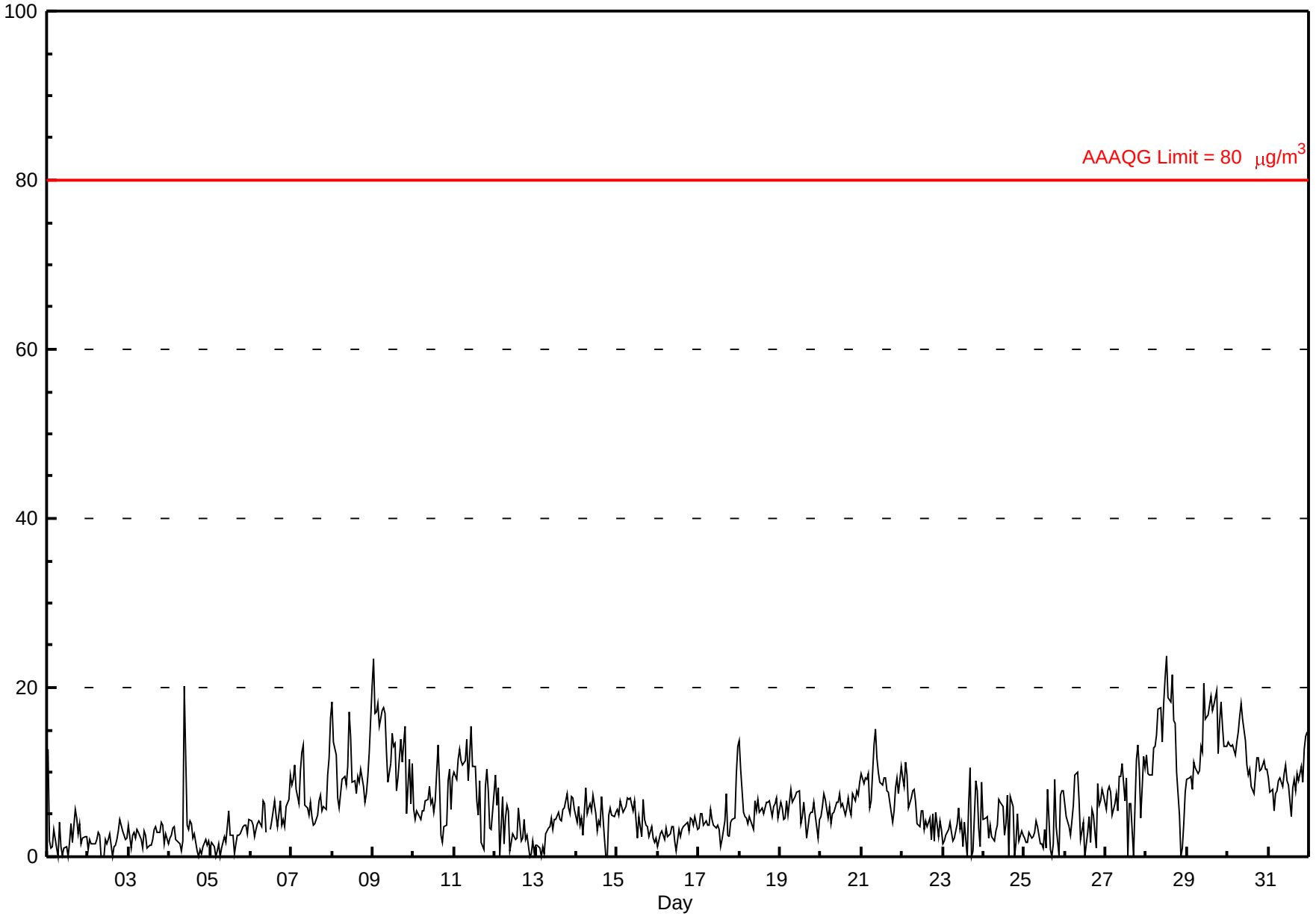
## Hourly Averages

**Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$**

**Henry Pirker - July 2010**



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# Hourly Maximums

## Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

## Henry Pirker - July 2010

Maximum Value: 28.9 $\mu g/m^3$ on Jul 1 01:00

Maximum Daily Average: 16.7 $\mu g/m^3$ on Jul 29

Minimum Value: 0 $\mu g/m^3$ on Jul 14 18:00

Minimum Daily Average: 3.5 $\mu g/m^3$ on Jul 2

Maximum Diurnal Average: 9.5 $\mu g/m^3$ at hour 24

Minimum Diurnal Average: 6.9 $\mu g/m^3$ at hour 4

Monthly Average: 8.16 $\mu g/m^3$

Percentiles: $P_1 = 0.7$ $P_{10} = 3.2$ $Q_1 = 4.8$ Median = 7.0 $Q_3 = 10.5$ $P_{90} = 14.2$ $P_{99} = 22.9$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 743 |
| Hours of Missing Data: | 1 |
| Hours of Calibration: | 0 |
| 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-Jul | 29 | 4 | 2 | 3 | 5 | 3 | 1 | 6 | 4 | 2 | 3 | 4 | 4 | 4 | 6 | 5 | 8 | 7 | 5 | 6 | 6 | 5 | 5 | 3 | 5.4 | 28.9 |
| 2-Jul | 2 | 3 | 3 | 2 | 2 | 3 | 4 | 3 | 0 | 1 | 4 | 4 | 5 | 5 | 2 | 3 | 4 | 4 | 5 | 6 | 5 | 4 | 3 | 5 | 3.5 | 5.9 |
| 3-Jul | 5 | 2 | 4 | 4 | 3 | 4 | 4 | 3 | 3 | 6 | 6 | 4 | 4 | 3 | 5 | 6 | 6 | 5 | 4 | 6 | 6 | 3 | 3 | 2 | 4.2 | 6.4 |
| 4-Jul | 4 | 3 | 5 | 5 | 4 | 3 | 2 | 1 | 14 | 23 | 12 | 4 | 6 | 6 | 6 | 5 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 5.2 | 23.2 |
| 5-Jul | 3 | 3 | 3 | 1 | 2 | 3 | 2 | 2 | 4 | 4 | 7 | 7 | 5 | 5 | 3 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 6 | 7 | 4.1 | 7.1 |
| 6-Jul | 6 | 6 | 5 | 6 | 6 | 6 | 6 | 9 | 9 | 4 | M | 4 | 7 | 7 | 10 | 10 | 7 | 8 | 6 | 6 | 5 | 9 | 9 | 11 | 6.9 | 11.1 |
| 7-Jul | 10 | 10 | 12 | 12 | 7 | 14 | 14 | 16 | 10 | 7 | 7 | 8 | 7 | 5 | 6 | 6 | 8 | 10 | 9 | 7 | 7 | 12 | 14 | 20 | 9.9 | 20.0 |
| 8-Jul | 20 | 16 | 14 | 10 | 8 | 9 | 10 | 10 | 10 | 14 | 20 | 20 | 12 | 10 | 10 | 12 | 10 | 11 | 11 | 8 | 9 | 12 | 15 | 27 | 12.8 | 26.9 |
| 9-Jul | 29 | 19 | 18 | 19 | 18 | 18 | 19 | 19 | 17 | 11 | 12 | 17 | 18 | 15 | 12 | 13 | 15 | 13 | 18 | 19 | 8 | 14 | 10 | 14 | 16.0 | 28.6 |
| 10-Jul | 10 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 10 | 10 | 10 | 10 | 12 | 14 | 11 | 5 | 2 | 4 | 6 | 11 | 12 | 8 | 11 | 8.2 | 14.2 |
| 11-Jul | 11 | 12 | 12 | 13 | 12 | 12 | 13 | 14 | 13 | 13 | 17 | 16 | 12 | 11 | 10 | 12 | 5 | 4 | 10 | 11 | 11 | 5 | 4 | 12 | 11.0 | 16.8 |
| 12-Jul | 12 | 11 | 12 | 4 | 9 | 5 | 6 | 8 | 6 | 4 | 4 | 5 | 3 | 6 | 8 | 6 | 6 | 6 | 3 | 4 | 3 | 4 | 4 | 2 | 5.9 | 12.2 |
| 13-Jul | 2 | 2 | 2 | 1 | 2 | 1 | 4 | 5 | 5 | 6 | 4 | 5 | 6 | 6 | 6 | 6 | 6 | 7 | 8 | 7 | 7 | 8 | 8 | 8 | 5.2 | 8.4 |
| 14-Jul | 5 | 7 | 5 | 5 | 4 | 10 | 9 | 7 | 7 | 8 | 9 | 7 | 7 | 7 | 4 | 9 | 8 | 0 | 0 | 8 | 8 | 6 | 5 | 7 | 6.3 | 9.8 |
| 15-Jul | 7 | 7 | 8 | 7 | 7 | 7 | 7 | 8 | 9 | 8 | 9 | 6 | 4 | 7 | 7 | 8 | 5 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 6.1 | 9.1 |
| 16-Jul | 2 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 5 | 3 | 3 | 4 | 4 | 5 | 4 | 4 | 5 | 4 | 6 | 5 | 5 | 6 | 6 | 4.3 | 5.7 |
| 17-Jul | 5 | 6 | 6 | 5 | 5 | 5 | 5 | 7 | 6 | 6 | 4 | 5 | 5 | 3 | 4 | 7 | 8 | 6 | 4 | 5 | 6 | 8 | 13 | 15 | 6.2 | 14.6 |
| 18-Jul | 16 | 15 | 6 | 5 | 5 | 4 | 5 | 5 | 5 | 8 | 7 | 9 | 6 | 7 | 6 | 7 | 7 | 7 | 9 | 6 | 8 | 7 | 8 | 5 | 7.2 | 15.6 |
| 19-Jul | 7 | 6 | 6 | 5 | 8 | 7 | 10 | 9 | 9 | 9 | 9 | 9 | 5 | 7 | 8 | 8 | 4 | 6 | 6 | 8 | 9 | 6 | 4 | 6 | 7.2 | 10.2 |
| 20-Jul | 6 | 7 | 9 | 8 | 7 | 6 | 5 | 6 | 7 | 7 | 8 | 9 | 9 | 8 | 6 | 6 | 8 | 7 | 9 | 9 | 8 | 9 | 9 | 11 | 7.6 | 11.3 |
| 21-Jul | 12 | 10 | 10 | 10 | 11 | 9 | 9 | 17 | 17 | 14 | 12 | 10 | 10 | 10 | 10 | 9 | 9 | 8 | 4 | 8 | 9 | 11 | 9 | 12 | 10.4 | 17.0 |
| 22-Jul | 11 | 11 | 12 | 11 | 8 | 9 | 9 | 9 | 8 | 5 | 5 | 8 | 8 | 6 | 5 | 5 | 6 | 5 | 7 | 6 | 7 | 6 | 6 | 5 | 7.3 | 11.9 |
| 23-Jul | 2 | 3 | 4 | 4 | 5 | 5 | 5 | 5 | 6 | 6 | 8 | 9 | 7 | 7 | 0 | 14 | 14 | 6 | 7 | 10 | 9 | 7 | 7 | 11 | 6.7 | 13.9 |
| 24-Jul | 8 | 8 | 7 | 4 | 4 | 4 | 4 | 4 | 5 | 9 | 8 | 9 | 9 | 12 | 12 | 2 | 10 | 9 | 0 | 8 | 9 | 4 | 5 | 5 | 6.6 | 12.4 |
| 25-Jul | 3 | 2 | 3 | 4 | 3 | 4 | 4 | 5 | 5 | 4 | 3 | 5 | 6 | 6 | 9 | 7 | 0 | 9 | 11 | 6 | 3 | 9 | 10 | 10 | 5.3 | 10.7 |
| 26-Jul | 7 | 6 | 4 | 4 | 5 | 8 | 11 | 11 | 12 | 3 | 4 | 5 | 4 | 4 | 6 | 8 | 9 | 7 | 4 | 11 | 9 | 8 | 9 | 8 | 7.0 | 11.7 |
| 27-Jul | 6 | 9 | 10 | 10 | 7 | 7 | 8 | 7 | 13 | 13 | 13 | 10 | 12 | 4 | 11 | 11 | 2 | 9 | 13 | 14 | 13 | 7 | 15 | 15 | 10.0 | 15.1 |
| 28-Jul | 13 | 10 | 10 | 11 | 15 | 15 | 16 | 19 | 19 | 17 | 21 | 22 | 26 | 25 | 21 | 24 | 18 | 17 | 16 | 10 | 0 | 4 | 6 | 8 | 15.2 | 26.5 |
| 29-Jul | 10 | 13 | 13 | 11 | 12 | 12 | 10 | 12 | 14 | 22 | 24 | 18 | 18 | 21 | 21 | 19 | 20 | 21 | 19 | 21 | 21 | 17 | 16 | 15 | 16.7 | 24.3 |
| 30-Jul | 14 | 13 | 14 | 14 | 14 | 15 | 17 | 17 | 19 | 18 | 16 | 13 | 11 | 14 | 11 | 10 | 12 | 13 | 13 | 12 | 12 | 13 | 12 | 12 | 13.7 | 19.0 |
| 31-Jul | 12 | 10 | 9 | 8 | 9 | 9 | 10 | 11 | 10 | 11 | 12 | 12 | 10 | 6 | 11 | 11 | 11 | 12 | 11 | 12 | 11 | 14 | 15 | 16 | 10.9 | 16.0 |
| | 9.4 | 7.9 | 7.7 | 6.9 | 7.0 | 7.3 | 7.7 | 8.5 | 8.9 | 8.9 | 9.4 | 8.9 | 8.3 | 8.1 | 8.2 | 8.6 | 7.9 | 7.6 | 7.5 | 8.3 | 7.6 | 7.7 | 8.0 | 9.5 | Diurnal Average | |
| | 28.9 | 19.0 | 18.5 | 19.4 | 18.0 | 18.3 | 19.1 | 19.1 | 19.0 | 23.2 | 24.3 | 21.5 | 26.5 | 24.9 | 21.0 | 23.6 | 20.4 | 21.3 | 19.4 | 20.8 | 20.8 | 16.8 | 15.5 | 26.9 | Diurnal Maximum | |

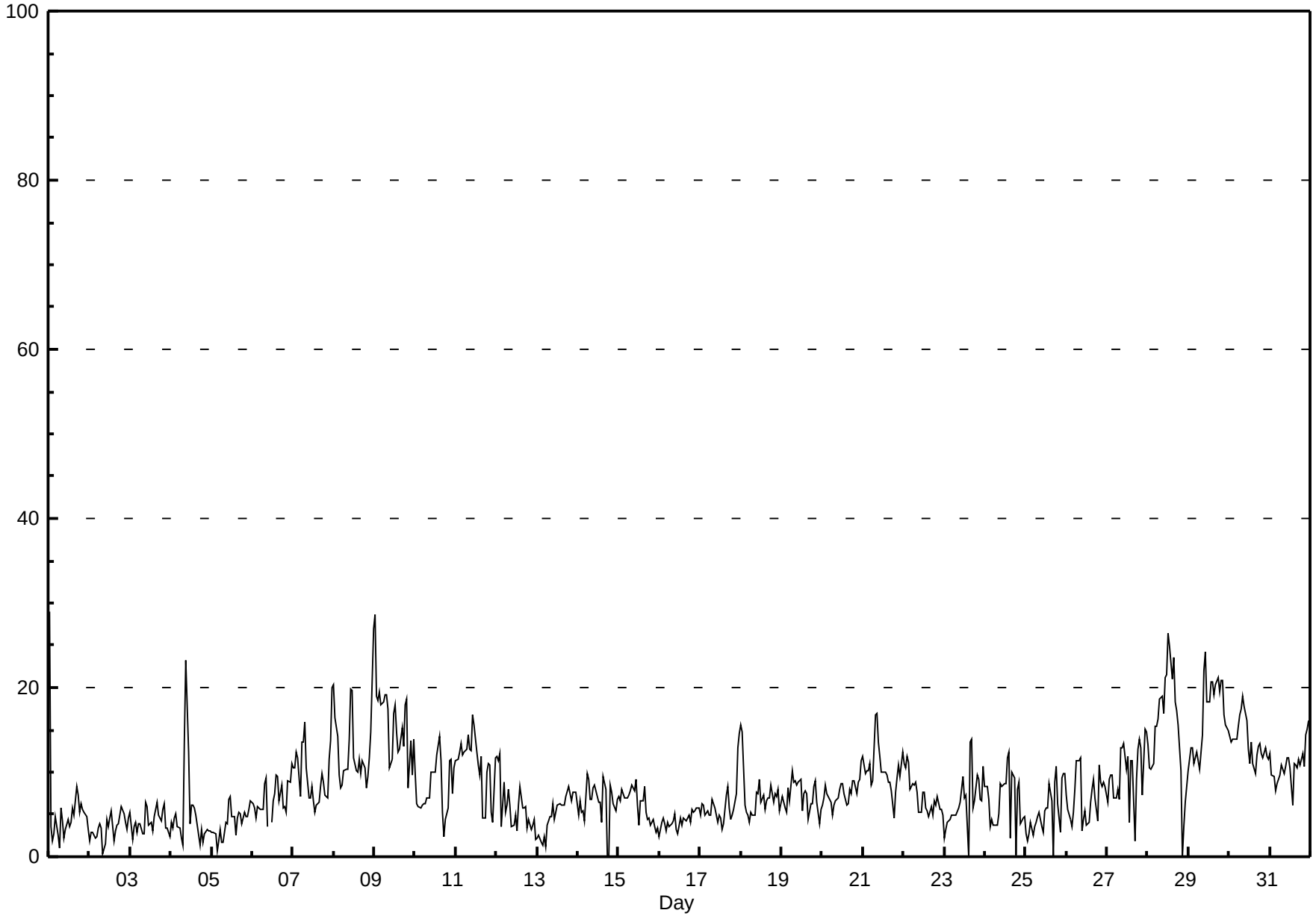
M - Maintenance

PASZA
Peace Airshed Zone Association

## Hourly Maximums

**Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$**

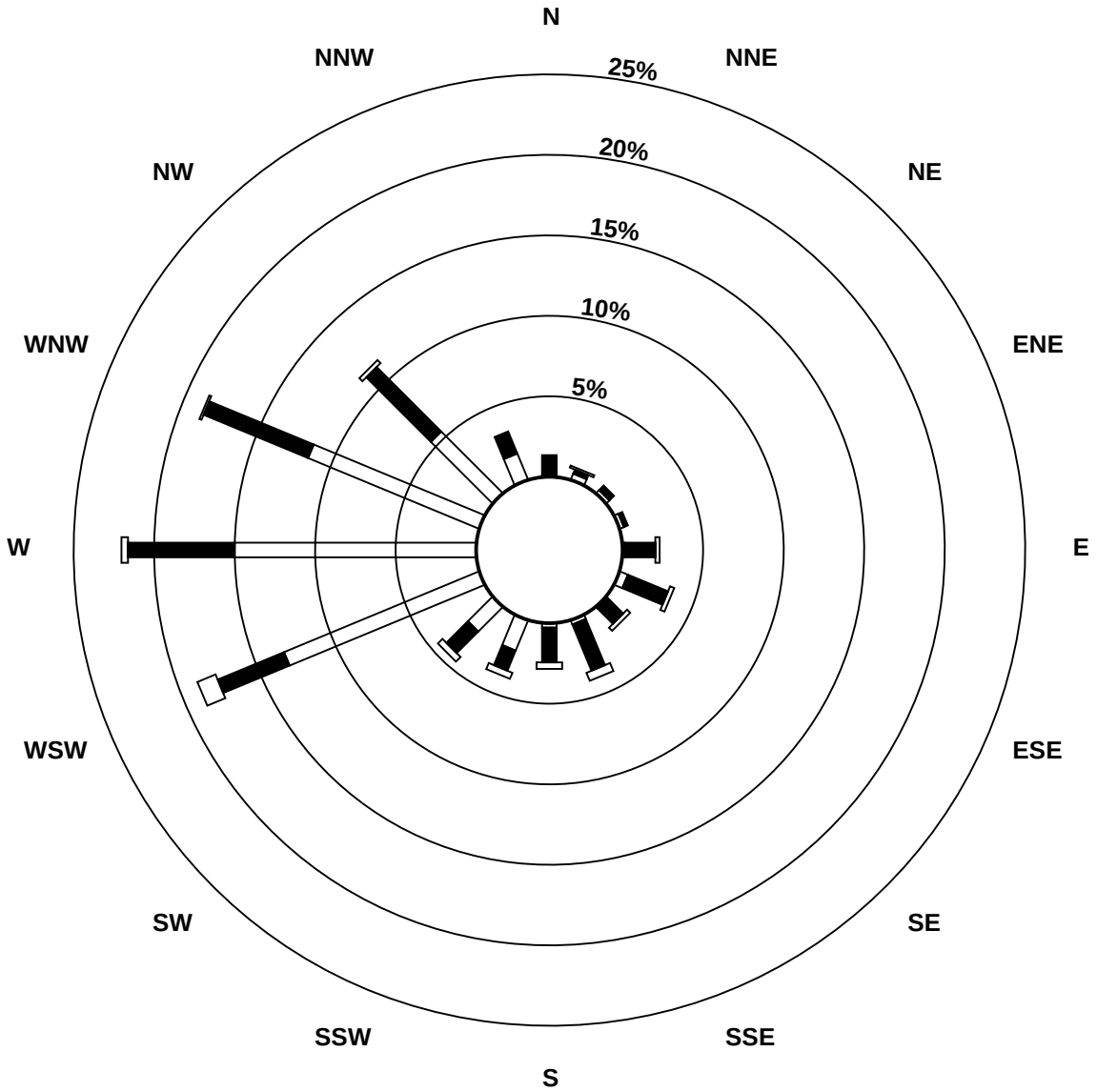
**Henry Pirker - July 2010**



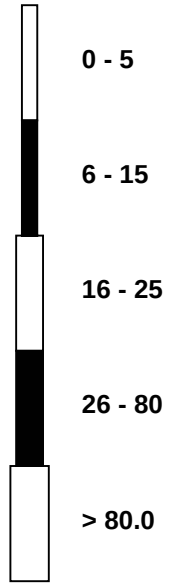
# Pollutant Rose

**Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$**

**Henry Pirker - July 2010**




**Pollutant Classes ($\mu g/m^3$)**



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# Hourly Averages

## External Temperature (ET) - $^{o}$C

## Henry Pirker - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 30.9 $^{o}$C on Jul 8 17:00 Maximum Daily Average: 23.3 $^{o}$C on Jul 8

Minimum Value: 7 $^{o}$C on Jul 1 06:00 Minimum Daily Average: 13.3 $^{o}$C on Jul 1
Maximum Diurnal Average: 23.4 $^{o}$C at hour 16 Minimum Diurnal Average: 11.5 $^{o}$C at hour 5
Monthly Average: 17.89 $^{o}$C Percentiles: $P_1$ = 8.6 $P_{10}$ = 11.1 $Q_1$ = 13.8 Median = 17.5 $Q_3$ = 21.6 $P_{90}$ = 25.4 $P_{99}$ = 29.4

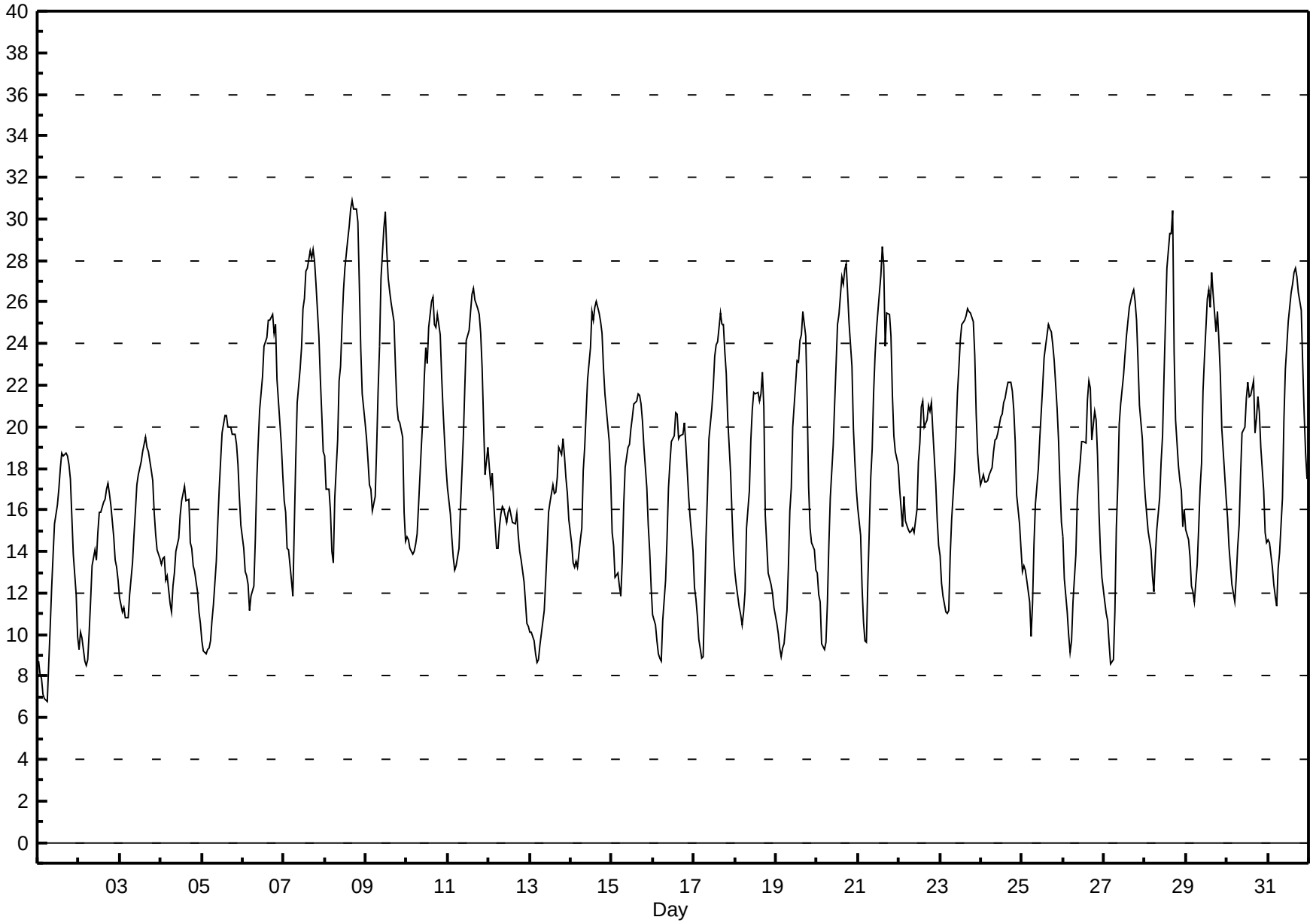
| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 744 |
| Hours of Missing Data: | 0 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 9 | 8 | 8 | 7 | 7 | 7 | 9 | 10 | 12 | 14 | 15 | 16 | 17 | 18 | 19 | 19 | 19 | 19 | 18 | 17 | 16 | 14 | 12 | 10 | 13.3 | 18.8 |
| 2-Jul | 9 | 10 | 10 | 9 | 9 | 9 | 10 | 12 | 13 | 14 | 14 | 15 | 16 | 16 | 16 | 17 | 17 | 17 | 17 | 16 | 15 | 14 | 13 | 13 | 13.3 | 17.3 |
| 3-Jul | 12 | 11 | 11 | 11 | 11 | 11 | 12 | 13 | 15 | 16 | 17 | 18 | 18 | 19 | 19 | 19 | 19 | 19 | 18 | 17 | 16 | 15 | 14 | 14 | 15.2 | 19.5 |
| 4-Jul | 13 | 14 | 14 | 13 | 13 | 12 | 11 | 12 | 13 | 14 | 15 | 16 | 16 | 17 | 17 | 16 | 17 | 14 | 14 | 13 | 13 | 12 | 11 | 11 | 13.8 | 17.2 |
| 5-Jul | 10 | 9 | 9 | 9 | 9 | 10 | 11 | 11 | 14 | 15 | 17 | 18 | 20 | 21 | 21 | 20 | 20 | 20 | 20 | 20 | 19 | 18 | 17 | 15 | 15.5 | 20.6 |
| 6-Jul | 14 | 13 | 13 | 12 | 11 | 12 | 12 | 15 | 17 | 19 | 21 | 22 | 24 | 24 | 24 | 25 | 25 | 25 | 24 | 25 | 22 | 21 | 19 | 18 | 19.2 | 25.4 |
| 7-Jul | 16 | 16 | 14 | 14 | 13 | 12 | 15 | 18 | 21 | 23 | 24 | 26 | 26 | 28 | 28 | 28 | 28 | 29 | 28 | 27 | 24 | 22 | 21 | 19 | 21.6 | 28.5 |
| 8-Jul | 19 | 17 | 17 | 16 | 14 | 13 | 17 | 19 | 22 | 23 | 25 | 27 | 28 | 29 | 30 | 31 | 31 | 30 | 30 | 30 | 27 | 24 | 22 | 20 | 23.3 | 30.9 |
| 9-Jul | 19 | 18 | 17 | 17 | 16 | 17 | 19 | 22 | 24 | 27 | 30 | 30 | 28 | 27 | 27 | 26 | 25 | 23 | 21 | 20 | 20 | 20 | 16 | 14 | 21.8 | 30.3 |
| 10-Jul | 15 | 15 | 14 | 14 | 14 | 14 | 15 | 16 | 19 | 20 | 22 | 24 | 23 | 25 | 26 | 26 | 25 | 25 | 25 | 24 | 22 | 21 | 19 | 18 | 20.1 | 26.3 |
| 11-Jul | 17 | 16 | 15 | 14 | 13 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 25 | 26 | 26 | 27 | 26 | 26 | 25 | 24 | 23 | 20 | 18 | 19 | 20.2 | 26.7 |
| 12-Jul | 18 | 17 | 18 | 16 | 14 | 14 | 15 | 16 | 16 | 16 | 15 | 16 | 16 | 16 | 15 | 15 | 16 | 15 | 14 | 14 | 13 | 12 | 11 | 10 | 14.9 | 18.1 |
| 13-Jul | 10 | 10 | 10 | 9 | 9 | 9 | 9 | 11 | 11 | 13 | 14 | 16 | 16 | 17 | 17 | 17 | 18 | 19 | 19 | 19 | 19 | 18 | 17 | 16 | 14.2 | 19.5 |
| 14-Jul | 14 | 13 | 13 | 13 | 13 | 15 | 15 | 18 | 19 | 21 | 22 | 24 | 26 | 25 | 26 | 26 | 25 | 25 | 25 | 23 | 22 | 21 | 19 | 18 | 20.0 | 26.1 |
| 15-Jul | 15 | 14 | 13 | 13 | 12 | 12 | 14 | 16 | 18 | 19 | 19 | 20 | 20 | 21 | 21 | 22 | 22 | 21 | 20 | 19 | 17 | 15 | 14 | 12 | 17.1 | 21.6 |
| 16-Jul | 11 | 10 | 10 | 9 | 9 | 9 | 11 | 13 | 15 | 17 | 18 | 19 | 20 | 21 | 21 | 19 | 20 | 20 | 20 | 19 | 18 | 17 | 16 | 14 | 15.6 | 20.7 |
| 17-Jul | 12 | 12 | 11 | 10 | 9 | 9 | 12 | 15 | 17 | 19 | 21 | 22 | 23 | 24 | 24 | 26 | 25 | 25 | 24 | 23 | 20 | 18 | 16 | 14 | 17.9 | 25.5 |
| 18-Jul | 13 | 12 | 11 | 11 | 10 | 11 | 12 | 15 | 17 | 19 | 21 | 22 | 22 | 22 | 21 | 22 | 23 | 21 | 16 | 13 | 13 | 12 | 12 | 11 | 15.9 | 22.6 |
| 19-Jul | 11 | 10 | 9 | 9 | 9 | 10 | 11 | 13 | 16 | 17 | 20 | 22 | 23 | 23 | 24 | 24 | 26 | 24 | 21 | 17 | 15 | 14 | 14 | 13 | 16.5 | 25.5 |
| 20-Jul | 13 | 12 | 12 | 10 | 9 | 10 | 11 | 14 | 17 | 19 | 21 | 23 | 25 | 25 | 27 | 27 | 28 | 28 | 26 | 25 | 23 | 20 | 18 | 17 | 19.2 | 27.8 |
| 21-Jul | 16 | 15 | 12 | 11 | 10 | 10 | 13 | 18 | 19 | 22 | 23 | 25 | 26 | 27 | 29 | 28 | 24 | 25 | 25 | 24 | 22 | 20 | 19 | 18 | 20.0 | 28.6 |
| 22-Jul | 17 | 16 | 15 | 17 | 15 | 15 | 15 | 15 | 15 | 15 | 16 | 18 | 19 | 21 | 21 | 20 | 20 | 21 | 21 | 21 | 20 | 17 | 16 | 14 | 17.6 | 21.2 |
| 23-Jul | 14 | 12 | 12 | 11 | 11 | 11 | 14 | 16 | 18 | 20 | 22 | 23 | 24 | 25 | 25 | 25 | 26 | 26 | 25 | 25 | 23 | 21 | 19 | 18 | 19.4 | 25.7 |
| 24-Jul | 17 | 18 | 17 | 17 | 17 | 18 | 18 | 19 | 19 | 19 | 20 | 20 | 21 | 21 | 21 | 22 | 22 | 22 | 22 | 21 | 19 | 17 | 15 | 14 | 19.1 | 22.2 |
| 25-Jul | 13 | 13 | 13 | 13 | 12 | 10 | 11 | 14 | 16 | 18 | 19 | 21 | 22 | 23 | 24 | 25 | 25 | 25 | 24 | 23 | 21 | 19 | 17 | 15 | 18.2 | 24.9 |
| 26-Jul | 15 | 13 | 11 | 10 | 9 | 10 | 12 | 14 | 16 | 18 | 18 | 19 | 19 | 19 | 21 | 22 | 22 | 19 | 21 | 20 | 19 | 16 | 14 | 13 | 16.2 | 22.2 |
| 27-Jul | 12 | 11 | 11 | 10 | 9 | 9 | 11 | 15 | 17 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 26 | 27 | 26 | 25 | 23 | 21 | 19 | 18 | 18.8 | 26.6 |
| 28-Jul | 17 | 16 | 15 | 14 | 13 | 12 | 14 | 15 | 17 | 18 | 20 | 22 | 25 | 28 | 29 | 29 | 30 | 24 | 20 | 18 | 17 | 17 | 15 | 16 | 19.2 | 30.4 |
| 29-Jul | 15 | 15 | 14 | 12 | 12 | 12 | 13 | 15 | 17 | 18 | 22 | 23 | 26 | 27 | 26 | 27 | 26 | 25 | 26 | 24 | 23 | 20 | 19 | 17 | 19.7 | 27.4 |
| 30-Jul | 16 | 14 | 13 | 12 | 12 | 13 | 14 | 15 | 18 | 20 | 20 | 21 | 22 | 21 | 22 | 22 | 20 | 20 | 21 | 21 | 19 | 17 | 15 | 14 | 17.6 | 22.2 |
| 31-Jul | 15 | 14 | 13 | 12 | 12 | 11 | 13 | 14 | 17 | 20 | 23 | 24 | 25 | 26 | 27 | 27 | 28 | 27 | 26 | 26 | 23 | 21 | 19 | 17 | 20.1 | 27.6 |
| | 14.1 | 13.4 | 12.7 | 12.1 | 11.5 | 11.5 | 13.0 | 15.0 | 16.9 | 18.5 | 19.9 | 21.3 | 22.1 | 22.8 | 23.2 | 23.4 | 23.3 | 22.7 | 22.1 | 21.1 | 19.5 | 17.8 | 16.3 | 15.2 | Diurnal Average | |
| | 19.4 | 18.4 | 17.7 | 17.4 | 17.4 | 17.7 | 19.0 | 21.7 | 23.9 | 27.2 | 29.6 | 30.3 | 28.4 | 29.0 | 29.7 | 30.5 | 30.9 | 30.5 | 30.5 | 29.9 | 26.9 | 23.8 | 21.6 | 20.2 | Diurnal Maximum | |

## Hourly Averages

**External Temperature (ET) - $^{o}C$**

**Henry Pirker - July 2010**



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# Hourly Averages

## Relative Humidity (RH) - %

## Henry Pirker - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 91.2 % on Jul 29 06:00 Maximum Daily Average: 76.7 % on Jul 13

Minimum Value: 22 % on Jul 1 17:00 Minimum Daily Average: 38.3 % on Jul 24
Maximum Diurnal Average: 74.4 % at hour 5 Minimum Diurnal Average: 37.3 % at hour 17
Monthly Average: 54.34 % Percentiles: $P_1$ = 24.1 $P_{10}$ = 32.0 $Q_1$ = 39.8 Median = 52.1 $Q_3$ = 68.0 $P_{90}$ = 80.8 $P_{99}$ = 88.9

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 744 |
| Hours of Missing Data: | 0 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 59 | 61 | 61 | 61 | 61 | 62 | 56 | 50 | 43 | 38 | 32 | 28 | 25 | 24 | 23 | 22 | 22 | 23 | 24 | 26 | 29 | 33 | 39 | 44 | 39.5 | 61.9 |
| 2-Jul | 46 | 44 | 47 | 49 | 50 | 51 | 50 | 48 | 46 | 46 | 47 | 47 | 47 | 47 | 46 | 46 | 45 | 44 | 45 | 47 | 51 | 55 | 56 | 57 | 48.1 | 57.3 |
| 3-Jul | 62 | 68 | 68 | 72 | 71 | 70 | 64 | 56 | 51 | 46 | 42 | 41 | 39 | 39 | 39 | 39 | 39 | 39 | 41 | 42 | 45 | 49 | 51 | 52 | 51.0 | 72.4 |
| 4-Jul | 53 | 54 | 57 | 60 | 61 | 70 | 73 | 63 | 57 | 54 | 51 | 46 | 43 | 42 | 41 | 43 | 45 | 54 | 58 | 61 | 61 | 68 | 75 | 81 | 57.2 | 80.6 |
| 5-Jul | 86 | 88 | 89 | 88 | 88 | 85 | 81 | 78 | 69 | 62 | 54 | 47 | 42 | 39 | 37 | 40 | 42 | 43 | 44 | 45 | 43 | 44 | 48 | 51 | 59.7 | 88.9 |
| 6-Jul | 55 | 58 | 58 | 57 | 60 | 58 | 59 | 53 | 47 | 43 | 40 | 36 | 34 | 33 | 30 | 29 | 30 | 29 | 30 | 31 | 36 | 40 | 52 | 58 | 44.1 | 60.1 |
| 7-Jul | 65 | 66 | 71 | 69 | 74 | 75 | 68 | 56 | 45 | 39 | 37 | 33 | 31 | 28 | 29 | 27 | 27 | 27 | 27 | 30 | 36 | 41 | 47 | 56 | 45.9 | 75.0 |
| 8-Jul | 55 | 60 | 58 | 61 | 70 | 73 | 66 | 60 | 51 | 50 | 44 | 37 | 34 | 29 | 26 | 24 | 24 | 25 | 24 | 26 | 32 | 41 | 52 | 54 | 44.9 | 73.4 |
| 9-Jul | 57 | 59 | 67 | 65 | 69 | 64 | 52 | 46 | 43 | 35 | 29 | 28 | 32 | 37 | 40 | 40 | 42 | 49 | 56 | 57 | 54 | 57 | 74 | 83 | 51.5 | 83.1 |
| 10-Jul | 82 | 84 | 86 | 87 | 88 | 87 | 86 | 81 | 68 | 61 | 54 | 47 | 48 | 44 | 38 | 37 | 39 | 40 | 38 | 41 | 47 | 53 | 56 | 60 | 60.5 | 88.0 |
| 11-Jul | 63 | 68 | 72 | 76 | 78 | 78 | 76 | 71 | 67 | 63 | 59 | 53 | 47 | 46 | 42 | 38 | 36 | 34 | 32 | 33 | 40 | 46 | 53 | 50 | 55.0 | 77.8 |
| 12-Jul | 53 | 54 | 43 | 45 | 52 | 51 | 49 | 48 | 47 | 49 | 52 | 49 | 50 | 49 | 51 | 50 | 49 | 53 | 56 | 56 | 59 | 63 | 65 | 67 | 52.5 | 67.4 |
| 13-Jul | 69 | 70 | 78 | 83 | 85 | 88 | 86 | 85 | 84 | 83 | 79 | 76 | 75 | 72 | 74 | 75 | 73 | 69 | 69 | 68 | 72 | 76 | 78 | 76 | 76.7 | 87.8 |
| 14-Jul | 80 | 81 | 81 | 78 | 78 | 72 | 68 | 58 | 54 | 49 | 44 | 39 | 36 | 33 | 34 | 32 | 29 | 31 | 35 | 38 | 39 | 42 | 47 | 52 | 51.3 | 81.2 |
| 15-Jul | 61 | 63 | 68 | 67 | 69 | 69 | 63 | 54 | 46 | 41 | 39 | 35 | 33 | 31 | 30 | 31 | 31 | 34 | 38 | 41 | 44 | 48 | 52 | 57 | 47.7 | 69.1 |
| 16-Jul | 62 | 65 | 67 | 68 | 68 | 67 | 60 | 54 | 48 | 42 | 38 | 36 | 37 | 35 | 36 | 39 | 39 | 39 | 39 | 41 | 44 | 49 | 56 | 67 | 49.8 | 68.3 |
| 17-Jul | 75 | 75 | 79 | 83 | 86 | 84 | 75 | 66 | 59 | 50 | 45 | 40 | 35 | 33 | 32 | 29 | 30 | 30 | 32 | 36 | 41 | 48 | 54 | 63 | 53.4 | 86.2 |
| 18-Jul | 68 | 66 | 72 | 77 | 81 | 79 | 76 | 68 | 63 | 54 | 48 | 47 | 47 | 46 | 47 | 46 | 43 | 45 | 70 | 86 | 86 | 86 | 86 | 86 | 65.5 | 86.5 |
| 19-Jul | 86 | 89 | 89 | 90 | 89 | 87 | 81 | 75 | 68 | 65 | 57 | 46 | 39 | 38 | 37 | 35 | 33 | 33 | 43 | 61 | 70 | 70 | 72 | 77 | 63.9 | 90.5 |
| 20-Jul | 79 | 83 | 82 | 87 | 88 | 85 | 78 | 72 | 67 | 59 | 54 | 46 | 37 | 33 | 29 | 28 | 27 | 26 | 28 | 30 | 37 | 50 | 53 | 58 | 54.8 | 88.4 |
| 21-Jul | 62 | 66 | 78 | 84 | 83 | 85 | 75 | 63 | 56 | 50 | 42 | 41 | 37 | 32 | 29 | 29 | 41 | 37 | 36 | 39 | 49 | 52 | 54 | 58 | 53.2 | 85.3 |
| 22-Jul | 64 | 68 | 71 | 61 | 66 | 69 | 72 | 77 | 78 | 82 | 79 | 71 | 65 | 58 | 53 | 58 | 54 | 51 | 50 | 46 | 48 | 57 | 62 | 66 | 63.5 | 82.5 |
| 23-Jul | 67 | 72 | 73 | 75 | 75 | 75 | 67 | 63 | 56 | 50 | 45 | 38 | 33 | 31 | 33 | 32 | 33 | 33 | 31 | 32 | 35 | 44 | 49 | 51 | 49.7 | 75.2 |
| 24-Jul | 53 | 53 | 56 | 56 | 56 | 52 | 44 | 36 | 31 | 32 | 32 | 32 | 31 | 28 | 26 | 26 | 26 | 27 | 27 | 30 | 34 | 41 | 42 | 46 | 38.3 | 56.4 |
| 25-Jul | 51 | 49 | 49 | 51 | 54 | 59 | 55 | 49 | 42 | 39 | 35 | 33 | 30 | 27 | 27 | 26 | 25 | 26 | 28 | 30 | 37 | 40 | 46 | 52 | 39.9 | 58.8 |
| 26-Jul | 54 | 61 | 70 | 73 | 77 | 76 | 69 | 64 | 60 | 56 | 53 | 47 | 51 | 55 | 48 | 45 | 44 | 58 | 53 | 52 | 58 | 69 | 74 | 81 | 60.5 | 80.9 |
| 27-Jul | 87 | 88 | 89 | 89 | 89 | 91 | 86 | 72 | 68 | 60 | 56 | 49 | 43 | 39 | 37 | 35 | 32 | 31 | 32 | 33 | 38 | 43 | 49 | 59 | 58.0 | 90.9 |
| 28-Jul | 63 | 65 | 67 | 71 | 76 | 79 | 74 | 70 | 67 | 63 | 60 | 54 | 46 | 39 | 34 | 33 | 29 | 47 | 52 | 69 | 70 | 73 | 84 | 79 | 61.0 | 83.6 |
| 29-Jul | 82 | 83 | 86 | 90 | 91 | 91 | 88 | 80 | 73 | 71 | 59 | 55 | 45 | 45 | 46 | 42 | 41 | 41 | 32 | 43 | 45 | 51 | 56 | 67 | 62.7 | 91.2 |
| 30-Jul | 72 | 78 | 81 | 84 | 85 | 79 | 78 | 71 | 64 | 57 | 55 | 50 | 49 | 54 | 50 | 49 | 56 | 61 | 55 | 58 | 65 | 72 | 81 | 80 | 66.0 | 84.6 |
| 31-Jul | 80 | 82 | 85 | 88 | 88 | 90 | 83 | 83 | 76 | 61 | 50 | 45 | 40 | 37 | 35 | 34 | 32 | 32 | 33 | 35 | 44 | 52 | 59 | 62 | 58.7 | 90.1 |
| | 66.1 | 68.5 | 70.8 | 72.5 | 74.4 | 74.2 | 69.7 | 63.6 | 57.9 | 53.2 | 48.8 | 44.3 | 41.3 | 39.4 | 38.0 | 37.4 | 37.3 | 39.0 | 40.7 | 43.9 | 48.1 | 53.3 | 58.8 | 62.9 | Diurnal Average | |
| | 86.7 | 88.9 | 89.1 | 90.5 | 91.1 | 91.2 | 88.3 | 84.6 | 84.3 | 82.6 | 78.9 | 75.7 | 74.8 | 72.4 | 74.2 | 74.7 | 73.0 | 69.2 | 70.0 | 85.9 | 86.5 | 85.7 | 85.5 | 86.4 | Diurnal Maximum | |

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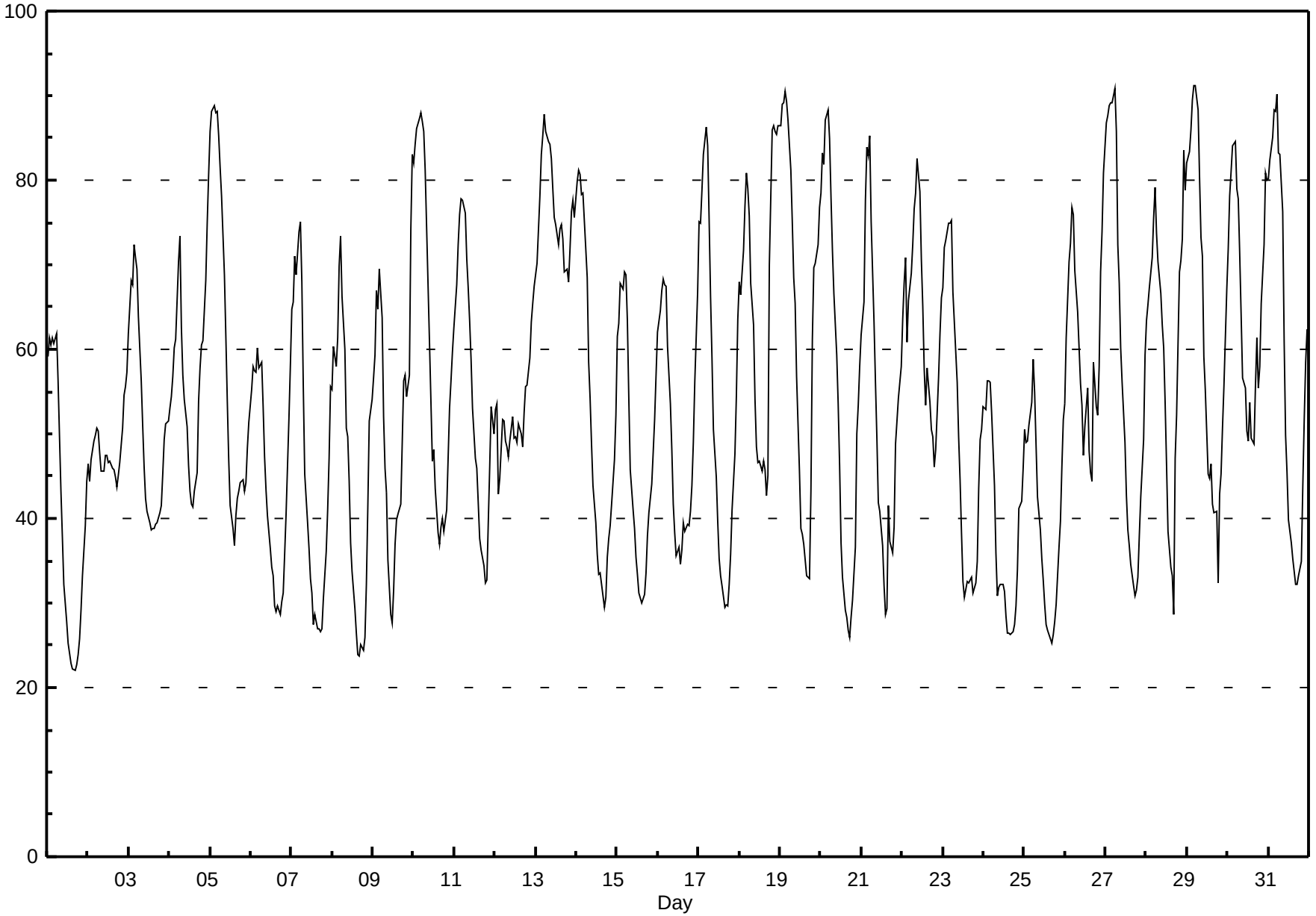
## Hourly Averages

**Relative Humidity (RH) - %**

**Henry Pirker - July 2010**



# Hourly Averages

## Solar Radiation (SR) - W/m$^2$

## Henry Pirker - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 809.2 W/m$^2$ on Jul 14 13:00

Maximum Daily Average: 280.4 W/m$^2$ on Jul 1

Minimum Value: 0 W/m$^2$ on Jul 1 01:00

Minimum Daily Average: 98.7 W/m$^2$ on Jul 13

Maximum Diurnal Average: 615.8 W/m$^2$ at hour 13

Minimum Diurnal Average: 0.0 W/m$^2$ at hour 1

Monthly Average: 218.87 W/m$^2$

Percentiles: $P_1$ = 0.0 $P_{10}$ = 0.0 $Q_1$ = 0.0 Median = 114.3 $Q_3$ = 391.2 $P_{90}$ = 637.5 $P_{99}$ = 762.1

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 744 |
| Hours of Missing Data: | 0 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 0 | 0 | 0 | 0 | 3 | 19 | 147 | 301 | 374 | 553 | 650 | 725 | 773 | 781 | 755 | 700 | 531 | 100 | 193 | 94 | 25 | 6 | 0 | 0 | 280.4 | 780.6 |
| 2-Jul | 0 | 0 | 0 | 0 | 5 | 40 | 96 | 239 | 358 | 375 | 232 | 494 | 519 | 327 | 381 | 366 | 340 | 115 | 193 | 113 | 27 | 2 | 0 | 0 | 175.9 | 518.8 |
| 3-Jul | 0 | 0 | 0 | 0 | 1 | 20 | 72 | 165 | 336 | 466 | 624 | 705 | 763 | 665 | 670 | 660 | 442 | 112 | 197 | 79 | 30 | 5 | 0 | 0 | 250.5 | 762.5 |
| 4-Jul | 0 | 0 | 0 | 0 | 1 | 25 | 64 | 165 | 210 | 341 | 223 | 314 | 310 | 436 | 521 | 353 | 360 | 135 | 148 | 79 | 22 | 0 | 0 | 0 | 154.5 | 520.6 |
| 5-Jul | 0 | 0 | 0 | 0 | 2 | 41 | 97 | 115 | 273 | 401 | 521 | 613 | 681 | 733 | 547 | 288 | 251 | 190 | 123 | 96 | 36 | 1 | 0 | 0 | 208.7 | 733.2 |
| 6-Jul | 0 | 0 | 0 | 0 | 3 | 20 | 70 | 242 | 350 | 525 | 624 | 697 | 734 | 526 | 482 | 567 | 397 | 155 | 156 | 92 | 26 | 5 | 0 | 0 | 236.2 | 733.6 |
| 7-Jul | 0 | 0 | 0 | 0 | 3 | 35 | 119 | 232 | 350 | 526 | 612 | 717 | 743 | 744 | 724 | 634 | 538 | 86 | 210 | 82 | 37 | 4 | 0 | 0 | 266.6 | 744.3 |
| 8-Jul | 0 | 0 | 0 | 0 | 3 | 17 | 124 | 276 | 351 | 520 | 618 | 692 | 738 | 763 | 592 | 705 | 541 | 98 | 204 | 86 | 24 | 2 | 0 | 0 | 264.8 | 762.9 |
| 9-Jul | 0 | 0 | 0 | 0 | 1 | 27 | 134 | 253 | 303 | 321 | 193 | 188 | 605 | 573 | 513 | 363 | 238 | 113 | 72 | 45 | 38 | 5 | 0 | 0 | 166.0 | 604.6 |
| 10-Jul | 0 | 0 | 0 | 0 | 1 | 14 | 71 | 152 | 297 | 547 | 722 | 533 | 385 | 756 | 712 | 512 | 219 | 224 | 306 | 196 | 24 | 2 | 0 | 0 | 236.4 | 755.7 |
| 11-Jul | 0 | 0 | 0 | 0 | 4 | 26 | 85 | 155 | 248 | 271 | 424 | 577 | 354 | 417 | 445 | 504 | 327 | 249 | 255 | 185 | 26 | 2 | 0 | 0 | 189.7 | 577.4 |
| 12-Jul | 0 | 0 | 0 | 0 | 1 | 16 | 148 | 314 | 400 | 368 | 359 | 429 | 534 | 394 | 344 | 304 | 305 | 227 | 94 | 82 | 31 | 3 | 0 | 0 | 181.5 | 534.3 |
| 13-Jul | 0 | 0 | 0 | 0 | 0 | 5 | 25 | 56 | 82 | 99 | 262 | 275 | 248 | 354 | 134 | 99 | 135 | 279 | 97 | 160 | 54 | 2 | 0 | 0 | 98.7 | 354.4 |
| 14-Jul | 0 | 0 | 0 | 0 | 0 | 9 | 63 | 288 | 369 | 545 | 649 | 724 | 809 | 688 | 554 | 494 | 433 | 200 | 223 | 90 | 27 | 2 | 0 | 0 | 257.0 | 809.2 |
| 15-Jul | 0 | 0 | 0 | 0 | 1 | 17 | 126 | 291 | 372 | 542 | 651 | 730 | 766 | 772 | 630 | 520 | 442 | 211 | 283 | 179 | 27 | 1 | 0 | 0 | 273.4 | 772.0 |
| 16-Jul | 0 | 0 | 0 | 0 | 2 | 13 | 124 | 293 | 373 | 552 | 639 | 728 | 530 | 742 | 407 | 233 | 204 | 196 | 271 | 91 | 26 | 1 | 0 | 0 | 226.0 | 742.1 |
| 17-Jul | 0 | 0 | 0 | 0 | 0 | 12 | 115 | 281 | 363 | 540 | 625 | 671 | 761 | 641 | 515 | 476 | 272 | 190 | 207 | 181 | 22 | 0 | 0 | 0 | 244.7 | 761.1 |
| 18-Jul | 0 | 0 | 0 | 0 | 0 | 11 | 112 | 285 | 361 | 536 | 638 | 583 | 457 | 420 | 370 | 258 | 413 | 171 | 31 | 4 | 10 | 10 | 0 | 0 | 194.6 | 638.5 |
| 19-Jul | 0 | 0 | 0 | 0 | 0 | 14 | 112 | 280 | 361 | 408 | 638 | 707 | 582 | 663 | 710 | 541 | 546 | 174 | 43 | 40 | 18 | 0 | 0 | 0 | 243.2 | 709.9 |
| 20-Jul | 0 | 0 | 0 | 0 | 0 | 15 | 100 | 270 | 352 | 528 | 630 | 701 | 738 | 754 | 717 | 487 | 398 | 264 | 276 | 171 | 23 | 0 | 0 | 0 | 267.7 | 753.8 |
| 21-Jul | 0 | 0 | 0 | 0 | 0 | 15 | 108 | 268 | 350 | 544 | 551 | 659 | 731 | 739 | 718 | 438 | 352 | 265 | 325 | 142 | 24 | 1 | 0 | 0 | 259.6 | 738.6 |
| 22-Jul | 0 | 0 | 0 | 0 | 0 | 5 | 13 | 45 | 109 | 99 | 259 | 331 | 424 | 496 | 369 | 235 | 239 | 242 | 156 | 140 | 29 | 1 | 0 | 0 | 133.0 | 496.0 |
| 23-Jul | 0 | 0 | 0 | 0 | 0 | 11 | 121 | 231 | 333 | 517 | 607 | 678 | 756 | 743 | 710 | 479 | 314 | 209 | 271 | 171 | 21 | 0 | 0 | 0 | 257.2 | 756.5 |
| 24-Jul | 0 | 0 | 0 | 0 | 0 | 14 | 116 | 272 | 354 | 532 | 639 | 711 | 745 | 749 | 715 | 477 | 282 | 181 | 258 | 166 | 21 | 0 | 0 | 0 | 259.8 | 749.2 |
| 25-Jul | 0 | 0 | 0 | 0 | 0 | 12 | 108 | 269 | 359 | 532 | 633 | 704 | 743 | 745 | 711 | 517 | 280 | 160 | 245 | 163 | 13 | 0 | 0 | 0 | 258.1 | 745.0 |
| 26-Jul | 0 | 0 | 0 | 0 | 0 | 12 | 39 | 139 | 345 | 321 | 392 | 485 | 403 | 563 | 625 | 432 | 151 | 180 | 267 | 167 | 26 | 0 | 0 | 0 | 189.5 | 625.0 |
| 27-Jul | 0 | 0 | 0 | 0 | 0 | 16 | 96 | 234 | 330 | 500 | 611 | 693 | 695 | 643 | 616 | 500 | 249 | 164 | 255 | 151 | 20 | 0 | 0 | 0 | 240.5 | 695.4 |
| 28-Jul | 0 | 0 | 0 | 0 | 0 | 17 | 108 | 107 | 171 | 287 | 465 | 673 | 706 | 702 | 666 | 504 | 258 | 63 | 45 | 0 | 12 | 0 | 0 | 0 | 199.3 | 705.6 |
| 29-Jul | 0 | 0 | 0 | 0 | 0 | 17 | 42 | 68 | 171 | 403 | 572 | 433 | 680 | 436 | 442 | 521 | 159 | 105 | 232 | 127 | 30 | 0 | 0 | 0 | 184.9 | 680.5 |
| 30-Jul | 0 | 0 | 0 | 0 | 0 | 16 | 37 | 97 | 331 | 424 | 426 | 459 | 502 | 278 | 308 | 222 | 102 | 192 | 230 | 105 | 19 | 0 | 0 | 0 | 156.1 | 501.8 |
| 31-Jul | 0 | 0 | 0 | 0 | 0 | 15 | 76 | 95 | 284 | 482 | 587 | 659 | 673 | 727 | 637 | 521 | 225 | 158 | 255 | 122 | 19 | 0 | 0 | 0 | 230.6 | 727.1 |
| | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 17.7 | 92.5 | 209.0 | 310.4 | 438.9 | 525.0 | 589.9 | 615.8 | 611.9 | 556.1 | 448.6 | 320.7 | 174.5 | 197.4 | 116.1 | 25.4 | 1.8 | 0.0 | 0.0 | Diurnal Average | |
| | 0.0 | 0.0 | 0.0 | 0.0 | 5.1 | 40.9 | 148.0 | 313.8 | 400.3 | 552.6 | 722.1 | 730.3 | 809.2 | 780.6 | 754.5 | 704.8 | 546.2 | 279.4 | 325.4 | 195.6 | 53.8 | 10.3 | 0.0 | 0.0 | Diurnal Maximum | |

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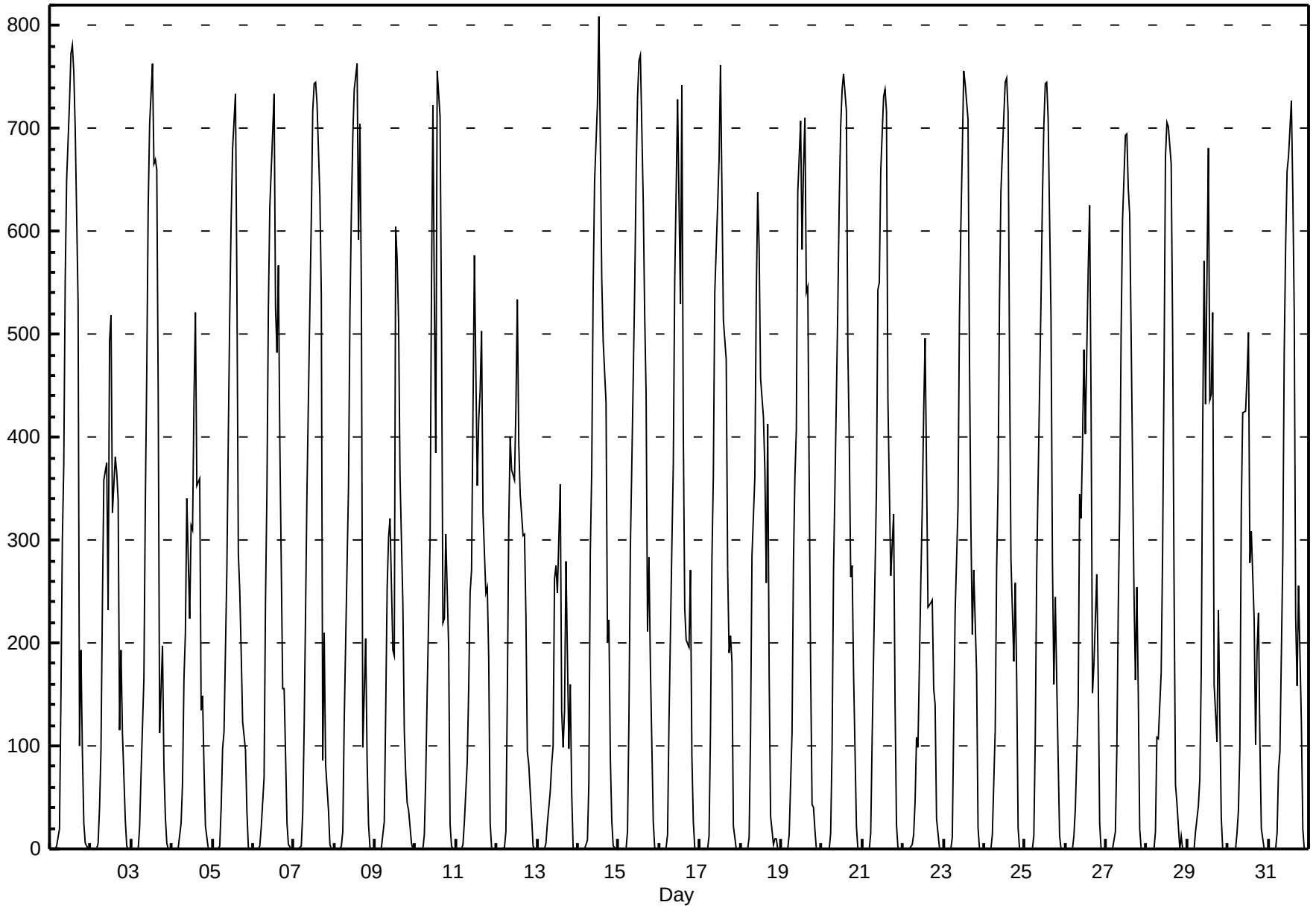
## Hourly Averages

**Solar Radiation (SR) - W/m$^2$**

**Henry Pirker - July 2010**



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# Hourly Averages

## Wind Speed (km/h)
## Wind Direction (deg)
## Henry Pirker - July 2010

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1 Spd | 13 | 11 | 11 | 10 | 13 | 12 | 13 | 15 | 21 | 23 | 20 | 24 | 24 | 22 | 24 | 27 | 26 | 27 | 25 | 21 | 18 | 14 | 12 | 8 | 17.5 | 27.3 |
| Dir | 221 | 227 | 218 | 204 | 203 | 193 | 197 | 206 | 222 | 231 | 231 | 243 | 241 | 232 | 229 | 237 | 241 | 242 | 241 | 240 | 252 | 246 | 243 | 225 | 231.0 | 236.7 |
| 2 Spd | 8 | 10 | 12 | 11 | 11 | 11 | 13 | 18 | 23 | 24 | 24 | 24 | 23 | 20 | 22 | 21 | 21 | 23 | 22 | 24 | 23 | 16 | 16 | 13 | 17.1 | 24.2 |
| Dir | 211 | 209 | 217 | 203 | 199 | 209 | 227 | 242 | 258 | 264 | 272 | 273 | 258 | 252 | 250 | 244 | 241 | 245 | 241 | 244 | 247 | 240 | 247 | 256 | 245.1 | 272.7 |
| 3 Spd | 13 | 9 | 11 | 6 | 7 | 9 | 11 | 16 | 22 | 25 | 27 | 28 | 27 | 27 | 28 | 28 | 30 | 29 | 30 | 28 | 23 | 12 | 12 | 13 | 19.4 | 30.1 |
| Dir | 255 | 268 | 252 | 271 | 282 | 275 | 273 | 273 | 257 | 253 | 259 | 253 | 260 | 251 | 247 | 250 | 249 | 251 | 251 | 247 | 249 | 235 | 238 | 235 | 253.3 | 250.9 |
| 4 Spd | 15 | 17 | 13 | 9 | 20 | 20 | 16 | 22 | 26 | 26 | 24 | 24 | 24 | 27 | 31 | 27 | 27 | 24 | 21 | 22 | 19 | 16 | 12 | 10 | 20.0 | 31.3 |
| Dir | 239 | 255 | 266 | 251 | 253 | 249 | 239 | 246 | 249 | 250 | 263 | 278 | 273 | 256 | 253 | 257 | 269 | 267 | 278 | 279 | 279 | 278 | 280 | 280 | 261.6 | 253.3 |
| 5 Spd | 12 | 14 | 14 | 14 | 11 | 10 | 13 | 12 | 19 | 19 | 20 | 21 | 21 | 24 | 23 | 16 | 19 | 20 | 15 | 11 | 11 | 16 | 19 | 14 | 15.5 | 24.3 |
| Dir | 288 | 279 | 280 | 260 | 278 | 287 | 296 | 297 | 293 | 296 | 296 | 294 | 294 | 293 | 292 | 291 | 270 | 276 | 278 | 268 | 264 | 247 | 248 | 240 | 280.7 | 293.1 |
| 6 Spd | 13 | 8 | 11 | 13 | 11 | 12 | 11 | 14 | 16 | 18 | 15 | 13 | 13 | 13 | 16 | 15 | 13 | 15 | 12 | 7 | 4 | 4 | 5 | 4 | 10.8 | 17.7 |
| Dir | 237 | 273 | 275 | 266 | 281 | 257 | 262 | 259 | 274 | 275 | 279 | 281 | 288 | 293 | 292 | 290 | 293 | 304 | 308 | 281 | 240 | 208 | 232 | 286 | 276.9 | 275.4 |
| 7 Spd | 5 | 4 | 6 | 4 | 4 | 5 | 5 | 7 | 10 | 13 | 12 | 8 | 8 | 6 | 8 | 9 | 9 | 7 | 6 | 4 | 2 | 5 | 4 | 4 | 5.4 | 13.0 |
| Dir | 312 | 282 | 285 | 270 | 267 | 293 | 286 | 295 | 299 | 288 | 278 | 279 | 275 | 301 | 270 | 275 | 285 | 305 | 313 | 295 | 175 | 177 | 165 | 159 | 281.0 | 288.2 |
| 8 Spd | 4 | 6 | 4 | 3 | 1 | 5 | 7 | 8 | 4 | 10 | 8 | 6 | 4 | 4 | 4 | 5 | 7 | 7 | 5 | 3 | 5 | 3 | 3 | 5 | 1.1 | 9.8 |
| Dir | 101 | 147 | 67 | 113 | 239 | 323 | 335 | 334 | 160 | 186 | 207 | 187 | 140 | 162 | 287 | 309 | 292 | 272 | 300 | 282 | 164 | 118 | 90 | 141 | 212.4 | 185.7 |
| 9 Spd | 5 | 4 | 2 | 7 | 5 | 5 | 7 | 11 | 12 | C | C | C | 16 | 17 | 14 | 13 | 13 | 7 | 4 | 8 | 3 | 6 | 13 | 9 | 4.9 | 16.6 |
| Dir | 120 | 89 | 235 | 262 | 283 | 250 | 244 | 253 | 292 | C | C | C | 317 | 344 | 4 | 2 | 10 | 354 | 338 | 290 | 180 | 7 | 2 | 78 | 332.3 | 344.3 |
| 10 Spd | 3 | 5 | 7 | 5 | 4 | 5 | 5 | 4 | 2 | 4 | 2 | 4 | 1 | 3 | 3 | 3 | 4 | 5 | 5 | 9 | 9 | 8 | 7 | 6 | 0.8 | 8.9 |
| Dir | 243 | 273 | 347 | 317 | 349 | 339 | 301 | 330 | 128 | 153 | 144 | 277 | 277 | 307 | 5 | 113 | 195 | 150 | 114 | 119 | 122 | 131 | 137 | 141 | 131.8 | 121.6 |
| 11 Spd | 7 | 6 | 5 | 5 | 6 | 5 | 5 | 5 | 6 | 7 | 10 | 12 | 14 | 8 | 16 | 24 | 21 | 21 | 21 | 20 | 11 | 6 | 4 | 7 | 7.2 | 23.6 |
| Dir | 135 | 151 | 161 | 160 | 166 | 163 | 146 | 169 | 161 | 169 | 175 | 175 | 205 | 215 | 265 | 262 | 256 | 269 | 275 | 266 | 280 | 272 | 203 | 244 | 231.0 | 262.2 |
| 12 Spd | 8 | 9 | 13 | 13 | 13 | 16 | 26 | 33 | 30 | 23 | 21 | 20 | 23 | 23 | 24 | 21 | 23 | 22 | 19 | 23 | 20 | 21 | 20 | 20 | 19.2 | 33.0 |
| Dir | 256 | 255 | 273 | 264 | 253 | 253 | 271 | 280 | 282 | 298 | 311 | 310 | 314 | 298 | 298 | 299 | 296 | 284 | 300 | 307 | 306 | 306 | 302 | 312 | 292.0 | 280.3 |
| 13 Spd | 21 | 21 | 20 | 19 | 18 | 17 | 22 | 20 | 22 | 19 | 21 | 21 | 20 | 22 | 20 | 19 | 18 | 20 | 19 | 14 | 9 | 7 | 9 | 11 | 17.5 | 22.4 |
| Dir | 300 | 299 | 299 | 298 | 302 | 304 | 316 | 314 | 315 | 312 | 317 | 315 | 308 | 311 | 304 | 305 | 303 | 294 | 302 | 306 | 296 | 291 | 266 | 266 | 304.3 | 315.7 |
| 14 Spd | 7 | 7 | 7 | 7 | 6 | 10 | 9 | 12 | 16 | 20 | 21 | 18 | 13 | 14 | 15 | 19 | 21 | 21 | 26 | 25 | 18 | 17 | 10 | 7 | 14.3 | 26.0 |
| Dir | 255 | 265 | 274 | 266 | 291 | 263 | 278 | 272 | 264 | 262 | 260 | 260 | 254 | 252 | 257 | 253 | 259 | 261 | 268 | 260 | 262 | 260 | 249 | 239 | 261.1 | 268.3 |
| 15 Spd | 5 | 6 | 6 | 6 | 10 | 11 | 9 | 14 | 22 | 25 | 29 | 27 | 30 | 28 | 26 | 24 | 23 | 25 | 24 | 26 | 26 | 19 | 19 | 11 | 18.4 | 29.7 |
| Dir | 254 | 238 | 217 | 247 | 253 | 254 | 242 | 259 | 270 | 278 | 273 | 272 | 271 | 268 | 271 | 274 | 267 | 278 | 279 | 281 | 274 | 269 | 265 | 255 | 268.9 | 271.2 |
| 16 Spd | 11 | 11 | 11 | 12 | 11 | 12 | 11 | 16 | 21 | 19 | 19 | 20 | 17 | 18 | 15 | 14 | 17 | 15 | 16 | 18 | 16 | 10 | 7 | 4 | 13.1 | 20.6 |
| Dir | 252 | 249 | 247 | 242 | 243 | 256 | 282 | 261 | 262 | 285 | 288 | 289 | 294 | 299 | 310 | 279 | 286 | 300 | 302 | 283 | 262 | 244 | 322 | 318 | 277.8 | 262.1 |
| 17 Spd | 4 | 4 | 5 | 6 | 5 | 5 | 5 | 7 | 6 | 7 | 8 | 11 | 9 | 8 | 6 | 4 | 6 | 6 | 9 | 14 | 9 | 4 | 3 | 2 | 5.0 | 14.1 |
| Dir | 282 | 303 | 340 | 334 | 320 | 309 | 290 | 249 | 263 | 284 | 291 | 295 | 300 | 326 | 326 | 273 | 312 | 296 | 331 | 352 | 21 | 62 | 111 | 164 | 313.0 | 352.4 |
| 18 Spd | 5 | 10 | 9 | 6 | 6 | 6 | 8 | 9 | 10 | 7 | 2 | 7 | 8 | 9 | 11 | 11 | 11 | 9 | 5 | 5 | 7 | 4 | 5 | 7 | 4.7 | 10.9 |
| Dir | 324 | 338 | 333 | 321 | 301 | 243 | 253 | 281 | 288 | 307 | 310 | 299 | 302 | 276 | 259 | 300 | 304 | 50 | 116 | 174 | 157 | 181 | 280 | 327 | 294.2 | 299.9 |
| 19 Spd | 6 | 4 | 3 | 4 | 7 | 8 | 10 | 10 | 9 | 8 | 9 | 8 | 7 | 12 | 11 | 8 | 6 | 7 | 2 | 13 | 8 | 5 | 4 | 3 | 5.5 | 13.4 |
| Dir | 300 | 292 | 299 | 224 | 238 | 257 | 258 | 260 | 268 | 246 | 245 | 284 | 283 | 298 | 322 | 15 | 41 | 16 | 328 | 251 | 265 | 245 | 261 | 285 | 277.8 | 251.4 |
| 20 Spd | 3 | 3 | 4 | 3 | 1 | 4 | 8 | 8 | 5 | 5 | 6 | 6 | 4 | 5 | 3 | 2 | 3 | 0 | 4 | 9 | 9 | 10 | 10 | 6 | 2.2 | 10.1 |
| Dir | 258 | 206 | 270 | 291 | 277 | 229 | 259 | 258 | 242 | 218 | 225 | 205 | 235 | 180 | 280 | 321 | 254 | 138 | 42 | 123 | 112 | 109 | 121 | 164 | 201.0 | 120.8 |
| 21 Spd | 3 | 4 | 4 | 2 | 4 | 3 | 2 | 1 | 7 | 8 | 6 | 9 | 8 | 9 | 6 | 7 | 18 | 6 | 9 | 11 | 11 | 7 | 4 | 7 | 2.5 | 18.2 |
| Dir | 119 | 85 | 303 | 314 | 341 | 292 | 293 | 207 | 213 | 239 | 197 | 151 | 169 | 149 | 161 | 271 | 325 | 94 | 124 | 146 | 176 | 162 | 105 | 115 | 169.4 | 325.1 |
| 22 Spd | 6 | 3 | 3 | 7 | 7 | 5 | 3 | 7 | 12 | 9 | 6 | 6 | 7 | 9 | 9 | 14 | 11 | 10 | 10 | 12 | 14 | 14 | 15 | 13 | 7.6 | 15.4 |
| Dir | 107 | 216 | 284 | 253 | 285 | 233 | 219 | 257 | 272 | 275 | 308 | 319 | 305 | 314 | 290 | 240 | 242 | 235 | 254 | 289 | 266 | 259 | 257 | 258 | 265.3 | 257.1 |

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# Hourly Averages

## Wind Speed (km/h)
## Wind Direction (deg)
## Henry Pirker - July 2010

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 23 Spd | 12 | 8 | 9 | 8 | 8 | 9 | 10 | 10 | 13 | 15 | 12 | 15 | 14 | 16 | 22 | 23 | 26 | 24 | 22 | 18 | 14 | 6 | 7 | 7 | 12.9 | 25.6 |
| Dir | 257 | 243 | 253 | 273 | 265 | 274 | 265 | 258 | 259 | 260 | 246 | 231 | 235 | 242 | 266 | 265 | 272 | 278 | 276 | 267 | 261 | 237 | 196 | 179 | 258.1 | 272.0 |
| 24 Spd | 5 | 8 | 7 | 11 | 14 | 16 | 17 | 21 | 23 | 24 | 29 | 26 | 31 | 31 | 32 | 30 | 28 | 29 | 28 | 26 | 20 | 13 | 16 | 12 | 20.2 | 31.9 |
| Dir | 210 | 262 | 256 | 250 | 262 | 271 | 271 | 278 | 294 | 289 | 279 | 281 | 277 | 262 | 268 | 265 | 261 | 261 | 260 | 273 | 269 | 285 | 296 | 298 | 272.0 | 268.5 |
| 25 Spd | 14 | 14 | 13 | 11 | 9 | 5 | 12 | 15 | 23 | 19 | 18 | 16 | 14 | 13 | 14 | 14 | 16 | 16 | 14 | 15 | 10 | 11 | 12 | 11 | 13.2 | 22.6 |
| Dir | 293 | 284 | 288 | 281 | 263 | 247 | 254 | 263 | 274 | 285 | 293 | 282 | 267 | 274 | 274 | 293 | 288 | 286 | 297 | 301 | 280 | 270 | 250 | 255 | 278.7 | 273.5 |
| 26 Spd | 9 | 5 | 4 | 4 | 4 | 3 | 5 | 9 | 20 | 18 | 18 | 17 | 22 | 21 | 16 | 13 | 14 | 12 | 19 | 14 | 10 | 7 | 7 | 4 | 11.1 | 21.5 |
| Dir | 289 | 319 | 302 | 312 | 335 | 287 | 247 | 298 | 318 | 318 | 311 | 332 | 305 | 289 | 301 | 306 | 298 | 325 | 299 | 309 | 317 | 318 | 320 | 317 | 308.1 | 305.4 |
| 27 Spd | 5 | 2 | 2 | 2 | 3 | 3 | 2 | 3 | 1 | 4 | 7 | 8 | 9 | 8 | 10 | 10 | 7 | 7 | 8 | 9 | 9 | 8 | 12 | 11 | 4.4 | 11.5 |
| Dir | 308 | 33 | 280 | 309 | 301 | 296 | 305 | 318 | 4 | 97 | 121 | 122 | 138 | 113 | 106 | 111 | 105 | 91 | 102 | 91 | 95 | 87 | 98 | 97 | 100.1 | 97.7 |
| 28 Spd | 9 | 8 | 6 | 4 | 4 | 2 | 2 | 3 | 2 | 3 | 5 | 5 | 4 | 4 | 0 | 3 | 3 | 20 | 25 | 8 | 8 | 5 | 8 | 11 | 0.9 | 24.6 |
| Dir | 87 | 87 | 83 | 79 | 56 | 307 | 299 | 27 | 287 | 203 | 191 | 145 | 204 | 273 | 85 | 153 | 259 | 321 | 350 | 281 | 65 | 245 | 213 | 208 | 325.9 | 350.3 |
| 29 Spd | 4 | 3 | 2 | 1 | 2 | 3 | 7 | 7 | 3 | 10 | 8 | 6 | 5 | 5 | 8 | 8 | 8 | 13 | 10 | 11 | 13 | 8 | 6 | 4 | 3.4 | 13.1 |
| Dir | 311 | 91 | 347 | 167 | 169 | 311 | 257 | 322 | 40 | 179 | 204 | 244 | 254 | 226 | 171 | 164 | 153 | 171 | 192 | 224 | 310 | 282 | 286 | 223 | 222.7 | 170.6 |
| 30 Spd | 5 | 2 | 1 | 3 | 5 | 5 | 7 | 12 | 12 | 11 | 14 | 12 | 11 | 15 | 9 | 13 | 10 | 11 | 12 | 10 | 9 | 4 | 3 | 6 | 7.1 | 14.8 |
| Dir | 219 | 214 | 121 | 312 | 305 | 252 | 255 | 258 | 246 | 246 | 246 | 258 | 267 | 302 | 330 | 315 | 304 | 245 | 238 | 238 | 251 | 268 | 323 | 306 | 267.5 | 302.3 |
| 31 Spd | 6 | 6 | 6 | 4 | 4 | 3 | 4 | 5 | 7 | 6 | 5 | 6 | 4 | 5 | 1 | 4 | 4 | 3 | 5 | 2 | 6 | 6 | 5 | 4 | 2.9 | 7.0 |
| Dir | 298 | 300 | 314 | 291 | 309 | 284 | 310 | 302 | 294 | 308 | 308 | 309 | 329 | 329 | 19 | 310 | 273 | 302 | 341 | 303 | 142 | 165 | 169 | 175 | 296.4 | 294.1 |
| Spd | 4.9 | 4.7 | 5.3 | 5.4 | 5.8 | 6.6 | 7.8 | 9.8 | 11.8 | 11.6 | 11.6 | 11.1 | 11.6 | 11.3 | 11.5 | 11.4 | 12.1 | 11.2 | 10.7 | 10.4 | 7.7 | 5.9 | 5.3 | 4.4 | Diurnal Average | |
| Dir | 260.2 | 264.7 | 273.8 | 264.6 | 266.9 | 261.8 | 266.2 | 270.1 | 271.2 | 269.0 | 270.1 | 273.1 | 274.0 | 274.3 | 275.3 | 272.7 | 274.2 | 274.4 | 278.4 | 269.8 | 263.5 | 256.2 | 258.3 | 248.9 | | |
| Spd | 20.6 | 21.4 | 19.5 | 18.8 | 20.1 | 20.4 | 25.7 | 33.0 | 29.8 | 25.8 | 29.0 | 27.9 | 31.5 | 30.9 | 31.9 | 30.4 | 29.9 | 29.2 | 30.1 | 28.5 | 26.5 | 20.5 | 20.1 | 20.3 | Diurnal Maximum | |
| Dir | 299.7 | 299.2 | 298.9 | 298.2 | 252.6 | 248.7 | 270.7 | 280.3 | 282.4 | 250.0 | 278.6 | 253.1 | 276.7 | 262.3 | 268.5 | 264.6 | 248.7 | 250.6 | 250.9 | 247.1 | 274.2 | 305.8 | 302.3 | 312.1 | | |

Maximum Speed Value: 33 km/h on Jul 12 08:00
Minimum Speed Value: 0 km/h on Jul 28 15:00
Maximum Daily Speed Average: 20.2 km/h on Jul 24
Minimum Daily Speed Average: 0.8 km/h on Jul 31
Maximum Diurnal Speed Average: 12.1 km/h at hour 17
Minimum Diurnal Speed Average: 4.4 km/h at hour 24

Monthly Average Velocity: 8.69 km/h 269.75 deg
Speed Percentiles: $P_1$ = 1.4 $P_{10}$ = 3.6 $Q_1$ = 5.5 Median = 9.7 $Q_3$ = 16.2 $P_{90}$ = 23.0 $P_{99}$ = 29.8
All monthly, daily, and diurnal averages have been calculated using vector methods

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 741 |
| Hours of Missing Data: | 3 |
| Percent Operational Time: | 100.0 |

C - Calibration

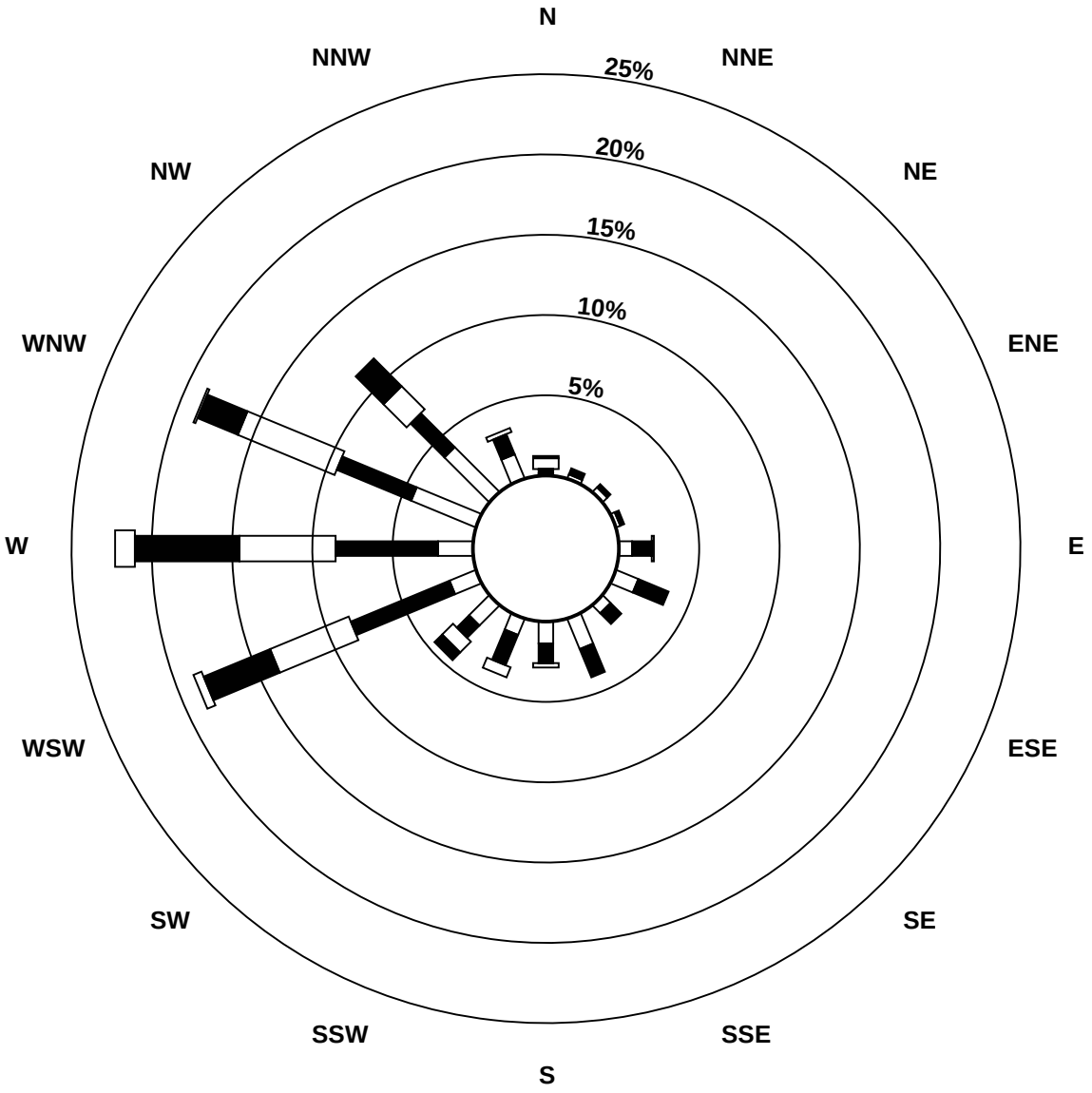
Frequency Distribution

| Direction | Speed Range (km/h) 0 to 5 | 5 to 11 | 11 to 19 | 19 to 28 | 28 to 38 | > 38 | Total |
|---|---|---|---|---|---|---|---|
| North | 8 | 9 | 6 | 1 | 0 | 0 | 24 |
| NorthEast | 7 | 3 | 0 | 0 | 0 | 0 | 10 |
| East | 10 | 16 | 2 | 0 | 0 | 0 | 28 |
| SouthEast | 15 | 25 | 0 | 0 | 0 | 0 | 40 |
| South | 15 | 26 | 5 | 0 | 0 | 0 | 46 |
| SouthWest | 23 | 42 | 31 | 20 | 1 | 0 | 117 |
| West | 33 | 98 | 84 | 72 | 17 | 0 | 304 |
| NorthWest | 46 | 49 | 39 | 38 | 0 | 0 | 172 |
| Total | 157 | 268 | 167 | 131 | 18 | 0 | 741 |

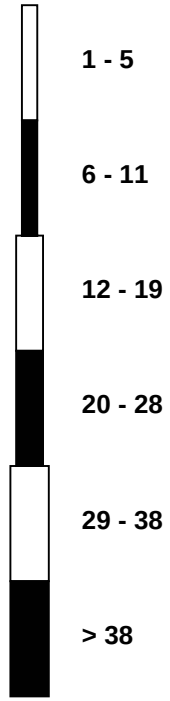
# Wind Rose

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

**Henry Pirker - July 2010**




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



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# Hourly Averages - Wind Speed (Scalar)

## Wind Speed (km/h)

## Henry Pirker - July 2010

Maximum Speed: 33 km/h on Jul 12 08:00

Maximum Daily Speed Average: 21.2 km/h on Jul 24

Minimum Speed: 3 km/h on Jul 27 07:00

Minimum Daily Speed Average: 5.8 km/h on Jul 31

Maximum Diurnal Speed Average: 15.8 km/h at hour 15

Minimum Diurnal Speed Average: 7.5 km/h at hour 4

Monthly Average Speed: 12.22 km/h

Percentiles: $P_1$ = 3.0 $P_{10}$ = 4.7 $Q_1$ = 6.6 Median = 10.3 $Q_3$ = 16.4 $P_{90}$ = 23.3 $P_{99}$ = 29.8

Hours in Service: 744

Hours of Data: 741

Hours of Missing Data: 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-Jul | 13 | 11 | 12 | 10 | 13 | 12 | 13 | 15 | 21 | 24 | 21 | 25 | 25 | 23 | 25 | 28 | 27 | 27 | 26 | 22 | 18 | 14 | 12 | 8 | 18.5 | 27.9 |
| 2-Jul | 8 | 10 | 12 | 11 | 11 | 11 | 13 | 18 | 23 | 24 | 24 | 24 | 23 | 20 | 23 | 22 | 21 | 23 | 22 | 24 | 23 | 16 | 16 | 14 | 18.3 | 24.4 |
| 3-Jul | 14 | 10 | 11 | 6 | 7 | 9 | 11 | 16 | 22 | 26 | 27 | 28 | 28 | 27 | 28 | 28 | 30 | 30 | 30 | 29 | 23 | 13 | 12 | 14 | 20.0 | 30.4 |
| 4-Jul | 15 | 17 | 13 | 9 | 20 | 21 | 16 | 23 | 27 | 26 | 24 | 24 | 24 | 27 | 32 | 28 | 28 | 24 | 22 | 22 | 19 | 16 | 12 | 10 | 20.8 | 31.7 |
| 5-Jul | 12 | 14 | 14 | 14 | 11 | 10 | 13 | 12 | 19 | 19 | 20 | 21 | 22 | 25 | 24 | 17 | 19 | 20 | 16 | 11 | 11 | 16 | 19 | 15 | 16.4 | 24.6 |
| 6-Jul | 13 | 10 | 11 | 14 | 11 | 12 | 11 | 14 | 16 | 18 | 16 | 13 | 14 | 14 | 16 | 16 | 14 | 15 | 12 | 7 | 5 | 4 | 5 | 6 | 11.9 | 17.9 |
| 7-Jul | 6 | 5 | 6 | 4 | 4 | 5 | 5 | 7 | 10 | 13 | 12 | 9 | 9 | 9 | 10 | 9 | 11 | 8 | 6 | 4 | 4 | 5 | 4 | 5 | 7.1 | 13.3 |
| 8-Jul | 5 | 6 | 5 | 4 | 3 | 5 | 7 | 8 | 6 | 10 | 9 | 7 | 7 | 7 | 7 | 7 | 8 | 7 | 6 | 4 | 5 | 4 | 3 | 5 | 6.1 | 10.3 |
| 9-Jul | 5 | 4 | 4 | 8 | 5 | 5 | 7 | 11 | 12 | C | C | C | 17 | 17 | 15 | 14 | 13 | 10 | 7 | 9 | 5 | 10 | 15 | 10 | 9.7 | 17.3 |
| 10-Jul | 5 | 7 | 7 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 6 | 7 | 5 | 5 | 6 | 6 | 9 | 9 | 8 | 7 | 6 | 5.9 | 9.2 |
| 11-Jul | 7 | 6 | 5 | 6 | 6 | 5 | 5 | 5 | 6 | 7 | 11 | 13 | 14 | 10 | 17 | 24 | 21 | 22 | 22 | 20 | 11 | 6 | 5 | 7 | 10.9 | 24.1 |
| 12-Jul | 8 | 9 | 13 | 13 | 13 | 16 | 26 | 33 | 30 | 24 | 21 | 21 | 23 | 23 | 24 | 22 | 24 | 22 | 20 | 23 | 20 | 21 | 20 | 21 | 20.4 | 33.1 |
| 13-Jul | 21 | 21 | 20 | 19 | 18 | 17 | 23 | 20 | 22 | 19 | 21 | 21 | 20 | 22 | 20 | 19 | 18 | 20 | 19 | 14 | 9 | 7 | 9 | 11 | 17.9 | 22.5 |
| 14-Jul | 7 | 7 | 7 | 7 | 6 | 10 | 9 | 12 | 17 | 20 | 22 | 19 | 15 | 15 | 16 | 20 | 22 | 21 | 26 | 25 | 19 | 17 | 10 | 8 | 14.8 | 26.4 |
| 15-Jul | 6 | 6 | 6 | 7 | 10 | 11 | 9 | 14 | 22 | 25 | 29 | 28 | 30 | 29 | 27 | 24 | 24 | 25 | 24 | 26 | 27 | 19 | 19 | 11 | 19.1 | 30.1 |
| 16-Jul | 11 | 11 | 11 | 12 | 12 | 12 | 12 | 16 | 21 | 19 | 20 | 20 | 18 | 18 | 16 | 15 | 17 | 15 | 17 | 18 | 17 | 10 | 10 | 4 | 14.7 | 20.8 |
| 17-Jul | 4 | 4 | 6 | 6 | 5 | 5 | 6 | 7 | 7 | 8 | 9 | 11 | 10 | 9 | 8 | 7 | 7 | 7 | 10 | 14 | 10 | 5 | 4 | 3 | 7.2 | 14.4 |
| 18-Jul | 5 | 10 | 9 | 6 | 6 | 6 | 8 | 9 | 10 | 8 | 6 | 8 | 9 | 10 | 12 | 11 | 12 | 9 | 9 | 6 | 7 | 5 | 6 | 7 | 8.2 | 12.3 |
| 19-Jul | 6 | 4 | 4 | 5 | 7 | 9 | 10 | 10 | 9 | 8 | 9 | 9 | 9 | 13 | 14 | 9 | 8 | 8 | 11 | 14 | 8 | 6 | 5 | 4 | 8.3 | 14.3 |
| 20-Jul | 4 | 4 | 5 | 4 | 3 | 4 | 8 | 8 | 6 | 6 | 6 | 6 | 7 | 7 | 6 | 7 | 5 | 4 | 6 | 9 | 9 | 10 | 10 | 8 | 6.4 | 10.2 |
| 21-Jul | 4 | 4 | 4 | 4 | 5 | 3 | 3 | 3 | 7 | 8 | 7 | 9 | 9 | 10 | 8 | 12 | 19 | 9 | 10 | 11 | 12 | 7 | 5 | 7 | 7.5 | 18.6 |
| 22-Jul | 6 | 5 | 4 | 7 | 8 | 6 | 5 | 8 | 12 | 9 | 7 | 7 | 7 | 9 | 10 | 14 | 11 | 11 | 11 | 13 | 14 | 15 | 15 | 13 | 9.5 | 15.5 |
| 23-Jul | 12 | 8 | 9 | 8 | 8 | 9 | 10 | 10 | 14 | 16 | 13 | 15 | 15 | 18 | 23 | 23 | 26 | 24 | 22 | 18 | 14 | 6 | 7 | 7 | 14.0 | 26.0 |
| 24-Jul | 6 | 9 | 7 | 11 | 14 | 16 | 17 | 21 | 23 | 25 | 29 | 27 | 32 | 32 | 32 | 31 | 29 | 29 | 29 | 26 | 20 | 14 | 17 | 12 | 21.2 | 32.4 |
| 25-Jul | 14 | 14 | 14 | 11 | 9 | 6 | 12 | 15 | 23 | 19 | 18 | 16 | 15 | 14 | 15 | 14 | 16 | 16 | 15 | 15 | 10 | 11 | 13 | 12 | 14.0 | 22.8 |
| 26-Jul | 11 | 6 | 5 | 4 | 4 | 4 | 6 | 9 | 20 | 19 | 18 | 18 | 22 | 21 | 17 | 14 | 15 | 13 | 19 | 15 | 10 | 7 | 7 | 4 | 12.0 | 21.8 |
| 27-Jul | 5 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 4 | 5 | 8 | 10 | 10 | 10 | 11 | 10 | 9 | 8 | 8 | 10 | 9 | 8 | 12 | 11 | 7.0 | 11.6 |
| 28-Jul | 9 | 8 | 6 | 5 | 4 | 3 | 4 | 5 | 5 | 5 | 6 | 6 | 5 | 5 | 5 | 8 | 5 | 21 | 25 | 13 | 9 | 9 | 9 | 11 | 7.9 | 24.9 |
| 29-Jul | 7 | 4 | 5 | 3 | 4 | 4 | 8 | 7 | 8 | 10 | 8 | 7 | 7 | 7 | 8 | 9 | 8 | 13 | 11 | 12 | 14 | 10 | 7 | 5 | 7.9 | 14.3 |
| 30-Jul | 5 | 5 | 3 | 4 | 5 | 7 | 9 | 12 | 12 | 11 | 14 | 13 | 11 | 16 | 10 | 14 | 11 | 11 | 13 | 10 | 9 | 5 | 4 | 7 | 9.2 | 16.2 |
| 31-Jul | 6 | 7 | 6 | 5 | 4 | 3 | 5 | 5 | 7 | 7 | 6 | 7 | 7 | 7 | 6 | 7 | 6 | 5 | 7 | 4 | 7 | 6 | 5 | 4 | 5.8 | 7.5 |
| | 8.4 | 8.1 | 8.0 | 7.5 | 7.9 | 8.3 | 9.6 | 11.7 | 14.4 | 14.8 | 14.9 | 14.9 | 15.1 | 15.5 | 15.8 | 15.8 | 15.7 | 15.7 | 15.6 | 14.7 | 12.5 | 10.0 | 9.8 | 8.7 | Diurnal Average | |
| | 20.7 | 21.5 | 19.6 | 18.8 | 20.2 | 20.5 | 25.8 | 33.1 | 30.0 | 26.0 | 29.5 | 28.4 | 32.2 | 31.7 | 32.4 | 31.1 | 30.2 | 29.7 | 30.4 | 28.6 | 26.7 | 20.7 | 20.2 | 20.5 | Diurnal Maximum | |

C - Calibration

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

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# Hourly Standard Deviations

## Wind Direction (WD) - deg

## Henry Pirker - July 2010

Maximum Value: 101.6 deg on Jul 20 18:00

Minimum Value: 3.9 deg on Jul 13 04:00

Percentiles: $P_1$ = 4.8 $P_{10}$ = 6.9 $Q_1$ = 9.4 Median = 14.2 $Q_3$ = 29.8 $P_{90}$ = 52.3 $P_{99}$ = 82.0

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 741 |
| Hours of Missing Data: | 3 |
| Hours of Calibration: | 3 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Maximum |
| 1-Jul | 8 | 9 | 8 | 10 | 8 | 9 | 9 | 13 | 13 | 14 | 13 | 12 | 12 | 19 | 13 | 12 | 12 | 9 | 9 | 8 | 8 | 5 | 6 | 9 | 18.7 |
| 2-Jul | 10 | 7 | 6 | 10 | 9 | 8 | 11 | 8 | 11 | 11 | 8 | 9 | 13 | 11 | 11 | 13 | 12 | 11 | 7 | 7 | 6 | 7 | 7 | 16 | 15.9 |
| 3-Jul | 11 | 17 | 6 | 11 | 5 | 7 | 7 | 12 | 8 | 9 | 10 | 11 | 11 | 11 | 10 | 11 | 9 | 10 | 8 | 7 | 8 | 8 | 9 | 8 | 17.0 |
| 4-Jul | 8 | 8 | 12 | 10 | 8 | 7 | 7 | 7 | 6 | 8 | 10 | 9 | 10 | 9 | 9 | 9 | 17 | 13 | 14 | 11 | 5 | 4 | 7 | 6 | 17.3 |
| 5-Jul | 6 | 6 | 6 | 12 | 10 | 7 | 9 | 8 | 6 | 8 | 9 | 11 | 10 | 9 | 11 | 12 | 9 | 7 | 5 | 7 | 8 | 6 | 5 | 9 | 12.1 |
| 6-Jul | 7 | 36 | 14 | 10 | 9 | 7 | 9 | 7 | 11 | 9 | 14 | 20 | 20 | 16 | 11 | 18 | 18 | 12 | 11 | 9 | 41 | 11 | 14 | 44 | 44.2 |
| 7-Jul | 31 | 28 | 10 | 26 | 25 | 14 | 11 | 13 | 13 | 11 | 14 | 33 | 33 | 55 | 33 | 31 | 30 | 34 | 31 | 22 | 69 | 8 | 9 | 39 | 68.8 |
| 8-Jul | 37 | 15 | 36 | 37 | 75 | 30 | 14 | 17 | 72 | 18 | 29 | 40 | 73 | 63 | 60 | 61 | 33 | 30 | 34 | 26 | 15 | 36 | 26 | 20 | 75.2 |
| 9-Jul | 14 | 41 | 65 | 39 | 26 | 17 | 16 | 18 | 11 | C | C | C | 17 | 17 | 18 | 22 | 17 | 52 | 63 | 46 | 63 | 62 | 31 | 31 | 65.1 |
| 10-Jul | 62 | 43 | 17 | 18 | 30 | 27 | 12 | 29 | 73 | 46 | 85 | 40 | 78 | 71 | 72 | 82 | 46 | 36 | 39 | 21 | 11 | 7 | 10 | 9 | 84.7 |
| 11-Jul | 8 | 10 | 14 | 11 | 11 | 10 | 10 | 20 | 21 | 14 | 15 | 15 | 16 | 40 | 20 | 12 | 10 | 11 | 14 | 7 | 8 | 21 | 24 | 12 | 39.8 |
| 12-Jul | 15 | 11 | 13 | 13 | 7 | 18 | 7 | 6 | 6 | 14 | 12 | 10 | 9 | 12 | 11 | 8 | 6 | 11 | 10 | 8 | 7 | 6 | 6 | 8 | 17.6 |
| 13-Jul | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 6 | 7 | 7 | 7 | 9 | 7 | 6 | 6 | 7 | 7 | 6 | 8 | 5 | 18 | 11 | 8 | 18.2 |
| 14-Jul | 12 | 16 | 16 | 12 | 10 | 8 | 11 | 10 | 12 | 10 | 11 | 13 | 24 | 23 | 18 | 15 | 14 | 12 | 10 | 6 | 6 | 5 | 10 | 15 | 23.9 |
| 15-Jul | 31 | 16 | 10 | 24 | 15 | 10 | 17 | 9 | 11 | 10 | 10 | 11 | 10 | 13 | 11 | 12 | 12 | 10 | 8 | 7 | 7 | 6 | 9 | 9 | 31.4 |
| 16-Jul | 10 | 7 | 9 | 7 | 7 | 10 | 26 | 9 | 9 | 14 | 14 | 15 | 16 | 16 | 18 | 24 | 17 | 9 | 14 | 12 | 9 | 7 | 47 | 32 | 47.4 |
| 17-Jul | 13 | 29 | 10 | 14 | 17 | 14 | 29 | 17 | 23 | 31 | 24 | 21 | 36 | 36 | 37 | 61 | 39 | 31 | 19 | 12 | 13 | 45 | 61 | 62 | 62.2 |
| 18-Jul | 53 | 10 | 8 | 13 | 13 | 16 | 17 | 15 | 20 | 34 | 80 | 36 | 33 | 24 | 29 | 17 | 24 | 19 | 59 | 53 | 33 | 41 | 30 | 9 | 80.4 |
| 19-Jul | 11 | 29 | 50 | 35 | 15 | 13 | 9 | 8 | 16 | 21 | 21 | 21 | 31 | 20 | 43 | 36 | 47 | 34 | 88 | 16 | 21 | 18 | 34 | 36 | 88.4 |
| 20-Jul | 46 | 34 | 49 | 36 | 68 | 14 | 12 | 15 | 23 | 34 | 29 | 32 | 51 | 40 | 71 | 81 | 72 | 102 | 54 | 15 | 17 | 9 | 7 | 39 | 101.6 |
| 21-Jul | 43 | 19 | 53 | 70 | 33 | 29 | 59 | 83 | 18 | 19 | 38 | 19 | 31 | 29 | 45 | 64 | 12 | 54 | 22 | 14 | 22 | 14 | 37 | 13 | 83.1 |
| 22-Jul | 23 | 62 | 68 | 12 | 23 | 38 | 51 | 19 | 12 | 17 | 22 | 36 | 25 | 19 | 29 | 13 | 15 | 23 | 26 | 15 | 9 | 7 | 6 | 5 | 67.9 |
| 23-Jul | 8 | 9 | 11 | 10 | 9 | 10 | 12 | 14 | 14 | 15 | 21 | 17 | 20 | 24 | 15 | 11 | 10 | 8 | 9 | 8 | 8 | 14 | 12 | 13 | 24.2 |
| 24-Jul | 31 | 29 | 18 | 9 | 8 | 6 | 6 | 8 | 8 | 12 | 10 | 11 | 12 | 13 | 10 | 12 | 12 | 10 | 8 | 9 | 7 | 11 | 5 | 6 | 31.4 |
| 25-Jul | 5 | 4 | 5 | 6 | 29 | 48 | 10 | 9 | 8 | 13 | 11 | 13 | 18 | 23 | 23 | 20 | 15 | 17 | 13 | 11 | 10 | 13 | 8 | 7 | 48.4 |
| 26-Jul | 40 | 27 | 44 | 20 | 16 | 43 | 20 | 23 | 10 | 10 | 10 | 16 | 10 | 9 | 16 | 14 | 18 | 19 | 8 | 10 | 8 | 14 | 7 | 32 | 44.0 |
| 27-Jul | 24 | 52 | 74 | 51 | 31 | 38 | 62 | 32 | 82 | 42 | 35 | 30 | 32 | 52 | 27 | 29 | 39 | 34 | 25 | 11 | 7 | 6 | 5 | 6 | 81.6 |
| 28-Jul | 9 | 10 | 10 | 25 | 23 | 53 | 63 | 71 | 82 | 50 | 31 | 55 | 47 | 43 | 96 | 77 | 65 | 37 | 8 | 61 | 35 | 65 | 32 | 19 | 95.9 |
| 29-Jul | 56 | 45 | 84 | 81 | 61 | 57 | 25 | 29 | 76 | 14 | 23 | 27 | 45 | 55 | 28 | 30 | 19 | 13 | 25 | 19 | 26 | 34 | 35 | 42 | 84.2 |
| 30-Jul | 29 | 76 | 65 | 65 | 20 | 42 | 53 | 7 | 10 | 14 | 14 | 21 | 21 | 23 | 17 | 13 | 28 | 13 | 12 | 13 | 10 | 47 | 41 | 27 | 75.7 |
| 31-Jul | 12 | 30 | 14 | 24 | 14 | 24 | 24 | 17 | 16 | 34 | 39 | 42 | 60 | 58 | 96 | 71 | 57 | 68 | 50 | 69 | 18 | 6 | 4 | 6 | 95.9 |
| | 62.2 | 75.7 | 84.2 | 80.6 | 75.2 | 57.3 | 62.8 | 83.1 | 82.0 | 50.4 | 84.7 | 55.0 | 78.1 | 71.1 | 95.9 | 81.9 | 71.8 | 101.6 | 88.4 | 69.2 | 68.8 | 65.2 | 61.3 | 62.2 | |

C - Calibration

# PASZA
# Evergreen Park Station
## Monthly Summary Tables, Graphs and Roses

PASZA
Peace Airshed Zone Association

# Hourly Averages

## Sulphur Dioxide ($SO_2$) - ppb

## Evergreen Park - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 7.9 ppb on Jul 15 10:00 Maximum Daily Average: 1.4 ppb on Jul 14

Minimum Value: 0 ppb on Jul 1 04:00 Minimum Daily Average: 0.0 ppb on Jul 2
Maximum Diurnal Average: 0.9 ppb at hour 9 Minimum Diurnal Average: 0.0 ppb at hour 5
Monthly Average: 0.28 ppb Percentiles: $P_1 = 0.0$ $P_{10} = 0.0$ $Q_1 = 0.0$ Median = 0.1 $Q_3 = 0.2$ $P_{90} = 0.5$ $P_{99} = 4.6$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 709 |
| Hours of Missing Data: | 35 |
| Hours of Calibration: | 33 |
| Percent Operational Time: | 99.7 |

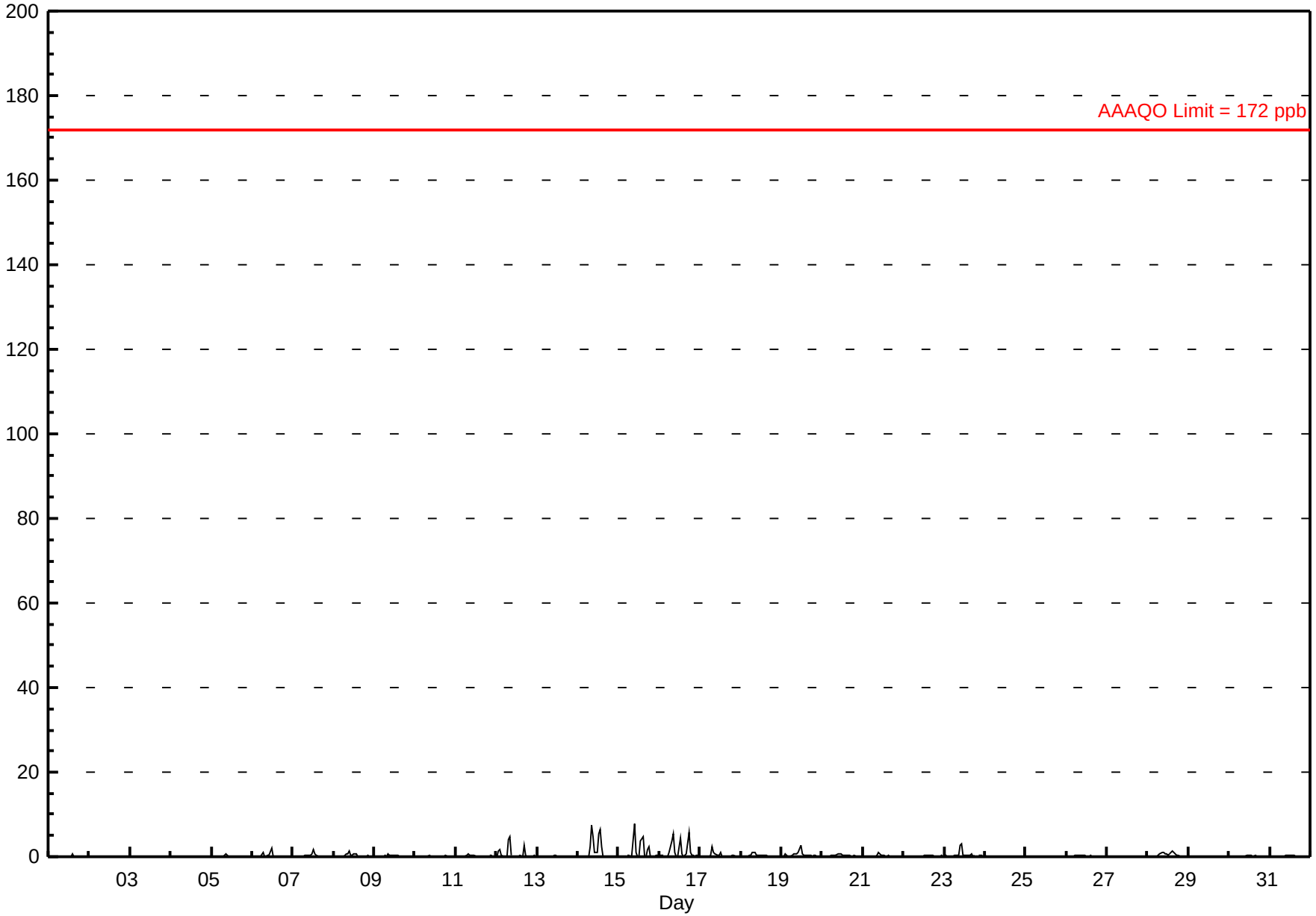
| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | C | C | C | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.7 |
| 2-Jul | 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 |
| 3-Jul | 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 |
| 4-Jul | 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 | 0.1 |
| 5-Jul | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.7 |
| 6-Jul | 0 | A | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 1.9 |
| 7-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0.3 | 1.8 |
| 8-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0.3 | 1.3 |
| 9-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0.2 | 0.7 |
| 10-Jul | 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 | 0.3 |
| 11-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0.1 | 0.5 |
| 12-Jul | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 4 | 5 | 0 | M | M | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 4.7 |
| 13-Jul | 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 |
| 14-Jul | 0 | 0 | 0 | 0 | 0 | A | 0 | 2 | 7 | 5 | 1 | 1 | 5 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.4 | 7.4 |
| 15-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 8 | 1 | 0 | 0 | 4 | 5 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 1.0 | 7.9 |
| 16-Jul | 0 | 0 | 0 | A | 0 | 0 | 1 | 4 | 5 | 1 | 0 | 0 | 4 | 1 | 0 | 0 | 1 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 1.1 | 5.7 |
| 17-Jul | 0 | 0 | A | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 2.4 |
| 18-Jul | 0 | A | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 1.2 |
| 19-Jul | A | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0.4 | 2.6 |
| 20-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0.3 | 0.6 |
| 21-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0.2 | 1.0 |
| 22-Jul | 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 |
| 23-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0.5 | 3.2 |
| 24-Jul | 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 |
| 25-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.1 |
| 26-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.5 |
| 27-Jul | 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 |
| 28-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 1.2 |
| 29-Jul | 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 |
| 30-Jul | 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 | 0.4 |
| 31-Jul | 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 |
| | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.2 | 0.6 | 0.9 | 0.8 | 0.5 | 0.4 | 0.6 | 0.5 | 0.4 | 0.1 | 0.2 | 0.3 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | Diurnal Average | |
| | 0.2 | 1.2 | 1.6 | 0.4 | 0.2 | 0.3 | 1.0 | 4.0 | 7.4 | 7.9 | 3.2 | 2.6 | 5.3 | 6.6 | 4.7 | 0.9 | 2.8 | 5.7 | 2.5 | 0.3 | 0.3 | 0.2 | 0.2 | 0.3 | Diurnal Maximum | |

C - Calibration M - Maintenance A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 57 ppb

## Hourly Averages

**Sulphur Dioxide ($SO_2$) - ppb**

**Evergreen Park - July 2010**



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# Hourly Maximums

## Sulphur Dioxide ($SO_2$) - ppb

## Evergreen Park - July 2010

Maximum Value: 26.3 ppb on Jul 16 13:00

Maximum Daily Average: 6.3 ppb on Jul 14

Minimum Value: 0 ppb on Jul 10 00:00

Minimum Daily Average: 0.3 ppb on Jul 2

Maximum Diurnal Average: 3.2 ppb at hour 9

Minimum Diurnal Average: 0.4 ppb at hour 6

Monthly Average: 1.31 ppb

Percentiles: $P_1 = 0.2$ $P_{10} = 0.3$ $Q_1 = 0.3$ Median = 0.4 $Q_3 = 0.6$ $P_{90} = 1.2$ $P_{99} = 20.5$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 709 |
| Hours of Missing Data: | 35 |
| Hours of Calibration: | 33 |
| Percent Operational Time: | 99.7 |

| 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-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | C | C | C | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.7 | 6.0 |
| 2-Jul | 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 |
| 3-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0.3 | 1.6 |
| 4-Jul | 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 |
| 5-Jul | 0 | 0 | A | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 3.5 |
| 6-Jul | 0 | A | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | 4 | 19 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.6 | 18.7 |
| 7-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 5 | 10 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 1.2 | 10.1 |
| 8-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 1 | 1 | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | A | 1 | 1.3 | 10.0 |
| 9-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0.5 | 1.8 |
| 10-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | A | 0 | 0 | 0 | 0.4 | 0.7 |
| 11-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 1 | 1 | 0 | 0 | 0.5 | 0.8 |
| 12-Jul | 0 | 3 | 3 | 1 | 0 | 0 | 1 | 16 | 25 | 1 | M | M | 1 | 1 | 1 | 1 | 19 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3.5 | 24.6 |
| 13-Jul | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.6 | 1.0 |
| 14-Jul | 0 | 0 | 0 | 0 | 0 | A | 0 | 8 | 21 | 20 | 16 | 18 | 17 | 23 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.3 | 22.7 |
| 15-Jul | 0 | 0 | 0 | 0 | A | 1 | 0 | 0 | 7 | 26 | 10 | 0 | 0 | 17 | 24 | 0 | 0 | 9 | 17 | 1 | 1 | 1 | 1 | 1 | 5.1 | 25.8 |
| 16-Jul | 1 | 1 | 1 | A | 0 | 1 | 9 | 11 | 17 | 8 | 1 | 0 | 26 | 3 | 0 | 1 | 1 | 22 | 10 | 1 | 1 | 0 | 1 | 1 | 5.0 | 26.3 |
| 17-Jul | 0 | 1 | A | 1 | 0 | 0 | 3 | 11 | 5 | 1 | 1 | 1 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1.7 | 11.3 |
| 18-Jul | 0 | A | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 | 1.9 |
| 19-Jul | A | 0 | 1 | 1 | 0 | 0 | 1 | 4 | 1 | 1 | 3 | 10 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | A | 1.4 | 10.0 |
| 20-Jul | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | A | 0 | 0.6 | 1.0 |
| 21-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0.7 | 5.0 |
| 22-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 4 | 1 | 0 | 1 | A | 1 | 0 | 1 | 0.6 | 4.0 |
| 23-Jul | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 15 | 15 | 1 | 1 | 1 | 1 | 7 | 5 | 1 | 1 | A | 0 | 0 | 0 | 0 | 2.3 | 15.2 |
| 24-Jul | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0.4 | 1.3 |
| 25-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | A | 0 | 0 | 1 | 0 | 0 | 0 | 0.4 | 0.7 |
| 26-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.5 | 1.3 |
| 27-Jul | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.8 |
| 28-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 | 2 | 1 | 1 | 1 | 3 | 8 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.4 | 7.9 |
| 29-Jul | 1 | 0 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 0.9 |
| 30-Jul | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 5 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.6 | 5.4 |
| 31-Jul | 0 | 0 | 0 | 0 | A | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 0.7 |
| | 0.4 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 1.0 | 2.1 | 3.2 | 2.9 | 2.4 | 2.3 | 2.9 | 2.1 | 2.2 | 0.8 | 1.3 | 1.4 | 1.3 | 0.4 | 0.5 | 0.4 | 0.4 | 0.4 | Diurnal Average | |
| | 1.3 | 2.8 | 2.6 | 1.0 | 1.0 | 0.7 | 9.2 | 15.9 | 24.6 | 25.8 | 15.9 | 18.7 | 26.3 | 22.7 | 24.3 | 7.0 | 18.9 | 21.7 | 16.8 | 0.8 | 1.6 | 0.9 | 1.1 | 1.1 | Diurnal Maximum | |

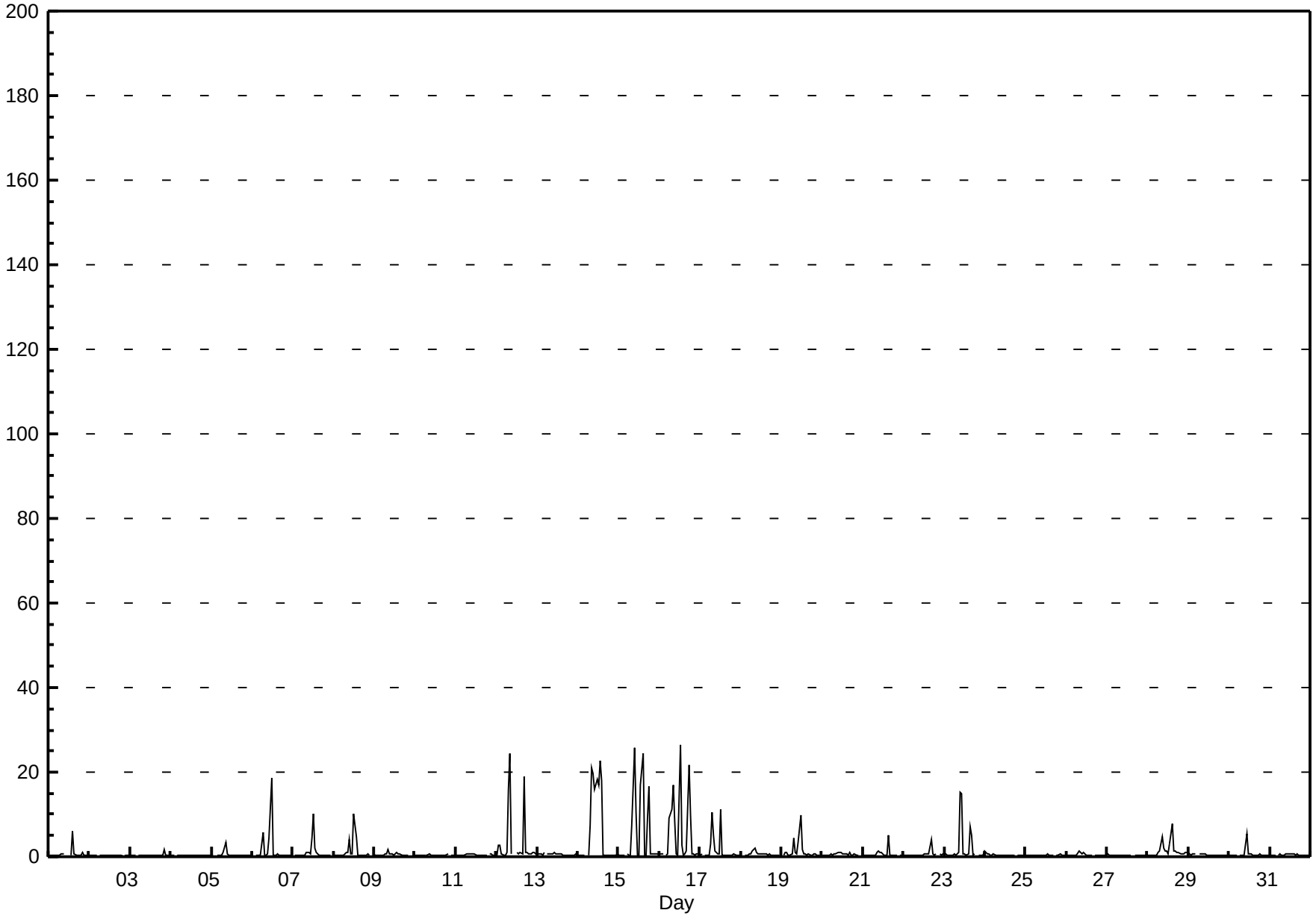
C - Calibration M - Maintenance A - Automated Daily Zero Span

PASZA
Pretoria Airshed Zones Association

# Hourly Maximums

**Sulphur Dioxide ($SO_2$) - ppb**

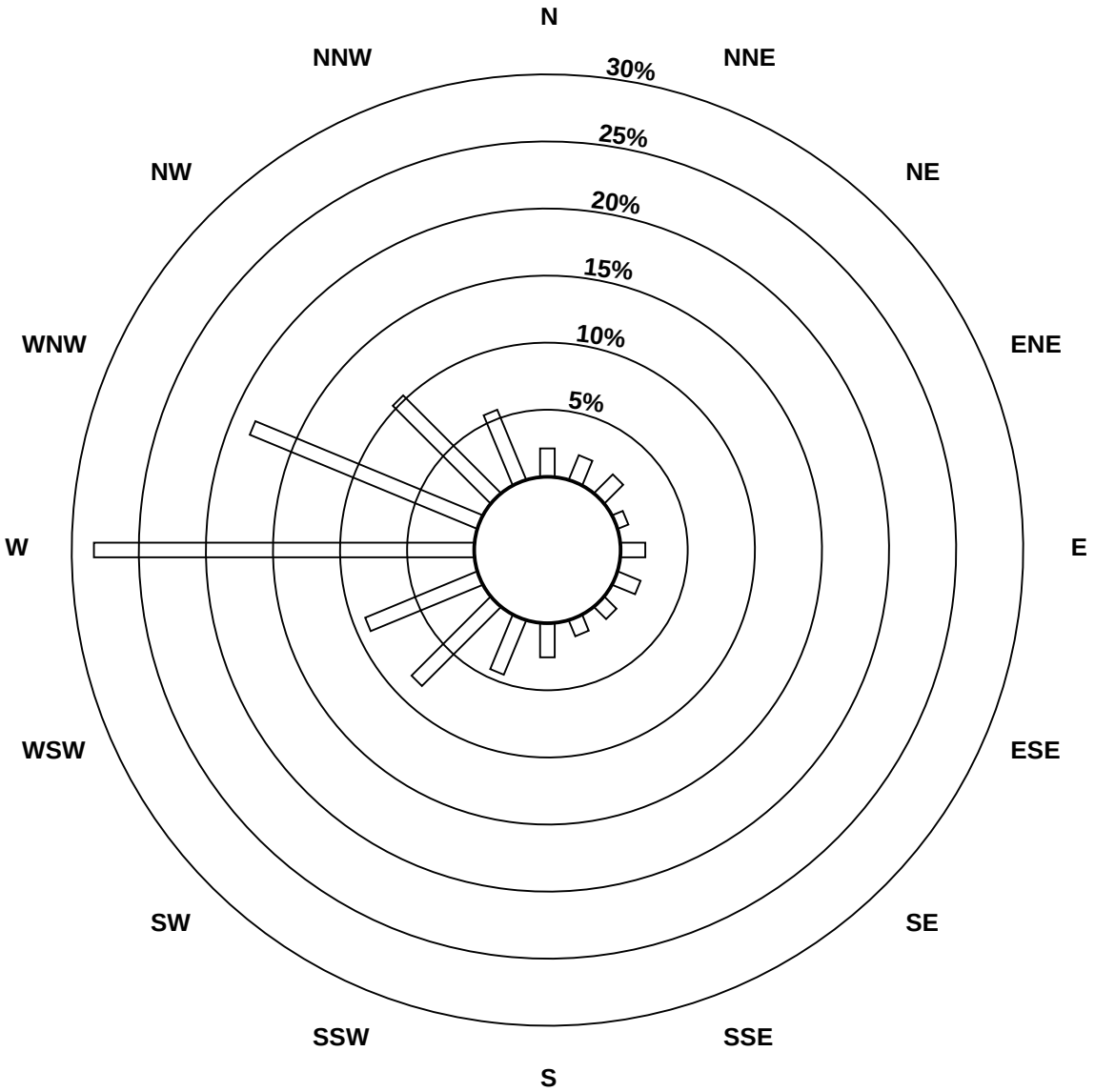
**Evergreen Park - July 2010**



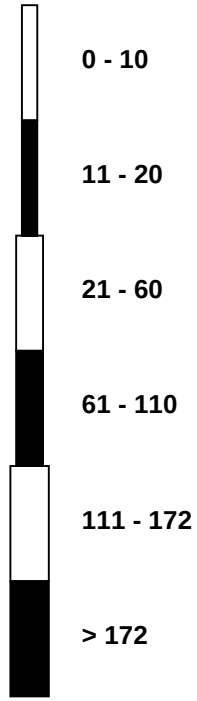
# Pollutant Rose

**Sulphur Dioxide ($SO_2$) - ppb**

**Evergreen Park - July 2010**




**Pollutant Classes (ppb)**



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# Hourly Averages

## Total Reduced Sulphur (TRS) - ppb

## Evergreen Park - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 1.1 ppb on Jul 17 04:00 Maximum Daily Average: 0.7 ppb on Jul 28

Minimum Value: 0 ppb on Jul 19 23:00 Minimum Daily Average: 0.3 ppb on Jul 2
Maximum Diurnal Average: 0.5 ppb at hour 4 Minimum Diurnal Average: 0.4 ppb at hour 19
Monthly Average: 0.48 ppb Percentiles: $P_1$ = 0.3 $P_{10}$ = 0.3 $Q_1$ = 0.4 Median = 0.5 $Q_3$ = 0.5 $P_{90}$ = 0.6 $P_{99}$ = 0.9

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 704 |
| Hours of Missing Data: | 40 |
| Hours of Calibration: | 38 |
| Percent Operational Time: | 99.7 |

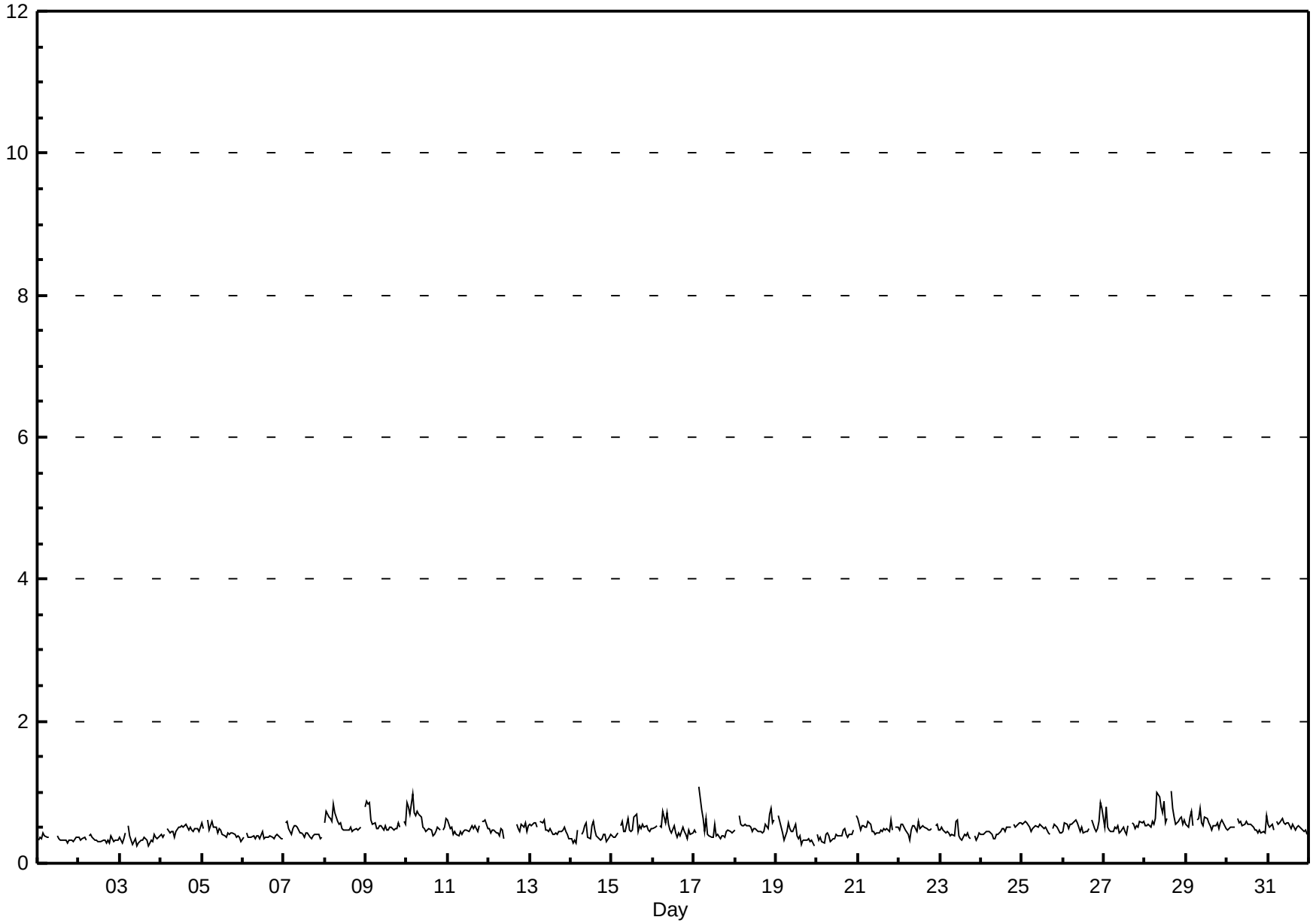
| Day | Hourly Period Ending At (MST) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Daily Average | Daily Maximum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | C | C | C | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.4 |
| 2-Jul | 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 |
| 3-Jul | 0 | 0 | 0 | 0 | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.5 |
| 4-Jul | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0.5 | 0.6 |
| 5-Jul | 1 | 0 | A | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.6 |
| 6-Jul | 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 |
| 7-Jul | A | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0.4 | 0.6 |
| 8-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | A | 1 | 0.6 | 0.8 |
| 9-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | A | 1 | 1 | 0.6 | 0.9 |
| 10-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | A | 0 | 1 | 1 | 0.6 | 1.0 |
| 11-Jul | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | A | 1 | 1 | 1 | 0 | 0.5 | 0.6 |
| 12-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | M | M | 0 | C | C | A | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0.5 | 0.6 |
| 13-Jul | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.5 | 0.6 |
| 14-Jul | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.6 |
| 15-Jul | 0 | 0 | 0 | 0 | A | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0.5 | 0.7 |
| 16-Jul | 0 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 0.7 |
| 17-Jul | 0 | 0 | A | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 1.1 |
| 18-Jul | 0 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0.5 | 0.8 |
| 19-Jul | A | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0.4 | 0.7 |
| 20-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 1 | 0.4 | 0.7 |
| 21-Jul | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | A | 1 | 1 | 0.5 | 0.6 |
| 22-Jul | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | A | 1 | 1 | 0 | 0.5 | 0.6 |
| 23-Jul | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0.4 | 0.6 |
| 24-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 0.5 | 0.6 |
| 25-Jul | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | A | 0 | 1 | 1 | 0 | 0 | 0 | 0.5 | 0.6 |
| 26-Jul | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | A | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0.5 | 0.8 |
| 27-Jul | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | A | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0.5 | 0.8 |
| 28-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.7 | 1.0 |
| 29-Jul | 1 | 0 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0.6 | 0.8 |
| 30-Jul | 0 | 0 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.5 | 0.7 |
| 31-Jul | 1 | 1 | 1 | 0 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 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 | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | Diurnal Average | |
| | 0.9 | 0.8 | 0.9 | 1.1 | 0.8 | 0.8 | 0.7 | 1.0 | 0.9 | 0.8 | 0.7 | 0.9 | 0.6 | 0.7 | 0.7 | 1.0 | 0.8 | 0.7 | 0.6 | 0.6 | 0.7 | 0.8 | 0.8 | 0.8 | Diurnal Maximum | |

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

## Hourly Averages

**Total Reduced Sulphur (TRS) - ppb**

**Evergreen Park - July 2010**



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# Hourly Maximums

## Total Reduced Sulphur (TRS) - ppb

## Evergreen Park - July 2010

Maximum Value: 2.5 ppb on Jul 29 09:00

Maximum Daily Average: 1.1 ppb on Jul 28

Minimum Value: 1 ppb on Jul 19 23:00

Minimum Daily Average: 0.7 ppb on Jul 1

Maximum Diurnal Average: 1.0 ppb at hour 8

Minimum Diurnal Average: 0.8 ppb at hour 18

Monthly Average: 0.86 ppb

Percentiles: $P_1$ = 0.6 $P_{10}$ = 0.7 $Q_1$ = 0.7 Median = 0.8 $Q_3$ = 0.9 $P_{90}$ = 1.1 $P_{99}$ = 1.8

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 704 |
| Hours of Missing Data: | 40 |
| Hours of Calibration: | 38 |
| Percent Operational Time: | 99.7 |

| 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-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.7 | 0.9 |
| 2-Jul | 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 |
| 3-Jul | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.7 | 1.5 |
| 4-Jul | 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 |
| 5-Jul | 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 | 0.9 |
| 6-Jul | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.7 | 1.3 |
| 7-Jul | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 0.8 | 1.1 |
| 8-Jul | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1.0 | 1.9 |
| 9-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 0.9 | 1.2 |
| 10-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 0.9 | 1.3 |
| 11-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 0.8 | 1.1 |
| 12-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | M | M | 1 | C | C | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.1 |
| 13-Jul | 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 |
| 14-Jul | 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 | 1.5 |
| 15-Jul | 1 | 1 | 1 | 1 | A | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.8 |
| 16-Jul | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.4 |
| 17-Jul | 1 | 1 | A | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 2.3 |
| 18-Jul | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.2 |
| 19-Jul | A | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 0.9 | 2.5 |
| 20-Jul | 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 | 1.1 |
| 21-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 0.9 | 1.8 |
| 22-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 0.8 | 1.0 |
| 23-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 0.9 | 2.1 |
| 24-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 0.8 | 1.0 |
| 25-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 0.8 | 1.0 |
| 26-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.4 |
| 27-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.2 |
| 28-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.1 | 2.1 |
| 29-Jul | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.0 | 2.5 |
| 30-Jul | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.2 |
| 31-Jul | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.1 |
| | 0.9 | 0.9 | 0.9 | 0.9 | 0.8 | 0.9 | 0.9 | 1.0 | 1.0 | 0.9 | 0.8 | 0.9 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | 0.8 | 0.8 | 0.9 | Diurnal Average | |
| | 1.3 | 1.2 | 1.3 | 1.7 | 1.2 | 1.9 | 1.8 | 2.5 | 2.5 | 2.1 | 1.7 | 1.5 | 2.3 | 1.8 | 1.4 | 1.8 | 1.3 | 1.1 | 1.1 | 1.2 | 1.5 | 1.2 | 1.4 | 1.4 | Diurnal Maximum | |

C - Calibration M - Maintenance A - Automated Daily Zero Span

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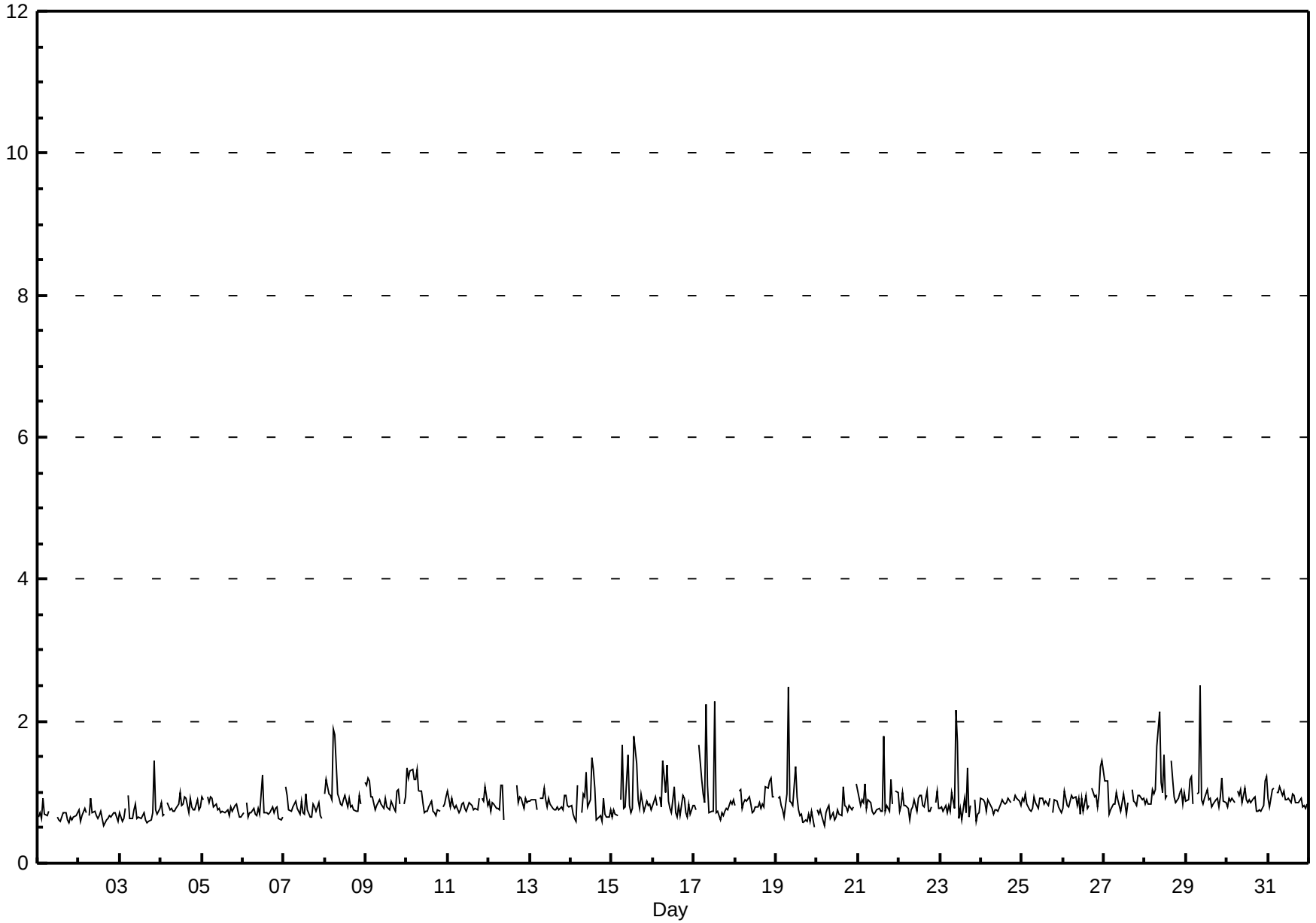
## Hourly Maximums

**Total Reduced Sulphur (TRS) - ppb**

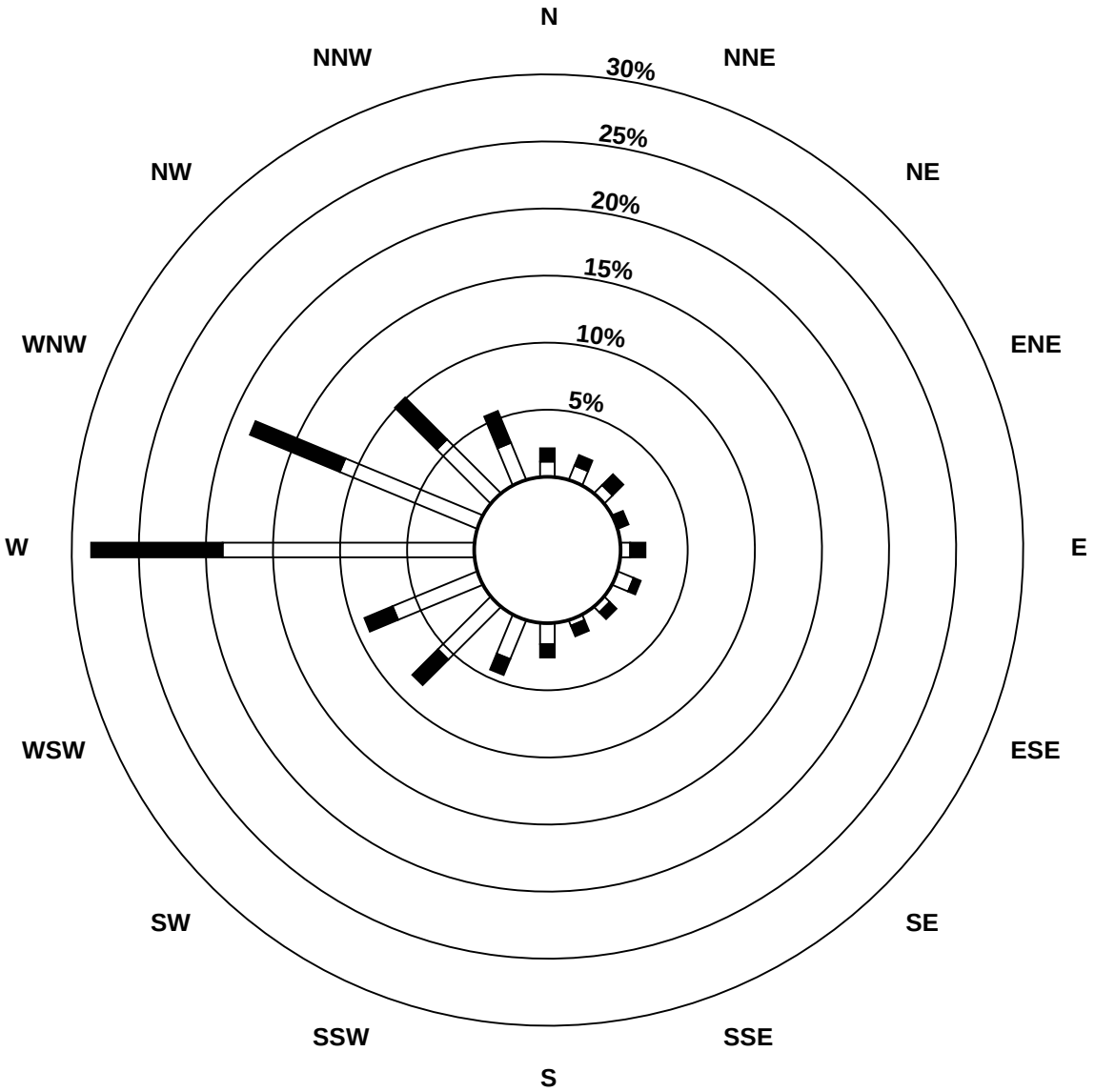
**Evergreen Park - July 2010**



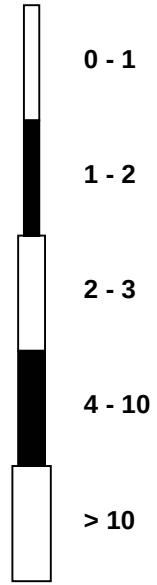
# Pollutant Rose

**Total Reduced Sulphur (TRS) - ppb**

**Evergreen Park - July 2010**




**Pollutant Classes (ppb)**



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# Hourly Averages

## Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

## Evergreen Park - July 2010

Number of Exceedences: 1-hr: 0 24-hr: 0
Maximum Value: 28.7 $\mu g/m^3$ on Jul 21 17:00
Maximum Daily Average: 11.2 $\mu g/m^3$ on Jul 29

Minimum Value: 0 $\mu g/m^3$ on Jul 1 02:00
Maximum Diurnal Average: 8.5 $\mu g/m^3$ at hour 9
Monthly Average: 5.21 $\mu g/m^3$
Minimum Daily Average: 1.4 $\mu g/m^3$ on Jul 5
Minimum Diurnal Average: 3.2 $\mu g/m^3$ at hour 4
Percentiles: $P_1 = 0.0$ $P_{10} = 0.3$ $Q_1 = 1.8$ Median = 3.8 $Q_3 = 7.1$ $P_{90} = 12.2$ $P_{99} = 20.7$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 737 |
| Hours of Missing Data: | 7 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 99.1 |

| Day | Hourly Period Ending At (MST) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Daily Average | Daily Maximum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 17 | 0 | M | 9 | 7 | 5 | 6 | 4 | 4 | 5 | 3 | 4 | 2 | 3.1 | 17.4 |
| 2-Jul | 2 | 3 | 3 | 2 | 2 | 3 | 4 | 4 | 5 | 4 | 5 | 5 | 4 | 3 | 5 | 5 | 3 | 4 | 2 | 3 | 3 | 12 | 3 | 3 | 3.8 | 11.7 |
| 3-Jul | 4 | 5 | 3 | 2 | 2 | 1 | 1 | 3 | 3 | 4 | 3 | 3 | 3 | 5 | 6 | 5 | 5 | 6 | 6 | 3 | 4 | 5 | 2 | 1 | 3.6 | 6.4 |
| 4-Jul | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 4 | 2 | 3 | 2 | 2 | 1 | 0 | 2 | 2 | 2 | 1.6 | 4.3 |
| 5-Jul | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 1 | 1 | 2 | 2 | 1 | 0 | 2 | 1.4 | 5.9 |
| 6-Jul | 0 | 1 | 1 | 1 | 2 | 3 | 6 | 4 | 5 | 5 | 4 | 10 | 3 | 3 | 2 | 3 | 4 | 2 | 2 | 2 | 15 | 8 | 8 | 8 | 4.2 | 14.5 |
| 7-Jul | 7 | 5 | 5 | 5 | 5 | 5 | 11 | 15 | 5 | 2 | 3 | 4 | 18 | 6 | 6 | 5 | 4 | 8 | 6 | 5 | 15 | 27 | 13 | 15 | 8.4 | 26.7 |
| 8-Jul | 10 | 7 | 8 | 6 | 6 | 7 | 11 | 8 | 11 | 9 | 6 | 1 | 7 | 4 | 2 | 4 | 1 | 4 | 6 | 9 | 16 | 18 | 13 | 14 | 7.8 | 18.3 |
| 9-Jul | 12 | 11 | 10 | 4 | 9 | 15 | 17 | 20 | 21 | 4 | 10 | 9 | 8 | 12 | 15 | 6 | 5 | 3 | 2 | 9 | 6 | 7 | 6 | 0 | 9.2 | 20.8 |
| 10-Jul | 5 | 2 | 3 | 1 | 2 | 6 | 3 | 5 | 7 | 5 | 3 | 0 | 4 | 5 | 0 | 3 | 3 | 3 | 4 | 5 | 2 | 3 | 5 | 2 | 3.5 | 7.5 |
| 11-Jul | 3 | 6 | 5 | 8 | 8 | 9 | 13 | 10 | 15 | 19 | 11 | 9 | BD | 0 | BD | BD | 2 | 0 | 0 | 0 | 4 | 5 | 4 | 5 | 6.4 | 18.5 |
| 12-Jul | 1 | 1 | 0 | 0 | 4 | 5 | 11 | 21 | 19 | 3 | 1 | 0 | 1 | 1 | 7 | 2 | 9 | 3 | 5 | 1 | 1 | 0 | 0 | 0 | 4.0 | 20.7 |
| 13-Jul | 2 | 1 | 2 | 0 | 1 | 1 | 2 | 2 | 3 | 4 | 4 | 6 | 3 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 0 | 0 | 2.9 | 6.2 |
| 14-Jul | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 8 | 27 | 9 | 0 | 0 | 15 | 17 | 7 | 0 | 1 | 5 | 7 | 1 | 2 | 2 | 2 | 3 | 4.6 | 26.9 |
| 15-Jul | 4 | 1 | 3 | 2 | 4 | 4 | 6 | 6 | 5 | 23 | 3 | 2 | 5 | 16 | 16 | 3 | 5 | 7 | 12 | 2 | 13 | 8 | 4 | 1 | 6.4 | 22.6 |
| 16-Jul | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 20 | 22 | 2 | 2 | 1 | 16 | 0 | 2 | 3 | 4 | 16 | 5 | 0 | 2 | 1 | 3 | 6 | 4.7 | 21.9 |
| 17-Jul | 2 | 3 | 3 | 3 | 0 | 1 | 7 | 11 | 3 | 4 | 1 | 0 | 5 | 0 | 0 | 1 | 1 | 2 | 4 | 3 | 3 | 6 | 5 | 3 | 3.0 | 11.3 |
| 18-Jul | 2 | 7 | 5 | 3 | 4 | 3 | 5 | 5 | 4 | 2 | 1 | 3 | 3 | 3 | 3 | 4 | 2 | 2 | 13 | 3 | 4 | 7 | 3 | 0 | 3.8 | 13.0 |
| 19-Jul | 2 | 1 | 3 | 0 | 2 | 7 | 7 | 7 | 5 | 7 | 5 | 7 | 0 | 1 | 1 | 0 | 3 | 0 | 5 | 13 | 6 | 3 | 1 | 0 | 3.5 | 13.0 |
| 20-Jul | 0 | 2 | 2 | 2 | 1 | 7 | 11 | 2 | 5 | 6 | 3 | 4 | BD | 3 | BD | 0 | 1 | 3 | 3 | 4 | 11 | 2 | 3 | 7 | 3.7 | 11.2 |
| 21-Jul | 4 | 4 | 8 | 8 | 8 | 12 | 16 | 7 | 10 | 7 | 9 | 1 | 2 | 0 | 1 | 7 | 29 | 4 | BD | 6 | 0 | 1 | 6 | 4 | 6.7 | 28.7 |
| 22-Jul | 5 | 5 | 8 | 8 | 2 | 6 | 6 | 8 | 5 | 5 | 0 | 0 | 1 | 0 | 2 | 5 | 3 | 3 | 2 | 0 | 4 | 1 | 0 | 0 | 3.3 | 8.4 |
| 23-Jul | 1 | 1 | 0 | 0 | 1 | 1 | 6 | 5 | 6 | 12 | 14 | 0 | 0 | 7 | 12 | 9 | 14 | 3 | 5 | 5 | 3 | 3 | 3 | 3 | 4.8 | 14.1 |
| 24-Jul | 5 | 3 | 6 | 4 | 3 | 5 | 0 | 0 | 0 | 3 | 6 | 17 | 13 | 21 | 11 | 10 | 11 | 6 | 5 | 5 | 5 | 6 | 6 | 4 | 6.4 | 20.7 |
| 25-Jul | 4 | 1 | 1 | 1 | 2 | 2 | 4 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 1 | 6 | 2 | 6 | 8 | 4 | 2 | 2.6 | 8.2 |
| 26-Jul | 3 | 3 | 2 | 3 | 1 | 6 | 11 | 13 | 9 | 2 | 2 | 1 | 7 | 6 | 9 | 9 | 8 | 9 | 7 | 4 | 4 | 7 | 7 | 6 | 5.8 | 12.6 |
| 27-Jul | 6 | 5 | 5 | 2 | 3 | 5 | 16 | 9 | 11 | 8 | 2 | 0 | 3 | 1 | 0 | 1 | 2 | 2 | 2 | 5 | 8 | 5 | 5 | 8 | 4.7 | 15.8 |
| 28-Jul | 7 | 6 | 6 | 6 | 6 | 12 | 18 | 14 | 19 | 20 | 16 | 18 | 14 | 11 | 8 | 14 | 17 | 19 | 3 | 21 | 0 | 4 | 3 | 3 | 11.1 | 20.9 |
| 29-Jul | 4 | 0 | 4 | 2 | 3 | 11 | 17 | 13 | 11 | 15 | 18 | 8 | 14 | 17 | 12 | 11 | 17 | 20 | 5 | 16 | 13 | 16 | 12 | 8 | 11.2 | 20.5 |
| 30-Jul | 10 | 6 | 8 | 8 | 15 | 13 | 15 | 12 | 8 | 8 | 12 | 4 | 9 | 12 | 11 | 0 | 15 | 5 | 5 | 9 | 10 | 7 | 5 | 10 | 9.0 | 15.2 |
| 31-Jul | 9 | 7 | 9 | 14 | 7 | 8 | 9 | 9 | 11 | 9 | 1 | 0 | 3 | 2 | 3 | 2 | 4 | 4 | 5 | 10 | 10 | 11 | 7 | 6 | 6.6 | 13.5 |
| | 3.7 | 3.2 | 3.8 | 3.2 | 3.4 | 5.3 | 7.8 | 7.9 | 8.5 | 6.5 | 4.8 | 4.3 | 5.6 | 5.5 | 5.6 | 4.3 | 6.1 | 5.1 | 4.6 | 5.1 | 5.9 | 6.2 | 4.4 | 4.2 | Diurnal Average | |
| | 11.9 | 11.0 | 9.6 | 13.5 | 15.2 | 15.3 | 17.8 | 20.7 | 26.9 | 22.6 | 17.8 | 18.1 | 17.7 | 20.7 | 16.0 | 14.4 | 28.7 | 20.5 | 13.0 | 20.9 | 15.6 | 26.7 | 12.9 | 15.2 | Diurnal Maximum | |

M - Maintenance BD - Baseline Drift
Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 $\mu g/m^3$ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 $\mu g/m^3$

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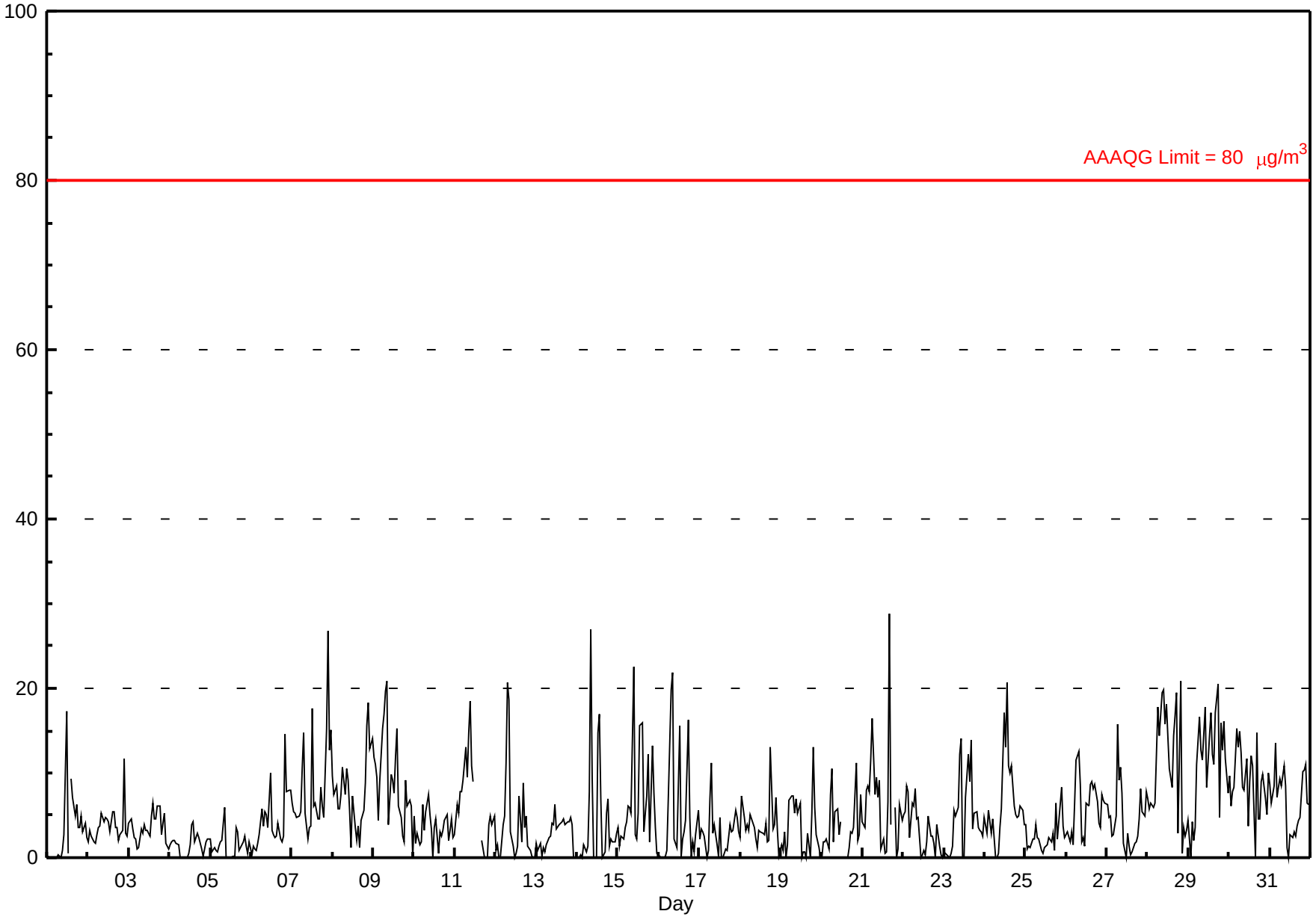
## Hourly Averages

**Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$**

**Evergreen Park - July 2010**



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# Hourly Maximums

## Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

## Evergreen Park - July 2010

Maximum Value: 76.2 $\mu g/m^3$ on Jul 1 12:00

Maximum Daily Average: 27.2 $\mu g/m^3$ on Jul 29

Minimum Value: 0 $\mu g/m^3$ on Jul 1 04:00

Minimum Daily Average: 4.6 $\mu g/m^3$ on Jul 5

Maximum Diurnal Average: 19.0 $\mu g/m^3$ at hour 9

Minimum Diurnal Average: 6.5 $\mu g/m^3$ at hour 4

Monthly Average: 12.08 $\mu g/m^3$

Percentiles: $P_1 = 0.5$ $P_{10} = 3.1$ $Q_1 = 5.4$ Median = 9.0 $Q_3 = 15.5$ $P_{90} = 24.4$ $P_{99} = 54.7$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 743 |
| Hours of Missing Data: | 1 |
| Hours of Calibration: | 0 |
| 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-Jul | 2 | 1 | 0 | 0 | 1 | 1 | 3 | 2 | 3 | 5 | 12 | 76 | 0 | M | 22 | 19 | 9 | 9 | 7 | 6 | 8 | 6 | 10 | 4 | 8.9 | 76.2 |
| 2-Jul | 5 | 6 | 4 | 4 | 4 | 4 | 6 | 9 | 9 | 8 | 7 | 8 | 7 | 8 | 9 | 8 | 6 | 10 | 5 | 5 | 6 | 34 | 5 | 4 | 7.4 | 34.4 |
| 3-Jul | 17 | 12 | 5 | 5 | 4 | 4 | 4 | 8 | 5 | 8 | 9 | 9 | 5 | 8 | 10 | 7 | 8 | 9 | 11 | 5 | 9 | 10 | 4 | 3 | 7.3 | 16.6 |
| 4-Jul | 4 | 3 | 4 | 3 | 4 | 3 | 1 | 2 | 2 | 2 | 2 | 6 | 6 | 11 | 16 | 4 | 10 | 7 | 6 | 3 | 3 | 4 | 4 | 4 | 4.8 | 16.2 |
| 5-Jul | 4 | 2 | 3 | 2 | 2 | 3 | 3 | 5 | 16 | 3 | 5 | 3 | 7 | 4 | 5 | 10 | 9 | 3 | 5 | 4 | 5 | 3 | 2 | 4 | 4.6 | 15.6 |
| 6-Jul | 2 | 3 | 2 | 2 | 4 | 4 | 15 | 6 | 8 | 9 | 7 | 44 | 6 | 6 | 6 | 7 | 9 | 6 | 5 | 6 | 25 | 16 | 17 | 19 | 9.8 | 43.6 |
| 7-Jul | 11 | 8 | 9 | 9 | 7 | 8 | 15 | 20 | 17 | 5 | 10 | 10 | 52 | 23 | 16 | 14 | 8 | 43 | 25 | 11 | 23 | 33 | 18 | 26 | 17.5 | 52.0 |
| 8-Jul | 17 | 15 | 15 | 7 | 10 | 11 | 15 | 13 | 18 | 17 | 13 | 12 | 14 | 13 | 7 | 9 | 11 | 14 | 15 | 24 | 30 | 35 | 19 | 17 | 15.5 | 34.8 |
| 9-Jul | 16 | 13 | 13 | 8 | 14 | 20 | 24 | 27 | 55 | 14 | 19 | 14 | 21 | 23 | 26 | 12 | 21 | 11 | 16 | 16 | 16 | 17 | 22 | 4 | 18.5 | 55.3 |
| 10-Jul | 10 | 5 | 8 | 4 | 4 | 9 | 7 | 12 | 19 | 13 | 12 | 14 | 12 | 13 | 9 | 9 | 11 | 11 | 10 | 13 | 4 | 6 | 12 | 5 | 9.7 | 19.1 |
| 11-Jul | 4 | 9 | 8 | 13 | 9 | 12 | 20 | 13 | 21 | 26 | 23 | 18 | 5 | 6 | 13 | 7 | 13 | 6 | 6 | 4 | 8 | 11 | 10 | 11 | 11.5 | 26.2 |
| 12-Jul | 6 | 5 | 2 | 5 | 9 | 14 | 20 | 34 | 65 | 10 | 9 | 2 | 6 | 6 | 16 | 6 | 18 | 13 | 9 | 5 | 6 | 3 | 2 | 3 | 11.4 | 64.5 |
| 13-Jul | 8 | 3 | 3 | 2 | 3 | 3 | 3 | 4 | 4 | 6 | 7 | 10 | 7 | 6 | 9 | 7 | 8 | 7 | 7 | 7 | 10 | 9 | 1 | 3 | 5.7 | 10.0 |
| 14-Jul | 0 | 0 | 2 | 2 | 3 | 4 | 6 | 26 | 58 | 37 | 32 | 6 | 40 | 40 | 26 | 3 | 7 | 14 | 11 | 4 | 5 | 4 | 5 | 6 | 14.2 | 58.4 |
| 15-Jul | 7 | 3 | 6 | 5 | 5 | 7 | 10 | 12 | 12 | 56 | 14 | 6 | 9 | 25 | 41 | 10 | 9 | 19 | 34 | 19 | 24 | 14 | 11 | 3 | 15.0 | 55.9 |
| 16-Jul | 1 | 1 | 2 | 2 | 3 | 5 | 19 | 37 | 42 | 30 | 7 | 6 | 48 | 6 | 6 | 27 | 9 | 37 | 34 | 3 | 4 | 3 | 8 | 8 | 14.5 | 47.9 |
| 17-Jul | 5 | 7 | 5 | 8 | 1 | 10 | 16 | 29 | 16 | 9 | 6 | 5 | 18 | 6 | 9 | 6 | 5 | 13 | 16 | 9 | 7 | 11 | 9 | 6 | 9.7 | 28.6 |
| 18-Jul | 4 | 14 | 7 | 5 | 14 | 11 | 8 | 6 | 6 | 9 | 11 | 8 | 10 | 8 | 6 | 9 | 5 | 22 | 23 | 18 | 8 | 9 | 5 | 3 | 9.6 | 23.3 |
| 19-Jul | 4 | 2 | 5 | 2 | 5 | 14 | 26 | 19 | 19 | 13 | 14 | 17 | 11 | 15 | 10 | 11 | 12 | 8 | 15 | 28 | 22 | 8 | 4 | 1 | 11.9 | 28.0 |
| 20-Jul | 1 | 4 | 4 | 11 | 6 | 13 | 34 | 9 | 13 | 11 | 11 | 11 | 7 | 14 | 9 | 16 | 8 | 9 | 13 | 10 | 22 | 16 | 4 | 19 | 11.4 | 34.3 |
| 21-Jul | 6 | 6 | 16 | 15 | 10 | 19 | 32 | 12 | 16 | 17 | 18 | 20 | 10 | 19 | 12 | 33 | 75 | 41 | 13 | 20 | 17 | 13 | 23 | 17 | 20.1 | 75.1 |
| 22-Jul | 11 | 12 | 13 | 12 | 9 | 18 | 16 | 19 | 10 | 10 | 10 | 7 | 13 | 10 | 10 | 11 | 16 | 10 | 11 | 4 | 7 | 5 | 2 | 1 | 10.3 | 18.7 |
| 23-Jul | 2 | 2 | 2 | 2 | 2 | 5 | 8 | 10 | 10 | 27 | 35 | 6 | 8 | 12 | 20 | 17 | 26 | 10 | 12 | 13 | 9 | 12 | 11 | 9 | 11.2 | 35.3 |
| 24-Jul | 13 | 12 | 19 | 14 | 10 | 10 | 4 | 8 | 4 | 8 | 8 | 32 | 22 | 33 | 16 | 15 | 17 | 10 | 8 | 7 | 7 | 8 | 10 | 7 | 12.7 | 33.0 |
| 25-Jul | 7 | 3 | 2 | 3 | 4 | 4 | 7 | 5 | 8 | 4 | 4 | 7 | 5 | 5 | 6 | 9 | 8 | 5 | 12 | 8 | 12 | 11 | 7 | 6 | 6.3 | 12.3 |
| 26-Jul | 9 | 6 | 4 | 5 | 5 | 10 | 18 | 20 | 13 | 7 | 7 | 5 | 22 | 23 | 28 | 20 | 14 | 34 | 11 | 8 | 8 | 10 | 10 | 12 | 12.8 | 33.7 |
| 27-Jul | 16 | 12 | 10 | 6 | 5 | 8 | 22 | 17 | 19 | 13 | 11 | 9 | 12 | 9 | 7 | 6 | 10 | 8 | 9 | 9 | 15 | 16 | 11 | 9 | 11.2 | 22.0 |
| 28-Jul | 9 | 9 | 9 | 10 | 10 | 20 | 34 | 25 | 41 | 33 | 21 | 24 | 20 | 11 | 8 | 52 | 29 | 44 | 22 | 35 | 8 | 13 | 6 | 11 | 21.1 | 52.4 |
| 29-Jul | 17 | 7 | 19 | 6 | 13 | 21 | 28 | 19 | 30 | 27 | 28 | 25 | 28 | 35 | 30 | 24 | 29 | 70 | 22 | 32 | 32 | 37 | 36 | 35 | 27.2 | 70.4 |
| 30-Jul | 21 | 10 | 13 | 14 | 19 | 20 | 24 | 23 | 20 | 17 | 23 | 19 | 19 | 33 | 41 | 0 | 15 | 5 | 5 | 9 | 10 | 7 | 5 | 10 | 15.8 | 40.7 |
| 31-Jul | 9 | 7 | 9 | 14 | 7 | 8 | 9 | 9 | 11 | 9 | 1 | 0 | 3 | 2 | 3 | 2 | 4 | 4 | 5 | 10 | 10 | 11 | 7 | 6 | 6.6 | 13.5 |
| | 8.0 | 6.6 | 7.2 | 6.5 | 6.6 | 9.8 | 14.8 | 14.7 | 19.0 | 14.9 | 12.8 | 14.2 | 14.7 | 14.4 | 14.5 | 12.6 | 14.2 | 16.5 | 13.0 | 11.5 | 12.2 | 12.8 | 9.6 | 8.9 | Diurnal Average | |
| | 20.8 | 15.1 | 19.0 | 15.4 | 18.6 | 20.9 | 34.3 | 36.7 | 64.5 | 55.9 | 35.3 | 76.2 | 52.0 | 40.3 | 40.7 | 52.4 | 75.1 | 70.4 | 34.2 | 35.2 | 32.3 | 37.1 | 35.8 | 35.3 | Diurnal Maximum | |

M - Maintenance

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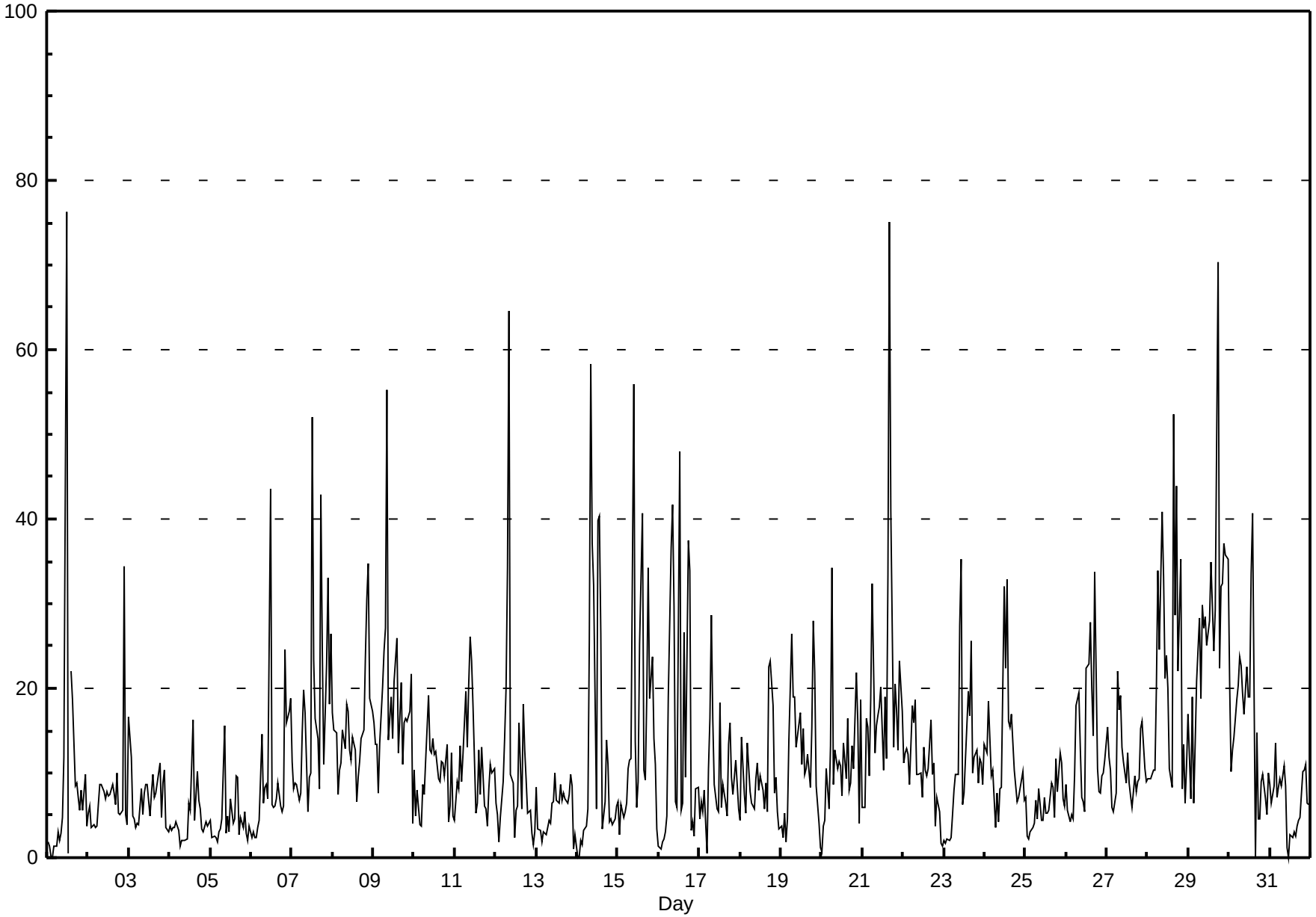
Peace Airshed Zone Association

## Hourly Maximums

**Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$**

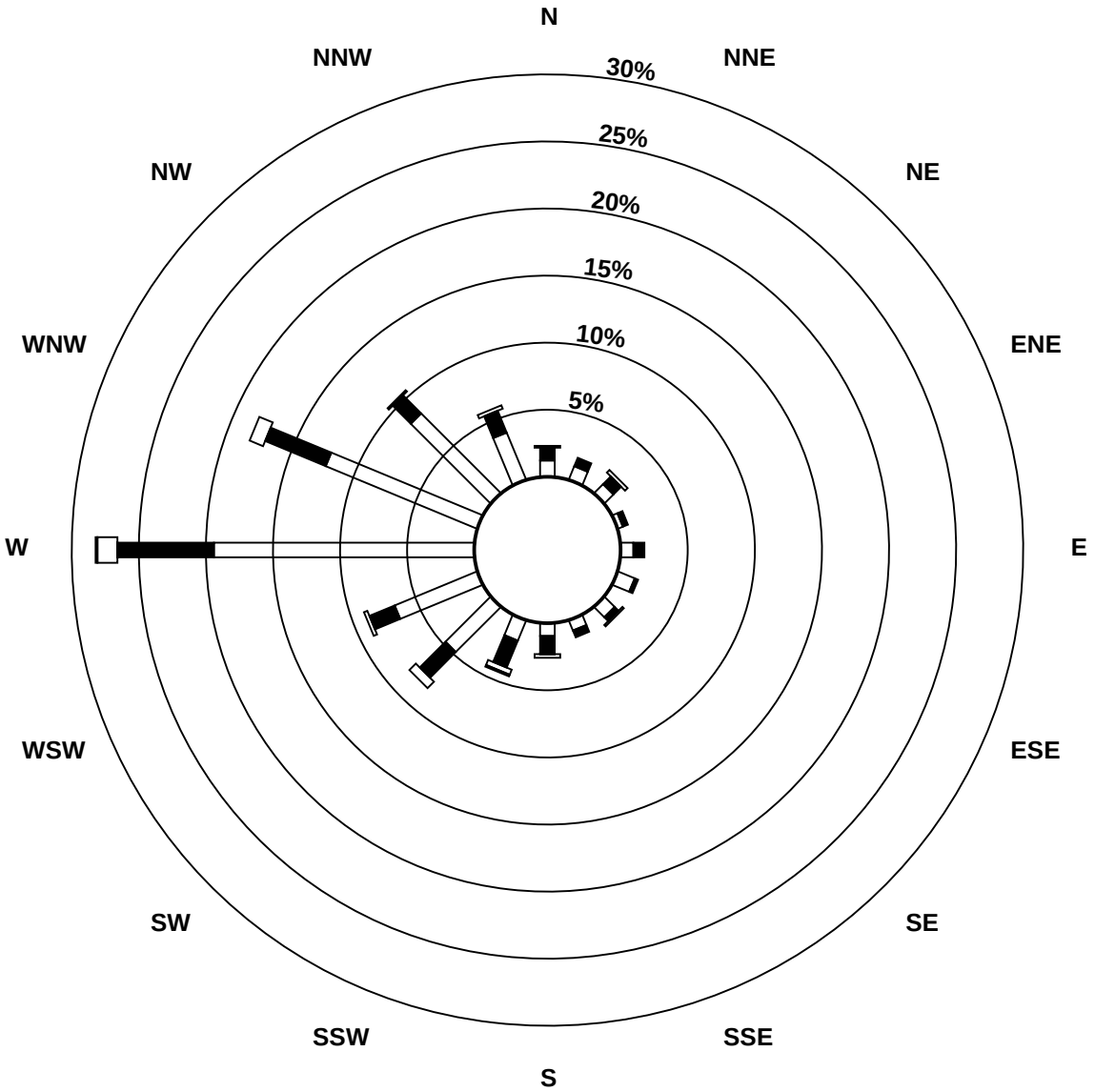
**Evergreen Park - July 2010**



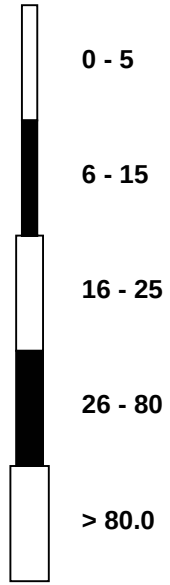
# Pollutant Rose

**Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$**

**Evergreen Park - July 2010**




**Pollutant Classes ($\mu g/m^3$)**



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# Hourly Averages

## External Temperature (ET) - $^{o}$C

## Evergreen Park - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 30.4 $^{o}$C on Jul 8 20:00 Maximum Daily Average: 22.4 $^{o}$C on Jul 8

Minimum Value: 6 $^{o}$C on Jul 1 06:00 Minimum Daily Average: 13.4 $^{o}$C on Jul 2
Maximum Diurnal Average: 22.6 $^{o}$C at hour 17 Minimum Diurnal Average: 11.9 $^{o}$C at hour 5
Monthly Average: 17.60 $^{o}$C Percentiles: $P_1$ = 7.7 $P_{10}$ = 11.6 $Q_1$ = 14.2 Median = 17.3 $Q_3$ = 20.9 $P_{90}$ = 24.5 $P_{99}$ = 27.6

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 712 |
| Hours of Missing Data: | 32 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 95.7 |

| 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-Jul | 9 | 9 | 8 | 8 | 7 | 6 | 8 | 10 | 13 | 14 | 15 | 16 | 17 | 18 | 18 | 19 | 19 | 19 | 19 | 18 | 17 | 15 | 14 | 13 | 13.6 | 19.0 |
| 2-Jul | 11 | 9 | 8 | 7 | 7 | 8 | 9 | 11 | 14 | 14 | 15 | 15 | 16 | 16 | 17 | 17 | 17 | 18 | 17 | 17 | 16 | 15 | 14 | 14 | 13.4 | 17.5 |
| 3-Jul | 14 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 15 | 16 | 18 | 18 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 18 | 17 | 16 | 16 | 15 | 16.1 | 19.3 |
| 4-Jul | 15 | 15 | 14 | 14 | 14 | 13 | 13 | 13 | 14 | 15 | 15 | 16 | 17 | 17 | 16 | 17 | 17 | 15 | 15 | 14 | 14 | 13 | 13 | 12 | 14.7 | 17.2 |
| 5-Jul | 11 | 10 | 10 | 10 | 10 | 10 | 11 | 12 | 14 | 16 | 17 | 18 | 19 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 19 | 18 | 17 | 16.0 | 20.5 |
| 6-Jul | 16 | 15 | 15 | 15 | 14 | 14 | 14 | 15 | 17 | 19 | 20 | 21 | 22 | 23 | 24 | 24 | 24 | 25 | 25 | 25 | 24 | 21 | 19 | 19 | 19.6 | 24.9 |
| 7-Jul | 18 | 17 | 15 | 15 | 14 | 14 | 15 | 17 | 20 | 22 | 23 | 23 | 24 | 25 | 26 | 26 | 27 | 27 | 28 | 27 | 26 | 22 | 18 | 17 | 21.1 | 27.5 |
| 8-Jul | 17 | 18 | 17 | 15 | 13 | 14 | 17 | 20 | 21 | 22 | 23 | 25 | 26 | 27 | 28 | 29 | 29 | 29 | 30 | 30 | 28 | 23 | 20 | 19 | 22.4 | 30.4 |
| 9-Jul | 18 | 18 | 16 | 18 | 18 | 16 | 18 | 21 | 23 | 24 | 25 | 26 | 27 | 26 | 26 | 25 | 24 | 24 | 23 | 22 | 21 | 20 | 17 | 15 | 21.2 | 26.7 |
| 10-Jul | 15 | 15 | 15 | 15 | 14 | 15 | 15 | 16 | 18 | 19 | 20 | 22 | 21 | 22 | 23 | 25 | 25 | 25 | 25 | 24 | 23 | 21 | 19 | 18 | 19.6 | 24.8 |
| 11-Jul | 18 | 16 | 15 | 14 | 13 | 13 | 14 | 16 | 17 | 20 | 22 | 23 | 24 | 25 | 26 | 26 | 26 | 26 | 25 | 25 | 24 | 20 | 17 | 17 | 20.1 | 26.3 |
| 12-Jul | 18 | 18 | 18 | 17 | 15 | 15 | 15 | 16 | 16 | 16 | 15 | 15 | 15 | 15 | 15 | 15 | 16 | 15 | 15 | 14 | 14 | 13 | 12 | 12 | 15.2 | 18.4 |
| 13-Jul | 11 | 11 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 12 | 14 | 15 | 15 | 16 | 17 | 17 | 17 | 18 | 18 | 19 | 19 | 18 | 17 | 16 | 14.3 | 19.1 |
| 14-Jul | 15 | 15 | 14 | 13 | 13 | 15 | 16 | 18 | 19 | 20 | 22 | 23 | 24 | 24 | 25 | 25 | 26 | 26 | 25 | 23 | 22 | 21 | 20 | 18 | 20.0 | 25.6 |
| 15-Jul | 16 | 15 | 14 | 13 | 12 | 13 | 14 | 16 | 18 | 19 | 19 | 20 | 20 | 21 | 21 | 21 | 21 | 21 | 20 | 19 | 17 | 16 | 15 | 13 | 17.2 | 21.4 |
| 16-Jul | 12 | 11 | 10 | 8 | 9 | 9 | 10 | 12 | 14 | 16 | 17 | 18 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 18 | 17 | 16 | 15 | 15.3 | 19.3 |
| 17-Jul | 14 | 12 | 12 | 11 | 11 | 10 | 12 | 14 | 15 | 17 | 18 | 20 | 21 | 22 | 22 | 23 | 24 | 24 | 24 | 23 | 20 | 18 | 15 | 13 | 17.2 | 23.7 |
| 18-Jul | 11 | 13 | 13 | 13 | 11 | 12 | 12 | 14 | 15 | 17 | 19 | 20 | 20 | 20 | 21 | 21 | 21 | 20 | 16 | 13 | 12 | 12 | 12 | 12 | 15.4 | 20.9 |
| 19-Jul | 12 | 11 | 10 | 9 | 8 | 9 | 11 | 13 | 14 | 16 | 18 | 20 | 21 | 21 | 22 | 22 | 23 | 23 | 21 | 17 | 16 | 15 | 14 | 12 | 15.8 | 23.4 |
| 20-Jul | 11 | 11 | 11 | 10 | 9 | 10 | 11 | 13 | 15 | 17 | 20 | 21 | 23 | 23 | 24 | 25 | 25 | 26 | 26 | 25 | 24 | 20 | 18 | 17 | 18.1 | 25.7 |
| 21-Jul | 15 | 13 | 12 | 11 | 10 | 10 | 12 | 15 | 18 | 20 | 22 | 24 | 25 | 26 | 27 | 27 | 22 | 23 | 24 | 24 | 21 | 20 | 18 | 17 | 18.9 | 27.1 |
| 22-Jul | 16 | 16 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 16 | 17 | 19 | 19 | 20 | 19 | 20 | 20 | 20 | 21 | 20 | 18 | 17 | 16 | 17.3 | 21.3 |
| 23-Jul | 15 | 14 | 13 | 13 | 13 | 13 | 14 | 16 | 17 | 19 | 20 | 21 | 23 | 24 | 24 | 25 | 26 | 26 | 26 | 25 | 24 | 22 | 19 | 18 | 19.6 | 25.7 |
| 24-Jul | 18 | 18 | 17 | 17 | 17 | 18 | 18 | 18 | 19 | 19 | 19 | 20 | 21 | 21 | 21 | 22 | 22 | 22 | 22 | 21 | 20 | 18 | 16 | 16 | 19.1 | 22.0 |
| 25-Jul | 14 | 14 | 14 | 13 | 12 | 11 | 12 | 13 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 24 | 24 | 23 | 22 | 20 | 18 | 17 | 18.0 | 23.9 |
| 26-Jul | 16 | 15 | 13 | 12 | 11 | 11 | 12 | 13 | 16 | 17 | 17 | 18 | 18 | 18 | 20 | 21 | 21 | 20 | 20 | 20 | 20 | 18 | 16 | 15 | 16.6 | 21.2 |
| 27-Jul | 13 | 12 | 10 | 10 | 9 | 9 | 11 | 13 | 16 | 18 | 20 | 21 | 22 | 23 | 24 | 25 | 25 | 26 | 26 | 25 | 23 | 20 | 18 | 17 | 18.1 | 25.6 |
| 28-Jul | 16 | 14 | 13 | 12 | 11 | 11 | 13 | 15 | 15 | 17 | 18 | 20 | 23 | 25 | 27 | 28 | 29 | 25 | 21 | 18 | 16 | 16 | 16 | 15 | 18.0 | 28.9 |
| 29-Jul | 15 | 14 | 13 | 12 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 25 | 25 | 26 | 26 | 24 | 25 | 24 | 23 | 21 | 19 | 17 | 19.1 | 26.2 |
| 30-Jul | 16 | 14 | 13 | 12 | 12 | 13 | 14 | 15 | 17 | 18 | 19 | 20 | 21 | 20 | 20 | 21 | D | D | D | D | D | D | D | D | -- | 21.5 |
| 31-Jul | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | -- | -- |
| | 14.5 | 13.8 | 13.1 | 12.4 | 11.9 | 11.9 | 13.1 | 14.6 | 16.3 | 17.6 | 18.8 | 20.0 | 20.9 | 21.4 | 21.9 | 22.4 | 22.6 | 22.3 | 21.9 | 21.2 | 20.0 | 18.2 | 16.6 | 15.6 | Diurnal Average | |
| | 18.4 | 18.4 | 17.7 | 17.7 | 17.5 | 17.6 | 17.7 | 21.0 | 23.1 | 24.1 | 24.7 | 25.8 | 26.7 | 27.3 | 27.5 | 28.7 | 29.0 | 29.3 | 29.8 | 30.4 | 27.7 | 22.6 | 20.1 | 18.9 | Diurnal Maximum | |

D - DAS Failure

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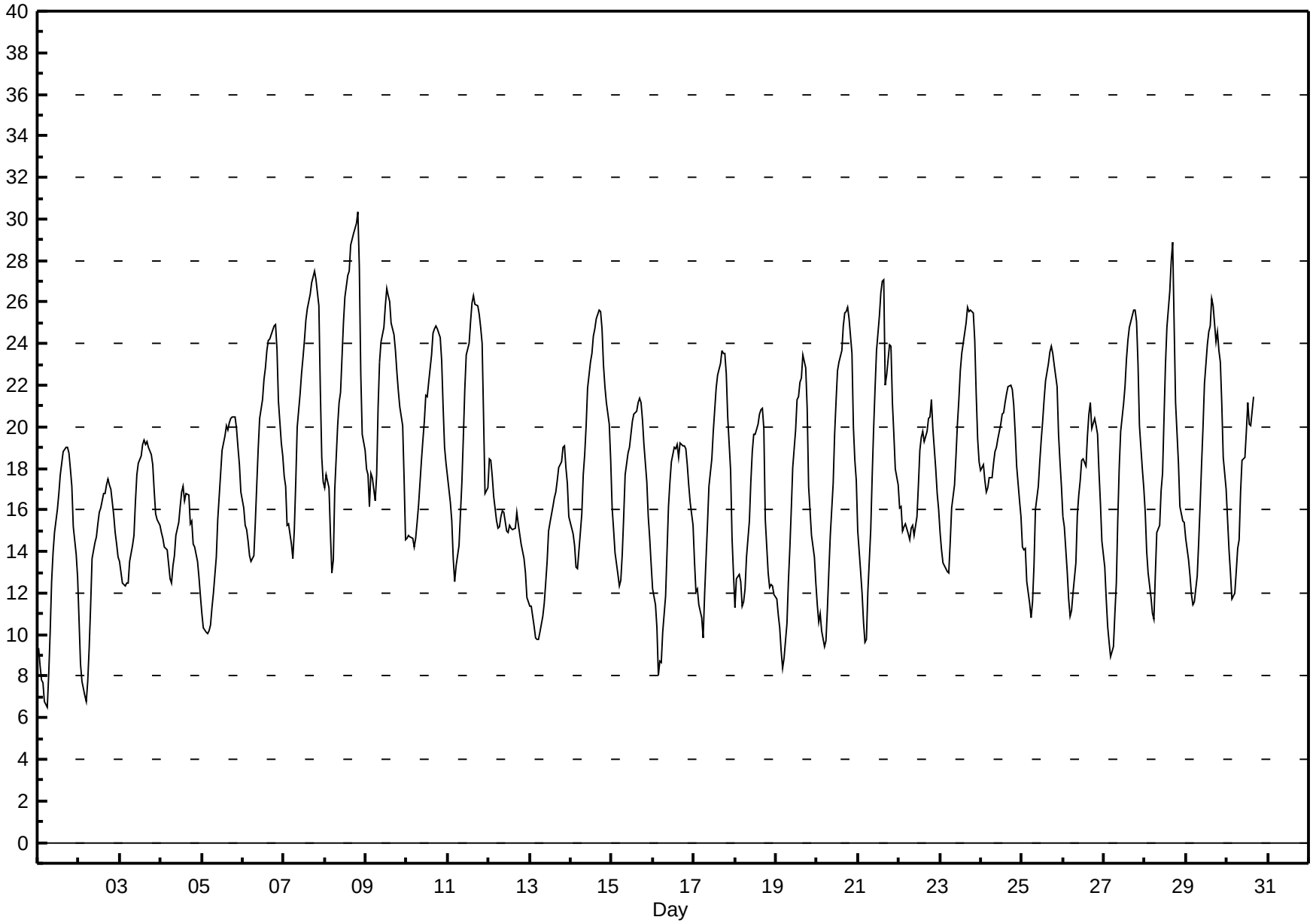
Pasco Airlifted Zoos Association

## Hourly Averages

**External Temperature (ET) - $^{o}$C**

**Evergreen Park - July 2010**



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# Hourly Averages

## Relative Humidity (RH) - %

## Evergreen Park - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 97.1 % on Jul 29 06:00 Maximum Daily Average: 80.1 % on Jul 13

Minimum Value: 22 % on Jul 1 18:00 Minimum Daily Average: 36.7 % on Jul 24
Maximum Diurnal Average: 76.0 % at hour 6 Minimum Diurnal Average: 36.9 % at hour 17
Monthly Average: 54.99 % Percentiles: $P_1$ = 23.2 $P_{10}$ = 30.5 $Q_1$ = 39.7 Median = 51.8 $Q_3$ = 68.7 $P_{90}$ = 85.5 $P_{99}$ = 95.2

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 712 |
| Hours of Missing Data: | 32 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 95.7 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 57 | 59 | 60 | 59 | 64 | 67 | 60 | 52 | 40 | 34 | 31 | 28 | 25 | 22 | 23 | 23 | 23 | 22 | 23 | 23 | 26 | 31 | 33 | 35 | 38.2 | 67.0 |
| 2-Jul | 42 | 53 | 58 | 62 | 63 | 60 | 56 | 49 | 44 | 43 | 44 | 44 | 44 | 44 | 43 | 43 | 43 | 42 | 43 | 44 | 48 | 51 | 53 | 56 | 48.8 | 62.9 |
| 3-Jul | 57 | 66 | 68 | 69 | 67 | 66 | 57 | 54 | 50 | 43 | 39 | 37 | 36 | 35 | 36 | 37 | 37 | 37 | 37 | 38 | 42 | 46 | 45 | 46 | 47.8 | 68.5 |
| 4-Jul | 48 | 50 | 54 | 56 | 59 | 68 | 68 | 59 | 57 | 52 | 48 | 45 | 41 | 40 | 44 | 43 | 45 | 51 | 53 | 57 | 58 | 63 | 70 | 78 | 54.5 | 77.7 |
| 5-Jul | 88 | 91 | 94 | 94 | 93 | 91 | 88 | 84 | 76 | 63 | 56 | 48 | 43 | 39 | 37 | 40 | 43 | 41 | 40 | 40 | 41 | 42 | 43 | 46 | 60.9 | 94.4 |
| 6-Jul | 48 | 50 | 50 | 50 | 52 | 55 | 54 | 50 | 47 | 43 | 39 | 37 | 35 | 33 | 30 | 29 | 29 | 29 | 28 | 28 | 35 | 47 | 53 | 56 | 41.9 | 56.0 |
| 7-Jul | 61 | 63 | 71 | 69 | 72 | 74 | 69 | 60 | 48 | 39 | 37 | 33 | 31 | 30 | 29 | 28 | 27 | 26 | 26 | 27 | 37 | 52 | 63 | 65 | 47.3 | 73.5 |
| 8-Jul | 64 | 60 | 62 | 71 | 80 | 80 | 68 | 60 | 56 | 53 | 46 | 38 | 34 | 30 | 27 | 26 | 23 | 24 | 24 | 24 | 35 | 50 | 60 | 60 | 48.1 | 79.7 |
| 9-Jul | 64 | 65 | 74 | 61 | 61 | 67 | 63 | 46 | 42 | 37 | 34 | 33 | 31 | 35 | 38 | 43 | 44 | 44 | 43 | 49 | 54 | 57 | 69 | 87 | 51.7 | 87.4 |
| 10-Jul | 87 | 87 | 88 | 89 | 92 | 93 | 90 | 86 | 74 | 64 | 61 | 51 | 49 | 47 | 41 | 38 | 38 | 37 | 38 | 40 | 45 | 52 | 59 | 59 | 62.8 | 93.4 |
| 11-Jul | 62 | 68 | 71 | 80 | 84 | 81 | 79 | 73 | 70 | 65 | 60 | 54 | 49 | 46 | 40 | 35 | 31 | 31 | 31 | 31 | 34 | 47 | 61 | 59 | 56.0 | 83.7 |
| 12-Jul | 51 | 48 | 44 | 42 | 45 | 46 | 46 | 45 | 44 | 44 | 51 | 50 | 49 | 47 | 49 | 48 | 45 | 48 | 50 | 55 | 57 | 61 | 64 | 66 | 49.8 | 65.6 |
| 13-Jul | 68 | 70 | 80 | 86 | 89 | 91 | 91 | 90 | 90 | 88 | 85 | 82 | 80 | 78 | 77 | 77 | 76 | 74 | 73 | 71 | 71 | 78 | 77 | 81 | 80.1 | 91.3 |
| 14-Jul | 79 | 77 | 78 | 83 | 83 | 72 | 66 | 58 | 53 | 49 | 43 | 37 | 35 | 32 | 32 | 30 | 27 | 28 | 33 | 35 | 37 | 39 | 42 | 48 | 49.8 | 83.4 |
| 15-Jul | 58 | 60 | 64 | 68 | 71 | 69 | 62 | 55 | 46 | 40 | 37 | 33 | 31 | 30 | 28 | 27 | 28 | 30 | 35 | 38 | 42 | 43 | 47 | 52 | 45.6 | 71.1 |
| 16-Jul | 58 | 61 | 65 | 76 | 70 | 69 | 63 | 56 | 48 | 41 | 37 | 34 | 33 | 35 | 36 | 40 | 37 | 38 | 41 | 39 | 42 | 45 | 49 | 59 | 48.8 | 76.2 |
| 17-Jul | 68 | 75 | 77 | 81 | 84 | 86 | 78 | 71 | 63 | 55 | 49 | 42 | 39 | 35 | 32 | 31 | 30 | 30 | 32 | 35 | 41 | 49 | 63 | 70 | 54.8 | 85.8 |
| 18-Jul | 76 | 69 | 68 | 73 | 80 | 81 | 79 | 75 | 69 | 60 | 52 | 49 | 50 | 48 | 46 | 46 | 46 | 45 | 71 | 89 | 92 | 93 | 93 | 91 | 68.4 | 93.3 |
| 19-Jul | 90 | 92 | 93 | 94 | 96 | 96 | 92 | 83 | 75 | 69 | 62 | 52 | 44 | 40 | 38 | 38 | 35 | 36 | 42 | 68 | 74 | 80 | 87 | 91 | 69.5 | 96.3 |
| 20-Jul | 94 | 95 | 92 | 92 | 93 | 92 | 87 | 80 | 74 | 67 | 57 | 51 | 40 | 38 | 35 | 29 | 28 | 28 | 27 | 29 | 37 | 48 | 54 | 58 | 59.4 | 94.7 |
| 21-Jul | 69 | 77 | 83 | 87 | 90 | 90 | 84 | 75 | 64 | 56 | 51 | 43 | 36 | 31 | 28 | 28 | 55 | 60 | 47 | 47 | 51 | 52 | 61 | 64 | 59.5 | 90.4 |
| 22-Jul | 71 | 71 | 77 | 74 | 70 | 73 | 78 | 80 | 82 | 89 | 84 | 74 | 63 | 60 | 57 | 59 | 54 | 50 | 52 | 41 | 46 | 52 | 56 | 59 | 65.6 | 89.3 |
| 23-Jul | 63 | 65 | 67 | 67 | 68 | 69 | 65 | 60 | 56 | 51 | 45 | 38 | 32 | 29 | 30 | 31 | 31 | 31 | 31 | 32 | 35 | 40 | 46 | 49 | 47.1 | 68.9 |
| 24-Jul | 51 | 50 | 55 | 60 | 58 | 56 | 50 | 39 | 30 | 30 | 30 | 28 | 28 | 25 | 24 | 23 | 23 | 24 | 24 | 28 | 31 | 35 | 40 | 40 | 36.7 | 59.7 |
| 25-Jul | 44 | 44 | 44 | 49 | 52 | 55 | 55 | 50 | 41 | 38 | 34 | 32 | 30 | 28 | 27 | 26 | 25 | 25 | 27 | 28 | 31 | 38 | 41 | 45 | 37.9 | 55.5 |
| 26-Jul | 49 | 51 | 60 | 64 | 68 | 68 | 66 | 64 | 62 | 58 | 54 | 49 | 50 | 57 | 50 | 47 | 45 | 52 | 52 | 52 | 52 | 61 | 68 | 75 | 57.3 | 75.5 |
| 27-Jul | 81 | 87 | 90 | 93 | 93 | 93 | 89 | 85 | 75 | 67 | 60 | 49 | 45 | 40 | 36 | 34 | 32 | 31 | 32 | 33 | 40 | 49 | 56 | 63 | 60.6 | 93.2 |
| 28-Jul | 68 | 77 | 81 | 85 | 87 | 87 | 80 | 76 | 76 | 70 | 68 | 59 | 51 | 43 | 36 | 32 | 31 | 40 | 48 | 71 | 85 | 86 | 89 | 87 | 67.3 | 88.7 |
| 29-Jul | 90 | 93 | 95 | 96 | 97 | 97 | 97 | 90 | 83 | 74 | 66 | 58 | 48 | 47 | 46 | 41 | 41 | 47 | 40 | 42 | 45 | 47 | 61 | 68 | 67.1 | 97.1 |
| 30-Jul | 77 | 83 | 89 | 93 | 91 | 87 | 84 | 84 | 68 | 61 | 61 | 55 | 52 | 59 | 62 | 52 | D | D | D | D | D | D | D | D | -- | 92.9 |
| 31-Jul | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | -- | -- |
| | 66.1 | 68.5 | 71.7 | 74.1 | 75.7 | 76.0 | 72.1 | 66.3 | 60.1 | 54.7 | 50.6 | 45.4 | 41.7 | 40.2 | 38.7 | 37.5 | 36.9 | 38.1 | 39.4 | 42.6 | 47.1 | 53.0 | 58.7 | 62.5 | Diurnal Average | |
| | 94.0 | 94.7 | 95.5 | 96.2 | 96.8 | 97.1 | 96.6 | 89.9 | 89.8 | 89.3 | 84.8 | 81.6 | 80.4 | 78.4 | 77.4 | 76.8 | 75.6 | 73.8 | 73.4 | 89.4 | 91.9 | 93.3 | 92.6 | 91.0 | Diurnal Maximum | |

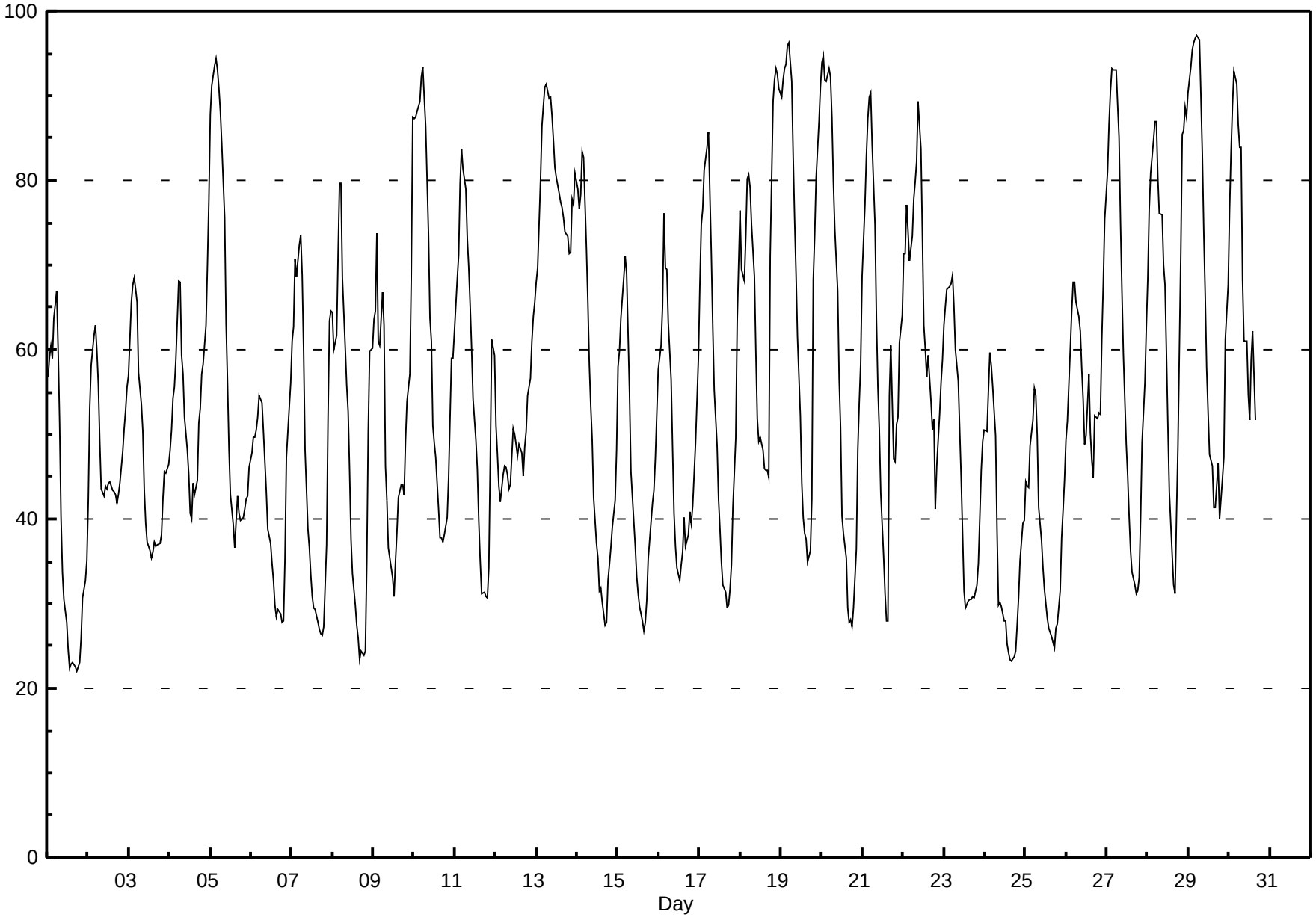
D - DAS Failure

PASZA
Peace Airshed Zone Association

## Hourly Averages

**Relative Humidity (RH) - %**

**Evergreen Park - July 2010**



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Peace Airshed Zone Association

# Hourly Averages

## Wind Speed (km/h)
## Wind Direction (deg)
## Evergreen Park - July 2010

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1 Spd | 11 | 13 | 12 | 13 | 7 | 6 | 10 | 13 | 17 | 19 | 18 | 19 | 20 | 23 | 22 | 20 | 19 | 20 | 20 | 20 | 12 | 7 | 9 | 8 | 14.4 | 22.7 |
| Dir | 244 | 237 | 235 | 233 | 220 | 213 | 222 | 230 | 247 | 257 | 253 | 249 | 246 | 250 | 257 | 266 | 270 | 278 | 274 | 262 | 262 | 262 | 265 | 250 | 252.7 | 249.9 |
| 2 Spd | 7 | 5 | 7 | 7 | 7 | 5 | 6 | 12 | 18 | 17 | 15 | 16 | 18 | 16 | 17 | 17 | 18 | 18 | 17 | 15 | 17 | 15 | 11 | 9 | 12.1 | 17.9 |
| Dir | 227 | 216 | 216 | 212 | 209 | 208 | 219 | 257 | 269 | 271 | 274 | 269 | 272 | 273 | 273 | 279 | 263 | 268 | 267 | 269 | 264 | 262 | 258 | 259 | 261.4 | 267.9 |
| 3 Spd | 13 | 8 | 3 | 4 | 3 | 4 | 9 | 12 | 16 | 20 | 19 | 20 | 20 | 20 | 23 | 22 | 24 | 24 | 21 | 18 | 12 | 9 | 11 | 13 | 14.0 | 23.8 |
| Dir | 265 | 272 | 304 | 307 | 304 | 311 | 299 | 286 | 273 | 274 | 281 | 282 | 289 | 281 | 271 | 269 | 267 | 270 | 275 | 279 | 262 | 249 | 247 | 252 | 274.3 | 267.4 |
| 4 Spd | 13 | 13 | 4 | 7 | 16 | 15 | 15 | 18 | 18 | 20 | 18 | 17 | 19 | 21 | 20 | 19 | 19 | 13 | 13 | 11 | 13 | 10 | 7 | 5 | 14.0 | 21.4 |
| Dir | 252 | 258 | 273 | 267 | 274 | 271 | 265 | 266 | 263 | 268 | 276 | 273 | 273 | 274 | 272 | 276 | 276 | 297 | 302 | 304 | 291 | 299 | 297 | 305 | 275.7 | 274.5 |
| 5 Spd | 6 | 8 | 9 | 12 | 8 | 8 | 7 | 7 | 10 | 11 | 13 | 13 | 15 | 15 | 16 | 10 | 13 | 11 | 9 | 7 | 7 | 10 | 13 | 15 | 9.7 | 15.8 |
| Dir | 308 | 298 | 295 | 277 | 292 | 299 | 300 | 293 | 293 | 322 | 332 | 326 | 323 | 320 | 327 | 305 | 283 | 303 | 301 | 288 | 265 | 263 | 264 | 261 | 299.1 | 327.4 |
| 6 Spd | 15 | 13 | 10 | 7 | 7 | 6 | 8 | 10 | 12 | 12 | 10 | 10 | 10 | 8 | 9 | 9 | 8 | 9 | 10 | 5 | 2 | 1 | 2 | 1 | 7.4 | 15.3 |
| Dir | 263 | 263 | 270 | 289 | 293 | 299 | 285 | 291 | 285 | 283 | 301 | 308 | 287 | 305 | 303 | 308 | 319 | 326 | 350 | 334 | 245 | 214 | 211 | 297 | 293.2 | 263.3 |
| 7 Spd | 2 | 1 | 2 | 4 | 4 | 4 | 3 | 5 | 6 | 9 | 7 | 7 | 5 | 6 | 6 | 6 | 5 | 5 | 3 | 3 | 1 | 1 | 1 | 1 | 3.6 | 8.6 |
| Dir | 352 | 295 | 246 | 262 | 274 | 287 | 280 | 279 | 316 | 330 | 303 | 281 | 289 | 291 | 294 | 306 | 266 | 270 | 288 | 311 | 228 | 210 | 210 | 219 | 289.6 | 330.4 |
| 8 Spd | 2 | 4 | 1 | 1 | 0 | 1 | 2 | 1 | 2 | 8 | 6 | 4 | 3 | 2 | 4 | 2 | 6 | 4 | 2 | 1 | 1 | 0 | 0 | 3 | 0.9 | 8.0 |
| Dir | 102 | 207 | 93 | 212 | 2 | 7 | 33 | 75 | 242 | 221 | 231 | 216 | 254 | 255 | 318 | 359 | 352 | 11 | 314 | 8 | 205 | 52 | 131 | 209 | 259.0 | 220.9 |
| 9 Spd | 0 | 0 | 0 | 4 | 2 | 2 | 3 | 7 | 6 | 11 | 10 | 10 | 13 | 11 | 9 | 8 | 7 | 6 | 4 | 2 | 1 | 1 | 8 | 5 | 3.9 | 13.5 |
| Dir | 186 | 145 | 41 | 259 | 314 | 235 | 236 | 270 | 312 | 330 | 330 | 343 | 345 | 347 | 12 | 38 | 39 | 27 | 347 | 301 | 169 | 357 | 23 | 91 | 347.4 | 344.9 |
| 10 Spd | 1 | 3 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 0 | 1 | 1 | 4 | 2 | 2 | 1 | 4 | 3 | 4 | 4 | 3 | 2 | 1 | 2 | 0.3 | 4.4 |
| Dir | 250 | 272 | 307 | 329 | 77 | 311 | 310 | 252 | 51 | 166 | 114 | 107 | 342 | 18 | 8 | 307 | 90 | 113 | 154 | 129 | 132 | 137 | 165 | 178 | 100.3 | 128.6 |
| 11 Spd | 4 | 3 | 2 | 0 | 1 | 2 | 2 | 3 | 3 | 3 | 6 | 8 | 9 | 8 | 12 | 18 | 19 | 16 | 14 | 11 | 6 | 0 | 2 | 1 | 5.3 | 19.5 |
| Dir | 189 | 192 | 191 | 109 | 215 | 188 | 184 | 216 | 177 | 186 | 208 | 201 | 206 | 209 | 262 | 273 | 268 | 264 | 280 | 282 | 286 | 314 | 213 | 250 | 246.7 | 268.2 |
| 12 Spd | 5 | 6 | 8 | 11 | 9 | 9 | 20 | 20 | 18 | 16 | 16 | 16 | 18 | 17 | 18 | 13 | 16 | 15 | 15 | 14 | 15 | 13 | 13 | 14 | 12.8 | 20.4 |
| Dir | 256 | 262 | 262 | 277 | 268 | 277 | 288 | 288 | 290 | 297 | 333 | 340 | 334 | 321 | 289 | 312 | 298 | 284 | 296 | 326 | 326 | 327 | 331 | 328 | 304.2 | 288.2 |
| 13 Spd | 12 | 12 | 11 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 13 | 12 | 12 | 11 | 12 | 11 | 10 | 11 | 10 | 6 | 5 | 4 | 6 | 5 | 9.7 | 13.0 |
| Dir | 310 | 299 | 300 | 304 | 309 | 313 | 315 | 320 | 320 | 319 | 330 | 330 | 323 | 318 | 315 | 321 | 311 | 296 | 289 | 313 | 312 | 261 | 275 | 259 | 310.5 | 329.8 |
| 14 Spd | 7 | 6 | 3 | 1 | 1 | 6 | 7 | 8 | 14 | 17 | 17 | 15 | 11 | 14 | 13 | 15 | 16 | 16 | 19 | 19 | 11 | 10 | 7 | 7 | 10.7 | 18.9 |
| Dir | 265 | 262 | 287 | 353 | 317 | 262 | 273 | 287 | 267 | 262 | 270 | 271 | 277 | 264 | 263 | 269 | 272 | 268 | 274 | 269 | 265 | 258 | 247 | 234 | 267.7 | 274.0 |
| 15 Spd | 6 | 5 | 3 | 3 | 5 | 6 | 9 | 10 | 15 | 16 | 18 | 18 | 19 | 20 | 21 | 18 | 18 | 15 | 15 | 15 | 15 | 13 | 14 | 9 | 12.3 | 20.7 |
| Dir | 218 | 220 | 218 | 246 | 260 | 270 | 259 | 270 | 274 | 279 | 285 | 284 | 274 | 282 | 282 | 271 | 274 | 284 | 285 | 278 | 287 | 276 | 277 | 264 | 275.1 | 282.2 |
| 16 Spd | 9 | 9 | 6 | 5 | 5 | 4 | 7 | 12 | 14 | 13 | 15 | 12 | 15 | 11 | 10 | 11 | 10 | 12 | 6 | 13 | 12 | 8 | 5 | 1 | 8.6 | 14.6 |
| Dir | 259 | 248 | 234 | 212 | 247 | 240 | 281 | 262 | 264 | 275 | 285 | 296 | 295 | 311 | 326 | 275 | 292 | 279 | 280 | 270 | 267 | 254 | 286 | 360 | 275.5 | 284.7 |
| 17 Spd | 1 | 1 | 2 | 3 | 2 | 1 | 4 | 6 | 7 | 6 | 6 | 8 | 5 | 4 | 4 | 6 | 7 | 4 | 4 | 6 | 5 | 1 | 1 | 0 | 2.9 | 7.7 |
| Dir | 255 | 281 | 326 | 324 | 302 | 234 | 264 | 270 | 258 | 277 | 299 | 289 | 310 | 332 | 296 | 333 | 262 | 299 | 344 | 12 | 42 | 181 | 46 | 30 | 302.4 | 288.8 |
| 18 Spd | 0 | 5 | 4 | 3 | 3 | 4 | 7 | 8 | 7 | 6 | 4 | 4 | 6 | 8 | 10 | 10 | 8 | 7 | 4 | 5 | 3 | 1 | 3 | 4 | 3.8 | 10.3 |
| Dir | 16 | 344 | 343 | 353 | 235 | 257 | 278 | 283 | 283 | 279 | 322 | 301 | 304 | 274 | 267 | 284 | 310 | 37 | 171 | 243 | 168 | 286 | 309 | 316 | 290.3 | 283.9 |
| 19 Spd | 4 | 3 | 4 | 3 | 2 | 4 | 5 | 6 | 9 | 6 | 7 | 7 | 6 | 10 | 7 | 6 | 5 | 4 | 6 | 10 | 3 | 1 | 0 | 1 | 3.8 | 10.1 |
| Dir | 307 | 323 | 283 | 217 | 229 | 234 | 274 | 283 | 277 | 289 | 272 | 282 | 280 | 271 | 303 | 24 | 26 | 46 | 260 | 264 | 259 | 241 | 235 | 53 | 283.5 | 264.2 |
| 20 Spd | 0 | 3 | 3 | 2 | 1 | 3 | 5 | 6 | 5 | 3 | 3 | 4 | 4 | 2 | 2 | 3 | 1 | 4 | 3 | 3 | 2 | 4 | 3 | 2 | 1.9 | 6.2 |
| Dir | 192 | 223 | 226 | 233 | 225 | 242 | 263 | 264 | 267 | 256 | 258 | 275 | 218 | 280 | 19 | 306 | 288 | 255 | 319 | 180 | 158 | 108 | 137 | 221 | 245.6 | 264.1 |
| 21 Spd | 2 | 0 | 1 | 1 | 0 | 0 | 3 | 2 | 2 | 4 | 1 | 4 | 5 | 4 | 4 | 3 | 6 | 4 | 4 | 3 | 5 | 4 | 2 | 2 | 1.6 | 5.8 |
| Dir | 67 | 52 | 270 | 217 | 144 | 321 | 205 | 219 | 198 | 213 | 146 | 171 | 178 | 175 | 198 | 241 | 3 | 111 | 122 | 159 | 216 | 185 | 99 | 75 | 176.4 | 2.9 |
| 22 Spd | 2 | 3 | 0 | 1 | 3 | 1 | 1 | 4 | 6 | 5 | 4 | 6 | 6 | 7 | 9 | 11 | 9 | 10 | 6 | 13 | 10 | 11 | 10 | 10 | 5.4 | 12.7 |
| Dir | 86 | 267 | 316 | 246 | 224 | 193 | 165 | 277 | 288 | 291 | 347 | 314 | 298 | 334 | 278 | 256 | 255 | 253 | 245 | 269 | 267 | 268 | 268 | 262 | 272.1 | 268.7 |

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# Hourly Averages

## Wind Speed (km/h)
## Wind Direction (deg)
## Evergreen Park - July 2010

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 23 Spd | 9 | 9 | 7 | 7 | 7 | 6 | 7 | 11 | 10 | 12 | 12 | 12 | 13 | 14 | 16 | 14 | 13 | 15 | 11 | 10 | 5 | 5 | 6 | 5 | 9.4 | 16.4 |
| Dir | 259 | 259 | 256 | 251 | 258 | 252 | 263 | 260 | 268 | 263 | 266 | 262 | 249 | 269 | 281 | 271 | 270 | 292 | 289 | 266 | 256 | 222 | 210 | 208 | 263.7 | 281.3 |
| 24 Spd | 5 | 6 | 3 | 1 | 4 | 6 | 8 | 13 | 17 | 13 | 19 | 22 | 21 | 23 | 23 | 21 | 22 | 21 | 20 | 14 | 11 | 9 | 6 | 5 | 12.8 | 22.6 |
| Dir | 220 | 268 | 239 | 253 | 284 | 276 | 283 | 284 | 289 | 304 | 289 | 278 | 283 | 287 | 281 | 285 | 284 | 290 | 281 | 290 | 285 | 270 | 269 | 274 | 282.9 | 286.8 |
| 25 Spd | 4 | 6 | 8 | 6 | 7 | 7 | 8 | 11 | 15 | 14 | 13 | 12 | 11 | 11 | 11 | 8 | 11 | 10 | 9 | 10 | 5 | 5 | 8 | 8 | 8.7 | 14.7 |
| Dir | 267 | 286 | 299 | 265 | 260 | 235 | 263 | 272 | 279 | 289 | 283 | 294 | 287 | 277 | 287 | 298 | 281 | 293 | 292 | 322 | 299 | 257 | 263 | 261 | 281.5 | 279.5 |
| 26 Spd | 5 | 5 | 3 | 3 | 4 | 3 | 7 | 5 | 16 | 16 | 13 | 14 | 15 | 13 | 10 | 8 | 11 | 9 | 11 | 7 | 6 | 4 | 3 | 2 | 7.4 | 16.3 |
| Dir | 286 | 304 | 281 | 288 | 282 | 276 | 268 | 303 | 341 | 340 | 334 | 344 | 337 | 315 | 322 | 341 | 307 | 348 | 317 | 308 | 321 | 318 | 309 | 259 | 321.8 | 340.6 |
| 27 Spd | 3 | 0 | 2 | 1 | 1 | 1 | 2 | 3 | 1 | 3 | 3 | 5 | 6 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 3 | 3 | 4 | 3 | 2.2 | 5.6 |
| Dir | 283 | 166 | 224 | 220 | 241 | 214 | 209 | 268 | 41 | 79 | 104 | 135 | 137 | 141 | 144 | 156 | 112 | 105 | 107 | 104 | 82 | 85 | 80 | 83 | 122.1 | 137.4 |
| 28 Spd | 3 | 2 | 1 | 1 | 0 | 2 | 1 | 1 | 3 | 3 | 4 | 3 | 2 | 4 | 4 | 1 | 0 | 13 | 11 | 7 | 3 | 6 | 7 | 4 | 1.4 | 13.5 |
| Dir | 80 | 67 | 66 | 25 | 333 | 229 | 40 | 22 | 271 | 230 | 226 | 145 | 259 | 327 | 339 | 241 | 332 | 341 | 4 | 283 | 85 | 246 | 231 | 238 | 304.1 | 341.1 |
| 29 Spd | 1 | 2 | 1 | 0 | 2 | 1 | 2 | 2 | 4 | 6 | 6 | 4 | 5 | 3 | 4 | 5 | 5 | 4 | 9 | 7 | 8 | 10 | 4 | 2 | 2.8 | 9.7 |
| Dir | 25 | 98 | 2 | 270 | 214 | 217 | 271 | 35 | 180 | 220 | 223 | 262 | 266 | 270 | 192 | 171 | 180 | 216 | 227 | 249 | 312 | 277 | 278 | 208 | 238.8 | 276.8 |
| 30 Spd | 0 | 1 | 1 | 1 | 4 | 4 | 4 | 5 | 10 | 9 | 11 | 11 | 8 | 7 | 2 | 5 | 10 | 10 | 10 | 7 | 4 | 2 | 2 | 3 | 4.9 | 11.2 |
| Dir | 221 | 220 | 9 | 207 | 218 | 260 | 275 | 249 | 261 | 275 | 251 | 270 | 287 | 307 | 50 | 309 | 269 | 259 | 264 | 260 | 262 | 246 | 348 | 288 | 269.1 | 250.8 |
| 31 Spd | 3 | 4 | 3 | 1 | 3 | 3 | 3 | 5 | 4 | 4 | 4 | 5 | 4 | 3 | 6 | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2.6 | 5.6 |
| Dir | 268 | 281 | 287 | 253 | 274 | 261 | 267 | 282 | 287 | 291 | 272 | 329 | 273 | 310 | 273 | 282 | 283 | 266 | 342 | 215 | 174 | 202 | 201 | 228 | 276.9 | 273.2 |
| Spd | 3.8 | 4.2 | 3.3 | 3.3 | 3.5 | 3.8 | 5.3 | 7.0 | 8.5 | 8.6 | 8.3 | 8.0 | 8.5 | 8.6 | 8.9 | 8.3 | 8.6 | 7.9 | 7.6 | 7.2 | 4.9 | 4.3 | 3.9 | 3.5 | Diurnal Average | |
| Dir | 262.4 | 264.2 | 269.4 | 264.7 | 265.1 | 266.6 | 272.4 | 275.1 | 278.4 | 282.1 | 286.2 | 287.0 | 286.6 | 287.7 | 285.8 | 285.1 | 282.4 | 288.5 | 285.9 | 280.6 | 277.2 | 265.9 | 270.5 | 261.6 | | |
| Spd | 15.3 | 13.3 | 11.9 | 13.2 | 16.1 | 14.6 | 20.4 | 19.9 | 18.0 | 19.7 | 18.8 | 21.9 | 21.0 | 22.7 | 22.6 | 21.5 | 23.8 | 23.6 | 21.0 | 20.4 | 17.1 | 14.6 | 13.8 | 14.7 | Diurnal Maximum | |
| Dir | 263.3 | 263.5 | 235.1 | 233.2 | 273.8 | 270.5 | 288.2 | 288.0 | 289.5 | 268.3 | 289.4 | 278.0 | 283.3 | 249.9 | 271.5 | 268.8 | 267.4 | 269.9 | 275.1 | 262.3 | 264.4 | 262.1 | 276.7 | 260.6 | | |

Maximum Speed Value: 24 km/h on Jul 3 17:00
Minimum Speed Value: 0 km/h on Jul 29 04:00
Maximum Daily Speed Average: 14.4 km/h on Jul 1
Minimum Daily Speed Average: 0.3 km/h on Jul 10
Maximum Diurnal Speed Average: 8.9 km/h at hour 15
Minimum Diurnal Speed Average: 3.3 km/h at hour 3

Monthly Average Velocity: 6.17 km/h 279.32 deg
Speed Percentiles: $P_1$ = 0.2 $P_{10}$ = 1.3 $Q_1$ = 3.2 Median = 6.3 $Q_3$ = 11.3 $P_{90}$ = 16.4 $P_{99}$ = 22.1
All monthly, daily, and diurnal averages have been calculated using vector methods

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 744 |
| Hours of Missing Data: | 0 |
| Percent Operational Time: | 100.0 |

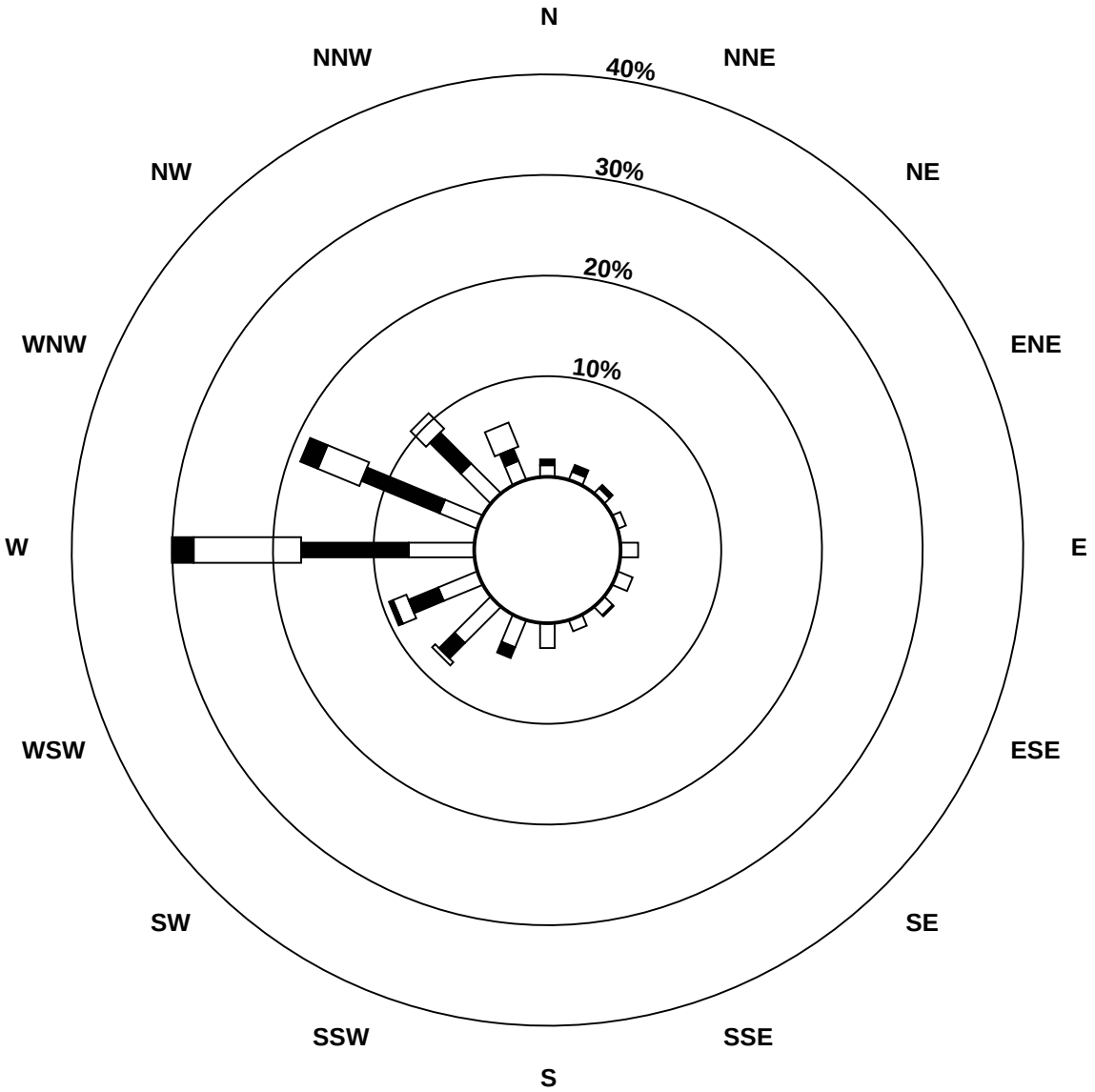
Frequency Distribution

| Direction | Speed Range (km/h) 0 to 5 | 5 to 11 | 11 to 19 | 19 to 28 | 28 to 38 | > 38 | Total |
|---|---|---|---|---|---|---|---|
| North | 25 | 10 | 7 | 0 | 0 | 0 | 42 |
| NorthEast | 19 | 7 | 0 | 0 | 0 | 0 | 26 |
| East | 23 | 3 | 0 | 0 | 0 | 0 | 26 |
| SouthEast | 15 | 3 | 0 | 0 | 0 | 0 | 18 |
| South | 35 | 1 | 0 | 0 | 0 | 0 | 36 |
| SouthWest | 70 | 30 | 7 | 1 | 0 | 0 | 108 |
| West | 73 | 125 | 110 | 33 | 0 | 0 | 341 |
| NorthWest | 48 | 60 | 39 | 0 | 0 | 0 | 147 |
| Total | 308 | 239 | 163 | 34 | 0 | 0 | 744 |

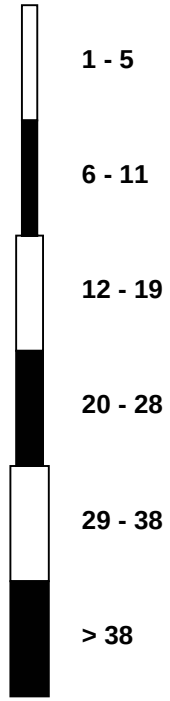
# Wind Rose

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

**Evergreen Park - July 2010**




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



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# Hourly Averages - Wind Speed (Scalar)

## Wind Speed (km/h)

## Evergreen Park - July 2010

Maximum Speed: 24 km/h on Jul 3 17:00

Maximum Daily Speed Average: 15.2 km/h on Jul 1

Minimum Speed: 1 km/h on Jul 19 23:00

Minimum Daily Speed Average: 3.2 km/h on Jul 10

Maximum Diurnal Speed Average: 11.7 km/h at hour 15

Minimum Diurnal Speed Average: 4.4 km/h at hour 4

Monthly Average Speed: 8.29 km/h

Percentiles: $P_1$ = 1.2 $P_{10}$ = 2.1 $Q_1$ = 3.8 Median = 6.9 $Q_3$ = 11.9 $P_{90}$ = 16.9 $P_{99}$ = 22.5

Hours in Service: 744

Hours of Data: 744

Hours of Missing Data: 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-Jul | 11 | 13 | 12 | 13 | 7 | 6 | 10 | 13 | 17 | 19 | 19 | 19 | 21 | 23 | 22 | 21 | 19 | 20 | 20 | 21 | 12 | 7 | 9 | 9 | 15.2 | 23.5 |
| 2-Jul | 7 | 5 | 7 | 7 | 7 | 5 | 7 | 12 | 18 | 18 | 16 | 16 | 18 | 16 | 18 | 17 | 18 | 18 | 18 | 15 | 17 | 15 | 11 | 9 | 13.1 | 18.5 |
| 3-Jul | 13 | 9 | 3 | 4 | 3 | 5 | 9 | 12 | 16 | 20 | 19 | 20 | 21 | 20 | 23 | 22 | 24 | 24 | 21 | 18 | 12 | 9 | 11 | 13 | 14.7 | 24.1 |
| 4-Jul | 13 | 13 | 5 | 7 | 16 | 15 | 16 | 18 | 18 | 20 | 19 | 18 | 19 | 22 | 21 | 19 | 20 | 14 | 14 | 11 | 13 | 10 | 8 | 5 | 14.7 | 21.8 |
| 5-Jul | 6 | 9 | 9 | 12 | 9 | 8 | 7 | 7 | 10 | 12 | 14 | 14 | 15 | 16 | 17 | 11 | 13 | 11 | 9 | 7 | 7 | 10 | 13 | 15 | 10.8 | 17.0 |
| 6-Jul | 15 | 13 | 11 | 8 | 8 | 7 | 8 | 10 | 13 | 13 | 10 | 11 | 11 | 10 | 10 | 10 | 8 | 10 | 10 | 5 | 2 | 1 | 2 | 2 | 8.7 | 15.4 |
| 7-Jul | 2 | 2 | 3 | 4 | 4 | 4 | 3 | 5 | 7 | 9 | 9 | 8 | 7 | 7 | 7 | 7 | 6 | 6 | 4 | 3 | 1 | 2 | 1 | 2 | 4.8 | 9.3 |
| 8-Jul | 3 | 4 | 3 | 2 | 1 | 2 | 2 | 2 | 3 | 8 | 7 | 5 | 5 | 5 | 5 | 4 | 7 | 4 | 3 | 1 | 1 | 1 | 2 | 3 | 3.5 | 8.4 |
| 9-Jul | 1 | 2 | 1 | 5 | 3 | 2 | 3 | 7 | 6 | 11 | 11 | 11 | 14 | 12 | 10 | 9 | 7 | 7 | 5 | 4 | 2 | 5 | 9 | 6 | 6.5 | 14.1 |
| 10-Jul | 3 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 4 | 4 | 5 | 3 | 5 | 4 | 5 | 4 | 4 | 5 | 3 | 2 | 1 | 2 | 3.2 | 5.3 |
| 11-Jul | 4 | 3 | 2 | 1 | 2 | 2 | 2 | 4 | 3 | 4 | 7 | 8 | 9 | 9 | 13 | 18 | 20 | 17 | 14 | 12 | 6 | 1 | 2 | 2 | 6.9 | 19.9 |
| 12-Jul | 5 | 7 | 9 | 11 | 9 | 9 | 21 | 20 | 18 | 17 | 16 | 16 | 19 | 18 | 18 | 14 | 16 | 15 | 15 | 15 | 15 | 13 | 14 | 14 | 14.4 | 20.7 |
| 13-Jul | 13 | 12 | 11 | 10 | 10 | 13 | 12 | 12 | 12 | 12 | 13 | 12 | 12 | 12 | 13 | 11 | 11 | 11 | 10 | 7 | 5 | 4 | 6 | 5 | 10.4 | 13.4 |
| 14-Jul | 7 | 7 | 3 | 1 | 2 | 6 | 7 | 9 | 15 | 17 | 18 | 16 | 11 | 14 | 14 | 16 | 16 | 16 | 19 | 19 | 11 | 10 | 7 | 7 | 11.2 | 19.2 |
| 15-Jul | 6 | 5 | 3 | 3 | 5 | 6 | 9 | 10 | 15 | 17 | 18 | 19 | 20 | 21 | 22 | 19 | 18 | 16 | 16 | 15 | 15 | 14 | 14 | 9 | 13.0 | 21.5 |
| 16-Jul | 9 | 9 | 6 | 5 | 5 | 5 | 7 | 12 | 14 | 14 | 15 | 13 | 16 | 12 | 11 | 12 | 10 | 13 | 7 | 14 | 12 | 8 | 7 | 2 | 9.9 | 15.8 |
| 17-Jul | 2 | 1 | 2 | 3 | 2 | 1 | 4 | 6 | 7 | 7 | 7 | 9 | 7 | 8 | 6 | 7 | 8 | 4 | 5 | 6 | 5 | 2 | 2 | 1 | 4.7 | 9.1 |
| 18-Jul | 1 | 5 | 4 | 3 | 4 | 4 | 7 | 8 | 8 | 7 | 5 | 5 | 7 | 8 | 11 | 11 | 9 | 8 | 7 | 8 | 4 | 2 | 3 | 4 | 6.0 | 11.3 |
| 19-Jul | 5 | 3 | 4 | 3 | 2 | 4 | 5 | 7 | 9 | 7 | 8 | 8 | 7 | 10 | 8 | 7 | 6 | 5 | 9 | 10 | 4 | 2 | 1 | 1 | 5.7 | 10.4 |
| 20-Jul | 1 | 3 | 3 | 2 | 2 | 3 | 5 | 6 | 6 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 3 | 5 | 4 | 4 | 3 | 5 | 3 | 3 | 3.8 | 6.3 |
| 21-Jul | 2 | 1 | 2 | 2 | 1 | 1 | 3 | 2 | 3 | 4 | 3 | 5 | 6 | 5 | 6 | 8 | 9 | 5 | 4 | 4 | 6 | 5 | 3 | 3 | 3.9 | 8.8 |
| 22-Jul | 2 | 4 | 2 | 1 | 3 | 2 | 2 | 5 | 6 | 6 | 4 | 7 | 8 | 7 | 10 | 11 | 9 | 10 | 7 | 13 | 10 | 11 | 10 | 10 | 6.8 | 12.9 |
| 23-Jul | 9 | 9 | 7 | 7 | 7 | 6 | 7 | 11 | 10 | 12 | 12 | 12 | 14 | 14 | 17 | 15 | 14 | 16 | 12 | 10 | 5 | 5 | 6 | 5 | 10.2 | 17.3 |
| 24-Jul | 5 | 6 | 3 | 2 | 4 | 6 | 9 | 13 | 17 | 14 | 19 | 22 | 22 | 23 | 23 | 22 | 23 | 21 | 20 | 14 | 11 | 9 | 7 | 6 | 13.4 | 23.3 |
| 25-Jul | 4 | 6 | 8 | 6 | 7 | 7 | 8 | 11 | 15 | 14 | 14 | 12 | 12 | 12 | 12 | 9 | 12 | 11 | 10 | 11 | 5 | 5 | 8 | 8 | 9.5 | 15.1 |
| 26-Jul | 6 | 5 | 4 | 3 | 4 | 3 | 7 | 6 | 17 | 16 | 14 | 14 | 16 | 13 | 11 | 8 | 12 | 10 | 12 | 7 | 6 | 4 | 3 | 2 | 8.5 | 16.7 |
| 27-Jul | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 3 | 2 | 4 | 5 | 6 | 7 | 6 | 7 | 7 | 6 | 6 | 6 | 4 | 3 | 3 | 4 | 4 | 4.0 | 6.9 |
| 28-Jul | 3 | 2 | 2 | 1 | 1 | 2 | 2 | 3 | 5 | 3 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 14 | 13 | 11 | 4 | 7 | 7 | 6 | 4.8 | 14.5 |
| 29-Jul | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 5 | 6 | 6 | 5 | 6 | 5 | 4 | 6 | 5 | 5 | 9 | 8 | 9 | 11 | 5 | 3 | 5.0 | 10.6 |
| 30-Jul | 2 | 2 | 2 | 2 | 4 | 5 | 5 | 5 | 10 | 9 | 11 | 12 | 9 | 8 | 3 | 5 | 10 | 10 | 10 | 7 | 4 | 3 | 2 | 3 | 6.0 | 11.7 |
| 31-Jul | 3 | 4 | 4 | 2 | 3 | 3 | 3 | 5 | 4 | 5 | 5 | 6 | 5 | 5 | 7 | 5 | 5 | 4 | 3 | 3 | 1 | 2 | 1 | 2 | 3.7 | 6.7 |
| | 5.5 | 5.6 | 4.6 | 4.4 | 4.5 | 4.7 | 6.3 | 8.1 | 10.1 | 10.7 | 10.9 | 11.1 | 11.6 | 11.4 | 11.7 | 11.1 | 11.4 | 11.0 | 10.3 | 9.4 | 7.1 | 6.0 | 5.9 | 5.3 | Diurnal Average | |
| | 15.4 | 13.3 | 11.9 | 13.2 | 16.3 | 14.8 | 20.7 | 20.2 | 18.4 | 20.2 | 19.5 | 22.4 | 21.7 | 23.5 | 23.3 | 22.2 | 24.1 | 24.1 | 21.3 | 20.7 | 17.3 | 14.7 | 14.0 | 14.8 | Diurnal Maximum | |

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

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# Hourly Standard Deviations

## Wind Direction (WD) - deg

## Evergreen Park - July 2010

Maximum Value: 101.0 deg on Jul 10 10:00

Minimum Value: 3.4 deg on Jul 1 04:00

Percentiles: $P_1$ = 5.6 $P_{10}$ = 9.5 $Q_1$ = 13.0 Median = 19.7 $Q_3$ = 40.5 $P_{90}$ = 66.9 $P_{99}$ = 92.1

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 744 |
| Hours of Missing Data: | 0 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Maximum |
| 1-Jul | 8 | 6 | 5 | 3 | 13 | 9 | 7 | 10 | 13 | 11 | 16 | 15 | 13 | 15 | 13 | 10 | 11 | 11 | 10 | 9 | 8 | 8 | 8 | 13 | 15.6 |
| 2-Jul | 6 | 6 | 4 | 5 | 5 | 6 | 9 | 15 | 13 | 12 | 12 | 14 | 17 | 13 | 16 | 16 | 12 | 14 | 12 | 13 | 8 | 7 | 9 | 8 | 17.5 |
| 3-Jul | 7 | 24 | 16 | 16 | 18 | 12 | 15 | 15 | 8 | 10 | 12 | 15 | 16 | 14 | 12 | 11 | 9 | 11 | 11 | 11 | 11 | 9 | 10 | 8 | 24.1 |
| 4-Jul | 8 | 7 | 24 | 14 | 9 | 9 | 9 | 9 | 9 | 13 | 13 | 12 | 13 | 12 | 9 | 12 | 11 | 22 | 24 | 15 | 11 | 13 | 15 | 15 | 24.0 |
| 5-Jul | 11 | 13 | 13 | 10 | 16 | 11 | 15 | 14 | 13 | 21 | 17 | 20 | 20 | 18 | 21 | 25 | 15 | 15 | 14 | 14 | 12 | 6 | 7 | 6 | 24.7 |
| 6-Jul | 6 | 6 | 11 | 17 | 17 | 20 | 13 | 13 | 14 | 12 | 22 | 29 | 30 | 32 | 27 | 25 | 19 | 29 | 16 | 25 | 42 | 71 | 27 | 66 | 71.0 |
| 7-Jul | 43 | 90 | 52 | 10 | 16 | 17 | 34 | 16 | 35 | 22 | 41 | 30 | 58 | 40 | 39 | 42 | 45 | 44 | 60 | 26 | 60 | 80 | 80 | 83 | 89.7 |
| 8-Jul | 71 | 16 | 89 | 93 | 85 | 51 | 25 | 76 | 49 | 16 | 28 | 62 | 67 | 80 | 51 | 79 | 42 | 42 | 72 | 65 | 61 | 92 | 88 | 19 | 92.6 |
| 9-Jul | 88 | 85 | 80 | 47 | 41 | 35 | 37 | 19 | 27 | 19 | 23 | 29 | 20 | 22 | 26 | 21 | 20 | 39 | 45 | 66 | 73 | 84 | 26 | 46 | 87.7 |
| 10-Jul | 81 | 46 | 39 | 46 | 61 | 57 | 26 | 65 | 89 | 101 | 86 | 82 | 28 | 69 | 66 | 72 | 55 | 62 | 38 | 20 | 15 | 10 | 25 | 15 | 101.0 |
| 11-Jul | 12 | 21 | 16 | 80 | 21 | 18 | 22 | 28 | 32 | 24 | 20 | 16 | 18 | 23 | 24 | 18 | 12 | 12 | 16 | 15 | 20 | 95 | 28 | 61 | 94.8 |
| 12-Jul | 13 | 16 | 13 | 12 | 10 | 21 | 9 | 10 | 14 | 19 | 17 | 15 | 19 | 20 | 18 | 20 | 17 | 17 | 15 | 15 | 13 | 13 | 15 | 14 | 20.7 |
| 13-Jul | 16 | 12 | 12 | 11 | 13 | 11 | 12 | 12 | 13 | 15 | 14 | 13 | 16 | 15 | 12 | 16 | 16 | 16 | 12 | 18 | 17 | 19 | 12 | 11 | 18.5 |
| 14-Jul | 7 | 7 | 26 | 31 | 58 | 8 | 12 | 18 | 12 | 10 | 12 | 14 | 16 | 13 | 16 | 13 | 16 | 10 | 10 | 7 | 9 | 6 | 12 | 7 | 58.0 |
| 15-Jul | 7 | 7 | 8 | 24 | 23 | 19 | 10 | 11 | 11 | 15 | 13 | 15 | 15 | 15 | 15 | 14 | 13 | 18 | 16 | 18 | 12 | 10 | 9 | 7 | 23.6 |
| 16-Jul | 7 | 9 | 31 | 9 | 10 | 23 | 18 | 9 | 11 | 17 | 17 | 22 | 23 | 24 | 25 | 19 | 18 | 16 | 27 | 12 | 10 | 9 | 38 | 80 | 80.2 |
| 17-Jul | 51 | 59 | 25 | 33 | 46 | 88 | 23 | 20 | 24 | 29 | 34 | 35 | 57 | 68 | 60 | 44 | 35 | 35 | 34 | 22 | 10 | 81 | 88 | 94 | 93.7 |
| 18-Jul | 90 | 15 | 16 | 33 | 22 | 12 | 14 | 15 | 17 | 27 | 61 | 55 | 31 | 26 | 25 | 25 | 25 | 31 | 80 | 52 | 49 | 88 | 14 | 15 | 89.7 |
| 19-Jul | 13 | 22 | 33 | 17 | 37 | 18 | 16 | 19 | 17 | 24 | 26 | 28 | 32 | 19 | 38 | 36 | 55 | 35 | 67 | 20 | 67 | 92 | 79 | 72 | 92.5 |
| 20-Jul | 95 | 27 | 37 | 48 | 57 | 18 | 13 | 14 | 19 | 47 | 59 | 46 | 54 | 82 | 75 | 65 | 93 | 49 | 61 | 18 | 36 | 12 | 18 | 68 | 94.6 |
| 21-Jul | 20 | 77 | 49 | 80 | 73 | 97 | 16 | 38 | 36 | 30 | 81 | 41 | 41 | 46 | 55 | 56 | 58 | 21 | 26 | 30 | 35 | 54 | 47 | 59 | 97.3 |
| 22-Jul | 58 | 32 | 78 | 20 | 23 | 86 | 63 | 41 | 15 | 39 | 22 | 38 | 46 | 28 | 27 | 10 | 15 | 16 | 19 | 10 | 8 | 7 | 6 | 6 | 85.7 |
| 23-Jul | 8 | 6 | 7 | 10 | 8 | 9 | 10 | 12 | 15 | 17 | 18 | 22 | 20 | 16 | 19 | 21 | 18 | 13 | 16 | 11 | 13 | 14 | 13 | 13 | 21.6 |
| 24-Jul | 15 | 25 | 25 | 59 | 22 | 17 | 14 | 12 | 12 | 20 | 16 | 13 | 14 | 12 | 15 | 15 | 11 | 11 | 11 | 12 | 11 | 8 | 16 | 17 | 59.4 |
| 25-Jul | 23 | 14 | 15 | 10 | 8 | 10 | 12 | 11 | 13 | 15 | 19 | 22 | 20 | 24 | 29 | 30 | 27 | 28 | 24 | 20 | 20 | 10 | 6 | 6 | 30.1 |
| 26-Jul | 38 | 17 | 51 | 18 | 17 | 29 | 11 | 21 | 13 | 14 | 18 | 13 | 19 | 18 | 29 | 28 | 25 | 16 | 19 | 17 | 17 | 25 | 22 | 43 | 51.4 |
| 27-Jul | 30 | 84 | 41 | 49 | 61 | 69 | 58 | 52 | 59 | 46 | 52 | 48 | 39 | 42 | 54 | 67 | 34 | 37 | 28 | 23 | 11 | 8 | 8 | 12 | 83.5 |
| 28-Jul | 11 | 16 | 30 | 55 | 87 | 67 | 89 | 75 | 62 | 53 | 31 | 54 | 64 | 47 | 50 | 79 | 94 | 29 | 37 | 56 | 53 | 43 | 8 | 47 | 94.3 |
| 29-Jul | 81 | 42 | 73 | 91 | 56 | 76 | 69 | 52 | 38 | 17 | 16 | 48 | 38 | 65 | 30 | 37 | 21 | 47 | 14 | 23 | 27 | 26 | 30 | 58 | 91.4 |
| 30-Jul | 93 | 71 | 77 | 90 | 28 | 41 | 42 | 21 | 10 | 18 | 13 | 21 | 29 | 31 | 41 | 33 | 16 | 9 | 10 | 11 | 15 | 38 | 36 | 27 | 92.8 |
| 31-Jul | 29 | 34 | 26 | 52 | 19 | 14 | 20 | 20 | 29 | 33 | 38 | 47 | 48 | 68 | 34 | 71 | 70 | 79 | 58 | 47 | 25 | 26 | 31 | 38 | 78.9 |
| | 94.6 | 89.7 | 88.6 | 92.6 | 87.5 | 97.3 | 89.4 | 76.2 | 88.7 | 101.0 | 86.2 | 82.2 | 67.3 | 82.4 | 74.9 | 79.4 | 94.3 | 78.9 | 80.5 | 66.4 | 72.9 | 94.8 | 88.0 | 93.7 | |

# PASZA
# Smoky Heights Station
## Monthly Summary Tables, Graphs and Roses

PASZA
Peace Airshed Zone Association

# Hourly Averages

## Sulphur Dioxide ($SO_2$) - ppb

## Smoky Heights - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 5.8 ppb on Jul 15 07:00 Maximum Daily Average: 0.7 ppb on Jul 28

Minimum Value: 0 ppb on Jul 21 21:00 Minimum Daily Average: 0.1 ppb on Jul 13
Maximum Diurnal Average: 0.9 ppb at hour 7 Minimum Diurnal Average: 0.1 ppb at hour 17
Monthly Average: 0.32 ppb Percentiles: $P_1$ = 0.0 $P_{10}$ = 0.0 $Q_1$ = 0.1 Median = 0.1 $Q_3$ = 0.3 $P_{90}$ = 0.8 $P_{99}$ = 3.0

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 709 |
| Hours of Missing Data: | 35 |
| Hours of Calibration: | 34 |
| Percent Operational Time: | 99.9 |

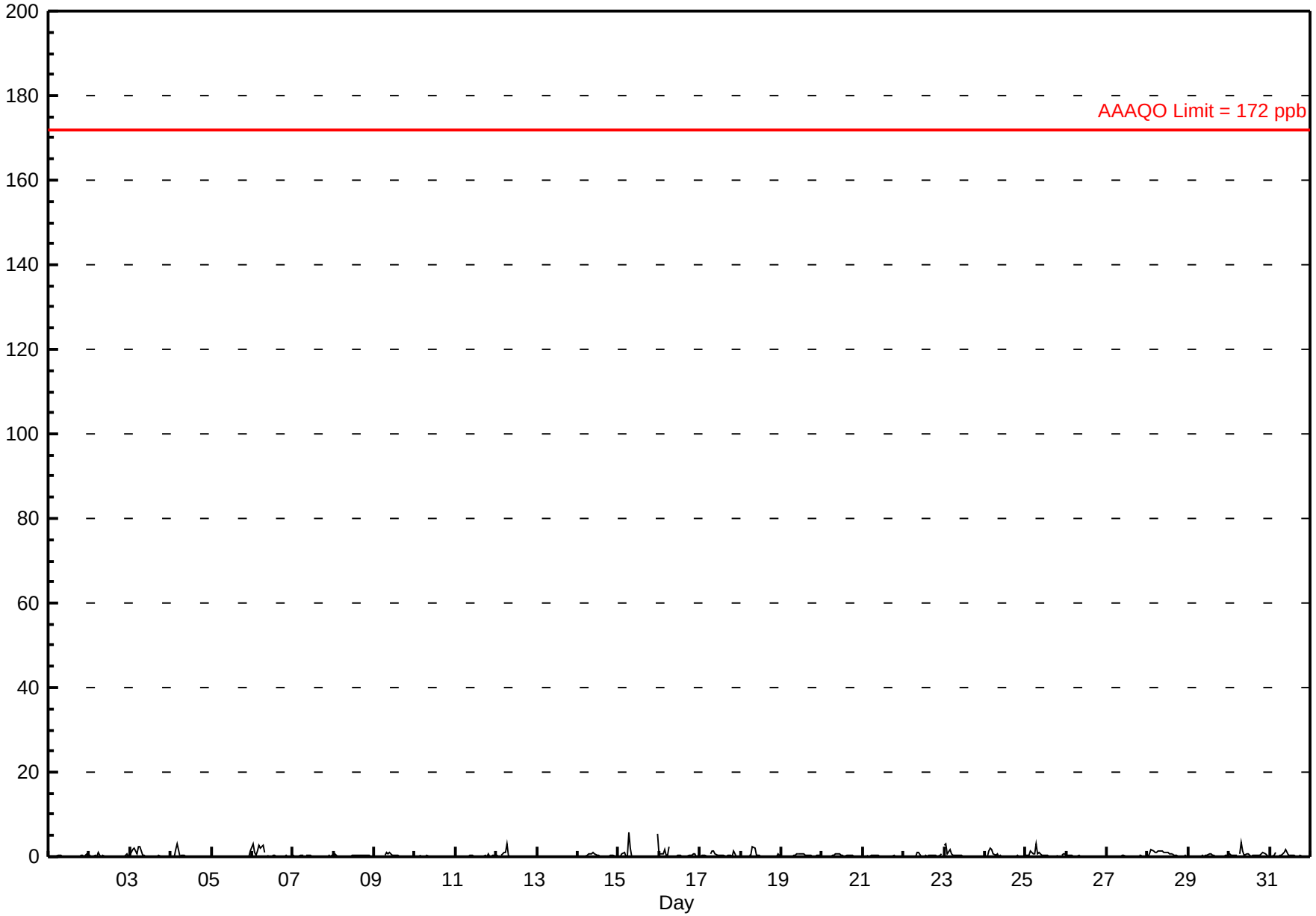
| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily Average | Daily Maximum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | |
| 1-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 | 0.6 |
| 2-Jul | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.2 | 1.0 |
| 3-Jul | 0 | 2 | 2 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 2.4 |
| 4-Jul | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 2.9 |
| 5-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 | 1.5 |
| 6-Jul | 3 | 1 | 0 | 1 | 3 | 2 | 3 | 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.7 | 3.0 |
| 7-Jul | 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 |
| 8-Jul | 0 | 1 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.5 |
| 9-Jul | 0 | 0 | 0 | 0 | 0 | A | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 1.2 |
| 10-Jul | 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 |
| 11-Jul | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.1 | 0.6 |
| 12-Jul | 0 | 0 | A | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 3.1 |
| 13-Jul | 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 |
| 14-Jul | A | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0.3 | 0.9 |
| 15-Jul | 0 | 0 | 1 | 1 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 5 | 0.7 | 5.8 |
| 16-Jul | 1 | 1 | 1 | 2 | 0 | 0 | 2 | C | C | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0.5 | 2.5 |
| 17-Jul | 0 | 0 | 0 | 0 | 0 | A | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.4 | 1.3 |
| 18-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.3 | 2.3 |
| 19-Jul | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.7 |
| 20-Jul | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.7 |
| 21-Jul | 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 |
| 22-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | A | 0.2 | 0.9 |
| 23-Jul | 3 | 3 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0.5 | 3.1 |
| 24-Jul | 0 | 0 | 1 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0.4 | 2.1 |
| 25-Jul | 1 | 0 | 0 | 1 | 1 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 1 | 1 | 0.5 | 3.0 |
| 26-Jul | 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 | 0.3 |
| 27-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | N | 0 | A | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.3 |
| 28-Jul | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.7 | 1.7 |
| 29-Jul | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.7 |
| 30-Jul | 1 | 0 | 0 | 0 | 0 | A | 1 | 4 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0.6 | 3.5 |
| 31-Jul | 0 | 0 | 0 | 1 | A | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 1.8 |
| | 0.4 | 0.4 | 0.4 | 0.6 | 0.5 | 0.4 | 0.9 | 0.7 | 0.5 | 0.4 | 0.3 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.2 | 0.4 | Diurnal Average | |
| | 3.0 | 3.1 | 2.1 | 2.1 | 2.9 | 2.3 | 5.8 | 3.5 | 2.1 | 1.8 | 1.1 | 1.1 | 0.9 | 0.8 | 0.7 | 0.5 | 0.4 | 0.4 | 0.5 | 0.7 | 1.3 | 0.6 | 0.8 | 5.4 | Diurnal Maximum | |

C - Calibration N - Not Valid A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 57 ppb

## Hourly Averages

**Sulphur Dioxide ($SO_2$) - ppb**

**Smoky Heights - July 2010**



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# Hourly Maximums

## Sulphur Dioxide ($SO_2$) - ppb

## Smoky Heights - July 2010

Maximum Value: 22.3 ppb on Jul 12 07:00

Maximum Daily Average: 1.7 ppb on Jul 23

Minimum Value: 0 ppb on Jul 22 00:00

Minimum Daily Average: 0.4 ppb on Jul 13

Maximum Diurnal Average: 2.4 ppb at hour 7

Minimum Diurnal Average: 0.5 ppb at hour 16

Monthly Average: 0.92 ppb

Percentiles: $P_1 = 0.2$ $P_{10} = 0.3$ $Q_1 = 0.4$ Median = 0.5 $Q_3 = 0.8$ $P_{90} = 1.8$ $P_{99} = 6.4$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 709 |
| Hours of Missing Data: | 35 |
| Hours of Calibration: | 34 |
| 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-Jul | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 2 | 0 | 0.6 | 2.1 |
| 2-Jul | 1 | 0 | 0 | 1 | 0 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0.6 | 1.6 |
| 3-Jul | 1 | 3 | 4 | 3 | 1 | 6 | 6 | 1 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1.3 | 6.2 |
| 4-Jul | 0 | 0 | 0 | 7 | 6 | 0 | 0 | 1 | 1 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.9 | 6.5 |
| 5-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0.6 | 5.4 |
| 6-Jul | 7 | 2 | 1 | 2 | 4 | 4 | 5 | 2 | A | 2 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1.5 | 7.4 |
| 7-Jul | 1 | 0 | 0 | 0 | 1 | 1 | 1 | A | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0.5 | 1.0 |
| 8-Jul | 1 | 2 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0.6 | 2.1 |
| 9-Jul | 0 | 1 | 0 | 0 | 0 | A | 1 | 3 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.7 | 3.2 |
| 10-Jul | 0 | 0 | 0 | 1 | A | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 1.5 |
| 11-Jul | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 1 | 0.5 | 1.6 |
| 12-Jul | 1 | 0 | A | 1 | 2 | 2 | 22 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1.5 | 22.3 |
| 13-Jul | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.6 |
| 14-Jul | A | 0 | 0 | 0 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | 2 | 0 | A | 1.1 | 2.3 |
| 15-Jul | 0 | 0 | 2 | 4 | 0 | 3 | 10 | 4 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | A | 8 | 1.7 | 9.6 |
| 16-Jul | 2 | 1 | 2 | 5 | 1 | 4 | 4 | C | C | C | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 2 | 0 | 1 | 1.3 | 5.4 |
| 17-Jul | 0 | 1 | 1 | 1 | 0 | A | 2 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 6 | 0 | 0 | 1 | 1.2 | 5.9 |
| 18-Jul | 1 | 0 | 0 | 0 | A | 1 | 1 | 4 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0.8 | 3.7 |
| 19-Jul | 0 | 0 | 0 | A | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0.7 | 1.1 |
| 20-Jul | 0 | 0 | A | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0.6 | 1.3 |
| 21-Jul | 0 | A | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0.5 | 0.7 |
| 22-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | A | 0.9 | 4.5 |
| 23-Jul | 5 | 15 | 3 | 5 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | A | 0 | 1.7 | 15.1 |
| 24-Jul | 0 | 1 | 3 | 7 | 6 | 2 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | A | 1 | 1 | 1.3 | 6.8 |
| 25-Jul | 1 | 1 | 1 | 2 | 1 | 3 | 6 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | A | 1 | 4 | 1 | 1.4 | 5.5 |
| 26-Jul | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | A | 0 | 0 | 0 | 0 | 0.5 | 0.9 |
| 27-Jul | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | N | 1 | A | 1 | 1 | 0 | 0 | 0 | 0.4 | 0.8 |
| 28-Jul | 1 | 1 | 3 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1.2 | 2.5 |
| 29-Jul | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0.6 | 1.3 |
| 30-Jul | 1 | 1 | 1 | 1 | 1 | A | 2 | 8 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 2 | 1 | 2 | 4 | 2 | 1 | 0 | 1.6 | 8.2 |
| 31-Jul | 0 | 1 | 1 | 3 | A | 0 | 1 | 1 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1.0 | 3.5 |
| | 1.0 | 1.2 | 0.9 | 1.7 | 1.2 | 1.3 | 2.4 | 1.6 | 1.3 | 1.0 | 0.7 | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.5 | 0.6 | 0.8 | 0.6 | 0.8 | 1.0 | Diurnal Average | |
| | 7.4 | 15.1 | 3.5 | 6.8 | 6.1 | 5.7 | 22.3 | 8.2 | 5.8 | 4.0 | 2.3 | 1.5 | 1.3 | 1.2 | 1.0 | 0.9 | 0.8 | 1.6 | 1.5 | 1.9 | 5.9 | 2.4 | 4.1 | 8.3 | Diurnal Maximum | |

C - Calibration N - Not Valid A - Automated Daily Zero Span

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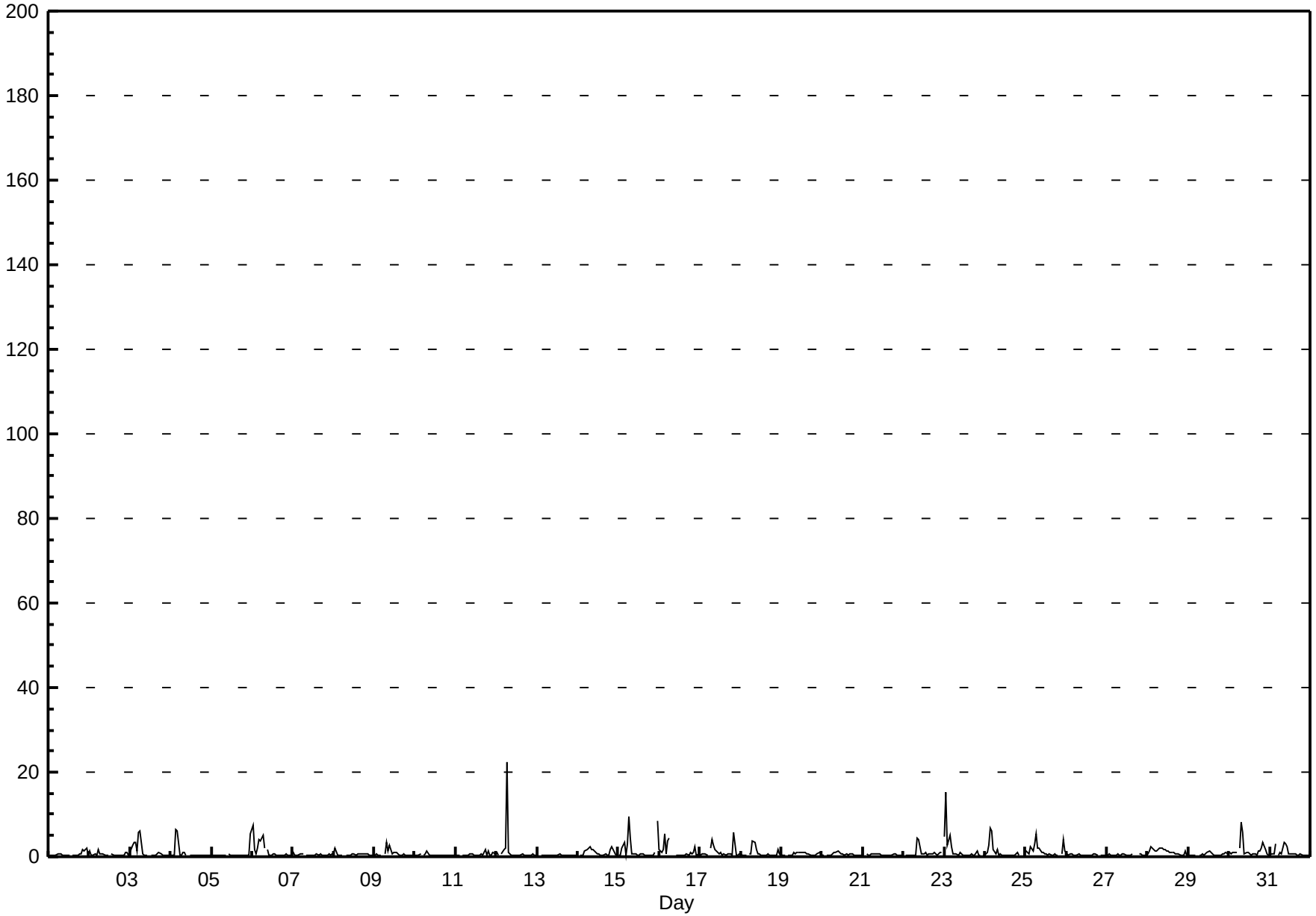
## Hourly Maximums

**Sulphur Dioxide ($SO_2$) - ppb**

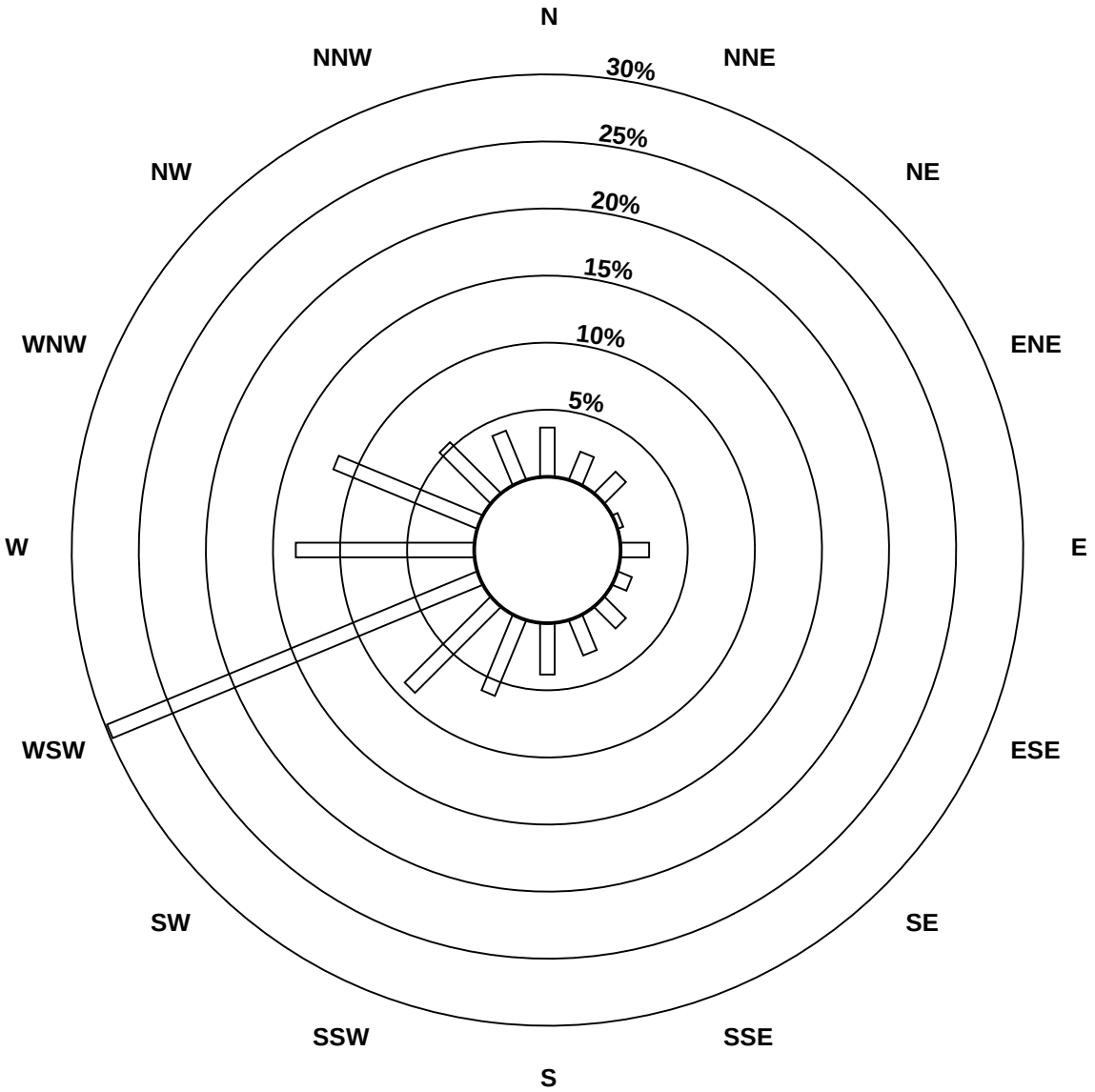
**Smoky Heights - July 2010**



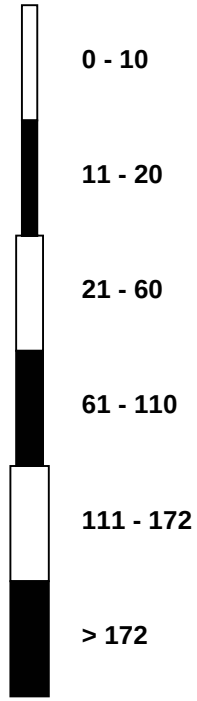
# Pollutant Rose

**Sulphur Dioxide ($SO_2$) - ppb**

**Smoky Heights - July 2010**




**Pollutant Classes (ppb)**



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# Hourly Averages

## Total Reduced Sulphur (TRS) - ppb

## Smoky Heights - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 1.3 ppb on Jul 9 07:00 Maximum Daily Average: 0.5 ppb on Jul 9

Minimum Value: 0 ppb on Jul 20 12:00 Minimum Daily Average: 0.3 ppb on Jul 7
Maximum Diurnal Average: 0.5 ppb at hour 7 Minimum Diurnal Average: 0.3 ppb at hour 17
Monthly Average: 0.35 ppb Percentiles: $P_1 = 0.2$ $P_{10} = 0.2$ $Q_1 = 0.3$ Median = 0.3 $Q_3 = 0.4$ $P_{90} = 0.5$ $P_{99} = 0.6$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 709 |
| Hours of Missing Data: | 35 |
| Hours of Calibration: | 34 |
| Percent Operational Time: | 99.9 |

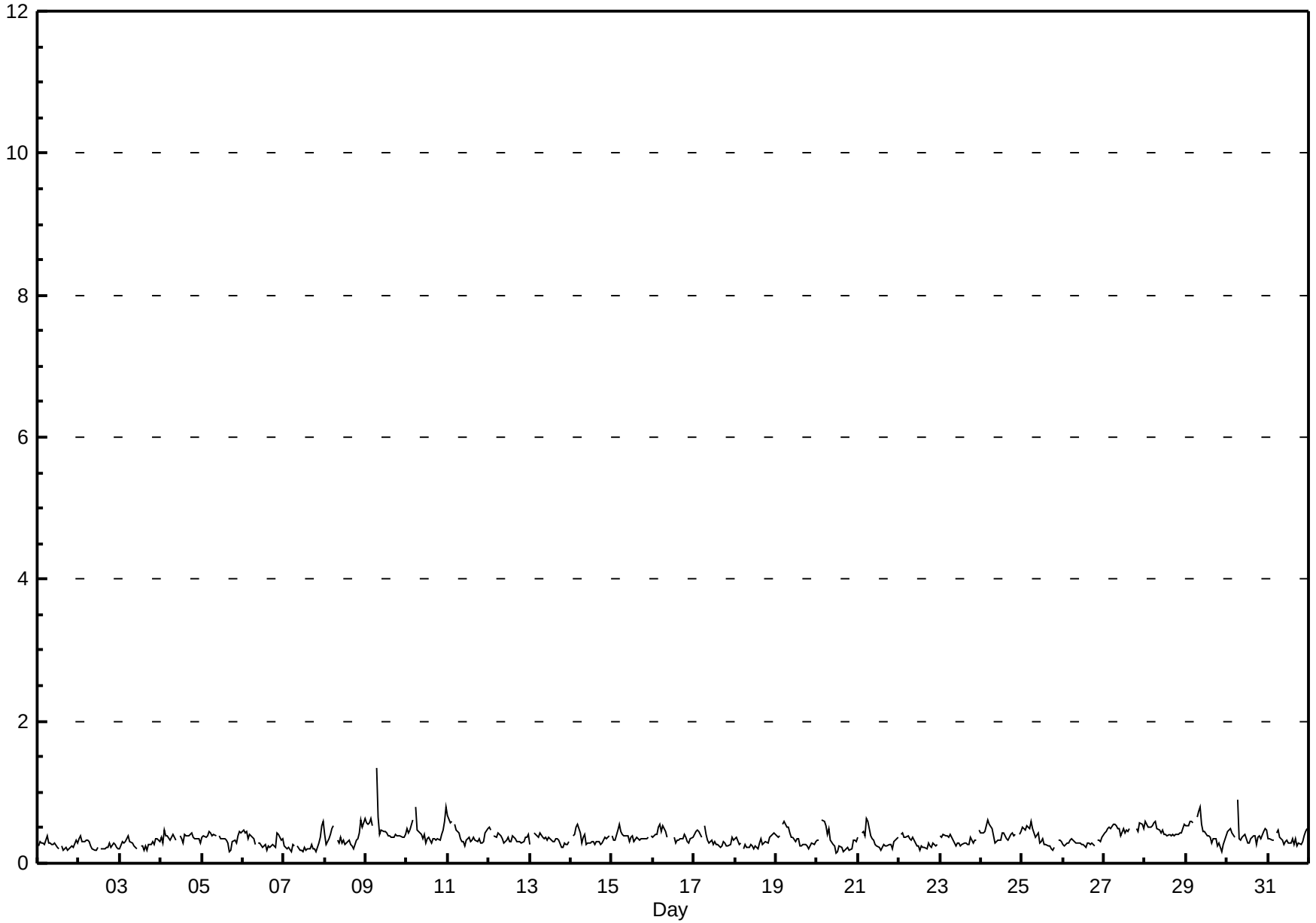
| Day | Hourly Period Ending At (MST) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Daily Average | Daily Maximum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Jul | 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 |
| 2-Jul | 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 |
| 3-Jul | 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 |
| 4-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.5 |
| 5-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.5 |
| 6-Jul | 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 | 0.5 |
| 7-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.3 | 0.6 |
| 8-Jul | 0 | 0 | 0 | 0 | 0 | 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0.4 | 0.6 |
| 9-Jul | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 1.3 |
| 10-Jul | 0 | 0 | 0 | 1 | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.4 | 0.8 |
| 11-Jul | 1 | 1 | 1 | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.7 |
| 12-Jul | 1 | 0 | A | 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 |
| 13-Jul | 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 | 0.4 |
| 14-Jul | A | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0.3 | 0.6 |
| 15-Jul | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0.4 | 0.6 |
| 16-Jul | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | C | C | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.6 |
| 17-Jul | 0 | 0 | 0 | 0 | 0 | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.5 |
| 18-Jul | 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 |
| 19-Jul | 0 | 0 | 0 | A | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.6 |
| 20-Jul | 0 | 0 | A | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.6 |
| 21-Jul | 0 | A | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.6 |
| 22-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0.3 | 0.4 |
| 23-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0.3 | 0.5 |
| 24-Jul | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0.4 | 0.6 |
| 25-Jul | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0.4 | 0.6 |
| 26-Jul | 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 |
| 27-Jul | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | N | 0 | A | 0 | 0 | 1 | 1 | 0 | 0.5 | 0.6 |
| 28-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.5 | 0.6 |
| 29-Jul | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.8 |
| 30-Jul | 0 | 0 | 0 | 0 | 0 | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.9 |
| 31-Jul | 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 | 0.5 |
| Diurnal Average | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 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 | 0.4 | 0.4 | | |
| Diurnal Maximum | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.8 | 1.3 | 0.7 | 0.8 | 0.5 | 0.5 | 0.5 | 0.4 | 0.5 | 0.4 | 0.5 | 0.4 | 0.4 | 0.4 | 0.5 | 0.4 | 0.6 | 0.6 | 0.8 | | |

C - Calibration N - Not Valid A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb

## Hourly Averages

**Total Reduced Sulphur (TRS) - ppb**

**Smoky Heights - July 2010**



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# Hourly Maximums

## Total Reduced Sulphur (TRS) - ppb

## Smoky Heights - July 2010

Maximum Value: 1.9 ppb on Jul 9 07:00

Maximum Daily Average: 0.9 ppb on Jul 9

Minimum Value: 0 ppb on Jul 2 15:00

Minimum Daily Average: 0.6 ppb on Jul 7

Maximum Diurnal Average: 0.9 ppb at hour 7

Minimum Diurnal Average: 0.7 ppb at hour 17

Monthly Average: 0.75 ppb

Percentiles: $P_1 = 0.5$ $P_{10} = 0.6$ $Q_1 = 0.7$ Median = 0.7 $Q_3 = 0.8$ $P_{90} = 0.9$ $P_{99} = 1.2$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 709 |
| Hours of Missing Data: | 35 |
| Hours of Calibration: | 34 |
| 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-Jul | 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 |
| 2-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.7 | 0.9 |
| 3-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.6 | 0.8 |
| 4-Jul | 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 | 1.0 |
| 5-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.8 | 0.9 |
| 6-Jul | 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 | 0.9 |
| 7-Jul | 1 | 1 | 0 | 1 | 1 | 1 | 1 | A | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0.6 | 1.2 |
| 8-Jul | 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 | 1.2 |
| 9-Jul | 1 | 1 | 1 | 1 | 1 | A | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.9 |
| 10-Jul | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.4 |
| 11-Jul | 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 | 1.3 |
| 12-Jul | 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 | 0.9 |
| 13-Jul | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.7 | 0.8 |
| 14-Jul | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 0.8 | 0.9 |
| 15-Jul | 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 |
| 16-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.8 | 1.0 |
| 17-Jul | 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 | 1.1 |
| 18-Jul | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.7 | 0.9 |
| 19-Jul | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0.7 | 0.9 |
| 20-Jul | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.7 | 1.3 |
| 21-Jul | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.8 | 1.2 |
| 22-Jul | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 0.7 | 0.9 |
| 23-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 0.7 | 1.0 |
| 24-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 0.8 | 1.0 |
| 25-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 0.7 | 0.9 |
| 26-Jul | 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 | 0.9 |
| 27-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | N | 1 | A | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.0 |
| 28-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.8 | 1.0 |
| 29-Jul | 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 | 1.3 |
| 30-Jul | 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 | 1.4 |
| 31-Jul | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.7 | 0.9 |
| | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | Diurnal Average | |
| | 1.3 | 1.0 | 1.0 | 1.3 | 1.1 | 1.4 | 1.9 | 1.2 | 1.3 | 0.9 | 1.0 | 0.9 | 0.8 | 0.9 | 0.9 | 0.9 | 0.8 | 1.0 | 0.9 | 0.9 | 1.0 | 1.3 | 1.0 | 1.2 | Diurnal Maximum | |

C - Calibration N - Not Valid A - Automated Daily Zero Span

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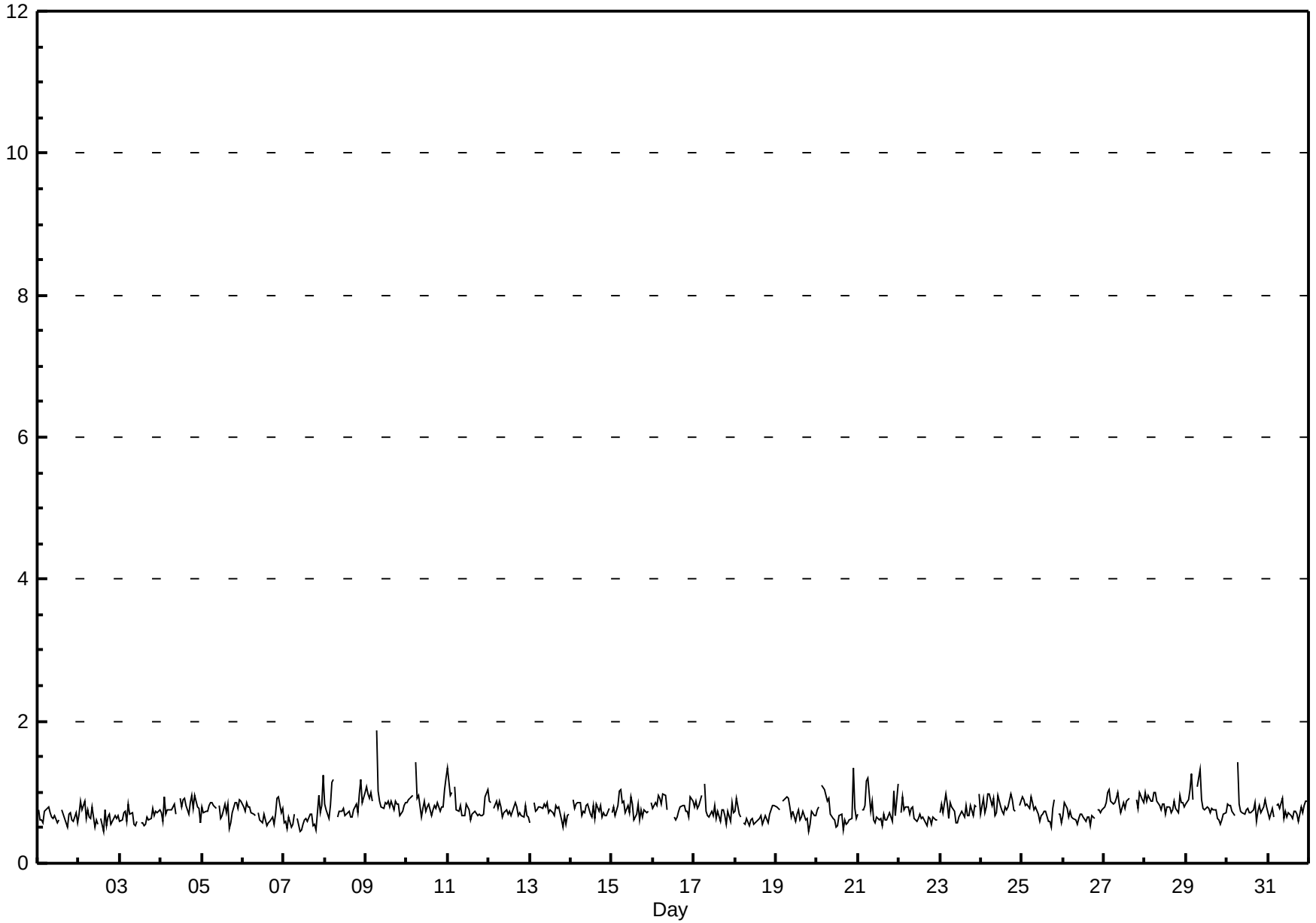
## Hourly Maximums

**Total Reduced Sulphur (TRS) - ppb**

**Smoky Heights - July 2010**



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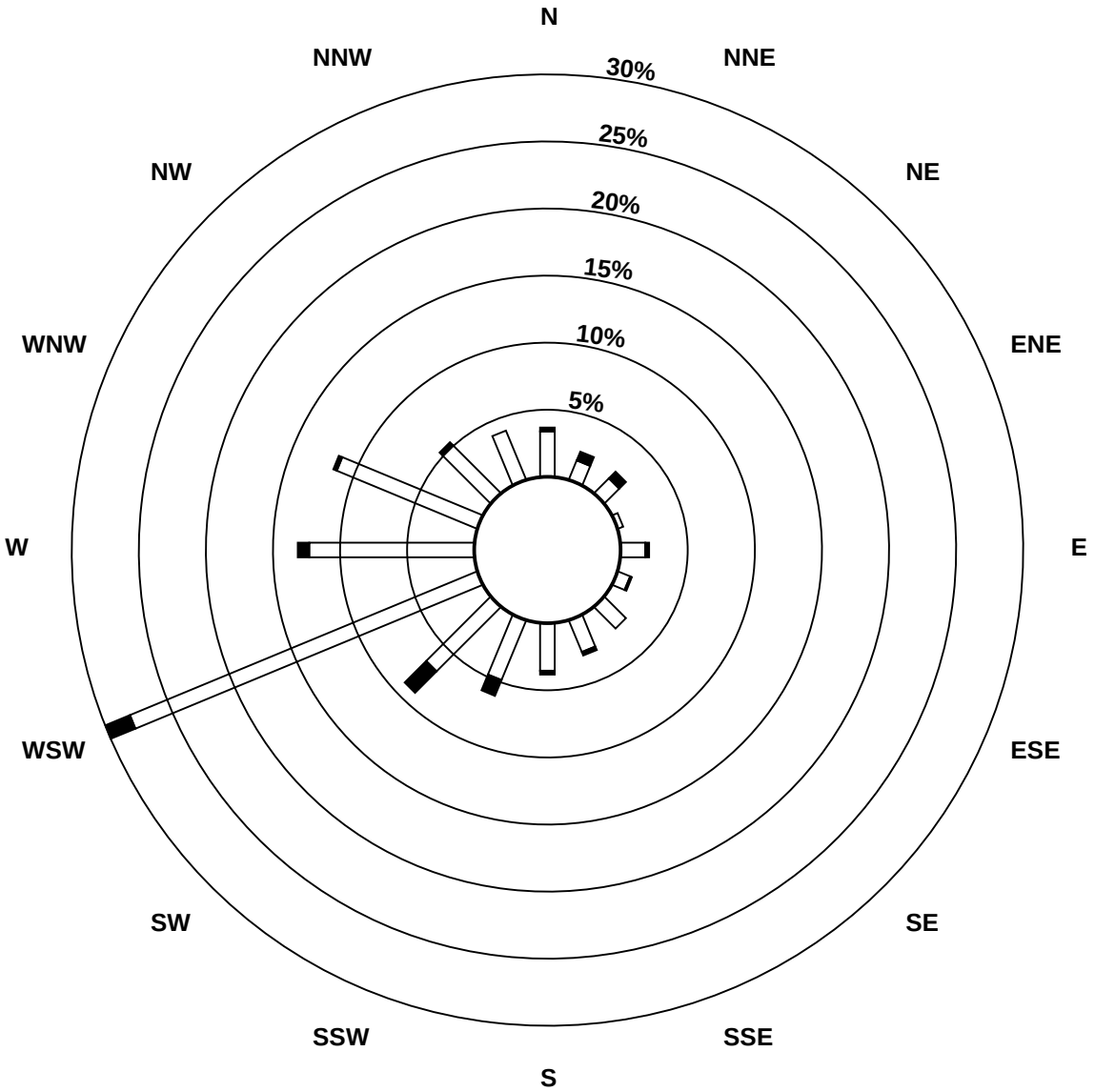
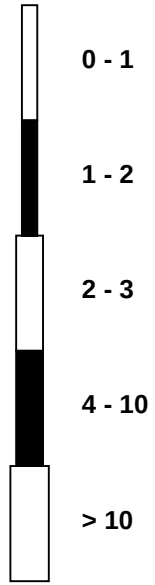
# Pollutant Rose

**Total Reduced Sulphur (TRS) - ppb**

**Smoky Heights - July 2010**




**Pollutant Classes (ppb)**



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# Hourly Averages

## Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

## Smoky Heights - July 2010

Number of Exceedences: 1-hr: 0 24-hr: 0
Maximum Value: 79.9 $\mu g/m^3$ on Jul 25 22:00
Maximum Daily Average: 9.4 $\mu g/m^3$ on Jul 28

Minimum Value: 0 $\mu g/m^3$ on Jul 1 04:00
Maximum Diurnal Average: 7.7 $\mu g/m^3$ at hour 22
Monthly Average: 3.90 $\mu g/m^3$
Minimum Daily Average: 1.3 $\mu g/m^3$ on Jul 4
Minimum Diurnal Average: 2.3 $\mu g/m^3$ at hour 3
Percentiles: $P_1$ = 0.0 $P_{10}$ = 0.2 $Q_1$ = 1.1 Median = 2.4 $Q_3$ = 4.9 $P_{90}$ = 9.0 $P_{99}$ = 20.8

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 740 |
| Hours of Missing Data: | 4 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 99.5 |

| 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-Jul | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 2 | 2 | 3 | 5 | 21 | 2 | 1.7 | 21.3 |
| 2-Jul | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 6 | 3 | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 4 | 4 | 5 | 2.2 | 6.3 |
| 3-Jul | 2 | 3 | 3 | 4 | 3 | 2 | 2 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 1.8 | 4.2 |
| 4-Jul | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 1 | 4 | 0 | 2 | 4 | 2 | 1 | 0 | 1.3 | 4.4 |
| 5-Jul | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 2 | 2 | 2 | 5 | 4 | 6 | 2 | 1.4 | 5.6 |
| 6-Jul | 0 | 1 | 0 | 1 | 2 | 2 | 3 | 3 | 4 | 0 | 2 | 2 | 3 | 6 | 5 | 3 | 4 | 4 | 6 | 3 | 16 | 13 | 7 | 2 | 3.9 | 16.1 |
| 7-Jul | 3 | 0 | 1 | 2 | 3 | 3 | 4 | 4 | 3 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 3 | 4 | 5 | 6 | 34 | 17 | 17 | 10 | 5.5 | 33.5 |
| 8-Jul | 10 | 10 | 6 | 5 | 5 | 5 | 5 | 2 | 1 | 1 | 0 | 0 | 1 | 2 | 5 | 4 | 1 | 2 | 4 | 4 | 10 | 6 | 10 | 17 | 4.9 | 16.9 |
| 9-Jul | 8 | 7 | 5 | 15 | 9 | 8 | 13 | 17 | 13 | 10 | 7 | 7 | 7 | 4 | 4 | 5 | 5 | 4 | 1 | 4 | 0 | 17 | 5 | 2 | 7.3 | 17.1 |
| 10-Jul | 1 | 3 | 2 | 6 | 3 | 3 | 3 | 3 | 2 | 2 | 0 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 2 | 3 | 6 | 2 | 2 | 2.0 | 6.3 |
| 11-Jul | 0 | 0 | 1 | 0 | 1 | 3 | 3 | 3 | 4 | 4 | 5 | 3 | 0 | 2 | 3 | 0 | BD | 0 | 0 | 0 | 0 | 1 | 10 | 4 | 2.1 | 10.3 |
| 12-Jul | 2 | 2 | 2 | 0 | 0 | 2 | 1 | 3 | 4 | 3 | 0 | 0 | 0 | 1 | 4 | 2 | 3 | 0 | 1 | 1 | 3 | 1 | 1 | 0 | 1.5 | 4.1 |
| 13-Jul | 0 | 1 | 1 | 0 | 1 | 1 | 2 | 3 | 3 | 4 | 4 | 5 | 4 | 5 | 5 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 2.7 | 4.9 |
| 14-Jul | 1 | 3 | 0 | 2 | 1 | 5 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 4 | 5 | 1 | 3 | 4 | 3 | 1.5 | 5.3 |
| 15-Jul | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 0 | 0 | 2 | 1 | 1 | 3 | 1 | 0 | 2 | 2 | 2 | 7 | 1 | 2 | 0 | 0 | 1.6 | 7.0 |
| 16-Jul | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 4 | 5 | 2 | 7 | 13 | 5 | 3 | 3 | 8 | 6 | 6 | 5 | 5 | 1 | 1 | 3.2 | 13.2 |
| 17-Jul | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 4 | 1 | 2 | 3 | 2 | 1 | 5 | 3 | 6 | 4 | 5 | 6 | 2 | 2.5 | 6.1 |
| 18-Jul | 2 | 2 | 6 | 1 | 1 | 2 | 2 | 3 | 2 | 0 | 2 | 2 | 1 | 0 | 9 | 2 | 0 | 1 | 5 | 6 | 3 | 2 | 2 | 0 | 2.3 | 8.9 |
| 19-Jul | 1 | 1 | 0 | 1 | 2 | 3 | 5 | 5 | 5 | 1 | 4 | 1 | 6 | 3 | 3 | 0 | 3 | 3 | 3 | 5 | 6 | 3 | 4 | 3 | 2.9 | 5.8 |
| 20-Jul | 4 | 2 | 1 | 1 | 2 | 7 | 8 | 5 | 5 | 5 | 6 | 0 | 3 | 7 | BD | 0 | 2 | 6 | 4 | 2 | 3 | 2 | 3 | 2 | 3.5 | 8.3 |
| 21-Jul | 3 | 1 | 1 | 1 | 0 | 5 | 5 | 5 | 7 | 8 | 6 | 2 | 3 | 2 | 3 | 2 | 3 | 9 | 3 | 7 | 3 | 3 | 3 | 4 | 3.7 | 9.1 |
| 22-Jul | 3 | 3 | 4 | 3 | 4 | 7 | 5 | 5 | 10 | 3 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 6 | 1 | 1 | 1 | 3 | 2 | 0 | 2.6 | 10.0 |
| 23-Jul | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 1 | 1 | 0 | 0 | 0 | 2 | 3 | 7 | 2 | 5 | 7 | 1 | 2 | 2 | 0 | 21 | 2.6 | 21.0 |
| 24-Jul | 26 | 7 | 4 | 3 | 3 | 5 | BD | 0 | 0 | 2 | 3 | 7 | 2 | 1 | 0 | 1 | 1 | 2 | 0 | 1 | 2 | 4 | 60 | 15 | 6.5 | 59.8 |
| 25-Jul | 4 | 2 | 2 | 2 | 6 | 2 | 1 | 1 | 1 | 2 | 3 | 5 | 3 | 1 | 3 | 1 | 8 | 3 | 7 | 10 | 11 | 80 | 12 | 8 | 7.4 | 79.9 |
| 26-Jul | 5 | 2 | 2 | 4 | 4 | 5 | 6 | 6 | 3 | 1 | 2 | 3 | 5 | 2 | 2 | 4 | 3 | 5 | 11 | 12 | 15 | 10 | 6 | 5 | 5.1 | 15.3 |
| 27-Jul | 3 | 2 | 1 | 3 | 3 | 6 | 11 | 2 | 6 | 5 | 2 | 0 | 0 | 3 | 1 | 1 | N | 3 | 3 | 4 | 5 | 13 | 9 | 9 | 4.2 | 13.4 |
| 28-Jul | 8 | 8 | 8 | 9 | 9 | 11 | 12 | 10 | 9 | 10 | 13 | 14 | 11 | 10 | 7 | 7 | 6 | 16 | 29 | 0 | 8 | 0 | 6 | 3 | 9.4 | 29.3 |
| 29-Jul | 4 | 3 | 1 | 0 | 5 | 4 | 10 | 9 | 7 | 10 | 12 | 11 | 12 | 10 | 1 | 11 | 14 | 14 | 19 | 18 | 12 | 12 | 8 | 10 | 9.0 | 19.2 |
| 30-Jul | 15 | 9 | 9 | 11 | 15 | 9 | 10 | 10 | 15 | 9 | 5 | 7 | 8 | 19 | 7 | 16 | 0 | 5 | 16 | 6 | 8 | 7 | 3 | 2 | 9.3 | 19.2 |
| 31-Jul | 8 | 7 | 5 | 4 | 0 | 5 | 5 | 6 | 4 | 4 | 4 | 3 | 0 | 5 | 1 | 6 | 2 | 3 | 5 | 7 | 7 | 7 | 18 | 6 | 5.1 | 17.6 |
| | 4.0 | 2.9 | 2.3 | 2.8 | 2.9 | 3.7 | 4.4 | 3.7 | 3.6 | 3.2 | 3.2 | 2.8 | 2.7 | 3.5 | 2.7 | 2.9 | 2.7 | 4.1 | 5.0 | 4.5 | 5.8 | 7.7 | 7.6 | 4.7 | Diurnal Average | |
| | 26.4 | 9.9 | 8.9 | 14.7 | 14.7 | 10.6 | 12.9 | 16.7 | 14.7 | 10.4 | 13.0 | 13.6 | 12.2 | 19.2 | 8.9 | 16.1 | 14.0 | 15.7 | 29.3 | 17.8 | 33.5 | 79.9 | 59.8 | 21.0 | Diurnal Maximum | |

N - Not Valid BD - Baseline Drift
Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 $\mu g/m^3$ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 $\mu g/m^3$

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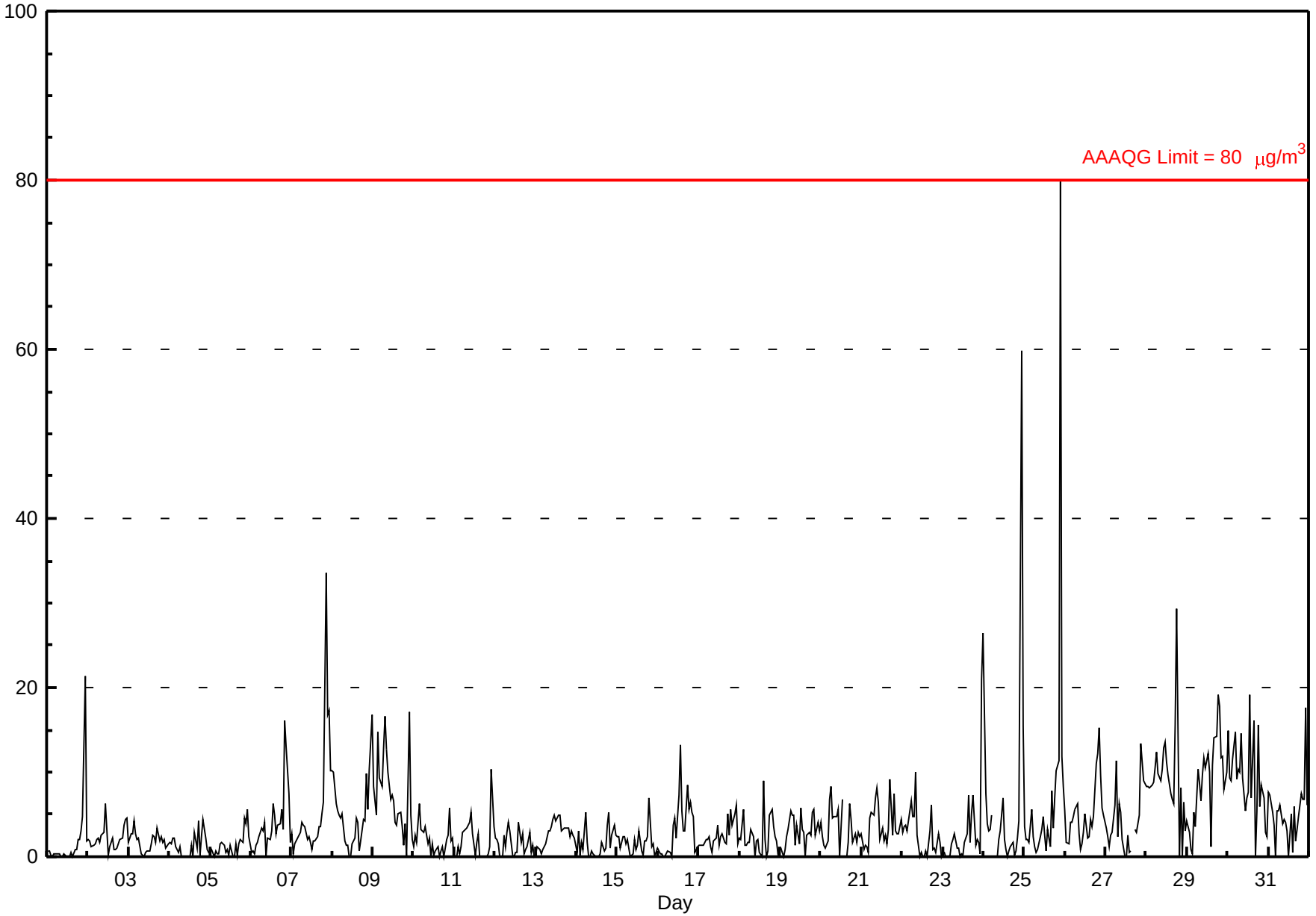
## Hourly Averages

**Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$**

**Smoky Heights - July 2010**



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# Hourly Maximums

## Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

## Smoky Heights - July 2010

Maximum Value: 201.1 $\mu g/m^3$ on Jul 25 22:00

Maximum Daily Average: 21.3 $\mu g/m^3$ on Jul 30

Minimum Value: 0 $\mu g/m^3$ on Jul 1 09:00

Minimum Daily Average: 3.6 $\mu g/m^3$ on Jul 3

Maximum Diurnal Average: 20.6 $\mu g/m^3$ at hour 22

Minimum Diurnal Average: 4.9 $\mu g/m^3$ at hour 3

Monthly Average: 10.63 $\mu g/m^3$

Percentiles: $P_1$ = 1.1 $P_{10}$ = 2.5 $Q_1$ = 4.2 Median = 7.0 $Q_3$ = 12.0 $P_{90}$ = 20.9 $P_{99}$ = 48.0

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 743 |
| Hours of Missing Data: | 1 |
| Hours of Calibration: | 0 |
| 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-Jul | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 4 | 0 | 1 | 7 | 1 | 1 | 1 | 6 | 2 | 7 | 3 | 6 | 5 | 11 | 15 | 88 | 6 | 7.3 | 87.9 |
| 2-Jul | 3 | 5 | 4 | 2 | 3 | 4 | 5 | 4 | 12 | 5 | 14 | 11 | 2 | 4 | 9 | 3 | 3 | 2 | 4 | 4 | 4 | 9 | 9 | 7 | 5.6 | 14.2 |
| 3-Jul | 3 | 4 | 4 | 6 | 5 | 4 | 3 | 3 | 3 | 2 | 2 | 3 | 2 | 5 | 4 | 4 | 3 | 6 | 4 | 4 | 5 | 3 | 2 | 3 | 3.6 | 6.2 |
| 4-Jul | 3 | 3 | 4 | 5 | 3 | 3 | 4 | 1 | 0 | 0 | 1 | 1 | 2 | 9 | 6 | 12 | 7 | 15 | 4 | 4 | 9 | 4 | 2 | 2 | 4.3 | 15.1 |
| 5-Jul | 2 | 2 | 1 | 2 | 2 | 1 | 3 | 4 | 4 | 3 | 3 | 3 | 4 | 2 | 2 | 3 | 2 | 5 | 5 | 4 | 7 | 9 | 16 | 6 | 4.0 | 16.1 |
| 6-Jul | 2 | 3 | 2 | 2 | 3 | 4 | 6 | 5 | 7 | 4 | 5 | 8 | 6 | 19 | 12 | 8 | 8 | 8 | 15 | 6 | 63 | 30 | 21 | 4 | 10.4 | 63.4 |
| 7-Jul | 5 | 1 | 3 | 3 | 4 | 5 | 8 | 8 | 5 | 5 | 5 | 4 | 4 | 7 | 4 | 8 | 7 | 11 | 11 | 9 | 53 | 43 | 33 | 17 | 11.0 | 53.3 |
| 8-Jul | 15 | 17 | 11 | 16 | 16 | 15 | 14 | 8 | 5 | 7 | 3 | 3 | 8 | 5 | 8 | 7 | 4 | 4 | 10 | 11 | 25 | 25 | 20 | 34 | 12.1 | 33.8 |
| 9-Jul | 10 | 9 | 7 | 53 | 16 | 10 | 26 | 32 | 40 | 23 | 14 | 19 | 18 | 9 | 10 | 12 | 10 | 9 | 8 | 16 | 2 | 48 | 28 | 8 | 18.2 | 53.3 |
| 10-Jul | 7 | 8 | 5 | 12 | 6 | 8 | 9 | 9 | 10 | 8 | 11 | 11 | 6 | 8 | 12 | 8 | 5 | 12 | 4 | 13 | 14 | 21 | 8 | 9 | 9.3 | 21.1 |
| 11-Jul | 3 | 3 | 3 | 2 | 6 | 5 | 6 | 7 | 7 | 8 | 8 | 10 | 5 | 8 | 10 | 8 | 7 | 8 | 9 | 3 | 6 | 17 | 26 | 9 | 7.6 | 26.0 |
| 12-Jul | 5 | 4 | 6 | 2 | 2 | 8 | 4 | 8 | 9 | 9 | 3 | 3 | 6 | 5 | 8 | 5 | 4 | 4 | 5 | 6 | 7 | 3 | 3 | 1 | 5.0 | 9.0 |
| 13-Jul | 1 | 4 | 2 | 2 | 2 | 3 | 4 | 5 | 5 | 6 | 7 | 9 | 8 | 9 | 13 | 7 | 7 | 7 | 6 | 5 | 5 | 5 | 4 | 4 | 5.4 | 12.9 |
| 14-Jul | 3 | 6 | 4 | 3 | 4 | 8 | 8 | 3 | 5 | 4 | 4 | 6 | 4 | 4 | 6 | 5 | 4 | 4 | 11 | 9 | 4 | 6 | 7 | 4 | 5.4 | 11.4 |
| 15-Jul | 4 | 5 | 4 | 5 | 5 | 3 | 5 | 5 | 2 | 3 | 5 | 4 | 9 | 8 | 5 | 6 | 6 | 6 | 11 | 17 | 4 | 3 | 2 | 2 | 5.3 | 17.3 |
| 16-Jul | 4 | 2 | 2 | 1 | 2 | 2 | 3 | 3 | 2 | 11 | 19 | 11 | 20 | 63 | 14 | 8 | 6 | 33 | 20 | 17 | 23 | 20 | 2 | 5 | 12.2 | 62.5 |
| 17-Jul | 3 | 3 | 3 | 3 | 9 | 5 | 5 | 5 | 5 | 6 | 6 | 15 | 8 | 9 | 8 | 3 | 8 | 21 | 5 | 14 | 9 | 8 | 14 | 6 | 7.4 | 20.9 |
| 18-Jul | 5 | 6 | 11 | 3 | 3 | 3 | 3 | 6 | 5 | 4 | 5 | 7 | 5 | 4 | 30 | 13 | 6 | 6 | 13 | 10 | 10 | 5 | 5 | 4 | 7.2 | 29.7 |
| 19-Jul | 4 | 2 | 3 | 5 | 6 | 12 | 16 | 7 | 11 | 13 | 10 | 8 | 21 | 17 | 12 | 7 | 9 | 10 | 8 | 9 | 11 | 6 | 9 | 5 | 9.2 | 20.6 |
| 20-Jul | 15 | 4 | 5 | 4 | 6 | 19 | 22 | 10 | 11 | 9 | 10 | 5 | 44 | 41 | 7 | 8 | 12 | 30 | 14 | 7 | 7 | 16 | 17 | 7 | 13.7 | 44.5 |
| 21-Jul | 7 | 3 | 4 | 3 | 2 | 7 | 10 | 7 | 11 | 13 | 15 | 12 | 9 | 20 | 17 | 9 | 8 | 17 | 13 | 22 | 7 | 5 | 5 | 10 | 9.9 | 21.7 |
| 22-Jul | 4 | 6 | 7 | 5 | 7 | 9 | 8 | 9 | 20 | 9 | 4 | 4 | 5 | 4 | 9 | 3 | 22 | 15 | 6 | 5 | 5 | 6 | 3 | 2 | 7.5 | 22.2 |
| 23-Jul | 2 | 3 | 1 | 1 | 2 | 6 | 6 | 6 | 4 | 5 | 5 | 5 | 14 | 12 | 10 | 16 | 5 | 19 | 16 | 5 | 5 | 6 | 5 | 80 | 9.9 | 80.0 |
| 24-Jul | 100 | 28 | 6 | 6 | 17 | 20 | 2 | 5 | 4 | 6 | 10 | 23 | 11 | 3 | 7 | 5 | 3 | 7 | 3 | 3 | 4 | 7 | 112 | 93 | 20.1 | 112.2 |
| 25-Jul | 5 | 3 | 4 | 3 | 22 | 5 | 3 | 3 | 2 | 9 | 14 | 29 | 11 | 6 | 8 | 4 | 34 | 12 | 27 | 31 | 42 | 201 | 16 | 17 | 21.2 | 201.1 |
| 26-Jul | 8 | 3 | 3 | 21 | 17 | 8 | 19 | 9 | 5 | 8 | 5 | 13 | 14 | 17 | 13 | 27 | 23 | 9 | 30 | 20 | 52 | 18 | 10 | 13 | 15.2 | 52.5 |
| 27-Jul | 10 | 10 | 5 | 10 | 16 | 16 | 29 | 7 | 9 | 8 | 5 | 5 | 6 | 11 | 5 | 6 | N | 6 | 5 | 7 | 8 | 23 | 11 | 10 | 9.9 | 28.8 |
| 28-Jul | 10 | 10 | 9 | 10 | 15 | 15 | 17 | 13 | 12 | 15 | 17 | 20 | 15 | 17 | 19 | 16 | 11 | 63 | 59 | 8 | 38 | 19 | 20 | 17 | 19.4 | 63.3 |
| 29-Jul | 11 | 8 | 7 | 6 | 15 | 9 | 16 | 16 | 13 | 24 | 21 | 24 | 29 | 19 | 22 | 22 | 24 | 22 | 31 | 23 | 46 | 26 | 11 | 13 | 19.0 | 46.4 |
| 30-Jul | 27 | 14 | 13 | 15 | 36 | 13 | 14 | 17 | 26 | 18 | 12 | 11 | 12 | 54 | 50 | 39 | 21 | 35 | 34 | 11 | 13 | 11 | 7 | 8 | 21.3 | 54.0 |
| 31-Jul | 12 | 11 | 7 | 6 | 5 | 12 | 10 | 9 | 11 | 12 | 11 | 8 | 12 | 15 | 7 | 13 | 9 | 9 | 14 | 12 | 25 | 22 | 29 | 10 | 12.1 | 28.7 |
| | 9.4 | 6.2 | 4.9 | 7.1 | 8.3 | 7.8 | 9.3 | 7.7 | 8.5 | 8.3 | 8.5 | 9.5 | 10.3 | 13.4 | 11.3 | 9.6 | 9.5 | 13.5 | 13.3 | 10.3 | 16.9 | 20.6 | 17.6 | 13.4 | Diurnal Average | |
| | 99.9 | 27.8 | 13.2 | 53.3 | 35.6 | 20.1 | 28.8 | 32.1 | 40.1 | 24.0 | 21.0 | 29.3 | 44.5 | 62.5 | 50.4 | 38.5 | 33.6 | 63.3 | 59.1 | 30.6 | 63.4 | 201.1 | 112.2 | 93.1 | Diurnal Maximum | |

N - Not Valid

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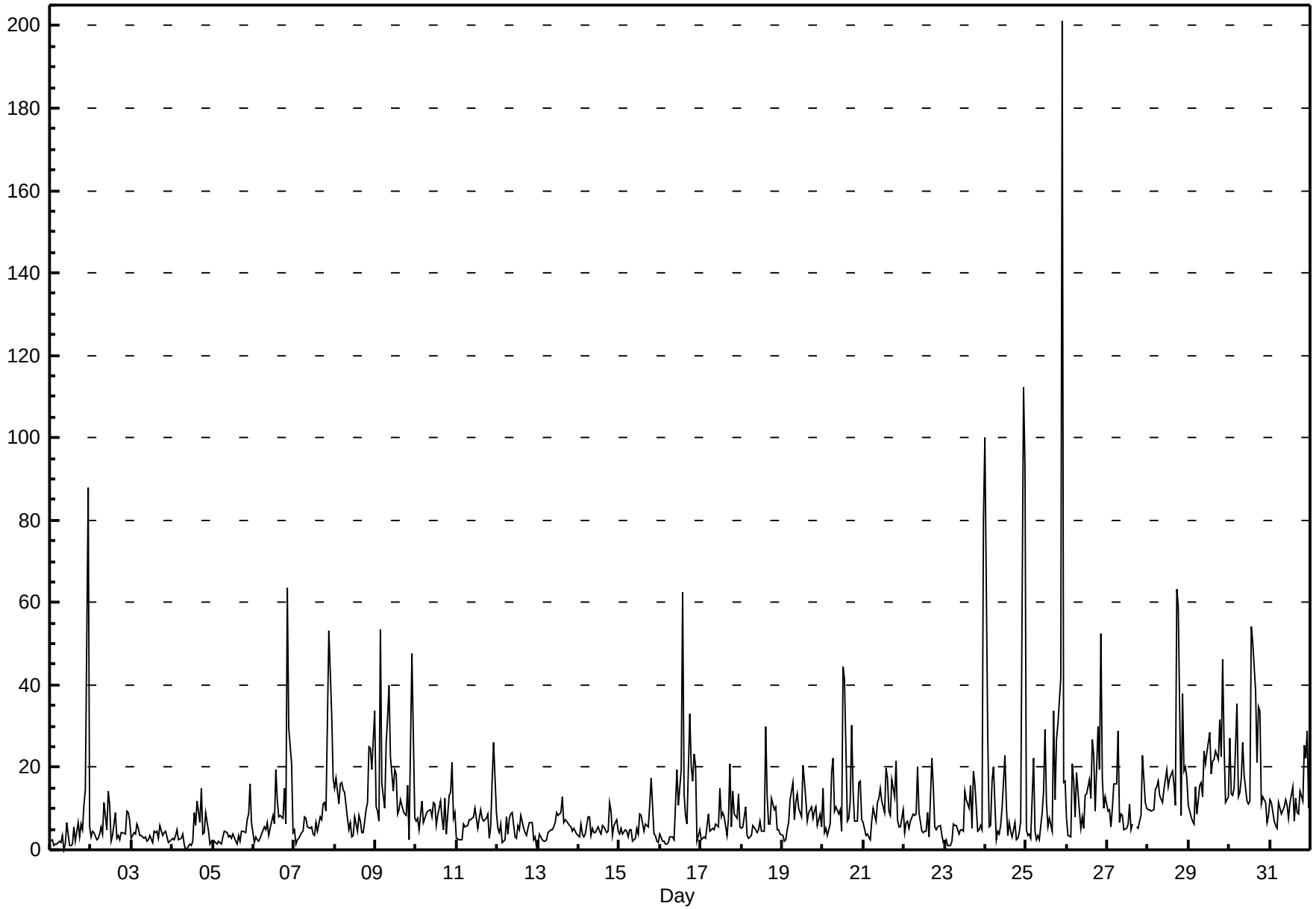
## Hourly Maximums

**Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$**

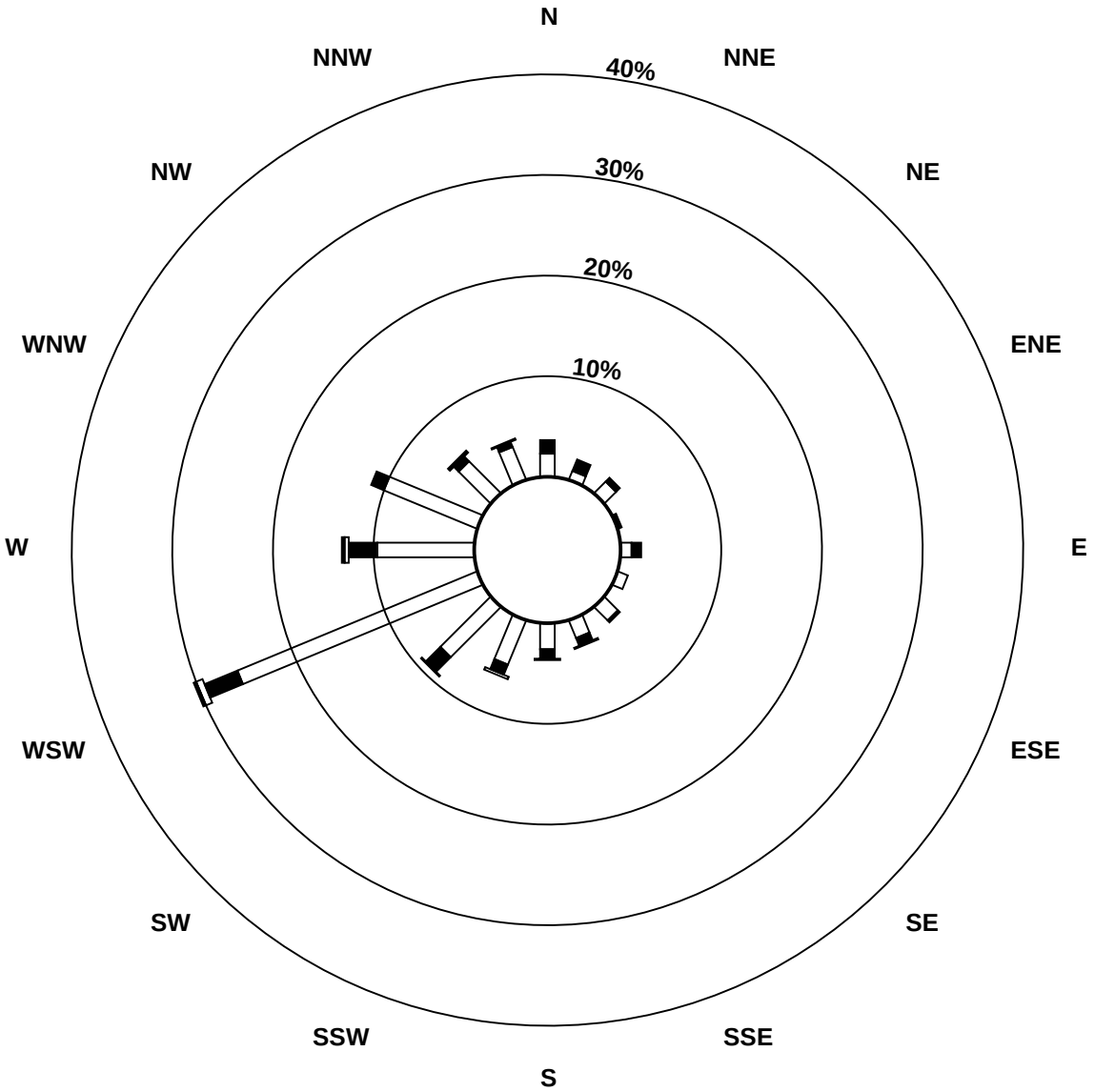
**Smoky Heights - July 2010**



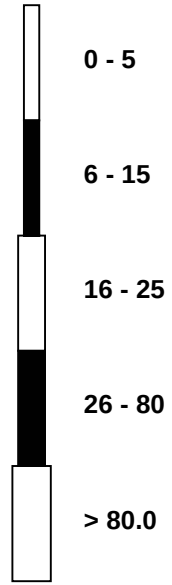
# Pollutant Rose

**Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$**

**Smoky Heights - July 2010**




**Pollutant Classes ($\mu g/m^3$)**



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# Hourly Averages

## External Temperature (ET) - °C

## Smoky Heights - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 29.8 °C on Jul 28 16:00 Maximum Daily Average: 22.4 °C on Jul 8

Minimum Value: 2 °C on Jul 2 05:00 Minimum Daily Average: 12.7 °C on Jul 2
Maximum Diurnal Average: 23.3 °C at hour 17 Minimum Diurnal Average: 10.6 °C at hour 5
Monthly Average: 17.46 °C Percentiles: $P_1$ = 6.2 $P_{10}$ = 10.8 $Q_1$ = 13.5 Median = 17.2 $Q_3$ = 21.3 $P_{90}$ = 24.8 $P_{99}$ = 29.0

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 740 |
| Hours of Missing Data: | 4 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 99.5 |

| 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-Jul | 8 | 8 | 7 | 7 | 6 | 6 | 8 | 10 | 13 | 14 | 15 | 17 | 18 | 19 | 19 | 19 | 20 | 19 | 19 | 18 | 16 | 13 | 10 | 9 | 13.3 | 19.6 |
| 2-Jul | 7 | 6 | 4 | 3 | 2 | 6 | 9 | 12 | 13 | 14 | 14 | 14 | 16 | 17 | 17 | 18 | 19 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12.7 | 18.9 |
| 3-Jul | 13 | 12 | 12 | 11 | 11 | 11 | 12 | 13 | 14 | 15 | 18 | 19 | 20 | 21 | 20 | 20 | 20 | 20 | 19 | 18 | 17 | 15 | 15 | 14 | 15.9 | 20.7 |
| 4-Jul | 13 | 13 | 12 | 12 | 13 | 14 | 13 | 13 | 14 | 15 | 16 | 17 | 17 | 17 | 18 | 18 | 17 | 16 | 16 | 15 | 13 | 12 | 11 | 10 | 14.4 | 17.9 |
| 5-Jul | 10 | 10 | 10 | 10 | 11 | 12 | 13 | 14 | 15 | 17 | 17 | 18 | 19 | 20 | 21 | 21 | 22 | 21 | 21 | 20 | 20 | 17 | 16 | 16 | 16.2 | 21.6 |
| 6-Jul | 15 | 14 | 14 | 13 | 13 | 12 | 13 | 15 | 18 | 21 | 22 | 23 | 23 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 21 | 18 | 16 | 17 | 19.0 | 24.3 |
| 7-Jul | 19 | 19 | 18 | 17 | 17 | 17 | 17 | 20 | 21 | 23 | 24 | 25 | 26 | 26 | 26 | 27 | 27 | 27 | 27 | 26 | 25 | 21 | 16 | 15 | 21.8 | 27.2 |
| 8-Jul | 14 | 17 | 16 | 14 | 13 | 14 | 18 | 20 | 22 | 24 | 25 | 27 | 28 | 29 | 29 | 29 | 30 | 30 | 30 | 29 | 27 | 21 | 18 | 16 | 22.4 | 29.8 |
| 9-Jul | 17 | 16 | 15 | 15 | 14 | 13 | 16 | 21 | 24 | 23 | 25 | 25 | 26 | 26 | 26 | 26 | 25 | 24 | 24 | 22 | 20 | 18 | 15 | 15 | 20.4 | 25.7 |
| 10-Jul | 14 | 14 | 14 | 14 | 14 | 14 | 15 | 17 | 18 | 19 | 21 | 21 | 22 | 23 | 22 | 24 | 25 | 24 | 25 | 24 | 23 | 18 | 16 | 15 | 19.0 | 24.9 |
| 11-Jul | 14 | 12 | 12 | 12 | 10 | 12 | 13 | 14 | 16 | 18 | 20 | 24 | 25 | 25 | 25 | 26 | 27 | 25 | 25 | 24 | 23 | 20 | 16 | 13 | 18.9 | 26.8 |
| 12-Jul | 14 | 15 | 15 | 15 | 14 | 13 | 14 | 16 | 17 | 16 | 16 | 16 | 16 | 16 | 15 | 15 | 15 | 15 | 15 | 14 | 14 | 13 | 12 | 11 | 14.6 | 16.7 |
| 13-Jul | 11 | 10 | 10 | 10 | 10 | 11 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 19 | 20 | 20 | 21 | 21 | 20 | 19 | 19 | 18 | 16 | 16 | 15.3 | 20.9 |
| 14-Jul | 14 | 13 | 12 | 12 | 11 | 12 | 14 | 16 | 18 | 21 | 22 | 24 | 25 | 25 | 26 | 26 | 26 | 26 | 26 | 24 | 22 | 20 | 19 | 17 | 19.6 | 26.1 |
| 15-Jul | 16 | 14 | 12 | 11 | 10 | 11 | 14 | 17 | 19 | 20 | 20 | 20 | 21 | 21 | 22 | 22 | 22 | 21 | 21 | 19 | 18 | 15 | 14 | 12 | 17.1 | 21.8 |
| 16-Jul | 11 | 9 | 8 | 8 | 6 | 7 | 10 | 12 | 15 | 15 | 17 | 18 | 19 | 19 | 19 | 20 | 20 | 19 | 20 | 19 | 18 | 15 | 15 | 13 | 14.7 | 19.9 |
| 17-Jul | 12 | 11 | 9 | 10 | 12 | 10 | 12 | 14 | 17 | 18 | 19 | 21 | 22 | 22 | 23 | 24 | 24 | 24 | 24 | 21 | 19 | 17 | 14 | 12 | 17.1 | 24.2 |
| 18-Jul | 12 | 11 | 14 | 14 | 14 | 13 | 15 | 17 | 17 | 18 | 19 | 20 | 22 | 22 | 19 | 19 | 20 | 20 | 18 | 14 | 13 | 13 | 12 | 11 | 16.2 | 21.8 |
| 19-Jul | 11 | 11 | 9 | 7 | 7 | 8 | 10 | 12 | 15 | 18 | 19 | 21 | 20 | 21 | 21 | 22 | 22 | 22 | 22 | 21 | 19 | 16 | 15 | 13 | 16.0 | 22.3 |
| 20-Jul | 10 | 10 | 9 | 8 | 7 | 7 | 11 | 13 | 16 | 18 | 21 | 23 | 23 | 19 | 24 | 25 | 25 | 23 | 24 | 22 | 20 | 16 | 14 | 13 | 16.7 | 25.4 |
| 21-Jul | 13 | 13 | 10 | 10 | 9 | 9 | 12 | 14 | 16 | 20 | 23 | 25 | 26 | 27 | 27 | 28 | 27 | 25 | 25 | 24 | 21 | 19 | 16 | 16 | 18.9 | 27.5 |
| 22-Jul | 15 | 15 | 13 | 13 | 13 | 14 | 15 | 16 | 16 | 17 | 18 | 18 | 20 | 21 | 21 | 22 | 23 | 22 | 21 | 21 | 20 | 20 | 18 | 16 | 17.8 | 23.1 |
| 23-Jul | 14 | 13 | 12 | 12 | 10 | 10 | 12 | 15 | 17 | 19 | 21 | 22 | 24 | 24 | 25 | 26 | 26 | 26 | 25 | 25 | 23 | 21 | 19 | 16 | 18.9 | 25.8 |
| 24-Jul | 14 | 15 | 16 | 16 | 13 | 13 | 17 | 19 | 20 | 20 | 20 | 20 | 21 | 22 | 22 | 22 | 22 | 22 | 22 | 21 | 19 | 16 | 13 | 11 | 18.2 | 22.2 |
| 25-Jul | 9 | 9 | 8 | 7 | 7 | 7 | 11 | 14 | 16 | 17 | 19 | 20 | 21 | 22 | 23 | 23 | 24 | 24 | 24 | 23 | 21 | 16 | 15 | 16 | 16.5 | 24.0 |
| 26-Jul | 16 | 15 | 14 | 12 | 11 | 13 | 14 | 15 | 16 | 17 | 17 | 18 | 19 | 19 | 21 | 22 | 22 | 22 | 22 | 20 | 20 | 17 | 15 | 13 | 17.2 | 22.5 |
| 27-Jul | 12 | 10 | 9 | 9 | 8 | 7 | 10 | 12 | 15 | 18 | 20 | 23 | 24 | 24 | 25 | 25 | N | M | M | 25 | 23 | 20 | 19 | 17 | 16.9 | 25.5 |
| 28-Jul | 16 | 14 | 14 | 13 | 12 | 12 | 14 | 16 | 18 | 20 | M | 24 | 26 | 27 | 28 | 30 | 30 | 28 | 21 | 19 | 18 | 18 | 16 | 14 | 19.4 | 29.8 |
| 29-Jul | 13 | 13 | 12 | 10 | 10 | 10 | 11 | 14 | 16 | 16 | 20 | 23 | 24 | 27 | 27 | 27 | 27 | 27 | 25 | 25 | 22 | 21 | 19 | 16 | 19.0 | 27.4 |
| 30-Jul | 16 | 13 | 13 | 12 | 12 | 12 | 14 | 17 | 16 | 17 | 20 | 22 | 21 | 19 | 20 | 20 | 21 | 23 | 21 | 21 | 20 | 17 | 16 | 17 | 17.6 | 22.6 |
| 31-Jul | 16 | 15 | 16 | 14 | 12 | 11 | 13 | 16 | 19 | 20 | 22 | 23 | 25 | 26 | 25 | 24 | 26 | 26 | 26 | 25 | 23 | 18 | 17 | 14 | 19.7 | 26.4 |
| | 13.2 | 12.6 | 12.0 | 11.4 | 10.6 | 11.1 | 13.0 | 15.1 | 16.7 | 18.1 | 19.5 | 20.9 | 21.7 | 22.1 | 22.6 | 23.0 | 23.3 | 22.8 | 22.3 | 21.3 | 19.7 | 17.2 | 15.4 | 14.1 | Diurnal Average | |
| | 18.8 | 18.8 | 17.8 | 17.1 | 16.8 | 17.1 | 17.8 | 21.3 | 24.1 | 23.6 | 25.4 | 27.3 | 28.1 | 28.8 | 29.1 | 29.8 | 29.8 | 29.8 | 29.6 | 29.1 | 26.8 | 21.4 | 18.8 | 17.4 | Diurnal Maximum | |

M - Maintenance N - Not Valid

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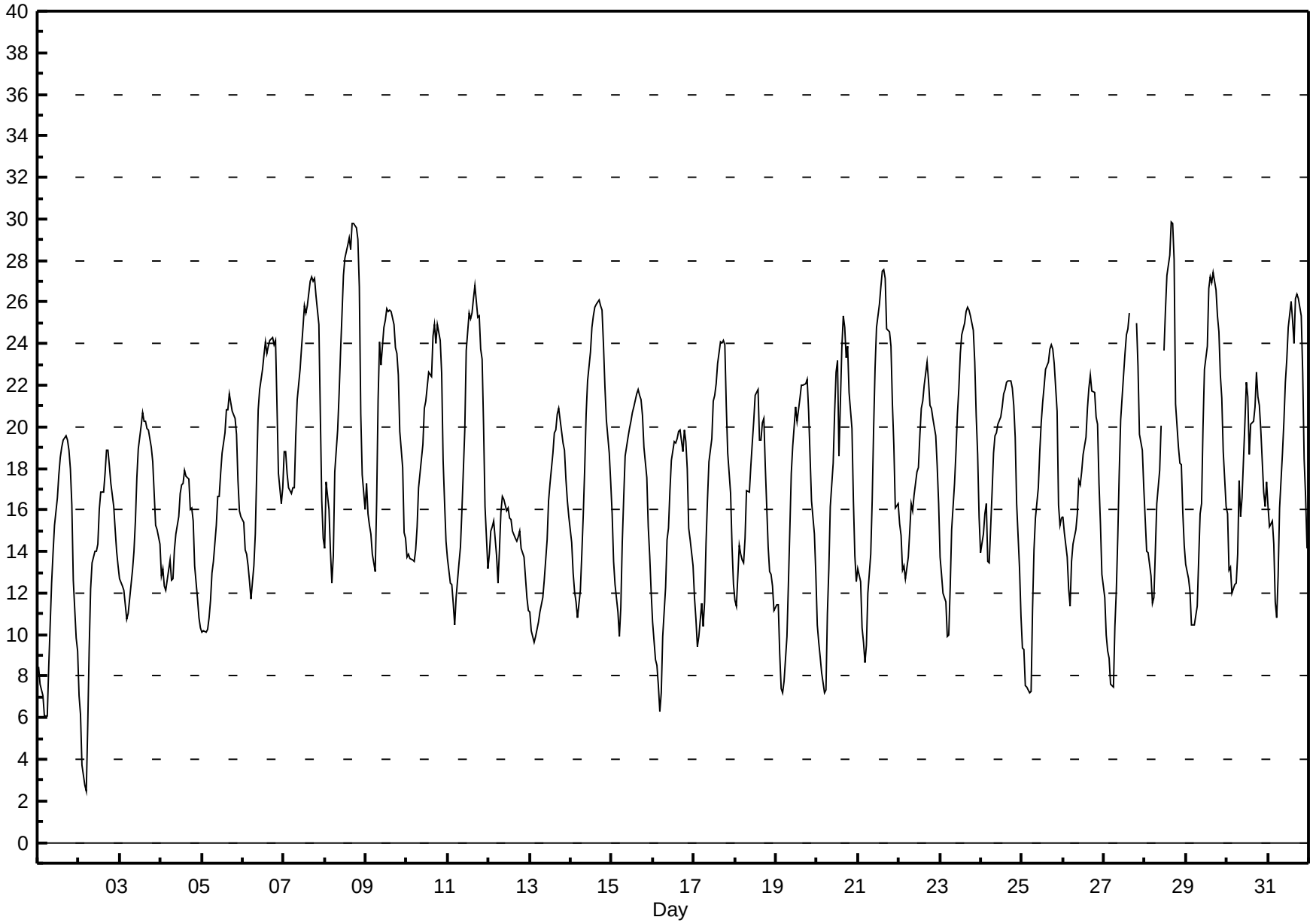
## Hourly Averages

**External Temperature (ET) - $^{o}$C**

**Smoky Heights - July 2010**



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# Hourly Averages

## Wind Speed (km/h)
## Wind Direction (deg)
## Smoky Heights - July 2010

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1 Spd | 18 | 19 | 25 | 24 | 17 | 18 | 19 | 25 | 31 | 37 | 37 | 36 | 35 | 33 | 34 | 33 | 35 | 34 | 31 | 32 | 25 | 13 | 11 | 13 | 25.7 | 37.0 |
| Dir | 228 | 222 | 225 | 224 | 206 | 198 | 195 | 208 | 225 | 233 | 234 | 240 | 239 | 239 | 240 | 232 | 231 | 242 | 248 | 257 | 251 | 241 | 251 | 246 | 232.9 | 232.5 |
| 2 Spd | 11 | 9 | 9 | 9 | 8 | 6 | 9 | 20 | 28 | 29 | 28 | 30 | 27 | 27 | 27 | 29 | 29 | 30 | 32 | 28 | 26 | 24 | 19 | 20 | 21.0 | 31.8 |
| Dir | 246 | 242 | 209 | 214 | 207 | 216 | 219 | 245 | 251 | 259 | 263 | 265 | 256 | 255 | 247 | 247 | 239 | 238 | 236 | 238 | 242 | 241 | 237 | 243 | 244.6 | 236.2 |
| 3 Spd | 18 | 20 | 19 | 17 | 14 | 14 | 17 | 15 | 27 | 30 | 28 | 32 | 32 | 30 | 31 | 31 | 31 | 33 | 36 | 36 | 31 | 24 | 26 | 21 | 25.3 | 36.3 |
| Dir | 240 | 246 | 242 | 246 | 236 | 247 | 252 | 255 | 264 | 261 | 269 | 256 | 256 | 250 | 263 | 258 | 257 | 252 | 250 | 246 | 240 | 239 | 241 | 237 | 251.2 | 250.0 |
| 4 Spd | 15 | 16 | 17 | 17 | 17 | 24 | 31 | 26 | 29 | 31 | 30 | 30 | 28 | 24 | 25 | 27 | 28 | 28 | 27 | 22 | 18 | 15 | 17 | 18 | 22.2 | 31.1 |
| Dir | 227 | 244 | 248 | 265 | 253 | 248 | 246 | 246 | 255 | 260 | 256 | 267 | 280 | 282 | 275 | 290 | 276 | 273 | 286 | 302 | 290 | 278 | 275 | 269 | 266.9 | 259.5 |
| 5 Spd | 15 | 14 | 19 | 16 | 16 | 21 | 24 | 22 | 20 | 22 | 23 | 25 | 23 | 26 | 28 | 25 | 28 | 25 | 20 | 16 | 10 | 8 | 9 | 15 | 18.8 | 28.2 |
| Dir | 260 | 263 | 266 | 273 | 281 | 303 | 308 | 296 | 298 | 310 | 302 | 299 | 301 | 304 | 299 | 298 | 282 | 282 | 290 | 285 | 281 | 273 | 255 | 248 | 289.4 | 299.4 |
| 6 Spd | 17 | 18 | 22 | 22 | 20 | 19 | 13 | 10 | 9 | 9 | 8 | 9 | 11 | 19 | 18 | 17 | 17 | 14 | 9 | 8 | 5 | 9 | 13 | 12 | 12.3 | 22.2 |
| Dir | 251 | 253 | 247 | 253 | 258 | 259 | 252 | 238 | 240 | 319 | 309 | 287 | 254 | 251 | 269 | 301 | 313 | 306 | 312 | 308 | 280 | 261 | 277 | 303 | 270.7 | 252.8 |
| 7 Spd | 10 | 14 | 13 | 12 | 11 | 12 | 6 | 11 | 9 | 9 | 9 | 9 | 8 | 11 | 11 | 10 | 13 | 12 | 10 | 6 | 3 | 4 | 6 | 5 | 8.4 | 14.0 |
| Dir | 333 | 335 | 323 | 332 | 332 | 324 | 301 | 329 | 337 | 331 | 309 | 301 | 293 | 288 | 299 | 295 | 272 | 266 | 294 | 270 | 254 | 308 | 263 | 258 | 306.5 | 334.9 |
| 8 Spd | 6 | 10 | 11 | 4 | 5 | 4 | 5 | 6 | 11 | 9 | 6 | 3 | 4 | 6 | 5 | 8 | 6 | 5 | 1 | 5 | 2 | 1 | 4 | 2 | 2.2 | 11.3 |
| Dir | 221 | 359 | 17 | 31 | 359 | 311 | 329 | 206 | 221 | 251 | 255 | 224 | 247 | 243 | 238 | 223 | 255 | 314 | 302 | 103 | 88 | 323 | 18 | 235 | 272.6 | 220.6 |
| 9 Spd | 3 | 5 | 6 | 8 | 5 | 8 | 9 | 11 | 10 | 12 | 8 | 9 | 10 | 15 | 12 | 14 | 12 | 13 | 9 | 15 | 12 | 11 | 8 | 15 | 5.0 | 14.9 |
| Dir | 222 | 259 | 242 | 236 | 236 | 197 | 232 | 262 | 281 | 359 | 16 | 354 | 341 | 324 | 344 | 352 | 4 | 41 | 46 | 53 | 48 | 337 | 30 | 261 | 336.2 | 323.5 |
| 10 Spd | 7 | 5 | 5 | 4 | 0 | 2 | 1 | 6 | 3 | 5 | 6 | 2 | 3 | 3 | 2 | 4 | 7 | 5 | 4 | 6 | 7 | 7 | 4 | 4 | 1.1 | 7.1 |
| Dir | 48 | 274 | 272 | 358 | 306 | 239 | 4 | 50 | 86 | 130 | 135 | 249 | 283 | 337 | 298 | 163 | 87 | 84 | 88 | 135 | 158 | 183 | 210 | 210 | 134.3 | 158.4 |
| 11 Spd | 3 | 6 | 5 | 6 | 6 | 8 | 11 | 10 | 11 | 13 | 15 | 15 | 24 | 25 | 18 | 20 | 31 | 31 | 28 | 29 | 22 | 11 | 7 | 10 | 13.3 | 31.1 |
| Dir | 217 | 207 | 238 | 224 | 194 | 192 | 190 | 188 | 183 | 175 | 180 | 181 | 199 | 202 | 210 | 240 | 250 | 251 | 241 | 250 | 244 | 246 | 264 | 273 | 223.2 | 250.1 |
| 12 Spd | 10 | 12 | 12 | 13 | 15 | 13 | 15 | 24 | 26 | 22 | 23 | 23 | 22 | 26 | 26 | 25 | 21 | 21 | 25 | 25 | 22 | 24 | 26 | 24 | 19.2 | 26.3 |
| Dir | 263 | 265 | 214 | 220 | 228 | 243 | 242 | 263 | 276 | 294 | 299 | 296 | 287 | 291 | 287 | 269 | 294 | 278 | 287 | 284 | 293 | 300 | 298 | 287 | 279.2 | 291.5 |
| 13 Spd | 27 | 25 | 21 | 19 | 20 | 25 | 27 | 29 | 23 | 27 | 20 | 18 | 16 | 21 | 26 | 27 | 27 | 31 | 26 | 21 | 15 | 14 | 13 | 13 | 21.6 | 30.7 |
| Dir | 288 | 291 | 286 | 282 | 292 | 305 | 309 | 313 | 319 | 313 | 317 | 317 | 321 | 308 | 304 | 291 | 290 | 292 | 297 | 292 | 282 | 277 | 286 | 284 | 298.9 | 292.3 |
| 14 Spd | 10 | 9 | 7 | 4 | 8 | 4 | 8 | 15 | 18 | 24 | 21 | 18 | 21 | 23 | 24 | 23 | 24 | 28 | 27 | 30 | 26 | 19 | 18 | 16 | 17.6 | 29.7 |
| Dir | 276 | 253 | 254 | 216 | 238 | 251 | 224 | 224 | 241 | 250 | 246 | 258 | 251 | 239 | 234 | 236 | 247 | 244 | 243 | 244 | 248 | 246 | 241 | 241 | 244.0 | 243.9 |
| 15 Spd | 14 | 14 | 13 | 14 | 15 | 15 | 18 | 21 | 34 | 37 | 41 | 38 | 40 | 36 | 34 | 33 | 32 | 34 | 31 | 29 | 33 | 21 | 20 | 17 | 26.3 | 40.6 |
| Dir | 243 | 249 | 247 | 253 | 261 | 240 | 251 | 257 | 257 | 255 | 255 | 251 | 258 | 254 | 247 | 247 | 249 | 255 | 260 | 265 | 261 | 255 | 248 | 255 | 253.9 | 254.7 |
| 16 Spd | 15 | 13 | 14 | 13 | 11 | 11 | 15 | 16 | 27 | 24 | 20 | 24 | 21 | 24 | 21 | 22 | 22 | 17 | 22 | 18 | 13 | 13 | 12 | 9 | 16.2 | 27.2 |
| Dir | 267 | 253 | 261 | 241 | 233 | 249 | 259 | 252 | 253 | 255 | 259 | 254 | 259 | 293 | 289 | 289 | 286 | 289 | 271 | 285 | 295 | 331 | 306 | 286 | 270.9 | 253.3 |
| 17 Spd | 8 | 9 | 8 | 7 | 9 | 9 | 6 | 9 | 8 | 10 | 8 | 9 | 12 | 11 | 11 | 8 | 8 | 7 | 6 | 17 | 11 | 5 | 3 | 4 | 6.7 | 17.1 |
| Dir | 249 | 229 | 224 | 214 | 287 | 273 | 202 | 248 | 234 | 252 | 249 | 272 | 243 | 267 | 282 | 295 | 248 | 251 | 251 | 314 | 354 | 24 | 332 | 304 | 265.6 | 313.6 |
| 18 Spd | 5 | 6 | 19 | 19 | 16 | 14 | 11 | 9 | 6 | 10 | 7 | 7 | 7 | 9 | 14 | 10 | 13 | 8 | 7 | 19 | 9 | 12 | 14 | 9 | 6.7 | 19.3 |
| Dir | 329 | 292 | 334 | 344 | 348 | 346 | 347 | 13 | 11 | 335 | 321 | 326 | 329 | 289 | 279 | 247 | 294 | 334 | 194 | 199 | 172 | 254 | 272 | 221 | 305.9 | 199.2 |
| 19 Spd | 15 | 13 | 5 | 6 | 3 | 6 | 8 | 10 | 7 | 9 | 8 | 6 | 7 | 9 | 11 | 12 | 5 | 11 | 7 | 6 | 10 | 10 | 7 | 6 | 5.1 | 15.3 |
| Dir | 272 | 275 | 165 | 159 | 195 | 247 | 180 | 221 | 191 | 204 | 202 | 205 | 96 | 133 | 136 | 186 | 133 | 95 | 114 | 144 | 200 | 241 | 216 | 204 | 190.7 | 272.3 |
| 20 Spd | 8 | 6 | 9 | 6 | 5 | 5 | 7 | 8 | 5 | 8 | 8 | 8 | 3 | 7 | 6 | 3 | 5 | 7 | 8 | 16 | 10 | 3 | 4 | 5 | 3.2 | 16.1 |
| Dir | 235 | 222 | 206 | 209 | 236 | 226 | 215 | 208 | 186 | 147 | 158 | 142 | 115 | 220 | 150 | 195 | 294 | 284 | 41 | 84 | 115 | 274 | 271 | 258 | 191.5 | 83.7 |
| 21 Spd | 9 | 8 | 5 | 7 | 8 | 7 | 8 | 9 | 10 | 9 | 10 | 10 | 13 | 12 | 11 | 11 | 5 | 14 | 5 | 8 | 11 | 9 | 4 | 7 | 5.9 | 14.1 |
| Dir | 240 | 261 | 258 | 263 | 231 | 234 | 180 | 174 | 166 | 181 | 175 | 170 | 137 | 159 | 157 | 154 | 154 | 312 | 275 | 124 | 157 | 173 | 171 | 158 | 183.4 | 312.5 |
| 22 Spd | 5 | 2 | 6 | 6 | 4 | 7 | 6 | 10 | 13 | 16 | 16 | 17 | 10 | 14 | 13 | 12 | 15 | 25 | 19 | 11 | 10 | 18 | 18 | 18 | 11.2 | 25.2 |
| Dir | 159 | 228 | 257 | 185 | 186 | 178 | 212 | 228 | 256 | 257 | 258 | 250 | 237 | 251 | 277 | 278 | 263 | 246 | 250 | 244 | 243 | 262 | 259 | 256 | 248.8 | 246.3 |

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# Hourly Averages

## Wind Speed (km/h)
## Wind Direction (deg)
## Smoky Heights - July 2010

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 23 Spd | 17 | 20 | 22 | 17 | 12 | 10 | 10 | 15 | 24 | 24 | 25 | 24 | 26 | 27 | 28 | 29 | 29 | 28 | 30 | 26 | 19 | 15 | 13 | 9 | 20.5 | 30.1 |
| Dir | 259 | 257 | 258 | 251 | 252 | 234 | 213 | 227 | 243 | 248 | 241 | 241 | 238 | 235 | 242 | 239 | 239 | 243 | 240 | 246 | 239 | 235 | 225 | 209 | 241.5 | 239.8 |
| 24 Spd | 9 | 13 | 12 | 12 | 9 | 6 | 16 | 28 | 37 | 38 | 44 | 45 | 42 | 40 | 38 | 37 | 36 | 34 | 32 | 32 | 27 | 14 | 11 | 12 | 25.8 | 44.8 |
| Dir | 260 | 267 | 246 | 248 | 242 | 210 | 257 | 258 | 265 | 266 | 253 | 255 | 250 | 249 | 253 | 254 | 253 | 254 | 251 | 251 | 259 | 253 | 263 | 243 | 254.3 | 255.1 |
| 25 Spd | 11 | 13 | 13 | 13 | 13 | 8 | 19 | 27 | 29 | 25 | 22 | 19 | 13 | 20 | 14 | 18 | 12 | 5 | 20 | 17 | 10 | 10 | 14 | 14 | 9.9 | 28.6 |
| Dir | 256 | 246 | 252 | 267 | 266 | 295 | 0 | 0 | 0 | 0 | 0 | 352 | 270 | 48 | 45 | 275 | 271 | 292 | 272 | 276 | 283 | 244 | 270 | 271 | 311.6 | 0.0 |
| 26 Spd | 10 | 9 | 10 | 8 | 8 | 11 | 13 | 19 | 22 | 18 | 17 | 18 | 20 | 17 | 19 | 13 | 13 | 12 | 13 | 15 | 12 | 12 | 3 | 4 | 11.2 | 22.2 |
| Dir | 330 | 341 | 305 | 239 | 246 | 359 | 0 | 360 | 0 | 340 | 315 | 314 | 300 | 307 | 0 | 359 | 4 | 320 | 300 | 0 | 0 | 0 | 298 | 247 | 334.1 | 0.0 |
| 27 Spd | 6 | 4 | 2 | 1 | 1 | 5 | 2 | 6 | 6 | 6 | 7 | 7 | 9 | 12 | 13 | 10 | N | M | M | 10 | 6 | 12 | 15 | 9 | 4.9 | 14.5 |
| Dir | 263 | 210 | 71 | 46 | 280 | 286 | 44 | 116 | 124 | 115 | 139 | 142 | 130 | 138 | 146 | 121 | N | M | M | 92 | 80 | 81 | 80 | 64 | 112.7 | 80.1 |
| 28 Spd | 6 | 5 | 5 | 6 | 6 | 6 | 6 | 2 | 6 | 6 | M | 1 | 2 | 4 | 4 | 2 | 6 | 3 | 38 | 23 | 25 | 9 | 13 | 10 | 2.1 | 37.6 |
| Dir | 31 | 50 | 47 | 12 | 9 | 16 | 28 | 99 | 86 | 35 | M | 29 | 172 | 17 | 187 | 76 | 92 | 172 | 306 | 324 | 224 | 184 | 215 | 217 | 310.9 | 305.6 |
| 29 Spd | 7 | 10 | 1 | 4 | 8 | 7 | 7 | 12 | 5 | 7 | 11 | 14 | 14 | 7 | 13 | 13 | 13 | 17 | 12 | 12 | 15 | 21 | 15 | 7 | 9.1 | 20.9 |
| Dir | 215 | 200 | 42 | 222 | 249 | 232 | 241 | 234 | 167 | 163 | 225 | 242 | 244 | 260 | 242 | 225 | 199 | 205 | 203 | 238 | 267 | 287 | 266 | 245 | 234.4 | 287.5 |
| 30 Spd | 4 | 8 | 8 | 8 | 14 | 13 | 11 | 12 | 14 | 11 | 14 | 15 | 10 | 8 | 14 | 9 | 5 | 16 | 20 | 21 | 15 | 9 | 9 | 10 | 10.1 | 21.3 |
| Dir | 243 | 238 | 251 | 258 | 256 | 254 | 255 | 241 | 245 | 196 | 237 | 223 | 200 | 251 | 214 | 148 | 203 | 271 | 241 | 248 | 258 | 267 | 303 | 333 | 244.5 | 248.4 |
| 31 Spd | 4 | 9 | 12 | 8 | 4 | 8 | 10 | 4 | 4 | 5 | 4 | 4 | 2 | 4 | 3 | 5 | 8 | 8 | 6 | 7 | 7 | 7 | 6 | 5 | 1.7 | 12.4 |
| Dir | 316 | 332 | 337 | 352 | 240 | 278 | 263 | 293 | 25 | 21 | 344 | 213 | 109 | 34 | 211 | 175 | 159 | 163 | 203 | 164 | 167 | 203 | 258 | 258 | 259.0 | 336.7 |
| Spd | 8.3 | 8.9 | 8.5 | 7.8 | 7.8 | 7.6 | 7.5 | 9.3 | 11.0 | 11.5 | 12.8 | 12.9 | 12.7 | 12.7 | 12.6 | 13.0 | 13.8 | 14.6 | 15.1 | 11.9 | 10.3 | 8.9 | 9.0 | 9.1 | Diurnal Average | |
| Dir | 259.2 | 260.6 | 260.1 | 255.8 | 256.5 | 260.8 | 258.1 | 258.3 | 262.1 | 267.8 | 261.9 | 261.9 | 257.1 | 262.0 | 261.0 | 258.6 | 261.4 | 262.5 | 262.8 | 262.9 | 254.1 | 261.1 | 262.0 | 256.3 | | |
| Spd | 26.6 | 25.1 | 24.6 | 23.8 | 20.3 | 24.6 | 30.5 | 29.1 | 37.0 | 38.0 | 43.9 | 44.8 | 41.6 | 40.3 | 38.3 | 37.0 | 36.5 | 34.0 | 37.6 | 35.8 | 32.7 | 24.1 | 25.8 | 24.5 | Diurnal Maximum | |
| Dir | 287.5 | 290.5 | 225.5 | 223.5 | 291.6 | 304.6 | 246.5 | 313.1 | 265.2 | 266.5 | 253.1 | 255.1 | 249.7 | 249.1 | 252.5 | 253.7 | 253.0 | 241.5 | 305.6 | 245.7 | 260.7 | 239.2 | 240.7 | 286.9 | | |

Maximum Speed Value: 45 km/h on Jul 24 12:00
Minimum Speed Value: 0 km/h on Jul 10 05:00
Maximum Daily Speed Average: 26.3 km/h on Jul 1
Minimum Daily Speed Average: 1.1 km/h on Jul 10
Maximum Diurnal Speed Average: 15.1 km/h at hour 19
Minimum Diurnal Speed Average: 7.5 km/h at hour 7

Monthly Average Velocity: 10.70 km/h 260.47 deg
Speed Percentiles: $P_1$ = 1.4 $P_{10}$ = 4.9 $Q_1$ = 7.7 Median = 12.4 $Q_3$ = 20.8 $P_{90}$ = 28.2 $P_{99}$ = 36.6
All monthly, daily, and diurnal averages have been calculated using vector methods

Hours in Service: 744
Hours of Data: 740
Hours of Missing Data: 4

Percent Operational Time: 99.5

M - Maintenance N - Not Valid

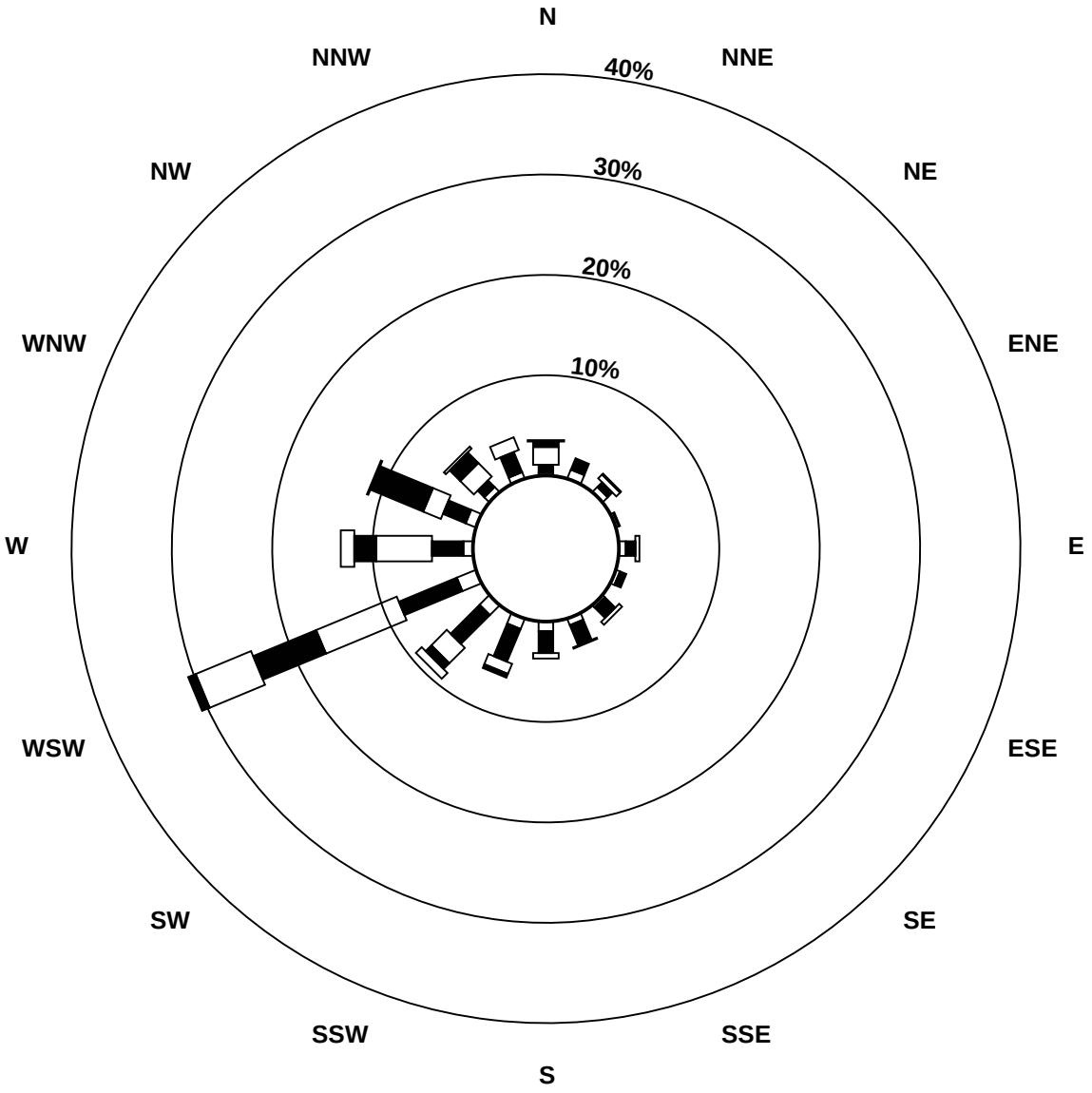
Frequency Distribution

| Direction | Speed Range (km/h) 0 to 5 | 5 to 11 | 11 to 19 | 19 to 28 | 28 to 38 | > 38 | Total |
|---|---|---|---|---|---|---|---|
| North | 6 | 16 | 16 | 6 | 1 | 0 | 45 |
| NorthEast | 9 | 10 | 4 | 1 | 0 | 0 | 24 |
| East | 8 | 7 | 4 | 0 | 0 | 0 | 19 |
| SouthEast | 1 | 24 | 4 | 0 | 0 | 0 | 29 |
| South | 10 | 38 | 8 | 4 | 0 | 0 | 60 |
| SouthWest | 18 | 68 | 52 | 37 | 25 | 0 | 200 |
| West | 14 | 53 | 88 | 57 | 42 | 8 | 262 |
| NorthWest | 14 | 30 | 24 | 30 | 3 | 0 | 101 |
| Total | 80 | 246 | 200 | 135 | 71 | 8 | 740 |

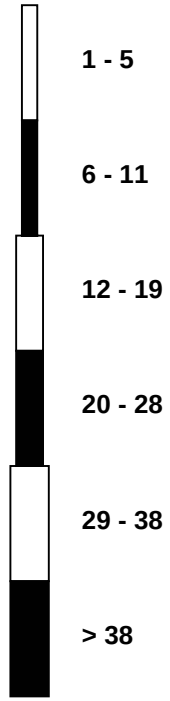
# Wind Rose

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

**Smoky Heights - July 2010**




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



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# Hourly Averages - Wind Speed (Scalar)

**Wind Speed (km/h)**

## Smoky Heights - July 2010

Maximum Speed: 45 km/h on Jul 24 12:00

Maximum Daily Speed Average: 26.9 km/h on Jul 1

Minimum Speed: 2 km/h on Jul 10 06:00

Minimum Daily Speed Average: 5.5 km/h on Jul 10

Maximum Diurnal Speed Average: 19.7 km/h at hour 19

Minimum Diurnal Speed Average: 10.5 km/h at hour 5

Monthly Average Speed: 15.41 km/h

Percentiles: $P_1$ = 3.2 $P_{10}$ = 5.9 $Q_1$ = 8.5 Median = 13.2 $Q_3$ = 21.2 $P_{90}$ = 28.6 $P_{99}$ = 37.4

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 740 |
| Hours of Missing Data: | 4 |
| Percent Operational Time: | 99.5 |

| 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-Jul | 19 | 20 | 25 | 24 | 18 | 18 | 19 | 25 | 32 | 37 | 37 | 37 | 36 | 34 | 35 | 33 | 35 | 34 | 32 | 32 | 25 | 13 | 11 | 13 | 26.9 | 37.3 |
| 2-Jul | 12 | 9 | 9 | 9 | 8 | 6 | 10 | 20 | 29 | 29 | 29 | 30 | 27 | 28 | 27 | 29 | 30 | 31 | 32 | 29 | 26 | 24 | 20 | 20 | 21.8 | 32.1 |
| 3-Jul | 18 | 20 | 19 | 17 | 14 | 14 | 17 | 15 | 28 | 31 | 29 | 32 | 32 | 31 | 32 | 32 | 31 | 33 | 36 | 36 | 31 | 24 | 26 | 21 | 25.8 | 36.5 |
| 4-Jul | 15 | 16 | 17 | 17 | 17 | 24 | 31 | 26 | 29 | 31 | 31 | 30 | 29 | 25 | 26 | 28 | 29 | 28 | 28 | 22 | 18 | 15 | 17 | 19 | 23.5 | 31.3 |
| 5-Jul | 15 | 14 | 19 | 16 | 17 | 21 | 24 | 22 | 20 | 22 | 24 | 25 | 24 | 26 | 29 | 25 | 28 | 26 | 20 | 16 | 10 | 8 | 9 | 15 | 19.8 | 28.9 |
| 6-Jul | 17 | 18 | 22 | 22 | 20 | 19 | 13 | 10 | 10 | 9 | 9 | 10 | 13 | 20 | 19 | 18 | 18 | 15 | 9 | 8 | 5 | 9 | 13 | 12 | 14.1 | 22.3 |
| 7-Jul | 11 | 14 | 13 | 12 | 11 | 12 | 8 | 12 | 9 | 10 | 11 | 11 | 11 | 13 | 11 | 12 | 14 | 12 | 10 | 7 | 3 | 4 | 6 | 5 | 10.1 | 14.3 |
| 8-Jul | 6 | 12 | 11 | 5 | 5 | 5 | 5 | 7 | 11 | 10 | 8 | 6 | 7 | 9 | 10 | 11 | 10 | 7 | 6 | 5 | 3 | 2 | 4 | 3 | 7.1 | 12.2 |
| 9-Jul | 4 | 5 | 6 | 8 | 7 | 9 | 9 | 11 | 14 | 13 | 8 | 10 | 12 | 16 | 13 | 15 | 13 | 13 | 9 | 15 | 12 | 14 | 16 | 15 | 11.1 | 16.1 |
| 10-Jul | 10 | 6 | 7 | 4 | 2 | 2 | 3 | 6 | 5 | 6 | 7 | 5 | 5 | 6 | 4 | 6 | 8 | 6 | 5 | 6 | 7 | 7 | 5 | 4 | 5.5 | 9.5 |
| 11-Jul | 3 | 7 | 5 | 6 | 6 | 8 | 11 | 10 | 12 | 14 | 15 | 16 | 25 | 26 | 20 | 20 | 32 | 31 | 28 | 30 | 22 | 11 | 8 | 10 | 15.5 | 31.5 |
| 12-Jul | 10 | 13 | 13 | 14 | 15 | 13 | 15 | 24 | 26 | 24 | 24 | 23 | 23 | 27 | 26 | 25 | 22 | 22 | 26 | 25 | 22 | 24 | 26 | 25 | 21.1 | 26.8 |
| 13-Jul | 27 | 25 | 21 | 20 | 21 | 25 | 27 | 29 | 23 | 27 | 20 | 19 | 17 | 22 | 27 | 27 | 27 | 31 | 26 | 22 | 15 | 14 | 13 | 13 | 22.3 | 31.1 |
| 14-Jul | 11 | 9 | 8 | 5 | 8 | 5 | 8 | 15 | 18 | 25 | 21 | 19 | 22 | 24 | 24 | 24 | 24 | 28 | 28 | 30 | 26 | 19 | 18 | 16 | 18.1 | 29.9 |
| 15-Jul | 14 | 14 | 13 | 14 | 15 | 15 | 18 | 21 | 35 | 38 | 41 | 38 | 41 | 37 | 35 | 34 | 33 | 34 | 31 | 29 | 33 | 21 | 20 | 18 | 26.7 | 41.1 |
| 16-Jul | 15 | 13 | 15 | 13 | 12 | 12 | 15 | 16 | 27 | 24 | 21 | 24 | 22 | 25 | 22 | 22 | 23 | 18 | 22 | 18 | 14 | 13 | 12 | 9 | 17.8 | 27.3 |
| 17-Jul | 8 | 9 | 8 | 7 | 9 | 9 | 6 | 10 | 9 | 11 | 11 | 11 | 13 | 12 | 13 | 10 | 10 | 9 | 7 | 18 | 11 | 5 | 4 | 6 | 9.3 | 17.5 |
| 18-Jul | 6 | 7 | 19 | 19 | 16 | 14 | 11 | 9 | 7 | 11 | 9 | 8 | 9 | 10 | 16 | 10 | 14 | 9 | 12 | 20 | 12 | 13 | 14 | 11 | 12.0 | 19.8 |
| 19-Jul | 15 | 13 | 6 | 6 | 4 | 6 | 8 | 10 | 8 | 10 | 9 | 8 | 9 | 9 | 11 | 13 | 10 | 11 | 8 | 6 | 10 | 10 | 9 | 6 | 9.1 | 15.4 |
| 20-Jul | 8 | 6 | 9 | 6 | 6 | 5 | 7 | 8 | 6 | 8 | 9 | 9 | 12 | 11 | 7 | 7 | 6 | 8 | 9 | 16 | 10 | 3 | 4 | 5 | 7.8 | 16.5 |
| 21-Jul | 9 | 8 | 5 | 7 | 8 | 8 | 8 | 9 | 10 | 9 | 10 | 12 | 14 | 14 | 13 | 14 | 8 | 16 | 7 | 10 | 11 | 9 | 5 | 7 | 9.7 | 16.1 |
| 22-Jul | 6 | 4 | 7 | 6 | 4 | 7 | 7 | 12 | 13 | 16 | 16 | 17 | 11 | 15 | 14 | 14 | 17 | 26 | 19 | 12 | 12 | 18 | 18 | 18 | 13.0 | 25.8 |
| 23-Jul | 17 | 20 | 22 | 17 | 13 | 10 | 10 | 15 | 24 | 25 | 25 | 25 | 27 | 28 | 29 | 30 | 29 | 28 | 30 | 26 | 19 | 15 | 13 | 9 | 21.1 | 30.3 |
| 24-Jul | 9 | 13 | 12 | 13 | 9 | 8 | 16 | 28 | 37 | 39 | 45 | 45 | 42 | 41 | 39 | 37 | 37 | 34 | 33 | 33 | 27 | 14 | 11 | 12 | 26.3 | 45.2 |
| 25-Jul | 11 | 13 | 13 | 13 | 13 | 13 | 19 | 27 | 29 | 25 | 22 | 22 | 21 | 20 | 19 | 19 | 16 | 16 | 21 | 18 | 10 | 10 | 14 | 15 | 17.5 | 28.6 |
| 26-Jul | 11 | 10 | 10 | 8 | 8 | 11 | 13 | 19 | 22 | 19 | 17 | 18 | 21 | 18 | 19 | 13 | 13 | 13 | 15 | 15 | 12 | 12 | 7 | 5 | 13.8 | 22.2 |
| 27-Jul | 6 | 4 | 4 | 3 | 5 | 5 | 4 | 6 | 6 | 6 | 8 | 8 | 10 | 13 | 14 | 12 | N | M | M | 10 | 7 | 13 | 15 | 9 | 8.1 | 14.8 |
| 28-Jul | 7 | 5 | 6 | 6 | 6 | 6 | 6 | 3 | 6 | 7 | M | 5 | 6 | 7 | 7 | 6 | 8 | 6 | 39 | 24 | 26 | 11 | 13 | 11 | 9.9 | 38.9 |
| 29-Jul | 8 | 11 | 6 | 5 | 9 | 8 | 7 | 13 | 7 | 9 | 12 | 15 | 15 | 9 | 14 | 13 | 14 | 17 | 12 | 12 | 16 | 21 | 15 | 10 | 11.6 | 21.0 |
| 30-Jul | 6 | 9 | 9 | 8 | 14 | 13 | 13 | 13 | 14 | 12 | 15 | 16 | 11 | 13 | 15 | 13 | 15 | 17 | 20 | 21 | 15 | 10 | 10 | 11 | 12.9 | 21.4 |
| 31-Jul | 6 | 10 | 12 | 9 | 5 | 8 | 10 | 6 | 5 | 6 | 6 | 6 | 8 | 6 | 5 | 5 | 8 | 9 | 8 | 7 | 7 | 7 | 6 | 5 | 7.1 | 12.5 |
| | 10.9 | 11.5 | 11.9 | 10.9 | 10.5 | 11.0 | 12.2 | 14.8 | 17.1 | 18.1 | 18.2 | 18.2 | 18.5 | 19.2 | 19.2 | 18.7 | 19.5 | 19.6 | 19.7 | 18.6 | 15.4 | 12.7 | 12.4 | 11.5 | Diurnal Average | |
| | 26.7 | 25.2 | 24.6 | 23.9 | 20.5 | 24.8 | 30.6 | 29.3 | 37.2 | 38.5 | 44.6 | 45.2 | 42.3 | 41.0 | 39.0 | 37.4 | 37.1 | 34.3 | 38.9 | 36.0 | 32.8 | 24.1 | 25.9 | 24.6 | Diurnal Maximum | |

M - Maintenance N - Not Valid

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

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# Hourly Standard Deviations

## Wind Direction (WD) - deg

## Smoky Heights - July 2010

Maximum Value: 93.9 deg on Jul 28 12:00

Minimum Value: 0.0 deg on Jul 25 07:00

Percentiles: $P_1$ = 0.0 $P_{10}$ = 5.0 $Q_1$ = 7.8 Median = 12.8 $Q_3$ = 26.9 $P_{90}$ = 46.7 $P_{99}$ = 82.4

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 740 |
| Hours of Missing Data: | 4 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 99.5 |

| 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-Jul | 5 | 5 | 4 | 4 | 8 | 3 | 8 | 8 | 11 | 7 | 9 | 12 | 11 | 11 | 11 | 14 | 12 | 8 | 9 | 6 | 6 | 11 | 6 | 7 | 13.6 |
| 2-Jul | 8 | 16 | 8 | 6 | 5 | 9 | 15 | 10 | 7 | 8 | 10 | 8 | 11 | 11 | 11 | 8 | 11 | 9 | 8 | 6 | 6 | 4 | 4 | 4 | 16.5 |
| 3-Jul | 4 | 4 | 5 | 4 | 4 | 6 | 6 | 6 | 7 | 6 | 11 | 10 | 9 | 12 | 10 | 10 | 9 | 8 | 6 | 6 | 4 | 4 | 3 | 5 | 12.3 |
| 4-Jul | 4 | 8 | 7 | 8 | 3 | 4 | 4 | 5 | 7 | 8 | 8 | 9 | 11 | 19 | 16 | 12 | 16 | 9 | 8 | 7 | 15 | 6 | 4 | 6 | 18.5 |
| 5-Jul | 4 | 8 | 4 | 8 | 5 | 7 | 6 | 8 | 10 | 10 | 10 | 9 | 11 | 11 | 12 | 12 | 10 | 8 | 6 | 5 | 4 | 14 | 13 | 7 | 14.2 |
| 6-Jul | 4 | 8 | 3 | 2 | 3 | 2 | 9 | 10 | 20 | 17 | 32 | 32 | 36 | 19 | 14 | 17 | 16 | 18 | 16 | 16 | 17 | 10 | 13 | 14 | 35.9 |
| 7-Jul | 7 | 5 | 4 | 6 | 10 | 5 | 47 | 14 | 23 | 28 | 31 | 47 | 60 | 36 | 29 | 36 | 30 | 18 | 21 | 26 | 33 | 17 | 12 | 33 | 59.7 |
| 8-Jul | 30 | 60 | 12 | 20 | 18 | 36 | 45 | 25 | 10 | 26 | 52 | 80 | 73 | 57 | 84 | 45 | 66 | 64 | 88 | 18 | 34 | 79 | 34 | 58 | 88.1 |
| 9-Jul | 33 | 17 | 10 | 9 | 63 | 24 | 14 | 14 | 54 | 20 | 25 | 27 | 28 | 19 | 20 | 18 | 23 | 16 | 14 | 13 | 8 | 40 | 60 | 14 | 63.5 |
| 10-Jul | 69 | 36 | 38 | 58 | 77 | 20 | 78 | 13 | 69 | 47 | 44 | 90 | 60 | 66 | 79 | 66 | 38 | 32 | 43 | 31 | 7 | 10 | 31 | 16 | 90.4 |
| 11-Jul | 18 | 23 | 22 | 14 | 21 | 7 | 6 | 5 | 11 | 10 | 9 | 22 | 12 | 13 | 23 | 16 | 10 | 7 | 9 | 5 | 5 | 8 | 20 | 6 | 23.4 |
| 12-Jul | 11 | 10 | 30 | 19 | 5 | 6 | 9 | 9 | 10 | 19 | 15 | 14 | 17 | 11 | 11 | 11 | 10 | 10 | 8 | 6 | 7 | 7 | 7 | 6 | 30.0 |
| 13-Jul | 4 | 5 | 4 | 5 | 8 | 6 | 7 | 7 | 7 | 6 | 8 | 11 | 17 | 11 | 9 | 9 | 9 | 9 | 6 | 9 | 7 | 4 | 4 | 3 | 16.7 |
| 14-Jul | 21 | 6 | 15 | 33 | 9 | 51 | 11 | 7 | 10 | 8 | 12 | 18 | 18 | 12 | 13 | 13 | 11 | 8 | 8 | 6 | 5 | 6 | 3 | 5 | 51.2 |
| 15-Jul | 9 | 4 | 6 | 5 | 6 | 7 | 4 | 4 | 6 | 8 | 8 | 10 | 9 | 11 | 10 | 11 | 12 | 8 | 10 | 6 | 4 | 4 | 7 | 11 | 11.6 |
| 16-Jul | 7 | 6 | 5 | 7 | 6 | 7 | 7 | 10 | 6 | 7 | 14 | 14 | 23 | 13 | 16 | 14 | 13 | 21 | 10 | 8 | 26 | 11 | 8 | 24 | 25.9 |
| 17-Jul | 11 | 9 | 9 | 14 | 24 | 25 | 14 | 17 | 31 | 25 | 41 | 43 | 38 | 26 | 37 | 42 | 41 | 34 | 60 | 14 | 18 | 20 | 34 | 44 | 60.0 |
| 18-Jul | 33 | 35 | 10 | 6 | 7 | 7 | 11 | 18 | 26 | 24 | 45 | 45 | 44 | 28 | 33 | 16 | 18 | 29 | 79 | 14 | 45 | 18 | 5 | 38 | 78.5 |
| 19-Jul | 5 | 6 | 31 | 13 | 47 | 23 | 12 | 14 | 22 | 26 | 25 | 58 | 56 | 32 | 17 | 30 | 59 | 16 | 27 | 13 | 17 | 14 | 42 | 21 | 58.5 |
| 20-Jul | 13 | 22 | 15 | 16 | 12 | 17 | 14 | 13 | 29 | 20 | 28 | 33 | 81 | 48 | 32 | 74 | 38 | 13 | 59 | 13 | 17 | 44 | 18 | 20 | 81.1 |
| 21-Jul | 10 | 27 | 19 | 10 | 13 | 28 | 8 | 10 | 12 | 16 | 21 | 32 | 21 | 38 | 35 | 41 | 64 | 33 | 53 | 42 | 12 | 6 | 47 | 16 | 64.0 |
| 22-Jul | 48 | 69 | 46 | 17 | 24 | 19 | 23 | 26 | 12 | 9 | 13 | 10 | 31 | 23 | 29 | 37 | 29 | 12 | 7 | 15 | 32 | 4 | 3 | 4 | 68.5 |
| 23-Jul | 2 | 3 | 2 | 3 | 7 | 12 | 8 | 15 | 7 | 11 | 11 | 11 | 13 | 17 | 14 | 13 | 13 | 11 | 6 | 7 | 5 | 6 | 5 | 20 | 19.9 |
| 24-Jul | 13 | 8 | 10 | 8 | 16 | 37 | 5 | 5 | 6 | 9 | 10 | 8 | 10 | 11 | 10 | 9 | 10 | 9 | 8 | 6 | 5 | 11 | 8 | 5 | 36.9 |
| 25-Jul | 4 | 6 | 9 | 3 | 6 | 52 | 0 | 0 | 0 | 0 | 0 | 40 | 59 | 18 | 61 | 25 | 54 | 76 | 28 | 10 | 11 | 7 | 12 | 19 | 75.9 |
| 26-Jul | 12 | 21 | 12 | 15 | 17 | 9 | 0 | 1 | 0 | 18 | 11 | 16 | 17 | 24 | 0 | 8 | 20 | 21 | 30 | 0 | 0 | 0 | 68 | 43 | 68.2 |
| 27-Jul | 26 | 53 | 72 | 92 | 84 | 42 | 67 | 20 | 15 | 27 | 29 | 46 | 47 | 39 | 30 | 41 | N | M | M | 13 | 26 | 23 | 11 | 12 | 91.8 |
| 28-Jul | 14 | 19 | 22 | 7 | 7 | 12 | 13 | 67 | 30 | 36 | M | 94 | 86 | 60 | 64 | 80 | 49 | 65 | 16 | 11 | 18 | 43 | 15 | 21 | 93.9 |
| 29-Jul | 28 | 11 | 86 | 32 | 16 | 39 | 31 | 14 | 41 | 42 | 17 | 17 | 20 | 53 | 33 | 17 | 18 | 13 | 10 | 13 | 23 | 7 | 9 | 53 | 86.4 |
| 30-Jul | 40 | 22 | 21 | 9 | 6 | 7 | 51 | 40 | 14 | 21 | 13 | 19 | 28 | 60 | 8 | 46 | 72 | 15 | 8 | 6 | 7 | 7 | 23 | 9 | 71.8 |
| 31-Jul | 53 | 37 | 7 | 25 | 49 | 12 | 7 | 54 | 42 | 41 | 67 | 54 | 77 | 52 | 57 | 18 | 22 | 27 | 41 | 9 | 8 | 19 | 11 | 9 | 76.8 |
| | 68.8 | 68.5 | 86.4 | 91.8 | 83.5 | 52.3 | 77.9 | 67.2 | 68.9 | 46.9 | 67.3 | 93.9 | 85.6 | 66.0 | 83.9 | 80.5 | 71.8 | 75.9 | 88.1 | 42.2 | 45.4 | 79.4 | 68.2 | 58.3 | |

M - Maintenance N - Not Valid

# PASZA
# Beaverlodge Station
## Monthly Summary Tables, Graphs and Roses

PASZA
Peace Airshed Zone Association

# Hourly Averages

## Sulphur Dioxide ($SO_2$) - ppb

## Beaverlodge - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 4.4 ppb on Jul 10 11:00 Maximum Daily Average: 0.8 ppb on Jul 10

Minimum Value: 0 ppb on Jul 1 02:00 Minimum Daily Average: 0.0 ppb on Jul 12
Maximum Diurnal Average: 0.4 ppb at hour 11 Minimum Diurnal Average: 0.2 ppb at hour 22
Monthly Average: 0.27 ppb Percentiles: $P_1$ = 0.0 $P_{10}$ = 0.0 $Q_1$ = 0.1 Median = 0.2 $Q_3$ = 0.4 $P_{90}$ = 0.6 $P_{99}$ = 1.4

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 705 |
| Hours of Missing Data: | 39 |
| Hours of Calibration: | 39 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 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 |
| 2-Jul | 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 |
| 3-Jul | 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 |
| 4-Jul | 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 |
| 5-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | C | C | C | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.2 |
| 6-Jul | 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 | 1.1 |
| 7-Jul | 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 | 0.7 |
| 8-Jul | 0 | 0 | 0 | 0 | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.4 | 0.5 |
| 9-Jul | 1 | 1 | 1 | 0 | A | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 1.0 |
| 10-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 1 | 1 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 4.4 |
| 11-Jul | 0 | 1 | 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 |
| 12-Jul | 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 |
| 13-Jul | 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-Jul | 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 |
| 15-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | C | C | C | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.3 |
| 16-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.3 | 1.1 |
| 17-Jul | 1 | 0 | 0 | 0 | A | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0.3 | 0.8 |
| 18-Jul | 0 | 1 | 0 | 1 | A | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.6 |
| 19-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.7 |
| 20-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.4 | 1.3 |
| 21-Jul | 1 | 3 | 2 | 1 | A | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.6 | 3.2 |
| 22-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.1 | 0.6 |
| 23-Jul | 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 |
| 24-Jul | 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 |
| 25-Jul | 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 |
| 26-Jul | 0 | 0 | 0 | 0 | A | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.7 |
| 27-Jul | 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 | 0.5 |
| 28-Jul | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 1.6 |
| 29-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0.6 | 1.3 |
| 30-Jul | 1 | 1 | 1 | 1 | A | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0.5 | 0.6 |
| 31-Jul | 0 | 0 | 0 | 1 | A | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.9 |
| | 0.2 | 0.3 | 0.3 | 0.2 | -- | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | Diurnal Average | |
| | 0.7 | 3.2 | 2.3 | 0.9 | -- | 0.6 | 0.7 | 1.1 | 1.4 | 1.6 | 4.4 | 2.7 | 2.2 | 1.4 | 1.1 | 1.1 | 0.8 | 0.7 | 0.8 | 1.3 | 0.7 | 0.6 | 0.5 | 1.1 | Diurnal Maximum | |

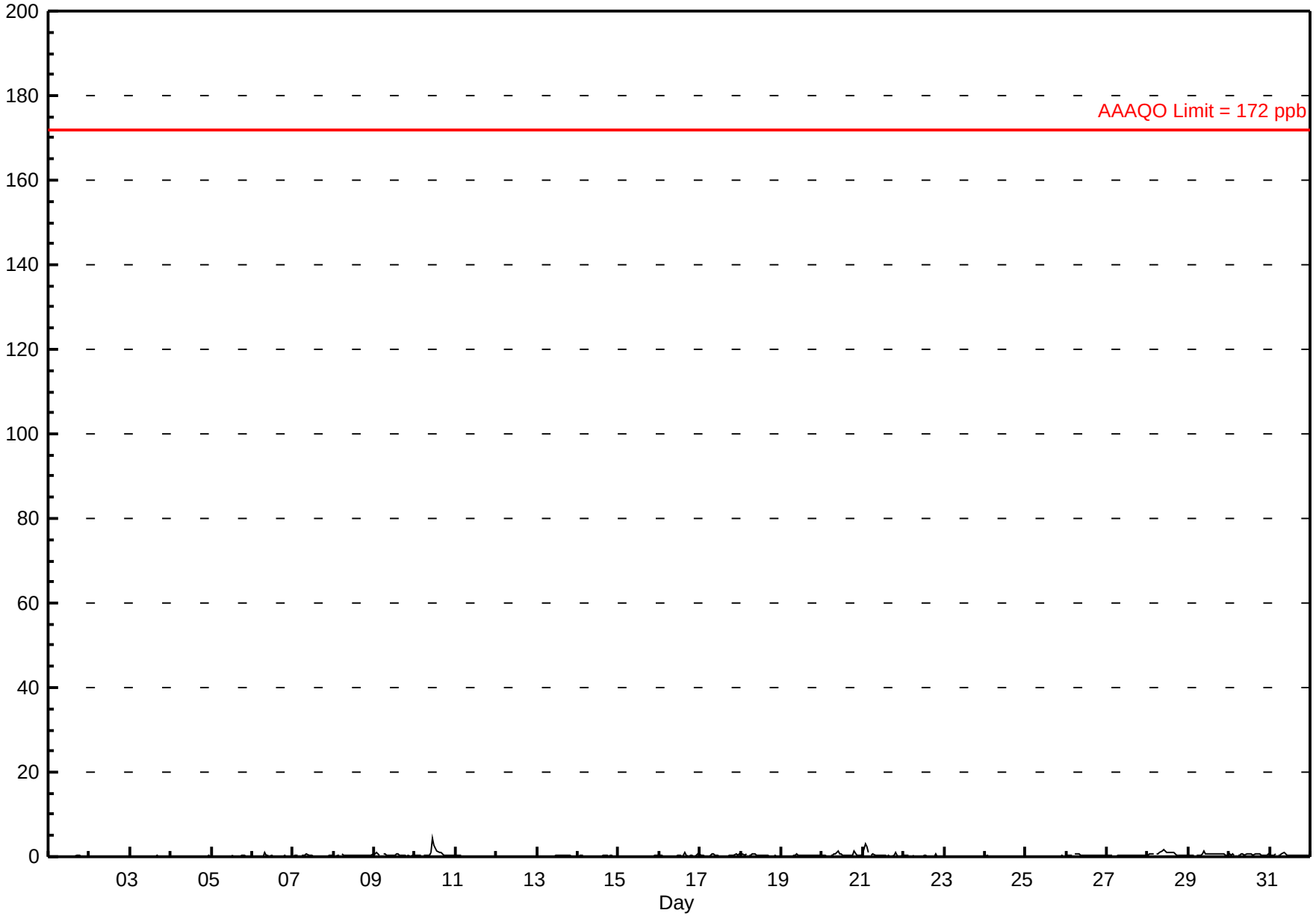
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 57 ppb

PASZA
Peace Airshed Zone Association

# Hourly Averages

## Sulphur Dioxide ($SO_2$) - ppb

## Beaverlodge - July 2010



PASZA
Peace Airshed Zone Association

# Hourly Maximums

## Sulphur Dioxide ($SO_2$) - ppb

## Beaverlodge - July 2010

Maximum Value: 7.5 ppb on Jul 10 11:00

Maximum Daily Average: 1.4 ppb on Jul 10

Minimum Value: 0 ppb on Jul 14 09:00

Minimum Daily Average: 0.2 ppb on Jul 24

Maximum Diurnal Average: 0.7 ppb at hour 11

Minimum Diurnal Average: 0.3 ppb at hour 22

Monthly Average: 0.45 ppb

Percentiles: $P_1 = 0.1$ $P_{10} = 0.1$ $Q_1 = 0.2$ Median = 0.3 $Q_3 = 0.5$ $P_{90} = 0.8$ $P_{99} = 2.6$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 705 |
| Hours of Missing Data: | 39 |
| Hours of Calibration: | 39 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 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 |
| 2-Jul | 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 | 0.2 |
| 3-Jul | 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 | 0.5 |
| 4-Jul | 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-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | C | C | C | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.5 |
| 6-Jul | 0 | 0 | 0 | 0 | A | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 1.6 |
| 7-Jul | 0 | 0 | 0 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.4 | 0.8 |
| 8-Jul | 0 | 0 | 0 | 0 | A | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0.5 | 0.8 |
| 9-Jul | 1 | 1 | 1 | 0 | A | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.7 | 1.4 |
| 10-Jul | 0 | 0 | 0 | 0 | A | 0 | 1 | 1 | 1 | 5 | 7 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1.4 | 7.5 |
| 11-Jul | 0 | 1 | 1 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.6 |
| 12-Jul | 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 |
| 13-Jul | 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 |
| 14-Jul | 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-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | C | C | C | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.2 | 0.7 |
| 16-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0.5 | 1.7 |
| 17-Jul | 1 | 0 | 0 | 0 | A | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0.5 | 1.1 |
| 18-Jul | 1 | 2 | 1 | 1 | A | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.5 | 1.6 |
| 19-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 1 | 1 | 1 | 0 | 0.6 | 1.6 |
| 20-Jul | 1 | 0 | 0 | 0 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | 0 | 0.7 | 2.4 |
| 21-Jul | 2 | 4 | 3 | 2 | A | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1.0 | 4.2 |
| 22-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.3 | 1.3 |
| 23-Jul | 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 | 0.2 |
| 24-Jul | 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-Jul | 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 |
| 26-Jul | 0 | 0 | 0 | 1 | A | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0.5 | 0.8 |
| 27-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.4 | 0.6 |
| 28-Jul | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.9 | 1.8 |
| 29-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.7 | 1.7 |
| 30-Jul | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.7 | 0.8 |
| 31-Jul | 0 | 1 | 1 | 1 | A | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0.6 | 1.2 |
| | 0.4 | 0.5 | 0.4 | 0.4 | -- | 0.4 | 0.4 | 0.5 | 0.5 | 0.6 | 0.7 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.4 | 0.3 | 0.4 | 0.4 | Diurnal Average | |
| | 2.3 | 4.2 | 2.7 | 1.8 | -- | 0.8 | 1.1 | 1.6 | 1.6 | 4.6 | 7.5 | 3.4 | 3.3 | 1.9 | 1.3 | 1.4 | 1.0 | 1.6 | 1.2 | 3.0 | 1.1 | 0.7 | 0.7 | 1.7 | Diurnal Maximum | |

C - Calibration

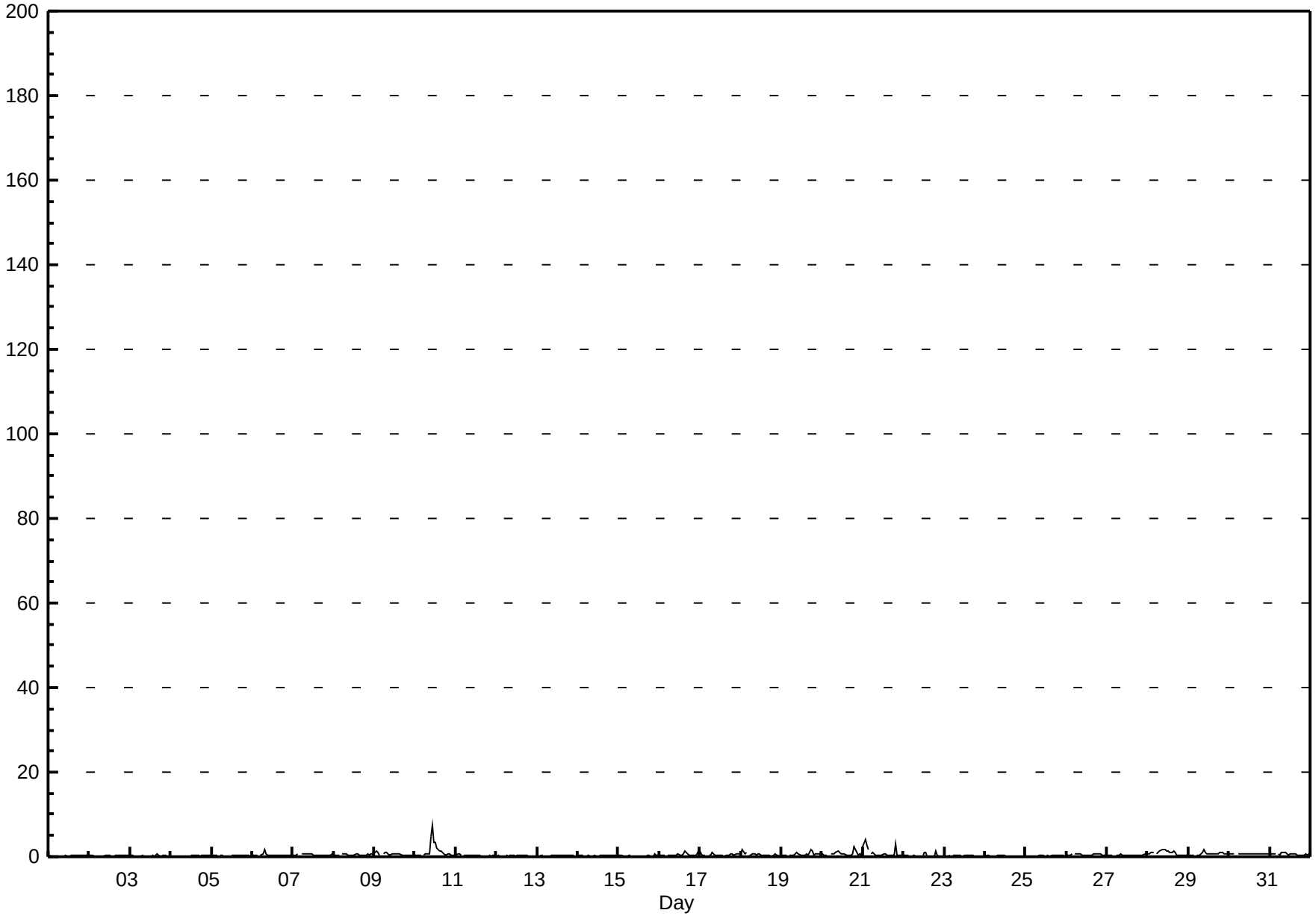
A - Automated Daily Zero Span

PASZA
Peace Airshed Zone Association

# Hourly Maximums

## Sulphur Dioxide ($SO_2$) - ppb

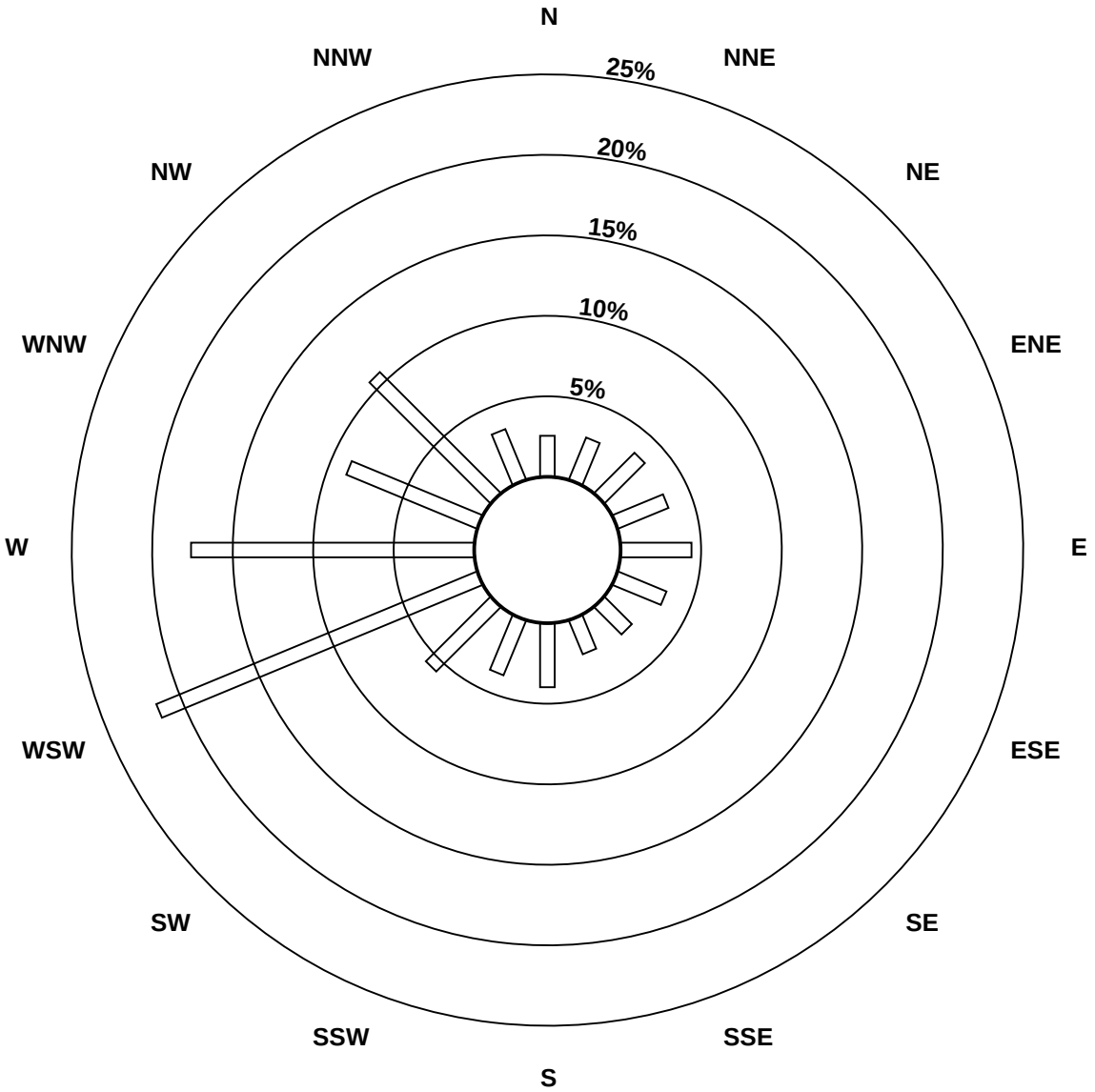
## Beaverlodge - July 2010



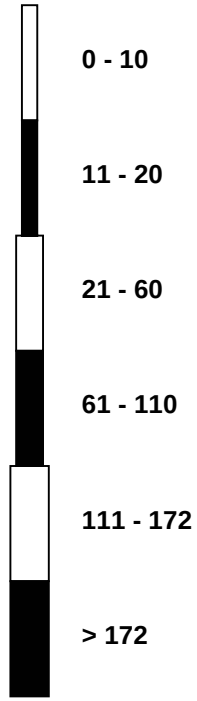
# Pollutant Rose

**Sulphur Dioxide ($SO_2$) - ppb**

**Beaverlodge - July 2010**




**Pollutant Classes (ppb)**



PASZA
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# Hourly Averages

## Nitrogen Dioxide ($NO_2$) - ppb

## Beaverlodge - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 9.5 ppb on Jul 21 06:00 Maximum Daily Average: 3.2 ppb on Jul 28

Minimum Value: 0 ppb on Jul 24 04:00 Minimum Daily Average: 0.4 ppb on Jul 4
Maximum Diurnal Average: 4.7 ppb at hour 6 Minimum Diurnal Average: 0.6 ppb at hour 15
Monthly Average: 1.66 ppb Percentiles: $P_1$ = 0.2 $P_{10}$ = 0.3 $Q_1$ = 0.5 Median = 1.1 $Q_3$ = 2.4 $P_{90}$ = 3.8 $P_{99}$ = 7.0

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 708 |
| Hours of Missing Data: | 36 |
| Hours of Calibration: | 36 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 1 | 2 | 1 | 3 | A | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0.8 | 2.9 |
| 2-Jul | 1 | 1 | 2 | 4 | A | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1.0 | 5.1 |
| 3-Jul | 2 | 3 | 2 | 2 | A | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0.8 | 2.5 |
| 4-Jul | 0 | 0 | 0 | 0 | A | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0.4 | 2.2 |
| 5-Jul | 1 | 1 | 1 | 1 | A | 3 | 2 | 1 | C | C | C | C | C | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1.2 | 3.3 |
| 6-Jul | 1 | 1 | 2 | 2 | A | 3 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 2 | 3 | 3 | 1.3 | 3.3 |
| 7-Jul | 2 | 2 | 3 | 6 | A | 7 | 6 | 8 | 5 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 8 | 3 | 3 | 2.7 | 7.9 |
| 8-Jul | 3 | 4 | 4 | 4 | A | 6 | 6 | 5 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 4 | 3 | 2 | 2 | 2.6 | 5.7 |
| 9-Jul | 3 | 5 | 6 | 5 | A | 5 | 4 | 3 | 3 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 4 | 1 | 1 | 2 | 2.4 | 6.0 |
| 10-Jul | 2 | 3 | 3 | 3 | A | 5 | 5 | 4 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 5 | 4 | 3 | 3 | 2.3 | 4.9 |
| 11-Jul | 5 | 4 | 5 | 4 | A | 6 | 3 | 3 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 3 | 2 | 2.1 | 6.3 |
| 12-Jul | 0 | 0 | 0 | 0 | A | 2 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.7 | 2.3 |
| 13-Jul | 0 | 0 | 1 | 1 | A | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 1 | 2 | 1.2 | 2.7 |
| 14-Jul | 3 | 4 | 4 | 5 | A | 6 | 2 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1.6 | 6.2 |
| 15-Jul | 2 | 3 | 2 | 2 | A | 4 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.9 | 4.1 |
| 16-Jul | 1 | 0 | 0 | 0 | A | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0.8 | 3.0 |
| 17-Jul | 5 | 2 | 3 | 4 | A | 5 | 4 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 4 | 2 | 1.7 | 5.2 |
| 18-Jul | 4 | 3 | 2 | 2 | A | 4 | 3 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 3 | 2 | 1.7 | 4.5 |
| 19-Jul | 2 | 3 | 3 | 2 | A | 5 | 4 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 2 | 3 | 3 | 2.1 | 4.8 |
| 20-Jul | 2 | 2 | 3 | 4 | A | 8 | 5 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 4 | 3 | 3 | 4 | 2.5 | 7.8 |
| 21-Jul | 2 | 2 | 2 | 2 | A | 9 | 7 | 4 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2.3 | 9.5 |
| 22-Jul | 3 | 3 | 3 | 3 | A | 5 | 3 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 2 | 1 | 1.8 | 5.1 |
| 23-Jul | 1 | 1 | 3 | 3 | A | 4 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 2 | 1.4 | 4.2 |
| 24-Jul | 3 | 3 | 1 | 0 | A | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 2 | 0.7 | 3.1 |
| 25-Jul | 2 | 1 | 1 | 1 | A | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0.7 | 2.6 |
| 26-Jul | 1 | 1 | 2 | 2 | A | 4 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 4 | 1.4 | 3.9 |
| 27-Jul | 5 | 3 | 3 | 4 | A | 5 | 4 | 4 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2.1 | 5.2 |
| 28-Jul | 1 | 1 | 2 | 3 | A | 5 | 7 | 6 | 4 | 4 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 4 | 5 | 5 | 3.2 | 7.0 |
| 29-Jul | 4 | 5 | 3 | 3 | A | 8 | 8 | 5 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 2.6 | 8.4 |
| 30-Jul | 2 | 2 | 2 | 2 | A | 6 | 7 | 4 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 2 | 2.2 | 7.2 |
| 31-Jul | 4 | 2 | 4 | 3 | A | 6 | 5 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 4 | 3 | 2 | 2.2 | 5.9 |
| | 2.2 | 2.2 | 2.3 | 2.5 | -- | 4.7 | 3.4 | 2.5 | 1.8 | 1.2 | 0.9 | 0.7 | 0.7 | 0.7 | 0.6 | 0.6 | 0.7 | 0.6 | 0.7 | 1.0 | 1.8 | 2.1 | 2.0 | 2.0 | Diurnal Average | |
| | 5.0 | 4.8 | 6.0 | 6.1 | -- | 9.5 | 7.6 | 7.8 | 4.6 | 4.1 | 3.4 | 2.7 | 2.4 | 2.0 | 1.7 | 1.8 | 2.2 | 1.8 | 2.2 | 2.7 | 4.5 | 7.9 | 5.0 | 5.0 | Diurnal Maximum | |

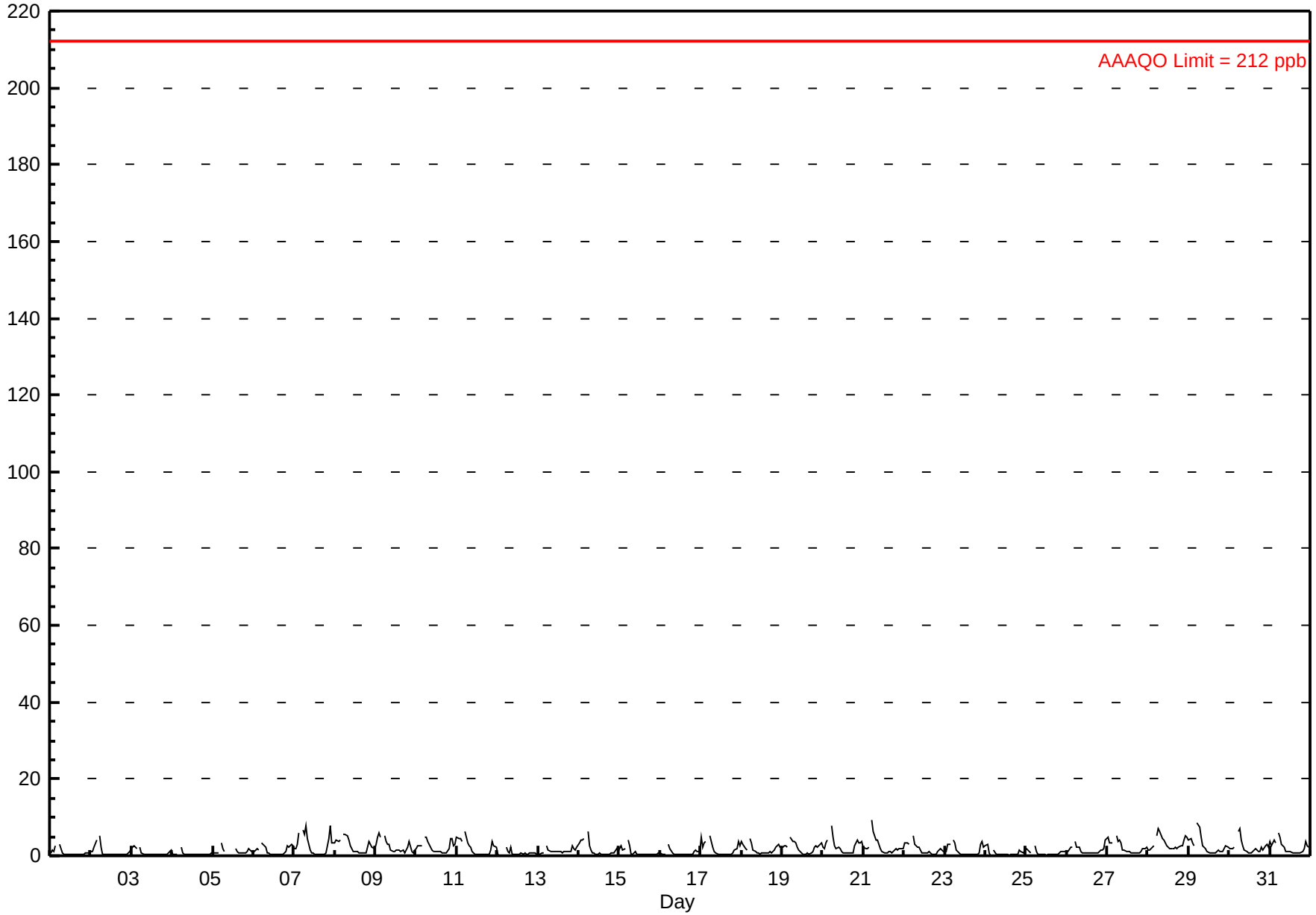
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 212 ppb 24-hr 106 ppb

PASZA
Peace Airshed Zone Association

# Hourly Averages

## Nitrogen Dioxide ($NO_2$) - ppb

## Beaverlodge - July 2010



PASZA
Peace Airshed Zone Association

# Hourly Maximums

## Nitrogen Dioxide ($NO_2$) - ppb

## Beaverlodge - July 2010

Maximum Value: 48.1 ppb on Jul 12 09:00

Maximum Daily Average: 4.9 ppb on Jul 28

Minimum Value: 0 ppb on Jul 24 04:00

Minimum Daily Average: 0.9 ppb on Jul 4

Maximum Diurnal Average: 8.4 ppb at hour 6

Minimum Diurnal Average: 1.1 ppb at hour 16

Monthly Average: 2.94 ppb

Percentiles: $P_1$ = 0.4 $P_{10}$ = 0.6 $Q_1$ = 1.0 Median = 1.9 $Q_3$ = 4.0 $P_{90}$ = 6.1 $P_{99}$ = 11.6

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 708 |
| Hours of Missing Data: | 36 |
| 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-Jul | 1 | 3 | 3 | 4 | A | 5 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 1.6 | 5.2 |
| 2-Jul | 4 | 2 | 3 | 5 | A | 7 | 5 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1.8 | 7.3 |
| 3-Jul | 4 | 3 | 3 | 4 | A | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 1.6 | 5.3 |
| 4-Jul | 1 | 1 | 1 | 1 | A | 5 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 4.5 |
| 5-Jul | 2 | 2 | 1 | 1 | A | 7 | 3 | 3 | C | C | C | C | C | 4 | 2 | 1 | 1 | 1 | 1 | 1 | 3 | 4 | 2 | 1 | 2.2 | 6.6 |
| 6-Jul | 1 | 3 | 2 | 2 | A | 5 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 3 | 4 | 3 | 5 | 3 | 2.2 | 5.1 |
| 7-Jul | 3 | 4 | 6 | 10 | A | 11 | 12 | 9 | 6 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 10 | 12 | 4 | 5 | 4.5 | 12.5 |
| 8-Jul | 5 | 5 | 4 | 6 | A | 10 | 12 | 9 | 6 | 3 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 5 | 6 | 6 | 3 | 2 | 4.1 | 11.6 |
| 9-Jul | 4 | 6 | 8 | 6 | A | 9 | 5 | 5 | 6 | 2 | 1 | 1 | 3 | 3 | 8 | 2 | 4 | 2 | 4 | 4 | 9 | 2 | 1 | 3 | 4.3 | 9.3 |
| 10-Jul | 2 | 4 | 4 | 3 | A | 8 | 8 | 5 | 3 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 3 | 6 | 7 | 4 | 4 | 3.4 | 8.3 |
| 11-Jul | 6 | 5 | 5 | 4 | A | 10 | 4 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 6 | 5 | 5 | 3.0 | 9.6 |
| 12-Jul | 3 | 1 | 0 | 1 | A | 5 | 3 | 7 | 48 | 19 | 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4.9 | 48.1 |
| 13-Jul | 1 | 1 | 1 | 1 | A | 5 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 5 | 4 | 2 | 3 | 1.9 | 5.3 |
| 14-Jul | 5 | 5 | 5 | 6 | A | 10 | 5 | 9 | 6 | 1 | 1 | 1 | 10 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 5 | 2 | 3.5 | 9.9 |
| 15-Jul | 2 | 4 | 3 | 4 | A | 8 | 4 | 2 | 1 | 27 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 3.0 | 27.1 |
| 16-Jul | 2 | 1 | 1 | 2 | A | 6 | 4 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 2 | 4 | 1.7 | 6.1 |
| 17-Jul | 8 | 3 | 4 | 4 | A | 10 | 5 | 3 | 2 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 6 | 4 | 2.7 | 9.6 |
| 18-Jul | 5 | 3 | 3 | 2 | A | 6 | 5 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 3 | 5 | 4 | 3 | 2.4 | 6.4 |
| 19-Jul | 4 | 6 | 5 | 4 | A | 8 | 4 | 4 | 4 | 4 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 5 | 4 | 4 | 4 | 4 | 5 | 3.4 | 7.6 |
| 20-Jul | 5 | 4 | 5 | 9 | A | 13 | 9 | 5 | 2 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 6 | 7 | 6 | 5 | 6 | 4.1 | 12.7 |
| 21-Jul | 3 | 5 | 2 | 4 | A | 24 | 9 | 6 | 5 | 5 | 3 | 2 | 1 | 1 | 1 | 2 | 3 | 1 | 2 | 3 | 3 | 3 | 5 | 3 | 4.2 | 24.4 |
| 22-Jul | 5 | 4 | 4 | 4 | A | 8 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 2 | 2.7 | 7.9 |
| 23-Jul | 1 | 2 | 5 | 5 | A | 7 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 3 | 6 | 5 | 3 | 2.4 | 7.3 |
| 24-Jul | 5 | 4 | 3 | 0 | A | 4 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 4 | 2 | 5 | 1.8 | 4.6 |
| 25-Jul | 3 | 3 | 2 | 1 | A | 5 | 3 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 2 | 3 | 1.4 | 4.9 |
| 26-Jul | 1 | 2 | 4 | 3 | A | 6 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 8 | 2.2 | 8.0 |
| 27-Jul | 8 | 6 | 4 | 4 | A | 8 | 7 | 5 | 4 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 5 | 2 | 3 | 3.2 | 8.0 |
| 28-Jul | 1 | 2 | 2 | 3 | A | 9 | 11 | 11 | 8 | 5 | 4 | 4 | 3 | 2 | 2 | 2 | 4 | 3 | 4 | 4 | 4 | 12 | 7 | 6 | 4.9 | 11.9 |
| 29-Jul | 5 | 11 | 5 | 3 | A | 12 | 10 | 7 | 5 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 2 | 2 | 3 | 3 | 3 | 3.9 | 12.3 |
| 30-Jul | 2 | 2 | 2 | 3 | A | 15 | 15 | 6 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 4 | 2 | 1 | 1 | 4 | 2 | 6 | 4 | 3 | 3.7 | 15.3 |
| 31-Jul | 5 | 6 | 5 | 6 | A | 9 | 6 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 7 | 3 | 2 | 3.2 | 8.9 |
| | 3.5 | 3.6 | 3.4 | 3.7 | -- | 8.4 | 5.5 | 4.0 | 4.4 | 3.4 | 1.7 | 1.1 | 1.4 | 1.2 | 1.3 | 1.1 | 1.2 | 1.2 | 1.4 | 2.2 | 3.3 | 4.2 | 3.2 | 3.4 | Diurnal Average | |
| | 8.4 | 11.5 | 7.7 | 9.5 | -- | 24.4 | 14.7 | 10.8 | 48.1 | 27.1 | 12.5 | 3.6 | 9.8 | 4.1 | 8.0 | 3.5 | 4.2 | 3.1 | 5.1 | 5.8 | 9.5 | 11.9 | 7.3 | 8.0 | Diurnal Maximum | |

C - Calibration

A - Automated Daily Zero Span

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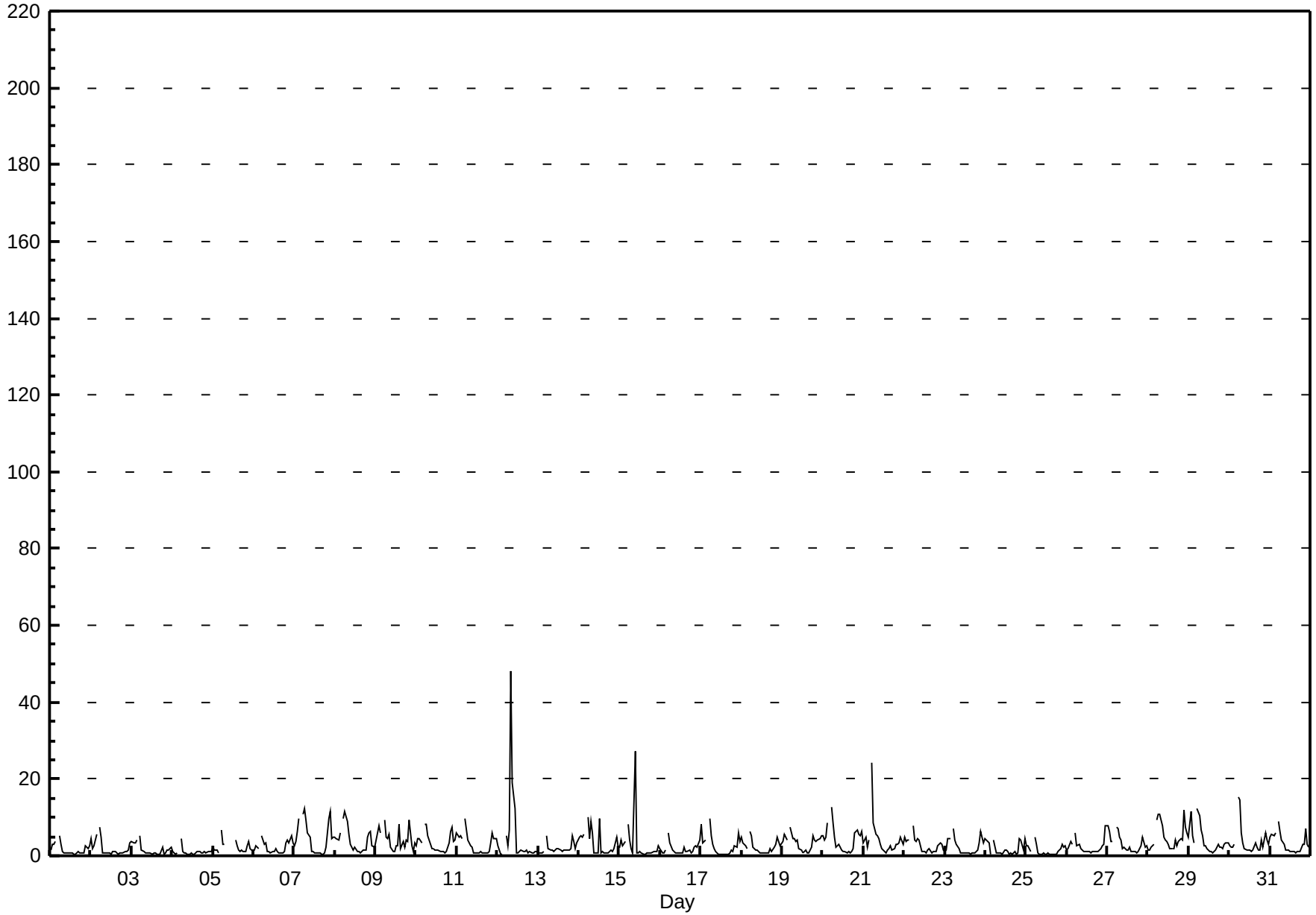
# Hourly Maximums

**Nitrogen Dioxide ($NO_2$) - ppb**

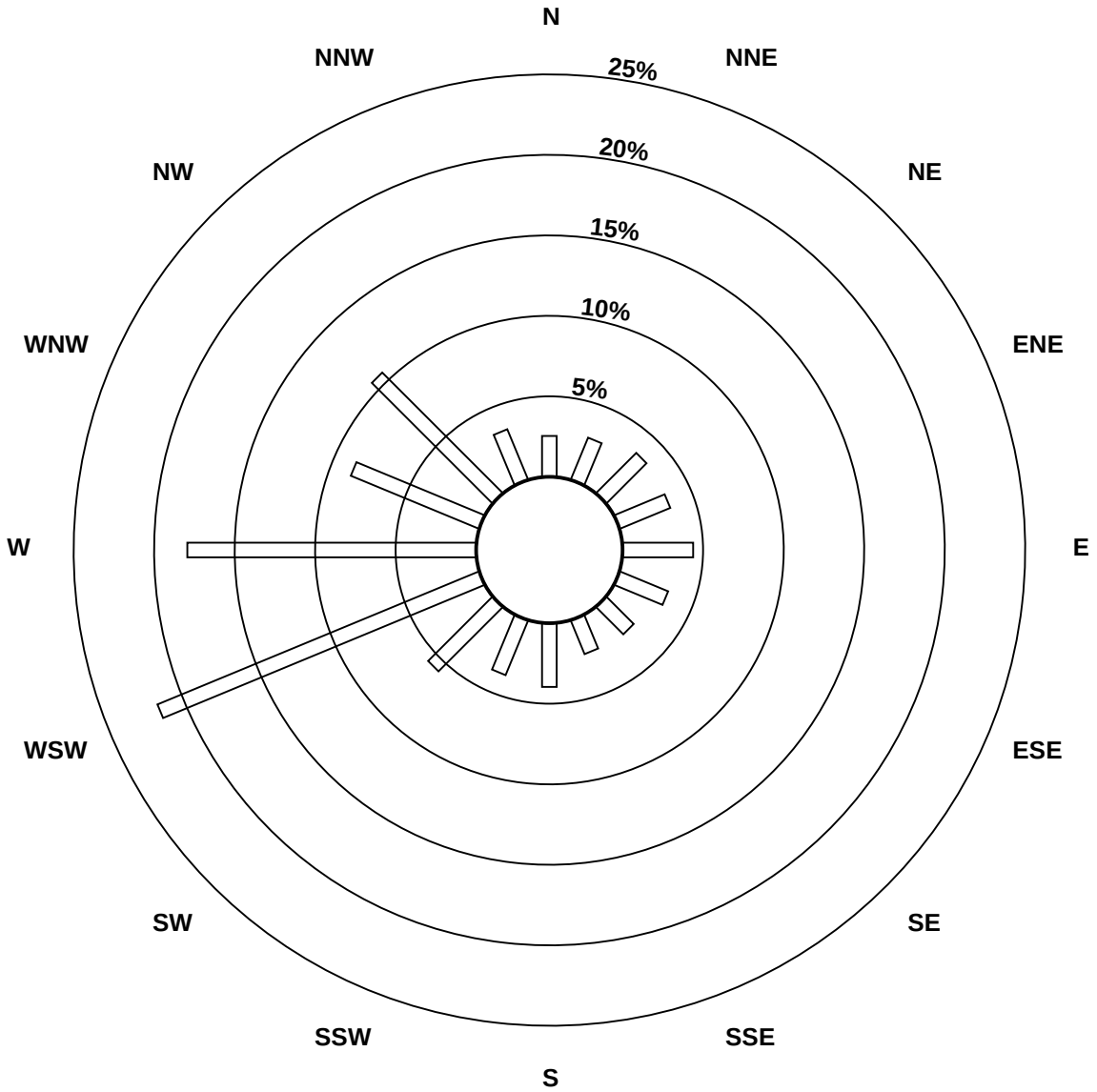
**Beaverlodge - July 2010**



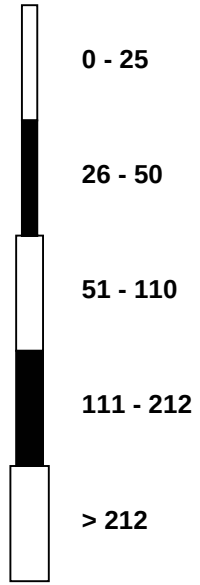
# Pollutant Rose

**Nitrogen Dioxide ($NO_2$) - ppb**

**Beaverlodge - July 2010**




**Pollutant Classes (ppb)**



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# Hourly Averages

## Nitrogen Oxide (NO) - ppb

## Beaverlodge - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 7.6 ppb on Jul 27 08:00 Maximum Daily Average: 0.8 ppb on Jul 27

Minimum Value: 0 ppb on Jul 2 02:00 Minimum Daily Average: 0.0 ppb on Jul 24
Maximum Diurnal Average: 1.4 ppb at hour 8 Minimum Diurnal Average: 0.0 ppb at hour 24
Monthly Average: 0.27 ppb Percentiles: $P_1$ = 0.0 $P_{10}$ = 0.0 $Q_1$ = 0.1 Median = 0.1 $Q_3$ = 0.2 $P_{90}$ = 0.6 $P_{99}$ = 3.0

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 708 |
| Hours of Missing Data: | 36 |
| Hours of Calibration: | 36 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 0 | 0 | 0 | 0 | A | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.6 |
| 2-Jul | 0 | 0 | 0 | 0 | A | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.7 |
| 3-Jul | 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 |
| 4-Jul | 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 |
| 5-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | C | C | C | C | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.5 |
| 6-Jul | 0 | 0 | 0 | 0 | A | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.3 | 1.3 |
| 7-Jul | 0 | 0 | 0 | 0 | A | 1 | 3 | 5 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 | 5.3 |
| 8-Jul | 0 | 0 | 0 | 0 | A | 0 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 2.6 |
| 9-Jul | 0 | 0 | 0 | 0 | A | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.9 |
| 10-Jul | 0 | 0 | 0 | 0 | A | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 1.7 |
| 11-Jul | 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 | 0.7 |
| 12-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 3.3 |
| 13-Jul | 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 |
| 14-Jul | 0 | 0 | 0 | 0 | A | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 1.6 |
| 15-Jul | 0 | 0 | 0 | 0 | A | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.8 |
| 16-Jul | 0 | 0 | 0 | 0 | A | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.6 |
| 17-Jul | 0 | 0 | 0 | 0 | A | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 2.2 |
| 18-Jul | 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 | 0.8 |
| 19-Jul | 0 | 0 | 0 | 0 | A | 0 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 1.7 |
| 20-Jul | 0 | 0 | 0 | 0 | A | 2 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 3.1 |
| 21-Jul | 0 | 0 | 0 | 0 | A | 1 | 2 | 2 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 2.6 |
| 22-Jul | 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 |
| 23-Jul | 0 | 0 | 0 | 0 | A | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 2.2 |
| 24-Jul | 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 |
| 25-Jul | 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 |
| 26-Jul | 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 |
| 27-Jul | 0 | 0 | 0 | 0 | A | 1 | 4 | 8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 7.6 |
| 28-Jul | 0 | 0 | 0 | 0 | A | 0 | 3 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 4.2 |
| 29-Jul | 0 | 0 | 0 | 0 | A | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 2.0 |
| 30-Jul | 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 | 1.4 |
| 31-Jul | 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 | 0.9 |
| | 0.0 | 0.1 | 0.1 | 0.1 | -- | 0.5 | 1.2 | 1.4 | 0.8 | 0.4 | 0.3 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.0 | Diurnal Average | |
| | 0.3 | 0.3 | 0.4 | 0.5 | -- | 2.1 | 4.2 | 7.6 | 3.6 | 1.4 | 1.0 | 0.5 | 0.5 | 0.6 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.9 | 0.4 | 0.3 | 0.1 | 0.2 | Diurnal Maximum | |

C - Calibration A - Automated Daily Zero Span

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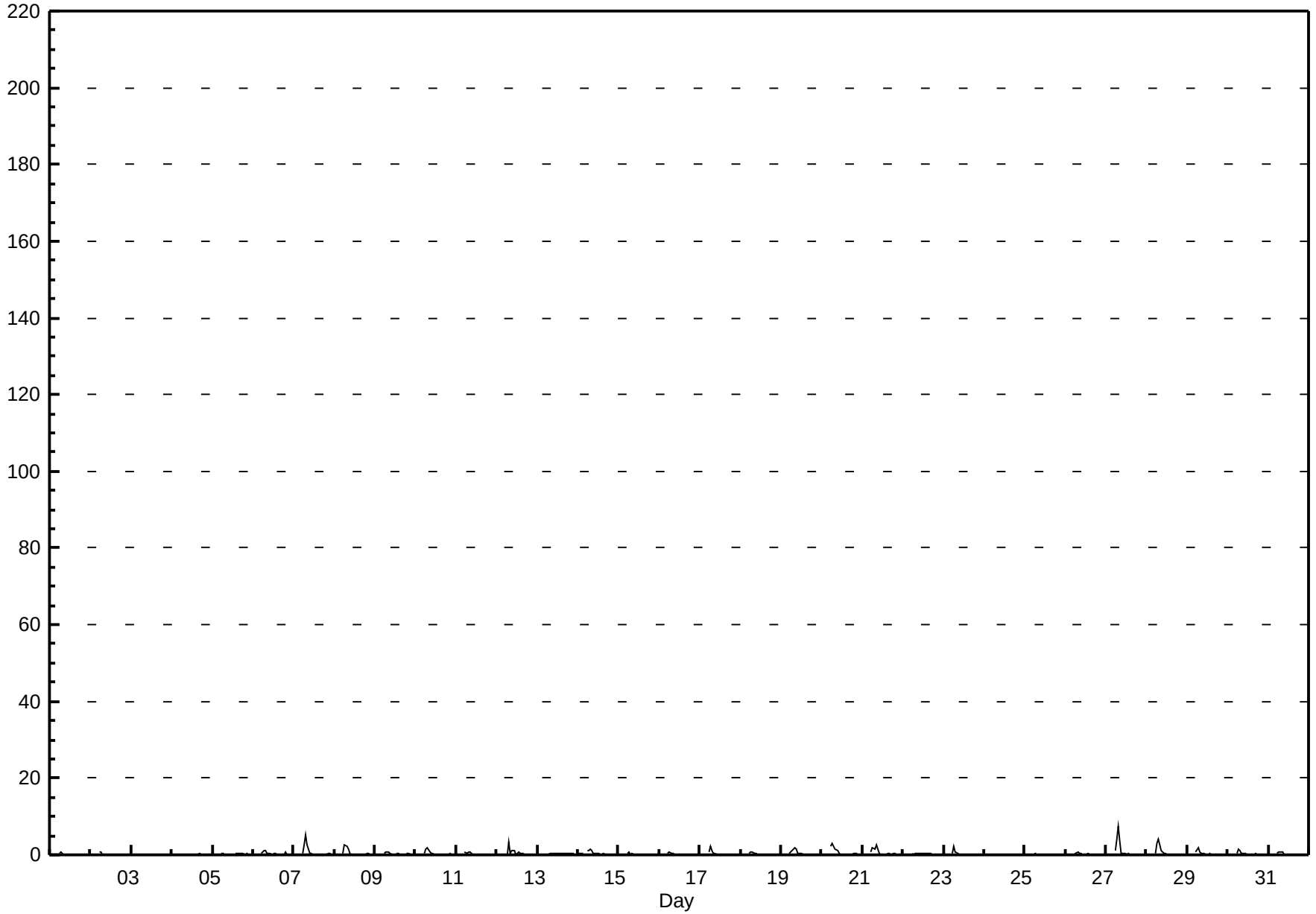
# Hourly Averages

**Nitrogen Oxide (NO) - ppb**

**Beaverlodge - July 2010**



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# Hourly Maximums

## Nitrogen Oxide (NO) - ppb

## Beaverlodge - July 2010

Maximum Value: 101.9 ppb on Jul 12 08:00

Maximum Daily Average: 8.8 ppb on Jul 12

Minimum Value: 0 ppb on Jul 25 04:00

Minimum Daily Average: 0.2 ppb on Jul 24

Maximum Diurnal Average: 6.1 ppb at hour 8

Minimum Diurnal Average: 0.2 ppb at hour 24

Monthly Average: 1.07 ppb

Percentiles: $P_1 = 0.1$ $P_{10} = 0.1$ $Q_1 = 0.2$ Median = 0.3 $Q_3 = 0.5$ $P_{90} = 1.5$ $P_{99} = 14.5$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 708 |
| Hours of Missing Data: | 36 |
| Hours of Calibration: | 36 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 0 | 0 | 0 | 0 | A | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 1.0 |
| 2-Jul | 0 | 0 | 0 | 0 | A | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 1.6 |
| 3-Jul | 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 | 0.5 |
| 4-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.7 |
| 5-Jul | 0 | 0 | 0 | 0 | A | 0 | 1 | 1 | C | C | C | C | C | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.9 |
| 6-Jul | 0 | 0 | 0 | 0 | A | 4 | 2 | 2 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 2.1 | 30.5 |
| 7-Jul | 0 | 0 | 0 | 0 | A | 3 | 19 | 9 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1.8 | 19.1 |
| 8-Jul | 0 | 0 | 0 | 0 | A | 1 | 8 | 5 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.9 | 8.0 |
| 9-Jul | 0 | 0 | 0 | 0 | A | 1 | 1 | 1 | 5 | 1 | 0 | 0 | 1 | 13 | 5 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1.4 | 12.7 |
| 10-Jul | 0 | 0 | 0 | 0 | A | 1 | 4 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 | 3.8 |
| 11-Jul | 0 | 0 | 0 | 0 | A | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 1.3 |
| 12-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 102 | 6 | 36 | 32 | 0 | 8 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8.8 | 101.9 |
| 13-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0.5 | 1.1 |
| 14-Jul | 1 | 1 | 3 | 1 | A | 2 | 14 | 16 | 6 | 1 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.3 | 16.2 |
| 15-Jul | 0 | 0 | 0 | 0 | A | 1 | 1 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 5.0 |
| 16-Jul | 0 | 0 | 0 | 0 | A | 2 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 2.1 |
| 17-Jul | 0 | 0 | 0 | 0 | A | 3 | 4 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 | 3.9 |
| 18-Jul | 0 | 0 | 0 | 0 | A | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 2.0 |
| 19-Jul | 0 | 1 | 0 | 1 | A | 1 | 2 | 2 | 3 | 4 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0.9 | 3.6 |
| 20-Jul | 0 | 0 | 1 | 0 | A | 6 | 5 | 4 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1.1 | 6.2 |
| 21-Jul | 0 | 0 | 0 | 0 | A | 3 | 2 | 3 | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.9 | 3.8 |
| 22-Jul | 0 | 0 | 0 | 0 | A | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 2.9 |
| 23-Jul | 0 | 0 | 0 | 0 | A | 1 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.6 | 3.2 |
| 24-Jul | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.7 |
| 25-Jul | 0 | 0 | 0 | 0 | A | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 1.4 |
| 26-Jul | 0 | 0 | 0 | 0 | A | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 1.1 |
| 27-Jul | 0 | 0 | 0 | 0 | A | 2 | 23 | 14 | 6 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.3 | 22.6 |
| 28-Jul | 0 | 0 | 0 | 0 | A | 1 | 7 | 8 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1.1 | 8.3 |
| 29-Jul | 0 | 2 | 0 | 0 | A | 2 | 5 | 2 | 2 | 1 | 1 | 1 | 2 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.2 | 9.0 |
| 30-Jul | 0 | 0 | 0 | 0 | A | 3 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.7 | 5.0 |
| 31-Jul | 0 | 0 | 0 | 0 | A | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 2.0 |
| | 0.2 | 0.3 | 0.3 | 0.3 | -- | 1.5 | 3.9 | 6.1 | 2.0 | 2.0 | 1.5 | 0.3 | 0.8 | 1.6 | 0.5 | 0.3 | 0.3 | 0.3 | 0.3 | 1.3 | 0.3 | 0.3 | 0.2 | 0.2 | Diurnal Average | |
| | 0.8 | 1.8 | 2.6 | 1.2 | -- | 6.2 | 22.6 | 101.9 | 6.4 | 35.5 | 32.0 | 0.8 | 7.5 | 15.6 | 4.9 | 0.7 | 0.5 | 0.9 | 0.7 | 30.5 | 1.2 | 0.6 | 0.9 | 0.6 | Diurnal Maximum | |

C - Calibration

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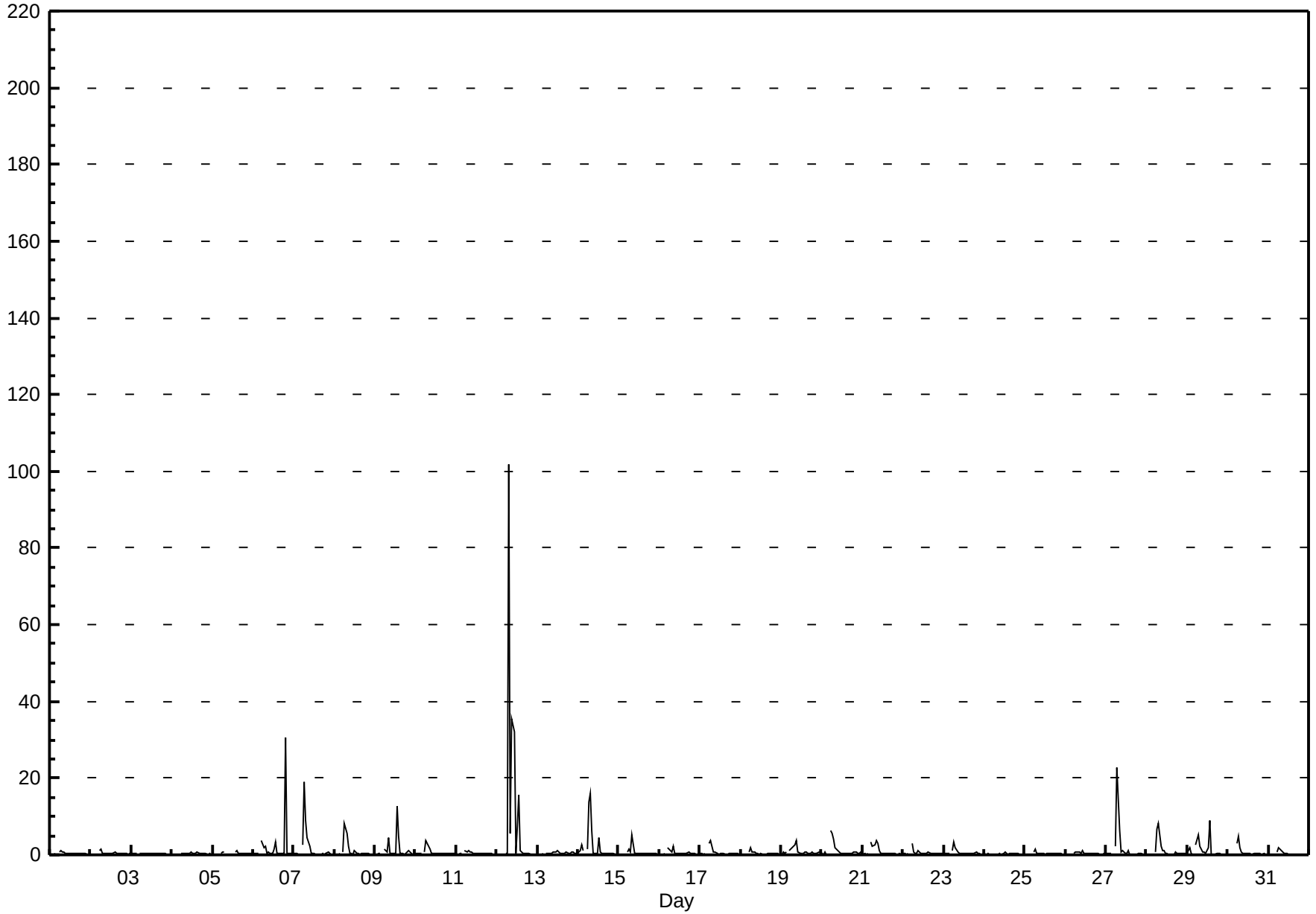
# Hourly Maximums

**Nitrogen Oxide (NO) - ppb**

**Beaverlodge - July 2010**



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# Hourly Averages

## Oxides of Nitrogen ($NO_X$) - ppb

## Beaverlodge - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 13.6 ppb on Jul 7 08:00 Maximum Daily Average: 3.8 ppb on Jul 28

Minimum Value: 0 ppb on Jul 24 04:00 Minimum Daily Average: 0.6 ppb on Jul 4
Maximum Diurnal Average: 5.4 ppb at hour 6 Minimum Diurnal Average: 0.8 ppb at hour 15
Monthly Average: 2.02 ppb Percentiles: $P_1$ = 0.2 $P_{10}$ = 0.4 $Q_1$ = 0.7 Median = 1.3 $Q_3$ = 2.8 $P_{90}$ = 4.5 $P_{99}$ = 9.7

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 708 |
| Hours of Missing Data: | 36 |
| Hours of Calibration: | 36 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 1 | 2 | 1 | 3 | A | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0.9 | 3.4 |
| 2-Jul | 1 | 1 | 2 | 4 | A | 6 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1.2 | 5.8 |
| 3-Jul | 2 | 3 | 2 | 2 | A | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0.9 | 2.6 |
| 4-Jul | 1 | 0 | 0 | 0 | A | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0.6 | 2.3 |
| 5-Jul | 1 | 1 | 1 | 1 | A | 4 | 2 | 2 | C | C | C | C | C | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1.5 | 3.6 |
| 6-Jul | 1 | 2 | 2 | 2 | A | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 3 | 1.7 | 4.0 |
| 7-Jul | 2 | 2 | 3 | 6 | A | 8 | 9 | 14 | 7 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 5 | 8 | 4 | 3 | 3.5 | 13.6 |
| 8-Jul | 3 | 4 | 4 | 4 | A | 6 | 8 | 8 | 6 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 4 | 3 | 2 | 2 | 3.2 | 8.4 |
| 9-Jul | 3 | 5 | 6 | 5 | A | 6 | 5 | 4 | 4 | 2 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 3 | 4 | 1 | 1 | 2 | 2.8 | 6.4 |
| 10-Jul | 2 | 3 | 3 | 3 | A | 6 | 7 | 6 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 5 | 5 | 3 | 3 | 2.8 | 6.7 |
| 11-Jul | 5 | 5 | 5 | 4 | A | 7 | 4 | 4 | 3 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 3 | 2 | 2.4 | 7.2 |
| 12-Jul | 1 | 0 | 0 | 0 | A | 2 | 1 | 1 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 2.7 |
| 13-Jul | 0 | 0 | 1 | 1 | A | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 3 | 2 | 2 | 2 | 1.6 | 3.2 |
| 14-Jul | 4 | 4 | 5 | 5 | A | 8 | 4 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2.1 | 7.7 |
| 15-Jul | 2 | 3 | 2 | 2 | A | 5 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1.1 | 4.7 |
| 16-Jul | 1 | 0 | 0 | 0 | A | 4 | 3 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 2 | 1 | 1 | 0.9 | 3.5 |
| 17-Jul | 5 | 3 | 3 | 4 | A | 6 | 6 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 4 | 3 | 2.1 | 6.2 |
| 18-Jul | 4 | 3 | 2 | 2 | A | 5 | 4 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 2 | 1.9 | 5.0 |
| 19-Jul | 3 | 3 | 3 | 3 | A | 6 | 5 | 5 | 5 | 4 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 3 | 3 | 4 | 2.6 | 5.5 |
| 20-Jul | 2 | 2 | 4 | 4 | A | 10 | 8 | 5 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 4 | 4 | 4 | 4 | 3.1 | 10.3 |
| 21-Jul | 2 | 2 | 2 | 2 | A | 11 | 9 | 6 | 7 | 5 | 3 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3.0 | 10.8 |
| 22-Jul | 4 | 3 | 3 | 3 | A | 6 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 2.1 | 5.7 |
| 23-Jul | 1 | 1 | 3 | 3 | A | 5 | 6 | 3 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 3 | 4 | 3 | 1.7 | 5.9 |
| 24-Jul | 3 | 3 | 1 | 0 | A | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 2 | 0.8 | 3.3 |
| 25-Jul | 2 | 2 | 1 | 1 | A | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0.8 | 2.8 |
| 26-Jul | 1 | 1 | 2 | 2 | A | 4 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 4 | 1.6 | 4.2 |
| 27-Jul | 5 | 3 | 4 | 4 | A | 6 | 8 | 12 | 7 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3.1 | 11.8 |
| 28-Jul | 1 | 2 | 2 | 3 | A | 6 | 10 | 11 | 6 | 5 | 4 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 5 | 5 | 3.8 | 10.8 |
| 29-Jul | 5 | 5 | 4 | 3 | A | 9 | 10 | 6 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 3 | 2 | 3.0 | 9.9 |
| 30-Jul | 2 | 2 | 2 | 2 | A | 7 | 9 | 5 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 3 | 3 | 2 | 2.5 | 9.0 |
| 31-Jul | 4 | 3 | 4 | 3 | A | 6 | 6 | 4 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 4 | 3 | 2 | 2.5 | 6.4 |
| | 2.4 | 2.4 | 2.5 | 2.7 | -- | 5.4 | 4.8 | 3.9 | 2.7 | 1.7 | 1.2 | 0.9 | 0.9 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | 1.3 | 2.0 | 2.3 | 2.2 | 2.2 | Diurnal Average | |
| | 5.3 | 5.1 | 6.4 | 6.4 | -- | 10.8 | 10.5 | 13.6 | 7.5 | 5.1 | 4.1 | 3.0 | 2.6 | 2.5 | 1.9 | 1.9 | 2.4 | 1.9 | 2.4 | 3.2 | 5.1 | 8.5 | 5.3 | 5.3 | Diurnal Maximum | |

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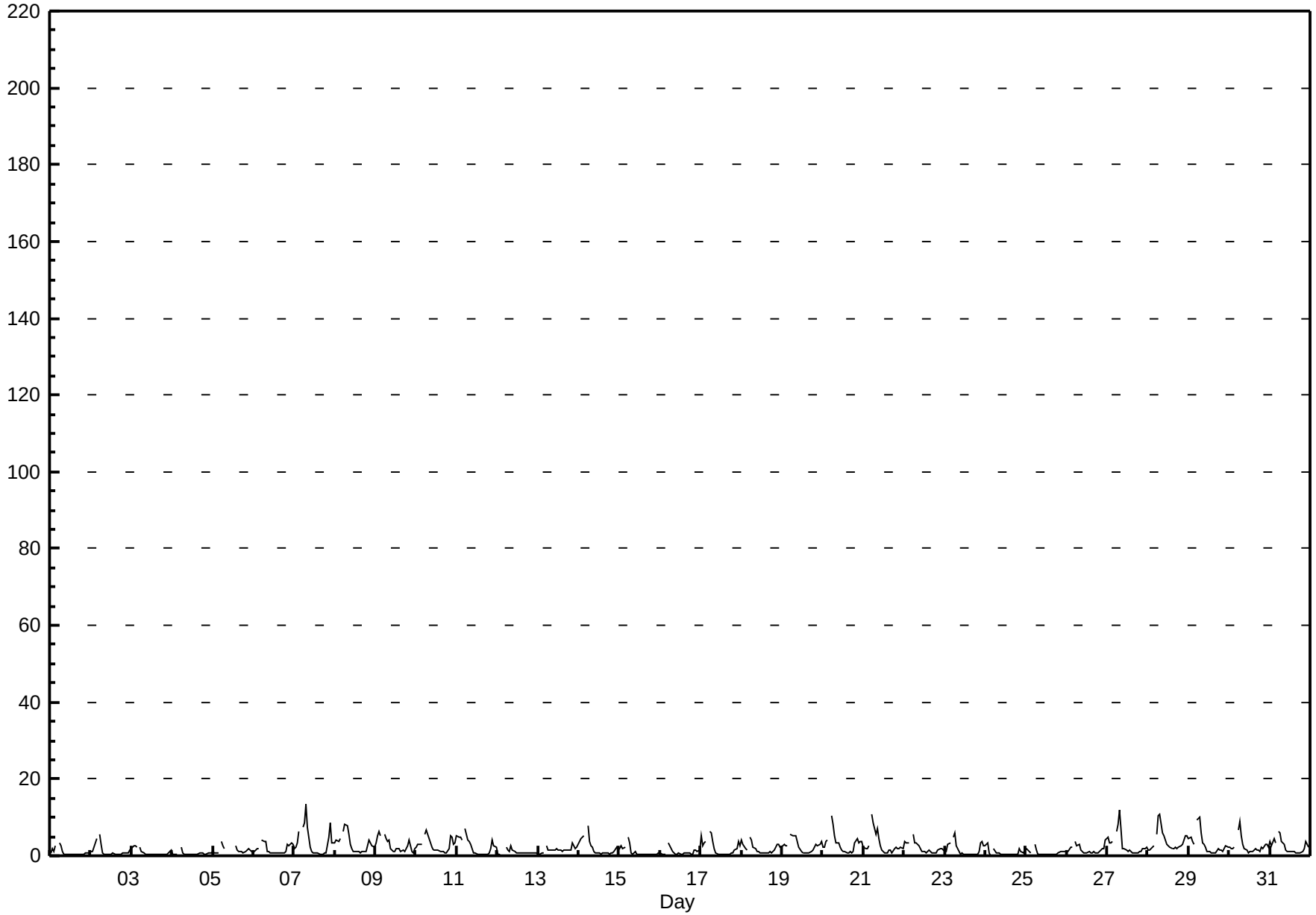
## Hourly Averages

**Oxides of Nitrogen ($NO_X$) - ppb**

**Beaverlodge - July 2010**



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# Hourly Maximums

## Oxides of Nitrogen ($NO_X$) - ppb

## Beaverlodge - July 2010

Maximum Value: 52.7 ppb on Jul 12 09:00

Maximum Daily Average: 6.5 ppb on Jul 7

Minimum Value: 0 ppb on Jul 25 13:00

Minimum Daily Average: 1.2 ppb on Jul 4

Maximum Diurnal Average: 9.6 ppb at hour 6

Minimum Diurnal Average: 1.4 ppb at hour 16

Monthly Average: 3.68 ppb

Percentiles: $P_1 = 0.6$ $P_{10} = 0.9$ $Q_1 = 1.2$ Median = 2.3 $Q_3 = 4.6$ $P_{90} = 7.5$ $P_{99} = 18.3$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 708 |
| Hours of Missing Data: | 36 |
| Hours of Calibration: | 36 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 2 | 3 | 3 | 4 | A | 6 | 4 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 1.9 | 5.5 |
| 2-Jul | 4 | 2 | 3 | 6 | A | 8 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 2.2 | 8.4 |
| 3-Jul | 4 | 4 | 4 | 4 | A | 5 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 1 | 2 | 2 | 2 | 1.8 | 5.3 |
| 4-Jul | 1 | 1 | 1 | 1 | A | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.2 | 4.6 |
| 5-Jul | 2 | 2 | 2 | 1 | A | 7 | 3 | 3 | C | C | C | C | C | 5 | 4 | 2 | 2 | 2 | 1 | 2 | 3 | 4 | 2 | 2 | 2.7 | 6.9 |
| 6-Jul | 2 | 3 | 2 | 2 | A | 7 | 5 | 5 | 2 | 2 | 1 | 2 | 2 | 5 | 2 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 5 | 4 | 2.9 | 7.0 |
| 7-Jul | 3 | 4 | 7 | 10 | A | 14 | 32 | 18 | 11 | 7 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 11 | 12 | 5 | 5 | 6.5 | 31.7 |
| 8-Jul | 5 | 5 | 4 | 6 | A | 10 | 19 | 15 | 8 | 3 | 3 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 2 | 6 | 7 | 7 | 3 | 3 | 5.1 | 18.6 |
| 9-Jul | 4 | 7 | 8 | 7 | A | 10 | 6 | 6 | 10 | 3 | 1 | 2 | 3 | 9 | 13 | 2 | 4 | 3 | 5 | 4 | 11 | 3 | 1 | 4 | 5.5 | 13.3 |
| 10-Jul | 3 | 5 | 5 | 4 | A | 9 | 12 | 9 | 5 | 3 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 4 | 7 | 8 | 4 | 4 | 4.2 | 12.5 |
| 11-Jul | 6 | 5 | 6 | 5 | A | 10 | 5 | 4 | 4 | 3 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 3 | 6 | 5 | 5 | 3.5 | 10.3 |
| 12-Jul | 3 | 2 | 1 | 1 | A | 6 | 3 | 7 | 53 | 22 | 15 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 5.6 | 52.7 |
| 13-Jul | 1 | 1 | 1 | 2 | A | 5 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 6 | 5 | 2 | 4 | 2.5 | 6.3 |
| 14-Jul | 6 | 6 | 7 | 6 | A | 12 | 6 | 19 | 10 | 1 | 1 | 1 | 10 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 5 | 2 | 4.7 | 19.2 |
| 15-Jul | 2 | 4 | 3 | 4 | A | 9 | 5 | 2 | 1 | 28 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 3 | 3.4 | 28.4 |
| 16-Jul | 2 | 1 | 1 | 2 | A | 8 | 5 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 3 | 3 | 3 | 4 | 2.3 | 8.3 |
| 17-Jul | 9 | 4 | 4 | 4 | A | 10 | 9 | 5 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 3 | 3 | 6 | 4 | 3.3 | 10.3 |
| 18-Jul | 5 | 4 | 3 | 2 | A | 7 | 7 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 3 | 3 | 5 | 4 | 3 | 2.7 | 6.7 |
| 19-Jul | 4 | 7 | 5 | 4 | A | 8 | 6 | 7 | 7 | 8 | 3 | 2 | 1 | 2 | 2 | 1 | 1 | 3 | 6 | 5 | 4 | 5 | 5 | 6 | 4.4 | 8.2 |
| 20-Jul | 6 | 4 | 5 | 9 | A | 19 | 13 | 9 | 4 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 7 | 7 | 6 | 6 | 7 | 5.3 | 19.5 |
| 21-Jul | 3 | 5 | 2 | 4 | A | 29 | 11 | 9 | 9 | 8 | 4 | 2 | 1 | 1 | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 3 | 5 | 3 | 5.2 | 28.5 |
| 22-Jul | 5 | 4 | 4 | 5 | A | 9 | 5 | 4 | 5 | 5 | 2 | 2 | 2 | 1 | 2 | 3 | 1 | 1 | 1 | 1 | 3 | 4 | 4 | 2 | 3.2 | 9.0 |
| 23-Jul | 1 | 2 | 5 | 5 | A | 9 | 7 | 5 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 4 | 7 | 5 | 4 | 3.0 | 8.6 |
| 24-Jul | 5 | 4 | 4 | 1 | A | 4 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 5 | 4 | 2 | 5 | 2.1 | 4.9 |
| 25-Jul | 3 | 3 | 2 | 1 | A | 5 | 5 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 2 | 3 | 1.7 | 5.2 |
| 26-Jul | 2 | 2 | 4 | 3 | A | 6 | 3 | 4 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 3 | 3 | 9 | 2.6 | 8.5 |
| 27-Jul | 9 | 7 | 4 | 4 | A | 8 | 29 | 19 | 11 | 3 | 3 | 2 | 2 | 3 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 5 | 2 | 3 | 5.4 | 29.4 |
| 28-Jul | 2 | 2 | 2 | 3 | A | 10 | 18 | 20 | 10 | 6 | 5 | 4 | 3 | 2 | 2 | 2 | 4 | 3 | 4 | 5 | 5 | 13 | 8 | 6 | 6.1 | 19.5 |
| 29-Jul | 5 | 14 | 6 | 4 | A | 14 | 16 | 9 | 7 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 3 | 3 | 3 | 2 | 3 | 4 | 3 | 4.8 | 15.8 |
| 30-Jul | 3 | 3 | 3 | 3 | A | 19 | 18 | 8 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 3 | 2 | 2 | 4 | 2 | 6 | 4 | 3 | 4.5 | 18.8 |
| 31-Jul | 5 | 6 | 6 | 6 | A | 10 | 7 | 5 | 4 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 8 | 3 | 3 | 3.6 | 9.5 |
| | 3.8 | 3.9 | 3.7 | 4.0 | -- | 9.6 | 8.9 | 6.7 | 6.1 | 4.3 | 2.3 | 1.5 | 1.8 | 1.8 | 1.8 | 1.4 | 1.5 | 1.5 | 1.8 | 2.6 | 3.7 | 4.6 | 3.5 | 3.7 | Diurnal Average | |
| | 8.8 | 13.6 | 8.1 | 10.1 | -- | 28.5 | 31.7 | 19.5 | 52.7 | 28.4 | 15.1 | 4.1 | 10.5 | 8.7 | 13.3 | 4.1 | 4.4 | 3.4 | 5.8 | 6.8 | 10.9 | 12.5 | 7.7 | 8.5 | Diurnal Maximum | |

C - Calibration

A - Automated Daily Zero Span

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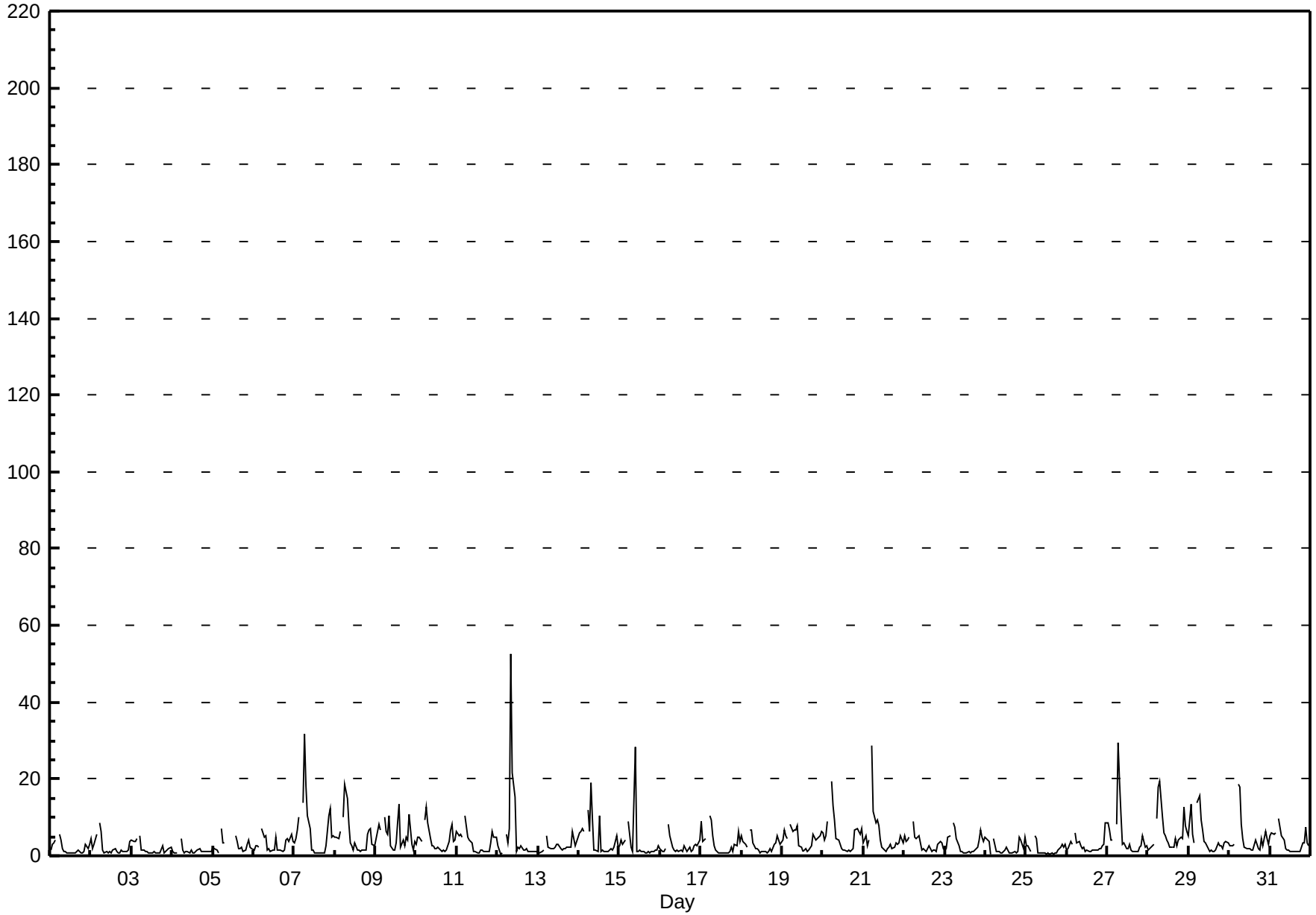
# Hourly Maximums

**Oxides of Nitrogen ($NO_X$) - ppb**

**Beaverlodge - July 2010**



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# Hourly Averages

## Ozone ($O_3$) - ppb

## Beaverlodge - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 51.7 ppb on Jul 31 15:00 Maximum Daily Average: 37.2 ppb on Jul 31

Minimum Value: 4 ppb on Jul 14 04:00 Minimum Daily Average: 14.9 ppb on Jul 13
Maximum Diurnal Average: 30.5 ppb at hour 15 Minimum Diurnal Average: 14.9 ppb at hour 6
Monthly Average: 24.30 ppb Percentiles: $P_1$ = 5.6 $P_{10}$ = 14.0 $Q_1$ = 18.2 Median = 23.5 $Q_3$ = 29.4 $P_{90}$ = 35.8 $P_{99}$ = 50.0

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 710 |
| Hours of Missing Data: | 34 |
| Hours of Calibration: | 34 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 24 | 21 | 23 | 21 | A | 19 | 21 | 23 | 25 | 27 | 28 | 28 | 30 | 31 | 31 | 31 | 31 | 31 | 30 | 29 | 29 | 29 | 26 | 25 | 26.5 | 30.9 |
| 2-Jul | 22 | 21 | 19 | 17 | A | 14 | 18 | 22 | 21 | 21 | 21 | 22 | 22 | 23 | 21 | 21 | 21 | 21 | 21 | 19 | 18 | 19 | 18 | 16 | 19.9 | 22.6 |
| 3-Jul | 16 | 14 | 14 | 12 | A | 19 | 20 | 22 | 23 | 24 | 24 | 24 | 25 | 25 | 24 | 24 | 25 | 25 | 25 | 25 | 25 | 25 | 24 | 22 | 22.0 | 25.1 |
| 4-Jul | 26 | 27 | 26 | 26 | A | 19 | 17 | 17 | 17 | 18 | 19 | 20 | 20 | 19 | 19 | 19 | 18 | 18 | 17 | 16 | 16 | 16 | 14 | 13 | 18.9 | 26.7 |
| 5-Jul | 13 | 15 | 14 | 14 | A | 11 | 12 | 12 | 13 | 18 | 23 | 25 | C | C | C | 21 | 21 | 22 | 23 | 24 | 22 | 19 | 18 | 19 | 18.0 | 25.1 |
| 6-Jul | 19 | 18 | 15 | 16 | A | 16 | 15 | 18 | 21 | 23 | 24 | 25 | 26 | 27 | 27 | 27 | 29 | 35 | 36 | 34 | 25 | 19 | 16 | 15 | 22.8 | 35.5 |
| 7-Jul | 16 | 15 | 16 | 15 | A | 16 | 13 | 11 | 21 | 30 | 33 | 34 | 35 | 36 | 35 | 33 | 34 | 34 | 33 | 33 | 27 | 21 | 25 | 26 | 25.7 | 36.3 |
| 8-Jul | 23 | 20 | 20 | 18 | A | 20 | 16 | 22 | 29 | 39 | 40 | 39 | 39 | 39 | 38 | 37 | 36 | 37 | 37 | 36 | 32 | 31 | 33 | 34 | 31.0 | 40.5 |
| 9-Jul | 30 | 25 | 18 | 15 | A | 15 | 21 | 25 | 27 | 32 | 32 | 32 | 34 | 34 | 35 | 35 | 33 | 35 | 32 | 29 | 23 | 27 | 26 | 23 | 27.7 | 35.3 |
| 10-Jul | 20 | 19 | 17 | 16 | A | 14 | 12 | 14 | 23 | 32 | 36 | 37 | 37 | 37 | 37 | 38 | 38 | 37 | 37 | 37 | 31 | 24 | 24 | 22 | 27.8 | 38.0 |
| 11-Jul | 19 | 18 | 15 | 14 | A | 11 | 13 | 13 | 15 | 17 | 21 | 21 | 22 | 23 | 26 | 30 | 31 | 32 | 34 | 33 | 28 | 25 | 26 | 28 | 22.4 | 34.0 |
| 12-Jul | 37 | 37 | 35 | 33 | A | 28 | 26 | 25 | 25 | 26 | 26 | 26 | 26 | 23 | 20 | 20 | 19 | 18 | 20 | 20 | 18 | 18 | 18 | 18 | 24.4 | 37.1 |
| 13-Jul | 17 | 17 | 15 | 15 | A | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 20 | 16 | 11 | 10 | 9 | 14.9 | 20.4 |
| 14-Jul | 6 | 5 | 4 | 4 | A | 6 | 11 | 14 | 16 | 17 | 19 | 21 | 22 | 23 | 23 | 24 | 26 | 23 | 25 | 26 | 26 | 26 | 24 | 24 | 18.0 | 25.7 |
| 15-Jul | 22 | 19 | 21 | 18 | A | 18 | 18 | 26 | 27 | 28 | 29 | 29 | 28 | 29 | 29 | 28 | 27 | 27 | 27 | 25 | 24 | 24 | 24 | 22 | 24.7 | 29.0 |
| 16-Jul | 21 | 19 | 18 | 18 | A | 15 | 16 | 19 | 20 | 20 | 21 | 21 | 22 | 21 | 21 | 21 | 21 | 20 | 19 | 17 | 15 | 14 | 16 | 16 | 18.7 | 21.8 |
| 17-Jul | 10 | 12 | 11 | 10 | A | 10 | 10 | 16 | 21 | 22 | 21 | 23 | 25 | 26 | 26 | 26 | 26 | 26 | 25 | 29 | 27 | 26 | 22 | 23 | 20.6 | 28.6 |
| 18-Jul | 19 | 19 | 21 | 21 | A | 17 | 16 | 21 | 23 | 29 | 32 | 32 | 33 | 33 | 31 | 31 | 29 | 28 | 34 | 29 | 23 | 22 | 27 | 30 | 26.1 | 33.7 |
| 19-Jul | 25 | 20 | 21 | 19 | A | 13 | 13 | 12 | 13 | 19 | 26 | 29 | 29 | 30 | 31 | 32 | 31 | 30 | 29 | 25 | 22 | 24 | 18 | 16 | 22.9 | 31.7 |
| 20-Jul | 20 | 19 | 15 | 13 | A | 9 | 10 | 12 | 17 | 25 | 28 | 33 | 34 | 36 | 37 | 38 | 39 | 40 | 39 | 34 | 30 | 27 | 28 | 26 | 26.6 | 40.2 |
| 21-Jul | 29 | 31 | 31 | 28 | A | 16 | 18 | 18 | 19 | 24 | 30 | 34 | 34 | 35 | 34 | 29 | 30 | 34 | 33 | 32 | 33 | 32 | 31 | 29 | 28.8 | 35.1 |
| 22-Jul | 21 | 21 | 21 | 20 | A | 16 | 19 | 21 | 23 | 27 | 28 | 29 | 28 | 28 | 27 | 26 | 29 | 27 | 26 | 24 | 21 | 17 | 15 | 15 | 23.1 | 28.6 |
| 23-Jul | 15 | 14 | 11 | 10 | A | 10 | 8 | 15 | 20 | 23 | 26 | 28 | 26 | 23 | 21 | 21 | 20 | 21 | 22 | 22 | 20 | 17 | 15 | 16 | 18.4 | 28.3 |
| 24-Jul | 15 | 14 | 15 | 17 | A | 25 | 30 | 32 | 30 | 30 | 30 | 27 | 26 | 26 | 28 | 29 | 29 | 29 | 29 | 28 | 26 | 28 | 28 | 26 | 26.0 | 31.9 |
| 25-Jul | 25 | 23 | 22 | 21 | A | 17 | 17 | 19 | 19 | 20 | 22 | 22 | 23 | 22 | 23 | 23 | 22 | 22 | 20 | 18 | 17 | 16 | 17 | 17 | 20.4 | 24.7 |
| 26-Jul | 17 | 17 | 15 | 14 | A | 13 | 13 | 13 | 18 | 21 | 26 | 25 | 23 | 23 | 28 | 29 | 27 | 26 | 28 | 28 | 26 | 23 | 20 | 16 | 21.2 | 28.9 |
| 27-Jul | 14 | 14 | 11 | 9 | A | 5 | 6 | 5 | 12 | 24 | 28 | 32 | 35 | 40 | 37 | 35 | 34 | 35 | 35 | 34 | 31 | 30 | 29 | 25 | 24.3 | 39.6 |
| 28-Jul | 24 | 24 | 24 | 22 | A | 12 | 9 | 12 | 23 | 30 | 37 | 43 | 46 | 47 | 49 | 51 | 45 | 40 | 41 | 38 | 36 | 28 | 22 | 21 | 31.5 | 51.4 |
| 29-Jul | 19 | 20 | 22 | 24 | A | 12 | 7 | 12 | 22 | 25 | 30 | 36 | 41 | 44 | 46 | 48 | 49 | 41 | 40 | 40 | 39 | 39 | 32 | 31 | 31.3 | 48.8 |
| 30-Jul | 32 | 29 | 30 | 25 | A | 18 | 14 | 21 | 26 | 27 | 28 | 33 | 36 | 40 | 41 | 35 | 38 | 41 | 40 | 34 | 31 | 27 | 28 | 33 | 30.7 | 41.1 |
| 31-Jul | 30 | 29 | 24 | 22 | A | 15 | 16 | 21 | 30 | 38 | 41 | 44 | 47 | 50 | 52 | 51 | 50 | 51 | 51 | 46 | 38 | 35 | 39 | 39 | 37.2 | 51.7 |
| | 20.8 | 19.9 | 18.9 | 17.6 | -- | 14.9 | 15.0 | 17.6 | 21.0 | 24.9 | 27.1 | 28.6 | 29.6 | 30.2 | 30.5 | 29.9 | 29.8 | 29.8 | 29.9 | 28.5 | 25.6 | 23.8 | 23.0 | 22.4 | Diurnal Average | |
| | 37.1 | 36.8 | 35.3 | 33.2 | -- | 27.9 | 29.6 | 31.9 | 30.0 | 38.9 | 40.8 | 43.8 | 47.2 | 50.4 | 51.7 | 51.4 | 50.1 | 50.6 | 50.6 | 46.0 | 38.6 | 38.7 | 38.7 | 39.4 | Diurnal Maximum | |

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

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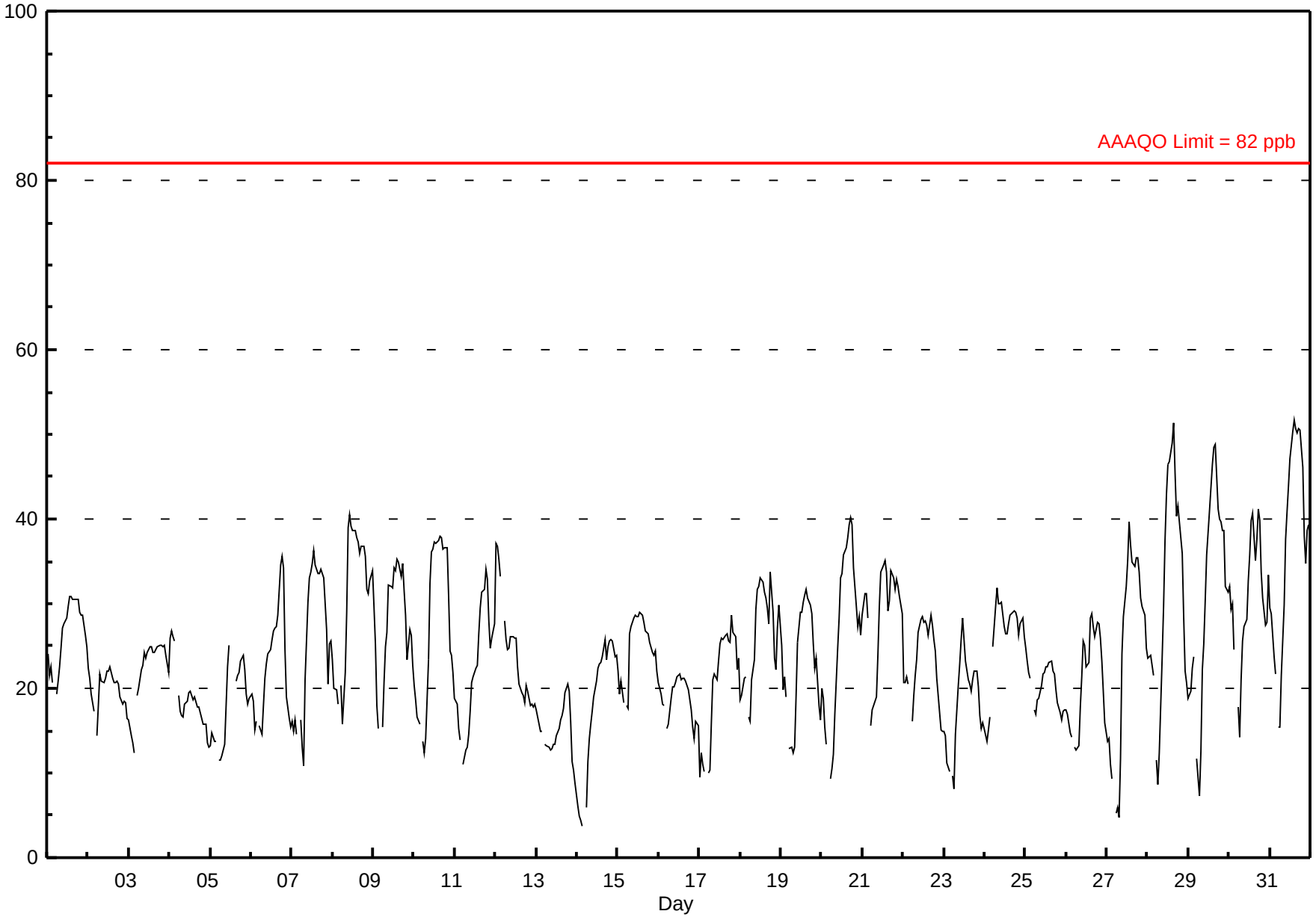
# Hourly Averages

**Ozone ($O_3$) - ppb**

**Beaverlodge - July 2010**



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# Hourly Maximums

## Ozone ($O_3$) - ppb

## Beaverlodge - July 2010

Maximum Value: 52.8 ppb on Jul 28 16:00

Maximum Daily Average: 40.3 ppb on Jul 31

Minimum Value: 5 ppb on Jul 14 04:00

Minimum Daily Average: 16.1 ppb on Jul 13

Maximum Diurnal Average: 32.2 ppb at hour 15

Minimum Diurnal Average: 18.1 ppb at hour 6

Monthly Average: 26.57 ppb

Percentiles: $P_1$ = 10.2 $P_{10}$ = 16.2 $Q_1$ = 20.4 Median = 25.7 $Q_3$ = 31.8 $P_{90}$ = 38.3 $P_{99}$ = 52.2

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 710 |
| Hours of Missing Data: | 34 |
| Hours of Calibration: | 34 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 25 | 24 | 25 | 22 | A | 21 | 22 | 24 | 27 | 31 | 28 | 30 | 31 | 33 | 32 | 32 | 32 | 31 | 32 | 30 | 30 | 31 | 28 | 26 | 28.1 | 32.6 |
| 2-Jul | 25 | 22 | 21 | 20 | A | 17 | 24 | 23 | 22 | 22 | 23 | 23 | 23 | 24 | 23 | 22 | 22 | 22 | 22 | 20 | 19 | 19 | 19 | 19 | 21.5 | 24.6 |
| 3-Jul | 19 | 16 | 16 | 16 | A | 21 | 21 | 23 | 24 | 26 | 24 | 26 | 26 | 26 | 25 | 25 | 25 | 26 | 26 | 26 | 26 | 26 | 26 | 23 | 23.3 | 26.2 |
| 4-Jul | 28 | 27 | 27 | 27 | A | 22 | 18 | 18 | 18 | 19 | 20 | 21 | 21 | 20 | 20 | 21 | 20 | 19 | 18 | 18 | 17 | 17 | 14 | 14 | 20.1 | 27.6 |
| 5-Jul | 15 | 16 | 14 | 15 | A | 13 | 12 | 13 | 16 | 20 | 25 | 27 | C | C | C | 23 | 24 | 24 | 25 | 25 | 25 | 21 | 19 | 20 | 19.6 | 26.6 |
| 6-Jul | 20 | 21 | 17 | 18 | A | 19 | 17 | 21 | 23 | 24 | 25 | 26 | 27 | 29 | 29 | 29 | 32 | 37 | 37 | 36 | 32 | 20 | 19 | 17 | 24.9 | 36.9 |
| 7-Jul | 17 | 19 | 23 | 20 | A | 19 | 19 | 18 | 26 | 33 | 35 | 35 | 37 | 38 | 36 | 36 | 34 | 35 | 35 | 35 | 34 | 24 | 27 | 28 | 28.8 | 37.8 |
| 8-Jul | 25 | 22 | 22 | 21 | A | 24 | 24 | 28 | 35 | 41 | 42 | 40 | 40 | 40 | 40 | 39 | 38 | 39 | 38 | 40 | 34 | 35 | 36 | 37 | 34.0 | 42.3 |
| 9-Jul | 32 | 30 | 23 | 17 | A | 18 | 24 | 27 | 31 | 34 | 33 | 34 | 36 | 36 | 38 | 38 | 36 | 38 | 35 | 32 | 28 | 29 | 27 | 27 | 30.5 | 38.0 |
| 10-Jul | 22 | 21 | 18 | 18 | A | 15 | 17 | 23 | 31 | 36 | 38 | 38 | 39 | 38 | 38 | 39 | 39 | 38 | 38 | 39 | 35 | 28 | 25 | 23 | 30.4 | 39.4 |
| 11-Jul | 21 | 19 | 18 | 15 | A | 14 | 14 | 15 | 15 | 20 | 22 | 22 | 24 | 24 | 29 | 33 | 33 | 34 | 36 | 35 | 32 | 29 | 28 | 35 | 24.7 | 36.2 |
| 12-Jul | 39 | 38 | 36 | 34 | A | 29 | 27 | 26 | 26 | 27 | 27 | 27 | 27 | 25 | 22 | 20 | 20 | 19 | 22 | 21 | 19 | 19 | 19 | 19 | 25.6 | 38.8 |
| 13-Jul | 19 | 18 | 16 | 16 | A | 14 | 14 | 14 | 13 | 14 | 14 | 15 | 15 | 17 | 17 | 18 | 19 | 20 | 22 | 21 | 19 | 14 | 11 | 10 | 16.1 | 21.9 |
| 14-Jul | 8 | 6 | 5 | 5 | A | 8 | 15 | 15 | 17 | 19 | 20 | 22 | 25 | 25 | 25 | 25 | 28 | 26 | 28 | 27 | 27 | 27 | 25 | 25 | 19.8 | 28.2 |
| 15-Jul | 24 | 21 | 22 | 21 | A | 20 | 24 | 28 | 29 | 30 | 30 | 30 | 30 | 31 | 30 | 29 | 28 | 28 | 28 | 27 | 25 | 26 | 25 | 24 | 26.4 | 31.0 |
| 16-Jul | 22 | 20 | 18 | 19 | A | 17 | 18 | 21 | 21 | 21 | 22 | 23 | 23 | 22 | 23 | 22 | 23 | 21 | 20 | 18 | 17 | 15 | 18 | 17 | 20.0 | 22.8 |
| 17-Jul | 13 | 14 | 12 | 12 | A | 17 | 13 | 19 | 23 | 23 | 23 | 25 | 26 | 27 | 27 | 29 | 28 | 27 | 27 | 30 | 28 | 28 | 28 | 26 | 22.8 | 29.6 |
| 18-Jul | 26 | 21 | 22 | 23 | A | 19 | 18 | 25 | 25 | 32 | 33 | 33 | 34 | 34 | 33 | 32 | 30 | 30 | 40 | 33 | 26 | 24 | 31 | 31 | 28.4 | 40.0 |
| 19-Jul | 29 | 27 | 26 | 24 | A | 15 | 14 | 15 | 15 | 25 | 29 | 31 | 31 | 32 | 32 | 33 | 32 | 32 | 34 | 30 | 26 | 26 | 26 | 21 | 26.3 | 34.4 |
| 20-Jul | 24 | 23 | 22 | 15 | A | 16 | 15 | 15 | 23 | 28 | 32 | 34 | 35 | 37 | 38 | 39 | 41 | 41 | 41 | 39 | 32 | 31 | 31 | 30 | 29.7 | 41.4 |
| 21-Jul | 33 | 35 | 33 | 32 | A | 20 | 22 | 20 | 21 | 27 | 33 | 36 | 36 | 37 | 36 | 31 | 33 | 36 | 36 | 35 | 35 | 34 | 34 | 33 | 31.5 | 36.8 |
| 22-Jul | 27 | 23 | 23 | 22 | A | 22 | 25 | 24 | 28 | 29 | 30 | 30 | 29 | 29 | 30 | 29 | 30 | 29 | 27 | 26 | 23 | 20 | 16 | 16 | 25.6 | 30.2 |
| 23-Jul | 16 | 16 | 13 | 12 | A | 11 | 11 | 20 | 22 | 25 | 28 | 32 | 29 | 25 | 23 | 22 | 20 | 22 | 23 | 23 | 22 | 20 | 17 | 17 | 20.4 | 31.5 |
| 24-Jul | 17 | 15 | 17 | 18 | A | 28 | 32 | 34 | 32 | 32 | 32 | 29 | 28 | 28 | 30 | 31 | 31 | 32 | 32 | 29 | 29 | 30 | 30 | 28 | 27.8 | 34.1 |
| 25-Jul | 26 | 24 | 23 | 22 | A | 19 | 19 | 19 | 20 | 22 | 23 | 24 | 24 | 23 | 25 | 25 | 23 | 22 | 21 | 19 | 18 | 17 | 19 | 20 | 21.6 | 25.8 |
| 26-Jul | 19 | 18 | 16 | 15 | A | 14 | 14 | 15 | 21 | 24 | 27 | 26 | 24 | 27 | 30 | 30 | 29 | 28 | 29 | 29 | 27 | 24 | 22 | 19 | 23.0 | 30.4 |
| 27-Jul | 17 | 16 | 14 | 11 | A | 10 | 10 | 8 | 19 | 26 | 31 | 34 | 38 | 42 | 40 | 37 | 35 | 37 | 37 | 36 | 33 | 31 | 31 | 28 | 27.1 | 41.6 |
| 28-Jul | 25 | 25 | 26 | 24 | A | 15 | 20 | 20 | 28 | 34 | 41 | 46 | 48 | 50 | 53 | 53 | 52 | 42 | 44 | 40 | 39 | 34 | 25 | 23 | 35.0 | 52.8 |
| 29-Jul | 22 | 25 | 29 | 27 | A | 17 | 13 | 22 | 26 | 29 | 33 | 40 | 46 | 47 | 49 | 50 | 50 | 48 | 42 | 41 | 40 | 41 | 39 | 33 | 35.2 | 50.4 |
| 30-Jul | 35 | 34 | 32 | 31 | A | 27 | 19 | 26 | 30 | 29 | 30 | 40 | 40 | 41 | 44 | 40 | 41 | 43 | 43 | 36 | 33 | 30 | 30 | 36 | 34.4 | 43.8 |
| 31-Jul | 33 | 32 | 30 | 23 | A | 21 | 20 | 28 | 36 | 40 | 43 | 46 | 50 | 53 | 53 | 52 | 51 | 52 | 52 | 50 | 44 | 39 | 40 | 40 | 40.3 | 52.7 |
| | 23.2 | 22.3 | 21.4 | 19.8 | -- | 18.1 | 18.6 | 20.8 | 23.9 | 27.1 | 29.0 | 30.4 | 31.3 | 31.9 | 32.2 | 31.7 | 31.5 | 31.6 | 31.9 | 30.6 | 28.1 | 26.0 | 25.3 | 24.7 | Diurnal Average | |
| | 38.8 | 38.3 | 36.4 | 34.4 | -- | 29.0 | 31.5 | 34.1 | 35.6 | 41.2 | 43.1 | 46.5 | 49.8 | 52.6 | 52.7 | 52.8 | 52.3 | 52.2 | 52.2 | 49.7 | 44.0 | 41.1 | 40.1 | 40.3 | Diurnal Maximum | |

C - Calibration

A - Automated Daily Zero Span

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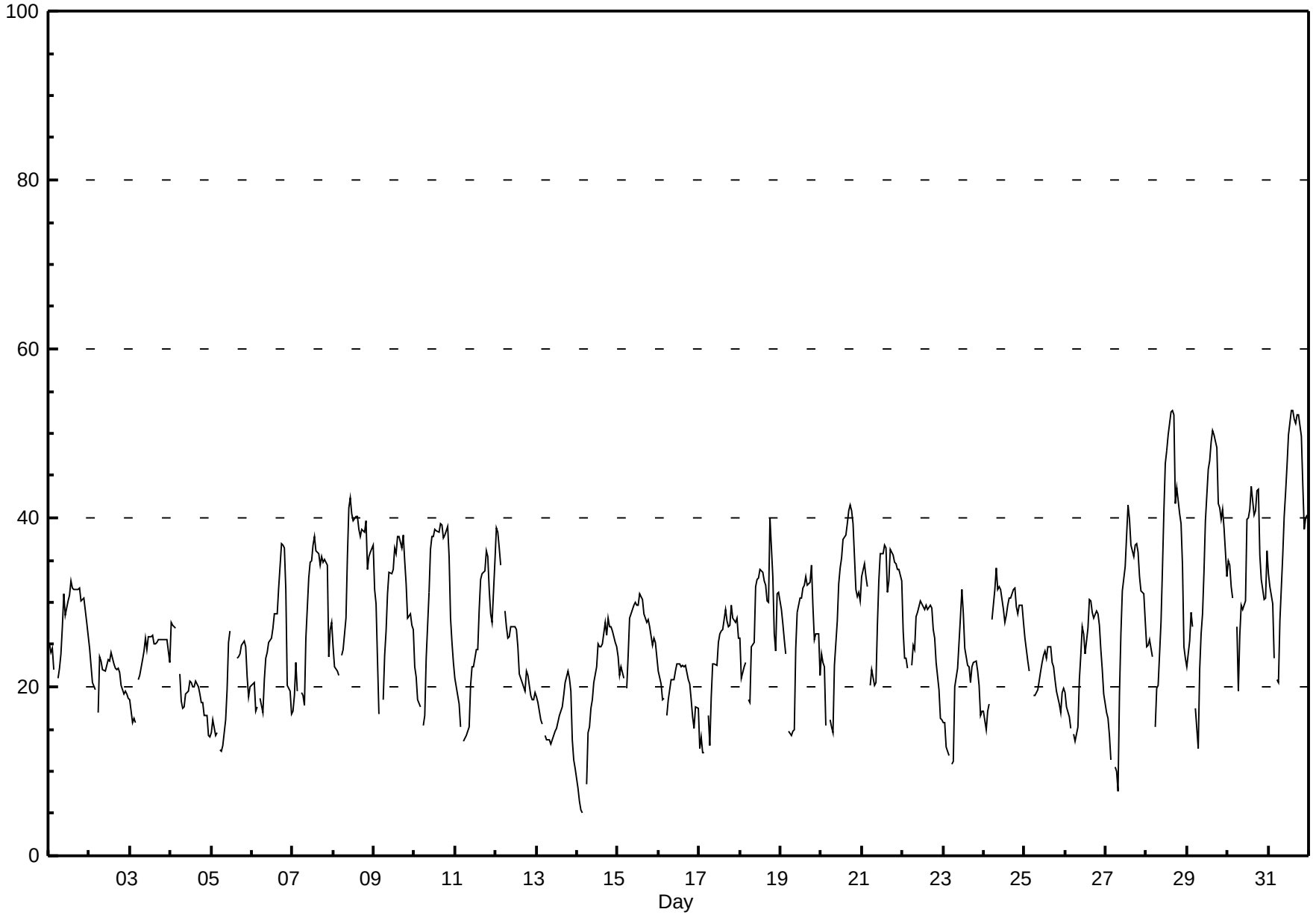
# Hourly Maximums

**Ozone ($O_3$) - ppb**

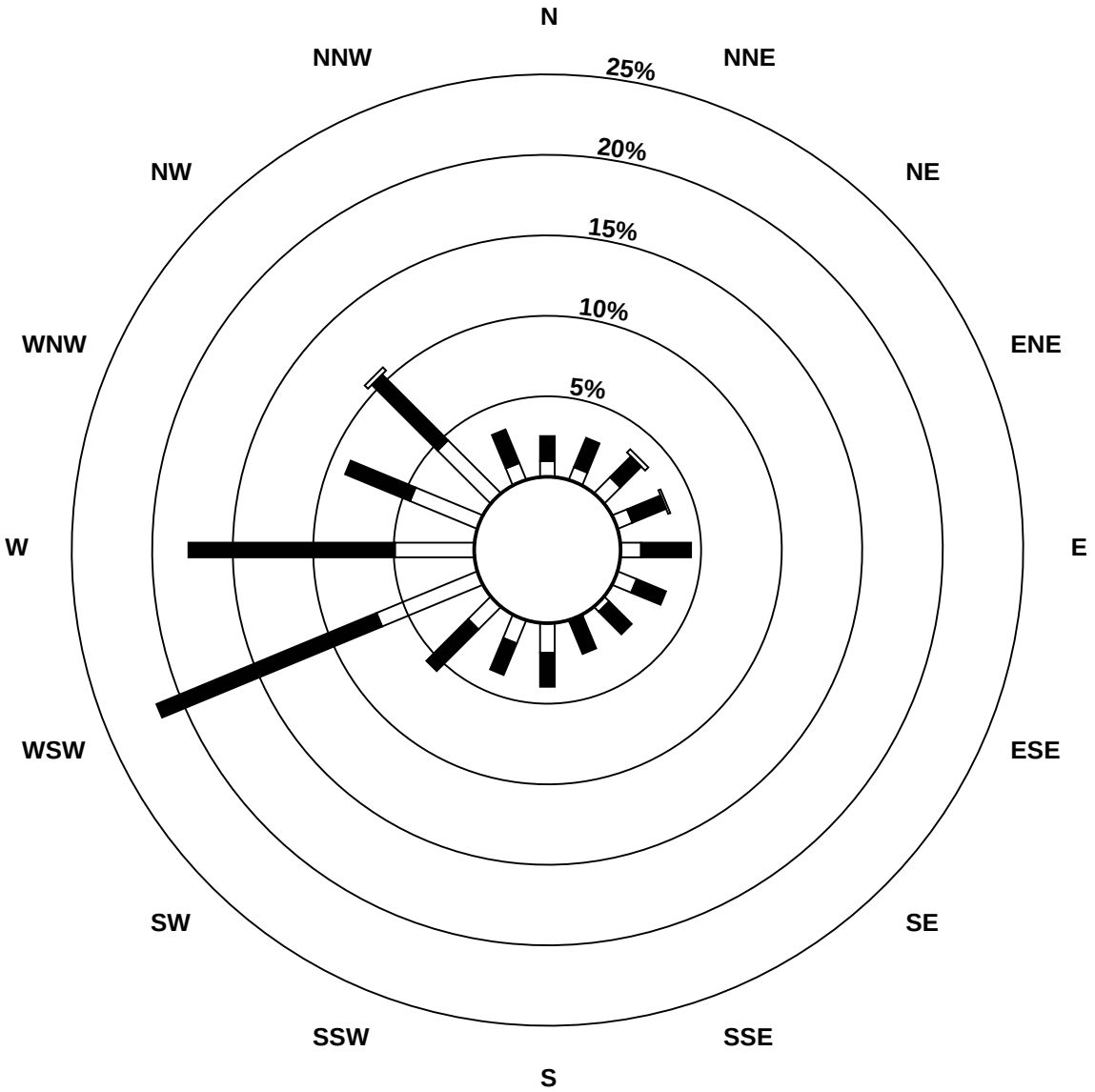
**Beaverlodge - July 2010**



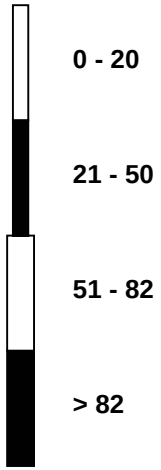
# Pollutant Rose

**Ozone ($O_3$) - ppb**

**Beaverlodge - July 2010**




**Pollutant Classes (ppb)**



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# Eight Hour Running Averages

## Ozone ($O_3$) - ppb

## Beaverlodge - July 2010

Maximum Value: 49.6 ppb on Jul 31 20:00

Minimum Value: 6.3 ppb on Jul 14 06:00

Percentiles: $P_1$ = 9.0 $P_{10}$ = 15.7 $Q_1$ = 18.8 Median = 23.3 $Q_3$ = 28.3 $P_{90}$ = 33.7 $P_{99}$ = 44.6

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 738 |
| Hours of Missing Data: | 6 |
| Hours of Calibration: | 6 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Maximum |
| 1-Jul | 27 | 26 | 26 | 24 | 24 | 23 | 22 | 22 | 22 | 23 | 23 | 24 | 25 | 26 | 28 | 29 | 29 | 30 | 30 | 30 | 30 | 30 | 29 | 29 | 30.3 |
| 2-Jul | 28 | 26 | 25 | 24 | 23 | 21 | 20 | 19 | 19 | 19 | 19 | 20 | 20 | 21 | 22 | 21 | 21 | 21 | 21 | 21 | 20 | 20 | 20 | 19 | 27.6 |
| 3-Jul | 19 | 18 | 17 | 16 | 16 | 16 | 16 | 17 | 18 | 19 | 21 | 22 | 23 | 23 | 24 | 24 | 24 | 24 | 25 | 25 | 25 | 25 | 25 | 24 | 24.8 |
| 4-Jul | 25 | 25 | 25 | 25 | 25 | 24 | 23 | 23 | 21 | 20 | 19 | 18 | 18 | 18 | 18 | 19 | 19 | 19 | 19 | 18 | 18 | 17 | 17 | 16 | 25.0 |
| 5-Jul | 15 | 15 | 15 | 14 | 14 | 13 | 13 | 13 | 13 | 13 | 15 | 16 | 16 | 17 | N | N | N | N | N | N | 22 | 22 | 21 | 21 | 22.3 |
| 6-Jul | 21 | 20 | 19 | 18 | 18 | 17 | 17 | 17 | 17 | 18 | 19 | 20 | 21 | 22 | 24 | 25 | 26 | 27 | 29 | 30 | 30 | 29 | 28 | 26 | 30.0 |
| 7-Jul | 25 | 22 | 20 | 17 | 16 | 16 | 15 | 15 | 15 | 17 | 20 | 23 | 24 | 27 | 29 | 32 | 34 | 34 | 34 | 34 | 33 | 31 | 30 | 29 | 34.3 |
| 8-Jul | 28 | 26 | 24 | 22 | 22 | 22 | 20 | 20 | 21 | 23 | 26 | 29 | 31 | 33 | 36 | 37 | 38 | 38 | 38 | 37 | 36 | 35 | 35 | 34 | 38.3 |
| 9-Jul | 34 | 32 | 30 | 27 | 27 | 24 | 23 | 21 | 21 | 22 | 24 | 26 | 27 | 30 | 31 | 33 | 33 | 34 | 34 | 33 | 32 | 31 | 30 | 28 | 33.8 |
| 10-Jul | 27 | 25 | 23 | 21 | 21 | 19 | 17 | 16 | 16 | 18 | 21 | 24 | 26 | 29 | 32 | 35 | 37 | 37 | 37 | 37 | 36 | 35 | 33 | 31 | 37.2 |
| 11-Jul | 29 | 26 | 24 | 21 | 19 | 18 | 16 | 15 | 14 | 14 | 15 | 16 | 17 | 18 | 20 | 22 | 24 | 26 | 27 | 29 | 30 | 30 | 30 | 29 | 29.8 |
| 12-Jul | 30 | 31 | 31 | 31 | 32 | 32 | 32 | 32 | 30 | 28 | 27 | 26 | 26 | 25 | 25 | 24 | 23 | 22 | 22 | 21 | 20 | 19 | 19 | 19 | 32.0 |
| 13-Jul | 18 | 18 | 18 | 17 | 17 | 16 | 16 | 15 | 14 | 14 | 13 | 13 | 13 | 14 | 14 | 14 | 15 | 16 | 17 | 17 | 18 | 17 | 16 | 15 | 18.5 |
| 14-Jul | 14 | 12 | 10 | 8 | 7 | 6 | 6 | 7 | 9 | 10 | 12 | 15 | 16 | 18 | 19 | 21 | 22 | 23 | 23 | 24 | 24 | 25 | 25 | 25 | 24.8 |
| 15-Jul | 24 | 24 | 23 | 22 | 22 | 21 | 20 | 20 | 21 | 22 | 23 | 25 | 25 | 27 | 28 | 28 | 28 | 28 | 28 | 27 | 27 | 26 | 26 | 25 | 28.3 |
| 16-Jul | 24 | 23 | 22 | 21 | 21 | 20 | 18 | 18 | 18 | 18 | 18 | 19 | 19 | 20 | 21 | 21 | 21 | 21 | 21 | 20 | 19 | 19 | 18 | 17 | 24.2 |
| 17-Jul | 16 | 15 | 14 | 13 | 13 | 12 | 11 | 11 | 13 | 14 | 16 | 18 | 19 | 21 | 22 | 24 | 24 | 25 | 25 | 26 | 26 | 26 | 26 | 26 | 26.3 |
| 18-Jul | 25 | 24 | 23 | 22 | 22 | 20 | 20 | 19 | 20 | 21 | 23 | 24 | 25 | 27 | 29 | 31 | 31 | 31 | 31 | 31 | 30 | 28 | 28 | 28 | 31.3 |
| 19-Jul | 27 | 26 | 25 | 23 | 23 | 22 | 20 | 18 | 16 | 16 | 16 | 18 | 19 | 21 | 24 | 26 | 28 | 30 | 30 | 30 | 29 | 28 | 26 | 24 | 30.0 |
| 20-Jul | 23 | 22 | 20 | 18 | 18 | 16 | 15 | 14 | 14 | 15 | 16 | 19 | 21 | 24 | 28 | 31 | 34 | 36 | 37 | 37 | 37 | 36 | 35 | 33 | 37.1 |
| 21-Jul | 32 | 31 | 30 | 29 | 29 | 27 | 26 | 24 | 23 | 22 | 22 | 23 | 24 | 26 | 29 | 30 | 31 | 33 | 33 | 33 | 32 | 32 | 32 | 32 | 32.9 |
| 22-Jul | 30 | 29 | 27 | 26 | 25 | 23 | 21 | 20 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 28 | 27 | 27 | 26 | 25 | 23 | 22 | 30.5 |
| 23-Jul | 20 | 18 | 17 | 15 | 14 | 13 | 12 | 12 | 13 | 14 | 16 | 19 | 19 | 21 | 23 | 23 | 23 | 23 | 23 | 22 | 21 | 20 | 20 | 19 | 23.5 |
| 24-Jul | 19 | 18 | 17 | 16 | 16 | 17 | 19 | 21 | 23 | 25 | 28 | 29 | 29 | 29 | 29 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 29.1 |
| 25-Jul | 27 | 27 | 26 | 25 | 25 | 23 | 22 | 21 | 20 | 19 | 19 | 19 | 20 | 20 | 21 | 22 | 22 | 22 | 22 | 22 | 21 | 20 | 19 | 19 | 27.4 |
| 26-Jul | 18 | 18 | 17 | 16 | 16 | 16 | 15 | 15 | 15 | 15 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 26 | 26 | 26 | 27 | 27 | 26 | 24 | 26.9 |
| 27-Jul | 22 | 21 | 19 | 17 | 15 | 13 | 11 | 9 | 9 | 10 | 13 | 16 | 18 | 23 | 27 | 30 | 33 | 35 | 35 | 36 | 35 | 34 | 33 | 32 | 35.7 |
| 28-Jul | 30 | 29 | 27 | 26 | 25 | 23 | 20 | 18 | 18 | 19 | 21 | 24 | 27 | 31 | 36 | 41 | 44 | 45 | 45 | 45 | 44 | 41 | 38 | 34 | 45.5 |
| 29-Jul | 31 | 28 | 26 | 24 | 22 | 20 | 18 | 17 | 17 | 18 | 19 | 21 | 23 | 27 | 32 | 37 | 40 | 42 | 43 | 44 | 43 | 43 | 41 | 39 | 43.6 |
| 30-Jul | 37 | 35 | 34 | 32 | 31 | 28 | 26 | 24 | 23 | 23 | 23 | 24 | 25 | 28 | 31 | 33 | 35 | 36 | 38 | 38 | 37 | 36 | 34 | 34 | 38.0 |
| 31-Jul | 33 | 31 | 29 | 28 | 27 | 26 | 24 | 22 | 22 | 24 | 26 | 29 | 31 | 36 | 40 | 44 | 47 | 48 | 49 | 50 | 49 | 47 | 45 | 44 | 49.6 |
| | 36.7 | 35.2 | 34.0 | 32.1 | 31.5 | 32.0 | 32.0 | 31.5 | 29.8 | 28.2 | 27.6 | 29.4 | 31.4 | 35.8 | 40.3 | 44.0 | 46.5 | 48.1 | 49.4 | 49.6 | 48.5 | 46.6 | 44.9 | 43.5 | |
| | Diurnal Maximums | | | | | | | | | | | | | | | | | | | | | | | | |

N - Not Valid

PASZA
Peace Airshed Zone Association

# Hourly Averages

## Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

## Beaverlodge - July 2010

Number of Exceedences: 1-hr: 0 24-hr: 0
Maximum Value: 23.2 $\mu g/m^3$ on Jul 29 19:00
Maximum Daily Average: 17.0 $\mu g/m^3$ on Jul 29

Minimum Value: 1 $\mu g/m^3$ on Jul 2 12:00
Maximum Diurnal Average: 8.0 $\mu g/m^3$ at hour 23
Monthly Average: 7.43 $\mu g/m^3$
Minimum Daily Average: 2.9 $\mu g/m^3$ on Jul 4
Minimum Diurnal Average: 6.9 $\mu g/m^3$ at hour 3
Percentiles: $P_1$ = 1.4 $P_{10}$ = 3.4 $Q_1$ = 4.7 Median = 6.5 $Q_3$ = 9.3 $P_{90}$ = 13.0 $P_{99}$ = 21.2

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 740 |
| Hours of Missing Data: | 4 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 99.5 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 3 | 4 | 3 | 3 | 2 | 3 | 3 | 4 | 3 | 6 | 4 | 3 | 1 | 3 | 3 | 5 | 2 | 1 | 5 | 4 | 3 | 5 | 4 | 3 | 3.2 | 5.6 |
| 2-Jul | 5 | 4 | 7 | 5 | 5 | 5 | 6 | 4 | 3 | 2 | 1 | 1 | 5 | 3 | 4 | 4 | 2 | 3 | 2 | 6 | 5 | 5 | 6 | 6 | 4.1 | 6.7 |
| 3-Jul | 8 | 6 | 5 | 5 | 4 | 3 | 5 | 4 | 4 | 5 | 4 | 5 | 6 | 4 | 5 | 4 | 8 | 6 | 5 | 6 | 6 | 6 | 6 | 6 | 5.2 | 8.3 |
| 4-Jul | 5 | 4 | 3 | 1 | 2 | 3 | 2 | 2 | 1 | 2 | 5 | 4 | 2 | 2 | 3 | 2 | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 2.9 | 5.1 |
| 5-Jul | 4 | 4 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 5 | 3 | 5 | 5 | 6 | 1 | 4 | 4 | 4 | 4 | 5 | 4 | 6 | 5 | 4 | 4.0 | 6.5 |
| 6-Jul | 5 | 4 | 5 | 4 | 4 | 5 | 6 | 6 | 5 | 5 | 5 | 7 | 6 | 7 | 7 | 7 | 6 | 6 | 5 | 4 | 8 | 8 | 10 | 11 | 6.0 | 11.1 |
| 7-Jul | 9 | 10 | 9 | 8 | 7 | 7 | 8 | 8 | 9 | 8 | 6 | 6 | 8 | 9 | 9 | 7 | 6 | 8 | 8 | 7 | 7 | 10 | 16 | 16 | 8.6 | 16.2 |
| 8-Jul | 13 | 13 | 12 | 12 | 12 | 13 | 13 | 15 | 13 | 11 | 12 | 10 | 10 | 10 | 10 | 8 | 10 | 11 | 10 | 10 | 12 | 15 | 17 | 15 | 11.9 | 16.6 |
| 9-Jul | 14 | 14 | 16 | 18 | 16 | 16 | 15 | 13 | 15 | 11 | 12 | 13 | 12 | 11 | 12 | 13 | 12 | 7 | 7 | 11 | 9 | 7 | 7 | 6 | 12.0 | 18.2 |
| 10-Jul | 7 | 8 | 7 | 7 | 7 | 8 | 8 | 7 | 8 | 8 | 9 | 10 | 12 | 13 | 12 | 11 | 9 | 7 | 7 | 8 | 8 | 9 | 9 | 10 | 8.9 | 13.1 |
| 11-Jul | 10 | 10 | 9 | 11 | 10 | 9 | 8 | 9 | 11 | 8 | 8 | 8 | 7 | 6 | 5 | 5 | 5 | 3 | 6 | 6 | 5 | 9 | 11 | 9 | 7.8 | 10.9 |
| 12-Jul | 6 | 5 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 3 | 2 | 3 | 5 | 6 | 4 | 4 | 2 | 3 | 4 | 2 | 4 | 4 | 1 | 3 | 3.8 | 6.2 |
| 13-Jul | 3 | 3 | 4 | 3 | 4 | 5 | 7 | 5 | 4 | 5 | 5 | 6 | 6 | 6 | 7 | 7 | 8 | 8 | 7 | 8 | 8 | 7 | 6 | 7 | 5.8 | 7.9 |
| 14-Jul | 8 | 8 | 7 | 7 | 6 | 7 | 7 | 6 | 7 | 5 | 7 | 6 | 6 | 6 | 7 | 8 | 7 | 7 | 8 | 6 | 7 | 7 | 6 | 7 | 6.8 | 8.3 |
| 15-Jul | 7 | 7 | 8 | 7 | 7 | 6 | 5 | 7 | 6 | 6 | 4 | 4 | 4 | 6 | 5 | 5 | 6 | 6 | 4 | 5 | 5 | 5 | 4 | 5 | 5.6 | 7.9 |
| 16-Jul | 4 | 3 | 4 | 5 | 4 | 4 | 5 | 6 | 4 | 2 | 3 | 2 | 4 | 3 | 2 | 4 | 4 | 5 | 5 | 5 | 5 | 6 | 6 | 5 | 4.2 | 6.1 |
| 17-Jul | 5 | 6 | 5 | 5 | 5 | 5 | 5 | 6 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 6 | 9 | 6 | 6 | 8 | 9 | 9 | 5.8 | 9.1 |
| 18-Jul | 8 | 6 | 6 | 6 | 5 | 4 | 5 | 6 | 6 | 6 | 5 | 6 | 5 | 6 | 7 | 7 | 7 | 9 | 11 | 7 | 9 | 7 | 7 | 7 | 6.5 | 10.6 |
| 19-Jul | 7 | 8 | 8 | 7 | 8 | 8 | 9 | 11 | 10 | 10 | 11 | 8 | 7 | 5 | 6 | 6 | 6 | 7 | P | P | 6 | 9 | 9 | 8 | 7.9 | 10.9 |
| 20-Jul | 7 | 6 | 5 | 6 | 7 | 5 | 8 | 6 | 8 | 9 | 9 | 9 | 7 | 9 | 7 | 7 | 8 | 7 | 8 | 8 | 7 | 8 | 8 | 8 | 7.3 | 9.4 |
| 21-Jul | 8 | 7 | 7 | 7 | 9 | 10 | 10 | 10 | 8 | 10 | 11 | 11 | 8 | 8 | 9 | 9 | 9 | 9 | 8 | 9 | 9 | 8 | 8 | 8 | 8.8 | 11.1 |
| 22-Jul | 8 | 9 | 8 | 9 | 10 | 10 | 9 | 8 | 6 | 5 | 5 | 5 | 4 | 6 | 5 | 6 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 6.1 | 9.8 |
| 23-Jul | 4 | 5 | 3 | 3 | 5 | 3 | 5 | 6 | 7 | 6 | 5 | 3 | 4 | 5 | 6 | 7 | 8 | 7 | 5 | 5 | 9 | 5 | 5 | 6 | 5.4 | 9.4 |
| 24-Jul | 6 | 7 | 7 | 4 | 4 | 3 | 4 | 4 | 7 | 6 | 8 | 5 | 5 | 6 | 3 | 3 | 3 | 6 | 8 | 5 | 5 | 5 | 5 | 5 | 5.2 | 7.8 |
| 25-Jul | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 4 | 3 | 3 | 4 | 4 | 3 | 4 | 4 | 3 | 7 | 8 | 5 | 5 | 5 | 6 | 8 | 7 | 4.9 | 8.1 |
| 26-Jul | 5 | 2 | 5 | 6 | 6 | 7 | 6 | 8 | 8 | 7 | 6 | 4 | 5 | 4 | 6 | 8 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 9 | 6.5 | 8.9 |
| 27-Jul | 7 | 7 | 6 | 5 | 4 | 4 | 6 | 8 | 8 | 6 | 7 | 8 | 8 | 11 | 11 | 9 | 10 | 10 | 10 | 11 | 9 | 10 | 10 | 11 | 8.1 | 11.3 |
| 28-Jul | 11 | 12 | 12 | 11 | 13 | 13 | 13 | 16 | 17 | 16 | 18 | 16 | 17 | 16 | 17 | 16 | 16 | P | P | 11 | 12 | 11 | 11 | 11 | 14.0 | 17.8 |
| 29-Jul | 7 | 10 | 10 | 12 | 12 | 12 | 17 | 17 | 19 | 17 | 19 | 22 | 20 | 20 | 21 | 23 | 22 | 22 | 23 | 23 | 19 | 13 | 12 | 15 | 17.0 | 23.2 |
| 30-Jul | 14 | 13 | 15 | 15 | 15 | 15 | 16 | 18 | 17 | 15 | 16 | 15 | 13 | 14 | 15 | 16 | 13 | 13 | 13 | 14 | 15 | 12 | 11 | 10 | 14.3 | 18.0 |
| 31-Jul | 10 | 11 | 10 | 13 | 13 | 13 | 13 | 13 | 15 | 14 | 11 | 11 | 12 | 11 | 10 | 11 | 12 | 11 | 12 | 11 | 14 | 17 | 14 | 14 | 12.3 | 16.8 |
| | 7.2 | 7.2 | 6.9 | 7.0 | 7.1 | 7.0 | 7.6 | 7.9 | 7.9 | 7.4 | 7.3 | 7.3 | 7.2 | 7.5 | 7.3 | 7.5 | 7.4 | 7.2 | 7.4 | 7.5 | 7.7 | 7.9 | 8.0 | 8.0 | Diurnal Average | |
| | 14.0 | 14.1 | 15.7 | 18.2 | 15.9 | 15.7 | 17.3 | 18.0 | 18.6 | 16.6 | 18.8 | 21.8 | 20.5 | 20.2 | 21.4 | 22.9 | 21.5 | 22.4 | 23.2 | 22.5 | 18.7 | 16.8 | 16.6 | 15.7 | Diurnal Maximum | |

P - Power Failure
Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 $\mu g/m^3$ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 $\mu g/m^3$

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## Hourly Averages

**Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$**

**Beaverlodge - July 2010**

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Peace Airshed Zone Association

# Hourly Maximums

## Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

## Beaverlodge - July 2010

Maximum Value: 23.9 $\mu g/m^3$ on Jul 29 20:00

Maximum Daily Average: 18.7 $\mu g/m^3$ on Jul 29

Minimum Value: 1 $\mu g/m^3$ on Jul 1 13:00

Minimum Daily Average: 3.7 $\mu g/m^3$ on Jul 4

Maximum Diurnal Average: 9.1 $\mu g/m^3$ at hour 8

Minimum Diurnal Average: 7.7 $\mu g/m^3$ at hour 6

Monthly Average: 8.44 $\mu g/m^3$

Percentiles: $P_1 = 2.4$ $P_{10} = 4.4$ $Q_1 = 5.6$ Median = 7.6 $Q_3 = 10.2$ $P_{90} = 14.5$ $P_{99} = 23.0$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 740 |
| Hours of Missing Data: | 4 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 99.5 |

| 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-Jul | 4 | 4 | 3 | 3 | 2 | 3 | 4 | 4 | 4 | 6 | 5 | 4 | 1 | 3 | 5 | 6 | 4 | 2 | 6 | 5 | 4 | 5 | 5 | 4 | 4.1 | 6.1 |
| 2-Jul | 5 | 5 | 7 | 7 | 5 | 6 | 7 | 6 | 3 | 3 | 2 | 4 | 6 | 4 | 4 | 4 | 3 | 4 | 5 | 7 | 6 | 6 | 6 | 7 | 5.1 | 7.4 |
| 3-Jul | 8 | 7 | 6 | 6 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 6 | 6 | 5 | 6 | 6 | 9 | 7 | 7 | 7 | 8 | 6 | 6 | 7 | 6.2 | 9.4 |
| 4-Jul | 6 | 5 | 4 | 2 | 3 | 3 | 2 | 3 | 2 | 3 | 6 | 6 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 3 | 3.7 | 6.0 |
| 5-Jul | 5 | 5 | 4 | 4 | 4 | 3 | 4 | 4 | 5 | 6 | 5 | 5 | 9 | 9 | 2 | 4 | 5 | 5 | 5 | 6 | 5 | 7 | 6 | 5 | 5.1 | 9.0 |
| 6-Jul | 5 | 4 | 5 | 5 | 5 | 5 | 6 | 6 | 5 | 5 | 7 | 8 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 5 | 9 | 9 | 12 | 12 | 6.8 | 11.7 |
| 7-Jul | 10 | 10 | 10 | 9 | 8 | 8 | 9 | 9 | 10 | 9 | 6 | 7 | 10 | 10 | 11 | 7 | 8 | 9 | 8 | 8 | 8 | 13 | 17 | 17 | 9.6 | 17.5 |
| 8-Jul | 14 | 14 | 13 | 13 | 12 | 13 | 13 | 16 | 15 | 13 | 13 | 12 | 10 | 11 | 11 | 9 | 12 | 12 | 10 | 11 | 13 | 16 | 18 | 16 | 13.0 | 17.5 |
| 9-Jul | 15 | 16 | 17 | 19 | 18 | 17 | 16 | 14 | 17 | 14 | 14 | 14 | 13 | 13 | 13 | 14 | 13 | 10 | 8 | 13 | 12 | 8 | 8 | 7 | 13.5 | 19.2 |
| 10-Jul | 8 | 9 | 8 | 8 | 8 | 9 | 9 | 8 | 9 | 9 | 10 | 12 | 13 | 15 | 13 | 13 | 10 | 8 | 8 | 9 | 9 | 10 | 10 | 11 | 9.8 | 14.7 |
| 11-Jul | 11 | 11 | 10 | 11 | 11 | 9 | 9 | 10 | 12 | 11 | 8 | 9 | 9 | 7 | 6 | 5 | 6 | 5 | 7 | 7 | 7 | 10 | 11 | 11 | 8.8 | 11.8 |
| 12-Jul | 7 | 6 | 5 | 5 | 6 | 5 | 5 | 5 | 4 | 4 | 3 | 4 | 5 | 7 | 6 | 5 | 3 | 3 | 4 | 4 | 5 | 5 | 3 | 5 | 4.8 | 7.1 |
| 13-Jul | 5 | 3 | 4 | 4 | 5 | 5 | 9 | 8 | 5 | 6 | 6 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 7 | 9 | 8 | 9 | 7 | 8 | 6.6 | 8.5 |
| 14-Jul | 8 | 8 | 8 | 8 | 6 | 8 | 8 | 8 | 8 | 6 | 8 | 7 | 7 | 6 | 8 | 9 | 9 | 8 | 9 | 8 | 7 | 7 | 7 | 8 | 7.7 | 9.2 |
| 15-Jul | 8 | 8 | 8 | 8 | 8 | 6 | 6 | 8 | 8 | 6 | 6 | 5 | 6 | 7 | 6 | 6 | 7 | 7 | 5 | 6 | 6 | 6 | 6 | 5 | 6.6 | 8.3 |
| 16-Jul | 5 | 4 | 4 | 5 | 5 | 5 | 6 | 7 | 6 | 2 | 3 | 4 | 5 | 3 | 3 | 5 | 5 | 6 | 6 | 6 | 6 | 7 | 7 | 5 | 5.0 | 7.3 |
| 17-Jul | 6 | 7 | 6 | 6 | 6 | 5 | 6 | 7 | 6 | 6 | 6 | 6 | 7 | 7 | 5 | 6 | 6 | 8 | 10 | 9 | 8 | 9 | 11 | 11 | 7.0 | 10.9 |
| 18-Jul | 8 | 8 | 6 | 6 | 6 | 6 | 5 | 8 | 8 | 6 | 6 | 7 | 5 | 7 | 7 | 8 | 8 | 11 | 12 | 9 | 9 | 9 | 8 | 7 | 7.6 | 11.8 |
| 19-Jul | 8 | 8 | 9 | 8 | 9 | 9 | 10 | 12 | 12 | 11 | 11 | 11 | 8 | 6 | 7 | 7 | 7 | 8 | P | P | 8 | 9 | 10 | 8 | 8.9 | 11.7 |
| 20-Jul | 8 | 7 | 6 | 8 | 8 | 7 | 8 | 7 | 8 | 10 | 10 | 9 | 8 | 11 | 10 | 8 | 8 | 8 | 8 | 9 | 8 | 8 | 8 | 9 | 8.3 | 10.8 |
| 21-Jul | 9 | 8 | 8 | 8 | 10 | 10 | 10 | 11 | 10 | 11 | 12 | 11 | 10 | 9 | 10 | 10 | 10 | 10 | 9 | 9 | 10 | 9 | 9 | 8 | 9.6 | 11.7 |
| 22-Jul | 9 | 10 | 9 | 9 | 11 | 11 | 9 | 8 | 8 | 6 | 6 | 6 | 5 | 7 | 7 | 6 | 5 | 6 | 6 | 5 | 5 | 5 | 5 | 5 | 7.0 | 10.8 |
| 23-Jul | 5 | 5 | 4 | 4 | 5 | 4 | 6 | 6 | 8 | 7 | 6 | 5 | 5 | 7 | 7 | 8 | 9 | 7 | 6 | 7 | 11 | 8 | 6 | 6 | 6.4 | 10.7 |
| 24-Jul | 8 | 8 | 8 | 6 | 5 | 4 | 4 | 5 | 7 | 7 | 9 | 8 | 7 | 7 | 6 | 4 | 4 | 8 | 9 | 9 | 6 | 5 | 6 | 6 | 6.5 | 8.6 |
| 25-Jul | 6 | 6 | 6 | 5 | 5 | 4 | 6 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 9 | 9 | 6 | 6 | 6 | 7 | 9 | 8 | 5.8 | 9.2 |
| 26-Jul | 7 | 4 | 6 | 6 | 8 | 8 | 8 | 8 | 9 | 8 | 7 | 5 | 5 | 5 | 7 | 8 | 7 | 7 | 8 | 8 | 9 | 9 | 9 | 10 | 7.3 | 9.6 |
| 27-Jul | 8 | 7 | 7 | 6 | 6 | 5 | 7 | 9 | 9 | 7 | 7 | 9 | 9 | 13 | 13 | 10 | 10 | 10 | 11 | 12 | 10 | 10 | 11 | 11 | 9.0 | 12.6 |
| 28-Jul | 12 | 12 | 13 | 11 | 14 | 15 | 14 | 18 | 18 | 17 | 18 | 18 | 18 | 18 | 18 | 17 | 19 | P | P | 13 | 15 | 12 | 12 | 12 | 15.1 | 18.8 |
| 29-Jul | 10 | 12 | 11 | 13 | 13 | 13 | 22 | 22 | 20 | 19 | 20 | 24 | 23 | 21 | 22 | 24 | 23 | 23 | 24 | 24 | 23 | 15 | 14 | 15 | 18.7 | 23.9 |
| 30-Jul | 15 | 14 | 16 | 15 | 15 | 16 | 17 | 19 | 19 | 15 | 16 | 16 | 14 | 15 | 17 | 18 | 14 | 14 | 14 | 15 | 15 | 15 | 12 | 12 | 15.4 | 19.1 |
| 31-Jul | 11 | 12 | 11 | 14 | 14 | 14 | 14 | 15 | 15 | 15 | 13 | 11 | 13 | 13 | 11 | 11 | 13 | 12 | 12 | 12 | 18 | 19 | 15 | 15 | 13.4 | 19.3 |
| | 8.2 | 8.0 | 7.8 | 7.8 | 7.9 | 7.7 | 8.6 | 9.1 | 8.9 | 8.3 | 8.3 | 8.5 | 8.3 | 8.6 | 8.5 | 8.5 | 8.6 | 8.3 | 8.3 | 8.6 | 8.9 | 8.9 | 8.9 | 8.8 | Diurnal Average | |
| | 15.3 | 15.7 | 16.8 | 19.2 | 17.8 | 16.7 | 21.7 | 21.8 | 20.4 | 19.1 | 19.7 | 23.6 | 23.1 | 21.3 | 21.9 | 23.7 | 23.1 | 23.1 | 23.8 | 23.9 | 22.7 | 19.3 | 17.5 | 16.6 | Diurnal Maximum | |

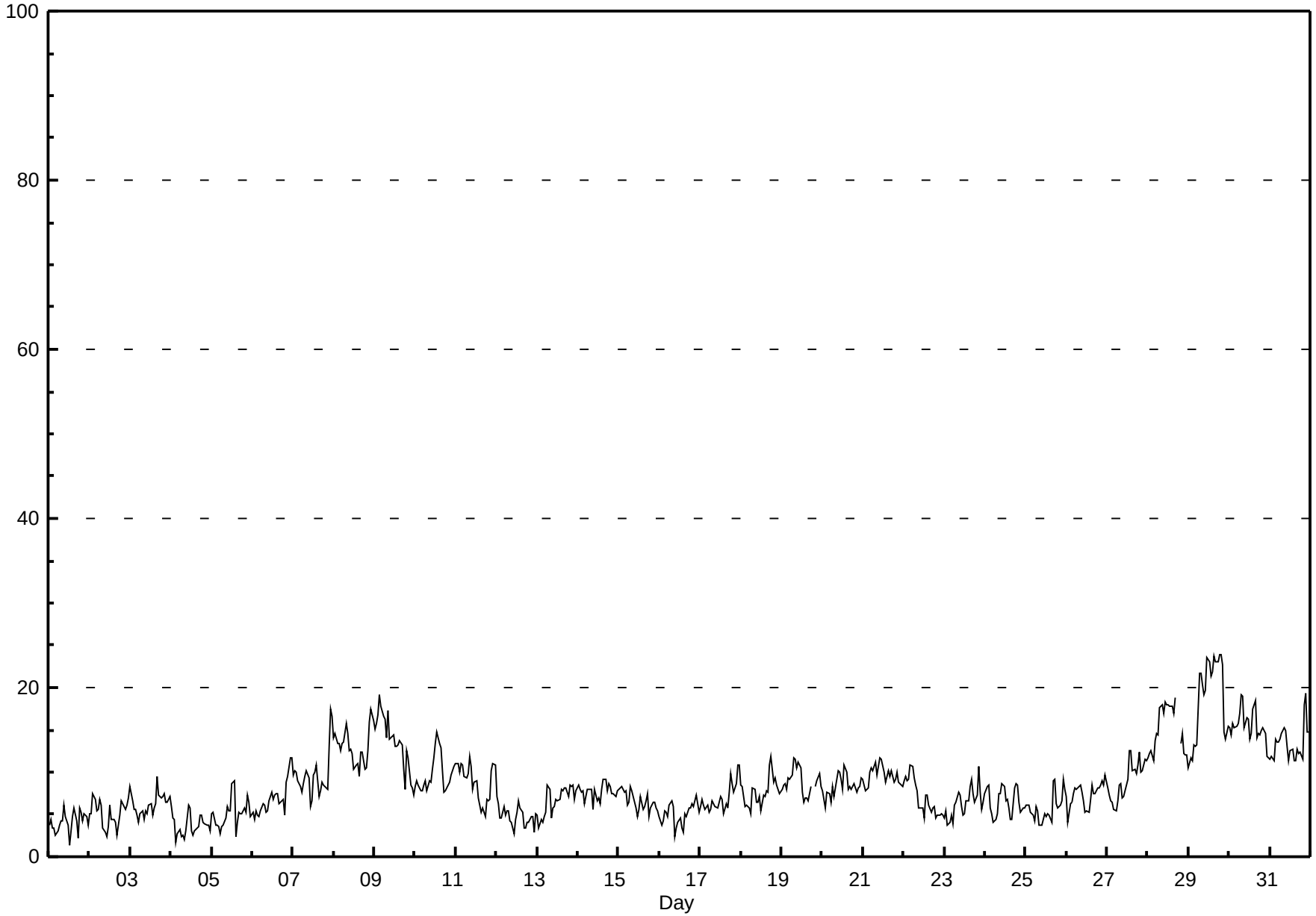
P - Power Failure

PASZA
Peace Airshed Zone Association

## Hourly Maximums

**Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$**

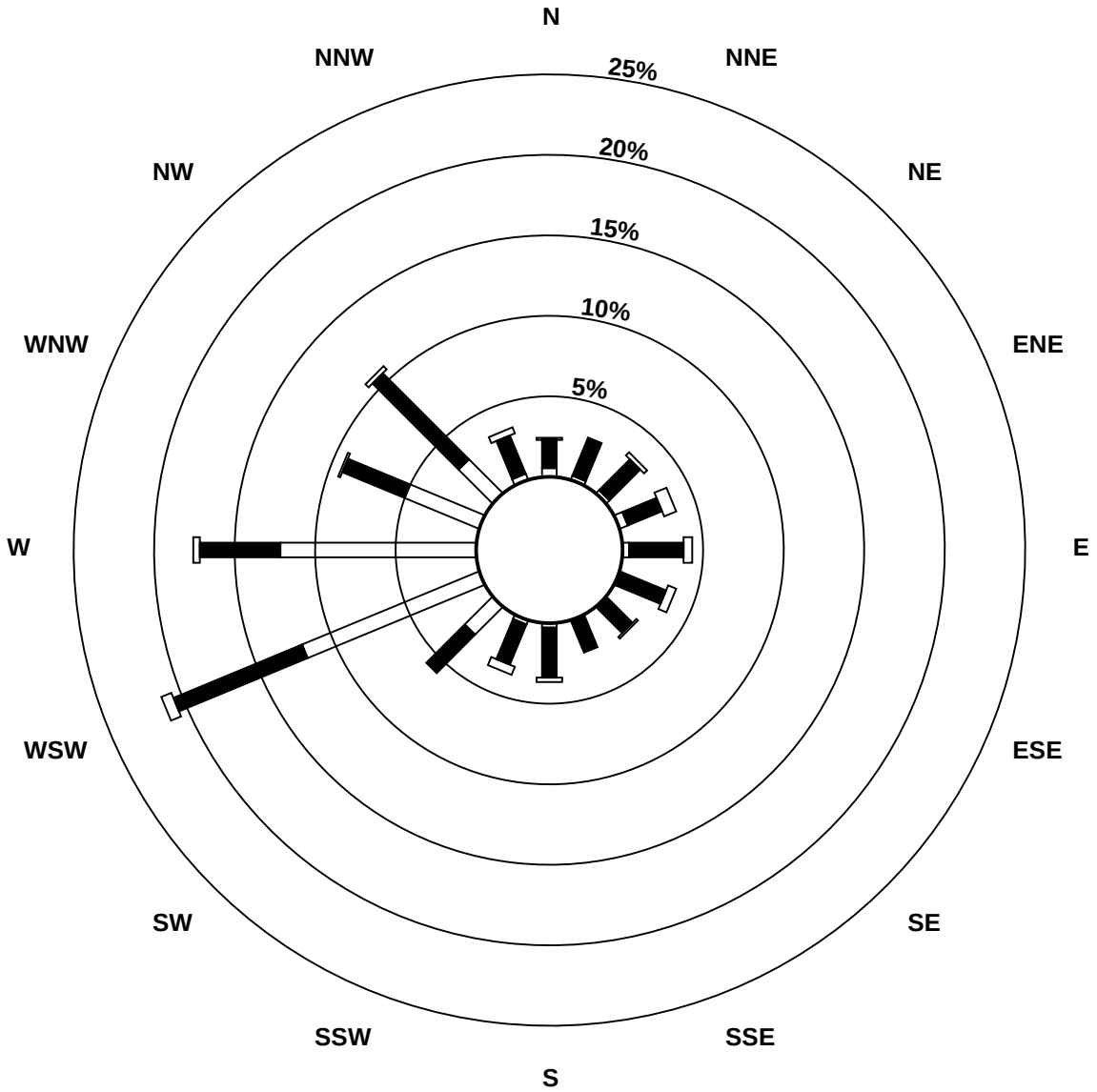
**Beaverlodge - July 2010**



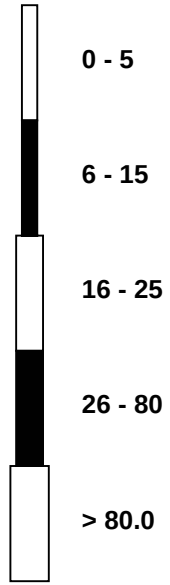
# Pollutant Rose

**Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$**

**Beaverlodge - July 2010**




**Pollutant Classes ($\mu g/m^3$)**



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# Hourly Averages

## External Temperature (ET) - $^{o}$C

## Beaverlodge - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 31.1 $^{o}$C on Jul 8 18:00 Maximum Daily Average: 23.1 $^{o}$C on Jul 8

Minimum Value: 5 $^{o}$C on Jul 1 05:00 Minimum Daily Average: 12.2 $^{o}$C on Jul 1
Maximum Diurnal Average: 22.4 $^{o}$C at hour 17 Minimum Diurnal Average: 11.2 $^{o}$C at hour 5
Monthly Average: 17.31 $^{o}$C Percentiles: $P_1$ = 5.7 $P_{10}$ = 10.8 $Q_1$ = 13.5 Median = 16.8 $Q_3$ = 21.0 $P_{90}$ = 24.9 $P_{99}$ = 28.0

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 744 |
| Hours of Missing Data: | 0 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 100.0 |

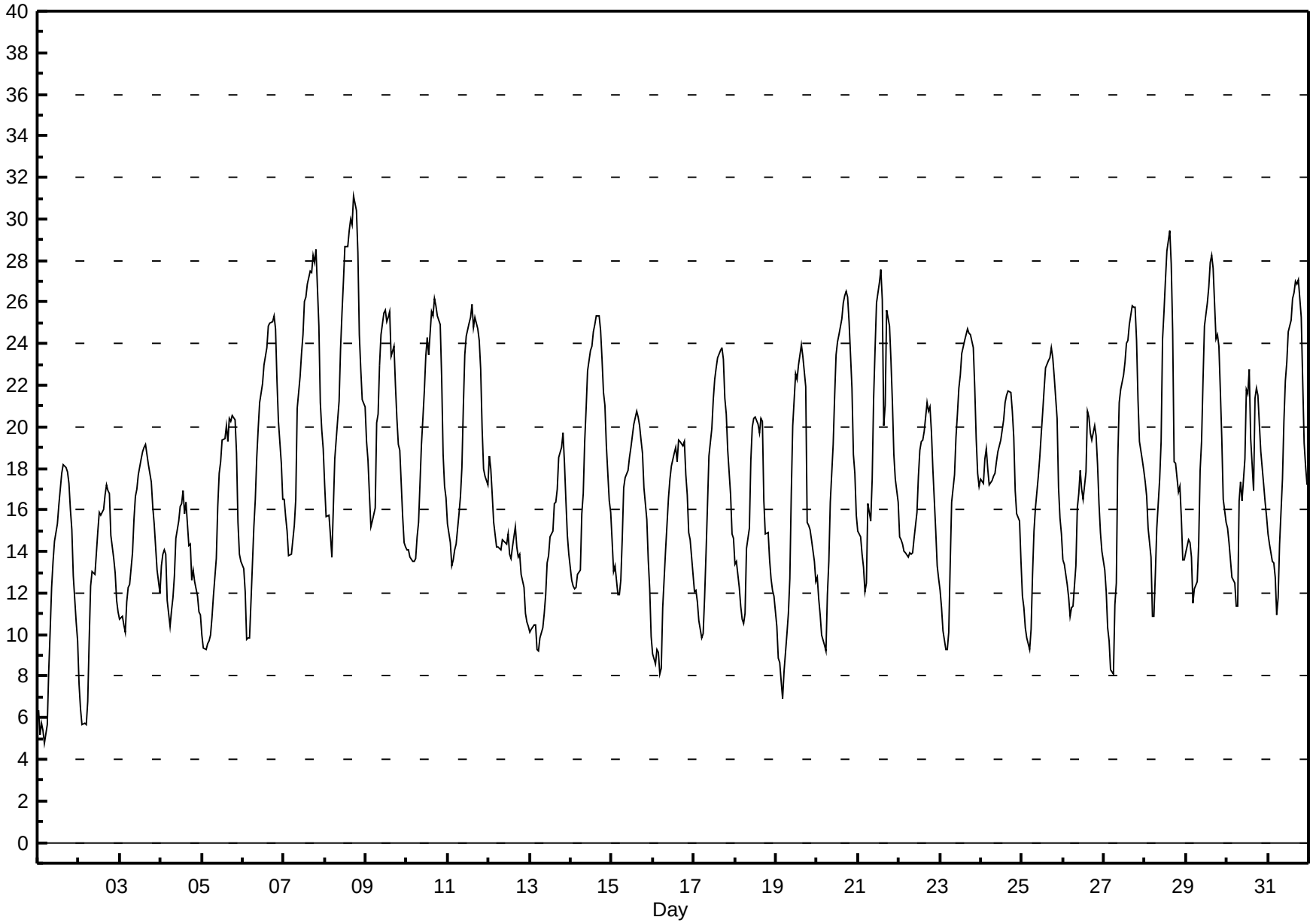
| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 6 | 5 | 6 | 5 | 5 | 6 | 8 | 10 | 12 | 13 | 15 | 15 | 16 | 17 | 18 | 18 | 18 | 18 | 17 | 16 | 15 | 13 | 11 | 10 | 12.2 | 18.2 |
| 2-Jul | 8 | 6 | 6 | 6 | 6 | 7 | 10 | 12 | 13 | 13 | 14 | 15 | 16 | 16 | 16 | 17 | 17 | 17 | 17 | 15 | 14 | 13 | 12 | 11 | 12.3 | 17.2 |
| 3-Jul | 11 | 11 | 10 | 10 | 12 | 12 | 12 | 14 | 16 | 17 | 17 | 18 | 18 | 19 | 19 | 19 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 15.0 | 19.2 |
| 4-Jul | 13 | 14 | 14 | 14 | 12 | 10 | 11 | 12 | 13 | 15 | 15 | 16 | 16 | 17 | 16 | 16 | 14 | 14 | 13 | 13 | 13 | 12 | 11 | 11 | 13.6 | 16.9 |
| 5-Jul | 10 | 9 | 9 | 10 | 10 | 10 | 11 | 12 | 14 | 16 | 18 | 18 | 19 | 19 | 20 | 19 | 20 | 20 | 21 | 20 | 19 | 15 | 14 | 14 | 15.3 | 20.5 |
| 6-Jul | 13 | 12 | 10 | 10 | 10 | 12 | 15 | 17 | 19 | 20 | 21 | 22 | 23 | 23 | 24 | 25 | 25 | 25 | 25 | 25 | 22 | 20 | 18 | 17 | 18.8 | 25.3 |
| 7-Jul | 16 | 16 | 15 | 14 | 14 | 15 | 15 | 17 | 21 | 22 | 24 | 24 | 26 | 26 | 27 | 27 | 27 | 28 | 28 | 29 | 25 | 21 | 20 | 19 | 21.5 | 28.5 |
| 8-Jul | 17 | 16 | 16 | 15 | 14 | 16 | 18 | 20 | 21 | 24 | 25 | 27 | 29 | 29 | 29 | 30 | 30 | 31 | 30 | 28 | 24 | 23 | 21 | 21 | 23.1 | 31.1 |
| 9-Jul | 19 | 18 | 17 | 15 | 15 | 16 | 20 | 21 | 23 | 24 | 25 | 26 | 25 | 25 | 26 | 23 | 24 | 22 | 20 | 19 | 19 | 16 | 14 | 14 | 20.3 | 25.6 |
| 10-Jul | 14 | 14 | 14 | 14 | 14 | 14 | 15 | 15 | 19 | 20 | 22 | 23 | 24 | 23 | 26 | 25 | 26 | 26 | 25 | 25 | 22 | 19 | 17 | 17 | 19.7 | 26.2 |
| 11-Jul | 15 | 14 | 13 | 14 | 14 | 14 | 16 | 17 | 18 | 21 | 23 | 24 | 25 | 25 | 26 | 25 | 25 | 25 | 24 | 23 | 20 | 18 | 18 | 17 | 19.8 | 25.9 |
| 12-Jul | 19 | 18 | 17 | 15 | 14 | 14 | 14 | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 14 | 15 | 14 | 14 | 14 | 13 | 12 | 11 | 11 | 10 | 14.1 | 18.6 |
| 13-Jul | 10 | 10 | 10 | 10 | 9 | 9 | 10 | 10 | 11 | 12 | 13 | 14 | 15 | 15 | 16 | 16 | 17 | 19 | 19 | 20 | 18 | 16 | 15 | 14 | 13.7 | 19.7 |
| 14-Jul | 13 | 12 | 12 | 12 | 13 | 13 | 16 | 17 | 19 | 21 | 23 | 24 | 24 | 25 | 25 | 25 | 25 | 25 | 23 | 22 | 21 | 19 | 16 | 16 | 19.2 | 25.3 |
| 15-Jul | 14 | 13 | 13 | 12 | 12 | 13 | 15 | 17 | 18 | 18 | 19 | 19 | 20 | 20 | 21 | 20 | 20 | 19 | 19 | 17 | 16 | 14 | 12 | 10 | 16.2 | 20.7 |
| 16-Jul | 9 | 9 | 9 | 9 | 8 | 8 | 11 | 14 | 15 | 17 | 18 | 18 | 19 | 19 | 18 | 19 | 19 | 19 | 19 | 18 | 17 | 15 | 15 | 13 | 14.8 | 19.4 |
| 17-Jul | 12 | 12 | 12 | 11 | 10 | 10 | 12 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 23 | 24 | 24 | 23 | 21 | 21 | 19 | 17 | 15 | 15 | 17.3 | 23.8 |
| 18-Jul | 13 | 14 | 12 | 11 | 11 | 11 | 11 | 14 | 15 | 18 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 16 | 15 | 15 | 14 | 13 | 12 | 12 | 15.4 | 20.5 |
| 19-Jul | 10 | 9 | 9 | 8 | 7 | 8 | 10 | 11 | 13 | 17 | 20 | 23 | 22 | 23 | 23 | 24 | 23 | 22 | 15 | 15 | 15 | 15 | 14 | 13 | 15.3 | 24.0 |
| 20-Jul | 13 | 12 | 11 | 10 | 9 | 9 | 12 | 14 | 16 | 19 | 21 | 23 | 24 | 24 | 25 | 26 | 26 | 27 | 26 | 25 | 22 | 19 | 18 | 16 | 18.7 | 26.5 |
| 21-Jul | 15 | 15 | 14 | 13 | 12 | 12 | 16 | 15 | 17 | 21 | 24 | 26 | 27 | 28 | 26 | 20 | 21 | 26 | 25 | 23 | 21 | 19 | 17 | 16 | 19.6 | 27.6 |
| 22-Jul | 15 | 15 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 15 | 16 | 18 | 19 | 19 | 19 | 20 | 21 | 21 | 21 | 20 | 18 | 15 | 13 | 13 | 16.4 | 21.1 |
| 23-Jul | 12 | 11 | 10 | 9 | 9 | 10 | 13 | 16 | 18 | 20 | 21 | 22 | 23 | 23 | 24 | 24 | 25 | 24 | 24 | 24 | 22 | 19 | 18 | 17 | 18.3 | 24.7 |
| 24-Jul | 17 | 17 | 18 | 19 | 18 | 17 | 17 | 18 | 18 | 18 | 19 | 19 | 20 | 20 | 21 | 22 | 22 | 22 | 21 | 20 | 17 | 16 | 15 | 14 | 18.5 | 21.7 |
| 25-Jul | 12 | 11 | 10 | 10 | 9 | 10 | 13 | 15 | 16 | 18 | 19 | 20 | 21 | 22 | 23 | 23 | 23 | 24 | 23 | 22 | 20 | 17 | 16 | 15 | 17.2 | 23.8 |
| 26-Jul | 14 | 13 | 12 | 12 | 11 | 11 | 11 | 13 | 16 | 17 | 18 | 17 | 17 | 18 | 21 | 20 | 20 | 19 | 20 | 20 | 18 | 16 | 15 | 14 | 16.0 | 20.8 |
| 27-Jul | 13 | 12 | 10 | 10 | 8 | 8 | 11 | 13 | 18 | 21 | 22 | 22 | 23 | 24 | 24 | 25 | 26 | 26 | 26 | 24 | 21 | 19 | 18 | 18 | 18.5 | 25.8 |
| 28-Jul | 17 | 17 | 15 | 14 | 11 | 11 | 13 | 15 | 17 | 19 | 24 | 26 | 27 | 28 | 29 | 28 | 25 | 18 | 18 | 17 | 17 | 16 | 14 | 14 | 18.8 | 29.4 |
| 29-Jul | 14 | 15 | 14 | 14 | 11 | 12 | 13 | 14 | 18 | 19 | 22 | 25 | 26 | 27 | 28 | 28 | 28 | 24 | 24 | 24 | 22 | 19 | 16 | 15 | 19.7 | 28.2 |
| 30-Jul | 15 | 14 | 14 | 13 | 12 | 11 | 11 | 16 | 17 | 16 | 18 | 22 | 22 | 23 | 19 | 17 | 21 | 22 | 21 | 20 | 19 | 17 | 16 | 16 | 17.3 | 22.8 |
| 31-Jul | 15 | 14 | 14 | 13 | 13 | 11 | 12 | 14 | 17 | 20 | 22 | 23 | 25 | 25 | 26 | 26 | 27 | 27 | 27 | 25 | 22 | 19 | 18 | 17 | 19.8 | 27.1 |
| | 13.4 | 12.9 | 12.3 | 11.8 | 11.2 | 11.5 | 13.2 | 14.7 | 16.6 | 18.2 | 19.7 | 20.8 | 21.5 | 21.9 | 22.4 | 22.3 | 22.4 | 22.0 | 21.3 | 20.4 | 18.7 | 16.6 | 15.3 | 14.4 | Diurnal Average | |
| | 19.3 | 18.4 | 18.5 | 18.9 | 18.0 | 17.2 | 20.2 | 20.6 | 23.0 | 24.4 | 25.5 | 27.0 | 28.6 | 28.7 | 29.4 | 30.0 | 29.7 | 31.1 | 30.4 | 28.5 | 24.9 | 22.8 | 21.3 | 20.9 | Diurnal Maximum | |

PASZA
Peace Airshed Zone Association

## Hourly Averages

**External Temperature (ET) - $^{o}$C**

**Beaverlodge - July 2010**



# Hourly Averages

## Relative Humidity (RH) - %

## Beaverlodge - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 95.7 % on Jul 27 06:00 Maximum Daily Average: 76.9 % on Jul 13

Minimum Value: 21 % on Jul 8 18:00 Minimum Daily Average: 34.0 % on Jul 24
Maximum Diurnal Average: 74.7 % at hour 5 Minimum Diurnal Average: 35.2 % at hour 15
Monthly Average: 53.27 % Percentiles: $P_1$ = 23.0 $P_{10}$ = 29.1 $Q_1$ = 36.2 Median = 51.5 $Q_3$ = 68.2 $P_{90}$ = 81.7 $P_{99}$ = 92.0

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 744 |
| Hours of Missing Data: | 0 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 65 | 71 | 66 | 68 | 70 | 68 | 59 | 52 | 42 | 35 | 32 | 29 | 27 | 25 | 23 | 22 | 22 | 23 | 24 | 26 | 28 | 32 | 41 | 44 | 41.4 | 70.7 |
| 2-Jul | 52 | 57 | 60 | 60 | 63 | 63 | 55 | 46 | 46 | 47 | 48 | 46 | 45 | 46 | 46 | 45 | 43 | 44 | 45 | 51 | 56 | 58 | 62 | 65 | 51.9 | 65.1 |
| 3-Jul | 74 | 74 | 77 | 80 | 67 | 60 | 57 | 51 | 47 | 41 | 41 | 39 | 37 | 37 | 37 | 36 | 37 | 38 | 40 | 44 | 47 | 51 | 55 | 60 | 51.1 | 79.9 |
| 4-Jul | 55 | 56 | 56 | 56 | 74 | 83 | 72 | 66 | 62 | 52 | 48 | 43 | 41 | 40 | 49 | 45 | 60 | 58 | 69 | 63 | 65 | 69 | 76 | 80 | 60.0 | 83.0 |
| 5-Jul | 87 | 92 | 93 | 91 | 88 | 87 | 83 | 78 | 70 | 58 | 49 | 44 | 41 | 41 | 38 | 42 | 39 | 38 | 36 | 35 | 40 | 53 | 57 | 57 | 59.9 | 92.9 |
| 6-Jul | 55 | 58 | 70 | 67 | 66 | 60 | 51 | 48 | 41 | 37 | 35 | 32 | 29 | 27 | 27 | 26 | 26 | 26 | 26 | 28 | 41 | 48 | 55 | 61 | 43.3 | 69.7 |
| 7-Jul | 60 | 63 | 64 | 66 | 62 | 61 | 64 | 62 | 47 | 36 | 32 | 29 | 26 | 26 | 26 | 25 | 25 | 24 | 25 | 25 | 34 | 47 | 49 | 51 | 43.0 | 65.6 |
| 8-Jul | 58 | 64 | 64 | 67 | 72 | 63 | 57 | 54 | 53 | 42 | 36 | 30 | 26 | 25 | 24 | 23 | 23 | 21 | 23 | 29 | 37 | 42 | 45 | 44 | 42.6 | 72.2 |
| 9-Jul | 50 | 55 | 64 | 71 | 70 | 63 | 47 | 45 | 40 | 34 | 30 | 30 | 34 | 33 | 34 | 38 | 36 | 41 | 55 | 63 | 67 | 81 | 87 | 87 | 52.3 | 87.3 |
| 10-Jul | 88 | 88 | 91 | 92 | 92 | 92 | 88 | 85 | 68 | 59 | 51 | 46 | 40 | 40 | 34 | 33 | 31 | 30 | 31 | 33 | 42 | 58 | 64 | 65 | 60.1 | 92.2 |
| 11-Jul | 70 | 74 | 79 | 78 | 76 | 75 | 70 | 68 | 65 | 55 | 45 | 43 | 40 | 36 | 32 | 31 | 30 | 29 | 28 | 32 | 42 | 48 | 50 | 49 | 51.9 | 78.7 |
| 12-Jul | 34 | 35 | 37 | 41 | 46 | 47 | 48 | 49 | 48 | 54 | 53 | 49 | 54 | 52 | 48 | 46 | 52 | 56 | 55 | 59 | 62 | 67 | 67 | 69 | 51.2 | 69.0 |
| 13-Jul | 72 | 71 | 70 | 71 | 85 | 87 | 87 | 87 | 87 | 84 | 81 | 81 | 79 | 79 | 74 | 74 | 73 | 68 | 66 | 63 | 69 | 76 | 79 | 82 | 76.9 | 87.2 |
| 14-Jul | 86 | 87 | 88 | 87 | 83 | 80 | 66 | 60 | 52 | 45 | 38 | 34 | 32 | 31 | 30 | 29 | 27 | 30 | 32 | 36 | 38 | 43 | 52 | 55 | 51.6 | 87.6 |
| 15-Jul | 60 | 66 | 63 | 67 | 64 | 60 | 57 | 40 | 38 | 35 | 33 | 32 | 31 | 29 | 29 | 29 | 32 | 34 | 36 | 40 | 44 | 51 | 54 | 66 | 45.3 | 66.6 |
| 16-Jul | 69 | 72 | 69 | 66 | 68 | 67 | 57 | 46 | 41 | 37 | 35 | 34 | 33 | 34 | 35 | 33 | 34 | 36 | 35 | 41 | 47 | 54 | 61 | 71 | 49.0 | 72.3 |
| 17-Jul | 77 | 77 | 79 | 83 | 83 | 80 | 74 | 65 | 57 | 48 | 40 | 34 | 30 | 30 | 29 | 27 | 28 | 30 | 37 | 38 | 43 | 48 | 55 | 57 | 52.0 | 82.8 |
| 18-Jul | 66 | 68 | 75 | 80 | 83 | 87 | 87 | 73 | 69 | 53 | 47 | 44 | 45 | 46 | 48 | 45 | 44 | 66 | 67 | 72 | 83 | 85 | 82 | 80 | 66.3 | 86.7 |
| 19-Jul | 85 | 90 | 92 | 92 | 95 | 91 | 83 | 82 | 78 | 62 | 49 | 35 | 32 | 31 | 30 | 29 | 30 | 36 | 69 | 75 | 75 | 73 | 80 | 84 | 65.7 | 94.7 |
| 20-Jul | 76 | 82 | 82 | 89 | 87 | 89 | 77 | 73 | 65 | 57 | 51 | 39 | 34 | 31 | 27 | 27 | 26 | 25 | 24 | 29 | 38 | 49 | 50 | 60 | 53.6 | 89.3 |
| 21-Jul | 61 | 61 | 64 | 67 | 73 | 71 | 60 | 63 | 57 | 44 | 39 | 32 | 27 | 24 | 28 | 52 | 49 | 30 | 34 | 41 | 41 | 49 | 52 | 60 | 49.1 | 72.7 |
| 22-Jul | 68 | 70 | 70 | 72 | 72 | 75 | 78 | 82 | 86 | 84 | 80 | 68 | 58 | 53 | 52 | 52 | 40 | 40 | 40 | 43 | 50 | 63 | 69 | 71 | 64.1 | 85.7 |
| 23-Jul | 74 | 77 | 81 | 84 | 84 | 80 | 70 | 61 | 50 | 41 | 34 | 29 | 30 | 31 | 31 | 31 | 32 | 31 | 29 | 30 | 35 | 41 | 48 | 51 | 49.4 | 84.0 |
| 24-Jul | 50 | 54 | 49 | 46 | 44 | 38 | 31 | 29 | 32 | 32 | 30 | 29 | 26 | 25 | 24 | 23 | 23 | 24 | 26 | 29 | 35 | 37 | 36 | 43 | 34.0 | 53.5 |
| 25-Jul | 48 | 50 | 54 | 56 | 59 | 57 | 50 | 42 | 39 | 35 | 32 | 30 | 28 | 26 | 25 | 24 | 25 | 25 | 25 | 27 | 32 | 42 | 47 | 49 | 38.7 | 59.3 |
| 26-Jul | 53 | 55 | 59 | 63 | 67 | 66 | 66 | 61 | 57 | 57 | 52 | 60 | 70 | 63 | 44 | 42 | 49 | 53 | 49 | 52 | 58 | 66 | 73 | 78 | 58.9 | 77.6 |
| 27-Jul | 82 | 86 | 91 | 94 | 95 | 96 | 86 | 79 | 62 | 51 | 46 | 41 | 35 | 31 | 32 | 33 | 31 | 31 | 30 | 34 | 42 | 47 | 49 | 51 | 56.4 | 95.7 |
| 28-Jul | 56 | 60 | 65 | 72 | 83 | 84 | 78 | 71 | 62 | 56 | 41 | 37 | 34 | 31 | 29 | 32 | 40 | 63 | 64 | 76 | 73 | 80 | 90 | 90 | 61.1 | 90.4 |
| 29-Jul | 88 | 84 | 81 | 83 | 91 | 89 | 90 | 84 | 67 | 60 | 52 | 40 | 30 | 29 | 24 | 23 | 24 | 41 | 40 | 36 | 39 | 39 | 50 | 55 | 55.8 | 91.2 |
| 30-Jul | 55 | 59 | 62 | 68 | 70 | 74 | 75 | 59 | 59 | 65 | 58 | 47 | 45 | 42 | 54 | 72 | 55 | 49 | 50 | 58 | 66 | 73 | 70 | 71 | 60.6 | 75.3 |
| 31-Jul | 76 | 78 | 81 | 81 | 83 | 89 | 86 | 77 | 65 | 53 | 46 | 41 | 35 | 31 | 28 | 28 | 27 | 27 | 26 | 29 | 38 | 51 | 56 | 60 | 53.9 | 89.1 |
| | 66.2 | 68.8 | 70.9 | 72.7 | 74.7 | 73.7 | 68.0 | 62.6 | 56.5 | 50.0 | 44.5 | 40.3 | 37.8 | 36.3 | 35.2 | 36.1 | 35.9 | 37.7 | 39.8 | 43.0 | 48.6 | 55.5 | 60.0 | 63.4 | Diurnal Average | |
| | 88.0 | 91.8 | 92.9 | 94.0 | 95.3 | 95.7 | 89.6 | 87.2 | 86.7 | 84.4 | 81.2 | 80.8 | 78.7 | 79.2 | 73.8 | 74.4 | 73.3 | 67.8 | 69.2 | 75.8 | 83.2 | 84.6 | 90.3 | 90.4 | Diurnal Maximum | |

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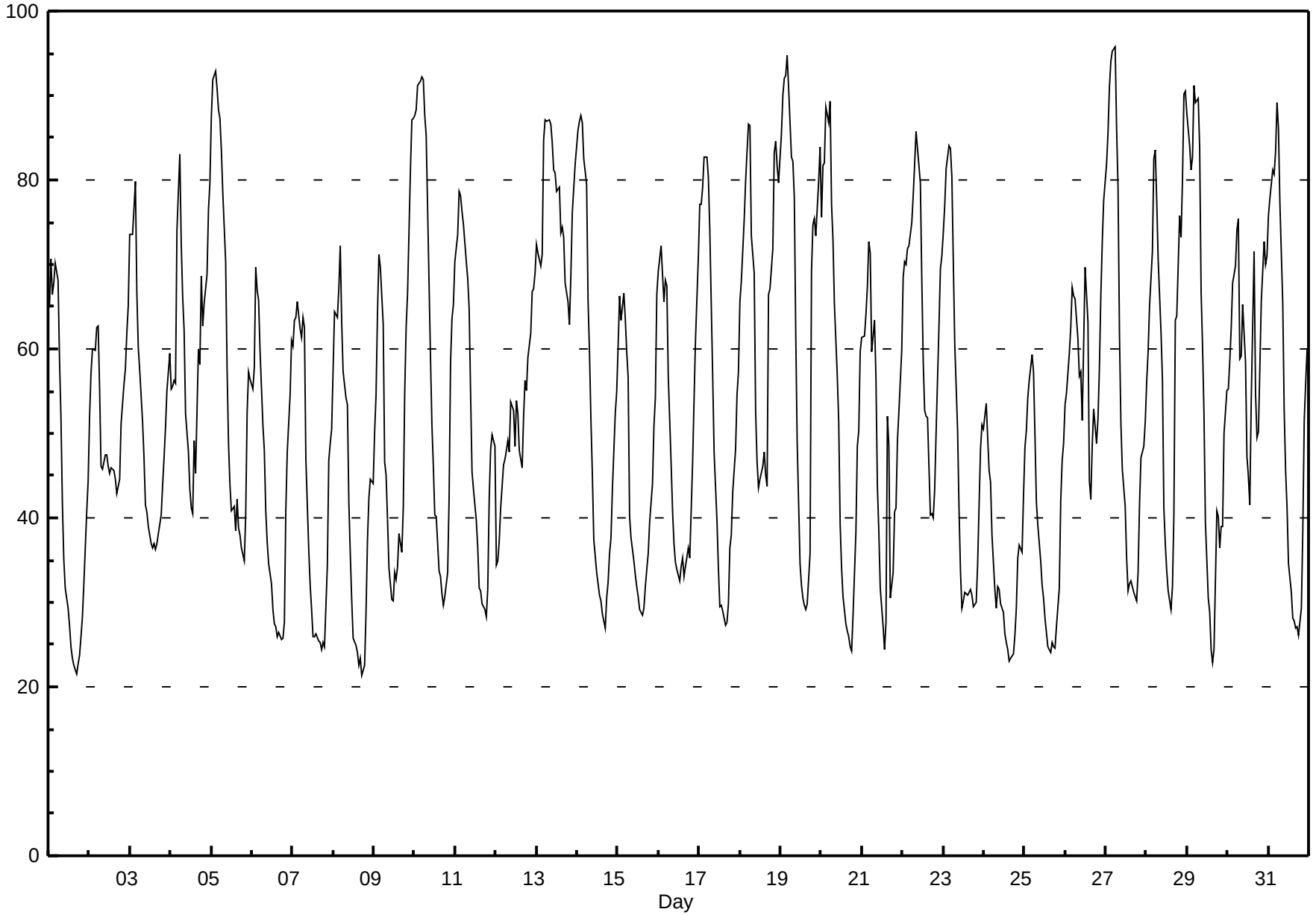
## Hourly Averages

**Relative Humidity (RH) - %**

**Beaverlodge - July 2010**



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# Hourly Averages

## Wind Speed (km/h)
## Wind Direction (deg)
## Beaverlodge - July 2010

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1 Spd | 14 | 12 | 19 | 17 | 11 | 15 | 20 | 27 | 33 | 36 | 38 | 38 | 36 | 37 | 36 | 35 | 38 | 34 | 34 | 27 | 24 | 19 | 14 | 15 | 25.7 | 38.4 |
| Dir | 236 | 227 | 228 | 225 | 224 | 211 | 220 | 230 | 241 | 245 | 247 | 254 | 249 | 246 | 255 | 251 | 247 | 254 | 256 | 250 | 250 | 253 | 258 | 247 | 245 | 247 |
| 2 Spd | 9 | 7 | 10 | 9 | 6 | 6 | 12 | 26 | 30 | 30 | 28 | 28 | 27 | 27 | 26 | 25 | 28 | 27 | 26 | 22 | 16 | 14 | 11 | 3 | 18.3 | 30.3 |
| Dir | 231 | 224 | 229 | 229 | 229 | 216 | 243 | 263 | 268 | 265 | 266 | 262 | 274 | 269 | 245 | 251 | 248 | 249 | 260 | 235 | 238 | 241 | 238 | 185 | 253 | 268 |
| 3 Spd | 6 | 3 | 1 | 2 | 6 | 9 | 11 | 23 | 24 | 31 | 34 | 32 | 32 | 34 | 34 | 34 | 36 | 36 | 36 | 32 | 25 | 19 | 12 | 10 | 20.9 | 36.4 |
| Dir | 175 | 182 | 71 | 53 | 254 | 262 | 273 | 260 | 254 | 258 | 245 | 247 | 250 | 260 | 260 | 260 | 256 | 251 | 241 | 241 | 241 | 241 | 228 | 227 | 250 | 256 |
| 4 Spd | 16 | 18 | 19 | 27 | 16 | 10 | 20 | 23 | 23 | 29 | 32 | 30 | 34 | 33 | 30 | 29 | 18 | 22 | 16 | 22 | 18 | 14 | 13 | 13 | 21.4 | 33.8 |
| Dir | 247 | 258 | 259 | 256 | 249 | 238 | 245 | 245 | 252 | 269 | 260 | 266 | 261 | 264 | 255 | 261 | 285 | 286 | 283 | 282 | 281 | 276 | 262 | 282 | 263 | 261 |
| 5 Spd | 12 | 12 | 8 | 10 | 11 | 11 | 12 | 13 | 16 | 19 | 18 | 19 | 19 | 17 | 20 | 26 | 22 | 18 | 21 | 23 | 16 | 12 | 12 | 9 | 14.9 | 25.8 |
| Dir | 300 | 289 | 276 | 261 | 287 | 295 | 292 | 295 | 294 | 300 | 305 | 299 | 294 | 291 | 278 | 266 | 275 | 276 | 264 | 261 | 260 | 245 | 245 | 241 | 279 | 266 |
| 6 Spd | 10 | 4 | 3 | 2 | 3 | 2 | 1 | 7 | 15 | 17 | 15 | 16 | 17 | 18 | 18 | 16 | 15 | 14 | 13 | 8 | 8 | 8 | 0 | 5 | 8.0 | 18.5 |
| Dir | 246 | 246 | 60 | 87 | 60 | 102 | 185 | 272 | 283 | 282 | 279 | 280 | 289 | 271 | 272 | 289 | 305 | 327 | 309 | 305 | 232 | 248 | 202 | 44 | 285 | 272 |
| 7 Spd | 4 | 3 | 5 | 12 | 11 | 5 | 2 | 3 | 4 | 9 | 8 | 9 | 5 | 6 | 6 | 5 | 5 | 3 | 2 | 2 | 4 | 3 | 5 | 3 | 3.4 | 12.4 |
| Dir | 37 | 317 | 324 | 315 | 312 | 315 | 314 | 230 | 258 | 319 | 308 | 292 | 315 | 276 | 316 | 281 | 319 | 31 | 6 | 90 | 170 | 116 | 62 | 99 | 315 | 315 |
| 8 Spd | 4 | 4 | 9 | 2 | 2 | 3 | 2 | 4 | 14 | 5 | 5 | 5 | 2 | 4 | 8 | 4 | 1 | 4 | 3 | 7 | 7 | 6 | 6 | 7 | 3.3 | 13.9 |
| Dir | 71 | 108 | 33 | 97 | 123 | 64 | 348 | 286 | 101 | 145 | 174 | 146 | 124 | 142 | 50 | 36 | 289 | 105 | 190 | 145 | 99 | 78 | 81 | 85 | 96 | 101 |
| 9 Spd | 3 | 2 | 4 | 6 | 2 | 2 | 3 | 5 | 8 | 13 | 19 | 17 | 16 | 18 | 17 | 15 | 10 | 6 | 2 | 5 | 9 | 19 | 22 | 3 | 6.3 | 21.6 |
| Dir | 97 | 163 | 188 | 47 | 82 | 81 | 207 | 247 | 313 | 326 | 315 | 316 | 333 | 341 | 3 | 345 | 331 | 2 | 108 | 75 | 235 | 344 | 40 | 279 | 341 | 40 |
| 10 Spd | 6 | 6 | 10 | 7 | 7 | 8 | 1 | 6 | 3 | 2 | 4 | 6 | 4 | 2 | 2 | 5 | 6 | 6 | 7 | 7 | 8 | 6 | 6 | 5 | 1.8 | 9.9 |
| Dir | 237 | 291 | 291 | 28 | 21 | 25 | 27 | 202 | 164 | 201 | 184 | 136 | 152 | 20 | 121 | 158 | 111 | 166 | 182 | 158 | 146 | 91 | 88 | 95 | 139 | 291 |
| 11 Spd | 3 | 5 | 4 | 4 | 4 | 3 | 5 | 5 | 6 | 12 | 14 | 18 | 28 | 37 | 40 | 36 | 36 | 38 | 33 | 22 | 11 | 5 | 7 | 11 | 13.6 | 40.3 |
| Dir | 143 | 118 | 115 | 89 | 107 | 112 | 166 | 170 | 183 | 202 | 204 | 212 | 259 | 253 | 248 | 244 | 245 | 255 | 248 | 245 | 238 | 211 | 260 | 260 | 239 | 248 |
| 12 Spd | 21 | 28 | 30 | 26 | 22 | 27 | 29 | 25 | 27 | 23 | 22 | 22 | 20 | 24 | 23 | 22 | 23 | 25 | 20 | 18 | 22 | 19 | 20 | 20 | 21.8 | 29.7 |
| Dir | 271 | 275 | 268 | 268 | 255 | 250 | 259 | 252 | 265 | 305 | 310 | 310 | 320 | 288 | 279 | 290 | 280 | 268 | 293 | 314 | 304 | 302 | 298 | 300 | 282 | 268 |
| 13 Spd | 19 | 21 | 23 | 22 | 24 | 22 | 21 | 22 | 21 | 17 | 19 | 18 | 20 | 20 | 20 | 17 | 16 | 17 | 15 | 12 | 8 | 8 | 8 | 7 | 16.5 | 23.8 |
| Dir | 289 | 290 | 290 | 295 | 299 | 306 | 313 | 315 | 315 | 318 | 312 | 305 | 307 | 313 | 313 | 318 | 308 | 301 | 303 | 293 | 278 | 241 | 251 | 237 | 302 | 299 |
| 14 Spd | 3 | 2 | 2 | 3 | 2 | 2 | 6 | 8 | 15 | 19 | 25 | 23 | 17 | 23 | 27 | 28 | 27 | 32 | 35 | 23 | 21 | 17 | 4 | 8 | 14.4 | 34.6 |
| Dir | 189 | 140 | 90 | 77 | 126 | 111 | 202 | 218 | 247 | 248 | 251 | 258 | 272 | 256 | 258 | 247 | 252 | 255 | 256 | 254 | 244 | 256 | 231 | 242 | 250 | 256 |
| 15 Spd | 5 | 6 | 6 | 5 | 7 | 11 | 13 | 37 | 35 | 37 | 39 | 36 | 37 | 35 | 35 | 35 | 34 | 35 | 33 | 35 | 26 | 26 | 16 | 9 | 24.5 | 39.3 |
| Dir | 217 | 216 | 243 | 253 | 264 | 256 | 240 | 262 | 273 | 266 | 264 | 255 | 247 | 248 | 255 | 259 | 259 | 263 | 261 | 257 | 251 | 257 | 249 | 251 | 257 | 264 |
| 16 Spd | 9 | 13 | 19 | 16 | 12 | 9 | 5 | 16 | 27 | 26 | 26 | 21 | 18 | 18 | 23 | 20 | 17 | 16 | 30 | 24 | 11 | 10 | 8 | 6 | 15.4 | 29.7 |
| Dir | 242 | 245 | 245 | 245 | 234 | 241 | 246 | 251 | 263 | 272 | 271 | 284 | 286 | 278 | 268 | 278 | 276 | 296 | 263 | 261 | 239 | 252 | 346 | 0 | 267 | 263 |
| 17 Spd | 7 | 8 | 8 | 9 | 6 | 3 | 3 | 4 | 6 | 6 | 11 | 7 | 10 | 9 | 9 | 12 | 4 | 7 | 12 | 16 | 11 | 5 | 2 | 2 | 5.0 | 16.1 |
| Dir | 315 | 330 | 316 | 329 | 310 | 9 | 220 | 270 | 260 | 242 | 273 | 285 | 281 | 275 | 289 | 278 | 257 | 342 | 17 | 28 | 27 | 25 | 223 | 311 | 312 | 28 |
| 18 Spd | 11 | 12 | 13 | 11 | 12 | 12 | 6 | 5 | 9 | 5 | 5 | 2 | 4 | 4 | 10 | 8 | 12 | 2 | 14 | 8 | 6 | 6 | 7 | 8 | 5.0 | 14.3 |
| Dir | 10 | 10 | 16 | 333 | 318 | 304 | 285 | 282 | 318 | 323 | 348 | 22 | 281 | 268 | 281 | 287 | 277 | 282 | 29 | 80 | 160 | 220 | 259 | 289 | 320 | 29 |
| 19 Spd | 2 | 2 | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 6 | 6 | 8 | 12 | 10 | 9 | 10 | 10 | 4 | 7 | 4 | 7 | 2 | 1 | 2 | 2.9 | 11.8 |
| Dir | 353 | 64 | 50 | 65 | 68 | 171 | 226 | 193 | 260 | 288 | 289 | 305 | 300 | 320 | 335 | 344 | 7 | 324 | 299 | 189 | 226 | 258 | 172 | 190 | 311 | 300 |
| 20 Spd | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 6 | 6 | 4 | 7 | 5 | 4 | 6 | 7 | 9 | 6 | 6 | 5 | 2.6 | 8.9 |
| Dir | 264 | 51 | 271 | 276 | 289 | 280 | 218 | 207 | 241 | 256 | 211 | 180 | 173 | 205 | 201 | 154 | 170 | 193 | 151 | 147 | 133 | 86 | 219 | 94 | 181 | 133 |
| 21 Spd | 5 | 2 | 6 | 4 | 2 | 2 | 2 | 5 | 7 | 4 | 7 | 7 | 7 | 9 | 11 | 14 | 16 | 4 | 15 | 14 | 13 | 7 | 3 | 8 | 2.8 | 15.6 |
| Dir | 90 | 68 | 44 | 56 | 110 | 114 | 138 | 192 | 196 | 181 | 155 | 133 | 157 | 154 | 242 | 325 | 32 | 48 | 133 | 139 | 181 | 218 | 206 | 250 | 153 | 32 |
| 22 Spd | 3 | 6 | 4 | 3 | 0 | 2 | 1 | 3 | 2 | 3 | 7 | 11 | 14 | 13 | 14 | 16 | 19 | 19 | 23 | 22 | 14 | 12 | 10 | 9 | 7.9 | 22.7 |
| Dir | 92 | 129 | 170 | 51 | 341 | 18 | 37 | 227 | 245 | 250 | 220 | 265 | 277 | 273 | 233 | 225 | 254 | 262 | 273 | 271 | 271 | 250 | 243 | 233 | 254 | 273 |

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# Hourly Averages

## Wind Speed (km/h)
## Wind Direction (deg)
## Beaverlodge - July 2010

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 23 Spd | 12 | 9 | 4 | 2 | 2 | 3 | 2 | 8 | 18 | 25 | 26 | 28 | 28 | 28 | 27 | 31 | 32 | 29 | 31 | 26 | 17 | 6 | 4 | 2 | 15.6 | 31.5 |
| Dir | 247 | 236 | 173 | 95 | 75 | 55 | 83 | 242 | 247 | 256 | 249 | 245 | 243 | 239 | 254 | 241 | 242 | 238 | 251 | 245 | 242 | 201 | 185 | 201 | 243 | 242 |
| 24 Spd | 5 | 8 | 27 | 30 | 28 | 32 | 31 | 25 | 26 | 33 | 37 | 43 | 45 | 43 | 38 | 39 | 36 | 36 | 36 | 31 | 17 | 19 | 22 | 7 | 28.7 | 44.8 |
| Dir | 274 | 280 | 260 | 256 | 252 | 257 | 259 | 272 | 281 | 272 | 259 | 265 | 262 | 258 | 257 | 260 | 260 | 256 | 248 | 247 | 259 | 271 | 267 | 291 | 261 | 262 |
| 25 Spd | 11 | 15 | 10 | 6 | 9 | 10 | 12 | 25 | 26 | 23 | 19 | 18 | 19 | 21 | 22 | 21 | 21 | 18 | 19 | 21 | 18 | 12 | 10 | 7 | 16.1 | 25.8 |
| Dir | 274 | 266 | 272 | 270 | 275 | 256 | 255 | 259 | 265 | 276 | 260 | 259 | 255 | 266 | 273 | 266 | 268 | 279 | 294 | 277 | 267 | 256 | 256 | 254 | 267 | 265 |
| 26 Spd | 5 | 9 | 13 | 11 | 7 | 7 | 11 | 10 | 17 | 18 | 16 | 13 | 19 | 15 | 14 | 16 | 22 | 18 | 16 | 15 | 8 | 4 | 5 | 6 | 11.5 | 22.3 |
| Dir | 309 | 319 | 312 | 308 | 303 | 324 | 314 | 312 | 313 | 312 | 321 | 343 | 17 | 352 | 322 | 313 | 305 | 306 | 307 | 303 | 311 | 341 | 327 | 350 | 320 | 305 |
| 27 Spd | 8 | 7 | 5 | 5 | 5 | 4 | 2 | 2 | 1 | 4 | 11 | 13 | 13 | 14 | 13 | 13 | 10 | 10 | 10 | 12 | 9 | 10 | 9 | 13 | 5.6 | 14.1 |
| Dir | 325 | 322 | 323 | 22 | 279 | 5 | 335 | 230 | 95 | 78 | 127 | 115 | 121 | 112 | 111 | 94 | 98 | 93 | 79 | 61 | 45 | 43 | 80 | 85 | 82 | 112 |
| 28 Spd | 10 | 11 | 4 | 2 | 9 | 5 | 5 | 6 | 7 | 6 | 2 | 4 | 6 | 6 | 7 | 3 | 4 | 20 | 19 | 20 | 1 | 7 | 8 | 4 | 2.6 | 20.3 |
| Dir | 75 | 79 | 67 | 184 | 299 | 35 | 1 | 256 | 267 | 287 | 101 | 108 | 132 | 69 | 58 | 78 | 316 | 2 | 40 | 118 | 40 | 271 | 173 | 161 | 54 | 2 |
| 29 Spd | 5 | 2 | 6 | 4 | 2 | 2 | 0 | 8 | 6 | 12 | 9 | 13 | 14 | 11 | 9 | 11 | 11 | 18 | 14 | 4 | 10 | 8 | 3 | 3 | 3.0 | 17.7 |
| Dir | 80 | 338 | 352 | 14 | 112 | 103 | 106 | 34 | 338 | 313 | 206 | 267 | 281 | 255 | 242 | 242 | 210 | 170 | 199 | 332 | 345 | 273 | 65 | 67 | 262 | 170 |
| 30 Spd | 4 | 4 | 3 | 7 | 3 | 2 | 2 | 2 | 7 | 9 | 13 | 13 | 14 | 10 | 16 | 12 | 4 | 10 | 12 | 10 | 7 | 2 | 8 | 10 | 3.7 | 16.0 |
| Dir | 251 | 286 | 19 | 28 | 4 | 215 | 71 | 124 | 213 | 229 | 250 | 261 | 311 | 320 | 354 | 8 | 161 | 206 | 219 | 238 | 257 | 296 | 314 | 2 | 285 | 354 |
| 31 Spd | 7 | 3 | 5 | 8 | 7 | 2 | 3 | 5 | 10 | 6 | 5 | 6 | 5 | 5 | 5 | 2 | 2 | 1 | 4 | 5 | 4 | 4 | 5 | 5 | 2.7 | 10.0 |
| Dir | 310 | 38 | 233 | 299 | 309 | 332 | 311 | 315 | 303 | 324 | 297 | 276 | 313 | 299 | 51 | 308 | 287 | 314 | 37 | 51 | 88 | 74 | 71 | 76 | 328 | 303 |
| Spd | 4.0 | 4.2 | 5.5 | 5.2 | 5.2 | 4.5 | 6.0 | 9.9 | 11.8 | 13.4 | 13.6 | 13.4 | 13.5 | 14.2 | 14.2 | 14.2 | 13.6 | 12.7 | 12.3 | 9.6 | 8.1 | 6.5 | 4.0 | 2.8 | Diurnal Average | |
| Dir | 270 | 276 | 276 | 282 | 276 | 271 | 261 | 260 | 268 | 273 | 264 | 266 | 271 | 268 | 268 | 267 | 266 | 266 | 264 | 256 | 252 | 263 | 264 | 268 | | |
| Spd | 20.9 | 28.0 | 29.7 | 30.3 | 27.7 | 32.4 | 30.9 | 37.5 | 35.3 | 37.1 | 39.3 | 43.3 | 44.8 | 43.1 | 40.3 | 39.2 | 37.8 | 37.5 | 36.2 | 34.9 | 25.9 | 26.0 | 21.7 | 19.7 | Diurnal Maximum | |
| Dir | 271 | 275 | 268 | 256 | 252 | 257 | 259 | 262 | 273 | 266 | 264 | 265 | 262 | 258 | 248 | 260 | 247 | 255 | 248 | 257 | 251 | 257 | 267 | 300 | | |

Maximum Speed Value: 45 km/h on Jul 24 13:00
Minimum Speed Value: 0 km/h on Jul 6 23:00
Maximum Daily Speed Average: 28.7 km/h on Jul 24
Minimum Daily Speed Average: 1.8 km/h on Jul 20
Maximum Diurnal Speed Average: 14.2 km/h at hour 16
Minimum Diurnal Speed Average: 2.8 km/h at hour 24

Monthly Average Velocity: 9.22 km/h 266.7 deg
Speed Percentiles: $P_1$ = 0.9 $P_{10}$ = 2.6 $Q_1$ = 5.0 Median = 9.9 $Q_3$ = 19.1 $P_{90}$ = 28.2 $P_{99}$ = 37.6
All monthly, daily, and diurnal averages have been calculated using vector methods

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 744 |
| Hours of Missing Data: | 0 |
| Percent Operational Time: | 100.0 |

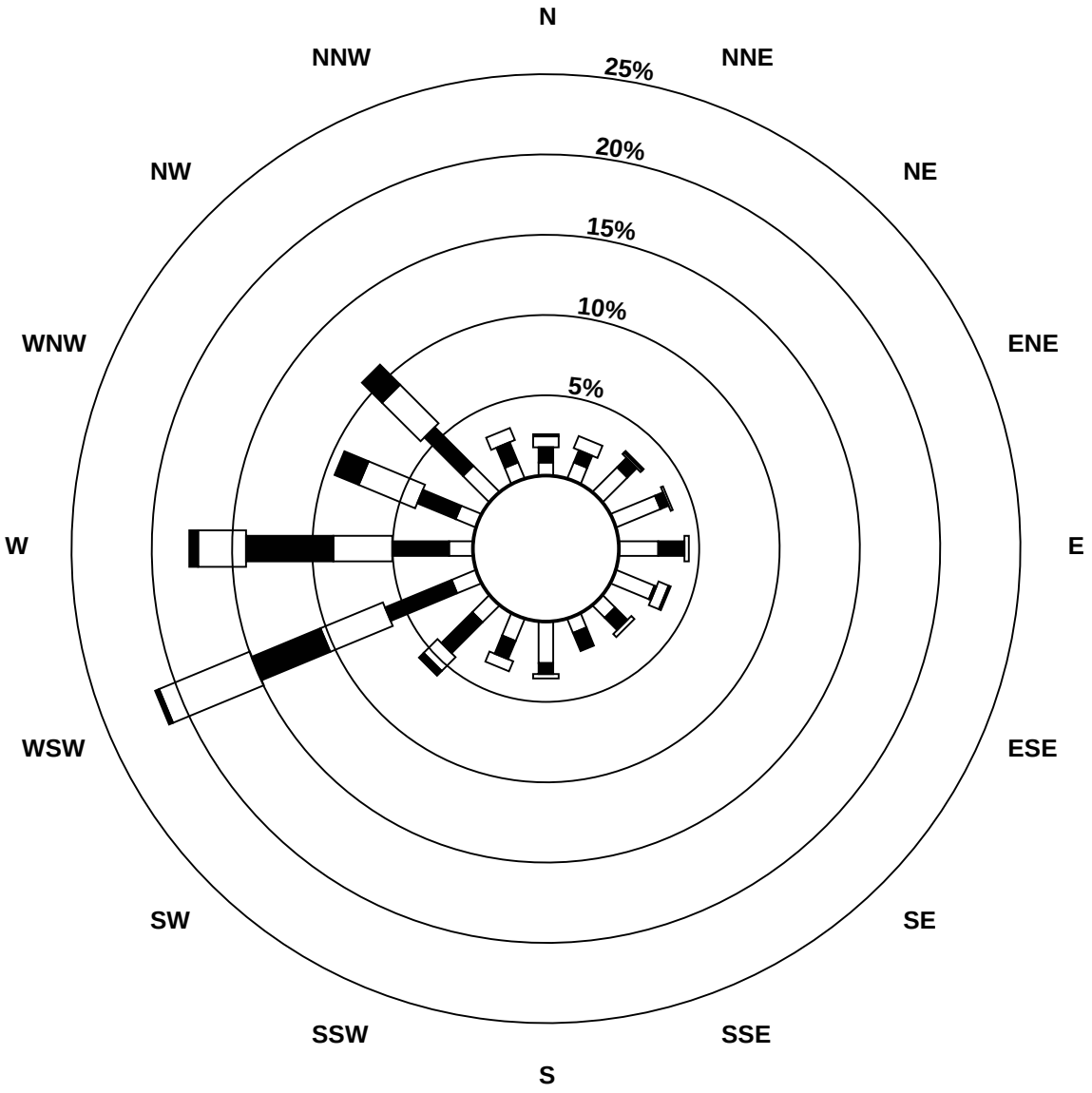
Frequency Distribution

| Direction | Speed Range (km/h) 0 to 5 | 5 to 11 | 11 to 19 | 19 to 28 | 28 to 38 | > 38 | Total |
|---|---|---|---|---|---|---|---|
| North | 17 | 13 | 11 | 2 | 0 | 0 | 43 |
| NorthEast | 24 | 16 | 6 | 1 | 0 | 0 | 47 |
| East | 41 | 19 | 5 | 0 | 0 | 0 | 65 |
| SouthEast | 14 | 16 | 4 | 1 | 0 | 0 | 35 |
| South | 31 | 15 | 4 | 0 | 0 | 0 | 50 |
| SouthWest | 18 | 45 | 30 | 12 | 18 | 1 | 124 |
| West | 23 | 52 | 53 | 72 | 52 | 8 | 260 |
| NorthWest | 18 | 40 | 41 | 21 | 0 | 0 | 120 |
| Total | 186 | 216 | 154 | 109 | 70 | 9 | 744 |

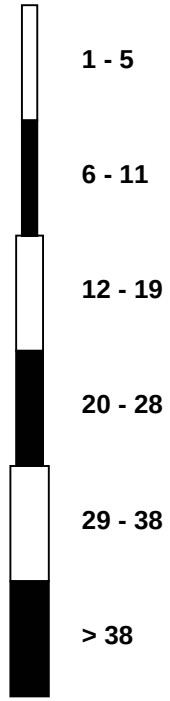
# Wind Rose

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

**Beaverlodge - July 2010**




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



# Hourly Averages - Wind Speed (Scalar)

**Wind Speed (km/h)**

## Beaverlodge - July 2010

Maximum Speed: 45 km/h on Jul 24 13:00

Maximum Daily Speed Average: 29.3 km/h on Jul 24

Minimum Speed: 1 km/h on Jul 6 07:00

Minimum Daily Speed Average: 5.4 km/h on Jul 20

Maximum Diurnal Speed Average: 19.9 km/h at hour 15

Minimum Diurnal Speed Average: 8.0 km/h at hour 24

Monthly Average Speed: 13.83 km/h

Percentiles: $P_1$ = 2.1 $P_{10}$ = 3.8 $Q_1$ = 6.2 Median = 10.7 $Q_3$ = 19.4 $P_{90}$ = 28.9 $P_{99}$ = 38.1

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 744 |
| Hours of Missing Data: | 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-Jul | 14 | 12 | 19 | 17 | 12 | 15 | 20 | 27 | 33 | 37 | 39 | 38 | 37 | 37 | 36 | 36 | 38 | 35 | 35 | 28 | 24 | 19 | 14 | 15 | 26.5 | 38.7 |
| 2-Jul | 9 | 7 | 11 | 9 | 6 | 6 | 13 | 26 | 30 | 30 | 29 | 29 | 27 | 28 | 27 | 26 | 29 | 27 | 27 | 22 | 16 | 14 | 11 | 5 | 19.4 | 30.5 |
| 3-Jul | 6 | 3 | 2 | 2 | 6 | 10 | 11 | 23 | 24 | 31 | 35 | 33 | 33 | 35 | 35 | 34 | 37 | 36 | 36 | 32 | 25 | 19 | 12 | 10 | 22.0 | 37.0 |
| 4-Jul | 16 | 18 | 19 | 27 | 16 | 10 | 20 | 23 | 23 | 29 | 32 | 31 | 34 | 33 | 31 | 29 | 19 | 23 | 17 | 22 | 18 | 15 | 13 | 13 | 22.2 | 34.2 |
| 5-Jul | 12 | 12 | 9 | 10 | 11 | 11 | 12 | 13 | 16 | 19 | 18 | 19 | 19 | 18 | 20 | 26 | 22 | 18 | 21 | 23 | 16 | 12 | 12 | 9 | 15.8 | 25.9 |
| 6-Jul | 10 | 5 | 3 | 3 | 4 | 3 | 1 | 7 | 15 | 17 | 15 | 16 | 18 | 19 | 19 | 17 | 16 | 14 | 13 | 9 | 8 | 8 | 2 | 5 | 10.3 | 19.2 |
| 7-Jul | 4 | 4 | 5 | 12 | 11 | 6 | 4 | 4 | 4 | 10 | 9 | 10 | 7 | 8 | 8 | 8 | 9 | 7 | 4 | 3 | 4 | 5 | 5 | 3 | 6.5 | 12.4 |
| 8-Jul | 5 | 4 | 9 | 3 | 3 | 4 | 4 | 5 | 15 | 10 | 6 | 7 | 5 | 6 | 10 | 7 | 7 | 6 | 4 | 7 | 8 | 6 | 6 | 7 | 6.5 | 15.3 |
| 9-Jul | 4 | 3 | 4 | 6 | 5 | 3 | 4 | 6 | 8 | 13 | 19 | 18 | 17 | 18 | 18 | 15 | 11 | 8 | 6 | 5 | 10 | 27 | 22 | 10 | 10.7 | 26.7 |
| 10-Jul | 6 | 7 | 10 | 7 | 7 | 8 | 3 | 6 | 4 | 4 | 6 | 7 | 5 | 6 | 6 | 8 | 8 | 8 | 8 | 8 | 8 | 6 | 6 | 5 | 6.6 | 10.1 |
| 11-Jul | 4 | 6 | 4 | 4 | 4 | 4 | 5 | 5 | 6 | 12 | 15 | 19 | 28 | 38 | 41 | 37 | 36 | 38 | 34 | 22 | 11 | 5 | 8 | 11 | 16.4 | 40.8 |
| 12-Jul | 21 | 28 | 30 | 26 | 23 | 27 | 29 | 25 | 29 | 23 | 22 | 22 | 20 | 24 | 24 | 22 | 24 | 25 | 22 | 19 | 22 | 19 | 20 | 20 | 23.6 | 29.8 |
| 13-Jul | 19 | 21 | 23 | 22 | 24 | 22 | 21 | 22 | 21 | 18 | 19 | 18 | 20 | 20 | 20 | 17 | 16 | 17 | 15 | 12 | 8 | 8 | 9 | 7 | 17.4 | 23.9 |
| 14-Jul | 3 | 2 | 2 | 3 | 2 | 2 | 7 | 8 | 16 | 19 | 25 | 23 | 18 | 24 | 27 | 29 | 28 | 32 | 35 | 23 | 21 | 17 | 4 | 9 | 15.7 | 34.8 |
| 15-Jul | 5 | 6 | 6 | 6 | 7 | 11 | 13 | 38 | 36 | 37 | 40 | 37 | 38 | 36 | 36 | 35 | 35 | 35 | 33 | 35 | 26 | 26 | 16 | 9 | 25.1 | 39.7 |
| 16-Jul | 9 | 13 | 19 | 16 | 12 | 10 | 7 | 17 | 27 | 26 | 26 | 23 | 19 | 19 | 23 | 21 | 18 | 17 | 30 | 24 | 11 | 10 | 9 | 7 | 17.2 | 29.9 |
| 17-Jul | 7 | 8 | 8 | 9 | 7 | 4 | 4 | 5 | 6 | 7 | 12 | 12 | 11 | 11 | 11 | 13 | 6 | 8 | 12 | 16 | 11 | 6 | 4 | 5 | 8.5 | 16.2 |
| 18-Jul | 12 | 12 | 13 | 12 | 12 | 12 | 7 | 6 | 9 | 6 | 8 | 5 | 6 | 6 | 10 | 10 | 13 | 11 | 15 | 11 | 7 | 7 | 7 | 8 | 9.3 | 14.8 |
| 19-Jul | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 4 | 7 | 7 | 10 | 13 | 13 | 10 | 11 | 13 | 13 | 13 | 5 | 7 | 3 | 3 | 3 | 6.5 | 13.2 |
| 20-Jul | 4 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 3 | 4 | 4 | 5 | 7 | 8 | 7 | 8 | 7 | 6 | 7 | 7 | 9 | 6 | 7 | 6 | 5.4 | 9.2 |
| 21-Jul | 5 | 2 | 6 | 4 | 3 | 2 | 2 | 5 | 7 | 5 | 7 | 8 | 8 | 10 | 18 | 15 | 16 | 6 | 16 | 14 | 14 | 8 | 5 | 9 | 8.1 | 17.7 |
| 22-Jul | 4 | 6 | 4 | 4 | 3 | 5 | 3 | 3 | 2 | 3 | 7 | 12 | 14 | 14 | 16 | 17 | 19 | 19 | 23 | 22 | 14 | 12 | 10 | 9 | 10.3 | 23.1 |
| 23-Jul | 12 | 9 | 4 | 2 | 3 | 4 | 3 | 9 | 18 | 26 | 27 | 29 | 28 | 29 | 28 | 31 | 32 | 29 | 31 | 26 | 17 | 7 | 4 | 2 | 17.1 | 31.8 |
| 24-Jul | 6 | 8 | 28 | 30 | 28 | 32 | 31 | 26 | 26 | 33 | 37 | 44 | 45 | 44 | 39 | 40 | 37 | 36 | 36 | 31 | 17 | 19 | 22 | 7 | 29.3 | 45.4 |
| 25-Jul | 11 | 15 | 10 | 6 | 9 | 10 | 13 | 25 | 26 | 23 | 20 | 19 | 20 | 22 | 23 | 22 | 22 | 19 | 19 | 21 | 18 | 12 | 10 | 8 | 16.8 | 26.0 |
| 26-Jul | 7 | 10 | 13 | 11 | 7 | 7 | 11 | 11 | 17 | 18 | 17 | 13 | 19 | 17 | 14 | 16 | 23 | 19 | 16 | 15 | 8 | 5 | 6 | 7 | 12.7 | 22.7 |
| 27-Jul | 9 | 8 | 6 | 5 | 7 | 6 | 4 | 4 | 2 | 5 | 11 | 14 | 14 | 15 | 14 | 14 | 12 | 11 | 11 | 12 | 9 | 10 | 9 | 13 | 9.3 | 15.3 |
| 28-Jul | 11 | 11 | 5 | 2 | 9 | 6 | 7 | 6 | 7 | 7 | 4 | 6 | 7 | 8 | 9 | 6 | 15 | 21 | 22 | 21 | 12 | 10 | 8 | 5 | 9.3 | 21.8 |
| 29-Jul | 9 | 7 | 6 | 5 | 5 | 4 | 6 | 9 | 8 | 12 | 10 | 15 | 15 | 13 | 12 | 12 | 12 | 18 | 14 | 12 | 11 | 8 | 4 | 4 | 9.6 | 18.2 |
| 30-Jul | 4 | 7 | 4 | 7 | 4 | 3 | 3 | 4 | 7 | 10 | 13 | 15 | 14 | 11 | 18 | 13 | 6 | 11 | 13 | 10 | 7 | 3 | 9 | 10 | 8.6 | 17.6 |
| 31-Jul | 7 | 3 | 6 | 8 | 7 | 4 | 4 | 5 | 10 | 7 | 6 | 8 | 7 | 8 | 8 | 6 | 6 | 6 | 5 | 6 | 4 | 4 | 5 | 5 | 6.0 | 10.2 |
| | 8.3 | 8.4 | 9.5 | 9.2 | 8.5 | 8.3 | 8.9 | 12.2 | 14.9 | 16.4 | 17.6 | 18.2 | 18.5 | 19.3 | 19.9 | 19.4 | 19.0 | 18.7 | 19.1 | 16.9 | 13.0 | 10.8 | 9.1 | 8.0 | Diurnal Average | |
| | 21.0 | 28.0 | 29.8 | 30.4 | 27.8 | 32.4 | 31.0 | 37.6 | 35.5 | 37.5 | 39.7 | 43.7 | 45.4 | 43.7 | 40.8 | 39.5 | 38.3 | 37.9 | 36.4 | 35.1 | 26.0 | 26.7 | 21.8 | 19.9 | Diurnal Maximum | |

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

PASZA
Peace Airshed Zone Association

# Hourly Standard Deviations

## Wind Direction (WD) - deg

## Beaverlodge - July 2010

Maximum Value: 94.7 deg on Jul 28 17:00

Minimum Value: 2.1 deg on Jul 16 04:00

Percentiles: $P_1$ = 2.9 $P_{10}$ = 5.5 $Q_1$ = 8.3 Median = 15.0 $Q_3$ = 36.9 $P_{90}$ = 61.9 $P_{99}$ = 85.7

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 744 |
| Hours of Missing Data: | 0 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Maximum |
| 1-Jul | 3 | 5 | 8 | 3 | 6 | 7 | 5 | 6 | 8 | 9 | 8 | 7 | 9 | 10 | 7 | 9 | 10 | 11 | 8 | 5 | 6 | 4 | 5 | 4 | 11.1 |
| 2-Jul | 5 | 5 | 6 | 6 | 8 | 16 | 23 | 9 | 6 | 6 | 8 | 10 | 9 | 9 | 16 | 14 | 12 | 10 | 15 | 4 | 2 | 5 | 5 | 58 | 57.9 |
| 3-Jul | 12 | 19 | 59 | 41 | 19 | 10 | 9 | 7 | 9 | 7 | 7 | 9 | 11 | 12 | 9 | 10 | 10 | 9 | 6 | 5 | 3 | 3 | 10 | 10 | 59.1 |
| 4-Jul | 4 | 8 | 6 | 6 | 7 | 4 | 3 | 4 | 5 | 8 | 7 | 10 | 8 | 8 | 8 | 8 | 13 | 11 | 12 | 7 | 6 | 11 | 3 | 13 | 13.3 |
| 5-Jul | 5 | 6 | 11 | 8 | 5 | 4 | 5 | 6 | 6 | 9 | 12 | 14 | 12 | 17 | 15 | 6 | 9 | 12 | 5 | 4 | 4 | 4 | 2 | 9 | 17.5 |
| 6-Jul | 10 | 51 | 27 | 22 | 24 | 60 | 67 | 13 | 11 | 12 | 20 | 14 | 16 | 20 | 18 | 22 | 23 | 15 | 15 | 22 | 7 | 8 | 82 | 18 | 82.4 |
| 7-Jul | 44 | 53 | 16 | 2 | 6 | 20 | 84 | 60 | 38 | 24 | 27 | 27 | 64 | 62 | 55 | 61 | 61 | 79 | 87 | 68 | 13 | 44 | 12 | 29 | 86.9 |
| 8-Jul | 22 | 19 | 20 | 79 | 67 | 25 | 71 | 42 | 50 | 51 | 46 | 51 | 86 | 61 | 44 | 81 | 91 | 59 | 54 | 24 | 23 | 13 | 16 | 18 | 90.5 |
| 9-Jul | 23 | 55 | 62 | 36 | 64 | 71 | 47 | 24 | 24 | 14 | 14 | 12 | 11 | 13 | 18 | 17 | 22 | 31 | 70 | 43 | 42 | 52 | 5 | 73 | 73.3 |
| 10-Jul | 12 | 40 | 13 | 15 | 7 | 5 | 90 | 8 | 49 | 67 | 55 | 43 | 58 | 75 | 86 | 58 | 45 | 46 | 36 | 17 | 12 | 13 | 5 | 7 | 89.6 |
| 11-Jul | 46 | 21 | 21 | 13 | 9 | 19 | 13 | 17 | 17 | 18 | 17 | 14 | 10 | 10 | 9 | 7 | 8 | 9 | 9 | 5 | 7 | 13 | 39 | 14 | 45.8 |
| 12-Jul | 5 | 2 | 5 | 3 | 6 | 5 | 6 | 6 | 20 | 9 | 10 | 11 | 16 | 13 | 13 | 9 | 14 | 12 | 21 | 7 | 7 | 6 | 6 | 7 | 21.4 |
| 13-Jul | 5 | 5 | 5 | 6 | 4 | 4 | 5 | 5 | 5 | 8 | 8 | 7 | 7 | 6 | 7 | 9 | 7 | 7 | 6 | 6 | 18 | 8 | 7 | 16 | 18.4 |
| 14-Jul | 40 | 24 | 23 | 15 | 21 | 47 | 18 | 16 | 10 | 10 | 9 | 12 | 17 | 15 | 14 | 13 | 12 | 8 | 5 | 9 | 6 | 6 | 53 | 9 | 52.6 |
| 15-Jul | 21 | 16 | 13 | 40 | 13 | 10 | 14 | 5 | 6 | 8 | 8 | 12 | 10 | 11 | 10 | 10 | 9 | 9 | 7 | 6 | 4 | 8 | 9 | 7 | 39.6 |
| 16-Jul | 9 | 7 | 4 | 2 | 15 | 30 | 63 | 33 | 8 | 11 | 13 | 20 | 21 | 25 | 7 | 13 | 20 | 20 | 7 | 5 | 6 | 12 | 19 | 32 | 63.0 |
| 17-Jul | 18 | 7 | 11 | 5 | 29 | 78 | 24 | 30 | 18 | 40 | 21 | 64 | 35 | 39 | 50 | 24 | 42 | 38 | 11 | 5 | 5 | 50 | 74 | 60 | 78.1 |
| 18-Jul | 25 | 7 | 5 | 17 | 5 | 13 | 47 | 32 | 13 | 42 | 56 | 64 | 50 | 48 | 19 | 36 | 16 | 87 | 16 | 39 | 22 | 15 | 12 | 12 | 86.9 |
| 19-Jul | 55 | 74 | 15 | 31 | 20 | 47 | 26 | 41 | 35 | 23 | 36 | 48 | 24 | 35 | 28 | 27 | 37 | 81 | 78 | 45 | 8 | 66 | 80 | 73 | 80.8 |
| 20-Jul | 70 | 20 | 60 | 34 | 41 | 63 | 52 | 22 | 35 | 39 | 48 | 62 | 47 | 55 | 65 | 36 | 44 | 69 | 34 | 14 | 15 | 14 | 37 | 39 | 69.9 |
| 21-Jul | 43 | 32 | 9 | 20 | 66 | 18 | 37 | 12 | 18 | 35 | 22 | 33 | 36 | 39 | 60 | 23 | 8 | 70 | 14 | 11 | 11 | 15 | 77 | 40 | 77.3 |
| 22-Jul | 40 | 17 | 13 | 35 | 79 | 72 | 76 | 26 | 53 | 28 | 21 | 20 | 17 | 18 | 28 | 14 | 14 | 14 | 10 | 5 | 8 | 9 | 3 | 6 | 78.9 |
| 23-Jul | 6 | 14 | 25 | 58 | 58 | 17 | 44 | 46 | 9 | 9 | 11 | 11 | 12 | 12 | 19 | 9 | 8 | 9 | 6 | 7 | 3 | 25 | 13 | 42 | 58.3 |
| 24-Jul | 41 | 11 | 6 | 5 | 5 | 3 | 5 | 8 | 9 | 7 | 9 | 8 | 9 | 10 | 10 | 8 | 11 | 10 | 6 | 5 | 4 | 7 | 8 | 15 | 40.8 |
| 25-Jul | 10 | 5 | 5 | 7 | 10 | 7 | 24 | 5 | 8 | 10 | 15 | 17 | 16 | 21 | 17 | 18 | 16 | 21 | 12 | 9 | 4 | 10 | 10 | 58 | 58.5 |
| 26-Jul | 56 | 10 | 3 | 7 | 29 | 17 | 6 | 6 | 10 | 10 | 13 | 18 | 8 | 26 | 20 | 15 | 10 | 11 | 9 | 8 | 9 | 25 | 26 | 36 | 55.9 |
| 27-Jul | 17 | 21 | 48 | 27 | 57 | 41 | 79 | 67 | 63 | 34 | 24 | 22 | 26 | 24 | 22 | 22 | 49 | 27 | 22 | 7 | 6 | 14 | 14 | 5 | 79.3 |
| 28-Jul | 10 | 13 | 34 | 41 | 16 | 49 | 57 | 26 | 15 | 53 | 77 | 58 | 42 | 61 | 64 | 66 | 95 | 16 | 36 | 21 | 89 | 49 | 15 | 35 | 94.7 |
| 29-Jul | 72 | 80 | 40 | 49 | 65 | 53 | 88 | 21 | 71 | 9 | 34 | 33 | 18 | 31 | 65 | 38 | 22 | 13 | 9 | 75 | 22 | 15 | 57 | 32 | 88.2 |
| 30-Jul | 64 | 72 | 44 | 32 | 56 | 70 | 71 | 66 | 34 | 14 | 18 | 34 | 11 | 27 | 26 | 21 | 62 | 25 | 11 | 14 | 13 | 66 | 19 | 26 | 72.4 |
| 31-Jul | 11 | 42 | 39 | 7 | 24 | 53 | 59 | 40 | 12 | 42 | 50 | 46 | 66 | 63 | 72 | 91 | 83 | 80 | 63 | 14 | 8 | 10 | 5 | 9 | 91.1 |
| | 72.3 | 80.1 | 61.8 | 78.9 | 78.9 | 78.1 | 89.6 | 66.5 | 71.2 | 67.1 | 77.0 | 64.4 | 86.4 | 74.7 | 86.5 | 91.1 | 94.7 | 86.9 | 86.9 | 75.0 | 89.3 | 66.5 | 82.4 | 73.3 | |

# PASZA
# Portable – Bonanza Station
## Monthly Summary Tables, Graphs and Roses

PASZA
Peace Airshed Zone Association

# Hourly Averages

## Sulphur Dioxide ($SO_2$) - ppb

## Portable-Bonanza - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 1.8 ppb on Jul 9 21:00 Maximum Daily Average: 0.7 ppb on Jul 28

Minimum Value: 0 ppb on Jul 1 01:00 Minimum Daily Average: 0.0 ppb on Jul 1
Maximum Diurnal Average: 0.4 ppb at hour 10 Minimum Diurnal Average: 0.2 ppb at hour 19
Monthly Average: 0.29 ppb Percentiles: $P_1 = 0.0$ $P_{10} = 0.0$ $Q_1 = 0.1$ Median = 0.2 $Q_3 = 0.4$ $P_{90} = 0.5$ $P_{99} = 1.2$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 708 |
| Hours of Missing Data: | 36 |
| Hours of Calibration: | 36 |
| Percent Operational Time: | 100.0 |

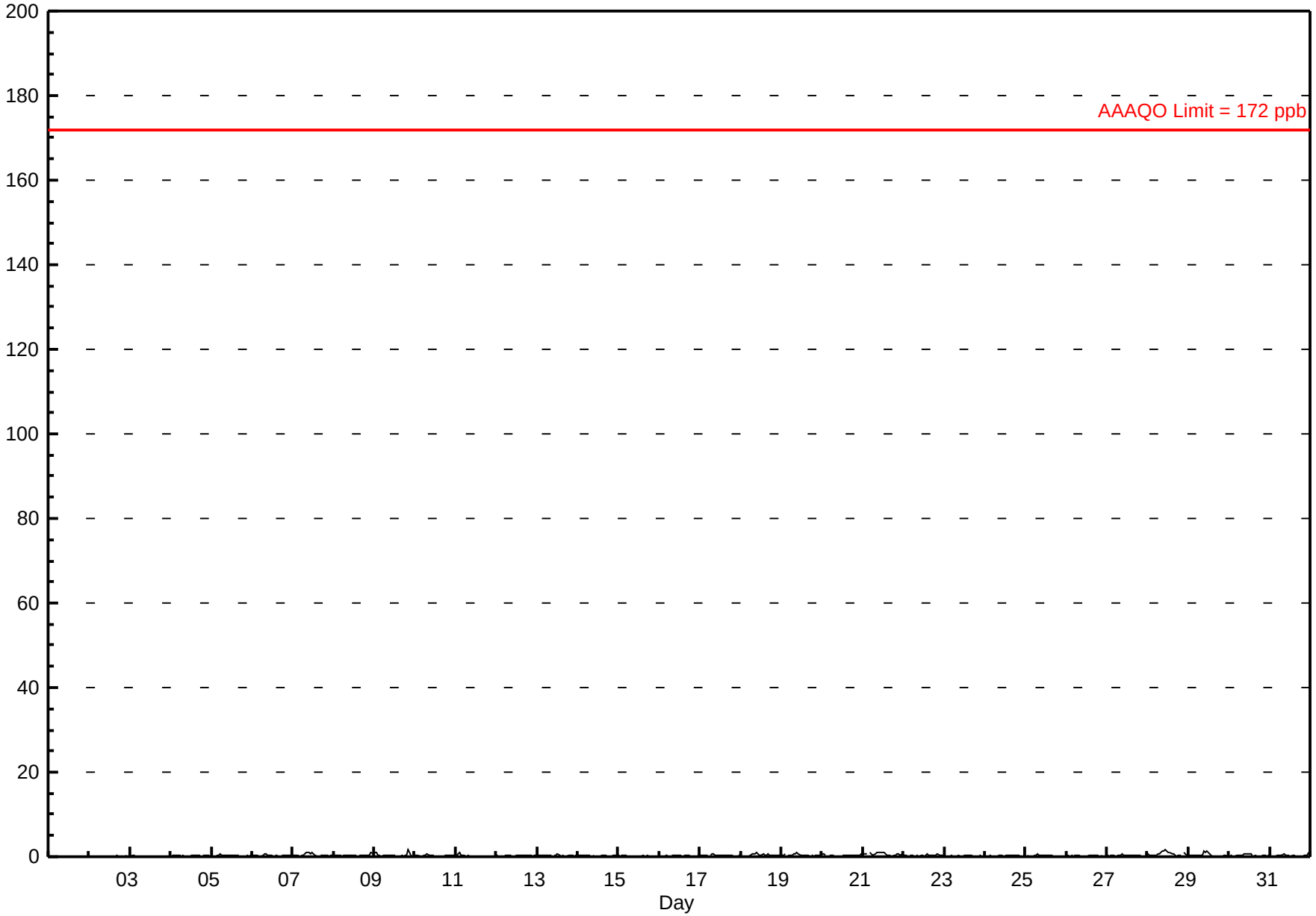
| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily Average | Daily Maximum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | |
| 1-Jul | 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 |
| 2-Jul | 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 |
| 3-Jul | 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 | 0.3 |
| 4-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.4 |
| 5-Jul | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.6 |
| 6-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.7 |
| 7-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 1.0 |
| 8-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.3 | 1.0 |
| 9-Jul | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0.4 | 1.8 |
| 10-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.6 |
| 11-Jul | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 1.1 |
| 12-Jul | 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 | 0.5 |
| 13-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.5 |
| 14-Jul | 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 | 0.5 |
| 15-Jul | 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 |
| 16-Jul | 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 | 0.4 |
| 17-Jul | 0 | 0 | 0 | 0 | 0 | A | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.7 |
| 18-Jul | 0 | 0 | 0 | 0 | A | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 1.0 |
| 19-Jul | 0 | 1 | 1 | A | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.5 | 1.0 |
| 20-Jul | 1 | 1 | 0 | A | 1 | 0 | 0 | 0 | C | C | C | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.4 | 0.6 |
| 21-Jul | 1 | 1 | 1 | A | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0.6 | 1.0 |
| 22-Jul | 1 | 1 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0.3 | 0.6 |
| 23-Jul | 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 | 0.3 |
| 24-Jul | 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 | 0.4 |
| 25-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0.2 | 0.7 |
| 26-Jul | 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 |
| 27-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0.3 | 0.5 |
| 28-Jul | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | A | 1 | 1 | 0 | 0.7 | 1.7 |
| 29-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0.4 | 1.5 |
| 30-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.6 |
| 31-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 1 | 0.3 | 1.0 |
| | 0.3 | 0.3 | 0.3 | 0.2 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | Diurnal Average | |
| | 0.9 | 1.0 | 1.1 | 0.5 | 1.0 | 0.6 | 0.5 | 0.8 | 1.3 | 1.4 | 1.7 | 1.5 | 1.0 | 0.9 | 0.8 | 0.8 | 0.7 | 0.5 | 0.4 | 0.5 | 1.8 | 0.9 | 1.0 | 1.0 | Diurnal Maximum | |

C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 57 ppb

## Hourly Averages

**Sulphur Dioxide ($SO_2$) - ppb**

**Portable-Bonanza - July 2010**



PASZA
Peace Airshed Zone Association

# Hourly Maximums

## Sulphur Dioxide ($SO_2$) - ppb

## Portable-Bonanza - July 2010

Maximum Value: 6.5 ppb on Jul 9 21:00

Maximum Daily Average: 1.1 ppb on Jul 28

Minimum Value: 0 ppb on Jul 1 18:00

Minimum Daily Average: 0.4 ppb on Jul 1

Maximum Diurnal Average: 0.8 ppb at hour 10

Minimum Diurnal Average: 0.5 ppb at hour 19

Monthly Average: 0.61 ppb

Percentiles: $P_1 = 0.3$ $P_{10} = 0.4$ $Q_1 = 0.4$ Median = 0.5 $Q_3 = 0.7$ $P_{90} = 1.0$ $P_{99} = 2.4$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 708 |
| Hours of Missing Data: | 36 |
| 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-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0.4 | 0.4 |
| 2-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0.5 | 0.5 |
| 3-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0.5 | 0.9 |
| 4-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 0.6 | 1.0 |
| 5-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 0 | 1 | 1 | 1 | 1 | 0.6 | 1.0 |
| 6-Jul | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | A | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0.6 | 2.0 |
| 7-Jul | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.8 | 1.5 |
| 8-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | A | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 1 | 0.6 | 1.9 |
| 9-Jul | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 2 | 0 | 1 | 0.9 | 6.5 |
| 10-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 1.0 |
| 11-Jul | 0 | 1 | 1 | 1 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 | 4.1 |
| 12-Jul | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | A | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0.7 | 1.0 |
| 13-Jul | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | A | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 0.9 |
| 14-Jul | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 1.0 |
| 15-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.9 |
| 16-Jul | 0 | 0 | 0 | 0 | 1 | 0 | A | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.9 |
| 17-Jul | 0 | 0 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.6 | 1.0 |
| 18-Jul | 0 | 0 | 0 | 0 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 2.5 |
| 19-Jul | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0.8 | 1.5 |
| 20-Jul | 1 | 1 | 0 | A | 1 | 1 | 1 | 0 | C | C | C | C | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.7 | 1.0 |
| 21-Jul | 1 | 1 | 1 | A | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1.0 | 1.5 |
| 22-Jul | 1 | 1 | 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0.7 | 1.0 |
| 23-Jul | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.4 |
| 24-Jul | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.4 | 0.9 |
| 25-Jul | A | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0.5 | 1.3 |
| 26-Jul | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | A | 0 | 0.4 | 0.9 |
| 27-Jul | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | A | 1 | 0 | 0.6 | 1.2 |
| 28-Jul | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | A | 1 | 1 | 1 | 1.1 | 2.4 |
| 29-Jul | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 1 | 0 | 0 | 0.7 | 2.1 |
| 30-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 0 | 0 | 0 | 0 | A | 0 | 0 | 1 | 0 | 0 | 0.7 | 4.2 |
| 31-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 1 | 1 | 0.5 | 1.4 |
| | 0.6 | 0.6 | 0.6 | 0.5 | 0.6 | 0.6 | 0.6 | 0.7 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 | 0.6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.7 | 0.6 | 0.6 | 0.6 | Diurnal Average | |
| | 1.5 | 1.4 | 1.4 | 1.5 | 1.5 | 4.1 | 1.0 | 1.4 | 2.4 | 1.9 | 2.4 | 2.1 | 1.8 | 4.2 | 1.4 | 1.2 | 2.5 | 1.0 | 0.8 | 1.0 | 6.5 | 2.5 | 1.9 | 1.4 | Diurnal Maximum | |

C - Calibration

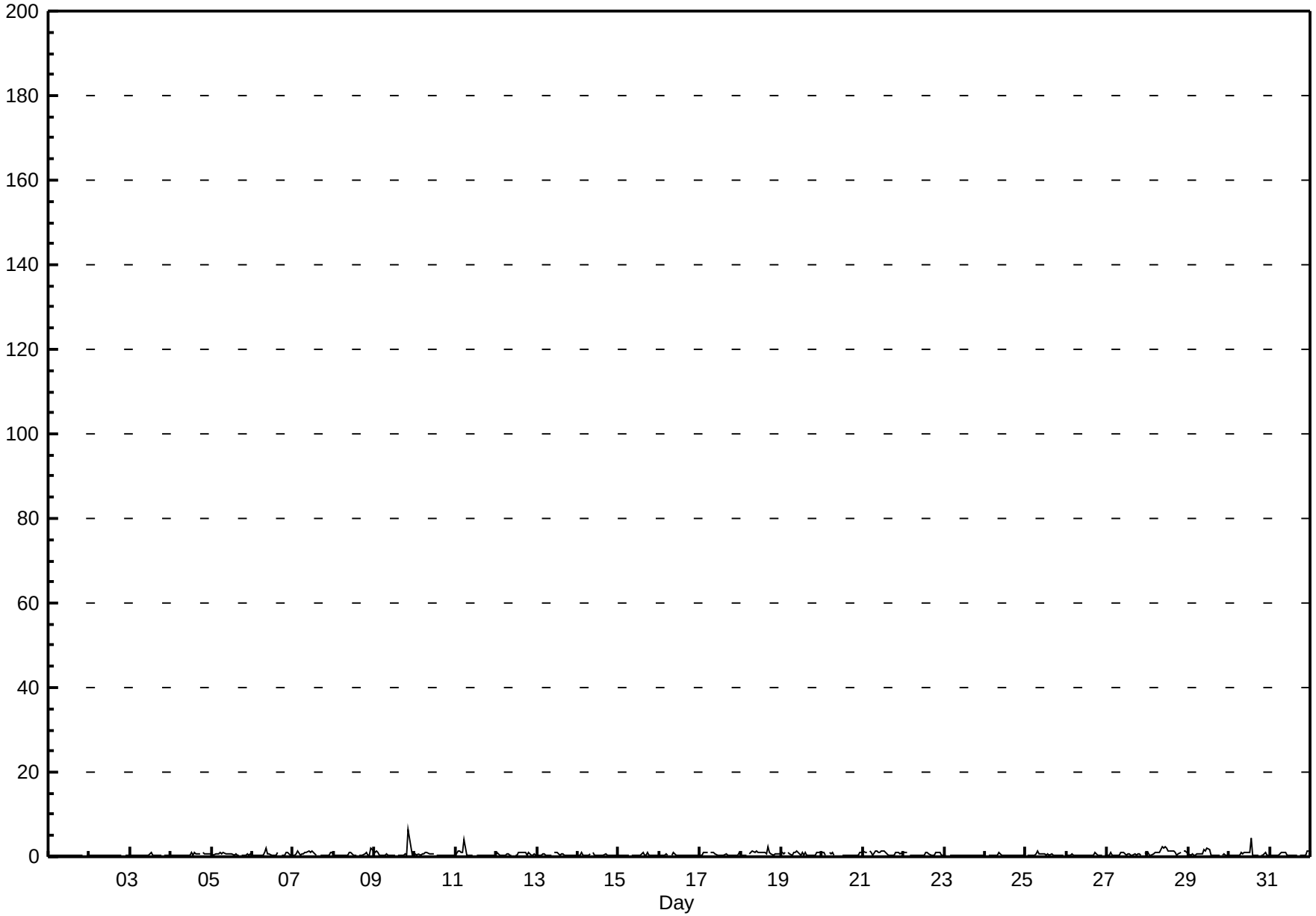
A - Automated Daily Zero Span

PASZA
Peace Airshed Zone Association

# Hourly Maximums

**Sulphur Dioxide ($SO_2$) - ppb**

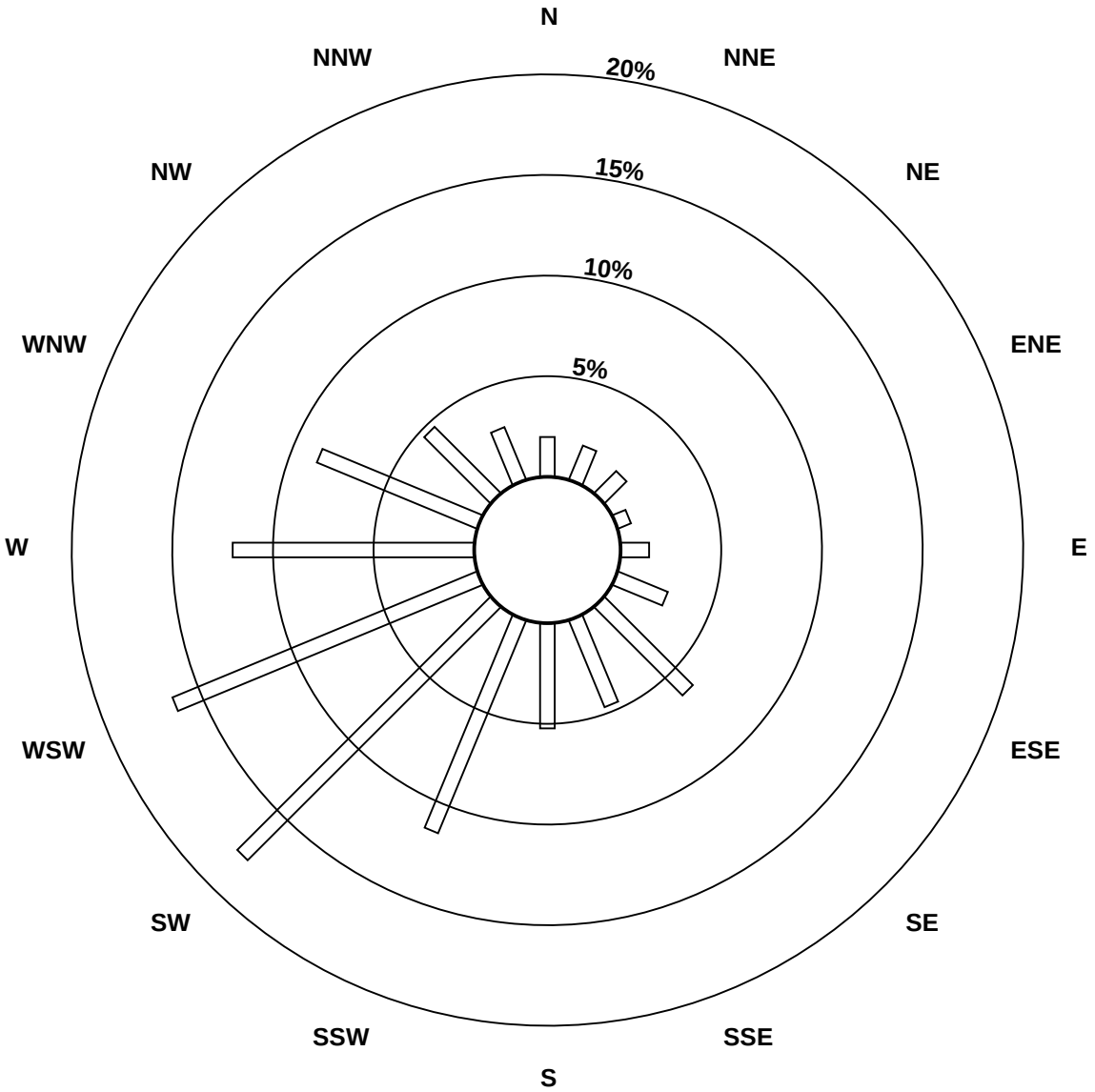
**Portable-Bonanza - July 2010**



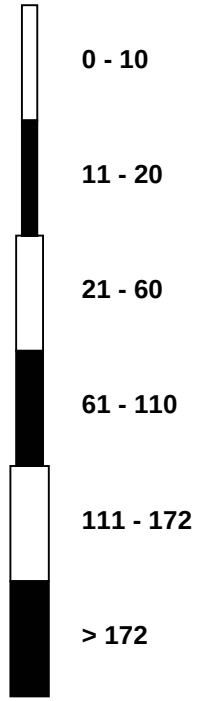
# Pollutant Rose

**Sulphur Dioxide ($SO_2$) - ppb**

**Portable-Bonanza - July 2010**




**Pollutant Classes (ppb)**



PASZA
Peace Airshed Zone Association

# Hourly Averages

## Total Reduced Sulphur (TRS) - ppb

## Portable-Bonanza - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 1.1 ppb on Jul 8 08:00 Maximum Daily Average: 0.6 ppb on Jul 7

Minimum Value: 0 ppb on Jul 14 18:00 Minimum Daily Average: 0.3 ppb on Jul 3
Maximum Diurnal Average: 0.5 ppb at hour 5 Minimum Diurnal Average: 0.4 ppb at hour 18
Monthly Average: 0.46 ppb Percentiles: $P_1 = 0.2$ $P_{10} = 0.3$ $Q_1 = 0.4$ Median = 0.4 $Q_3 = 0.5$ $P_{90} = 0.6$ $P_{99} = 0.8$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 709 |
| Hours of Missing Data: | 35 |
| Hours of Calibration: | 35 |
| Percent Operational Time: | 100.0 |

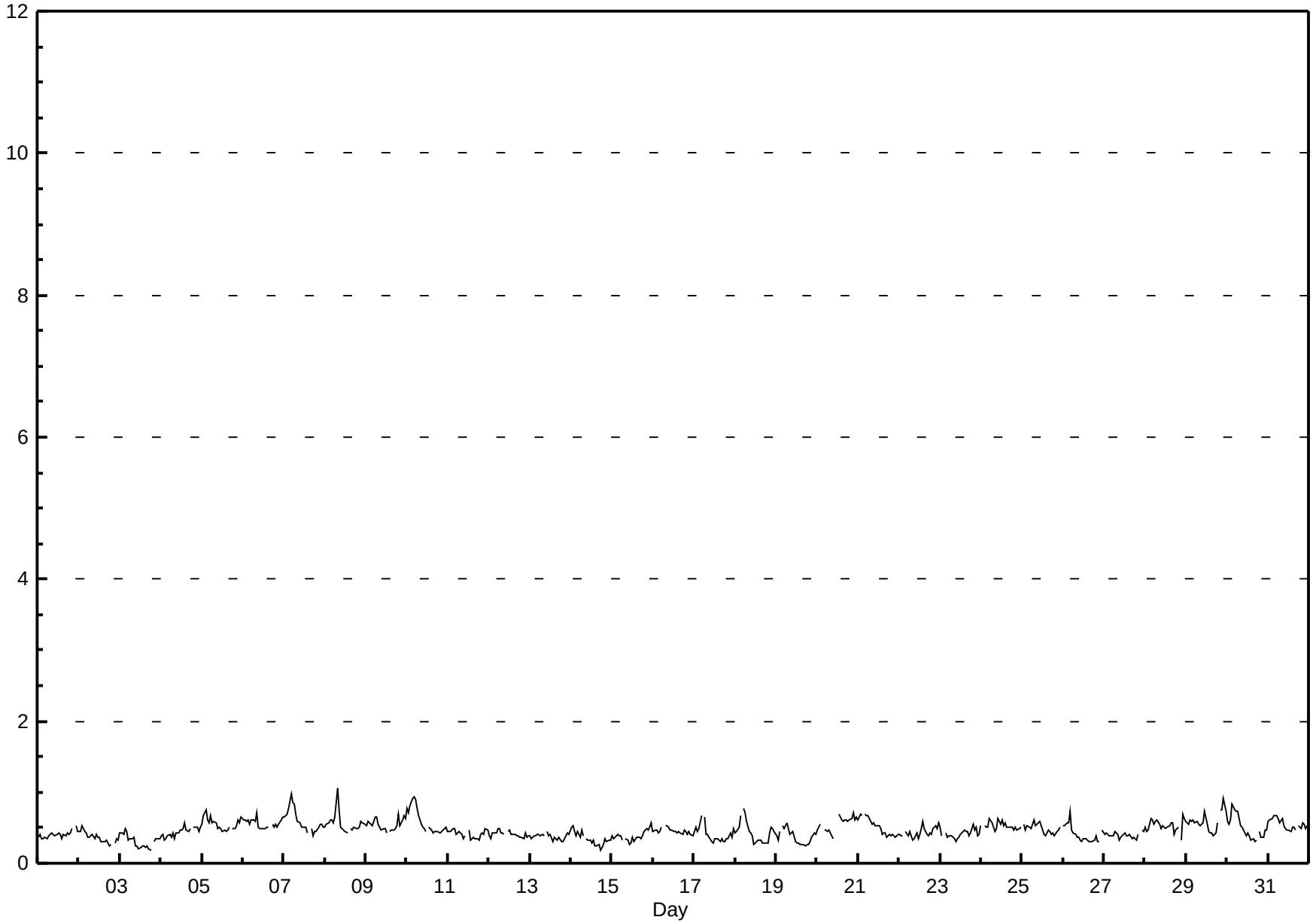
| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily Average | Daily Maximum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | |
| 1-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 1 | 0 | 0.4 | 0.5 |
| 2-Jul | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0.4 | 0.5 |
| 3-Jul | 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 | 0.5 |
| 4-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | A | 1 | 1 | 1 | 0 | 1 | 0.4 | 0.6 |
| 5-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | A | 0 | 0 | 1 | 1 | 1 | 1 | 0.6 | 0.8 |
| 6-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.6 | 0.7 |
| 7-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | A | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0.6 | 1.0 |
| 8-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | A | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0.6 | 1.1 |
| 9-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0.5 | 0.7 |
| 10-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.6 | 0.9 |
| 11-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.5 |
| 12-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.5 |
| 13-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.5 |
| 14-Jul | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.5 |
| 15-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.4 | 0.6 |
| 16-Jul | 0 | 0 | 0 | 0 | 0 | 1 | A | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 0.5 |
| 17-Jul | 0 | 1 | 0 | 0 | 1 | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.7 |
| 18-Jul | 0 | 0 | 1 | 1 | A | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.4 | 0.8 |
| 19-Jul | 0 | 0 | 0 | A | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.6 |
| 20-Jul | 0 | 1 | 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.6 | 0.7 |
| 21-Jul | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 0.7 |
| 22-Jul | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0.4 | 0.6 |
| 23-Jul | 1 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0.4 | 0.6 |
| 24-Jul | 1 | A | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0.5 | 0.6 |
| 25-Jul | A | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | A | 0.5 | 0.6 |
| 26-Jul | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0.4 | 0.7 |
| 27-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0.4 | 0.5 |
| 28-Jul | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | A | 0 | 1 | 1 | 0.5 | 0.7 |
| 29-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | A | 1 | 1 | 1 | 1 | 0.6 | 0.9 |
| 30-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0.5 | 0.8 |
| 31-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | A | 1 | 0 | 1 | 1 | 0 | 1 | 0.6 | 0.7 |
| | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | Diurnal Average | |
| | 0.8 | 0.7 | 0.8 | 0.9 | 1.0 | 0.9 | 0.8 | 1.1 | 0.7 | 0.6 | 0.6 | 0.7 | 0.6 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.8 | 0.8 | 0.9 | 0.7 | Diurnal Maximum | |

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

## Hourly Averages

**Total Reduced Sulphur (TRS) - ppb**

**Portable-Bonanza - July 2010**



# Hourly Maximums

## Total Reduced Sulphur (TRS) - ppb

## Portable-Bonanza - July 2010

Maximum Value: 3.1 ppb on Jul 30 20:00

Maximum Daily Average: 1.0 ppb on Jul 30

Minimum Value: 0 ppb on Jul 14 18:00

Minimum Daily Average: 0.6 ppb on Jul 3

Maximum Diurnal Average: 0.9 ppb at hour 20

Minimum Diurnal Average: 0.7 ppb at hour 15

Monthly Average: 0.80 ppb

Percentiles: $P_1 = 0.5$ $P_{10} = 0.6$ $Q_1 = 0.7$ Median = 0.8 $Q_3 = 0.9$ $P_{90} = 1.0$ $P_{99} = 1.2$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 709 |
| Hours of Missing Data: | 35 |
| 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-Jul | 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 | 0.9 |
| 2-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | A | 1 | 1 | 1 | 0.7 | 0.8 |
| 3-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | A | 1 | 1 | 1 | 1 | 0.6 | 0.9 |
| 4-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 0.8 | 1.1 |
| 5-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.2 |
| 6-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.6 |
| 7-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.3 |
| 8-Jul | 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 | 1.4 |
| 9-Jul | 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 | 1.3 |
| 10-Jul | 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 | 1.3 |
| 11-Jul | 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 | 1.2 |
| 12-Jul | 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 | 1.0 |
| 13-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.7 | 0.9 |
| 14-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0.7 | 1.2 |
| 15-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.7 | 0.9 |
| 16-Jul | 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 | 1.0 |
| 17-Jul | 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 | 1.1 |
| 18-Jul | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0.8 | 1.2 |
| 19-Jul | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0.7 | 0.9 |
| 20-Jul | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.1 |
| 21-Jul | 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 | 1.1 |
| 22-Jul | 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 | 1.0 |
| 23-Jul | 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 | 1.2 |
| 24-Jul | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.2 |
| 25-Jul | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 0.9 | 1.1 |
| 26-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 0.7 | 1.2 |
| 27-Jul | 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 | 1.1 |
| 28-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 0.9 | 1.2 |
| 29-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 2 | 1 | 0.9 | 1.8 |
| 30-Jul | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 3 | 1 | 1 | 1 | 1 | 1.0 | 3.1 |
| 31-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 1.1 |
| | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 | 0.8 | 0.8 | 0.7 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 0.9 | 0.8 | 0.9 | 0.9 | 0.8 | Diurnal Average | |
| | 1.3 | 1.2 | 1.2 | 1.3 | 1.3 | 1.6 | 1.2 | 1.4 | 1.6 | 1.0 | 1.1 | 1.1 | 0.9 | 1.1 | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 | 3.1 | 1.1 | 1.5 | 1.8 | 1.2 | Diurnal Maximum | |

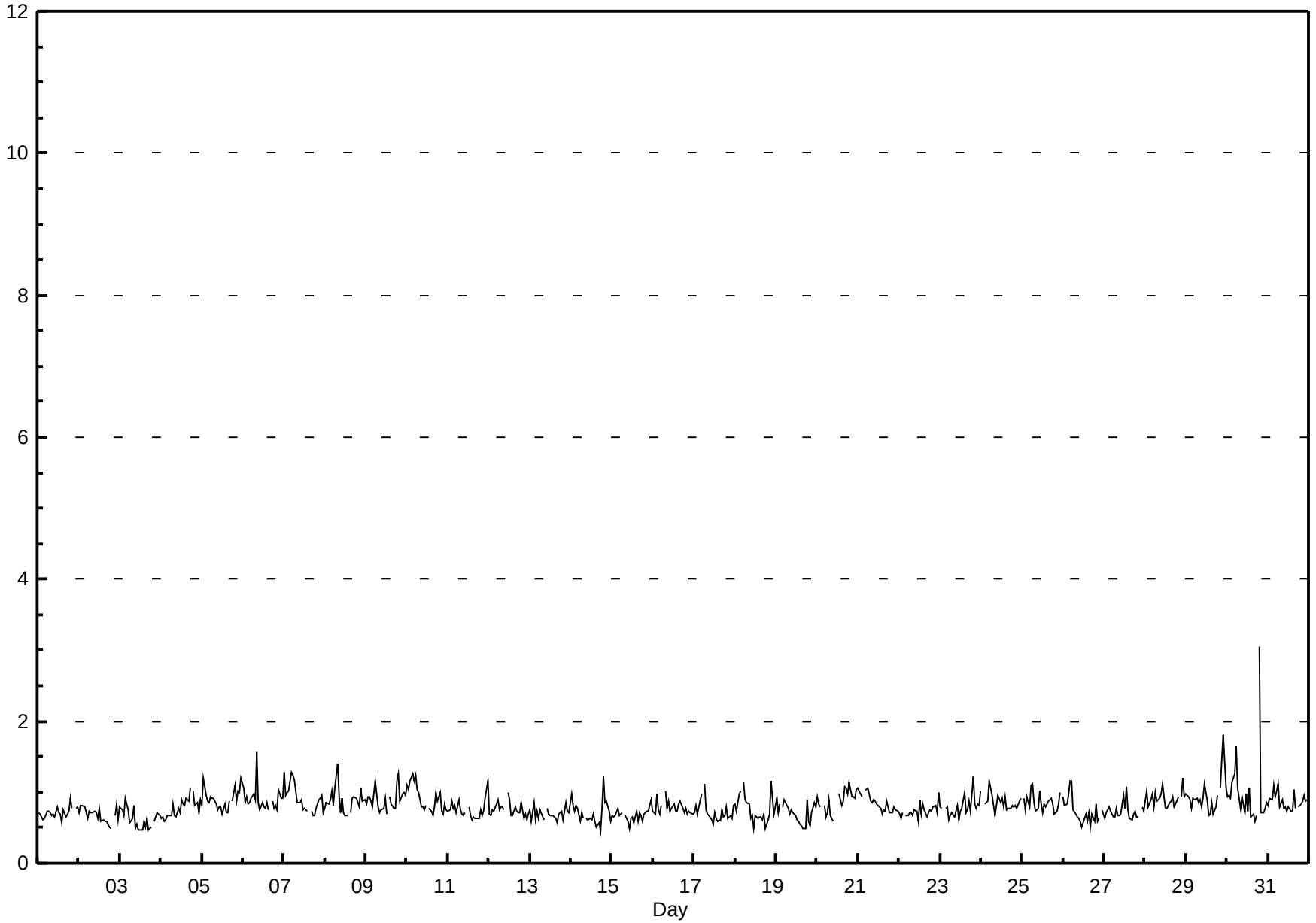
C - Calibration

A - Automated Daily Zero Span

## Hourly Maximums

**Total Reduced Sulphur (TRS) - ppb**

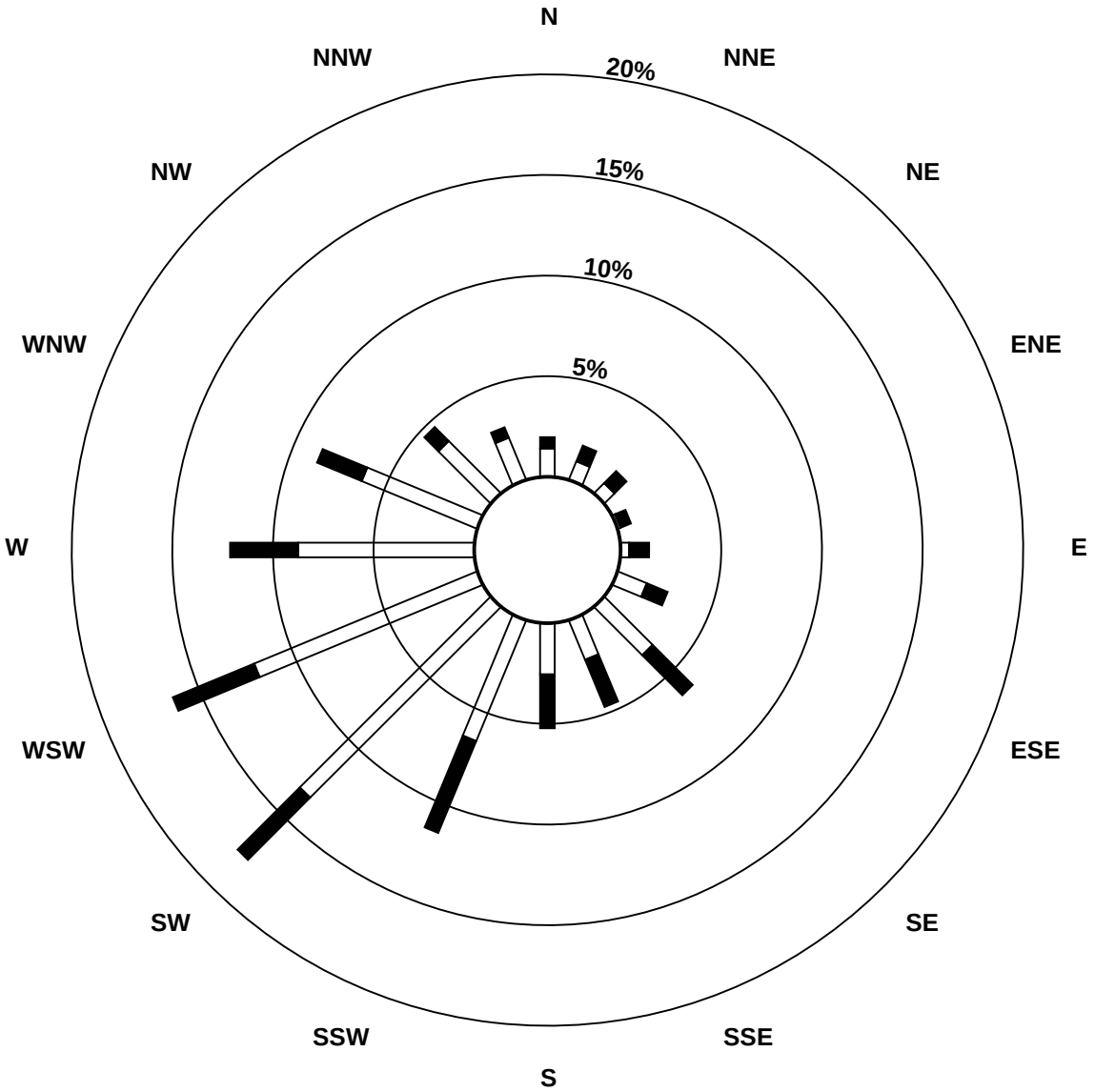
**Portable-Bonanza - July 2010**



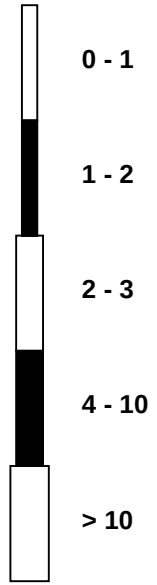
# Pollutant Rose

**Total Reduced Sulphur (TRS) - ppb**

**Portable-Bonanza - July 2010**




**Pollutant Classes (ppb)**



PASZA
Peace Airshed Zone Association

# Hourly Averages

## Nitrogen Dioxide ($NO_2$) - ppb

## Portable-Bonanza - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 17.2 ppb on Jul 6 09:00 Maximum Daily Average: 3.5 ppb on Jul 30

Minimum Value: 0 ppb on Jul 1 11:00 Minimum Daily Average: 0.2 ppb on Jul 1
Maximum Diurnal Average: 3.1 ppb at hour 6 Minimum Diurnal Average: 0.7 ppb at hour 13
Monthly Average: 1.68 ppb Percentiles: $P_1 = 0.0$ $P_{10} = 0.3$ $Q_1 = 0.5$ Median = 1.1 $Q_3 = 2.4$ $P_{90} = 3.7$ $P_{99} = 7.8$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 703 |
| Hours of Missing Data: | 41 |
| Hours of Calibration: | 41 |
| 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-Jul | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 1 | 1 | 0.2 | 1.4 |
| 2-Jul | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 2 | 2 | 2 | 0.6 | 1.8 |
| 3-Jul | 2 | 2 | 3 | 3 | 4 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 2 | 1 | 1 | 1 | 1.0 | 3.7 |
| 4-Jul | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 2 | 1 | 1 | 1 | 1 | 0.5 | 1.6 |
| 5-Jul | 2 | 2 | 2 | 2 | 1 | 3 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | A | 2 | 1 | 2 | 4 | 3 | 3 | 1.6 | 3.7 |
| 6-Jul | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | A | 2 | 1 | 1 | 1 | 2 | 3 | 3 | 1.9 | 17.2 |
| 7-Jul | 2 | 3 | 4 | 4 | 3 | 3 | 3 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | A | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 2 | 1.9 | 4.2 |
| 8-Jul | 2 | 1 | 2 | 2 | 5 | 8 | 3 | 2 | 2 | 1 | 1 | 1 | 0 | 1 | A | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 4 | 5 | 2.1 | 7.8 |
| 9-Jul | 3 | 3 | 3 | 2 | 1 | 4 | 5 | 4 | 1 | 1 | 1 | 1 | 1 | A | 2 | 1 | 1 | 1 | 3 | 2 | 1 | 2 | 2 | 3 | 2.1 | 5.1 |
| 10-Jul | 6 | 6 | 5 | 8 | 7 | 6 | 5 | 5 | 2 | 1 | 1 | 1 | A | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3.0 | 7.9 |
| 11-Jul | 2 | 3 | 2 | 2 | 3 | 2 | 1 | 1 | 1 | 0 | 0 | A | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1.1 | 2.8 |
| 12-Jul | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 2 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0.6 | 1.9 |
| 13-Jul | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 1 | A | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 3 | 4 | 3 | 1.3 | 3.7 |
| 14-Jul | 6 | 4 | 4 | 3 | 2 | 2 | 2 | 1 | A | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.4 | 5.7 |
| 15-Jul | 1 | 0 | 0 | 0 | 0 | 0 | 1 | A | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.4 | 1.9 |
| 16-Jul | 0 | 0 | 1 | 1 | 1 | 1 | A | 3 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0.7 | 2.5 |
| 17-Jul | 1 | 1 | 2 | 2 | 2 | A | 3 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 1 | 2 | 1.1 | 3.2 |
| 18-Jul | 1 | 3 | 4 | 5 | A | 7 | 5 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 2 | 3 | 3 | 2 | 2.5 | 6.5 |
| 19-Jul | 3 | 2 | 2 | A | 4 | 3 | 3 | 2 | 2 | 2 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 1.6 | 3.6 |
| 20-Jul | 2 | 3 | 2 | A | 4 | 3 | 2 | 2 | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 6 | 4 | 2.1 | 5.8 |
| 21-Jul | 3 | 3 | 3 | A | 5 | 5 | 4 | 4 | 3 | C | C | C | C | C | 2 | 2 | 3 | 1 | 3 | 5 | 3 | 3 | 3 | 5 | 3.3 | 5.4 |
| 22-Jul | 5 | 2 | 3 | A | 5 | 4 | 3 | 3 | 3 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 3 | 2 | 3 | 4 | 3 | 2.6 | 5.3 |
| 23-Jul | 3 | 1 | A | 3 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 2 | 4 | 1 | 1 | 1.2 | 3.7 |
| 24-Jul | 1 | A | 2 | 2 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.9 | 2.6 |
| 25-Jul | A | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | A | 0.9 | 3.8 |
| 26-Jul | 5 | 3 | 3 | 2 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | A | 3 | 1.5 | 4.7 |
| 27-Jul | 3 | 3 | 3 | 4 | 4 | 3 | 4 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 3 | 3 | 2.1 | 4.2 |
| 28-Jul | 2 | 4 | 3 | 4 | 6 | 6 | 4 | 4 | 5 | 4 | 2 | 3 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | A | 3 | 3 | 2 | 2.9 | 6.4 |
| 29-Jul | 2 | 1 | 3 | 3 | 3 | 4 | 3 | 3 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | A | 5 | 6 | 8 | 9 | 2.9 | 9.4 |
| 30-Jul | 7 | 6 | 6 | 7 | 9 | 8 | 7 | 4 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 2 | 2 | 2 | 2 | 2 | 3.5 | 9.3 |
| 31-Jul | 5 | 6 | 7 | 4 | 4 | 5 | 3 | 2 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 2 | 2 | 7 | 5 | 3 | 4 | 3.1 | 6.9 |
| | 2.4 | 2.4 | 2.4 | 2.5 | 2.9 | 3.1 | 2.4 | 2.0 | 2.1 | 1.1 | 0.9 | 0.9 | 0.7 | 0.8 | 0.7 | 0.7 | 0.8 | 0.7 | 1.0 | 1.1 | 1.7 | 2.3 | 2.3 | 2.4 | Diurnal Average | |
| | 7.1 | 6.4 | 6.6 | 7.9 | 9.3 | 8.5 | 7.0 | 4.5 | 17.2 | 3.6 | 2.5 | 2.9 | 1.8 | 2.0 | 2.0 | 1.9 | 3.1 | 1.6 | 3.2 | 4.6 | 6.9 | 6.5 | 8.3 | 9.4 | Diurnal Maximum | |

C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 212 ppb 24-hr 106 ppb

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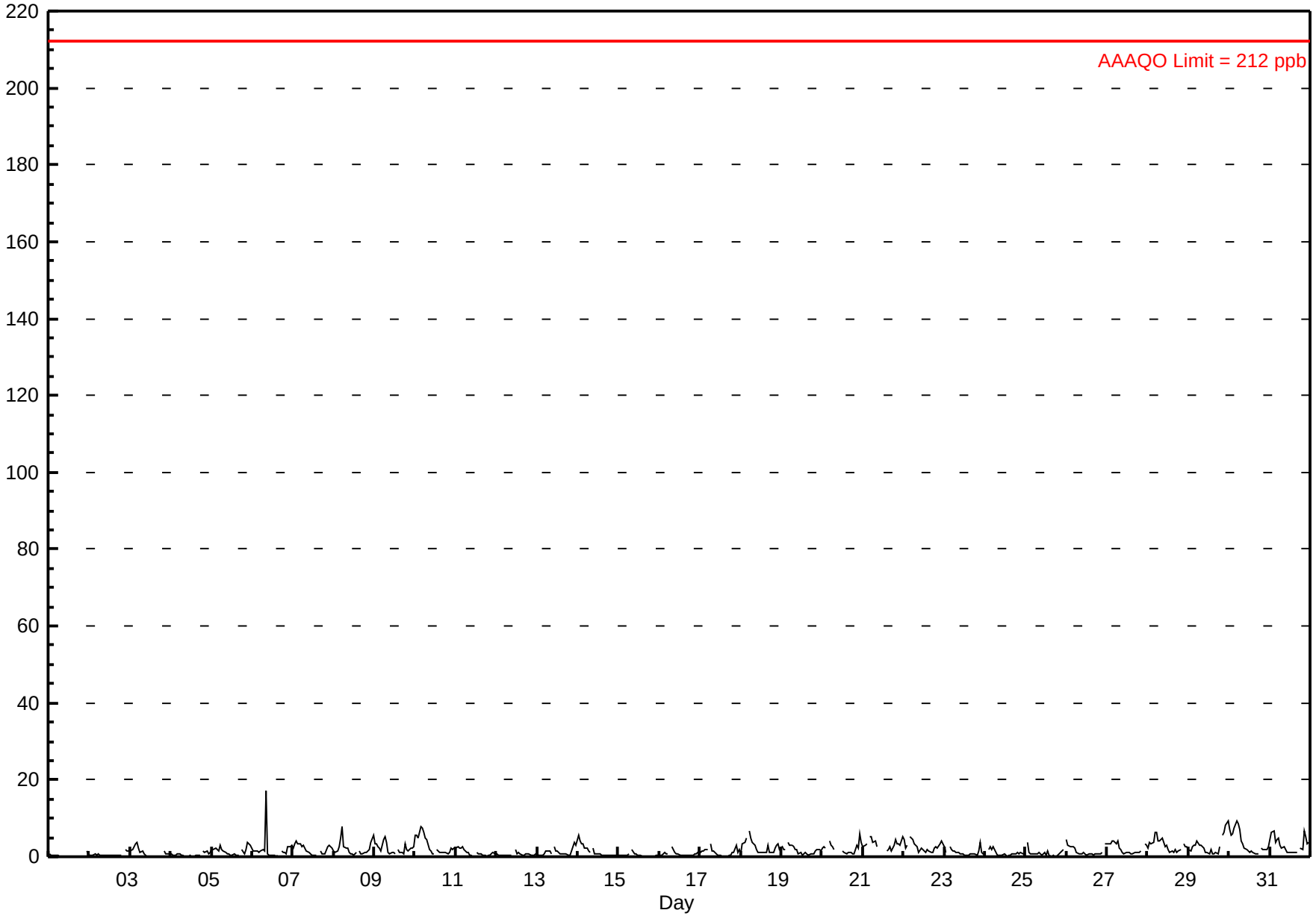
# Hourly Averages

## Nitrogen Dioxide ($NO_2$) - ppb

## Portable-Bonanza - July 2010



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# Hourly Maximums

## Nitrogen Dioxide ($NO_2$) - ppb

## Portable-Bonanza - July 2010

Maximum Value: 171.2 ppb on Jul 6 09:00

Maximum Daily Average: 11.2 ppb on Jul 6

Minimum Value: 0 ppb on Jul 1 12:00

Minimum Daily Average: 1.0 ppb on Jul 1

Maximum Diurnal Average: 9.6 ppb at hour 9

Minimum Diurnal Average: 2.0 ppb at hour 13

Monthly Average: 4.64 ppb

Percentiles: $P_1 = 0.2$ $P_{10} = 0.7$ $Q_1 = 1.4$ Median = 3.1 $Q_3 = 5.5$ $P_{90} = 10.4$ $P_{99} = 28.4$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 703 |
| Hours of Missing Data: | 41 |
| Hours of Calibration: | 41 |
| 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-Jul | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 2 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 2 | A | 3 | 1 | 1.0 | 4.0 |
| 2-Jul | 1 | 1 | 1 | 3 | 1 | 3 | 4 | 3 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | A | 4 | 3 | 3 | 1.8 | 4.4 |
| 3-Jul | 2 | 3 | 3 | 4 | 5 | 4 | 2 | 3 | 1 | 1 | 1 | 2 | 0 | 1 | 1 | 1 | 1 | 0 | 4 | A | 6 | 1 | 1 | 1 | 2.1 | 6.1 |
| 4-Jul | 1 | 1 | 1 | 1 | 2 | 4 | 1 | 2 | 1 | 2 | 1 | 5 | 0 | 1 | 0 | 1 | 1 | 1 | A | 3 | 1 | 3 | 1 | 3 | 1.7 | 5.5 |
| 5-Jul | 3 | 2 | 5 | 2 | 2 | 8 | 3 | 3 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 5 | 1 | 11 | 11 | 4 | 4 | 3.2 | 11.3 |
| 6-Jul | 3 | 10 | 2 | 4 | 1 | 3 | 18 | 5 | 171 | 2 | 1 | 5 | 6 | 2 | 0 | 1 | A | 3 | 3 | 2 | 3 | 5 | 6 | 3 | 11.2 | 171.2 |
| 7-Jul | 5 | 7 | 7 | 4 | 8 | 5 | 6 | 5 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | A | 3 | 1 | 1 | 1 | 30 | 12 | 12 | 10 | 5.4 | 30.3 |
| 8-Jul | 2 | 3 | 4 | 6 | 13 | 13 | 6 | 3 | 9 | 3 | 1 | 1 | 1 | 6 | A | 3 | 1 | 2 | 6 | 3 | 6 | 4 | 6 | 14 | 5.0 | 13.6 |
| 9-Jul | 4 | 4 | 4 | 4 | 4 | 9 | 10 | 7 | 3 | 2 | 4 | 3 | 1 | A | 3 | 2 | 2 | 1 | 36 | 3 | 3 | 3 | 3 | 4 | 5.2 | 35.9 |
| 10-Jul | 11 | 9 | 7 | 11 | 11 | 12 | 7 | 7 | 2 | 3 | 1 | 1 | A | 3 | 2 | 2 | 2 | 4 | 4 | 2 | 3 | 8 | 3 | 8 | 5.4 | 12.2 |
| 11-Jul | 3 | 3 | 3 | 2 | 8 | 3 | 3 | 2 | 1 | 1 | 0 | A | 2 | 2 | 2 | 3 | 4 | 3 | 1 | 2 | 1 | 1 | 2 | 1 | 2.3 | 7.7 |
| 12-Jul | 1 | 1 | 1 | 1 | 0 | 4 | 1 | 1 | 1 | 1 | A | 4 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 0 | 1 | 1 | 1 | 1.2 | 3.8 |
| 13-Jul | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | A | 5 | 2 | 3 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 3 | 8 | 7 | 7 | 2.4 | 7.6 |
| 14-Jul | 9 | 6 | 5 | 5 | 4 | 6 | 4 | 2 | A | 6 | 1 | 2 | 1 | 3 | 1 | 2 | 2 | 2 | 1 | 3 | 1 | 2 | 1 | 1 | 2.9 | 9.3 |
| 15-Jul | 1 | 1 | 1 | 1 | 1 | 3 | 5 | A | 4 | 3 | 2 | 3 | 3 | 2 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1.5 | 4.8 |
| 16-Jul | 1 | 3 | 1 | 2 | 1 | 4 | A | 4 | 5 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 1.7 | 5.0 |
| 17-Jul | 2 | 2 | 2 | 3 | 5 | A | 10 | 2 | 2 | 1 | 7 | 2 | 2 | 2 | 0 | 0 | 1 | 1 | 2 | 6 | 4 | 6 | 4 | 7 | 3.1 | 10.1 |
| 18-Jul | 1 | 15 | 12 | 7 | A | 8 | 6 | 5 | 4 | 3 | 2 | 1 | 1 | 2 | 16 | 4 | 7 | 3 | 2 | 2 | 4 | 7 | 4 | 3 | 5.1 | 15.6 |
| 19-Jul | 6 | 4 | 2 | A | 6 | 7 | 4 | 5 | 2 | 2 | 2 | 11 | 1 | 2 | 3 | 1 | 2 | 4 | 1 | 1 | 3 | 2 | 7 | 2 | 3.6 | 10.6 |
| 20-Jul | 3 | 3 | 3 | A | 8 | 7 | 8 | 4 | C | C | C | C | 4 | 4 | 1 | 2 | 6 | 4 | 4 | 1 | 13 | 7 | 14 | 13 | 5.7 | 14.2 |
| 21-Jul | 3 | 4 | 5 | A | 10 | 7 | 5 | 17 | 6 | C | C | C | C | C | 2 | 8 | 7 | 4 | 13 | 24 | 11 | 9 | 5 | 14 | 8.6 | 24.1 |
| 22-Jul | 10 | 3 | 11 | A | 14 | 11 | 13 | 9 | 7 | 5 | 20 | 6 | 3 | 1 | 3 | 2 | 3 | 4 | 26 | 24 | 11 | 10 | 21 | 4 | 9.6 | 25.8 |
| 23-Jul | 3 | 1 | A | 3 | 2 | 3 | 7 | 4 | 4 | 6 | 4 | 4 | 3 | 3 | 5 | 6 | 14 | 7 | 6 | 6 | 18 | 32 | 5 | 4 | 6.6 | 32.5 |
| 24-Jul | 5 | A | 3 | 32 | 4 | 10 | 3 | 2 | 4 | 3 | 6 | 9 | 5 | 1 | 3 | 11 | 13 | 8 | 10 | 7 | 6 | 15 | 7 | 4 | 7.4 | 32.2 |
| 25-Jul | A | 36 | 5 | 5 | 4 | 3 | 4 | 5 | 12 | 2 | 3 | 29 | 4 | 20 | 9 | 0 | 0 | 1 | 0 | 3 | 10 | 4 | 13 | A | 7.9 | 36.3 |
| 26-Jul | 10 | 5 | 4 | 3 | 4 | 4 | 3 | 2 | 3 | 2 | 12 | 6 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 4 | A | 4 | 3.5 | 12.4 |
| 27-Jul | 4 | 4 | 4 | 5 | 6 | 6 | 7 | 5 | 5 | 2 | 1 | 2 | 2 | 4 | 3 | 3 | 3 | 7 | 3 | 5 | 8 | A | 5 | 4 | 4.2 | 7.6 |
| 28-Jul | 3 | 6 | 5 | 6 | 12 | 13 | 5 | 7 | 7 | 7 | 3 | 4 | 3 | 2 | 4 | 3 | 14 | 3 | 3 | 5 | A | 11 | 12 | 3 | 6.1 | 14.0 |
| 29-Jul | 2 | 2 | 5 | 15 | 7 | 8 | 5 | 8 | 4 | 16 | 2 | 5 | 2 | 10 | 4 | 4 | 8 | 2 | 10 | A | 8 | 8 | 16 | 12 | 7.1 | 15.9 |
| 30-Jul | 12 | 8 | 12 | 11 | 12 | 12 | 14 | 7 | 9 | 3 | 4 | 2 | 2 | 5 | 5 | 1 | 1 | 1 | A | 3 | 4 | 4 | 3 | 4 | 6.1 | 14.3 |
| 31-Jul | 10 | 10 | 9 | 5 | 10 | 11 | 4 | 4 | 3 | 3 | 1 | 2 | 1 | 1 | 8 | 2 | 3 | A | 4 | 5 | 18 | 20 | 5 | 5 | 6.3 | 20.4 |
| | 4.1 | 5.2 | 4.2 | 5.3 | 5.5 | 6.6 | 5.6 | 4.5 | 9.6 | 3.1 | 3.2 | 4.1 | 2.0 | 3.1 | 2.8 | 2.3 | 3.5 | 2.5 | 5.3 | 4.1 | 6.6 | 7.0 | 5.9 | 4.9 | Diurnal Average | |
| | 11.6 | 36.3 | 11.8 | 32.2 | 14.2 | 12.9 | 17.7 | 16.6 | 171.2 | 15.9 | 20.1 | 29.1 | 6.4 | 20.4 | 15.6 | 10.9 | 14.0 | 8.5 | 35.9 | 24.1 | 30.3 | 32.5 | 21.2 | 13.9 | Diurnal Maximum | |

C - Calibration

A - Automated Daily Zero Span

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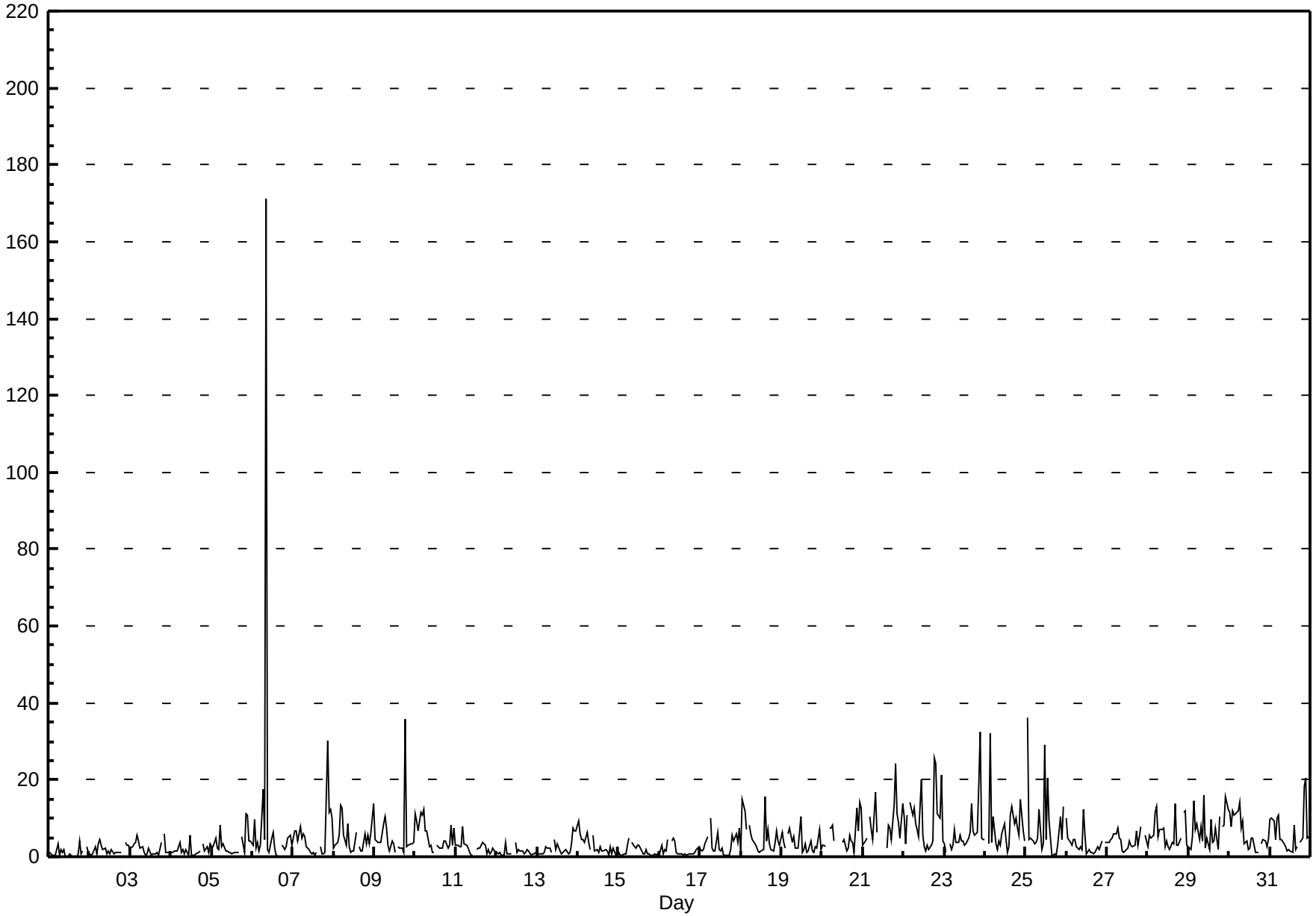
## Hourly Maximums

**Nitrogen Dioxide ($NO_2$) - ppb**

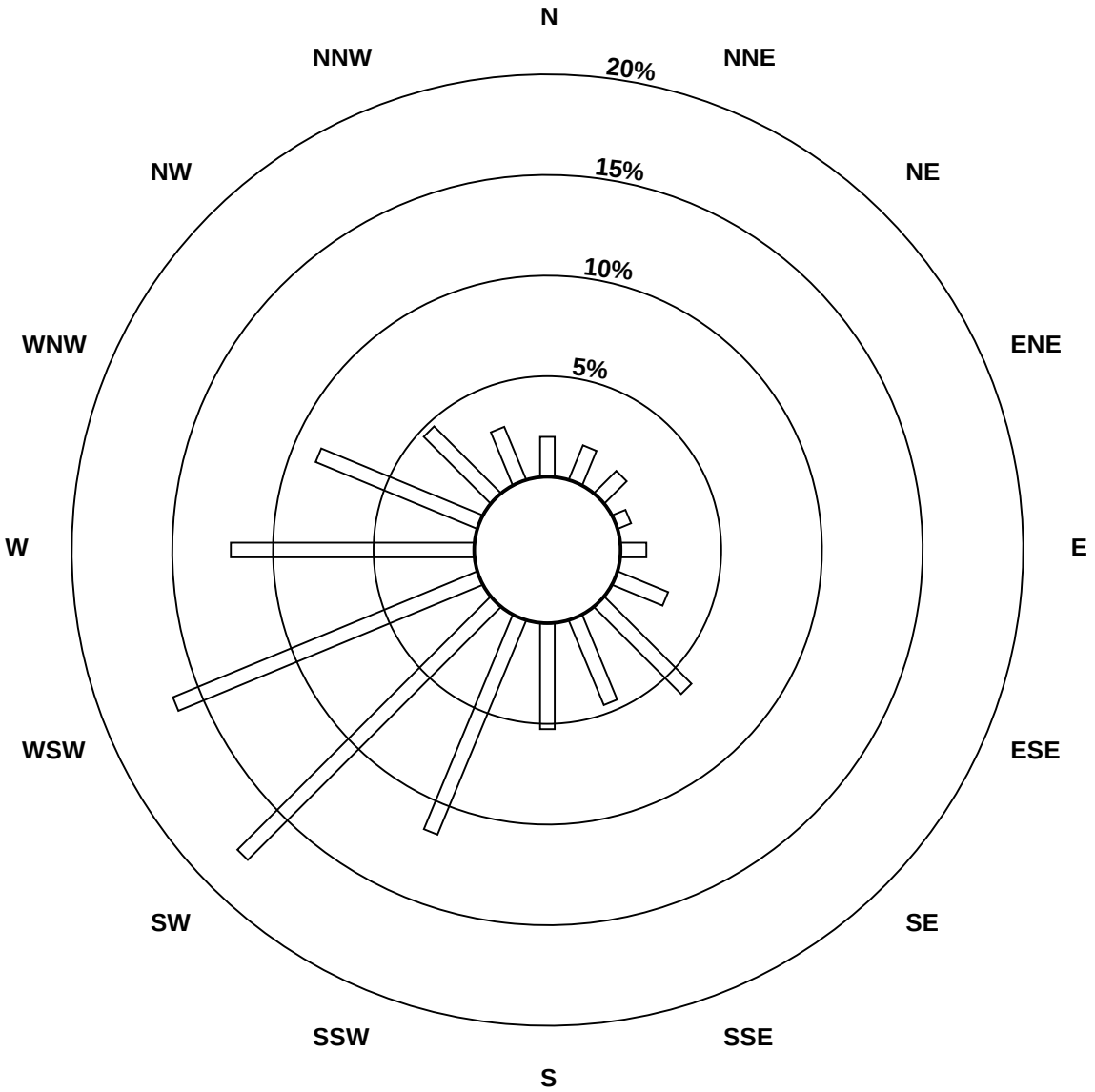
**Portable-Bonanza - July 2010**



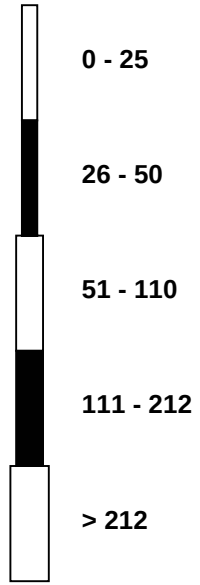
# Pollutant Rose

**Nitrogen Dioxide ($NO_2$) - ppb**

**Portable-Bonanza - July 2010**




**Pollutant Classes (ppb)**



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# Hourly Averages

## Nitrogen Oxide (NO) - ppb

## Portable-Bonanza - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 37.4 ppb on Jul 6 09:00 Maximum Daily Average: 1.9 ppb on Jul 6

Minimum Value: 0 ppb on Jul 1 01:00 Minimum Daily Average: 0.1 ppb on Jul 1
Maximum Diurnal Average: 1.9 ppb at hour 9 Minimum Diurnal Average: 0.2 ppb at hour 16
Monthly Average: 0.49 ppb Percentiles: $P_1$ = 0.0 $P_{10}$ = 0.0 $Q_1$ = 0.1 Median = 0.2 $Q_3$ = 0.5 $P_{90}$ = 1.0 $P_{99}$ = 4.1

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 703 |
| Hours of Missing Data: | 41 |
| Hours of Calibration: | 41 |
| 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-Jul | 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 |
| 2-Jul | 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 |
| 3-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 1 | 0 | 0 | 0 | 0.2 | 1.3 |
| 4-Jul | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.5 |
| 5-Jul | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 1 | 1 | 0 | 0 | 0.5 | 1.0 |
| 6-Jul | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.9 | 37.4 |
| 7-Jul | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0.4 | 2.5 |
| 8-Jul | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 3.6 |
| 9-Jul | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0.6 | 6.4 |
| 10-Jul | 0 | 0 | 0 | 3 | 2 | 3 | 3 | 2 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 3.5 |
| 11-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.5 |
| 12-Jul | 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 | 0.5 |
| 13-Jul | 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 |
| 14-Jul | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 1.5 |
| 15-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.7 |
| 16-Jul | 0 | 0 | 0 | 0 | 0 | 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.5 |
| 17-Jul | 0 | 0 | 0 | 0 | 0 | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.9 |
| 18-Jul | 0 | 0 | 0 | 0 | A | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 | 1.8 |
| 19-Jul | 0 | 0 | 0 | A | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 1.6 |
| 20-Jul | 0 | 0 | 0 | A | 0 | 1 | 1 | 1 | C | C | C | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.3 | 1.2 |
| 21-Jul | 0 | 0 | 0 | A | 0 | 0 | 1 | 2 | 1 | C | C | C | C | C | 0 | 1 | 1 | 0 | 1 | 4 | 0 | 1 | 0 | 0 | 0.7 | 4.2 |
| 22-Jul | 0 | 0 | 0 | A | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 3 | 1 | 2 | 2 | 1 | 0.7 | 2.8 |
| 23-Jul | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 2 | 1 | 1 | 1 | 2 | 4 | 1 | 0 | 0.8 | 4.4 |
| 24-Jul | 1 | A | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 2 | 3 | 1 | 2 | 2 | 1 | 0 | 0 | 0.9 | 2.8 |
| 25-Jul | A | 4 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | A | 0.8 | 4.2 |
| 26-Jul | 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 | 0.5 |
| 27-Jul | 0 | 0 | 0 | 1 | 2 | 3 | 5 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0.8 | 5.4 |
| 28-Jul | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0.6 | 2.4 |
| 29-Jul | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | A | 0 | 0 | 5 | 2 | 0.7 | 5.1 |
| 30-Jul | 1 | 0 | 0 | 2 | 1 | 3 | 6 | 2 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 0.9 | 6.4 |
| 31-Jul | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 3 | 1 | 0 | 0 | 0.5 | 2.8 |
| | 0.2 | 0.3 | 0.2 | 0.4 | 0.4 | 1.0 | 1.1 | 0.8 | 1.9 | 0.4 | 0.3 | 0.4 | 0.2 | 0.4 | 0.2 | 0.2 | 0.3 | 0.3 | 0.5 | 0.4 | 0.5 | 0.5 | 0.4 | 0.2 | Diurnal Average | |
| | 1.1 | 4.2 | 0.7 | 3.5 | 2.5 | 3.6 | 6.4 | 2.3 | 37.4 | 1.3 | 1.0 | 3.0 | 1.6 | 4.1 | 1.3 | 0.6 | 1.8 | 2.8 | 6.4 | 4.2 | 2.8 | 4.4 | 5.1 | 1.6 | Diurnal Maximum | |

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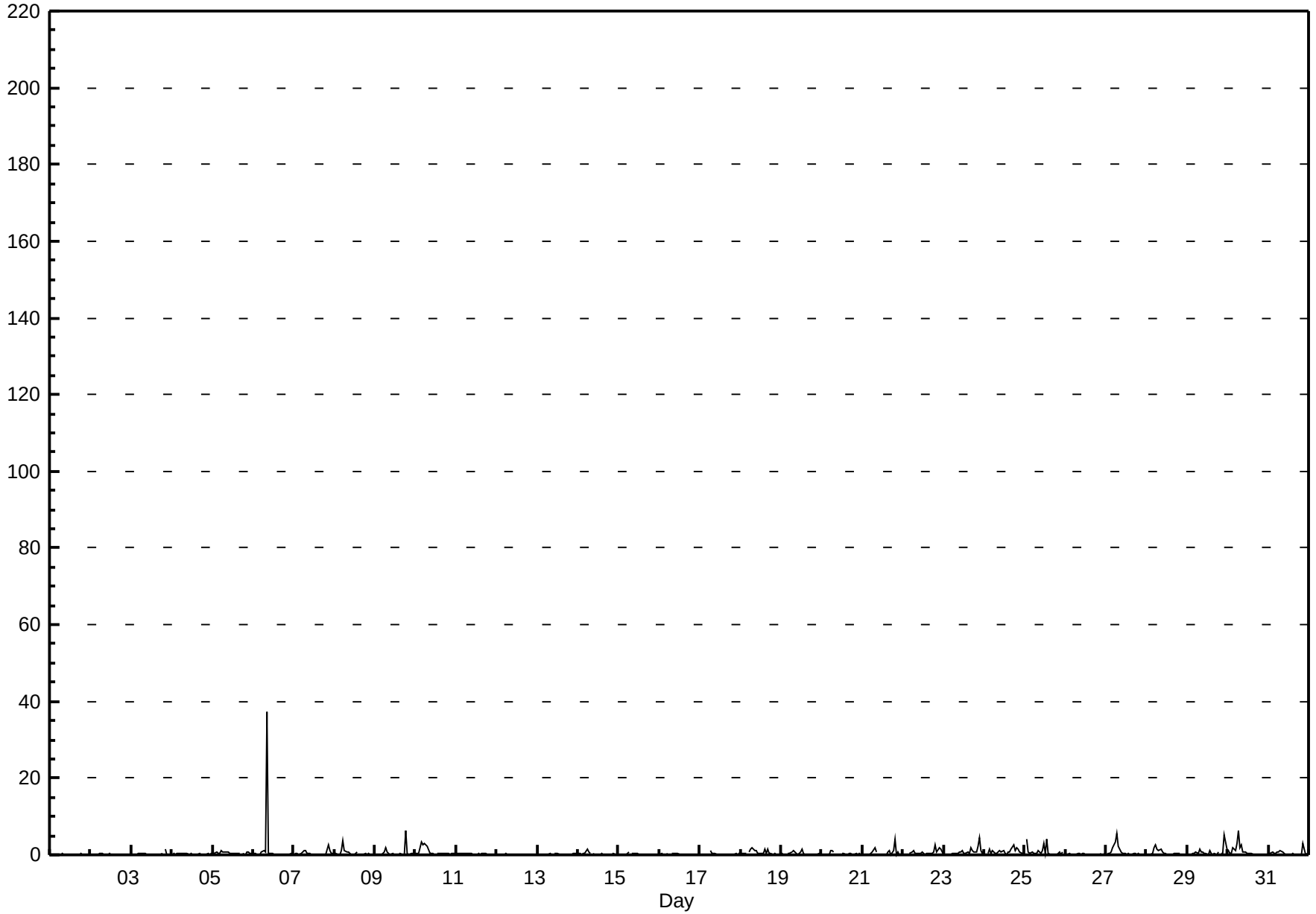
# Hourly Averages

**Nitrogen Oxide (NO) - ppb**

**Portable-Bonanza - July 2010**



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# Hourly Maximums

## Nitrogen Oxide (NO) - ppb

## Portable-Bonanza - July 2010

Maximum Value: 326.7 ppb on Jul 6 09:00

Maximum Daily Average: 17.6 ppb on Jul 6

Minimum Value: 0 ppb on Jul 14 23:00

Minimum Daily Average: 0.5 ppb on Jul 12

Maximum Diurnal Average: 14.7 ppb at hour 9

Minimum Diurnal Average: 1.5 ppb at hour 1

Monthly Average: 4.42 ppb

Percentiles: $P_1 = 0.1$ $P_{10} = 0.2$ $Q_1 = 0.3$ Median = 1.1 $Q_3 = 4.2$ $P_{90} = 10.3$ $P_{99} = 42.0$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 703 |
| Hours of Missing Data: | 41 |
| Hours of Calibration: | 41 |
| 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-Jul | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 3 | 1 | 6 | 0 | 0 | 2 | 2 | 1 | 0 | 0 | 1 | 11 | 1 | 2 | A | 0 | 0 | 1.5 | 10.8 |
| 2-Jul | 0 | 0 | 0 | 4 | 0 | 6 | 6 | 5 | 3 | 2 | 1 | 2 | 1 | 2 | 0 | 2 | 1 | 2 | 2 | 2 | A | 4 | 0 | 0 | 2.0 | 5.9 |
| 3-Jul | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 7 | 1 | 0 | 1 | 2 | 0 | 1 | 1 | 1 | 2 | 2 | 10 | A | 18 | 0 | 1 | 0 | 2.4 | 18.0 |
| 4-Jul | 0 | 1 | 1 | 1 | 1 | 10 | 4 | 5 | 1 | 3 | 1 | 10 | 0 | 0 | 0 | 0 | 1 | 0 | A | 0 | 0 | 1 | 0 | 1 | 1.7 | 9.9 |
| 5-Jul | 1 | 1 | 2 | 0 | 0 | 4 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 0 | 0 | A | 4 | 0 | 13 | 10 | 9 | 1 | 2.5 | 13.1 |
| 6-Jul | 1 | 15 | 1 | 1 | 0 | 17 | 13 | 2 | 327 | 3 | 7 | 4 | 4 | 3 | 0 | 0 | A | 3 | 0 | 0 | 0 | 1 | 3 | 0 | 17.6 | 326.7 |
| 7-Jul | 1 | 3 | 1 | 0 | 2 | 8 | 4 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | A | 0 | 0 | 0 | 0 | 59 | 26 | 12 | 3 | 5.6 | 59.1 |
| 8-Jul | 0 | 4 | 0 | 0 | 10 | 14 | 4 | 2 | 8 | 2 | 0 | 1 | 0 | 7 | A | 1 | 0 | 1 | 9 | 1 | 5 | 0 | 1 | 0 | 3.1 | 14.3 |
| 9-Jul | 1 | 0 | 0 | 0 | 0 | 5 | 5 | 5 | 1 | 1 | 2 | 1 | 0 | A | 2 | 5 | 1 | 0 | 104 | 1 | 1 | 1 | 1 | 0 | 5.9 | 104.1 |
| 10-Jul | 2 | 1 | 1 | 16 | 7 | 16 | 5 | 4 | 1 | 1 | 0 | 0 | A | 1 | 1 | 1 | 1 | 3 | 2 | 0 | 0 | 6 | 1 | 4 | 3.2 | 16.0 |
| 11-Jul | 0 | 0 | 0 | 0 | 8 | 1 | 1 | 1 | 2 | 1 | 0 | A | 0 | 6 | 1 | 11 | 8 | 3 | 1 | 1 | 0 | 0 | 2 | 0 | 2.1 | 11.3 |
| 12-Jul | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 6.3 |
| 13-Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 2 | 0.5 | 3.1 |
| 14-Jul | 3 | 1 | 0 | 1 | 3 | 12 | 4 | 3 | A | 2 | 0 | 5 | 1 | 2 | 5 | 2 | 3 | 2 | 1 | 7 | 0 | 10 | 0 | 3 | 3.0 | 12.5 |
| 15-Jul | 1 | 0 | 0 | 0 | 0 | 5 | 10 | A | 4 | 5 | 7 | 5 | 3 | 2 | 1 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 2.2 | 10.4 |
| 16-Jul | 0 | 10 | 0 | 0 | 0 | 7 | A | 4 | 2 | 5 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1.5 | 10.1 |
| 17-Jul | 0 | 0 | 0 | 3 | 2 | A | 12 | 2 | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 3 | 0 | 1 | 1.4 | 12.1 |
| 18-Jul | 0 | 4 | 1 | 1 | A | 2 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 45 | 4 | 5 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 3.4 | 45.3 |
| 19-Jul | 3 | 0 | 0 | A | 4 | 4 | 5 | 3 | 2 | 1 | 1 | 15 | 9 | 2 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 10 | 0 | 2.8 | 15.5 |
| 20-Jul | 1 | 0 | 0 | A | 2 | 16 | 12 | 3 | C | C | C | C | 10 | 12 | 2 | 0 | 4 | 4 | 3 | 0 | 4 | 3 | 11 | 2 | 4.7 | 15.8 |
| 21-Jul | 0 | 0 | 0 | A | 0 | 2 | 2 | 22 | 3 | C | C | C | C | C | 1 | 12 | 6 | 2 | 9 | 43 | 1 | 13 | 2 | 4 | 6.9 | 43.2 |
| 22-Jul | 3 | 0 | 1 | A | 9 | 20 | 15 | 3 | 4 | 4 | 7 | 9 | 9 | 0 | 1 | 0 | 5 | 2 | 7 | 18 | 6 | 35 | 18 | 25 | 8.8 | 35.2 |
| 23-Jul | 0 | 0 | A | 0 | 0 | 5 | 4 | 3 | 2 | 7 | 8 | 7 | 5 | 2 | 5 | 3 | 35 | 10 | 3 | 11 | 9 | 85 | 11 | 5 | 9.5 | 84.7 |
| 24-Jul | 11 | A | 15 | 17 | 1 | 12 | 3 | 3 | 6 | 11 | 6 | 7 | 4 | 2 | 10 | 5 | 14 | 25 | 5 | 9 | 11 | 11 | 4 | 5 | 8.6 | 25.4 |
| 25-Jul | A | 34 | 7 | 7 | 7 | 4 | 3 | 5 | 13 | 1 | 6 | 29 | 9 | 49 | 4 | 4 | 0 | 0 | 0 | 0 | 18 | 0 | 15 | A | 9.8 | 49.4 |
| 26-Jul | 8 | 1 | 10 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | A | 1 | 2.0 | 10.1 |
| 27-Jul | 0 | 1 | 4 | 2 | 12 | 11 | 14 | 13 | 8 | 3 | 0 | 1 | 1 | 3 | 2 | 1 | 2 | 4 | 1 | 2 | 2 | A | 1 | 1 | 3.9 | 14.4 |
| 28-Jul | 0 | 0 | 0 | 0 | 41 | 26 | 11 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 15 | 1 | 1 | 2 | A | 5 | 4 | 0 | 5.2 | 40.5 |
| 29-Jul | 0 | 0 | 0 | 12 | 2 | 9 | 4 | 17 | 7 | 9 | 3 | 6 | 1 | 8 | 10 | 2 | 4 | 1 | 7 | A | 1 | 0 | 41 | 7 | 6.5 | 41.2 |
| 30-Jul | 5 | 2 | 4 | 5 | 4 | 17 | 36 | 6 | 20 | 2 | 7 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | A | 0 | 0 | 0 | 0 | 0 | 4.9 | 36.0 |
| 31-Jul | 0 | 2 | 2 | 0 | 4 | 5 | 4 | 11 | 1 | 1 | 0 | 1 | 0 | 0 | 6 | 0 | 1 | A | 0 | 1 | 25 | 20 | 0 | 1 | 3.9 | 25.4 |
| | 1.5 | 2.7 | 1.7 | 2.7 | 4.1 | 8.3 | 6.4 | 4.8 | 14.7 | 2.8 | 2.6 | 3.9 | 2.2 | 3.8 | 3.6 | 2.0 | 3.7 | 2.5 | 6.4 | 3.5 | 6.1 | 8.6 | 5.0 | 2.3 | Diurnal Average | |
| | 11.4 | 34.4 | 15.2 | 16.8 | 40.5 | 26.2 | 36.0 | 22.5 | 326.7 | 11.5 | 9.0 | 29.2 | 10.3 | 49.4 | 45.3 | 12.2 | 35.4 | 25.4 | 104.1 | 43.2 | 59.1 | 84.7 | 41.2 | 24.6 | Diurnal Maximum | |

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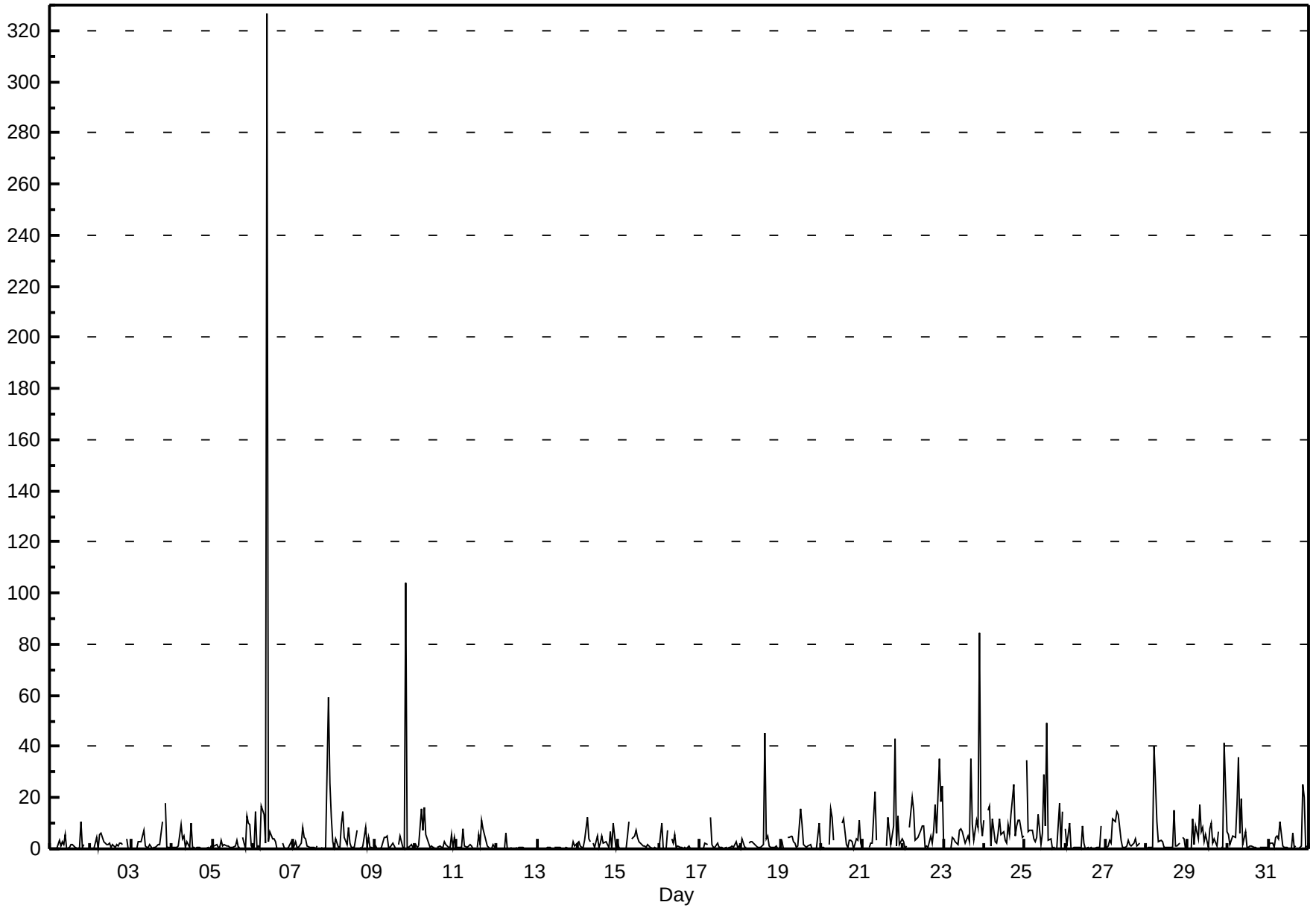
# Hourly Maximums

**Nitrogen Oxide (NO) - ppb**

**Portable-Bonanza - July 2010**



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# Hourly Averages

## Oxides of Nitrogen ($NO_X$) - ppb

## Portable-Bonanza - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 54.9 ppb on Jul 6 09:00 Maximum Daily Average: 4.4 ppb on Jul 30

Minimum Value: 0 ppb on Jul 1 11:00 Minimum Daily Average: 0.3 ppb on Jul 1
Maximum Diurnal Average: 4.2 ppb at hour 6 Minimum Diurnal Average: 0.9 ppb at hour 16
Monthly Average: 2.25 ppb Percentiles: $P_1 = 0.0$ $P_{10} = 0.5$ $Q_1 = 0.8$ Median = 1.5 $Q_3 = 2.9$ $P_{90} = 4.7$ $P_{99} = 10.9$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 703 |
| Hours of Missing Data: | 41 |
| Hours of Calibration: | 41 |
| 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-Jul | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A | 1 | 1 | 0.3 | 1.4 |
| 2-Jul | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | A | 2 | 2 | 2 | 0.7 | 2.0 |
| 3-Jul | 2 | 2 | 3 | 4 | 4 | 3 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | A | 3 | 1 | 1 | 1 | 1.4 | 4.1 |
| 4-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | A | 2 | 1 | 2 | 1 | 2 | 0.9 | 1.9 |
| 5-Jul | 3 | 3 | 3 | 2 | 2 | 4 | 3 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | A | 3 | 1 | 3 | 5 | 4 | 4 | 2.3 | 4.9 |
| 6-Jul | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 55 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | A | 2 | 1 | 1 | 1 | 3 | 3 | 3 | 4.1 | 54.9 |
| 7-Jul | 3 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | A | 2 | 1 | 1 | 1 | 5 | 4 | 3 | 3 | 2.5 | 5.2 |
| 8-Jul | 2 | 1 | 2 | 3 | 6 | 12 | 4 | 3 | 3 | 2 | 1 | 1 | 1 | 2 | A | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 4 | 6 | 2.8 | 11.7 |
| 9-Jul | 4 | 4 | 3 | 2 | 2 | 6 | 7 | 5 | 2 | 1 | 1 | 1 | 1 | A | 2 | 2 | 1 | 1 | 10 | 2 | 2 | 3 | 3 | 3 | 2.9 | 9.7 |
| 10-Jul | 6 | 6 | 5 | 12 | 10 | 9 | 8 | 7 | 2 | 2 | 1 | 1 | A | 2 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 3 | 2 | 3 | 3.9 | 11.6 |
| 11-Jul | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 1 | 1 | 1 | 0 | A | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1.4 | 3.2 |
| 12-Jul | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | A | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0.8 | 2.2 |
| 13-Jul | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | A | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 4 | 3 | 1.4 | 4.1 |
| 14-Jul | 6 | 5 | 4 | 4 | 3 | 4 | 2 | 2 | A | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1.8 | 6.1 |
| 15-Jul | 1 | 1 | 1 | 1 | 1 | 1 | 2 | A | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.7 | 2.4 |
| 16-Jul | 0 | 1 | 1 | 1 | 1 | 1 | A | 3 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 1.0 | 2.9 |
| 17-Jul | 1 | 2 | 2 | 2 | 2 | A | 4 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 1 | 2 | 1.3 | 4.2 |
| 18-Jul | 1 | 4 | 4 | 5 | A | 7 | 6 | 6 | 4 | 3 | 2 | 1 | 1 | 1 | 3 | 2 | 5 | 2 | 1 | 1 | 3 | 3 | 3 | 2 | 3.1 | 7.4 |
| 19-Jul | 3 | 2 | 2 | A | 4 | 4 | 4 | 3 | 3 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2.0 | 4.0 |
| 20-Jul | 2 | 3 | 3 | A | 4 | 4 | 4 | 3 | C | C | C | C | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 6 | 4 | 2.4 | 6.4 |
| 21-Jul | 3 | 3 | 3 | A | 6 | 6 | 4 | 6 | 3 | C | C | C | C | C | 2 | 2 | 3 | 1 | 4 | 9 | 3 | 4 | 3 | 5 | 3.9 | 8.7 |
| 22-Jul | 5 | 2 | 3 | A | 6 | 5 | 5 | 3 | 3 | 1 | 3 | 3 | 2 | 1 | 2 | 2 | 1 | 1 | 3 | 5 | 3 | 5 | 6 | 4 | 3.2 | 5.8 |
| 23-Jul | 3 | 1 | A | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 4 | 8 | 2 | 1 | 2.0 | 8.1 |
| 24-Jul | 2 | A | 2 | 4 | 2 | 4 | 2 | 1 | 1 | 2 | 1 | 2 | 1 | 0 | 1 | 1 | 2 | 4 | 2 | 3 | 3 | 2 | 1 | 1 | 1.9 | 3.9 |
| 25-Jul | A | 8 | 2 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 4 | 1 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | A | 1.8 | 8.1 |
| 26-Jul | 5 | 3 | 3 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | A | 3 | 1.6 | 5.1 |
| 27-Jul | 3 | 4 | 4 | 5 | 6 | 7 | 10 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | A | 4 | 3 | 2.9 | 9.7 |
| 28-Jul | 2 | 4 | 4 | 4 | 8 | 9 | 6 | 6 | 6 | 4 | 3 | 3 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | A | 3 | 3 | 3 | 3.5 | 8.9 |
| 29-Jul | 2 | 2 | 3 | 3 | 3 | 5 | 3 | 4 | 3 | 3 | 1 | 2 | 1 | 3 | 1 | 1 | 1 | 1 | 3 | A | 6 | 7 | 14 | 11 | 3.6 | 13.5 |
| 30-Jul | 8 | 6 | 6 | 9 | 11 | 11 | 13 | 6 | 6 | 3 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | A | 2 | 2 | 2 | 2 | 3 | 4.4 | 13.5 |
| 31-Jul | 5 | 7 | 7 | 4 | 5 | 6 | 3 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | A | 2 | 2 | 10 | 7 | 3 | 4 | 3.6 | 9.8 |
| | 2.7 | 2.8 | 2.7 | 3.0 | 3.4 | 4.2 | 3.6 | 2.9 | 4.1 | 1.6 | 1.3 | 1.4 | 1.0 | 1.2 | 1.0 | 0.9 | 1.2 | 1.0 | 1.5 | 1.6 | 2.3 | 2.9 | 2.9 | 2.7 | Diurnal Average | |
| | 8.2 | 8.1 | 7.2 | 11.6 | 10.6 | 11.7 | 13.5 | 6.8 | 54.9 | 4.4 | 2.8 | 4.1 | 2.1 | 5.4 | 2.5 | 2.3 | 4.5 | 3.7 | 9.7 | 8.7 | 9.8 | 8.1 | 13.5 | 11.1 | Diurnal Maximum | |

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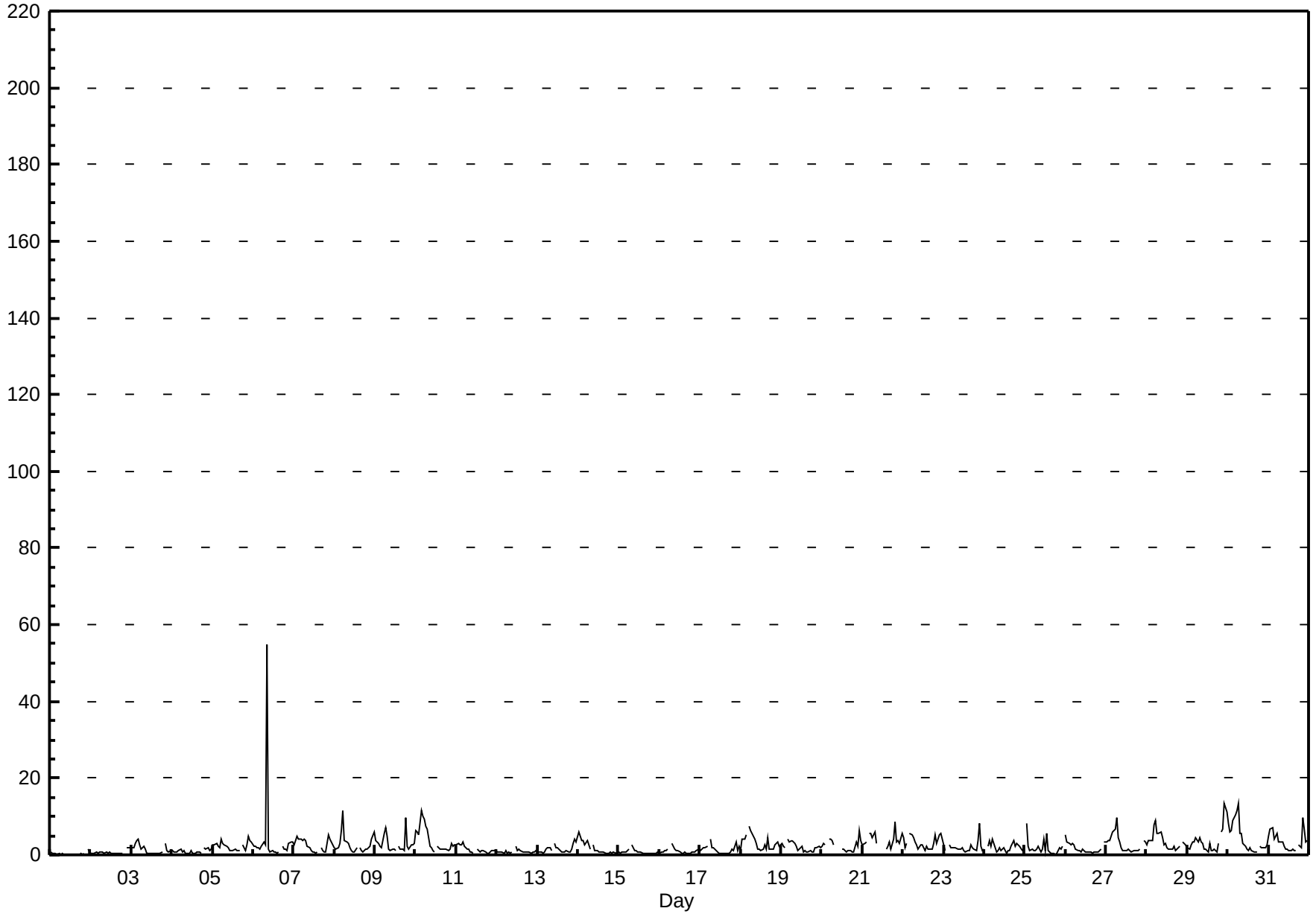
## Hourly Averages

**Oxides of Nitrogen ($NO_X$) - ppb**

**Portable-Bonanza - July 2010**



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# Hourly Maximums

## Oxides of Nitrogen ($NO_X$) - ppb

## Portable-Bonanza - July 2010

Maximum Value: 457.6 ppb on Jul 6 09:00

Maximum Daily Average: 26.8 ppb on Jul 6

Minimum Value: 0 ppb on Jul 1 11:00

Minimum Daily Average: 1.7 ppb on Jul 12

Maximum Diurnal Average: 22.1 ppb at hour 9

Minimum Diurnal Average: 3.8 ppb at hour 13

Monthly Average: 8.55 ppb

Percentiles: $P_1 = 0.4$ $P_{10} = 1.1$ $Q_1 = 2.0$ Median = 4.2 $Q_3 = 9.9$ $P_{90} = 17.5$ $P_{99} = 56.8$

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 703 |
| Hours of Missing Data: | 41 |
| Hours of Calibration: | 41 |
| 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-Jul | 1 | 1 | 0 | 1 | 1 | 5 | 1 | 3 | 2 | 8 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 1 | 15 | 1 | 3 | A | 3 | 1 | 2.2 | 15.0 |
| 2-Jul | 1 | 1 | 1 | 6 | 1 | 7 | 10 | 7 | 5 | 4 | 2 | 3 | 2 | 4 | 1 | 2 | 2 | 3 | 3 | 3 | A | 8 | 3 | 3 | 3.5 | 10.5 |
| 3-Jul | 2 | 3 | 3 | 4 | 8 | 7 | 5 | 9 | 2 | 1 | 1 | 4 | 1 | 1 | 1 | 2 | 3 | 1 | 13 | A | 21 | 2 | 2 | 1 | 4.3 | 21.1 |
| 4-Jul | 2 | 2 | 2 | 2 | 3 | 13 | 5 | 7 | 1 | 4 | 1 | 16 | 1 | 1 | 1 | 1 | 2 | 2 | A | 4 | 2 | 3 | 1 | 5 | 3.5 | 15.6 |
| 5-Jul | 4 | 3 | 6 | 3 | 2 | 12 | 4 | 5 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | A | 10 | 2 | 25 | 21 | 14 | 5 | 5.9 | 24.6 |
| 6-Jul | 4 | 24 | 3 | 5 | 2 | 15 | 32 | 7 | 458 | 4 | 3 | 9 | 11 | 5 | 1 | 1 | A | 6 | 3 | 2 | 3 | 6 | 9 | 4 | 26.8 | 457.6 |
| 7-Jul | 6 | 9 | 7 | 5 | 10 | 12 | 9 | 10 | 3 | 2 | 2 | 1 | 2 | 1 | 2 | A | 3 | 1 | 1 | 1 | 88 | 36 | 25 | 10 | 10.8 | 88.0 |
| 8-Jul | 3 | 7 | 4 | 6 | 22 | 27 | 10 | 5 | 17 | 5 | 1 | 2 | 2 | 14 | A | 3 | 2 | 3 | 15 | 4 | 10 | 4 | 7 | 14 | 8.2 | 27.1 |
| 9-Jul | 5 | 4 | 4 | 4 | 4 | 14 | 15 | 12 | 3 | 2 | 7 | 4 | 2 | A | 4 | 6 | 3 | 2 | 122 | 3 | 3 | 5 | 4 | 4 | 10.3 | 122.1 |
| 10-Jul | 13 | 10 | 8 | 27 | 18 | 28 | 11 | 10 | 3 | 4 | 1 | 2 | A | 3 | 3 | 3 | 3 | 7 | 6 | 2 | 3 | 14 | 4 | 12 | 8.6 | 28.4 |
| 11-Jul | 3 | 3 | 3 | 3 | 16 | 5 | 4 | 3 | 2 | 1 | 1 | A | 2 | 7 | 4 | 15 | 10 | 5 | 2 | 3 | 1 | 2 | 4 | 1 | 4.3 | 15.9 |
| 12-Jul | 2 | 1 | 2 | 1 | 1 | 8 | 1 | 1 | 1 | 1 | A | 4 | 1 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1.7 | 7.9 |
| 13-Jul | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | A | 5 | 2 | 4 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 4 | 11 | 8 | 9 | 2.9 | 10.8 |
| 14-Jul | 10 | 7 | 5 | 5 | 7 | 19 | 8 | 5 | A | 8 | 2 | 3 | 2 | 5 | 6 | 4 | 4 | 3 | 1 | 8 | 1 | 11 | 1 | 3 | 5.5 | 18.6 |
| 15-Jul | 2 | 1 | 1 | 1 | 1 | 7 | 15 | A | 7 | 8 | 8 | 8 | 6 | 4 | 2 | 2 | 2 | 2 | 2 | 1 | 0 | 1 | 1 | 1 | 3.6 | 14.8 |
| 16-Jul | 1 | 12 | 1 | 2 | 1 | 12 | A | 8 | 8 | 10 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 3 | 3.2 | 11.9 |
| 17-Jul | 2 | 2 | 2 | 6 | 7 | A | 22 | 4 | 2 | 2 | 9 | 2 | 2 | 3 | 0 | 1 | 1 | 1 | 2 | 7 | 5 | 8 | 4 | 8 | 4.5 | 22.4 |
| 18-Jul | 1 | 19 | 12 | 8 | A | 9 | 9 | 7 | 5 | 4 | 2 | 2 | 2 | 3 | 61 | 8 | 10 | 5 | 2 | 2 | 5 | 7 | 4 | 3 | 8.3 | 61.2 |
| 19-Jul | 10 | 4 | 2 | A | 10 | 11 | 8 | 8 | 4 | 3 | 3 | 21 | 9 | 4 | 4 | 1 | 3 | 6 | 2 | 1 | 3 | 3 | 17 | 2 | 6.1 | 20.6 |
| 20-Jul | 4 | 3 | 3 | A | 9 | 19 | 20 | 8 | C | C | C | C | 13 | 16 | 3 | 2 | 8 | 8 | 6 | 1 | 16 | 10 | 22 | 13 | 9.6 | 21.8 |
| 21-Jul | 3 | 4 | 5 | A | 11 | 9 | 6 | 39 | 9 | C | C | C | C | C | 2 | 20 | 13 | 6 | 21 | 66 | 12 | 22 | 6 | 18 | 15.1 | 66.0 |
| 22-Jul | 11 | 3 | 12 | A | 23 | 30 | 27 | 12 | 10 | 7 | 27 | 12 | 9 | 2 | 4 | 2 | 8 | 6 | 30 | 42 | 18 | 39 | 39 | 22 | 17.2 | 41.8 |
| 23-Jul | 3 | 1 | A | 4 | 2 | 6 | 11 | 7 | 6 | 12 | 12 | 11 | 4 | 5 | 8 | 9 | 50 | 17 | 7 | 11 | 23 | 118 | 12 | 7 | 14.9 | 117.6 |
| 24-Jul | 13 | A | 15 | 49 | 4 | 22 | 5 | 3 | 7 | 14 | 12 | 13 | 8 | 3 | 7 | 14 | 21 | 20 | 13 | 14 | 12 | 27 | 11 | 9 | 13.8 | 49.4 |
| 25-Jul | A | 53 | 12 | 12 | 9 | 7 | 6 | 6 | 18 | 3 | 9 | 58 | 11 | 55 | 13 | 2 | 0 | 1 | 0 | 3 | 27 | 4 | 28 | A | 15.4 | 58.3 |
| 26-Jul | 18 | 6 | 13 | 3 | 5 | 5 | 3 | 2 | 3 | 2 | 21 | 7 | 1 | 2 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 12 | A | 4 | 5.2 | 21.4 |
| 27-Jul | 4 | 5 | 8 | 6 | 16 | 16 | 21 | 15 | 13 | 3 | 1 | 2 | 3 | 8 | 4 | 4 | 5 | 10 | 4 | 7 | 10 | A | 6 | 4 | 7.6 | 21.1 |
| 28-Jul | 3 | 6 | 5 | 6 | 50 | 39 | 16 | 10 | 10 | 10 | 3 | 5 | 3 | 2 | 4 | 4 | 29 | 4 | 4 | 7 | A | 16 | 16 | 3 | 11.2 | 50.4 |
| 29-Jul | 2 | 2 | 5 | 25 | 9 | 18 | 8 | 23 | 10 | 25 | 4 | 8 | 2 | 17 | 11 | 6 | 11 | 2 | 17 | A | 9 | 9 | 52 | 19 | 12.8 | 52.1 |
| 30-Jul | 17 | 9 | 16 | 16 | 16 | 28 | 49 | 14 | 21 | 5 | 11 | 2 | 3 | 6 | 6 | 1 | 1 | 1 | A | 3 | 5 | 5 | 3 | 4 | 10.5 | 49.1 |
| 31-Jul | 10 | 12 | 11 | 5 | 12 | 14 | 8 | 12 | 4 | 3 | 2 | 2 | 2 | 1 | 15 | 2 | 3 | A | 4 | 6 | 44 | 41 | 5 | 6 | 9.8 | 43.9 |
| | 5.4 | 7.2 | 5.7 | 7.9 | 9.4 | 14.2 | 11.7 | 8.8 | 22.1 | 5.6 | 5.6 | 7.4 | 3.8 | 6.3 | 5.9 | 4.1 | 6.8 | 4.4 | 10.8 | 7.3 | 12.3 | 15.4 | 10.4 | 6.7 | Diurnal Average | |
| | 17.9 | 52.9 | 15.5 | 49.4 | 50.4 | 39.1 | 49.1 | 39.1 | 457.6 | 24.8 | 27.3 | 58.3 | 13.3 | 54.8 | 61.2 | 20.4 | 49.8 | 19.7 | 122.1 | 66.0 | 88.0 | 117.6 | 52.1 | 21.6 | Diurnal Maximum | |

C - Calibration

A - Automated Daily Zero Span

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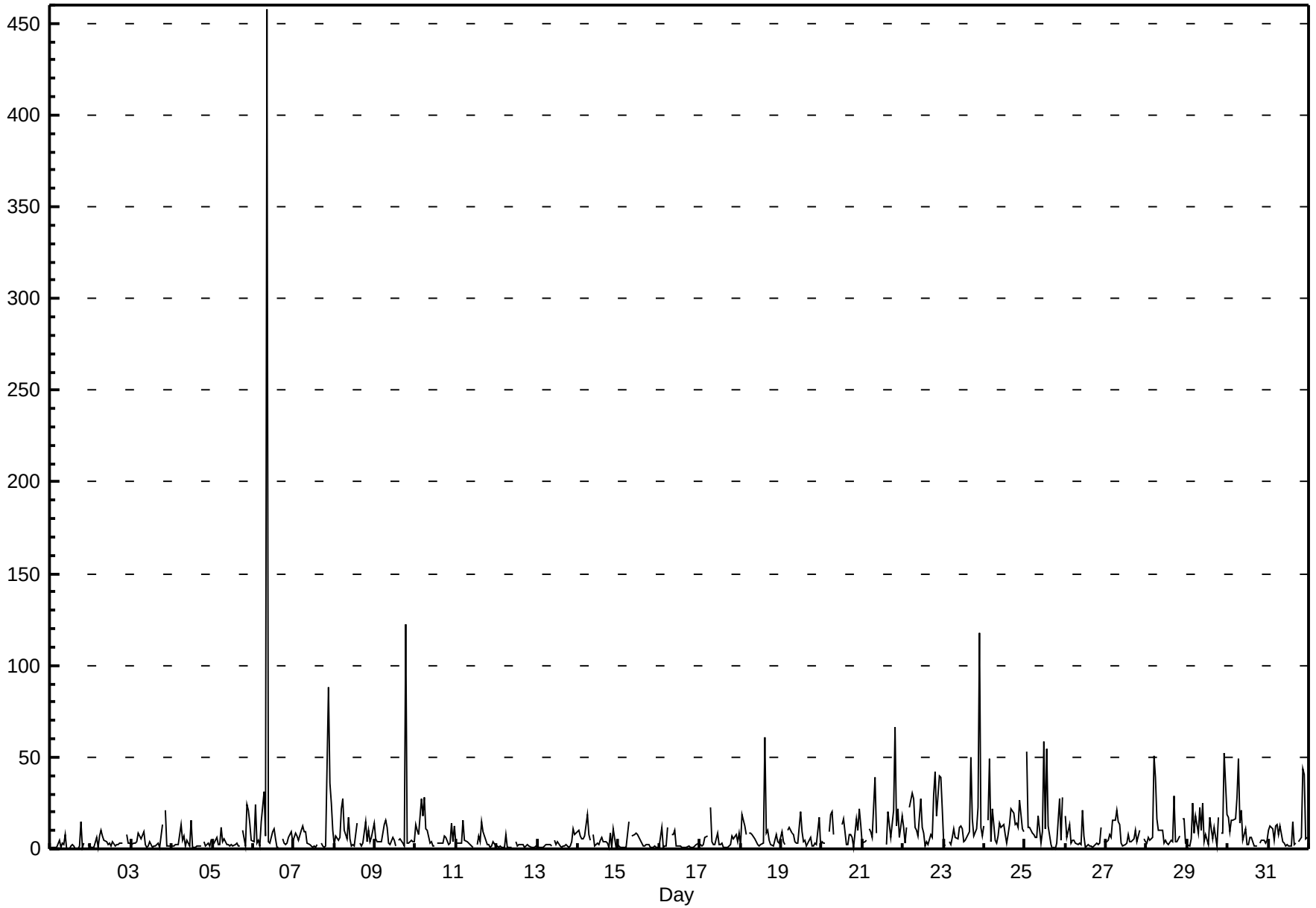
# Hourly Maximums

**Oxides of Nitrogen ($NO_X$) - ppb**

**Portable-Bonanza - July 2010**



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# Hourly Averages

## Ozone ($O_3$) - ppb

## Portable-Bonanza - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 55.2 ppb on Jul 31 17:00 Maximum Daily Average: 33.9 ppb on Jul 31

Minimum Value: 1 ppb on Jul 10 04:00 Minimum Daily Average: 15.3 ppb on Jul 13
Maximum Diurnal Average: 31.8 ppb at hour 16 Minimum Diurnal Average: 14.2 ppb at hour 6
Monthly Average: 23.68 ppb Percentiles: $P_1$ = 4.3 $P_{10}$ = 13.1 $Q_1$ = 17.3 Median = 22.7 $Q_3$ = 28.6 $P_{90}$ = 35.5 $P_{99}$ = 51.4

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 708 |
| Hours of Missing Data: | 36 |
| Hours of Calibration: | 35 |
| 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-Jul | 25 | 24 | 23 | 23 | 22 | 22 | 23 | 23 | 23 | 23 | 24 | 26 | 27 | 27 | 27 | 28 | 28 | 28 | 27 | 27 | 25 | A | 23 | 21 | 24.7 | 28.4 |
| 2-Jul | 21 | 21 | 21 | 20 | 19 | 18 | 19 | 19 | 19 | 19 | 19 | 20 | 21 | 23 | 24 | 24 | 23 | 22 | 20 | 18 | A | 16 | 13 | 17 | 19.8 | 23.8 |
| 3-Jul | 16 | 17 | 13 | 10 | 11 | 14 | 16 | 15 | 18 | 20 | 21 | 22 | 23 | 22 | 20 | 21 | 22 | 21 | 21 | A | 21 | 21 | 21 | 21 | 18.5 | 22.6 |
| 4-Jul | 21 | 25 | 23 | 25 | 22 | 20 | 18 | 18 | 19 | 19 | 20 | 18 | 19 | 18 | 18 | 20 | 20 | 20 | A | 16 | 15 | 13 | 17 | 17 | 19.2 | 24.8 |
| 5-Jul | 14 | 12 | 11 | 13 | 13 | 10 | 11 | 12 | 14 | 17 | 22 | 26 | 26 | 27 | 27 | 26 | 26 | A | 26 | 28 | 23 | 16 | 17 | 16 | 18.8 | 27.5 |
| 6-Jul | 16 | 16 | 15 | 15 | 16 | 16 | 16 | 19 | 19 | 26 | 28 | 29 | 28 | 30 | 35 | 35 | A | 34 | 32 | 30 | 30 | 24 | 17 | 17 | 23.7 | 35.5 |
| 7-Jul | 20 | 11 | 14 | 12 | 12 | 13 | 17 | 21 | 29 | 33 | 35 | 35 | 35 | 36 | 35 | A | 35 | 35 | 34 | 34 | 25 | 20 | 22 | 22 | 25.4 | 35.6 |
| 8-Jul | 24 | 26 | 23 | 17 | 10 | 8 | 17 | 22 | 30 | 33 | 36 | 37 | 36 | 36 | A | 34 | 34 | 33 | 32 | 31 | 25 | 22 | 23 | 21 | 26.4 | 36.8 |
| 9-Jul | 25 | 20 | 18 | 22 | 26 | 14 | 15 | 22 | 21 | 22 | 24 | 27 | 31 | A | 32 | 33 | 31 | 30 | 27 | 25 | 25 | 22 | 19 | 16 | 23.8 | 32.9 |
| 10-Jul | 10 | 9 | 8 | 1 | 1 | 4 | 9 | 16 | 26 | 32 | 35 | 35 | A | 33 | 35 | 36 | 36 | 37 | 35 | 35 | 34 | 30 | 32 | 33 | 24.4 | 36.6 |
| 11-Jul | 29 | 25 | 22 | 19 | 17 | 16 | 17 | 17 | 18 | 18 | 19 | A | 24 | 26 | 28 | 31 | 32 | 32 | 32 | 31 | 27 | 24 | 24 | 25 | 24.0 | 31.9 |
| 12-Jul | 29 | 30 | 26 | 24 | 24 | 23 | 24 | 25 | 27 | 26 | A | 26 | 25 | 24 | 24 | 23 | 23 | 21 | 19 | 19 | 20 | 19 | 17 | 15 | 23.1 | 29.9 |
| 13-Jul | 15 | 13 | 13 | 14 | 13 | 13 | 12 | 12 | 13 | A | 12 | 14 | 15 | 17 | 18 | 19 | 20 | 22 | 20 | 23 | 19 | 15 | 10 | 11 | 15.3 | 22.6 |
| 14-Jul | 8 | 6 | 10 | 8 | 9 | 8 | 11 | 15 | A | 21 | 23 | 24 | 25 | 26 | 28 | 27 | 26 | 25 | 24 | 24 | 24 | 23 | 23 | 22 | 19.1 | 27.6 |
| 15-Jul | 20 | 21 | 20 | 23 | 22 | 22 | 23 | A | 25 | 28 | 28 | 27 | 28 | 31 | 31 | 31 | 30 | 28 | 25 | 22 | 23 | 23 | 20 | 17 | 24.6 | 31.3 |
| 16-Jul | 16 | 16 | 14 | 16 | 17 | 16 | A | 16 | 15 | 16 | 17 | 18 | 21 | 22 | 21 | 20 | 21 | 22 | 20 | 17 | 17 | 17 | 19 | 17 | 17.8 | 21.9 |
| 17-Jul | 17 | 13 | 13 | 14 | 13 | A | 15 | 19 | 20 | 22 | 27 | 29 | 29 | 27 | 26 | 27 | 27 | 29 | 29 | 26 | 23 | 17 | 26 | 22 | 22.2 | 29.4 |
| 18-Jul | 24 | 20 | 17 | 12 | A | 12 | 14 | 18 | 18 | 21 | 24 | 26 | 27 | 30 | 31 | 32 | 27 | 28 | 31 | 31 | 23 | 20 | 18 | 19 | 22.8 | 32.1 |
| 19-Jul | 16 | 19 | 20 | A | 14 | 12 | 13 | 16 | 19 | 26 | 30 | 31 | P | 32 | 32 | 35 | 35 | 32 | 34 | 28 | 24 | 22 | 18 | 18 | 23.8 | 35.3 |
| 20-Jul | 17 | 14 | 15 | A | 17 | 14 | 16 | 19 | 24 | 29 | 35 | 38 | 38 | 39 | 41 | 44 | 43 | 43 | 43 | 41 | 34 | 24 | 25 | 28 | 29.6 | 43.6 |
| 21-Jul | 28 | 24 | 21 | A | 21 | 12 | 16 | 20 | 26 | 30 | 34 | 35 | C | C | C | 35 | 33 | 39 | 36 | 32 | 29 | 28 | 28 | 23 | 27.4 | 38.7 |
| 22-Jul | 24 | 28 | 23 | A | 16 | 21 | 25 | 28 | 31 | 33 | 29 | 32 | 31 | 33 | 32 | 36 | 36 | 31 | 30 | 27 | 25 | 21 | 19 | 14 | 27.3 | 36.3 |
| 23-Jul | 12 | 14 | A | 13 | 12 | 12 | 14 | 16 | 19 | 24 | 28 | 30 | 29 | 23 | 20 | 26 | 24 | 22 | 23 | 22 | 21 | 19 | 19 | 17 | 19.9 | 29.9 |
| 24-Jul | 17 | A | 18 | 15 | 14 | 15 | 19 | 26 | 29 | 28 | 28 | 26 | 28 | 27 | 27 | 29 | 28 | 29 | 29 | 28 | 26 | 24 | 22 | 20 | 24.0 | 29.3 |
| 25-Jul | A | 17 | 18 | 18 | 17 | 16 | 17 | 18 | 19 | 22 | 28 | 27 | 28 | 27 | 26 | 25 | 25 | 23 | 22 | 21 | 17 | 13 | 14 | A | 20.7 | 28.2 |
| 26-Jul | 10 | 9 | 8 | 8 | 7 | 14 | 16 | 20 | 23 | 23 | 22 | 21 | 23 | 25 | 24 | 24 | 26 | 27 | 23 | 22 | 20 | 16 | A | 9 | 18.3 | 27.2 |
| 27-Jul | 9 | 7 | 6 | 5 | 4 | 2 | 4 | 9 | 13 | 19 | 24 | 30 | 34 | 35 | 35 | 38 | 40 | 41 | 41 | 38 | 30 | A | 26 | 25 | 22.5 | 41.4 |
| 28-Jul | 23 | 19 | 16 | 12 | 9 | 10 | 15 | 15 | 20 | 28 | 40 | 49 | 44 | 44 | 44 | 45 | 45 | 53 | 47 | 45 | A | 37 | 31 | 31 | 31.3 | 52.6 |
| 29-Jul | 36 | 33 | 24 | 23 | 25 | 26 | 24 | 21 | 27 | 35 | 42 | 46 | 45 | 45 | 48 | 48 | 48 | 42 | 35 | A | 26 | 23 | 15 | 11 | 32.6 | 48.3 |
| 30-Jul | 15 | 16 | 12 | 4 | 7 | 6 | 9 | 17 | 25 | 30 | 37 | 42 | 44 | 39 | 43 | 46 | 46 | 47 | A | 43 | 38 | 38 | 38 | 28 | 29.3 | 46.7 |
| 31-Jul | 20 | 14 | 9 | 17 | 15 | 17 | 16 | 23 | 27 | 32 | 40 | 44 | 49 | 52 | 53 | 55 | 55 | A | 53 | 52 | 34 | 30 | 36 | 37 | 33.9 | 55.2 |
| | 19.0 | 18.0 | 16.5 | 14.8 | 14.9 | 14.2 | 16.1 | 18.5 | 21.7 | 25.2 | 27.7 | 29.7 | 29.8 | 30.2 | 30.5 | 31.8 | 31.5 | 30.8 | 30.0 | 28.7 | 24.9 | 22.0 | 21.8 | 20.4 | Diurnal Average | |
| | 35.9 | 33.4 | 26.0 | 24.5 | 26.2 | 26.0 | 24.7 | 28.2 | 31.1 | 35.3 | 42.2 | 49.3 | 49.3 | 51.7 | 52.9 | 54.6 | 55.2 | 52.6 | 52.9 | 52.2 | 38.2 | 38.1 | 38.0 | 37.4 | Diurnal Maximum | |

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

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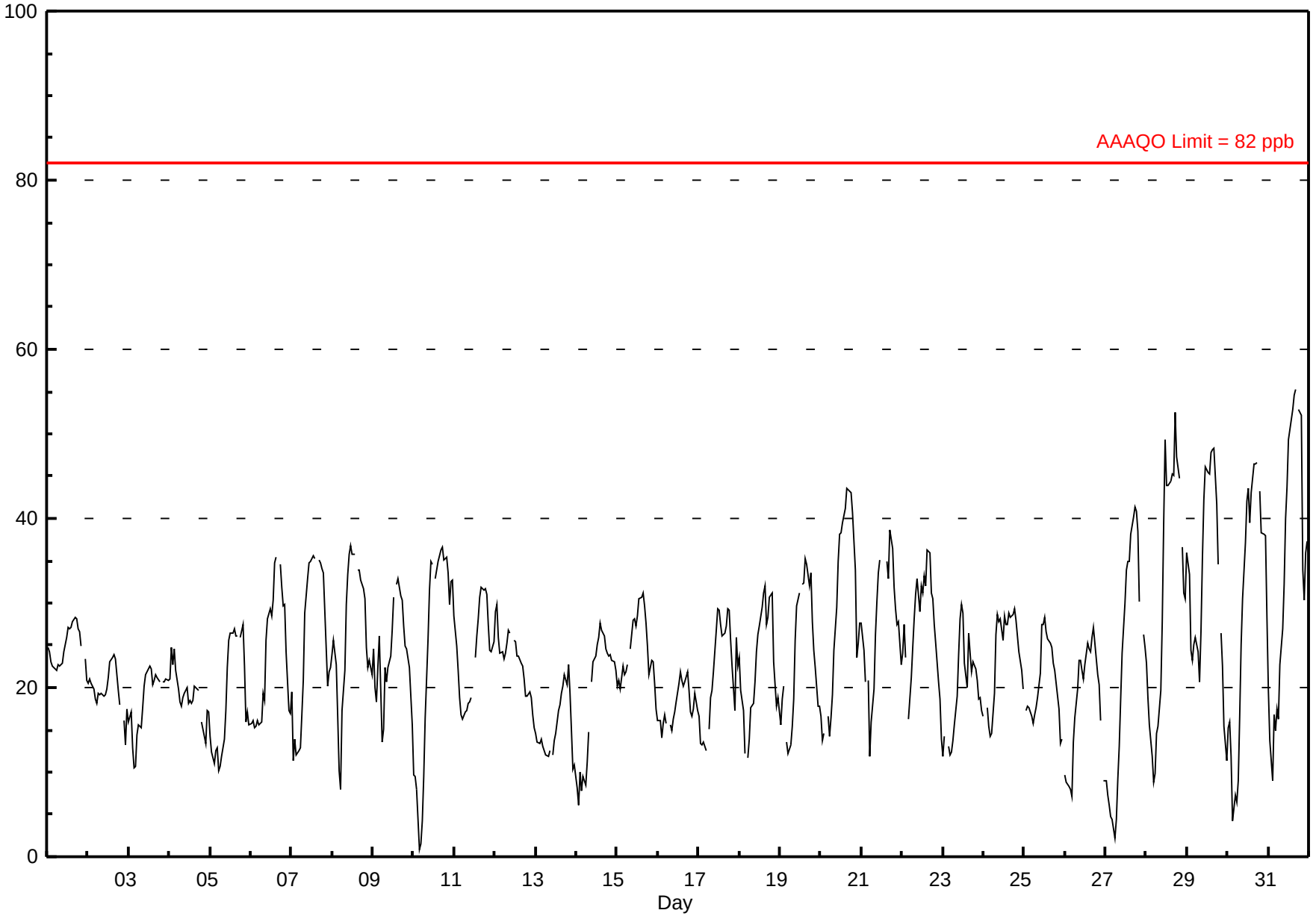
# Hourly Averages

**Ozone ($O_3$) - ppb**

**Portable-Bonanza - July 2010**



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# Hourly Maximums

## Ozone ($O_3$) - ppb

## Portable-Bonanza - July 2010

Maximum Value: 58.2 ppb on Jul 28 17:00

Maximum Daily Average: 38.4 ppb on Jul 31

Minimum Value: 4 ppb on Jul 27 06:00

Minimum Daily Average: 17.6 ppb on Jul 13

Maximum Diurnal Average: 34.5 ppb at hour 17

Minimum Diurnal Average: 18.0 ppb at hour 6

Monthly Average: 26.77 ppb

Percentiles: $P_1$ = 9.9 $P_{10}$ = 16.0 $Q_1$ = 20.1 Median = 25.9 $Q_3$ = 31.7 $P_{90}$ = 38.7 $P_{99}$ = 54.6

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 708 |
| Hours of Missing Data: | 36 |
| Hours of Calibration: | 35 |
| 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-Jul | 27 | 26 | 25 | 25 | 24 | 24 | 24 | 24 | 24 | 25 | 26 | 28 | 29 | 28 | 29 | 30 | 30 | 30 | 29 | 29 | 28 | A | 26 | 23 | 26.6 | 30.5 |
| 2-Jul | 22 | 23 | 22 | 22 | 21 | 20 | 21 | 21 | 21 | 21 | 21 | 21 | 23 | 24 | 26 | 28 | 26 | 25 | 21 | 20 | A | 18 | 16 | 22 | 22.0 | 28.2 |
| 3-Jul | 19 | 22 | 15 | 12 | 15 | 19 | 19 | 18 | 19 | 22 | 23 | 23 | 25 | 24 | 22 | 23 | 23 | 23 | 22 | A | 23 | 22 | 22 | 23 | 20.9 | 24.5 |
| 4-Jul | 26 | 27 | 25 | 27 | 26 | 21 | 20 | 19 | 21 | 21 | 21 | 21 | 20 | 21 | 20 | 22 | 21 | 22 | A | 18 | 17 | 15 | 20 | 20 | 21.4 | 26.7 |
| 5-Jul | 16 | 14 | 12 | 14 | 15 | 13 | 13 | 14 | 16 | 21 | 25 | 28 | 28 | 29 | 29 | 28 | 28 | A | 28 | 29 | 27 | 20 | 20 | 18 | 21.1 | 29.3 |
| 6-Jul | 18 | 18 | 17 | 17 | 18 | 17 | 18 | 22 | 25 | 28 | 31 | 31 | 30 | 36 | 38 | 38 | A | 37 | 34 | 33 | 33 | 30 | 23 | 21 | 26.6 | 37.8 |
| 7-Jul | 23 | 20 | 18 | 16 | 15 | 17 | 19 | 27 | 32 | 36 | 37 | 37 | 37 | 37 | 37 | A | 37 | 37 | 36 | 35 | 35 | 27 | 25 | 26 | 29.0 | 37.4 |
| 8-Jul | 27 | 29 | 26 | 21 | 17 | 17 | 19 | 27 | 34 | 35 | 38 | 39 | 38 | 39 | A | 36 | 36 | 35 | 33 | 34 | 31 | 27 | 28 | 28 | 30.1 | 38.7 |
| 9-Jul | 27 | 27 | 21 | 26 | 28 | 27 | 21 | 26 | 27 | 24 | 26 | 31 | 32 | A | 34 | 36 | 35 | 32 | 31 | 31 | 28 | 26 | 22 | 19 | 27.8 | 35.6 |
| 10-Jul | 18 | 18 | 12 | 4 | 6 | 10 | 12 | 25 | 32 | 34 | 37 | 37 | A | 35 | 37 | 38 | 39 | 39 | 39 | 37 | 36 | 33 | 35 | 35 | 28.2 | 39.0 |
| 11-Jul | 32 | 27 | 25 | 21 | 18 | 22 | 19 | 19 | 20 | 20 | 21 | A | 25 | 29 | 32 | 34 | 36 | 33 | 34 | 33 | 31 | 28 | 28 | 29 | 26.7 | 36.0 |
| 12-Jul | 31 | 35 | 29 | 27 | 26 | 25 | 26 | 27 | 29 | 29 | A | 28 | 28 | 25 | 26 | 24 | 24 | 23 | 21 | 21 | 21 | 21 | 19 | 17 | 25.3 | 34.7 |
| 13-Jul | 16 | 15 | 15 | 15 | 15 | 15 | 14 | 14 | 14 | A | 14 | 15 | 17 | 19 | 20 | 21 | 22 | 25 | 22 | 24 | 23 | 19 | 17 | 17 | 17.6 | 24.6 |
| 14-Jul | 15 | 12 | 12 | 11 | 11 | 10 | 13 | 18 | A | 23 | 25 | 25 | 27 | 29 | 31 | 29 | 30 | 27 | 26 | 26 | 25 | 24 | 24 | 24 | 21.6 | 30.8 |
| 15-Jul | 23 | 23 | 22 | 25 | 24 | 24 | 25 | A | 26 | 31 | 30 | 29 | 31 | 33 | 33 | 33 | 31 | 30 | 28 | 24 | 26 | 25 | 23 | 20 | 26.9 | 33.4 |
| 16-Jul | 17 | 18 | 16 | 18 | 19 | 18 | A | 17 | 16 | 18 | 19 | 20 | 22 | 23 | 22 | 22 | 22 | 24 | 22 | 19 | 19 | 19 | 22 | 20 | 19.7 | 23.7 |
| 17-Jul | 19 | 16 | 15 | 16 | 17 | A | 19 | 21 | 21 | 25 | 29 | 31 | 31 | 30 | 29 | 28 | 35 | 33 | 31 | 31 | 26 | 26 | 36 | 32 | 25.9 | 36.0 |
| 18-Jul | 25 | 25 | 22 | 16 | A | 15 | 19 | 19 | 20 | 25 | 26 | 28 | 31 | 31 | 33 | 35 | 30 | 30 | 33 | 33 | 30 | 24 | 22 | 21 | 25.9 | 34.6 |
| 19-Jul | 20 | 22 | 22 | A | 16 | 14 | 15 | 18 | 22 | 30 | 31 | 33 | P | 34 | 35 | 37 | 37 | 34 | 36 | 33 | 26 | 26 | 23 | 20 | 26.6 | 37.0 |
| 20-Jul | 18 | 19 | 16 | A | 19 | 16 | 19 | 23 | 27 | 33 | 39 | 40 | 40 | 41 | 44 | 46 | 45 | 46 | 45 | 43 | 40 | 32 | 31 | 30 | 32.8 | 46.2 |
| 21-Jul | 30 | 27 | 25 | A | 24 | 15 | 18 | 23 | 29 | 33 | 36 | 37 | C | C | C | 38 | 38 | 41 | 40 | 36 | 32 | 30 | 30 | 29 | 30.6 | 40.5 |
| 22-Jul | 29 | 30 | 30 | A | 23 | 30 | 31 | 34 | 35 | 34 | 33 | 35 | 35 | 37 | 35 | 39 | 39 | 34 | 33 | 32 | 28 | 26 | 23 | 18 | 31.4 | 39.3 |
| 23-Jul | 14 | 15 | A | 14 | 14 | 14 | 16 | 18 | 21 | 27 | 30 | 33 | 32 | 27 | 22 | 29 | 28 | 24 | 24 | 25 | 23 | 21 | 21 | 20 | 22.3 | 32.7 |
| 24-Jul | 19 | A | 21 | 19 | 18 | 19 | 26 | 30 | 30 | 31 | 31 | 29 | 31 | 29 | 30 | 30 | 30 | 32 | 32 | 30 | 29 | 28 | 25 | 22 | 26.9 | 31.8 |
| 25-Jul | A | 20 | 20 | 19 | 19 | 17 | 19 | 19 | 21 | 25 | 31 | 31 | 30 | 29 | 27 | 27 | 26 | 25 | 23 | 22 | 22 | 18 | 18 | A | 23.1 | 30.7 |
| 26-Jul | 13 | 13 | 11 | 10 | 13 | 17 | 19 | 23 | 25 | 25 | 25 | 23 | 27 | 27 | 26 | 26 | 28 | 29 | 28 | 23 | 23 | 19 | A | 13 | 21.2 | 29.1 |
| 27-Jul | 11 | 11 | 10 | 9 | 8 | 4 | 7 | 13 | 16 | 23 | 27 | 33 | 37 | 37 | 37 | 41 | 42 | 44 | 44 | 42 | 37 | A | 28 | 26 | 25.6 | 44.5 |
| 28-Jul | 25 | 22 | 20 | 16 | 13 | 15 | 20 | 17 | 26 | 34 | 47 | 54 | 47 | 46 | 47 | 48 | 58 | 56 | 52 | 47 | A | 39 | 37 | 37 | 35.7 | 58.2 |
| 29-Jul | 39 | 36 | 35 | 32 | 30 | 30 | 31 | 25 | 31 | 40 | 45 | 49 | 49 | 48 | 51 | 50 | 51 | 49 | 40 | A | 32 | 30 | 24 | 26 | 37.9 | 50.6 |
| 30-Jul | 24 | 21 | 20 | 14 | 17 | 13 | 13 | 22 | 29 | 35 | 43 | 45 | 46 | 45 | 47 | 49 | 48 | 48 | A | 46 | 41 | 42 | 42 | 34 | 34.1 | 49.0 |
| 31-Jul | 24 | 22 | 15 | 21 | 20 | 21 | 20 | 26 | 29 | 37 | 44 | 47 | 52 | 54 | 55 | 57 | 57 | A | 56 | 55 | 53 | 39 | 39 | 39 | 38.4 | 57.0 |
| | 22.3 | 21.8 | 19.8 | 18.1 | 18.2 | 18.0 | 19.2 | 21.7 | 24.6 | 28.2 | 30.4 | 32.0 | 32.1 | 32.7 | 32.9 | 34.1 | 34.5 | 33.3 | 32.5 | 31.5 | 29.2 | 26.0 | 25.6 | 24.3 | Diurnal Average | |
| | 38.9 | 35.6 | 34.5 | 32.3 | 30.1 | 30.5 | 31.0 | 33.8 | 34.9 | 39.7 | 46.7 | 53.8 | 51.8 | 53.8 | 55.0 | 56.5 | 58.2 | 56.1 | 56.2 | 54.7 | 53.3 | 42.1 | 42.1 | 39.1 | Diurnal Maximum | |

C - Calibration P - Power Failure A - Automated Daily Zero Span

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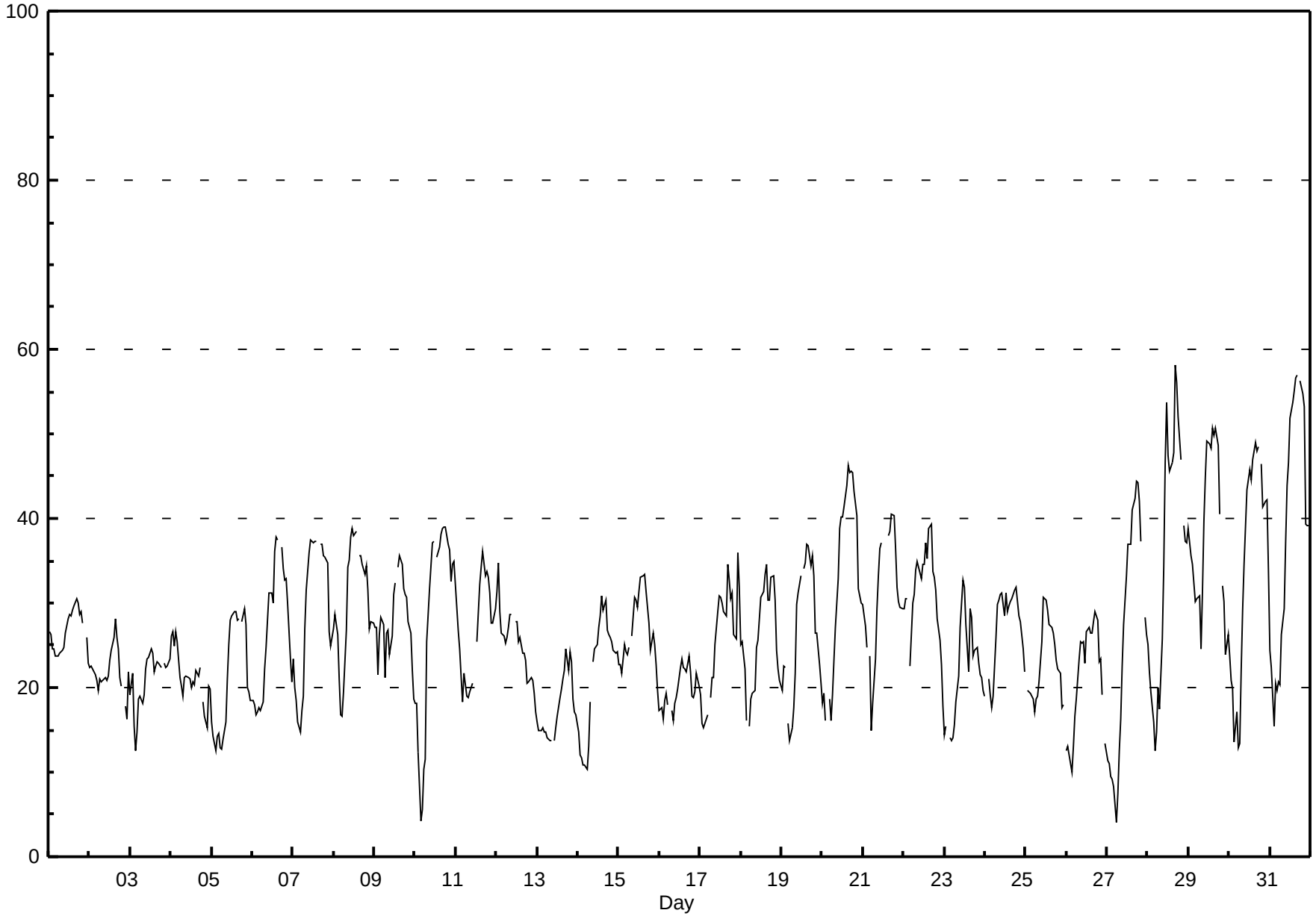
# Hourly Maximums

**Ozone ($O_3$) - ppb**

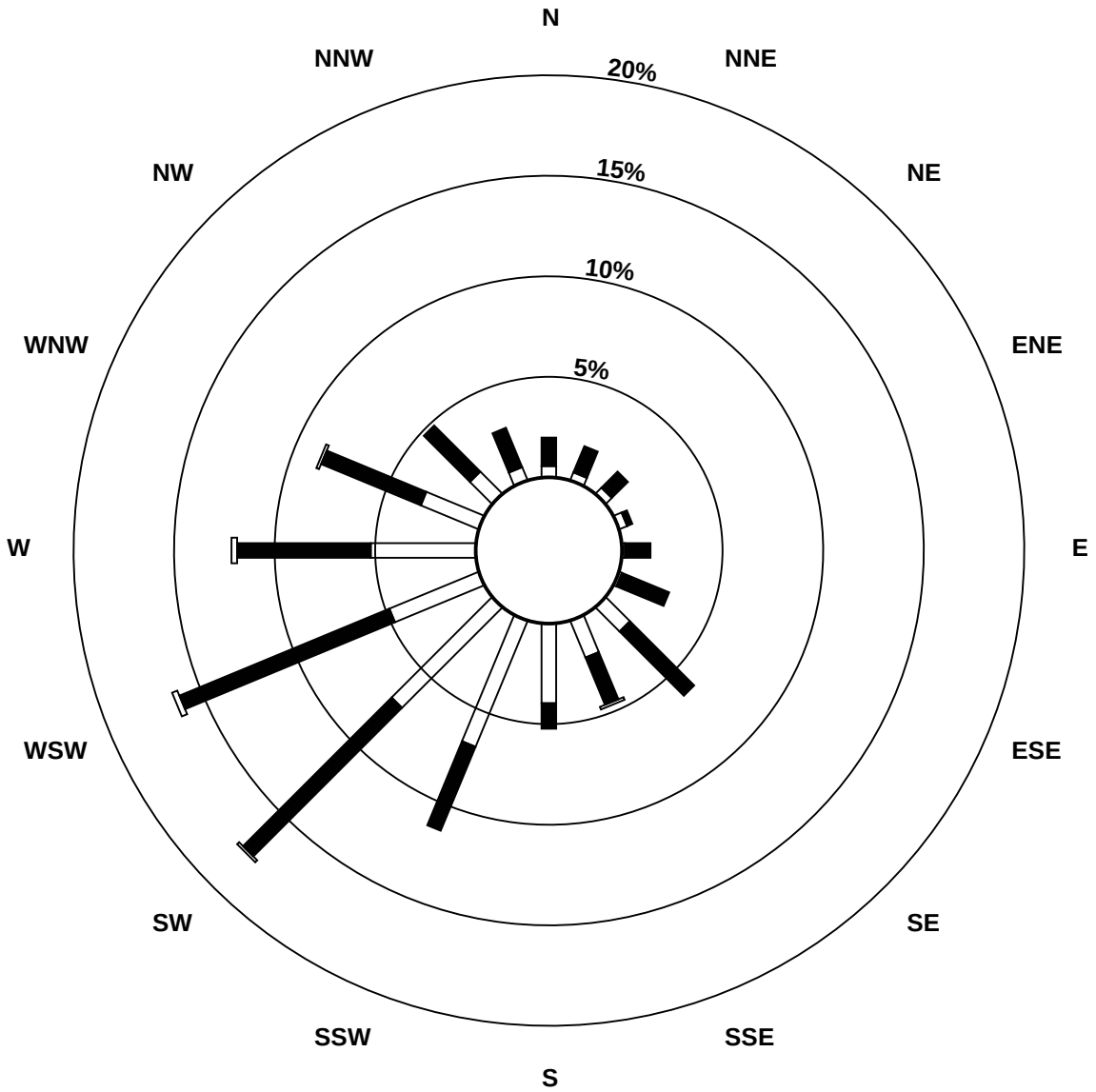
**Portable-Bonanza - July 2010**



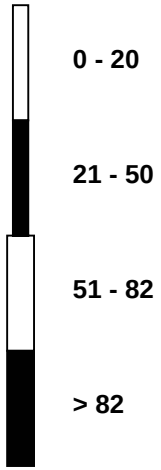
# Pollutant Rose

**Ozone ($O_3$) - ppb**

**Portable-Bonanza - July 2010**




**Pollutant Classes (ppb)**



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# Eight Hour Running Averages

## Ozone ($O_3$) - ppb

## Portable-Bonanza - July 2010

Maximum Value: 52.7 ppb on Jul 31 20:00

Minimum Value: 5.9 ppb on Jul 27 07:00

Percentiles: $P_1$ = 8.1 $P_{10}$ = 14.7 $Q_1$ = 18.2 Median = 22.6 $Q_3$ = 27.6 $P_{90}$ = 34.3 $P_{99}$ = 45.6

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 738 |
| 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-Jul | 25 | 25 | 24 | 24 | 24 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 24 | 24 | 25 | 26 | 26 | 27 | 27 | 27 | 27 | 27 | 27 | 26 | 27.4 |
| 2-Jul | 25 | 23 | 23 | 22 | 21 | 20 | 20 | 20 | 19 | 19 | 19 | 19 | 19 | 20 | 21 | 21 | 22 | 22 | 22 | 22 | 22 | 21 | 19 | 18 | 24.5 |
| 3-Jul | 17 | 17 | 16 | 15 | 14 | 14 | 14 | 14 | 14 | 15 | 16 | 17 | 19 | 20 | 20 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21.5 |
| 4-Jul | 21 | 21 | 22 | 22 | 22 | 22 | 22 | 21 | 21 | 20 | 20 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 18 | 18 | 17 | 17 | 22.2 |
| 5-Jul | 16 | 15 | 15 | 14 | 14 | 13 | 13 | 12 | 12 | 13 | 14 | 16 | 17 | 19 | 21 | 23 | 25 | 26 | 26 | 26 | 26 | 24 | 23 | 22 | 26.5 |
| 6-Jul | 20 | 20 | 18 | 17 | 16 | 16 | 16 | 16 | 17 | 18 | 19 | 21 | 23 | 24 | 27 | 29 | 30 | 32 | 32 | 32 | 32 | 31 | 29 | 26 | 32.3 |
| 7-Jul | 25 | 23 | 20 | 18 | 16 | 15 | 14 | 15 | 16 | 19 | 21 | 24 | 27 | 30 | 32 | 34 | 35 | 35 | 35 | 35 | 33 | 31 | 29 | 28 | 35.1 |
| 8-Jul | 27 | 26 | 24 | 22 | 20 | 19 | 18 | 18 | 19 | 20 | 22 | 24 | 27 | 31 | 33 | 34 | 35 | 35 | 34 | 33 | 32 | 30 | 29 | 28 | 35.0 |
| 9-Jul | 26 | 25 | 23 | 22 | 22 | 21 | 20 | 20 | 20 | 20 | 21 | 21 | 22 | 23 | 26 | 27 | 28 | 30 | 30 | 30 | 29 | 28 | 27 | 24 | 30.2 |
| 10-Jul | 22 | 19 | 17 | 14 | 11 | 9 | 7 | 7 | 9 | 12 | 16 | 20 | 22 | 27 | 30 | 33 | 34 | 35 | 35 | 35 | 35 | 35 | 34 | 34 | 35.2 |
| 11-Jul | 33 | 32 | 30 | 28 | 26 | 24 | 22 | 20 | 19 | 18 | 18 | 18 | 18 | 20 | 21 | 23 | 25 | 27 | 29 | 29 | 30 | 30 | 29 | 28 | 33.0 |
| 12-Jul | 28 | 28 | 27 | 26 | 26 | 26 | 26 | 26 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 24 | 24 | 23 | 22 | 21 | 21 | 20 | 19 | 28.1 |
| 13-Jul | 18 | 17 | 16 | 16 | 15 | 14 | 14 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 20 | 19 | 18 | 19.8 |
| 14-Jul | 16 | 14 | 13 | 11 | 10 | 9 | 9 | 10 | 10 | 12 | 14 | 16 | 18 | 21 | 23 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 24 | 24 | 25.5 |
| 15-Jul | 23 | 23 | 22 | 22 | 22 | 21 | 21 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 29 | 29 | 29 | 28 | 27 | 26 | 25 | 23 | 29.2 |
| 16-Jul | 22 | 20 | 19 | 18 | 17 | 17 | 16 | 16 | 16 | 16 | 16 | 16 | 17 | 18 | 18 | 19 | 19 | 20 | 21 | 20 | 20 | 19 | 19 | 19 | 21.8 |
| 17-Jul | 18 | 17 | 16 | 16 | 15 | 15 | 15 | 15 | 15 | 16 | 18 | 21 | 23 | 24 | 25 | 26 | 27 | 28 | 28 | 28 | 27 | 25 | 25 | 25 | 28.1 |
| 18-Jul | 24 | 23 | 22 | 20 | 20 | 19 | 17 | 17 | 16 | 16 | 17 | 19 | 20 | 22 | 24 | 26 | 27 | 28 | 29 | 30 | 29 | 28 | 26 | 25 | 29.7 |
| 19-Jul | 23 | 22 | 21 | 19 | 18 | 17 | 16 | 16 | 16 | 17 | 18 | 20 | 21 | 24 | 26 | 29 | 32 | 33 | 33 | 33 | 32 | 30 | 29 | 26 | 33.1 |
| 20-Jul | 24 | 22 | 19 | 18 | 17 | 16 | 16 | 16 | 17 | 19 | 22 | 24 | 27 | 30 | 33 | 36 | 39 | 40 | 41 | 42 | 41 | 39 | 37 | 35 | 41.6 |
| 21-Jul | 33 | 31 | 28 | 26 | 24 | 23 | 21 | 20 | 20 | 21 | 23 | 24 | 25 | 27 | N | N | N | N | N | N | 34 | 33 | 32 | 31 | 34.0 |
| 22-Jul | 30 | 28 | 27 | 26 | 24 | 23 | 23 | 24 | 25 | 25 | 26 | 27 | 29 | 30 | 31 | 32 | 33 | 33 | 33 | 32 | 31 | 30 | 28 | 25 | 32.9 |
| 23-Jul | 22 | 20 | 19 | 17 | 15 | 14 | 13 | 13 | 14 | 16 | 17 | 19 | 21 | 23 | 24 | 25 | 25 | 25 | 25 | 24 | 23 | 22 | 22 | 21 | 25.5 |
| 24-Jul | 20 | 20 | 19 | 18 | 17 | 16 | 16 | 18 | 19 | 20 | 22 | 23 | 25 | 26 | 27 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 27 | 26 | 28.3 |
| 25-Jul | 25 | 24 | 22 | 21 | 19 | 18 | 17 | 17 | 17 | 18 | 19 | 20 | 22 | 23 | 24 | 25 | 26 | 26 | 25 | 25 | 23 | 21 | 20 | 19 | 26.0 |
| 26-Jul | 17 | 15 | 13 | 11 | 10 | 10 | 10 | 11 | 13 | 15 | 17 | 18 | 20 | 22 | 23 | 23 | 24 | 24 | 24 | 24 | 24 | 23 | 23 | 20 | 24.4 |
| 27-Jul | 18 | 15 | 13 | 10 | 8 | 6 | 6 | 6 | 6 | 8 | 10 | 13 | 17 | 21 | 25 | 28 | 32 | 35 | 37 | 38 | 37 | 38 | 36 | 35 | 37.9 |
| 28-Jul | 32 | 29 | 25 | 21 | 18 | 17 | 16 | 15 | 14 | 15 | 18 | 23 | 27 | 32 | 35 | 39 | 42 | 45 | 46 | 46 | 46 | 45 | 43 | 41 | 46.5 |
| 29-Jul | 40 | 37 | 34 | 31 | 30 | 29 | 28 | 27 | 25 | 26 | 28 | 31 | 33 | 36 | 39 | 42 | 45 | 46 | 45 | 44 | 42 | 38 | 34 | 29 | 45.6 |
| 30-Jul | 24 | 20 | 17 | 15 | 13 | 11 | 10 | 11 | 12 | 14 | 17 | 22 | 26 | 30 | 35 | 38 | 41 | 43 | 44 | 44 | 43 | 43 | 42 | 40 | 44.1 |
| 31-Jul | 36 | 31 | 29 | 25 | 22 | 20 | 17 | 16 | 17 | 20 | 23 | 27 | 31 | 35 | 40 | 44 | 47 | 50 | 51 | 53 | 50 | 47 | 45 | 43 | 52.7 |
| | 39.8 | 37.1 | 33.9 | 30.8 | 30.1 | 28.7 | 27.9 | 26.6 | 25.5 | 25.7 | 27.9 | 30.8 | 33.3 | 35.7 | 39.9 | 43.9 | 47.5 | 49.6 | 51.5 | 52.7 | 50.5 | 47.4 | 45.0 | 42.5 | |
| | Diurnal Maximums | | | | | | | | | | | | | | | | | | | | | | | | |

N - Not Valid

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# Hourly Averages

## External Temperature (ET) - °C

## Portable-Bonanza - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 31.1 °C on Jul 8 20:00 Maximum Daily Average: 22.8 °C on Jul 8

Minimum Value: 6 °C on Jul 27 06:00 Minimum Daily Average: 13.1 °C on Jul 12
Maximum Diurnal Average: 23.5 °C at hour 16 Minimum Diurnal Average: 12.2 °C at hour 6
Monthly Average: 18.07 °C Percentiles: $P_1$ = 8.6 $P_{10}$ = 11.6 $Q_1$ = 13.7 Median = 17.6 $Q_3$ = 21.9 $P_{90}$ = 25.9 $P_{99}$ = 29.3

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 744 |
| Hours of Missing Data: | 0 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1-Jul | 9 | 8 | 8 | 8 | 8 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 17 | 18 | 17 | 18 | 18 | 18 | 17 | 16 | 16 | 14 | 14 | 12 | 13.4 | 18.1 |
| 2-Jul | 11 | 11 | 11 | 10 | 10 | 10 | 11 | 12 | 12 | 13 | 14 | 15 | 17 | 17 | 19 | 19 | 20 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 14.6 | 19.8 |
| 3-Jul | 13 | 13 | 13 | 12 | 12 | 12 | 13 | 13 | 15 | 17 | 18 | 19 | 20 | 19 | 19 | 21 | 20 | 20 | 20 | 19 | 19 | 17 | 16 | 16 | 16.5 | 20.6 |
| 4-Jul | 15 | 15 | 14 | 13 | 13 | 13 | 13 | 14 | 16 | 16 | 16 | 16 | 16 | 17 | 16 | 16 | 15 | 14 | 13 | 12 | 12 | 12 | 11 | 10 | 14.1 | 17.3 |
| 5-Jul | 10 | 10 | 10 | 11 | 11 | 11 | 12 | 13 | 15 | 17 | 19 | 19 | 21 | 22 | 21 | 22 | 22 | 23 | 23 | 22 | 21 | 18 | 17 | 15 | 16.9 | 22.8 |
| 6-Jul | 14 | 14 | 13 | 12 | 12 | 12 | 13 | 16 | 18 | 20 | 21 | 23 | 23 | 24 | 25 | 25 | 25 | 26 | 25 | 26 | 26 | 22 | 17 | 16 | 19.6 | 26.1 |
| 7-Jul | 16 | 14 | 14 | 13 | 13 | 14 | 16 | 17 | 20 | 22 | 24 | 25 | 26 | 27 | 27 | 28 | 28 | 28 | 27 | 28 | 25 | 21 | 19 | 19 | 21.2 | 28.0 |
| 8-Jul | 20 | 18 | 16 | 13 | 12 | 12 | 15 | 17 | 20 | 23 | 25 | 27 | 28 | 29 | 30 | 30 | 30 | 31 | 31 | 31 | 26 | 22 | 21 | 20 | 22.8 | 31.1 |
| 9-Jul | 20 | 19 | 18 | 19 | 19 | 16 | 17 | 20 | 22 | 23 | 24 | 25 | 25 | 25 | 26 | 26 | 26 | 25 | 24 | 21 | 19 | 16 | 16 | 15 | 21.2 | 26.5 |
| 10-Jul | 15 | 15 | 14 | 13 | 13 | 14 | 15 | 17 | 20 | 22 | 23 | 26 | 26 | 27 | 26 | 28 | 29 | 27 | 27 | 26 | 24 | 21 | 19 | 18 | 21.1 | 28.7 |
| 11-Jul | 18 | 18 | 18 | 17 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 26 | 27 | 26 | 27 | 27 | 27 | 26 | 24 | 24 | 23 | 20 | 19 | 18 | 22.0 | 27.2 |
| 12-Jul | 17 | 17 | 15 | 14 | 13 | 14 | 12 | 11 | 11 | 12 | 13 | 14 | 14 | 12 | 13 | 15 | 14 | 14 | 13 | 12 | 11 | 11 | 11 | 11 | 13.1 | 17.3 |
| 13-Jul | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 12 | 12 | 13 | 14 | 16 | 16 | 17 | 18 | 19 | 20 | 20 | 20 | 21 | 18 | 17 | 14 | 13 | 15.0 | 20.9 |
| 14-Jul | 14 | 14 | 14 | 14 | 14 | 14 | 16 | 18 | 20 | 22 | 24 | 25 | 25 | 26 | 27 | 27 | 26 | 26 | 25 | 23 | 22 | 21 | 19 | 18 | 20.6 | 26.8 |
| 15-Jul | 17 | 16 | 14 | 14 | 13 | 13 | 15 | 17 | 18 | 19 | 19 | 20 | 21 | 21 | 20 | 21 | 21 | 21 | 19 | 18 | 15 | 13 | 12 | 10 | 17.0 | 21.4 |
| 16-Jul | 10 | 10 | 9 | 10 | 11 | 11 | 11 | 12 | 13 | 14 | 15 | 16 | 18 | 19 | 19 | 19 | 20 | 20 | 19 | 16 | 15 | 14 | 14 | 13 | 14.5 | 19.8 |
| 17-Jul | 13 | 13 | 12 | 10 | 10 | 9 | 11 | 14 | 16 | 18 | 20 | 21 | 22 | 23 | 24 | 24 | 23 | 24 | 22 | 21 | 18 | 16 | 16 | 14 | 17.3 | 24.2 |
| 18-Jul | 13 | 13 | 12 | 12 | 12 | 12 | 12 | 13 | 14 | 16 | 18 | 19 | 19 | 20 | 21 | 21 | 19 | 19 | 21 | 20 | 18 | 16 | 14 | 14 | 16.2 | 21.3 |
| 19-Jul | 13 | 12 | 13 | 12 | 12 | 12 | 13 | 14 | 16 | 18 | 21 | 22 | 23 | 24 | 25 | 25 | 26 | 25 | 24 | 22 | 21 | 19 | 17 | 15 | 18.5 | 25.9 |
| 20-Jul | 14 | 12 | 12 | 11 | 11 | 10 | 12 | 14 | 17 | 19 | 22 | 24 | 25 | 27 | 26 | 28 | 27 | 28 | 27 | 27 | 26 | 19 | 18 | 18 | 19.7 | 28.2 |
| 21-Jul | 17 | 16 | 14 | 16 | 14 | 12 | 13 | 16 | 18 | 21 | 25 | 27 | 28 | 28 | 26 | 23 | 22 | 25 | 26 | 24 | 22 | 21 | 20 | 17 | 20.4 | 28.1 |
| 22-Jul | 16 | 16 | 16 | 15 | 15 | 14 | 15 | 16 | 16 | 16 | 15 | 15 | 15 | 16 | 18 | 21 | 21 | 21 | 21 | 20 | 19 | 18 | 17 | 15 | 16.9 | 20.8 |
| 23-Jul | 14 | 14 | 14 | 13 | 13 | 14 | 15 | 17 | 18 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 26 | 26 | 26 | 25 | 24 | 21 | 22 | 22 | 20.2 | 25.9 |
| 24-Jul | 20 | 19 | 17 | 15 | 13 | 13 | 15 | 17 | 17 | 18 | 18 | 19 | 19 | 20 | 21 | 21 | 22 | 21 | 21 | 20 | 18 | 17 | 15 | 14 | 17.9 | 21.6 |
| 25-Jul | 13 | 12 | 11 | 11 | 10 | 10 | 12 | 14 | 16 | 18 | 19 | 21 | 21 | 22 | 23 | 23 | 24 | 24 | 23 | 22 | 20 | 18 | 16 | 15 | 17.5 | 23.8 |
| 26-Jul | 14 | 13 | 13 | 13 | 12 | 14 | 14 | 15 | 16 | 15 | 16 | 16 | 18 | 19 | 19 | 19 | 20 | 20 | 20 | 20 | 18 | 15 | 14 | 12 | 16.0 | 20.4 |
| 27-Jul | 11 | 10 | 9 | 9 | 8 | 6 | 9 | 11 | 14 | 17 | 20 | 23 | 24 | 25 | 27 | 28 | 27 | 27 | 27 | 26 | 23 | 19 | 19 | 18 | 18.2 | 27.7 |
| 28-Jul | 17 | 16 | 14 | 11 | 10 | 11 | 13 | 15 | 18 | 20 | 24 | 26 | 29 | 29 | 31 | 29 | 26 | 27 | 25 | 23 | 22 | 20 | 18 | 17 | 20.4 | 31.1 |
| 29-Jul | 17 | 17 | 14 | 13 | 14 | 14 | 14 | 15 | 18 | 22 | 24 | 26 | 27 | 28 | 29 | 29 | 29 | 24 | 19 | 19 | 18 | 16 | 14 | 13 | 19.8 | 29.0 |
| 30-Jul | 13 | 12 | 11 | 9 | 10 | 9 | 10 | 13 | 16 | 18 | 20 | 22 | 23 | 22 | 22 | 23 | 24 | 25 | 24 | 23 | 21 | 19 | 17 | 16 | 17.7 | 25.0 |
| 31-Jul | 14 | 12 | 11 | 12 | 12 | 12 | 12 | 15 | 16 | 18 | 21 | 23 | 25 | 25 | 27 | 27 | 27 | 28 | 27 | 26 | 23 | 18 | 18 | 19 | 19.5 | 27.6 |
| | 14.5 | 13.9 | 13.1 | 12.5 | 12.2 | 12.2 | 13.3 | 14.8 | 16.6 | 18.2 | 19.7 | 21.1 | 22.1 | 22.6 | 23.1 | 23.5 | 23.4 | 23.3 | 22.6 | 21.7 | 20.0 | 17.6 | 16.4 | 15.4 | Diurnal Average | |
| | 20.4 | 19.1 | 18.4 | 19.2 | 19.1 | 17.8 | 19.4 | 20.4 | 22.3 | 23.7 | 25.3 | 27.4 | 29.1 | 29.0 | 31.1 | 30.0 | 30.3 | 30.7 | 30.7 | 31.1 | 26.1 | 22.1 | 21.6 | 21.7 | Diurnal Maximum | |

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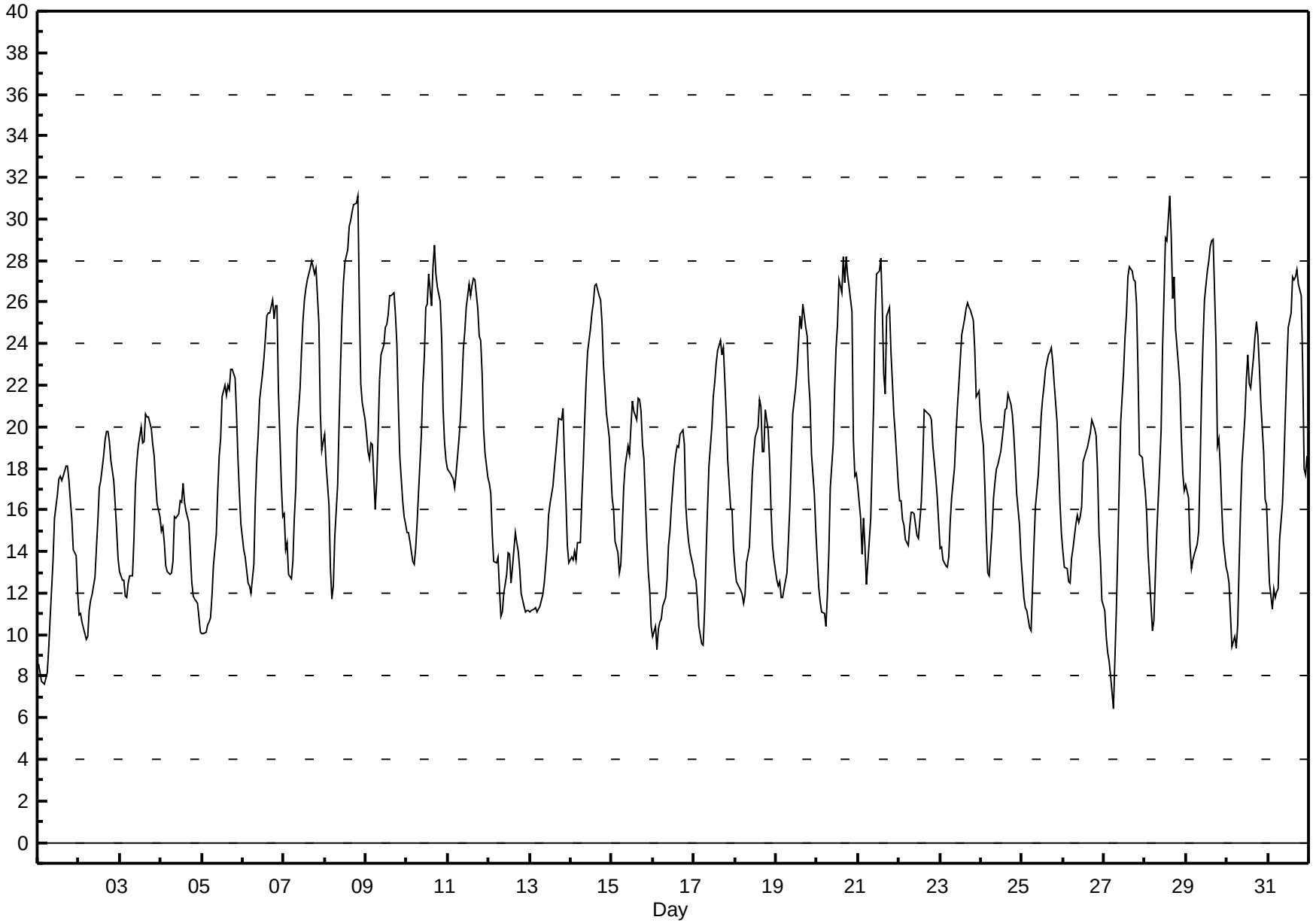
## Hourly Averages

**External Temperature (ET) - $^{o}$C**

**Portable-Bonanza - July 2010**



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# Hourly Averages

## Wind Speed (km/h)
## Wind Direction (deg)
## Portable-Bonanza - July 2010

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1 Spd | 23 | 25 | 23 | 23 | 23 | 26 | 29 | 33 | 32 | 30 | 39 | 40 | 41 | 40 | 40 | 41 | 38 | 38 | 37 | 35 | 31 | 24 | 21 | 17 | 30.3 | 41.4 |
| Dir | 202 | 200 | 204 | 207 | 206 | 203 | 205 | 219 | 219 | 216 | 230 | 234 | 236 | 229 | 219 | 224 | 231 | 239 | 238 | 241 | 233 | 226 | 223 | 224 | 223 | 236 |
| 2 Spd | 17 | 18 | 18 | 18 | 16 | 16 | 22 | 25 | 25 | 25 | 25 | 27 | 29 | 27 | 28 | 27 | 27 | 29 | 29 | 27 | 25 | 18 | 11 | 10 | 22.1 | 28.8 |
| Dir | 222 | 215 | 216 | 216 | 218 | 224 | 247 | 241 | 241 | 242 | 238 | 235 | 232 | 236 | 237 | 244 | 238 | 236 | 232 | 232 | 229 | 227 | 244 | 263 | 234 | 236 |
| 3 Spd | 8 | 7 | 7 | 5 | 3 | 13 | 14 | 13 | 15 | 21 | 21 | 22 | 25 | 23 | 27 | 29 | 34 | 32 | 30 | 29 | 26 | 20 | 19 | 13 | 18.6 | 34.3 |
| Dir | 242 | 256 | 218 | 232 | 239 | 258 | 239 | 232 | 233 | 257 | 254 | 242 | 246 | 251 | 240 | 242 | 234 | 235 | 232 | 227 | 221 | 211 | 211 | 236 | 236 | 234 |
| 4 Spd | 15 | 22 | 21 | 21 | 24 | 23 | 23 | 22 | 28 | 28 | 26 | 28 | 19 | 23 | 24 | 27 | 23 | 22 | 19 | 17 | 14 | 11 | 16 | 12 | 19.1 | 28.0 |
| Dir | 233 | 232 | 232 | 231 | 234 | 231 | 232 | 240 | 256 | 261 | 266 | 255 | 275 | 270 | 287 | 310 | 312 | 299 | 290 | 276 | 269 | 261 | 276 | 259 | 262 | 256 |
| 5 Spd | 13 | 12 | 10 | 11 | 12 | 7 | 9 | 12 | 17 | 21 | 22 | 26 | 26 | 23 | 22 | 22 | 19 | 20 | 21 | 20 | 13 | 7 | 9 | 9 | 14.7 | 25.9 |
| Dir | 227 | 221 | 249 | 279 | 281 | 265 | 271 | 273 | 278 | 277 | 292 | 297 | 277 | 272 | 285 | 278 | 275 | 269 | 262 | 278 | 264 | 229 | 181 | 210 | 270 | 297 |
| 6 Spd | 10 | 7 | 10 | 9 | 11 | 8 | 8 | 12 | 9 | 8 | 9 | 13 | 14 | 16 | 15 | 17 | 12 | 13 | 11 | 8 | 3 | 4 | 7 | 8 | 6.5 | 17.3 |
| Dir | 219 | 213 | 192 | 192 | 201 | 196 | 214 | 263 | 266 | 266 | 254 | 247 | 257 | 258 | 305 | 307 | 283 | 284 | 295 | 338 | 301 | 72 | 61 | 49 | 260 | 307 |
| 7 Spd | 4 | 4 | 8 | 6 | 6 | 3 | 3 | 6 | 6 | 11 | 9 | 9 | 11 | 12 | 12 | 12 | 11 | 11 | 10 | 7 | 2 | 7 | 9 | 8 | 4.6 | 11.9 |
| Dir | 74 | 232 | 207 | 185 | 204 | 214 | 191 | 229 | 254 | 265 | 297 | 295 | 290 | 285 | 281 | 287 | 272 | 268 | 280 | 281 | 102 | 129 | 134 | 91 | 260 | 287 |
| 8 Spd | 10 | 12 | 5 | 2 | 2 | 3 | 8 | 8 | 8 | 10 | 6 | 5 | 7 | 7 | 10 | 11 | 11 | 10 | 10 | 6 | 7 | 9 | 10 | 9 | 1.8 | 12.3 |
| Dir | 83 | 108 | 89 | 314 | 160 | 196 | 200 | 206 | 249 | 233 | 207 | 210 | 264 | 240 | 278 | 265 | 274 | 323 | 353 | 44 | 104 | 116 | 123 | 140 | 209 | 108 |
| 9 Spd | 11 | 6 | 9 | 9 | 7 | 7 | 3 | 7 | 13 | 12 | 10 | 7 | 9 | 10 | 12 | 11 | 10 | 5 | 8 | 2 | 21 | 10 | 6 | 4 | 4.0 | 20.8 |
| Dir | 134 | 197 | 187 | 183 | 170 | 14 | 1 | 30 | 38 | 22 | 19 | 10 | 342 | 341 | 352 | 3 | 5 | 350 | 342 | 19 | 296 | 41 | 87 | 227 | 6 | 296 |
| 10 Spd | 2 | 5 | 5 | 5 | 2 | 3 | 3 | 3 | 4 | 6 | 3 | 5 | 3 | 3 | 5 | 5 | 8 | 7 | 12 | 10 | 10 | 9 | 11 | 11 | 4.3 | 11.7 |
| Dir | 344 | 160 | 166 | 48 | 150 | 163 | 169 | 358 | 77 | 93 | 41 | 35 | 92 | 112 | 231 | 155 | 103 | 157 | 126 | 155 | 141 | 138 | 135 | 137 | 130 | 126 |
| 11 Spd | 11 | 11 | 13 | 12 | 13 | 11 | 11 | 10 | 21 | 24 | 23 | 26 | 36 | 36 | 29 | 31 | 29 | 36 | 30 | 20 | 13 | 12 | 13 | 12 | 17.8 | 36.4 |
| Dir | 142 | 147 | 144 | 144 | 145 | 146 | 157 | 155 | 199 | 202 | 212 | 218 | 225 | 220 | 222 | 215 | 227 | 220 | 222 | 210 | 221 | 210 | 216 | 212 | 205 | 220 |
| 12 Spd | 13 | 18 | 16 | 15 | 18 | 22 | 31 | 24 | 23 | 24 | 24 | 26 | 22 | 24 | 22 | 23 | 21 | 21 | 26 | 25 | 23 | 18 | 19 | 17 | 19.7 | 31.5 |
| Dir | 220 | 242 | 229 | 224 | 224 | 232 | 281 | 280 | 277 | 296 | 274 | 281 | 285 | 306 | 284 | 276 | 280 | 292 | 305 | 291 | 282 | 273 | 271 | 270 | 274 | 281 |
| 13 Spd | 17 | 19 | 19 | 21 | 19 | 22 | 20 | 22 | 20 | 19 | 17 | 18 | 19 | 24 | 24 | 21 | 19 | 16 | 13 | 13 | 8 | 5 | 4 | 6 | 14.6 | 24.2 |
| Dir | 265 | 263 | 271 | 273 | 282 | 294 | 293 | 293 | 302 | 292 | 293 | 297 | 292 | 296 | 297 | 311 | 313 | 318 | 353 | 341 | 340 | 63 | 125 | 128 | 296 | 296 |
| 14 Spd | 4 | 2 | 4 | 6 | 8 | 7 | 8 | 14 | 19 | 24 | 18 | 19 | 22 | 21 | 24 | 23 | 28 | 30 | 32 | 24 | 19 | 18 | 18 | 17 | 15.8 | 32.3 |
| Dir | 117 | 175 | 171 | 193 | 195 | 215 | 231 | 233 | 253 | 247 | 267 | 261 | 253 | 252 | 241 | 232 | 242 | 242 | 232 | 222 | 204 | 206 | 203 | 204 | 232 | 232 |
| 15 Spd | 16 | 16 | 17 | 12 | 11 | 14 | 14 | 23 | 30 | 28 | 27 | 30 | 33 | 35 | 29 | 31 | 33 | 34 | 33 | 31 | 28 | 18 | 11 | 5 | 22.7 | 35.4 |
| Dir | 213 | 209 | 213 | 211 | 217 | 209 | 227 | 229 | 233 | 252 | 248 | 243 | 232 | 243 | 247 | 241 | 231 | 242 | 241 | 221 | 221 | 218 | 217 | 244 | 232 | 243 |
| 16 Spd | 11 | 12 | 10 | 14 | 11 | 11 | 12 | 13 | 20 | 19 | 15 | 15 | 19 | 21 | 22 | 25 | 20 | 17 | 17 | 25 | 13 | 5 | 8 | 5 | 12.3 | 24.8 |
| Dir | 222 | 222 | 218 | 240 | 239 | 216 | 218 | 219 | 234 | 258 | 276 | 262 | 275 | 279 | 287 | 304 | 278 | 267 | 276 | 336 | 337 | 299 | 276 | 288 | 267 | 304 |
| 17 Spd | 7 | 7 | 7 | 9 | 9 | 9 | 10 | 11 | 11 | 13 | 13 | 12 | 12 | 11 | 9 | 11 | 14 | 13 | 13 | 8 | 5 | 4 | 12 | 16 | 7.9 | 16.2 |
| Dir | 267 | 261 | 271 | 214 | 202 | 206 | 212 | 222 | 250 | 249 | 247 | 276 | 256 | 244 | 233 | 256 | 261 | 222 | 179 | 350 | 89 | 275 | 269 | 330 | 248 | 330 |
| 18 Spd | 18 | 11 | 4 | 7 | 6 | 6 | 5 | 10 | 9 | 8 | 11 | 13 | 9 | 12 | 7 | 13 | 19 | 9 | 3 | 5 | 7 | 6 | 7 | 7 | 5.0 | 19.3 |
| Dir | 347 | 14 | 49 | 252 | 255 | 194 | 241 | 288 | 278 | 297 | 332 | 338 | 328 | 334 | 316 | 337 | 8 | 32 | 349 | 293 | 248 | 191 | 161 | 171 | 321 | 8 |
| 19 Spd | 6 | 8 | 8 | 8 | 9 | 8 | 8 | 8 | 10 | 6 | 6 | 9 | 10 | 6 | 10 | 6 | 6 | 11 | 4 | 8 | 6 | 7 | 6 | 6 | 3.5 | 10.5 |
| Dir | 190 | 164 | 179 | 211 | 220 | 245 | 234 | 239 | 245 | 293 | 288 | 302 | 300 | 302 | 39 | 311 | 355 | 47 | 312 | 343 | 317 | 240 | 215 | 206 | 263 | 47 |
| 20 Spd | 7 | 6 | 7 | 6 | 7 | 7 | 6 | 7 | 5 | 4 | 3 | 5 | 5 | 2 | 5 | 3 | 7 | 4 | 5 | 5 | 2 | 6 | 10 | 12 | 3.3 | 11.9 |
| Dir | 185 | 191 | 191 | 198 | 191 | 196 | 208 | 210 | 245 | 280 | 286 | 309 | 244 | 250 | 264 | 279 | 205 | 185 | 316 | 289 | 90 | 116 | 126 | 135 | 203 | 135 |
| 21 Spd | 13 | 8 | 6 | 10 | 6 | 3 | 6 | 5 | 5 | 3 | 3 | 4 | 5 | 6 | 20 | 24 | 27 | 16 | 13 | 10 | 11 | 13 | 11 | 4 | 7.5 | 26.8 |
| Dir | 137 | 143 | 152 | 139 | 140 | 279 | 253 | 176 | 192 | 128 | 83 | 164 | 221 | 236 | 212 | 153 | 118 | 95 | 123 | 132 | 133 | 134 | 141 | 89 | 146 | 118 |
| 22 Spd | 5 | 8 | 2 | 6 | 2 | 2 | 7 | 7 | 11 | 14 | 12 | 12 | 11 | 8 | 6 | 5 | 9 | 14 | 11 | 11 | 13 | 7 | 9 | 9 | 6.0 | 14.3 |
| Dir | 125 | 135 | 162 | 213 | 188 | 253 | 237 | 171 | 186 | 206 | 184 | 199 | 228 | 280 | 306 | 316 | 242 | 248 | 267 | 254 | 291 | 269 | 207 | 190 | 226 | 248 |

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Peace Airshed Zone Association

# Hourly Averages

## Wind Speed (km/h)
## Wind Direction (deg)
## Portable-Bonanza - July 2010

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 23 Spd | 8 | 11 | 8 | 10 | 11 | 13 | 15 | 17 | 25 | 26 | 21 | 25 | 25 | 29 | 29 | 31 | 33 | 28 | 26 | 26 | 17 | 12 | 16 | 22 | 18.9 | 33.1 |
| Dir | 193 | 190 | 175 | 185 | 197 | 202 | 212 | 220 | 235 | 236 | 217 | 228 | 234 | 242 | 244 | 245 | 238 | 216 | 217 | 217 | 206 | 161 | 191 | 208 | 221 | 238 |
| 24 Spd | 20 | 21 | 16 | 10 | 4 | 7 | 15 | 30 | 39 | 39 | 44 | 46 | 46 | 42 | 42 | 39 | 38 | 39 | 38 | 36 | 31 | 28 | 21 | 17 | 28.8 | 46.5 |
| Dir | 202 | 210 | 215 | 214 | 233 | 205 | 244 | 241 | 240 | 245 | 244 | 246 | 249 | 255 | 244 | 257 | 247 | 244 | 251 | 252 | 242 | 240 | 230 | 226 | 242 | 249 |
| 25 Spd | 16 | 12 | 11 | 13 | 12 | 13 | 16 | 22 | 21 | 19 | 16 | 18 | 19 | 19 | 17 | 18 | 20 | 21 | 18 | 17 | 6 | 8 | 10 | 3 | 13.2 | 21.9 |
| Dir | 226 | 213 | 206 | 204 | 211 | 216 | 222 | 228 | 237 | 251 | 254 | 245 | 250 | 252 | 252 | 250 | 257 | 269 | 280 | 285 | 296 | 268 | 9 | 37 | 246 | 228 |
| 26 Spd | 2 | 5 | 8 | 4 | 6 | 14 | 19 | 23 | 23 | 18 | 17 | 16 | 16 | 22 | 21 | 20 | 15 | 13 | 20 | 17 | 12 | 10 | 4 | 3 | 12.6 | 23.0 |
| Dir | 286 | 221 | 213 | 250 | 266 | 292 | 294 | 310 | 313 | 313 | 296 | 277 | 281 | 299 | 292 | 289 | 302 | 288 | 306 | 310 | 313 | 305 | 339 | 153 | 296 | 310 |
| 27 Spd | 4 | 3 | 6 | 3 | 4 | 2 | 3 | 5 | 5 | 2 | 2 | 4 | 5 | 8 | 7 | 6 | 7 | 4 | 7 | 9 | 7 | 11 | 12 | 16 | 4.3 | 15.8 |
| Dir | 203 | 191 | 166 | 186 | 185 | 218 | 177 | 214 | 215 | 232 | 288 | 334 | 111 | 129 | 108 | 121 | 133 | 148 | 134 | 112 | 107 | 104 | 108 | 119 | 136 | 119 |
| 28 Spd | 15 | 13 | 2 | 3 | 5 | 5 | 5 | 3 | 5 | 6 | 5 | 7 | 6 | 8 | 5 | 3 | 10 | 11 | 19 | 15 | 14 | 8 | 7 | 7 | 4.2 | 19.0 |
| Dir | 119 | 124 | 187 | 171 | 125 | 135 | 203 | 320 | 12 | 21 | 29 | 14 | 27 | 6 | 41 | 301 | 152 | 167 | 140 | 154 | 174 | 144 | 176 | 170 | 133 | 140 |
| 29 Spd | 10 | 12 | 4 | 7 | 9 | 9 | 7 | 6 | 6 | 8 | 9 | 15 | 19 | 15 | 15 | 13 | 10 | 23 | 13 | 8 | 7 | 5 | 5 | 6 | 7.8 | 22.6 |
| Dir | 148 | 139 | 147 | 165 | 154 | 161 | 166 | 214 | 195 | 235 | 241 | 239 | 227 | 229 | 238 | 195 | 198 | 248 | 253 | 271 | 209 | 234 | 174 | 145 | 211 | 248 |
| 30 Spd | 9 | 6 | 5 | 1 | 5 | 4 | 5 | 6 | 8 | 12 | 13 | 13 | 18 | 23 | 21 | 13 | 10 | 6 | 11 | 18 | 14 | 18 | 6 | 9 | 5.9 | 22.7 |
| Dir | 158 | 184 | 202 | 294 | 128 | 179 | 179 | 235 | 210 | 262 | 267 | 281 | 306 | 325 | 342 | 325 | 309 | 309 | 288 | 295 | 309 | 16 | 159 | 225 | 292 | 325 |
| 31 Spd | 3 | 1 | 4 | 7 | 6 | 8 | 9 | 8 | 8 | 4 | 5 | 5 | 3 | 6 | 2 | 5 | 6 | 4 | 6 | 5 | 3 | 7 | 9 | 11 | 3.3 | 10.8 |
| Dir | 250 | 327 | 145 | 204 | 186 | 181 | 200 | 229 | 278 | 288 | 261 | 282 | 260 | 279 | 288 | 246 | 237 | 263 | 273 | 235 | 126 | 126 | 138 | 139 | 218 | 139 |
| Spd | 6.4 | 7.5 | 7.6 | 7.6 | 7.3 | 7.5 | 9.2 | 10.8 | 12.4 | 12.8 | 12.4 | 13.6 | 14.8 | 14.7 | 13.7 | 13.3 | 12.4 | 13.0 | 11.8 | 10.0 | 8.0 | 5.1 | 6.0 | 5.3 | Diurnal Average | |
| Dir | 201 | 202 | 207 | 213 | 212 | 221 | 234 | 241 | 247 | 255 | 257 | 257 | 256 | 262 | 260 | 260 | 253 | 250 | 252 | 256 | 242 | 213 | 199 | 201 | | |
| Spd | 23.5 | 24.9 | 22.6 | 23.2 | 23.9 | 25.8 | 31.5 | 32.9 | 38.9 | 38.7 | 43.7 | 46.4 | 46.5 | 42.0 | 41.7 | 40.6 | 38.1 | 39.5 | 37.6 | 35.9 | 31.1 | 27.5 | 21.1 | 22.3 | Diurnal Maximum | |
| Dir | 202 | 200 | 204 | 207 | 234 | 203 | 281 | 219 | 240 | 245 | 244 | 246 | 249 | 255 | 244 | 224 | 247 | 244 | 251 | 252 | 242 | 240 | 230 | 208 | | |

Maximum Speed Value: 46 km/h on Jul 24 13:00
Minimum Speed Value: 1 km/h on Jul 30 04:00
Maximum Daily Speed Average: 30.3 km/h on Jul 1
Minimum Daily Speed Average: 1.8 km/h on Jul 31
Maximum Diurnal Speed Average: 14.8 km/h at hour 13
Minimum Diurnal Speed Average: 5.1 km/h at hour 22

Monthly Average Velocity: 9.49 km/h 242.3 deg
Speed Percentiles: $P_1$ = 2.0 $P_{10}$ = 4.5 $Q_1$ = 6.7 Median = 11.4 $Q_3$ = 19.8 $P_{90}$ = 26.7 $P_{99}$ = 39.8
All monthly, daily, and diurnal averages have been calculated using vector methods

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 744 |
| Hours of Missing Data: | 0 |
| Percent Operational Time: | 100.0 |

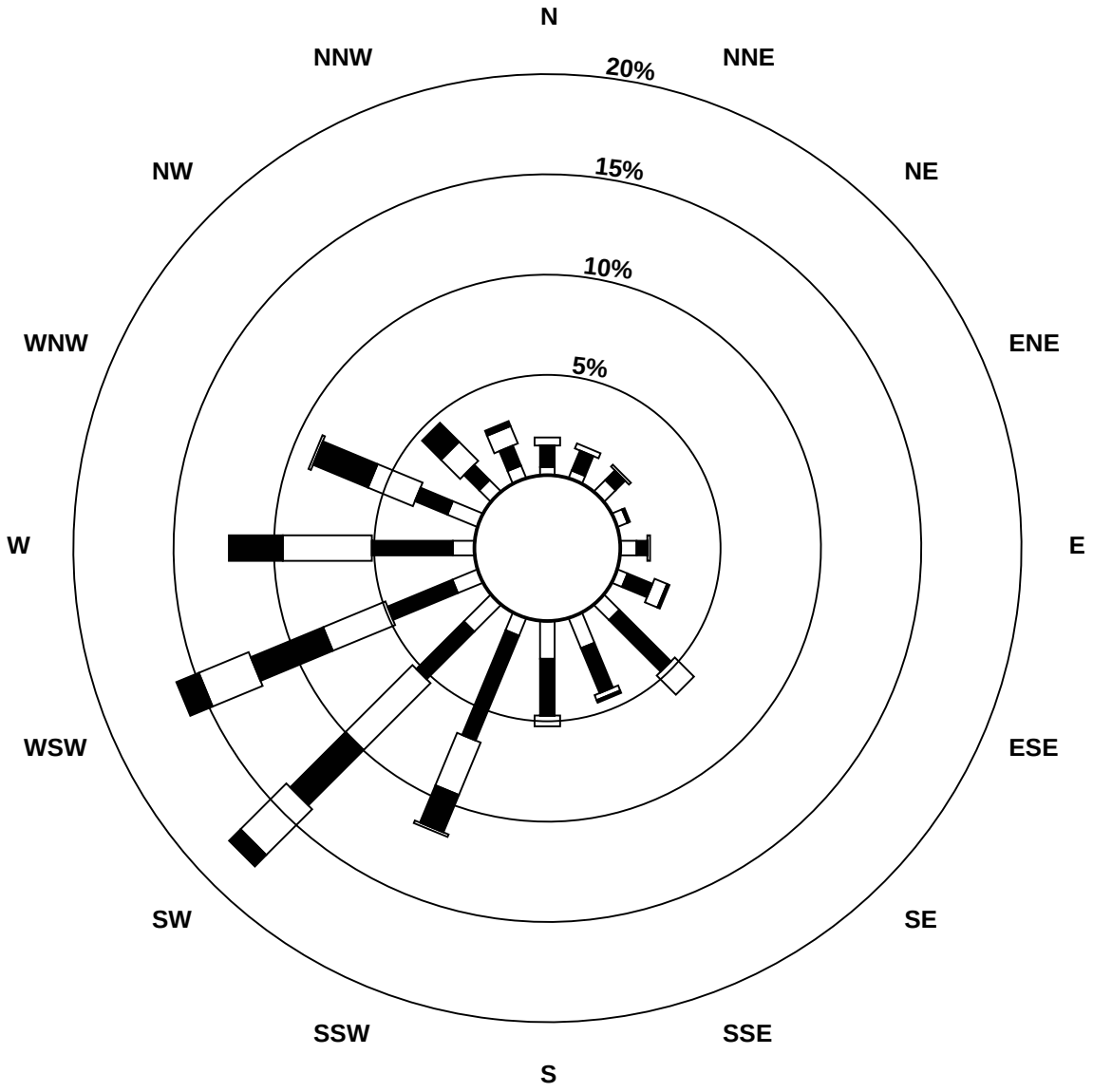
Frequency Distribution

| Direction | Speed Range (km/h) 0 to 5 | 5 to 11 | 11 to 19 | 19 to 28 | 28 to 38 | > 38 | Total |
|---|---|---|---|---|---|---|---|
| North | 7 | 19 | 8 | 2 | 0 | 0 | 36 |
| NorthEast | 6 | 11 | 1 | 0 | 0 | 0 | 18 |
| East | 10 | 12 | 3 | 0 | 0 | 0 | 25 |
| SouthEast | 11 | 37 | 19 | 3 | 0 | 0 | 70 |
| South | 21 | 52 | 10 | 5 | 0 | 0 | 88 |
| SouthWest | 16 | 63 | 66 | 56 | 43 | 14 | 258 |
| West | 19 | 36 | 65 | 49 | 3 | 3 | 175 |
| NorthWest | 13 | 17 | 21 | 23 | 0 | 0 | 74 |
| Total | 103 | 247 | 193 | 138 | 46 | 17 | 744 |

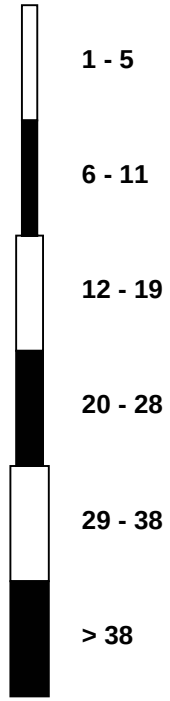
# Wind Rose

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

**Portable-Bonanza - July 2010**




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



# Hourly Averages - Wind Speed (Scalar)

**Wind Speed (km/h)**

## Portable-Bonanza - July 2010

Maximum Speed: 47 km/h on Jul 24 12:00

Maximum Daily Speed Average: 31.4 km/h on Jul 1

Minimum Speed: 2 km/h on Jul 27 06:00

Minimum Daily Speed Average: 7.0 km/h on Jul 20

Maximum Diurnal Speed Average: 19.8 km/h at hour 17

Minimum Diurnal Speed Average: 9.7 km/h at hour 5

Monthly Average Speed: 14.67 km/h

Percentiles: $P_1$ = 3.4 $P_{10}$ = 5.6 $Q_1$ = 7.7 Median = 12.0 $Q_3$ = 20.5 $P_{90}$ = 27.1 $P_{99}$ = 40.2

Hours in Service: 744
Hours of Data: 744
Hours of Missing Data: 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-Jul | 24 | 25 | 23 | 23 | 23 | 26 | 29 | 33 | 33 | 31 | 40 | 40 | 42 | 40 | 41 | 41 | 39 | 39 | 37 | 35 | 31 | 24 | 21 | 17 | 31.4 | 42.1 |
| 2-Jul | 17 | 18 | 18 | 18 | 16 | 16 | 22 | 25 | 25 | 26 | 26 | 27 | 29 | 27 | 28 | 28 | 27 | 29 | 29 | 27 | 25 | 18 | 11 | 10 | 22.6 | 29.2 |
| 3-Jul | 8 | 7 | 7 | 5 | 5 | 13 | 14 | 13 | 15 | 22 | 22 | 23 | 25 | 24 | 27 | 29 | 35 | 33 | 31 | 29 | 26 | 21 | 19 | 14 | 19.5 | 34.7 |
| 4-Jul | 15 | 22 | 21 | 21 | 24 | 24 | 23 | 22 | 28 | 28 | 26 | 28 | 21 | 27 | 24 | 27 | 24 | 22 | 19 | 17 | 14 | 11 | 16 | 12 | 21.6 | 28.4 |
| 5-Jul | 13 | 12 | 11 | 11 | 12 | 7 | 9 | 12 | 17 | 21 | 23 | 26 | 26 | 24 | 22 | 22 | 19 | 21 | 22 | 20 | 13 | 8 | 9 | 9 | 16.3 | 26.4 |
| 6-Jul | 11 | 7 | 10 | 10 | 11 | 8 | 8 | 12 | 10 | 9 | 10 | 14 | 16 | 17 | 17 | 19 | 13 | 14 | 11 | 8 | 4 | 7 | 8 | 8 | 10.9 | 19.2 |
| 7-Jul | 5 | 4 | 8 | 6 | 6 | 3 | 3 | 7 | 7 | 12 | 10 | 10 | 13 | 13 | 13 | 13 | 13 | 12 | 10 | 7 | 4 | 7 | 9 | 11 | 8.6 | 13.3 |
| 8-Jul | 10 | 13 | 9 | 4 | 4 | 4 | 8 | 8 | 9 | 10 | 7 | 8 | 9 | 9 | 12 | 13 | 13 | 12 | 10 | 6 | 7 | 9 | 10 | 9 | 8.9 | 13.3 |
| 9-Jul | 11 | 8 | 9 | 9 | 7 | 8 | 5 | 7 | 13 | 12 | 11 | 8 | 10 | 11 | 13 | 12 | 10 | 6 | 8 | 6 | 22 | 12 | 8 | 5 | 9.7 | 21.9 |
| 10-Jul | 5 | 5 | 6 | 5 | 3 | 4 | 4 | 4 | 5 | 7 | 6 | 6 | 6 | 7 | 8 | 8 | 9 | 9 | 13 | 11 | 10 | 9 | 11 | 11 | 7.2 | 13.1 |
| 11-Jul | 12 | 11 | 13 | 12 | 13 | 11 | 11 | 10 | 21 | 25 | 24 | 27 | 36 | 36 | 30 | 32 | 30 | 37 | 30 | 21 | 13 | 12 | 13 | 12 | 20.5 | 36.7 |
| 12-Jul | 14 | 18 | 16 | 15 | 18 | 23 | 32 | 24 | 23 | 24 | 25 | 26 | 23 | 25 | 23 | 24 | 22 | 22 | 27 | 25 | 23 | 18 | 19 | 18 | 21.9 | 31.7 |
| 13-Jul | 17 | 19 | 20 | 21 | 19 | 22 | 20 | 22 | 20 | 19 | 17 | 18 | 19 | 24 | 24 | 21 | 19 | 16 | 14 | 13 | 8 | 5 | 5 | 6 | 17.0 | 24.4 |
| 14-Jul | 4 | 3 | 5 | 7 | 8 | 7 | 8 | 14 | 19 | 24 | 19 | 20 | 22 | 22 | 25 | 24 | 29 | 31 | 33 | 25 | 20 | 18 | 18 | 17 | 17.6 | 32.5 |
| 15-Jul | 16 | 16 | 17 | 13 | 11 | 14 | 15 | 23 | 31 | 29 | 27 | 30 | 34 | 36 | 30 | 31 | 34 | 34 | 33 | 31 | 29 | 18 | 12 | 6 | 23.7 | 35.7 |
| 16-Jul | 11 | 12 | 10 | 15 | 12 | 11 | 12 | 13 | 20 | 20 | 15 | 15 | 20 | 22 | 23 | 26 | 21 | 18 | 17 | 25 | 13 | 6 | 8 | 6 | 15.4 | 25.6 |
| 17-Jul | 7 | 7 | 8 | 9 | 9 | 9 | 10 | 11 | 12 | 13 | 14 | 13 | 13 | 13 | 11 | 13 | 15 | 16 | 13 | 12 | 6 | 6 | 17 | 18 | 11.4 | 17.7 |
| 18-Jul | 19 | 11 | 6 | 8 | 7 | 6 | 6 | 11 | 9 | 9 | 12 | 13 | 10 | 13 | 8 | 14 | 20 | 10 | 5 | 5 | 7 | 6 | 7 | 8 | 9.5 | 19.6 |
| 19-Jul | 7 | 8 | 8 | 9 | 9 | 8 | 8 | 9 | 10 | 7 | 8 | 10 | 11 | 11 | 10 | 9 | 11 | 11 | 5 | 8 | 7 | 7 | 7 | 7 | 8.5 | 11.4 |
| 20-Jul | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 7 | 6 | 5 | 5 | 7 | 8 | 9 | 7 | 6 | 9 | 7 | 7 | 5 | 4 | 7 | 10 | 12 | 7.0 | 11.9 |
| 21-Jul | 13 | 8 | 7 | 10 | 7 | 4 | 6 | 5 | 6 | 4 | 4 | 6 | 8 | 10 | 22 | 25 | 27 | 17 | 13 | 10 | 11 | 13 | 11 | 4 | 10.5 | 27.2 |
| 22-Jul | 6 | 8 | 5 | 6 | 3 | 2 | 7 | 7 | 12 | 14 | 12 | 12 | 11 | 9 | 6 | 7 | 10 | 15 | 12 | 11 | 13 | 8 | 9 | 9 | 8.9 | 14.6 |
| 23-Jul | 8 | 11 | 8 | 10 | 11 | 13 | 15 | 17 | 25 | 27 | 21 | 25 | 26 | 29 | 30 | 31 | 33 | 29 | 26 | 26 | 18 | 12 | 17 | 22 | 20.5 | 33.5 |
| 24-Jul | 20 | 21 | 16 | 11 | 6 | 7 | 15 | 31 | 39 | 39 | 44 | 47 | 47 | 42 | 42 | 39 | 39 | 40 | 38 | 36 | 31 | 28 | 21 | 17 | 29.9 | 46.9 |
| 25-Jul | 16 | 12 | 12 | 13 | 12 | 13 | 16 | 22 | 21 | 20 | 17 | 19 | 20 | 20 | 18 | 19 | 22 | 22 | 18 | 18 | 8 | 10 | 11 | 4 | 16.0 | 22.1 |
| 26-Jul | 3 | 5 | 8 | 5 | 7 | 14 | 20 | 24 | 23 | 18 | 18 | 16 | 17 | 22 | 21 | 20 | 15 | 14 | 20 | 17 | 13 | 10 | 6 | 5 | 14.3 | 23.5 |
| 27-Jul | 5 | 4 | 6 | 4 | 4 | 2 | 3 | 5 | 5 | 3 | 4 | 8 | 9 | 9 | 9 | 9 | 9 | 6 | 8 | 9 | 7 | 11 | 13 | 16 | 7.0 | 15.8 |
| 28-Jul | 15 | 13 | 4 | 3 | 6 | 6 | 5 | 4 | 5 | 6 | 6 | 8 | 8 | 9 | 8 | 7 | 16 | 12 | 19 | 15 | 14 | 8 | 8 | 7 | 8.8 | 19.3 |
| 29-Jul | 10 | 12 | 6 | 7 | 9 | 9 | 7 | 7 | 7 | 8 | 11 | 15 | 20 | 16 | 16 | 14 | 12 | 24 | 17 | 9 | 7 | 7 | 6 | 6 | 10.9 | 23.9 |
| 30-Jul | 9 | 6 | 7 | 5 | 7 | 4 | 6 | 6 | 9 | 12 | 13 | 15 | 18 | 24 | 21 | 13 | 11 | 9 | 12 | 19 | 14 | 22 | 8 | 9 | 11.6 | 24.3 |
| 31-Jul | 7 | 4 | 5 | 7 | 6 | 8 | 9 | 8 | 9 | 6 | 6 | 7 | 6 | 8 | 7 | 8 | 8 | 7 | 6 | 5 | 4 | 7 | 9 | 11 | 7.0 | 10.8 |
| | 11.1 | 10.9 | 10.1 | 10.0 | 9.7 | 10.1 | 11.7 | 13.7 | 15.9 | 16.5 | 16.3 | 17.8 | 18.8 | 19.7 | 19.2 | 19.5 | 19.8 | 19.1 | 18.2 | 16.5 | 13.7 | 11.7 | 11.5 | 10.5 | Diurnal Average | |
| | 23.5 | 25.0 | 22.6 | 23.2 | 24.0 | 25.9 | 31.7 | 33.2 | 39.2 | 39.1 | 44.1 | 46.9 | 46.9 | 42.4 | 42.2 | 41.1 | 39.0 | 40.0 | 37.8 | 36.2 | 31.2 | 27.6 | 21.2 | 22.5 | Diurnal Maximum | |

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

PASZA
Peace Airshed Zone Association

# Hourly Standard Deviations

## Wind Direction (WD) - deg

## Portable-Bonanza - July 2010

Maximum Value: 96.5 deg on Jul 20 14:00

Minimum Value: 2.2 deg on Jul 28 00:00

Percentiles: $P_1$ = 3.0 $P_{10}$ = 5.7 $Q_1$ = 8.2 Median = 13.5 $Q_3$ = 27.8 $P_{90}$ = 50.6 $P_{99}$ = 83.6

| | |
|---|---|
| Hours in Service: | 744 |
| Hours of Data: | 744 |
| Hours of Missing Data: | 0 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Maximum |
| 1-Jul | 4 | 3 | 4 | 4 | 4 | 4 | 5 | 7 | 8 | 11 | 10 | 11 | 11 | 9 | 10 | 9 | 14 | 9 | 8 | 5 | 4 | 4 | 5 | 7 | 14.1 |
| 2-Jul | 4 | 3 | 3 | 3 | 5 | 8 | 6 | 5 | 6 | 6 | 7 | 8 | 8 | 9 | 10 | 12 | 10 | 10 | 7 | 7 | 6 | 7 | 11 | 10 | 12.1 |
| 3-Jul | 6 | 18 | 8 | 15 | 56 | 5 | 13 | 8 | 11 | 12 | 19 | 17 | 13 | 13 | 7 | 7 | 8 | 7 | 7 | 6 | 7 | 5 | 3 | 26 | 55.9 |
| 4-Jul | 10 | 5 | 6 | 5 | 4 | 4 | 5 | 6 | 8 | 9 | 10 | 11 | 22 | 31 | 10 | 9 | 8 | 12 | 6 | 7 | 5 | 4 | 5 | 11 | 31.2 |
| 5-Jul | 7 | 5 | 9 | 6 | 6 | 11 | 8 | 9 | 8 | 10 | 17 | 12 | 12 | 14 | 14 | 11 | 11 | 19 | 8 | 8 | 8 | 15 | 9 | 18 | 18.6 |
| 6-Jul | 15 | 7 | 6 | 6 | 3 | 5 | 18 | 10 | 15 | 31 | 27 | 24 | 25 | 20 | 30 | 29 | 29 | 19 | 15 | 17 | 44 | 50 | 31 | 6 | 49.8 |
| 7-Jul | 55 | 29 | 9 | 14 | 9 | 15 | 47 | 28 | 25 | 19 | 25 | 31 | 40 | 31 | 31 | 28 | 32 | 24 | 16 | 19 | 89 | 15 | 6 | 42 | 89.2 |
| 8-Jul | 22 | 12 | 57 | 68 | 74 | 43 | 8 | 24 | 22 | 19 | 46 | 66 | 58 | 49 | 40 | 32 | 26 | 39 | 21 | 9 | 14 | 10 | 4 | 12 | 73.6 |
| 9-Jul | 4 | 32 | 10 | 11 | 7 | 30 | 58 | 29 | 9 | 11 | 18 | 28 | 30 | 33 | 27 | 17 | 28 | 43 | 25 | 75 | 19 | 38 | 46 | 52 | 75.3 |
| 10-Jul | 70 | 14 | 54 | 28 | 65 | 40 | 45 | 49 | 41 | 37 | 76 | 48 | 67 | 81 | 66 | 60 | 46 | 50 | 30 | 20 | 6 | 3 | 4 | 5 | 81.1 |
| 11-Jul | 4 | 10 | 4 | 5 | 5 | 7 | 8 | 10 | 12 | 9 | 9 | 17 | 10 | 10 | 15 | 11 | 15 | 8 | 10 | 6 | 6 | 8 | 10 | 17 | 17.3 |
| 12-Jul | 51 | 9 | 10 | 8 | 7 | 16 | 6 | 8 | 8 | 9 | 13 | 13 | 11 | 9 | 15 | 15 | 12 | 15 | 7 | 9 | 9 | 8 | 6 | 6 | 50.9 |
| 13-Jul | 7 | 5 | 6 | 7 | 7 | 6 | 8 | 6 | 6 | 6 | 10 | 9 | 9 | 8 | 7 | 11 | 9 | 12 | 10 | 13 | 26 | 15 | 25 | 23 | 26.1 |
| 14-Jul | 38 | 55 | 15 | 13 | 5 | 10 | 13 | 14 | 13 | 10 | 19 | 17 | 15 | 19 | 15 | 15 | 12 | 10 | 6 | 12 | 6 | 4 | 3 | 6 | 55.2 |
| 15-Jul | 5 | 3 | 4 | 36 | 9 | 5 | 12 | 7 | 7 | 12 | 8 | 13 | 10 | 7 | 11 | 11 | 12 | 9 | 8 | 11 | 7 | 6 | 37 | 26 | 37.3 |
| 16-Jul | 6 | 6 | 5 | 15 | 13 | 9 | 9 | 9 | 6 | 20 | 13 | 17 | 17 | 16 | 17 | 15 | 16 | 19 | 10 | 9 | 16 | 31 | 12 | 12 | 30.9 |
| 17-Jul | 11 | 11 | 13 | 26 | 11 | 9 | 7 | 9 | 14 | 16 | 21 | 29 | 29 | 31 | 38 | 35 | 35 | 34 | 18 | 44 | 34 | 69 | 62 | 32 | 68.6 |
| 18-Jul | 12 | 18 | 55 | 21 | 22 | 13 | 33 | 13 | 16 | 26 | 19 | 17 | 29 | 20 | 45 | 24 | 10 | 18 | 54 | 14 | 17 | 14 | 11 | 14 | 55.2 |
| 19-Jul | 20 | 17 | 9 | 5 | 6 | 8 | 11 | 22 | 17 | 39 | 48 | 38 | 32 | 65 | 26 | 68 | 58 | 17 | 46 | 9 | 38 | 19 | 13 | 12 | 67.6 |
| 20-Jul | 16 | 19 | 12 | 12 | 7 | 14 | 14 | 10 | 34 | 52 | 58 | 56 | 64 | 96 | 68 | 84 | 46 | 65 | 63 | 22 | 52 | 12 | 3 | 4 | 96.5 |
| 21-Jul | 3 | 19 | 34 | 6 | 68 | 49 | 12 | 27 | 29 | 57 | 59 | 54 | 69 | 65 | 24 | 21 | 10 | 12 | 10 | 8 | 5 | 3 | 10 | 37 | 68.7 |
| 22-Jul | 60 | 6 | 81 | 12 | 47 | 34 | 10 | 19 | 14 | 10 | 9 | 6 | 17 | 19 | 32 | 55 | 41 | 11 | 18 | 19 | 10 | 23 | 9 | 7 | 81.2 |
| 23-Jul | 9 | 6 | 11 | 12 | 4 | 5 | 8 | 7 | 9 | 12 | 14 | 13 | 17 | 12 | 17 | 11 | 9 | 12 | 9 | 8 | 18 | 14 | 19 | 7 | 18.6 |
| 24-Jul | 7 | 5 | 12 | 16 | 42 | 23 | 12 | 8 | 8 | 8 | 8 | 9 | 8 | 8 | 10 | 9 | 11 | 9 | 6 | 7 | 4 | 4 | 7 | 6 | 41.7 |
| 25-Jul | 4 | 4 | 6 | 5 | 9 | 3 | 6 | 7 | 11 | 13 | 16 | 19 | 22 | 18 | 23 | 19 | 25 | 14 | 9 | 16 | 41 | 39 | 17 | 78 | 77.7 |
| 26-Jul | 61 | 13 | 7 | 26 | 36 | 15 | 13 | 11 | 9 | 10 | 13 | 14 | 15 | 11 | 11 | 13 | 13 | 19 | 11 | 10 | 10 | 7 | 64 | 71 | 71.1 |
| 27-Jul | 29 | 29 | 18 | 22 | 13 | 40 | 31 | 15 | 30 | 54 | 66 | 69 | 52 | 46 | 70 | 69 | 60 | 64 | 53 | 13 | 8 | 5 | 9 | 2 | 69.6 |
| 28-Jul | 3 | 9 | 75 | 41 | 15 | 32 | 18 | 45 | 20 | 21 | 37 | 34 | 49 | 41 | 60 | 85 | 61 | 26 | 9 | 17 | 6 | 12 | 21 | 26 | 84.9 |
| 29-Jul | 9 | 6 | 65 | 10 | 21 | 8 | 25 | 28 | 22 | 27 | 28 | 20 | 15 | 18 | 26 | 24 | 41 | 23 | 36 | 26 | 29 | 49 | 44 | 14 | 64.6 |
| 30-Jul | 15 | 14 | 42 | 88 | 46 | 42 | 35 | 21 | 20 | 20 | 18 | 32 | 18 | 22 | 9 | 23 | 27 | 51 | 24 | 13 | 9 | 42 | 46 | 15 | 87.8 |
| 31-Jul | 74 | 84 | 33 | 14 | 22 | 7 | 8 | 23 | 19 | 46 | 35 | 47 | 79 | 50 | 89 | 60 | 53 | 76 | 28 | 25 | 65 | 5 | 4 | 3 | 89.3 |
| | 74.4 | 83.8 | 81.2 | 87.8 | 73.6 | 48.5 | 57.7 | 49.4 | 40.7 | 56.7 | 75.8 | 69.0 | 79.1 | 96.5 | 89.3 | 84.9 | 60.6 | 75.9 | 62.9 | 75.3 | 89.2 | 68.6 | 64.4 | 77.7 | |

# PASZA
# Valleyview Station
## Monthly Summary Tables, Graphs and Roses

PASZA
Peace Airshed Zone Association

# Hourly Averages

## Sulphur Dioxide ($SO_2$) - ppb

## Valleyview - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 8.4 ppb on Jul 16 21:00 Maximum Daily Average: 2.9 ppb on Jul 14

Minimum Value: 0 ppb on Jul 1 02:00 Minimum Daily Average: 0.0 ppb on Jul 1
Maximum Diurnal Average: 1.4 ppb at hour 10 Minimum Diurnal Average: 0.1 ppb at hour 6
Monthly Average: 0.66 ppb Percentiles: $P_1$ = 0.0 $P_{10}$ = 0.0 $Q_1$ = 0.0 Median = 0.2 $Q_3$ = 0.6 $P_{90}$ = 2.0 $P_{99}$ = 7.4

| | |
|---|---|
| Hours in Service: | 706 |
| Hours of Data: | 672 |
| Hours of Missing Data: | 34 |
| Hours of Calibration: | 34 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Daily Average | Daily Maximum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Jul | 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 | 0.2 |
| 2-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0.5 | 2.4 |
| 3-Jul | A | 0 | 0 | 2 | 2 | 2 | 3 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 2 | 2 | 3 | 2 | 0 | 0 | 1.2 | 3.2 |
| 4-Jul | A | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 2 | 1 | 3 | 2 | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1.0 | 4.9 |
| 5-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0.3 | 3.0 |
| 6-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | C | C | NS | NS | NS | NS | NS | NS | -- | 0.8 |
| 7-Jul | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- | -- |
| 8-Jul | NS | NS | NS | NS | NS | NS | NS | NS | C | C | C | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -- | 0.6 |
| 9-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 2.2 |
| 10-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 3.4 |
| 11-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.7 |
| 12-Jul | 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 | 0.6 |
| 13-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 3 | 1 | 2 | 3 | 2 | 0.7 | 3.5 |
| 14-Jul | A | 2 | 1 | 1 | 0 | 0 | 0 | 7 | 8 | 7 | 5 | 2 | 2 | 1 | 3 | 2 | 2 | 2 | 8 | 8 | 4 | 2 | 0 | 0 | 2.9 | 8.1 |
| 15-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 1 | 2 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0.7 | 2.0 |
| 16-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 8 | 5 | 2 | 0 | 1.4 | 8.4 |
| 17-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 1.6 |
| 18-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.1 | 0.5 |
| 19-Jul | A | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 8.1 |
| 20-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 2.2 |
| 21-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0.3 | 3.9 |
| 22-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 4 | 3 | 2 | 6 | 0 | 0 | 2 | 1.1 | 5.8 |
| 23-Jul | A | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 5 | 2 | 0 | 0 | 0 | 2 | 5 | 4 | 6 | 0 | 0 | 0 | 0 | 0 | 1.6 | 6.1 |
| 24-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 2 | 3 | 2 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1.0 | 4.2 |
| 25-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.7 | 2.0 |
| 26-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 4.2 |
| 27-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0.4 | 1.7 |
| 28-Jul | A | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0.7 | 1.3 |
| 29-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 6 | 2 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0.9 | 5.8 |
| 30-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 4 | 1 | 0 | 1 | 0 | 0 | 4 | 8 | 0 | 0 | 0 | 0 | 1.0 | 8.0 |
| 31-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 2.8 |
| | -- | 0.3 | 0.2 | 0.1 | 0.1 | 0.1 | 0.3 | 0.9 | 1.2 | 1.4 | 1.3 | 0.9 | 0.7 | 0.6 | 0.5 | 0.5 | 0.5 | 0.8 | 1.1 | 1.0 | 0.9 | 0.7 | 0.4 | 0.4 | Diurnal Average | |
| | -- | 4.8 | 1.3 | 1.6 | 1.7 | 2.3 | 4.9 | 7.4 | 8.1 | 6.7 | 5.4 | 5.8 | 3.6 | 2.3 | 2.9 | 2.3 | 4.6 | 4.3 | 7.8 | 8.1 | 8.4 | 4.9 | 3.5 | 2.5 | Diurnal Maximum | |

C - Calibration NS - Not in service A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 57 ppb

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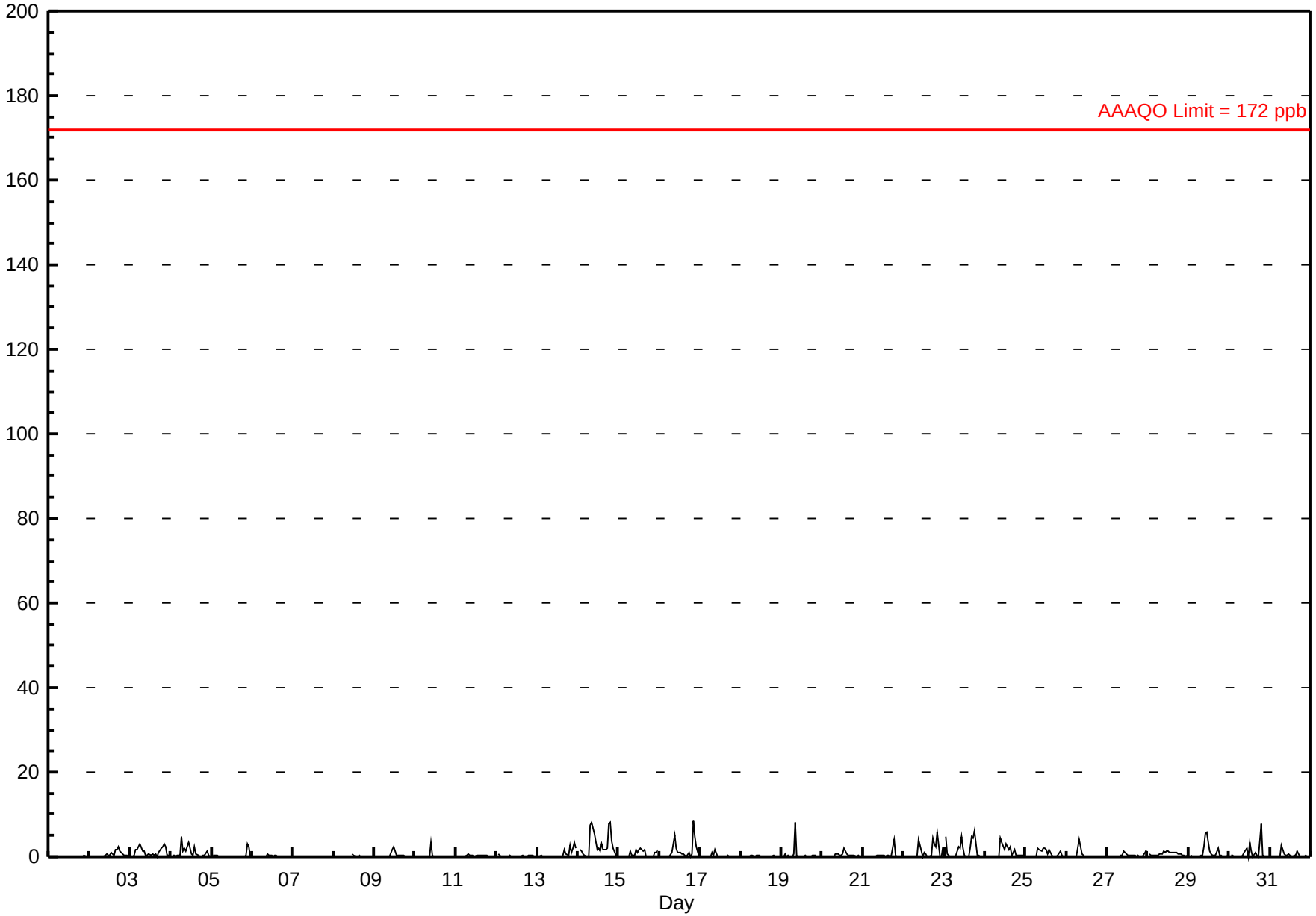
# Hourly Averages

## Sulphur Dioxide ($SO_2$) - ppb

## Valleyview - July 2010



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# Hourly Maximums

## Sulphur Dioxide ($SO_2$) - ppb

## Valleyview - July 2010

Maximum Value: 33.8 ppb on Jul 23 19:00

Maximum Daily Average: 10.9 ppb on Jul 14

Minimum Value: 0 ppb on Jul 31 00:00

Minimum Daily Average: 0.5 ppb on Jul 1

Maximum Diurnal Average: 5.9 ppb at hour 13

Minimum Diurnal Average: 0.7 ppb at hour 6

Monthly Average: 3.11 ppb

Percentiles: $P_1 = 0.1$ $P_{10} = 0.4$ $Q_1 = 0.5$ Median = 0.7 $Q_3 = 2.5$ $P_{90} = 10.0$ $P_{99} = 25.7$

| | |
|---|---|
| Hours in Service: | 706 |
| Hours of Data: | 672 |
| Hours of Missing Data: | 34 |
| Hours of Calibration: | 34 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Daily Average | Daily Maximum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Jul | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0.5 | 2.1 |
| 2-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 3 | 3 | 4 | 0 | 8 | 6 | 6 | 7 | 7 | 1 | 1 | 1 | 1 | 2.4 | 8.5 |
| 3-Jul | A | 1 | 1 | 5 | 6 | 7 | 7 | 3 | 4 | 1 | 1 | 4 | 3 | 5 | 1 | 2 | 1 | 6 | 4 | 7 | 8 | 8 | 1 | 1 | 3.6 | 7.8 |
| 4-Jul | A | 1 | 1 | 1 | 1 | 1 | 9 | 4 | 7 | 4 | 8 | 9 | 4 | 3 | 12 | 4 | 2 | 1 | 1 | 1 | 6 | 6 | 1 | 1 | 3.6 | 11.8 |
| 5-Jul | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 8 | 1 | 1.2 | 7.7 |
| 6-Jul | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 1 | 1 | 2 | 5 | 1 | C | C | NS | NS | NS | NS | NS | NS | -- | 4.6 |
| 7-Jul | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- | -- |
| 8-Jul | NS | NS | NS | NS | NS | NS | NS | NS | C | C | C | 2 | 30 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -- | 30.4 |
| 9-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 16 | 10 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.0 | 15.7 |
| 10-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1.0 | 12.5 |
| 11-Jul | A | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0.7 | 1.1 |
| 12-Jul | A | 5 | 4 | 1 | 1 | 0 | 0 | 1 | 3 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1.0 | 5.4 |
| 13-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 8 | 7 | 2 | 1 | 10 | 4 | 9 | 6 | 4 | 2.5 | 9.7 |
| 14-Jul | A | 3 | 3 | 2 | 1 | 1 | 1 | 23 | 21 | 14 | 15 | 10 | 16 | 9 | 26 | 12 | 16 | 10 | 26 | 23 | 18 | 5 | 1 | 1 | 10.9 | 26.0 |
| 15-Jul | A | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 2 | 1 | 11 | 7 | 13 | 13 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 8 | 4.3 | 13.5 |
| 16-Jul | A | 0 | 0 | 1 | 1 | 0 | 1 | 13 | 10 | 19 | 10 | 6 | 9 | 10 | 8 | 2 | 2 | 9 | 1 | 2 | 27 | 14 | 8 | 1 | 6.7 | 27.1 |
| 17-Jul | A | 0 | 0 | 1 | 1 | 0 | 0 | 12 | 7 | 9 | 1 | 0 | 1 | 0 | 1 | 1 | 8 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1.9 | 12.3 |
| 18-Jul | A | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 3 | 1 | 2 | 1 | 0 | 0.7 | 2.8 |
| 19-Jul | A | 0 | 5 | 1 | 1 | 0 | 0 | 9 | 17 | 4 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2.2 | 17.2 |
| 20-Jul | A | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 3 | 1 | 1 | 3 | 10 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1.4 | 9.9 |
| 21-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 24 | 1 | 0 | 1 | 0 | 1 | 1.6 | 23.5 |
| 22-Jul | A | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 16 | 11 | 1 | 9 | 6 | 0 | 1 | 2 | 21 | 12 | 13 | 33 | 1 | 0 | 13 | 6.3 | 32.9 |
| 23-Jul | A | 20 | 2 | 1 | 0 | 0 | 0 | 3 | 14 | 8 | 13 | 21 | 4 | 1 | 0 | 18 | 23 | 23 | 34 | 2 | 2 | 1 | 1 | 1 | 8.4 | 33.8 |
| 24-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 17 | 12 | 16 | 17 | 14 | 20 | 8 | 21 | 1 | 2 | 1 | 1 | 1 | 1 | 7.0 | 25.3 |
| 25-Jul | A | 1 | 0 | 0 | 1 | 0 | 1 | 9 | 4 | 10 | 12 | 15 | 18 | 3 | 10 | 1 | 1 | 0 | 0 | 0 | 3 | 1 | 0 | 1 | 4.0 | 18.3 |
| 26-Jul | A | 1 | 1 | 1 | 1 | 1 | 1 | 16 | 16 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1.9 | 16.1 |
| 27-Jul | A | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 2 | 2 | 0.9 | 2.3 |
| 28-Jul | A | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1.3 | 2.5 |
| 29-Jul | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 11 | 8 | 4 | 2 | 1 | 1 | 2 | 12 | 1 | 1 | 0 | 0 | 0 | 3 | 2.6 | 12.0 |
| 30-Jul | A | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 12 | 1 | 24 | 7 | 0 | 5 | 1 | 0 | 16 | 30 | 1 | 1 | 1 | 0 | 4.9 | 30.2 |
| 31-Jul | A | 1 | 1 | 1 | 1 | 1 | 1 | 34 | 6 | 1 | 1 | 6 | 1 | 1 | 1 | 1 | 4 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2.7 | 33.7 |
| | -- | 1.5 | 1.0 | 0.7 | 0.7 | 0.7 | 1.0 | 5.0 | 4.2 | 5.3 | 5.1 | 4.4 | 5.9 | 3.4 | 3.6 | 3.7 | 3.2 | 4.2 | 4.7 | 3.7 | 3.9 | 2.4 | 1.4 | 1.5 | Diurnal Average | |
| | -- | 19.9 | 4.8 | 4.7 | 5.7 | 6.7 | 9.1 | 33.7 | 20.8 | 25.3 | 16.9 | 21.5 | 30.4 | 16.5 | 26.0 | 20.2 | 23.4 | 23.5 | 33.8 | 30.2 | 32.9 | 14.3 | 7.7 | 13.2 | Diurnal Maximum | |

C - Calibration NS - Not in service A - Automated Daily Zero Span

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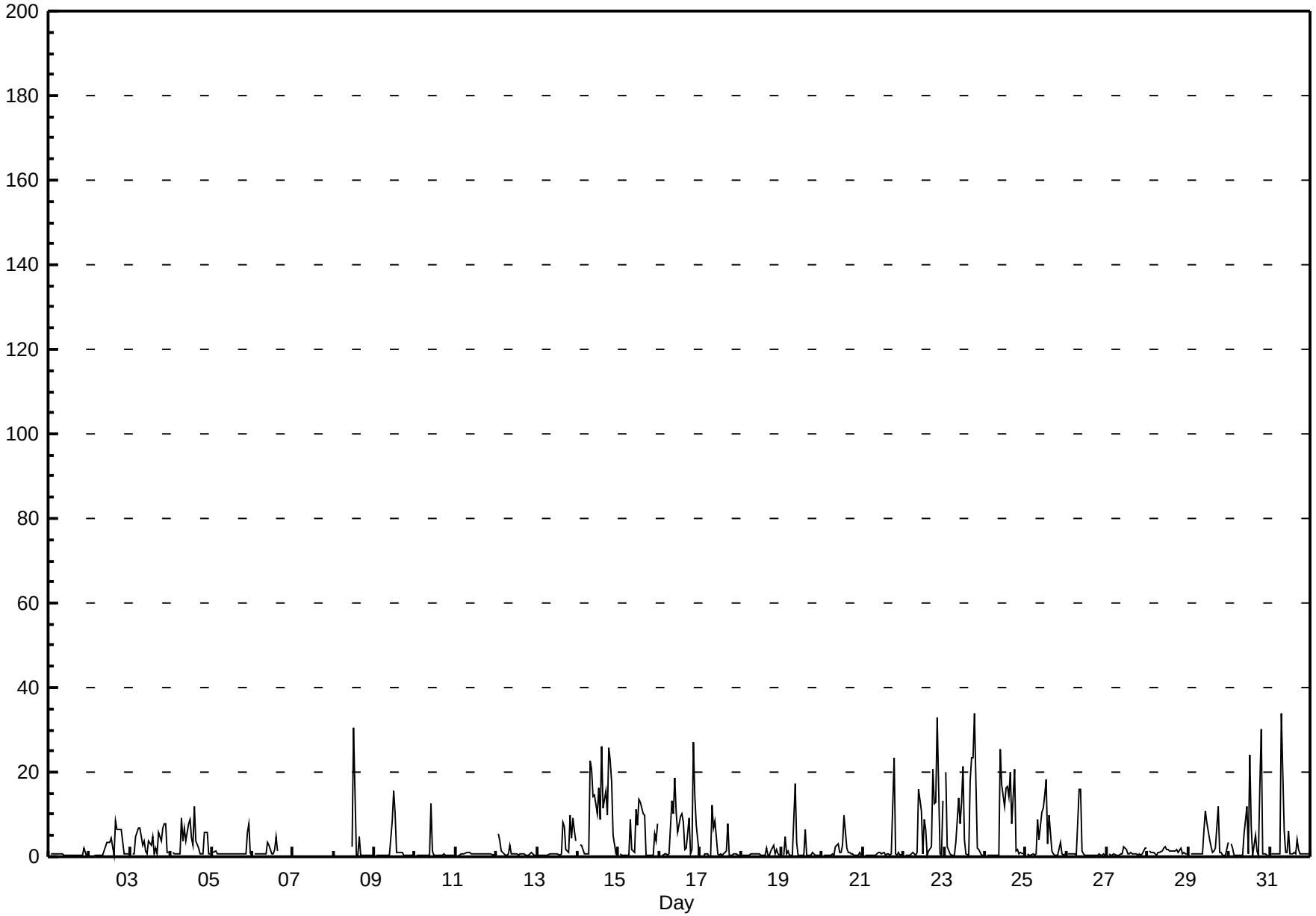
# Hourly Maximums

## Sulphur Dioxide ($SO_2$) - ppb

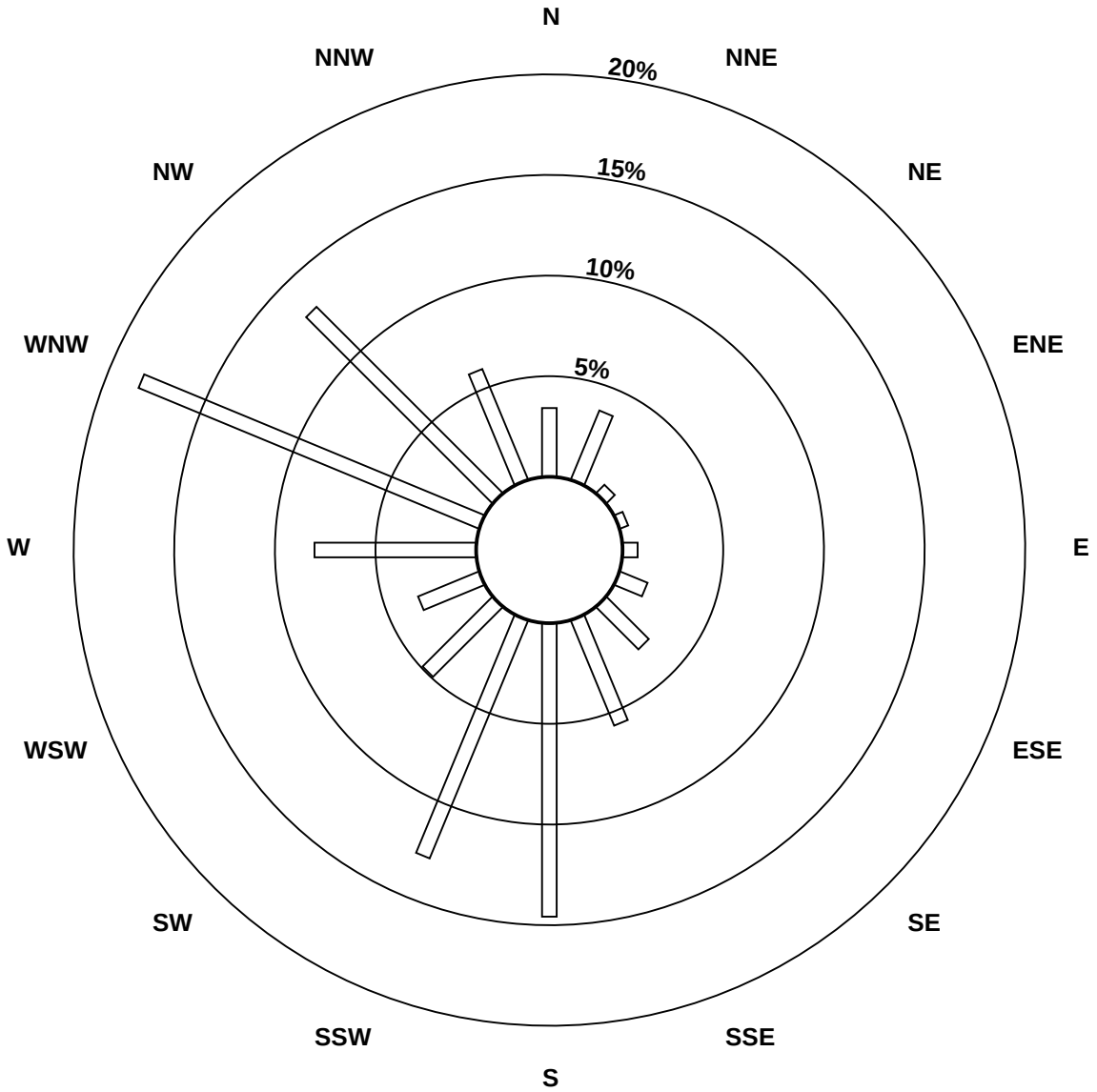
## Valleyview - July 2010



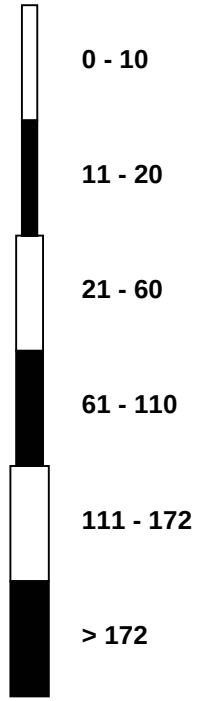
# Pollutant Rose

**Sulphur Dioxide ($SO_2$) - ppb**

**Valleyview - July 2010**




**Pollutant Classes (ppb)**



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# Hourly Averages

## Hydrogen Sulphide ($H_2S$) - ppb

## Valleyview - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 0.8 ppb on Jul 4 17:00 Maximum Daily Average: 0.2 ppb on Jul 14

Minimum Value: 0 ppb on Jul 5 12:00 Minimum Daily Average: 0.0 ppb on Jul 24
Maximum Diurnal Average: 0.1 ppb at hour 2 Minimum Diurnal Average: 0.0 ppb at hour 15
Monthly Average: 0.06 ppb Percentiles: $P_1 = 0.0$ $P_{10} = 0.0$ $Q_1 = 0.0$ Median = 0.0 $Q_3 = 0.1$ $P_{90} = 0.1$ $P_{99} = 0.4$

| | |
|---|---|
| Hours in Service: | 707 |
| Hours of Data: | 671 |
| Hours of Missing Data: | 36 |
| Hours of Calibration: | 36 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Daily Average | Daily Maximum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Jul | 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 |
| 2-Jul | 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 |
| 3-Jul | 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 | 0.3 |
| 4-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.8 |
| 5-Jul | 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 | 0.3 |
| 6-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | C | C | C | NS | NS | NS | NS | -- | 0.0 |
| 7-Jul | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- | -- |
| 8-Jul | NS | NS | NS | NS | NS | NS | NS | NS | NS | C | C | C | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -- | 0.2 |
| 9-Jul | 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 | 0.3 |
| 10-Jul | 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 |
| 11-Jul | 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 |
| 12-Jul | 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 | 0.4 |
| 13-Jul | 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 | 0.2 |
| 14-Jul | A | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.6 |
| 15-Jul | 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 | 0.1 |
| 16-Jul | 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 | 0.3 |
| 17-Jul | 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 | 0.2 |
| 18-Jul | 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 |
| 19-Jul | 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 | 0.1 |
| 20-Jul | 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 | 0.2 |
| 21-Jul | 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 | 0.2 |
| 22-Jul | 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 | 0.1 |
| 23-Jul | 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 | 0.2 |
| 24-Jul | 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 |
| 25-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 | 0.5 |
| 26-Jul | 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 |
| 27-Jul | 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 | 0.3 |
| 28-Jul | 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 | 0.2 |
| 29-Jul | 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 | 0.3 |
| 30-Jul | 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 | 0.1 |
| 31-Jul | 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 |
| | -- | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | Diurnal Average | |
| | -- | 0.5 | 0.6 | 0.5 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.3 | 0.2 | 0.2 | 0.1 | 0.8 | 0.2 | 0.1 | 0.1 | 0.5 | 0.4 | 0.3 | 0.2 | Diurnal Maximum | |

C - Calibration NS - Not in service A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb

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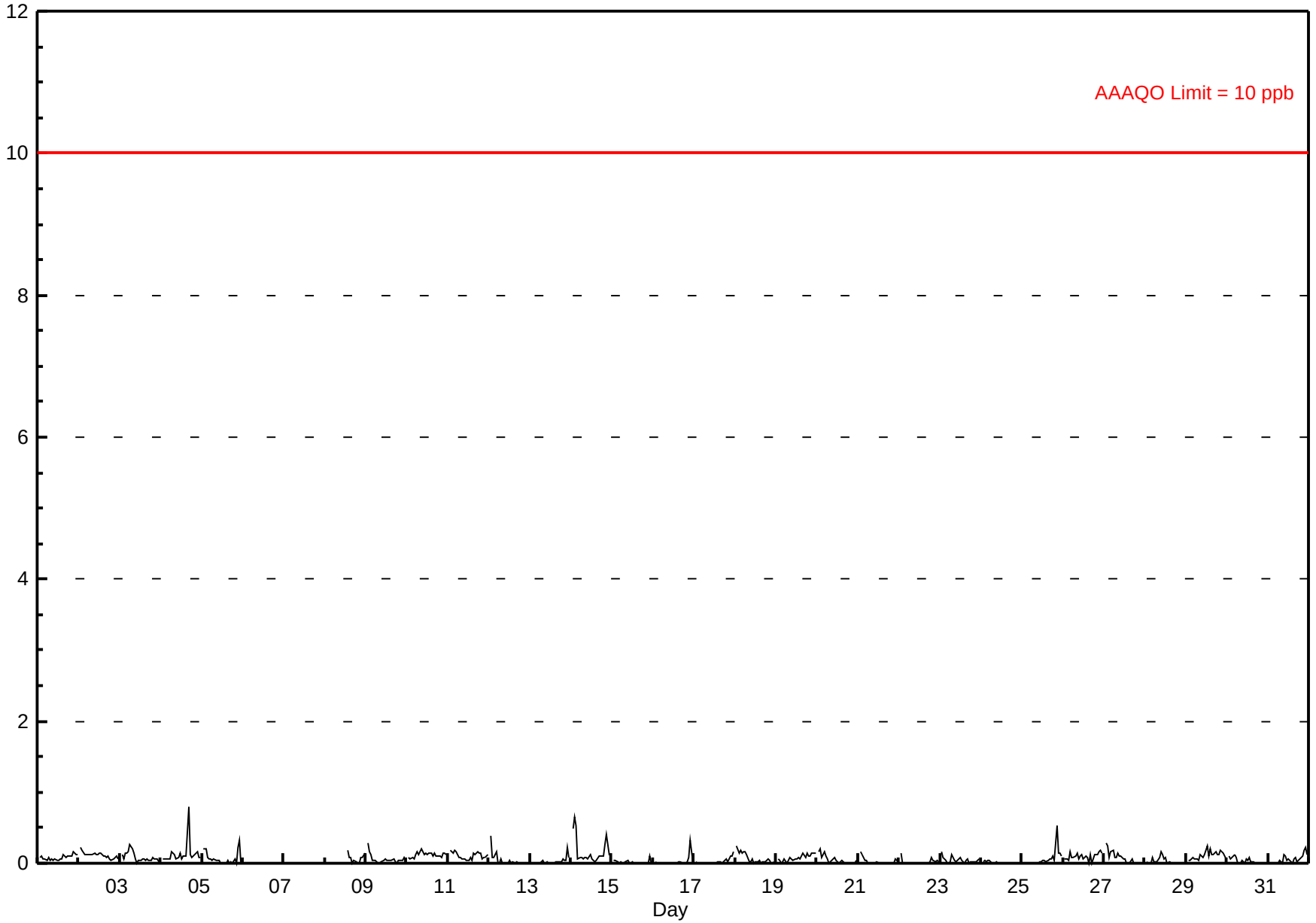
## Hourly Averages

**Hydrogen Sulphide ($H_2S$) - ppb**

**Valleyview - July 2010**



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# Hourly Maximums

## Hydrogen Sulphide ($H_2S$) - ppb

## Valleyview - July 2010

Maximum Value: 18.3 ppb on Jul 4 17:00

Maximum Daily Average: 1.2 ppb on Jul 4

Minimum Value: 0 ppb on Jul 21 15:00

Minimum Daily Average: 0.2 ppb on Jul 21

Maximum Diurnal Average: 0.9 ppb at hour 17

Minimum Diurnal Average: 0.3 ppb at hour 15

Monthly Average: 0.39 ppb

Percentiles: $P_1 = 0.1$ $P_{10} = 0.2$ $Q_1 = 0.3$ Median = 0.3 $Q_3 = 0.4$ $P_{90} = 0.5$ $P_{99} = 1.1$

| | |
|---|---|
| Hours in Service: | 707 |
| Hours of Data: | 671 |
| Hours of Missing Data: | 36 |
| Hours of Calibration: | 36 |
| Percent Operational Time: | 100.0 |

| Day | Hourly Period Ending At (MST) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Daily Average | Daily Maximum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.4 | 0.6 |
| 2-Jul | A | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.7 |
| 3-Jul | A | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.6 |
| 4-Jul | A | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.2 | 18.3 |
| 5-Jul | A | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0.5 | 1.1 |
| 6-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | C | C | C | NS | NS | NS | NS | -- | 0.3 |
| 7-Jul | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- | -- |
| 8-Jul | NS | NS | NS | NS | NS | NS | NS | NS | NS | C | C | C | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -- | 0.5 |
| 9-Jul | A | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.7 |
| 10-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.4 | 0.5 |
| 11-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.4 | 0.9 |
| 12-Jul | A | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 1.1 |
| 13-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.3 | 0.6 |
| 14-Jul | A | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0.5 | 1.4 |
| 15-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.3 | 0.9 |
| 16-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.3 | 1.0 |
| 17-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.4 |
| 18-Jul | A | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.6 |
| 19-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0.4 | 1.1 |
| 20-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.5 |
| 21-Jul | 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 |
| 22-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.4 |
| 23-Jul | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.7 |
| 24-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.5 |
| 25-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0.4 | 1.9 |
| 26-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.4 | 0.5 |
| 27-Jul | A | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.8 |
| 28-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 1.3 |
| 29-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 1.0 |
| 30-Jul | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.4 |
| 31-Jul | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.4 | 0.9 |
| | -- | 0.5 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.9 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | Diurnal Average | |
| | -- | 1.0 | 1.0 | 1.1 | 1.1 | 0.5 | 0.6 | 0.5 | 0.9 | 1.0 | 1.3 | 0.5 | 1.0 | 0.5 | 0.5 | 0.5 | 18.3 | 0.5 | 1.1 | 1.1 | 1.9 | 1.4 | 1.0 | 0.5 | Diurnal Maximum | |

C - Calibration NS - Not in service A - Automated Daily Zero Span

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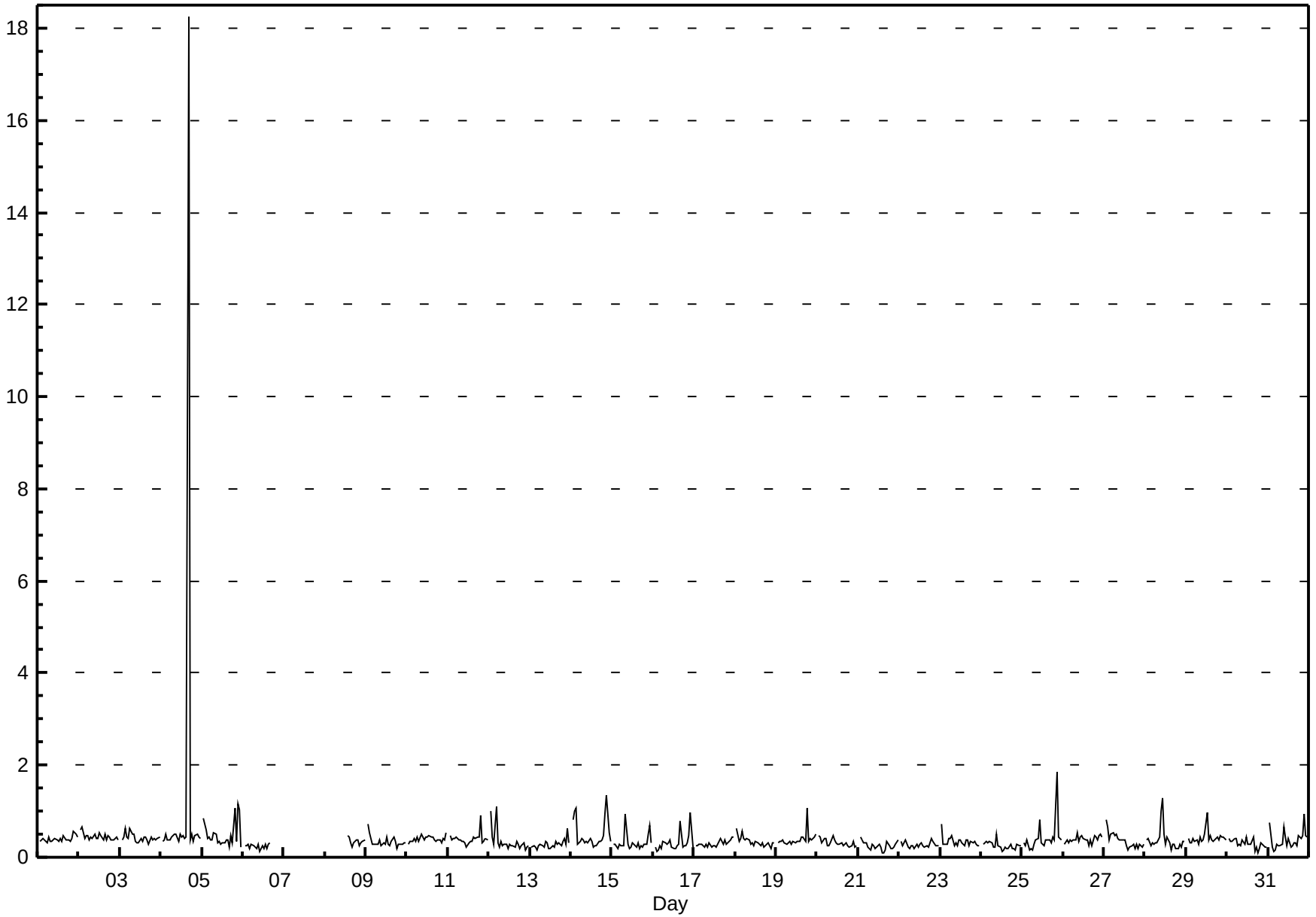
# Hourly Maximums

**Hydrogen Sulphide ($H_2S$) - ppb**

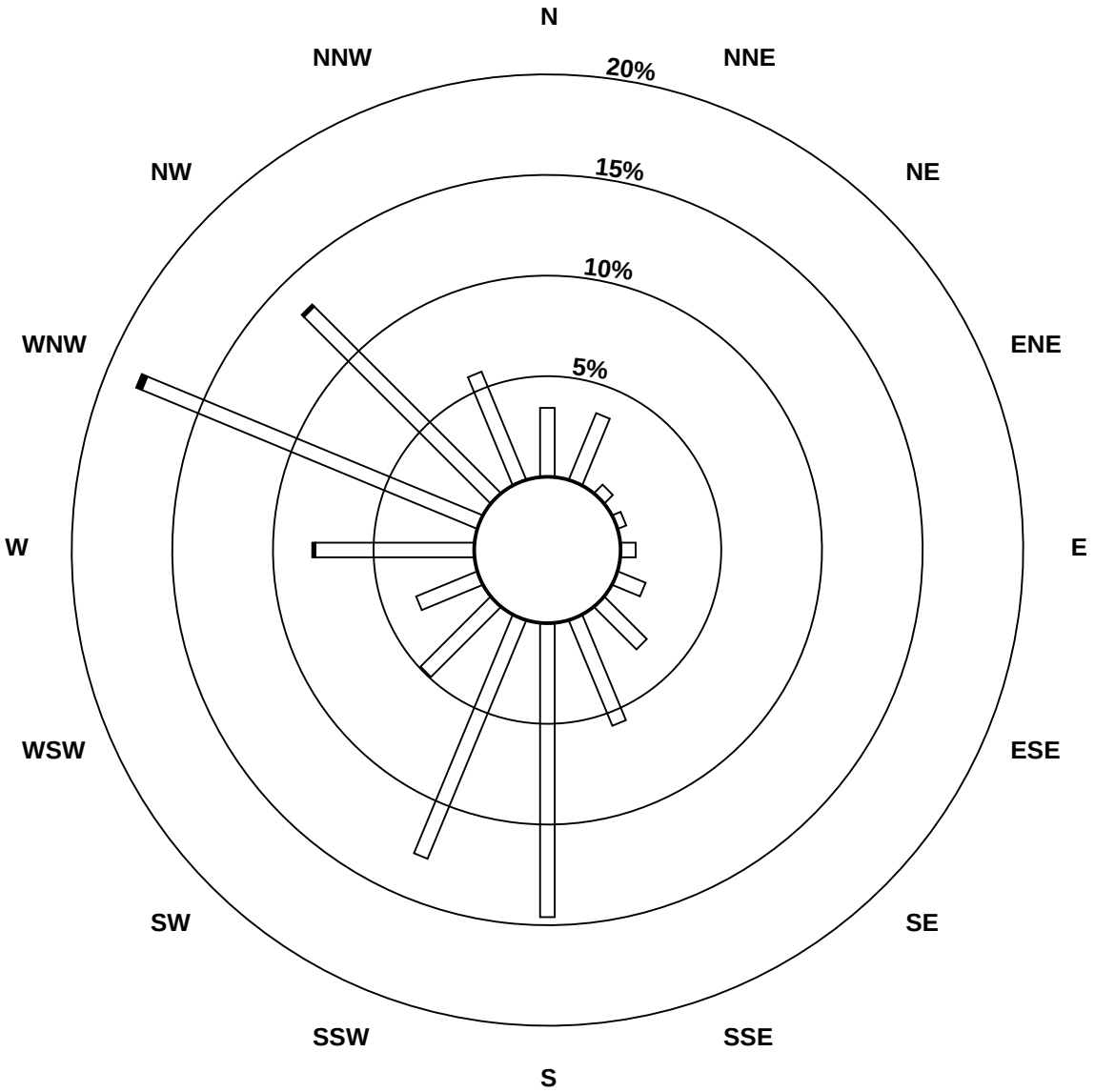
**Valleyview - July 2010**



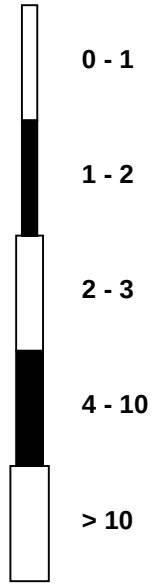
# Pollutant Rose

## Hydrogen Sulphide ($H_2S$) - ppb

## Valleyview - July 2010




**Pollutant Classes (ppb)**



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# Hourly Averages

## External Temperature (ET) - °C

## Valleyview - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 28.6 °C on Jul 28 18:00 Maximum Daily Average: 19.9 °C on Jul 9

Minimum Value: 4 °C on Jul 1 05:00 Minimum Daily Average: 12.4 °C on Jul 2
Maximum Diurnal Average: 21.6 °C at hour 17 Minimum Diurnal Average: 9.7 °C at hour 5
Monthly Average: 16.49 °C Percentiles: $P_1$ = 5.3 $P_{10}$ = 10.0 $Q_1$ = 12.6 Median = 16.3 $Q_3$ = 20.1 $P_{90}$ = 23.5 $P_{99}$ = 27.2

| | |
|---|---|
| Hours in Service: | 704 |
| Hours of Data: | 704 |
| Hours of Missing Data: | 0 |
| Hours of Calibration: | 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-Jul | 7 | 5 | 5 | 4 | 4 | 4 | 7 | 10 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 19 | 20 | 19 | 19 | 18 | 17 | 16 | 12 | 10 | 12.9 | 19.5 |
| 2-Jul | 8 | 7 | 5 | 5 | 5 | 6 | 8 | 12 | 15 | 15 | 15 | 15 | 16 | 16 | 15 | 15 | 15 | 16 | 17 | 16 | 15 | 14 | 13 | 13 | 12.4 | 17.1 |
| 3-Jul | 12 | 11 | 11 | 12 | 12 | 12 | 12 | 12 | 13 | 15 | 15 | 17 | 18 | 19 | 20 | 20 | 19 | 20 | 19 | 18 | 18 | 16 | 14 | 13 | 15.4 | 19.7 |
| 4-Jul | 12 | 13 | 13 | 11 | 11 | 11 | 13 | 13 | 13 | 14 | 14 | 15 | 15 | 16 | 16 | 17 | 16 | 17 | 16 | 16 | 15 | 13 | 12 | 10 | 13.8 | 17.0 |
| 5-Jul | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 13 | 14 | 15 | 16 | 17 | 17 | 18 | 19 | 20 | 20 | 19 | 19 | 18 | 17 | 17 | 13 | 14.6 | 20.1 |
| 6-Jul | 13 | 12 | 12 | 11 | 11 | 11 | 14 | 15 | 16 | 17 | 18 | 20 | 21 | 22 | 22 | 23 | 23 | 22 | 22 | NS | NS | NS | NS | NS | 17.1 | 22.9 |
| 7-Jul | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- | -- |
| 8-Jul | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 26 | 26 | 26 | 27 | 27 | 28 | 28 | 28 | 26 | 25 | 22 | 18 | 17 | -- | 27.9 |
| 9-Jul | 15 | 14 | 13 | 13 | 12 | 13 | 15 | 18 | 20 | 24 | 25 | 25 | 26 | 27 | 26 | 26 | 24 | 23 | 22 | 22 | 21 | 19 | 18 | 17 | 19.9 | 26.6 |
| 10-Jul | 15 | 15 | 14 | 14 | 13 | 14 | 14 | 15 | 16 | 18 | 20 | 20 | 21 | 22 | 22 | 23 | 24 | 24 | 24 | 23 | 22 | 18 | 16 | 14 | 18.4 | 24.1 |
| 11-Jul | 12 | 11 | 11 | 10 | 10 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 24 | 24 | 24 | 25 | 25 | 23 | 23 | 23 | 21 | 19 | 17 | 16 | 18.3 | 25.2 |
| 12-Jul | 15 | 15 | 15 | 14 | 13 | 13 | 13 | 13 | 14 | 16 | 17 | 17 | 17 | 17 | 16 | 16 | 15 | 14 | 14 | 14 | 14 | 13 | 13 | 12 | 14.6 | 17.2 |
| 13-Jul | 10 | 9 | 9 | 8 | 9 | 9 | 9 | 10 | 11 | 12 | 13 | 13 | 14 | 16 | 17 | 17 | 18 | 19 | 18 | 18 | 18 | 17 | 16 | 15 | 13.5 | 18.6 |
| 14-Jul | 15 | 14 | 14 | 13 | 13 | 12 | 14 | 16 | 17 | 18 | 19 | 21 | 22 | 23 | 24 | 24 | 25 | 25 | 25 | 24 | 22 | 20 | 17 | 16 | 18.9 | 24.7 |
| 15-Jul | 14 | 13 | 12 | 11 | 10 | 11 | 13 | 17 | 18 | 19 | 20 | 20 | 21 | 21 | 22 | 22 | 21 | 21 | 21 | 20 | 19 | 17 | 16 | 15 | 17.2 | 21.6 |
| 16-Jul | 13 | 12 | 10 | 9 | 8 | 8 | 11 | 14 | 15 | 16 | 17 | 18 | 18 | 19 | 19 | 19 | 20 | 19 | 18 | 18 | 18 | 16 | 15 | 14 | 15.1 | 19.7 |
| 17-Jul | 12 | 11 | 9 | 8 | 7 | 7 | 10 | 13 | 14 | 16 | 17 | 18 | 19 | 20 | 20 | 22 | 22 | 23 | 23 | 22 | 20 | 16 | 15 | 13 | 15.9 | 23.0 |
| 18-Jul | 11 | 10 | 9 | 8 | 7 | 8 | 10 | 11 | 15 | 16 | 17 | 19 | 20 | 20 | 20 | 18 | 17 | 17 | 16 | 15 | 14 | 13 | 12 | 12 | 14.0 | 20.4 |
| 19-Jul | 11 | 11 | 12 | 11 | 11 | 11 | 11 | 12 | 13 | 15 | 15 | 17 | 18 | 17 | 19 | 19 | 17 | 20 | 19 | 20 | 17 | 15 | 14 | 12 | 14.9 | 19.8 |
| 20-Jul | 12 | 11 | 10 | 9 | 9 | 9 | 10 | 13 | 16 | 18 | 20 | 21 | 22 | 23 | 24 | 22 | 24 | 24 | 25 | 22 | 19 | 17 | 15 | 13 | 17.0 | 24.5 |
| 21-Jul | 11 | 10 | 9 | 9 | 9 | 9 | 11 | 14 | 17 | 20 | 22 | 24 | 25 | 26 | 26 | 26 | 26 | 24 | 20 | 20 | 20 | 18 | 16 | 15 | 17.7 | 26.4 |
| 22-Jul | 13 | 12 | 12 | 12 | 11 | 12 | 13 | 14 | 16 | 19 | 19 | 19 | 19 | 19 | 20 | 20 | 21 | 20 | 19 | 18 | 18 | 17 | 17 | 17 | 16.5 | 20.6 |
| 23-Jul | 16 | 15 | 14 | 13 | 11 | 11 | 13 | 15 | 17 | 18 | 19 | 20 | 22 | 23 | 24 | 24 | 25 | 25 | 25 | 25 | 23 | 20 | 17 | 15 | 18.8 | 25.4 |
| 24-Jul | 14 | 13 | 12 | 12 | 12 | 11 | 12 | 13 | 16 | 18 | 19 | 21 | 21 | 22 | 22 | 22 | 23 | 22 | 22 | 21 | 19 | 16 | 13 | 11 | 17.0 | 22.6 |
| 25-Jul | 10 | 9 | 8 | 7 | 6 | 7 | 9 | 13 | 15 | 17 | 17 | 18 | 19 | 20 | 21 | 22 | 22 | 23 | 23 | 23 | 21 | 17 | 14 | 13 | 15.5 | 22.8 |
| 26-Jul | 12 | 11 | 11 | 9 | 8 | 8 | 9 | 11 | 13 | 14 | 14 | 15 | 17 | 18 | 19 | 20 | 20 | 20 | 20 | 20 | 18 | 14 | 11 | 10 | 14.4 | 20.3 |
| 27-Jul | 9 | 8 | 7 | 6 | 6 | 6 | 8 | 11 | 14 | 18 | 20 | 21 | 22 | 22 | 23 | 24 | 24 | 24 | 24 | 23 | 21 | 18 | 17 | 16 | 16.3 | 23.9 |
| 28-Jul | 15 | 14 | 12 | 11 | 9 | 9 | 11 | 13 | 17 | 20 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 28 | 27 | 22 | 20 | 19 | 17 | 19.5 | 28.6 |
| 29-Jul | 17 | 16 | 15 | 13 | 12 | 11 | 12 | 15 | 18 | 20 | 22 | 24 | 26 | 27 | 27 | 25 | 24 | 23 | 26 | 24 | 21 | 19 | 17 | 18 | 19.7 | 26.8 |
| 30-Jul | 17 | 15 | 15 | 14 | 12 | 11 | 12 | 13 | 16 | 18 | 19 | 21 | 22 | 22 | 23 | 19 | 19 | 20 | 19 | 19 | 17 | 15 | 14 | 13 | 16.8 | 22.6 |
| 31-Jul | 12 | 12 | 12 | 12 | 12 | 12 | 13 | 16 | 17 | 19 | 20 | 21 | 22 | 23 | 23 | 22 | 25 | 23 | 23 | 23 | 21 | 17 | 15 | 14 | 17.8 | 24.6 |
| | 12.5 | 11.8 | 11.0 | 10.3 | 9.7 | 9.9 | 11.3 | 13.4 | 15.4 | 17.0 | 18.2 | 19.5 | 20.4 | 21.0 | 21.4 | 21.5 | 21.6 | 21.6 | 21.2 | 20.6 | 19.0 | 17.0 | 15.2 | 13.9 | Diurnal Average | |
| | 16.6 | 16.0 | 15.5 | 14.1 | 13.4 | 13.6 | 15.2 | 18.1 | 20.5 | 23.5 | 24.9 | 25.5 | 26.2 | 26.7 | 26.9 | 27.3 | 27.8 | 28.6 | 28.4 | 27.0 | 24.8 | 21.8 | 18.5 | 18.2 | Diurnal Maximum | |

NS - Not in service

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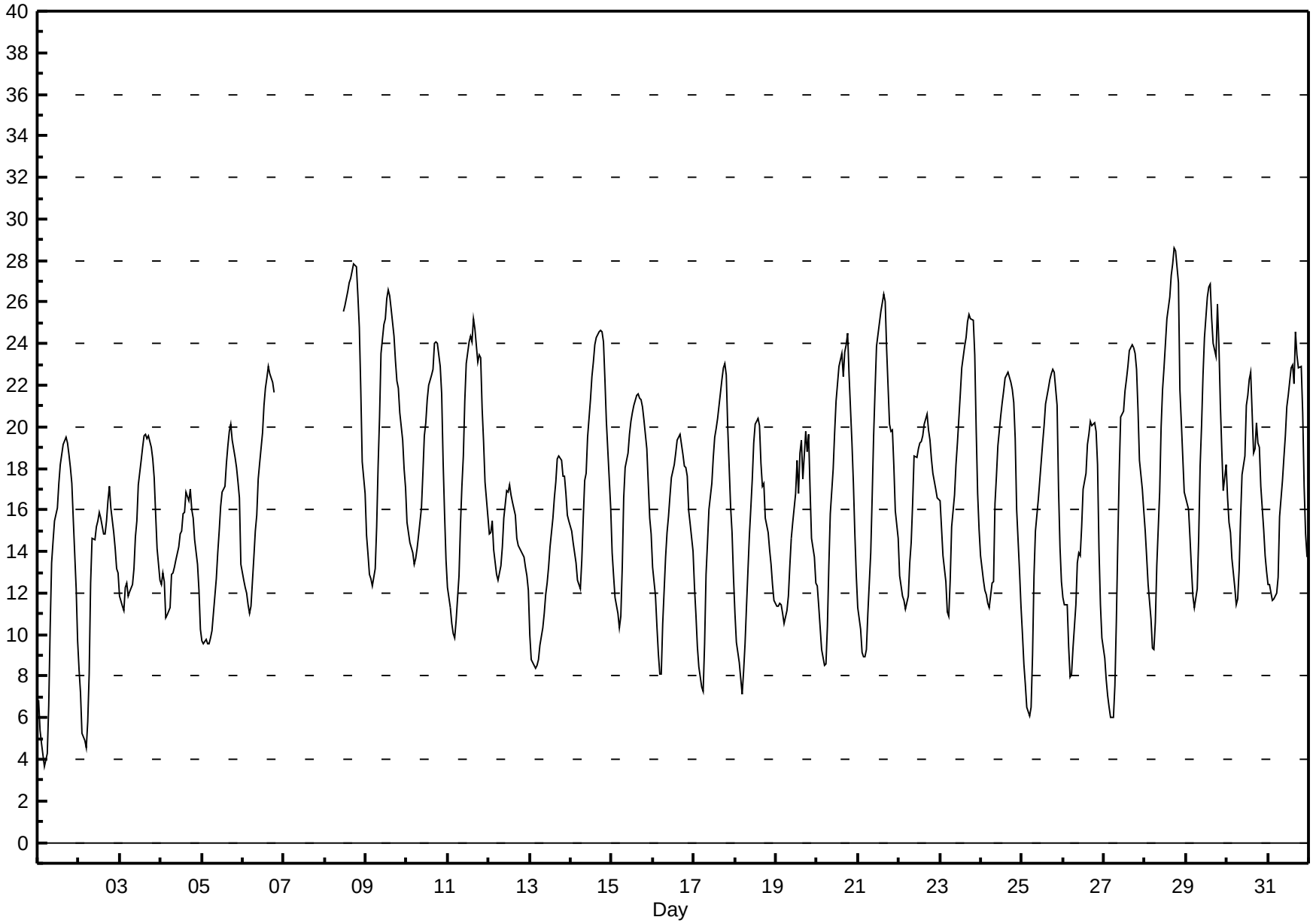
## Hourly Averages

**External Temperature (ET) - $^{o}$C**

**Valleyview - July 2010**



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# Hourly Averages

## Relative Humidity (RH) - %

## Valleyview - July 2010

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 97.4 % on Jul 20 05:00 Maximum Daily Average: 85.6 % on Jul 13

Minimum Value: 22 % on Jul 1 16:00 Minimum Daily Average: 44.3 % on Jul 1
Maximum Diurnal Average: 88.3 % at hour 5 Minimum Diurnal Average: 39.5 % at hour 18
Monthly Average: 60.70 % Percentiles: $P_1$ = 24.7 $P_{10}$ = 32.8 $Q_1$ = 41.3 Median = 59.0 $Q_3$ = 80.6 $P_{90}$ = 90.7 $P_{99}$ = 96.4

| | |
|---|---|
| Hours in Service: | 703 |
| Hours of Data: | 703 |
| Hours of Missing Data: | 0 |
| Hours of Calibration: | 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-Jul | 62 | 72 | 73 | 75 | 78 | 76 | 67 | 56 | 38 | 35 | 32 | 30 | 29 | 24 | 24 | 22 | 23 | 24 | 25 | 29 | 30 | 34 | 49 | 58 | 44.3 | 78.0 |
| 2-Jul | 64 | 69 | 85 | 79 | 85 | 77 | 69 | 51 | 36 | 34 | 35 | 38 | 40 | 43 | 46 | 49 | 48 | 45 | 42 | 45 | 52 | 53 | 56 | 57 | 54.2 | 85.3 |
| 3-Jul | 63 | 64 | 65 | 60 | 62 | 67 | 67 | 64 | 60 | 52 | 50 | 46 | 42 | 39 | 37 | 36 | 36 | 36 | 37 | 38 | 39 | 42 | 47 | 54 | 50.1 | 67.0 |
| 4-Jul | 55 | 55 | 55 | 62 | 62 | 64 | 62 | 66 | 65 | 62 | 55 | 50 | 50 | 47 | 46 | 41 | 42 | 40 | 46 | 46 | 51 | 57 | 70 | 87 | 55.7 | 87.3 |
| 5-Jul | 90 | 92 | 92 | 92 | 93 | 91 | 89 | 86 | 77 | 71 | 67 | 62 | 52 | 51 | 47 | 44 | 39 | 38 | 42 | 47 | 49 | 53 | 57 | 84 | 66.8 | 92.6 |
| 6-Jul | 89 | 88 | 87 | 85 | 82 | 75 | 59 | 52 | 52 | 49 | 48 | 44 | 38 | 36 | 36 | 33 | 33 | 36 | 40 | NS | NS | NS | NS | NS | 55.8 | 88.6 |
| 7-Jul | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- | -- |
| 8-Jul | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 29 | 27 | 27 | 27 | 26 | 26 | 27 | 34 | 39 | 51 | 72 | 71 | -- | 71.8 |
| 9-Jul | 83 | 83 | 88 | 86 | 86 | 82 | 74 | 62 | 56 | 45 | 34 | 34 | 32 | 32 | 33 | 36 | 45 | 49 | 51 | 43 | 53 | 63 | 63 | 63 | 57.4 | 87.6 |
| 10-Jul | 76 | 79 | 83 | 88 | 90 | 89 | 88 | 84 | 79 | 70 | 58 | 52 | 47 | 40 | 38 | 36 | 33 | 31 | 32 | 37 | 45 | 65 | 73 | 85 | 62.4 | 89.7 |
| 11-Jul | 92 | 95 | 94 | 96 | 97 | 93 | 82 | 71 | 65 | 62 | 55 | 50 | 45 | 42 | 43 | 41 | 43 | 52 | 54 | 54 | 66 | 74 | 83 | 88 | 68.2 | 96.6 |
| 12-Jul | 90 | 90 | 88 | 77 | 90 | 92 | 89 | 85 | 64 | 51 | 44 | 44 | 43 | 41 | 45 | 46 | 51 | 51 | 52 | 53 | 55 | 57 | 60 | 61 | 63.3 | 92.3 |
| 13-Jul | 81 | 90 | 91 | 92 | 93 | 94 | 94 | 94 | 93 | 92 | 92 | 91 | 88 | 84 | 82 | 79 | 75 | 74 | 74 | 78 | 77 | 80 | 84 | 85 | 85.6 | 94.1 |
| 14-Jul | 86 | 85 | 84 | 84 | 88 | 91 | 84 | 72 | 61 | 59 | 56 | 49 | 44 | 39 | 33 | 34 | 32 | 32 | 33 | 34 | 38 | 44 | 56 | 61 | 57.4 | 90.7 |
| 15-Jul | 71 | 77 | 83 | 85 | 89 | 83 | 73 | 56 | 45 | 41 | 39 | 37 | 38 | 35 | 31 | 29 | 29 | 28 | 28 | 30 | 36 | 41 | 44 | 48 | 49.8 | 88.7 |
| 16-Jul | 58 | 64 | 71 | 80 | 87 | 87 | 77 | 56 | 42 | 40 | 37 | 36 | 35 | 34 | 32 | 32 | 34 | 38 | 40 | 41 | 43 | 49 | 51 | 57 | 50.8 | 87.3 |
| 17-Jul | 71 | 75 | 86 | 91 | 94 | 95 | 83 | 69 | 63 | 56 | 48 | 42 | 39 | 37 | 36 | 32 | 32 | 31 | 32 | 35 | 55 | 71 | 70 | 81 | 59.2 | 95.1 |
| 18-Jul | 90 | 94 | 92 | 94 | 95 | 94 | 88 | 84 | 71 | 64 | 57 | 51 | 47 | 46 | 48 | 60 | 71 | 59 | 74 | 75 | 77 | 77 | 83 | 89 | 74.1 | 94.7 |
| 19-Jul | 90 | 90 | 86 | 87 | 91 | 94 | 92 | 89 | 79 | 76 | 76 | 70 | 60 | 70 | 60 | 56 | 59 | 51 | 59 | 57 | 74 | 83 | 86 | 92 | 76.2 | 94.2 |
| 20-Jul | 88 | 91 | 95 | 96 | 97 | 97 | 91 | 79 | 70 | 64 | 57 | 49 | 43 | 39 | 35 | 39 | 36 | 34 | 31 | 39 | 50 | 58 | 72 | 81 | 63.8 | 97.4 |
| 21-Jul | 92 | 93 | 93 | 96 | 96 | 95 | 86 | 75 | 64 | 54 | 46 | 39 | 32 | 27 | 26 | 25 | 28 | 37 | 51 | 54 | 55 | 64 | 77 | 79 | 61.8 | 96.3 |
| 22-Jul | 90 | 87 | 90 | 92 | 94 | 91 | 83 | 79 | 73 | 59 | 58 | 59 | 59 | 58 | 59 | 55 | 53 | 59 | 60 | 59 | 63 | 70 | 74 | 71 | 70.6 | 94.4 |
| 23-Jul | 60 | 64 | 67 | 73 | 81 | 81 | 73 | 63 | 55 | 51 | 48 | 44 | 41 | 39 | 36 | 33 | 29 | 27 | 30 | 32 | 38 | 52 | 65 | 79 | 52.5 | 81.2 |
| 24-Jul | 85 | 89 | 86 | 83 | 85 | 84 | 82 | 89 | 78 | 60 | 47 | 38 | 32 | 28 | 26 | 25 | 23 | 24 | 25 | 27 | 32 | 49 | 69 | 70 | 55.7 | 88.9 |
| 25-Jul | 67 | 73 | 75 | 83 | 85 | 82 | 73 | 58 | 44 | 39 | 37 | 35 | 33 | 31 | 29 | 27 | 26 | 26 | 26 | 27 | 31 | 46 | 55 | 63 | 48.8 | 85.0 |
| 26-Jul | 68 | 69 | 66 | 81 | 90 | 91 | 83 | 74 | 66 | 66 | 76 | 67 | 51 | 47 | 41 | 39 | 37 | 35 | 35 | 36 | 47 | 71 | 79 | 87 | 62.6 | 91.1 |
| 27-Jul | 89 | 92 | 95 | 96 | 97 | 96 | 92 | 82 | 71 | 60 | 44 | 40 | 36 | 34 | 34 | 32 | 32 | 33 | 34 | 39 | 45 | 55 | 59 | 63 | 60.4 | 96.8 |
| 28-Jul | 68 | 73 | 79 | 88 | 93 | 90 | 88 | 80 | 70 | 62 | 58 | 55 | 51 | 48 | 43 | 36 | 34 | 33 | 35 | 39 | 49 | 58 | 67 | 72 | 61.3 | 93.3 |
| 29-Jul | 71 | 77 | 85 | 91 | 94 | 94 | 88 | 80 | 69 | 62 | 54 | 49 | 40 | 35 | 31 | 36 | 34 | 36 | 31 | 39 | 50 | 59 | 67 | 58 | 59.6 | 94.3 |
| 30-Jul | 70 | 78 | 83 | 90 | 95 | 97 | 96 | 88 | 80 | 63 | 59 | 53 | 44 | 42 | 41 | 62 | 68 | 60 | 60 | 62 | 74 | 87 | 94 | 95 | 72.6 | 96.8 |
| 31-Jul | 96 | 95 | 97 | 95 | 95 | 96 | 94 | 80 | 70 | 64 | 58 | 52 | 49 | 43 | 44 | 49 | 38 | 42 | 46 | 48 | 60 | 80 | 88 | 87 | 69.4 | 96.8 |
| | 77.8 | 80.9 | 83.2 | 85.5 | 88.3 | 87.5 | 81.7 | 73.2 | 63.9 | 57.4 | 52.6 | 48.5 | 43.5 | 41.2 | 39.6 | 39.7 | 39.6 | 39.5 | 41.6 | 44.0 | 50.9 | 60.1 | 68.0 | 73.4 | Diurnal Average | |
| | 96.2 | 95.4 | 96.8 | 96.5 | 97.4 | 97.4 | 95.9 | 93.8 | 93.0 | 91.8 | 92.0 | 90.7 | 87.5 | 84.2 | 81.9 | 79.5 | 75.0 | 73.5 | 73.8 | 77.8 | 77.2 | 87.1 | 93.9 | 95.4 | Diurnal Maximum | |

NS - Not in service

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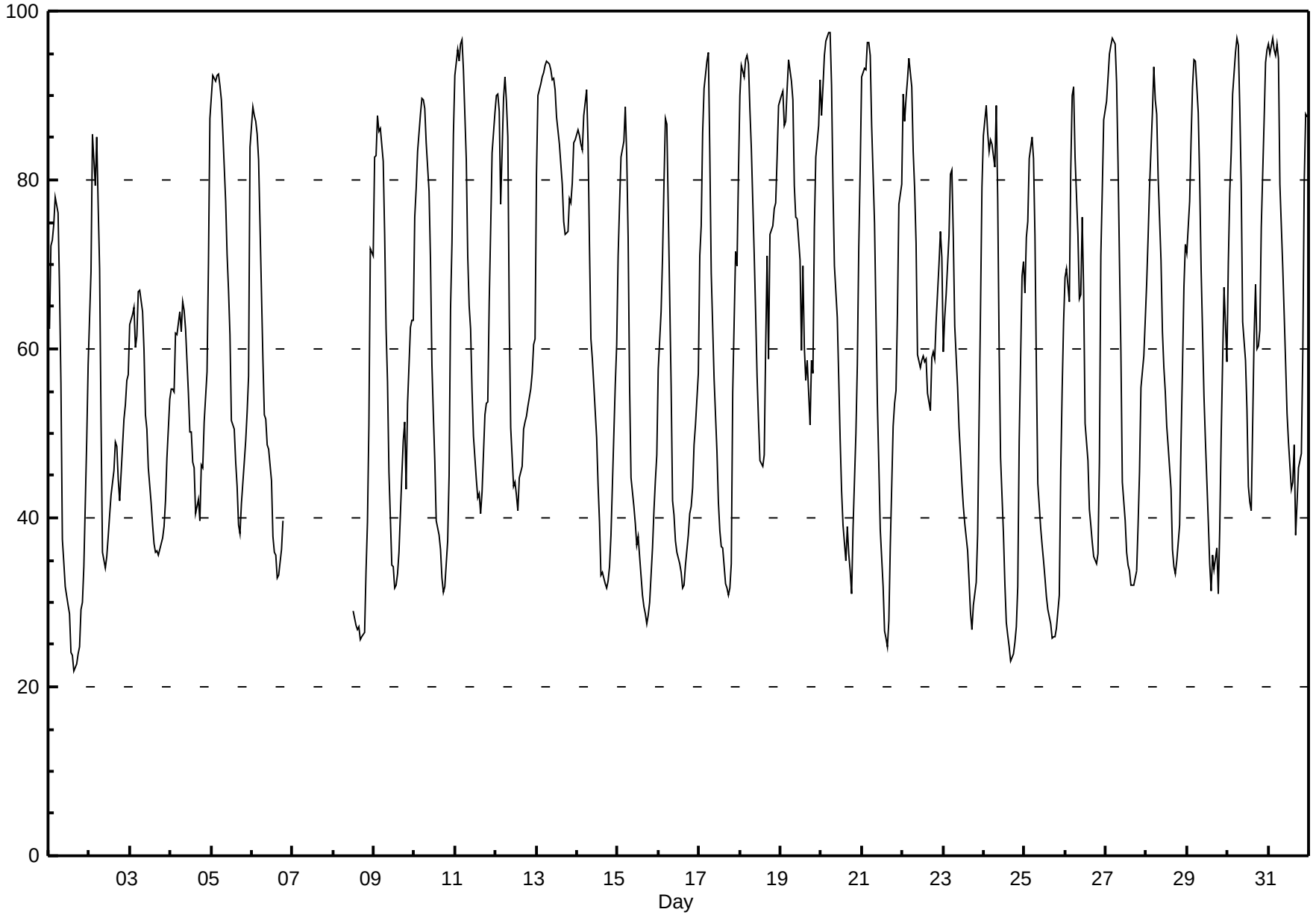
## Hourly Averages

**Relative Humidity (RH) - %**

**Valleyview - July 2010**



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# Hourly Averages

## Wind Speed (km/h)
## Wind Direction (deg)
## Valleyview - July 2010

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 1 Spd | 5 | 4 | 6 | 4 | 5 | 5 | 5 | 4 | 8 | 8 | 8 | 9 | 7 | 8 | 10 | 10 | 8 | 9 | 10 | 5 | 8 | 6 | 3 | 2 | 5.8 | 9.9 |
| Dir | 186 | 191 | 189 | 197 | 193 | 190 | 191 | 194 | 234 | 235 | 241 | 248 | 234 | 245 | 249 | 255 | 263 | 261 | 264 | 249 | 260 | 279 | 198 | 202 | 236 | 249 |
| 2 Spd | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 4 | 11 | 15 | 15 | 15 | 12 | 12 | 10 | 6 | 10 | 13 | 14 | 12 | 6 | 4 | 3 | 3 | 6.5 | 15.2 |
| Dir | 196 | 189 | 184 | 189 | 174 | 165 | 171 | 214 | 261 | 278 | 281 | 287 | 301 | 291 | 302 | 277 | 282 | 286 | 280 | 268 | 254 | 241 | 237 | 220 | 271 | 278 |
| 3 Spd | 3 | 3 | 2 | 12 | 16 | 12 | 8 | 11 | 13 | 15 | 13 | 14 | 14 | 15 | 16 | 15 | 16 | 17 | 17 | 15 | 13 | 11 | 5 | 3 | 11.0 | 17.3 |
| Dir | 195 | 200 | 214 | 286 | 292 | 289 | 286 | 291 | 290 | 299 | 303 | 300 | 308 | 295 | 305 | 299 | 302 | 292 | 284 | 285 | 285 | 272 | 247 | 205 | 290 | 284 |
| 4 Spd | 3 | 3 | 3 | 3 | 3 | 3 | 10 | 9 | 11 | 10 | 14 | 15 | 13 | 13 | 13 | 15 | 17 | 19 | 15 | 17 | 15 | 12 | 10 | 11 | 9.7 | 19.1 |
| Dir | 202 | 196 | 206 | 198 | 211 | 207 | 279 | 272 | 278 | 267 | 277 | 292 | 309 | 302 | 294 | 306 | 310 | 303 | 315 | 301 | 299 | 294 | 316 | 306 | 293 | 303 |
| 5 Spd | 10 | 7 | 9 | 12 | 12 | 11 | 11 | 10 | 14 | 14 | 13 | 13 | 18 | 15 | 15 | 16 | 19 | 17 | 15 | 9 | 9 | 7 | 3 | 3 | 11.2 | 18.7 |
| Dir | 292 | 274 | 291 | 296 | 303 | 314 | 317 | 312 | 317 | 317 | 301 | 312 | 322 | 324 | 326 | 323 | 316 | 313 | 302 | 299 | 294 | 281 | 308 | 133 | 309 | 316 |
| 6 Spd | 3 | 3 | 3 | 2 | 3 | 3 | 6 | 12 | 10 | 10 | 9 | 9 | 10 | 12 | 12 | 13 | 12 | 13 | 9 | NS | NS | NS | NS | NS | 6.3 | 13.4 |
| Dir | 202 | 200 | 165 | 159 | 155 | 200 | 282 | 296 | 289 | 296 | 309 | 330 | 328 | 311 | 306 | 303 | 322 | 341 | 350 | NS | NS | NS | NS | NS | 308 | 303 |
| 7 Spd | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- | -- |
| Dir | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- | -- |
| 8 Spd | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 4 | 6 | 5 | 8 | 8 | 7 | 4 | 4 | 5 | 3 | 0 | 1 | 1 | -- | 7.8 |
| Dir | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 337 | 18 | 352 | 6 | 321 | 332 | 19 | 359 | 122 | 118 | 324 | 207 | 204 | -- | 6 |
| 9 Spd | 1 | 1 | 2 | 1 | 3 | 3 | 4 | 4 | 3 | 4 | 9 | 8 | 10 | 12 | 17 | 14 | 14 | 15 | 12 | 7 | 5 | 0 | 5 | 6 | 4.0 | 16.8 |
| Dir | 201 | 272 | 187 | 233 | 194 | 196 | 192 | 189 | 179 | 206 | 305 | 277 | 305 | 327 | 346 | 348 | 18 | 12 | 10 | 19 | 18 | 133 | 21 | 346 | 341 | 346 |
| 10 Spd | 3 | 2 | 1 | 2 | 4 | 1 | 2 | 5 | 2 | 3 | 2 | 3 | 3 | 5 | 5 | 5 | 2 | 4 | 1 | 4 | 3 | 2 | 1 | 1 | 1.5 | 5.1 |
| Dir | 309 | 293 | 313 | 323 | 333 | 345 | 296 | 331 | 315 | 344 | 62 | 7 | 29 | 6 | 12 | 18 | 19 | 356 | 102 | 130 | 142 | 171 | 219 | 193 | 356 | 18 |
| 11 Spd | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 6 | 8 | 7 | 5 | 7 | 6 | 8 | 6 | 7 | 7 | 8 | 5 | 5 | 2 | 2 | 3 | 2 | 4.4 | 7.8 |
| Dir | 193 | 186 | 211 | 190 | 187 | 198 | 187 | 188 | 187 | 186 | 192 | 185 | 191 | 191 | 192 | 188 | 182 | 187 | 189 | 189 | 189 | 203 | 174 | 210 | 189 | 187 |
| 12 Spd | 2 | 2 | 4 | 5 | 3 | 2 | 2 | 2 | 7 | 12 | 16 | 18 | 19 | 19 | 20 | 20 | 18 | 18 | 18 | 15 | 15 | 13 | 13 | 17 | 10.8 | 20.2 |
| Dir | 196 | 283 | 262 | 305 | 188 | 190 | 189 | 183 | 302 | 311 | 316 | 313 | 311 | 321 | 325 | 321 | 310 | 317 | 322 | 326 | 318 | 319 | 328 | 328 | 315 | 321 |
| 13 Spd | 16 | 13 | 16 | 15 | 13 | 17 | 18 | 22 | 20 | 16 | 15 | 13 | 13 | 12 | 10 | 11 | 15 | 17 | 16 | 11 | 13 | 9 | 7 | 10 | 13.4 | 21.5 |
| Dir | 319 | 303 | 298 | 306 | 317 | 321 | 339 | 339 | 343 | 342 | 336 | 331 | 327 | 319 | 310 | 297 | 296 | 298 | 298 | 289 | 296 | 299 | 293 | 295 | 315 | 339 |
| 14 Spd | 8 | 7 | 7 | 5 | 2 | 2 | 3 | 4 | 11 | 9 | 7 | 9 | 10 | 9 | 12 | 10 | 11 | 11 | 11 | 8 | 8 | 7 | 3 | 3 | 6.8 | 12.0 |
| Dir | 298 | 292 | 287 | 277 | 222 | 179 | 162 | 264 | 292 | 284 | 283 | 294 | 293 | 294 | 269 | 293 | 280 | 287 | 285 | 276 | 287 | 279 | 236 | 220 | 282 | 269 |
| 15 Spd | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 5 | 11 | 13 | 12 | 14 | 14 | 14 | 17 | 16 | 17 | 16 | 14 | 9 | 8 | 7 | 5 | 6 | 7.6 | 16.9 |
| Dir | 193 | 187 | 178 | 184 | 180 | 175 | 168 | 287 | 300 | 300 | 302 | 301 | 310 | 297 | 297 | 307 | 315 | 315 | 318 | 318 | 322 | 305 | 299 | 272 | 300 | 315 |
| 16 Spd | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 4 | 14 | 13 | 13 | 11 | 14 | 13 | 14 | 16 | 16 | 15 | 10 | 8 | 7 | 6 | 7 | 3 | 7.3 | 16.2 |
| Dir | 193 | 196 | 206 | 196 | 199 | 212 | 194 | 236 | 293 | 290 | 285 | 289 | 298 | 298 | 306 | 313 | 322 | 304 | 304 | 296 | 287 | 272 | 283 | 322 | 291 | 322 |
| 17 Spd | 2 | 2 | 2 | 1 | 2 | 2 | 3 | 4 | 7 | 5 | 9 | 11 | 8 | 8 | 7 | 8 | 7 | 4 | 3 | 2 | 2 | 0 | 2 | 0 | 2.9 | 10.6 |
| Dir | 206 | 221 | 164 | 211 | 189 | 189 | 191 | 274 | 319 | 308 | 305 | 316 | 313 | 332 | 325 | 333 | 355 | 352 | 34 | 23 | 180 | 184 | 20 | 176 | 317 | 316 |
| 18 Spd | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 3 | 6 | 9 | 9 | 6 | 10 | 9 | 7 | 4 | 5 | 10 | 1 | 4 | 4 | 1 | 4 | 3 | 2.2 | 10.4 |
| Dir | 225 | 197 | 220 | 358 | 132 | 184 | 323 | 338 | 10 | 21 | 20 | 19 | 12 | 6 | 335 | 208 | 187 | 358 | 326 | 254 | 265 | 222 | 286 | 220 | 348 | 12 |
| 19 Spd | 2 | 1 | 4 | 2 | 2 | 2 | 1 | 1 | 2 | 3 | 4 | 3 | 3 | 5 | 4 | 1 | 6 | 2 | 2 | 1 | 1 | 2 | 2 | 3 | 0.9 | 5.7 |
| Dir | 186 | 248 | 284 | 332 | 167 | 192 | 178 | 206 | 280 | 192 | 180 | 184 | 147 | 135 | 103 | 79 | 339 | 4 | 304 | 223 | 224 | 205 | 165 | 157 | 187 | 339 |
| 20 Spd | 2 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 3 | 3 | 1 | 4 | 3 | 2 | 1 | 1 | 0.7 | 4.1 |
| Dir | 181 | 195 | 214 | 199 | 191 | 201 | 192 | 185 | 197 | 164 | 147 | 157 | 296 | 244 | 2 | 89 | 87 | 103 | 120 | 52 | 43 | 26 | 264 | 138 | 137 | 52 |
| 21 Spd | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 3 | 3 | 3 | 4 | 4 | 4 | 1 | 1 | 4 | 5 | 6 | 5 | 4 | 2 | 1 | 0 | 1 | 1.8 | 6.3 |
| Dir | 188 | 252 | 317 | 183 | 213 | 192 | 192 | 188 | 178 | 186 | 170 | 157 | 189 | 336 | 141 | 152 | 180 | 231 | 260 | 137 | 163 | 22 | 333 | 264 | 189 | 231 |
| 22 Spd | 1 | 1 | 1 | 2 | 2 | 3 | 5 | 4 | 3 | 6 | 8 | 7 | 7 | 7 | 10 | 11 | 12 | 12 | 10 | 7 | 4 | 2 | 2 | 3 | 3.9 | 12.3 |
| Dir | 185 | 267 | 210 | 207 | 194 | 197 | 185 | 186 | 189 | 281 | 300 | 323 | 304 | 326 | 320 | 320 | 304 | 291 | 292 | 291 | 265 | 175 | 195 | 237 | 288 | 304 |

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# Hourly Averages

## Wind Speed (km/h)
## Wind Direction (deg)
## Valleyview - July 2010

| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Average | Maximum |
| 23 Spd | 8 | 4 | 4 | 2 | 3 | 3 | 3 | 3 | 8 | 11 | 10 | 9 | 8 | 7 | 6 | 10 | 11 | 10 | 10 | 5 | 4 | 2 | 2 | 3 | 5.4 | 10.6 |
| Dir | 288 | 259 | 250 | 188 | 188 | 190 | 189 | 233 | 270 | 292 | 283 | 270 | 262 | 236 | 232 | 266 | 273 | 269 | 285 | 265 | 263 | 206 | 209 | 197 | 261 | 292 |
| 24 Spd | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 3 | 9 | 7 | 11 | 15 | 16 | 14 | 18 | 16 | 15 | 13 | 9 | 5 | 2 | 2 | 2 | 5.9 | 17.8 |
| Dir | 201 | 195 | 234 | 195 | 191 | 178 | 193 | 183 | 185 | 285 | 290 | 298 | 295 | 293 | 295 | 296 | 303 | 300 | 302 | 308 | 326 | 194 | 160 | 197 | 289 | 296 |
| 25 Spd | 2 | 3 | 2 | 3 | 3 | 3 | 3 | 4 | 12 | 14 | 15 | 14 | 11 | 10 | 8 | 9 | 10 | 10 | 7 | 5 | 5 | 3 | 3 | 3 | 5.4 | 14.6 |
| Dir | 225 | 211 | 213 | 196 | 197 | 193 | 193 | 266 | 296 | 302 | 287 | 293 | 299 | 301 | 297 | 315 | 319 | 321 | 326 | 308 | 289 | 217 | 211 | 196 | 289 | 287 |
| 26 Spd | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 4 | 10 | 11 | 12 | 12 | 15 | 13 | 13 | 14 | 15 | 13 | 10 | 7 | 1 | 1 | 1 | 2 | 5.2 | 15.4 |
| Dir | 174 | 116 | 324 | 150 | 170 | 189 | 172 | 255 | 294 | 302 | 347 | 346 | 337 | 340 | 330 | 328 | 349 | 1 | 14 | 21 | 105 | 203 | 174 | 197 | 337 | 337 |
| 27 Spd | 2 | 1 | 2 | 1 | 2 | 2 | 3 | 3 | 2 | 2 | 5 | 5 | 6 | 7 | 7 | 6 | 6 | 8 | 9 | 6 | 5 | 4 | 4 | 3 | 3.8 | 8.9 |
| Dir | 169 | 287 | 187 | 221 | 155 | 210 | 166 | 177 | 167 | 148 | 177 | 175 | 149 | 155 | 140 | 158 | 134 | 136 | 135 | 128 | 132 | 149 | 157 | 164 | 152 | 135 |
| 28 Spd | 3 | 2 | 0 | 0 | 0 | 1 | 2 | 1 | 2 | 1 | 2 | 3 | 3 | 3 | 2 | 3 | 2 | 1 | 2 | 3 | 15 | 2 | 1 | 2 | 0.2 | 15.3 |
| Dir | 159 | 176 | 308 | 188 | 215 | 217 | 160 | 156 | 113 | 204 | 195 | 195 | 210 | 156 | 18 | 36 | 81 | 118 | 183 | 281 | 348 | 98 | 259 | 241 | 208 | 348 |
| 29 Spd | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 2 | 2 | 2 | 1 | 3 | 2 | 8 | 12 | 13 | 7 | 3 | 2 | 3 | 5 | 5 | 3 | 9 | 1.0 | 12.6 |
| Dir | 107 | 175 | 64 | 30 | 215 | 190 | 186 | 190 | 181 | 143 | 127 | 161 | 65 | 347 | 355 | 305 | 197 | 353 | 137 | 195 | 188 | 185 | 204 | 257 | 247 | 305 |
| 30 Spd | 4 | 2 | 1 | 2 | 0 | 1 | 3 | 3 | 4 | 6 | 3 | 3 | 6 | 6 | 5 | 6 | 3 | 4 | 9 | 5 | 2 | 2 | 2 | 2 | 2.6 | 8.6 |
| Dir | 194 | 245 | 162 | 194 | 133 | 265 | 187 | 174 | 185 | 274 | 221 | 192 | 273 | 258 | 223 | 275 | 216 | 213 | 285 | 279 | 177 | 187 | 184 | 181 | 235 | 285 |
| 31 Spd | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 4 | 5 | 7 | 6 | 3 | 5 | 3 | 4 | 4 | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 1.0 | 6.6 |
| Dir | 166 | 198 | 211 | 201 | 183 | 166 | 189 | 290 | 311 | 333 | 339 | 314 | 8 | 357 | 3 | 24 | 147 | 4 | 41 | 126 | 161 | 162 | 224 | 216 | 335 | 333 |
| Spd | 1.8 | 1.9 | 1.9 | 1.9 | 1.7 | 1.7 | 1.8 | 2.9 | 5.2 | 6.3 | 6.4 | 6.3 | 6.9 | 6.9 | 7.2 | 7.7 | 6.9 | 7.2 | 6.2 | 4.1 | 3.8 | 2.6 | 1.7 | 2.0 | Diurnal Average | |
| Dir | 241 | 241 | 249 | 256 | 240 | 238 | 239 | 269 | 288 | 294 | 297 | 299 | 309 | 308 | 312 | 307 | 308 | 310 | 306 | 295 | 294 | 271 | 272 | 263 | | |
| Spd | 15.6 | 13.5 | 16.2 | 15.0 | 15.9 | 17.3 | 17.7 | 21.5 | 20.1 | 16.2 | 16.3 | 18.2 | 19.4 | 19.3 | 19.7 | 20.2 | 18.7 | 19.1 | 18.4 | 17.0 | 15.3 | 12.6 | 12.7 | 16.9 | Diurnal Maximum | |
| Dir | 319 | 303 | 298 | 306 | 292 | 321 | 339 | 339 | 343 | 342 | 316 | 313 | 311 | 321 | 325 | 321 | 316 | 303 | 322 | 301 | 348 | 319 | 328 | 328 | | |

Maximum Speed Value: 22 ppb on Jul 13 08:00
Maximum Daily Speed Average: 13.4 ppb on Jul 13
Maximum Diurnal Speed Average: 7.7 ppb at hour 16

Minimum Speed Value: 0 ppb on Jul 9 22:00
Minimum Daily Speed Average: 0.2 ppb on Jul 20
Minimum Diurnal Speed Average: 1.7 ppb at hour 6

Monthly Average Velocity: 4.03 ppb 293.8 deg

Speed Percentiles: $P_1$ = 0.4 $P_{10}$ = 1.2 $Q_1$ = 2.2 Median = 4.4 $Q_3$ = 10.0 $P_{90}$ = 14.1 $P_{99}$ = 19.0

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

| | |
|---|---|
| Hours in Service: | 704 |
| Hours of Data: | 704 |
| Hours of Missing Data: | 0 |
| Percent Operational Time: | 100.0 |

NS - Not in service

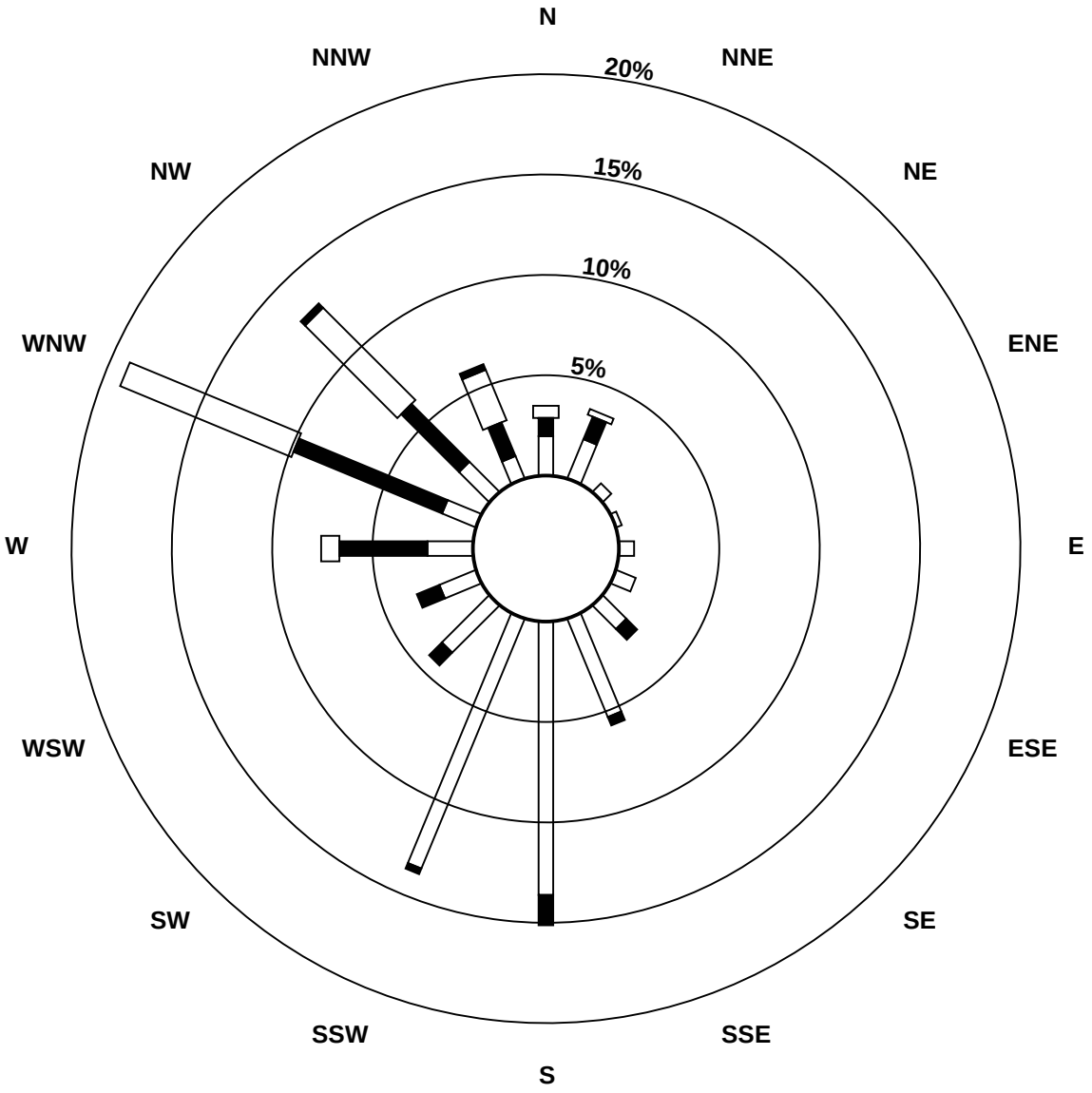
Frequency Distribution

| Direction | Speed Range (ppb) 0 to 5 | 5 to 11 | 11 to 19 | 19 to 28 | 28 to 38 | > 38 | Total |
|---|---|---|---|---|---|---|---|
| North | 21 | 23 | 15 | 2 | 0 | 0 | 61 |
| NorthEast | 13 | 0 | 0 | 0 | 0 | 0 | 13 |
| East | 10 | 0 | 0 | 0 | 0 | 0 | 10 |
| SouthEast | 35 | 8 | 0 | 0 | 0 | 0 | 43 |
| South | 174 | 20 | 0 | 0 | 0 | 0 | 194 |
| SouthWest | 67 | 10 | 0 | 0 | 0 | 0 | 77 |
| West | 30 | 61 | 28 | 0 | 0 | 0 | 119 |
| NorthWest | 23 | 63 | 96 | 5 | 0 | 0 | 187 |
| Total | 373 | 185 | 139 | 7 | 0 | 0 | 704 |

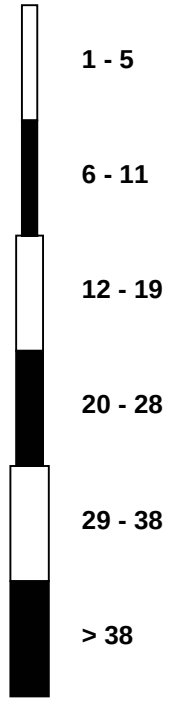
# Wind Rose

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

**Valleyview - July 2010**




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



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# Hourly Averages - Wind Speed (Scalar)

## Wind Speed (km/h)

## Valleyview - July 2010

Maximum Speed: 22 km/h on Jul 13 08:00

Maximum Daily Speed Average: 14.3 km/h on Jul 13

Minimum Speed: 1 km/h on Jul 28 06:00

Minimum Daily Speed Average: 2.7 km/h on Jul 20

Maximum Diurnal Speed Average: 10.7 km/h at hour 17

Minimum Diurnal Speed Average: 3.4 km/h at hour 2

Monthly Average Speed: 6.88 km/h

Percentiles: $P_1$ = 1.0 $P_{10}$ = 1.9 $Q_1$ = 2.8 Median = 5.1 $Q_3$ = 10.6 $P_{90}$ = 14.8 $P_{99}$ = 19.2

Hours in Service: 704
Hours of Data: 704
Hours of Missing Data: 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-Jul | 5 | 4 | 6 | 4 | 5 | 5 | 5 | 5 | 9 | 9 | 9 | 10 | 8 | 10 | 11 | 11 | 9 | 10 | 10 | 5 | 8 | 7 | 3 | 2 | 7.0 | 10.9 |
| 2-Jul | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 5 | 12 | 16 | 16 | 16 | 13 | 12 | 10 | 7 | 10 | 13 | 14 | 12 | 6 | 5 | 3 | 3 | 8.0 | 15.9 |
| 3-Jul | 4 | 3 | 3 | 13 | 16 | 12 | 8 | 11 | 13 | 15 | 14 | 14 | 14 | 16 | 17 | 16 | 16 | 17 | 18 | 16 | 14 | 11 | 5 | 3 | 12.0 | 17.5 |
| 4-Jul | 3 | 3 | 3 | 3 | 3 | 4 | 10 | 9 | 11 | 11 | 15 | 15 | 13 | 13 | 14 | 16 | 18 | 19 | 16 | 17 | 15 | 13 | 11 | 11 | 11.1 | 19.4 |
| 5-Jul | 10 | 7 | 9 | 12 | 12 | 11 | 11 | 10 | 14 | 14 | 14 | 14 | 18 | 15 | 15 | 16 | 19 | 17 | 15 | 10 | 9 | 7 | 5 | 4 | 12.1 | 19.4 |
| 6-Jul | 3 | 3 | 3 | 2 | 3 | 3 | 7 | 12 | 11 | 11 | 10 | 10 | 11 | 13 | 13 | 14 | 13 | 13 | 9 | NS | NS | NS | NS | NS | 8.6 | 13.9 |
| 7-Jul | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- | -- |
| 8-Jul | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 6 | 7 | 7 | 9 | 9 | 8 | 4 | 5 | 5 | 3 | 1 | 1 | 1 | -- | 9.0 |
| 9-Jul | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 3 | 5 | 10 | 8 | 11 | 13 | 17 | 15 | 14 | 15 | 13 | 7 | 5 | 1 | 6 | 7 | 7.2 | 17.0 |
| 10-Jul | 5 | 4 | 1 | 2 | 4 | 2 | 3 | 5 | 3 | 4 | 3 | 5 | 5 | 7 | 6 | 6 | 5 | 5 | 3 | 5 | 3 | 2 | 1 | 1 | 3.7 | 7.0 |
| 11-Jul | 1 | 1 | 1 | 2 | 1 | 1 | 4 | 7 | 8 | 7 | 6 | 7 | 7 | 8 | 7 | 7 | 7 | 8 | 6 | 5 | 3 | 2 | 3 | 2 | 4.5 | 7.9 |
| 12-Jul | 3 | 5 | 5 | 6 | 3 | 2 | 3 | 2 | 7 | 13 | 17 | 19 | 20 | 20 | 20 | 21 | 18 | 18 | 19 | 16 | 15 | 13 | 13 | 17 | 12.2 | 20.5 |
| 13-Jul | 16 | 14 | 16 | 15 | 14 | 18 | 18 | 22 | 20 | 16 | 15 | 13 | 13 | 12 | 11 | 11 | 15 | 18 | 16 | 11 | 13 | 9 | 7 | 10 | 14.3 | 21.6 |
| 14-Jul | 8 | 7 | 7 | 5 | 2 | 2 | 3 | 5 | 11 | 9 | 7 | 10 | 11 | 10 | 13 | 10 | 12 | 12 | 12 | 8 | 8 | 7 | 4 | 3 | 7.8 | 12.7 |
| 15-Jul | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 6 | 11 | 14 | 13 | 14 | 14 | 15 | 17 | 17 | 17 | 16 | 14 | 10 | 9 | 8 | 5 | 6 | 9.5 | 17.5 |
| 16-Jul | 4 | 3 | 3 | 3 | 3 | 2 | 3 | 5 | 15 | 14 | 14 | 12 | 14 | 13 | 14 | 17 | 17 | 15 | 10 | 8 | 7 | 7 | 7 | 4 | 8.9 | 17.0 |
| 17-Jul | 2 | 2 | 2 | 1 | 2 | 2 | 3 | 5 | 8 | 6 | 10 | 11 | 9 | 9 | 9 | 9 | 8 | 4 | 3 | 3 | 2 | 1 | 3 | 2 | 4.9 | 11.4 |
| 18-Jul | 1 | 1 | 1 | 2 | 4 | 3 | 3 | 4 | 7 | 9 | 9 | 7 | 11 | 10 | 8 | 6 | 6 | 11 | 3 | 4 | 4 | 3 | 4 | 3 | 5.3 | 11.1 |
| 19-Jul | 2 | 2 | 4 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 3 | 4 | 5 | 5 | 4 | 8 | 3 | 5 | 2 | 1 | 2 | 2 | 3 | 3.2 | 7.7 |
| 20-Jul | 2 | 2 | 1 | 1 | 1 | 1 | 3 | 3 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 3 | 4 | 4 | 2 | 5 | 4 | 2 | 2 | 1 | 2.7 | 4.7 |
| 21-Jul | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 3 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 5 | 6 | 7 | 6 | 5 | 2 | 1 | 2 | 1 | 3.1 | 7.5 |
| 22-Jul | 1 | 1 | 2 | 2 | 2 | 3 | 5 | 4 | 3 | 7 | 8 | 8 | 8 | 8 | 10 | 11 | 13 | 13 | 10 | 7 | 5 | 2 | 2 | 3 | 5.7 | 12.9 |
| 23-Jul | 9 | 5 | 4 | 2 | 3 | 3 | 3 | 4 | 8 | 11 | 11 | 9 | 9 | 8 | 7 | 11 | 11 | 11 | 10 | 6 | 5 | 2 | 2 | 3 | 6.5 | 11.1 |
| 24-Jul | 2 | 2 | 2 | 3 | 2 | 3 | 3 | 2 | 3 | 10 | 8 | 12 | 16 | 16 | 15 | 18 | 17 | 16 | 13 | 9 | 5 | 3 | 2 | 2 | 7.7 | 18.3 |
| 25-Jul | 2 | 3 | 3 | 3 | 4 | 3 | 3 | 5 | 12 | 15 | 15 | 15 | 11 | 10 | 9 | 10 | 10 | 11 | 8 | 5 | 5 | 3 | 3 | 3 | 7.2 | 15.4 |
| 26-Jul | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 5 | 11 | 11 | 13 | 13 | 16 | 15 | 14 | 15 | 16 | 14 | 11 | 7 | 1 | 1 | 2 | 2 | 7.6 | 15.8 |
| 27-Jul | 2 | 3 | 2 | 1 | 2 | 2 | 3 | 4 | 3 | 3 | 5 | 5 | 6 | 8 | 7 | 6 | 7 | 8 | 9 | 6 | 5 | 4 | 5 | 3 | 4.5 | 9.0 |
| 28-Jul | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 4 | 3 | 4 | 4 | 5 | 3 | 3 | 3 | 6 | 16 | 3 | 3 | 3 | 3.4 | 15.6 |
| 29-Jul | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 3 | 2 | 2 | 3 | 4 | 9 | 12 | 13 | 8 | 5 | 2 | 3 | 5 | 5 | 3 | 10 | 4.5 | 13.2 |
| 30-Jul | 5 | 4 | 2 | 2 | 2 | 2 | 3 | 4 | 4 | 7 | 4 | 3 | 7 | 7 | 6 | 8 | 4 | 5 | 9 | 5 | 2 | 2 | 2 | 2 | 4.2 | 8.9 |
| 31-Jul | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 4 | 6 | 7 | 7 | 5 | 6 | 5 | 5 | 5 | 3 | 2 | 4 | 2 | 2 | 1 | 1 | 2 | 3.4 | 7.4 |
| | 3.8 | 3.4 | 3.4 | 3.6 | 3.7 | 3.5 | 4.3 | 5.5 | 7.8 | 8.8 | 9.2 | 9.3 | 10.0 | 10.3 | 10.4 | 10.7 | 10.7 | 10.5 | 9.3 | 7.2 | 6.2 | 4.4 | 3.9 | 4.1 | Diurnal Average | |
| | 15.8 | 13.6 | 16.3 | 15.2 | 16.1 | 17.5 | 18.0 | 21.6 | 20.2 | 16.3 | 16.8 | 18.6 | 19.8 | 19.9 | 20.2 | 20.5 | 19.4 | 19.4 | 18.6 | 17.3 | 15.6 | 12.8 | 12.9 | 17.1 | Diurnal Maximum | |

NS - Not in service
All monthly, daily, and diurnal averages have been calculated using scalar methods

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# Hourly Standard Deviations

## Wind Direction (WD) - deg

## Valleyview - July 2010

Maximum Value: 96.6 deg on Jul 9 22:00

Minimum Value: 4.5 deg on Jul 1 05:00

Percentiles: $P_1$ = 7.0 $P_{10}$ = 10.1 $Q_1$ = 13.9 Median = 22.8 $Q_3$ = 38.8 $P_{90}$ = 66.8 $P_{99}$ = 85.8

| | |
|---|---|
| Hours in Service: | 704 |
| Hours of Data: | 704 |
| Hours of Missing Data: | 0 |
| Hours of Calibration: | 0 |
| Percent Operational Time: | 100.0 |

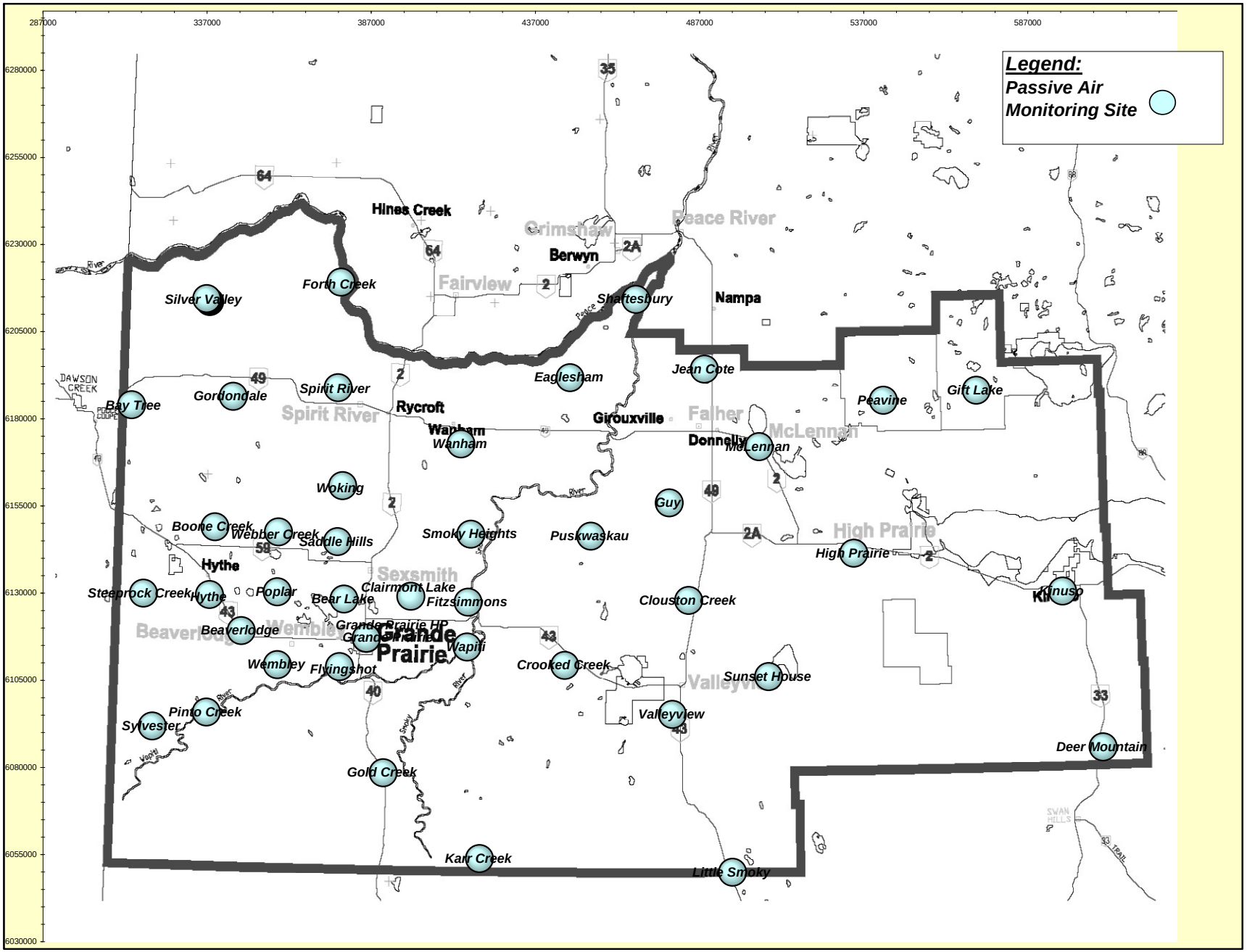
| Day | Hourly Period Ending At (MST) | | | | | | | | | | | | | | | | | | | | | | | | Daily |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Maximum |
| 1-Jul | 7 | 7 | 6 | 5 | 5 | 8 | 8 | 29 | 26 | 25 | 30 | 30 | 36 | 32 | 29 | 29 | 31 | 25 | 12 | 26 | 15 | 34 | 7 | 10 | 36.0 |
| 2-Jul | 29 | 20 | 8 | 8 | 25 | 15 | 12 | 32 | 24 | 15 | 16 | 23 | 18 | 13 | 12 | 22 | 15 | 13 | 14 | 9 | 15 | 31 | 22 | 25 | 31.6 |
| 3-Jul | 11 | 11 | 28 | 22 | 8 | 10 | 12 | 10 | 9 | 12 | 15 | 18 | 21 | 17 | 15 | 15 | 12 | 13 | 10 | 11 | 11 | 12 | 22 | 11 | 28.1 |
| 4-Jul | 10 | 8 | 14 | 9 | 12 | 23 | 9 | 14 | 17 | 16 | 10 | 17 | 14 | 18 | 14 | 17 | 16 | 10 | 14 | 10 | 10 | 9 | 16 | 11 | 23.3 |
| 5-Jul | 11 | 12 | 11 | 10 | 8 | 10 | 10 | 12 | 10 | 15 | 17 | 17 | 15 | 14 | 13 | 14 | 15 | 14 | 11 | 11 | 8 | 9 | 63 | 45 | 63.3 |
| 6-Jul | 31 | 18 | 20 | 28 | 22 | 31 | 58 | 12 | 19 | 16 | 17 | 20 | 21 | 25 | 21 | 16 | 15 | 8 | 8 | NS | NS | NS | NS | NS | 57.7 |
| 7-Jul | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- |
| 8-Jul | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 86 | 35 | 55 | 27 | 31 | 33 | 40 | 36 | 25 | 9 | 87 | 58 | 41 | 87.3 |
| 9-Jul | 70 | 60 | 19 | 57 | 16 | 20 | 14 | 17 | 58 | 34 | 25 | 26 | 19 | 23 | 10 | 19 | 11 | 10 | 21 | 17 | 17 | 97 | 13 | 51 | 96.6 |
| 10-Jul | 62 | 76 | 87 | 72 | 14 | 73 | 47 | 17 | 48 | 53 | 74 | 58 | 74 | 67 | 37 | 38 | 83 | 55 | 80 | 23 | 17 | 12 | 26 | 27 | 87.5 |
| 11-Jul | 30 | 28 | 41 | 29 | 35 | 49 | 26 | 11 | 10 | 12 | 15 | 17 | 22 | 13 | 10 | 13 | 11 | 8 | 14 | 15 | 12 | 33 | 14 | 27 | 49.4 |
| 12-Jul | 37 | 76 | 63 | 33 | 40 | 30 | 17 | 23 | 44 | 15 | 14 | 11 | 13 | 14 | 13 | 11 | 12 | 10 | 10 | 11 | 8 | 9 | 10 | 9 | 75.9 |
| 13-Jul | 9 | 8 | 7 | 10 | 14 | 9 | 11 | 6 | 6 | 8 | 8 | 10 | 8 | 10 | 12 | 11 | 11 | 10 | 10 | 9 | 9 | 11 | 13 | 10 | 13.8 |
| 14-Jul | 10 | 10 | 8 | 22 | 40 | 20 | 19 | 50 | 15 | 13 | 35 | 28 | 25 | 26 | 22 | 22 | 20 | 21 | 13 | 9 | 9 | 16 | 27 | 14 | 49.9 |
| 15-Jul | 12 | 12 | 21 | 13 | 7 | 10 | 15 | 68 | 14 | 14 | 17 | 18 | 19 | 19 | 15 | 17 | 15 | 15 | 13 | 15 | 19 | 16 | 55 | 17 | 67.7 |
| 16-Jul | 16 | 8 | 15 | 7 | 15 | 29 | 21 | 41 | 14 | 16 | 20 | 20 | 20 | 22 | 19 | 19 | 14 | 14 | 11 | 10 | 14 | 13 | 14 | 28 | 40.6 |
| 17-Jul | 27 | 34 | 27 | 56 | 20 | 25 | 27 | 48 | 21 | 36 | 28 | 21 | 31 | 28 | 30 | 39 | 35 | 47 | 48 | 52 | 10 | 81 | 72 | 88 | 88.5 |
| 18-Jul | 76 | 49 | 44 | 84 | 74 | 29 | 72 | 70 | 33 | 19 | 20 | 34 | 23 | 29 | 27 | 38 | 28 | 24 | 76 | 28 | 30 | 76 | 34 | 29 | 83.6 |
| 19-Jul | 64 | 76 | 34 | 46 | 29 | 24 | 24 | 42 | 69 | 29 | 21 | 36 | 39 | 15 | 36 | 60 | 64 | 78 | 75 | 54 | 60 | 28 | 15 | 30 | 78.2 |
| 20-Jul | 32 | 41 | 39 | 26 | 52 | 27 | 10 | 22 | 57 | 59 | 77 | 56 | 74 | 80 | 88 | 43 | 39 | 49 | 61 | 39 | 25 | 84 | 56 | 84 | 88.3 |
| 21-Jul | 69 | 73 | 80 | 58 | 43 | 20 | 18 | 17 | 21 | 26 | 29 | 41 | 29 | 86 | 75 | 53 | 28 | 29 | 35 | 61 | 38 | 77 | 85 | 68 | 86.3 |
| 22-Jul | 62 | 60 | 59 | 31 | 15 | 25 | 9 | 14 | 24 | 29 | 20 | 28 | 38 | 28 | 19 | 18 | 19 | 15 | 11 | 11 | 21 | 19 | 27 | 46 | 62.0 |
| 23-Jul | 15 | 30 | 22 | 24 | 12 | 13 | 14 | 36 | 23 | 19 | 20 | 30 | 35 | 32 | 35 | 24 | 23 | 22 | 18 | 14 | 21 | 12 | 17 | 10 | 35.7 |
| 24-Jul | 14 | 10 | 31 | 33 | 41 | 51 | 68 | 40 | 26 | 30 | 41 | 22 | 18 | 17 | 22 | 14 | 15 | 13 | 13 | 17 | 12 | 37 | 21 | 29 | 68.0 |
| 25-Jul | 38 | 10 | 19 | 10 | 8 | 9 | 10 | 54 | 12 | 15 | 18 | 22 | 21 | 26 | 32 | 30 | 24 | 25 | 25 | 23 | 11 | 20 | 28 | 10 | 54.5 |
| 26-Jul | 81 | 79 | 34 | 62 | 15 | 35 | 27 | 37 | 14 | 12 | 24 | 13 | 13 | 30 | 18 | 20 | 20 | 19 | 13 | 11 | 65 | 62 | 55 | 25 | 80.7 |
| 27-Jul | 51 | 84 | 41 | 36 | 28 | 39 | 15 | 18 | 42 | 71 | 31 | 34 | 32 | 27 | 27 | 30 | 29 | 15 | 10 | 12 | 8 | 13 | 14 | 17 | 84.4 |
| 28-Jul | 11 | 18 | 83 | 81 | 82 | 55 | 36 | 69 | 68 | 79 | 47 | 49 | 40 | 58 | 61 | 67 | 68 | 78 | 38 | 53 | 18 | 62 | 83 | 46 | 83.2 |
| 29-Jul | 73 | 67 | 83 | 68 | 37 | 17 | 19 | 31 | 36 | 50 | 56 | 37 | 84 | 61 | 20 | 22 | 39 | 68 | 49 | 15 | 16 | 11 | 29 | 23 | 83.9 |
| 30-Jul | 48 | 51 | 84 | 43 | 87 | 81 | 17 | 25 | 18 | 42 | 44 | 51 | 36 | 43 | 30 | 52 | 38 | 26 | 18 | 35 | 40 | 21 | 31 | 18 | 87.1 |
| 31-Jul | 33 | 24 | 30 | 69 | 21 | 46 | 21 | 39 | 28 | 29 | 29 | 79 | 43 | 83 | 61 | 54 | 73 | 75 | 45 | 43 | 63 | 62 | 25 | 36 | 83.2 |
| | 80.7 | 84.4 | 87.5 | 83.6 | 87.1 | 81.3 | 72.1 | 70.0 | 68.7 | 79.2 | 77.3 | 85.9 | 83.9 | 86.3 | 88.3 | 67.0 | 82.9 | 78.2 | 79.9 | 61.2 | 64.6 | 96.6 | 85.1 | 88.5 | |

NS - Not in service

# PASZA

## Monthly Passive Data Summary

## Location of PASZA Passive Monitoring Stations



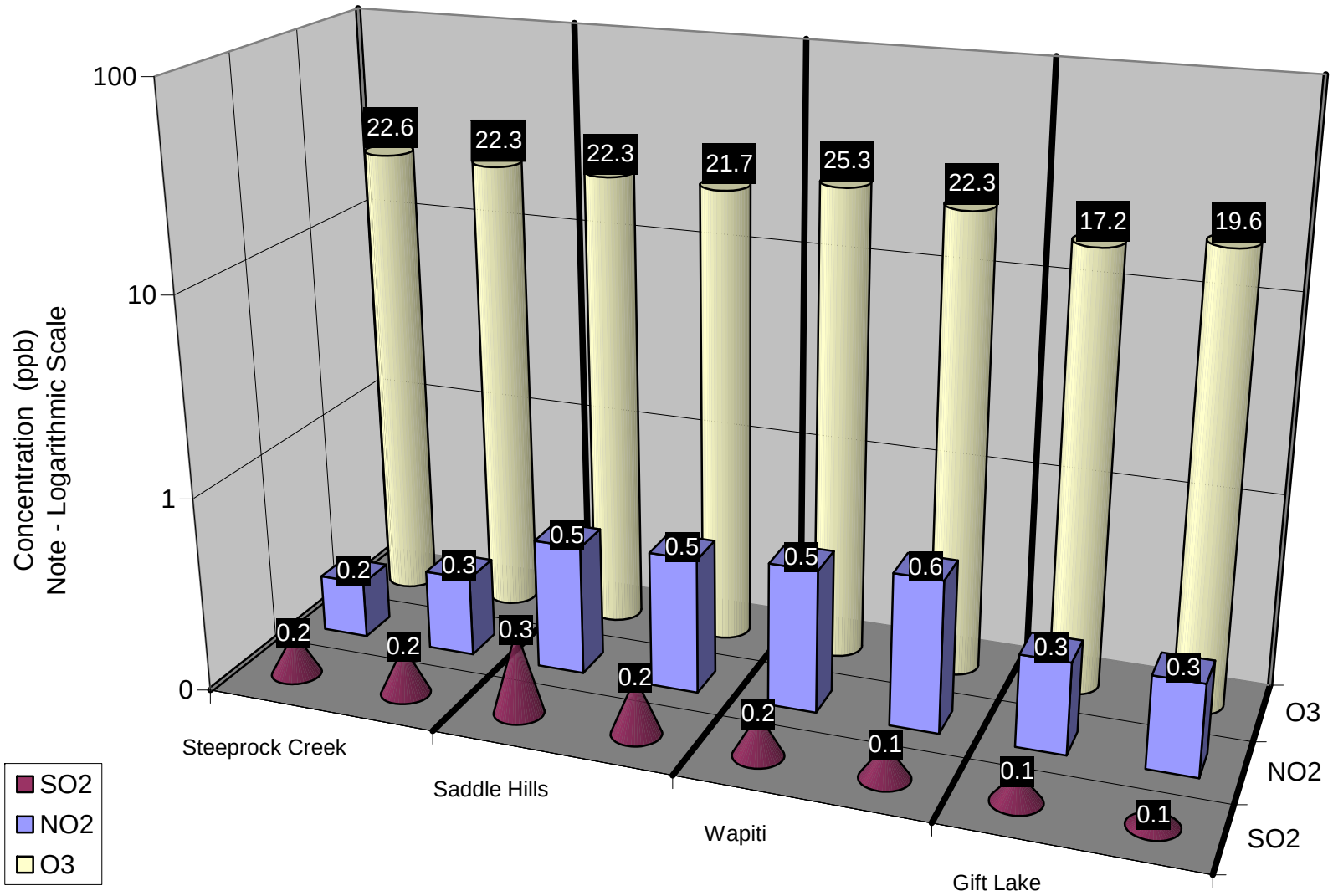
# PASZA Passive Results for July 2010

| Station Number | Station Name | SO2 ppb | O3 ppb | NO2 ppb | Site Legal |
|---|---|---|---|---|---|
| **Duplicates** | | | | | |
| 7a | Steeprock Creek | **0.2** | **22.6** | **0.2** | |
| 7b | Steeprock Creek | **0.2** | **22.3** | **0.3** | |
| 18a | Saddle Hills | **0.3** | **22.3** | **0.5** | |
| 18b | Saddle Hills | **0.2** | **21.7** | **0.5** | |
| 33a | Wapiti | **0.2** | **25.3** | **0.5** | |
| 33b | Wapiti | **0.1** | **22.3** | **0.6** | |
| 45a | Gift Lake | **0.1** | **17.2** | **0.3** | |
| 45b | Gift Lake | **0.1** | **19.6** | **0.3** | |
| 1 | Silver Valley | **0.3** | **21.3** | **0.7** | 08-27-081-11 W6M |
| 2 | Bay Tree | **0.1** | **22.8** | **0.4** | 13-16-078-13 W6M |
| 3 | Fourth Creek | **0.2** | **26.4** | **0.3** | 04-13-082-07 W6M |
| 4 | Gordondale | **0.2** | **23.9** | **0.5** | 04-34-078-10 W6M |
| 5 | Boone Creek | **0.2** | **17.7** | **0.6** | 16-36-074-11 W6M |
| 7 | Steeprock Creek | **0.2** | **22.4** | **0.2** | 09-35-072-13 W6M |
| 9 | Spirit River | **0.2** | **23.4** | **0.9** | 08-12-079-07 W6M |
| 10 | Woking | **0.3** | **21.8** | **0.8** | 01-13-076-07 W6M |
| 11 | Webber Creek | **0.2** | **19.9** | **0.8** | 09-36-074-09 W6M |
| 12 | Hythe | **0.1** | **19.4** | **0.6** | 14-36-072-11 W6M |
| 14 | Sylvester | **0.1** | **17.7** | **0.6** | 08-06-069-12 W6M |
| 16 | Beaverlodge | **0.2** | **27.4** | **0.7** | 15-36-071-10 W6M |
| 17 | Poplar | **0.2** | **21.5** | **1.0** | 13-06-073-08 W6M |
| 18 | Saddle Hills | **0.2** | **22.0** | **0.5** | 04-25-074-07 W6M |
| 19 | Wanham | **0.2** | **24.9** | **0.5** | 16-22-077-03 W6M |
| 20 | Shaftesbury | **0.2** | **26.0** | **0.4** | 04-03-082-23 W5M |
| 21 | Eaglesham | **1.0** | **20.1** | **0.7** | 16-21-079-25 W5M |
| 23 | Bear Lake | **0.2** | **24.6** | **0.9** | 15-31-072-06 W6M |

# PASZA Passive Results for July 2010 (Continued)

| Station Number | Station Name | SO2 ppb | O3 ppb | NO2 ppb | Site Legal |
|---|---|---|---|---|---|
| 24 | Wembley | **0.2** | **19.5** | **1.0** | 12-31-070-08 W6M |
| 25 | Pinto Creek | **0.1** | **22.8** | **0.4** | 04-24-069-11 W6M |
| 26 | Flyingshot | **0.1** | **21.5** | **0.8** | 15-36-070-07 W6M |
| 27 | Grande Prairie I | **0.2** | **22.8** | **1.1** | 08-15-071-06 W6M |
| 28 | Clairmont Lake | **0.3** | **24.0** | **1.0** | 09-06-073-04 W6M |
| 29 | Smoky Heights | **0.4** | **28.9** | **0.8** | 04-06-075-02 W6M |
| 30 | Fitzsimmons | **0.1** | **21.8** | **0.5** | 15-36-072-03 W6M |
| 32 | Gold Creek | **0.2** | **17.8** | **0.4** | 06-33-067-05 W6M |
| 33 | Wapiti | **0.2** | **23.8** | **0.6** | 02-25-071-03 W6M |
| 34 | Puskwaskau | **0.1** | **19.0** | **0.3** | 15-35-074-25 W5M |
| 35 | Jean Cote | **0.2** | **21.1** | **1.3** | 12-35-079-21 W5M |
| 36 | Guy | **0.2** | **22.4** | **0.9** | 03-04-076-22 W5M |
| 37 | Crooked Creek | **0.1** | **25.7** | **0.5** | 16-01-071-26 W5M |
| 38 | Karr Creek | **0.1** | **16.2** | **0.2** | 10-16-065-02 W6M |
| 39 | Clouston Creek | **0.1** | **21.5** | **0.5** | 12-01-073-22 W5M |
| 40 | McLennan | **0.3** | **21.9** | **1.4** | 03-29-077-19 W5M |
| 41 | Valleyview | **0.2** | **23.2** | **0.4** | 09-30-069-22 W5M |
| 42 | Sunset House | **0.2** | **22.5** | **0.4** | 05-32-070-19 W5M |
| 43 | High Prairie | **0.1** | **21.4** | **0.5** | 16-13-074-17 W5M |
| 44 | Peavine | **0.1** | **19.2** | **0.4** | 03-05-079-15 W5M |
| 45 | Gift Lake | **0.1** | **18.4** | **0.3** | 10-07-079-12 W5M |
| 46 | Little Smoky | **0.1** | **18.0** | **0.6** | 12-01-065-21 W5M |
| 47 | Kinuso | **0.1** | **17.1** | **0.3** | 12-10-073-10 W5M |
| 48 | Deer Mountain | **0.1** | **17.2** | **0.4** | 15-22-068-09 W5M |
| 49 | Grande Prairie HP | **0.2** | **28.8** | **1.5** | 17-26-071-06 W6M |

*BDL = Below Detection Level




**Duplicate Summary Chart**

# Passive Summary for July 2010

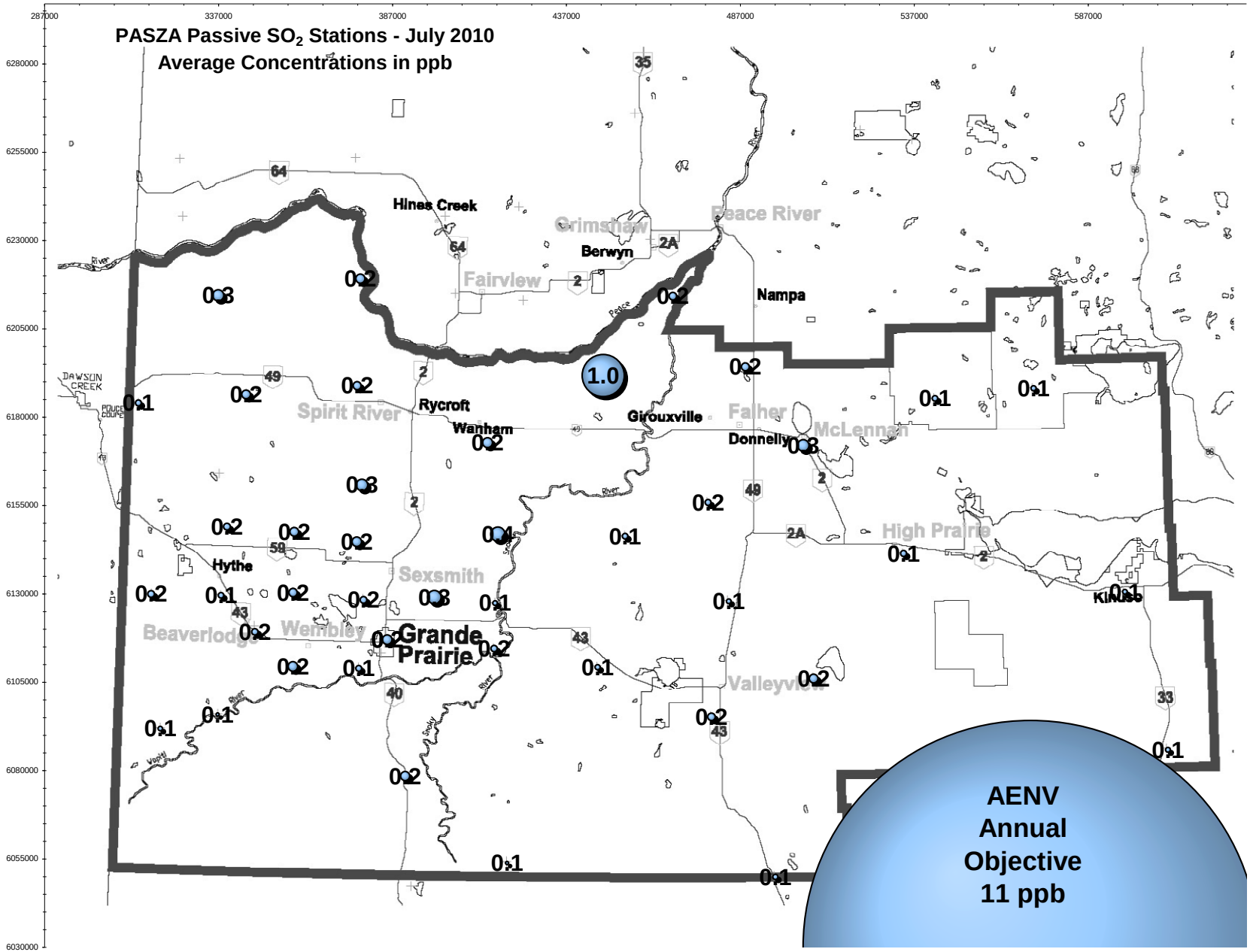
| Stats | Sulphur Dioxide $SO_2$ | Ozone $O_3$ | Nitrogen Dioxide $NO_2$ |
|---|---|---|---|
| | ppb | ppb | ppb |
| | Passive Summary for July 2010 (PASZA Zone) | | |
| **Mean** | **0.2** | **21.9** | **0.6** |
| **Standard Deviation** | **0.1** | **3.1** | **0.3** |
| **Minimum** | **0.1** | **16.2** | **0.2** |
| **Minimum At** | **Pinto Creek (#25)** | **Karr Creek (#38)** | **Steeprock Creek (#7)** |
| **Maximum** | **1.0** | **28.9** | **1.5** |
| **Maximum At** | **Eaglesham (#21)** | **Smoky Heights (#29)** | **Grande Prairie HP (#49)** |

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

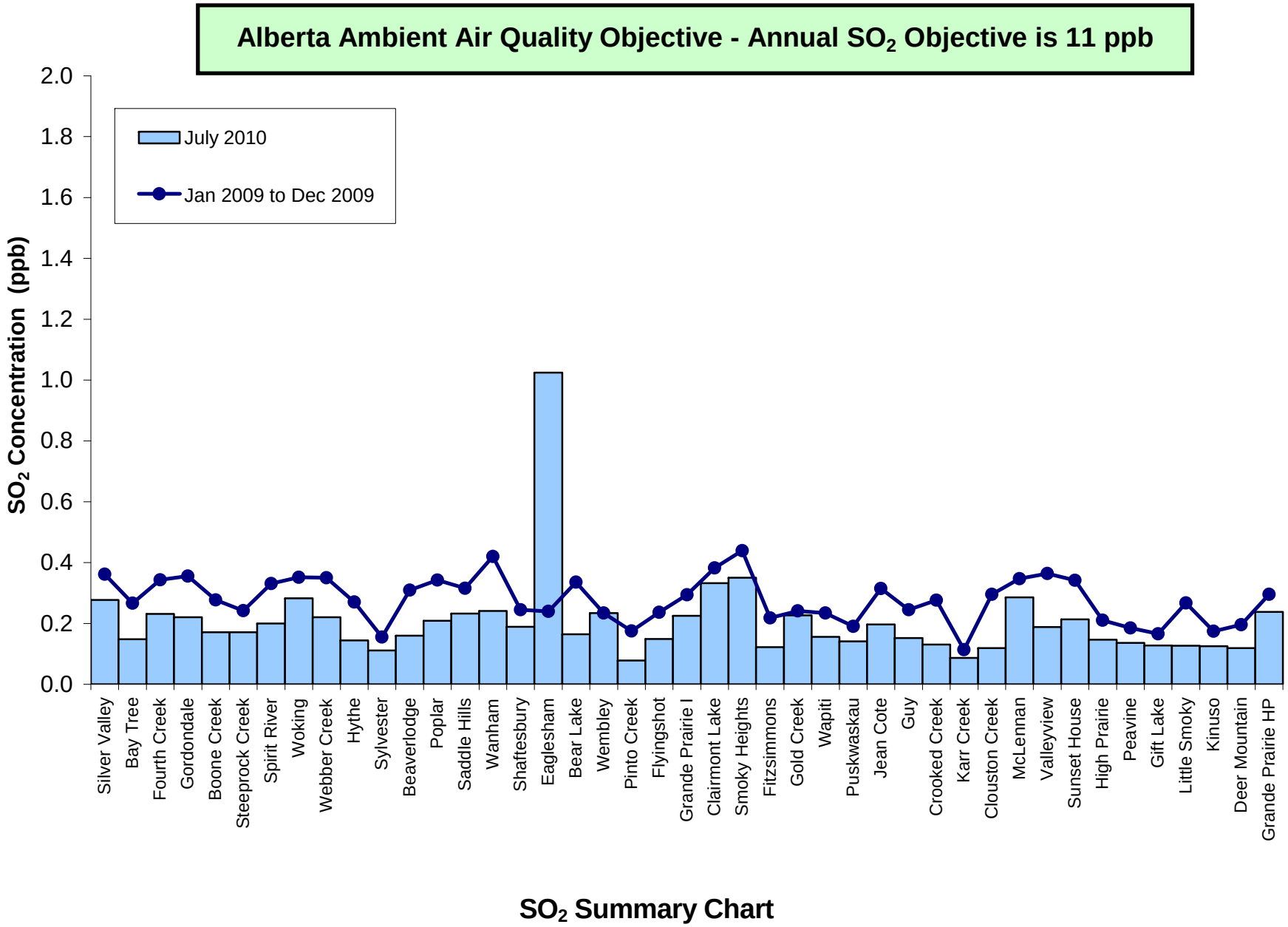
| | $SO_2$ | $O_3$ | $NO_2$ |
|---|---|---|---|
| **PASZA Beaverlodge station** | **0.3** | **24.3** | **1.7** |
| **PASZA Beaverlodge passive** | **0.2** | **27.4** | **0.7** |

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

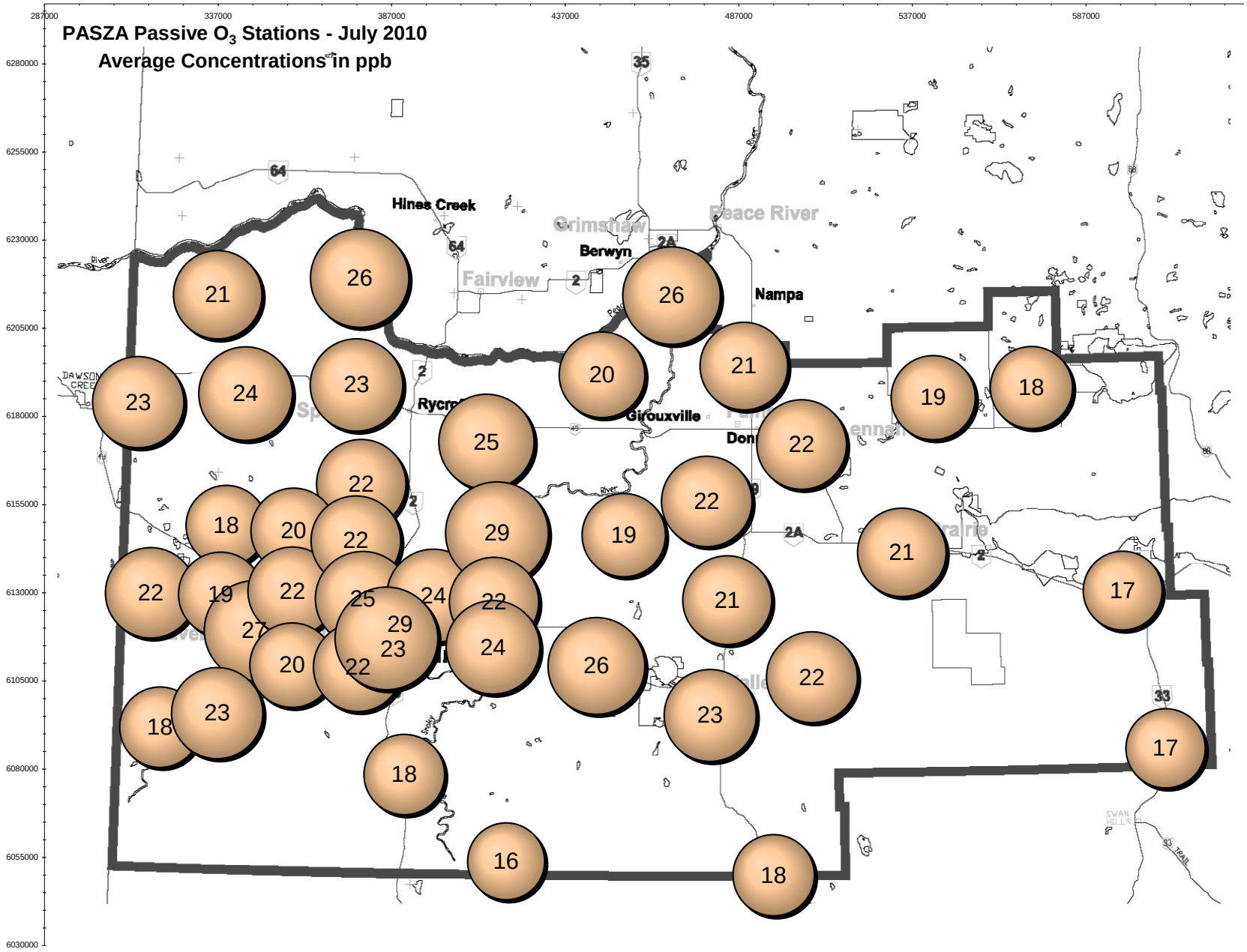
| | $SO_2$ | $O_3$ | $NO_2$ |
|---|---|---|---|
| **PASZA Henry Pirker station** | **0.2** | **25.2** | **4.0** |
| **PASZA Grande Prairie passive** | **0.2** | **28.8** | **1.5** |



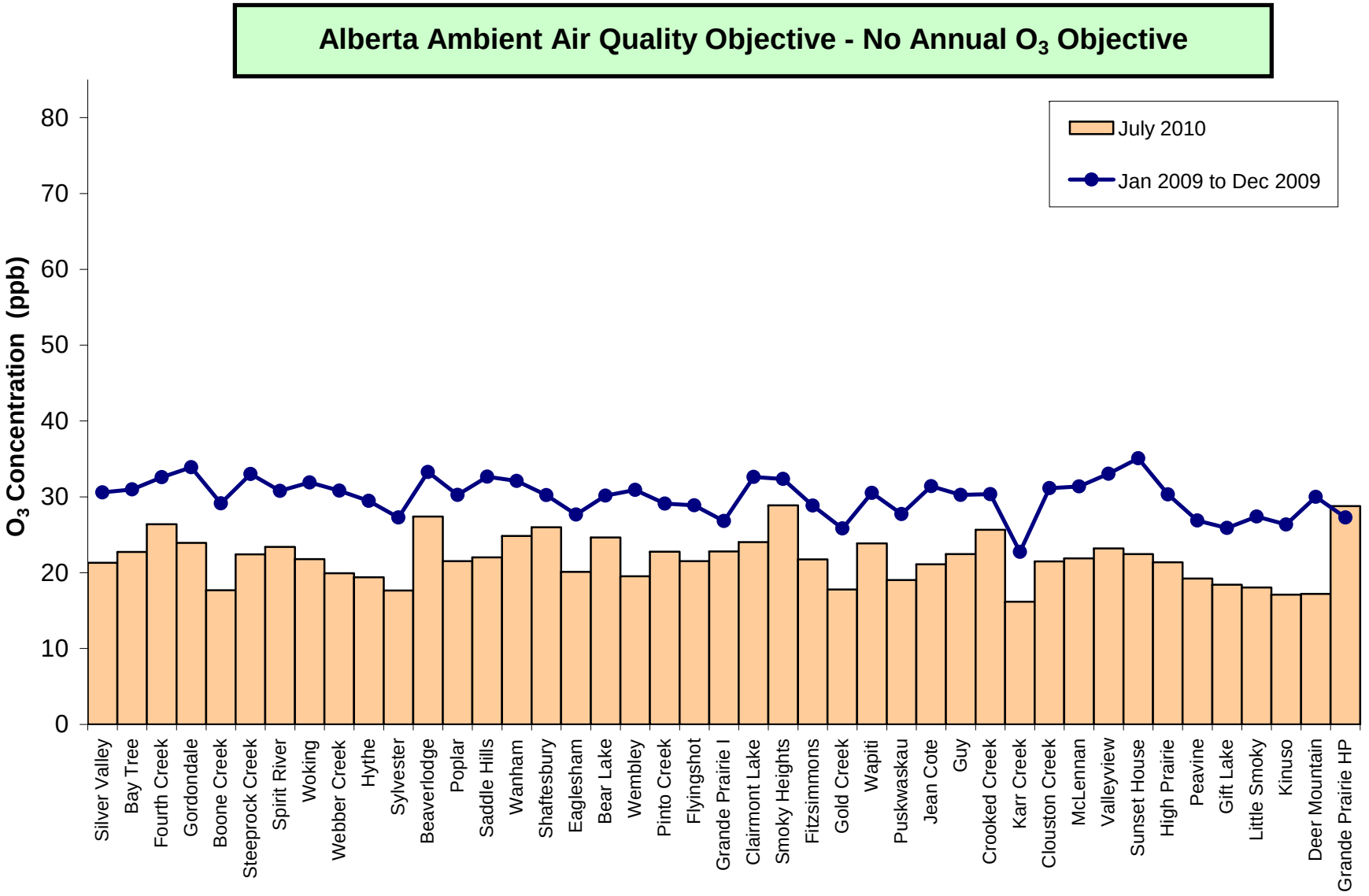

**$SO_2$ Bubble Chart**



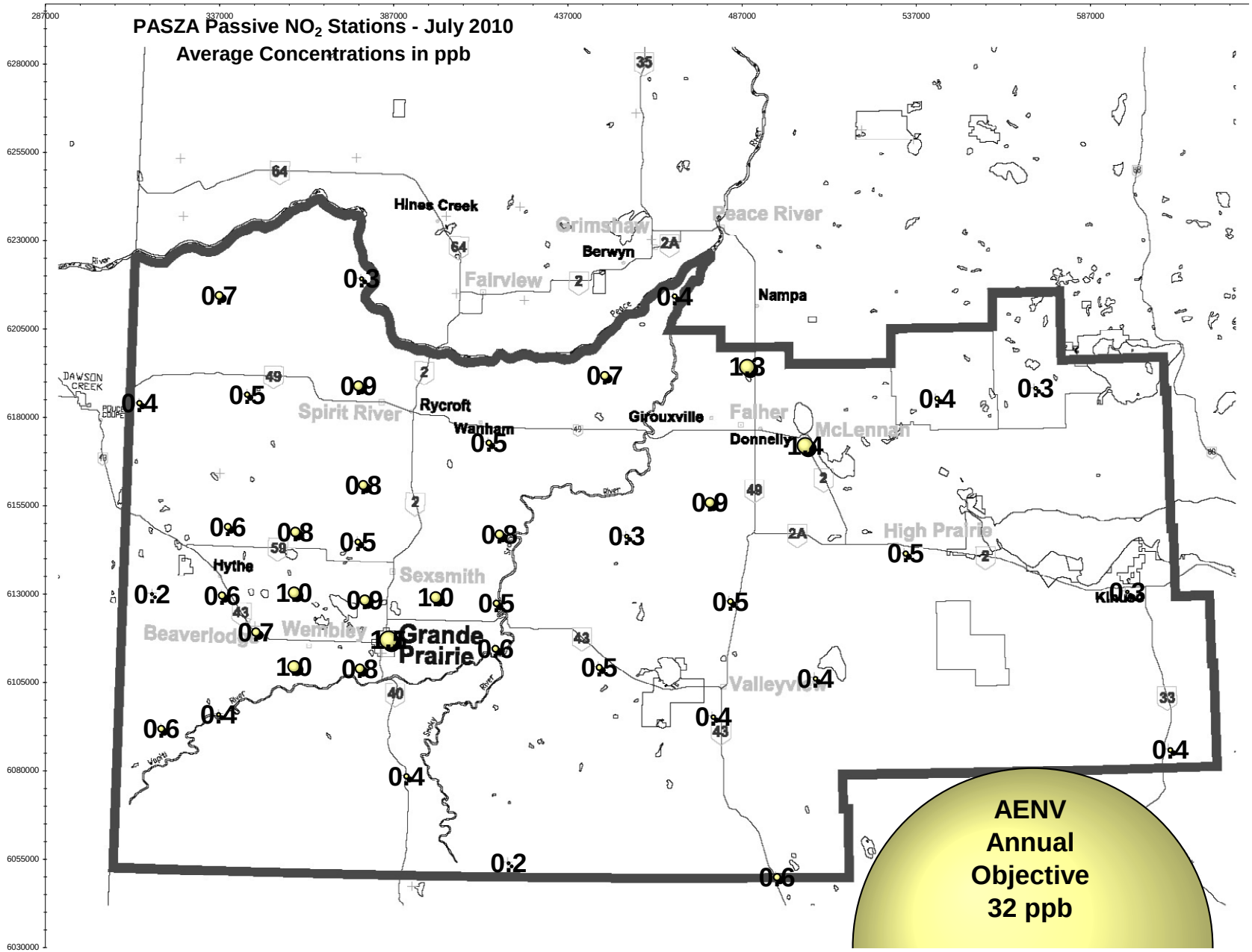

**$SO_2$ Summary Chart**



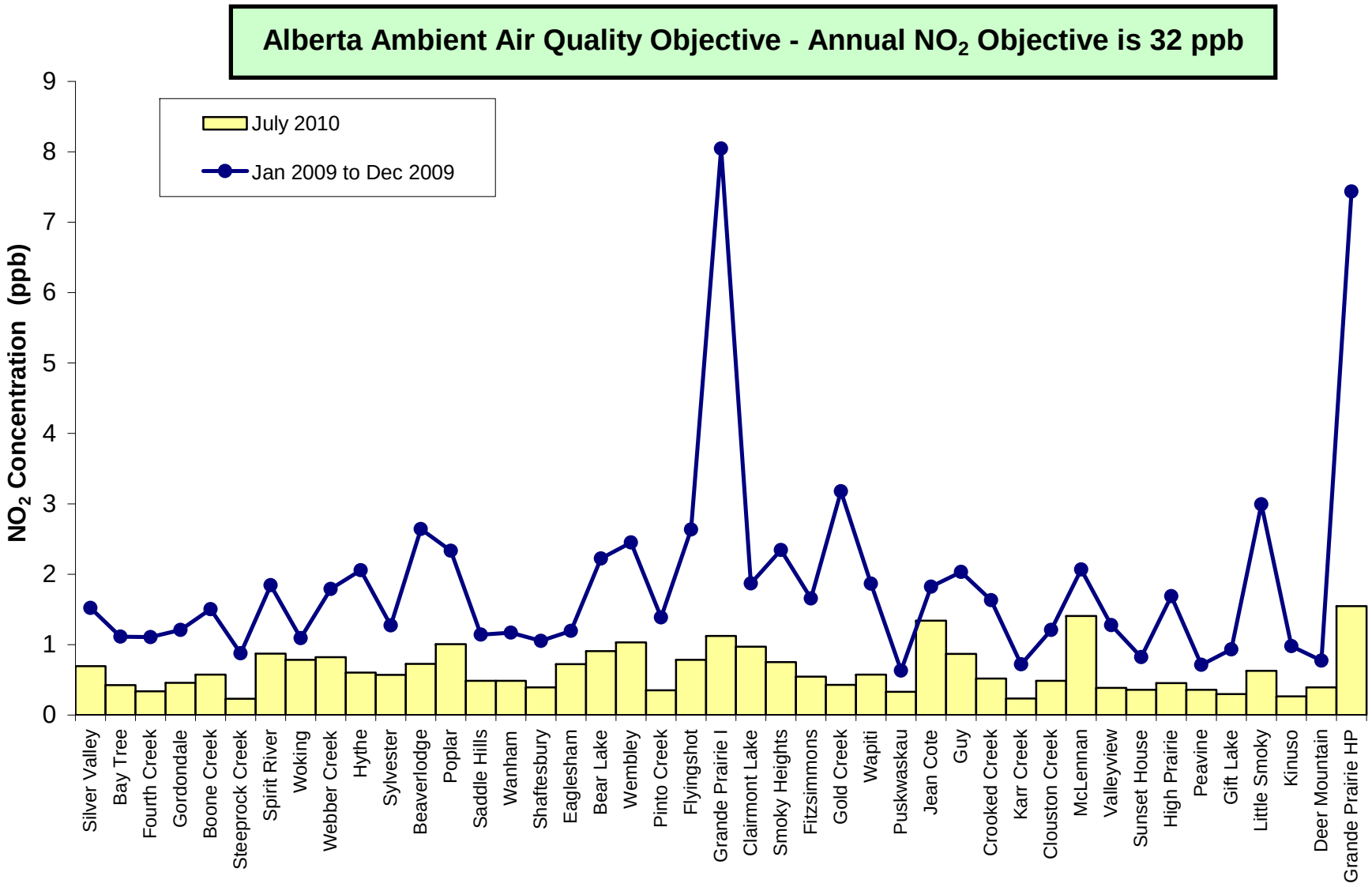

$O_3$ Bubble Chart




**$O_3$ Summary Chart**




**$NO_2$ Bubble Chart**




**$NO_2$ Summary Chart**

# July 2010 Calibration Reports

**PASZA - Henry Pirker Station with the following calibrations:**
**$SO_2$, NO, $NO_2$, $NO_x$, $O_3$, CO, THC, TRS**

**PASZA – Evergreen Park Station with the following calibrations:**
**$SO_2$, TRS**

**PASZA – Smoky Heights Station with the following calibrations:**
**$SO_2$, TRS**

**PASZA – Beaverlodge Station with the following calibrations:**
**$SO_2$, NO, $NO_2$, $NO_x$, $O_3$**

**PASZA – Kinuso (Portable) Station with the following calibrations:**
**$SO_2$, TRS, NO, $NO_2$, $NO_x$ & $O_3$,**

**PASZA – Valleyview Station with the following calibrations:**
**$SO_2$ & $H_2S$**

# Calibration Report

Parameter **SO2**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 13, 2010 | Previous Calibration | June 1, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |
| Reason: | Routine / Install / Removal / Other: | | |
| Start Time (MST) | 8:26 | End Time (MST) | 11:25 |
| Barometric Pressure | 0.924 ATM | Station Temperature | 20.0 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Conc | 50.6 ppb | Cal Gas Cert Date | 13/3/2009 |
| | | Cal Gas Cylinder # | AAL 15377 |
| DACS make | Focus AP1000 | DACS serial No. | 1 |
| DACS voltage range | 0 - 1 volt | DACS channel # | 10 |
| | Before | | After |
| Calculated slope | 1.002323 | Calculated slope | 0.995169 |
| Calculated intercept | -1.420158 | Calculated intercept | -1.521890 |
| Analyzer make | TEI 43C | Analyzer serial # | 610816292 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 500 | ppb | 0 - 500 | ppb |
| Background | 8.7 | | 8.5 | |
| Coefficient | .815 | | .779 | |
| Pressure | 643.3 | mm Hg | 643.2 | mm Hg |
| Flow | 0.486 | lpm | 0.485 | lpm |
| Lamp Voltage | 43941 | Hz | 43047 | 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) |
|---|---|---|---|---|
| 4991 | 0.00 | 0.0 | 0.5 | N/A |
| 4991 | 39.83 | 400.6 | 403.9 | 0.9918 |
| 4991 | 19.89 | 200.8 | 202.8 | 0.9902 |
| 4991 | 9.93 | 100.5 | 104.2 | 0.9643 |
| | | | | |
| | | | | |
| 4991 | 0.00 | 0.0 | 0.5 | As Found Zero |
| 4991 | 39.83 | 400.6 | 403.9 | As Found Span |
| | | | Average Correction Factor | 0.9821 |

Calculated value of As Found Response: 402.9 ppb Percent Change of As Found: -0.6%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | 0.1 | ppb | 0.1 | ppb |
| Auto span | 239.8 | ppb | 249.4 | ppb |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **SO2**

Air Monitoring Network **PASZA**

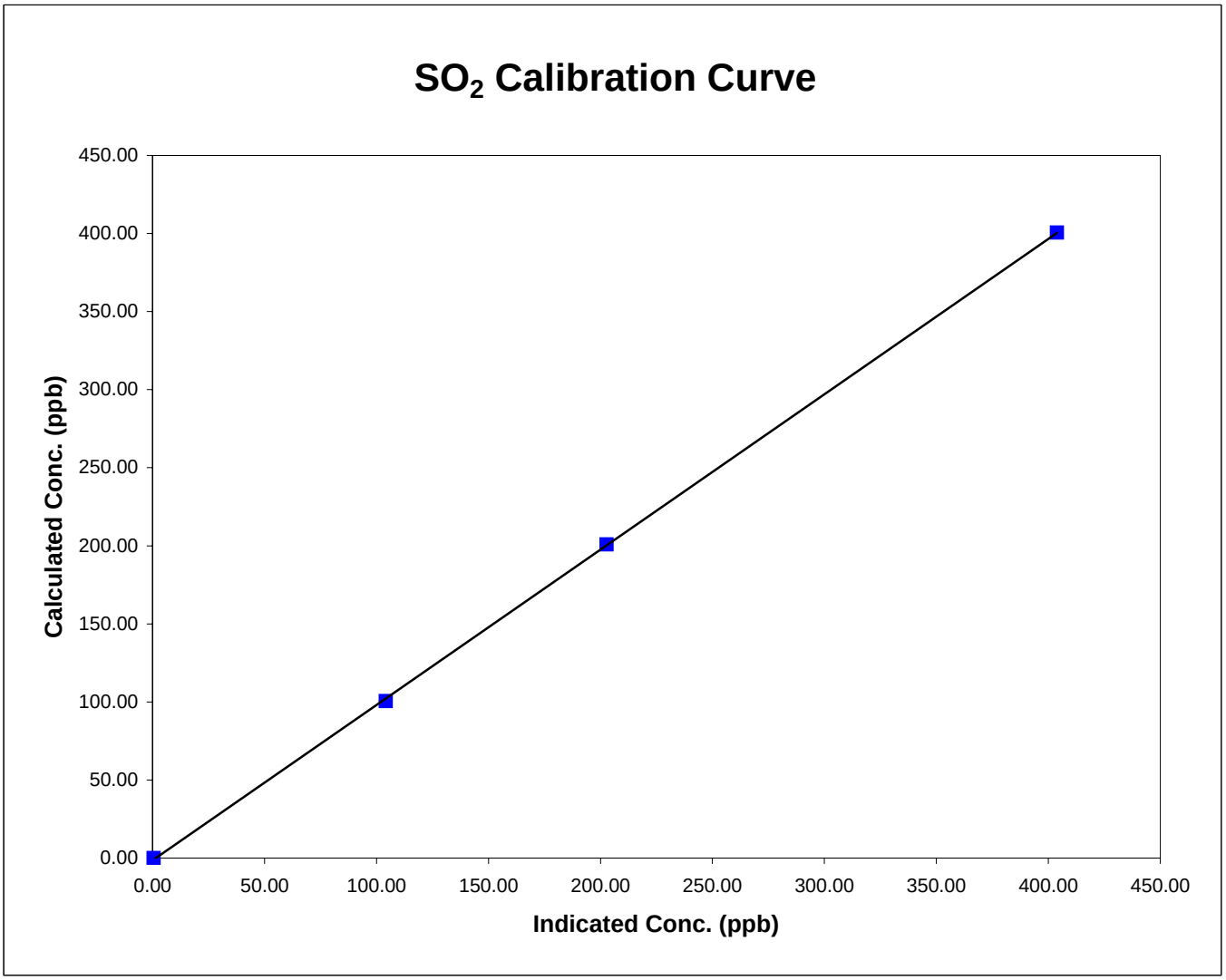
FOCUS AIR QUALITY MONITORING

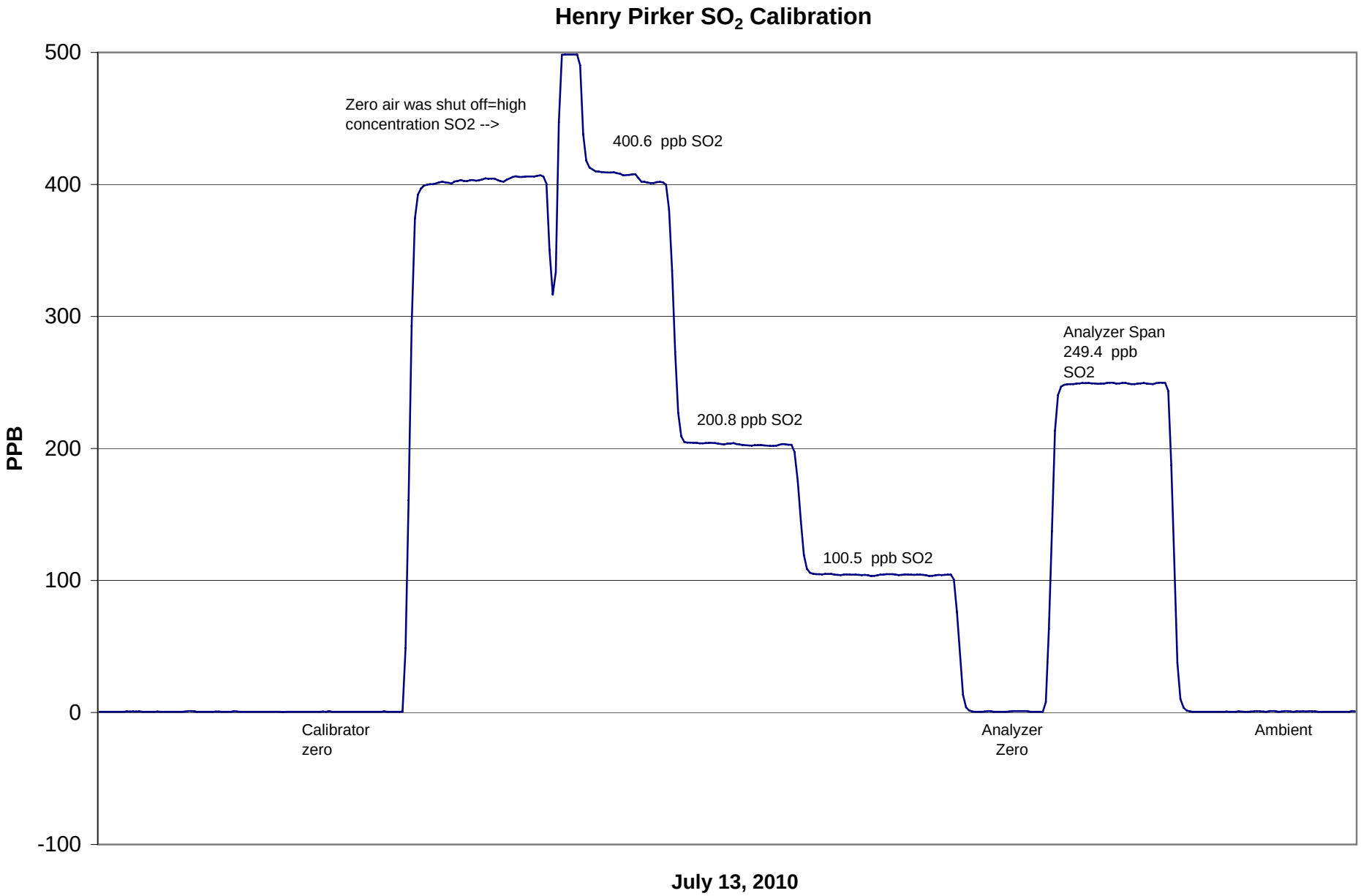
***Station Information***

| | | | |
|---|---|---|---|
| Calibration Date | July 13, 2010 | Previous Calibration | June 1, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |
| Start Time (MST) | 8:26 | End Time (MST) | 11:25 |
| Analyzer make/model | TEI 43C | Analyzer serial # | 610816292 |

***Calibration Data***

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | 0.5 | N/A | | |
| 400.6 | 403.9 | 0.9918 | Correlation Coefficient | 0.999952 |
| 200.8 | 202.8 | 0.9902 | | |
| 100.5 | 104.2 | 0.9643 | Slope | 0.995169 |
| | | | | |
| | | | Intercept | -1.521890 |
| | | | | |




Henry Pirker $SO_2$ Calibration
500
400
300
200
100
0
-100
PPB
Zero air was shut off=high concentration SO2 -->
400.6 ppb SO2
200.8 ppb SO2
100.5 ppb SO2
Analyzer Span 249.4 ppb SO2
Calibrator zero
Analyzer Zero
Ambient
July 13, 2010

# Calibration Report

Parameter **TRS**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 14, 2010 | Previous Calibration | June 10, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |
| Reason: | Routine ☐ Install | ☐ Removal | ☐ Other: |
| Start Time (MST) | 8:30 | End Time (MST) | 10:53 |
| Barometric Pressure | 0.927 ATM | Station Temperature | 20.0 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Conc | 5.15 ppb | Cal Gas Expiry Date | 7/31/2008 |
| | | Cal Gas Cylinder # | ALM013295 |
| DACS make | Focus AP1000 | DACS serial No. | 1 |
| DACS voltage range | 0 - 1 volt | DACS channel # | 9 |
| | Before | | After |
| Calculated slope | 1.015601 | Calculated slope | 0.996588 |
| Calculated intercept | 0.662155 | Calculated intercept | 0.064477 |
| Analyzer make | TEI 43C | Analyzer serial # | 31990000000491 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 100 | ppb | 0 - 100 | ppb |
| Coefficient | 1.641 | | 1.641 | |
| Background | 26.2 | | 28.5 | |
| Pressure | 644.0 | mm Hg | 648.1 | mm Hg |
| Flow | 0.641 | ccm | 0.601 | ccm |
| Lamp Voltage | 822 | V | 824 | V |

## *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) |
|---|---|---|---|---|
| 4989 | 0.00 | 0.00 | 0.18 | N/A |
| 4989 | 79.79 | 81.07 | 81.57 | 0.9939 |
| 4989 | 39.87 | 40.83 | 40.30 | 1.0131 |
| 4989 | 9.93 | 10.23 | 10.27 | 0.9965 |
| | | | | |
| | | | | |
| 4989 | 0.00 | 0.00 | 0.18 | As Found Zero |
| 4989 | 79.78 | 81.06 | 81.87 | As Found Span |
| | | | Average Correction Factor | 1.0011 |

Calculated value of As Found Response: 83.6 ppb Percent Change of As Found: -3.2%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | -0.29 | ppb | 0.35 | ppb |
| Auto span | 32.32 | ppb | 30.32 | ppb |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **TRS**

Air Monitoring Network **PASZA**

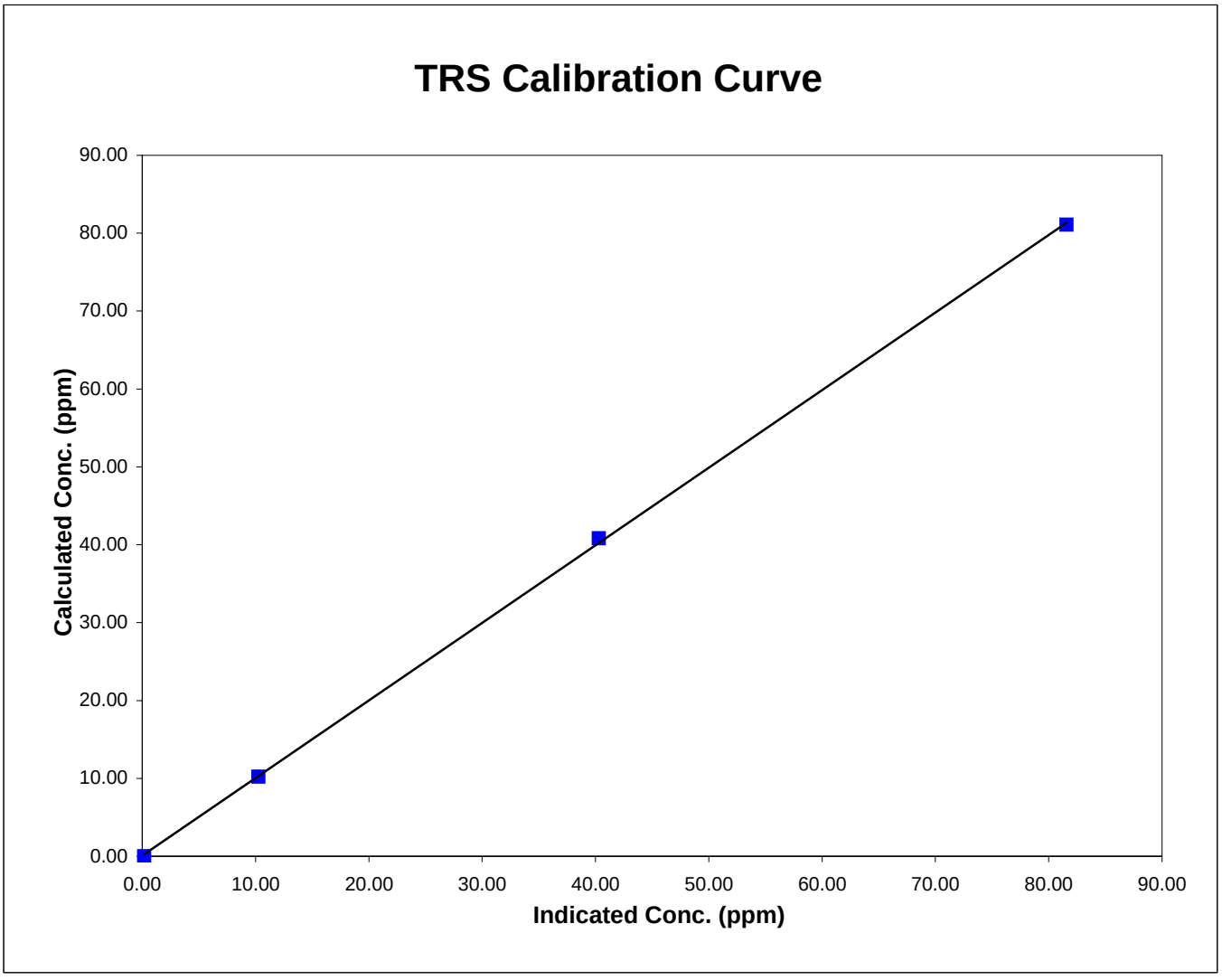
FOCUS AIR QUALITY MONITORING

***Station Information***

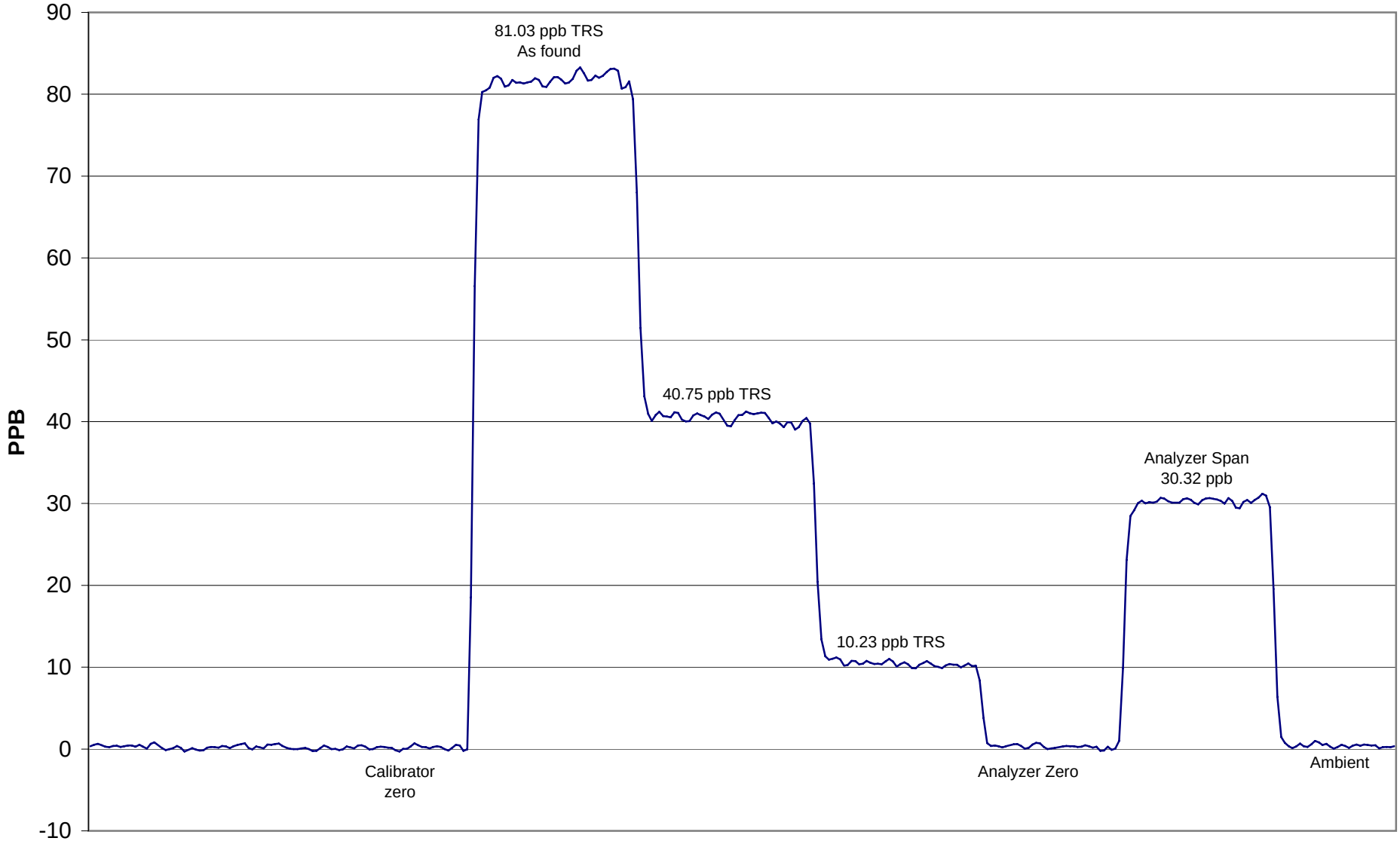
| | | | |
|---|---|---|---|
| Calibration Date | July 14, 2010 | Previous Calibration | June 10, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |
| Start Time (MST) | 8:30 | End Time (MST) | 10:53 |
| Analyzer make/model | TEI 43C | Analyzer serial # | 3.199E+13 |

***Calibration Data***

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.000 | 0.183 | N/A | | |
| 81.068 | 81.570 | 0.9939 | Correlation Coefficient | 0.999872 |
| 40.830 | 40.303 | 1.0131 | | |
| 10.230 | 10.266 | 0.9965 | Slope | 0.996588 |
| | | | | |
| | | | Intercept | 0.064477 |
| | | | | |



# Henry Pirker TRS Calibration




**July 14, 2010**

# Calibration Report

Parameter **$NO_X$-NO-$NO_2$**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 9, 2010 | Previous Calibration | June 1, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |

Reason: Routine | Installation | Removal | Other:

| | | | | | |
|---|---|---|---|---|---|
| Start Time (MST) | 8:00 | | End Time (MST) | 12:19 | |
| Barometric Pressure | 0.926 | Atm | Station Temperature | 20.0 | Deg C |
| Calibrator | Environics | | Serial Number | 3474 | |
| NO Cal Gas Conc | 49.6 | ppm | Cal Gas Expiry Date | June 8, 2008 | |
| NOx Cal Gas Conc | 49.6 | ppm | Cal Gas Serial # | AAL 15377 | |

## *DACS Information*

DACS make: Focus AP1000 DACS serial No.:

| Parameter | | NO2 | NOx | NO |
|---|---|---|---|---|
| Before | Data Slope | 1.000050 | 1.127906 | 1.127673 |
| | Data Offset | -0.279852 | 0.476673 | 0.014364 |
| After | Data Slope | 0.995307 | 1.116753 | 1.134006 |
| | Data Offset | 0.110502 | 0.097804 | 0.004142 |
| Channel # | | 8 | 6 | 7 |
| Voltage Range | | 0 - 10 VDC | 0 - 10 VDC | 0 - 10 VDC |

## *Analyzer Information*

Analyzer make/model: TEI 42C Analyzer serial #: 508011073

| Test Point | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 500 | ppb | 0 - 500 | ppb |
| NO offset | 10.2 | mV | 10.4 | mV |
| NOx bkgnd | 10.8 | mV | 10.6 | mV |
| NO coefficient | 0.776 | | 0.778 | |
| NOx coefficient | 1.000 | | 1.000 | |
| NO2 conv temp | 318.0 | Deg C | 318.0 | Deg C |
| PMT Temp | -2.5 | Deg C | -2.4 | Deg C |
| PMT Volt | -786.0 | mV | -786.0 | mV |
| R Cell Press | 200.2 | in Hg | 175.7 | in Hg |

# Calibration Report

Parameter **NOx-NO-$NO_2$**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## Station Information

Calibration Date: July 9, 2010 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 | 4988 | 0.00 | 0.0 | 0.0 | 0.0 | -0.1 | 0.0 | -0.1 | N/A | N/A |
| 1 | 4988 | 39.83 | 392.9 | 392.9 | 0.0 | 351.8 | 346.5 | 5.3 | 1.1170 | 1.1340 |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| | | | | | | | | | | |
| AFZ | 4988 | 0.00 | 0.0 | 0.0 | 0.0 | -0.1 | 0.0 | -0.1 | 0.0000 | 0.0000 |
| AFS | 4988 | 39.83 | 392.9 | 392.9 | 0.0 | 351.8 | 346.5 | 5.3 | 1.1170 | 1.1340 |
| | | | | | | | Average Correction Factor | | 1.1170 | 1.1340 |

As Found Concentrations: $NO_X$= 352.3 NO= 346.5 As Found Percent Change $NO_X$= -10.3% NO= -11.8%

## GPT Calibration Data

Dilution Flow 4989 ccm Source Gas Flow 39.85 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 | 0.0 | 0.0 | 0.0 | -0.1 | 0.0 | -0.1 | N/A | N/A | N/A | N/A |
| NO point | 346.5 | 346.5 | 0.0 | 351.8 | 346.5 | 5.3 | 0.9850 | 1.0000 | N/A | N/A |
| 300 | 346.5 | 108.3 | 238.2 | 347.4 | 108.3 | 239.2 | 0.9973 | 1.0000 | 0.9958 | 100.4% |
| 200 | | | | | | | | | | |
| 100 | | | | | | | | | | |
| | | | | | Average Correction Factor | | 0.9973 | 1.0000 | 0.9958 | 100.4% |

## AIC Data

| | Previous calibration | | | | Current calibration | | | |
|---|---|---|---|---|---|---|---|---|
| Parameter | NOx | NO2 | NO | | NOx | NO2 | NO | |
| Auto zero | -0.1 | 0.0 | 0.0 | ppb | -0.3 | -0.2 | 0.0 | ppb |
| Auto span | 168.4 | 169.5 | 1.2 | ppb | 138.1 | 137.3 | 1.0 | ppb |

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **$NO_2$**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

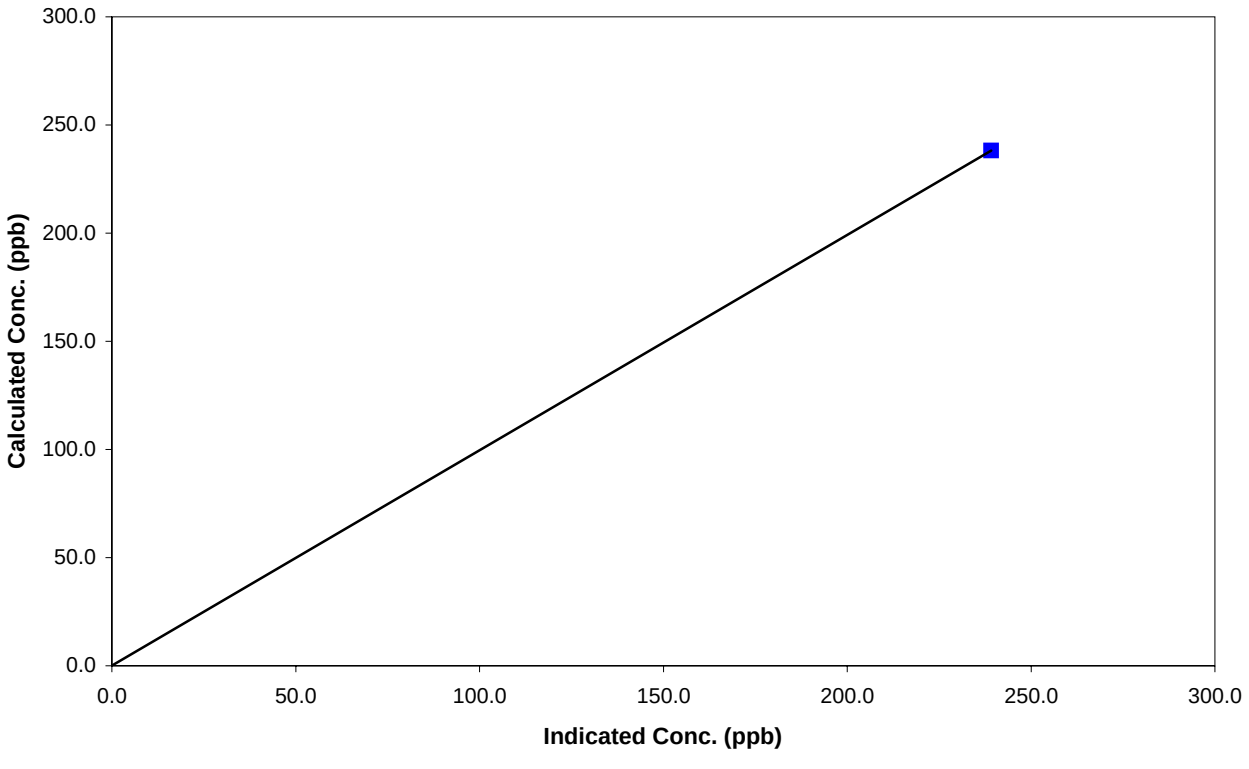
### *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 9, 2010 | Previous Calibration | June 1, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |
| Start Time (MST) | 8:00 | End Time (MST) | 12:19 |
| Analyzer make | TEI 42C | Analyzer serial # | 508011073 |

### *Calibration Data*

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | -0.1 | N/A | | |
| 238.2 | 239.2 | 0.9958 | Correlation Coefficient | 1.000000 |
| | | | | |
| | | | Slope | 0.995307 |
| | | | | |
| | | | Intercept | 0.110502 |
| | | | | |

## $NO_2$ Calibration Curve



# Calibration Summary

Parameter **$NO_x$**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

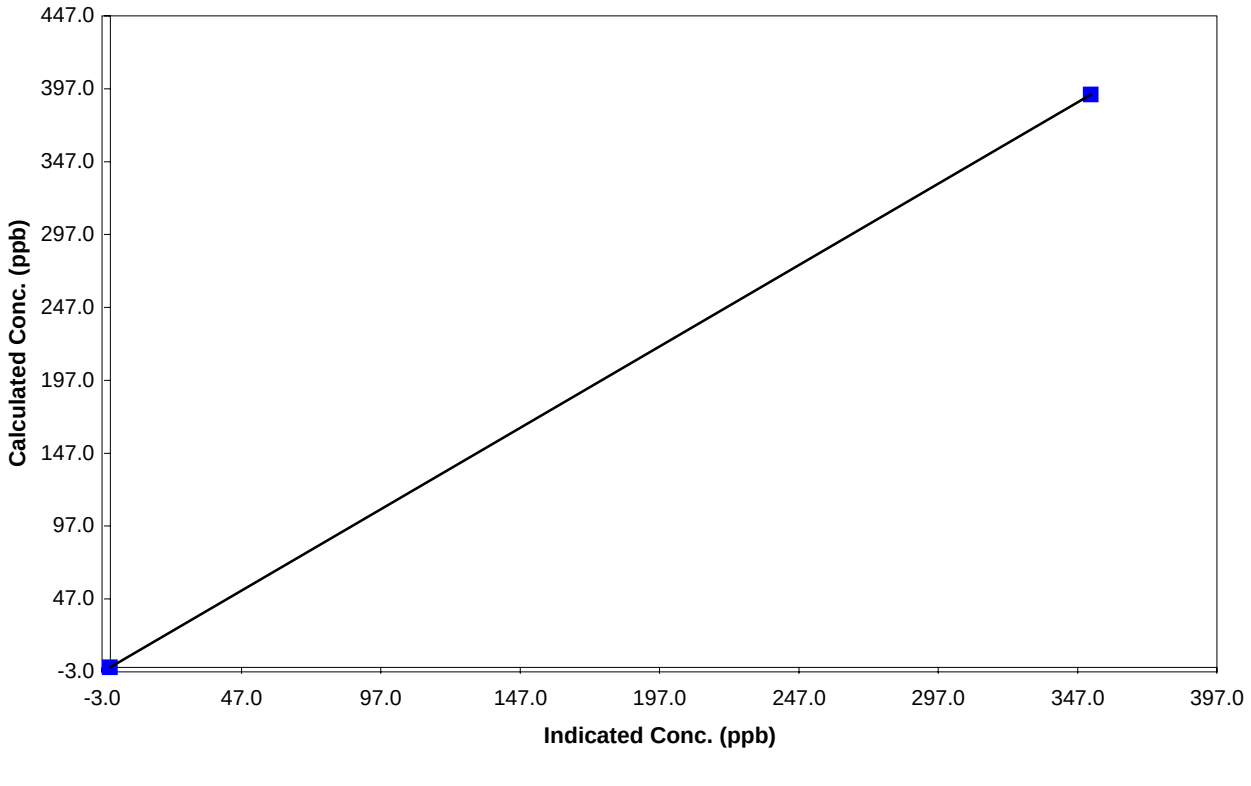
### *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 9, 2010 | Previous Calibration | June 1, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |
| Start Time (MST) | 8:00 | End Time (MST) | 12:19 |
| Analyzer make | TEI 42C | Analyzer serial # | 508011073 |

### *Calibration Data*

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | -0.1 | N/A | | |
| 392.9 | 351.8 | 1.1170 | Correlation Coefficient | 1.000000 |
| | | | | |
| | | | Slope | 1.116753 |
| | | | | |
| | | | Intercept | 0.097804 |
| | | | | |

## NOx Calibration Curve



# Calibration Summary

Parameter **NO**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

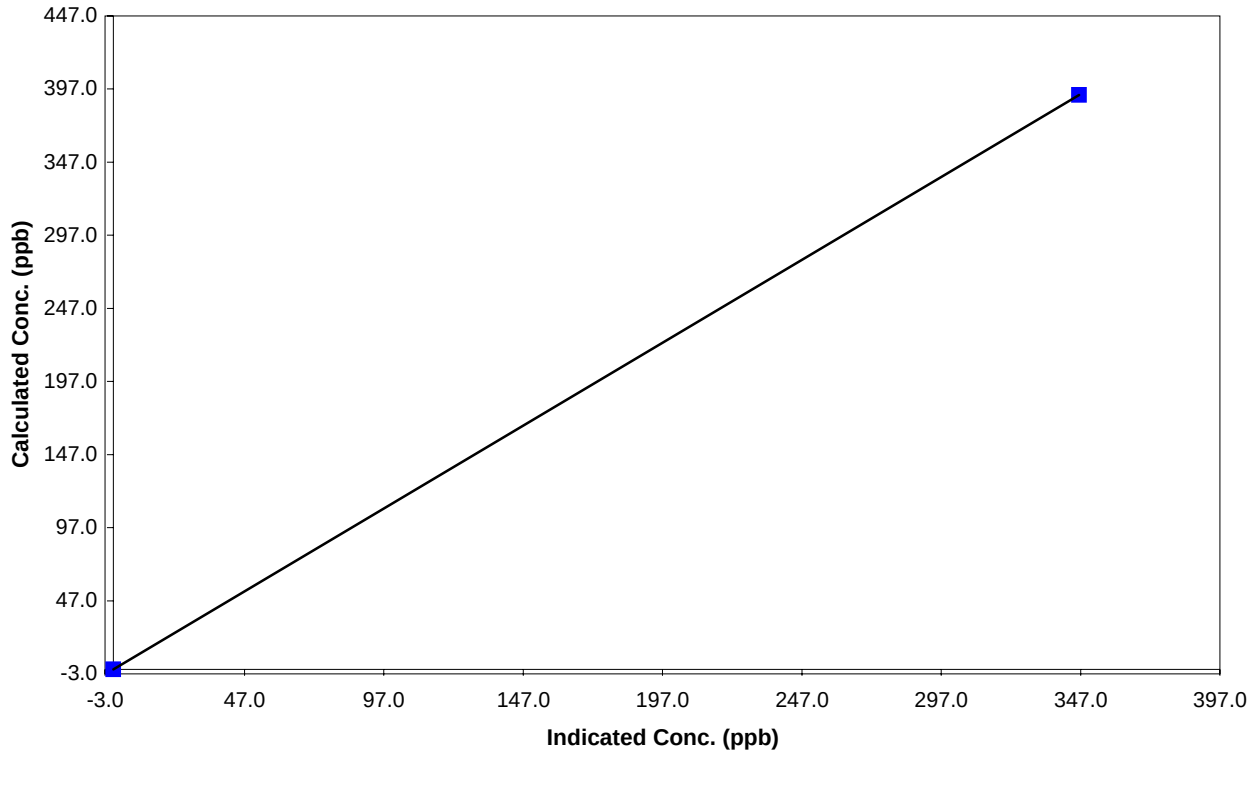
### *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 9, 2010 | Previous Calibration | June 1, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |
| Start Time (MST) | 8:00 | End Time (MST) | 12:19 |
| Analyzer make | TEI 42C | Analyzer serial # | 508011073 |

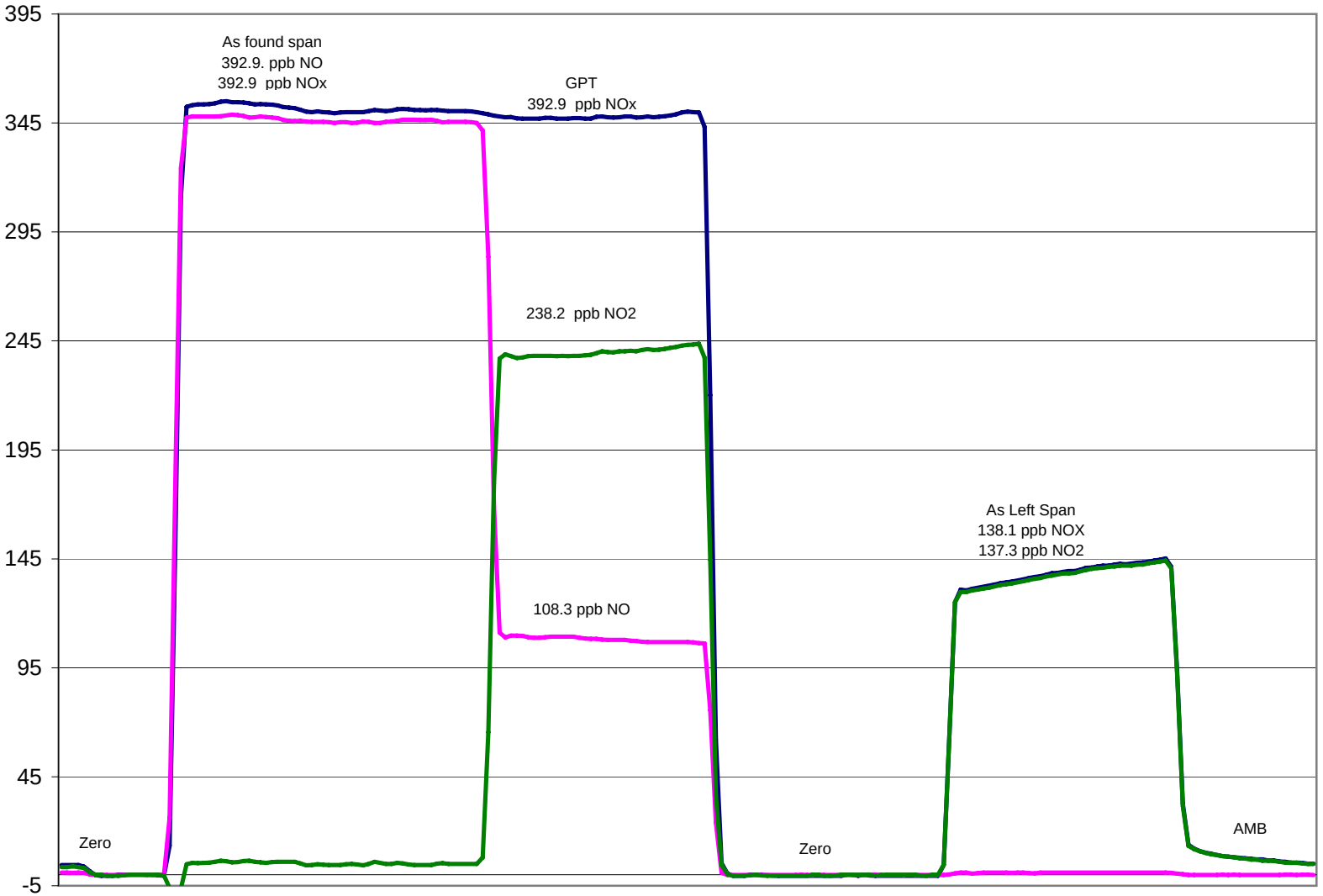
### *Calibration Data*

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | 0.0 | N/A | | |
| 392.9 | 346.5 | 1.1340 | Correlation Coefficient | 1.000000 |
| | | | | |
| | | | Slope | 1.134006 |
| | | | | |
| | | | Intercept | 0.004142 |
| | | | | |

## NO Calibration Curve



# Henry Pirker
# $NO_X$ Calibration




**July 9, 2010**

# Calibration Report

Parameter **$NO_X$-NO-$NO_2$**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## Station Information

| | | | |
|---|---|---|---|
| Calibration Date | July 13, 2010 | Previous Calibration | June 1, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |

Reason: **Routine** Installation Removal Other:

| | | | | | |
|---|---|---|---|---|---|
| Start Time (MST) | 8:26 | | End Time (MST) | 12:40 | |
| Barometric Pressure | 0.924 | Atm | Station Temperature | 20.0 | Deg C |
| Calibrator | Environics | | Serial Number | 3474 | |
| NO Cal Gas Conc | 49.6 | ppm | Cal Gas Expiry Date | June 8, 2008 | |
| NOx Cal Gas Conc | 49.6 | ppm | Cal Gas Serial # | AAL 15377 | |

## DACS Information

DACS make: Focus AP1000 DACS serial No.:

| Parameter | | NO2 | NOx | NO |
|---|---|---|---|---|
| Before | Data Slope | 0.995307 | 1.116753 | 1.134006 |
| | Data Offset | 0.110502 | 0.097804 | 0.004142 |
| After | Data Slope | 0.997466 | 0.993406 | 0.993996 |
| | Data Offset | 0.096288 | -2.172831 | -2.468315 |
| Channel # | | 8 | 6 | 7 |
| Voltage Range | | 0 - 10 VDC | 0 - 10 VDC | 0 - 10 VDC |

## Analyzer Information

Analyzer make/model: TEI 42C Analyzer serial #: 508011073

| Test Point | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 500 | ppb | 0 - 500 | ppb |
| NO offset | 10.2 | mV | 10.2 | mV |
| NOx bkgnd | 10.8 | mV | 10.8 | mV |
| NO coefficient | 0.776 | | 0.776 | |
| NOx coefficient | 1.000 | | 1.000 | |
| NO2 conv temp | 319.0 | Deg C | 319.0 | Deg C |
| PMT Temp | -2.4 | Deg C | -2.5 | Deg C |
| PMT Volt | -787.0 | mV | -786.0 | mV |
| R Cell Press | 200.8 | in Hg | 168.5 | in Hg |

# Calibration Report

Parameter **NOx-NO-$NO_2$**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## Station Information

Calibration Date: July 13, 2010 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 | 4991 | 0.00 | 0.0 | 0.0 | 0.0 | -0.4 | 0.0 | -0.4 | N/A | N/A |
| 1 | 4991 | 39.83 | 392.7 | 392.7 | 0.0 | 396.0 | 396.1 | -0.1 | 0.9916 | 0.9914 |
| 2 | 4991 | 19.89 | 196.9 | 196.9 | 0.0 | 201.9 | 202.2 | -0.3 | 0.9751 | 0.9737 |
| 3 | 4991 | 9.93 | 98.5 | 98.5 | 0.0 | 103.9 | 103.9 | -0.1 | 0.9481 | 0.9480 |
| | | | | | | | | | | |
| AFZ | 4991 | 0.00 | 0.0 | 0.0 | 0.0 | -0.4 | 0.0 | -0.4 | 0.0000 | 0.0000 |
| AFS | 4991 | 39.83 | 392.7 | 392.7 | 0.0 | 337.5 | 337.4 | 15.4 | 1.1637 | 1.1638 |
| | | | | | | | Average Correction Factor | | 0.9716 | 0.9710 |

As Found Concentrations: $NO_X$= 338.0 NO= 337.5 As Found Percent Change $NO_X$= -13.9% NO= -14.1%

## GPT Calibration Data

Dilution Flow 4989 ccm Source Gas Flow 39.85 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 | 0.0 | 0.0 | 0.0 | -0.4 | 0.0 | -0.4 | N/A | N/A | N/A | N/A |
| NO point | 397.5 | 397.5 | 0.0 | 397.4 | 397.5 | -0.1 | 1.0002 | 1.0000 | N/A | N/A |
| 300 | 397.5 | 114.2 | 283.2 | 397.6 | 114.2 | 283.6 | 0.9997 | 1.0000 | 0.9988 | 100.1% |
| 200 | 397.5 | 206.7 | 190.8 | 397.8 | 206.7 | 191.4 | 0.9991 | 1.0000 | 0.9970 | 100.3% |
| 100 | 397.5 | 294.5 | 102.9 | 397.8 | 294.5 | 103.5 | 0.9992 | 1.0000 | 0.9944 | 100.6% |
| | | | | | Average Correction Factor | | 0.9993 | 1.0000 | 0.9967 | 100.3% |

## AIC Data

| | Previous calibration | | | | Current calibration | | | |
|---|---|---|---|---|---|---|---|---|
| Parameter | NOx | NO2 | NO | | NOx | NO2 | NO | |
| Auto zero | -0.1 | 0.0 | 0.0 | ppb | -0.4 | -0.4 | 0.0 | ppb |
| Auto span | 168.4 | 169.5 | 1.2 | ppb | 160.4 | 159.4 | 1.0 | ppb |

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **$NO_2$**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

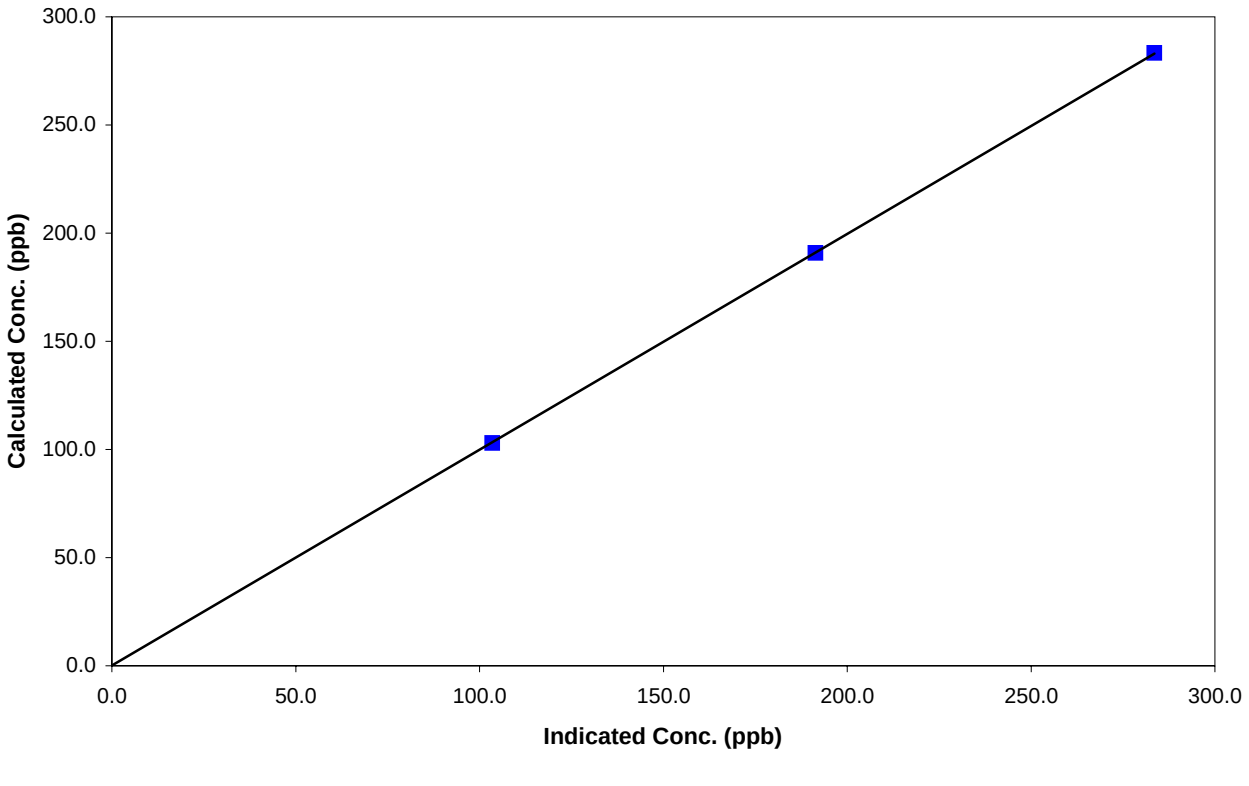
### *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 13, 2010 | Previous Calibration | June 1, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |
| Start Time (MST) | 8:26 | End Time (MST) | 12:40 |
| Analyzer make | TEI 42C | Analyzer serial # | 508011073 |

### *Calibration Data*

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | -0.4 | N/A | | |
| 283.2 | 283.6 | 0.9988 | Correlation Coefficient | 0.999991 |
| 190.8 | 191.4 | 0.9970 | | |
| 102.9 | 103.5 | 0.9944 | Slope | 0.997466 |
| | | | | |
| | | | Intercept | 0.096288 |
| | | | | |

## $NO_2$ Calibration Curve



# Calibration Summary

Parameter **$NO_x$**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

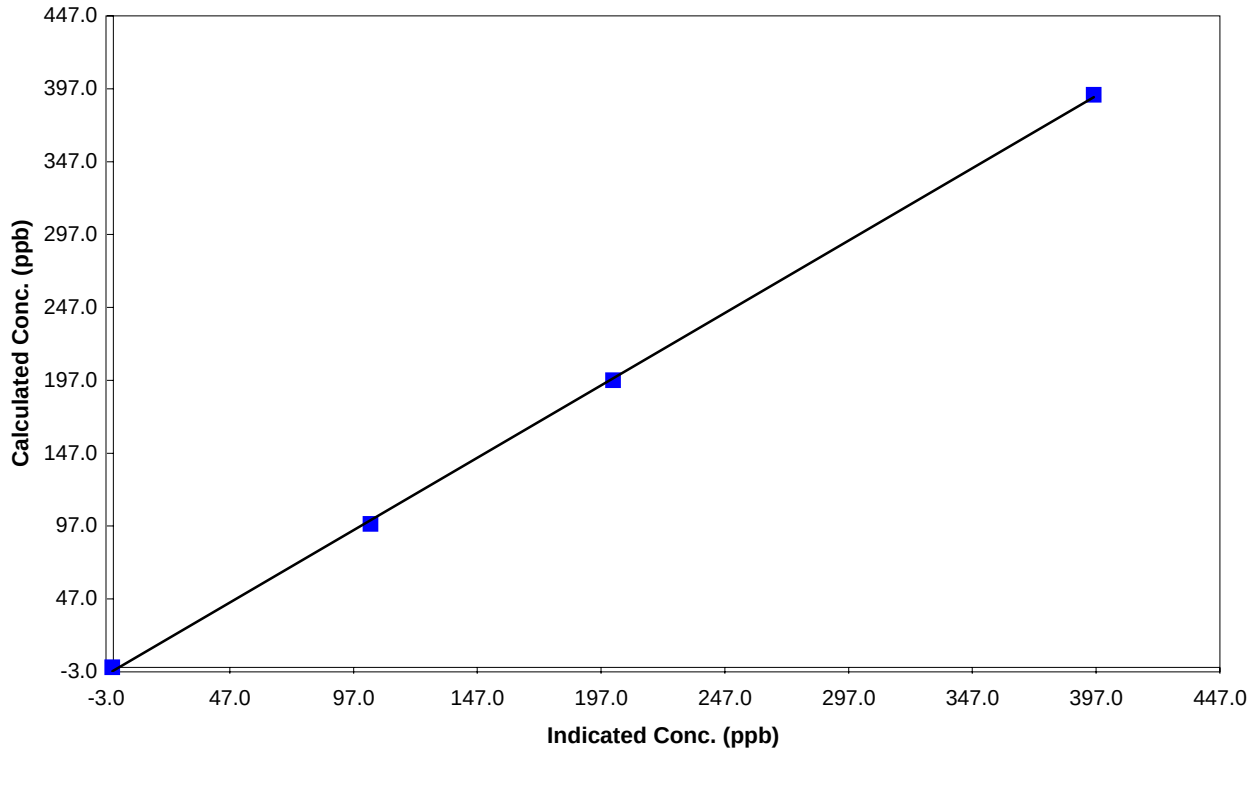
### *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 13, 2010 | Previous Calibration | June 1, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |
| Start Time (MST) | 8:26 | End Time (MST) | 12:40 |
| Analyzer make | TEI 42C | Analyzer serial # | 508011073 |

### *Calibration Data*

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | -0.4 | N/A | | |
| 392.7 | 396.0 | 0.9916 | Correlation Coefficient | 0.999791 |
| 196.9 | 201.9 | 0.9751 | | |
| 98.5 | 103.9 | 0.9481 | Slope | 0.993406 |
| | | | | |
| | | | Intercept | -2.172831 |
| | | | | |

## NOx Calibration Curve



# Calibration Summary

Parameter **NO**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

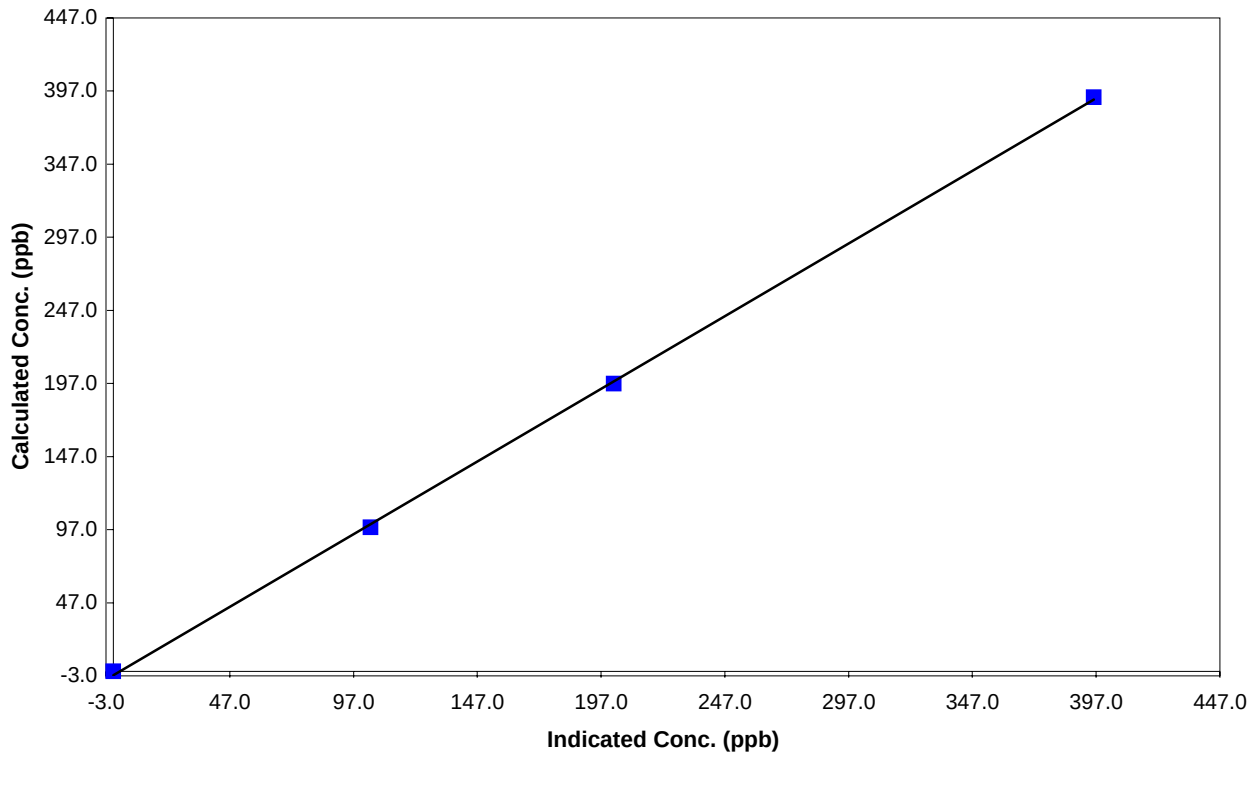
### *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 13, 2010 | Previous Calibration | June 1, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |
| Start Time (MST) | 8:26 | End Time (MST) | 12:40 |
| Analyzer make | TEI 42C | Analyzer serial # | 508011073 |

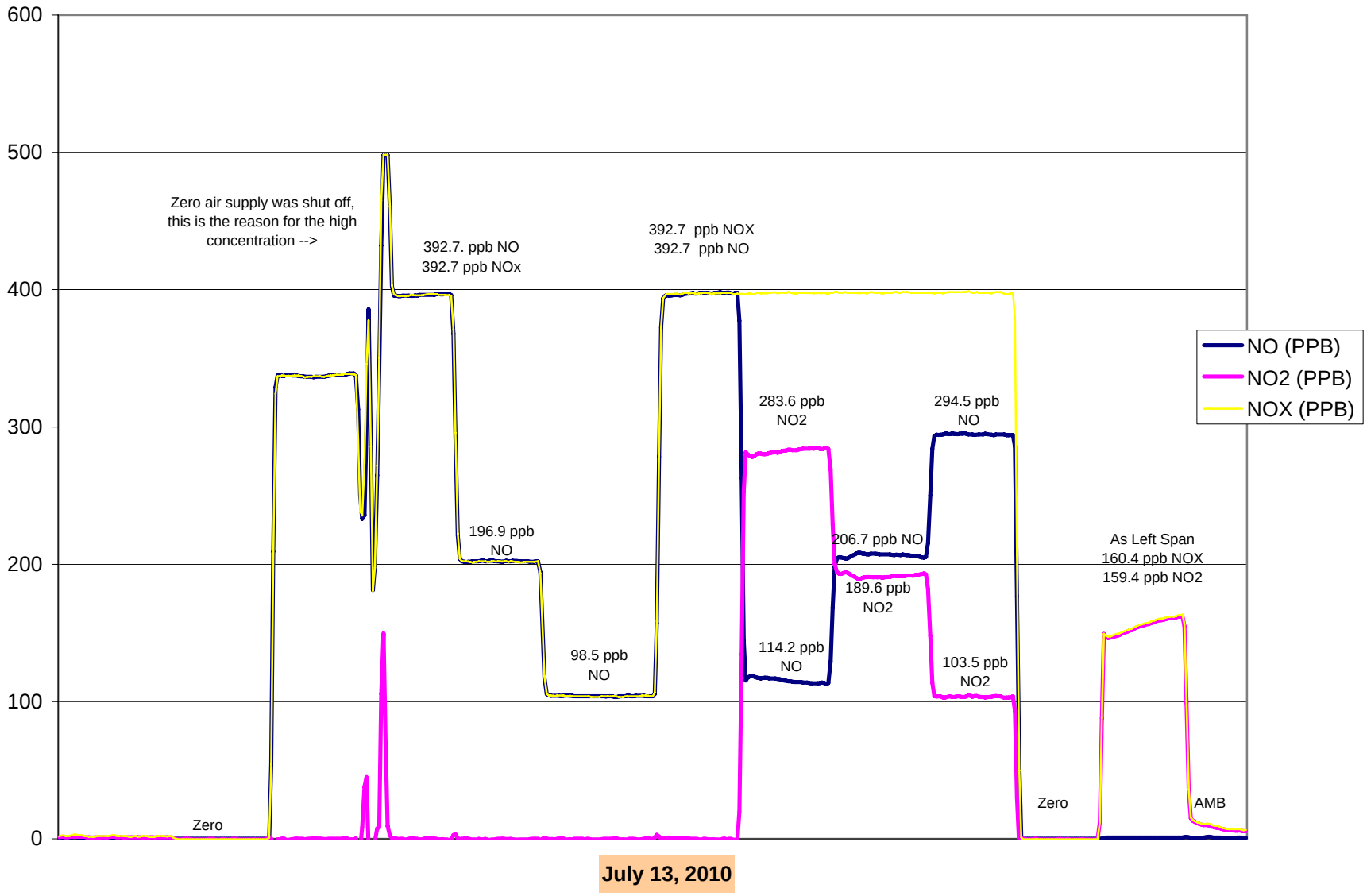
### *Calibration Data*

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | 0.0 | N/A | | |
| 392.7 | 396.1 | 0.9914 | Correlation Coefficient | 0.999806 |
| 196.9 | 202.2 | 0.9737 | | |
| 98.5 | 103.9 | 0.9480 | Slope | 0.993996 |
| | | | | |
| | | | Intercept | -2.468315 |
| | | | | |

## NO Calibration Curve



# PASZA
# $NO_X$ Calibration




**July 13, 2010**

# Calibration Report

Parameter **O3**

Air Monitoring Network **PASZA**

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 13, 2010 | Previous Calibration | June 1, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |
| Reason: Routine | Install | Removal | Other: |
| Start Time (MST) | 10:15 | End Time (MST) | 13:55 |
| Barometric Pressure | 0.924 atm | Station Temperature | 20.0 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Concentration | NA | Cal Gas Expiry Date | NA |
| DACS make | Focus AP1000 | DACS serial No. | 45269 |
| DACS voltage range | 0 - 1 volt | DACS channel # | 5 |
| | Before | | After |
| Calculated slope | 0.998751 | Calculated slope | 0.991776 |
| Calculated intercept | 0.343555 | Calculated intercept | 0.207748 |
| Analyzer make | TECO 49C | Analyzer serial # | 607415761 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 500 | ppb | 500 | ppb |
| offset | -0.6 | ppb | -0.7 | ppb |
| slope | 1.018 | | 1.078 | |
| O3 Lamp temp | 71.1 | Deg C | 71 | Deg C |
| Intensities | 85442/73938 | mV | 86070/74454 | mV |
| Pressure | 684.7 | inches Hg | 694.8 | inches Hg |
| Flow A | 0.719 | ccm | 0.724 | ccm |
| Flow B | 0.734 | ccm | 0.741 | ccm |

## *Calibration Data*

| Referenced concentration (ppb) | Dilution air flow rate (cc/min) | Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---|---|---|---|---|
| 0 | 4991 | 0.0 | 0.5 | N/A |
| 300 | 4991 | 281.0 | 284.4 | 0.9882 |
| 200 | 4991 | 190.2 | 189.8 | 1.0020 |
| 100 | 4991 | 101.2 | 101.7 | 0.9953 |
| | | | | |
| | | | 0.5 | As found zero |
| | | | 268.0 | As found span |
| | | | Average Correction Factor | 0.9952 |

Calculated value of As Found Response: 267.6 ppm Percent Change of As Found: NA

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | 0.3 | ppb | 0.3 | ppb |
| Auto span | 153.0 | ppb | 160.5 | ppb |

Notes:

Calibration Performed By: **Courtney Thompson**

# Calibration Summary

Parameter **O3**

Air Monitoring Network **PASZA**

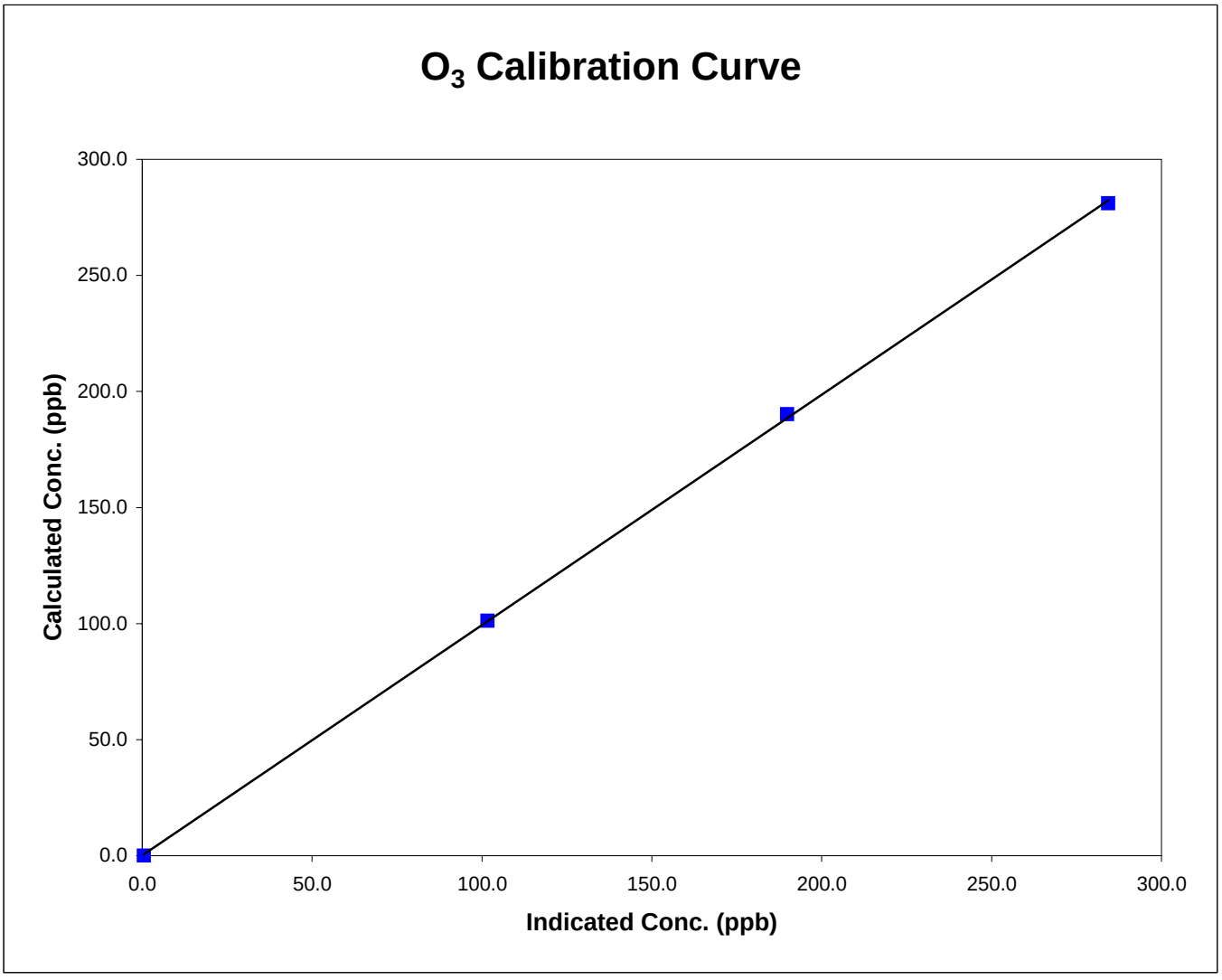
FOCUS AIR QUALITY MONITORING

***Station Information***

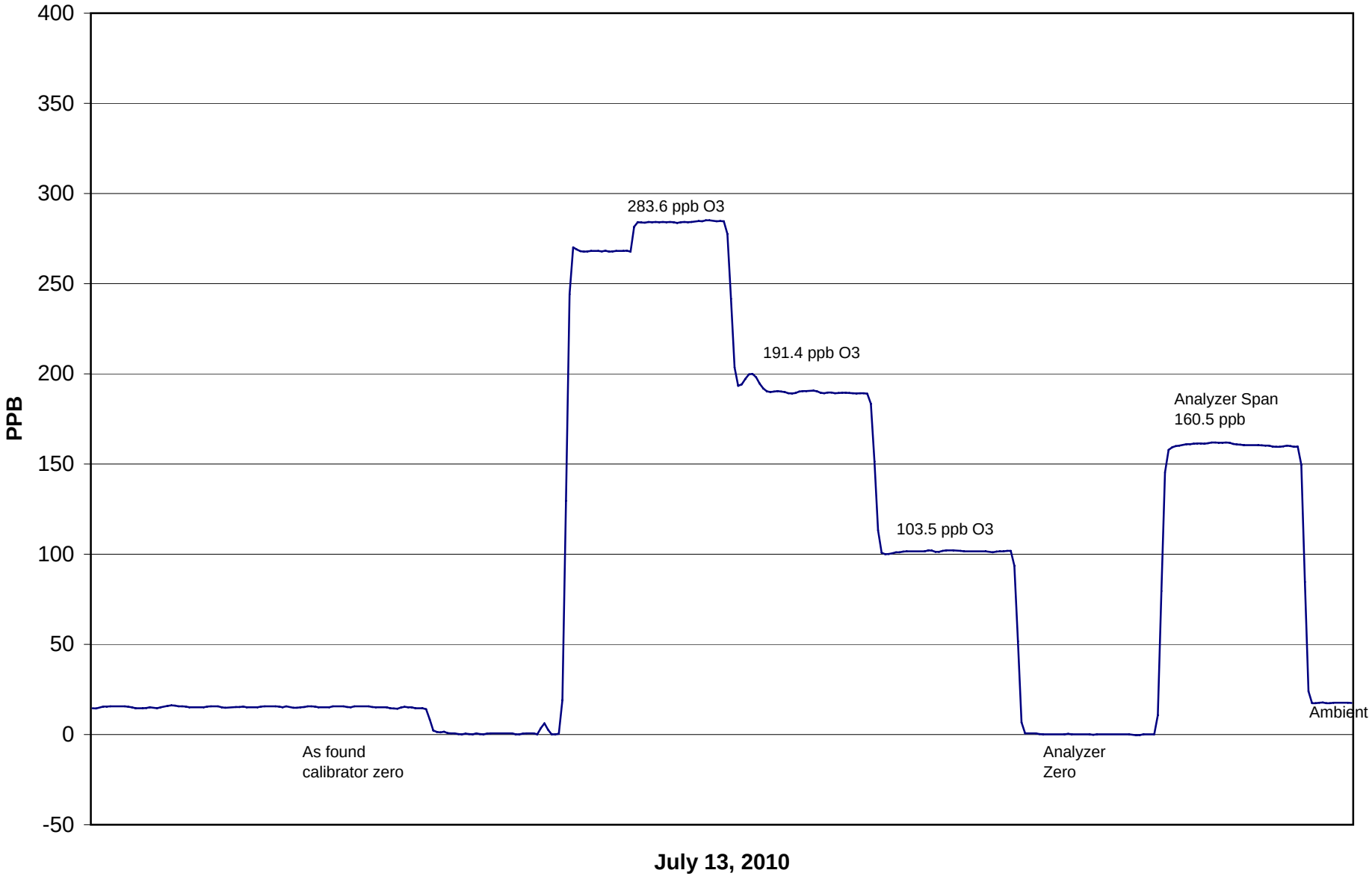
| | | | |
|---|---|---|---|
| Calibration Date | July 13, 2010 | Previous Calibration | June 1, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |
| Start Time (MST) | 10:15 | End Time (MST) | 13:55 |
| Analyzer make/model | TECO 49C | Analyzer serial # | 607415761 |

***Calibration Data***

| Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | 0.5 | NA | | |
| 281.0 | 284.4 | 0.9882 | Correlation Coefficient | 0.999886 |
| 190.2 | 189.8 | 1.0020 | | |
| 101.2 | 101.7 | 0.9953 | Slope | 0.991776 |
| | | | | |
| | | | Intercept | 0.207748 |
| | | | | |



# Henry Pirker $O_3$ Calibration



# Calibration Report

Parameter **CO**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 14, 2010 | Previous Calibration | June 2, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |
| Reason: | Routine / Install / Removal / Other: | | |
| Start Time (MST) | 9:50 | End Time (MST) | 12:14 |
| Barometric Pressure | 0.927 ATM | Station Temperature | 20.0 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Conc | 3000 ppm | Cal Gas Expiry Date | AUG 28/05 |
| | | Cal Gas Cylinder # | AAL20565 |
| DACS make | Focus AP1000 | DACS serial No. | 1 |
| DACS voltage range | 0 - 1 volt | DACS channel # | 9 |
| | Before | | After |
| Calculated slope | 1.021092 | Calculated slope | 1.010206 |
| Calculated intercept | -0.218260 | Calculated intercept | -0.156745 |
| Analyzer make | TEI Model 48C | Analyzer serial # | 508011062 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 50 | ppm | 0 - 50 | ppm |
| CO span setting | 1.062 | | 1.062 | |
| CO zero setting | 9.807 | | 9.713 | |
| Sample pressure | 676.2 | mm Hg | 685.8 | mm Hg |
| Sample Flow | 1.127 | LPM | 1.137 | 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) |
|---|---|---|---|---|
| 4991 | 0.00 | 0.00 | 0.03 | N/A |
| 4989 | 39.84 | 23.77 | 23.62 | 1.0062 |
| 4989 | 19.90 | 11.92 | 12.01 | 0.9923 |
| 4989 | 9.95 | 5.97 | 6.19 | 0.9644 |
| | | | | |
| | | | | |
| 4990 | 0.00 | 0.00 | 0.03 | As Found Zero |
| 4989 | 39.84 | 23.77 | 23.62 | As Found Span |
| | | | Average Correction Factor | 0.9876 |

Calculated value of As Found Response: 23.865 ppm Percent Change of As Found: -0.4%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | 0.03 | ppm | 0.03 | ppm |
| Auto span | 19.43 | ppm | 19.33 | ppm |

Notes:

Calibration Performed By: Grover Christiansen/Courtney Thompson

# Calibration Summary

Parameter **CO**

Air Monitoring Network **PASZA**

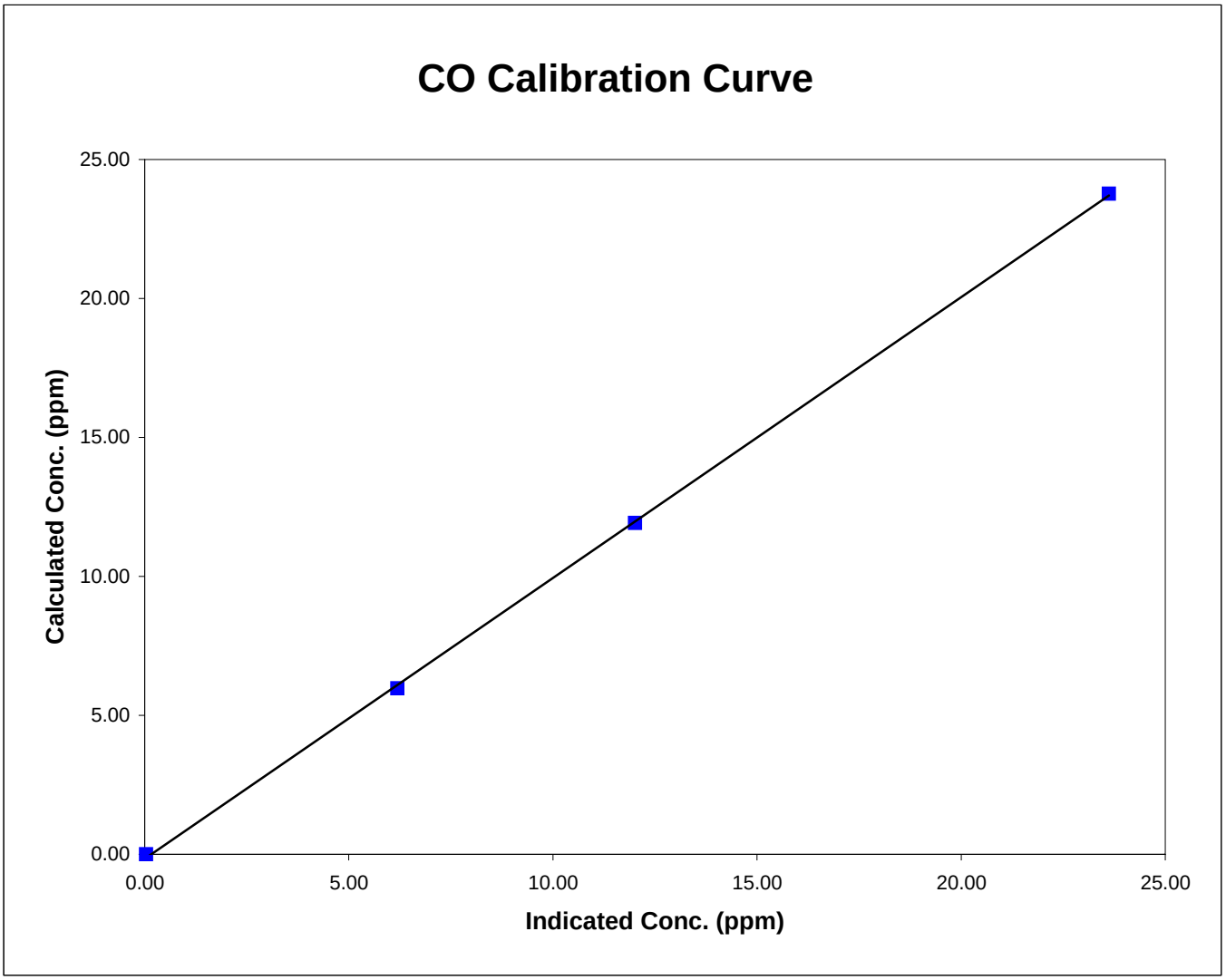
FOCUS AIR QUALITY MONITORING

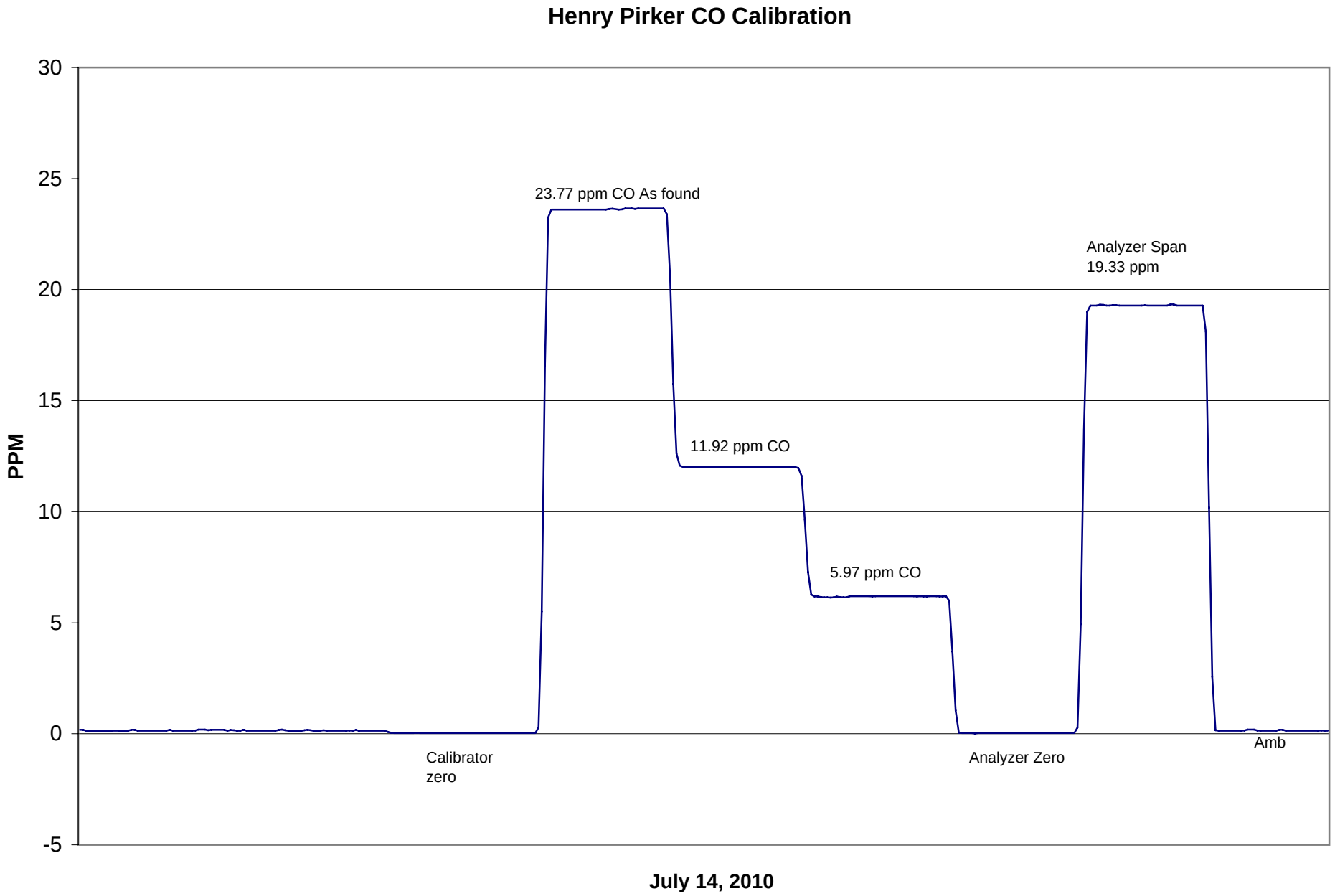
***Station Information***

| | | | |
|---|---|---|---|
| Calibration Date | July 14, 2010 | Previous Calibration | June 2, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |
| Start Time (MST) | 9:50 | End Time (MST) | 12:14 |
| Analyzer make/model | TEI Model 48C | Analyzer serial # | 508011062 |

***Calibration Data***

| Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.000 | 0.034 | N/A | | |
| 23.767 | 23.620 | 1.0062 | Correlation Coefficient | 0.999875 |
| 11.919 | 12.011 | 0.9923 | | |
| 5.971 | 6.192 | 0.9644 | Slope | 1.010206 |
| | | | | |
| | | | Intercept | -0.156745 |
| | | | | |




Henry Pirker CO Calibration
30
25
20
15
10
5
0
-5
PPM
23.77 ppm CO As found
11.92 ppm CO
5.97 ppm CO
Analyzer Span
19.33 ppm
Calibrator
zero
Analyzer Zero
Amb
July 14, 2010

# Calibration Report

Parameter **THC**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 14, 2010 | Previous Calibration | June 2, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |

Reason: [Routine] [Install] [Removal] [Other:]

| | | | |
|---|---|---|---|
| Start Time (MST) | 11:40 | End Time (MST) | 15:30 |
| Barometric Pressure | 0.915 ATM | Station Temperature | 20.0 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Concentration | 701 ppm CH4/ 299 ppm C3H8 | Cal Gas Expiry Date | 2/4/2010 |
| Cal Gas CH4 equiv | 1523.25 ppm | Cal Gas Cylinder # | ALM 004476 |
| DACS make | Focus AP1000 | DACS serial No. | 1 |
| DACS voltage range | 0 - 1 volt | DACS channel # | 9 |
| | Before | | After |
| Calculated slope | 1.016572 | Calculated slope | 1.011351 |
| Calculated intercept | 0.060640 | Calculated intercept | 0.051047 |

| | | |
|---|---|---|
| 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 span counts | 9615 | capture | 9611 | capture |
| THC zero counts | 431 | capture | 449 | 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) |
|---|---|---|---|---|
| 4988 | 0.00 | 0.00 | 0.03 | N/A |
| 4991 | 69.73 | 20.99 | 20.76 | 1.0110 |
| 4991 | 29.90 | 9.07 | 8.78 | 1.0328 |
| 4991 | 9.92 | 3.02 | 2.94 | 1.0278 |
| | | | | |
| | | | | |
| 4989 | 0.00 | 0.00 | -0.09 | As Found Zero |
| 4989 | 69.50 | 21.01 | 20.55 | As Found Span |
| | | | Average Correction Factor | 1.0239 |

Calculated value of As Found Response: 21.035 ppm Percent Change of As Found: -0.1%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | 0.10 | ppm | -0.04 | ppm |
| Auto span | 25.45 | ppm | 23.27 | ppm |

Notes:

Calibration Performed By: Grover Christiansen/Courtney Thompson

# Calibration Summary

Parameter **THC**

Air Monitoring Network **PASZA**

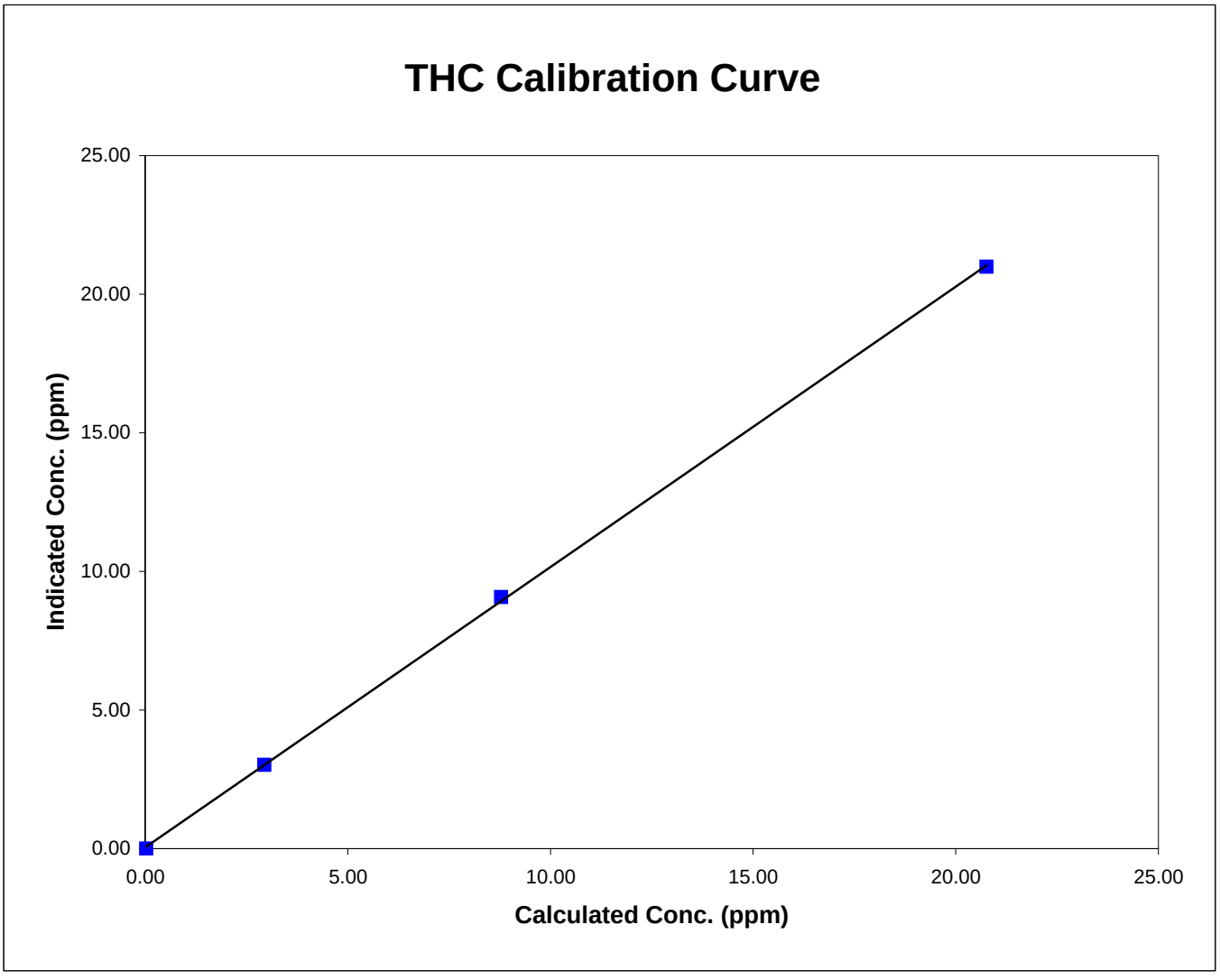
FOCUS AIR QUALITY MONITORING

***Station Information***

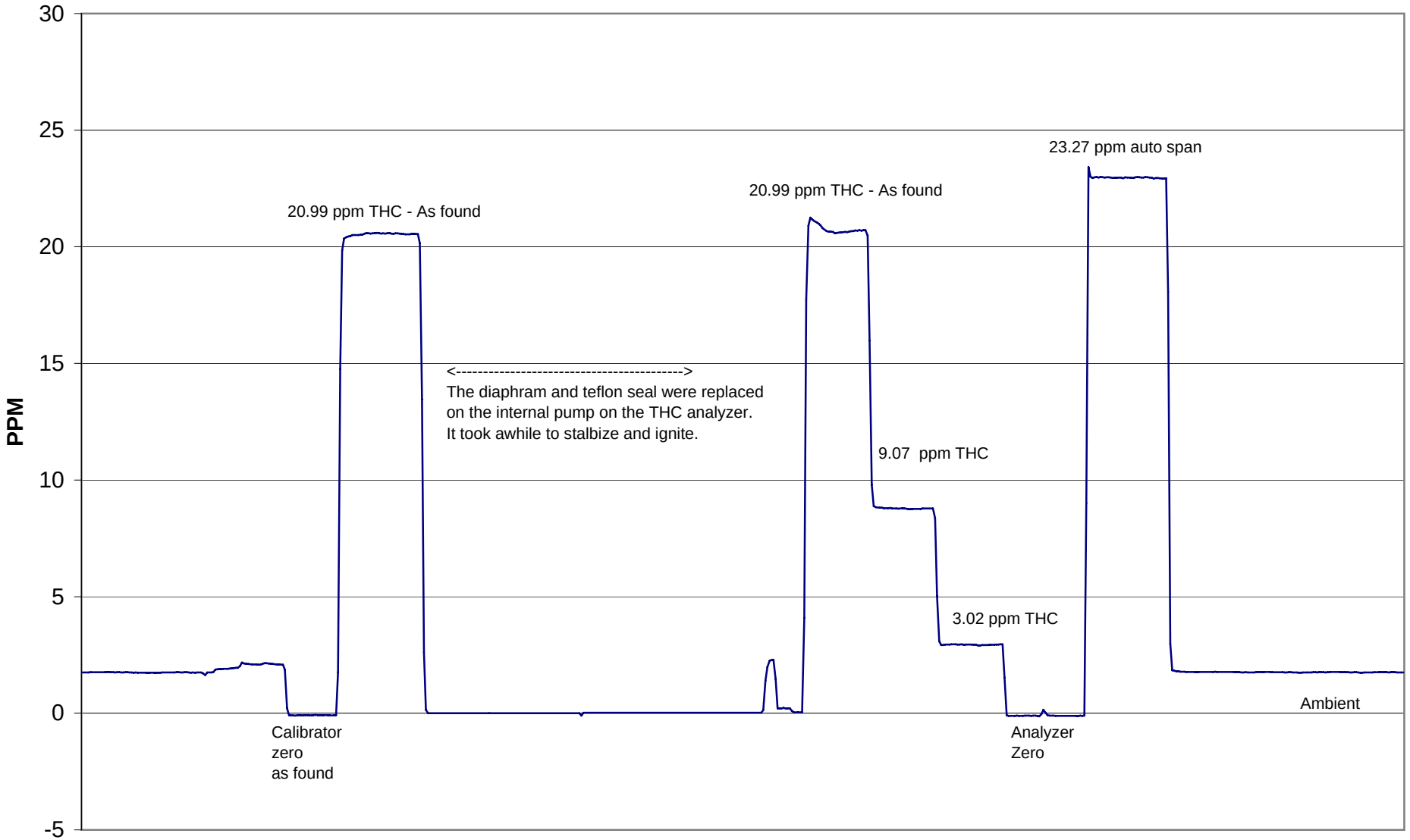
| | | | |
|---|---|---|---|
| Calibration Date | July 14, 2010 | Previous Calibration | June 2, 2010 |
| Station Number | 1 | Station Location | Henry Pirker |
| Start Time (MST) | 11:40 | End Time (MST) | 15:30 |
| Analyzer make/model | TEI Model 51C-LT | Analyzer serial # | 51CLT-79009-390 |

***Calibration Data***

| Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.000 | 0.026 | N/A | | |
| 20.988 | 20.759 | 1.0110 | Correlation Coefficient | 0.999891 |
| 9.071 | 8.783 | 1.0328 | | |
| 3.022 | 2.940 | 1.0278 | Slope | 1.011351 |
| | | | | |
| | | | Intercept | 0.051047 |
| | | | | |



# Henry Pirker THC Calibration




**July 14, 2010**

# Calibration Report

Parameter **$SO_2$**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 1, 2010 | Previous Calibration | June 14, 2010 |
| Station Number | 2 | Station Location | Evergreen Park |
| Reason: Routine | Install | Removal | Other: |
| Start Time (MST) | 9:45 | End Time (MST) | 12:10 |
| Barometric Pressure | 0.921 ATM | Station Temperature | 20.0 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Concentration | 50.6 ppm | Cal Gas Expiry Date | 1/2/2009 |
| Correction factor | 0.031307 | Cal Gas Cylinder # | LL16161 |
| DACS make | Focus AP1000 | DACS serial No. | 52620 |
| DACS voltage range | 0 - 10 volt | DACS channel # | 6 |
| | Before | | After |
| Calculated slope | 1.010438 | Calculated slope | 1.011732 |
| Calculated intercept | -2.737553 | Calculated intercept | -2.489173 |
| Analyzer make | Teco 43i | Analyzer serial # | 701120008 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 1000 | ppb | 0 - 1000 | ppb |
| Background | 10.9 | | 11 | |
| coefficient | 1.051 | | 1.051 | |
| Lamp Voltage | 831 | volts | 828 | volts |
| Chamber Temp | 45.2 | Deg C | 45.1 | Deg C |
| Perm Gas Temp | 45 | Deg C | 45 | Deg C |
| Pressure | 664.3 | mm Hg | 661.6 | mm Hg |
| Sample Flow | 0.451 | ccm | 0.447 | ccm |
| Lamp Intensity | 90 | % | 90 | % |

## *Calibration Data*

| 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 | 0.3 | N/A |
| 4991 | 39.85 | 400.81 | 397.5 | 1.0085 |
| 4991 | 19.91 | 201.05 | 202.4 | 0.9932 |
| 4991 | 9.96 | 100.78 | 104.1 | 0.9679 |
| | 0.0 | | | |
| | | | | |
| 4991 | 0.0 | 0.00 | 0.3 | As Found Zero |
| 4991 | 39.85 | 400.81 | 397.5 | As Found Span |
| | | | Average Correction Factor | 0.9899 |

Calculated value of As Found Response: 398.524 ppm Percent Change of As Found: 0.6%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | 0.7 | ppm | 0.1 | ppm |
| Auto span | 286.9 | ppm | 292.6 | ppm |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **SO2**

Air Monitoring Network **PASZA**

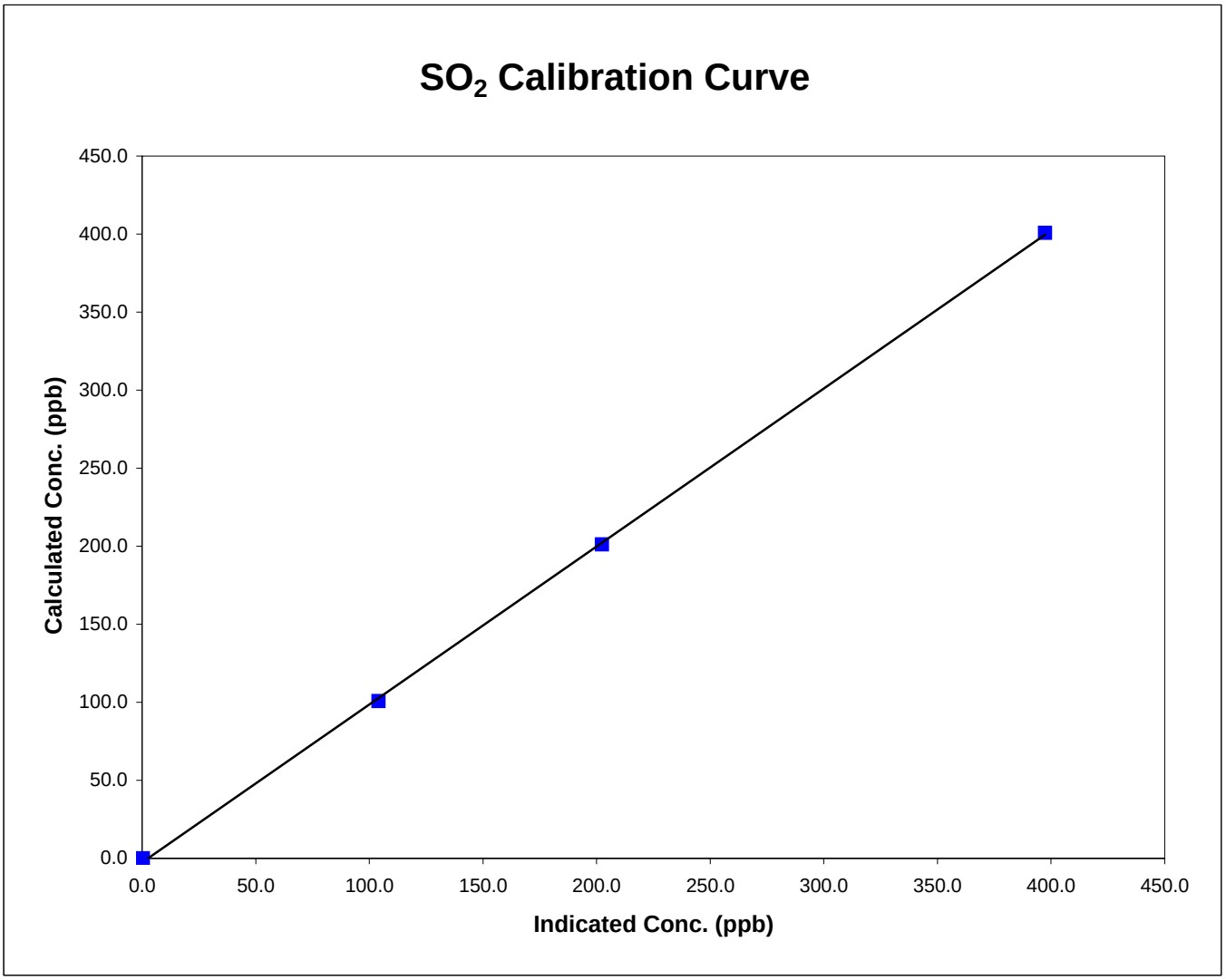
FOCUS AIR QUALITY MONITORING

***Station Information***

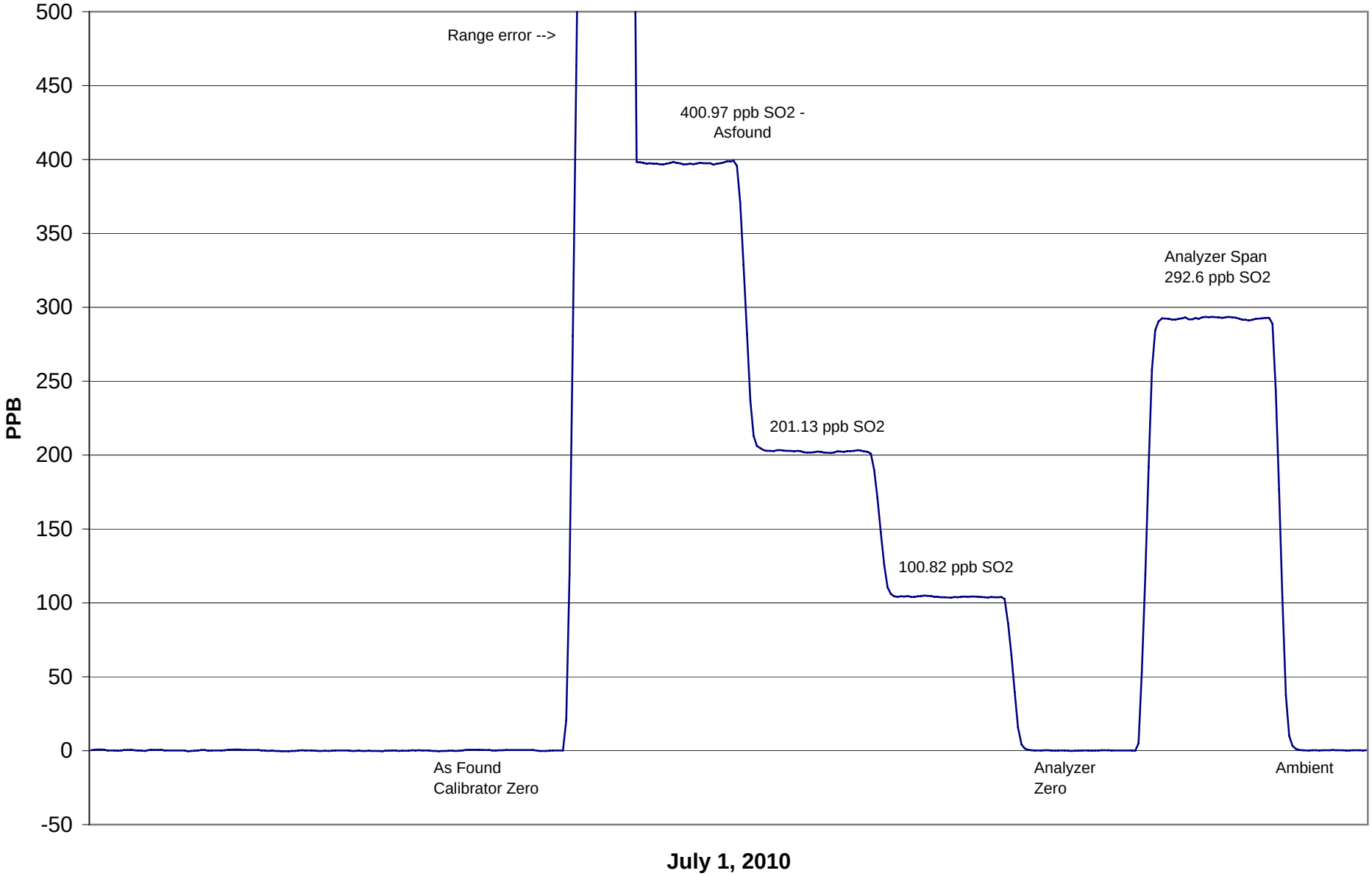
| | | | |
|---|---|---|---|
| Calibration Date | July 1, 2010 | Previous Calibration | June 14, 2010 |
| Station Number | 2 | Station Location | Evergreen Park |
| Start Time (MST) | 9:45 | End Time (MST) | 12:10 |
| Analyzer make/model | Teco 43i | Analyzer serial # | 701120008 |

***Calibration Data***

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | 0.3 | N/A | | |
| 400.8 | 397.5 | 1.0085 | Correlation Coefficient | 0.999864 |
| 201.1 | 202.4 | 0.9932 | | |
| 100.8 | 104.1 | 0.9679 | Slope | 1.011732 |
| | | | | |
| | | | Intercept | -2.489173 |
| | | | | |



# Evergreen Park $SO_2$ Calibration



# Calibration Report

Parameter **TRS**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 1, 2010 | Previous Calibration | June 14, 2010 |
| Station Number | 2 | Station Location | Evergreen Park |

Reason: Routine | Install | Removal | Other:

| | | | |
|---|---|---|---|
| Start Time (MST) | 8:05 | End Time (MST) | 11:02 |
| Barometric Pressure | 0.921 ATM | Station Temperature | 20.0 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Conc | 5.15 ppm | Cal Gas Expiry Date | 4/2/2009 |
| Correction factor | 0.031307 | Cal Gas Cylinder # | ALM 013295 |
| DACS make | Focus AP1000 | DACS serial No. | 52620 |
| DACS voltage range | 0 - 10 volt | DACS channel # | 5 |
| | Before | | After |
| Calculated slope | 1.011467 | Calculated slope | 1.011111 |
| Calculated intercept | -0.427580 | Calculated intercept | -0.657243 |

| | | | | |
|---|---|---|---|---|
| Analyzer make | TEI Model 43C | | Analyzer serial # | 436610005 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 100 | ppb | 0 - 100 | ppb |
| Background | 15.4 | ppb | 15.5 | ppb |
| coefficient | 0.859 | | 0.859 | |
| Lamp Voltage | 809 | volts | 810 | volts |
| Chamber Temp | 44.2 | Deg C | 44.2 | Deg C |
| Perm Gas Temp | 45 | Deg C | 45.01 | Deg C |
| Pressure | 644.2 | mm Hg | 639.4 | mm Hg |
| Sample Flow | 0.480 | ccm | 0.478 | ccm |
| Lamp Intensity | 45,883 | mv | 45,831 | mv |

## *Calibration Data*

| 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 | 0.00 | 0.00 | 0.3 | N/A |
| 4991 | 79.79 | 81.04 | 80.6 | 1.0057 |
| 4991 | 39.87 | 40.81 | 41.4 | 0.9860 |
| 4991 | 9.95 | 10.25 | 11.0 | 0.9313 |
| | | | | |
| | | | | |
| 4990 | 0.00 | 0.00 | 0.3 | As Found Zero |
| 4991 | 79.79 | 81.04 | 80.6 | As Found Span |
| | | | Average Correction Factor | 0.9744 |

Calculated value of As Found Response: 80.79 ppm Percent Change of As Found: 0.3%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | -0.5 | ppm | -0.2 | ppm |
| Auto span | 62.0 | ppm | 58.6 | ppm |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **TRS**

Air Monitoring Network **PASZA**

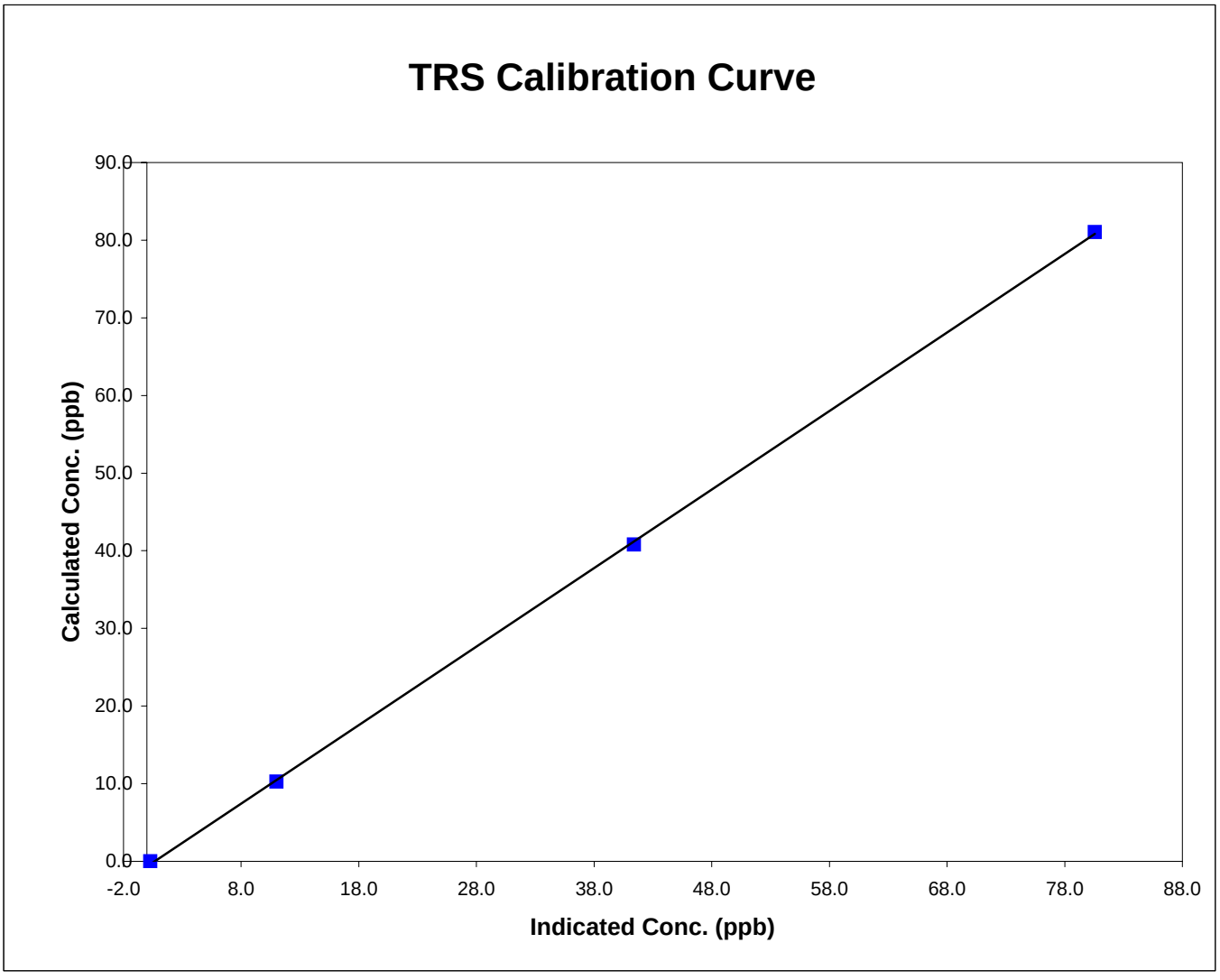
FOCUS AIR QUALITY MONITORING

***Station Information***

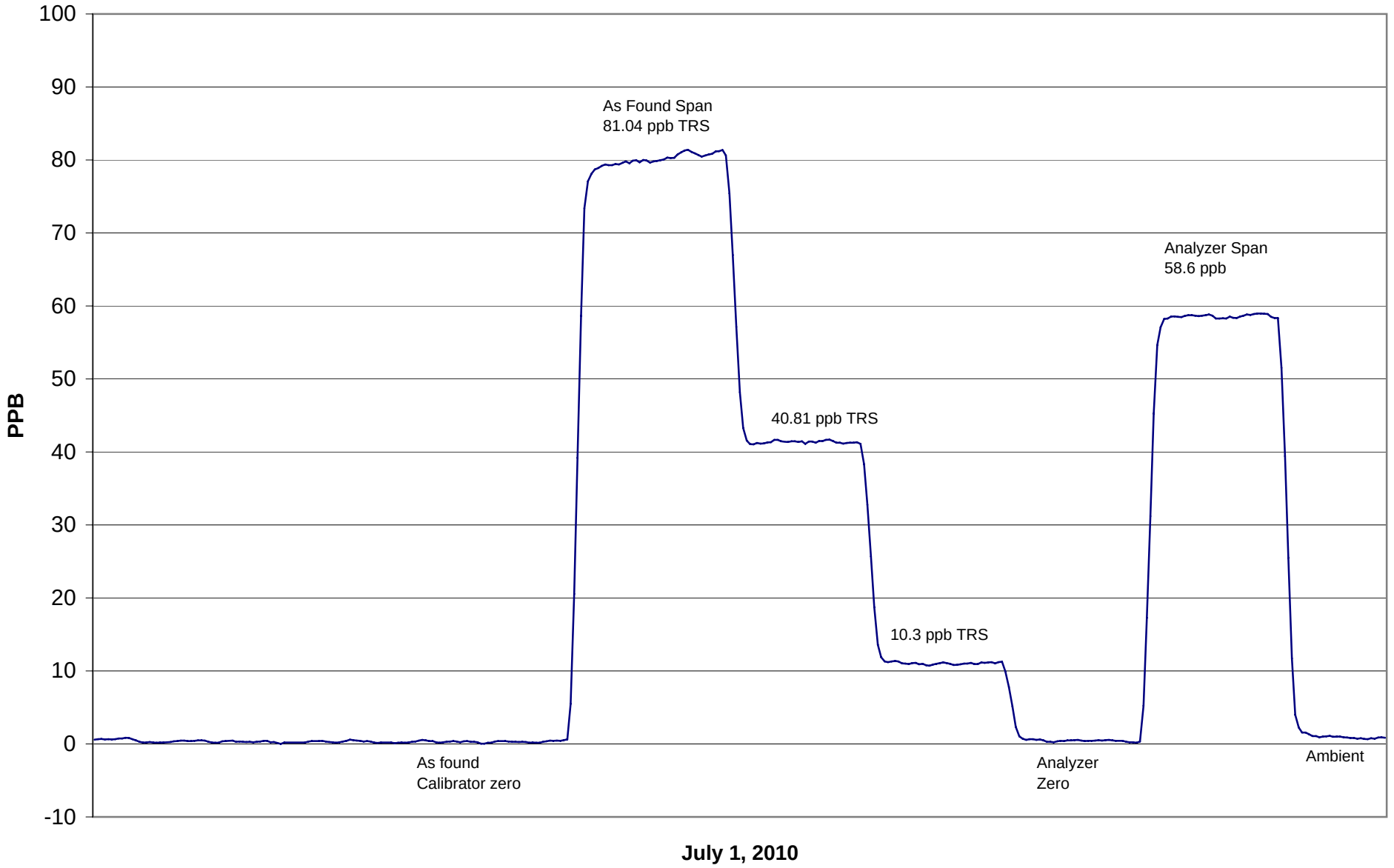
| | | | |
|---|---|---|---|
| Calibration Date | July 1, 2010 | Previous Calibration | June 14, 2010 |
| Station Number | 2 | Station Location | Evergreen Park |
| Start Time (MST) | 8:05 | End Time (MST) | 11:02 |
| Analyzer make/model | TEI Model 43C | Analyzer serial # | 436610005 |

***Calibration Data***

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | 0.3 | N/A | | |
| 81.0 | 80.6 | 1.0057 | Correlation Coefficient | 0.999903 |
| 40.8 | 41.4 | 0.9860 | | |
| 10.2 | 11.0 | 0.9313 | Slope | 1.011111 |
| | | | | |
| | | | Intercept | -0.657243 |
| | | | | |



# Evergreen Park TRS Calibration



# Calibration Report

Parameter **TRS**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 12, 2010 | Previous Calibration | July 1, 2010 |
| Station Number | 2 | Station Location | Evergreen Park |

Reason: Routine | Install | Removal | Other:

| | | | |
|---|---|---|---|
| Start Time (MST) | 13:45 | End Time (MST) | 15:16:00 PM |
| Barometric Pressure | 0.926 ATM | Station Temperature | 20.0 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Conc | 5.15 ppm | Cal Gas Expiry Date | 4/2/2009 |
| Correction factor | 0.031477 | Cal Gas Cylinder # | ALM 013295 |
| DACS make | Focus AP1000 | DACS serial No. | 52620 |
| DACS voltage range | 0 - 10 volt | DACS channel # | 5 |
| | Before | | After |
| Calculated slope | 1.011111 | Calculated slope | 1.027175 |
| Calculated intercept | -0.657243 | Calculated intercept | -0.251523 |

| | | | | |
|---|---|---|---|---|
| Analyzer make | TEI Model 43C | | Analyzer serial # | 436610005 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 100 | ppb | 0 - 100 | ppb |
| Background | 15.4 | ppb | 15.5 | ppb |
| coefficient | 0.859 | | 0.859 | |
| Lamp Voltage | 809 | volts | 810 | volts |
| Chamber Temp | 44.2 | Deg C | 44.2 | Deg C |
| Perm Gas Temp | 45 | Deg C | 45.06 | Deg C |
| Pressure | 644.2 | mm Hg | 641.2 | mm Hg |
| Sample Flow | 0.480 | ccm | 0.479 | ccm |
| Lamp Intensity | 45,775 | mv | 45,679 | mv |

## *Calibration Data*

| 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 | 0.00 | 0.00 | 0.2 | N/A |
| 4991 | 79.79 | 81.04 | 79.1 | 1.0240 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| 4990 | 0.00 | 0.00 | 0.2 | As Found Zero |
| 4991 | 79.79 | 81.04 | 79.1 | As Found Span |
| | | | Average Correction Factor | 1.0240 |

Calculated value of As Found Response: 79.11 ppm Percent Change of As Found: 2.4%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | -0.5 | ppm | 0.4 | ppm |
| Auto span | 62.0 | ppm | 48.1 | ppm |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **TRS**

Air Monitoring Network **PASZA**

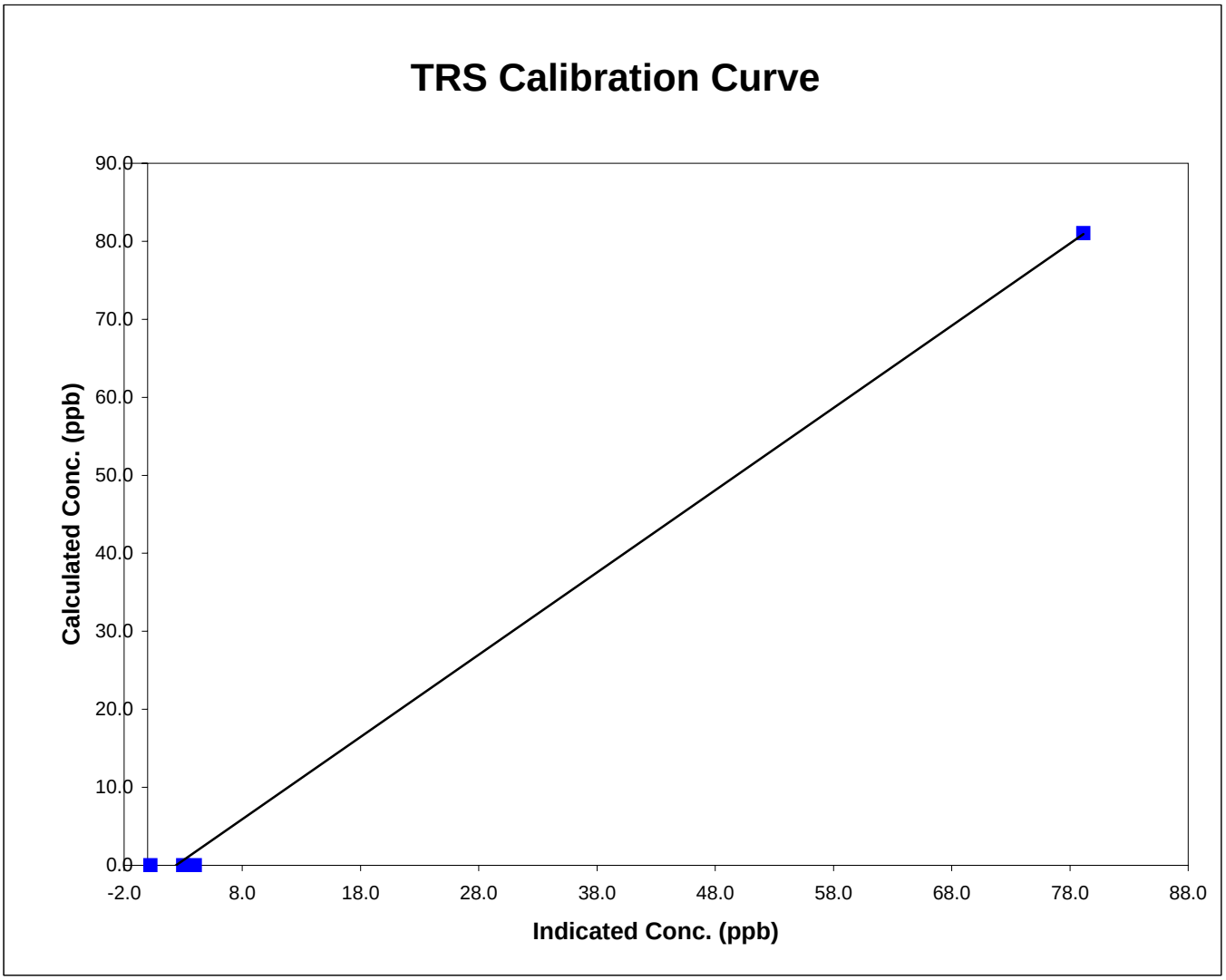
FOCUS AIR QUALITY MONITORING

***Station Information***

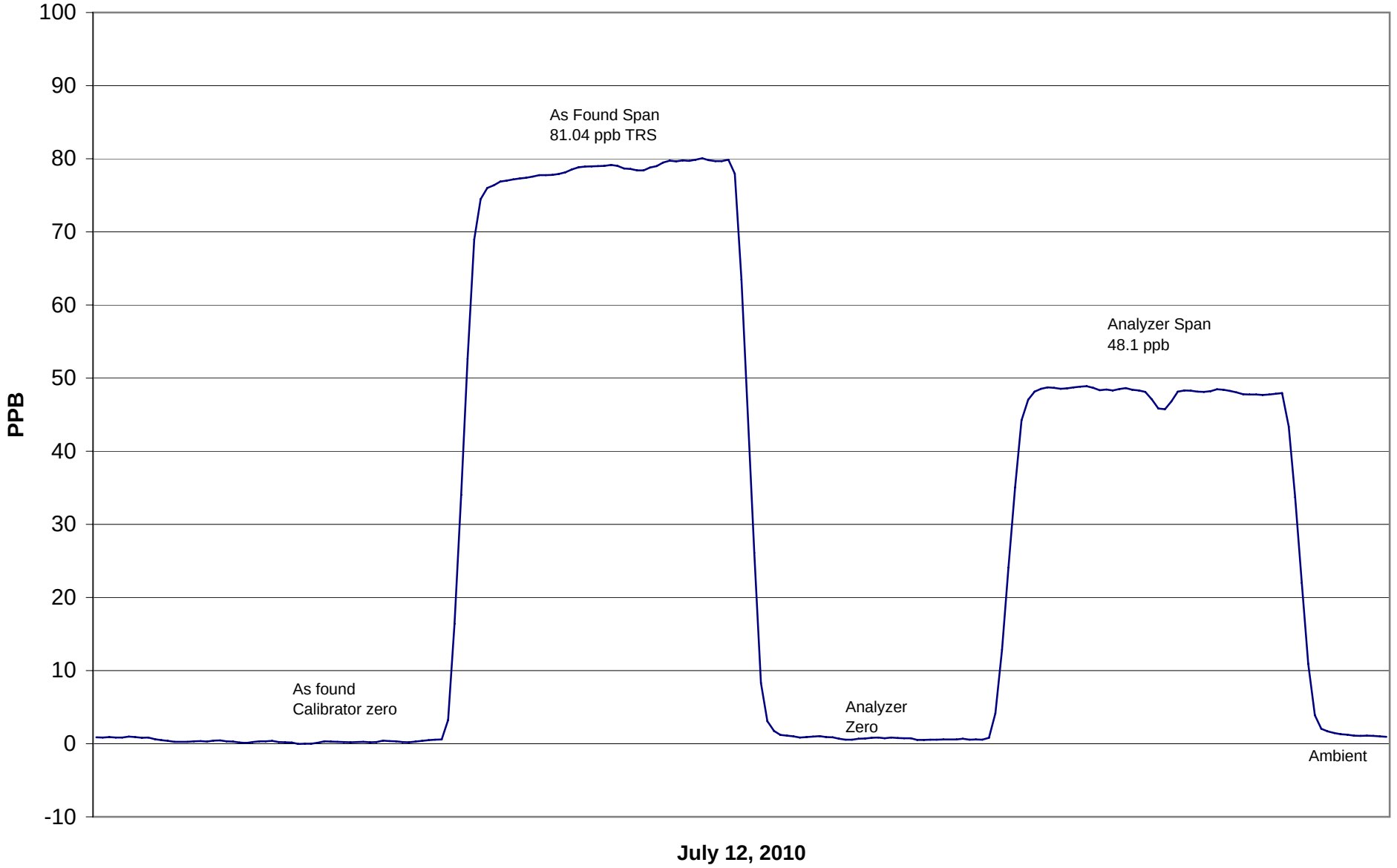
| | | | |
|---|---|---|---|
| Calibration Date | July 12, 2010 | Previous Calibration | July 1, 2010 |
| Station Number | 2 | Station Location | Evergreen Park |
| Start Time (MST) | 13:45 | End Time (MST) | 15:16:00 PM |
| Analyzer make/model | TEI Model 43C | Analyzer serial # | 436610005 |

***Calibration Data***

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | 0.2 | N/A | | |
| 81.0 | 79.1 | 1.0240 | Correlation Coefficient | 1.000000 |
| | | | | |
| | | | Slope | 1.027175 |
| | | | | |
| | | | Intercept | -0.251523 |
| | | | | |



# Evergreen Park TRS Calibration



# Calibration Report

Parameter **TRS**

Air Monitoring Network **PASZA**

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 28, 2010 | Previous Calibration | July 12, 2010 |
| Station Number | 2 | Station Location | Evergreen Park |

Reason: Routine | Install | Removal | Other:

| | | | |
|---|---|---|---|
| Start Time (MST) | 14:00 | End Time (MST) | 15:10 |
| Barometric Pressure | 0.927 ATM | Station Temperature | 20.0 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Conc | 5.15 ppm | Cal Gas Expiry Date | 4/2/2009 |
| Correction factor | 0.031511 | Cal Gas Cylinder # | ALM 013295 |
| DACS make | Focus AP1000 | DACS serial No. | 52620 |
| DACS voltage range | 0 - 10 volt | DACS channel # | 5 |
| | Before | | After |
| Calculated slope | 1.027175 | Calculated slope | 1.062745 |
| Calculated intercept | -0.251523 | Calculated intercept | -0.354817 |

Analyzer make: TEI Model 43C | Analyzer serial #: 436610005

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 100 | ppb | 0 - 100 | ppb |
| Background | 15.4 | ppb | 15.4 | ppb |
| coefficient | 0.859 | | 0.859 | |
| Lamp Voltage | 809 | volts | 808 | volts |
| Chamber Temp | 44.2 | Deg C | 44.1 | Deg C |
| Perm Gas Temp | 45.1 | Deg C | 45.2 | Deg C |
| Pressure | 644.2 | mm Hg | 641.7 | mm Hg |
| Sample Flow | 0.480 | ccm | 0.478 | ccm |
| Lamp Intensity | 45,861 | mv | 45,977 | mv |

## *Calibration Data*

| 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 | 0.00 | 0.00 | 0.3 | N/A |
| 4988 | 79.79 | 81.08 | 76.6 | 1.0581 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| 4988 | 0.00 | 0.00 | 0.3 | As Found Zero |
| 4988 | 79.79 | 81.08 | 76.6 | As Found Span |
| | | | Average Correction Factor | 1.0581 |

Calculated value of As Found Response: 78.12 ppm  Percent Change of As Found: 3.7%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | -0.5 | ppm | NA | ppm |
| Auto span | 62.0 | ppm | 0.0 | ppm |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **TRS**

Air Monitoring Network **PASZA**

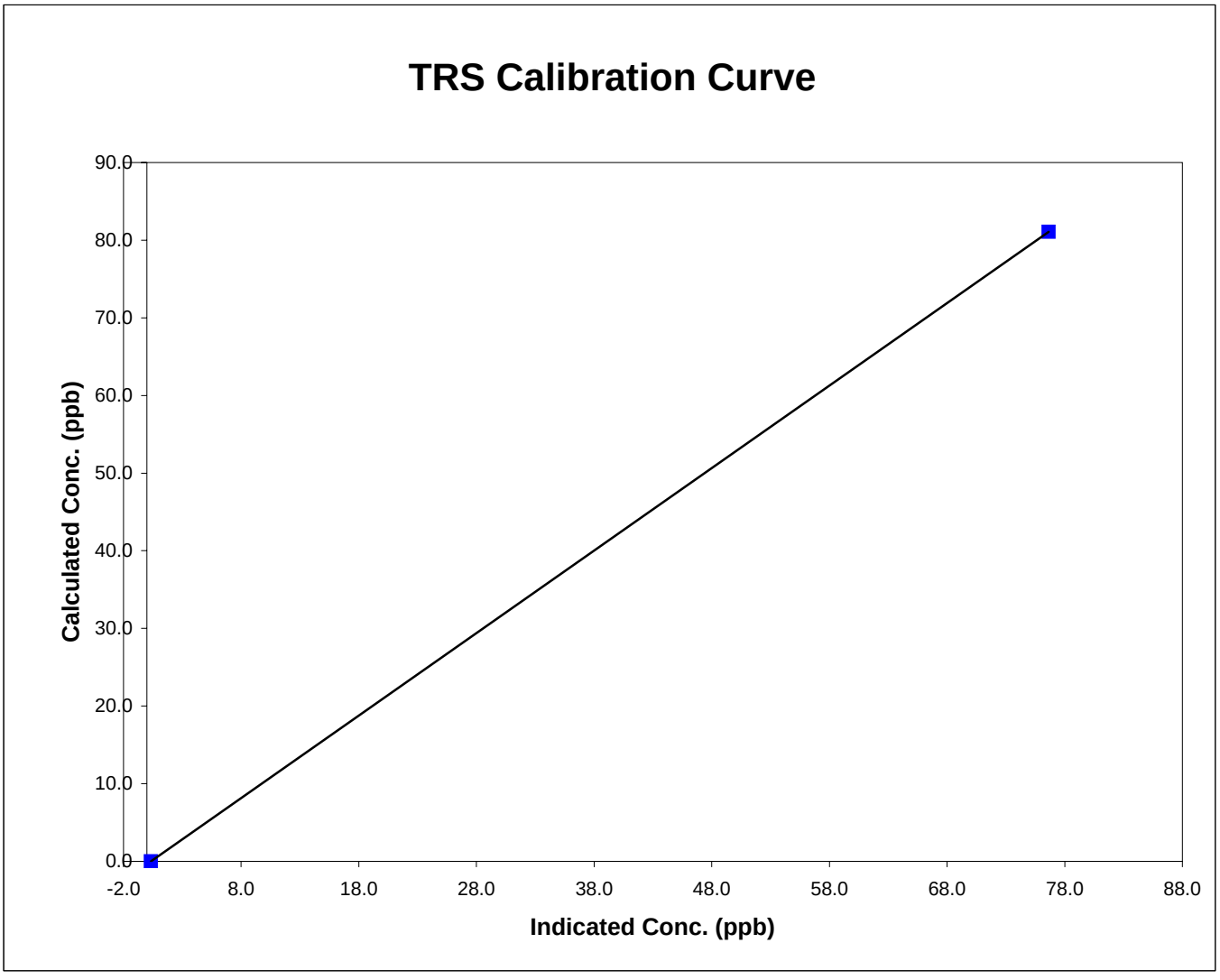
FOCUS AIR QUALITY MONITORING

***Station Information***

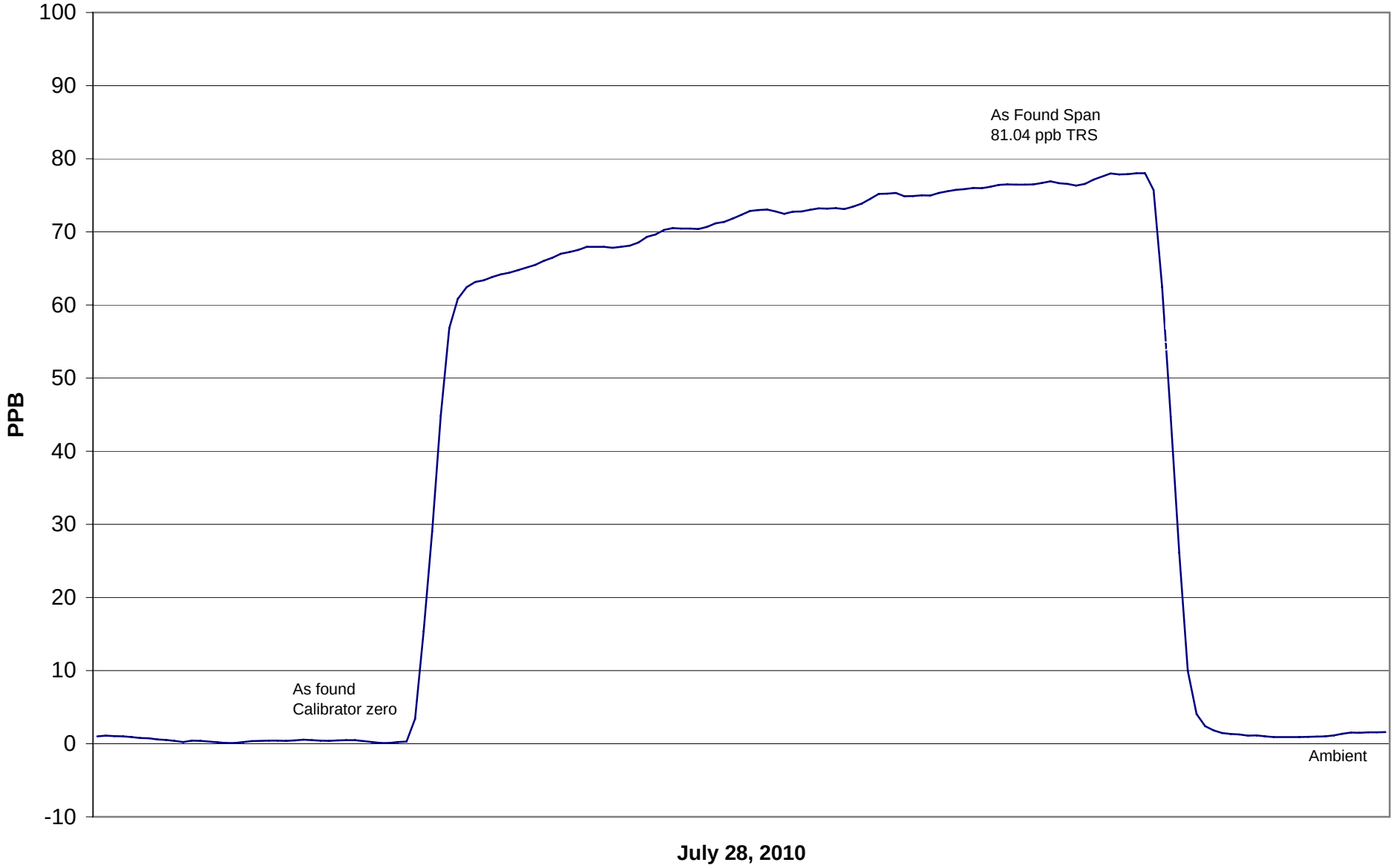
| | | | |
|---|---|---|---|
| Calibration Date | July 28, 2010 | Previous Calibration | July 12, 2010 |
| Station Number | 2 | Station Location | Evergreen Park |
| Start Time (MST) | 14:00 | End Time (MST) | 15:10 |
| Analyzer make/model | TEI Model 43C | Analyzer serial # | 436610005 |

***Calibration Data***

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | 0.3 | N/A | | |
| 81.1 | 76.6 | 1.0581 | Correlation Coefficient | 1.000000 |
| | | | | |
| | | | Slope | 1.062745 |
| | | | | |
| | | | Intercept | -0.354817 |
| | | | | |



# Evergreen Park TRS Calibration



# Calibration Report

Parameter **$SO_2$**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 16, 2010 | Previous Calibration | June 15, 2010 |
| Station Number | 3 | Station Location | Smokey Heights |

Reason: [Routine] [Install] [Removal] [Other:]

| | | | |
|---|---|---|---|
| Start Time (MST) | 7:20 | End Time (MST) | 9:36 |
| Barometric Pressure | 0.923 ATM | Station Temperature | 20.0 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Concentration | 50.6 ppm | Cal Gas Cert Date | 6/8/2008 |
| Correction factor | 0.031375 | Cal Gas Cylinder # | AAL 15377 |
| DACS make | Focus AP1000 | DACS serial No. | 45272 |
| DACS voltage range | 0 - 10 volt | DACS channel # | 6 |
| | Before | | After |
| Calculated slope | 1.003646 | Calculated slope | 1.005020 |
| Calculated intercept | -2.009232 | Calculated intercept | -2.419343 |

| | | |
|---|---|---|
| Analyzer make | Teco 43i | Analyzer serial # 701120009 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 500 | ppb | 0 - 500 | ppb |
| Background | 8.8 | | 8.9 | |
| coefficient | 0.698 | | 0.698 | |
| Lamp Voltage | 923 | volts | 923 | volts |
| Chamber Temp | 45.2 | Deg C | 44.9 | Deg C |
| Perm Gas Temp | 45 | Deg C | 45 | Deg C |
| Pressure | 670.8 | mm Hg | 666.9 | mm Hg |
| Sample Flow | 0.442 | ccm | 0.44 | ccm |
| Lamp Intensity | 89 | % | 89 | % |

## *Calibration Data*

| Dilution air flow rate (cc/min) | Corrected gas flow rate (cc/min) | Calculated concentration (ppb) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---|---|---|---|---|
| 4989 | 0.0 | 0.00 | 0.4 | N/A |
| 4989 | 39.84 | 400.87 | 400.1 | 1.0019 |
| 4989 | 19.91 | 201.13 | 203.9 | 0.9865 |
| 4989 | 9.95 | 100.72 | 104.4 | 0.9643 |
| | | | | |
| | | | | |
| 4989 | 0.0 | 0.00 | 0.4 | As Found Zero |
| 4989 | 39.84 | 400.87 | 400.1 | As Found Span |
| | | | Average Correction Factor | 0.9842 |

Calculated value of As Found Response: 399.163 ppm Percent Change of As Found: 0.4%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | 0.4 | ppb | 0.3 | ppb |
| Auto span | 304.1 | ppb | 311.6 | ppb |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **SO2**

Air Monitoring Network **PASZA**

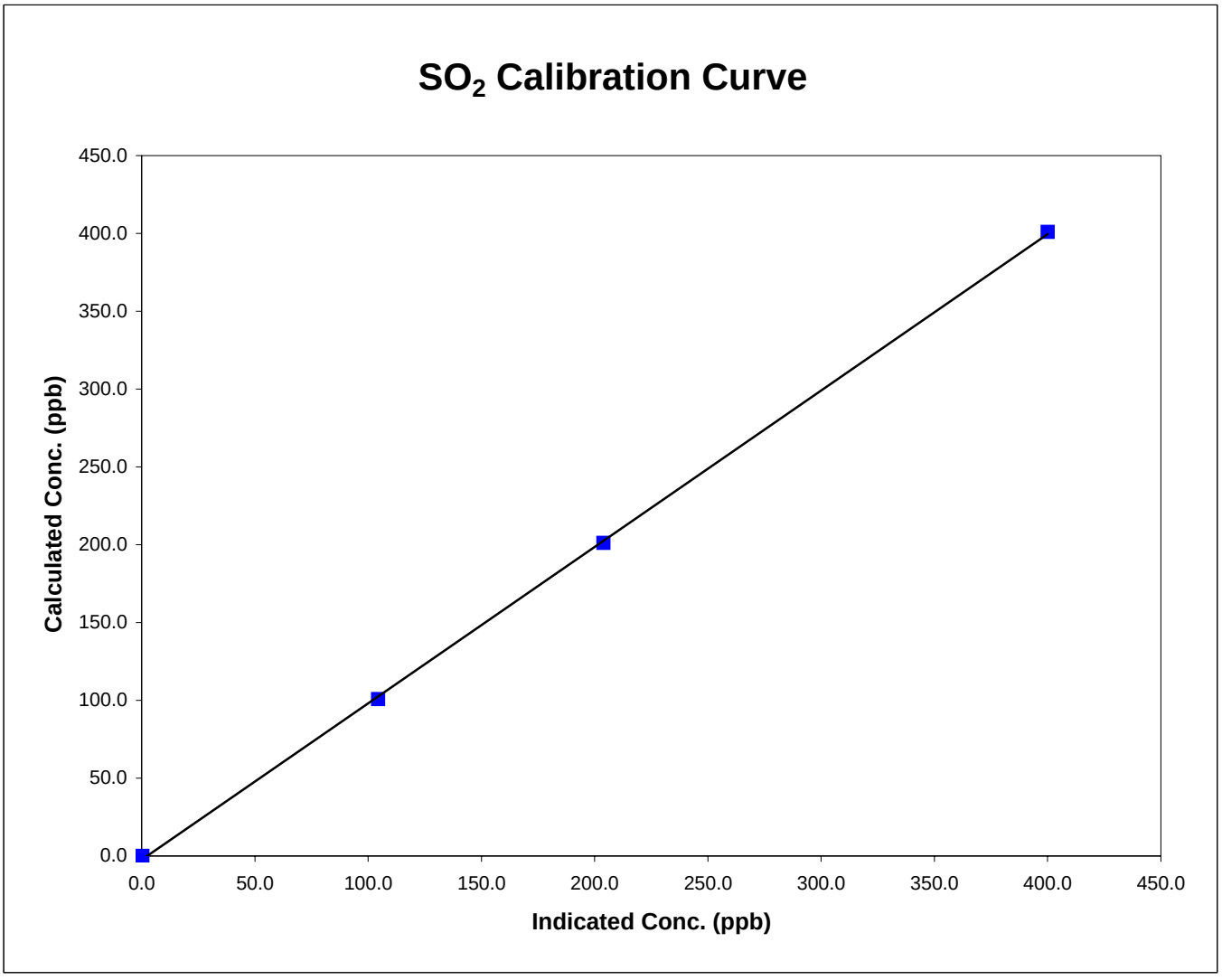
FOCUS AIR QUALITY MONITORING

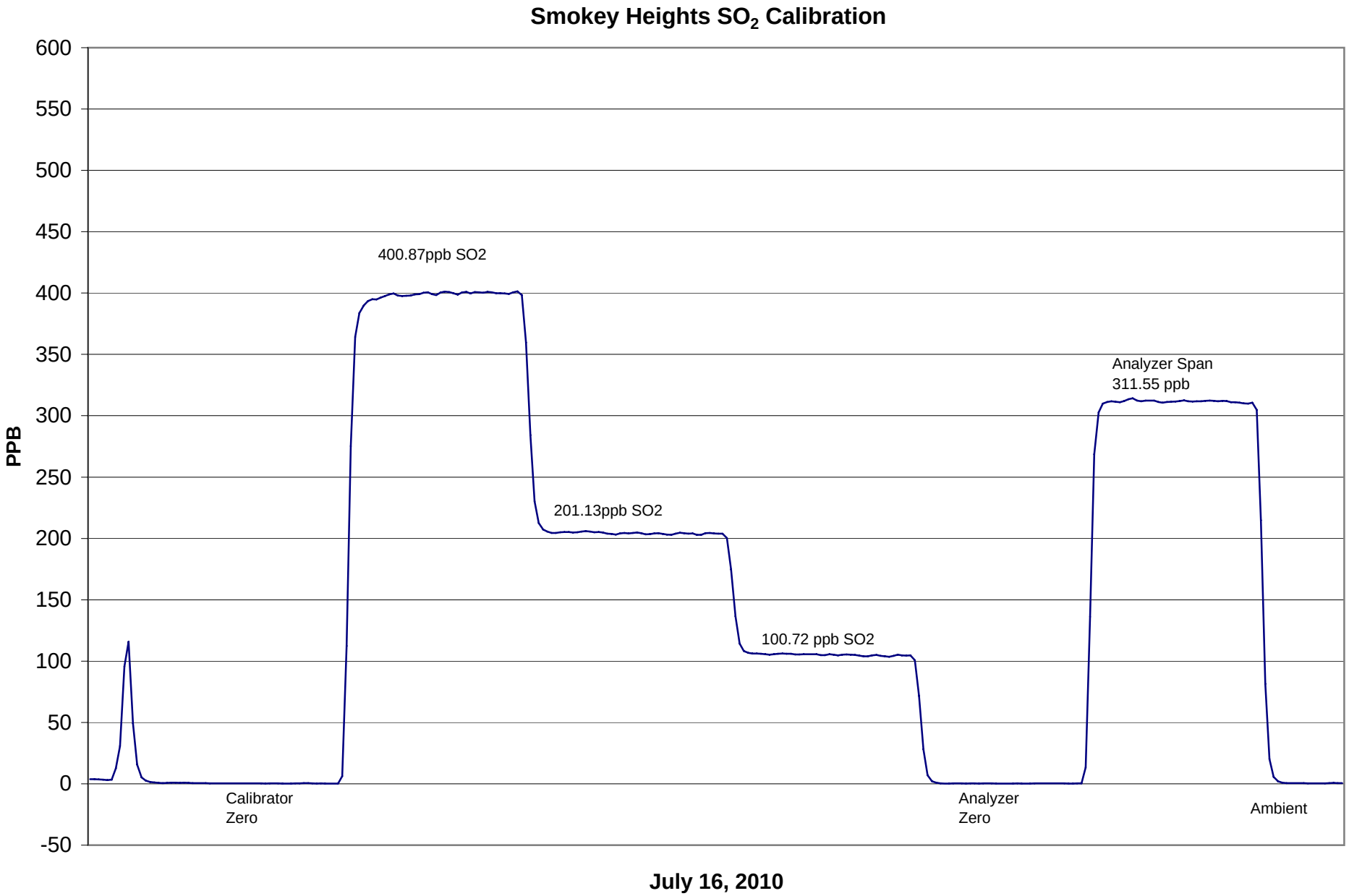
***Station Information***

| | | | |
|---|---|---|---|
| Calibration Date | July 16, 2010 | Previous Calibration | June 15, 2010 |
| Station Number | 3 | Station Location | Smokey Heights |
| Start Time (MST) | 7:20 | End Time (MST) | 9:36 |
| 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 | | |
| 400.9 | 400.1 | 1.0019 | Correlation Coefficient | 0.999879 |
| 201.1 | 203.9 | 0.9865 | | |
| 100.7 | 104.4 | 0.9643 | Slope | 1.005020 |
| | | | | |
| | | | Intercept | -2.419343 |
| | | | | |




Smokey Heights SO2 Calibration
600
550
500
450
400
350
300
250
200
150
100
50
0
-50
PPB
400.87ppb SO2
201.13ppb SO2
100.72 ppb SO2
Analyzer Span
311.55 ppb
Calibrator
Zero
Analyzer
Zero
Ambient
July 16, 2010

# Calibration Report

Parameter **TRS**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 16, 2010 | Previous Calibration | June 15, 2010 |
| Station Number | 3 | Station Location | Smokey Heights |

Reason: Routine | Install | Removal | Other:

| | | | |
|---|---|---|---|
| Start Time (MST) | 8:45 | End Time (MST) | 11:20 |
| Barometric Pressure | 0.923 ATM | Station Temperature | 20.0 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Conc | 5.15 ppm | Cal Gas Expiry Date | 4/2/2009 |
| Correction factor | 0.031375 | Cal Gas Cylinder # | ALM013295 |
| DACS make | Focus AP1000 | DACS serial No. | 52620 |
| DACS voltage range | 0 - 10 volt | DACS channel # | 5 |
| | Before | | After |
| Calculated slope | 1.006195 | Calculated slope | 1.009022 |
| Calculated intercept | -0.094834 | Calculated intercept | -0.104999 |

Analyzer make: TEI Model 43C | Analyzer serial #: 0436610005

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 100 | ppb | 100 | ppb |
| Background | 13.9 | ppb | 13.7 | ppb |
| coefficient | 0.995 | | 0.995 | |
| Lamp Voltage | 763 | volts | 762 | volts |
| Chamber Temp | 43.7 | Deg C | 43.6 | Deg C |
| Perm Gas Temp | 45 | Deg C | 45 | Deg C |
| Pressure | 491.8 | mm Hg | 505.1 | mm Hg |
| Sample Flow | 0.722 | ccm | 0.737 | ccm |
| Lamp Intensity | 32,383 | mv | 32,580 | mv |

## *Calibration Data*

| Dilution air flow rate (cc/min) | Corrected gas flow rate (cc/min) | Calculated concentration (ppb) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) |
|---|---|---|---|---|
| 4989 | 0.0 | 0.00 | 0.1 | N/A |
| 4990 | 79.77 | 81.03 | 80.5 | 1.0068 |
| 4990 | 39.85 | 40.80 | 40.4 | 1.0110 |
| 4990 | 9.94 | 10.24 | 10.4 | 0.9841 |
| | | | | |
| | | | | |
| 4990 | 0.0 | 0.00 | 0.1 | As Found Zero |
| 4990 | 79.77 | 81.03 | 82.3 | As Found Span |
| | | | Average Correction Factor | 1.0006 |

Calculated value of As Found Response: 82.66 ppm  Percent Change of As Found: -2.0%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | 0.0 | ppm | 0.0 | ppm |
| Auto span | 40.8 | ppm | 41.1 | ppm |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **TRS**

Air Monitoring Network **PASZA**

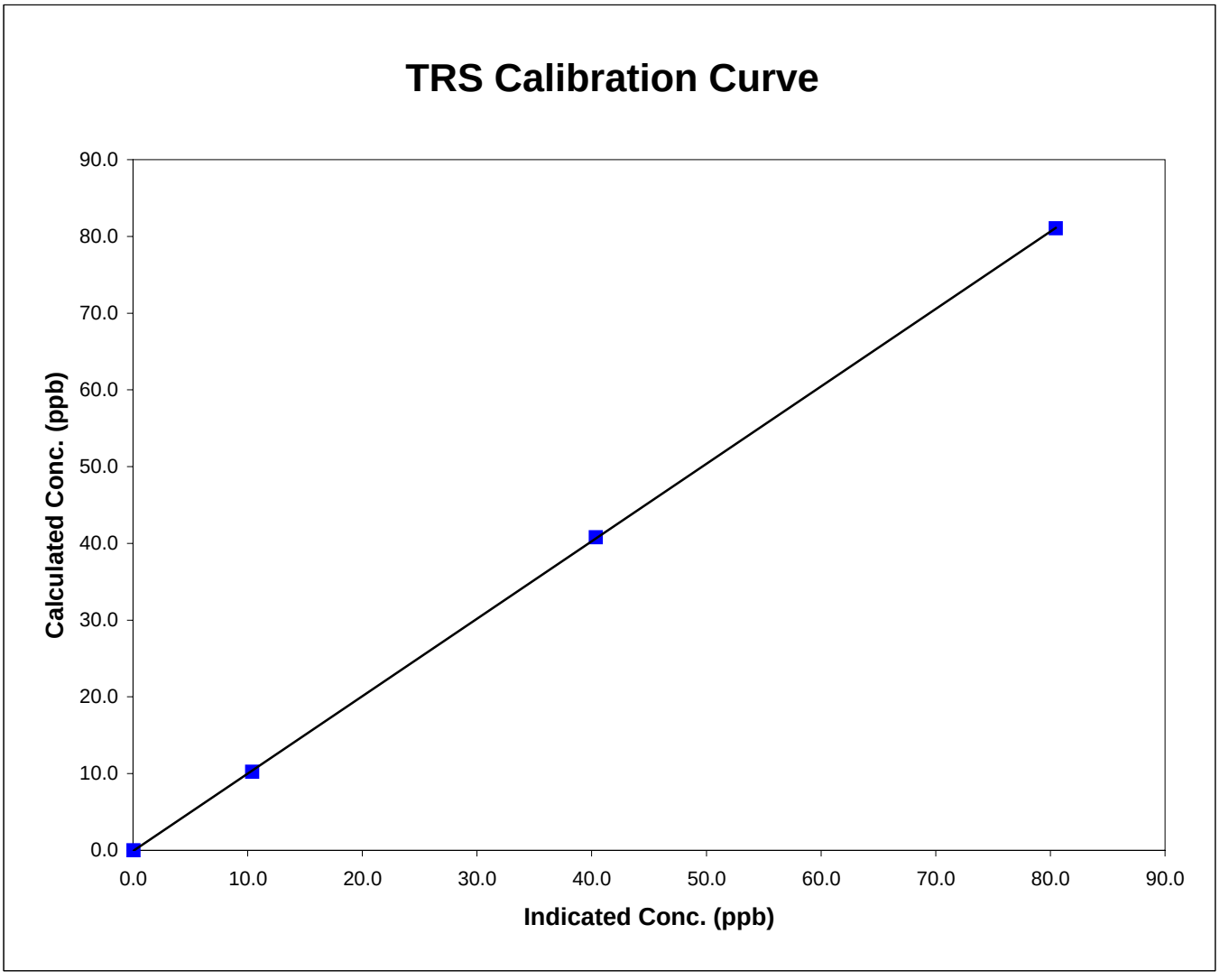
FOCUS AIR QUALITY MONITORING

***Station Information***

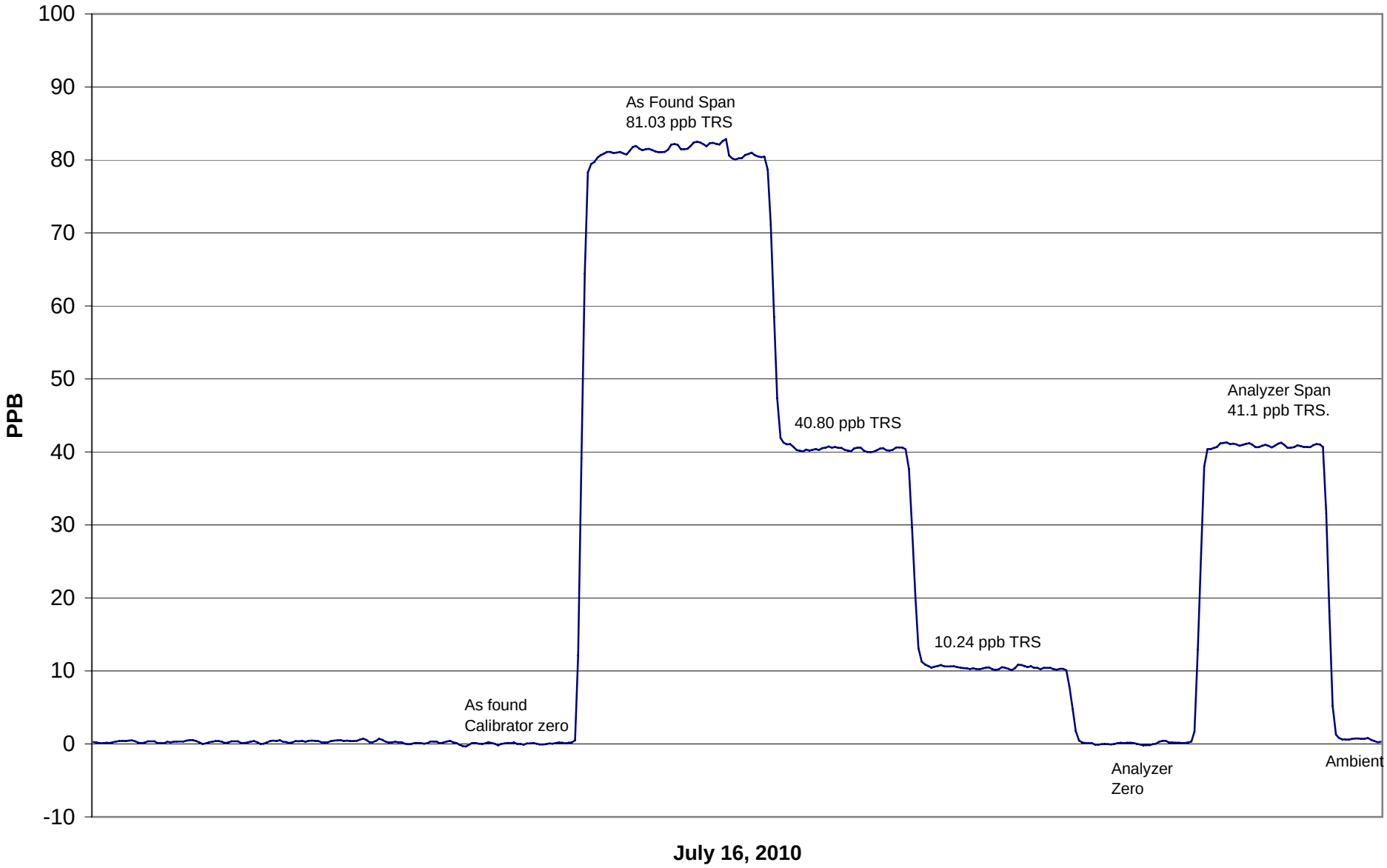
| | | | |
|---|---|---|---|
| Calibration Date | July 16, 2010 | Previous Calibration | June 15, 2010 |
| Station Number | 3 | Station Location | Smokey Heights |
| Start Time (MST) | 8:45 | End Time (MST) | 11:20 |
| Analyzer make/model | TEI Model 43C | Analyzer serial # | 0436610005 |

***Calibration Data***

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | 0.1 | N/A | | |
| 81.0 | 80.5 | 1.0068 | Correlation Coefficient | 0.999984 |
| 40.8 | 40.4 | 1.0110 | | |
| 10.2 | 10.4 | 0.9841 | Slope | 1.009022 |
| | | | | |
| | | | Intercept | -0.104999 |
| | | | | |



# Smokey Heights TRS Calibration



# Calibration Report

Parameter **SO2**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 5, 2010 | Previous Calibration | June 11, 2010 |
| Station Number | 4 | Station Location | Beaverlodge |

Reason: Routine | Install | Removal | Other:

| | | | |
|---|---|---|---|
| Start Time (MST) | 8:30 | End Time (MST) | 11:23 |
| Barometric Pressure | 0.915 atm | Station Temperature | 23.0 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Concentration | 10.06 ppm | Cal Gas Expiry Date | 7/27/2009 |
| Gas Cert Reference | CC 114395 | | |
| DACS make | Focus AP1000 | DACS serial No. | 45269 |
| DACS voltage range | 0 - 10 volt | DACS channel # | 5 |
| | Before | | After |
| DACS Scale High | 100 | DACS slope | 100 |
| DACS Scale Low | 0 | DACS intercept | 0 |
| Calculated slope | 1.046514 | Calculated slope | 0.986691 |
| Calculated intercept | -0.367873 | Calculated intercept | 0.932630 |

| | | |
|---|---|---|
| Analyzer make | TEI Model 43i-TLE | Analyzer serial # 713021137 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 100 | ppb | 0 - 100 | ppb |
| Background | 2.45 | | 2.49 | |
| Coefficient | 0.886 | | 0.904 | |
| PMT | -813.3 | V | -812.9 | V |
| UV Lamp Voltage | 1078 | V | 1073 | V |
| Chamber Temp | 45.3 | Deg C | 45 | Deg C |
| Pressure | 665.2 | mm Hg | 664 | mm Hg |
| Sample Flow | 0.504 | LPM | 0.502 | LPM |
| Lamp Intesity | 88% | % | 85% | % |

## *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) |
|---|---|---|---|---|
| 4988 | 0.00 | 0.0 | -0.1 | N/A |
| 4988 | 39.82 | 79.7 | 80.4 | 0.9915 |
| 4988 | 19.90 | 40.0 | 38.7 | 1.0342 |
| 4988 | 9.93 | 20.0 | 18.8 | 1.0620 |
| | | | | |
| 4988 | 0.00 | 0.0 | -0.1 | As found zero |
| 4988 | 39.82 | 79.7 | 82.9 | As found span |
| | | | Average Correction Factor | 1.0292 |

Calculated value of As Found Response: 86.526 ppm Percent Change of As Found: -8.6%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | -0.3 | ppb | 0.9 | ppb |
| Auto span | 57.8 | ppb | 55.4 | ppb |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **SO2**

Air Monitoring Network **PASZA**

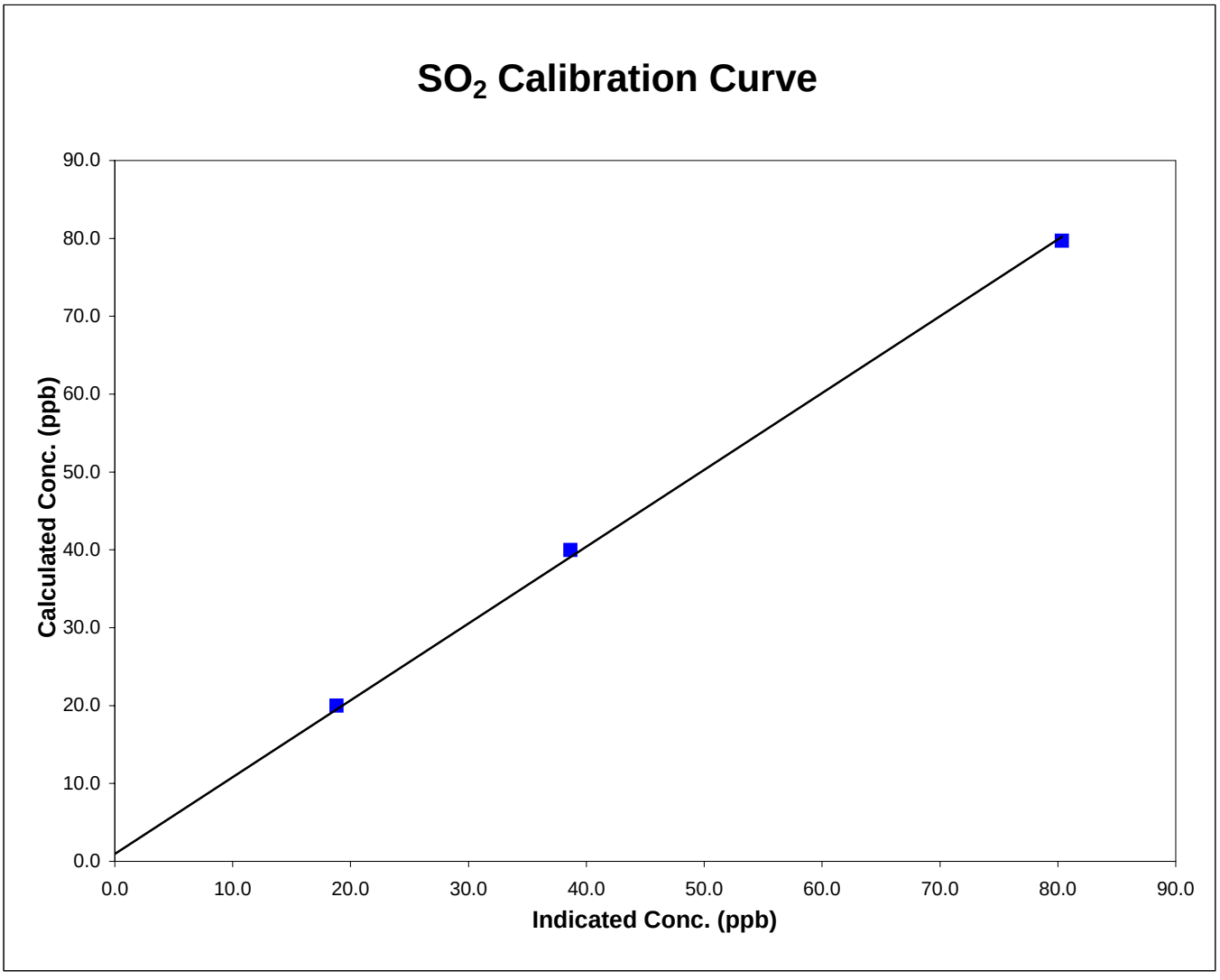
FOCUS AIR QUALITY MONITORING

***Station Information***

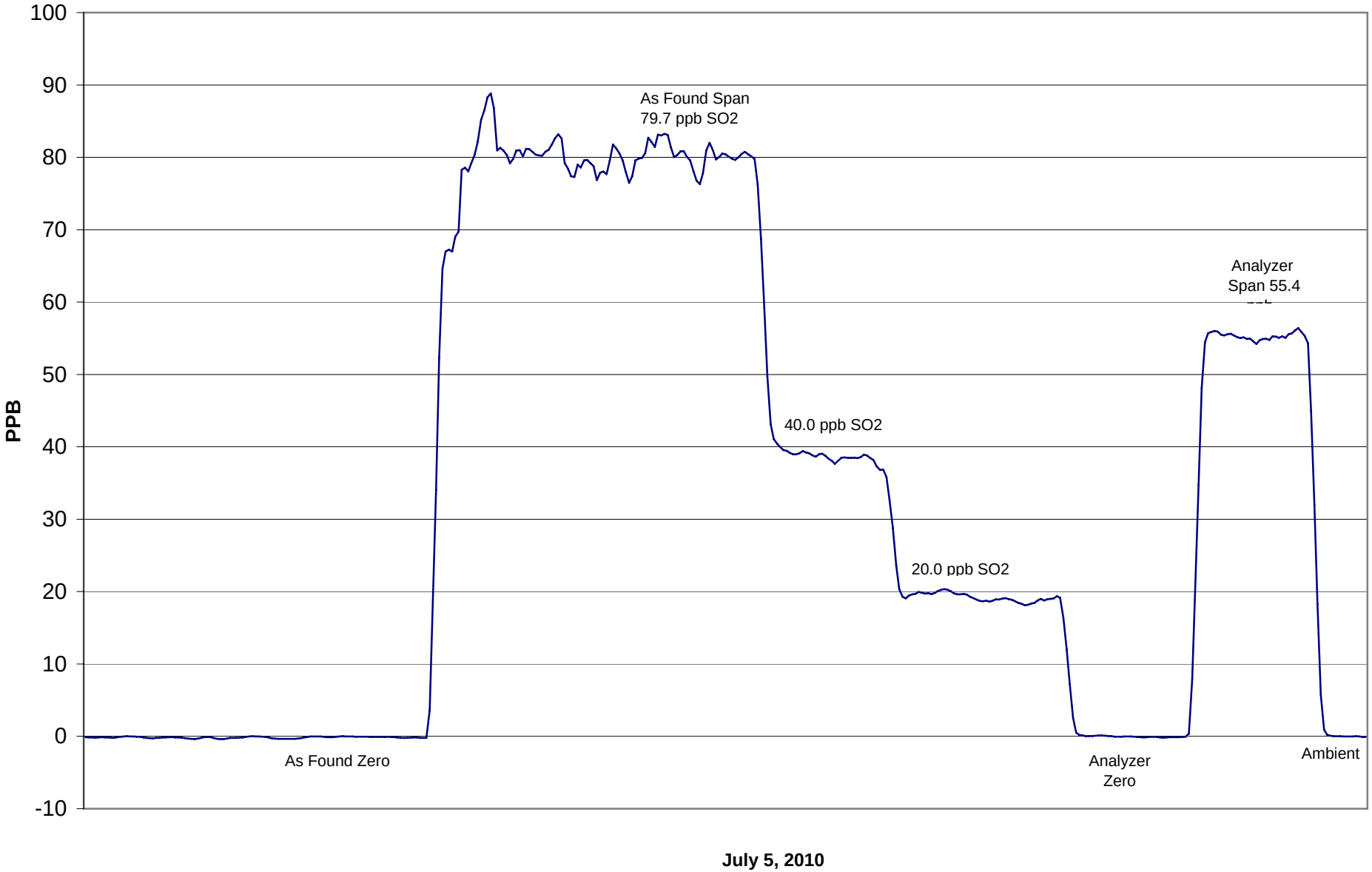
| | | | |
|---|---|---|---|
| Calibration Date | July 5, 2010 | Previous Calibration | June 11, 2010 |
| Station Number | 4 | Station Location | Beaverlodge |
| Start Time (MST) | 8:30 | End Time (MST) | 11:23 |
| Analyzer make/model | TEI Model 43i-TLE | Analyzer serial # | 713021137 |

***Calibration Data***

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | -0.1 | N/A | | |
| 79.7 | 80.4 | 0.9915 | Correlation Coefficient | 0.999407 |
| 40.0 | 38.7 | 1.0342 | | |
| 20.0 | 18.8 | 1.0620 | Slope | 0.986691 |
| | | | | |
| | | | Intercept | 0.932630 |
| | | | | |



# Beaverlodge $SO_2$ Calibration




**July 5, 2010**

# Calibration Report

Parameter **SO2**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 15, 2010 | Previous Calibration | July 5, 2010 |
| Station Number | 4 | Station Location | Beaverlodge |

Reason: **Routine** | Install | Removal | Other:

| | | | |
|---|---|---|---|
| Start Time (MST) | 8:10 | End Time (MST) | 11:57 |
| Barometric Pressure | 0.915 atm | Station Temperature | 23.0 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Concentration | 10.06 ppm | Cal Gas Expiry Date | 7/27/2009 |
| Gas Cert Reference | CC 114395 | | |
| DACS make | Focus AP1000 | DACS serial No. | 45269 |
| DACS voltage range | 0 - 10 volt | DACS channel # | 5 |
| | Before | | After |
| DACS Scale High | 100 | DACS slope | 100 |
| DACS Scale Low | 0 | DACS intercept | 0 |
| Calculated slope | 0.986691 | Calculated slope | 0.997466 |
| Calculated intercept | 0.932630 | Calculated intercept | -0.461042 |

| | | | | |
|---|---|---|---|---|
| Analyzer make | TEI Model 43i-TLE | | Analyzer serial # | 713021137 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 100 | ppb | 0 - 100 | ppb |
| Background | 2.49 | | 2.49 | |
| Coefficient | 0.904 | | 0.904 | |
| PMT | -813.3 | V | -813.3 | V |
| UV Lamp Voltage | 1066 | V | 1070 | V |
| Chamber Temp | 45 | Deg C | 45 | Deg C |
| Pressure | 666.7 | mm Hg | 662.5 | mm Hg |
| Sample Flow | 0.505 | LPM | 0.504 | LPM |
| Lamp Intesity | 88% | % | 86% | % |

## *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) |
|---|---|---|---|---|
| 4988 | 0.00 | 0.0 | 0.1 | N/A |
| 4988 | 39.82 | 79.7 | 80.1 | 0.9947 |
| 4988 | 19.90 | 40.0 | 40.9 | 0.9780 |
| 4988 | 9.93 | 20.0 | 20.8 | 0.9621 |
| | | | | |
| 4988 | 0.00 | 0.0 | 0.1 | As found zero |
| 4988 | 39.82 | 79.7 | 80.1 | As found span |
| | | | Average Correction Factor | 0.9783 |

Calculated value of As Found Response: 79.871 ppm Percent Change of As Found: -0.2%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | -0.3 | ppb | -0.4 | ppb |
| Auto span | 59.7 | ppb | 58.3 | ppb |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **SO2**

Air Monitoring Network **PASZA**

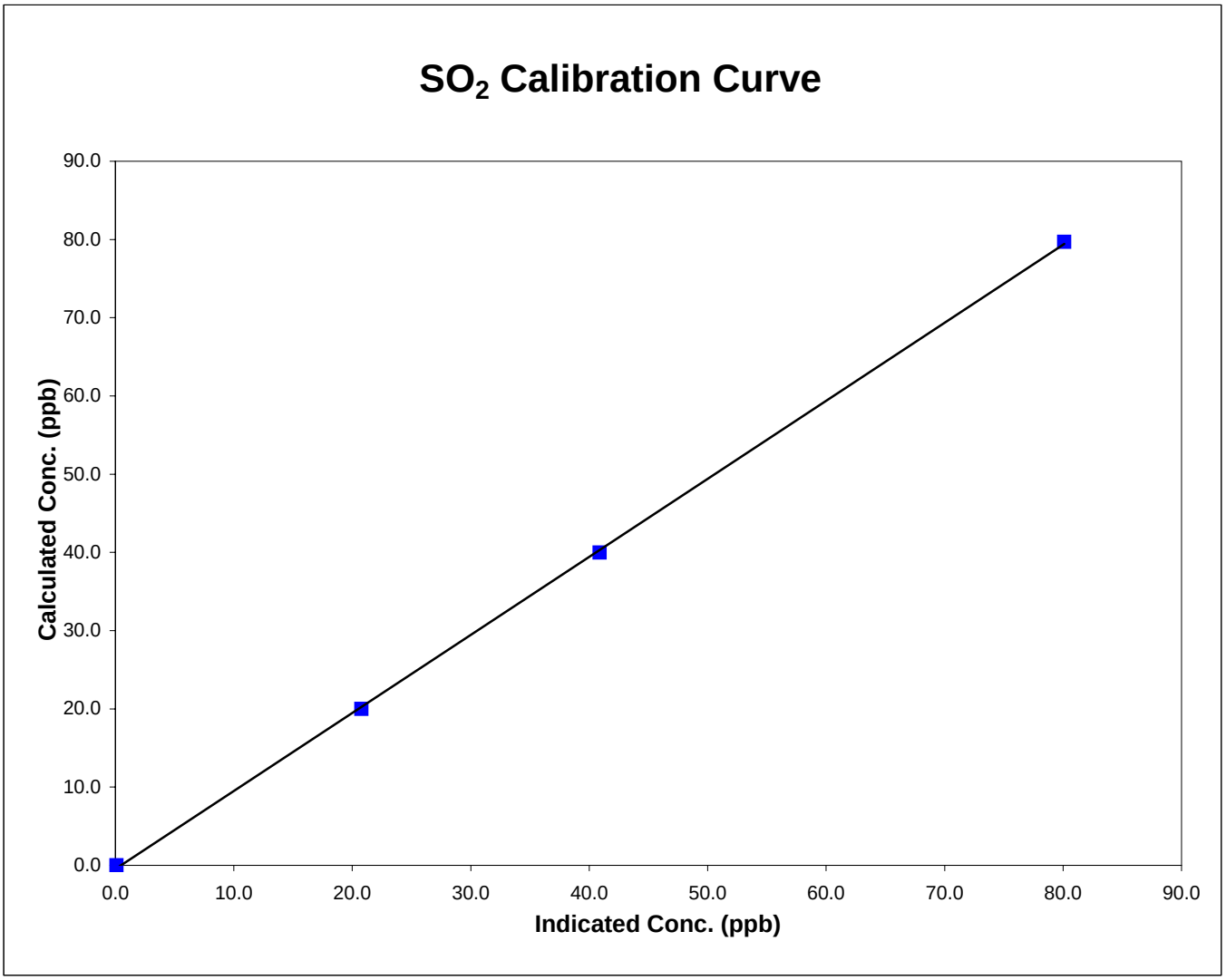
FOCUS AIR QUALITY MONITORING

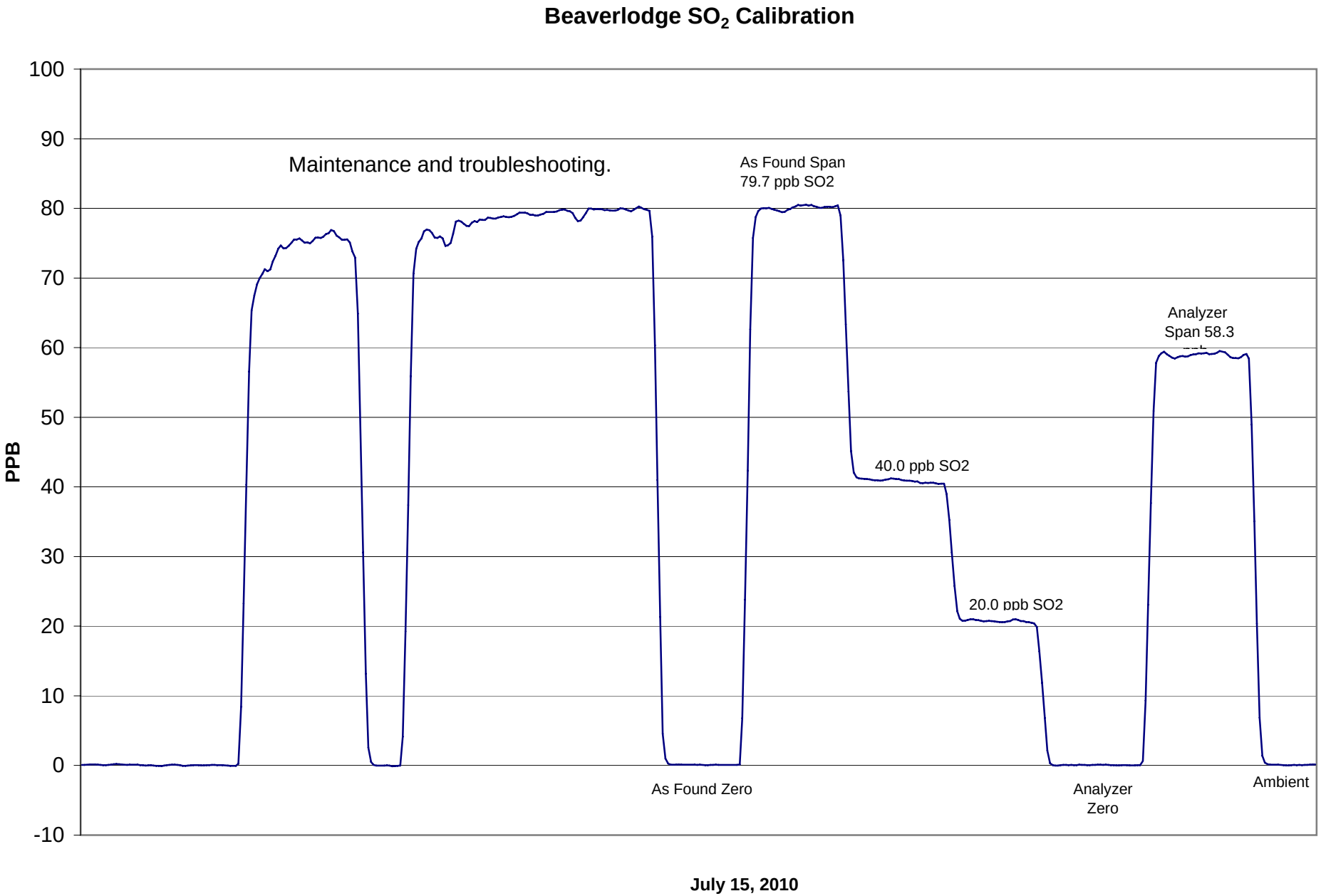
***Station Information***

| | | | |
|---|---|---|---|
| Calibration Date | July 15, 2010 | Previous Calibration | July 5, 2010 |
| Station Number | 4 | Station Location | Beaverlodge |
| Start Time (MST) | 8:10 | End Time (MST) | 11:57 |
| 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 | 0.1 | N/A | | |
| 79.7 | 80.1 | 0.9947 | Correlation Coefficient | 0.999891 |
| 40.0 | 40.9 | 0.9780 | | |
| 20.0 | 20.8 | 0.9621 | Slope | 0.997466 |
| | | | | |
| | | | Intercept | -0.461042 |
| | | | | |




Beaverlodge SO2 Calibration
100
90
80
70
60
50
40
30
20
10
0
-10
PPB
Maintenance and troubleshooting.
As Found Span
79.7 ppb SO2
40.0 ppb SO2
20.0 ppb SO2
Analyzer
Span 58.3
As Found Zero
Analyzer
Zero
Ambient
July 15, 2010

# Calibration Report

Parameter **$NO_X$-NO-$NO_2$**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 5, 2010 | Previous Calibration | June 11, 2010 |
| Station Number | 4 | Station Location | BeaverLodge |

Reason: **Routine** Installation Removal Other:

| | | | | | |
|---|---|---|---|---|---|
| Start Time (MST) | 8:30 | | End Time (MST) | 12:57 | |
| Barometric Pressure | 0.915 | Atm | Station Temperature | 9.0 | Deg C |
| Calibrator | Environics | | Serial Number | 2844 | |
| NO Cal Gas Conc | 50.1 | ppm | Cal Gas Expiry Date | | |
| NOx Cal Gas Conc | 50.2 | ppm | Cal Gas Serial # | CC-114395 | |

## *DACS Information*

DACS make: AP1000 DACS serial No.:

| Parameter | | NO2 | NOx | NO |
|---|---|---|---|---|
| Before | Data Slope | 0.998443 | 1.004538 | 1.002358 |
| | Data Offset | -0.355322 | -2.377709 | -1.353658 |
| After | Data Slope | 0.996963 | 1.042544 | 1.041132 |
| | Data Offset | 0.092437 | -2.271972 | -1.261478 |
| Channel # | | 8 | 6 | 7 |
| Voltage Range | | 0 - 10 VDC | 0 - 10 VDC | 0 - 10 VDC |

## *Analyzer Information*

Analyzer make/model: TEI 42i Analyzer serial #: 906535068

| Test Point | before | | after | |
|---|---|---|---|---|
| Concentration range | 0-500 | ppb | 0-500 | ppb |
| NO offset | 2.3 | mV | 2.4 | mV |
| NOx bkgnd | 2.6 | mV | 2.6 | mV |
| NO coefficient | 1.405 | | 1.405 | |
| NOx coefficient | 0.994 | | 0.994 | |
| NO2 conv temp | 322.9 | Deg C | 326.3 | Deg C |
| PMT Temp | -3.0 | Deg C | -2.7 | Deg C |
| PMT Volt | -676.4 | mV | -676.0 | mV |
| R Cell Press | 185.8 | in Hg | 186.7 | in Hg |
| Sample Flow | 0.737 | ccm | 0.738 | ccm |

# Calibration Report

Parameter **NOX-NO-NO2**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## Station Information

Calibration Date: July 5, 2010 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 | 4989 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 | N/A | N/A |
| 1 | 4988 | 39.82 | 397.6 | 396.8 | 0.8 | 382.3 | 381.6 | 0.4 | 1.0400 | 1.0398 |
| 2 | 4988 | 19.90 | 199.5 | 199.1 | 0.4 | 194.9 | 193.3 | 0.9 | 1.0233 | 1.0297 |
| 3 | 4988 | 9.93 | 99.7 | 99.5 | 0.2 | 99.8 | 97.9 | 1.7 | 0.9993 | 1.0166 |
| | | | | | | | | | | |
| AFZ | 4988 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 | 0.0000 | 0.0000 |
| AFS | 4988 | 39.84 | 397.8 | 397.0 | 0.8 | 382.3 | 381.6 | 0.4 | 1.0405 | 1.0404 |
| | | | | | | | Average Correction Factor | | 1.0209 | 1.0287 |

As Found Concentrations: $NO_X$= 379.9 NO= 380.3 As Found Percent Change $NO_X$= -4.5% NO= -4.2%

## GPT Calibration Data

Dilution Flow 4989 ccm Source Gas Flow 39.84 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 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 | N/A | N/A | N/A | N/A |
| NO point | 382.4 | 382.4 | 0.0 | 383.0 | 382.4 | 0.2 | 0.9985 | 1.0000 | N/A | N/A |
| 300 | 382.4 | 103.5 | 278.9 | 383.8 | 103.5 | 279.9 | 0.9966 | 1.0000 | 0.9967 | 100.3% |
| 200 | 382.4 | 193.1 | 189.3 | 382.9 | 193.1 | 189.4 | 0.9988 | 1.0000 | 0.9994 | 100.1% |
| 100 | 382.4 | 280.7 | 101.7 | 383.0 | 280.7 | 102.2 | 0.9986 | 1.0000 | 0.9959 | 100.4% |
| | | | | | Average Correction Factor | | 0.9980 | 1.0000 | 0.9973 | 100.3% |

## AIC Data

| | Previous calibration | | | | Current calibration | | | |
|---|---|---|---|---|---|---|---|---|
| Parameter | NOx | NO2 | NO | | NOx | NO2 | NO | |
| Auto zero | -0.2 | -0.3 | -0.2 | ppb | 0.2 | 0.0 | 0.1 | ppb |
| Auto span | 175.3 | 173.3 | 2.1 | ppb | 196.1 | 193.9 | 1.7 | ppb |

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **$NO_2$**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

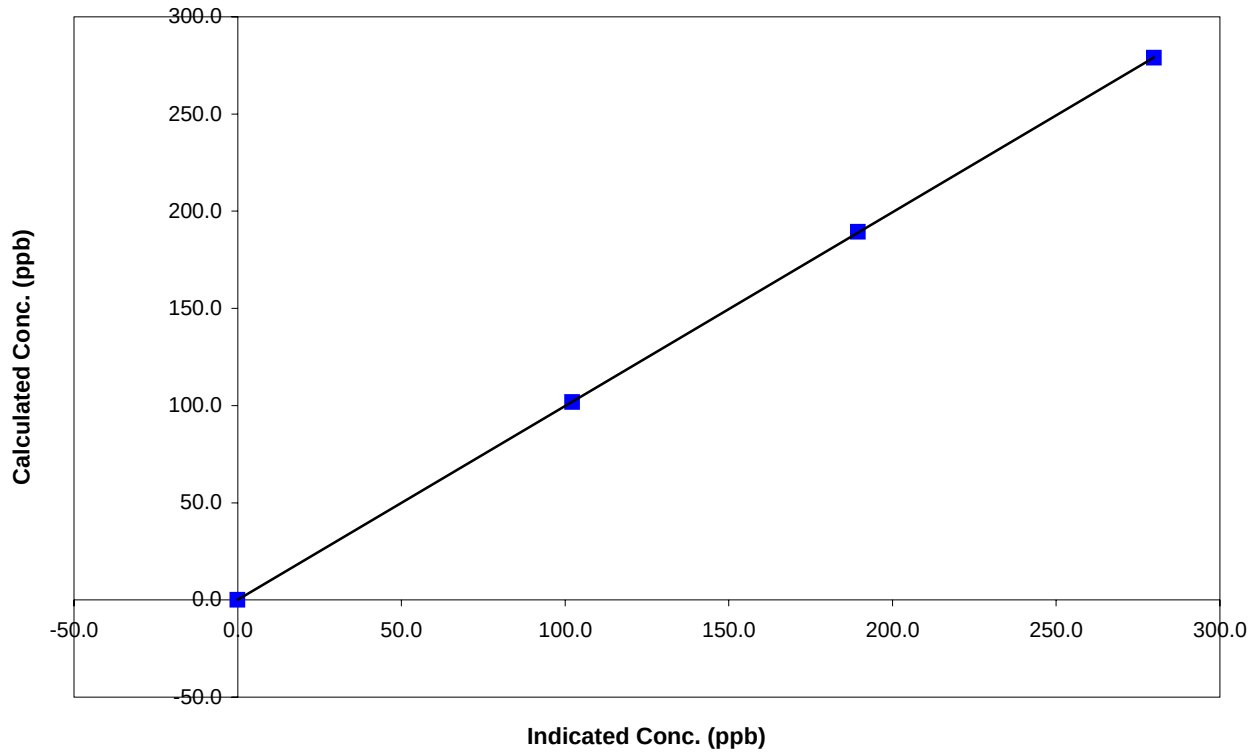
### *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 5, 2010 | Previous Calibration | June 11, 2010 |
| Station Number | 4 | Station Location | BeaverLodge |
| Start Time (MST) | 8:30 | End Time (MST) | 12:57 |
| 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 | | |
| 278.9 | 279.9 | 0.9967 | Correlation Coefficient | 0.999995 |
| 189.3 | 189.4 | 0.9994 | | |
| 101.7 | 102.2 | 0.9959 | Slope | 0.996963 |
| | | | | |
| | | | Intercept | 0.092437 |
| | | | | |

## $NO_2$ Calibration Curve



# Calibration Summary

Parameter **$NO_x$**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

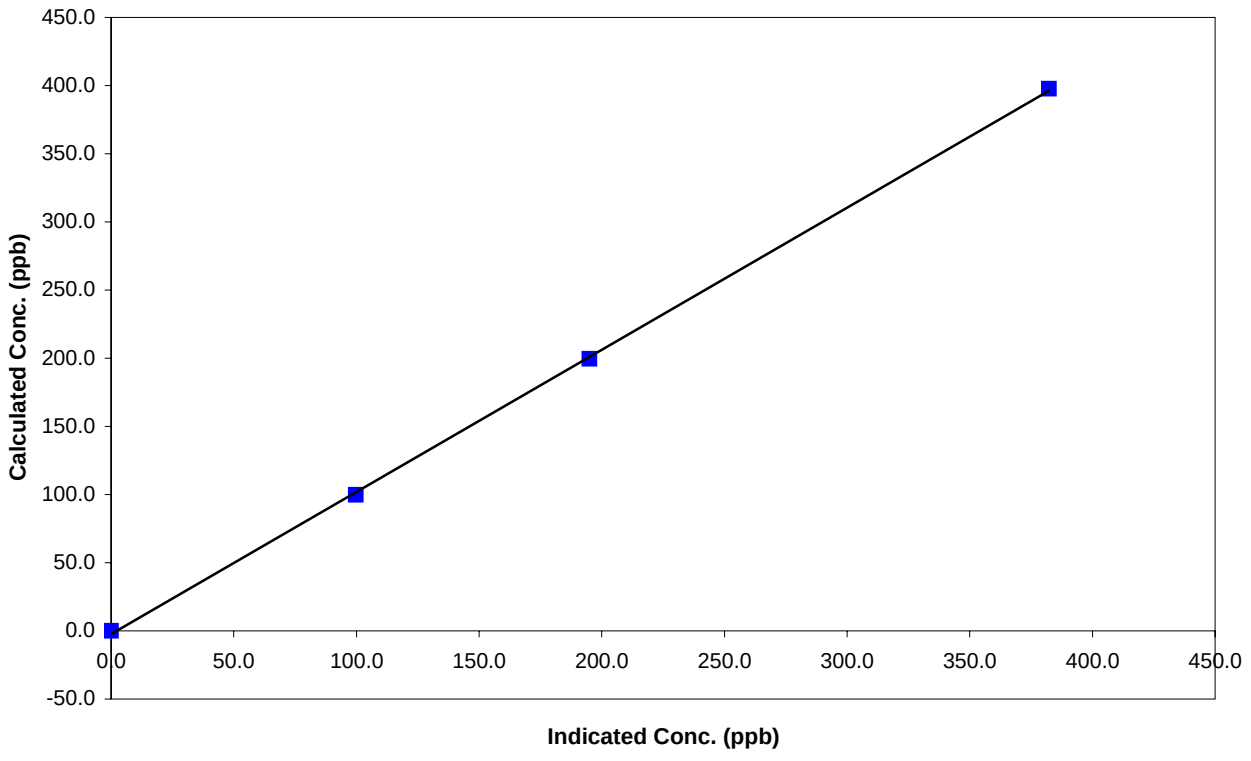
### *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 5, 2010 | Previous Calibration | June 11, 2010 |
| Station Number | 4 | Station Location | BeaverLodge |
| Start Time (MST) | 8:30 | End Time (MST) | 12:57 |
| 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 | | |
| 397.6 | 382.3 | 1.0400 | Correlation Coefficient | 0.999849 |
| 199.5 | 194.9 | 1.0233 | | |
| 99.7 | 99.8 | 0.9993 | Slope | 1.042544 |
| | | | | |
| | | | Intercept | -2.271972 |
| | | | | |

## NOx Calibration Curve



# Calibration Summary

Parameter **NO**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

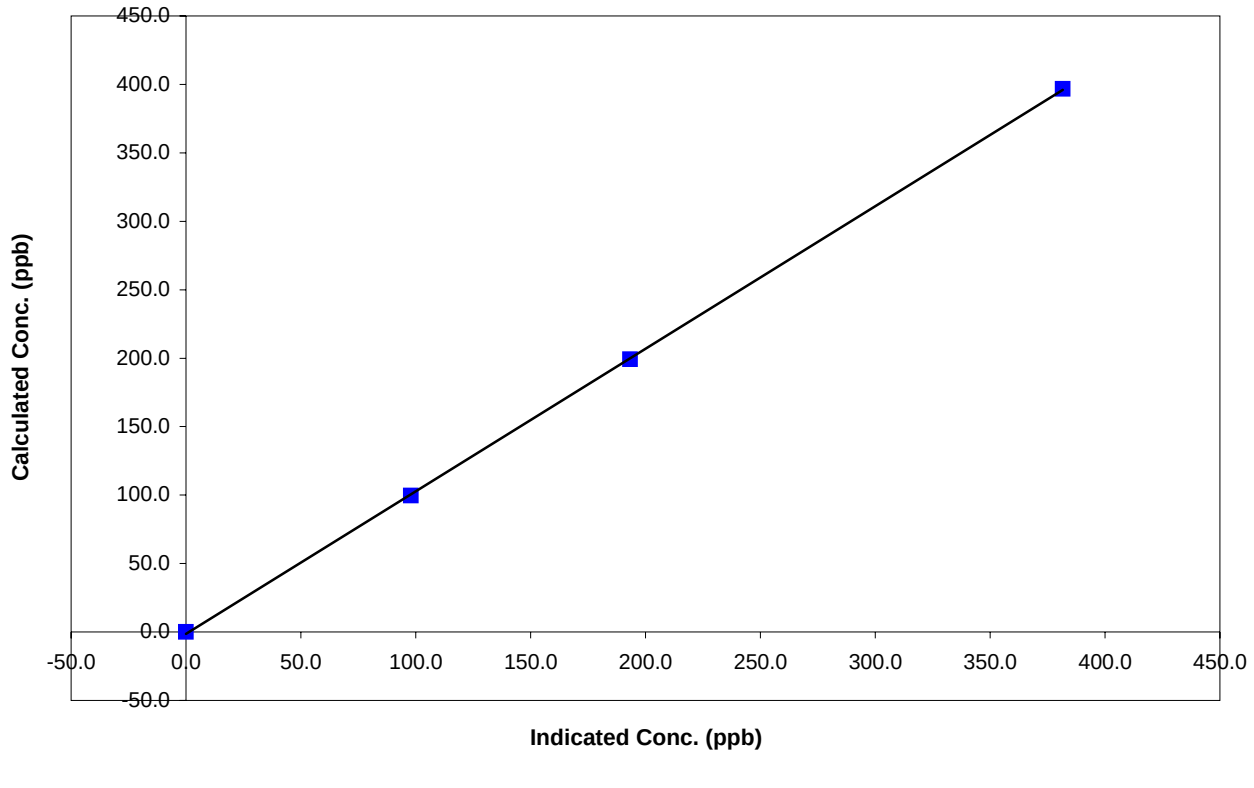
### *Station Information*

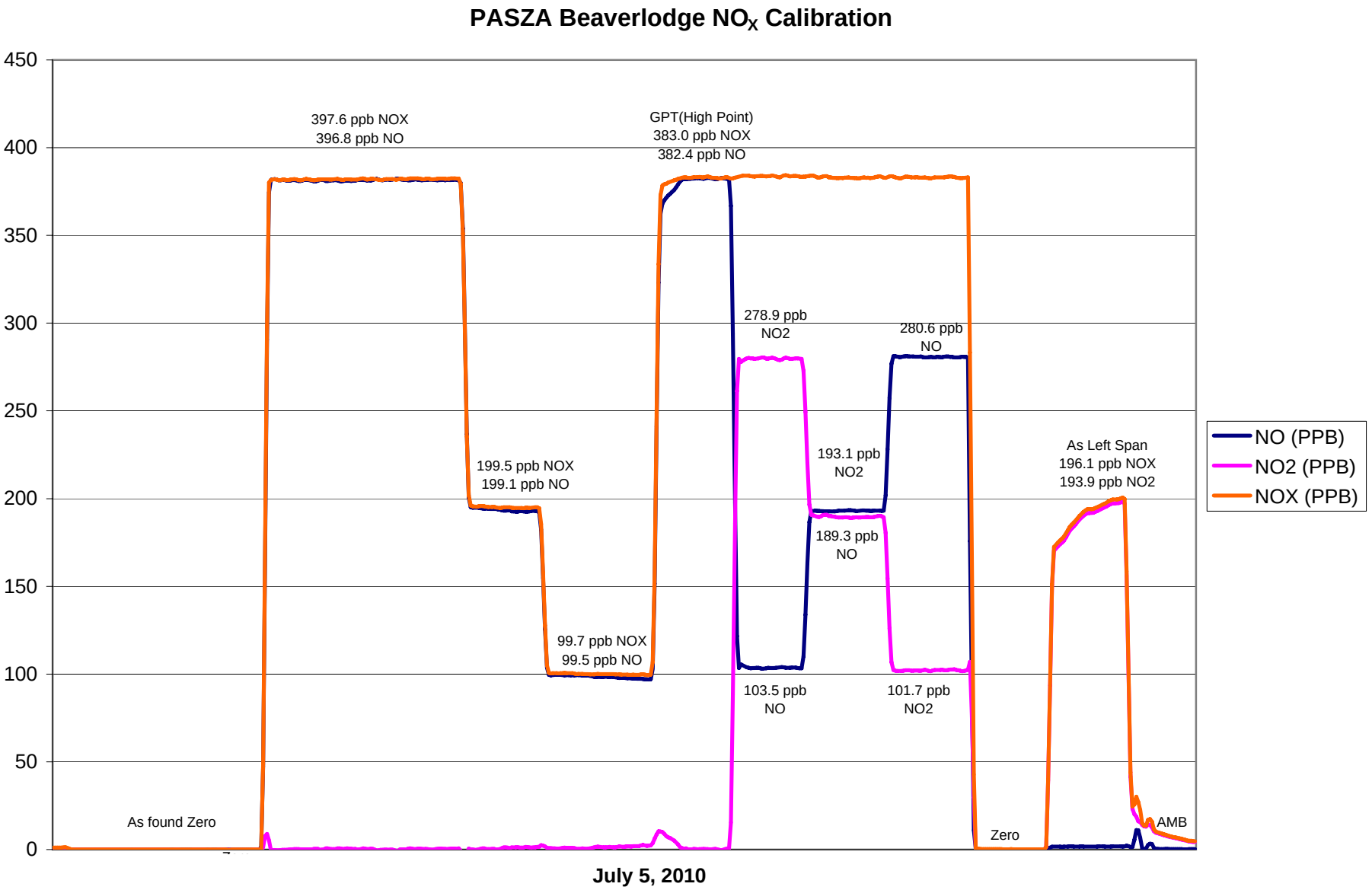
| | | | |
|---|---|---|---|
| Calibration Date | July 5, 2010 | Previous Calibration | June 11, 2010 |
| Station Number | 4 | Station Location | BeaverLodge |
| Start Time (MST) | 8:30 | End Time (MST) | 12:57 |
| Analyzer make | TEI 42i | Analyzer serial # | 906535068 |

### *Calibration Data*

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | 0.0 | N/A | | |
| 396.8 | 381.6 | 1.0398 | Correlation Coefficient | 0.999948 |
| 199.1 | 193.3 | 1.0297 | | |
| 99.5 | 97.9 | 1.0166 | Slope | 1.041132 |
| | | | | |
| | | | Intercept | -1.261478 |
| | | | | |

## NO Calibration Curve




PASZA Beaverlodge NOX Calibration
450
400
350
300
250
200
150
100
50
0
397.6 ppb NOX
396.8 ppb NO
GPT(High Point)
383.0 ppb NOX
382.4 ppb NO
278.9 ppb
NO2
280.6 ppb
NO
193.1 ppb
NO2
199.5 ppb NOX
199.1 ppb NO
189.3 ppb
NO
As Left Span
196.1 ppb NOX
193.9 ppb NO2
99.7 ppb NOX
99.5 ppb NO
103.5 ppb
NO
101.7 ppb
NO2
As found Zero
Zero
AMB
NO (PPB)
NO2 (PPB)
NOX (PPB)
July 5, 2010

# Calibration Report

Parameter **O3**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 5, 2010 | Previous Calibration | June 11, 2010 |
| Station Number | 4 | Station Location | Beaverlodge |

Reason: [Routine] [Install] [Removal] [Other:]

| | | | |
|---|---|---|---|
| Start Time (MST) | 12:00 | End Time (MST) | 14:22 |
| Barometric Pressure | 0.915 atm | Station Temperature | 21.0 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Concentration | NA | Cal Gas Expiry Date | NA |

| | | | |
|---|---|---|---|
| DACS make | Focus AP1000 | DACS serial No. | 45269 |
| DACS voltage range | 0 - 1 volt | DACS channel # | 9 |
| | Before | | After |
| Calculated slope | 0.998409 | Calculated slope | 0.964840 |
| Calculated intercept | 0.743590 | Calculated intercept | 0.216343 |

| | | | |
|---|---|---|---|
| Analyzer make | Teco 49C | Analyzer serial # | 49C-76443-383 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 500 | ppb | 0 - 500 | ppb |
| offset | -0.70 | ppb | -0.70 | ppb |
| slope | 1.008 | | 1.008 | |
| Lamp temp | 56.5 | mV | 56.5 | mV |
| Lamp Intensity A/B | 68730/67974 | mV | 68823/68075 | mV |
| Pressure | 693.6 | mm Hg | 665.4 | mm Hg |
| Flow A | 0.715 | ccm | 0.693 | ccm |
| Flow B | 0.663 | ccm | 0.639 | ccm |

## *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) |
|---|---|---|---|---|
| 4990 | 0.00 | 0.0 | -0.2 | N/A |
| 4990 | 0.00 | 278.9 | 288.8 | 0.9656 |
| 4990 | 0.00 | 189.3 | 196.0 | 0.9660 |
| 4990 | 0.00 | 101.7 | 105.2 | 0.9670 |
| | | | | |
| 4990 | 0.00 | 0.0 | -0.2 | As found zero |
| 4990 | 0.00 | 278.9 | 288.8 | As found span |
| | | | Average Correction Factor | 0.9662 |

Calculated value of As Found Response: 289.3 ppm Percent Change of As Found: 3.7%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | 0.1 | ppb | -0.1 | ppb |
| Auto span | 114.3 | ppb | 119.5 | ppb |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **O3**

Air Monitoring Network **PASZA**

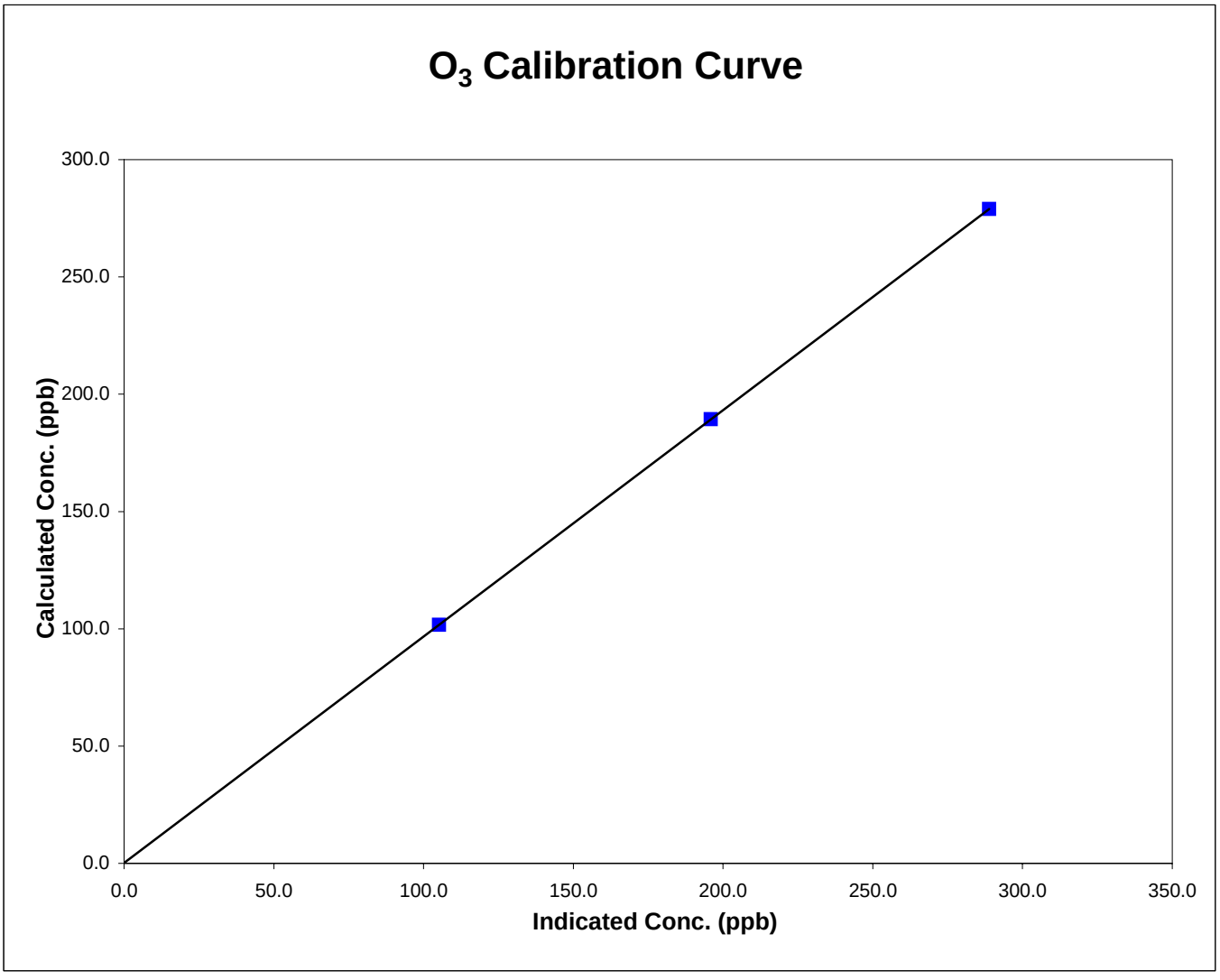
FOCUS AIR QUALITY MONITORING

***Station Information***

| | | | |
|---|---|---|---|
| Calibration Date | July 5, 2010 | Previous Calibration | June 11, 2010 |
| Station Number | 4 | Station Location | Beaverlodge |
| Start Time (MST) | 12:00 | End Time (MST) | 14:22 |
| Analyzer make/model | Teco 49C | Analyzer serial # | 49C-76443-383 |

***Calibration Data***

| Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | -0.2 | NA | | |
| 278.9 | 288.8 | 0.9656 | Correlation Coefficient | 1.000000 |
| 189.3 | 196.0 | 0.9660 | | |
| 101.7 | 105.2 | 0.9670 | Slope | 0.964840 |
| | | | | |
| | | | Intercept | 0.216343 |
| | | | | |



# Beverlodge $O_3$ Calibration


**July 5, 2010**

# Calibration Report

Parameter **SO2**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 20, 2010 | Previous Calibration | June 18, 2010 |
| Station Number | 9 | Station Location | Rover - Bonanza |
| Reason: | Routine ☒ Install ☐ | Removal ☐ | Other: ☐ |
| Start Time (MST) | 8:15 | End Time (MST) | 11:16 |
| Barometric Pressure | 27.66 inches Hg | Station Temperature | 15.7 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Concentration | 50.6 ppm | Cal Gas Expiry Date | 7/27/2009 |
| Gas Cert Reference | LL 16161 | | |
| DACS make | Focus AP1000 | DACS serial No. | 52662 |
| DACS voltage range | 0 - 10 volt | DACS channel # | 9 |
| | Before | | After |
| DACS Scale High | 500 | DACS slope | 500 |
| DACS Scale Low | 0 | DACS intercept | 0 |
| Calculated slope | 1.001749 | Calculated slope | 1.002130 |
| Calculated intercept | -2.100578 | Calculated intercept | -1.785903 |
| Analyzer make | TEI 43C | Analyzer serial # | 609716238 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0-500 | ppb | 0-500 | ppb |
| Background | 8.9 | | 9.5 | |
| Coefficient | 0.985 | | 0.994 | |
| UV Lamp Voltage | 793 | V | 794 | V |
| Chamber Temp | 44.5 | C | 44.4 | C |
| Perm Gas Temp | 45 | C | 45 | C |
| Pressure | 679.2 | mm Hg | 679.5 | mm Hg |
| Sample Flow | 0.490 | LPM | 0.491 | LPM |
| Lamp Intesity | 47731 | Hz | 47972 | 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) |
|---|---|---|---|---|
| 4989 | 0.00 | 0.0 | 0.0 | N/A |
| 4991 | 39.84 | 400.7 | 400.8 | 0.9998 |
| 4991 | 19.90 | 200.9 | 203.1 | 0.9895 |
| 4991 | 9.93 | 100.5 | 103.9 | 0.9671 |
| | | | | |
| 4991 | 0.00 | 0.0 | 0.0 | As found zero |
| 4991 | 39.84 | 400.7 | 397.5 | As found span |
| | | | Average Correction Factor | 0.9855 |

Calculated value of As Found Response: 396.075 ppm  Percent Change of As Found: 1.2%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | 0.3 | ppm | 0.3 | ppm |
| Auto span | 256.9 | ppm | 260.2 | ppm |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **SO2**

Air Monitoring Network **PASZA**

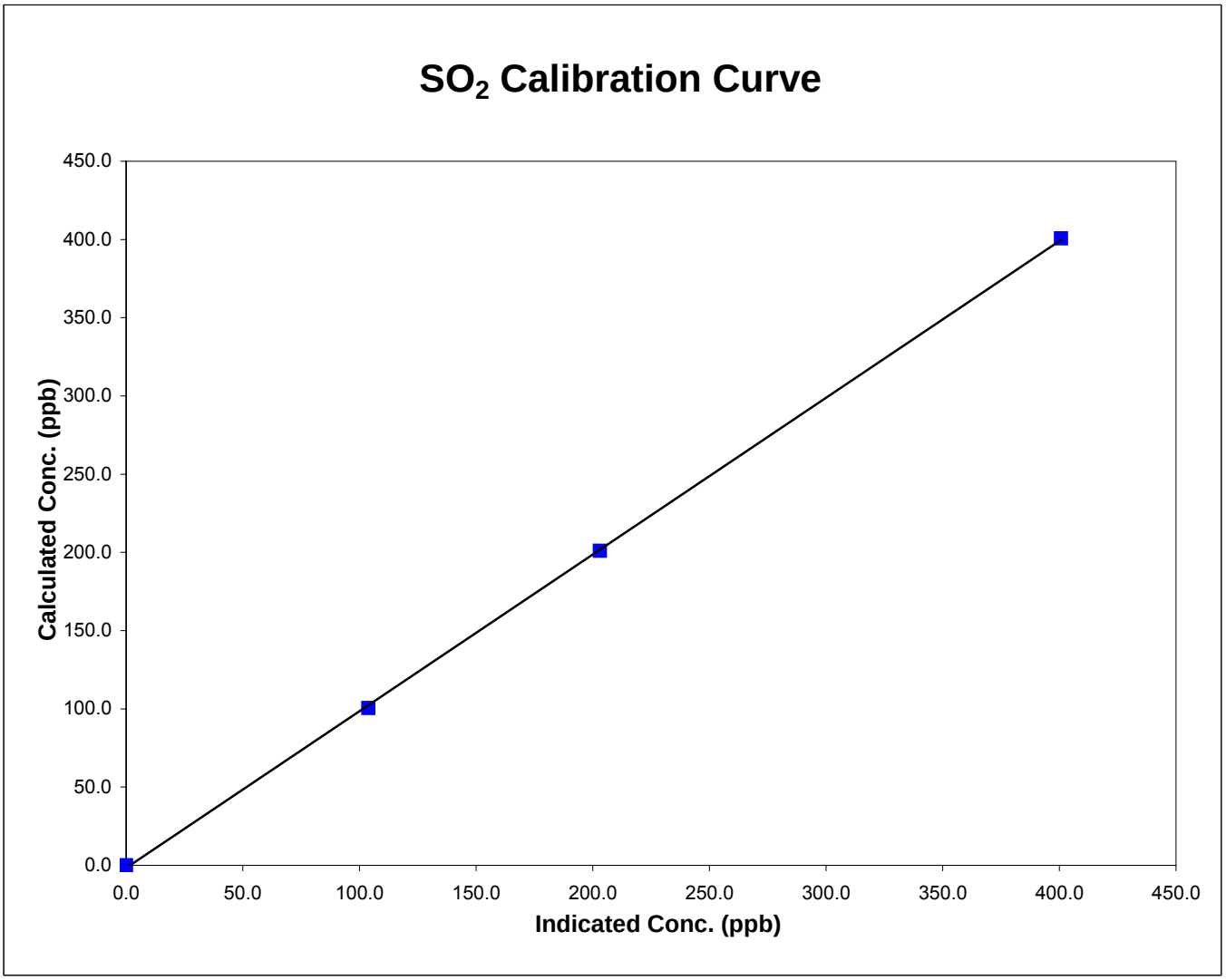
FOCUS AIR QUALITY MONITORING

***Station Information***

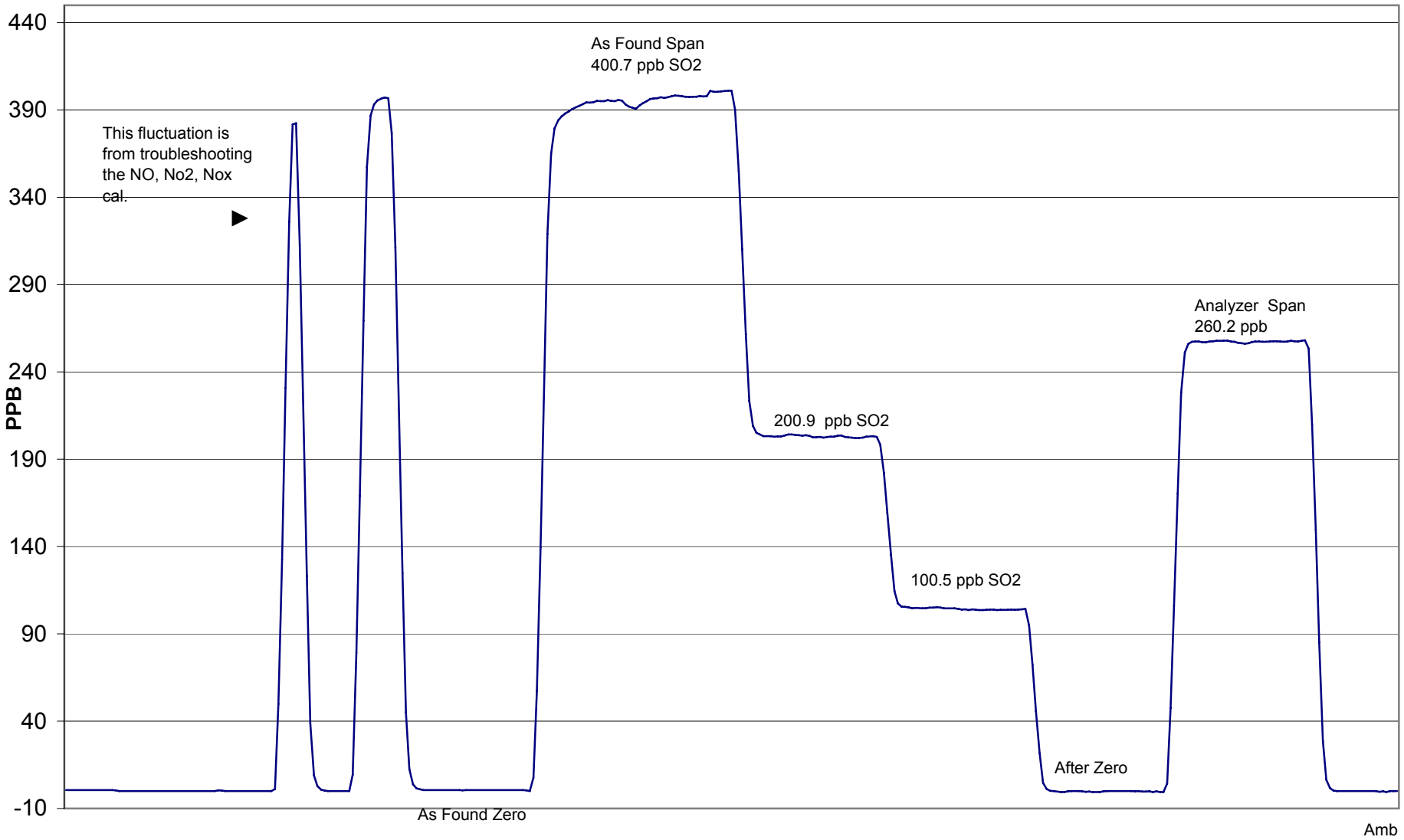
| | | | |
|---|---|---|---|
| Calibration Date | July 20, 2010 | Previous Calibration | June 18, 2010 |
| Station Number | 9 | Station Location | Rover - Bonanza |
| Start Time (MST) | 8:15 | End Time (MST) | 11:16 |
| Analyzer make/model | TEI 43C | Analyzer serial # | 609716238 |

***Calibration Data***

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | 0.0 | N/A | | |
| 400.7 | 400.8 | 0.9998 | Correlation Coefficient | 0.999911 |
| 200.9 | 203.1 | 0.9895 | | |
| 100.5 | 103.9 | 0.9671 | Slope | 1.002130 |
| | | | | |
| | | | Intercept | -1.785903 |
| | | | | |



# Bonanza $SO_2$ Calibration




**July 20, 2010**

# Calibration Report

Parameter **TRS**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 20, 2010 | Previous Calibration | June 18, 2010 |
| Station Number | 9 | Station Location | Rover-Bonanza |
| Reason: | Routine / Install / Removal / Other: | | |
| Start Time (MST) | 10:24 | End Time (MST) | 12:50 |
| Barometric Pressure | 27.5 inches Hg | Station Temperature | 15.7 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Concentration | 5.15 ppm | Cal Gas Expiry Date | 11/15/2005 |
| Gas Cert Reference | ALM013295 | | |
| DACS make | Focus AP1000 | DACS serial No. | 52662 |
| DACS voltage range | 0 - 5 volt | DACS channel # | 8 |
| | Before | | After |
| DACS Scale High | 100 | DACS slope | 100 |
| DACS Scale Low | 0 | DACS intercept | 0 |
| Calculated slope | 1.000749 | Calculated slope | 1.006421 |
| Calculated intercept | 0.498726 | Calculated intercept | -0.053281 |
| Analyzer make | TEI 43C | Analyzer serial # | 609716238 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 100 | ppb | 0 - 100 | ppb |
| Background | 9.8 | ppb | 9.8 | ppb |
| Coefficient | 1.397 | | 1.379 | |
| Lamp Voltage | 788 | V | 789 | V |
| Chamber Temp | 43.8 | C | 43.9 | C |
| Perm gas Temp | 45.00 | C | 45 | C |
| Pressure | 662.8 | mmHg | 662.1 | mmHg |
| Sample Flow | .441 | ccm | .441 | ccm |
| Lamp Intensity | 38796.0 | Hz | 39299.0 | 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) |
|---|---|---|---|---|
| 4989 | 0.0 | 0.0 | -0.1 | N/A |
| 4991 | 79.74 | 81.0 | 80.5 | 1.0064 |
| 4991 | 39.80 | 40.7 | 40.6 | 1.0037 |
| 4991 | 9.93 | 10.2 | 10.4 | 0.9830 |
| | | | | |
| 4991 | 0.00 | 0.0 | -0.1 | As found zero |
| 4991 | 79.74 | 81.0 | 80.5 | As found span |
| | | | Average Correction Factor | 0.9977 |

Calculated value of As Found Response: 81.17 ppm Percent Change of As Found: -0.2%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | -0.6 | ppm | -0.1 | ppm |
| Auto span | 64.8 | ppm | 65.7 | ppm |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **TRS**

Air Monitoring Network **PASZA**

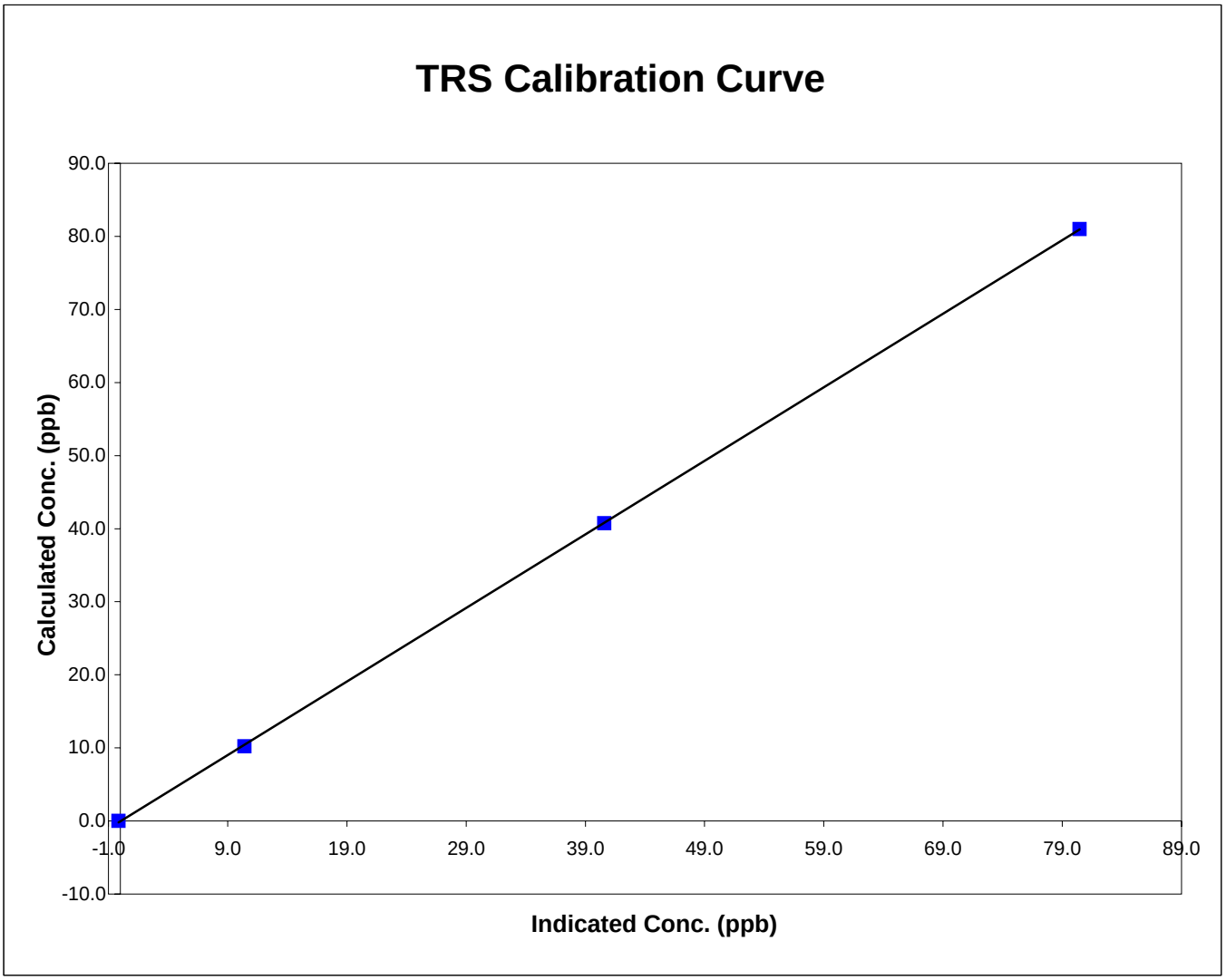
FOCUS AIR QUALITY MONITORING

***Station Information***

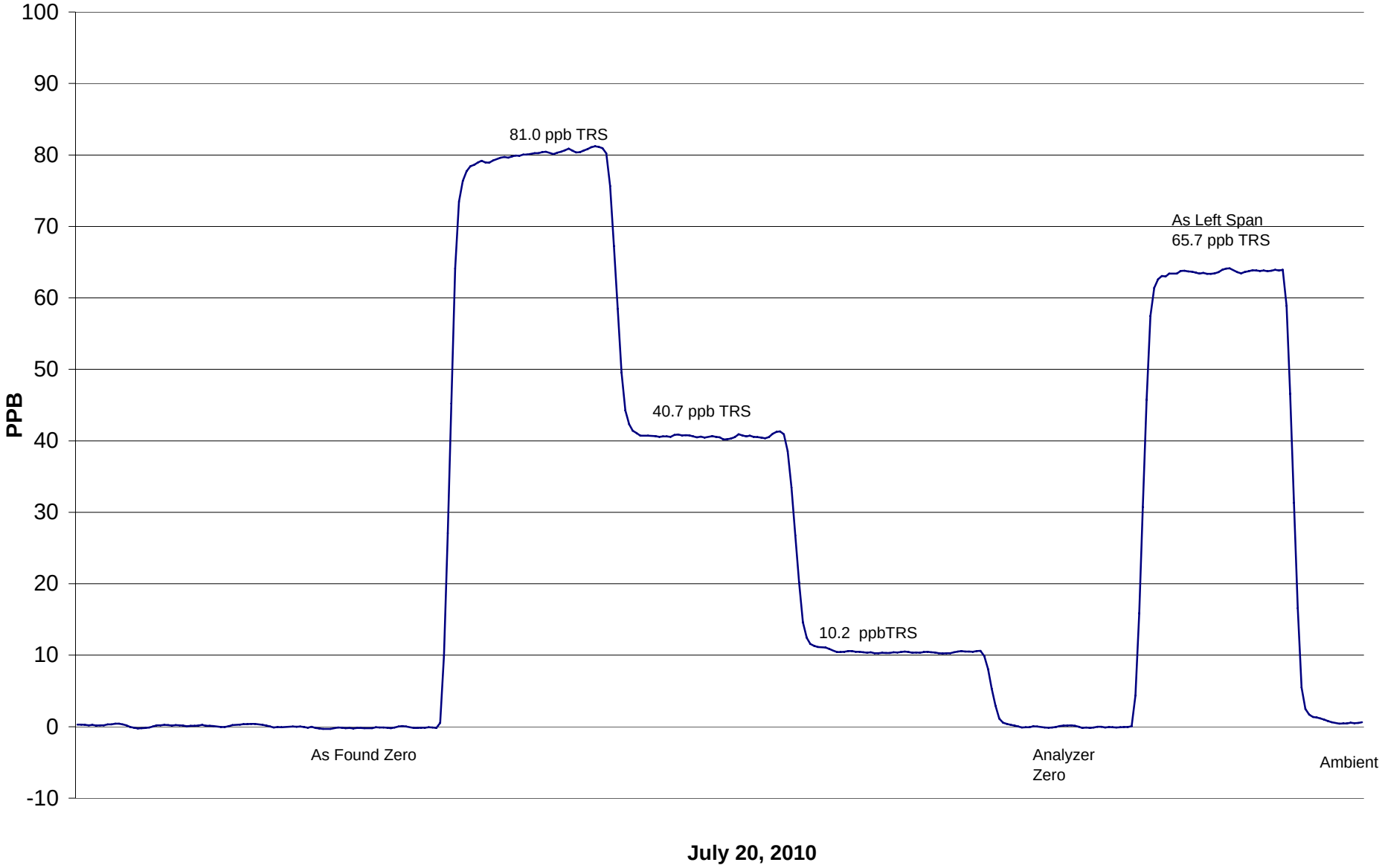
| | | | |
|---|---|---|---|
| Calibration Date | July 20, 2010 | Previous Calibration | June 18, 2010 |
| Station Number | 9 | Station Location | Rover-Bonanza |
| Start Time (MST) | 10:24 | End Time (MST) | 12:50 |
| Analyzer make/model | TEI 43C | Analyzer serial # | 609716238 |

***Calibration Data***

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | -0.1 | N/A | | |
| 81.0 | 80.5 | 1.0064 | Correlation Coefficient | 0.999980 |
| 40.7 | 40.6 | 1.0037 | | |
| 10.2 | 10.4 | 0.9830 | Slope | 1.006421 |
| | | | | |
| | | | Intercept | -0.053281 |
| | | | | |



# Bonanza TRS Calibration




**July 20, 2010**

# Calibration Report

Parameter **$NO_X$-NO-$NO_2$**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 21, 2010 | Previous Calibration | June 18, 2010 |
| Station Number | 9 | Station Location | Rover Bonanza |

Reason: Routine | Installation | Other:

| | | | | | |
|---|---|---|---|---|---|
| Start Time (MST) | 9:00 | | End Time (MST) | 13:13 | |
| Barometric Pressure | 0.927 | Atm | Station Temperature | 15.7 | Deg C |
| Calibrator | Environics 6100 | | Serial Number | 3474 | |
| NO Cal Gas Conc | 50.1 | ppm | Cal Gas Expiry Date | July 2, 2007 | |
| NOx Cal Gas Conc | 50.1 | ppm | Cal Gas Serial # | CC114395 | |

## *DACS Information*

DACS make: Focus AP1000 | DACS serial No.: 52662

| Parameter | | NO2 | NOx | NO |
|---|---|---|---|---|
| Before | Data Slope | 0.995766 | 0.997728 | 1.005136 |
| | Data Offset | 1.154511 | -2.729008 | -3.513829 |
| After | Data Slope | 0.995831 | 1.011305 | 1.004642 |
| | Data Offset | 0.641464 | -6.758112 | -3.543341 |
| Channel # | | 8 | 6 | 7 |
| Voltage Range | | 0 - 10 VDC | 0 - 10 VDC | 0 - 10 VDC |

## *Analyzer Information*

Analyzer make/model: TEI 42i | Analyzer serial #: 701120011

| Test Point | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 500 | ppb | 0 - 500 | ppb |
| NO offset | 4.8 | mV | 5.2 | mV |
| NOx bkgnd | 5.1 | mV | 5.6 | mV |
| NO coefficient | 0.875 | | 0.956 | |
| NOx coefficient | 0.999 | | 0.997 | |
| NO2 conv temp | 324.5 | Deg C | 325.0 | Deg C |
| PMT Temp | -3.1 | Deg C | -2.7 | Deg C |
| PMT Volt | -829.9 | mV | -829.9 | mV |
| R Cell Press | 165.4 | in Hg | 164.8 | in Hg |

# Calibration Report

Parameter **$NOx\text{-}NO\text{-}NO_2$**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## Station Information

Calibration Date: July 21, 2010 Station Location: Rover Bonanza

## 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 | 4989 | 0.00 | | 0.0 | | 0.1 | 0.5 | -1.6 | N/A | N/A |
| 1 | 4989 | 39.84 | 396.9 | 396.9 | 0.0 | 399.1 | 396.9 | -0.8 | 0.9944 | 0.9999 |
| 2 | 4989 | 19.91 | 199.1 | 199.1 | 0.0 | 203.7 | 203.4 | -1.5 | 0.9778 | 0.9788 |
| 3 | 4989 | 9.96 | 99.8 | 99.8 | 0.0 | 105.3 | 105.8 | -1.2 | 0.9475 | 0.9431 |
| | | | | | | | | | | |
| AFZ | 4989 | 0.00 | 0.0 | 0.0 | 0.0 | 0.1 | 0.5 | -0.9 | 0.0000 | 0.0000 |
| AFS | 4989 | 39.85 | 397.0 | 397.0 | 0.0 | 365.8 | 363.7 | -0.7 | 1.0853 | 1.0916 |
| | | | | | | | Average Correction Factor | | 0.9733 | 0.9739 |

As Found Concentrations: $NO_X$= 363.0 NO= 359.7 As Found Percent Change $NO_X$= -8.6% NO= -9.4%

## GPT Calibration Data

Dilution Flow 4988 ccm Source Gas Flow 39.84 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 | -1.6 | N/A | N/A | N/A | N/A |
| NO point | 397.5 | 397.5 | 0.0 | 399.0 | 397.5 | -1.5 | 0.9963 | 1.0000 | N/A | N/A |
| 300 | 397.5 | 125.5 | 272.0 | 399.9 | 125.5 | 272.6 | 0.9939 | 1.0000 | 0.9978 | 100.2% |
| 200 | 397.5 | 212.3 | 185.2 | 399.9 | 212.3 | 185.1 | 0.9941 | 1.0000 | 1.0006 | 99.9% |
| 100 | 397.5 | 298.5 | 99.0 | 400.0 | 298.5 | 98.9 | 0.9939 | 1.0000 | 1.0011 | 99.9% |
| | | | | | Average Correction Factor | | 0.9940 | 1.0000 | 0.9998 | 100.0% |

## AIC Data

| | Previous calibration | | | | Current calibration | | | |
|---|---|---|---|---|---|---|---|---|
| Parameter | NOx | NO2 | NO | | NOx | NO2 | NO | |
| Auto zero | 0.4 | -0.9 | 0.7 | ppb | 0.0 | -0.9 | 0.5 | ppb |
| Auto span | 275.6 | 274.9 | 2.9 | ppb | 299.3 | 294.6 | 3.1 | ppb |

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **$NO_2$**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

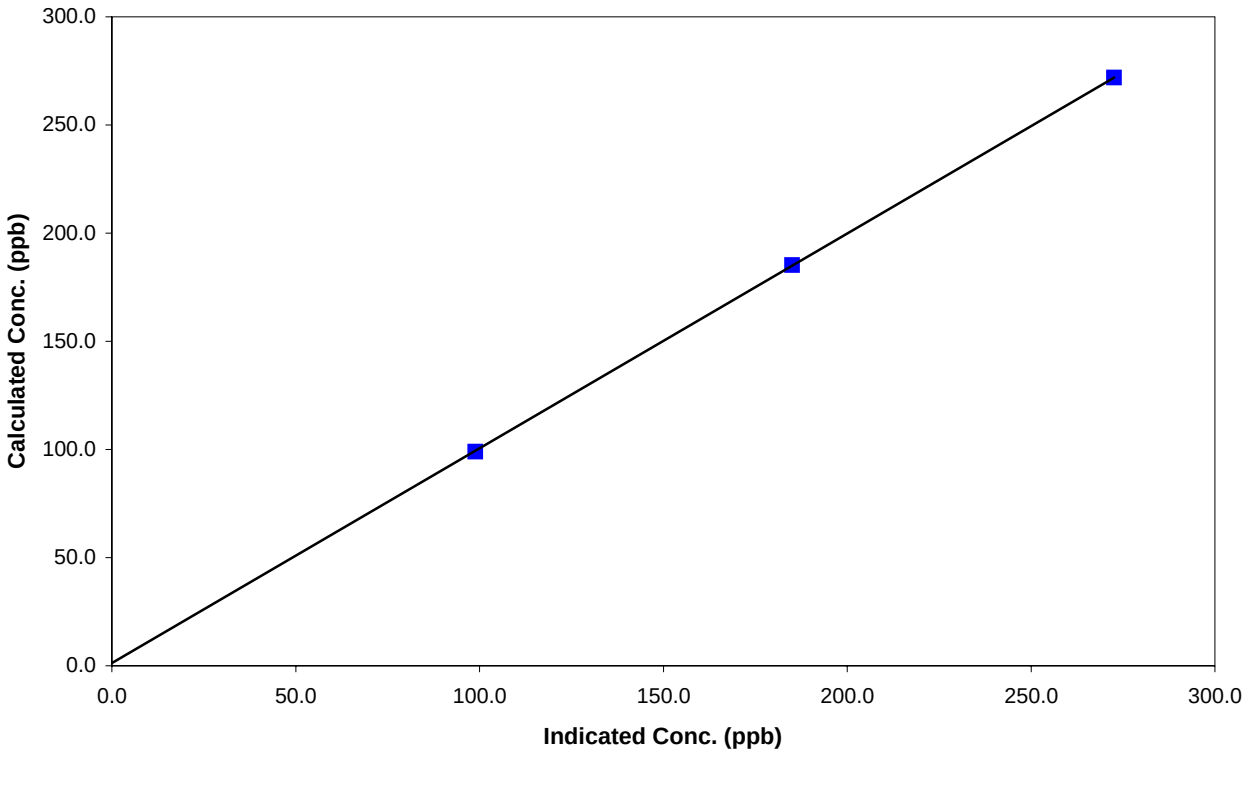
### *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 21, 2010 | Previous Calibration | June 18, 2010 |
| Station Number | 9 | Station Location | Rover Bonanza |
| Start Time (MST) | 9:00 | End Time (MST) | 13:12 |
| Analyzer make | TEI 42i | Analyzer serial # | 701120011 |

### *Calibration Data*

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| | -1.6 | N/A | | |
| 272.0 | 272.6 | 0.9978 | Correlation Coefficient | 0.999994 |
| 185.2 | 185.1 | 1.0006 | | |
| 99.0 | 98.9 | 1.0011 | Slope | 0.995831 |
| | | | | |
| | | | Intercept | 0.641464 |
| | | | | |

## $NO_2$ Calibration Curve



# Calibration Summary

Parameter **$NO_x$**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

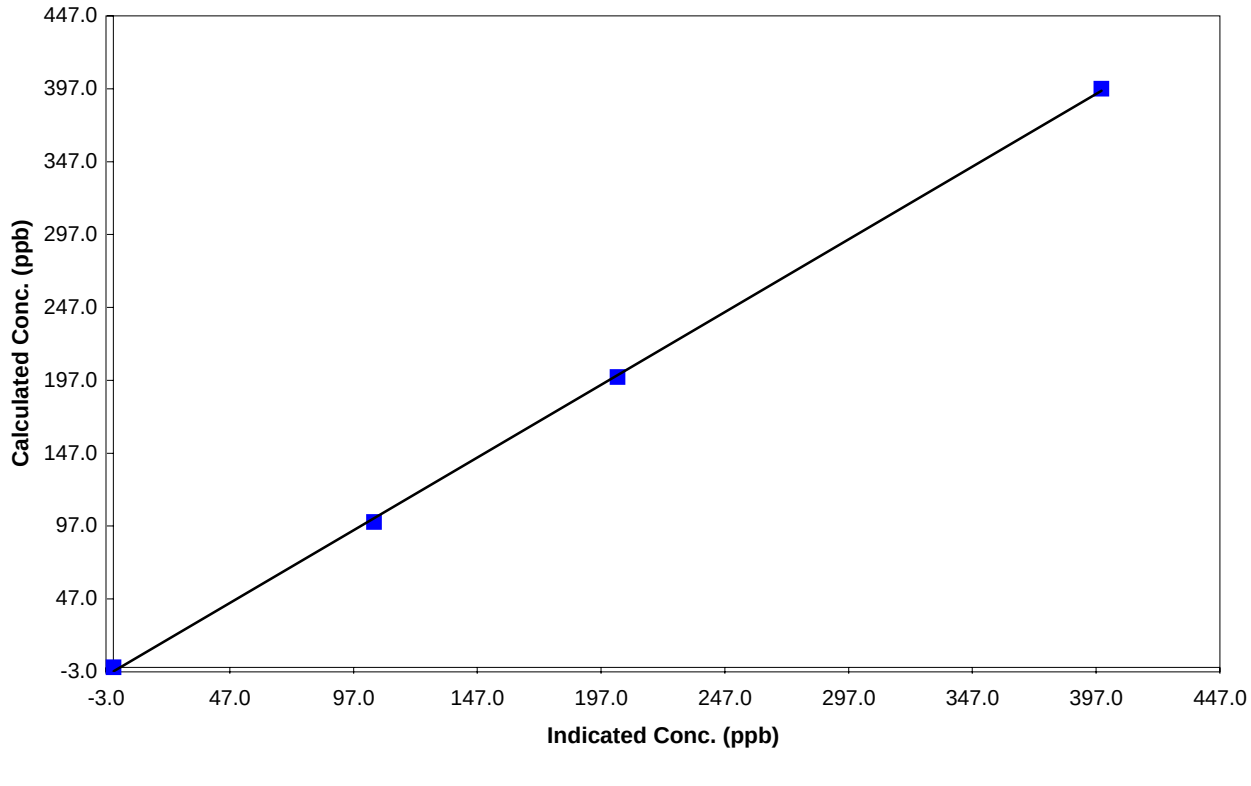
### *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 21, 2010 | Previous Calibration | June 18, 2010 |
| Station Number | 9 | Station Location | Rover Bonanza |
| Start Time (MST) | 9:00 | End Time (MST) | 13:12 |
| Analyzer make | TEI 42i | Analyzer serial # | 701120011 |

### *Calibration Data*

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| | 0.1 | N/A | | |
| 396.9 | 399.1 | 0.9944 | Correlation Coefficient | 1.000000 |
| 199.1 | 203.7 | 0.9778 | | |
| 99.8 | 105.3 | 0.9475 | Slope | 1.011305 |
| | | | | |
| | | | Intercept | -6.758112 |
| | | | | |

## NOx Calibration Curve



# Calibration Summary

Parameter **NO**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

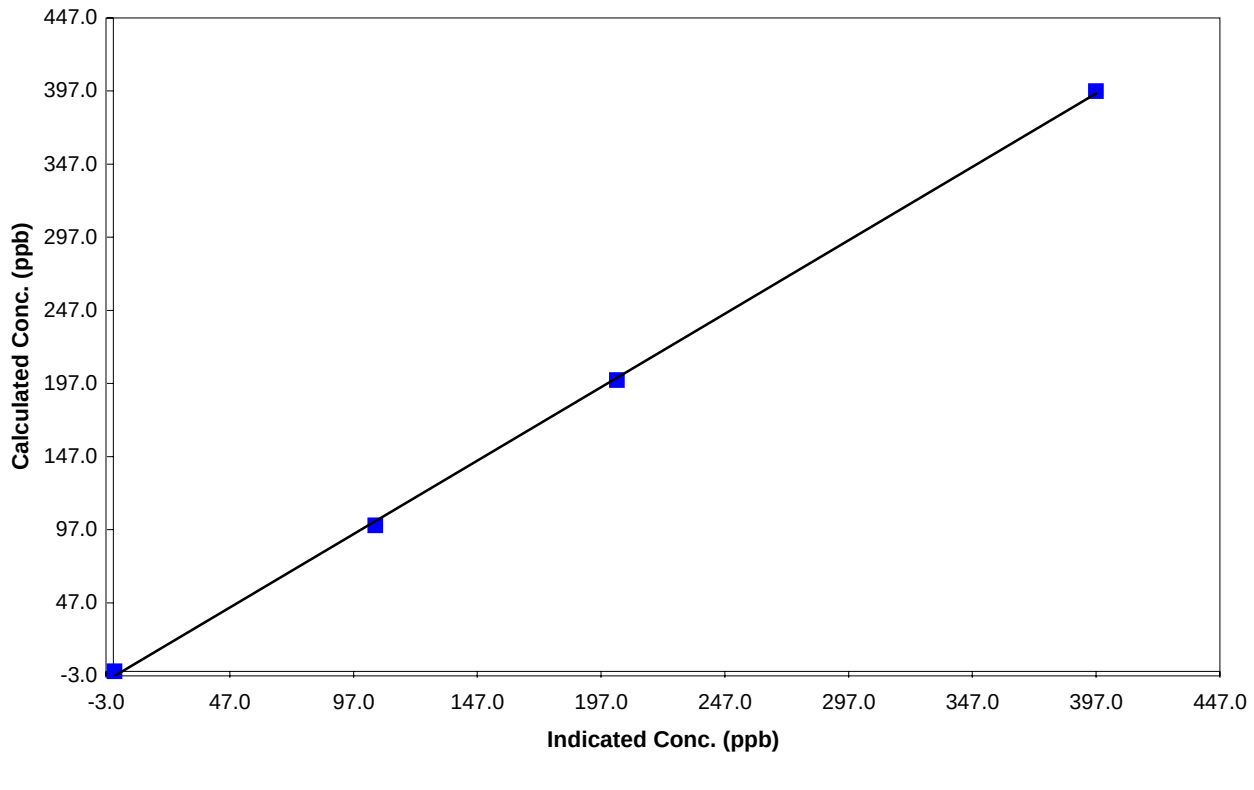
### *Station Information*

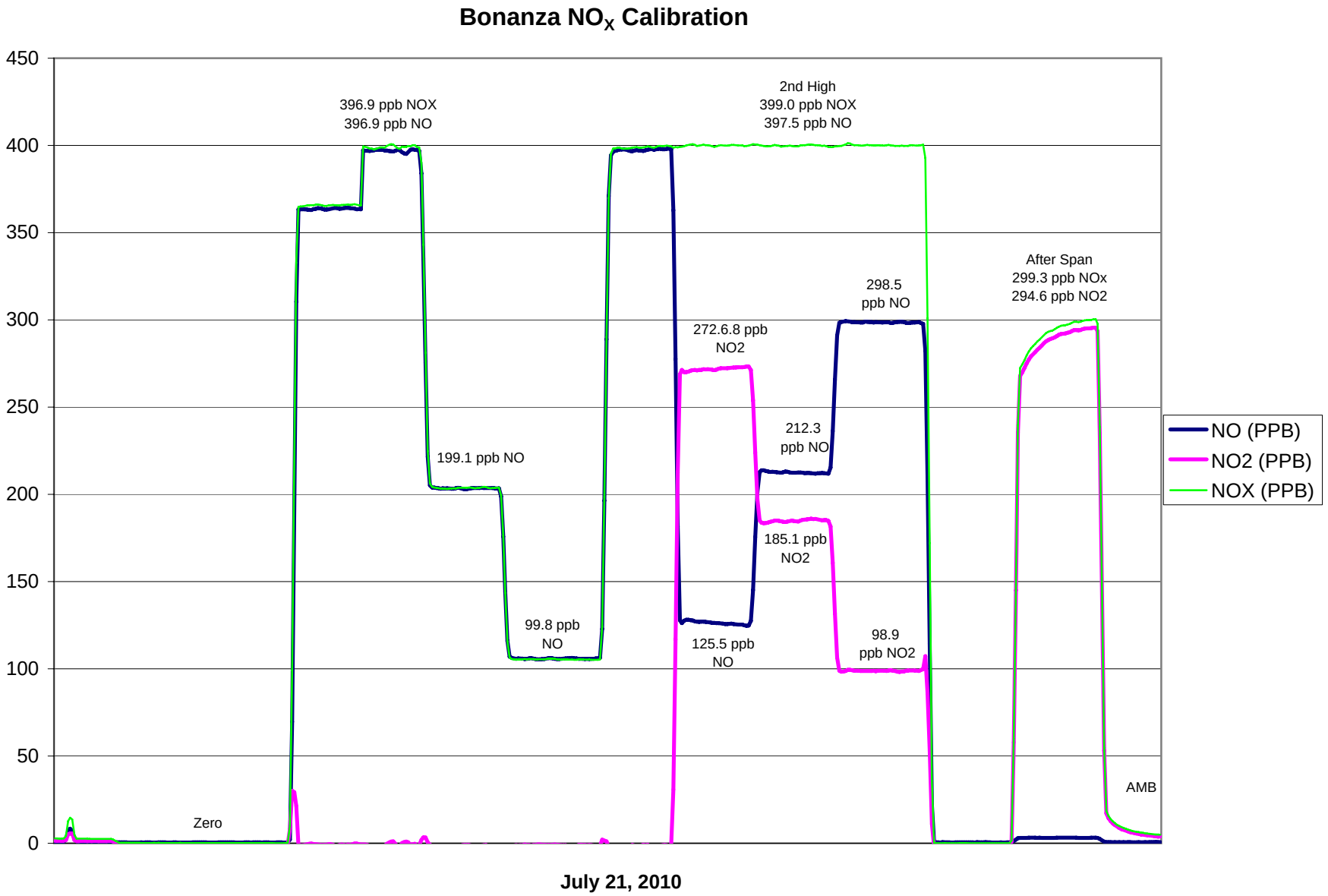
| | | | |
|---|---|---|---|
| Calibration Date | July 21, 2010 | Previous Calibration | June 18, 2010 |
| Station Number | 9 | Station Location | Rover Bonanza |
| Start Time (MST) | 9:00 | End Time (MST) | 13:12 |
| Analyzer make | TEI 42i | Analyzer serial # | 701120011 |

### *Calibration Data*

| Calculated conc (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | 0.5 | N/A | | |
| 396.9 | 396.9 | 0.9999 | Correlation Coefficient | 0.999726 |
| 199.1 | 203.4 | 0.9788 | | |
| 99.8 | 105.8 | 0.9431 | Slope | 1.004642 |
| | | | | |
| | | | Intercept | -3.543341 |
| | | | | |

## NO Calibration Curve




Bonanza NOX Calibration
450
400
350
300
250
200
150
100
50
0
396.9 ppb NOX
396.9 ppb NO
2nd High
399.0 ppb NOX
397.5 ppb NO
After Span
299.3 ppb NOx
294.6 ppb NO2
298.5
ppb NO
272.6.8 ppb
NO2
212.3
ppb NO
199.1 ppb NO
185.1 ppb
NO2
99.8 ppb
NO
125.5 ppb
NO
98.9
ppb NO2
Zero
AMB
NO (PPB)
NO2 (PPB)
NOX (PPB)
July 21, 2010

# Calibration Report

Parameter **O3**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 21, 2010 | Previous Calibration | June 18, 2010 |
| Station Number | 12:00 | Station Location | Rover - Bonanza |

Reason: Routine | Install | Removal | remove | Other:

| | | | |
|---|---|---|---|
| Start Time (MST) | 12:00 | End Time (MST) | 14:05 |
| Barometric Pressure | 0.927 atm | Station Temperature | 15.7 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| DACS make | Focus AP1000 | DACS serial No. | 52662 |
| DACS voltage range | 0-5 | DACS channel # | 7 |
| | Before | | After |
| Calculated slope | 1.005504 | Calculated slope | 0.993532 |
| Calculated intercept | -1.583813 | Calculated intercept | 0.251780 |
| Analyzer make | TEI Model 49C | Analyzer serial # | 609-716240 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0-500 | ppb | 0-500 | ppb |
| Offset | -13.1 | ppb | -14.3 | ppb |
| Span | 1.442 | | 1.478 | |
| Cell A intensity | 75409 | Hz | 75251 | Hz |
| Cell B intensity | 90492 | Hz | 90437 | Hz |
| Pressure | 696.10 | in Hg | 691.40 | in Hg |
| CellA Flow | 0.586 | ccm | 0.715 | ccm |
| Cell B Flow | 0.711 | cmm | 0.682 | 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) |
|---|---|---|---|---|
| 4988 | 0.00 | 0.0 | -0.5 | N/A |
| 4990 | 0.30 | 272.6 | 273.9 | 0.9953 |
| 4990 | 0.20 | 185.1 | 186.3 | 0.9938 |
| 4990 | 0.10 | 98.9 | 99.5 | 0.9938 |
| | | | | |
| 4990 | 0.00 | 0.0 | -0.5 | As found zero |
| 4990 | 0.30 | 306.0 | 266.5 | As found span |
| | | | Average Correction Factor | 0.9943 |

Calculated value of As Found Response: 313.7 ppm Percent Change of As Found: 2.5%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | 2.1 | ppb | 0.6 | ppb |
| Auto span | 301.0 | ppb | 297.7 | ppb |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **O3**

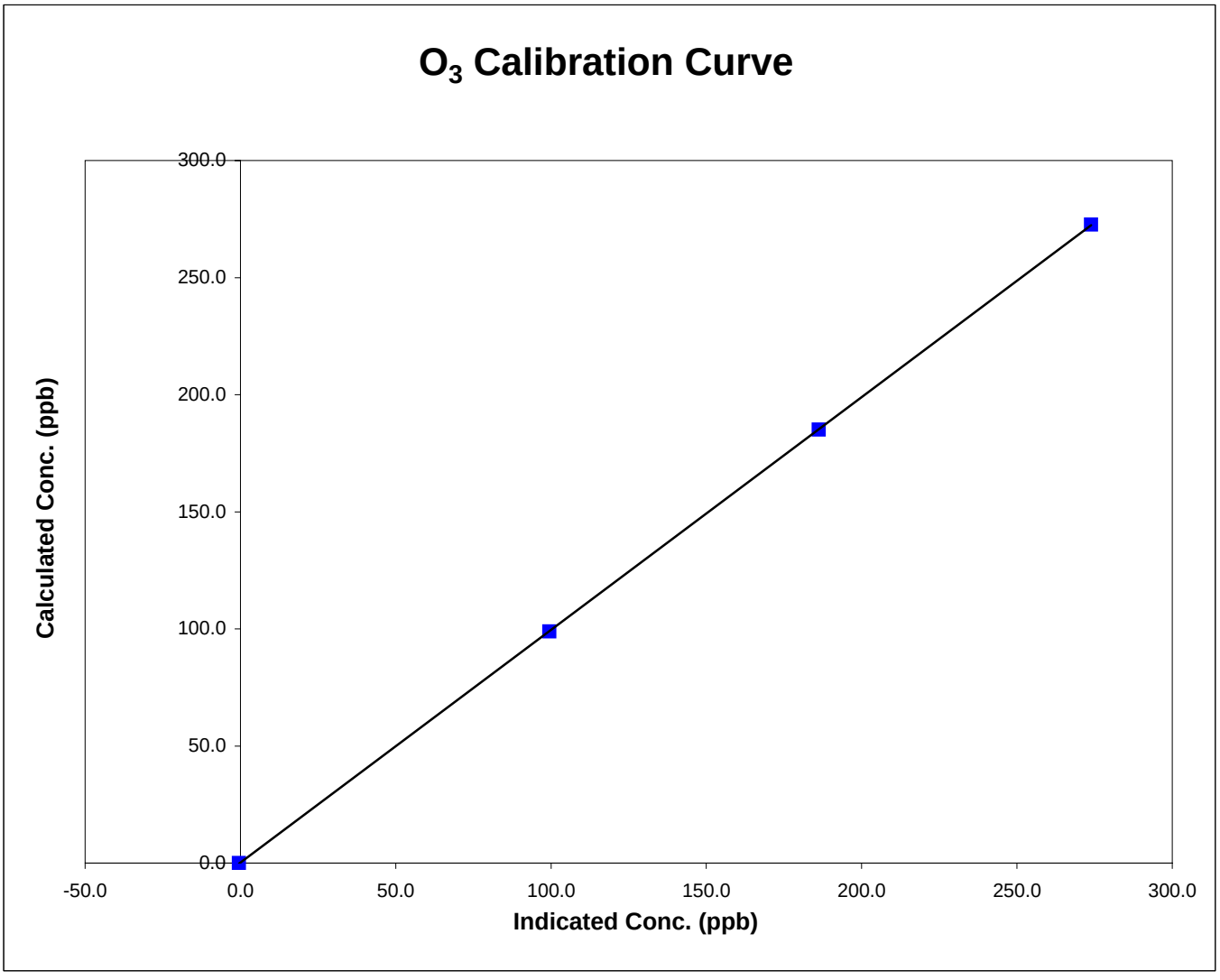
Air Monitoring Network **PASZA**

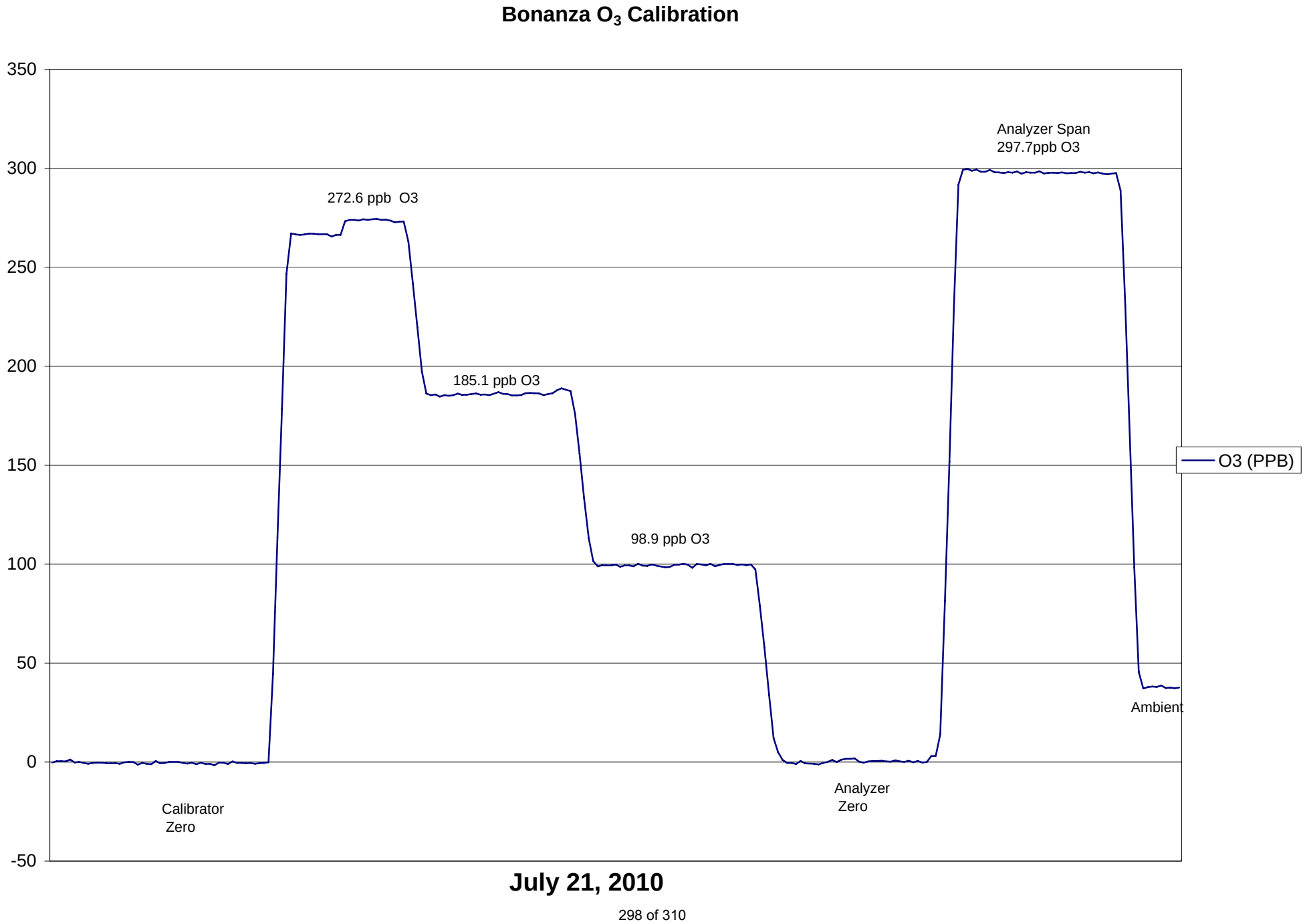
***Station Information***

| | | | |
|---|---|---|---|
| Calibration Date | July 21, 2010 | Previous Calibration | June 18, 2010 |
| Station Number | 0.5 | Station Location | Rover - Bonanza |
| Start Time (MST) | 12:00 | End Time (MST) | 14:05 |
| Analyzer make/model | TEI Model 49C | Analyzer serial # | 609-716240 |

***Calibration Data***

| Calculated concentration (ppm) (Cc) | Indicated concentration (ppm) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | -0.5 | NA | | |
| 272.6 | 273.9 | 0.9953 | Correlation Coefficient | 0.999996 |
| 185.1 | 186.3 | 0.9938 | | |
| 98.9 | 99.5 | 0.9938 | Slope | 0.993532 |
| | | | | |
| | | | Intercept | 0.251780 |
| | | | | |




Bonanza $O_3$ Calibration
350
300
250
200
150
100
50
0
-50
Analyzer Span
297.7ppb O3
272.6 ppb O3
185.1 ppb O3
98.9 ppb O3
Ambient
Calibrator
Zero
Analyzer
Zero
O3 (PPB)
July 21, 2010

# Calibration Report

Parameter **SO2**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 6, 2010 | Previous Calibration | May 24, 2010 |
| Station Number | 6 | Station Location | Valleyview |
| Reason: Routine | Install | Removal | Other: |
| Start Time (MST) | 4:30 | End Time (MST) | 18:39 |
| Barometric Pressure | 702.00 mm | Station Temperature | 14.7 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Concentration | 50.6 ppm | Cal Gas Cert Date | 12/3/2009 |
| Gas Cert Reference | AAL 56996 | | |
| DACS make | Focus AP1000 | DACS serial No. | 45274 |
| DACS voltage range | 0 - 10 volt | DACS channel # | 4 |
| | Before | | After |
| DACS Scale High | 500 | DACS slope | 500 |
| DACS Scale Low | 0 | DACS intercept | 0 |
| Calculated slope | 1.002396 | Calculated slope | 0.995581 |
| Calculated intercept | -2.325015 | Calculated intercept | -2.218511 |
| Analyzer make | TEI 45C | Analyzer serial # | 45C-57531-313 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 1000 | ppb | 0 - 1000 | ppb |
| Background | 24.4 | | N/A | |
| Coefficient | 0.875 | | N/A | |
| UV Lamp Voltage | 919 | LPM | N/A | LPM |
| Chamber Temp | 44 | V | N/A | V |
| Perm Gas Temp | 35.02 | C | N/A | C |
| Pressure | 625.6 | in Hg | N/A | in Hg |
| Sample Flow | 0.471 | LPM | N/A | LPM |
| Lamp Intensity | 48218 | Hz | N/A | 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) |
|---|---|---|---|---|
| 4988 | 0.00 | 0.0 | 0.0 | N/A |
| 4988 | 39.85 | 401.0 | 403.9 | 0.9930 |
| 4988 | 19.89 | 201.0 | 205.2 | 0.9794 |
| 4988 | 9.94 | 100.6 | 105.7 | 0.9525 |
| | | | | |
| 4988 | 0.00 | 0.0 | 0.0 | As found zero |
| 4988 | 39.88 | 401.3 | 403.7 | As found span |
| | | | Average Correction Factor | 0.9749 |

Calculated value of As Found Response: 402.418 ppm Percent Change of As Found: -0.3%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | 0.0 | ppm | 0.0 | ppm |
| Auto span | 150.3 | ppm | #DIV/0! | ppm |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **SO2**

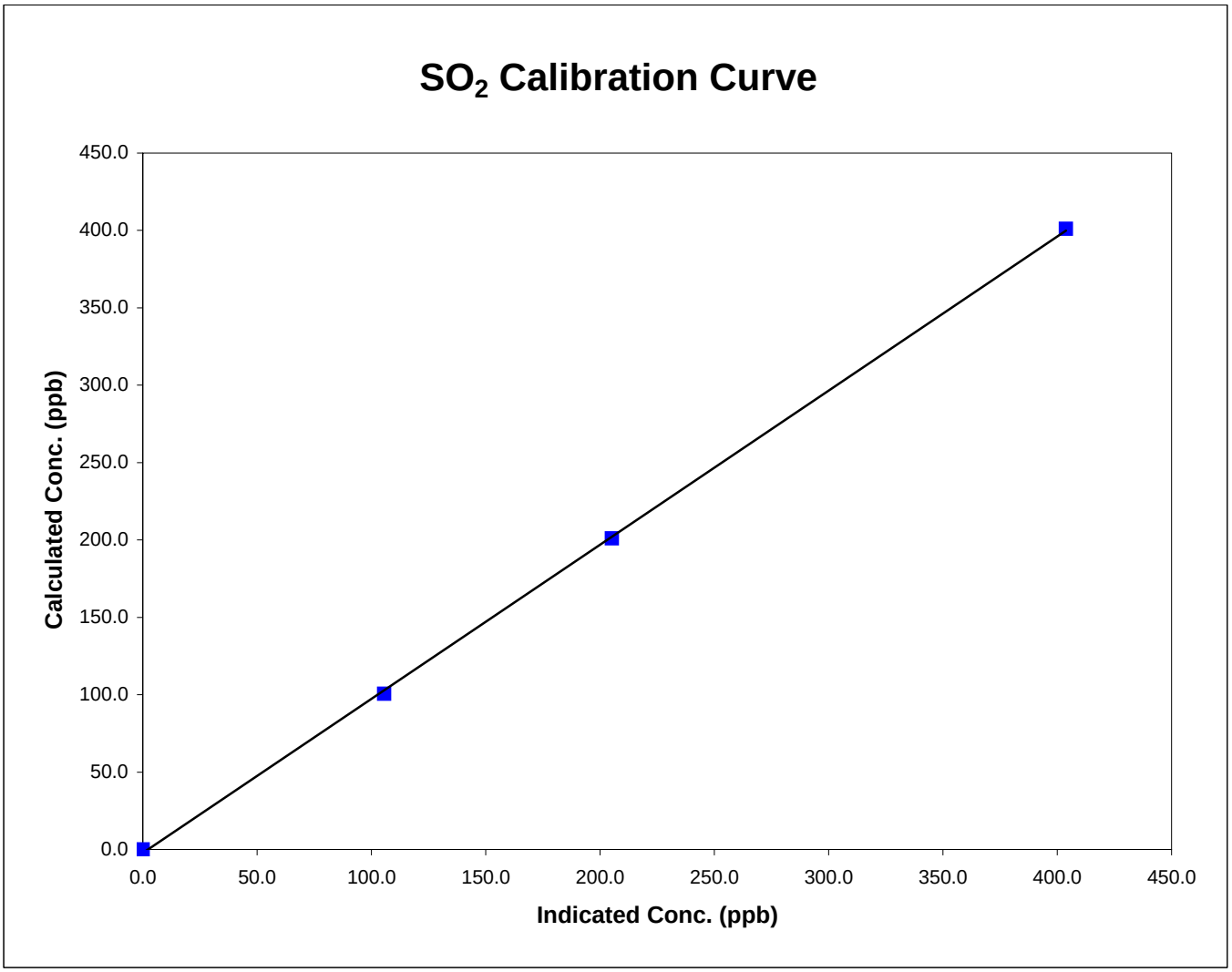
Air Monitoring Network **PASZA**

***Station Information***

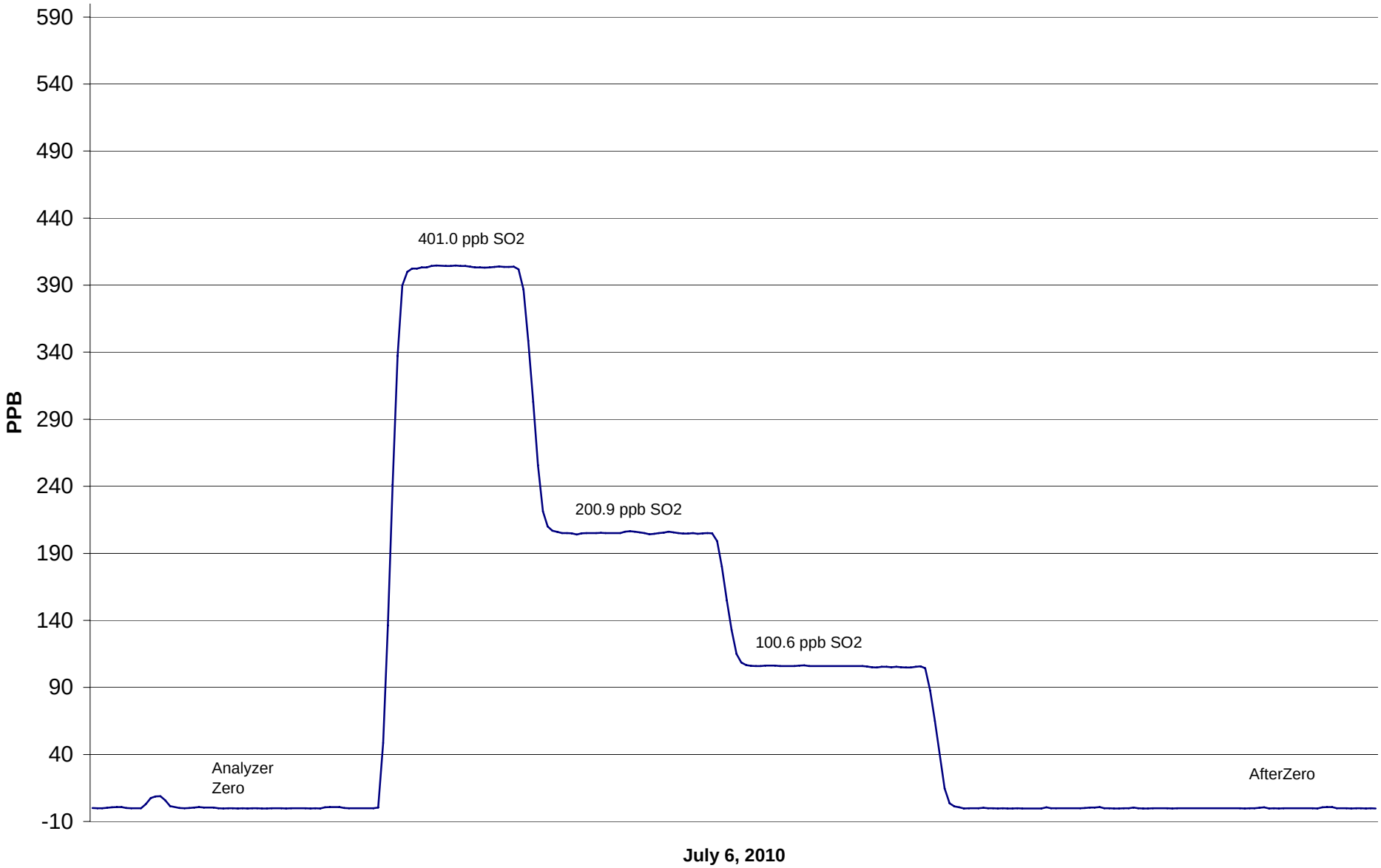
| | | | |
|---|---|---|---|
| Calibration Date | July 6, 2010 | Previous Calibration | May 24, 2010 |
| Station Number | 6 | Station Location | Valleyview |
| Start Time (MST) | 4:30 | End Time (MST) | 14:42 |
| Analyzer make/model | TEI 43C | Analyzer serial # | 43C-97351-313 |

***Calibration Data***

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | 0.0 | N/A | | |
| 401.0 | 403.9 | 0.9930 | Correlation Coefficient | 0.999850 |
| 201.0 | 205.2 | 0.9794 | | |
| 100.6 | 105.7 | 0.9525 | Slope | 0.995581 |
| | | | | |
| | | | Intercept | -2.218511 |
| | | | | |



# Vallyview $SO_2$ Calibration



# Calibration Report

Parameter **SO2**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 8, 2010 | Previous Calibration | May 24, 2010 |
| Station Number | 6 | Station Location | Valleyview |
| Reason: Routine | Install | Removal | Other: |
| Start Time (MST) | 8:11 | End Time (MST) | 11:01 |
| Barometric Pressure | 702.00 mm | Station Temperature | 14.7 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Concentration | 50.6 ppm | Cal Gas Cert Date | 12/3/2009 |
| Gas Cert Reference | AAL 56996 | | |
| DACS make | Focus AP1000 | DACS serial No. | 45274 |
| DACS voltage range | 0 - 10 volt | DACS channel # | 4 |
| | Before | | After |
| DACS Scale High | 500 | DACS slope | 500 |
| DACS Scale Low | 0 | DACS intercept | 0 |
| Calculated slope | N/A | Calculated slope | 0.998736 |
| Calculated intercept | N/A | Calculated intercept | -2.736664 |
| Analyzer make | TEI 45C | Analyzer serial # | 45C-57531-313 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 1000 | ppb | 0 - 1000 | ppb |
| Background | 24.1 | | 24.2 | |
| Coefficient | 0.875 | | 0.862 | |
| UV Lamp Voltage | 926 | LPM | 923 | LPM |
| Chamber Temp | 44.1 | V | 44.2 | V |
| Perm Gas Temp | 34.9 | C | 34 | C |
| Pressure | 636.2 | in Hg | 681.7 | in Hg |
| Sample Flow | 0.478 | LPM | 0.470 | LPM |
| Lamp Intensity | 48448 | Hz | 48616 | 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) |
|---|---|---|---|---|
| 4991 | 0.00 | 0.0 | 0.5 | N/A |
| 4991 | 39.85 | 400.8 | 402.8 | 0.9950 |
| 4991 | 19.89 | 200.8 | 205.2 | 0.9790 |
| 4991 | 9.94 | 100.6 | 105.6 | 0.9521 |
| | | | | |
| | | | | As found zero |
| | | | | As found span |
| | | | Average Correction Factor | 0.9754 |

Calculated value of As Found Response: NA

Percent Change of As Found: NA

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | N/A | ppm | 0.0 | ppm |
| Auto span | N/A | ppm | 155.5 | ppm |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **SO2**

Air Monitoring Network **PASZA**

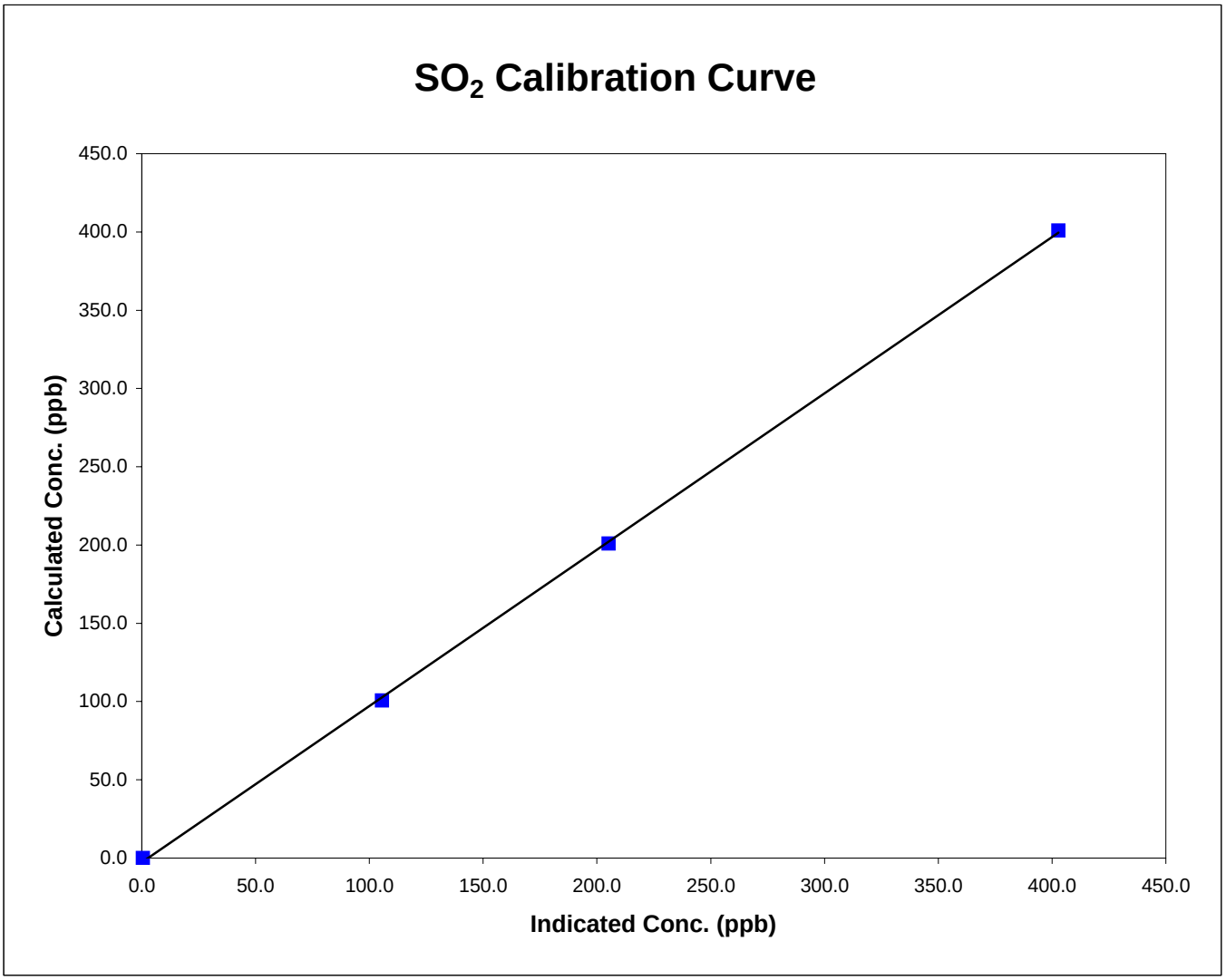
FOCUS AIR QUALITY MONITORING

***Station Information***

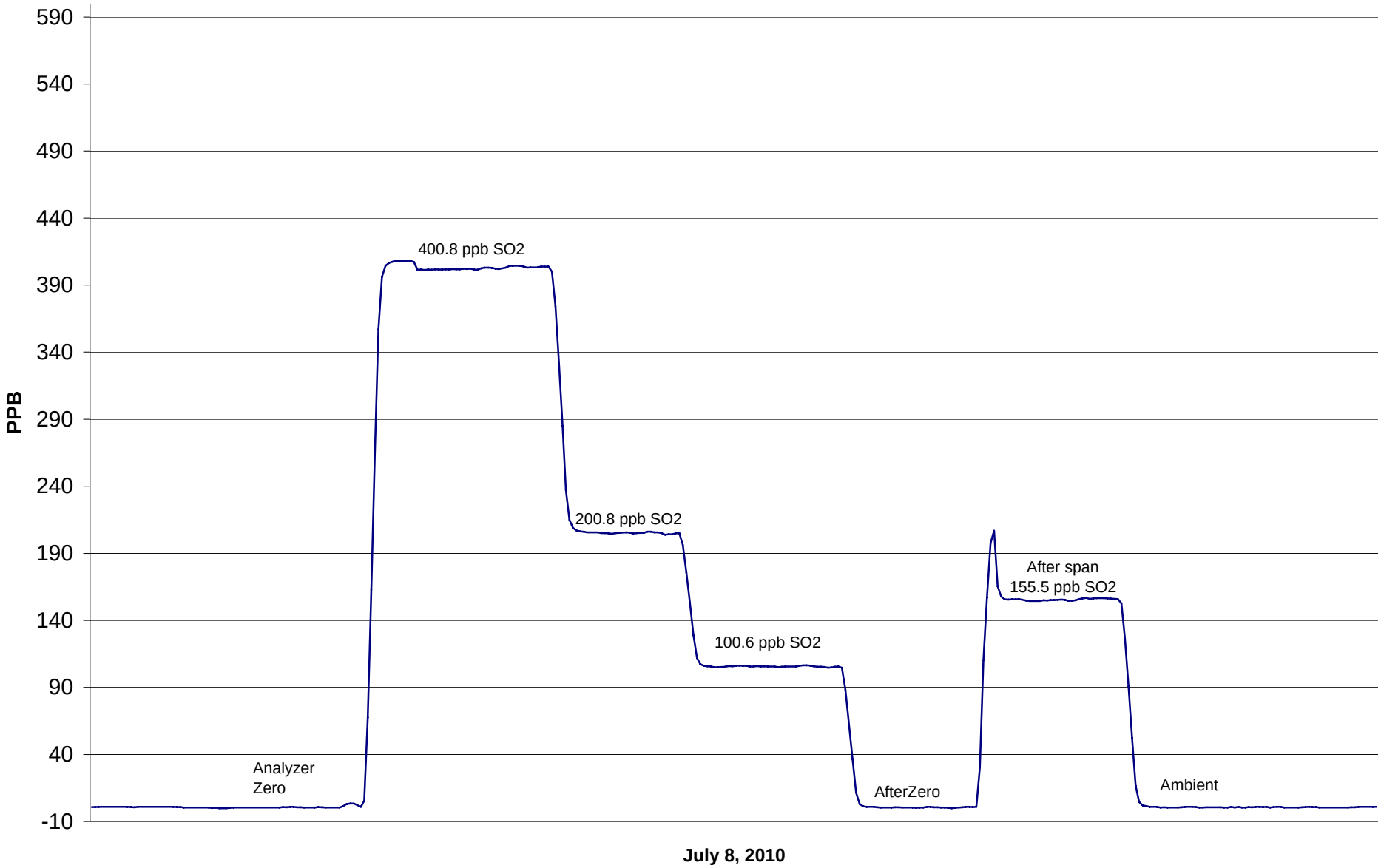
| | | | |
|---|---|---|---|
| Calibration Date | July 8, 2010 | Previous Calibration | May 24, 2010 |
| Station Number | 6 | Station Location | Valleyview |
| Start Time (MST) | 8:11 | End Time (MST) | 14:42 |
| Analyzer make/model | TEI 45C | Analyzer serial # | 45C-57531-313 |

***Calibration Data***

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | 0.5 | N/A | | |
| 400.8 | 402.8 | 0.9950 | Correlation Coefficient | 0.999849 |
| 200.8 | 205.2 | 0.9790 | | |
| 100.6 | 105.6 | 0.9521 | Slope | 0.998736 |
| | | | | |
| | | | Intercept | -2.736664 |
| | | | | |



# Vallyview $SO_2$ Calibration



# Calibration Report

Parameter **H2S**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 6, 2010 | Previous Calibration | May 24, 2010 |
| Station Number | 5 | Station Location | Valleyview |

Reason: [Routine] [Install] [Removal] [Other:]

| | | | |
|---|---|---|---|
| Start Time (MST) | 16:30 | End Time (MST) | 19:12 |
| Barometric Pressure | 702.00 mm | Station Temperature | 14.7 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Concentration | 5.15 ppm | Cal Gas Expiry Date | 4/4/2009 |
| Gas Cert Reference | ALM013295 | | |
| DACS make | Focus AP1000 | DACS serial No. | 1 |
| DACS voltage range | 0 - 10 volt | DACS channel # | 9 |
| | Before | | After |
| DACS Scale High | 100 | DACS slope | 100 |
| DACS Scale Low | 0 | DACS intercept | 0 |
| Calculated slope | 1.000385 | Calculated slope | 1.016152 |
| Calculated intercept | -0.235862 | Calculated intercept | -0.439195 |

| | | |
|---|---|---|
| Analyzer make | TEI Model 43i - APSCB | Analyzer serial # 701120010 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 100 | ppb | 0 - 100 | ppb |
| Back Ground | 4.7 | ppb | 4.8 | ppb |
| Coefficient | 1.056 | | 1.056 | |
| Lamp Voltage | 787 | V | 789 | V |
| Chamber Temp | 45.0 | c | 45.5 | c |
| Perm Oven Temp | 45 | c | 45 | c |
| Pressure | 658 | mm Hg | 651 | mm Hg |
| Sample Flow | .307 | ccm | .323 | ccm |
| Lamp Intensity | 91.0 | % | 91.0 | % |

## *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) |
|---|---|---|---|---|
| 4988 | 0.00 | 0.0 | 0.2 | N/A |
| 4988 | 79.75 | 81.0 | 80.0 | 1.0131 |
| 4988 | 39.83 | 40.8 | 40.9 | 0.9965 |
| 4988 | 9.93 | 10.2 | 10.6 | 0.9699 |
| | | | | |
| 4988 | 0.00 | 0.0 | 0.2 | As found zero |
| 4988 | 79.75 | 81.0 | 80.0 | As found span |
| | | | Average Correction Factor | 0.9931 |

Calculated value of As Found Response: 79.58 ppm Percent Change of As Found: 1.8%

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | -0.1 | ppm | 0.0 | ppm |
| Auto span | 59.5 | ppm | NA | ppm |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **H2S**

Air Monitoring Network **PASZA**

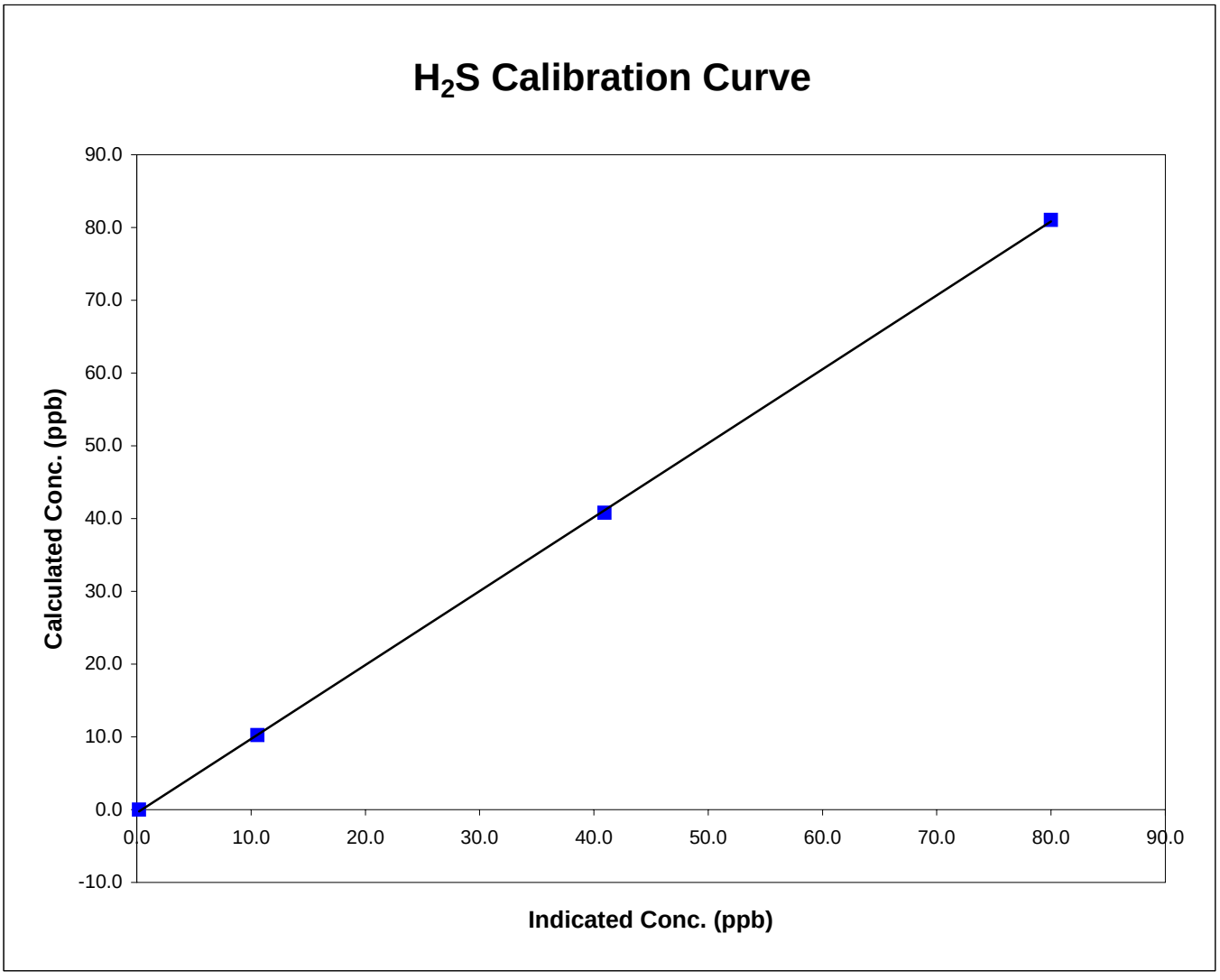
FOCUS AIR QUALITY MONITORING

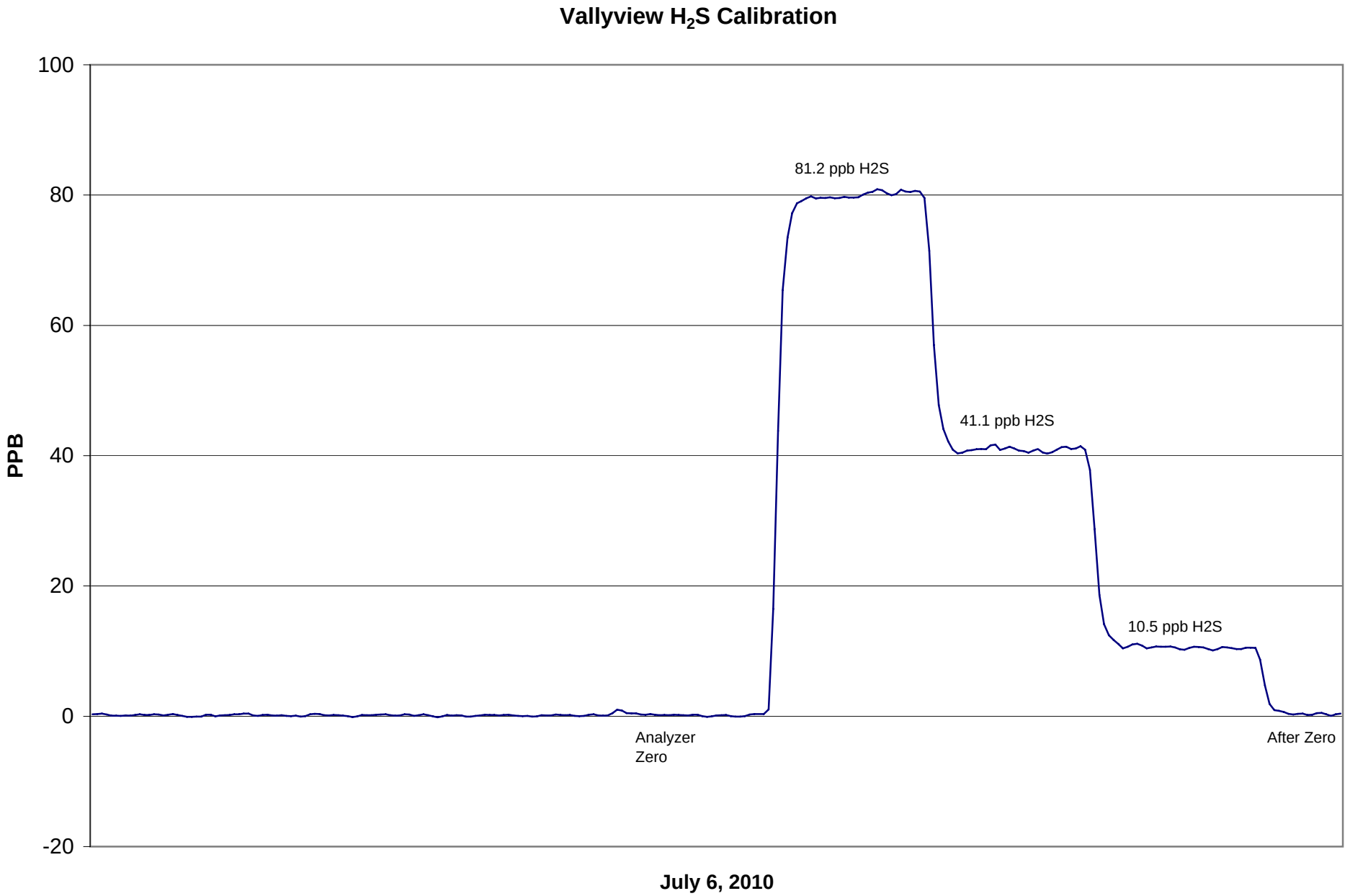
***Station Information***

| | | | |
|---|---|---|---|
| Calibration Date | July 6, 2010 | Previous Calibration | May 24, 2010 |
| Station Number | 5 | Station Location | Valleyview |
| Start Time (MST) | 16:30 | End Time (MST) | 19:12 |
| Analyzer make/model | TEI Model 43i - APSCB | Analyzer serial # | 701120010 |

***Calibration Data***

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | 0.2 | N/A | | |
| 81.0 | 80.0 | 1.0131 | Correlation Coefficient | 0.999944 |
| 40.8 | 40.9 | 0.9965 | | |
| 10.2 | 10.6 | 0.9699 | Slope | 1.016152 |
| | | | | |
| | | | Intercept | -0.439195 |
| | | | | |




Vallyview H2S Calibration
100
80
60
40
20
0
-20
PPB
81.2 ppb H2S
41.1 ppb H2S
10.5 ppb H2S
Analyzer
Zero
After Zero
July 6, 2010

# Calibration Report

Parameter **H2S**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

## *Station Information*

| | | | |
|---|---|---|---|
| Calibration Date | July 8, 2010 | Previous Calibration | May 24, 2010 |
| Station Number | 5 | Station Location | Valleyview |

Reason: Routine | Install | Removal | Other:

| | | | |
|---|---|---|---|
| Start Time (MST) | 9:30 | End Time (MST) | 12:53 |
| Barometric Pressure | 702.00 mm | Station Temperature | 21.0 Deg C |
| Calibrator | Environics 6100 | Serial Number | 3474 |
| Cal Gas Concentration | 5.15 ppm | Cal Gas Expiry Date | 4/4/2009 |
| Gas Cert Reference | ALM013295 | | |
| DACS make | Focus AP1000 | DACS serial No. | 1 |
| DACS voltage range | 0 - 10 volt | DACS channel # | 9 |
| | Before | | After |
| DACS Scale High | 100 | DACS slope | 100 |
| DACS Scale Low | 0 | DACS intercept | 0 |
| Calculated slope | N/A | Calculated slope | 1.008581 |
| Calculated intercept | N/A | Calculated intercept | -0.263147 |

| | | | | |
|---|---|---|---|---|
| Analyzer make | TEI Model 43i - APSCB | | Analyzer serial # | 701120010 |

| | before | | after | |
|---|---|---|---|---|
| Concentration range | 0 - 100 | ppb | 0 - 100 | ppb |
| Back Ground | 4.7 | ppb | 4.7 | ppb |
| Coefficient | 1.056 | | 1.056 | |
| Lamp Voltage | 784 | V | 783 | V |
| Chamber Temp | 45,0 | c | 45.0 | c |
| Perm Oven Temp | 45.01 | c | 45.01 | c |
| Pressure | 665 | mm Hg | 651 | mm Hg |
| Sample Flow | .349 | ccm | .339 | ccm |
| Lamp Intensity | 93.0 | % | 92.0 | % |

## *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) |
|---|---|---|---|---|
| 4988 | 0.00 | 0.0 | 0.2 | N/A |
| 4988 | 79.75 | 81.0 | 80.6 | 1.0052 |
| 4988 | 39.83 | 40.8 | 40.7 | 1.0028 |
| 4988 | 9.93 | 10.2 | 10.5 | 0.9782 |
| 5988 | 9.92 | 83.7 | | SOX test |
| 6000 | 10.00 | 8.6 | | As found zero |
| | | | | As found span |
| | | | Average Correction Factor | 0.9954 |

Calculated value of As Found Response: NA ppm Percent Change of As Found: NA

| | before calibration | | after calibration | |
|---|---|---|---|---|
| Auto zero | N/A | ppm | 0.0 | ppm |
| Auto span | N/A | ppm | 70.6 | ppm |

Notes:

Calibration Performed By: Courtney Thompson

# Calibration Summary

Parameter **H2S**

Air Monitoring Network **PASZA**

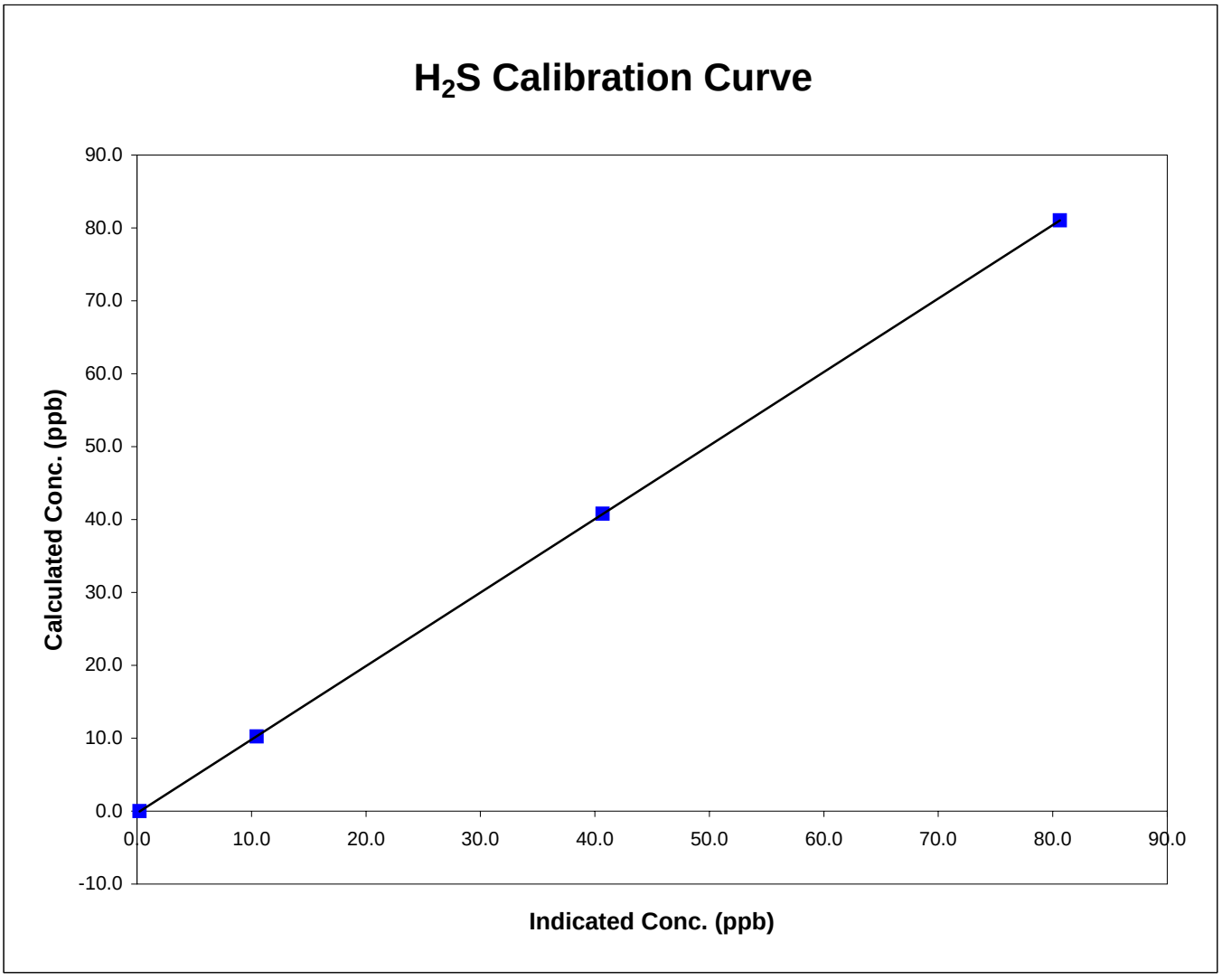
FOCUS AIR QUALITY MONITORING

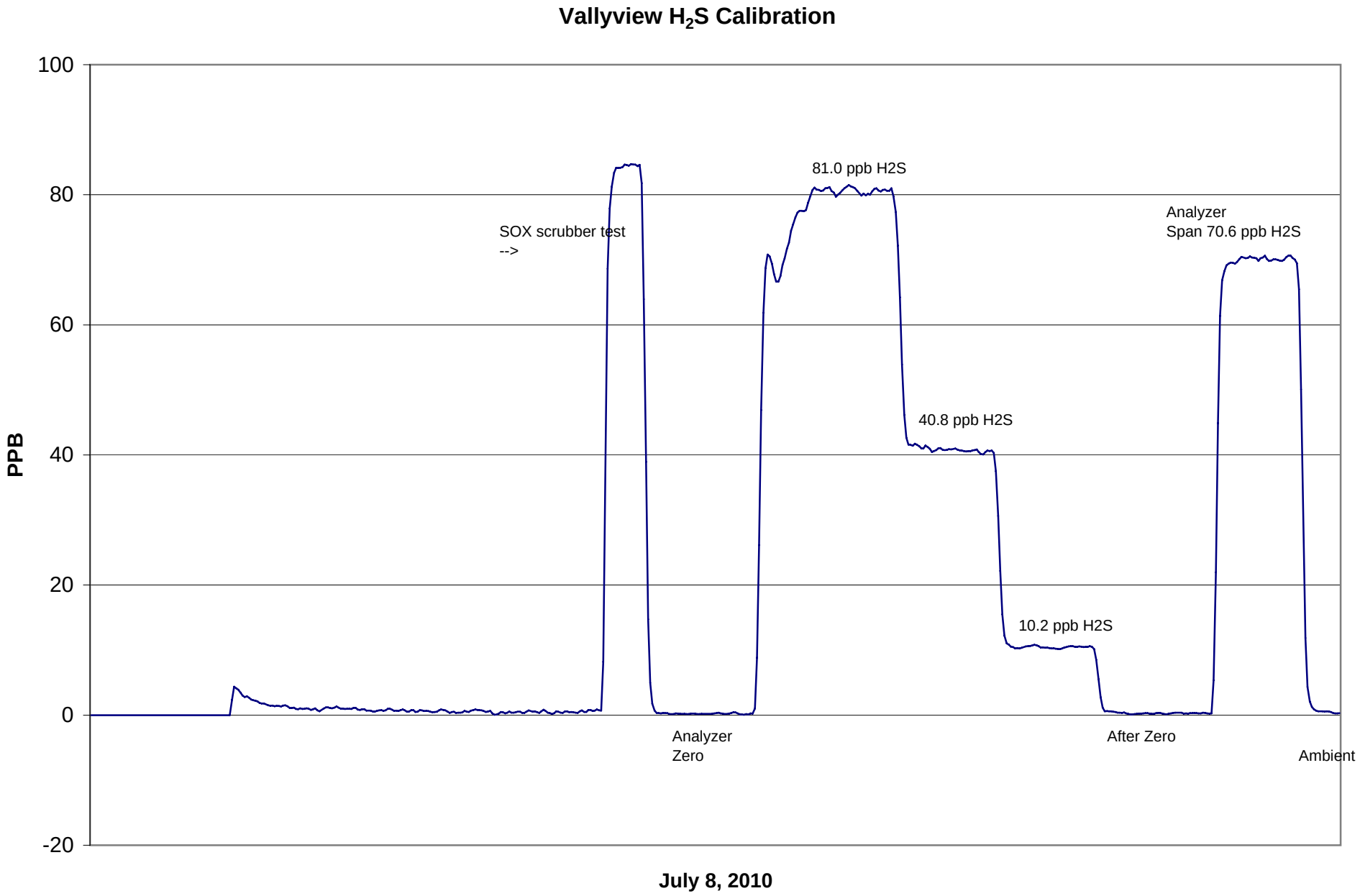
***Station Information***

| | | | |
|---|---|---|---|
| Calibration Date | July 8, 2010 | Previous Calibration | May 24, 2010 |
| Station Number | 5 | Station Location | Valleyview |
| Start Time (MST) | 9:30 | End Time (MST) | 12:53 |
| Analyzer make/model | TEI Model 43i - APSCB | Analyzer serial # | 701120010 |

***Calibration Data***

| Calculated concentration (ppb) (Cc) | Indicated concentration (ppb) (Ic) | Correction factor (Cc/Ic) | Statistical Evaluation | |
|---|---|---|---|---|
| 0.0 | 0.2 | N/A | | |
| 81.0 | 80.6 | 1.0052 | Correlation Coefficient | 0.999999 |
| 40.8 | 40.7 | 1.0028 | | |
| 10.2 | 10.5 | 0.9782 | Slope | 1.008581 |
| | | | | |
| | | | Intercept | -0.263147 |
| | | | | |




Vallyview H2S Calibration
100
80
60
40
20
0
-20
PPB
SOX scrubber test
-->
81.0 ppb H2S
40.8 ppb H2S
10.2 ppb H2S
Analyzer
Span 70.6 ppb H2S
Analyzer
Zero
After Zero
Ambient
July 8, 2010