



Peace Airshed Zone Association

Ambient Air Monitoring Network Summary

**Continuous Ambient Air Quality Monitoring Program
Monthly Report
December 2015**

December 23rd, 2015

Alberta Environment
 11th Floor, Oxbridge Place
 9820-106 Street
 Edmonton Alberta T5K 2J6

RE: Peace Airshed Zone Association (PAZA) – December 2015 Ambient Air Report

Enclosed is the PAZA Ambient Monitoring Network Report for the month of **December 2015**.

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

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

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

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

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

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

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

Henry Pirker Station:

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

Evergreen Park Station:

- ◆ The measured ambient air quality was within the AAAQO for the Evergreen Park station.
- ◆ All analyzers and sensors at the Evergreen Park station had an operational uptime greater than 90% for the month of December with the exception of the Temperature/RH probe, which was vandalized and returned to service December 19th.

Smoky Heights Station:

- ◆ The measured ambient air quality was within the AAAQO for the Smoky Heights station with the exception of the PM_{2.5} analyzer, which recorded two (2) 1-hour exceedences of the guideline of 80 µg/m³;
 - December 13 1100h 86.3 µg/m³ Alberta Environment Reference # 306584
 - December 28 0400h 100.8 µg/m³ Alberta Environment Reference # 306916
- ◆ All analyzers and sensors at the Smoky Heights station had an operational uptime greater than 90% for the month of December.

Beaverlodge Station:

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

Valleyview Station:

- ◆ The measured ambient air quality was within the AAAQO for the Valleyview station with the exception of the H₂S analyzer, which recorded three (3) 1-hour exceedences and one (1) 24-hour exceedance of the objectives of 10/3 ppb;
 - December 3 1400h 13.7 ppb Alberta Environment Reference # 306314
 - December 3 1500h 24.5 ppb Alberta Environment Reference # 306314
 - December 3 1600h 14.5 ppb Alberta Environment Reference # 306314
 - December 3 24h 4.0 ppb Alberta Environment Reference # 306314
- ◆ All analyzers and sensors at the Valleyview station had an operational uptime greater than 90% for the month of December.

Falher Station:

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

Passive Monitoring - 46 Stations throughout the PAZA zone:

There were five duplicate sites sampled in the month of December: Saddle Hills, Bear Lake, Clairmont Lake and Girouxville 3. 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 SO₂ passives ranged from 0.1 ppb to 0.6 ppb, with a mean of 0.3 ppb.
- Monthly average concentrations for NO₂ passives ranged from 0.7 ppb to 15.3 ppb, with a mean of 2.8 ppb.
- Monthly average concentrations for O₃ passives ranged from 9.1 ppb to 30.6 ppb, with a mean of 18.9 ppb.
- Monthly average concentrations for H₂S passives were 0.3 ppb at all locations.

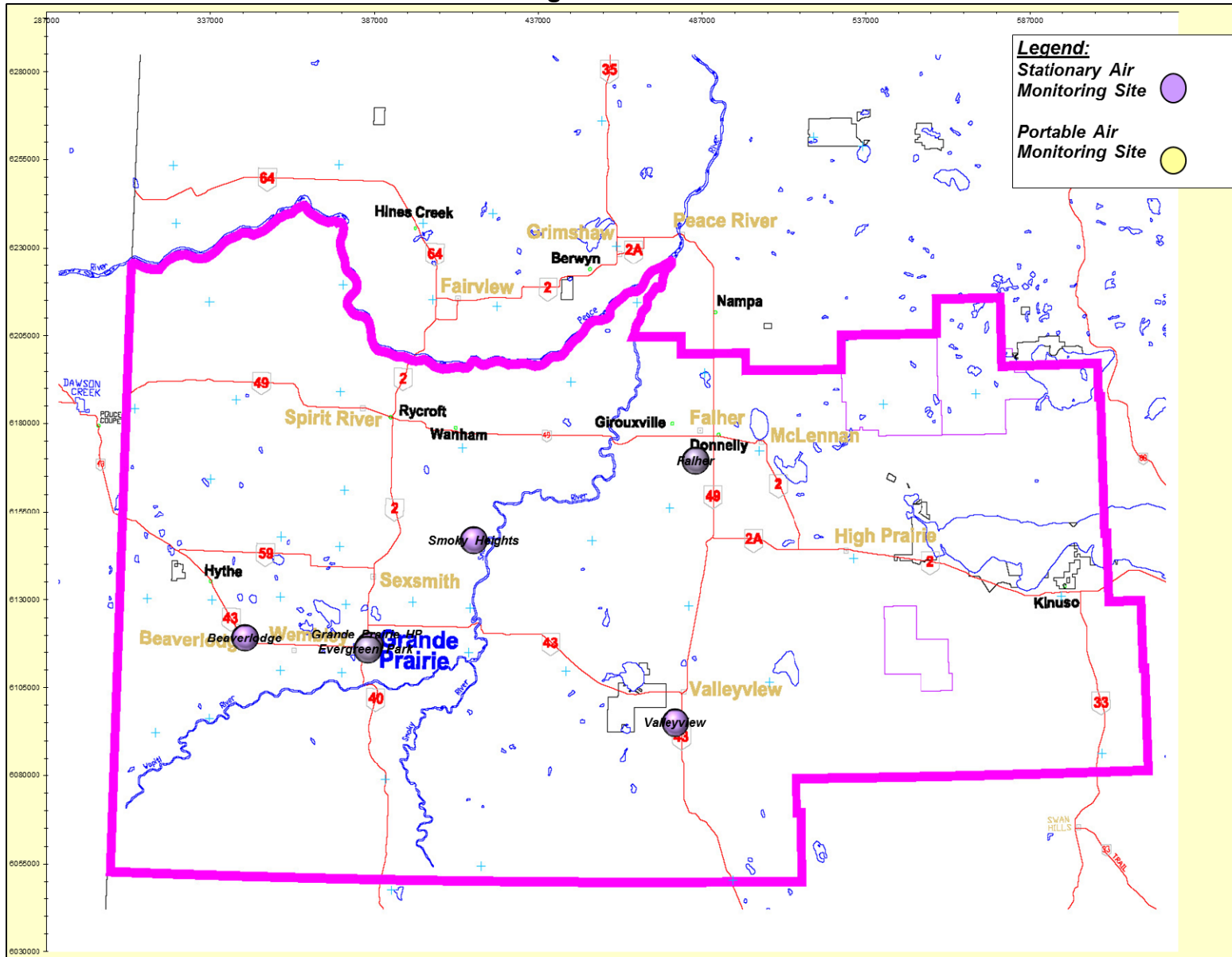
If you have any questions or concerns, please contact Patrick Andersen at 403.505.1041 or the PAZA office at 780.833.4343.

On Behalf of the
Peace Airshed Zone Association



Patrick Andersen, B.Sc.
Program Manager

Location of PAZA Continuous Monitoring Stations



PAZA Monthly Continuous Data Summary

Dec-2015		Peace Airshed Zone Association					Maximum Recorded Values				Operational Time (%)
							1-hr		24-hr / 8-hr		
Pollutant (units)	Objectives		Station	Monthly Average	Exceedence		Conc	Day	Conc	Day	
	1-hr	24-hr			1-hr	24-hr					
SO ₂ (ppb)	172	48	Henry Pirker	0.1	0	0	5.4	Dec-14 15:00	0.6	Dec-14	100%
SO ₂ (ppb)	172	48	Evergreen Park	0.2	0	0	1.4	Dec-08 21:00	0.5	Dec-21	100%
SO ₂ (ppb)	172	48	Smoky Heights	0.5	0	0	8.2	Dec-16 11:00	1.9	Dec-16	99%
SO ₂ (ppb)	172	48	Beaverlodge	0.3	0	0	1.6	Dec-08 11:00	0.8	Dec-20	100%
SO ₂ (ppb)	172	48	Valleyview	0.3	0	0	8.1	Dec-16 12:00	2.1	Dec-16	100%
SO ₂ (ppb)	172	48	Falher	0.2	0	0	1.5	Dec-13 01:00	0.4	Dec-01	100%
NO (ppb)			Henry Pirker	16.0	0	0	128.6	Dec-04 10:00	53.9	Dec-01	100%
NO ₂ (ppb)	159	106	Henry Pirker	18.2	0	0	44.2	Dec-01 17:00	34.3	Dec-01	100%
NO _x (ppb)			Henry Pirker	34.4	0	0	160.5	Dec-04 10:00	88.5	Dec-01	100%
NO (ppb)			Beaverlodge	2.4	0	0	30.0	Dec-19 20:00	7.5	Dec-20	100%
NO ₂ (ppb)	159	106	Beaverlodge	8.5	0	0	26.8	Dec-21 17:00	17.2	Dec-27	100%
NO _x (ppb)			Beaverlodge	10.8	0	0	56.0	Dec-19 20:00	22.5	Dec-20	100%
O ₃ (ppb)	82		Henry Pirker	6.8	0	-	37.6	Dec-31 22:00	19.7	Dec-18	100%
O ₃ (ppb) - 8-hr			Henry Pirker		0				32.3	Dec-02	
O ₃ (ppb)	82		Beaverlodge	17.6	0	-	42.1	Jan-01 00:00	38.8	Dec-31	100%
O ₃ (ppb) - 8-hr			Beaverlodge		0				40.9	Dec-31	
CO (ppm)	13		Henry Pirker	0.35	0	-	1.0	Dec-01 19:00	0.6	Dec-01	100%
CO (ppm) - 8-hr		5	Henry Pirker		0				0.9	Dec-01	

PAZA Monthly Continuous Data Summary – continued

Dec-2015		Peace Airshed Zone Association					Maximum Recorded Values				
							1-hr		24-hr / 8-hr		
THC (ppm)			Henry Pirker	2.3	-	-	3.6	Dec-06 21:00	2.8	Dec-29	96%
CH ₄ (ppm)			Henry Pirker	2.3	-	-	3.6	Dec-06 21:00	2.9	Dec-29	96%
NMHC (ppm)			Henry Pirker	0.0	-	-	0.0	Dec-23 09:00	0.0	Dec-23	96%
TRS (ppb)			Henry Pirker	0.4	-	-	2.6	Dec-10 05:00	0.9	Dec-10	100%
TRS (ppb)			Evergreen Park	0.5	-	-	2.2	Dec-27 00:00	1.1	Dec-29	100%
TRS (ppb)			Smoky Heights	0.1	-	-	1.2	Dec-30 00:00	0.4	Dec-21	96%
H ₂ S (ppb)	10	3	Valleyview	0.4	3	1	24.3	Dec-03 15:00	3.2	Dec-03	100%
H ₂ S (ppb)	10	3	Falher	0.2	0	0	0.7	Dec-09 08:00	0.4	Dec-25	100%
PM _{2.5} (µg/m ³)	80	30	Henry Pirker	11.7	0	0	57.1	Dec-06 20:00	21.5	Dec-01	100%
PM _{2.5} (µg/m ³)	80	30	Evergreen Park	6.7	0	0	39.4	Dec-04 18:00	13.9	Dec-12	100%
PM _{2.5} (µg/m ³)	80	30	Smoky Heights	9.3	2	0	100.8	Dec-28 04:00	25.3	Dec-11	99%
PM _{2.5} (µg/m ³)	80	30	Beaverlodge	8.2	0	0	33.7	Dec-23 06:00	19.0	Dec-01	100%
RH (%)			Henry Pirker	73.3	-	-	87.1	Dec-08 20:00	85.1	Dec-11	100%
RH (%)			Evergreen Park	82.4	-	-	99.8	Dec-08 21:00	95.1	Dec-11	100%
RH (%)			Beaverlodge	83.1	-	-	100.0	Dec-06 20:00	100.0	Dec-11	100%
RH (%)			Valleyview	77.4	-	-	93.8	Dec-09 00:00	90.8	Dec-09	100%
SR (W/m ²)			Henry Pirker	16.9	-	-	200.2	Dec-04 13:00	35.0	Dec-14	100%
Temp (°C)			Henry Pirker	-10.1	-	-	7.3	Dec-02 14:00	0.8	Dec-02	100%
Temp (°C)			Evergreen Park	-10.8	-	-	7.7	Dec-02 15:00	0.5	Dec-02	100%
Temp (°C)			Smoky Heights	-10.2	-	-	5.4	Dec-02 14:00	0.4	Dec-02	99%
Temp (°C)			Beaverlodge	-8.6	-	-	5.6	Dec-02 15:00	1.8	Dec-02	100%
Temp (°C)			Valleyview	-8.5	-	-	8.0	Dec-07 15:00	1.6	Dec-07	100%
Temp (°C)			Falher	-9.8	-	-	5.7	Dec-02 15:00	0.4	Dec-02	100%

PAZA Monthly Continuous Data Summary – continued

Dec-2015		Peace Airshed Zone Association					Maximum Recorded Values				
							1-hr		24-hr / 8-hr		
WSPD s (km/hr)			Henry Pirker	3.7	-	-	43.0	Dec-22 23:00	8.2	Dec-02	100%
WSPD s (km/hr)			Evergreen Park	4.5	-	-	49.0	Dec-02 13:00	14.9	Dec-02	100%
WSPD s (km/hr)			Smoky Heights	8.2	-	-	43.0	Dec-02 14:00	15.0	Dec-31	99%
WSPD s (km/hr)			Beaverlodge	5.9	-	-	52.0	Dec-02 12:00	14.2	Dec-02	100%
WSPD s (km/hr)			Valleyview	2.0	-	-	18.0	Dec-02 14:00	6.1	Dec-16	100%
WSPD s (km/hr)			Falher	10.1	-	-	41.0	Dec-02 13:00	19.4	Dec-02	97%
WSPD v (km/hr)			Henry Pirker	0.8	-	-	37.0	Dec-22 23:00	6.6	Dec-02	100%
WSPD v (km/hr)			Evergreen Park	1.8	-	-	49.0	Dec-02 13:00	13.3	Dec-02	100%
WSPD v (km/hr)			Smoky Heights	3.5	-	-	43.0	Dec-02 14:00	14.7	Dec-31	99%
WSPD v (km/hr)			Beaverlodge	1.0	-	-	52.0	Dec-02 12:00	11.7	Dec-18	100%
WSPD v (km/hr)			Valleyview	0.8	-	-	18.0	Dec-02 14:00	5.7	Dec-16	100%
WSPD v (km/hr)			Falher	3.5	-	-	41.0	Dec-02 13:00	16.9	Dec-02	97%
WDIR			Henry Pirker	WSW	-	-	-	-	-	-	100%
WDIR			Evergreen Park	WSW	-	-	-	-	-	-	100%
WDIR			Smoky Heights	SW	-	-	-	-	-	-	99%
WDIR			Beaverlodge	NNW	-	-	-	-	-	-	100%
WDIR			Valleyview	SW	-	-	-	-	-	-	100%
WDIR			Falher	ENE	-	-	-	-	-	-	97%

Continuous Network Equipment Summary

PAZA – Henry Pirker Station

General Station Issues

Routine monthly calibrations were performed on December 10th (SO₂, NO_x, O₃), 14th (CO, THC, TRS). Data acquisition system rebooted during THC service on December 11th.

Parameter	Make	Model	Notes
SO ₂	TEI	43i	No operational issues observed.
NO _x /NO/NO ₂	TEI	42i	No operational issues observed.
O ₃	TEI	49i	No operational issues observed.
CO	TEI	48C	Span cylinder swap December 21 st .
THC/CH ₄ /NMHC	TEI	55i	Spans dropped in early part of month, hydrogen cylinder change December 9 th . Sample pump failure December 11 th , diagnosed and replaced December 12 th .
TRS	TEI	45C/43C	No operational issues observed.
PM _{2.5}	Sharp	5030	No operational issues observed.
RH	Met One	083D	No operational issues observed.
ET	Met One	083D	No operational issues observed.
SR	Met One	096-1	No operational issues observed.
WS / WD	Met One	010C/020C	Wind system reported 2 hours of invalid data.

PAZA – Evergreen Park Station

General Station Issues

Routine monthly calibration performed on December 4th (SO₂, TRS).

Parameter	Make	Model	Notes
SO ₂	TEI	43i	No operational issues observed.
TRS	TEI	43C	No operational issues observed.
PM _{2.5}	Sharp	5030	No operational issues observed.
ET	Met One/Gill	083D	No operational issues observed.
RH	Met One/Gill		No operational issues observed.
WS / WD	Met One/ Gill		Instrument returned 2 hours of invalid data.

PAZA – Smoky Heights Station

General Station Issues

Routine monthly calibration performed on December 9th (SO₂, TRS). Power outage caused loss of 7 hours of data.

Parameter	Make	Model	Notes
SO ₂	TEI	43C	No operational issues observed.
TRS	TEI	43C	Replaced processor and lamp supply boards December 8 th .
PM _{2.5}	Sharp	5030	Two 1-hour exceedences recorded. Reference #306584, 306916
ET	Met One	083D	No operational issues observed.
WS / WD	Met One	010C/020C	No operational issues observed.

PAZA – Beaverlodge Station

General Station Issues

Routine monthly calibrations performed on December 16th (SO₂, O₃, NO_x).

Parameter	Make	Model	Notes
SO ₂	TEI	43CTL	No operational issues observed.
NO _x /NO/NO ₂	TEI	42C	No operational issues observed.
O ₃	TEI	49C	No operational issues observed.
PM _{2.5}	Sharp	5030	No operational issues observed.
ET	n/a	n/a	No operational issues observed.
RH	n/a	n/a	No operational issues observed.
WS / WD	Blue Sky	857	No operational issues observed.

PAZA – Valleyview Station

General Station Issues

Routine monthly calibrations were performed on December 15th (SO₂ & H₂S).

Parameter	Make	Model	Notes
SO ₂	TEI	43i	No operational issues observed.
H ₂ S	TEI	43A	Three 1-hour and one 24-hour exceedences were recorded Reference # 306314
ET	Gill	Met Pak 3	No operational issues observed.
RH	Gill	Met Pak 3	No operational issues observed.
WS / WD	Gill	Met Pak 3	No operational issues observed.

PAZA – Falher Station

General Station Issues

Routine monthly calibrations were performed on December 22nd (SO₂ & H₂S).

Parameter	Make	Model	Notes
SO ₂	TEI	43i	Decreasing spans required perm tube replacement December 29 th .
H ₂ S	Thermo	450i	No operational issues observed.
ET	Gill	RM Young 5103	No operational issues observed.
WS / WD	Gill	RM Young 5103	Wind head frozen December 28 th -29 th .

PAZA – Portable-Clairmont

General Station Issues

Routine monthly calibrations were performed on December 24th (SO₂, NO_x, O₃) and 25th (THC, TRS). Station was relocated on December 5th.

Parameter	Make	Model	Notes
SO ₂	TEI	43i	Manifold cleaning during December 25 th calibration period.
NO _x	TEI	42i	Manifold cleaning during December 25 th calibration period.
O ₃	TEI	49C	Manifold cleaning during December 25 th calibration period.
TRS	TEI	39C	No operational issues observed.
THC	TEI	51C	No operational issues observed.
PM _{2.5}	Sharp	5030	Manifold cleaning during December 25 th calibration period.
ET	Gill	Met Pak 3	No operational issues observed.
WS / WD	Gill	Met Pak 3	No operational issues observed.

PAZA

Henry Pirker Station

Monthly Summary Tables, Graphs and
Roses

Hourly Averages

Sulphur Dioxide (SO₂) - ppb

Henry Pirker - December 2015

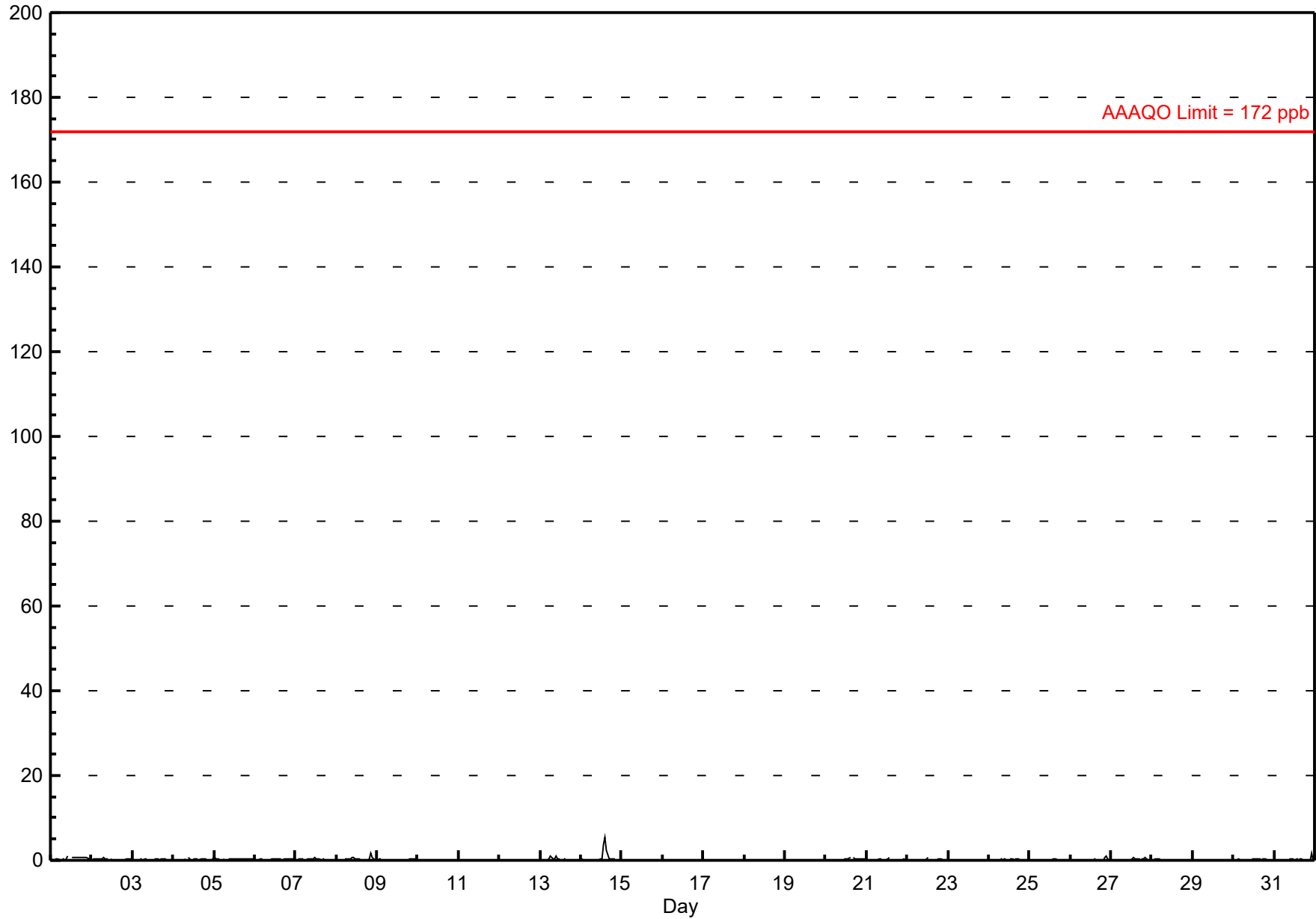
Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 5.4 ppb on Dec 14 15:00	Maximum Daily Average: 0.6 ppb on Dec 14		Hours of Data:	707
Minimum Value: 0 ppb on Dec 2 14:00	Minimum Daily Average: 0.0 ppb on Dec 18		Hours of Missing Data:	37
Maximum Diurnal Average: 0.3 ppb at hour 15	Minimum Diurnal Average: 0.1 ppb at hour 6		Hours of Calibration:	36
Monthly Average: 0.14 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.2 P ₉₀ = 0.4 P ₉₉ = 1.0		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-Dec	0	0	0	0	0	0	0	0	0	0	1	A	1	1	1	1	1	1	1	1	1	1	0	0	0.4	1.0
2-Dec	0	0	0	0	0	0	0	1	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
3-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
4-Dec	0	0	0	0	0	0	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6
5-Dec	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.9
6-Dec	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	0.5
7-Dec	0	0	0	0	0	A	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
8-Dec	0	0	0	0	A	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	1	0	0.3	1.6
9-Dec	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	0.4
10-Dec	0	0	A	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
11-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	D	0	0	0	0	0.0	0.1
12-Dec	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
13-Dec	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0.2	1.0
14-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5	2	0	0	0	0	0	A	0	0	0.6	5.4
15-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.0	0.1
16-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.0	0.1
17-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.0	0.1
18-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.0	0.0
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.0	0.1
20-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	1	0	0	0	0	0	0	0	0.2	0.8
21-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	0	0	0	0	0	0	0	0	0	0.1	0.6
22-Dec	0	0	0	0	0	0	0	0	0	0	0	0	1	A	0	0	0	0	0	0	0	0	0	0	0.1	0.7
23-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
24-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
25-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3
26-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0.1	1.1
27-Dec	0	0	0	0	0	0	0	0	A	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0.2	0.6
28-Dec	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
29-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
30-Dec	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	0.5
31-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0.2	1.6
	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	Diurnal Average
	0.9	0.3	0.4	0.3	0.3	0.3	0.9	0.5	0.5	1.0	1.0	0.5	0.7	3.8	5.4	2.4	0.8	0.5	0.7	0.7	1.6	1.1	1.6	0.3	Diurnal Maximum	

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

Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Henry Pirker - December 2015



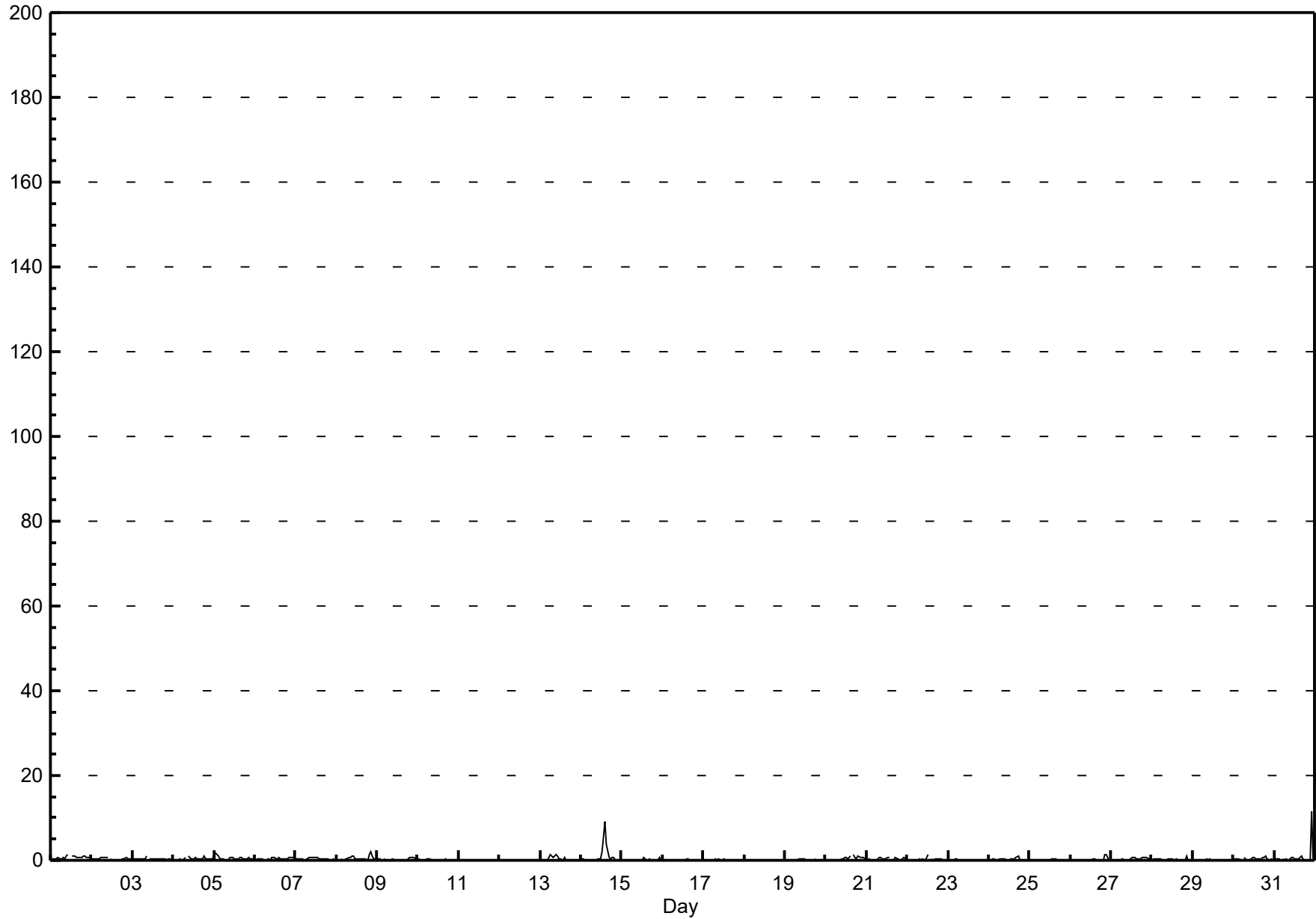
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Henry Pirker - December 2015

Maximum Value: 11.6 ppb on Dec 31 23:00		Maximum Daily Average: 1.1 ppb on Dec 14		Hours in Service: 744																						
Minimum Value: 0 ppb on Dec 9 17:00		Minimum Daily Average: 0.0 ppb on Dec 23		Hours of Data: 707																						
Maximum Diurnal Average: 0.6 ppb at hour 23		Minimum Diurnal Average: 0.1 ppb at hour 4		Hours of Missing Data: 37																						
Monthly Average: 0.30 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.2 Q ₃ = 0.4 P ₉₀ = 0.7 P ₉₉ = 1.5		Hours of Calibration: 36																						
				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-Dec	0	0	0	0	1	0	0	1	0	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0	0.7	1.4
2-Dec	0	0	0	0	0	1	1	1	1	1	A	0	0	0	0	0	0	0	0	0	0	1	0	0	0.3	0.8
3-Dec	0	0	0	0	0	0	0	0	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.9
4-Dec	0	0	0	0	0	0	0	1	A	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0.4	1.1
5-Dec	2	2	1	0	0	0	0	A	0	1	1	1	0	0	0	1	1	0	0	0	1	0	0	0	0.5	1.7
6-Dec	0	0	0	0	0	0	A	0	0	0	1	1	0	0	1	0	0	0	0	0	0	1	1	1	0.4	0.7
7-Dec	0	0	0	0	0	A	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0.4	0.8
8-Dec	0	0	0	0	A	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	2	2	1	0	0.5	2.0
9-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0.2	0.5
10-Dec	0	0	A	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
11-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	D	0	0	0	0	0.1	0.2
12-Dec	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	0.2
13-Dec	0	0	0	0	0	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	A	0	0.3	1.4
14-Dec	0	0	0	0	0	0	0	0	0	0	0	0	2	6	9	4	1	0	1	1	0	A	0	0	1.1	9.0
15-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	A	0	1	0	0.1	0.6
16-Dec	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	0.4
17-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.1	0.3
18-Dec	0	0	0	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
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.1	0.4
20-Dec	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	A	1	1	0	1	1	1	1	0	0.4	1.4
21-Dec	0	0	0	0	0	0	1	1	0	0	0	0	1	1	A	0	0	1	0	0	0	0	0	1	0.3	0.8
22-Dec	0	0	0	0	0	0	0	0	0	0	0	1	1	A	0	0	0	0	0	0	0	0	0	0	0.3	1.3
23-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2
24-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	1	1	0	0	0	0	0	0	0.3	1.0
25-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
26-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0.2	1.4
27-Dec	0	0	0	0	0	0	0	0	A	0	0	0	1	1	1	0	0	0	1	1	1	1	0	0	0.3	0.8
28-Dec	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.2	1.1
29-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
30-Dec	0	0	0	0	0	A	1	0	0	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	0.4	0.8
31-Dec	0	0	0	0	A	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	12	0	0.8	11.6
		0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.6	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.6	0.2	Diurnal Average
		1.7	1.6	0.9	0.4	0.7	0.5	1.4	0.8	0.9	1.3	1.4	0.7	2.0	5.5	9.0	3.8	1.4	1.0	1.0	1.5	2.0	1.3	11.6	0.5	Diurnal Maximum
C - Calibration		D - DAS Failure						A - Automated Daily Zero Span																		

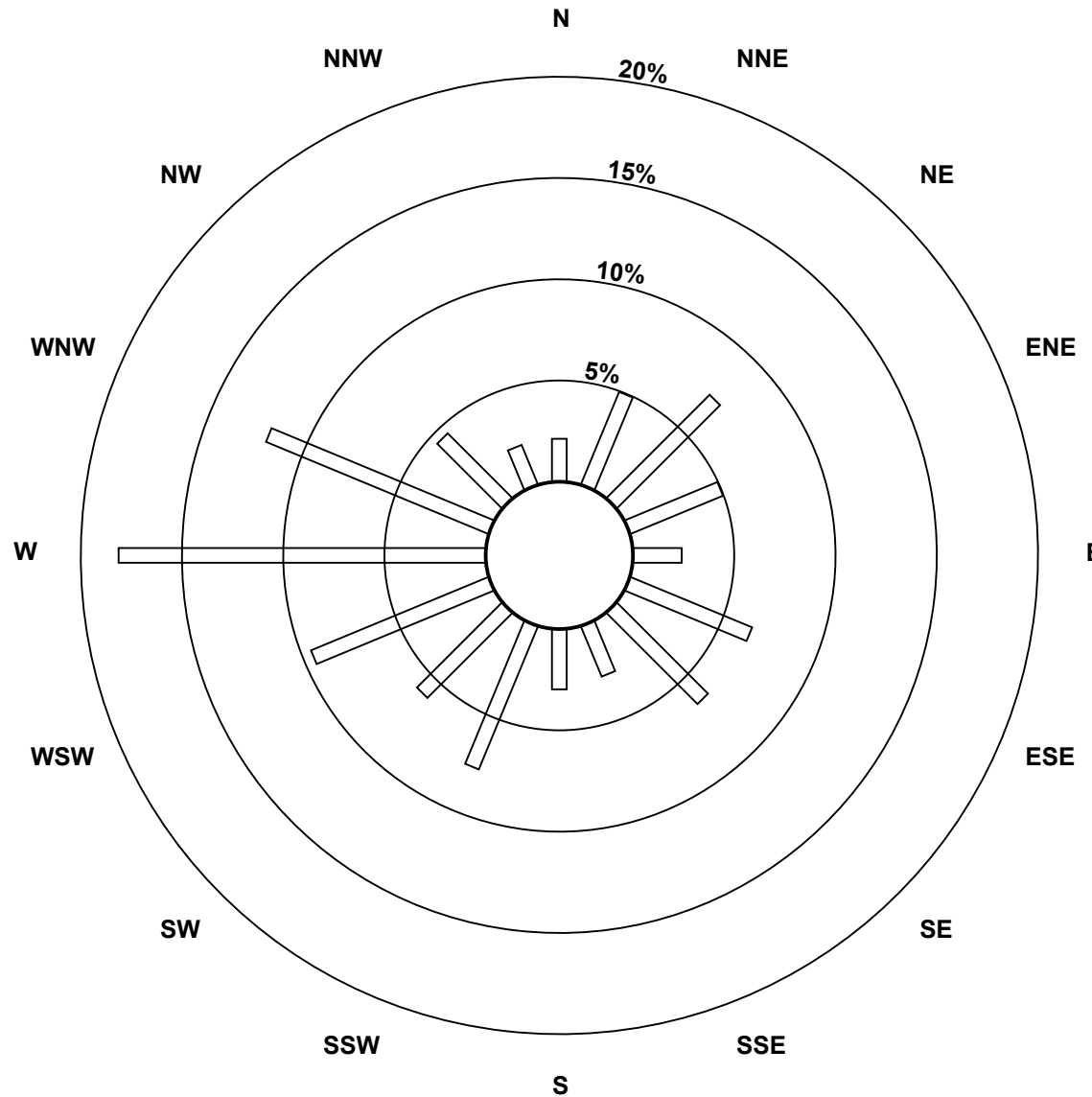
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Henry Pirker - December 2015

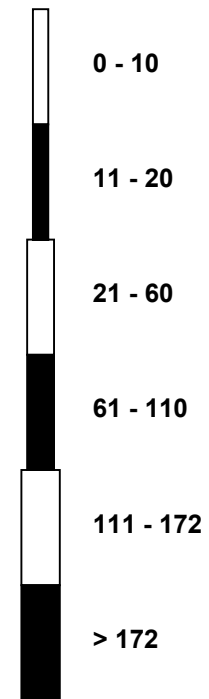


Pollutant Rose

Sulphur Dioxide (SO₂) - ppb
Henry Pirker - December 2015

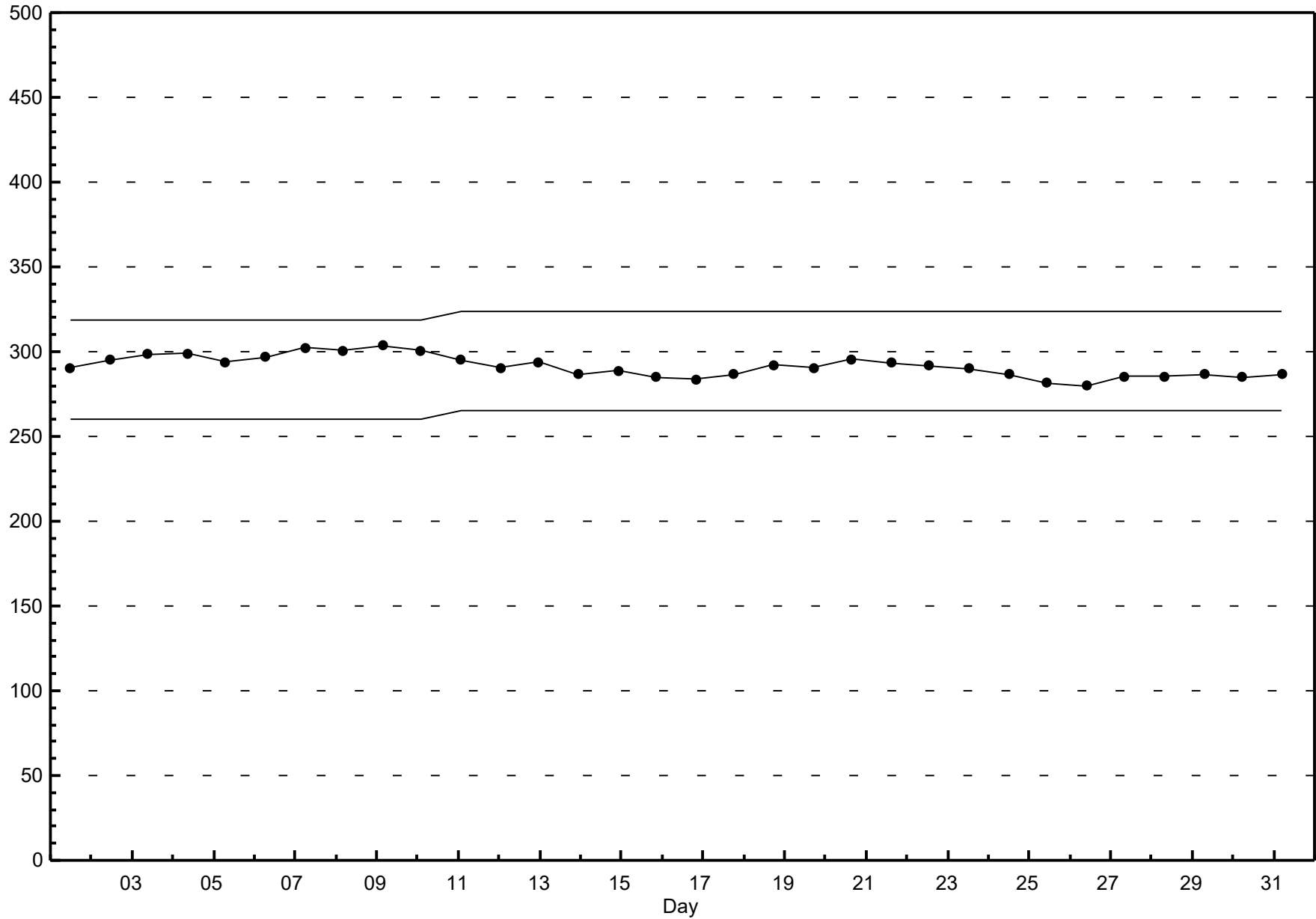


Pollutant Classes (ppb)



Span Responses

Sulphur Dioxide (SO₂)
Henry Pirker - December 2015

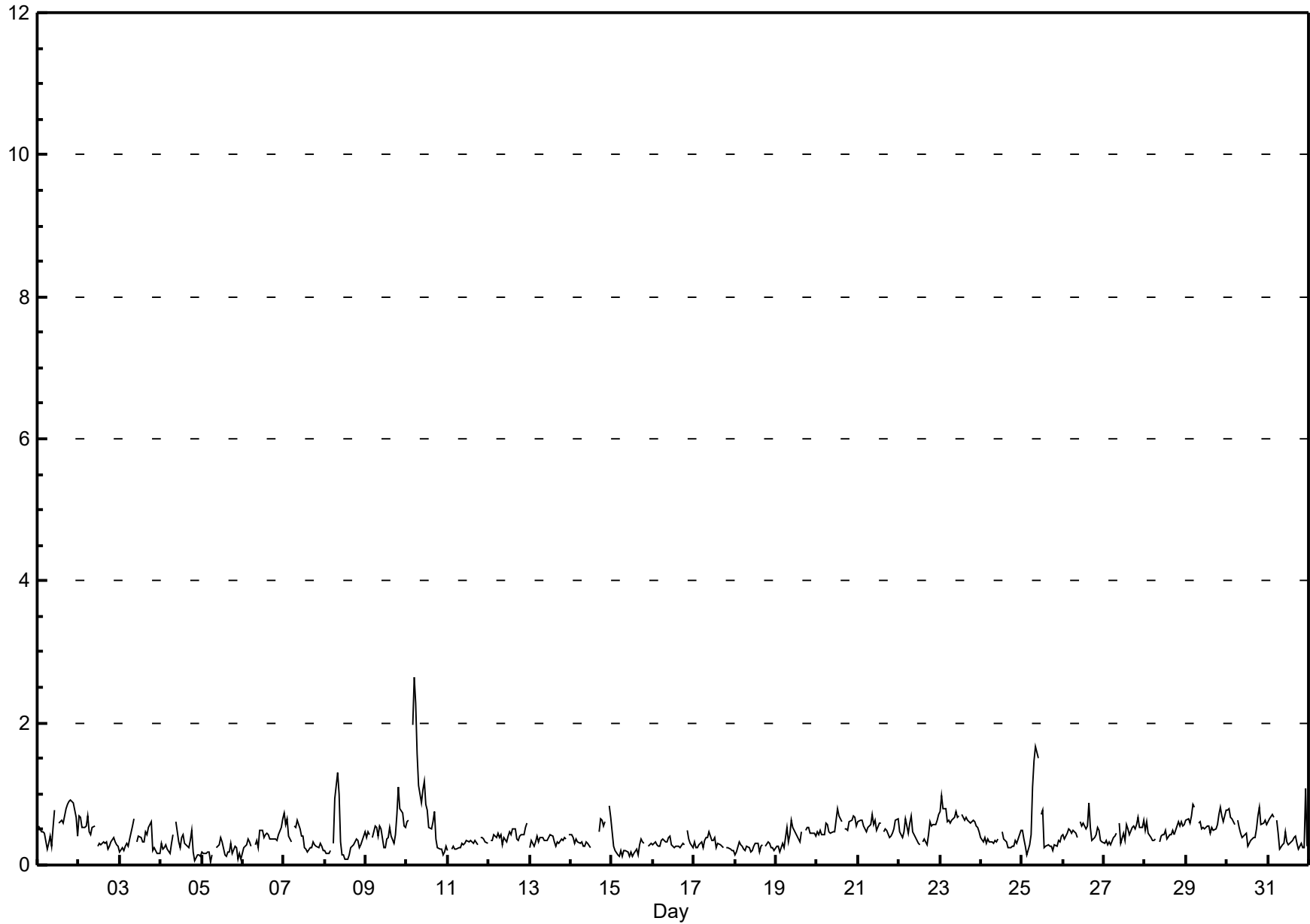


Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Henry Pirker - December 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 2.6 ppb on Dec 10 05:00 Maximum Daily Average: 0.9 ppb on Dec 10		Hours in Service: 744 Hours of Data: 707 Hours of Missing Data: 37 Hours of Calibration: 36 Percent Operational Time: 99.9																																														
Minimum Value: 0 ppb on Dec 5 06:00 Maximum Diurnal Average: 0.5 ppb at hour 8 Monthly Average: 0.43 ppb		Minimum Daily Average: 0.2 ppb on Dec 5 Minimum Diurnal Average: 0.4 ppb at hour 15 Percentiles: P ₁ = 0.1 P ₁₀ = 0.2 Q ₁ = 0.3 Median = 0.4 Q ₃ = 0.5 P ₉₀ = 0.7 P ₉₉ = 1.4																																														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	1	1	0	0	0	0	0	0	0	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0	0.6	0.9																						
2-Dec	1	1	1	1	1	1	0	0	1	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.7																						
3-Dec	0	0	0	0	0	0	0	1	1	A	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0.3	0.6																						
4-Dec	0	0	0	0	0	0	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6																						
5-Dec	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																						
6-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	0.6																						
7-Dec	1	1	1	0	0	A	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.7																						
8-Dec	0	0	0	0	A	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.3																						
9-Dec	0	0	0	A	0	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	0.5	1.1																						
10-Dec	1	1	A	2	3	2	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0.9	2.6																						
11-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	D	0	0	0	0	0	0.3	0.4																						
12-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	A	0.4	0.6																						
13-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.4	0.4																						
14-Dec	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	1	1	1	1	1	A	1	0.4	0.8																						
15-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.2	0.5																						
16-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.3	0.5																						
17-Dec	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																						
18-Dec	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	0.3																						
19-Dec	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	A	0	1	1	0	0	0	0	0.4	0.6																						
20-Dec	0	0	0	0	0	1	1	0	0	0	0	1	1	1	1	A	1	1	0	1	1	1	1	1	0.5	0.8																						
21-Dec	1	1	1	1	1	0	1	1	1	1	1	0	1	1	A	0	1	0	0	0	0	0	1	1	0.5	0.7																						
22-Dec	0	0	0	0	1	0	1	1	0	0	0	0	0	A	0	0	0	0	1	1	1	1	1	1	0.5	0.7																						
23-Dec	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0	0.7	1.0																						
24-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5																						
25-Dec	0	0	0	0	0	0	1	1	2	2	A	1	1	0	0	0	0	0	0	0	0	0	0	0	0.5	1.7																						
26-Dec	0	0	0	1	0	0	0	0	0	A	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0.5	0.9																						
27-Dec	0	0	0	0	0	0	0	0	0	A	1	0	0	0	1	1	0	1	1	1	1	1	1	1	0.5	0.7																						
28-Dec	0	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0.5	0.6																						
29-Dec	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	0.6	0.9																						
30-Dec	1	1	1	1	1	A	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0.5	0.8																						
31-Dec	1	1	1	1	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.1																						
																								0.4	0.4	0.4	0.4	0.5	0.4	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	0.4	0.4	0.4	Diurnal Average
																								0.8	1.0	0.8	2.0	2.6	2.3	1.6	1.5	1.7	1.5	1.2	0.9	0.8	0.7	0.6	0.9	0.8	0.8	0.9	1.1	0.9	0.9	1.1	0.8	Diurnal Maximum
C - Calibration D - DAS Failure A - Automated Daily Zero Span Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																																																

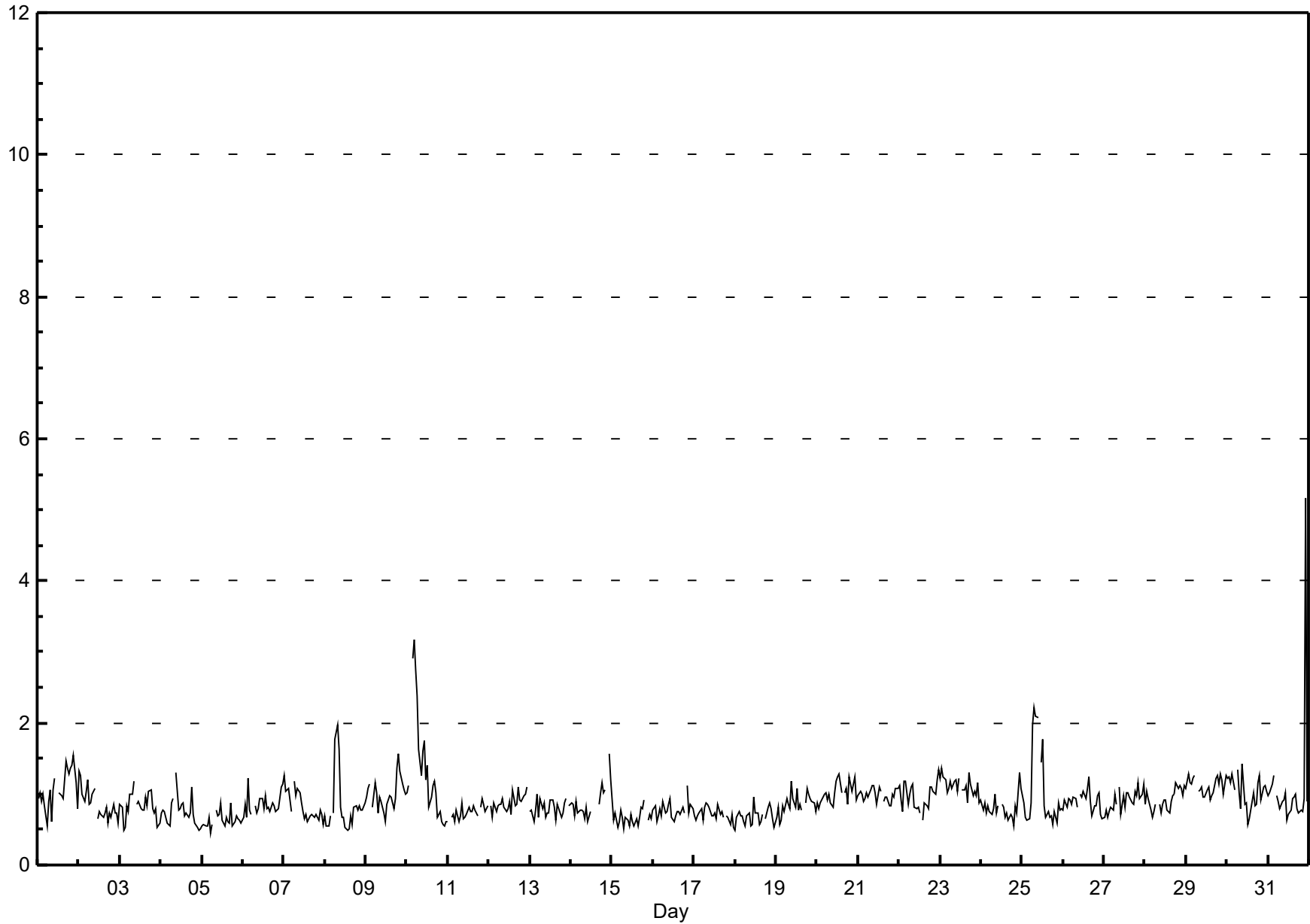


Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

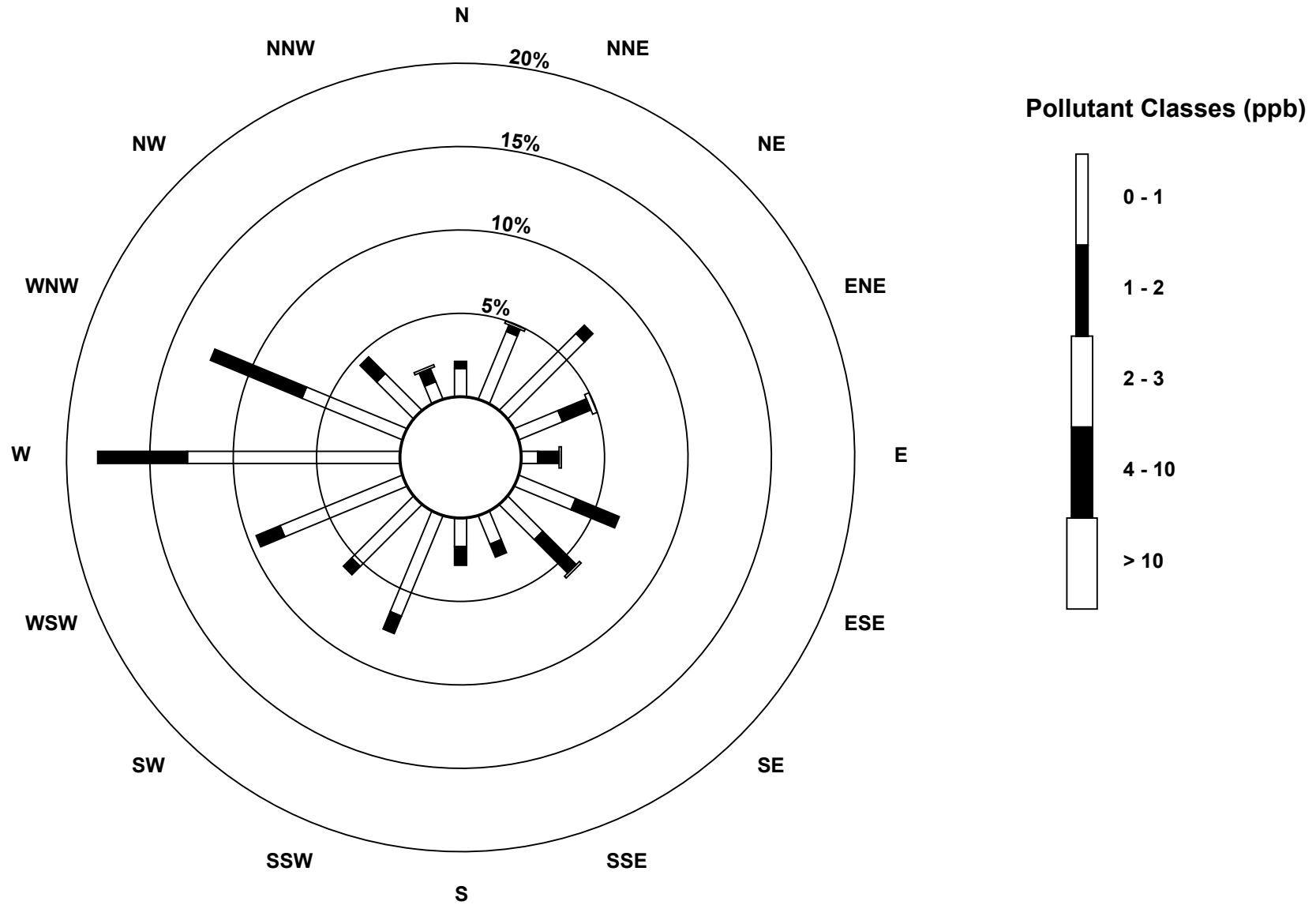
Henry Pirker - December 2015

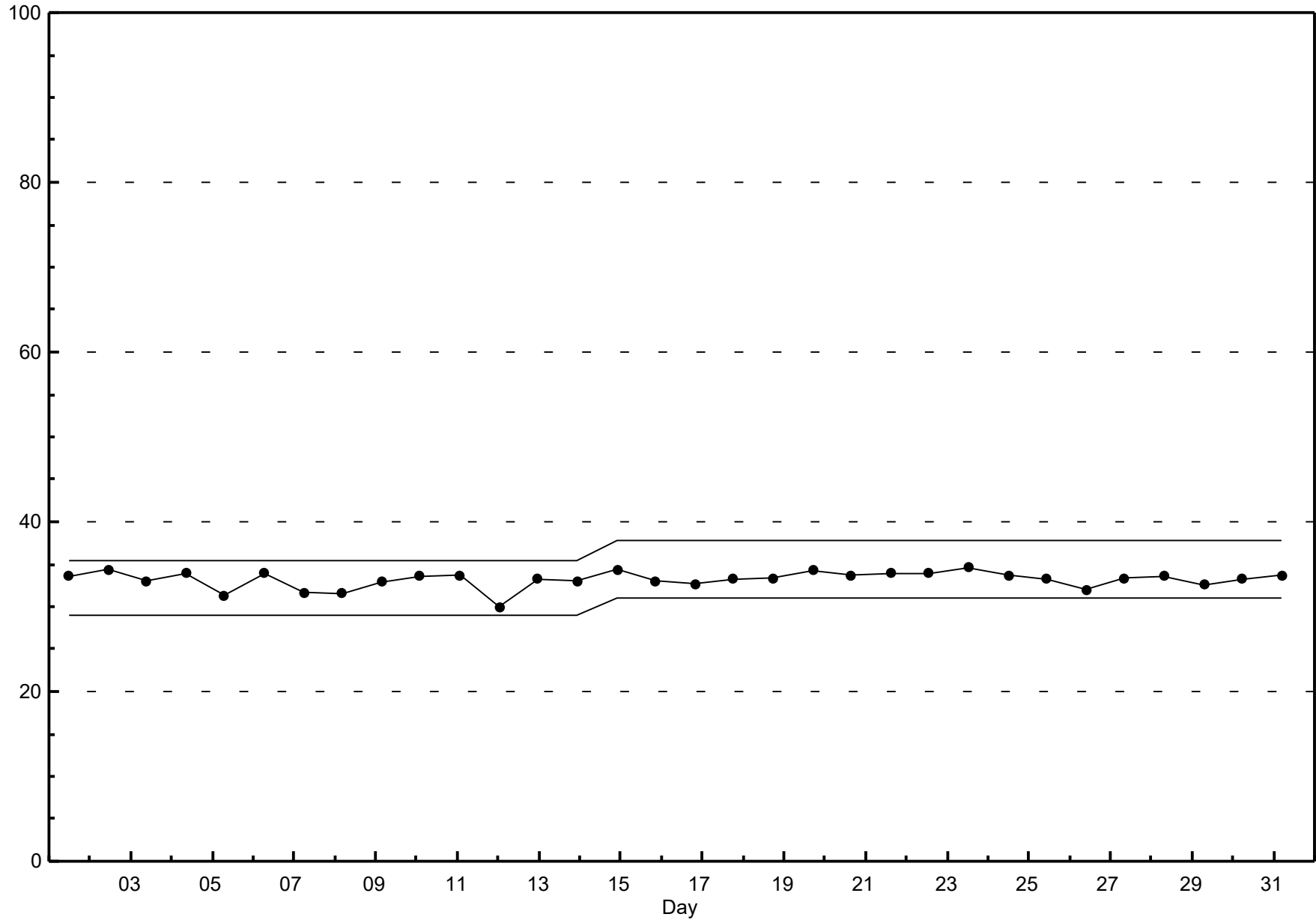
Maximum Value: 5.2 ppb on Dec 31 23:00		Maximum Daily Average: 1.3 ppb on Dec 10		Hours in Service:	744																					
Minimum Value: 0 ppb on Dec 5 06:00		Minimum Daily Average: 0.6 ppb on Dec 5		Hours of Data:	707																					
Maximum Diurnal Average: 1.1 ppb at hour 23		Minimum Diurnal Average: 0.8 ppb at hour 15		Hours of Missing Data:	37																					
Monthly Average: 0.90 ppb		Percentiles: P ₁ = 0.5 P ₁₀ = 0.6 Q ₁ = 0.7 Median = 0.8 Q ₃ = 1.0 P ₉₀ = 1.2 P ₉₉ = 2.0		Hours of Calibration:	36																					
				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-Dec	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	2	1	1	1.1	1.5
2-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.3
3-Dec	1	1	0	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.2
4-Dec	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0.7	1.3
5-Dec	1	1	1	1	1	0	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.9
6-Dec	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
7-Dec	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
8-Dec	1	1	1	1	A	1	2	2	2	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0.8	2.0
9-Dec	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1.0	1.6
10-Dec	1	1	A	3	3	3	2	2	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1.3	3.2
11-Dec	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	D	1	1	1	1	1	0.7	0.9
12-Dec	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
13-Dec	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
14-Dec	1	1	1	1	1	1	1	1	1	1	1	1	C	C	C	C	1	1	1	1	1	A	2	1	0.9	1.6
15-Dec	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
16-Dec	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	1.1
17-Dec	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
18-Dec	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0
19-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2
20-Dec	1	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	1.3
21-Dec	1	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	1.1
22-Dec	1	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	1.4
23-Dec	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1.1	1.4
24-Dec	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.3
25-Dec	1	1	1	1	1	1	2	2	2	2	A	1	2	1	1	1	1	1	1	1	1	1	1	1	1.1	2.2
26-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2
27-Dec	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2
28-Dec	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2
29-Dec	1	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	1.3
30-Dec	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
31-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1	1.1	5.2
		0.9	0.9	0.8	0.9	0.9	0.9	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	Diurnal Average
		1.3	1.4	1.2	2.9	3.2	2.7	2.4	2.2	2.1	2.1	1.7	1.5	1.8	1.3	1.1	1.2	1.5	1.4	1.4	1.6	1.4	1.5	5.2	1.4	Diurnal Maximum
C - Calibration		D - DAS Failure						A - Automated Daily Zero Span																		



Pollutant Rose

Total Reduced Sulphur (TRS) - ppb
Henry Pirker - December 2015





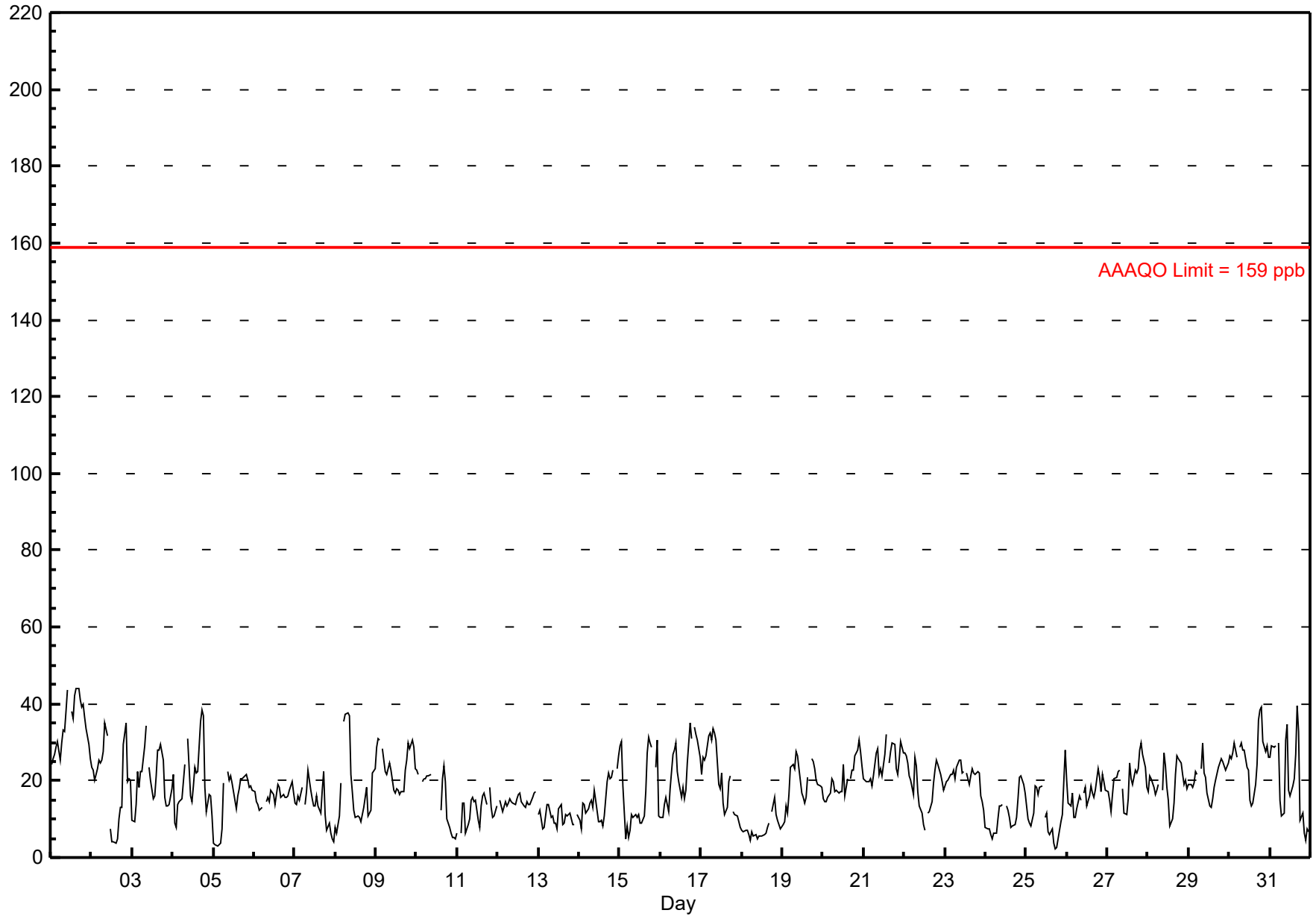
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb Henry Pirker - December 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0										Hours in Service: 744																																						
Maximum Value: 44.2 ppb on Dec 1 17:00										Maximum Daily Average: 34.3 ppb on Dec 1										Hours of Data: 706																												
Minimum Value: 2 ppb on Dec 25 18:00										Minimum Daily Average: 7.5 ppb on Dec 18										Hours of Missing Data: 38																												
Maximum Diurnal Average: 22.5 ppb at hour 18										Minimum Diurnal Average: 14.9 ppb at hour 15										Hours of Calibration: 37																												
Monthly Average: 18.23 ppb										Percentiles: P ₁ = 3.7 P ₁₀ = 7.9 Q ₁ = 12.3 Median = 17.5 Q ₃ = 23.1 P ₉₀ = 29.2 P ₉₉ = 39.1										Percent Operational Time: 99.9																												
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	24	26	27	29	30	26	30	33	33	38	43	A	38	36	42	44	44	41	39	40	36	33	29	26	34.3	44.2																						
2-Dec	23	23	20	23	25	25	25	28	35	32	A	7	4	4	5	10	13	13	29	35	20	20	20	19.3	35.1																							
3-Dec	10	9	14	23	18	22	22	29	34	A	23	20	15	16	21	28	28	30	26	16	13	14	14	18	20.2	34.5																						
4-Dec	22	9	8	14	15	15	20	24	A	31	16	15	19	24	22	22	36	38	37	18	12	16	16	11	19.9	38.4																						
5-Dec	4	3	3	3	4	7	19	A	22	20	21	19	17	13	16	18	20	21	21	22	20	18	19	18	15.2	22.4																						
6-Dec	17	15	14	12	13	13	A	15	16	14	18	16	14	16	19	18	16	16	16	16	16	17	20	17	15.8	19.8																						
7-Dec	14	14	16	15	18	A	14	17	23	17	15	14	13	16	14	11	17	23	11	7	9	6	5	4	13.7	22.7																						
8-Dec	8	6	11	20	A	35	37	38	37	22	17	12	10	11	10	9	11	13	18	11	11	12	22	23	17.6	37.6																						
9-Dec	29	31	31	A	28	22	22	23	24	23	18	17	18	18	16	17	17	23	25	30	28	31	29	23	23.5	30.8																						
10-Dec	23	22	A	20	20	21	21	21	21	C	C	C	C	C	12	20	24	20	10	8	6	5	5	5	15.8	24.0																						
11-Dec	6	A	6	14	14	6	9	10	15	15	15	15	10	8	13	16	17	14	D	18	13	10	11	13	12.2	18.2																						
12-Dec	A	15	14	12	15	14	14	15	15	14	14	15	16	17	14	13	13	14	14	14	16	17	17	A	14.6	17.0																						
13-Dec	11	12	7	8	11	14	14	11	11	9	9	8	13	14	9	9	11	11	12	10	9	9	A	11	10.4	13.8																						
14-Dec	10	7	14	14	11	13	14	15	13	18	15	9	9	10	8	11	20	22	21	21	23	A	23	27	15.1	26.6																						
15-Dec	29	30	19	5	8	5	7	11	11	11	10	11	9	9	11	17	27	31	30	29	A	24	31	11	16.8	31.5																						
16-Dec	10	11	14	16	14	12	18	27	28	30	22	20	16	18	15	17	25	35	31	A	34	32	31	26	21.8	35.1																						
17-Dec	22	26	25	26	32	33	31	34	33	31	19	18	22	14	11	13	20	21	A	12	11	11	9	8	20.9	33.6																						
18-Dec	7	7	7	7	6	5	7	6	6	5	6	6	6	6	6	8	9	A	12	16	11	10	9	8	7.5	15.6																						
19-Dec	9	9	14	12	17	23	24	23	27	26	23	17	15	14	16	21	A	26	25	23	20	19	19	18	19.1	27.4																						
20-Dec	15	15	15	16	17	20	20	17	17	17	17	17	17	24	16	20	A	21	23	23	27	28	31	28	20.2	30.5																						
21-Dec	21	20	20	20	20	18	21	27	28	22	23	21	27	32	A	25	28	30	29	23	21	26	30	27	24.3	32.0																						
22-Dec	27	26	25	21	20	16	26	24	17	14	11	9	7	A	12	12	15	19	23	25	24	21	20	18	18.8	27.3																						
23-Dec	19	20	20	22	22	23	20	24	25	25	22	22	A	22	19	21	23	22	22	23	22	16	15	12	20.9	25.2																						
24-Dec	8	8	7	6	5	6	6	10	14	14	14	A	13	12	10	8	8	9	11	15	21	21	19	17	11.4	21.2																						
25-Dec	13	10	9	8	11	19	18	17	18	19	A	11	11	7	6	8	4	2	3	5	9	11	20	28	11.6	27.9																						
26-Dec	20	14	13	17	11	11	13	16	15	A	17	18	14	16	18	17	16	17	23	21	17	22	20	18	16.6	23.0																						
27-Dec	17	15	12	16	21	21	22	23	A	18	11	11	15	25	20	19	23	22	23	28	30	27	23	18	20.1	29.8																						
28-Dec	17	21	20	18	16	18	19	A	18	27	24	18	15	8	10	14	22	26	26	25	22	19	20	18	19.2	27.1																						
29-Dec	19	19	18	20	22	22	A	23	30	22	21	17	13	13	15	18	20	24	24	26	25	24	23	25	21.0	29.9																						
30-Dec	26	26	27	30	26	A	29	30	28	28	24	23	15	13	14	19	24	36	38	39	30	28	29	26	26.4	39.2																						
31-Dec	26	29	29	29	A	30	15	11	12	31	35	18	16	19	20	27	39	33	10	12	6	4	7	7	20.1	39.4																						
																								16.9	16.6	16.0	16.4	16.9	17.7	19.2	20.7	21.6	21.1	18.7	15.1	15.0	15.4	14.9	16.9	20.2	22.5	21.2	20.2	19.4	18.4	19.4	17.4	Diurnal Average
																								28.9	30.8	30.5	29.7	31.6	35.4	37.3	37.6	36.9	38.0	43.4	22.8	38.0	36.2	42.0	43.9	44.2	41.0	39.3	40.1	36.4	33.4	30.7	27.9	Diurnal Maximum
C - Calibration																								D - DAS Failure						A - Automated Daily Zero Span																		
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb																																																

Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Henry Pirker - December 2015



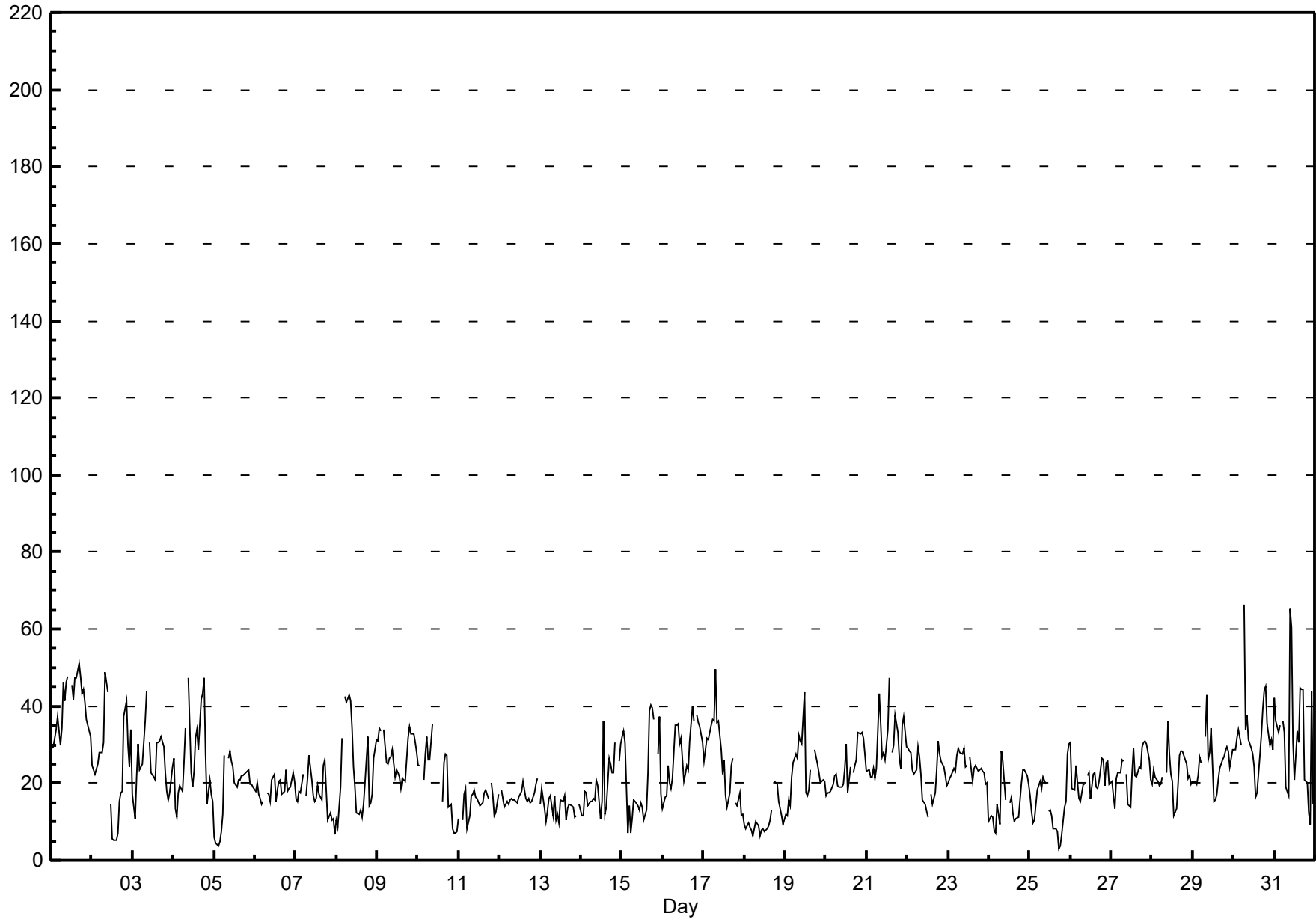
Hourly Maximums

Nitrogen Dioxide (NO₂) - ppb Henry Pirker - December 2015

Maximum Value: 66.5 ppb on Dec 30 07:00		Maximum Daily Average: 39.9 ppb on Dec 1		Hours in Service: 744																						
Minimum Value: 3 ppb on Dec 25 18:00		Minimum Daily Average: 10.3 ppb on Dec 18		Hours of Data: 706																						
Maximum Diurnal Average: 27.4 ppb at hour 9		Minimum Diurnal Average: 19.0 ppb at hour 15		Hours of Missing Data: 38																						
Monthly Average: 22.66 ppb		Percentiles: P ₁ = 5.6 P ₁₀ = 11.4 Q ₁ = 15.7 Median = 21.6 Q ₃ = 28.2 P ₉₀ = 35.1 P ₉₉ = 46.9		Hours of Calibration: 37																						
				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-Dec	29	29	32	34	37	30	34	46	41	46	48	A	45	42	47	47	51	48	43	44	41	37	34	32	39.9	51.2
2-Dec	25	24	22	25	28	28	28	31	49	44	A	15	6	5	5	7	15	18	18	37	41	30	24	34	24.3	49.0
3-Dec	17	11	22	30	24	24	25	36	44	A	31	23	22	21	30	31	31	32	29	23	18	16	18	24	25.2	44.1
4-Dec	26	13	11	18	20	18	25	34	A	47	23	19	23	32	34	29	42	43	47	28	14	21	17	15	26.0	47.2
5-Dec	6	4	4	5	8	12	27	A	27	28	26	24	20	19	21	21	22	22	22	23	23	20	20	19	18.4	28.4
6-Dec	18	20	17	16	15	15	A	18	17	15	21	22	15	18	21	21	17	18	23	18	19	19	23	21	18.6	23.3
7-Dec	16	15	18	18	22	A	17	21	27	21	17	15	16	19	17	16	24	26	18	10	12	10	11	7	17.2	27.2
8-Dec	11	9	19	32	A	42	41	43	41	34	24	19	12	12	13	11	15	20	32	14	15	17	27	31	23.2	43.0
9-Dec	31	34	34	A	34	25	25	27	27	29	22	24	23	22	19	21	21	26	32	35	33	33	31	28	27.5	34.7
10-Dec	25	25	A	21	28	32	26	26	35	C	C	C	C	C	15	25	27	27	14	15	8	7	7	7	20.6	35.4
11-Dec	11	A	11	17	19	8	12	17	17	18	16	16	14	15	15	18	18	16	D	20	17	12	12	17	15.2	20.1
12-Dec	A	18	16	14	15	14	16	16	15	16	15	17	17	18	21	16	15	16	15	15	18	20	21	A	16.5	21.2
13-Dec	14	19	13	10	13	16	17	11	17	11	12	10	16	15	17	10	14	14	14	14	11	12	A	15	13.7	18.7
14-Dec	12	11	18	17	14	15	15	16	16	21	19	11	15	36	12	14	26	25	23	23	30	A	26	30	19.4	36.0
15-Dec	32	34	31	7	14	7	11	16	15	14	13	15	14	11	13	23	39	40	39	37	A	28	37	17	22.0	40.1
16-Dec	14	16	17	25	20	19	21	35	35	35	30	32	21	22	25	24	31	40	36	A	37	36	35	31	27.7	39.8
17-Dec	26	29	32	31	35	36	36	49	36	36	29	22	26	17	14	18	25	26	A	15	14	18	12	12	25.8	49.5
18-Dec	9	8	10	8	8	6	8	10	9	6	8	8	7	8	9	10	13	A	21	20	15	13	12	9	10.3	20.6
19-Dec	12	11	16	14	22	25	28	26	33	31	30	44	18	17	18	24	A	29	27	25	23	20	21	21	23.1	43.7
20-Dec	17	17	18	18	20	22	22	19	19	19	20	24	30	18	24	A	23	25	26	33	33	33	32	28	23.4	33.3
21-Dec	23	23	22	22	24	21	24	43	35	27	28	26	34	48	A	28	30	38	33	26	24	35	37	30	29.6	47.5
22-Dec	29	28	28	23	22	23	30	27	22	16	15	13	11	A	17	15	18	23	31	28	26	24	22	19	22.2	31.0
23-Dec	20	21	22	24	23	27	29	28	28	29	24	25	A	27	20	24	24	24	23	24	23	23	20	20	24.0	29.2
24-Dec	10	11	11	8	7	15	9	28	26	20	16	A	15	16	12	10	11	11	16	20	23	24	22	20	15.7	28.2
25-Dec	17	13	10	10	18	19	20	19	22	20	A	13	13	11	8	8	8	3	4	7	14	15	28	30	14.3	30.1
26-Dec	30	19	18	25	20	16	15	20	20	A	22	23	16	22	23	19	19	20	27	26	19	25	26	20	21.3	30.4
27-Dec	20	17	14	21	23	23	26	26	A	23	15	14	23	29	22	22	24	24	29	31	31	30	26	21	23.1	30.9
28-Dec	20	23	22	21	19	20	22	A	23	36	28	22	21	12	13	20	27	28	29	26	25	21	22	20	22.5	36.1
29-Dec	21	20	20	22	27	25	A	32	43	26	28	34	15	16	17	21	24	26	27	28	29	28	24	29	25.3	42.8
30-Dec	29	29	32	34	30	A	67	34	38	31	29	28	24	16	17	27	32	39	44	45	35	30	31	29	32.6	66.5
31-Dec	42	36	33	35	A	36	33	19	17	65	60	31	21	34	31	45	44	44	21	20	12	9	44	14	32.5	65.2
		20.3	19.7	19.6	20.1	20.9	21.5	24.4	26.7	27.4	27.3	23.8	20.9	19.1	20.6	19.0	20.8	24.3	26.4	26.3	24.3	22.9	22.2	24.0	21.7	Diurnal Average
		42.2	36.3	33.6	35.0	37.3	42.4	66.5	49.5	49.0	65.2	60.4	43.7	45.4	47.5	47.3	47.5	51.2	47.6	47.2	45.0	41.3	36.6	44.0	34.1	Diurnal Maximum
C - Calibration		D - DAS Failure						A - Automated Daily Zero Span																		

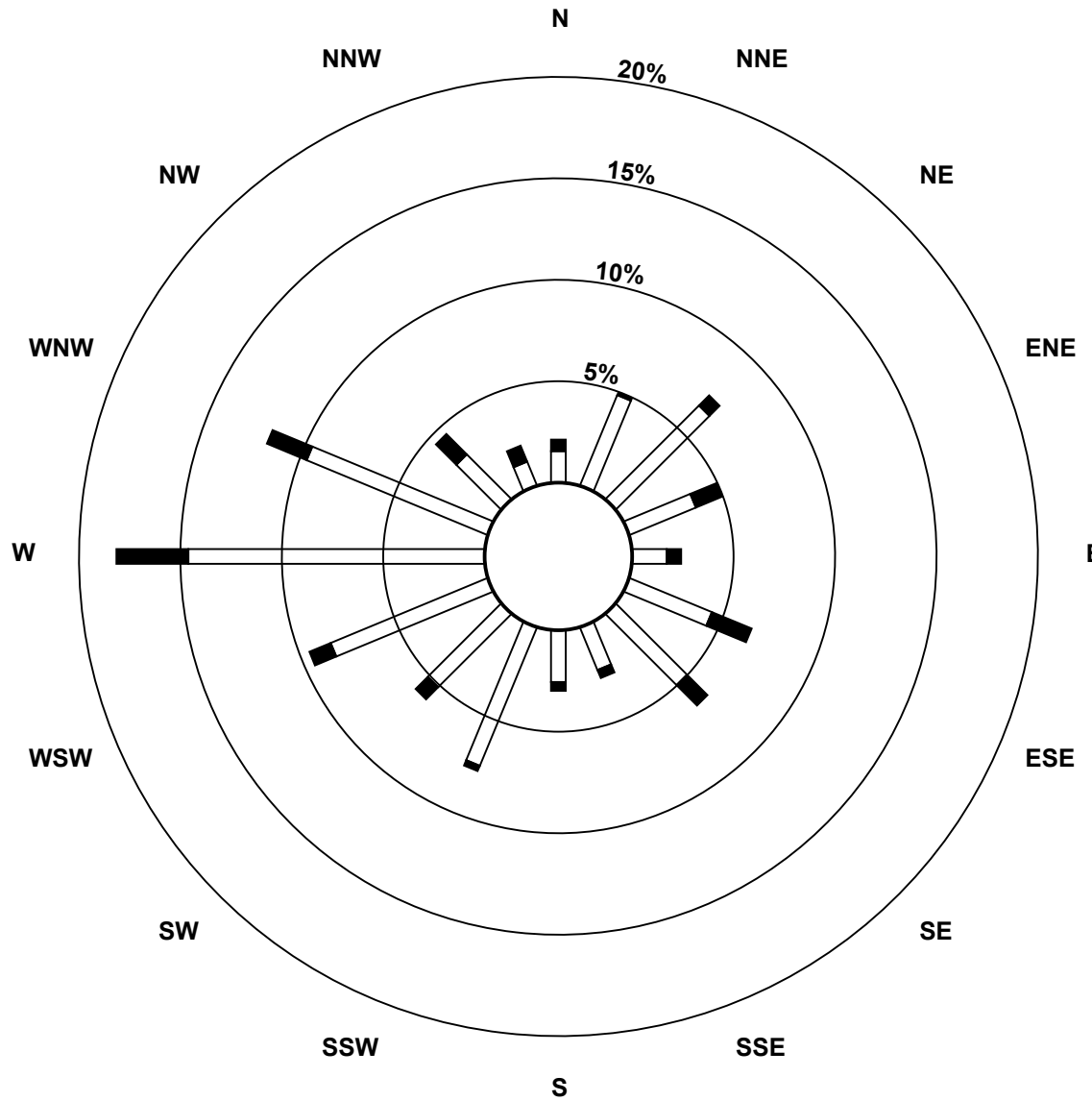
Hourly Maximums

Nitrogen Dioxide (NO₂) - ppb
Henry Pirker - December 2015

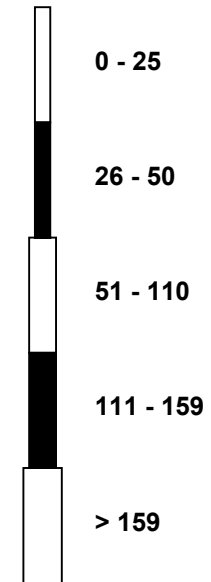


Pollutant Rose

Nitrogen Dioxide (NO₂) - ppb
Henry Pirker - December 2015

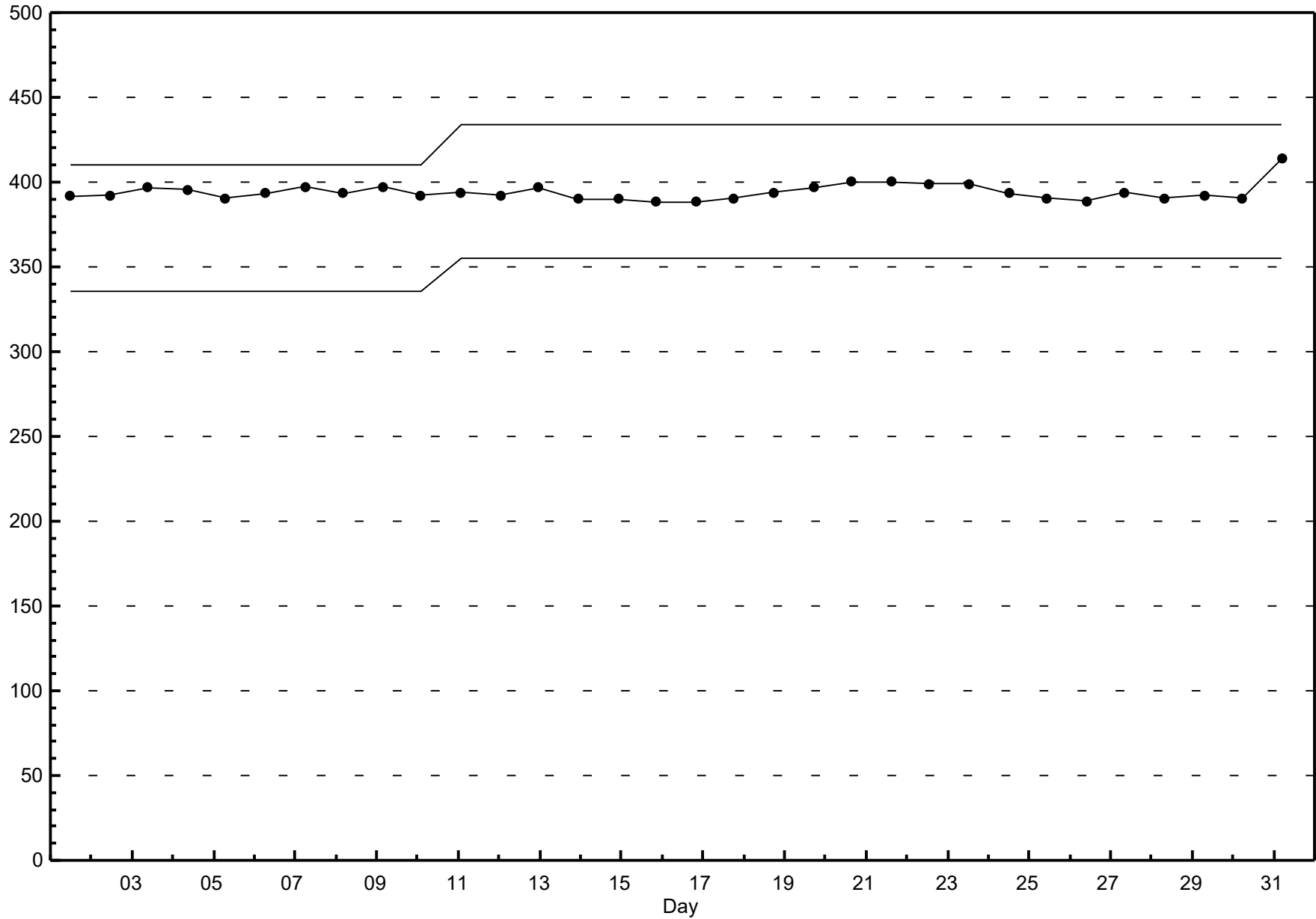


Pollutant Classes (ppb)



Span Responses

Nitrogen Dioxide (NO₂)
Henry Pirker - December 2015



Hourly Averages

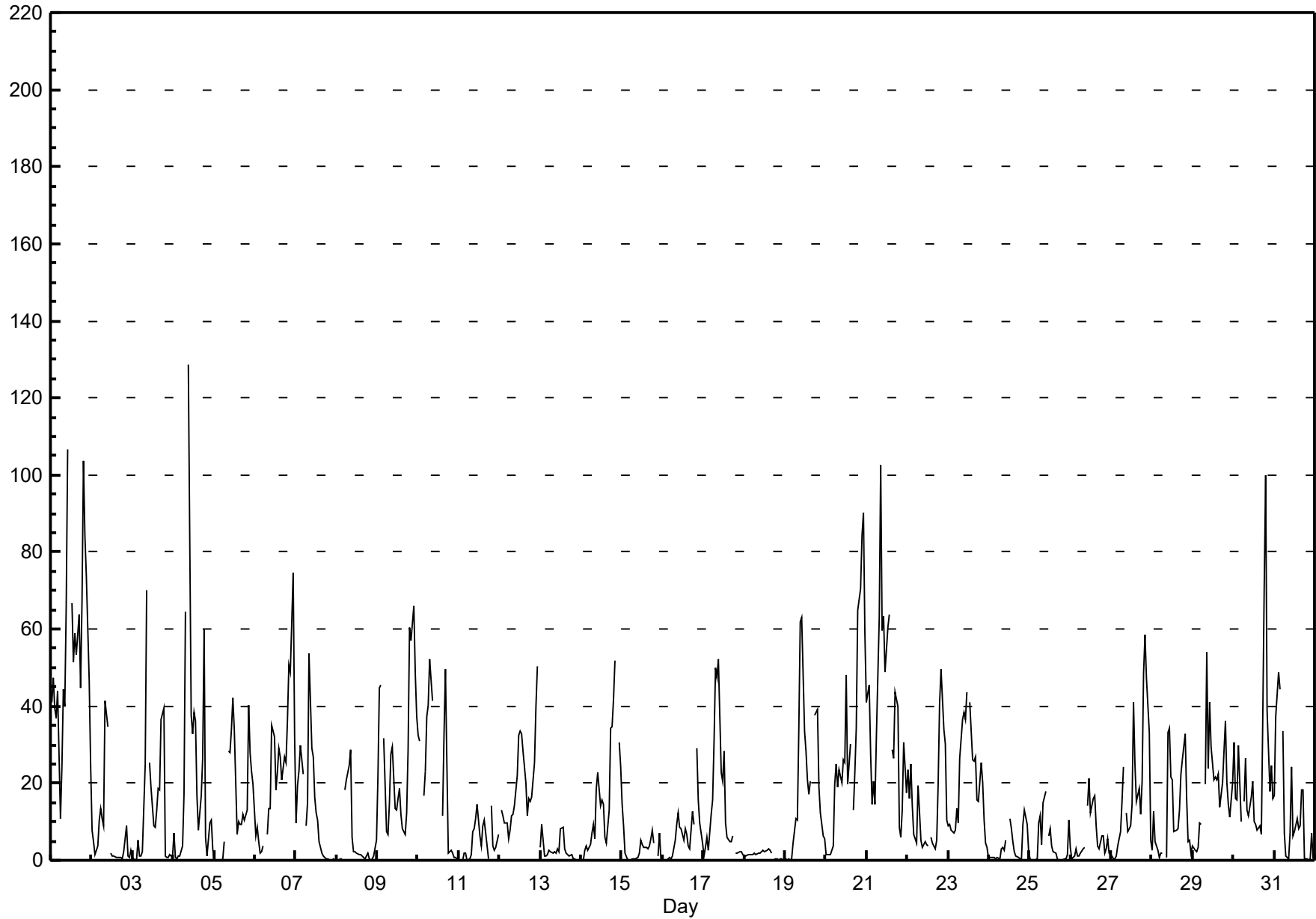
Nitrogen Oxide (NO) - ppb

Henry Pirker - December 2015

Number of Exceedences (AAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 128.6 ppb on Dec 4 10:00	Maximum Daily Average: 53.9 ppb on Dec 1		Hours of Data:	706
Minimum Value: 0 ppb on Dec 25 19:00	Minimum Daily Average: 1.4 ppb on Dec 18		Hours of Missing Data:	38
Maximum Diurnal Average: 26.3 ppb at hour 10	Minimum Diurnal Average: 8.0 ppb at hour 4		Hours of Calibration:	37
Monthly Average: 16.02 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.4 Q ₁ = 2.0 Median = 9.1 Q ₃ = 24.2 P ₉₀ = 41.0 P ₉₉ = 81.0		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-Dec	41	47	39	37	44	11	24	44	40	66	106	A	67	52	59	53	64	45	68	104	84	74	47	25	53.9	106.5
2-Dec	8	5	1	4	10	13	11	9	41	35	A	2	1	1	1	1	1	1	0	2	9	1	1	3	6.9	41.3
3-Dec	1	0	0	5	1	1	2	25	70	A	25	19	9	9	13	19	18	36	40	1	1	1	1	1	13.0	70.1
4-Dec	7	1	0	1	1	4	17	65	A	129	38	33	39	36	17	8	17	27	60	6	1	10	10	3	22.9	128.6
5-Dec	0	0	0	0	0	0	5	A	28	28	34	42	34	7	10	9	9	12	11	13	40	28	23	20	15.4	42.2
6-Dec	6	9	5	2	2	4	A	7	13	13	35	32	18	23	29	27	21	27	25	36	51	49	75	32	23.5	74.6
7-Dec	10	19	23	30	22	A	9	15	54	29	27	16	12	10	5	2	1	1	0	0	0	0	0	0	12.4	53.6
8-Dec	0	0	0	1	A	18	21	25	29	6	2	2	2	2	1	1	1	0	2	0	0	0	1	5	5.2	28.7
9-Dec	22	45	45	A	32	8	7	15	28	30	13	13	16	18	12	8	7	12	29	60	57	66	49	37	27.3	66.1
10-Dec	32	31	A	17	23	37	40	52	41	C	C	C	C	C	12	32	49	25	2	3	2	1	1	0	22.3	52.3
11-Dec	1	A	0	2	2	0	0	1	7	8	11	14	6	4	9	10	7	1	D	14	4	3	3	7	5.2	14.4
12-Dec	A	13	11	10	10	6	8	12	12	14	22	32	34	33	28	20	12	16	15	17	25	40	50	A	19.9	50.2
13-Dec	3	9	1	1	1	3	2	2	2	2	3	2	8	9	3	2	1	1	2	1	0	0	A	0	2.6	9.2
14-Dec	0	0	3	4	3	4	7	9	6	19	23	14	16	15	6	5	13	34	35	42	52	A	31	24	15.7	51.9
15-Dec	14	9	2	0	0	0	0	0	0	1	2	5	4	3	3	3	4	6	8	5	A	1	7	0	3.4	14.4
16-Dec	0	0	0	0	1	0	1	5	9	12	9	8	5	8	7	4	3	13	9	A	29	16	10	4	6.7	29.0
17-Dec	1	3	6	3	12	16	31	50	47	52	23	21	28	10	6	5	5	6	A	2	2	2	2	2	14.5	52.2
18-Dec	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	2	A	0	0	0	0	0	0	1.4	2.9
19-Dec	0	0	0	0	0	5	11	10	34	62	63	33	28	21	17	21	A	38	38	39	19	12	6	5	20.2	63.2
20-Dec	2	2	2	2	4	20	25	19	23	20	26	25	48	20	30	A	13	23	34	65	71	84	90	59	30.7	90.4
21-Dec	41	46	28	15	21	15	32	63	102	60	63	49	60	64	A	29	27	44	40	9	6	13	31	17	37.9	102.5
22-Dec	23	16	25	14	7	5	19	13	5	4	5	4	4	A	6	4	3	5	20	41	50	34	30	10	15.1	49.7
23-Dec	9	9	8	7	8	13	10	27	37	39	37	44	A	41	26	26	27	16	15	25	20	10	5	3	20.0	43.5
24-Dec	1	1	1	1	0	1	1	3	3	3	5	A	11	8	5	2	1	1	0	0	9	13	9	2	3.5	13.1
25-Dec	0	0	0	0	0	10	12	4	15	18	A	6	8	4	2	2	0	0	0	0	0	0	1	10	4.1	17.8
26-Dec	3	0	1	3	1	1	2	3	3	A	14	21	12	16	17	9	4	3	6	6	2	3	6	2	6.1	21.3
27-Dec	1	0	0	1	4	7	15	24	A	12	7	9	14	41	25	15	19	12	21	49	59	47	33	5	18.4	58.7
28-Dec	3	13	5	3	1	2	2	A	1	33	34	22	21	7	8	8	13	23	26	33	16	5	5	2	12.4	34.3
29-Dec	4	3	2	3	10	9	A	20	54	24	41	30	21	22	21	22	14	20	28	36	20	15	11	20	19.6	54.1
30-Dec	31	16	16	30	10	A	15	27	13	11	17	21	10	9	8	9	7	37	71	100	39	18	25	16	24.1	100.0
31-Dec	17	37	49	44	A	34	7	1	0	7	24	6	8	11	8	9	18	18	0	0	0	0	7	0	13.4	48.9
	9.4	11.2	9.2	8.0	8.0	8.5	11.6	19.0	24.9	26.3	25.4	18.9	18.9	17.4	13.2	12.2	12.6	16.7	20.9	23.6	22.3	18.2	19.0	10.6	Diurnal Average	
	41.0	47.4	48.9	44.5	44.1	37.3	40.1	64.7	102.5	128.6	106.5	48.9	66.6	63.8	59.0	53.3	63.8	44.6	71.2	103.5	84.4	84.3	90.4	58.9	Diurnal Maximum	

C - Calibration D - DAS Failure A - Automated Daily Zero Span



Hourly Maximums

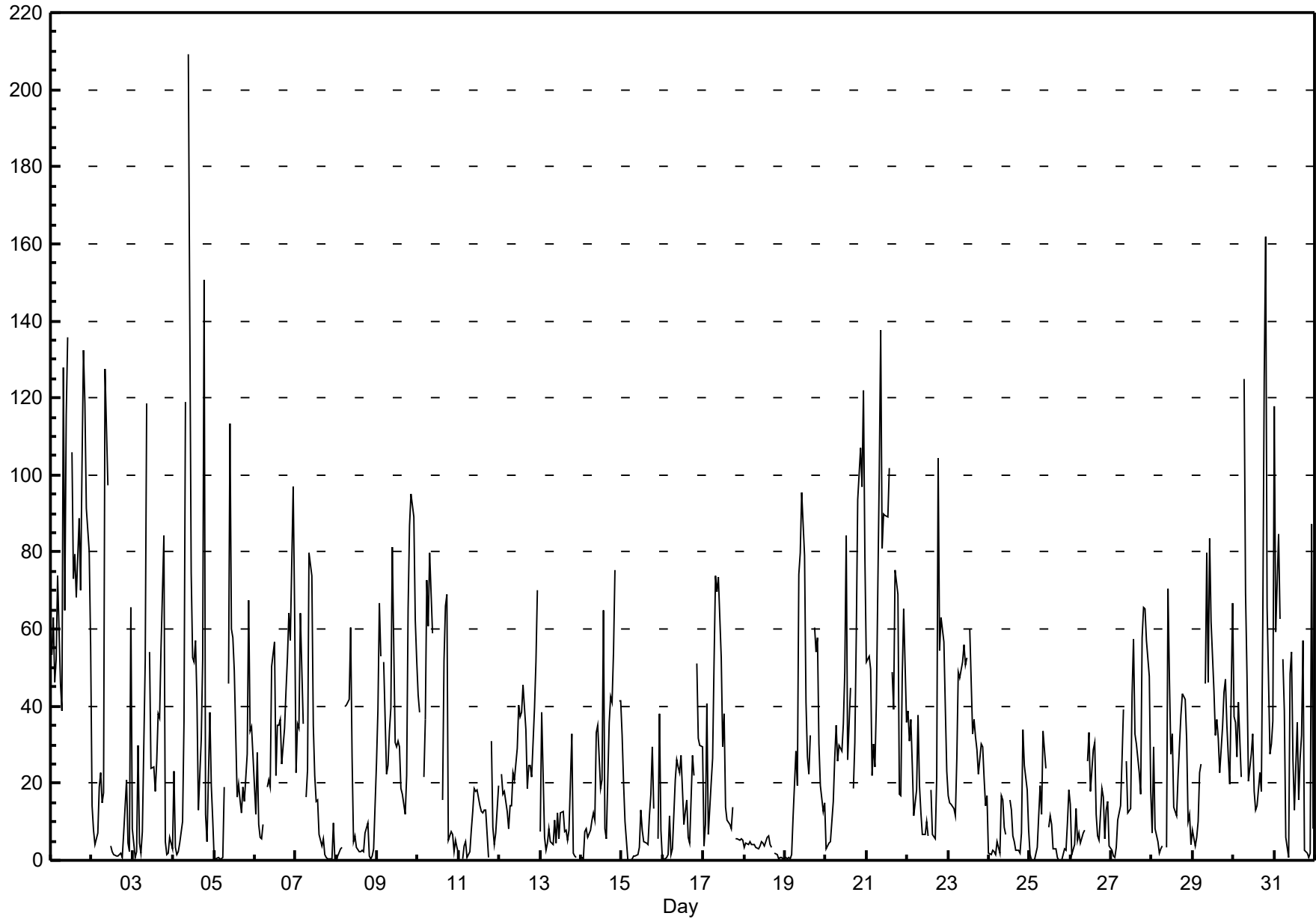
Nitrogen Oxide (NO) - ppb

Henry Pirker - December 2015

Maximum Value: 209.2 ppb on Dec 4 10:00		Maximum Daily Average: 81.9 ppb on Dec 1		Hours in Service: 744																						
Minimum Value: 0 ppb on Dec 25 19:00		Minimum Daily Average: 3.4 ppb on Dec 18		Hours of Data: 706																						
Maximum Diurnal Average: 50.5 ppb at hour 10		Minimum Diurnal Average: 14.5 ppb at hour 4		Hours of Missing Data: 38																						
Monthly Average: 28.19 ppb		Percentiles: P ₁ = 0.1 P ₁₀ = 1.7 Q ₁ = 5.6 Median = 19.0 Q ₃ = 39.9 P ₉₀ = 66.6 P ₉₉ = 125.8		Hours of Calibration: 37																						
				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-Dec	53	63	46	52	74	46	39	128	65	116	136	A	106	73	80	68	89	70	103	132	118	91	80	56	81.9	135.8
2-Dec	14	8	4	7	19	23	15	18	127	97	A	4	2	1	1	1	2	2	1	7	21	5	2	65	19.4	127.5
3-Dec	8	1	2	30	4	2	7	52	119	A	54	24	24	18	26	38	37	55	84	5	2	2	6	3	26.2	118.5
4-Dec	23	3	2	2	5	10	36	119	A	209	75	53	51	57	42	13	31	52	151	12	5	38	19	10	44.3	209.2
5-Dec	0	0	1	0	0	1	19	A	46	113	60	58	49	16	20	16	12	19	15	28	68	33	35	27	27.7	113.3
6-Dec	12	28	9	6	6	9	A	19	21	19	50	57	22	35	35	37	25	34	44	53	64	57	97	65	34.9	96.8
7-Dec	23	36	34	64	35	A	16	23	80	74	35	22	15	16	7	4	6	2	1	0	0	0	10	0	21.9	79.7
8-Dec	0	1	3	3	A	40	40	42	60	27	5	6	3	2	2	3	2	7	10	1	0	1	3	25	12.5	60.4
9-Dec	39	67	53	A	51	22	24	34	39	81	31	30	31	29	19	17	12	22	65	87	95	89	62	52	45.8	95.1
10-Dec	43	39	A	22	36	73	61	80	59	C	C	C	C	C	16	52	66	69	5	7	7	2	5	3	35.8	79.8
11-Dec	2	A	0	4	5	1	2	8	13	19	18	18	14	13	12	13	13	1	D	31	9	4	7	19	10.3	30.9
12-Dec	A	22	17	18	13	8	14	14	23	21	29	40	37	39	45	34	19	24	24	22	40	51	70	A	28.4	70.1
13-Dec	8	38	6	3	5	8	5	4	10	4	12	6	12	13	7	8	5	8	33	2	1	1	A	1	8.7	38.4
14-Dec	1	0	8	8	6	8	11	12	10	33	35	19	21	65	8	6	36	43	41	54	75	A	41	41	25.3	75.4
15-Dec	32	20	10	0	0	0	0	1	1	2	3	13	8	5	4	4	11	17	30	13	A	6	38	8	9.9	37.9
16-Dec	0	0	1	2	12	1	3	21	26	24	23	27	9	13	15	6	4	27	22	A	51	32	30	29	16.5	50.9
17-Dec	4	9	41	7	20	26	51	74	70	74	53	29	38	14	10	9	8	14	A	5	6	5	5	5	25.2	73.8
18-Dec	3	4	4	5	4	4	4	3	3	4	5	4	4	6	6	4	3	A	2	1	1	1	1	0	3.4	6.2
19-Dec	1	1	1	0	2	11	28	19	74	80	96	79	41	27	23	32	A	61	54	58	30	20	13	15	33.2	95.6
20-Dec	3	4	5	5	15	26	35	26	30	28	35	49	84	26	45	A	19	30	58	94	107	97	122	79	44.4	121.8
21-Dec	52	53	50	22	30	24	41	100	138	81	90	89	89	102	A	49	39	75	69	17	17	48	65	36	59.8	137.7
22-Dec	39	31	36	24	11	18	38	19	12	7	7	10	6	A	18	7	6	22	104	54	63	57	40	23	28.4	104.3
23-Dec	17	15	15	13	12	26	49	47	51	56	51	53	A	60	33	36	32	29	23	30	29	21	14	17	31.7	60.0
24-Dec	2	2	2	2	1	5	2	17	16	8	7	A	16	13	6	5	3	3	2	7	34	25	18	8	8.8	33.8
25-Dec	2	0	0	0	3	12	19	12	34	24	A	9	11	9	3	3	1	0	0	0	3	3	10	18	7.6	33.7
26-Dec	15	2	4	13	5	7	4	7	8	A	26	33	18	29	30	12	7	5	19	17	6	13	15	4	13.0	33.3
27-Dec	3	1	1	3	10	14	26	39	A	26	12	13	43	57	33	30	23	17	58	66	65	57	48	18	28.8	65.7
28-Dec	7	30	8	5	2	3	4	A	3	71	47	28	33	14	12	22	30	37	43	42	31	10	12	4	21.6	70.5
29-Dec	8	4	6	10	23	25	A	46	80	46	84	62	44	33	36	32	23	35	44	47	35	27	20	67	36.3	83.6
30-Dec	37	36	27	41	22	A	125	69	48	21	27	33	18	13	14	23	18	62	125	162	66	27	30	36	46.9	161.7
31-Dec	118	59	84	62	A	52	39	6	1	48	54	26	13	36	16	27	33	57	3	2	1	2	87	8	36.3	118.0
		18.9	19.2	16.0	14.5	14.9	17.5	26.2	36.5	43.7	50.5	41.4	31.9	29.8	28.7	20.8	20.3	20.5	30.0	42.5	35.2	34.9	27.5	33.5	24.8	Diurnal Average
		118.0	66.7	84.5	64.2	73.7	72.6	125.1	128.1	137.7	209.2	135.8	89.4	105.9	102.0	79.6	68.3	88.7	75.5	150.7	161.7	118.4	97.0	121.8	78.7	Diurnal Maximum
C - Calibration		D - DAS Failure						A - Automated Daily Zero Span																		

Hourly Maximums

Nitrogen Oxide (NO) - ppb
Henry Pirker - December 2015

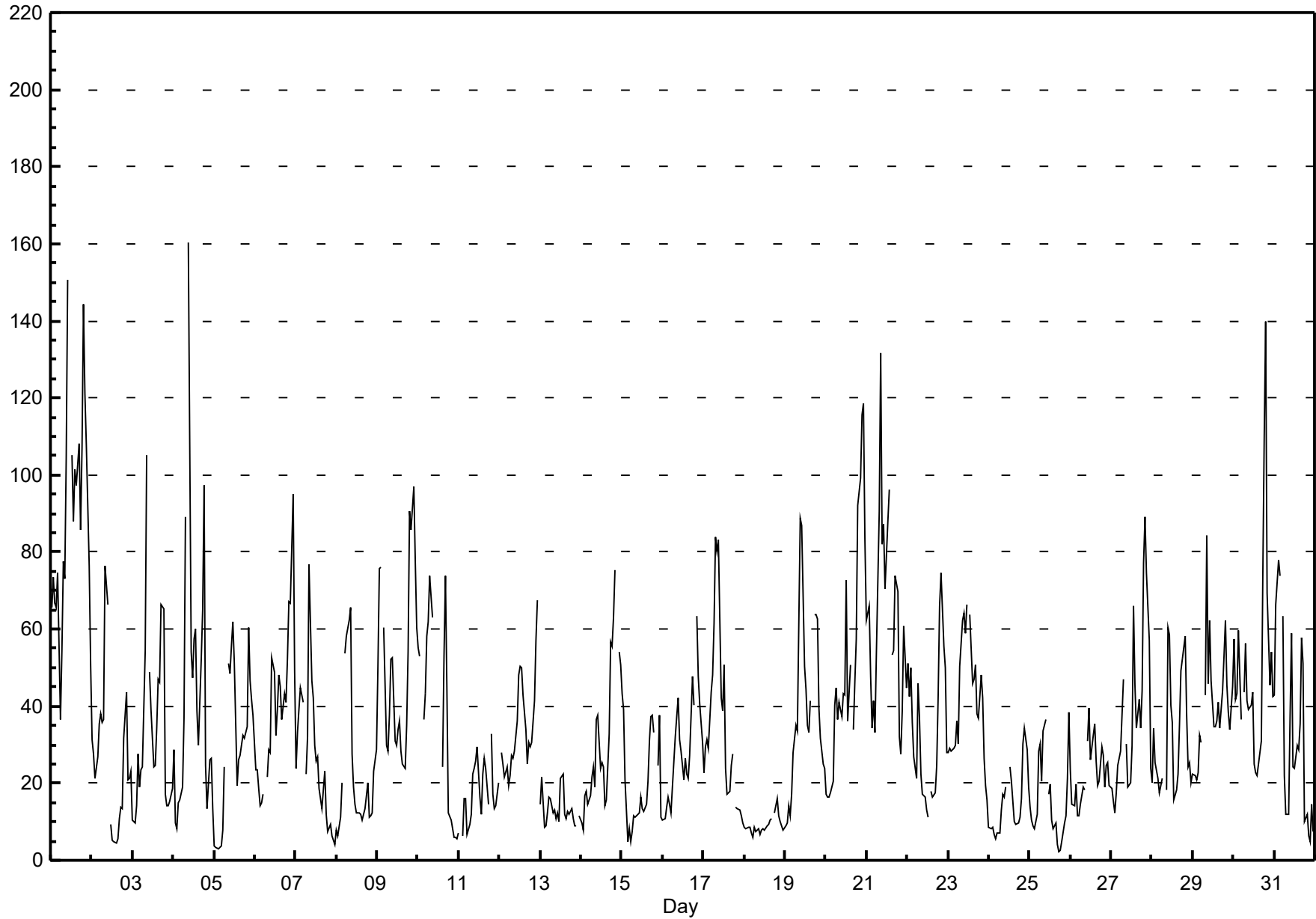


Hourly Averages

Oxides of Nitrogen (NO_x) - ppb

Henry Pirker - December 2015

Number of Exceedences (AAQO): 1-hr: 0 24-hr: 0 Maximum Value: 160.5 ppb on Dec 4 10:00 Maximum Daily Average: 88.5 ppb on Dec 1		Hours in Service: 744 Hours of Data: 706 Hours of Missing Data: 38 Hours of Calibration: 37 Percent Operational Time: 99.9																																														
Minimum Value: 2 ppb on Dec 25 18:00 Maximum Diurnal Average: 47.6 ppb at hour 10 Monthly Average: 34.41 ppb		Minimum Daily Average: 9.0 ppb on Dec 18 Minimum Diurnal Average: 24.5 ppb at hour 4 Percentiles: P ₁ = 3.9 P ₁₀ = 9.2 Q ₁ = 15.5 Median = 28.4 Q ₃ = 46.5 P ₉₀ = 66.3 P ₉₉ = 117.3																																														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	66	73	67	66	75	37	54	78	73	104	151	A	105	88	101	97	108	86	107	144	121	108	76	51	88.5	150.5																						
2-Dec	31	27	21	27	35	38	36	36	76	66	A	9	5	5	5	6	11	14	13	32	44	21	21	23	26.2	76.5																						
3-Dec	11	10	14	28	19	23	24	54	105	A	49	39	24	25	34	47	46	66	65	17	14	14	15	18	33.2	105.0																						
4-Dec	29	10	8	15	16	19	37	89	A	161	54	48	57	60	39	30	52	65	97	25	13	26	26	14	43.0	160.5																						
5-Dec	4	3	3	3	4	8	24	A	51	48	55	62	52	19	26	27	30	32	32	35	61	46	42	38	30.7	61.9																						
6-Dec	23	23	19	14	15	17	A	22	29	28	53	49	32	39	48	45	37	43	41	52	67	67	95	49	39.5	94.9																						
7-Dec	24	33	39	45	41	A	22	32	77	47	42	30	26	27	19	13	18	23	12	7	9	6	5	4	26.2	76.7																						
8-Dec	8	6	11	20	A	54	58	62	66	28	19	14	12	12	10	12	13	20	11	12	12	23	29	22.9	65.7																							
9-Dec	50	76	76	A	60	30	28	38	52	52	31	30	34	36	28	25	24	35	54	91	86	97	77	60	50.9	97.1																						
10-Dec	55	53	A	37	43	58	62	74	63	C	C	C	C	C	24	53	74	45	12	11	8	6	6	5	38.3	74.0																						
11-Dec	7	A	7	16	16	7	9	12	22	24	26	29	16	12	22	27	24	15	D	33	17	13	14	20	17.7	32.8																						
12-Dec	A	28	25	22	24	19	22	27	27	28	36	48	50	50	43	34	25	31	29	31	41	57	68	A	34.8	67.6																						
13-Dec	15	22	9	9	12	16	16	12	13	11	12	10	21	23	12	11	13	12	13	11	9	9	A	12	13.1	22.5																						
14-Dec	10	8	17	18	14	17	21	24	19	37	38	24	25	24	14	15	33	57	56	63	75	A	54	51	31.0	75.2																						
15-Dec	43	39	21	5	8	5	7	11	11	12	12	16	13	13	14	20	31	37	38	33	A	25	38	11	20.2	43.3																						
16-Dec	11	11	14	16	15	12	19	32	37	42	31	28	21	27	22	21	27	48	40	A	63	48	40	30	28.6	63.2																						
17-Dec	23	29	31	29	44	48	62	84	80	83	42	39	51	24	17	18	25	28	A	14	13	13	12	10	35.5	83.9																						
18-Dec	9	8	9	9	7	6	9	7	8	7	8	8	9	10	11	A	12	16	11	10	9	8	8	9.0	16.0																							
19-Dec	9	10	14	12	17	28	35	34	62	89	87	51	44	35	33	41	A	64	64	63	40	32	25	24	39.6	88.7																						
20-Dec	17	16	16	17	21	40	45	37	41	37	43	43	73	36	51	A	34	46	57	92	99	115	119	83	51.3	118.7																						
21-Dec	62	66	48	34	41	33	54	91	132	82	87	71	88	96	A	53	54	74	70	32	28	39	61	45	62.6	131.6																						
22-Dec	51	42	50	36	27	21	46	37	22	17	16	13	11	A	18	17	18	25	43	66	75	56	50	28	34.1	74.5																						
23-Dec	28	29	28	29	30	36	30	50	62	64	59	66	A	64	46	47	51	38	37	48	42	26	19	16	41.2	66.3																						
24-Dec	8	8	8	7	5	7	7	13	17	16	19	A	24	21	15	10	9	10	11	16	30	34	29	19	15.0	34.4																						
25-Dec	14	10	9	8	12	28	30	21	34	37	A	17	20	11	8	10	4	2	3	5	10	12	21	38	15.8	38.3																						
26-Dec	24	15	14	20	12	12	15	19	18	A	31	40	26	32	36	26	20	20	29	27	19	25	25	20	22.7	39.7																						
27-Dec	18	15	12	18	25	28	38	47	A	30	19	20	30	66	46	34	42	34	44	77	89	75	57	24	38.6	89.0																						
28-Dec	20	34	25	21	17	19	21	A	18	60	58	40	36	16	18	22	35	49	52	58	38	24	25	20	31.7	60.5																						
29-Dec	23	22	21	23	32	31	A	43	84	46	62	47	35	35	36	41	34	44	53	62	46	39	34	45	40.7	84.4																						
30-Dec	57	42	43	60	36	A	44	56	41	39	40	44	25	23	22	28	31	73	110	140	69	46	54	42	50.7	139.8																						
31-Dec	43	66	78	74	A	64	22	12	12	37	59	24	24	30	29	36	58	51	10	12	6	5	15	7	33.6	77.9																						
																								26.4	27.8	25.3	24.5	25.0	26.3	31.0	39.8	46.7	47.6	44.3	34.2	34.1	32.9	28.3	29.2	33.0	39.3	42.3	44.1	41.8	36.8	38.5	28.1	Diurnal Average
																								65.7	75.6	77.9	73.8	74.6	63.5	61.8	90.8	131.6	160.5	150.5	70.6	105.0	96.3	101.3	97.4	108.3	85.8	110.1	144.2	121.3	115.5	118.7	83.4	Diurnal Maximum
C - Calibration D - DAS Failure A - Automated Daily Zero Span																																																



Hourly Maximums

Oxides of Nitrogen (NO_x) - ppb

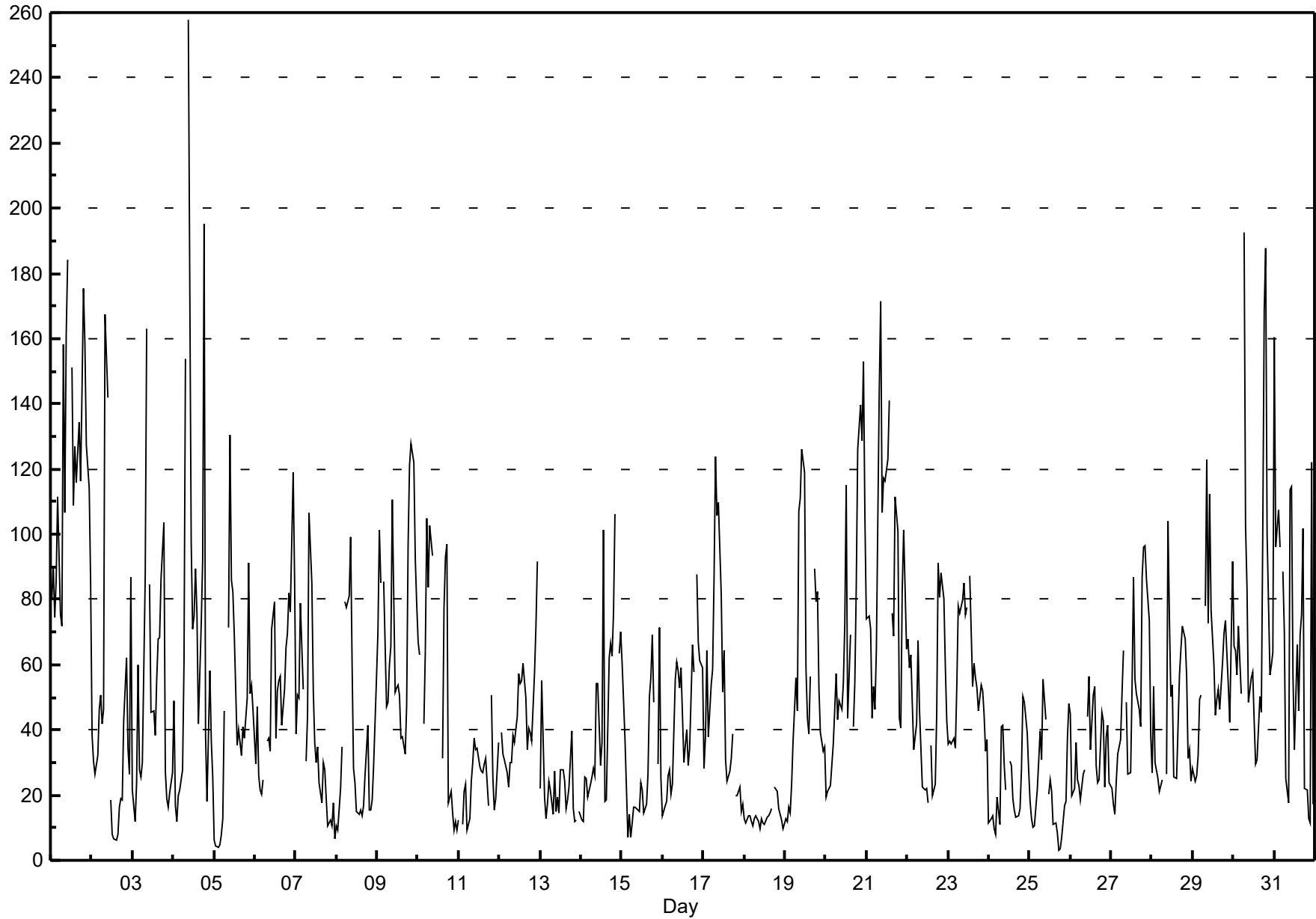
Henry Pirker - December 2015

Maximum Value: 257.8 ppb on Dec 4 10:00		Maximum Daily Average: 119.9 ppb on Dec 1		Hours in Service: 744																							
Minimum Value: 3 ppb on Dec 25 18:00		Minimum Daily Average: 13.5 ppb on Dec 18		Hours of Data: 706																							
Maximum Diurnal Average: 76.7 ppb at hour 10		Minimum Diurnal Average: 34.2 ppb at hour 4		Hours of Missing Data: 38																							
Monthly Average: 50.03 ppb		Percentiles: P ₁ = 6.5 P ₁₀ = 13.4 Q ₁ = 22.7 Median = 41.2 Q ₃ = 67.7 P ₉₀ = 101.2 P ₉₉ = 169.0		Hours of Calibration: 37																							
				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-Dec	80	91	75	86	111	75	72	158	107	161	184	A	151	109	127	116	135	116	144	175	159	128	114	85	119.9	184.0	
2-Dec	38	31	27	32	46	51	42	46	167	142	A	18	8	7	6	8	16	19	19	43	62	34	27	87	42.4	167.5	
3-Dec	21	12	24	60	28	26	30	87	163	A	85	45	46	39	56	68	68	86	104	27	19	16	21	27	50.3	163.0	
4-Dec	49	17	12	20	22	28	61	154	A	258	98	71	75	89	76	42	73	93	195	38	18	58	37	26	69.9	257.8	
5-Dec	6	5	4	5	8	13	46	A	71	131	86	82	69	35	40	36	32	41	38	50	91	51	54	46	45.2	130.5	
6-Dec	30	47	26	22	20	25	A	36	37	34	71	79	37	52	55	56	41	52	65	70	82	76	119	85	53.0	119.1	
7-Dec	39	51	50	79	53	A	30	45	107	85	52	36	30	35	24	18	30	28	19	11	13	11	18	7	37.7	106.7	
8-Dec	11	9	22	35	A	79	77	81	99	61	28	24	15	14	15	14	17	26	41	15	15	18	29	56	34.9	99.0	
9-Dec	70	101	85	A	86	47	48	60	66	110	52	53	54	51	37	38	32	48	96	121	128	122	93	78	72.9	127.9	
10-Dec	67	63	A	42	64	105	84	103	93	C	C	C	C	C	31	77	93	97	17	21	15	9	12	9	55.7	105.0	
11-Dec	12	A	11	21	23	9	13	24	30	37	34	34	29	27	27	30	31	17	D	51	26	15	19	36	25.3	50.8	
12-Dec	A	39	33	31	27	23	30	30	38	36	44	57	54	55	60	50	34	41	39	36	57	72	92	A	44.4	91.6	
13-Dec	22	55	19	13	17	24	21	14	27	15	20	15	28	28	24	16	19	22	40	16	12	12	A	15	21.5	55.2	
14-Dec	13	12	26	25	19	23	26	28	26	54	54	29	36	101	18	18	62	66	63	76	106	A	63	70	44.2	106.4	
15-Dec	60	49	37	7	14	7	12	16	16	15	15	24	22	15	17	27	50	56	69	49	A	30	71	25	30.6	71.3	
16-Dec	14	17	18	26	28	20	24	56	61	58	53	59	30	35	40	29	34	66	58	A	88	67	61	59	43.5	87.6	
17-Dec	28	38	64	38	54	59	87	124	106	110	82	52	65	31	24	27	31	39	A	20	20	23	15	17	50.1	123.9	
18-Dec	13	11	14	13	12	10	13	14	12	10	13	12	11	13	13	14	16	A	22	21	16	14	13	10	13.5	22.4	
19-Dec	13	12	16	15	23	36	56	46	107	111	126	119	59	44	39	56	A	90	79	82	53	39	33	35	56.1	126.2	
20-Dec	19	21	22	23	35	46	57	43	49	46	54	72	115	44	69	A	41	55	84	126	140	129	153	106	67.4	153.0	
21-Dec	74	75	71	44	54	46	65	144	171	107	117	116	123	141	A	76	69	111	101	44	40	83	101	65	88.6	171.2	
22-Dec	68	59	63	48	34	42	67	46	35	22	22	22	18	A	35	20	23	45	91	81	88	80	60	43	48.3	91.4	
23-Dec	36	36	36	37	35	54	78	76	80	85	75	78	A	87	54	61	56	53	46	54	52	44	33	37	55.8	87.3	
24-Dec	11	13	14	10	8	19	11	41	41	29	22	A	30	29	19	15	13	14	16	28	50	48	39	28	23.8	50.4	
25-Dec	18	13	10	11	21	31	40	31	56	43	A	20	25	21	11	11	8	3	4	7	17	18	37	48	21.9	55.7	
26-Dec	45	20	22	36	25	23	18	26	28	A	44	56	34	51	54	29	24	25	45	43	22	38	41	24	33.6	56.4	
27-Dec	22	17	14	24	33	37	51	64	A	49	27	27	53	87	55	51	46	41	87	96	96	87	74	38	51.2	96.4	
28-Dec	27	53	30	25	21	23	24	A	26	104	74	50	54	26	25	41	57	65	72	68	56	31	34	24	44.0	104.2	
29-Dec	28	24	26	32	50	51	A	78	123	73	112	77	60	45	49	53	46	61	70	74	64	54	42	92	60.1	123.1	
30-Dec	66	64	57	72	51	A	192	102	84	48	56	58	43	30	31	50	45	101	169	188	100	57	60	64	77.7	192.4	
31-Dec	160	96	108	96	A	89	70	25	18	114	114	57	34	66	46	69	75	102	22	22	13	12	122	17	67.3	160.3	
		38.7	38.4	34.5	34.2	35.2	38.6	49.8	62.1	70.5	76.7	64.8	51.5	48.5	48.4	39.3	40.6	44.0	55.9	66.1	58.4	57.3	49.2	56.2	45.3	Diurnal Average	
		160.3	101.4	107.6	95.9	111.3	105.0	192.4	158.1	171.2	257.8	184.0	119.2	151.2	141.1	127.0	116.0	134.6	116.4	195.4	187.7	158.7	128.7	153.0	105.7	Diurnal Maximum	
C - Calibration		D - DAS Failure						A - Automated Daily Zero Span																			

Hourly Maximums

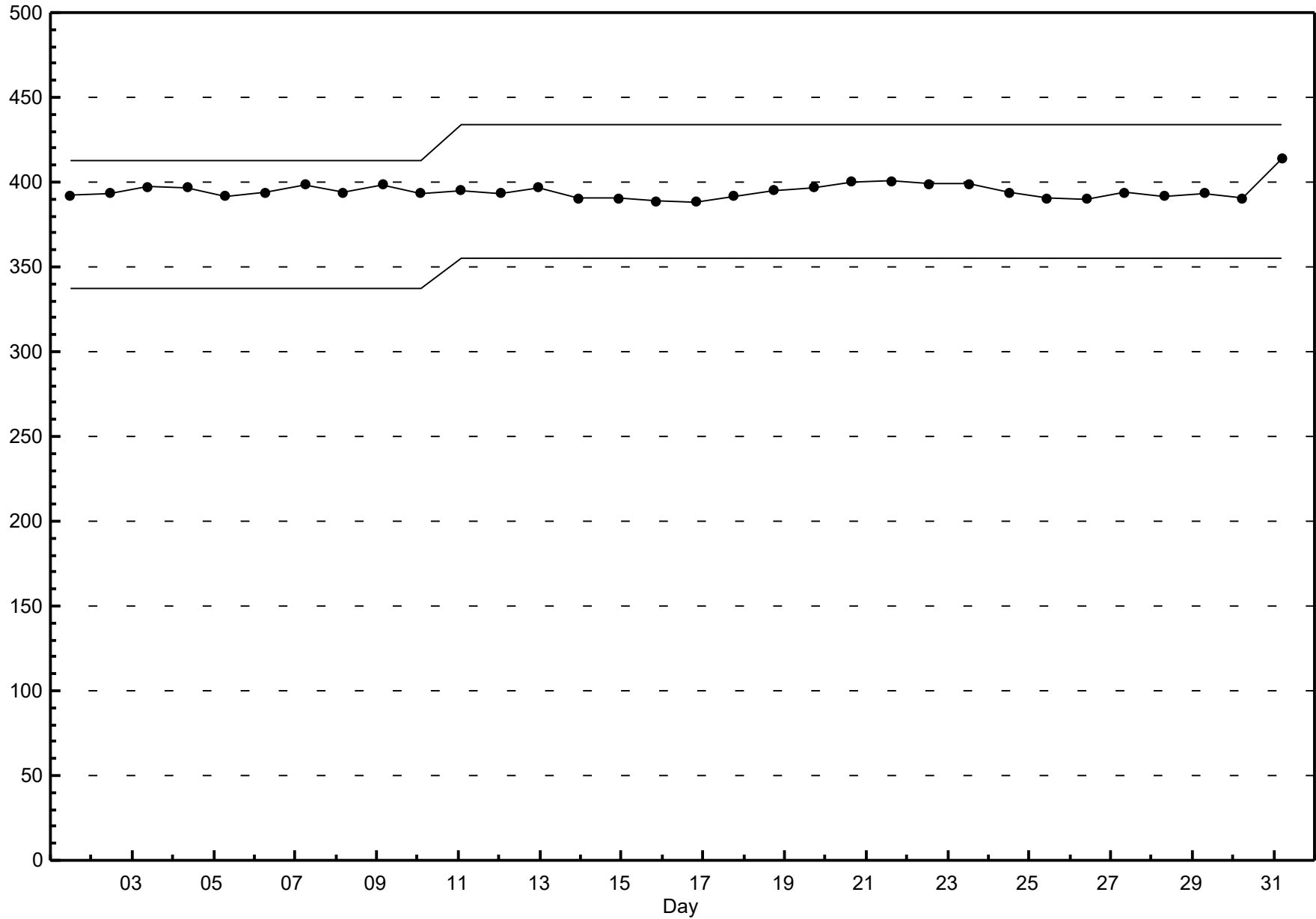
Oxides of Nitrogen (NO_x) - ppb

Henry Pirker - December 2015



Span Responses

Oxides of Nitrogen (NO_x)
Henry Pirker - December 2015



Hourly Averages

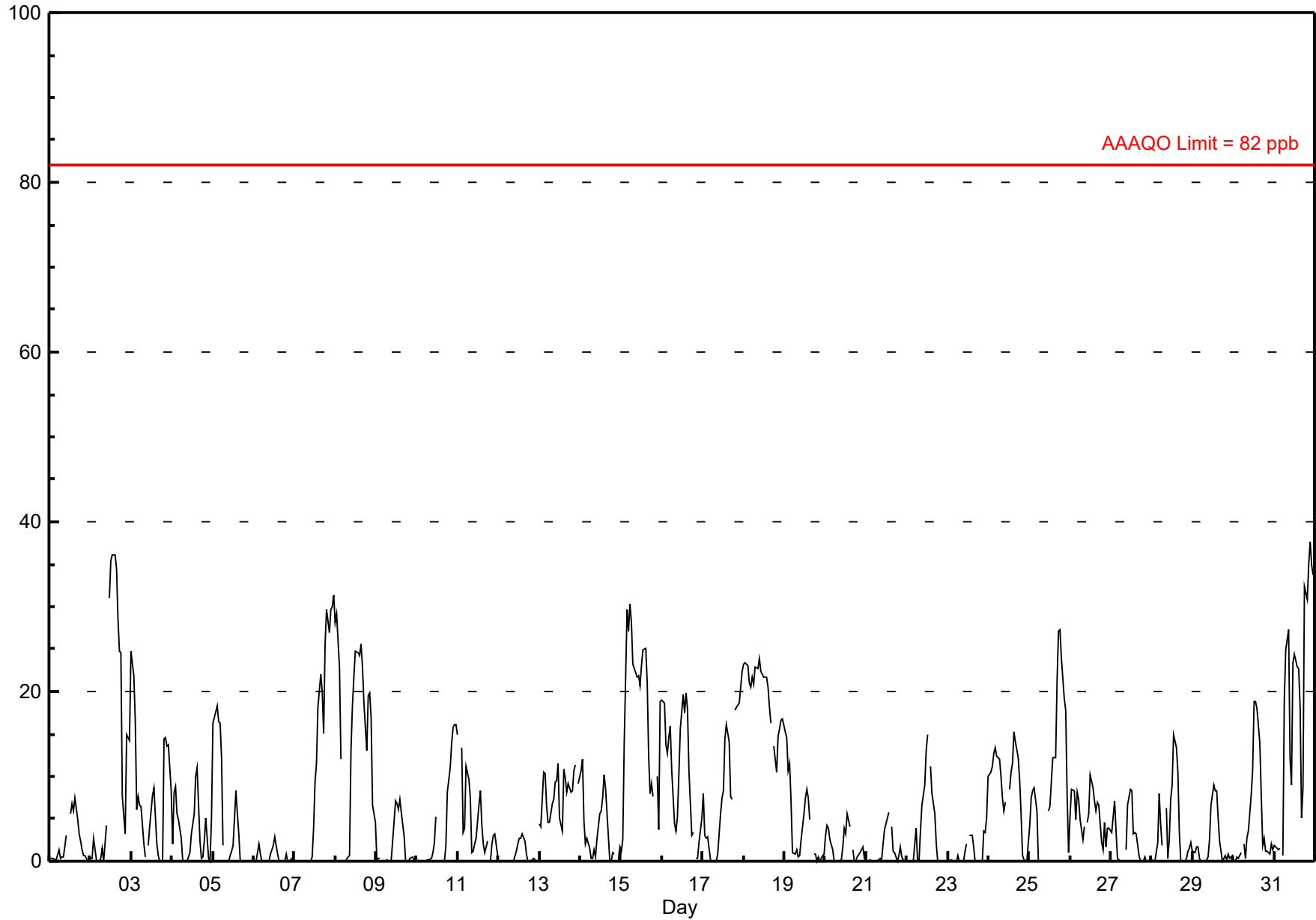
Ozone (O₃) - ppb

Henry Pirker - December 2015

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 37.6 ppb on Dec 31 22:00	Maximum Daily Average: 19.7 ppb on Dec 18		Hours of Data:	708
Minimum Value: 0 ppb on Dec 1 23:00	Minimum Daily Average: 0.6 ppb on Dec 6		Hours of Missing Data:	36
Maximum Diurnal Average: 11.9 ppb at hour 15	Minimum Diurnal Average: 3.8 ppb at hour 8		Hours of Calibration:	35
Monthly Average: 6.78 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.3 Median = 3.2 Q ₃ = 10.4 P ₉₀ = 20.5 P ₉₉ = 34.2		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-Dec	0	0	0	0	0	1	0	0	0	2	3	A	6	7	6	8	5	3	2	1	1	1	0	0	2.1	7.5	
2-Dec	0	0	3	0	0	0	0	1	0	4	A	31	35	36	36	34	28	25	25	8	3	15	15	14	13.7	36.1	
3-Dec	25	22	17	6	8	7	6	2	1	A	2	4	8	9	5	2	1	0	0	14	15	14	14	8	8.2	24.7	
4-Dec	2	8	9	6	5	3	0	0	A	0	1	3	4	6	10	11	2	0	1	2	5	0	0	5	3.6	10.9	
5-Dec	16	17	18	16	16	12	2	A	0	0	1	1	2	8	6	3	0	0	0	0	0	0	0	0	5.2	18.4	
6-Dec	0	0	1	2	1	0	A	0	0	0	1	2	3	2	1	0	0	0	0	1	0	0	0	0	0.6	2.9	
7-Dec	0	0	0	0	0	A	0	0	0	0	0	4	9	11	18	22	20	15	26	30	27	30	30	31	11.9	31.3	
8-Dec	28	29	23	12	A	0	0	0	0	1	13	18	22	25	25	24	26	23	19	13	20	20	17	7	5	16.0	29.1
9-Dec	0	0	0	A	0	0	0	0	0	0	5	7	7	6	7	6	3	0	0	0	0	0	0	0	1.9	7.2	
10-Dec	0	0	A	0	0	0	0	0	0	1	2	5	C	C	C	0	0	2	8	11	14	16	16	16	4.6	16.2	
11-Dec	15	A	13	3	4	11	10	8	1	1	2	3	7	8	4	2	1	2	D	0	2	3	3	1	4.8	14.9	
12-Dec	A	0	0	0	0	0	0	0	0	0	1	2	3	3	3	2	1	0	0	0	0	0	0	A	0.7	3.2	
13-Dec	4	4	10	10	7	5	5	7	7	9	10	12	5	3	11	10	8	9	8	8	11	11	A	9	8.0	11.6	
14-Dec	11	12	5	2	3	2	0	0	1	1	3	6	6	7	10	9	3	0	0	1	1	A	0	2	3.6	12.1	
15-Dec	1	3	14	30	27	30	28	23	23	22	22	21	23	25	25	21	12	8	9	8	A	10	4	19	17.7	30.3	
16-Dec	19	19	14	13	15	16	11	4	4	5	10	16	20	18	20	18	11	3	3	A	0	0	2	5	10.6	19.9	
17-Dec	8	3	3	3	0	0	0	0	0	1	6	8	8	14	16	14	8	7	A	18	18	19	21	22	8.5	22.3	
18-Dec	23	23	23	21	20	22	21	23	23	24	22	22	22	22	20	18	16	A	13	10	15	16	17	17	19.7	23.8	
19-Dec	15	15	11	12	7	1	1	1	0	1	3	6	7	9	8	5	A	1	1	0	1	0	1	1	4.5	15.3	
20-Dec	3	4	4	3	1	0	0	0	0	0	2	4	3	6	4	A	1	0	0	1	1	1	2	0	1.8	5.6	
21-Dec	0	0	0	0	0	0	0	0	0	0	2	4	5	6	A	4	1	1	0	1	2	0	0	0	1.1	5.7	
22-Dec	0	0	0	0	0	4	0	0	4	7	9	13	15	A	11	8	6	2	0	0	0	0	0	0	3.4	15.0	
23-Dec	0	0	0	0	0	0	1	0	0	0	1	2	A	3	3	2	0	0	0	0	0	4	3	5	1.0	5.1	
24-Dec	10	11	11	13	13	12	12	10	7	6	7	A	9	11	12	15	14	12	10	5	1	0	0	2	8.8	15.2	
25-Dec	4	7	8	9	6	0	0	0	0	0	A	6	6	9	12	12	21	27	27	24	19	18	8	1	9.8	27.3	
26-Dec	5	8	8	5	8	7	5	3	4	A	5	6	10	9	7	6	7	7	2	1	5	2	4	4	5.5	10.1	
27-Dec	3	5	7	4	0	0	0	0	A	1	7	8	8	3	3	3	1	0	0	0	1	0	0	0	2.4	8.4	
28-Dec	0	0	0	2	8	4	2	A	6	0	2	7	9	15	13	10	4	0	0	0	0	1	2	2	3.9	14.9	
29-Dec	1	1	2	2	0	0	A	0	0	1	2	7	9	8	8	5	2	0	0	1	0	1	0	1	2.3	9.0	
30-Dec	0	0	1	0	1	A	2	0	3	4	8	11	19	19	18	14	8	2	3	1	1	1	2	1	5.1	18.8	
31-Dec	2	2	1	1	A	1	19	25	27	12	9	23	24	23	23	18	5	9	32	31	35	38	35	34	18.7	37.6	
	6.6	6.5	6.9	5.8	5.2	4.8	4.3	3.8	3.9	3.9	5.7	9.1	10.9	11.4	11.9	10.3	7.1	5.1	6.3	6.6	6.6	7.2	6.1	6.9	Diurnal Average		
	28.2	29.1	23.1	29.6	27.2	30.3	28.1	24.9	27.3	23.8	22.4	31.0	35.5	36.1	36.1	34.4	28.5	27.1	32.3	30.8	35.1	37.6	34.9	33.8	Diurnal Maximum		

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



Hourly Maximums

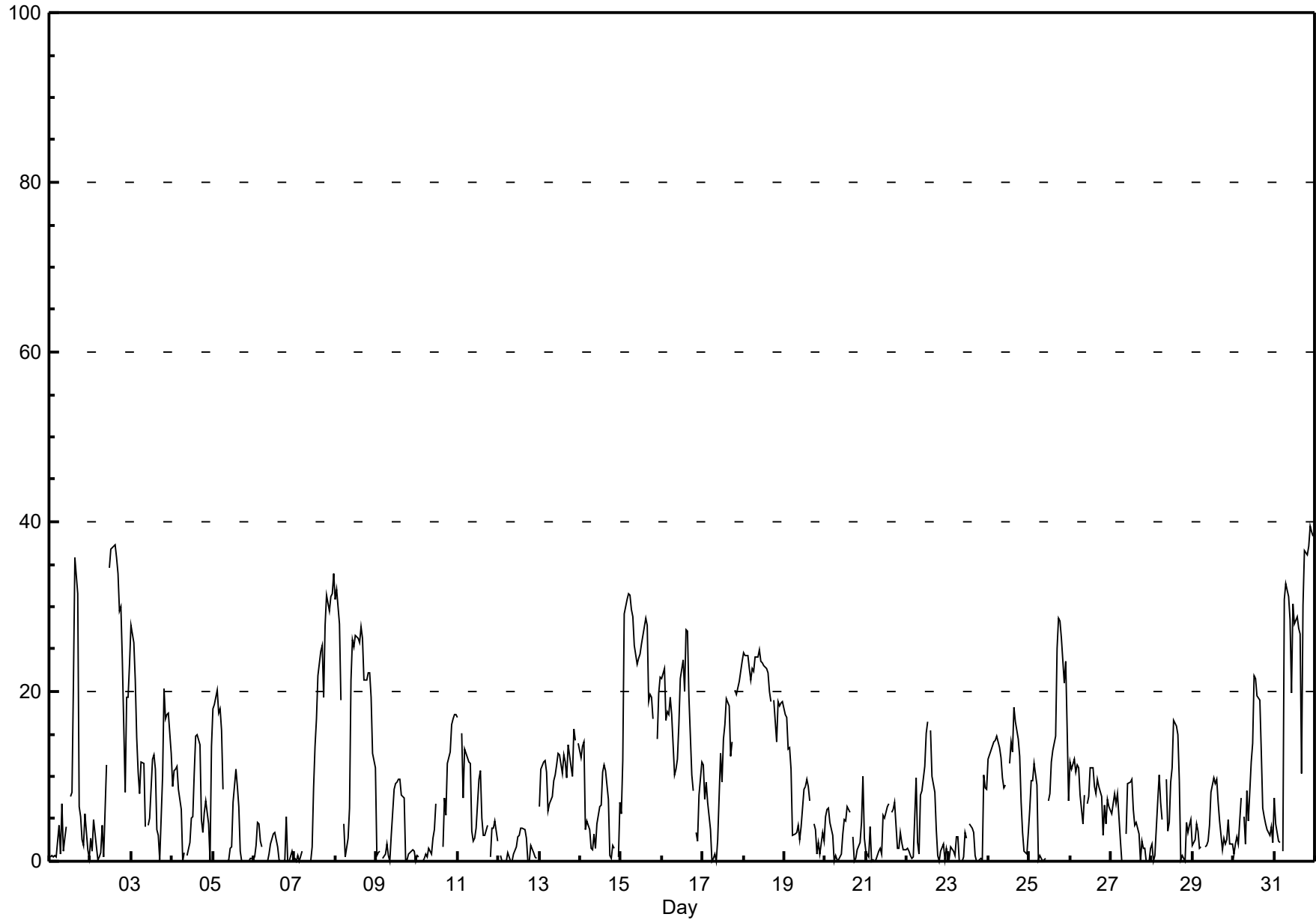
Ozone (O₃) - ppb

Henry Pirker - December 2015

Maximum Value: 39.5 ppb on Dec 31 22:00		Maximum Daily Average: 24.7 ppb on Dec 31		Hours in Service: 744																						
Minimum Value: 0 ppb on Dec 4 07:00		Minimum Daily Average: 1.3 ppb on Dec 12		Hours of Data: 708																						
Maximum Diurnal Average: 14.7 ppb at hour 15		Minimum Diurnal Average: 5.9 ppb at hour 9		Hours of Missing Data: 36																						
Monthly Average: 9.41 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.3 Q ₁ = 1.7 Median = 6.7 Q ₃ = 14.0 P ₉₀ = 23.9 P ₉₉ = 36.6		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-Dec	1	1	1	1	1	4	1	7	1	3	4	A	8	8	21	36	31	7	5	3	2	6	1	0	6.5	35.7
2-Dec	3	1	5	2	0	1	1	4	0	11	A	35	37	37	37	36	34	30	30	24	8	19	19	23	17.3	37.2
3-Dec	28	26	21	15	11	8	12	12	4	A	4	5	12	12	11	4	3	0	10	20	17	17	17	13	12.2	27.8
4-Dec	9	11	11	11	8	6	0	1	A	1	2	5	5	10	15	15	14	5	3	6	7	4	0	14	7.1	15.0
5-Dec	18	19	20	18	18	15	8	A	0	0	1	2	7	11	9	6	1	0	0	0	0	0	0	0	6.7	20.2
6-Dec	1	2	5	4	2	2	A	0	0	1	2	3	3	3	2	0	0	0	0	5	0	0	1	0	1.6	5.3
7-Dec	0	0	1	0	1	A	0	0	0	0	2	9	14	17	22	25	25	19	28	31	30	31	32	34	13.9	33.9
8-Dec	31	32	28	19	A	4	0	3	6	21	26	25	27	26	26	28	26	21	21	22	22	19	13	11	20.0	32.1
9-Dec	1	1	1	A	0	1	2	1	0	3	8	9	9	10	10	8	7	0	0	1	1	1	1	0	3.3	9.7
10-Dec	1	0	A	0	0	1	0	2	1	3	4	7	C	C	C	2	7	5	12	13	16	17	17	17	6.3	17.3
11-Dec	17	A	15	8	13	13	12	12	4	2	3	4	10	11	5	3	3	4	D	0	4	4	5	2	6.9	16.9
12-Dec	A	1	0	0	0	1	1	0	0	1	2	3	3	4	4	4	3	0	0	2	1	1	0	A	1.3	3.8
13-Dec	6	11	12	12	10	6	7	8	10	10	11	13	13	10	12	12	10	14	11	10	16	14	A	14	10.9	15.6
14-Dec	12	14	14	4	5	4	1	1	3	2	4	7	7	10	11	11	7	1	0	2	2	A	0	7	5.6	14.0
15-Dec	6	12	29	31	32	31	30	29	25	23	24	24	26	27	29	28	19	20	19	17	A	14	20	22	23.3	31.5
16-Dec	22	23	17	18	17	19	17	10	11	12	16	22	24	20	27	27	19	10	8	A	3	2	8	12	15.8	27.2
17-Dec	11	7	9	7	4	0	0	1	0	3	13	9	14	16	19	18	12	14	A	20	20	21	22	24	11.6	23.6
18-Dec	25	24	24	23	21	23	22	24	24	25	23	23	23	23	22	20	19	A	19	14	19	18	19	19	21.6	24.9
19-Dec	17	17	13	13	11	3	3	3	4	3	4	8	9	10	9	7	A	4	4	1	2	1	3	2	6.6	17.4
20-Dec	5	6	6	5	3	0	1	0	0	1	3	5	5	6	6	A	3	0	0	1	2	5	10	3	3.3	10.1
21-Dec	1	1	4	0	0	0	0	1	2	1	5	5	6	7	A	6	6	7	2	2	3	2	1	1	2.8	6.9
22-Dec	1	1	1	0	1	10	2	1	8	8	11	15	16	A	15	10	8	4	1	0	1	2	0	2	5.2	16.4
23-Dec	1	0	2	1	1	3	3	0	0	1	3	3	A	4	4	3	1	0	0	0	0	10	9	8	2.5	10.1
24-Dec	12	13	14	14	14	15	13	12	10	9	9	A	12	14	13	18	16	14	12	7	3	1	1	3	10.9	18.1
25-Dec	6	10	10	11	9	0	1	0	0	0	A	7	8	12	13	15	25	29	28	26	21	24	16	7	12.1	28.6
26-Dec	12	11	12	10	11	11	8	4	8	A	7	8	11	11	9	8	10	9	8	3	7	4	7	6	8.4	12.0
27-Dec	6	7	8	7	8	3	0	0	A	3	9	9	10	6	4	5	3	0	2	1	1	0	0	1	4.1	9.6
28-Dec	2	0	1	7	10	7	5	A	10	4	5	9	11	17	16	15	9	0	1	0	5	3	4	5	6.3	16.6
29-Dec	2	2	4	4	2	2	A	2	2	2	4	8	10	9	10	7	5	1	3	2	3	5	2	2	4.0	9.8
30-Dec	1	2	3	2	7	A	5	2	8	5	12	14	22	22	20	19	13	6	5	4	4	3	4	2	8.0	21.8
31-Dec	7	4	2	2	A	1	31	33	31	28	20	30	28	29	27	27	10	30	37	36	37	40	39	38	24.7	39.5
		8.8	8.6	9.7	8.2	7.6	6.7	6.5	5.9	5.9	6.4	8.4	11.3	13.4	13.8	14.7	14.0	11.7	8.5	9.3	9.2	8.6	9.7	9.1	9.8	Diurnal Average
		30.8	32.1	29.1	30.8	31.5	31.4	30.8	32.8	31.3	28.4	26.0	34.6	36.8	37.0	37.2	35.8	34.0	30.2	36.6	36.1	37.1	39.5	38.8	38.3	Diurnal Maximum
C - Calibration		D - DAS Failure						A - Automated Daily Zero Span																		

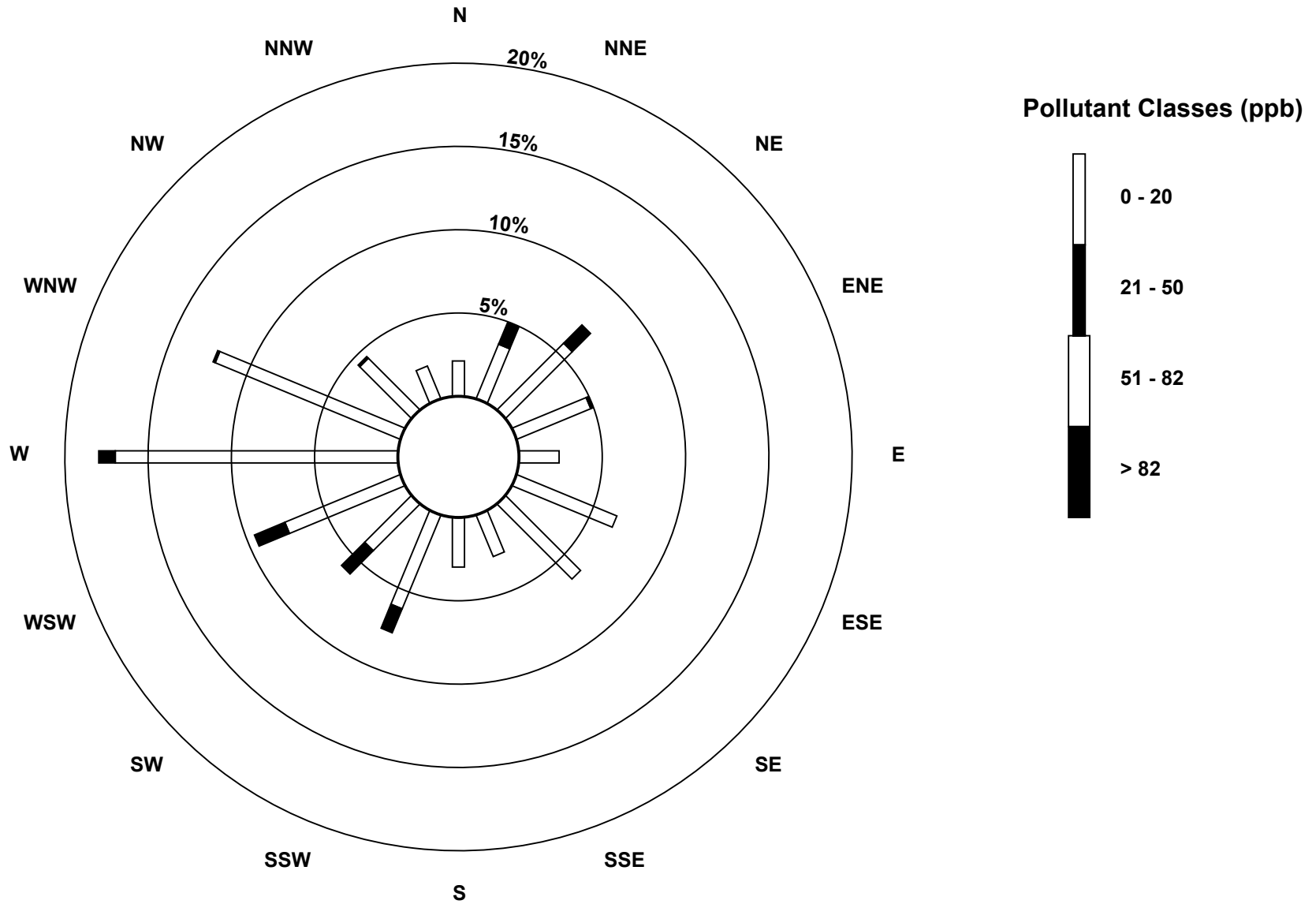
Hourly Maximums

Ozone (O₃) - ppb
Henry Pirker - December 2015



Pollutant Rose

Ozone (O₃) - ppb
Henry Pirker - December 2015





Peace Airshed Zone Association

Eight Hour Running Averages

Ozone (O₃) - ppb

Henry Pirker - December 2015

Maximum Value: 32.3 ppb on Dec 2 18:00 Minimum Value: 0.0 ppb on Dec 5 23:00 Percentiles: P ₁ = 0.0 P ₁₀ = 0.2 Q ₁ = 1.2 Median = 4.2 Q ₃ = 9.8 P ₉₀ = 17.5 P ₉₉ = 26.2	Hours in Service: 744 Hours of Data: 738 Hours of Missing Data: 6 Hours of Calibration: 6 Percent Operational Time: 100.0
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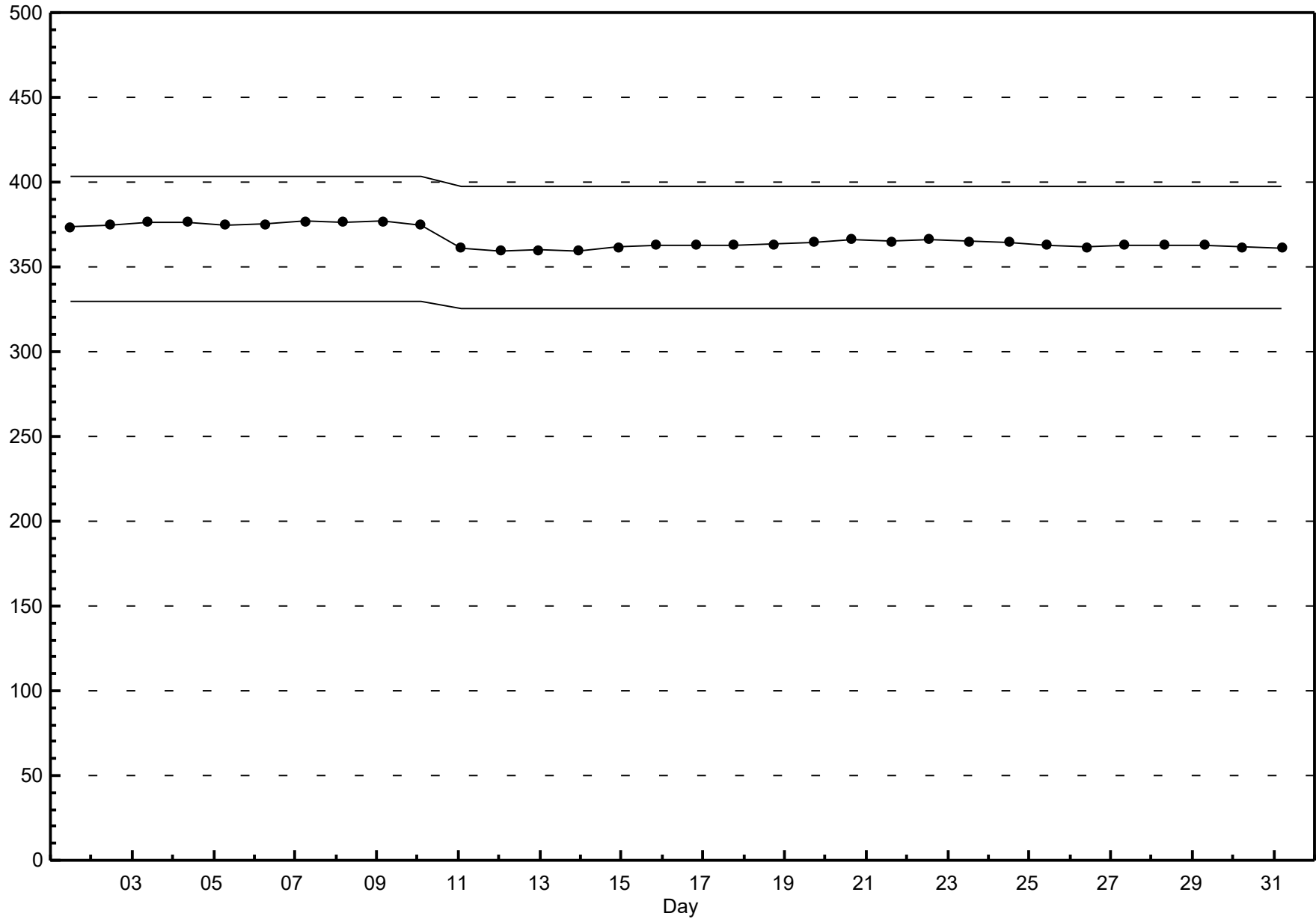
Day	Hourly Period Ending At (MST)																								Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	1	0	0	0	0	0	0	0	0	1	1	1	2	3	3	4	5	5	5	5	4	3	3	2	5.3	
2-Dec	1	1	1	1	0	0	0	1	1	1	1	5	10	15	21	25	29	32	31	28	24	22	19	17	32.3	
3-Dec	16	16	15	15	15	14	13	11	8	7	4	4	4	4	4	4	4	4	3	5	6	6	7	8	16.1	
4-Dec	8	9	10	9	8	7	5	4	4	3	2	2	1	2	3	5	5	5	5	5	5	4	3	2	10.5	
5-Dec	4	6	8	10	11	13	13	14	12	9	7	4	2	2	2	2	3	2	2	2	2	1	0	0	14.0	
6-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0.9	
7-Dec	0	0	0	0	0	0	0	0	0	0	0	0	1	3	5	8	11	13	16	19	21	23	25	26	26.0	
8-Dec	27	29	28	26	26	22	18	13	9	7	6	8	10	13	16	19	22	23	22	22	21	20	18	15	28.8	
9-Dec	12	10	9	7	4	2	1	0	0	0	1	2	3	4	5	5	5	4	3	3	2	1	0	0	12.4	
10-Dec	0	0	0	0	0	0	0	0	0	0	0	1	1	2	N	N	N	N	N	N	6	7	8	10	10.3	
11-Dec	12	14	14	13	12	11	10	9	7	6	5	5	5	5	4	4	4	4	4	3	3	2	2	2	14.5	
12-Dec	2	1	1	1	1	0	0	0	0	0	0	0	1	1	1	2	2	2	2	1	1	1	0	0	1.9	
13-Dec	1	1	3	4	5	6	6	6	7	7	7	8	7	7	8	8	8	8	8	8	9	10	9	9	9.6	
14-Dec	10	10	10	9	8	6	5	4	3	2	1	2	2	3	4	5	5	5	5	5	4	3	2	1	10.1	
15-Dec	1	1	3	7	11	13	17	20	22	25	26	24	24	23	23	23	21	20	18	16	15	13	10	10	25.6	
16-Dec	11	12	13	14	14	15	16	14	12	10	10	10	11	11	12	14	15	14	13	13	10	8	5	4	15.5	
17-Dec	3	3	3	3	3	3	3	2	1	1	1	2	3	4	7	8	9	10	11	12	14	14	15	16	16.1	
18-Dec	18	21	21	21	22	22	22	22	22	22	22	22	22	22	22	22	21	20	19	17	16	16	15	15	22.3	
19-Dec	15	15	14	14	14	12	10	8	6	4	3	2	3	3	4	5	5	5	5	4	3	2	1	1	14.7	
20-Dec	1	1	2	2	2	2	2	2	1	1	1	1	1	2	2	3	3	3	3	2	2	1	1	1	2.8	
21-Dec	1	1	1	1	0	0	0	0	0	0	0	1	1	2	2	3	3	3	3	3	2	1	1	1	3.2	
22-Dec	0	0	0	0	0	0	0	0	1	2	3	4	6	7	8	9	10	9	8	6	4	3	2	1	9.8	
23-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	1	1	1	1	1	1	1	1.6	
24-Dec	2	4	5	7	9	10	11	11	11	11	10	10	9	9	9	9	10	11	12	11	10	9	7	6	11.7	
25-Dec	4	4	4	4	5	5	5	4	4	3	2	2	2	3	5	6	10	14	15	17	19	20	20	18	20.1	
26-Dec	16	14	11	9	8	6	6	6	6	6	5	5	6	6	6	7	7	7	7	6	5	5	4	4	16.1	
27-Dec	3	3	4	4	4	3	3	2	2	2	2	2	3	4	4	5	4	4	3	2	1	1	0	0	4.9	
28-Dec	0	0	0	0	1	2	2	2	3	3	4	4	5	6	8	8	8	8	7	6	5	3	2	1	8.0	
29-Dec	1	1	1	1	1	1	1	1	1	1	1	1	3	4	4	5	5	5	5	4	3	2	1	1	5.4	
30-Dec	0	0	0	0	0	0	1	1	1	1	1	3	4	7	8	10	12	12	12	12	10	8	6	4	2	12.4
31-Dec	2	2	1	1	2	1	4	7	11	12	14	17	18	20	21	20	17	17	20	21	22	24	25	27	27.3	
	27.1	28.8	28.5	26.2	26.1	22.0	22.0	22.1	22.2	24.6	25.6	24.5	24.0	23.3	22.9	25.3	29.4	32.3	31.4	28.4	24.4	23.8	25.3	27.3		

Diurnal Maximums

N - Not Valid

Span Responses

Ozone (O₃)
Henry Pirker - December 2015



Hourly Averages

Carbon Monoxide (CO) - ppm Henry Pirker - December 2015

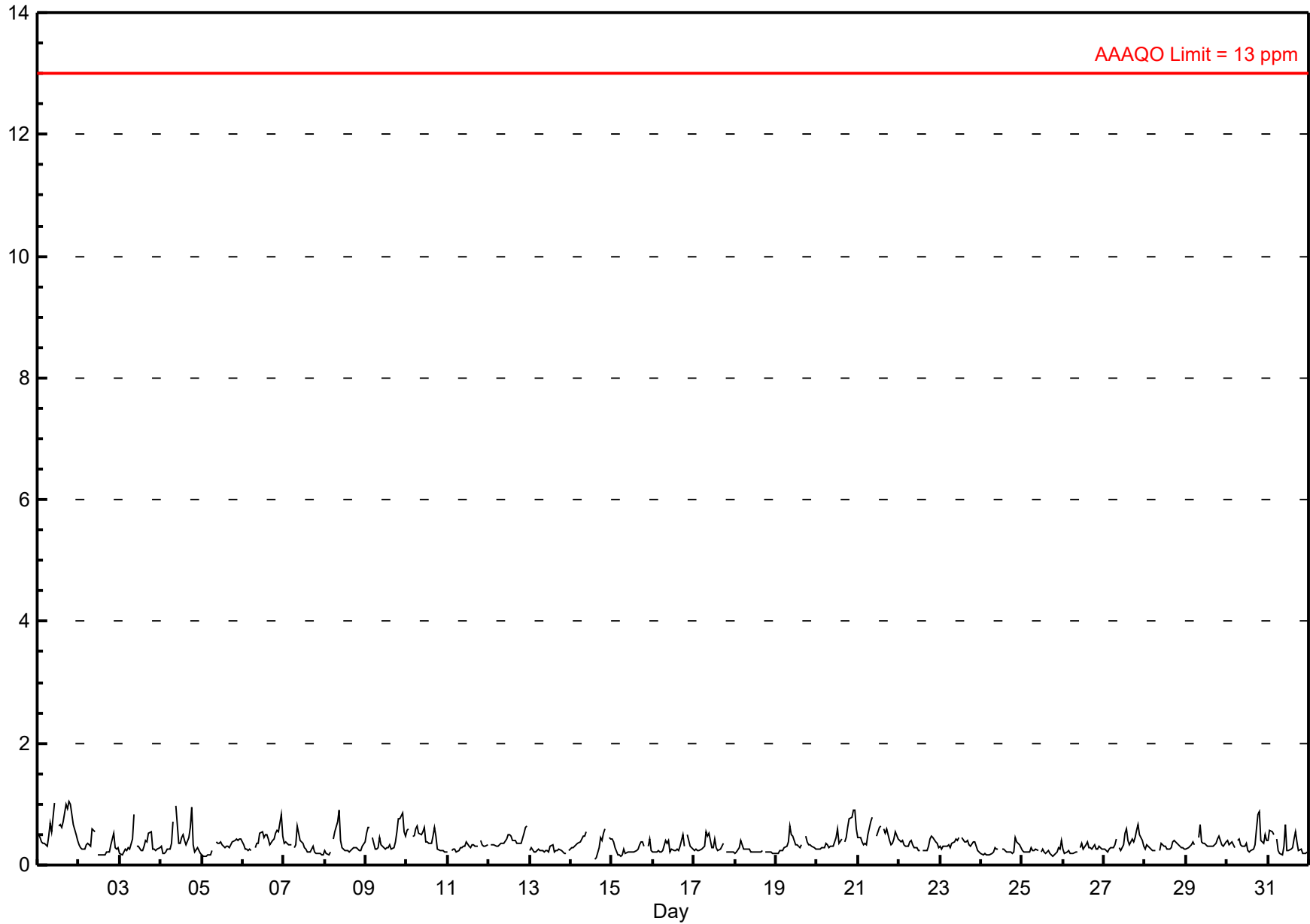
Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 744
Maximum Value: 1.04 ppm on Dec 1 19:00	Maximum Daily Average: 0.64 ppm on Dec 1
Minimum Value: 0.1 ppm on Dec 14 15:00	Hours of Data: 705
Maximum Diurnal Average: 0.43 ppm at hour 9	Hours of Missing Data: 39
Monthly Average: 0.346 ppm	Hours of Calibration: 36
Minimum Daily Average: 0.23 ppm on Dec 25	Percent Operational Time: 99.6
Minimum Diurnal Average: 0.28 ppm at hour 5	
Percentiles: P ₁ = 0.16 P ₁₀ = 0.21 Q ₁ = 0.24 Median = 0.31 Q ₃ = 0.40 P ₉₀ = 0.54 P ₉₉ = 0.92	

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-Dec	0.5	0.5	0.4	0.4	0.4	0.3	0.5	0.7	0.5	0.8	1.0	A	0.6	0.7	1.0	0.9	1.0	1.0	0.8	0.7	0.5	0.4	0.64	1.04																								
2-Dec	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.6	0.5	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.3	0.3	0.29	0.60																								
3-Dec	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.4	0.8	A	0.3	0.3	0.2	0.2	0.3	0.4	0.4	0.5	0.5	0.3	0.3	0.2	0.3	0.32	0.82																							
4-Dec	0.3	0.2	0.2	0.2	0.3	0.3	0.4	0.7	A	1.0	0.4	0.3	0.4	0.5	0.4	0.3	0.5	0.6	1.0	0.3	0.2	0.3	0.2	0.40	0.97																							
5-Dec	0.2	0.1	0.1	0.2	0.2	0.2	0.2	A	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.30	0.42																								
6-Dec	0.3	0.3	0.3	0.2	0.3	0.2	A	0.3	0.3	0.3	0.5	0.5	0.4	0.5	0.5	0.4	0.3	0.4	0.4	0.5	0.6	0.5	0.8	0.42	0.83																							
7-Dec	0.4	0.4	0.4	0.3	0.3	A	0.3	0.3	0.6	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.29	0.63																							
8-Dec	0.2	0.2	0.2	0.2	A	0.4	0.5	0.7	0.9	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.4	0.32	0.89																							
9-Dec	0.5	0.6	0.6	A	0.5	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.8	0.8	0.9	0.5	0.44	0.85																							
10-Dec	0.6	0.6	A	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.6	0.4	0.4	0.4	0.4	0.5	0.6	0.5	0.3	0.2	0.2	0.2	0.2	0.43	0.63																							
11-Dec	0.2	A	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	D	0.4	0.3	0.3	0.3	0.30	0.41																							
12-Dec	A	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.3	0.4	0.4	0.4	0.5	0.6	0.6	A	0.41	0.63																						
13-Dec	0.2	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	A	0.2	0.24	0.33																						
14-Dec	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	C	C	C	C	0.1	0.1	0.3	0.4	0.4	0.5	0.6	A	0.4	0.4	0.38	0.59																						
15-Dec	0.4	0.4	0.3	0.2	0.2	0.1	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.3	A	0.3	0.4	0.2	0.27	0.44																						
16-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.4	0.2	0.3	0.2	0.2	0.3	0.2	0.3	0.5	0.3	A	0.5	0.4	0.3	0.3	0.29	0.49																						
17-Dec	0.2	0.3	0.2	0.2	0.3	0.3	0.3	0.5	0.5	0.5	0.3	0.3	0.4	0.3	0.2	0.2	0.3	0.4	A	0.2	0.2	0.2	0.2	0.2	0.30	0.54																						
18-Dec	0.2	0.2	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.24	0.41																						
19-Dec	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.6	0.5	0.5	0.3	0.3	0.3	0.3	0.3	A	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.33	0.65																						
20-Dec	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.6	0.4	0.4	A	0.4	0.4	0.6	0.8	0.8	0.9	0.9	0.6	0.46	0.90																						
21-Dec	0.5	0.5	0.4	0.3	0.4	0.3	0.5	0.7	0.8	M	M	0.5	0.6	0.7	A	0.6	0.5	0.6	0.4	0.3	0.4	0.4	0.5	0.4	0.49	0.79																						
22-Dec	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.2	0.2	A	0.2	0.2	0.2	0.3	0.4	0.5	0.5	0.4	0.4	0.3	0.34	0.47																						
23-Dec	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	A	0.5	0.4	0.4	0.4	0.3	0.3	0.4	0.4	0.3	0.2	0.2	0.34	0.45																						
24-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	A	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.3	0.3	0.24	0.45																						
25-Dec	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.2	A	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.23	0.40																						
26-Dec	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.26	0.37																						
27-Dec	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.4	A	0.3	0.2	0.3	0.5	0.6	0.4	0.3	0.4	0.4	0.4	0.6	0.7	0.5	0.4	0.3	0.38	0.65																						
28-Dec	0.3	0.3	0.3	0.3	0.2	0.2	0.2	A	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.30	0.41																						
29-Dec	0.3	0.3	0.3	0.3	0.4	0.3	A	0.5	0.7	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.4	0.3	0.3	0.4	0.36	0.66																						
30-Dec	0.4	0.3	0.4	0.4	0.3	A	0.4	0.4	0.3	0.3	0.3	0.4	0.2	0.2	0.2	0.3	0.3	0.6	0.8	0.9	0.4	0.4	0.5	0.4	0.40	0.88																						
31-Dec	0.4	0.6	0.6	0.5	A	0.4	0.2	0.2	0.2	0.3	0.7	0.2	0.2	0.2	0.3	0.4	0.6	0.4	0.2	0.3	0.2	0.2	0.2	0.2	0.33	0.66																						
																								0.31	0.31	0.29	0.29	0.28	0.29	0.32	0.39	0.43	0.40	0.37	0.33	0.34	0.34	0.30	0.32	0.35	0.40	0.41	0.40	0.40	0.37	0.37	0.32	Diurnal Average
																								0.56	0.61	0.62	0.51	0.48	0.59	0.63	0.70	0.89	0.97	1.01	0.55	0.64	0.67	0.62	0.70	1.00	0.94	1.04	0.99	0.82	0.90	0.89	0.58	Diurnal Maximum

C - Calibration D - DAS Failure M - Maintenance 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 - December 2015



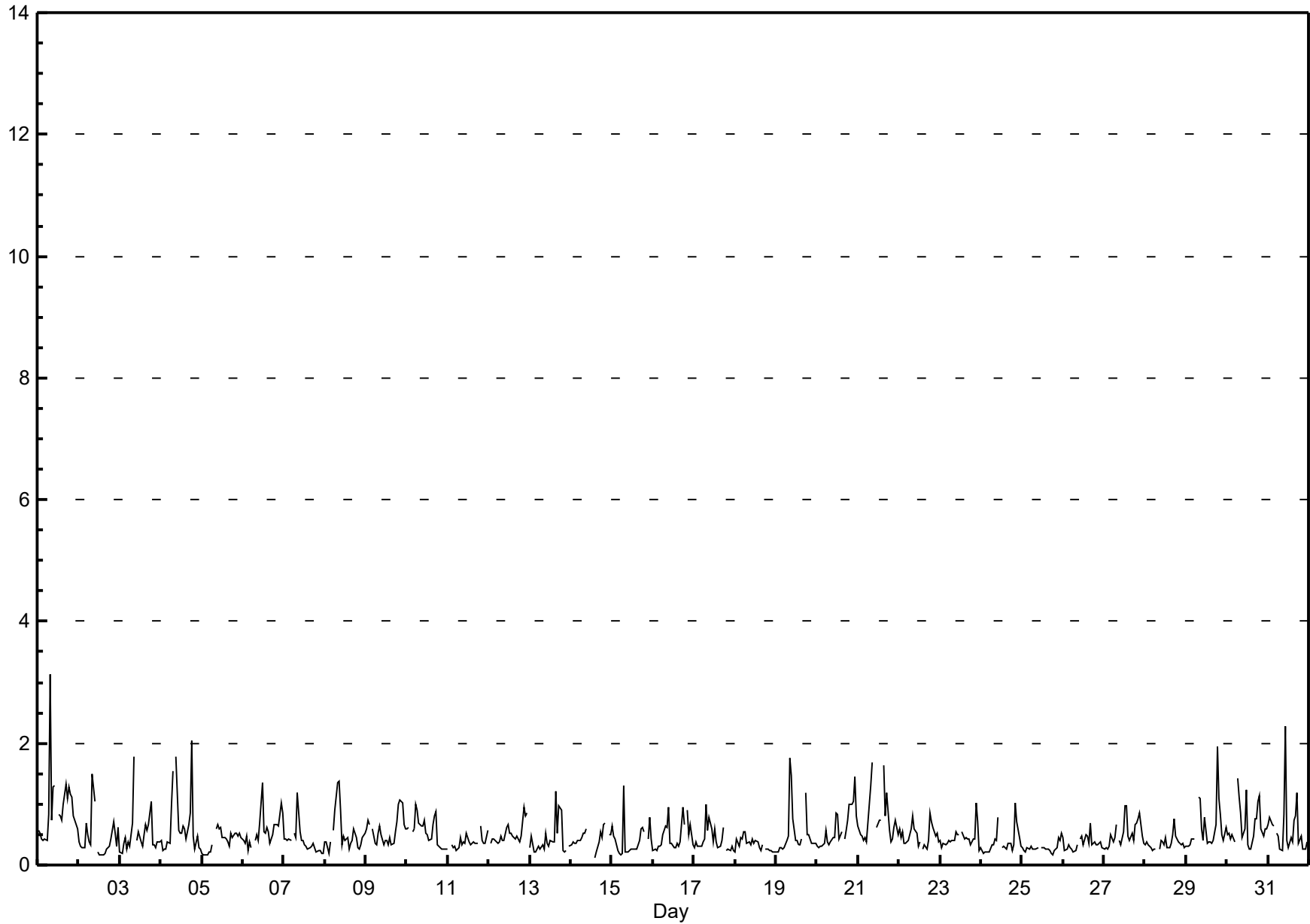
Hourly Maximums

Carbon Monoxide (CO) - ppm Henry Pirker - December 2015

Maximum Value: 3.14 ppm on Dec 1 08:00 Minimum Value: 0.1 ppm on Dec 14 15:00 Maximum Diurnal Average: 0.73 ppm at hour 8 Monthly Average: 0.498 ppm		Maximum Daily Average: 0.93 ppm on Dec 1 Minimum Daily Average: 0.28 ppm on Dec 25 Minimum Diurnal Average: 0.35 ppm at hour 4 Percentiles: P ₁ = 0.17 P ₁₀ = 0.25 Q ₁ = 0.31 Median = 0.40 Q ₃ = 0.59 P ₉₀ = 0.85 P ₉₉ = 1.75		Hours in Service: 744 Hours of Data: 705 Hours of Missing Data: 39 Hours of Calibration: 36 Percent Operational Time: 99.6																																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Dec	0.6	0.5	0.4	0.4	0.4	0.4	0.8	3.1	0.7	1.3	1.3	A	0.8	0.8	0.7	1.0	1.3	1.1	1.3	1.2	1.1	0.8	0.7	0.6	0.93	3.14																							
2-Dec	0.4	0.3	0.3	0.3	0.7	0.5	0.4	0.3	1.5	1.0	A	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.7	0.5	0.3	0.6	0.44	1.49																							
3-Dec	0.2	0.2	0.4	0.4	0.3	0.4	0.3	0.7	1.8	A	0.4	0.5	0.4	0.3	0.5	0.7	0.6	0.7	1.1	0.3	0.3	0.3	0.4	0.4	0.50	1.77																							
4-Dec	0.4	0.2	0.3	0.3	0.4	0.4	1.0	1.6	A	1.8	0.6	0.5	0.5	0.6	0.6	0.4	0.7	0.9	2.0	0.5	0.3	0.5	0.3	0.3	0.64	2.03																							
5-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.3	A	0.6	0.7	0.6	0.6	0.4	0.5	0.4	0.4	0.3	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.41	0.67																							
6-Dec	0.4	0.3	0.5	0.2	0.4	0.3	A	0.4	0.5	0.4	0.7	1.4	0.5	0.5	0.6	0.5	0.4	0.5	0.7	0.7	0.7	0.6	1.0	0.9	0.57	1.36																							
7-Dec	0.4	0.4	0.4	0.4	0.4	A	0.5	0.5	1.2	0.5	0.4	0.4	0.3	0.3	0.2	0.3	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.38	1.19																							
8-Dec	0.4	0.4	0.2	0.4	A	0.6	0.9	1.4	1.4	0.9	0.3	0.5	0.4	0.5	0.3	0.4	0.4	0.6	0.4	0.3	0.3	0.3	0.5	0.5	0.52	1.38																							
9-Dec	0.6	0.7	0.7	A	0.6	0.3	0.3	0.5	0.6	0.5	0.3	0.4	0.4	0.3	0.5	0.3	0.3	0.5	0.7	1.0	1.1	1.0	0.7	0.6	0.57	1.08																							
10-Dec	0.6	0.6	A	0.5	0.6	1.0	0.9	0.7	0.6	0.6	0.7	0.5	0.5	0.4	0.4	0.7	0.8	0.9	0.3	0.3	0.3	0.3	0.3	0.3	0.56	1.00																							
11-Dec	0.3	A	0.3	0.3	0.3	0.2	0.3	0.5	0.3	0.4	0.4	0.5	0.4	0.3	0.4	0.4	0.4	0.3	D	0.6	0.4	0.3	0.4	0.6	0.37	0.65																							
12-Dec	A	0.4	0.4	0.4	0.4	0.3	0.4	0.5	0.4	0.4	0.6	0.7	0.5	0.5	0.5	0.4	0.5	0.4	0.4	0.5	0.9	0.8	0.8	A	0.51	0.95																							
13-Dec	0.3	0.5	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.5	0.4	0.3	0.4	0.4	0.4	1.2	0.5	1.0	0.9	0.2	0.2	0.2	A	0.3	0.41	1.21																							
14-Dec	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	C	C	C	C	0.1	0.2	0.4	0.5	0.5	0.7	0.7	A	0.5	0.5	0.44	0.68																							
15-Dec	0.7	0.5	0.4	0.2	0.2	0.2	0.2	1.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.6	0.6	0.5	A	0.4	0.8	0.4	0.41	1.30																							
16-Dec	0.2	0.3	0.2	0.3	0.3	0.3	0.5	0.6	0.6	1.0	0.3	0.3	0.3	0.3	0.4	0.3	0.4	1.0	0.7	A	0.9	0.5	0.7	0.3	0.47	0.96																							
17-Dec	0.3	0.4	0.3	0.3	0.3	0.4	0.4	1.0	0.6	0.8	0.6	0.4	0.6	0.4	0.3	0.3	0.4	0.6	A	0.2	0.3	0.2	0.3	0.2	0.42	1.00																							
18-Dec	0.2	0.4	0.3	0.5	0.4	0.6	0.5	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.3	0.2	0.3	A	0.3	0.3	0.2	0.2	0.2	0.2	0.34	0.55																							
19-Dec	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.5	1.8	1.5	0.8	0.4	0.4	0.3	0.3	0.4	A	1.2	0.5	0.5	0.4	0.4	0.3	0.3	0.52	1.76																							
20-Dec	0.3	0.3	0.3	0.3	0.4	0.6	0.4	0.3	0.4	0.5	0.5	0.9	0.8	0.4	0.6	A	0.4	0.6	0.7	1.0	1.0	1.0	1.5	0.8	0.60	1.46																							
21-Dec	0.6	0.5	0.5	0.4	0.5	0.4	0.7	1.3	1.7	M	M	0.6	0.7	0.7	A	1.6	0.8	1.2	0.6	0.4	0.4	0.6	0.7	0.5	0.74	1.68																							
22-Dec	0.6	0.5	0.5	0.4	0.4	0.4	0.5	0.6	0.8	0.6	0.5	0.3	0.4	A	0.3	0.3	0.3	0.4	0.8	0.7	0.6	0.5	0.5	0.4	0.49	0.85																							
23-Dec	0.4	0.3	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	A	0.5	0.4	0.5	0.4	0.4	0.3	0.4	0.4	1.0	0.7	0.2	0.45	1.02																							
24-Dec	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.8	A	0.3	0.3	0.3	0.3	0.4	0.3	0.2	0.3	1.0	0.7	0.5	0.3	0.37	1.01																							
25-Dec	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	A	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.5	0.28	0.51																							
26-Dec	0.4	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.3	A	0.4	0.5	0.3	0.5	0.5	0.3	0.7	0.3	0.4	0.3	0.3	0.4	0.4	0.3	0.36	0.69																							
27-Dec	0.3	0.3	0.3	0.3	0.5	0.4	0.4	0.7	A	0.4	0.3	0.5	1.0	1.0	0.5	0.4	0.5	0.4	0.7	0.7	0.8	0.9	0.5	0.4	0.52	0.97																							
28-Dec	0.3	0.4	0.3	0.3	0.2	0.3	0.3	A	0.3	0.4	0.4	0.3	0.5	0.3	0.3	0.4	0.5	0.8	0.5	0.4	0.4	0.3	0.3	0.3	0.36	0.76																							
29-Dec	0.3	0.3	0.3	0.4	0.4	0.4	A	1.1	1.1	0.6	0.4	0.8	0.3	0.4	0.4	0.4	0.4	0.7	1.9	1.1	0.8	0.5	0.4	0.6	0.61	1.95																							
30-Dec	0.5	0.5	0.4	0.5	0.4	A	1.4	1.1	0.9	0.4	0.6	1.2	0.3	0.3	0.3	0.5	0.7	0.8	1.0	1.1	0.6	0.5	0.6	0.6	0.66	1.43																							
31-Dec	0.7	0.8	0.7	0.6	A	0.5	0.5	0.3	0.2	0.8	2.3	0.4	0.3	0.4	0.4	0.7	0.8	1.2	0.4	0.5	0.3	0.3	0.3	0.4	0.59	2.27																							
																								0.39	0.38	0.35	0.35	0.37	0.38	0.49	0.73	0.72	0.66	0.58	0.52	0.45	0.43	0.38	0.48	0.49	0.64	0.66	0.54	0.55	0.51	0.52	0.43	Diurnal Average	
																								0.67	0.79	0.67	0.64	0.69	1.00	1.43	3.14	1.77	1.79	2.27	1.36	0.97	0.97	0.74	1.63	1.33	1.19	2.03	1.16	1.11	1.04	1.46	0.86	Diurnal Maximum	
C - Calibration																								D - DAS Failure				M - Maintenance				A - Automated Daily Zero Span																	

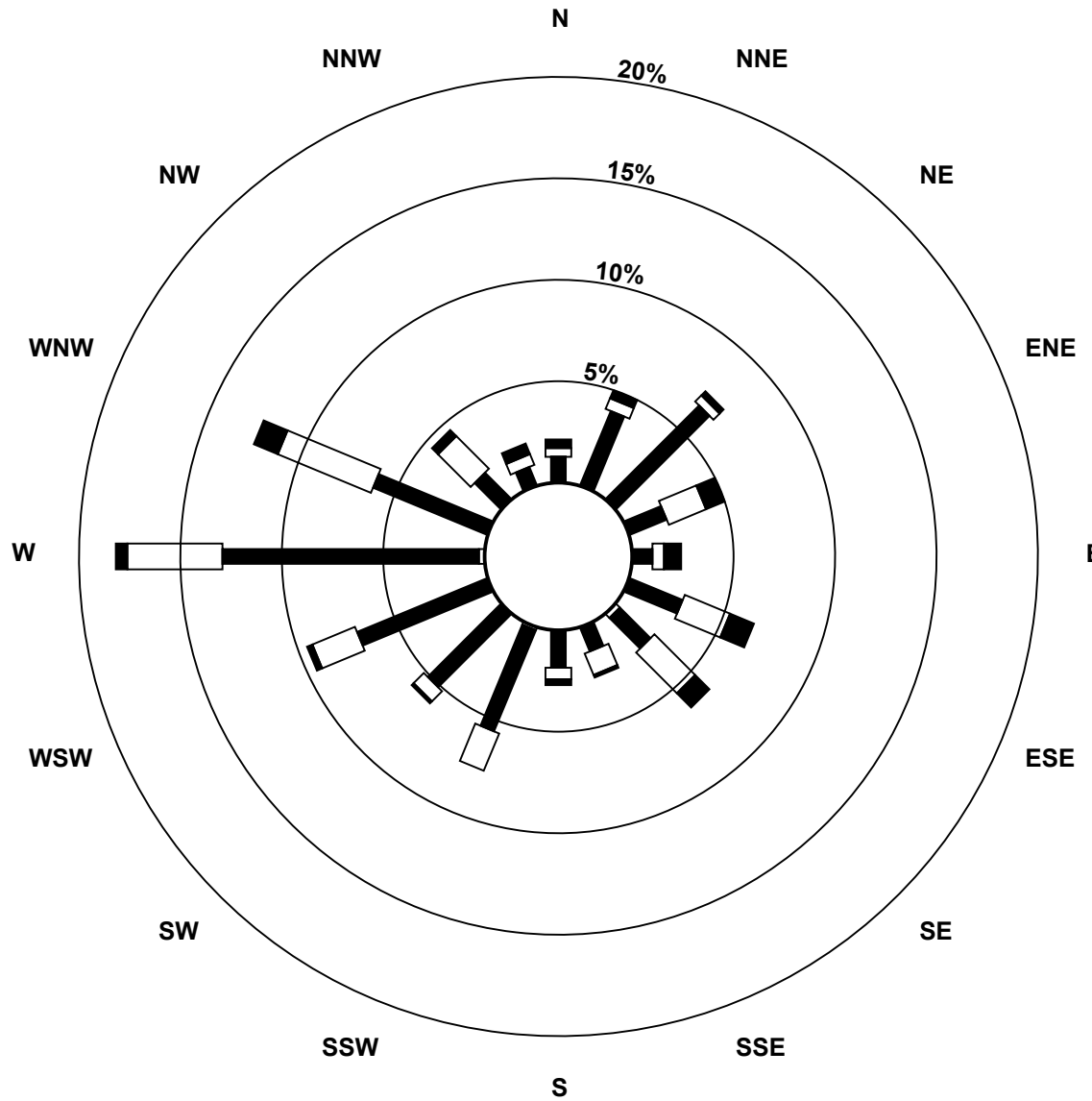
Hourly Maximums

Carbon Monoxide (CO) - ppm
Henry Pirker - December 2015

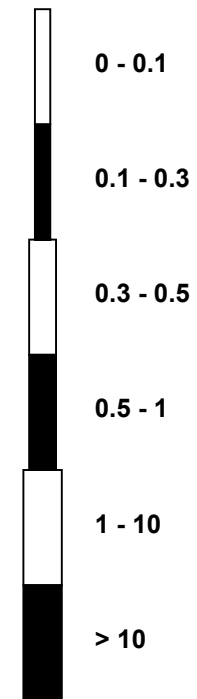


Pollutant Rose

Carbon Monoxide (CO) - ppm
Henry Pirker - December 2015



Pollutant Classes (ppm)



Eight Hour Running Averages

Carbon Monoxide (CO) - ppm

Henry Pirker - December 2015

Number of Exceedences (AAAQO): 8-hr: 0	Hours in Service: 744
Maximum Value: 0.85 ppm on Dec 1 22:00	Hours of Data: 734
Minimum Value: 0.17 ppm on Dec 5 08:00	Hours of Missing Data: 10
	Hours of Calibration: 7
	Percent Operational Time: 99.6
Percentiles: P ₁ = 0.18 P ₁₀ = 0.23 Q ₁ = 0.27 Median = 0.33 Q ₃ = 0.40 P ₉₀ = 0.48 P ₉₉ = 0.79	

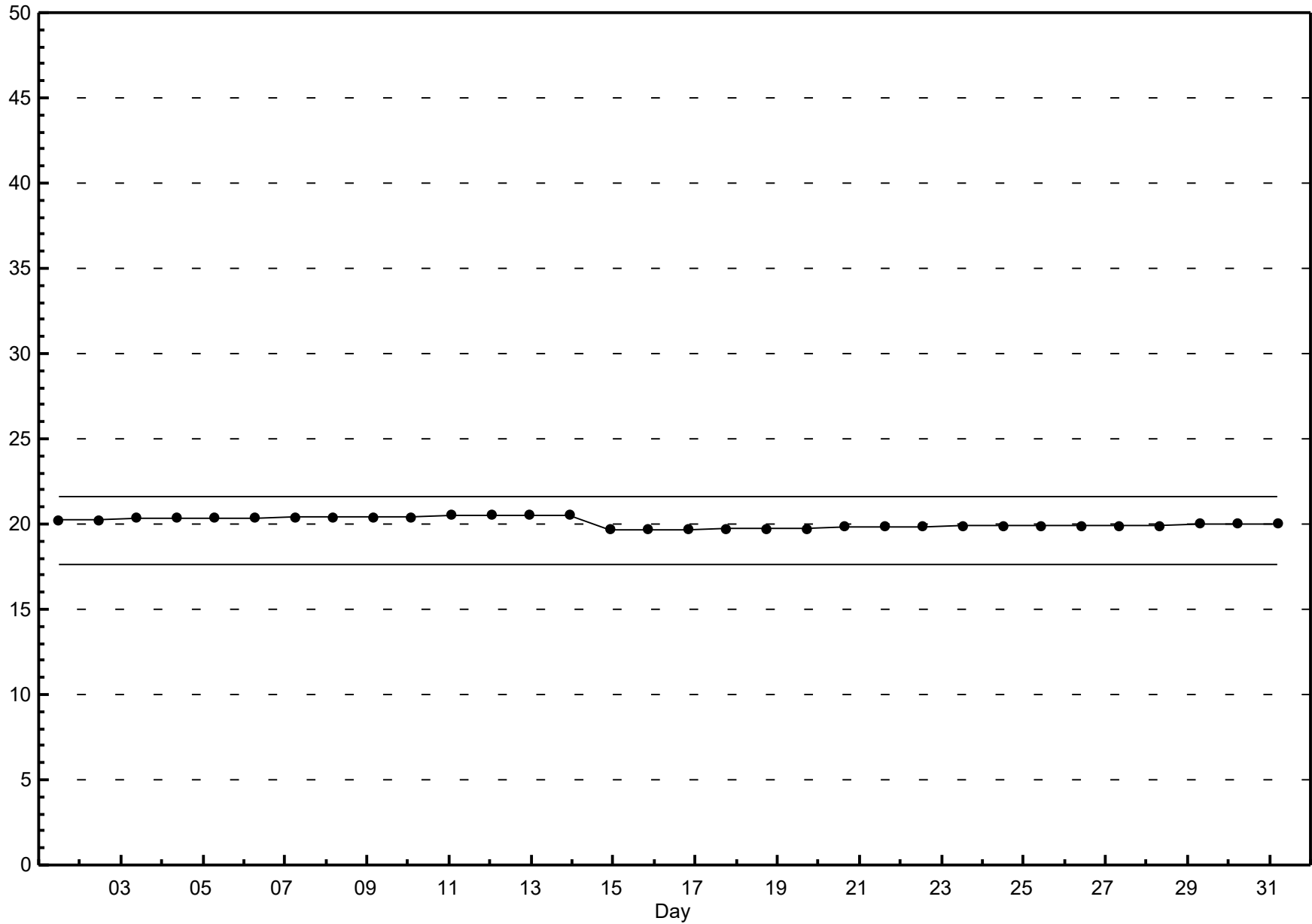
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Dec	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.85
2-Dec	0.7	0.6	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.71
3-Dec	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.38
4-Dec	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.53
5-Dec	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.38
6-Dec	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.51
7-Dec	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.52
8-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.50
9-Dec	0.3	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.57
10-Dec	0.6	0.6	0.6	0.6	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	0.4	0.4	0.4	0.4	0.3	0.3	0.65
11-Dec	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.33
12-Dec	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.46
13-Dec	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.44
14-Dec	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	N	N	N	N	N	N	N	0.3	0.4	0.4	0.4	0.4	0.45
15-Dec	0.5	0.5	0.4	0.4	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	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.47
16-Dec	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.36
17-Dec	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.39
18-Dec	0.2	0.2	0.2	0.2	0.3	0.3	0.3	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	0.28
19-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.41
20-Dec	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.7	0.7	0.68
21-Dec	0.7	0.7	0.7	0.6	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	N	N	N	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.68
22-Dec	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.44
23-Dec	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.41
24-Dec	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	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.29
25-Dec	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.29
26-Dec	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.31
27-Dec	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.48
28-Dec	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.44
29-Dec	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.42
30-Dec	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.54
31-Dec	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.54
	0.71	0.68	0.65	0.61	0.57	0.53	0.54	0.55	0.54	0.53	0.57	0.59	0.63	0.69	0.71	0.71	0.78	0.80	0.80	0.82	0.85	0.85	0.83	0.79	

Diurnal Maximums

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

Span Responses

Carbon Monoxide (CO)
Henry Pirker - December 2015





Peace Airshed Zone Association

Hourly Averages

Total Hydrocarbons (THC) - ppm

Henry Pirker - December 2015

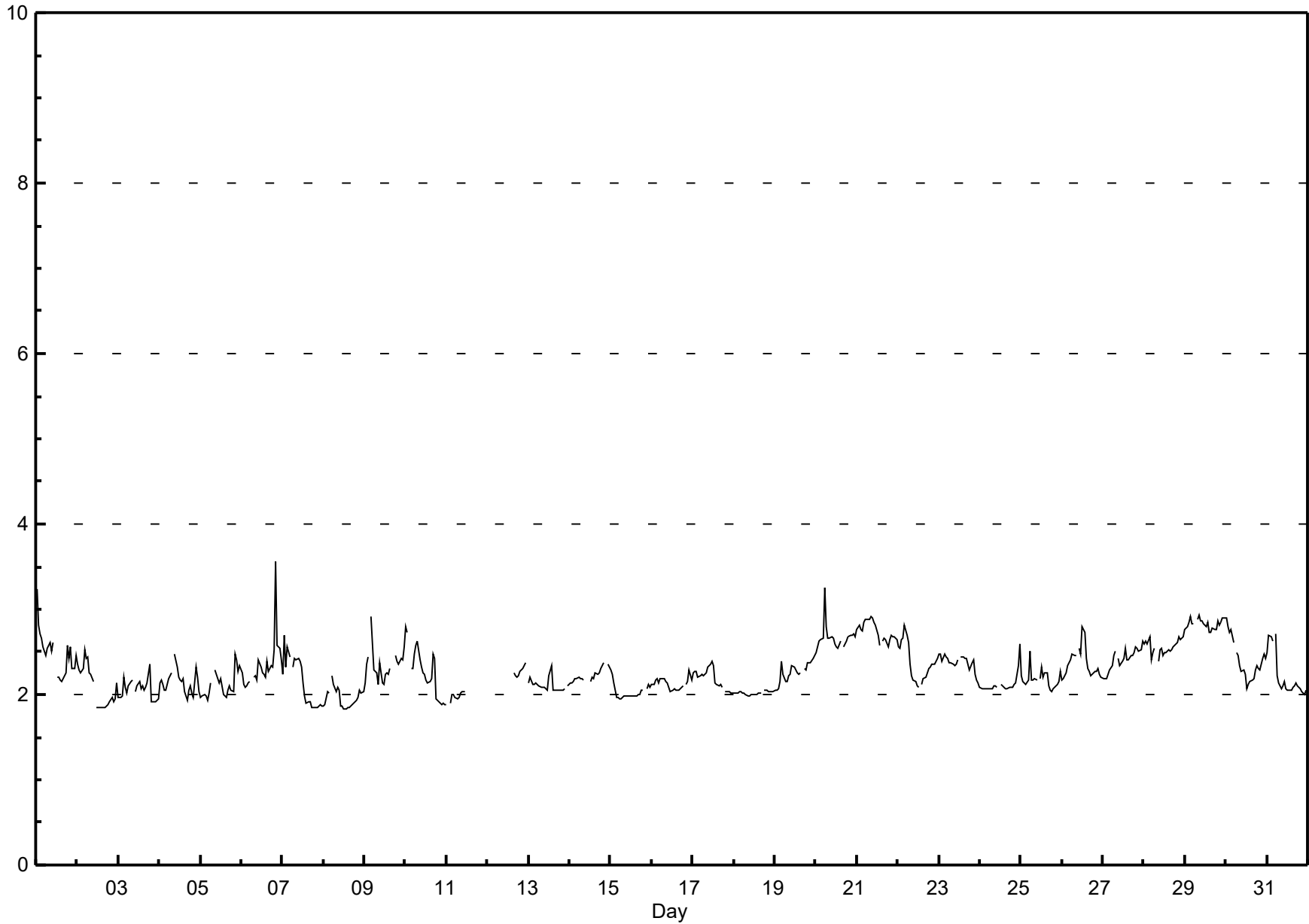
Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 3.57 ppm on Dec 6 21:00	Maximum Daily Average: 2.83 ppm on Dec 29		Hours of Data:	681
Minimum Value: 1.8 ppm on Dec 8 14:00	Minimum Daily Average: 1.96 ppm on Dec 8		Hours of Missing Data:	63
Maximum Diurnal Average: 2.35 ppm at hour 6	Minimum Diurnal Average: 2.18 ppm at hour 15		Hours of Calibration:	34
Monthly Average: 2.275 ppm	Percentiles: P ₁ = 1.85 P ₁₀ = 1.98 Q ₁ = 2.07 Median = 2.22 Q ₃ = 2.44 P ₉₀ = 2.67 P ₉₉ = 2.91		Percent Operational Time:	96.1

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Dec	3.2	2.8	2.7	2.7	2.6	2.5	2.5	2.6	2.6	2.5	2.6	A	2.2	2.2	2.2	2.2	2.3	2.6	2.4	2.6	2.3	2.3	2.5	2.48	3.23																								
2-Dec	2.4	2.3	2.3	2.3	2.5	2.4	2.4	2.3	2.2	2.2	A	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	2.0	1.9	2.0	2.1	2.09	2.52																							
3-Dec	2.0	2.0	2.0	2.2	2.1	2.0	2.1	2.2	2.2	A	2.0	2.1	2.2	2.1	2.1	2.1	2.1	2.4	1.9	1.9	1.9	1.9	1.9	2.06	2.36																								
4-Dec	2.1	2.2	2.1	2.0	2.0	2.2	2.2	2.3	A	2.5	2.3	2.2	2.2	2.1	2.2	2.0	1.9	2.1	2.1	2.0	2.0	2.3	2.2	2.0	2.14	2.47																							
5-Dec	2.0	2.0	2.0	2.0	1.9	2.0	2.1	A	2.3	2.2	2.2	2.1	2.2	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.5	2.4	2.3	2.3	2.12	2.48																							
6-Dec	2.2	2.1	2.1	2.1	2.1	2.2	A	2.2	2.2	2.2	2.4	2.3	2.3	2.2	2.2	2.4	2.3	2.3	2.3	2.5	3.6	2.6	2.5	2.4	2.34	3.57																							
7-Dec	2.2	2.7	2.3	2.6	2.4	A	2.3	2.4	2.4	2.4	2.4	2.3	2.1	2.0	1.9	1.9	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	2.15	2.69																							
8-Dec	1.9	1.9	2.0	2.0	A	2.2	2.1	2.0	2.1	2.0	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	1.96	2.23																							
9-Dec	2.1	2.4	2.4	A	2.9	2.3	2.3	2.2	2.1	2.4	2.1	2.1	2.2	2.3	2.2	2.3	M	M	2.5	2.4	2.4	2.4	2.4	2.6	2.34	2.92																							
10-Dec	2.8	2.7	A	2.3	2.3	2.5	2.6	2.6	2.4	2.3	2.2	2.2	2.2	2.1	2.2	2.2	2.5	2.4	1.9	1.9	1.9	1.9	1.9	1.9	2.26	2.80																							
11-Dec	1.9	A	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	N	N	N	N	N	M	D	N	N	N	N	N	--	2.04																							
12-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	M	2.3	2.2	2.2	2.2	2.3	2.3	2.3	2.4	A	--	2.36																							
13-Dec	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.1	2.0	2.1	2.0	2.0	2.1	2.1	2.1	A	2.1	2.10	2.34																							
14-Dec	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	C	C	C	2.2	2.2	2.2	2.3	2.2	2.2	2.3	2.3	2.4	A	2.4	2.3	2.23	2.38																							
15-Dec	2.3	2.2	2.1	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	2.1	2.1	A	2.1	2.1	2.1	2.03	2.28																							
16-Dec	2.1	2.1	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.1	2.3	2.2	2.13	2.29																							
17-Dec	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.3	2.1	2.1	2.1	2.1	2.1	A	2.0	2.0	2.0	2.0	2.0	2.19	2.40																							
18-Dec	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	A	2.0	2.1	2.0	2.0	2.0	2.0	2.02	2.05																							
19-Dec	2.1	2.1	2.1	2.1	2.4	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.2	A	2.3	2.3	2.4	2.4	2.4	2.4	2.5	2.26	2.46																							
20-Dec	2.5	2.6	2.6	2.6	2.7	3.3	2.8	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	A	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.7	2.66	3.26																							
21-Dec	2.8	2.8	2.8	2.7	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.7	2.6	A	2.6	2.7	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.75	2.92																							
22-Dec	2.6	2.5	2.6	2.7	2.8	2.7	2.6	2.4	2.2	2.2	2.2	2.1	2.1	A	2.1	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.37	2.81																							
23-Dec	2.5	2.5	2.4	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.4	2.4	A	2.4	2.4	2.4	2.4	2.4	2.3	2.4	2.4	2.2	2.2	2.1	2.37	2.48																						
24-Dec	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.6	2.12	2.59																							
25-Dec	2.2	2.2	2.1	2.1	2.2	2.5	2.2	2.2	2.2	2.2	A	2.2	2.3	2.2	2.2	2.3	2.1	2.0	2.0	2.1	2.1	2.1	2.2	2.3	2.18	2.51																							
26-Dec	2.2	2.2	2.2	2.3	2.4	2.4	2.5	2.5	2.5	A	2.5	2.5	2.8	2.7	2.4	2.3	2.3	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.37	2.80																							
27-Dec	2.2	2.2	2.2	2.2	2.3	2.3	2.5	2.5	A	2.4	2.3	2.4	2.4	2.6	2.4	2.4	2.5	2.5	2.5	2.6	2.5	2.5	2.6	2.6	2.41	2.62																							
28-Dec	2.6	2.6	2.6	2.7	2.4	2.5	2.5	A	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.56	2.68																							
29-Dec	2.8	2.8	2.8	2.9	2.8	2.8	A	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.7	2.7	2.8	2.8	2.8	2.9	2.8	2.9	2.9	2.9	2.83	2.94																							
30-Dec	2.9	2.8	2.7	2.8	2.6	A	2.5	2.5	2.3	2.3	2.3	2.2	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.5	2.4	2.40	2.90																							
31-Dec	2.5	2.7	2.7	2.6	A	2.7	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.20	2.71																							
																								2.32	2.34	2.30	2.32	2.34	2.35	2.31	2.31	2.29	2.30	2.29	2.24	2.24	2.23	2.18	2.19	2.20	2.22	2.24	2.24	2.26	2.31	2.27	2.28	2.29	Diurnal Average
																								3.23	2.81	2.85	2.91	2.92	3.26	2.88	2.89	2.94	2.91	2.86	2.83	2.80	2.85	2.73	2.73	2.77	2.77	2.76	2.86	3.57	2.85	2.89	2.89	Diurnal Maximum	

C - Calibration D - DAS Failure M - Maintenance N - Not Valid A - Automated Daily Zero Span

Hourly Averages

Total Hydrocarbons (THC) - ppm
Henry Pirker - December 2015



Hourly Maximums

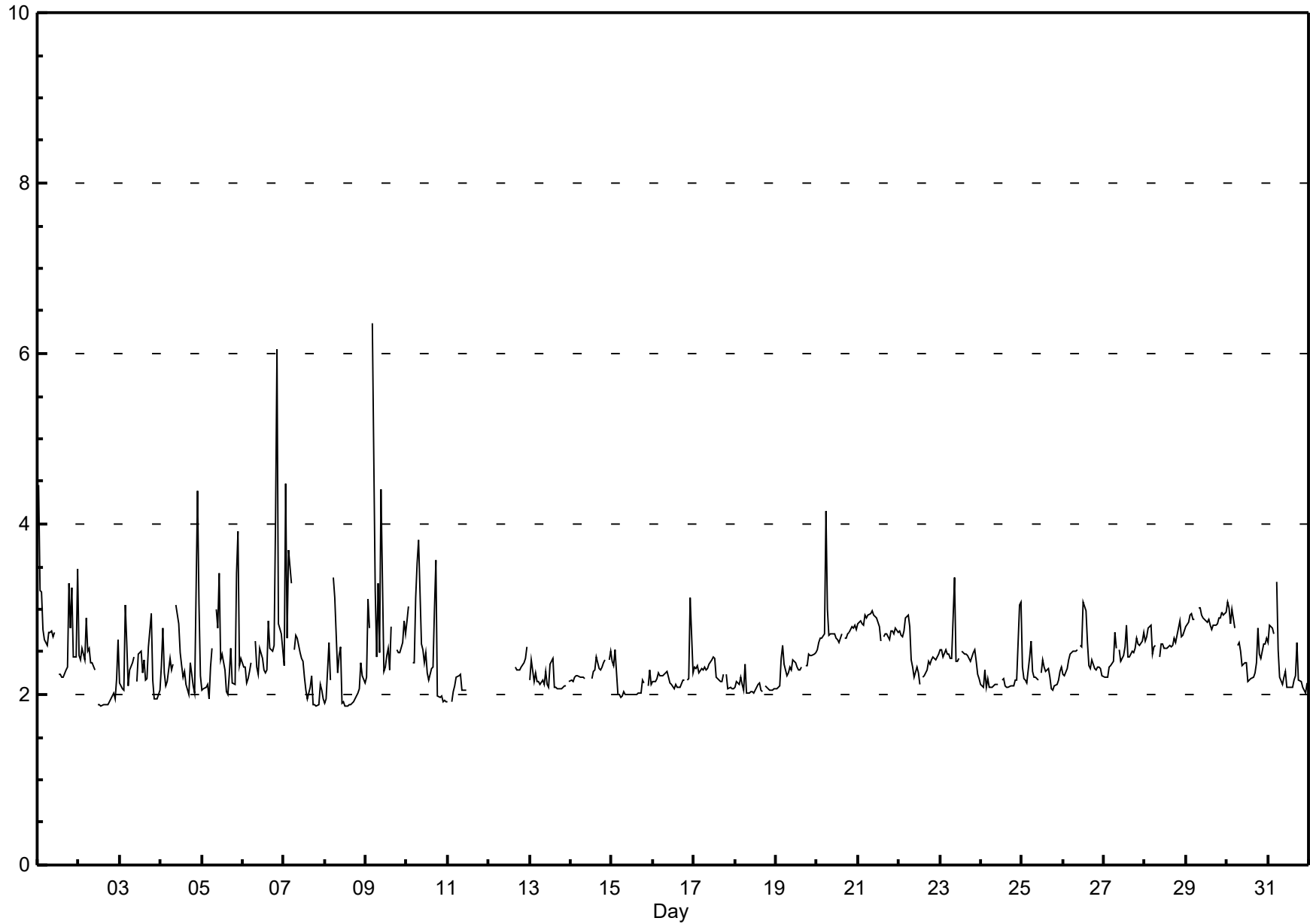
Total Hydrocarbons (THC) - ppm

Henry Pirker - December 2015

Maximum Value: 6.36 ppm on Dec 9 05:00		Maximum Daily Average: 2.89 ppm on Dec 9		Hours in Service: 744																																												
Minimum Value: 1.9 ppm on Dec 8 13:00		Minimum Daily Average: 2.09 ppm on Dec 18		Hours of Data: 681																																												
Maximum Diurnal Average: 2.60 ppm at hour 5		Minimum Diurnal Average: 2.25 ppm at hour 15		Hours of Missing Data: 63																																												
Monthly Average: 2.427 ppm		Percentiles: P ₁ = 1.87 P ₁₀ = 2.04 Q ₁ = 2.15 Median = 2.33 Q ₃ = 2.61 P ₉₀ = 2.87 P ₉₉ = 4.08		Hours of Calibration: 34																																												
				Percent Operational Time: 96.1																																												
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	4.5	3.2	3.2	2.8	2.6	2.6	2.7	2.7	2.8	2.7	2.7	A	2.2	2.2	2.2	2.3	2.3	3.3	2.8	3.2	2.4	2.4	3.5	2.77	4.46																							
2-Dec	2.5	2.4	2.5	2.4	2.9	2.5	2.5	2.4	2.4	2.3	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.2	2.6	2.20	2.89																							
3-Dec	2.1	2.1	2.1	3.0	2.6	2.1	2.3	2.4	2.4	A	2.1	2.5	2.5	2.2	2.4	2.2	2.2	2.6	3.0	2.2	1.9	2.0	1.9	2.0	2.30	3.05																						
4-Dec	2.3	2.8	2.3	2.1	2.2	2.4	2.3	2.4	A	3.1	2.8	2.5	2.3	2.2	2.3	2.1	2.0	2.4	2.2	2.1	2.0	4.4	3.1	2.2	2.45	4.39																						
5-Dec	2.0	2.1	2.1	2.1	1.9	2.3	2.5	A	3.0	2.8	3.4	2.4	2.5	2.3	2.0	2.0	2.2	2.5	2.1	2.1	3.4	3.9	2.3	2.4	2.46	3.92																						
6-Dec	2.3	2.3	2.1	2.2	2.3	2.4	A	2.6	2.3	2.2	2.5	2.4	2.3	2.3	2.3	2.9	2.5	2.5	2.6	4.0	6.1	2.8	2.7	2.5	2.66	6.05																						
7-Dec	2.3	4.5	2.7	3.7	3.3	A	2.5	2.7	2.7	2.5	2.4	2.4	2.2	2.0	1.9	2.1	2.2	1.9	1.9	1.9	1.9	2.1	2.0	1.9	2.42	4.47																						
8-Dec	1.9	1.9	2.6	2.2	A	3.4	3.1	2.2	2.4	2.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.4	2.2	2.1	2.19	3.37																							
9-Dec	2.2	3.1	2.8	A	6.4	3.2	2.4	3.3	2.5	4.4	2.3	2.3	2.5	2.5	2.3	2.8	M	M	2.5	2.5	2.5	2.6	2.9	2.7	2.89	6.36																						
10-Dec	2.9	3.0	A	2.4	2.4	3.1	3.5	3.8	2.6	2.5	2.4	2.5	2.2	2.2	2.3	2.3	M	M	3.0	3.6	2.0	2.0	1.9	1.9	2.54	3.81																						
11-Dec	1.9	A	1.9	2.0	2.1	2.2	2.2	2.2	2.0	2.1	2.1	2.1	N	N	N	N	N	M	D	N	N	N	N	N	--	2.25																						
12-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	M	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.6	A	--	2.56																						
13-Dec	2.2	2.4	2.2	2.2	2.2	2.1	2.1	2.2	2.1	2.3	2.1	2.1	2.4	2.4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.16	2.42																						
14-Dec	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	C	C	C	2.2	2.3	2.3	2.4	2.3	2.3	2.3	2.4	2.4	A	2.4	2.5	2.28	2.51																						
15-Dec	2.4	2.3	2.5	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	2.2	2.1	A	2.1	2.3	2.1	2.09	2.52																						
16-Dec	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	A	2.2	2.2	3.1	2.2	2.21	3.13																						
17-Dec	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.2	2.2	2.1	2.2	2.2	A	2.2	2.1	2.1	2.1	2.1	2.25	2.44																						
18-Dec	2.1	2.1	2.1	2.2	2.1	2.1	2.4	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	A	A	2.1	2.1	2.1	2.1	2.1	2.1	2.09	2.35																						
19-Dec	2.1	2.1	2.1	2.4	2.6	2.4	2.2	2.2	2.3	2.3	2.4	2.4	2.3	2.3	2.3	2.3	A	A	2.3	2.3	2.5	2.5	2.5	2.5	2.34	2.58																						
20-Dec	2.5	2.6	2.7	2.7	2.7	4.2	3.0	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.7	A	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.77	4.16																						
21-Dec	2.8	2.9	2.8	2.8	2.9	2.9	2.9	3.0	3.0	2.9	2.9	2.9	2.8	2.6	A	2.7	2.7	2.7	2.6	2.8	2.8	2.7	2.8	2.7	2.81	2.99																						
22-Dec	2.8	2.7	2.7	2.8	2.9	2.9	2.8	2.4	2.3	2.2	2.3	2.2	2.1	A	2.2	2.2	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.47	2.94																						
23-Dec	2.5	2.5	2.4	2.5	2.5	2.5	2.4	2.4	3.4	2.4	2.4	2.4	A	2.5	2.5	2.5	2.5	2.4	2.4	2.5	2.5	2.4	2.2	2.2	2.48	3.37																						
24-Dec	2.1	2.1	2.3	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	A	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	3.0	3.1	2.21	3.09																						
25-Dec	2.3	2.2	2.2	2.1	2.4	2.6	2.3	2.2	2.2	2.2	A	2.3	2.4	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.24	2.62																						
26-Dec	2.2	2.2	2.3	2.4	2.5	2.5	2.5	2.5	2.5	A	2.6	2.6	3.1	3.0	2.6	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.45	3.09																						
27-Dec	2.2	2.2	2.2	2.3	2.3	2.4	2.7	2.5	A	2.5	2.4	2.4	2.6	2.8	2.4	2.4	2.5	2.5	2.5	2.7	2.6	2.6	2.6	2.7	2.49	2.82																						
28-Dec	2.6	2.7	2.8	2.8	2.5	2.6	2.6	A	2.4	2.6	2.6	2.5	2.5	2.5	2.6	2.6	2.6	2.7	2.6	2.8	2.9	2.7	2.7	2.7	2.63	2.87																						
29-Dec	2.8	2.8	2.9	3.0	2.9	2.9	A	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.9	2.9	3.0	2.9	3.0	2.89	3.02																						
30-Dec	3.1	3.0	2.8	3.0	2.8	A	2.6	2.6	2.5	2.3	2.4	2.4	2.2	2.2	2.2	2.2	2.2	2.4	2.8	2.5	2.4	2.6	2.6	2.7	2.54	3.09																						
31-Dec	2.6	2.8	2.8	2.7	A	3.3	2.5	2.2	2.1	2.2	2.3	2.1	2.1	2.1	2.1	2.2	2.2	2.6	2.2	2.2	2.1	2.0	2.0	2.1	2.33	3.32																						
																								2.43	2.54	2.44	2.47	2.60	2.58	2.50	2.49	2.45	2.49	2.42	2.34	2.33	2.32	2.25	2.28	2.30	2.38	2.36	2.38	2.51	2.47	2.47	2.44	Diurnal Average
																								4.46	4.47	3.20	3.69	6.36	4.16	3.55	3.81	3.37	4.40	3.42	2.89	3.09	2.98	2.82	2.86	3.00	3.57	3.31	4.05	6.05	4.39	3.13	3.48	Diurnal Maximum
C - Calibration																								D - DAS Failure				M - Maintenance				N - Not Valid				A - Automated Daily Zero Span												

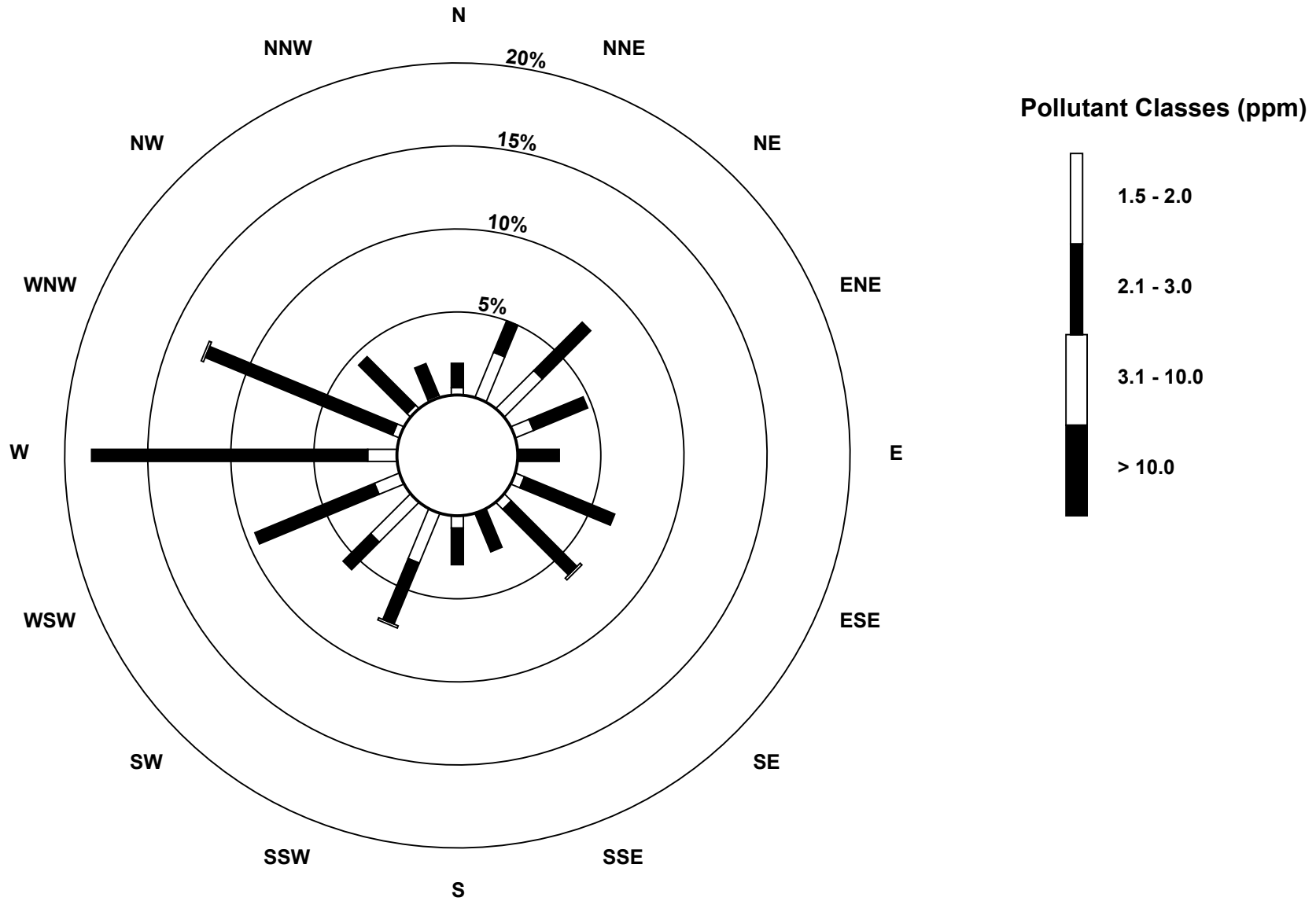
Hourly Maximums

Total Hydrocarbons (THC) - ppm
Henry Pirker - December 2015



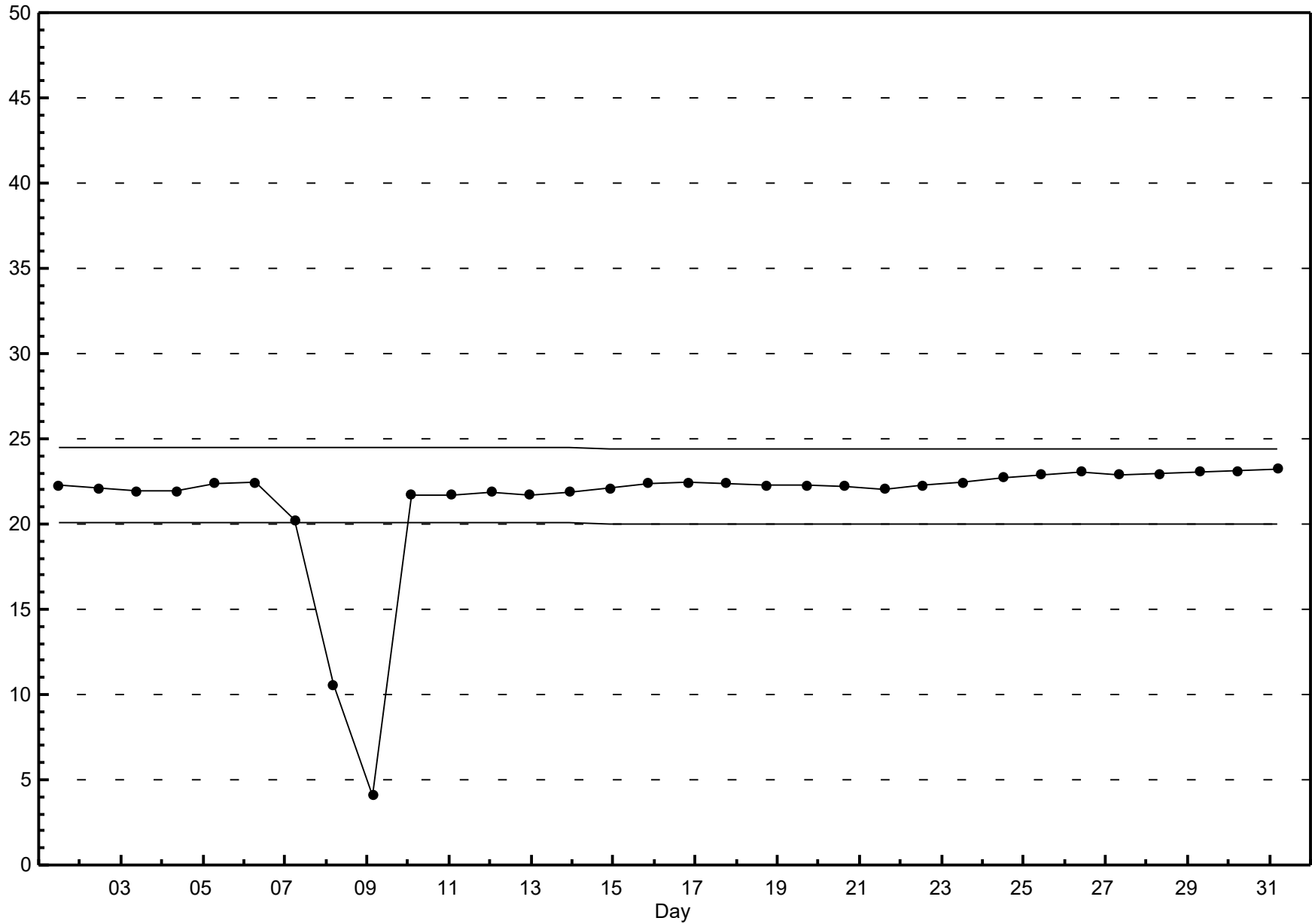
Pollutant Rose

Total Hydrocarbons (THC) - ppm
Henry Pirker - December 2015



Span Responses

Total Hydrocarbons (THC)
Henry Pirker - December 2015



Hourly Averages

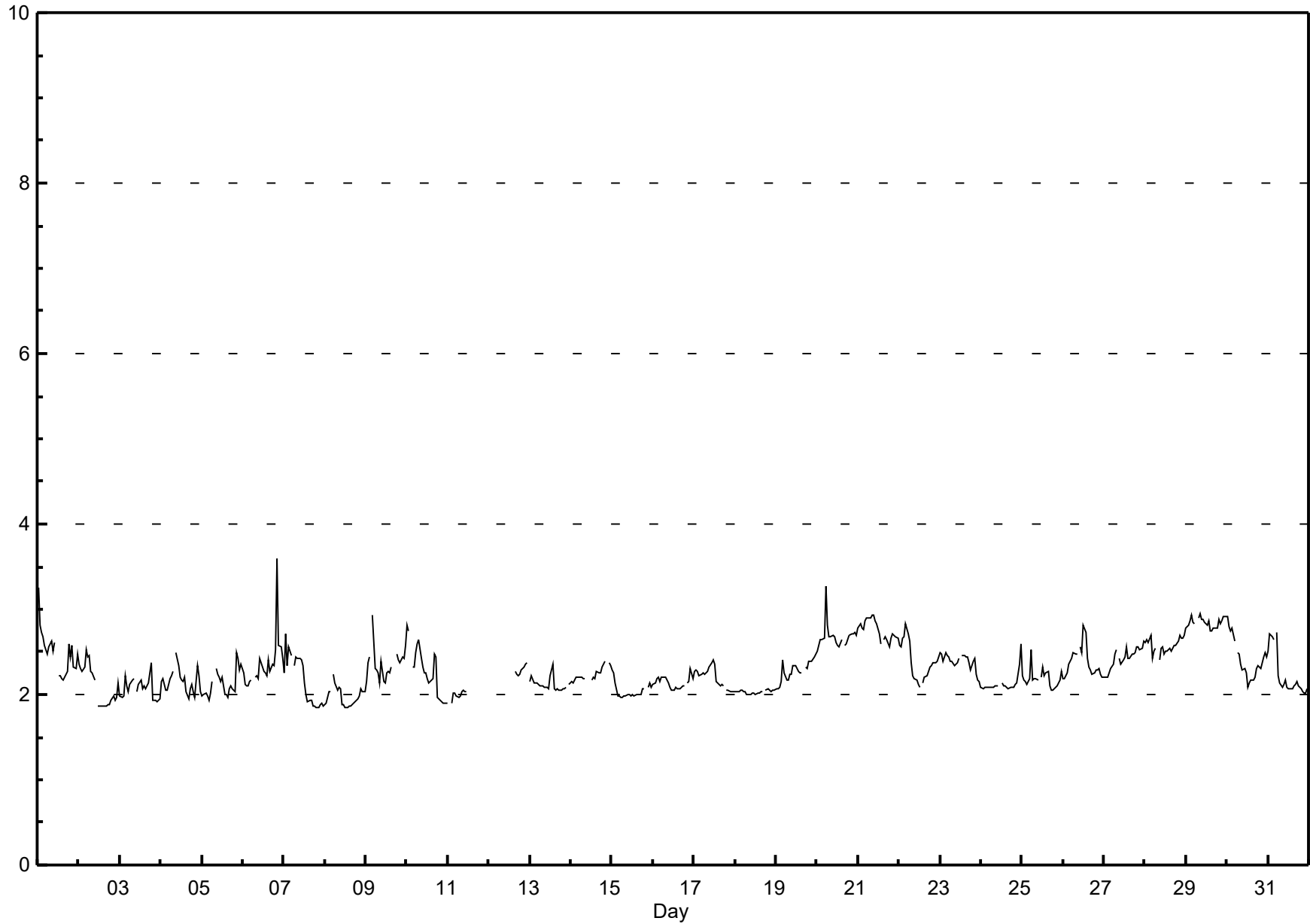
Methane (CH₄) - ppm

Henry Pirker - December 2015

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 3.59 ppm on Dec 6 21:00	Maximum Daily Average: 2.85 ppm on Dec 29		Hours of Data:	681
Minimum Value: 1.8 ppm on Dec 8 14:00	Minimum Daily Average: 1.97 ppm on Dec 8		Hours of Missing Data:	63
Maximum Diurnal Average: 2.36 ppm at hour 6	Minimum Diurnal Average: 2.19 ppm at hour 15		Hours of Calibration:	34
Monthly Average: 2.287 ppm	Percentiles: P ₁ = 1.86 P ₁₀ = 1.99 Q ₁ = 2.08 Median = 2.23 Q ₃ = 2.45 P ₉₀ = 2.68 P ₉₉ = 2.93		Percent Operational Time:	96.1

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	3.3	2.8	2.7	2.7	2.6	2.5	2.6	2.6	2.6	2.5	2.6	A	2.2	2.2	2.2	2.2	2.3	2.6	2.4	2.6	2.3	2.3	2.5	2.50	3.25																							
2-Dec	2.4	2.3	2.3	2.3	2.5	2.4	2.5	2.3	2.3	2.2	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	2.0	2.1	2.10	2.53																						
3-Dec	2.0	2.0	2.0	2.2	2.1	2.0	2.1	2.2	2.2	A	2.0	2.1	2.2	2.1	2.1	2.1	2.1	2.4	1.9	1.9	1.9	1.9	2.0	2.07	2.37																							
4-Dec	2.1	2.2	2.1	2.1	2.1	2.2	2.2	2.3	A	2.5	2.3	2.2	2.2	2.2	2.2	2.0	2.0	2.1	2.1	2.0	2.0	2.3	2.2	2.0	2.16	2.48																						
5-Dec	2.0	2.0	2.0	2.0	1.9	2.0	2.2	A	2.3	2.2	2.2	2.1	2.2	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.5	2.4	2.3	2.3	2.13	2.49																						
6-Dec	2.3	2.1	2.1	2.1	2.1	2.2	A	2.2	2.2	2.2	2.4	2.3	2.3	2.2	2.2	2.4	2.3	2.4	2.3	2.5	3.6	2.6	2.6	2.4	2.35	3.59																						
7-Dec	2.3	2.7	2.3	2.6	2.5	A	2.3	2.4	2.4	2.4	2.4	2.3	2.1	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.16	2.71																						
8-Dec	1.9	1.9	2.0	2.0	A	2.2	2.1	2.0	2.1	2.1	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.0	2.0	2.0	1.97	2.24																						
9-Dec	2.2	2.4	2.4	A	2.9	2.3	2.3	2.3	2.1	2.4	2.1	2.1	2.3	2.3	2.3	2.3	M	M	2.5	2.4	2.4	2.4	2.6	2.35	2.94																							
10-Dec	2.8	2.7	A	2.3	2.3	2.5	2.6	2.7	2.4	2.3	2.3	2.3	2.2	2.1	2.2	2.2	2.5	2.4	2.0	1.9	1.9	1.9	1.9	1.9	2.27	2.81																						
11-Dec	1.9	A	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	N	N	N	N	N	M	D	N	N	N	N	N	--	2.05																						
12-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	M	2.3	2.2	2.2	2.2	2.3	2.3	2.4	2.4	A	--	2.38																						
13-Dec	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.11	2.35																						
14-Dec	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	C	C	C	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.4	A	2.4	2.3	2.24	2.39																						
15-Dec	2.3	2.3	2.1	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	2.1	2.1	A	2.1	2.1	2.1	2.1	2.04	2.29																						
16-Dec	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.2	2.3	2.2	2.14	2.30																						
17-Dec	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.4	2.2	2.1	2.1	2.1	2.1	A	2.0	2.0	2.0	2.0	2.0	2.20	2.41																						
18-Dec	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.1	2.1	2.0	2.0	2.0	2.0	2.03	2.06																						
19-Dec	2.1	2.1	2.1	2.2	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	A	2.3	2.3	2.4	2.4	2.4	2.4	2.5	2.27	2.47																						
20-Dec	2.5	2.6	2.6	2.6	2.7	3.3	2.8	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	A	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.7	2.68	3.28																						
21-Dec	2.8	2.8	2.8	2.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.7	2.6	A	2.6	2.7	2.6	2.6	2.7	2.7	2.7	2.7	2.7	2.76	2.94																						
22-Dec	2.6	2.6	2.7	2.7	2.8	2.7	2.6	2.4	2.2	2.2	2.2	2.1	2.1	A	2.1	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.38	2.82																						
23-Dec	2.5	2.5	2.4	2.5	2.5	2.4	2.4	2.4	2.3	2.4	2.4	2.4	A	2.5	2.4	2.4	2.4	2.4	2.3	2.4	2.4	2.2	2.2	2.1	2.38	2.49																						
24-Dec	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.6	2.13	2.60																						
25-Dec	2.2	2.2	2.2	2.1	2.2	2.5	2.2	2.2	2.2	2.2	A	2.2	2.3	2.2	2.3	2.3	2.1	2.1	2.0	2.1	2.1	2.1	2.2	2.3	2.19	2.52																						
26-Dec	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5	2.5	A	2.6	2.5	2.8	2.7	2.4	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.2	2.2	2.38	2.82																						
27-Dec	2.2	2.2	2.2	2.3	2.3	2.4	2.5	2.5	A	2.4	2.4	2.4	2.4	2.6	2.4	2.4	2.5	2.5	2.5	2.6	2.6	2.5	2.5	2.6	2.43	2.63																						
28-Dec	2.6	2.6	2.6	2.7	2.4	2.5	2.5	A	2.4	2.5	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.57	2.69																						
29-Dec	2.8	2.8	2.9	2.9	2.8	2.8	A	2.9	3.0	2.9	2.9	2.8	2.8	2.9	2.7	2.7	2.8	2.8	2.8	2.9	2.8	2.9	2.9	2.9	2.85	2.96																						
30-Dec	2.9	2.8	2.7	2.8	2.6	A	2.5	2.5	2.4	2.3	2.3	2.2	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.5	2.4	2.41	2.92																						
31-Dec	2.5	2.7	2.7	2.6	A	2.7	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.0	2.0	2.0	2.1	2.22	2.72																						
																								2.33	2.36	2.31	2.33	2.35	2.36	2.32	2.32	2.30	2.31	2.30	2.26	2.25	2.24	2.19	2.20	2.22	2.24	2.25	2.25	2.32	2.28	2.30	2.30	Diurnal Average
																								3.25	2.83	2.86	2.93	2.94	3.28	2.89	2.90	2.96	2.92	2.88	2.85	2.82	2.86	2.74	2.75	2.79	2.78	2.77	2.88	3.59	2.87	2.91	2.91	Diurnal Maximum

C - Calibration D - DAS Failure M - Maintenance N - Not Valid A - Automated Daily Zero Span



Hourly Maximums

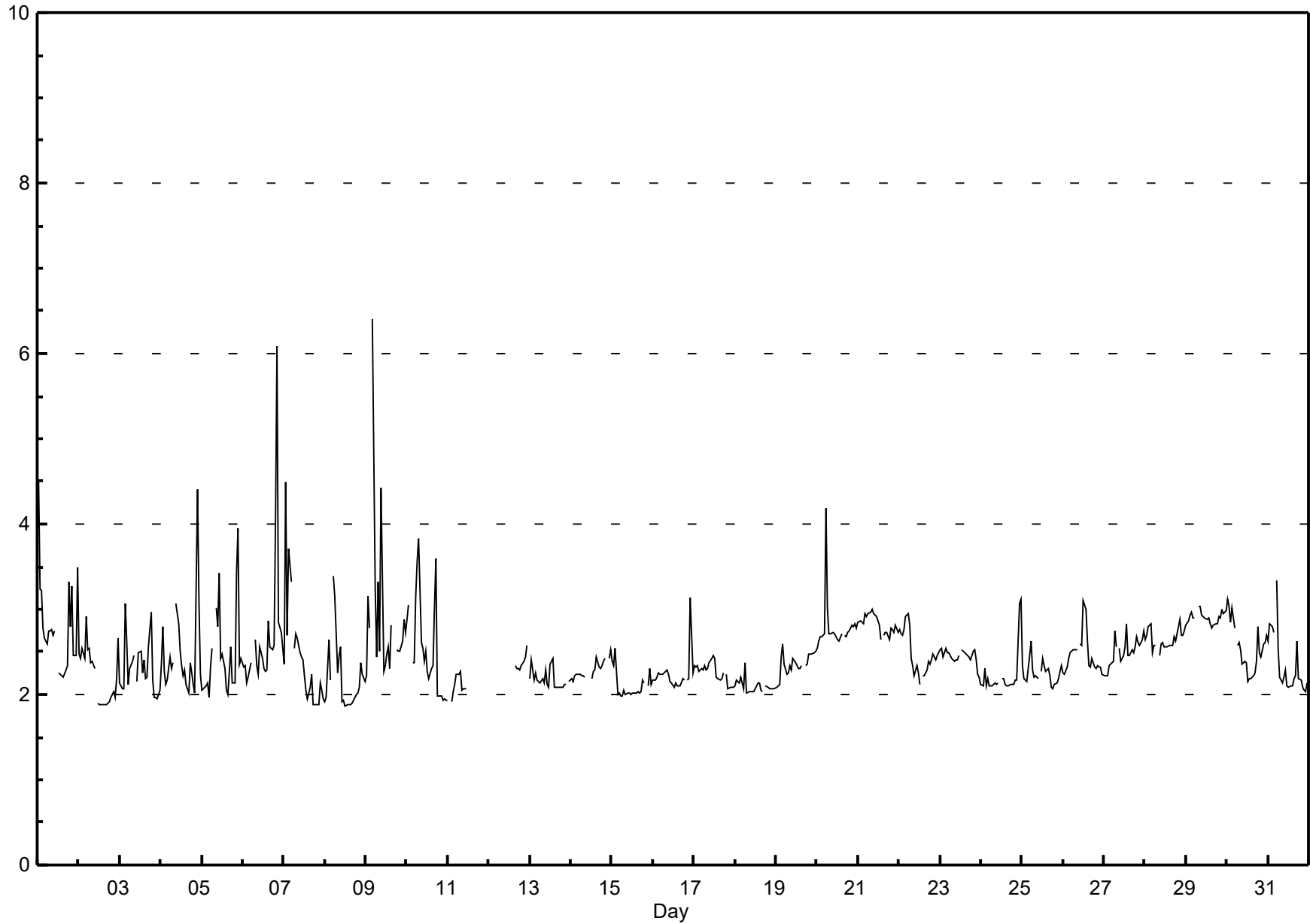
Methane (CH₄) - ppm

Henry Pirker - December 2015

Maximum Value: 6.41 ppm on Dec 9 05:00		Maximum Daily Average: 2.91 ppm on Dec 9		Hours in Service: 744																							
Minimum Value: 1.9 ppm on Dec 8 13:00		Minimum Daily Average: 2.10 ppm on Dec 18		Hours of Data: 681																							
Maximum Diurnal Average: 2.62 ppm at hour 5		Minimum Diurnal Average: 2.26 ppm at hour 15		Hours of Missing Data: 63																							
Monthly Average: 2.439 ppm		Percentiles: P ₁ = 1.88 P ₁₀ = 2.05 Q ₁ = 2.16 Median = 2.34 Q ₃ = 2.62 P ₉₀ = 2.90 P ₉₉ = 4.12		Hours of Calibration: 34																							
				Percent Operational Time: 96.1																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	4.5	3.2	3.2	2.8	2.7	2.6	2.7	2.7	2.8	2.7	2.8	A	2.2	2.2	2.2	2.3	2.3	3.3	2.8	3.3	2.5	2.5	3.5	2.78	4.49		
2-Dec	2.5	2.4	2.5	2.4	2.9	2.5	2.5	2.4	2.4	2.3	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.2	2.7	2.21	2.91		
3-Dec	2.1	2.1	2.1	3.1	2.6	2.1	2.3	2.4	2.5	A	2.2	2.5	2.5	2.3	2.4	2.2	2.2	2.6	3.0	2.2	2.0	2.0	2.0	2.31	3.06		
4-Dec	2.4	2.8	2.3	2.1	2.2	2.4	2.3	2.4	A	3.1	2.8	2.5	2.3	2.2	2.3	2.1	2.0	2.4	2.3	2.1	2.0	4.4	3.1	2.2	2.47	4.41	
5-Dec	2.1	2.1	2.1	2.1	2.0	2.3	2.5	A	3.0	2.8	3.4	2.4	2.5	2.3	2.0	2.0	2.3	2.6	2.1	2.1	3.4	3.9	2.4	2.4	2.48	3.94	
6-Dec	2.3	2.3	2.1	2.2	2.3	2.4	A	2.6	2.3	2.2	2.6	2.4	2.3	2.3	2.3	2.9	2.6	2.5	2.6	4.1	6.1	2.8	2.7	2.5	2.68	6.09	
7-Dec	2.4	4.5	2.7	3.7	3.3	A	2.5	2.7	2.7	2.5	2.4	2.4	2.2	2.1	2.0	2.1	2.2	1.9	1.9	1.9	1.9	2.1	2.1	2.0	2.44	4.49	
8-Dec	1.9	2.0	2.6	2.2	A	3.4	3.1	2.3	2.5	2.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.4	2.2	2.1	2.20	3.39		
9-Dec	2.2	3.2	2.8	A	6.4	3.2	2.4	3.3	2.5	4.4	2.3	2.3	2.5	2.6	2.3	2.8	M	M	2.5	2.5	2.5	2.6	2.9	2.7	2.91	6.41	
10-Dec	2.9	3.0	A	2.4	2.4	3.1	3.6	3.8	2.6	2.5	2.4	2.5	2.3	2.2	2.3	2.3	M	M	3.0	3.6	2.0	2.0	1.9	1.9	2.55	3.84	
11-Dec	1.9	A	1.9	2.0	2.1	2.2	2.2	2.3	2.1	2.1	2.1	2.1	N	N	N	N	N	M	D	N	N	N	N	N	--	2.27	
12-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	M	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.6	A	--	2.57	
13-Dec	2.2	2.4	2.2	2.3	2.2	2.2	2.1	2.2	2.1	2.3	2.1	2.1	2.4	2.4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	A	2.2	2.17	2.43	
14-Dec	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	C	C	C	2.2	2.3	2.3	2.4	2.3	2.3	2.3	2.4	2.4	A	2.4	2.5	2.29	2.52	
15-Dec	2.4	2.3	2.5	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.1	A	2.1	2.3	2.1	2.10	2.54	
16-Dec	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	A	2.2	2.2	3.1	2.3	2.23	3.14	
17-Dec	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.5	2.4	2.2	2.2	2.2	2.2	2.3	A	2.2	2.1	2.1	2.1	2.1	2.26	2.45	
18-Dec	2.1	2.2	2.1	2.2	2.1	2.1	2.4	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	A	A	2.1	2.1	2.1	2.1	2.1	2.1	2.10	2.36	
19-Dec	2.1	2.1	2.1	2.4	2.6	2.4	2.2	2.3	2.3	2.3	2.4	2.4	2.3	2.3	2.3	2.3	A	A	2.3	2.4	2.5	2.5	2.5	2.5	2.35	2.59	
20-Dec	2.5	2.6	2.7	2.7	2.7	4.2	3.0	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.7	A	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.78	4.19	
21-Dec	2.9	2.9	2.8	2.8	2.9	2.9	3.0	3.0	3.0	3.0	2.9	2.9	2.8	2.6	A	2.7	2.7	2.7	2.7	2.8	2.8	2.7	2.8	2.7	2.83	3.00	
22-Dec	2.8	2.7	2.7	2.8	2.9	3.0	2.8	2.4	2.3	2.2	2.3	2.3	2.1	A	2.2	2.2	2.3	2.4	2.4	2.4	2.5	2.4	2.4	2.5	2.48	2.96	
23-Dec	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.5	A	2.5	2.5	2.5	2.5	2.4	2.4	2.5	2.5	2.4	2.2	2.45	2.54	
24-Dec	2.1	2.1	2.3	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	A	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	3.1	3.1	2.22	3.12	
25-Dec	2.3	2.2	2.2	2.1	2.4	2.6	2.3	2.2	2.2	2.2	A	2.3	2.4	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.26	2.63	
26-Dec	2.3	2.2	2.3	2.4	2.5	2.5	2.5	2.5	2.5	2.5	A	2.6	2.6	3.1	3.0	2.6	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.2	2.46	3.11	
27-Dec	2.2	2.2	2.2	2.3	2.4	2.4	2.4	2.6	A	2.5	2.4	2.5	2.6	2.8	2.5	2.5	2.5	2.5	2.6	2.7	2.6	2.6	2.7	2.7	2.50	2.83	
28-Dec	2.6	2.7	2.8	2.8	2.5	2.6	2.6	A	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.7	2.6	2.8	2.9	2.7	2.7	2.7	2.64	2.88	
29-Dec	2.8	2.9	2.9	3.0	2.9	2.9	A	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.9	2.9	3.0	3.0	3.0	2.90	3.04	
30-Dec	3.1	3.0	2.8	3.0	2.8	A	2.6	2.6	2.5	2.3	2.4	2.4	2.2	2.2	2.2	2.2	2.3	2.4	2.8	2.5	2.4	2.6	2.6	2.7	2.55	3.11	
31-Dec	2.6	2.8	2.8	2.7	A	3.3	2.5	2.2	2.1	2.2	2.3	2.1	2.1	2.1	2.1	2.2	2.2	2.6	2.2	2.2	2.1	2.0	2.0	2.1	2.34	3.33	
		2.45	2.56	2.45	2.48	2.62	2.60	2.52	2.50	2.43	2.51	2.43	2.36	2.34	2.33	2.26	2.29	2.31	2.39	2.37	2.39	2.52	2.49	2.48	2.45	Diurnal Average	
		4.49	4.49	3.22	3.71	6.41	4.19	3.56	3.84	3.04	4.42	3.43	2.91	3.11	3.01	2.84	2.87	3.02	3.60	3.32	4.08	6.09	4.41	3.14	3.49	Diurnal Maximum	
C - Calibration		D - DAS Failure					M - Maintenance					N - Not Valid					A - Automated Daily Zero Span										

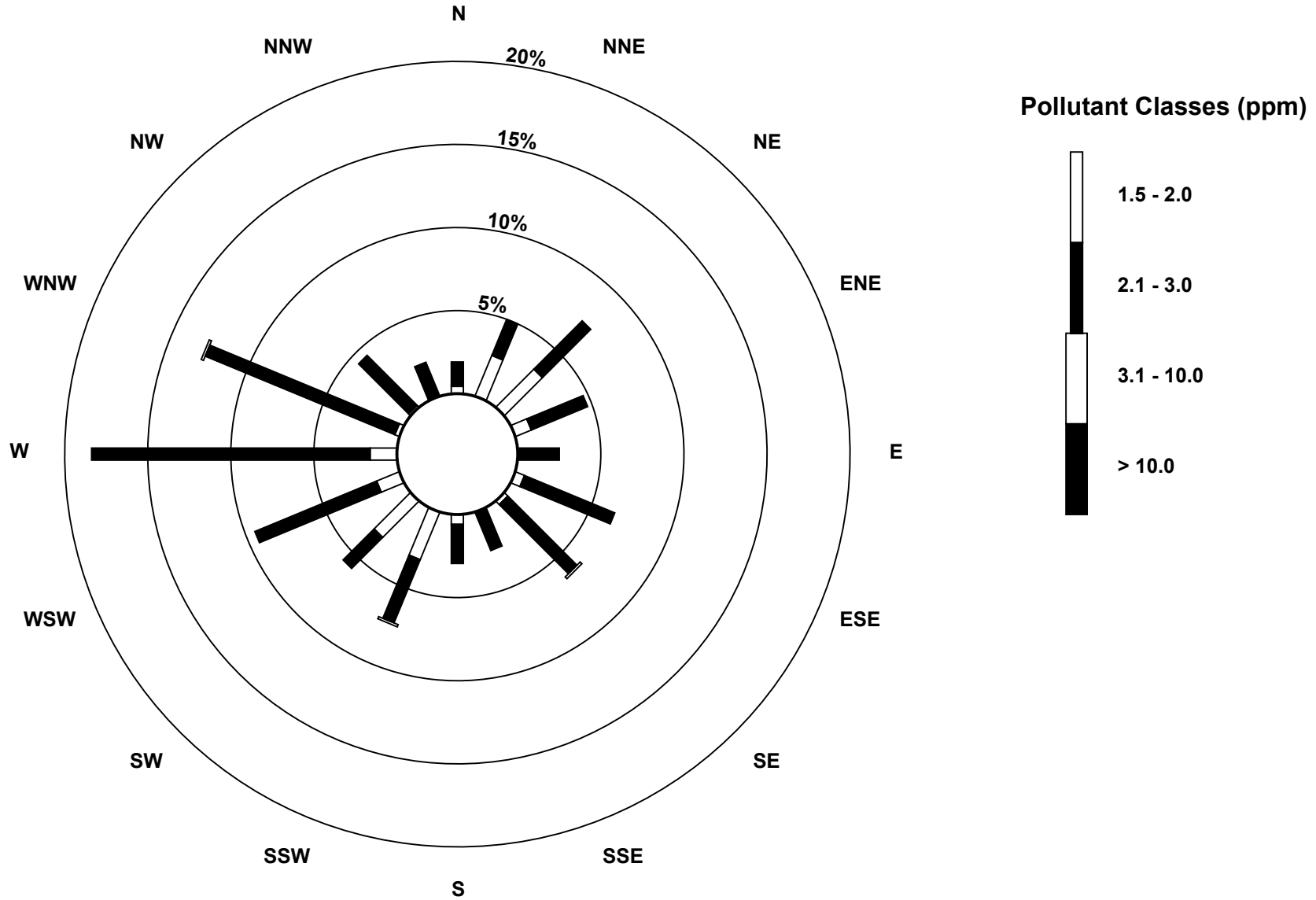
Hourly Maximums

Methane (CH₄) - ppm
Henry Pirker - December 2015



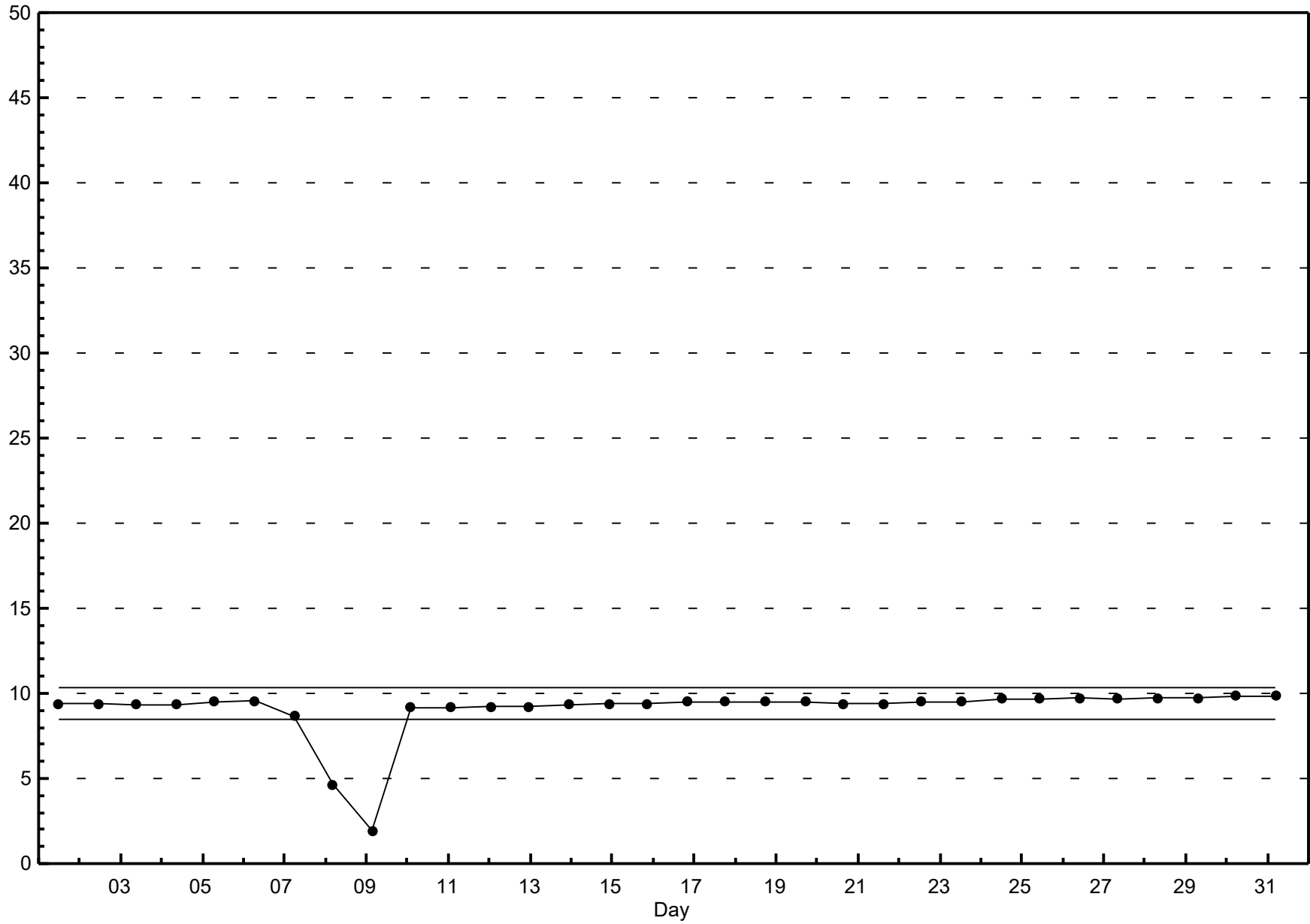
Pollutant Rose

Methane (CH₄) - ppm
Henry Pirker - December 2015



Span Responses

Methane (CH₄)
Henry Pirker - December 2015



Hourly Averages

Non Methane Hydrocarbon (NMHC) - ppm

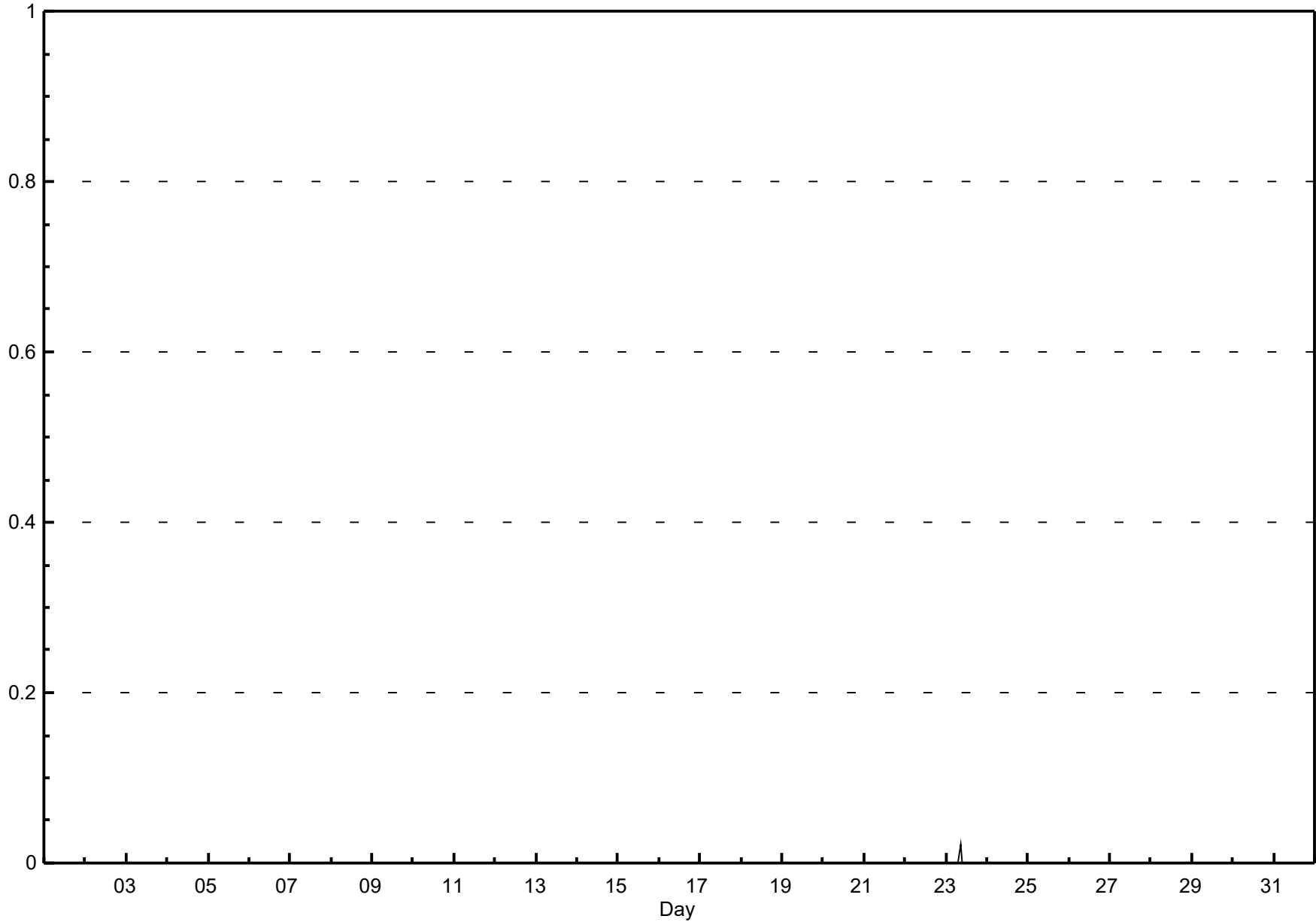
Henry Pirker - December 2015

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 0.02 ppm on Dec 23 09:00	Maximum Daily Average: 0.00 ppm on Dec 23		Hours of Data:	681
Minimum Value: 0.0 ppm on Dec 1 01:00	Minimum Daily Average: 0.00 ppm on Dec 1		Hours of Missing Data:	63
Maximum Diurnal Average: 0.00 ppm at hour 9	Minimum Diurnal Average: 0.00 ppm at hour 2		Hours of Calibration:	34
Monthly Average: 0.000 ppm	Percentiles: P ₁ = 0.00 P ₁₀ = 0.00 Q ₁ = 0.00 Median = 0.00 Q ₃ = 0.00 P ₉₀ = 0.00 P ₉₉ = 0.00		Percent Operational Time:	96.1

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24				
1-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
2-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
3-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
4-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
5-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
6-Dec	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
7-Dec	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
8-Dec	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
9-Dec	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	M	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
10-Dec	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	M	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
11-Dec	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N	N	N	N	N	M	D	N	N	N	N	N	N	--	0.00	
12-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	--	0.00
13-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.00	0.00	
14-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.00	0.00	
15-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.00	0.00	
16-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.00	0.00	
17-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.00	0.00	
18-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.00	0.00	
19-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.00	0.00	
20-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
21-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
22-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
23-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.02	
24-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
25-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
26-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
27-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
28-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
29-Dec	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
30-Dec	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
31-Dec	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Diurnal Average
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Diurnal Maximum

C - Calibration D - DAS Failure M - Maintenance N - Not Valid A - Automated Daily Zero Span

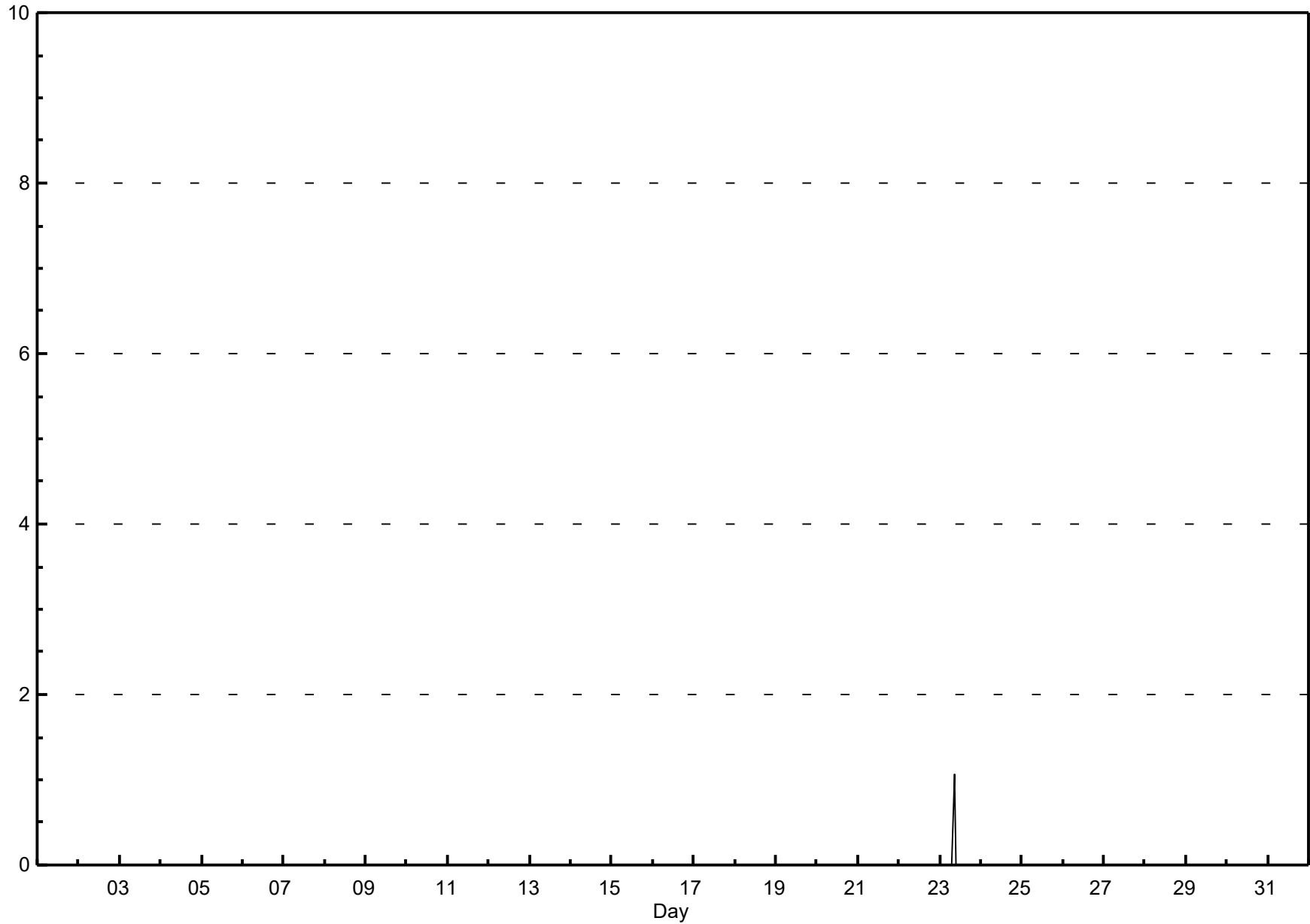


Hourly Maximums

Non Methane Hydrocarbon (NMHC) - ppm

Henry Pirker - December 2015

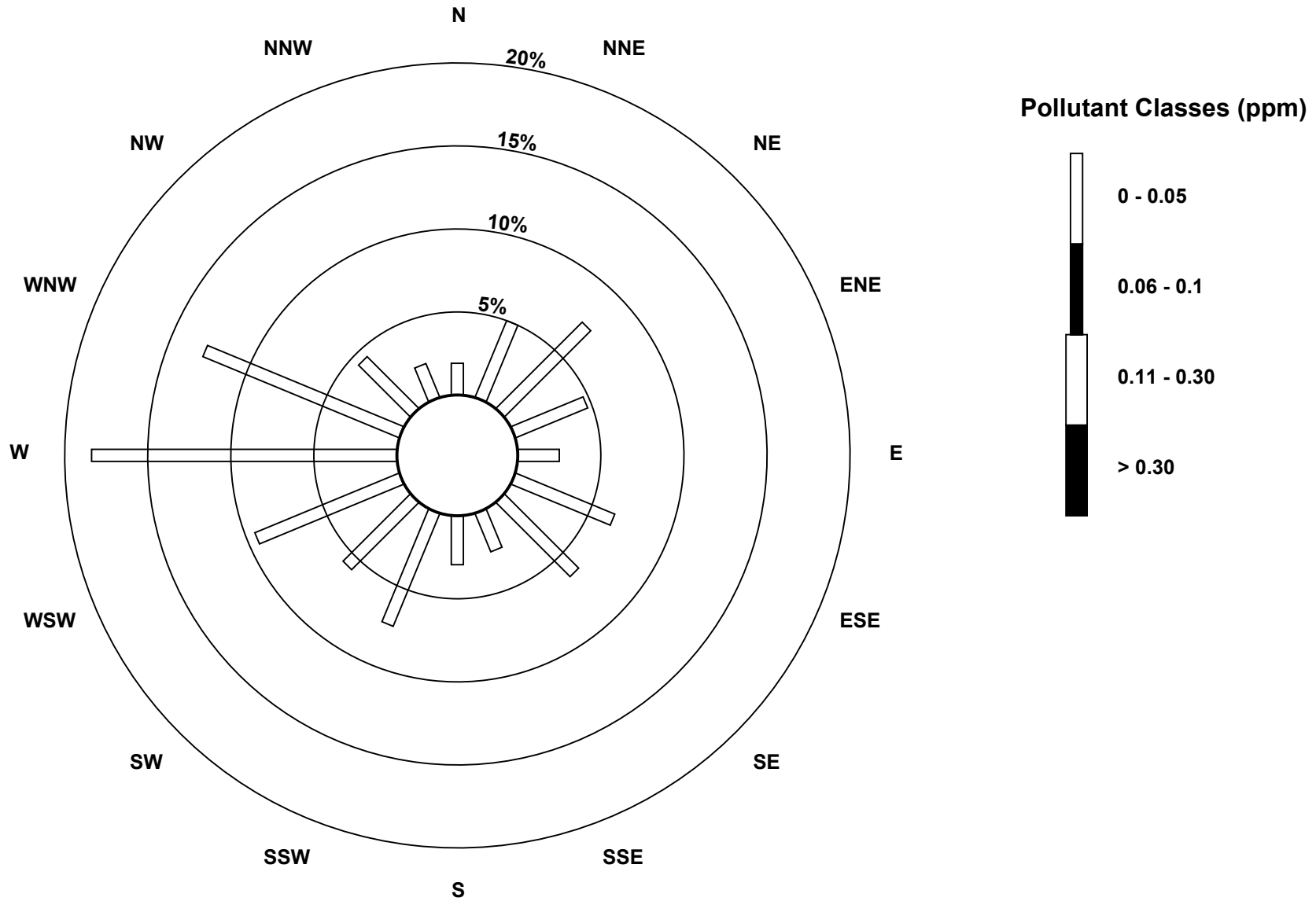
Maximum Value: 1.07 ppm on Dec 23 09:00 Maximum Daily Average: 0.05 ppm on Dec 23 Minimum Value: 0.0 ppm on Dec 1 13:00 Minimum Daily Average: 0.00 ppm on Dec 1 Maximum Diurnal Average: 0.04 ppm at hour 9 Minimum Diurnal Average: 0.00 ppm at hour 18 Monthly Average: 0.002 ppm Percentiles: P ₁ = 0.00 P ₁₀ = 0.00 Q ₁ = 0.00 Median = 0.00 Q ₃ = 0.00 P ₉₀ = 0.00 P ₉₉ = 0.00																								Hours in Service:	744																										
																								Hours of Data:	681																										
																								Hours of Missing Data:	63																										
																								Hours of Calibration:	34																										
																								Percent Operational Time:	96.1																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																											
1-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
2-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
3-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
4-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
5-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
6-Dec	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
7-Dec	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
8-Dec	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
9-Dec	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	M	M	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
10-Dec	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	M	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
11-Dec	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N	N	N	N	N	M	D	N	N	N	N	N	--	0.00																									
12-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	--	0.00																								
13-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.00	0.00																									
14-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.00	0.00																									
15-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.00	0.00																									
16-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.00	0.00																									
17-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.00	0.00																									
18-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.00	0.00																									
19-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.00	0.00																									
20-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
21-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
22-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
23-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.05	1.07																									
24-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
25-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
26-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
27-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
28-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
29-Dec	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
30-Dec	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
31-Dec	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																									
																								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Diurnal Average	
																								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Diurnal Maximum
C - Calibration																								D - DAS Failure				M - Maintenance				N - Not Valid				A - Automated Daily Zero Span															

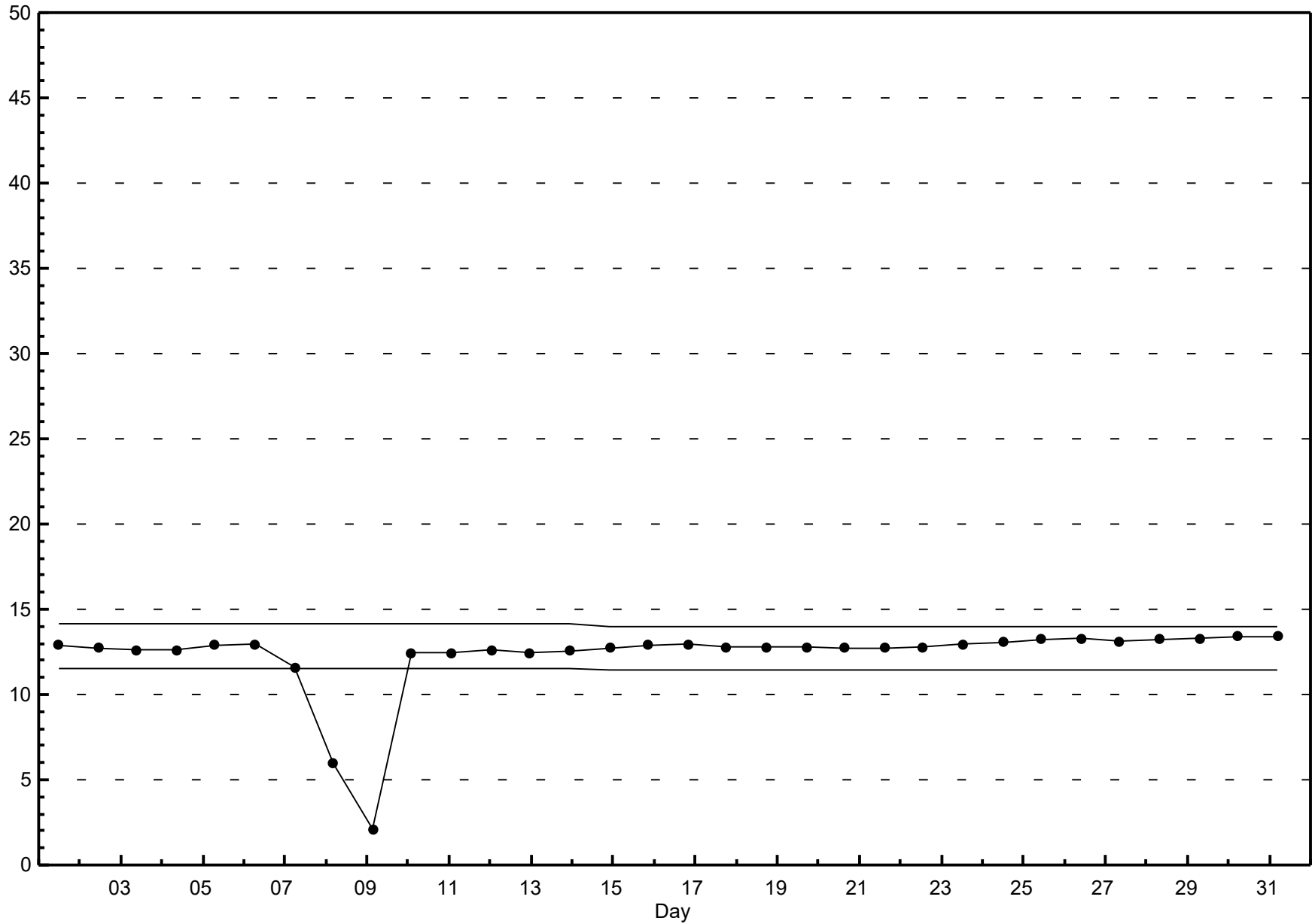


Pollutant Rose

Non Methane Hydrocarbon (NMHC) - ppm

Henry Pirker - December 2015





Hourly Averages

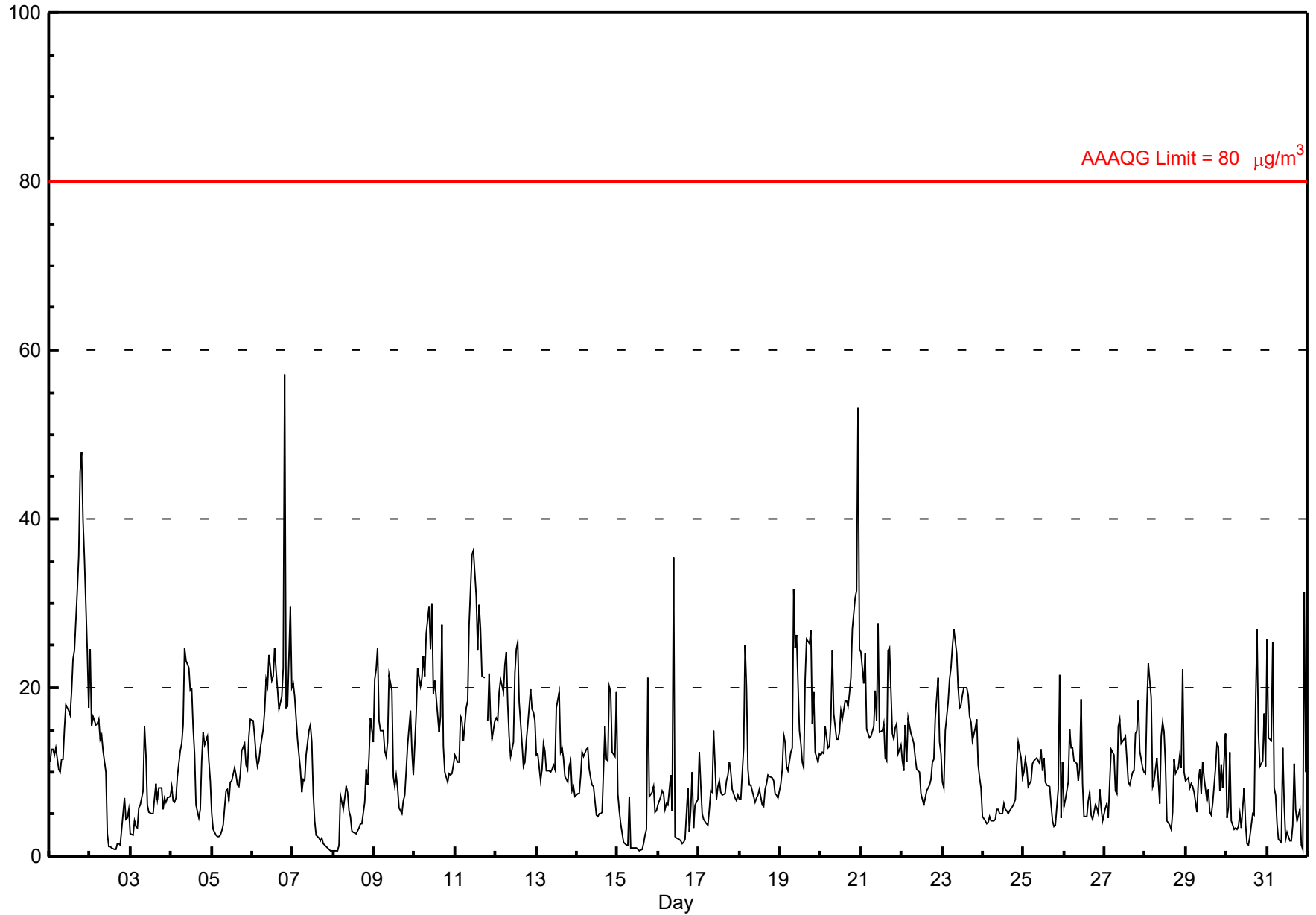
Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Henry Pirker - December 2015

Number of Exceedences: 1-hr: 0 24-hr: 0	Hours in Service: 744
Maximum Value: 57.1 µg/m ³ on Dec 6 20:00	Maximum Daily Average: 21.5 µg/m ³ on Dec 1
Minimum Value: 1 µg/m ³ on Dec 8 02:00	Hours of Data: 743
Maximum Diurnal Average: 14.2 µg/m ³ at hour 10	Hours of Missing Data: 1
Monthly Average: 11.73 µg/m ³	Hours of Calibration: 0
Minimum Daily Average: 4.1 µg/m ³ on Dec 15	Percent Operational Time: 99.9
Minimum Diurnal Average: 9.5 µg/m ³ at hour 15	
Percentiles: P ₁ = 0.8 P ₁₀ = 3.4 Q ₁ = 6.4 Median = 10.4 Q ₃ = 15.5 P ₉₀ = 21.2 P ₉₉ = 35.1	

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	11	13	13	12	13	10	10	12	12	15	18	17	17	19	23	24	32	36	46	48	40	35	24	18	21.5	47.9
2-Dec	25	15	17	16	16	16	14	14	13	10	3	1	1	1	1	1	2	1	1	3	7	4	5	6	8.0	24.6
3-Dec	3	3	4	4	3	6	6	8	15	12	6	5	5	5	7	9	7	8	8	6	7	6	7	7	6.5	15.4
4-Dec	8	7	6	7	9	13	13	16	25	23	22	20	20	15	12	6	5	6	11	15	13	14	11	9	12.8	24.8
5-Dec	5	3	2	2	2	3	3	4	8	8	7	9	9	10	10	9	8	10	13	13	11	10	14	16	7.9	16.3
6-Dec	16	14	12	11	11	13	15	17	21	20	24	21	21	25	22	20	17	19	22	57	18	18	30	20	20.2	57.1
7-Dec	21	19	16	14	10	8	9	9	12	15	16	14	7	4	3	2	2	2	1	1	1	1	1	1	7.9	20.5
8-Dec	1	1	1	1	7	6	6	8	8	5	5	3	3	3	3	4	4	6	10	8	12	17	14	5.8	16.5	
9-Dec	21	22	25	16	15	15	13	12	14	22	20	10	8	10	8	6	5	7	7	10	13	17	13	10	13.2	24.7
10-Dec	13	17	22	20	21	24	21	26	30	25	30	19	21	19	15	17	27	13	10	9	10	10	10	11	18.3	30.0
11-Dec	12	11	11	17	16	14	18	18	27	32	36	36	31	24	30	27	21	21	D	16	22	16	14	16	21.2	36.4
12-Dec	17	16	19	21	19	23	24	18	14	12	14	22	25	25	18	13	11	11	14	16	20	17	17	16	17.6	25.5
13-Dec	12	12	9	10	13	13	10	10	10	10	11	10	18	20	12	13	12	10	9	11	11	8	8	7	11.2	19.6
14-Dec	8	7	9	12	12	13	13	10	9	8	8	5	5	5	5	5	16	11	11	20	20	12	12	20	10.7	20.2
15-Dec	7	5	4	2	2	1	1	7	1	1	1	1	1	1	1	1	3	3	21	7	8	8	5	5	4.1	21.1
16-Dec	6	7	8	7	6	6	6	10	5	35	2	2	2	2	2	2	2	8	3	6	10	3	6	7	6.4	35.4
17-Dec	12	8	5	4	4	4	6	8	8	15	7	8	9	8	7	7	9	10	11	10	8	7	7	7	7.9	14.9
18-Dec	7	7	13	25	20	10	8	8	7	6	7	7	8	6	6	8	9	10	10	9	9	7	7	7	9.3	25.0
19-Dec	9	10	14	13	11	10	12	13	32	25	26	15	13	11	10	21	26	25	27	16	19	12	11	12	16.5	31.6
20-Dec	12	12	12	15	13	13	16	24	17	14	14	15	17	16	18	18	18	19	21	27	31	32	53	25	19.7	53.2
21-Dec	24	21	24	15	15	14	14	15	20	16	28	15	15	16	12	11	24	25	15	14	15	16	12	13	17.0	27.6
22-Dec	11	10	16	11	16	15	14	13	12	10	10	7	7	6	7	8	8	9	11	12	16	21	13	12	11.6	21.1
23-Dec	9	8	15	18	21	22	25	27	24	20	18	18	19	20	20	19	17	16	14	15	16	11	9	8	17.1	27.0
24-Dec	5	4	4	4	5	4	4	4	6	6	5	5	6	6	5	5	6	6	6	7	11	14	12	9	6.2	13.6
25-Dec	10	12	10	8	9	11	11	12	12	11	13	10	12	9	8	8	6	4	3	4	8	22	5	11	9.5	21.6
26-Dec	6	7	9	15	13	13	11	11	9	11	19	9	5	5	7	8	5	4	6	6	5	8	6	4	8.3	18.6
27-Dec	6	6	5	9	13	12	8	8	15	16	13	14	14	11	9	9	10	10	15	15	18	13	11	10	11.2	18.5
28-Dec	10	18	23	19	8	9	10	12	6	14	16	15	11	4	4	3	5	12	10	10	12	11	22	10	11.4	22.9
29-Dec	9	9	8	9	8	8	5	9	10	7	11	9	7	8	5	5	6	10	13	13	8	11	8	15	8.9	14.6
30-Dec	5	6	12	4	3	3	3	4	5	3	8	4	2	1	2	5	5	18	27	14	11	11	17	11	7.7	26.9
31-Dec	26	14	14	25	8	7	4	2	2	13	6	2	3	2	2	4	11	6	4	6	1	1	31	10	8.5	31.3
	11.1	10.5	11.7	11.9	11.1	10.9	10.8	11.9	13.1	14.2	13.6	11.2	11.0	10.3	9.5	9.6	10.9	11.4	12.6	13.7	13.1	12.5	13.5	11.2	Diurnal Average	
	25.7	22.3	24.7	25.4	21.2	23.7	24.8	27.0	31.6	35.4	35.7	36.4	30.9	25.5	29.9	26.9	31.6	35.6	45.5	57.1	39.9	35.2	53.2	24.6	Diurnal Maximum	

D - DAS Failure
 Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 µg/m³ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 µg/m³

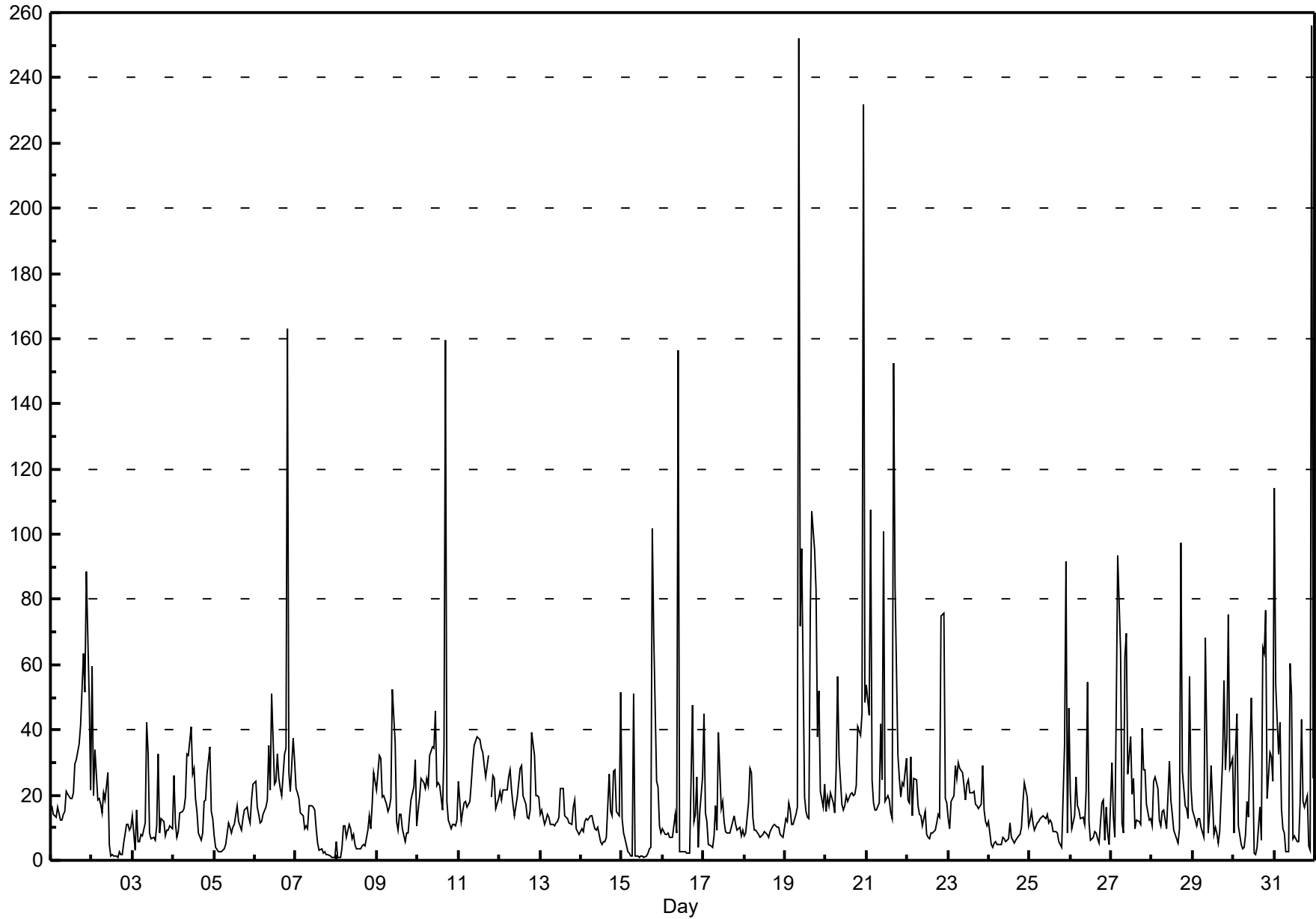


Hourly Maximums

Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Henry Pirker - December 2015

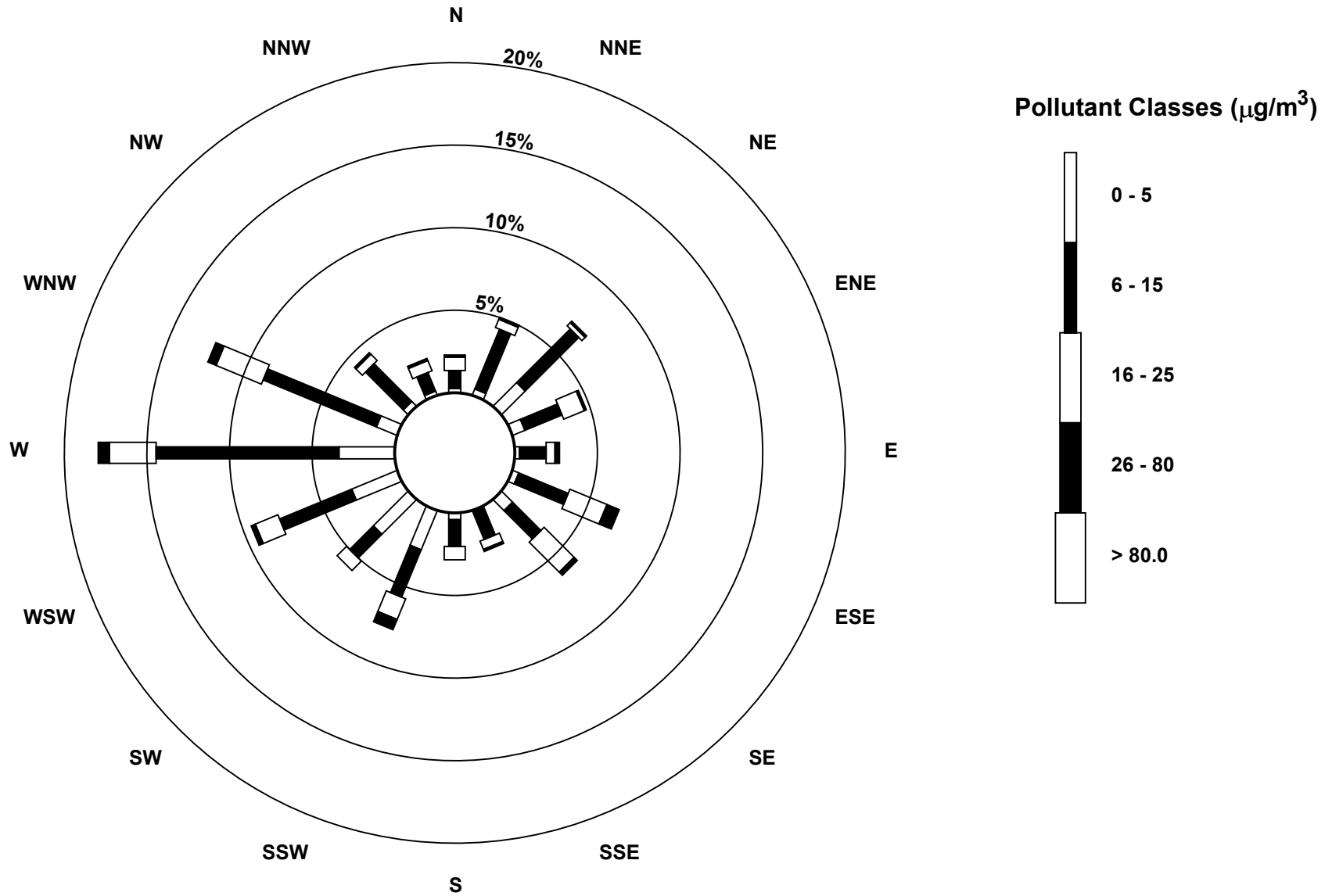
Maximum Value: 255.9 µg/m ³ on Dec 31 23:00		Maximum Daily Average: 46.0 µg/m ³ on Dec 19		Hours in Service: 744 Hours of Data: 743 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9																							
Minimum Value: 1 µg/m ³ on Dec 8 02:00 Maximum Diurnal Average: 33.3 µg/m ³ at hour 23 Monthly Average: 20.57 µg/m ³		Minimum Daily Average: 8.4 µg/m ³ on Dec 8 Minimum Diurnal Average: 11.5 µg/m ³ at hour 15 Percentiles: P ₁ = 1.0 P ₁₀ = 4.8 Q ₁ = 8.8 Median = 14.2 Q ₃ = 23.2 P ₉₀ = 38.0 P ₉₉ = 148.8																									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	17	14	14	13	16	12	12	14	15	21	20	19	19	21	30	31	36	42	53	64	51	89	50	22	28.9	88.7	
2-Dec	59	20	34	19	19	17	15	21	18	27	5	1	2	1	1	1	3	2	2	5	11	11	9	10	13.0	59.5	
3-Dec	14	3	15	6	6	8	7	12	42	33	9	7	7	6	10	33	8	13	12	7	9	9	10	10	12.3	42.2	
4-Dec	26	11	7	9	14	15	16	19	33	32	41	26	28	19	15	8	6	8	18	19	26	35	15	13	19.2	40.8	
5-Dec	7	4	3	3	2	3	4	5	11	10	8	10	11	17	12	10	9	13	15	16	13	11	18	23	10.0	23.2	
6-Dec	24	16	14	11	12	14	16	19	35	22	51	23	24	33	25	22	20	32	35	163	27	21	37	30	30.3	162.9	
7-Dec	22	21	19	15	14	10	11	10	17	17	16	15	10	5	3	4	2	3	2	2	1	1	1	1	9.1	22.1	
8-Dec	6	1	1	4	11	11	7	11	10	7	8	5	3	4	3	4	5	4	9	14	10	17	27	22	8.4	26.8	
9-Dec	27	32	31	19	20	17	15	16	19	53	36	12	9	14	14	10	6	9	8	13	19	23	31	11	19.3	52.5	
10-Dec	15	19	25	24	22	25	23	32	35	35	46	23	24	23	16	35	160	18	12	10	11	11	11	12	27.8	159.6	
11-Dec	24	12	15	17	18	16	18	24	30	35	37	38	37	35	33	29	26	32	D	19	26	25	16	19	25.3	38.0	
12-Dec	21	19	21	22	21	25	28	22	17	14	19	24	28	29	20	17	13	13	16	39	32	20	20	19	21.6	39.2	
13-Dec	14	16	11	12	14	13	11	11	10	11	12	13	22	22	14	13	13	12	11	16	18	10	9	8	13.2	22.1	
14-Dec	10	9	12	13	12	14	14	11	10	9	10	6	5	6	6	7	26	15	14	27	28	15	14	52	14.3	51.6	
15-Dec	13	8	7	3	2	2	1	51	1	1	1	1	1	1	1	2	3	4	102	69	24	22	11	8	14.2	102.0	
16-Dec	10	8	8	8	7	7	7	14	8	157	3	3	3	3	2	2	2	48	12	14	26	4	14	25	16.4	156.5	
17-Dec	45	15	12	5	4	4	7	17	9	39	16	18	12	9	8	8	10	12	14	11	9	10	7	9	13.0	45.0	
18-Dec	7	8	18	28	27	13	9	9	8	7	7	8	9	8	7	9	10	10	11	10	10	8	8	7	10.8	28.2	
19-Dec	13	12	17	16	11	11	14	16	252	72	96	20	15	13	13	77	107	95	83	38	52	21	16	24	46.0	252.1	
20-Dec	15	20	17	21	18	15	28	56	32	17	16	17	20	18	20	21	20	20	23	41	38	45	232	48	34.0	232.0	
21-Dec	54	44	107	25	18	16	15	18	42	25	101	18	20	19	15	13	153	84	32	25	20	24	23	31	39.2	152.5	
22-Dec	19	18	32	14	25	25	17	14	13	11	15	8	7	7	8	8	9	11	14	13	75	76	19	17	19.8	75.7	
23-Dec	13	10	18	20	29	25	30	28	27	23	18	23	25	21	21	21	17	17	16	17	29	16	12	10	20.2	30.0	
24-Dec	12	5	4	5	6	5	5	5	7	7	6	7	12	7	6	6	6	7	8	10	18	24	20	10	8.5	23.8	
25-Dec	12	15	12	9	12	12	13	13	14	13	14	12	12	11	9	9	8	6	5	4	35	92	8	47	16.5	91.7	
26-Dec	21	10	13	26	17	15	13	13	11	21	54	12	6	7	9	8	6	5	18	19	6	16	8	5	14.1	54.5	
27-Dec	30	13	7	47	93	64	12	9	62	70	27	38	20	25	10	12	12	11	41	28	28	17	12	13	29.2	93.3	
28-Dec	11	24	26	22	12	10	15	16	10	20	30	19	14	9	7	5	10	97	27	17	16	13	56	22	21.1	97.2	
29-Dec	16	12	11	13	13	10	7	68	37	9	15	29	8	10	8	5	9	30	55	28	38	75	28	31	23.6	75.3	
30-Dec	8	32	45	11	5	4	4	8	18	13	50	31	2	2	4	16	6	65	63	76	19	33	32	24	23.9	76.5	
31-Dec	114	54	33	42	16	10	8	3	3	60	51	7	8	6	6	18	43	18	16	20	5	3	256	25	34.3	255.9	
		22.5	16.3	19.6	16.1	16.6	14.5	13.0	18.9	27.6	28.7	27.0	15.9	13.6	13.2	11.5	15.0	24.7	24.4	24.9	27.6	23.6	25.7	33.3	19.7	Diurnal Average	
		114.1	53.7	107.4	47.3	93.3	64.4	30.0	68.5	252.1	156.5	100.9	38.0	37.2	34.5	32.9	76.9	159.6	97.2	102.0	162.9	74.8	91.7	255.9	51.6	Diurnal Maximum	
D - DAS Failure																											



Pollutant Rose

Particulate Matter 2.5 (PM_{2.5}) - μg/m³

Henry Pirker - December 2015



Hourly Averages

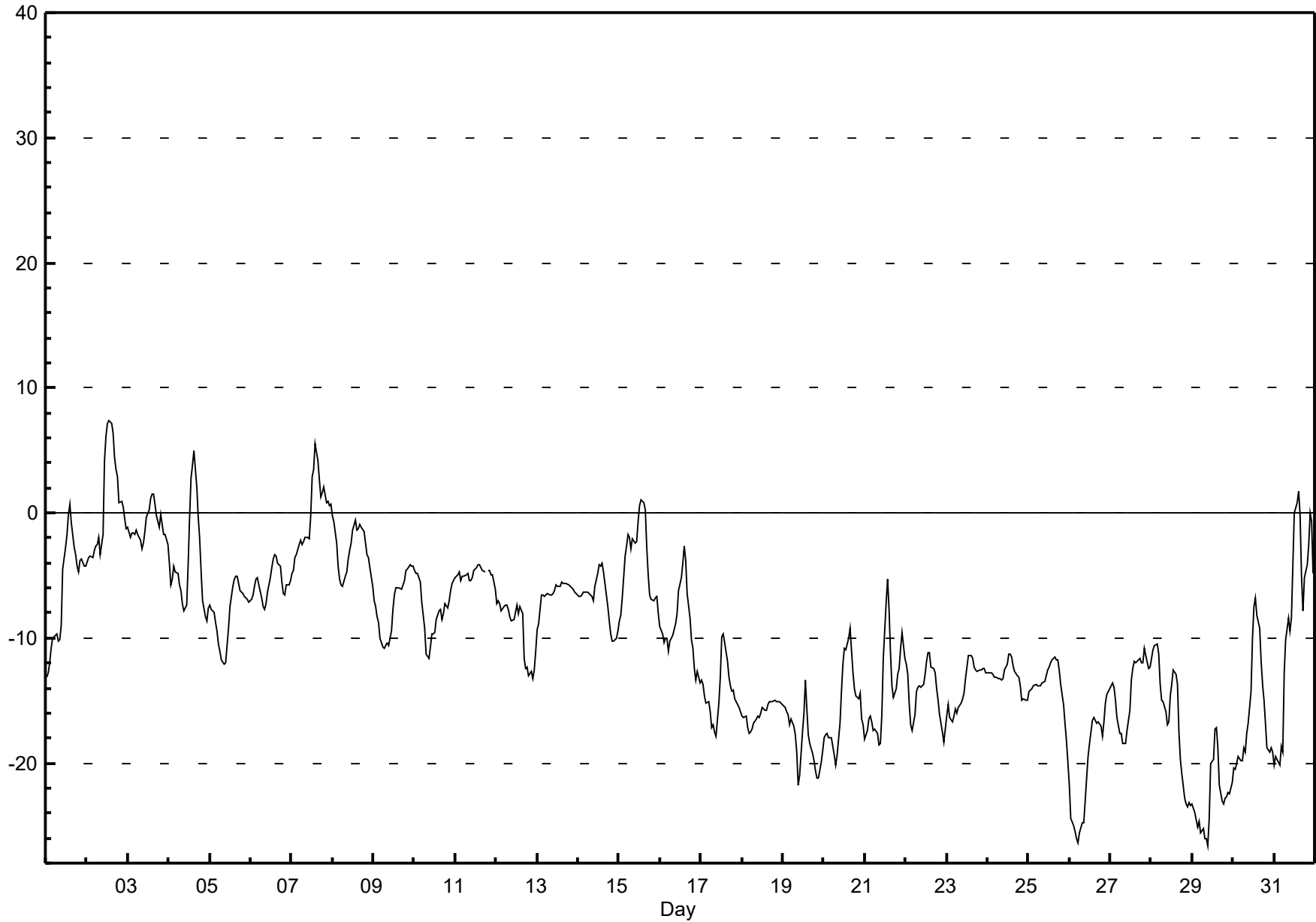
External Temperature (ET) - °C

Henry Pirker - December 2015

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 7.3 °C on Dec 2 14:00	Maximum Daily Average: 0.8 °C on Dec 2		Hours of Data:	743
Minimum Value: -27 °C on Dec 29 10:00	Minimum Daily Average: -22.9 °C on Dec 29		Hours of Missing Data:	1
Maximum Diurnal Average: -6.4 °C at hour 15	Minimum Diurnal Average: -11.9 °C at hour 9		Hours of Calibration:	0
Monthly Average: -10.09 °C	Percentiles: P ₁ = -25.5 P ₁₀ = -18.5 Q ₁ = -15.1 Median = -10.0 Q ₃ = -5.1 P ₉₀ = -1.7 P ₉₉ = 4.4		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-Dec	-13	-13	-12	-11	-10	-10	-10	-10	-10	-9	-5	-3	-2	0	1	-1	-3	-3	-4	-5	-4	-4	-4	-4	-6.2	0.7
2-Dec	-4	-4	-3	-4	-3	-3	-3	-2	-3	-2	4	6	7	7	7	6	4	3	3	1	1	0	0	-1	0.8	7.3
3-Dec	-1	-2	-2	-2	-2	-1	-2	-2	-3	-2	-2	0	0	1	1	1	1	0	-1	0	-1	-2	-2	-3	-1.0	1.5
4-Dec	-4	-6	-5	-4	-5	-5	-6	-6	-7	-8	-7	-4	0	3	4	5	2	0	-2	-5	-7	-8	-9	-8	-3.9	5.0
5-Dec	-7	-8	-8	-9	-9	-10	-11	-12	-12	-12	-11	-9	-8	-6	-5	-5	-5	-6	-6	-6	-7	-7	-7	-7	-8.0	-5.0
6-Dec	-7	-7	-6	-5	-5	-6	-7	-8	-8	-7	-6	-5	-4	-4	-3	-3	-4	-4	-6	-6	-7	-6	-6	-5	-5.6	-3.3
7-Dec	-5	-5	-4	-3	-2	-2	-3	-2	-2	-2	-2	0	3	3	6	4	3	1	2	2	1	1	1	1	-0.2	5.6
8-Dec	0	-1	-2	-4	-5	-6	-6	-5	-5	-4	-3	-2	-1	-1	-1	-1	-1	-2	-2	-3	-4	-4	-6	-3.0	-0.3	
9-Dec	-7	-7	-8	-9	-10	-11	-11	-11	-10	-11	-9	-8	-7	-6	-6	-6	-6	-6	-5	-5	-4	-4	-4	-4	-7.3	-4.2
10-Dec	-5	-5	-5	-5	-7	-8	-9	-11	-12	-11	-10	-10	-10	-9	-8	-8	-9	-8	-7	-8	-7	-6	-6	-5	-7.8	-4.6
11-Dec	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-4	-4	-4	-4	-5	-5	D	-5	-5	-5	-5	-6	-4.9	-4.2
12-Dec	-7	-7	-7	-8	-8	-7	-7	-8	-8	-9	-9	-8	-7	-8	-7	-8	-12	-12	-12	-13	-13	-13	-13	-11	-9.3	-7.0
13-Dec	-9	-9	-7	-7	-7	-7	-6	-7	-7	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6.4	-5.6
14-Dec	-7	-7	-7	-6	-6	-6	-6	-7	-7	-7	-6	-5	-4	-4	-4	-5	-7	-7	-9	-10	-10	-10	-10	-9	-6.9	-4.1
15-Dec	-9	-8	-7	-3	-3	-2	-2	-3	-2	-2	-2	-1	1	1	1	0	-3	-5	-7	-7	-7	-7	-7	-8	-3.8	1.0
16-Dec	-9	-10	-10	-10	-10	-11	-10	-10	-9	-9	-8	-6	-5	-4	-3	-4	-6	-8	-10	-11	-12	-13	-13	-14	-9.0	-2.7
17-Dec	-13	-14	-15	-15	-15	-16	-17	-17	-17	-18	-15	-13	-10	-10	-10	-12	-13	-14	-14	-14	-15	-15	-16	-16	-14.4	-9.7
18-Dec	-16	-16	-16	-17	-18	-17	-17	-17	-16	-16	-16	-16	-16	-16	-16	-15	-15	-15	-15	-15	-15	-15	-15	-15	-16.0	-15.0
19-Dec	-15	-16	-16	-16	-17	-16	-17	-18	-19	-22	-21	-17	-16	-13	-16	-18	-18	-19	-20	-21	-21	-21	-20	-19	-18.0	-13.3
20-Dec	-18	-18	-18	-18	-18	-19	-19	-20	-19	-17	-14	-12	-11	-11	-10	-9	-11	-13	-14	-15	-15	-14	-17	-17	-15.3	-9.3
21-Dec	-18	-17	-16	-16	-17	-17	-17	-18	-19	-18	-16	-12	-7	-5	-8	-11	-14	-15	-14	-13	-12	-11	-10	-12	-13.9	-5.3
22-Dec	-12	-13	-15	-17	-17	-16	-14	-14	-14	-14	-14	-13	-12	-11	-11	-12	-12	-13	-14	-15	-16	-17	-18	-17	-14.3	-11.1
23-Dec	-16	-15	-16	-17	-16	-16	-16	-16	-15	-15	-14	-13	-12	-11	-11	-12	-12	-13	-13	-13	-13	-12	-12	-13	-13.9	-11.4
24-Dec	-13	-13	-13	-13	-13	-13	-13	-13	-13	-13	-13	-12	-11	-11	-12	-12	-13	-13	-13	-14	-15	-15	-15	-15	-13.1	-11.3
25-Dec	-14	-14	-14	-14	-14	-14	-14	-14	-14	-13	-13	-13	-12	-12	-12	-12	-12	-12	-13	-14	-15	-17	-18	-20	-13.8	-11.6
26-Dec	-22	-24	-25	-25	-26	-26	-26	-25	-25	-23	-21	-19	-18	-17	-16	-17	-17	-17	-17	-18	-17	-15	-14	-14	-20.2	-14.3
27-Dec	-14	-14	-14	-15	-16	-18	-18	-18	-18	-18	-17	-16	-13	-12	-12	-12	-12	-12	-12	-12	-11	-11	-12	-12	-14.2	-10.8
28-Dec	-12	-11	-11	-10	-11	-14	-15	-15	-16	-17	-17	-15	-14	-13	-13	-14	-18	-20	-21	-23	-23	-24	-23	-23	-16.2	-10.4
29-Dec	-23	-24	-25	-25	-25	-26	-25	-26	-26	-27	-24	-20	-20	-17	-17	-19	-22	-23	-23	-23	-23	-22	-23	-22	-22.9	-17.1
30-Dec	-20	-20	-20	-19	-20	-20	-19	-19	-18	-17	-14	-10	-7	-7	-8	-9	-12	-14	-15	-17	-19	-19	-19	-19	-15.9	-6.8
31-Dec	-20	-19	-20	-20	-19	-19	-13	-10	-8	-9	-8	-4	0	1	2	0	-5	-8	-5	-4	-3	0	-1	-5	-8.3	1.8
	-11.2	-11.3	-11.3	-11.4	-11.6	-11.8	-11.7	-11.8	-11.9	-11.7	-10.5	-8.7	-7.3	-6.5	-6.4	-7.0	-8.4	-9.2	-9.8	-10.1	-10.4	-10.4	-10.6	-10.9	Diurnal Average	
	-0.3	-0.6	-1.7	-1.6	-1.7	-1.3	-1.7	-2.0	-1.9	-1.7	4.1	6.2	7.2	7.3	7.2	6.3	4.4	3.5	2.9	2.1	0.9	1.0	0.6	0.7	Diurnal Maximum	

D - DAS Failure



Hourly Averages

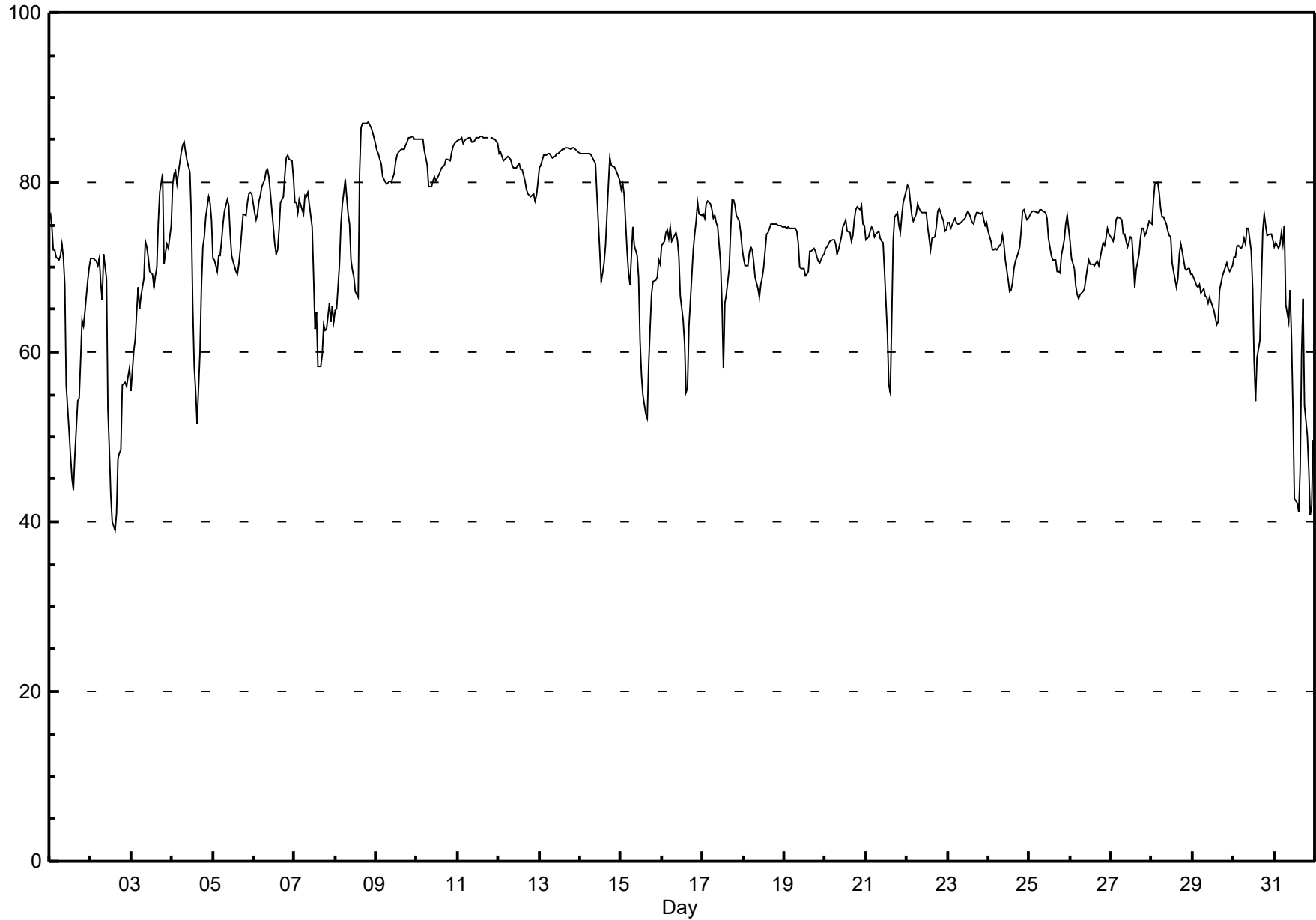
Relative Humidity (RH) - %

Henry Pirker - December 2015

Number of Exceedences (AAQO): 1-hr: 0 24-hr: 0 Maximum Value: 87.1 % on Dec 8 20:00 Maximum Daily Average: 85.1 % on Dec 11		Hours in Service: 744 Hours of Data: 743 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9																									
Minimum Value: 39 % on Dec 2 15:00 Minimum Daily Average: 58.0 % on Dec 2 Maximum Diurnal Average: 75.8 % at hour 7 Minimum Diurnal Average: 67.0 % at hour 15 Monthly Average: 73.28 % Percentiles: P ₁ = 42.7 P ₁₀ = 63.6 Q ₁ = 69.9 Median = 74.2 Q ₃ = 78.5 P ₉₀ = 83.4 P ₉₉ = 86.3																											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	77	75	72	72	71	71	71	73	71	68	56	51	48	45	44	48	54	55	59	64	63	65	69	70	62.9	76.5	
2-Dec	71	71	71	71	70	71	68	66	72	69	53	48	43	40	39	41	47	48	48	56	56	56	57	58	58.0	71.6	
3-Dec	55	60	62	65	68	65	67	69	73	72	71	69	69	68	69	70	75	79	81	70	72	73	72	75	69.5	81.1	
4-Dec	80	81	81	80	81	84	84	85	84	82	81	76	65	58	55	51	60	68	72	74	76	78	78	76	74.6	84.7	
5-Dec	71	71	69	71	71	73	75	77	78	77	74	71	71	69	69	70	72	74	76	76	78	79	79	79	73.8	78.8	
6-Dec	76	76	76	78	79	79	80	81	81	81	79	75	73	72	72	74	78	78	81	83	83	83	82	81	78.3	83.2	
7-Dec	78	78	77	78	77	76	78	78	79	76	75	69	63	65	58	58	60	63	62	63	66	63	65	64	69.5	78.9	
8-Dec	65	65	70	75	78	79	80	76	75	71	70	69	67	66	81	86	87	87	87	87	87	86	86	85	77.7	87.1	
9-Dec	84	83	83	82	81	80	80	80	80	80	81	82	83	84	84	84	84	84	85	85	85	85	85	85	82.9	85.4	
10-Dec	85	85	85	85	84	83	82	80	79	80	81	80	80	81	82	82	82	83	83	83	84	84	85	85	82.6	85.1	
11-Dec	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	D	85	85	85	85	85	85.1	85.5	
12-Dec	83	84	83	83	83	83	83	83	82	82	82	82	82	81	82	80	79	79	79	78	79	78	78	80	81.1	83.6	
13-Dec	82	82	83	83	83	83	83	83	83	83	83	83	84	84	84	84	84	84	84	84	84	84	83	83	83.5	84.1	
14-Dec	83	83	83	83	83	83	83	83	83	82	79	72	68	69	71	73	80	83	82	82	82	82	81	80	79.7	83.4	
15-Dec	79	80	79	72	69	68	71	75	72	71	69	61	57	55	53	52	58	63	67	68	68	69	71	70	67.4	79.7	
16-Dec	72	73	74	74	73	75	73	74	74	73	71	67	64	61	55	56	63	69	72	74	75	78	76	76	70.6	77.7	
17-Dec	76	76	77	78	77	77	76	76	75	75	71	66	58	66	67	70	74	78	78	77	76	75	74	72	73.6	77.9	
18-Dec	71	70	70	72	72	72	71	69	68	66	68	69	70	74	74	75	75	75	75	75	75	75	75	75	72.1	75.1	
19-Dec	75	75	75	75	75	75	75	74	73	70	70	70	69	69	69	72	72	72	72	71	71	71	71	72	72.1	74.7	
20-Dec	72	72	73	73	73	73	73	72	72	74	75	75	76	74	74	73	74	76	77	77	77	77	75	75	74.2	77.3	
21-Dec	73	74	74	75	74	74	74	74	73	73	73	70	62	56	55	64	73	76	77	75	74	76	78	79	71.9	78.9	
22-Dec	80	79	78	76	75	76	77	77	77	77	76	76	75	73	72	73	74	75	77	77	77	75	74	74	75.9	79.7	
23-Dec	75	75	75	75	76	75	75	75	75	76	76	76	77	76	75	75	76	76	77	76	76	76	75	75	75.6	76.7	
24-Dec	74	73	72	72	72	72	73	73	74	73	71	69	67	67	68	70	71	72	72	74	77	77	76	76	72.2	76.7	
25-Dec	76	76	77	77	76	76	77	77	77	76	76	73	72	71	71	71	69	70	69	71	73	75	76	75	74.1	76.8	
26-Dec	73	71	70	68	67	66	67	67	67	69	70	71	70	70	70	71	71	70	72	73	72	73	75	74	70.3	74.5	
27-Dec	73	73	74	76	76	76	76	74	74	73	72	74	73	71	68	70	72	73	75	75	74	74	75	75	73.5	75.9	
28-Dec	75	78	80	80	79	77	76	76	75	74	74	71	70	68	69	71	73	72	70	70	70	70	69	69	73.2	79.9	
29-Dec	69	68	68	68	68	67	67	67	66	66	66	66	65	64	63	64	67	69	69	70	70	70	69	70	67.4	70.5	
30-Dec	71	71	72	72	72	72	73	73	75	75	72	67	59	54	59	61	68	74	76	75	74	74	74	73	70.4	76.3	
31-Dec	72	73	72	73	74	73	75	66	64	67	62	53	43	42	41	46	60	66	54	50	46	41	42	50	58.5	74.9	
		75.3	75.4	75.5	75.6	75.6	75.5	75.8	75.3	75.4	74.7	72.9	70.6	68.0	67.2	67.0	68.3	71.5	73.4	73.6	74.2	74.4	74.4	74.6	74.7	Diurnal Average	
		85.1	85.1	85.3	85.1	85.0	85.0	85.2	85.2	84.8	84.7	84.9	85.2	85.3	85.5	85.5	86.4	86.9	87.0	87.0	87.1	86.7	86.5	85.9	85.1	Diurnal Maximum	
D - DAS Failure																											

Hourly Averages

Relative Humidity (RH) - %
Henry Pirker - December 2015



Hourly Averages

Solar Radiation (SR) - W/m²

Henry Pirker - December 2015

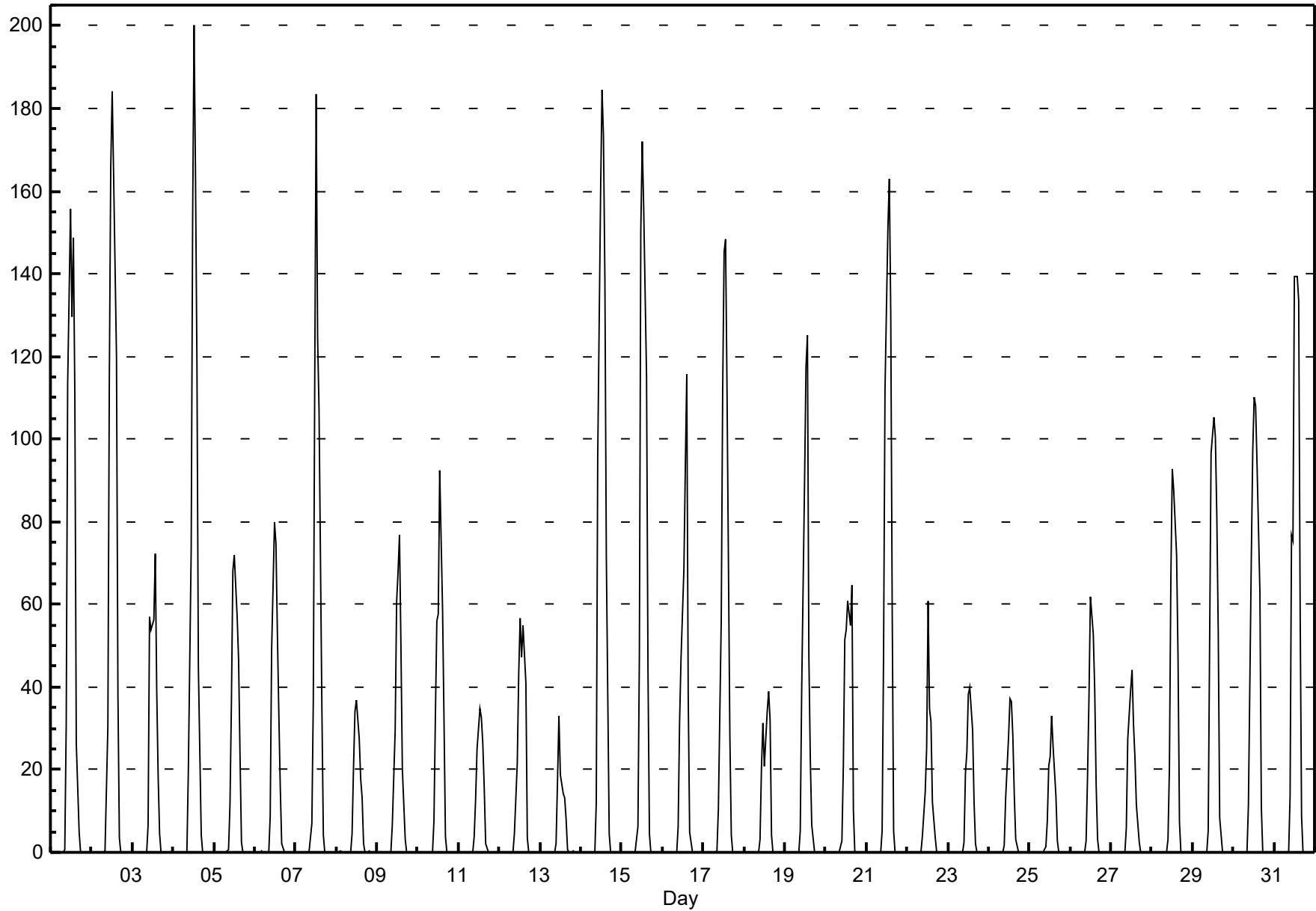
Number of Exceedences (AAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 200.2 W/m ² on Dec 4 13:00	Maximum Daily Average: 35.0 W/m ² on Dec 14		Hours of Data:	743
Minimum Value: 0 W/m ² on Dec 1 01:00	Minimum Daily Average: 4.5 W/m ² on Dec 13		Hours of Missing Data:	1
Maximum Diurnal Average: 90.3 W/m ² at hour 13	Minimum Diurnal Average: 0.0 W/m ² at hour 7		Hours of Calibration:	0
Monthly Average: 16.93 W/m ²	Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 12.1 P ₉₀ = 60.9 P ₉₉ = 160.2		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-Dec	0	0	0	0	0	0	0	0	1	31	113	156	130	149	110	26	5	0	0	0	0	0	0	0	30.0	155.6
2-Dec	0	0	0	0	0	0	0	0	0	31	114	166	184	164	120	38	3	0	0	0	0	0	0	0	34.2	184.1
3-Dec	0	0	0	0	0	0	0	0	0	7	57	54	56	72	39	18	4	0	0	0	0	0	0	0	12.8	72.4
4-Dec	0	0	0	0	0	0	0	0	0	20	73	153	200	164	118	45	4	0	0	0	0	0	0	0	32.4	200.2
5-Dec	0	0	0	0	0	0	0	0	1	12	36	68	72	57	46	23	3	0	0	0	0	0	0	0	13.2	72.0
6-Dec	0	0	0	0	0	0	0	0	0	9	49	80	75	53	34	16	2	0	0	0	0	0	0	0	13.2	80.1
7-Dec	0	0	0	0	0	0	0	0	0	7	37	113	184	125	107	35	4	0	0	0	0	0	0	0	25.5	183.5
8-Dec	0	0	0	0	0	0	0	0	0	4	21	34	37	28	18	13	2	0	0	0	0	0	0	0	6.6	36.8
9-Dec	0	0	0	0	0	0	0	0	0	7	30	60	68	77	50	20	3	0	0	0	0	0	0	0	13.1	76.8
10-Dec	0	0	0	0	0	0	0	0	0	8	33	56	58	93	59	32	4	0	0	0	0	0	0	0	14.2	92.6
11-Dec	0	0	0	0	0	0	0	0	0	4	13	25	35	33	26	16	2	0	D	0	0	0	0	0	6.7	34.9
12-Dec	0	0	0	0	0	0	0	0	0	5	22	43	57	47	55	41	3	0	0	0	0	0	0	0	11.4	56.7
13-Dec	0	0	0	0	0	0	0	0	0	2	17	33	19	14	13	8	1	0	0	0	0	0	0	0	4.5	32.9
14-Dec	0	0	0	0	0	0	0	0	0	12	96	159	185	173	139	72	5	0	0	0	0	0	0	0	35.0	184.5
15-Dec	0	0	0	0	0	0	0	0	0	6	47	151	172	156	115	44	4	0	0	0	0	0	0	0	29.0	172.0
16-Dec	0	0	0	0	0	0	0	0	0	6	32	47	68	93	116	38	5	0	0	0	0	0	0	0	16.9	115.7
17-Dec	0	0	0	0	0	0	0	0	0	11	56	112	145	148	112	28	4	0	0	0	0	0	0	0	25.7	148.2
18-Dec	0	0	0	0	0	0	0	0	0	3	21	31	21	34	39	32	4	0	0	0	0	0	0	0	7.7	38.8
19-Dec	0	0	0	0	0	0	0	0	0	5	39	90	117	125	48	23	7	0	0	0	0	0	0	0	18.9	125.0
20-Dec	0	0	0	0	0	0	0	0	0	3	21	52	54	61	55	65	10	0	0	0	0	0	0	0	13.3	64.6
21-Dec	0	0	0	0	0	0	0	0	0	5	48	112	151	163	131	60	5	0	0	0	0	0	0	0	28.1	162.8
22-Dec	0	0	0	0	0	0	0	0	0	4	14	25	61	35	32	12	3	0	0	0	0	0	0	0	7.8	60.9
23-Dec	0	0	0	0	0	0	0	0	0	2	19	24	38	40	30	12	2	0	0	0	0	0	0	0	7.0	40.1
24-Dec	0	0	0	0	0	0	0	0	0	2	13	28	37	37	28	14	3	0	0	0	0	0	0	0	6.7	37.2
25-Dec	0	0	0	0	0	0	0	0	0	2	8	21	23	33	26	13	3	0	0	0	0	0	0	0	5.3	32.9
26-Dec	0	0	0	0	0	0	0	0	0	3	18	38	62	53	39	16	3	0	0	0	0	0	0	0	9.7	62.0
27-Dec	0	0	0	0	0	0	0	0	0	6	27	39	44	31	23	11	2	0	0	0	0	0	0	0	7.7	44.0
28-Dec	0	0	0	0	0	0	0	0	0	3	20	66	93	88	72	47	7	0	0	0	0	0	0	0	16.5	92.8
29-Dec	0	0	0	0	0	0	0	0	0	5	51	97	105	100	81	53	8	0	0	0	0	0	0	0	20.9	105.2
30-Dec	0	0	0	0	0	0	0	0	0	12	71	97	110	108	94	63	11	0	0	0	0	0	0	0	23.5	110.1
31-Dec	0	0	0	0	0	0	0	0	0	13	77	75	139	140	133	59	9	0	0	0	0	0	0	0	26.9	139.5
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	7.9	41.7	74.3	90.3	86.8	68.0	32.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Diurnal Average	
	0.0	0.1	0.2	0.0	0.2	0.0	0.0	0.1	0.8	30.8	113.9	165.9	200.2	173.4	138.5	71.6	10.9	0.1	0.1	0.3	0.1	0.1	0.1	0.0	Diurnal Maximum	

D - DAS Failure

Hourly Averages

Solar Radiation (SR) - W/m²
Henry Pirker - December 2015





Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Henry Pirker - December 2015

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 Spd	0	3	1	1	2	3	2	2	4	1	2	2	1	2	2	1	1	2	0	1	2	2	1	3	0.7	3.6
Dir	209	267	124	251	119	101	75	119	104	12	107	105	118	126	101	58	58	80	319	54	94	277	301	272	101.0	104.2
2 Spd	2	3	3	1	2	2	3	3	1	3	6	17	23	24	27	22	15	13	9	2	3	3	3	2	6.6	27.0
Dir	283	296	276	277	264	211	191	170	174	214	202	193	198	207	210	210	213	219	210	144	44	58	34	23	207.8	210.0
3 Spd	3	1	1	2	1	1	3	2	2	2	3	2	3	2	1	1	1	2	3	3	2	2	1	1	0.6	3.2
Dir	16	326	62	240	357	30	87	240	329	272	274	285	273	266	214	241	317	227	335	44	50	66	37	115	333.4	273.0
4 Spd	3	5	3	2	3	3	1	1	1	2	3	2	1	1	1	2	2	2	3	5	1	2	2	8	0.8	7.5
Dir	250	283	256	178	135	216	159	105	351	246	276	293	139	113	147	191	172	306	78	76	46	266	273	279	240.9	279.0
5 Spd	14	11	9	6	5	2	1	1	2	1	1	3	1	1	2	1	1	1	2	1	1	0	2	2	2.2	13.5
Dir	274	269	271	255	246	263	276	295	308	290	289	286	302	37	352	299	221	275	140	141	256	268	125	145	268.8	273.8
6 Spd	1	1	3	2	2	3	3	0	2	3	1	2	0	0	2	2	2	2	1	0	0	1	1	2	0.3	2.8
Dir	137	207	307	215	249	151	116	204	120	117	321	62	68	125	253	262	266	252	336	290	126	108	26	72	174.8	116.0
7 Spd	2	1	1	1	1	0	4	3	1	3	3	4	8	7	6	6	7	6	11	14	6	9	7	5	3.9	13.8
Dir	75	276	18	308	19	258	248	263	99	163	168	197	197	184	202	252	226	216	210	214	214	231	264	244	218.3	214.1
8 Spd	3	3	3	1	1	2	3	2	2	4	3	5	8	9	9	9	6	1	5	8	5	4	1	1	1.4	9.5
Dir	225	273	278	117	121	95	105	64	56	67	67	43	52	57	52	53	55	102	192	223	227	259	251	39	66.1	56.6
9 Spd	1	1	1	1	2	2	2	2	3	3	4	2	1	3	4	3	4	1	0	1	2	1	1	3	1.1	3.7
Dir	5	43	87	37	265	287	276	258	293	267	292	266	271	289	290	280	275	321	114	124	70	322	284	121	286.1	290.0
10 Spd	1	2	2	3	1	1	1	4	1	2	4	4	3	5	2	1	1	1	5	6	6	6	3	3	1.5	6.3
Dir	69	126	117	75	81	31	341	271	302	285	292	282	293	292	272	298	268	9	26	33	27	47	18	10	355.8	46.8
11 Spd	2	2	0	2	1	4	3	3	4	3	3	2	3	2	1	1	2	2	D	1	4	5	4	1	0.5	5.3
Dir	11	7	123	200	261	267	283	226	204	213	203	211	248	249	204	149	131	129	D	65	66	77	48	357	190.2	77.3
12 Spd	1	1	1	2	1	3	1	1	2	2	0	0	1	2	1	3	2	2	2	1	1	0	0	1	0.9	3.1
Dir	342	3	268	230	193	215	222	106	154	238	28	123	284	317	264	259	282	271	273	252	283	284	143	343	258.1	215.3
13 Spd	2	4	7	3	3	5	6	3	3	3	3	4	2	0	3	4	2	2	2	2	2	2	2	3	1.9	7.2
Dir	39	60	45	23	342	345	351	13	6	22	26	39	118	103	325	318	321	329	299	275	276	255	251	241	355.6	44.9
14 Spd	3	3	2	4	5	5	3	3	5	2	5	7	4	3	3	3	4	3	6	4	3	3	3	0	2.3	6.7
Dir	244	245	206	207	202	211	199	203	209	211	186	195	185	136	131	128	103	83	114	108	84	98	99	79	169.6	195.3
15 Spd	1	1	3	8	6	10	12	5	12	12	12	11	11	11	10	7	6	2	3	3	4	2	2	3	5.9	12.1
Dir	72	68	253	235	196	206	208	257	223	221	217	235	219	220	227	225	216	218	260	267	262	248	281	288	225.7	221.5
16 Spd	3	3	3	3	5	4	2	1	1	2	2	6	7	4	6	5	4	5	4	4	2	3	4	3	3.1	6.8
Dir	299	275	264	250	267	261	306	325	267	269	241	210	214	195	208	214	204	264	268	276	299	220	260	264	246.6	213.9
17 Spd	3	2	3	2	1	0	2	2	4	2	4	2	1	4	5	5	3	3	4	4	4	6	6	5	1.8	5.7
Dir	268	307	280	241	327	54	266	322	263	299	262	284	297	36	46	46	38	27	26	26	27	32	34	29	3.3	33.9
18 Spd	5	5	8	9	9	10	8	13	14	14	12	13	12	10	8	9	6	4	2	1	3	5	5	5	6.2	14.2
Dir	23	28	24	25	27	28	37	43	50	43	34	27	35	26	30	49	56	91	144	168	189	203	195	190	40.0	43.3
19 Spd	4	3	3	3	2	2	3	3	2	1	3	3	5	3	3	1	2	19	10	5	3	3	3	4	1.6	18.6
Dir	183	164	161	116	117	99	85	66	1	119	264	285	280	253	266	257	113	144	135	128	262	283	154	282	161.1	144.0
20 Spd	3	4	3	7	2	1	1	1	2	2	2	0	3	4	1	3	2	2	2	1	3	0	1	1	0.9	6.6
Dir	281	176	276	113	275	299	290	249	255	270	256	252	175	246	190	192	198	137	128	103	120	120	332	288	205.8	113.2
21 Spd	4	1	1	1	2	1	1	1	3	2	2	1	0	1	4	3	2	3	3	3	4	1	2	2	1.2	3.9
Dir	130	270	292	300	295	221	341	166	300	147	295	299	245	259	260	287	295	296	276	280	291	329	205	158	272.9	130.1
22 Spd	1	2	2	3	2	3	3	4	4	5	3	4	4	2	4	5	4	3	2	1	1	1	37	2	0.9	37.2
Dir	158	139	293	249	129	271	56	65	53	42	40	26	39	12	278	276	273	311	323	301	353	271	135	263	101.1	135.4



Peace Airshed Zone Association

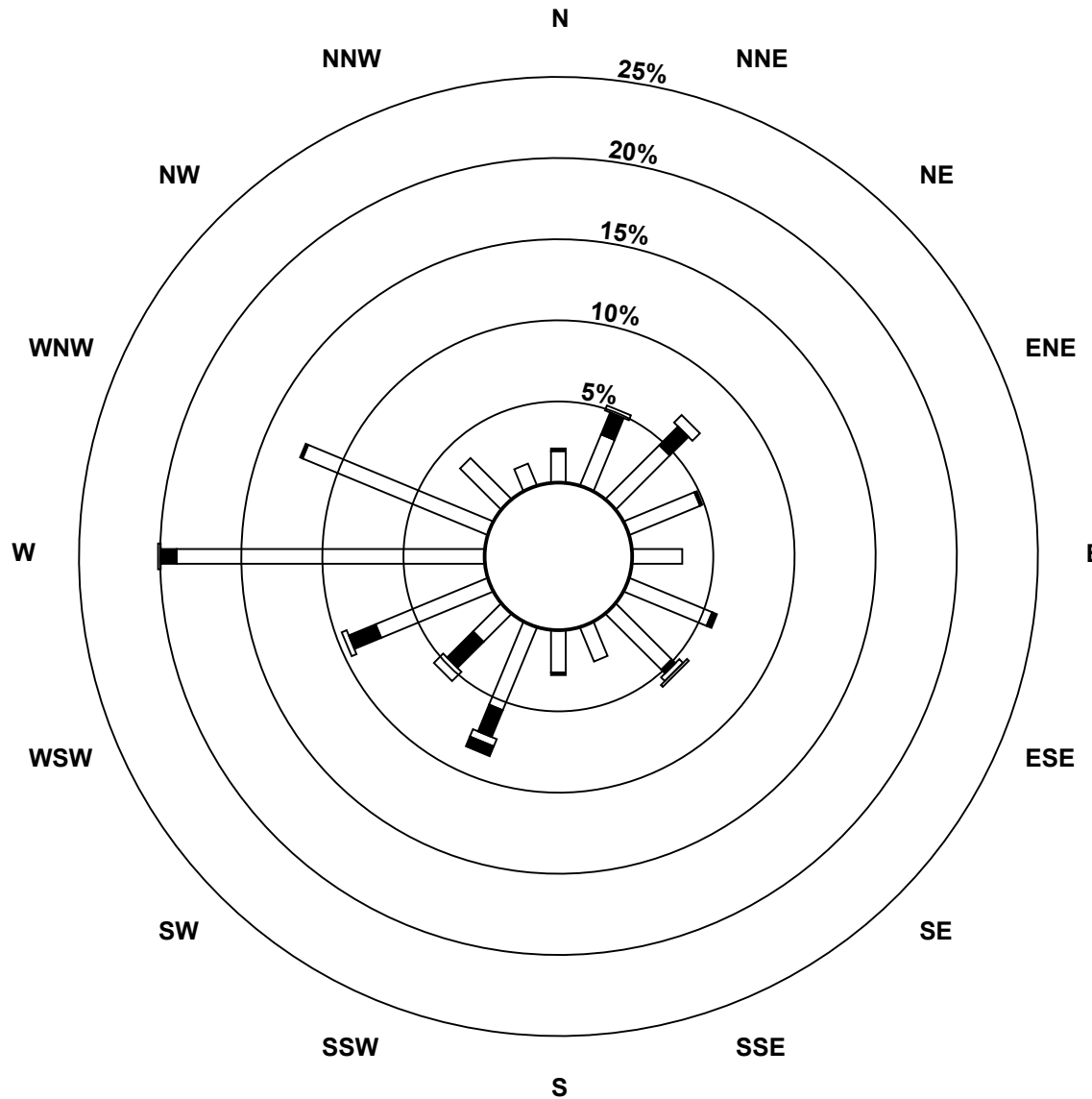
Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Henry Pirker - December 2015

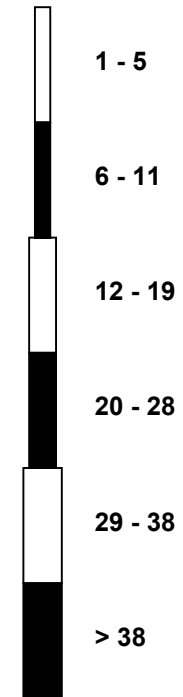
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
23 Spd	2	2	3	2	1	2	0	1	1	1	0	1	0	1	1	0	0	2	1	2	2	1	3	1	0.5	2.9	
Dir	290	241	191	198	170	189	165	114	187	143	117	240	192	234	228	195	142	119	128	274	284	36	71	56	194.9	191.0	
24 Spd	2	2	2	2	2	2	1	1	1	1	0	1	1	1	3	3	3	3	2	0	0	1	2	1	1.1	3.3	
Dir	349	343	33	44	44	49	37	26	38	42	318	89	270	348	43	47	70	73	100	282	303	319	129	155	42.3	69.6	
25 Spd	1	1	1	0	2	1	3	0	0	1	1	2	4	5	6	6	9	11	6	7	5	5	1	2	2.4	11.3	
Dir	112	107	109	134	126	115	94	38	59	140	219	263	246	207	210	228	250	256	251	244	246	262	215	315	236.5	255.9	
26 Spd	1	1	4	1	4	2	2	2	4	1	2	2	4	0	3	3	3	3	2	4	4	0	4	3	0.6	4.2	
Dir	267	271	276	309	277	267	267	271	290	264	263	137	140	111	59	58	56	40	320	290	293	230	86	99	307.6	276.9	
27 Spd	0	1	2	2	2	3	1	1	3	3	2	1	0	1	2	1	1	1	1	1	1	1	2	3	1.0	3.1	
Dir	341	286	271	295	267	259	311	246	283	275	285	112	194	221	251	286	127	116	317	358	2	283	270	296	274.3	259.0	
28 Spd	1	2	2	2	3	2	1	1	1	1	2	1	3	2	1	1	1	1	2	2	2	2	2	1	1.3	2.9	
Dir	216	193	186	162	203	190	189	250	257	216	264	278	280	246	260	249	282	295	272	270	274	278	293	268	245.9	280.0	
29 Spd	2	1	2	1	2	1	1	1	2	1	2	2	2	3	3	5	3	2	5	11	1	5	2	1	1.3	10.8	
Dir	286	286	271	287	305	301	302	316	303	280	281	281	279	276	256	281	291	308	161	136	181	289	283	298	266.9	135.9	
30 Spd	1	2	2	4	N	N	2	2	5	3	3	3	5	5	3	4	1	1	1	2	5	1	0	14	1.7	13.8	
Dir	308	232	279	276	N	N	128	280	266	267	266	254	197	246	294	281	125	124	142	295	273	297	317	135	243.0	135.4	
31 Spd	1	2	0	1	3	1	10	9	6	2	3	4	2	2	2	3	7	10	9	11	16	13	7	4.6	15.6		
Dir	118	349	102	123	144	295	255	286	264	237	274	251	269	267	258	296	287	252	247	244	248	238	248	269	253.9	237.5	
Spd	0.8	1.0	1.0	0.7	0.6	0.7	0.4	0.5	0.8	0.5	1.2	1.1	1.6	1.5	1.6	1.4	1.0	1.0	1.2	1.0	0.9	1.1	0.9	0.6	Diurnal Average		
Dir	284.0	277.0	281.3	234.0	237.3	240.0	241.2	299.6	280.4	248.3	259.0	239.2	215.1	226.2	230.2	246.0	232.9	214.7	210.2	219.1	273.1	262.6	158.2	255.6	Diurnal Maximum		
Spd	13.5	11.0	9.2	8.7	8.8	9.9	11.5	13.3	13.6	14.2	11.8	16.9	23.0	23.6	27.0	22.0	14.9	18.6	11.0	13.8	11.4	15.6	37.2	13.8	Diurnal Maximum		
Dir	273.8	269.1	271.1	25.3	27.4	28.3	208.3	42.8	50.1	43.3	33.7	193.5	198.0	206.9	210.0	210.3	212.6	144.0	209.9	214.1	247.5	237.5	135.4	135.4	Diurnal Maximum		
Maximum Speed Value: 37 km/h on Dec 22 23:00																		Minimum Speed Value: 0 km/h on Dec 27 01:00						Hours in Service:		744	
Maximum Daily Speed Average: 6.6 km/h on Dec 2																		Minimum Daily Speed Average: 0.3 km/h on Dec 23						Hours of Data:		741	
Maximum Diurnal Speed Average: 1.6 km/h at hour 13																		Minimum Diurnal Speed Average: 0.4 km/h at hour 7						Hours of Missing Data:		3	
Monthly Average Velocity: 0.84 km/h 242.00 deg																		Speed Percentiles: P ₁ = 0.2 P ₁₀ = 0.8 Q ₁ = 1.4 Median = 2.3 Q ₃ = 3.6 P ₉₀ = 6.2 P ₉₉ = 15.4						Percent Operational Time:		99.6	
All monthly, daily, and diurnal averages have been calculated using vector methods																											
D - DAS Failure N - Not Valid																											
Frequency Distribution																											
Speed Range (km/h)																											
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																				
North	34	1	0	0	0	0	35																				
NorthEast	69	25	6	0	0	0	100																				
East	54	1	0	0	0	0	55																				
SouthEast	77	5	2	0	1	0	85																				
South	48	8	1	1	0	0	58																				
SouthWest	62	26	10	3	0	0	101																				
West	206	17	5	0	0	0	228																				
NorthWest	79	0	0	0	0	0	79																				
Total	629	83	24	4	1	0	741																				

Wind Rose

Wind Speed (WS) (km/h)
Henry Pirker - December 2015



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Henry Pirker - December 2015

Maximum Speed: 43 km/h on Dec 22 23:00	Maximum Daily Speed Average: 8.2 km/h on Dec 2	Hours in Service: 744
Minimum Speed: 0 km/h on Dec 25 08:00	Minimum Daily Speed Average: 1.5 km/h on Dec 23	Hours of Data: 741
Maximum Diurnal Speed Average: 4.7 km/h at hour 23	Minimum Diurnal Speed Average: 2.9 km/h at hour 2	Hours of Missing Data: 3
Monthly Average Speed: 3.68 km/h	Percentiles: P ₁ = 0.3 P ₁₀ = 1.1 Q ₁ = 1.8 Median = 2.7 Q ₃ = 4.2 P ₉₀ = 7.0 P ₉₉ = 12.4	Percent Operational Time: 99.6

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	4	1	2	2	3	3	2	4	2	2	2	2	2	1	1	2	2	2	4	2	2	3	2.2	4.0	
2-Dec	2	3	3	1	2	2	4	3	1	4	7	17	23	24	27	22	15	13	9	2	3	3	3	2	8.2	27.1
3-Dec	3	2	2	3	2	1	4	3	2	2	3	2	3	2	2	2	3	1	3	3	3	2	2	2	2.3	4.3
4-Dec	4	5	4	2	4	4	2	1	3	3	3	2	2	2	4	3	3	2	3	5	2	2	2	8	3.1	7.7
5-Dec	14	11	9	6	5	3	2	2	2	1	2	3	1	1	2	1	0	1	2	1	1	0	2	2	3.2	13.6
6-Dec	1	2	5	3	2	3	3	2	2	3	2	2	1	1	1	2	2	4	1	1	0	1	1	2	2.0	4.6
7-Dec	3	1	4	2	2	1	4	4	2	3	3	5	8	7	6	6	7	6	11	14	6	9	7	7	5.2	13.9
8-Dec	3	3	3	1	1	3	3	2	2	4	3	5	9	10	9	9	6	1	5	8	6	4	2	1	4.3	9.6
9-Dec	2	2	3	1	3	2	2	2	3	3	4	2	1	3	4	3	4	1	1	2	2	2	2	3	2.3	3.8
10-Dec	2	2	2	3	2	1	2	4	2	2	5	4	4	5	2	0	1	2	5	6	6	6	4	3	3.1	6.4
11-Dec	2	2	1	2	1	4	3	3	4	4	3	2	3	2	2	2	2	2	D	2	5	5	4	2	2.6	5.5
12-Dec	1	1	2	2	1	3	2	1	2	2	1	1	1	2	1	3	3	3	2	2	1	0	0	1	1.6	3.2
13-Dec	3	4	7	3	3	5	6	3	3	3	4	4	2	1	3	4	2	2	3	2	2	2	2	3	3.2	7.3
14-Dec	3	3	3	4	5	5	3	4	5	3	5	7	4	3	3	3	4	3	6	4	3	3	4	1	3.7	6.8
15-Dec	2	2	5	8	6	10	12	6	12	12	12	11	11	11	10	7	6	3	3	3	4	2	2	3	6.8	12.2
16-Dec	3	3	3	3	5	4	2	1	1	3	2	6	7	4	6	5	4	5	5	5	2	3	4	4	3.9	6.8
17-Dec	4	2	3	2	1	2	5	2	5	2	4	2	2	4	6	5	3	3	4	4	4	6	6	5	3.6	5.9
18-Dec	6	6	8	9	9	10	8	13	14	14	12	13	12	10	8	9	6	5	2	1	3	5	5	5	8.1	14.3
19-Dec	5	3	3	3	2	2	3	3	2	5	4	6	5	3	5	4	11	28	16	12	5	3	11	5	6.1	27.8
20-Dec	4	9	4	13	2	1	5	6	5	2	2	4	4	4	2	3	3	2	2	2	3	1	3	2	3.7	13.2
21-Dec	7	2	3	3	3	2	2	2	4	6	2	1	1	1	4	4	2	4	4	3	4	1	3	2	3.0	7.2
22-Dec	2	2	3	7	9	4	4	5	4	5	3	4	4	2	4	5	5	3	2	2	4	5	43	7	5.7	42.7
23-Dec	2	2	3	2	2	2	0	1	1	1	0	1	0	1	1	0	0	2	1	3	3	2	3	2	1.5	3.1
24-Dec	2	2	2	2	2	2	1	1	1	0	0	1	2	2	2	3	3	3	2	0	0	1	2	1	1.6	3.5
25-Dec	1	1	1	0	2	1	3	0	0	1	1	3	4	5	6	6	9	11	6	7	6	5	1	2	3.4	11.4
26-Dec	7	2	4	2	4	2	2	3	4	1	2	2	4	1	3	3	4	3	4	4	4	1	4	3	3.0	6.8
27-Dec	1	1	4	4	3	4	2	3	4	3	3	1	1	1	2	1	1	1	2	1	1	2	4	3	2.1	3.9
28-Dec	1	2	3	2	3	3	1	1	1	1	2	1	3	2	1	1	1	1	2	2	3	2	2	1	1.8	2.9
29-Dec	2	1	2	1	2	1	1	1	2	1	2	2	2	3	6	5	4	3	10	15	4	5	2	1	3.3	15.3
30-Dec	1	3	3	5	N	N	10	4	5	4	4	3	5	6	3	4	1	1	2	2	6	2	1	17	4.1	16.6
31-Dec	3	2	0	2	3	2	10	9	6	2	3	4	2	2	2	2	3	7	10	9	12	16	13	7	5.5	16.1
	3.1	2.9	3.3	3.3	3.0	3.1	3.7	3.1	3.5	3.3	3.3	4.0	4.3	4.0	4.5	4.2	3.9	4.2	4.3	4.2	3.5	3.3	4.7	3.6	Diurnal Average	
	13.6	11.1	9.3	13.2	9.0	10.1	11.7	13.4	13.8	14.3	12.0	17.0	23.3	23.8	27.1	22.1	15.2	27.8	16.2	15.3	11.6	16.1	42.7	16.6	Diurnal Maximum	

D - DAS Failure N - Not Valid
 All monthly, daily, and diurnal averages have been calculated using scalar methods

Hourly Standard Deviations

Wind Direction (WD) - deg

Henry Pirker - December 2015

Maximum Value: 96.6 deg on Dec 9 19:00		Hours in Service: 744																									
Minimum Value: 5.5 deg on Dec 29 09:00		Hours of Data: 743																									
Percentiles: P ₁ = 6.5 P ₁₀ = 10.5 Q ₁ = 16.0 Median = 28.1 Q ₃ = 52.4 P ₉₀ = 71.7 P ₉₉ = 88.0		Hours of Missing Data: 1																									
		Hours of Calibration: 0																									
		Percent Operational Time: 99.9																									
Day	Hourly Period Ending At (MST)																								Daily Maximum		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	85	45	55	64	52	38	55	29	32	65	41	68	53	61	28	70	42	40	78	79	83	47	83	18	84.6		
2-Dec	27	10	25	68	42	36	28	27	65	70	13	7	9	8	7	6	12	15	12	52	21	22	41	15	70.2		
3-Dec	26	63	84	66	52	59	47	72	22	48	22	24	18	34	44	50	84	63	48	32	24	33	25	59	84.3		
4-Dec	42	19	34	63	40	37	63	88	85	80	46	30	76	74	85	37	43	50	45	10	89	54	53	12	88.8		
5-Dec	6	9	7	12	11	49	80	83	16	67	38	30	63	55	36	56	62	60	28	52	40	77	21	57	82.9		
6-Dec	38	52	63	27	47	19	20	84	33	20	71	43	82	69	65	22	34	65	78	77	68	56	59	28	84.4		
7-Dec	71	93	85	70	37	77	34	64	72	21	23	63	14	19	13	19	14	13	9	6	14	16	14	36	93.0		
8-Dec	21	17	28	78	58	35	20	11	22	16	30	12	9	8	7	10	59	22	16	27	29	80	70	80.0			
9-Dec	84	59	54	67	45	28	49	40	50	54	15	54	45	23	11	18	9	76	97	62	47	56	57	19	96.6		
10-Dec	79	42	20	33	57	39	51	41	67	43	33	22	11	10	40	80	51	52	28	14	12	11	23	20	80.4		
11-Dec	38	41	77	25	37	11	14	24	11	14	11	23	26	28	23	27	9	12	D	47	10	13	27	34	77.3		
12-Dec	40	37	35	25	32	19	28	57	47	25	79	85	51	28	26	12	17	19	14	47	51	68	84	50	84.5		
13-Dec	14	35	9	22	19	12	14	23	19	24	20	14	37	69	28	10	12	15	21	9	9	16	20	10	68.6		
14-Dec	8	12	23	12	10	10	15	15	12	25	10	10	11	15	15	9	19	7	8	15	13	23	43	84	83.5		
15-Dec	64	62	60	19	15	10	12	30	11	7	6	11	10	8	9	10	13	49	31	19	25	46	83	19	83.3		
16-Dec	18	19	18	27	11	23	23	65	55	34	24	12	10	13	14	10	14	17	32	27	26	25	20	36	65.2		
17-Dec	30	18	32	31	61	58	55	36	43	13	18	29	53	21	17	17	13	16	13	12	11	10	12	13	60.8		
18-Dec	13	10	10	10	9	11	15	7	8	9	10	11	9	11	11	8	14	25	20	29	21	11	15	14	29.2		
19-Dec	14	21	17	11	19	14	27	17	29	79	32	38	20	23	34	41	78	81	78	77	40	23	66	29	80.7		
20-Dec	29	57	28	81	34	52	71	53	45	49	32	91	30	20	50	22	29	45	68	63	55	84	82	69	91.1		
21-Dec	86	80	69	56	81	90	78	79	45	59	61	84	67	50	21	26	24	45	50	25	21	61	75	47	89.7		
22-Dec	51	27	29	51	84	43	48	17	16	14	18	18	15	33	50	9	20	8	13	53	39	50	64	44	83.6		
23-Dec	27	33	17	21	53	38	68	15	35	27	70	24	37	23	31	34	54	22	53	35	28	57	26	40	70.3		
24-Dec	23	27	19	16	10	16	22	29	22	80	71	53	22	61	36	12	16	13	55	48	80	11	88	30	88.2		
25-Dec	31	8	9	19	12	16	19	79	56	15	39	23	14	9	12	13	6	9	6	7	20	20	72	42	79.3		
26-Dec	53	54	45	51	21	30	52	30	21	53	37	33	10	92	46	23	18	19	61	21	20	59	21	17	92.3		
27-Dec	94	36	40	50	49	38	83	68	32	28	86	75	57	51	40	62	22	14	81	69	62	44	39	28	93.9		
28-Dec	58	39	22	26	19	21	48	20	27	26	21	22	9	17	15	23	22	9	24	16	18	20	16	20	57.6		
29-Dec	14	14	17	36	9	25	27	30	5	20	7	11	8	17	33	17	21	39	68	75	89	16	51	58	88.8		
30-Dec	17	47	30	22	73	69	63	45	25	19	32	77	18	14	14	12	67	60	38	18	32	87	49	61	87.5		
31-Dec	58	51	85	42	20	81	15	14	19	44	45	25	27	13	21	21	15	11	8	14	11	15	9	14	85.1		
		93.9	93.0	85.3	80.9	83.6	89.7	82.9	87.8	84.7	80.1	85.8	91.1	82.5	92.3	85.4	80.4	84.3	80.7	96.6	79.4	88.8	87.5	88.2	83.5		
D - DAS Failure																											

PAZA

Evergreen Park Station

Monthly Summary Tables, Graphs and
Roses

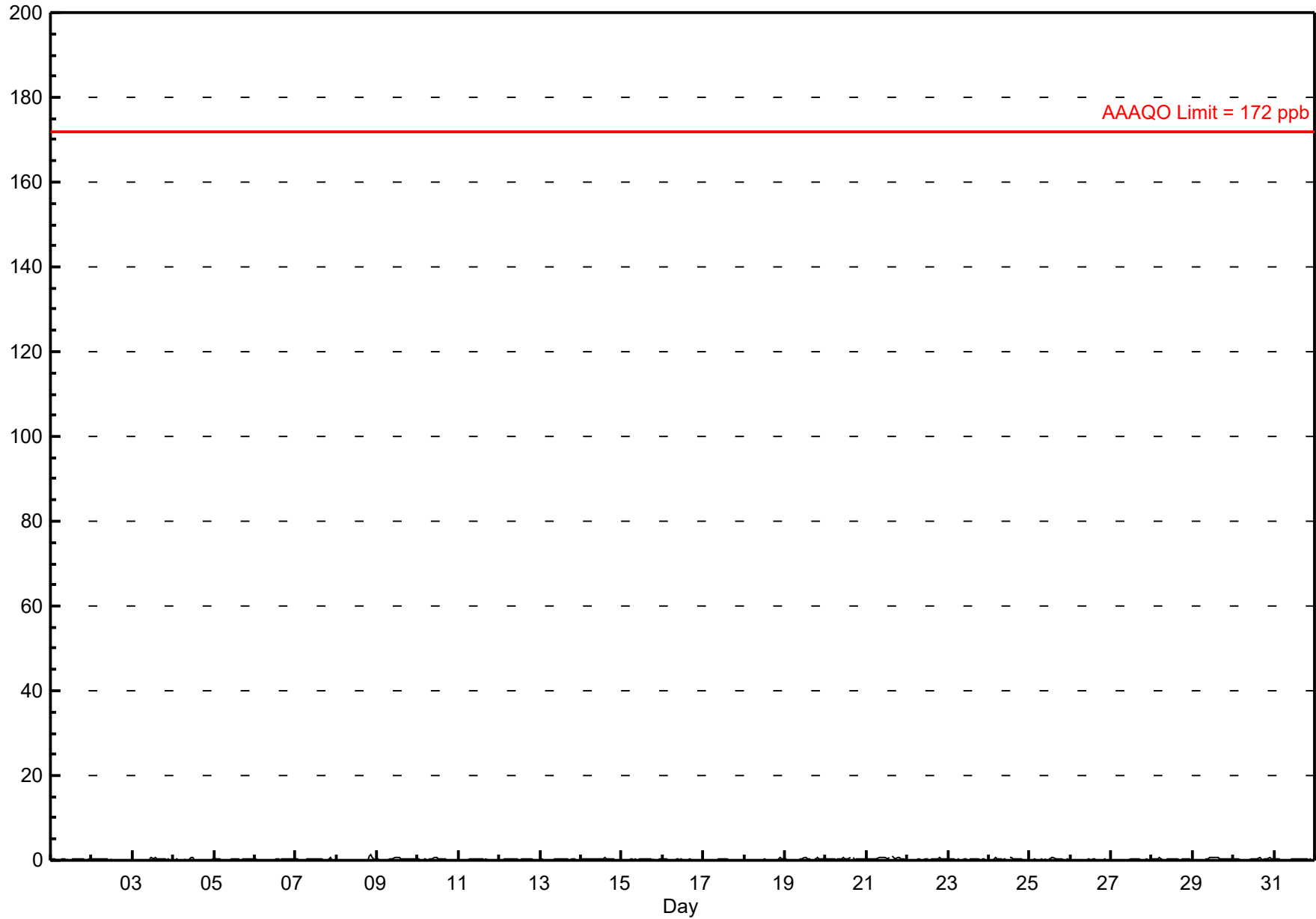
Hourly Averages

Sulphur Dioxide (SO₂) - ppb Evergreen Park - December 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 1.4 ppb on Dec 8 21:00 Maximum Daily Average: 0.5 ppb on Dec 21		Hours in Service: 744 Hours of Data: 708 Hours of Missing Data: 36 Hours of Calibration: 36 Percent Operational Time: 100.0																																															
Minimum Value: 0 ppb on Dec 10 20:00 Maximum Diurnal Average: 0.4 ppb at hour 12 Monthly Average: 0.24 ppb		Minimum Daily Average: 0.1 ppb on Dec 17 Minimum Diurnal Average: 0.1 ppb at hour 6 Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.3 P ₉₀ = 0.5 P ₉₉ = 0.8																																															
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5																							
2-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4																							
3-Dec	0	0	0	0	0	0	0	0	0	A	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0.2	0.5																							
4-Dec	0	0	0	0	0	0	0	0	A	0	1	1	1	C	C	C	C	0	0	0	0	0	0	0	0.2	0.7																							
5-Dec	1	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	0.8																							
6-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3																							
7-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.2	0.6																							
8-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0.2	1.4																							
9-Dec	0	0	0	A	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0.3	0.7																							
10-Dec	0	0	A	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6																							
11-Dec	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	0.5																							
12-Dec	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	0.3																							
13-Dec	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																							
14-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	A	0	0.3	0.7																							
15-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	0.3																							
16-Dec	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																							
17-Dec	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																							
18-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	0	0.1	0.7																							
19-Dec	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	A	0	0	1	0	0	0	1	0.3	0.6																							
20-Dec	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	A	1	0	0	0	0	0	0	0	0.4	0.8																							
21-Dec	0	0	0	0	0	0	0	1	1	1	1	1	0	1	A	1	1	0	1	1	1	1	0	0	0.5	1.0																							
22-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	1	0	0	0	0.3	0.5																							
23-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4																							
24-Dec	0	0	0	0	1	1	0	0	0	0	0	A	1	1	0	0	0	0	0	0	0	0	0	0	0.3	0.7																							
25-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	1	1	0	0	0	0	0	0	0	0	0	0.3	0.7																							
26-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4																							
27-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4																							
28-Dec	0	0	0	0	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7																							
29-Dec	0	0	0	0	0	0	A	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0.4	0.8																							
30-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0.3	0.8																							
31-Dec	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																							
																								0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.2	0.2	Diurnal Average
																								0.8	0.5	0.4	0.4	0.7	0.5	0.5	0.6	0.6	0.7	0.8	0.8	0.8	0.7	0.8	0.8	1.0	0.7	0.5	0.7	1.2	1.4	0.8	0.5	0.5	Diurnal Maximum
C - Calibration A - Automated Daily Zero Span Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb 30-day 11 ppb																																																	

Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Evergreen Park - December 2015



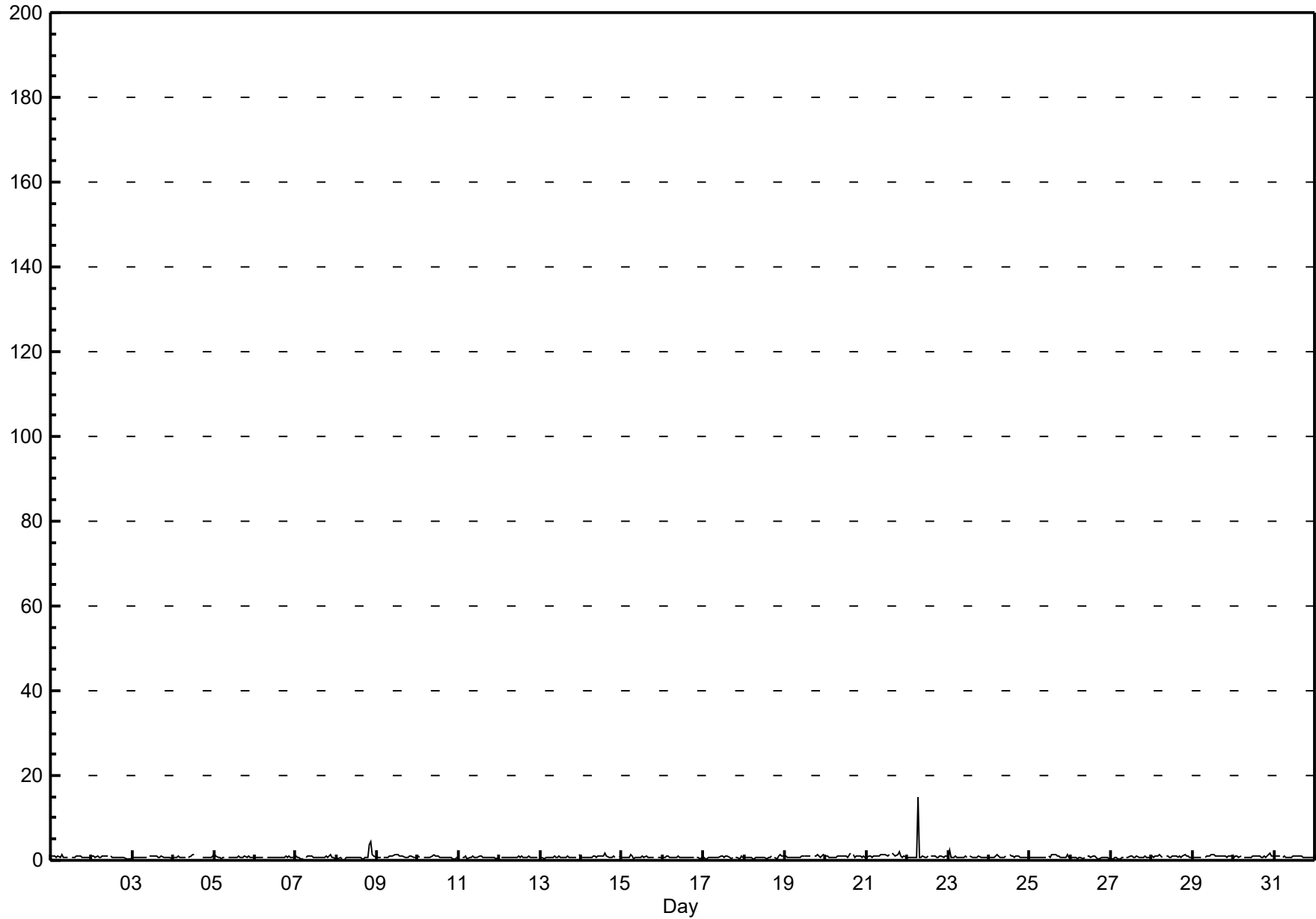
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb Evergreen Park - December 2015

Maximum Value: 15.1 ppb on Dec 22 07:00		Maximum Daily Average: 1.4 ppb on Dec 22		Hours in Service: 744																							
Minimum Value: 0 ppb on Dec 27 01:00		Minimum Daily Average: 0.6 ppb on Dec 26		Hours of Data: 708																							
Maximum Diurnal Average: 1.2 ppb at hour 7		Minimum Diurnal Average: 0.7 ppb at hour 4		Hours of Missing Data: 36																							
Monthly Average: 0.82 ppb		Percentiles: P ₁ = 0.4 P ₁₀ = 0.5 Q ₁ = 0.6 Median = 0.7 Q ₃ = 0.9 P ₉₀ = 1.1 P ₉₉ = 1.7		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-Dec	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.2	
2-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0	0	0	0.7	1.1	
3-Dec	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0.8	1.1	
4-Dec	1	1	1	1	1	1	1	1	A	1	1	1	1	C	C	C	C	1	1	1	1	1	1	1	0.8	1.3	
5-Dec	2	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.6	
6-Dec	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0	
7-Dec	1	1	1	1	0	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0.7	1.3	
8-Dec	1	0	1	0	A	0	1	1	1	1	1	1	1	1	1	0	0	1	1	4	4	1	1	1	0.9	4.5	
9-Dec	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	1.3	
10-Dec	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	0.8	1.3	
11-Dec	0	A	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0.7	1.0	
12-Dec	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	1.0	
13-Dec	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0.7	1.3	
14-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	A	1	1	0.9	1.7	
15-Dec	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	1.4	
16-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0	1	0.7	1.0	
17-Dec	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	A	1	1	0	1	1	0.7	1.1	
18-Dec	1	1	1	1	1	0	0	1	1	1	1	1	1	0	1	1	1	A	1	1	0	1	1	1	0.7	1.2	
19-Dec	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	
20-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	A	1	1	1	1	1	1	1	1	0.9	1.7	
21-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	2	1	1	1	1	2	1	1	1	1.1	2.2	
22-Dec	1	1	1	1	1	1	15	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1.4	15.1	
23-Dec	1	2	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.8	2.4	
24-Dec	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.4	
25-Dec	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	1.4	
26-Dec	1	1	1	1	0	1	1	0	1	A	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0.6	1.0	
27-Dec	0	0	1	1	0	0	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.1	
28-Dec	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.4	
29-Dec	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.4	
30-Dec	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	0.9	1.6	
31-Dec	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	
		0.8	0.8	0.7	0.7	0.7	0.7	1.2	0.7	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.9	0.9	0.8	0.8	0.7	Diurnal Average	
		1.6	2.4	1.0	1.0	1.3	1.4	15.1	1.2	1.2	1.4	1.3	1.4	1.4	1.4	1.7	1.7	1.4	1.2	1.3	3.7	4.5	1.6	1.4	1.3	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

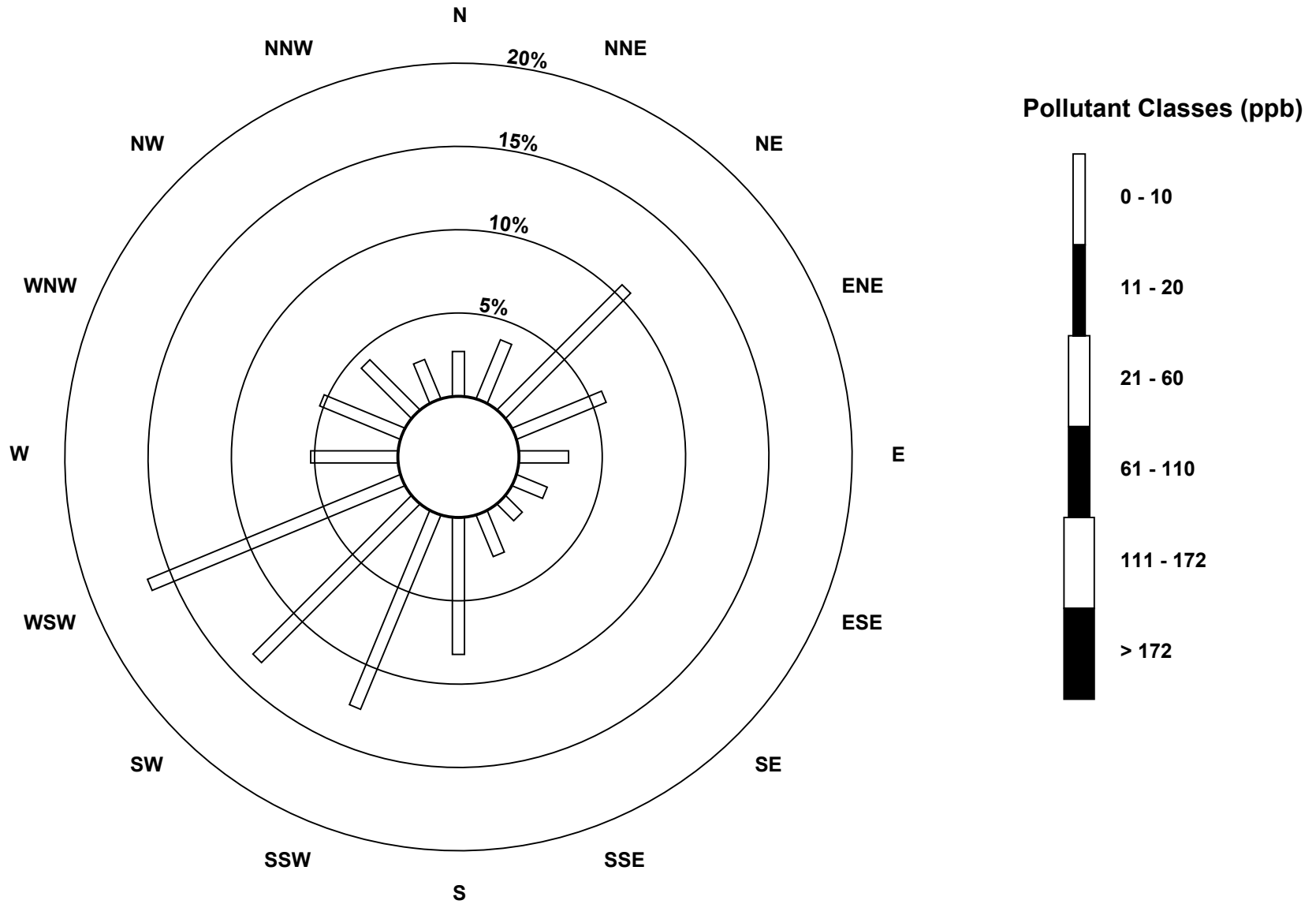
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Evergreen Park - December 2015



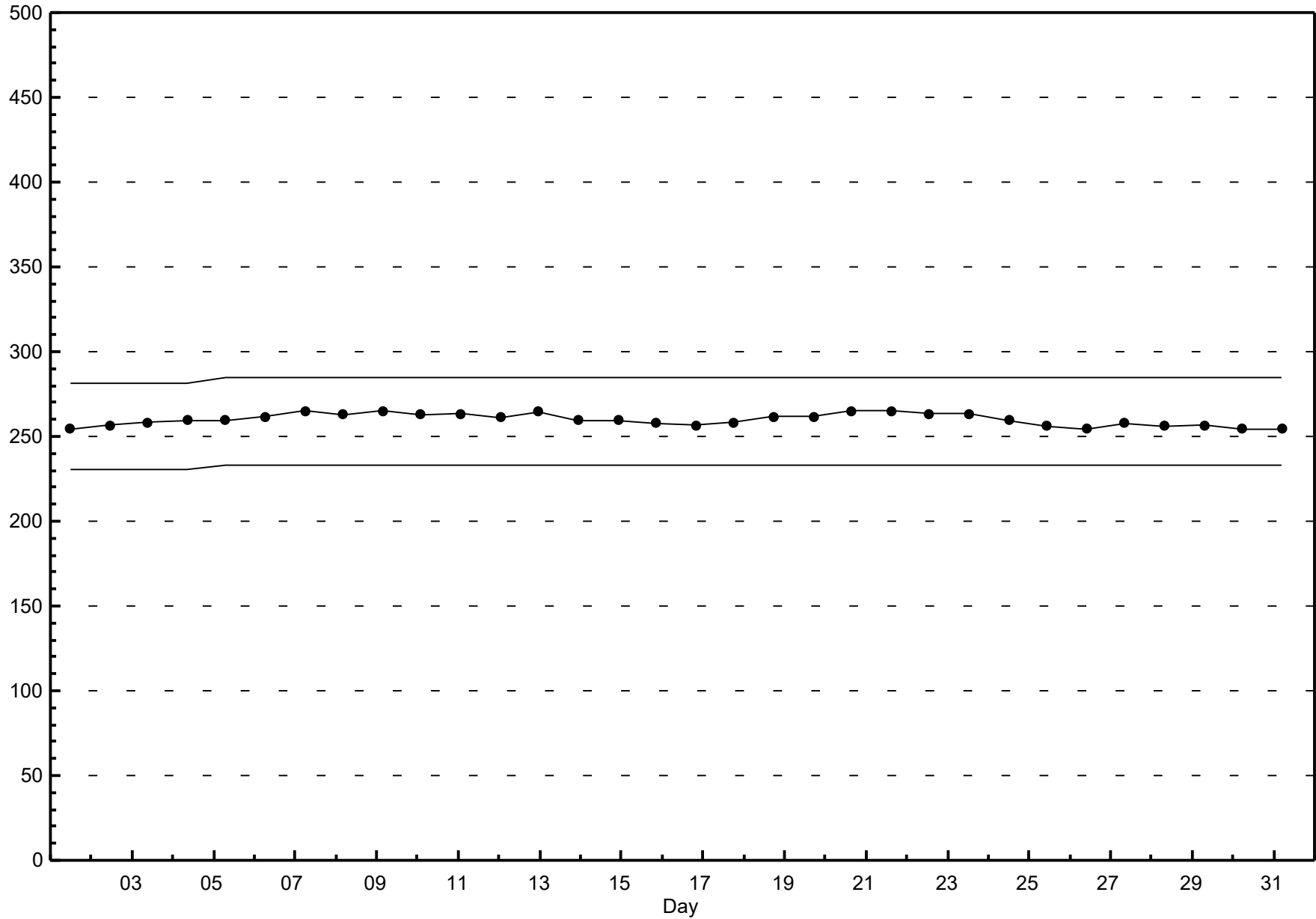
Pollutant Rose

Sulphur Dioxide (SO₂) - ppb
Evergreen Park - December 2015



Span Responses

Sulphur Dioxide (SO₂)
Evergreen Park - December 2015



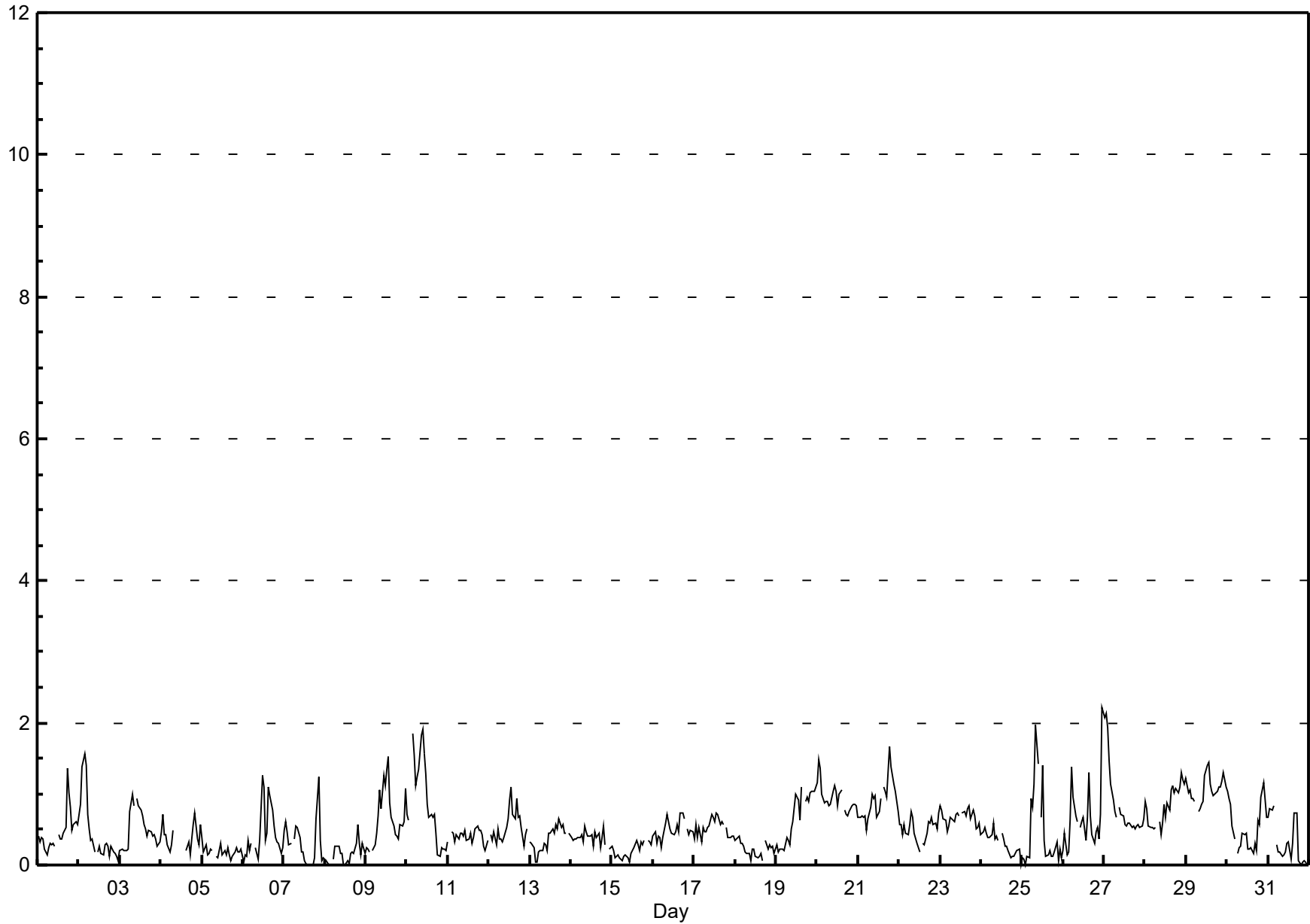
Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Evergreen Park - December 2015

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:		744																		
Maximum Value: 2.2 ppb on Dec 27 00:00		Maximum Daily Average: 1.1 ppb on Dec 29		Hours of Data:		706		Hours of Missing Data: 38																		
Minimum Value: 0 ppb on Dec 7 15:00		Minimum Daily Average: 0.2 ppb on Dec 8		Hours of Calibration: 38		Hours of Missing Data: 38		Percent Operational Time: 100.0																		
Maximum Diurnal Average: 0.6 ppb at hour 12		Minimum Diurnal Average: 0.5 ppb at hour 5		Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.3 Median = 0.4 Q ₃ = 0.7 P ₉₀ = 1.0 P ₉₉ = 1.8																						
Monthly Average: 0.53 ppb																										
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-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	1	1	1	1	0	1	1	1	0.5	1.4
2-Dec	1	1	1	2	1	1	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	1.6
3-Dec	0	0	0	0	0	0	1	1	1	A	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0.5	1.0
4-Dec	0	1	0	0	0	0	0	0	A	C	C	C	C	C	C	0	0	0	0	1	1	0	0	1	--	0.7
5-Dec	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
6-Dec	0	0	0	0	0	0	A	0	0	0	0	1	1	0	0	1	1	1	1	1	0	0	0	0	0.4	1.3
7-Dec	0	1	0	0	0	A	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0.3	1.2
8-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.2	0.6
9-Dec	0	0	0	A	0	0	0	0	1	1	1	1	1	2	1	1	1	1	0	0	1	1	1	1	0.7	1.5
10-Dec	1	1	A	2	2	1	1	1	2	2	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0.9	1.9
11-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0.4	0.5
12-Dec	A	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	A	0.5	1.1
13-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	0	0	A	0	0.4	0.7
14-Dec	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	A	0	0	0.4	0.6
15-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.2	0.3
16-Dec	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	1	1	1	A	1	0	0	0	0.5	0.7
17-Dec	0	1	0	1	0	1	0	0	1	1	1	1	1	1	1	1	1	1	A	1	0	0	0	0	0.5	0.7
18-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.2	0.4
19-Dec	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.7	1.1
20-Dec	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	1.5
21-Dec	1	1	1	1	1	0	1	1	1	1	1	1	1	1	A	1	1	1	1	2	1	1	1	1	0.9	1.7
22-Dec	1	1	0	1	0	0	1	1	1	0	0	0	0	A	0	0	0	0	1	1	1	1	1	1	0.5	0.7
23-Dec	1	1	1	1	0	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.7	0.8
24-Dec	0	0	1	0	0	0	0	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6
25-Dec	0	0	0	0	0	1	1	1	2	1	A	1	1	0	0	0	0	0	0	0	0	0	0	0	0.5	2.0
26-Dec	0	0	0	0	1	1	1	1	1	1	A	1	1	1	0	1	1	1	0	0	0	1	0	1	0.7	2.2
27-Dec	2	2	2	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	2.1
28-Dec	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.3
29-Dec	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	1.4
30-Dec	1	1	1	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0.5	1.2
31-Dec	1	1	1	1	A	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0.3	0.8
		0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	Diurnal Average
		2.1	2.1	1.9	1.9	1.5	1.4	1.2	1.3	2.0	1.9	1.6	1.3	1.4	1.5	1.1	1.3	1.1	1.4	1.7	1.4	1.3	1.3	1.3	2.2	Diurnal Maximum

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



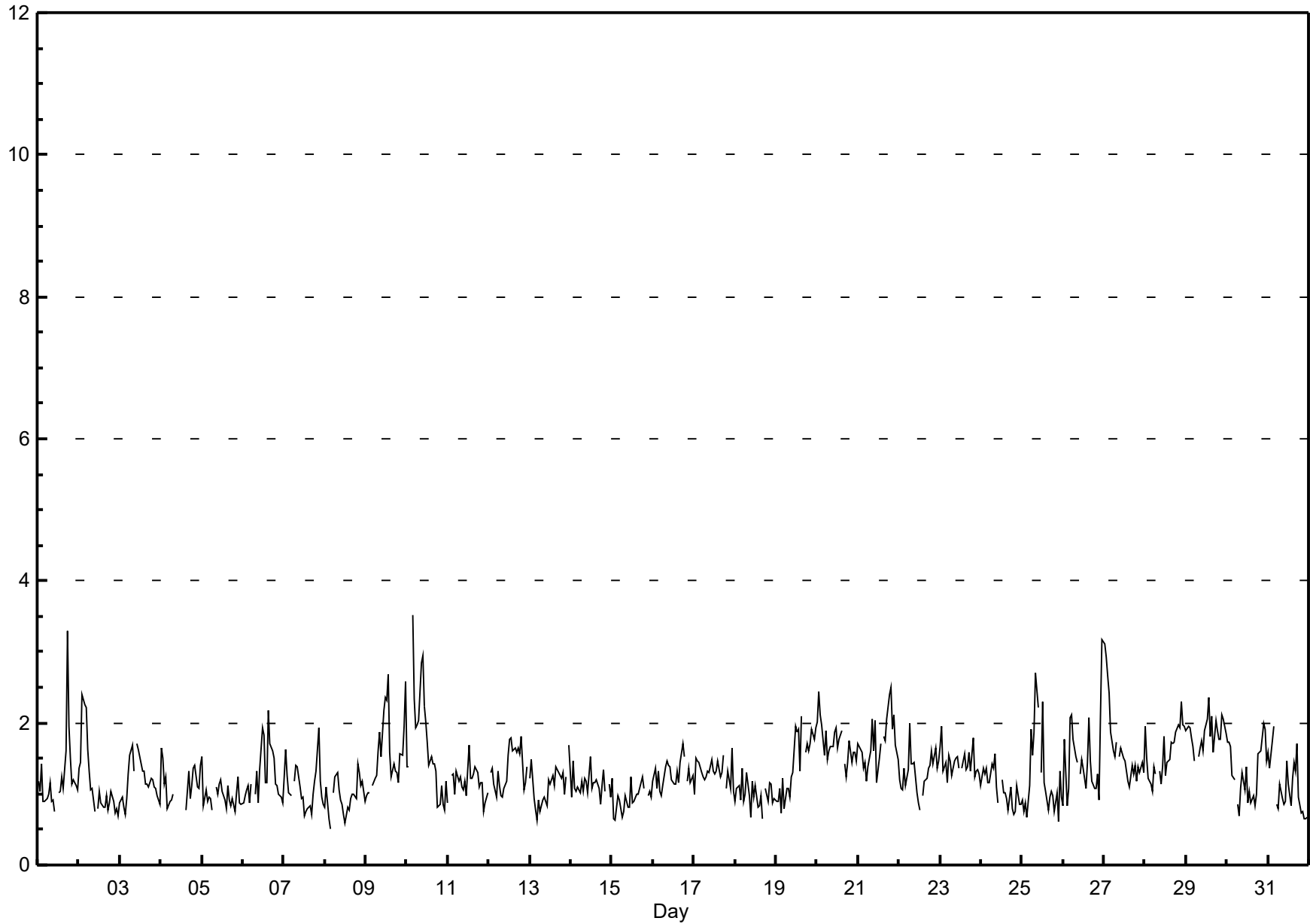
Hourly Maximums

Total Reduced Sulphur (TRS) - ppb Evergreen Park - December 2015

Maximum Value: 3.5 ppb on Dec 10 04:00		Maximum Daily Average: 1.9 ppb on Dec 29		Hours in Service: 744																						
Minimum Value: 1 ppb on Dec 8 04:00		Minimum Daily Average: 0.9 ppb on Dec 15		Hours of Data: 706																						
Maximum Diurnal Average: 1.4 ppb at hour 12		Minimum Diurnal Average: 1.2 ppb at hour 15		Hours of Missing Data: 38																						
Monthly Average: 1.31 ppb		Percentiles: P ₁ = 0.6 P ₁₀ = 0.8 Q ₁ = 1.0 Median = 1.2 Q ₃ = 1.5 P ₉₀ = 1.9 P ₉₉ = 2.8		Hours of Calibration: 38																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	2	3	2	2	1	1	1	1	1.2	3.3
2-Dec	1	1	2	2	2	2	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1.2	2.4
3-Dec	1	1	1	1	1	1	2	2	1	A	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1.2	1.7
4-Dec	2	1	1	1	1	1	1	1	A	C	C	C	C	C	C	1	1	1	1	1	1	1	1	1	--	1.6
5-Dec	2	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	1.5
6-Dec	1	1	1	1	1	1	A	1	1	1	1	2	2	1	1	2	2	2	2	2	1	1	1	1	1.3	2.2
7-Dec	1	2	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1.1	1.9
8-Dec	1	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	1.4
9-Dec	1	1	1	A	1	1	1	2	2	2	2	2	2	3	2	1	1	1	1	1	2	2	2	3	1.6	2.7
10-Dec	1	1	A	4	2	2	2	2	3	3	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1.7	3.5
11-Dec	1	A	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1.2	1.7
12-Dec	A	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	1	1	1	1.4	1.8
13-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	2	1.1	1.7
14-Dec	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	A	1	1	1.1	1.5
15-Dec	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
16-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	A	1	1	1	1	1	1.3	1.7
17-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	A	1	1	1	2	1	1	1.3	1.6
18-Dec	1	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	1.4
19-Dec	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1	2	A	2	2	2	2	2	2	2	1.4	2.1
20-Dec	2	2	2	2	2	2	1	2	2	2	2	2	2	2	A	1	1	1	1	2	1	2	2	1	1.7	2.4
21-Dec	2	2	2	1	1	1	1	2	2	2	2	1	2	2	A	2	2	2	2	2	2	2	2	1	1.7	2.5
22-Dec	1	1	1	1	1	1	2	1	1	1	1	1	A	1	1	1	1	1	1	2	1	2	1	1	1.3	2.0
23-Dec	2	2	1	1	1	2	1	1	1	1	2	1	A	1	2	1	1	2	1	2	1	1	1	1	1.4	2.0
24-Dec	1	1	1	1	1	1	1	1	2	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1.1	1.6
25-Dec	1	1	1	1	1	2	2	2	3	2	A	1	2	1	1	1	1	1	1	1	1	1	1	1	1.3	2.7
26-Dec	1	2	1	1	2	2	2	2	1	A	1	1	1	1	1	2	1	1	1	1	1	1	2	3	1.5	3.2
27-Dec	3	3	3	2	2	2	2	2	A	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1.7	3.1
28-Dec	2	2	1	1	1	1	1	A	1	1	1	2	1	1	2	2	2	2	2	2	2	2	2	2	1.6	2.3
29-Dec	2	2	2	2	2	1	A	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.9	2.4
30-Dec	2	2	2	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	1.3	2.0
31-Dec	2	1	2	2	A	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1.1	1.9
		1.3	1.4	1.3	1.3	1.2	1.3	1.2	1.3	1.4	1.3	1.3	1.4	1.4	1.3	1.2	1.3	1.3	1.4	1.3	1.3	1.3	1.3	1.3	1.3	Diurnal Average
		3.1	2.9	2.7	3.5	2.3	2.1	2.0	2.0	2.8	3.0	2.2	2.4	2.3	2.7	1.9	2.2	1.7	3.3	2.4	2.5	1.9	2.3	2.1	3.2	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								

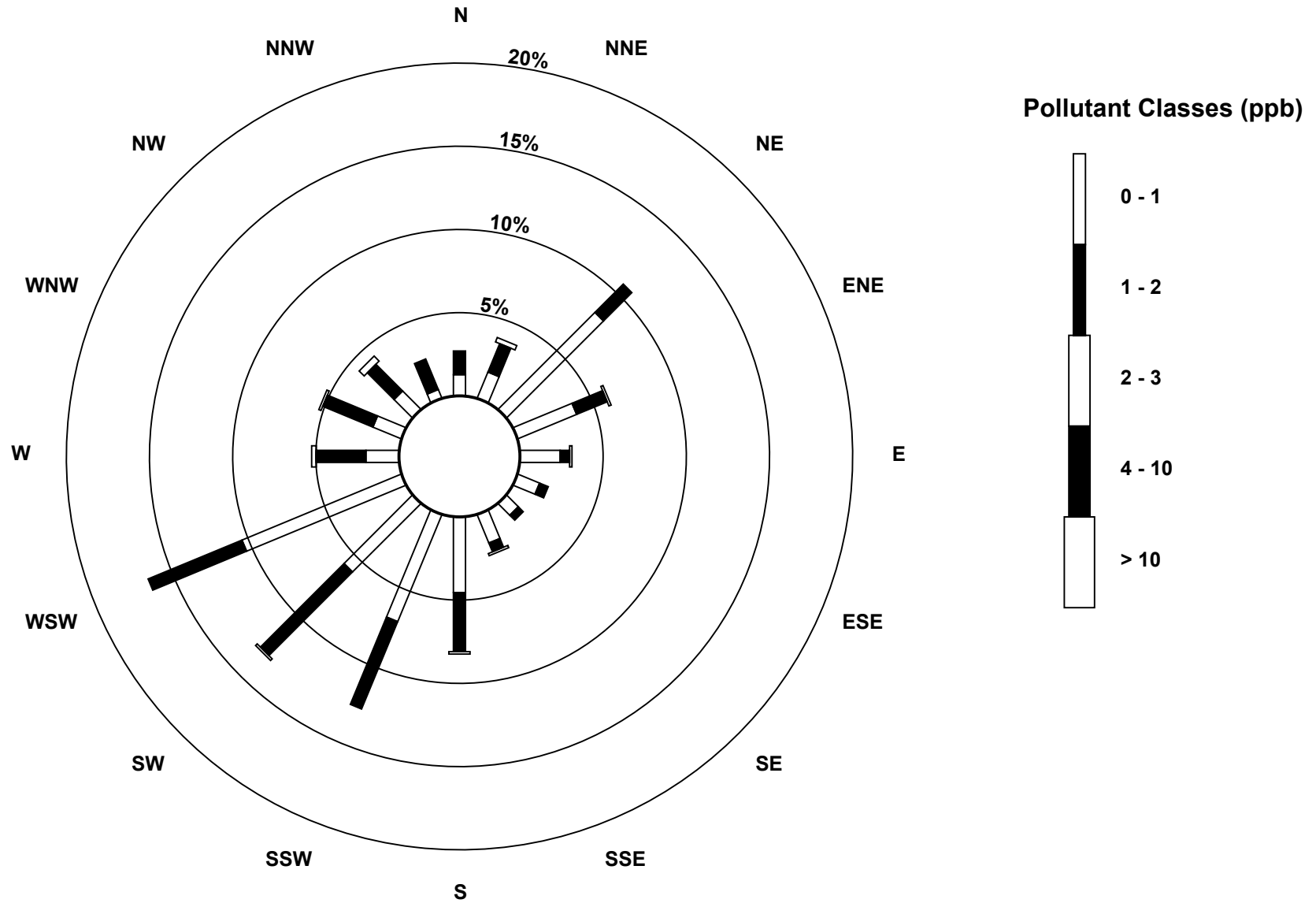
Hourly Maximums

Total Reduced Sulphur (TRS) - ppb
Evergreen Park - December 2015



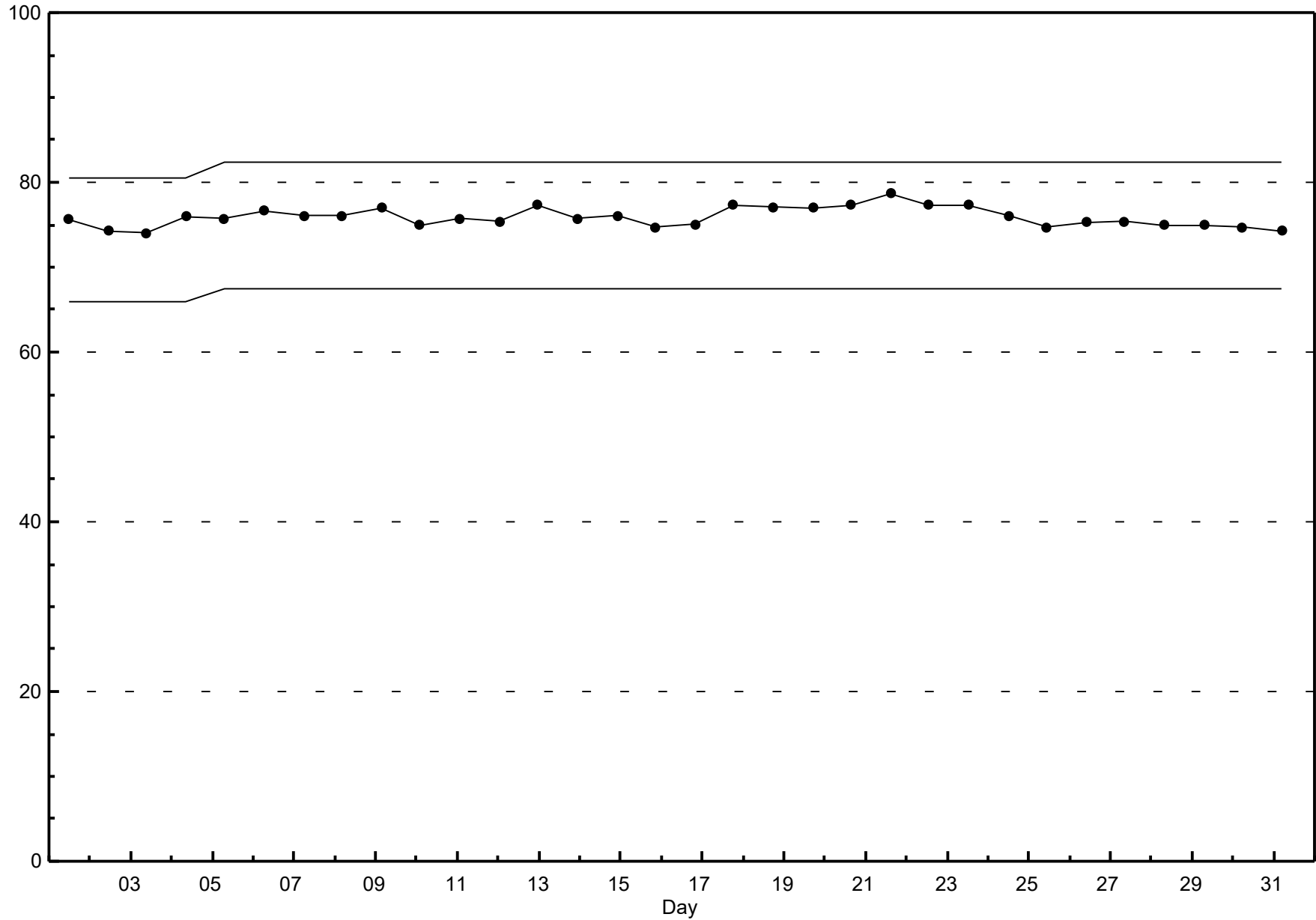
Pollutant Rose

Total Reduced Sulphur (TRS) - ppb
Evergreen Park - December 2015



Span Responses

Total Reduced Sulphur (TRS)
Evergreen Park - December 2015



Hourly Averages

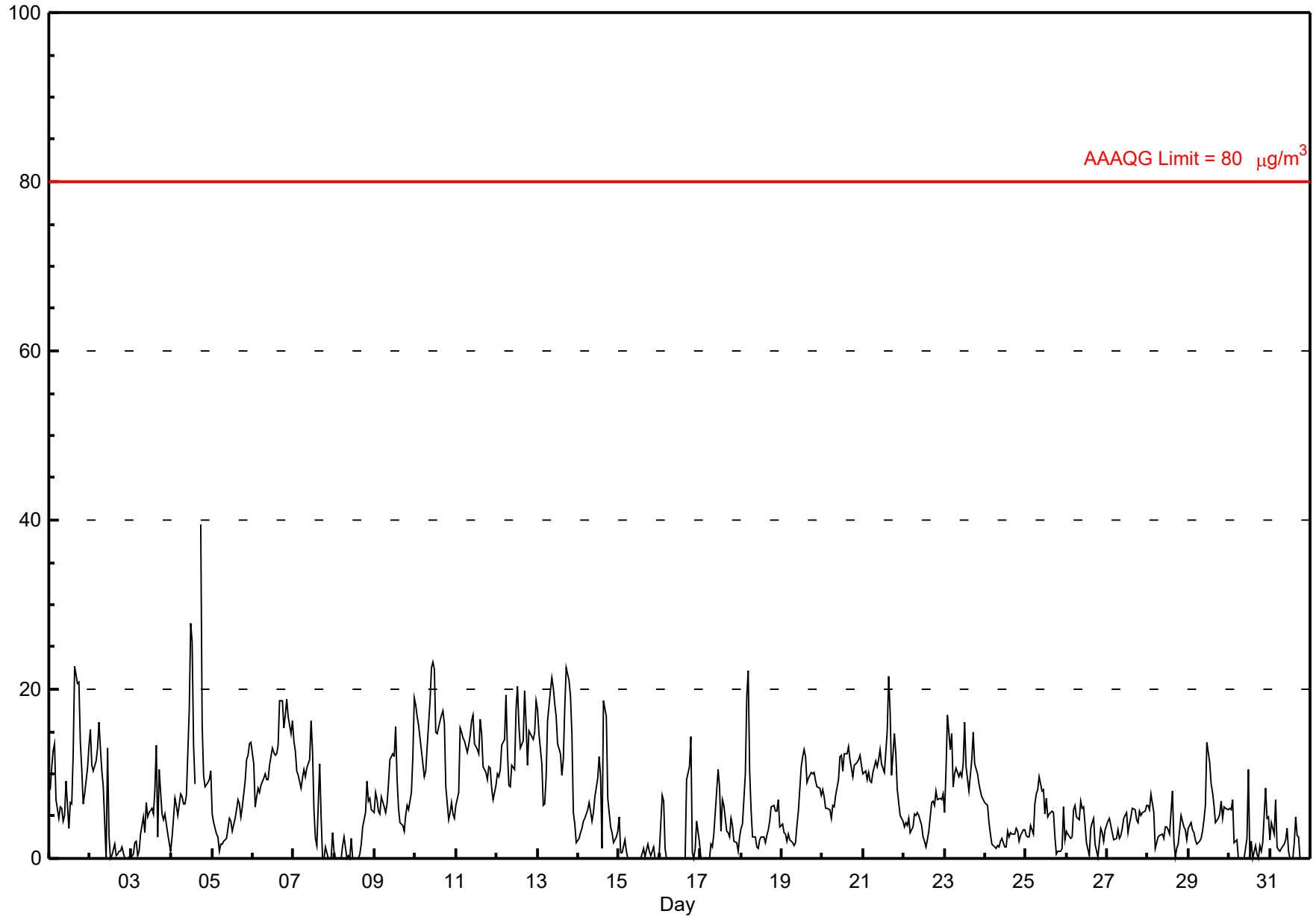
Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Evergreen Park - December 2015

Number of Exceedences: 1-hr: 0 24-hr: 0	Hours in Service: 744
Maximum Value: 39.4 µg/m ³ on Dec 4 18:00	Maximum Daily Average: 13.9 µg/m ³ on Dec 12
Minimum Value: 0 µg/m ³ on Dec 2 10:00	Hours of Data: 742
Maximum Diurnal Average: 8.6 µg/m ³ at hour 18	Hours of Missing Data: 2
Monthly Average: 6.74 µg/m ³	Hours of Calibration: 2
Minimum Daily Average: 0.7 µg/m ³ on Dec 15	Percent Operational Time: 100.0
Minimum Diurnal Average: 5.6 µg/m ³ at hour 6	
Percentiles: P ₁ = 0.0 P ₁₀ = 0.3 Q ₁ = 2.4 Median = 5.5 Q ₃ = 10.3 P ₉₀ = 14.6 P ₉₉ = 22.4	

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	8	11	13	14	7	5	6	6	4	5	9	4	7	6	12	23	21	21	14	11	7	8	11	13	10.1	22.8
2-Dec	15	11	10	11	13	16	13	10	8	0	13	3	0	0	2	0	1	1	1	1	0	0	0	0	5.5	16.2
3-Dec	0	1	2	2	0	1	3	5	3	7	5	5	6	5	8	13	3	10	5	5	5	4	3	1	4.2	13.3
4-Dec	2	5	7	6	5	8	7	6	6	7	18	28	26	13	9	C	C	39	16	10	8	9	9	10	11.7	39.4
5-Dec	5	4	3	3	1	2	2	2	2	4	5	4	3	5	6	7	6	5	6	9	12	12	14	14	5.6	13.8
6-Dec	11	6	7	8	8	9	10	10	9	9	11	13	12	12	12	13	19	19	15	17	19	17	15	16	12.4	18.7
7-Dec	14	13	10	10	8	9	10	10	11	12	16	13	6	2	2	11	5	0	0	1	0	0	0	3	6.9	16.3
8-Dec	1	0	0	0	0	2	2	0	0	0	2	0	0	0	0	0	2	4	5	9	7	7	6	5	2.2	9.1
9-Dec	8	7	6	5	7	6	5	6	9	12	12	12	16	9	6	4	4	3	5	6	6	8	12	19	8.1	18.9
10-Dec	18	17	16	13	11	10	10	13	19	23	23	22	15	15	16	17	17	16	9	5	5	7	5	5	13.6	23.2
11-Dec	6	8	15	15	14	14	13	13	15	16	17	14	13	12	16	15	11	10	9	11	11	8	7	9	12.2	17.0
12-Dec	10	10	11	13	14	19	13	9	8	11	10	18	20	16	13	14	20	16	11	15	14	14	15	19	13.9	20.4
13-Dec	18	15	11	6	7	10	16	20	21	20	18	17	14	12	10	12	18	22	21	19	15	5	4	2	13.9	22.5
14-Dec	2	3	4	4	5	6	7	6	4	5	7	10	12	10	1	19	17	7	5	4	3	2	3	3	6.2	18.7
15-Dec	5	1	1	2	1	0	0	0	0	0	0	0	0	0	1	0	1	2	1	0	1	0	0	0	0.7	4.9
16-Dec	1	7	7	1	0	0	0	0	0	0	0	0	0	0	0	0	9	11	14	1	0	1	4	2	2.4	14.4
17-Dec	0	0	0	0	0	0	2	1	3	5	11	9	3	7	6	3	3	3	5	4	2	2	1	2	3.0	10.5
18-Dec	4	4	10	19	22	10	6	3	3	1	1	2	3	2	2	3	3	4	6	6	6	6	7	4	5.7	22.2
19-Dec	4	3	3	2	3	2	2	2	2	4	6	11	12	13	12	9	10	10	10	10	9	8	8	7	6.8	12.8
20-Dec	8	7	6	6	6	5	6	6	7	9	12	12	10	12	12	13	12	11	10	11	11	12	12	11	9.5	13.2
21-Dec	10	10	9	10	9	9	10	11	11	12	13	11	10	13	15	22	17	10	15	12	8	7	5	4	11.0	21.5
22-Dec	4	4	4	5	3	4	5	5	5	5	4	3	2	1	2	3	7	7	6	8	7	7	7	8	4.8	8.0
23-Dec	5	10	17	13	15	9	10	11	10	10	10	11	16	11	8	10	12	15	11	10	9	8	7	7	10.6	17.0
24-Dec	7	6	4	3	2	2	1	2	1	2	2	1	1	3	3	3	3	3	4	3	2	3	3	3	2.8	6.6
25-Dec	3	3	2	4	3	7	8	8	10	8	8	5	7	5	5	6	5	3	0	1	1	1	6	2	4.6	9.7
26-Dec	3	3	2	3	6	6	5	5	7	6	6	4	2	0	4	4	5	2	0	2	4	3	2	3	3.6	6.8
27-Dec	4	5	4	3	2	2	3	2	3	4	5	5	3	4	5	6	6	5	4	6	5	5	6	6	4.3	6.2
28-Dec	6	6	8	5	1	2	2	3	3	2	4	4	3	3	8	2	0	1	2	5	4	4	3	2	3.5	7.9
29-Dec	4	4	3	3	2	2	2	2	3	5	6	14	11	9	8	6	4	5	5	7	5	6	6	6	5.3	13.7
30-Dec	6	6	7	2	2	0	0	0	0	0	2	11	0	2	0	2	1	0	1	1	2	8	5	5	2.6	10.5
31-Dec	2	4	3	7	1	1	1	1	2	2	4	1	0	0	2	5	3	3	0	0	0	0	0	0	1.7	7.0
	6.3	6.2	6.6	6.4	5.8	5.6	5.8	5.7	6.1	6.7	8.4	8.6	7.5	6.6	6.6	8.2	8.1	8.6	7.0	6.7	6.0	5.9	6.0	6.2	Diurnal Average	
	18.2	16.8	17.0	19.2	22.2	19.3	16.3	19.9	21.3	22.6	23.2	27.7	25.6	15.8	16.5	22.8	20.7	39.4	21.1	19.1	18.7	16.8	14.9	18.9	Diurnal Maximum	

C - Calibration
 Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 µg/m³ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 µg/m³

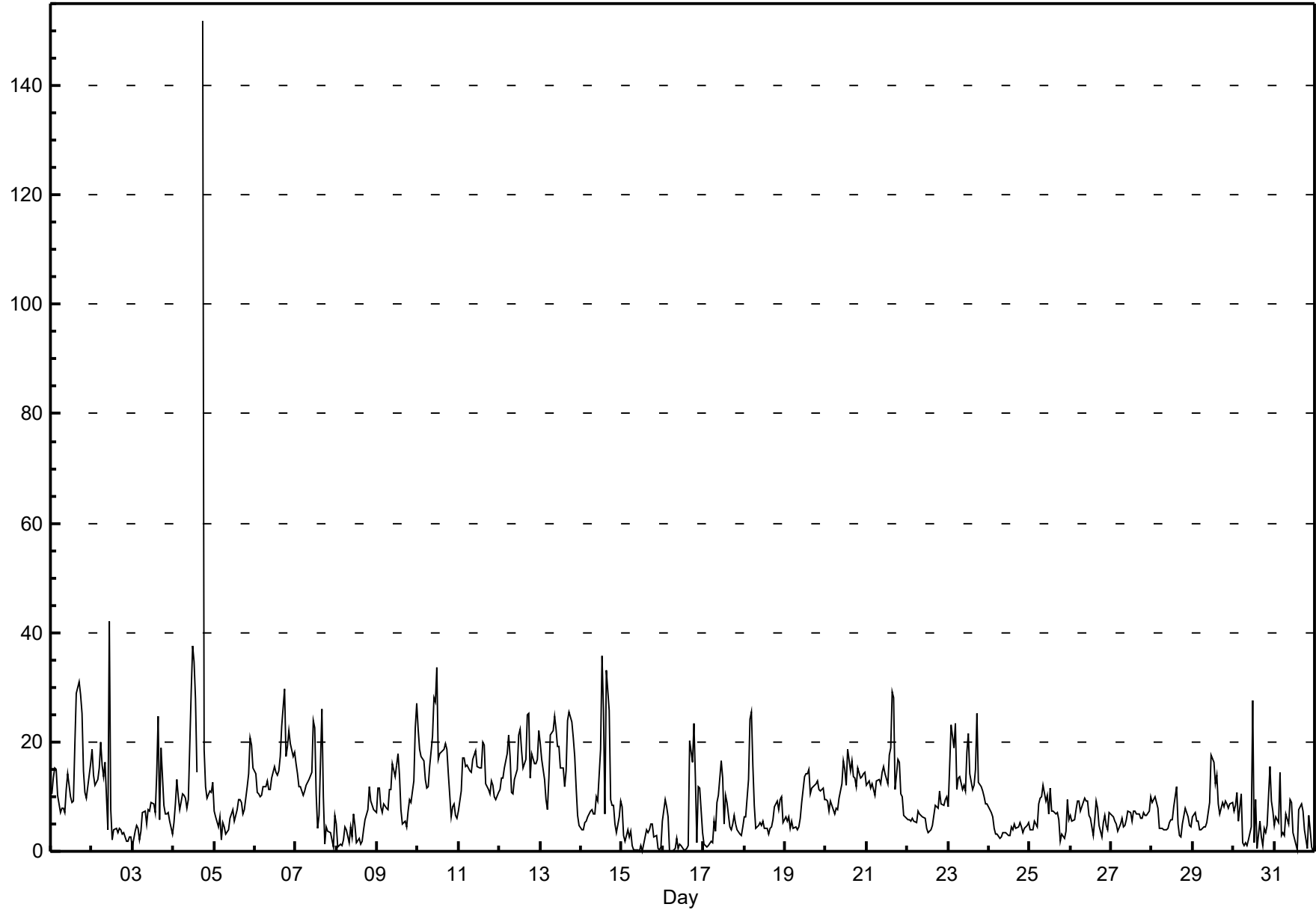


Hourly Maximums

Particulate Matter 2.5 (PM_{2.5}) - µg/m³

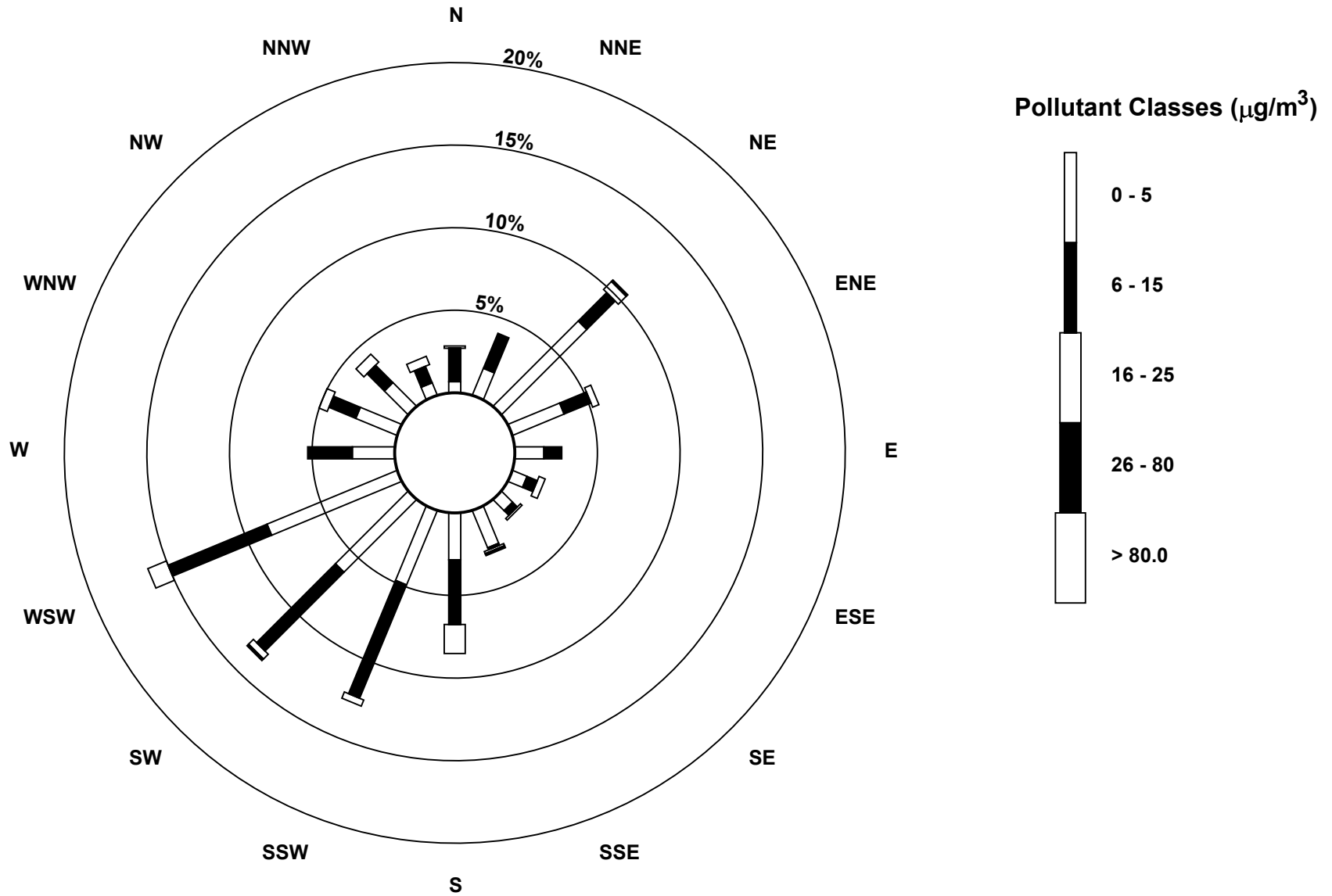
Evergreen Park - December 2015

Maximum Value: 151.8 µg/m³ on Dec 4 18:00																	Maximum Daily Average: 21.0 µg/m³ on Dec 4																	Hours in Service: 744 Hours of Data: 742 Hours of Missing Data: 2 Hours of Calibration: 2 Percent Operational Time: 100.0															
Minimum Value: 0 µg/m³ on Dec 15 11:00																	Minimum Daily Average: 2.3 µg/m³ on Dec 15																																
Maximum Diurnal Average: 15.7 µg/m³ at hour 18																	Minimum Diurnal Average: 7.9 µg/m³ at hour 8																																
Monthly Average: 9.84 µg/m³																	Percentiles: P ₁ = 0.2 P ₁₀ = 2.8 Q ₁ = 4.8 Median = 8.2 Q ₃ = 13.1 P ₉₀ = 18.7 P ₉₉ = 32.6																																
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Dec	10	13	15	15	10	7	8	8	7	11	14	10	9	9	19	29	31	29	25	15	11	10	14	16	14.4	31.1																							
2-Dec	19	14	12	13	15	20	16	14	16	4	42	8	2	4	4	3	4	4	3	3	2	2	3	3	9.6	42.1																							
3-Dec	1	4	5	4	2	4	7	7	5	8	7	9	9	7	14	25	6	19	8	7	7	7	5	3	7.5	24.8																							
4-Dec	5	9	13	10	8	10	10	10	8	9	29	37	35	28	15	C	C	152	19	12	10	11	11	13	21.0	151.8																							
5-Dec	7	6	5	6	2	5	5	3	4	6	7	8	6	7	9	9	9	7	8	12	14	21	19	15	8.4	20.6																							
6-Dec	14	11	10	10	10	12	12	13	11	11	13	16	15	14	15	17	23	30	17	19	22	20	17	18	15.4	29.7																							
7-Dec	16	14	12	12	10	11	12	13	13	15	24	23	10	4	6	26	10	1	5	4	3	2	1	6	10.6	26.0																							
8-Dec	5	1	1	1	2	5	4	2	5	3	7	5	2	2	1	2	4	6	8	12	9	8	8	7	4.5	11.9																							
9-Dec	12	12	8	7	9	8	8	11	11	16	14	16	18	14	8	5	6	5	7	9	9	13	23	27	11.4	27.0																							
10-Dec	22	19	17	16	13	12	12	16	21	28	27	34	17	18	18	19	20	19	14	6	8	9	7	6	16.5	33.6																							
11-Dec	7	11	17	17	16	16	15	15	17	18	18	16	15	15	20	19	12	11	10	13	12	10	9	11	14.2	19.9																							
12-Dec	11	13	13	15	18	21	17	11	10	13	15	21	22	18	15	17	25	25	13	18	16	16	17	22	16.9	25.3																							
13-Dec	20	17	13	9	8	13	21	22	25	22	19	19	15	15	12	15	24	25	24	21	17	12	7	5	16.7	25.5																							
14-Dec	4	4	5	6	6	7	8	7	7	10	9	19	36	26	7	33	26	9	8	8	5	3	6	9	11.2	35.8																							
15-Dec	8	3	2	4	3	4	1	0	0	0	0	1	0	1	4	3	4	5	5	3	3	1	0	1	2.3	8.2																							
16-Dec	6	9	8	6	0	0	0	1	2	1	1	1	0	0	1	1	20	16	23	13	2	12	12	3	5.8	23.3																							
17-Dec	1	1	1	1	2	2	6	4	9	10	17	13	5	10	9	5	4	5	7	5	4	3	3	5	5.4	16.5																							
18-Dec	6	6	13	24	26	16	8	4	5	5	5	4	4	3	4	4	6	8	9	8	9	10	5	5	8.3	25.5																							
19-Dec	6	6	6	4	6	4	5	4	4	6	9	14	14	14	15	10	12	12	12	13	11	11	12	9	9.2	15.0																							
20-Dec	9	9	7	9	8	7	8	8	10	12	17	15	12	19	15	17	14	13	12	15	13	14	14	15	12.1	18.7																							
21-Dec	12	13	12	12	11	10	13	13	12	14	16	14	12	18	19	29	28	11	17	16	10	10	7	6	14.0	29.2																							
22-Dec	6	6	6	6	6	5	7	7	7	6	6	4	3	4	4	5	8	8	8	11	9	8	9	10	6.6	10.9																							
23-Dec	8	16	23	19	23	11	13	14	11	12	11	18	22	14	11	12	15	25	13	12	11	10	9	9	14.3	25.3																							
24-Dec	8	7	6	4	3	3	2	3	3	3	3	3	3	5	4	5	4	5	5	4	3	4	5	5	4.3	8.2																							
25-Dec	4	4	4	6	5	9	10	10	12	9	10	7	12	7	7	7	7	6	2	3	2	4	9	6	6.7	12.2																							
26-Dec	7	6	6	8	9	9	7	9	10	9	9	7	6	3	6	9	8	5	3	5	7	5	4	7	6.7	9.7																							
27-Dec	6	6	6	5	4	5	6	5	5	6	7	7	6	7	7	7	7	6	6	7	7	6	7	10	6.3	9.9																							
28-Dec	9	9	10	8	4	4	4	4	4	4	5	6	6	8	12	5	3	3	5	8	7	6	5	5	6.0	11.9																							
29-Dec	6	7	6	6	4	4	4	4	5	5	7	9	17	16	12	14	9	7	9	8	9	8	9	9	8.3	17.5																							
30-Dec	7	8	11	5	10	2	1	2	1	2	4	27	2	9	0	6	3	1	4	3	5	16	9	7	6.1	27.5																							
31-Dec	5	6	5	14	3	3	3	7	5	9	9	3	2	0	8	8	9	7	4	1	7	4	1	0	5.2	14.3																							
																								8.7	8.7	9.0	9.2	8.2	8.0	8.2	7.9	8.6	9.4	12.4	13.0	10.8	10.3	9.8	12.0	11.9	15.7	10.1	9.6	8.5	8.8	8.7	8.8	Diurnal Average	
																								22.3	18.7	23.1	24.3	25.5	21.4	21.4	22.1	24.8	28.0	42.1	37.5	35.8	28.0	19.9	33.1	31.1	151.8	25.3	20.9	22.1	20.6	22.6	27.0	Diurnal Maximum	
C - Calibration																																																	



Pollutant Rose

Particulate Matter 2.5 (PM_{2.5}) - μg/m³
Evergreen Park - December 2015



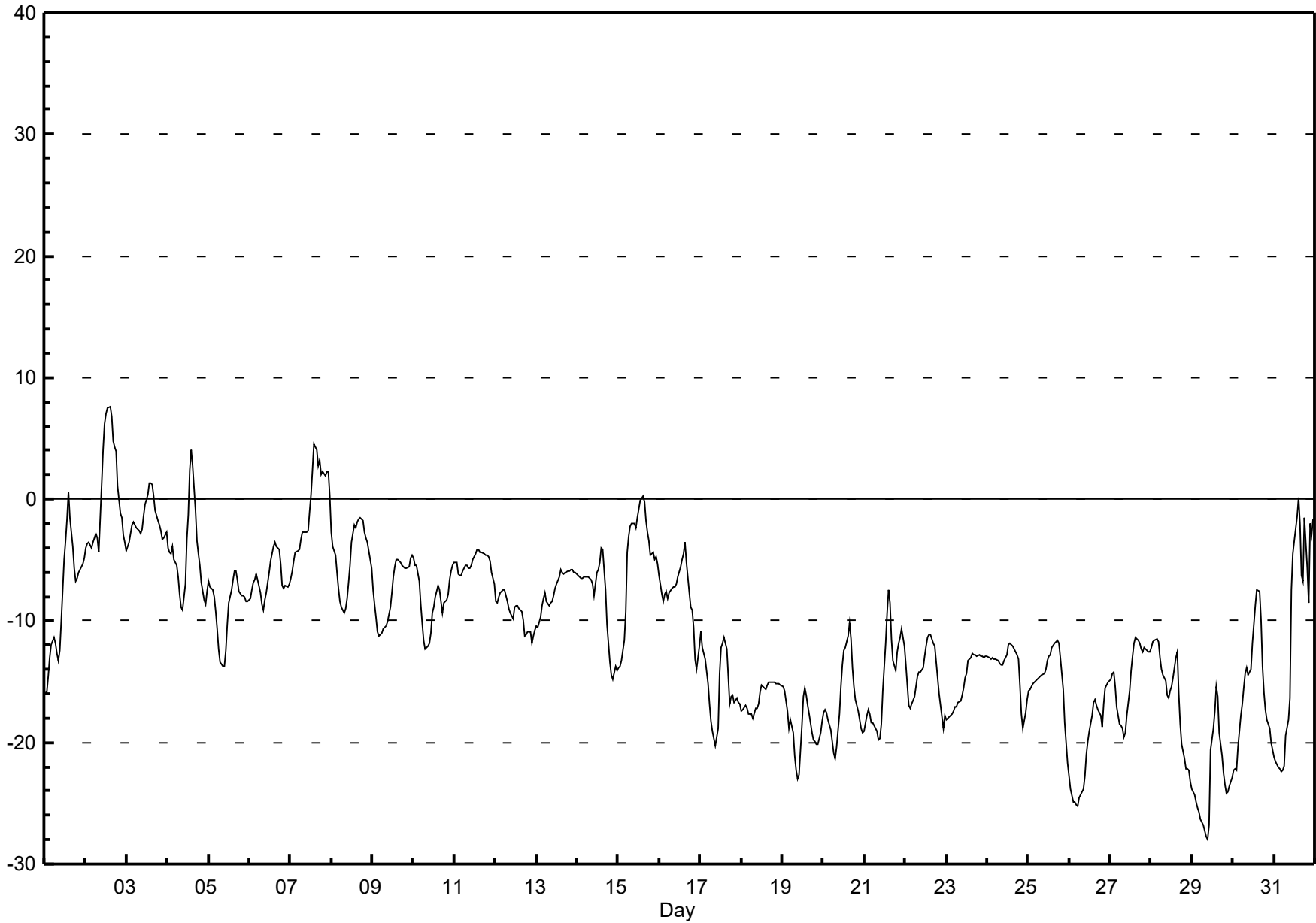
Hourly Averages

External Temperature (ET) - °C
Evergreen Park - December 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 7.7 °C on Dec 2 15:00 Maximum Daily Average: 0.5 °C on Dec 2		Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																								
Minimum Value: -28 °C on Dec 29 10:00 Maximum Diurnal Average: -6.7 °C at hour 15 Monthly Average: -10.77 °C		Minimum Daily Average: -23.2 °C on Dec 29 Minimum Diurnal Average: -13.0 °C at hour 9 Percentiles: P ₁ = -25.4 P ₁₀ = -19.2 Q ₁ = -15.8 Median = -11.0 Q ₃ = -5.7 P ₉₀ = -2.7 P ₉₉ = 4.2																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	-16	-16	-15	-13	-12	-11	-12	-13	-13	-12	-10	-5	-3	-2	1	-2	-4	-6	-7	-6	-6	-6	-5	-5	-8.3	0.6
2-Dec	-4	-4	-4	-4	-4	-3	-3	-3	-4	1	4	6	7	8	8	7	5	4	4	1	-1	-2	-3	-4	0.5	7.7
3-Dec	-4	-4	-3	-2	-2	-2	-2	-3	-3	-2	-1	0	0	1	1	1	0	-1	-2	-2	-3	-3	-3	-3	-1.7	1.4
4-Dec	-4	-4	-4	-4	-5	-5	-6	-8	-9	-9	-7	-3	-1	2	4	3	-1	-3	-5	-5	-7	-8	-9	-8	-4.5	4.1
5-Dec	-7	-7	-7	-8	-9	-11	-12	-13	-14	-14	-12	-10	-9	-7	-7	-6	-6	-7	-8	-8	-8	-8	-8	-8	-9.0	-5.9
6-Dec	-8	-8	-7	-7	-6	-7	-8	-9	-9	-8	-8	-6	-5	-5	-4	-4	-4	-4	-5	-7	-7	-7	-7	-7	-6.5	-3.6
7-Dec	-7	-6	-5	-4	-4	-4	-3	-3	-3	-3	-3	-1	0	2	4	4	3	3	2	2	2	2	2	0	-0.7	4.5
8-Dec	-3	-4	-5	-6	-7	-8	-9	-9	-9	-8	-7	-5	-4	-2	-2	-2	-2	-2	-2	-3	-3	-4	-4	-6	-4.8	-1.6
9-Dec	-7	-9	-10	-11	-11	-11	-11	-10	-10	-10	-9	-8	-6	-6	-5	-5	-5	-5	-6	-6	-6	-6	-5	-5	-7.6	-4.6
10-Dec	-5	-5	-5	-7	-9	-10	-12	-12	-12	-12	-11	-9	-9	-8	-7	-7	-8	-9	-9	-8	-8	-7	-6	-5	-8.4	-4.8
11-Dec	-5	-5	-6	-6	-6	-6	-5	-5	-6	-6	-5	-5	-4	-4	-4	-4	-4	-4	-5	-5	-5	-5	-6	-7	-5.2	-4.2
12-Dec	-8	-8	-8	-8	-7	-7	-8	-8	-9	-9	-10	-9	-9	-9	-9	-9	-10	-11	-11	-11	-11	-12	-11	-11	-9.4	-7.5
13-Dec	-10	-11	-10	-9	-8	-8	-8	-9	-9	-8	-8	-7	-7	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-7.4	-5.7
14-Dec	-6	-6	-7	-7	-6	-6	-6	-7	-7	-7	-8	-6	-6	-5	-4	-4	-7	-10	-12	-13	-15	-15	-14	-14	-8.3	-4.0
15-Dec	-14	-14	-13	-12	-9	-4	-3	-2	-2	-2	-2	-1	-1	0	0	0	-2	-3	-3	-5	-4	-5	-5	-5	-4.7	0.2
16-Dec	-6	-8	-8	-8	-8	-8	-8	-7	-7	-7	-7	-6	-6	-5	-5	-4	-5	-8	-9	-9	-11	-13	-14	-12	-7.8	-3.6
17-Dec	-11	-12	-13	-13	-15	-17	-18	-19	-20	-20	-19	-14	-12	-12	-11	-12	-15	-17	-16	-16	-17	-16	-17	-17	-15.4	-10.9
18-Dec	-17	-17	-17	-17	-18	-18	-18	-18	-17	-17	-17	-16	-15	-16	-16	-15	-15	-15	-15	-15	-15	-15	-15	-15	-16.2	-15.0
19-Dec	-15	-16	-17	-17	-19	-18	-19	-21	-22	-23	-23	-19	-16	-16	-16	-17	-18	-19	-20	-20	-20	-20	-19	-18	-18.7	-15.4
20-Dec	-17	-17	-18	-18	-19	-20	-21	-21	-20	-18	-15	-14	-12	-12	-11	-10	-12	-14	-15	-17	-17	-18	-19	-19	-16.5	-10.2
21-Dec	-19	-18	-17	-18	-18	-18	-19	-19	-20	-20	-18	-16	-12	-9	-7	-9	-12	-13	-14	-13	-12	-11	-11	-12	-14.8	-7.5
22-Dec	-14	-15	-17	-17	-17	-16	-15	-15	-14	-14	-14	-13	-12	-11	-11	-11	-12	-12	-13	-15	-16	-18	-19	-18	-14.6	-11.1
23-Dec	-18	-18	-18	-18	-17	-17	-17	-17	-17	-16	-16	-15	-14	-13	-13	-13	-13	-13	-13	-13	-13	-13	-13	-13	-15.0	-12.7
24-Dec	-13	-13	-13	-13	-13	-13	-13	-13	-14	-14	-13	-13	-12	-12	-12	-12	-12	-13	-13	-15	-18	-19	-17	-17	-13.8	-11.8
25-Dec	-16	-16	-15	-15	-15	-15	-15	-15	-14	-14	-14	-13	-13	-13	-12	-12	-12	-12	-12	-13	-16	-18	-20	-22	-14.6	-11.6
26-Dec	-23	-24	-25	-25	-25	-25	-25	-24	-24	-23	-21	-20	-19	-18	-17	-16	-17	-17	-18	-19	-17	-16	-15	-15	-20.3	-15.1
27-Dec	-15	-14	-14	-15	-17	-19	-19	-19	-20	-19	-18	-16	-14	-13	-12	-11	-12	-12	-12	-13	-12	-12	-13	-13	-14.7	-11.4
28-Dec	-12	-12	-12	-11	-12	-13	-14	-14	-15	-16	-16	-16	-15	-15	-13	-13	-16	-18	-20	-21	-22	-22	-22	-23	-16.0	-11.5
29-Dec	-24	-24	-25	-25	-26	-26	-27	-27	-28	-28	-27	-21	-19	-17	-15	-16	-19	-21	-23	-24	-24	-24	-24	-23	-23.2	-15.4
30-Dec	-22	-22	-22	-20	-18	-17	-15	-14	-14	-15	-14	-12	-10	-9	-7	-8	-10	-14	-16	-17	-18	-19	-20	-21	-15.6	-7.4
31-Dec	-21	-22	-22	-22	-22	-22	-22	-19	-18	-16	-7	-4	-3	-1	0	-2	-6	-7	-2	-6	-9	-2	-3	-2	-10.9	0.1
																								Diurnal Average		
																								Diurnal Maximum		

Hourly Averages

External Temperature (ET) - °C
Evergreen Park - December 2015





Peace Airshed Zone Association

Hourly Averages

Relative Humidity (RH) - %

Evergreen Park - December 2015

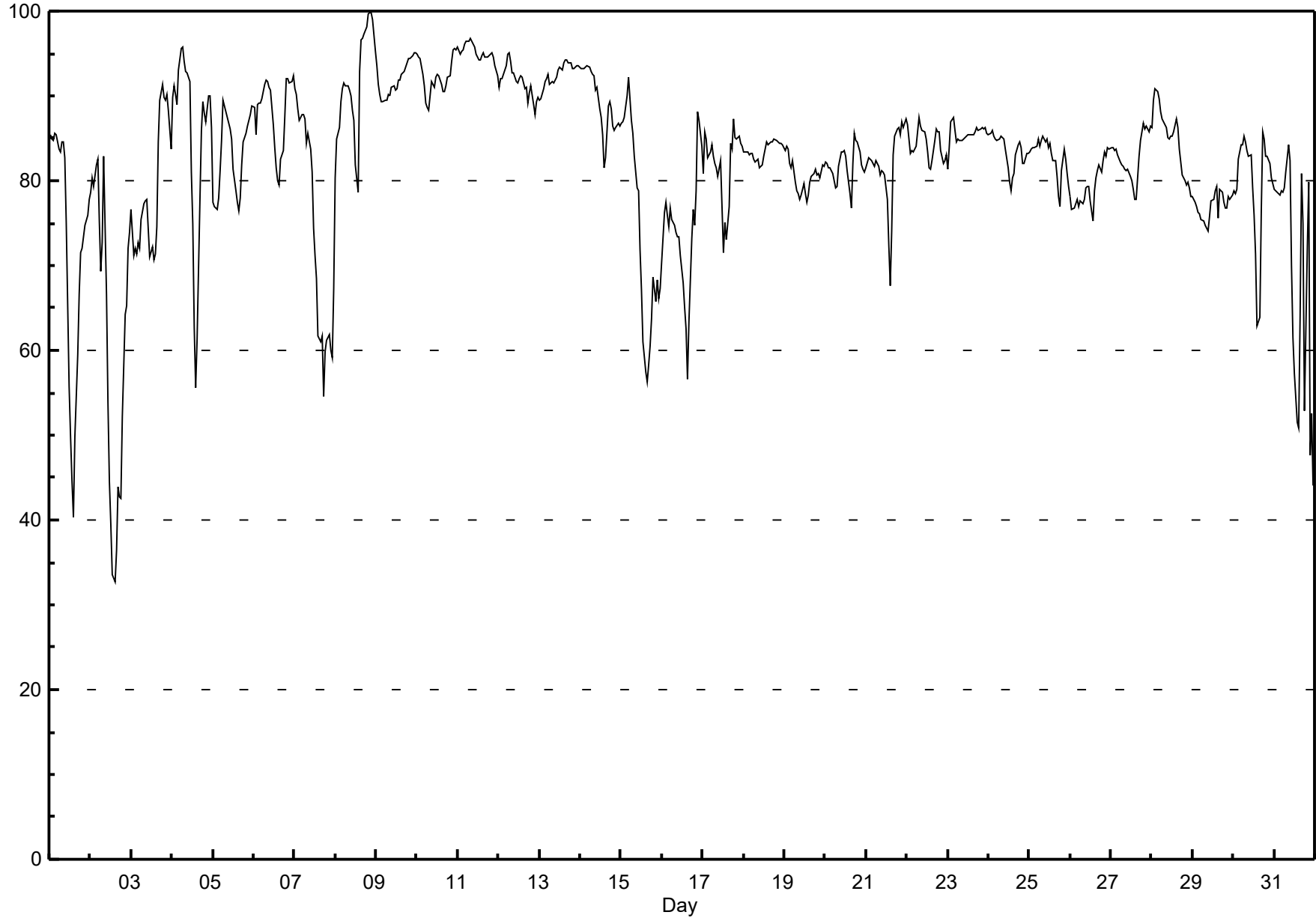
Number of Exceedences (AAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 99.8 % on Dec 8 21:00	Maximum Daily Average: 95.1 % on Dec 11		Hours of Data:	744
Minimum Value: 33 % on Dec 2 15:00	Minimum Daily Average: 61.1 % on Dec 2		Hours of Missing Data:	0
Maximum Diurnal Average: 85.3 % at hour 5	Minimum Diurnal Average: 75.0 % at hour 15		Hours of Calibration:	0
Monthly Average: 82.35 %	Percentiles: P ₁ = 43.9 P ₁₀ = 71.5 Q ₁ = 78.8 Median = 83.8 Q ₃ = 89.1 P ₉₀ = 93.0 P ₉₉ = 96.4		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	85	85	85	86	85	84	83	85	85	83	75	56	50	45	40	50	60	67	71	72	73	75	76	78	72.2	85.6	
2-Dec	79	80	79	82	83	75	69	73	83	67	54	45	40	34	33	36	44	43	42	52	64	65	72	74	61.1	83.0	
3-Dec	77	71	72	71	73	72	75	77	78	78	74	71	72	71	71	75	85	90	91	90	90	90	88	84	78.6	91.4	
4-Dec	90	91	90	89	93	96	96	94	93	93	92	81	75	63	56	61	78	86	89	88	87	90	90	86	85.2	95.7	
5-Dec	77	77	77	78	81	85	90	89	88	87	86	85	81	79	77	76	78	82	85	86	86	87	88	89	83.0	89.5	
6-Dec	89	85	89	89	89	90	91	92	92	91	91	87	84	82	80	79	83	84	88	92	92	92	92	92	88.0	92.4	
7-Dec	91	90	88	87	88	88	87	84	86	84	81	74	71	68	62	61	62	55	60	61	62	60	59	67	74.0	90.8	
8-Dec	80	85	86	89	91	91	91	91	91	90	88	87	82	79	93	97	97	97	98	100	100	100	99	95	91.6	99.8	
9-Dec	94	91	90	89	89	90	90	91	91	91	91	91	91	92	92	93	93	93	94	94	94	95	95	95	92.0	95.1	
10-Dec	95	95	94	93	91	89	89	88	92	91	91	92	92	92	91	91	90	91	92	92	94	95	96	95	92.2	95.6	
11-Dec	96	95	95	95	96	96	96	97	96	96	96	95	94	94	95	95	95	95	95	95	95	95	93	92	95.1	96.8	
12-Dec	91	92	92	93	93	95	95	94	93	93	92	92	92	92	92	91	91	89	90	91	89	88	89	90	91.6	95.0	
13-Dec	89	90	91	92	92	93	91	92	91	92	92	93	93	93	94	94	94	94	94	93	93	93	94	94	92.6	94.3	
14-Dec	93	93	93	93	94	93	93	93	92	91	91	89	88	85	82	83	89	89	88	86	86	86	87	86	89.3	93.6	
15-Dec	87	87	88	90	92	90	87	86	83	79	79	72	67	61	57	56	58	61	64	69	66	68	66	67	74.1	92.2	
16-Dec	70	76	78	76	75	77	75	75	74	73	73	71	68	65	63	57	63	73	77	75	79	88	87	84	73.8	88.1	
17-Dec	81	86	85	83	83	84	83	82	82	80	82	77	72	75	73	77	84	84	87	85	85	85	84	84	81.8	87.3	
18-Dec	83	83	83	83	83	83	82	82	83	82	82	82	83	85	84	84	85	84	85	85	85	84	84	84	84	83.5	84.9
19-Dec	84	84	84	82	82	82	80	79	78	78	78	80	79	77	78	80	80	81	81	81	81	80	82	82	80.5	84.0	
20-Dec	82	82	82	81	81	80	79	79	82	83	83	84	83	81	79	77	82	86	85	85	83	82	81	81	81.8	85.6	
21-Dec	82	83	83	82	82	82	82	82	81	81	81	81	78	72	68	74	83	85	86	86	85	87	86	87	81.6	87.3	
22-Dec	87	85	83	84	83	84	86	88	86	86	86	85	83	82	81	82	85	86	86	86	84	82	82	83	84.4	87.5	
23-Dec	81	84	87	87	86	85	85	85	85	85	85	85	85	85	85	85	86	86	86	86	86	86	86	86	85.4	87.4	
24-Dec	85	86	86	85	85	85	85	85	85	85	84	81	80	79	80	81	83	84	85	84	82	82	83	83	83.5	85.9	
25-Dec	83	84	84	84	84	85	84	85	85	85	85	84	84	83	82	82	80	78	77	81	84	83	81	79	82.8	85.2	
26-Dec	78	77	77	77	78	77	78	77	78	79	79	79	78	75	79	80	81	82	81	82	83	83	84	84	79.4	83.9	
27-Dec	84	84	84	84	83	82	82	82	81	81	81	81	80	79	78	78	83	85	86	87	86	86	86	87	82.8	86.7	
28-Dec	86	89	91	91	90	88	87	87	86	85	85	85	86	87	86	84	82	81	80	79	80	79	78	78	84.9	90.9	
29-Dec	78	77	77	76	76	75	75	75	74	74	76	78	78	79	79	76	79	79	78	77	77	78	78	78	76.9	79.3	
30-Dec	79	78	79	82	84	84	85	85	83	83	83	79	76	71	63	64	76	86	85	83	83	82	80	80	79.8	85.8	
31-Dec	79	79	78	78	79	79	79	81	84	82	70	62	57	52	51	64	81	75	53	72	80	48	52	44	69.1	84.2	

84.4	84.7	84.8	84.9	85.3	85.1	84.9	84.9	85.1	84.1	82.8	80.0	78.1	76.0	75.0	76.3	80.4	81.6	81.9	83.1	83.7	83.1	83.3	82.9	Diurnal Average
95.8	94.9	95.3	95.4	96.0	96.4	96.4	96.8	96.4	96.2	95.8	95.0	94.3	94.2	94.7	96.6	96.8	97.3	98.1	99.7	99.8	99.8	99.0	95.5	Diurnal Maximum

Hourly Averages

Relative Humidity (RH) - %
Evergreen Park - December 2015





Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Evergreen Park - December 2015

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 Spd	1	2	2	7	7	4	3	4	6	3	1	1	2	1	1	2	0	0	1	1	1	1	1	1	1.7	6.8
Dir	187	209	193	197	182	180	179	189	183	168	80	189	217	311	199	189	75	131	32	60	40	327	351	263	187.8	197.4
2 Spd	1	1	1	1	1	6	5	4	7	18	24	38	49	48	43	32	20	22	12	3	3	2	2	1	13.3	48.9
Dir	241	315	269	187	210	239	234	183	210	210	227	231	227	235	238	233	239	237	225	55	51	59	48	13	230.6	227.4
3 Spd	4	2	0	4	2	2	3	1	2	0	1	1	4	4	5	2	1	2	2	1	0	1	3	3	0.3	4.8
Dir	27	28	125	248	61	156	45	325	30	243	319	299	295	316	239	235	156	241	82	83	292	208	83	89	328.2	239.3
4 Spd	3	7	5	3	7	4	3	1	2	1	3	1	1	4	3	0	1	2	5	4	3	1	0	10	0.8	10.0
Dir	312	303	234	216	195	198	227	33	29	216	234	229	167	196	193	91	67	47	44	63	46	350	256	316	257.8	316.0
5 Spd	16	11	9	4	3	2	1	0	1	1	1	1	2	3	5	2	0	1	3	1	1	2	1	1	1.7	16.2
Dir	321	322	316	306	293	227	78	213	39	184	6	49	29	47	38	42	31	196	182	200	206	186	202	203	325.0	320.8
6 Spd	2	2	1	5	1	5	3	2	1	1	1	2	2	1	2	2	2	3	0	1	3	1	2	1	0.8	5.1
Dir	208	244	193	206	165	188	186	200	124	103	5	55	348	11	307	244	239	258	280	154	187	66	39	119	205.5	206.2
7 Spd	2	1	2	2	4	2	5	4	2	6	7	8	8	6	17	11	11	15	11	16	16	20	14	4	6.8	20.0
Dir	31	353	43	13	44	28	240	233	215	211	215	239	249	246	234	244	241	236	238	230	214	230	223	210	232.8	229.6
8 Spd	2	3	1	1	2	1	2	3	3	1	1	5	6	4	8	5	1	3	10	15	9	5	3	3	0.2	14.8
Dir	49	85	68	50	156	188	150	36	43	74	74	47	56	57	57	54	6	254	233	240	255	275	198	52	32.3	239.5
9 Spd	3	3	1	2	1	0	1	1	3	1	2	1	1	4	3	3	4	3	0	1	2	1	3	0	0.4	4.0
Dir	183	45	76	49	205	251	46	249	13	10	295	245	227	324	298	286	252	192	118	138	59	331	173	3	290.9	252.0
10 Spd	1	1	2	1	1	2	1	1	1	1	1	2	4	5	0	1	2	2	6	5	7	6	4	4	1.9	7.3
Dir	42	169	121	60	23	39	15	298	316	312	283	307	333	330	73	315	344	37	59	52	40	56	36	44	29.3	40.2
11 Spd	2	2	7	6	6	6	3	6	7	5	6	4	5	3	2	3	1	1	1	1	3	2	3	2	2.3	7.0
Dir	49	187	217	250	221	242	238	230	248	242	245	246	253	246	181	182	179	170	86	76	89	82	55	351	231.0	248.1
12 Spd	1	0	1	3	4	6	5	1	0	1	2	1	3	3	2	1	0	3	2	2	0	0	0	0	1.2	5.8
Dir	6	238	242	231	253	256	250	214	226	241	3	338	337	345	357	277	311	301	282	231	216	107	304	173	279.1	255.8
13 Spd	1	0	0	2	2	1	6	3	3	1	0	1	1	1	0	3	3	1	1	0	0	1	2	3	1.3	6.2
Dir	194	82	193	194	207	213	187	210	187	179	177	192	212	307	340	182	182	171	191	237	276	280	228	254	200.2	187.0
14 Spd	2	2	3	3	4	6	5	4	6	4	4	3	4	6	4	3	1	1	0	0	1	1	1	1	2.2	5.6
Dir	226	222	223	219	243	246	244	235	239	225	199	222	207	187	189	173	116	111	64	107	92	29	152	37	216.4	186.6
15 Spd	1	0	1	1	4	11	19	20	22	21	19	19	22	22	19	16	15	11	8	7	7	9	13	9	11.8	22.3
Dir	106	205	84	187	182	201	226	237	239	241	239	242	244	246	253	261	248	255	259	314	259	243	248	255	243.4	243.9
16 Spd	7	4	5	11	9	11	8	8	10	9	8	14	15	14	10	11	8	5	6	9	4	2	3	8	7.9	14.9
Dir	300	292	269	247	278	257	267	257	238	250	256	246	253	255	278	260	233	279	281	244	230	255	240	278	258.4	252.8
17 Spd	6	2	4	5	3	3	4	1	3	1	4	1	1	4	5	5	2	3	7	5	7	7	7	6	1.1	7.3
Dir	232	246	276	245	225	212	187	168	196	182	219	219	346	33	57	39	46	41	47	45	48	57	54	66	53.7	53.8
18 Spd	7	9	12	11	13	14	12	12	12	16	19	17	14	10	6	3	2	3	3	6	8	7	8	8	7.0	19.2
Dir	51	54	57	56	52	53	56	56	63	54	53	53	60	51	49	67	91	203	237	201	217	234	210	207	59.7	53.5
19 Spd	7	2	4	1	0	0	0	1	1	0	1	2	2	7	4	2	1	0	2	2	1	1	1	2	1.3	6.8
Dir	208	179	177	133	51	74	359	30	31	162	227	274	235	227	259	288	245	220	244	207	289	246	256	288	229.1	207.8
20 Spd	2	2	2	2	2	0	1	1	1	1	2	1	6	6	5	5	2	3	4	1	1	2	2	0	1.8	6.1
Dir	284	266	249	207	197	71	181	32	218	278	233	357	203	263	234	233	206	171	190	61	208	189	198	171	223.9	262.9
21 Spd	0	1	2	1	0	1	1	3	2	0	4	1	3	2	1	2	2	1	2	2	2	1	4	2	0.9	3.9
Dir	18	189	193	219	340	192	195	199	208	71	194	217	342	6	235	300	284	273	218	225	296	121	197	212	228.4	197.2
22 Spd	1	0	1	2	0	1	4	4	4	6	7	3	6	3	4	3	7	2	1	1	0	0	1	3	1.7	7.0
Dir	219	77	207	213	8	57	53	63	58	49	45	43	35	34	24	8	322	14	30	219	13	82	278	235	31.1	322.4

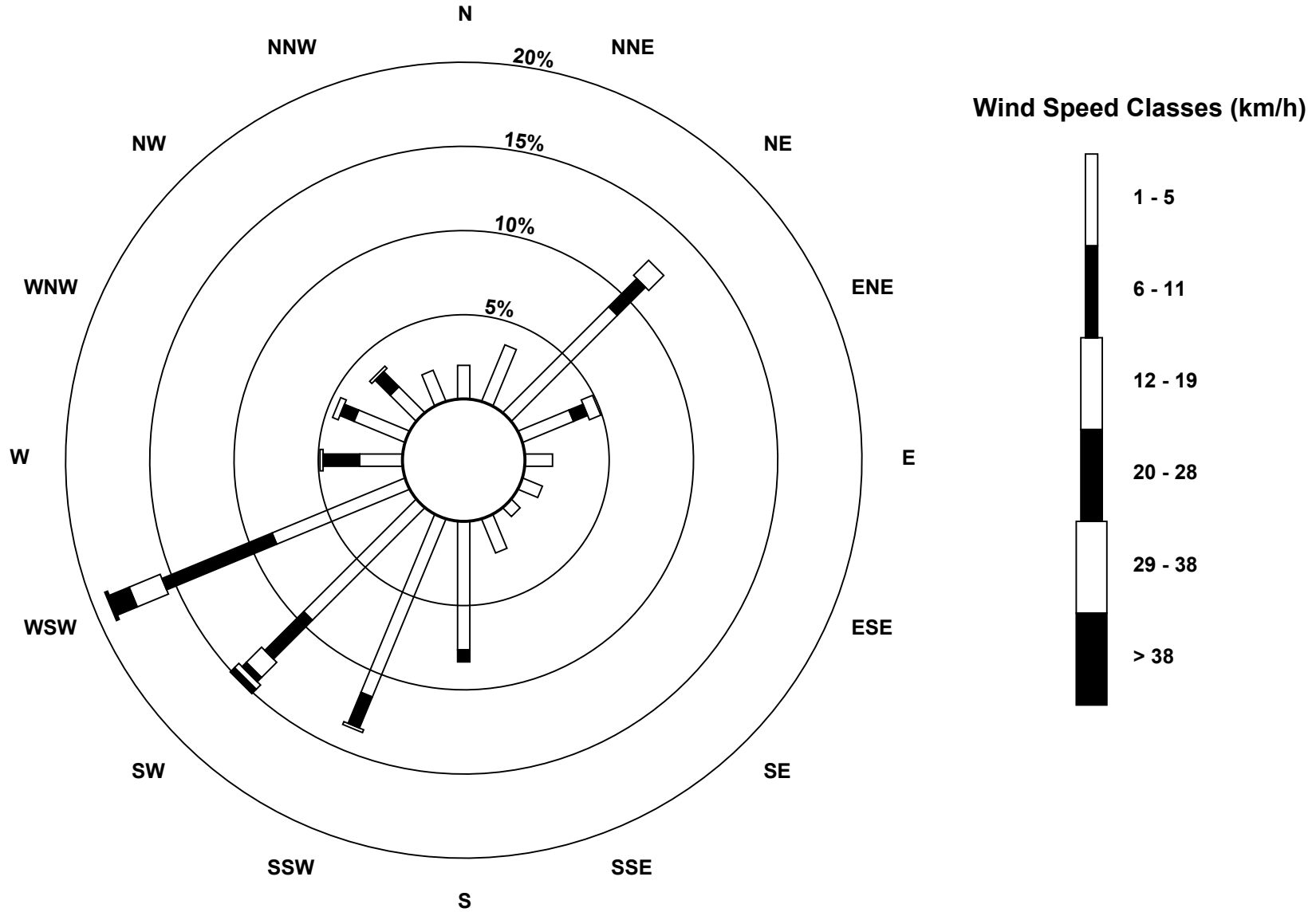
Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Evergreen Park - December 2015

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	1	7	9	7	4	3	2	3	1	2	2	2	3	2	2	2	1	0	0	0	1	1	2	1	2.2	8.5
Dir	236	234	243	249	238	204	236	198	231	235	231	244	240	243	199	246	280	233	325	244	169	180	145	1	232.3	242.8
24 Spd	0	0	1	2	1	1	0	0	1	0	1	2	0	3	4	4	2	1	1	0	0	1	3	0	0.7	4.2
Dir	42	90	107	105	113	114	155	97	86	74	139	144	228	40	39	71	56	58	338	202	32	176	185	282	84.4	38.8
25 Spd	0	0	1	1	1	1	0	1	1	1	1	2	7	8	8	7	10	13	9	4	2	3	2	2	2.7	12.6
Dir	146	56	89	186	162	120	66	46	92	66	5	219	240	249	250	256	263	282	296	248	251	206	199	211	257.3	282.0
26 Spd	1	0	1	2	1	0	0	1	2	0	1	3	5	2	3	4	2	3	0	1	4	1	3	2	0.2	4.6
Dir	340	155	215	35	238	30	141	21	349	263	227	205	213	164	49	51	40	41	294	297	304	144	152	146	85.7	213.4
27 Spd	1	2	1	2	1	3	2	2	1	0	2	2	2	2	1	2	2	1	2	2	1	1	1	2	0.7	2.7
Dir	17	265	268	190	222	211	209	193	177	319	185	202	235	265	277	267	178	165	51	43	84	341	323	315	228.4	211.4
28 Spd	3	6	7	7	7	5	5	3	2	N	8	7	3	3	2	1	0	0	1	0	0	1	0	1	2.7	7.9
Dir	243	224	235	217	240	250	265	316	230	N	286	232	218	222	251	283	344	290	223	284	240	275	305	230	245.6	285.6
29 Spd	1	1	1	0	1	N	2	0	1	6	0	0	0	1	1	2	1	1	0	2	1	2	1	1	0.9	5.7
Dir	246	286	215	53	91	N	154	248	244	210	307	198	208	211	276	302	290	245	212	232	187	236	190	194	223.0	210.2
30 Spd	0	2	2	2	2	2	4	5	7	3	7	8	8	7	10	7	2	0	2	0	2	1	0	1	3.4	10.1
Dir	183	202	196	230	247	226	218	248	245	252	243	234	212	246	259	232	206	38	204	222	237	209	151	193	234.4	259.2
31 Spd	3	0	1	3	1	0	1	3	6	10	12	6	7	8	4	3	2	8	7	4	6	13	9	14	4.3	14.3
Dir	193	219	25	192	205	284	159	342	326	315	298	288	249	240	209	187	187	242	260	224	221	247	255	255	256.8	255.0
Spd	0.8	0.8	1.1	1.7	1.2	1.8	1.8	1.3	1.4	1.9	2.4	2.9	3.7	3.6	3.2	2.6	2.3	2.3	1.6	1.2	1.0	1.4	1.5	1.3	Diurnal Average	
Dir	292.5	279.5	236.5	225.4	219.8	220.1	218.9	234.6	234.5	233.7	247.4	241.0	241.0	252.2	250.0	246.2	247.0	249.1	251.9	239.2	235.0	236.1	215.7	261.8	Diurnal Maximum	
Spd	16.2	10.5	12.1	11.1	13.4	14.4	19.2	20.4	21.9	21.3	24.5	38.0	48.9	47.5	43.1	32.1	20.0	21.6	12.1	15.8	15.7	20.0	14.4	14.3	Diurnal Maximum	
Dir	320.8	321.6	56.9	55.6	52.5	52.7	226.0	236.5	238.5	241.3	226.7	230.9	227.4	235.1	237.8	232.7	239.3	236.7	224.9	230.4	214.2	229.6	222.6	255.0	Diurnal Maximum	
Maximum Speed Value: 49 km/h on Dec 2 13:00		Minimum Speed Value: 0 km/h on Dec 13 00:00																Hours in Service: 744								
Maximum Daily Speed Average: 13.3 km/h on Dec 2		Minimum Daily Speed Average: 0.2 km/h on Dec 24																Hours of Data: 742								
Maximum Diurnal Speed Average: 3.7 km/h at hour 13		Minimum Diurnal Speed Average: 0.8 km/h at hour 2																Hours of Missing Data: 2								
Monthly Average Velocity: 1.82 km/h 241.57 deg		Speed Percentiles: P ₁ = 0.1 P ₁₀ = 0.4 Q ₁ = 1.0 Median = 2.1 Q ₃ = 4.7 P ₉₀ = 8.7 P ₉₉ = 20.4																Percent Operational Time: 99.7								
All monthly, daily, and diurnal averages have been calculated using vector methods																										
N - Not Valid																										
Frequency Distribution																										
		Speed Range (km/h)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	43	0	0	0	0	0	43																			
NorthEast	95	20	11	1	0	0	127																			
East	43	0	0	0	0	0	43																			
SouthEast	31	0	0	0	0	0	31																			
South	108	6	1	0	0	0	115																			
SouthWest	144	56	10	12	2	3	227																			
West	62	30	10	1	0	0	103																			
NorthWest	41	10	2	0	0	0	53																			
Total	567	122	34	14	2	3	742																			

Wind Rose

Wind Speed (WS) (km/h)
Evergreen Park - December 2015



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Evergreen Park - December 2015

Maximum Speed: 49 km/h on Dec 2 13:00	Maximum Daily Speed Average: 14.9 km/h on Dec 2	Hours in Service: 744
Minimum Speed: 0 km/h on Dec 19 05:00	Minimum Daily Speed Average: 1.4 km/h on Dec 24	Hours of Data: 742
Maximum Diurnal Speed Average: 6.9 km/h at hour 13	Minimum Diurnal Speed Average: 3.0 km/h at hour 2	Hours of Missing Data: 2
Monthly Average Speed: 4.49 km/h	Percentiles: P ₁ = 0.3 P ₁₀ = 1.0 Q ₁ = 1.7 Median = 2.9 Q ₃ = 5.4 P ₉₀ = 9.3 P ₉₉ = 20.2	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-Dec	1	2	3	7	7	6	5	5	7	6	4	2	3	2	1	3	1	1	2	2	2	3	3	2	3.3	7.0
2-Dec	2	1	2	2	2	7	6	5	7	18	25	38	49	48	43	32	20	22	14	4	3	3	2	2	14.9	49.3
3-Dec	4	3	2	5	4	5	5	4	2	0	2	2	5	4	5	4	6	3	3	2	1	2	4	3	3.3	6.2
4-Dec	3	7	6	4	8	5	4	4	4	5	3	2	4	5	3	3	2	3	5	4	4	2	2	10	4.3	10.5
5-Dec	16	11	9	5	4	4	3	2	1	1	1	1	2	4	5	2	1	1	3	1	1	2	1	2	3.5	16.5
6-Dec	2	3	6	6	3	5	4	2	3	2	4	3	3	2	2	2	4	8	4	4	3	2	3	3	3.4	8.2
7-Dec	2	2	4	2	5	2	6	4	5	6	7	9	9	6	17	11	11	15	11	16	16	20	15	7	8.7	20.1
8-Dec	3	3	3	3	3	3	3	3	4	2	3	5	6	4	8	5	2	3	10	15	9	7	4	4	4.8	15.2
9-Dec	4	5	3	4	1	2	2	3	3	3	3	2	1	4	3	3	4	3	2	3	4	2	4	3	3.0	4.9
10-Dec	4	1	2	2	2	2	2	2	1	2	4	3	5	5	1	3	2	2	6	6	8	7	5	4	3.3	7.5
11-Dec	2	3	7	6	6	6	3	6	7	5	6	4	5	3	2	3	1	1	1	1	3	3	3	2	3.8	7.5
12-Dec	1	1	1	3	5	6	5	1	1	1	2	2	3	3	3	2	1	3	3	3	1	0	0	1	2.2	6.0
13-Dec	1	1	0	2	2	1	6	3	3	1	0	1	1	1	1	3	3	1	1	0	0	1	2	3	1.6	6.3
14-Dec	2	2	3	3	4	6	5	4	6	5	4	3	4	6	4	3	1	2	1	1	1	2	2	3	3.1	5.7
15-Dec	1	2	2	3	5	11	20	21	22	21	19	19	22	22	20	16	15	11	8	8	8	9	14	9	12.9	22.5
16-Dec	7	4	5	11	9	12	8	8	11	9	8	14	15	14	10	11	8	7	7	9	5	2	3	8	8.6	15.0
17-Dec	6	3	5	6	3	4	4	3	4	2	4	2	2	6	5	5	2	3	7	5	7	7	7	6	4.5	7.4
18-Dec	8	10	12	12	14	15	12	13	13	13	17	20	18	14	11	7	3	3	3	3	6	8	7	8	10.3	19.7
19-Dec	7	3	4	1	0	1	0	1	2	1	1	4	3	7	4	2	2	1	2	2	2	1	1	2	2.3	6.9
20-Dec	3	3	2	2	2	1	2	1	2	1	3	4	7	7	5	6	4	3	5	3	3	3	3	1	3.2	7.3
21-Dec	1	2	2	3	2	2	5	3	3	1	5	3	3	2	3	3	4	3	5	4	3	4	5	3	3.0	4.8
22-Dec	2	1	1	2	1	2	4	4	5	6	7	4	6	4	5	3	7	2	1	2	1	2	2	3	3.1	7.1
23-Dec	1	7	9	7	5	4	3	3	1	2	2	3	3	2	2	2	1	1	1	0	1	1	2	1	2.6	8.7
24-Dec	0	0	1	2	1	1	0	0	1	0	1	2	1	3	5	4	2	1	1	1	1	1	3	0	1.4	4.5
25-Dec	0	0	1	1	1	1	1	1	2	1	1	2	7	8	8	7	10	13	9	4	3	3	2	2	3.7	13.0
26-Dec	1	0	2	2	1	1	1	1	2	2	1	3	5	3	4	5	3	4	1	2	4	2	4	3	2.3	5.2
27-Dec	1	2	1	2	2	3	3	4	3	1	3	2	3	3	2	2	2	1	2	2	1	1	1	2	2.1	3.9
28-Dec	4	6	7	7	7	5	6	6	2	N	11	10	3	3	2	1	0	0	1	0	1	1	1	1	3.7	10.6
29-Dec	1	2	1	1	3	N	4	0	6	8	1	0	0	1	1	2	3	1	1	1	3	3	2	1	2.1	8.0
30-Dec	1	2	2	2	3	3	4	5	7	4	8	8	8	8	10	7	3	1	2	1	2	2	1	2	4.0	10.4
31-Dec	3	1	1	3	3	1	3	5	6	10	13	6	7	8	4	3	2	9	7	4	7	14	10	15	6.1	15.1
	3.1	3.0	3.6	3.8	3.7	4.1	4.4	4.1	4.6	4.7	5.5	5.9	6.9	6.9	6.6	5.4	4.2	4.3	4.2	3.6	3.6	3.8	3.8	3.8	Diurnal Average	
	16.5	10.9	12.5	11.6	13.7	14.8	19.6	20.7	22.0	21.4	25.0	38.2	49.3	48.0	43.3	32.3	20.1	21.8	14.1	15.9	15.8	20.1	14.7	15.1	Diurnal Maximum	

N - Not Valid
 All monthly, daily, and diurnal averages have been calculated using scalar methods

Hourly Standard Deviations

Wind Direction (WD) - deg
Evergreen Park - December 2015

Maximum Value: 98.9 deg on Dec 26 07:00																		Hours in Service: 744							
Minimum Value: 4.3 deg on Dec 15 11:00																		Hours of Data: 744							
Percentiles: P ₁ = 6.2 P ₁₀ = 12.9 Q ₁ = 22.7 Median = 44.8 Q ₃ = 72.7 P ₉₀ = 85.1 P ₉₉ = 94.9																		Hours of Missing Data: 0							
																		Hours of Calibration: 0							
																		Percent Operational Time: 100.0							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Dec	61	29	64	13	31	70	68	64	16	80	91	94	51	65	73	70	79	93	77	47	82	83	79	82	93.7
2-Dec	59	59	47	86	37	18	32	66	40	8	12	7	7	8	6	7	6	8	61	66	42	68	64	69	85.7
3-Dec	37	57	82	38	78	80	63	63	54	80	54	68	33	14	35	68	82	62	63	81	90	70	47	63	89.7
4-Dec	54	23	64	73	26	50	57	87	89	89	41	62	88	28	40	84	94	68	32	32	42	80	86	26	93.6
5-Dec	10	16	16	33	29	83	78	92	78	71	80	57	43	38	29	71	91	80	66	84	74	35	83	97	96.5
6-Dec	53	82	92	31	86	18	58	56	76	71	82	58	63	71	66	58	85	80	96	88	58	80	72	75	96.3
7-Dec	31	85	58	57	14	60	20	45	92	21	13	37	21	20	10	32	35	9	11	7	5	6	13	84	92.4
8-Dec	44	37	75	93	73	85	52	29	18	89	74	13	16	43	12	17	55	31	14	13	20	46	63	56	92.6
9-Dec	72	60	90	63	72	90	88	93	53	91	48	73	54	26	37	23	23	50	83	70	76	82	55	95	95.0
10-Dec	81	80	71	69	74	39	44	69	84	62	83	43	40	29	95	78	35	59	24	29	16	25	29	21	95.2
11-Dec	32	86	25	12	15	16	33	12	11	17	11	18	16	20	25	21	59	38	36	54	25	59	28	29	85.8
12-Dec	60	76	53	12	28	16	17	73	73	70	28	53	29	41	48	59	76	30	32	52	91	73	72	87	90.7
13-Dec	81	79	93	33	30	46	12	20	18	25	35	27	22	47	81	20	13	17	32	56	39	19	22	17	93.3
14-Dec	12	13	18	12	14	10	15	13	10	23	9	19	23	10	11	21	47	51	84	78	88	76	73	90	90.0
15-Dec	75	94	80	83	66	10	12	10	6	6	4	5	7	7	8	10	9	13	25	30	24	10	6	24	93.9
16-Dec	24	23	23	9	15	16	16	24	32	15	15	18	8	9	20	11	12	42	25	12	26	60	22	15	60.2
17-Dec	28	61	38	31	68	77	30	86	79	82	38	79	83	38	22	15	66	81	10	11	9	16	10	25	85.7
18-Dec	13	13	14	17	12	14	20	16	18	16	13	15	18	15	22	25	29	41	18	18	12	10	19	10	40.9
19-Dec	13	59	26	66	88	69	55	65	76	83	81	54	66	14	42	44	48	81	56	52	65	53	61	47	88.2
20-Dec	29	31	45	33	73	80	88	68	75	87	48	81	35	41	22	20	81	77	67	86	78	85	88	94	94.2
21-Dec	86	85	66	77	93	63	95	62	70	94	51	84	40	52	77	41	43	85	89	90	51	86	35	68	95.0
22-Dec	80	89	81	62	92	77	20	27	20	23	18	32	25	47	43	31	13	20	58	75	83	90	66	35	91.5
23-Dec	51	11	12	26	33	30	48	23	37	26	25	22	21	27	24	37	56	57	55	72	43	50	24	37	72.3
24-Dec	46	77	36	20	35	36	59	60	29	88	32	42	78	41	25	26	21	34	63	82	50	82	49	99	98.9
25-Dec	59	60	66	36	44	52	53	30	47	43	67	45	21	11	13	14	13	13	16	27	56	40	59	76	75.6
26-Dec	75	89	44	36	77	94	99	49	52	94	68	25	22	66	45	37	43	24	92	59	72	50	37	44	98.9
27-Dec	83	34	67	51	75	43	44	91	95	86	43	51	38	57	49	38	27	67	52	37	76	72	70	30	94.5
28-Dec	36	21	9	11	13	19	44	53	23	31	48	40	13	12	21	26	37	74	58	65	84	58	51	38	84.2
29-Dec	66	64	34	64	80	43	75	76	84	54	73	68	37	14	31	15	28	35	54	79	85	72	85	84	85.4
30-Dec	93	76	22	24	40	31	13	30	23	53	13	18	22	18	13	10	50	68	75	93	56	85	95	88	95.1
31-Dec	33	94	80	43	86	92	78	74	47	20	10	16	14	12	27	39	47	28	47	31	59	19	26	19	94.2
	93.4	94.2	93.3	92.6	93.3	93.7	98.9	93.1	94.5	94.2	90.7	93.7	88.4	71.2	95.2	83.5	93.6	93.4	96.3	93.0	90.7	90.0	95.1	98.9	

PAZA

Smoky Heights Station

Monthly Summary Tables, Graphs and
Roses

Hourly Averages

Sulphur Dioxide (SO₂) - ppb Smoky Heights - December 2015

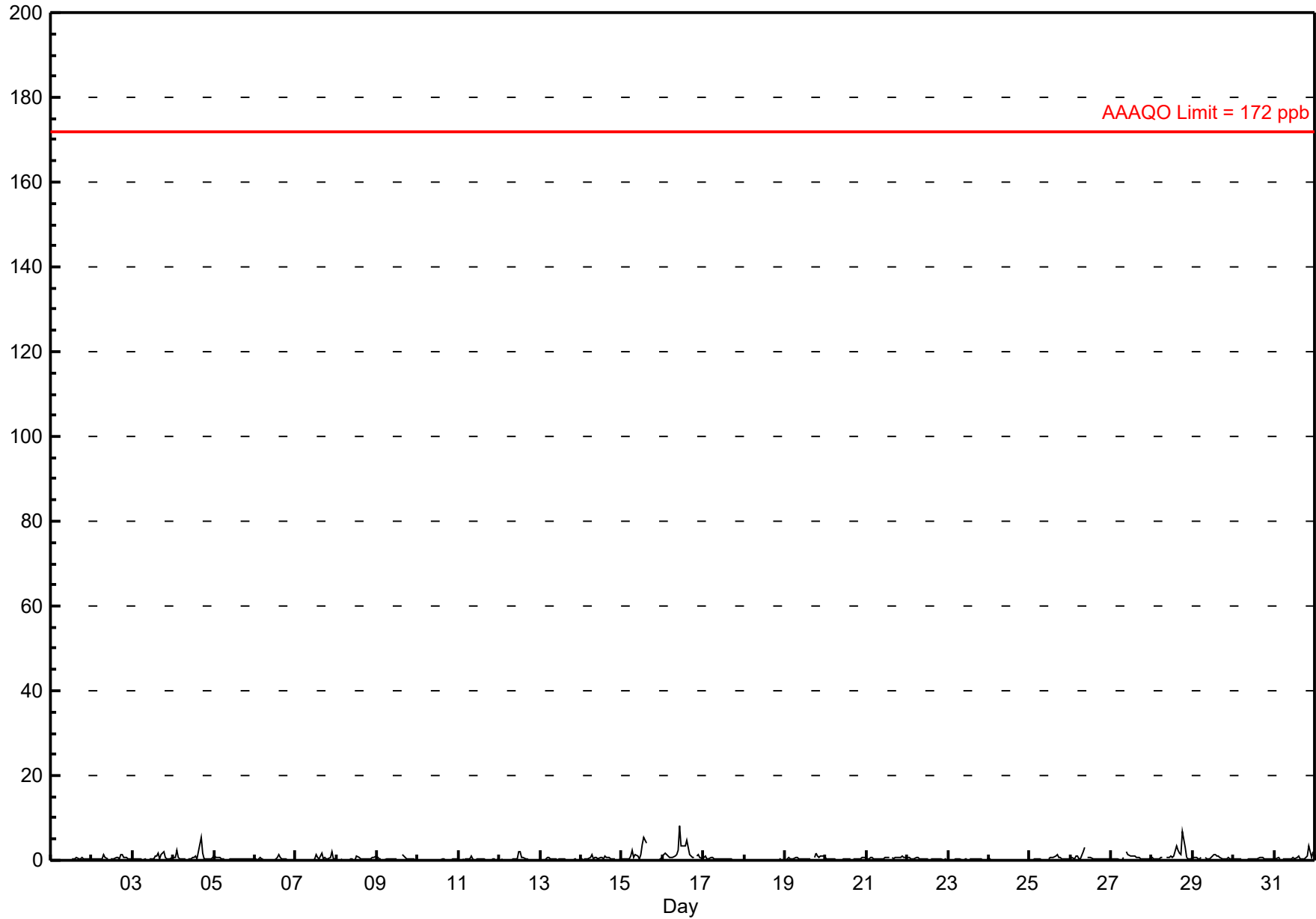
Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 8.2 ppb on Dec 16 11:00	Maximum Daily Average: 1.9 ppb on Dec 16		Hours of Data:	703
Minimum Value: 0 ppb on Dec 8 12:00	Minimum Daily Average: 0.1 ppb on Dec 18		Hours of Missing Data:	41
Maximum Diurnal Average: 0.9 ppb at hour 15	Minimum Diurnal Average: 0.3 ppb at hour 5		Hours of Calibration:	34
Monthly Average: 0.51 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.2 Median = 0.3 Q ₃ = 0.5 P ₉₀ = 1.0 P ₉₉ = 3.5		Percent Operational Time:	99.1

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	1	1	0	1	1	0	0	0	0	0.2	0.5
2-Dec	0	0	0	0	0	0	0	1	1	0	A	0	0	0	1	1	0	1	1	1	1	0	0	0	0.5	1.3
3-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	1	1	2	0	1	2	1	0	0	0	1	0.5	1.9
4-Dec	1	1	2	1	0	0	0	0	A	0	0	1	1	1	0	2	6	2	0	0	0	0	0	1	0.9	5.5
5-Dec	2	1	1	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.5
6-Dec	0	0	0	1	0	0	A	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0.3	1.2
7-Dec	0	0	0	0	0	A	0	0	0	0	0	0	1	1	0	2	0	1	0	0	1	2	0	0	0.4	2.1
8-Dec	0	0	0	0	A	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	1	0.3	1.0
9-Dec	1	0	0	A	0	0	0	0	0	0	0	0	C	C	C	1	1	0	0	0	0	0	0	0	0.4	1.4
10-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
11-Dec	0	A	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.9
12-Dec	A	0	0	0	0	0	0	0	0	0	0	2	2	1	1	0	0	0	0	0	0	0	0	A	0.4	2.2
13-Dec	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.2	0.7
14-Dec	0	0	0	0	0	1	1	0	1	1	0	1	1	0	1	1	1	0	0	0	0	A	0	0	0.5	1.3
15-Dec	0	0	0	0	0	1	2	1	1	1	1	1	4	5	4	P	P	P	P	P	P	P	P	0	--	5.4
16-Dec	1	2	1	1	1	1	1	1	1	2	8	3	4	3	5	3	1	1	1	A	1	1	1	0	1.9	8.2
17-Dec	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.3	0.9
18-Dec	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	0.2
19-Dec	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	A	1	2	1	1	1	1	1	0.6	1.7
20-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	1	1	1	0.3	0.7
21-Dec	0	0	1	1	0	0	0	0	0	0	0	1	1	1	A	1	0	1	1	1	1	1	1	1	0.6	1.0
22-Dec	1	1	0	0	0	1	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.3	0.6
23-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
24-Dec	1	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.8
25-Dec	0	0	0	0	0	0	0	0	0	0	A	0	1	1	1	1	1	1	1	1	0	0	0	0	0.4	1.5
26-Dec	0	1	0	1	1	0	0	2	3	A	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.6	2.9
27-Dec	0	0	0	0	0	0	0	1	A	2	1	1	1	1	1	1	1	0	0	0	0	0	1	0.6	2.0	
28-Dec	1	0	1	0	0	1	1	A	1	1	1	1	1	1	3	2	2	1	7	3	1	0	0	1.3	6.8	
29-Dec	1	1	1	0	0	1	A	1	0	0	1	1	1	1	1	1	1	0	0	0	1	0	0	0.6	1.2	
30-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0.3	0.6	
31-Dec	0	0	1	0	A	0	0	0	0	0	0	1	0	1	1	0	0	0	0	1	3	2	1	2	0.8	3.3
	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.6	0.6	0.7	0.8	0.9	0.8	0.6	0.5	0.7	0.4	0.5	0.5	0.4	0.4	Diurnal Average	
	1.5	1.8	2.3	1.0	1.0	0.9	2.5	2.1	2.9	2.4	8.2	3.3	3.7	5.4	4.9	2.9	5.5	1.6	6.8	3.1	3.3	2.1	1.0	2.2	Diurnal Maximum	

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

Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Smoky Heights - December 2015



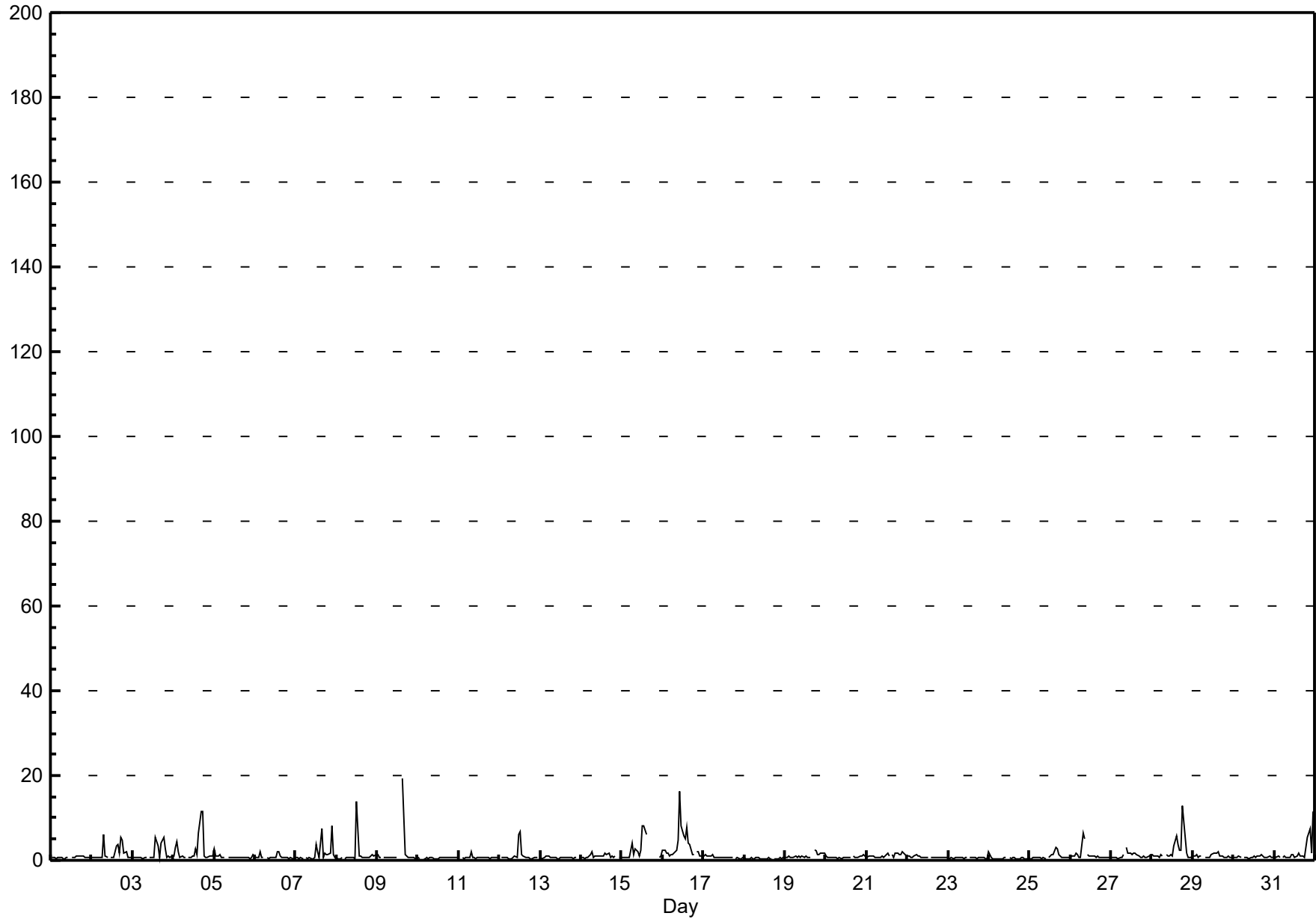
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb Smoky Heights - December 2015

Maximum Value: 19.3 ppb on Dec 9 16:00		Maximum Daily Average: 3.5 ppb on Dec 16		Hours in Service: 744																							
Minimum Value: 0 ppb on Dec 10 00:00		Minimum Daily Average: 0.5 ppb on Dec 18		Hours of Data: 703																							
Maximum Diurnal Average: 2.4 ppb at hour 16		Minimum Diurnal Average: 0.7 ppb at hour 5		Hours of Missing Data: 41																							
Monthly Average: 1.23 ppb		Percentiles: P ₁ = 0.4 P ₁₀ = 0.5 Q ₁ = 0.6 Median = 0.7 Q ₃ = 1.0 P ₉₀ = 2.0 P ₉₉ = 11.3		Hours of Calibration: 34																							
				Percent Operational Time: 99.1																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	1	1	1	0	1	1	1	0	0	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.1	
2-Dec	1	1	1	1	1	1	1	6	1	1	A	1	1	1	3	4	2	5	5	2	2	1	1	1	1.7	6.2	
3-Dec	1	1	1	1	1	1	0	1	1	A	1	1	1	5	4	3	1	4	5	3	1	1	1	1	1.6	5.4	
4-Dec	1	3	4	2	1	1	1	1	A	1	1	1	1	3	1	6	12	12	1	1	1	1	1	1	2.4	11.7	
5-Dec	3	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0.8	2.6	
6-Dec	1	1	1	2	1	1	A	1	0	1	1	1	1	2	2	1	1	1	1	1	0	1	0	0	0.8	2.2	
7-Dec	1	1	0	1	0	A	1	0	1	0	0	1	4	2	1	7	1	2	1	1	2	8	1	1	1.6	8.1	
8-Dec	1	0	1	1	A	0	1	1	1	1	1	0	14	1	1	1	1	1	1	1	1	1	1	1	1.3	13.7	
9-Dec	1	1	1	A	1	1	1	1	1	1	1	1	C	C	C	19	1	1	1	1	1	0	0	1.7	19.3		
10-Dec	1	1	A	0	0	1	0	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0.5	0.7	
11-Dec	1	A	1	0	1	1	1	2	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0.7	2.0	
12-Dec	A	1	1	1	1	0	0	0	1	1	1	6	7	1	1	1	1	1	0	0	1	1	1	A	1.2	6.6	
13-Dec	1	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	1	A	1	0.7	1.2	
14-Dec	1	1	0	1	1	1	2	1	1	1	1	1	1	1	2	1	2	1	1	1	1	A	1	1	1.0	2.0	
15-Dec	1	1	1	1	1	2	4	1	3	2	1	2	8	8	6	P	P	P	P	P	P	P	P	1	1	--	8.2
16-Dec	2	2	2	2	1	1	1	2	2	5	16	8	6	5	8	4	4	1	1	A	2	2	1	1	3.5	16.4	
17-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0	1	0	0	1	0.8	1.3	
18-Dec	1	0	0	0	1	1	0	1	1	0	0	0	0	0	1	0	0	A	0	0	0	0	1	0	0.5	0.6	
19-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	2	2	1	1	2	2	2	1.1	2.4	
20-Dec	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.8	1.3	
21-Dec	1	1	1	1	1	1	1	1	1	1	1	1	2	1	A	1	1	2	2	1	1	2	2	1	1.1	2.0	
22-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.8	1.2	
23-Dec	1	0	1	1	1	1	1	1	1	0	1	1	A	1	1	1	1	1	1	1	1	1	0	0	0.6	0.7	
24-Dec	2	1	0	1	0	0	0	0	0	1	1	A	1	0	1	1	0	0	0	1	1	0	0	1	0.6	2.0	
25-Dec	0	0	1	1	1	1	1	0	1	0	A	1	1	1	1	3	3	1	1	1	1	1	1	1	0.9	3.0	
26-Dec	1	1	1	2	1	1	1	6	5	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.3	6.4	
27-Dec	1	1	1	1	0	1	1	1	A	3	2	2	1	2	2	1	1	1	1	1	1	1	1	1	1.1	3.0	
28-Dec	2	1	1	1	1	1	1	A	1	1	1	1	1	3	6	4	2	2	13	5	2	1	1	1	2.3	12.8	
29-Dec	1	1	1	1	1	1	A	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1.1	1.9	
30-Dec	1	1	1	1	1	A	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.2	
31-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	2	1	1	1	1	6	7	8	2	11	2.2	11.4	
		0.9	0.9	0.9	0.9	0.7	0.8	0.9	1.1	1.0	0.9	1.3	1.3	2.0	1.7	1.7	2.4	1.4	1.6	1.5	1.2	1.1	1.3	0.8	1.2	Diurnal Average	
		2.6	3.2	4.2	2.2	1.5	2.4	4.1	6.4	5.0	4.8	16.4	8.1	13.7	8.2	7.7	19.3	11.7	11.6	12.8	5.5	6.5	8.1	1.8	11.4	Diurnal Maximum	
C - Calibration		P - Power Failure						A - Automated Daily Zero Span																			

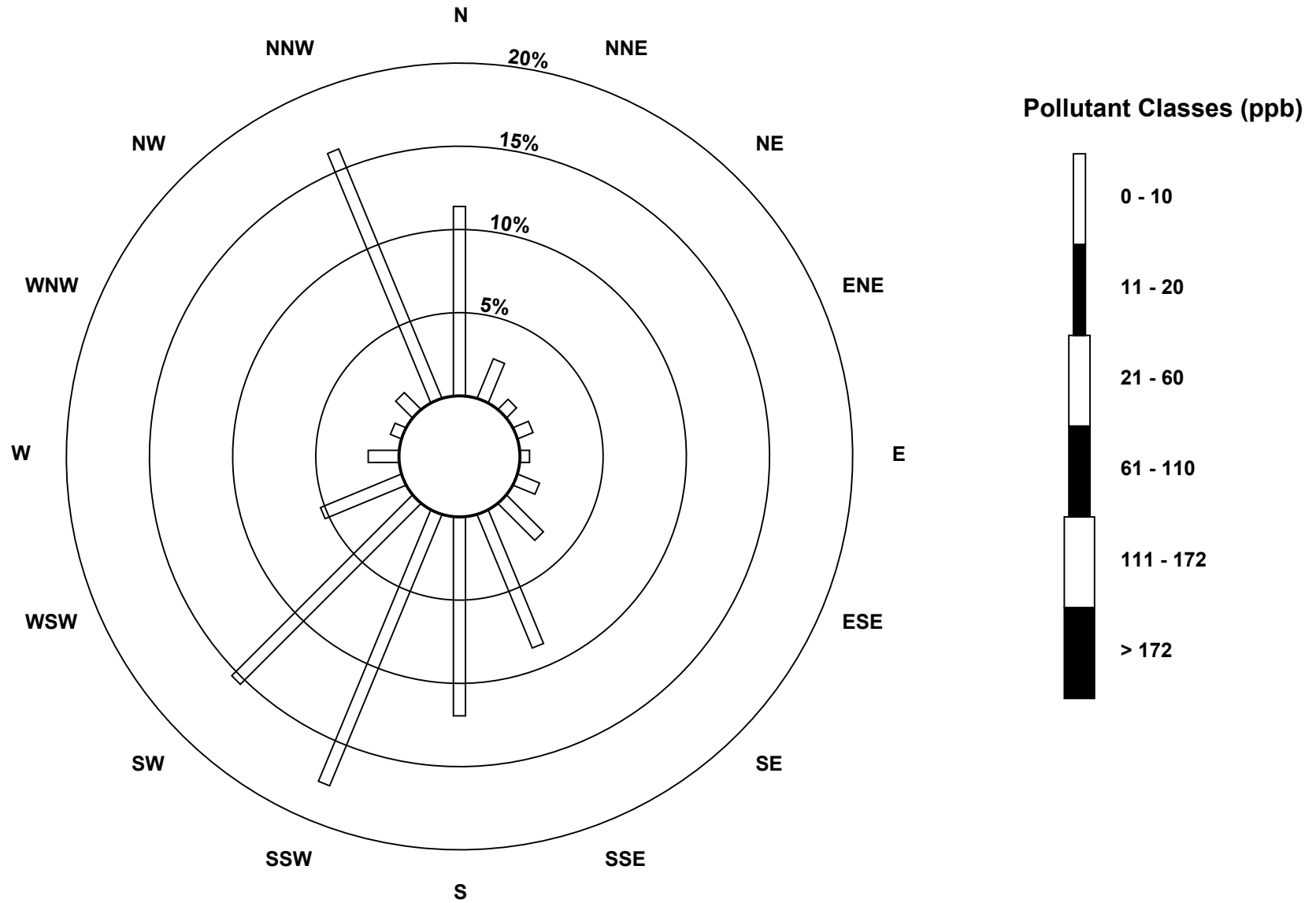
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Smoky Heights - December 2015



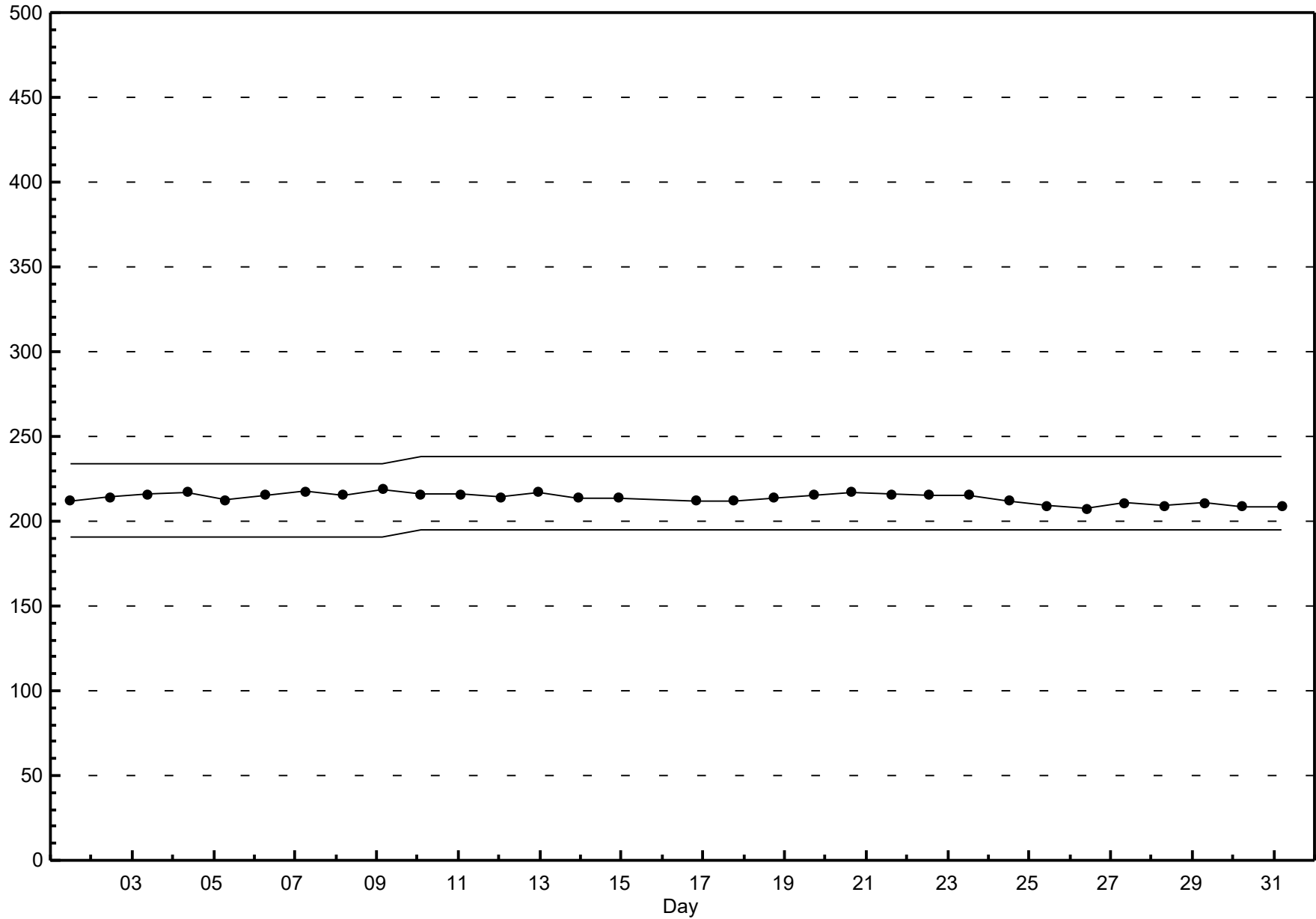
Pollutant Rose

Sulphur Dioxide (SO₂) - ppb
Smoky Heights - December 2015



Span Responses

Sulphur Dioxide (SO₂)
Smoky Heights - December 2015



Hourly Averages

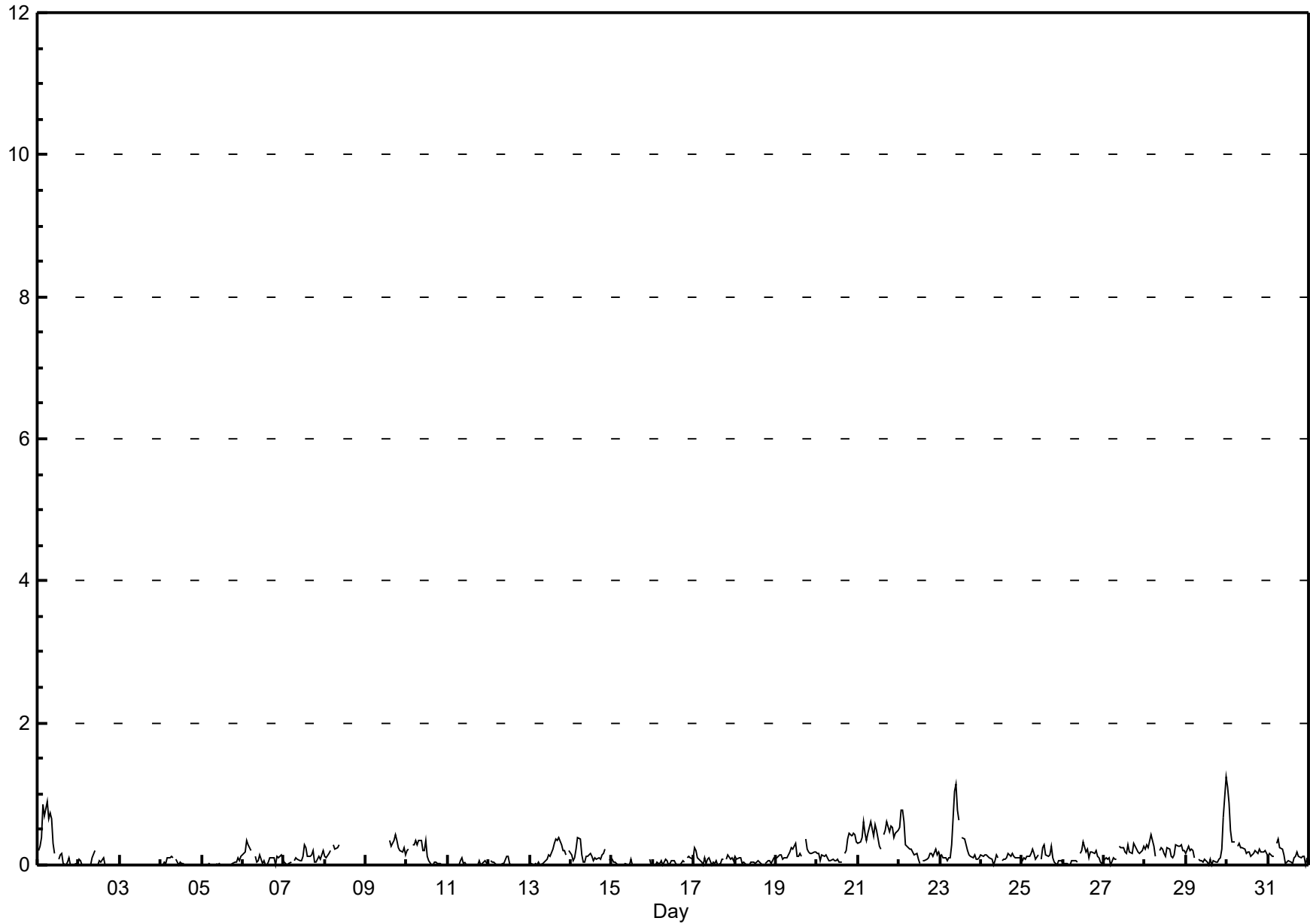
Total Reduced Sulphur (TRS) - ppb

Smoky Heights - December 2015

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 1.2 ppb on Dec 30 00:00	Maximum Daily Average: 0.4 ppb on Dec 21		Hours of Data:	678
Minimum Value: 0 ppb on Dec 1 17:00	Minimum Daily Average: 0.0 ppb on Dec 3		Hours of Missing Data:	66
Maximum Diurnal Average: 0.2 ppb at hour 4	Minimum Diurnal Average: 0.1 ppb at hour 13		Hours of Calibration:	35
Monthly Average: 0.14 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.2 P ₉₀ = 0.3 P ₉₉ = 0.9		Percent Operational Time:	95.8

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	0	0	1	1	1	1	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.9
2-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2
3-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
4-Dec	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
5-Dec	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
6-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
7-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
8-Dec	0	0	0	0	A	0	0	0	0	M	M	M	M	M	M	M	-	-	-	-	-	-	-	-	--	0.3
9-Dec	-	-	-	-	R	-	-	-	-	-	C	C	C	C	C	C	-	-	-	-	-	-	-	-	--	0.4
10-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
11-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
12-Dec	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
13-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.1	0.4
14-Dec	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	0.4
15-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	P	P	P	P	P	P	P	P	P	0	--	0.1
16-Dec	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
17-Dec	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
18-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.0	0.1
19-Dec	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	0.4
20-Dec	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	0.5
21-Dec	0	0	0	1	0	0	0	1	1	0	1	0	0	0	A	0	0	1	0	1	1	0	0	0	0.4	0.6
22-Dec	1	1	1	1	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.2	0.8
23-Dec	0	0	0	0	0	0	0	0	1	1	1	1	A	0	0	0	0	0	0	0	0	0	0	0	0.3	1.1
24-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
25-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
26-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
27-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
28-Dec	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
29-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.2	1.2
30-Dec	1	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.1
31-Dec	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
	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	Diurnal Average	
	1.1	0.9	0.8	0.9	0.7	0.9	0.7	0.7	1.0	1.1	0.8	0.6	0.3	0.4	0.4	0.4	0.5	0.6	0.5	0.5	0.5	0.5	0.7	1.2	Diurnal Maximum	

C - Calibration R - Recovery P - Power Failure M - Maintenance - - Not Valid
A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb



Hourly Maximums

Total Reduced Sulphur (TRS) - ppb Smoky Heights - December 2015

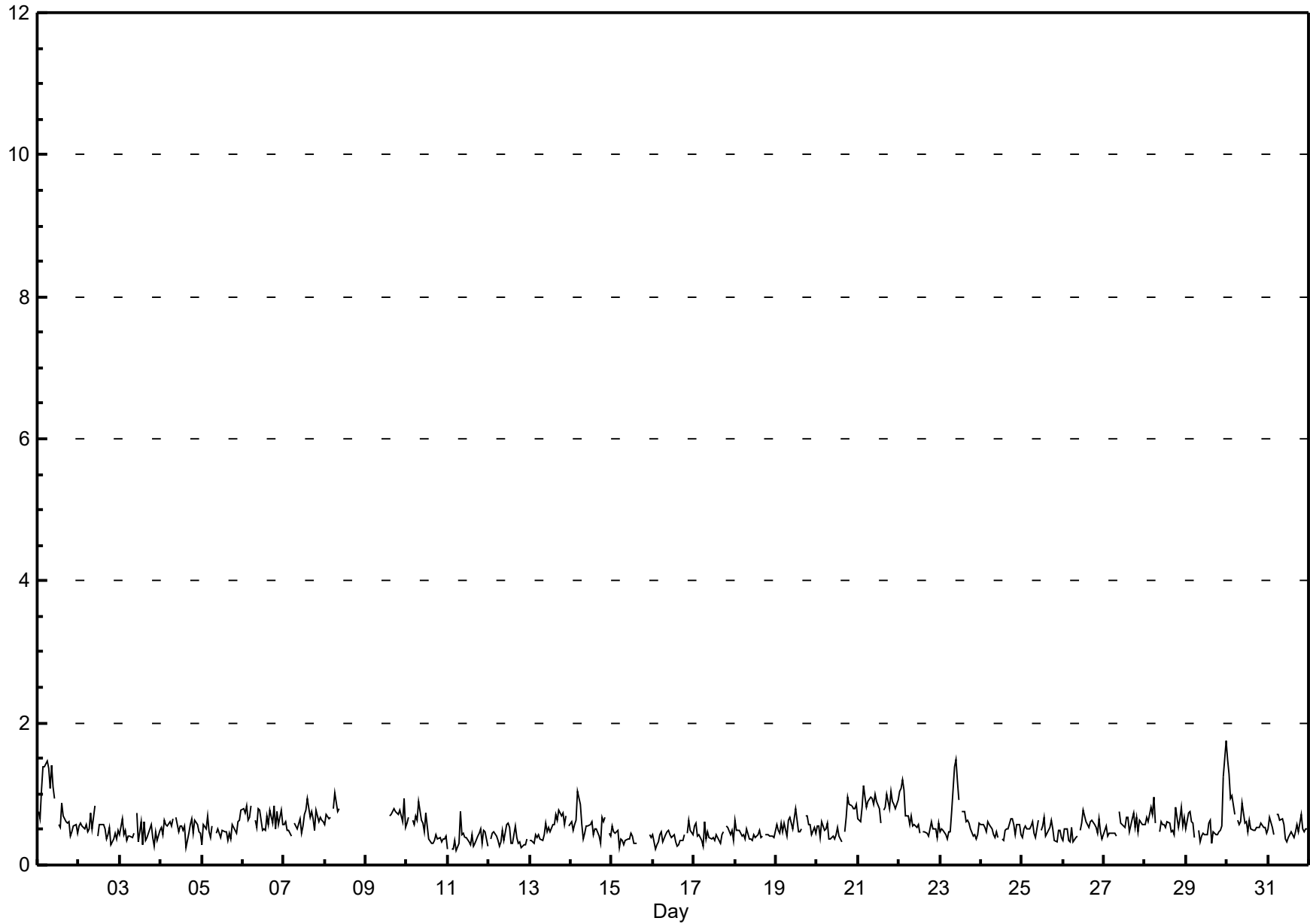
Maximum Value: 1.8 ppb on Dec 30 00:00	Maximum Daily Average: 0.9 ppb on Dec 21	Hours in Service: 744
Minimum Value: 0 ppb on Dec 11 06:00	Minimum Daily Average: 0.4 ppb on Dec 11	Hours of Data: 678
Maximum Diurnal Average: 0.6 ppb at hour 10	Minimum Diurnal Average: 0.5 ppb at hour 16	Hours of Missing Data: 66
Monthly Average: 0.55 ppb	Percentiles: P ₁ = 0.2 P ₁₀ = 0.3 Q ₁ = 0.4 Median = 0.5 Q ₃ = 0.6 P ₉₀ = 0.8 P ₉₉ = 1.4	Hours of Calibration: 35
		Percent Operational Time: 95.8

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0	0	1	1	0	0.8	1.5
2-Dec	1	1	1	1	1	0	1	1	1	1	A	A	1	1	1	1	0	0	1	0	0	0	0	0	0.5	0.8
3-Dec	0	1	0	0	0	0	0	0	0	A	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0.4	0.7
4-Dec	1	0	1	1	1	1	1	1	A	1	0	1	1	0	1	0	0	1	1	0	1	1	0	0	0.5	0.7
5-Dec	0	1	1	1	0	0	1	A	0	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0.5	0.8
6-Dec	1	1	1	1	1	1	A	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	0.7	0.8
7-Dec	1	1	0	0	0	A	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	0.6	0.9
8-Dec	1	1	1	1	A	1	1	1	1	M	M	M	M	M	M	M	-	-	-	-	-	-	-	-	--	1.0
9-Dec	-	-	-	-	R	-	-	-	-	-	C	C	C	C	M	M	-	-	-	-	-	-	-	-	--	0.9
10-Dec	1	1	A	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0.5	0.9
11-Dec	0	A	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.4	0.7
12-Dec	A	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0.4	0.6
13-Dec	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	1	1	1	1	1	1	1	1	A	0.5	0.8
14-Dec	1	0	1	1	1	1	1	0	0	1	1	1	1	0	1	1	0	0	1	1	1	1	A	0	0.6	1.0
15-Dec	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	P	P	P	P	P	P	P	P	0	--	0.5
16-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	1	0	0	0.4	0.6
17-Dec	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	A	1	1	0	0	0.4	0.6
18-Dec	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.4	0.6
19-Dec	1	0	0	1	0	1	0	1	1	1	1	1	1	0	0	1	A	1	1	1	1	0	1	0	0.6	0.8
20-Dec	1	1	0	1	0	1	1	0	0	0	0	0	1	0	0	A	0	1	1	1	1	1	1	1	0.6	0.9
21-Dec	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	1.1
22-Dec	1	1	1	1	1	1	1	1	1	1	1	1	0	A	0	0	0	0	1	1	1	1	0	1	0.6	1.2
23-Dec	0	1	0	0	0	0	0	1	1	1	1	1	A	1	1	1	1	1	1	0	0	0	0	1	0.7	1.5
24-Dec	1	1	1	0	1	1	1	0	0	0	0	A	0	0	0	0	1	1	1	1	0	1	1	0	0.5	0.7
25-Dec	0	1	1	1	1	1	1	0	0	1	A	0	1	1	0	0	1	1	1	0	0	0	0	0	0.5	0.7
26-Dec	0	1	1	0	0	1	0	0	0	A	0	1	1	1	1	1	1	1	1	1	0	1	0	0	0.5	0.8
27-Dec	0	1	0	0	0	0	0	0	A	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0.6	0.8
28-Dec	1	1	1	1	1	1	1	A	A	0	1	1	1	1	1	0	0	0	1	1	1	1	1	1	0.6	1.0
29-Dec	1	1	1	1	1	0	A	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	2	0.6	1.8
30-Dec	1	1	1	1	1	A	1	1	1	1	1	1	0	1	1	0	0	1	1	1	1	1	1	0	0.7	1.5
31-Dec	1	1	1	0	A	1	1	1	1	1	0	0	0	0	0	0	0	1	0	1	1	0	1	1	0.5	0.7
	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	Diurnal Average
	1.5	1.3	1.2	1.4	1.4	1.5	1.4	1.1	1.4	1.5	1.2	0.9	0.8	0.8	0.9	0.8	0.8	1.0	0.9	1.0	0.9	0.9	1.2	1.8	Diurnal Maximum	

C - Calibration R - Recovery P - Power Failure M - Maintenance - - Not Valid
A - Automated Daily Zero Span

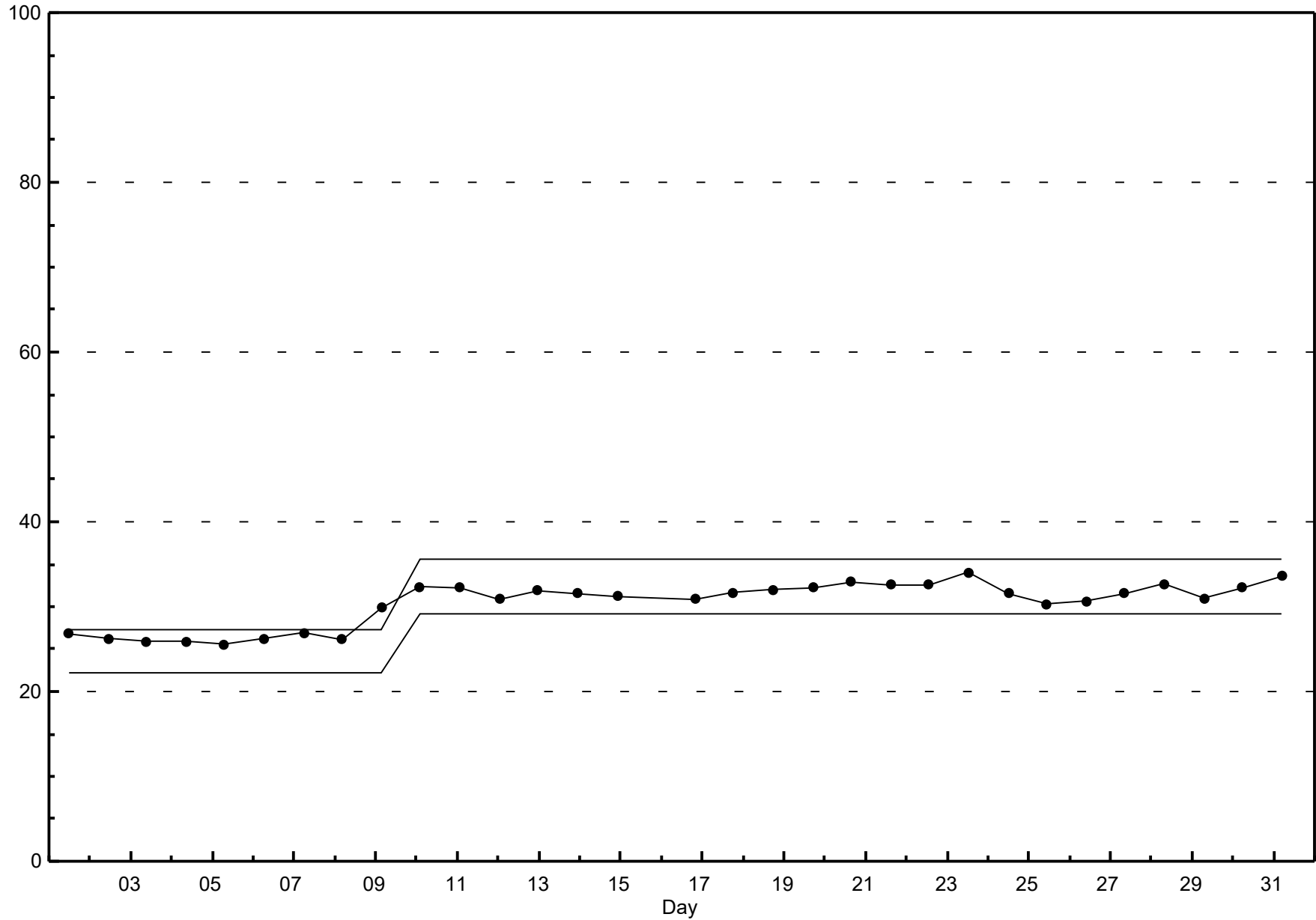
Hourly Maximums

Total Reduced Sulphur (TRS) - ppb
Smoky Heights - December 2015



Span Responses

Total Reduced Sulphur (TRS)
Smoky Heights - December 2015



Hourly Averages

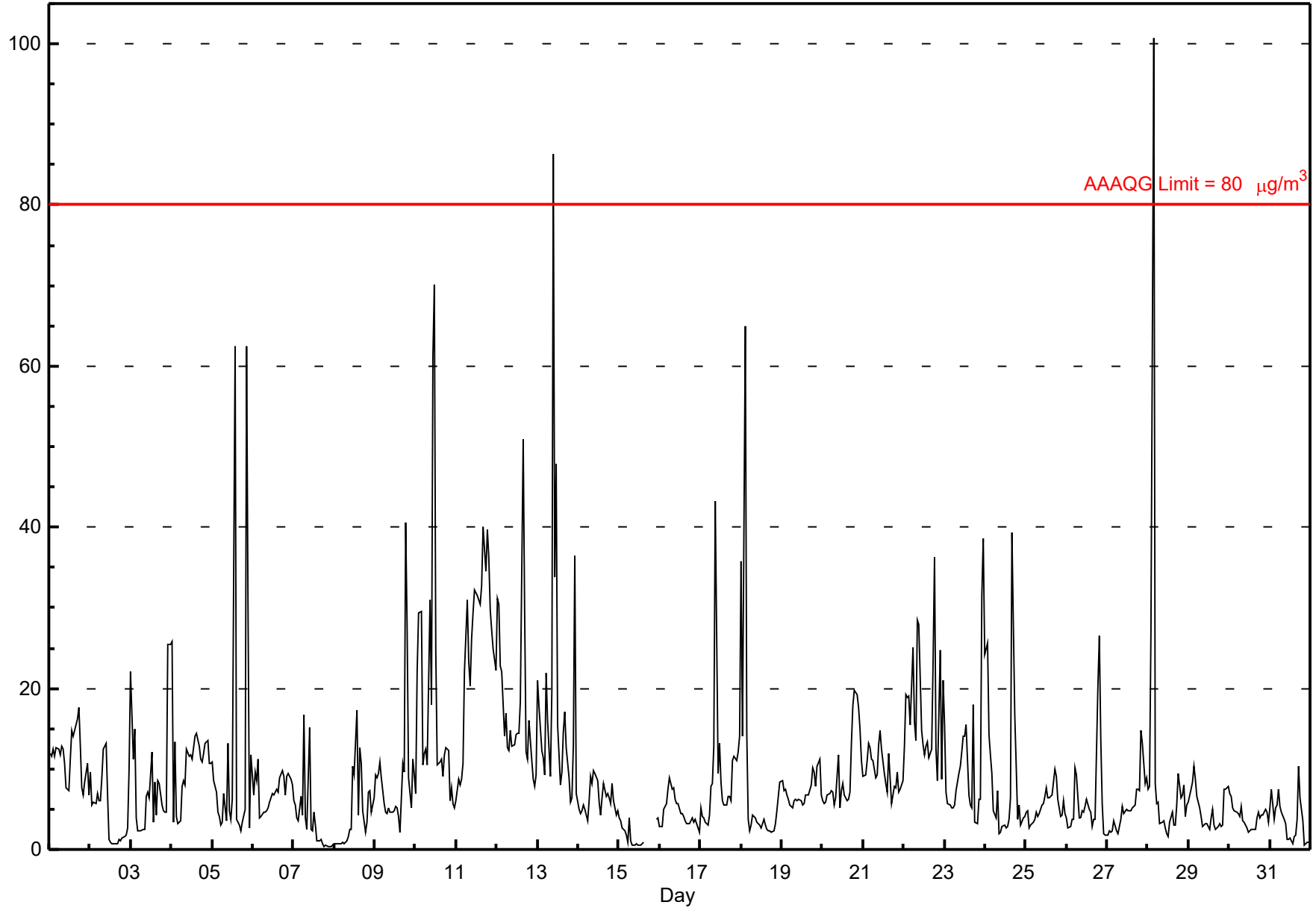
Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Smoky Heights - December 2015

Number of Exceedences: 1-hr: 2 24-hr: 0	Hours in Service: 744
Maximum Value: 100.8 µg/m ³ on Dec 28 04:00	Maximum Daily Average: 25.3 µg/m ³ on Dec 11
Minimum Value: 0 µg/m ³ on Dec 7 22:00	Hours of Data: 737
Maximum Diurnal Average: 12.6 µg/m ³ at hour 10	Hours of Missing Data: 7
Monthly Average: 9.31 µg/m ³	Hours of Calibration: 0
Minimum Daily Average: 3.6 µg/m ³ on Dec 31	Percent Operational Time: 99.1
Minimum Diurnal Average: 6.7 µg/m ³ at hour 5	
Percentiles: P ₁ = 0.5 P ₁₀ = 2.4 Q ₁ = 3.9 Median = 6.5 Q ₃ = 11.2 P ₉₀ = 17.9 P ₉₉ = 60.2	

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	12	12	12	12	13	12	12	13	12	11	8	7	11	15	14	15	16	18	13	8	7	8	11	7	11.5	17.7																						
2-Dec	10	6	6	6	7	6	6	9	12	13	7	1	1	1	1	1	1	1	1	1	2	2	3	10	4.6	13.1																						
3-Dec	22	11	15	4	2	2	2	2	3	7	7	6	12	3	8	4	9	8	6	5	5	5	25	26	8.3	25.5																						
4-Dec	26	3	13	4	3	4	8	8	8	12	12	12	11	13	14	14	13	11	11	12	13	14	11	11	10.9	25.8																						
5-Dec	11	9	7	5	4	3	3	7	4	13	5	4	6	62	4	3	3	2	3	5	62	30	3	12	11.2	62.4																						
6-Dec	7	10	9	11	4	4	5	5	5	5	6	7	7	7	7	7	9	10	9	7	9	9	9	8	7.3	11.2																						
7-Dec	6	6	4	4	7	4	17	4	3	15	2	2	5	3	1	1	1	1	0	1	0	0	0	1	3.6	16.8																						
8-Dec	1	1	1	1	1	1	1	1	2	3	3	10	9	17	4	13	11	5	2	3	7	7	5	6	4.7	17.3																						
9-Dec	9	9	9	11	9	6	5	5	5	5	5	5	5	5	4	2	11	10	41	28	9	5	11	9	9.2	40.5																						
10-Dec	7	22	29	30	10	12	12	10	31	18	61	70	25	11	11	11	9	12	13	12	6	8	6	5	18.4	70.0																						
11-Dec	6	9	8	9	11	22	31	23	20	26	29	32	32	31	30	33	40	35	40	36	30	27	25	22	25.3	40.0																						
12-Dec	31	30	23	22	14	17	13	12	15	13	13	14	14	14	18	51	29	12	11	16	11	9	8	9	17.6	51.0																						
13-Dec	21	18	12	11	9	22	16	9	20	86	34	48	15	8	10	15	17	13	9	6	6	13	36	7	19.2	86.3																						
14-Dec	5	4	5	5	5	3	6	9	8	10	9	9	6	4	6	8	7	7	6	6	8	6	4	5	6.4	9.7																						
15-Dec	4	3	3	2	2	1	4	1	0	0	1	1	1	1	1	P	P	P	P	P	P	P	P	4	4	--	4.0																					
16-Dec	3	3	5	5	6	8	9	7	8	6	6	6	4	4	4	4	3	3	4	4	3	4	3	2	4.7	9.0																						
17-Dec	5	4	4	3	3	4	8	8	13	43	9	13	8	6	6	5	7	7	6	11	12	11	12	14	9.3	43.2																						
18-Dec	36	14	65	14	4	2	3	4	4	3	3	3	3	4	3	2	2	2	2	2	3	5	7	8	8.3	65.0																						
19-Dec	9	7	7	7	6	6	5	6	6	6	6	6	6	6	7	7	7	8	10	10	8	10	11	7	7.2	11.2																						
20-Dec	6	6	6	7	7	7	7	6	6	12	5	7	8	7	6	6	7	13	18	20	19	18	15	11	9.6	19.7																						
21-Dec	9	9	11	13	13	11	11	9	9	13	15	13	9	8	7	12	9	6	8	8	10	7	7	9	9.8	14.8																						
22-Dec	13	19	19	19	15	25	16	13	29	28	15	13	12	13	13	11	12	23	36	12	9	25	9	21	17.5	36.4																						
23-Dec	15	7	6	6	5	5	5	7	9	10	12	14	14	15	7	5	5	18	3	3	6	6	31	39	10.7	38.6																						
24-Dec	24	26	14	12	9	5	4	7	2	2	3	3	3	3	4	6	39	17	10	4	6	3	4	4	8.9	39.2																						
25-Dec	5	5	3	3	3	4	5	4	5	6	6	7	8	6	6	7	8	10	9	6	4	4	6	4	5.5	10.0																						
26-Dec	4	3	3	4	4	10	9	4	4	5	5	5	6	5	5	3	4	4	20	26	14	6	2	2	6.5	26.5																						
27-Dec	2	2	2	2	4	2	2	3	4	5	4	5	5	5	5	5	5	7	7	7	15	13	8	9	5.4	14.8																						
28-Dec	7	8	27	101	8	6	6	3	3	4	3	2	2	3	5	3	3	6	10	6	7	8	4	5	10.0	100.8																						
29-Dec	6	7	8	10	9	7	5	4	3	3	3	3	3	4	5	3	3	3	3	3	3	7	7	8	5.0	10.3																						
30-Dec	7	7	5	5	5	4	4	5	4	3	3	2	2	3	2	2	4	5	4	4	4	5	5	3	4.1	6.9																						
31-Dec	5	7	4	5	5	8	5	5	4	3	1	1	1	1	2	2	4	10	6	3	1	1	1	1	3.6	10.4																						
																								10.7	9.2	11.1	11.3	6.7	7.5	7.9	7.0	8.4	12.6	9.7	10.7	8.2	9.3	7.1	8.8	9.9	9.5	10.7	9.2	9.9	9.2	9.5	9.3	Diurnal Average
																								35.8	30.5	65.0	100.8	15.5	25.1	31.0	23.3	31.0	86.3	61.2	70.0	31.5	62.4	30.5	51.0	40.0	34.5	40.5	36.3	62.4	29.8	36.4	38.6	Diurnal Maximum

P - Power Failure
 Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 µg/m³ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 µg/m³

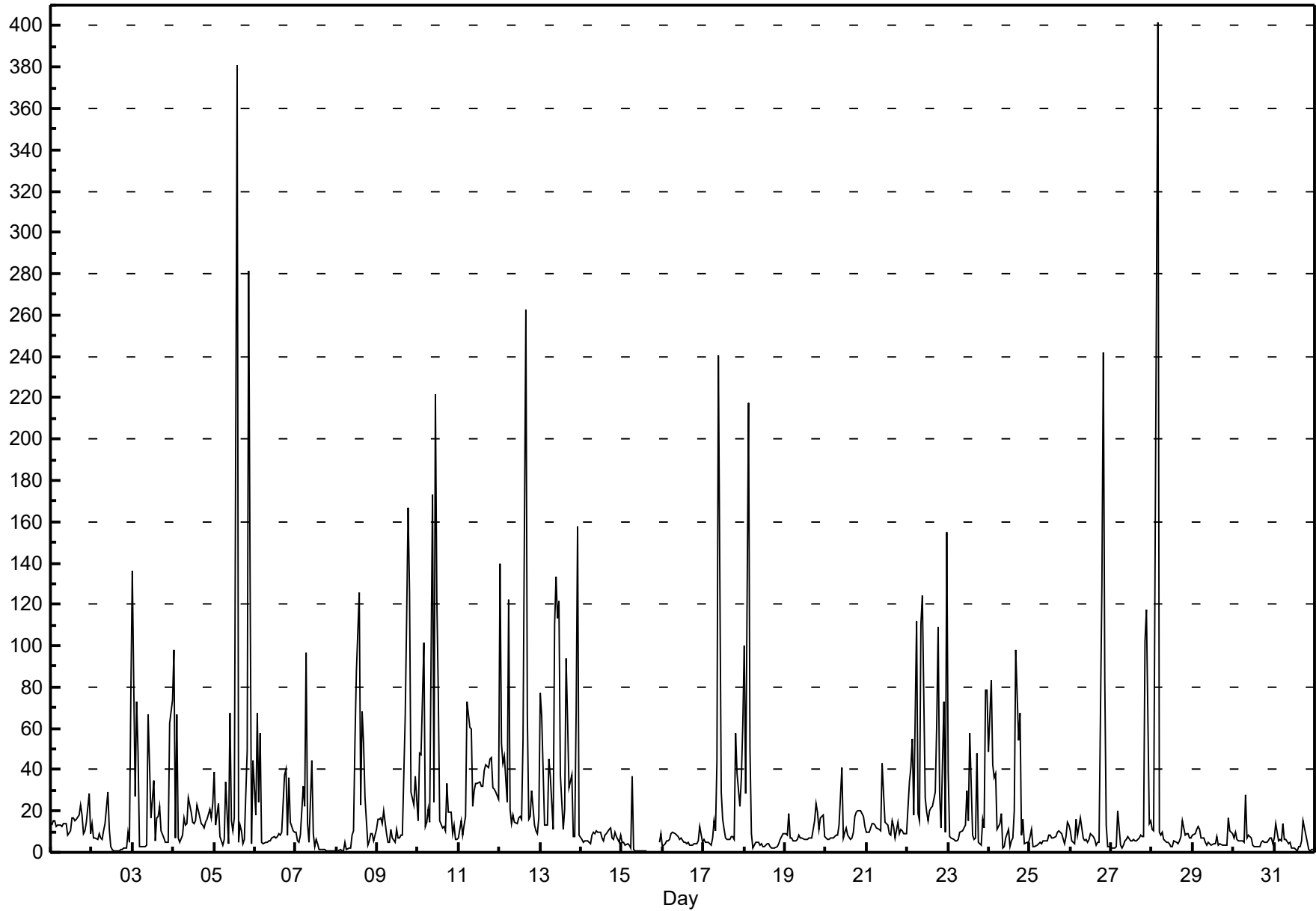


Hourly Maximums

Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Smoky Heights - December 2015

Maximum Value: 401.4 µg/m ³ on Dec 28 04:00 Minimum Value: 0 µg/m ³ on Dec 7 19:00 Maximum Diurnal Average: 32.4 µg/m ³ at hour 10 Monthly Average: 21.80 µg/m ³		Maximum Daily Average: 54.3 µg/m ³ on Dec 13 Minimum Daily Average: 5.5 µg/m ³ on Dec 31 Minimum Diurnal Average: 11.0 µg/m ³ at hour 15 Percentiles: P ₁ = 0.9 P ₁₀ = 3.1 Q ₁ = 5.3 Median = 9.0 Q ₃ = 18.3 P ₉₀ = 52.9 P ₉₉ = 205.8		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)																								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-Dec	13	16	15	12	13	13	12	14	14	14	8	11	17	17	15	16	18	23	18	9	10	14	28	9	14.6	28.3																							
2-Dec	14	7	7	6	9	7	6	11	14	29	11	3	1	1	1	1	1	2	1	2	2	10	5	77	9.5	77.4																							
3-Dec	136	27	73	48	3	3	3	3	3	66	42	17	35	6	17	17	22	10	7	5	5	5	62	74	28.7	136.0																							
4-Dec	98	7	67	7	5	8	17	13	14	26	20	15	14	15	23	20	14	13	12	15	16	21	17	24	20.8	97.9																							
5-Dec	39	13	24	8	6	3	6	34	4	67	16	10	17	381	5	13	11	4	6	49	282	133	4	45	49.2	380.8																							
6-Dec	18	67	24	58	5	4	5	5	5	5	7	8	7	8	9	9	10	38	40	9	36	15	10	9	17.1	67.1																							
7-Dec	10	6	5	8	32	22	97	14	5	44	9	3	6	4	1	2	2	1	0	1	1	1	1	1	11.4	96.9																							
8-Dec	1	1	1	1	1	5	1	2	8	10	53	87	126	23	68	52	26	4	5	9	9	5	11	11	21.3	125.8																							
9-Dec	16	16	17	14	20	9	5	5	11	7	5	11	7	7	8	9	66	114	167	126	29	23	37	26	31.4	166.6																							
10-Dec	15	48	48	102	12	14	21	14	173	24	222	123	78	15	12	12	10	34	19	19	9	13	6	6	43.8	222.0																							
11-Dec	7	16	8	13	17	73	61	60	22	30	33	33	34	32	32	40	43	41	45	46	31	31	29	25	33.4	73.0																							
12-Dec	140	53	43	47	25	122	21	14	18	14	14	17	17	16	54	263	67	16	17	30	13	11	9	17	44.0	262.8																							
13-Dec	77	66	13	13	13	45	37	11	110	134	114	121	38	11	21	94	65	31	37	8	8	69	158	9	54.3	158.0																							
14-Dec	7	5	5	6	6	4	8	10	9	10	10	9	7	5	8	9	11	12	7	7	10	8	5	8	7.7	11.9																							
15-Dec	5	5	3	4	3	2	37	1	1	1	1	1	1	1	1	P	P	P	P	P	P	P	P	5	9	--	36.6																						
16-Dec	3	4	6	6	7	9	10	9	8	8	6	7	5	5	4	5	3	3	4	4	4	5	13	5	6.0	12.7																							
17-Dec	6	5	5	5	3	7	15	10	44	241	29	16	11	7	7	6	8	8	7	58	38	22	36	62	27.3	240.6																							
18-Dec	100	28	217	50	9	2	4	5	5	4	4	3	3	4	4	3	2	2	2	3	4	6	8	9	20.1	217.4																							
19-Dec	9	8	19	7	7	6	6	7	8	7	7	7	6	6	7	7	7	15	23	20	11	17	18	8	10.1	23.4																							
20-Dec	7	6	7	7	7	8	9	9	13	41	7	10	12	8	7	7	9	17	20	20	20	19	18	12	12.5	41.2																							
21-Dec	10	10	12	14	14	13	12	11	10	43	29	15	13	9	8	16	12	7	15	9	11	10	9	9	13.3	43.2																							
22-Dec	22	34	41	55	18	112	19	16	111	124	26	20	15	20	21	22	30	62	109	29	12	73	9	155	48.1	154.8																							
23-Dec	39	8	7	6	5	5	6	9	10	12	13	30	15	58	8	6	7	48	5	3	16	12	79	79	20.3	78.8																							
24-Dec	48	83	42	36	39	11	14	19	2	3	7	11	3	5	7	20	98	54	67	8	16	4	5	5	25.4	97.7																							
25-Dec	8	11	3	3	4	4	5	4	6	6	6	8	8	7	7	8	10	10	10	9	4	8	15	13	7.3	14.9																							
26-Dec	10	5	4	16	8	13	17	7	6	6	5	7	9	8	6	4	5	5	129	242	84	13	3	3	25.6	242.1																							
27-Dec	2	2	2	3	20	3	2	3	5	7	8	6	6	6	6	6	7	8	8	8	102	117	14	16	15.3	117.2																							
28-Dec	11	10	140	401	10	8	9	6	5	5	4	3	3	6	5	4	6	8	15	8	9	9	7	7	29.2	401.4																							
29-Dec	8	9	11	12	11	7	7	5	3	5	4	3	4	4	8	4	4	3	4	3	3	17	10	9	6.7	16.8																							
30-Dec	7	10	7	5	5	5	5	28	7	8	7	4	3	3	3	3	5	5	5	5	5	7	7	4	6.3	27.5																							
31-Dec	7	14	6	7	6	14	7	6	4	5	2	2	2	1	3	3	6	15	12	5	1	1	2	1	5.5	15.4																							
																								28.8	19.4	28.4	31.6	11.0	18.2	15.5	11.7	21.1	32.4	22.1	18.9	15.5	25.9	11.0	23.1	20.4	21.2	27.2	25.5	26.8	23.4	20.4	24.1	Diurnal Average	
																								139.5	83.3	217.4	401.4	38.5	122.4	96.9	59.8	172.7	240.6	222.0	123.3	87.4	380.8	54.2	262.8	97.7	114.3	166.6	242.1	281.7	133.4	158.0	154.8	Diurnal Maximum	
P - Power Failure																																																	



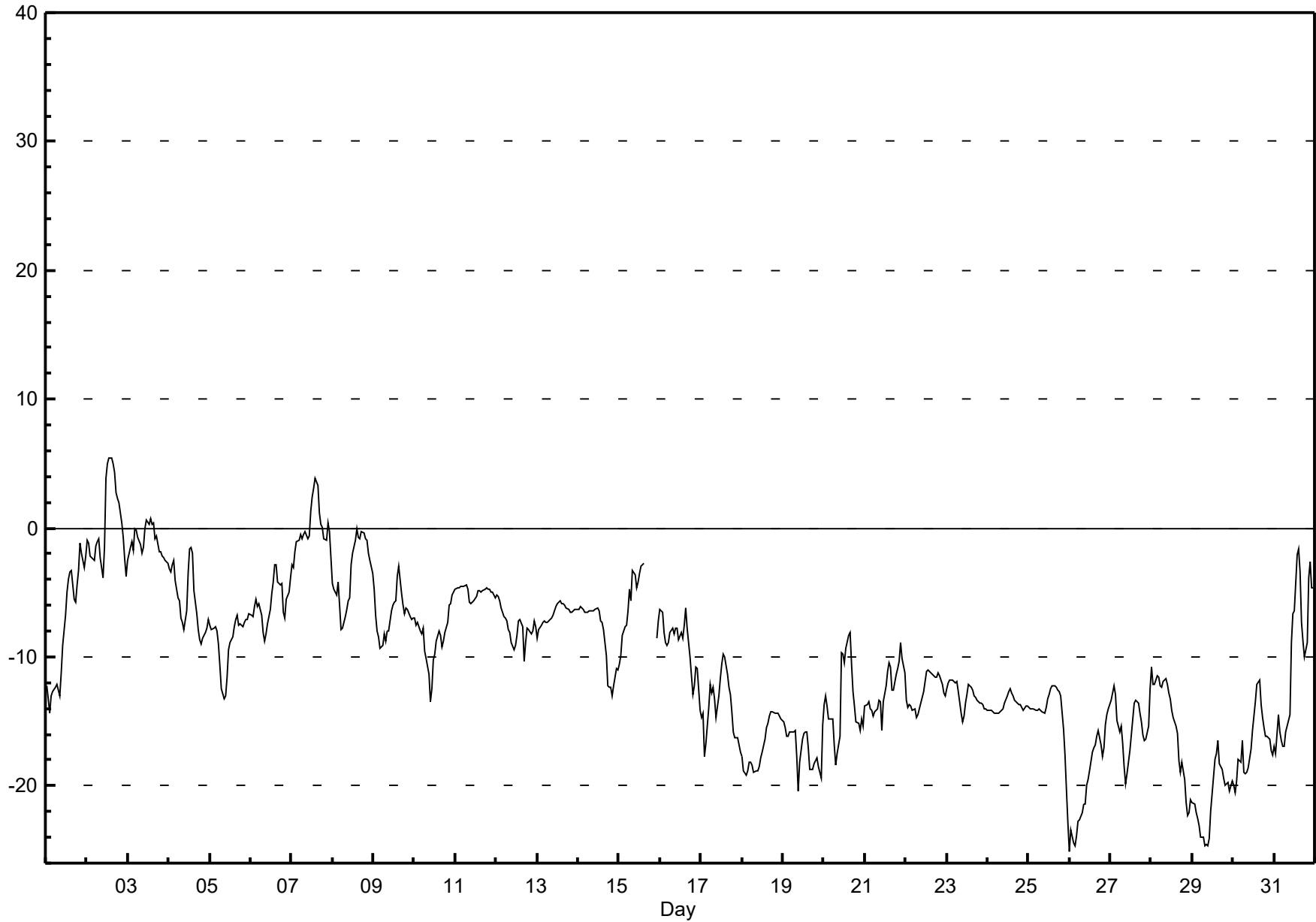
Hourly Averages

External Temperature (ET) - °C Smoky Heights - December 2015

Number of Exceedences (AAQO): 1-hr: 0 24-hr: 0 Maximum Value: 5.4 °C on Dec 2 14:00 Maximum Daily Average: 0.4 °C on Dec 2		Hours in Service: 744 Hours of Data: 737 Hours of Missing Data: 7 Hours of Calibration: 0 Percent Operational Time: 99.1																																															
Minimum Value: -25 °C on Dec 26 01:00 Maximum Diurnal Average: -7.7 °C at hour 15 Monthly Average: -10.19 °C		Minimum Daily Average: -21.1 °C on Dec 29 Minimum Diurnal Average: -11.8 °C at hour 10 Percentiles: P ₁ = -24.0 P ₁₀ = -18.0 Q ₁ = -14.4 Median = -10.4 Q ₃ = -5.9 P ₉₀ = -2.1 P ₉₉ = 3.8																																															
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Dec	-12	-13	-14	-13	-13	-12	-12	-13	-13	-11	-9	-7	-5	-4	-3	-3	-6	-6	-4	-3	-1	-2	-3	-2	-7.7	-1.2																							
2-Dec	-1	-1	-2	-2	-3	-1	-1	-1	-2	-4	-1	4	5	5	5	5	4	3	2	2	0	-1	-2	-4	0.4	5.4																							
3-Dec	-3	-1	-1	-2	0	0	-1	-1	-2	-1	0	1	0	1	0	0	-1	-1	-2	-2	-2	-2	-3	-3	-1.0	0.7																							
4-Dec	-3	-3	-3	-2	-4	-5	-6	-7	-7	-8	-6	-4	-2	-1	-2	-5	-7	-8	-9	-9	-9	-8	-8	-7	-5.5	-1.5																							
5-Dec	-8	-8	-8	-8	-8	-9	-11	-12	-13	-13	-12	-9	-9	-8	-8	-7	-7	-8	-7	-8	-7	-7	-7	-7	-8.7	-6.7																							
6-Dec	-7	-7	-6	-6	-6	-6	-7	-8	-9	-8	-7	-6	-5	-4	-3	-3	-4	-4	-4	-6	-7	-6	-5	-4	-5.8	-2.9																							
7-Dec	-3	-3	-2	-1	-1	0	-1	0	0	-1	-1	1	2	3	4	3	1	0	0	-1	-1	0	0	-2	-0.1	3.9																							
8-Dec	-4	-5	-5	-4	-6	-8	-8	-7	-6	-6	-5	-3	-2	-1	0	-1	-1	0	0	-1	-1	-2	-3	-3	-3.4	0.0																							
9-Dec	-5	-7	-8	-8	-9	-9	-8	-9	-8	-8	-6	-6	-6	-6	-4	-3	-5	-6	-7	-6	-6	-7	-7	-7	-6.7	-2.9																							
10-Dec	-7	-8	-7	-8	-8	-8	-10	-10	-11	-13	-13	-10	-10	-9	-8	-8	-9	-9	-8	-7	-6	-6	-5	-5	-8.5	-5.0																							
11-Dec	-5	-5	-5	-5	-5	-4	-4	-5	-6	-6	-6	-6	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-4.9	-4.5																							
12-Dec	-5	-5	-6	-6	-7	-7	-7	-8	-8	-9	-9	-9	-8	-7	-7	-8	-10	-9	-8	-8	-8	-8	-7	-8	-7.6	-5.2																							
13-Dec	-9	-8	-8	-7	-7	-7	-7	-7	-7	-7	-6	-6	-6	-6	-6	-6	-6	-6	-6	-7	-7	-6	-6	-6	-6.7	-5.7																							
14-Dec	-6	-6	-6	-6	-7	-7	-6	-6	-6	-6	-6	-6	-6	-7	-7	-8	-10	-12	-12	-12	-13	-12	-11	-11	-8.3	-6.1																							
15-Dec	-11	-10	-8	-8	-8	-6	-5	-6	-3	-4	-5	-4	-4	-3	-3	P	P	P	P	P	P	P	P	-9	-7	--	-2.7																						
16-Dec	-6	-7	-8	-9	-9	-9	-8	-8	-8	-8	-8	-9	-8	-9	-8	-6	-8	-10	-11	-13	-12	-11	-11	-14	-9.0	-6.2																							
17-Dec	-15	-14	-18	-17	-14	-12	-13	-12	-13	-15	-13	-12	-11	-10	-10	-11	-12	-13	-14	-16	-16	-16	-17	-17	-13.8	-9.7																							
18-Dec	-18	-19	-19	-19	-18	-18	-18	-19	-19	-19	-18	-18	-17	-16	-15	-15	-15	-14	-14	-14	-14	-14	-15	-15	-16.8	-14.3																							
19-Dec	-15	-15	-16	-16	-16	-16	-16	-16	-16	-18	-20	-18	-16	-16	-16	-17	-19	-19	-18	-18	-18	-18	-19	-15	-17.0	-15.0																							
20-Dec	-14	-13	-14	-15	-15	-15	-17	-18	-18	-16	-10	-10	-10	-9	-8	-8	-11	-13	-14	-15	-15	-16	-15	-15	-13.5	-8.1																							
21-Dec	-14	-14	-14	-14	-14	-15	-14	-14	-13	-13	-16	-13	-12	-11	-10	-11	-13	-13	-11	-11	-10	-9	-10	-11	-12.5	-8.9																							
22-Dec	-13	-14	-14	-14	-14	-14	-15	-15	-14	-14	-13	-12	-11	-11	-11	-11	-11	-12	-12	-11	-12	-12	-13	-13	-12.7	-11.1																							
23-Dec	-12	-12	-12	-12	-12	-12	-12	-13	-14	-15	-15	-14	-13	-12	-12	-13	-13	-13	-13	-14	-14	-14	-14	-14	-13.0	-11.8																							
24-Dec	-14	-14	-14	-14	-14	-14	-14	-14	-14	-14	-14	-13	-13	-12	-13	-13	-13	-14	-14	-14	-14	-14	-14	-14	-13.7	-12.5																							
25-Dec	-14	-14	-14	-14	-14	-14	-14	-14	-14	-14	-14	-13	-13	-12	-12	-12	-13	-13	-13	-13	-16	-18	-20	-23	-14.4	-12.2																							
26-Dec	-25	-23	-24	-25	-24	-23	-23	-22	-21	-21	-20	-19	-19	-17	-17	-17	-16	-16	-17	-18	-17	-15	-14	-14	-19.5	-14.0																							
27-Dec	-13	-13	-12	-13	-15	-16	-15	-17	-19	-20	-19	-17	-16	-15	-14	-13	-14	-14	-15	-16	-16	-16	-15	-13	-15.3	-12.2																							
28-Dec	-11	-12	-12	-11	-12	-12	-12	-12	-12	-12	-13	-13	-14	-15	-15	-16	-18	-19	-18	-19	-21	-22	-22	-21	-15.3	-10.8																							
29-Dec	-21	-21	-22	-23	-23	-24	-24	-25	-25	-25	-24	-22	-19	-18	-17	-17	-18	-19	-19	-20	-20	-20	-20	-20	-21.1	-16.5																							
30-Dec	-20	-21	-20	-18	-18	-17	-19	-19	-19	-19	-17	-16	-15	-13	-12	-12	-14	-15	-16	-16	-16	-16	-17	-18	-16.7	-11.8																							
31-Dec	-17	-17	-15	-16	-17	-17	-17	-16	-15	-14	-9	-7	-6	-2	-2	-3	-7	-9	-10	-9	-4	-3	-5	-5	-10.0	-1.6																							
																								-10.6	-10.8	-10.8	-10.8	-10.9	-10.9	-11.1	-11.4	-11.6	-11.8	-10.8	-9.5	-8.8	-8.1	-7.7	-8.1	-9.3	-9.8	-10.0	-10.3	-10.3	-10.2	-10.4	-10.4	Diurnal Average	
																								-0.9	-1.2	-1.1	-1.1	-0.1	-0.2	-0.7	-0.5	-0.3	-0.8	-0.1	3.8	5.0	5.4	5.4	4.9	4.3	2.8	2.3	2.0	0.4	0.4	-0.2	-2.2	Diurnal Maximum	
P - Power Failure																																																	

Hourly Averages

External Temperature (ET) - °C
Smoky Heights - December 2015



Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Smoky Heights - December 2015

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1 Spd	7	7	6	9	8	8	8	10	8	7	8	6	6	4	5	8	9	6	5	6	7	8	9	9	6.5	9.6	
Dir	161	180	154	166	176	166	178	171	175	223	216	195	156	138	153	146	168	200	252	225	207	208	202	218	184.9	171.4	
2 Spd	7	9	7	6	9	6	8	12	9	8	13	29	36	43	37	29	28	16	19	12	11	3	2	1	14.7	42.7	
Dir	225	194	190	205	218	214	192	214	207	203	210	200	205	209	221	215	220	205	195	199	209	233	263	315	209.4	209.3	
3 Spd	6	8	5	2	4	6	4	6	3	3	4	6	8	9	7	6	10	13	10	12	13	13	11	12	6.1	12.7	
Dir	336	353	332	211	160	187	208	287	312	321	348	3	348	341	347	346	349	324	354	336	338	340	343	343	337.5	323.5	
4 Spd	10	11	8	5	10	12	13	11	10	6	8	5	3	4	7	11	12	12	10	7	6	7	6	7	2.8	13.3	
Dir	335	328	332	234	187	195	200	207	187	211	240	221	132	124	345	331	334	352	352	346	350	359	13	348	298.6	200.0	
5 Spd	10	9	7	3	4	4	4	2	4	2	4	4	4	7	7	8	10	13	12	12	11	11	9	8	6.3	12.9	
Dir	341	349	354	17	58	38	29	311	271	356	260	287	5	346	356	346	354	356	346	338	340	346	352	342	346.9	356.3	
6 Spd	8	7	2	1	4	2	4	6	5	8	6	7	4	6	5	4	2	2	4	3	4	6	8	8	2.9	8.5	
Dir	352	353	328	315	156	64	171	198	191	172	199	181	184	215	202	213	30	162	208	189	170	218	203	236	202.0	351.5	
7 Spd	6	6	5	3	2	4	5	2	2	2	7	10	16	19	22	16	11	15	17	15	11	17	15	12	9.0	22.2	
Dir	220	213	214	226	311	318	354	344	131	244	191	210	214	222	224	212	221	211	200	196	225	213	210	223	216.2	223.8	
8 Spd	12	12	11	15	9	5	7	6	4	5	2	4	7	7	5	5	8	3	5	13	20	18	16	13	5.3	19.5	
Dir	230	231	234	227	225	207	207	210	271	255	272	347	352	340	41	356	338	357	155	207	208	206	177	160	220.4	207.6	
9 Spd	9	8	6	8	6	11	9	7	8	9	6	5	7	10	9	6	4	4	3	6	4	1	3	2	3.3	10.5	
Dir	149	162	159	173	218	220	171	187	217	241	233	164	199	243	249	274	15	15	348	341	345	213	350	38	212.9	220.0	
10 Spd	2	4	3	4	6	8	7	6	2	5	1	1	5	7	10	13	14	15	14	12	11	8	9	8	4.3	14.6	
Dir	61	239	208	180	209	204	208	231	248	236	322	39	355	353	351	346	347	346	338	338	350	349	356	1	331.2	346.1	
11 Spd	7	7	6	4	4	3	3	3	7	4	4	5	5	3	3	3	3	2	4	4	5	4	4	2	1.4	7.2	
Dir	360	353	356	353	343	340	343	61	126	136	111	117	168	150	113	138	149	140	129	118	120	115	232	295	93.4	359.6	
12 Spd	2	3	3	2	2	1	2	5	7	8	6	4	5	6	2	3	3	5	7	8	8	8	7	7	1.9	8.3	
Dir	353	334	311	342	304	275	216	190	196	213	209	223	206	217	93	3	349	345	336	333	343	349	353	350	304.4	212.8	
13 Spd	5	4	4	5	7	7	6	6	5	5	4	4	4	4	4	4	3	3	2	3	5	4	1	4	3.4	6.8	
Dir	343	357	1	356	348	336	339	332	340	332	338	333	332	333	333	329	340	354	266	233	229	276	271	222	329.2	347.5	
14 Spd	2	2	4	2	5	8	8	10	13	12	13	10	12	10	11	10	9	12	12	12	11	8	10	5	8.5	13.1	
Dir	230	196	205	189	207	220	219	219	218	219	216	204	188	194	180	197	220	222	217	210	220	205	174	179	207.4	216.1	
15 Spd	13	10	9	9	12	12	7	10	20	17	19	17	17	17	17	P	P	P	P	P	P	P	P	13	13	--	20.4
Dir	193	182	162	149	157	210	177	153	223	228	230	229	227	217	223	P	P	P	P	P	P	P	P	233	241	--	223.3
16 Spd	12	9	11	13	14	14	15	14	8	15	22	17	16	16	13	10	17	16	14	16	14	12	12	7	13.5	21.8	
Dir	241	241	232	230	237	233	232	230	218	225	235	231	226	237	238	235	217	239	233	231	233	240	256	240	233.4	235.5	
17 Spd	11	10	7	4	6	3	6	6	4	7	7	7	5	4	7	11	14	13	9	9	11	12	11	12	6.1	14.1	
Dir	244	257	248	244	232	265	8	343	357	339	354	12	17	7	349	3	0	2	355	348	344	344	344	345	338.5	0.4	
18 Spd	10	13	13	14	15	14	13	11	11	11	17	19	17	13	13	12	9	6	4	3	5	5	7	7	9.1	19.4	
Dir	339	345	341	343	350	4	7	349	4	10	357	0	1	5	9	355	13	27	15	29	66	113	162	161	1.9	0.2	
19 Spd	10	10	7	9	9	9	10	11	7	8	7	8	10	11	10	12	12	11	9	8	7	9	7	9	8.1	12.3	
Dir	165	167	158	163	159	152	164	178	204	216	207	210	186	181	203	208	228	241	236	224	214	233	228	226	197.6	207.7	
20 Spd	9	10	8	8	8	6	2	6	5	5	6	3	3	9	10	9	9	12	12	12	10	8	9	8	7.1	12.3	
Dir	223	208	208	200	191	218	211	228	247	247	235	211	131	202	193	169	159	176	189	175	176	172	173	178	193.2	175.3	
21 Spd	12	10	10	6	7	8	11	6	8	8	6	8	9	9	7	8	8	7	7	5	8	7	8	7	7.6	12.4	
Dir	221	175	155	156	184	168	167	200	181	159	162	218	191	187	191	169	192	199	175	171	209	205	178	187	183.5	220.9	
22 Spd	6	0	7	9	11	10	10	11	7	5	6	6	4	3	5	5	5	5	5	4	3	3	3	4	5.2	10.8	
Dir	164	72	359	353	353	349	346	340	331	343	347	347	348	334	333	347	351	332	335	5	18	343	306	328	345.2	353.1	

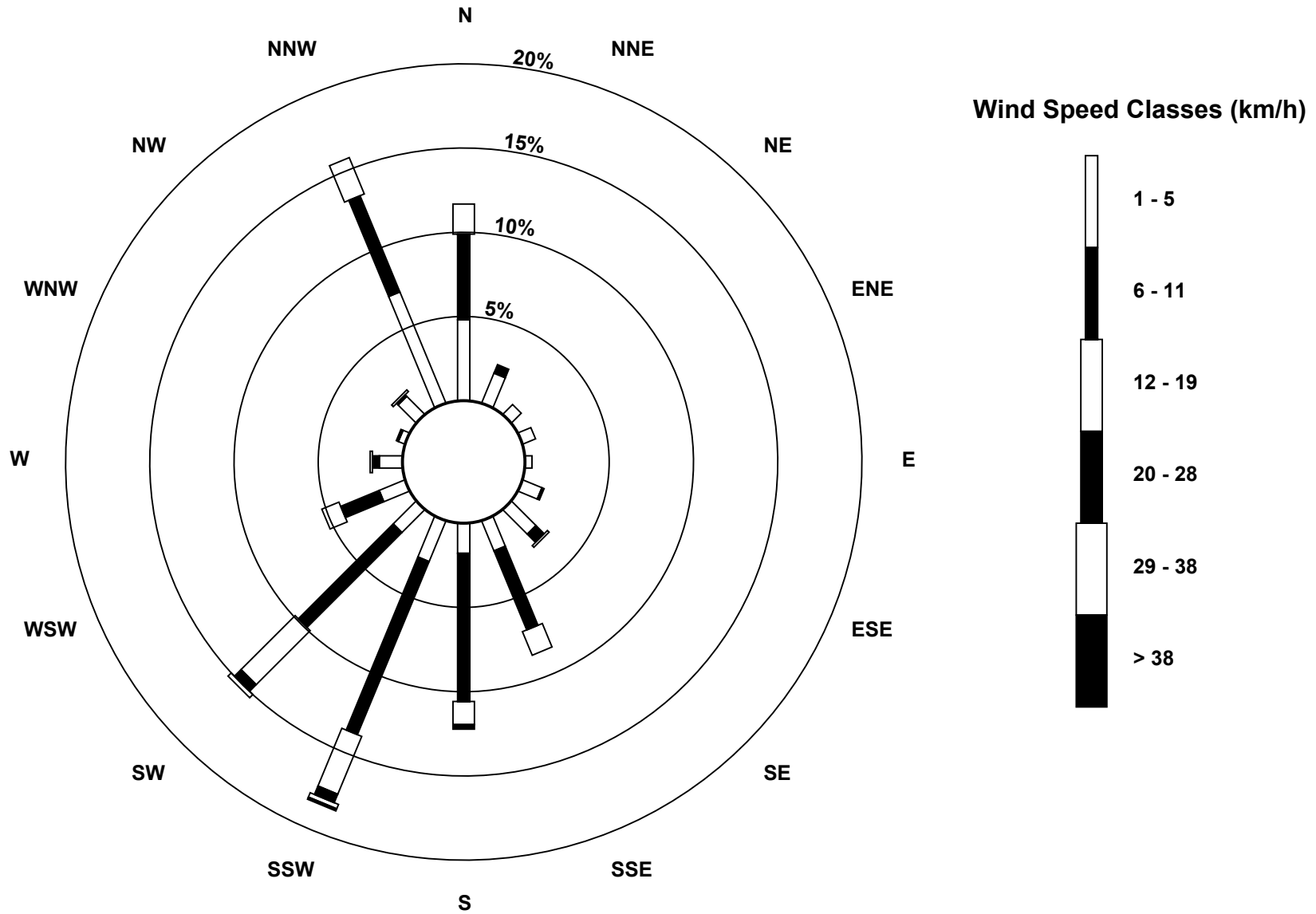
Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Smoky Heights - December 2015

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	4	3	2	3	3	2	2	4	3	5	1	1	1	3	4	4	5	5	4	4	5	5	5	4	2.6	5.4
Dir	339	357	5	1	7	61	14	81	123	98	132	255	105	13	17	4	354	340	358	360	344	334	335	336	4.8	334.2
24 Spd	5	6	6	6	6	5	5	4	4	2	4	3	3	4	4	4	3	3	2	1	0	2	0	1	3.2	6.0
Dir	332	333	335	334	326	327	331	342	355	3	349	7	3	356	340	345	338	340	1	358	288	220	179	81	340.1	332.8
25 Spd	1	2	4	3	5	6	6	5	5	6	7	9	10	12	9	7	9	9	8	11	9	12	8	6	5.6	11.7
Dir	338	146	182	204	177	175	178	169	148	169	192	202	209	203	207	215	230	230	250	268	281	261	247	254	217.7	202.7
26 Spd	7	5	6	6	7	7	5	6	6	6	6	7	7	6	4	1	6	2	3	5	3	0	2	2	3.5	7.3
Dir	249	248	199	209	213	227	199	203	223	181	170	199	211	195	147	128	254	238	347	333	334	31	37	206	215.3	199.5
27 Spd	7	7	6	3	6	11	8	9	9	8	9	7	7	9	7	6	7	8	7	7	3	2	6	7	6.2	10.6
Dir	214	235	253	228	232	224	216	204	180	172	172	205	199	191	173	173	161	160	196	190	176	325	236	235	199.9	223.6
28 Spd	4	3	2	1	3	4	1	7	7	7	8	8	8	6	6	5	6	8	6	7	10	12	13	13	4.8	13.1
Dir	226	53	352	353	33	24	339	196	188	161	180	203	235	239	258	254	233	228	199	175	171	189	196	202	203.5	202.4
29 Spd	14	14	15	13	10	8	9	6	9	8	7	8	9	10	8	12	7	9	9	11	10	6	6	5	8.8	14.6
Dir	210	207	195	201	209	198	201	185	199	195	171	178	181	191	184	219	188	191	204	217	200	160	153	141	195.2	194.8
30 Spd	5	6	7	6	6	5	6	3	6	4	5	5	5	7	10	13	7	6	9	6	10	9	8	7	5.9	12.6
Dir	161	197	192	176	183	211	119	117	136	125	141	167	136	146	191	195	153	199	206	197	199	173	193	198	176.9	195.0
31 Spd	14	14	16	15	17	13	12	14	12	9	15	15	13	25	24	18	8	7	9	14	23	27	22	17	14.7	27.0
Dir	167	164	184	159	161	149	145	152	153	153	187	178	166	191	186	159	140	171	168	170	203	211	201	191	175.9	210.8
Spd	3.3	2.8	2.6	2.9	3.4	3.4	3.1	3.7	4.1	3.9	4.4	4.4	4.4	5.5	4.4	3.0	2.4	2.7	3.0	3.4	3.6	3.7	3.8	3.1	Diurnal Average	
Dir	231.6	229.0	219.0	205.7	205.6	211.3	196.2	206.0	203.1	209.5	216.2	212.5	207.2	214.5	221.4	228.0	249.2	252.4	237.5	234.2	232.9	232.7	221.9	231.3	Diurnal Maximum	
Spd	13.9	13.8	16.4	15.4	16.8	14.1	14.6	14.0	20.4	17.2	21.8	28.6	35.9	42.7	36.6	28.9	28.5	16.2	19.1	16.2	23.0	27.0	21.5	16.7	Diurnal Maximum	
Dir	209.9	207.1	183.8	158.8	161.3	4.3	231.8	230.4	223.3	227.9	235.5	200.1	205.3	209.3	220.6	214.6	220.3	204.9	195.4	230.8	203.1	210.8	200.8	191.5	Diurnal Maximum	
Maximum Speed Value: 43 km/h on Dec 2 14:00		Minimum Speed Value: 0 km/h on Dec 22 02:00										Hours in Service: 744														
Maximum Daily Speed Average: 14.7 km/h on Dec 31		Minimum Daily Speed Average: 1.4 km/h on Dec 23										Hours of Data: 737														
Maximum Diurnal Speed Average: 5.5 km/h at hour 14		Minimum Diurnal Speed Average: 2.4 km/h at hour 17										Hours of Missing Data: 7														
Monthly Average Velocity: 3.45 km/h 219.73 deg		Speed Percentiles: P ₁ = 1.0 P ₁₀ = 2.7 Q ₁ = 4.6 Median = 7.0 Q ₃ = 10.1 P ₉₀ = 13.5 P ₉₉ = 25.6										Percent Operational Time: 99.1														
All monthly, daily, and diurnal averages have been calculated using vector methods																										
P - Power Failure																										
Frequency Distribution																										
		Speed Range (km/h)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	68	73	33	1	0	0	175																			
NorthEast	17	2	0	0	0	0	19																			
East	7	0	0	0	0	0	7																			
SouthEast	26	22	5	0	0	0	53																			
South	21	133	30	4	1	0	189																			
SouthWest	32	107	58	7	4	1	209																			
West	16	14	3	0	0	0	33																			
NorthWest	27	21	4	0	0	0	52																			
Total	214	372	133	12	5	1	737																			

Wind Rose

Wind Speed (WS) (km/h)
Smoky Heights - December 2015



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Smoky Heights - December 2015

Maximum Speed: 43 km/h on Dec 2 14:00	Maximum Daily Speed Average: 15.9 km/h on Dec 31	Hours in Service: 744
Minimum Speed: 1 km/h on Dec 25 00:00	Minimum Daily Speed Average: 3.6 km/h on Dec 23	Hours of Data: 737
Maximum Diurnal Speed Average: 9.8 km/h at hour 14	Minimum Diurnal Speed Average: 6.9 km/h at hour 4	Hours of Missing Data: 7
Monthly Average Speed: 8.16 km/h	Percentiles: P ₁ = 1.6 P ₁₀ = 3.4 Q ₁ = 5.0 Median = 7.4 Q ₃ = 10.3 P ₉₀ = 13.7 P ₉₉ = 25.6	Percent Operational Time: 99.1

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	7	7	7	10	8	9	8	10	8	7	9	6	6	4	5	8	9	6	6	7	7	9	10	10	7.6	10.0	
2-Dec	7	10	7	6	9	7	8	12	9	9	15	29	36	43	37	29	29	16	19	12	12	6	6	2	15.6	42.8	
3-Dec	6	9	5	3	5	6	4	6	3	3	4	6	8	9	7	6	10	13	11	13	13	13	11	12	7.8	12.9	
4-Dec	10	12	8	7	10	13	13	11	11	7	9	5	4	5	8	11	12	12	11	7	6	8	6	7	8.8	13.4	
5-Dec	10	9	7	3	4	5	4	4	4	3	5	5	4	7	7	8	10	13	12	12	12	11	9	8	7.3	13.0	
6-Dec	9	7	4	5	6	2	5	6	5	8	6	7	4	6	6	5	3	3	5	3	4	6	8	9	5.6	8.6	
7-Dec	6	7	5	6	4	5	5	4	4	3	7	11	16	19	22	16	11	15	17	15	11	17	15	12	10.6	22.2	
8-Dec	12	12	11	15	9	6	8	6	4	5	3	5	7	7	8	7	8	4	6	13	20	18	16	14	9.4	19.6	
9-Dec	9	9	6	8	7	12	10	7	8	9	6	5	7	10	9	7	4	4	3	6	4	3	4	3	6.7	11.5	
10-Dec	3	5	3	5	7	8	7	6	3	5	3	2	6	7	11	13	14	15	14	12	12	9	9	9	7.8	14.6	
11-Dec	7	7	6	4	4	3	3	4	7	4	4	5	5	3	3	3	3	2	4	4	5	4	5	3	4.3	7.3	
12-Dec	3	3	3	2	2	2	2	5	8	8	6	4	5	6	3	3	3	5	7	8	8	8	7	7	4.9	8.4	
13-Dec	5	4	5	5	7	7	6	6	5	5	4	4	4	4	4	4	3	3	3	3	5	4	2	4	4.4	6.9	
14-Dec	2	3	4	2	6	8	8	10	13	12	13	10	12	10	11	10	9	12	13	13	11	8	10	5	8.9	13.2	
15-Dec	13	10	10	10	13	12	9	10	21	17	19	18	17	17	17	P	F	P	F	P	F	P	F	13	13	--	20.6
16-Dec	12	9	11	13	14	14	15	14	8	15	22	17	16	16	13	11	17	16	14	16	14	12	12	8	13.8	21.9	
17-Dec	11	10	7	5	6	5	6	6	4	7	7	7	5	4	7	11	14	13	9	9	11	12	11	12	8.5	14.2	
18-Dec	10	14	14	14	15	14	13	11	11	11	17	19	17	13	13	12	9	6	4	3	5	5	7	8	11.0	19.5	
19-Dec	10	10	7	10	9	9	10	11	8	8	7	8	10	11	10	12	13	11	10	8	7	9	7	9	9.3	12.5	
20-Dec	9	10	8	8	8	6	4	6	5	5	7	5	6	10	10	9	9	12	12	12	10	8	9	8	8.2	12.5	
21-Dec	13	10	10	7	8	9	11	7	8	8	7	8	10	9	8	9	9	7	7	6	9	7	9	7	8.3	12.7	
22-Dec	6	2	7	10	11	10	10	11	7	6	6	7	5	4	5	5	5	5	5	5	3	3	3	5	6.0	10.8	
23-Dec	4	3	2	4	4	2	2	4	3	5	1	2	1	3	4	5	5	5	4	4	5	5	5	4	3.6	5.5	
24-Dec	6	6	6	6	6	5	5	4	4	3	4	3	3	4	5	4	3	3	2	2	2	2	1	1	3.7	6.1	
25-Dec	1	3	4	3	5	6	6	5	5	6	7	9	10	12	9	8	9	9	9	12	9	12	9	6	7.1	11.8	
26-Dec	7	7	7	7	7	7	5	6	6	6	6	7	7	6	5	3	6	3	4	5	3	2	2	2	5.3	7.5	
27-Dec	7	8	6	3	7	11	8	10	9	9	10	8	8	9	7	7	7	8	8	7	4	2	6	7	7.3	10.6	
28-Dec	5	4	3	2	3	4	2	7	7	7	8	8	8	6	6	5	6	8	7	7	10	12	13	13	6.7	13.2	
29-Dec	14	14	15	13	10	8	9	6	10	9	7	8	9	10	8	12	7	9	9	12	10	6	6	5	9.3	14.7	
30-Dec	6	6	7	6	6	6	6	4	6	5	5	5	6	7	10	13	7	7	9	6	10	9	8	8	7.0	12.6	
31-Dec	14	14	17	15	17	14	13	14	12	10	16	16	14	25	24	18	8	8	10	15	23	27	22	17	15.9	27.0	
	7.9	7.8	7.2	6.9	7.6	7.6	7.3	7.6	7.3	7.3	8.1	8.4	8.9	9.8	9.7	9.2	8.8	8.5	8.4	8.6	8.9	8.6	8.5	7.6	Diurnal Average		
	14.0	13.9	17.2	15.5	16.8	14.3	14.7	14.1	20.6	17.2	21.9	28.7	36.0	42.8	36.8	29.1	28.7	16.5	19.2	16.2	23.1	27.0	21.6	16.9	Diurnal Maximum		

P - Power Failure
 All monthly, daily, and diurnal averages have been calculated using scalar methods

Hourly Standard Deviations

Wind Direction (WD) - deg
Smoky Heights - December 2015

Maximum Value: 96.9 deg on Dec 23 12:00																								Hours in Service: 744	
Minimum Value: 2.4 deg on Dec 2 14:00																								Hours of Data: 737	
Percentiles: P ₁ = 2.9 P ₁₀ = 5.8 Q ₁ = 8.1 Median = 12.6 Q ₃ = 21.5 P ₉₀ = 42.1 P ₉₉ = 77.8																								Hours of Missing Data: 7	
																								Hours of Calibration: 0	
																								Percent Operational Time: 99.1	
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-Dec	8	10	20	20	23	20	17	15	17	18	21	29	12	31	22	10	10	16	39	16	18	23	31	18	38.8
2-Dec	13	18	19	22	11	19	18	9	21	25	34	5	4	2	5	6	8	11	6	13	6	69	62	71	71.4
3-Dec	27	15	11	61	25	26	26	27	45	27	21	11	9	7	13	23	9	11	13	6	5	8	8	4	60.9
4-Dec	7	13	15	64	14	17	7	11	14	24	12	36	44	33	18	7	6	7	17	9	14	11	8	20	64.0
5-Dec	8	10	12	33	36	18	15	61	17	40	49	42	25	6	11	6	8	8	7	5	5	6	6	7	60.7
6-Dec	8	9	81	85	72	51	36	8	22	11	16	9	29	21	31	51	64	69	41	32	33	10	20	11	84.6
7-Dec	11	13	37	77	58	42	28	55	62	66	18	14	6	7	5	5	15	12	4	6	15	3	3	11	76.7
8-Dec	5	4	8	9	14	28	23	14	43	28	53	51	10	11	43	42	8	58	21	6	6	9	8	10	58.2
9-Dec	8	36	54	13	30	25	15	20	22	7	16	22	29	5	7	81	15	11	8	6	13	88	43	59	88.2
10-Dec	67	41	34	32	18	9	16	16	76	12	85	47	37	21	10	6	6	6	8	6	8	11	10	17	85.4
11-Dec	9	8	9	10	10	12	19	51	12	11	7	11	20	20	12	15	14	20	7	9	10	15	41	65	65.5
12-Dec	33	31	35	36	37	54	38	9	12	6	12	9	14	9	37	27	23	9	8	10	9	11	13	11	54.4
13-Dec	14	20	21	12	10	12	11	11	19	10	11	11	10	11	9	14	17	22	57	16	8	40	44	7	57.1
14-Dec	9	33	9	29	25	4	6	3	3	3	4	6	7	5	11	15	8	5	5	8	8	13	18	29	33.1
15-Dec	11	13	24	26	21	10	51	16	9	4	2	3	4	5	5	P	P	P	P	P	P	P	5	7	50.9
16-Dec	4	12	12	6	5	5	4	7	15	17	4	4	3	5	6	19	9	4	4	3	4	6	16	34	33.5
17-Dec	5	13	16	38	24	79	33	17	35	10	12	7	13	24	9	7	7	7	13	7	8	8	10	7	79.0
18-Dec	9	7	6	7	7	7	8	9	8	8	6	6	8	12	11	7	11	6	7	27	13	24	7	7	26.9
19-Dec	5	7	8	6	6	4	6	4	19	8	6	10	12	4	6	4	12	7	10	14	16	8	12	6	18.7
20-Dec	7	5	11	17	8	7	76	22	37	26	20	80	58	18	9	10	16	13	12	6	6	13	11	22	80.2
21-Dec	14	8	8	12	22	21	8	30	9	12	27	22	16	14	13	15	22	10	16	35	25	14	11	12	35.2
22-Dec	13	95	15	8	5	8	8	9	10	15	11	10	14	18	11	12	11	13	14	19	19	19	12	11	95.2
23-Dec	14	17	40	18	23	43	39	43	25	11	64	97	48	43	12	14	15	10	13	12	17	12	11	13	96.9
24-Dec	10	9	11	11	11	10	11	16	22	26	13	20	16	15	16	16	27	29	53	65	81	21	71	65	80.7
25-Dec	69	51	13	13	19	9	12	13	10	7	8	6	7	4	4	15	8	4	25	11	6	14	10	21	69.0
26-Dec	18	56	37	19	12	8	20	9	8	19	15	11	8	16	30	63	13	68	49	18	45	95	51	30	95.1
27-Dec	13	21	11	24	18	6	11	20	13	18	16	14	11	16	14	19	8	11	12	12	81	36	20	12	80.7
28-Dec	46	42	44	36	22	27	75	14	13	11	21	21	8	6	14	12	9	8	22	10	10	12	7	6	74.6
29-Dec	5	6	6	4	8	11	12	14	10	17	9	9	7	6	12	6	8	6	7	8	17	13	9	41	40.6
30-Dec	17	16	20	12	13	31	17	45	17	33	13	20	35	9	17	6	16	20	6	14	7	15	9	20	44.5
31-Dec	11	10	19	6	5	6	12	7	7	21	7	22	22	3	4	13	35	25	42	18	6	5	5	9	42.3
69.0	95.2	81.0	84.6	71.9	79.0	76.3	60.7	76.3	66.0	85.4	96.9	57.8	43.2	43.3	80.7	64.3	68.8	57.1	64.7	80.7	95.1	70.9	71.4		
P - Power Failure																									

PAZA

Beaverlodge Station

Monthly Summary Tables, Graphs and
Roses

Hourly Averages

Sulphur Dioxide (SO₂) - ppb Beaverlodge - December 2015

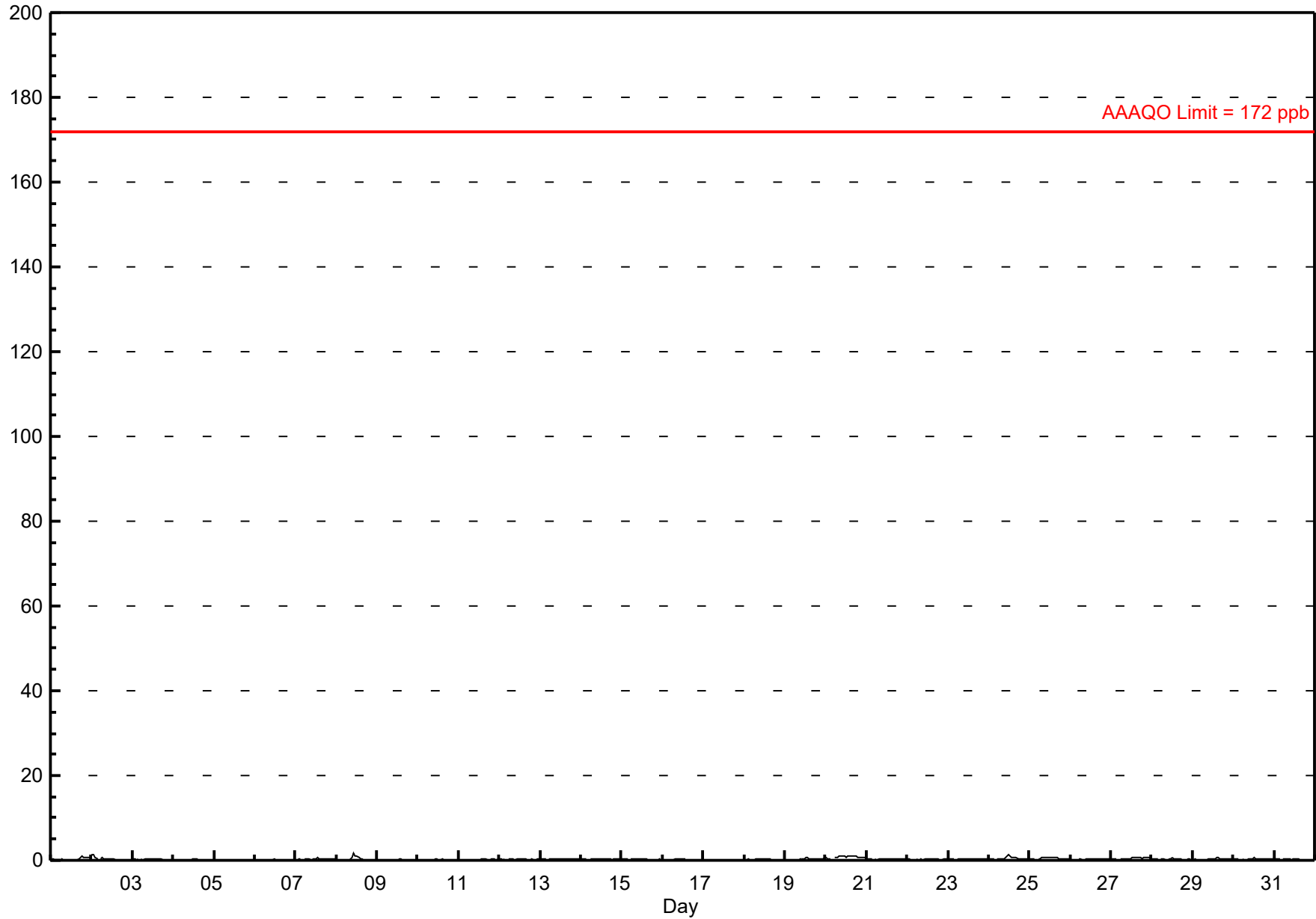
Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 1.6 ppb on Dec 8 11:00	Maximum Daily Average: 0.8 ppb on Dec 20		Hours of Data:	710
Minimum Value: 0 ppb on Dec 5 01:00	Minimum Daily Average: 0.1 ppb on Dec 5		Hours of Missing Data:	34
Maximum Diurnal Average: 0.4 ppb at hour 13	Minimum Diurnal Average: 0.2 ppb at hour 6		Hours of Calibration:	34
Monthly Average: 0.26 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.3 P ₉₀ = 0.5 P ₉₉ = 1.1		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0.3	0.9	
2-Dec	2	1	1	0	A	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.5	
3-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
4-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	
5-Dec	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	0.1	
6-Dec	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	
7-Dec	0	0	0	0	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.3	0.5	
8-Dec	0	0	0	0	A	0	0	0	0	1	2	1	1	1	0	0	0	0	0	0	0	0	0	0.3	1.6	
9-Dec	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	
10-Dec	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	
11-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2	
12-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
13-Dec	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	
14-Dec	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	
15-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
16-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0.2	0.3	
17-Dec	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	
18-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
19-Dec	0	0	0	0	A	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0.3	0.6	
20-Dec	1	0	0	0	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1	
21-Dec	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	0.5	
22-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5	
23-Dec	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	0.5	
24-Dec	0	0	0	0	A	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	1	0	0.5	1.2	
25-Dec	0	0	0	0	A	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0.5	0.7	
26-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
27-Dec	0	0	0	0	A	0	0	0	0	0	0	1	1	1	1	1	1	0	1	1	1	1	0	0.5	0.8	
28-Dec	0	0	0	0	A	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6	
29-Dec	0	0	0	0	A	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0.3	0.5	
30-Dec	0	0	0	0	A	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0.3	0.6	
31-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
	0.3	0.2	0.2	0.2	--	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	Diurnal Average		
	1.5	1.3	0.5	0.5	--	0.7	0.6	0.8	0.9	0.9	1.6	1.2	1.0	0.9	0.9	1.1	1.1	1.0	0.8	0.7	0.7	0.7	0.7	Diurnal Maximum		

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

Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Beaverlodge - December 2015



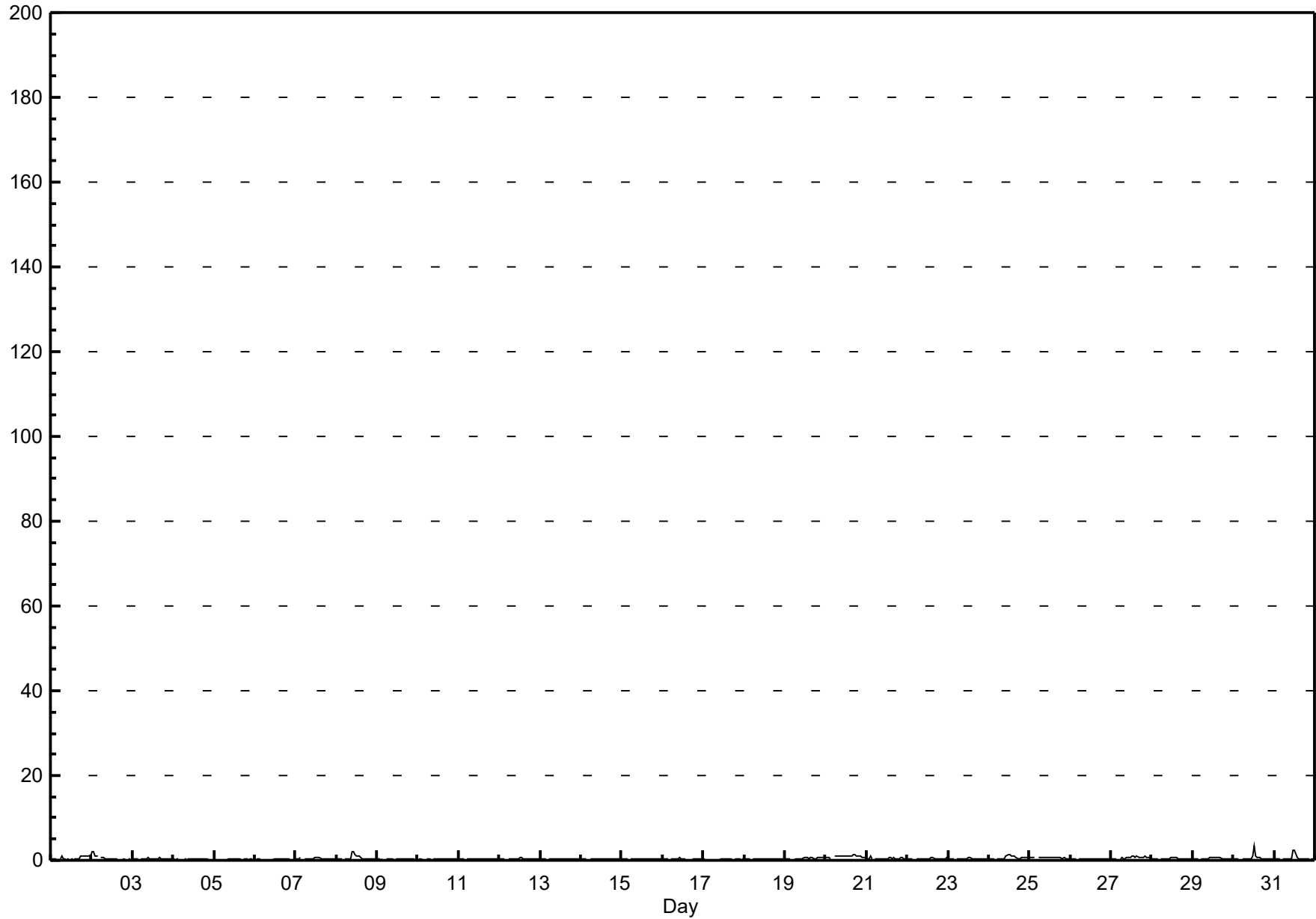
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb Beaverlodge - December 2015

Maximum Value: 3.3 ppb on Dec 30 13:00		Maximum Daily Average: 1.0 ppb on Dec 20		Hours in Service: 744																						
Minimum Value: 0 ppb on Dec 5 02:00		Minimum Daily Average: 0.2 ppb on Dec 5		Hours of Data: 710																						
Maximum Diurnal Average: 0.7 ppb at hour 13		Minimum Diurnal Average: 0.3 ppb at hour 6		Hours of Missing Data: 34																						
Monthly Average: 0.40 ppb		Percentiles: P ₁ = 0.1 P ₁₀ = 0.2 Q ₁ = 0.2 Median = 0.3 Q ₃ = 0.5 P ₉₀ = 0.7 P ₉₉ = 1.8		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-Dec	0	0	0	0	A	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0.5	1.2	
2-Dec	2	2	1	1	A	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	2.2	
3-Dec	1	0	0	0	A	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0.4	0.8	
4-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
5-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
6-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
7-Dec	0	0	0	1	A	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0.4	0.7	
8-Dec	0	0	0	0	A	0	0	0	0	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0.5	2.0	
9-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
10-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
11-Dec	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	0.3	
12-Dec	0	0	0	0	A	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0.3	0.5	
13-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.5	
14-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.5	
15-Dec	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	0.5	
16-Dec	0	0	0	0	A	0	0	0	0	0	1	0	0	0	C	C	C	0	0	0	0	0	0	0.3	0.7	
17-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
18-Dec	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	
19-Dec	0	0	0	0	A	0	0	0	0	0	0	1	1	1	0	1	1	1	0	0	1	1	1	1	0.4	0.8
20-Dec	1	1	1	0	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.4	
21-Dec	0	0	1	0	A	0	0	0	0	0	0	1	0	1	1	0	1	0	0	0	1	1	1	0.5	1.1	
22-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0.3	0.6	
23-Dec	0	0	0	0	A	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0.4	0.5	
24-Dec	0	0	0	0	A	0	0	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	0.6	1.4	
25-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0.6	0.8	
26-Dec	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	0.5	
27-Dec	0	0	0	0	A	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	1.0	
28-Dec	0	0	0	0	A	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0.4	0.7	
29-Dec	0	0	0	0	A	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0.4	0.7	
30-Dec	0	0	0	0	A	0	0	0	0	0	0	1	3	1	1	1	0	0	0	0	0	0	0	0.6	3.3	
31-Dec	0	0	0	0	A	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0.5	2.5	
		0.4	0.4	0.3	0.3	--	0.3	0.3	0.3	0.3	0.4	0.5	0.6	0.7	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.3	Diurnal Average	
		2.2	2.2	1.1	0.9	--	1.1	1.0	1.0	1.1	1.9	2.0	2.5	3.3	1.2	1.1	1.1	1.4	1.2	1.2	1.0	0.9	1.0	0.9	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																								

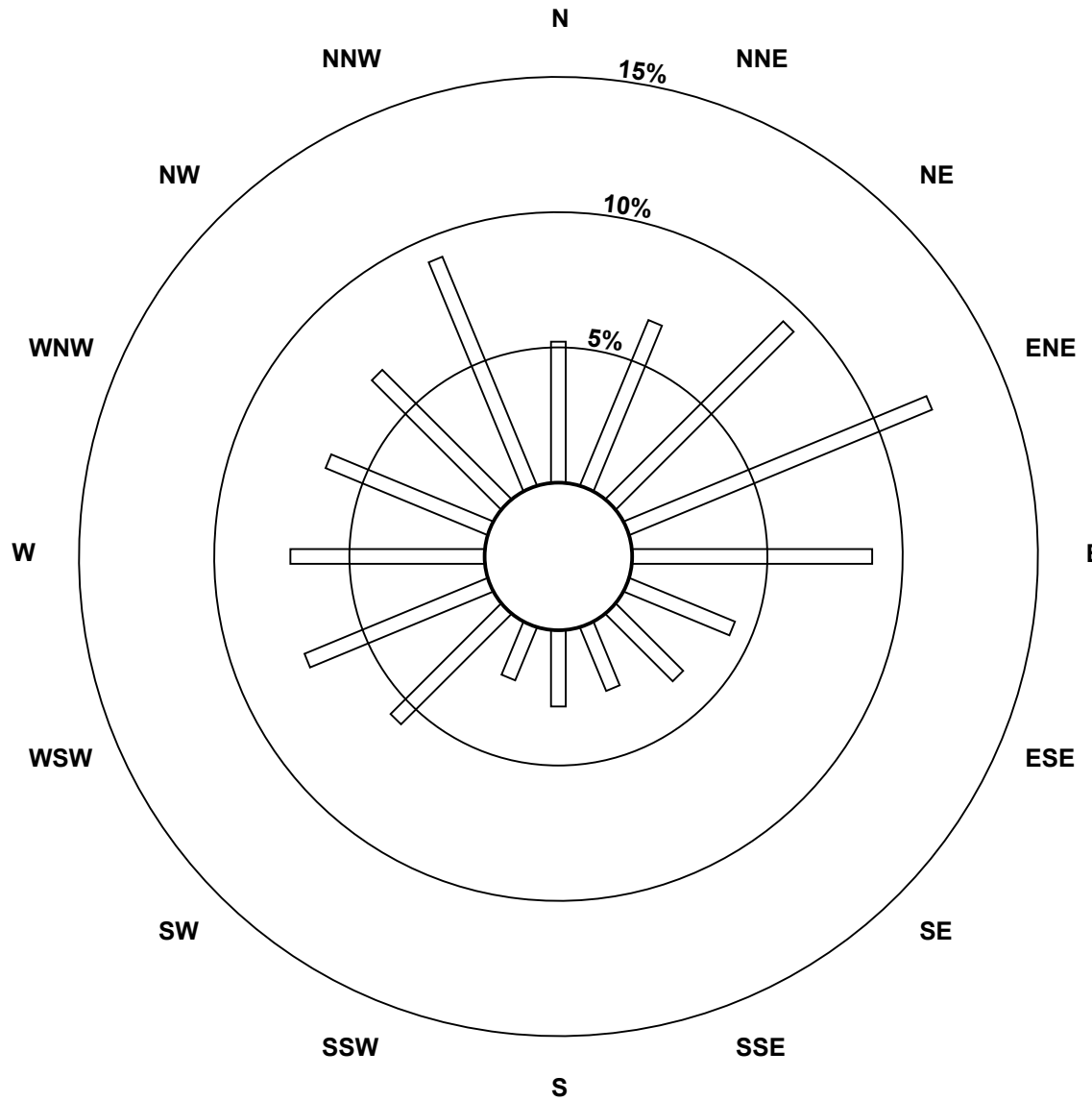
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Beaverlodge - December 2015

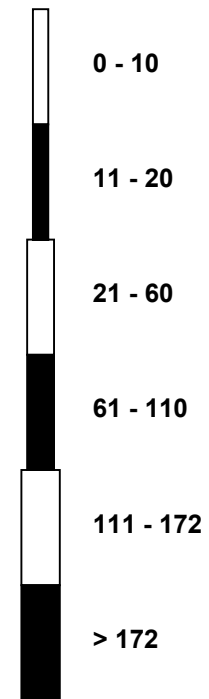


Pollutant Rose

Sulphur Dioxide (SO₂) - ppb
Beaverlodge - December 2015

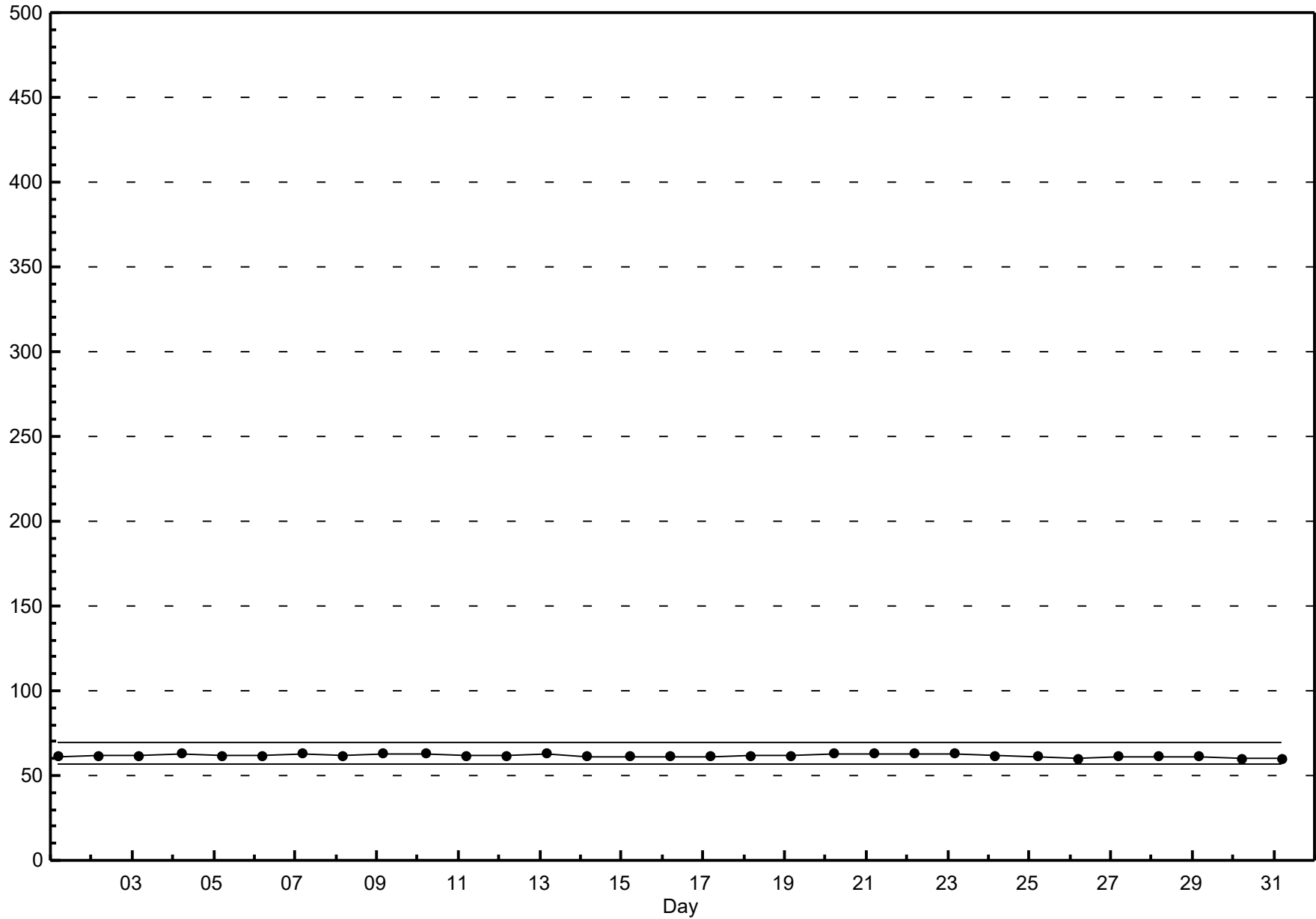


Pollutant Classes (ppb)



Span Responses

Sulphur Dioxide (SO₂)
Beaverlodge - December 2015



Hourly Averages

Nitrogen Dioxide (NO₂) - ppb Beaverlodge - December 2015

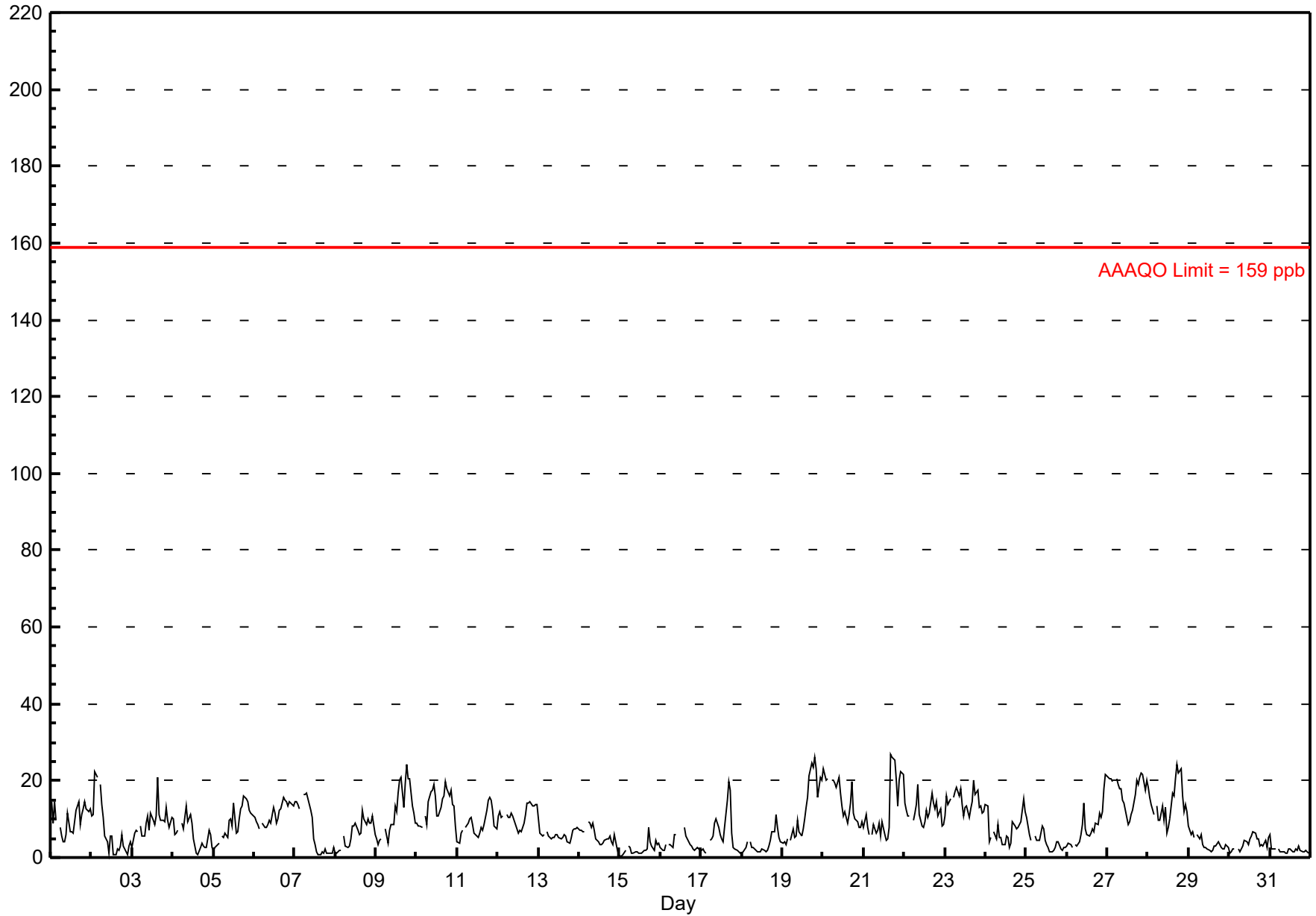
Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 744
Maximum Value: 26.8 ppb on Dec 21 17:00	Maximum Daily Average: 17.2 ppb on Dec 27
Minimum Value: 0 ppb on Dec 15 02:00	Hours of Data: 709
Maximum Diurnal Average: 11.5 ppb at hour 18	Hours of Missing Data: 35
Monthly Average: 8.54 ppb	Hours of Calibration: 35
Minimum Daily Average: 2.0 ppb on Dec 31	Percent Operational Time: 100.0
Minimum Diurnal Average: 6.4 ppb at hour 14	
Percentiles: P ₁ = 0.8 P ₁₀ = 1.9 Q ₁ = 3.8 Median = 7.6 Q ₃ = 12.2 P ₉₀ = 16.9 P ₉₉ = 24.2	

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	14	9	14	10	A	8	6	4	4	6	12	7	7	6	9	12	14	9	11	13	14	13	12	13	9.8	14.5
2-Dec	11	11	22	21	A	19	14	10	5	4	1	6	5	1	1	2	2	3	6	3	2	1	3	4	6.9	22.3
3-Dec	3	6	7	7	A	8	6	6	9	11	7	12	10	8	11	21	11	10	10	9	13	10	8	11	9.2	21.1
4-Dec	10	6	6	7	A	9	7	10	14	9	11	9	5	3	1	1	3	4	3	3	3	7	6	3	6.1	13.5
5-Dec	2	3	3	4	A	5	5	6	5	10	10	8	14	6	7	10	13	13	16	15	15	12	12	11	9.0	16.1
6-Dec	11	9	8	8	A	9	8	8	9	10	9	13	12	9	10	12	13	16	15	15	14	14	14	14	11.2	15.6
7-Dec	15	15	14	13	A	16	17	17	15	12	10	5	4	1	1	1	1	1	2	1	1	1	1	3	7.2	16.6
8-Dec	1	1	2	2	A	5	3	2	3	5	8	8	9	7	6	6	12	10	9	10	9	9	11	6	6.3	12.2
9-Dec	5	3	4	5	A	7	5	4	7	9	8	13	12	17	20	21	13	20	24	20	21	13	11	9	11.9	24.2
10-Dec	9	8	8	8	A	11	9	14	17	18	19	16	11	11	13	15	16	20	18	16	18	14	13	8	13.4	19.9
11-Dec	4	4	6	7	A	8	9	10	10	9	6	6	5	6	8	7	8	12	15	16	15	12	8	7	8.7	15.7
12-Dec	11	12	11	11	A	11	10	10	12	11	9	7	6	7	7	9	11	14	14	14	13	13	14	14	11.0	14.5
13-Dec	10	6	6	6	A	7	5	5	5	5	6	6	5	5	5	6	6	4	4	5	7	8	7	8	6.0	10.0
14-Dec	7	7	7	7	A	9	9	8	9	7	5	4	3	3	4	4	5	5	6	4	3	6	2	1	5.4	9.4
15-Dec	0	0	1	2	A	3	3	1	1	1	2	1	1	1	2	2	2	8	4	3	2	5	3	4	2.3	8.0
16-Dec	2	2	2	3	A	3	3	2	6	6	C	C	C	C	8	6	5	3	3	2	2	2	2	2	3.5	7.9
17-Dec	2	2	1	1	A	4	5	6	9	10	8	6	5	4	8	15	20	17	6	2	2	2	1	1	6.0	19.7
18-Dec	1	2	3	4	A	4	3	3	2	2	1	2	2	2	2	2	3	5	7	7	11	8	5	4	3.5	11.1
19-Dec	4	4	3	5	A	5	7	5	6	10	7	6	7	10	13	16	21	25	24	26	23	16	21	20	12.3	26.1
20-Dec	23	21	20	20	A	20	20	20	18	21	17	13	11	12	9	11	14	20	11	10	9	8	8	9	15.1	23.0
21-Dec	8	11	8	6	A	6	8	7	7	9	6	9	6	5	5	8	27	26	25	20	14	20	22	22	12.4	26.8
22-Dec	14	12	11	11	A	10	12	14	19	11	8	8	9	12	11	11	17	14	13	15	11	13	8	8	11.8	18.9
23-Dec	11	16	14	15	A	16	17	18	16	18	14	11	13	13	10	13	14	20	16	18	13	13	11	12	14.5	20.0
24-Dec	14	13	4	5	A	7	5	8	5	5	3	3	6	5	3	4	9	8	8	8	9	9	15	12	7.4	15.1
25-Dec	11	8	6	4	A	6	5	4	5	8	7	4	3	2	2	1	2	2	4	4	2	2	2	2	4.3	10.6
26-Dec	3	4	3	3	A	3	3	4	6	9	14	7	6	5	6	7	7	9	9	11	11	12	18	22	7.9	21.7
27-Dec	21	21	20	20	A	21	19	18	18	15	14	10	9	9	11	12	16	20	19	21	22	22	18	20	17.2	22.0
28-Dec	18	16	14	11	A	13	10	10	13	10	13	6	8	10	17	16	20	24	22	23	16	12	14	12	14.3	24.3
29-Dec	8	6	7	5	A	6	5	6	3	3	2	2	2	2	2	3	3	4	3	3	2	2	3	3	3.8	8.3
30-Dec	1	2	2	2	A	2	1	2	3	4	4	3	5	6	7	6	5	5	3	3	3	4	3	5	3.6	6.8
31-Dec	6	2	2	2	A	2	1	2	2	1	1	2	2	2	2	2	2	3	2	2	2	2	1	1	2.0	5.9
	8.3	7.9	7.8	7.6	--	8.6	7.8	7.9	8.5	8.6	8.1	7.2	6.7	6.4	7.0	8.5	10.2	11.5	10.7	10.4	9.7	9.2	9.0	8.7	Diurnal Average	
	23.0	21.5	22.3	21.0	--	20.7	20.3	19.5	18.9	20.7	18.9	16.2	14.3	16.8	20.2	21.1	26.8	26.2	25.3	26.1	23.1	21.8	22.4	21.8	Diurnal Maximum	

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

Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Beaverlodge - December 2015



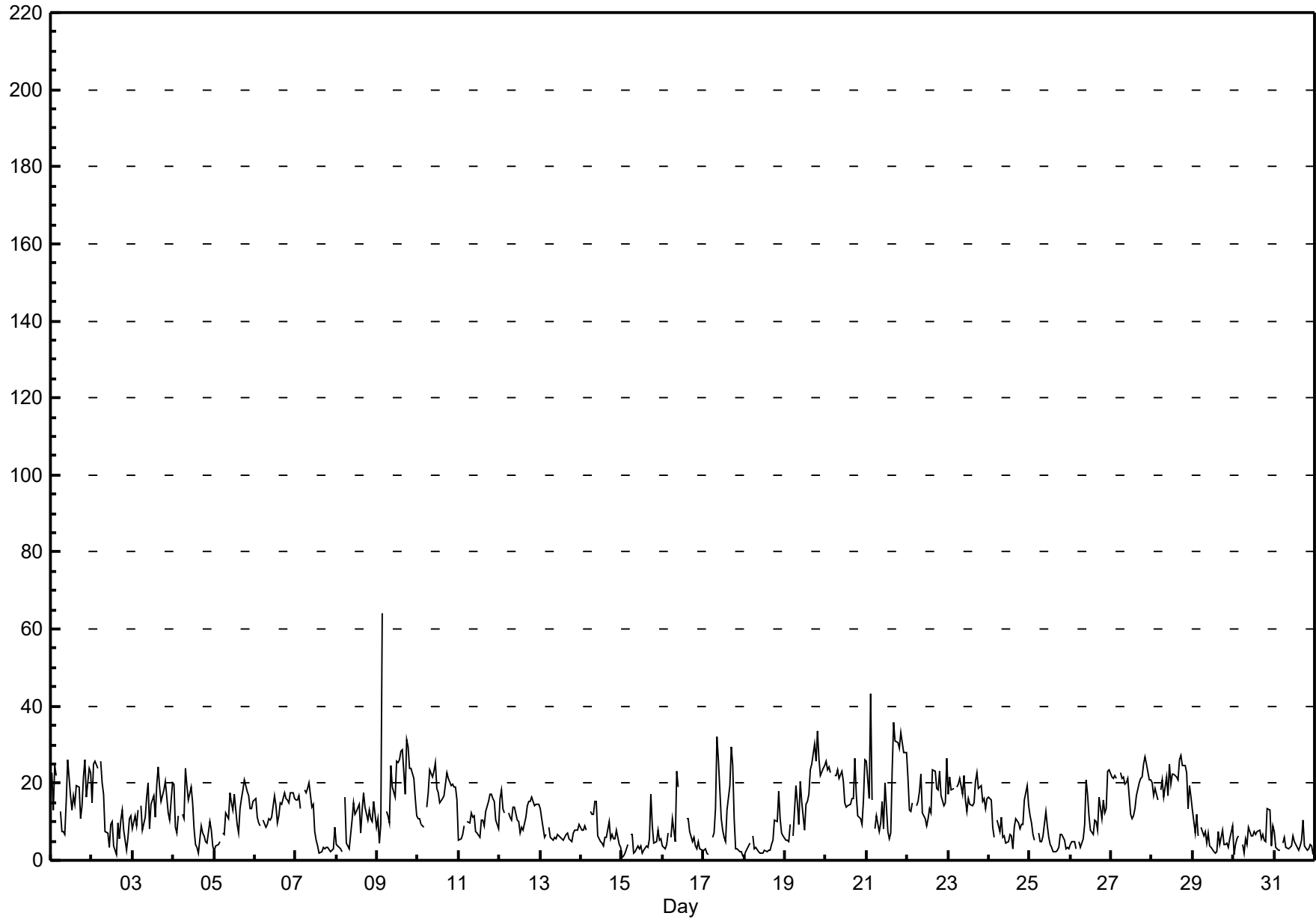
Hourly Maximums

Nitrogen Dioxide (NO₂) - ppb Beaverlodge - December 2015

Maximum Value: 64.3 ppb on Dec 9 04:00		Maximum Daily Average: 21.4 ppb on Dec 9		Hours in Service: 744																						
Minimum Value: 1 ppb on Dec 15 01:00		Minimum Daily Average: 4.1 ppb on Dec 31		Hours of Data: 709																						
Maximum Diurnal Average: 15.3 ppb at hour 18		Minimum Diurnal Average: 9.2 ppb at hour 14		Hours of Missing Data: 35																						
Monthly Average: 12.16 ppb		Percentiles: P ₁ = 1.6 P ₁₀ = 3.3 Q ₁ = 5.9 Median = 10.8 Q ₃ = 16.9 P ₉₀ = 22.8 P ₉₉ = 31.0		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-Dec	23	13	25	22	A	13	7	8	7	15	26	17	13	17	15	19	19	11	14	22	26	16	24	23	17.1	26.1
2-Dec	15	25	26	24	A	26	20	17	7	7	3	9	10	4	1	10	5	10	13	8	3	6	11	12	11.9	25.8
3-Dec	8	12	9	13	A	14	8	11	16	20	8	15	17	11	19	24	19	15	18	20	17	12	11	20	14.7	24.2
4-Dec	20	9	7	12	A	12	11	24	19	16	19	15	8	4	3	2	9	7	6	5	4	10	8	4	10.2	23.7
5-Dec	2	4	4	5	A	7	7	12	11	18	15	13	17	9	7	14	16	18	21	18	17	14	13	15	12.0	20.8
6-Dec	16	11	10	9	A	10	8	9	11	10	11	17	14	10	12	15	14	18	16	16	15	17	17	16	13.2	17.6
7-Dec	16	16	17	14	A	18	18	19	20	14	15	7	5	4	2	2	3	3	3	3	2	2	3	8	9.3	20.0
8-Dec	4	4	3	2	A	16	4	3	7	11	15	12	13	14	7	13	17	14	11	13	11	10	15	8	9.9	17.4
9-Dec	11	4	9	64	A	13	12	10	24	19	16	26	25	26	28	29	17	31	29	24	24	21	16	11	21.4	64.3
10-Dec	11	11	9	9	A	14	17	24	22	23	25	19	17	15	16	17	20	23	21	19	20	19	19	16	17.6	25.3
11-Dec	5	6	7	9	A	10	10	12	11	12	7	7	6	11	11	9	13	15	17	17	16	15	10	8	10.6	17.2
12-Dec	16	18	13	12	A	12	11	11	14	14	11	10	7	9	8	11	14	15	15	17	14	14	15	15	12.9	18.4
13-Dec	13	11	6	7	A	8	6	5	6	6	7	6	6	5	6	7	7	5	5	7	8	8	8	9	7.1	13.3
14-Dec	8	8	9	8	A	13	12	12	15	15	6	5	5	4	6	6	10	6	7	6	6	8	4	3	7.8	15.2
15-Dec	1	1	2	4	A	7	7	2	2	4	3	4	2	2	4	3	5	17	9	5	5	8	5	5	4.7	17.3
16-Dec	4	3	4	7	A	6	11	5	23	19	C	C	C	C	11	11	7	5	6	4	3	5	3	3	7.3	23.1
17-Dec	3	3	2	1	A	6	7	13	32	26	11	8	6	5	13	19	29	25	11	3	3	2	2	1	10.0	32.0
18-Dec	1	2	4	4	A	6	3	3	2	2	2	2	3	2	2	2	4	5	11	10	18	11	7	6	5.0	17.8
19-Dec	5	5	5	9	A	6	19	15	9	20	15	8	15	15	17	23	25	30	26	34	26	22	24	25	17.4	33.7
20-Dec	26	23	24	23	A	22	22	24	21	23	21	15	14	14	14	16	16	26	17	12	11	9	16	26	18.9	26.4
21-Dec	26	16	43	16	A	8	11	7	10	15	8	20	8	5	7	24	36	31	30	29	33	31	28	28	20.5	43.3
22-Dec	21	13	13	15	A	14	15	18	22	12	11	9	11	14	12	23	23	19	18	23	17	14	15	27	16.5	26.6
23-Dec	17	22	18	19	A	19	20	21	17	22	16	13	16	15	14	15	20	23	19	20	15	16	13	16	17.6	22.8
24-Dec	16	16	9	6	A	10	7	11	6	7	4	5	7	6	3	9	11	10	8	9	9	16	20	14	9.5	19.6
25-Dec	12	10	7	5	A	7	5	5	6	13	9	6	4	3	2	2	2	3	7	7	5	3	3	3	5.6	12.7
26-Dec	4	5	5	3	A	5	3	6	10	21	17	12	8	7	10	10	8	16	11	16	12	13	23	23	10.8	23.4
27-Dec	21	21	22	21	A	23	21	22	20	20	21	12	11	11	13	17	20	21	21	25	27	25	21	21	19.9	26.7
28-Dec	20	17	19	16	A	18	21	16	22	17	25	20	22	22	22	21	26	27	25	25	23	14	19	16	20.5	27.0
29-Dec	13	7	12	7	A	9	6	7	5	7	4	3	2	2	2	7	4	8	4	4	4	3	5	9	5.9	13.0
30-Dec	2	4	6	6	A	4	2	5	4	9	6	6	7	7	8	8	6	7	5	5	13	13	4	9	6.4	13.4
31-Dec	8	3	3	3	A	4	6	3	3	3	4	6	5	3	2	4	5	11	4	3	3	4	4	2	4.1	10.5
		11.8	10.4	11.3	12.1	--	11.7	10.9	11.6	13.1	14.2	12.0	10.8	10.1	9.2	9.7	12.6	14.0	15.3	13.8	13.7	13.2	12.4	12.5	13.0	Diurnal Average
		25.7	25.0	43.3	64.3	--	25.8	22.2	23.7	32.0	26.0	25.9	25.8	25.4	26.3	28.5	28.7	35.8	31.4	30.5	33.7	33.3	30.6	28.0	28.1	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								

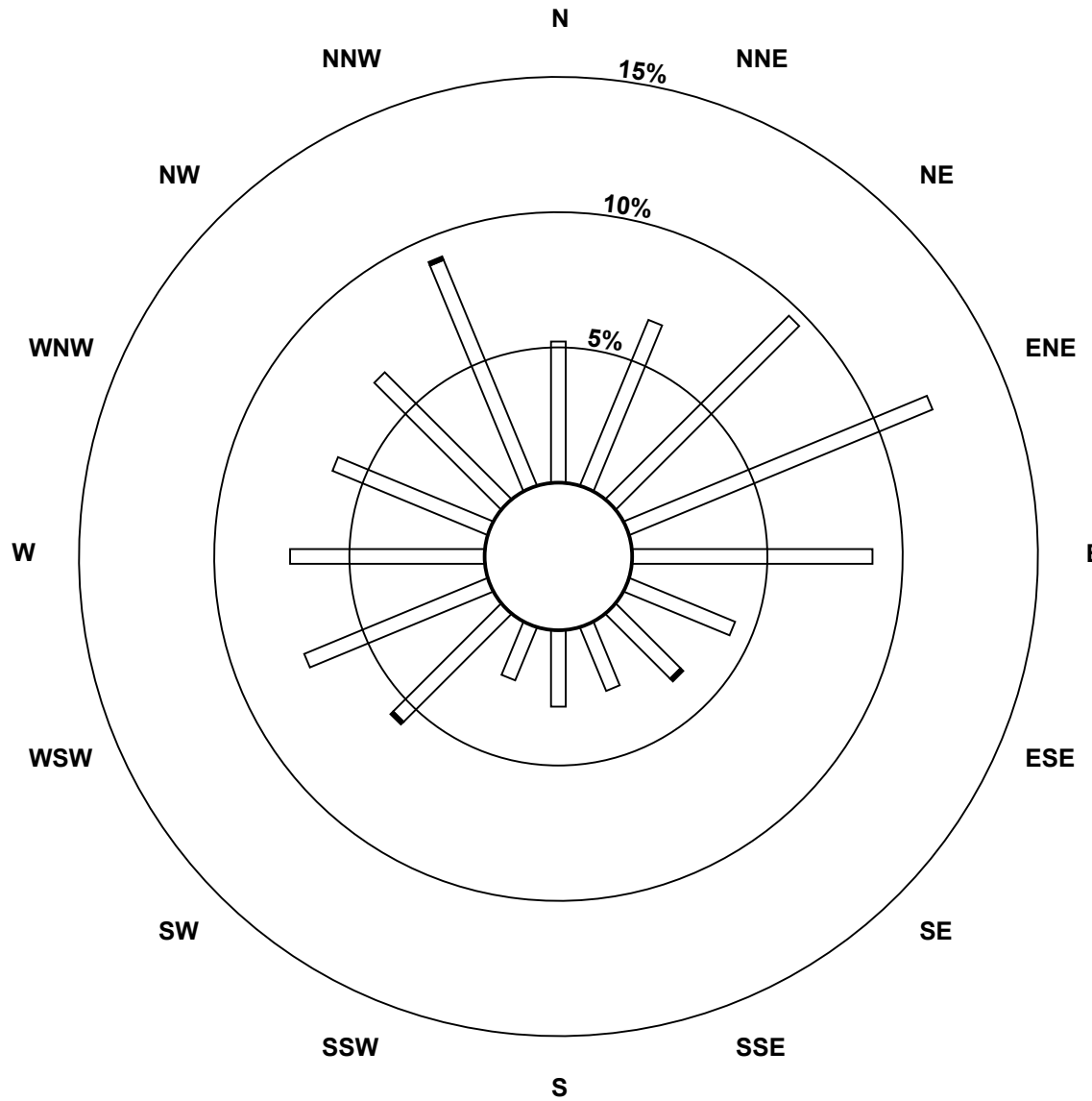
Hourly Maximums

Nitrogen Dioxide (NO₂) - ppb
Beaverlodge - December 2015

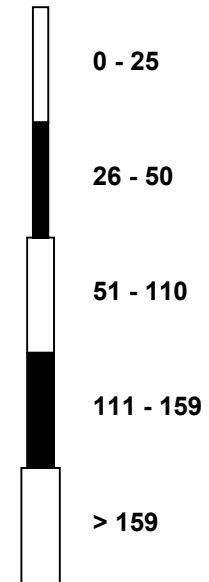


Pollutant Rose

Nitrogen Dioxide (NO₂) - ppb
Beaverlodge - December 2015

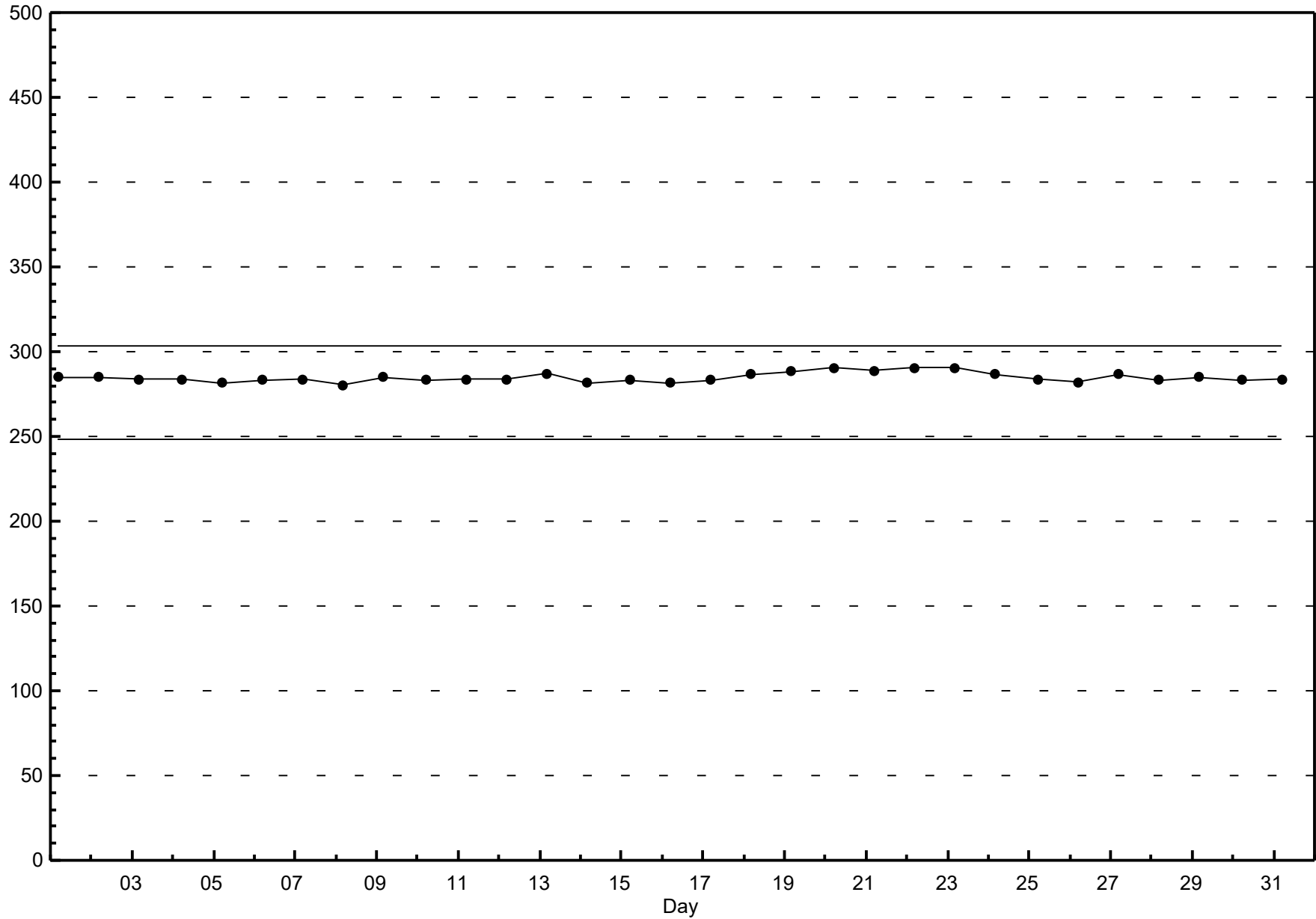


Pollutant Classes (ppb)



Span Responses

Nitrogen Dioxide (NO₂)
Beaverlodge - December 2015





Peace Airshed Zone Association

Hourly Averages

Nitrogen Oxide (NO) - ppb

Beaverlodge - December 2015

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 30.0 ppb on Dec 19 20:00	Maximum Daily Average: 7.5 ppb on Dec 20		Hours of Data:	709
Minimum Value: 0 ppb on Dec 2 21:00	Minimum Daily Average: 0.1 ppb on Dec 15		Hours of Missing Data:	35
Maximum Diurnal Average: 5.7 ppb at hour 12	Minimum Diurnal Average: 0.4 ppb at hour 6		Hours of Calibration:	35
Monthly Average: 2.36 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.3 Q ₃ = 2.4 P ₉₀ = 7.9 P ₉₉ = 22.3		Percent Operational Time:	100.0

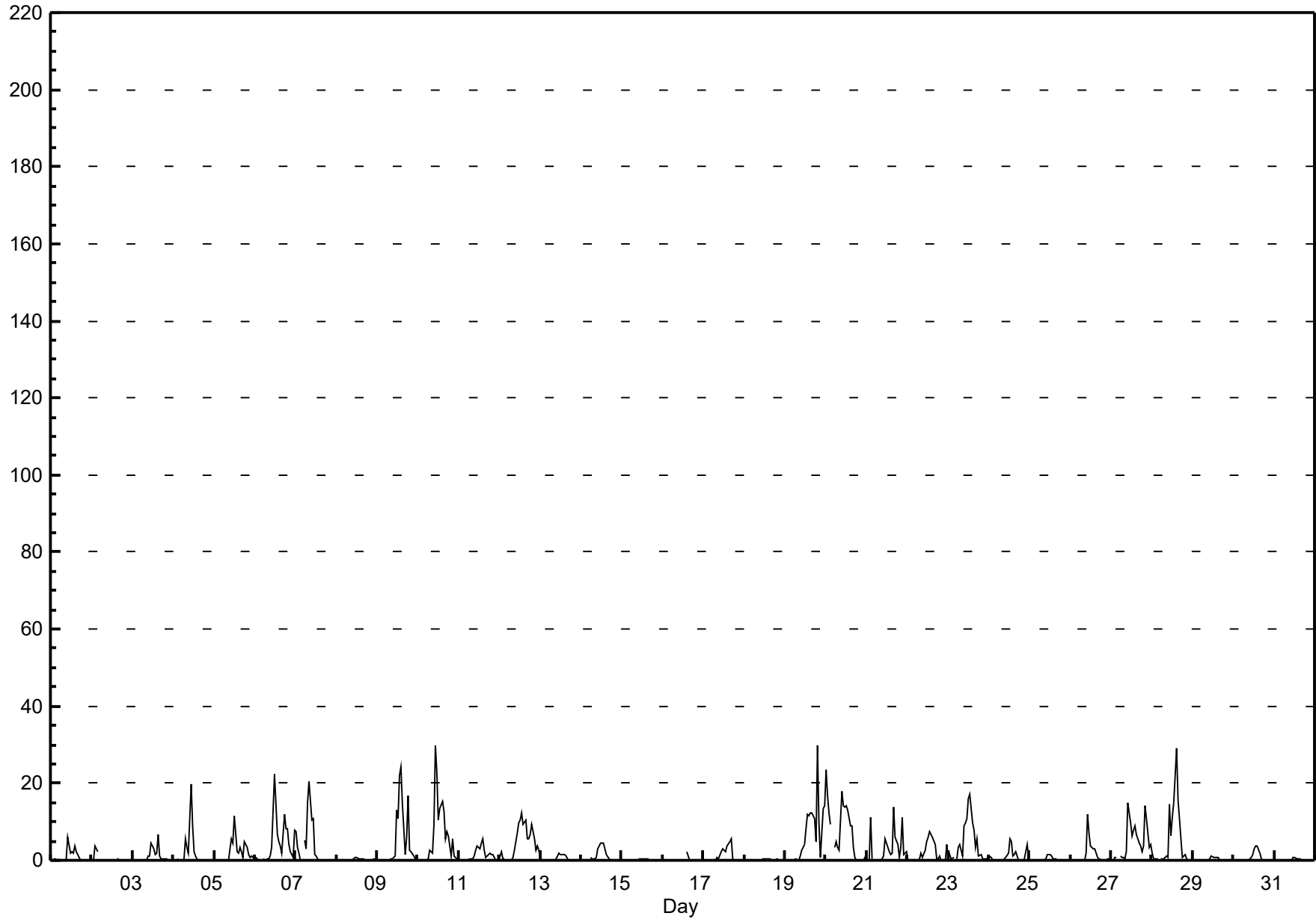
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	0	0	0	A	0	0	0	0	0	6	2	2	2	4	2	1	0	0	0	0	0	0	0	0.9	6.0
2-Dec	0	0	4	2	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	3.8
3-Dec	0	0	0	0	A	0	0	0	0	1	1	4	3	1	2	7	1	0	0	1	0	0	0	0	1.0	6.6
4-Dec	0	0	0	0	A	0	0	6	3	2	20	9	2	1	0	0	0	0	0	0	0	0	0	0	2.0	19.9
5-Dec	0	0	0	0	A	0	0	0	0	3	5	5	12	2	2	4	2	1	5	3	1	1	1	1	2.1	11.7
6-Dec	1	0	0	0	A	0	0	0	0	1	3	22	15	7	5	4	2	12	8	8	4	2	1	8	4.5	22.4
7-Dec	8	3	2	0	A	5	3	15	20	10	11	2	1	0	0	0	0	0	0	0	0	0	0	0	3.6	20.4
8-Dec	0	0	0	0	A	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0.2	0.9
9-Dec	0	0	0	0	A	0	0	0	0	0	1	13	11	22	24	15	1	6	17	3	2	1	0	0	5.1	24.1
10-Dec	0	0	0	0	A	0	0	3	2	9	30	23	11	13	15	13	6	8	6	1	6	1	1	0	6.4	29.9
11-Dec	0	0	0	0	A	0	0	1	1	1	2	4	3	5	6	3	1	1	2	2	1	1	0	0	1.4	5.6
12-Dec	1	2	0	0	A	0	0	0	1	2	7	10	10	12	9	11	6	6	7	9	6	3	4	3	4.7	12.1
13-Dec	1	0	0	0	A	0	0	0	0	0	1	2	2	1	1	1	0	0	0	0	0	0	0	0	0.5	1.7
14-Dec	0	0	0	0	A	1	1	0	0	1	3	5	4	4	3	1	0	0	0	0	0	0	0	0	1.1	4.6
15-Dec	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
16-Dec	0	0	0	0	A	0	0	0	0	0	C	C	C	C	2	1	0	0	0	0	0	0	0	0	0.2	2.2
17-Dec	0	0	0	0	A	0	0	0	1	1	2	3	3	2	4	5	6	0	0	0	0	0	0	0	1.1	5.6
18-Dec	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
19-Dec	0	0	0	0	A	0	0	0	0	1	3	4	8	12	11	12	12	11	5	30	10	1	13	14	6.4	30.0
20-Dec	24	17	12	9	A	3	5	3	2	18	14	14	14	13	9	9	3	1	0	0	0	0	0	1	7.5	23.6
21-Dec	0	0	11	0	A	0	0	0	0	1	1	6	3	2	1	2	14	6	4	1	3	11	1	2	3.1	13.7
22-Dec	0	0	0	0	A	0	0	0	2	1	3	5	6	8	7	6	4	1	0	1	0	0	0	4	2.1	7.6
23-Dec	0	1	1	1	A	0	3	4	1	9	10	11	16	17	10	8	3	6	1	1	0	0	0	0	4.6	17.0
24-Dec	1	1	0	0	A	0	0	0	0	0	1	2	6	5	1	1	2	0	0	0	0	1	4	0	1.1	5.6
25-Dec	0	0	0	0	A	0	0	0	0	0	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0.3	1.7
26-Dec	0	0	0	0	A	0	0	0	0	2	12	7	4	3	3	2	1	0	0	0	0	0	0	0	1.5	11.9
27-Dec	0	0	1	1	A	1	1	1	1	2	15	10	6	8	9	7	5	4	2	4	14	11	3	4	4.7	14.9
28-Dec	2	0	1	0	A	0	0	1	1	1	15	6	11	15	29	16	11	6	1	2	0	0	0	0	5.1	29.2
29-Dec	0	0	0	0	A	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0.2	0.9
30-Dec	0	0	0	0	A	0	0	0	0	0	1	2	3	4	4	2	0	0	0	0	0	0	0	0	0.7	3.8
31-Dec	0	0	0	0	A	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0.1	0.7

1.2	0.8	1.1	0.5	--	0.4	0.5	1.1	1.2	2.2	5.7	5.7	5.4	5.4	5.3	4.3	2.7	2.2	1.9	2.1	1.6	1.1	1.0	1.3	Diurnal Average	
23.6	16.7	12.2	9.5	--	5.3	4.9	15.1	20.4	17.7	29.9	22.6	16.2	22.0	29.2	15.7	13.7	11.9	16.6	30.0	14.2	11.1	13.3	14.3	Diurnal Maximum	

C - Calibration A - Automated Daily Zero Span

Hourly Averages

Nitrogen Oxide (NO) - ppb
Beaverlodge - December 2015



Hourly Maximums

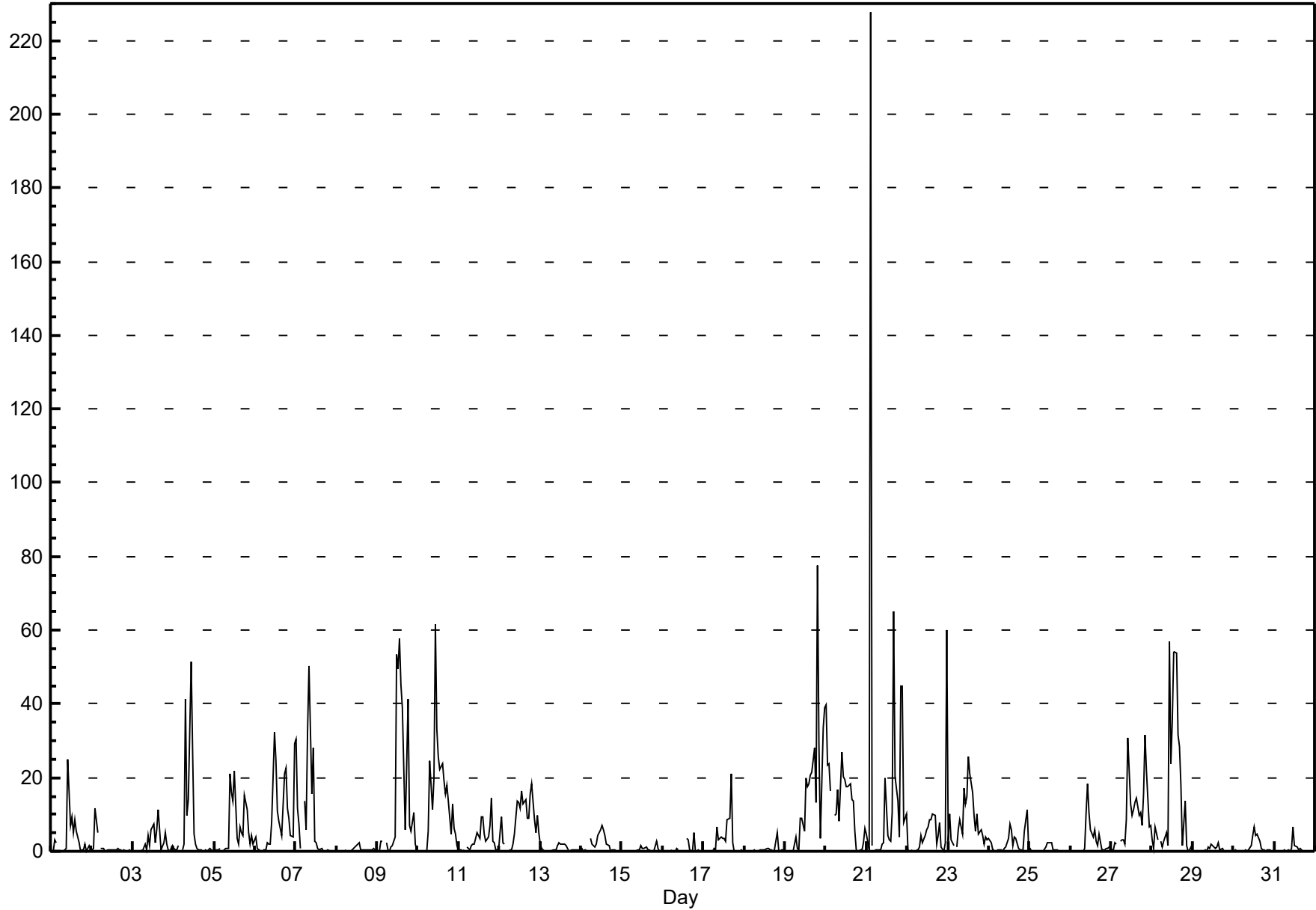
Nitrogen Oxide (NO) - ppb

Beaverlodge - December 2015

Maximum Value: 227.5 ppb on Dec 21 03:00		Maximum Daily Average: 21.3 ppb on Dec 21		Hours in Service: 744																							
Minimum Value: 0 ppb on Dec 31 04:00		Minimum Daily Average: 0.5 ppb on Dec 15		Hours of Data: 709																							
Maximum Diurnal Average: 12.8 ppb at hour 11		Minimum Diurnal Average: 1.4 ppb at hour 6		Hours of Missing Data: 35																							
Monthly Average: 6.00 ppb		Percentiles: P ₁ = 0.1 P ₁₀ = 0.1 Q ₁ = 0.3 Median = 1.2 Q ₃ = 6.0 P ₉₀ = 17.5 P ₉₉ = 56.3		Hours of Calibration: 35																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	0	0	3	2	A	0	0	0	1	1	25	7	10	5	9	5	2	0	0	0	2	0	1	1	3.3	25.1	
2-Dec	0	1	12	5	A	1	1	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1.1	11.7	
3-Dec	0	0	0	0	A	1	0	2	1	4	2	6	7	2	6	11	6	1	2	5	2	0	0	2	2.6	11.3	
4-Dec	1	0	0	2	A	0	2	41	10	14	51	27	5	2	1	0	0	0	0	0	0	1	1	0	6.9	51.5	
5-Dec	0	0	0	1	A	0	0	1	1	21	16	14	22	4	2	7	5	4	15	11	5	2	4	2	6.0	21.8	
6-Dec	4	1	0	0	A	1	0	2	2	2	8	32	25	11	8	6	4	21	22	12	9	4	4	29	9.1	32.5	
7-Dec	30	12	7	1	A	13	6	32	50	16	28	3	2	1	0	1	0	0	0	0	0	0	0	0	8.8	50.1	
8-Dec	0	0	0	0	A	0	0	0	0	0	1	1	2	2	1	1	1	0	0	0	0	1	0	0	0.5	2.2	
9-Dec	0	0	3	3	A	2	1	0	1	1	4	53	49	58	45	39	6	23	41	7	5	10	2	0	15.4	57.7	
10-Dec	0	0	0	0	A	0	6	25	11	20	61	33	26	22	24	19	16	18	14	5	13	6	5	2	14.1	61.5	
11-Dec	0	0	0	0	A	1	0	2	2	2	4	5	4	9	9	5	3	4	7	15	3	2	0	0	3.4	14.6	
12-Dec	5	9	2	2	A	0	0	0	2	5	13	13	12	16	13	14	9	9	16	18	9	5	10	5	8.2	18.3	
13-Dec	2	1	0	0	A	0	0	0	1	1	1	2	2	2	2	1	1	0	0	0	0	0	0	0	0.8	2.1	
14-Dec	1	0	0	0	A	3	2	2	1	2	4	6	7	6	4	2	2	0	0	0	0	0	0	0	1.9	7.2	
15-Dec	0	0	0	0	A	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	3	1	0	0	0.5	2.9	
16-Dec	0	0	0	0	A	0	0	0	1	1	C	C	C	C	4	3	0	0	5	0	0	0	0	0	0.8	5.3	
17-Dec	0	0	0	0	A	0	1	1	6	3	4	4	3	3	9	9	21	2	0	0	0	0	0	0	2.9	20.9	
18-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	1	1	0	0	0	1	5	0	0	0	0	0.5	5.1	
19-Dec	0	0	0	0	A	0	4	1	0	9	9	5	20	17	18	20	21	28	13	78	29	4	33	39	15.2	77.8	
20-Dec	40	23	24	16	A	10	10	17	8	27	20	20	18	18	18	14	14	6	0	0	0	0	2	6	13.5	39.7	
21-Dec	5	0	228	1	A	0	0	0	0	2	2	20	4	3	3	11	65	20	14	4	45	45	8	10	21.3	227.5	
22-Dec	0	0	0	0	A	0	1	1	4	2	4	6	7	9	9	10	10	2	4	8	1	0	2	60	6.1	59.9	
23-Dec	3	10	3	2	A	1	6	9	5	17	13	15	26	21	16	10	6	10	5	6	4	2	4	3	8.5	25.6	
24-Dec	4	2	0	0	A	0	0	0	0	1	1	4	7	6	2	4	4	1	0	1	0	5	11	1	2.4	11.4	
25-Dec	1	0	0	0	A	0	0	0	0	1	2	2	2	2	1	0	0	0	0	0	0	0	0	0	0.6	2.3	
26-Dec	0	0	0	0	A	0	0	0	1	11	18	11	6	4	6	3	1	5	0	1	1	1	1	1	3.1	18.5	
27-Dec	0	0	2	2	A	3	3	3	2	9	31	13	10	11	13	14	10	10	7	16	32	22	7	7	9.9	31.7	
28-Dec	3	1	7	3	A	3	1	3	5	1	57	24	36	54	54	31	28	18	2	13	2	0	0	1	15.1	56.8	
29-Dec	0	0	0	0	A	0	0	0	0	1	1	2	1	1	1	2	0	1	0	0	0	0	0	0	0.5	2.4	
30-Dec	0	0	0	0	A	0	0	0	0	1	1	4	7	4	5	3	1	0	1	0	0	0	0	0	1.2	6.6	
31-Dec	0	0	0	0	A	0	0	0	0	0	1	7	1	1	1	1	0	0	0	0	0	0	0	0	0.6	6.6	
		3.3	2.1	9.5	1.4	--	1.4	1.5	4.6	3.8	5.6	12.8	11.3	10.7	9.9	9.2	8.0	7.6	6.0	5.5	6.7	5.4	3.7	3.2	5.5	Diurnal Average	
		39.7	23.5	227.5	16.4	--	13.5	10.0	41.2	50.1	26.8	61.5	53.3	49.5	57.7	53.8	38.9	65.1	28.0	41.4	77.8	45.0	44.9	33.3	59.9	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

Hourly Maximums

Nitrogen Oxide (NO) - ppb
Beaverlodge - December 2015



Hourly Averages

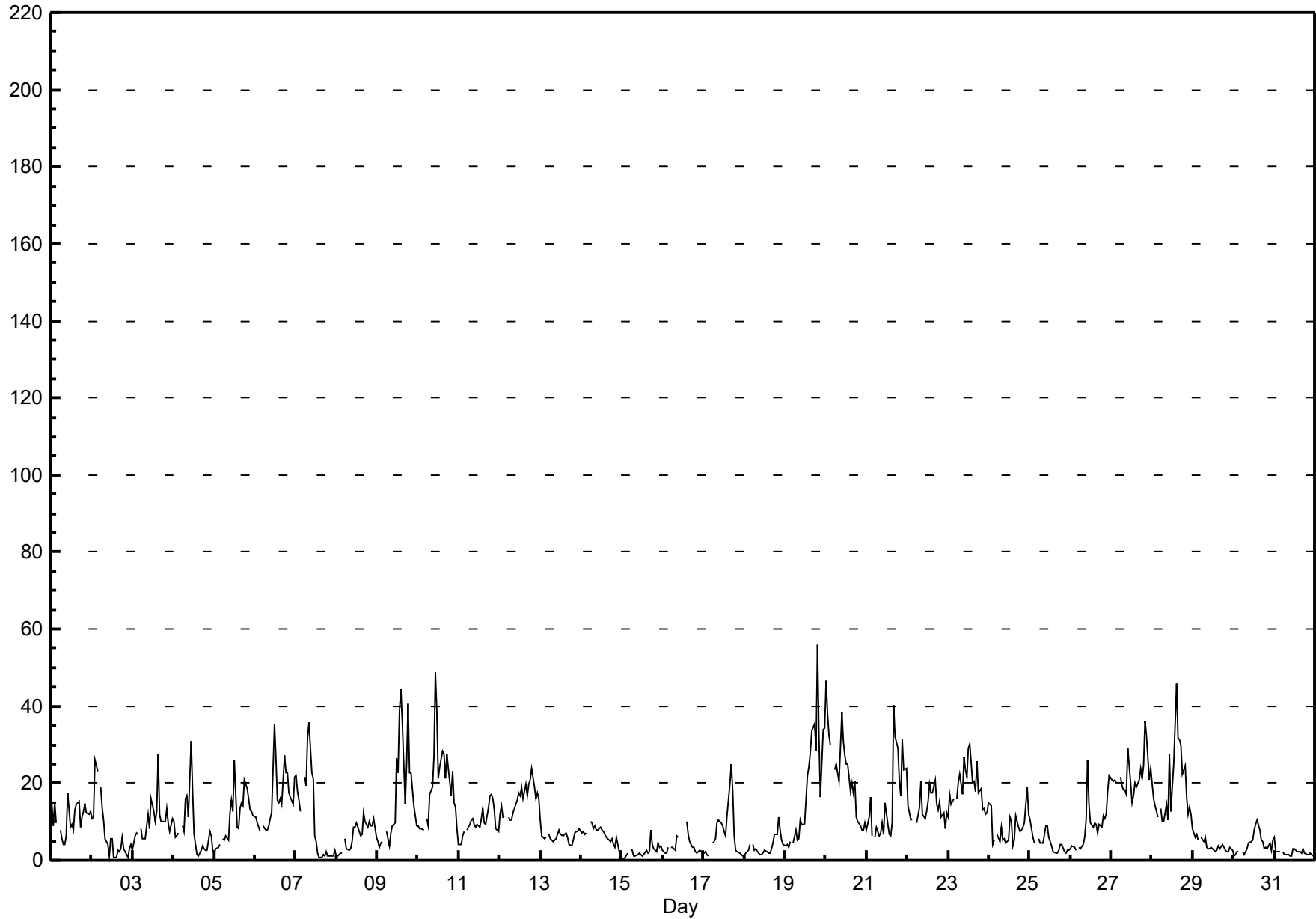
Oxides of Nitrogen (NO_x) - ppb

Beaverlodge - December 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 744
Maximum Value: 56.0 ppb on Dec 19 20:00	Maximum Daily Average: 22.5 ppb on Dec 20
Minimum Value: 0 ppb on Dec 15 02:00	Hours of Data: 709
Maximum Diurnal Average: 13.7 ppb at hour 11	Hours of Missing Data: 35
Monthly Average: 10.84 ppb	Hours of Calibration: 35
Minimum Daily Average: 2.1 ppb on Dec 31	Percent Operational Time: 100.0
Minimum Diurnal Average: 8.0 ppb at hour 4	
Percentiles: P ₁ = 0.8 P ₁₀ = 2.1 Q ₁ = 4.0 Median = 8.5 Q ₃ = 15.2 P ₉₀ = 23.1 P ₉₉ = 40.0	

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-Dec	14	9	15	10	A	8	6	4	4	6	18	9	9	8	13	14	15	9	11	13	14	12	12	13	10.7	17.6
2-Dec	11	11	26	23	A	19	14	10	5	4	1	6	6	1	1	2	2	3	6	3	2	1	3	4	7.2	26.0
3-Dec	3	6	7	7	A	8	5	6	9	12	8	16	13	10	13	28	12	10	10	10	13	10	8	11	10.1	27.5
4-Dec	10	6	6	7	A	9	8	16	17	11	31	18	7	4	2	1	3	4	3	3	3	7	6	3	8.0	31.1
5-Dec	2	3	4	4	A	6	5	6	5	12	15	13	26	8	8	14	15	14	21	19	16	13	13	12	11.0	26.0
6-Dec	11	10	9	8	A	9	8	8	9	11	12	35	26	16	15	16	14	27	23	23	17	17	14	22	15.6	35.5
7-Dec	22	18	16	13	A	22	19	32	36	23	21	6	5	2	1	1	1	1	2	1	1	1	1	3	10.7	35.8
8-Dec	1	1	2	2	A	5	3	3	3	5	9	9	10	7	6	7	12	10	9	10	9	9	11	6	6.4	12.3
9-Dec	5	3	4	5	A	8	5	4	7	9	10	26	23	39	44	35	14	25	41	23	23	14	12	9	16.9	44.2
10-Dec	9	8	8	8	A	11	9	17	19	27	49	39	21	24	28	28	21	27	24	17	23	15	14	8	19.8	48.8
11-Dec	4	4	6	7	A	8	9	11	11	9	9	9	8	11	13	10	9	14	17	17	16	13	8	7	10.1	17.2
12-Dec	12	14	11	11	A	11	10	10	12	13	16	17	17	19	16	20	17	20	21	24	19	16	18	16	15.7	23.9
13-Dec	10	6	6	6	A	7	5	5	5	6	7	8	7	6	7	7	6	4	4	5	7	8	8	8	6.4	10.5
14-Dec	7	7	7	7	A	10	10	8	9	8	8	9	8	8	7	6	5	5	6	4	3	6	2	1	6.5	10.2
15-Dec	0	0	1	2	A	3	3	1	1	1	2	2	1	2	2	2	2	8	4	3	2	5	3	4	2.4	8.0
16-Dec	2	2	2	3	A	3	3	2	6	6	C	C	C	C	10	7	5	3	3	2	2	2	2	2	3.7	10.1
17-Dec	2	2	1	1	A	4	5	6	10	10	10	9	8	6	12	20	25	18	6	2	2	2	1	1	7.1	25.2
18-Dec	1	2	3	4	A	4	3	3	2	2	2	2	2	2	2	2	3	5	7	7	11	8	5	4	3.6	11.1
19-Dec	4	4	3	5	A	5	8	5	6	11	9	10	16	22	24	28	34	35	28	56	33	16	34	34	18.7	56.0
20-Dec	47	38	32	30	A	23	25	23	21	38	31	27	25	25	18	20	17	21	11	10	9	8	8	10	22.5	46.6
21-Dec	8	11	17	6	A	6	8	7	7	10	7	15	9	7	6	10	40	32	29	21	17	31	23	24	15.2	40.3
22-Dec	14	12	11	11	A	10	12	14	21	12	11	13	15	20	17	18	21	14	13	15	11	12	8	12	13.8	21.0
23-Dec	11	17	14	16	A	16	20	22	17	27	23	22	29	30	20	20	18	26	18	19	13	14	12	12	19.0	30.4
24-Dec	15	14	4	5	A	7	5	9	5	6	4	5	11	10	4	5	11	8	8	8	9	10	19	12	8.4	19.0
25-Dec	11	8	6	4	A	6	5	4	5	9	9	6	5	4	2	2	2	2	4	4	2	2	2	2	4.6	10.6
26-Dec	3	4	3	3	A	3	3	4	6	11	26	14	10	9	10	9	7	9	9	11	11	12	18	22	9.4	26.1
27-Dec	21	21	21	20	A	22	19	18	18	17	29	20	15	17	20	19	21	24	21	25	36	32	21	24	21.8	36.1
28-Dec	20	16	14	11	A	14	10	10	14	10	28	13	19	25	46	32	31	30	23	24	16	12	14	12	19.3	46.0
29-Dec	8	6	7	5	A	6	5	6	3	3	3	3	3	2	3	4	3	4	3	3	2	2	3	3	4.0	8.3
30-Dec	1	2	2	2	A	2	1	2	3	5	5	5	8	9	10	8	5	5	3	3	3	4	3	5	4.3	10.5
31-Dec	6	2	2	2	A	2	1	2	2	1	1	3	3	2	2	2	2	3	2	2	2	2	1	1	2.1	5.9
	9.5	8.7	8.7	8.0	--	8.9	8.2	9.0	9.6	10.8	13.7	12.9	12.1	11.8	12.3	12.7	12.8	13.6	12.5	12.5	11.2	10.2	9.9	9.9	Diurnal Average	
	46.6	38.1	32.4	29.8	--	23.3	25.1	31.6	35.8	38.4	48.8	38.8	29.1	38.8	46.0	35.4	40.3	35.4	40.7	56.0	36.1	32.4	33.9	34.4	Diurnal Maximum	

C - Calibration A - Automated Daily Zero Span



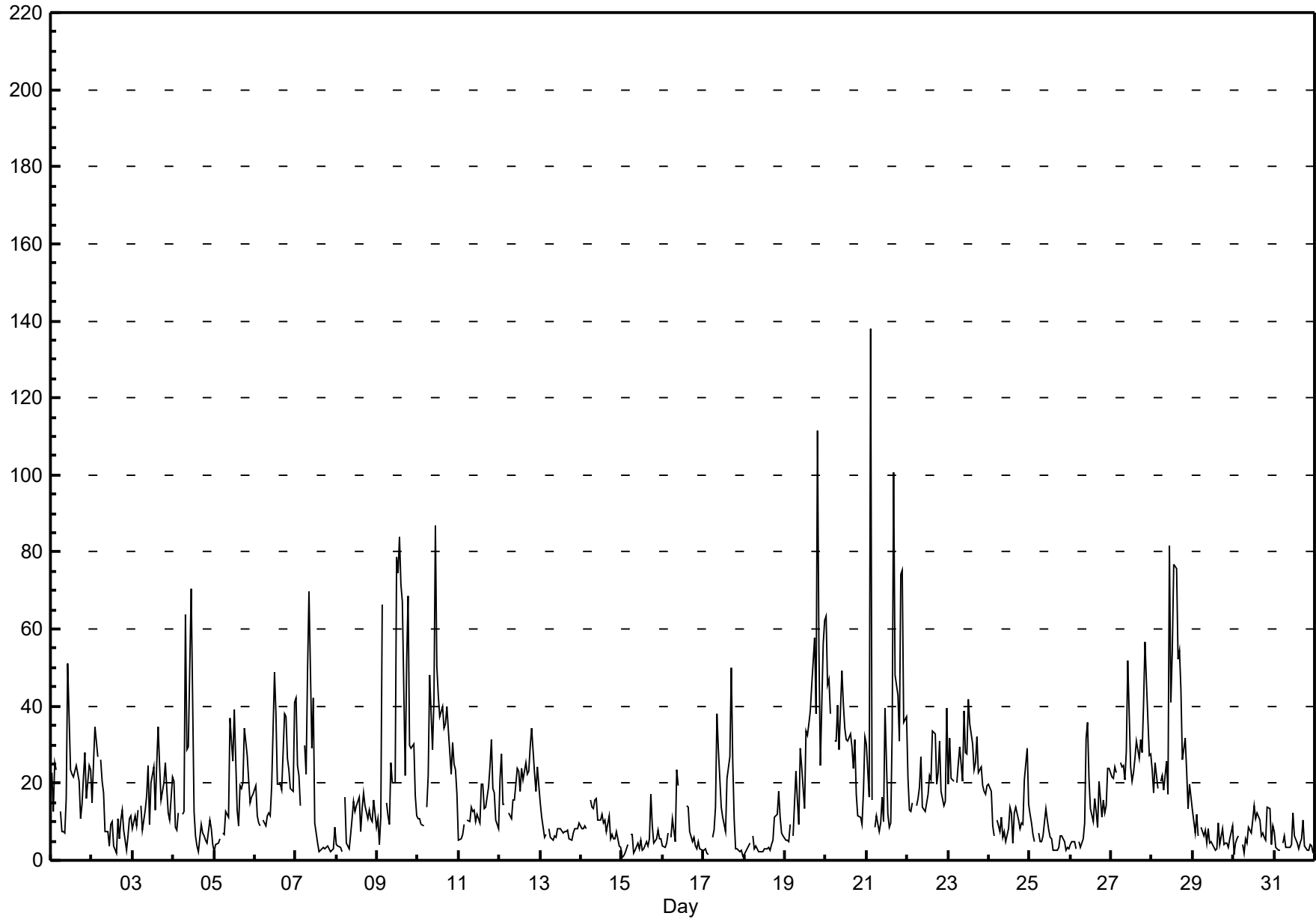
Hourly Maximums

Oxides of Nitrogen (NO_x) - ppb Beaverlodge - December 2015

Maximum Value: 137.9 ppb on Dec 21 03:00		Maximum Daily Average: 36.1 ppb on Dec 9		Hours in Service: 744																							
Minimum Value: 1 ppb on Dec 15 01:00		Minimum Daily Average: 4.7 ppb on Dec 31		Hours of Data: 709																							
Maximum Diurnal Average: 24.6 ppb at hour 11		Minimum Diurnal Average: 12.2 ppb at hour 7		Hours of Missing Data: 35																							
Monthly Average: 17.50 ppb		Percentiles: P ₁ = 1.8 P ₁₀ = 3.4 Q ₁ = 6.3 Median = 12.6 Q ₃ = 23.5 P ₉₀ = 36.9 P ₉₉ = 77.0		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-Dec	23	13	25	24	A	13	7	8	7	16	51	23	22	21	23	24	21	11	14	22	28	16	25	23	20.0	51.0	
2-Dec	15	25	35	27	A	26	21	18	8	8	4	9	10	4	2	11	6	11	13	8	3	6	11	12	12.6	34.7	
3-Dec	8	12	9	13	A	14	8	13	17	24	9	20	24	13	25	35	25	16	20	25	19	12	11	22	17.1	34.7	
4-Dec	20	9	8	12	A	12	13	64	29	29	71	42	13	6	4	2	9	7	6	5	4	10	8	4	16.9	70.6	
5-Dec	2	4	4	5	A	7	7	13	11	37	31	26	39	13	9	20	19	20	34	27	21	15	16	17	17.3	39.0	
6-Dec	19	11	10	9	A	10	9	12	12	12	19	49	38	20	20	20	18	38	37	27	24	19	18	41	21.4	48.8	
7-Dec	42	25	22	14	A	30	22	49	70	29	42	10	7	5	2	3	3	3	3	4	2	3	3	8	17.5	69.8	
8-Dec	4	4	3	2	A	16	4	3	7	11	15	13	14	16	7	13	18	14	11	13	11	10	16	9	10.2	17.6	
9-Dec	11	4	11	67	A	15	12	10	25	20	20	79	74	84	72	67	22	52	69	30	29	30	17	12	36.1	83.9	
10-Dec	11	11	9	9	A	14	22	48	29	42	87	51	43	37	40	34	35	40	34	22	31	25	24	17	31.0	86.8	
11-Dec	5	6	7	9	A	10	10	14	13	13	10	12	10	20	20	13	14	19	24	31	19	17	11	8	13.7	31.3	
12-Dec	21	27	15	14	A	12	12	11	16	16	24	23	18	24	21	25	22	23	30	34	23	18	24	20	20.6	34.4	
13-Dec	15	11	6	7	A	8	6	5	6	6	8	8	8	7	8	8	8	5	5	7	8	8	8	10	7.7	15.1	
14-Dec	8	8	9	8	A	16	14	13	16	16	10	11	12	10	10	8	11	5	7	6	6	8	4	3	9.5	16.1	
15-Dec	1	1	2	4	A	7	7	2	2	4	3	5	3	3	5	4	6	17	9	5	5	8	5	5	4.9	17.3	
16-Dec	4	3	4	7	A	6	11	5	23	19	C	C	C	C	14	14	7	5	6	4	3	5	3	3	7.7	23.4	
17-Dec	3	3	2	1	A	6	8	14	38	29	14	11	9	8	21	27	50	26	11	3	3	2	3	1	12.7	50.0	
18-Dec	2	2	4	4	A	6	3	4	2	2	2	3	3	3	3	4	5	11	12	18	11	7	6	6	5.3	18.0	
19-Dec	5	5	5	9	A	6	23	16	9	29	24	13	34	32	35	39	46	58	38	111	55	25	56	62	32.0	111.3	
20-Dec	63	46	47	38	A	31	31	40	29	49	41	34	31	31	33	30	24	31	17	11	11	9	18	32	31.7	63.2	
21-Dec	30	16	138	16	A	8	12	7	10	16	10	40	12	8	10	34	101	48	43	31	74	75	36	37	35.3	137.9	
22-Dec	21	13	13	15	A	14	16	19	27	14	13	15	17	22	21	33	33	20	23	31	18	14	15	39	20.2	39.5	
23-Dec	20	32	21	20	A	20	25	30	21	39	28	27	42	35	30	24	25	32	23	24	19	18	17	19	25.8	41.6	
24-Dec	20	18	9	6	A	11	7	11	6	7	5	8	14	12	5	12	14	10	8	10	9	21	29	15	11.6	29.2	
25-Dec	12	10	7	5	A	7	5	5	6	13	11	8	6	6	3	3	3	3	6	6	5	3	3	3	6.0	13.5	
26-Dec	4	5	5	3	A	5	3	6	10	32	36	21	14	10	16	13	9	21	11	16	12	14	24	24	13.5	35.7	
27-Dec	22	21	24	23	A	25	24	25	21	28	52	24	20	23	26	31	26	32	28	41	57	46	27	28	29.3	56.6	
28-Dec	23	17	25	19	A	20	22	18	26	17	82	41	54	77	76	52	54	44	26	32	23	13	20	16	34.7	81.7	
29-Dec	13	7	12	6	A	9	6	8	5	8	5	5	3	3	3	10	4	8	4	4	4	3	5	9	6.3	12.9	
30-Dec	2	4	6	6	A	4	2	6	4	9	7	11	14	11	12	11	6	7	6	5	14	13	4	9	7.5	14.1	
31-Dec	8	3	3	3	A	4	6	3	3	3	4	12	6	5	3	4	5	10	4	3	3	4	4	2	4.7	12.3	
		14.7	12.2	16.1	13.1	--	12.7	12.2	16.0	16.3	19.4	24.6	21.8	20.5	18.9	18.7	20.2	20.9	20.7	18.8	19.7	18.1	15.6	15.2	16.7	Diurnal Average	
		63.2	45.6	137.9	66.5	--	30.9	31.0	63.9	69.8	49.3	86.8	78.8	74.5	83.9	75.5	67.0	100.5	57.8	68.7	111.3	74.3	75.4	56.3	62.4	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

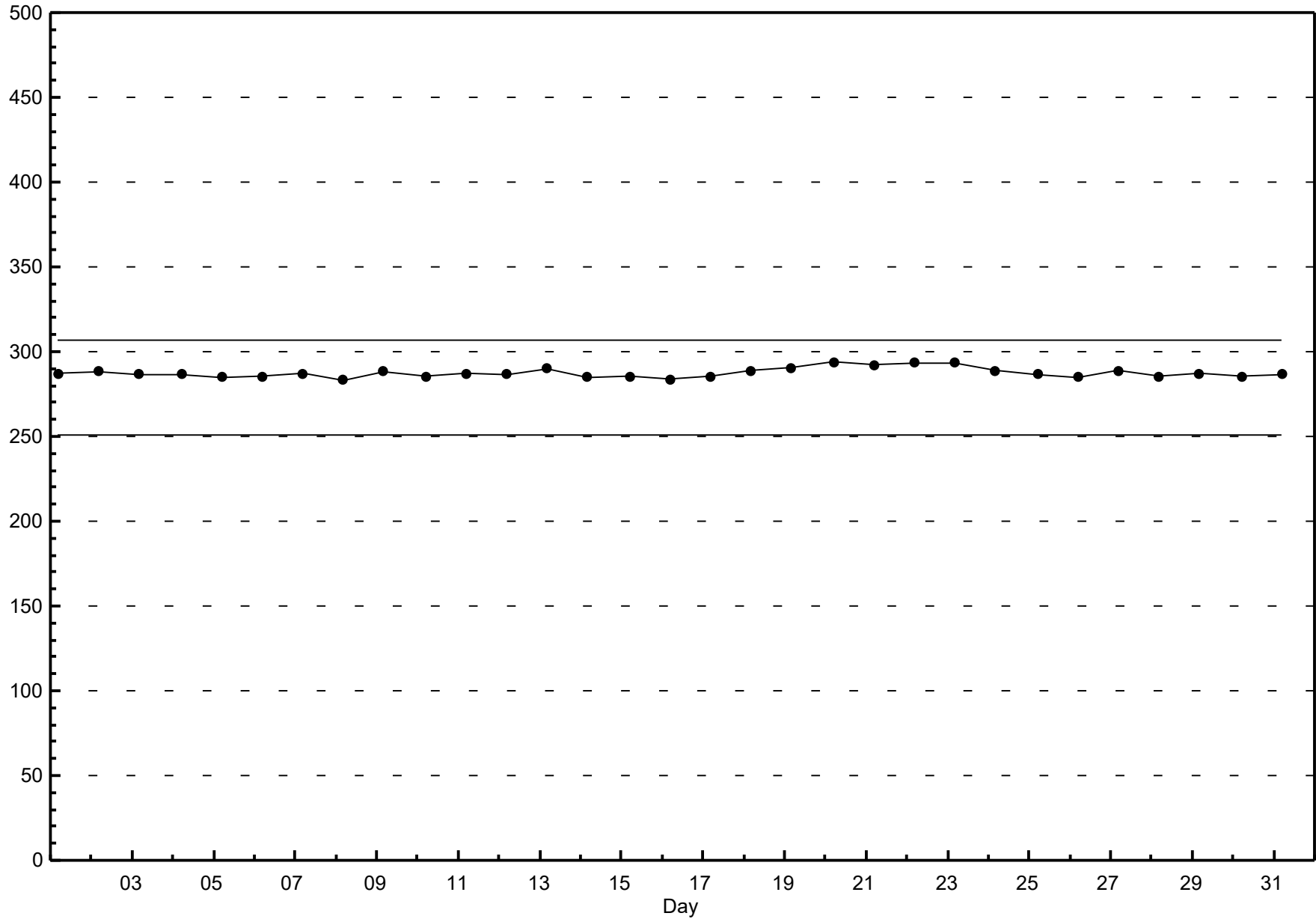
Hourly Maximums

Oxides of Nitrogen (NO_x) - ppb
Beaverlodge - December 2015



Span Responses

Oxides of Nitrogen (NO_x)
Beaverlodge - December 2015



Hourly Averages

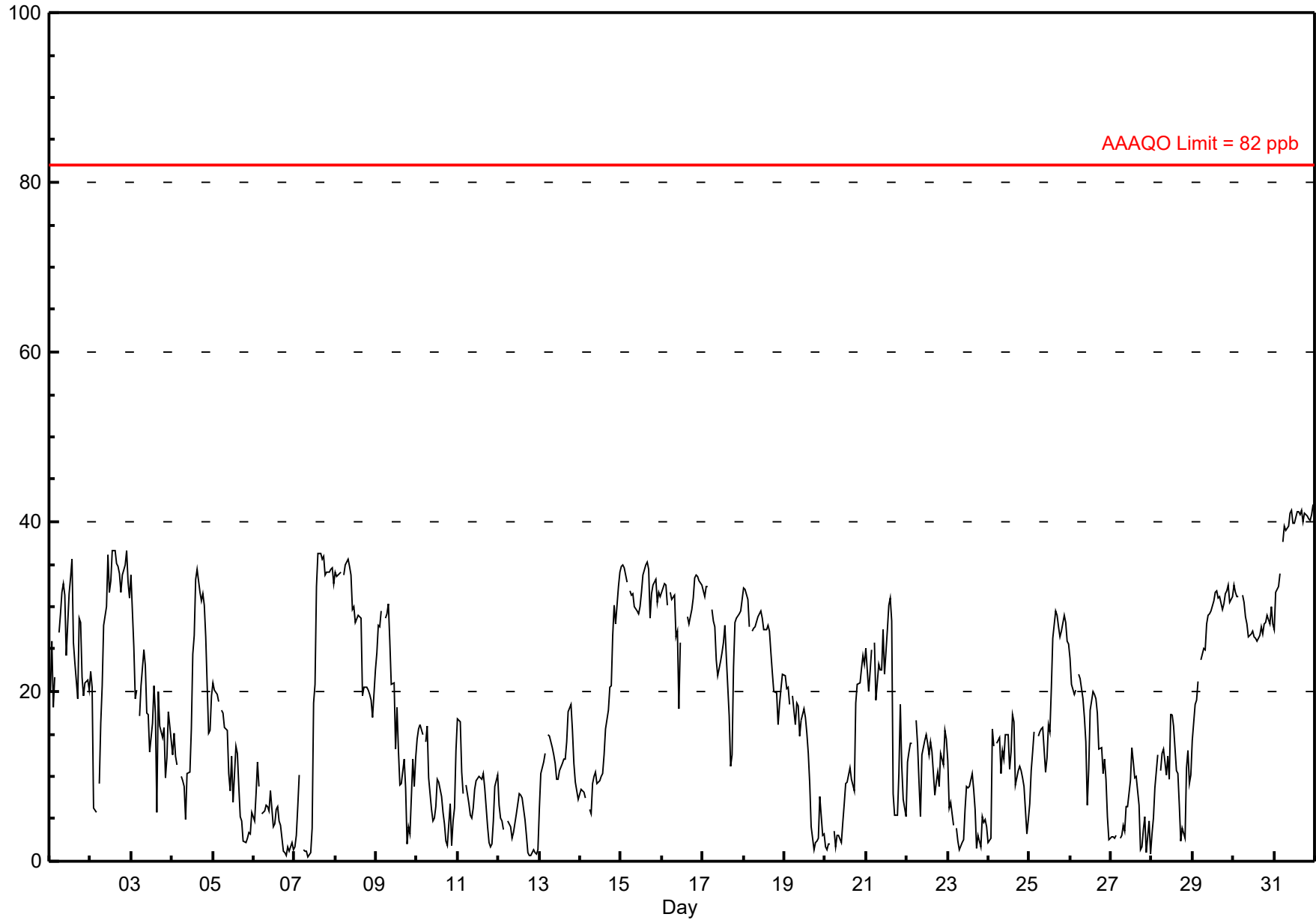
Ozone (O₃) - ppb

Beaverlodge - December 2015

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 42.1 ppb on Jan 1 00:00	Maximum Daily Average: 38.8 ppb on Dec 31		Hours of Data:	710
Minimum Value: 1 ppb on Dec 7 09:00	Minimum Daily Average: 3.9 ppb on Dec 12		Hours of Missing Data:	34
Maximum Diurnal Average: 20.2 ppb at hour 14	Minimum Diurnal Average: 16.0 ppb at hour 18		Hours of Calibration:	34
Monthly Average: 17.61 ppb	Percentiles: P ₁ = 0.9 P ₁₀ = 3.2 Q ₁ = 8.4 Median = 15.9 Q ₃ = 28.0 P ₉₀ = 32.7 P ₉₉ = 40.9		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	20	26	18	22	A	27	29	32	33	31	24	32	33	36	26	23	19	29	28	22	19	21	21	20	25.7	35.6
2-Dec	22	21	6	6	A	9	16	21	28	30	36	32	33	37	37	35	35	34	32	34	35	37	33	31	27.7	36.7
3-Dec	34	25	19	20	A	17	21	25	23	17	17	13	16	21	17	6	20	16	15	16	10	12	18	14	17.9	33.7
4-Dec	13	15	12	11	A	10	10	9	5	10	10	16	24	27	33	34	32	31	32	30	26	15	15	20	19.1	34.4
5-Dec	21	20	20	19	A	18	17	16	15	10	8	12	7	14	13	9	5	5	2	2	3	3	3	6	10.8	21.0
6-Dec	5	8	12	9	A	6	6	7	6	6	8	4	4	6	7	5	4	1	1	1	2	1	2	1	4.9	11.7
7-Dec	2	3	6	10	A	1	1	1	1	1	4	19	21	32	36	36	36	36	34	34	34	34	35	33	19.6	36.3
8-Dec	34	34	34	34	A	34	35	36	35	34	30	30	28	29	29	29	20	20	20	20	20	19	17	23	27.9	35.7
9-Dec	25	28	28	29	A	29	29	30	26	21	21	13	18	13	9	9	12	9	2	4	3	12	9	12	17.0	30.3
10-Dec	14	16	16	15	A	14	16	10	6	5	5	6	10	9	8	6	4	2	2	7	2	5	6	13	8.6	16.0
11-Dec	17	16	10	8	A	9	7	5	5	6	8	9	10	10	10	10	9	4	2	2	2	5	9	10	8.0	16.8
12-Dec	7	5	5	4	A	5	4	4	3	3	6	7	8	8	7	5	3	1	1	1	1	1	1	1	3.9	7.9
13-Dec	6	10	12	13	A	15	15	13	13	11	10	10	11	11	12	12	14	18	19	15	12	9	8	7	12.0	18.5
14-Dec	8	8	8	7	A	6	6	9	10	10	9	9	10	10	12	16	18	20	21	27	30	28	32	34	15.2	34.1
15-Dec	35	35	35	33	A	32	31	31	30	30	29	30	32	34	35	35	34	29	32	33	33	31	32	31	32.2	35.2
16-Dec	32	33	33	30	A	32	31	31	26	27	18	26	C	C	C	29	28	30	31	33	34	34	33	33	30.1	33.7
17-Dec	32	31	32	32	A	30	28	28	24	22	24	25	26	28	24	17	11	13	23	28	29	29	30	31	25.9	32.4
18-Dec	32	32	31	28	A	27	27	28	29	29	29	27	27	28	27	25	22	20	20	16	19	20	22	22	25.8	32.2
19-Dec	22	20	20	18	A	19	16	19	18	15	17	18	17	15	13	9	4	1	2	2	3	8	3	3	12.3	21.8
20-Dec	2	1	2	2	A	3	2	3	3	2	5	7	9	9	11	10	9	8	19	21	21	23	24	23	9.5	24.2
21-Dec	25	20	22	25	A	26	19	23	23	22	27	22	27	30	31	28	8	5	5	10	19	11	7	5	19.3	31.1
22-Dec	12	13	14	14	A	17	14	9	5	13	14	15	14	13	14	13	8	9	11	9	13	11	15	14	12.3	16.6
23-Dec	12	6	7	4	A	4	2	1	2	3	6	9	9	9	10	8	6	2	3	2	5	5	5	4	5.4	11.9
24-Dec	2	3	16	14	A	14	15	10	13	12	15	15	11	13	17	16	9	11	11	11	10	9	3	5	11.0	17.3
25-Dec	7	11	13	15	A	15	15	16	16	11	12	16	15	20	26	29	29	28	26	27	29	28	26	26	19.8	29.4
26-Dec	24	21	20	20	A	22	22	19	17	14	7	11	18	20	20	19	17	13	13	10	12	10	5	3	15.5	23.8
27-Dec	3	3	3	3	A	3	3	4	4	6	6	9	13	12	10	10	7	1	2	4	5	1	5	1	5.1	13.4
28-Dec	3	5	9	13	A	11	13	13	10	12	10	17	17	16	11	10	7	2	4	3	11	13	9	10	9.9	17.2
29-Dec	14	18	19	21	A	24	25	25	28	29	29	30	31	32	32	31	31	30	30	32	32	33	30	31	27.7	32.6
30-Dec	33	32	31	31	A	31	31	29	28	26	27	27	27	26	26	27	28	27	28	28	29	28	30	28	28.5	32.5
31-Dec	27	32	32	34	A	38	39	39	39	41	41	40	40	41	41	41	41	40	41	41	40	40	41	42	38.8	42.1
	17.5	17.8	17.6	17.6	--	17.6	17.6	17.6	16.9	16.5	16.6	17.9	18.9	20.2	20.1	19.2	17.2	16.0	16.5	17.0	17.4	17.2	17.1	17.3		Diurnal Average
	34.8	34.9	34.6	34.0	--	37.6	39.4	38.9	39.4	40.9	41.3	39.8	39.8	41.2	41.2	40.9	41.4	40.0	41.1	40.7	40.4	40.1	40.9	42.1		Diurnal Maximum

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



Hourly Maximums

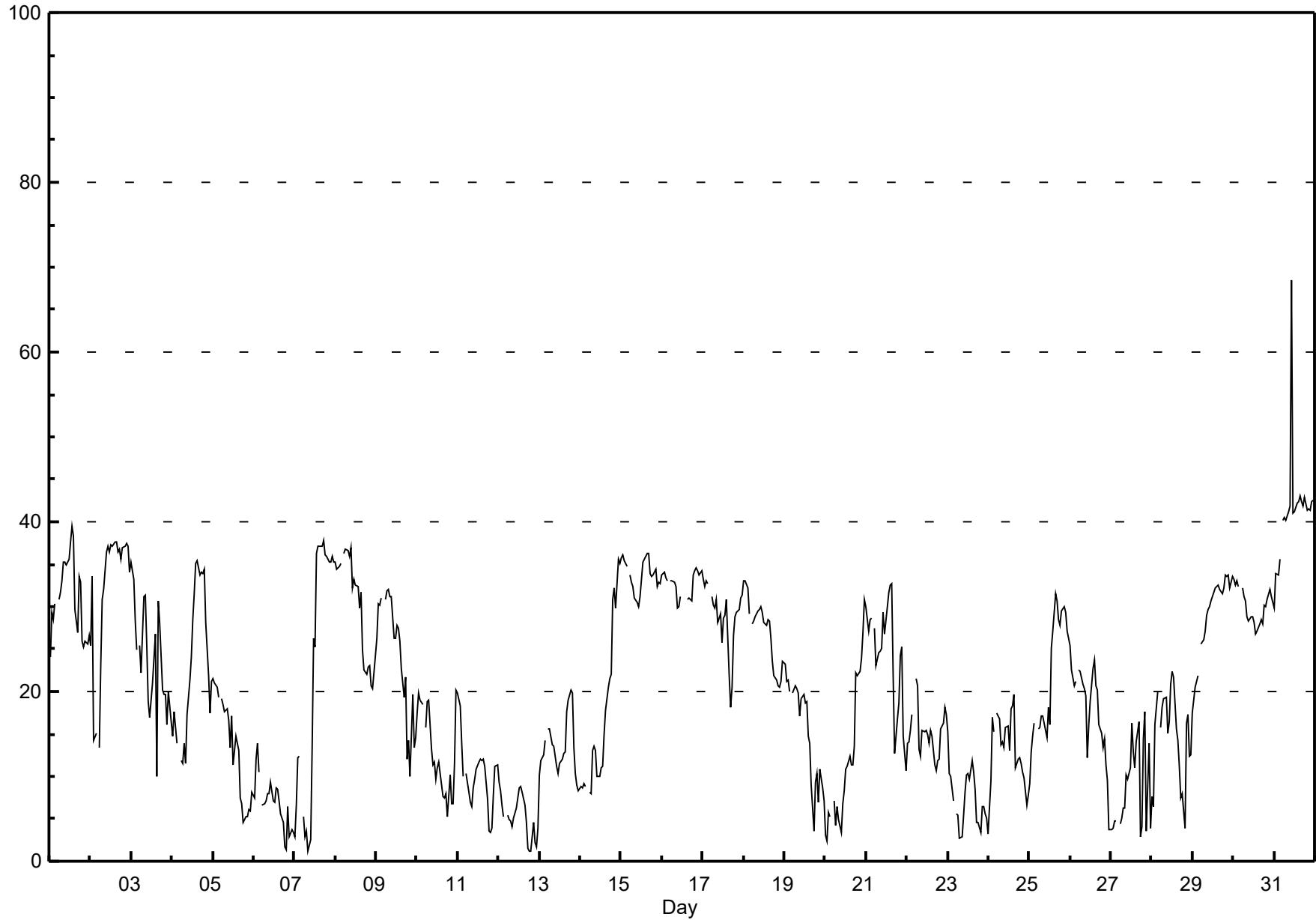
Ozone (O₃) - ppb

Beaverlodge - December 2015

Maximum Value: 68.6 ppb on Dec 31 11:00		Maximum Daily Average: 41.4 ppb on Dec 31		Hours in Service: 744																						
Minimum Value: 1 ppb on Dec 7 09:00		Minimum Daily Average: 5.2 ppb on Dec 12		Hours of Data: 710																						
Maximum Diurnal Average: 23.0 ppb at hour 15		Minimum Diurnal Average: 19.5 ppb at hour 19		Hours of Missing Data: 34																						
Monthly Average: 20.55 ppb		Percentiles: P ₁ = 2.2 P ₁₀ = 6.4 Q ₁ = 11.2 Median = 19.9 Q ₃ = 30.7 P ₉₀ = 34.9 P ₉₉ = 42.2		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-Dec	24	29	28	30	A	31	32	33	35	35	35	36	38	39	38	30	27	34	33	26	25	26	26	27	31.2	39.5
2-Dec	25	33	14	15	A	13	23	31	32	36	37	36	37	37	38	38	37	37	36	37	37	38	37	34	32.1	37.6
3-Dec	35	33	28	25	A	25	22	31	31	25	19	17	21	24	27	10	31	28	20	20	20	16	20	16	23.7	35.3
4-Dec	15	18	16	14	A	12	12	14	12	17	21	24	28	32	35	35	34	34	34	34	28	22	17	21	23.0	35.5
5-Dec	22	21	20	19	A	19	19	18	18	17	13	17	11	15	14	13	7	7	5	5	5	6	6	8	13.3	21.5
6-Dec	8	12	14	10	A	7	7	7	8	8	9	7	7	9	8	7	6	5	2	1	6	3	4	3	6.9	14.0
7-Dec	3	7	12	12	A	5	3	4	1	3	13	26	25	36	37	37	37	38	36	36	35	35	36	35	22.3	37.9
8-Dec	35	34	35	35	A	36	37	37	36	37	32	33	32	32	30	32	25	23	22	23	23	21	20	24	30.2	36.9
9-Dec	26	30	30	31	A	31	32	32	31	31	26	26	28	27	26	23	19	22	12	14	10	20	13	15	24.2	32.0
10-Dec	18	20	19	19	A	16	19	19	13	11	12	10	11	12	9	8	8	8	5	10	7	7	11	20	12.6	20.2
11-Dec	20	18	14	10	A	10	8	7	6	9	10	11	12	12	12	11	7	4	3	4	8	11	11	10.0	19.8	
12-Dec	9	8	7	5	A	5	5	5	4	5	6	8	9	9	8	7	5	1	1	1	5	2	2	4	5.2	9.4
13-Dec	10	12	12	14	A	16	16	14	14	12	11	10	12	12	13	13	18	19	20	20	13	10	9	8	13.4	20.1
14-Dec	9	9	9	9	A	8	8	13	14	13	10	10	11	11	15	18	20	22	22	31	32	30	36	35	17.1	35.7
15-Dec	36	36	35	35	A	34	33	32	31	31	30	31	33	35	36	36	36	34	34	34	34	32	33	33	33.7	36.4
16-Dec	34	34	33	33	A	33	33	33	32	30	30	31	C	C	C	31	31	31	34	34	35	34	34	34	32.7	34.5
17-Dec	33	32	33	33	A	31	30	30	31	28	29	26	29	29	31	22	18	21	27	29	29	30	31	31	28.8	33.2
18-Dec	33	33	32	29	A	28	28	29	29	30	30	29	28	28	28	26	23	22	21	21	20	21	24	24	27.1	33.1
19-Dec	23	21	21	20	A	20	21	20	20	17	19	20	19	19	15	14	9	4	9	10	7	11	9	7	15.4	23.1
20-Dec	3	2	6	5	A	7	4	6	5	3	7	8	11	11	12	11	11	14	22	22	22	24	27	31	12.0	30.8
21-Dec	30	27	29	29	A	27	23	25	25	25	29	27	30	32	33	33	22	13	17	19	24	25	15	11	24.7	32.8
22-Dec	14	14	15	17	A	22	21	13	12	15	15	15	15	14	15	15	11	11	12	12	16	16	18	17	15.1	21.6
23-Dec	15	10	10	7	A	6	5	3	3	5	8	10	10	10	12	11	8	5	5	3	6	6	6	5	7.4	15.2
24-Dec	3	9	17	15	A	17	17	14	14	13	16	16	13	18	18	20	11	12	12	11	11	10	7	8	13.1	19.6
25-Dec	9	13	15	16	A	16	16	17	17	15	15	18	16	25	27	32	31	29	28	30	30	29	27	26	21.6	31.5
26-Dec	25	23	21	21	A	23	22	21	20	19	12	16	19	23	24	21	20	16	15	13	14	11	10	4	18.0	25.5
27-Dec	4	4	5	5	A	4	5	6	6	10	10	11	16	13	11	14	16	3	4	14	18	4	14	4	8.7	17.6
28-Dec	8	6	16	20	A	16	18	19	19	15	17	21	22	22	16	14	11	7	8	4	16	17	12	13	14.7	22.3
29-Dec	18	20	21	22	A	26	26	27	29	30	30	31	32	32	32	33	32	32	32	34	34	34	32	34	29.2	33.8
30-Dec	33	33	33	32	A	32	31	31	29	28	29	29	28	27	27	28	28	28	30	30	31	32	31	30	30.1	33.3
31-Dec	30	34	34	36	A	40	40	40	41	42	69	41	41	42	42	43	42	42	43	41	41	41	42	43	41.4	68.6
		19.7	20.6	20.5	20.2	--	19.9	19.8	20.3	20.0	19.9	20.9	21.0	21.5	22.9	23.0	22.1	21.0	19.5	19.5	20.2	20.6	20.0	19.9	19.9	Diurnal Average
		35.8	36.1	35.5	35.6	--	40.1	40.5	40.1	41.1	41.9	68.6	41.0	41.1	42.2	42.3	43.0	42.4	41.8	42.9	41.4	41.5	41.4	42.4	42.6	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								

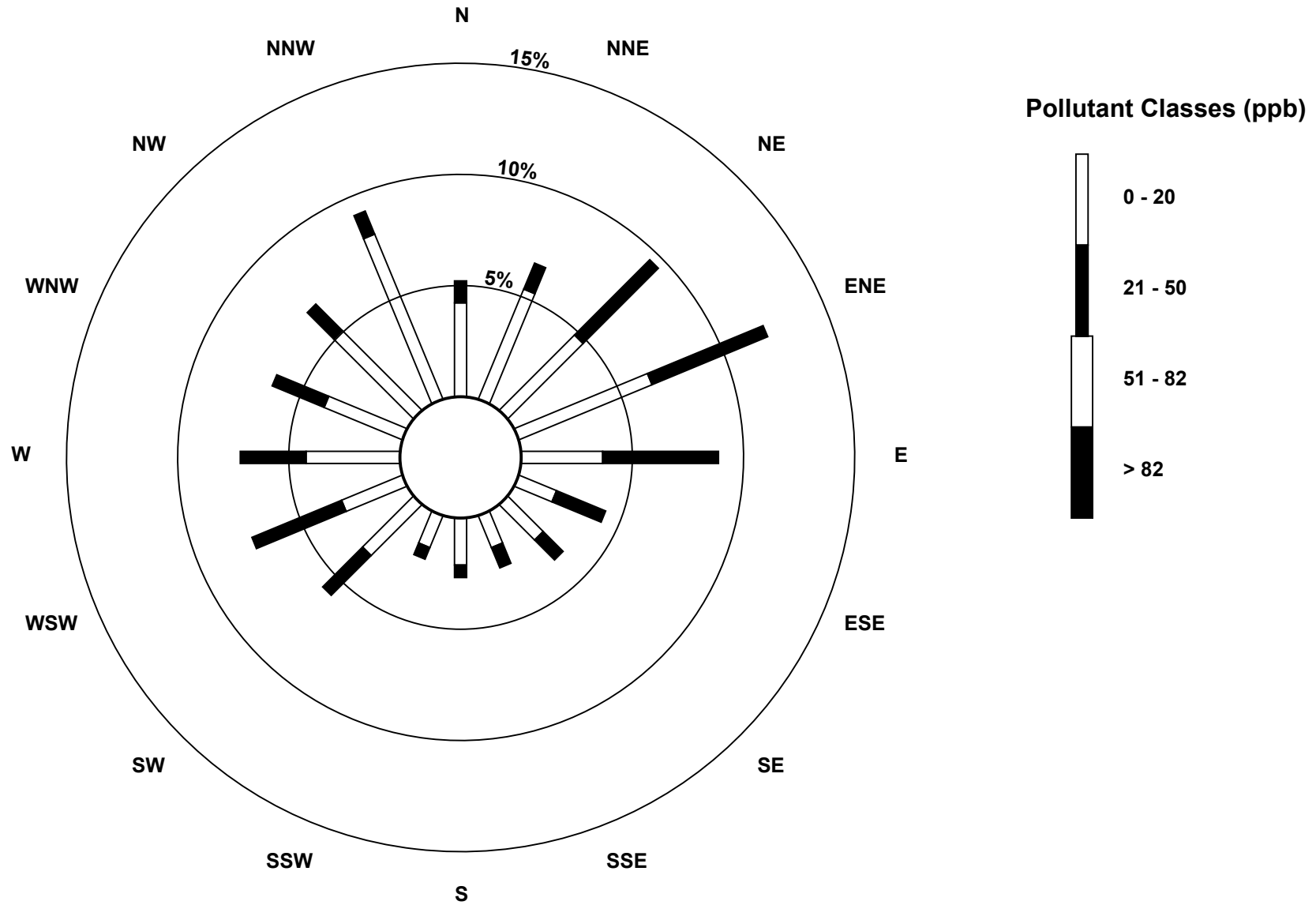
Hourly Maximums

Ozone (O₃) - ppb
Beaverlodge - December 2015



Pollutant Rose

Ozone (O₃) - ppb
Beaverlodge - December 2015



Eight Hour Running Averages

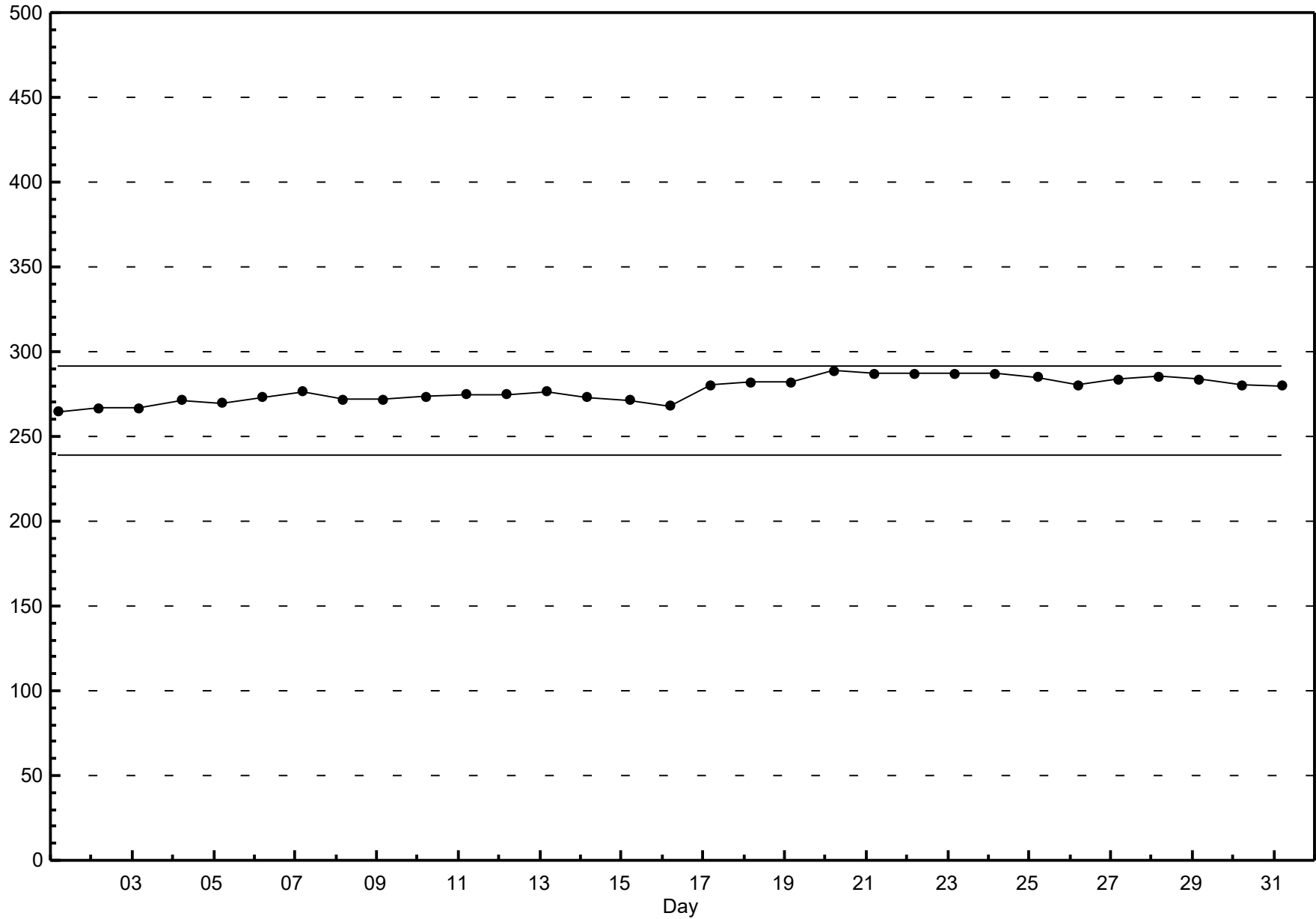
Ozone (O₃) - ppb

Beaverlodge - December 2015

Maximum Value: 40.9 ppb on Dec 31 21:00																					Hours in Service:	744			
Minimum Value: 1.2 ppb on Dec 13 00:00																					Hours of Data:	738			
Percentiles: P ₁ = 2.2 P ₁₀ = 4.9 Q ₁ = 8.3 Median = 15.1 Q ₃ = 27.0 P ₉₀ = 31.7 P ₉₉ = 40.7																					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-Dec	19	21	21	21	22	23	23	25	27	27	28	30	31	31	30	28	28	28	27	25	23	23	22	31.2	
2-Dec	23	22	19	17	17	15	14	14	15	17	21	25	26	29	32	33	34	35	34	34	35	35	34	34	34.7
3-Dec	34	32	31	29	28	26	24	23	21	20	20	19	19	19	16	16	16	15	16	15	14	14	15	33.5	
4-Dec	14	14	14	13	14	13	12	11	10	10	9	10	12	14	17	20	23	26	29	30	31	29	27	25	30.6
5-Dec	24	22	21	19	18	19	19	19	18	16	15	14	13	13	12	11	10	9	8	7	7	5	4	4	23.7
6-Dec	4	4	5	6	7	7	7	7	8	7	7	6	6	6	6	6	6	5	4	4	3	3	2	2	7.6
7-Dec	1	2	2	4	4	4	4	4	3	3	3	4	6	10	14	19	23	27	31	33	35	35	35	34	35.0
8-Dec	34	34	34	34	34	34	34	34	34	34	34	33	33	32	31	30	28	27	26	24	23	22	21	20	34.4
9-Dec	20	21	22	23	24	25	27	28	28	27	26	24	23	21	19	16	15	13	11	10	8	8	8	8	28.4
10-Dec	8	9	11	12	13	14	15	14	13	12	10	9	9	8	7	7	7	6	6	6	5	4	4	5	14.7
11-Dec	7	8	10	10	11	11	12	10	9	7	7	7	8	8	8	9	9	9	8	7	6	5	5	5	11.5
12-Dec	5	5	5	6	6	6	6	5	4	4	4	5	5	5	6	6	6	6	5	4	3	3	2	1	6.3
13-Dec	2	3	4	6	6	8	10	12	13	13	13	12	12	12	11	11	11	12	13	14	14	14	13	13	14.1
14-Dec	12	11	10	9	8	8	7	8	8	8	8	9	9	9	10	11	12	13	15	17	19	21	24	26	26.3
15-Dec	28	30	32	33	33	34	34	33	32	32	31	31	31	31	31	32	32	32	33	33	33	33	32	32	33.7
16-Dec	31	32	32	32	32	32	32	32	31	30	28	27	27	27	N	N	N	N	N	N	31	31	31	32	32.0
17-Dec	32	33	33	33	32	32	31	30	29	28	27	26	26	25	25	24	22	21	21	21	22	22	22	24	32.7
18-Dec	27	29	30	30	30	30	30	29	29	28	28	28	28	28	28	28	28	27	26	25	23	22	21	20	30.3
19-Dec	20	20	20	20	20	20	20	19	19	18	17	17	17	17	16	15	13	12	10	8	6	5	4	3	20.4
20-Dec	3	3	3	3	3	2	2	2	2	3	3	4	4	5	6	7	8	8	10	12	13	15	17	19	18.5
21-Dec	21	22	22	23	23	24	23	23	23	23	24	23	24	24	26	26	25	22	20	18	17	15	12	9	26.4
22-Dec	9	10	11	12	11	12	13	13	12	12	12	12	13	12	12	13	13	12	12	11	11	11	11	11	13.1
23-Dec	12	11	11	10	10	9	7	5	4	3	3	4	4	5	6	7	7	7	7	6	6	5	4	4	11.8
24-Dec	3	4	5	7	7	8	10	10	12	13	13	13	13	13	13	14	14	13	13	12	12	12	10	9	14.0
25-Dec	8	8	8	9	9	10	11	13	14	14	14	14	14	15	17	18	20	22	24	25	27	28	28	27	27.9
26-Dec	27	26	25	24	23	23	22	21	20	19	17	16	16	16	16	16	16	16	16	16	16	14	13	10	26.7
27-Dec	9	7	6	5	4	3	3	3	3	4	4	5	6	7	8	9	9	9	8	7	6	5	4	3	9.2
28-Dec	3	3	4	5	5	7	8	9	10	12	12	12	13	14	13	13	13	11	11	9	8	8	7	7	13.6
29-Dec	8	10	12	15	15	17	19	21	23	24	26	27	28	29	29	30	31	31	31	31	31	31	31	31	31.2
30-Dec	31	32	32	32	32	31	31	31	30	30	29	28	28	28	27	27	27	27	27	27	27	28	28	28	31.7
31-Dec	28	29	29	30	30	32	33	34	36	38	39	40	40	40	40	41	41	41	41	41	41	41	41	41	40.9
34.2 33.9 33.9 33.9 33.9 33.8 33.8 34.5 36.2 37.5 38.8 39.6 39.7 40.1 40.3 40.6 40.8 40.7 40.7 40.8 40.9 40.7 40.7 40.8																									
Diurnal Maximums																									
N - Not Valid																									

Span Responses

Ozone (O₃)
Beaverlodge - December 2015



Hourly Averages

Particulate Matter 2.5 (PM_{2.5}) - µg/m³

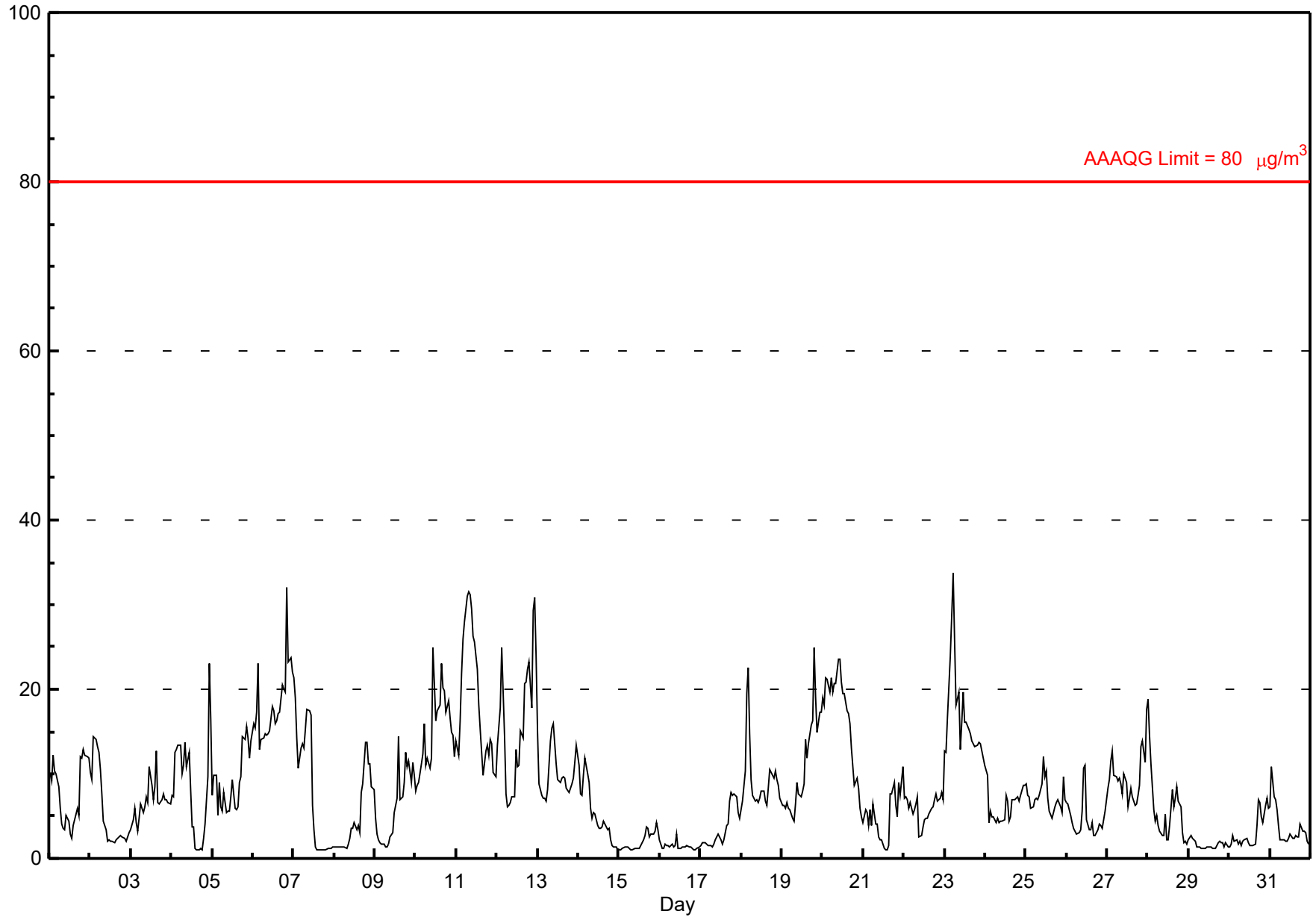
Beaverlodge - December 2015

Number of Exceedences: 1-hr: 0 24-hr: 0	Hours in Service: 744
Maximum Value: 33.7 µg/m ³ on Dec 23 06:00	Maximum Daily Average: 19.0 µg/m ³ on Dec 11
Minimum Value: 1 µg/m ³ on Dec 21 15:00	Hours of Data: 744
Maximum Diurnal Average: 9.3 µg/m ³ at hour 4	Hours of Missing Data: 0
Monthly Average: 8.18 µg/m ³	Hours of Calibration: 0
Minimum Daily Average: 1.5 µg/m ³ on Dec 16	Percent Operational Time: 100.0
Minimum Diurnal Average: 6.6 µg/m ³ at hour 14	
Percentiles: P ₁ = 1.1 P ₁₀ = 1.4 Q ₁ = 2.9 Median = 6.8 Q ₃ = 11.8 P ₉₀ = 17.3 P ₉₉ = 28.0	

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-Dec	10	9	12	10	10	9	6	4	3	3	5	4	3	2	4	5	6	5	12	12	13	12	12	12	7.7	12.9
2-Dec	10	9	14	14	13	13	11	8	4	3	2	2	2	2	2	2	2	3	3	3	2	2	2	3	5.5	14.3
3-Dec	3	5	6	4	3	5	6	5	6	7	7	11	9	7	9	13	7	7	7	8	7	7	7	7	6.7	12.7
4-Dec	7	7	12	13	13	13	10	11	14	11	13	8	4	4	1	1	1	1	1	2	4	10	23	16	8.4	23.1
5-Dec	7	10	10	5	9	6	6	8	5	6	6	7	9	6	6	6	9	10	14	14	16	14	12	14	8.9	15.7
6-Dec	16	15	17	23	13	14	14	15	15	15	15	18	17	16	16	17	17	21	20	20	32	23	24	22	18.1	32.0
7-Dec	21	19	14	11	13	14	13	15	18	18	17	6	3	1	1	1	1	1	1	1	1	1	1	1	8.1	21.4
8-Dec	1	1	1	1	1	1	1	1	2	2	4	4	3	4	3	8	9	14	14	11	11	9	8	8	5.0	13.8
9-Dec	5	3	2	2	2	2	1	1	2	3	3	5	6	7	14	7	7	9	12	11	12	9	11	10	6.1	14.3
10-Dec	8	9	9	11	12	16	11	12	11	12	25	21	16	18	18	23	20	20	17	19	17	15	15	12	15.2	24.9
11-Dec	14	12	16	22	26	28	31	31	31	29	26	26	22	18	15	13	10	13	13	12	14	13	10	10	19.0	31.5
12-Dec	13	16	18	25	14	8	6	6	7	7	7	13	11	11	15	14	21	21	22	23	18	29	31	24	15.8	30.9
13-Dec	15	9	8	7	7	7	8	14	15	16	13	11	9	9	9	10	10	8	8	8	9	9	11	13	10.2	15.9
14-Dec	11	8	8	10	12	10	9	6	5	5	5	4	4	4	4	4	4	3	4	2	1	1	1	1	5.2	11.9
15-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	4	4	3	3	3	3	4	3	2.0	4.3
16-Dec	2	1	1	2	2	1	1	2	1	2	3	1	1	1	1	1	2	1	1	1	1	1	1	1	1.5	2.9
17-Dec	2	2	2	2	2	2	1	1	2	2	3	2	2	2	2	4	4	7	8	7	8	7	5	5	3.5	7.8
18-Dec	6	7	10	20	23	15	9	8	7	7	7	8	8	8	7	6	8	11	10	9	10	9	9	7	9.5	22.6
19-Dec	6	6	6	7	6	6	5	4	6	9	8	7	8	9	14	12	14	16	16	25	19	15	17	17	10.7	24.8
20-Dec	19	18	21	21	20	21	20	21	21	24	23	21	20	20	17	17	16	13	11	9	9	8	6	5	16.7	23.6
21-Dec	4	6	5	4	6	4	6	4	4	2	2	2	1	1	1	2	8	8	9	6	5	9	7	11	4.9	10.9
22-Dec	7	7	7	6	7	5	6	6	7	3	3	4	5	5	5	5	6	6	7	8	7	7	8	7	5.9	7.8
23-Dec	13	12	17	24	29	34	26	18	20	13	16	20	16	16	15	15	14	14	13	13	14	14	13	12	17.0	33.7
24-Dec	11	10	4	6	5	5	4	5	4	4	4	4	7	7	4	5	7	7	7	7	7	7	9	9	6.3	11.1
25-Dec	9	7	7	6	6	7	7	7	7	9	12	10	10	7	6	5	5	6	7	7	6	5	10	7	7.3	12.0
26-Dec	7	6	5	4	4	3	3	3	3	6	11	11	5	3	3	4	3	3	3	4	4	4	5	6	4.7	11.1
27-Dec	8	9	12	13	10	10	9	9	9	8	10	9	6	7	8	7	6	6	8	9	13	14	11	18	9.5	17.6
28-Dec	19	15	11	6	4	5	4	3	3	3	5	2	2	4	8	6	7	9	7	6	3	2	2	2	5.7	18.8
29-Dec	2	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	2	1	1.6	2.7
30-Dec	1	2	3	2	2	2	2	2	2	2	2	2	2	2	1	2	4	7	7	5	4	6	7	6	3.2	7.2
31-Dec	6	11	7	7	6	4	2	2	2	2	2	2	3	2	2	3	3	3	4	3	3	3	2	2	3.6	10.9

8.6	8.2	8.7	9.3	9.1	8.7	7.8	7.6	7.7	7.6	8.4	8.0	7.0	6.6	7.0	7.0	7.5	8.1	8.8	8.8	8.9	8.9	9.3	8.7	Diurnal Average
21.4	19.0	21.3	24.9	28.6	33.7	31.0	31.5	31.1	29.4	26.3	25.5	22.4	19.6	18.1	23.0	20.6	20.9	22.4	24.8	32.0	29.3	30.9	23.8	Diurnal Maximum

Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 µg/m³ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 µg/m³

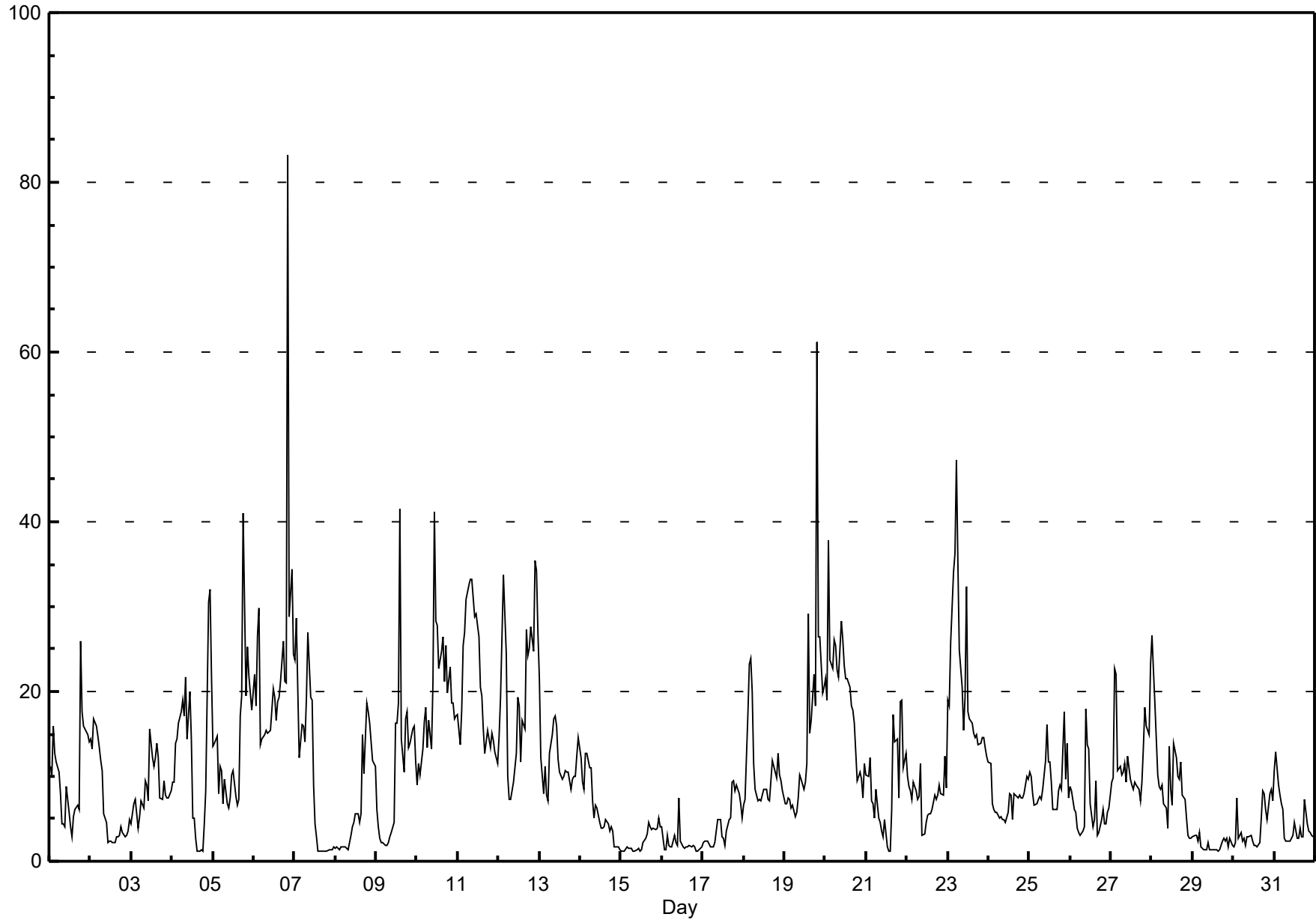


Hourly Maximums

Particulate Matter 2.5 (PM_{2.5}) - µg/m³

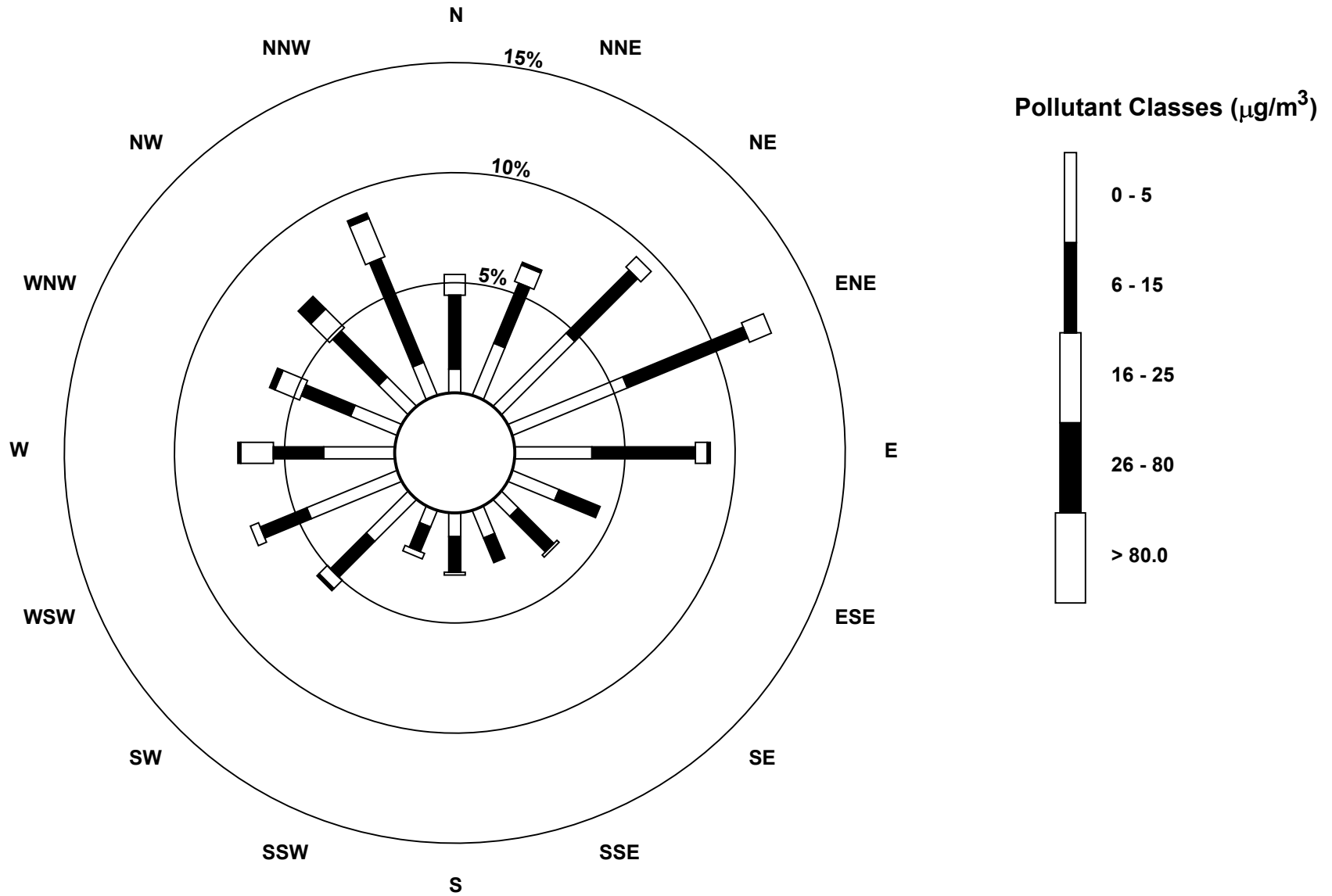
Beaverlodge - December 2015

Maximum Value: 83.2 µg/m ³ on Dec 6 21:00 Minimum Value: 1 µg/m ³ on Dec 21 15:00 Maximum Diurnal Average: 13.3 µg/m ³ at hour 21 Monthly Average: 10.64 µg/m ³		Maximum Daily Average: 23.1 µg/m ³ on Dec 6 Minimum Daily Average: 2.0 µg/m ³ on Dec 29 Minimum Diurnal Average: 8.4 µg/m ³ at hour 14 Percentiles: P ₁ = 1.2 P ₁₀ = 1.9 Q ₁ = 4.1 Median = 8.5 Q ₃ = 14.9 P ₉₀ = 22.0 P ₉₉ = 34.8		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 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-Dec	11	10	16	13	12	11	8	4	4	4	9	6	4	3	5	6	7	6	26	18	16	16	15	14	10.1	25.9
2-Dec	14	13	17	16	15	13	12	11	6	5	2	2	2	2	2	3	3	3	4	3	3	3	4	5	6.8	16.9
3-Dec	4	7	7	6	4	5	7	6	10	9	7	16	12	11	12	14	12	8	7	9	8	8	8	8	8.5	15.6
4-Dec	9	9	14	14	16	18	19	17	22	14	20	14	5	5	3	1	1	1	1	4	8	31	32	22	12.6	32.0
5-Dec	14	14	15	8	11	11	7	10	7	6	8	10	11	8	7	7	17	20	41	20	25	22	20	18	13.9	41.1
6-Dec	22	18	27	30	14	14	15	15	15	15	15	20	19	17	19	19	21	26	21	21	83	29	34	24	23.1	83.2
7-Dec	24	29	20	12	16	16	14	19	27	19	19	9	4	3	1	1	1	1	1	1	1	1	1	2	10.2	28.6
8-Dec	1	2	1	2	2	2	2	1	2	3	4	5	6	6	5	6	15	10	19	18	16	14	12	11	6.8	18.6
9-Dec	6	4	3	2	2	2	2	2	3	3	5	16	16	19	42	14	10	17	18	13	14	16	16	12	10.7	41.6
10-Dec	9	11	10	13	16	18	13	17	13	21	41	28	28	23	25	26	21	25	20	23	19	19	17	17	19.8	41.1
11-Dec	17	14	18	25	27	31	33	33	33	31	29	29	26	21	20	16	13	15	14	13	15	14	13	11	21.3	33.3
12-Dec	15	19	26	34	24	10	7	7	8	9	13	19	18	12	17	16	27	24	25	28	25	36	34	27	20.0	35.5
13-Dec	22	12	8	11	8	7	13	15	17	17	16	12	10	10	10	11	10	10	8	10	10	10	12	15	11.8	21.5
14-Dec	12	9	8	13	13	11	11	7	5	7	6	5	4	4	4	5	4	4	4	4	2	2	2	1	6.1	12.7
15-Dec	1	1	1	2	1	1	1	1	1	1	1	1	1	2	3	3	5	4	4	4	4	4	5	4	2.4	5.1
16-Dec	4	1	1	3	2	2	2	3	2	2	8	2	2	1	2	2	2	2	2	2	1	1	1	2	2.1	7.5
17-Dec	2	2	2	2	2	2	2	2	4	5	5	3	3	2	4	5	5	9	10	8	9	8	7	5	4.4	9.5
18-Dec	7	7	17	23	24	20	12	9	7	7	8	9	9	7	7	9	12	11	10	13	10	9	8	10.9	24.0	
19-Dec	7	7	8	7	6	7	5	6	8	10	10	8	9	11	29	15	17	22	18	61	26	26	20	21	15.2	61.2
20-Dec	22	19	38	24	23	26	25	22	22	28	26	23	21	21	21	18	18	16	13	10	10	10	8	11	19.8	37.9
21-Dec	10	10	12	7	7	5	9	5	5	4	3	5	2	1	1	6	17	14	14	8	19	19	11	13	8.6	19.0
22-Dec	10	9	8	7	9	8	7	8	11	3	3	5	5	6	6	6	8	7	8	9	8	8	12	9	7.5	12.4
23-Dec	19	18	26	34	36	47	36	25	21	15	19	32	18	17	16	15	15	15	14	14	15	15	13	12	21.1	47.3
24-Dec	12	11	7	6	6	6	5	5	5	5	5	6	8	8	5	8	8	8	8	8	8	8	10	10	7.2	11.7
25-Dec	11	10	8	7	7	7	8	7	9	12	16	12	12	9	6	6	6	8	9	8	18	10	14	8	9.4	17.6
26-Dec	9	8	6	6	4	3	3	4	4	18	14	13	7	4	5	10	3	3	5	6	4	4	6	6	6.5	18.0
27-Dec	9	10	23	22	11	11	10	10	11	9	12	10	9	9	9	9	9	7	9	13	18	16	15	23	12.3	23.2
28-Dec	27	22	19	10	9	8	9	7	6	4	14	8	7	14	12	10	10	12	8	7	5	3	3	3	9.8	26.6
29-Dec	3	3	3	2	3	2	1	1	1	2	1	1	1	1	1	1	1	2	3	2	3	2	3	2	2.0	3.4
30-Dec	2	2	8	3	3	2	3	2	3	3	3	2	2	2	2	2	5	8	8	6	5	8	9	7	4.1	8.5
31-Dec	11	13	9	8	7	6	3	2	2	2	3	3	5	3	3	4	3	3	7	4	4	3	3	3	4.7	12.9
	11.1	10.6	12.5	12.0	11.0	10.7	9.8	9.2	9.5	9.5	11.1	10.8	9.2	8.4	9.7	8.8	9.8	10.5	11.6	11.8	13.3	12.0	11.9	10.8	Diurnal Average	
	26.6	28.6	37.9	34.0	36.3	47.3	35.5	33.3	33.3	31.1	41.1	32.3	27.9	22.7	41.6	26.4	27.4	25.9	41.1	61.2	83.2	35.5	34.5	26.9	Diurnal Maximum	



Pollutant Rose

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Beaverlodge - December 2015



Hourly Averages

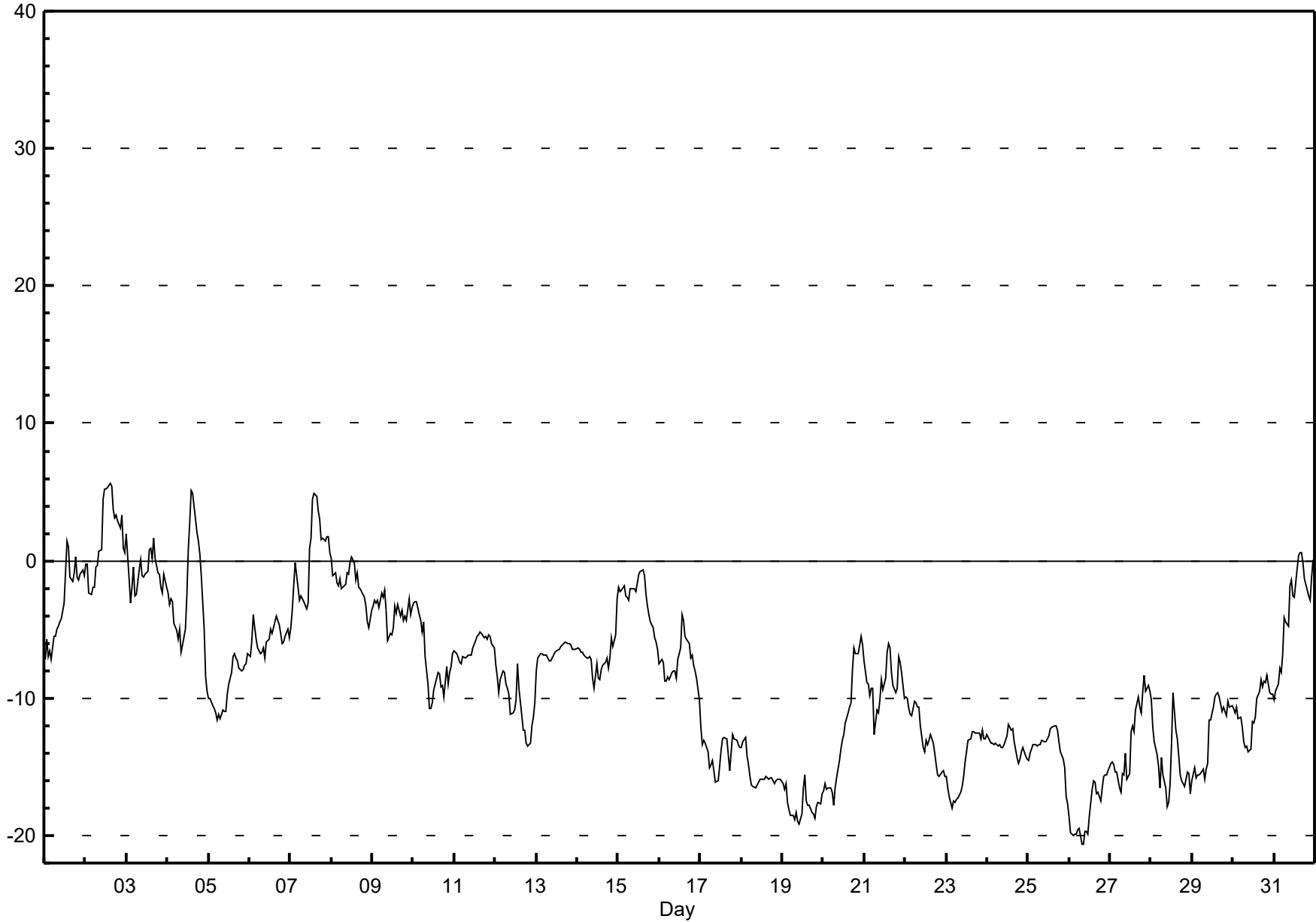
External Temperature (ET) - °C

Beaverlodge - December 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 5.6 °C on Dec 2 15:00 Maximum Daily Average: 1.8 °C on Dec 2		Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																								
Minimum Value: -21 °C on Dec 26 09:00 Maximum Diurnal Average: -6.9 °C at hour 15 Monthly Average: -8.64 °C		Minimum Daily Average: -18.1 °C on Dec 26 Minimum Diurnal Average: -9.9 °C at hour 10 Percentiles: P ₁ = -19.7 P ₁₀ = -16.1 Q ₁ = -13.4 Median = -8.6 Q ₃ = -4.4 P ₉₀ = -0.9 P ₉₉ = 4.7																								
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-Dec	-7	-6	-7	-7	-7	-5	-5	-5	-5	-4	-4	-3	-1	1	1	-1	-2	-1	0	-1	-1	-1	-1	-1	-3.0	1.5
2-Dec	0	0	-2	-2	-2	-2	0	0	1	1	4	5	5	5	6	5	4	3	3	3	2	3	1	1	1.8	5.6
3-Dec	2	-1	-3	-2	-1	-3	-2	-1	0	-1	-1	-1	-1	1	1	0	2	0	-1	-1	-2	-2	-1	-2	-0.8	2.0
4-Dec	-2	-3	-3	-3	-5	-5	-6	-5	-7	-6	-5	-3	1	3	5	5	3	2	1	1	-1	-5	-8	-9	-2.3	5.1
5-Dec	-10	-10	-11	-11	-11	-12	-11	-11	-11	-11	-11	-10	-9	-8	-7	-7	-7	-7	-8	-8	-8	-8	-8	-7	-9.2	-6.7
6-Dec	-7	-6	-4	-5	-6	-6	-7	-7	-6	-7	-6	-6	-5	-5	-5	-4	-4	-5	-5	-6	-6	-5	-5	-6	-5.6	-4.0
7-Dec	-5	-4	-2	0	-2	-3	-3	-3	-3	-4	-3	1	2	5	5	5	4	3	2	2	1	2	2	1	0.1	4.9
8-Dec	0	-1	-1	-2	-2	-1	-2	-2	-2	-1	-1	0	0	0	-1	-1	-2	-2	-2	-3	-3	-4	-5	-4	-1.7	0.2
9-Dec	-3	-3	-3	-3	-3	-2	-3	-2	-4	-6	-5	-5	-3	-4	-3	-4	-4	-4	-4	-4	-4	-3	-4	-3	-3.7	-2.2
10-Dec	-3	-3	-3	-4	-4	-5	-4	-7	-9	-11	-11	-10	-9	-9	-8	-8	-9	-9	-10	-8	-9	-8	-8	-7	-7.4	-3.0
11-Dec	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-6	-6	-5	-5	-5	-5	-6	-6	-6	-5	-6	-6	-6	-6.3	-5.1
12-Dec	-8	-8	-10	-9	-8	-8	-9	-9	-10	-11	-11	-11	-10	-8	-9	-11	-12	-12	-13	-13	-13	-12	-11	-10	-10.3	-7.5
13-Dec	-8	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6.6	-5.9
14-Dec	-6	-6	-7	-7	-7	-7	-7	-7	-7	-9	-9	-8	-9	-9	-8	-8	-7	-7	-8	-7	-6	-6	-5	-3	-7.0	-2.8
15-Dec	-2	-2	-2	-2	-3	-3	-3	-2	-2	-2	-2	-2	-1	-1	-1	-1	-2	-3	-4	-4	-5	-6	-6	-6	-2.8	-0.6
16-Dec	-7	-7	-7	-9	-9	-8	-9	-8	-8	-8	-9	-7	-6	-4	-4	-5	-6	-6	-7	-7	-8	-8	-9	-10	-7.4	-3.9
17-Dec	-12	-13	-13	-13	-14	-15	-15	-15	-15	-16	-16	-15	-14	-13	-13	-13	-14	-15	-14	-13	-13	-13	-13	-14	-13.9	-12.1
18-Dec	-14	-13	-13	-14	-15	-16	-16	-16	-17	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-15.5	-12.9
19-Dec	-16	-17	-16	-18	-18	-19	-19	-19	-18	-19	-19	-18	-17	-16	-17	-18	-18	-18	-18	-19	-18	-18	-18	-17	-17.8	-15.5
20-Dec	-17	-16	-17	-17	-17	-17	-18	-17	-16	-15	-14	-13	-13	-12	-11	-11	-10	-8	-6	-7	-7	-6	-6	-6	-12.2	-5.6
21-Dec	-7	-9	-9	-10	-9	-9	-13	-11	-11	-10	-9	-9	-9	-7	-6	-6	-8	-9	-10	-9	-7	-7	-8	-10	-8.8	-6.0
22-Dec	-10	-10	-11	-11	-11	-10	-10	-11	-11	-12	-14	-14	-13	-13	-13	-13	-13	-14	-15	-16	-16	-15	-15	-16	-12.8	-9.9
23-Dec	-16	-17	-17	-18	-17	-18	-17	-17	-17	-16	-16	-15	-14	-13	-13	-12	-12	-13	-13	-13	-13	-12	-13	-13	-14.8	-12.3
24-Dec	-13	-13	-13	-13	-13	-13	-13	-13	-14	-14	-13	-13	-12	-12	-12	-12	-13	-14	-15	-14	-14	-14	-14	-14	-13.4	-11.9
25-Dec	-15	-14	-14	-13	-13	-14	-13	-13	-13	-13	-13	-13	-13	-12	-12	-12	-12	-12	-13	-14	-14	-15	-17	-18	-13.6	-12.0
26-Dec	-19	-20	-20	-20	-20	-20	-19	-21	-21	-20	-20	-20	-19	-17	-16	-16	-17	-17	-17	-16	-16	-16	-16	-15	-18.1	-15.3
27-Dec	-15	-15	-15	-15	-15	-17	-17	-15	-16	-14	-16	-16	-12	-12	-12	-11	-10	-11	-11	-10	-8	-9	-9	-9	-12.9	-8.4
28-Dec	-10	-12	-13	-14	-15	-17	-14	-16	-17	-18	-18	-16	-13	-10	-12	-13	-14	-16	-16	-16	-15	-15	-17	-17	-14.7	-9.6
29-Dec	-16	-15	-16	-16	-16	-15	-15	-16	-15	-15	-12	-12	-11	-10	-10	-10	-10	-11	-11	-11	-10	-11	-11	-11	-12.6	-9.6
30-Dec	-11	-11	-11	-11	-11	-12	-13	-14	-13	-14	-14	-12	-12	-11	-10	-9	-9	-9	-9	-9	-8	-10	-10	-10	-10.9	-8.4
31-Dec	-10	-9	-9	-8	-8	-7	-4	-5	-5	-2	-1	-3	-3	-1	0	1	1	0	-1	-2	-3	-3	-1	0	-3.4	0.6
																								Diurnal Average		
																								Diurnal Maximum		

Hourly Averages

External Temperature (ET) - °C
Beaverlodge - December 2015





Peace Airshed Zone Association

Hourly Averages

Relative Humidity (RH) - %

Beaverlodge - December 2015

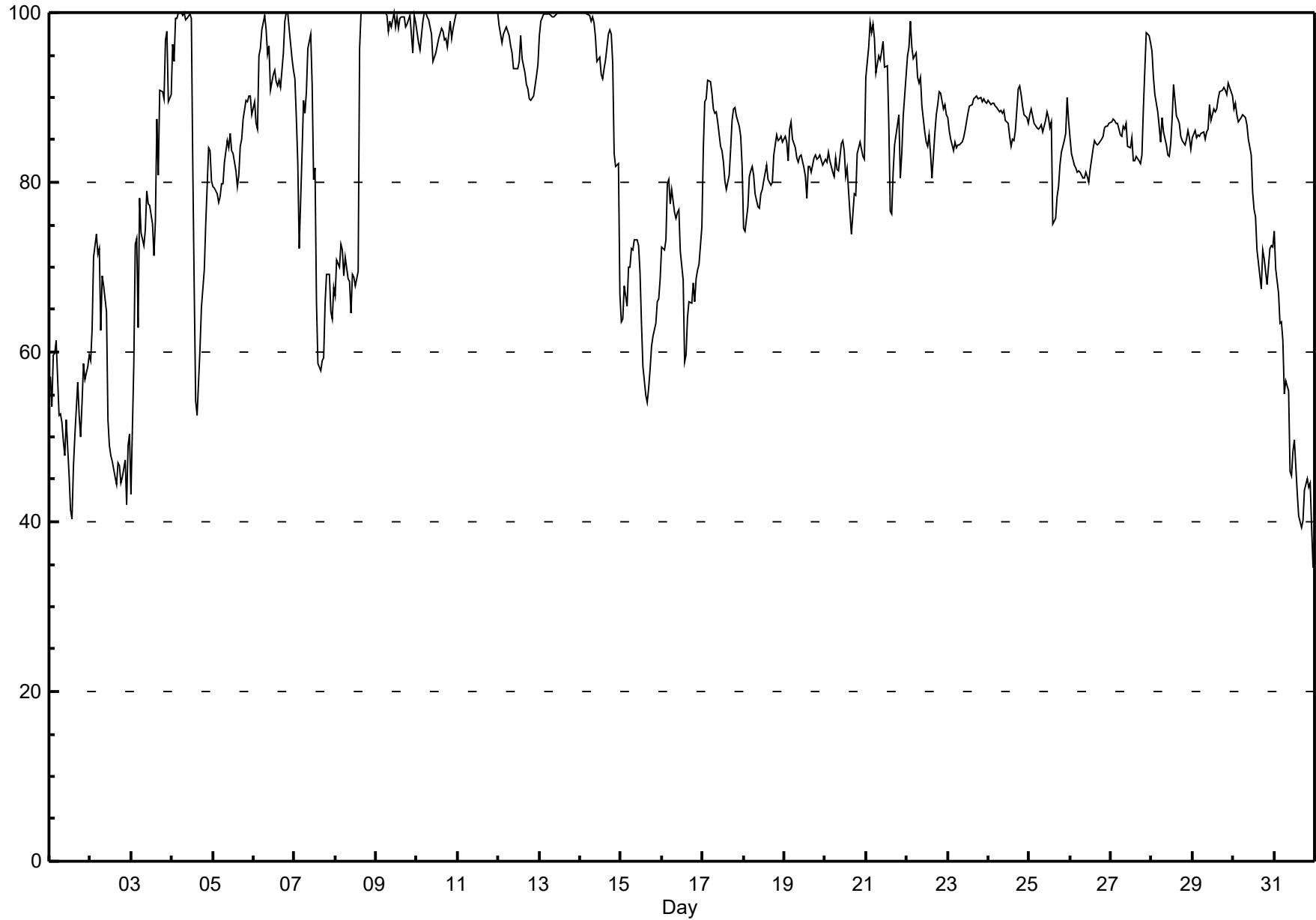
Number of Exceedences (AAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 100.0 % on Dec 6 20:00	Maximum Daily Average: 100.0 % on Dec 11		Hours of Data:	744
Minimum Value: 35 % on Jan 1 00:00	Minimum Daily Average: 50.4 % on Dec 31		Hours of Missing Data:	0
Maximum Diurnal Average: 85.8 % at hour 6	Minimum Diurnal Average: 78.4 % at hour 15		Hours of Calibration:	0
Monthly Average: 83.07 %	Percentiles: P ₁ = 41.3 P ₁₀ = 61.3 Q ₁ = 77.2 Median = 85.7 Q ₃ = 93.4 P ₉₀ = 99.7 P ₉₉ = 100.0		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-Dec	57	54	60	60	61	53	53	52	49	48	52	45	41	40	46	50	57	52	50	54	59	57	58	60	52.8	61.3	
2-Dec	59	63	71	74	71	72	63	69	68	65	52	49	48	47	45	44	47	47	44	45	47	42	49	50	55.5	73.9	
3-Dec	43	59	73	73	63	78	74	73	74	79	77	77	75	71	75	88	81	91	91	90	97	98	89	90	78.3	97.8	
4-Dec	96	94	99	99	100	100	100	100	99	99	100	99	82	67	54	53	60	65	68	70	75	84	84	80	84.5	100.0	
5-Dec	79	79	79	78	78	80	80	82	85	84	86	84	83	81	79	81	84	85	87	90	89	90	90	88	83.5	90.2	
6-Dec	89	87	86	95	96	98	100	98	95	96	91	93	93	92	91	92	91	95	99	100	100	98	95	93	94.3	100.0	
7-Dec	92	88	82	72	84	90	88	91	96	98	92	80	82	66	59	58	59	59	66	69	69	65	64	68	76.4	97.5	
8-Dec	67	71	70	73	72	69	71	69	68	65	69	69	68	69	96	100	100	100	100	100	100	100	100	100	81.9	100.0	
9-Dec	100	100	100	100	100	100	100	100	98	99	98	100	98	100	98	99	100	99	98	99	99	100	95	100	99	99.1	100.0
10-Dec	98	96	96	99	100	100	99	99	97	94	95	95	96	97	98	98	97	97	96	99	97	98	99	100	97.5	100.0	
11-Dec	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100.0	100.0	
12-Dec	99	97	96	97	98	98	97	96	95	93	93	93	94	97	95	93	92	91	90	90	90	91	93	94	94.3	98.5	
13-Dec	97	99	100	100	100	100	100	100	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	99.7	100.0	
14-Dec	100	100	100	100	100	100	99	99	99	97	94	95	93	92	93	94	97	98	98	94	83	82	82	67	94.0	100.0	
15-Dec	64	64	68	65	70	70	72	72	73	73	73	69	63	58	55	54	56	58	61	62	63	66	66	69	65.2	73.2	
16-Dec	72	72	73	80	80	77	79	76	76	76	77	72	69	59	60	64	66	66	68	66	69	70	70	75	71.3	80.3	
17-Dec	84	90	90	92	92	91	89	88	88	87	84	84	82	80	79	81	84	87	89	89	88	87	85	82	86.3	92.0	
18-Dec	75	74	77	81	81	82	81	79	77	77	79	79	80	82	80	80	80	80	83	86	85	85	85	85	80.5	85.7	
19-Dec	85	85	82	86	87	85	84	83	82	83	83	82	81	78	82	82	81	83	83	83	83	83	82	82	83.0	87.1	
20-Dec	83	82	83	82	81	81	83	82	81	85	85	84	81	82	76	74	76	79	79	83	85	84	83	83	81.5	84.9	
21-Dec	92	96	99	98	99	97	93	95	94	95	97	93	94	87	77	76	81	84	87	88	81	83	88	93	90.3	98.8	
22-Dec	95	96	99	96	95	95	92	92	92	89	86	85	84	86	83	81	86	88	89	91	90	89	89	88	89.8	99.0	
23-Dec	88	86	85	84	85	84	84	84	85	85	86	87	88	89	89	90	90	90	90	90	90	90	89	89	87.4	90.2	
24-Dec	90	89	89	89	89	89	88	88	88	88	87	87	85	84	85	85	86	91	91	90	89	88	88	87	88.0	91.4	
25-Dec	88	89	88	87	86	86	86	87	86	87	88	88	86	87	75	76	78	80	82	84	85	86	90	87	85.1	90.1	
26-Dec	85	83	82	82	81	81	81	81	80	81	81	80	82	84	85	85	84	85	85	85	86	87	87	87	83.3	87.0	
27-Dec	87	87	87	87	87	86	85	87	86	87	84	84	85	82	82	83	83	82	83	89	93	98	97	96	87.1	97.6	
28-Dec	95	92	90	88	87	85	88	86	84	83	83	85	87	92	88	87	87	85	85	84	85	86	85	84	86.8	95.3	
29-Dec	85	86	85	86	85	86	86	85	86	86	89	87	89	88	89	90	91	91	91	91	90	92	91	90	88.1	91.6	
30-Dec	89	89	88	87	88	88	88	88	87	85	83	79	77	76	72	69	68	72	71	69	68	72	73	72	79.0	89.3	
31-Dec	74	70	67	63	64	61	55	57	55	46	45	48	50	43	41	40	39	40	44	45	44	45	39	35	50.4	74.2	

84.1	84.4	85.3	85.6	85.8	85.8	85.1	84.9	84.8	84.2	83.6	82.3	81.2	79.2	78.4	78.9	80.0	81.3	82.2	83.0	83.2	83.5	83.6	83.0	Diurnal Average
100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	Diurnal Maximum

Hourly Averages

Relative Humidity (RH) - %
Beaverlodge - December 2015



Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Beaverlodge - December 2015

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1 Spd	2	5	7	4	0	4	2	2	6	2	2	2	3	3	1	3	2	3	3	3	2	1	4	1	1.4	7.4	
Dir	20	23	306	16	204	67	128	141	57	107	45	96	69	101	217	125	141	112	140	275	29	353	52	75	61	306	
2 Spd	1	2	4	5	2	3	1	4	5	14	30	52	48	38	31	16	15	5	12	4	6	7	6	3	10.0	51.8	
Dir	40	64	246	337	351	61	346	237	215	234	249	249	245	244	252	284	276	273	297	341	46	54	57	80	257	249	
3 Spd	4	5	7	5	10	6	2	10	1	3	0	1	8	4	3	15	5	1	8	4	4	4	2	3	2.4	14.7	
Dir	56	287	335	20	36	197	249	55	354	338	28	0	337	336	335	324	15	171	237	305	352	58	188	240	357	15	
4 Spd	8	11	11	5	4	3	3	4	2	2	3	3	8	16	17	22	11	6	0	9	11	8	22	22	5.0	22.2	
Dir	318	329	326	297	64	84	59	26	355	28	30	136	220	234	244	246	239	237	220	355	2	334	325	330	301	246	
5 Spd	19	14	10	10	6	1	1	0	1	3	2	3	4	6	2	5	5	2	3	2	3	3	3	3	4.0	19.2	
Dir	332	333	342	345	4	68	88	210	14	276	72	231	326	343	5	287	314	354	338	330	337	326	39	7	337	332	
6 Spd	9	7	9	10	5	4	4	4	3	3	3	5	2	2	1	4	3	2	1	1	2	0	1	2	3	0.9	9.5
Dir	298	2	14	264	198	190	48	51	123	114	35	291	138	232	266	331	335	331	184	65	17	320	249	222	326	264	
7 Spd	3	1	1	3	6	2	5	5	3	1	4	9	1	20	24	29	13	14	4	16	11	11	11	3	7.2	29.1	
Dir	227	256	109	192	305	336	42	316	273	66	196	236	165	258	253	250	252	259	243	251	252	261	246	231	254	250	
8 Spd	4	1	1	4	5	3	4	7	9	9	10	11	6	9	13	4	9	6	6	5	6	2	2	4	3.3	13.3	
Dir	231	185	110	93	65	77	75	77	84	102	106	111	158	135	92	107	281	215	215	216	181	45	125	49	117	92	
9 Spd	2	1	2	5	4	5	3	1	2	2	1	1	2	2	3	2	5	1	1	4	4	1	1	3	1.6	5.0	
Dir	70	81	62	58	72	53	95	253	49	172	20	101	88	210	2	351	42	338	288	60	52	178	101	114	61	53	
10 Spd	6	4	4	4	4	4	3	2	2	1	2	4	2	2	1	3	2	6	3	8	4	1	4	8	0.7	7.9	
Dir	93	130	136	95	125	87	77	340	53	332	295	37	19	265	331	192	69	269	260	300	255	163	355	13	30	13	
11 Spd	8	10	11	13	13	2	10	7	7	8	7	6	3	2	4	1	1	3	1	3	2	6	7	8	3.3	12.7	
Dir	352	329	319	322	319	333	225	296	311	321	327	324	356	311	312	320	54	167	136	81	139	128	102	66	328	319	
12 Spd	1	4	3	2	2	0	3	1	2	3	3	2	1	1	3	4	4	3	3	2	4	4	1	0	1.3	4.4	
Dir	63	288	32	25	241	321	145	281	334	19	296	330	179	206	255	214	358	335	332	319	336	312	306	8	320	358	
13 Spd	2	5	8	9	8	8	7	11	9	9	8	8	8	7	6	6	5	4	5	6	8	8	8	8	5.7	11.3	
Dir	47	69	83	77	61	51	9	3	352	346	338	342	338	341	346	345	353	348	14	342	332	321	321	311	359	3	
14 Spd	10	8	5	3	6	6	4	6	4	6	5	3	3	4	3	3	4	3	2	8	9	5	6	11	2.7	11.0	
Dir	327	318	245	244	266	261	268	282	254	218	215	184	161	73	71	82	76	116	100	221	223	196	250	250	246	250	
15 Spd	14	6	2	9	5	6	6	20	16	20	18	20	23	23	21	19	13	7	7	9	9	10	9	7	11.7	23.4	
Dir	246	213	312	292	223	195	247	271	270	274	270	266	276	281	281	278	271	282	291	291	329	298	301	284	275	276	
16 Spd	4	4	5	1	4	3	3	3	2	5	4	3	1	2	1	2	1	3	3	4	4	6	4	2	2.2	5.6	
Dir	322	358	352	318	47	25	53	51	12	325	319	298	303	178	177	52	37	257	358	333	337	316	311	278	341	316	
17 Spd	3	3	3	4	3	4	4	2	1	2	2	3	3	4	4	3	6	2	5	11	8	22	26	24	5.1	25.7	
Dir	83	55	33	64	93	55	32	40	70	67	92	62	64	46	280	348	260	72	116	92	81	86	88	89	79	88	
18 Spd	24	19	12	13	10	11	16	16	21	22	23	23	23	17	16	14	9	5	2	6	4	3	5	6	11.2	23.5	
Dir	90	88	83	92	85	68	92	80	84	81	78	83	83	77	90	101	105	92	230	281	293	255	241	225	86	90	
19 Spd	4	2	2	4	4	6	6	7	3	1	3	1	1	1	2	1	0	2	4	4	1	2	1	1	0.8	6.8	
Dir	216	159	169	101	93	102	126	94	102	230	261	346	314	249	293	308	275	353	56	330	10	18	281	19	91	94	
20 Spd	3	3	3	1	1	1	2	2	0	2	2	3	3	2	3	3	5	1	2	3	3	4	3	1	1.1	5.0	
Dir	290	56	11	260	56	294	43	33	61	297	338	273	74	341	231	92	60	32	234	67	69	61	55	26	33	60	
21 Spd	3	1	3	2	3	2	3	3	5	4	5	3	5	4	5	3	1	2	1	4	5	1	3	2	2.3	5.4	
Dir	77	49	101	134	78	119	162	66	67	66	54	140	83	51	45	38	133	219	267	39	45	67	87	157	75	54	
22 Spd	4	2	3	3	4	14	3	2	1	9	9	5	1	6	3	2	2	7	5	2	4	0	3	4	2.6	13.9	
Dir	80	143	62	302	344	329	358	158	333	336	346	326	341	280	304	272	27	26	32	57	114	145	32	46	353	329	

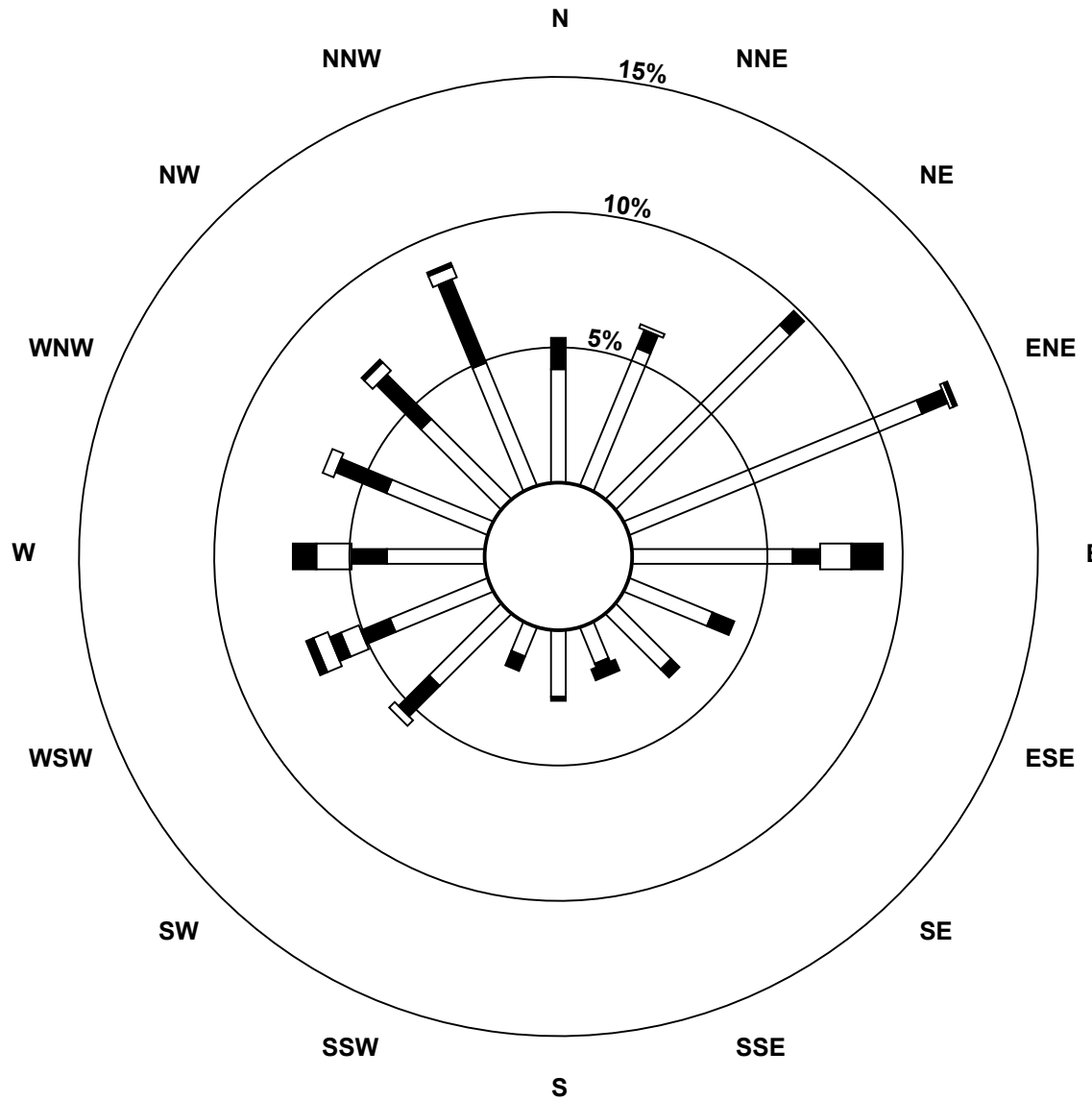
Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Beaverlodge - December 2015

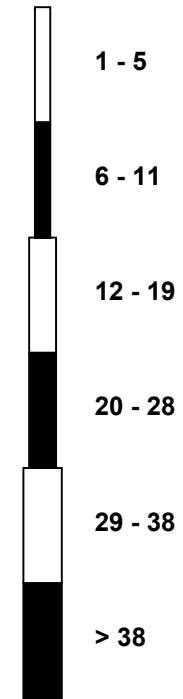
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	2	5	2	2	2	1	3	2	2	2	2	1	3	2	3	2	1	2	0	1	2	0	2	1	1.2	4.9
Dir	267	288	312	336	271	99	300	2	53	290	38	265	298	265	243	254	274	282	257	203	223	178	188	354	286	288
24 Spd	0	1	5	6	5	4	1	3	4	5	2	1	3	4	2	4	3	4	4	4	4	3	3	2	2.2	5.9
Dir	94	20	24	20	22	13	21	319	29	28	24	77	162	50	2	358	171	99	80	64	46	51	283	205	34	20
25 Spd	3	3	2	1	2	2	2	1	2	3	4	4	4	10	13	12	9	5	4	4	6	5	4	3	2.6	13.0
Dir	58	73	89	108	102	90	67	50	72	281	300	274	216	298	300	306	303	303	309	317	317	306	73	118	314	300
26 Spd	2	4	3	4	3	2	2	5	4	2	1	1	5	2	2	2	3	3	5	3	6	5	6	4	0.5	6.0
Dir	141	111	102	78	103	109	150	235	21	347	152	196	52	138	254	251	225	253	279	22	30	240	207	191	167	207
27 Spd	1	3	4	3	2	1	4	2	2	3	4	3	2	1	0	2	1	1	1	2	1	2	2	3	0.7	4.2
Dir	87	59	301	282	6	280	60	240	47	351	170	144	76	73	113	358	70	183	18	8	40	270	22	306	19	170
28 Spd	5	8	5	3	2	4	2	5	1	3	1	3	2	0	0	2	1	3	1	1	2	3	1	2	1.6	7.6
Dir	315	320	338	40	306	35	10	39	58	58	149	54	54	171	219	50	231	58	96	80	78	66	86	67	26	320
29 Spd	2	3	2	20	20	20	5	3	2	2	2	1	3	3	4	2	3	3	2	2	3	6	5	2.4	20.1	
Dir	63	67	80	165	163	165	61	86	109	110	119	85	79	71	60	55	64	52	260	40	55	346	308	249	133	165
30 Spd	4	1	3	1	1	1	2	3	1	1	5	2	2	2	2	4	4	4	1	5	8	3	3	3	0.4	8.0
Dir	250	340	289	297	62	208	69	56	125	161	53	82	171	64	52	54	75	64	230	244	235	246	69	70	63	235
31 Spd	4	2	2	3	2	2	14	11	2	12	18	4	5	2	2	1	3	5	3	3	6	3	12	11	2.6	18.2
Dir	70	56	34	38	68	297	251	239	31	268	271	78	81	85	123	152	218	236	69	173	218	234	270	296	262	271
Spd	1.5	2.0	2.3	1.2	1.4	1.4	1.1	1.3	1.5	1.3	1.5	1.4	1.0	2.4	2.9	2.5	1.7	1.0	0.9	1.8	1.4	1.1	1.3	1.1	Diurnal Average	
Dir	355	7	2	24	56	80	69	11	36	326	311	258	269	269	276	281	299	275	302	317	339	340	339	345	Diurnal Maximum	
Spd	23.5	19.3	12.0	20.1	19.6	19.9	15.5	20.0	21.0	22.2	29.9	51.8	48.1	38.0	30.9	29.1	14.7	13.6	11.7	15.9	11.3	22.0	25.7	23.6	Diurnal Maximum	
Dir	90	88	83	165	163	165	92	271	84	81	249	249	245	244	252	250	15	259	297	251	2	86	88	89	Diurnal Maximum	
Maximum Speed Value: 52 km/h on Dec 2 12:00																		Minimum Speed Value: 0 km/h on Dec 1 05:00						Hours in Service:		744
Maximum Daily Speed Average: 11.7 km/h on Dec 18																		Minimum Daily Speed Average: 0.4 km/h on Dec 23						Hours of Data:		744
Maximum Diurnal Speed Average: 2.9 km/h at hour 15																		Minimum Diurnal Speed Average: 0.9 km/h at hour 19						Hours of Missing Data:		0
Monthly Average Velocity: 1.01 km/h 328.3 deg																		Speed Percentiles: P ₁ = 0.3 P ₁₀ = 1.2 Q ₁ = 2.0 Median = 3.3 Q ₃ = 5.6 P ₉₀ = 11.1 P ₉₉ = 22.5						Percent Operational Time:		100.0
All monthly, daily, and diurnal averages have been calculated using vector methods																										
Frequency Distribution																										
		Speed Range (km/h)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	66	24	3	0	0	0	93																			
NorthEast	127	18	0	0	0	0	145																			
East	95	14	11	10	0	0	130																			
SouthEast	39	3	0	0	0	0	42																			
South	35	5	0	3	0	0	43																			
SouthWest	47	20	5	1	0	2	75																			
West	55	19	15	8	3	1	101																			
NorthWest	66	36	10	3	0	0	115																			
Total	530	139	44	25	3	3	744																			

Wind Rose

Wind Speed (WS) (km/h)
Beaverlodge - December 2015



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Beaverlodge - December 2015

Maximum Speed: 52 km/h on Dec 2 12:00	Maximum Daily Speed Average: 14.2 km/h on Dec 2	Hours in Service: 744
Minimum Speed: 1 km/h on Dec 28 14:00	Minimum Daily Speed Average: 2.7 km/h on Dec 23	Hours of Data: 744
Maximum Diurnal Speed Average: 7.2 km/h at hour 15	Minimum Diurnal Speed Average: 4.4 km/h at hour 19	Hours of Missing Data: 0
Monthly Average Speed: 5.91 km/h	Percentiles: P ₁ = 1.2 P ₁₀ = 2.3 Q ₁ = 3.2 Median = 4.3 Q ₃ = 6.2 P ₉₀ = 11.4 P ₉₉ = 22.5	Percent Operational Time: 100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	3	5	8	5	5	5	4	3	6	5	5	4	4	3	3	3	3	4	4	5	4	4	5	2	4.2	8.4
2-Dec	2	4	5	6	4	3	4	6	7	14	30	52	48	38	31	17	15	11	12	5	6	7	7	6	14.2	51.9
3-Dec	5	6	11	7	10	7	5	11	4	5	2	2	9	4	5	4	15	8	4	8	6	4	3	4	6.1	14.9
4-Dec	9	11	12	8	5	4	5	6	4	5	4	4	8	16	18	22	12	6	2	10	12	9	22	22	9.7	22.2
5-Dec	19	14	10	10	7	2	3	2	2	4	3	3	4	7	3	6	5	3	6	4	5	3	4	4	5.7	19.3
6-Dec	9	8	12	11	5	5	4	5	4	4	7	3	4	3	4	4	4	4	2	3	3	4	3	3	4.9	12.1
7-Dec	4	5	3	4	7	3	5	7	4	2	5	10	7	21	24	29	13	14	7	16	11	12	11	5	9.5	29.2
8-Dec	5	3	3	5	5	5	5	7	9	9	10	12	8	11	14	8	9	6	6	5	7	5	5	4	6.9	13.5
9-Dec	3	2	4	5	5	5	3	3	3	3	2	4	4	2	4	4	5	4	4	6	5	3	5	4	3.8	5.8
10-Dec	6	4	4	5	4	5	4	6	3	3	4	4	3	3	4	4	4	7	6	8	6	5	6	9	4.8	9.1
11-Dec	8	10	11	13	13	11	13	8	8	8	8	6	4	3	4	2	2	3	2	3	2	6	7	8	6.7	13.0
12-Dec	4	6	4	3	3	2	4	2	2	5	3	3	2	1	3	5	6	3	4	3	5	5	3	1	3.4	5.6
13-Dec	3	5	8	9	8	8	8	11	9	9	8	9	8	8	6	6	6	4	6	6	8	8	8	8	7.3	11.4
14-Dec	10	8	5	3	6	6	4	6	4	6	5	3	3	4	3	4	4	3	3	8	9	5	8	11	5.5	11.2
15-Dec	15	6	4	10	6	6	8	20	17	20	18	20	24	23	22	19	13	7	8	10	11	10	9	7	13.0	23.5
16-Dec	4	5	5	2	4	5	3	3	3	6	5	5	5	3	2	3	1	3	5	4	5	6	4	4	4.0	5.8
17-Dec	4	3	3	4	4	5	5	2	3	2	3	3	3	4	5	4	7	4	6	11	9	22	26	24	6.9	25.7
18-Dec	24	19	12	13	10	12	16	16	21	22	23	23	23	17	16	14	9	6	3	6	4	3	5	6	13.5	23.6
19-Dec	5	3	2	4	4	6	6	7	3	2	3	2	2	2	3	3	2	3	4	6	3	3	3	3	3.7	6.9
20-Dec	4	3	5	3	2	3	4	3	2	4	5	5	4	5	4	3	6	3	4	4	3	4	3	4	3.8	6.1
21-Dec	4	2	4	3	3	4	6	4	5	4	6	4	5	5	5	3	2	3	2	5	6	2	5	4	3.9	5.8
22-Dec	4	3	3	5	6	14	5	2	2	9	10	5	3	6	3	2	2	7	5	2	4	1	4	4	4.7	14.2
23-Dec	3	5	3	3	4	2	4	3	2	3	3	3	3	3	4	3	2	3	1	2	2	1	2	1	2.7	5.5
24-Dec	1	3	5	6	5	4	4	2	3	4	5	3	1	3	5	4	4	3	4	4	4	3	3	3	3.6	5.9
25-Dec	3	3	2	2	2	2	2	1	2	3	5	5	4	10	13	12	9	5	4	4	6	5	4	3	4.7	13.1
26-Dec	3	4	3	5	3	3	3	5	5	3	2	2	5	3	3	4	4	3	5	4	9	5	7	4	4.0	8.9
27-Dec	3	4	5	4	3	3	4	3	3	4	4	4	3	3	4	4	2	2	4	3	2	4	4	4	3.3	4.6
28-Dec	5	8	5	3	3	5	4	6	3	4	1	3	2	1	1	3	3	4	2	2	2	3	2	2	3.2	7.7
29-Dec	3	3	3	22	22	20	5	4	2	2	2	2	2	3	3	4	3	3	3	3	3	4	6	5	5.5	22.4
30-Dec	4	2	4	3	2	2	3	3	2	5	6	3	3	2	4	4	4	4	4	6	8	3	3	3	3.7	8.1
31-Dec	4	4	2	3	5	4	14	11	6	12	18	4	5	2	2	4	4	5	4	4	6	7	12	11	6.4	18.4
	6.0	5.6	5.5	6.1	5.7	5.5	5.3	5.7	5.0	6.2	6.9	6.9	6.9	7.0	7.2	6.8	5.8	4.8	4.4	5.5	5.6	5.4	6.4	5.9	Diurnal Average	
	23.6	19.4	12.5	22.0	22.4	20.2	15.9	20.1	21.2	22.3	30.1	51.9	48.1	38.0	31.1	29.2	15.3	13.9	11.9	16.0	11.5	22.1	25.7	23.7	Diurnal Maximum	

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

Hourly Standard Deviations

Wind Direction (WD) - deg
Beaverlodge - December 2015

Maximum Value: 97.6 deg on Dec 6 21:00		Hours in Service: 744																							
Minimum Value: 2.7 deg on Dec 2 14:00		Hours of Data: 744																							
Percentiles: P ₁ = 3.8 P ₁₀ = 8.1 Q ₁ = 16.4 Median = 39.3 Q ₃ = 62.9 P ₉₀ = 78.5 P ₉₉ = 91.8		Hours of Missing Data: 0																							
		Hours of Calibration: 0																							
		Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Dec	67	33	33	58	93	42	56	50	21	56	79	53	35	39	88	42	47	52	50	76	63	87	49	86	93.4
2-Dec	59	72	36	45	65	27	89	77	61	11	7	4	3	3	6	13	30	83	12	43	28	19	47	81	88.6
3-Dec	56	54	53	49	16	39	76	12	84	54	85	80	28	34	60	44	11	47	84	28	50	26	46	41	84.7
4-Dec	11	8	14	51	43	42	83	61	81	77	89	45	20	4	7	4	6	24	90	51	14	44	4	5	89.9
5-Dec	4	8	6	9	20	75	90	91	75	55	89	39	29	26	67	45	19	45	57	56	55	50	37	61	91.4
6-Dec	37	28	49	35	10	38	19	16	56	33	54	63	71	64	30	59	73	91	80	38	98	70	71	38	97.6
7-Dec	49	91	79	34	44	69	23	50	75	71	34	13	77	37	4	4	6	18	87	4	9	13	9	78	91.5
8-Dec	49	77	74	20	8	65	45	12	8	21	16	19	44	30	10	73	18	8	9	16	42	81	63	40	81.3
9-Dec	81	80	70	32	22	15	35	88	76	69	70	79	66	45	50	66	14	71	86	56	67	61	83	51	88.2
10-Dec	10	50	28	42	29	19	24	75	75	85	72	30	57	50	77	69	61	43	65	30	66	76	44	32	85.5
11-Dec	18	15	4	9	8	81	46	26	5	6	16	9	25	30	15	96	42	29	79	10	47	14	16	7	95.7
12-Dec	84	66	46	63	65	93	42	60	51	60	40	56	60	51	26	40	37	46	52	64	49	61	78	88	92.5
13-Dec	68	19	14	15	11	15	16	8	9	10	8	8	8	9	8	9	14	23	11	12	7	7	5	10	67.9
14-Dec	7	17	8	11	11	7	32	6	29	12	11	18	32	9	21	32	13	33	43	17	12	36	71	12	70.6
15-Dec	29	39	72	16	56	17	76	5	5	4	4	6	5	5	5	4	5	17	9	28	34	6	5	10	75.7
16-Dec	35	30	17	62	9	58	30	16	43	29	67	68	88	29	60	64	65	58	56	13	20	11	9	64	87.7
17-Dec	26	52	59	11	48	28	53	77	85	35	64	37	24	8	51	39	27	55	32	11	18	4	3	5	84.9
18-Dec	5	9	18	21	17	14	15	9	8	6	6	6	7	6	6	3	6	11	59	12	8	30	11	7	59.2
19-Dec	23	40	49	13	12	7	16	11	53	56	29	78	80	84	61	74	86	56	45	61	77	65	87	91	91.2
20-Dec	56	30	56	64	75	84	68	81	89	61	75	71	50	68	44	35	40	90	93	42	12	19	34	84	93.4
21-Dec	41	69	47	51	24	46	59	25	24	19	22	42	16	23	12	51	83	56	95	67	47	77	47	62	94.6
22-Dec	23	43	58	58	46	24	59	41	72	13	7	17	74	7	28	25	34	7	23	58	36	92	67	21	91.8
23-Dec	67	33	65	53	71	84	58	35	51	41	69	86	32	54	15	24	66	42	83	87	26	88	45	28	87.5
24-Dec	85	84	11	6	14	13	29	63	11	7	8	48	65	25	19	77	12	31	7	12	6	34	37	51	85.0
25-Dec	45	18	21	21	23	38	16	35	41	44	7	23	10	21	6	6	5	20	26	16	9	40	20	19	45.0
26-Dec	44	31	43	13	37	35	49	32	48	70	68	61	43	71	66	70	38	32	47	39	62	12	24	24	71.5
27-Dec	74	12	48	59	65	80	38	66	37	60	20	37	70	77	81	91	63	46	92	76	70	88	56	37	92.2
28-Dec	11	11	43	26	74	42	72	44	76	68	61	23	13	72	82	84	72	63	46	46	63	20	39	17	84.5
29-Dec	25	12	34	29	34	11	11	17	31	30	32	26	52	33	18	21	23	30	25	60	53	40	13	24	59.9
30-Dec	16	55	52	64	67	88	69	34	60	74	71	90	54	34	87	9	16	23	88	56	9	46	18	13	89.9
31-Dec	7	69	43	64	82	57	6	17	74	29	19	41	21	52	39	78	69	20	63	51	13	81	8	7	81.5
	85.0	91.5	79.1	64.4	93.4	92.5	90.2	91.4	89.3	85.5	89.4	89.9	87.7	84.2	87.6	95.7	86.4	91.5	94.6	87.1	97.6	91.8	87.0	91.2	

PAZA

Valleyview Station

Monthly Summary Tables, Graphs and
Roses

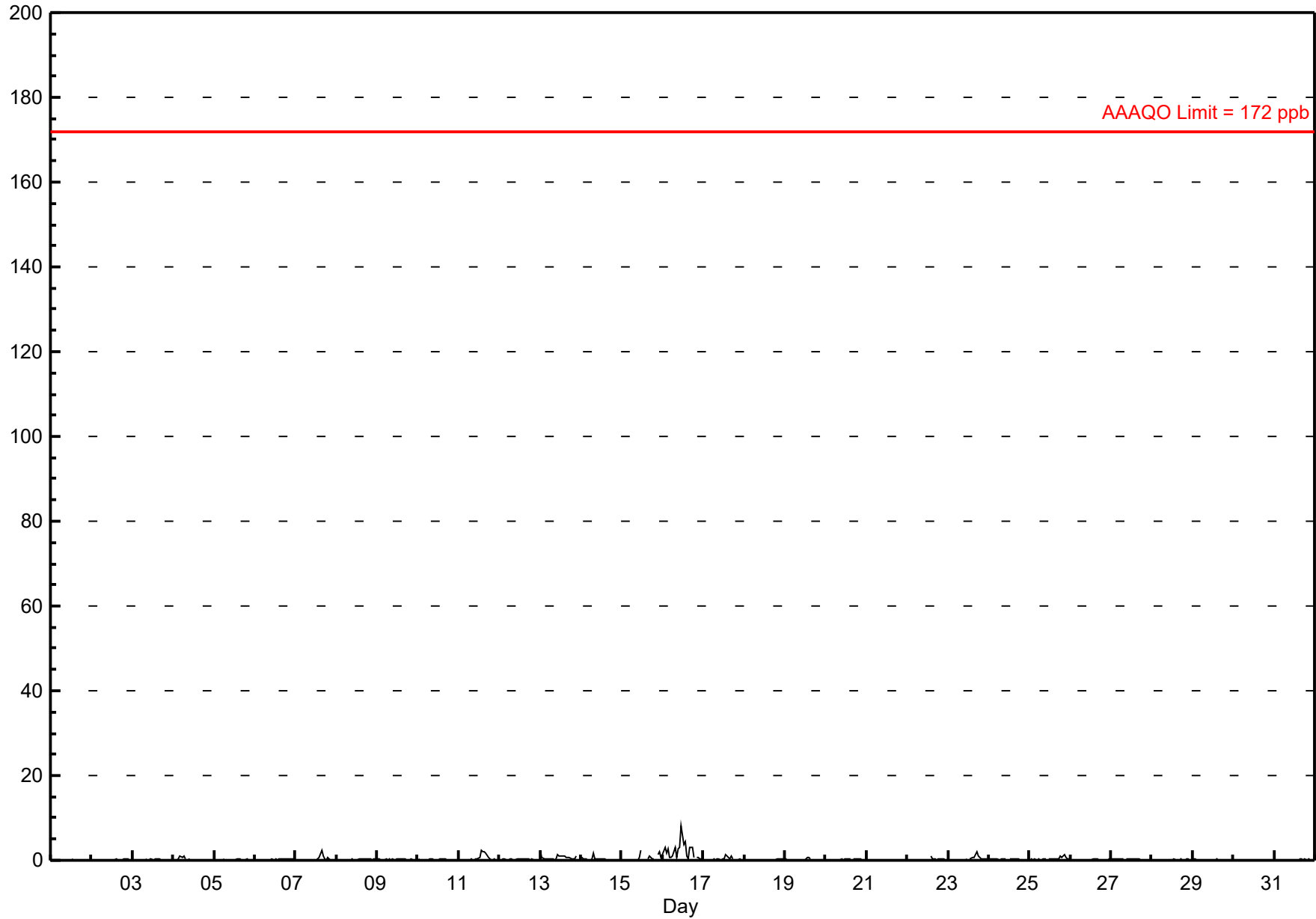
Hourly Averages

Sulphur Dioxide (SO₂) - ppb Valleyview - December 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 8.1 ppb on Dec 16 12:00 Maximum Daily Average: 2.1 ppb on Dec 16		Hours in Service: 744 Hours of Data: 709 Hours of Missing Data: 35 Hours of Calibration: 35 Percent Operational Time: 100.0																																																	
Minimum Value: 0 ppb on Dec 1 02:00 Maximum Diurnal Average: 0.5 ppb at hour 12 Monthly Average: 0.27 ppb		Minimum Daily Average: 0.0 ppb on Dec 30 Minimum Diurnal Average: 0.1 ppb at hour 9 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.1 Q ₃ = 0.2 P ₉₀ = 0.5 P ₉₉ = 2.9																																																	
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-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2																								
2-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4																								
3-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4																								
4-Dec	0	0	0	0	1	1	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.9																								
5-Dec	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3																								
6-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0.2	0.5																								
7-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	2	1	0	0	1	0	0	0	0	0	0.3	2.2																								
8-Dec	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	0.3																								
9-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3																								
10-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3																								
11-Dec	0	A	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	1	0	0	0	0	0	0	0	0.5	2.5																								
12-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.2	0.4																								
13-Dec	3	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	1	A	1	0.6	2.5																									
14-Dec	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	A	1	0	0.3	1.7																									
15-Dec	0	0	0	0	0	0	0	0	0	0	1	2	C	C	C	0	1	1	0	0	A	1	2	1	0.5	2.3																									
16-Dec	1	3	2	3	1	1	1	3	1	3	3	8	4	5	1	0	3	3	1	A	1	1	0	0	2.1	8.1																									
17-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	A	0	0	0	0	0	0.3	1.4																									
18-Dec	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	0.3																									
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	A	0	0	0	0	0	0	0	0.2	0.5																									
20-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.2	0.4																									
21-Dec	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	0.1																									
22-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	1	0	0	0	0	0	0	0	0	0	0.1	0.9																									
23-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	1	1	1	2	1	0	0	0	0	0	0.4	2.1																									
24-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3																									
25-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	1	1	1	0	0	0.3	1.4																									
26-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4																									
27-Dec	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																									
28-Dec	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	0.2																									
29-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2																									
30-Dec	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																									
31-Dec	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																									
																								Diurnal Average	Diurnal Maximum																										
																								0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.1	0.2	0.3	0.5	0.3	0.5	0.4	0.4	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.8	2.5
																								2.5	2.9	1.7	2.6	0.9	0.7	0.9	3.1	0.8	2.6	3.2	8.1	3.7	4.5	1.9	2.2	2.9	3.1	1.1	0.8	1.4	1.2	2.0	0.8				
C - Calibration A - Automated Daily Zero Span Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb 30-day 11 ppb																																																			

Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Valleyview - December 2015



Hourly Maximums

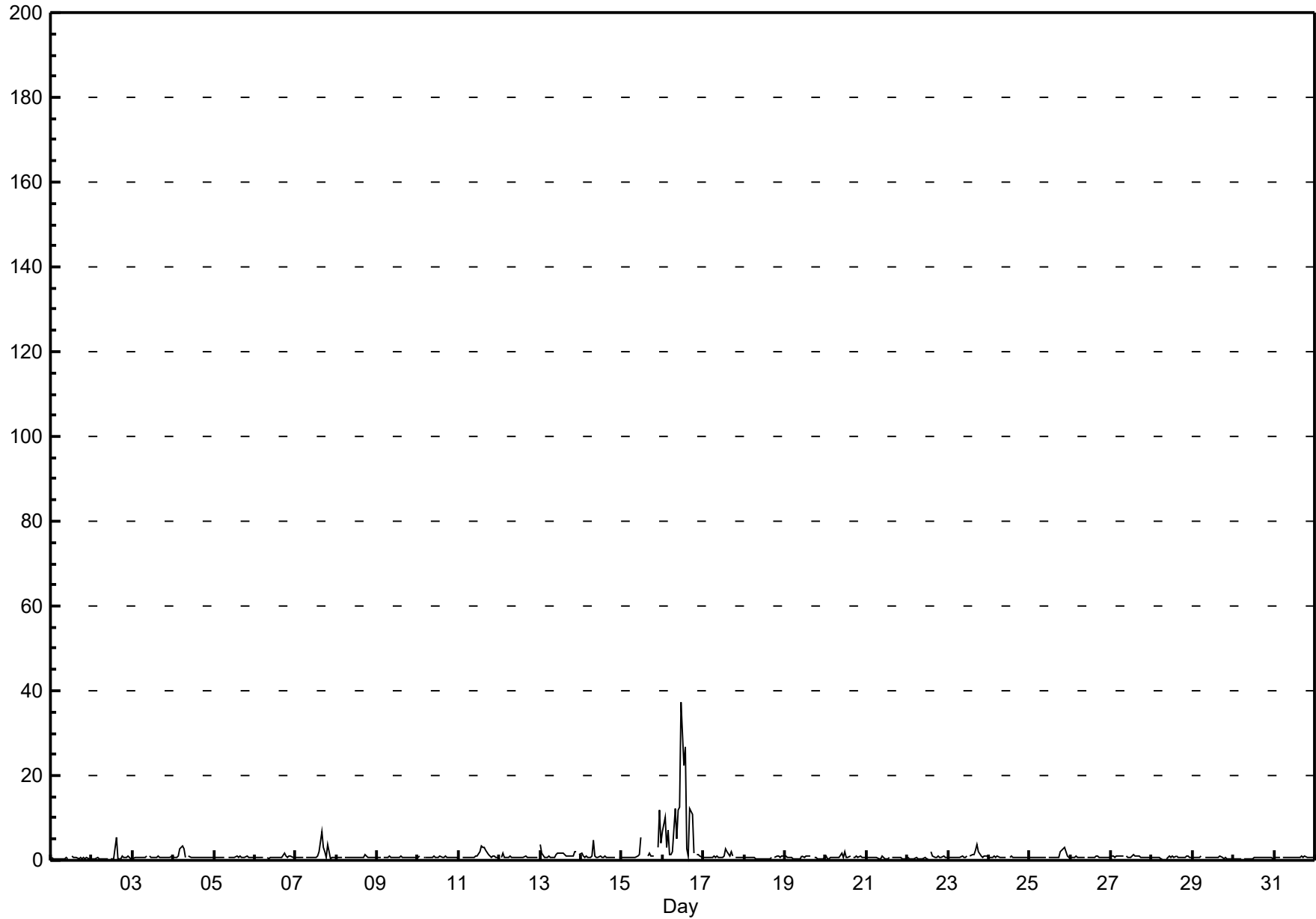
Sulphur Dioxide (SO₂) - ppb

Valleyview - December 2015

Maximum Value: 37.4 ppb on Dec 16 12:00		Maximum Daily Average: 8.4 ppb on Dec 16		Hours in Service: 744																						
Minimum Value: 0 ppb on Dec 30 05:00		Minimum Daily Average: 0.5 ppb on Dec 30		Hours of Data: 709																						
Maximum Diurnal Average: 2.2 ppb at hour 12		Minimum Diurnal Average: 0.7 ppb at hour 5		Hours of Missing Data: 35																						
Monthly Average: 1.06 ppb		Percentiles: P ₁ = 0.4 P ₁₀ = 0.5 Q ₁ = 0.6 Median = 0.6 Q ₃ = 0.8 P ₉₀ = 1.2 P ₉₉ = 11.8		Hours of Calibration: 35																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	1	0	0	0	0	0	0	0	0	1	0	A	1	1	1	1	0	1	0	1	0	1	0	0	0.5	0.9
2-Dec	0	0	0	1	0	0	0	0	0	0	0	A	0	0	0	5	0	0	0	1	1	1	1	1	0.7	5.3
3-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.1
4-Dec	1	1	1	1	3	3	3	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	3.2
5-Dec	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	1.1
6-Dec	1	1	1	1	1	1	A	1	0	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	0.7	1.6
7-Dec	1	1	1	1	1	A	1	1	1	1	1	1	1	1	2	7	3	2	1	4	0	1	1	1	1.3	6.7
8-Dec	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	1.2
9-Dec	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9
10-Dec	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.1
11-Dec	0	A	1	1	1	1	1	1	1	1	1	1	2	4	3	3	2	1	1	1	1	1	1	1	1.2	3.5
12-Dec	A	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.6
13-Dec	4	2	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	2	2	A	1	1.3	3.6
14-Dec	2	1	1	1	1	1	1	5	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.9	4.7
15-Dec	1	1	1	1	1	1	1	1	1	1	1	6	C	C	C	1	2	1	1	1	A	3	12	4	1.9	11.8
16-Dec	7	10	3	7	1	1	2	12	5	12	13	37	22	27	3	1	12	11	2	A	1	1	1	1	8.4	37.4
17-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	3	2	1	2	1	A	1	1	1	1	1	1.0	2.8
18-Dec	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	1	A	1	1	1	1	1	1	0.6	0.9
19-Dec	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	A	1	1	0	0	0	0	1	0.6	1.0
20-Dec	1	0	1	1	1	1	1	1	1	2	1	2	1	1	1	A	1	1	1	1	1	1	1	1	0.8	2.0
21-Dec	1	1	1	1	1	1	1	0	0	1	1	0	0	1	A	1	1	1	1	1	1	1	0	0	0.6	1.0
22-Dec	1	0	0	0	0	1	0	0	0	0	1	0	0	A	2	1	1	1	1	1	1	1	1	1	0.7	2.0
23-Dec	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	2	4	2	1	1	1	1	1	1.0	3.6
24-Dec	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0
25-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	2	2	3	2	1	1	1.0	3.0
26-Dec	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.9
27-Dec	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.3
28-Dec	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	1.0
29-Dec	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0.6	0.9
30-Dec	0	0	0	0	0	A	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0.5	0.7
31-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.9
		1.0	1.0	0.7	0.8	0.7	0.7	0.8	1.1	0.8	1.1	1.1	2.2	1.5	1.9	1.2	1.1	1.4	1.3	0.8	0.8	0.8	0.9	1.0	0.8	Diurnal Average
		6.9	10.2	3.1	7.1	2.6	3.2	2.7	12.4	5.2	12.0	12.6	37.4	22.3	26.8	5.3	6.7	12.3	11.0	2.1	3.8	3.0	3.0	11.8	3.9	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								

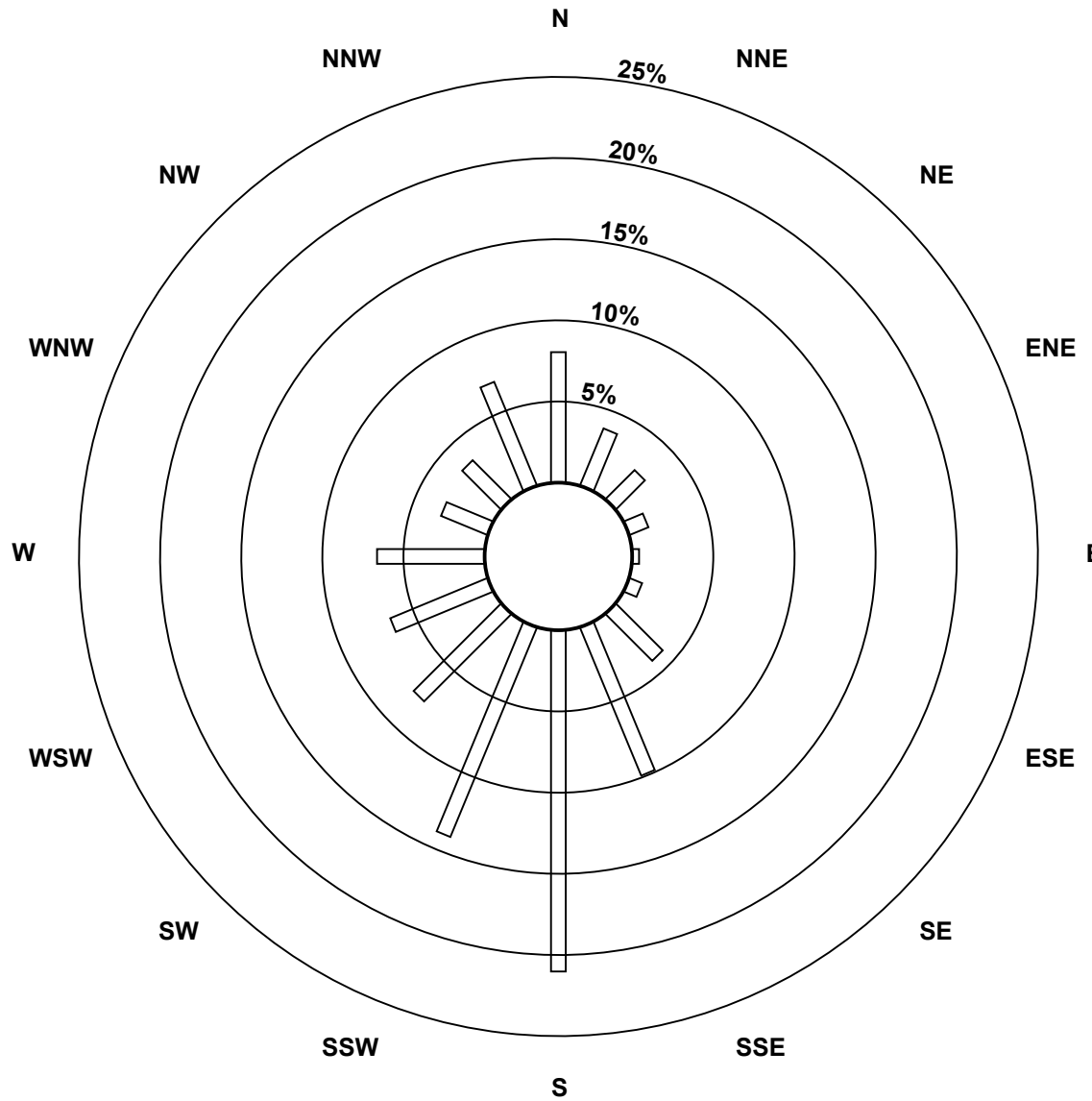
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Valleyview - December 2015

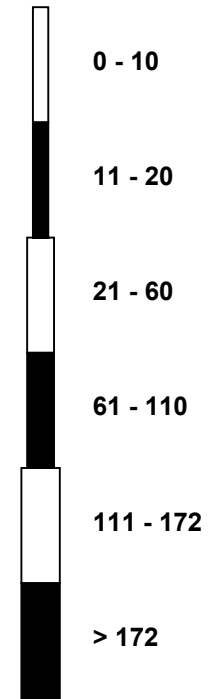


Pollutant Rose

Sulphur Dioxide (SO₂) - ppb
Valleyview - December 2015

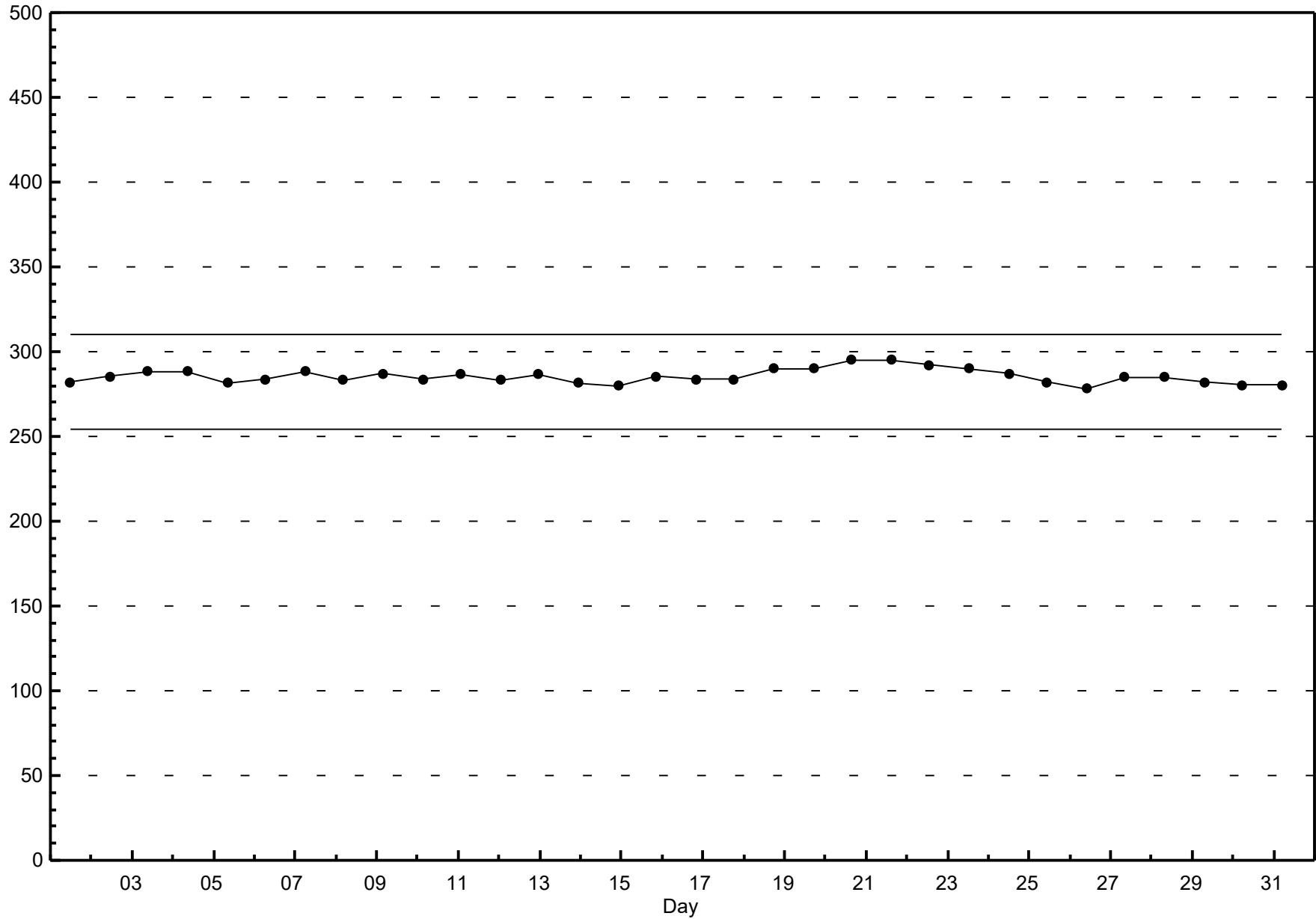


Pollutant Classes (ppb)



Span Responses

Sulphur Dioxide (SO₂)
Valleyview - December 2015

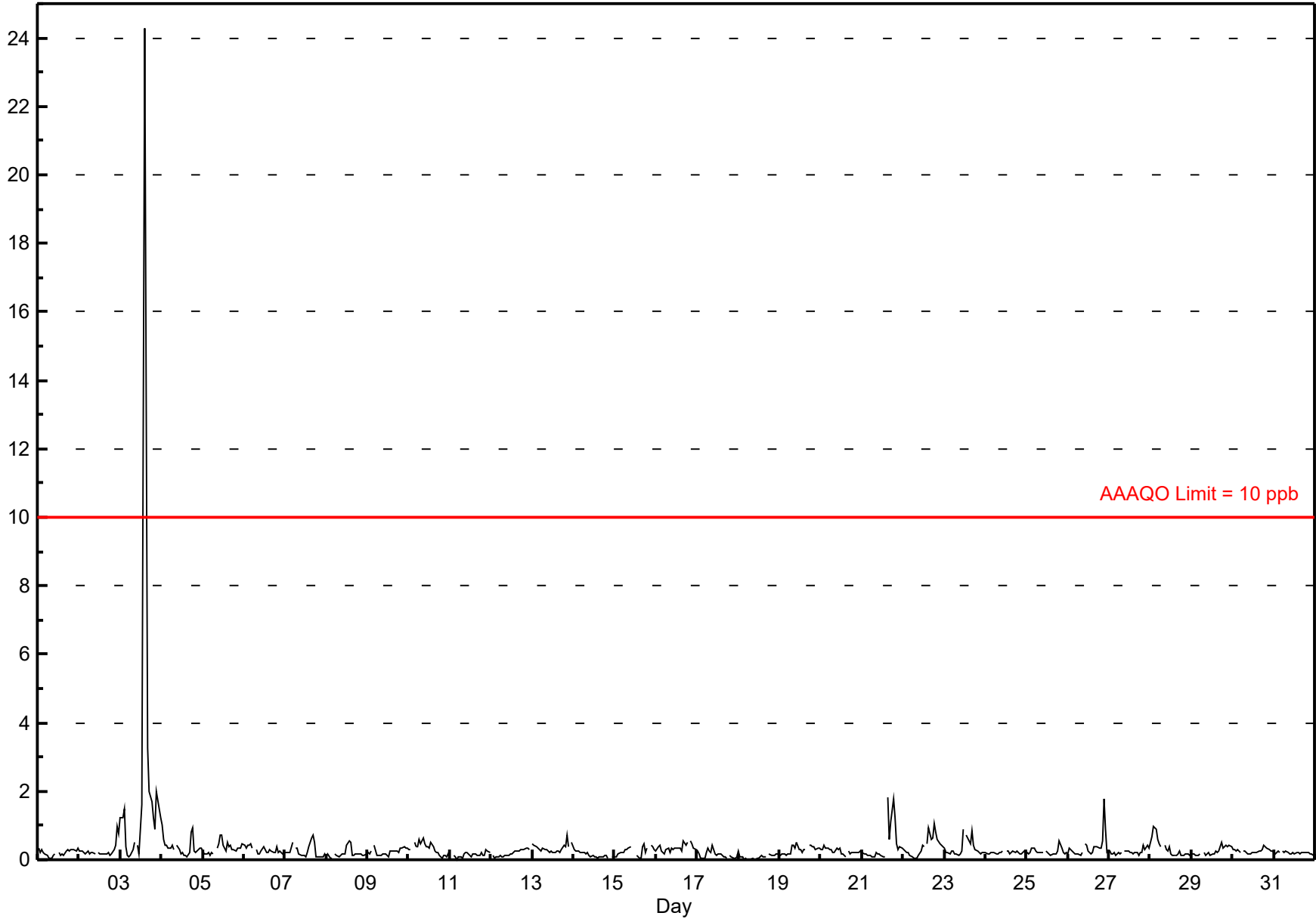


Hourly Averages

Hydrogen Sulphide (H₂S) - ppb

Valleyview - December 2015

Number of Exceedences (AAAQO): 1-hr: 3 24-hr: 0 Maximum Value: 24.3 ppb on Dec 3 15:00 Maximum Daily Average: 3.2 ppb on Dec 3		Hours in Service: 744 Hours of Data: 709 Hours of Missing Data: 35 Hours of Calibration: 35 Percent Operational Time: 100.0																																														
Minimum Value: 0 ppb on Dec 18 06:00 Maximum Diurnal Average: 1.0 ppb at hour 15 Monthly Average: 0.36 ppb		Minimum Daily Average: 0.1 ppb on Dec 18 Minimum Diurnal Average: 0.2 ppb at hour 6 Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.2 Median = 0.2 Q ₃ = 0.3 P ₉₀ = 0.5 P ₉₉ = 1.8																																														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4																						
2-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	1	1	0.3	1.0																						
3-Dec	1	1	1	0	0	0	0	0	1	A	0	0	2	13	24	14	3	2	2	1	1	2	2	1	3.2	24.3																						
4-Dec	1	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0.4	1.0																						
5-Dec	0	0	0	0	0	0	0	A	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7																						
6-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4																						
7-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0.2	0.7																						
8-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0.2	0.5																						
9-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4																						
10-Dec	0	0	A	1	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6																						
11-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3																						
12-Dec	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																						
13-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	A	0	0.3	0.7																						
14-Dec	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																						
15-Dec	0	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	A	0	0	0	0.2	0.5																						
16-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	A	1	0	0	0	0.3	0.6																						
17-Dec	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	0.4																						
18-Dec	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	0.3																						
19-Dec	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0.3	0.5																						
20-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.3	0.4																						
21-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	2	1	1	2	1	0	0	0	0	0.4	1.8																						
22-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	1	1	1	1	1	1	1	0	0	0.4	1.0																						
23-Dec	0	0	0	0	0	0	0	0	0	0	0	1	A	1	1	0	1	0	0	0	0	0	0	0	0.3	0.9																						
24-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3																						
25-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	0	0	0	0	0.2	0.6																						
26-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0.4	1.8																						
27-Dec	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	0.4																						
28-Dec	1	1	1	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.0																						
29-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.2	0.5																						
30-Dec	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																						
31-Dec	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																						
																								0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.7	1.0	0.7	0.4	0.4	0.4	0.3	0.3	0.4	0.3	0.3	Diurnal Average
																								1.2	1.2	1.5	0.9	0.6	0.5	0.6	0.5	0.6	0.5	0.7	0.9	1.6	13.0	24.3	13.6	3.3	2.0	1.8	1.2	0.9	2.0	1.7	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																																																



Hourly Maximums

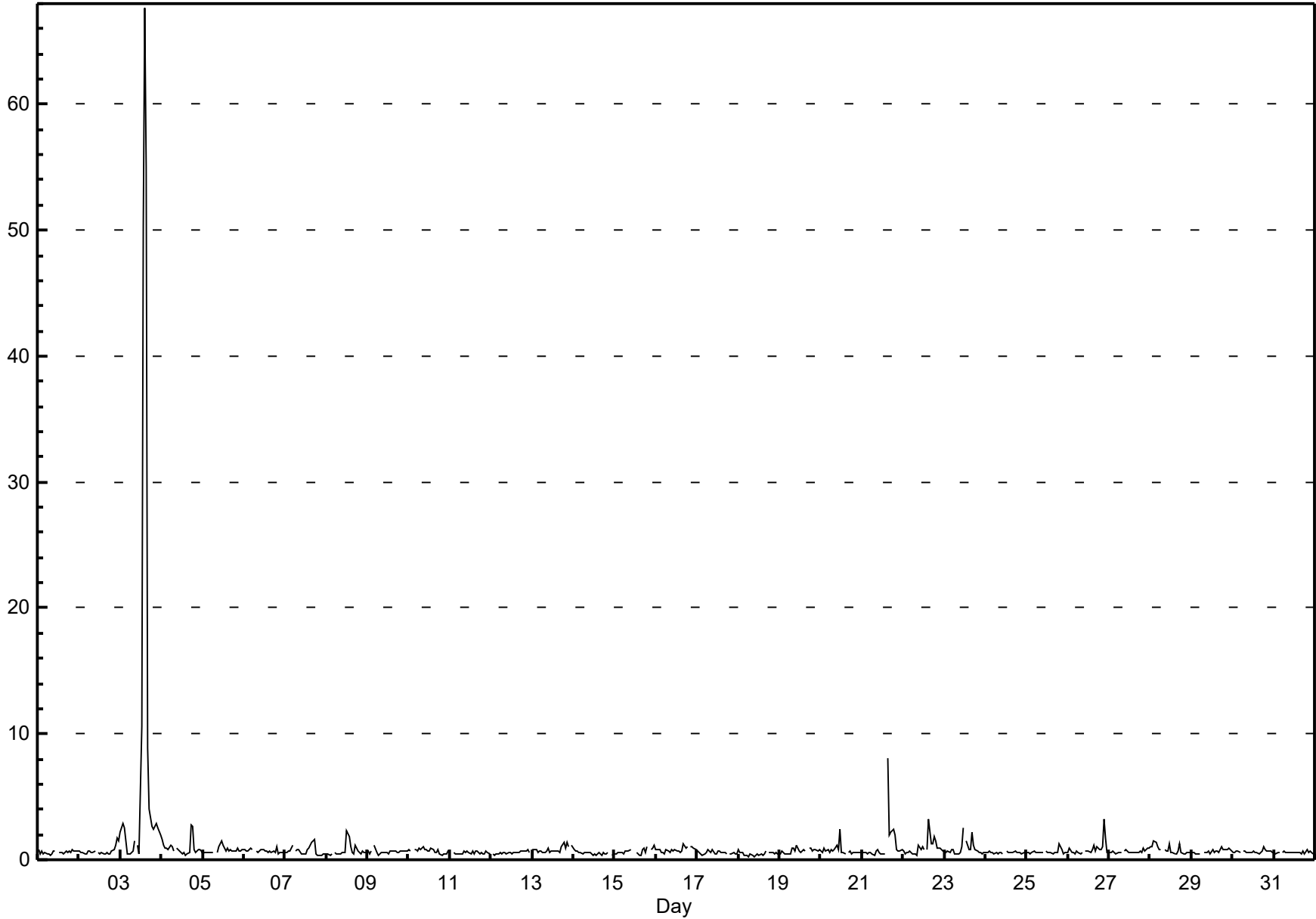
Hydrogen Sulphide (H₂S) - ppb

Valleyview - December 2015

Maximum Value: 67.6 ppb on Dec 3 15:00		Maximum Daily Average: 9.8 ppb on Dec 3		Hours in Service: 744																						
Minimum Value: 0 ppb on Dec 18 10:00		Minimum Daily Average: 0.5 ppb on Dec 18		Hours of Data: 709																						
Maximum Diurnal Average: 2.9 ppb at hour 15		Minimum Diurnal Average: 0.6 ppb at hour 8		Hours of Missing Data: 35																						
Monthly Average: 1.00 ppb		Percentiles: P ₁ = 0.3 P ₁₀ = 0.5 Q ₁ = 0.5 Median = 0.6 Q ₃ = 0.8 P ₉₀ = 1.1 P ₉₉ = 1.6		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-Dec	1	0	1	1	1	0	0	0	0	1	1	A	1	1	1	0	1	1	1	1	1	1	1	1	0.6	0.9
2-Dec	1	1	1	1	1	1	1	1	1	1	A	1	0	1	0	1	1	1	0	1	1	1	2	1	0.7	1.7
3-Dec	2	3	3	1	0	0	0	1	1	A	1	0	11	50	68	55	9	4	3	2	3	3	3	2	9.8	67.6
4-Dec	2	1	1	1	1	1	1	1	A	1	1	1	0	1	0	0	1	3	3	1	1	1	1	1	1.0	2.8
5-Dec	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.5
6-Dec	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0.7	1.0
7-Dec	1	1	1	1	1	A	1	1	1	0	0	1	0	1	1	1	2	2	0	0	0	0	0	0	0.7	1.6
8-Dec	0	0	0	0	A	1	0	0	0	0	1	1	1	2	2	1	1	0	1	1	1	0	1	1	0.7	2.3
9-Dec	1	1	1	A	1	1	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0.6	1.1
10-Dec	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0.7	1.0
11-Dec	1	A	1	0	0	0	0	0	1	1	1	1	0	1	0	1	1	0	1	0	0	1	1	0	0.5	0.7
12-Dec	A	0	0	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.8
13-Dec	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	1.3
14-Dec	1	1	1	1	1	0	1	1	1	1	1	0	0	0	0	1	0	1	0	0	1	A	0	1	0.5	0.8
15-Dec	0	0	1	1	1	0	1	1	1	1	C	C	C	1	0	0	1	1	1	1	A	1	1	1	0.7	1.1
16-Dec	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	1.2
17-Dec	1	1	0	0	0	1	1	1	1	1	0	1	1	1	1	1	1	0	A	0	0	1	0	0	0.6	0.8
18-Dec	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	A	1	1	1	0	1	0.5	0.8
19-Dec	0	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.7	1.1
20-Dec	1	1	1	1	1	1	1	1	1	1	1	2	1	1	0	A	1	1	1	1	1	1	1	1	0.8	2.5
21-Dec	1	1	1	0	1	1	0	0	1	1	1	0	1	0	A	8	2	2	2	2	2	1	1	1	1.2	8.1
22-Dec	1	1	1	1	1	0	0	0	0	1	1	1	1	A	1	3	1	1	2	2	1	1	1	1	0.9	3.2
23-Dec	1	1	1	1	1	1	1	0	0	1	1	3	A	1	1	1	2	1	1	1	1	1	1	1	0.9	2.5
24-Dec	1	1	1	1	1	1	1	0	1	1	1	A	1	1	1	1	1	1	1	1	1	0	1	0	0.6	0.7
25-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0	1	1	1	1	1	1	1	1	0.6	1.3
26-Dec	1	1	1	1	1	1	1	0	1	A	1	1	1	1	1	1	1	1	1	1	1	1	3	2	0.9	3.2
27-Dec	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.9
28-Dec	1	1	2	1	1	1	1	A	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0.8	1.5
29-Dec	1	1	0	0	0	1	A	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0
30-Dec	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0.6	1.0
31-Dec	1	0	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	0.6	0.8
		0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8	1.0	2.3	2.9	2.8	1.0	1.0	0.9	0.8	0.8	0.9	0.8	0.7	Diurnal Average
		2.1	2.9	2.5	1.5	1.1	1.1	1.0	1.0	1.5	1.2	1.3	2.5	10.6	50.4	67.6	54.9	8.8	4.0	2.7	2.5	2.6	3.2	2.6	2.0	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								

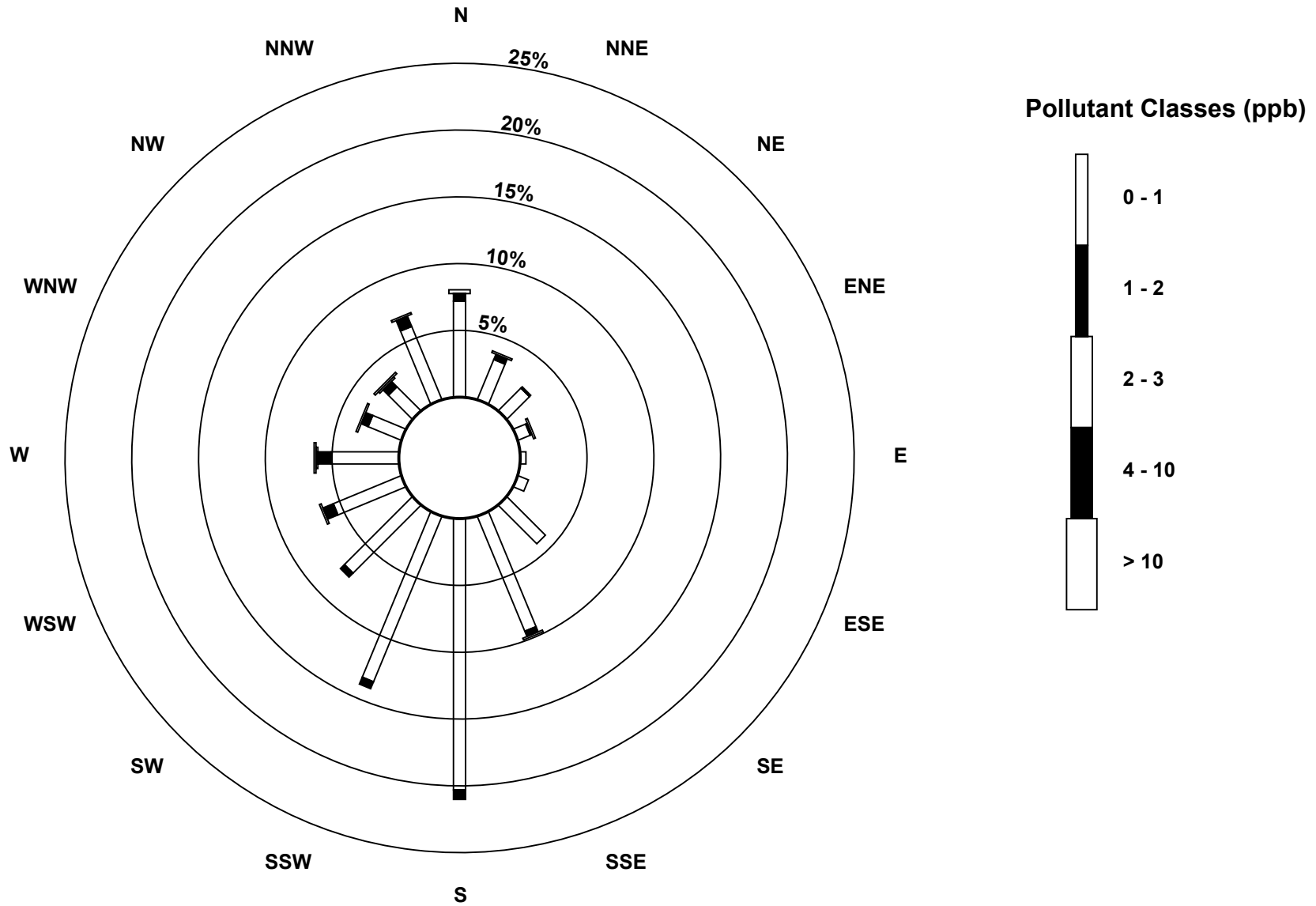
Hourly Maximums

Hydrogen Sulphide (H₂S) - ppb
Valleyview - December 2015



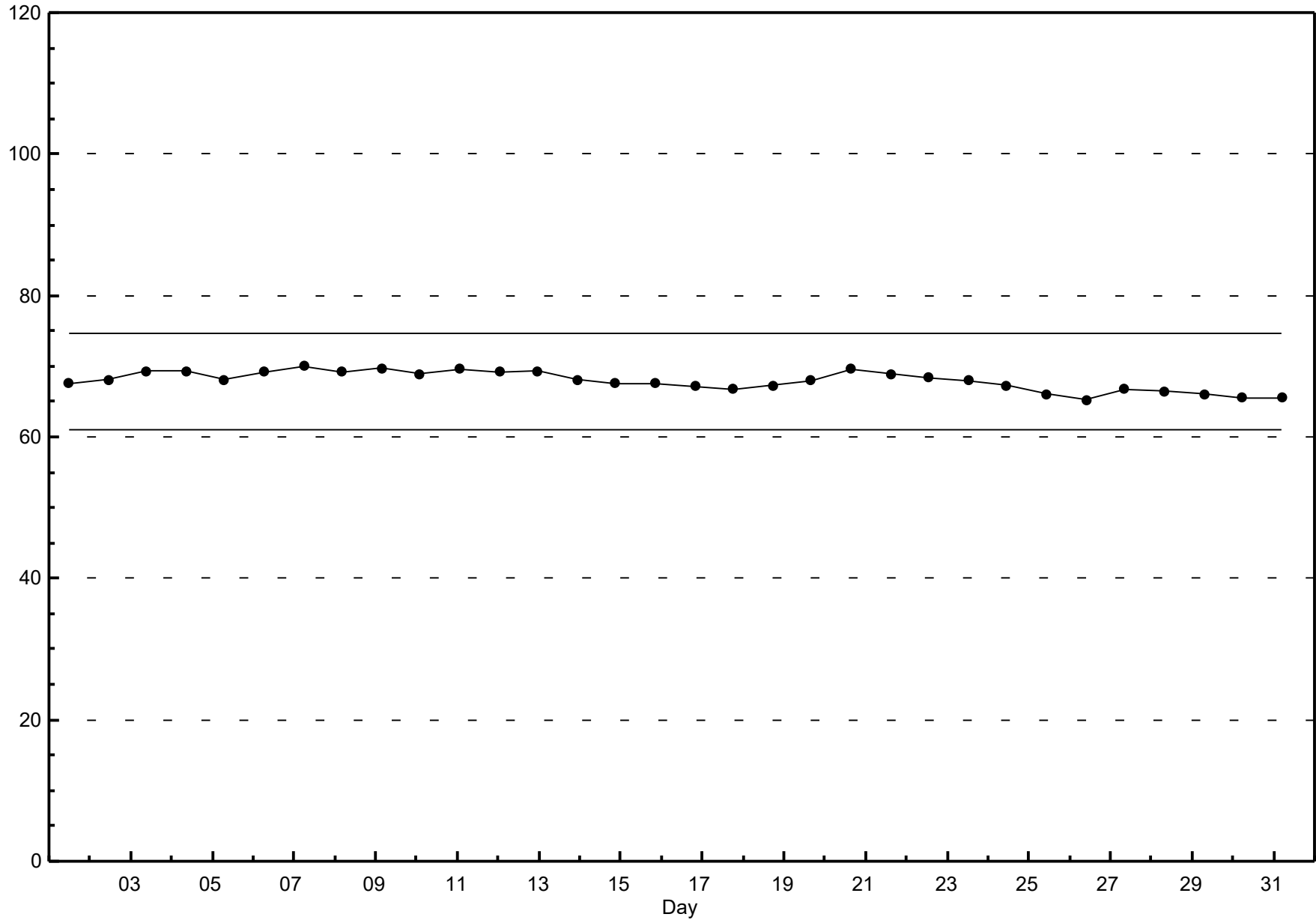
Pollutant Rose

Hydrogen Sulphide (H₂S) - ppb
Valleyview - December 2015



Span Responses

Hydrogen Sulphide (H₂S)
Valleyview - December 2015



Hourly Averages

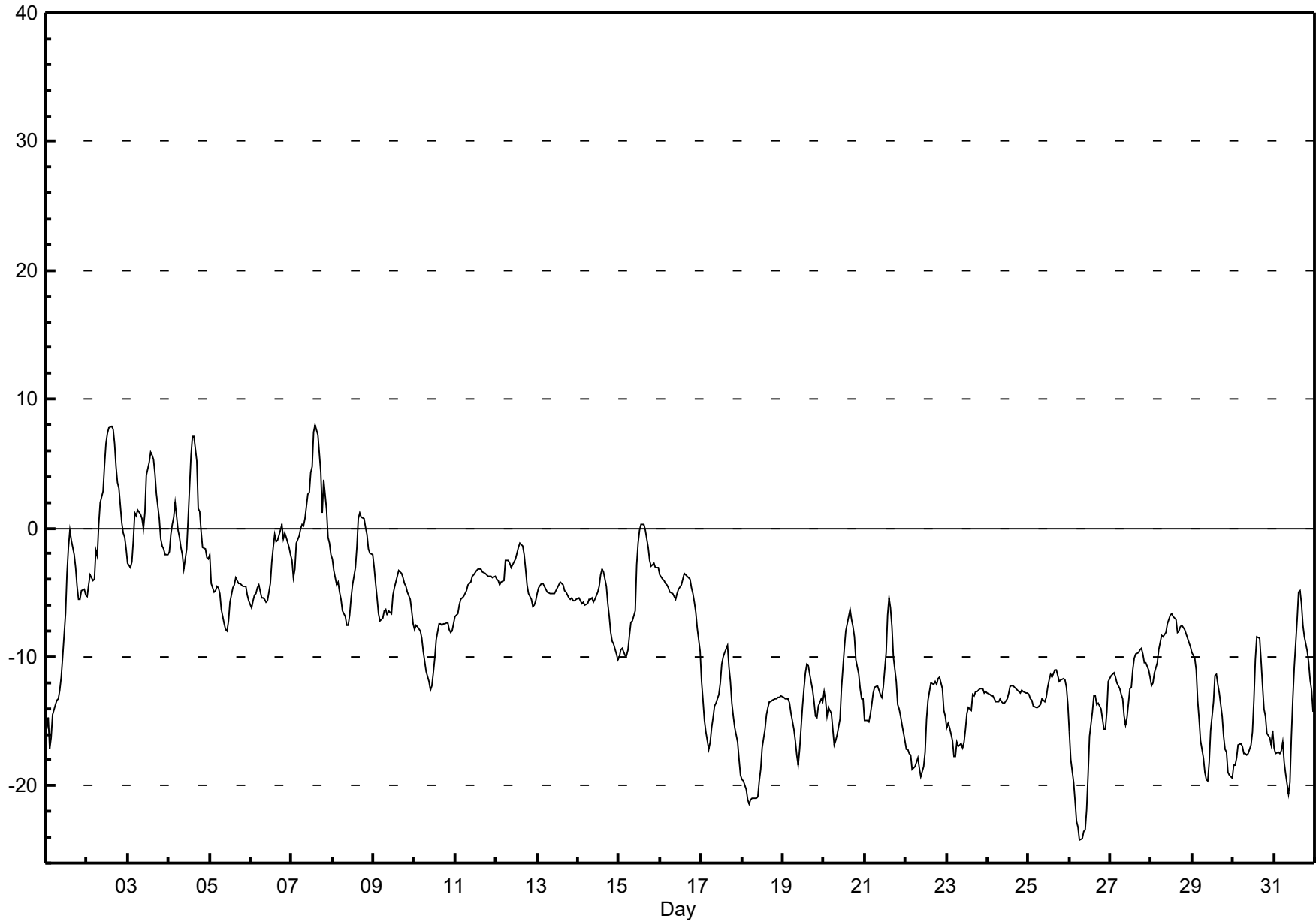
External Temperature (ET) - °C

Valleyview - December 2015

Number of Exceedences (AAQO): 1-hr: 0 24-hr: 0 Maximum Value: 8.0 °C on Dec 7 15:00 Maximum Daily Average: 1.6 °C on Dec 7		Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																																														
Minimum Value: -24 °C on Dec 26 07:00 Maximum Diurnal Average: -5.0 °C at hour 16 Monthly Average: -8.52 °C		Minimum Daily Average: -17.8 °C on Dec 26 Minimum Diurnal Average: -10.6 °C at hour 9 Percentiles: P ₁ = -21.5 P ₁₀ = -16.8 Q ₁ = -13.4 Median = -8.1 Q ₃ = -4.1 P ₉₀ = -0.5 P ₉₉ = 7.1																																														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	-16	-15	-17	-16	-14	-14	-13	-13	-13	-12	-10	-7	-3	-2	0	-1	-2	-3	-5	-6	-6	-5	-5	-5	-8.4	-0.2																						
2-Dec	-5	-4	-4	-4	-4	-2	-2	0	2	3	5	7	7	8	8	8	6	5	4	3	0	0	-1	-2	1.6	7.9																						
3-Dec	-3	-3	-3	-1	1	1	1	1	1	0	1	4	5	6	6	5	4	3	1	-1	-1	-2	-2	-2	1.0	5.9																						
4-Dec	-2	0	0	1	2	0	-1	-1	-2	-3	-2	1	3	6	7	7	5	1	1	0	-1	-2	-2	-2	0.6	7.1																						
5-Dec	-2	-4	-5	-5	-5	-5	-5	-6	-7	-8	-8	-7	-6	-5	-4	-4	-4	-4	-4	-5	-5	-5	-5	-6	-5.1	-2.0																						
6-Dec	-6	-6	-5	-5	-5	-4	-5	-5	-6	-6	-6	-4	-3	-1	0	-1	-1	0	0	-1	0	-1	-2	-2	-3.1	0.3																						
7-Dec	-2	-4	-3	-1	-1	0	0	0	1	3	3	4	5	7	8	7	6	4	1	4	1	-1	-1	-2	1.6	8.0																						
8-Dec	-2	-3	-4	-4	-5	-5	-6	-7	-8	-8	-7	-5	-4	-3	-2	1	1	1	1	0	0	-2	-2	-2	-3.2	1.2																						
9-Dec	-3	-4	-5	-7	-7	-7	-6	-7	-6	-7	-6	-7	-5	-4	-4	-3	-4	-4	-4	-5	-5	-6	-6	-7	-5.3	-3.1																						
10-Dec	-8	-8	-8	-8	-9	-10	-10	-11	-12	-13	-12	-11	-10	-9	-7	-7	-8	-7	-7	-7	-8	-8	-8	-7	-8.9	-7.3																						
11-Dec	-7	-7	-6	-6	-5	-5	-5	-4	-4	-4	-4	-4	-3	-3	-3	-3	-3	-4	-4	-4	-4	-4	-4	-4	-4.3	-3.1																						
12-Dec	-4	-4	-4	-4	-4	-3	-2	-3	-3	-3	-3	-2	-2	-1	-1	-1	-2	-3	-4	-5	-5	-6	-6	-6	-3.5	-1.2																						
13-Dec	-5	-5	-4	-4	-5	-5	-5	-5	-5	-5	-5	-5	-5	-4	-4	-4	-5	-5	-5	-6	-5	-6	-6	-6	-4.9	-4.2																						
14-Dec	-5	-6	-6	-6	-6	-6	-6	-5	-5	-6	-6	-5	-4	-4	-3	-3	-5	-6	-7	-8	-9	-9	-10	-10	-6.0	-3.2																						
15-Dec	-10	-9	-9	-10	-10	-9	-8	-7	-7	-6	-3	-1	0	0	0	0	-1	-1	-3	-3	-3	-3	-3	-3	-4.6	0.3																						
16-Dec	-4	-4	-4	-4	-4	-5	-5	-5	-5	-6	-5	-5	-4	-4	-4	-4	-4	-4	-5	-5	-6	-7	-8	-10	-4.9	-3.6																						
17-Dec	-12	-13	-15	-16	-17	-17	-15	-15	-14	-14	-13	-12	-11	-10	-10	-9	-11	-12	-14	-15	-15	-17	-18	-19	-13.8	-9.1																						
18-Dec	-19	-20	-20	-21	-21	-21	-21	-21	-21	-21	-20	-19	-17	-16	-15	-14	-13	-14	-13	-13	-13	-13	-13	-13	-17.2	-13.1																						
19-Dec	-13	-13	-13	-13	-14	-14	-16	-16	-18	-18	-17	-14	-12	-11	-11	-11	-11	-11	-13	-13	-15	-15	-14	-13	-13.8	-10.6																						
20-Dec	-13	-13	-15	-14	-14	-16	-17	-17	-16	-15	-12	-11	-9	-8	-7	-6	-7	-8	-8	-10	-11	-12	-13	-13	-11.9	-6.3																						
21-Dec	-15	-15	-15	-15	-14	-13	-12	-12	-13	-13	-13	-12	-10	-7	-5	-6	-8	-10	-12	-14	-14	-15	-15	-17	-12.2	-5.4																						
22-Dec	-17	-17	-18	-18	-19	-18	-18	-18	-19	-19	-19	-17	-15	-13	-13	-12	-12	-12	-12	-12	-12	-13	-14	-15	-15.4	-11.5																						
23-Dec	-16	-15	-16	-17	-18	-18	-17	-17	-17	-17	-17	-16	-14	-14	-14	-13	-13	-13	-13	-13	-12	-12	-13	-13	-14.8	-12.5																						
24-Dec	-13	-13	-13	-13	-13	-13	-13	-13	-13	-14	-14	-13	-13	-12	-12	-12	-12	-13	-13	-13	-13	-13	-13	-13	-12.9	-12.2																						
25-Dec	-13	-13	-13	-14	-14	-14	-14	-14	-13	-13	-13	-12	-12	-11	-12	-11	-11	-11	-12	-12	-12	-12	-14	-12.6	-11.0																							
26-Dec	-16	-18	-20	-21	-23	-23	-24	-24	-24	-23	-22	-19	-16	-14	-13	-13	-14	-14	-14	-15	-16	-16	-14	-12	-17.8	-11.9																						
27-Dec	-11	-11	-11	-12	-12	-12	-13	-13	-15	-15	-15	-13	-12	-11	-10	-10	-10	-9	-9	-10	-10	-10	-11	-12	-11.6	-9.3																						
28-Dec	-12	-12	-11	-10	-9	-9	-8	-8	-8	-7	-7	-7	-7	-7	-8	-8	-8	-8	-8	-8	-8	-9	-9	-9	-8.5	-6.7																						
29-Dec	-10	-10	-11	-13	-15	-17	-18	-19	-19	-20	-18	-16	-13	-11	-11	-12	-13	-15	-16	-17	-17	-19	-19	-19	-15.4	-9.6																						
30-Dec	-18	-18	-18	-17	-17	-17	-17	-17	-18	-17	-17	-16	-13	-10	-8	-9	-10	-12	-14	-15	-16	-16	-17	-16	-15.2	-8.4																						
31-Dec	-17	-18	-17	-18	-17	-17	-18	-19	-21	-20	-16	-13	-11	-7	-5	-5	-6	-8	-8	-10	-10	-12	-13	-14	-13.3	-4.8																						
																								-9.7	-9.9	-10.1	-10.2	-10.2	-10.2	-10.4	-10.4	-10.6	-10.5	-9.7	-8.2	-6.9	-5.7	-5.1	-5.0	-5.6	-6.4	-7.1	-7.6	-8.1	-8.6	-9.0	-9.3	Diurnal Average
																								-1.8	-0.5	0.3	0.8	1.9	0.9	1.5	1.1	2.0	2.9	4.8	6.6	7.3	7.8	8.0	7.7	6.5	4.8	3.6	3.7	1.4	-0.3	-0.7	-1.6	Diurnal Maximum

Hourly Averages

External Temperature (ET) - °C
Valleyview - December 2015



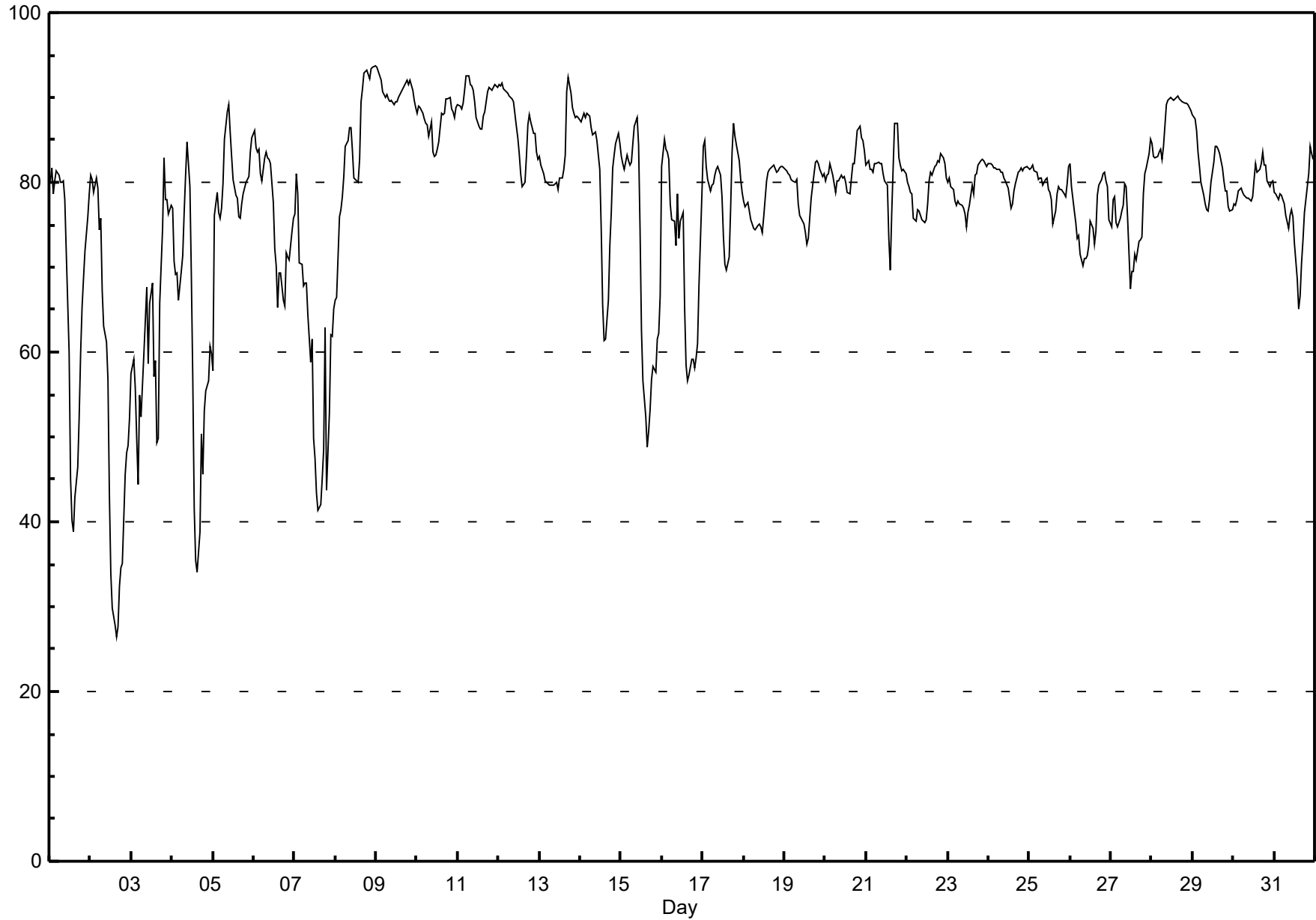
Hourly Averages

Relative Humidity (RH) - %
Valleyview - December 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 93.8 % on Dec 9 00:00 Maximum Daily Average: 90.8 % on Dec 9		Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																									
Minimum Value: 26 % on Dec 2 16:00 Maximum Diurnal Average: 81.1 % at hour 2 Monthly Average: 77.42 %		Minimum Daily Average: 53.5 % on Dec 2 Minimum Diurnal Average: 70.2 % at hour 15 Percentiles: P ₁ = 34.5 P ₁₀ = 61.2 Q ₁ = 75.5 Median = 80.2 Q ₃ = 83.5 P ₉₀ = 89.2 P ₉₉ = 92.6																									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	80	82	79	80	81	81	80	80	80	78	72	60	45	40	39	43	46	52	60	65	69	72	76	79	67.4	81.7	
2-Dec	81	80	79	80	79	74	76	67	63	61	57	43	34	30	28	26	28	32	34	35	46	48	49	52	53.5	80.9	
3-Dec	57	59	56	50	44	55	52	60	64	68	59	66	68	57	59	49	50	66	75	83	78	78	76	77	62.7	82.9	
4-Dec	77	71	69	69	66	70	71	76	81	85	80	69	57	42	35	34	39	50	46	53	55	57	61	60	61.3	84.8	
5-Dec	58	76	79	77	76	77	80	85	88	89	86	83	80	78	78	76	76	78	79	80	80	81	84	85	79.5	89.1	
6-Dec	86	84	84	84	81	80	83	84	83	83	82	78	72	70	65	69	69	66	65	72	71	71	74	76	76.3	86.1	
7-Dec	76	81	79	70	70	68	68	68	64	59	62	50	47	43	41	42	45	48	63	44	53	62	62	65	59.7	81.0	
8-Dec	66	66	76	77	78	81	84	85	86	86	84	80	80	80	83	90	91	93	93	93	92	93	93	94	84.4	93.8	
9-Dec	94	93	93	92	91	90	90	90	90	90	89	89	89	90	91	91	91	92	92	91	92	91	90	89	90.8	93.6	
10-Dec	88	89	89	88	87	87	87	85	87	84	83	83	84	85	88	88	88	90	90	90	89	88	88	89	87.2	90.0	
11-Dec	89	89	89	89	91	93	92	92	91	91	90	88	87	86	86	88	88	91	91	91	91	91	91	91	89.8	92.6	
12-Dec	92	91	92	91	91	91	90	90	90	90	87	85	83	81	80	80	83	87	88	87	86	86	84	83	86.9	91.7	
13-Dec	83	82	81	80	80	80	80	80	80	80	80	79	80	80	81	83	91	92	91	89	88	88	88	88	83.5	92.3	
14-Dec	87	88	88	88	88	88	86	86	86	86	85	81	75	66	61	62	66	73	76	82	83	85	86	85	80.6	88.1	
15-Dec	83	82	82	83	83	82	82	85	87	88	84	75	62	57	52	49	51	53	57	58	58	61	62	67	70.1	87.6	
16-Dec	82	85	84	84	83	77	76	76	73	79	73	75	76	65	59	57	57	59	59	58	59	61	68	78	70.9	85.1	
17-Dec	84	85	82	80	79	80	80	81	82	82	81	78	74	70	70	71	77	84	87	85	84	83	80	79	79.9	87.0	
18-Dec	78	77	78	77	76	75	75	74	75	75	74	76	80	81	82	82	82	82	81	81	82	82	82	82	78.3	82.1	
19-Dec	82	81	81	81	80	80	80	80	78	76	76	75	74	73	73	76	78	81	82	82	82	81	81	81	79.0	82.5	
20-Dec	80	81	81	82	81	80	79	80	80	81	81	81	80	79	79	80	82	82	84	86	87	85	85	84	81.6	86.6	
21-Dec	82	83	82	81	81	82	82	82	82	82	81	80	80	73	70	76	82	87	87	83	82	81	82	81	81.0	87.0	
22-Dec	80	80	79	79	76	75	77	77	76	76	75	76	77	80	81	81	82	82	83	82	83	83	82	81	79.2	83.3	
23-Dec	80	81	79	79	78	77	78	77	77	77	76	75	76	77	80	79	81	81	82	83	83	83	82	82	79.3	82.8	
24-Dec	82	82	82	82	82	82	82	81	81	81	80	79	78	77	77	79	80	81	81	82	81	82	82	82	80.7	82.2	
25-Dec	82	82	82	81	81	80	80	81	80	80	80	79	79	78	75	77	79	80	79	79	79	78	80	82	79.7	82.0	
26-Dec	82	79	77	75	73	74	72	70	71	71	71	73	75	75	73	74	78	80	80	81	81	80	79	76	75.9	82.2	
27-Dec	75	78	78	75	75	76	77	77	80	79	76	67	69	69	71	71	73	73	74	79	81	82	83	85	76.0	85.0	
28-Dec	85	83	83	83	84	84	83	84	89	90	90	90	90	90	90	90	90	90	90	89	89	89	89	89	87.5	90.2	
29-Dec	88	88	86	84	82	80	78	77	77	77	78	80	82	84	84	84	83	82	80	79	79	77	77	77	81.0	88.0	
30-Dec	77	77	78	79	79	79	79	78	78	78	78	78	80	82	81	81	82	84	82	82	80	79	80	80	79.7	83.5	
31-Dec	79	79	78	79	79	78	77	76	75	76	77	76	73	69	65	67	70	73	76	79	81	84	83	83	76.3	84.3	
		80.5	81.1	80.7	80.0	79.2	79.2	79.2	79.5	79.8	79.8	78.3	75.7	73.7	71.2	70.2	70.8	72.9	75.6	77.1	77.6	78.2	78.8	79.3	79.9	Diurnal Average	
		93.6	93.1	92.5	92.0	90.8	92.6	92.5	91.6	91.3	90.8	89.8	90.0	89.8	90.0	90.4	90.6	91.3	92.9	93.2	92.7	92.3	93.4	93.5	93.8	Diurnal Maximum	

Hourly Averages

**Relative Humidity (RH) - %
Valleyview - December 2015**





Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Valleyview - December 2015

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 Spd	2	1	1	1	3	3	2	1	2	1	1	3	1	1	1	1	1	1	0	0	0	1	1	1	1.1	3.1
Dir	159	189	157	190	202	172	192	196	183	196	206	181	174	182	221	275	238	212	78	180	277	204	159	320	191	172
2 Spd	0	1	1	1	2	1	3	3	3	4	4	8	17	18	15	9	3	1	1	2	0	0	1	0	3.6	18.1
Dir	171	245	208	180	159	240	176	183	180	186	207	224	243	250	249	237	240	240	180	206	50	320	210	4	231	250
3 Spd	1	0	1	3	3	2	1	2	1	1	3	2	0	1	0	0	1	0	0	1	1	0	1	0	0.4	3.5
Dir	341	291	213	218	169	157	124	321	245	148	186	185	260	307	262	282	27	67	160	338	261	244	338	356	211	186
4 Spd	0	1	2	3	8	10	2	2	1	2	2	3	3	4	3	1	1	1	1	1	1	1	1	2	1.5	10.4
Dir	249	233	193	212	276	284	244	173	189	185	192	184	165	166	164	164	149	308	189	187	272	240	316	191	221	284
5 Spd	0	5	5	2	1	1	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0.7	5.3
Dir	129	5	13	44	356	319	234	184	185	339	347	204	186	350	27	359	332	349	306	336	309	205	241	231	2	13
6 Spd	0	0	1	1	0	0	1	0	1	0	0	0	0	1	0	2	1	2	1	2	2	1	1	1	0.5	2.5
Dir	333	84	329	144	126	162	146	159	182	181	20	283	199	170	132	337	168	173	169	205	197	200	206	212	188	173
7 Spd	1	0	1	1	1	1	0	1	3	2	2	3	2	3	9	9	6	3	2	5	2	2	1	2	1.9	9.5
Dir	230	287	188	231	269	231	140	212	196	173	170	185	180	274	285	274	272	253	204	240	187	164	216	215	241	285
8 Spd	3	2	1	2	2	1	3	1	1	1	2	1	2	1	3	2	2	3	2	5	1	2	1	1	1.3	4.6
Dir	217	208	174	182	210	209	208	282	247	278	236	216	345	336	147	101	182	168	185	183	191	185	211	182	192	183
9 Spd	1	0	0	0	0	1	1	0	0	0	1	0	0	1	1	0	0	1	1	1	1	0	0	0	0.1	1.5
Dir	192	205	314	176	214	221	206	219	225	234	202	331	1	7	156	143	159	10	1	334	346	175	163	166	284	334
10 Spd	0	0	2	0	0	0	1	0	1	0	0	0	0	1	3	1	1	3	2	2	1	1	0	2	0.6	2.6
Dir	192	195	349	306	231	10	353	231	180	123	39	125	61	24	346	329	13	3	17	4	190	40	45	3	2	346
11 Spd	2	2	0	1	1	2	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0.5	2.3
Dir	354	11	339	13	340	353	354	237	215	279	223	248	56	30	50	65	2	337	306	143	306	345	344	255	353	11
12 Spd	1	1	1	0	1	3	3	3	3	3	5	6	7	7	7	5	3	4	4	4	3	4	8	6	3.5	8.0
Dir	330	0	317	268	186	178	171	172	174	173	171	171	166	165	166	166	174	172	170	170	154	150	152	148	166	152
13 Spd	5	5	6	7	8	6	5	4	4	6	6	4	3	1	0	2	2	2	3	2	1	2	2	1	2.3	7.6
Dir	151	143	131	137	135	130	137	139	125	126	128	128	131	134	52	345	354	302	279	279	254	273	265	261	139	135
14 Spd	1	1	1	0	1	2	5	4	1	1	1	1	3	3	3	2	1	3	2	2	3	3	3	2	1.8	4.5
Dir	221	202	215	143	157	232	252	250	210	172	169	183	220	228	217	184	173	170	180	188	178	179	192	201	204	252
15 Spd	2	3	2	2	2	3	2	0	2	3	6	6	9	12	11	10	8	5	6	5	6	7	8	9	4.4	11.7
Dir	204	193	195	192	194	166	168	266	197	196	280	275	286	296	295	292	273	280	318	284	292	265	271	271	273	296
16 Spd	7	7	8	8	1	2	4	5	3	5	3	8	10	11	10	8	6	6	7	7	9	5	0	0	5.7	10.8
Dir	267	272	280	262	229	295	290	285	303	265	293	270	277	276	279	283	283	271	277	273	276	280	359	208	276	276
17 Spd	0	1	1	0	0	1	1	1	0	1	1	1	2	1	2	2	3	3	4	3	3	3	1	1	0.9	4.1
Dir	140	179	157	287	89	356	11	310	155	165	40	15	254	293	10	22	343	17	347	359	342	333	340	345	352	347
18 Spd	2	1	3	3	3	3	1	1	2	3	5	5	5	4	3	3	0	2	2	2	2	1	1	1	1.8	4.9
Dir	60	16	357	353	31	10	350	31	25	30	34	33	41	42	44	70	60	349	349	145	156	160	167	167	35	33
19 Spd	1	1	1	1	0	0	0	1	0	0	1	3	3	3	3	3	2	1	0	0	0	2	1	1	1.1	3.4
Dir	163	160	161	163	131	144	22	341	359	238	150	166	162	163	171	176	181	191	212	178	172	185	186	187	171	171
20 Spd	0	0	0	1	0	0	0	0	0	1	1	1	2	3	2	1	2	2	1	1	1	1	2	0	0.8	2.6
Dir	205	130	197	206	204	209	144	225	216	255	229	218	194	187	179	208	203	182	202	219	207	204	200	242	201	187
21 Spd	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	0	0	0	0	0	1	0.5	1.5
Dir	215	211	206	190	181	220	222	213	178	197	182	182	186	184	267	319	23	301	11	182	181	194	190	188	204	186
22 Spd	1	1	0	0	0	1	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.2	0.7
Dir	197	182	185	217	52	157	180	1	121	329	4	150	163	129	114	27	354	218	227	249	260	173	162	122	169	197

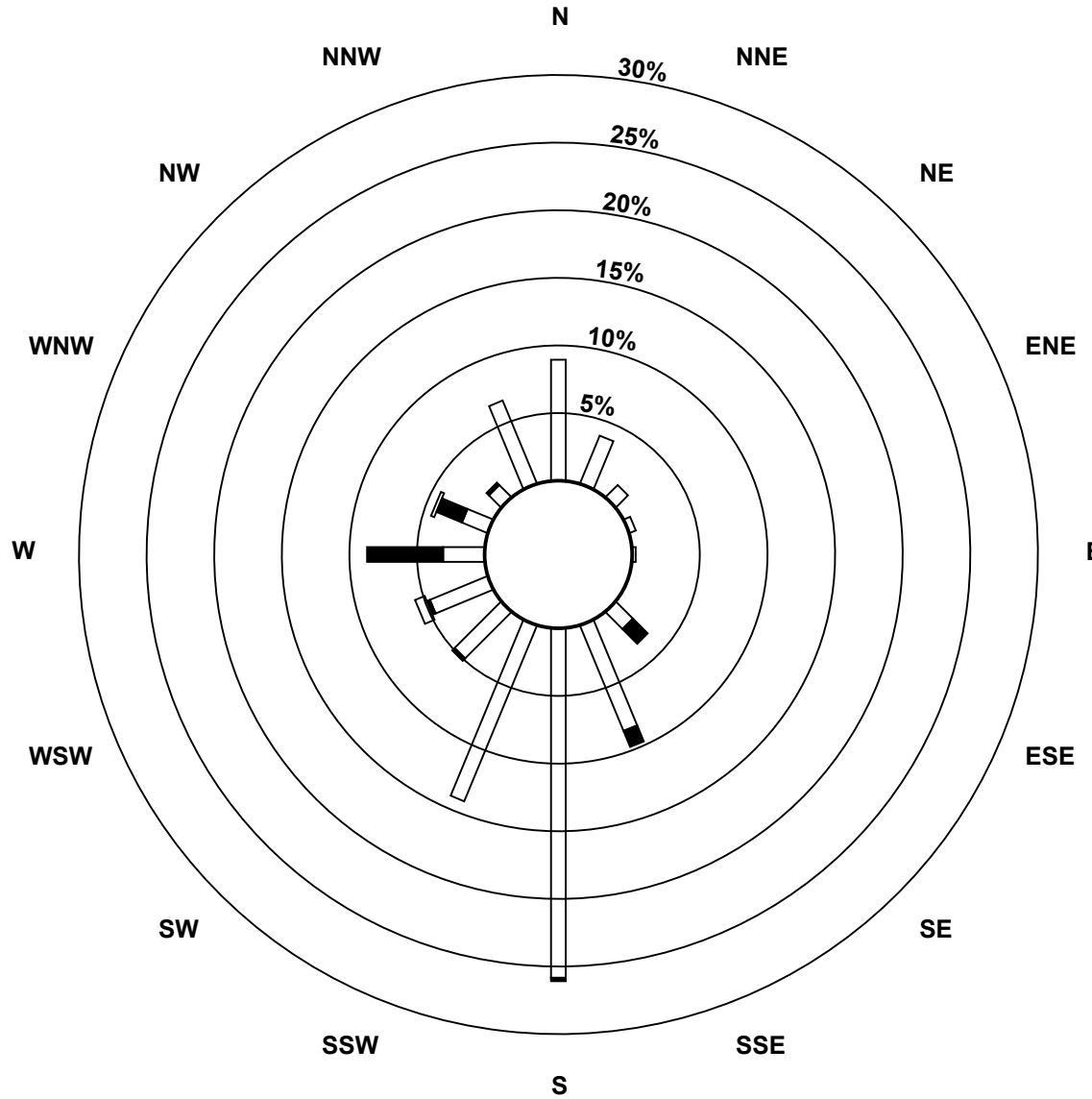
Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Valleyview - December 2015

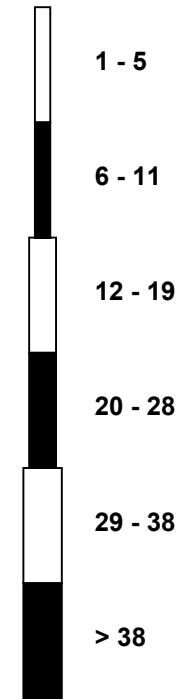
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	1	0	3	2	2	3	4	2	0.8	3.8
Dir	243	210	169	13	159	162	277	154	330	323	154	37	344	346	335	282	299	26	5	356	346	347	349	6	348	349
24 Spd	3	3	3	3	3	3	3	1	2	2	2	2	1	1	2	1	1	1	1	1	1	0	1	1	1.7	3.4
Dir	10	1	358	355	354	349	349	8	7	2	350	342	21	37	339	347	334	349	337	346	335	353	332	358	355	358
25 Spd	0	1	0	0	0	0	0	0	0	0	0	0	0	1	3	1	1	1	3	6	4	4	2	0	1.1	6.1
Dir	319	343	265	316	248	150	173	161	112	257	207	238	146	219	248	227	240	247	258	273	262	249	240	205	255	273
26 Spd	1	0	0	0	0	0	0	0	0	1	0	0	1	2	1	0	1	1	1	0	1	1	2	4	0.3	4.2
Dir	258	42	188	171	156	189	159	326	277	357	212	223	176	175	171	77	341	14	327	335	325	350	175	172	180	172
27 Spd	4	5	4	4	4	3	2	1	1	1	1	1	2	1	1	1	1	1	0	1	1	0	2	1	1.3	5.1
Dir	168	167	175	176	180	184	186	198	234	231	225	219	255	225	216	181	180	171	36	318	20	341	359	351	188	167
28 Spd	1	0	0	1	1	1	0	0	0	1	1	1	2	2	2	4	2	1	2	2	3	2	3	3	1.0	4.0
Dir	237	322	57	211	176	160	4	111	209	221	254	218	165	197	244	261	262	247	170	181	167	177	170	169	202	261
29 Spd	3	3	1	2	2	1	1	1	1	1	2	2	2	2	1	2	1	1	0	0	1	1	0	1	1.3	2.8
Dir	175	174	187	185	192	197	195	202	199	202	193	183	182	179	234	251	228	166	189	184	215	194	200	195	193	174
30 Spd	1	2	2	2	2	1	2	2	3	2	2	3	3	2	2	2	1	1	1	0	1	0	1	0	1.5	2.7
Dir	192	193	175	181	160	167	177	176	165	176	182	172	164	163	171	197	211	176	185	208	180	193	195	223	178	172
31 Spd	0	1	1	2	2	0	1	0	1	3	5	5	5	3	3	2	2	2	2	3	3	2	2	1	2.0	4.7
Dir	183	200	201	190	185	186	12	181	178	190	183	182	181	180	186	191	201	202	204	203	206	203	212	207	192	182
Spd	0.6	0.4	0.3	0.8	0.7	0.5	0.6	0.5	0.7	0.8	0.9	1.2	1.4	1.5	1.5	1.2	0.9	0.6	0.6	1.0	0.9	0.8	0.7	0.7	Diurnal Average	
Dir	208	204	222	197	193	218	205	213	183	191	197	206	221	237	251	260	259	247	272	250	239	228	216	213	Diurnal Maximum	
Spd	7.4	6.5	7.9	7.7	8.5	10.4	4.9	4.8	4.3	5.6	6.3	8.5	16.9	18.1	14.7	10.1	8.2	5.6	7.4	7.3	8.5	7.0	8.3	9.1	Diurnal Maximum	
Dir	267	272	280	262	276	284	137	285	125	126	280	270	243	250	249	292	273	271	277	273	276	265	271	271	Diurnal Maximum	
Maximum Speed Value: 18 km/h on Dec 2 14:00																		Minimum Speed Value: 0 km/h on Dec 25 09:00						Hours in Service: 744		
Maximum Daily Speed Average: 5.7 km/h on Dec 16																		Minimum Daily Speed Average: 0.1 km/h on Dec 22						Hours of Data: 744		
Maximum Diurnal Speed Average: 1.5 km/h at hour 15																		Minimum Diurnal Speed Average: 0.3 km/h at hour 3						Hours of Missing Data: 0		
Monthly Average Velocity: 0.76 km/h 225.2 deg																		Speed Percentiles: P ₁ = 0.0 P ₁₀ = 0.2 Q ₁ = 0.5 Median = 1.2 Q ₃ = 2.5 P ₉₀ = 4.3 P ₉₉ = 10.2						Percent Operational Time: 100.0		
All monthly, daily, and diurnal averages have been calculated using vector methods																										
Frequency Distribution																										
		Speed Range (km/h)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	107	1	0	0	0	0	108																			
NorthEast	36	0	0	0	0	0	36																			
East	8	0	0	0	0	0	8																			
SouthEast	49	9	0	0	0	0	58																			
South	254	5	0	0	0	0	259																			
SouthWest	130	2	1	0	0	0	133																			
West	57	29	2	0	0	0	88																			
NorthWest	51	2	1	0	0	0	54																			
Total	692	48	4	0	0	0	744																			

Wind Rose

Wind Speed (WS) (km/h)
Valleyview - December 2015



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Valleyview - December 2015

Maximum Speed: 18 km/h on Dec 2 14:00	Maximum Daily Speed Average: 6.1 km/h on Dec 16	Hours in Service: 744
Minimum Speed: 0 km/h on Dec 25 09:00	Minimum Daily Speed Average: 0.5 km/h on Dec 22	Hours of Data: 744
Maximum Diurnal Speed Average: 3.2 km/h at hour 15	Minimum Diurnal Speed Average: 1.4 km/h at hour 9	Hours of Missing Data: 0
Monthly Average Speed: 2.03 km/h	Percentiles: P ₁ = 0.1 P ₁₀ = 0.4 Q ₁ = 0.7 Median = 1.3 Q ₃ = 2.6 P ₉₀ = 4.4 P ₉₉ = 10.4	Percent Operational Time: 100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	2	1	1	1	3	3	2	1	2	1	2	3	2	1	1	1	1	1	1	1	1	1	1	2	1.5	3.2
2-Dec	0	1	1	1	2	1	3	3	3	4	4	8	17	18	15	9	4	3	3	2	1	1	1	1	4.4	18.3
3-Dec	1	1	1	4	3	2	2	2	1	1	4	3	1	1	0	0	1	1	1	2	1	1	1	2	1.5	4.2
4-Dec	1	2	3	4	9	11	3	2	1	2	2	3	3	4	3	1	1	1	1	1	1	1	1	2	2.7	10.6
5-Dec	3	5	5	2	1	1	0	0	0	0	0	0	1	1	1	0	1	1	1	1	0	0	0	0	1.2	5.4
6-Dec	1	0	1	1	1	0	1	0	1	1	0	1	0	1	1	2	1	3	2	2	2	1	1	1	1.0	2.7
7-Dec	1	1	2	3	2	3	1	1	3	2	3	3	2	4	10	9	6	3	2	5	2	2	1	2	3.0	9.6
8-Dec	3	2	1	2	2	1	3	2	1	1	2	1	2	2	3	3	2	3	2	5	2	2	1	1	2.0	4.8
9-Dec	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	0	1	1	2	2	1	0	0	0	0.8	1.6
10-Dec	1	1	2	0	1	1	1	1	1	0	1	0	0	1	3	1	1	3	2	2	1	1	1	2	1.2	2.7
11-Dec	2	2	1	1	1	2	1	0	0	1	0	0	1	0	1	0	1	0	0	0	0	0	1	0	0.7	2.4
12-Dec	1	1	1	1	1	3	3	3	3	3	5	6	8	7	7	5	3	4	4	4	4	4	8	6	4.0	8.1
13-Dec	5	6	6	7	8	6	5	4	4	6	6	4	3	1	1	2	2	2	3	2	1	2	2	1	3.7	7.7
14-Dec	1	1	1	0	1	2	5	4	1	1	1	1	3	3	3	2	1	3	2	2	3	3	3	2	2.1	4.6
15-Dec	2	3	2	2	2	3	2	1	2	3	7	6	9	12	11	10	8	5	6	5	6	7	9	9	5.6	11.9
16-Dec	8	7	8	8	2	2	4	5	3	5	4	9	10	11	10	8	6	6	8	7	9	5	1	1	6.1	11.0
17-Dec	1	1	1	0	1	2	1	1	1	1	2	1	2	1	3	2	3	3	4	3	3	3	2	1	1.7	4.2
18-Dec	2	2	3	3	3	3	2	2	3	3	5	5	5	4	3	3	1	2	3	2	2	1	1	1	2.6	5.0
19-Dec	1	1	1	1	0	0	1	1	1	0	1	3	3	3	3	3	2	1	0	0	0	2	1	1	1.3	3.5
20-Dec	0	0	0	1	0	0	0	0	0	1	1	2	3	3	2	1	2	2	1	1	1	1	2	1	1.1	3.0
21-Dec	0	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1	1	0	0	0	0	0	2	0.8	1.9
22-Dec	1	1	0	1	0	1	1	0	0	1	1	1	0	1	1	0	1	0	0	0	0	0	0	0	0.5	1.4
23-Dec	1	1	0	0	0	0	0	0	0	0	0	0	1	1	2	0	1	1	3	2	2	3	4	2	1.1	3.8
24-Dec	3	3	3	3	3	3	3	2	2	2	2	2	1	1	2	1	1	1	1	1	0	1	1	1	1.8	3.4
25-Dec	0	1	1	0	0	0	0	0	0	0	1	1	0	1	3	1	1	1	3	6	4	4	2	0	1.3	6.2
26-Dec	1	0	0	0	0	0	0	0	0	1	1	0	1	2	1	1	1	1	1	1	1	1	2	4	0.9	4.2
27-Dec	4	5	4	4	4	3	2	1	1	1	1	1	2	2	2	1	1	1	0	1	1	1	2	1	1.9	5.2
28-Dec	1	1	0	1	1	1	0	0	1	1	1	1	2	2	3	4	2	1	2	2	3	2	3	3	1.5	4.1
29-Dec	3	3	2	2	2	1	1	1	1	1	2	2	2	2	2	2	1	1	0	1	1	1	1	1	1.4	2.8
30-Dec	1	2	2	2	2	1	2	2	3	2	2	3	3	2	2	2	1	1	1	0	1	0	1	1	1.6	2.8
31-Dec	1	1	1	2	2	1	1	1	1	3	5	5	5	3	3	2	2	3	3	3	3	2	2	1	2.2	4.8
	1.7	1.8	1.8	1.9	1.9	1.9	1.7	1.4	1.4	1.6	2.1	2.5	3.0	3.1	3.2	2.6	1.9	1.9	2.0	2.1	1.9	1.8	1.8	1.6	Diurnal Average	
	7.8	6.7	8.0	7.8	9.1	10.6	5.0	5.0	4.4	5.6	7.0	8.7	17.0	18.3	15.1	10.3	8.3	5.8	7.5	7.4	8.7	7.2	8.7	9.4	Diurnal Maximum	

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

Hourly Standard Deviations

Wind Direction (WD) - deg
Valleyview - December 2015

Maximum Value: 96.9 deg on Dec 3 23:00																								Hours in Service:	744
Minimum Value: 5.0 deg on Dec 29 10:00																								Hours of Data:	744
Percentiles: P ₁ = 6.3 P ₁₀ = 9.8 Q ₁ = 14.1 Median = 30.5 Q ₃ = 56.7 P ₉₀ = 77.8 P ₉₉ = 94.0																								Hours of Missing Data:	0
																								Hours of Calibration:	0
																								Percent Operational Time:	100.0
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Dec	21	55	16	22	16	19	24	53	13	85	24	18	29	45	42	40	29	17	85	78	66	44	50	78	85.2
2-Dec	67	59	38	45	51	46	13	11	8	7	13	21	9	9	13	15	54	68	56	27	92	73	19	59	92.5
3-Dec	78	93	37	48	41	46	77	33	49	34	33	65	95	79	74	45	67	93	79	42	73	58	97	91	96.9
4-Dec	83	49	40	44	31	12	63	15	27	15	10	12	10	7	10	14	33	60	25	18	57	45	54	44	83.1
5-Dec	78	13	11	34	47	32	62	58	38	80	89	85	54	67	39	75	58	38	51	27	75	76	81	62	88.9
6-Dec	97	77	86	62	76	65	75	68	38	85	80	80	52	79	92	82	37	24	68	25	6	10	21	29	96.7
7-Dec	22	76	72	83	71	68	79	43	28	62	35	11	10	47	10	9	8	28	34	28	8	31	18	10	83.4
8-Dec	7	25	13	11	23	19	7	72	81	58	35	38	34	85	18	32	51	14	9	17	27	20	68	42	85.4
9-Dec	34	78	77	80	79	19	16	37	39	49	31	87	95	62	54	59	70	20	36	37	31	53	39	67	94.7
10-Dec	48	74	50	85	47	73	71	77	38	87	86	76	79	18	10	47	83	11	12	55	50	62	70	37	86.8
11-Dec	22	19	51	24	14	25	73	88	56	63	77	51	74	32	25	25	26	40	94	71	53	74	60	85	94.1
12-Dec	83	55	64	91	76	6	7	7	7	7	8	9	9	9	8	9	8	8	7	11	14	11	10	12	90.6
13-Dec	15	15	12	10	10	9	11	16	10	8	10	10	15	48	80	17	12	27	19	49	23	29	14	34	79.6
14-Dec	25	25	27	45	17	37	8	11	32	12	11	18	36	28	26	14	12	5	9	10	13	10	12	14	45.4
15-Dec	19	7	50	24	13	16	65	67	27	13	33	36	11	11	11	11	10	11	18	18	21	12	18	15	66.6
16-Dec	18	15	9	11	44	43	21	17	20	17	28	12	12	10	8	9	10	18	11	10	11	13	81	66	80.7
17-Dec	49	20	42	95	71	76	63	65	74	39	66	26	34	46	26	18	27	10	11	15	14	13	79	54	95.3
18-Dec	55	42	28	21	16	15	74	47	34	32	10	14	10	12	17	22	70	24	58	17	14	13	9	11	73.7
19-Dec	13	15	15	14	39	42	70	68	95	45	49	11	11	10	10	10	7	10	30	57	52	32	29	26	94.9
20-Dec	50	78	33	13	46	91	63	40	52	63	39	64	40	29	48	32	29	28	31	26	26	17	9	54	90.6
21-Dec	27	16	26	11	50	36	25	44	40	32	54	69	28	30	33	42	76	81	76	21	25	22	63	41	81.4
22-Dec	54	39	72	50	73	39	50	90	72	92	79	48	83	39	52	62	55	29	36	53	45	38	22	78	92.1
23-Dec	45	65	66	83	42	55	60	83	80	68	77	25	33	18	25	30	37	79	45	20	10	18	11	11	82.9
24-Dec	14	10	10	9	9	10	13	16	17	22	13	8	31	31	14	17	14	8	14	26	71	75	55	38	75.4
25-Dec	39	72	56	92	57	33	30	48	79	68	59	64	19	45	25	43	35	18	25	11	11	10	13	16	91.9
26-Dec	47	84	16	24	34	29	27	94	74	80	82	76	18	13	16	69	57	23	68	86	94	93	16	9	94.3
27-Dec	9	10	9	9	11	10	5	80	64	24	45	47	28	40	36	20	14	27	73	50	56	92	78	52	91.8
28-Dec	40	81	80	57	32	57	91	65	40	30	44	41	15	35	32	15	24	57	19	16	16	14	14	12	90.5
29-Dec	11	12	21	8	6	7	12	10	8	5	6	9	12	11	26	14	33	29	15	18	40	42	87	13	86.5
30-Dec	25	12	11	18	18	24	18	12	12	11	10	13	11	16	14	10	22	19	11	37	48	28	15	39	48.3
31-Dec	34	19	19	7	9	92	76	84	56	18	8	7	5	12	8	7	9	10	14	12	16	16	16	20	91.9
96.7	93.5	85.9	95.3	78.6	91.9	90.5	94.3	94.9	92.1	88.9	86.7	95.1	85.4	92.0	82.1	82.9	93.3	94.1	86.3	94.1	93.4	96.9	91.1		

PAZA

Falher Station

Monthly Summary Tables, Graphs and
Roses

Hourly Averages

Sulphur Dioxide (SO₂) - ppb

Falher - December 2015

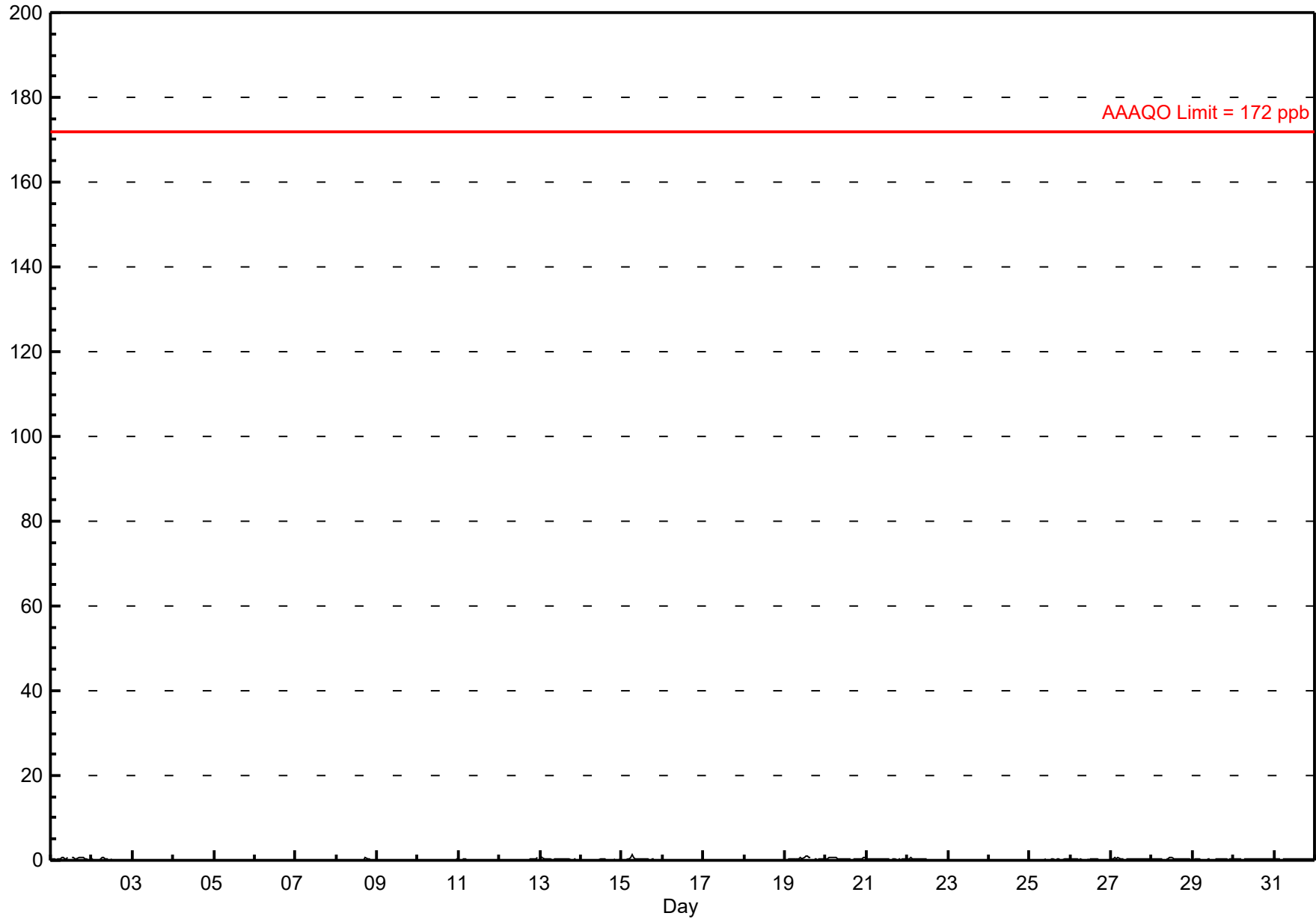
Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 1.5 ppb on Dec 13 01:00	Maximum Daily Average: 0.4 ppb on Dec 1		Hours of Data:	708
Minimum Value: 0 ppb on Dec 2 22:00	Minimum Daily Average: 0.0 ppb on Dec 23		Hours of Missing Data:	36
Maximum Diurnal Average: 0.2 ppb at hour 14	Minimum Diurnal Average: 0.1 ppb at hour 21		Hours of Calibration:	34
Monthly Average: 0.17 ppb	Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.2 P ₉₀ = 0.4 P ₉₉ = 0.8		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-Dec	0	0	0	0	0	0	1	1	0	0	1	A	1	1	0	0	1	1	1	1	0	0	0	0	0.4	0.7
2-Dec	0	0	0	0	0	0	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.7
3-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
4-Dec	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1
5-Dec	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
6-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
7-Dec	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
8-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.1	0.5
9-Dec	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
10-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
11-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
12-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	0.1	0.6
13-Dec	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.3	1.5
14-Dec	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	0.4
15-Dec	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.3	1.4
16-Dec	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	0.2
17-Dec	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	0.1
18-Dec	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
19-Dec	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	A	A	0	0	0	0	0	0	0	0.4	1.0
20-Dec	0	0	1	1	1	1	1	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	1	0.4	0.8
21-Dec	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
22-Dec	0	0	1	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0	0	0	0.2	0.5
23-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
24-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
25-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
26-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2
27-Dec	0	0	1	0	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6
28-Dec	0	0	0	0	0	0	0	A	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7
29-Dec	0	0	0	0	0	0	A	0	0	0	0	M	M	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
30-Dec	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
31-Dec	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
	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	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Diurnal Average
	1.5	0.7	0.6	0.8	0.8	0.6	1.4	0.6	0.5	0.5	0.7	0.7	0.9	1.0	0.6	0.5	0.6	0.7	0.6	0.5	0.4	0.5	0.8	0.6	Diurnal Maximum	

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

Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Falher - December 2015



Hourly Maximums

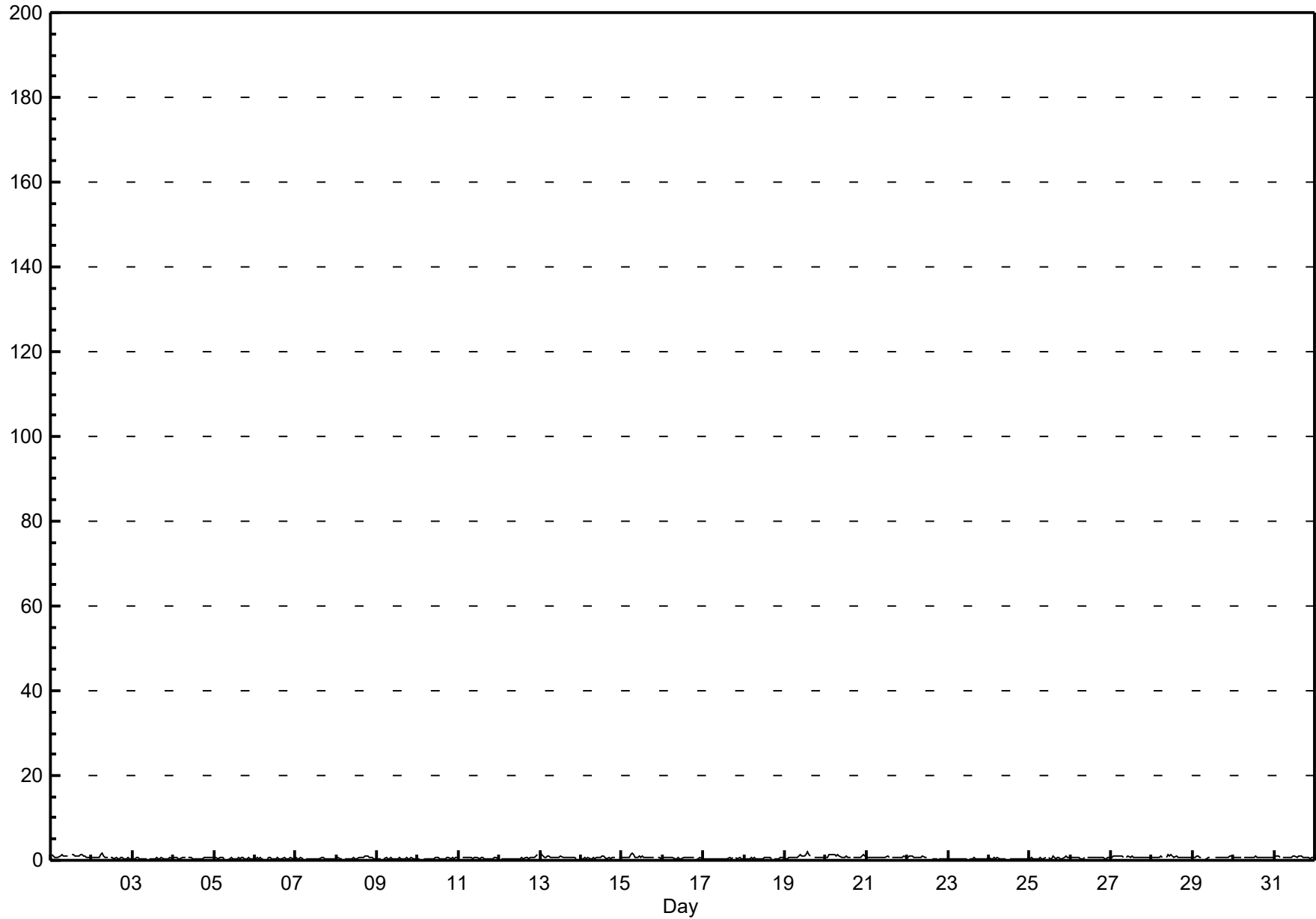
Sulphur Dioxide (SO₂) - ppb

Falher - December 2015

Maximum Value: 2.1 ppb on Dec 13 01:00		Maximum Daily Average: 1.0 ppb on Dec 1		Hours in Service:	744																					
Minimum Value: 0 ppb on Dec 22 19:00		Minimum Daily Average: 0.4 ppb on Dec 23		Hours of Data:	708																					
Maximum Diurnal Average: 0.7 ppb at hour 13		Minimum Diurnal Average: 0.5 ppb at hour 20		Hours of Missing Data:	36																					
Monthly Average: 0.61 ppb		Percentiles: P ₁ = 0.2 P ₁₀ = 0.4 Q ₁ = 0.4 Median = 0.6 Q ₃ = 0.7 P ₉₀ = 0.9 P ₉₉ = 1.4		Hours of Calibration:	34																					
				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-Dec	1	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	1.5
2-Dec	1	1	1	1	1	1	2	1	1	1	A	1	1	0	1	0	0	1	1	0	0	1	0	0	0.6	1.6
3-Dec	0	1	1	1	0	0	0	0	0	A	0	0	0	0	1	0	0	1	0	0	0	0	1	1	0.4	0.7
4-Dec	1	1	1	0	1	1	1	1	A	1	1	0	0	0	0	0	1	0	1	1	1	1	1	1	0.5	0.6
5-Dec	1	1	0	1	1	1	0	A	0	0	1	0	0	0	1	0	1	1	0	0	1	0	0	0	0.5	0.6
6-Dec	0	1	0	1	0	0	A	0	1	1	0	0	0	1	0	0	0	1	0	1	1	1	0	1	0.5	0.6
7-Dec	1	0	0	1	0	A	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0.4	0.6
8-Dec	0	1	0	0	A	0	0	0	1	0	1	0	0	1	1	1	1	1	1	1	1	1	0	0	0.5	1.1
9-Dec	0	0	0	A	0	1	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0.4	0.6
10-Dec	0	0	A	0	1	0	0	1	0	0	1	1	1	0	0	0	0	1	1	0	1	0	1	1	0.5	0.7
11-Dec	1	A	1	1	1	1	1	1	0	1	1	1	0	1	1	0	0	0	0	0	0	0	1	1	0.5	0.8
12-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	1	1	1	1	A	0.5	1.3
13-Dec	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	A	0.8	2.1
14-Dec	0	0	1	0	1	0	0	1	0	1	1	1	1	1	1	0	1	0	1	1	1	1	A	1	0.6	1.0
15-Dec	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.8	1.8
16-Dec	1	1	1	1	1	1	1	0	0	1	0	0	1	1	1	1	1	1	1	1	A	0	0	1	0.5	0.7
17-Dec	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	1	1	A	1	0	1	0	0.5	0.8
18-Dec	0	1	0	0	1	0	1	0	0	0	1	1	1	1	1	1	0	1	1	1	0	0	1	1	0.5	0.7
19-Dec	1	0	1	1	1	1	1	1	1	1	1	1	1	2	1	1	A	1	1	1	1	1	1	1	0.9	2.0
20-Dec	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
21-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.7	1.0
22-Dec	1	1	1	1	1	1	1	1	1	1	1	1	C	C	C	0	0	0	0	0	0	0	0	0	0.6	1.1
23-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	0	0	0	0	0	0	0	0	0.4	0.5
24-Dec	1	0	0	1	0	1	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.6
25-Dec	0	1	0	0	0	0	1	0	1	1	A	1	0	0	1	0	1	1	1	0	0	1	1	1	0.6	0.9
26-Dec	1	1	1	1	1	1	0	0	1	A	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0.6	0.8
27-Dec	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1
28-Dec	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.3
29-Dec	1	1	1	1	1	1	A	0	1	1	1	M	M	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0
30-Dec	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
31-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0.8	1.0
		0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.7	0.6	0.6	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.6	0.6	0.6	Diurnal Average
		2.1	1.4	1.3	1.3	1.3	1.4	1.8	1.3	1.1	1.3	1.2	1.3	1.4	2.0	1.4	1.0	1.1	1.5	1.3	1.1	0.9	1.0	1.4	1.2	Diurnal Maximum
C - Calibration		M - Maintenance						A - Automated Daily Zero Span																		

Hourly Maximums

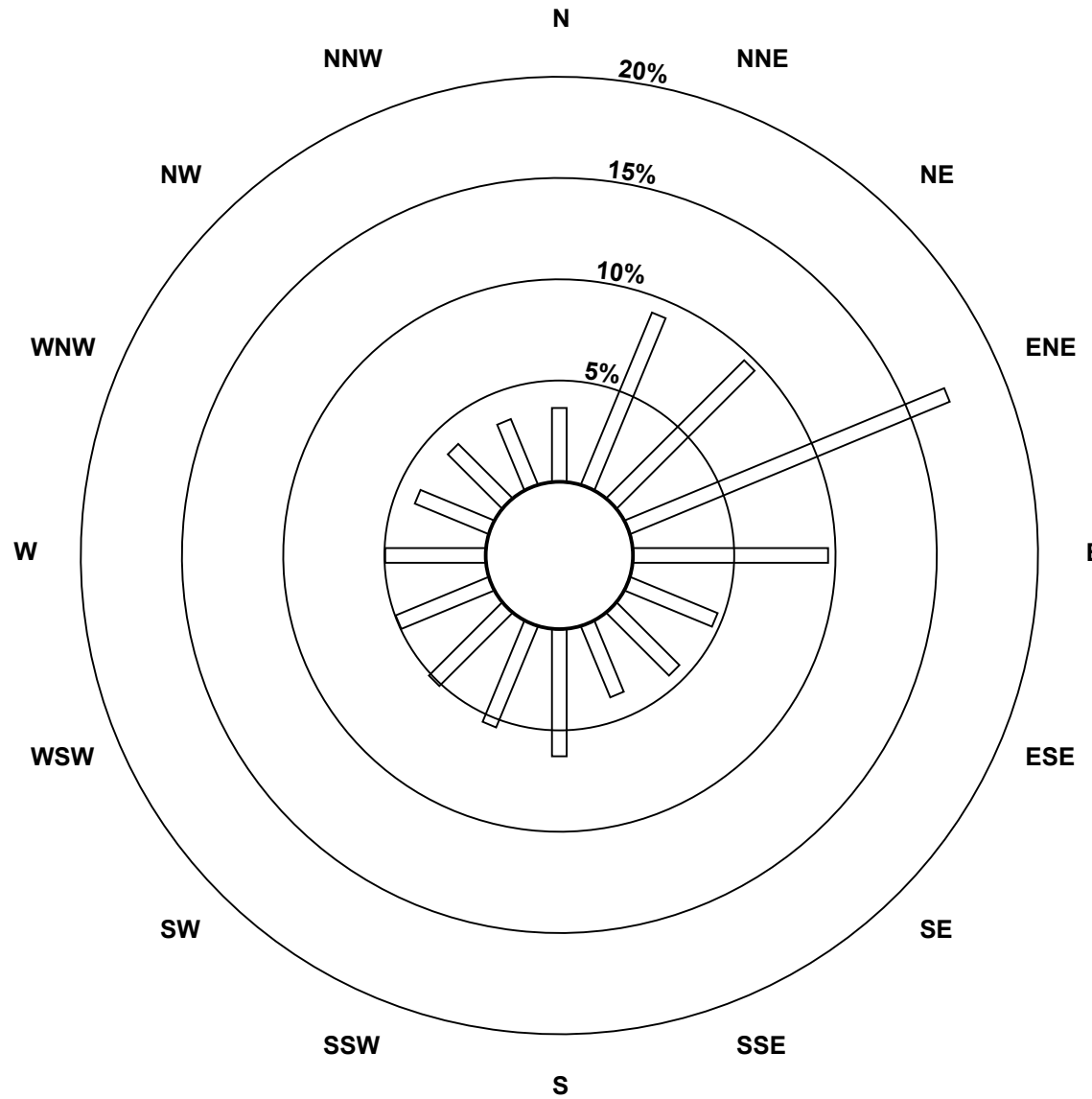
Sulphur Dioxide (SO₂) - ppb
Falher - December 2015



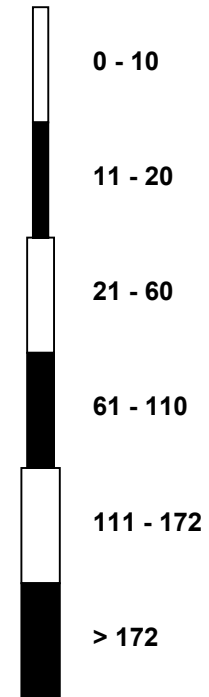
Pollutant Rose

Sulphur Dioxide (SO₂) - ppb

Falher - December 2015

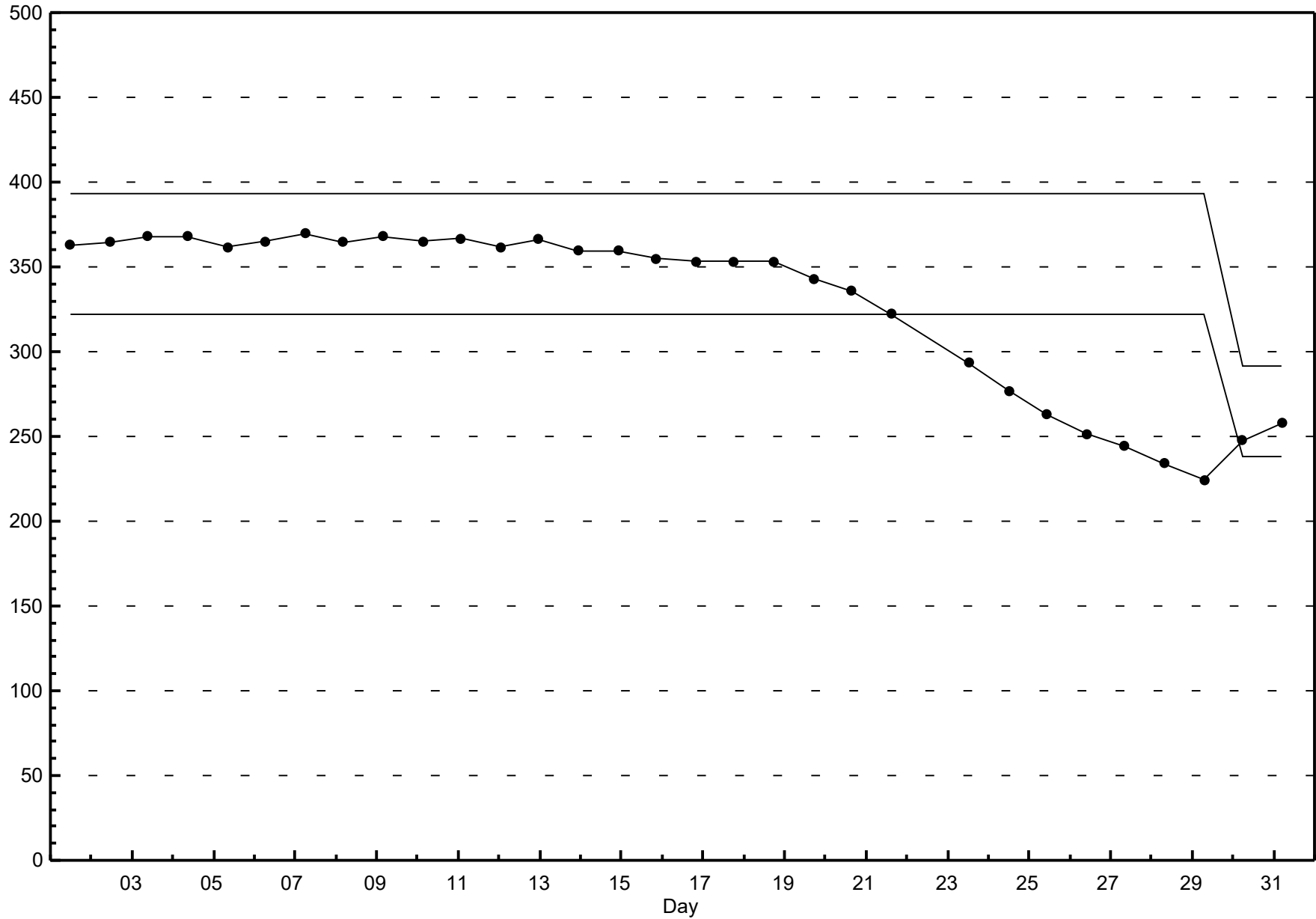


Pollutant Classes (ppb)



Span Responses

Sulphur Dioxide (SO₂)
Falher - December 2015



Hourly Averages

Hydrogen Sulphide (H₂S) - ppb

Falher - December 2015

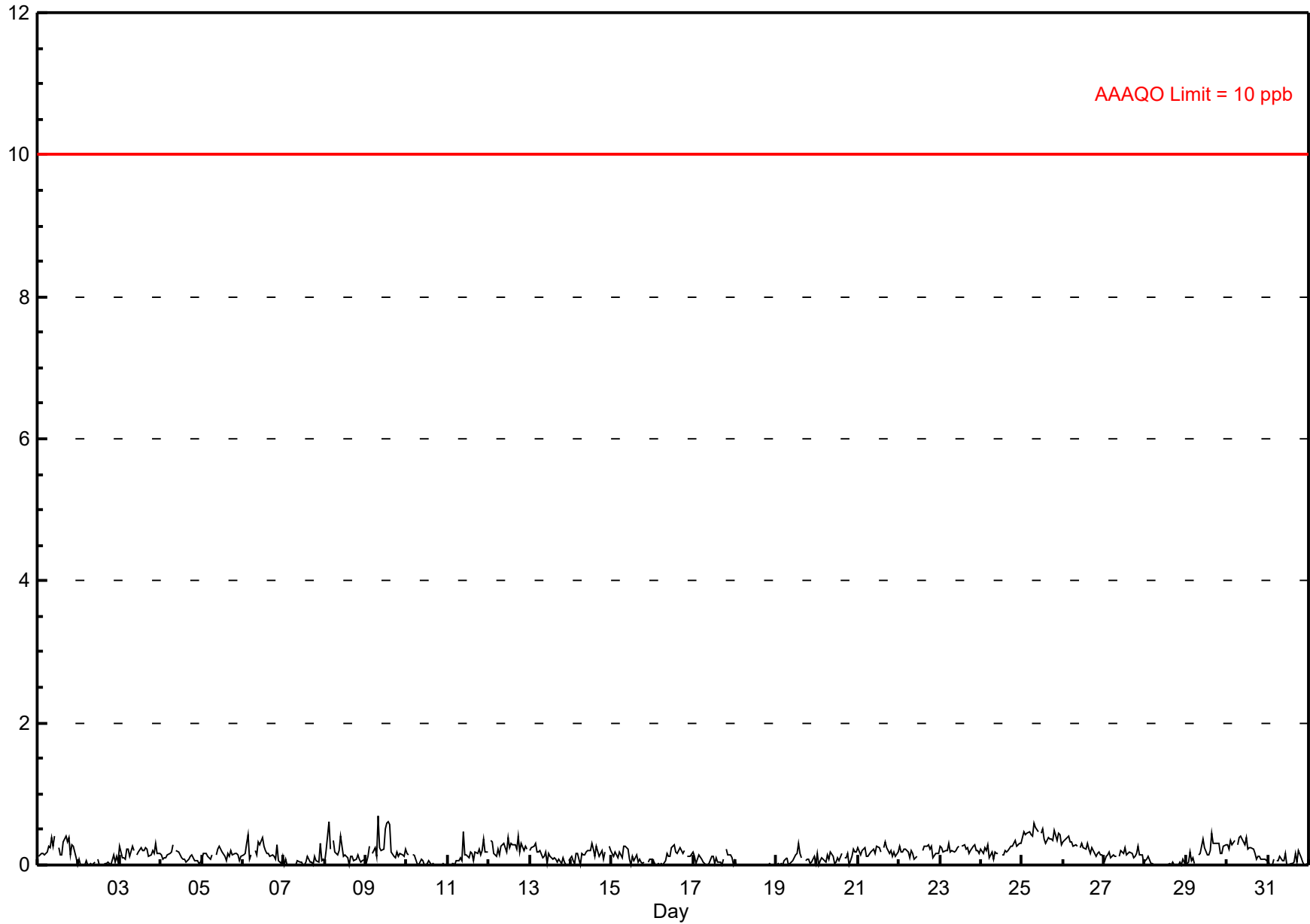
Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 0.7 ppb on Dec 9 08:00	Maximum Daily Average: 0.4 ppb on Dec 25		Hours of Data:	710
Minimum Value: 0 ppb on Dec 2 00:00	Minimum Daily Average: 0.0 ppb on Dec 18		Hours of Missing Data:	34
Maximum Diurnal Average: 0.2 ppb at hour 10	Minimum Diurnal Average: 0.1 ppb at hour 24		Hours of Calibration:	34
Monthly Average: 0.15 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 = 0.5		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
2-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2
3-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
4-Dec	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
5-Dec	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
6-Dec	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
7-Dec	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	0.3
8-Dec	0	0	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6
9-Dec	0	0	0	A	0	0	0	1	0	0	A	1	1	1	1	0	0	0	0	0	0	0	0	0	0.3	0.7
10-Dec	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
11-Dec	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	0.5
12-Dec	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
13-Dec	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	0.3
14-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	0.3
15-Dec	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
16-Dec	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
17-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.1	0.2
18-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.0	0.1
19-Dec	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
20-Dec	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	0.2
21-Dec	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	0.3
22-Dec	0	0	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0	0	0	0.2	0.3
23-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
24-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
25-Dec	0	0	0	0	0	0	0	1	1	0	A	0	1	0	0	0	0	0	0	0	0	0	0	0	0.4	0.6
26-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
27-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
28-Dec	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
29-Dec	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
30-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
31-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	Diurnal Average	
	0.4	0.5	0.6	0.5	0.5	0.4	0.4	0.7	0.5	0.5	0.4	0.5	0.6	0.6	0.6	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	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

Hydrogen Sulphide (H₂S) - ppb
Falher - December 2015



Hourly Maximums

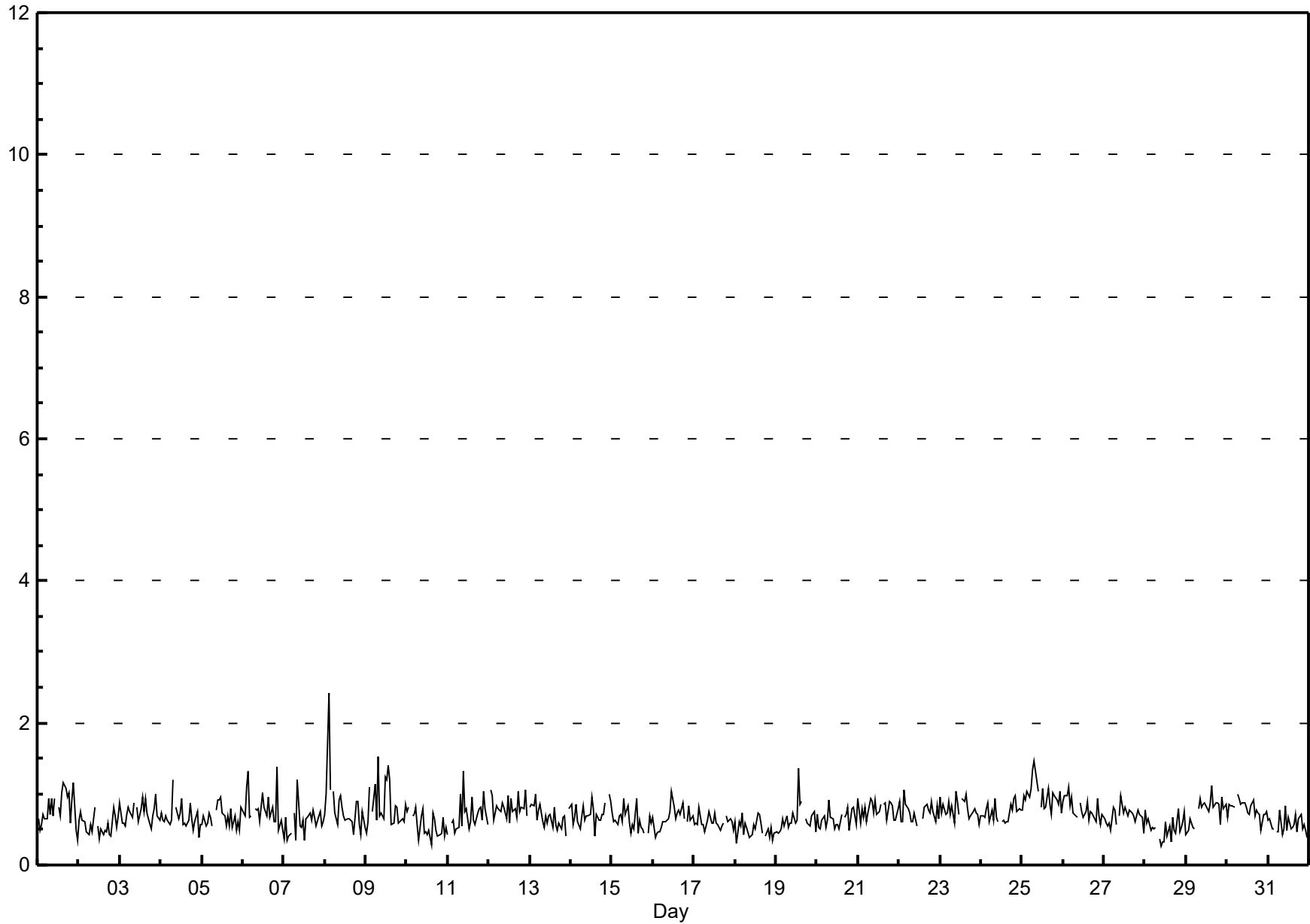
Hydrogen Sulphide (H₂S) - ppb

Falher - December 2015

Maximum Value: 2.4 ppb on Dec 8 03:00		Maximum Daily Average: 1.0 ppb on Dec 25		Hours in Service: 744																							
Minimum Value: 0 ppb on Dec 28 10:00		Minimum Daily Average: 0.5 ppb on Dec 18		Hours of Data: 710																							
Maximum Diurnal Average: 0.8 ppb at hour 8		Minimum Diurnal Average: 0.6 ppb at hour 24		Hours of Missing Data: 34																							
Monthly Average: 0.70 ppb		Percentiles: P ₁ = 0.3 P ₁₀ = 0.5 Q ₁ = 0.6 Median = 0.7 Q ₃ = 0.8 P ₉₀ = 0.9 P ₉₉ = 1.3		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-Dec	1	0	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0	0	0.8	1.2	
2-Dec	1	1	1	1	0	0	0	1	0	1	A	1	0	1	0	0	0	1	0	0	1	1	1	1	0.6	0.8	
3-Dec	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	1.0	
4-Dec	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	0.7	1.2	
5-Dec	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0.7	1.0	
6-Dec	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0.8	1.4
7-Dec	0	1	0	0	0	A	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0.6	1.2	
8-Dec	1	1	2	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	0.8	2.4	
9-Dec	0	1	1	A	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.5	
10-Dec	1	1	A	1	1	1	1	0	1	1	0	0	0	0	1	1	0	0	0	0	0	1	0	1	0.6	0.8	
11-Dec	0	A	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.3	
12-Dec	A	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	1.1	
13-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	A	1	0.7	1.0	
14-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	A	1	0.7	1.0	
15-Dec	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	0	A	0	1	0.6	0.9	
16-Dec	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0.7	1.0	
17-Dec	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	A	1	1	1	0	0.6	0.8	
18-Dec	1	0	1	1	1	0	1	1	0	0	1	1	1	1	1	1	0	1	A	0	0	0	1	0	0.5	0.7	
19-Dec	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0	0.6	1.4	
20-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0	1	1	1	0.6	0.9	
21-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.8	0.9	
22-Dec	1	1	1	1	1	1	1	1	1	1	1	C	C	C	1	1	1	1	1	1	1	1	1	1	0.7	1.1	
23-Dec	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0	
24-Dec	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0	
25-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.5	
26-Dec	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	1.1	
27-Dec	1	1	1	1	0	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0.7	1.0	
28-Dec	1	1	1	0	1	1	1	A	0	0	0	1	0	1	0	1	0	0	1	0	0	1	0	1	0.5	0.8	
29-Dec	0	0	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1	
30-Dec	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0.8	1.0	
31-Dec	1	1	1	1	A	0	0	1	0	1	1	0	1	1	1	1	1	0	1	1	1	1	0	0	0.6	0.8	
		0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.7	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	0.6	Diurnal Average		
		0.9	1.1	2.4	1.3	0.9	1.1	1.3	1.5	1.3	1.3	1.0	1.2	1.2	1.4	1.2	1.2	1.1	1.0	1.0	1.0	1.4	1.2	1.0	0.9	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

Hourly Maximums

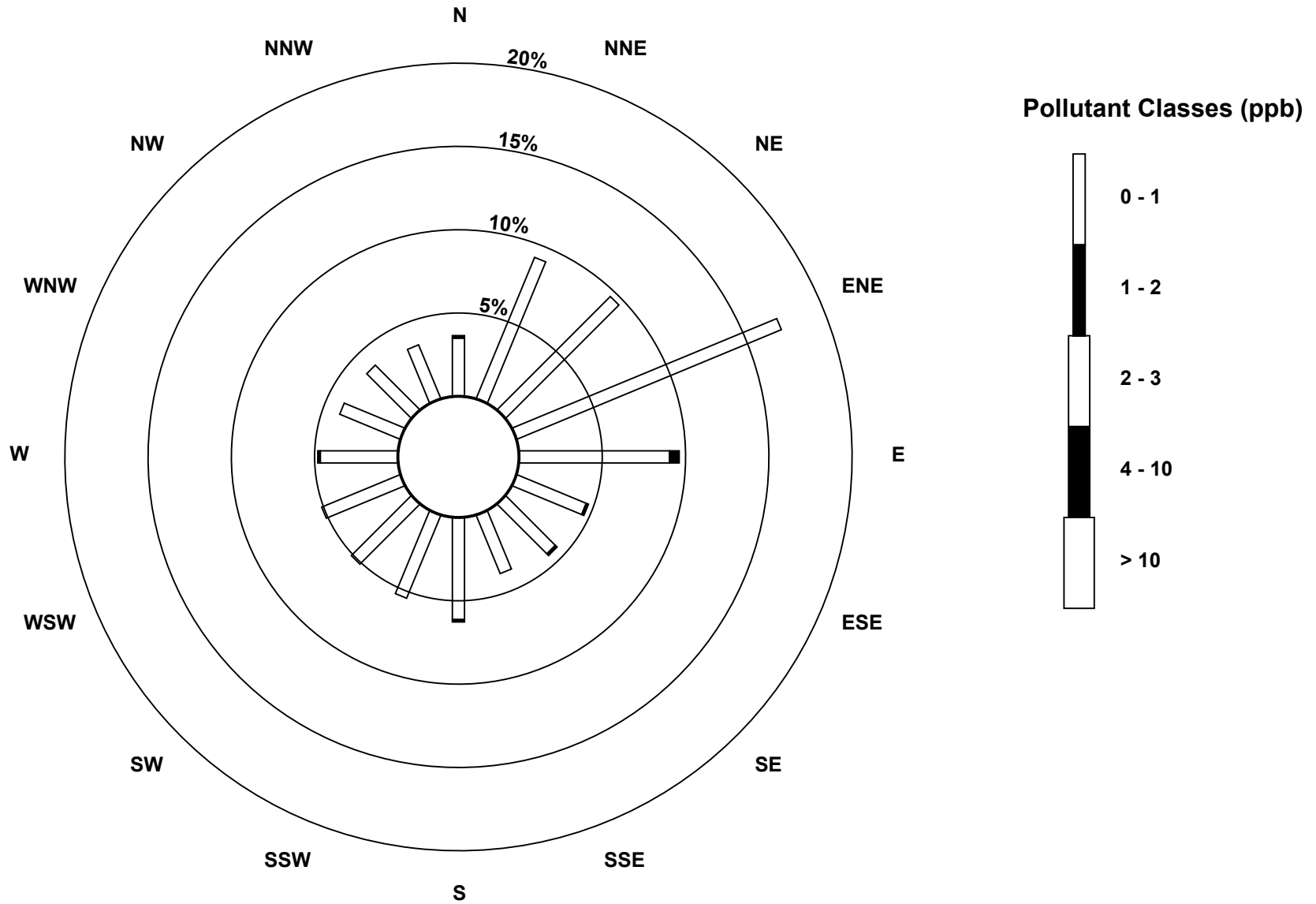
Hydrogen Sulphide (H₂S) - ppb
Falher - December 2015



Pollutant Rose

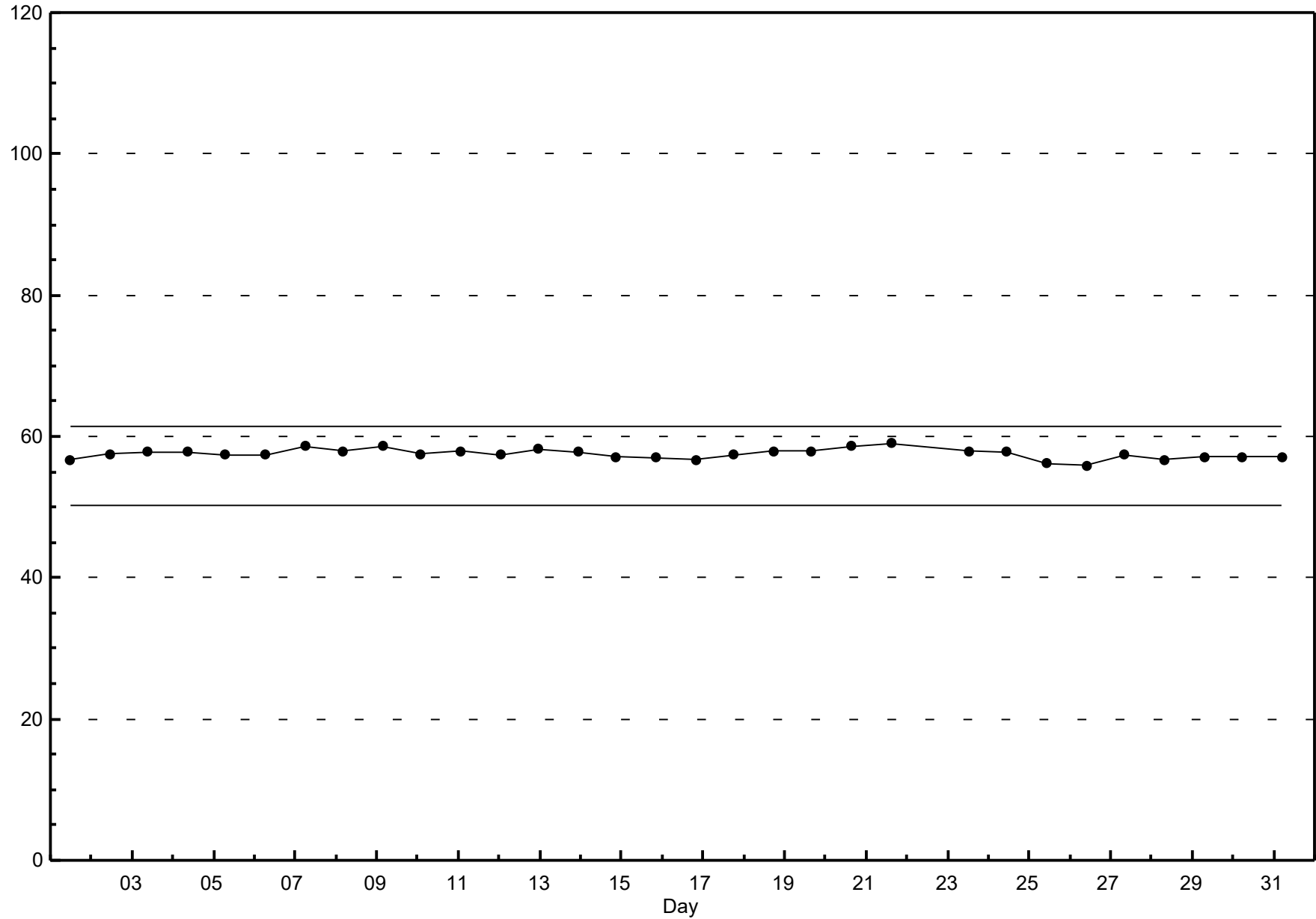
Hydrogen Sulphide (H₂S) - ppb

Falher - December 2015



Span Responses

Hydrogen Sulphide (H₂S)
Falher - December 2015



Hourly Averages

External Temperature (ET) - °C

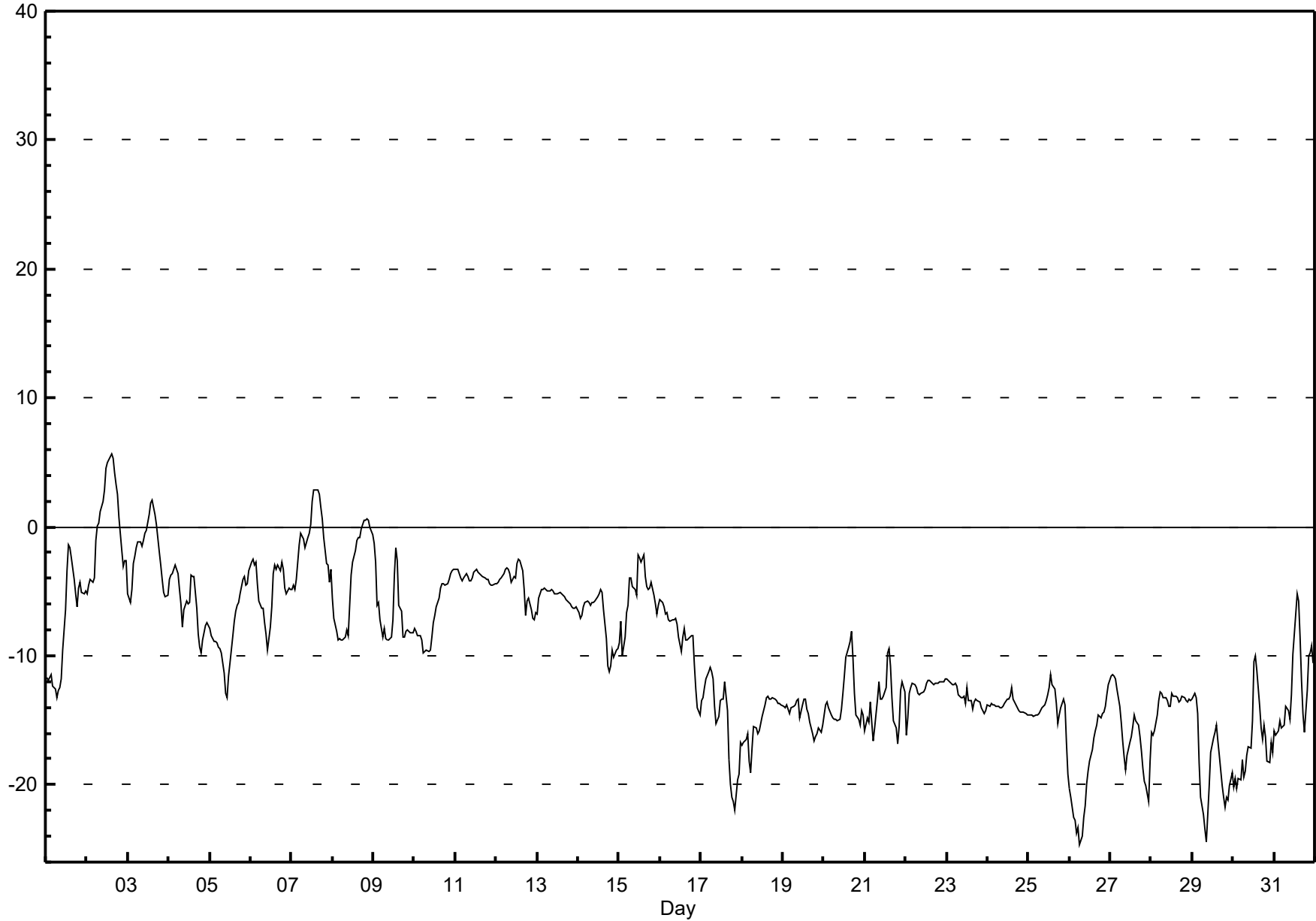
Falher - December 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 5.7 °C on Dec 2 15:00 Maximum Daily Average: 0.4 °C on Dec 2		Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																								
Minimum Value: -25 °C on Dec 26 07:00 Maximum Diurnal Average: -7.3 °C at hour 15 Monthly Average: -9.77 °C		Minimum Daily Average: -18.7 °C on Dec 29 Minimum Diurnal Average: -10.7 °C at hour 10 Percentiles: P ₁ = -22.6 P ₁₀ = -16.6 Q ₁ = -14.0 Median = -10.0 Q ₃ = -4.9 P ₉₀ = -2.7 P ₉₉ = 2.3																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	-12	-12	-12	-11	-12	-13	-13	-13	-12	-12	-10	-6	-3	-1	-2	-2	-4	-5	-6	-5	-4	-5	-5	-5	-7.8	-1.4
2-Dec	-5	-4	-4	-4	-4	-1	0	0	1	2	3	5	5	5	6	5	4	3	2	1	-2	-3	-3	-3	0.4	5.7
3-Dec	-5	-6	-5	-3	-2	-2	-1	-1	-1	-1	0	0	1	2	2	2	1	0	-2	-3	-4	-5	-5	-5	-1.9	2.1
4-Dec	-4	-4	-4	-3	-3	-4	-5	-6	-8	-6	-6	-6	-6	-4	-4	-4	-6	-8	-9	-10	-9	-8	-7	-8	-5.9	-2.9
5-Dec	-8	-8	-9	-9	-9	-9	-9	-10	-11	-13	-13	-12	-11	-8	-7	-7	-6	-6	-5	-4	-4	-4	-4	-3	-8.0	-3.4
6-Dec	-3	-3	-3	-3	-4	-6	-6	-6	-7	-8	-10	-8	-6	-4	-3	-3	-3	-3	-3	-3	-5	-5	-5	-5	-4.8	-2.5
7-Dec	-5	-5	-5	-4	-1	-1	-1	-1	-2	-1	0	0	2	3	3	3	3	2	1	-1	-3	-3	-4	-3	-1.0	2.9
8-Dec	-6	-7	-8	-9	-9	-9	-9	-9	-8	-8	-6	-4	-3	-2	-1	-1	-1	0	0	1	1	0	0	-1	-4.0	0.6
9-Dec	-1	-3	-6	-6	-7	-8	-8	-9	-9	-9	-9	-7	-4	-2	-3	-6	-7	-9	-9	-8	-8	-8	-8	-8	-6.7	-1.3
10-Dec	-8	-8	-8	-8	-9	-10	-10	-10	-10	-10	-9	-7	-7	-6	-5	-5	-4	-4	-5	-4	-4	-4	-3	-3	-6.7	-3.3
11-Dec	-3	-3	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-3	-4	-4	-4	-4	-4	-4	-4	-4	-5	-5	-4	-3.9	-3.3
12-Dec	-4	-4	-4	-4	-4	-3	-3	-3	-4	-4	-4	-4	-3	-2	-3	-3	-5	-7	-6	-5	-6	-7	-7	-7	-4.5	-2.5
13-Dec	-7	-6	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-6	-6	-6	-6	-6	-6	-6	-5.4	-4.8
14-Dec	-7	-7	-7	-6	-6	-6	-6	-6	-6	-6	-6	-5	-5	-5	-5	-6	-9	-11	-11	-11	-10	-10	-10	-9	-7.3	-4.9
15-Dec	-9	-7	-10	-9	-7	-6	-4	-4	-5	-5	-5	-2	-2	-3	-2	-4	-5	-5	-5	-4	-5	-6	-7	-6	-5.3	-2.2
16-Dec	-6	-6	-6	-7	-7	-7	-7	-7	-7	-7	-8	-9	-10	-8	-8	-9	-9	-9	-8	-8	-11	-13	-14	-15	-8.5	-5.7
17-Dec	-13	-13	-12	-12	-11	-11	-11	-12	-14	-15	-15	-13	-13	-13	-12	-14	-18	-20	-21	-21	-22	-20	-19	-17	-15.2	-10.9
18-Dec	-17	-17	-16	-16	-18	-19	-17	-16	-16	-16	-15	-15	-14	-13	-13	-13	-13	-13	-13	-13	-13	-14	-14	-14	-15.1	-13.2
19-Dec	-14	-14	-14	-14	-15	-14	-14	-14	-13	-13	-15	-14	-13	-13	-14	-15	-15	-16	-17	-16	-16	-16	-16	-15	-14.6	-13.3
20-Dec	-15	-14	-14	-14	-15	-15	-15	-15	-15	-15	-14	-13	-12	-10	-9	-9	-8	-10	-13	-15	-15	-15	-14	-15	-13.2	-8.1
21-Dec	-16	-15	-15	-14	-15	-17	-16	-13	-12	-13	-13	-13	-12	-10	-9	-11	-13	-15	-16	-17	-16	-13	-12	-13	-13.7	-9.5
22-Dec	-16	-15	-13	-12	-12	-12	-12	-13	-13	-13	-13	-13	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12.6	-11.8
23-Dec	-12	-12	-12	-12	-12	-12	-12	-13	-13	-13	-13	-14	-12	-13	-13	-14	-14	-13	-14	-14	-14	-14	-14	-14	-13.1	-11.8
24-Dec	-14	-14	-14	-14	-14	-14	-14	-14	-14	-14	-14	-13	-13	-13	-12	-13	-14	-14	-14	-14	-14	-14	-14	-15	-13.8	-12.4
25-Dec	-15	-15	-15	-15	-15	-15	-14	-14	-14	-14	-13	-13	-12	-11	-12	-13	-14	-15	-15	-14	-13	-14	-17	-19	-14.2	-11.5
26-Dec	-20	-21	-23	-23	-24	-23	-25	-24	-22	-22	-20	-19	-18	-17	-16	-16	-15	-15	-15	-14	-14	-14	-13	-12	-18.6	-12.2
27-Dec	-12	-12	-12	-12	-13	-14	-15	-17	-18	-19	-18	-17	-16	-15	-15	-15	-15	-16	-17	-19	-20	-20	-21	-18	-16.0	-11.5
28-Dec	-16	-16	-16	-15	-13	-13	-13	-13	-13	-13	-14	-14	-13	-13	-13	-13	-14	-13	-13	-13	-13	-14	-13	-13	-13.7	-12.8
29-Dec	-13	-13	-13	-14	-18	-21	-22	-23	-24	-22	-20	-18	-16	-16	-15	-17	-18	-20	-21	-22	-21	-21	-20	-19	-18.7	-13.0
30-Dec	-20	-20	-20	-19	-20	-18	-19	-19	-18	-17	-17	-15	-10	-10	-11	-14	-16	-17	-15	-16	-18	-18	-17	-18	-16.8	-10.0
31-Dec	-16	-16	-16	-15	-16	-15	-15	-14	-14	-15	-13	-10	-8	-5	-6	-9	-12	-14	-16	-13	-10	-10	-9	-11	-12.4	-5.1
																								Diurnal Average		
																								Diurnal Maximum		

Hourly Averages

External Temperature (ET) - °C

Falher - December 2015





Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Falher - December 2015

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 Spd	8	8	12	12	5	4	11	8	8	10	8	8	8	7	8	12	13	12	15	14	18	15	16	17	9.8	18.4
Dir	27	38	53	60	164	60	66	76	70	60	70	93	115	126	116	110	90	96	95	75	95	86	75	63	81	95
2 Spd	18	19	15	16	12	11	6	5	14	22	23	35	41	40	38	29	24	18	17	13	9	11	11	14	12.1	40.7
Dir	67	78	71	84	82	132	168	179	168	189	199	207	219	220	226	228	226	207	208	213	154	129	143	129	189	219
3 Spd	12	11	15	15	18	20	17	17	15	17	16	18	15	11	6	9	5	2	7	7	6	6	7	5	10.3	20.1
Dir	79	43	40	67	91	88	79	93	76	74	79	85	79	64	62	96	80	17	358	30	19	8	7	16	68	88
4 Spd	6	9	10	7	16	11	8	5	5	5	11	11	4	2	4	3	3	7	8	8	7	9	10	11	4.8	15.7
Dir	27	331	317	285	243	211	212	142	99	217	251	264	269	312	324	319	279	227	195	191	209	220	224	218	240	243
5 Spd	16	19	18	17	16	11	9	7	3	7	9	8	10	13	13	15	13	16	14	16	14	10	13	15	4.6	18.5
Dir	214	209	205	212	212	217	198	174	135	63	41	32	26	46	58	63	66	74	54	70	78	84	64	77	98	209
6 Spd	16	13	12	7	7	6	4	3	6	4	6	5	6	9	13	13	17	14	17	15	11	13	17	20	8.5	19.7
Dir	70	76	84	105	250	249	255	142	198	142	62	57	59	64	78	73	77	78	76	79	67	70	67	73	77	73
7 Spd	19	19	18	16	13	11	13	8	8	5	7	11	16	17	14	11	8	4	5	8	15	14	7	1	5.0	19.4
Dir	70	76	74	69	76	66	65	69	94	169	117	143	173	203	215	218	249	232	191	205	199	201	207	184	135	76
8 Spd	1	3	8	8	9	11	10	12	9	9	11	12	13	15	14	17	18	19	20	17	7	13	14	12	8.6	20.1
Dir	332	64	82	107	113	125	135	111	73	46	53	79	73	77	75	87	83	79	85	105	154	190	220	208	98	85
9 Spd	7	4	9	6	7	9	8	8	6	6	5	5	2	1	3	12	11	6	4	5	4	3	4	2	2.0	12.4
Dir	222	162	86	60	66	80	82	88	55	71	84	359	86	141	280	288	314	314	287	304	327	330	336	337	23	288
10 Spd	1	4	7	6	4	9	10	10	10	10	10	11	9	8	6	5	5	5	4	4	4	4	3	4	6.4	10.9
Dir	347	67	55	78	63	56	48	47	49	52	60	56	69	59	61	65	45	43	47	20	24	25	42	61	54	69
11 Spd	4	6	5	4	4	4	4	4	4	4	3	1	0	3	3	3	2	3	3	3	3	2	3	4	2.5	6.0
Dir	45	72	75	52	50	56	64	94	88	87	94	116	94	180	177	174	172	149	159	156	143	132	92	78	98	72
12 Spd	3	5	7	5	6	8	11	14	13	11	12	13	13	15	19	16	15	12	17	18	16	14	16	19	12.1	19.0
Dir	89	83	87	67	60	69	75	82	84	84	89	83	82	88	87	82	73	74	59	57	55	60	55	51	72	51
13 Spd	19	20	25	24	22	20	19	16	13	14	15	10	7	7	6	8	6	1	2	2	3	3	2	1	9.9	25.5
Dir	55	61	76	75	72	70	70	67	67	87	69	47	55	67	20	20	13	82	340	309	285	266	280	305	63	76
14 Spd	2	5	5	6	7	7	8	9	8	8	8	9	9	13	11	8	13	16	16	18	19	17	16	15	8.1	18.5
Dir	189	187	174	185	203	211	214	214	206	190	170	167	176	185	179	150	119	108	104	102	110	110	118	118	147	110
15 Spd	15	16	12	13	12	11	14	16	11	12	12	9	14	15	17	14	14	16	17	17	10	3	7	12	9.2	17.3
Dir	115	124	116	132	134	149	184	190	192	204	211	244	224	232	238	236	237	215	214	239	251	285	215	237	202	238
16 Spd	14	8	6	1	4	7	4	3	6	7	10	11	1	7	6	6	2	1	6	9	6	6	5	5	3.6	13.8
Dir	243	247	277	20	244	308	321	245	157	169	163	180	176	288	254	189	306	327	308	313	302	267	250	234	248	243
17 Spd	3	1	4	2	1	5	6	3	3	4	3	5	4	6	3	4	5	5	9	5	8	14	13	23	4.8	22.9
Dir	223	319	83	52	169	248	287	319	301	308	310	312	309	325	345	338	298	328	323	341	339	339	335	353	328	353
18 Spd	18	16	13	13	9	9	12	15	12	12	18	18	24	26	26	25	18	25	28	26	23	20	19	17	16.9	27.5
Dir	350	360	355	348	303	293	329	356	4	356	356	1	355	4	10	11	15	21	29	34	34	37	36	35	9	29
19 Spd	14	13	12	13	13	14	13	14	14	16	14	16	21	18	13	10	12	15	15	17	18	20	16	20	13.8	20.6
Dir	36	44	58	68	78	80	80	77	69	56	48	54	74	71	47	69	52	25	21	20	21	21	14	21	49	74
20 Spd	24	23	23	24	25	27	25	25	26	27	24	21	16	13	11	10	10	12	11	13	14	12	9	10	16.1	26.9
Dir	27	27	26	24	18	12	16	15	14	14	23	37	60	71	77	61	139	116	52	39	51	64	68	57	35	14
21 Spd	10	8	11	13	10	7	7	5	5	7	6	10	9	6	6	6	5	5	5	7	5	4	2	6	5.8	12.8
Dir	36	55	85	90	53	7	26	15	30	26	48	68	63	81	92	64	46	35	12	32	32	325	19	282	47	90
22 Spd	9	9	8	3	4	8	10	10	10	8	8	7	8	7	7	7	10	9	8	9	6	7	6	4	7.2	10.2
Dir	287	293	304	320	233	243	263	267	265	270	269	265	268	267	242	240	252	276	277	278	265	275	274	262	268	252

Hourly Averages

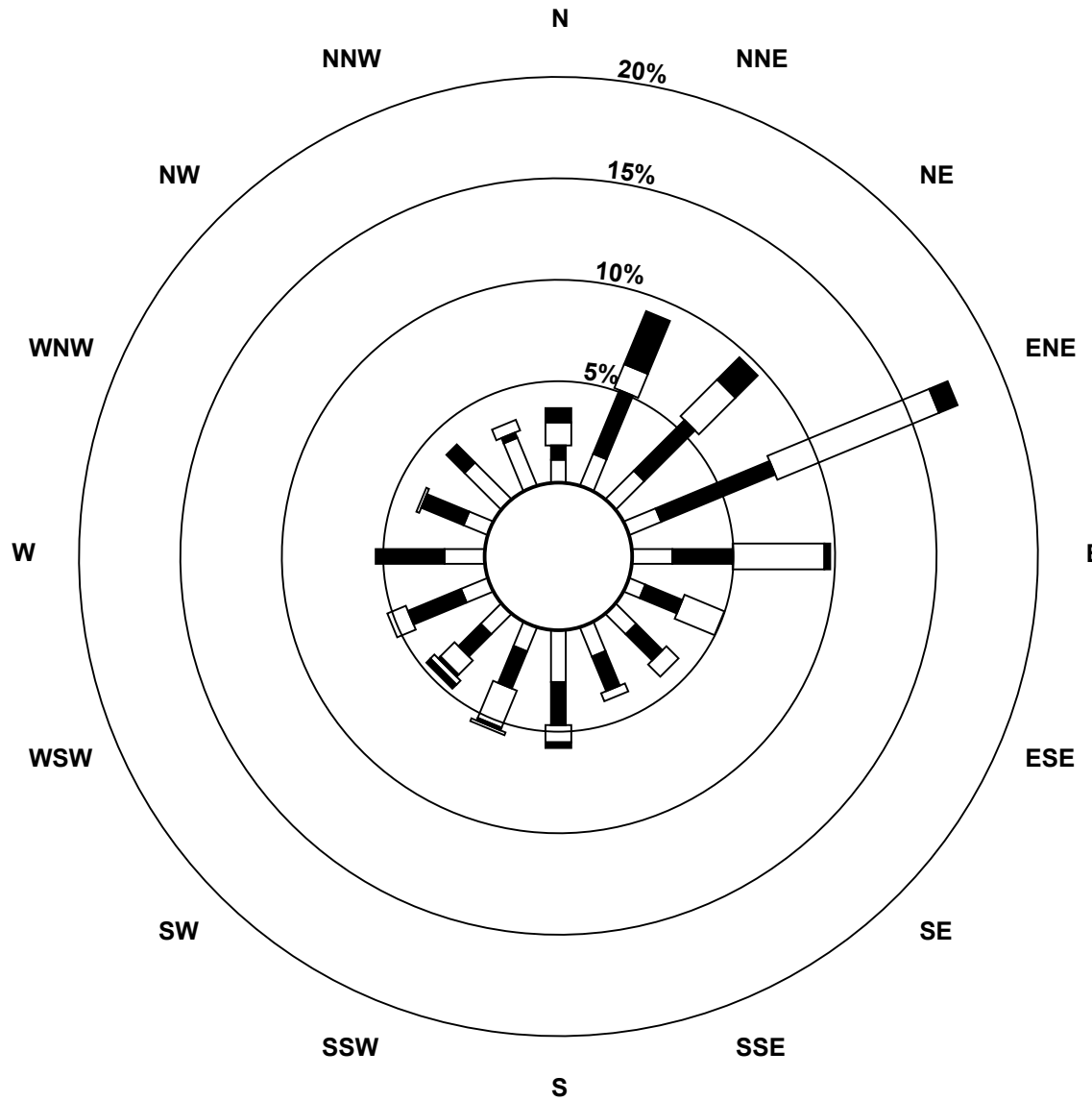
Wind Speed (km/h)
Wind Direction (deg)
Falher - December 2015

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
23 Spd	6	7	6	8	6	5	5	4	5	7	8	5	5	6	5	4	6	7	6	6	6	8	7	4	5.6	8.1	
Dir	245	246	255	270	276	268	249	275	223	256	288	240	267	265	284	256	239	264	261	242	238	253	261	273	258	288	
24 Spd	4	6	8	8	7	7	6	6	5	4	3	2	4	2	1	3	1	4	5	5	4	2	3	3	3.3	8.4	
Dir	275	273	295	300	295	289	281	292	309	306	329	337	325	338	260	282	250	213	213	223	225	191	195	174	277	300	
25 Spd	3	1	1	1	3	1	5	4	6	8	10	7	5	3	5	4	4	9	6	5	10	9	10	7	4.2	10.3	
Dir	177	204	202	232	145	84	77	92	105	102	114	149	188	203	156	164	171	187	192	169	197	190	161	139	157	114	
26 Spd	6	4	6	7	6	5	6	5	5	5	5	7	6	7	8	10	14	18	23	22	21	21	27	25	10.4	27.1	
Dir	125	153	34	27	26	359	351	351	343	349	360	15	16	20	31	29	23	26	24	24	28	24	37	52	27	37	
27 Spd	22	24	24	23	23	20	16	6	10	7	7	8	4	5	0	3	2	7	3	1	5	6	6	4	8.9	24.0	
Dir	52	47	48	48	43	32	29	23	21	31	83	104	103	332	348	135	70	92	50	297	5	16	18	16	44	48	
28 Spd	3	3	2	4	5	0	5	4	4	4	5	N	N	N	N	N	N	N	N	N	N	N	N	N	--	5.1	
Dir	2	359	279	293	276	226	181	210	222	214	239	N	N	N	N	N	N	N	N	N	N	N	N	N	--	181	
29 Spd	N	N	N	N	N	N	N	N	N	N	N	N	N	12	10	9	7	9	8	7	6	3	2	6	--	11.8	
Dir	N	N	N	N	N	N	N	N	N	N	N	N	N	74	86	82	78	53	52	60	64	116	211	135	120	--	74
30 Spd	3	1	1	4	3	4	3	4	6	9	7	8	7	6	4	9	11	11	15	10	9	13	14	11	5.8	14.6	
Dir	107	34	188	150	154	162	118	104	125	137	146	167	190	180	138	118	107	108	106	94	54	69	76	78	112	106	
31 Spd	12	13	16	10	9	3	8	10	6	3	7	17	12	5	3	5	6	9	8	14	17	19	20	19	6.9	19.5	
Dir	93	84	94	89	91	49	138	171	225	339	162	184	201	231	295	45	48	78	68	134	142	155	170	157	135	170	
Spd	4.7	5.0	6.2	5.5	3.3	3.0	3.1	3.2	3.3	3.0	3.3	2.9	2.4	1.7	1.7	2.6	2.8	3.8	4.2	4.0	3.6	3.1	3.4	4.5	Diurnal Average		
Dir	54	57	61	65	73	66	66	77	73	73	75	96	98	92	86	82	68	75	61	62	69	71	70	69			
Spd	23.8	23.9	25.5	23.8	24.8	26.6	24.7	25.4	26.2	26.9	23.6	35.4	40.7	39.9	37.8	28.6	23.9	24.9	27.5	26.0	23.0	21.2	27.1	25.0	Diurnal Maximum		
Dir	27	47	76	75	18	12	16	15	14	14	23	207	219	220	226	228	226	21	29	34	34	24	37	52			
Maximum Speed Value: 41 km/h on Dec 2 13:00		Minimum Speed Value: 0 km/h on Dec 11 13:00												Hours in Service: 744													
Maximum Daily Speed Average: 16.9 km/h on Dec 2		Minimum Daily Speed Average: 2.0 km/h on Dec 11												Hours of Data: 719													
Maximum Diurnal Speed Average: 6.2 km/h at hour 3		Minimum Diurnal Speed Average: 1.7 km/h at hour 15												Hours of Missing Data: 25													
Monthly Average Velocity: 3.45 km/h 69.9 deg		Speed Percentiles: P ₁ = 0.8 P ₁₀ = 3.2 Q ₁ = 5.1 Median = 8.2 Q ₃ = 13.7 P ₉₀ = 18.2 P ₉₉ = 26.8												Percent Operational Time: 96.6													
All monthly, daily, and diurnal averages have been calculated using vector methods																											
N - Not Valid																											
Frequency Distribution																											
		Speed Range (km/h)																									
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																				
North	18	23	15	14	0	0	70																				
NorthEast	23	65	43	23	0	0	154																				
East	22	46	81	12	0	0	161																				
SouthEast	20	22	18	1	0	0	61																				
South	21	32	12	3	0	0	68																				
SouthWest	17	32	28	1	3	2	83																				
West	24	43	2	0	0	0	69																				
NorthWest	31	20	2	0	0	0	53																				
Total	176	283	201	54	3	2	719																				

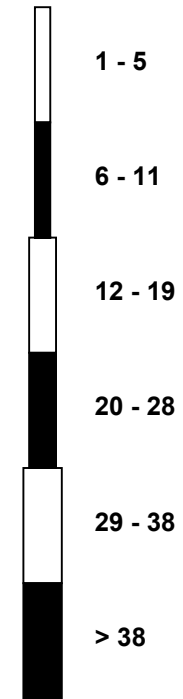
Wind Rose

Wind Speed (WS) (km/h)

Falher - December 2015



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Falher - December 2015

Maximum Speed: 41 km/h on Dec 2 13:00	Maximum Daily Speed Average: 19.4 km/h on Dec 2	Hours in Service: 744
Minimum Speed: 0 km/h on Dec 11 13:00	Minimum Daily Speed Average: 3.4 km/h on Dec 11	Hours of Data: 719
Maximum Diurnal Speed Average: 10.8 km/h at hour 3	Minimum Diurnal Speed Average: 8.8 km/h at hour 9	Hours of Missing Data: 25
Monthly Average Speed: 10.05 km/h	Percentiles: P ₁ = 1.3 P ₁₀ = 3.5 Q ₁ = 5.3 Median = 8.5 Q ₃ = 13.9 P ₉₀ = 18.2 P ₉₉ = 26.8	Percent Operational Time: 96.6

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	9	8	12	12	7	5	11	8	8	10	9	8	8	8	13	13	12	15	14	18	16	16	18	11.0	18.5																							
2-Dec	18	20	15	16	12	11	6	6	15	22	23	35	41	40	38	29	24	18	18	13	9	11	11	15	19.4	40.8																						
3-Dec	12	11	15	15	18	20	17	17	15	17	16	18	15	12	6	10	5	4	7	7	6	6	7	5	11.7	20.1																						
4-Dec	6	9	10	8	16	11	8	7	6	6	11	11	4	2	4	3	3	7	8	9	7	9	10	11	7.8	16.1																						
5-Dec	16	19	18	17	16	11	9	7	4	8	9	8	10	13	13	15	13	16	15	16	14	11	13	15	12.8	18.6																						
6-Dec	16	14	12	9	7	6	5	4	6	5	7	5	7	10	13	13	17	14	17	15	11	13	17	20	10.9	19.8																						
7-Dec	19	19	18	16	13	11	13	9	9	6	7	12	16	17	14	11	9	4	5	8	15	14	8	3	11.5	19.5																						
8-Dec	3	3	8	8	9	12	10	12	10	9	11	12	14	15	15	17	18	19	20	17	9	14	14	12	12.1	20.3																						
9-Dec	7	5	10	7	8	10	8	8	6	6	5	5	2	1	3	13	11	6	4	5	5	4	4	3	5.9	12.5																						
10-Dec	2	4	7	6	5	9	10	10	10	10	10	10	11	9	8	7	5	5	5	4	4	4	4	4	6.7	11.0																						
11-Dec	4	6	5	4	4	4	4	4	4	4	3	1	0	3	3	3	2	3	3	3	3	3	3	4	3.4	6.1																						
12-Dec	3	5	7	5	7	8	11	14	13	11	12	13	13	15	19	16	15	12	17	18	16	14	16	19	12.4	19.0																						
13-Dec	19	20	26	24	22	20	19	17	13	14	16	10	7	7	7	8	6	1	2	2	3	3	3	1	11.3	25.5																						
14-Dec	3	5	5	6	7	7	8	9	8	9	8	9	9	13	11	8	13	16	16	18	19	17	16	15	10.6	18.5																						
15-Dec	15	16	12	13	12	11	14	16	11	12	12	9	14	15	17	14	14	16	17	17	11	4	7	12	13.0	17.3																						
16-Dec	14	8	7	4	7	7	4	4	6	7	10	11	3	8	7	6	2	2	6	9	6	6	6	5	6.5	13.9																						
17-Dec	4	3	4	2	1	5	6	4	4	4	4	5	4	6	3	4	5	5	9	5	8	14	14	23	6.0	23.0																						
18-Dec	18	16	13	13	9	9	12	15	12	12	18	18	24	26	26	26	18	25	28	26	23	20	19	17	18.4	27.6																						
19-Dec	14	13	12	13	13	14	13	14	14	16	15	16	21	18	13	11	13	15	15	17	18	20	16	20	15.1	20.6																						
20-Dec	24	23	23	24	25	27	25	25	26	27	24	21	16	14	11	10	10	12	11	13	14	12	9	10	18.2	26.9																						
21-Dec	10	8	11	13	10	7	8	5	5	7	6	10	9	7	6	6	5	6	5	7	5	5	4	7	7.2	12.9																						
22-Dec	9	9	8	3	4	8	10	10	10	8	8	7	8	7	7	7	10	9	9	9	6	7	6	4	7.7	10.4																						
23-Dec	6	7	6	8	6	5	5	4	6	7	9	6	5	7	5	5	6	7	7	6	6	8	7	5	6.1	8.9																						
24-Dec	4	6	8	8	7	7	7	6	5	4	3	2	4	3	2	3	2	4	5	5	4	2	3	4	4.5	8.4																						
25-Dec	3	2	1	2	3	2	5	4	7	8	10	7	5	3	5	4	4	9	6	5	10	9	10	7	5.6	10.4																						
26-Dec	6	4	7	7	6	5	7	5	5	5	5	7	6	7	8	10	14	18	23	23	21	21	27	25	11.4	27.1																						
27-Dec	22	24	24	23	23	20	16	7	10	7	7	8	4	5	1	4	2	7	3	1	5	7	6	4	10.0	24.0																						
28-Dec	4	3	3	4	5	2	5	4	4	4	5	N	N	N	N	N	N	N	N	N	N	N	N	N	--	5.2																						
29-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	11.8																					
30-Dec	3	1	2	4	3	4	3	5	6	9	7	8	12	10	9	7	9	8	8	6	5	3	2	6	7.4	14.6																						
31-Dec	13	13	16	10	9	4	8	11	6	4	8	17	12	6	5	6	6	9	9	14	17	19	20	19	10.8	19.6																						
																								10.2	10.2	10.8	10.2	9.8	9.5	9.5	9.0	8.8	9.2	9.9	10.8	10.4	10.4	9.7	9.9	9.6	10.0	10.8	10.8	10.2	10.3	10.4	10.8	Diurnal Average
																								23.8	24.0	25.5	23.8	24.8	26.6	24.7	25.4	26.2	26.9	23.7	35.5	40.8	39.9	37.8	28.6	24.0	25.0	27.6	26.0	23.1	21.3	27.1	25.1	Diurnal Maximum

N - Not Valid
 All monthly, daily, and diurnal averages have been calculated using scalar methods

Hourly Standard Deviations

Wind Direction (WD) - deg

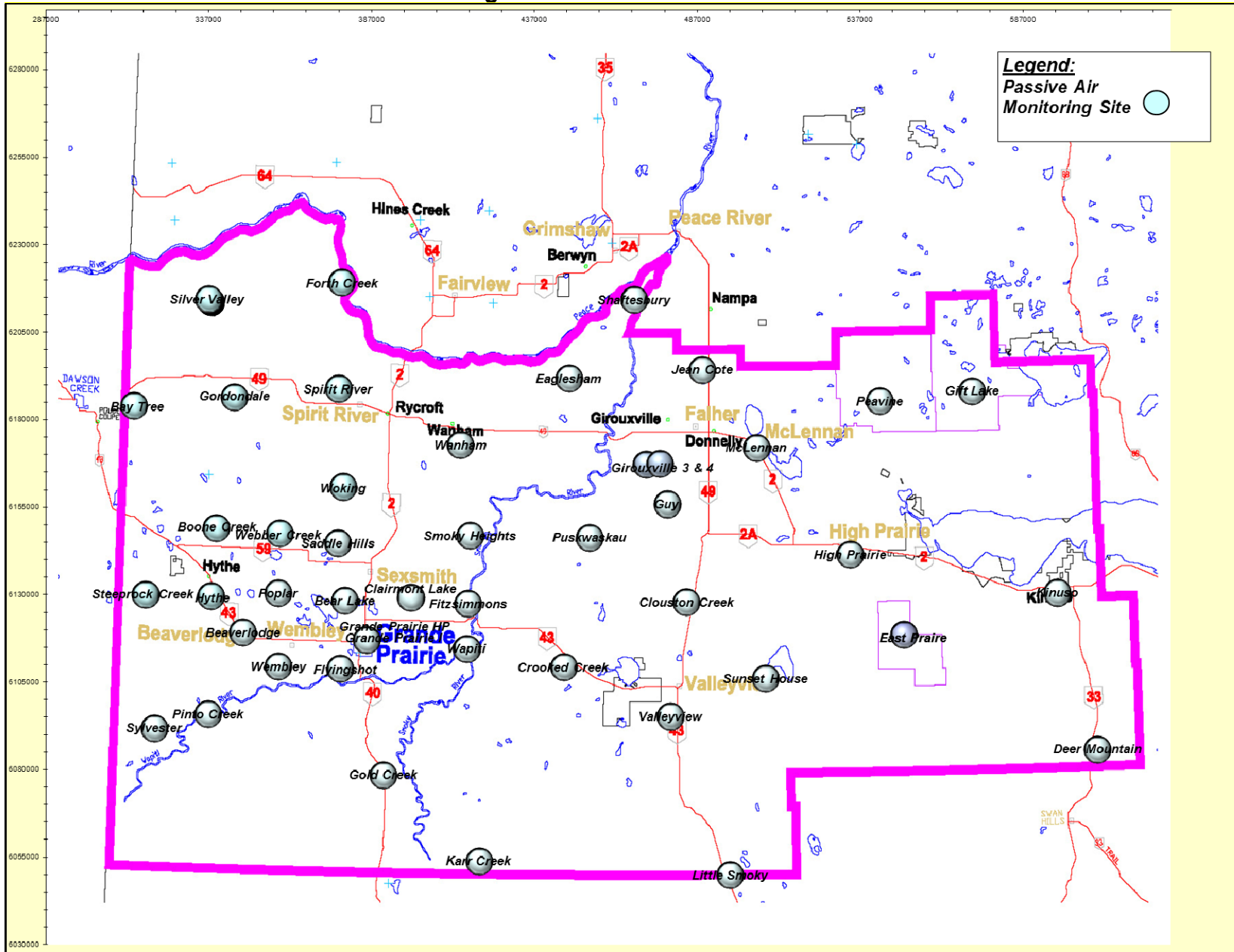
Falher - December 2015

Maximum Value: 92.6 deg on Dec 28 06:00																	Hours in Service: 744									
Minimum Value: 1.5 deg on Dec 12 08:00																	Hours of Data: 719									
Percentiles: P ₁ = 1.7 P ₁₀ = 3.4 Q ₁ = 5.2 Median = 9.4 Q ₃ = 16.1 P ₉₀ = 30.6 P ₉₉ = 67.8																	Hours of Missing Data: 25									
																	Hours of Calibration: 0									
																	Percent Operational Time: 96.6									
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-Dec	11	6	5	8	47	72	14	9	8	11	10	15	19	15	8	9	3	7	7	10	4	8	8	6	71.5	
2-Dec	3	7	4	2	6	20	36	42	20	7	4	4	4	2	4	3	4	15	7	14	24	16	6	15	42.4	
3-Dec	9	21	5	9	4	3	5	9	7	4	3	4	7	13	29	21	28	67	11	16	11	9	6	14	66.8	
4-Dec	26	17	7	23	11	12	8	49	48	32	10	6	28	41	11	23	20	10	11	9	10	11	4	5	48.8	
5-Dec	5	5	5	5	5	7	11	13	61	24	14	11	12	6	9	6	12	8	13	17	5	12	8	4	61.4	
6-Dec	4	9	3	54	10	17	51	46	7	28	17	24	35	16	5	4	6	10	3	5	19	4	4	5	53.7	
7-Dec	6	5	6	7	15	16	9	19	16	25	27	17	10	11	6	5	19	31	10	2	3	3	37	79	79.4	
8-Dec	62	61	17	15	14	19	11	3	16	11	5	7	5	4	8	4	3	4	8	4	37	12	6	10	62.1	
9-Dec	8	28	20	23	13	10	7	11	17	10	22	17	33	47	14	9	6	8	11	12	17	25	14	42	47.0	
10-Dec	67	30	10	16	28	7	3	3	3	4	4	8	5	6	8	13	11	8	18	9	12	9	16	8	66.8	
11-Dec	5	9	12	7	5	3	8	6	5	4	16	12	18	14	10	6	16	14	10	9	10	31	13	9	30.8	
12-Dec	14	5	9	10	11	4	4	1	2	2	3	2	4	3	3	3	6	6	4	2	3	8	3	3	14.2	
13-Dec	3	7	4	3	3	4	5	7	5	6	9	12	14	14	19	14	9	54	36	23	8	9	16	2	54.1	
14-Dec	50	13	9	5	5	8	4	4	4	8	5	10	5	5	8	14	9	5	4	4	2	3	3	4	50.3	
15-Dec	4	6	7	3	3	7	10	2	4	4	9	14	8	9	3	7	5	6	3	9	15	45	22	7	45.4	
16-Dec	5	10	34	88	52	8	17	48	11	7	7	10	83	21	23	8	40	69	50	5	11	9	17	19	87.9	
17-Dec	20	86	16	21	62	22	22	52	40	18	9	11	10	12	12	20	7	17	4	19	5	5	11	4	85.6	
18-Dec	5	10	7	7	10	4	15	6	8	10	8	9	7	6	5	4	4	3	3	2	2	2	2	2	2	15.4
19-Dec	2	5	7	4	2	5	5	4	6	9	10	14	3	8	9	13	21	3	3	2	2	2	3	4	20.7	
20-Dec	2	2	2	2	3	2	2	2	2	3	5	4	12	24	17	12	18	4	16	11	10	6	17	15	23.8	
21-Dec	6	19	7	4	17	11	13	14	8	7	10	3	9	8	9	13	10	20	18	15	22	34	66	20	66.3	
22-Dec	6	11	9	73	16	8	7	6	6	7	5	6	7	9	10	6	9	6	6	9	10	12	18	12	72.5	
23-Dec	14	7	9	5	10	16	10	11	15	13	24	41	20	17	8	19	11	14	13	8	10	6	6	24	40.7	
24-Dec	28	19	5	6	4	5	7	12	11	11	19	14	9	13	47	24	30	10	13	11	18	20	34	27	46.5	
25-Dec	22	40	40	72	36	41	15	18	14	9	10	23	14	10	25	7	6	7	9	4	14	13	7	15	72.5	
26-Dec	17	16	42	11	13	10	10	5	6	3	5	5	3	5	4	5	4	3	2	3	3	4	3	4	42.3	
27-Dec	2	2	2	5	3	3	4	12	8	19	13	5	36	16	56	44	22	8	32	23	16	9	12	26	56.0	
28-Dec	36	22	36	16	13	93	10	8	11	7	13	N	N	N	N	N	N	N	N	N	N	N	N	N	92.6	
29-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	3	5	6	7	7	11	8	14	47	19	52	8	52.1
30-Dec	17	42	86	18	20	25	28	37	9	7	6	11	15	20	33	13	8	13	5	15	8	4	5	14	86.0	
31-Dec	12	4	4	9	12	43	8	15	41	58	50	4	11	19	48	45	11	13	20	7	11	4	4	4	58.1	
	66.8	85.6	86.0	87.9	62.3	92.6	51.5	52.0	61.4	58.1	49.6	40.7	82.5	47.0	56.0	44.8	40.0	69.3	50.0	23.3	47.2	45.4	66.3	79.4		
N - Not Valid																										

PAZA

Monthly Passive Data Summary

Location of PAZA Passive Monitoring Stations



PAZA Passive Results for December 2015

Station Number	Station Name	SO2 ppb	O3 ppb	NO2 ppb	H2S ppb	Site Legal
Duplicates						
18a	Saddle Hills	0.4	23.1	1.2		
18b	Saddle Hills	0.4	24.2	1.4		
23a	Bear Lake	0.3	17.2	Missing		
23b	Bear Lake	0.3	19.8	2.8		
28a	Clairmont Lake	0.5	20.3	3.3		
28b	Clairmont Lake	0.5	24.0	3.8		
43a	High Prairie	0.2	20.4	1.6		
43b	High Prairie	0.2	20.2	1.4		
63a	Girouxville 3				0.3	
63b	Girouxville 3				0.4	
1	Silver Valley	0.5	16.3	1.4		08-27-081-11 W6M
2	Bay Tree	0.3	18.6	2.5		13-16-078-13 W6M
3	Fourth Creek	0.4	21.4	1.5		04-13-082-07 W6M
4	Gordondale	0.4	27.4	2.2		04-34-078-10 W6M
5	Boone Creek	0.2	19.2	1.7		16-36-074-11 W6M
7	Steeprock Creek	0.3	24.1	1.6		09-35-072-13 W6M
9	Spirit River	0.3	21.0	1.7		08-12-079-07 W6M
10	Woking	0.5	25.0	1.4		01-13-076-07 W6M
11	Webber Creek	0.5	14.7	2.8		09-36-074-09 W6M
12	Hythe	0.4	17.1	3.4		14-36-072-11 W6M
14	Sylvester	0.1	16.5	1.2		08-06-069-12 W6M
16	Beaverlodge	0.4	21.4	4.4		15-36-071-10 W6M
17	Poplar	0.4	15.8	3.9		13-06-073-08 W6M
18	Saddle Hills	0.4	23.7	1.3		04-25-074-07 W6M
19	Wanham	0.4	23.1	2.0		16-22-077-03 W6M
20	Shaftesbury	0.3	18.4	1.3		04-03-082-23 W5M
21	Eaglesham	0.2	17.3	1.3		16-21-079-25 W5M
23	Bear Lake	0.3	18.5	2.8		15-31-072-06 W6M
24	Wembley	0.2	16.2	3.9		12-31-070-08 W6M
25	Pinto Creek	0.2	17.4	2.4		04-24-069-11 W6M
26	Flyingshot	0.2	14.6	4.0		15-36-070-07 W6M
27	Grande Prairie I	0.2	15.3	14.7		08-15-071-06 W6M

PAZA Passive Results for December 2015 (Continued)

28	Clairmont Lake	0.5	22.2	3.5		09-06-073-04 W6M
29	Smoky Heights	0.5	17.1	N/S		04-06-075-02 W6M
30	Fitzsimmons	0.2	18.9	2.8		15-36-072-03 W6M
32	Gold Creek	0.2	9.1	5.8		06-33-067-05 W6M
33	Wapiti	0.2	16.8	3.2		02-25-071-03 W6M
34	Puskwaskau	0.1	14.8	0.7		15-35-074-25 W5M
35	Jean Cote	0.2	25.1	1.5		12-35-079-21 W5M
36	Guy	0.2	20.1	1.3		03-04-076-22 W5M
37	Crooked Creek	0.3	20.0	3.0		16-01-071-26 W5M
38	Karr Creek	0.2	16.9	1.9		10-16-065-02 W6M
39	Clouston Creek	0.4	20.4	1.8		12-01-073-22 W5M
40	McLennan	0.2	21.0	2.1		03-29-077-19 W5M
41	Valleyview	0.4	21.1	3.5		09-30-069-22 W5M
42	Sunset House	0.4	30.6	2.3		05-32-070-19 W5M
43	High Prairie	0.2	20.3	1.5		16-13-074-17 W5M
44	Peavine	0.1	17.4	0.7		03-05-079-15 W5M
45	Gift Lake	0.2	18.6	0.7	0.3	10-07-079-12 W5M
46	Little Smoky	0.2	16.1	4.5		12-01-065-21 W5M
47	Kinuso	0.1	16.2	1.4		12-10-073-10 W5M
65	Deer Mountain 2	0.1	21.2	0.8		15-22-068-09 W5M
49	Grande Prairie HP	0.6	10.6	15.3		17-26-071-06 W6M
50	East Prairie	0.1	14.0	0.7		13-02-072-15 W5M
63	Girouxville 3				0.3	14-02-077-23 W5M
64	Girouxville 4				0.3	4-08-077-22 W5M

*BDL = Below Detection Level

*N/S - No sample

Passive Summary for December 2015

Stats	Sulphur Dioxide SO ₂	Ozone O ₃	Nitrogen Dioxide NO ₂	Hydrogen Sulphide H ₂ S
	ppb	ppb	ppb	ppb

Passive Summary for December 2015 (PAZA Zone)				
Mean	0.3	18.9	2.8	0.3
Standard Deviation	0.1	4.1	3.0	0.0
Minimum	0.1	9.1	0.7	0.3
Minimum At	Sylvester (#14)	Gold Creek (#32)	East Prairie (#50)	Gift Lake (#45)
Maximum	0.6	30.6	15.3	0.3
Maximum At	Grande Prairie HP	Sunset House (#42)	Grande Prairie HP	Gift Lake (#45)

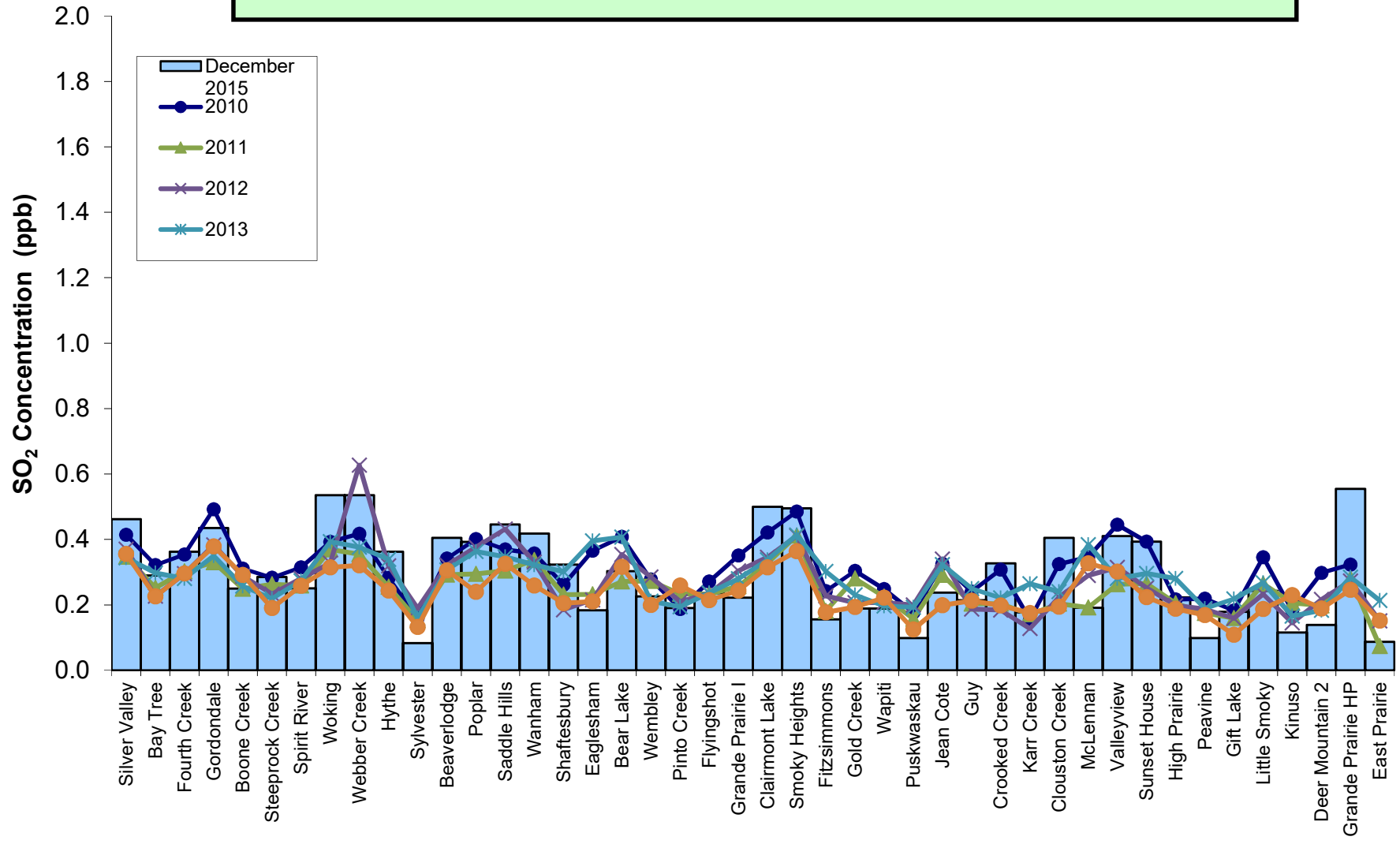
Comparison between Continuous and Passive monitoring at Beaverlodge (passive #16 Beaverlodge)

	SO ₂	O ₃	NO ₂
PAZA Beaverlodge station	0.3	17.6	8.5
PAZA Beaverlodge passive	0.4	21.4	4.4

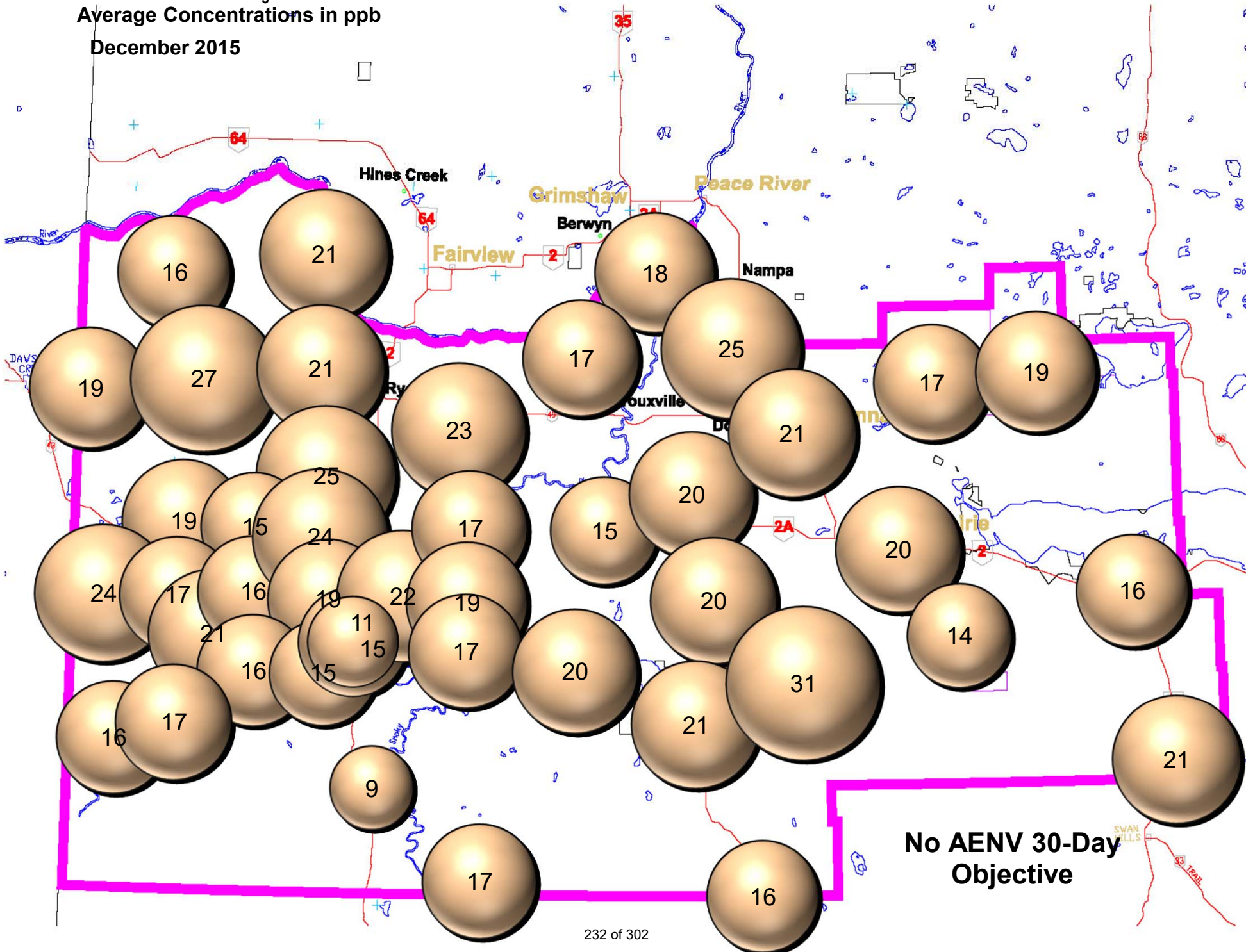
Comparison between Continuous and Passive monitoring at Henry Pirker (passive #49 Grande Prairie HP)

	SO ₂	O ₃	NO ₂
PAZA Henry Pirker station	0.1	6.8	18.2
PAZA Grande Prairie passive	0.6	10.6	15.3

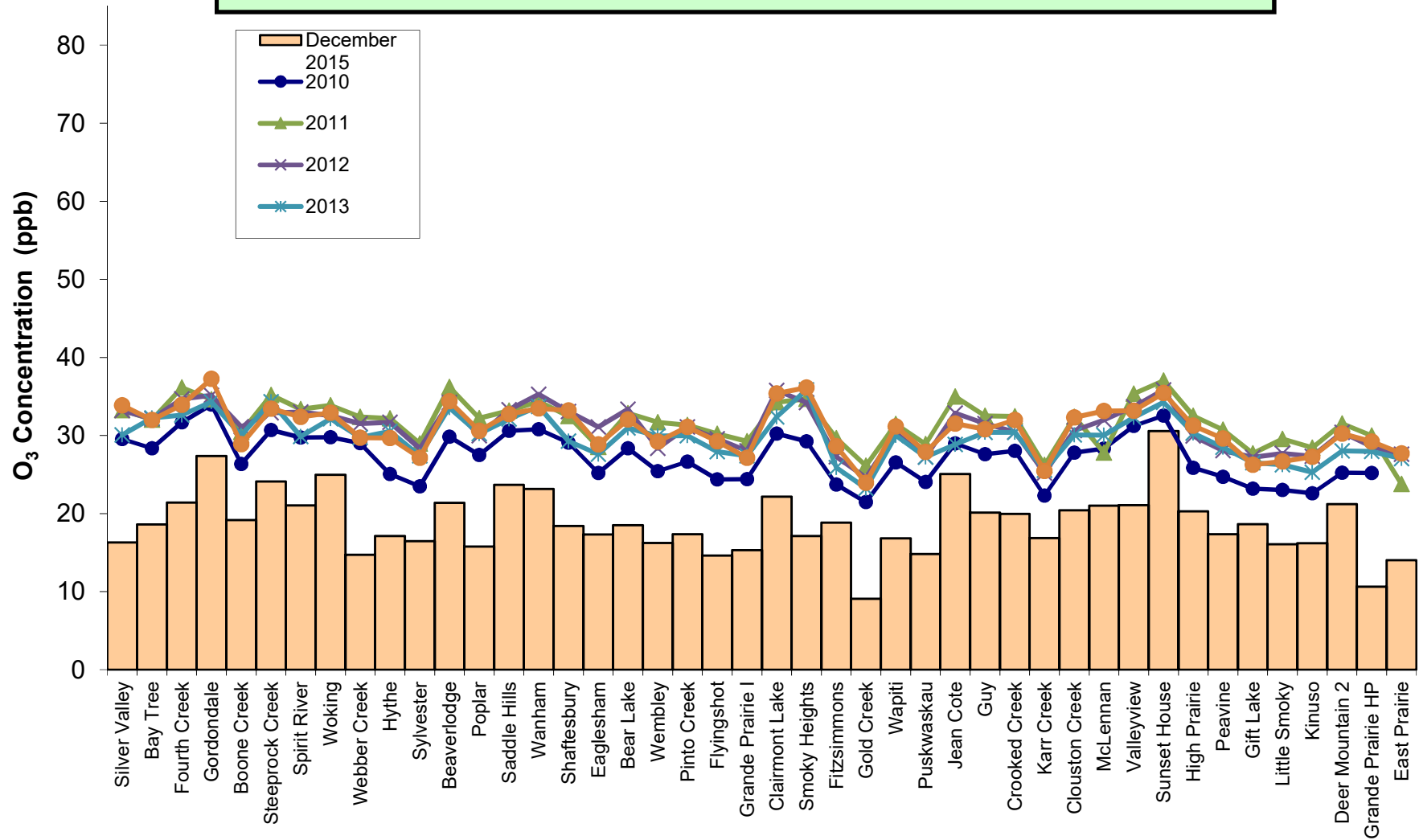
Alberta Ambient Air Quality Objective - 30-day Objective is 11 ppb



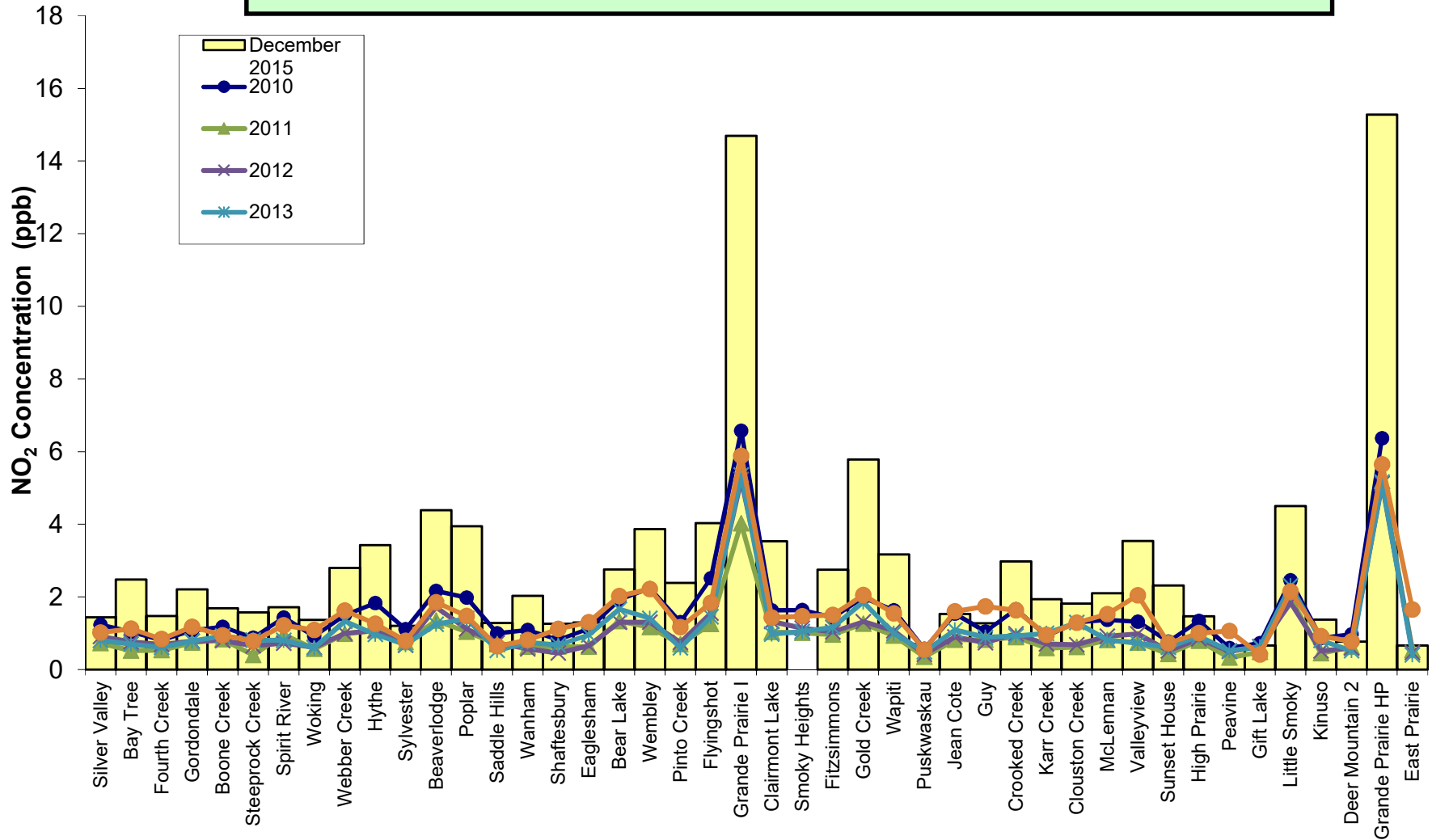
PAZA Passive O₃ Stations
Average Concentrations in ppb
December 2015



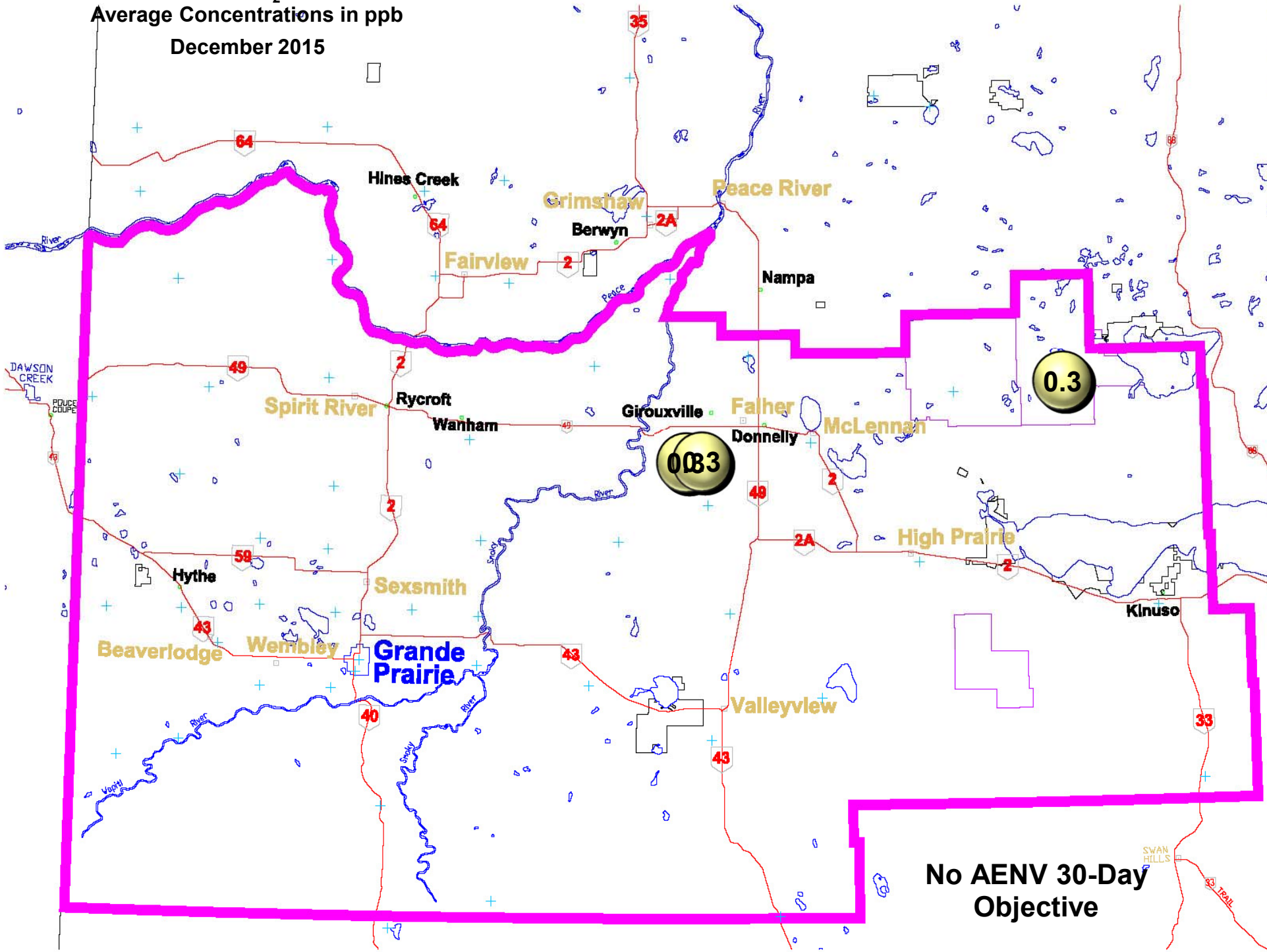
Alberta Ambient Air Quality Objective - No Annual O₃ Objective



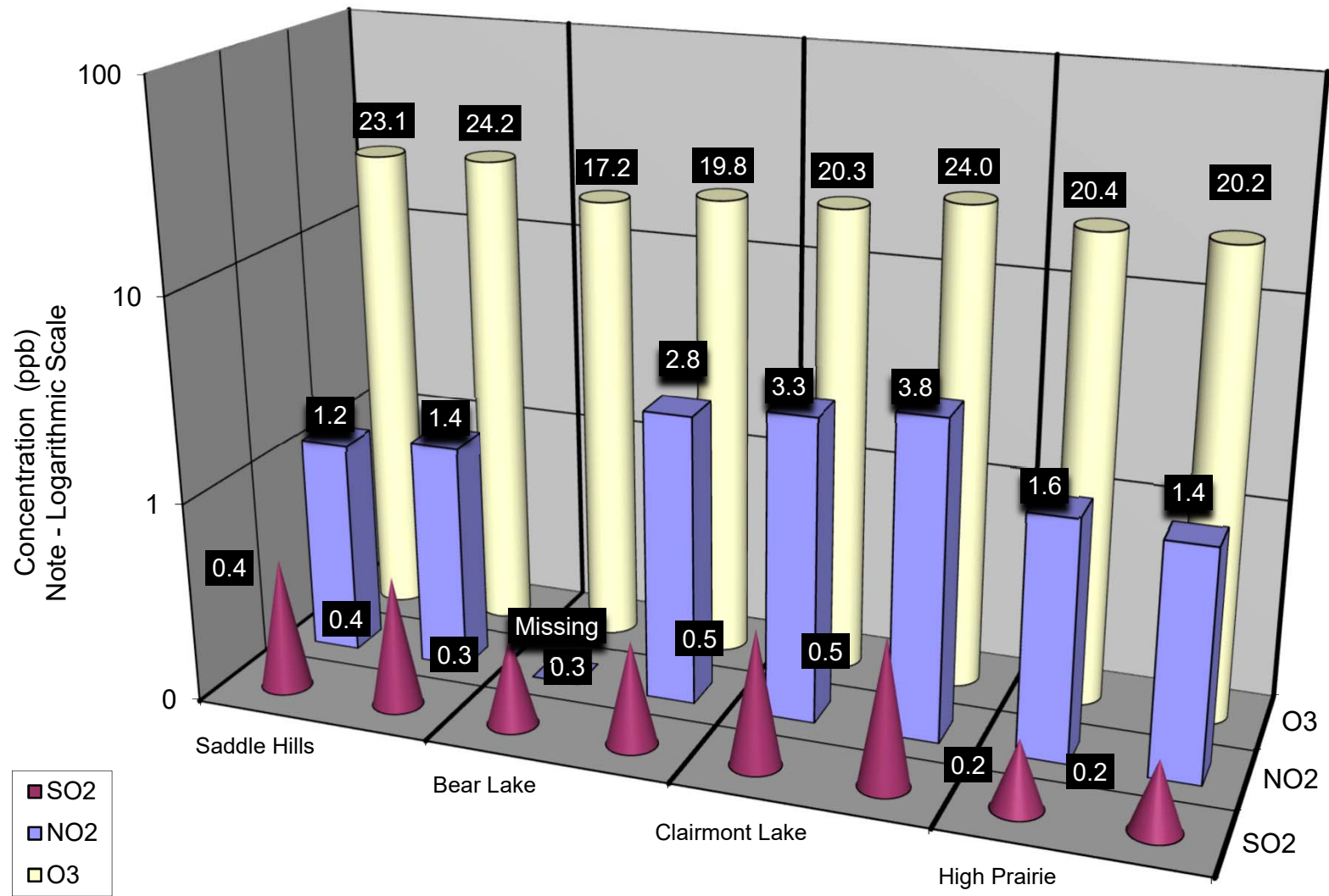
Alberta Ambient Air Quality Objective - Annual NO₂ Objective is 24 ppb



**PAZA Passive H₂S Stations
Average Concentrations in ppb
December 2015**



**No AENV 30-Day
Objective**



Duplicate Summary Chart

PAZA

ALBERTA ENVIRONMENT AND SUSTAINABLE RESOURCES INCIDENCE REPORT

November 2015

Air Monitoring Directive Exceedence Report

**Alberta Environmental Monitoring, Evaluation and Reporting Agency
Energy & Environmental Response**

111 Twin Atria Building
4999 – 98th Avenue
Edmonton, Alberta T6B 2X3
erc.environment@gov.ab.ca
Phone: (780) 422-4505
Fax: (780) 427-1044

Reference Number:	306314	Reported To (AESRD Contact):	Kale
Date & Time Incident Reported to AESRD:	December 3 2015 17:20	Reported By:	Grover Christiansen
Reported on Behalf of:	PAZA	Approval Number (if applicable):	N/A
Location(s) of Incident:	Valley View AQMS		
Start Date & Time of Incident:	December 3, 2015 14:00	End Date & Time of Incident:	December 3, 2015 16:00
Reason or Nature of Incident:			
<p>On December 3, 2015 the H₂S analyzer exceeded 1-hour AAAQ Objective of 10.0 ppb, details as follows: 14:00 MST H₂S: 13.7 ppb WS: 0.6 km/hr WD: 306.7 deg Temp: 5.9 deg C. 15:00 MST H₂S: 24.5 ppb WS: 0.2 km/hr WD: 261.5 deg Temp: 5.7 deg C. 16:00 MST H₂S: 14.5 ppb WS: 0.4 km/hr WD: 282.3 deg Temp: 5.3 deg C. On December 3, 2015 the H₂S analyzer exceeded 24hr AAAQ Objective of 3 ppb, details as follows: H₂S: 4.0 ppb WS: 1.1 km/hr WD: 229.1 Deg Temp: 1.0 Deg C.</p>			
Immediate Actions Taken:			
Confirmed validity of data and called in the exceedence to AEMERA			
Investigation Details:			
Called CNRL control room and talked to Joe Beamish.			
Actions Taken to Prevent Reoccurrence (if any):			
Plant sent team over and found failed seal on corrosion coupon. Seal was repaired.			
Additional Actions Required (if any):			
N/A			
Report Completed By:	Grover Christiansen	Date Report Submitted:	December 4 2015
7-Day Letter Due Date:	December 10 2015		

Air Monitoring Directive Exceedence Report

**Alberta Environmental Monitoring, Evaluation and Reporting Agency
Energy & Environmental Response**

111 Twin Atria Building
4999 – 98th Avenue
Edmonton, Alberta T6B 2X3
erc.environment@gov.ab.ca
Phone: (780) 422-4505
Fax: (780) 427-1044

Reference Number:	306584	Reported To (AESRD Contact):	Taryn
Date & Time Incident Reported to AESRD:	December 13, 2015 11:25	Reported By:	Grover Christiansen
Reported on Behalf of:	PAZA	Approval Number (if applicable):	N/A
Location(s) of Incident:	Smoky Heights		
Start Date & Time of Incident:	December 13, 2015 10:00 MST	End Date & Time of Incident:	December 13, 2015 10:00 MST
Reason or Nature of Incident:			
<p>The PM_{2.5} analyzer (Sharp 5030) within the Smoky Heights station, currently located ENE of Grande Prairie at LSD 13-8-074-02 W6, exceeded the AENV 1 hour average PM_{2.5} guideline (80 µg/m³) as detailed below:</p> <p>10:00 MST PM2.5 86.3 ug/m3 WS: 5.1 km/hr WD: 332.5 degrees Temp: -6.8</p>			
Immediate Actions Taken:			
Reviewed and confirmed the data as valid, called it in to AESRD.			
Investigation Details:			
N/A			
Actions Taken to Prevent Reoccurrence (if any):			
N/A			
Additional Actions Required (if any):			
N/A			
Report Completed By:	Grover Christiansen	Date Report Submitted:	December 13, 2015
7-Day Letter Due Date:	December 19 2015		

WSP AQM Group: Exceedence Report
Revision #3
January 01, 2015



Air Monitoring Directive Exceedance Report

**Alberta Environmental Monitoring, Evaluation and Reporting Agency
Energy & Environmental Response**

111 Twin Atria Building
4999 – 98th Avenue
Edmonton, Alberta T6B 2X3
erc.environment@gov.ab.ca
Phone: (780) 422-4505
Fax: (780) 427-1044

Reference Number:	306916	Reported To (AESRD Contact):	Taryn
Date & Time Incident Reported to AESRD:	December 28 2015 11:20	Reported By:	Dmytro Dolotii
Reported on Behalf of:	PAZA	Approval Number (if applicable):	N/A
Location(s) of Incident:	Smoky Heights		
Start Date & Time of Incident:	December 28, 2015 03:00	End Date & Time of Incident:	December 28, 2015 04:00
Reason or Nature of Incident:			
On December 28, 2015 the PM 2.5 analyzer exceeded 1-hour AAAQ Objective of 30 mg/m3, details as follows: 04:00 MST H2S: 100.8 mg/m3 WS: 1.4 km/hr WD: 353.0 deg Temp: -11.5 deg C.			
Immediate Actions Taken:			
Confirmed validity of data and called in the exceedance to AEMERA			
Investigation Details:			
Suspect oil field rig matt construction facility which may still be using Wood Boiler for heat			
Actions Taken to Prevent Reoccurrence (if any):			
Additional Actions Required (if any):			
N/A			
Report Completed By:	Dmytro Dolotii	Date Report Submitted:	December 28 2015
7-Day Letter Due Date:	January 3 2016		

December 2015 Calibration Reports

**PAZA - Henry Pirker Station with the following calibrations:
SO₂, NO, NO₂, NO_x, O₃, CO, THC, TRS**

**PAZA – Evergreen Park Station with the following calibrations:
SO₂, TRS**

**PAZA – Smoky Heights Station with the following calibrations:
SO₂, TRS**

**PAZA – Beaverlodge Station with the following calibrations:
SO₂, NO, NO₂, NO_x, O₃**

**PAZA – Valleyview Station with the following calibrations:
SO₂ & H₂S**

**PAZA – Falher Station with the following calibrations:
SO₂ & H₂S**

Calibration Report



AIR QUALITY MONITORING

Parameter SO2

Air Monitoring Network PAZA

Station Information

Calibration Date	December 10, 2015	Previous Calibration	November 4, 2015
Station Number	1	Station Location	Henry Pirker
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	9:40	End Time (MST)	12:25
Barometric Pressure	728.000 mm	Station Temperature	21.0 Deg C
Calibrator	EnviroNics	Serial Number	6586
Cal Gas Conc	49.7 ppm	Cal Gas Cert Date	October 5, 2018
		Cal Gas Cylinder #	LL103793
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 1 volt	DACS channel #	10
	Before		After
Calculated slope	0.995118	Calculated slope	0.989102
Calculated intercept	0.954661	Calculated intercept	0.821239
Analyzer make	TEI 43I-TLE	Analyzer serial #	1507864682 (AMU 2006)

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	1.47		1.79	
Coefficient	1.038		1.012	
Pressure	658.5	mm Hg	661.0	mm Hg
Flow	0.435	lpm	0.436	lpm
Lamp intensity	82	Hz	82	Hz

Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
4995	0.00	0.0	0.1	N/A
4995	39.93	394.2	398.2	0.9899
4995	19.97	197.9	198.6	0.9963
4995	9.97	99.0	98.4	1.0062
4995	0.00	0.0	0.3	As Found Zero
4995	39.93	394.2	405.2	As Found Span
Average Correction Factor				0.9975

Calculated value of As Found Response: 403.9 ppb Percent Change of As Found: -2.5%

	before calibration		after calibration	
Auto zero	0.1	ppb	0.1	ppb
Auto span	293.8	ppb	296.8	ppb

Notes: Zero & span adjustments made

Calibration Performed By: Dmytro Dolotii

Calibration Summary



Parameter SO2
 Air Monitoring Network PAZA

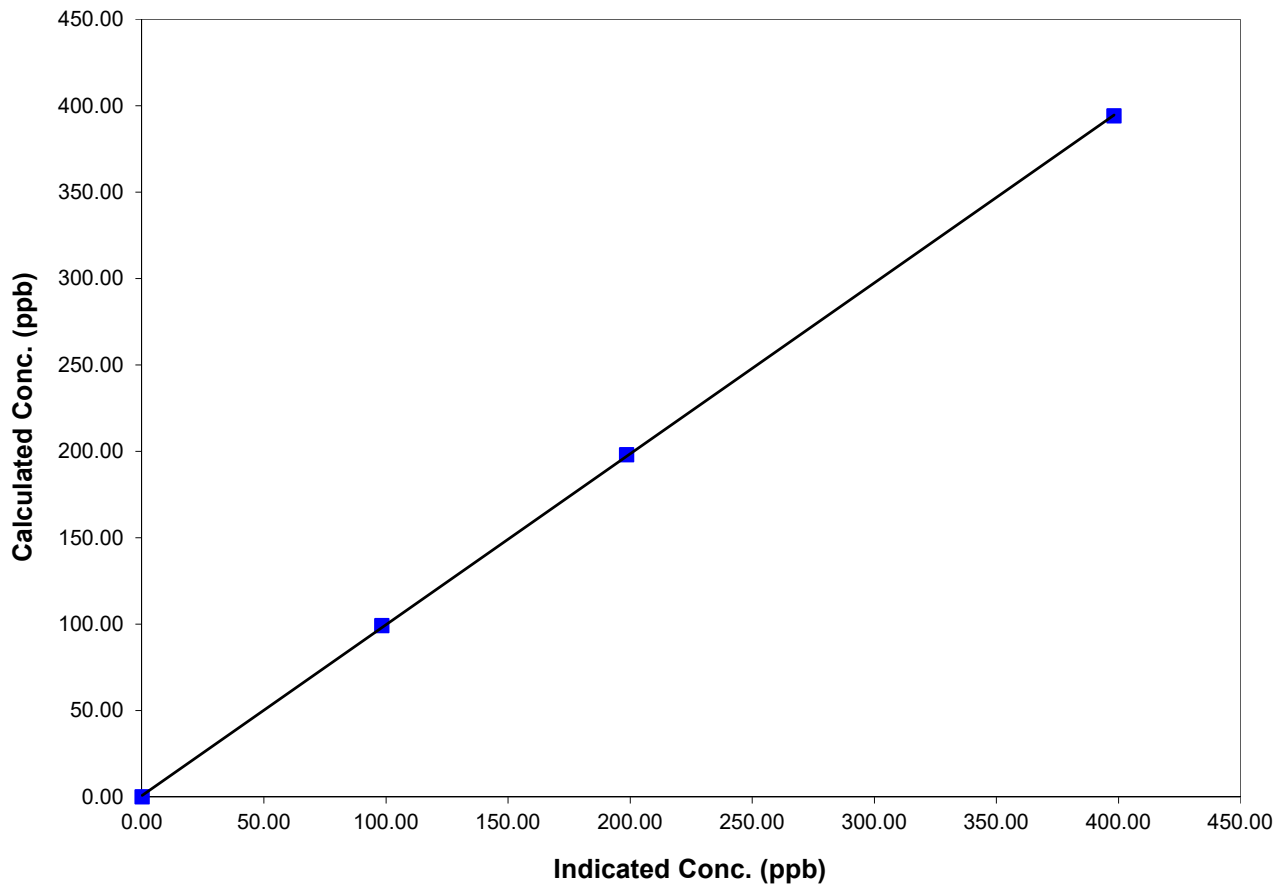
Station Information

Calibration Date	December 10, 2015	Previous Calibration	November 4, 2015
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:40	End Time (MST)	12:25
Analyzer make/model	TEI 43I-TLE	Analyzer serial #	1507864682 (AMU 2006)

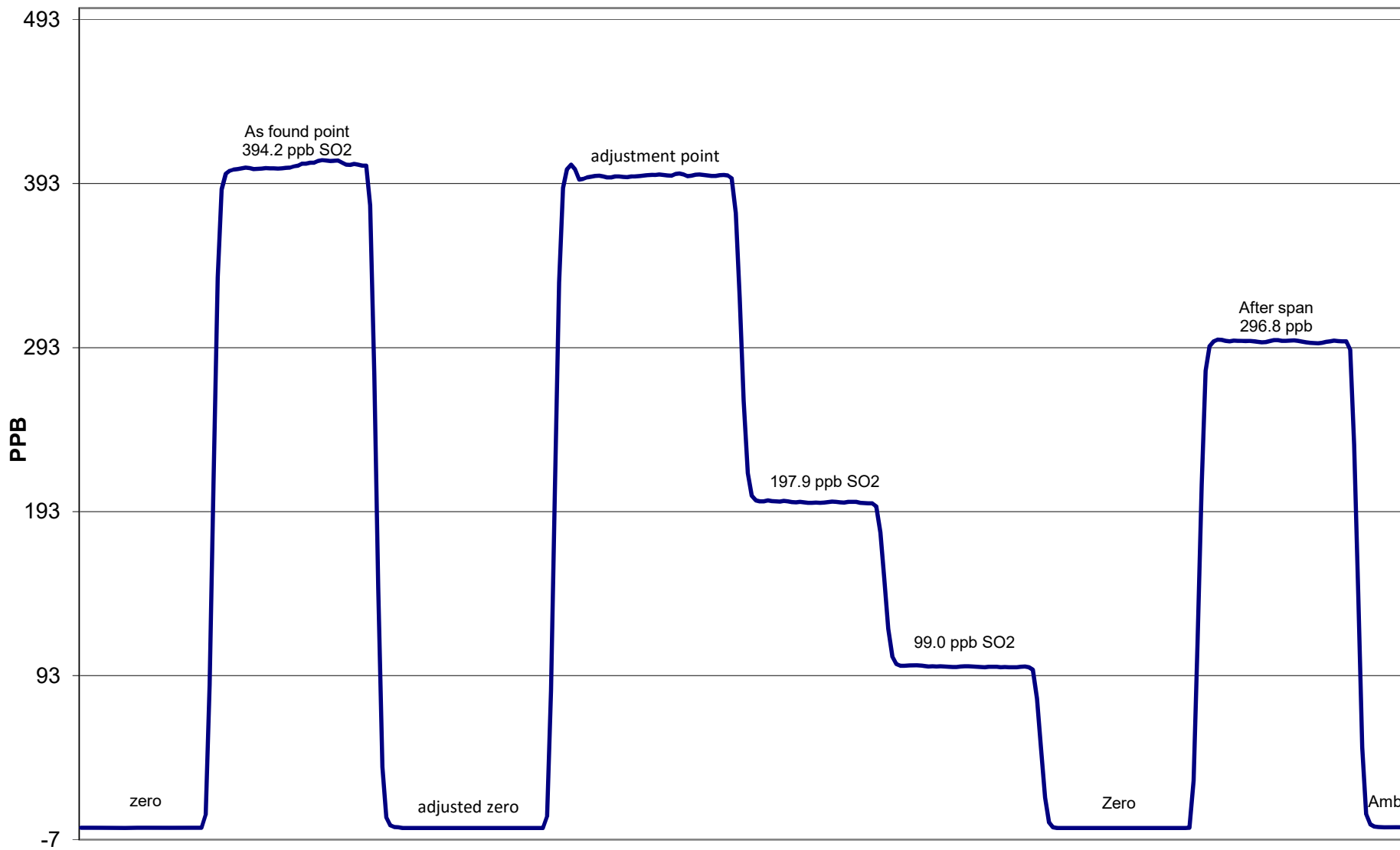
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A		
394.2	398.2	0.9899	Correlation Coefficient	0.999973
197.9	198.6	0.9963		
99.0	98.4	1.0062	Slope	0.989102
			Intercept	0.821239

SO2 Calibration Curve



SO2 Calibration



December 10, 2015

Calibration Report



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

Station Information

Calibration Date: December 10, 2015 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	4995	0.00	0.0	0.0	0.0	-0.1	0.1	0.0	N/A	N/A	
1	4995	39.92	405.9	403.6	2.4	401.4	401.8	0.0	1.0113	1.0045	
2	4995	19.96	203.8	202.6	1.2	200.9	200.5	0.1	1.0145	1.0106	
3	4995	9.93	101.6	101.0	0.6	99.6	99.6	0.1	1.0198	1.0138	
AFZ	4995	0.00	0.0	0.0	0.0	0.7	0.4	0.4	0.0000	0.0000	
AFS	4995	39.92	405.9	403.6	0.8	401.7	401.4	0.5	1.0105	1.0054	
									Average Correction Factor	1.0152	1.0096

As Found Concentrations: NO_x= 402.0 NO= 400.2 As Found Percent Change NO_x= -1.0% NO= -0.8%

GPT Calibration Data

Dilution Flow 4995 ccm Source Gas Flow 39.93 ccm

O3 Setpoint (ppb)	Indicated NO high point (ppb)	Indicated NO drop conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor	NO2 Correction factor	Converter Efficiency	
0	0.4	0.4	0.0	-0.1	0.1	0.0	N/A	N/A	N/A	N/A	
NO point	402.6	402.6	0.0	402.6	402.6	-0.1	1.0000	1.0000	N/A	N/A	
300	402.6	75.6	327.0	404.7	75.6	328.8	0.9949	1.0000	0.9943	100.6%	
200	402.6	181.4	221.2	403.5	181.4	221.2	0.9977	1.0000	0.9998	100.0%	
100	402.6	295.5	107.1	403.3	295.5	106.8	0.9983	1.0000	1.0031	99.7%	
							Average Correction Factor	0.9970	1.0000	0.9991	100.1%

AIC Data

Parameter	Previous calibration				Current calibration			
	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	0.7	0.5	0.4	ppb	-0.1	0.0	0.1	ppb
Auto span	378.3	374.5	3.1	ppb	396.3	393.2	2.5	ppb

Calibration Performed By: Dmytro Dolotii

Calibration Summary



Parameter NO₂

Air Monitoring Network PAZA

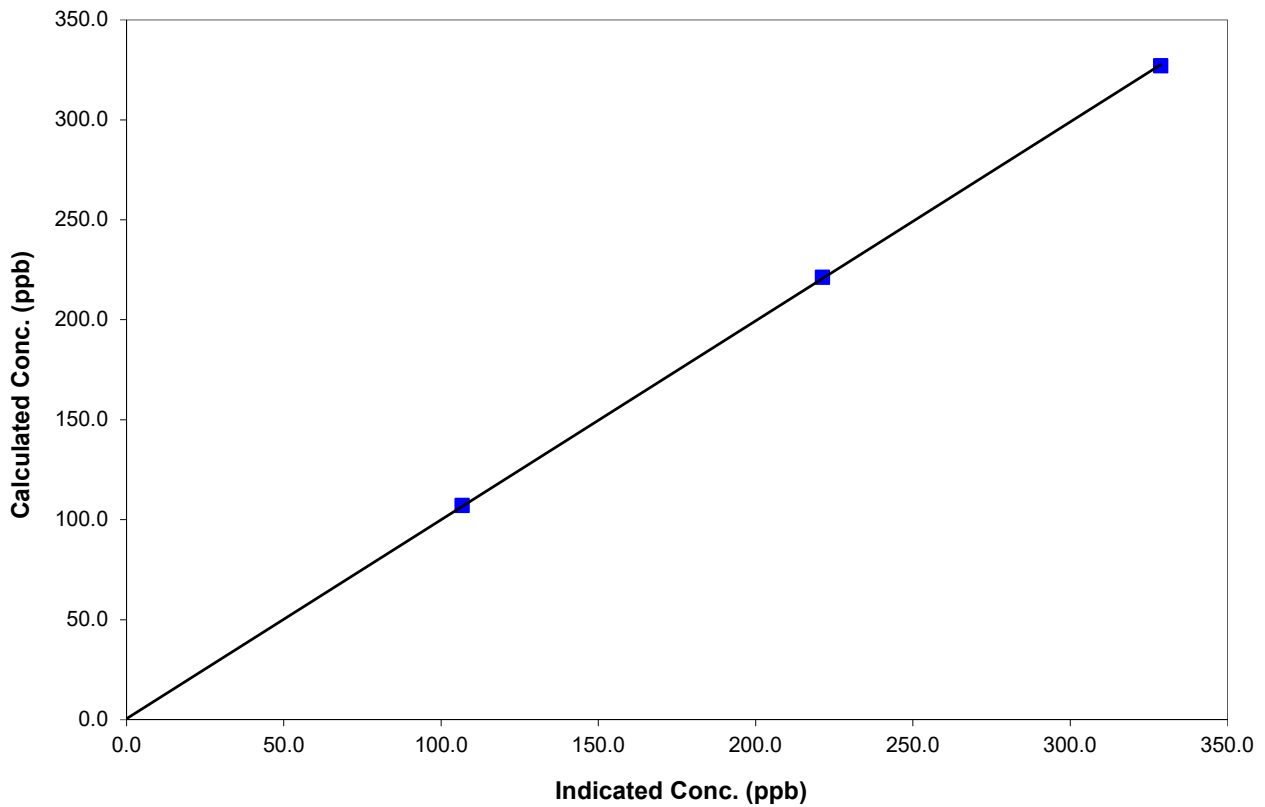
Station Information

Calibration Date	December 10, 2015	Previous Calibration	November 3, 2015
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:30	End Time (MST)	13:40:00 PM
Analyzer make	42i	Analyzer serial #	906535087

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A	Correlation Coefficient	0.999980
327.0	328.8	0.9943		
221.2	221.2	0.9998	Slope	0.994583
107.1	106.8	1.0031		
			Intercept	0.500841

NO₂ Calibration Curve



Calibration Summary



Parameter NO_x

Air Monitoring Network PAZA

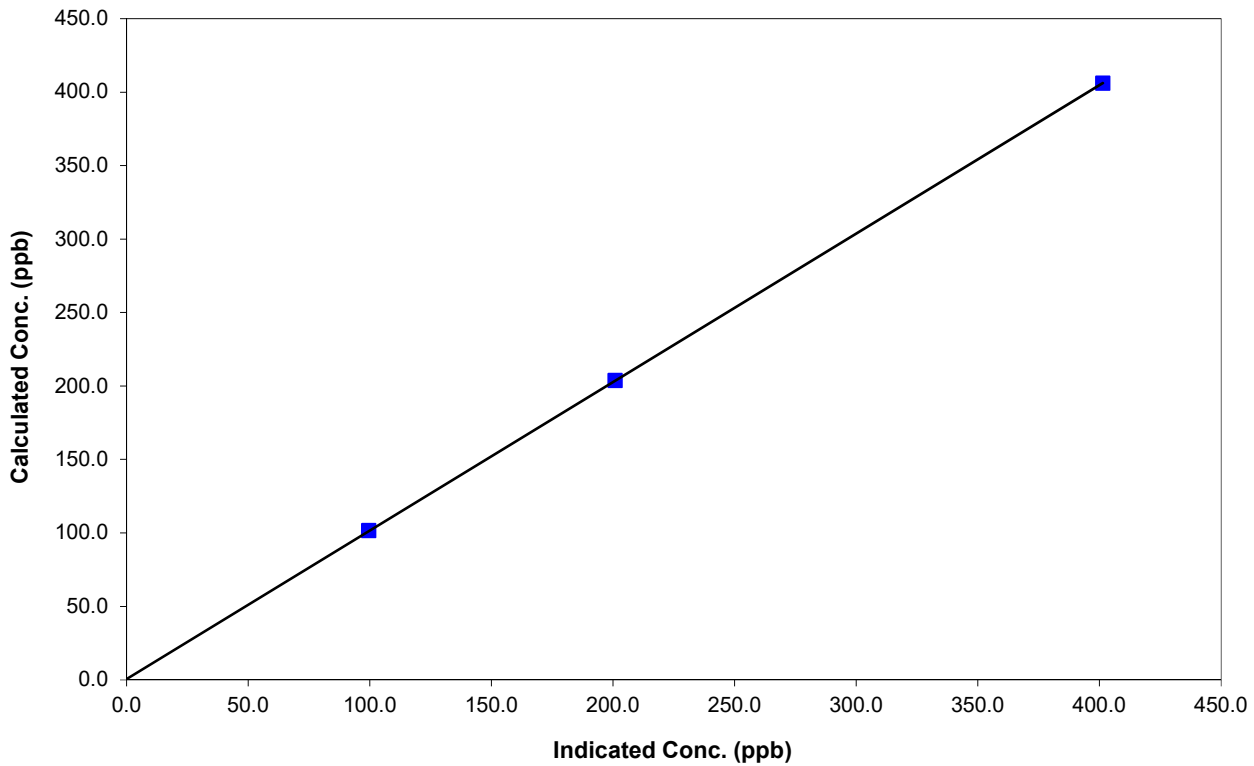
Station Information

Calibration Date	December 10, 2015	Previous Calibration	November 3, 2015
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:30	End Time (MST)	13:40:00 PM
Analyzer make	42i	Analyzer serial #	906535087

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A	Correlation Coefficient	0.999995
405.9	401.4	1.0113		
203.8	200.9	1.0145	Slope	1.010662
101.6	99.6	1.0198		
			Intercept	0.501902

NO_x Calibration Curve



Calibration Summary

Parameter NO

Air Monitoring Network PAZA



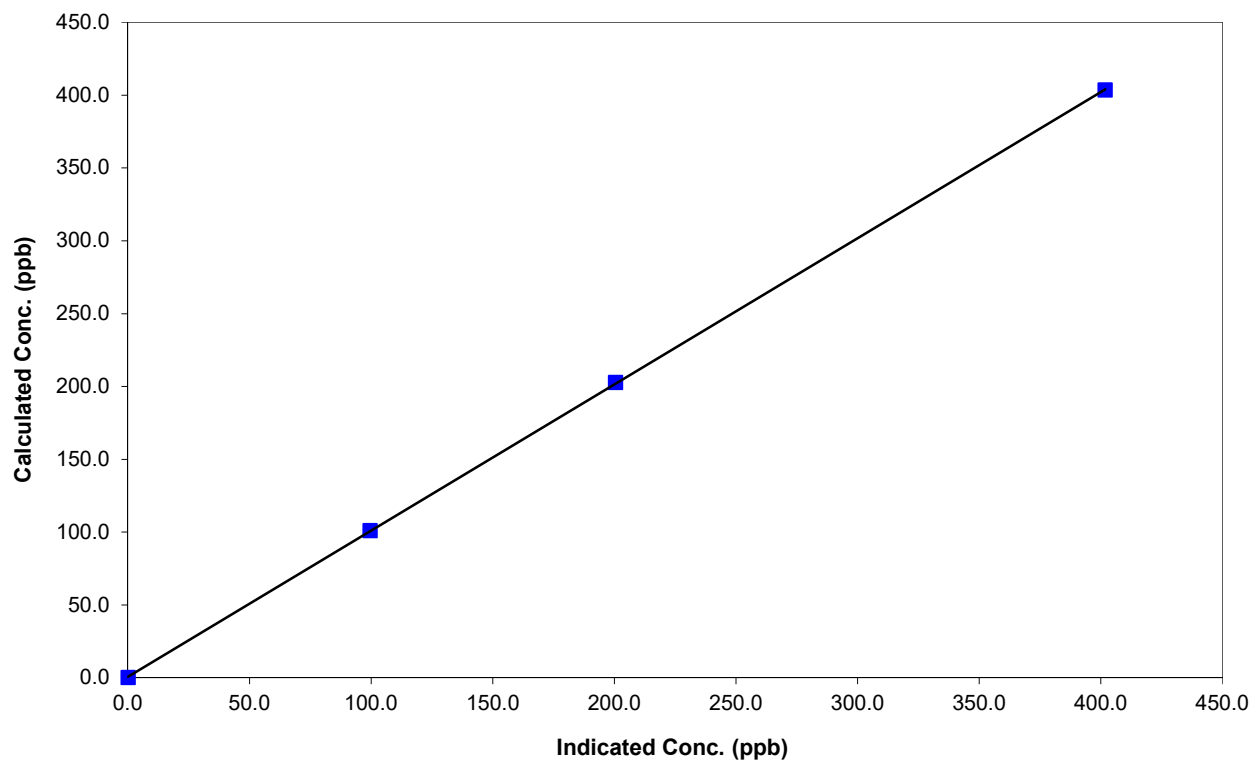
Station Information

Calibration Date	December 10, 2015	Previous Calibration	November 3, 2015
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:30	End Time (MST)	13:40:00 PM
Analyzer make	42i	Analyzer serial #	906535087

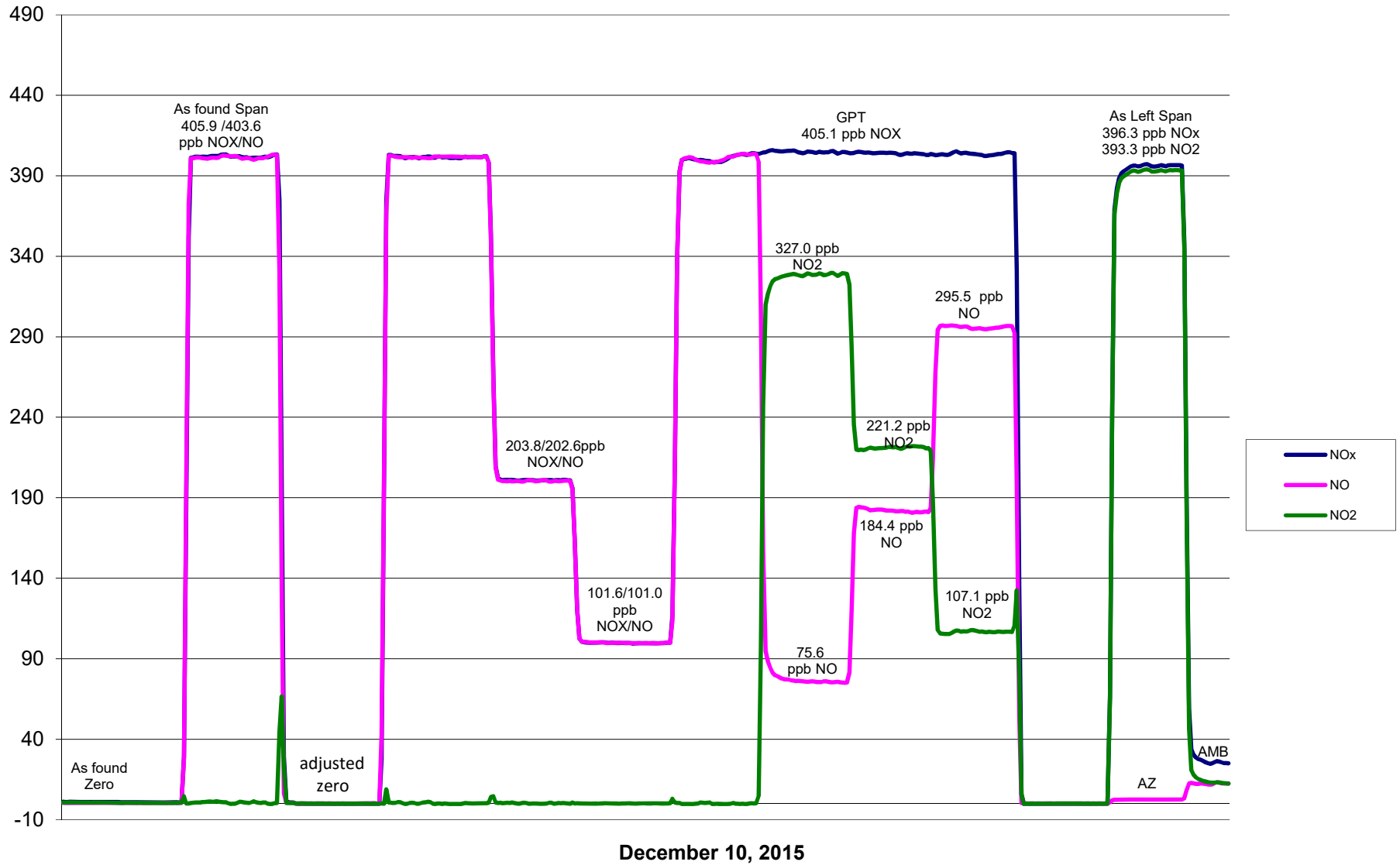
Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A	Correlation Coefficient	0.999985
403.6	401.8	1.0045		
202.6	200.5	1.0106	Slope	1.004268
101.0	99.6	1.0138		
			Intercept	0.544684

NO Calibration Curve



NO_x Calibration



Calibration Report



AIR QUALITY MONITORING

Parameter 03

Air Monitoring Network PAZA

Station Information

Calibration Date	December 10, 2015	Previous Calibration	November 4, 2015
Station Number	1	Station Location	Henry Pirker
Reason:	Routine	Install	Removal
		Other:	
Start Time (MST)	12:50	End Time (MST)	15:15:00 PM
Barometric Pressure	728.000 mm	Station Temperature	21.0 Deg C
Calibrator	Envionics	Serial Number	6586
Cal Gas Concentration	NA	Cal Gas Expiry Date	NA
DACS make	CR3000	DACS serial No.	5237
DACS voltage range	0 - 5 volt	DACS channel #	9
	Before		After
Calculated slope	1.001575	Calculated slope	0.987581
Calculated intercept	-0.106146	Calculated intercept	0.567749
Analyzer make	Teco 49I	Analyzer serial #	1507964699 (AMU:2015)

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
offset	-2.00	ppb	0.70	ppb
slope	1.004		1.004	
Lamp temp	53.6	mV	53.7	mV
Lamp Intensity A/B	85144/95868	mV	85465/96121	mV
Pressure	678.7	mm Hg	678.3	mm Hg
Flow A	0.721	ccm	0.721	ccm
Flow B	0.724	ccm	0.725	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)
5035	0.0	0.0	-0.6	N/A
5035	0.3	327.0	331.2	0.9874
5035	0.2	221.2	222.2	0.9956
5035	0.1	107.1	108.5	0.9872
5035	0.0	0.0	-0.6	As found zero
5035	0.3	327.0	339.0	As found span
Average Correction Factor				0.9901

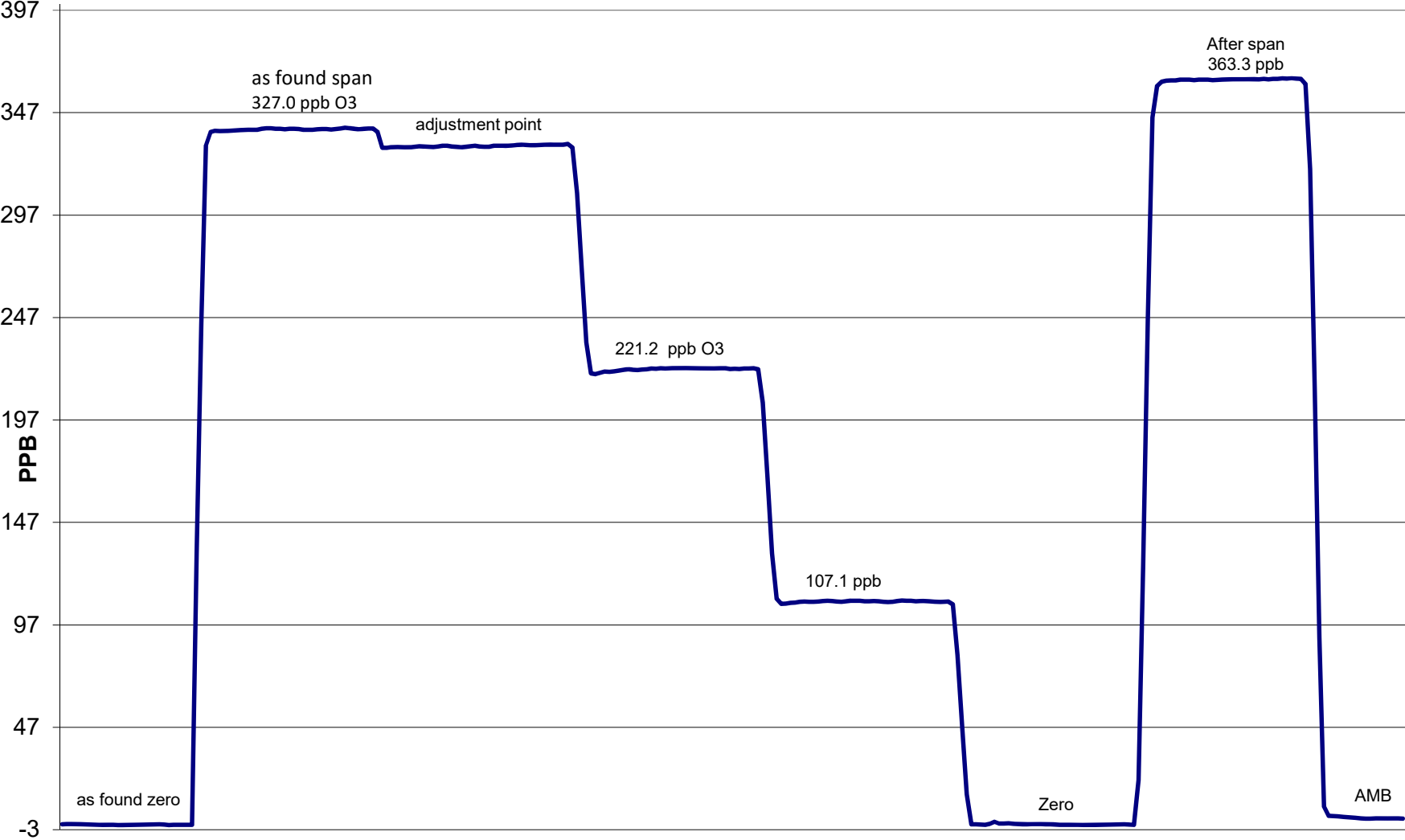
Calculated value of As Found Response: 340.1 ppm Percent Change of As Found: 4.0%

	before calibration		after calibration	
Auto zero	0.7	ppb	-0.5	ppb
Auto span	369.1	ppb	363.3	ppb

Notes: Span adjustment made

Calibration Performed By: Dmytro Dolotii

O3 Calibration



December 10, 2015

Calibration Report



AIR QUALITY MONITORING

Parameter CO

Air Monitoring Network PAZA

Station Information

Calibration Date	December 14, 2015	Previous Calibration	November 3, 2015
Station Number	1	Station Location	Henry Pirker
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	10:35	End Time (MST)	13:40:00 PM
Barometric Pressure	726.0 mm/hg	Station Temperature	21.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	6586
Cal Gas Conc	2898 ppm	Cal Gas Expiry Date	04/02/2013
		Cal Gas Cylinder #	LL83909
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 5 volt	DACS channel #	9
	Before		After
Calculated slope	1.012271	Calculated slope	1.010125
Calculated intercept	-0.145085	Calculated intercept	-0.262317
Analyzer make	Model 48I-TLE	Analyzer serial #	1408761378

	before		after	
Concentration range	0 - 50	ppm	0 - 50	ppm
CO zero setting	3.417		3.937	
CO span setting	1.001		1.001	
Sample pressure	697.1	mm Hg	696.8	mm Hg
Sample Flow	0.452	LPM	0.452	LPM

Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.00	0.00	0.01	N/A
4995	69.94	40.02	39.74	1.0069
4995	34.96	20.14	20.33	0.9909
4995	17.96	10.38	10.79	0.9620
4995	0.00	0.00	0.52	As Found Zero
4995	69.94	40.02	41.17	As Found Span
Average Correction Factor				0.9866

Calculated value of As Found Response: 41.002 ppm Percent Change of As Found: -2.5%

	before calibration		after calibration	
Auto zero	-0.02	ppm	0.01	ppm
Auto span	19.59	ppm	19.59	ppm

Notes: Zero adjustment made

Calibration Performed By: Dmytro Dolotii

Calibration Summary



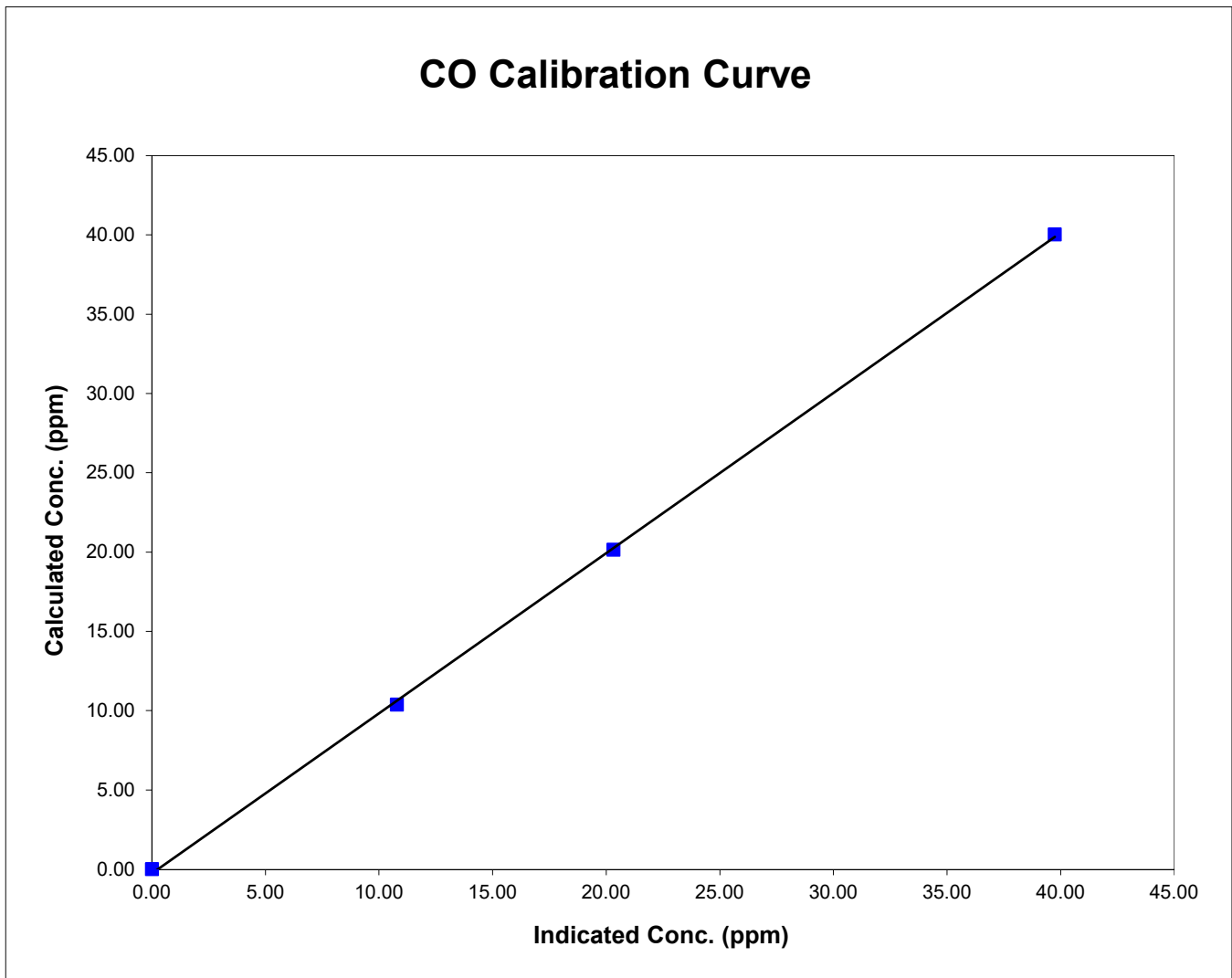
Parameter CO
 Air Monitoring Network PAZA

Station Information

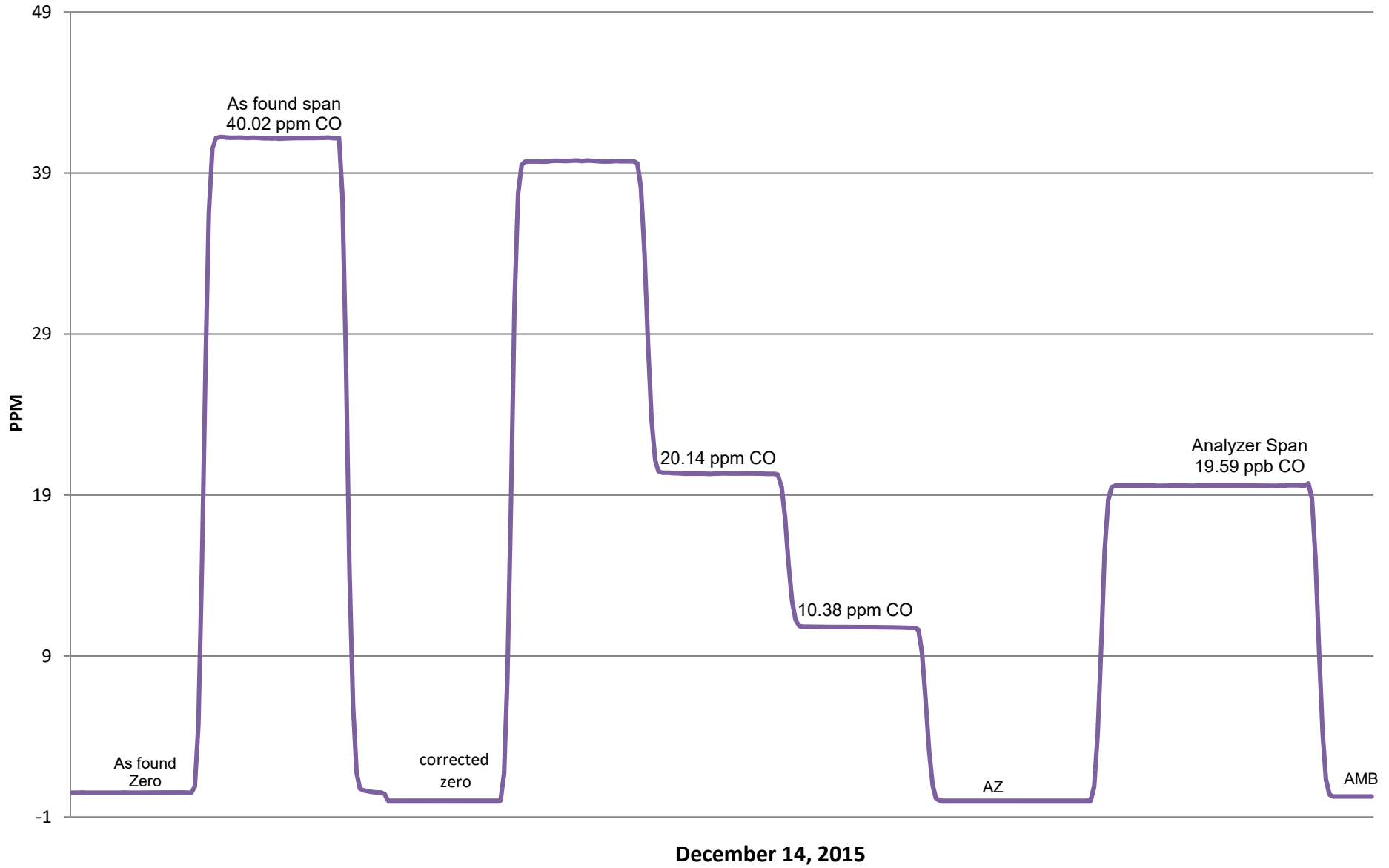
Calibration Date	December 14, 2015	Previous Calibration	November 3, 2015
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	10:35	End Time (MST)	13:40:00 PM
Analyzer make/model	Model 48I-TLE	Analyzer serial #	1408761378

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.012	N/A	Correlation Coefficient	0.999812
40.017	39.742	1.0069		
20.142	20.328	0.9909	Slope	1.010125
10.383	10.793	0.9620		
			Intercept	-0.262317



CO Calibration



Calibration Report



Parameter CH4 / NMHC / THC

Air Monitoring Network PAZA

Station Information

Calibration Date	December 14, 2015	Previous Calibration	November 3, 2015
Station Number	1	Station Location	Henry Pirker
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	9:10	End Time (MST)	11:25
Barometric Pressure	726.00 mm/hg	Station Temperature	21.0 Deg C
Calibrator	EnviroNics 6103	Serial Number	6586
Cal Gas CH4 Conc	386 ppm CH4	Cal Gas Expiry Date	28/03/2014
Cal Gas C3H8 Conc	207 569.25 ppm CH4	Cal Gas Cylinder #	LL34318
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 5 volt	DACS channel #	SE 11,12,13

Analyzer make TEI 551 Analyzer serial # 1134650658

	before		after	
Concentration range	0-20 (CH4, NMHC); 0-40 (THC)	ppm	0-20 (CH4, NMHC); 0-40 (THC)	ppm
Air pressure	27.8	PSI	27.8	PSI
Fuel pressure	42.1	PSI	42.1	PSI
Carrier pressure	30.3	PSI	30.3	PSI
CH4 cal factor	6.01		6.01	E ⁻⁴
NMHC cal factor	2.23		2.23	E ⁻⁴
Rt	12.74	Sec	12.74	Sec
Pk Index	23.22		23.22	

CH4 Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
1996	0.00	0.00	0.02	N/A
1996	68.96	12.89	13.04	0.9882
1996	40.96	7.76	7.84	0.9902
1996	15.99	3.07	3.08	0.9949
1996	0.00	0.00	0.02	As Found Zero
1996	68.93	12.89	13.04	As Found Span
Average Correction Factor				0.9911

Calculated value of As Found Response: 13.104 ppm Percent Change of As Found: -1.7%

	Before		After
Calculated slope	1.005939	Calculated slope	0.989078
Calculated intercept	0.002055	Calculated intercept	-0.000866

Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.03	ppm	0.03	ppm
Auto span	9.33	ppm	9.20	ppm

NMHC Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
1996	0.00	0.00	0.02	N/A
1996	68.96	19.01	18.81	1.0109
1996	40.96	11.45	11.50	0.9953
1996	15.99	4.52	4.58	0.9879
1996	0.00	0.00	0.02	As Found Zero
1996	68.93	19.00	18.81	As Found Span
Average Correction Factor				0.9980

Calculated value of As Found Response: 18.833 ppm Percent Change of As Found: 0.9%

	Before		After
Calculated slope	1.008346	Calculated slope	1.011405
Calculated intercept	-0.110308	Calculated intercept	-0.080620

Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.02	ppm	0.02	ppm
Auto span	12.96	ppm	12.75	ppm

THC Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
1996	0.00	0.00	0.03	N/A
1996	68.96	31.90	31.82	1.0025
1996	40.96	19.21	19.32	0.9943
1996	15.99	7.59	7.65	0.9927
1996	0.00	0.00	0.03	As Found Zero
1996	68.93	31.89	31.82	As Found Span
Average Correction Factor				0.9965

Calculated value of As Found Response: 31.941 ppm Percent Change of As Found: -0.2%

	Before		After
Calculated slope	1.007926	Calculated slope	1.002940
Calculated intercept	-0.100836	Calculated intercept	-0.072941

Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.02	ppm	0.02	ppm
Auto span	22.29	ppm	21.95	ppm

Notes: Sample pump replaced
No adjustment made

Calibration Performed By: Dmytro Dolotii

Calibration Summary



Parameter CH4
 Air Monitoring Network PAZA

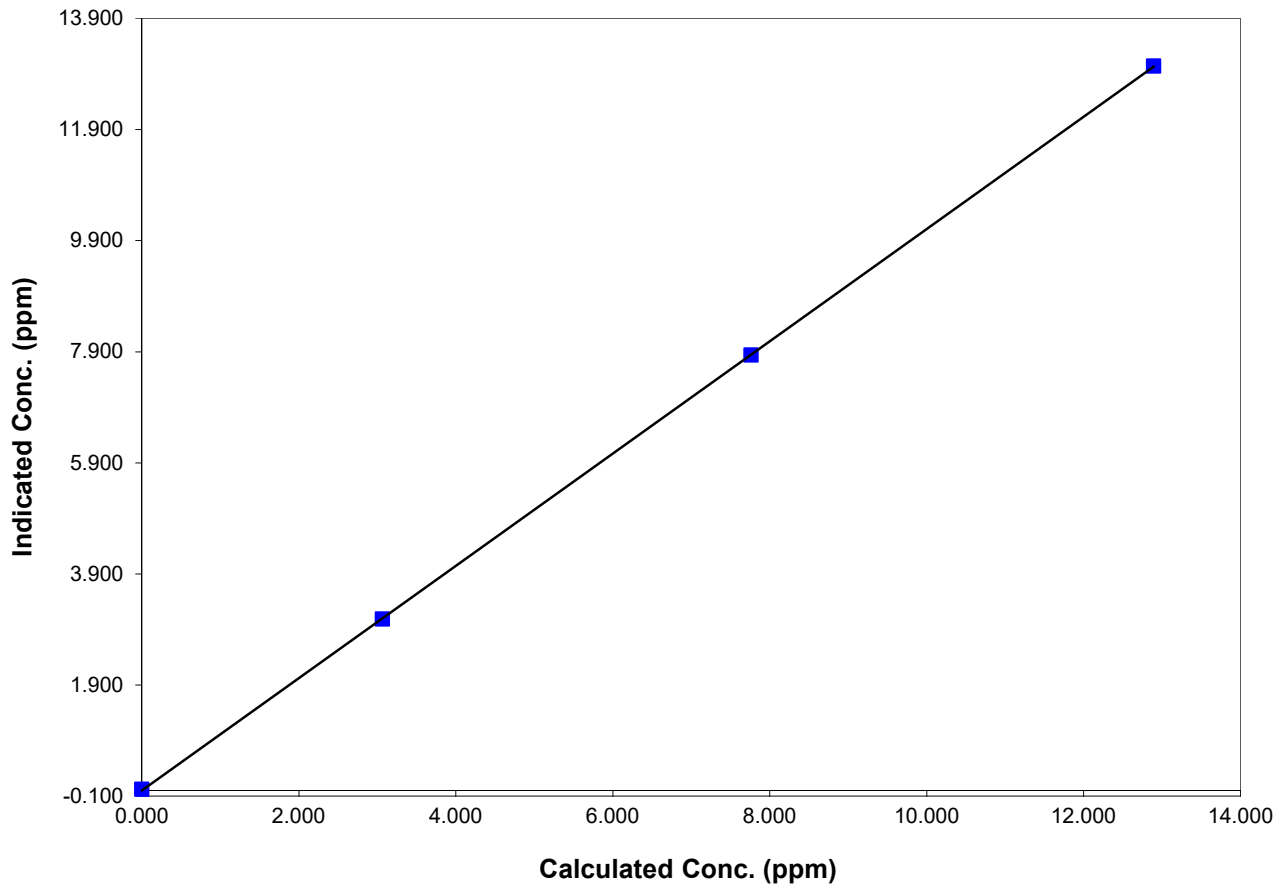
Station Information

Calibration Date	December 14, 2015	Previous Calibration	November 3, 2015
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:10	End Time (MST)	11:25
Analyzer make/model	TEI 55I	Analyzer serial #	1134650658

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.019	N/A		
12.891	13.044	0.9882	Correlation Coefficient	0.999991
7.762	7.839	0.9902		
3.068	3.084	0.9949	Slope	0.989078
			Intercept	-0.000866

CH4 Calibration Data



Calibration Summary



Parameter THC
 Air Monitoring Network PAZA

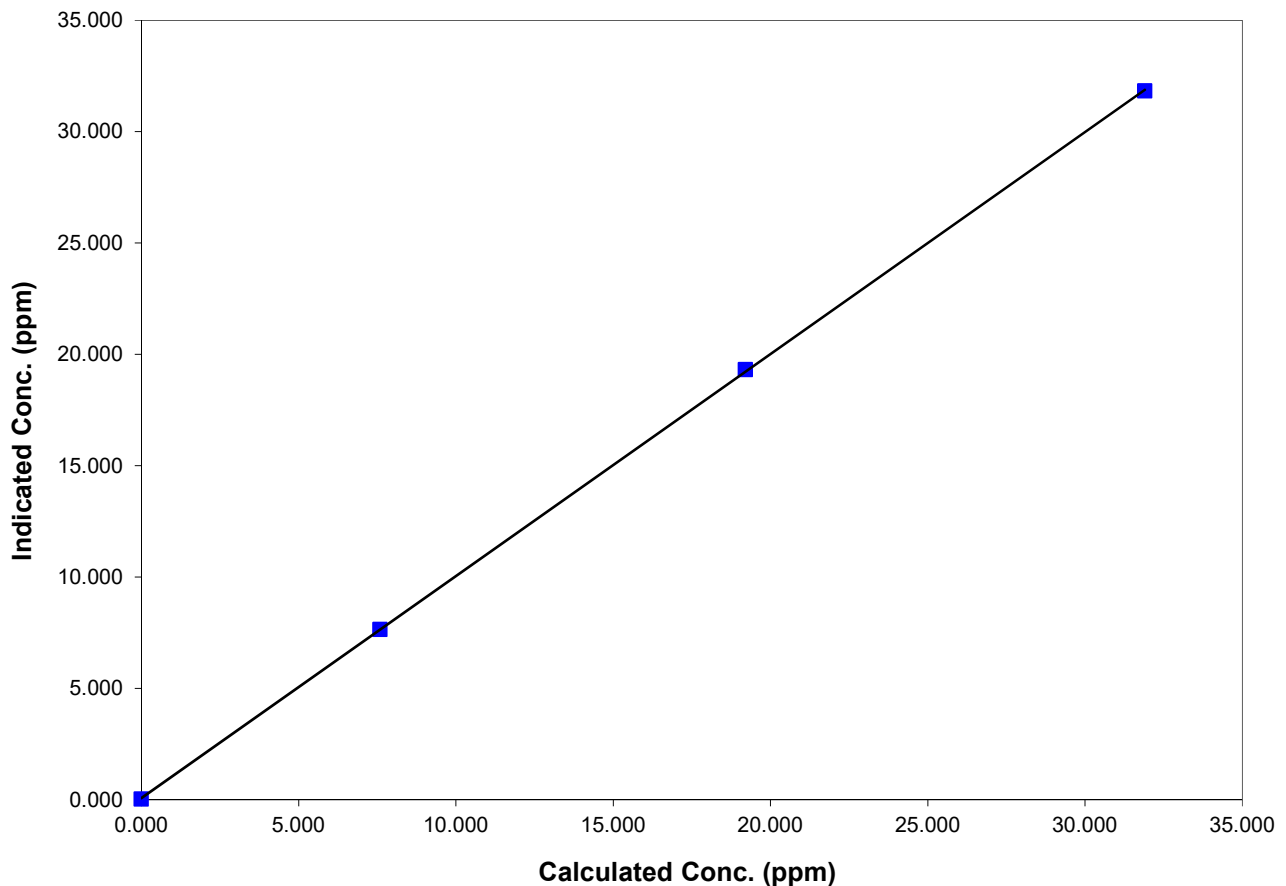
Station Information

Calibration Date	December 14, 2015	Previous Calibration	November 3, 2015
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:10	End Time (MST)	11:25
Analyzer make/model	TEI 55I	Analyzer serial #	1134650658

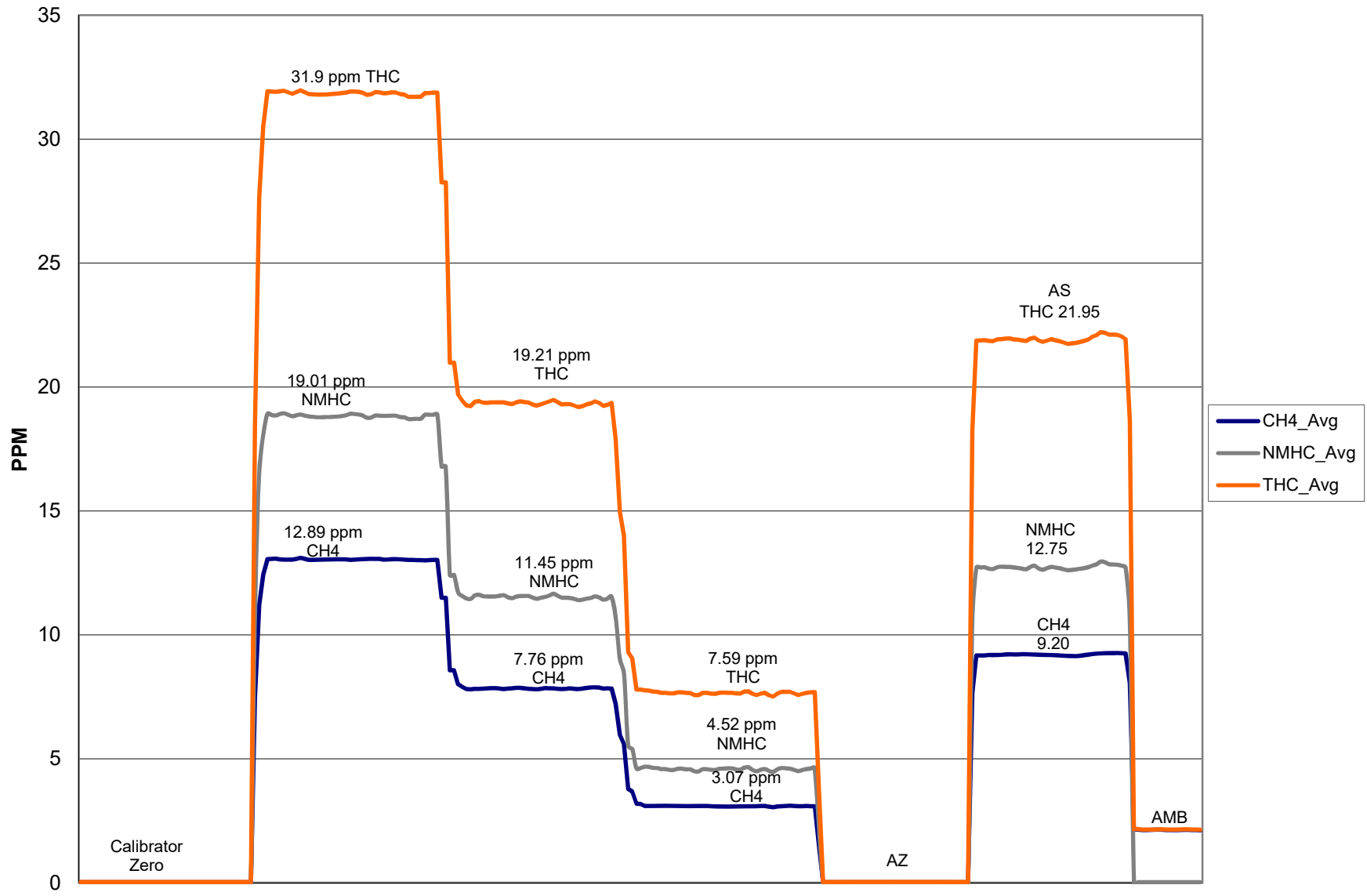
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.032	N/A	Correlation Coefficient	0.999976
31.901	31.822	1.0025		
19.209	19.318	0.9943	Slope	1.002940
7.592	7.647	0.9927		
			Intercept	-0.072941

THC Calibration Data



THC/CH₄/NMHC Calibration



Calibration Report

Parameter TR5

Air Monitoring Network PAZA



Station Information

Calibration Date	December 14, 2015	Previous Calibration	November 10, 2015
Station Number	1	Station Location	Henry Pirker
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	12:45	End Time (MST)	15:30:00 PM
Barometric Pressure	726.00 mm/Hg	Station Temperature	21.0 Deg C
Calibrator	EnviroNics 6103	Serial Number	6586
Cal Gas Conc	10.32 ppb	Cal Gas Expiry Date	08/07/2016
		Cal Gas Cylinder #	LL110781
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 1 volt	DACS channel #	9
	Before		After
Calculated slope	0.996902	Calculated slope	1.005923
Calculated intercept	0.447999	Calculated intercept	-0.245652
Analyzer make	TEI 45C	Analyzer serial #	630718528

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Coefficient	0.935		0.935	
Background	18.3		18.3	
Pressure	663.5	mm Hg	664.2	mm Hg
Flow	0.448	ccm	0.448	ccm
Lamp Voltage	903	v	902	v

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.00	0.00	0.31	N/A
4995	39.93	81.84	81.63	1.0026
4995	19.95	41.05	41.04	1.0004
6995	9.95	14.66	14.75	0.9938
4995	0.00	0.00	0.31	As Found Zero
4995	39.93	81.84	81.63	As Found Span
Average Correction Factor				0.9989

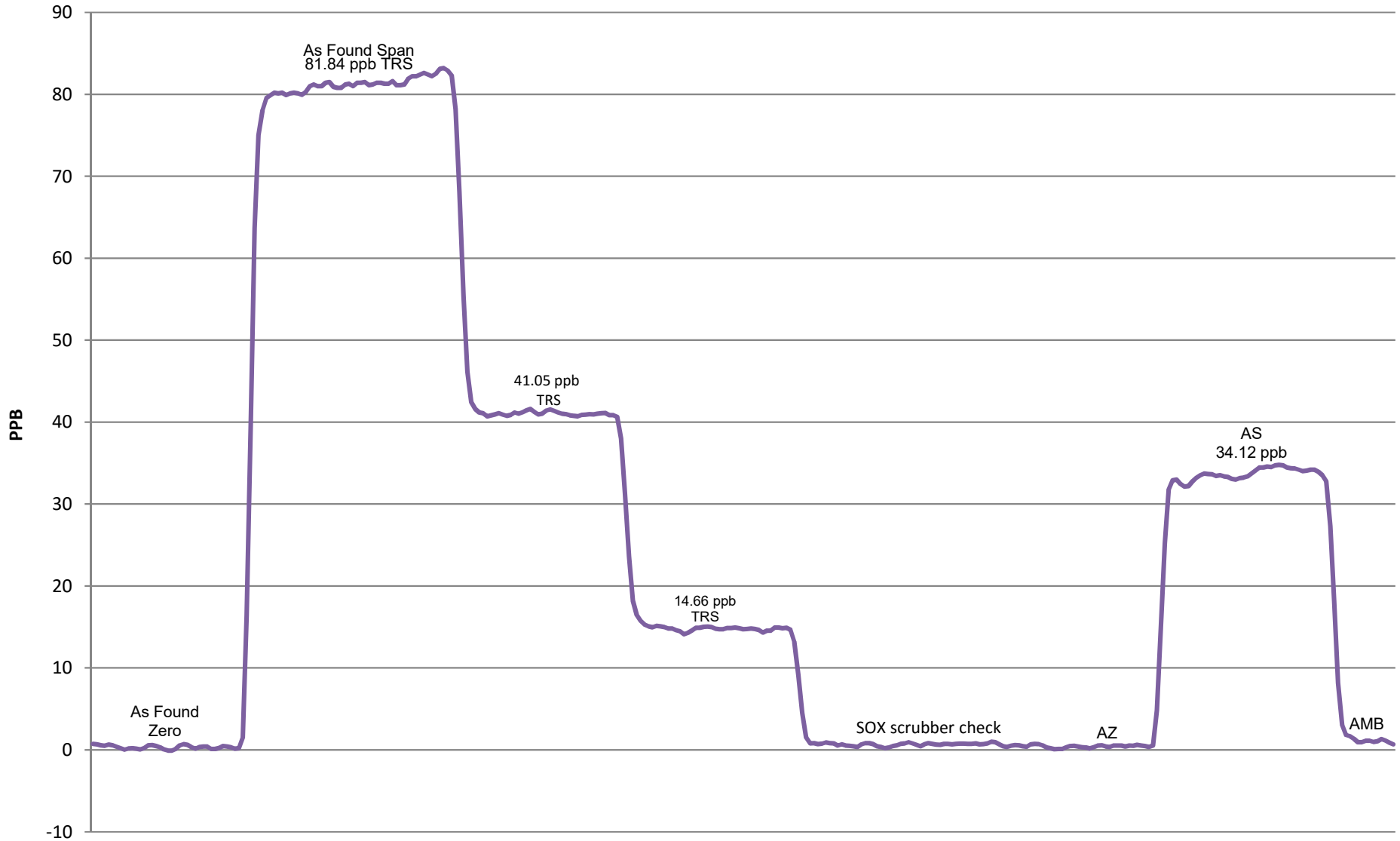
Calculated value of As Found Response: 81.5 ppb Percent Change of As Found: 0.4%

	before calibration		after calibration	
Auto zero	0.12	ppb	0.44	ppb
Auto span	31.47	ppb	34.12	ppb

Notes: No adjustment made
Scrubber material checked-still good.

Calibration Performed By: Dmytro Dolotii

TRS Calibration



December 14, 2015

Calibration Report



Parameter SO₂
 Air Monitoring Network PAZA

Station Information

Calibration Date	December 4 2015	Previous Calibration	November 5 2015
Station Number	2	Station Location	Evergreen Park
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	13:55:00 PM	End Time (MST)	16:17:00 PM
Barometric Pressure	0.920 ATM	Station Temperature	21.0 Deg C
Calibrator	EnviroNics	Serial Number	6586
Cal Gas Concentration	49.7 ppm	Cal Gas Expiry Date	05/10/2018
Correction factor	0.031167	Cal Gas Cylinder #	LL103793
DACS make	CR3000	DACS serial No.	5236
DACS voltage range	0 - 5 volt	DACS channel #	6
	<u>Before</u>		<u>After</u>
Calculated slope	1.016953	Calculated slope	0.999212
Calculated intercept	1.049128	Calculated intercept	0.443018
Analyzer make	Teco 43i	Analyzer serial #	701120008

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	11.8		11.9	
coefficient	1.233		1257	
Lamp Voltage	830	volts	831	volts
Chamber Temp	44.7	Deg C	45	Deg C
Perm Gas Temp	44.9	Deg C	45	Deg C
Pressure	657.1	mm Hg	658.6	mm Hg
Sample Flow	0.443	ccm	0.446	ccm
Lamp Intensity	89	%	89	%

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.0	0.00	0.5	N/A
4995	39.93	394.2	394.7	0.9985
4995	19.97	197.9	196.4	1.0077
4995	9.95	98.8	98.1	1.0076
4995	0.0	0.0	0.5	As Found Zero
4995	39.93	394.9	387.1	As Found Span
Average Correction Factor				1.0046

Calculated value of As Found Response: 394.217 ppm Percent Change of As Found: 0.2%

	before calibration		after calibration	
Auto zero	0.4	ppm	0.5	ppm
Auto span	257.7	ppm	266.3	ppm

Notes: Span adjustment made

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter SO2
 Air Monitoring Network PAZA



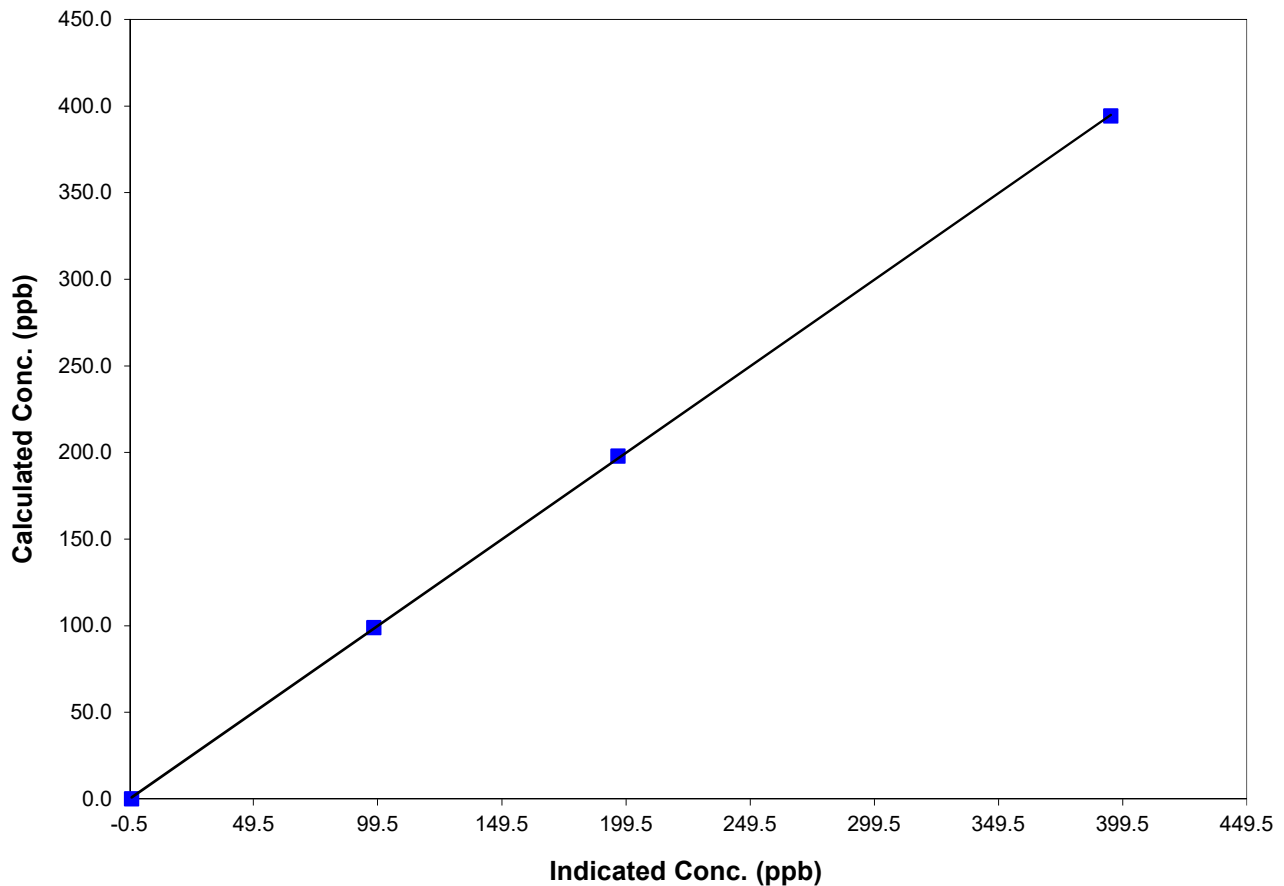
Station Information

Calibration Date	December 4 2015	Previous Calibration	November 5 2015
Station Number	2	Station Location	Evergreen Park
Start Time (MST)	13:55:00 PM	End Time (MST)	16:17:00 PM
Analyzer make/model	Teco 43i	Analyzer serial #	701120008

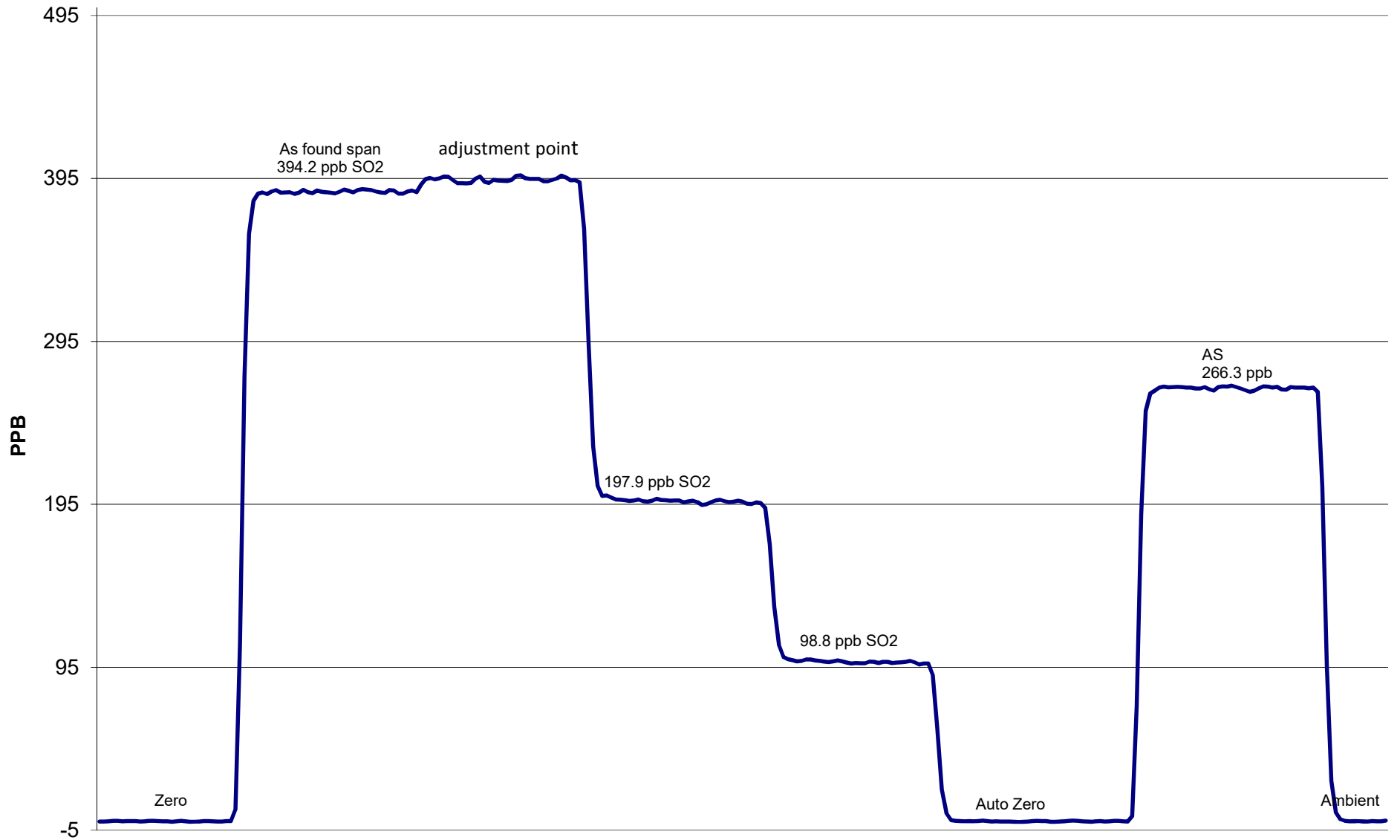
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.5	N/A	Correlation Coefficient	0.999965
394.2	394.7	0.9985		
197.9	196.4	1.0077	Slope	0.999212
98.8	98.1	1.0076		
			Intercept	0.443018

SO2 Calibration Curve



SO2 Calibration



December 4 2015

Calibration Report



Parameter TRS
 Air Monitoring Network PAZA

Station Information

Calibration Date	December 4 2015	Previous Calibration	November 5 2015
Station Number	2	Station Location	Evergreen Park
Reason:	Routine	Install	Removal
		Other:	
Start Time (MST)	9:30	End Time (MST)	14:45:00 PM
Barometric Pressure	0.920 ATM	Station Temperature	21.0 Deg C
Calibrator	EnviroNics	Serial Number	6586
Cal Gas Conc	10.32 ppm	Cal Gas Expiry Date	08/07/2016
Correction factor	0.031167	Cal Gas Cylinder #	LL110781
DACS make	CR3000	DACS serial No.	5236
DACS voltage range	0 - 5 volt	DACS channel #	5
	<u>Before</u>		<u>After</u>
Calculated slope	1.027775	Calculated slope	1.002742
Calculated intercept	-0.481948	Calculated intercept	0.293937
Analyzer make	TEI Model 43C	Analyzer serial #	3.199E+13

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	42.9	ppb	49.8	ppb
coefficient	0.963		1.149	
Lamp Voltage	1203	volts	1201	volts
Chamber Temp	44.2	Deg C	44.3	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	634.3	mm Hg	631.6	mm Hg
Sample Flow	0.570	ccm	0.579	ccm
Lamp Intensity	29,714	mv	24,730	mv

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.00	0.00	0.3	N/A
4995	39.93	81.84	81.4	1.0060
4995	19.97	41.10	40.9	1.0050
6995	9.97	14.69	13.6	1.0816
4995	9.97		1.4	Sox Test
4995	0.00	0.00	1.1	As Found Zero
4995	39.93	81.84	81.2	As Found Span
Average Correction Factor				1.0309

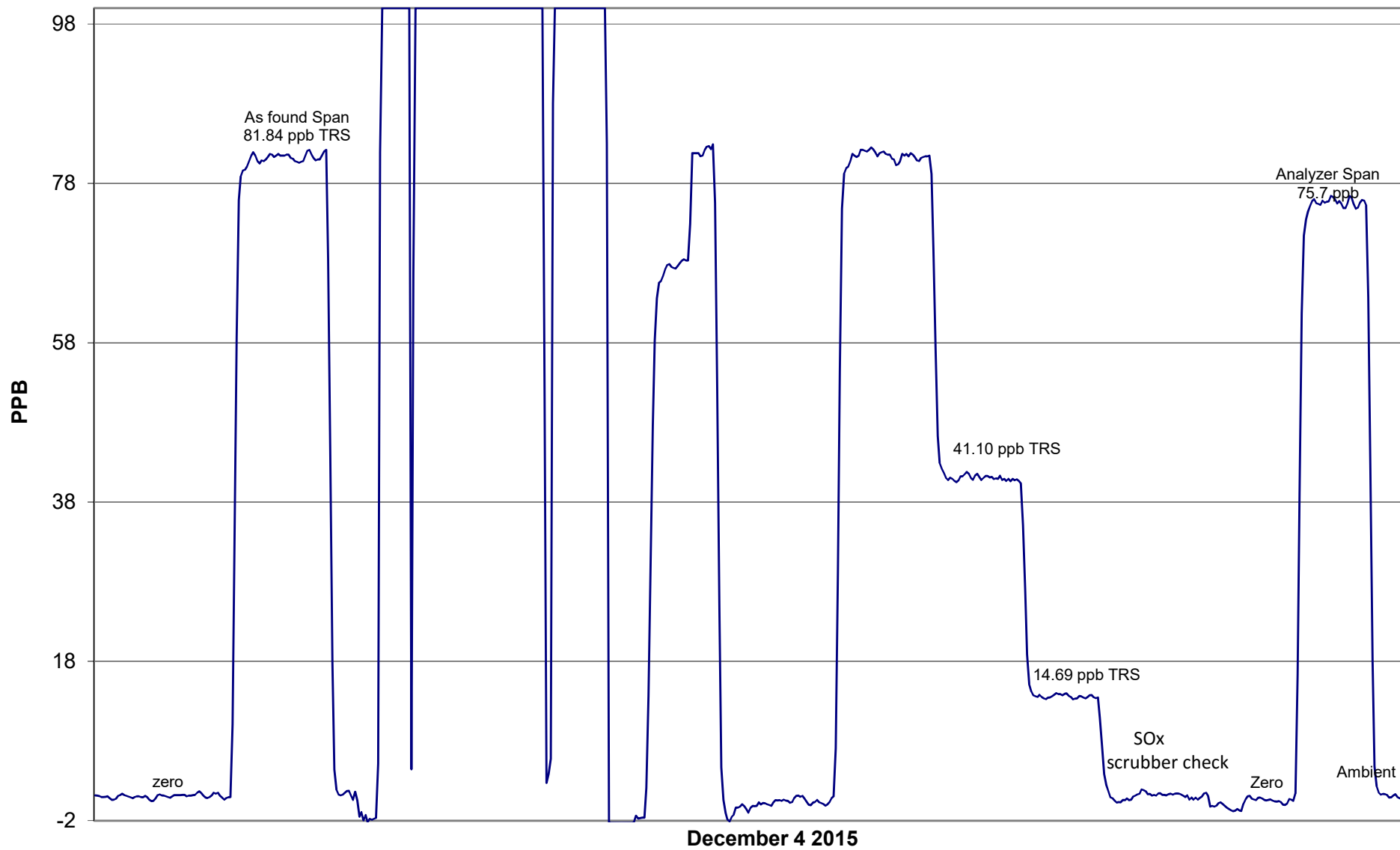
Calculated value of As Found Response: 81.84 ppm Percent Change of As Found: **0.0%**

	before calibration		after calibration	
Auto zero	0.6	ppm	0.6	ppm
Auto span	73.8	ppm	75.7	ppm

Notes: PMT, zero & regular adjustment made
Sox scrubber check performed

Calibration Performed By: Dmytro Dolotii

TRS Calibration



Calibration Report



AIR QUALITY MONITORING

Parameter SO₂

Air Monitoring Network PAZA

Station Information

Calibration Date	December 9, 2015	Previous Calibration	November 20, 2015
Station Number	3	Station Location	Smokey Heights
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	13:05:00 PM	End Time (MST)	15:05:00 PM
Barometric Pressure	0.927 ATM	Station Temperature	20.5 Deg C
Calibrator	EnviroNics	Serial Number	6586
Cal Gas Concentration	49.7 ppm	Cal Gas Cert Date	05/11/2018
Correction factor	0.031458	Cal Gas Cylinder #	LL103793
DACS make	CR3000	DACS serial No.	5238
DACS voltage range	0 - 5 volt	DACS channel #	6
	<u>Before</u>		<u>After</u>
Calculated slope	1.007244	Calculated slope	0.998672
Calculated intercept	0.302428	Calculated intercept	-0.316266
Analyzer make	Teco 43i	Analyzer serial #	701120009

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	12.3		12.4	
coefficient	0.952		0.952	
Lamp Voltage	935	volts	935	volts
Chamber Temp	45	Deg C	45	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	653	mm Hg	653.2	mm Hg
Sample Flow	0.435	lpm	0.433	lpm
Lamp Intensity	88	%	88	%

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.0	0.00	0.8	N/A
4995	39.93	394.15	395.3	0.9970
4995	19.97	197.91	198.0	0.9996
4995	9.97	99.00	99.1	0.9988
4995	0.0	0.00	0.8	As Found Zero
4995	39.93	394.15	395.3	As Found Span
Average Correction Factor				0.9985

Calculated value of As Found Response: 397.672 ppm Percent Change of As Found: -0.9%

	before calibration		after calibration	
Auto zero	1.0	ppb	0.9	ppb
Auto span	211.0	ppb	217.4	ppb

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter SO2
 Air Monitoring Network PAZA

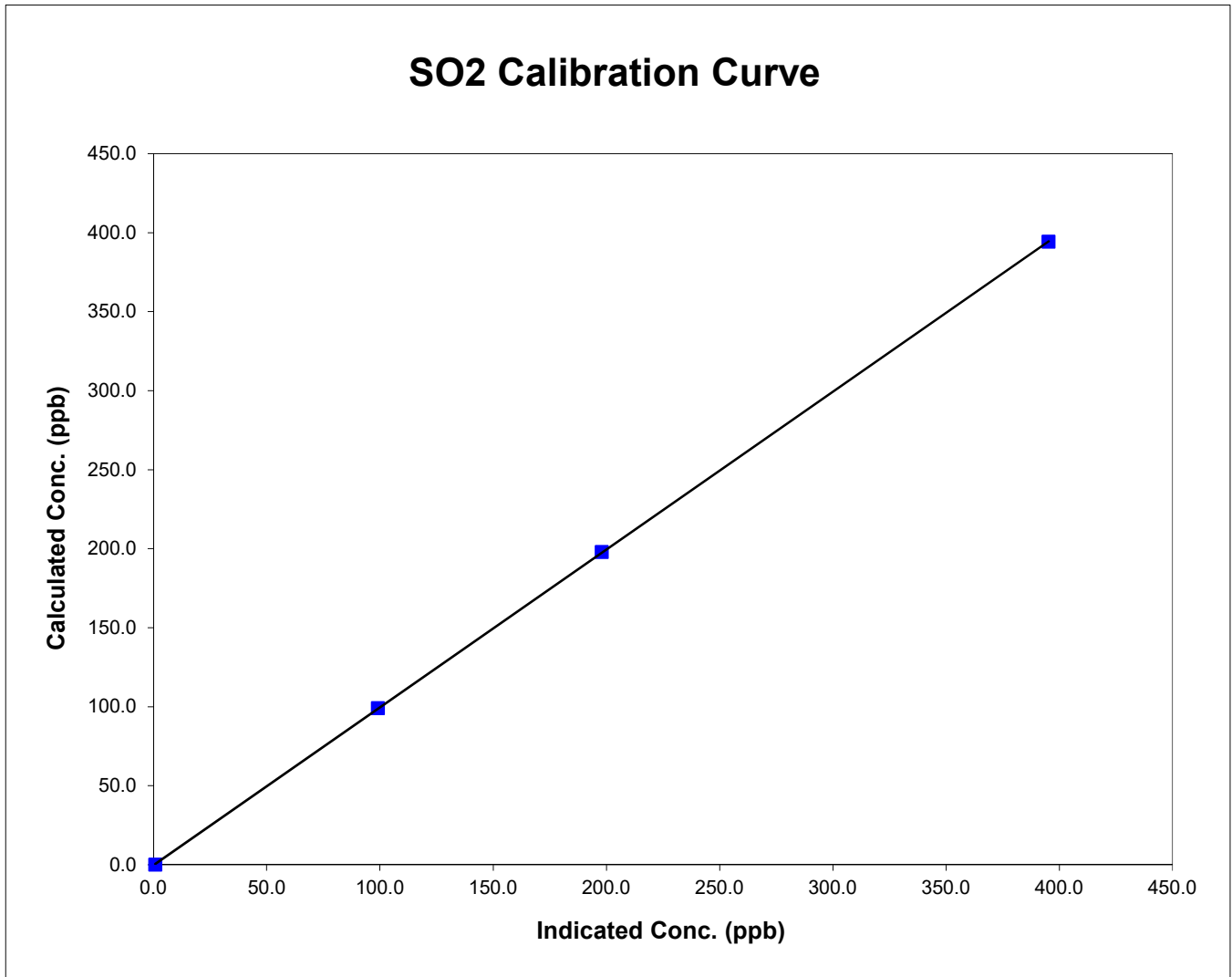


Station Information

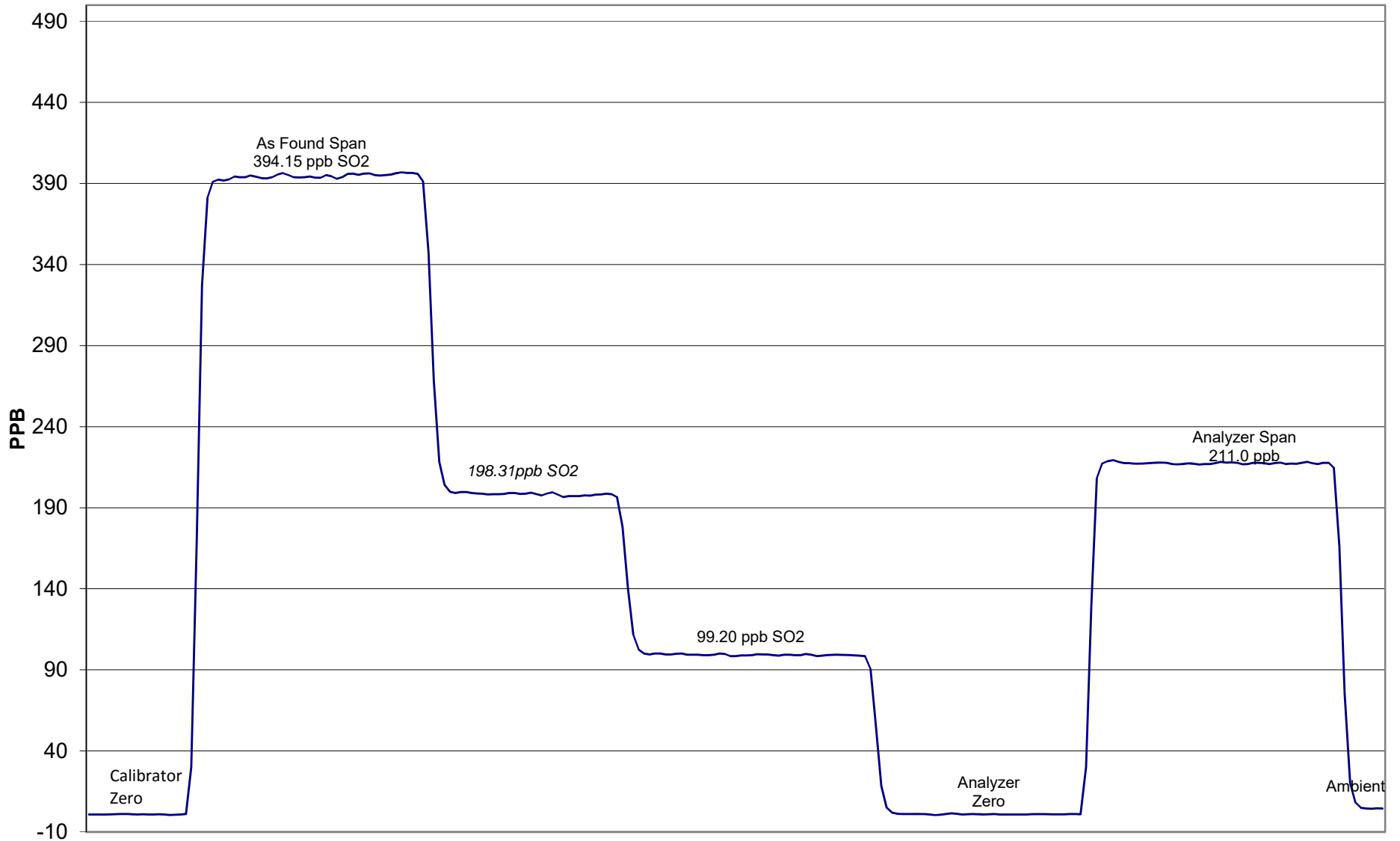
Calibration Date	December 9, 2015	Previous Calibration	November 20, 2015
Station Number	3	Station Location	Smokey Heights
Start Time (MST)	13:05:00 PM	End Time (MST)	15:05:00 PM
Analyzer make/model	Teco 43i	Analyzer serial #	701120009

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.8	N/A	Correlation Coefficient	0.999991
394.2	395.3	0.9970		
197.9	198.0	0.9996		
99.0	99.1	0.9988	Slope	0.998672
			Intercept	-0.316266

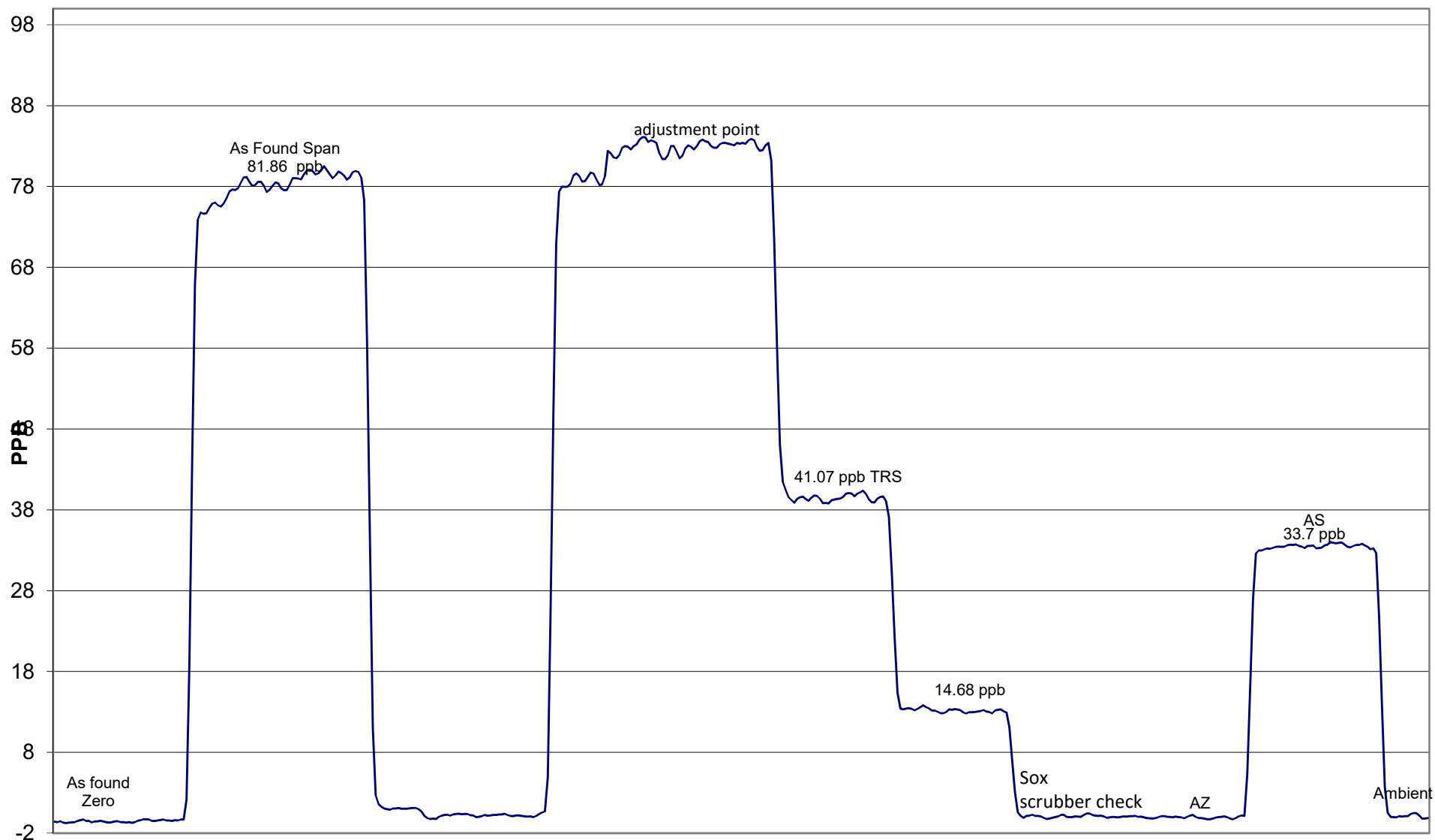


Smokey Heights SO₂ Calibration



December 9, 2015

Smokey Heights TRS Calibration



December 9, 2015

Calibration Report

Parameter SO2
Air Monitoring Network _____



PAZA

Station Information

Calibration Date	December 16, 2015	Previous Calibration	November 12, 2015
Station Number	4	Station Location	Beaverlodge
Reason:	Routine	Install	Removal
			Other:
Start Time (MST)	14:15:00 PM	End Time (MST)	16:35:00 PM
Barometric Pressure	0.928 atm	Station Temperature	20.0 Deg C
Calibrator	EnviroNics	Serial Number	6586
Cal Gas Concentration	10.8 ppm	Cal Gas Expiry Date	28/09/2012
Gas Cert Reference	FF14871		
DACS make	CR3000	DACS serial No.	5237
DACS voltage range	0 - 5 volt	DACS channel #	5
	<u>Before</u>		<u>After</u>
DACS Scale High	100	DACS slope	100
DACS Scale Low	0	DACS intercept	0
Calculated slope	0.998185	Calculated slope	0.983732
Calculated intercept	-0.217252	Calculated intercept	-0.258220
Analyzer make	TEI Model 43i-TLE	Analyzer serial #	713021137

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	2.67		2.69	
Coefficient	1.018		1.018	
PMT	-768.1	V	-768.5	V
UV Lamp Voltage	1104	V	1088	V
Chamber Temp	44.8	Deg C	45	Deg C
Pressure	664.6	mm Hg	665.5	mm Hg
Sample Flow	0.455	LPM	0.455	LPM
Lamp Intensity	96	%	96	%

Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4994	0.00	0.0	0.2	N/A
4994	39.92	85.6	87.3	0.9810
4994	19.96	43.0	44.0	0.9777
4994	9.96	21.5	22.2	0.9692
4994	0.00	0.0	0.2	As found zero
4994	39.92	85.6	87.3	As found span
Average Correction Factor				0.9760

Calculated value of As Found Response: 86.719 ppm Percent Change of As Found: -1.3%

	before calibration		after calibration	
Auto zero	0.0	ppb	0.0	ppb
Auto span	62.1	ppb	60.1	ppb

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter SO2
 Air Monitoring Network PAZA



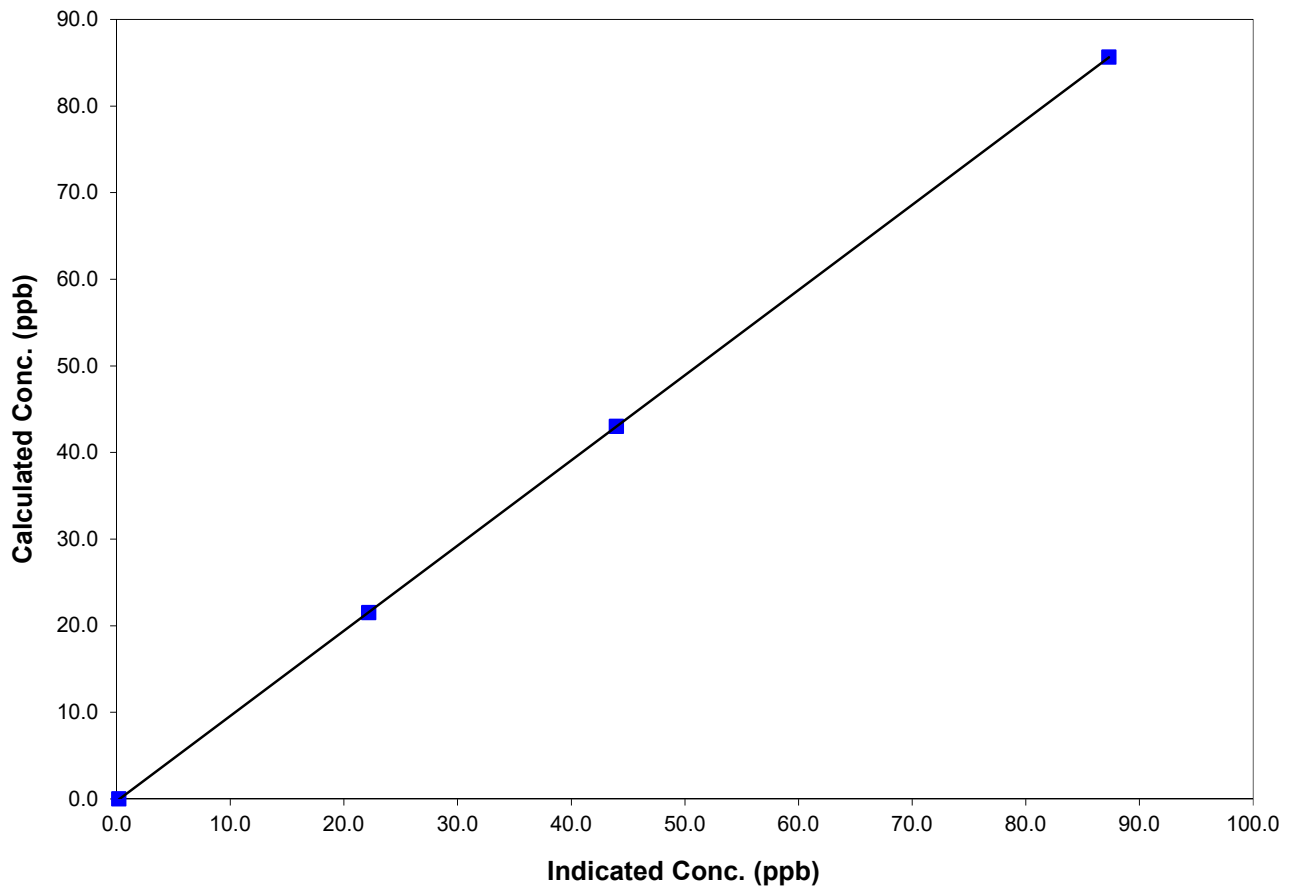
Station Information

Calibration Date	December 16, 2015	Previous Calibration	November 12, 2015
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	14:15:00 PM	End Time (MST)	16:35:00 PM
Analyzer make/model	TEI Model 43i-TLE	Analyzer serial #	713021137

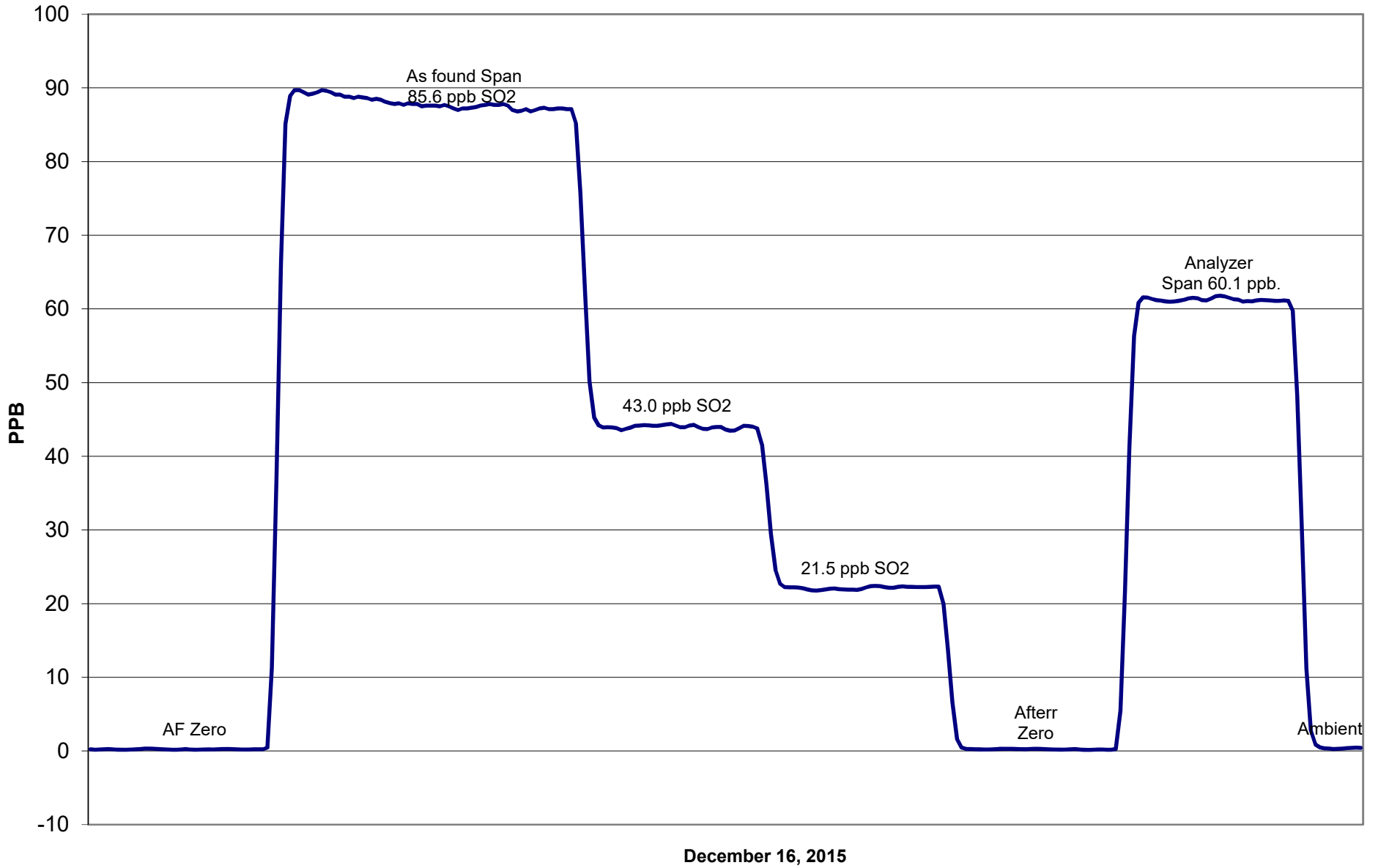
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.2	N/A	Correlation Coefficient	0.999998
85.6	87.3	0.9810		
43.0	44.0	0.9777	Slope	0.983732
21.5	22.2	0.9692		
			Intercept	-0.258220

SO2 Calibration Curve



SO2 Calibration



Calibration Report

Parameter
Air Monitoring Network

NO_x-NO-NO₂
PAZA



Station Information

Calibration Date	December 16 2015	Previous Calibration	November 12 2015
Station Number	4	Station Location	Beaverlodge
Reason:	Routine	Installation	Removal
Start Time (MST)	10:10	End Time (MST)	13:55:00 PM
Barometric Pressure	0.928 Atm	Station Temperature	20.0 Deg C
Calibrator	EnviroNics	Serial Number	6586
NO Cal Gas Conc	50.9 ppm	Cal Gas Expiry Date	November 5, 2018
NO _x Cal Gas Conc	51.2 ppm	Cal Gas Serial #	LL103793

DACS Information

DACS make	CR3000	DACS serial No.	5237	
	Parameter	NO2	NOx	NO
Before	Data Slope	0.998473	0.999885	1.000731
	Data Offset	-0.374424	0.100102	0.257754
After	Data Slope	0.989567	0.996435	0.995605
	Data Offset	-1.522745	0.188348	0.434190
	Channel #	8	6	7
	Voltage Range	0 - 5 VDC	0 - 5 VDC	0 - 5 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	2.6	mV	2.6	mV
NO _x bkgnd	3.0	mV	3.0	mV
NO coefficient	1.080		1.080	
NO _x coefficient	1.005		1.005	
NO ₂ conv temp	325.3	Deg C	327.0	Deg C
PMT Temp	-2.9	Deg C	-2.9	Deg C
PMT Volt	-730.0	mV	-730.0	mV
R Cell Press	186.1	in Hg	182.8	in Hg
Sample Flow	0.735	LPM	0.727	LPM

Notes: No adjustments made

Calibration Report



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

Station Information

Calibration Date: Station Location: Beaverlodge

Calibration Data

	Dilution flow rate (ccm)	Source gas flow rate (ccm)	Calculated NOx conc (ppb)	Calculated NO conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor	
zero	4995	0.00	0.0	0.0	0.0	0.0	-0.1	-0.1	N/A	N/A	
1	4995	39.92	405.9	403.6	2.4	407.3	405.2	1.3	0.9966	0.9960	
2	4995	19.96	203.8	202.6	1.2	204.2	202.6	0.7	0.9981	1.0001	
3	4995	9.93	101.6	101.0	0.6	101.6	100.8	0.6	0.9998	1.0017	
AFZ	4995	0.00	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0000	0.0000	
AFS	4995	39.92	405.9	403.6	0.8	407.3	405.2	1.3	0.9966	0.9960	
									Average Correction Factor	0.9982	0.9992

As Found Concentrations: NO_x= 407.4 NO= 405.8 As Found Percent Change NO_x= 0.4% NO= 0.6%

GPT Calibration Data

Dilution Flow 4995 ccm Source Gas Flow 39.93 ccm

O3 Setpoint (ppb)	Indicated NOx high point (ppb)	Indicated NO drop conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor	NO2 Correction factor	Converter Efficiency	
0	-0.1	-0.1	0.0	0.0	-0.1	-0.1	N/A	N/A	N/A	N/A	
NO point	401.9	401.9	0.0	404.0	401.9	1.3	0.9948	1.0000	N/A	N/A	
300	401.9	76.6	325.3	406.8	76.6	329.3	0.9878	1.0000	0.9878	101.2%	
200	401.9	182.7	219.2	406.9	182.7	223.3	0.9876	1.0000	0.9816	101.9%	
100	401.9	297.8	104.1	407.5	297.8	109.1	0.9863	1.0000	0.9542	104.8%	
							Average Correction Factor	0.9872	1.0000	0.9746	102.6%

AIC Data

Parameter	Previous calibration				Current calibration			
	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	0.0	-0.1	-0.1	ppb	-0.1	-0.2	0.0	ppb
Auto span	285.9	282.8	2.2	ppb	287.1	284.4	1.8	ppb

Calibration Performed By: Dmytro Dolotii

Calibration Summary



Parameter NO₂

Air Monitoring Network PAZA

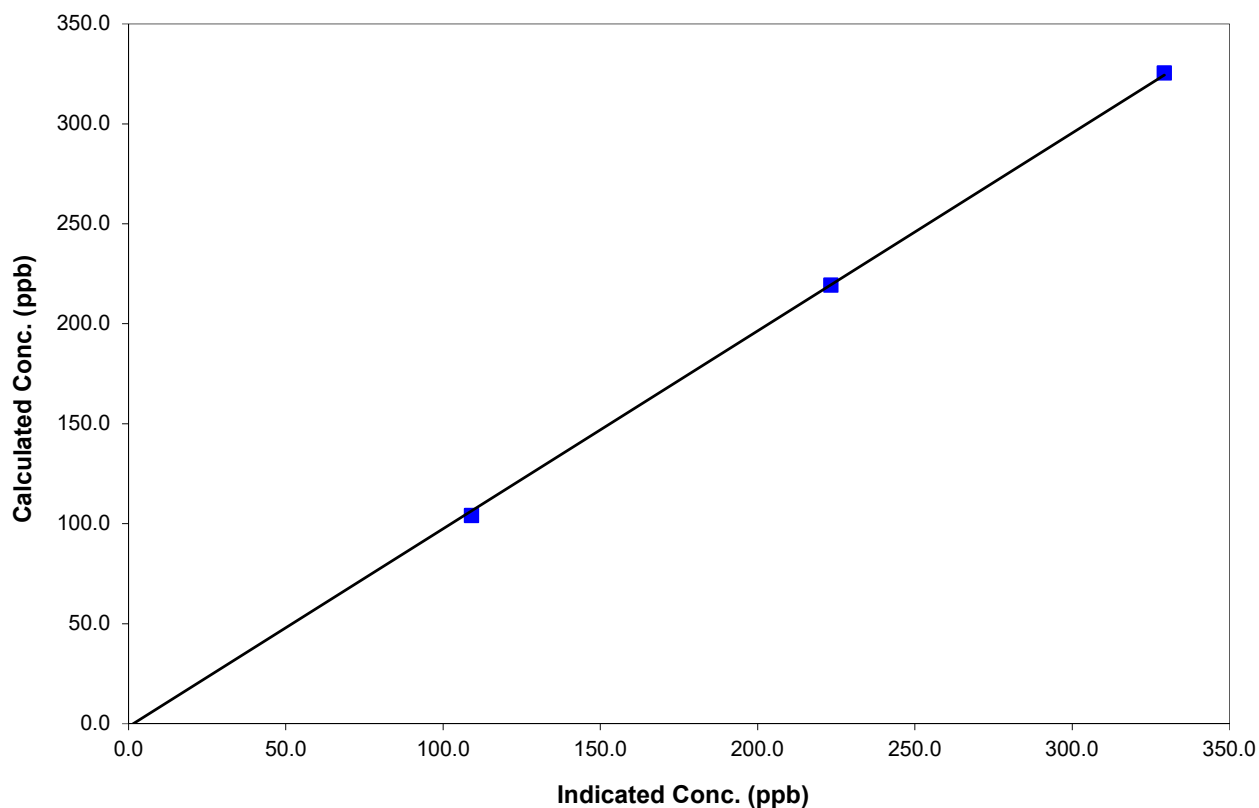
Station Information

Calibration Date	December 16 2015	Previous Calibration	November 12 2015
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	10:10	End Time (MST)	13:55:00 PM
Analyzer make	TEI 42i	Analyzer serial #	906535068

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A	Correlation Coefficient	0.999848
325.3	329.3	0.9878		
219.2	223.3	0.9816	Slope	0.989567
104.1	109.1	0.9542		

NO₂ Calibration Curve



Calibration Summary



Parameter NO_x

Air Monitoring Network PAZA

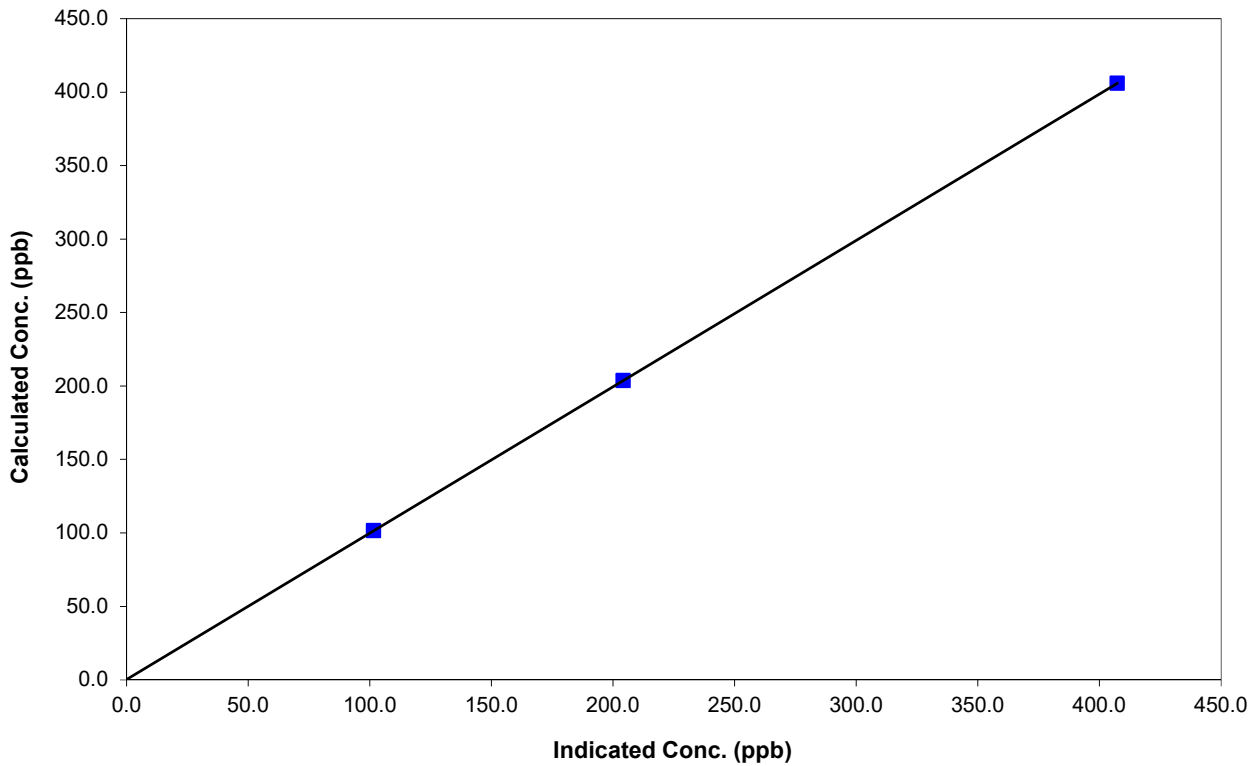
Station Information

Calibration Date	December 16 2015	Previous Calibration	November 12 2015
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	10:10	End Time (MST)	13:55:00 PM
Analyzer make	TEI 42i	Analyzer serial #	906535068

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A	Correlation Coefficient	0.999999
405.9	407.3	0.9966		
203.8	204.2	0.9981	Slope	0.996435
101.6	101.6	0.9998		

NO_x Calibration Curve



Calibration Summary



Parameter NO
 Air Monitoring Network PAZA

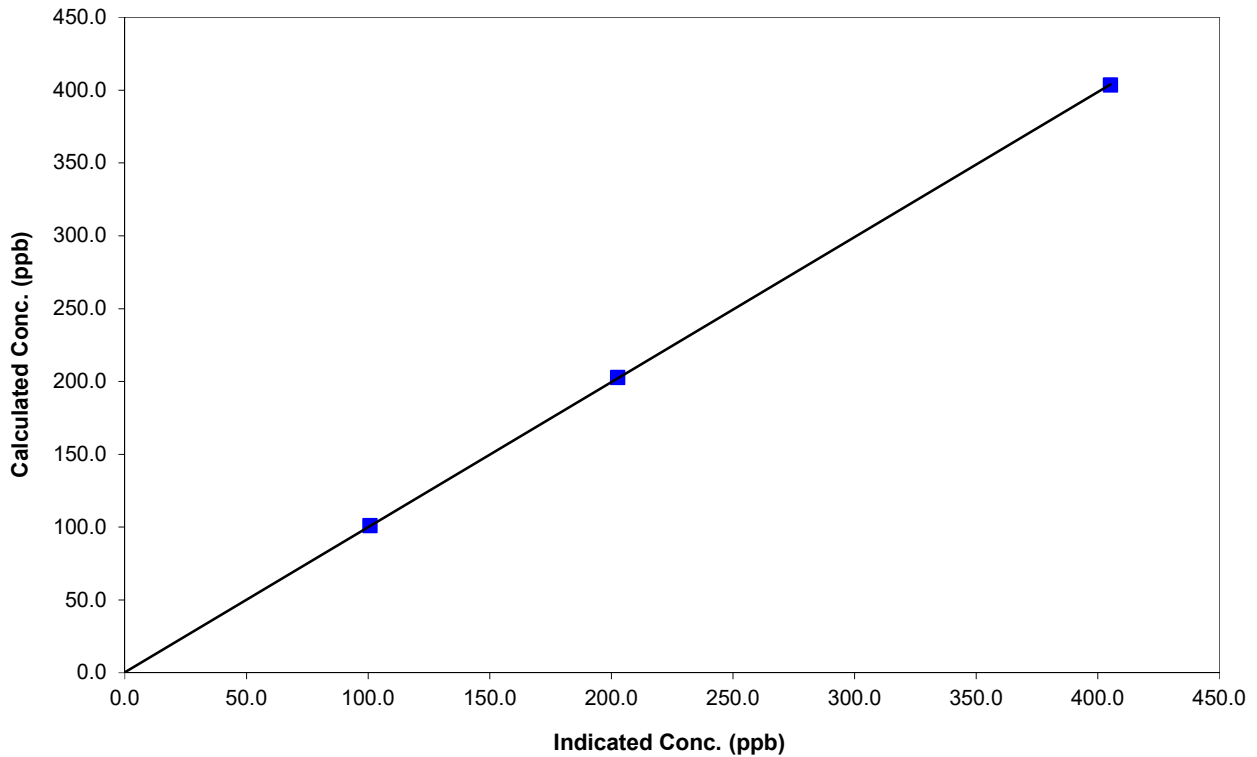
Station Information

Calibration Date	December 16 2015	Previous Calibration	November 12 2015
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	10:10	End Time (MST)	13:55:00 PM
Analyzer make	TEI 42i	Analyzer serial #	906535068

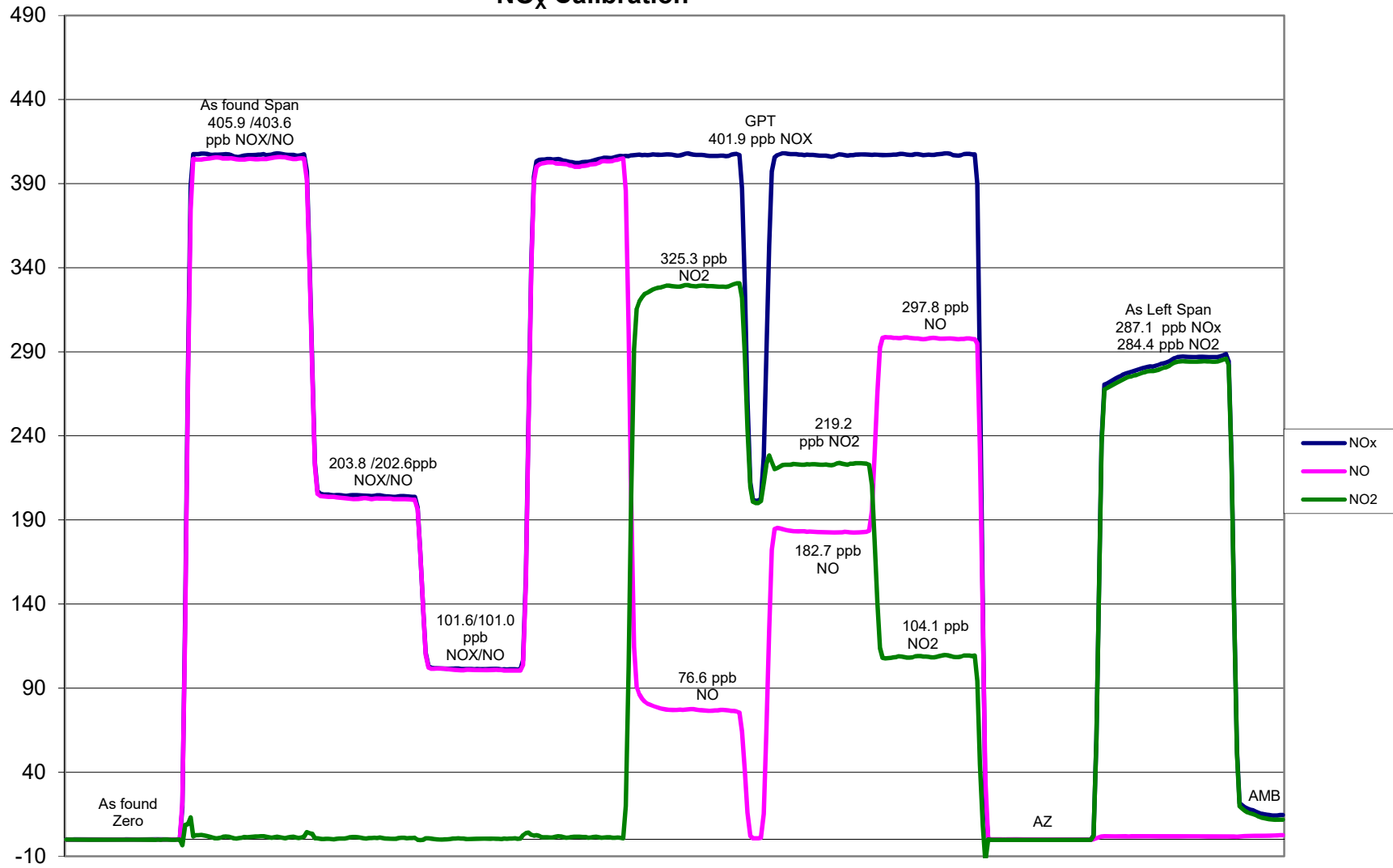
Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A	Correlation Coefficient	0.999995
403.6	405.2	0.9960		
202.6	202.6	1.0001		
101.0	100.8	1.0017		
			Slope	0.995605
			Intercept	0.434190

NO Calibration Curve



NO_x Calibration



December 16 2015

Calibration Report



Parameter 03
Air Monitoring Network PAZA

Station Information

Calibration Date	December 16, 2015	Previous Calibration	November 12, 2015
Station Number	4	Station Location	Beaverlodge
Reason:	Routine	Install	Removal
		Other:	
Start Time (MST)	12:52	End Time (MST)	15:15:00 PM
Barometric Pressure	0.928 atm	Station Temperature	20.0 Deg C
Calibrator	Envionics	Serial Number	6586
Cal Gas Concentration	NA	Cal Gas Expiry Date	NA
DACS make	CR3000	DACS serial No.	5237
DACS voltage range	0 - 5 volt	DACS channel #	9
	Before		After
Calculated slope	1.014104	Calculated slope	0.991789
Calculated intercept	0.850821	Calculated intercept	-0.926914
Analyzer make	Teco 49i	Analyzer serial #	1136451236,AMU 1879

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
offset	-0.20	ppb	-0.30	ppb
slope	1.004		1.062	
Lamp temp	53.8	mV	53.8	mV
Lamp Intensity A/B	53290/58356	mV	53271/58344	mV
Pressure	681.1	mm Hg	679.9	mm Hg
Flow A	0.783	LPM	0.784	LPM
Flow B	0.744	LPM	0.744	LPM

Calibration Data

Dilution air flow rate (cc/min)	Calibrator Setting	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
5035	0.00	0.0	0.5	N/A
5035	0.30	325.3	329.5	0.9872
5035	0.20	219.2	220.4	0.9947
5035	0.10	104.1	107.4	0.9697
5035	0.00	0.0	0.5	As found zero
5035	0.30	325.3	311.9	As found span
Average Correction Factor				0.9839

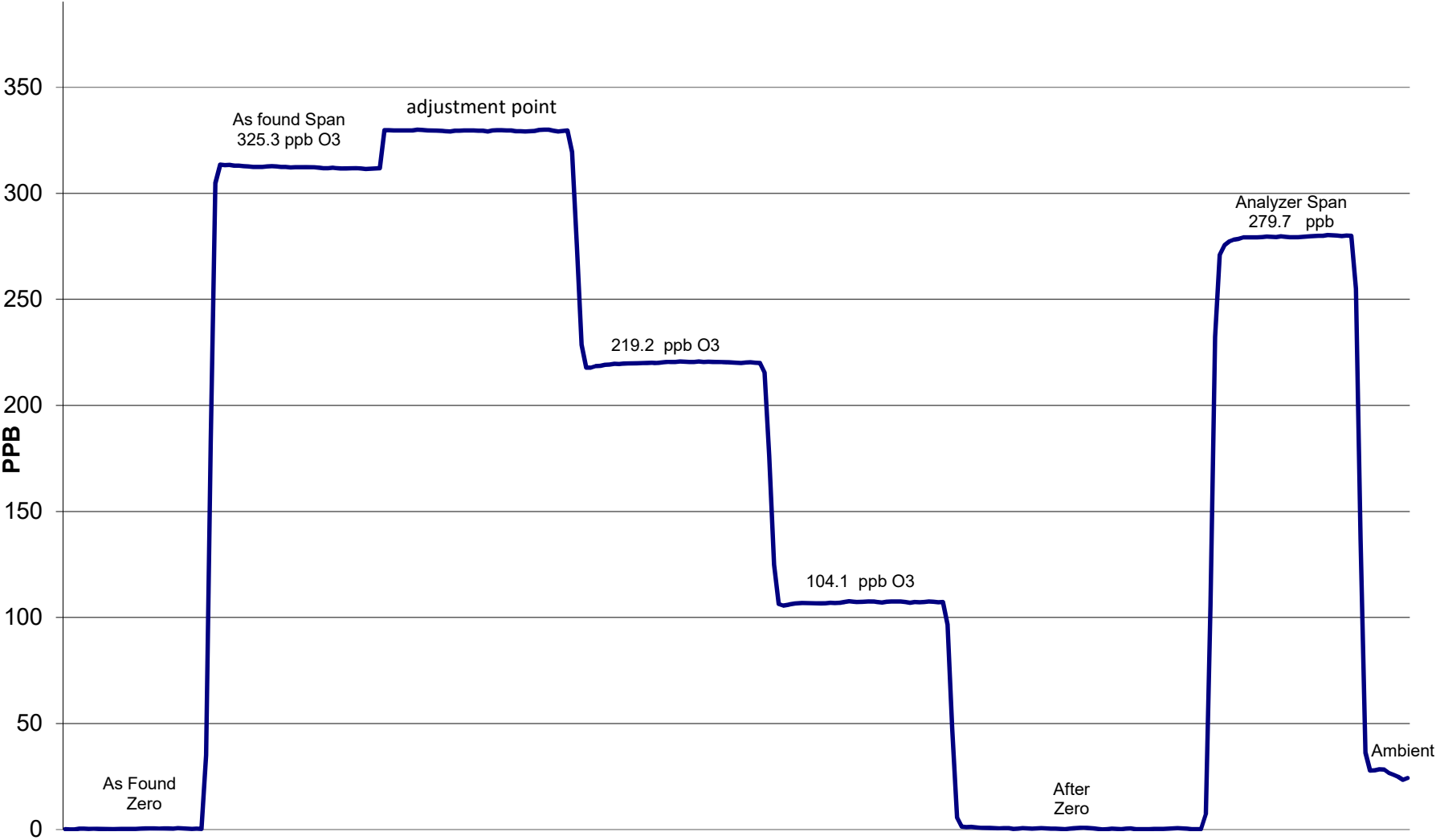
Calculated value of As Found Response: 316.7 ppm Percent Change of As Found: -2.7%

	before calibration		after calibration	
Auto zero	0.3	ppb	0.4	ppb
Auto span	262.1	ppb	279.7	ppb

Notes: Span adjustment made

Calibration Performed By: Dmytro Dolotii

O3 Calibration



December 16, 2015

Calibration Report



Parameter SO2

Air Monitoring Network PAZA

Station Information

Calibration Date	December 15 2015	Previous Calibration	November 9 2015
Station Number	6	Station Location	Valleyview
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	12:30	End Time (MST)	14:45:00 PM
Barometric Pressure	0.929 atm	Station Temperature	20.5 Deg C
Calibrator	Envionics	Serial Number	3016
Cal Gas Concentration	49.7 ppm	Cal Gas Exp Date	November 5, 2018
Gas Cylinder Num.	LL103793		
DACS make	CR3000	DACS serial No.	5409
DACS voltage range	0 - 5 volt	DACS channel #	4
	<u>Before</u>		<u>After</u>
DACS Scale High	500	DACS slope	500
DACS Scale Low	0	DACS intercept	0
Calculated slope	1.013327	Calculated slope	0.998970
Calculated intercept	0.884280	Calculated intercept	0.655793
Analyzer make	TEI 43C	Analyzer serial #	609716239

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Background	15.6		15.8	
Coefficient	1.012		1.031	
UV Lamp Voltage	737	LPM	736	LPM
Chamber Temp	43	V	43	V
Perm Gas Temp	45	C	45	C
Pressure	669.3	in Hg	760.2	in Hg
Sample Flow	0.485	LPM	0.485	LPM
Lamp Intensity	47525	Hz	47463	Hz

Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.00	0.0	0.5	N/A
4995	39.93	394.2	394.6	0.9988
4995	19.97	197.9	196.4	1.0075
4995	9.95	98.8	97.4	1.0149
4995	0.00	0.0	0.5	As found zero
4995	39.93	394.2	386.2	As found span
Average Correction Factor				1.0071

Calculated value of As Found Response: 391.7 ppm Percent Change of As Found: 0.6%

	before calibration		after calibration	
Auto zero	0.4	ppm	0.5	ppm
Auto span	279.0	ppm	285.5	ppm

Notes: Span adjustment made

Calibration Performed By: Dmytro Dolotii

Calibration Summary



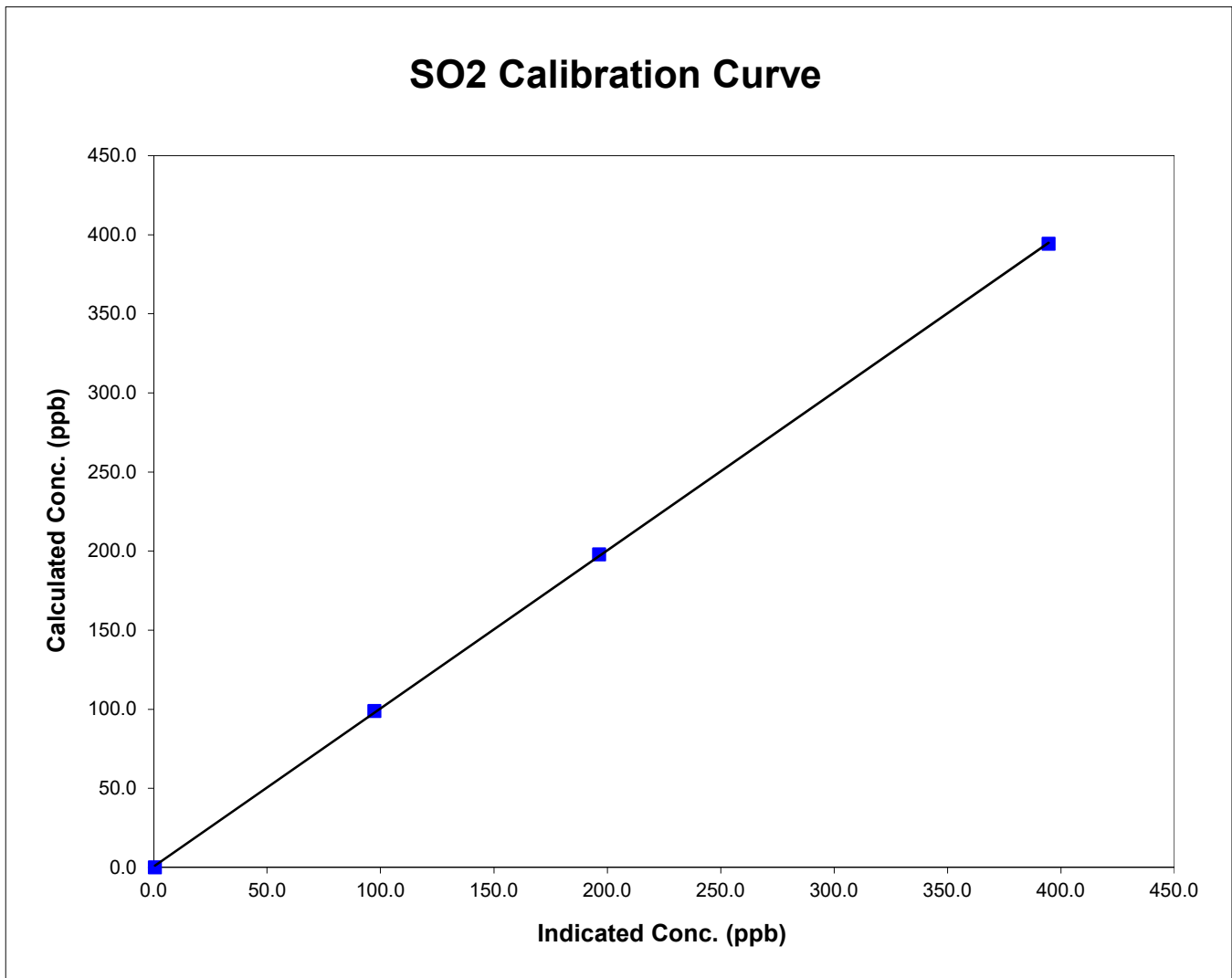
Parameter SO2
 Air Monitoring Network PAZA

Station Information

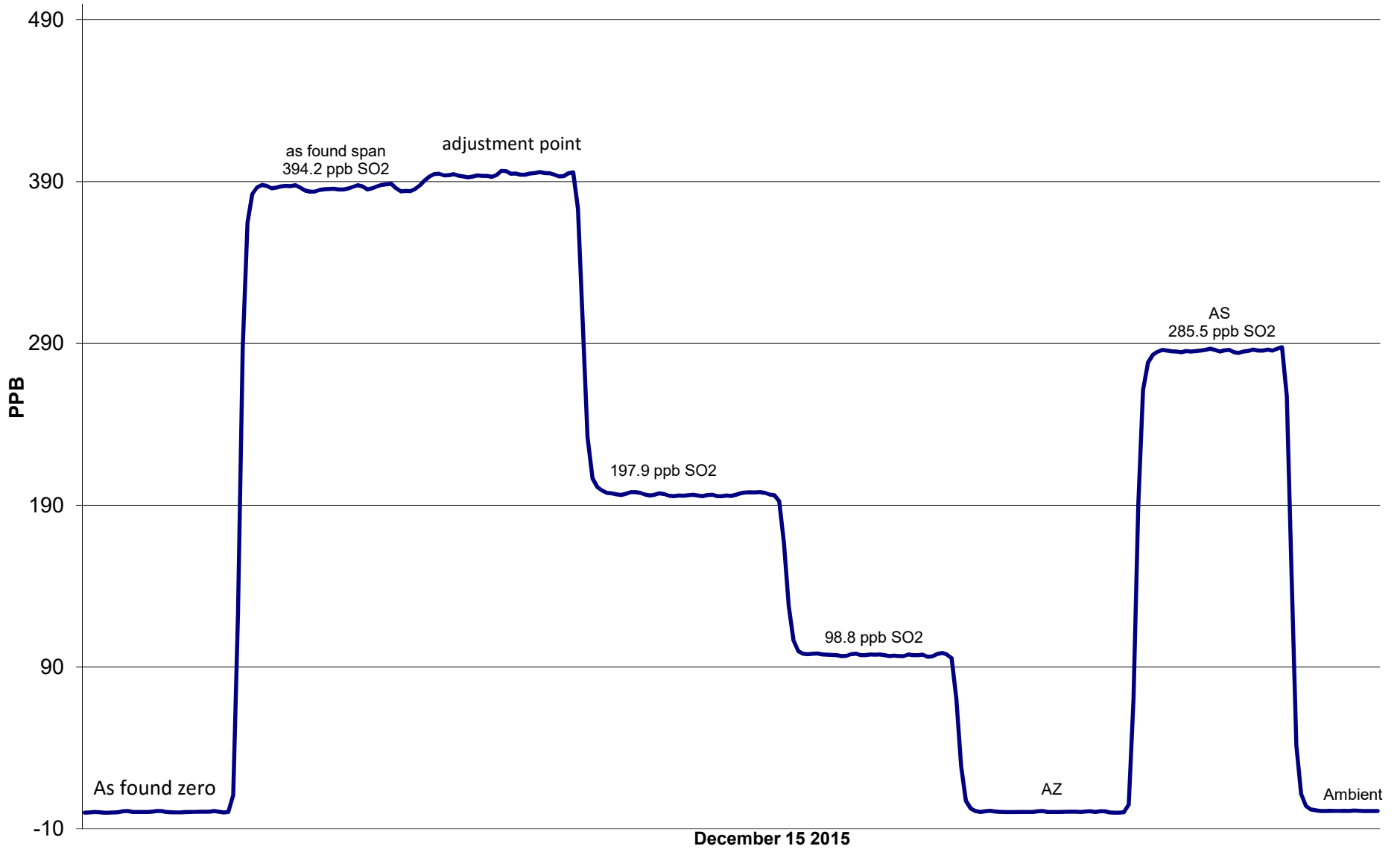
Calibration Date	December 15 2015	Previous Calibration	November 9 2015
Station Number	6	Station Location	Valleyview
Start Time (MST)	12:30	End Time (MST)	14:45:00 PM
Analyzer make/model	TEI 43C	Analyzer serial #	609716239

Calibration Data

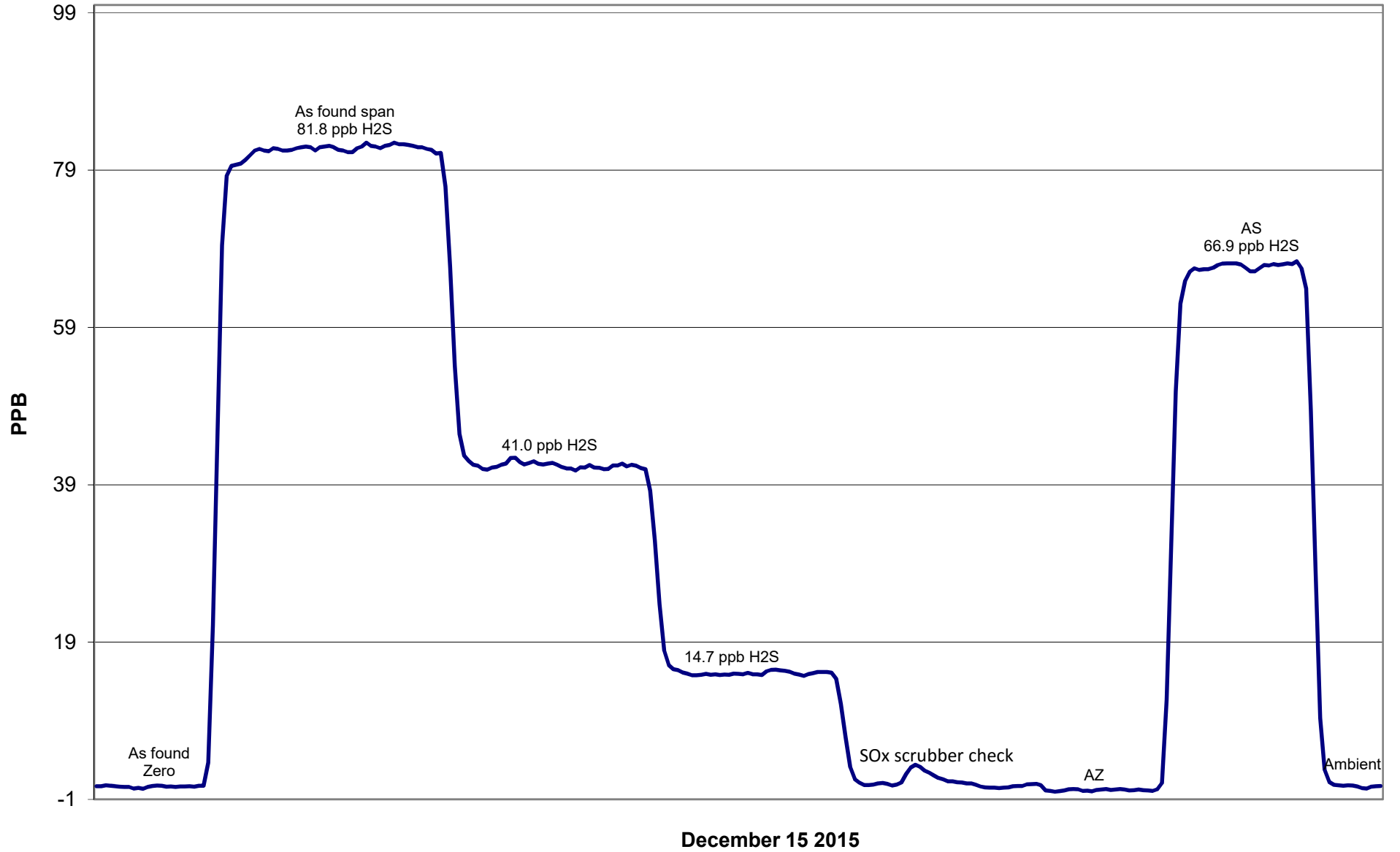
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.5	N/A		
394.2	394.6	0.9988	Correlation Coefficient	0.999955
197.9	196.4	1.0075		
98.8	97.4	1.0149	Slope	0.998970
			Intercept	0.655793



SO2 Calibration



H2S Calibration



Calibration Report



AIR QUALITY MONITORING

Parameter SO₂

Air Monitoring Network PAZA

Station Information

Calibration Date	December 22, 2015	Previous Calibration	November 26, 2015
Station Number	1	Station Location	Falher
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	12:50	End Time (MST)	14:44:00 PM
Barometric Pressure	0.921 mm	Station Temperature	20.5 Deg C
Calibrator	EnviroNics	Serial Number	6586
Cal Gas Concentration	49.7 ppm	Cal Gas Expiry Date	05/10/2018
Correction factor	0.031254	Cal Gas Cylinder #	LL103793
DACS make	CR1000	DACS serial No.	3980
DACS voltage range	0 - 5 volt	DACS channel #	6
	<u>Before</u>		<u>After</u>
Calculated slope	0.994073	Calculated slope	1.001629
Calculated intercept	-0.080650	Calculated intercept	0.243968
Analyzer make	Teco 43i	Analyzer serial #	1207452008

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	7.1		7.1	
coefficient	0.905		0.905	
Lamp Voltage	860	volts	860	volts
Chamber Temp	45	Deg C	45	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	666.8	mm Hg	669.2	mm Hg
Sample Flow	0.395	ccm	0.398	ccm
Lamp Intensity	97	%	97	%

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.0	0.00	0.5	N/A
4995	39.93	394.2	393.4	1.0020
4995	19.96	197.8	197.7	1.0005
4995	9.97	99.0	97.3	1.0176
4995	0.0	0.0	0.5	As Found Zero
4995	39.93	394.2	393.4	As Found Span
Average Correction Factor				1.0067

Calculated value of As Found Response: 390.437 ppm Percent Change of As Found: **0.9%**

	before calibration		after calibration	
Auto zero	0.9	ppm	0.6	ppm
Auto span	352.9	ppm	302.7	ppm

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter SO2
 Air Monitoring Network PAZA



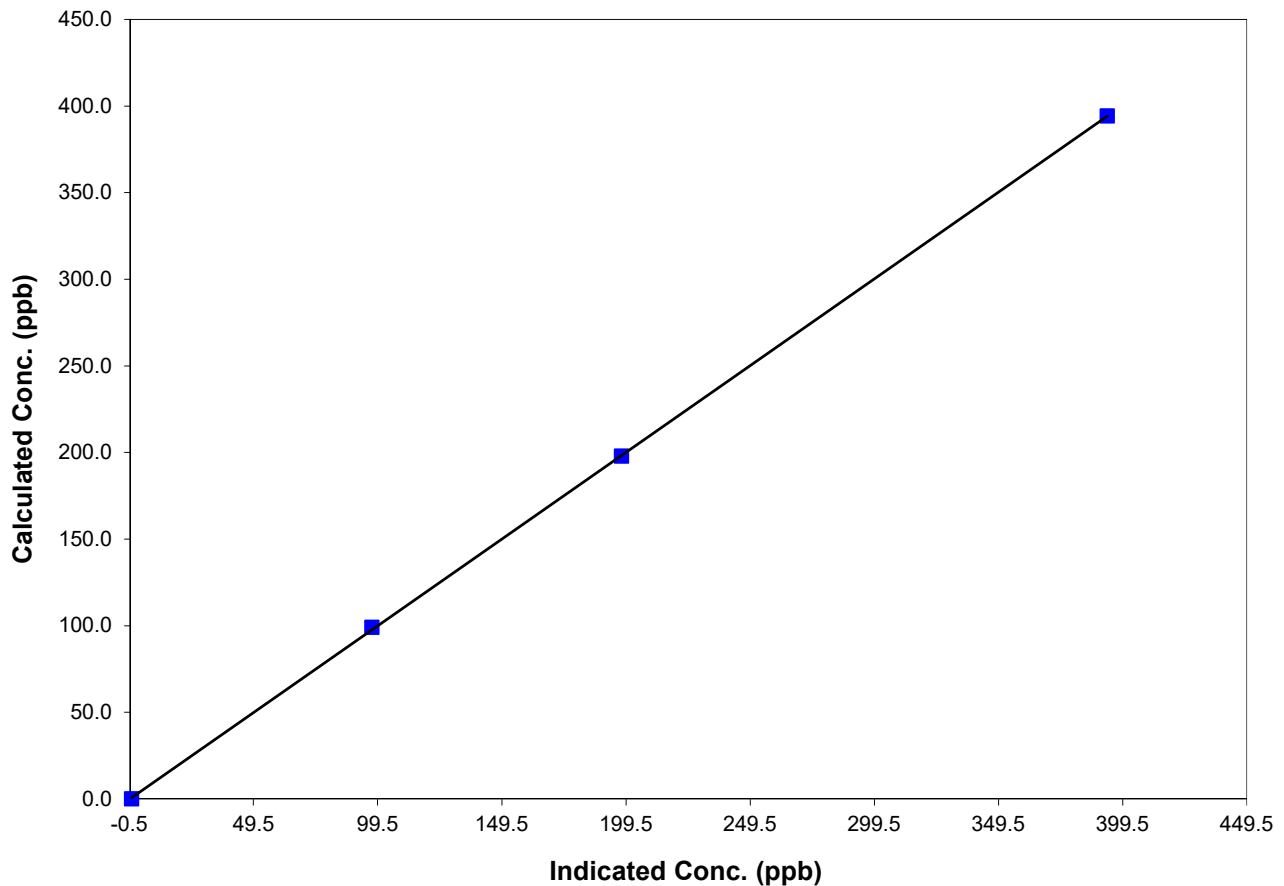
Station Information

Calibration Date	December 22, 2015	Previous Calibration	November 26, 2015
Station Number	1	Station Location	Falher
Start Time (MST)	12:50	End Time (MST)	14:44:00 PM
Analyzer make/model	Teco 43i	Analyzer serial #	1207452008

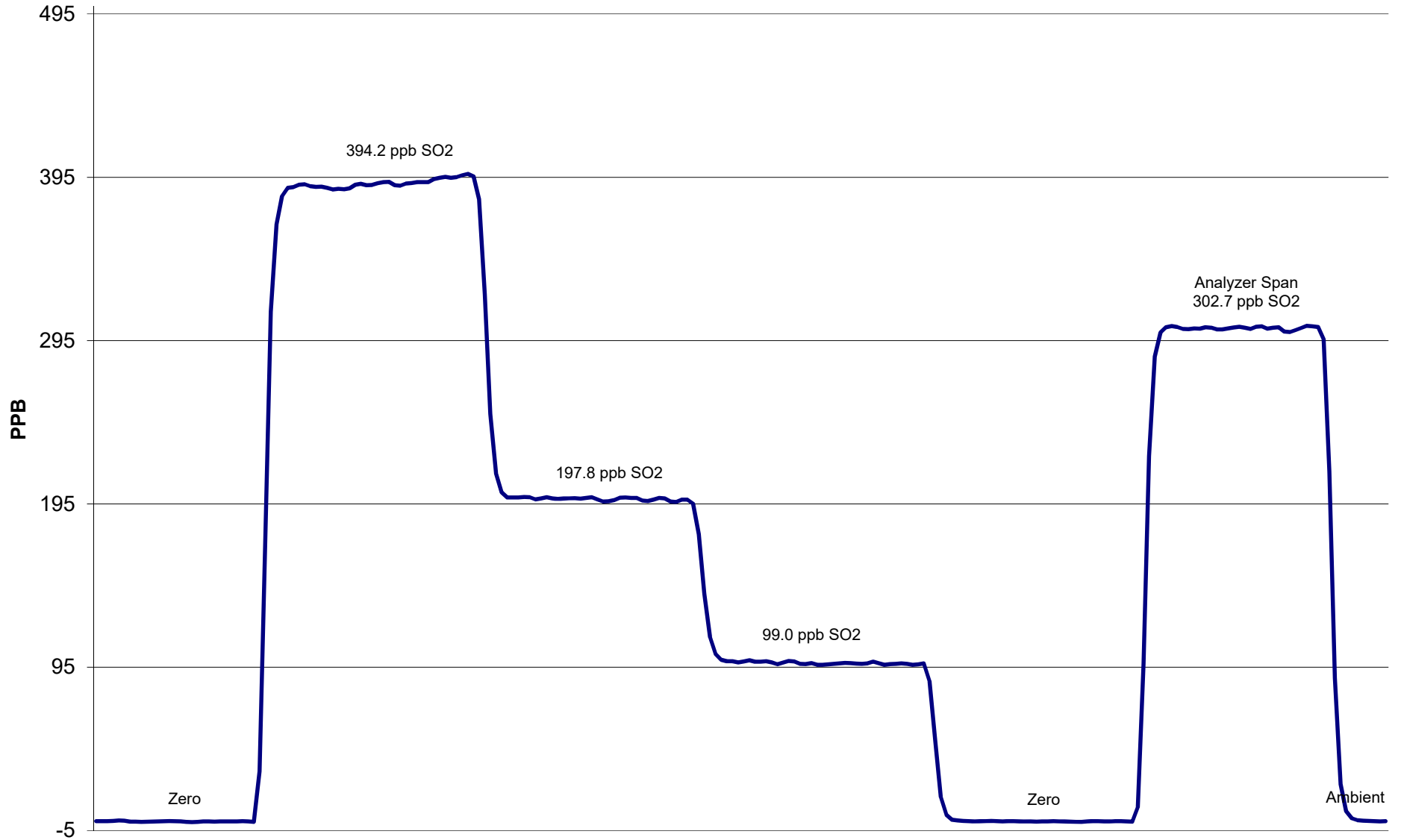
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.5	N/A		
394.2	393.4	1.0020	Correlation Coefficient	0.999971
197.8	197.7	1.0005		
99.0	97.3	1.0176	Slope	1.001629
			Intercept	0.243968

SO2 Calibration Curve



SO2 Calibration



December 22, 2015

Calibration Report



Parameter H2S

Air Monitoring Network PAZA

Station Information

Calibration Date	December 22, 2015	Previous Calibration	November 26, 2015
Station Number	1	Station Location	Falher
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	11:15	End Time (MST)	13:50:00 PM
Barometric Pressure	0.926 mm	Station Temperature	20.5 Deg C
Calibrator	EnviroNics	Serial Number	6586
Cal Gas Conc	10.32 ppm	Cal Gas Expiry Date	08/07/2016
Correction factor	0.031424	Cal Gas Cylinder #	LL110781
DACS make	CR1000	DACS serial No.	3980
DACS voltage range	0 - 5 volt	DACS channel #	5
	<u>Before</u>		<u>After</u>
Calculated slope	0.980439	Calculated slope	0.988526
Calculated intercept	-0.065826	Calculated intercept	0.027251
Analyzer make	Thermo 450i	Analyzer serial #	1207452006

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	15.6	ppb	15.6	ppb
coefficient	1.109		1.109	
Lamp Voltage	805	volts	805	volts
Chamber Temp	44.9	Deg C	45	Deg C
Perm Gas Temp	44.9	Deg C	45	Deg C
Pressure	507.4	mm Hg	504.7	mm Hg
Sample Flow	0.849	lpm	0.846	lpm
Lamp Intensity	90	mv	90	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)
4995	0.00	0.00	0.3	N/A
4995	39.93	81.84	82.9	0.9878
4995	19.96	41.07	41.5	0.9898
6994	9.97	14.69	14.4	1.0200
4995	0.00	0.00	0.3	As Found Zero
4995	39.93	81.84	82.9	As Found Span
Average Correction Factor				0.9992

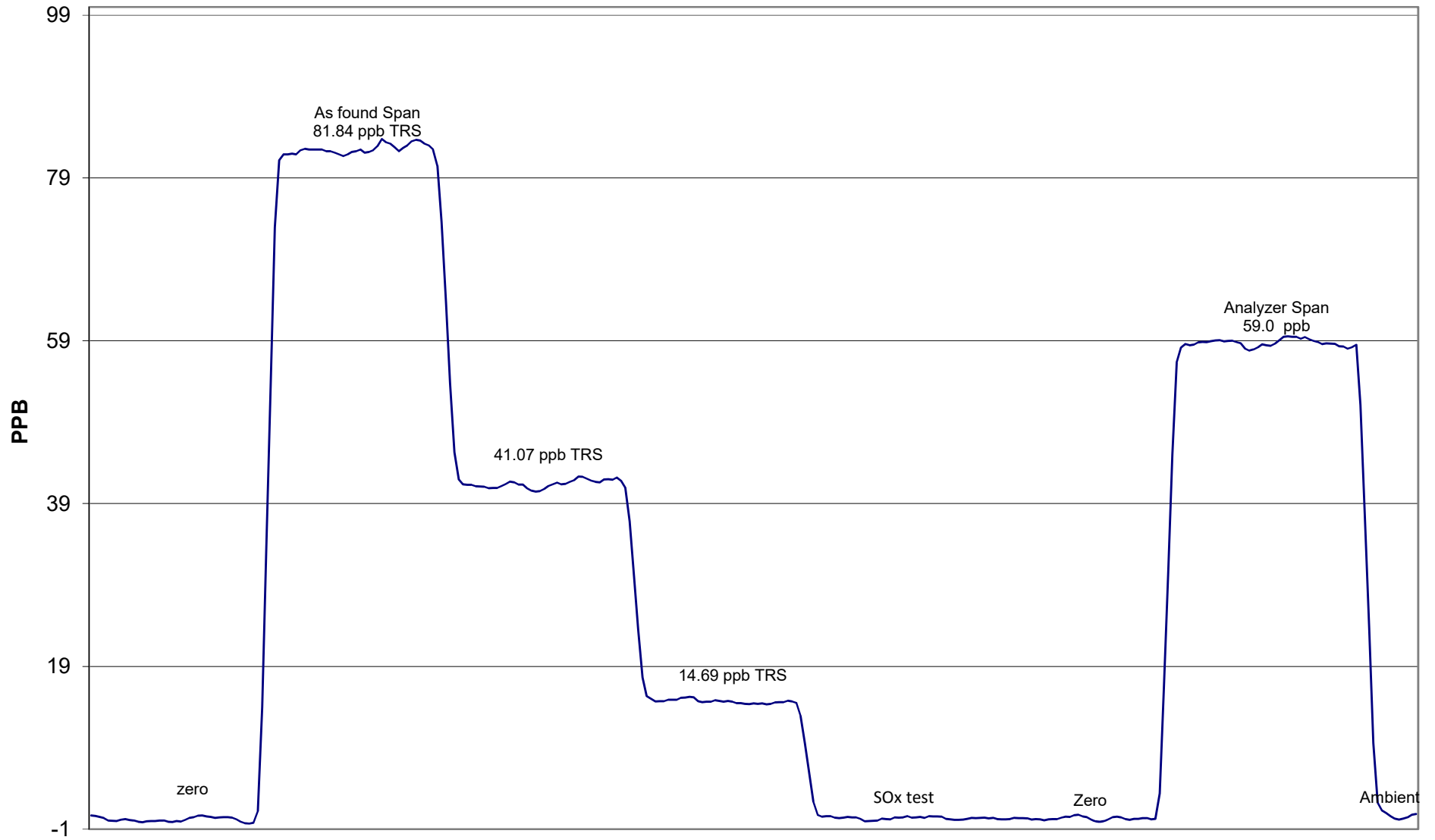
Calculated value of As Found Response: 80.83 ppm Percent Change of As Found: **1.2%**

	before calibration		after calibration	
Auto zero	0.3	ppm	0.3	ppm
Auto span	56.1	ppm	59.0	ppm

Notes: No adjustment made
Sox crubber check performed

Calibration Performed By: Dmytro Dolotii

H2S Calibration



December 22, 2015