



Peace Airshed Zone Association

Ambient Air Monitoring Network Summary

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

November 23rd, 2015

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

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

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

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 November with the exception of the Temperature/RH probe, which was vandalized and returned to service November 19th.

Smoky Heights Station:

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

Beaverlodge Station:

- ◆ The measured ambient air quality was within the AAAQO for the Beaverlodge station with the exception of the PM_{2.5} analyzer, which recorded one (1) 1-hour exceedence of the guideline of 80 µg/m³;
 - o November 27 2000h 97.7 µg/m³ Alberta Environment Reference # 306119
- ◆ All analyzers and sensors at the Beaverlodge station had an operational uptime greater than 90% for the month of November.

Valleyview Station:

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

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 November.

Passive Monitoring - 46 Stations throughout the PAZA zone:

There were five duplicate sites sampled in the month of November: Gordondale, Crooked Creek, Karr Creek, East Prairie and Girouxville 4. 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 0.5 ppb, with a mean of 0.2 ppb.
- Monthly average concentrations for NO₂ passives ranged from 0.3 ppb to 12.0 ppb, with a mean of 2.0 ppb.
- Monthly average concentrations for O₃ passives ranged from 16.8 ppb to 42.3 ppb, with a mean of 28.5 ppb.
- Monthly average concentrations for H₂S passives were 0.3 ppb at all locations.

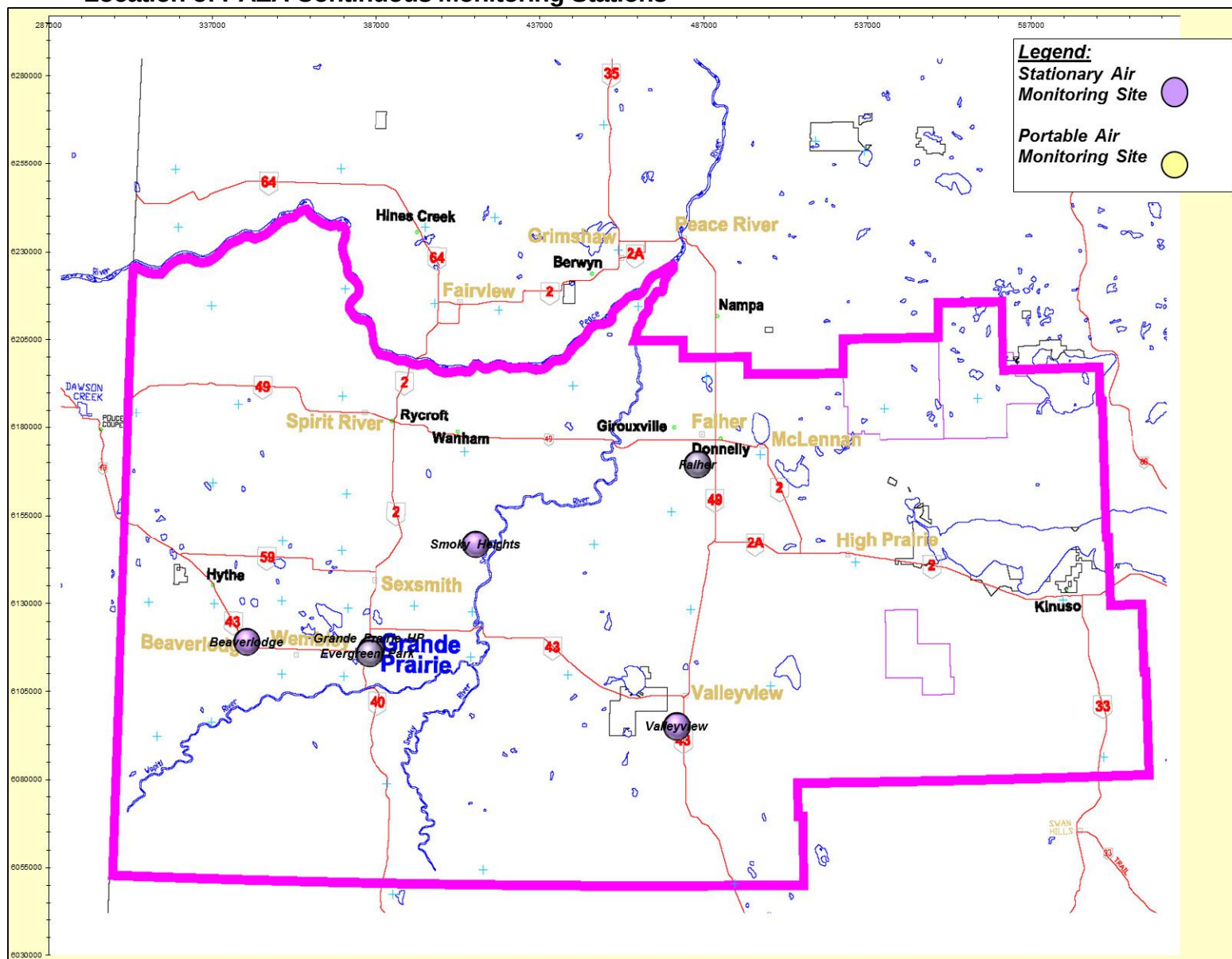
If you have any questions or concerns, please contact Patrick Andersen at 403.505.1041 or the PAZA office at 780.833.4343.

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

Nov-2015 Peace Airshed Zone Association							Maximum Recorded Values				
							1-hr		24-hr / 8-hr		
Pollutant (units)	Objectives		Station	Monthly Average	Exceedence		Conc	Day	Conc	Day	Operational Time (%)
	1-hr	24-hr			1-hr	24-hr					
SO ₂ (ppb)	172	48	Henry Pirker	0.2	0	0	6.8	Nov-26 22:00	0.8	Nov-03	100%
SO ₂ (ppb)	172	48	Evergreen Park	0.2	0	0	2.0	Nov-03 08:00	0.4	Nov-30	100%
SO ₂ (ppb)	172	48	Smoky Heights	0.4	0	0	6.8	Nov-04 20:00	1.0	Nov-27	100%
SO ₂ (ppb)	172	48	Beaverlodge	0.2	0	0	7.0	Nov-08 16:00	1.1	Nov-08	100%
SO ₂ (ppb)	172	48	Valleyview	1.6	0	0	102.7	Nov-21 23:00	21.6	Nov-21	100%
SO ₂ (ppb)	172	48	Falher	0.2	0	0	1.6	Nov-25 01:00	0.6	Nov-28	100%
NO (ppb)			Henry Pirker	12.9	0	0	203.2	Nov-19 10:00	55.0	Nov-30	100%
NO ₂ (ppb)	159	106	Henry Pirker	15.3	0	0	57.1	Nov-19 10:00	32.8	Nov-28	100%
NO _x (ppb)			Henry Pirker	42.0	0	0	385.9	Nov-16 11:00	119.3	Nov-30	100%
NO (ppb)			Beaverlodge	0.5	0	0	8.9	Nov-03 10:00	2.3	Nov-03	100%
NO ₂ (ppb)	159	106	Beaverlodge	3.5	0	0	28.6	Nov-30 19:00	10.0	Nov-30	100%
NO _x (ppb)			Beaverlodge	4.0	0	0	29.6	Nov-30 19:00	10.7	Nov-30	100%
O ₃ (ppb)	82		Henry Pirker	14.6	0	-	39.7	Nov-21 03:00	37.5	Nov-21	100%
O ₃ (ppb) - 8-hr			Henry Pirker		0				38.9	Nov-22	
O ₃ (ppb)	82		Beaverlodge	28.0	0	-	42.5	Nov-27 06:00	40.6	Nov-27	100%
O ₃ (ppb) - 8-hr			Beaverlodge		0				41.8	Nov-27	
CO (ppm)	13		Henry Pirker	0.29	0	-	1.9	Nov-28 23:00	0.7	Nov-28	100%
CO (ppm) - 8-hr	5		Henry Pirker		0				1.1	Nov-28	

PAZA Monthly Continuous Data Summary – continued

Nov-2015Peace Airshed Zone Association							Maximum Recorded Values				
							1-hr		24-hr / 8-hr		
THC (ppm)			Henry Pirker	2.1	-	-	4.8	Nov-25 01:00	2.7	Nov-25	100%
CH ₄ (ppm)			Henry Pirker	2.1	-	-	4.9	Nov-25 01:00	2.8	Nov-25	100%
NMHC (ppm)			Henry Pirker	0.0	-	-	0.0	Nov-03 21:00	0.0	Nov-10	100%
TRS (ppb)			Henry Pirker	0.3	-	-	1.7	Nov-09 18:00	0.7	Nov-28	100%
TRS (ppb)			Evergreen Park	0.4	-	-	8.7	Nov-27 22:00	2.0	Nov-27	100%
TRS (ppb)			Smoky Heights	0.1	-	-	0.7	Nov-23 08:00	0.3	Nov-30	100%
H ₂ S (ppb)	10	3	Valleyview	0.2	0	0	3.9	Nov-05 06:00	0.4	Nov-22	100%
H ₂ S (ppb)	10	3	Falher	0.1	0	0	2.0	Nov-06 06:00	0.3	Nov-06	100%
PM _{2.5} (µg/m3)	80	30	Henry Pirker	7.6	1	0	97.7	Nov-27 20:00	19.5	Nov-27	100%
PM _{2.5} (µg/m3)	80	30	Evergreen Park	4.1	0	0	27.5	Nov-30 16:00	11.1	Nov-30	100%
PM _{2.5} (µg/m3)	80	30	Smoky Heights	5.4	0	0	32.3	Nov-09 02:00	15.8	Nov-05	100%
PM _{2.5} (µg/m3)	80	30	Beaverlodge	4.0	0	0	27.1	Nov-05 12:00	8.6	Nov-03	100%
RH (%)			Henry Pirker	68.2	-	-	88.5	Nov-01 08:00	87.4	Nov-01	100%
RH (%)			Evergreen Park	77.0	-	-	100.0	Nov-01 02:00	99.6	Nov-01	100%
RH (%)			Beaverlodge	68.8	-	-	100.0	Nov-01 01:00	100.0	Nov-01	100%
RH (%)			Valleyview	72.0	-	-	97.4	Nov-03 09:00	93.1	Nov-03	100%
SR (W/m ²)			Henry Pirker	31.0	-	-	291.5	Nov-04 13:00	57.5	Nov-09	100%
Temp (°C)			Henry Pirker	-3.1	-	-	7.2	Nov-04 15:00	2.8	Nov-21	100%
Temp (°C)			Evergreen Park	-4.0	-	-	6.9	Nov-04 16:00	3.3	Nov-21	100%
Temp (°C)			Smoky Heights	-4.2	-	-	6.3	Nov-04 16:00	2.5	Nov-07	100%
Temp (°C)			Beaverlodge	-2.2	-	-	7.6	Nov-28 17:00	2.9	Nov-07	100%
Temp (°C)			Valleyview	-2.7	-	-	7.3	Nov-13 15:00	4.3	Nov-22	100%
Temp (°C)			Falher	-4.4	-	-	6.7	Nov-13 14:00	3.2	Nov-07	100%

PAZA Monthly Continuous Data Summary – continued

Nov-2015 Peace Airshed Zone Association							Maximum Recorded Values				
							1-hr		24-hr / 8-hr		
WSPD s (km/hr)			Henry Pirker	6.6	-	-	39.0	Nov-21 17:00	22.5	Nov-21	100%
WSPD s (km/hr)			Evergreen Park	9.9	-	-	59.0	Nov-21 18:00	38.3	Nov-21	100%
WSPD s (km/hr)			Smoky Heights	13.5	-	-	59.0	Nov-21 15:00	38.2	Nov-21	100%
WSPD s (km/hr)			Beaverlodge	11.2	-	-	57.0	Nov-22 00:00	41.2	Nov-21	100%
WSPD s (km/hr)			Valleyview	4.1	-	-	24.0	Nov-21 17:00	12.0	Nov-22	100%
WSPD s (km/hr)			Falher	13.4	-	-	43.0	Nov-21 15:00	27.8	Nov-21	100%
WSPD v (km/hr)			Henry Pirker	3.7	-	-	39.0	Nov-21 17:00	22.1	Nov-21	100%
WSPD v (km/hr)			Evergreen Park	6.4	-	-	58.0	Nov-21 18:00	37.7	Nov-21	100%
WSPD v (km/hr)			Smoky Heights	9.1	-	-	58.0	Nov-21 15:00	37.9	Nov-21	100%
WSPD v (km/hr)			Beaverlodge	5.6	-	-	57.0	Nov-22 00:00	41.0	Nov-21	100%
WSPD v (km/hr)			Valleyview	1.6	-	-	23.0	Nov-21 17:00	11.6	Nov-22	100%
WSPD v (km/hr)			Falher	5.6	-	-	42.0	Nov-21 15:00	27.0	Nov-21	100%
WDIR			Henry Pirker	SW	-	-	-	-	-	-	100%
WDIR			Evergreen Park	WSW	-	-	-	-	-	-	100%
WDIR			Smoky Heights	SSW	-	-	-	-	-	-	100%
WDIR			Beaverlodge	W	-	-	-	-	-	-	100%
WDIR			Valleyview	WSW	-	-	-	-	-	-	100%
WDIR			Falher	SSE	-	-	-	-	-	-	100%

Continuous Network Equipment Summary

PAZA – Henry Pirker Station

General Station Issues

Routine monthly calibrations were performed on November 3rd (CO, THC), 4th (SO₂, NO_x, O₃) and 10th (TRS).

Parameter	Make	Model	Notes
SO ₂	TEI	43i	No operational issues observed.
NOx/NO/NO ₂	TEI	42i	No operational issues observed.
O ₃	TEI	49i	No operational issues observed.
CO	TEI	48C	No operational issues observed.
THC/CH ₄ /NMHC	TEI	55i	Hydrogen cylinder change November 10 th .
TRS	TEI	45C/43C	No operational issues observed.
PM _{2.5}	Sharp	5030	One 1-hour exceedance recorded. Reference #306119.
RH	Met One	083D	No operational issues observed.
ET	Met One	083D	No operational issues observed.
SR	Met One	096-1	No operational issues observed.
WS / WD	Met One	010C/020C	No operational issues observed.

PAZA – Evergreen Park Station

General Station Issues

Routine monthly calibration performed on November 5th (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		No operational issues observed.

PAZA – Smoky Heights Station

General Station Issues

Routine monthly calibration performed on November 20th (SO₂, TRS).

Parameter	Make	Model	Notes
SO ₂	TEI	43C	Perm tube replaced November 6 th .
TRS	TEI	43C	Monthly calibration acceptable but indicative of developing problems with analyzer. Maintenance and troubleshooting performed November 23 rd . Replacement parts ordered.
PM _{2.5}	Sharp	5030	No operational issues observed.
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 November 12th (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 November 9th (SO₂ & H₂S).

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

PAZA – Falher Station

General Station Issues

Routine monthly calibrations were performed on November 26th (SO₂ & H₂S).

Parameter	Make	Model	Notes
SO ₂	TEI	43i	No operational issues observed.
H ₂ S	Thermo	450i	No operational issues observed.
ET	Gill	RM Young 5103	No operational issues observed.
WS / WD	Gill	RM Young 5103	No operational issues observed.

PAZA – Portable-Clairmont

General Station Issues

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

Parameter	Make	Model	Notes
SO ₂	TEI	43i	Manifold cleaning during November 25 th calibration period.
NO _x	TEI	42i	Manifold cleaning during November 25 th calibration period.
O ₃	TEI	49C	Manifold cleaning during November 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 November 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 - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 6.8 ppb on Nov 26 22:00 Maximum Daily Average: 0.8 ppb on Nov 3																				Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0						
Minimum Value: 0 ppb on Nov 1 02:00 Maximum Diurnal Average: 0.4 ppb at hour 22 Monthly Average: 0.21 ppb Minimum Daily Average: 0.0 ppb on Nov 11 Minimum Diurnal Average: 0.1 ppb at hour 2 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.3 P ₉₀ = 0.5 P ₉₉ = 1.7																										
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-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.0	0.1
2-Nov	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	0.4
3-Nov	0	0	0	1	1	3	2	3	4	3	1	1	0	0	0	0	A	0	0	0	0	0	0	0	0.8	3.8
4-Nov	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	A	0	0	0	0	0	0	0	0	0.0	0.2
5-Nov	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	0.9
6-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.1	0.3
7-Nov	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
8-Nov	0	0	0	0	0	0	0	0	0	0	0	A	1	1	1	1	0	0	0	0	0	0	1	1	0.3	0.8
9-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	1	0	0	0	0	0	0	0.2	0.7
10-Nov	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2
11-Nov	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
12-Nov	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0.1	0.5
13-Nov	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
14-Nov	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
15-Nov	0	0	0	0	A	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0.4	1.1
16-Nov	0	0	0	A	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0.2	0.9
17-Nov	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.1	0.7
18-Nov	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
19-Nov	A	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	A	0.3	1.0
20-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.2	0.5
21-Nov	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
22-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.0	0.2
23-Nov	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	A	0	0	0	0	0.2	1.2
24-Nov	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	0.3
25-Nov	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	0.5
26-Nov	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	A	1	0	0	2	7	1	0	0.6	6.8
27-Nov	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	A	1	1	1	1	1	1	1	1	0.6	1.3
28-Nov	1	1	1	1	1	0	0	0	0	1	0	0	0	0	A	0	0	1	1	1	1	1	1	1	0.6	1.2
29-Nov	0	0	0	0	0	0	0	0	0	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.3	0.6
30-Nov	0	0	0	0	0	0	1	1	1	1	0	1	A	0	0	0	0	1	1	1	0	0	0	0	0.4	0.8
																									Diurnal Average	Diurnal Maximum
																									0.2	1.0

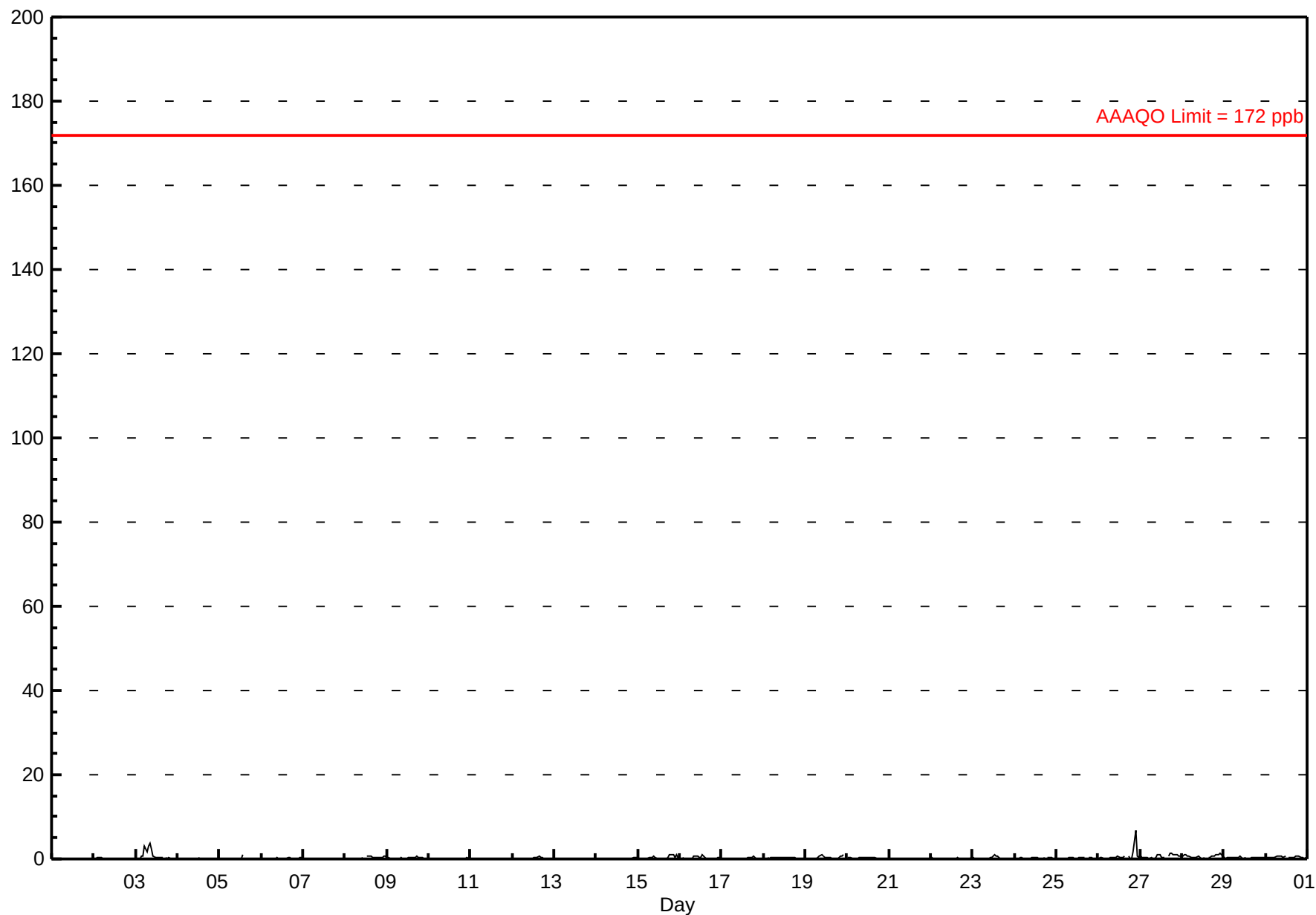
C - CalibrationA - Automated Daily Zero Span

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb 30-day 11 ppb

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
Henry Pirker - November 2015



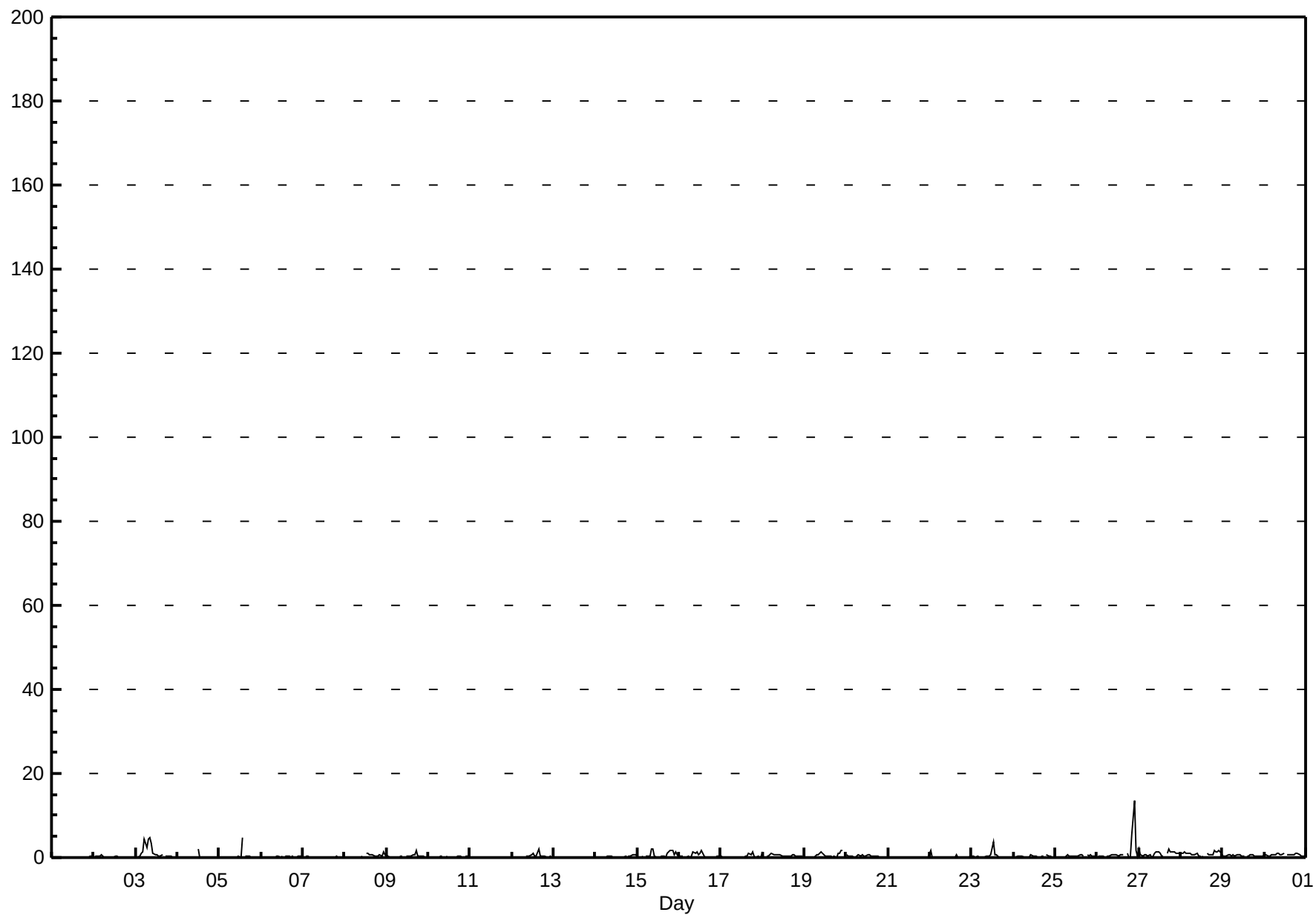
Hourly Maximums

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

Maximum Value: 13.6 ppb on Nov 26 22:00																				Maximum Daily Average: 1.3 ppb on Nov 26					Hours in Service: 720	
Minimum Value: 0 ppb on Nov 6 02:00																				Minimum Daily Average: 0.0 ppb on Nov 11					Hours of Data: 686	
Maximum Diurnal Average: 0.8 ppb at hour 22																				Minimum Diurnal Average: 0.2 ppb at hour 3					Hours of Missing Data: 34	
Monthly Average: 0.40 ppb																				Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.4 P ₉₀ = 0.9 P ₉₉ = 3.5					Hours of Calibration: 34	
																				Percent Operational Time: 100.0						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	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
2-Nov	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.1	0.7
3-Nov	0	0	0	1	1	4	2	4	5	3	1	1	1	0	0	1	A	0	0	0	0	0	0	0	1.2	4.8
4-Nov	0	0	0	0	0	0	0	0	0	C	C	C	2	0	0	A	0	0	0	0	0	0	0	0	0.1	1.9
5-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	5	A	0	0	0	0	0	0	0	0	0	0.3	4.7
6-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.2	0.4
7-Nov	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	0.3
8-Nov	0	0	0	0	0	0	0	0	0	0	0	0	A	1	1	1	1	1	0	0	1	0	1	1	0.4	1.4
9-Nov	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	1	1	2	0	0	0	0	0	0.3	1.8
10-Nov	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
11-Nov	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	0.2
12-Nov	0	0	0	0	0	0	0	A	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0.3	2.2
13-Nov	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
14-Nov	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.2	0.7
15-Nov	0	0	0	0	A	0	0	0	0	2	2	0	0	0	0	0	0	1	1	2	2	1	1	1	0.7	2.2
16-Nov	0	0	0	A	0	0	0	0	1	1	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0.5	1.5
17-Nov	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0.3	1.3
18-Nov	1	A	0	0	1	1	1	1	1	1	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0.5	1.3
19-Nov	A	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	1	1	2	2	A	0.6	1.8
20-Nov	1	0	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	A	0	0.3	0.7
21-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.1	0.2
22-Nov	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	A	0	0	0	0.2	1.5
23-Nov	0	0	0	0	0	0	0	0	0	0	0	1	4	1	1	0	0	0	0	A	0	0	0	0	0.4	3.7
24-Nov	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	A	1	0	0	0	0	0.3	0.7
25-Nov	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	A	1	0	1	0	0	0	0.3	0.6
26-Nov	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	1	A	1	0	0	5	14	2	0	1.3	13.6
27-Nov	2	1	0	1	1	0	1	0	0	1	1	1	1	0	0	A	1	2	1	1	1	1	1	1	0.9	2.1
28-Nov	1	1	1	1	1	1	1	1	1	1	0	0	0	0	A	1	1	1	1	2	1	1	2	1	0.9	1.6
29-Nov	0	0	0	1	1	0	1	0	1	1	1	0	0	A	0	0	1	1	0	0	0	0	0	0	0.5	0.7
30-Nov	1	1	0	0	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0	0	0	0.7	1.2
0.4 0.2 0.2 0.3 0.3 0.4 0.3 0.4 0.6 0.6 0.4 0.4 0.5 0.5 0.3 0.4 0.3 0.4 0.4 0.4 0.5 0.8 0.5 0.3																									Diurnal Average	
1.9 1.1 1.3 1.1 1.4 4.3 2.3 4.3 4.8 3.4 1.5 1.5 3.7 4.7 0.8 2.2 1.0 2.1 1.4 1.6 5.4 13.6 1.8 1.1																									Diurnal Maximum	
C - Calibration																									A - Automated Daily Zero Span	

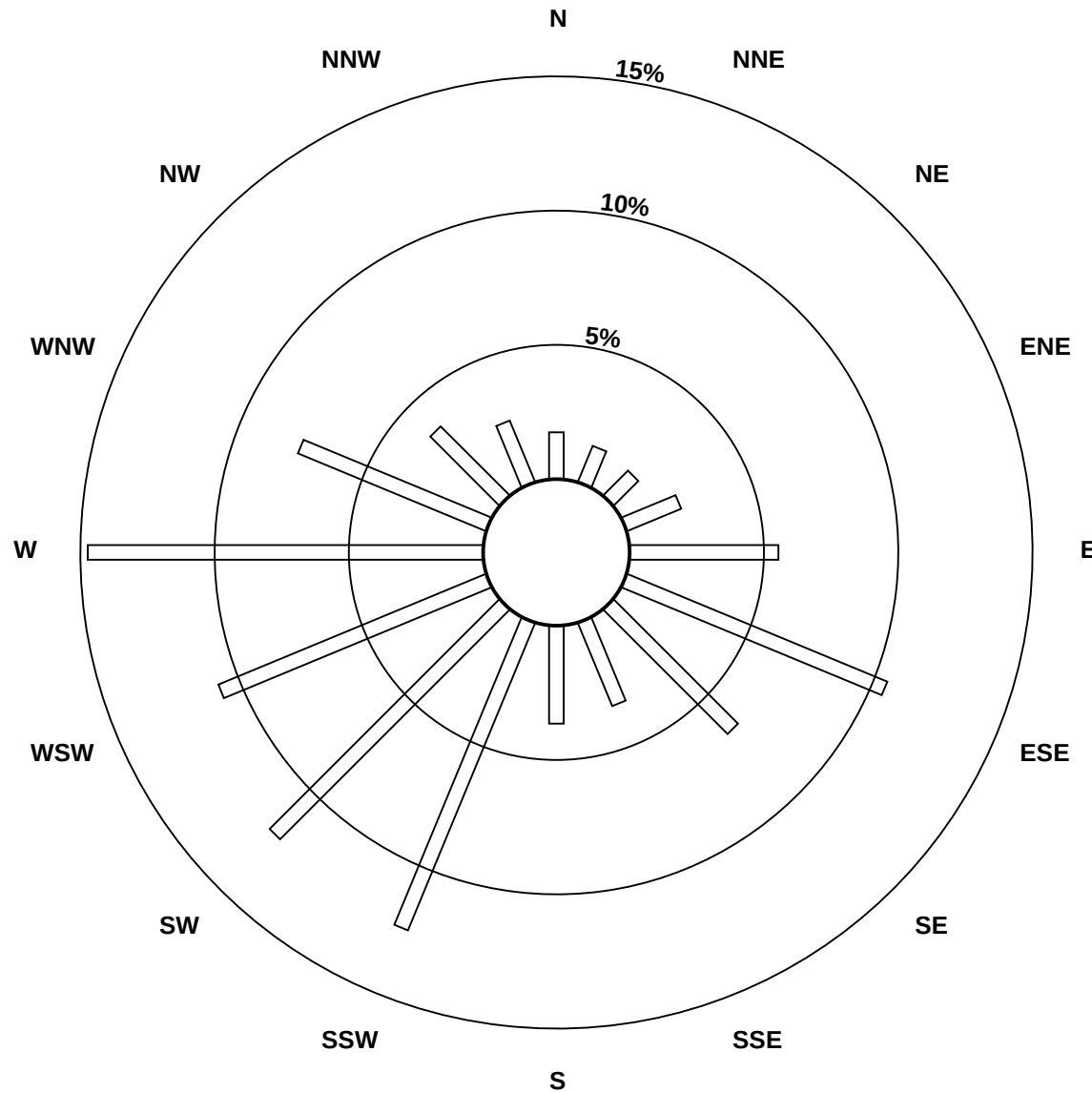
Hourly Maximums

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

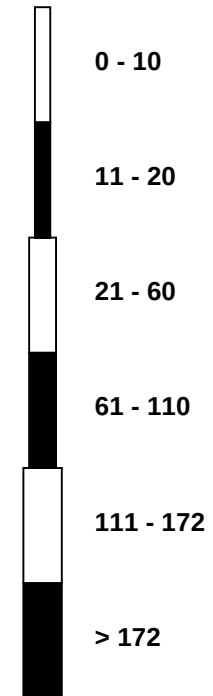


Pollutant Rose

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

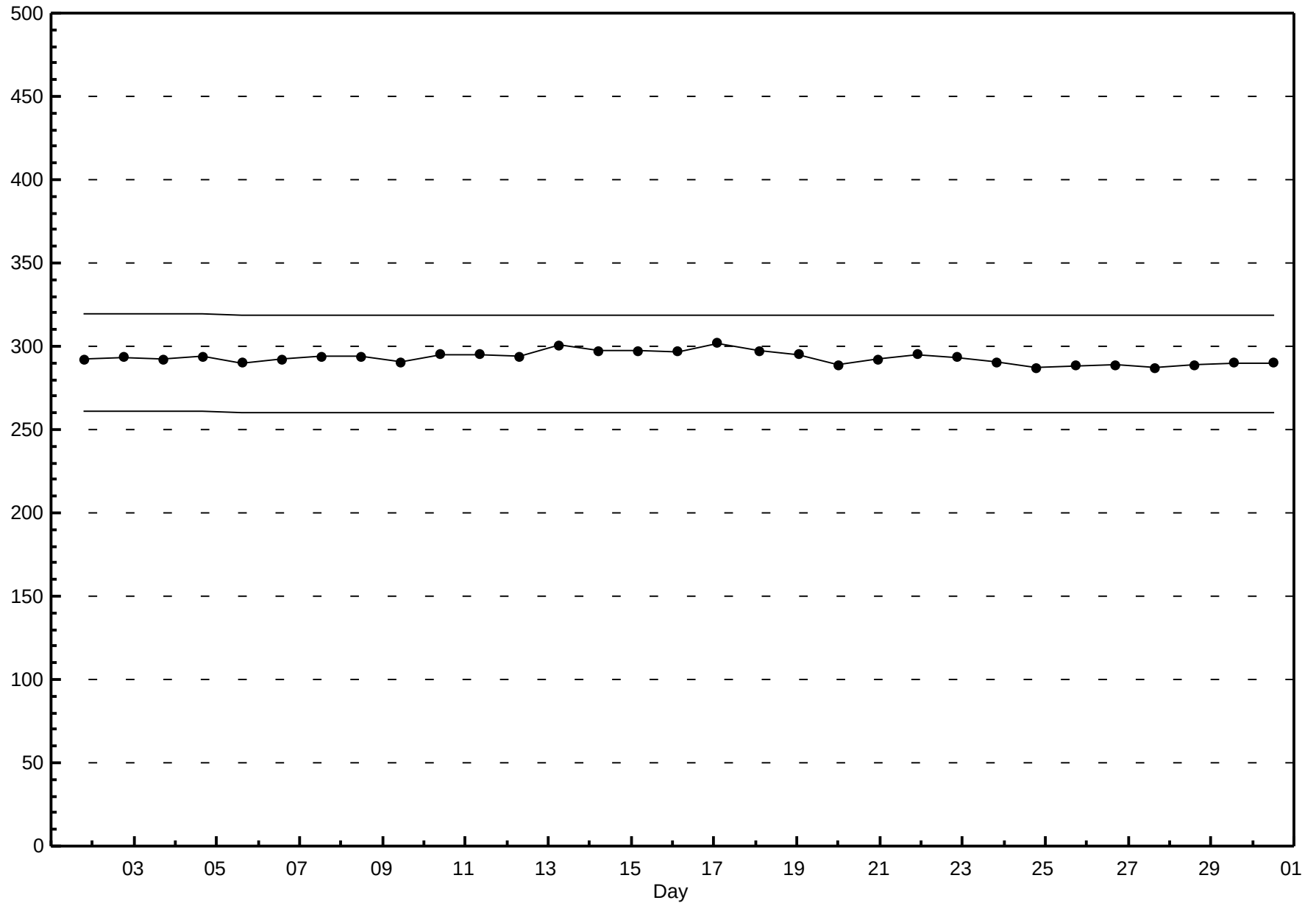


Pollutant Classes (ppb)



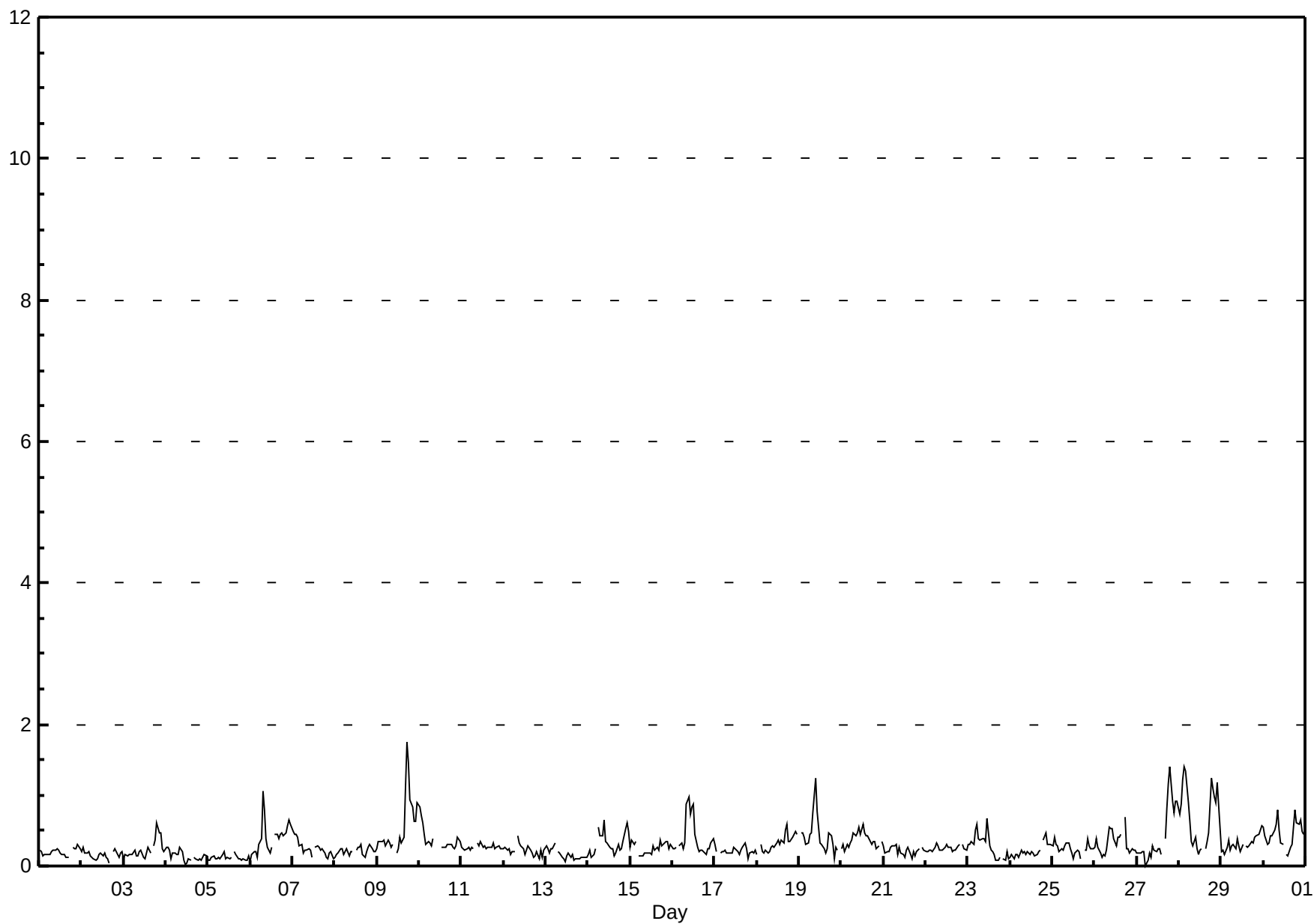
Span Responses

Sulphur Dioxide (SO₂)
Henry Pirker - November 2015



Hourly Averages

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



Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

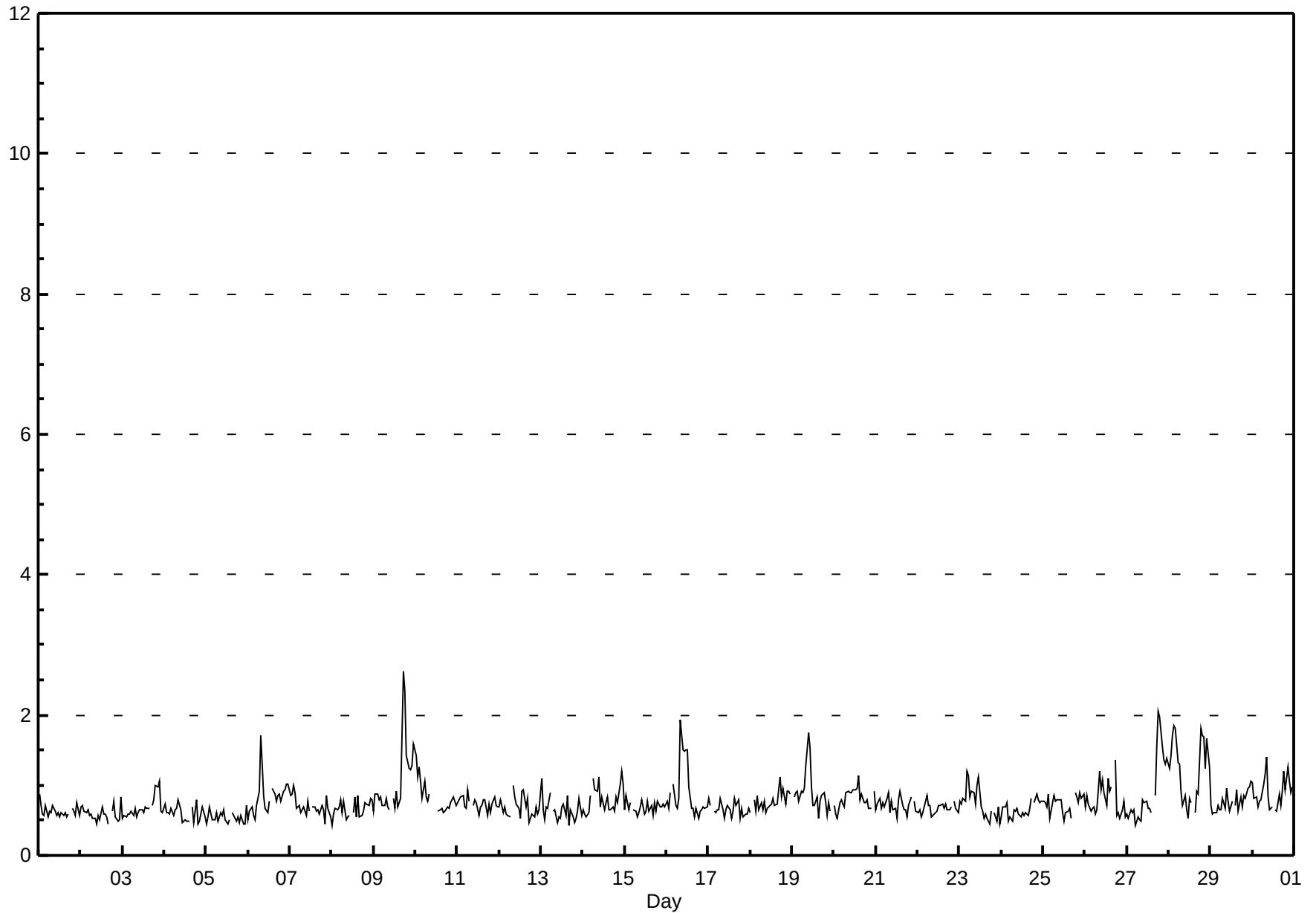
Henry Pirker - November 2015

Maximum Value: 2.6 ppb on Nov 9 18:00																			Maximum Daily Average: 1.2 ppb on Nov 28										Hours in Service: 720	
Minimum Value: 0 ppb on Nov 13 17:00																			Minimum Daily Average: 0.5 ppb on Nov 5										Hours of Data: 686	
Maximum Diurnal Average: 0.8 ppb at hour 19																			Minimum Diurnal Average: 0.7 ppb at hour 13										Hours of Missing Data: 34	
Monthly Average: 0.76 ppb																			Percentiles: P ₁ = 0.4 P ₁₀ = 0.5 Q ₁ = 0.6 Median = 0.7 Q ₃ = 0.8 P ₉₀ = 1.0 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-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0.6	0.9				
2-Nov	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	A	1	1	1	0	1	1	0.6	0.8				
3-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.7	1.1				
4-Nov	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	A	1	0	1	0	0	1	1	1	0.6	0.8				
5-Nov	0	1	1	1	1	1	1	0	1	1	1	1	0	1	A	1	1	0	1	0	1	0	0	1	0.5	0.7				
6-Nov	1	1	1	1	1	1	1	2	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.8	1.7				
7-Nov	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0	1	1	1	0.7	1.0				
8-Nov	0	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9				
9-Nov	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	2	3	2	1	1	1	1	2	1.1	2.6				
10-Nov	1	1	1	1	1	1	1	1	1	A	C	C	C	1	1	1	1	1	1	1	1	1	1	1	0.8	1.4				
11-Nov	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9				
12-Nov	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0.7	1.0				
13-Nov	1	1	0	1	1	1	A	1	1	0	1	1	1	1	1	1	0	1	1	0	1	1	1	1	0.6	1.1				
14-Nov	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	1.2				
15-Nov	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9				
16-Nov	1	1	1	A	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.9				
17-Nov	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	0.8				
18-Nov	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1				
19-Nov	A	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	A	0.9	1.8				
20-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0.8	1.1				
21-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.7	0.9				
22-Nov	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				
23-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	A	1	0	1	0	1	0.7	1.2				
24-Nov	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0.7	0.9				
25-Nov	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	A	1	1	1	1	1	1	0.7	0.9				
26-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.8	1.4				
27-Nov	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	A	1	2	2	2	2	1	1	1	0.9	2.1				
28-Nov	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	2	1	1.2	1.8			
29-Nov	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	1.1				
30-Nov	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.9	1.4				
																								Diurnal Average						
																								Diurnal Maximum						
C - Calibration																								A - Automated Daily Zero Span						

Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

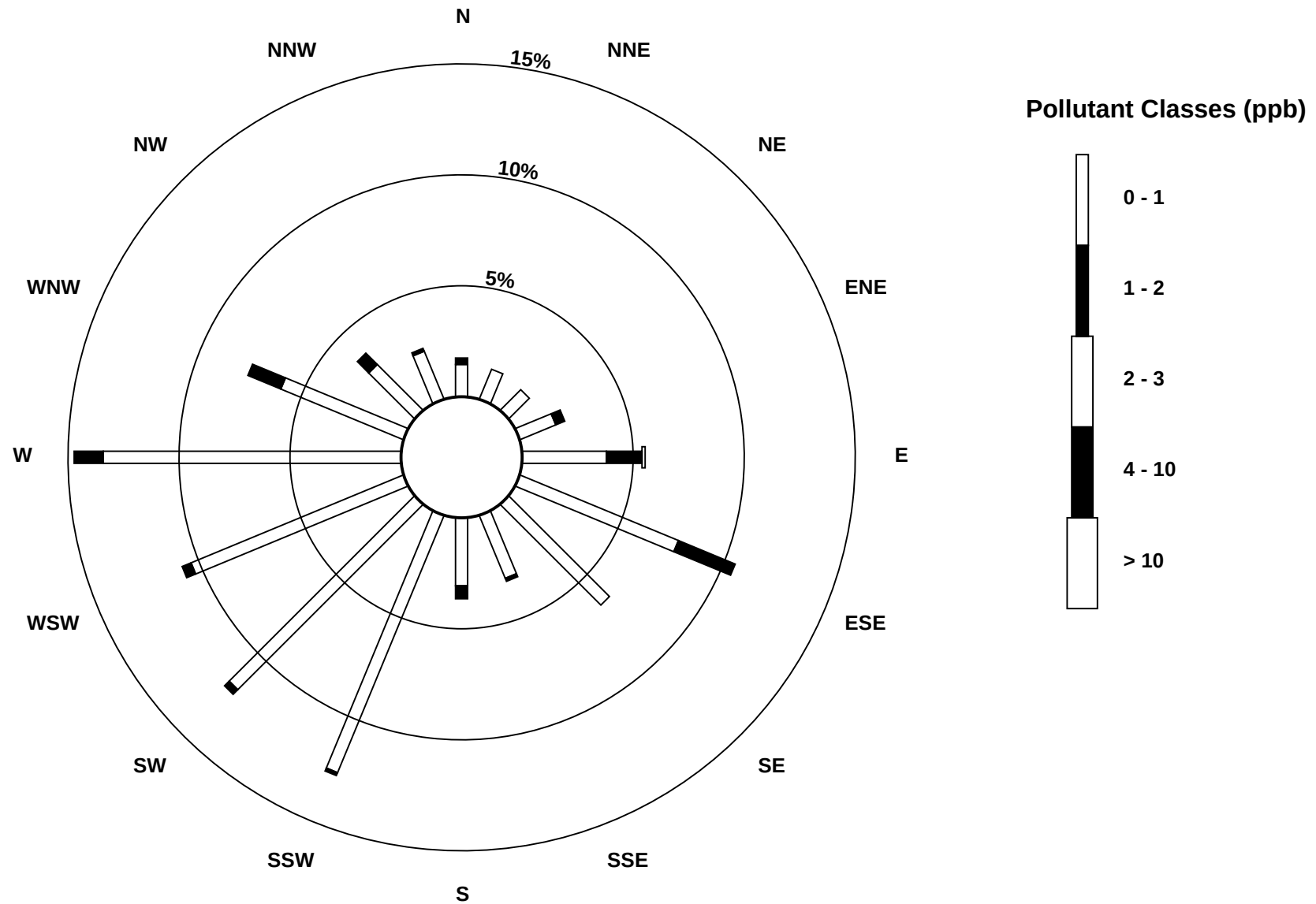
Henry Pirker - November 2015



Pollutant Rose

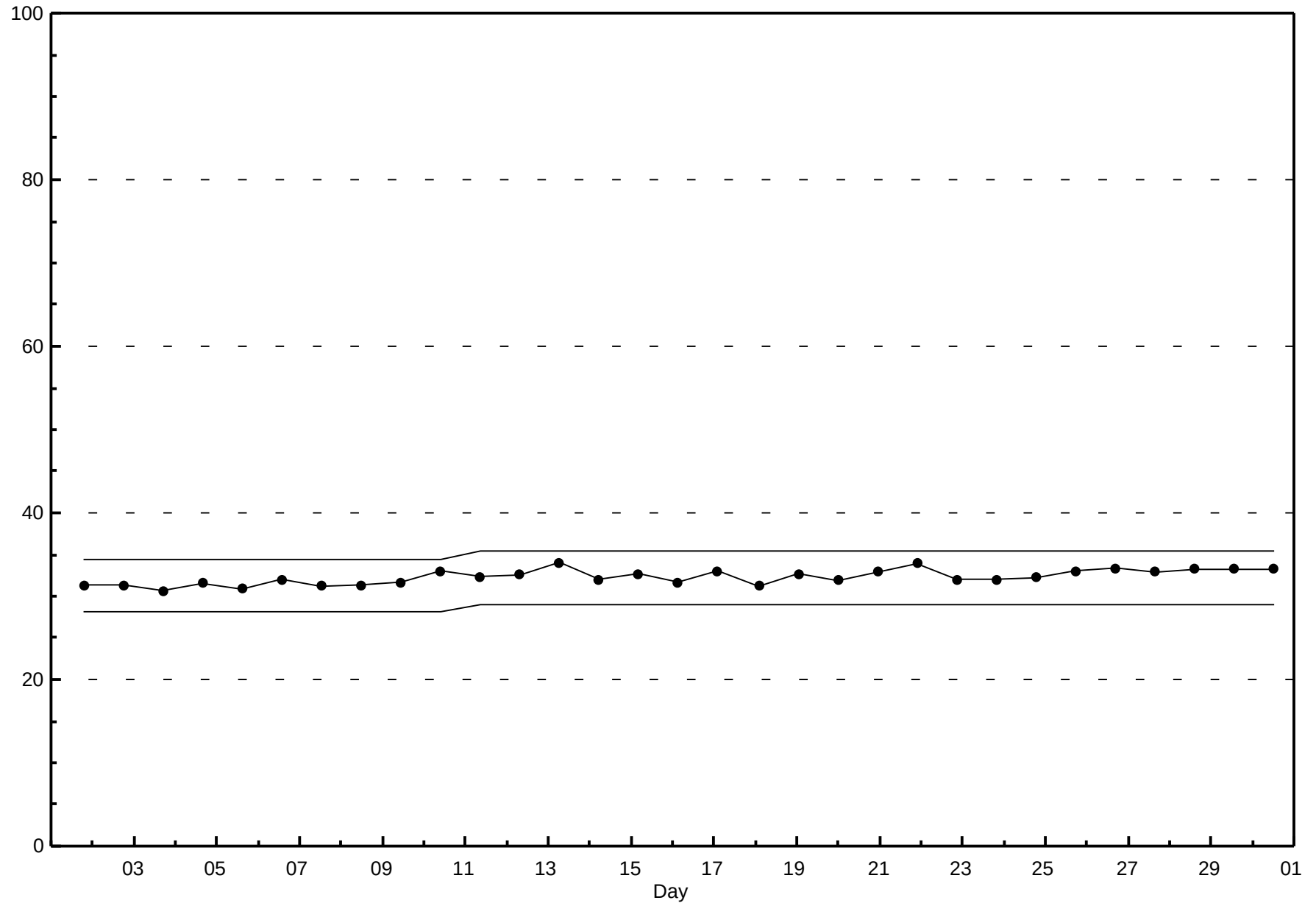
Total Reduced Sulphur (TRS) - ppb

Henry Pirker - November 2015



Span Responses

Total Reduced Sulphur (TRS)
Henry Pirker - November 2015



Hourly Averages

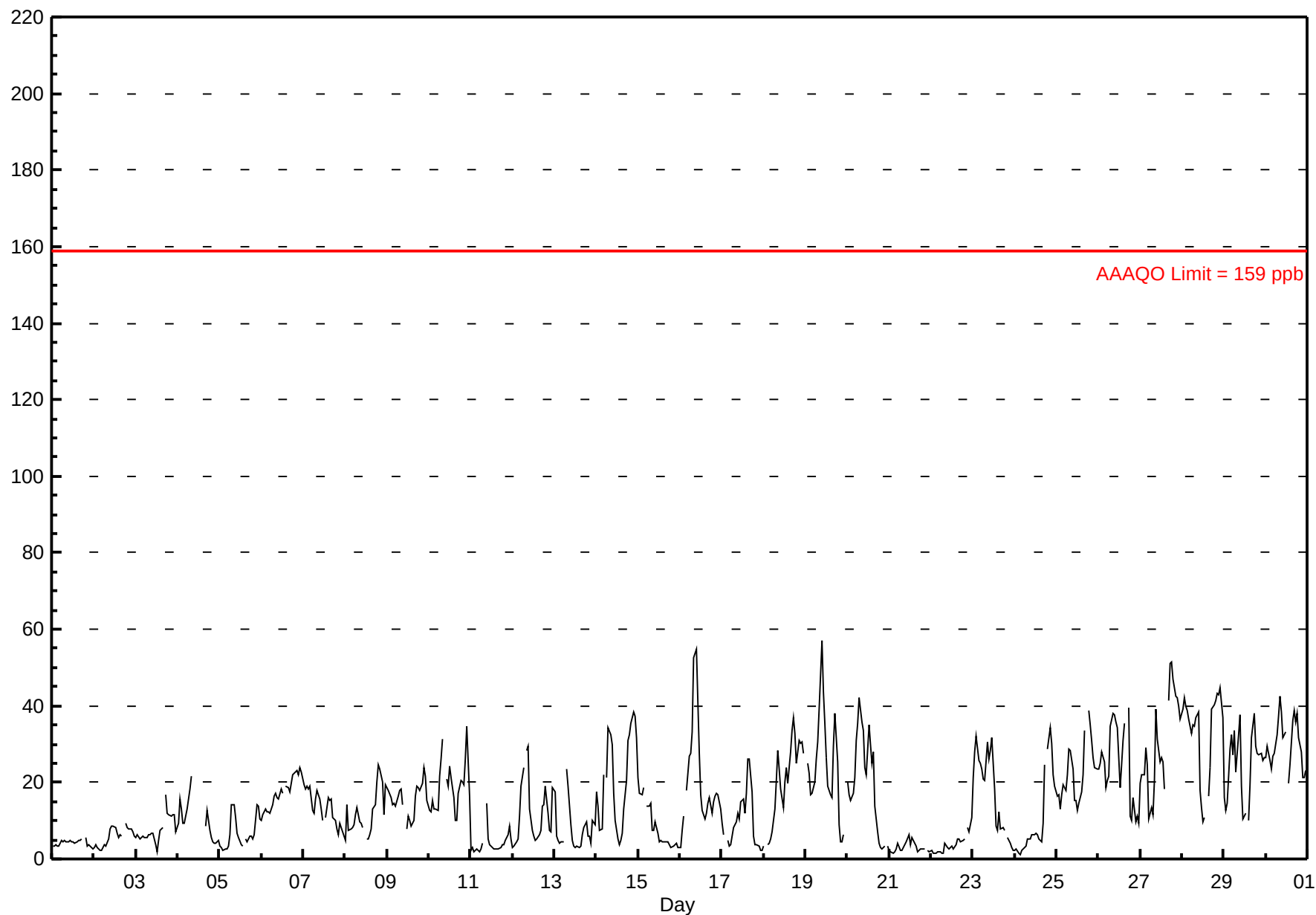
Nitrogen Dioxide (NO₂) - ppb

Henry Pirker - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 57.1 ppb on Nov 19 10:00 Maximum Daily Average: 32.8 ppb on Nov 28																								Hours in Service: 720 Hours of Data: 684 Hours of Missing Data: 36 Hours of Calibration: 36 Percent Operational Time: 100.0		
Minimum Value: 1 ppb on Nov 24 04:00 Minimum Daily Average: 3.1 ppb on Nov 21 Maximum Diurnal Average: 22.1 ppb at hour 9 Minimum Diurnal Average: 11.2 ppb at hour 14 Monthly Average: 15.29 ppb Percentiles: P ₁ = 1.5 P ₁₀ = 3.1 Q ₁ = 5.2 Median = 12.8 Q ₃ = 22.3 P ₉₀ = 33.2 P ₉₉ = 44.0																										
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-Nov	4	3	4	3	3	5	5	5	5	5	5	5	4	4	5	5	5	5	A	5	3	4	3	3	4.2	5.4
2-Nov	3	4	3	2	2	3	4	3	5	8	9	9	8	7	6	6	6	A	9	8	8	8	7	6	5.8	9.2
3-Nov	6	6	5	6	6	6	6	6	6	7	7	4	2	5	7	8	A	17	12	11	11	12	12	7	7.6	16.6
4-Nov	9	16	13	9	9	13	16	18	22	C	C	C	C	C	4	A	9	13	7	5	4	4	4	5	10.1	21.7
5-Nov	3	3	2	3	3	3	6	14	14	11	7	6	4	3	A	5	4	6	6	5	6	14	14	10	6.7	14.3
6-Nov	10	12	13	12	12	12	14	16	17	16	16	18	17	A	19	18	17	20	22	22	23	22	24	23	17.2	23.7
7-Nov	20	18	19	18	19	13	12	16	18	16	13	10	A	11	16	15	16	11	10	8	6	9	8	6	13.4	19.6
8-Nov	5	14	7	8	8	9	11	13	10	9	8	A	5	5	6	8	13	14	20	25	23	20	11	19	11.9	24.7
9-Nov	19	18	16	14	15	14	16	18	18	14	A	8	11	10	9	10	16	19	19	18	20	24	22	15	15.7	23.7
10-Nov	13	12	15	13	13	13	22	26	31	A	21	19	24	21	16	10	10	17	20	20	19	26	35	17	18.9	34.8
11-Nov	2	3	2	3	2	2	3	4	A	15	5	4	3	2	3	3	3	3	4	4	5	6	8	5	4.0	14.6
12-Nov	3	3	5	5	11	19	24	A	28	29	13	7	6	5	5	6	8	14	14	19	12	8	7	19	11.8	29.3
13-Nov	18	6	5	4	5	4	A	24	19	9	5	3	3	4	3	3	6	8	10	6	6	4	10	9	7.5	23.5
14-Nov	18	14	7	8	22	A	21	34	32	30	17	10	5	4	5	7	13	20	31	32	35	39	37	32	20.6	38.5
15-Nov	21	17	17	19	A	14	14	15	8	7	10	7	5	5	5	4	4	5	4	3	4	4	4	3	8.5	21.3
16-Nov	3	7	11	A	18	27	28	33	52	55	41	28	17	13	11	12	14	16	12	15	16	17	17	13	20.7	54.8
17-Nov	9	6	A	5	4	4	6	8	10	12	10	15	16	12	17	26	26	18	6	4	4	3	2	2	9.8	26.2
18-Nov	4	A	4	4	5	7	13	21	29	23	18	13	20	24	20	28	34	37	33	25	31	30	30	28	20.8	36.8
19-Nov	A	25	22	17	17	20	26	30	39	57	44	35	27	19	17	16	29	38	25	9	5	4	7	A	24.0	57.1
20-Nov	20	17	15	17	21	31	35	42	36	34	24	22	35	30	25	28	14	7	4	3	3	3	A	3	20.4	42.0
21-Nov	2	2	1	2	2	4	2	2	3	4	5	6	4	6	5	3	2	2	2	3	3	A	2	2	3.1	6.2
22-Nov	2	2	1	2	2	2	1	1	4	3	3	3	3	3	4	5	5	4	5	5	A	8	7	11	3.8	10.9
23-Nov	21	28	32	26	25	24	21	21	31	26	28	32	18	9	7	12	8	8	8	A	6	4	3	2	17.3	32.1
24-Nov	2	3	2	1	2	3	4	5	5	5	6	6	7	6	5	4	9	25	A	29	34	30	22	19	10.2	34.2
25-Nov	16	17	13	17	19	18	22	29	28	23	15	15	13	14	18	22	33	A	39	35	31	26	24	23	22.3	38.8
26-Nov	24	25	28	25	19	20	22	35	38	38	36	34	19	25	31	35	A	40	11	10	16	10	11	9	24.4	39.6
27-Nov	20	22	22	29	25	11	13	12	21	39	31	25	26	26	18	A	41	51	52	47	43	42	40	36	30.1	51.5
28-Nov	39	42	40	39	36	33	35	35	37	38	18	13	10	11	A	17	24	39	40	41	43	43	45	37	32.8	44.7
29-Nov	16	13	14	29	33	27	33	23	32	38	19	10	12	A	10	19	32	38	29	28	27	28	26	26	24.5	38.1
30-Nov	26	29	26	23	27	28	32	37	42	38	32	33	A	20	25	36	39	36	38	32	28	21	21	23	30.1	42.4
																								Diurnal Average		
																								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
Henry Pirker - November 2015



Hourly Maximums

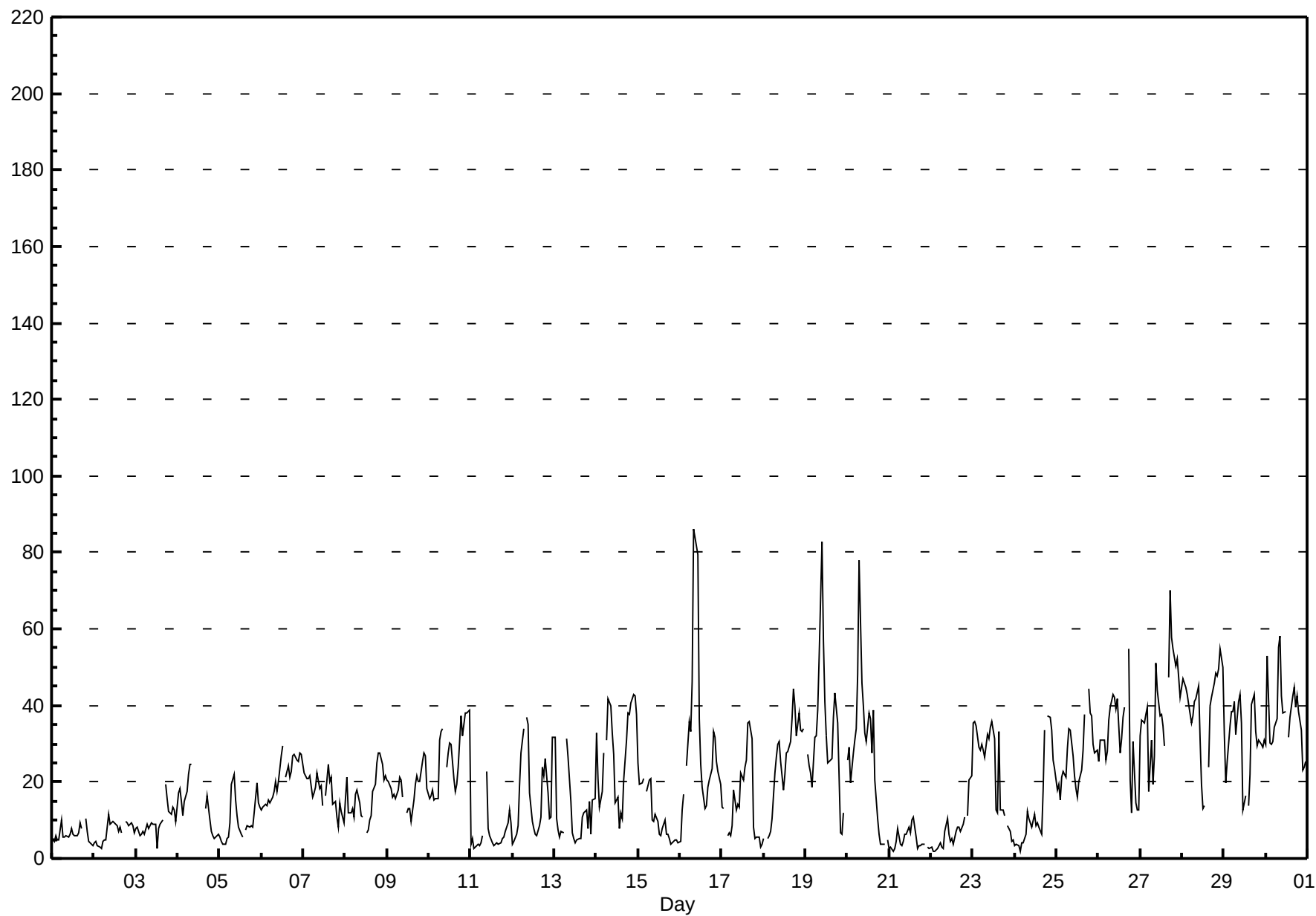
Nitrogen Dioxide (NO₂) - ppb

Henry Pirker - November 2015

Maximum Value: 86.0 ppb on Nov 16 09:00																				Maximum Daily Average: 40.5 ppb on Nov 27					Hours in Service: 720	
Minimum Value: 2 ppb on Nov 22 03:00																				Minimum Daily Average: 4.8 ppb on Nov 21					Hours of Data: 684	
Maximum Diurnal Average: 28.3 ppb at hour 9																				Minimum Diurnal Average: 15.6 ppb at hour 14					Hours of Missing Data: 36	
Monthly Average: 20.17 ppb																				Percentiles: P ₁ = 2.6 P ₁₀ = 4.6 Q ₁ = 8.0 Median = 17.5 Q ₃ = 30.5 P ₉₀ = 38.8 P ₉₉ = 53.9					Hours of Calibration: 36	
																									Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	5	5	6	5	5	10	6	6	6	6	7	8	6	6	6	7	9	8	A	11	7	4	4	3	6.3	10.5
2-Nov	4	4	3	3	3	4	5	5	11	9	9	10	9	9	7	8	7	A	10	9	9	9	9	7	7.1	11.4
3-Nov	8	8	6	6	7	6	9	8	8	9	9	9	3	8	9	10	A	19	16	12	12	13	13	10	9.5	19.4
4-Nov	17	18	15	11	15	17	22	25	25	C	C	C	C	C	6	A	13	17	10	7	6	5	6	6	13.4	24.7
5-Nov	6	4	4	4	5	6	9	19	22	15	11	8	6	5	A	7	9	8	9	8	12	20	15	13	9.8	21.9
6-Nov	13	13	14	14	15	15	16	18	20	17	20	27	29	A	21	24	21	23	27	27	26	26	28	27	20.9	29.4
7-Nov	22	22	21	21	21	16	17	19	22	18	19	14	A	16	25	20	21	14	15	11	8	15	12	9	17.4	24.6
8-Nov	16	21	12	12	13	11	17	18	14	11	11	A	7	7	10	11	18	19	25	28	27	24	21	22	16.3	27.5
9-Nov	21	20	18	16	17	16	18	21	21	16	A	12	13	13	10	15	19	22	20	20	25	27	27	18	18.5	27.5
10-Nov	16	16	18	15	16	16	31	33	34	A	24	27	30	30	21	17	19	24	37	32	35	38	38	39	26.4	38.9
11-Nov	4	5	3	3	4	3	4	6	A	23	8	6	4	3	4	4	4	4	5	6	7	9	13	9	6.1	22.8
12-Nov	4	5	6	9	19	28	34	A	37	35	17	10	8	6	6	8	11	24	22	26	17	10	11	32	16.7	36.8
13-Nov	32	10	8	6	7	7	A	31	26	15	7	5	4	5	5	5	11	12	13	8	15	6	15	16	11.7	31.8
14-Nov	33	21	13	17	28	A	31	42	40	33	27	15	16	8	12	11	20	31	38	38	40	43	43	38	27.7	42.9
15-Nov	25	19	20	21	A	18	20	21	10	10	11	10	6	6	8	10	6	6	5	4	5	5	5	4	11.1	24.9
16-Nov	4	13	17	A	24	36	33	46	86	82	79	37	24	18	13	14	19	20	24	33	32	25	23	19	31.4	86.0
17-Nov	13	13	A	6	7	6	9	18	13	14	13	22	21	24	26	36	36	31	8	5	6	6	3	4	14.7	35.9
18-Nov	5	A	5	6	7	11	22	26	30	31	25	18	22	28	28	31	37	44	40	32	38	33	33	34	25.5	44.4
19-Nov	A	27	24	22	19	32	32	39	53	83	57	41	32	25	26	26	37	43	36	21	7	6	12	A	31.8	82.8
20-Nov	26	29	20	27	31	34	48	78	46	40	33	31	38	37	28	39	20	11	6	4	4	4	A	5	27.7	77.8
21-Nov	3	3	2	3	4	8	4	3	4	6	6	8	7	10	11	6	3	3	3	4	4	A	3	3	4.8	10.8
22-Nov	3	2	2	2	2	4	3	3	7	10	6	5	5	4	7	8	8	7	9	11	A	11	21	21	7.0	21.4
23-Nov	35	36	35	29	28	30	28	26	33	31	34	36	31	13	12	33	13	13	11	A	9	7	5	5	23.1	35.8
24-Nov	3	4	3	2	4	4	6	12	10	9	8	12	9	9	8	6	18	33	A	37	37	34	26	23	13.9	37.2
25-Nov	18	19	15	21	23	21	29	34	33	27	22	18	16	20	23	29	38	A	45	38	37	30	27	28	26.6	44.5
26-Nov	25	31	31	31	26	28	36	40	43	42	39	42	28	31	37	40	A	55	20	12	30	15	13	13	30.7	54.9
27-Nov	32	36	36	38	39	18	31	19	27	51	44	37	37	34	29	A	47	70	58	55	50	52	47	42	40.5	70.1
28-Nov	47	46	45	43	40	35	37	41	42	45	31	19	13	14	A	24	40	42	46	48	48	50	55	50	39.2	54.6
29-Nov	32	20	25	35	38	38	41	32	41	43	35	13	16	A	14	22	40	43	33	30	31	30	29	31	31.0	43.1
30-Nov	30	53	30	30	30	34	36	55	58	43	38	38	A	32	37	42	45	40	42	38	34	23	24	25	37.3	58.0
17.3 18.1 15.8 15.8 17.2 17.6 21.9 25.7 28.3 27.7 23.3 19.1 16.4 15.6 16.0 18.4 21.0 24.6 22.6 21.2 21.3 20.1 19.9 19.2																									Diurnal Average	
47.1 53.0 44.8 43.1 40.3 38.5 48.3 77.8 86.0 82.8 79.2 41.8 38.0 36.6 36.9 42.4 47.5 70.1 57.8 54.9 50.3 52.3 54.6 49.8																									Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span																										

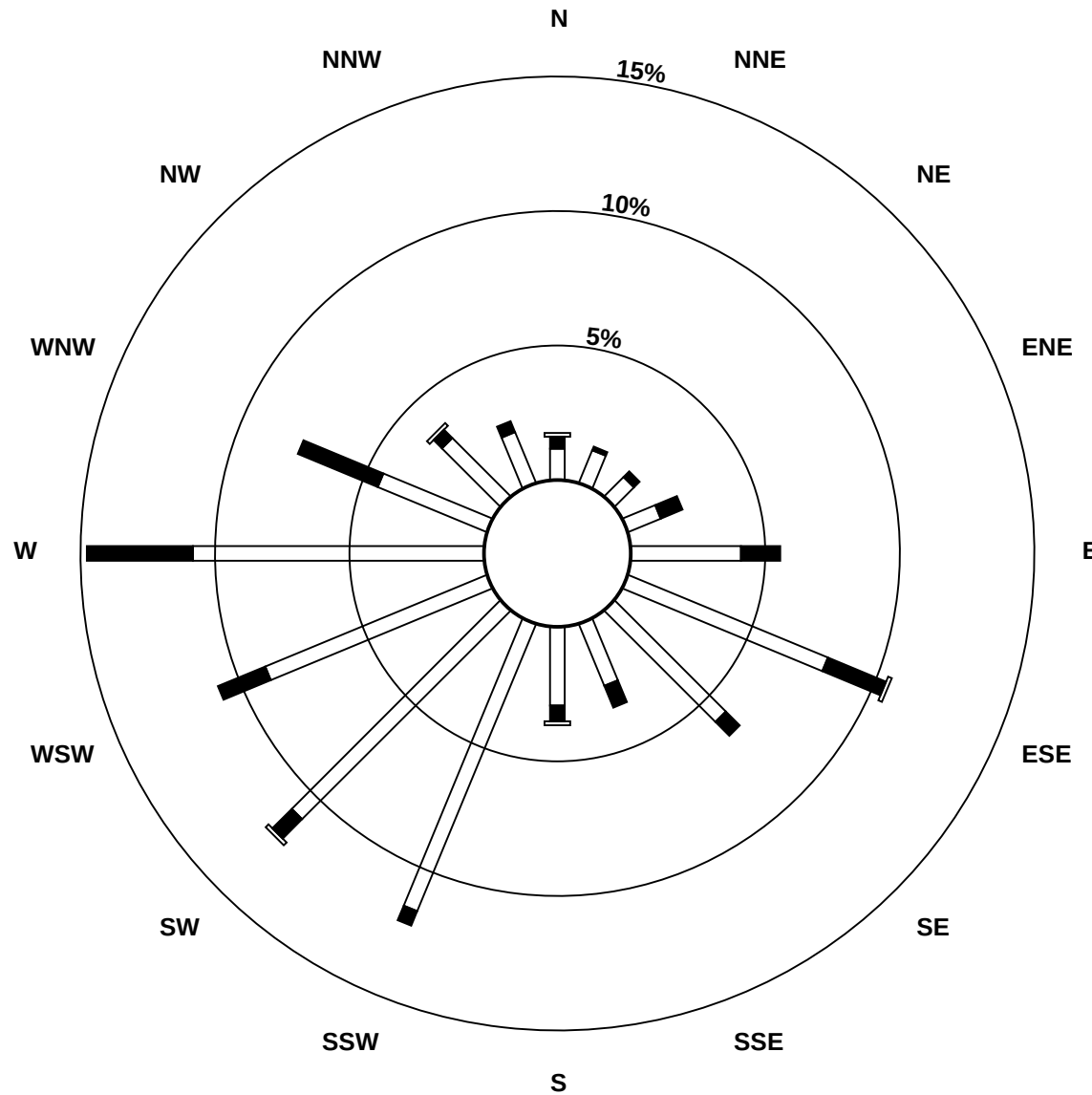
Hourly Maximums

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

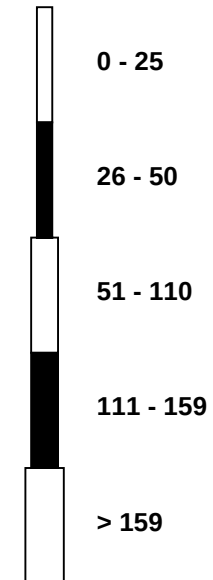


Pollutant Rose

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

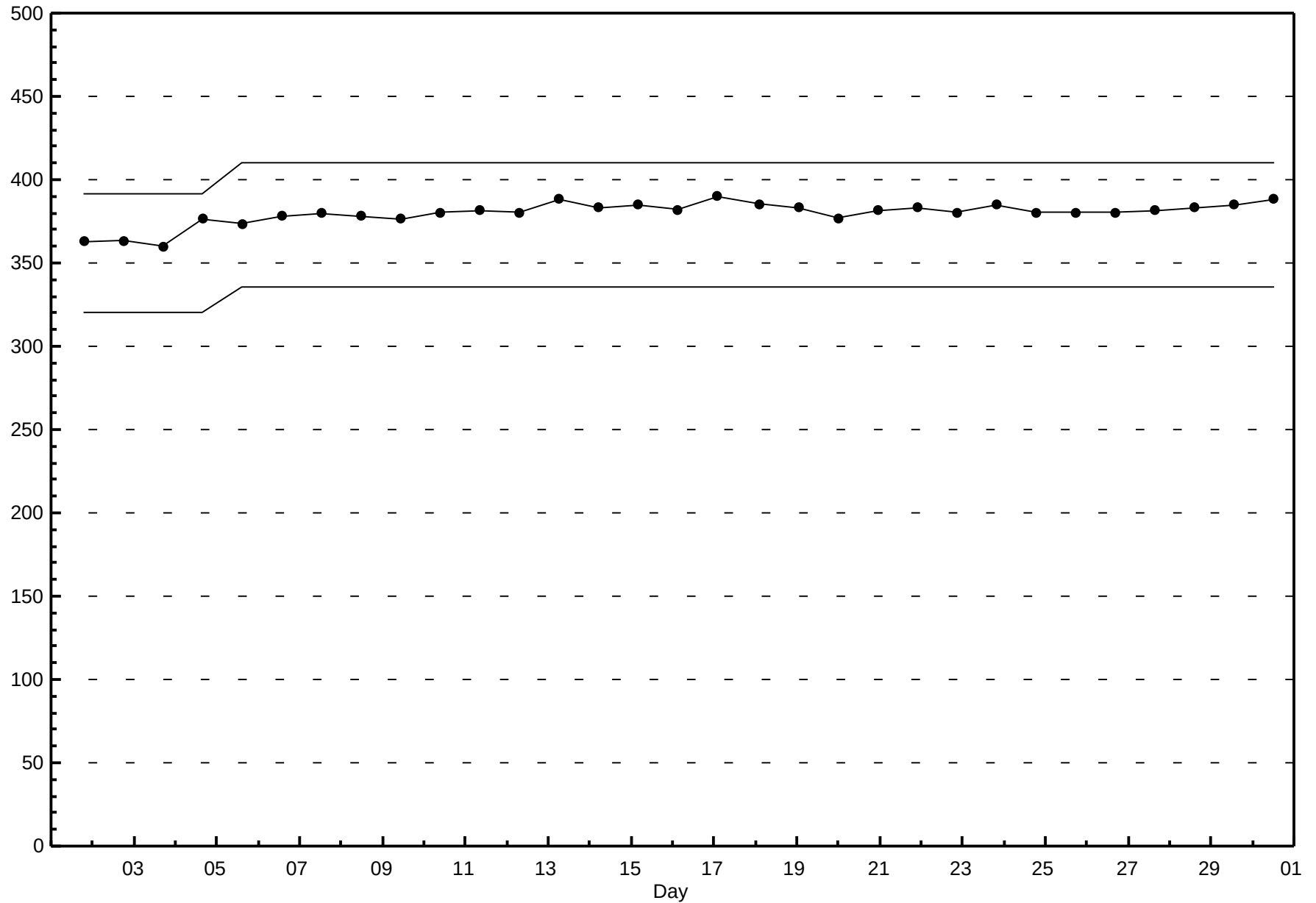


Pollutant Classes (ppb)



Span Responses

Nitrogen Dioxide (NO₂)
Henry Pirker - November 2015



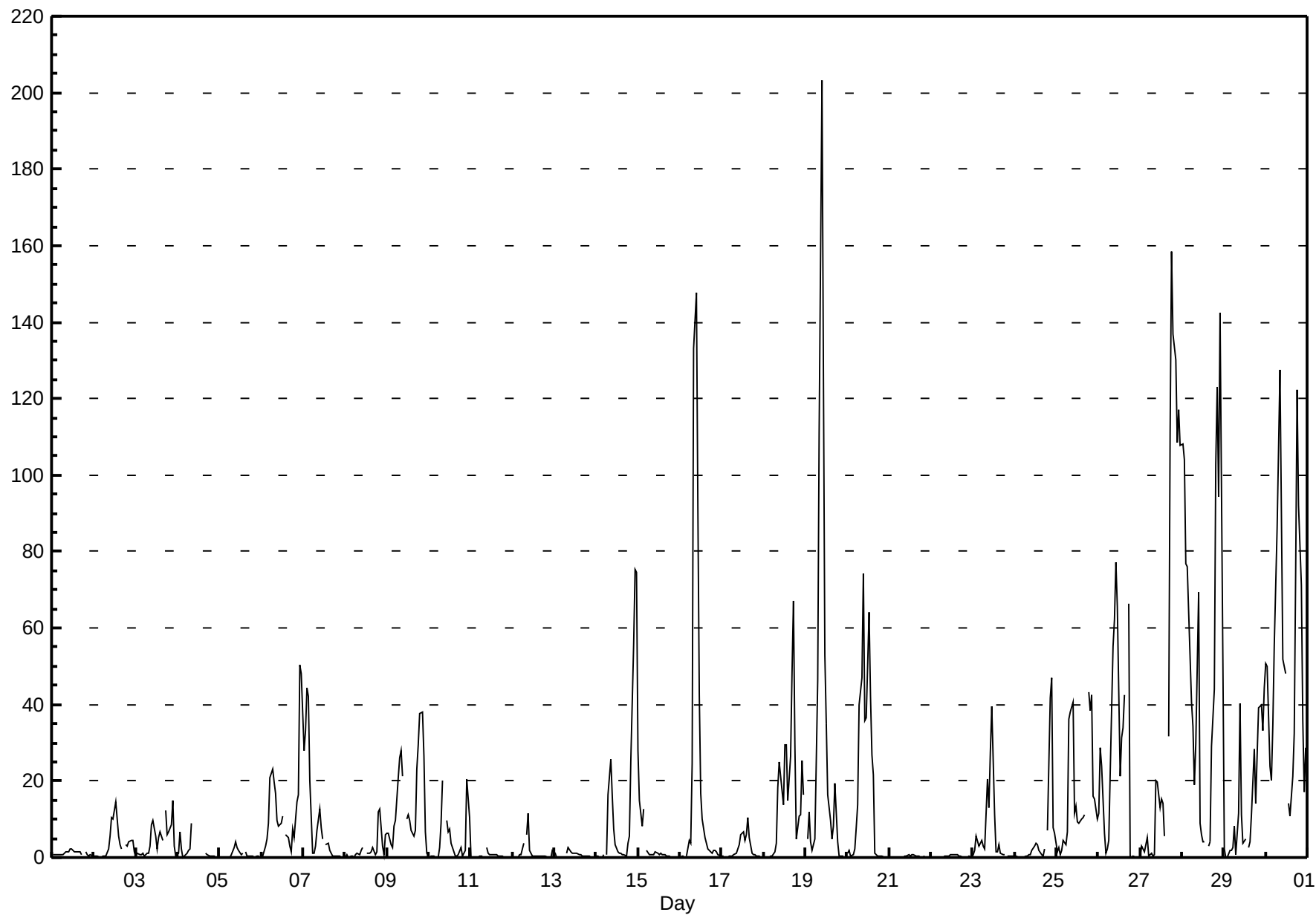
Hourly Averages

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

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 203.2 ppb on Nov 19 10:00 Maximum Daily Average: 55.0 ppb on Nov 30																				Hours in Service: 720 Hours of Data: 684 Hours of Missing Data: 36 Hours of Calibration: 36 Percent Operational Time: 100.0						
Minimum Value: 0 ppb on Nov 21 06:00 Minimum Daily Average: 0.2 ppb on Nov 21 Maximum Diurnal Average: 31.7 ppb at hour 10 Minimum Diurnal Average: 5.6 ppb at hour 5 Monthly Average: 12.94 ppb Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.3 Median = 1.9 Q ₃ = 11.1 P ₉₀ = 40.1 P ₉₉ = 129.0																										
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-Nov	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	1	1	1	A	1	1	0	1	0	1.1	2.2
2-Nov	0	0	0	0	0	0	0	0	2	6	11	10	15	10	6	3	2	A	3	3	4	4	4	2	3.8	14.7
3-Nov	1	1	1	1	1	1	1	1	3	8	10	5	2	5	7	4	A	12	6	7	9	15	3	0	4.5	15.1
4-Nov	1	7	2	0	0	1	2	2	9	C	C	C	C	C	1	A	1	1	0	0	0	0	0	0	1.6	8.9
5-Nov	0	0	0	0	0	0	0	1	3	4	3	2	1	1	A	1	0	0	0	0	0	1	0	0	0.8	4.2
6-Nov	0	1	3	5	9	21	23	20	17	10	8	9	11	A	6	5	3	2	7	5	14	16	50	48	12.8	50.4
7-Nov	28	33	45	42	20	1	1	3	7	13	8	5	A	3	4	2	1	0	0	0	0	0	0	0	9.5	44.5
8-Nov	0	1	0	0	0	0	1	1	1	2	3	A	1	1	1	1	3	1	2	12	13	3	1	6	2.3	12.7
9-Nov	6	6	3	3	8	10	21	26	28	21	A	10	11	10	7	6	7	23	30	38	38	26	7	1	15.1	37.9
10-Nov	0	0	0	0	0	0	3	9	20	A	10	7	7	4	1	0	0	1	3	0	1	2	21	10	4.4	20.7
11-Nov	0	0	0	0	0	0	0	0	A	3	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0.5	2.7
12-Nov	0	0	0	0	1	1	4	A	6	12	2	1	0	0	0	0	0	0	0	0	0	0	2	2	1.3	11.6
13-Nov	1	0	0	0	0	0	A	1	3	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0.6	2.5
14-Nov	0	0	0	0	1	A	1	17	26	16	7	3	2	1	1	1	1	0	4	6	25	56	75	75	13.8	75.2
15-Nov	28	15	8	13	A	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	3.3	28.1
16-Nov	0	0	0	A	0	4	4	25	133	148	91	43	17	10	5	4	2	2	1	2	2	2	1	0	21.6	147.6
17-Nov	0	0	A	0	0	0	1	1	1	2	3	6	7	4	6	10	5	1	1	1	1	0	0	0	2.2	10.5
18-Nov	0	A	0	0	0	0	1	4	18	25	21	14	29	29	15	27	49	67	29	5	11	11	25	16	17.3	66.9
19-Nov	A	5	12	4	2	5	25	46	111	203	126	53	35	16	10	5	8	19	4	0	0	0	0	A	31.4	203.2
20-Nov	1	2	0	1	2	8	14	40	47	74	36	37	64	42	27	22	1	0	0	0	0	0	A	0	18.2	74.2
21-Nov	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	A	0	0	0.2	0.8
22-Nov	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	A	0	0	0	0.3	0.8
23-Nov	1	2	6	3	4	4	3	2	21	13	27	40	11	2	2	3	1	1	1	A	1	1	0	0	6.4	39.6
24-Nov	0	0	0	0	0	0	0	0	1	1	2	3	4	3	2	1	0	2	A	7	42	47	8	6	5.7	46.9
25-Nov	2	3	1	2	5	3	7	36	38	41	11	13	9	9	10	10	11	A	43	39	43	16	15	10	16.4	43.4
26-Nov	11	29	24	6	1	2	4	22	55	62	77	66	21	31	34	42	A	66	0	0	0	0	0	0	24.2	77.3
27-Nov	1	3	1	3	5	0	1	0	1	20	20	13	15	14	6	A	32	111	158	137	130	109	117	108	43.7	158.4
28-Nov	108	104	77	76	64	41	34	19	30	69	9	6	4	4	A	3	4	29	44	103	123	94	142	51	53.9	142.4
29-Nov	2	0	0	2	2	3	8	1	11	40	11	4	5	A	2	4	11	28	14	27	39	40	33	44	14.5	44.4
30-Nov	51	50	24	20	35	55	86	107	128	90	52	48	A	14	11	21	32	75	122	92	71	36	17	29	55.0	127.6
																									Diurnal Average	
																									Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span																										

Hourly Averages

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



Hourly Maximums

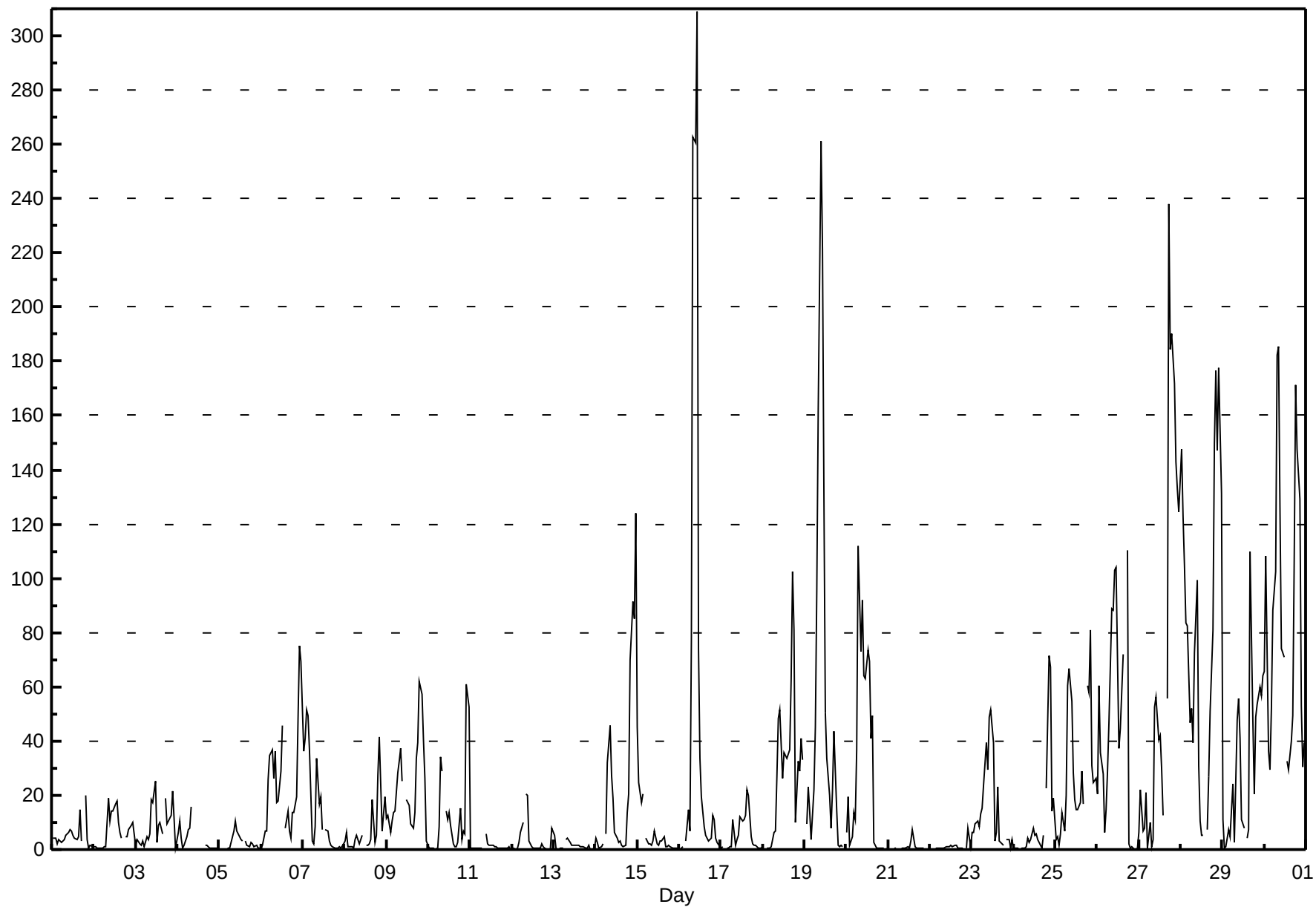
Nitrogen Oxide (NO) - ppb

Henry Pirker - November 2015

Maximum Value: 309.0 ppb on Nov 16 11:00																				Maximum Daily Average: 84.8 ppb on Nov 30					Hours in Service: 720	
Minimum Value: 0 ppb on Nov 12 23:00																				Minimum Daily Average: 0.8 ppb on Nov 21					Hours of Data: 684	
Maximum Diurnal Average: 48.0 ppb at hour 10																				Minimum Diurnal Average: 9.9 ppb at hour 4					Hours of Missing Data: 36	
Monthly Average: 22.67 ppb																				Percentiles: P ₁ = 0.2 P ₁₀ = 0.4 Q ₁ = 1.1 Median = 5.7 Q ₃ = 26.3 P ₉₀ = 62.7 P ₉₉ = 179.5					Hours of Calibration: 36	
																									Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	4	4	4	2	4	3	3	4	5	6	7	7	5	4	4	5	14	3	A	20	4	1	1	1	5.0	20.0
2-Nov	1	1	1	0	0	1	1	1	19	11	14	14	17	18	10	7	4	A	5	5	8	9	10	6	7.0	18.7
3-Nov	1	4	2	1	3	1	5	4	6	18	18	25	3	9	10	6	A	19	9	10	13	22	12	1	8.7	25.4
4-Nov	6	10	4	0	2	5	7	8	16	C	C	C	C	C	2	A	2	2	1	1	1	1	1	0	3.8	15.5
5-Nov	0	0	0	0	0	0	0	2	7	11	7	6	4	3	A	3	1	1	2	2	1	2	1	1	2.4	10.7
6-Nov	1	1	7	7	26	35	37	26	36	17	18	29	46	A	8	14	7	4	14	14	19	48	75	69	24.3	75.0
7-Nov	36	41	51	49	37	3	2	8	34	17	19	8	A	8	7	3	2	1	0	0	0	1	1	2	14.4	51.5
8-Nov	3	6	1	1	1	0	3	5	2	4	5	A	2	2	2	4	18	3	5	27	42	7	13	20	7.7	41.6
9-Nov	12	13	6	10	14	14	28	33	37	25	A	18	18	16	10	8	14	34	39	62	57	40	26	3	23.4	61.9
10-Nov	1	1	1	1	0	1	9	34	29	A	14	11	14	9	2	1	1	2	15	4	7	6	61	53	12.0	61.0
11-Nov	0	0	0	0	0	0	1	0	A	6	2	1	2	1	1	1	1	1	0	0	0	0	1	0	0.9	5.7
12-Nov	0	0	0	0	3	6	10	A	20	20	3	1	1	1	1	1	0	2	1	1	0	0	0	8	3.5	20.4
13-Nov	5	1	0	0	0	0	A	3	4	3	2	2	1	2	2	1	1	1	1	1	2	0	0	0	1.4	5.1
14-Nov	4	3	0	1	2	A	6	32	46	27	19	6	4	2	3	1	1	2	14	21	70	91	85	124	24.5	123.8
15-Nov	45	25	17	20	A	4	2	2	2	3	7	2	2	3	3	5	1	1	2	1	0	1	1	0	6.5	45.3
16-Nov	0	1	1	A	3	15	7	77	263	260	309	74	34	19	9	5	4	3	4	13	11	4	3	1	48.7	309.0
17-Nov	1	1	A	0	1	1	1	11	1	4	5	12	11	11	12	22	20	5	2	2	1	1	0	1	5.4	22.1
18-Nov	1	A	1	1	0	1	7	7	27	48	51	26	36	35	34	37	63	102	81	10	32	29	41	33	30.6	102.2
19-Nov	A	10	23	14	4	22	45	96	162	261	221	131	50	34	20	8	22	44	14	2	1	2	1	A	53.9	261.1
20-Nov	6	20	1	4	14	11	37	112	73	92	64	63	74	69	41	49	3	1	1	1	0	0	A	0	32.0	112.1
21-Nov	0	0	0	0	0	0	0	0	0	1	1	1	1	3	8	1	1	1	0	0	0	A	0	0	0.8	7.6
22-Nov	0	0	0	0	1	1	0	0	1	1	1	1	1	1	2	2	1	1	1	0	A	0	8	1	1.0	7.7
23-Nov	6	6	9	11	8	13	15	24	40	29	49	51	39	3	6	23	3	2	2	A	4	4	1	4	15.3	51.5
24-Nov	0	1	0	0	0	0	1	1	4	3	4	8	5	6	3	1	1	5	A	23	71	67	14	19	10.4	71.2
25-Nov	4	4	2	6	14	7	20	61	67	55	28	18	15	15	17	29	17	A	61	58	81	31	25	26	28.6	81.1
26-Nov	20	61	36	28	6	15	29	47	89	88	103	104	37	45	58	72	A	110	2	0	1	0	0	0	41.4	110.2
27-Nov	6	22	7	8	21	1	10	1	4	52	56	41	42	30	12	A	56	238	185	190	172	143	133	125	67.6	238.0
28-Nov	148	123	105	84	83	47	52	40	72	99	31	10	5	5	A	8	27	51	81	150	176	147	177	131	80.5	177.4
29-Nov	11	0	1	7	5	15	24	3	48	56	41	11	8	A	4	7	110	47	21	49	53	60	57	64	30.5	110.0
30-Nov	66	108	36	29	52	88	103	182	186	127	74	71	A	32	30	40	49	107	171	147	129	53	31	39	84.8	185.7
13.5 16.1 11.0 9.9 10.5 10.7 16.1 28.5 44.8 48.0 41.9 26.9 17.6 14.3 11.4 13.0 15.8 28.3 26.2 28.0 33.1 26.5 26.8 25.3																								Diurnal Average		
147.5 123.1 104.7 83.7 82.6 88.4 102.6 182.3 262.7 261.1 309.0 130.8 73.5 69.5 58.4 72.2 110.0 238.0 184.6 190.1 176.4 146.9 177.4 131.1																								Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span																										

Hourly Maximums

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



Hourly Averages

Oxides of Nitrogen (NO_x) - ppb

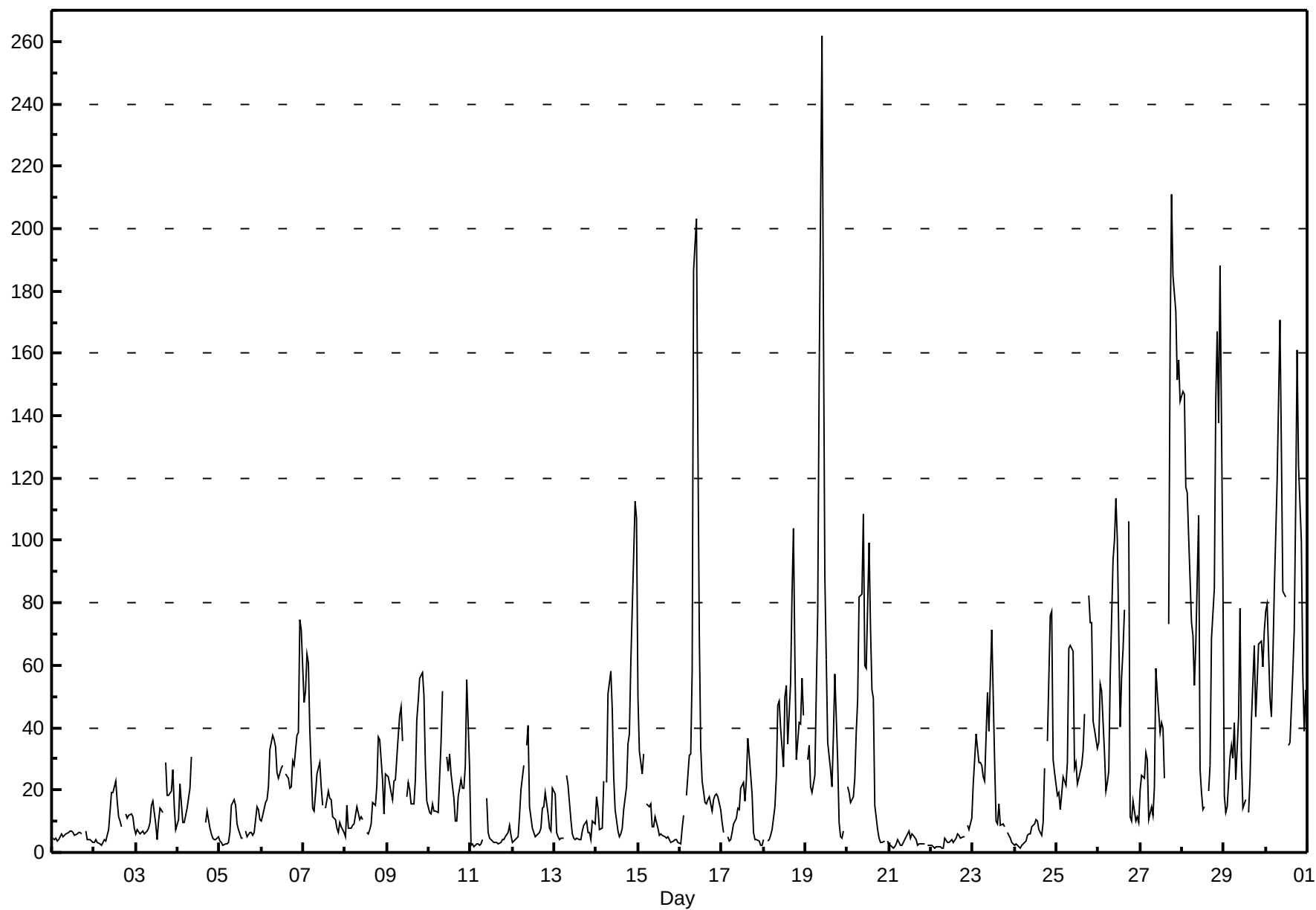
Henry Pirker - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 261.6 ppb on Nov 19 10:00 Maximum Daily Average: 87.0 ppb on Nov 28																				Hours in Service: 720 Hours of Data: 684 Hours of Missing Data: 36 Hours of Calibration: 36 Percent Operational Time: 100.0						
Minimum Value: 1 ppb on Nov 24 04:00 Maximum Diurnal Average: 53.6 ppb at hour 10 Monthly Average: 28.31 ppb																				Minimum Daily Average: 3.3 ppb on Nov 21 Minimum Diurnal Average: 17.5 ppb at hour 15 Percentiles: P ₁ = 1.7 P ₁₀ = 3.5 Q ₁ = 6.2 Median = 15.4 Q ₃ = 34.5 P ₉₀ = 71.2 P ₉₉ = 169.7						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Nov	4	4	5	4	4	6	5	6	6	6	7	7	6	6	6	6	6	A	7	4	4	4	3	5.3	6.8	
2-Nov	3	4	3	3	2	3	4	4	7	13	19	19	23	17	11	10	8	A	12	11	12	12	12	8	9.6	23.1
3-Nov	6	8	6	6	7	6	7	8	9	15	17	9	4	10	14	13	A	29	18	18	20	27	15	7	12.1	29.0
4-Nov	11	22	16	10	10	14	18	21	31	C	C	C	C	C	5	A	10	13	8	6	5	4	4	5	11.7	30.6
5-Nov	4	3	2	3	3	3	7	15	17	15	9	7	5	4	A	7	5	6	6	6	6	15	14	10	7.5	17.1
6-Nov	10	12	16	17	21	33	37	36	34	26	24	27	28	A	25	24	20	21	29	28	38	38	74	71	30.0	74.4
7-Nov	48	52	64	61	39	14	13	19	25	29	21	15	A	14	20	17	17	11	10	8	6	9	8	6	22.9	63.8
8-Nov	5	15	8	8	9	9	12	15	11	11	A	6	6	7	9	16	15	22	37	36	23	12	25	14.3	36.9	
9-Nov	25	24	19	17	23	23	37	44	47	36	A	18	22	20	16	16	24	43	48	56	58	50	29	17	30.9	57.8
10-Nov	13	12	16	13	13	13	24	35	52	A	31	26	32	25	18	10	10	18	23	21	21	28	56	27	23.3	55.5
11-Nov	2	3	2	3	3	2	3	4	A	17	6	5	4	3	3	3	3	4	4	5	6	9	5	4.5	17.3	
12-Nov	3	4	5	5	12	20	28	A	35	41	15	8	6	5	5	7	8	14	15	19	12	8	7	20	13.1	40.8
13-Nov	19	6	5	4	5	5	A	25	22	10	6	5	4	5	4	4	7	9	10	6	6	4	10	9	8.2	24.8
14-Nov	18	14	7	8	23	A	22	51	58	46	24	14	7	5	6	8	14	21	35	38	61	95	113	107	34.5	112.7
15-Nov	50	32	25	31	A	15	15	15	8	8	11	8	6	6	6	5	5	5	4	3	4	4	4	3	11.9	49.7
16-Nov	3	8	12	A	18	31	31	58	186	203	133	71	34	23	16	15	17	18	13	17	18	19	18	14	42.4	203.3
17-Nov	10	6	A	5	4	4	6	9	11	14	14	21	22	16	23	37	31	19	7	4	4	4	2	2	12.0	36.7
18-Nov	4	A	4	4	6	8	15	24	47	48	40	27	50	53	35	54	83	104	62	30	42	41	56	44	38.3	104.1
19-Nov	A	30	34	21	19	25	52	77	151	262	171	88	62	35	27	21	38	57	29	9	5	5	7	A	55.6	261.6
20-Nov	21	19	16	18	24	38	49	82	83	108	60	59	99	72	52	49	15	7	5	3	3	3	A	3	38.7	108.2
21-Nov	2	2	1	2	3	4	2	2	3	4	5	7	4	6	6	4	2	3	3	3	3	A	2	2	3.3	6.8
22-Nov	2	2	2	2	2	2	1	2	4	3	3	4	4	3	5	6	6	5	5	5	A	8	8	11	4.1	11.1
23-Nov	22	30	38	29	29	28	24	23	51	39	56	71	29	10	9	16	9	9	8	A	6	5	3	3	23.8	71.5
24-Nov	2	3	2	1	2	3	4	6	6	6	8	9	10	10	7	5	10	27	A	36	76	77	30	25	15.9	77.3
25-Nov	18	19	14	19	24	21	29	65	66	64	27	29	22	24	28	33	45	A	82	74	74	42	39	33	38.8	82.4
26-Nov	35	54	52	32	20	23	26	56	94	100	113	100	40	56	65	78	A	106	11	10	16	10	11	10	48.7	113.5
27-Nov	20	25	24	32	30	11	14	12	21	59	51	38	42	40	24	A	73	163	211	185	174	151	158	145	74.0	211.0
28-Nov	148	147	117	115	101	74	70	54	67	108	27	19	14	15	A	20	28	68	85	145	167	138	188	88	87.0	188.1
29-Nov	18	13	15	30	34	30	41	23	44	78	30	14	17	A	13	24	43	67	43	55	67	68	59	71	39.0	78.1
30-Nov	78	80	50	44	62	84	119	145	171	129	84	82	A	34	35	57	71	111	161	124	100	57	39	52	85.5	170.8
20.8 22.5 19.9 18.8 19.0 19.0 24.7 32.3 47.1 53.6 36.5 28.8 22.3 19.5 17.5 19.9 22.2 34.9 34.6 33.3 36.2 33.0 34.2 28.5																									Diurnal Average	
147.6 146.7 116.9 115.3 101.1 83.6 119.1 144.6 186.5 261.6 171.1 100.4 99.5 72.2 65.2 77.9 82.6 162.8 211.0 184.8 173.5 151.4 188.1 144.7																									Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span																										

Hourly Averages

Oxides of Nitrogen (NO_x) - ppb

Henry Pirker - November 2015



Hourly Maximums

Oxides of Nitrogen (NO_x) - ppb

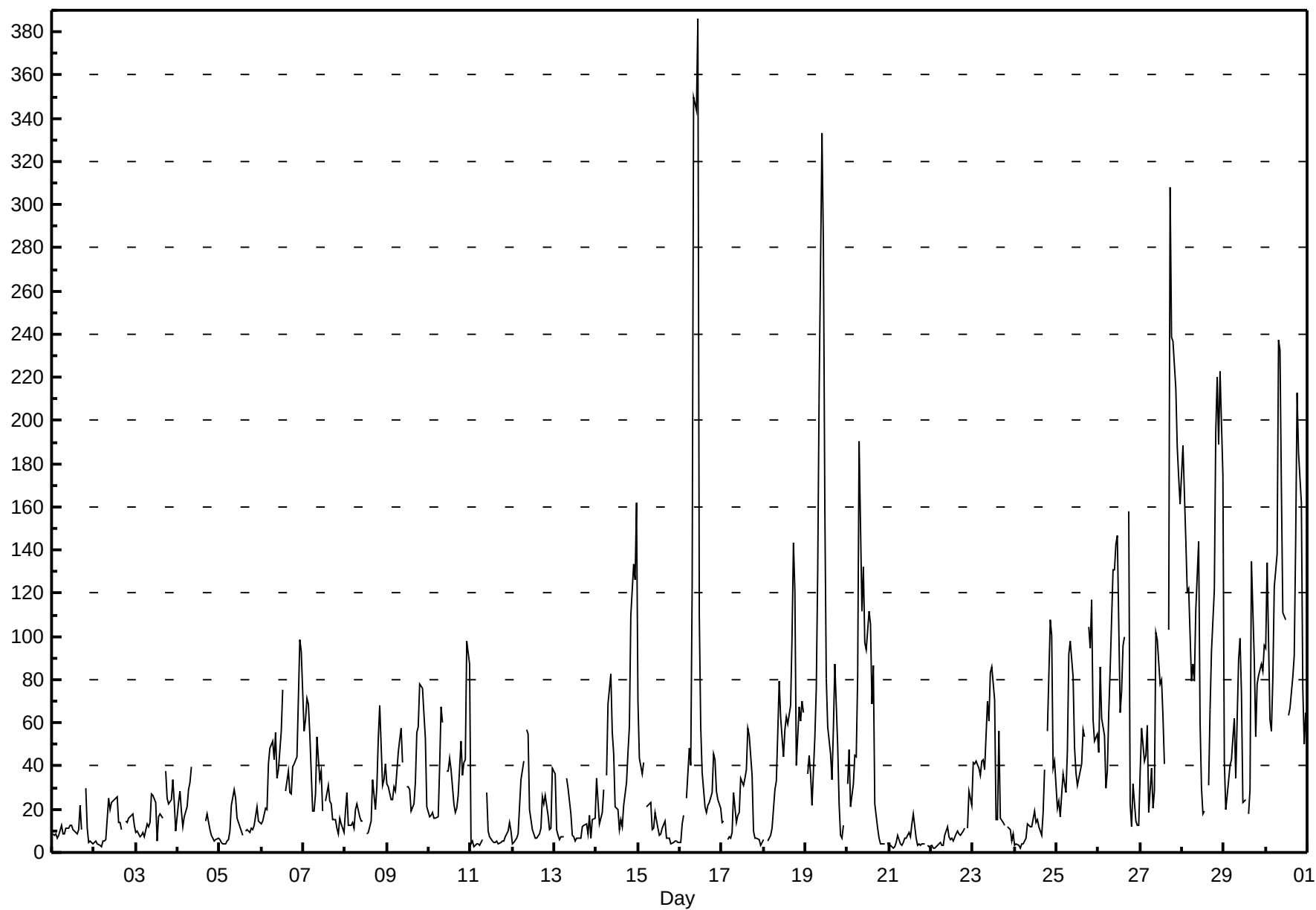
Henry Pirker - November 2015

Maximum Value: 385.9 ppb on Nov 16 11:00																				Maximum Daily Average: 119.3 ppb on Nov 30					Hours in Service: 720	
Minimum Value: 2 ppb on Nov 22 03:00																				Minimum Daily Average: 5.6 ppb on Nov 21					Hours of Data: 684	
Maximum Diurnal Average: 74.9 ppb at hour 10																				Minimum Diurnal Average: 25.0 ppb at hour 4					Hours of Missing Data: 36	
Monthly Average: 41.95 ppb																				Percentiles: P ₁ = 2.8 P ₁₀ = 5.3 Q ₁ = 10.3 Median = 23.1 Q ₃ = 54.9 P ₉₀ = 98.5 P ₉₉ = 224.3					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-Nov	9	8	8	7	8	13	9	8	11	12	13	13	10	10	8	11	22	11	A	30	11	5	5	4	10.6	29.8
2-Nov	4	5	4	3	3	5	6	6	25	20	23	24	25	26	14	14	10	A	14	14	16	17	18	13	13.5	26.0
3-Nov	9	10	7	8	9	7	13	12	14	27	26	23	5	16	18	16	A	38	25	22	24	34	23	10	17.4	37.9
4-Nov	23	28	19	12	16	21	29	33	40	C	C	C	C	C	8	A	15	18	11	8	6	6	6	6	16.9	39.7
5-Nov	6	4	4	4	5	6	10	22	29	25	16	14	10	8	A	10	10	9	11	10	13	21	15	14	12.0	28.9
6-Nov	14	14	21	20	41	48	51	43	55	35	38	56	75	A	28	38	28	27	40	41	44	71	98	93	44.4	98.2
7-Nov	56	62	72	69	55	19	19	27	53	34	37	19	A	24	31	24	23	15	15	11	8	16	13	10	30.9	71.7
8-Nov	19	28	12	12	14	11	20	23	17	15	14	A	8	9	12	15	34	20	30	53	68	31	34	41	23.5	68.3
9-Nov	32	30	25	24	31	28	46	52	57	41	A	31	30	29	19	22	33	55	58	78	76	64	53	21	40.8	77.9
10-Nov	16	17	19	16	16	16	39	67	60	A	38	38	44	38	23	18	20	26	52	35	42	43	98	87	37.8	98.0
11-Nov	4	5	3	4	4	4	4	6	A	28	10	7	6	5	4	5	4	4	6	6	7	10	14	10	6.9	27.6
12-Nov	4	5	6	9	21	34	42	A	57	55	20	11	8	7	6	9	11	26	23	27	17	11	11	39	19.9	57.2
13-Nov	36	11	8	6	7	7	A	34	30	18	8	7	5	7	7	6	12	13	13	8	17	7	15	16	13.0	36.1
14-Nov	34	24	14	18	29	A	36	69	83	56	45	21	20	10	15	12	22	33	46	58	110	133	126	162	51.1	161.6
15-Nov	70	44	36	42	A	21	22	23	11	12	18	11	8	9	11	15	7	7	6	4	5	5	5	5	17.3	70.2
16-Nov	5	13	17	A	25	48	40	124	349	344	386	110	58	37	21	19	22	23	28	46	43	28	24	21	79.6	385.9
17-Nov	14	14	A	6	7	7	10	28	14	17	18	34	31	35	38	58	54	36	10	6	7	6	4	4	19.9	57.7
18-Nov	6	A	5	6	8	11	29	33	56	79	63	44	57	63	59	68	100	144	121	40	68	60	70	65	54.6	143.7
19-Nov	A	37	45	36	22	54	76	130	213	333	280	159	81	58	46	34	57	87	49	23	8	7	12	A	84.0	333.4
20-Nov	32	48	21	32	45	45	81	191	111	132	97	94	112	106	69	87	22	11	7	4	4	4	A	5	59.0	190.6
21-Nov	3	3	2	3	4	8	4	3	5	7	7	9	7	13	18	7	3	4	4	4	4	A	3	3	5.6	18.2
22-Nov	3	2	2	2	3	5	3	3	8	12	7	6	7	5	9	10	9	8	10	11	A	11	28	22	8.1	28.3
23-Nov	41	41	43	39	36	42	43	38	70	61	84	86	71	15	15	56	16	14	12	A	12	11	5	9	37.4	85.8
24-Nov	4	4	3	2	4	4	7	13	13	12	12	19	14	15	12	8	19	39	A	56	108	100	39	42	23.9	108.0
25-Nov	21	24	17	27	36	28	47	92	98	81	49	37	31	35	41	57	54	A	105	95	117	61	52	55	54.6	116.7
26-Nov	46	86	62	54	30	38	65	85	131	131	143	146	65	75	96	100	A	158	23	12	32	15	13	13	70.3	158.1
27-Nov	37	57	43	45	59	18	39	20	29	101	98	78	80	63	41	A	103	308	238	237	215	188	174	161	105.8	308.0
28-Nov	189	166	145	121	122	79	87	79	112	144	60	30	18	19	A	31	66	93	122	195	220	189	223	174	116.8	222.7
29-Nov	42	20	27	40	43	53	62	34	89	99	74	23	24	A	18	29	135	89	54	78	82	88	84	96	60.1	134.8
30-Nov	95	134	62	56	80	123	138	237	232	168	111	108	A	63	66	82	91	144	213	185	162	76	50	65	119.3	237.2
30.1 32.6 25.9 25.0 27.1 27.7 37.2 53.0 71.4 74.9 64.1 44.9 33.8 29.6 27.0 30.6 35.7 52.1 48.1 48.2 53.3 45.5 45.4 43.5																										Diurnal Average
188.5 166.5 144.8 120.9 122.2 123.2 138.4 237.2 349.5 343.6 385.9 158.6 111.6 105.8 95.5 99.8 134.8 308.0 238.4 236.9 220.2 189.3 222.7 174.2																										Diurnal Maximum
C - Calibration A - Automated Daily Zero Span																										

Hourly Maximums

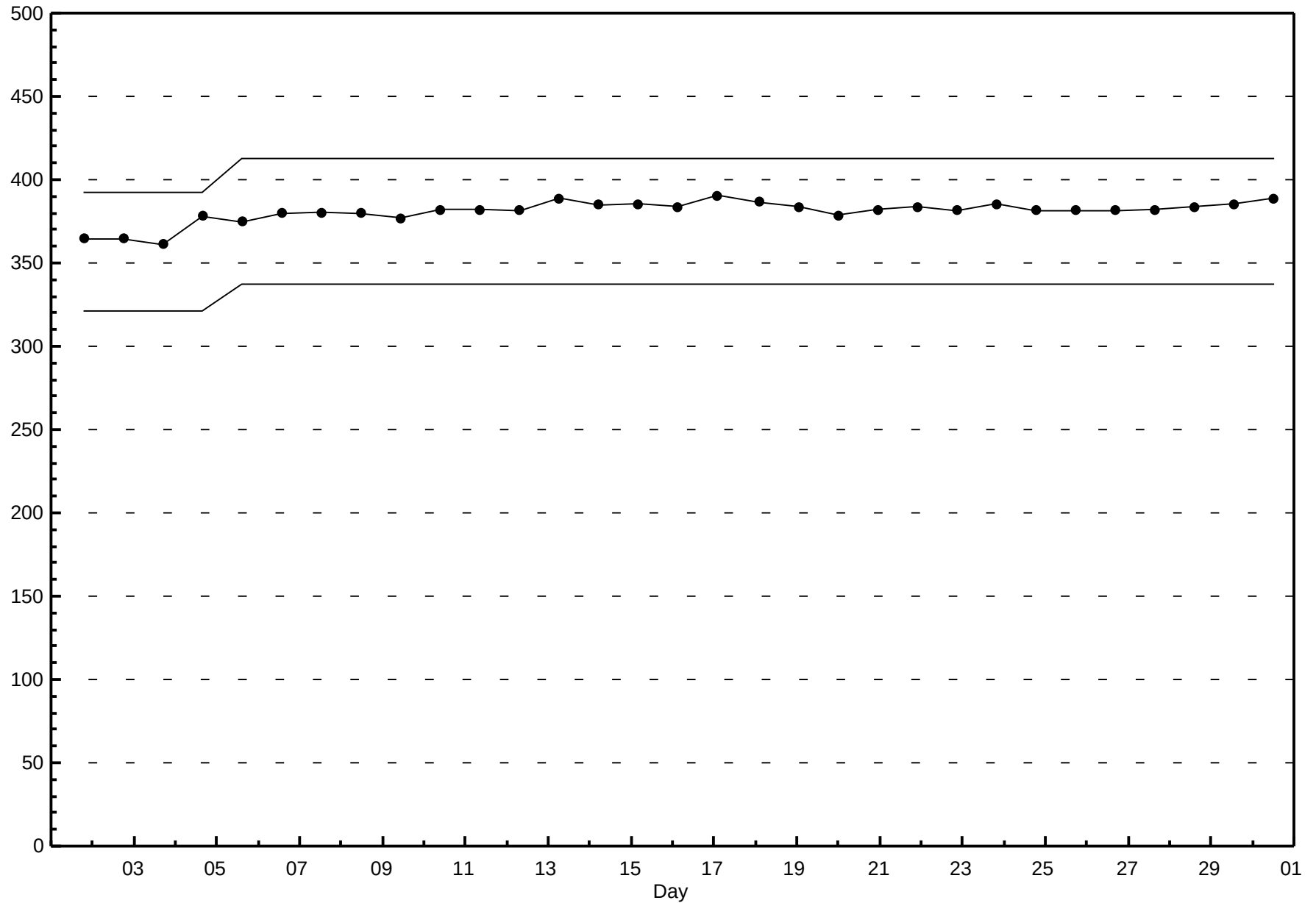
Oxides of Nitrogen (NO_x) - ppb

Henry Pirker - November 2015



Span Responses

Oxides of Nitrogen (NO_x)
Henry Pirker - November 2015



Hourly Averages

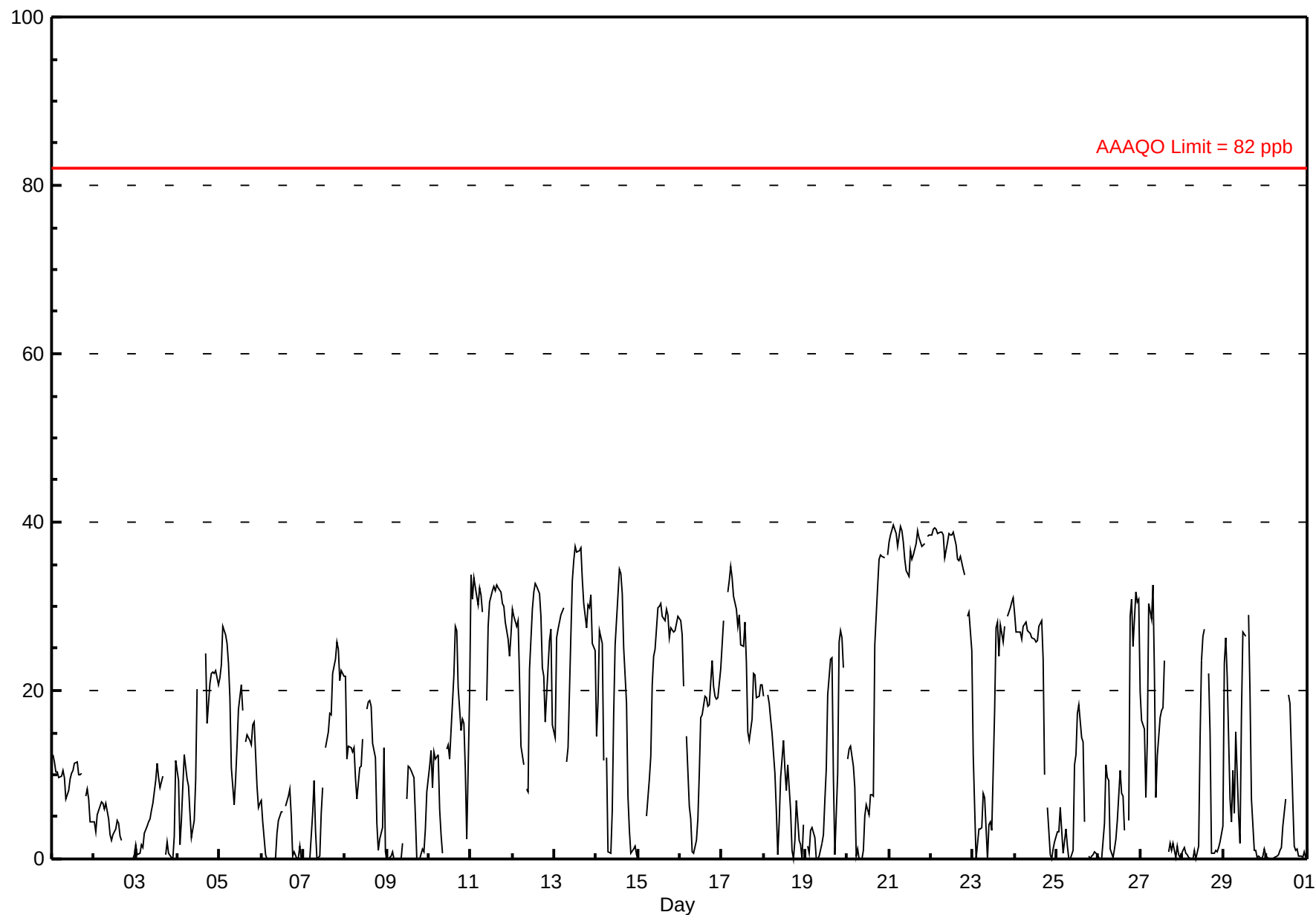
Ozone (O₃) - ppb

Henry Pirker - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 39.7 ppb on Nov 21 03:00 Maximum Daily Average: 37.5 ppb on Nov 21																				Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0						
Minimum Value: 0 ppb on Nov 2 19:00 Maximum Diurnal Average: 21.0 ppb at hour 15 Monthly Average: 14.60 ppb										Minimum Daily Average: 2.6 ppb on Nov 6 Minimum Diurnal Average: 8.3 ppb at hour 9 Percentiles: P ₁ = 0.0 P ₁₀ = 0.3 Q ₁ = 2.9 Median = 11.7 Q ₃ = 26.1 P ₉₀ = 32.2 P ₉₉ = 38.9																
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-Nov	12	11	10	10	10	10	11	10	7	8	9	10	10	11	11	10	10	10	A	8	8	7	4	4	9.3	12.5
2-Nov	4	3	5	6	7	7	6	7	5	3	2	3	4	5	4	3	2	A	0	0	0	0	0	0	3.3	6.9
3-Nov	2	1	1	2	1	3	4	4	5	6	7	9	11	10	8	10	A	0	2	1	0	0	3	12	4.4	11.8
4-Nov	9	2	5	9	12	9	9	5	3	5	9	20	C	C	C	C	24	16	21	22	22	22	22	21	13.4	24.4
5-Nov	22	23	28	27	26	23	19	11	6	9	13	18	21	18	A	14	15	14	14	16	16	9	6	7	16.2	27.7
6-Nov	7	4	1	0	0	0	0	0	0	3	5	6	6	A	6	7	8	5	0	1	0	0	2	0	2.6	8.3
7-Nov	0	0	0	0	0	5	9	3	0	0	5	8	A	13	15	17	17	22	24	26	25	21	22	22	11.1	25.8
8-Nov	22	12	13	13	13	13	10	7	11	11	14	A	18	19	19	18	14	12	4	1	2	4	13	1	11.5	21.7
9-Nov	0	0	0	1	0	0	0	0	0	2	A	7	11	11	11	10	5	0	0	0	1	1	4	8	3.1	11.0
10-Nov	11	13	8	13	12	12	6	3	1	A	13	14	12	15	22	28	27	20	15	17	16	11	2	19	13.5	27.7
11-Nov	34	31	33	31	30	32	31	29	A	19	28	31	32	32	32	33	32	32	30	30	28	26	24	27	29.9	33.8
12-Nov	30	29	28	28	21	13	11	A	8	8	22	30	32	33	32	32	29	23	22	16	23	26	27	16	23.4	32.8
13-Nov	14	26	27	28	29	30	A	12	13	27	33	35	37	36	37	37	33	30	28	30	30	31	26	25	28.5	37.2
14-Nov	15	19	27	26	12	A	12	1	1	6	17	25	31	34	34	32	25	19	7	3	1	1	2	1	15.2	34.3
15-Nov	0	0	0	0	A	5	9	12	21	24	25	30	30	30	29	28	30	29	26	27	27	27	28	29	20.3	30.3
16-Nov	28	27	20	A	15	6	5	1	1	2	5	10	17	17	19	19	18	18	24	21	19	19	19	22	15.3	28.3
17-Nov	25	28	A	32	33	35	33	31	30	28	29	26	25	28	23	15	14	17	22	22	19	19	21	21	25.0	34.7
18-Nov	19	A	20	18	17	15	10	6	1	4	10	14	11	8	11	6	1	0	2	7	2	2	0	4	8.1	19.6
19-Nov	A	1	1	3	4	3	0	0	0	2	3	7	11	20	24	24	10	1	10	26	27	26	23	A	10.2	27.2
20-Nov	12	13	13	11	8	0	1	0	0	1	5	6	5	8	8	7	25	32	36	36	36	36	A	36	14.7	36.1
21-Nov	38	38	40	39	39	37	40	39	38	36	34	34	37	36	36	38	39	38	38	37	38	A	38	38	37.5	39.7
22-Nov	39	39	39	39	39	39	39	39	36	38	39	38	39	39	37	36	35	36	34	34	A	29	29	25	36.3	39.4
23-Nov	12	6	0	4	4	4	8	7	0	4	4	3	18	27	28	24	28	26	28	A	29	30	30	31	15.4	31.0
24-Nov	29	27	27	27	26	28	28	27	27	27	26	26	26	26	28	28	24	10	A	6	1	0	1	2	20.7	29.1
25-Nov	3	3	6	3	1	4	2	0	0	1	11	12	17	18	14	14	4	A	0	0	0	1	1	1	5.1	18.3
26-Nov	0	0	0	4	11	10	9	1	0	1	2	5	11	8	8	3	A	5	29	31	25	32	30	31	11.1	31.6
27-Nov	20	16	15	7	14	30	28	32	22	7	12	17	18	18	23	A	1	2	1	2	0	2	0	0	12.6	32.5
28-Nov	1	1	1	0	0	0	0	1	0	1	14	23	26	27	A	22	15	1	1	1	1	1	2	4	6.3	27.4
29-Nov	23	26	22	7	4	11	5	15	5	2	17	27	26	A	29	20	7	1	1	0	0	0	0	1	10.9	29.0
30-Nov	1	0	0	0	0	0	0	0	1	1	4	7	A	19	19	7	2	1	1	0	0	0	1	0	2.8	19.5
14.9 13.8 13.5 13.4 13.3 13.2 11.9 10.5 8.3 9.8 14.5 17.3 20.0 21.0 21.0 19.3 17.7 15.0 15.0 14.5 13.7 13.2 13.2 14.0																									Diurnal Average	
38.6 39.2 39.7 39.2 38.7 38.8 39.5 38.9 37.6 37.6 38.7 38.5 38.5 38.8 37.4 37.5 39.0 38.1 37.6 37.2 37.5 35.8 38.3 38.4																									Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82 ppb 24-hr na																										

Hourly Averages

Ozone (O₃) - ppb
Henry Pirker - November 2015



Hourly Maximums

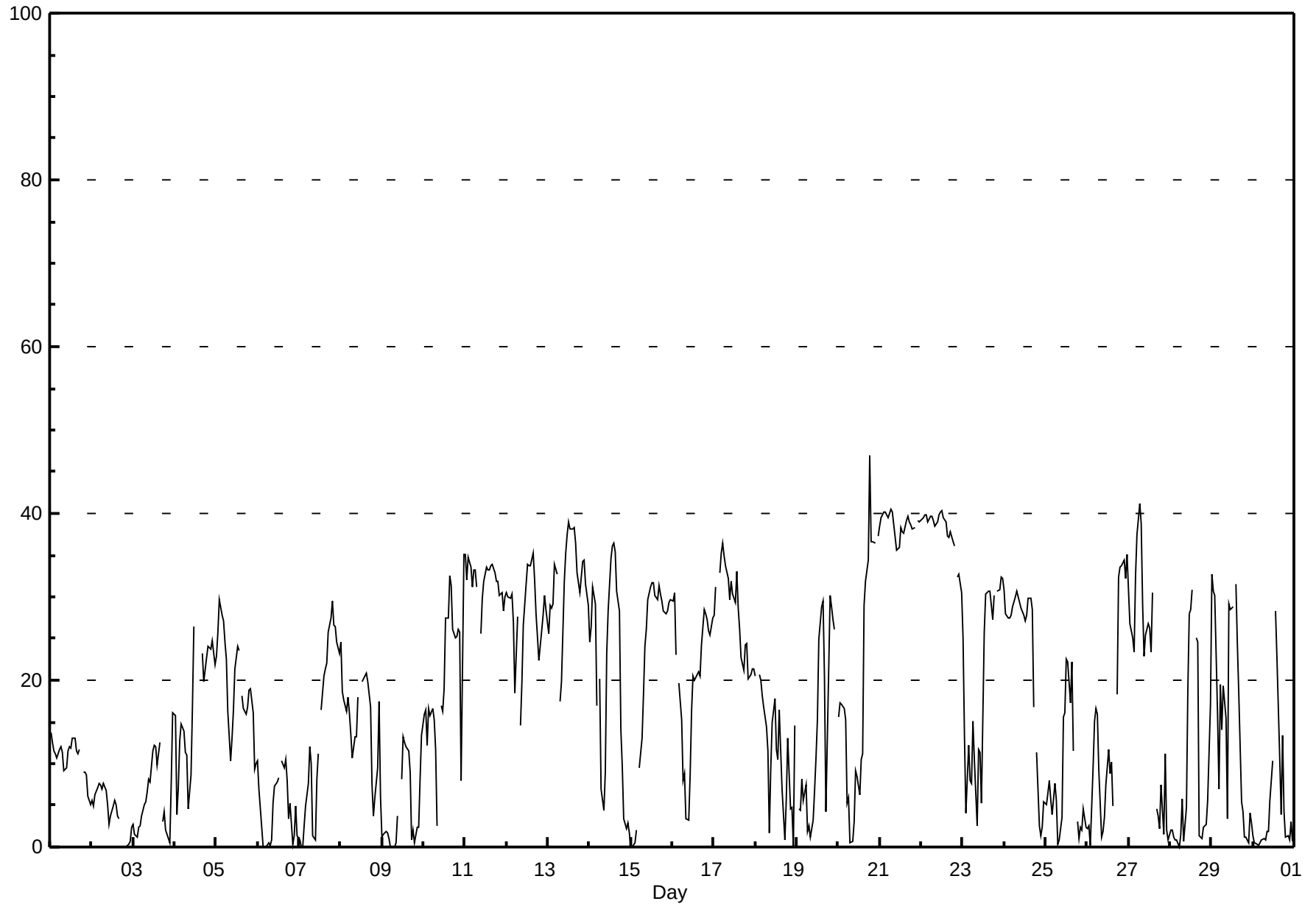
Ozone (O₃) - ppb

Henry Pirker - November 2015

Maximum Value: 46.9 ppb on Nov 20 19:00																				Maximum Daily Average: 38.7 ppb on Nov 21					Hours in Service: 720	
Minimum Value: 0 ppb on Nov 2 19:00																				Minimum Daily Average: 4.3 ppb on Nov 2					Hours of Data: 686	
Maximum Diurnal Average: 24.2 ppb at hour 14																				Minimum Diurnal Average: 10.9 ppb at hour 9					Hours of Missing Data: 34	
Monthly Average: 17.86 ppb																				Percentiles: P ₁ = 0.0 P ₁₀ = 1.5 Q ₁ = 5.6 Median = 16.7 Q ₃ = 29.3 P ₉₀ = 34.7 P ₉₉ = 40.2					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-Nov	14	13	11	11	11	12	12	11	9	10	12	12	13	13	13	11	11	12	A	9	9	9	6	5	10.8	13.7
2-Nov	6	5	6	7	8	7	7	8	7	5	3	4	5	6	5	4	3	A	0	0	0	0	1	2	4.3	7.7
3-Nov	3	2	1	2	3	4	5	5	7	8	8	12	12	12	10	13	A	3	4	2	1	1	8	16	6.1	16.2
4-Nov	16	4	7	13	15	14	11	11	5	9	17	26	C	C	C	C	23	20	23	24	24	24	25	22	16.5	26.4
5-Nov	23	26	30	28	27	25	23	16	10	13	16	21	24	23	A	18	17	16	17	19	19	16	9	10	19.4	29.6
6-Nov	10	7	2	0	0	0	1	0	1	5	7	8	8	A	10	10	10	8	3	5	0	1	5	1	4.6	10.4
7-Nov	1	0	0	3	5	8	12	10	1	1	8	11	A	16	21	21	22	26	27	29	27	27	25	23	14.1	29.5
8-Nov	25	19	18	16	18	16	14	11	13	13	18	A	20	20	21	21	20	17	7	4	6	10	17	6	15.1	24.5
9-Nov	1	2	2	2	1	0	0	0	1	4	A	8	13	12	12	12	9	1	2	1	2	2	8	13	4.7	13.3
10-Nov	16	16	12	17	16	17	15	12	3	A	17	16	19	27	27	33	31	26	25	25	26	26	8	35	20.2	35.1
11-Nov	35	32	35	34	31	33	33	31	A	26	30	32	33	33	33	34	34	33	32	32	30	31	28	30	31.9	35.1
12-Nov	31	30	30	30	27	18	28	A	15	20	27	32	34	34	34	35	32	28	25	22	26	28	30	29	28.0	35.3
13-Nov	26	29	29	29	34	33	A	17	20	32	35	37	39	38	38	38	36	33	30	32	34	34	31	29	32.0	39.1
14-Nov	25	26	31	29	17	A	20	7	4	9	23	28	35	36	36	35	31	28	14	10	3	2	3	2	19.8	36.4
15-Nov	0	0	1	2	A	10	13	18	24	26	30	31	32	32	30	30	31	30	30	28	28	28	29	30	22.3	31.8
16-Nov	30	30	23	A	20	15	8	9	3	3	9	16	20	20	21	21	21	24	28	28	27	26	25	27	19.8	30.5
17-Nov	28	31	A	33	35	36	35	34	32	30	32	30	29	33	29	26	23	21	24	24	20	21	21	21	28.2	36.4
18-Nov	20	A	21	20	18	17	14	12	2	9	15	18	12	11	16	7	4	1	6	13	5	5	0	15	11.2	20.6
19-Nov	A	5	4	8	6	7	2	2	1	3	7	11	15	25	29	29	20	4	21	30	29	27	26	A	14.2	30.2
20-Nov	16	17	17	17	15	5	6	1	1	3	9	8	6	10	11	29	32	34	47	37	37	36	A	37	18.8	46.9
21-Nov	39	39	40	40	40	40	41	40	39	37	36	36	38	38	38	39	40	39	39	38	38	A	39	39	38.7	40.5
22-Nov	39	40	40	40	39	40	40	39	39	39	40	40	40	39	39	37	37	38	37	36	A	32	33	30	37.9	40.4
23-Nov	25	13	4	12	8	8	15	11	3	12	11	5	26	30	31	31	31	27	30	A	31	31	32	32	19.9	32.4
24-Nov	31	28	27	28	28	29	30	31	30	29	29	28	27	28	30	30	28	17	A	11	3	1	2	5	23.0	30.8
25-Nov	5	6	8	6	4	8	6	0	1	4	16	16	23	22	17	22	11	A	3	1	2	2	5	2	8.3	22.6
26-Nov	2	2	0	10	15	17	16	9	1	2	4	7	12	9	10	5	A	18	32	34	34	34	32	35	14.8	35.1
27-Nov	31	27	25	23	33	37	41	39	29	23	25	27	26	23	30	A	5	4	2	8	1	11	2	1	20.6	41.1
28-Nov	2	2	1	1	1	0	2	6	1	5	19	28	28	31	A	25	25	1	1	2	3	3	6	17	9.1	30.8
29-Nov	33	31	30	16	7	19	14	19	15	3	29	29	29	A	32	24	18	5	4	1	1	1	4	3	16.0	32.6
30-Nov	1	1	0	0	1	1	1	1	2	2	6	10	A	28	23	11	4	13	4	1	1	1	3	1	5.0	28.3
18.3 16.6 15.7 16.4 16.5 16.4 16.0 14.1 10.9 13.2 18.5 20.3 22.9 24.2 23.9 23.2 21.8 18.9 18.6 17.5 16.1 16.2 16.0 18.0																									Diurnal Average	
39.4 39.5 40.2 40.2 39.8 39.7 41.1 40.2 38.6 39.0 39.8 40.2 40.4 39.5 38.9 39.2 39.7 39.1 46.9 38.1 38.3 36.4 39.2 39.0																									Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span																										

Hourly Maximums

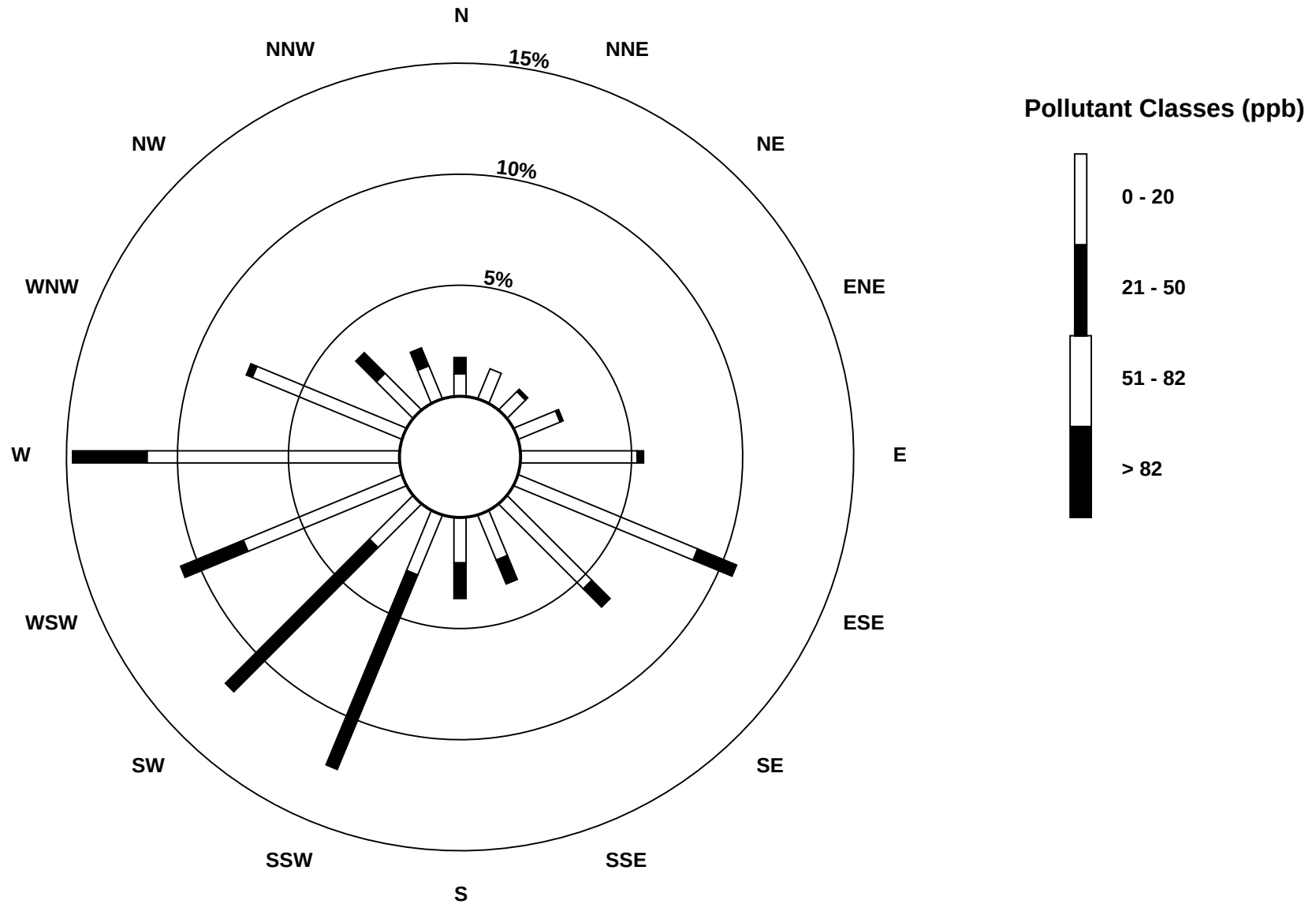
Ozone (O₃) - ppb
Henry Pirker - November 2015



Pollutant Rose

Ozone (O₃) - ppb

Henry Pirker - November 2015



Eight Hour Running Averages

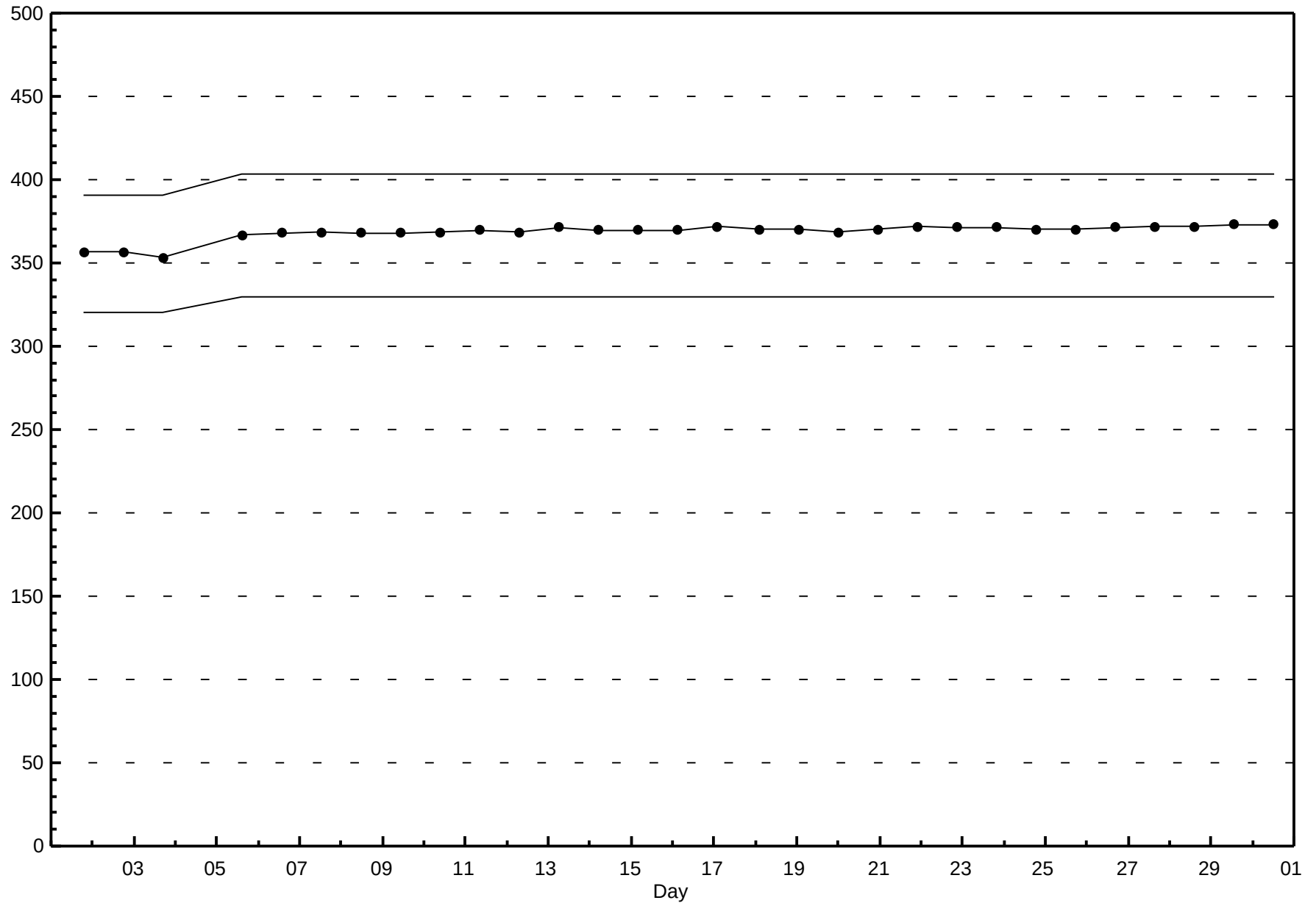
Ozone (O₃) - ppb

Henry Pirker - November 2015

Maximum Value: 38.9 ppb on Nov 22 08:00																								Hours in Service: 720
Minimum Value: 0.0 ppb on Nov 3 00:00																								Hours of Data: 713
Percentiles: P ₁ = 0.0 P ₁₀ = 1.8 Q ₁ = 4.8 Median = 12.2 Q ₃ = 23.3 P ₉₀ = 29.6 P ₉₉ = 38.7																								Hours of Missing Data: 7
																								Hours of Calibration: 7
																								Percent Operational Time: 100.0
Day	Hourly Period Ending At (MST)																							Daily Maximum
1-Nov	16	14	12	12	11	11	11	11	10	9	9	9	9	10	10	10	10	11	10	10	9	8	7	15.8
2-Nov	7	6	6	5	5	5	5	6	6	6	5	5	4	4	4	3	3	3	2	2	1	0	0	6.6
3-Nov	0	0	0	0	1	1	2	2	3	3	4	5	6	7	8	8	9	8	7	6	4	3	2	8.7
4-Nov	3	4	4	5	6	8	8	8	7	7	8	9	9	8	N	N	N	N	N	N	N	21	21	21.5
5-Nov	21	22	23	23	24	24	23	22	20	19	17	16	15	14	14	14	15	16	16	16	15	14	13	23.8
6-Nov	11	10	8	6	4	3	2	1	0	0	1	1	2	3	4	5	6	6	6	5	4	4	3	11.0
7-Nov	1	0	0	0	0	1	1	2	2	2	3	4	5	6	7	9	11	14	17	19	20	21	22	22.3
8-Nov	23	22	20	19	17	16	15	13	12	11	12	11	12	13	14	16	16	16	15	13	11	9	9	22.9
9-Nov	5	3	3	3	2	2	0	0	0	0	1	3	4	6	7	8	8	7	6	5	3	2	2	8.0
10-Nov	3	5	6	7	9	10	10	10	8	8	9	9	9	9	11	15	19	19	19	19	20	19	17	20.0
11-Nov	17	18	20	22	24	27	30	32	31	29	29	29	29	29	29	29	30	31	32	32	31	30	29	31.7
12-Nov	28	28	28	27	27	25	23	23	20	17	16	16	18	21	24	25	27	29	29	27	26	25	25	29.0
13-Nov	21	21	22	23	24	25	24	24	24	24	24	26	27	28	29	32	34	35	34	34	33	32	31	34.9
14-Nov	27	25	25	25	22	21	19	16	14	12	11	11	13	16	19	23	26	27	26	23	19	15	11	27.2
15-Nov	4	2	1	0	0	1	2	4	7	10	14	18	20	23	25	27	28	29	29	29	28	28	28	29.0
16-Nov	28	27	27	27	25	22	19	15	11	7	5	6	6	7	9	11	13	15	18	19	19	20	20	27.8
17-Nov	21	22	22	24	26	28	30	31	32	32	31	31	30	29	27	25	23	22	21	21	20	19	19	31.7
18-Nov	20	20	20	20	19	19	17	15	12	11	10	10	9	8	8	8	8	8	7	6	5	4	2	20.4
19-Nov	2	3	2	2	2	2	2	2	1	2	2	2	3	5	8	11	12	12	13	15	18	18	17	18.4
20-Nov	18	20	20	18	15	12	8	7	6	4	3	3	2	3	4	5	8	12	16	20	24	27	30	33.9
21-Nov	36	36	37	38	38	38	38	39	39	38	38	37	37	36	36	36	36	36	37	37	37	38	38	38.7
22-Nov	38	38	38	39	39	39	39	39	39	38	38	38	38	38	38	38	38	37	37	36	36	34	33	38.9
23-Nov	28	24	19	15	14	10	8	6	4	4	4	4	6	9	12	14	17	20	23	25	27	27	28	28.7
24-Nov	29	29	29	29	28	28	28	27	27	27	27	27	27	27	27	27	26	24	24	21	17	14	10	29.1
25-Nov	3	2	3	2	2	3	3	3	2	2	3	4	6	8	9	11	12	13	12	10	7	5	3	13.1
26-Nov	0	0	0	1	2	3	4	4	4	5	5	5	5	5	4	5	5	6	10	13	15	19	22	26.1
27-Nov	25	27	25	22	21	21	20	21	21	20	19	20	21	19	19	17	14	13	11	9	7	4	1	26.8
28-Nov	1	1	1	1	1	0	0	1	0	0	2	5	8	12	13	16	19	18	17	13	10	6	5	18.6
29-Nov	4	7	10	11	11	12	13	14	12	9	8	11	14	14	17	18	18	18	16	12	8	7	4	18.3
30-Nov	1	0	0	0	0	0	0	0	0	0	1	2	2	5	7	8	8	8	8	7	6	4	2	8.4
38.0 38.1 38.4 38.7 38.8 38.8 38.9 38.9 38.7 38.3 38.2 38.2 38.2 38.1 38.0 37.6 37.5 37.3 36.8 37.2 37.3 37.6 37.9 38.0																								Diurnal Maximums
N - Not Valid																								

Span Responses

Ozone (O₃)
Henry Pirker - November 2015



Hourly Averages

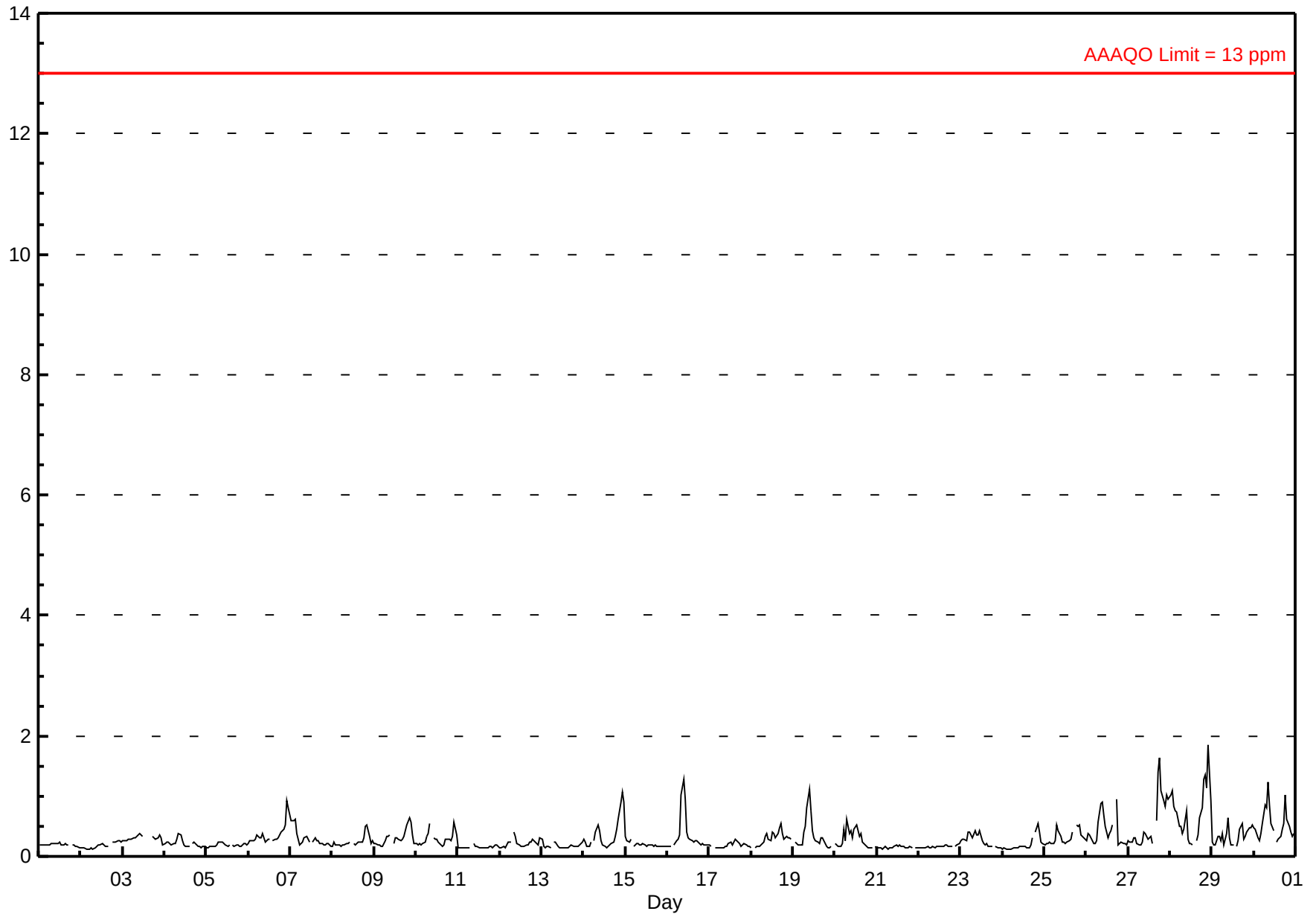
Carbon Monoxide (CO) - ppm

Henry Pirker - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 1.85 ppm on Nov 28 23:00 Maximum Daily Average: 0.72 ppm on Nov 28																								Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0		
Minimum Value: 0.1 ppm on Nov 24 05:00 Maximum Diurnal Average: 0.41 ppm at hour 10 Monthly Average: 0.293 ppm												Minimum Daily Average: 0.15 ppm on Nov 21 Minimum Diurnal Average: 0.22 ppm at hour 15 Percentiles: P ₁ = 0.13 P ₁₀ = 0.15 Q ₁ = 0.17 Median = 0.22 Q ₃ = 0.32 P ₉₀ = 0.51 P ₉₉ = 1.24														
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-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.1	0.19	0.24
2-Nov	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.3	0.3	0.2	0.18	0.26
3-Nov	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	C	C	C	0.2	A	0.3	0.3	0.3	0.3	0.4	0.3	0.2	0.30	0.37
4-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.3	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.21	0.39
5-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.19	0.24
6-Nov	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.4	0.3	0.2	0.3	0.3	A	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.9	0.8	0.37	0.93
7-Nov	0.6	0.6	0.6	0.6	0.4	0.2	0.2	0.2	0.3	0.3	0.3	0.2	A	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.30	0.61
8-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.5	0.3	0.2	0.3	0.24	0.53
9-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	A	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.7	0.6	0.4	0.2	0.31	0.65
10-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.5	A	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.6	0.4	0.28	0.56	
11-Nov	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	A	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.16	0.23
12-Nov	0.1	0.1	0.2	0.1	0.2	0.2	0.2	A	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.22	0.40
13-Nov	0.3	0.2	0.2	0.2	0.2	0.1	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.18	0.29
14-Nov	0.3	0.2	0.2	0.2	0.2	A	0.3	0.4	0.5	0.4	0.3	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.5	0.6	0.9	1.1	0.9	0.37	1.06
15-Nov	0.3	0.3	0.2	0.3	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.20	0.34
16-Nov	0.2	0.2	0.2	A	0.2	0.3	0.3	0.3	1.0	1.3	1.0	0.4	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.35	1.28
17-Nov	0.2	0.2	A	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.19	0.29
18-Nov	0.1	A	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.3	0.4	0.4	0.3	0.4	0.5	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.30	0.54
19-Nov	A	0.2	0.2	0.2	0.2	0.2	0.4	0.5	0.8	1.1	0.8	0.4	0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.1	0.1	0.2	A	0.34	1.11
20-Nov	0.2	0.2	0.2	0.2	0.2	0.4	0.3	0.6	0.4	0.4	0.3	0.4	0.5	0.4	0.3	0.4	0.2	0.2	0.2	0.2	0.1	0.2	A	0.2	0.29	0.62
21-Nov	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	A	0.1	0.1	0.15	0.19
22-Nov	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.16	0.21
23-Nov	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.1	0.1	0.1	0.26	0.42
24-Nov	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.3	A	0.4	0.5	0.4	0.2	0.2	0.20	0.54
25-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.4	A	0.5	0.5	0.5	0.4	0.3	0.3	0.32	0.53
26-Nov	0.3	0.4	0.3	0.3	0.2	0.2	0.3	0.6	0.9	0.9	0.7	0.5	0.3	0.4	0.4	0.5	A	0.9	0.2	0.2	0.2	0.2	0.2	0.2	0.40	0.94
27-Nov	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.4	0.4	0.3	0.3	0.3	0.2	A	0.6	1.4	1.6	1.1	0.9	0.8	1.0	0.9	0.55	1.63
28-Nov	1.0	1.1	0.8	0.8	0.7	0.5	0.5	0.4	0.5	0.8	0.3	0.2	0.2	0.2	A	0.3	0.4	0.6	0.8	1.3	1.3	1.1	1.9	0.9	0.72	1.85
29-Nov	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.2	0.4	0.6	0.3	0.2	0.2	A	0.2	0.3	0.4	0.5	0.3	0.3	0.4	0.5	0.5	0.5	0.34	0.64
30-Nov	0.5	0.5	0.3	0.3	0.4	0.5	0.8	0.8	1.2	0.8	0.5	0.4	A	0.2	0.3	0.3	0.4	0.6	1.0	0.6	0.5	0.4	0.3	0.4	0.53	1.25
																								Diurnal Average		
																								Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 13 ppm 24-hr na																										

Hourly Averages

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



Hourly Maximums

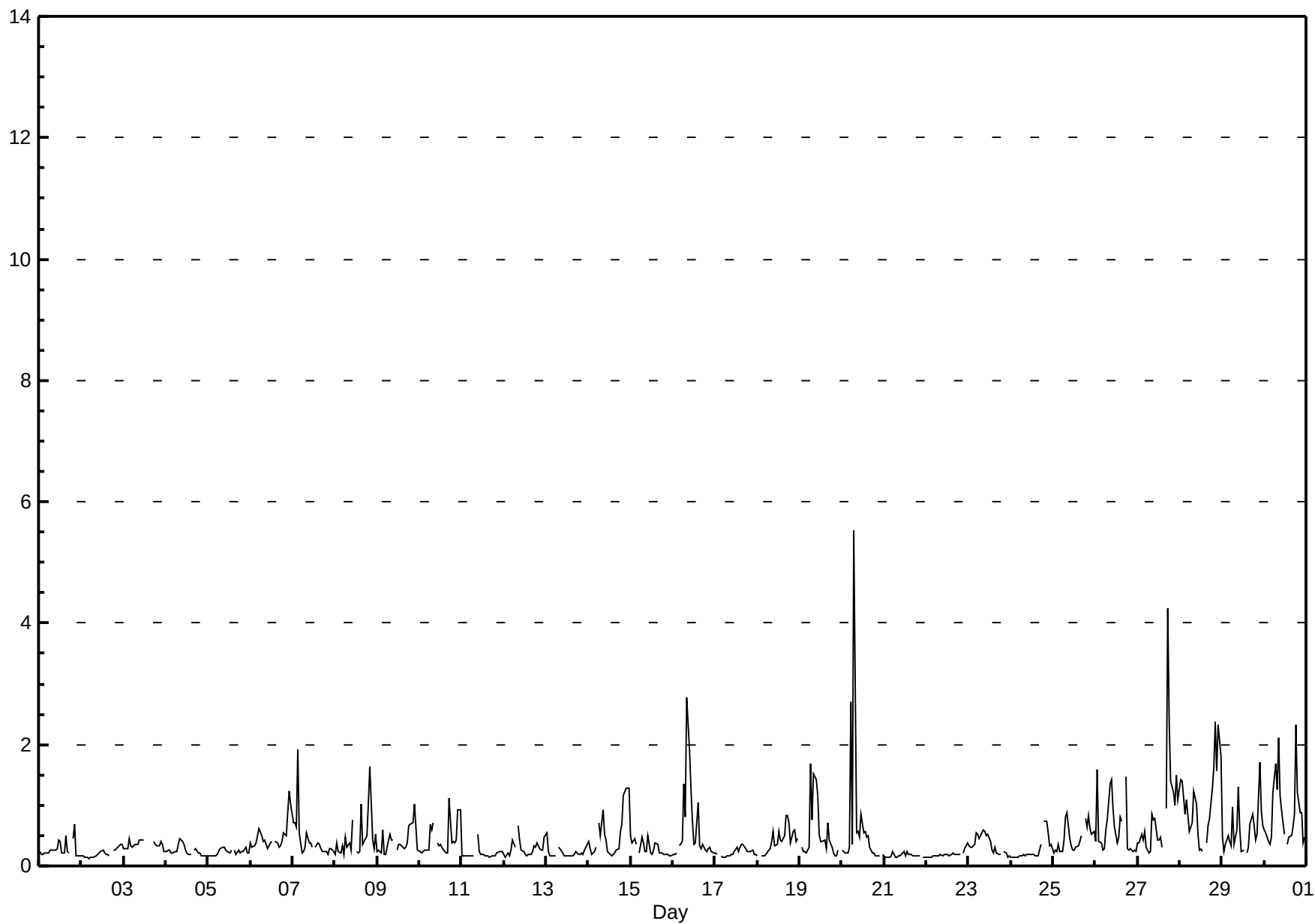
Carbon Monoxide (CO) - ppm

Henry Pirker - November 2015

Maximum Value: 5.53 ppm on Nov 20 08:00																				Maximum Daily Average: 1.05 ppm on Nov 28					Hours in Service: 720	
Minimum Value: 0.1 ppm on Nov 2 05:00																				Minimum Daily Average: 0.17 ppm on Nov 21					Hours of Data: 686	
Maximum Diurnal Average: 0.68 ppm at hour 9																				Minimum Diurnal Average: 0.29 ppm at hour 14					Hours of Missing Data: 34	
Monthly Average: 0.436 ppm																				Percentiles: P ₁ = 0.14 P ₁₀ = 0.17 Q ₁ = 0.20 Median = 0.29 Q ₃ = 0.48 P ₉₀ = 0.86 P ₉₉ = 2.32					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-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.2	0.2	0.5	0.2	0.2	A	0.5	0.7	0.2	0.2	0.2	0.28	0.69
2-Nov	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	A	0.3	0.3	0.3	0.3	0.4	0.4	0.21	0.36
3-Nov	0.3	0.3	0.3	0.5	0.3	0.3	0.4	0.3	0.3	0.4	0.4	0.4	C	C	C	0.3	A	0.4	0.4	0.3	0.3	0.4	0.4	0.2	0.35	0.45
4-Nov	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	A	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.25	0.45
5-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.3	A	0.3	0.2	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.23	0.30
6-Nov	0.4	0.3	0.3	0.4	0.5	0.6	0.5	0.4	0.4	0.4	0.3	0.4	0.4	A	0.4	0.4	0.3	0.3	0.4	0.5	0.5	0.9	1.2	1.0	0.49	1.24
7-Nov	0.7	0.7	0.6	1.9	0.5	0.2	0.2	0.3	0.5	0.4	0.4	0.3	A	0.3	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.43	1.92
8-Nov	0.2	0.4	0.2	0.2	0.3	0.2	0.5	0.3	0.4	0.3	0.8	A	0.2	0.2	0.2	1.0	0.4	0.5	0.5	1.1	1.6	0.4	0.3	0.5	0.46	1.64
9-Nov	0.2	0.3	0.2	0.6	0.2	0.2	0.4	0.5	0.4	0.4	A	0.3	0.4	0.4	0.3	0.3	0.3	0.4	0.7	0.7	1.0	0.6	0.3	0.42	1.02	
10-Nov	0.2	0.2	0.2	0.3	0.3	0.3	0.7	0.6	0.7	A	0.4	0.3	0.4	0.3	0.2	0.2	0.2	1.1	0.4	0.4	0.4	0.9	0.9	0.44	1.11	
11-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.20	0.51
12-Nov	0.2	0.1	0.2	0.2	0.3	0.4	0.3	A	0.7	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.5	0.29	0.68
13-Nov	0.6	0.2	0.2	0.2	0.2	0.2	A	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	0.3	0.4	0.22	0.55	
14-Nov	0.4	0.3	0.2	0.2	0.3	A	0.7	0.5	0.9	0.5	0.4	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.6	0.7	1.2	1.3	1.3	1.3	0.54	1.29
15-Nov	0.5	0.4	0.4	0.4	A	0.2	0.5	0.4	0.2	0.2	0.5	0.2	0.2	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.29	0.49
16-Nov	0.2	0.2	0.2	A	0.3	0.4	1.4	0.8	2.8	1.9	1.3	0.7	0.4	0.4	1.0	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.63	2.77
17-Nov	0.2	0.2	A	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.4	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.22	0.35
18-Nov	0.2	A	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.6	0.3	0.3	0.6	0.4	0.4	0.5	0.8	0.8	0.7	0.4	0.6	0.6	0.4	0.4	0.42	0.83
19-Nov	A	0.3	0.2	0.2	0.2	0.3	1.7	0.8	1.5	1.4	1.2	0.5	0.4	0.4	0.4	0.3	0.7	0.4	0.3	0.2	0.2	0.2	0.3	A	0.55	1.68
20-Nov	0.3	0.2	0.2	0.2	0.3	2.7	0.4	5.5	0.5	0.6	0.5	0.8	0.6	0.6	0.5	0.5	0.3	0.2	0.2	0.2	0.2	0.2	A	0.2	0.68	5.53
21-Nov	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.1	0.17	0.25
22-Nov	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.3	0.4	0.19	0.37
23-Nov	0.3	0.3	0.3	0.3	0.6	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.4	0.3	0.2	0.3	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.35	0.60
24-Nov	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	A	0.7	0.7	0.6	0.3	0.3	0.26	0.73
25-Nov	0.2	0.3	0.2	0.4	0.2	0.2	0.4	0.8	0.9	0.5	0.3	0.3	0.3	0.3	0.3	0.4	0.5	A	0.8	0.7	0.8	0.6	0.5	0.6	0.45	0.87
26-Nov	0.4	1.6	0.4	0.4	0.3	0.3	0.6	0.8	1.4	1.4	0.9	0.6	0.4	0.5	0.8	0.7	A	1.5	0.3	0.3	0.3	0.2	0.3	0.2	0.63	1.58
27-Nov	0.4	0.4	0.5	0.4	0.6	0.3	0.2	0.2	0.9	0.7	0.8	0.4	0.4	0.5	0.3	A	0.9	4.2	2.4	1.4	1.2	1.0	1.5	1.1	0.91	4.24
28-Nov	1.4	1.4	1.1	0.9	1.1	0.6	0.6	0.7	1.2	1.0	0.5	0.3	0.3	0.2	A	0.4	0.7	0.8	1.3	1.6	2.4	1.6	2.3	1.8	1.05	2.38
29-Nov	0.5	0.2	0.3	0.5	0.4	0.3	1.0	0.4	0.6	1.3	0.6	0.2	0.3	A	0.2	0.3	0.7	0.9	0.7	0.4	0.5	1.7	0.9	0.7	0.59	1.71
30-Nov	0.6	0.5	0.4	0.4	0.5	1.2	1.7	1.3	2.1	1.2	0.9	0.5	A	0.4	0.5	0.5	0.6	0.9	2.3	1.2	0.9	0.9	0.4	0.5	0.88	2.32
0.33 0.35 0.29 0.35 0.31 0.39 0.50 0.60 0.68 0.58 0.46 0.35 0.30 0.29 0.33 0.35 0.36 0.58 0.52 0.48 0.55 0.52 0.51 0.47																									Diurnal Average	
1.43 1.58 1.14 1.92 1.09 2.70 1.69 5.53 2.77 1.89 1.25 0.84 0.57 0.56 1.03 1.03 0.95 4.24 2.40 1.61 2.38 1.71 2.33 1.80																									Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span																										

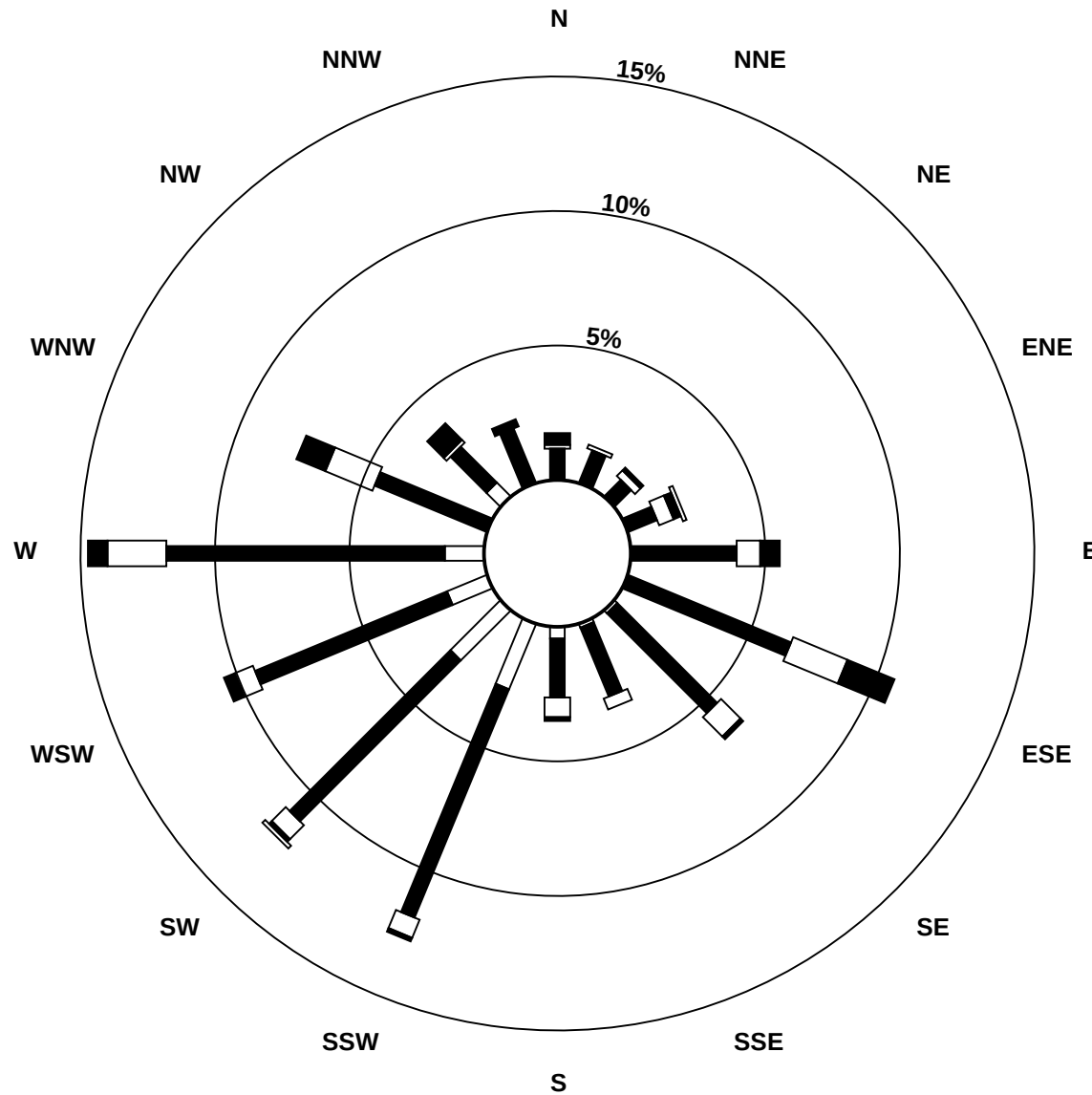
Hourly Maximums

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

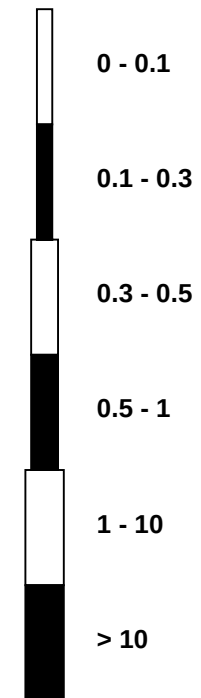


Pollutant Rose

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



Pollutant Classes (ppm)



Eight Hour Running Averages

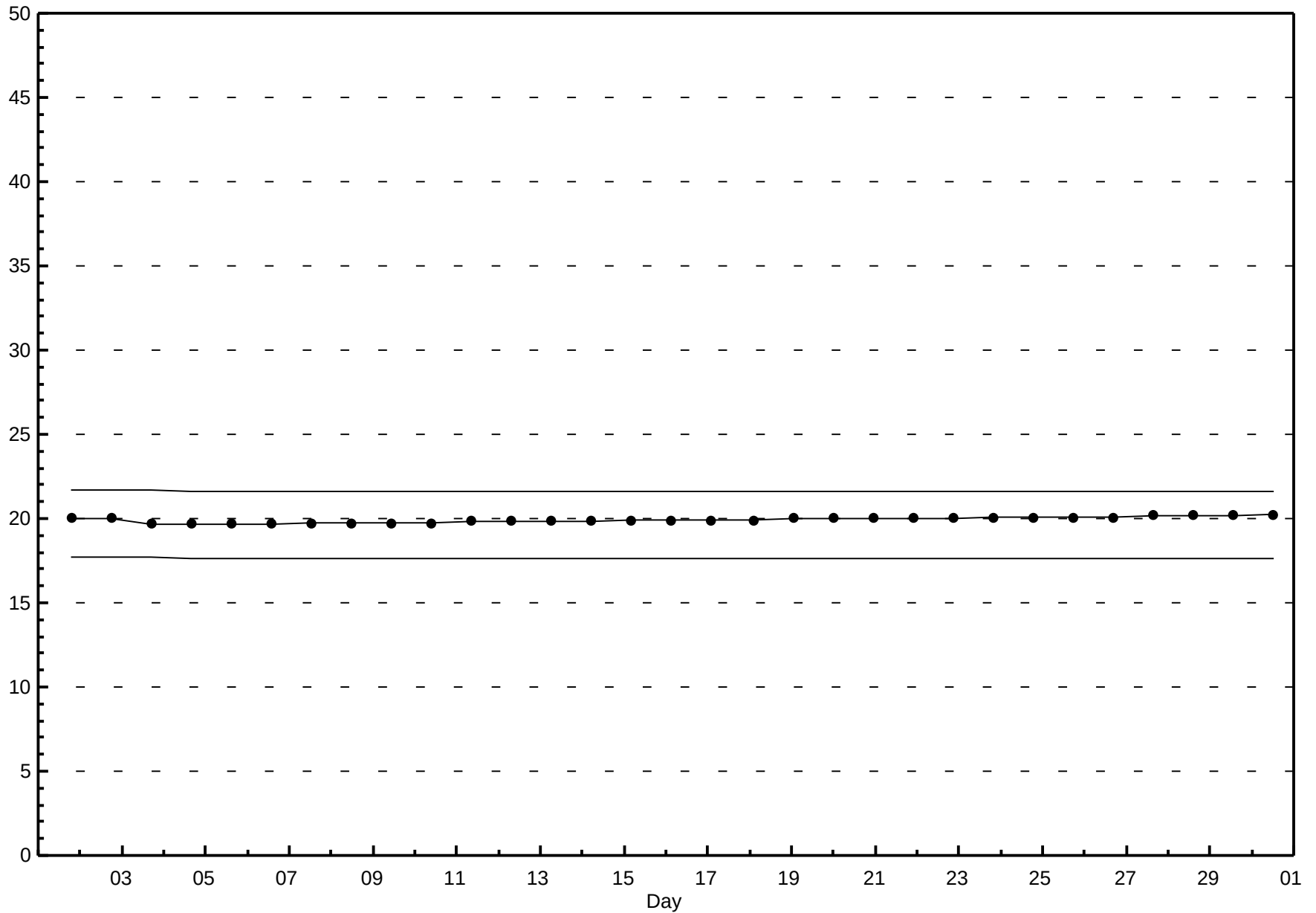
Carbon Monoxide (CO) - ppm

Henry Pirker - November 2015

Number of Exceedences (AAAQO): 8-hr: 0 Maximum Value: 1.11 ppm on Nov 28 01:00																								Hours in Service: 720 Hours of Data: 713	
Minimum Value: 0.13 ppm on Nov 24 06:00																								Hours of Missing Data: 7 Hours of Calibration: 7	
Percentiles: P ₁ = 0.13 P ₁₀ = 0.16 Q ₁ = 0.18 Median = 0.24 Q ₃ = 0.33 P ₉₀ = 0.50 P ₉₉ = 0.94																								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-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.21
2-Nov	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.23
3-Nov	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	N	N	N	N	N	N	N	0.3	0.3	0.3	0.33
4-Nov	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	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	0.28
5-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.21
6-Nov	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	0.4	0.4	0.5	0.51
7-Nov	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.64
8-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.33
9-Nov	0.3	0.3	0.3	0.3	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	0.4	0.4	0.4	0.4	0.43
10-Nov	0.4	0.4	0.4	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	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.41
11-Nov	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.31
12-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.26
13-Nov	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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.25
14-Nov	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	0.2	0.2	0.2	0.2	0.3	0.4	0.5	0.6	0.59
15-Nov	0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.61
16-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.62
17-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.22
18-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.39
19-Nov	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.57
20-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	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	0.2	0.2	0.2	0.43
21-Nov	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.17
22-Nov	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.18
23-Nov	0.2	0.2	0.2	0.2	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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.38
24-Nov	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.33
25-Nov	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	0.4	0.42
26-Nov	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.58
27-Nov	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	0.4	0.5	0.7	0.8	0.9	1.0	1.1	1.1	1.07
28-Nov	1.1	1.1	1.0	0.9	0.9	0.9	0.8	0.7	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.5	0.7	0.8	1.0	1.0	1.11
29-Nov	1.0	1.0	0.9	0.8	0.7	0.5	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	1.03
30-Nov	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.7	0.8	0.7	0.6	0.6	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.75
1.11 1.07 0.97 0.93 0.90 0.86 0.80 0.73 0.66 0.65 0.68 0.70 0.75 0.71 0.63 0.59 0.53 0.54 0.68 0.80 0.89 0.96 1.07 1.06																									
Diurnal Maximums																									
N - Not Valid																									
Alberta Ambient Air Quality Objectives (AAAQO): 8-hr 5 ppm																									

Span Responses

Carbon Monoxide (CO)
Henry Pirker - November 2015



Hourly Averages

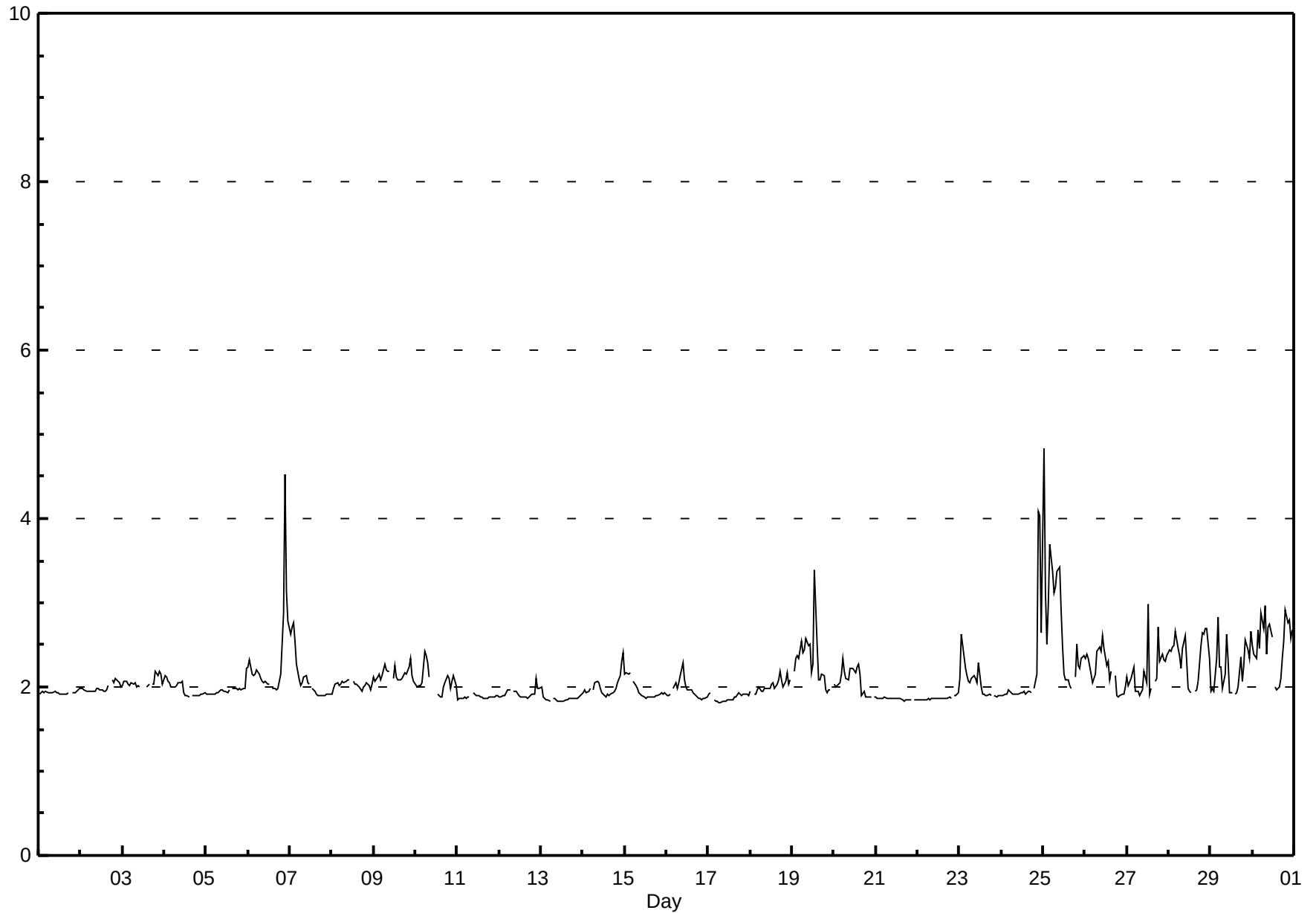
Total Hydrocarbons (THC) - ppm

Henry Pirker - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 4.82 ppm on Nov 25 01:00 Maximum Daily Average: 2.74 ppm on Nov 25																								Hours in Service: 720 Hours of Data: 684 Hours of Missing Data: 36 Hours of Calibration: 34 Percent Operational Time: 99.7			
Minimum Value: 1.8 ppm on Nov 17 08:00 Minimum Daily Average: 1.86 ppm on Nov 21 Maximum Diurnal Average: 2.24 ppm at hour 22 Minimum Diurnal Average: 1.95 ppm at hour 17 Monthly Average: 2.087 ppm Percentiles: P ₁ = 1.83 P ₁₀ = 1.87 Q ₁ = 1.91 Median = 1.98 Q ₃ = 2.14 P ₉₀ = 2.44 P ₉₉ = 3.37																											
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-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	2.0	1.93	1.98	
2-Nov	2.0	2.0	2.0	2.0	2.0	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.1	2.0	2.1	2.1	2.0	2.0	1.99	2.10
3-Nov	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	C	C	C	2.0	2.0	A	2.0	2.0	2.2	2.1	2.2	2.2	2.0	2.06	2.19	
4-Nov	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.98	2.13	
5-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	1.9	1.9	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	1.96	2.22	
6-Nov	2.2	2.3	2.2	2.1	2.2	2.2	2.2	2.1	2.1	2.0	2.1	2.0	2.0	A	2.0	2.0	2.0	2.0	2.1	2.1	2.9	4.5	3.1	2.8	2.31	4.52	
7-Nov	2.6	2.7	2.8	2.5	2.3	2.1	2.0	2.1	2.1	2.1	2.1	2.0	A	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.11	2.76	
8-Nov	1.9	2.0	2.0	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	A	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.03	2.09	
9-Nov	2.1	2.1	2.1	2.2	2.1	2.1	2.3	2.2	2.2	2.2	A	2.1	2.3	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.3	2.1	2.1	2.15	2.34	
10-Nov	2.0	2.0	2.0	2.0	2.1	2.4	2.4	2.3	2.1	A	2.1	M	M	1.9	1.9	1.9	2.0	2.0	2.1	2.1	2.0	2.1	2.1	2.0	2.08	2.42	
11-Nov	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.88	1.93	
12-Nov	1.9	1.9	1.9	1.9	1.9	2.0	2.0	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.0	2.0	1.92	2.10	
13-Nov	2.0	1.9	1.9	1.9	1.8	1.8	A	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.86	2.00	
14-Nov	1.9	2.0	1.9	1.9	2.0	A	2.0	2.1	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.1	2.3	2.4	2.00	2.41	
15-Nov	2.1	2.2	2.2	2.2	A	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.96	2.17	
16-Nov	1.9	1.9	1.9	A	2.0	2.1	2.0	2.0	2.1	2.3	2.1	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.96	2.30	
17-Nov	1.9	1.9	A	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.87	1.94	
18-Nov	2.0	A	1.9	1.9	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.1	2.0	2.1	2.2	2.0	2.1	2.02	2.19	
19-Nov	A	2.2	2.3	2.4	2.3	2.5	2.4	2.4	2.6	2.5	2.5	2.2	2.3	3.4	2.5	2.1	2.1	2.1	2.1	2.0	1.9	2.0	2.0	A	2.31	3.38	
20-Nov	2.0	2.0	2.0	2.0	2.2	2.3	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.1	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	2.07	2.34	
21-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	A	1.8	1.8	1.86	1.88	
22-Nov	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.87	1.93	
23-Nov	2.1	2.6	2.5	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.0	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	2.06	2.62	
24-Nov	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	A	2.0	2.1	4.1	4.0	2.6	2.16	4.08	
25-Nov	4.8	3.1	2.5	3.0	3.7	3.4	3.1	3.2	3.4	3.4	2.9	2.5	2.2	2.1	2.1	2.0	2.0	A	2.1	2.5	2.3	2.2	2.3	2.4	2.74	4.82	
26-Nov	2.3	2.4	2.3	2.2	2.1	2.1	2.1	2.4	2.5	2.4	2.6	2.5	2.2	2.3	2.1	2.2	A	2.1	1.9	1.9	1.9	1.9	1.9	2.0	2.19	2.61	
27-Nov	2.1	2.0	2.1	2.2	2.2	2.0	1.9	1.9	1.9	2.0	2.2	2.0	3.0	1.9	2.0	A	2.1	2.1	2.7	2.3	2.4	2.3	2.3	2.4	2.17	2.98	
28-Nov	2.4	2.4	2.5	2.5	2.7	2.5	2.4	2.2	2.5	2.6	2.3	2.0	1.9	1.9	A	2.0	2.0	2.1	2.5	2.6	2.6	2.7	2.7	2.3	2.36	2.70	
29-Nov	2.0	2.0	1.9	2.3	2.8	2.2	2.2	2.0	2.2	2.6	2.3	1.9	1.9	A	1.9	1.9	2.0	2.4	2.1	2.2	2.6	2.4	2.3	2.7	2.22	2.82	
30-Nov	2.5	2.4	2.3	2.7	2.5	2.9	2.7	3.0	2.4	2.7	2.7	2.6	A	2.0	2.0	2.0	2.1	2.3	2.5	2.9	2.8	2.8	2.6	2.7	2.52	2.97	
2.15 2.12 2.10 2.12 2.14 2.14 2.11 2.11 2.12 2.15 2.11 2.04 2.02 2.02 1.97 1.96 1.95 2.00 2.04 2.06 2.09 2.24 2.17 2.12																								Diurnal Average			
4.82 3.12 2.76 2.98 3.69 3.36 3.12 3.19 3.38 3.42 2.90 2.59 2.98 3.38 2.50 2.18 2.10 2.36 2.72 2.92 2.88 4.52 4.04 2.78																								Diurnal Maximum			
C - Calibration M - Maintenance A - Automated Daily Zero Span																											

Hourly Averages

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



Hourly Maximums

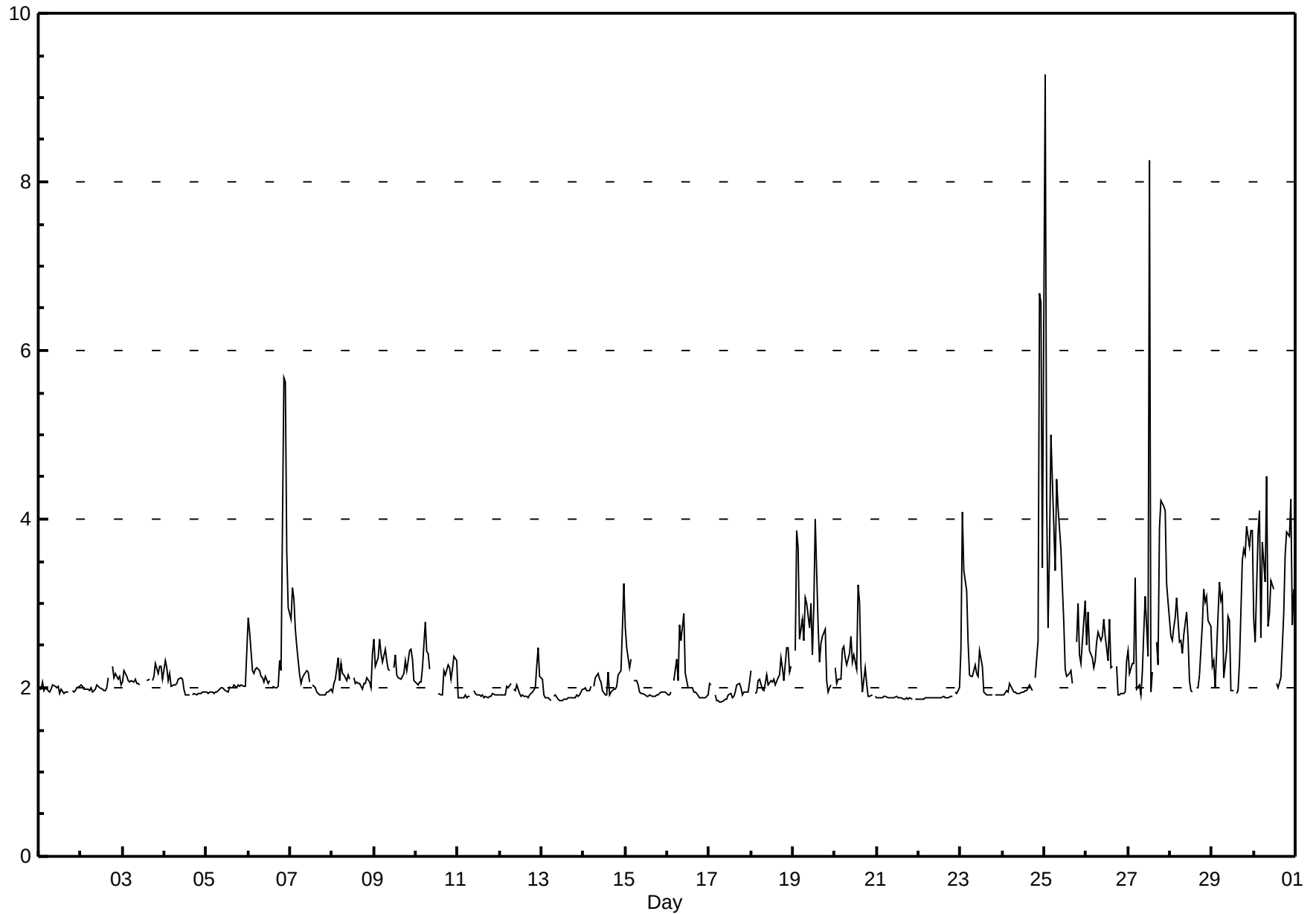
Total Hydrocarbons (THC) - ppm

Henry Pirker - November 2015

Maximum Value: 9.27 ppm on Nov 25 01:00																					Maximum Daily Average: 3.35 ppm on Nov 25				Hours in Service: 720		
Minimum Value: 1.8 ppm on Nov 17 08:00																					Minimum Daily Average: 1.88 ppm on Nov 21				Hours of Data: 684		
Maximum Diurnal Average: 2.58 ppm at hour 22																					Minimum Diurnal Average: 2.01 ppm at hour 16				Hours of Missing Data: 36		
Monthly Average: 2.280 ppm																					Percentiles: P ₁ = 1.85 P ₁₀ = 1.89 Q ₁ = 1.93 Median = 2.04 Q ₃ = 2.33 P ₉₀ = 2.93 P ₉₉ = 4.78				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-Nov	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	1.9	1.9	1.9	2.0	A	2.0	2.0	2.0	2.0	2.0	1.98	2.07	
2-Nov	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	2.1	A	2.2	2.1	2.2	2.1	2.1	2.0	2.04	2.25	
3-Nov	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.0	C	C	C	2.1	2.1	A	2.1	2.1	2.3	2.2	2.2	2.2	2.1	2.12	2.28	
4-Nov	2.3	2.2	2.1	2.2	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.02	2.32	
5-Nov	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.4	2.00	2.43	
6-Nov	2.8	2.7	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	A	2.0	2.0	2.0	2.0	2.3	2.2	5.7	5.6	3.6	2.9	2.59	5.67	
7-Nov	2.8	3.2	3.1	2.7	2.5	2.1	2.1	2.1	2.1	2.2	2.2	2.1	A	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.20	3.19	
8-Nov	1.9	2.1	2.1	2.4	2.1	2.3	2.2	2.2	2.1	2.2	2.1	A	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.4	2.11	2.41	
9-Nov	2.6	2.2	2.4	2.6	2.4	2.3	2.5	2.3	2.2	2.2	A	A	2.2	2.4	2.2	2.1	2.1	2.1	2.2	2.3	2.2	2.4	2.5	2.3	2.1	2.30	2.58
10-Nov	2.0	2.0	2.1	2.1	2.2	2.8	2.4	2.4	2.2	A	2.2	M	M	1.9	1.9	1.9	2.2	2.2	2.3	2.2	2.1	2.2	2.4	2.3	2.20	2.78	
11-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.91	1.97	
12-Nov	1.9	1.9	1.9	1.9	2.0	2.0	2.1	A	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.3	2.5	2.1	1.99	2.47	
13-Nov	2.1	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.89	2.10	
14-Nov	2.0	2.0	2.0	2.0	2.0	A	2.0	2.1	2.2	2.1	2.1	2.0	1.9	1.9	2.2	1.9	2.0	2.0	2.0	2.0	2.2	2.2	2.7	3.2	2.11	3.24	
15-Nov	2.7	2.5	2.2	2.3	A	2.1	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.9	2.0	2.03	2.71	
16-Nov	1.9	1.9	1.9	A	2.1	2.3	2.1	2.8	2.6	2.9	2.2	2.1	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.08	2.88	
17-Nov	2.0	2.0	A	1.9	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	1.9	2.0	1.9	1.9	2.1	1.93	2.07	
18-Nov	2.2	A	1.9	1.9	2.1	2.1	2.0	2.0	2.0	2.2	2.0	2.1	2.1	2.1	2.0	2.1	2.1	2.4	2.2	2.1	2.5	2.5	2.2	2.3	2.13	2.48	
19-Nov	A	2.4	3.9	3.7	2.6	2.8	2.6	3.1	3.0	2.7	3.0	2.4	3.0	4.0	2.7	2.3	2.5	2.6	2.7	2.1	1.9	2.0	2.0	A	2.73	4.01	
20-Nov	2.2	2.0	2.1	2.1	2.5	2.5	2.4	2.3	2.4	2.6	2.3	2.4	2.2	3.2	3.0	2.2	1.9	2.2	2.1	1.9	1.9	1.9	A	1.9	2.28	3.23	
21-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.88	1.90	
22-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	2.0	1.89	2.01	
23-Nov	2.5	4.1	3.4	3.2	2.5	2.2	2.1	2.1	2.3	2.2	2.1	2.4	2.2	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	2.28	4.09	
24-Nov	1.9	1.9	2.0	2.0	2.0	2.0	1.9	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	A	2.1	2.6	6.7	6.6	3.4	2.47	6.68	
25-Nov	9.3	4.3	2.7	3.6	5.0	3.9	3.4	4.5	4.1	3.6	3.2	2.8	2.2	2.1	2.2	2.2	2.0	A	2.5	3.0	2.4	2.3	2.5	3.0	3.35	9.27	
26-Nov	2.5	2.9	2.4	2.4	2.2	2.3	2.6	2.7	2.6	2.6	2.8	2.6	2.3	2.8	2.2	2.2	A	2.2	1.9	1.9	1.9	1.9	1.9	2.3	2.37	2.90	
27-Nov	2.4	2.2	2.3	2.3	3.3	2.0	2.0	1.9	2.2	2.7	3.1	2.4	8.3	1.9	2.2	A	2.5	2.3	3.9	4.2	4.1	4.1	3.2	3.0	2.98	8.26	
28-Nov	2.6	2.6	2.7	2.8	3.1	2.5	2.6	2.4	2.6	2.9	2.6	2.1	2.0	2.0	A	2.0	2.0	2.2	2.7	3.2	3.0	3.1	2.8	2.7	2.57	3.18	
29-Nov	2.2	2.3	2.0	2.9	3.2	3.0	3.1	2.1	2.4	2.8	2.8	2.0	2.0	A	1.9	2.0	2.3	3.5	3.6	3.6	3.9	3.7	3.9	3.9	2.83	3.92	
30-Nov	2.8	2.5	3.8	4.1	2.6	3.7	3.2	4.5	2.7	2.9	3.3	3.2	A	2.0	2.0	2.1	2.5	2.9	3.6	3.8	3.8	4.2	2.8	3.2	3.14	4.50	
2.47 2.33 2.31 2.36 2.35 2.30 2.24 2.31 2.26 2.28 2.26 2.15 2.30 2.12 2.06 2.01 2.05 2.13 2.27 2.28 2.42 2.58 2.45 2.38																								Diurnal Average			
9.27 4.26 3.87 4.10 4.99 3.94 3.38 4.50 4.13 3.64 3.27 3.17 8.26 4.01 3.01 2.30 2.55 3.51 3.91 4.22 5.67 6.68 6.57 3.87																								Diurnal Maximum			
C - Calibration M - Maintenance A - Automated Daily Zero Span																											

Hourly Maximums

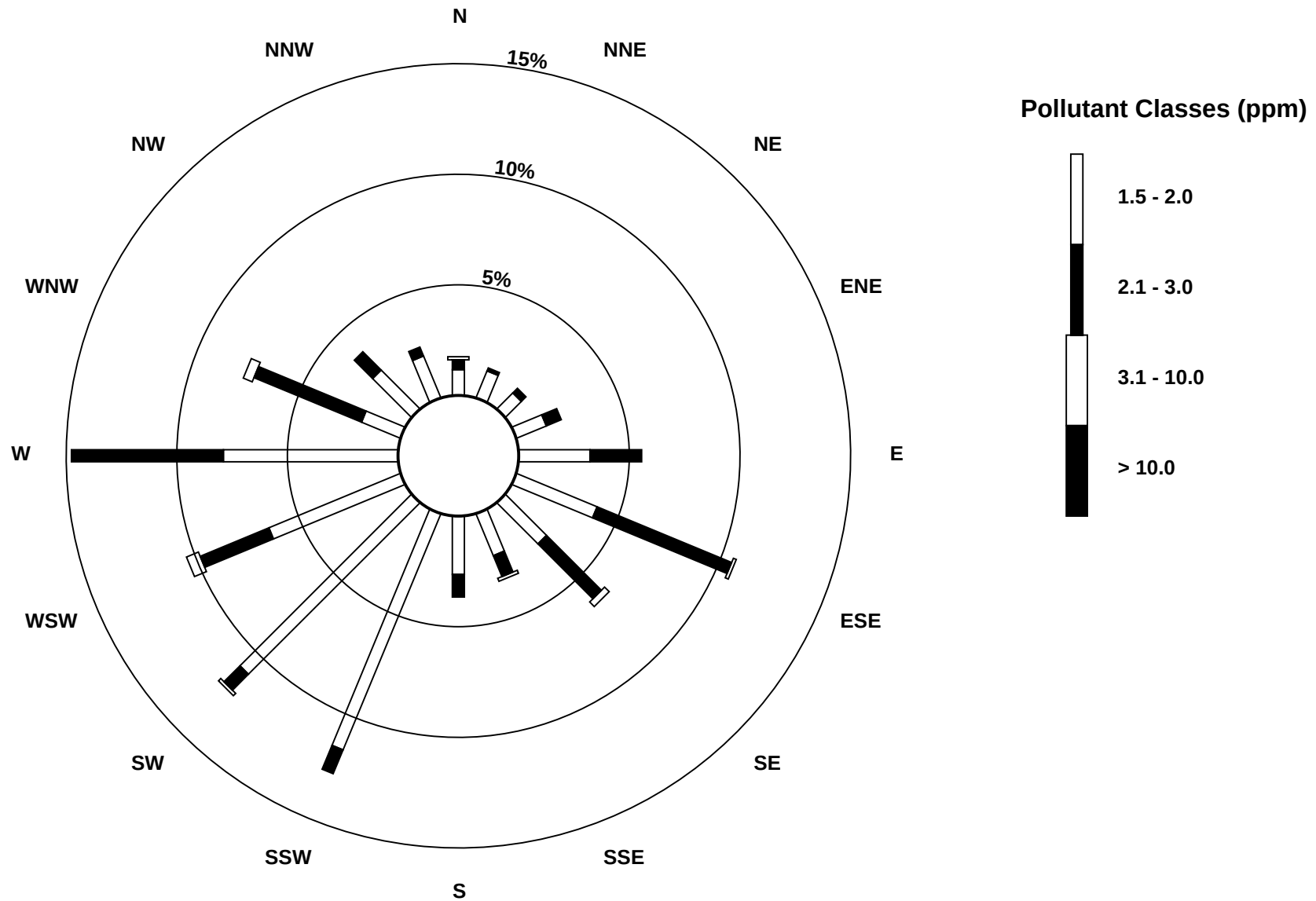
Total Hydrocarbons (THC) - ppm
Henry Pirker - November 2015



Pollutant Rose

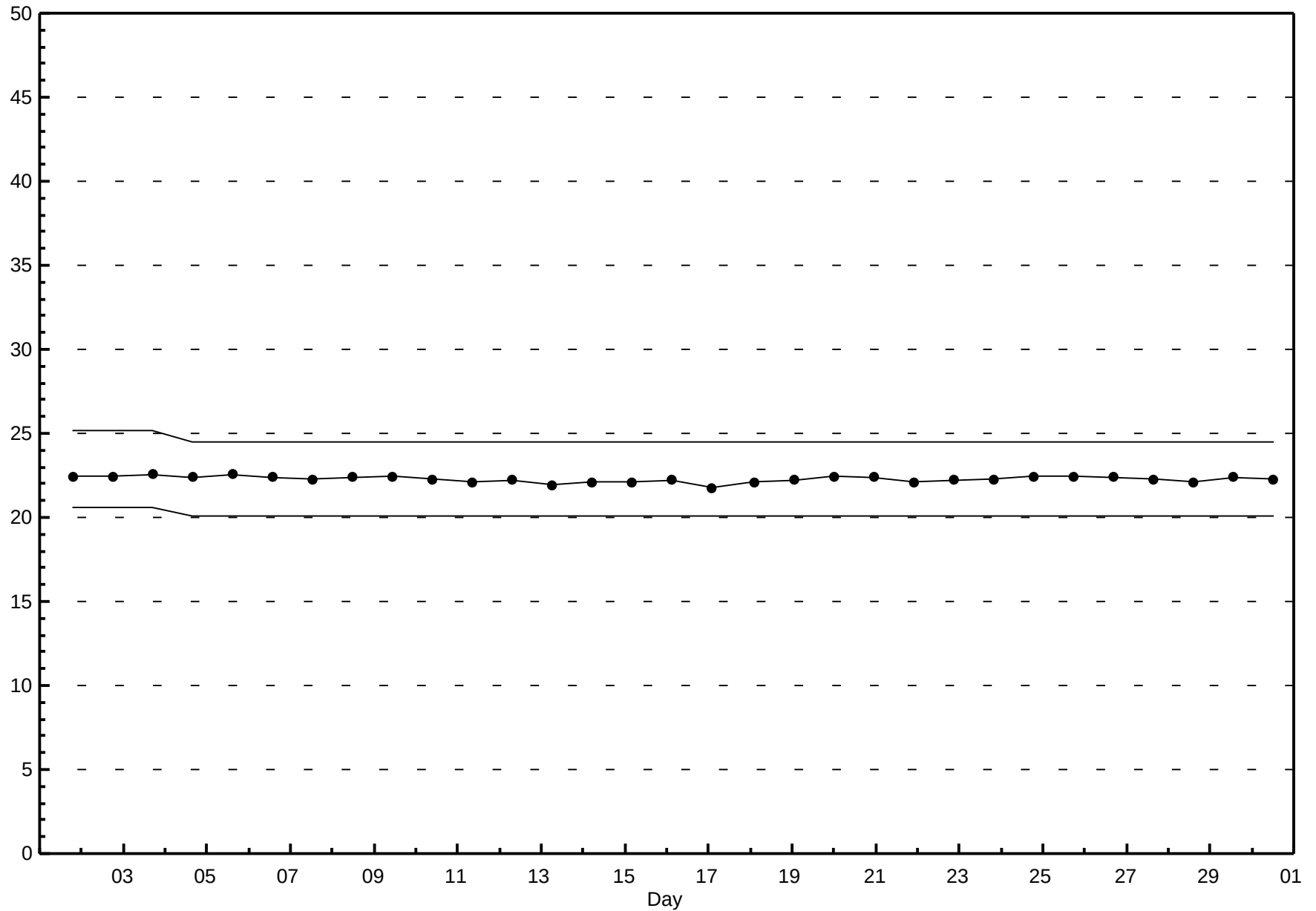
Total Hydrocarbons (THC) - ppm

Henry Pirker - November 2015



Span Responses

Total Hydrocarbons (THC)
Henry Pirker - November 2015



Hourly Averages

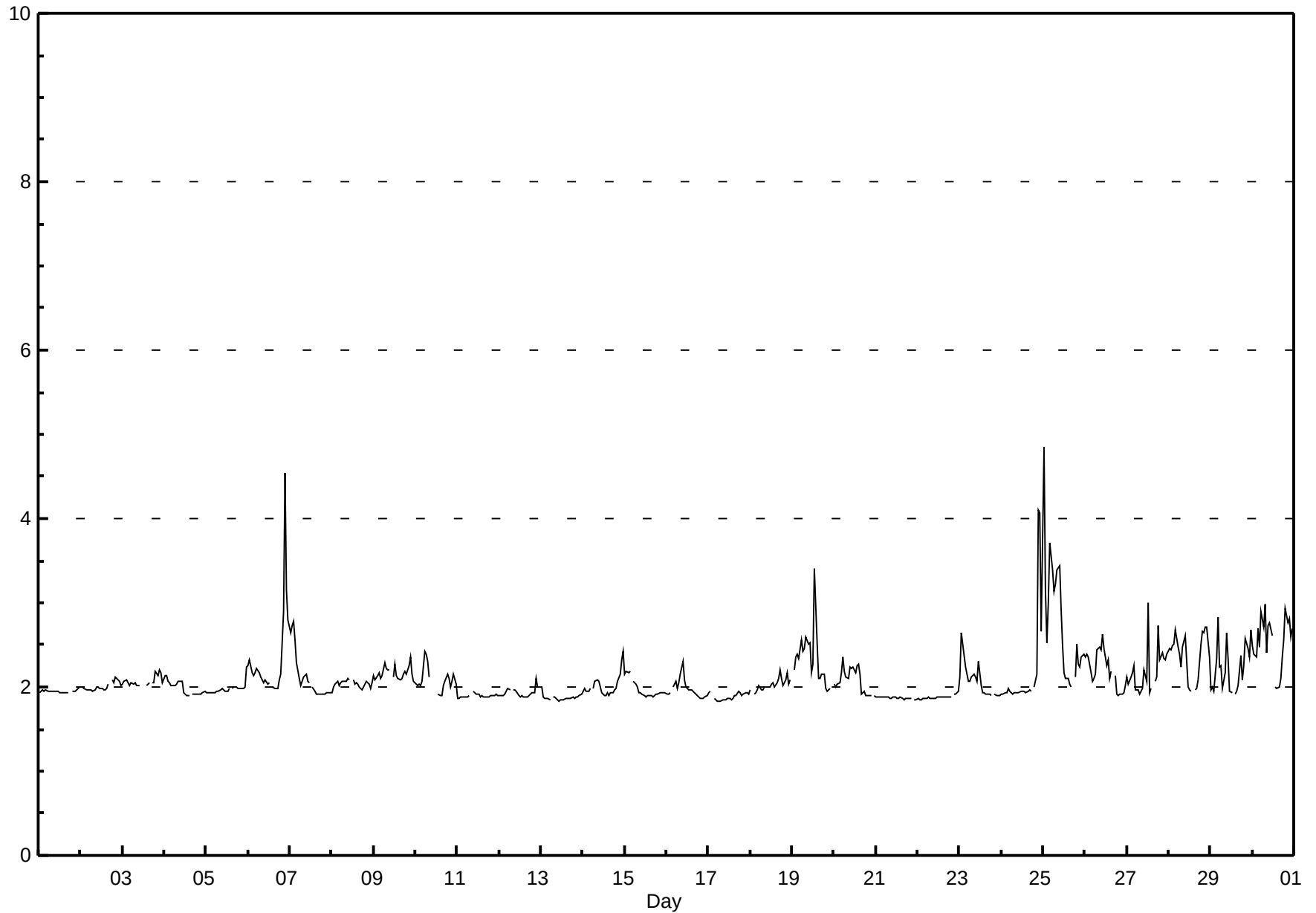
Methane (CH₄) - ppm

Henry Pirker - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 4.86 ppm on Nov 25 01:00 Maximum Daily Average: 2.76 ppm on Nov 25																								Hours in Service: 720 Hours of Data: 684 Hours of Missing Data: 36 Hours of Calibration: 34 Percent Operational Time: 99.7		
Minimum Value: 1.8 ppm on Nov 17 08:00 Minimum Daily Average: 1.87 ppm on Nov 21 Maximum Diurnal Average: 2.25 ppm at hour 22 Minimum Diurnal Average: 1.97 ppm at hour 17 Monthly Average: 2.099 ppm Percentiles: P ₁ = 1.84 P ₁₀ = 1.88 Q ₁ = 1.92 Median = 1.99 Q ₃ = 2.15 P ₉₀ = 2.46 P ₉₉ = 3.39																										
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-Nov	1.9	1.9	2.0	1.9	2.0	2.0	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	2.0	2.0	2.0	1.95	2.00
2-Nov	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	2.1	2.1	2.1	2.1	2.0	2.0	2.00	2.11
3-Nov	2.0	2.1	2.1	2.0	2.0	2.1	2.0	2.1	2.0	2.0	2.0	C	C	C	2.0	2.0	A	2.1	2.0	2.2	2.1	2.2	2.2	2.0	2.07	2.20
4-Nov	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.99	2.14
5-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	1.9	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	1.98	2.23
6-Nov	2.3	2.3	2.2	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.1	A	2.0	2.0	2.0	2.0	2.1	2.2	2.9	4.5	3.2	2.8	2.32	4.55
7-Nov	2.6	2.7	2.8	2.6	2.3	2.1	2.0	2.1	2.1	2.1	2.1	2.1	A	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.12	2.78
8-Nov	1.9	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.04	2.10
9-Nov	2.1	2.1	2.1	2.2	2.1	2.1	2.3	2.2	2.2	2.2	A	2.1	2.3	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.4	2.2	2.1	2.16	2.36
10-Nov	2.0	2.0	2.0	2.0	2.1	2.4	2.4	2.3	2.1	A	2.2	M	M	1.9	1.9	1.9	2.0	2.1	2.1	2.1	2.0	2.1	2.1	2.0	2.09	2.43
11-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.89	1.95
12-Nov	1.9	1.9	1.9	1.9	1.9	2.0	2.0	A	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.0	2.0	1.93	2.11
13-Nov	2.0	1.9	1.9	1.9	1.9	1.8	A	1.9	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.87	2.01
14-Nov	2.0	2.0	1.9	2.0	2.0	A	2.0	2.1	2.1	2.1	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.2	2.3	2.4	2.02	2.42
15-Nov	2.2	2.2	2.2	2.2	A	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.97	2.18
16-Nov	1.9	1.9	1.9	A	2.0	2.1	2.0	2.1	2.2	2.3	2.1	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.97	2.31
17-Nov	1.9	1.9	A	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.88	1.95
18-Nov	2.0	A	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.2	2.1	2.0	2.1	2.2	2.0	2.1	2.03	2.20
19-Nov	A	2.2	2.4	2.4	2.3	2.6	2.4	2.5	2.6	2.5	2.5	2.2	2.3	3.4	2.5	2.1	2.1	2.2	2.1	2.0	1.9	2.0	2.0	A	2.32	3.40
20-Nov	2.0	2.0	2.0	2.1	2.2	2.3	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.2	1.9	2.0	1.9	1.9	1.9	1.9	A	1.9	2.09	2.35
21-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	A	1.9	1.9	1.87	1.89
22-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.88	1.95
23-Nov	2.1	2.6	2.5	2.2	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.3	2.0	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	2.07	2.64
24-Nov	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	2.0	2.0	2.0	A	2.0	2.2	4.1	4.1	2.7	2.17	4.10
25-Nov	4.9	3.1	2.5	3.0	3.7	3.4	3.1	3.2	3.4	3.4	2.9	2.5	2.2	2.1	2.1	2.0	2.0	A	2.1	2.5	2.3	2.2	2.4	2.4	2.76	4.86
26-Nov	2.4	2.4	2.4	2.2	2.1	2.1	2.2	2.4	2.5	2.4	2.6	2.5	2.3	2.3	2.1	2.2	A	2.1	1.9	1.9	1.9	1.9	2.0	2.20	2.62	
27-Nov	2.1	2.0	2.1	2.2	2.3	2.0	2.0	1.9	1.9	2.0	2.2	2.1	3.0	1.9	2.0	A	2.1	2.1	2.7	2.3	2.4	2.3	2.3	2.4	2.19	3.00
28-Nov	2.5	2.4	2.5	2.5	2.7	2.5	2.4	2.2	2.5	2.6	2.3	2.0	2.0	1.9	A	2.0	2.0	2.1	2.5	2.7	2.6	2.7	2.7	2.3	2.37	2.71
29-Nov	2.0	2.0	2.0	2.3	2.8	2.2	2.3	2.0	2.2	2.6	2.3	1.9	1.9	A	1.9	1.9	2.0	2.4	2.1	2.3	2.6	2.5	2.4	2.7	2.23	2.84
30-Nov	2.5	2.4	2.3	2.7	2.5	2.9	2.7	3.0	2.4	2.7	2.8	2.6	A	2.0	2.0	2.0	2.1	2.4	2.6	2.9	2.8	2.8	2.6	2.7	2.53	2.99
2.16 2.13 2.11 2.13 2.15 2.15 2.12 2.12 2.13 2.16 2.12 2.05 2.04 2.03 1.99 1.97 1.97 2.01 2.05 2.07 2.11 2.25 2.19 2.14																								Diurnal Average		
4.86 3.14 2.78 3.00 3.71 3.38 3.14 3.21 3.40 3.44 2.91 2.60 3.00 3.40 2.51 2.19 2.11 2.38 2.73 2.94 2.89 4.55 4.06 2.80																								Diurnal Maximum		
C - Calibration M - Maintenance A - Automated Daily Zero Span																										

Hourly Averages

Methane (CH₄) - ppm
Henry Pirker - November 2015



Hourly Maximums

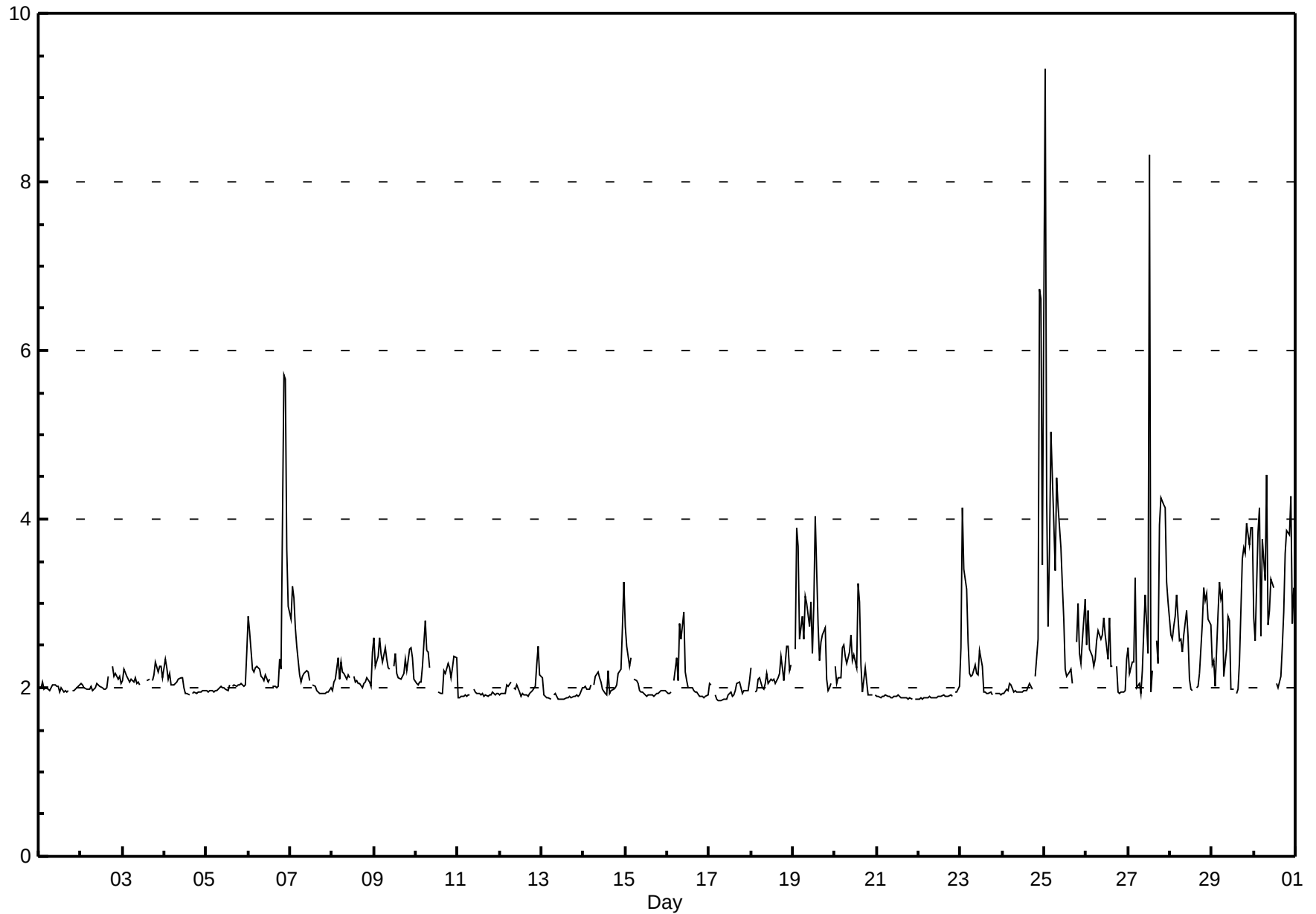
Methane (CH₄) - ppm

Henry Pirker - November 2015

Maximum Value: 9.34 ppm on Nov 25 01:00																								Maximum Daily Average: 3.36 ppm on Nov 25																								Hours in Service: 720	
Minimum Value: 1.8 ppm on Nov 17 07:00																								Minimum Daily Average: 1.89 ppm on Nov 21																								Hours of Data: 684	
Maximum Diurnal Average: 2.60 ppm at hour 22																								Minimum Diurnal Average: 2.02 ppm at hour 16																								Hours of Missing Data: 36	
Monthly Average: 2.293 ppm																								Percentiles: P ₁ = 1.86 P ₁₀ = 1.90 Q ₁ = 1.95 Median = 2.05 Q ₃ = 2.34 P ₉₀ = 2.95 P ₉₉ = 4.81																								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-Nov	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	1.9	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	1.99	2.07																							
2-Nov	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	2.1	A	2.3	2.1	2.2	2.1	2.1	2.0	2.05	2.26																							
3-Nov	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.0	C	C	C	2.1	2.1	A	2.1	2.2	2.3	2.2	2.3	2.3	2.1	2.13	2.30																							
4-Nov	2.3	2.2	2.1	2.2	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.03	2.33																							
5-Nov	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	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.4	2.02	2.43																							
6-Nov	2.8	2.7	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	A	2.0	2.0	2.0	2.0	2.3	2.2	5.7	5.7	3.6	3.0	2.60	5.70																							
7-Nov	2.8	3.2	3.1	2.7	2.5	2.2	2.1	2.1	2.2	2.2	2.2	2.1	A	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.21	3.20																							
8-Nov	2.0	2.1	2.1	2.4	2.1	2.3	2.2	2.2	2.1	2.2	2.1	A	2.1	2.1	2.1	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.0	2.4	2.12	2.42																							
9-Nov	2.6	2.3	2.4	2.6	2.4	2.3	2.5	2.3	2.2	2.2	A	2.2	2.4	2.2	2.1	2.1	2.1	2.2	2.3	2.2	2.5	2.5	2.4	2.1	2.31	2.60																							
10-Nov	2.1	2.0	2.1	2.1	2.2	2.8	2.4	2.4	2.2	A	2.2	M	M	1.9	1.9	1.9	2.2	2.2	2.3	2.2	2.1	2.2	2.4	2.3	2.21	2.80																							
11-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.92	1.99																							
12-Nov	1.9	1.9	1.9	1.9	2.0	2.0	2.1	A	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.3	2.5	2.2	2.01	2.49																							
13-Nov	2.1	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.91	2.12																							
14-Nov	2.0	2.0	2.0	2.0	2.0	A	2.0	2.1	2.2	2.1	2.1	2.0	1.9	1.9	2.2	1.9	2.0	2.0	2.0	2.0	2.2	2.2	2.7	3.3	2.12	3.26																							
15-Nov	2.7	2.5	2.3	2.3	A	2.1	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.05	2.73																							
16-Nov	1.9	1.9	2.0	A	2.1	2.4	2.1	2.8	2.6	2.9	2.2	2.1	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.09	2.89																							
17-Nov	2.0	2.0	A	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.0	1.9	2.0	2.0	2.1	1.94	2.08																								
18-Nov	2.2	A	1.9	2.0	2.1	2.1	2.0	2.0	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.2	2.4	2.2	2.1	2.5	2.5	2.2	2.3	2.15	2.50																							
19-Nov	A	2.4	3.9	3.7	2.6	2.8	2.6	3.1	3.0	2.7	3.0	2.4	3.0	4.0	2.8	2.3	2.5	2.6	2.7	2.1	2.0	2.0	2.0	A	2.74	4.04																							
20-Nov	2.2	2.1	2.1	2.1	2.5	2.5	2.4	2.3	2.4	2.6	2.3	2.4	2.2	3.2	3.0	2.3	2.0	2.2	2.1	1.9	1.9	1.9	A	1.9	2.29	3.24																							
21-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.89	1.91																							
22-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	2.0	1.9	2.0	1.90	2.02																							
23-Nov	2.5	4.1	3.4	3.2	2.5	2.2	2.1	2.1	2.3	2.2	2.1	2.4	2.3	2.0	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	2.30	4.13																							
24-Nov	1.9	1.9	2.0	2.0	2.1	2.0	2.0	2.0	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.1	2.6	6.7	6.6	3.5	2.48	6.72																							
25-Nov	9.3	4.3	2.7	3.6	5.0	4.0	3.4	4.5	4.2	3.7	3.2	2.8	2.2	2.1	2.2	2.2	2.1	A	2.5	3.0	2.4	2.3	2.6	3.0	3.36	9.34																							
26-Nov	2.5	2.9	2.5	2.4	2.3	2.3	2.6	2.7	2.6	2.6	2.8	2.6	2.3	2.8	2.2	2.3	A	2.3	1.9	1.9	1.9	1.9	2.0	2.3	2.38	2.92																							
27-Nov	2.5	2.2	2.3	2.3	3.3	2.0	2.0	1.9	2.2	2.7	3.1	2.4	8.3	2.0	2.2	A	2.6	2.3	3.9	4.3	4.2	4.1	3.2	3.0	3.00	8.32																							
28-Nov	2.6	2.6	2.7	2.9	3.1	2.6	2.6	2.4	2.6	2.9	2.6	2.1	2.0	2.0	A	2.0	2.0	2.2	2.8	3.2	3.0	3.1	2.8	2.7	2.59	3.19																							
29-Nov	2.3	2.3	2.0	2.9	3.3	3.0	3.1	2.1	2.5	2.9	2.8	2.0	2.0	A	1.9	2.0	2.3	3.5	3.7	3.6	3.9	3.7	3.9	3.9	2.85	3.94																							
30-Nov	2.8	2.6	3.8	4.1	2.6	3.8	3.3	4.5	2.8	2.9	3.3	3.2	A	2.1	2.0	2.1	2.5	2.9	3.6	3.9	3.8	4.3	2.8	3.2	3.16	4.53																							
																								Diurnal Average																									
																								Diurnal Maximum																									
C - Calibration M - Maintenance A - Automated Daily Zero Span																																																	

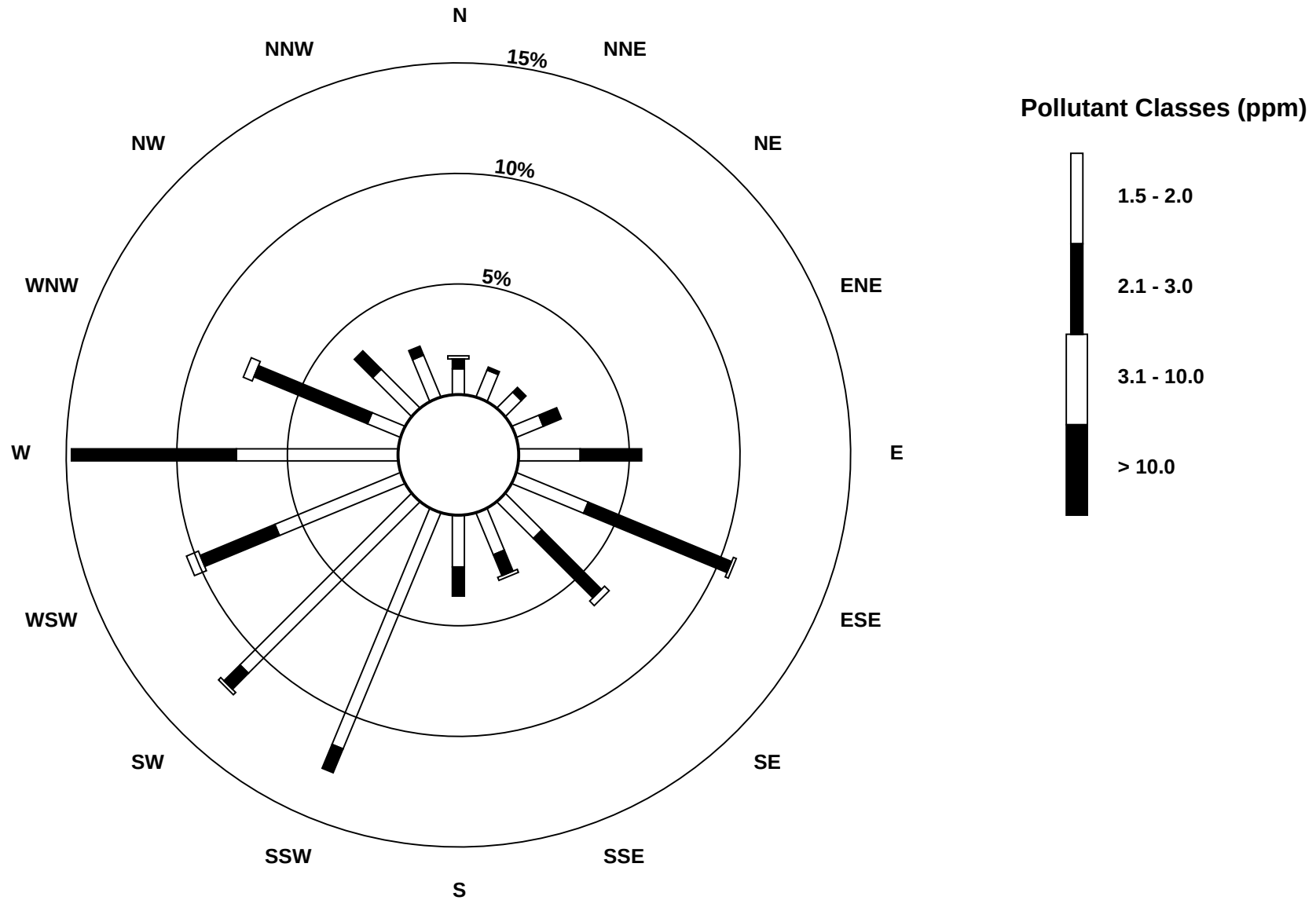
Hourly Maximums

Methane (CH₄) - ppm
Henry Pirker - November 2015



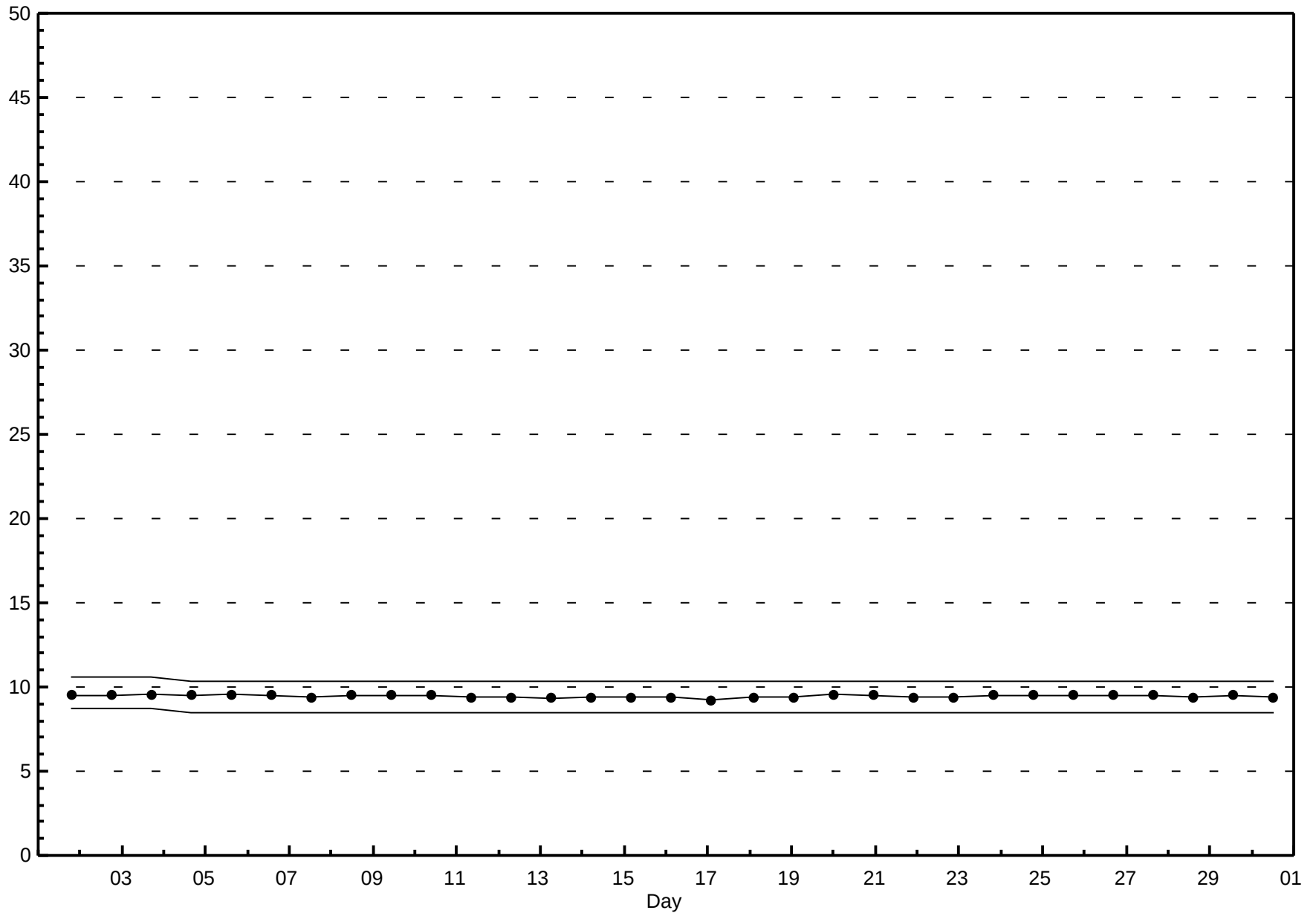
Pollutant Rose

Methane (CH₄) - ppm
Henry Pirker - November 2015



Span Responses

Methane (CH₄)
Henry Pirker - November 2015

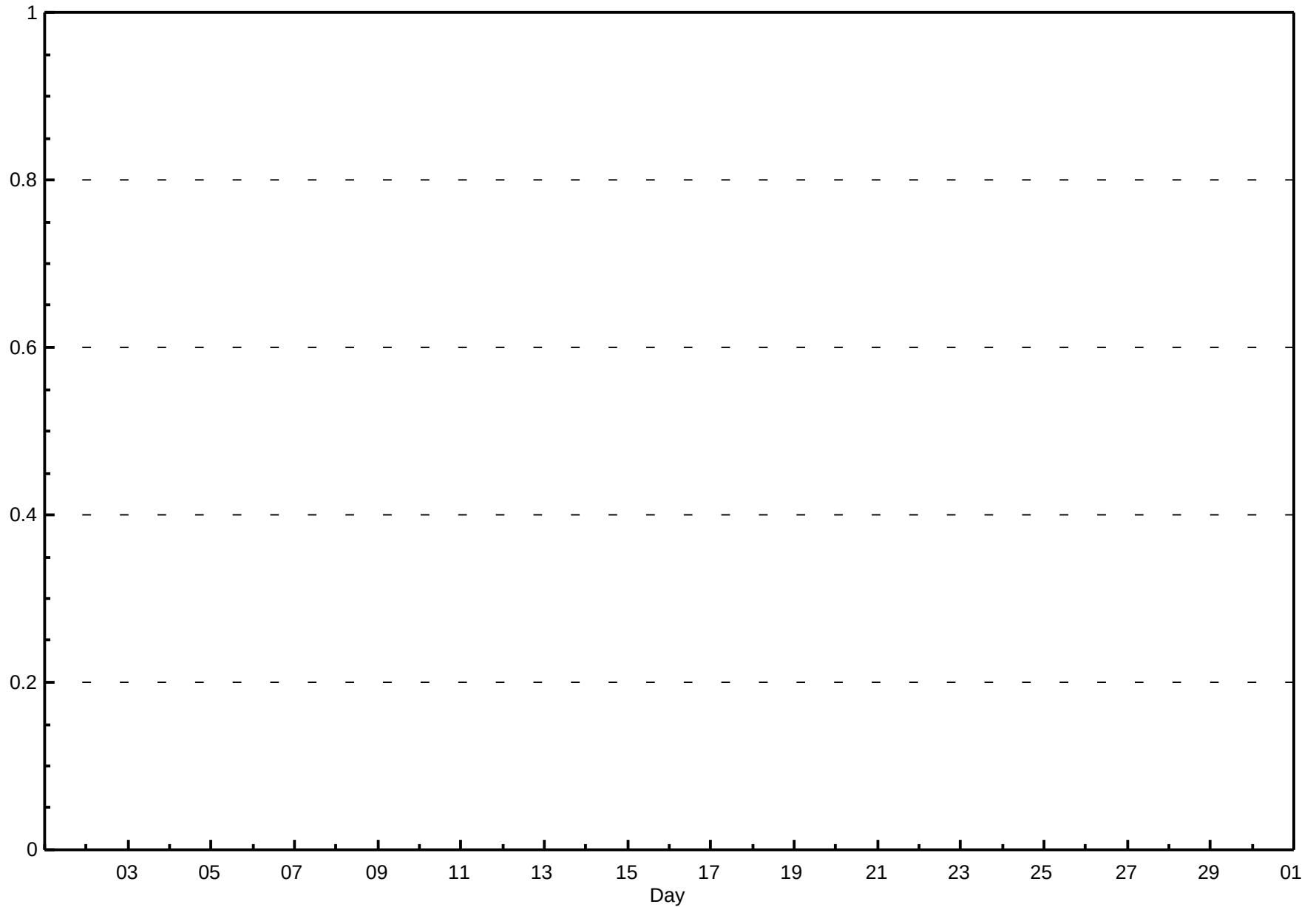


Hourly Averages

Non Methane Hydrocarbon (NMHC) - ppm

Henry Pirker - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 0.00 ppm on Nov 3 21:00 Maximum Daily Average: 0.00 ppm on Nov 10																								Hours in Service: 720 Hours of Data: 684 Hours of Missing Data: 36 Hours of Calibration: 34 Percent Operational Time: 99.7		
Minimum Value: 0.0 ppm on Nov 1 01:00 Maximum Diurnal Average: 0.00 ppm at hour 2 Monthly Average: 0.000 ppm												Minimum Daily Average: 0.00 ppm on Nov 2 Minimum Diurnal Average: 0.00 ppm at hour 3 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														
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-Nov	0.0	0.0	0.0	0.0	0.0	0.0	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	0.00	0.00
2-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
3-Nov	0.0	0.0	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	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
4-Nov	0.0	0.0	0.0	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
5-Nov	0.0	0.0	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
6-Nov	0.0	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
7-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
8-Nov	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
9-Nov	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
10-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	M	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
11-Nov	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
12-Nov	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
13-Nov	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
14-Nov	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
15-Nov	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
16-Nov	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
17-Nov	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
18-Nov	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
19-Nov	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.00	0.00
20-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
21-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
22-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
23-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.00	0.00
24-Nov	0.0	0.0	0.0	0.0	0.0	0.0	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	0.00	0.00
25-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
26-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
27-Nov	0.0	0.0	0.0	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
28-Nov	0.0	0.0	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
29-Nov	0.0	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
30-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
0.00 0.00																								Diurnal Average		
0.00 0.00																								Diurnal Maximum		
C - Calibration M - Maintenance A - Automated Daily Zero Span																										



Hourly Maximums

Non Methane Hydrocarbon (NMHC) - ppm

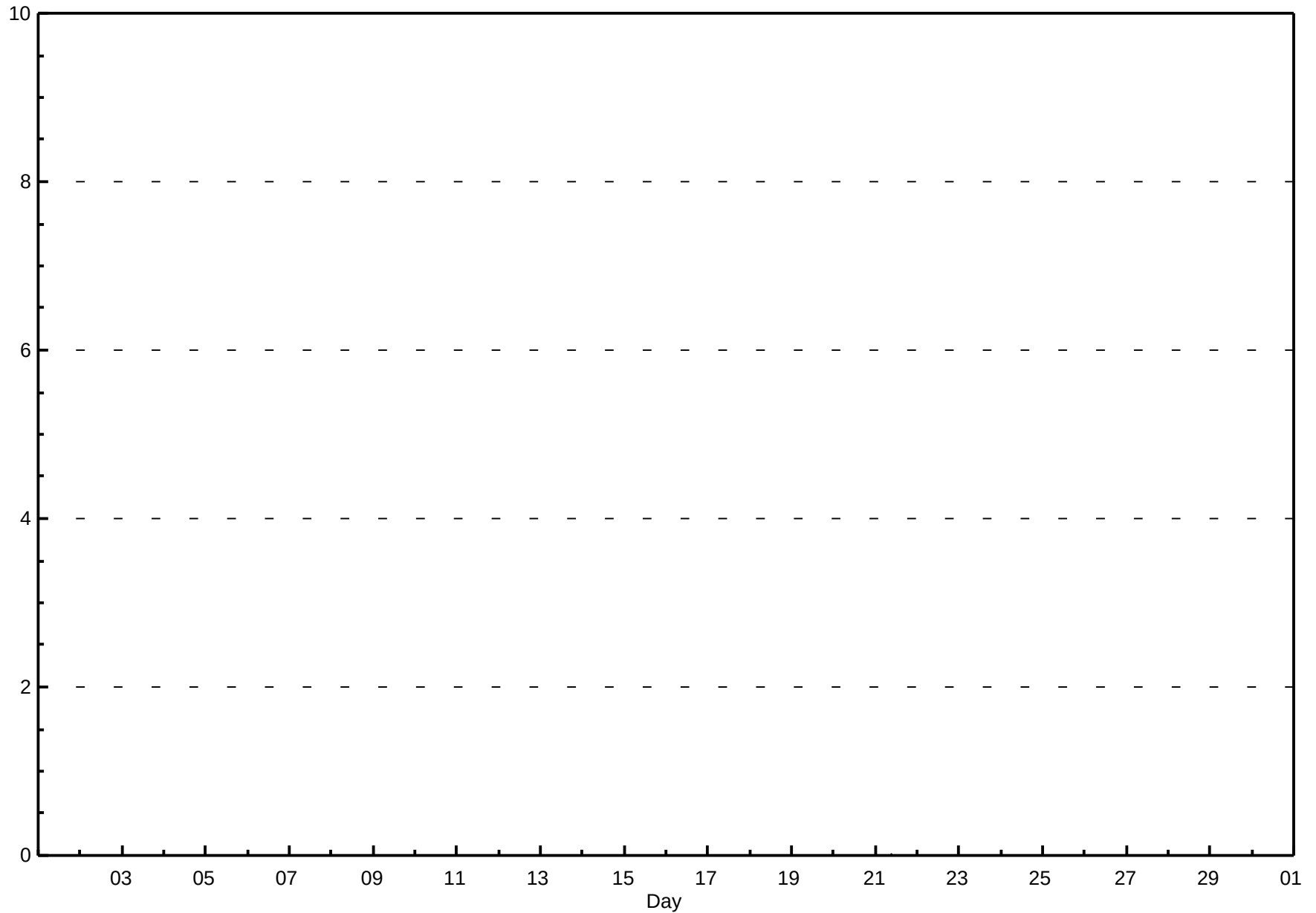
Henry Pirker - November 2015

Maximum Value: 0.01 ppm on Nov 21 10:00																					Maximum Daily Average: 0.00 ppm on Nov 21				Hours in Service: 720	
Minimum Value: 0.0 ppm on Nov 7 12:00																					Minimum Daily Average: 0.00 ppm on Nov 28				Hours of Data: 684	
Maximum Diurnal Average: 0.00 ppm at hour 10																					Minimum Diurnal Average: 0.00 ppm at hour 13				Hours of Missing Data: 36	
Monthly Average: 0.001 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 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-Nov	0.0	0.0	0.0	0.0	0.0	0.0	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	0.00	0.00
2-Nov	0.0	0.0	0.0	0.0	0.0	0.0	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	0.00	0.00
3-Nov	0.0	0.0	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	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
4-Nov	0.0	0.0	0.0	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
5-Nov	0.0	0.0	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
6-Nov	0.0	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
7-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
8-Nov	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
9-Nov	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
10-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	M	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
11-Nov	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
12-Nov	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
13-Nov	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
14-Nov	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
15-Nov	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
16-Nov	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
17-Nov	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
18-Nov	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
19-Nov	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.00	0.00
20-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
21-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.01	0.00
22-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
23-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.00	0.00
24-Nov	0.0	0.0	0.0	0.0	0.0	0.0	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	0.00	0.00
25-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
26-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
27-Nov	0.0	0.0	0.0	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
28-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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-Nov	0.0	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
30-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
0.00																								Diurnal Average		
0.00																								Diurnal Maximum		
C - Calibration				M - Maintenance				A - Automated Daily Zero Span																		

Hourly Maximums

Non Methane Hydrocarbon (NMHC) - ppm

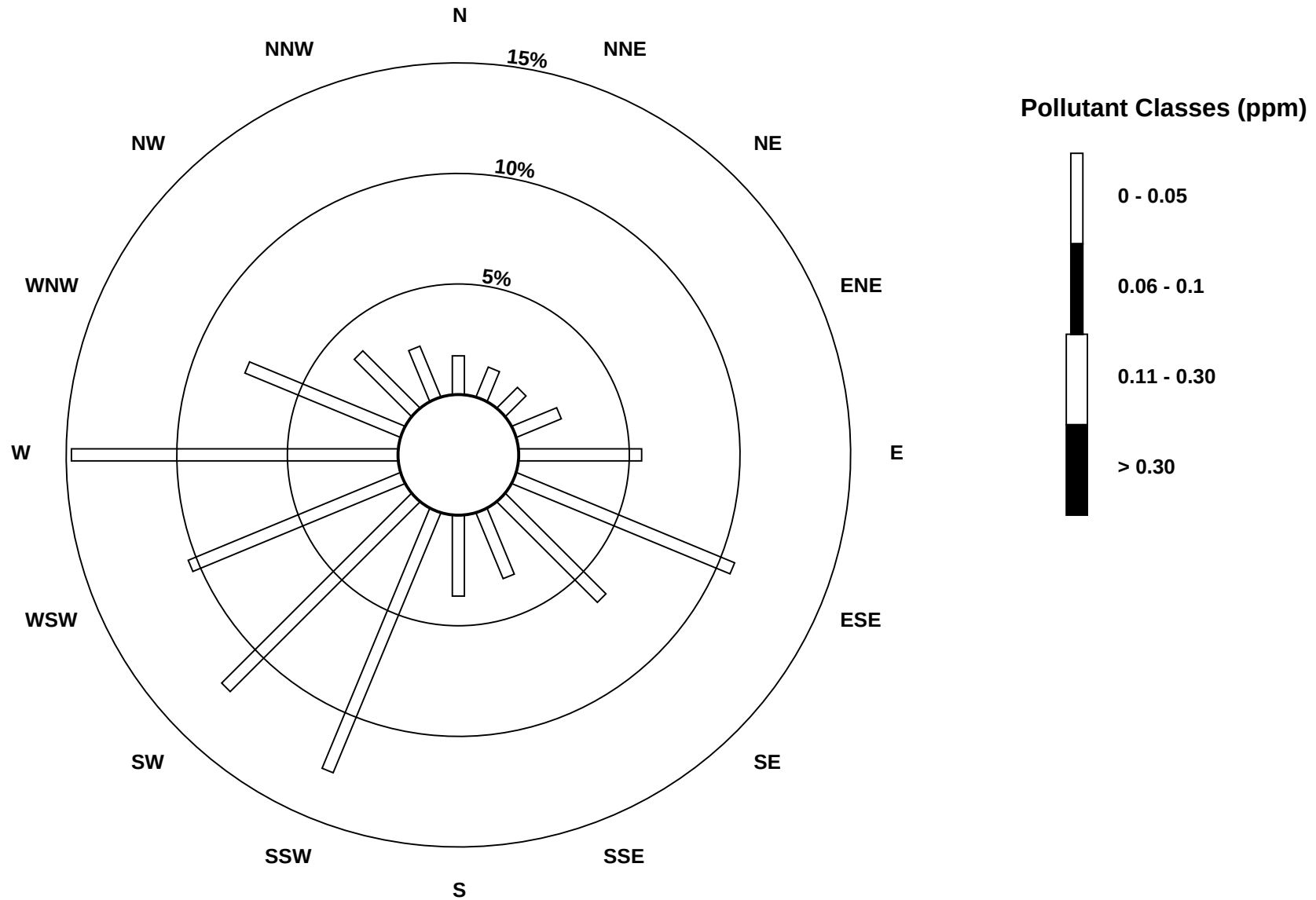
Henry Pirker - November 2015

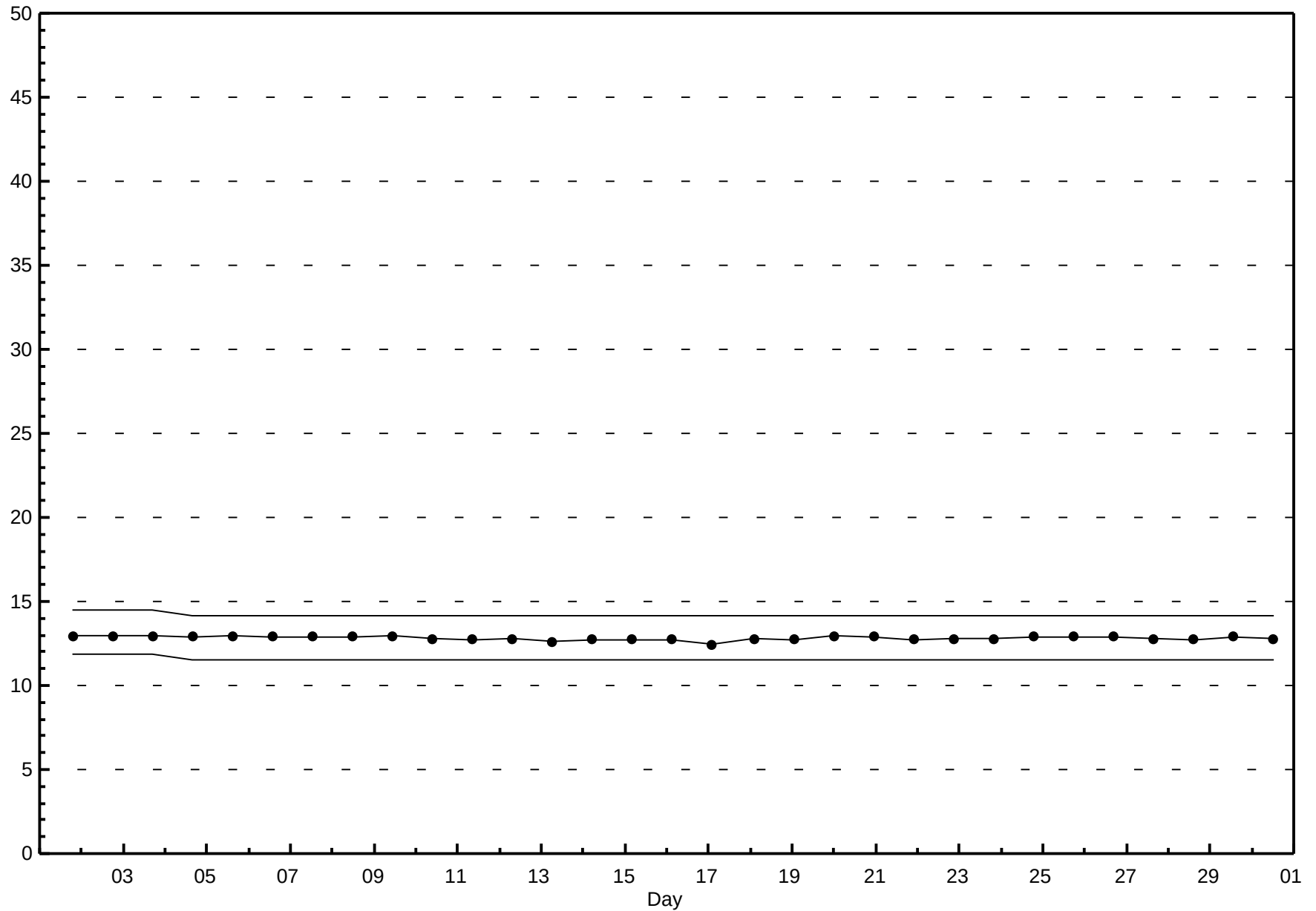


Pollutant Rose

Non Methane Hydrocarbon (NMHC) - ppm

Henry Pirker - November 2015



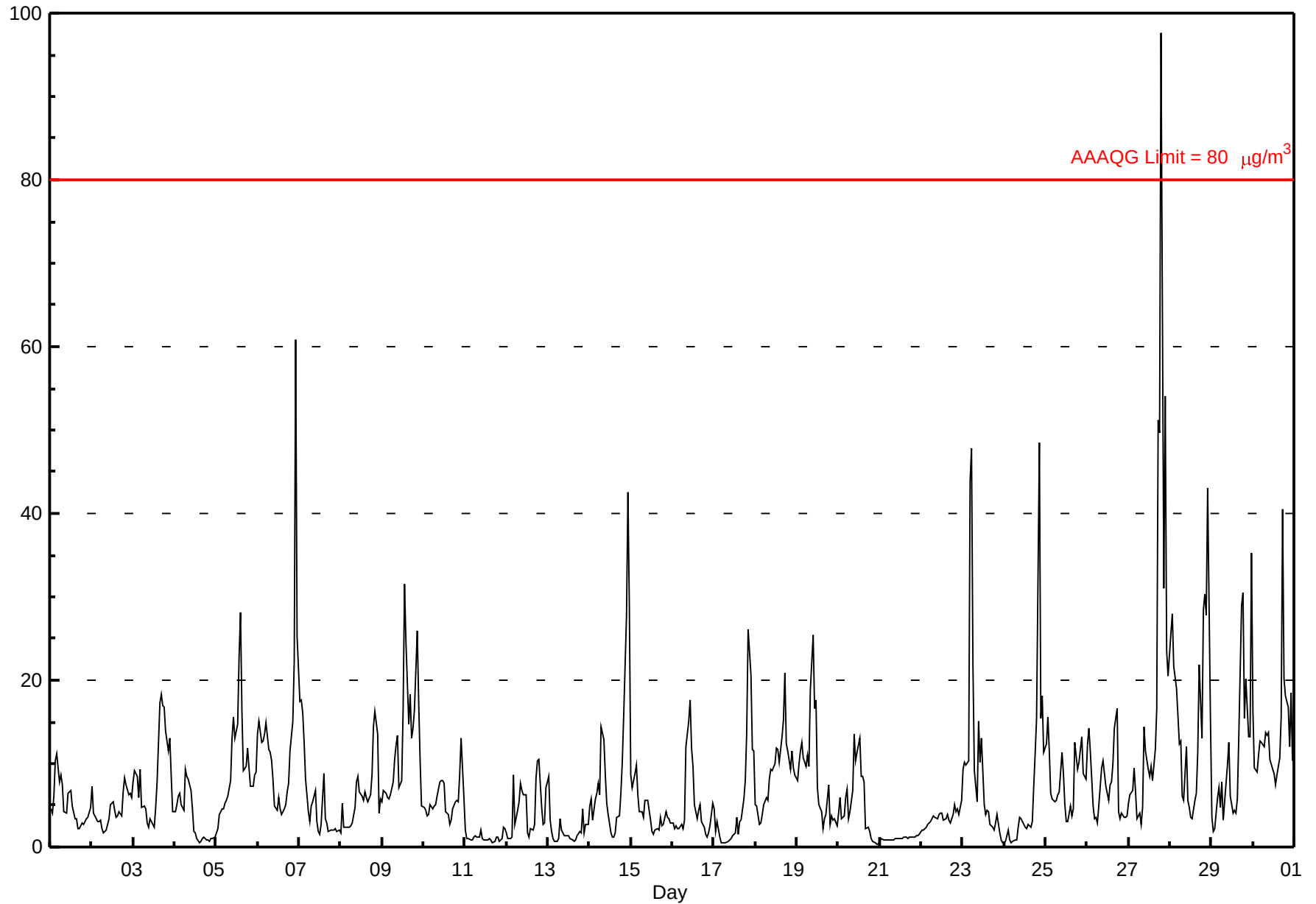


Hourly Averages

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

Henry Pirker - November 2015

Number of Exceedences: 1-hr: 1 24-hr: 0 Maximum Value: 97.7 µg/m³ on Nov 27 20:00 Minimum Value: 0 µg/m³ on Nov 21 00:00 Maximum Diurnal Average: 11.3 µg/m³ at hour 20 Monthly Average: 7.55 µg/m³																					Maximum Daily Average: 19.5 µg/m³ on Nov 27 Minimum Daily Average: 1.0 µg/m³ on Nov 21 Minimum Diurnal Average: 5.5 µg/m³ at hour 13 Percentiles: P ₁ = 0.5 P ₁₀ = 1.1 Q ₁ = 2.7 Median = 5.1 Q ₃ = 9.8 P ₉₀ = 15.4 P ₉₉ = 47.2					Hours in Service: 720 Hours of Data: 720 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-Nov	5	4	6	10	11	8	9	7	4	4	6	7	7	5	3	3	2	2	3	3	3	3	3	5	5.2	11.2																							
2-Nov	7	4	4	3	3	3	2	2	2	3	3	5	5	4	4	4	4	4	7	8	7	6	6	6	4.5	8.3																							
3-Nov	8	9	9	6	9	5	5	5	3	2	3	3	2	5	8	17	18	17	17	14	12	13	9	4	8.4	18.3																							
4-Nov	4	5	6	6	5	4	9	8	8	7	5	2	2	1	1	1	1	1	1	1	1	1	1	1	3.4	9.4																							
5-Nov	2	2	4	5	5	5	6	6	8	13	16	13	15	23	28	16	9	10	12	10	7	7	9	9	9.9	28.2																							
6-Nov	14	15	13	13	14	15	12	11	10	8	5	4	6	5	4	5	5	7	8	11	15	22	61	25	12.8	60.8																							
7-Nov	18	18	16	13	8	4	3	5	5	7	3	2	1	3	9	3	3	2	2	2	2	2	2	2	5.6	17.7																							
8-Nov	2	5	2	2	2	2	3	3	5	8	9	7	6	6	7	6	5	6	9	14	16	13	4	6	6.2	16.2																							
9-Nov	5	7	7	6	6	6	8	10	12	13	7	8	17	32	24	15	18	13	14	16	26	17	10	5	12.7	31.6																							
10-Nov	5	4	4	4	5	5	5	5	6	8	8	8	8	4	4	3	3	5	5	6	5	9	13	6	5.7	13.0																							
11-Nov	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	0	1	1	1	1	2	2	2	1.2	2.3																							
12-Nov	2	1	1	1	9	3	4	5	8	7	6	6	2	1	2	2	3	8	10	10	5	3	3	7	4.6	10.5																							
13-Nov	9	3	2	1	1	1	1	3	2	1	1	1	1	1	1	1	1	1	2	2	5	2	3	3	2.0	8.6																							
14-Nov	5	6	3	6	7	8	6	14	13	9	5	4	2	1	1	2	4	4	6	10	16	28	42	29	9.6	42.5																							
15-Nov	9	7	9	10	6	4	4	4	6	6	6	3	2	2	2	2	2	4	3	3	4	4	3	3	4.4	9.8																							
16-Nov	3	2	3	2	2	3	2	3	12	15	18	12	10	5	3	4	5	3	2	2	1	2	3	5	5.1	17.7																							
17-Nov	5	2	3	1	1	0	1	1	1	1	1	1	2	4	2	3	3	6	8	14	26	21	12	12	5.3	26.2																							
18-Nov	5	5	3	3	4	5	6	6	8	9	9	10	12	12	10	13	15	21	12	12	9	11	9	9	9.1	20.9																							
19-Nov	8	10	11	13	11	10	11	10	19	25	17	18	7	5	4	2	3	4	8	3	4	3	3	3	8.8	25.4																							
20-Nov	4	6	3	4	6	7	3	4	7	14	10	11	13	8	9	8	2	2	2	1	1	0	0	0	5.3	13.5																							
21-Nov	1	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	1.4																							
22-Nov	2	2	2	2	3	3	3	4	4	3	4	4	4	3	3	4	3	3	4	5	4	5	4	6	3.5	5.6																							
23-Nov	9	10	10	10	44	48	22	9	5	15	10	13	5	4	4	4	3	2	2	3	4	2	1	1	10.0	47.7																							
24-Nov	1	1	2	1	0	1	1	1	2	4	3	3	2	2	3	2	3	7	11	15	48	15	18	11	6.6	48.5																							
25-Nov	12	16	12	7	6	5	6	6	7	11	9	5	3	3	5	4	5	13	9	10	12	13	9	8	8.1	15.5																							
26-Nov	12	14	11	5	3	4	3	5	10	10	9	7	6	8	8	10	14	17	4	3	4	4	4	4	7.4	16.7																							
27-Nov	5	6	7	9	7	3	4	3	5	14	11	9	8	10	8	12	17	51	50	98	31	54	23	20	19.5	97.7																							
28-Nov	26	28	22	20	19	12	13	6	6	12	6	5	4	3	6	6	11	22	13	29	30	28	43	15	16.0	43.0																							
29-Nov	4	2	2	6	7	5	8	3	8	10	13	6	4	4	4	6	13	29	30	15	20	13	13	35	10.9	35.3																							
30-Nov	16	10	9	11	13	12	12	14	13	14	11	9	9	7	9	11	16	41	20	18	17	12	18	10	13.8	40.5																							
																									Diurnal Average	Diurnal Maximum																							
																									6.9 25.6	6.9 28.1	6.2 21.7	6.1 20.3	7.2 44.0	6.4 47.7	5.8 21.8	5.5 14.4	6.7 18.8	8.5 25.4	7.2 17.7	6.3 17.6	5.5 16.5	5.7 31.6	5.9 28.2	5.7 17.3	6.5 18.3	10.2 51.3	9.2 49.7	11.3 97.7	11.3 48.5	10.6 54.1	11.1 60.8	8.4 35.3	
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

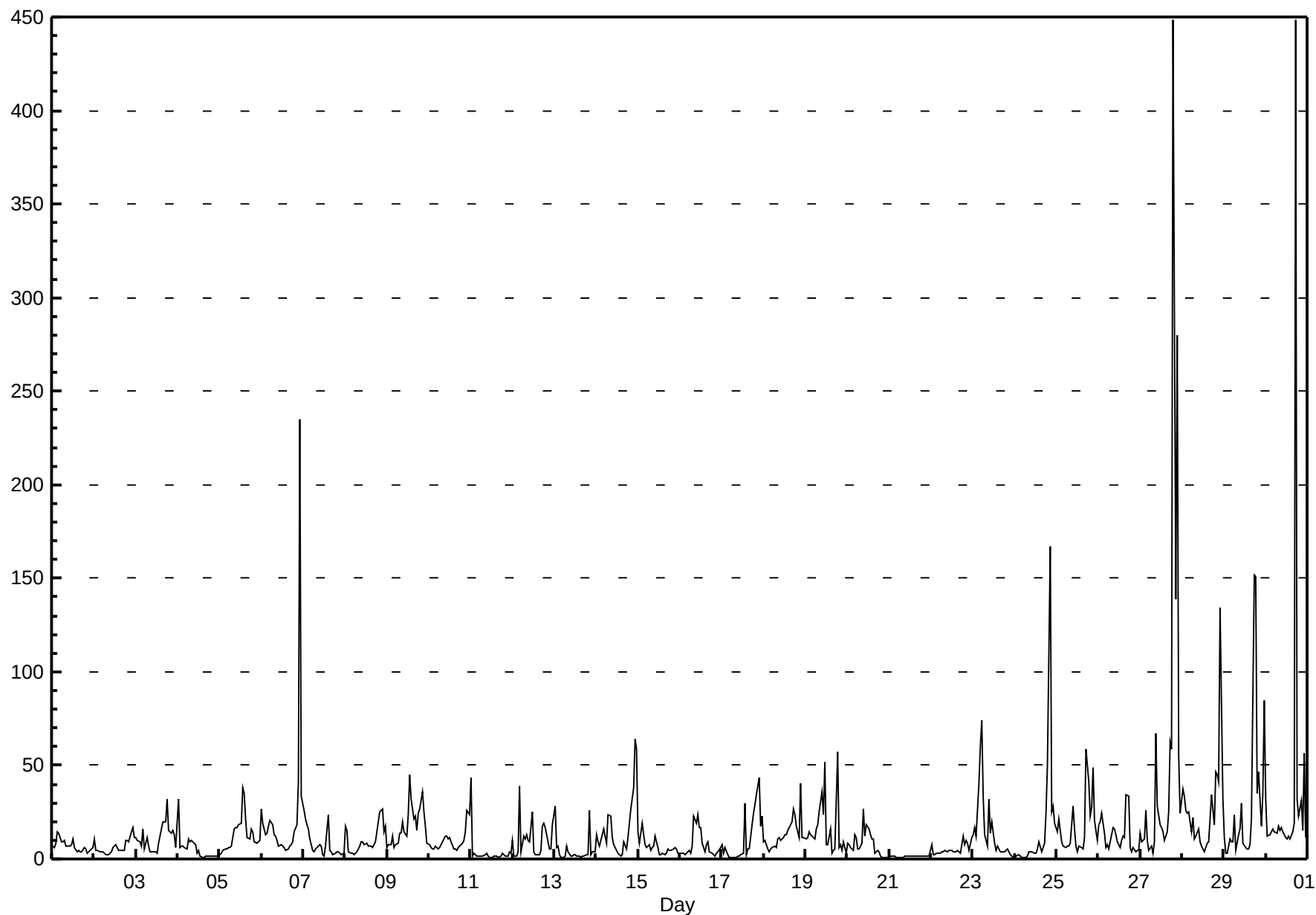
Henry Pirker - November 2015

Maximum Value: 448.5 μg/m ³ on Nov 27 20:00																					Maximum Daily Average: 56.5 μg/m ³ on Nov 27										Hours in Service: 720	
Minimum Value: 1 μg/m ³ on Nov 20 23:00																					Minimum Daily Average: 1.3 μg/m ³ on Nov 21										Hours of Data: 720	
Maximum Diurnal Average: 32.6 μg/m ³ at hour 18																					Minimum Diurnal Average: 7.6 μg/m ³ at hour 16										Hours of Missing Data: 0	
Monthly Average: 14.19 μg/m ³																					Percentiles: P ₁ = 0.8 P ₁₀ = 1.6 Q ₁ = 3.8 Median = 7.7 Q ₃ = 15.1 P ₉₀ = 26.3 P ₉₉ = 150.3										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-Nov	6	6	8	14	14	9	9	10	7	7	7	8	10	6	4	5	4	4	6	5	3	4	4	6	7.0	14.2						
2-Nov	11	5	4	4	4	4	3	2	2	3	4	6	8	6	4	4	5	5	10	10	9	15	17	11	6.5	16.7						
3-Nov	12	10	9	7	16	5	11	7	4	4	4	4	3	8	12	20	20	20	32	15	14	15	13	6	11.3	31.8						
4-Nov	32	6	7	7	6	5	11	9	10	8	7	3	4	2	1	1	2	2	1	1	1	2	2	1	5.4	31.9						
5-Nov	2	3	5	5	5	6	6	7	16	17	17	18	19	38	35	21	11	10	16	14	9	8	9	10	12.8	37.9						
6-Nov	27	19	13	13	18	20	19	13	12	10	7	7	7	6	4	5	7	7	9	15	19	41	235	33	23.6	234.7						
7-Nov	26	21	18	16	11	5	4	6	6	8	7	2	2	7	23	4	4	2	3	3	4	3	2	3	7.9	25.9						
8-Nov	17	15	4	3	3	2	3	3	7	9	9	7	9	6	7	7	6	9	15	20	25	26	14	17	10.2	26.4						
9-Nov	6	8	7	12	6	8	8	14	14	20	15	13	24	45	32	21	23	15	24	26	36	25	18	8	17.8	45.1						
10-Nov	8	6	5	5	7	5	6	8	9	12	12	11	12	9	5	5	4	6	8	8	10	15	26	23	9.4	26.2						
11-Nov	44	1	3	1	1	2	2	1	3	3	1	1	1	2	2	1	1	1	3	2	1	1	4	3	3.5	43.6						
12-Nov	10	1	1	4	39	4	12	11	13	10	9	25	3	2	2	3	5	18	19	17	9	6	5	19	10.3	39.1						
13-Nov	29	6	7	2	1	1	2	7	3	2	2	2	2	1	1	1	1	2	2	2	26	2	4	3	4.7	28.5						
14-Nov	13	9	7	13	16	12	8	23	23	12	8	6	3	2	2	2	9	6	12	19	27	38	64	59	16.3	63.7						
15-Nov	14	8	19	13	7	6	8	5	6	7	12	6	2	2	3	2	3	5	5	4	5	6	6	3	6.6	18.9						
16-Nov	3	3	3	3	3	5	3	7	23	19	23	17	17	8	4	8	9	4	3	2	2	3	4	6	7.6	23.3						
17-Nov	7	3	6	2	1	1	1	1	1	1	1	2	3	30	2	6	6	19	24	29	34	44	18	23	11.0	43.8						
18-Nov	9	10	5	3	5	6	7	6	11	11	10	11	13	13	15	18	20	26	24	17	11	41	12	12	13.2	40.7						
19-Nov	11	11	14	13	12	11	16	18	26	36	24	52	8	8	16	3	4	5	57	6	8	4	9	3	15.6	56.9						
20-Nov	8	7	6	5	13	11	6	5	9	27	12	18	16	13	10	11	3	5	4	1	1	1	1	1	8.1	27.0						
21-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2	2	2	1.3	1.7						
22-Nov	8	2	2	3	3	3	4	4	5	4	4	5	5	4	4	5	3	3	12	7	10	9	4	12	5.2	12.4						
23-Nov	13	17	12	40	60	74	32	13	7	32	14	20	9	4	7	5	4	3	4	4	5	2	1	1	16.1	74.2						
24-Nov	1	1	3	2	1	1	1	1	4	4	4	3	3	5	9	4	6	8	24	51	167	25	28	19	15.6	167.2						
25-Nov	14	21	15	9	7	6	7	7	9	28	16	7	4	6	6	5	11	58	42	23	27	49	21	10	17.0	58.4						
26-Nov	18	20	24	14	6	8	5	9	17	16	13	9	6	10	12	11	34	34	6	4	6	4	5	5	12.4	34.3						
27-Nov	13	9	11	26	10	5	7	3	9	67	28	18	17	15	10	15	25	63	59	449	139	280	56	24	56.5	448.5						
28-Nov	37	33	26	25	25	14	22	11	12	16	9	6	5	4	9	9	21	34	18	46	45	41	134	32	26.5	134.1						
29-Nov	11	3	3	11	9	9	24	5	13	16	30	8	6	5	5	8	21	152	151	35	46	18	35	84	29.6	151.7						
30-Nov	32	12	13	15	16	14	14	18	15	17	14	12	10	12	11	14	19	449	32	23	31	15	56	11	36.5	448.5						
14.8 9.3 8.8 9.7 10.9 8.8 8.7 7.8 9.8 14.2 10.9 10.4 7.7 9.4 8.7 7.6 9.8 32.6 20.8 28.7 24.4 24.8 26.9 15.0																									Diurnal Average							
43.6 33.3 26.2 40.2 60.4 74.2 32.4 23.4 25.5 67.0 29.7 52.1 23.8 45.1 34.7 21.2 34.3 448.5 150.9 448.5 167.2 279.9 234.7 84.4																									Diurnal Maximum							

Hourly Maximums

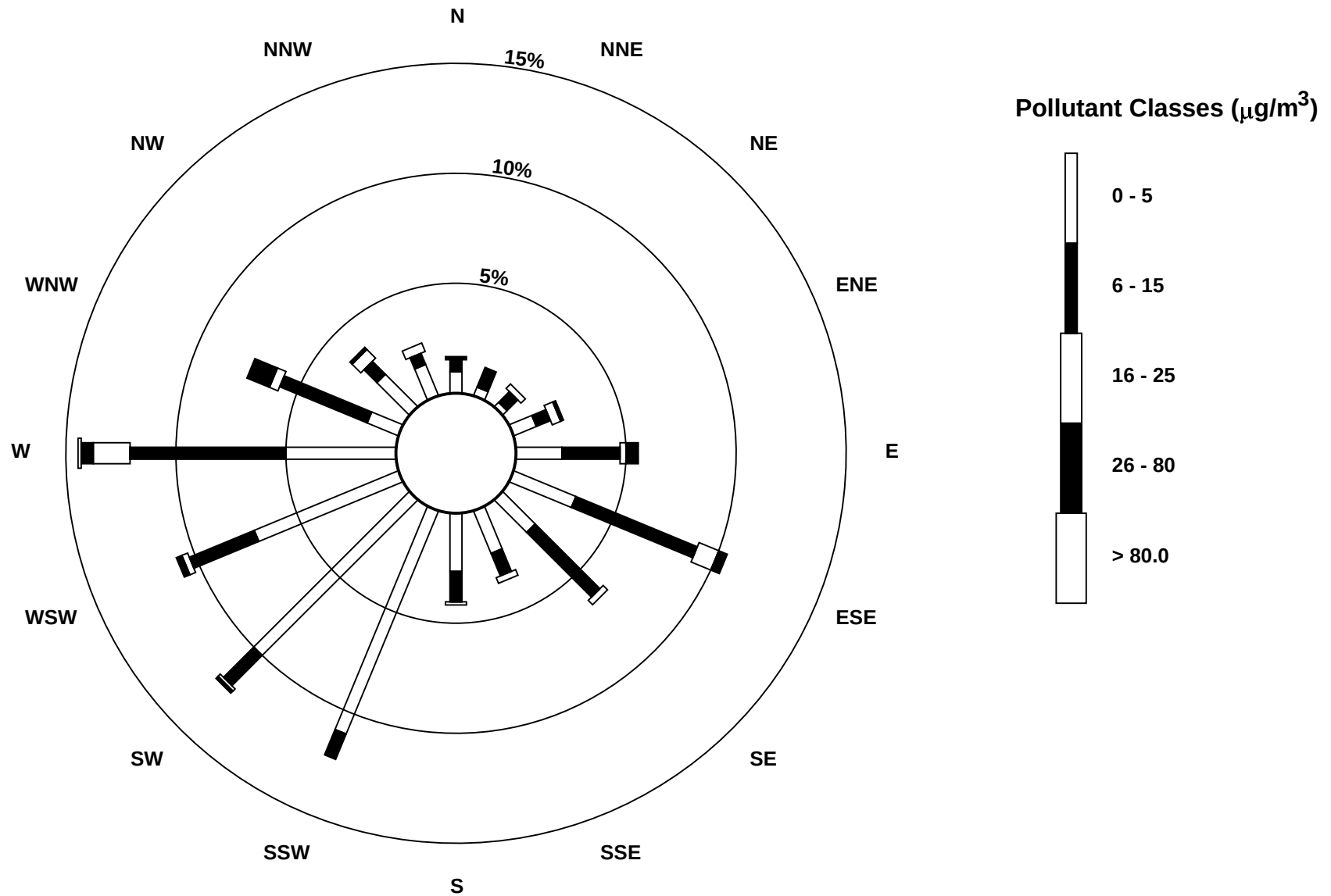
Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$

Henry Pirker - November 2015



Pollutant Rose

Particulate Matter 2.5 (PM_{2.5}) - µg/m³
Henry Pirker - November 2015



Hourly Averages

External Temperature (ET) - °C

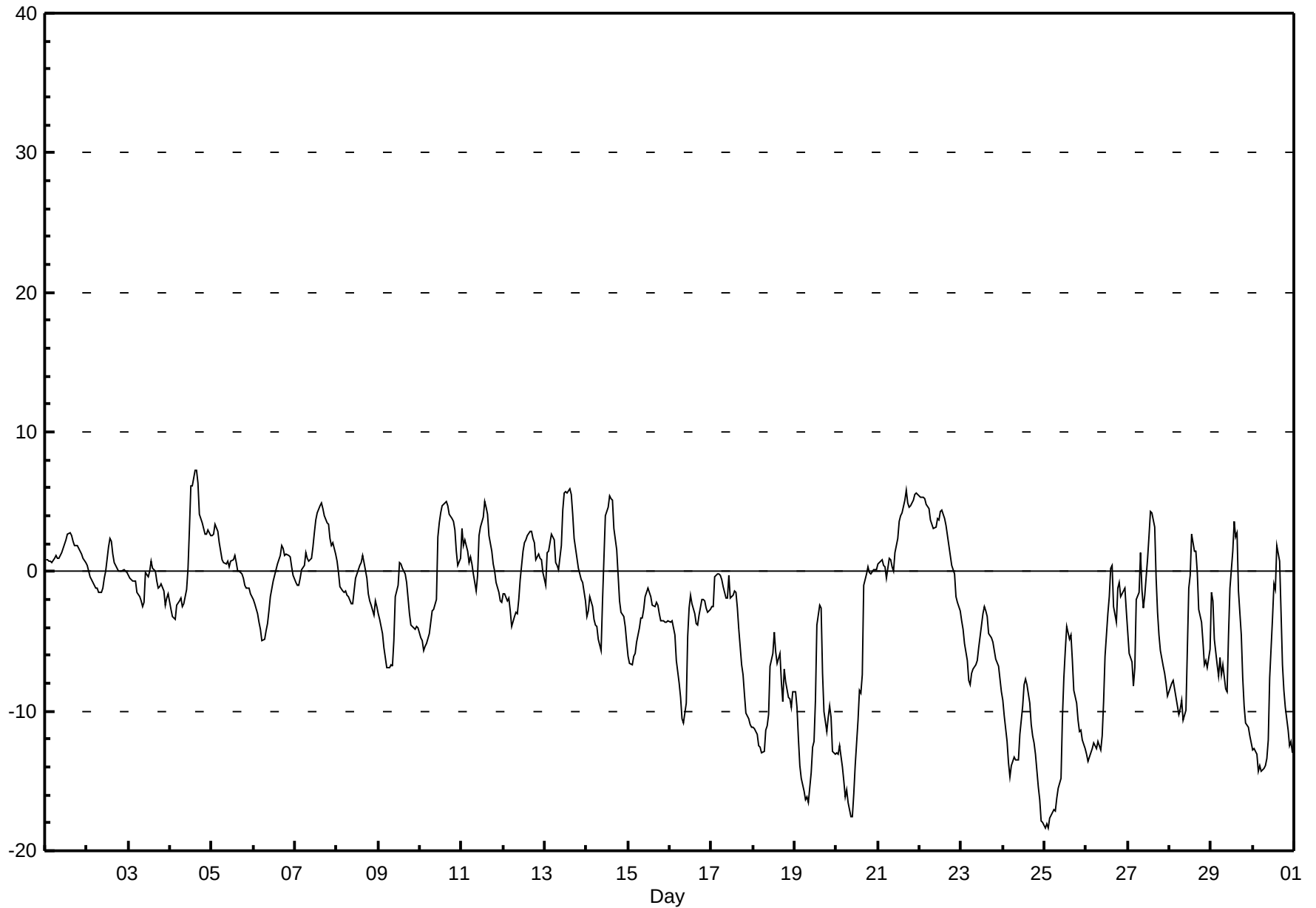
Henry Pirker - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 7.2 °C on Nov 4 15:00 Maximum Daily Average: 2.8 °C on Nov 21																				Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0						
Minimum Value: -18 °C on Nov 25 03:00 Maximum Diurnal Average: 0.7 °C at hour 15 Monthly Average: -3.13 °C Minimum Daily Average: -12.4 °C on Nov 24 Minimum Diurnal Average: -5.7 °C at hour 9 Percentiles: P ₁ = -17.6 P ₁₀ = -12.2 Q ₁ = -6.7 Median = -1.9 Q ₃ = 0.8 P ₉₀ = 3.2 P ₉₉ = 5.8																										
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-Nov	1	1	1	1	1	1	1	1	1	1	2	2	2	3	3	3	2	2	2	2	1	1	1	1	1.4	2.7
2-Nov	0	0	0	-1	-1	-1	-1	-1	-2	-1	0	0	2	2	2	1	1	0	0	0	0	0	0	0	0.0	2.4
3-Nov	0	0	-1	-1	-1	-2	-2	-2	-3	-2	0	0	0	1	0	0	-1	-1	-1	-1	-1	-2	-2	-2	-1.0	0.8
4-Nov	-3	-3	-3	-3	-2	-2	-2	-2	-2	-1	0	3	6	6	7	7	6	4	4	3	3	3	3	3	1.4	7.2
5-Nov	3	3	3	3	2	1	1	1	1	1	0	1	1	1	1	0	0	0	0	-1	-1	-1	-2	-2	0.6	3.4
6-Nov	-2	-2	-3	-4	-4	-5	-5	-4	-4	-3	-2	-1	0	0	1	1	2	2	1	1	1	1	0	0	-1.2	1.8
7-Nov	-1	-1	-1	-1	0	0	1	1	1	1	2	3	4	4	5	5	5	4	4	3	2	2	2	1	1.9	4.9
8-Nov	1	0	-1	-1	-2	-1	-2	-2	-2	-2	-1	0	0	0	1	1	1	0	-2	-2	-2	-3	-2	-3	-1.1	1.1
9-Nov	-3	-3	-4	-5	-6	-7	-7	-7	-7	-5	-2	-1	1	1	0	0	-1	-2	-3	-4	-4	-4	-4	-4	-3.4	0.6
10-Nov	-5	-5	-6	-5	-5	-4	-4	-3	-3	-2	3	3	4	5	5	5	5	4	4	4	3	1	0	1	0.2	5.0
11-Nov	3	2	2	1	1	1	1	0	-1	0	3	3	4	5	5	4	3	1	1	0	-1	-2	-2	-2	1.3	5.0
12-Nov	-2	-2	-2	-2	-3	-4	-3	-3	-3	-2	-1	1	2	2	3	3	3	2	2	1	1	1	1	0	-0.1	2.9
13-Nov	-1	1	1	2	3	2	1	0	0	2	4	6	6	6	6	6	4	2	1	0	0	-1	-1	-2	2.0	5.9
14-Nov	-3	-3	-2	-3	-3	-4	-4	-5	-6	-2	1	4	5	5	5	5	3	2	0	-2	-3	-3	-4	-5	-0.9	5.4
15-Nov	-6	-7	-7	-6	-6	-5	-4	-3	-3	-3	-2	-1	-1	-2	-2	-2	-2	-2	-3	-3	-4	-4	-4	-4	-3.6	-1.2
16-Nov	-4	-4	-4	-4	-6	-8	-9	-11	-11	-9	-5	-3	-2	-2	-3	-4	-4	-3	-2	-2	-2	-3	-3	-3	-4.5	-1.7
17-Nov	-3	-3	0	0	0	0	-1	-1	-2	-2	0	-2	-2	-1	-2	-3	-4	-7	-7	-9	-10	-11	-11	-11	-3.8	-0.1
18-Nov	-11	-11	-12	-12	-13	-13	-13	-11	-11	-10	-7	-6	-4	-6	-7	-6	-8	-9	-7	-8	-9	-9	-10	-9	-9.2	-4.3
19-Nov	-9	-10	-12	-14	-15	-16	-16	-16	-17	-14	-13	-12	-9	-4	-2	-3	-7	-10	-11	-10	-10	-10	-13	-13	-11.1	-2.4
20-Nov	-13	-13	-12	-14	-15	-16	-16	-17	-18	-18	-16	-14	-11	-9	-9	-7	-1	0	0	0	0	0	0	0	-9.0	0.3
21-Nov	1	1	1	0	0	0	1	1	0	0	1	2	4	4	4	5	6	5	5	5	5	6	6	5	2.8	5.8
22-Nov	5	5	5	5	5	4	4	3	3	3	4	4	4	4	4	3	3	2	0	0	0	-2	-2	-3	2.7	5.4
23-Nov	-4	-4	-5	-6	-8	-8	-7	-7	-7	-6	-6	-5	-3	-2	-3	-3	-4	-5	-5	-6	-6	-7	-8	-9	-5.6	-2.5
24-Nov	-9	-10	-12	-14	-15	-14	-13	-13	-14	-14	-12	-10	-8	-8	-8	-9	-11	-12	-12	-13	-15	-16	-18	-18	-12.4	-7.7
25-Nov	-18	-18	-18	-18	-17	-17	-17	-16	-16	-15	-10	-8	-6	-4	-5	-5	-6	-9	-9	-11	-11	-11	-12	-13	-12.1	-3.9
26-Nov	-13	-14	-13	-13	-12	-13	-13	-12	-13	-12	-9	-6	-3	-2	0	0	-3	-4	-1	-1	-2	-1	-1	-3	-6.7	0.4
27-Nov	-4	-6	-6	-8	-7	-2	-2	1	-1	-3	-2	1	3	4	4	3	0	-3	-5	-6	-7	-7	-8	-9	-2.9	4.3
28-Nov	-8	-8	-8	-8	-9	-10	-10	-9	-11	-10	-6	-1	0	3	1	2	0	-3	-4	-5	-7	-6	-7	-6	-5.4	2.6
29-Nov	-2	-2	-5	-7	-8	-6	-7	-7	-8	-9	-5	-1	1	4	3	3	-1	-5	-8	-10	-11	-11	-12	-12	-5.2	3.6
30-Nov	-13	-13	-13	-14	-14	-14	-14	-14	-13	-12	-8	-3	-1	-1	2	1	-3	-7	-9	-10	-11	-12	-12	-13	-9.2	1.8
																									Diurnal Average	
																									Diurnal Maximum	

Hourly Averages

External Temperature (ET) - °C

Henry Pirker - November 2015



Hourly Averages

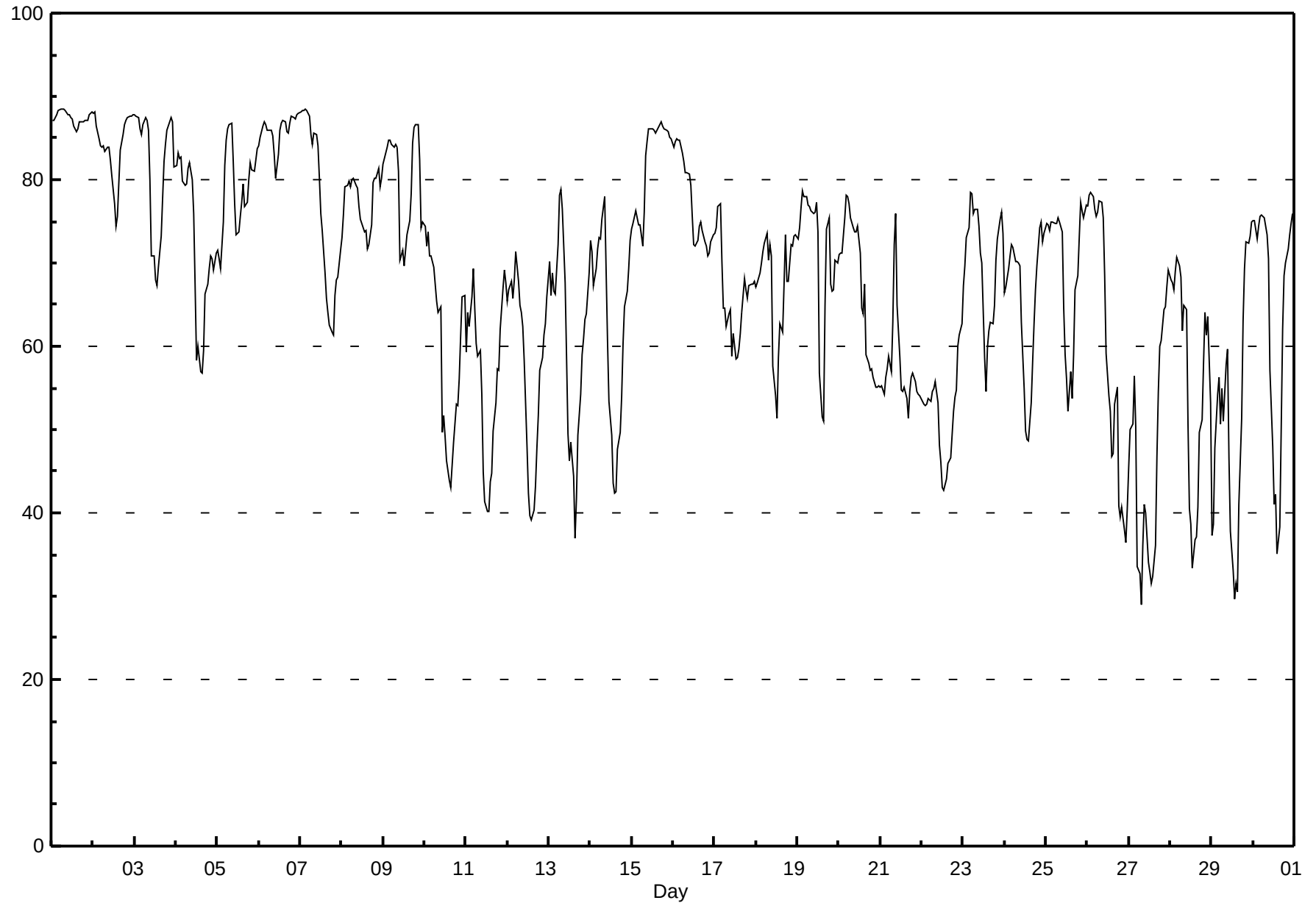
Relative Humidity (RH) - %

Henry Pirker - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0																				Hours in Service: 720							
Maximum Value: 88.5 % on Nov 1 08:00																				Maximum Daily Average: 87.4 % on Nov 1				Hours of Data: 720			
Minimum Value: 29 % on Nov 27 08:00																				Minimum Daily Average: 46.6 % on Nov 27				Hours of Missing Data: 0			
Maximum Diurnal Average: 74.3 % at hour 5																				Minimum Diurnal Average: 57.5 % at hour 15				Hours of Calibration: 0			
Monthly Average: 68.17 %																				Percentiles: P ₁ = 32.7 P ₁₀ = 47.9 Q ₁ = 58.6 Median = 70.8 Q ₃ = 78.5 P ₉₀ = 86.1 P ₉₉ = 88.3				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-Nov	87	87	87	88	88	88	88	89	88	88	88	88	87	87	86	86	87	87	87	87	87	87	88	88	87.4	88.5	
2-Nov	88	88	86	85	84	84	84	83	84	84	82	81	77	74	76	80	83	85	87	87	87	88	88	88	83.9	88.1	
3-Nov	88	88	87	86	85	87	87	87	86	80	71	71	68	67	69	73	78	82	84	86	87	87	87	82	81.4	87.7	
4-Nov	82	83	83	83	80	79	79	81	82	80	76	67	58	60	57	57	59	66	67	69	71	71	69	71	72.2	83.2	
5-Nov	72	70	69	75	82	85	86	87	87	82	77	73	74	76	77	80	77	77	80	82	81	81	82	84	79.0	86.8	
6-Nov	84	85	86	87	87	86	86	86	85	83	80	83	86	87	87	87	86	86	87	88	87	87	88	88	85.9	88.0	
7-Nov	88	88	88	88	88	88	85	84	86	85	84	80	76	74	69	66	64	63	62	61	66	68	68	72	76.8	88.4	
8-Nov	73	76	79	79	80	79	80	80	79	79	77	75	74	74	72	72	75	80	80	80	81	79	80	77.4	81.4		
9-Nov	82	83	84	85	85	84	84	84	84	81	70	72	70	71	73	75	78	84	86	87	87	82	74	75	80.0	86.6	
10-Nov	74	72	74	71	71	70	68	65	64	65	50	52	49	46	44	43	46	48	53	53	56	61	66	66	59.4	74.4	
11-Nov	59	64	62	66	69	64	60	59	59	54	45	41	40	40	44	45	50	53	57	57	62	67	69	68	56.5	69.3	
12-Nov	65	67	68	66	68	71	68	65	64	62	58	48	42	40	39	40	43	48	52	57	59	61	63	66	57.5	71.4	
13-Nov	70	66	69	67	66	72	78	79	76	68	59	49	46	49	44	37	42	49	54	59	61	63	64	69	60.7	78.8	
14-Nov	73	71	67	69	72	73	73	75	78	69	61	53	49	44	42	43	48	50	54	60	65	67	69	73	62.4	78.0	
15-Nov	74	75	76	75	75	75	72	76	83	85	86	86	86	86	86	86	87	87	86	86	86	86	85	85	82.1	86.9	
16-Nov	84	85	85	85	85	83	82	81	81	81	79	76	72	72	73	74	75	74	73	72	71	71	73	73	77.4	84.9	
17-Nov	74	74	77	77	70	65	65	62	64	64	59	62	58	59	60	62	64	68	67	66	67	67	67	68	66.0	77.2	
18-Nov	67	68	69	70	71	72	74	70	72	71	58	54	51	59	63	62	67	73	68	68	72	72	73	73	67.4	73.5	
19-Nov	73	74	77	79	78	78	77	77	76	76	76	77	74	57	51	51	65	74	75	68	67	67	70	70	71.1	78.6	
20-Nov	71	71	71	76	78	78	77	75	74	74	74	74	71	65	64	67	59	58	57	57	56	55	55	55	67.3	78.2	
21-Nov	55	55	54	56	57	59	57	63	72	76	65	59	55	55	55	54	51	55	56	57	56	55	54	54	57.7	76.0	
22-Nov	53	53	53	53	54	53	55	55	56	53	48	46	43	43	44	46	46	47	52	54	55	60	61	63	51.9	62.8	
23-Nov	67	70	73	74	79	78	76	76	76	74	71	70	59	55	60	62	63	63	65	70	73	75	76	74	70.0	78.5	
24-Nov	66	67	69	71	72	72	70	70	70	70	63	55	50	49	49	53	58	63	67	70	74	75	73	74	65.4	74.9	
25-Nov	75	75	74	75	75	75	75	75	75	74	65	59	56	52	57	54	59	67	68	73	77	76	76	77	69.2	77.2	
26-Nov	77	78	78	78	76	76	76	78	77	75	68	59	54	52	47	47	53	55	41	39	41	38	37	40	60.1	78.4	
27-Nov	45	50	51	56	50	34	33	29	36	41	40	34	33	31	32	36	47	54	60	61	64	65	67	69	46.6	69.2	
28-Nov	68	68	67	69	71	70	68	62	65	64	51	40	39	33	37	37	41	50	51	58	64	61	64	53	56.2	70.6	
29-Nov	37	39	48	54	56	51	55	51	58	60	47	38	33	30	32	30	41	51	63	69	72	72	73	75	51.4	74.9	
30-Nov	75	75	73	74	76	76	75	74	73	70	57	48	41	42	35	38	50	62	68	70	72	73	75	76	64.6	76.0	
		71.6	72.1	72.8	73.9	74.3	73.4	73.1	72.7	73.8	72.3	66.1	62.3	59.1	57.5	57.5	58.1	61.3	65.1	67.0	68.4	70.1	70.7	71.1	71.6	Diurnal Average	
		88.1	88.2	88.3	88.4	88.3	88.4	88.4	88.5	88.3	87.8	87.8	87.5	87.2	86.7	87.1	87.0	87.0	87.0	87.0	87.6	87.5	87.7	87.8	88.1	Diurnal Maximum	

Hourly Averages

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



Hourly Averages

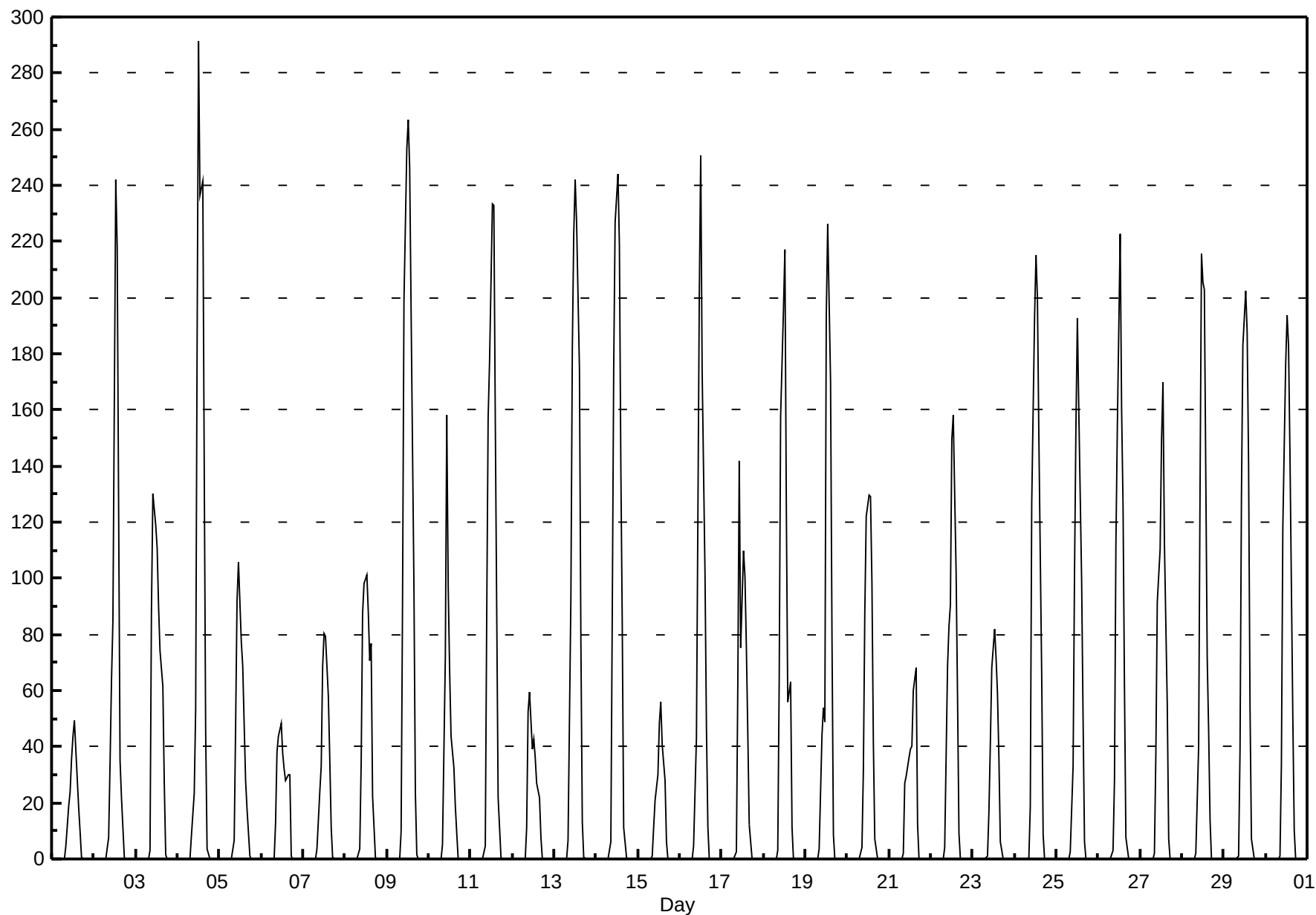
Solar Radiation (SR) - W/m²

Henry Pirker - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 291.5 W/m ² on Nov 4 13:00 Maximum Daily Average: 57.5 W/m ² on Nov 9																								Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0		
Minimum Value: 0 W/m ² on Nov 1 01:00 Minimum Daily Average: 9.7 W/m ² on Nov 1 Maximum Diurnal Average: 155.9 W/m ² at hour 13 Minimum Diurnal Average: 0.0 W/m ² at hour 1 Monthly Average: 31.01 W/m ² Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 35.1 P ₉₀ = 124.7 P ₉₉ = 241.1																										
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-Nov	0	0	0	0	0	0	0	0	4	19	24	35	44	50	28	18	10	1	0	0	0	0	0	0	9.7	49.5
2-Nov	0	0	0	0	0	0	0	0	8	34	63	85	242	217	125	35	22	1	0	0	0	0	0	0	34.7	242.1
3-Nov	0	0	0	0	0	0	0	0	3	88	130	119	111	90	74	62	27	1	0	0	0	0	0	0	29.4	130.3
4-Nov	0	0	0	0	0	0	0	0	8	23	54	182	291	236	241	140	46	3	0	0	0	0	0	0	51.1	291.5
5-Nov	0	0	0	0	0	0	0	0	7	47	92	106	78	68	48	28	18	1	0	0	0	0	0	0	20.5	105.6
6-Nov	0	0	0	0	0	0	0	0	13	38	44	48	38	32	28	30	30	1	0	0	0	0	0	0	12.6	48.2
7-Nov	0	0	0	0	0	0	0	0	3	24	33	69	80	79	58	35	11	1	0	0	0	0	0	0	16.4	80.5
8-Nov	0	0	0	0	0	0	0	0	4	34	87	98	101	88	70	77	22	1	0	0	0	0	0	0	24.3	101.2
9-Nov	0	0	0	0	0	0	0	0	10	91	199	253	263	246	195	97	23	1	0	0	0	0	0	0	57.5	263.3
10-Nov	0	0	0	0	0	0	0	0	5	72	158	97	67	44	32	19	9	0	0	0	0	0	0	0	21.0	158.2
11-Nov	0	0	0	0	0	0	0	0	5	86	157	177	234	233	157	89	22	1	0	0	0	0	0	0	48.4	233.6
12-Nov	0	0	0	0	0	0	0	0	11	52	59	39	43	36	27	22	7	0	0	0	0	0	0	0	12.4	59.4
13-Nov	0	0	0	0	0	0	0	0	7	93	181	223	242	227	175	78	13	0	0	0	0	0	0	0	51.6	242.2
14-Nov	0	0	0	0	0	0	0	0	6	87	174	227	244	218	140	84	11	0	0	0	0	0	0	0	49.7	243.9
15-Nov	0	0	0	0	0	0	0	0	1	11	21	30	48	56	41	28	6	0	0	0	0	0	0	0	10.1	56.0
16-Nov	0	0	0	0	0	0	0	0	4	43	121	201	251	174	102	47	11	0	0	0	0	0	0	0	39.8	250.5
17-Nov	0	0	0	0	0	0	0	0	3	63	142	75	110	101	75	45	12	0	0	0	0	0	0	0	26.1	142.0
18-Nov	0	0	0	0	0	0	0	0	3	63	157	196	217	125	56	63	11	0	0	0	0	0	0	0	37.2	216.9
19-Nov	0	0	0	0	0	0	0	0	4	44	54	49	193	226	170	80	8	0	0	0	0	0	0	0	34.5	226.1
20-Nov	0	0	0	0	0	0	0	0	4	31	87	122	130	129	99	42	7	0	0	0	0	0	0	0	27.1	129.5
21-Nov	0	0	0	0	0	0	0	0	2	27	30	36	39	40	60	68	12	0	0	0	0	0	0	0	13.1	68.2
22-Nov	0	0	0	0	0	0	0	0	4	69	83	91	150	158	102	58	9	0	0	0	0	0	0	0	30.2	158.4
23-Nov	0	0	0	0	0	0	0	0	1	17	41	68	82	72	59	36	6	0	0	0	0	0	0	0	15.9	82.0
24-Nov	0	0	0	0	0	0	0	0	1	19	127	193	215	200	150	65	9	0	0	0	0	0	0	0	40.8	214.9
25-Nov	0	0	0	0	0	0	0	0	3	33	102	155	193	160	99	50	6	0	0	0	0	0	0	0	33.3	192.8
26-Nov	0	0	0	0	0	0	0	0	3	28	112	154	223	160	126	62	8	0	0	0	0	0	0	0	36.5	222.5
27-Nov	0	0	0	0	0	0	0	0	2	37	91	110	149	170	113	55	7	0	0	0	0	0	0	0	30.6	169.6
28-Nov	0	0	0	0	0	0	0	0	2	40	134	215	206	203	72	46	14	0	0	0	0	0	0	0	38.8	215.4
29-Nov	0	0	0	0	0	0	0	0	1	39	129	183	202	188	141	54	7	0	0	0	0	0	0	0	39.3	202.2
30-Nov	0	0	0	0	0	0	0	0	1	34	118	176	194	183	144	51	10	0	0	0	0	0	0	0	38.0	193.5
Diurnal Average																										
Diurnal Maximum																										

Hourly Averages

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



Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Henry Pirker - November 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	5	3	3	3	4	4	3	3	3	3	4	4	4	4	5	5	6	5	5	5	6	5	5	5	3.3	6.1
Dir	40	35	27	35	27	53	43	26	27	27	26	18	7	3	353	337	337	333	324	315	313	293	279	265	352.2	312.9
2 Spd	6	7	9	7	6	6	4	3	3	1	1	0	1	3	1	3	5	4	2	3	1	1	3	2	2.3	8.8
Dir	265	254	251	247	246	245	252	250	263	254	259	236	280	275	306	129	127	123	135	129	275	308	284	282	244.3	251.4
3 Spd	1	3	3	3	1	3	4	5	6	5	4	4	4	1	2	2	3	4	5	4	4	4	2	3	1.0	5.7
Dir	267	270	265	290	318	284	267	276	277	253	239	253	244	237	175	170	112	75	91	95	102	111	117	147	233.8	277.1
4 Spd	4	5	5	5	5	5	4	5	5	3	4	7	11	14	17	16	12	8	10	10	10	10	8	5	6.0	17.2
Dir	112	108	110	112	102	100	89	122	117	118	192	205	205	213	215	213	212	199	202	197	190	198	193	193	186.0	214.7
5 Spd	6	7	11	10	8	7	6	5	4	5	5	4	6	9	10	9	5	7	5	4	3	2	2	2	4.5	10.7
Dir	194	207	227	213	205	196	212	225	269	333	336	308	278	268	274	274	255	247	261	261	253	203	128	122	244.3	227.5
6 Spd	3	3	3	1	2	2	4	5	4	3	3	1	6	5	5	4	5	3	4	2	3	1	1	1	2.7	5.9
Dir	126	110	115	128	103	86	94	103	114	123	187	89	84	85	83	85	117	125	142	120	111	105	295	316	106.7	84.2
7 Spd	1	2	1	1	1	2	6	3	1	2	6	7	8	6	6	5	5	8	9	10	8	8	6	5	4.2	9.9
Dir	256	125	321	286	174	196	193	178	128	133	192	189	184	229	215	188	193	199	215	209	208	236	232	254	205.8	209.3
8 Spd	2	2	2	2	2	3	1	3	4	3	4	6	3	4	3	2	3	2	1	1	3	1	1	1	1.8	5.7
Dir	273	329	265	256	255	252	274	282	296	274	281	280	268	251	260	288	327	303	86	66	45	23	23	274	284.8	279.7
9 Spd	2	2	1	1	1	1	1	1	2	2	3	2	3	5	6	6	5	4	1	1	3	3	4	5	1.8	6.4
Dir	296	300	277	272	282	252	239	139	146	114	180	131	140	110	119	115	98	96	113	115	124	107	81	95	117.3	114.7
10 Spd	5	7	5	6	5	4	3	4	2	3	3	4	3	4	7	6	8	3	8	3	6	1	0	8	4.0	8.5
Dir	110	114	114	118	120	123	141	116	135	124	110	137	166	157	156	145	135	81	135	111	139	164	298	204	133.5	135.0
11 Spd	17	12	14	10	12	17	15	10	2	3	5	11	14	21	25	27	25	23	16	11	6	6	1	4	12.3	27.4
Dir	201	195	174	195	193	189	200	207	221	324	260	220	221	217	215	213	218	209	210	210	232	230	222	208	209.2	213.0
12 Spd	9	9	3	3	3	3	6	4	5	5	8	13	15	16	14	12	11	6	5	6	7	6	5	3	6.1	15.5
Dir	200	196	205	173	54	97	68	63	75	92	116	115	108	108	107	106	109	105	113	126	118	125	112	85	114.3	108.2
13 Spd	6	11	6	8	10	8	4	4	9	15	18	25	28	24	26	26	17	13	10	10	4	5	5	3	11.7	27.7
Dir	140	154	170	166	175	192	188	165	182	199	196	206	205	204	209	213	212	204	198	192	254	228	200	242	198.6	204.6
14 Spd	2	1	4	2	3	2	2	2	2	2	4	4	7	8	7	5	5	5	2	2	1	1	1	2	2.0	8.4
Dir	168	221	208	124	83	83	114	81	114	189	168	188	202	242	229	202	174	193	237	113	42	101	312	286	189.9	241.5
15 Spd	2	2	0	1	3	4	4	3	6	7	6	8	10	12	13	9	9	9	13	17	21	19	16	13	8.0	20.8
Dir	279	281	292	265	288	301	313	323	349	333	332	332	321	317	309	297	286	280	277	274	274	272	271	263	291.4	274.0
16 Spd	11	9	6	4	1	4	5	3	1	1	1	3	4	5	8	8	8	8	11	10	10	9	8	8	2.5	11.4
Dir	251	228	211	222	274	247	244	247	186	123	73	91	86	70	57	63	64	67	76	82	80	86	90	99	92.4	251.2
17 Spd	6	8	12	9	15	18	19	17	15	10	9	7	8	4	6	3	6	7	13	19	18	15	14	14	8.4	19.2
Dir	109	137	165	168	191	192	198	196	198	200	209	221	224	242	209	215	302	276	277	277	267	261	262	251	222.3	198.3
18 Spd	15	14	13	9	8	6	3	2	1	2	3	2	1	0	2	0	1	2	6	4	3	3	2	4	3.8	15.1
Dir	260	253	249	254	261	264	234	216	164	126	201	220	251	145	119	122	259	157	191	229	268	263	273	264	244.2	260.0
19 Spd	3	3	3	3	3	1	1	3	1	1	3	4	4	4	3	2	3	4	6	13	16	14	6	4	4.5	15.8
Dir	255	275	293	276	295	251	234	277	269	312	276	270	283	251	245	249	276	268	253	267	276	270	269	255	268.9	275.7
20 Spd	4	2	1	1	1	1	4	2	1	3	2	1	0	2	3	4	11	16	25	28	24	21	20	21	7.6	28.0
Dir	247	269	298	100	119	156	169	10	72	198	238	213	187	232	285	194	210	222	215	214	211	219	221	222	216.9	213.5
21 Spd	23	23	27	20	14	9	22	21	22	13	11	16	24	18	16	23	39	31	23	18	23	32	34	32	22.1	38.8
Dir	225	223	216	206	215	224	212	213	212	203	221	219	212	221	216	221	229	227	228	234	228	219	217	218	219.7	229.0
22 Spd	29	29	30	26	25	24	21	22	20	23	20	23	21	21	16	14	13	15	10	10	10	7	5	1	17.9	29.9
Dir	221	222	219	224	229	233	241	241	238	239	234	235	230	239	232	229	230	235	234	242	225	204	255	321	231.2	219.3

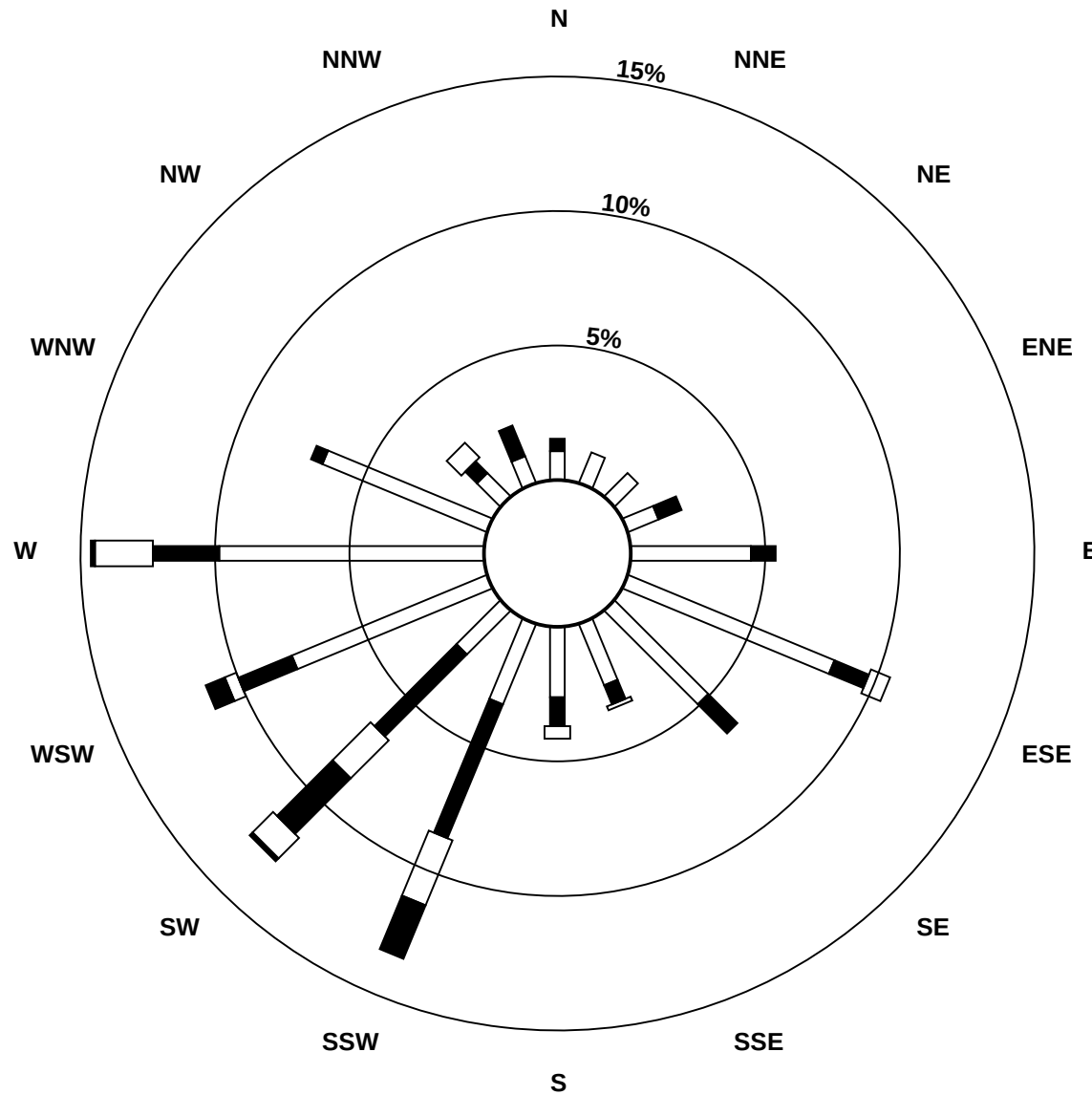
Hourly Averages

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

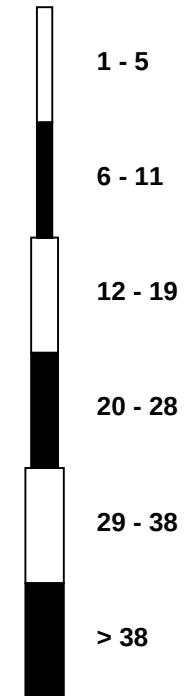
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	0	1	2	2	3	2	2	1	2	3	3	3	3	3	4	6	9	10	10	10	10	10	12	13	4.8	13.3
Dir	277	244	270	292	285	295	287	288	293	292	280	291	337	359	0	350	353	341	340	341	329	325	314	312	325.1	311.9
24 Spd	12	10	10	11	8	8	8	7	9	9	8	8	5	4	3	6	5	4	3	2	2	4	2	0	3.7	12.2
Dir	312	309	280	275	267	264	235	226	232	231	233	216	204	192	163	129	120	98	79	47	247	255	248	92	246.8	312.1
25 Spd	1	5	3	2	2	8	1	1	4	2	3	2	3	4	4	4	2	2	3	2	3	2	3	3	1.8	8.2
Dir	146	154	258	274	240	138	215	283	351	286	271	253	263	245	247	213	224	254	261	247	277	293	277	279	244.9	138.5
26 Spd	2	1	0	2	3	5	4	2	4	3	0	2	1	0	1	1	1	3	9	7	7	7	7	5	2.0	8.6
Dir	302	321	125	127	152	129	120	101	121	119	120	260	272	156	217	97	135	219	232	229	202	215	227	249	199.9	232.4
27 Spd	2	4	3	0	6	8	9	12	7	2	4	2	5	3	4	2	1	0	1	1	2	2	0	0	3.1	12.1
Dir	241	260	255	339	222	242	248	221	251	287	272	267	251	288	276	272	327	350	224	277	286	257	315	336	251.4	221.1
28 Spd	2	2	1	1	0	1	1	1	1	4	4	4	5	5	6	2	2	3	1	1	0	1	1	4	1.6	5.6
Dir	95	101	70	108	272	94	175	210	220	114	129	157	145	185	168	132	119	123	117	264	122	101	73	210	147.7	168.3
29 Spd	5	4	2	3	2	3	1	3	2	3	4	3	3	2	2	1	1	3	2	2	1	3	1	1	1.2	4.5
Dir	197	258	270	118	160	250	146	194	105	116	146	163	177	190	164	232	264	263	288	284	259	276	285	283	204.5	197.2
30 Spd	1	2	3	1	0	0	1	1	0	2	3	1	1	4	0	1	2	2	1	2	4	3	2	1	0.7	4.1
Dir	274	301	285	126	64	34	319	251	350	122	127	129	184	143	172	250	278	288	303	284	274	285	281	267	255.9	142.8
Spd	3.8	3.9	4.4	3.4	3.3	3.5	3.7	3.2	2.5	2.1	3.0	3.8	4.3	4.2	4.1	3.9	3.8	3.8	4.0	4.2	4.2	4.4	3.8	3.9	Diurnal Average	
Dir	223.5	217.2	219.1	210.6	213.2	210.6	213.4	215.2	215.9	210.8	216.9	217.2	212.8	219.3	215.0	208.6	214.2	221.4	223.1	233.1	239.0	236.7	239.4	235.9	Diurnal Maximum	
Spd	28.6	29.1	29.9	26.4	24.9	23.6	21.8	22.0	21.8	23.1	19.8	24.7	27.7	24.2	25.8	27.4	38.8	31.3	24.5	28.0	24.1	32.4	34.0	32.2	Diurnal Maximum	
Dir	220.6	221.7	219.3	223.8	229.3	233.0	211.7	240.7	212.0	239.5	234.4	206.4	204.6	203.9	209.1	213.0	229.0	226.8	214.8	213.5	211.2	219.0	216.7	218.2		
Maximum Speed Value: 39 km/h on Nov 21 17:00																								Hours in Service: 720		
Maximum Daily Speed Average: 22.1 km/h on Nov 21																								Hours of Data: 720		
Maximum Diurnal Speed Average: 4.4 km/h at hour 22																								Hours of Missing Data: 0		
Minimum Speed Value: 0 km/h on Nov 30 09:00																										
Minimum Daily Speed Average: 0.7 km/h on Nov 30																										
Minimum Diurnal Speed Average: 2.1 km/h at hour 10																										
Monthly Average Velocity: 3.67 km/h 220.64 deg																								Percent Operational Time: 100.0		
Speed Percentiles: P ₁ = 0.3 P ₁₀ = 1.1 Q ₁ = 2.1 Median = 4.0 Q ₃ = 8.1 P ₉₀ = 15.1 P ₉₉ = 28.5																										
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	10		7		0		0		0		0		17													
NorthEast	21		4		0		0		0		0		25													
East	54		18		6		0		0		0		78													
SouthEast	79		24		1		0		0		0		104													
South	41		32		13		1		0		0		87													
SouthWest	48		50		23		37		8		1		167													
West	133		30		17		3		0		0		183													
NorthWest	38		16		5		0		0		0		59													
Total	424		181		65		41		8		1		720													

Wind Rose

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



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Henry Pirker - November 2015

Maximum Speed: 39 km/h on Nov 21 17:00																				Maximum Daily Speed Average: 22.5 km/h on Nov 21										Hours in Service: 720	
Minimum Speed: 0 km/h on Nov 10 23:00																				Minimum Daily Speed Average: 2.1 km/h on Nov 30										Hours of Data: 720	
Maximum Diurnal Speed Average: 7.8 km/h at hour 17																				Minimum Diurnal Speed Average: 5.2 km/h at hour 10										Hours of Missing Data: 0	
Monthly Average Speed: 6.64 km/h																				Percentiles: P ₁ = 0.5 P ₁₀ = 1.4 Q ₁ = 2.5 Median = 4.5 Q ₃ = 8.4 P ₉₀ = 15.4 P ₉₉ = 28.7										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-Nov	5	3	3	3	4	4	3	4	3	4	4	4	5	4	5	6	6	5	5	5	6	6	5	6	4.5	6.1					
2-Nov	6	7	9	7	7	6	5	3	3	2	1	1	2	3	2	4	6	4	2	3	1	0	3	2	3.6	8.9					
3-Nov	1	3	4	3	2	3	4	6	6	5	4	5	4	1	2	2	3	4	5	4	4	4	3	4	3.4	5.7					
4-Nov	4	5	5	5	5	5	5	5	5	4	5	8	11	14	17	16	12	8	11	11	10	10	8	6	8.0	17.4					
5-Nov	6	7	11	10	8	8	6	5	4	6	5	5	6	9	11	9	6	7	5	4	4	2	2	2	6.1	10.8					
6-Nov	3	3	3	1	2	2	4	5	4	3	3	1	6	5	5	5	5	3	4	2	3	1	2	2	3.3	6.2					
7-Nov	1	2	1	1	2	2	6	3	1	2	6	7	8	6	6	5	5	8	9	10	8	8	6	5	4.9	10.0					
8-Nov	2	2	2	2	2	3	1	3	4	3	4	6	3	4	3	2	3	2	1	1	3	1	1	1	2.5	5.8					
9-Nov	2	3	2	1	2	1	1	1	2	2	3	3	3	5	6	7	5	4	1	1	3	4	4	5	3.0	6.5					
10-Nov	6	7	5	6	5	4	3	4	2	3	3	4	3	5	7	6	9	4	8	4	6	1	0	8	4.7	8.6					
11-Nov	17	13	15	10	12	17	16	10	3	3	6	11	14	21	25	28	25	24	16	11	7	6	1	4	13.1	27.6					
12-Nov	9	9	4	3	3	3	6	5	5	6	8	13	15	16	15	12	11	6	6	6	7	6	5	3	7.5	15.6					
13-Nov	6	11	7	8	10	8	4	4	9	15	18	25	28	25	26	27	17	13	10	10	6	6	5	3	12.7	28.0					
14-Nov	2	2	4	3	3	2	2	2	3	3	4	4	8	8	7	5	5	5	3	3	2	1	1	2	3.6	8.5					
15-Nov	2	3	2	2	3	4	4	3	6	7	6	9	10	12	13	10	9	10	13	17	21	19	16	13	8.9	20.9					
16-Nov	11	9	6	5	2	4	5	4	1	1	1	3	4	5	8	8	8	8	12	10	10	9	8	8	6.2	11.5					
17-Nov	6	8	12	9	15	18	19	17	15	10	9	7	8	5	6	3	6	7	13	19	18	15	14	14	11.6	19.3					
18-Nov	15	14	13	9	8	6	3	3	1	2	3	2	1	1	3	1	2	3	6	5	4	3	2	5	4.9	15.2					
19-Nov	4	3	3	4	5	5	2	3	2	1	4	4	4	4	3	2	4	4	6	14	16	14	7	5	5.0	15.9					
20-Nov	4	2	1	1	1	1	4	6	5	8	7	2	1	2	4	5	11	16	25	28	24	21	20	21	9.2	28.1					
21-Nov	23	24	27	20	15	10	22	21	22	13	12	16	24	18	16	23	39	32	23	18	24	33	34	32	22.5	39.0					
22-Nov	29	29	30	27	25	24	21	22	20	23	20	23	21	21	16	14	13	15	10	10	10	8	6	2	18.3	30.0					
23-Nov	1	2	1	2	3	2	4	1	2	3	3	3	3	3	4	6	10	11	11	10	10	10	12	13	5.5	13.4					
24-Nov	12	10	10	11	8	8	8	7	10	9	8	8	5	5	4	6	5	5	3	2	4	8	8	8	7.2	12.3					
25-Nov	10	11	5	2	6	15	3	4	8	2	3	2	4	4	5	5	3	2	5	2	4	3	4	4	4.7	15.1					
26-Nov	4	1	0	2	3	5	4	2	4	3	1	2	1	1	1	1	1	4	9	8	7	7	7	5	3.5	8.9					
27-Nov	2	4	3	1	6	8	10	12	7	2	4	2	6	4	4	2	1	0	2	1	2	2	0	0	3.6	12.2					
28-Nov	3	2	1	1	2	2	1	2	2	5	5	4	5	5	6	2	2	3	1	2	1	1	1	4	2.6	5.8					
29-Nov	5	4	2	3	3	3	2	3	2	3	4	3	3	2	2	1	1	4	3	2	1	3	1	1	2.6	5.4					
30-Nov	1	2	4	1	1	1	2	2	1	2	3	1	2	4	1	1	3	2	1	4	5	4	3	1	2.1	4.7					
6.8 6.8 6.5 5.5 5.8 6.1 6.0 5.7 5.5 5.2 5.6 6.3 7.3 7.5 7.8 7.4 7.8 7.4 7.6 7.6 7.6 7.2 6.4 6.3																									Diurnal Average						
28.8 29.3 30.0 26.6 25.0 23.7 21.9 22.1 22.0 23.2 19.9 24.9 28.0 24.7 26.0 27.6 39.0 31.5 24.7 28.1 24.2 32.6 34.2 32.4																									Diurnal Maximum						
All monthly, daily, and diurnal averages have been calculated using scalar methods																															

Hourly Standard Deviations

Wind Direction (WD) - deg

Henry Pirker - November 2015

Maximum Value: 97.5 deg on Nov 30 09:00																								Hours in Service: 720	
Minimum Value: 4.1 deg on Nov 22 10:00																								Hours of Data: 720	
																								Hours of Missing Data: 0	
Percentiles: P ₁ = 4.7 P ₁₀ = 6.9 Q ₁ = 9.3 Median = 16.8 Q ₃ = 35.0 P ₉₀ = 63.9 P ₉₉ = 87.0																								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-Nov	13	16	20	15	16	12	19	19	15	13	16	20	18	18	18	18	15	12	16	11	8	13	10	7	20.2
2-Nov	8	8	7	7	7	7	8	11	11	23	74	90	68	41	67	67	13	11	21	35	72	70	15	21	90.0
3-Nov	67	18	17	18	63	36	14	12	10	14	10	23	11	32	36	50	22	18	13	13	11	11	25	24	67.0
4-Nov	9	6	7	5	12	14	19	5	9	19	37	18	9	8	7	7	8	8	8	7	6	8	8	9	37.0
5-Nov	8	11	8	9	11	10	10	11	20	20	22	36	16	10	7	9	14	7	11	12	13	33	15	8	35.6
6-Nov	13	8	10	9	18	17	9	10	10	16	34	52	22	16	11	13	22	21	13	61	8	31	48	87	87.4
7-Nov	75	58	74	87	33	33	11	43	67	46	17	20	9	22	20	9	11	11	7	8	9	10	11	15	87.0
8-Nov	52	39	39	19	33	17	47	17	10	17	13	10	18	15	18	30	12	20	77	17	12	32	37	26	76.9
9-Nov	33	18	36	26	44	70	18	24	23	14	27	22	24	22	9	12	9	9	72	33	24	40	19	14	71.9
10-Nov	7	9	12	10	8	17	25	13	28	32	19	20	35	34	29	21	9	43	16	20	15	53	87	26	87.2
11-Nov	6	8	10	12	9	9	14	14	67	55	27	11	13	10	7	6	7	7	7	10	24	12	71	51	71.5
12-Nov	11	7	30	39	37	20	12	22	18	14	9	7	7	7	7	8	7	16	12	7	10	9	8	20	39.4
13-Nov	33	9	14	8	10	8	17	15	17	8	8	7	8	11	8	9	11	8	5	7	53	39	20	27	53.3
14-Nov	37	84	61	52	28	52	30	34	48	36	22	18	25	10	14	15	17	11	51	48	75	75	67	45	83.5
15-Nov	36	16	77	71	15	7	7	9	15	10	10	11	7	7	10	7	6	7	5	5	5	5	5	7	76.8
16-Nov	7	12	18	59	46	36	20	34	43	65	22	17	17	17	8	7	7	8	9	6	8	8	10	10	64.8
17-Nov	12	10	7	12	7	8	5	8	8	8	10	21	17	38	17	37	19	11	9	6	8	7	9	6	38.0
18-Nov	6	9	9	7	8	23	29	34	43	24	11	32	28	71	89	79	72	67	7	40	14	24	38	34	88.6
19-Nov	17	22	12	34	42	47	52	23	68	66	26	17	8	10	17	23	25	22	14	14	5	5	28	66	67.5
20-Nov	25	55	31	68	46	62	13	85	77	60	46	65	71	31	35	66	9	7	8	5	7	6	7	6	84.9
21-Nov	6	6	6	8	9	18	7	7	7	11	10	7	8	11	10	8	6	7	9	7	8	6	6	7	18.0
22-Nov	6	6	6	6	7	6	5	5	4	4	6	5	6	7	7	6	6	7	13	10	23	9	33	79	79.0
23-Nov	83	64	54	19	23	17	59	84	11	10	10	16	30	30	25	20	14	11	11	12	10	7	9	6	84.0
24-Nov	6	9	6	4	9	11	16	22	16	17	15	12	15	15	30	10	8	10	17	34	82	52	61	55	82.0
25-Nov	77	68	43	43	48	73	62	43	43	39	13	21	22	7	9	14	44	22	36	22	18	28	25	29	77.0
26-Nov	38	37	57	15	26	10	7	22	6	31	75	21	33	59	52	85	71	60	16	8	14	10	9	11	85.3
27-Nov	37	17	23	93	52	24	30	8	10	35	19	26	18	12	8	41	86	70	64	26	25	59	81	74	93.4
28-Nov	26	48	56	81	86	73	71	73	85	54	20	18	15	13	14	59	16	14	34	56	88	28	76	38	88.1
29-Nov	54	26	57	29	54	34	53	29	37	11	19	24	20	21	41	22	52	56	29	15	51	34	59	73	73.1
30-Nov	49	29	38	62	71	72	67	38	98	13	23	54	41	13	71	29	25	16	47	41	35	33	38	64	97.5
82.9 83.5 76.8 93.4 85.9 73.2 71.3 84.9 97.5 65.9 75.3 90.0 70.7 71.0 88.6 85.3 86.1 70.2 76.9 61.4 88.1 75.3 87.2 87.4																									

PAZA

Evergreen Park Station

Monthly Summary Tables, Graphs and
Roses

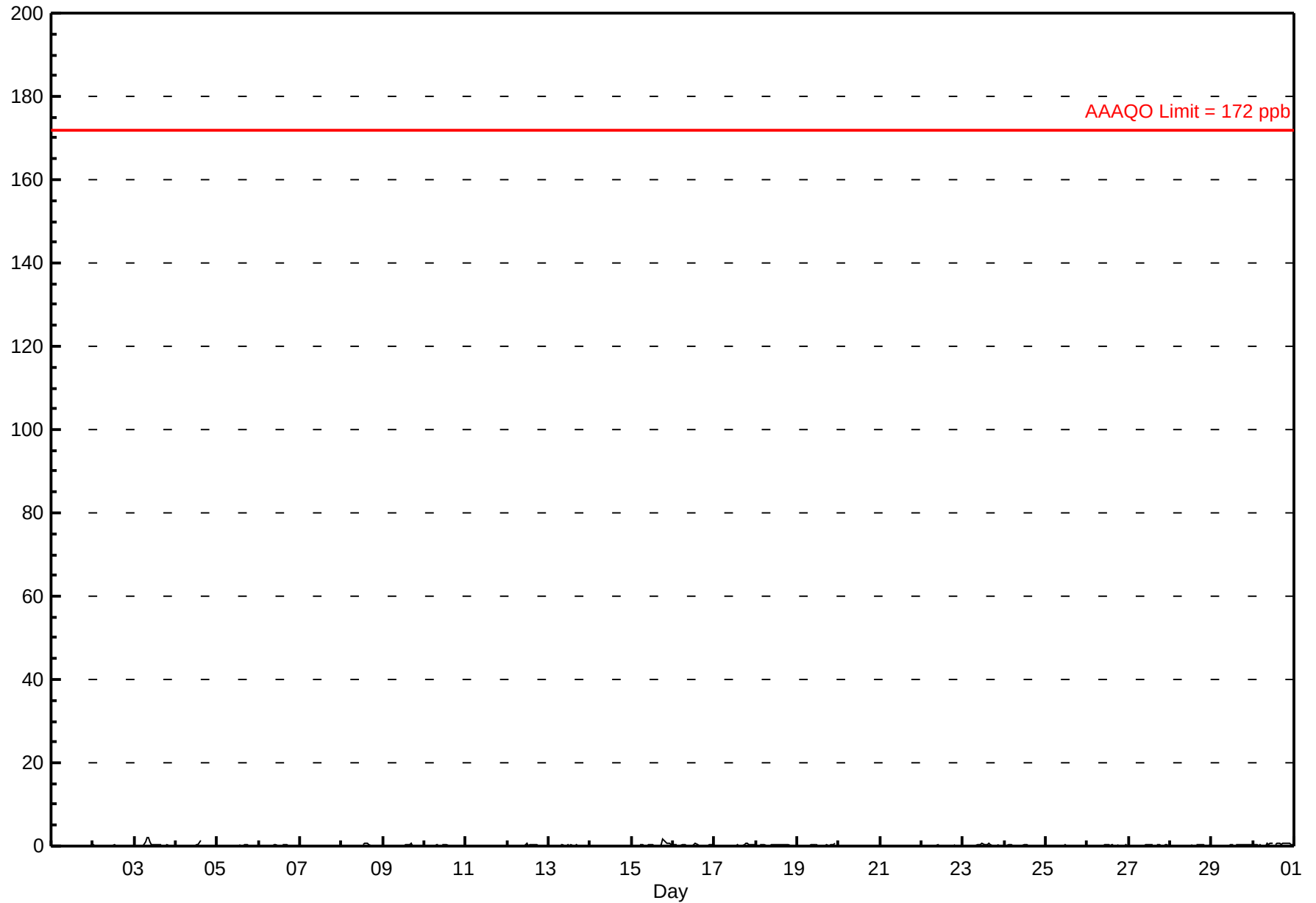
Hourly Averages

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

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0																			Hours in Service: 720								
Maximum Value: 2.0 ppb on Nov 3 08:00 Maximum Daily Average: 0.4 ppb on Nov 30																			Hours of Data: 686								
Minimum Value: 0 ppb on Nov 2 06:00 Minimum Daily Average: 0.0 ppb on Nov 11																			Hours of Missing Data: 34								
Maximum Diurnal Average: 0.2 ppb at hour 14 Minimum Diurnal Average: 0.1 ppb at hour 6																			Hours of Calibration: 34								
Monthly Average: 0.15 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: 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-Nov	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	0.3	
2-Nov	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	0.3	
3-Nov	0	0	0	0	0	0	1	2	2	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.4	2.0	
4-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	0	0	0	0	0	0	0	0	0.1	1.2	
5-Nov	0	0	0	0	0	0	0	0	0	C	C	C	0	0	A	0	0	0	0	0	0	0	0	0	0.1	0.3	
6-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.1	0.3	
7-Nov	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	0.2	
8-Nov	0	0	0	0	0	0	0	0	0	0	0	A	0	1	1	1	0	0	0	0	0	0	0	0	0.2	0.7	
9-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	1	0	0	0	0	0	0	0.1	0.6	
10-Nov	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	
11-Nov	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	
12-Nov	0	0	0	0	0	0	0	A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6	
13-Nov	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	
14-Nov	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	
15-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	0	0.3	1.5
16-Nov	0	0	0	A	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.2	0.8	
17-Nov	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0.2	0.8	
18-Nov	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	
19-Nov	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	0.2	0.7	
20-Nov	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	0.2	
21-Nov	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	
22-Nov	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	
23-Nov	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	A	0	0	0	0	0.2	0.8	
24-Nov	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	
25-Nov	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	0.3	
26-Nov	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	
27-Nov	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	0.5	
28-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.1	0.5	
29-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	1	0	0	0	0.2	0.5	
30-Nov	0	0	0	0	0	0	0	0	1	0	1	1	A	0	1	1	0	1	1	1	1	1	0	1	0.4	0.8	
0.1		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	Diurnal Average		
0.4		0.3	0.3	0.3	0.2	0.3	1.2	2.0	2.0	0.9	0.5	0.8	0.5	0.8	1.2	0.8	0.6	0.5	1.5	1.3	0.7	0.8	0.7	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 - November 2015



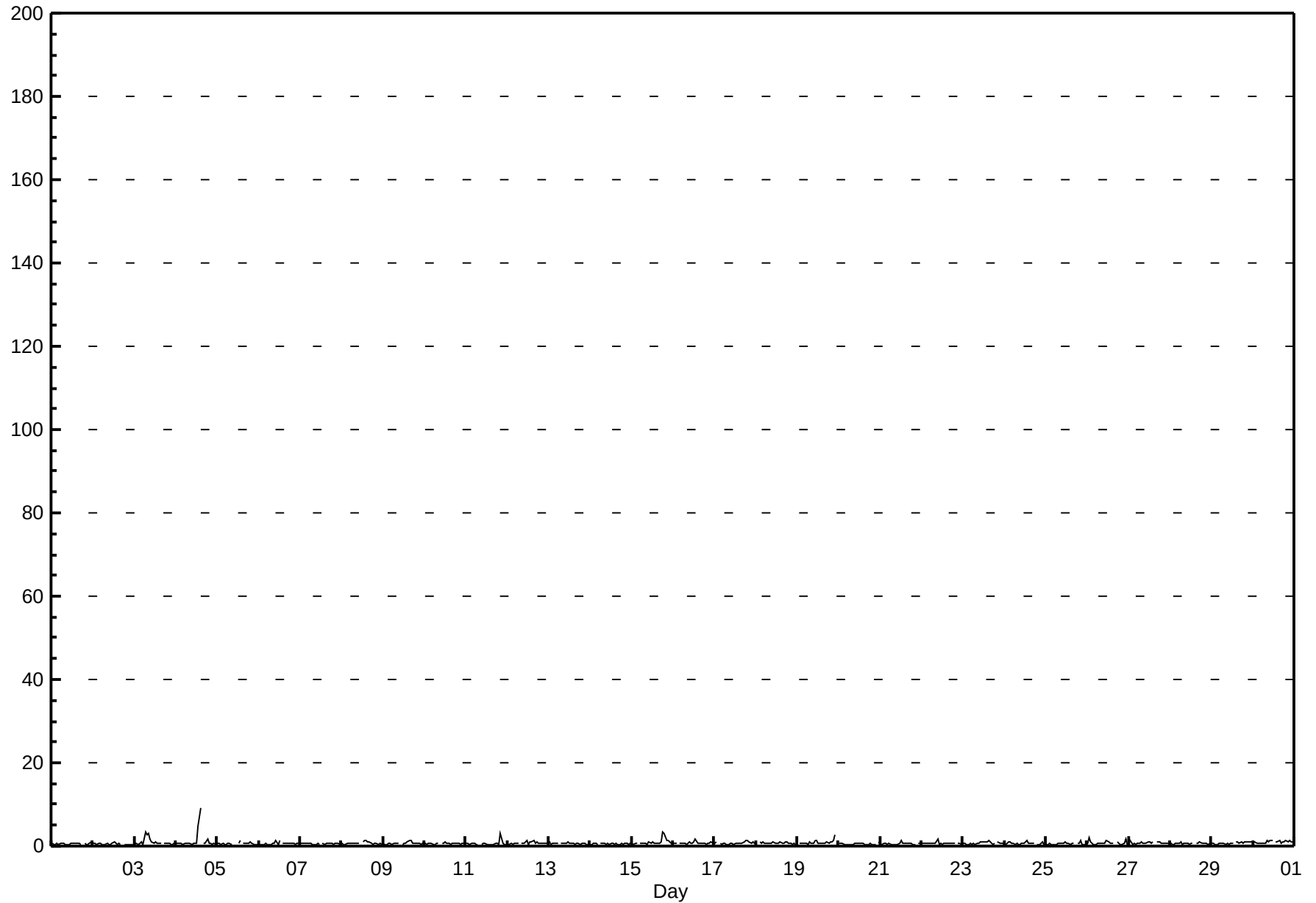
Hourly Maximums

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

Maximum Value: 9.1 ppb on Nov 4 15:00																			Maximum Daily Average: 1.2 ppb on Nov 4							Hours in Service: 720	
Minimum Value: 0 ppb on Nov 20 21:00																			Minimum Daily Average: 0.5 ppb on Nov 2							Hours of Data: 686	
Maximum Diurnal Average: 1.0 ppb at hour 15																			Minimum Diurnal Average: 0.6 ppb at hour 6							Hours of Missing Data: 34	
Monthly Average: 0.71 ppb																			Percentiles: P ₁ = 0.3 P ₁₀ = 0.4 Q ₁ = 0.5 Median = 0.6 Q ₃ = 0.7 P ₉₀ = 1.0 P ₉₉ = 2.9							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-Nov	1	0	0	1	0	1	1	1	0	0	0	1	1	1	1	1	1	1	A	1	0	0	1	1	0.6	0.9	
2-Nov	1	1	1	1	1	0	0	0	1	0	0	1	1	1	0	1	0	A	0	0	0	0	0	0	0.5	1.1	
3-Nov	0	1	0	1	1	1	3	3	3	2	1	1	1	1	1	1	A	1	1	1	1	0	0	1	1.0	3.5	
4-Nov	1	1	1	1	0	1	1	1	1	0	1	1	1	5	9	A	1	1	2	1	1	0	1	0	1.2	9.1	
5-Nov	1	1	0	1	0	0	1	1	0	C	C	C	1	1	A	1	1	1	1	1	1	0	0	1	0.6	1.5	
6-Nov	0	0	0	0	1	0	0	0	1	1	1	1	1	A	1	1	1	1	1	1	1	0	1	1	0.6	1.5	
7-Nov	1	1	1	1	1	1	1	0	0	0	1	0	A	1	0	1	1	1	1	0	1	1	1	1	0.6	0.8	
8-Nov	1	0	0	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0	1	1	0	1	0	0.7	1.3	
9-Nov	1	0	0	1	1	1	0	1	1	1	A	0	1	1	1	1	1	1	1	1	1	1	0	1	0.7	1.2	
10-Nov	1	0	1	1	1	0	0	1	1	A	1	1	1	1	1	0	1	1	1	1	1	0	1	1	0.6	0.9	
11-Nov	1	1	0	1	1	1	0	0	A	0	1	1	0	0	0	0	0	1	1	0	3	1	0	0	0.6	3.2	
12-Nov	0	0	1	0	1	1	1	A	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0.7	1.5	
13-Nov	1	0	1	1	1	1	A	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	0	0	0.6	0.9	
14-Nov	0	0	1	1	1	A	1	1	1	0	1	0	1	1	0	1	0	0	1	0	1	1	0	1	0.5	0.8	
15-Nov	1	0	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	1	1	1.0	3.2	
16-Nov	1	1	1	A	1	1	1	1	0	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	0.7	1.7	
17-Nov	1	1	A	1	0	1	1	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.4	
18-Nov	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0.8	1.1	
19-Nov	A	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	A	0.9	2.7	
20-Nov	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	1	0	0	0	A	1	0.5	0.9	
21-Nov	0	0	1	1	0	1	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	A	1	1	0.5	1.3	
22-Nov	1	1	1	1	1	1	1	1	1	2	0	1	0	1	1	1	1	1	1	1	A	1	1	0	0.6	1.7	
23-Nov	1	1	0	0	1	0	1	0	1	1	1	1	1	1	1	1	1	0	1	A	1	1	1	1	0.7	1.5	
24-Nov	0	0	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	A	0	0	1	1	0	0.7	1.3	
25-Nov	0	0	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0	0	1	0.6	1.4	
26-Nov	1	2	1	0	0	0	1	1	1	1	1	1	1	1	1	1	A	1	1	0	0	1	2	0	0.8	1.9	
27-Nov	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.8	1.5	
28-Nov	1	0	0	1	1	1	1	0	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.6	1.1	
29-Nov	1	1	0	0	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.7	1.1	
30-Nov	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1.0	1.5	
0.6 0.6 0.6 0.6 0.6 0.6 0.7 0.6 0.7 0.7 0.8 0.8 0.8 0.9 1.0 0.8 0.7 0.7 0.8 0.8 0.8 0.6 0.8 0.6																									Diurnal Average		
1.0 1.9 1.0 0.9 0.9 0.7 3.5 2.6 2.9 1.8 1.5 1.5 1.4 4.7 9.1 1.5 1.2 1.1 3.2 3.0 3.2 1.4 2.7 1.0																									Diurnal Maximum		
C - Calibration																									A - Automated Daily Zero Span		

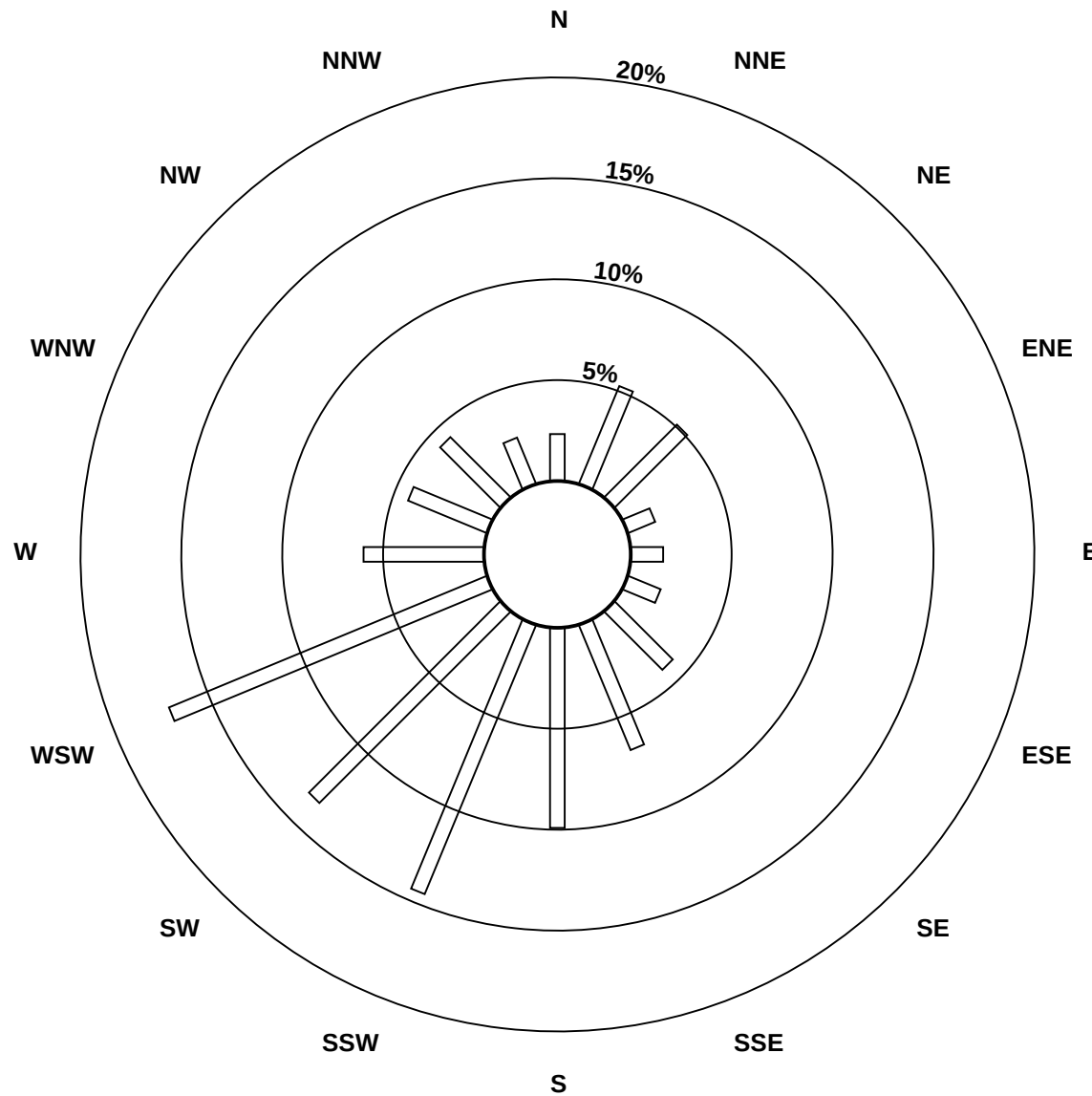
Hourly Maximums

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

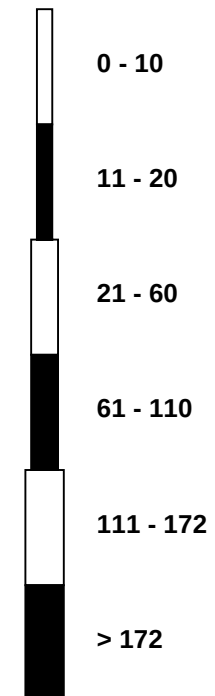


Pollutant Rose

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

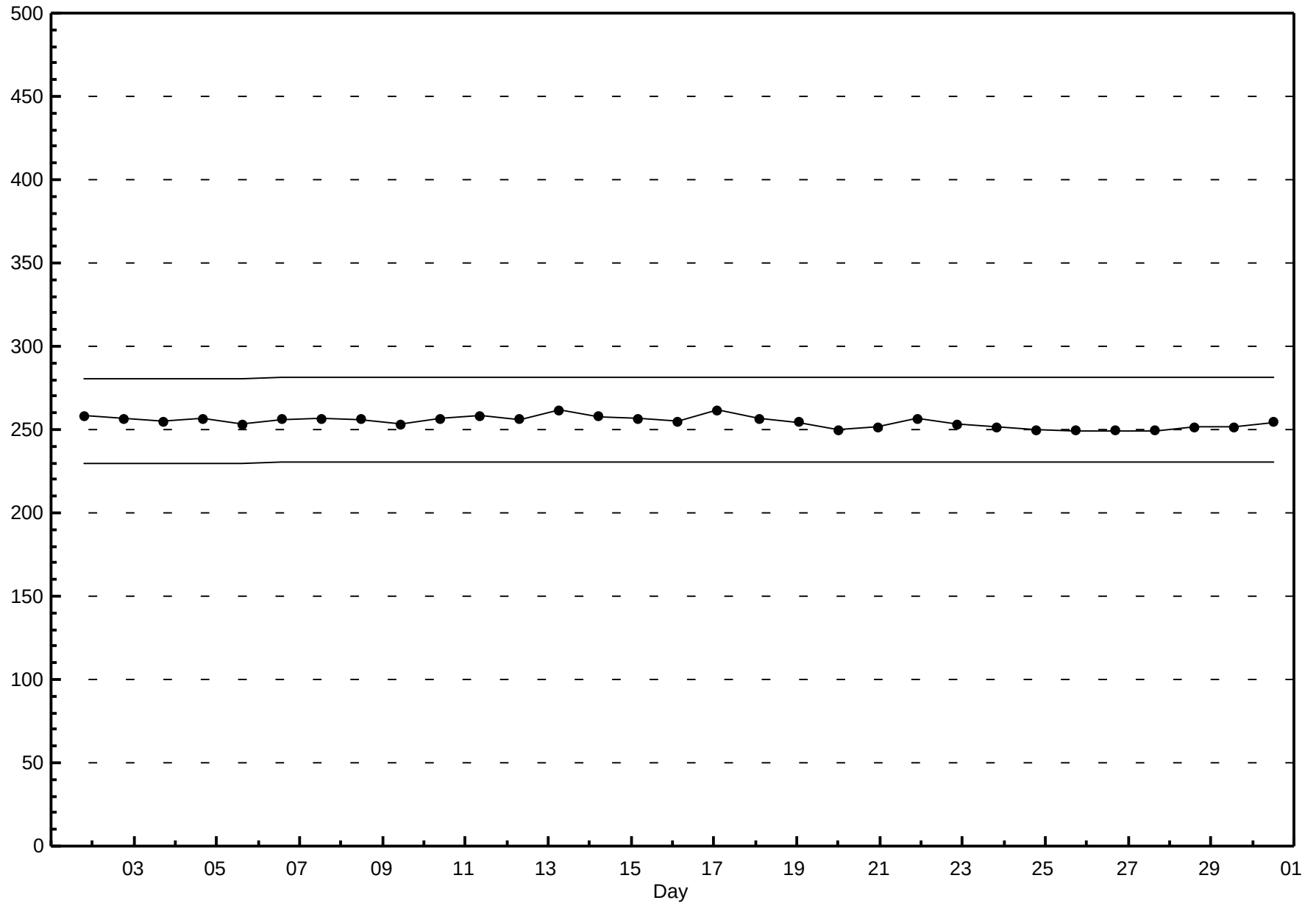


Pollutant Classes (ppb)



Span Responses

Sulphur Dioxide (SO₂)
Evergreen Park - November 2015



Hourly Averages

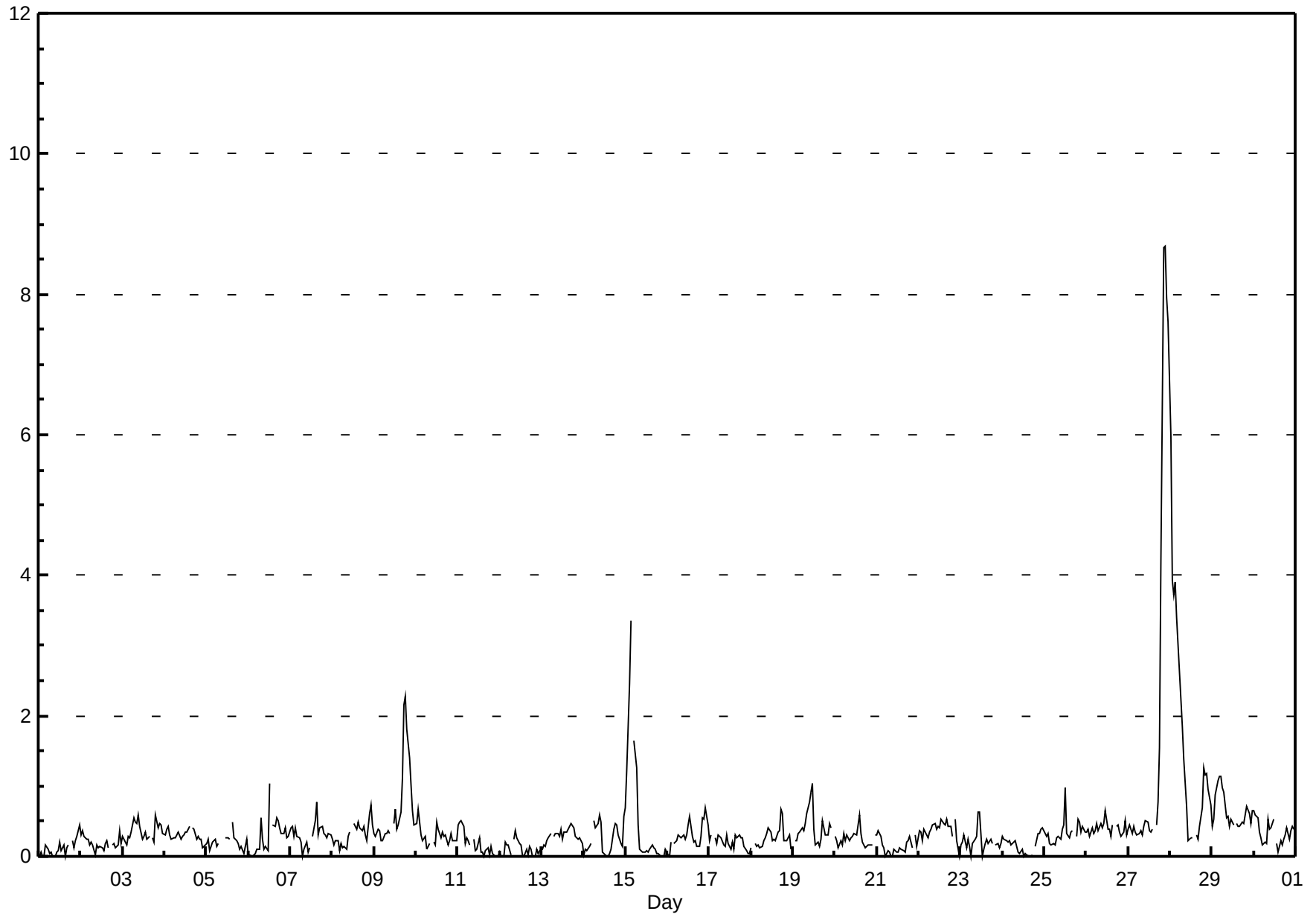
Total Reduced Sulphur (TRS) - ppb

Evergreen Park - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 8.7 ppb on Nov 27 22:00 Maximum Daily Average: 2.0 ppb on Nov 27																								Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0		
Minimum Value: 0 ppb on Nov 1 03:00 Maximum Diurnal Average: 0.6 ppb at hour 22 Monthly Average: 0.41 ppb																								Minimum Daily Average: 0.1 ppb on Nov 12 Minimum Diurnal Average: 0.3 ppb at hour 14 Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.2 Median = 0.3 Q ₃ = 0.4 P ₉₀ = 0.6 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-Nov	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
2-Nov	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
3-Nov	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	A	0	0	1	0	0	0	0	0.4	0.6
4-Nov	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
5-Nov	0	0	0	0	0	0	0	0	C	C	C	0	0	0	A	0	0	0	0	0	0	0	0	0	0.2	0.5
6-Nov	0	0	0	0	0	0	0	1	0	0	0	0	1	A	0	0	1	1	0	0	0	0	0	0	0.3	1.0
7-Nov	0	0	0	0	0	0	0	0	0	0	0	0	A	0	1	1	0	0	0	0	0	0	0	0	0.3	0.8
8-Nov	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	1	0	0.3	0.7
9-Nov	0	0	0	0	0	0	0	0	0	0	A	0	1	0	0	1	1	2	2	2	1	1	1	0	0.7	2.3
10-Nov	0	1	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7
11-Nov	0	0	1	0	0	0	0	0	A	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
12-Nov	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
13-Nov	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	0.5
14-Nov	0	0	0	0	0	A	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	0.6
15-Nov	1	1	2	3	A	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	3.4
16-Nov	0	0	0	A	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0.3	0.7
17-Nov	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
18-Nov	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0.3	0.7
19-Nov	A	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	A	0.4	1.0
20-Nov	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	0.6
21-Nov	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
22-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	A	1	0	0	0.4	0.5
23-Nov	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	A	0	0	0	0	0.2	0.6
24-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.2	0.4
25-Nov	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	A	0	1	0	0	0	0	0.3	1.0
26-Nov	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	A	0	0	0	0	0	1	0	0.4	0.6
27-Nov	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	A	0	1	2	4	9	9	8	8	2.0	8.7
28-Nov	6	4	4	4	3	3	2	2	1	1	0	0	0	0	A	0	0	0	1	1	1	1	1	1	1.6	6.0
29-Nov	0	1	1	1	1	1	1	1	1	1	0	1	0	A	0	0	0	0	0	1	1	1	0	1	0.6	1.1
30-Nov	1	1	1	0	0	0	0	0	1	0	0	1	A	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7
0.5 0.4 0.5 0.5 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 0.4 0.4 0.5 0.6 0.6 0.6 0.5																								Diurnal Average		
6.0 3.9 3.7 3.9 3.4 2.6 2.2 1.9 1.4 0.8 0.9 1.0 1.0 0.6 0.6 0.8 1.1 2.2 2.3 4.2 8.7 8.7 8.0 7.6																								Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																										

Hourly Averages

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



Hourly Maximums

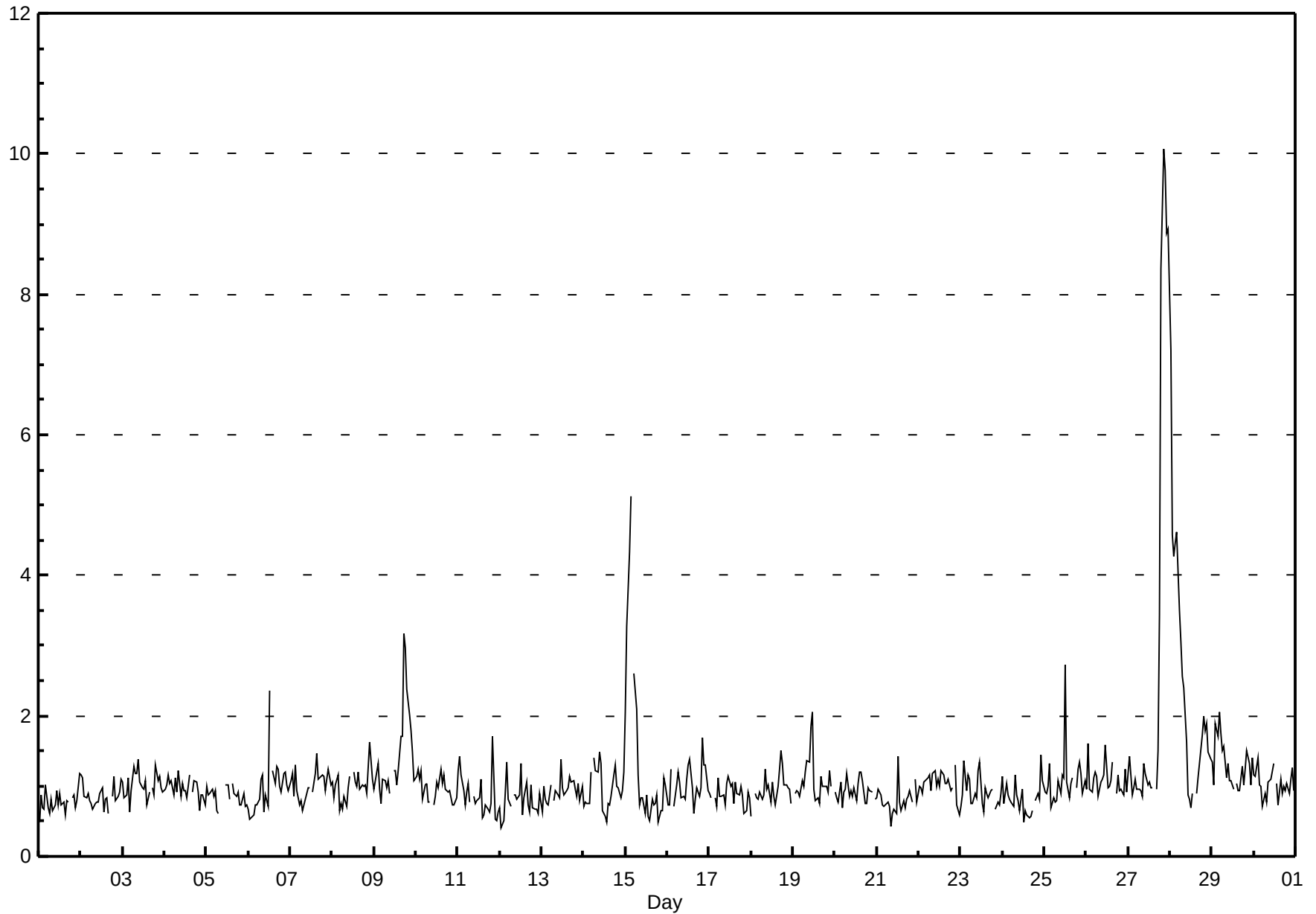
Total Reduced Sulphur (TRS) - ppb

Evergreen Park - November 2015

Maximum Value: 10.1 ppb on Nov 27 21:00																				Maximum Daily Average: 2.9 ppb on Nov 27					Hours in Service: 720	
Minimum Value: 0 ppb on Nov 12 02:00																				Minimum Daily Average: 0.8 ppb on Nov 1					Hours of Data: 686	
Maximum Diurnal Average: 1.3 ppb at hour 21																				Minimum Diurnal Average: 0.9 ppb at hour 14					Hours of Missing Data: 34	
Monthly Average: 1.11 ppb																				Percentiles: P ₁ = 0.5 P ₁₀ = 0.7 Q ₁ = 0.8 Median = 0.9 Q ₃ = 1.1 P ₉₀ = 1.4 P ₉₉ = 4.4					Hours of Calibration: 34	
																				Percent Operational Time: 100.0						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0.8	1.2
2-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0.9	1.2
3-Nov	1	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	1.4
4-Nov	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	1.2
5-Nov	1	1	1	1	1	1	1	1	C	C	C	1	1	1	A	1	1	1	1	1	1	1	1	1	0.9	1.0
6-Nov	1	1	1	1	1	1	1	1	1	1	1	1	2	A	1	1	1	1	1	1	1	1	1	1	1.0	2.4
7-Nov	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1.0	1.5
8-Nov	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	2	1	1	1.0	1.6
9-Nov	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	2	2	3	3	2	2	2	1	1	1.4	3.2
10-Nov	1	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	1.2
11-Nov	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	0.9	1.7
12-Nov	1	0	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.4
13-Nov	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
14-Nov	1	1	1	1	1	A	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1.0	1.5
15-Nov	2	3	4	5	A	3	2	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1.4	5.1
16-Nov	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	1.7
17-Nov	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1
18-Nov	1	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	1.5
19-Nov	A	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	A	1.1	2.0
20-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0.9	1.2
21-Nov	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.8	1.4
22-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1.0	1.3
23-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0.9	1.4
24-Nov	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	A	1	1	1	1	1	0.8	1.4
25-Nov	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	A	1	1	1	1	1	1	1.1	2.7
26-Nov	1	2	1	1	1	1	1	1	1	1	1	2	1	1	1	1	A	1	1	1	1	1	1	1	1.1	1.6
27-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	3	8	10	10	9	9	2.9	10.1
28-Nov	7	5	4	4	5	4	3	3	2	2	1	1	1	1	1	A	1	1	1	2	2	2	1	1	2.4	7.2
29-Nov	1	1	2	2	2	2	2	2	1	1	1	1	1	A	1	1	1	1	1	1	2	1	1	1	1.3	2.1
30-Nov	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1.0	1.4
																									Diurnal Average	
																									Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span																										

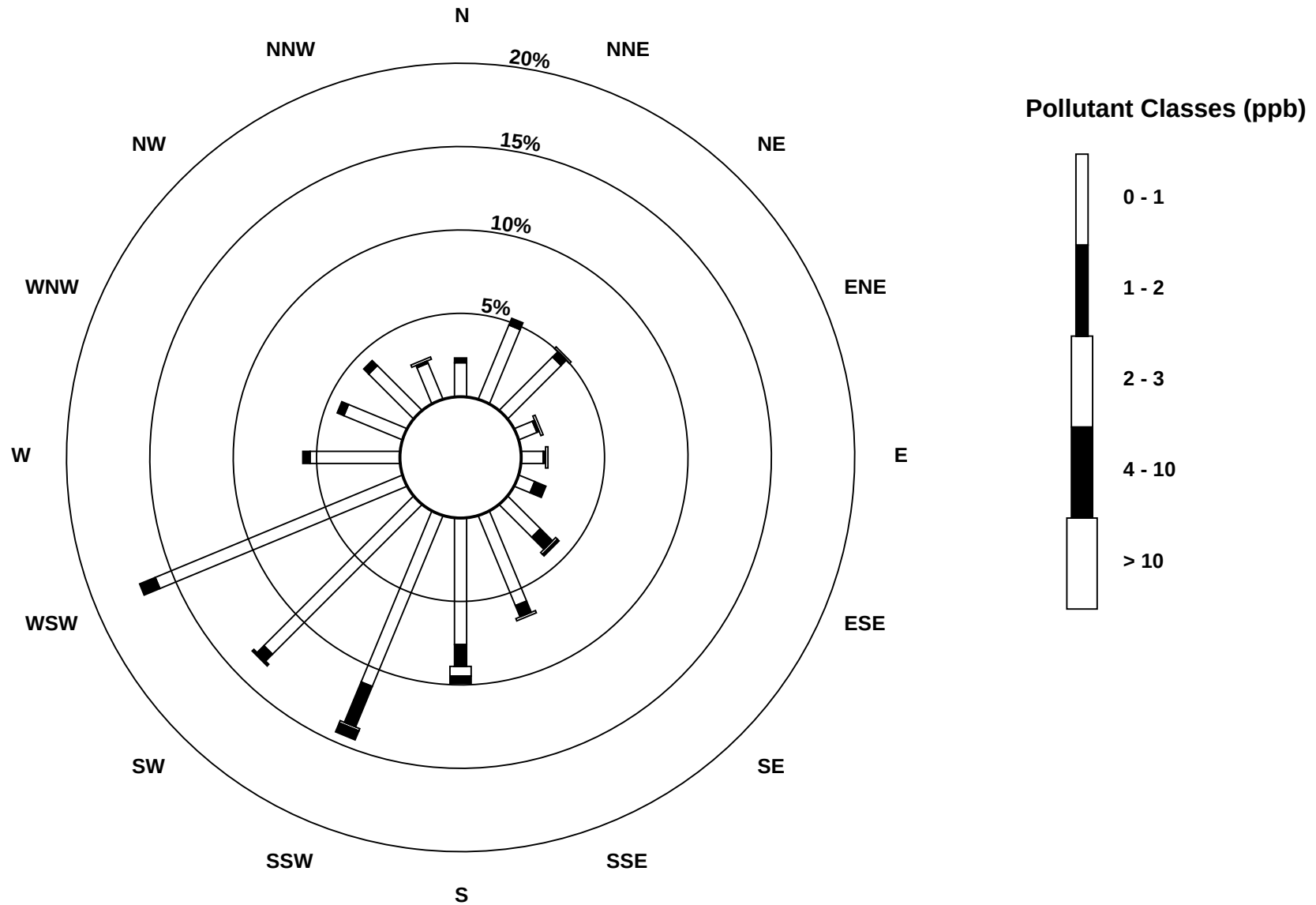
Hourly Maximums

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



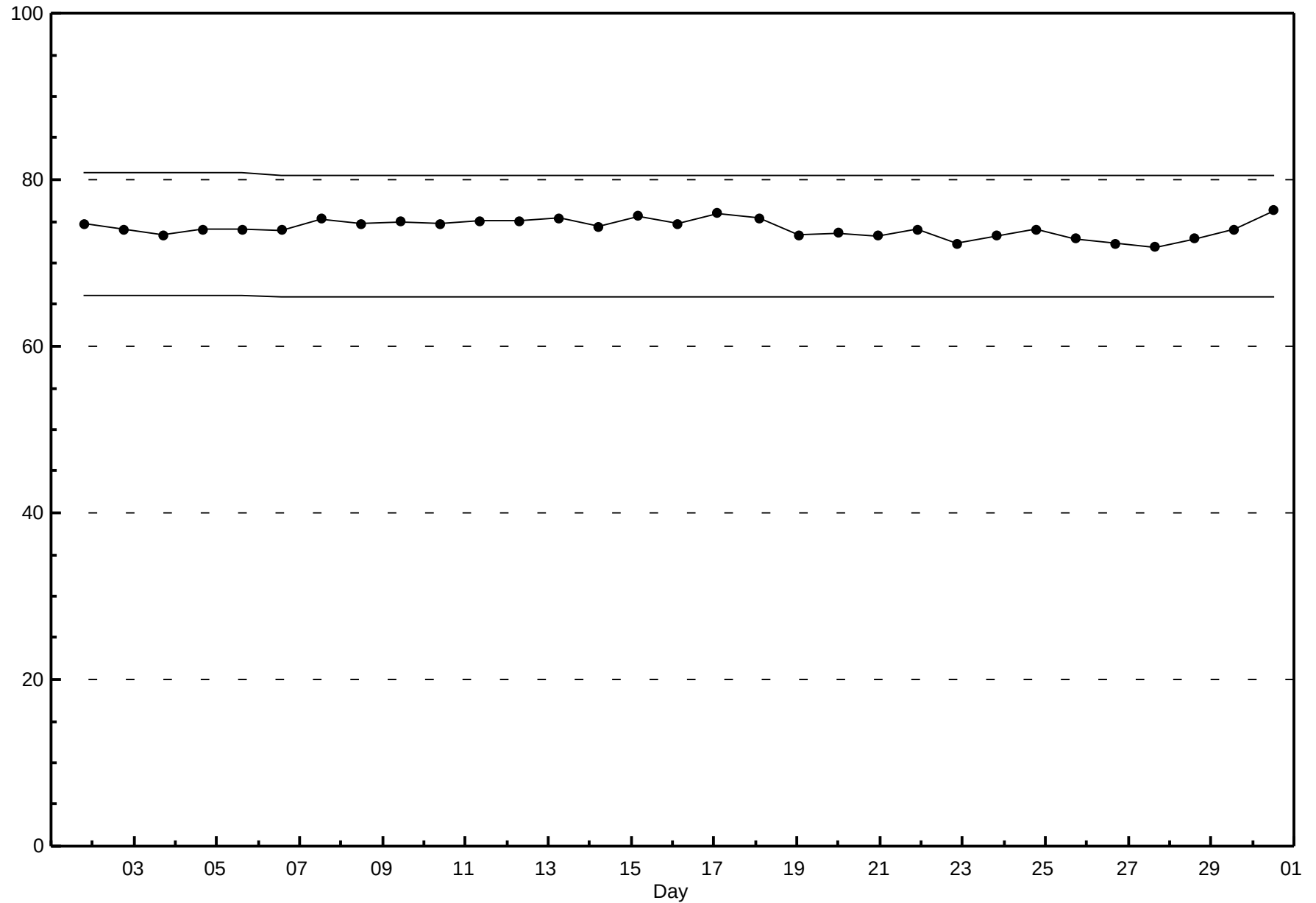
Pollutant Rose

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



Span Responses

Total Reduced Sulphur (TRS)
Evergreen Park - November 2015



Hourly Averages

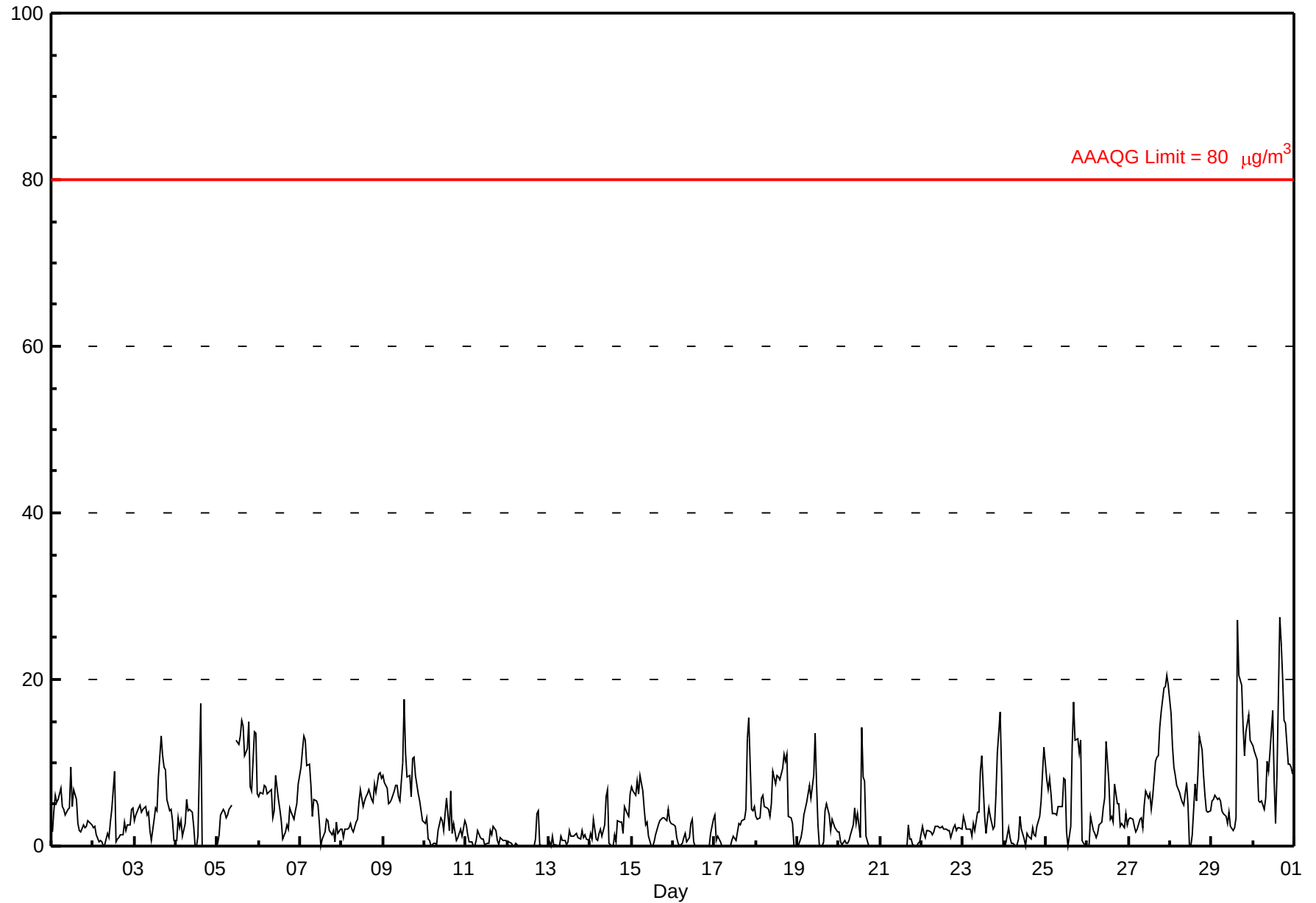
Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Evergreen Park - November 2015

Number of Exceedences: 1-hr: 0 24-hr: 0 Maximum Value: 27.5 µg/m³ on Nov 30 16:00 Minimum Value: 0 µg/m³ on Nov 2 07:00 Maximum Diurnal Average: 5.9 µg/m³ at hour 16 Monthly Average: 4.11 µg/m³																								Hours in Service: 720 Hours of Data: 718 Hours of Missing Data: 2 Hours of Calibration: 2 Percent Operational Time: 100.0		
Maximum Daily Average: 11.1 µg/m³ on Nov 30 Minimum Daily Average: 0.2 µg/m³ on Nov 21 Minimum Diurnal Average: 2.9 µg/m³ at hour 5 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 1.0 Median = 2.9 Q ₃ = 5.7 P ₉₀ = 10.0 P ₉₉ = 18.7																										
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-Nov	2	4	6	5	6	7	5	4	4	4	5	9	5	7	6	3	2	2	3	2	2	3	3	3	4.2	9.4
2-Nov	2	2	1	1	1	0	0	0	2	1	3	4	9	0	1	1	1	1	3	2	3	2	4	5	2.1	9.1
3-Nov	3	4	5	5	4	4	5	4	4	2	1	3	5	4	8	13	11	10	9	6	4	4	3	1	5.0	13.3
4-Nov	1	3	2	3	1	3	6	4	4	4	2	0	0	1	17	0	0	0	0	0	0	0	0	0	2.2	17.1
5-Nov	0	1	4	4	4	3	4	4	5	C	C	13	12	13	15	14	11	12	15	7	7	14	14	6	8.3	15.1
6-Nov	6	6	6	7	7	6	7	7	3	4	8	6	4	3	1	2	3	2	5	4	3	4	5	7	4.9	8.5
7-Nov	9	11	13	13	10	10	7	4	6	5	5	3	0	1	2	3	3	2	1	2	0	3	1	2	4.9	13.3
8-Nov	2	1	2	2	2	3	2	2	3	3	5	7	5	6	6	6	7	6	5	7	6	9	9	8	4.7	8.8
9-Nov	8	8	7	5	5	6	7	7	7	6	5	10	18	11	8	8	6	11	11	9	6	5	4	3	7.6	17.7
10-Nov	3	3	1	1	0	0	0	0	2	3	3	2	4	6	2	7	2	3	1	1	1	2	1	3	2.1	6.7
11-Nov	3	1	0	1	0	0	1	2	1	1	1	0	0	0	2	1	2	2	1	0	1	1	1	1	0.9	2.6
12-Nov	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	4	0	0	0	0	0	0.5	4.2
13-Nov	1	0	1	0	0	0	0	1	1	1	0	0	2	1	1	1	1	1	1	2	1	1	1	1	0.8	1.9
14-Nov	1	1	3	1	1	2	2	1	3	6	7	0	0	0	1	0	3	3	3	1	5	4	4	6	2.4	6.7
15-Nov	7	7	6	8	6	9	7	4	2	3	1	0	0	0	1	2	3	3	3	3	3	4	3	3	3.8	8.5
16-Nov	3	2	1	0	0	0	1	1	1	1	3	3	1	0	0	0	0	0	0	0	0	0	1	3	0.9	3.3
17-Nov	4	1	1	1	0	0	0	0	0	0	1	1	1	2	3	3	3	3	4	13	15	4	4	5	2.8	15.4
18-Nov	3	3	3	6	6	5	5	4	4	5	9	7	9	8	8	9	11	10	11	4	3	3	0	0	5.7	11.1
19-Nov	0	1	1	2	4	5	6	7	6	8	13	7	2	0	0	1	4	5	4	2	3	3	2	2	3.7	13.5
20-Nov	2	1	0	1	0	0	1	1	3	5	3	4	1	14	8	8	1	0	0	0	0	0	0	0	2.2	14.2
21-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	1	0	0	0	0	1	0.2	2.6
22-Nov	2	1	1	2	2	2	1	2	2	2	2	2	2	2	2	2	2	1	2	3	2	2	2	2	1.9	2.6
23-Nov	4	3	2	2	2	1	3	2	4	4	9	11	4	1	3	5	4	2	2	6	11	16	9	0	4.6	16.1
24-Nov	0	0	2	1	0	0	0	0	1	4	2	1	0	2	1	1	2	1	1	2	3	5	9	12	2.2	11.9
25-Nov	8	7	8	6	4	4	4	5	5	5	8	8	2	0	2	12	17	13	13	11	13	1	0	0	6.5	17.3
26-Nov	0	0	4	2	2	1	2	3	3	5	6	12	8	3	4	3	8	5	5	2	3	2	4	3	3.6	12.5
27-Nov	3	3	3	2	2	2	3	3	2	5	7	6	6	4	6	10	11	11	14	16	19	19	20	19	8.3	20.5
28-Nov	16	12	10	8	7	6	6	5	5	8	5	0	0	1	7	5	9	13	11	8	6	4	4	4	6.8	16.0
29-Nov	5	6	6	6	6	5	4	4	4	3	4	2	2	2	3	27	20	19	14	11	14	16	13	12	8.7	27.1
30-Nov	12	11	10	5	5	5	4	6	10	9	11	16	8	3	9	27	24	20	15	15	10	10	10	9	11.1	27.5
3.7 3.5 3.7 3.3 2.9 3.0 3.0 3.0 3.2 3.7 4.5 4.7 3.6 3.2 4.3 5.9 5.8 5.5 5.4 4.7 4.9 4.8 4.4 4.0																								Diurnal Average		
16.0 12.1 13.3 12.7 9.6 9.8 7.3 7.4 10.2 9.0 13.5 16.2 17.7 14.2 17.1 27.5 24.4 20.2 15.1 16.2 19.0 19.1 20.5 19.3																								Diurnal Maximum		
C - Calibration Alberta Ambient Air Quality Guideline (AAQG): 1-hr 80 µg/m³ Alberta Ambient Air Quality Objective (AAQO): 24-hr 30 µg/m³																										

Hourly Averages

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Evergreen Park - November 2015



Hourly Maximums

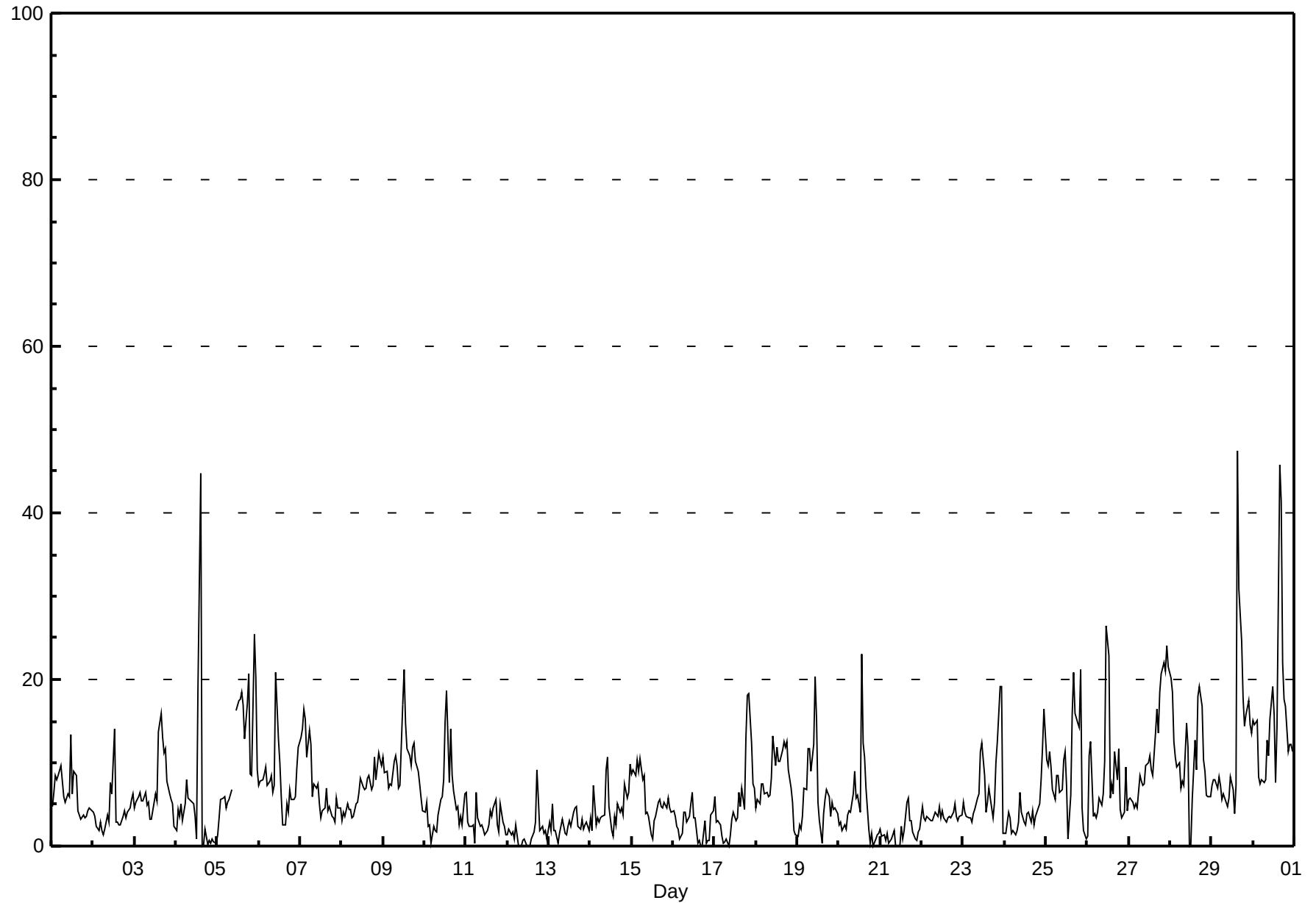
Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Evergreen Park - November 2015

Maximum Value: 47.5 μg/m ³ on Nov 29 16:00																								Maximum Daily Average: 15.4 μg/m ³ on Nov 30										Hours in Service: 720	
Minimum Value: 0 μg/m ³ on Nov 4 16:00																								Minimum Daily Average: 1.7 μg/m ³ on Nov 12										Hours of Data: 718	
Maximum Diurnal Average: 9.6 μg/m ³ at hour 16																								Minimum Diurnal Average: 4.8 μg/m ³ at hour 6										Hours of Missing Data: 2	
Monthly Average: 6.68 μg/m ³																								Percentiles: P ₁ = 0.0 P ₁₀ = 1.5 Q ₁ = 3.1 Median = 5.3 Q ₃ = 8.5 P ₉₀ = 14.0 P ₉₉ = 24.8										Hours of Calibration: 2	
																								Percent Operational Time: 100.0											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24											
1-Nov	5	6	8	8	8	10	8	6	5	6	6	13	6	9	8	4	4	3	4	3	4	4	5	4	6.2	13.3									
2-Nov	4	4	2	2	3	2	1	2	4	3	8	6	14	3	3	3	3	4	4	3	4	5	6	6	4.0	14.1									
3-Nov	5	5	6	6	6	6	6	5	5	3	3	5	6	6	14	16	13	11	12	8	6	6	5	2	6.9	16.0									
4-Nov	2	4	4	5	3	5	8	6	6	5	5	4	1	19	45	0	0	2	0	1	0	1	1	0	5.2	44.8									
5-Nov	1	3	6	6	6	5	5	6	7	C	C	16	17	18	18	17	13	17	21	9	8	25	20	9	11.5	25.5									
6-Nov	7	8	8	9	9	7	8	8	6	7	21	13	10	6	3	3	5	4	7	6	6	6	9	12	7.8	20.9									
7-Nov	13	14	16	15	11	14	12	6	7	7	7	5	3	4	5	7	4	5	4	3	3	6	5	5	7.5	16.4									
8-Nov	3	4	4	5	4	4	3	4	5	5	6	8	7	7	7	8	8	7	7	11	8	11	10	10	6.6	11.2									
9-Nov	11	9	9	7	7	7	10	11	10	7	7	17	21	15	12	11	10	12	12	10	9	7	6	4	10.0	21.1									
10-Nov	4	5	2	3	0	2	2	2	4	6	6	8	15	19	8	14	8	7	4	5	3	4	3	6	5.8	18.6									
11-Nov	6	3	2	2	3	0	6	3	2	3	2	1	2	3	4	4	5	6	3	2	5	3	2	1	3.1	6.5									
12-Nov	1	2	1	2	1	3	0	0	0	1	1	0	0	0	1	2	3	9	6	2	2	2	2	1	1.7	9.2									
13-Nov	3	2	5	2	2	0	2	2	3	2	1	2	3	2	4	5	5	2	2	3	2	3	3	2	2.6	5.0									
14-Nov	3	2	7	3	3	3	3	4	4	9	11	5	2	1	4	3	5	4	5	4	7	6	6	10	4.7	10.7									
15-Nov	9	9	8	10	9	10	8	8	4	4	4	1	1	3	4	5	6	5	5	5	5	6	5	4	5.7	10.4									
16-Nov	4	4	2	2	1	2	4	4	3	4	5	7	3	3	0	1	0	0	3	0	1	1	4	4	2.5	6.5									
17-Nov	6	3	3	3	1	0	0	1	0	1	3	4	3	3	6	5	7	4	13	18	18	12	7	7	5.5	18.4									
18-Nov	5	6	5	7	7	6	6	6	6	8	13	10	12	10	10	12	13	12	13	9	7	5	2	1	8.0	13.3									
19-Nov	1	3	2	4	7	7	12	12	9	12	20	15	5	3	0	4	6	7	6	4	5	4	5	4	6.5	20.4									
20-Nov	3	3	2	3	2	4	4	4	6	9	6	6	4	23	12	11	7	2	0	2	0	1	1	2	4.8	23.1									
21-Nov	2	1	1	1	2	0	1	1	2	0	0	0	2	1	2	5	6	3	3	2	1	1	2	2	1.7	5.8									
22-Nov	5	3	3	4	3	3	3	4	4	4	5	3	4	3	3	3	4	3	4	5	4	3	4	4	3.6	5.0									
23-Nov	5	4	4	3	3	3	4	4	6	6	11	12	8	4	5	7	6	3	5	10	13	19	19	2	7.0	19.2									
24-Nov	2	2	4	3	2	2	1	2	3	7	4	3	3	4	4	3	4	3	4	4	5	8	12	16	4.3	16.5									
25-Nov	10	10	11	9	7	6	8	8	7	7	10	11	7	1	6	16	21	16	15	14	21	5	2	1	9.6	21.1									
26-Nov	1	11	13	4	4	3	4	6	5	6	10	26	23	6	7	6	11	8	12	4	3	4	9	4	8.0	26.5									
27-Nov	6	6	5	5	5	5	8	8	7	7	10	10	11	9	8	14	16	14	18	21	22	21	24	22	11.7	24.1									
28-Nov	20	18	13	11	9	10	7	8	7	15	12	0	0	6	13	9	18	19	17	10	9	6	6	6	10.4	20.2									
29-Nov	7	8	8	7	8	7	6	6	5	5	6	8	7	4	7	47	31	25	18	14	16	17	15	14	12.3	47.5									
30-Nov	15	15	15	8	7	8	8	8	13	11	15	19	16	8	14	46	41	22	18	17	11	12	12	11	15.4	45.7									
5.6 5.9 6.0 5.2 4.8 4.8 5.3 5.1 5.2 5.8 7.6 8.0 7.3 6.7 7.9 9.6 9.4 7.9 8.1 6.9 6.9 7.1 7.0 5.9																								Diurnal Average											
20.2 18.4 16.4 15.3 10.7 13.8 12.1 11.7 12.8 14.8 20.9 26.5 22.8 23.1 44.8 47.5 41.3 24.6 20.6 20.6 22.1 25.5 24.1 21.6																								Diurnal Maximum											
C - Calibration																																			

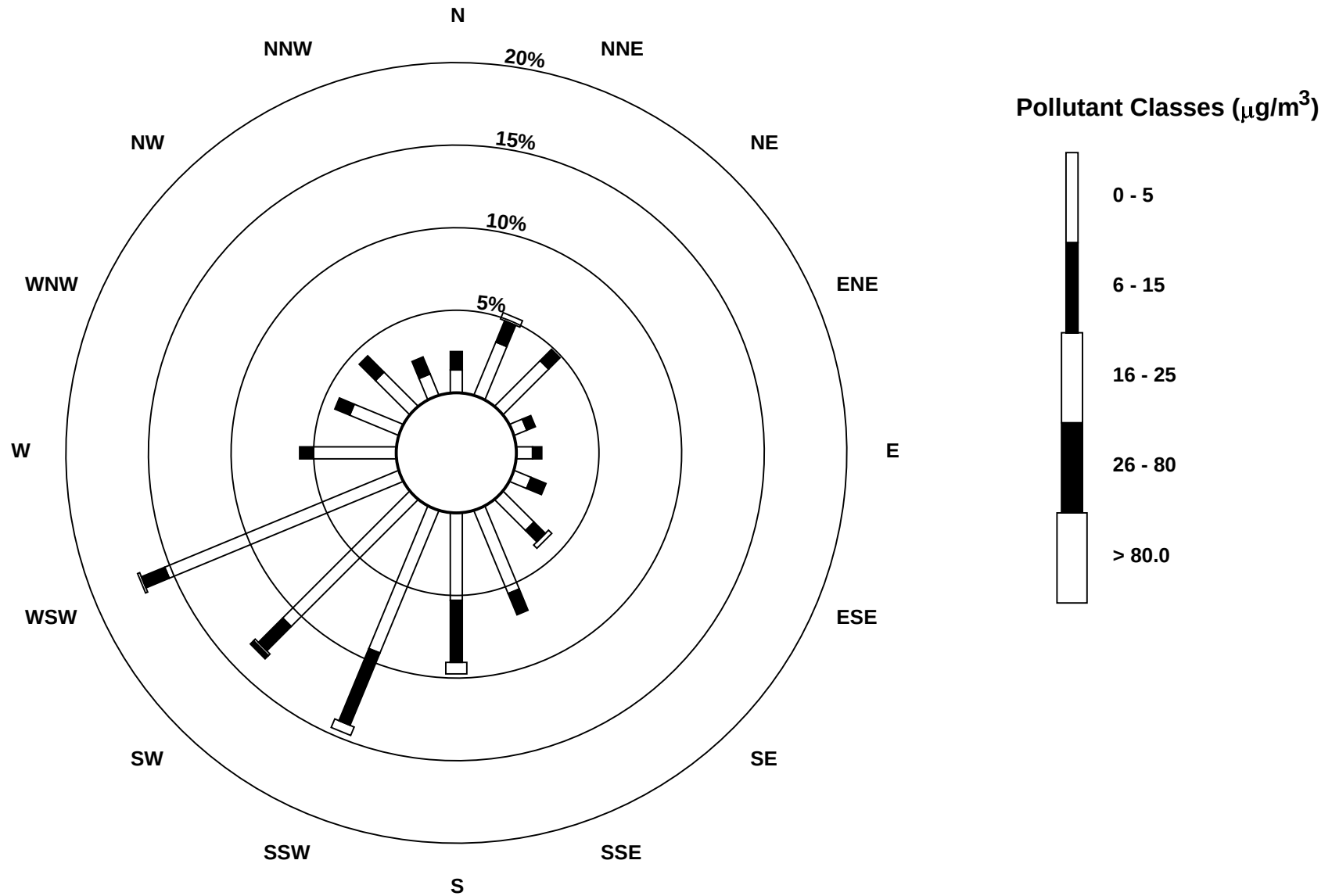
Hourly Maximums

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Evergreen Park - November 2015



Pollutant Rose

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Evergreen Park - November 2015



Hourly Averages

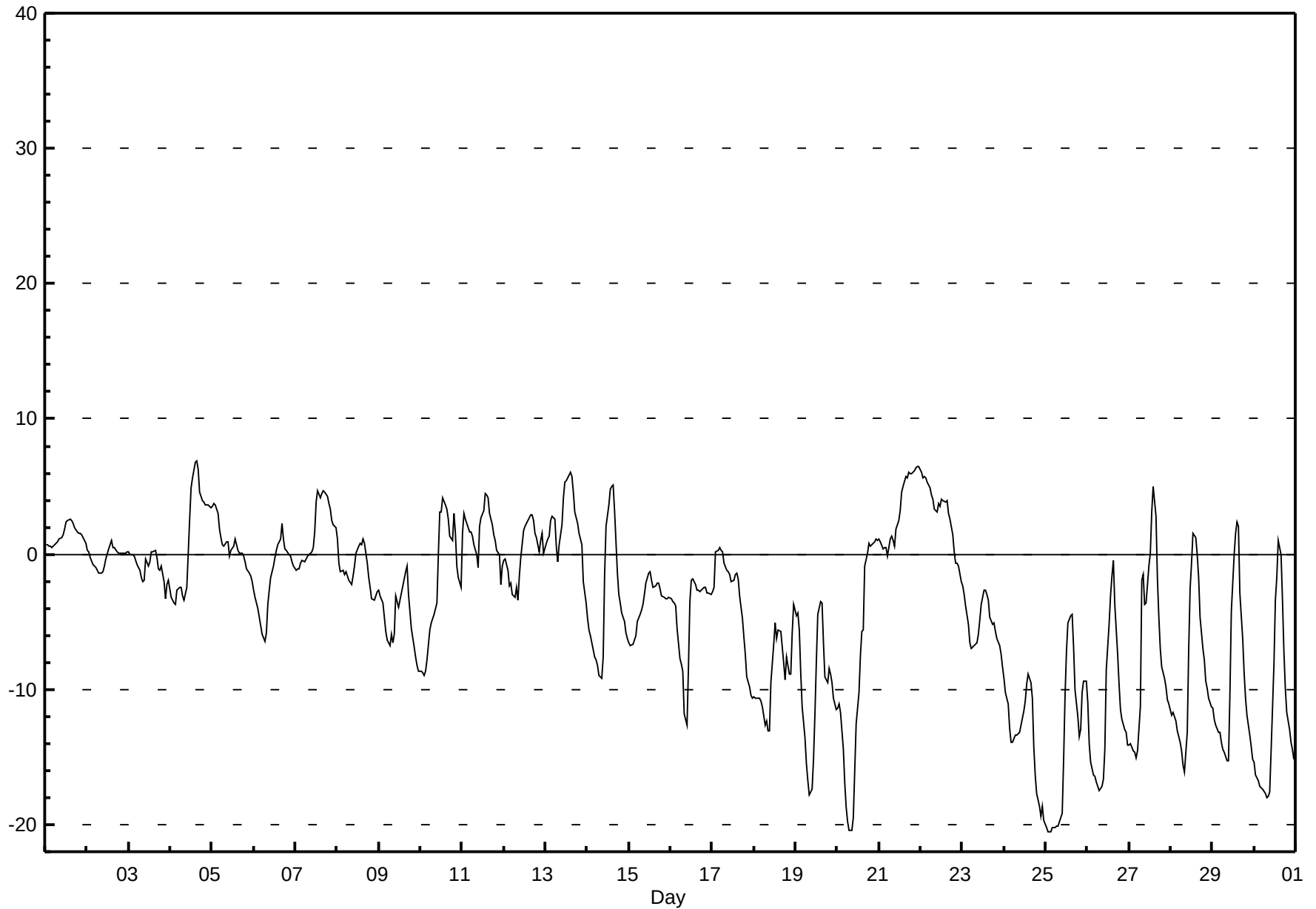
External Temperature (ET) - °C

Evergreen Park - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 6.9 °C on Nov 4 16:00 Maximum Daily Average: 3.3 °C on Nov 21																					Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0					
Minimum Value: -21 °C on Nov 25 04:00 Maximum Diurnal Average: 0.5 °C at hour 15 Monthly Average: -3.95 °C Minimum Daily Average: -13.9 °C on Nov 25 Minimum Diurnal Average: -6.8 °C at hour 9 Percentiles: P ₁ = -20.2 P ₁₀ = -13.9 Q ₁ = -8.3 Median = -2.4 Q ₃ = 0.7 P ₉₀ = 3.1 P ₉₉ = 6.1																										
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-Nov	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	3	2	2	2	1	2	1	1	1	1.4	2.6
2-Nov	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	0	0	1	1	0	0	0	0	0	0	0	0	0	-0.2	1.0
3-Nov	0	0	0	0	0	-1	-1	-2	-2	-2	0	-1	-1	0	0	0	0	-1	-1	-1	-2	-3	-2	-2	-0.9	0.3
4-Nov	-3	-3	-4	-4	-3	-2	-2	-3	-3	-2	0	3	5	6	7	7	6	5	4	4	4	4	4	3	1.2	6.9
5-Nov	4	4	4	3	2	1	1	1	1	1	0	0	1	1	1	0	0	0	0	-1	-1	-1	-2	-2	0.7	3.7
6-Nov	-3	-3	-4	-5	-5	-6	-6	-6	-4	-3	-2	-1	0	0	1	1	2	1	0	0	0	0	-1	-1	-1.8	2.2
7-Nov	-1	-1	-1	-1	0	-1	0	0	0	0	0	2	4	5	4	4	5	5	4	4	3	2	2	2	1.7	4.7
8-Nov	1	-1	-1	-1	-2	-1	-2	-2	-2	-2	-1	0	1	1	1	1	1	-1	-2	-3	-3	-3	-3	-3	-1.1	1.1
9-Nov	-3	-3	-4	-5	-6	-6	-7	-6	-7	-6	-3	-4	-3	-3	-2	-1	-1	-3	-4	-6	-7	-8	-8	-9	-4.7	-0.8
10-Nov	-9	-9	-9	-9	-8	-6	-5	-5	-4	-4	0	3	3	4	4	3	3	1	1	3	2	-1	-2	-3	-1.9	4.1
11-Nov	2	3	3	2	2	2	1	1	0	-1	2	3	3	4	4	4	3	2	1	1	0	0	-2	-1	1.6	4.5
12-Nov	-1	0	-1	-2	-2	-3	-3	-2	-3	-2	0	2	2	2	3	3	3	2	2	1	0	1	2	0	0.1	2.9
13-Nov	1	1	1	3	3	3	1	-1	1	2	4	5	5	6	6	6	5	3	2	2	1	1	-2	-4	2.3	6.0
14-Nov	-5	-6	-6	-7	-8	-8	-8	-9	-9	-8	-1	2	4	5	5	5	3	-1	-3	-4	-4	-5	-6	-6	-3.3	5.2
15-Nov	-7	-7	-7	-6	-6	-5	-4	-4	-4	-3	-2	-1	-1	-2	-2	-2	-2	-2	-3	-3	-3	-3	-3	-3	-3.6	-1.3
16-Nov	-3	-3	-4	-4	-5	-8	-8	-9	-12	-13	-8	-4	-2	-2	-2	-3	-3	-3	-3	-3	-2	-3	-3	-3	-4.6	-1.9
17-Nov	-3	-2	0	0	0	0	0	-1	-1	-1	-1	-2	-2	-2	-1	-2	-3	-5	-6	-7	-9	-10	-10	-11	-3.3	0.5
18-Nov	-11	-11	-11	-11	-11	-11	-13	-12	-13	-13	-9	-7	-5	-6	-6	-6	-7	-8	-9	-8	-9	-9	-6	-4	-8.9	-3.7
19-Nov	-5	-4	-6	-9	-11	-14	-16	-17	-18	-17	-15	-12	-8	-4	-4	-4	-7	-9	-10	-8	-9	-9	-11	-11	-9.8	-3.5
20-Nov	-11	-11	-12	-14	-17	-19	-20	-20	-20	-19	-16	-13	-10	-8	-6	-6	-1	0	1	1	1	1	1	1	-9.1	1.1
21-Nov	1	1	0	0	1	0	1	1	1	1	2	3	3	5	5	6	6	6	6	6	6	6	7	6	3.3	6.5
22-Nov	6	6	6	6	5	5	4	4	3	3	4	4	4	4	4	4	3	3	1	0	-1	-1	-1	-2	3.1	6.0
23-Nov	-2	-3	-4	-5	-7	-7	-7	-7	-7	-6	-5	-4	-3	-3	-3	-3	-5	-5	-5	-6	-6	-7	-7	-8	-5.2	-2.3
24-Nov	-9	-10	-11	-13	-14	-14	-13	-13	-13	-13	-13	-12	-11	-10	-9	-10	-11	-14	-16	-18	-19	-19	-19	-20	-13.4	-8.9
25-Nov	-20	-20	-21	-21	-20	-20	-20	-20	-20	-19	-15	-10	-7	-5	-5	-4	-7	-10	-12	-13	-13	-10	-9	-9	-13.9	-4.4
26-Nov	-11	-14	-15	-16	-16	-17	-17	-17	-17	-17	-14	-9	-5	-3	-2	0	-4	-7	-10	-12	-12	-13	-13	-14	-11.5	-0.4
27-Nov	-14	-14	-15	-15	-15	-14	-11	-2	-2	-4	-4	-1	0	3	5	3	-2	-5	-7	-8	-9	-10	-11	-11	-6.7	5.0
28-Nov	-12	-12	-12	-12	-13	-14	-15	-16	-16	-13	-7	-3	-1	2	1	0	-2	-5	-7	-8	-9	-10	-11	-11	-8.5	1.5
29-Nov	-11	-12	-13	-13	-13	-14	-14	-15	-15	-15	-10	-4	0	2	2	2	-3	-6	-9	-11	-12	-13	-14	-15	-9.5	2.3
30-Nov	-15	-16	-17	-17	-17	-17	-18	-18	-18	-18	-15	-8	-3	-2	1	0	-3	-7	-10	-12	-13	-14	-14	-15	-12.0	1.0
																									Diurnal Average	
																									Diurnal Maximum	

Hourly Averages

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



Hourly Averages

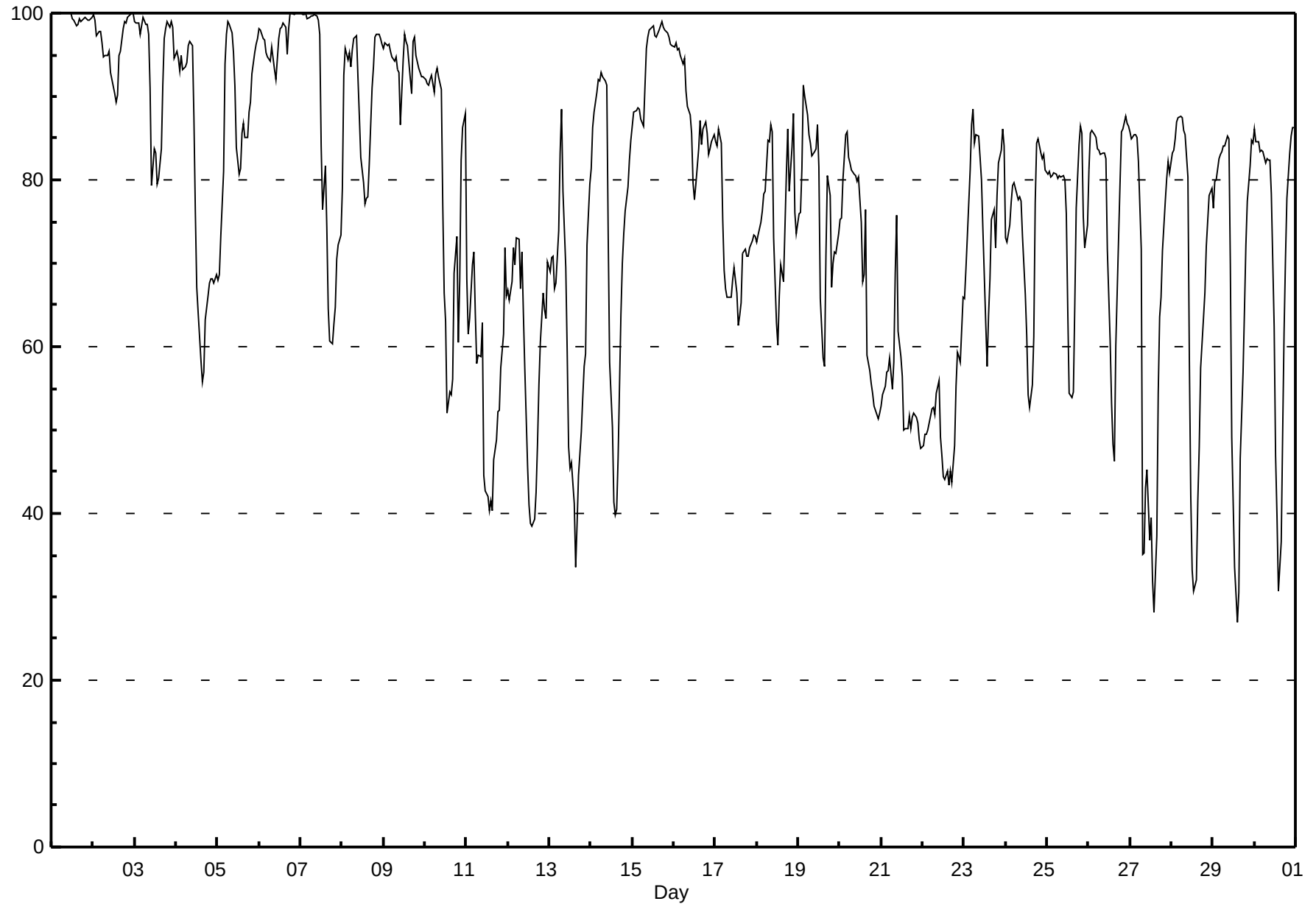
Relative Humidity (RH) - %

Evergreen Park - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 100.0 % on Nov 1 02:00 Maximum Daily Average: 99.6 % on Nov 1																								Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0		
Minimum Value: 27 % on Nov 29 15:00 Maximum Diurnal Average: 85.1 % at hour 5 Monthly Average: 76.95 %												Minimum Daily Average: 51.0 % on Nov 22 Minimum Diurnal Average: 61.9 % at hour 15 Percentiles: P ₁ = 31.6 P ₁₀ = 50.1 Q ₁ = 65.6 Median = 80.7 Q ₃ = 92.3 P ₉₀ = 98.1 P ₉₉ = 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-Nov	100	100	100	100	100	100	100	100	100	100	100	100	99	99	99	99	99	99	99	99	99	99	99	100	99.6	100.0
2-Nov	100	99	97	98	98	96	95	95	95	95	93	92	90	89	90	95	95	98	99	99	100	100	100	100	96.2	100.0
3-Nov	99	99	99	98	98	99	99	99	97	91	79	84	83	80	80	84	91	97	98	99	98	99	98	95	93.5	99.5
4-Nov	95	95	93	95	93	94	94	96	97	96	87	76	67	64	58	56	57	63	66	68	68	68	68	69	78.4	96.6
5-Nov	68	69	73	81	94	98	99	99	98	95	91	84	81	81	86	87	85	85	88	89	93	95	96	97	88.0	98.9
6-Nov	98	98	97	97	95	95	94	96	95	93	92	97	98	98	99	98	95	98	100	100	100	100	100	100	97.2	100.0
7-Nov	100	100	100	100	99	99	100	100	100	100	99	98	84	76	82	74	65	61	60	63	65	70	72	73	85.0	100.0
8-Nov	79	93	96	94	95	94	96	97	97	92	88	83	80	77	78	78	82	91	94	97	98	97	97	96	90.3	97.5
9-Nov	96	96	96	96	95	95	94	95	93	93	87	94	97	97	96	92	90	97	97	95	93	93	92	92	94.3	97.4
10-Nov	92	92	91	92	93	91	93	93	92	91	77	66	63	52	55	54	56	69	73	60	68	82	86	88	77.9	93.4
11-Nov	68	61	63	70	71	64	58	59	59	63	45	43	42	40	42	40	46	49	52	52	57	62	72	66	56.1	71.9
12-Nov	67	66	68	72	70	73	73	67	71	64	57	46	41	39	38	39	43	48	55	60	67	64	63	70	59.3	73.1
13-Nov	69	71	71	67	68	74	83	88	79	69	59	48	45	46	41	34	39	45	50	54	58	59	72	80	61.1	88.4
14-Nov	81	86	88	91	92	92	93	92	92	91	73	58	50	41	40	41	47	64	70	74	76	79	82	85	74.1	93.0
15-Nov	86	88	88	89	89	87	86	91	96	97	98	98	98	97	97	98	99	99	98	98	98	97	96	96	94.4	99.0
16-Nov	96	96	96	96	95	94	95	91	89	88	86	80	78	80	84	87	84	86	87	86	83	84	85	85	87.8	96.4
17-Nov	85	84	86	84	75	69	67	66	66	66	68	70	67	63	64	65	71	72	71	71	72	73	73	73	71.7	86.0
18-Nov	73	73	75	76	78	79	85	85	87	86	73	63	60	66	70	68	74	81	86	79	84	88	76	74	76.5	87.9
19-Nov	76	76	81	91	90	88	85	84	83	83	84	87	82	66	59	58	71	80	78	67	70	71	71	74	77.3	91.4
20-Nov	75	75	80	85	86	83	82	81	81	80	80	80	75	68	69	76	59	57	56	54	53	52	51	52	70.5	85.8
21-Nov	53	54	55	57	57	59	55	58	69	76	62	59	56	50	50	50	52	50	52	52	52	51	49	48	55.2	75.7
22-Nov	48	50	49	50	51	52	53	52	54	56	49	47	44	44	45	43	45	44	48	55	59	59	58	66	51.0	65.9
23-Nov	66	69	73	81	87	88	84	85	85	83	80	74	63	58	64	68	75	76	72	78	82	84	86	84	76.9	88.5
24-Nov	73	73	75	77	79	80	78	78	78	77	73	66	61	54	53	56	61	77	84	85	83	83	83	81	73.7	84.8
25-Nov	81	81	80	81	81	81	80	81	80	80	80	76	65	54	54	55	65	77	84	86	86	76	72	75	75.4	86.4
26-Nov	81	86	86	85	85	84	84	83	83	83	83	72	61	53	48	46	60	73	80	86	86	88	87	87	77.0	87.6
27-Nov	86	85	85	85	85	82	72	35	35	43	45	37	39	32	28	37	54	64	66	71	77	80	82	81	62.0	85.7
28-Nov	83	84	85	87	87	88	87	86	85	80	59	42	33	31	32	42	48	57	63	66	72	75	78	79	68.0	87.7
29-Nov	77	80	80	83	83	83	84	84	85	85	70	49	34	30	27	31	47	57	64	72	78	82	85	84	68.0	85.3
30-Nov	86	84	85	83	84	83	82	83	82	82	78	62	47	40	31	37	49	62	71	78	83	85	86	86	72.1	86.3
81.2 82.1 83.1 84.7 85.1 84.8 84.3 83.3 83.4 82.7 76.5 71.0 66.2 62.2 61.9 62.9 66.9 72.5 75.4 76.5 78.6 79.8 80.6 81.2																								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 99.3 99.2 98.7 98.7 99.3 99.0 100.0 100.0 99.9 100.0 100.0 100.0																								Diurnal Maximum		

Hourly Averages

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



Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Evergreen Park - November 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	5	4	4	4	6	3	3	5	6	6	6	7	7	7	9	11	8	7	5	5	5	7	8	9	4.8	10.6
Dir	68	61	51	50	49	79	34	52	50	52	50	43	33	30	21	20	28	14	6	2	337	331	318	266	23.4	19.6
2 Spd	10	10	12	10	8	10	8	8	5	5	2	1	1	2	3	4	5	3	1	1	1	1	3	2	3.8	11.9
Dir	253	286	259	252	242	244	251	246	254	220	224	157	200	228	153	146	187	148	138	174	18	35	199	274	240.4	259.2
3 Spd	3	2	3	4	2	3	6	11	5	6	6	8	8	3	3	1	1	2	2	3	1	2	7	6	2.1	11.1
Dir	309	250	258	330	12	4	326	317	293	289	292	265	259	281	252	169	105	78	111	151	143	180	193	181	276.5	316.8
4 Spd	2	5	3	3	5	3	2	1	2	1	13	15	22	22	33	31	25	17	18	22	20	20	15	13	11.7	32.6
Dir	134	159	151	155	149	144	128	126	150	100	216	212	231	237	248	246	242	227	224	230	228	231	230	220	227.6	248.2
5 Spd	17	22	16	13	13	12	8	7	5	9	11	6	9	9	13	15	7	7	8	5	4	2	1	2	6.3	21.5
Dir	227	236	243	242	238	219	222	253	273	1	31	343	328	300	311	312	271	259	249	240	226	171	175	178	262.2	236.5
6 Spd	1	2	1	0	1	0	1	3	4	3	8	2	4	3	4	3	2	1	1	3	3	2	1	2	1.5	8.3
Dir	135	160	179	56	83	93	121	168	171	183	227	126	127	123	125	121	140	145	339	189	164	169	343	24	157.0	227.1
7 Spd	3	1	1	1	2	3	4	4	1	1	2	9	16	9	4	8	14	11	14	17	11	7	8	8	6.2	16.9
Dir	173	233	201	217	217	201	183	203	198	274	179	205	236	236	245	219	224	236	247	236	240	259	261	252	231.8	236.0
8 Spd	3	1	1	1	1	3	0	1	1	3	4	4	6	6	6	4	3	1	0	0	1	1	2	1	1.8	6.0
Dir	240	3	207	264	237	231	345	288	292	281	290	288	300	281	308	310	8	27	33	8	47	0	211	348	291.1	308.0
9 Spd	1	1	0	0	1	1	2	1	3	1	4	6	4	6	7	5	3	2	1	1	0	2	3	2	1.6	7.0
Dir	216	16	11	163	231	352	203	195	180	191	175	153	124	131	137	138	123	67	202	190	121	47	42	57	138.5	136.6
10 Spd	1	0	1	1	3	8	1	2	4	4	5	3	5	11	9	4	3	1	2	11	4	1	1	1	3.2	10.8
Dir	45	73	171	139	157	182	180	64	193	180	175	197	208	201	194	186	164	133	168	190	168	258	155	210	184.9	189.8
11 Spd	26	28	29	26	26	37	35	21	16	2	20	26	26	28	44	52	41	48	38	27	12	13	5	19	26.4	52.0
Dir	228	228	216	223	229	222	225	230	226	273	246	241	243	247	244	242	248	242	239	239	242	231	192	229	235.2	242.5
12 Spd	24	25	18	10	11	10	7	7	6	8	10	15	15	15	14	14	11	8	8	6	7	13	9	9	10.5	24.8
Dir	221	219	206	197	197	189	160	164	161	146	164	160	156	149	153	154	163	166	175	165	176	188	178	179	178.9	219.3
13 Spd	14	15	18	19	16	16	11	11	21	30	35	42	48	43	39	42	39	27	24	22	18	15	1	1	22.8	48.2
Dir	192	199	202	206	216	220	202	199	217	230	225	230	236	237	242	240	234	235	231	226	221	225	190	54	226.4	236.5
14 Spd	2	1	1	1	1	1	2	2	2	2	5	6	10	15	10	4	7	1	2	2	0	0	1	1	1.9	15.3
Dir	154	55	41	63	166	117	41	48	201	202	186	246	251	265	274	291	219	227	166	46	124	166	21	339	247.6	264.6
15 Spd	1	1	1	0	3	1	0	2	6	8	11	17	16	18	14	10	13	16	18	21	24	27	22	15	9.4	26.7
Dir	184	318	94	158	351	327	112	350	23	14	23	22	16	13	359	336	322	320	316	316	315	315	313	291	335.7	315.4
16 Spd	12	15	10	7	1	1	6	3	2	1	2	2	3	6	9	9	11	7	8	8	8	9	8	10	2.7	15.0
Dir	262	254	251	232	134	288	254	279	51	83	34	130	109	106	94	91	117	100	107	123	132	147	147	158	151.7	253.6
17 Spd	10	17	28	21	26	34	35	30	25	26	15	12	11	10	6	5	6	15	21	21	19	21	22	20	14.8	35.0
Dir	182	200	209	216	228	230	231	222	225	229	242	251	239	253	251	260	329	323	317	315	293	302	301	287	249.2	230.7
18 Spd	15	20	9	9	5	6	3	1	1	3	6	2	2	2	1	3	3	3	3	13	3	4	11	22	4.5	21.8
Dir	284	312	301	297	331	317	211	202	184	207	253	318	318	340	92	342	358	247	226	213	284	227	229	229	269.0	228.7
19 Spd	9	12	6	4	4	0	0	2	1	1	1	4	5	7	7	5	3	5	8	16	14	16	9	7	5.0	15.8
Dir	232	234	235	212	2	3	43	195	184	2	287	291	256	270	297	290	262	251	305	300	294	305	275	261	276.3	304.6
20 Spd	7	6	1	2	1	0	0	0	1	1	1	2	4	1	2	2	19	28	49	55	52	45	45	44	14.9	55.3
Dir	269	272	234	164	28	181	216	177	196	189	34	205	199	246	314	244	239	243	245	242	240	240	243	243	242.5	242.2
21 Spd	41	31	24	35	27	13	36	38	40	33	32	19	34	43	44	33	36	58	54	45	46	54	50	47	37.7	58.0
Dir	244	240	230	236	236	246	235	238	238	231	226	228	232	239	246	245	243	252	252	251	248	245	248	246	242.0	251.8
22 Spd	41	36	42	41	37	31	30	30	25	26	27	26	29	27	23	28	20	20	11	8	12	12	8	4	24.4	42.2
Dir	247	251	248	251	251	255	266	265	270	256	262	257	258	257	257	253	258	269	265	255	237	241	236	336	255.8	247.9

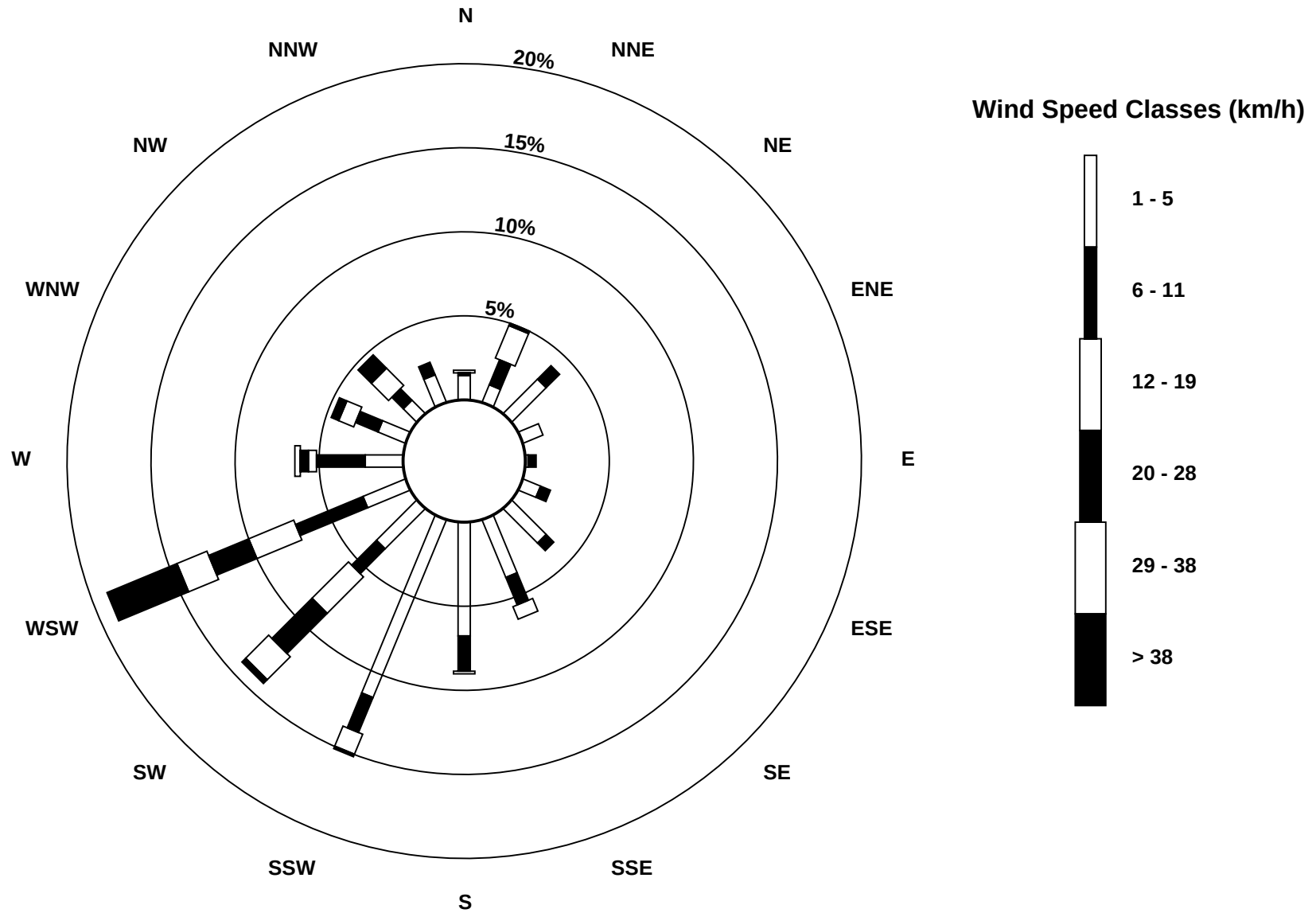
Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Evergreen Park - November 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	3	1	0	1	5	1	3	1	1	3	4	10	9	12	18	16	21	18	16	18	16	17	7.1	20.8	
Dir	321	227	254	35	238	194	185	45	340	0	16	18	27	47	34	27	26	29	27	27	23	17	12	12	22.2	27.2	
24 Spd	16	15	19	14	13	11	11	13	15	16	12	12	12	8	7	9	4	1	1	1	3	1	4	2	5.6	19.5	
Dir	18	20	324	313	301	291	265	246	242	248	252	250	243	259	207	197	154	41	26	5	196	198	221	189	272.9	323.7	
25 Spd	3	4	5	5	3	3	3	4	3	2	1	4	4	8	9	6	1	6	0	1	6	7	9	8	3.9	9.3	
Dir	188	193	197	186	197	202	188	205	198	196	225	225	278	255	251	248	179	202	216	195	243	236	244	234	224.7	251.0	
26 Spd	6	7	4	3	5	1	1	1	2	2	3	2	3	7	6	5	1	1	1	2	1	0	1	2	2.2	7.5	
Dir	214	184	187	193	191	149	213	42	198	203	200	211	193	187	193	183	154	212	181	51	40	142	221	46	188.4	184.1	
27 Spd	2	2	1	3	0	2	7	11	8	2	3	3	1	2	4	4	0	1	3	4	1	1	0	1	2.2	10.9	
Dir	198	197	213	186	98	226	274	255	260	245	238	259	229	308	294	210	74	107	191	198	227	202	184	176	239.6	255.2	
28 Spd	1	1	1	1	5	3	2	1	3	11	9	4	5	5	4	2	1	1	7	1	2	3	0	4	2.7	10.7	
Dir	145	190	208	193	186	191	35	145	141	185	187	187	193	243	193	44	141	167	195	176	188	197	81	206	187.5	184.7	
29 Spd	3	3	3	1	2	2	3	2	3	3	7	2	2	3	5	2	0	2	1	0	2	1	3	2	2.1	6.9	
Dir	213	204	185	198	203	184	193	213	195	207	210	261	278	238	203	215	16	191	320	265	207	206	197	210	209.6	210.3	
30 Spd	3	0	2	1	3	5	1	2	1	3	1	1	4	4	1	1	1	0	0	1	1	2	0	3	1.6	4.8	
Dir	191	160	185	205	200	212	197	209	211	211	273	23	203	192	244	229	200	184	178	227	211	222	155	217	206.2	211.6	
Spd	7.0	7.0	7.0	6.4	5.7	6.0	6.3	5.7	5.4	5.0	5.8	5.6	7.3	7.3	7.2	6.8	6.1	6.9	7.3	7.4	6.8	6.8	6.1	6.7	Diurnal Average		
Dir	236.7	237.8	232.5	234.5	234.1	230.4	233.9	237.9	233.9	233.6	233.3	236.6	240.1	244.1	247.6	245.3	242.5	251.4	252.5	249.0	250.4	253.0	252.8	245.6	Diurnal Maximum		
Spd	41.2	35.9	42.2	41.3	37.4	37.0	35.9	37.9	40.2	33.3	35.2	42.0	48.2	43.4	43.9	52.0	40.6	58.0	54.3	55.3	51.6	54.1	49.8	46.7	Diurnal Maximum		
Dir	247.3	251.4	247.9	250.8	251.0	221.6	235.5	238.0	238.4	230.6	225.2	230.0	236.5	239.4	245.9	242.5	248.3	251.8	251.9	242.2	240.0	244.6	247.8	246.2			
Maximum Speed Value: 58 km/h on Nov 21 18:00								Minimum Speed Value: 0 km/h on Nov 20 07:00												Hours in Service:				720			
Maximum Daily Speed Average: 37.7 km/h on Nov 21								Minimum Daily Speed Average: 1.5 km/h on Nov 30												Hours of Data:				720			
Maximum Diurnal Speed Average: 7.4 km/h at hour 20								Minimum Diurnal Speed Average: 5.0 km/h at hour 10												Hours of Missing Data:				0			
Monthly Average Velocity: 6.42 km/h 241.64 deg								Speed Percentiles: P ₁ = 0.2 P ₁₀ = 0.8 Q ₁ = 1.8 Median = 4.7 Q ₃ = 12.5 P ₉₀ = 26.0 P ₉₉ = 48.5												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	30		8		9		0		0		0		47														
NorthEast	40		14		5		1		0		0		60														
East	17		6		0		0		0		0		23														
SouthEast	45		10		4		0		0		0		59														
South	117		33		8		0		0		0		158														
SouthWest	76		22		38		31		22		22		211														
West	31		41		12		9		8		8		109														
NorthWest	13		17		12		11		0		0		53														
Total	369		151		88		52		30		30		720														

Wind Rose

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



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Evergreen Park - November 2015

Maximum Speed: 59 km/h on Nov 21 18:00																				Maximum Daily Speed Average: 38.3 km/h on Nov 21										Hours in Service: 720	
Minimum Speed: 0 km/h on Nov 6 04:00																				Minimum Daily Speed Average: 2.1 km/h on Nov 30										Hours of Data: 720	
Maximum Diurnal Speed Average: 12.2 km/h at hour 15																				Minimum Diurnal Speed Average: 7.8 km/h at hour 9										Hours of Missing Data: 0	
Monthly Average Speed: 9.91 km/h																				Percentiles: P ₁ = 0.5 P ₁₀ = 1.5 Q ₁ = 2.6 Median = 5.3 Q ₃ = 12.8 P ₉₀ = 26.3 P ₉₉ = 48.9										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-Nov	6	5	4	4	6	3	3	6	6	6	6	7	7	7	9	11	8	7	5	6	6	8	9	9	6.4	10.8					
2-Nov	10	10	12	10	8	10	9	9	6	5	3	2	3	3	5	5	5	3	2	1	1	2	4	3	5.4	12.4					
3-Nov	3	2	4	5	3	4	6	11	6	6	7	9	8	3	4	2	2	2	2	3	2	2	7	6	4.6	11.3					
4-Nov	3	5	3	4	5	3	3	2	2	3	13	15	22	22	33	31	25	17	19	22	20	20	15	13	13.3	32.9					
5-Nov	17	22	16	14	13	13	8	8	6	11	11	8	9	10	14	15	8	8	8	5	5	2	2	2	9.7	21.7					
6-Nov	1	2	1	0	1	0	1	3	4	3	9	3	7	4	4	3	4	3	2	3	3	3	1	2	2.9	8.7					
7-Nov	4	3	3	3	2	3	5	5	2	2	3	9	16	10	6	8	14	11	14	17	11	7	8	9	7.3	17.0					
8-Nov	4	1	2	2	4	3	1	2	2	3	4	5	6	6	6	5	3	1	1	1	1	1	2	1	2.8	6.5					
9-Nov	1	1	0	0	2	1	2	1	3	2	4	7	5	6	8	6	4	2	2	2	1	2	3	2	2.8	7.6					
10-Nov	2	1	1	2	3	8	2	3	5	5	5	3	6	11	9	5	3	4	4	11	4	2	3	4	4.4	11.0					
11-Nov	26	29	29	26	26	37	36	21	16	4	20	27	26	28	44	52	41	48	38	27	13	14	6	20	27.2	52.5					
12-Nov	24	25	18	10	11	10	8	7	6	9	11	16	16	16	14	14	11	8	8	6	7	13	9	9	11.9	25.0					
13-Nov	14	15	18	19	16	16	11	11	21	30	36	42	49	43	39	42	39	27	24	22	18	15	3	1	23.8	48.6					
14-Nov	2	1	2	2	3	3	2	3	2	4	5	6	10	16	11	5	7	2	3	2	3	2	2	2	4.2	15.7					
15-Nov	1	1	3	2	3	1	1	3	7	8	11	17	17	18	15	11	13	17	18	21	24	27	22	15	11.5	27.0					
16-Nov	13	15	10	7	3	4	7	4	2	2	2	3	4	7	10	10	11	7	9	8	8	9	9	10	7.2	15.1					
17-Nov	10	17	28	21	27	34	35	30	26	26	16	13	12	10	6	6	8	15	22	22	20	21	23	20	19.5	35.3					
18-Nov	15	20	9	10	6	7	5	2	3	4	6	3	3	3	2	3	4	8	4	13	5	5	12	23	7.2	22.7					
19-Nov	9	12	6	5	4	1	2	3	2	1	2	4	5	8	7	5	3	5	9	16	15	16	10	8	6.6	16.5					
20-Nov	8	7	2	2	2	1	1	1	1	1	1	2	4	1	4	6	19	28	49	56	52	45	45	45	15.9	55.7					
21-Nov	41	32	24	35	27	14	36	38	41	33	32	19	34	44	44	33	37	59	55	45	47	54	50	47	38.3	58.5					
22-Nov	41	36	42	42	38	32	30	30	25	27	27	26	30	27	23	28	20	21	13	10	12	12	8	6	25.2	42.4					
23-Nov	2	6	4	2	1	1	6	2	3	2	1	3	5	10	10	13	19	16	21	19	16	18	16	17	8.8	21.2					
24-Nov	16	15	20	15	13	11	12	14	16	16	13	13	12	9	8	9	4	1	1	1	3	1	4	2	9.5	20.1					
25-Nov	3	4	5	5	3	3	3	4	3	2	2	4	4	8	9	6	3	6	1	2	6	7	9	8	4.6	9.5					
26-Nov	6	8	4	3	5	2	2	2	3	2	3	2	4	7	6	5	2	2	2	3	3	1	1	3	3.4	7.5					
27-Nov	3	3	3	4	3	4	9	11	8	3	3	3	3	4	4	4	1	1	3	4	2	1	1	3	3.6	11.1					
28-Nov	3	2	2	3	6	5	3	4	4	11	9	5	5	5	4	2	1	2	8	2	2	3	1	4	4.1	10.9					
29-Nov	4	3	4	2	3	3	4	2	3	3	7	2	2	3	5	2	0	2	1	1	2	2	3	2	2.8	7.2					
30-Nov	3	1	2	2	4	5	1	2	1	3	2	2	5	4	1	1	1	1	0	1	1	2	1	3	2.1	4.9					
9.9 10.2 9.5 8.6 8.3 8.1 8.4 8.1 7.8 7.9 9.1 9.2 11.2 11.8 12.2 11.6 10.7 11.1 11.6 11.7 10.4 10.6 9.6 10.0																									Diurnal Average						
41.4 36.1 42.4 41.5 37.7 37.2 36.1 38.2 40.6 33.5 35.5 42.4 48.6 43.7 44.3 52.5 40.9 58.5 54.7 55.7 51.8 54.5 50.1 47.1																									Diurnal Maximum						
All monthly, daily, and diurnal averages have been calculated using scalar methods																															

Hourly Standard Deviations

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

Maximum Value: 99.4 deg on Nov 7 03:00																			Hours in Service: 720						
Minimum Value: 4.3 deg on Nov 12 03:00																			Hours of Data: 720						
																			Hours of Missing Data: 0						
																			Hours of Calibration: 0						
																			Percent Operational Time: 100.0						
Percentiles: P ₁ = 5.8 P ₁₀ = 7.9 Q ₁ = 12.3 Median = 26.3 Q ₃ = 59.9 P ₉₀ = 80.1 P ₉₉ = 93.8																									
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-Nov	27	34	27	41	20	42	40	17	13	17	19	16	16	21	12	11	15	14	18	19	23	17	15	16	42.4
2-Nov	10	15	17	10	13	11	16	11	20	14	31	81	93	75	63	22	28	29	48	68	79	90	36	46	93.2
3-Nov	54	58	53	40	41	42	32	12	31	20	30	19	17	39	26	86	51	28	42	18	61	46	9	11	86.0
4-Nov	56	15	15	24	36	36	58	62	51	75	15	6	10	8	8	8	7	8	8	7	6	7	9	10	75.1
5-Nov	8	8	13	10	10	11	15	15	24	28	19	38	17	16	16	12	27	17	16	20	25	46	66	48	66.1
6-Nov	46	29	65	87	65	65	42	19	17	36	21	65	62	59	38	33	59	87	86	58	23	54	50	61	86.8
7-Nov	74	86	99	93	30	31	23	42	85	67	63	22	7	27	78	19	9	9	8	6	13	25	17	16	99.4
8-Nov	49	82	74	67	76	14	86	59	49	34	29	31	32	24	23	21	25	33	68	61	53	29	58	55	86.3
9-Nov	65	40	77	87	72	71	53	75	40	31	32	33	33	28	24	21	38	39	93	75	61	58	25	70	93.3
10-Nov	90	94	87	82	52	12	90	72	40	30	34	31	28	8	21	35	58	92	64	12	30	67	88	82	94.1
11-Nov	12	7	8	10	7	6	9	11	11	82	11	10	13	9	8	8	7	7	7	8	12	10	29	10	81.9
12-Nov	6	7	4	10	15	15	14	27	34	16	18	12	14	13	17	14	13	23	15	19	17	7	17	17	34.4
13-Nov	9	6	7	6	8	9	9	10	11	6	8	7	8	8	8	7	8	5	7	7	7	8	79	47	79.2
14-Nov	45	56	65	67	78	81	60	68	64	76	32	26	18	15	22	35	18	71	60	45	98	89	95	73	97.5
15-Nov	81	79	84	86	20	33	73	32	12	17	12	10	11	13	18	17	11	8	9	10	10	9	10	17	85.7
16-Nov	11	8	10	12	57	79	17	51	44	83	35	72	53	23	13	12	19	20	35	17	17	17	22	11	83.0
17-Nov	15	8	6	11	7	8	8	6	5	8	25	15	13	16	14	17	46	15	9	16	17	16	17	16	45.9
18-Nov	14	16	17	18	30	62	91	64	65	54	15	34	43	60	78	58	35	68	57	5	51	38	34	16	91.3
19-Nov	12	8	19	51	18	64	87	88	93	74	64	36	29	35	22	31	46	21	22	20	22	16	22	20	92.9
20-Nov	27	31	72	61	94	85	91	77	70	84	84	26	20	71	61	76	10	11	8	6	6	5	5	6	94.2
21-Nov	7	10	9	5	6	10	6	6	8	6	7	13	6	7	7	8	9	8	7	9	8	6	6	7	13.5
22-Nov	6	6	6	6	8	8	11	10	10	8	9	10	9	9	9	7	8	16	25	38	9	8	34	46	45.8
23-Nov	52	35	35	85	69	92	48	95	17	47	62	18	25	25	24	16	11	13	11	10	12	12	15	13	95.3
24-Nov	12	11	19	17	14	16	21	28	17	14	13	13	13	18	35	15	29	38	32	45	59	74	34	57	74.4
25-Nov	26	34	16	24	40	27	23	20	35	25	67	14	42	18	12	11	82	14	89	64	37	16	10	14	89.2
26-Nov	8	6	13	32	22	90	68	49	46	64	60	53	49	13	8	27	91	88	60	49	90	80	92	80	92.4
27-Nov	66	50	86	61	75	78	65	10	12	35	56	49	75	54	25	36	81	76	48	32	70	52	85	71	85.5
28-Nov	85	91	94	89	70	75	87	74	48	16	15	23	17	29	9	54	68	63	14	81	66	65	88	47	93.9
29-Nov	67	26	67	93	71	74	61	66	60	61	19	31	39	31	17	28	82	44	91	80	62	84	59	65	93.1
30-Nov	67	91	77	69	62	12	44	38	54	57	77	88	24	34	38	32	90	93	82	77	66	57	72	38	92.7
90.1 94.1 99.4 93.1 94.2 92.3 91.3 95.3 92.9 83.9 84.5 88.1 93.2 74.7 78.0 86.0 90.7 92.7 93.3 81.5 97.5 89.7 95.1 81.6																									

PAZA
Smoky Heights Station
Monthly Summary Tables, Graphs and
Roses

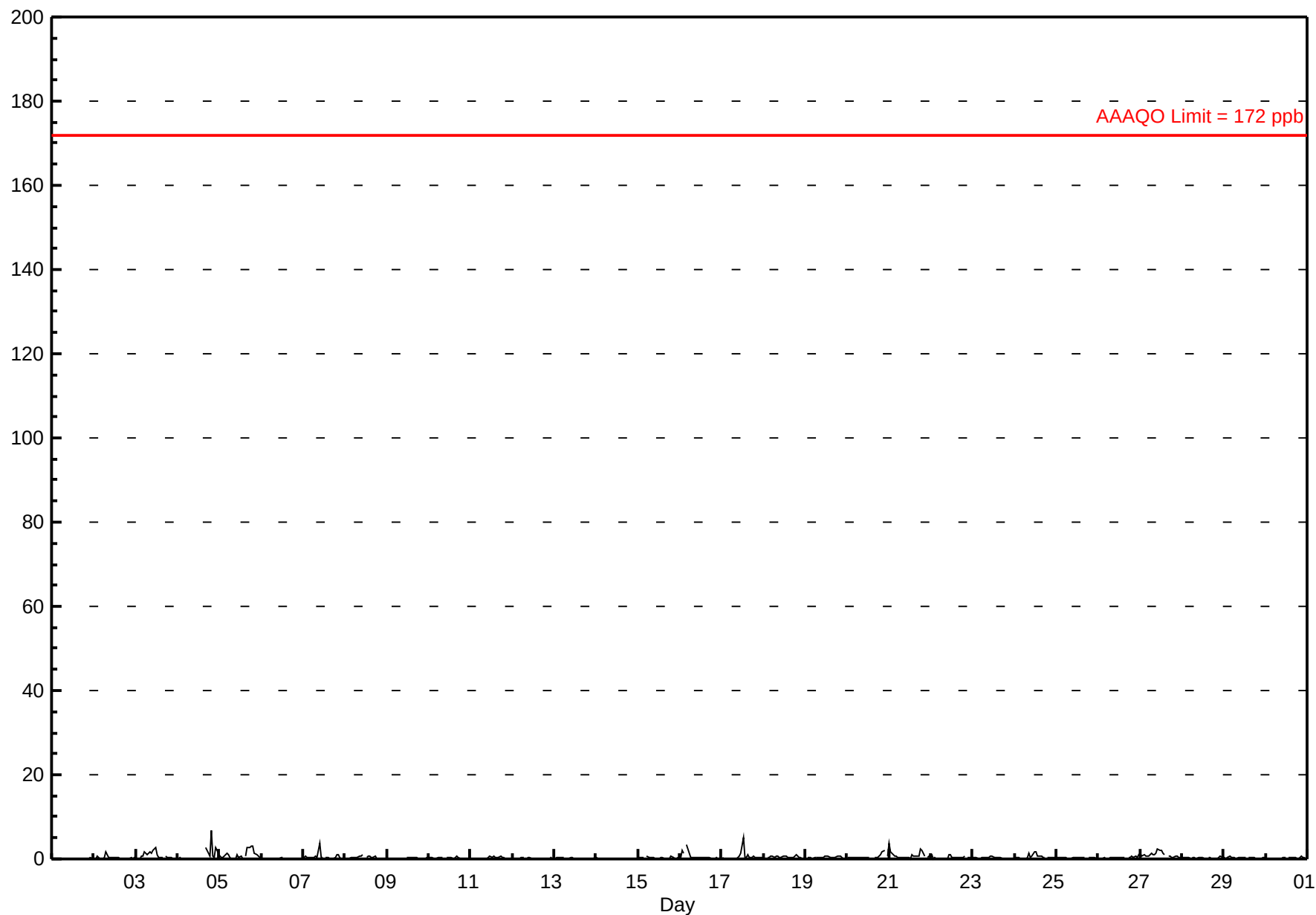
Hourly Averages

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

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 6.8 ppb on Nov 4 20:00 Maximum Daily Average: 1.0 ppb on Nov 27																			Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0							
Minimum Value: 0 ppb on Nov 4 09:00 Maximum Diurnal Average: 0.7 ppb at hour 20 Monthly Average: 0.39 ppb																			Minimum Daily Average: 0.0 ppb on Nov 14 Minimum Diurnal Average: 0.3 ppb at hour 4 Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.4 P ₉₀ = 0.8 P ₉₉ = 3.0							
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-Nov	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	0.5
2-Nov	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.2	1.6
3-Nov	0	0	0	1	1	2	1	1	2	1	2	3	1	0	0	0	A	1	0	0	0	0	0	0	0.7	2.7
4-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	3	2	1	7	1	0	3	1	0.8	6.8
5-Nov	1	0	0	1	1	1	0	0	0	0	1	0	1	0	A	1	3	3	3	3	1	1	1	0	1.0	3.1
6-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.1	0.3
7-Nov	0	1	0	0	0	0	0	1	0	4	0	0	A	0	0	0	0	0	0	1	1	0	0	0	0.5	3.8
8-Nov	0	0	0	0	0	0	0	0	1	1	1	A	0	1	1	0	0	1	0	0	0	0	0	0	0.3	0.9
9-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
10-Nov	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.2	0.6
11-Nov	0	0	0	0	0	0	0	0	A	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0.2	0.8
12-Nov	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
13-Nov	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
14-Nov	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
15-Nov	0	0	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.2	0.8
16-Nov	0	2	1	A	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	3.4
17-Nov	0	0	A	0	0	0	0	0	0	0	1	1	5	0	0	1	0	0	1	0	0	0	0	0	0.6	5.0
18-Nov	0	A	0	0	1	1	0	1	1	0	0	1	1	1	1	0	0	0	1	1	0	0	0	0	0.5	1.1
19-Nov	A	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	1	1	1	0	0	A	0.4	0.8
20-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	0	0	1	1	2	2	A	1	0.5	2.0
21-Nov	4	2	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	3	2	1	A	0	1	0.9	3.6
22-Nov	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	A	0	0	0	0.3	1.2
23-Nov	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	A	0	0	0	0	0.2	0.6
24-Nov	0	1	0	0	0	0	0	0	1	0	1	2	2	1	1	1	0	0	A	0	0	0	0	0	0.5	1.8
25-Nov	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	0.3
26-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	0	1	0	1	0.3	0.9
27-Nov	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1	A	1	1	0	0	1	1	0	0	1.0	2.3
28-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	0	0.2	0.6
29-Nov	0	0	0	1	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.2	0.5
30-Nov	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	0	0	0	0.2	0.6
0.4 0.3 0.3 0.3 0.4 0.3 0.3 0.3 0.3 0.3 0.4 0.5 0.5 0.6 0.4 0.3 0.3 0.5 0.4 0.4 0.7 0.3 0.3 0.3 0.3																									Diurnal Average	
3.6 2.1 1.2 1.1 3.4 1.6 1.2 1.6 1.6 3.8 2.3 2.7 5.0 1.2 1.1 1.0 2.8 2.6 3.0 6.8 1.8 2.0 2.8 1.2																									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
Smoky Heights - November 2015



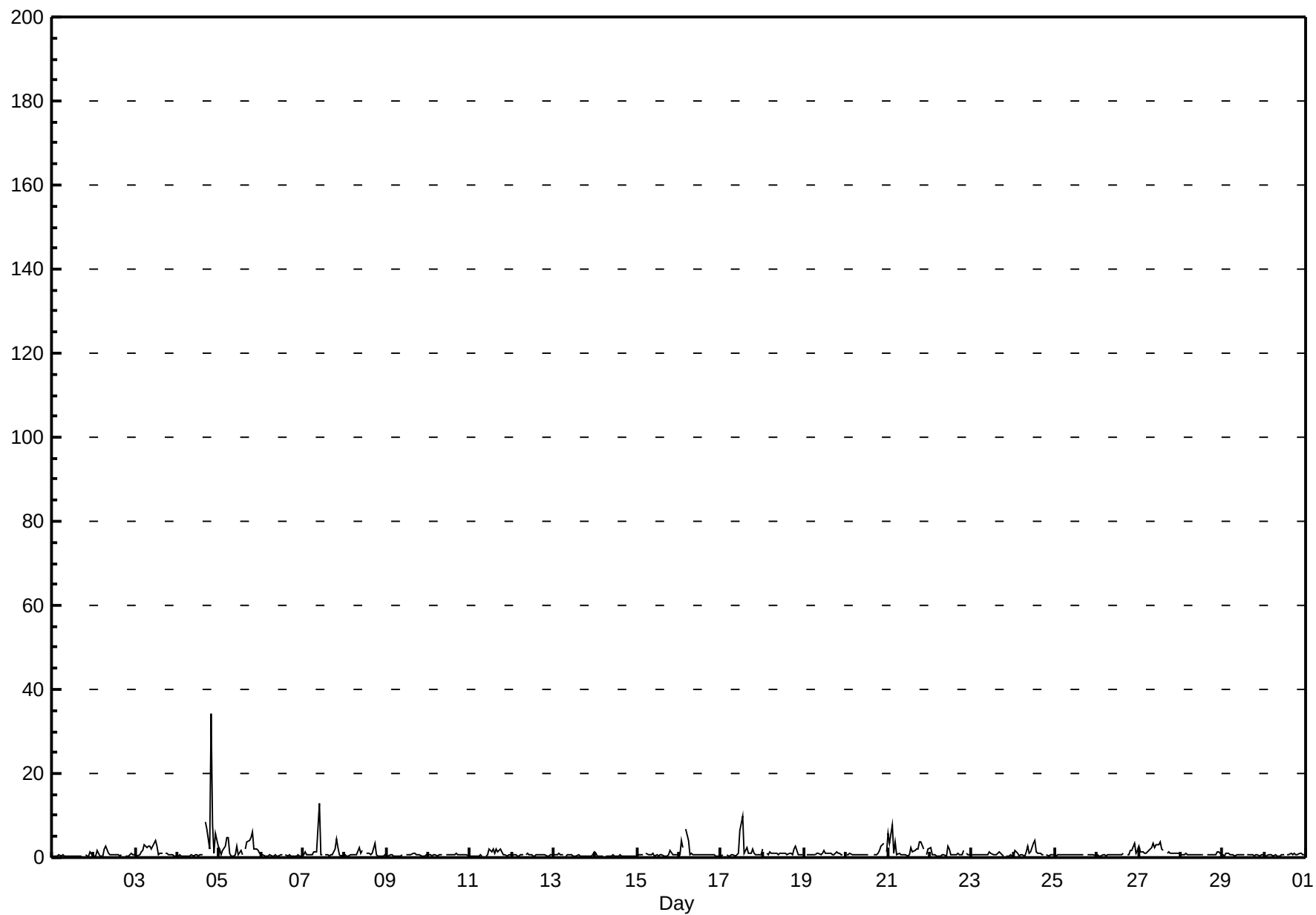
Hourly Maximums

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

Maximum Value: 34.4 ppb on Nov 4 20:00																			Maximum Daily Average: 3.3 ppb on Nov 4										Hours in Service: 720	
Minimum Value: 0 ppb on Nov 14 10:00																			Minimum Daily Average: 0.4 ppb on Nov 14										Hours of Data: 686	
Maximum Diurnal Average: 2.4 ppb at hour 20																			Minimum Diurnal Average: 0.7 ppb at hour 4										Hours of Missing Data: 34	
Monthly Average: 1.06 ppb																			Percentiles: P ₁ = 0.3 P ₁₀ = 0.4 Q ₁ = 0.5 Median = 0.6 Q ₃ = 1.0 P ₉₀ = 2.1 P ₉₉ = 6.6										Hours of Calibration: 34	
																													Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24						
1-Nov	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	A	1	0	0	1	1	0.5	1.4				
2-Nov	0	0	2	0	0	0	2	3	1	1	1	1	1	1	1	0	1	A	0	0	0	1	1	1	0.8	2.8				
3-Nov	1	0	1	1	2	3	2	3	3	2	3	4	3	1	1	1	A	1	1	1	1	1	0	0	1.5	3.9				
4-Nov	0	1	0	0	0	0	0	0	1	0	1	1	0	1	1	A	8	7	2	34	8	1	6	3	3.3	34.4				
5-Nov	2	1	2	3	5	5	1	0	0	1	3	1	2	1	A	2	4	4	5	6	2	2	2	1	2.3	6.0				
6-Nov	1	1	0	0	0	1	0	0	1	0	0	1	1	A	1	0	1	0	0	0	0	1	0	0	0.5	0.7				
7-Nov	1	1	1	1	1	1	1	1	1	13	1	1	A	1	1	0	1	1	2	4	2	1	0	1	1.6	12.8				
8-Nov	1	0	0	1	1	1	1	1	2	1	2	A	1	1	1	1	1	3	1	0	0	0	0	1	0.9	3.5				
9-Nov	1	0	1	1	0	0	0	1	1	1	A	1	1	1	1	1	1	1	1	1	0	0	0	1	0.6	1.0				
10-Nov	1	1	1	1	1	0	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0.6	1.2				
11-Nov	0	0	0	0	0	0	1	0	A	0	1	2	1	2	1	2	1	2	1	1	1	1	1	1	0.9	2.1				
12-Nov	0	1	1	0	0	1	1	A	1	1	1	1	1	0	1	1	1	1	1	1	0	0	1	1	0.6	0.9				
13-Nov	1	1	1	1	1	1	A	0	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	1	0.6	1.2				
14-Nov	1	0	0	0	0	A	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0.4	1.0				
15-Nov	1	1	1	1	A	1	1	1	1	1	1	1	0	1	1	0	0	0	1	2	1	1	1	1	0.7	1.7				
16-Nov	1	4	2	A	7	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1.3	6.9				
17-Nov	0	1	A	1	0	0	1	1	0	1	1	6	10	1	2	2	1	1	2	1	1	1	1	1	1.5	9.9				
18-Nov	2	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	1	1	1.0	2.7				
19-Nov	A	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	A	0.9	1.8				
20-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	C	C	C	1	1	1	2	3	4	A	1	1.0	3.5				
21-Nov	6	3	8	1	4	1	1	1	1	1	1	1	1	2	1	2	2	2	4	4	2	A	1	2	2.1	7.9				
22-Nov	2	1	1	1	0	0	0	1	1	0	3	2	1	1	1	1	1	1	1	2	A	1	1	1	0.9	2.7				
23-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0	0	1	0	0.7	1.3				
24-Nov	0	2	1	0	1	1	0	1	3	1	1	3	4	1	1	1	1	1	A	1	0	1	1	1	1.2	4.0				
25-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0	0.6	0.8				
26-Nov	1	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	A	1	1	2	2	4	1	2	0.9	3.5				
27-Nov	3	1	1	1	1	1	2	2	4	2	3	3	4	2	2	A	1	1	1	1	1	1	1	1	1.8	3.8				
28-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.4				
29-Nov	1	0	1	1	1	1	1	0	1	1	1	1	1	A	1	1	1	1	0	1	1	0	1	1	0.7	1.0				
30-Nov	0	0	1	1	1	0	1	1	0	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.7	1.2				
1.0 0.9 1.0 0.7 1.1 1.0 0.8 0.9 1.0 1.2 1.1 1.3 1.4 0.9 0.8 0.9 1.2 1.2 1.1 2.4 1.1 0.9 0.9 0.8																								Diurnal Average						
5.7 4.1 7.9 2.5 6.9 4.8 2.4 2.9 3.5 12.8 3.2 6.4 9.9 2.3 1.8 2.5 8.5 6.8 4.8 34.4 7.8 3.5 5.7 2.7																								Diurnal Maximum						
C - Calibration A - Automated Daily Zero Span																														

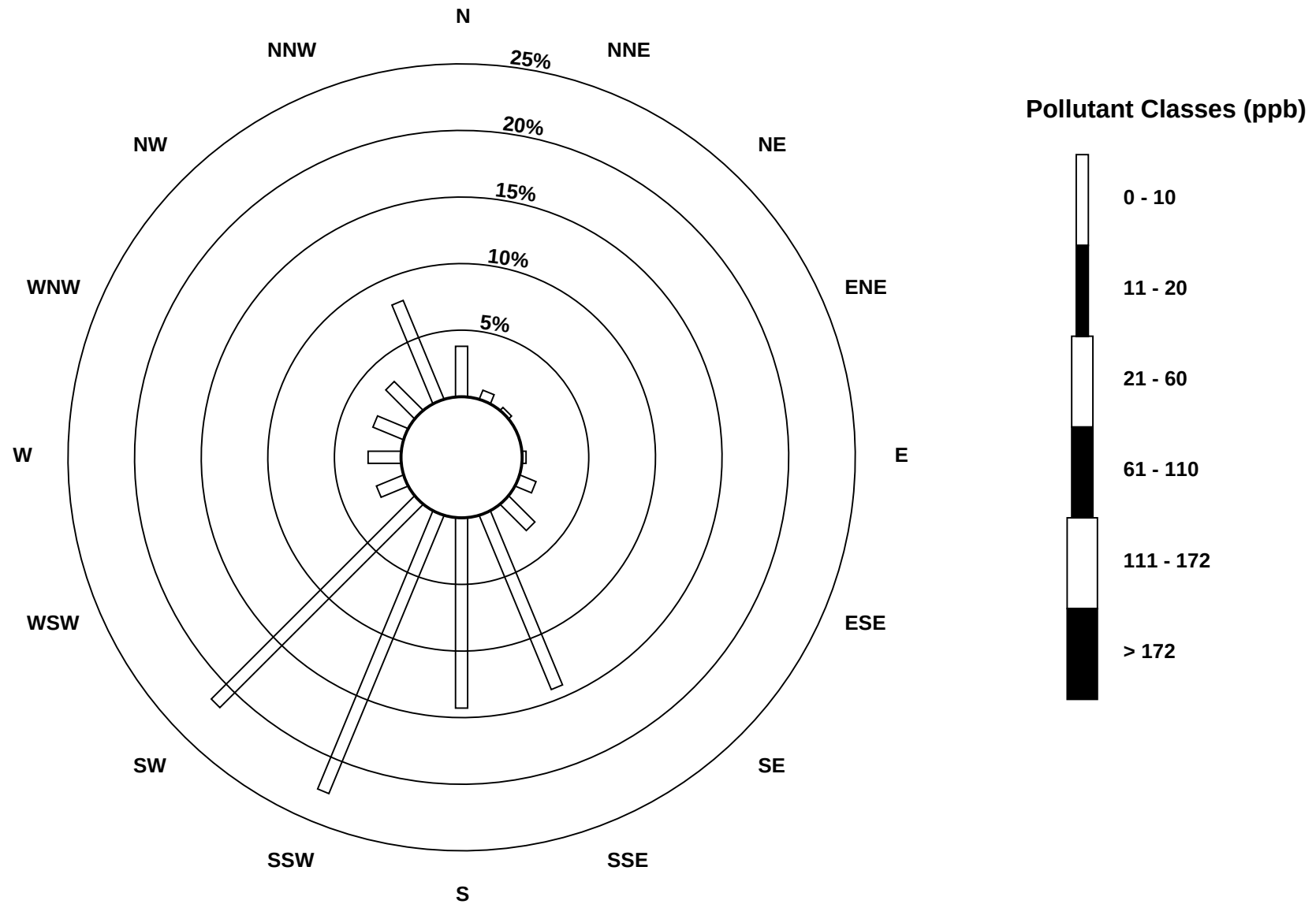
Hourly Maximums

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



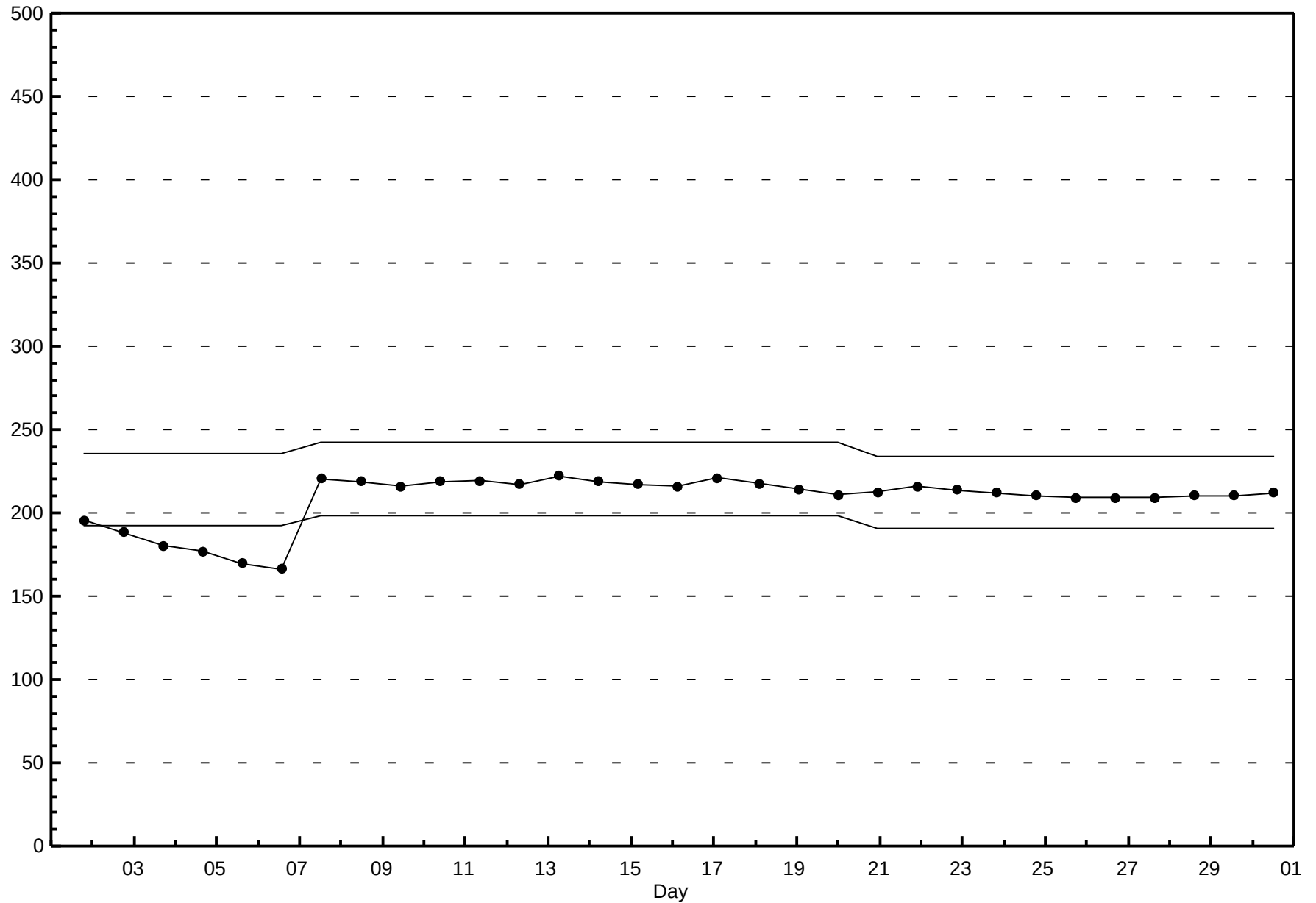
Pollutant Rose

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



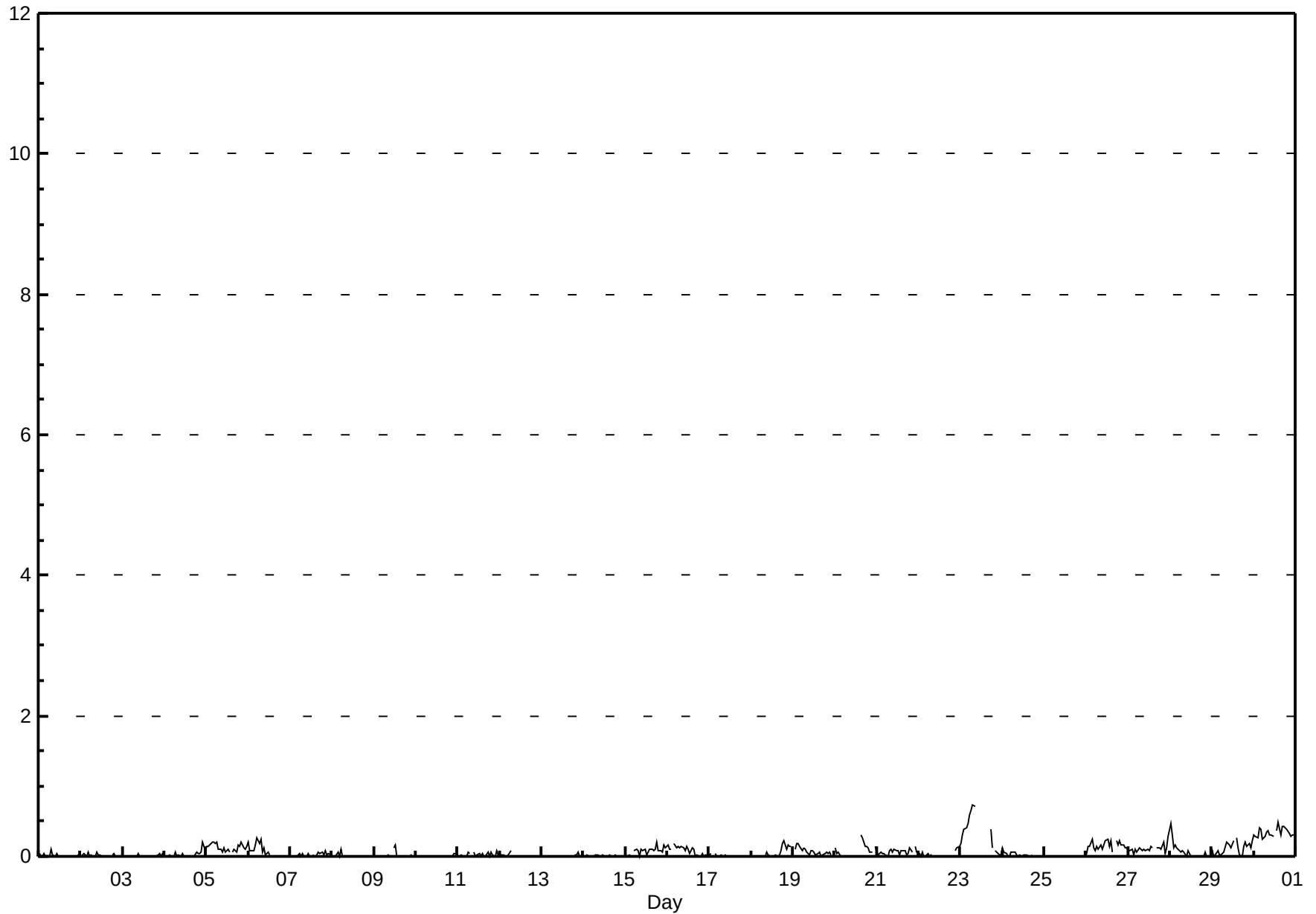
Span Responses

Sulphur Dioxide (SO₂)
Smoky Heights - November 2015



Hourly Averages

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



Hourly Maximums

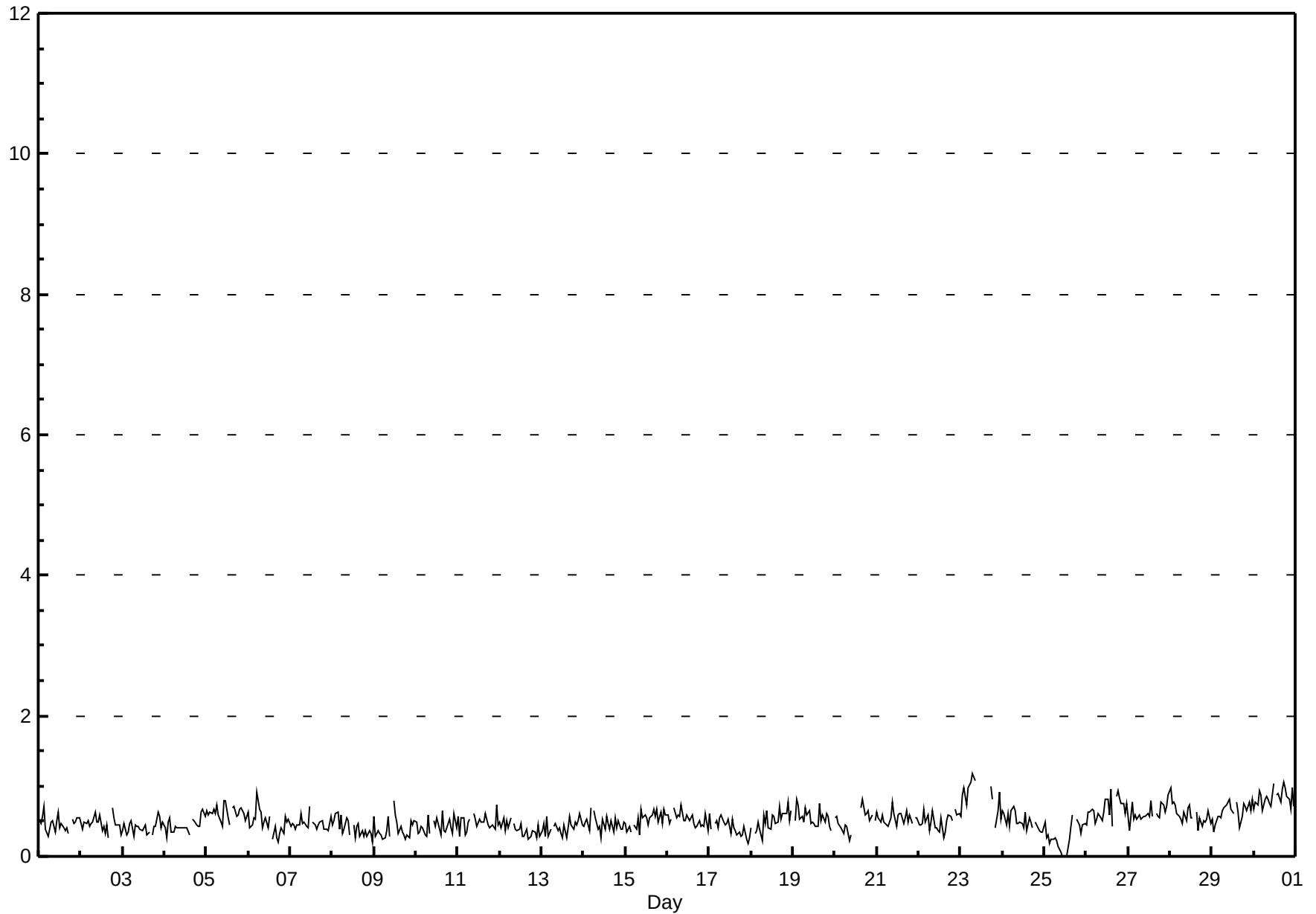
Total Reduced Sulphur (TRS) - ppb

Smoky Heights - November 2015

Maximum Value: 1.2 ppb on Nov 23 08:00																			Maximum Daily Average: 0.8 ppb on Nov 30										Hours in Service: 720	
Minimum Value: 0 ppb on Nov 25 11:00																			Minimum Daily Average: 0.3 ppb on Nov 25										Hours of Data: 676	
Maximum Diurnal Average: 0.6 ppb at hour 8																			Minimum Diurnal Average: 0.5 ppb at hour 15										Hours of Missing Data: 44	
Monthly Average: 0.51 ppb																			Percentiles: P ₁ = 0.2 P ₁₀ = 0.3 Q ₁ = 0.4 Median = 0.5 Q ₃ = 0.6 P ₉₀ = 0.7 P ₉₉ = 1.0										Hours of Calibration: 36	
																													Percent Operational Time: 98.9	
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-Nov	1	0	1	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	A	1	0	0	1	1	0.5	0.7				
2-Nov	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	A	1	1	0	0	0	0	0.5	0.7				
3-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	1	1	0	0	0.4	0.6				
4-Nov	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	A	1	1	0	0	0	1	1	1	0.4	0.7				
5-Nov	1	1	1	1	1	1	1	1	0	0	1	1	1	0	A	1	1	1	1	1	1	1	0	1	0.6	0.8				
6-Nov	1	0	0	1	1	1	1	1	0	0	1	0	1	A	0	0	0	0	0	0	0	1	0	1	0.5	0.9				
7-Nov	0	0	0	0	0	0	1	0	0	0	0	1	A	0	0	0	0	0	1	0	0	0	0	1	0.5	0.7				
8-Nov	0	1	1	1	0	1	0	0	1	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.6				
9-Nov	1	0	0	0	0	0	0	0	1	0	A	1	1	0	0	0	0	0	0	0	0	1	0	1	0.4	0.8				
10-Nov	0	0	0	0	0	0	0	1	0	A	0	0	1	0	0	1	0	0	0	1	0	0	1	0	0.4	0.7				
11-Nov	1	0	1	1	0	0	0	1	A	1	1	0	1	0	0	0	1	0	0	0	0	0	1	0	0.5	0.7				
12-Nov	0	0	1	0	1	0	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.5				
13-Nov	0	0	0	1	0	0	A	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0.4	0.6				
14-Nov	0	0	1	0	1	A	1	1	0	0	0	1	0	1	0	0	1	0	1	0	1	0	0	0	0.5	0.7				
15-Nov	0	0	0	0	A	0	0	1	0	1	1	1	1	0	1	1	1	1	1	0	1	0	1	1	0.5	0.7				
16-Nov	1	0	1	A	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	0	0	0	1	0	0.5	0.7				
17-Nov	1	0	A	0	1	0	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0.4	0.6				
18-Nov	0	A	0	0	0	0	0	1	0	1	0	0	1	1	0	0	1	1	1	1	1	1	1	1	0.5	0.8				
19-Nov	A	1	1	1	1	1	0	1	1	1	0	0	0	0	0	1	1	1	0	1	1	0	0	A	0.6	0.8				
20-Nov	1	1	0	0	0	0	0	0	0	0	C	C	C	C	C	1	1	1	1	1	1	1	A	1	0.5	0.8				
21-Nov	1	1	0	1	0	0	0	0	1	1	1	0	1	1	1	0	1	1	0	1	0	A	1	1	0.5	0.8				
22-Nov	0	0	0	1	0	1	0	0	1	0	0	0	0	1	0	0	1	1	1	0	A	1	1	1	0.5	0.7				
23-Nov	1	1	1	1	1	1	1	1	1	M	M	M	M	M	M	M	M	1	1	A	0	1	1	1	--	1.2				
24-Nov	1	1	0	1	0	1	1	1	0	0	0	0	0	1	0	1	0	0	A	0	0	0	0	0	0.5	0.7				
25-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	1	0	0	0	0	0	0.3	0.6				
26-Nov	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	A	1	1	1	1	1	1	1	0.7	0.9				
27-Nov	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.6	0.9				
28-Nov	1	1	1	1	1	1	1	0	1	1	1	1	1	1	A	1	0	1	0	1	0	1	1	0	0.6	1.0				
29-Nov	1	0	0	1	1	1	1	1	1	1	1	1	1	A	1	1	0	1	1	1	1	1	1	1	0.6	0.8				
30-Nov	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1				
0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.6 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5																								Diurnal Average						
1.0 0.9 1.0 0.9 1.0 1.0 1.1 1.2 1.1 0.8 0.8 1.0 0.8 0.9 0.9 0.8 0.9 1.1 1.0 0.8 0.8 0.8 1.0 0.9																								Diurnal Maximum						
C - Calibration M - Maintenance A - Automated Daily Zero Span																														

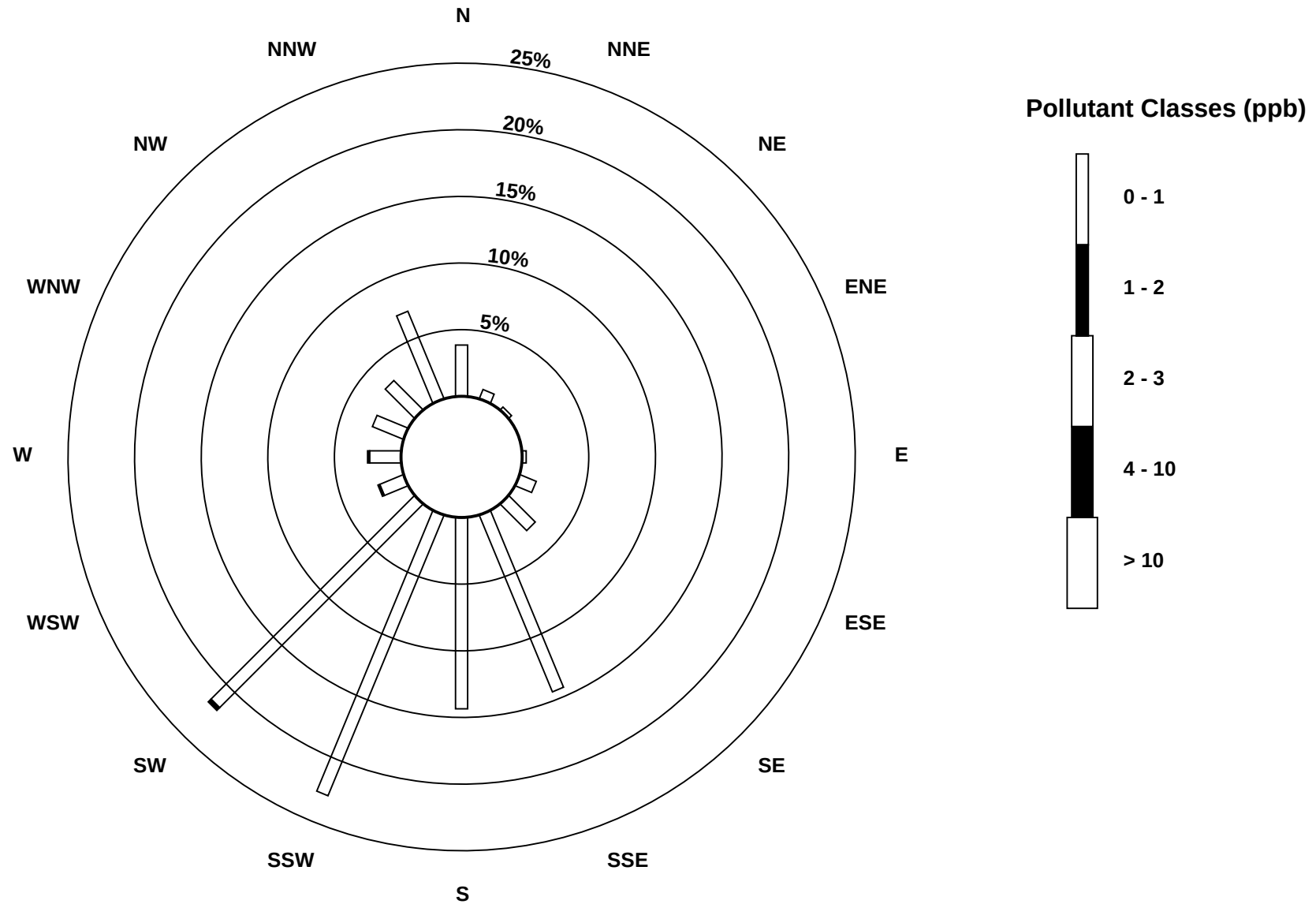
Hourly Maximums

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



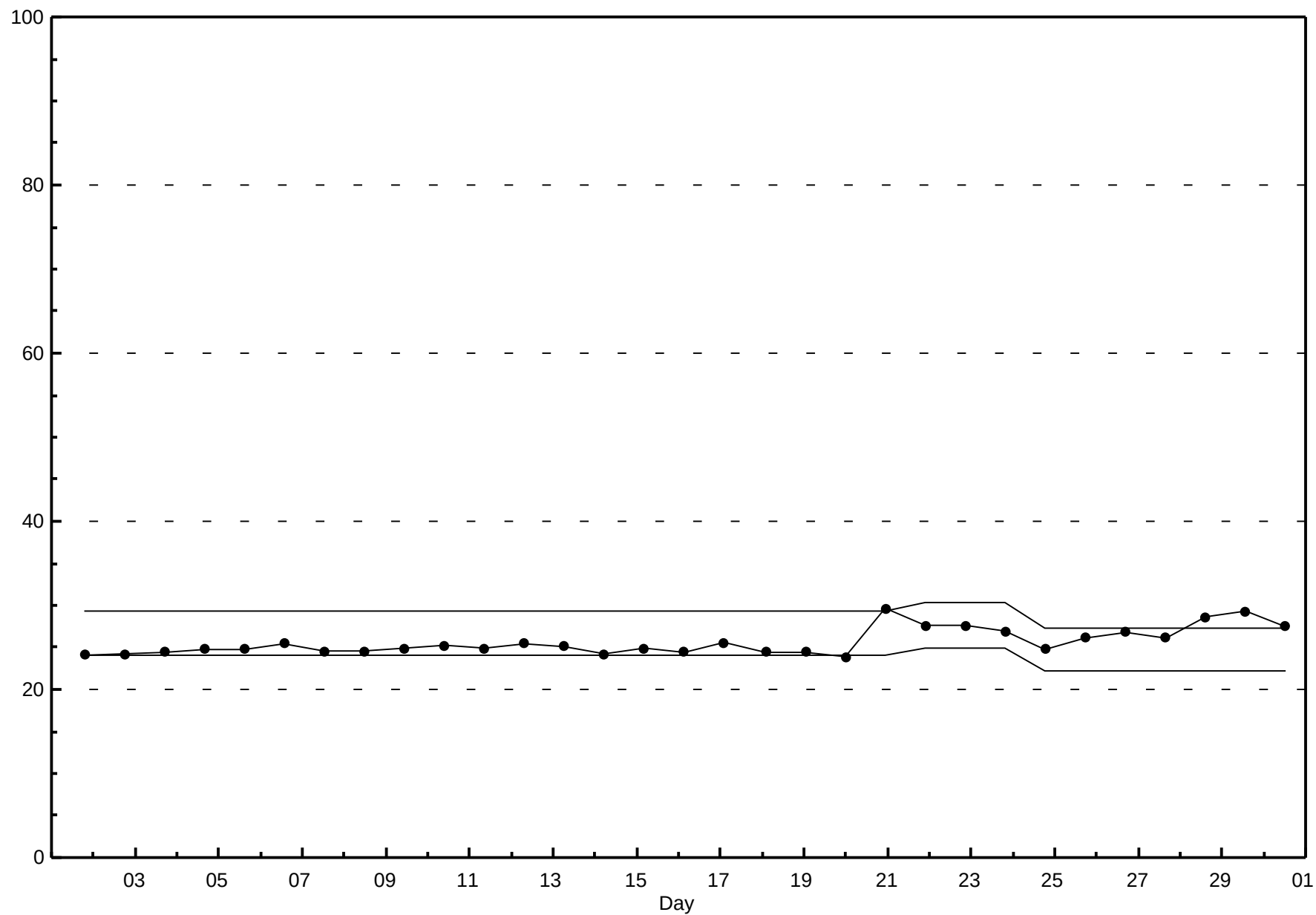
Pollutant Rose

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



Span Responses

Total Reduced Sulphur (TRS)
Smoky Heights - November 2015

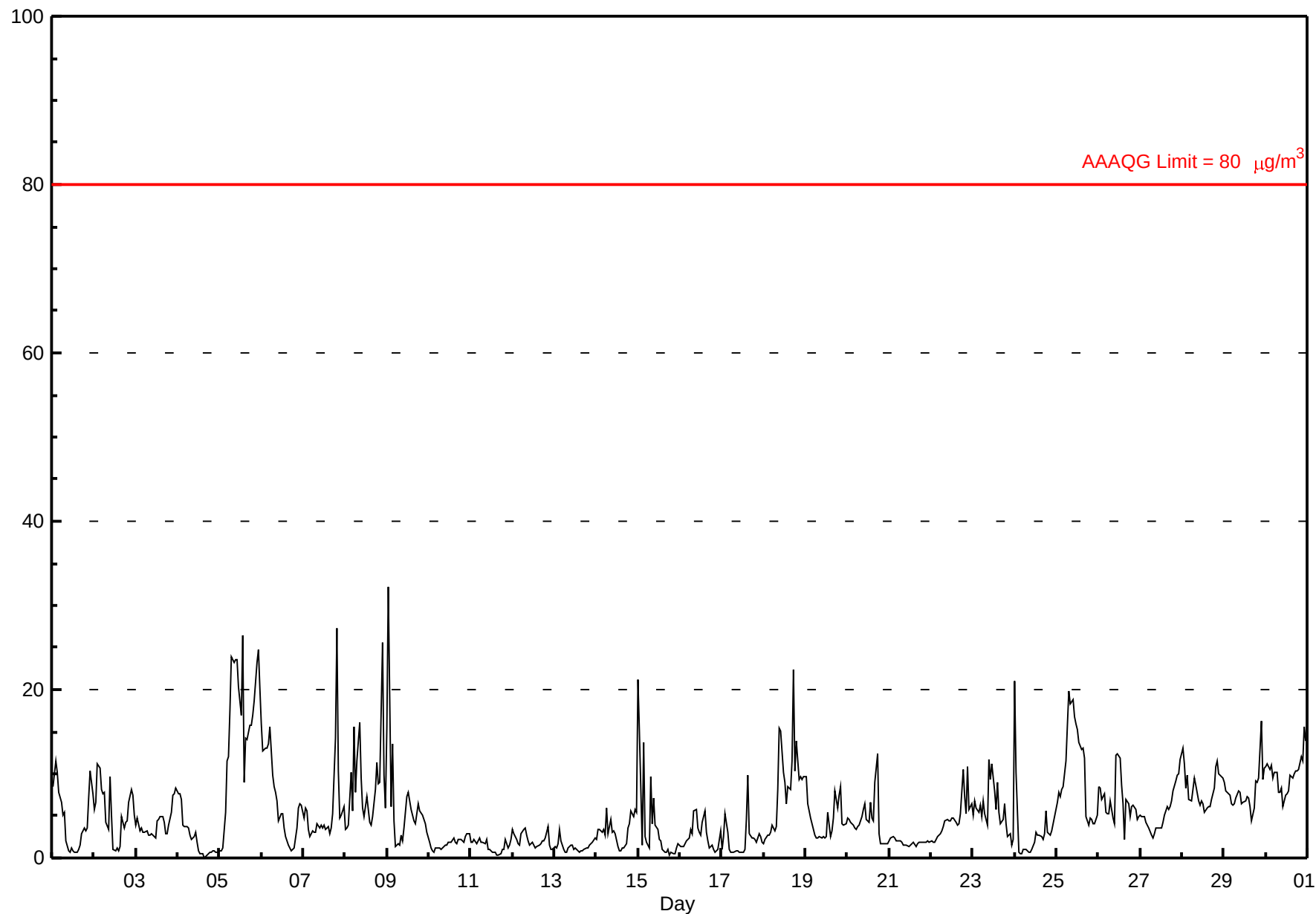


Hourly Averages

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

Smoky Heights - November 2015

Number of Exceedences: 1-hr: 0 24-hr: 0 Maximum Value: 32.3 µg/m³ on Nov 9 02:00																								Maximum Daily Average: 15.8 µg/m³ on Nov 5				Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0			
Minimum Value: 0 µg/m³ on Nov 4 16:00 Maximum Diurnal Average: 6.7 µg/m³ at hour 1 Monthly Average: 5.35 µg/m³												Minimum Daily Average: 1.4 µg/m³ on Nov 13 Minimum Diurnal Average: 4.2 µg/m³ at hour 16 Percentiles: P ₁ = 0.5 P ₁₀ = 1.0 Q ₁ = 1.9 Median = 4.0 Q ₃ = 7.3 P ₉₀ = 11.2 P ₉₉ = 23.3																			
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-Nov	9	10	12	10	8	7	5	6	2	1	1	1	1	1	1	1	2	3	4	3	4	7	10	8	4.7	11.6					
2-Nov	6	7	11	11	8	8	8	4	3	10	5	1	1	1	1	1	5	4	4	4	7	8	7	5	5.4	11.2					
3-Nov	4	5	3	4	3	3	3	3	3	3	3	2	4	5	5	5	4	3	3	4	5	8	8	8	4.1	8.2					
4-Nov	8	8	7	4	4	4	4	3	2	2	3	2	1	1	0	0	0	0	1	1	1	1	1	1	2.3	7.7					
5-Nov	1	1	1	5	12	12	17	24	23	24	23	20	17	26	9	14	14	16	16	17	19	23	25	20	15.8	26.4					
6-Nov	16	13	13	13	14	16	10	8	8	7	4	5	5	4	3	2	1	1	1	1	4	6	6	6	6.9	15.9					
7-Nov	5	6	6	3	3	3	3	3	4	4	4	3	4	3	4	3	4	5	14	27	10	5	5	6	5.7	27.3					
8-Nov	3	4	4	10	6	16	8	12	16	10	6	5	7	6	4	4	5	8	11	9	9	26	10	6	8.5	25.5					
9-Nov	15	32	6	14	4	1	2	2	3	2	4	7	8	7	6	4	4	5	7	6	5	5	4	3	6.5	32.3					
10-Nov	2	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	3	3	3	1.7	2.9					
11-Nov	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	0	0	0	1	1	2	1	2	2	1.4	2.3					
12-Nov	3	3	2	2	1	3	3	4	3	2	2	2	1	1	1	1	2	2	2	2	4	2	1	1	2.1	3.7					
13-Nov	1	1	2	3	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1.4	3.3					
14-Nov	2	3	3	3	3	3	6	3	5	3	3	3	1	1	1	1	1	2	4	4	6	5	6	5	3.2	6.0					
15-Nov	21	15	2	14	2	2	1	10	4	7	4	3	2	2	1	1	1	1	0	1	0	1	1	2	4.1	21.2					
16-Nov	1	1	1	2	2	2	3	3	6	6	4	3	3	4	6	3	2	1	2	1	1	1	1	3	2.6	5.7					
17-Nov	1	3	5	3	1	1	1	1	1	1	1	1	1	1	5	10	3	2	2	2	2	3	2	2	2.2	9.9					
18-Nov	2	2	3	3	3	4	3	4	8	15	15	10	9	6	8	8	12	22	10	14	9	10	9	10	8.4	22.4					
19-Nov	10	7	6	5	4	3	2	2	2	2	3	2	3	5	3	3	5	8	6	8	8	4	4	4	4.5	9.6					
20-Nov	5	5	4	4	4	3	4	4	5	6	6	5	4	7	5	4	9	12	3	2	2	2	2	2	4.4	12.4					
21-Nov	2	2	2	2	2	2	2	2	2	1	2	1	1	2	2	1	2	2	2	2	2	2	2	2	1.8	2.5					
22-Nov	2	2	2	2	3	3	3	4	4	5	4	4	5	5	4	4	4	5	11	7	5	11	6	6	4.6	10.8					
23-Nov	5	7	6	5	6	5	7	5	4	12	9	11	8	6	9	5	4	5	6	4	3	3	2	2	5.8	11.7					
24-Nov	21	10	1	1	1	1	1	1	1	1	1	2	3	3	3	3	2	3	6	3	3	3	4	5	3.3	21.0					
25-Nov	7	8	7	8	9	11	16	20	18	19	17	16	15	14	13	13	12	5	4	5	5	4	4	5	10.6	19.8					
26-Nov	8	8	7	8	5	5	5	7	5	4	12	12	12	9	6	2	7	6	5	6	6	6	5	5	6.8	12.5					
27-Nov	5	5	5	4	4	4	3	2	3	4	4	4	4	4	5	6	6	6	7	8	9	10	10	12	5.5	11.8					
28-Nov	13	11	8	10	7	7	8	10	9	7	6	7	6	5	6	6	6	7	8	11	12	10	10	10	8.3	13.0					
29-Nov	9	8	8	7	6	6	6	7	8	8	6	7	7	7	7	6	4	6	9	9	10	16	9	11	7.9	16.3					
30-Nov	11	11	11	11	10	10	10	8	8	8	6	7	8	8	10	9	10	10	10	10	12	12	16	14	10.0	15.6					
6.7 6.6 5.0 5.8 4.6 4.9 4.9 5.4 5.4 5.9 5.4 5.1 4.8 4.9 4.3 4.2 4.4 5.2 5.4 5.8 5.5 6.5 5.9 5.7																								Diurnal Average							
21.2 32.3 13.0 13.7 13.6 15.7 17.5 23.8 23.2 23.5 23.5 20.4 17.0 26.4 13.0 14.3 14.1 22.4 15.7 27.3 18.6 25.5 24.8 20.2																								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

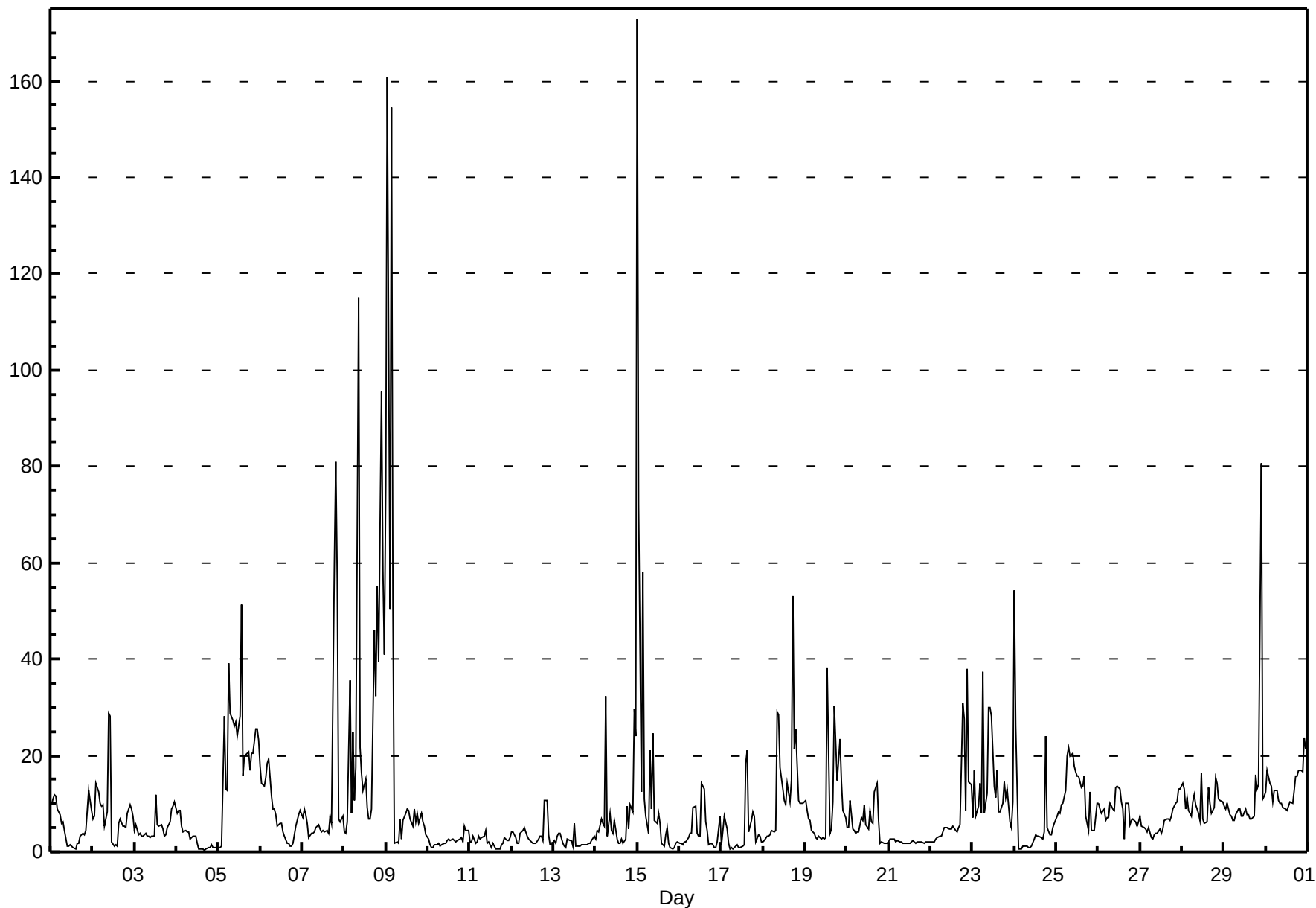
Smoky Heights - November 2015

Maximum Value: 172.9 μg/m ³ on Nov 15 01:00																								Maximum Daily Average: 28.8 μg/m ³ on Nov 8										Hours in Service: 720	
Minimum Value: 0 μg/m ³ on Nov 4 17:00																								Minimum Daily Average: 2.1 μg/m ³ on Nov 21										Hours of Data: 720	
Maximum Diurnal Average: 15.7 μg/m ³ at hour 1																								Minimum Diurnal Average: 6.0 μg/m ³ at hour 16										Hours of Missing Data: 0	
Monthly Average: 9.56 μg/m ³																								Percentiles: P ₁ = 0.7 P ₁₀ = 1.4 Q ₁ = 2.7 Median = 5.6 Q ₃ = 10.2 P ₉₀ = 19.7 P ₉₉ = 80.6										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-Nov	10	11	12	11	9	8	6	6	5	1	1	1	1	1	1	2	2	3	4	4	4	9	13	9	5.5	12.7									
2-Nov	7	8	14	12	10	9	10	5	8	29	28	2	1	1	1	6	7	5	5	5	8	10	9	7	8.7	28.8									
3-Nov	4	6	4	4	3	3	4	3	3	3	3	3	12	6	5	6	5	3	4	5	6	9	9	10	5.2	11.9									
4-Nov	8	9	9	5	4	4	4	4	3	3	3	3	2	1	1	0	0	1	1	1	1	1	1	1	2.9	8.5									
5-Nov	1	1	1	28	13	13	39	29	27	26	27	24	28	51	16	20	20	21	17	20	21	26	26	23	21.6	51.3									
6-Nov	18	14	14	15	18	19	12	9	9	8	5	6	6	4	3	2	2	1	1	2	5	7	8	9	8.2	19.3									
7-Nov	7	9	8	6	3	4	4	4	5	6	5	4	4	4	4	4	8	6	60	81	57	7	6	8	13.0	81.1									
8-Nov	4	4	6	36	8	25	11	18	115	22	16	13	15	9	7	7	9	46	32	55	40	96	58	41	28.8	115.0									
9-Nov	76	161	50	154	51	2	2	2	7	3	7	8	9	9	7	5	9	6	8	6	8	6	5	4	25.2	160.7									
10-Nov	3	1	1	1	1	1	2	1	1	2	2	2	3	2	3	2	2	2	3	3	2	5	5	4	2.3	5.3									
11-Nov	2	2	3	2	2	3	3	3	3	5	2	2	1	2	1	0	0	1	1	2	3	2	2	3	2.2	4.6									
12-Nov	4	4	3	2	2	4	5	5	4	3	3	2	2	2	2	3	3	3	2	11	11	4	1	1	3.5	10.7									
13-Nov	2	2	3	4	4	2	1	1	3	2	2	1	6	1	1	1	1	1	1	1	2	2	2	3	2.2	5.8									
14-Nov	3	5	4	7	6	5	32	3	8	4	4	7	3	2	2	3	2	3	9	5	10	8	30	24	7.8	32.4									
15-Nov	173	72	12	58	11	8	4	21	9	25	7	6	8	6	2	1	4	5	2	1	1	1	2	2	18.3	172.9									
16-Nov	2	2	1	2	2	3	4	4	9	9	4	3	3	14	13	6	5	1	2	1	1	1	2	8	4.3	14.4									
17-Nov	1	4	7	5	2	1	1	1	1	1	1	1	1	1	19	21	4	7	8	8	2	4	3	2	4.4	20.9									
18-Nov	2	2	3	3	4	4	4	5	29	29	18	13	11	10	14	10	15	53	21	26	11	10	10	10	13.2	53.0									
19-Nov	11	8	7	7	5	4	3	3	3	3	3	3	3	38	4	5	10	30	15	19	23	15	9	7	9.8	38.3									
20-Nov	5	5	11	5	5	4	4	4	7	7	10	6	5	9	6	6	12	14	7	2	2	2	2	2	5.8	14.4									
21-Nov	2	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.7									
22-Nov	2	2	2	3	3	3	3	4	5	5	5	5	5	5	5	4	5	6	31	28	9	38	15	14	8.5	37.8									
23-Nov	7	17	7	9	14	8	37	8	12	30	30	28	14	11	17	8	8	10	15	11	13	6	5	10	14.1	37.3									
24-Nov	54	26	1	1	1	1	1	1	1	1	1	3	4	3	3	3	3	4	24	5	4	4	5	6	6.6	54.4									
25-Nov	7	8	8	10	10	13	20	22	20	20	18	17	16	16	13	14	16	8	4	12	5	4	4	10	12.2	21.7									
26-Nov	10	9	8	9	7	7	7	10	9	9	13	14	13	10	9	3	10	10	6	7	7	6	5	6	8.5	13.7									
27-Nov	8	5	5	5	4	5	3	3	4	4	4	5	4	5	7	7	7	7	9	10	10	10	13	13	6.3	13.2									
28-Nov	14	13	9	11	8	8	10	12	10	8	7	16	7	6	6	13	10	8	9	15	14	11	11	10	10.3	16.3									
29-Nov	9	9	10	8	8	7	7	8	9	9	7	8	9	8	8	7	7	7	16	13	14	81	11	11	12.0	80.8									
30-Nov	12	17	14	14	10	13	13	11	10	10	9	9	8	9	10	10	13	16	16	17	17	17	24	21	13.3	23.6									
15.7 14.6 8.0 14.6 7.7 6.4 8.6 7.0 11.3 9.6 8.2 7.2 6.8 8.3 6.4 6.0 6.7 9.7 11.1 12.5 10.4 13.4 10.0 9.4																								Diurnal Average											
172.9 160.7 50.4 154.4 51.0 24.9 39.3 28.8 115.0 30.0 30.0 28.0 28.0 51.3 18.5 20.9 20.2 53.0 60.0 81.1 56.6 95.5 58.4 41.0																								Diurnal Maximum											

Hourly Maximums

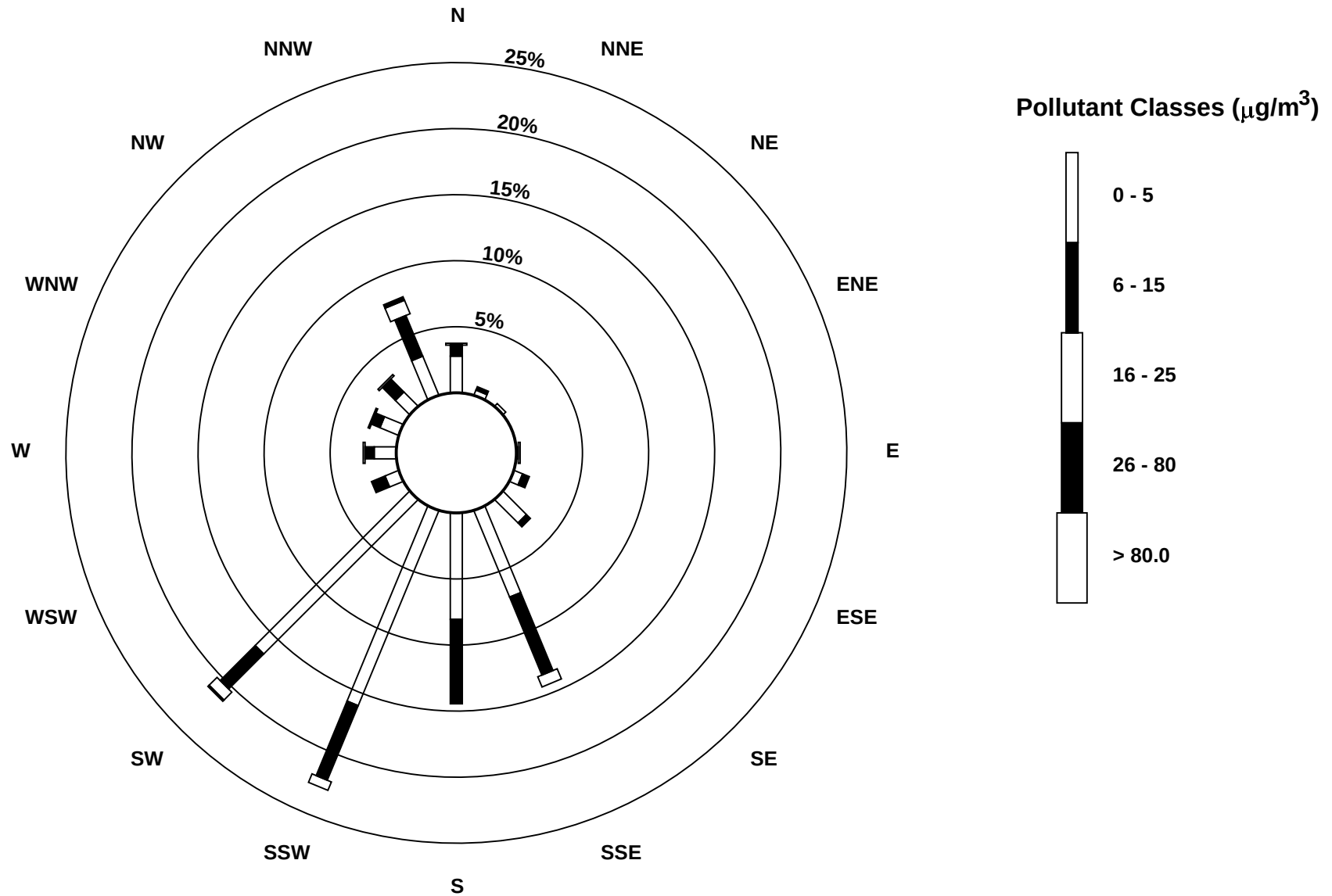
Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$

Smoky Heights - November 2015



Pollutant Rose

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Smoky Heights - November 2015



Hourly Averages

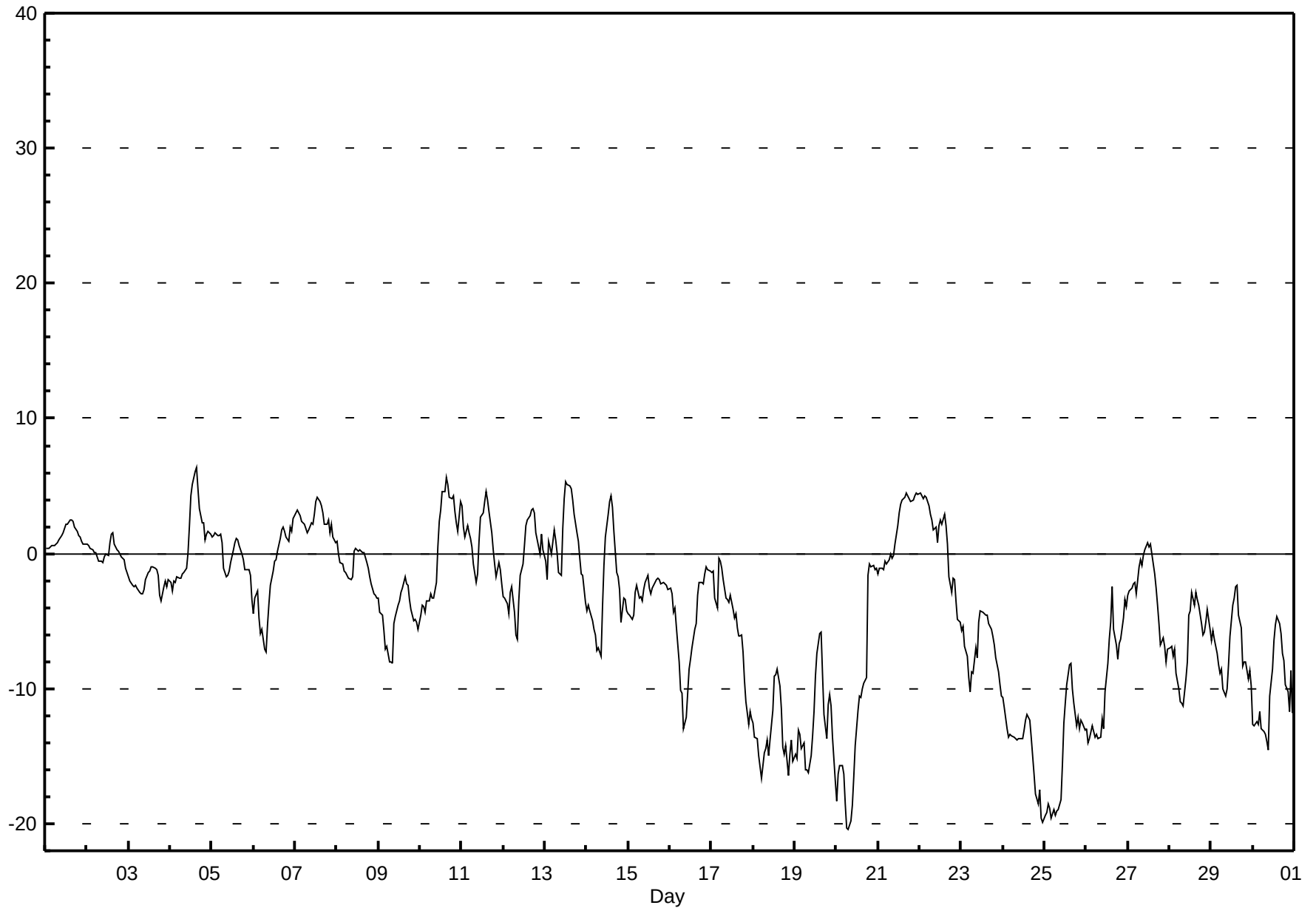
External Temperature (ET) - °C

Smoky Heights - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 6.3 °C on Nov 4 16:00 Maximum Daily Average: 2.5 °C on Nov 7																				Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0							
Minimum Value: -20 °C on Nov 20 08:00 Maximum Diurnal Average: -1.3 °C at hour 16 Monthly Average: -4.17 °C										Minimum Daily Average: -14.7 °C on Nov 25 Minimum Diurnal Average: -6.6 °C at hour 9 Percentiles: P ₁ = -19.4 P ₁₀ = -13.6 Q ₁ = -8.1 Median = -2.7 Q ₃ = 0.4 P ₉₀ = 2.5 P ₉₉ = 5.1																	
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-Nov	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1.3	2.5	
2-Nov	1	1	0	0	0	0	0	-1	-1	-1	0	0	0	1	1	1	1	0	0	0	0	0	-1	-1	0.1	1.5	
3-Nov	-2	-2	-2	-2	-2	-3	-3	-3	-3	-3	-2	-1	-1	-1	-1	-1	-1	-2	-3	-3	-2	-2	-2	-2	-2.1	-1.0	
4-Nov	-2	-3	-2	-2	-2	-2	-2	-2	-1	-1	0	2	4	5	6	6	5	3	2	2	1	1	2	1	1.0	6.3	
5-Nov	1	1	2	1	1	1	1	-1	-2	-2	-1	-1	0	1	1	1	1	0	0	-1	-1	-1	-2	-3	-0.1	1.5	
6-Nov	-4	-3	-3	-5	-6	-6	-7	-7	-5	-4	-2	-1	-1	0	0	1	2	2	2	1	1	2	2	3	-1.7	2.6	
7-Nov	3	3	3	3	2	2	2	2	2	2	2	3	4	4	4	4	3	2	2	3	2	2	1	1	2.5	4.2	
8-Nov	1	0	-1	-1	-1	-1	-2	-2	-2	-2	0	0	0	0	0	0	0	-1	-1	-2	-2	-3	-3	-3	-1.0	0.9	
9-Nov	-3	-4	-5	-6	-7	-7	-8	-8	-8	-5	-5	-4	-4	-3	-3	-2	-2	-2	-3	-4	-5	-5	-5	-6	-4.7	-1.8	
10-Nov	-5	-4	-4	-4	-3	-4	-3	-3	-3	-2	1	2	3	5	5	6	5	4	4	4	3	2	2	4	0.6	5.6	
11-Nov	3	2	1	2	2	1	0	-1	-2	-1	1	3	3	4	5	4	3	2	0	-1	-2	-1	-1	-2	1.0	4.5	
12-Nov	-3	-3	-4	-4	-3	-2	-4	-6	-6	-3	-2	-1	1	2	2	3	3	3	3	2	1	0	1	0	-0.9	3.3	
13-Nov	-1	-2	1	0	0	2	1	0	-1	-2	2	4	5	5	5	5	4	3	2	1	0	-2	-2	-4	1.1	5.3	
14-Nov	-4	-4	-4	-5	-6	-6	-7	-7	-8	-4	-1	1	3	4	4	3	2	-1	-2	-3	-5	-3	-3	-4	-2.5	4.3	
15-Nov	-4	-5	-5	-5	-3	-2	-3	-3	-4	-3	-2	-2	-3	-3	-3	-2	-2	-2	-2	-2	-2	-2	-2	-3	-2.8	-1.6	
16-Nov	-3	-3	-4	-4	-5	-8	-10	-10	-13	-12	-10	-9	-8	-7	-6	-5	-3	-2	-2	-2	-1	-1	-1	-1	-5.5	-1.0	
17-Nov	-1	-1	-3	-4	0	-1	-1	-2	-3	-3	-4	-3	-4	-5	-4	-5	-6	-6	-7	-9	-11	-13	-12	-12	-5.1	-0.4	
18-Nov	-13	-14	-14	-15	-16	-17	-15	-14	-14	-15	-14	-12	-9	-9	-9	-10	-11	-14	-15	-14	-16	-15	-14	-15	-13.4	-8.5	
19-Nov	-15	-15	-13	-13	-14	-14	-16	-16	-16	-15	-14	-12	-9	-7	-6	-6	-9	-12	-14	-11	-10	-11	-14	-17	-12.5	-5.9	
20-Nov	-18	-16	-16	-16	-16	-19	-20	-20	-20	-19	-17	-14	-12	-10	-11	-10	-10	-9	-2	-1	-1	-1	-1	-1	-11.6	-0.7	
21-Nov	-2	-1	-1	-1	-1	-1	-1	0	0	0	1	2	3	4	4	4	5	4	4	4	4	4	4	4	1.8	4.5	
22-Nov	5	4	4	4	4	4	3	2	2	2	1	2	3	2	3	2	1	-2	-3	-2	-2	-3	-5	-5	1.1	4.5	
23-Nov	-6	-5	-7	-8	-9	-10	-9	-9	-7	-8	-5	-4	-4	-4	-5	-5	-5	-6	-6	-7	-8	-9	-10	-11	-6.9	-4.2	
24-Nov	-11	-11	-13	-14	-13	-13	-14	-14	-14	-14	-14	-14	-13	-12	-12	-12	-14	-15	-16	-18	-18	-18	-20	-20	-14.4	-10.7	
25-Nov	-19	-19	-19	-19	-20	-19	-19	-19	-19	-18	-16	-13	-11	-10	-8	-8	-10	-11	-13	-12	-13	-12	-13	-13	-14.7	-8.1	
26-Nov	-13	-14	-14	-13	-13	-14	-13	-14	-14	-12	-13	-10	-8	-6	-5	-2	-6	-7	-8	-7	-6	-5	-3	-4	-9.3	-2.5	
27-Nov	-3	-3	-3	-2	-2	-3	-1	-1	-1	0	0	1	1	1	0	-2	-3	-4	-5	-7	-6	-7	-8	-7	-2.7	0.8	
28-Nov	-7	-7	-8	-7	-9	-10	-11	-11	-11	-9	-8	-5	-4	-3	-4	-3	-3	-4	-5	-6	-6	-5	-4	-6	-6.5	-2.9	
29-Nov	-6	-6	-6	-7	-8	-9	-9	-10	-11	-10	-8	-6	-4	-3	-2	-2	-5	-6	-8	-8	-8	-9	-9	-10	-7.1	-2.3	
30-Nov	-13	-13	-12	-13	-12	-13	-13	-13	-14	-14	-11	-9	-6	-5	-5	-5	-6	-7	-8	-10	-10	-12	-9	-12	-10.2	-4.7	
		-4.8	-4.9	-5.0	-5.3	-5.4	-5.7	-6.1	-6.4	-6.6	-5.9	-4.6	-3.2	-2.3	-1.7	-1.3	-1.3	-2.0	-2.9	-3.4	-3.7	-4.2	-4.2	-4.3	-4.9	Diurnal Average	
		4.5	4.3	4.1	4.3	4.1	3.5	2.9	2.5	1.8	2.3	2.1	4.1	5.3	5.1	6.0	6.3	5.1	4.2	4.1	4.3	3.9	4.2	4.4	4.4	Diurnal Maximum	

Hourly Averages

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



Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Smoky Heights - November 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	9	8	9	10	9	8	7	8	11	9	9	10	11	12	11	10	10	10	10	9	9	9	9	9	9.1	11.7
Dir	352	351	345	355	358	1	354	344	355	360	355	8	3	9	6	359	350	353	344	341	322	316	314	313	349.3	9.4
2 Spd	8	7	9	6	5	3	4	3	2	4	4	8	8	6	6	5	2	6	5	1	3	6	8	8	1.5	9.2
Dir	302	304	312	309	304	280	343	13	37	110	183	206	201	190	192	159	109	140	171	187	347	351	336	340	277.8	311.5
3 Spd	8	8	8	6	6	7	7	7	6	5	3	3	4	5	6	5	7	7	6	6	5	6	7	9	0.4	8.9
Dir	341	341	347	334	335	335	340	339	1	347	353	26	144	159	185	137	135	158	156	187	202	192	184	186	295.3	186.0
4 Spd	9	11	13	15	15	16	14	18	16	15	11	16	24	22	19	21	19	16	14	15	13	14	12	13	13.8	24.1
Dir	185	168	168	175	175	164	165	151	156	163	163	197	208	212	211	221	221	214	218	225	222	222	222	234	195.7	208.5
5 Spd	12	13	11	2	10	11	8	9	11	11	9	10	9	7	9	9	5	3	2	2	5	8	5	8	4.6	12.8
Dir	232	228	226	142	199	215	265	332	334	340	329	349	314	299	272	289	275	214	335	87	223	215	202	201	265.1	228.5
6 Spd	2	7	10	11	10	10	9	7	6	8	9	11	12	17	16	17	14	12	10	12	9	11	8	13	9.7	16.6
Dir	205	185	203	216	201	221	205	212	201	188	180	186	162	151	151	152	167	180	185	180	191	212	190	209	184.9	152.3
7 Spd	15	14	13	15	14	13	10	8	12	13	11	10	13	14	10	5	8	10	12	11	11	11	12	10	11.0	14.9
Dir	229	229	220	213	214	211	189	202	213	215	195	192	210	210	201	208	206	228	217	220	253	252	242	236	217.6	213.0
8 Spd	12	11	11	4	5	3	3	3	2	3	7	10	11	8	6	4	5	6	8	6	5	4	5	4	3.5	12.2
Dir	225	235	235	156	190	204	189	268	336	14	323	321	328	347	355	322	345	345	348	331	334	336	326	332	306.3	224.5
9 Spd	6	3	1	4	2	4	2	5	5	10	11	12	11	10	12	10	8	7	11	14	10	14	13	11	6.4	14.3
Dir	339	343	304	299	288	297	272	233	197	185	185	186	182	172	164	157	152	177	192	195	222	217	201	172	193.5	217.5
10 Spd	12	15	16	14	14	13	18	17	18	18	17	19	19	23	20	25	22	18	20	21	14	10	11	22	16.9	25.4
Dir	158	150	157	158	177	168	169	156	159	153	146	165	163	182	176	180	171	163	161	161	158	190	200	198	167.4	179.6
11 Spd	29	22	23	29	29	27	25	19	18	19	25	30	33	31	35	37	37	25	22	23	19	25	21	19	25.7	37.2
Dir	202	198	205	205	201	211	203	208	207	212	228	226	225	223	218	220	222	226	210	209	213	208	203	211	213.1	219.6
12 Spd	17	19	16	14	17	18	12	13	10	10	9	8	9	22	23	23	22	22	16	15	15	16	16	15	14.0	23.3
Dir	216	205	206	196	191	189	202	203	203	161	148	139	128	130	133	138	144	150	154	156	154	165	155	160	166.1	133.0
13 Spd	11	12	19	18	19	18	17	14	10	12	22	30	42	47	41	40	37	33	24	26	22	17	18	15	23.2	46.9
Dir	166	195	185	193	194	199	206	210	218	213	204	208	211	210	210	211	212	214	215	211	212	214	206	210	207.2	210.5
14 Spd	8	8	8	8	4	8	2	5	9	8	7	13	17	22	24	19	13	8	7	6	4	5	7	6	8.2	23.8
Dir	196	147	168	182	213	170	185	242	229	173	163	192	195	205	212	204	192	162	174	245	185	216	274	289	198.7	212.2
15 Spd	4	5	5	7	9	9	5	8	9	11	13	15	18	19	21	18	17	15	16	16	17	18	16	17	12.1	20.6
Dir	346	338	21	346	330	336	6	344	329	334	341	341	328	325	318	321	329	324	320	312	306	303	295	280	322.6	318.5
16 Spd	13	13	13	15	13	13	14	8	9	4	10	9	11	8	3	7	15	15	15	18	21	20	20	18	7.9	21.0
Dir	267	234	222	220	224	217	218	208	217	209	202	214	234	233	113	116	95	119	125	112	124	137	138	141	174.1	124.1
17 Spd	17	18	13	16	25	26	26	24	21	20	19	19	16	14	6	11	12	10	12	9	12	14	18	19	12.6	26.2
Dir	146	163	206	191	188	200	199	204	211	213	206	218	224	222	281	325	261	287	299	304	287	260	260	261	221.9	200.0
18 Spd	17	11	14	10	13	13	5	7	10	11	9	9	4	8	3	5	7	11	9	9	8	12	12	12	8.7	16.8
Dir	251	210	252	231	224	232	234	194	228	235	190	196	160	132	196	225	242	234	225	225	207	226	221	192	220.7	250.7
19 Spd	7	7	12	15	16	16	9	4	7	9	10	13	4	1	2	1	2	7	4	4	1	8	3	8	5.7	15.6
Dir	212	214	230	234	234	236	222	177	202	207	231	220	184	167	117	41	180	258	338	102	24	281	274	213	226.2	236.0
20 Spd	9	8	6	5	8	9	8	8	8	9	10	12	15	11	12	7	12	15	30	31	30	32	29	30	13.8	31.8
Dir	223	205	178	194	174	217	222	217	211	213	193	176	175	189	204	189	166	186	218	222	223	223	228	227	209.7	223.2
21 Spd	25	32	26	25	29	26	33	40	40	39	32	34	34	41	58	54	51	47	45	44	40	42	39	36	37.9	58.4
Dir	230	231	220	219	228	230	227	223	221	219	208	204	209	219	223	224	223	223	223	225	226	225	222	221	221.7	222.5
22 Spd	38	38	37	39	38	33	32	32	25	22	18	22	26	23	23	18	15	11	12	13	8	7	11	7	22.7	38.9
Dir	224	227	232	235	234	233	230	231	231	230	206	228	233	230	233	229	217	225	226	232	231	221	232	226	229.3	234.7

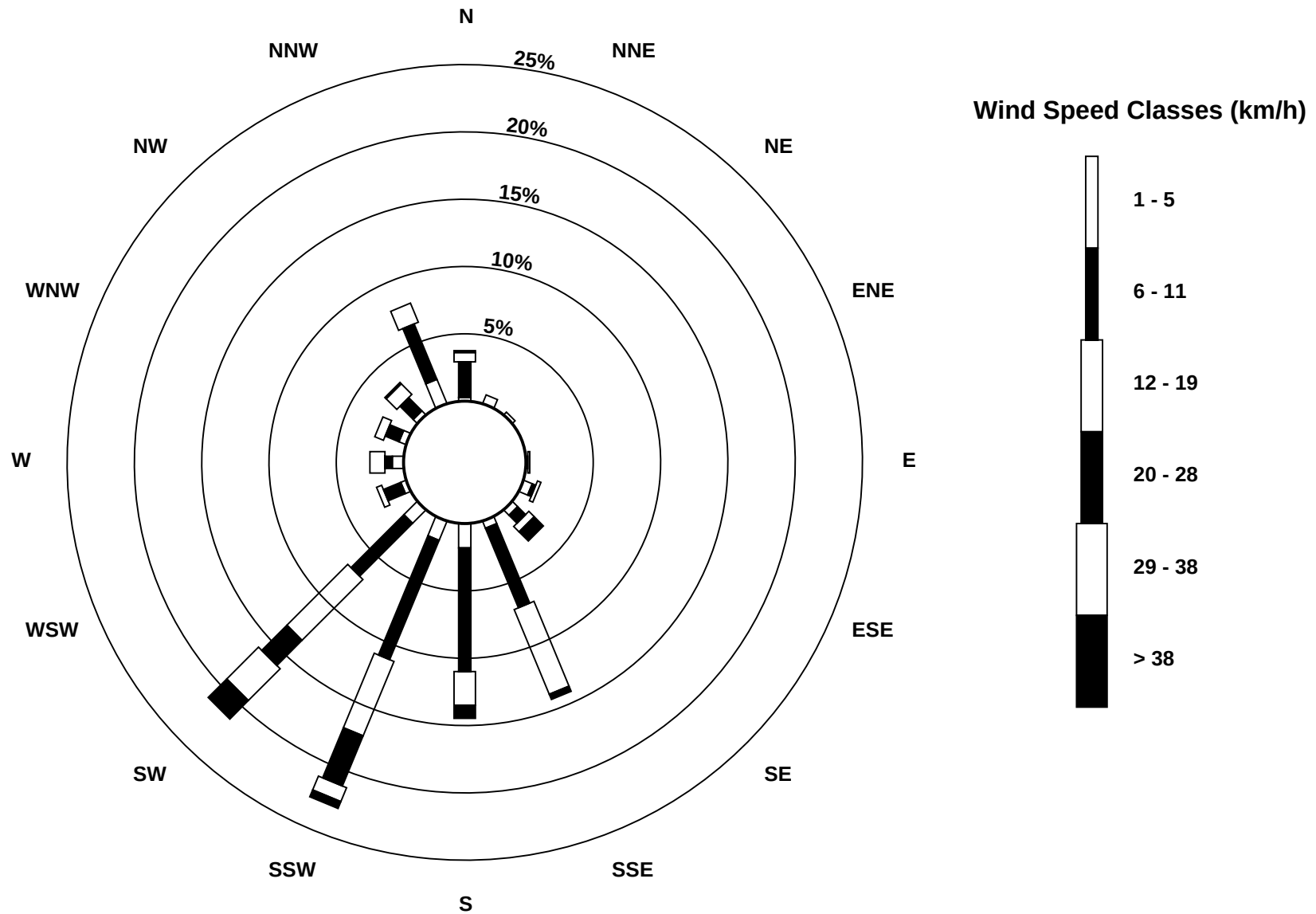
Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Smoky Heights - November 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	8	6	9	4	5	4	2	2	4	3	5	8	11	14	16	18	16	18	17	20	17	17	17	14	8.2	20.0					
Dir	242	250	232	209	226	219	249	226	266	258	335	338	341	345	342	341	341	342	344	355	1	355	358	352	334.8	355.2					
24 Spd	13	12	13	13	15	15	11	10	11	14	13	12	11	9	10	11	8	5	8	9	7	11	11	10	8.1	15.0					
Dir	335	319	306	289	271	259	247	220	209	218	220	220	208	201	181	181	185	227	237	228	207	214	198	201	232.7	270.5					
25 Spd	10	8	8	9	10	8	7	7	8	8	9	7	6	6	5	6	7	7	9	8	9	7	5	6	7.0	10.2					
Dir	215	203	185	175	169	159	156	160	163	160	160	150	151	112	145	146	165	185	189	213	184	191	186	179	173.1	215.1					
26 Spd	6	9	12	13	11	14	9	12	10	11	14	14	15	13	16	23	17	16	16	21	25	24	28	27	13.8	28.1					
Dir	163	152	156	152	162	157	163	168	192	187	160	150	148	151	169	189	163	191	218	223	226	225	215	210	185.7	215.3					
27 Spd	25	23	27	22	17	20	28	27	20	25	17	6	16	11	10	7	6	7	9	8	8	9	8	10	14.9	28.3					
Dir	213	211	207	196	172	183	204	205	204	214	224	196	192	184	208	178	204	196	196	200	207	199	213	180	201.4	204.1					
28 Spd	10	6	9	10	12	11	9	7	11	10	11	11	12	14	12	9	8	8	8	7	10	11	12	8	9.3	14.4					
Dir	167	157	169	192	160	157	170	184	196	189	164	150	151	133	163	181	178	175	188	195	197	201	204	195	174.6	133.3					
29 Spd	11	13	14	7	5	9	7	11	11	11	12	9	12	11	11	8	9	10	9	12	9	9	8	7	9.1	14.1					
Dir	180	191	168	169	188	181	189	178	169	152	158	166	160	154	154	167	190	202	213	219	220	219	187	162	179.3	168.3					
30 Spd	9	12	12	11	9	9	11	9	9	10	11	11	11	10	11	10	9	8	9	7	8	8	8	5	9.1	11.9					
Dir	167	171	175	174	209	170	167	206	183	170	196	166	161	153	151	193	168	172	209	173	183	200	205	180	178.1	174.5					
Spd	8.8	9.1	9.8	9.4	10.2	10.1	9.4	8.8	8.4	8.6	8.5	9.0	9.8	9.7	10.0	9.3	8.8	8.3	8.5	8.7	8.2	9.9	9.4	9.5	Diurnal Average						
Dir	217.9	210.7	210.5	207.9	208.1	208.0	207.5	208.1	210.2	204.1	199.1	202.2	202.9	199.2	202.9	205.4	200.8	206.5	213.5	214.7	218.5	222.5	219.7	214.6	Diurnal Maximum						
Spd	38.2	38.1	36.8	38.9	38.5	33.4	32.5	40.5	40.4	38.8	32.3	33.9	41.8	46.9	58.4	54.3	51.3	47.0	45.3	43.5	40.3	42.5	39.2	35.6							
Dir	223.9	226.9	232.0	234.7	234.3	232.5	226.9	222.6	221.3	218.5	208.0	204.1	211.2	210.5	222.5	224.0	222.7	223.0	222.6	224.8	226.4	225.3	221.7	220.5							
Maximum Speed Value: 58 km/h on Nov 21 15:00																								Minimum Speed Value: 1 km/h on Nov 19 14:00				Hours in Service: 720			
Maximum Daily Speed Average: 37.9 km/h on Nov 21																								Minimum Daily Speed Average: 0.4 km/h on Nov 2				Hours of Data: 720			
Maximum Diurnal Speed Average: 10.2 km/h at hour 5																								Minimum Diurnal Speed Average: 8.2 km/h at hour 21				Hours of Missing Data: 0			
Monthly Average Velocity: 9.13 km/h 208.95 deg																								Speed Percentiles: P ₁ = 1.8 P ₁₀ = 5.0 Q ₁ = 7.8 Median = 10.9 Q ₃ = 16.4 P ₉₀ = 24.7 P ₉₉ = 42.3				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	13		36		15		1		0		0		65																		
NorthEast	4		0		0		0		0		0		4																		
East	4		1		2		0		0		0		7																		
SouthEast	6		22		29		8		0		0		65																		
South	17		124		73		16		2		0		232																		
SouthWest	11		73		80		46		29		21		260																		
West	8		12		13		0		0		0		33																		
NorthWest	9		28		15		2		0		0		54																		
Total	72		296		227		73		31		21		720																		

Wind Rose

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



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Smoky Heights - November 2015

Maximum Speed: 59 km/h on Nov 21 15:00																				Maximum Daily Speed Average: 38.2 km/h on Nov 21										Hours in Service: 720																			
Minimum Speed: 2 km/h on Nov 23 08:00																				Minimum Daily Speed Average: 5.7 km/h on Nov 2										Hours of Data: 720																			
Maximum Diurnal Speed Average: 15.7 km/h at hour 15																				Minimum Diurnal Speed Average: 11.9 km/h at hour 9										Hours of Missing Data: 0																			
Monthly Average Speed: 13.46 km/h																				Percentiles: P ₁ = 2.6 P ₁₀ = 5.5 Q ₁ = 8.2 Median = 11.1 Q ₃ = 16.5 P ₉₀ = 25.1 P ₉₉ = 42.4										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-Nov	9	8	9	10	9	8	8	8	11	9	9	10	11	12	11	10	10	10	10	9	9	10	9	9	9.6	11.9																							
2-Nov	8	7	9	6	5	4	4	3	2	4	5	8	9	6	6	5	5	6	5	2	3	7	8	8	5.7	9.3																							
3-Nov	9	8	8	6	6	8	7	7	7	5	3	3	4	5	6	5	7	7	6	6	5	6	7	9	6.3	9.0																							
4-Nov	9	11	13	15	15	16	15	18	16	15	11	16	24	22	19	22	19	16	14	15	13	14	12	13	15.5	24.3																							
5-Nov	12	13	11	4	10	11	10	9	11	11	9	10	9	7	9	9	6	3	2	3	5	8	6	8	8.1	12.8																							
6-Nov	3	7	10	11	10	10	9	7	6	8	9	11	12	17	16	17	14	13	10	12	9	12	8	13	10.6	16.7																							
7-Nov	15	14	14	15	14	13	10	9	12	13	11	10	13	14	10	6	9	10	12	11	11	11	12	10	11.6	14.9																							
8-Nov	12	11	11	5	5	3	3	3	4	3	7	10	12	9	6	4	5	6	8	6	6	4	5	5	6.4	12.2																							
9-Nov	6	3	2	4	3	4	2	5	5	11	11	12	11	10	12	10	8	8	11	14	10	14	13	11	8.4	14.5																							
10-Nov	13	15	16	14	14	13	18	17	18	18	17	19	19	23	21	26	22	18	20	21	14	11	11	22	17.6	25.5																							
11-Nov	29	23	23	29	29	27	25	19	18	19	25	30	34	31	35	37	37	25	22	23	19	26	21	19	26.1	37.3																							
12-Nov	17	20	16	14	17	18	12	13	10	10	9	8	9	22	23	23	23	22	16	15	16	17	17	15	15.9	23.4																							
13-Nov	11	12	19	18	19	18	17	15	11	13	22	31	42	47	41	40	38	33	25	26	22	17	18	15	23.7	47.1																							
14-Nov	8	8	8	8	5	8	4	6	10	8	8	13	17	23	24	19	13	8	8	6	4	5	7	7	9.9	24.0																							
15-Nov	5	5	5	7	9	9	5	8	9	11	13	15	18	19	21	19	17	15	16	16	17	18	17	17	12.9	20.7																							
16-Nov	13	14	13	15	13	13	14	8	9	5	10	10	11	8	5	8	16	15	15	18	21	20	20	18	12.9	21.2																							
17-Nov	17	18	14	16	25	26	26	24	21	20	20	19	16	14	10	11	13	11	13	10	12	14	18	19	17.0	26.3																							
18-Nov	17	12	15	11	13	13	8	9	10	11	10	9	5	9	4	5	7	12	9	9	8	12	12	12	10.1	17.0																							
19-Nov	7	8	12	15	16	16	10	6	7	9	10	14	7	3	3	2	3	7	5	6	5	9	6	8	8.2	15.7																							
20-Nov	9	9	6	6	8	9	8	9	8	9	11	12	15	11	12	7	12	16	30	32	30	32	29	30	14.9	31.8																							
21-Nov	25	32	27	25	29	26	33	41	40	39	33	34	34	41	59	54	51	47	45	44	40	43	39	36	38.2	58.5																							
22-Nov	38	38	37	39	38	33	32	32	25	22	18	22	26	23	23	18	15	11	13	13	8	7	12	8	23.0	39.0																							
23-Nov	8	7	10	5	5	4	3	2	4	4	6	9	12	14	16	18	17	18	17	20	18	17	17	14	11.0	20.1																							
24-Nov	13	12	13	13	15	15	11	10	11	14	14	12	11	9	10	11	8	5	9	9	7	11	11	11	11.1	15.2																							
25-Nov	10	8	9	9	10	8	8	7	8	8	9	7	6	6	6	6	8	7	9	9	9	7	5	7	7.8	10.4																							
26-Nov	6	9	12	13	12	14	9	13	11	11	14	14	15	14	17	23	18	16	16	21	25	24	28	27	15.9	28.2																							
27-Nov	25	23	27	23	17	20	29	28	20	25	17	9	16	11	12	8	6	7	9	8	8	9	8	10	15.6	28.7																							
28-Nov	10	6	10	11	12	11	9	8	11	10	11	11	12	15	12	9	9	8	8	7	10	12	13	9	10.2	14.6																							
29-Nov	11	14	15	7	5	9	7	12	11	12	12	9	13	11	11	8	9	10	9	12	9	9	8	8	10.0	14.8																							
30-Nov	9	12	12	11	9	9	12	9	10	10	12	11	11	10	11	11	9	9	10	7	8	8	8	6	9.7	12.2																							
																									12.9	12.8	13.6	12.8	13.3	13.2	12.2	12.1	11.9	12.3	12.5	13.7	15.1	15.5	15.7	15.0	14.4	13.3	13.4	13.7	12.8	13.8	13.5	13.4	Diurnal Average
																									38.3	38.2	36.8	39.0	38.5	33.4	32.6	40.5	40.5	38.8	32.5	33.9	41.9	47.1	58.5	54.4	51.4	47.1	45.3	43.6	40.3	42.5	39.2	35.7	Diurnal Maximum
All monthly, daily, and diurnal averages have been calculated using scalar methods																																																	

Hourly Standard Deviations

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

Maximum Value: 87.2 deg on Nov 19 14:00																			Hours in Service: 720						
Minimum Value: 2.4 deg on Nov 22 05:00																			Hours of Data: 720						
																			Hours of Missing Data: 0						
Percentiles: P ₁ = 2.5 P ₁₀ = 3.7 Q ₁ = 5.5 Median = 8.8 Q ₃ = 14.9 P ₉₀ = 26.9 P ₉₉ = 72.3																			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-Nov	7	10	9	10	13	6	10	7	7	9	10	8	9	8	8	7	7	7	7	8	7	6	5	5	12.7
2-Nov	8	10	8	16	13	30	12	21	37	11	30	9	14	20	15	59	72	9	15	72	19	31	10	8	72.3
3-Nov	8	9	7	12	12	13	13	17	11	14	23	15	34	15	18	30	13	7	12	18	14	11	11	8	33.8
4-Nov	7	10	6	4	5	3	6	3	2	3	6	8	7	5	10	8	4	5	7	7	7	6	4	4	10.0
5-Nov	3	3	6	52	10	8	38	6	6	9	10	8	15	19	21	11	43	39	31	64	19	5	19	7	64.2
6-Nov	17	12	7	7	7	7	12	6	12	5	7	10	14	4	4	6	6	5	11	12	12	16	23	4	23.0
7-Nov	8	5	13	6	4	3	17	25	10	16	14	5	8	5	5	40	21	10	7	17	16	7	6	5	39.9
8-Nov	3	8	22	36	23	25	32	41	49	41	13	9	8	16	15	11	11	8	13	12	13	11	9	20	49.2
9-Nov	7	12	82	27	47	11	16	10	9	9	11	10	14	12	15	10	9	11	9	8	7	9	10	7	82.5
10-Nov	8	6	3	8	17	6	6	5	5	5	4	10	9	6	9	5	7	6	4	5	4	17	14	6	17.5
11-Nov	3	7	6	4	4	6	5	8	5	5	4	4	4	5	7	4	5	5	4	3	3	4	6	3	7.5
12-Nov	3	6	3	5	4	3	8	7	6	16	9	9	9	4	5	5	6	4	4	3	3	7	6	3	15.6
13-Nov	15	14	3	4	5	6	4	9	26	22	4	4	5	4	5	4	4	3	5	3	4	3	4	9	25.5
14-Nov	27	16	25	25	41	21	72	41	30	20	20	14	9	6	7	4	6	14	29	27	30	29	20	14	72.3
15-Nov	28	10	26	6	6	12	15	11	9	7	6	5	7	6	5	7	6	6	6	7	9	6	7	7	27.7
16-Nov	7	10	7	3	7	6	5	20	10	22	7	12	4	6	61	25	7	5	7	8	7	6	6	4	60.8
17-Nov	5	9	22	8	13	4	4	5	4	8	5	5	11	7	55	15	21	15	27	18	6	13	5	5	55.3
18-Nov	9	12	25	22	9	13	57	43	11	5	24	12	42	20	36	9	4	9	10	8	14	15	12	7	56.9
19-Nov	15	22	21	7	6	6	50	61	30	17	12	18	79	87	65	63	67	34	39	71	81	33	69	35	87.2
20-Nov	10	31	23	32	14	7	11	13	10	19	12	10	6	6	17	21	5	11	8	4	3	3	3	4	32.2
21-Nov	3	3	10	10	3	3	4	3	3	3	6	3	5	5	4	3	3	3	3	3	2	3	3	3	9.8
22-Nov	4	3	3	3	2	2	2	3	2	5	8	6	3	3	4	3	9	6	6	4	11	23	10	32	32.0
23-Nov	8	28	23	34	15	21	71	52	27	28	16	12	10	6	6	4	7	5	7	7	9	7	8	8	71.3
24-Nov	7	11	7	8	9	8	15	13	9	7	9	10	10	16	7	7	12	10	8	11	12	5	11	13	15.7
25-Nov	10	6	14	7	11	4	6	13	17	7	7	5	16	18	19	11	33	9	6	22	13	12	14	29	32.8
26-Nov	15	8	4	3	8	4	15	9	22	18	4	6	5	7	16	4	13	17	4	4	3	3	5	3	22.1
27-Nov	3	3	4	3	9	13	9	5	5	4	4	75	6	17	49	23	14	14	10	8	14	18	11	13	75.1
28-Nov	14	26	16	29	7	12	15	21	11	12	7	7	6	10	8	15	18	7	5	16	17	16	16	27	28.7
29-Nov	6	17	19	24	35	11	24	14	11	8	7	11	8	5	3	10	12	8	13	7	9	12	12	18	35.1
30-Nov	11	14	7	6	13	8	5	20	28	10	15	6	11	5	5	18	15	13	22	21	10	8	11	27	28.4
27.7 31.1 82.5 51.6 46.7 30.2 72.3 61.2 49.2 41.1 30.5 75.1 79.3 87.2 65.0 63.1 72.3 39.4 38.8 71.6 81.1 32.9 68.5 34.7																									

PAZA
Beaverlodge Station
Monthly Summary Tables, Graphs and
Roses

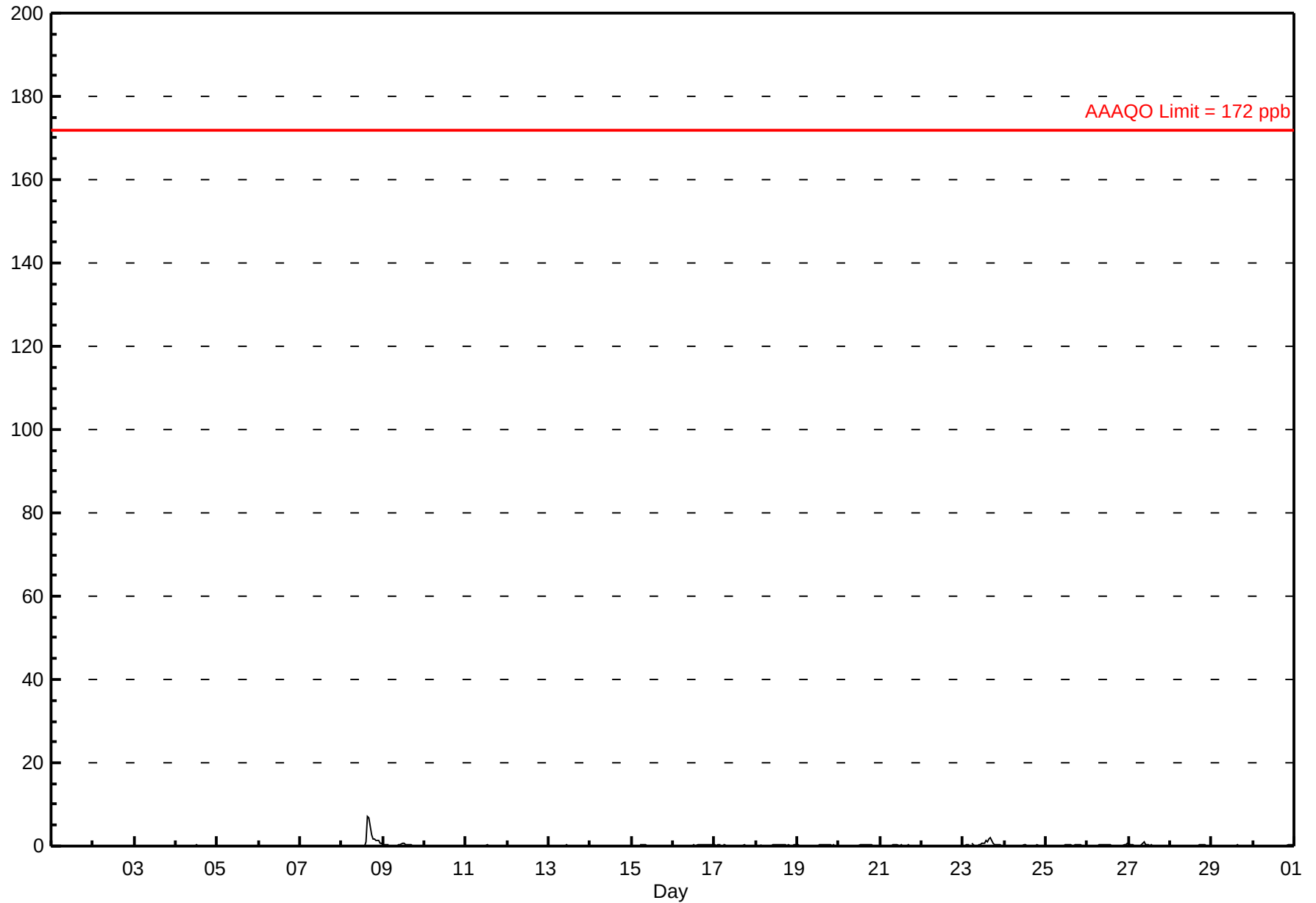
Hourly Averages

Sulphur Dioxide (SO₂) - ppb Beaverlodge - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0																				Hours in Service: 720						
Maximum Value: 7.0 ppb on Nov 8 16:00																				Maximum Daily Average: 1.1 ppb on Nov 8						
Minimum Value: 0 ppb on Nov 4 03:00																				Hours of Data: 687						
Maximum Diurnal Average: 0.4 ppb at hour 16																				Hours of Missing Data: 33						
Monthly Average: 0.16 ppb																				Hours of Calibration: 33						
Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.1 Q ₃ = 0.2 P ₉₀ = 0.2 P ₉₉ = 1.7																				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-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1
2-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
3-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
4-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
5-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
6-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1
7-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1
8-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	7	7	3	2	2	1	1	1	1	1.1	7.0
9-Nov	1	0	0	0	A	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0.3	0.5
10-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1
11-Nov	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
12-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0.1	0.1
13-Nov	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
14-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1
15-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
16-Nov	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
17-Nov	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
18-Nov	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
19-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2
20-Nov	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
21-Nov	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
22-Nov	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
23-Nov	0	0	0	0	A	1	0	0	0	0	0	1	1	2	1	2	2	1	0	0	0	0	0	0	0.5	2.1
24-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
25-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
26-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.2	0.7
27-Nov	1	0	0	0	A	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.8
28-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
29-Nov	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
30-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.5
0.1 0.1 0.1 0.1 -- 0.1 0.1 0.1 0.1 0.1 0.1 0.2 0.2 0.2 0.2 0.4 0.4 0.2 0.2 0.2 0.2 0.1 0.1																									Diurnal Average	
0.5 0.4 0.3 0.4 -- 0.5 0.3 0.3 0.6 0.8 0.4 0.7 0.6 1.5 1.0 7.0 6.7 2.6 1.7 1.7 1.4 1.3 0.8 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 - November 2015



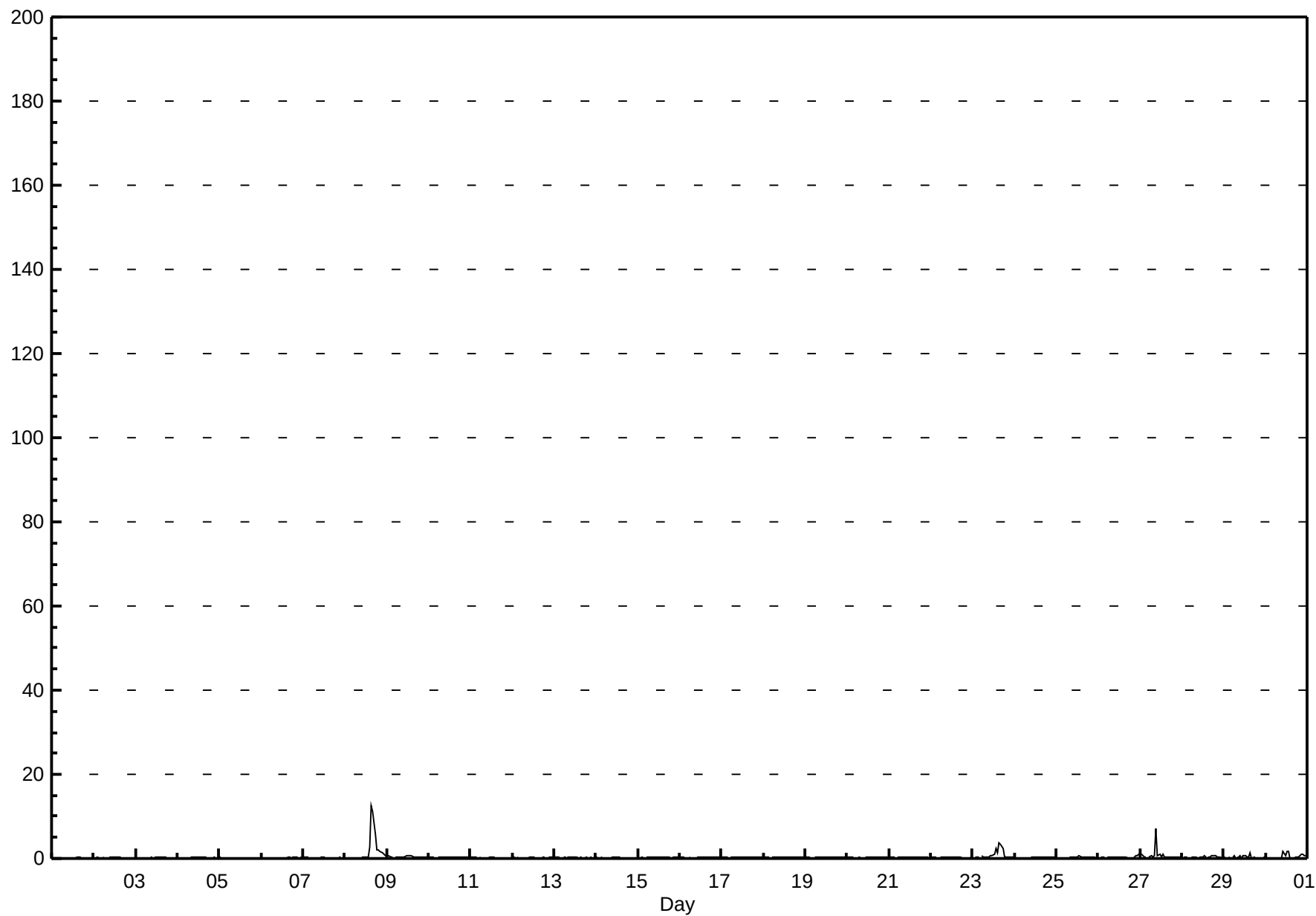
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb Beaverlodge - November 2015

Maximum Value: 12.6 ppb on Nov 8 16:00																				Maximum Daily Average: 1.9 ppb on Nov 8					Hours in Service: 720				
Minimum Value: 0 ppb on Nov 6 02:00																				Minimum Daily Average: 0.1 ppb on Nov 5					Hours of Data: 687				
Maximum Diurnal Average: 0.8 ppb at hour 16																				Minimum Diurnal Average: 0.2 ppb at hour 8					Hours of Missing Data: 33				
Monthly Average: 0.33 ppb																				Percentiles: P ₁ = 0.1 P ₁₀ = 0.1 Q ₁ = 0.2 Median = 0.2 Q ₃ = 0.3 P ₉₀ = 0.5 P ₉₉ = 2.6					Hours of Calibration: 33				
																				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-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2			
2-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2			
3-Nov	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			
4-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3			
5-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2			
6-Nov	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			
7-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2			
8-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	3	13	11	6	2	2	2	2	1	1	1.9	12.6			
9-Nov	1	1	0	0	A	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0.4	0.6			
10-Nov	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			
11-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3			
12-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0.2	0.3			
13-Nov	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			
14-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2			
15-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4			
16-Nov	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			
17-Nov	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			
18-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4			
19-Nov	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			
20-Nov	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			
21-Nov	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			
22-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5			
23-Nov	0	0	0	0	A	1	0	0	0	0	1	1	1	2	1	4	3	2	0	0	0	0	0	0	0.9	3.6			
24-Nov	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			
25-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.3	0.6			
26-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.3	0.9			
27-Nov	1	1	0	0	A	0	1	0	1	7	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0.7	7.0			
28-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0	0	0	0.3	0.6			
29-Nov	0	0	0	0	A	0	1	0	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0.3	1.3			
30-Nov	0	0	0	0	A	0	0	0	0	0	2	1	2	2	0	0	0	0	0	0	1	1	1	1	0.5	1.8			
0.2 0.2 0.2 0.2 -- 0.2 0.2 0.2 0.2 0.4 0.3 0.3 0.3 0.4 0.4 0.8 0.7 0.5 0.3 0.3 0.3 0.3 0.3 0.3																									Diurnal Average				
1.0 0.9 0.4 0.5 -- 0.6 0.7 0.5 0.7 7.0 1.6 1.1 1.6 2.3 2.8 12.6 11.1 5.6 2.0 2.2 1.8 1.5 1.0 0.9																									Diurnal Maximum				
C - Calibration A - Automated Daily Zero Span																													

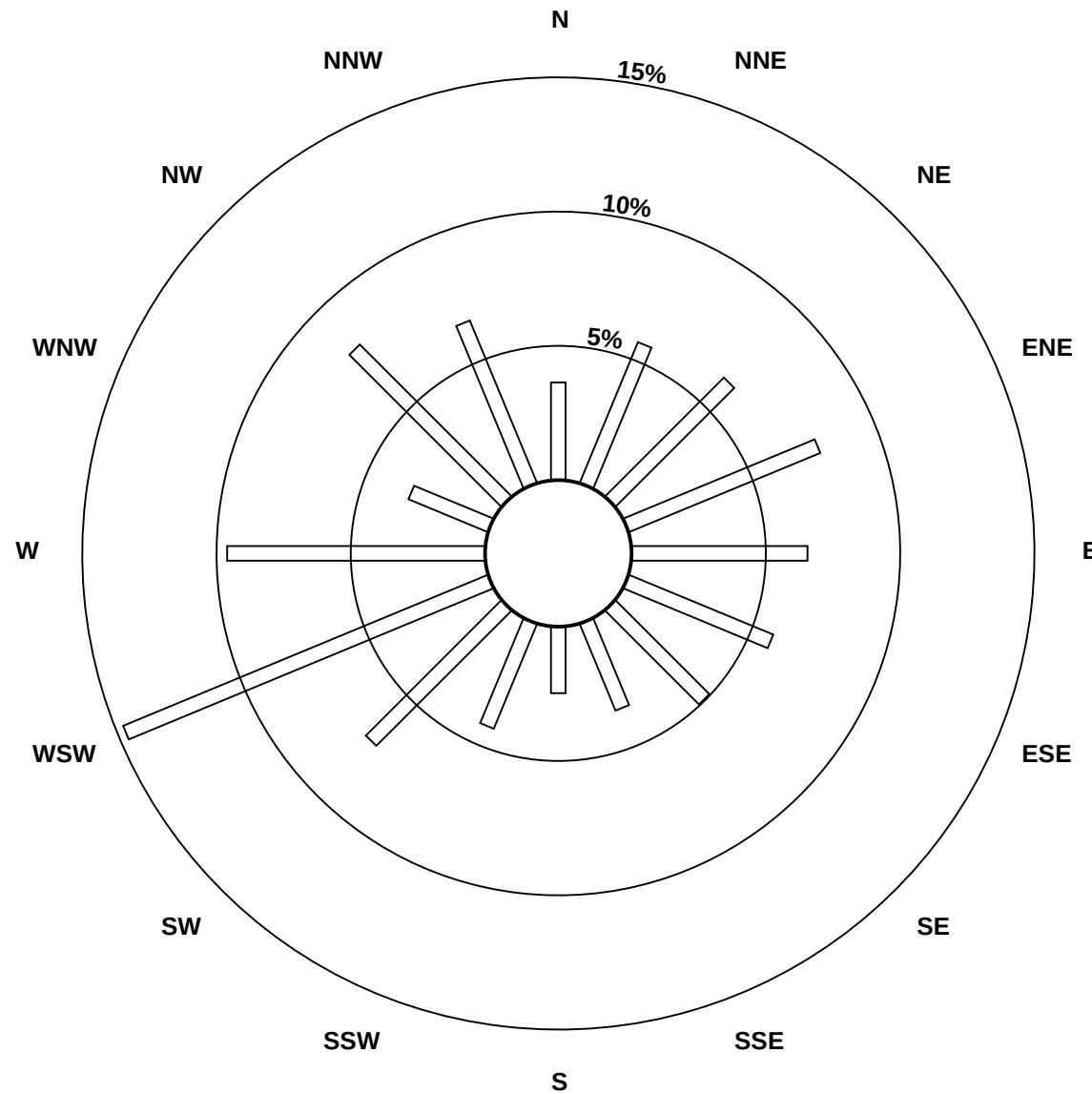
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Beaverlodge - November 2015

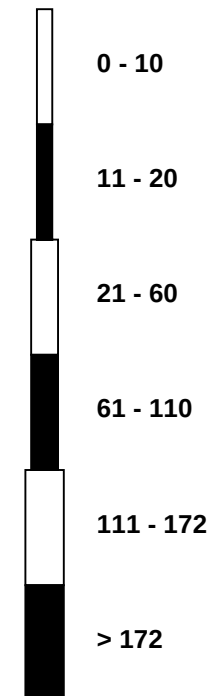


Pollutant Rose

Sulphur Dioxide (SO₂) - ppb
Beaverlodge - November 2015

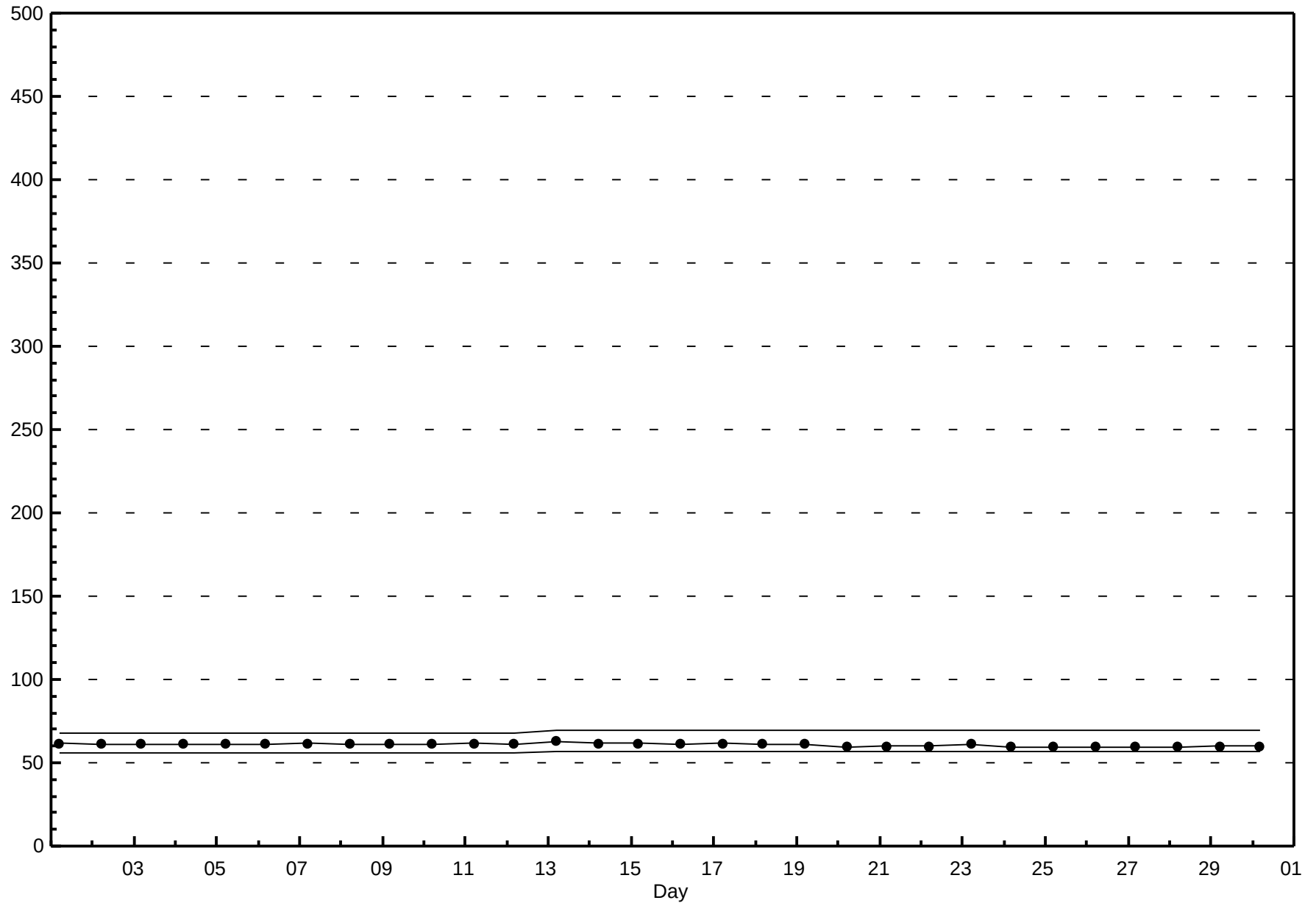


Pollutant Classes (ppb)



Span Responses

Sulphur Dioxide (SO₂)
Beaverlodge - November 2015



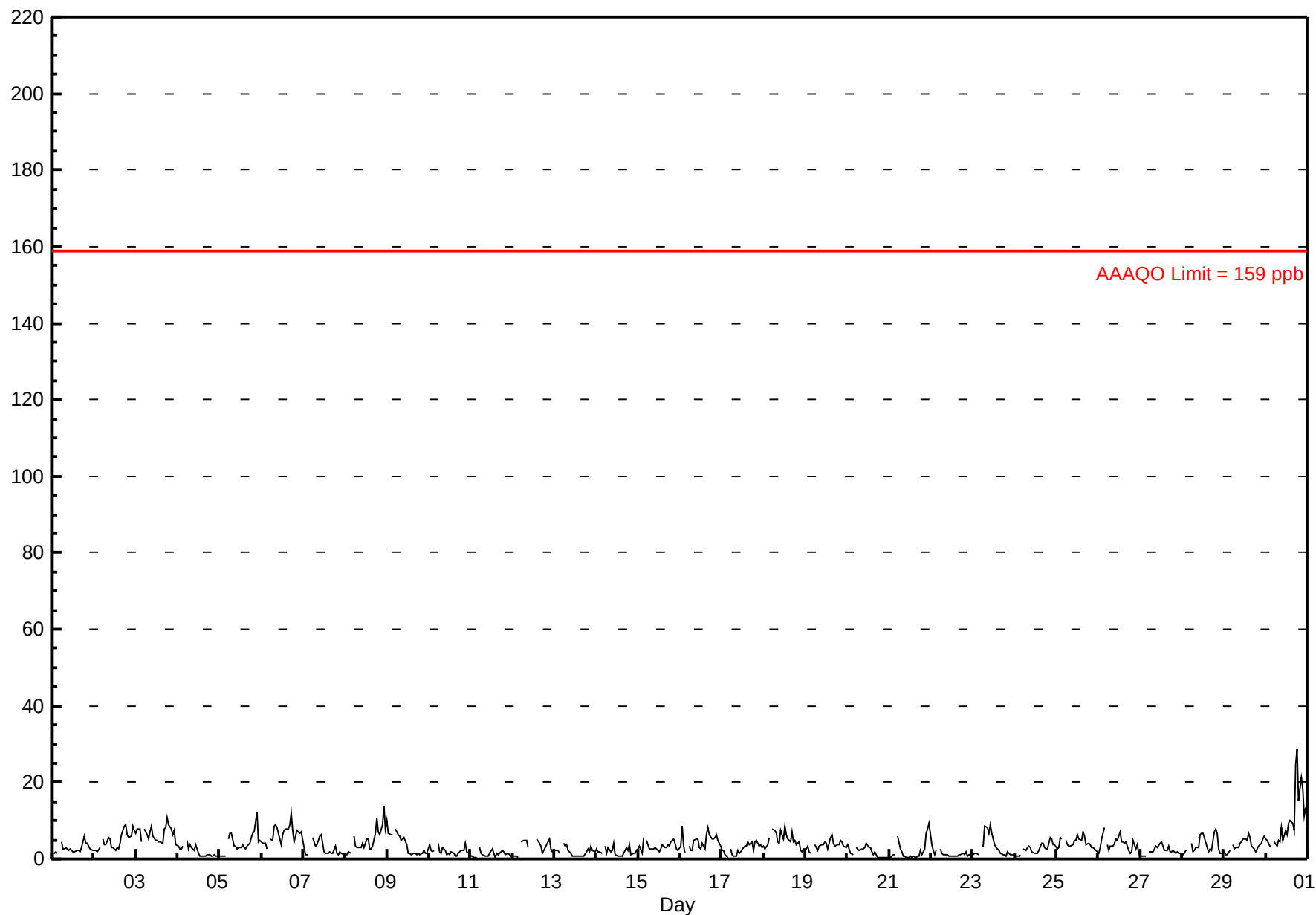
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb Beaverlodge - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 28.6 ppb on Nov 30 19:00 Maximum Daily Average: 10.0 ppb on Nov 30																					Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0					
Minimum Value: 0 ppb on Nov 20 23:00 Maximum Diurnal Average: 4.6 ppb at hour 19 Monthly Average: 3.52 ppb										Minimum Daily Average: 1.3 ppb on Nov 11 Minimum Diurnal Average: 2.3 ppb at hour 3 Percentiles: P ₁ = 0.4 P ₁₀ = 0.9 Q ₁ = 1.6 Median = 2.9 Q ₃ = 4.7 P ₉₀ = 6.8 P ₉₉ = 13.5																
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	1	1	2	2	A	4	3	3	3	2	3	2	2	2	2	2	2	3	6	4	4	3	3	2	2.7	5.8
2-Nov	2	2	2	3	A	5	4	4	5	5	3	3	2	3	3	4	6	8	9	6	6	6	9	7	4.7	8.8
3-Nov	7	8	8	4	A	8	7	5	7	9	6	5	5	4	4	4	8	8	11	9	8	6	7	4	6.6	10.7
4-Nov	3	3	3	3	A	5	3	4	3	2	4	3	1	1	1	1	1	1	1	1	1	1	1	1	2.0	5.0
5-Nov	1	1	1	1	A	5	7	7	3	3	3	3	3	4	3	3	3	4	6	7	7	12	5	5	4.1	12.4
6-Nov	4	4	4	3	A	5	5	9	9	8	7	4	6	8	8	8	9	12	7	5	8	7	7	7	6.6	11.8
7-Nov	3	1	1	1	A	6	5	3	4	6	6	4	2	1	2	2	1	1	3	2	1	2	1	1	2.6	6.2
8-Nov	1	1	2	2	A	6	3	3	3	3	4	3	5	5	2	2	3	7	11	7	6	9	14	8	4.8	13.8
9-Nov	10	7	6	6	A	8	6	6	5	5	6	4	2	2	1	2	2	1	1	1	1	2	2	1	3.8	9.9
10-Nov	4	2	2	2	A	4	2	2	3	2	1	2	1	2	1	1	1	1	2	2	2	4	2	1	2.1	4.0
11-Nov	1	1	0	0	A	3	1	1	1	1	1	2	2	1	1	2	1	2	2	2	1	2	1	1	1.3	3.1
12-Nov	1	1	1	0	A	4	5	5	5	3	C	C	C	C	5	4	3	1	2	3	4	5	3	2	3.0	5.3
13-Nov	2	2	2	1	A	4	3	4	2	1	1	1	1	1	1	1	1	1	2	3	2	3	2	2	1.8	4.1
14-Nov	3	2	2	1	A	3	2	3	2	2	4	1	1	1	1	1	2	3	2	4	1	2	2	2	1.9	4.2
15-Nov	2	3	1	6	A	5	3	2	2	3	3	2	2	3	4	3	3	4	3	4	5	4	3	2	3.2	5.6
16-Nov	3	9	3	1	A	4	2	2	5	5	5	3	3	4	3	6	8	6	5	5	5	6	5	3	4.5	8.7
17-Nov	2	2	1	1	A	3	1	1	1	2	1	2	3	3	3	4	4	4	2	5	5	3	4	3	2.7	4.9
18-Nov	3	3	4	6	A	8	7	7	4	4	7	5	9	6	5	5	7	4	5	4	4	2	2	3	5.0	8.8
19-Nov	3	3	2	2	A	4	3	2	3	4	4	5	4	3	6	6	4	3	4	4	5	5	3	3	3.6	6.4
20-Nov	4	3	1	1	A	3	3	2	3	3	3	4	3	3	2	1	2	0	0	0	0	0	0	0	1.8	4.0
21-Nov	0	0	1	1	A	6	3	2	1	1	1	1	1	1	1	0	1	1	2	1	3	7	8	10	2.2	9.5
22-Nov	4	2	1	2	A	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1.3	3.9
23-Nov	1	1	1	1	A	3	3	9	8	7	9	7	4	3	3	2	2	1	1	1	2	1	1	1	3.1	9.0
24-Nov	1	1	1	1	A	3	2	3	3	3	2	2	1	2	2	4	4	3	3	3	5	5	4	4	2.7	5.4
25-Nov	3	3	5	5	A	5	4	3	3	4	5	5	6	5	5	7	6	4	4	4	3	3	3	2	4.2	7.1
26-Nov	1	3	5	8	A	4	2	3	3	4	5	5	7	4	4	4	5	2	1	2	5	3	4	1	3.8	8.2
27-Nov	1	1	1	1	A	2	2	2	3	3	3	4	4	3	2	2	3	2	2	2	1	2	1	1	2.2	4.4
28-Nov	1	2	2	2	A	4	2	2	3	3	6	7	7	6	3	2	3	2	7	8	7	3	2	1	3.7	7.9
29-Nov	2	1	1	2	A	4	3	3	3	4	5	5	5	5	7	6	3	2	2	3	3	4	5	6	3.6	6.7
30-Nov	5	5	3	3	A	4	3	5	5	8	5	7	6	9	10	9	8	25	29	15	21	18	11	14	10.0	28.6
2.7 2.6 2.3 2.5 -- 4.5 3.3 3.5 3.6 3.7 3.8 3.4 3.4 3.3 3.2 3.3 3.5 4.0 4.6 3.9 4.3 4.4 3.8 3.3																								Diurnal Average		
9.9 8.7 7.9 8.2 -- 8.0 7.3 8.6 8.9 8.5 9.0 7.3 8.8 9.3 10.2 9.4 9.0 24.5 28.6 15.5 21.4 18.4 13.8 13.6																								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 - November 2015



Hourly Maximums

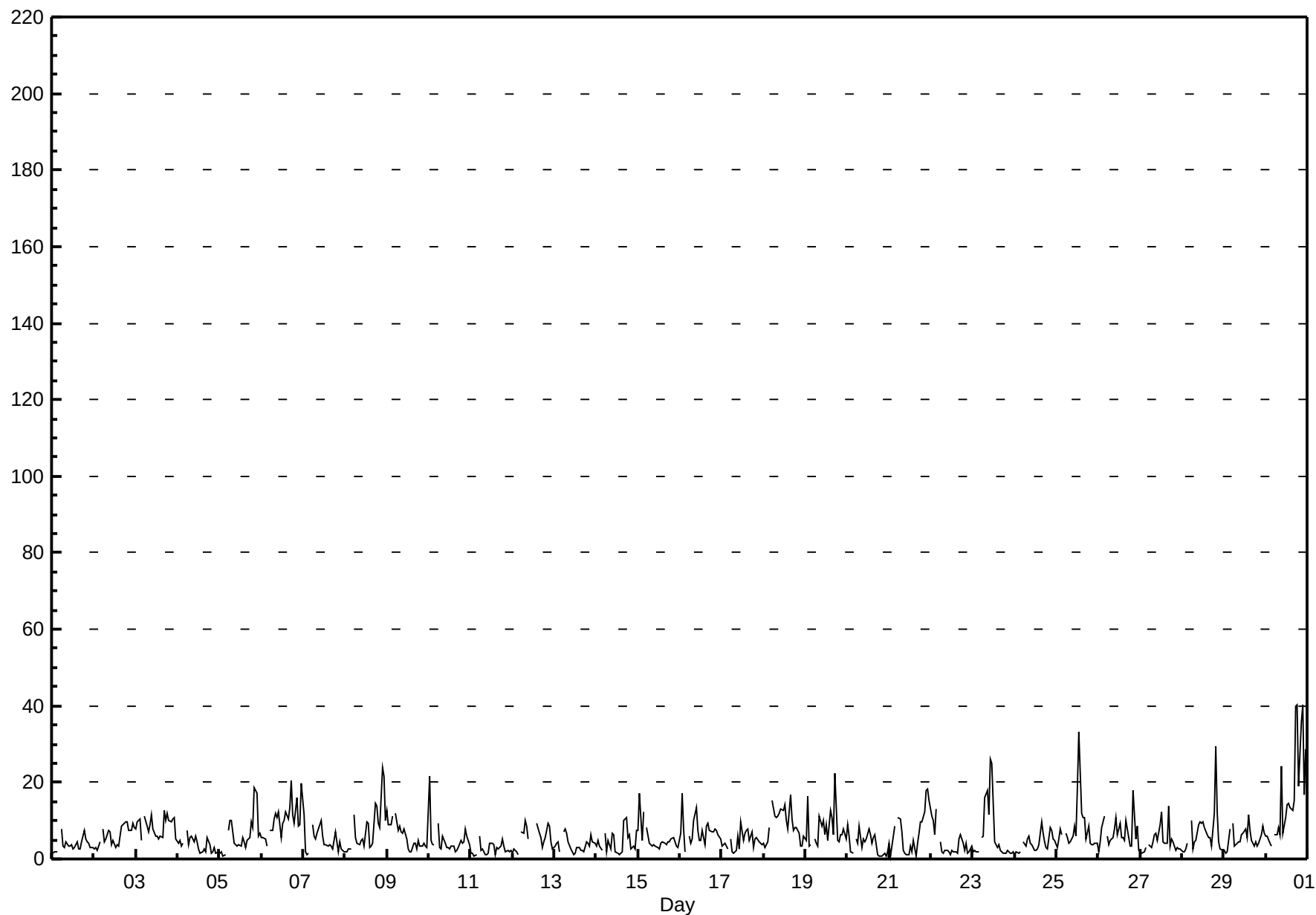
Nitrogen Dioxide (NO₂) - ppb

Beaverlodge - November 2015

Maximum Value: 40.4 ppb on Nov 30 19:00																				Maximum Daily Average: 16.5 ppb on Nov 30					Hours in Service: 720	
Minimum Value: 1 ppb on Nov 20 23:00																				Minimum Daily Average: 2.5 ppb on Nov 11					Hours of Data: 686	
Maximum Diurnal Average: 7.7 ppb at hour 22																				Minimum Diurnal Average: 3.9 ppb at hour 3					Hours of Missing Data: 34	
Monthly Average: 6.18 ppb																				Percentiles: P ₁ = 0.9 P ₁₀ = 1.9 Q ₁ = 3.1 Median = 4.7 Q ₃ = 7.9 P ₉₀ = 11.3 P ₉₉ = 28.4					Hours of Calibration: 34	
																									Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	2	2	2	2	A	8	3	3	4	3	3	4	3	3	4	3	2	5	8	5	4	4	3	3	3.6	7.8
2-Nov	3	3	2	4	A	8	4	5	8	7	4	5	3	4	3	6	8	9	10	10	7	8	9	8	6.0	9.8
3-Nov	8	10	10	5	A	11	9	7	9	12	8	6	6	5	6	6	13	10	12	10	10	10	11	5	8.6	12.8
4-Nov	4	5	3	4	A	8	4	6	6	4	6	5	3	1	2	2	2	6	4	2	2	3	1	2	3.6	7.6
5-Nov	2	2	1	1	A	7	10	10	4	4	4	4	4	6	5	3	5	6	10	8	19	17	6	7	6.2	18.7
6-Nov	6	5	5	4	A	7	8	10	12	11	12	5	9	10	12	10	13	20	12	9	16	9	9	20	10.2	20.3
7-Nov	12	2	1	2	A	9	6	5	7	9	10	6	4	4	3	4	3	3	7	4	2	5	3	2	4.8	11.6
8-Nov	2	2	3	3	A	12	5	4	4	5	5	3	10	9	3	3	4	14	14	9	8	24	21	10	7.7	23.9
9-Nov	13	9	9	11	A	12	8	9	7	7	8	5	3	2	2	4	4	3	5	3	3	4	3	3	5.9	12.6
10-Nov	22	5	4	4	A	9	3	3	6	4	3	3	3	3	3	2	2	3	5	4	5	8	6	4	4.9	21.7
11-Nov	2	2	1	1	A	6	2	3	1	1	1	4	4	4	1	3	3	3	5	4	2	2	2	2	2.5	6.1
12-Nov	1	2	2	1	A	7	7	10	9	5	C	C	C	C	9	7	6	3	4	6	9	9	4	3	5.5	10.2
13-Nov	3	4	5	2	A	7	8	7	4	2	2	1	1	3	3	2	2	2	5	4	3	6	5	4	3.8	7.9
14-Nov	3	5	3	2	A	7	2	5	3	7	7	2	1	1	2	2	10	11	6	6	2	3	2	7	4.3	10.9
15-Nov	8	17	5	12	A	8	4	4	3	4	4	3	2	4	5	4	4	5	4	5	6	5	3	3	5.2	17.3
16-Nov	7	17	8	2	A	6	4	5	10	13	7	5	5	8	4	9	9	8	7	7	8	8	6	5	7.3	17.3
17-Nov	3	4	4	3	A	5	2	1	2	6	3	10	5	7	7	8	5	7	3	5	6	4	4	4	4.7	9.8
18-Nov	4	3	4	8	A	15	11	11	11	12	13	13	14	10	8	17	10	7	8	8	7	3	3	6	9.1	16.9
19-Nov	5	16	3	4	A	5	4	3	11	9	10	6	9	5	13	11	6	22	5	4	6	6	8	5	7.8	22.4
20-Nov	9	6	2	1	A	5	4	9	3	5	4	5	8	6	4	6	6	1	1	1	1	1	1	2	4.0	8.9
21-Nov	4	1	6	9	A	11	10	7	2	1	1	1	3	2	5	1	4	7	10	10	12	18	18	15	6.9	18.2
22-Nov	11	10	6	13	A	4	2	1	2	2	2	1	2	2	2	2	5	6	4	2	4	2	2	3	4.0	12.9
23-Nov	2	2	2	2	A	5	6	16	18	12	26	25	4	4	3	4	2	2	2	2	2	1	2	2	6.3	26.3
24-Nov	1	2	2	2	A	4	3	5	6	4	4	2	2	3	4	10	7	4	3	3	8	8	5	5	4.2	9.6
25-Nov	3	5	8	6	A	7	6	4	4	6	8	6	19	33	12	11	11	5	8	4	4	4	4	4	7.9	33.2
26-Nov	2	4	8	11	A	6	4	5	5	8	11	6	9	6	6	5	10	5	4	3	18	5	8	2	6.6	17.8
27-Nov	2	1	2	3	A	4	3	4	6	7	5	9	12	4	4	4	14	3	5	4	2	3	3	3	4.7	13.6
28-Nov	2	2	3	4	A	10	3	4	5	9	10	9	10	8	6	6	6	3	12	29	12	4	2	2	7.0	29.5
29-Nov	2	2	2	8	A	9	3	4	5	4	6	7	8	6	12	7	5	3	5	3	4	6	8	7	5.5	11.6
30-Nov	6	6	4	3	A	6	7	8	6	24	7	11	14	15	13	13	15	40	40	19	36	40	17	29	16.5	40.4
5.1 5.2 3.9 4.5 -- 7.6 5.2 6.0 6.1 6.9 6.7 5.9 6.2 6.1 5.5 5.7 6.6 7.6 7.5 6.5 7.6 7.7 6.0 5.9																									Diurnal Average	
21.7 17.3 10.4 12.9 -- 15.2 11.3 16.1 17.8 24.2 26.3 24.9 18.7 33.2 13.3 16.9 15.4 39.8 40.4 29.5 35.7 40.3 21.5 28.7																									Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span																										

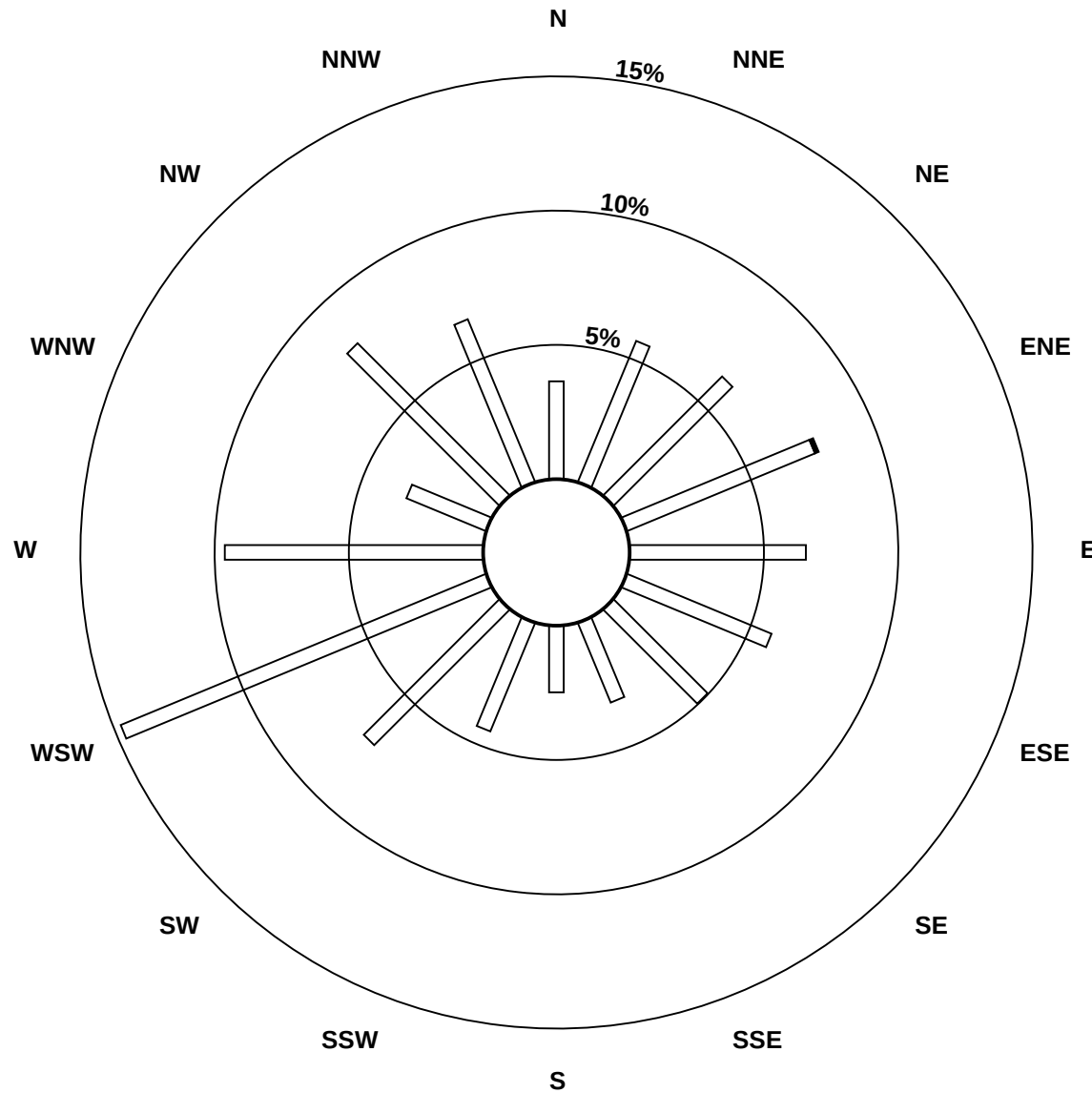
Hourly Maximums

Nitrogen Dioxide (NO₂) - ppb
Beaverlodge - November 2015

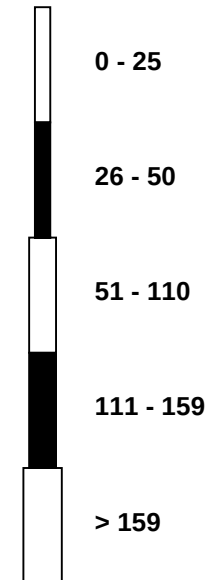


Pollutant Rose

Nitrogen Dioxide (NO₂) - ppb
Beaverlodge - November 2015

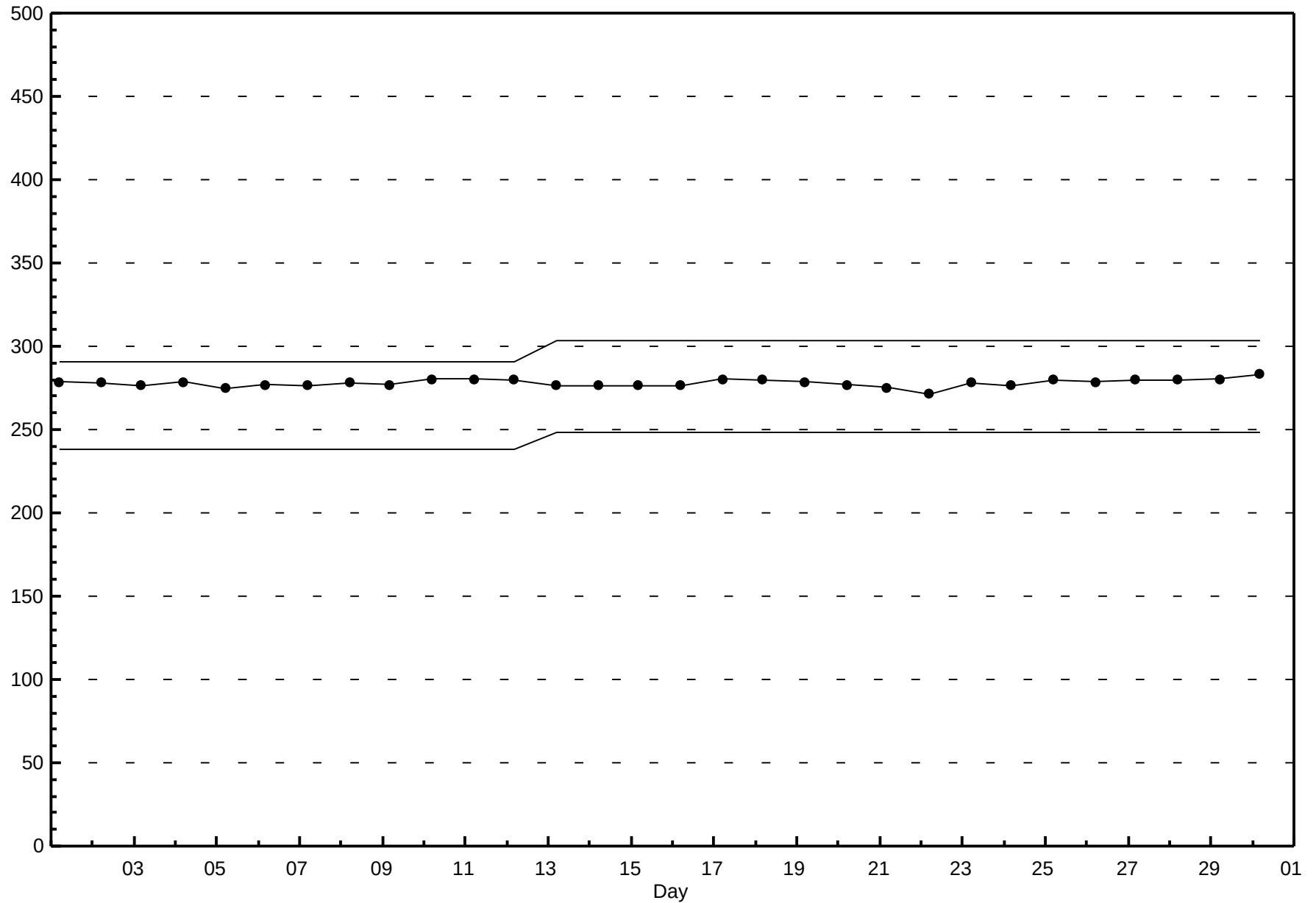


Pollutant Classes (ppb)



Span Responses

Nitrogen Dioxide (NO₂)
Beaverlodge - November 2015



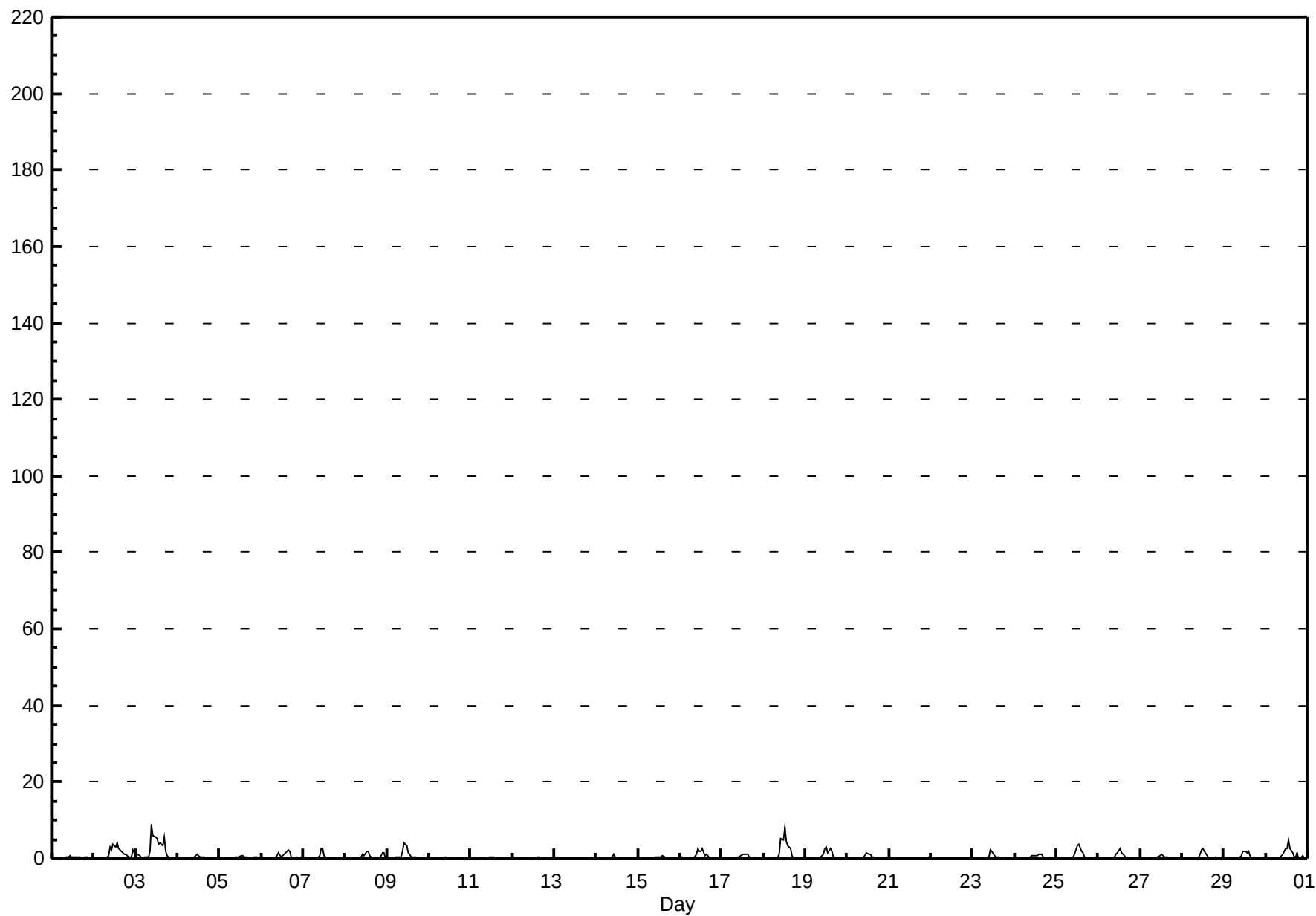
Hourly Averages

Nitrogen Oxide (NO) - ppb Beaverlodge - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 8.9 ppb on Nov 3 10:00 Maximum Daily Average: 2.3 ppb on Nov 3																				Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0							
Minimum Value: 0 ppb on Nov 12 23:00 Maximum Diurnal Average: 1.6 ppb at hour 13 Monthly Average: 0.45 ppb										Minimum Daily Average: 0.0 ppb on Nov 22 Minimum Diurnal Average: 0.0 ppb at hour 4 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.3 P ₉₀ = 1.4 P ₉₉ = 5.3																	
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-Nov	0	0	0	0	A	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6	
2-Nov	0	0	0	0	A	0	0	0	0	1	3	2	4	3	4	3	2	2	1	1	1	0	0	2	2	1.4	3.9
3-Nov	1	1	1	0	A	0	0	0	0	2	9	6	6	5	4	4	3	6	2	1	0	0	0	0	2	2.3	8.9
4-Nov	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	1.1	
5-Nov	0	0	0	0	A	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0.2	0.6	
6-Nov	0	0	0	0	A	0	0	0	0	0	1	1	1	1	1	2	2	2	0	0	0	0	0	0	0.5	2.3	
7-Nov	0	0	0	0	A	0	0	0	0	0	1	3	3	1	0	0	0	0	0	0	0	0	0	0	0.4	2.7	
8-Nov	0	0	0	0	A	0	0	0	0	0	0	1	1	2	2	1	0	0	0	0	0	0	1	1	0.4	1.9	
9-Nov	0	0	0	0	A	0	0	0	0	0	2	4	3	1	1	0	0	0	0	0	0	0	0	0	0.6	4.2	
10-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
11-Nov	0	0	0	0	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.1	0.5	
12-Nov	0	0	0	0	A	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
13-Nov	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	
14-Nov	0	0	0	0	A	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1.0	
15-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.1	0.6	
16-Nov	0	0	0	0	A	0	0	0	0	0	1	3	2	2	3	1	1	1	0	0	0	0	0	0	0.6	2.7	
17-Nov	0	0	0	0	A	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0.3	1.1	
18-Nov	0	0	0	0	A	0	0	0	0	0	1	5	5	8	5	3	3	1	0	0	0	0	0	0	1.4	8.1	
19-Nov	0	0	0	0	A	0	0	0	0	0	1	1	2	3	1	3	2	0	0	0	0	0	0	0	0.6	2.9	
20-Nov	0	0	0	0	A	0	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0.3	1.5	
21-Nov	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	
22-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	
23-Nov	0	0	0	0	A	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0.3	2.3	
24-Nov	0	0	0	0	A	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0.3	1.0	
25-Nov	0	0	0	0	A	0	0	0	0	0	0	1	2	3	4	2	1	0	0	0	0	0	0	0	0.6	3.8	
26-Nov	0	0	0	0	A	0	0	0	0	0	0	1	2	3	1	1	1	0	0	0	0	0	0	0	0.4	2.8	
27-Nov	0	0	0	0	A	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0.2	1.2	
28-Nov	0	0	0	0	A	0	0	0	0	0	0	1	2	3	2	1	0	0	0	0	0	0	0	0	0.4	2.5	
29-Nov	0	0	0	0	A	0	0	0	0	0	0	1	2	2	2	2	1	0	0	0	0	0	0	0	0.4	2.0	
30-Nov	0	0	0	0	A	0	0	0	0	0	1	1	3	2	5	3	1	0	0	1	0	0	1	0	0.8	4.7	
0.1 0.1 0.0 0.0 -- 0.1 0.1 0.1 0.2 0.8 1.4 1.5 1.6 1.4 1.0 0.8 0.5 0.2 0.2 0.1 0.1 0.1 0.2 0.1																									Diurnal Average		
1.4 1.2 0.8 0.1 -- 0.4 0.3 0.3 1.9 8.9 6.0 5.5 8.1 4.7 4.1 3.5 5.7 1.7 1.3 0.6 0.4 1.4 2.1 1.6																									Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span																											

Hourly Averages

Nitrogen Oxide (NO) - ppb
Beaverlodge - November 2015



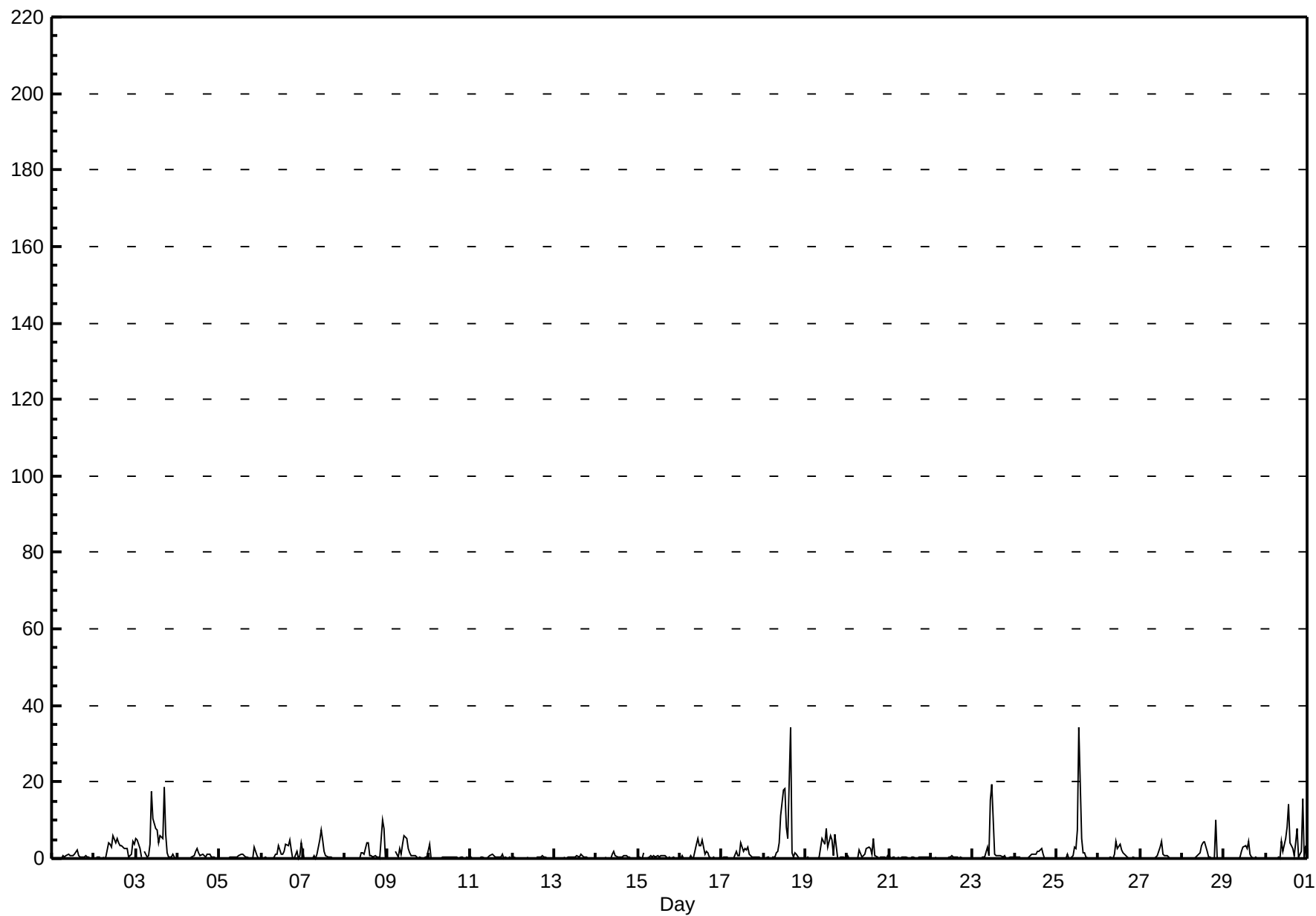
Hourly Maximums

Nitrogen Oxide (NO) - ppb Beaverlodge - November 2015

Maximum Value: 34.4 ppb on Nov 25 14:00																				Maximum Daily Average: 4.7 ppb on Nov 18					Hours in Service: 720	
Minimum Value: 0 ppb on Nov 19 04:00																				Minimum Daily Average: 0.2 ppb on Nov 22					Hours of Data: 686	
Maximum Diurnal Average: 3.7 ppb at hour 14																				Minimum Diurnal Average: 0.2 ppb at hour 4					Hours of Missing Data: 34	
Monthly Average: 1.29 ppb																				Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.1 Median = 0.3 Q ₃ = 1.0 P ₉₀ = 3.7 P ₉₉ = 17.3					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-Nov	0	0	0	0	A	0	1	0	1	1	1	1	1	1	2	1	0	0	1	1	0	0	0	0	0.6	2.1
2-Nov	0	0	0	0	A	0	0	0	4	4	3	6	4	5	4	3	3	2	3	3	1	1	5	4	2.4	5.8
3-Nov	5	5	2	0	A	2	0	1	4	17	10	8	7	4	6	5	19	6	1	1	0	1	0	0	4.6	18.8
4-Nov	0	0	0	0	A	0	0	0	0	1	2	3	2	1	1	1	0	1	1	0	0	0	0	0	0.6	2.6
5-Nov	0	0	0	0	A	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	3	1	0	0	0.5	2.9
6-Nov	0	0	0	0	A	0	0	0	1	1	3	1	1	2	4	3	5	2	0	0	2	0	1	4	1.4	4.8
7-Nov	0	0	0	0	A	0	1	0	1	5	7	5	2	1	0	0	0	0	0	0	0	0	0	0	1.1	7.3
8-Nov	0	0	0	0	A	0	0	0	0	1	2	1	4	4	1	1	0	1	0	0	0	10	8	0	1.5	10.2
9-Nov	0	0	0	0	A	2	1	2	1	4	6	5	3	1	1	1	1	0	0	0	0	0	0	0	1.3	6.1
10-Nov	4	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	3.7
11-Nov	0	0	0	0	A	0	0	1	0	0	0	1	1	1	0	0	0	0	1	0	1	0	0	0	0.4	1.1
12-Nov	0	0	0	0	A	0	0	0	0	0	C	C	C	C	1	1	1	1	0	0	0	0	0	0	0.3	0.8
13-Nov	0	0	0	0	A	0	0	0	0	0	1	0	0	1	0	1	1	0	0	0	0	0	0	0	0.3	0.9
14-Nov	0	0	0	0	A	0	0	0	0	1	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0.4	1.9
15-Nov	0	0	0	1	A	0	0	1	0	1	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0.4	1.4
16-Nov	0	1	0	0	A	0	1	0	1	4	5	3	3	5	1	2	1	0	0	0	0	0	0	0	1.2	5.0
17-Nov	0	0	0	0	A	0	0	0	2	1	1	4	2	3	2	3	1	0	0	0	0	0	0	0	1.0	4.3
18-Nov	0	0	0	0	A	0	0	2	2	4	11	18	18	8	5	34	1	0	1	1	0	0	0	0	4.7	34.2
19-Nov	0	0	0	0	A	0	0	0	0	5	4	4	8	3	6	5	1	6	0	0	0	0	0	0	1.9	7.7
20-Nov	1	0	0	0	A	0	0	2	0	1	1	2	3	2	1	5	1	0	0	0	0	0	0	1	1.0	5.4
21-Nov	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0.3	1.0
22-Nov	0	0	0	0	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6
23-Nov	0	0	0	0	A	0	0	0	3	1	15	20	1	1	1	1	1	1	1	0	0	0	0	0	2.0	19.5
24-Nov	0	0	0	0	A	0	0	0	0	1	1	1	1	2	2	2	1	0	0	0	0	0	0	0	0.6	2.4
25-Nov	0	0	0	0	A	0	1	0	0	1	3	3	8	34	5	2	1	0	0	0	0	0	0	0	2.6	34.4
26-Nov	0	0	0	0	A	0	0	0	0	1	4	2	4	2	2	1	1	0	0	0	0	0	0	0	0.9	4.5
27-Nov	0	0	0	0	A	0	0	0	0	0	1	3	5	1	1	1	0	0	0	0	0	0	0	0	0.6	4.5
28-Nov	0	0	0	0	A	0	0	0	0	1	2	3	4	5	2	0	0	0	0	10	0	0	0	0	1.3	10.0
29-Nov	0	0	0	0	A	0	0	0	0	0	2	3	3	2	4	1	0	0	0	0	0	0	0	0	0.8	4.4
30-Nov	0	0	0	0	A	0	0	0	0	4	2	5	8	14	4	3	1	4	8	0	2	16	0	3	3.3	15.7
0.5 0.3 0.2 0.2 -- 0.3 0.3 0.4 0.8 2.1 3.2 3.6 3.3 3.7 2.0 2.6 1.5 1.0 0.7 0.7 0.4 1.1 0.6 0.5																									Diurnal Average	
5.4 5.0 2.4 1.4 -- 1.9 1.0 2.5 4.0 17.5 15.4 19.5 18.2 34.4 6.1 34.2 18.8 6.2 7.9 10.0 2.9 15.7 7.8 4.1																									Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span																										

Hourly Maximums

Nitrogen Oxide (NO) - ppb
Beaverlodge - November 2015



Hourly Averages

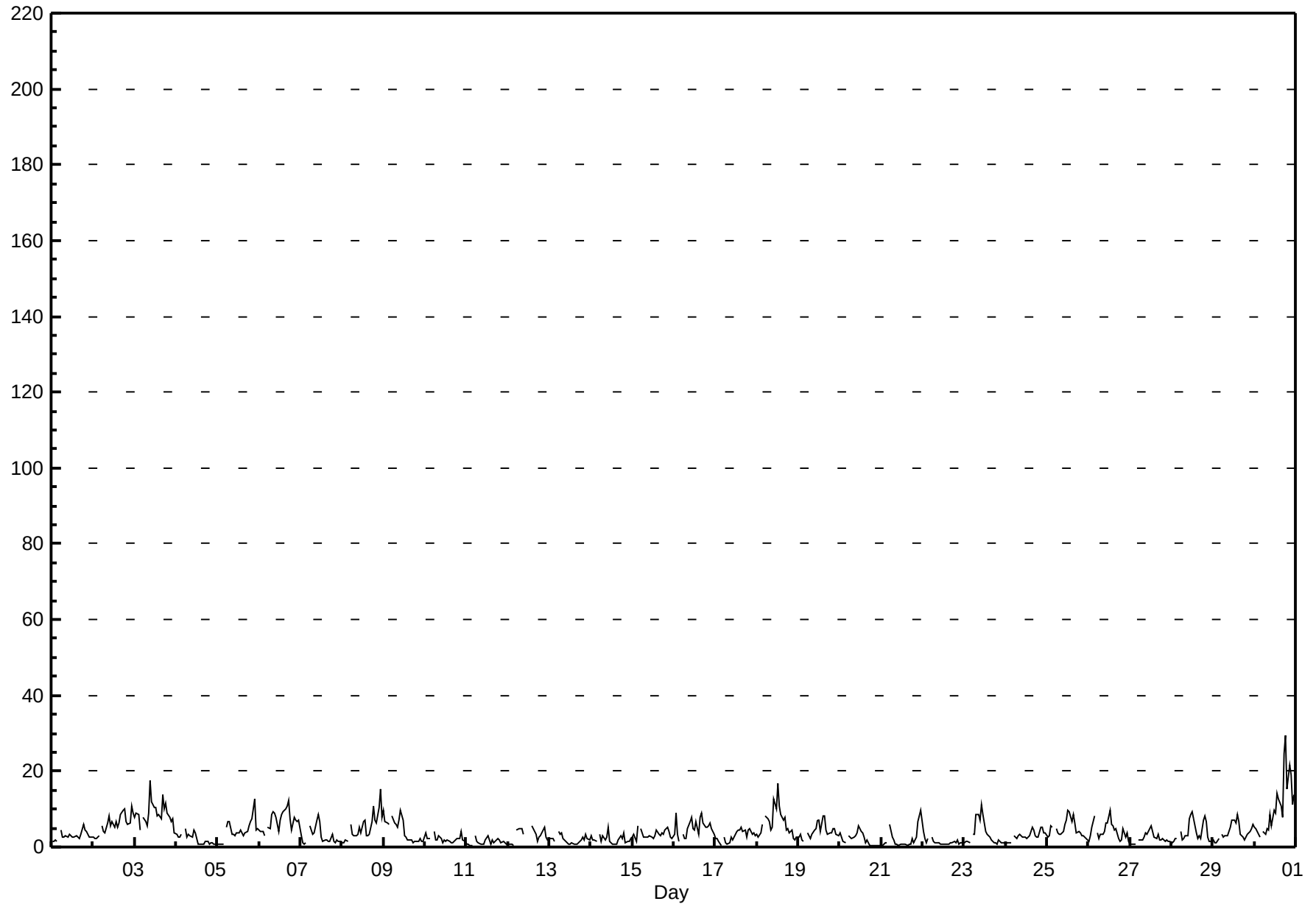
Oxides of Nitrogen (NO_x) - ppb

Beaverlodge - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 29.6 ppb on Nov 30 19:00 Maximum Daily Average: 10.7 ppb on Nov 30																					Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0					
Minimum Value: 0 ppb on Nov 21 02:00 Maximum Diurnal Average: 5.2 ppb at hour 11 Monthly Average: 3.96 ppb										Minimum Daily Average: 1.4 ppb on Nov 11 Minimum Diurnal Average: 2.4 ppb at hour 3 Percentiles: P ₁ = 0.4 P ₁₀ = 1.0 Q ₁ = 1.7 Median = 3.1 Q ₃ = 5.3 P ₉₀ = 8.2 P ₉₉ = 14.9																
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-Nov	1	2	2	2	A	4	3	3	3	3	3	3	2	2	3	3	2	3	6	4	4	3	3	3	2.9	6.1
2-Nov	2	2	2	3	A	5	4	4	6	8	5	7	5	7	5	6	8	10	10	7	6	6	11	9	6.1	10.7
3-Nov	8	9	9	4	A	8	7	6	9	17	12	11	10	8	9	8	14	10	12	9	8	7	7	4	8.9	17.4
4-Nov	3	3	3	3	A	5	3	4	3	3	4	4	2	1	1	1	1	1	1	1	1	1	1	1	2.2	4.9
5-Nov	1	1	1	1	A	5	7	7	3	3	3	4	4	4	4	3	4	4	6	7	7	13	5	5	4.3	12.6
6-Nov	4	4	4	3	A	5	5	9	9	9	8	4	7	9	9	10	11	12	7	5	8	7	7	7	7.1	12.2
7-Nov	3	1	1	1	A	6	5	3	4	7	9	7	3	2	2	2	1	1	3	2	1	2	1	1	2.9	8.7
8-Nov	1	1	2	2	A	6	3	3	3	3	5	4	7	7	3	3	3	7	11	7	6	10	15	8	5.3	15.1
9-Nov	10	7	6	6	A	8	7	6	5	7	10	7	3	3	2	2	2	1	1	1	1	2	2	1	4.4	9.9
10-Nov	4	2	2	2	A	4	2	2	3	2	1	2	1	2	2	1	1	2	2	2	2	4	2	1	2.1	4.0
11-Nov	1	1	1	0	A	3	2	1	1	1	1	2	3	2	1	2	1	2	2	2	1	2	1	1	1.4	3.1
12-Nov	1	1	1	0	A	4	5	5	5	3	C	C	C	C	5	4	3	1	2	3	4	5	3	2	3.1	5.4
13-Nov	2	2	2	1	A	4	3	4	2	2	1	1	1	1	1	1	1	1	2	3	2	3	2	2	1.9	4.2
14-Nov	3	2	2	2	A	3	2	3	2	3	5	1	1	1	1	1	2	3	2	4	1	2	2	2	2.1	5.3
15-Nov	3	3	2	6	A	5	3	3	3	3	3	3	2	3	4	4	3	4	3	5	5	4	3	2	3.3	5.7
16-Nov	3	9	3	1	A	4	2	2	5	7	8	5	5	7	3	8	9	6	5	5	6	6	5	3	5.1	8.9
17-Nov	2	2	1	1	A	3	1	1	1	3	2	3	4	4	5	5	4	5	2	5	5	3	4	3	3.0	5.4
18-Nov	3	3	4	6	A	8	7	7	5	5	13	10	17	11	8	7	8	4	5	4	4	2	2	3	6.3	16.9
19-Nov	3	3	2	2	A	4	3	2	3	5	5	7	7	4	8	8	4	3	4	4	5	5	4	3	4.2	8.2
20-Nov	4	3	1	1	A	3	3	2	3	3	4	6	4	4	2	1	2	0	0	0	0	0	0	0	2.1	5.5
21-Nov	0	0	1	1	A	6	3	2	1	1	1	1	1	1	1	0	1	1	2	1	3	7	8	10	2.2	9.7
22-Nov	4	2	1	2	A	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1.4	3.9
23-Nov	1	1	1	1	A	3	3	9	8	7	11	9	4	3	3	2	2	1	1	1	2	1	1	1	3.4	11.3
24-Nov	1	1	1	1	A	3	2	3	3	3	3	2	2	2	3	5	4	3	3	3	5	5	4	4	2.9	5.4
25-Nov	3	3	5	5	A	5	4	3	3	4	6	7	10	9	7	8	6	4	4	4	3	3	3	2	4.8	9.7
26-Nov	1	3	5	8	A	4	2	3	3	4	6	6	10	6	6	5	5	2	1	2	5	3	4	1	4.2	9.8
27-Nov	1	1	1	1	A	2	2	2	3	4	3	5	6	4	3	2	3	2	2	2	1	2	1	1	2.4	5.6
28-Nov	1	2	2	2	A	4	2	2	3	3	8	9	9	8	4	2	3	2	7	8	7	3	2	1	4.1	9.3
29-Nov	2	1	1	2	A	4	3	3	3	4	5	7	7	6	9	7	3	2	2	3	3	4	5	6	4.0	8.7
30-Nov	5	5	3	3	A	4	3	5	5	9	6	10	9	14	13	11	8	25	30	15	22	19	11	14	10.7	29.6
2.7 2.7 2.4 2.5 -- 4.5 3.3 3.6 3.7 4.5 5.2 5.0 5.0 4.7 4.2 4.1 4.0 4.2 4.7 3.9 4.4 4.5 3.9 3.4																								Diurnal Average		
9.9 9.1 8.6 8.1 -- 8.2 7.4 8.7 9.3 17.4 12.7 10.5 16.9 14.0 12.7 10.7 13.6 24.8 29.6 15.4 21.6 19.0 15.1 13.6																								Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span																										

Hourly Averages

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



Hourly Maximums

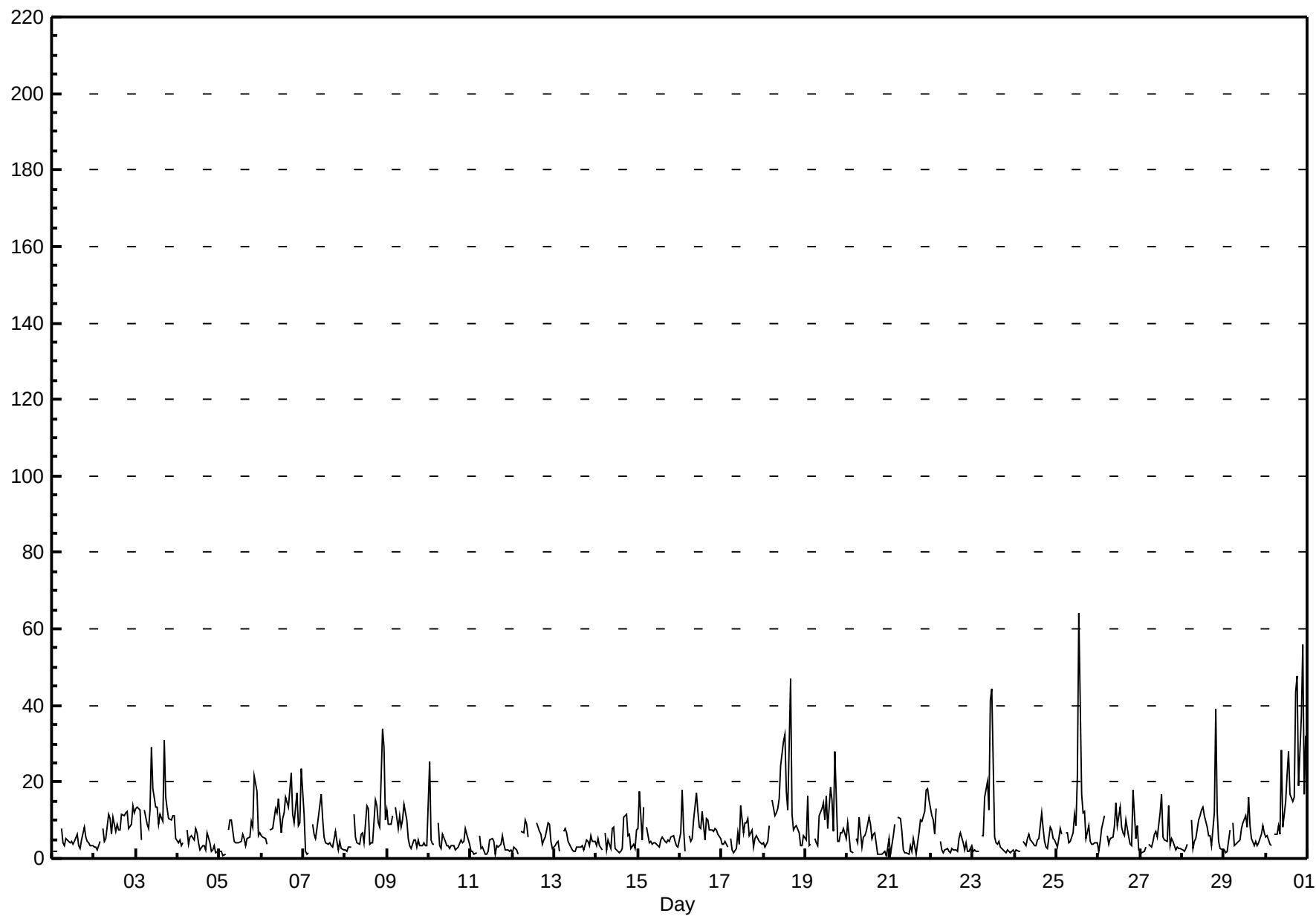
Oxides of Nitrogen (NO_x) - ppb

Beaverlodge - November 2015

Maximum Value: 64.1 ppb on Nov 25 14:00																				Maximum Daily Average: 19.5 ppb on Nov 30					Hours in Service: 720	
Minimum Value: 1 ppb on Nov 5 03:00																				Minimum Daily Average: 2.9 ppb on Nov 11					Hours of Data: 686	
Maximum Diurnal Average: 9.7 ppb at hour 11																				Minimum Diurnal Average: 4.0 ppb at hour 3					Hours of Missing Data: 34	
Monthly Average: 7.32 ppb																				Percentiles: P ₁ = 1.1 P ₁₀ = 2.0 Q ₁ = 3.3 Median = 5.3 Q ₃ = 9.0 P ₉₀ = 13.6 P ₉₉ = 40.7					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-Nov	2	2	2	2	A	8	4	3	5	4	4	4	4	4	6	3	3	5	8	6	5	4	3	3	4.1	8.1
2-Nov	3	3	2	4	A	8	5	5	12	11	6	11	7	9	7	8	11	11	12	12	8	9	14	12	8.2	13.8
3-Nov	13	13	13	5	A	13	9	8	13	29	18	14	13	9	12	10	31	16	13	10	10	11	11	5	13.0	31.0
4-Nov	4	5	3	4	A	7	4	6	6	5	8	7	4	2	3	3	2	7	4	2	2	3	1	2	4.1	7.8
5-Nov	2	2	1	1	A	7	10	10	4	4	4	4	5	6	5	4	5	6	10	8	21	17	6	7	6.5	21.4
6-Nov	6	6	5	4	A	7	8	11	13	12	16	7	10	12	16	13	18	22	12	9	17	9	9	23	11.5	23.4
7-Nov	12	2	1	2	A	9	6	5	8	14	17	10	6	4	4	4	3	3	7	4	2	5	3	2	5.8	16.9
8-Nov	2	2	3	3	A	12	6	4	4	6	7	4	14	13	4	4	4	15	14	9	8	34	29	10	9.1	33.9
9-Nov	13	9	9	11	A	13	8	11	8	10	14	10	5	3	3	5	5	3	5	3	3	4	3	3	7.1	14.0
10-Nov	25	5	4	4	A	9	3	3	6	4	3	3	3	3	3	2	3	3	5	4	5	8	6	4	5.2	25.3
11-Nov	2	2	1	1	A	6	3	3	1	1	2	5	5	5	1	3	3	4	6	4	2	2	2	2	2.9	6.1
12-Nov	1	3	2	1	A	7	7	10	9	5	C	C	C	C	9	7	6	4	5	5	9	9	4	3	5.7	10.1
13-Nov	3	4	4	2	A	7	8	7	5	3	2	2	2	3	3	3	3	2	5	4	3	6	5	4	4.0	8.0
14-Nov	3	5	3	2	A	7	2	5	3	8	8	3	2	1	2	3	11	12	6	6	2	4	2	7	4.7	11.7
15-Nov	8	18	5	13	A	8	4	4	4	4	4	3	3	5	5	5	4	5	5	5	6	5	3	3	5.6	17.5
16-Nov	7	18	8	2	A	6	5	5	10	17	12	8	8	12	5	11	10	8	7	7	8	8	6	5	8.4	17.9
17-Nov	4	4	4	3	A	5	2	2	3	7	4	14	7	9	9	10	6	7	3	5	6	5	4	4	5.5	14.0
18-Nov	4	3	5	9	A	15	11	12	13	16	24	31	32	18	13	47	11	8	8	9	7	3	3	6	13.4	46.9
19-Nov	5	17	3	4	A	5	4	3	11	13	14	10	17	8	19	15	7	28	5	4	7	7	8	5	9.5	28.0
20-Nov	9	6	2	1	A	5	4	11	3	6	6	7	11	9	5	6	7	1	1	1	1	2	1	3	4.7	10.8
21-Nov	5	1	6	9	A	11	10	7	2	2	1	1	3	2	5	1	4	7	10	10	12	18	18	15	7.0	18.3
22-Nov	11	10	6	13	A	4	2	1	2	2	2	2	3	2	2	2	5	7	4	2	4	2	2	3	4.2	13.1
23-Nov	2	2	2	2	A	6	6	16	20	13	41	44	5	4	4	4	3	2	2	2	2	2	2	2	8.2	44.3
24-Nov	2	2	2	2	A	5	3	5	6	5	4	3	3	5	5	12	8	4	3	3	8	7	5	5	4.7	12.1
25-Nov	3	5	8	6	A	7	7	4	4	7	12	8	22	64	17	12	12	5	8	4	4	4	4	4	10.0	64.1
26-Nov	2	4	8	11	A	6	4	5	5	9	15	9	13	8	7	6	10	5	4	3	18	5	8	2	7.3	17.7
27-Nov	2	2	2	3	A	4	3	4	6	7	6	12	17	5	5	5	14	3	5	4	2	3	3	3	5.1	16.7
28-Nov	2	2	3	4	A	10	3	4	5	10	11	13	14	11	8	6	6	3	12	39	12	4	3	2	8.1	39.2
29-Nov	2	2	2	8	A	9	3	4	4	5	8	9	11	8	16	9	5	3	5	3	4	6	8	7	6.2	16.0
30-Nov	6	6	4	3	A	6	6	9	6	28	8	15	22	28	17	15	16	44	48	19	37	56	17	32	19.5	55.8
5.5 5.4 4.0 4.6 -- 7.8 5.3 6.3 6.8 8.9 9.7 9.4 9.3 9.5 7.4 7.9 7.9 8.4 8.0 7.0 7.9 8.7 6.5 6.3																									Diurnal Average	
25.3 17.9 12.7 13.4 -- 15.4 11.4 16.2 20.1 29.2 41.5 44.3 32.3 64.1 18.7 46.9 31.0 43.6 47.6 39.2 37.5 55.8 29.2 31.9																									Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span																										

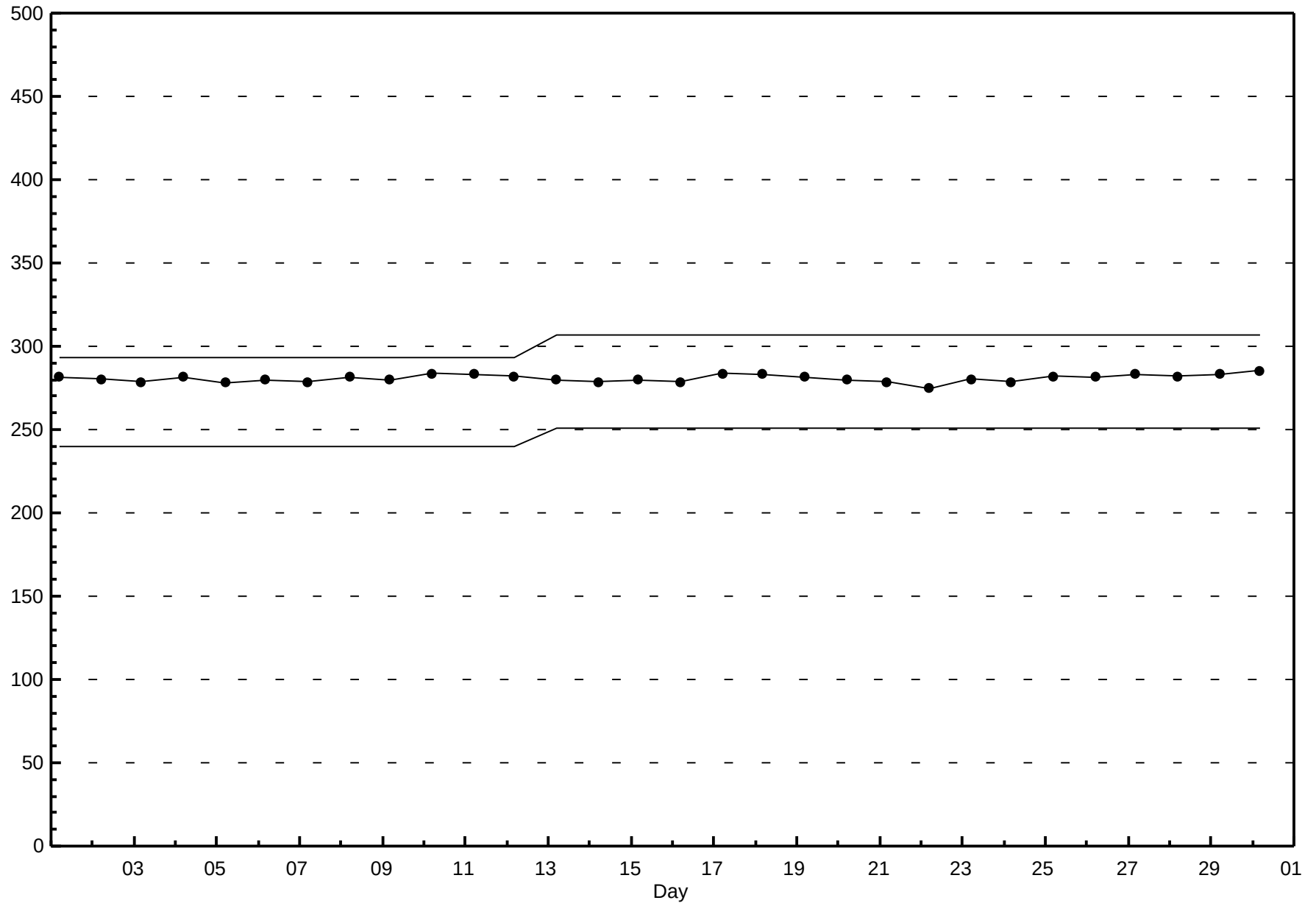
Hourly Maximums

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



Span Responses

Oxides of Nitrogen (NO_x)
Beaverlodge - November 2015



Hourly Averages

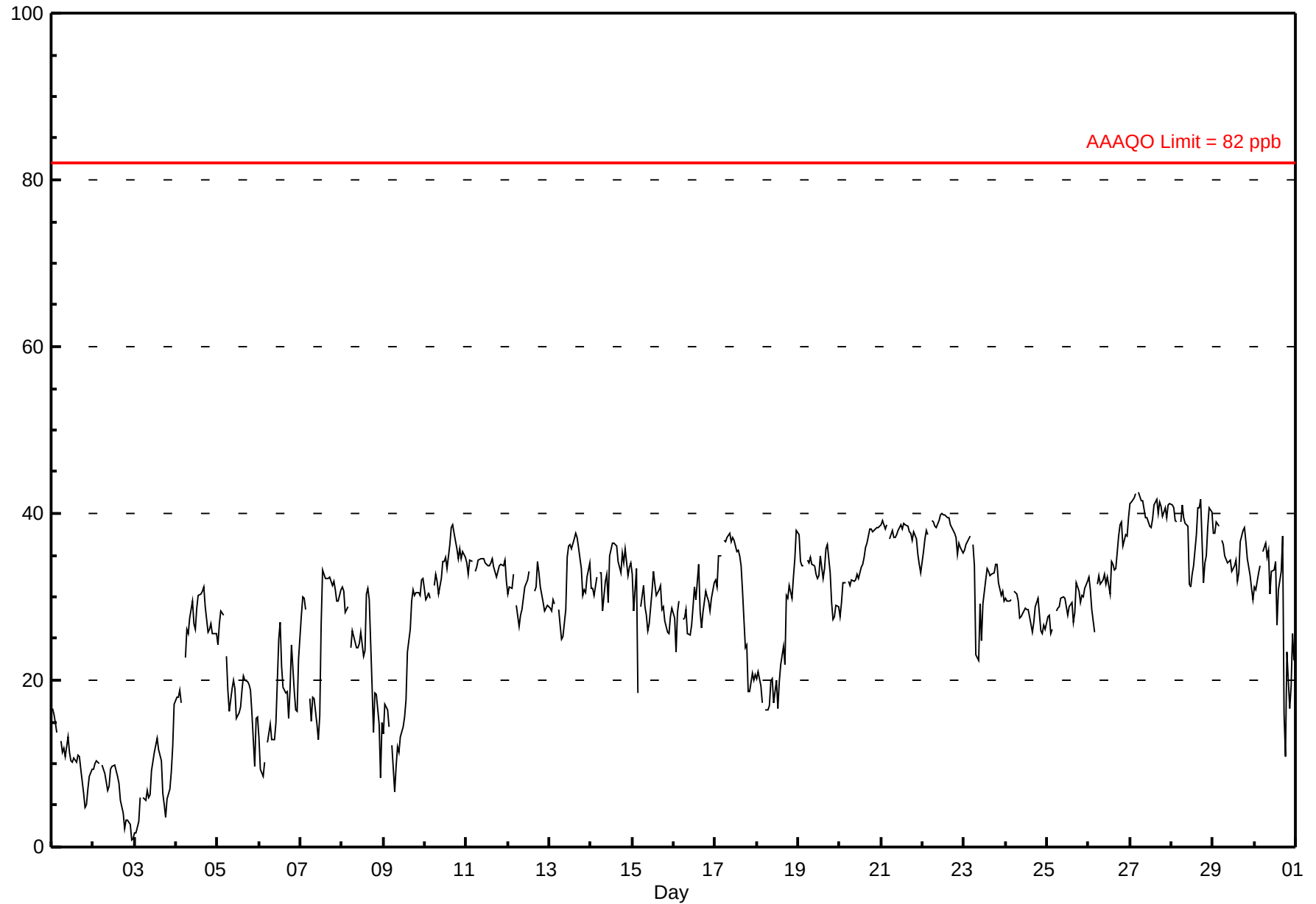
Ozone (O₃) - ppb

Beaverlodge - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 42.5 ppb on Nov 27 06:00 Maximum Daily Average: 40.6 ppb on Nov 27																								Hours in Service: 720 Hours of Data: 688 Hours of Missing Data: 32 Hours of Calibration: 32 Percent Operational Time: 100.0		
Minimum Value: 1 ppb on Nov 2 23:00 Maximum Diurnal Average: 29.9 ppb at hour 16 Monthly Average: 27.95 ppb												Minimum Daily Average: 6.9 ppb on Nov 2 Minimum Diurnal Average: 26.6 ppb at hour 9 Percentiles: P ₁ = 3.2 P ₁₀ = 12.0 Q ₁ = 23.4 Median = 30.4 Q ₃ = 34.5 P ₉₀ = 38.2 P ₉₉ = 41.5														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	17	16	15	14	A	13	11	12	11	13	11	10	10	11	10	11	11	9	6	5	5	7	8	9	10.7	16.6
2-Nov	9	10	10	10	A	10	9	9	7	7	9	10	10	9	9	8	6	4	2	3	3	3	1	1	6.9	10.4
3-Nov	2	2	3	6	A	6	6	7	6	6	9	11	12	13	12	10	6	5	4	6	7	9	12	17	7.7	17.1
4-Nov	18	18	19	17	A	23	26	26	27	30	27	26	29	30	30	31	31	29	26	26	27	26	26	26	25.7	31.2
5-Nov	24	27	28	28	A	23	19	16	19	20	19	15	16	17	19	21	20	20	20	19	16	10	15	16	19.4	28.2
6-Nov	13	9	8	10	A	13	15	13	13	13	15	25	27	22	19	18	19	15	19	24	19	16	16	23	16.7	26.9
7-Nov	28	30	30	28	A	18	15	18	18	15	13	16	27	33	32	32	32	32	31	32	31	30	29	31	26.1	33.2
8-Nov	31	31	28	29	A	24	26	25	24	24	24	26	23	24	30	31	30	19	14	19	18	15	8	15	23.3	31.2
9-Nov	14	17	16	14	A	12	7	10	12	11	13	14	16	18	23	26	30	31	30	31	30	30	32	32	20.4	32.2
10-Nov	30	30	30	30	A	31	33	32	30	32	34	34	35	33	36	38	39	38	36	35	36	35	35	35	33.8	38.7
11-Nov	34	33	34	34	A	33	34	34	35	35	35	34	34	34	34	35	34	32	33	34	34	34	34	32	33.8	34.6
12-Nov	30	31	31	33	A	29	26	28	28	30	31	32	33	C	C	31	31	34	33	31	29	28	29	29	30.4	34.3
13-Nov	29	28	30	29	A	29	27	25	25	29	35	36	36	36	37	38	37	36	33	30	31	30	32	34	31.8	37.6
14-Nov	31	31	30	32	A	33	33	28	32	33	29	35	36	36	36	36	34	33	35	34	36	33	34	34	33.3	36.5
15-Nov	33	28	33	18	A	29	31	29	28	26	27	31	33	32	30	31	31	29	29	27	26	26	28	29	28.8	33.4
16-Nov	28	23	28	29	A	27	27	29	26	25	27	29	31	30	34	28	26	28	31	30	29	28	30	32	28.5	33.9
17-Nov	32	31	35	35	A	37	37	37	38	37	37	37	35	36	35	34	31	24	24	19	19	21	20	21	30.8	37.6
18-Nov	20	21	19	17	A	17	16	17	20	20	17	20	17	20	22	24	22	30	30	31	30	32	35	38	23.3	38.0
19-Nov	37	34	34	34	A	34	34	35	34	34	33	32	33	35	32	33	36	36	33	29	27	28	29	29	32.8	37.5
20-Nov	28	29	32	32	A	32	31	32	32	32	33	32	34	34	35	36	36	38	38	38	38	38	38	38	34.2	38.4
21-Nov	39	39	38	39	A	37	38	37	37	37	38	39	38	39	39	38	38	38	37	38	37	35	34	33	37.4	39.2
22-Nov	35	37	38	37	A	39	39	38	38	39	40	40	40	40	39	39	39	38	38	37	35	37	36	35	38.0	39.9
23-Nov	36	36	37	37	A	36	34	23	22	29	25	29	32	33	33	33	33	33	34	34	32	30	31	29	31.8	37.2
24-Nov	30	30	30	30	A	31	30	29	28	28	28	29	29	28	28	26	27	29	29	30	26	26	27	26	28.3	30.8
25-Nov	28	28	26	26	A	28	29	29	30	30	30	29	28	29	29	27	28	32	31	29	30	30	31	32	29.0	31.9
26-Nov	32	31	28	26	A	32	33	32	32	33	31	32	30	34	34	33	33	37	39	39	36	37	37	39	33.6	39.5
27-Nov	41	41	42	42	A	43	42	42	41	39	40	38	38	39	41	42	40	41	41	40	41	40	41	41	40.6	42.5
28-Nov	41	41	39	39	A	39	41	40	39	39	31	31	33	34	38	41	41	42	32	34	35	38	41	40	37.7	41.6
29-Nov	38	38	39	38	A	37	36	35	34	34	34	33	34	34	32	33	37	38	38	37	34	32	31	30	35.1	38.9
30-Nov	31	31	33	34	A	35	36	35	36	30	33	33	34	27	31	33	37	16	11	23	17	19	26	22	28.9	37.3
27.9 27.7 28.1 27.6 -- 27.6 27.3 26.7 26.6 27.0 26.9 28.0 28.7 28.9 29.6 29.9 29.8 28.9 27.8 28.1 27.1 26.7 27.5 28.2																								Diurnal Average		
41.2 41.3 41.9 42.5 -- 42.5 41.6 41.6 40.5 39.4 39.8 39.9 39.8 39.8 41.0 41.7 40.6 41.6 40.9 39.6 40.7 39.5 40.9 41.2																								Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82 ppb 24-hr na																										

Hourly Averages

Ozone (O₃) - ppb
Beaverlodge - November 2015



Hourly Maximums

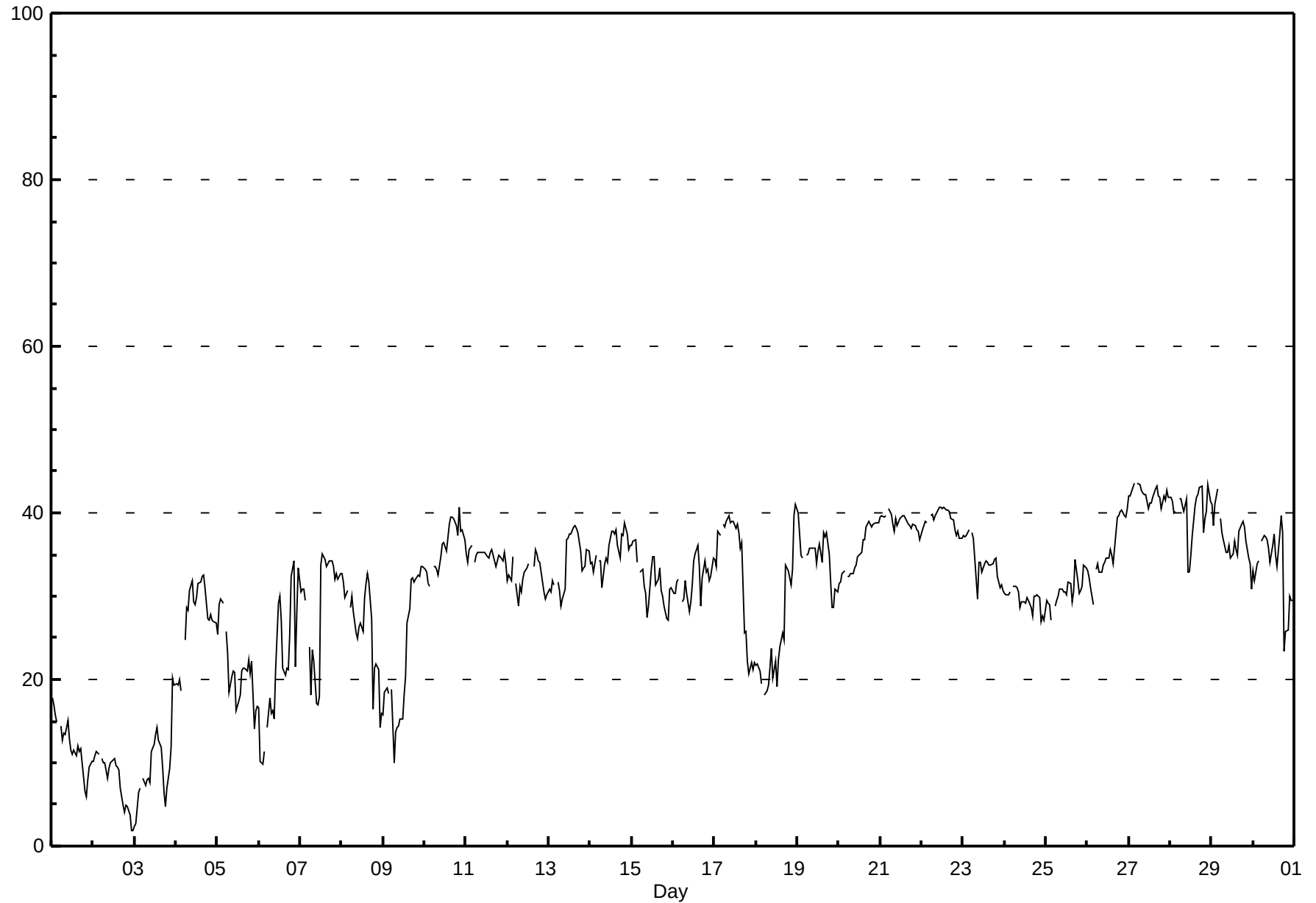
Ozone (O₃) - ppb

Beaverlodge - November 2015

Maximum Value: 43.6 ppb on Nov 27 06:00																				Hours in Service: 720						
Maximum Daily Average: 42.2 ppb on Nov 27																				Hours of Data: 688						
Minimum Value: 2 ppb on Nov 3 00:00																				Hours of Missing Data: 32						
Maximum Diurnal Average: 31.8 ppb at hour 17																				Hours of Calibration: 32						
Monthly Average: 30.13 ppb																				Percent Operational Time: 100.0						
Minimum Daily Average: 8.0 ppb on Nov 2																										
Minimum Diurnal Average: 28.9 ppb at hour 9																										
Percentiles: P ₁ = 4.5 P ₁₀ = 14.3 Q ₁ = 27.1 Median = 32.8 Q ₃ = 36.8 P ₉₀ = 39.6 P ₉₉ = 43.1																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Nov	18	17	16	15	A	14	13	14	13	15	13	12	11	12	11	12	11	8	7	6	8	10	10	12.0	17.8	
2-Nov	10	11	11	11	A	11	10	10	8	9	10	10	10	10	9	9	7	5	4	5	5	4	2	2	8.0	11.4
3-Nov	2	3	6	7	A	8	7	8	8	8	11	12	13	14	13	12	9	6	5	7	9	12	20	19	9.6	20.2
4-Nov	19	19	20	19	A	25	29	28	31	32	29	29	30	32	32	33	31	27	27	28	27	27	27	27	27.5	32.6
5-Nov	25	29	30	29	A	26	23	19	20	21	21	16	17	18	21	21	21	21	22	21	22	14	16	17	21.4	29.6
6-Nov	17	10	10	11	A	14	18	16	16	15	21	29	30	27	21	21	21	21	25	32	34	22	28	33	21.5	34.2
7-Nov	30	31	31	30	A	24	18	24	22	17	17	18	34	35	34	34	34	34	34	34	32	33	32	33	28.9	35.1
8-Nov	33	32	30	31	A	29	30	28	26	25	26	27	26	30	31	33	32	27	16	21	22	21	14	16	26.3	32.8
9-Nov	16	18	19	18	A	19	10	14	14	14	15	15	18	20	27	28	32	32	32	32	32	34	34	34	22.9	33.6
10-Nov	33	33	31	31	A	34	34	33	33	35	36	36	36	35	39	39	40	39	38	37	41	38	38	37	35.9	40.7
11-Nov	35	34	36	36	A	34	35	35	35	35	35	35	35	35	36	35	34	34	35	35	34	35	34	34	34.9	36.2
12-Nov	32	33	32	35	A	31	29	31	30	32	33	33	34	C	C	34	36	35	34	34	32	31	30	30	32.4	35.6
13-Nov	31	31	32	31	A	32	31	29	30	31	37	37	37	37	38	39	38	38	35	33	33	33	36	35	34.1	38.5
14-Nov	34	34	33	35	A	34	34	31	34	35	34	36	38	38	37	38	36	35	37	37	39	37	36	36	35.6	38.8
15-Nov	36	37	37	34	A	33	33	31	30	27	29	33	35	35	31	32	33	31	30	29	27	27	31	31	31.9	36.7
16-Nov	30	30	32	32	A	29	30	32	30	28	29	31	34	35	36	33	29	32	34	33	33	32	32	35	31.9	36.1
17-Nov	34	34	38	37	A	39	38	39	40	39	39	39	38	39	38	36	36	26	26	22	21	22	21	22	33.1	39.6
18-Nov	22	22	21	20	A	18	19	19	21	24	20	22	19	22	24	26	25	34	33	33	31	33	40	41	25.6	40.9
19-Nov	40	38	35	35	A	35	35	36	36	36	36	34	35	36	34	38	37	38	35	32	29	29	31	30	34.7	40.1
20-Nov	32	32	33	33	A	32	32	33	33	33	34	35	35	35	37	37	38	39	39	38	39	39	39	39	35.4	38.9
21-Nov	39	40	40	40	A	41	40	39	38	39	38	39	39	40	40	39	39	38	38	39	39	38	38	37	38.9	40.6
22-Nov	38	38	39	39	A	40	40	39	40	40	41	41	40	41	40	40	40	39	39	38	37	38	37	37	39.2	40.8
23-Nov	37	37	37	38	A	38	37	35	30	34	34	33	34	34	34	34	34	34	34	35	32	31	31	31	34.2	38.0
24-Nov	30	30	30	31	A	31	31	31	31	29	29	29	29	30	29	29	28	30	30	30	30	27	28	27	29.5	31.3
25-Nov	29	29	29	27	A	29	30	30	31	31	31	30	30	32	32	29	30	34	32	30	31	31	34	33	30.6	34.4
26-Nov	33	32	31	29	A	33	34	33	33	34	34	35	35	36	35	34	36	40	40	40	40	40	39	41	35.4	40.5
27-Nov	42	42	43	44	A	44	43	43	42	42	42	41	41	41	42	43	43	42	42	40	42	42	43	42	42.2	43.6
28-Nov	42	41	40	40	A	42	42	41	40	42	33	33	35	37	41	42	42	43	43	38	39	40	43	41	40.0	43.4
29-Nov	41	38	41	43	A	39	38	37	35	35	36	35	35	37	36	35	38	39	39	38	37	35	34	31	37.0	42.9
30-Nov	33	32	34	34	A	37	37	37	37	36	34	36	37	35	34	37	40	38	23	26	26	30	30	30	33.5	39.6
29.9 29.5 29.8 29.8 -- 29.8 29.3 29.1 28.9 29.1 29.3 29.8 30.8 31.3 31.4 31.7 31.8 31.5 30.4 30.1 30.1 29.3 30.2 30.3																									Diurnal Average	
42.1 42.0 43.0 43.5 -- 43.6 43.4 42.7 42.4 42.2 42.3 40.6 41.2 41.2 41.8 43.0 43.3 43.1 43.1 40.5 42.0 41.6 43.4 41.8																									Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span																										

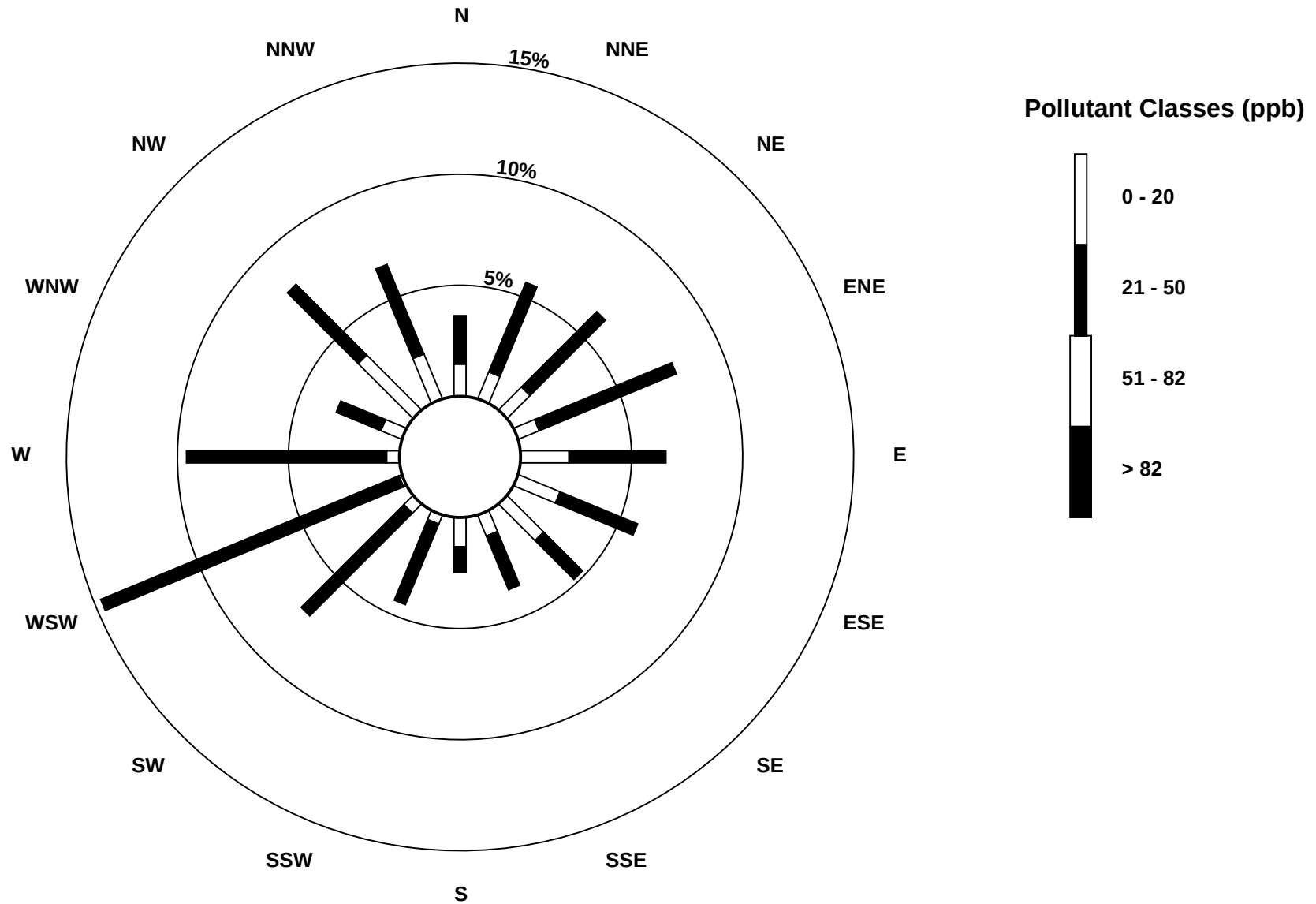
Hourly Maximums

Ozone (O₃) - ppb
Beaverlodge - November 2015



Pollutant Rose

Ozone (O₃) - ppb
Beaverlodge - November 2015



Eight Hour Running Averages

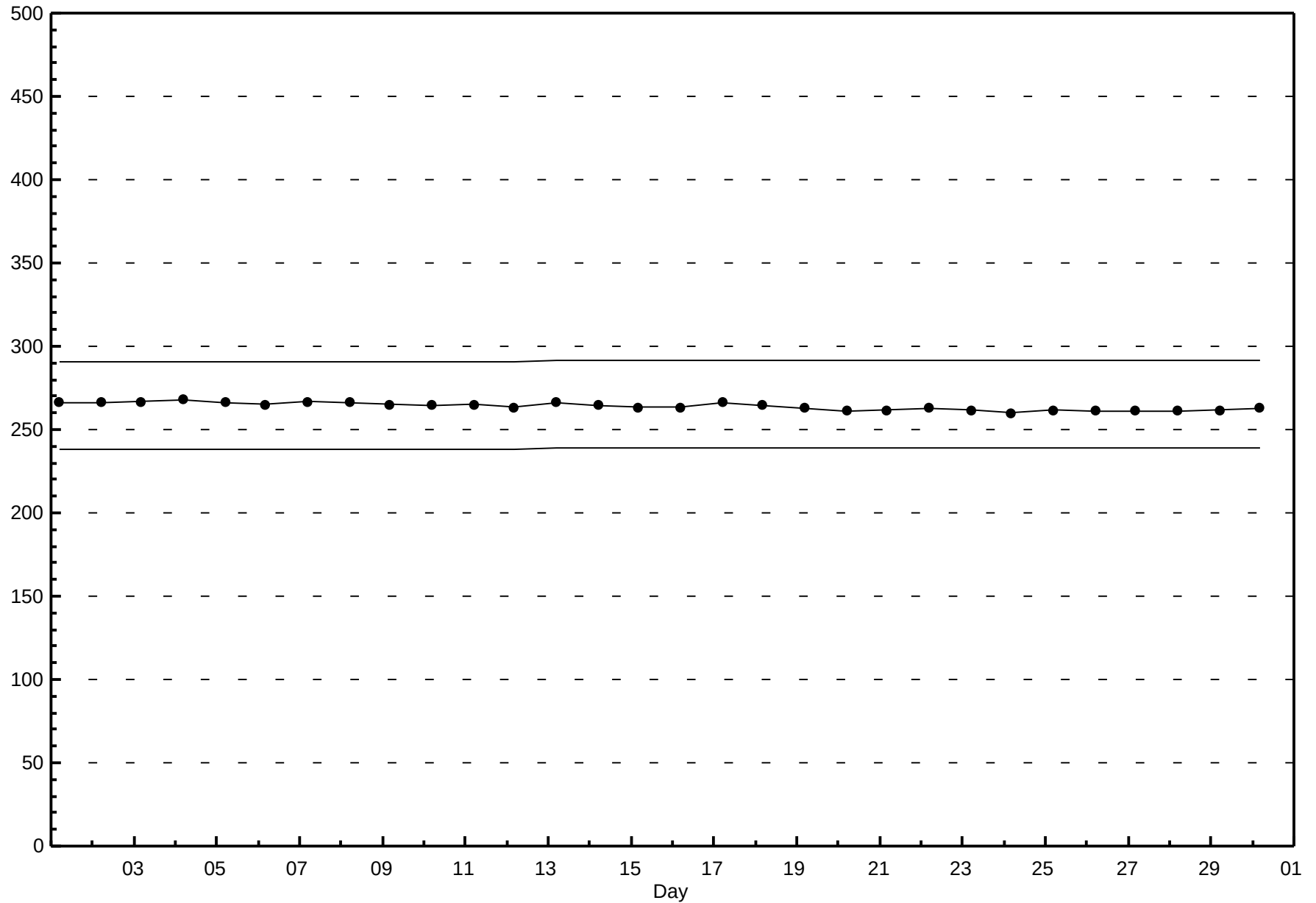
Ozone (O₃) - ppb

Beaverlodge - November 2015

Maximum Value: 41.8 ppb on Nov 27 08:00																								Hours in Service: 720	
Minimum Value: 2.1 ppb on Nov 3 02:00																								Hours of Data: 720	
Percentiles: P ₁ = 3.5 P ₁₀ = 12.0 Q ₁ = 23.7 Median = 30.3 Q ₃ = 34.2 P ₉₀ = 37.8 P ₉₉ = 40.5																								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-Nov	20	18	16	16	15	15	15	14	13	13	12	12	11	11	11	11	11	11	10	9	9	8	8	8	19.5
2-Nov	7	8	8	9	9	10	10	10	9	9	9	9	9	9	9	8	8	8	7	6	5	5	4	3	9.7
3-Nov	2	2	2	3	2	3	4	4	5	6	7	7	8	9	10	10	10	10	9	9	8	7	7	8	10.1
4-Nov	10	11	13	15	16	18	20	21	22	24	25	26	27	28	28	29	29	29	29	29	29	28	28	27	29.2
5-Nov	26	26	26	26	26	26	25	24	23	22	21	19	18	18	18	18	18	18	18	19	19	18	17	17	26.3
6-Nov	16	15	13	12	12	12	12	12	12	12	13	15	17	18	18	19	20	20	21	20	19	19	18	19	20.5
7-Nov	20	22	23	24	24	25	25	24	22	20	18	16	17	19	21	23	25	27	29	32	32	32	31	31	32.0
8-Nov	31	31	30	30	30	29	28	28	27	26	25	25	24	24	25	26	26	26	25	24	23	22	19	17	30.9
9-Nov	15	15	15	15	14	14	14	13	13	12	11	11	12	13	15	17	19	21	23	25	27	29	30	31	30.7
10-Nov	31	31	31	31	31	31	31	31	31	31	32	32	33	33	33	34	35	36	36	36	36	36	36	36	36.4
11-Nov	35	35	35	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	33	35.3
12-Nov	33	33	33	32	32	32	30	30	30	29	29	29	30	30	30	31	31	32	32	32	32	31	31	31	32.9
13-Nov	30	30	29	29	29	29	29	28	28	28	28	29	30	31	32	34	35	36	36	35	35	34	33	33	36.3
14-Nov	32	32	31	32	32	32	32	31	31	32	31	32	32	33	33	34	35	35	35	35	35	35	34	34	35.3
15-Nov	34	33	33	31	30	30	30	29	28	28	27	29	29	29	29	30	30	30	31	30	29	29	28	28	33.8
16-Nov	27	27	27	27	27	27	27	27	27	27	27	27	28	28	29	29	29	29	30	30	30	29	29	29	29.8
17-Nov	30	30	31	32	32	33	34	35	36	36	37	37	37	37	36	36	35	34	32	30	28	26	24	22	36.9
18-Nov	21	21	20	20	20	19	19	18	18	18	18	18	18	18	19	20	20	21	23	24	26	28	29	31	31.0
19-Nov	33	33	34	34	35	35	35	35	34	34	34	34	34	34	33	33	33	34	34	33	33	32	31	31	35.1
20-Nov	30	29	29	29	29	30	30	31	31	32	32	32	32	32	33	33	34	35	35	36	37	37	38	38	37.9
21-Nov	38	38	38	38	39	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	37	36	38.5
22-Nov	36	36	36	36	36	36	37	38	38	39	39	39	39	39	39	39	40	39	39	39	38	38	37	37	39.5
23-Nov	36	36	36	36	36	36	36	34	32	31	29	28	29	28	28	30	31	31	32	33	33	33	32	32	36.4
24-Nov	32	31	31	30	30	30	30	30	30	29	29	29	29	29	28	28	28	28	28	28	28	27	27	27	31.6
25-Nov	27	27	27	26	26	27	27	28	28	28	29	29	29	29	29	29	29	29	29	29	29	30	30	30	30.4
26-Nov	31	31	31	30	30	30	30	30	30	31	31	32	32	32	32	33	33	33	34	35	36	36	37	37	37.3
27-Nov	38	39	39	40	40	41	41	42	42	41	41	41	40	40	40	40	40	40	40	40	41	41	41	41	41.8
28-Nov	41	41	40	40	40	40	40	40	40	39	38	37	37	36	35	36	36	36	36	37	37	37	38	38	40.7
29-Nov	37	37	38	38	39	39	38	37	37	36	36	35	35	34	34	34	34	34	35	35	35	35	35	35	38.8
30-Nov	34	33	32	32	32	32	33	34	34	34	34	34	34	33	32	32	32	31	28	27	24	23	23	21	34.2
40.7 40.6 40.4 40.3 40.2 40.9 41.5 41.8 41.7 41.4 41.1 40.5 40.2 39.8 39.8 39.8 39.7 40.0 40.1 40.3 40.6 40.6 40.6 40.5																								Diurnal Maximums	

Span Responses

Ozone (O₃)
Beaverlodge - November 2015

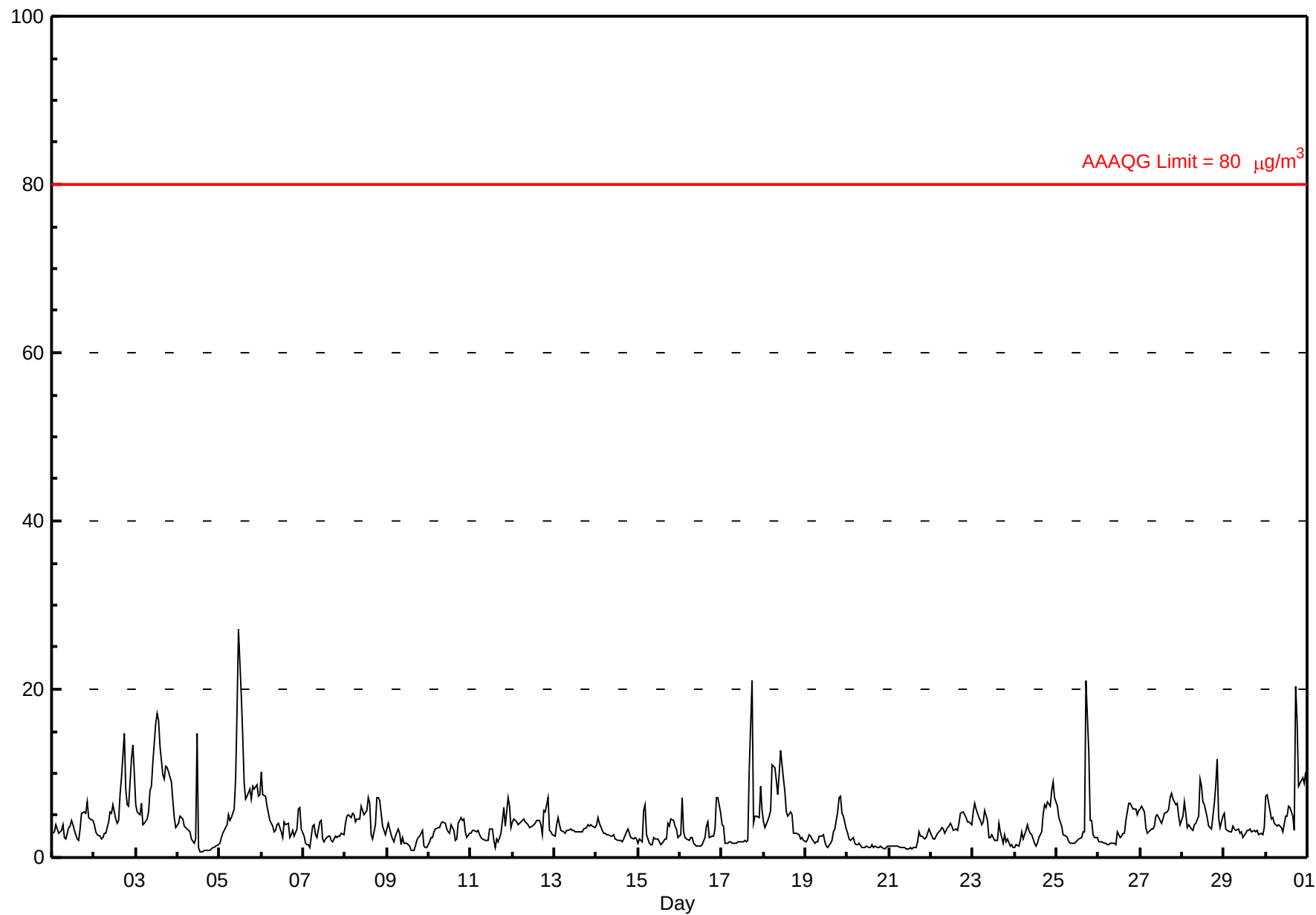


Hourly Averages

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

Beaverlodge - November 2015

Number of Exceedences: 1-hr: 0 24-hr: 0 Maximum Value: 27.1 µg/m³ on Nov 5 12:00 Maximum Daily Average: 8.6 µg/m³ on Nov 3																					Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0					
Minimum Value: 1 µg/m³ on Nov 4 15:00 Maximum Diurnal Average: 6.0 µg/m³ at hour 18 Monthly Average: 4.02 µg/m³ Minimum Daily Average: 1.5 µg/m³ on Nov 20 Minimum Diurnal Average: 3.2 µg/m³ at hour 9 Percentiles: P ₁ = 0.9 P ₁₀ = 1.5 Q ₁ = 2.3 Median = 3.3 Q ₃ = 4.8 P ₉₀ = 7.1 P ₉₉ = 16.9																										
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-Nov	3	3	4	3	3	3	4	2	2	4	4	4	4	3	2	2	3	5	5	5	7	5	5	4	3.8	6.6
2-Nov	4	3	3	2	2	2	3	3	4	5	5	6	5	4	4	7	10	15	8	6	6	12	13	10	6.0	14.7
3-Nov	6	5	5	6	4	4	5	5	8	8	11	16	17	16	13	10	9	11	11	10	9	7	5	4	8.6	17.1
4-Nov	4	5	5	5	4	3	3	3	2	2	2	15	1	1	1	1	1	1	1	1	1	1	1	2	2.7	14.8
5-Nov	2	2	3	4	4	5	4	5	6	9	17	27	19	14	9	7	7	8	7	9	8	9	7	8	8.3	27.1
6-Nov	10	7	7	6	5	4	4	3	3	4	4	3	2	4	4	4	2	3	3	3	3	6	6	3	4.4	10.2
7-Nov	3	2	1	1	1	4	4	3	2	4	4	2	2	2	3	2	2	2	3	2	3	2	3	3	2.5	4.3
8-Nov	4	5	5	5	5	5	4	5	5	6	6	5	6	7	6	3	2	4	7	7	7	4	3	3	4.9	7.1
9-Nov	3	4	3	2	2	3	3	3	2	2	2	2	1	1	1	1	2	2	3	3	3	1	1	1	2.1	4.1
10-Nov	2	2	2	3	3	4	4	4	4	4	3	3	3	4	3	2	2	4	5	4	5	3	2	3	3.3	4.7
11-Nov	3	3	3	3	3	3	2	2	2	2	2	3	3	2	1	2	2	3	4	6	4	7	6	4	3.2	7.1
12-Nov	4	5	4	4	4	4	5	4	4	4	4	4	4	4	4	4	4	3	6	5	7	3	3	3	4.2	7.1
13-Nov	3	4	5	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	3	3.4	4.7
14-Nov	4	5	4	3	3	3	3	3	3	3	3	2	2	2	2	2	2	3	3	3	2	2	2	2	2.7	4.7
15-Nov	2	2	2	6	6	3	2	2	2	2	2	2	2	2	2	2	2	4	4	5	4	4	3	2	2.8	6.2
16-Nov	3	7	3	2	2	2	2	2	2	1	1	1	1	1	2	4	4	2	2	3	3	7	7	5	3.1	7.2
17-Nov	4	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	10	21	4	5	5	5	8	6	4.1	21.0
18-Nov	4	4	4	5	6	11	11	9	7	10	13	9	8	5	5	5	3	3	3	3	3	2	2	2	5.8	12.7
19-Nov	2	2	3	3	2	2	2	2	2	3	3	2	1	1	2	2	3	3	5	7	7	5	5	3	3.0	7.2
20-Nov	3	2	2	2	2	2	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1.5	2.8
21-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	3	2	2	2	3	3	1.7	3.4
22-Nov	3	2	2	3	3	3	4	3	3	4	4	4	4	3	3	3	4	5	5	5	5	4	4	4	3.6	5.5
23-Nov	5	6	6	5	4	4	4	6	4	2	2	3	2	2	2	4	3	2	3	2	2	1	1	1	3.2	6.5
24-Nov	1	1	1	2	3	2	3	4	3	3	3	2	1	2	2	3	5	6	6	7	6	8	9	7	3.8	8.9
25-Nov	6	5	4	4	3	3	2	2	2	2	2	2	2	2	2	3	3	21	12	4	4	3	2	2	4.1	21.1
26-Nov	2	2	2	2	2	2	2	2	2	2	2	3	2	3	3	3	4	6	6	6	6	6	5	6	3.3	6.5
27-Nov	6	6	5	4	3	3	3	3	4	5	5	4	4	5	5	5	6	7	8	7	6	6	5	4	5.0	7.5
28-Nov	5	7	5	4	4	3	3	4	4	5	9	8	7	6	5	4	4	3	6	9	12	5	4	5	5.4	11.7
29-Nov	5	3	3	3	3	4	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	4	3.2	5.2
30-Nov	7	8	6	5	5	4	4	4	4	4	3	5	5	6	6	5	3	20	16	8	9	10	9	10	6.9	20.3
3.8 3.9 3.6 3.4 3.3 3.3 3.3 3.3 3.2 3.7 4.2 4.9 4.0 3.8 3.5 3.4 3.8 6.0 5.3 4.8 4.9 4.6 4.5 3.9																								Diurnal Average		
10.2 7.5 7.3 6.4 6.2 11.0 10.6 9.2 7.9 10.1 17.4 27.1 19.1 16.3 13.3 9.9 10.5 21.1 16.3 10.1 11.7 11.8 13.3 10.2																								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

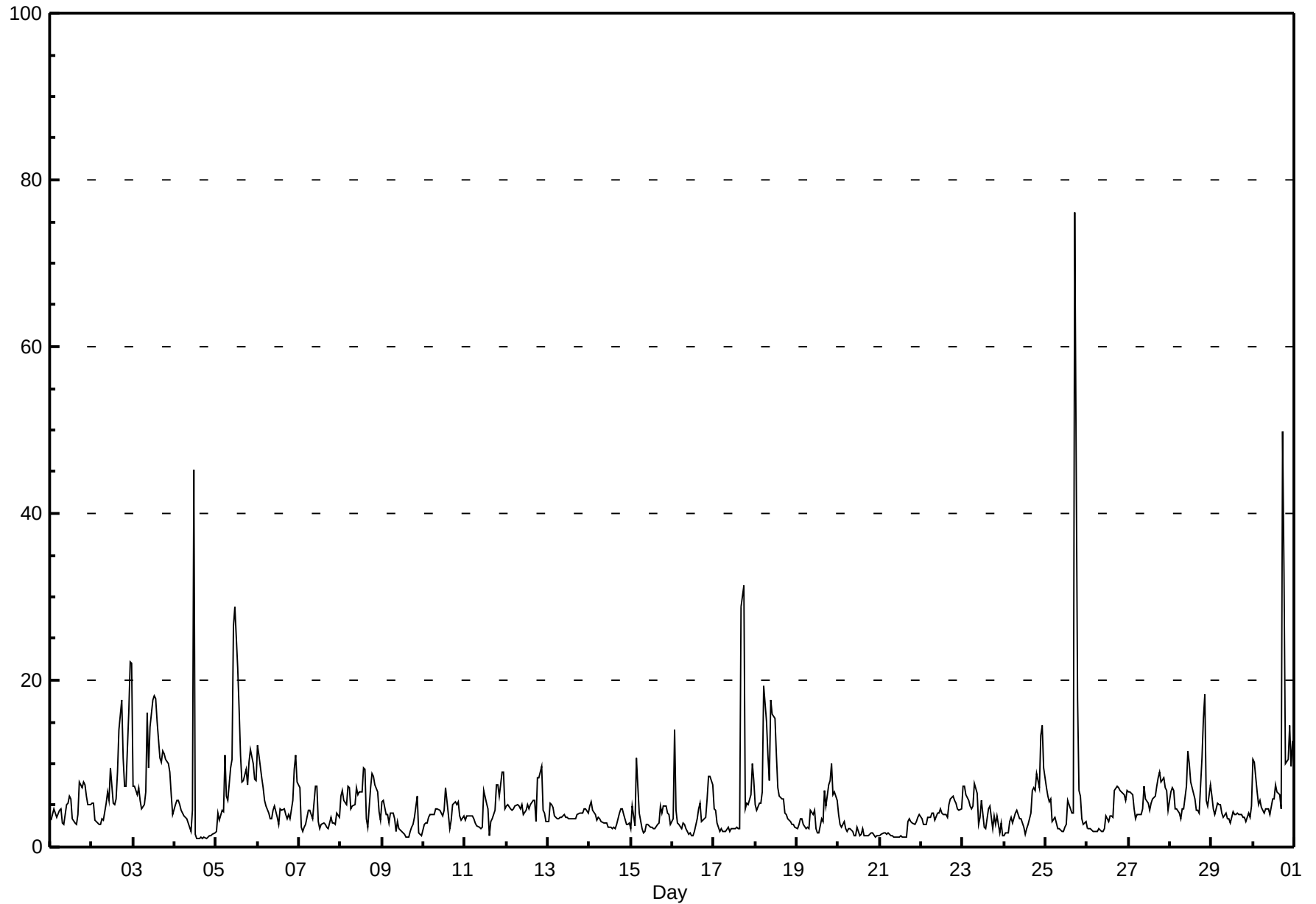
Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Beaverlodge - November 2015

Maximum Value: 76.1 µg/m ³ on Nov 25 18:00																								Hours in Service: 720		
Maximum Daily Average: 10.2 µg/m ³ on Nov 5																								Hours of Data: 720		
Minimum Value: 1 µg/m ³ on Nov 4 14:00																								Hours of Missing Data: 0		
Maximum Diurnal Average: 10.0 µg/m ³ at hour 18																								Hours of Calibration: 0		
Monthly Average: 5.28 µg/m ³																								Percent Operational Time: 100.0		
Minimum Daily Average: 1.9 µg/m ³ on Nov 20																										
Minimum Diurnal Average: 3.9 µg/m ³ at hour 8																										
Percentiles: P ₁ = 1.2 P ₁₀ = 1.9 Q ₁ = 2.9 Median = 4.1 Q ₃ = 6.1 P ₉₀ = 9.2 P ₉₉ = 28.8																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Nov	3	4	5	4	4	4	5	3	3	5	5	6	6	3	3	3	4	8	7	8	8	6	5	5	4.8	7.8
2-Nov	5	5	3	3	3	3	3	3	5	7	6	10	5	5	6	9	14	18	11	7	7	16	22	22	8.3	22.2
3-Nov	7	7	6	7	6	5	5	7	16	10	14	18	18	18	15	11	10	11	11	10	10	9	6	4	10.1	18.1
4-Nov	5	6	6	5	4	4	4	3	3	2	4	45	1	1	1	1	1	1	1	1	1	1	1	2	4.4	45.3
5-Nov	2	4	3	4	4	11	6	6	10	10	26	29	22	17	11	8	8	9	8	10	12	10	8	8	10.2	28.9
6-Nov	12	11	8	7	6	5	4	3	3	4	5	4	3	5	4	5	4	3	4	3	6	9	11	8	5.7	12.2
7-Nov	7	2	2	2	3	4	4	4	3	7	7	3	2	3	3	3	2	2	4	3	3	3	4	4	3.5	7.3
8-Nov	6	7	6	5	7	7	5	5	5	7	6	7	7	9	9	3	2	7	9	9	8	7	4	3	6.2	9.5
9-Nov	5	6	4	4	3	4	4	3	2	3	2	2	2	1	1	1	2	2	3	4	6	2	1	1	2.9	6.1
10-Nov	3	3	3	4	4	4	4	5	5	4	4	4	4	7	4	2	3	5	5	5	5	4	3	4	4.1	7.1
11-Nov	3	4	4	4	4	3	3	2	2	2	2	7	5	5	1	3	3	4	8	8	6	9	9	5	4.4	9.0
12-Nov	5	5	5	4	5	5	5	5	5	5	4	4	5	5	5	6	6	3	8	8	10	4	4	3	5.1	9.7
13-Nov	3	5	5	5	4	3	3	4	4	4	4	4	3	3	3	3	3	4	4	4	4	5	5	4	3.9	5.3
14-Nov	5	5	4	4	3	4	3	3	3	3	3	2	2	2	2	2	3	4	5	5	4	3	3	3	3.3	5.4
15-Nov	2	5	3	11	7	4	2	2	2	3	3	2	2	2	2	3	3	5	4	5	5	4	4	3	3.6	10.8
16-Nov	3	14	4	3	3	2	3	3	2	1	2	1	1	2	3	5	5	3	3	4	6	9	8	8	4.1	14.2
17-Nov	5	4	3	2	2	2	2	2	2	2	2	2	2	2	2	2	29	31	5	5	5	6	10	8	5.8	31.3
18-Nov	5	4	5	5	7	19	15	11	8	18	16	15	11	7	6	6	6	4	4	3	3	3	3	2	7.8	19.3
19-Nov	2	3	3	3	3	2	2	2	4	4	4	2	2	2	3	3	7	5	8	8	10	6	7	6	4.2	10.0
20-Nov	4	3	2	3	2	2	2	2	2	1	1	2	1	1	2	1	1	1	1	2	2	1	1	1	1.9	3.9
21-Nov	1	1	2	2	1	2	1	1	1	1	1	1	1	1	1	1	3	3	3	3	3	3	4	4	2.0	3.9
22-Nov	3	3	3	3	4	4	4	4	3	4	4	5	4	4	4	4	5	6	6	6	5	5	4	5	4.2	6.1
23-Nov	7	7	6	6	5	5	5	8	7	3	4	6	2	2	3	5	5	2	4	3	4	2	3	1	4.3	7.6
24-Nov	1	2	2	3	4	3	4	4	4	3	3	2	1	2	3	4	7	7	7	9	7	13	15	9	5.0	14.6
25-Nov	7	6	5	6	3	4	3	2	2	2	2	2	3	6	5	4	4	76	18	7	6	3	3	3	7.6	76.1
26-Nov	2	2	2	2	2	2	2	2	2	2	2	4	3	4	4	4	7	7	7	7	7	6	6	7	3.9	7.3
27-Nov	7	7	6	5	3	4	4	4	5	7	6	5	4	5	6	6	7	8	9	8	8	7	7	4	5.9	9.0
28-Nov	7	7	7	5	5	4	3	5	5	7	11	10	8	7	6	4	4	4	11	15	18	6	5	8	7.1	18.3
29-Nov	6	5	4	5	5	5	4	4	4	3	3	3	4	4	4	4	4	4	4	4	3	4	4	5	4.1	6.1
30-Nov	10	10	7	5	6	5	4	5	5	5	4	6	6	8	7	6	5	50	33	10	10	15	10	13	10.1	49.9
4.9 5.2 4.2 4.3 4.0 4.5 4.0 3.9 4.2 4.7 5.4 7.1 4.8 4.8 4.3 4.0 5.6 10.0 7.1 6.1 6.4 6.0 6.0 5.4																									Diurnal Average	
12.2 14.2 8.3 10.8 7.3 19.3 15.1 11.0 16.1 17.6 26.4 45.3 21.5 17.8 15.1 10.7 28.9 76.1 32.7 15.4 18.3 16.4 22.2 22.0																									Diurnal Maximum	

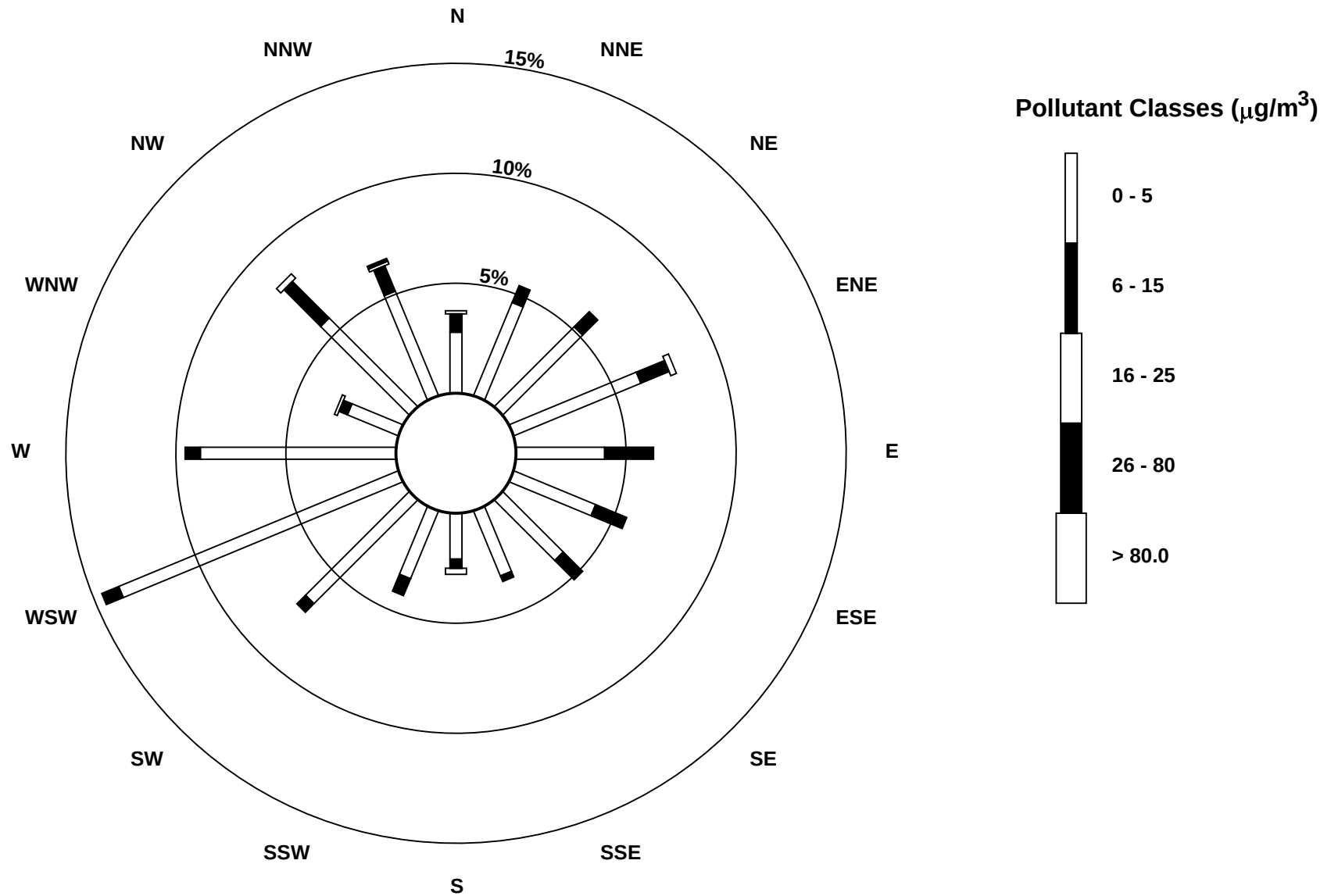
Hourly Maximums

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



Pollutant Rose

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



Hourly Averages

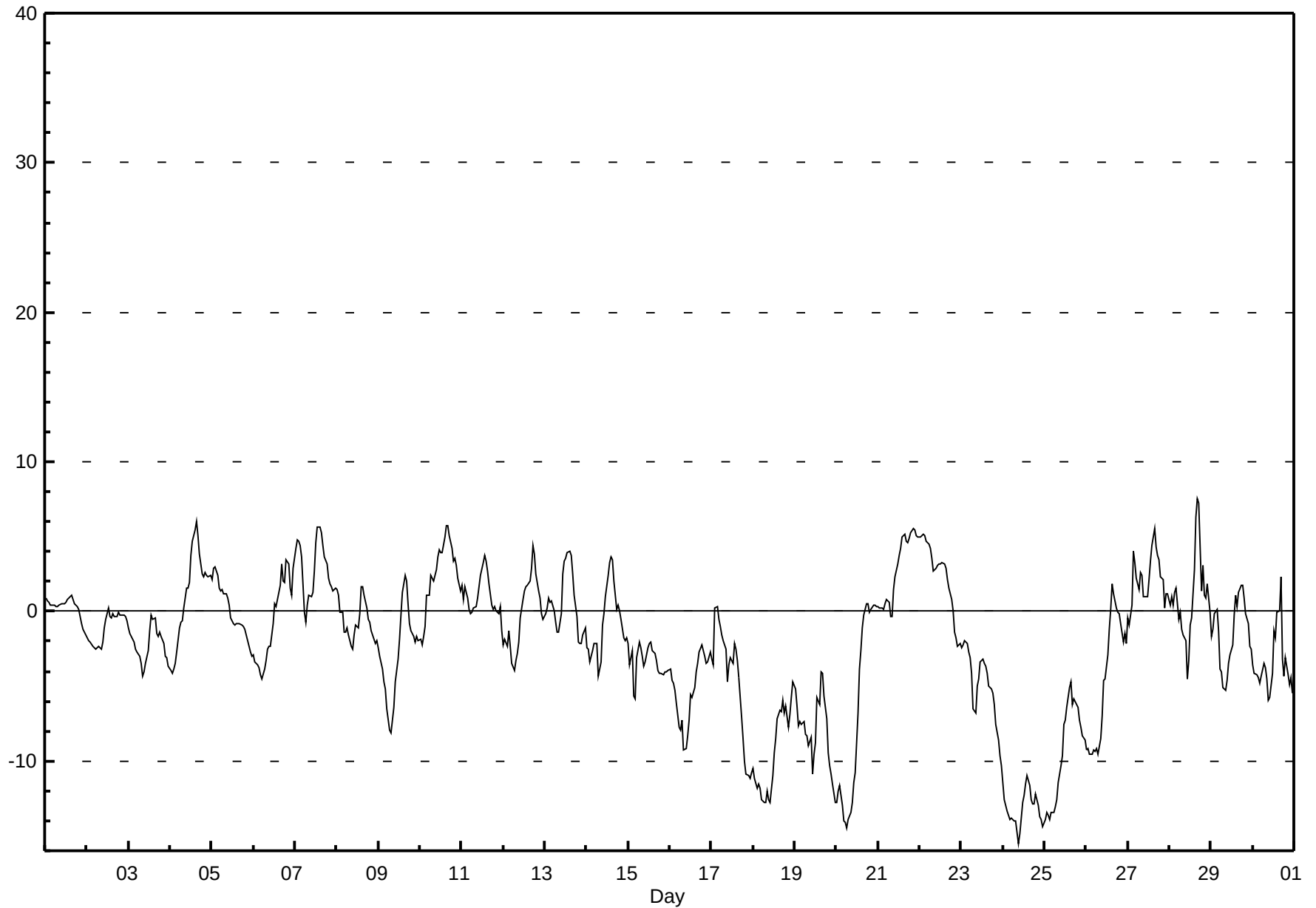
External Temperature (ET) - °C

Beaverlodge - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 7.6 °C on Nov 28 17:00 Maximum Daily Average: 2.9 °C on Nov 7																								Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0		
Minimum Value: -16 °C on Nov 24 10:00 Minimum Daily Average: -13.2 °C on Nov 24 Maximum Diurnal Average: 0.5 °C at hour 16 Minimum Diurnal Average: -4.0 °C at hour 9 Monthly Average: -2.19 °C Percentiles: P ₁ = -14.0 P ₁₀ = -9.5 Q ₁ = -4.3 Median = -1.4 Q ₃ = 1.0 P ₉₀ = 3.3 P ₉₉ = 5.5																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	-1	-1	-2	0.3	1.0
2-Nov	-2	-2	-2	-2	-2	-3	-2	-2	-2	-2	-1	-1	0	0	0	0	0	0	0	0	0	0	0	-1	-1.1	0.3
3-Nov	-1	-2	-2	-2	-3	-3	-3	-3	-4	-4	-3	-3	-1	0	-1	0	-1	-2	-1	-2	-2	-3	-3	-4	-2.2	-0.2
4-Nov	-4	-4	-4	-3	-3	-1	-1	-1	0	2	2	2	4	5	5	6	5	4	2	2	3	2	2	2	1.2	6.1
5-Nov	2	3	3	2	2	1	1	1	1	1	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-2	-2	-3	-3	0.1	3.0
6-Nov	-3	-3	-4	-4	-4	-5	-4	-3	-3	-2	-2	-1	1	0	1	2	3	2	2	3	3	2	1	3	-0.6	3.5
7-Nov	4	5	5	4	4	0	-1	0	1	1	1	3	5	6	6	5	4	4	3	2	2	2	1	2	2.9	5.6
8-Nov	1	1	0	0	-1	-1	-1	-2	-2	-3	-2	-1	-1	0	2	2	1	0	0	-1	-1	-2	-2	-2	-0.6	1.6
9-Nov	-2	-3	-4	-5	-5	-6	-8	-8	-7	-6	-5	-3	-2	0	1	2	2	1	-1	-1	-2	-2	-2	-2	-2.9	2.5
10-Nov	-2	-2	-2	-1	1	1	2	2	2	3	4	4	4	4	5	6	6	5	4	3	4	3	2	1	2.5	5.8
11-Nov	2	1	2	1	0	0	0	0	0	1	2	2	3	4	3	3	2	0	0	0	0	0	0	-1	1.1	3.7
12-Nov	-2	-2	-2	-1	-2	-4	-4	-3	-3	-2	0	1	1	2	2	2	3	4	4	2	1	1	0	-1	-0.1	4.5
13-Nov	0	0	1	1	1	0	-1	-1	-1	0	2	3	4	4	4	4	3	1	0	-2	-2	-2	-2	-1	0.6	4.0
14-Nov	-2	-3	-3	-3	-2	-2	-2	-4	-3	-1	0	1	2	3	4	3	2	0	0	0	0	-2	-2	-2	-0.7	3.7
15-Nov	-2	-4	-3	-6	-6	-3	-2	-2	-3	-4	-3	-2	-2	-2	-3	-3	-3	-4	-4	-4	-4	-4	-4	-4	-3.4	-2.0
16-Nov	-4	-5	-5	-5	-6	-8	-8	-7	-9	-9	-8	-7	-6	-6	-5	-4	-4	-3	-2	-3	-3	-4	-3	-3	-5.2	-2.3
17-Nov	-3	-4	0	0	-1	-1	-2	-2	-3	-5	-4	-3	-3	-2	-3	-3	-4	-7	-8	-10	-11	-11	-11	-11	-4.6	0.3
18-Nov	-11	-11	-12	-12	-12	-13	-13	-13	-12	-13	-13	-11	-9	-9	-7	-7	-7	-6	-7	-6	-8	-7	-6	-5	-9.4	-4.7
19-Nov	-5	-6	-8	-7	-8	-7	-8	-8	-9	-8	-11	-10	-9	-6	-6	-4	-4	-6	-7	-9	-10	-11	-12	-13	-8.0	-4.0
20-Nov	-13	-12	-12	-13	-14	-14	-14	-14	-13	-13	-11	-11	-7	-4	-3	-1	0	0	0	0	0	0	0	0	-7.0	0.5
21-Nov	0	0	0	0	1	1	1	0	0	1	2	3	4	4	5	5	5	5	5	5	6	5	5	5	2.8	5.5
22-Nov	5	5	5	5	5	4	4	4	3	3	3	3	3	3	3	3	2	2	1	0	-1	-2	-2	-2	2.4	5.1
23-Nov	-2	-2	-2	-2	-3	-3	-4	-7	-7	-5	-5	-3	-3	-3	-4	-4	-5	-5	-5	-6	-8	-9	-10	-10	-4.9	-1.9
24-Nov	-11	-13	-13	-14	-14	-14	-14	-14	-15	-16	-15	-13	-12	-12	-11	-12	-13	-13	-13	-12	-13	-14	-14	-14	-13.2	-10.9
25-Nov	-14	-13	-14	-14	-13	-13	-13	-13	-11	-10	-10	-8	-7	-6	-5	-5	-6	-6	-6	-6	-7	-8	-8	-9	-9.4	-4.7
26-Nov	-9	-9	-10	-10	-9	-9	-9	-10	-9	-7	-5	-4	-3	-1	0	2	1	0	0	0	-1	-2	-1	-2	-4.4	1.8
27-Nov	0	-1	0	4	3	2	1	3	2	1	1	1	2	3	4	6	4	4	3	2	2	0	1	1	2.2	5.5
28-Nov	0	1	0	1	2	-1	0	-1	-2	-2	-5	-3	-1	0	3	6	8	7	1	3	1	1	2	0	0.9	7.6
29-Nov	-2	-1	0	0	-1	-4	-4	-5	-5	-5	-3	-3	-2	0	1	0	1	2	2	1	0	-1	-2	-3	-1.4	1.8
30-Nov	-4	-4	-4	-4	-5	-4	-3	-4	-4	-6	-6	-4	-1	-2	0	0	2	-3	-4	-3	-4	-5	-4	-5	-3.5	2.3
																								Diurnal Average		
																								Diurnal Maximum		

Hourly Averages

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



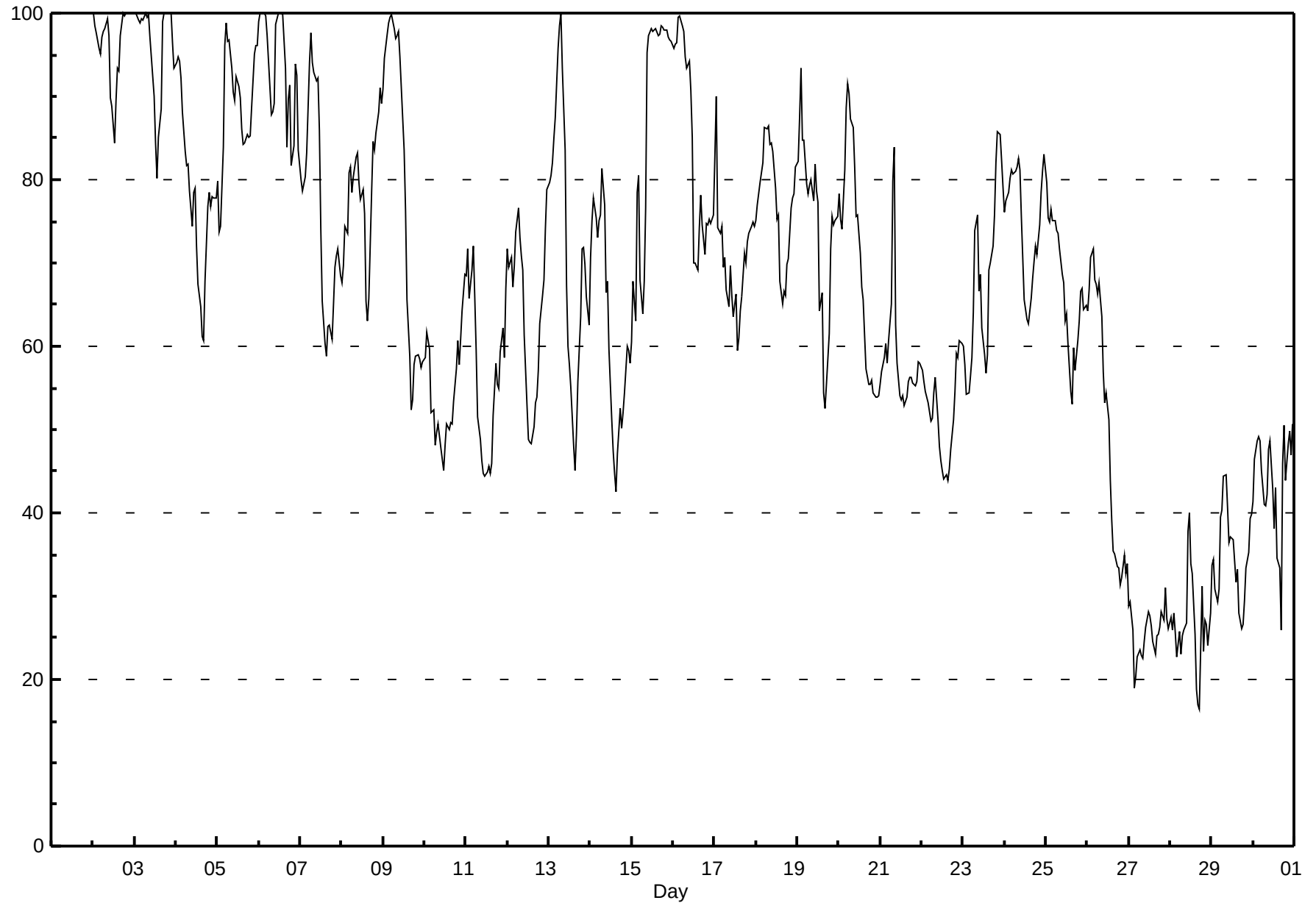
Hourly Averages

Relative Humidity (RH) - %
Beaverlodge - November 2015

Number of Exceedences (AAQO): 1-hr: 0 24-hr: 0 Maximum Value: 100.0 % on Nov 1 01:00 Maximum Daily Average: 100.0 % on Nov 1																								Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0		
Minimum Value: 16 % on Nov 28 18:00 Maximum Diurnal Average: 74.6 % at hour 8 Monthly Average: 68.76 %												Minimum Daily Average: 25.5 % on Nov 27 Minimum Diurnal Average: 59.4 % at hour 16 Percentiles: P ₁ = 22.6 P ₁₀ = 36.3 Q ₁ = 54.4 Median = 70.0 Q ₃ = 85.0 P ₉₀ = 98.1 P ₉₉ = 100.0														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Nov	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
2-Nov	100	98	98	96	95	97	98	98	99	97	90	89	84	89	93	93	97	100	100	100	100	100	100	100	96.4	100.0
3-Nov	100	100	99	99	99	99	100	99	100	97	95	90	84	80	85	88	99	100	100	100	100	96	93	96.0	100.0	
4-Nov	94	95	94	92	88	83	82	82	79	74	79	79	72	68	65	61	61	68	77	78	77	78	78	78	78.4	94.7
5-Nov	80	74	74	84	96	99	97	97	93	90	89	92	91	90	86	84	84	85	85	85	89	95	96	96	88.9	98.9
6-Nov	99	100	100	100	100	97	91	88	88	89	99	100	100	100	93	84	90	91	82	84	94	93	84	93.5	100.0	
7-Nov	80	79	79	80	83	94	98	94	93	92	92	86	74	65	60	59	62	63	61	65	69	71	72	68	76.7	97.6
8-Nov	68	70	74	74	81	81	78	80	83	83	80	78	79	76	65	63	66	79	85	84	86	88	91	89	78.3	90.9
9-Nov	91	95	98	99	99	100	98	97	97	98	95	87	84	76	66	59	52	54	58	59	59	58	57	58	78.9	99.8
10-Nov	59	62	61	60	52	52	48	50	51	48	46	45	48	51	50	51	51	53	57	61	58	61	64	69	54.4	68.6
11-Nov	69	72	66	69	72	66	59	52	49	46	45	44	45	46	45	46	52	58	55	55	59	62	59	67	56.5	72.0
12-Nov	72	70	71	67	70	74	77	73	71	69	61	53	49	48	48	50	53	54	57	63	66	68	74	79	64.0	78.8
13-Nov	80	81	82	85	87	96	98	100	93	83	67	60	58	55	48	45	49	56	64	72	72	70	66	63	72.1	100.0
14-Nov	71	75	78	75	73	75	76	81	77	66	68	60	51	48	45	43	47	53	50	52	54	60	59	58	62.3	81.4
15-Nov	61	68	63	79	80	68	64	68	77	95	97	98	98	98	97	98	98	98	98	98	98	97	97	97	87.0	98.5
16-Nov	96	96	96	100	100	98	98	95	93	94	91	85	70	70	69	74	78	75	71	75	75	75	75	76	84.3	99.6
17-Nov	83	90	74	74	74	69	71	67	65	70	66	64	66	59	61	64	66	71	70	73	74	74	75	74	70.6	90.0
18-Nov	75	77	80	81	82	86	86	86	84	84	83	79	75	76	68	65	67	66	70	71	77	78	78	82	77.3	86.5
19-Nov	82	88	93	85	85	79	78	79	80	77	82	79	77	64	66	54	53	55	62	72	76	75	75	76	74.7	93.3
20-Nov	78	75	74	81	89	92	90	87	86	81	76	76	71	67	66	61	57	55	55	56	54	54	54	54	70.5	91.5
21-Nov	55	57	59	60	58	61	65	80	84	63	58	54	54	53	54	56	56	56	56	55	56	58	58	58	59.1	84.0
22-Nov	57	56	55	54	53	51	51	54	56	51	48	46	45	44	45	44	45	48	51	55	59	59	61	60	52.0	60.6
23-Nov	60	58	54	54	57	59	64	74	76	67	69	62	59	57	59	69	70	72	76	82	86	85	82	79	67.9	85.8
24-Nov	76	77	78	80	81	81	81	82	83	81	76	66	64	63	63	66	68	70	72	71	75	79	81	83	74.8	83.1
25-Nov	80	75	75	77	75	75	74	74	72	69	68	63	64	60	55	53	60	57	61	63	67	67	64	65	67.1	79.7
26-Nov	64	67	71	72	68	67	66	68	64	57	53	54	51	44	39	35	35	34	33	31	32	35	33	34	50.3	71.8
27-Nov	29	29	26	19	20	23	24	23	23	25	26	28	28	26	25	23	25	25	26	28	27	31	27	26	25.5	31.0
28-Nov	27	26	28	26	23	26	23	25	26	27	38	40	34	33	25	19	17	16	31	23	27	27	24	28	26.6	40.0
29-Nov	34	34	31	29	31	39	40	44	45	41	36	37	37	34	32	33	28	26	27	29	33	35	39	40	34.8	44.5
30-Nov	41	46	49	49	49	45	41	41	42	48	49	43	38	43	35	33	26	46	50	44	48	50	47	51	43.9	50.7
	72.0	72.9	72.6	73.3	74.0	74.5	73.9	74.6	74.2	72.1	70.7	67.9	65.0	62.8	60.4	59.4	60.2	62.8	65.0	66.0	67.8	69.4	69.2	69.4	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 - November 2015



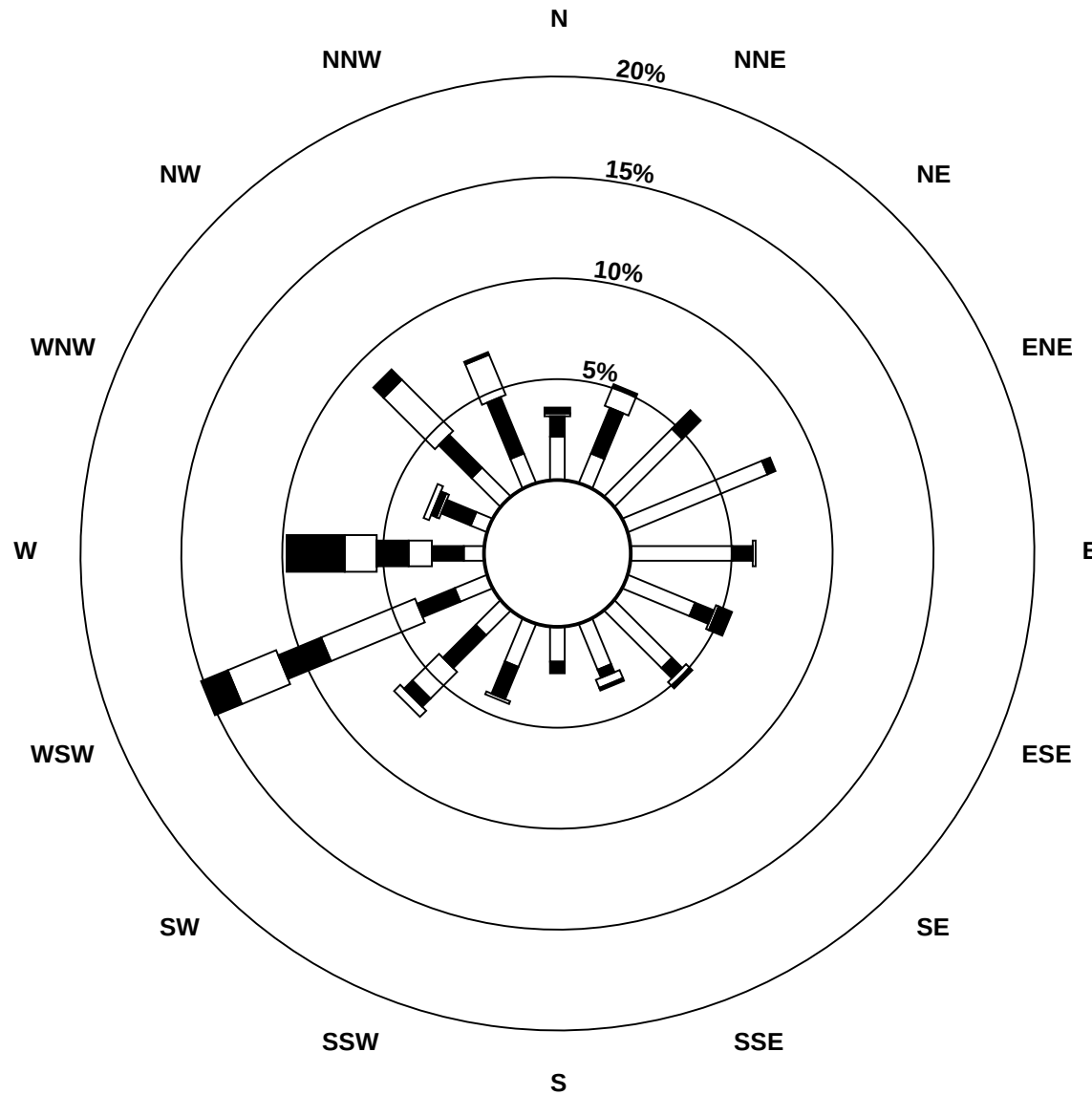
Hourly Averages

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

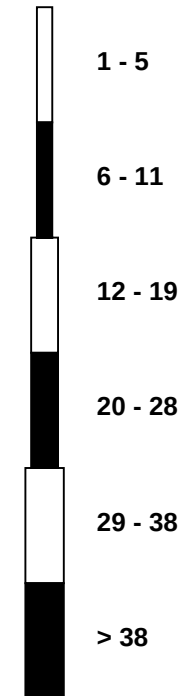
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 Spd	10	13	10	11	6	4	6	6	7	7	9	10	10	9	9	11	11	9	10	12	14	15	16	15	6.5	16.4
Dir	92	101	88	93	69	82	64	32	42	47	46	31	18	25	16	4	14	338	324	320	321	323	316	316	14	316
2 Spd	12	13	9	6	7	7	2	1	1	1	1	1	1	3	4	0	3	2	1	1	2	4	4	6	3.0	13.2
Dir	316	316	328	347	326	319	0	315	14	10	37	59	235	267	275	210	105	73	142	51	38	339	310	340	330	316
3 Spd	5	7	7	5	6	6	9	9	6	5	4	4	2	1	3	3	4	5	4	2	2	2	4	4	1.8	8.7
Dir	329	329	0	2	7	327	327	331	325	301	310	305	288	171	145	142	127	98	115	100	114	96	138	118	352	331
4 Spd	5	4	4	5	6	11	7	5	7	11	11	9	12	21	22	23	26	18	16	18	19	14	12	15	10.9	26.2
Dir	143	142	121	140	191	229	229	205	200	217	214	209	236	253	248	266	271	257	250	253	246	258	248	243	241	271
5 Spd	8	11	14	14	8	6	6	6	8	10	11	15	15	12	13	9	6	6	3	3	1	3	3	5	6.2	14.9
Dir	248	261	268	275	262	270	299	303	320	335	354	330	320	321	332	336	314	312	313	334	171	95	108	121	307	330
6 Spd	6	3	3	3	5	5	6	5	4	3	6	6	7	8	6	5	5	2	1	3	3	1	4	5	3.0	8.2
Dir	144	141	129	100	125	120	123	126	98	205	92	78	133	124	123	140	158	160	18	317	284	208	34	352	120	124
7 Spd	9	11	10	13	12	3	1	1	1	1	2	4	10	12	8	8	12	14	11	12	13	6	4	5	6.1	14.4
Dir	318	330	326	321	309	225	167	99	232	186	125	182	245	257	249	250	254	267	280	253	264	263	245	316	275	267
8 Spd	7	9	5	6	1	1	3	4	12	13	14	10	11	7	6	6	7	2	4	5	0	1	2	3	4.6	14.0
Dir	301	322	3	343	357	37	12	328	318	324	324	331	337	355	23	18	9	77	272	284	265	227	182	131	335	324
9 Spd	2	1	2	2	1	1	1	4	4	3	4	4	7	8	9	10	15	14	9	8	10	11	13	10	4.8	14.6
Dir	162	170	48	300	63	101	141	55	186	98	161	163	161	173	176	190	234	250	248	219	205	202	204	202	202	234
10 Spd	7	10	13	10	10	11	19	16	9	13	15	9	14	7	12	32	23	19	16	10	11	8	13	8	12.8	32.0
Dir	210	217	228	224	233	226	235	238	218	228	247	241	253	237	231	227	234	225	214	196	213	232	234	262	230	227
11 Spd	24	21	33	28	28	30	24	27	27	30	29	30	31	35	38	42	32	26	27	27	30	25	30	16	28.4	41.6
Dir	248	239	245	244	232	234	244	260	260	258	253	249	250	259	259	261	255	256	258	258	262	262	239	253	253	259
12 Spd	17	18	16	25	18	6	4	5	9	9	16	18	22	20	18	14	11	24	21	9	5	3	5	4	9.3	25.1
Dir	226	241	241	244	244	218	139	150	141	158	155	152	148	137	136	154	212	232	230	212	147	118	161	92	191	244
13 Spd	5	6	5	3	10	11	3	3	17	19	31	33	39	44	42	38	34	25	14	5	1	4	4	7	16.1	43.8
Dir	160	217	222	159	215	253	256	195	240	236	243	240	241	245	249	248	247	250	244	220	8	200	253	231	241	245
14 Spd	4	5	3	5	4	16	15	2	3	2	4	8	13	13	14	16	12	12	9	6	4	3	1	3	5.3	15.9
Dir	175	182	199	59	141	237	241	193	168	150	186	212	235	228	243	250	250	251	288	291	2	103	56	21	236	250
15 Spd	4	3	4	4	2	6	9	9	11	13	13	13	16	15	16	19	21	19	20	19	18	18	16	14	11.1	20.6
Dir	26	45	34	244	332	19	14	19	21	14	16	12	2	345	17	344	332	328	325	321	317	316	312	301	344	332
16 Spd	9	8	2	5	4	1	5	4	2	4	5	7	6	8	15	20	25	23	24	21	14	10	7	9	7.1	25.2
Dir	289	290	211	235	254	45	58	246	219	58	87	81	106	113	102	104	109	109	118	118	126	125	117	165	116	109
17 Spd	11	19	32	36	26	30	28	28	23	15	5	5	4	6	9	3	12	12	19	21	21	22	20	15	12.4	35.6
Dir	200	219	233	237	240	237	243	241	242	236	242	270	228	289	265	58	12	340	330	321	319	326	324	317	266	237
18 Spd	12	13	8	9	7	7	4	3	1	2	2	4	3	5	2	2	2	8	2	1	4	4	5	2	2.3	12.6
Dir	312	316	342	351	324	18	2	9	35	59	104	109	122	90	124	128	208	256	266	232	60	73	308	310	344	316
19 Spd	4	5	2	4	7	7	5	4	3	3	3	3	5	2	3	7	7	11	15	19	16	12	12	2	5.2	18.5
Dir	236	238	341	311	317	315	327	348	38	17	114	103	58	84	39	308	328	347	330	321	314	317	315	357	328	321
20 Spd	1	6	2	4	4	4	6	5	1	5	3	5	8	13	19	17	18	43	45	39	34	33	35	31	12.3	45.1
Dir	125	45	73	85	175	64	51	59	138	54	76	43	257	248	243	242	263	271	268	265	259	260	259	260	262	268
21 Spd	34	31	42	40	31	51	46	42	31	29	26	30	42	39	43	36	42	46	52	44	50	53	50	57	41.0	57.3
Dir	258	253	257	256	264	259	259	258	256	251	245	250	259	260	267	257	257	264	264	265	264	259	255	254	259	254
22 Spd	50	49	48	51	46	46	36	26	21	20	32	39	32	29	22	25	18	24	23	16	9	8	1	6	27.8	50.6
Dir	258	260	262	266	266	269	274	274	269	286	275	269	283	285	282	270	273	270	277	268	276	79	284	270	266	266

Wind Rose

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



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Beaverlodge - November 2015

Maximum Speed: 57 km/h on Nov 22 00:00																				Maximum Daily Speed Average: 41.2 km/h on Nov 21										Hours in Service: 720	
Minimum Speed: 1 km/h on Nov 2 11:00																				Minimum Daily Speed Average: 3.0 km/h on Nov 25										Hours of Data: 720	
Maximum Diurnal Speed Average: 14.5 km/h at hour 18																				Minimum Diurnal Speed Average: 8.5 km/h at hour 10										Hours of Missing Data: 0	
Monthly Average Speed: 11.16 km/h																				Percentiles: P ₁ = 1.5 P ₁₀ = 2.9 Q ₁ = 4.1 Median = 6.6 Q ₃ = 14.2 P ₉₀ = 26.2 P ₉₉ = 50.0										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-Nov	10	13	10	11	6	4	6	6	7	8	9	10	10	9	9	11	11	10	10	12	14	15	16	15	10.1	16.4					
2-Nov	12	13	9	7	7	7	2	1	2	1	1	3	1	3	4	2	4	3	2	2	3	4	4	7	4.4	13.2					
3-Nov	5	7	7	5	6	6	9	9	6	5	5	4	2	1	3	3	5	5	4	2	2	2	4	4	4.7	8.8					
4-Nov	5	4	4	5	7	11	7	6	8	11	11	9	12	21	22	23	26	18	16	18	19	14	12	15	12.7	26.2					
5-Nov	8	11	14	14	9	6	6	6	8	11	11	15	15	12	13	10	7	6	3	3	3	4	3	5	8.4	15.0					
6-Nov	6	4	4	4	5	5	6	5	4	3	6	6	8	8	6	5	5	4	2	5	6	2	6	6	5.1	8.3					
7-Nov	9	11	10	13	12	5	2	3	3	2	2	4	10	12	8	8	12	15	11	12	13	8	5	5	8.2	14.6					
8-Nov	8	9	6	6	3	2	4	4	12	13	14	10	12	7	6	6	7	4	4	5	2	2	3	3	6.3	14.1					
9-Nov	2	2	3	4	2	3	3	4	4	4	5	5	7	8	9	11	15	14	9	9	10	11	13	10	7.0	15.0					
10-Nov	8	10	13	10	11	11	19	16	9	13	15	9	14	8	12	32	23	19	16	10	11	9	13	9	13.4	32.1					
11-Nov	24	21	33	28	28	30	24	28	27	30	29	30	31	35	38	42	32	26	28	28	31	25	30	16	28.9	41.8					
12-Nov	17	18	16	25	18	6	6	6	9	9	16	18	22	20	18	14	13	24	21	11	6	4	5	5	13.6	25.2					
13-Nov	6	6	5	3	11	12	6	6	17	19	31	33	39	44	42	38	34	25	15	6	3	6	8	7	17.6	44.0					
14-Nov	5	5	4	5	4	17	15	5	3	3	5	9	13	14	15	16	12	13	9	9	6	3	2	4	8.2	16.6					
15-Nov	5	5	4	6	4	6	9	9	11	13	14	13	16	16	20	20	21	19	20	19	18	18	17	14	13.3	20.6					
16-Nov	9	8	4	5	5	3	5	5	6	4	5	7	6	9	15	20	25	24	25	21	15	10	8	10	10.6	25.2					
17-Nov	11	19	32	36	26	30	28	28	23	15	8	7	5	6	11	4	13	13	19	21	21	22	20	15	18.0	35.7					
18-Nov	12	13	8	9	9	8	6	4	2	4	5	4	3	5	3	3	2	8	5	4	4	4	10	5	5.8	12.7					
19-Nov	5	6	4	6	7	7	5	5	4	4	4	4	5	3	5	7	7	11	15	19	16	12	12	5	7.3	18.6					
20-Nov	3	6	2	4	5	4	6	5	3	5	4	5	8	13	19	17	20	43	45	39	34	33	35	31	16.3	45.2					
21-Nov	34	31	42	41	32	51	46	42	31	29	26	31	42	39	43	36	42	46	52	44	50	53	50	57	41.2	57.3					
22-Nov	50	49	48	51	46	46	36	27	21	20	32	39	32	30	23	25	18	24	23	17	9	8	2	7	28.4	50.7					
23-Nov	5	5	5	5	8	10	6	4	6	4	4	5	8	11	9	11	14	17	21	22	21	19	17	15	10.5	22.4					
24-Nov	15	12	12	10	12	10	10	8	9	7	4	2	4	5	6	6	7	6	6	5	2	2	4	3	6.9	14.9					
25-Nov	3	3	2	4	4	5	3	3	2	2	2	2	4	3	2	2	4	4	2	3	5	2	3	3	3.0	5.3					
26-Nov	4	3	4	3	6	4	3	5	4	4	2	4	3	3	3	2	4	11	15	13	9	5	5	4	5.1	14.7					
27-Nov	3	3	3	22	18	16	10	14	8	3	4	4	3	4	6	4	2	5	3	3	6	4	3	3	6.4	22.5					
28-Nov	4	5	5	4	6	3	4	6	7	4	3	3	3	6	6	5	10	11	5	3	5	6	5	4	5.1	10.6					
29-Nov	6	6	5	8	4	4	4	4	5	5	4	4	4	4	2	4	3	5	4	4	3	4	2	4	4.2	7.7					
30-Nov	4	4	5	4	5	3	3	2	6	3	4	7	4	4	2	5	4	2	4	2	4	6	4	3	4.0	6.7					
9.9 10.3 10.9 11.9 10.8 11.2 10.0 9.2 8.8 8.5 9.5 10.2 11.6 12.1 12.7 13.2 13.4 14.5 13.8 12.4 11.8 10.6 10.7 9.8																									Diurnal Average						
49.7 48.8 47.8 50.7 46.4 51.4 45.6 41.8 31.3 29.7 32.1 39.1 42.4 44.0 43.3 41.8 41.8 46.5 51.6 43.8 50.0 53.1 50.1 57.3																									Diurnal Maximum						
All monthly, daily, and diurnal averages have been calculated using scalar methods																															

Hourly Standard Deviations

Wind Direction (WD) - deg
Beaverlodge - November 2015

Maximum Value: 94.0 deg on Nov 7 09:00																		Hours in Service: 720							
Minimum Value: 2.6 deg on Nov 17 08:00																		Hours of Data: 720							
																		Hours of Missing Data: 0							
Percentiles: P ₁ = 3.2 P ₁₀ = 4.4 Q ₁ = 6.5 Median = 15.7 Q ₃ = 36.7 P ₉₀ = 64.3 P ₉₉ = 87.7																		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-Nov	8	5	6	8	13	24	27	10	8	7	4	6	4	6	9	7	5	17	4	7	4	5	4	5	26.9
2-Nov	5	5	13	15	15	15	36	41	55	32	77	75	78	29	24	84	22	36	37	62	37	35	17	25	84.4
3-Nov	22	17	15	23	27	19	6	8	9	19	16	22	30	44	15	18	20	16	21	35	31	25	17	37	43.6
4-Nov	19	26	24	18	35	27	36	27	18	15	4	5	10	6	5	7	4	9	3	5	4	5	7	3	35.8
5-Nov	11	16	7	7	9	17	5	7	7	10	15	8	8	7	10	9	16	8	17	8	85	23	18	14	85.2
6-Nov	16	20	32	17	11	18	12	16	12	47	12	23	13	9	16	30	20	77	85	65	62	63	71	63	84.5
7-Nov	18	5	5	6	6	41	64	78	94	69	45	15	23	11	13	7	6	9	6	7	7	71	72	31	94.0
8-Nov	12	8	34	15	87	78	33	40	6	3	6	8	11	14	14	10	7	52	29	42	90	90	59	10	90.1
9-Nov	26	52	53	76	84	71	69	33	18	29	22	20	11	12	10	22	14	7	14	19	15	7	10	11	84.0
10-Nov	29	25	7	9	19	14	5	8	9	11	6	12	7	24	18	5	7	6	6	13	20	23	13	22	29.3
11-Nov	5	7	6	5	3	6	9	8	4	4	5	7	5	9	5	6	6	6	3	5	5	7	6	14	13.9
12-Nov	4	6	5	5	13	16	38	27	8	9	5	4	5	4	6	11	60	4	5	54	28	38	10	23	60.2
13-Nov	40	44	42	50	27	25	63	64	4	7	4	3	5	5	5	5	4	5	13	36	64	65	87	19	87.1
14-Nov	34	18	58	29	21	33	10	75	47	60	17	17	12	9	9	5	4	8	16	53	55	41	94	59	93.6
15-Nov	62	55	38	52	76	13	9	5	6	7	4	5	5	31	39	20	5	4	4	4	4	4	4	4	75.9
16-Nov	6	5	55	23	58	83	11	54	76	59	17	9	14	24	4	5	3	5	7	6	15	9	11	23	82.8
17-Nov	11	5	3	5	4	4	3	3	4	10	85	50	88	22	69	26	12	17	6	4	4	5	5	7	88.4
18-Nov	5	7	14	16	37	24	50	49	76	88	67	18	26	26	43	42	47	10	89	83	34	24	61	82	89.4
19-Nov	54	37	84	49	7	7	28	27	34	27	48	31	16	36	44	13	13	6	10	4	5	7	7	76	84.2
20-Nov	62	11	52	32	32	10	6	6	69	33	27	29	10	5	4	9	36	4	5	4	4	4	4	4	68.7
21-Nov	4	4	3	3	8	4	4	3	4	5	5	7	6	4	4	4	4	3	3	4	4	4	4	3	8.0
22-Nov	3	3	4	4	4	4	5	6	5	7	6	6	4	5	7	5	13	5	4	7	23	39	84	34	83.5
23-Nov	64	29	8	7	6	14	37	82	52	34	76	29	6	7	10	8	8	8	4	6	5	6	6	7	82.2
24-Nov	7	7	6	12	11	13	11	16	16	24	10	39	14	25	23	7	8	8	7	12	28	68	75	20	74.8
25-Nov	54	83	88	23	9	7	14	34	70	72	27	33	70	17	33	34	60	42	71	75	16	79	73	27	88.3
26-Nov	17	25	20	47	29	46	42	15	12	47	75	25	27	23	32	37	60	8	4	4	19	26	12	28	74.8
27-Nov	64	83	94	11	10	7	12	6	22	66	68	61	40	10	10	26	51	8	12	72	62	51	87	45	93.7
28-Nov	29	22	17	76	43	64	47	57	54	62	34	21	36	10	31	54	7	9	76	61	21	32	79	51	79.5
29-Nov	28	17	62	57	80	31	67	40	40	14	49	51	8	33	47	13	18	10	36	26	35	81	52	21	80.8
30-Nov	18	43	8	24	16	40	19	85	17	33	23	8	16	34	58	40	11	67	64	81	40	52	41	64	85.4
	64.1	83.2	93.7	75.6	87.1	82.8	68.7	85.4	94.0	87.8	85.1	75.0	88.4	43.6	68.7	84.4	60.2	77.2	89.4	82.6	89.9	90.1	93.6	82.3	

PAZA
Valleyview Station
Monthly Summary Tables, Graphs and
Roses

Hourly Averages

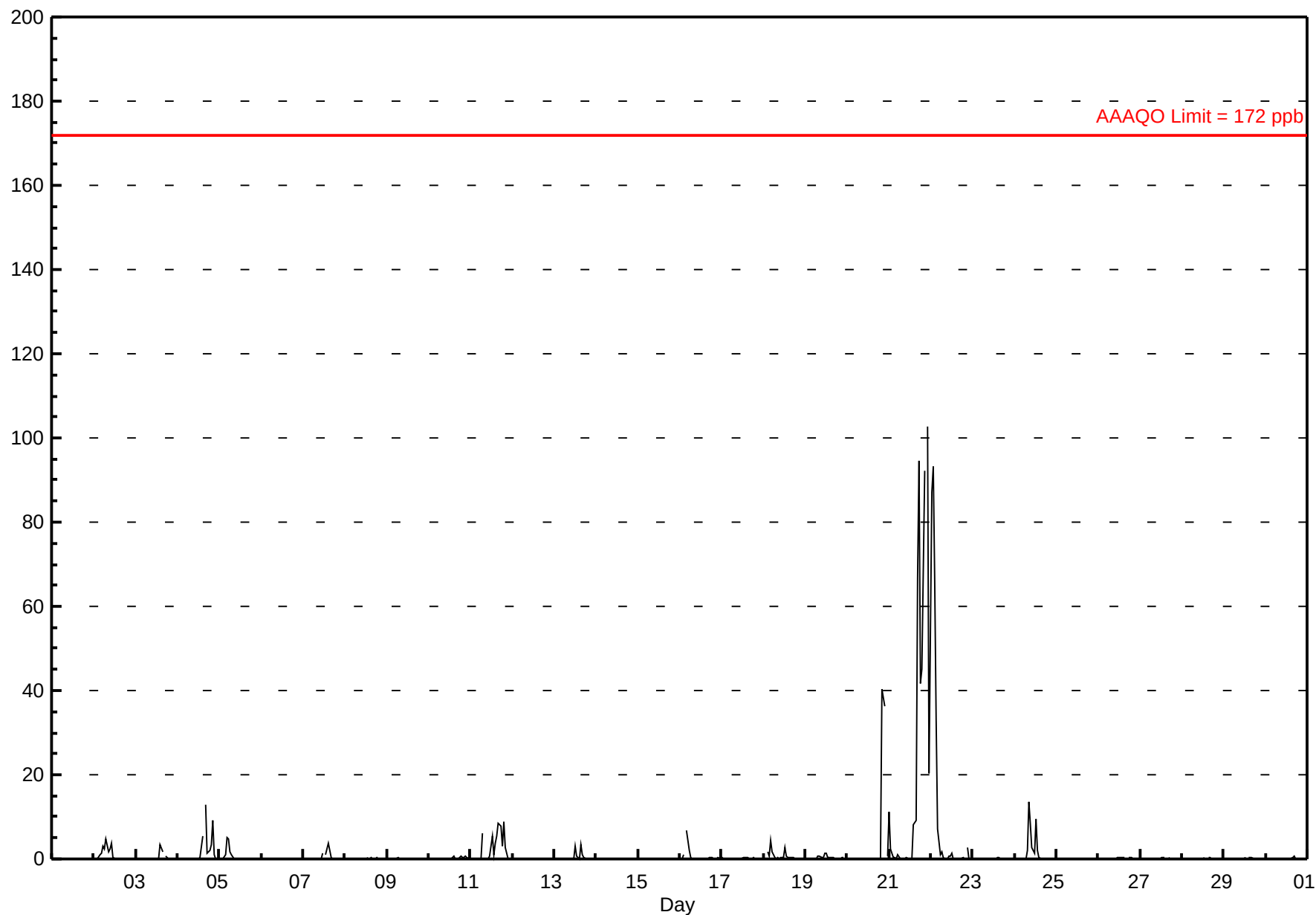
Sulphur Dioxide (SO₂) - ppb

Valleyview - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 102.7 ppb on Nov 21 23:00 Maximum Daily Average: 21.6 ppb on Nov 21																								Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0		
Minimum Value: 0 ppb on Nov 1 08:00 Minimum Daily Average: 0.0 ppb on Nov 15 Maximum Diurnal Average: 5.0 ppb at hour 21 Minimum Diurnal Average: 0.2 ppb at hour 7 Monthly Average: 1.63 ppb Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.2 P ₉₀ = 1.0 P ₉₉ = 65.7																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.0	0.1
2-Nov	0	0	0	1	1	3	2	5	2	3	4	0	0	0	0	0	0	A	0	0	0	0	0	0	0.9	4.9
3-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	A	1	0	0	0	0	0	0	0	0.3	3.3
4-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	5	A	13	1	2	3	9	1	0	0	1.6	12.8	
5-Nov	0	0	0	1	5	5	2	1	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.6	5.0	
6-Nov	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.0	0.1	
7-Nov	0	0	0	0	0	0	0	0	0	0	0	1	A	1	4	2	0	0	0	0	0	0	0	0.4	3.7	
8-Nov	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	0.4	
9-Nov	0	0	0	0	0	0	0	0	0	0	0	A	C	C	C	0	0	0	0	0	0	0	0	0.1	0.2	
10-Nov	0	0	0	0	0	0	0	0	0	A	0	0	0	0	1	0	0	0	1	0	0	1	0	0.2	0.6	
11-Nov	0	0	0	0	0	0	0	6	A	0	1	6	1	4	5	9	8	3	9	3	0	0	0	2.3	8.7	
12-Nov	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	
13-Nov	0	0	0	0	0	0	A	0	0	0	0	3	1	0	3	1	0	0	0	0	0	0	0	0.4	3.4	
14-Nov	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	
15-Nov	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	
16-Nov	0	0	1	A	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	6.7	
17-Nov	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	0.3	
18-Nov	0	A	2	1	4	2	0	0	0	0	0	3	1	1	0	0	0	0	0	0	0	0	0	0.6	4.4	
19-Nov	A	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0.3	1.5	
20-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	36	A	1	3.4	40.4	
21-Nov	11	2	0	0	0	1	0	0	0	0	0	0	0	8	9	67	95	42	45	92	A	103	20	21.6	102.7	
22-Nov	87	93	66	33	7	1	2	0	0	0	1	1	1	0	0	0	0	0	A	3	0	0	0	12.9	93.2	
23-Nov	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	0.4	
24-Nov	0	0	0	0	0	0	0	2	14	8	3	1	10	2	0	0	0	0	A	0	0	0	0	1.8	13.6	
25-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.0	0.2	
26-Nov	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	0.3	
27-Nov	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	0.3	
28-Nov	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	
29-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.1	0.3	
30-Nov	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	1	0	0	0	0	0	0	0.1	0.6	
3.4 3.3 2.4 1.3 0.9 0.5 0.2 0.5 0.6 0.4 0.3 0.3 0.9 0.3 1.1 0.9 3.3 3.8 1.8 2.0 5.0 1.4 3.6 0.8																								Diurnal Average		
87.1 93.2 66.0 33.3 7.2 4.6 2.3 6.1 13.6 8.4 3.6 1.5 9.6 1.9 8.3 9.2 66.8 94.7 41.7 45.1 92.3 36.2 102.7 20.3																								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
Valleyview - November 2015



Hourly Maximums

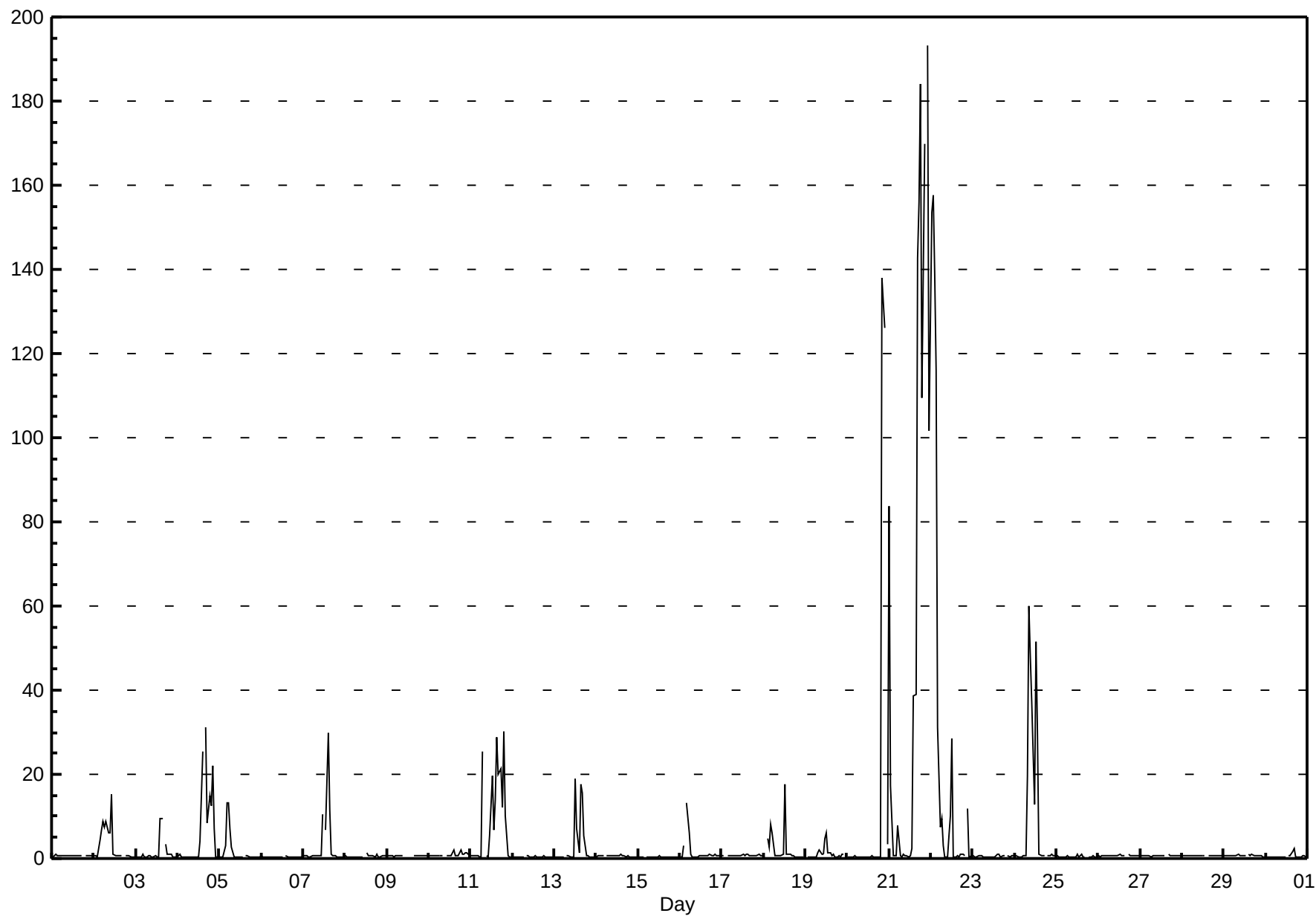
Sulphur Dioxide (SO₂) - ppb

Valleyview - November 2015

Maximum Value: 193.2 ppb on Nov 21 23:00																				Maximum Daily Average: 54.4 ppb on Nov 21					Hours in Service: 720	
Minimum Value: 0 ppb on Nov 30 05:00																				Minimum Daily Average: 0.5 ppb on Nov 12					Hours of Data: 686	
Maximum Diurnal Average: 12.2 ppb at hour 21																				Minimum Diurnal Average: 1.3 ppb at hour 7					Hours of Missing Data: 34	
Monthly Average: 5.01 ppb																				Percentiles: P ₁ = 0.4 P ₁₀ = 0.4 Q ₁ = 0.5 Median = 0.5 Q ₃ = 0.7 P ₉₀ = 6.6 P ₉₉ = 138.9					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-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0.6	1.0
2-Nov	1	1	0	4	7	9	7	9	6	6	15	1	1	1	1	1	1	A	1	1	1	1	0	0	3.1	15.4
3-Nov	0	0	0	0	1	0	0	1	1	0	0	1	0	0	10	9	A	3	1	1	1	0	0	0	1.5	9.7
4-Nov	1	1	0	0	0	0	0	0	0	0	0	0	0	4	25	A	31	8	15	13	22	7	0	0	5.8	31.1
5-Nov	0	0	0	3	13	13	7	3	0	0	0	0	0	0	A	1	1	0	0	0	0	0	0	0	2.1	13.4
6-Nov	1	0	0	0	0	0	0	0	0	0	0	0	0	A	1	0	0	0	0	1	0	0	1	1	0.5	0.6
7-Nov	1	1	1	0	0	1	1	1	1	1	1	11	A	7	30	11	1	1	1	0	0	1	1	1	3.0	29.9
8-Nov	1	0	0	0	0	0	0	0	0	0	0	A	1	1	1	1	1	0	1	1	1	1	1	1	0.6	1.5
9-Nov	1	1	1	1	0	1	1	1	1	1	A	1	C	C	C	1	1	1	1	1	1	1	1	1	0.6	0.8
10-Nov	1	1	1	1	1	1	1	1	1	A	1	1	1	1	2	1	1	1	2	1	1	1	1	1	0.8	2.1
11-Nov	1	1	1	1	1	1	0	25	A	1	0	5	20	7	14	29	20	21	12	30	10	1	0	0	8.7	30.3
12-Nov	0	0	0	0	0	0	0	A	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0.5	0.8
13-Nov	0	0	0	0	0	0	A	1	1	0	0	0	19	7	1	18	16	5	1	1	0	1	1	1	3.3	18.9
14-Nov	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0.5	1.0
15-Nov	0	0	0	0	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.5	0.8
16-Nov	0	0	3	A	13	6	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.5	13.2
17-Nov	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
18-Nov	1	A	5	3	8	6	1	1	1	1	1	1	18	1	1	1	1	1	1	1	0	0	0	0	2.2	17.8
19-Nov	A	0	0	0	0	0	0	1	2	1	1	5	6	1	1	1	1	0	0	1	0	1	1	A	1.3	6.0
20-Nov	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	138	126	A	3	12.1	137.8
21-Nov	84	17	1	1	1	8	1	0	1	1	1	0	1	2	39	39	143	156	184	109	170	A	193	102	54.4	193.2
22-Nov	153	158	139	116	31	7	9	3	0	0	5	10	29	0	0	1	0	1	1	1	A	12	0	1	29.5	157.7
23-Nov	1	0	0	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	A	1	1	1	1	0.6	1.0
24-Nov	1	1	1	1	1	1	1	20	60	48	37	13	51	30	1	1	1	1	A	1	1	1	1	1	11.7	59.9
25-Nov	1	1	1	1	0	0	1	0	0	0	0	0	1	0	1	0	0	A	0	0	0	1	0	1	0.5	1.0
26-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.7	1.1
27-Nov	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.6	1.0
28-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.6	0.8
29-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0	0	0.6	1.0
30-Nov	1	0	0	0	0	0	0	0	0	0	0	0	A	1	1	2	2	0	0	0	0	1	1	0	0.6	2.3
8.7		6.5	5.5	4.8	2.9	2.1	1.3	2.5	2.9	2.4	2.5	2.0	5.8	2.6	5.0	4.3	8.1	7.4	8.1	5.8	12.2	5.5	7.2	4.1	Diurnal Average	
153.4		157.7	139.0	115.9	31.1	13.2	9.5	25.4	59.9	48.1	37.3	12.8	51.5	30.1	38.6	39.1	142.8	155.8	184.1	109.4	169.9	126.0	193.2	101.6	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																								

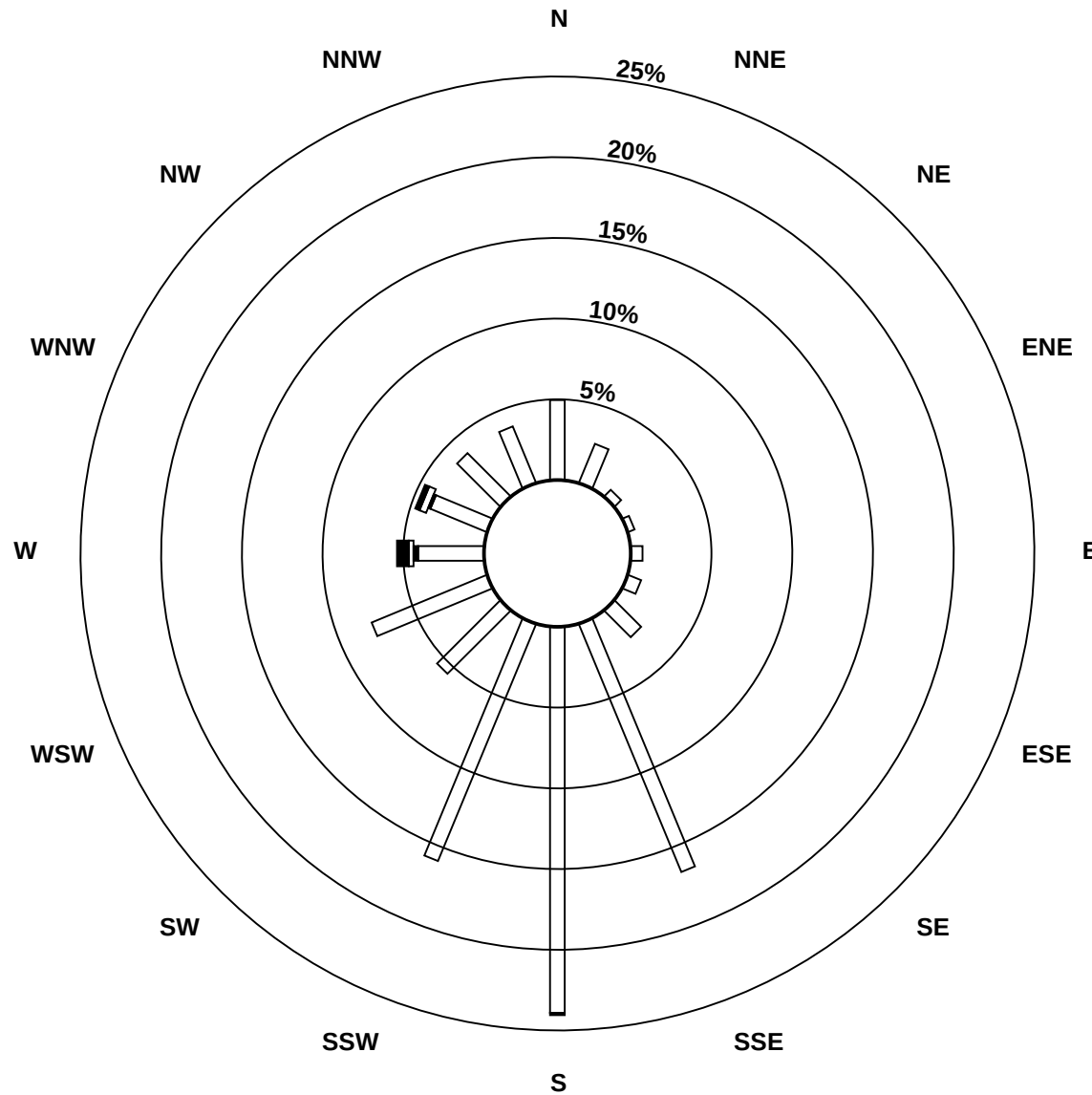
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Valleyview - November 2015

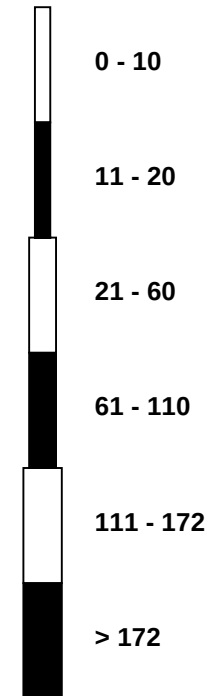


Pollutant Rose

Sulphur Dioxide (SO₂) - ppb
Valleyview - November 2015

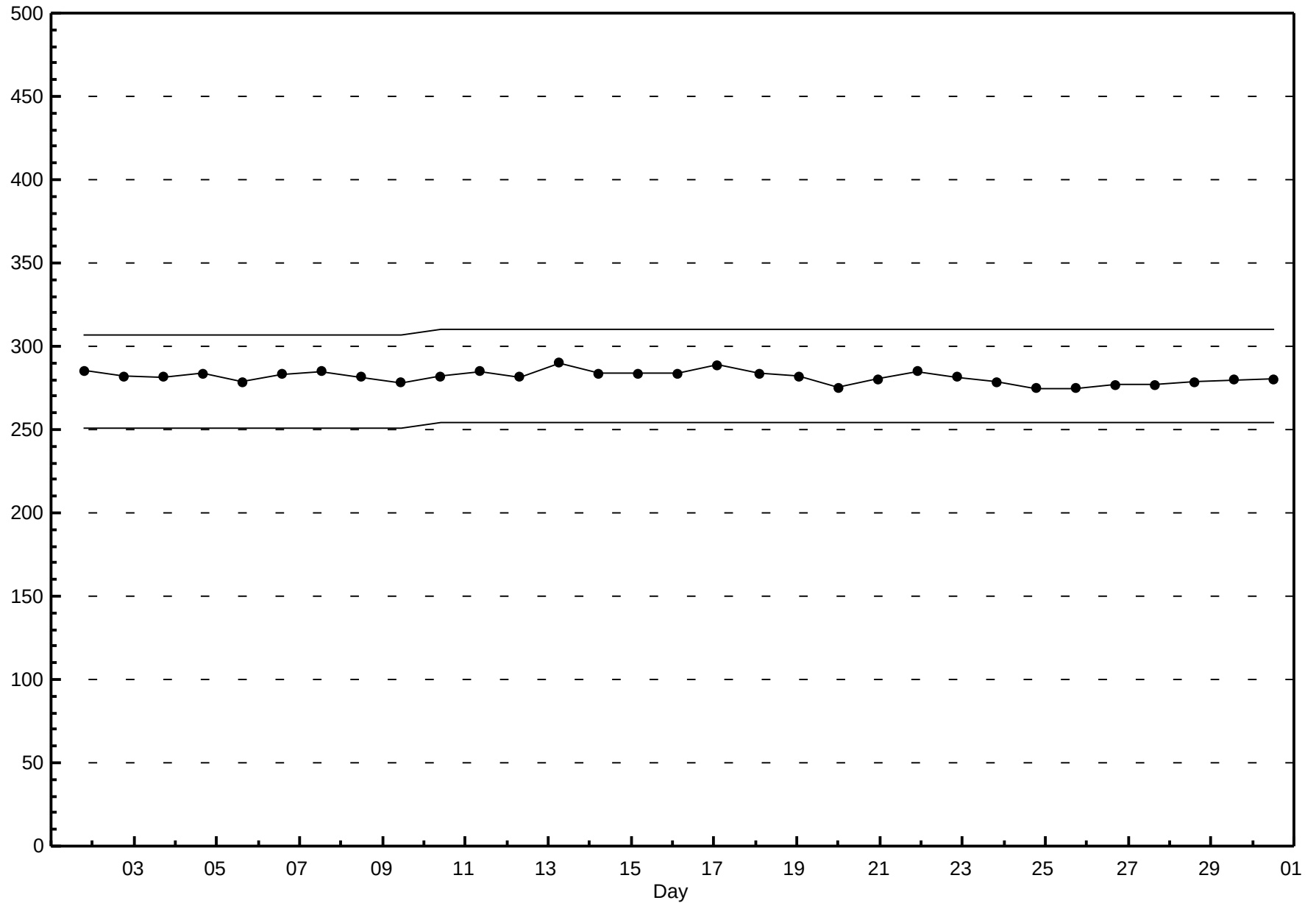


Pollutant Classes (ppb)



Span Responses

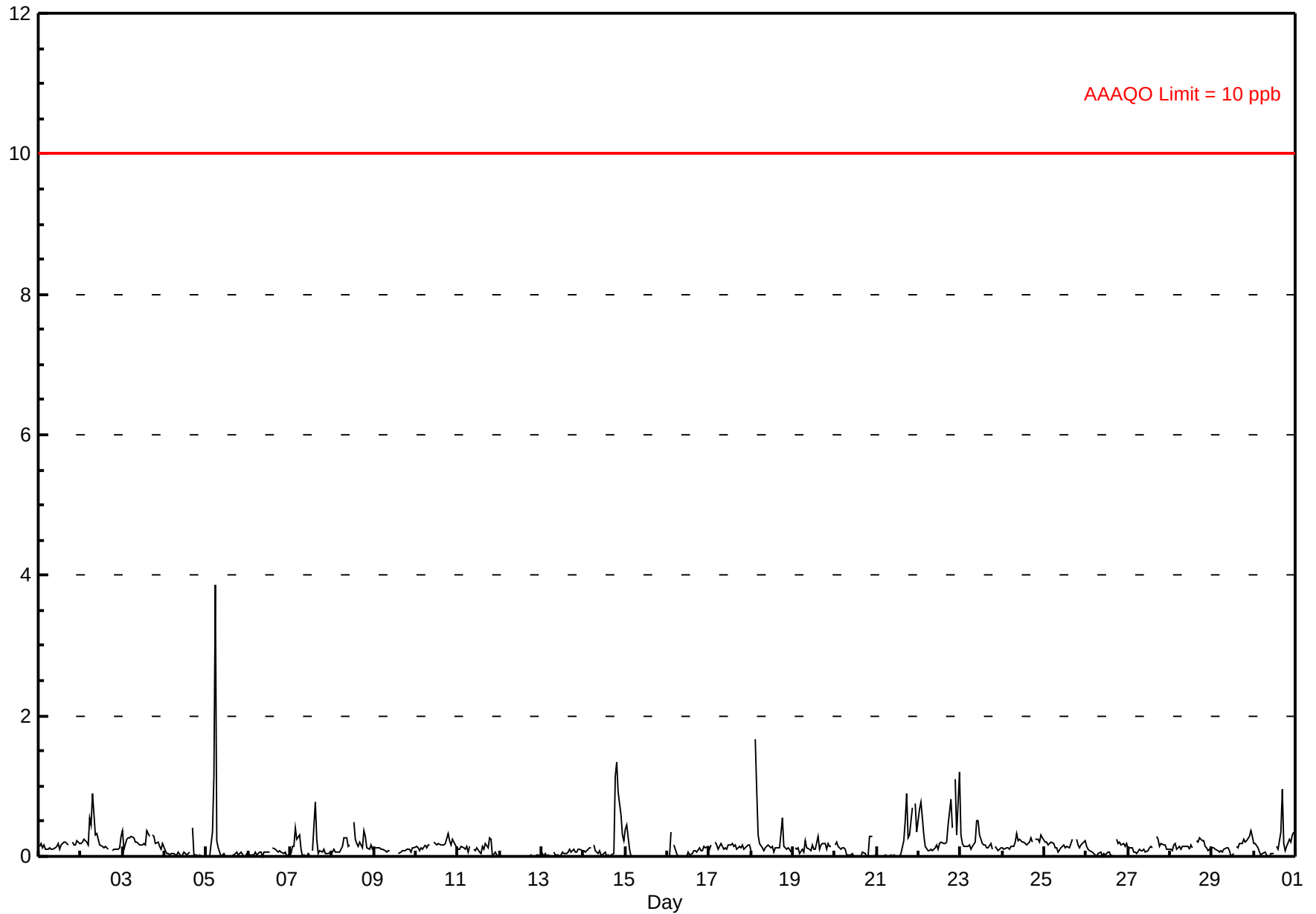
Sulphur Dioxide (SO₂)
Valleyview - November 2015



Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 3.9 ppb on Nov 5 06:00 Maximum Daily Average: 0.4 ppb on Nov 22																			Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0							
Minimum Value: 0 ppb on Nov 4 10:00 Maximum Diurnal Average: 0.2 ppb at hour 6 Monthly Average: 0.15 ppb																			Minimum Daily Average: 0.0 ppb on Nov 12 Minimum Diurnal Average: 0.1 ppb at hour 12 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 = 1.1							
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-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.2	0.2
2-Nov	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.2	0.9
3-Nov	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
4-Nov	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	0.4
5-Nov	0	0	0	0	1	4	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.3	3.9
6-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.1	0.1
7-Nov	0	0	0	0	0	0	0	0	0	0	0	0	A	0	1	0	0	0	0	0	0	0	0	0	0.1	0.8
8-Nov	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
9-Nov	0	0	0	0	0	0	0	0	0	0	A	C	C	C	0	0	0	0	0	0	0	0	0	0	0.1	0.1
10-Nov	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
11-Nov	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
12-Nov	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
13-Nov	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
14-Nov	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0.2	1.3
15-Nov	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	0.4
16-Nov	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	0.3
17-Nov	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
18-Nov	0	A	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.3	1.7
19-Nov	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.1	0.3
20-Nov	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
21-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	A	1	0	0.2	0.9
22-Nov	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	A	1	0	1	0.4	1.2
23-Nov	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0.2	0.5
24-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.2	0.3
25-Nov	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	0.3
26-Nov	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	0.3
27-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.1	0.3
28-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.1	0.3
29-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.1	0.4
30-Nov	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	1	0	0	0	0	0	0	0	0.2	1.0
																									Diurnal Average	
																									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
Valleyview - November 2015



Hourly Maximums

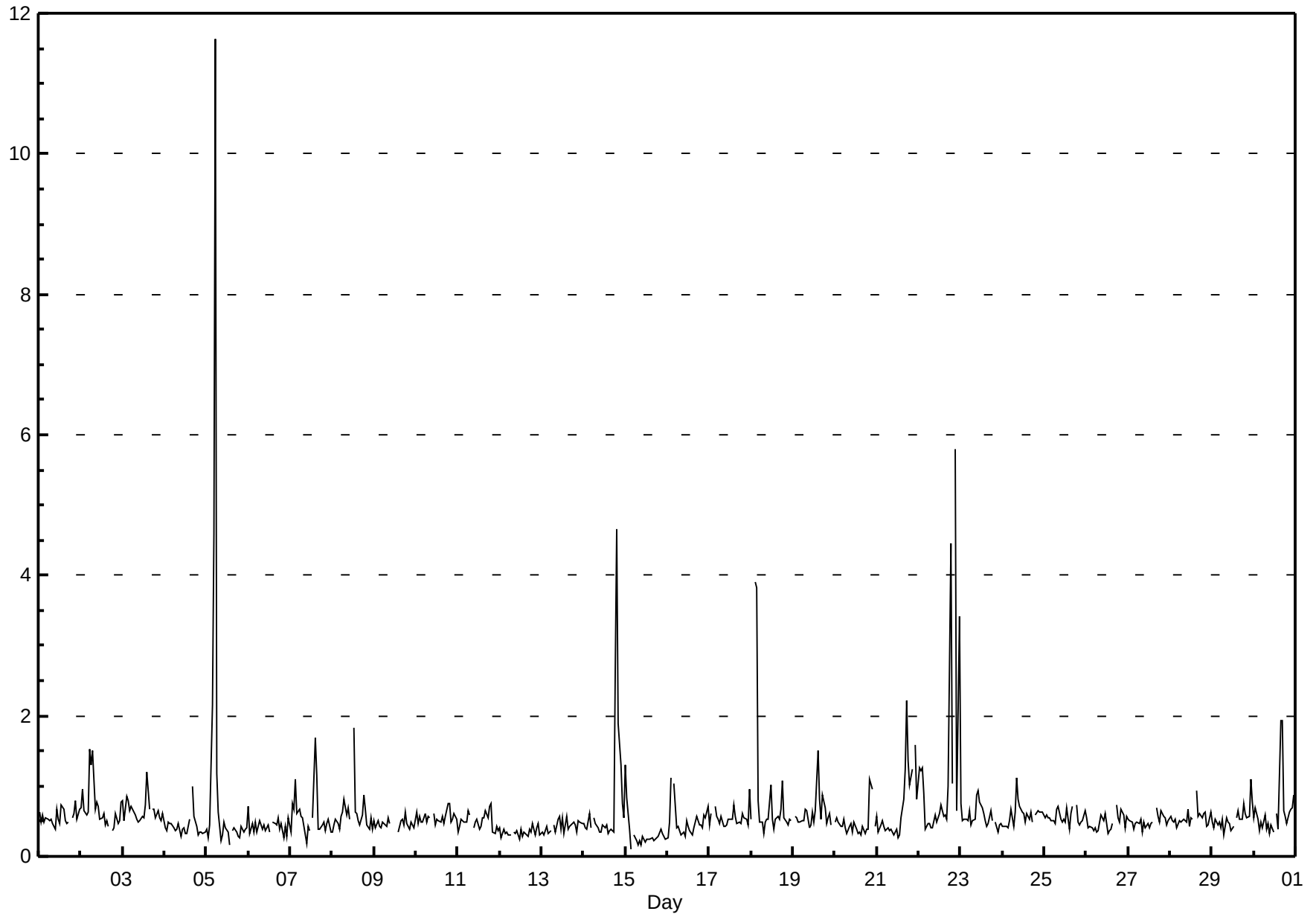
Hydrogen Sulphide (H₂S) - ppb

Valleyview - November 2015

Maximum Value: 11.6 ppb on Nov 5 06:00																				Maximum Daily Average: 1.2 ppb on Nov 22										Hours in Service: 720	
Minimum Value: 0 ppb on Nov 15 04:00																				Minimum Daily Average: 0.3 ppb on Nov 15										Hours of Data: 686	
Maximum Diurnal Average: 0.9 ppb at hour 6																				Minimum Diurnal Average: 0.5 ppb at hour 10										Hours of Missing Data: 34	
Monthly Average: 0.60 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 = 3.8										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-Nov	1	0	1	0	1	1	1	1	0	0	1	1	0	1	1	1	0	0	A	1	1	1	1	1	0.6	0.8					
2-Nov	1	1	1	1	1	2	1	1	1	1	1	1	1	1	0	1	0	A	0	0	1	0	1	1	0.7	1.5					
3-Nov	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.7	1.2					
4-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	1	1	0	0	0	0	0	0	0.4	1.0					
5-Nov	0	0	0	2	5	12	1	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1.2	11.6					
6-Nov	1	0	0	0	0	0	1	0	0	0	0	0	0	A	0	0	0	1	0	0	0	0	0	1	0.4	0.7					
7-Nov	0	1	1	1	1	1	1	1	0	0	0	0	A	1	2	1	0	0	0	0	0	0	1	0	0.6	1.7					
8-Nov	0	0	1	0	0	1	1	1	1	1	1	A	2	1	1	1	0	1	1	1	0	0	1	0	0.6	1.8					
9-Nov	1	0	1	0	0	0	0	0	1	0	A	C	C	C	0	1	1	0	1	0	0	0	0	0	0.5	0.6					
10-Nov	1	0	1	0	0	1	0	1	1	A	1	0	1	1	0	1	0	1	1	1	0	1	1	1	0.6	0.8					
11-Nov	0	0	1	0	0	0	1	1	A	0	0	1	0	0	1	1	1	1	1	1	0	0	0	0	0.5	0.8					
12-Nov	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5					
13-Nov	0	0	0	0	0	0	A	0	0	1	1	0	1	0	1	0	0	0	0	0	0	1	0	0	0.4	0.6					
14-Nov	0	0	0	1	0	A	1	0	0	0	0	0	0	0	0	0	0	0	3	5	2	1	1	1	0.8	4.7					
15-Nov	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.3					
16-Nov	0	0	1	A	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0.5	1.1					
17-Nov	0	1	A	1	1	1	0	1	0	0	0	1	1	1	1	1	0	0	0	1	1	1	0	1	0.5	0.9					
18-Nov	1	A	4	4	1	0	0	0	0	1	1	1	1	0	1	1	1	1	1	1	0	0	1	1	0.9	3.9					
19-Nov	A	1	1	0	0	1	1	1	1	0	0	1	0	1	1	1	1	1	1	0	1	1	0	A	0.6	1.5					
20-Nov	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	A	0	0.5	1.1					
21-Nov	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	2	1	1	1	A	2	1	0.7	2.2					
22-Nov	1	1	1	1	0	0	0	0	0	1	0	1	1	1	1	1	1	1	4	1	A	6	1	3	1.2	5.8					
23-Nov	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	0	1	1	A	0	0	0	0	0.6	0.9					
24-Nov	0	0	0	0	1	1	0	1	1	1	1	1	1	0	1	1	1	0	A	1	1	1	1	1	0.6	1.1					
25-Nov	1	1	1	1	1	1	0	1	1	1	0	1	0	1	0	1	1	A	1	0	0	0	1	1	0.6	0.7					
26-Nov	1	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	A	1	1	0	1	1	0	1	0.5	0.7					
27-Nov	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	A	1	1	0	1	1	1	0	1	0.5	0.7					
28-Nov	1	1	0	1	0	1	0	1	1	0	1	0	1	1	A	1	1	1	1	1	1	0	0	1	0.5	0.9					
29-Nov	0	0	1	0	0	0	1	0	1	0	0	0	0	A	1	1	1	1	1	1	1	1	1	1	0.5	1.1					
30-Nov	1	1	1	0	0	0	1	0	0	0	0	0	A	1	0	2	2	1	1	0	1	1	1	1	0.7	1.9					
0.6 0.5 0.7 0.7 0.6 0.9 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.6 0.6 0.6 0.6 0.8 0.7 0.6 0.7 0.6 0.6																									Diurnal Average						
1.3 1.2 3.9 3.8 4.6 11.6 1.3 1.5 1.1 0.9 0.9 1.0 1.8 0.7 1.7 1.9 1.9 2.2 4.5 4.7 1.9 5.8 1.6 3.4																									Diurnal Maximum						
C - Calibration																									A - Automated Daily Zero Span						

Hourly Maximums

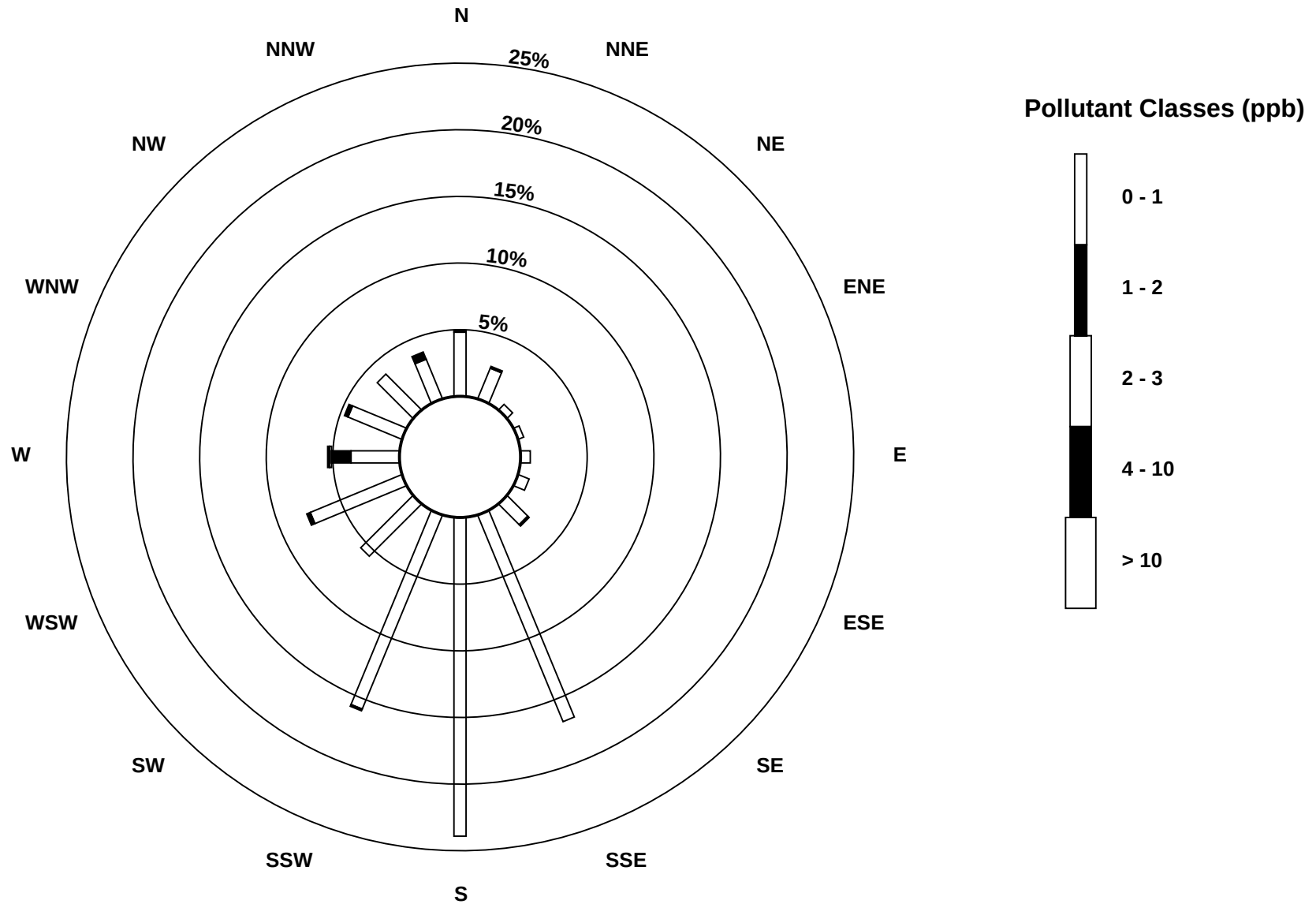
Hydrogen Sulphide (H₂S) - ppb
Valleyview - November 2015



Pollutant Rose

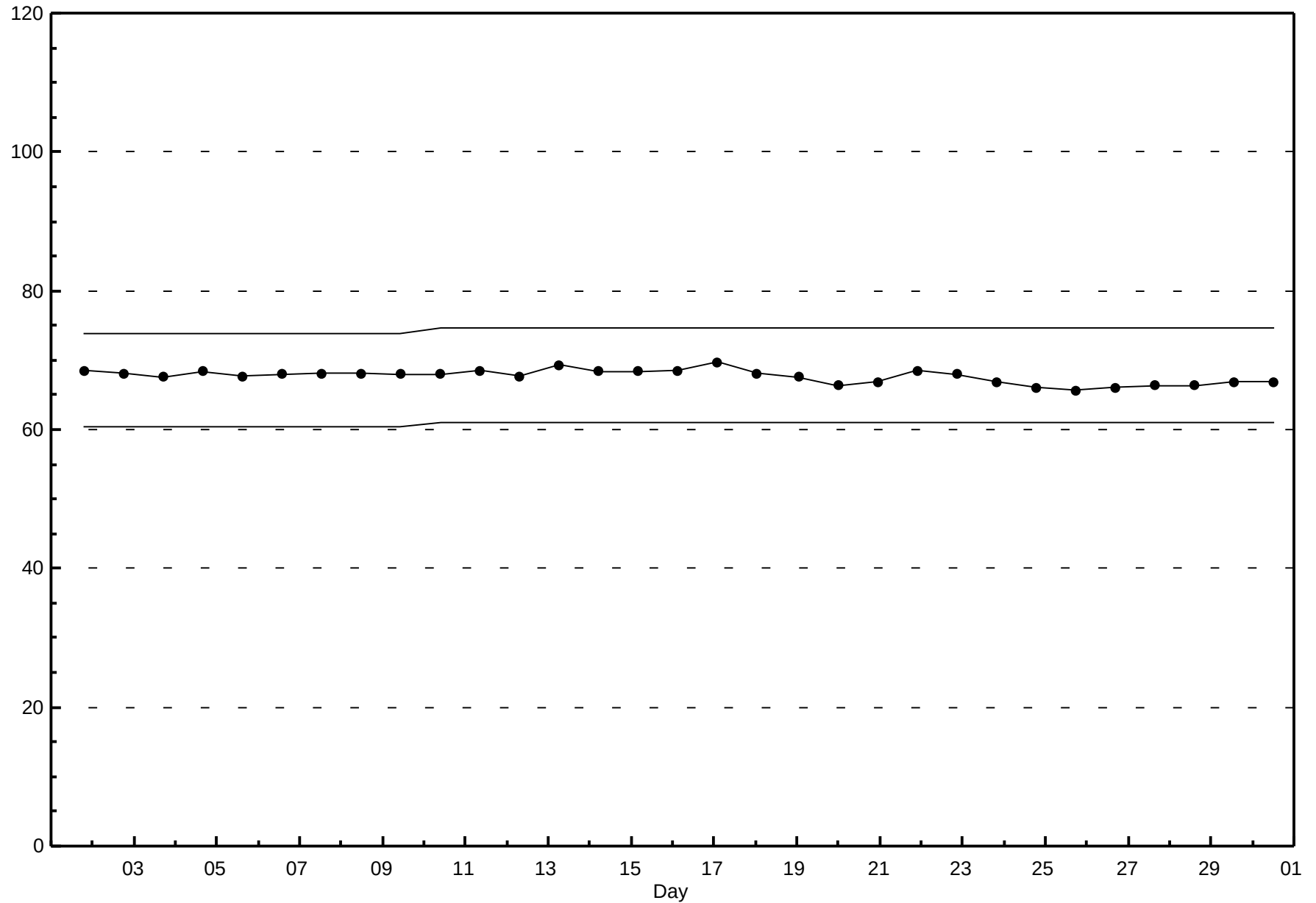
Hydrogen Sulphide (H₂S) - ppb

Valleyview - November 2015



Span Responses

Hydrogen Sulphide (H_2S)
Valleyview - November 2015



Hourly Averages

External Temperature (ET) - °C

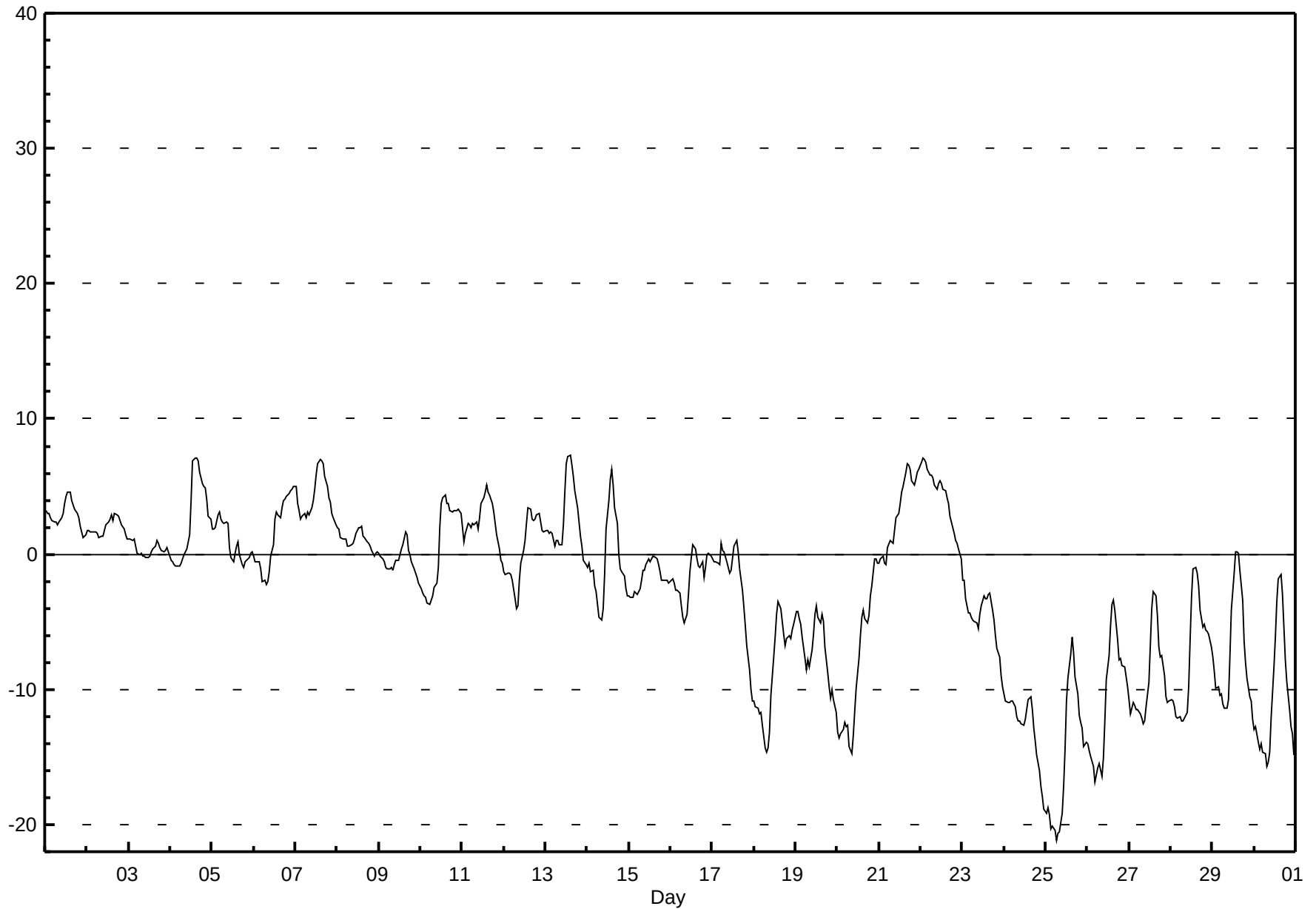
Valleyview - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 7.3 °C on Nov 13 15:00 Maximum Daily Average: 4.3 °C on Nov 22																								Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0			
Minimum Value: -21 °C on Nov 25 07:00 Minimum Daily Average: -14.9 °C on Nov 25 Maximum Diurnal Average: 0.7 °C at hour 15 Minimum Diurnal Average: -4.9 °C at hour 9 Monthly Average: -2.65 °C Percentiles: P ₁ = -19.2 P ₁₀ = -12.2 Q ₁ = -6.3 Median = -0.7 Q ₃ = 1.9 P ₉₀ = 4.0 P ₉₉ = 6.9																											
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-Nov	3	3	3	3	2	2	2	2	2	3	3	4	4	5	5	4	4	3	3	3	3	2	2	1	1	2.9	4.6
2-Nov	2	2	2	2	2	2	2	1	1	1	2	2	2	3	3	3	3	3	3	3	2	2	2	1	1	2.0	3.0
3-Nov	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0.4	1.2	
4-Nov	0	-1	-1	-1	-1	-1	-1	0	0	0	1	1	4	7	7	7	7	6	5	5	5	4	3	3	2.5	7.1	
5-Nov	2	2	2	3	3	3	2	2	2	2	0	0	-1	0	1	1	0	-1	-1	-1	0	0	0	0	0.9	3.1	
6-Nov	0	-1	-1	-1	-1	-2	-2	-2	-2	-1	0	1	3	3	3	3	3	4	4	4	4	5	5	5	1.4	5.0	
7-Nov	5	4	3	3	3	3	3	3	3	3	4	5	6	7	7	7	7	6	5	4	4	3	3	2	4.2	7.0	
8-Nov	2	2	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	0	0	0	0	1.0	2.0	
9-Nov	0	0	0	-1	-1	-1	-1	-1	-1	-1	0	0	0	0	1	2	1	0	0	-1	-1	-1	-2	-2	-0.4	1.7	
10-Nov	-3	-3	-3	-3	-4	-4	-3	-3	-2	-2	-1	2	4	4	4	4	4	3	3	3	3	3	3	3	0.5	4.4	
11-Nov	2	1	2	2	2	2	2	2	2	2	3	4	4	5	5	5	4	4	3	2	1	0	0	-1	2.4	5.1	
12-Nov	-1	-1	-1	-1	-1	-2	-3	-4	-4	-2	-1	0	1	2	3	3	3	2	3	3	3	2	2	2	0.3	3.4	
13-Nov	2	2	2	2	2	1	1	1	1	1	2	5	7	7	7	7	6	5	3	2	1	1	0	-1	2.7	7.3	
14-Nov	-1	-1	-1	-1	-2	-3	-4	-5	-5	-4	-2	2	4	6	6	5	3	2	0	-1	-1	-2	-3	-3	-0.4	6.3	
15-Nov	-3	-3	-3	-3	-3	-3	-3	-2	-1	-1	-1	0	-1	0	0	0	0	-1	-1	-2	-2	-2	-2	-2	-1.6	-0.1	
16-Nov	-2	-2	-2	-3	-3	-3	-4	-5	-5	-4	-3	-1	0	1	0	0	-1	-1	-1	-2	-1	0	0	0	-1.7	0.7	
17-Nov	0	-1	-1	-1	-1	1	0	0	-1	-1	-1	-1	1	1	1	0	-1	-3	-4	-5	-7	-9	-10	-11	-2.2	1.0	
18-Nov	-11	-11	-11	-12	-12	-13	-14	-15	-14	-13	-10	-8	-6	-4	-4	-4	-5	-6	-7	-6	-6	-6	-6	-5	-8.7	-3.5	
19-Nov	-4	-4	-5	-5	-6	-8	-9	-8	-8	-7	-6	-4	-4	-5	-5	-4	-5	-7	-9	-10	-11	-10	-11	-12	-6.9	-3.8	
20-Nov	-13	-14	-13	-13	-12	-13	-13	-14	-15	-13	-12	-10	-8	-6	-5	-4	-5	-5	-5	-3	-2	0	0	-1	-8.3	-0.4	
21-Nov	-1	0	0	-1	-1	0	1	1	1	2	3	3	4	5	5	6	7	7	6	5	5	6	6	6	3.2	6.7	
22-Nov	7	7	7	7	6	6	6	6	5	5	5	5	5	5	5	4	4	3	2	2	1	1	0	0	4.3	7.1	
23-Nov	-2	-2	-3	-4	-4	-5	-5	-5	-5	-6	-4	-4	-3	-3	-3	-3	-3	-4	-5	-6	-7	-8	-9	-10	-4.7	-1.9	
24-Nov	-10	-11	-11	-11	-11	-11	-11	-12	-12	-12	-13	-13	-12	-11	-11	-11	-12	-13	-14	-15	-16	-17	-18	-19	-12.7	-10.3	
25-Nov	-19	-19	-19	-20	-20	-20	-21	-21	-21	-19	-17	-14	-11	-9	-7	-6	-7	-9	-10	-12	-12	-13	-14	-14	-14.9	-6.2	
26-Nov	-14	-15	-15	-16	-17	-16	-16	-16	-16	-15	-12	-9	-7	-5	-4	-3	-4	-6	-8	-8	-8	-8	-9	-10	-10.8	-3.4	
27-Nov	-11	-12	-11	-11	-11	-12	-12	-12	-13	-12	-11	-10	-7	-4	-3	-3	-5	-7	-8	-8	-9	-11	-11	-11	-9.2	-2.8	
28-Nov	-11	-11	-11	-12	-12	-12	-12	-12	-12	-12	-10	-6	-3	-1	-1	-1	-2	-4	-5	-5	-6	-6	-6	-7	-7.6	-1.0	
29-Nov	-8	-9	-10	-10	-10	-10	-11	-11	-11	-11	-8	-4	-1	0	0	0	-1	-3	-6	-8	-9	-11	-11	-12	-7.3	0.2	
30-Nov	-13	-13	-14	-14	-14	-15	-15	-16	-15	-15	-12	-8	-6	-3	-2	-2	-3	-5	-8	-9	-12	-13	-13	-15	-10.6	-1.5	
	-3.4	-3.6	-3.8	-4.0	-4.2	-4.4	-4.6	-4.8	-4.9	-4.4	-3.4	-2.0	-0.7	0.3	0.7	0.6	0.1	-0.8	-1.6	-2.1	-2.6	-2.9	-3.3	-3.7	Diurnal Average		
	6.8	7.1	7.0	6.8	6.3	5.8	5.8	5.6	5.1	4.8	5.2	5.4	6.7	7.2	7.3	7.1	6.9	6.6	6.2	5.4	5.1	5.5	6.1	6.3	Diurnal Maximum		

Hourly Averages

External Temperature (ET) - °C

Valleyview - November 2015



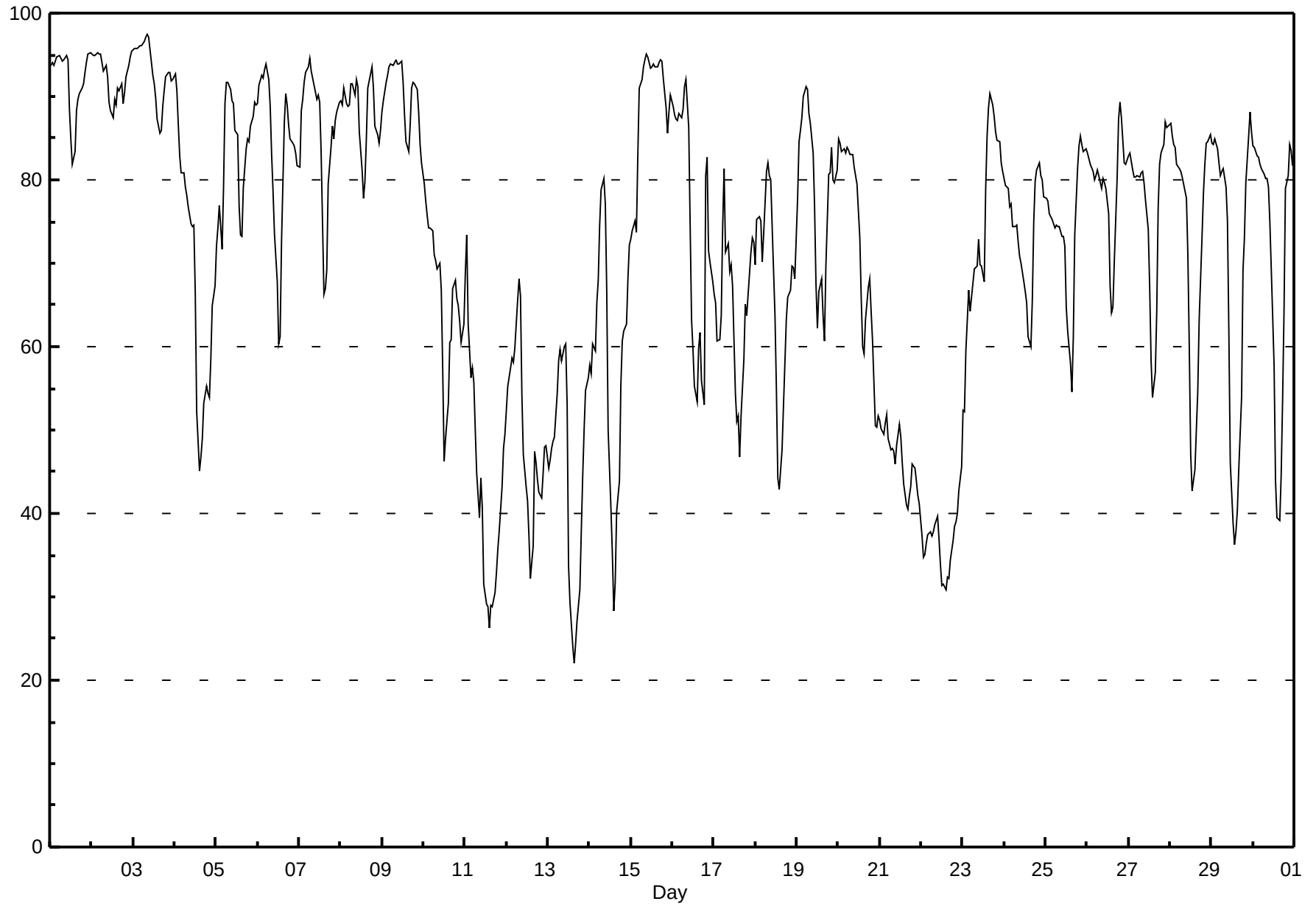
Hourly Averages

Relative Humidity (RH) - %
Valleyview - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 97.4 % on Nov 3 09:00 Maximum Daily Average: 93.1 % on Nov 3																				Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0						
Minimum Value: 22 % on Nov 13 16:00 Maximum Diurnal Average: 79.0 % at hour 7 Monthly Average: 71.96 %										Minimum Daily Average: 36.6 % on Nov 22 Minimum Diurnal Average: 57.8 % at hour 15 Percentiles: P ₁ = 28.8 P ₁₀ = 43.9 Q ₁ = 59.6 Median = 77.5 Q ₃ = 86.8 P ₉₀ = 92.5 P ₉₉ = 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-Nov	94	94	94	94	95	95	95	94	94	95	94	88	85	82	83	88	90	90	91	91	93	94	95	95	91.9	95.3
2-Nov	95	95	95	95	95	95	94	93	94	92	89	88	87	90	89	91	91	92	89	90	92	94	95	95	92.4	95.4
3-Nov	96	96	96	96	96	96	97	97	97	97	96	93	92	90	87	86	86	89	91	92	93	93	92	92	93.1	97.4
4-Nov	93	91	87	83	81	81	79	78	77	75	74	75	67	52	45	47	49	53	55	54	54	58	65	67	68.3	92.7
5-Nov	72	74	77	72	79	89	92	92	91	90	89	86	85	77	73	73	79	84	85	85	86	88	89	89	83.2	91.8
6-Nov	89	91	93	92	93	94	92	89	83	79	74	68	60	61	73	87	90	89	87	85	84	84	83	82	83.4	93.9
7-Nov	81	88	90	92	93	94	95	93	92	90	90	90	89	83	66	67	69	80	84	87	85	87	88	89	85.9	94.6
8-Nov	90	89	91	89	89	89	92	92	90	92	91	86	81	78	80	85	91	93	93	91	86	85	84	86	88.0	93.5
9-Nov	88	89	92	93	94	94	94	94	94	94	94	94	92	88	85	83	87	91	92	92	91	88	84	82	90.3	94.3
10-Nov	80	78	76	74	74	74	71	70	69	70	67	57	46	49	53	61	61	67	68	66	65	63	61	63	65.9	79.6
11-Nov	69	73	63	56	57	56	50	45	39	44	41	32	29	29	26	29	29	31	33	36	38	43	48	50	43.6	73.5
12-Nov	52	55	57	59	58	60	66	68	66	54	47	43	42	37	32	36	47	46	44	43	42	45	48	48	49.8	68.2
13-Nov	45	46	48	49	49	54	58	60	58	60	60	53	34	29	24	22	24	27	31	38	44	50	55	56	44.8	60.3
14-Nov	58	57	60	60	65	68	75	79	80	77	67	50	41	35	28	32	40	44	55	61	62	63	68	72	58.2	80.2
15-Nov	73	74	75	74	83	91	92	94	94	95	95	93	94	94	94	94	94	94	94	92	89	86	88	90	89.0	95.0
16-Nov	89	88	87	87	88	88	88	91	92	86	75	63	60	55	53	60	62	56	53	80	83	72	70	68	74.7	92.0
17-Nov	66	65	61	61	64	74	81	71	72	69	70	67	54	51	52	47	52	58	65	64	66	71	73	73	64.5	81.3
18-Nov	70	75	76	75	70	74	81	82	80	80	74	64	55	44	43	48	53	58	63	66	67	70	70	68	66.9	82.0
19-Nov	78	85	86	87	90	91	91	88	87	83	77	67	62	67	68	64	61	70	81	81	84	80	80	81	78.6	91.1
20-Nov	85	84	83	84	83	84	83	83	83	82	81	79	73	66	60	59	63	67	68	64	61	50	50	52	72.0	84.9
21-Nov	51	50	50	51	52	49	48	48	47	46	48	51	49	46	44	41	41	42	43	46	45	44	42	41	46.4	51.8
22-Nov	37	35	35	36	37	38	37	38	39	40	37	34	31	31	31	32	32	34	37	38	39	40	43	46	36.6	45.7
23-Nov	52	52	59	67	64	66	68	69	70	73	70	70	68	79	85	89	90	89	88	86	85	85	82	81	74.4	90.4
24-Nov	80	79	79	77	77	74	74	75	73	71	70	68	67	65	61	60	66	75	80	81	82	81	80	78	73.9	82.1
25-Nov	78	77	76	76	75	74	75	74	74	73	73	72	65	62	58	55	61	73	81	84	85	84	83	84	73.9	85.2
26-Nov	83	83	82	81	80	80	81	81	79	80	80	79	76	67	64	65	70	80	87	89	88	82	82	82	79.2	89.3
27-Nov	83	83	81	80	80	80	80	81	81	80	78	74	67	58	54	57	64	77	82	83	84	87	86	86	77.0	87.0
28-Nov	87	85	84	84	82	81	81	80	79	78	71	60	47	43	45	50	55	63	73	78	82	84	85	85	72.6	86.8
29-Nov	84	84	85	84	82	81	81	81	79	75	62	46	39	36	38	40	45	54	69	73	80	85	88	86	69.1	88.2
30-Nov	84	84	83	83	82	81	81	80	80	79	75	64	58	44	39	39	45	53	64	79	81	84	84	82	71.1	84.2
		76.1	76.7	76.7	76.3	77.0	78.2	79.0	78.7	77.9	76.6	73.6	68.5	63.1	59.6	57.8	59.5	62.9	67.3	70.9	73.2	73.8	74.0	74.7	75.0	Diurnal Average
		95.6	95.8	95.7	95.9	96.1	96.1	96.6	97.2	97.4	97.1	95.6	94.3	93.6	94.0	93.5	93.5	94.0	94.4	94.2	92.4	92.9	94.1	95.2	95.4	Diurnal Maximum

Hourly Averages

Relative Humidity (RH) - %
Valleyview - November 2015



Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Valleyview - November 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	0	0	1	1	0	1	1	0	0	1	3	3	3	3	3	3	3	1	1	2	3	3	1	0.8	3.3
Dir	74	258	38	133	117	101	166	143	164	169	60	88	95	117	124	123	126	132	152	358	360	353	335	338	97	353
2 Spd	0	0	0	1	2	2	3	4	2	3	2	1	1	1	1	2	1	1	1	1	0	0	0	1	1.0	4.4
Dir	356	189	212	244	253	263	267	272	251	259	265	241	232	189	183	171	199	194	214	172	201	162	309	332	245	272
3 Spd	0	1	1	0	3	3	2	2	2	2	3	3	3	2	3	2	0	0	1	1	2	3	2	3	0.6	3.3
Dir	92	174	277	197	0	15	12	19	36	21	30	29	347	353	282	321	273	158	153	152	162	169	174	170	16	30
4 Spd	3	4	6	6	7	7	7	7	5	6	5	5	5	7	10	6	7	6	6	6	7	2	2	1	3.9	10.1
Dir	169	169	168	168	170	168	168	168	172	169	165	168	170	242	265	270	271	251	252	253	260	235	176	183	205	265
5 Spd	1	1	0	2	5	2	1	3	3	8	8	8	8	7	4	3	5	3	1	0	1	1	1	1	2.0	8.5
Dir	142	155	135	273	281	269	202	282	331	334	11	5	13	356	30	38	12	30	113	176	160	165	175	198	356	5
6 Spd	1	0	2	2	0	2	2	3	4	6	5	6	5	4	5	5	5	6	7	6	5	3	4	3	3.8	7.0
Dir	160	154	177	177	183	178	181	173	168	167	166	168	174	172	169	166	169	169	168	167	170	174	172	174	170	168
7 Spd	1	0	1	1	1	1	2	1	2	1	0	2	3	2	7	3	1	1	1	2	3	1	1	1	1.2	6.9
Dir	227	168	324	341	163	213	166	200	189	186	193	234	186	237	277	252	225	180	157	195	178	149	181	188	216	277
8 Spd	1	1	1	2	1	1	0	1	0	0	0	2	2	3	2	1	0	0	1	1	2	3	1	0	0.3	2.7
Dir	198	178	196	159	160	241	184	15	143	122	169	263	314	356	358	14	136	192	313	39	4	335	340	139	331	356
9 Spd	0	0	0	0	0	0	0	1	1	1	3	3	3	4	5	2	4	4	3	4	6	6	5	5	2.5	5.9
Dir	150	143	133	174	159	251	169	147	342	160	180	182	169	163	160	157	155	165	172	169	163	164	168	168	166	163
10 Spd	5	4	5	6	6	6	6	8	7	7	8	8	8	7	7	7	6	5	5	6	5	4	4	4	5.9	7.7
Dir	169	168	171	168	168	163	167	169	169	166	168	167	168	166	168	170	170	170	170	166	168	170	178	176	168	168
11 Spd	2	2	3	3	1	3	4	7	11	5	5	12	9	5	6	12	17	20	20	12	10	5	4	3	7.0	20.3
Dir	182	177	174	189	163	230	228	260	259	235	237	256	261	252	260	267	269	270	275	268	257	242	234	206	256	275
12 Spd	2	2	2	3	2	1	1	1	3	5	9	8	9	9	11	8	10	12	9	8	7	4	3	2	5.4	11.8
Dir	182	193	197	179	183	190	218	192	171	167	165	169	168	164	164	162	164	167	170	171	166	179	179	190	170	167
13 Spd	6	4	5	3	2	2	2	1	2	3	2	4	16	18	20	18	16	13	8	7	3	2	2	3	5.8	19.6
Dir	176	172	177	183	187	182	170	145	182	196	195	204	257	255	252	261	254	252	245	239	231	216	176	168	236	252
14 Spd	3	2	3	2	1	1	0	1	2	2	3	4	4	3	1	2	1	0	1	1	1	1	2	0	1.3	4.4
Dir	172	172	179	193	200	198	230	210	206	193	180	175	179	174	242	180	165	193	335	339	127	330	336	320	188	175
15 Spd	0	1	1	1	3	3	4	7	10	9	9	9	9	9	9	9	9	10	11	10	8	8	7	10	6.3	10.6
Dir	316	354	344	306	340	358	360	5	19	21	25	31	13	5	7	6	2	348	333	328	323	322	321	322	355	333
16 Spd	8	9	10	10	5	6	6	2	2	3	3	3	4	4	5	6	7	8	11	11	11	12	10	9	4.2	12.2
Dir	309	292	283	274	260	255	243	169	153	169	182	180	164	167	160	157	150	154	165	164	154	164	169	166	189	164
17 Spd	8	8	8	8	4	5	2	6	4	5	2	2	0	1	0	4	4	7	4	9	8	8	6	6	1.9	9.1
Dir	171	168	170	172	174	217	190	219	207	222	170	150	95	89	77	311	305	324	304	327	312	322	312	298	247	327
18 Spd	5	4	2	1	2	0	0	1	1	2	2	2	2	2	1	2	2	1	2	2	1	2	2	1	1.1	4.6
Dir	295	289	278	327	255	226	163	193	155	151	144	202	216	160	218	165	171	175	201	164	175	190	190	201	206	295
19 Spd	3	2	1	1	0	1	2	1	1	2	2	3	3	2	2	3	2	1	1	1	1	8	10	3	1.2	10.0
Dir	229	184	162	179	155	161	151	251	151	239	303	253	250	236	245	286	298	245	174	237	345	320	335	349	283	335
20 Spd	1	1	1	1	1	1	1	1	2	2	2	3	3	3	3	2	2	2	3	2	4	11	6	1	1.8	11.4
Dir	173	172	145	172	192	173	179	199	191	186	183	169	165	164	165	172	181	194	180	158	269	268	250	193	205	268
21 Spd	1	2	2	3	2	10	9	5	7	10	6	5	10	8	12	17	23	18	16	12	9	10	14	13	8.6	23.4
Dir	185	207	148	154	218	255	243	231	247	246	244	230	234	238	254	260	275	279	284	285	283	283	279	269	262	275
22 Spd	17	17	18	19	15	14	19	20	17	15	17	18	16	15	14	10	6	2	2	3	2	4	2	2	11.6	20.4
Dir	275	277	282	283	287	290	289	292	293	291	292	289	291	309	314	305	290	282	278	296	244	270	294	249	289	292

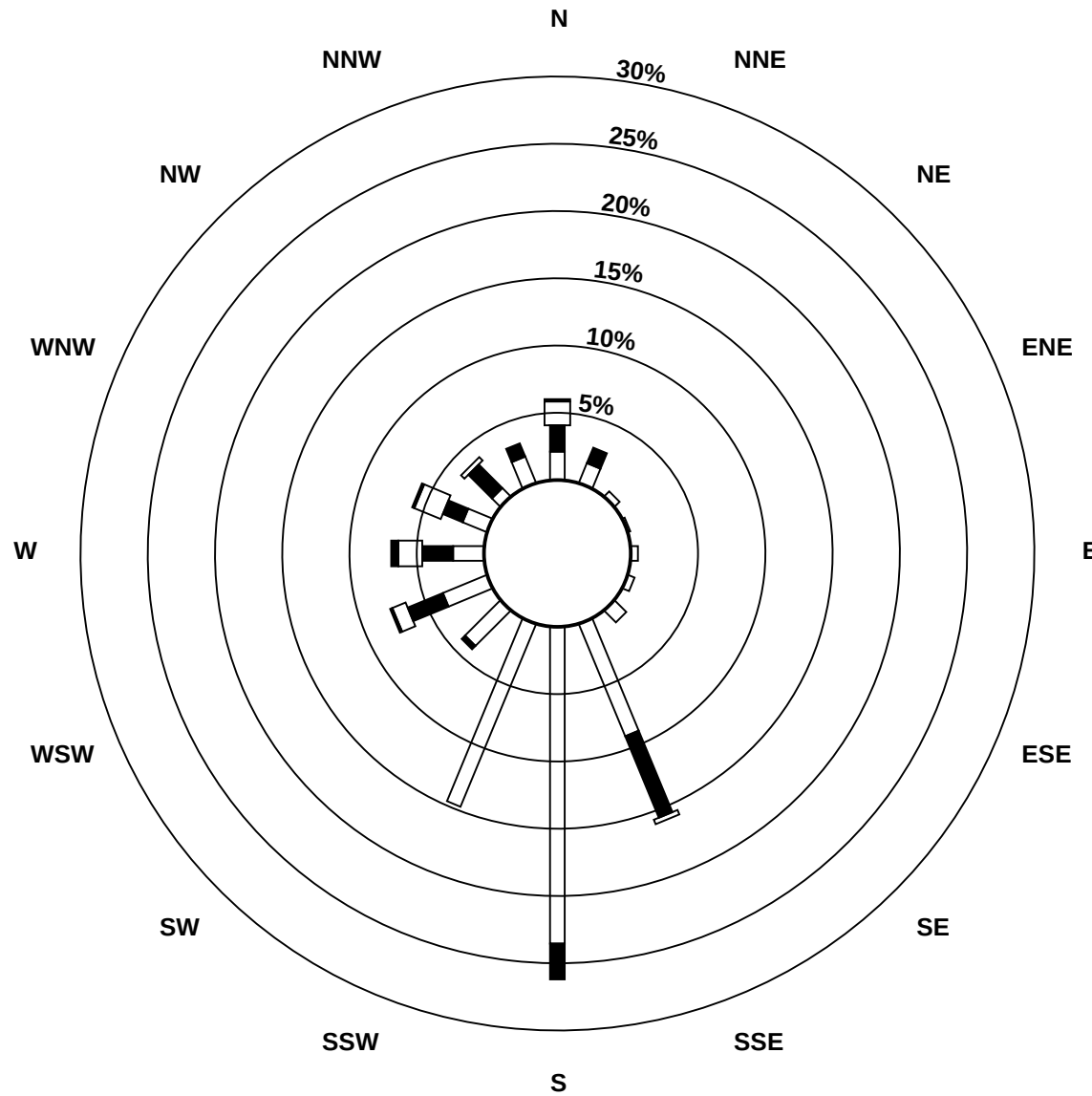
Hourly Averages

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

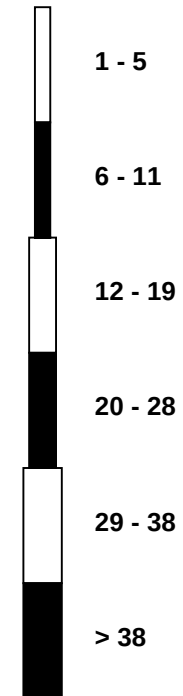
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	1	2	1	1	1	0	0	0	0	3	0	2	2	3	6	7	9	14	16	18	16	16	20	17	5.9	20.5
Dir	194	233	166	152	162	165	164	160	343	354	25	344	332	329	359	6	11	6	5	5	7	8	6	4	4	6
24 Spd	14	13	13	12	6	9	8	9	8	6	8	6	7	3	2	3	2	2	2	2	1	0	0	1	3.7	14.3
Dir	1	356	353	352	356	324	315	285	287	284	261	311	272	239	222	179	170	173	174	191	195	196	217	199	316	1
25 Spd	1	1	1	1	1	0	1	2	1	1	2	3	2	3	1	0	0	1	1	1	1	0	0	1	1.1	3.1
Dir	202	201	246	200	211	201	186	199	190	235	177	177	186	181	158	190	226	157	216	174	193	242	201	210	191	177
26 Spd	1	0	0	0	1	1	1	1	1	2	3	1	2	3	2	2	2	0	1	2	2	1	1	0	1.2	2.8
Dir	204	212	253	193	172	193	201	200	214	201	183	181	185	182	195	196	201	194	203	208	155	173	189	218	191	183
27 Spd	1	2	2	3	3	3	4	3	3	2	3	3	3	2	2	1	1	1	2	2	1	1	1	1	2.1	4.4
Dir	232	211	212	202	202	202	195	184	194	199	189	186	179	183	176	203	203	174	189	196	204	186	180	205	195	195
28 Spd	2	3	1	2	3	2	2	2	3	2	3	3	4	3	2	1	1	1	3	4	3	4	3	3	2.4	3.9
Dir	198	197	171	198	191	190	193	206	202	202	193	192	184	184	196	257	238	188	186	193	198	196	201	193	195	184
29 Spd	2	2	1	2	3	2	1	1	2	2	3	2	2	2	2	1	0	0	1	1	1	0	1	1	1.4	3.0
Dir	200	200	194	210	200	198	206	201	203	198	193	191	189	190	241	216	229	269	169	216	197	190	207	176	200	200
30 Spd	1	1	1	2	2	2	1	1	1	1	1	1	2	2	1	0	0	1	0	0	1	0	0	1	0.9	1.7
Dir	216	185	185	205	192	203	202	194	213	204	200	170	188	176	186	288	249	189	154	231	161	201	169	176	193	176
Spd	1.2	1.3	1.2	1.5	1.4	1.7	1.7	1.8	1.6	1.7	1.4	1.6	2.2	1.9	2.2	2.0	2.1	1.8	1.9	1.5	1.3	1.4	1.2	1.0	Diurnal Average	
Dir	236	233	231	226	228	240	235	243	238	232	212	218	228	229	243	250	251	251	245	244	240	265	272	242		
Spd	16.7	17.2	17.6	18.8	14.9	14.4	19.2	20.4	17.3	14.6	16.8	17.6	16.1	17.7	19.6	18.0	23.4	20.1	20.3	17.6	16.1	15.7	20.5	17.2	Diurnal Maximum	
Dir	275	277	282	283	287	290	289	292	293	291	292	289	257	255	252	261	275	270	275	5	7	8	6	4		
Maximum Speed Value: 23 km/h on Nov 21 17:00							Minimum Speed Value: 0 km/h on Nov 9 00:00													Hours in Service:				720		
Maximum Daily Speed Average: 11.6 km/h on Nov 22							Minimum Daily Speed Average: 0.3 km/h on Nov 30													Hours of Data:				720		
Maximum Diurnal Speed Average: 2.2 km/h at hour 15							Minimum Diurnal Speed Average: 1.0 km/h at hour 24													Hours of Missing Data:				0		
Monthly Average Velocity: 1.57 km/h 238.9 deg							Speed Percentiles: P ₁ = 0.1 P ₁₀ = 0.5 Q ₁ = 1.1 Median = 2.3 Q ₃ = 5.4 P ₉₀ = 9.3 P ₉₉ = 19.0													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	32		17		10		1		0		0		60													
NorthEast	10		2		0		0		0		0		12													
East	8		0		0		0		0		0		8													
SouthEast	45		4		0		0		0		0		49													
South	290		56		4		0		0		0		350													
SouthWest	82		13		0		0		0		0		95													
West	34		30		27		6		0		0		97													
NorthWest	26		20		3		0		0		0		49													
Total	527		142		44		7		0		0		720													

Wind Rose

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



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Valleyview - November 2015

Maximum Speed: 24 km/h on Nov 21 17:00																				Maximum Daily Speed Average: 12.0 km/h on Nov 22										Hours in Service: 720	
Minimum Speed: 0 km/h on Nov 9 00:00																				Minimum Daily Speed Average: 1.1 km/h on Nov 30										Hours of Data: 720	
Maximum Diurnal Speed Average: 5.2 km/h at hour 13																				Minimum Diurnal Speed Average: 3.0 km/h at hour 5										Hours of Missing Data: 0	
Monthly Average Speed: 4.07 km/h																				Percentiles: P ₁ = 0.2 P ₁₀ = 0.7 Q ₁ = 1.3 Median = 2.4 Q ₃ = 5.5 P ₉₀ = 9.6 P ₉₉ = 19.1										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-Nov	0	0	0	1	1	0	1	1	1	0	1	3	3	3	3	3	3	3	1	1	2	3	3	1	1.6	3.4					
2-Nov	0	0	0	1	2	2	3	5	2	3	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1.4	4.5					
3-Nov	1	1	1	1	4	3	2	2	2	2	3	3	3	2	3	2	0	0	1	1	2	3	2	3	2.0	3.6					
4-Nov	3	5	6	6	7	7	7	7	5	6	5	5	5	7	11	6	7	6	6	6	7	2	2	1	5.6	10.7					
5-Nov	1	1	1	2	5	2	1	3	3	8	9	9	8	7	4	3	5	3	1	0	1	1	1	1	3.4	8.6					
6-Nov	1	0	2	2	0	2	2	3	4	6	5	6	5	4	5	5	5	6	7	6	5	3	4	3	3.8	7.1					
7-Nov	2	0	1	2	1	1	2	2	2	1	2	3	3	3	7	3	1	1	1	2	3	1	1	1	1.9	7.1					
8-Nov	1	1	1	2	1	1	1	1	1	0	0	2	2	3	2	1	0	0	1	1	2	3	1	0	1.2	2.8					
9-Nov	0	0	0	0	0	0	0	1	1	1	3	3	4	4	5	2	4	4	3	4	6	6	5	5	2.6	5.9					
10-Nov	5	4	5	6	6	6	6	8	7	7	8	8	8	7	7	7	6	5	5	6	5	4	4	4	6.0	7.7					
11-Nov	2	2	4	3	2	4	5	7	11	5	5	12	10	6	6	12	18	20	20	12	10	5	4	3	7.8	20.5					
12-Nov	2	2	2	3	2	1	1	1	3	5	9	9	9	9	11	8	10	12	9	8	7	4	3	2	5.5	11.9					
13-Nov	6	4	5	3	3	2	2	1	2	3	2	4	16	18	20	18	17	14	8	7	3	2	2	3	6.9	19.9					
14-Nov	3	2	3	2	1	1	1	2	2	2	3	4	4	3	2	2	1	0	1	1	1	1	2	1	1.9	4.5					
15-Nov	0	1	1	1	3	3	4	7	10	9	9	9	9	9	9	9	9	10	11	10	8	8	7	10	7.0	10.7					
16-Nov	8	9	10	10	5	6	6	2	2	3	3	3	4	4	5	6	7	8	11	11	11	12	11	9	7.0	12.3					
17-Nov	8	8	8	8	4	5	2	6	5	5	2	2	1	1	1	4	4	7	4	9	8	8	6	6	5.2	9.2					
18-Nov	5	4	2	1	2	1	1	1	2	2	2	2	2	3	1	2	2	1	2	2	1	2	2	1	2.0	4.7					
19-Nov	4	2	1	1	1	1	2	2	2	3	2	3	3	2	2	3	2	1	1	1	1	9	10	5	2.7	10.0					
20-Nov	1	1	1	1	1	1	1	1	2	2	2	3	3	3	3	2	3	3	3	2	5	11	6	2	2.6	11.5					
21-Nov	2	3	2	3	2	10	9	5	7	10	6	6	10	8	12	18	24	19	16	12	9	10	14	13	9.6	23.6					
22-Nov	17	17	18	19	15	15	19	21	18	15	17	18	16	15	15	10	6	2	2	3	2	5	2	2	12.0	20.6					
23-Nov	1	2	1	1	1	0	0	0	1	3	0	2	2	3	6	8	10	14	16	18	16	16	21	17	6.6	20.7					
24-Nov	14	13	13	12	6	9	8	9	9	7	8	6	7	3	3	3	2	2	2	2	1	0	0	1	5.8	14.4					
25-Nov	1	1	1	1	1	1	2	2	1	1	2	3	2	3	2	0	1	1	1	1	1	1	0	1	1.3	3.2					
26-Nov	1	0	0	0	1	1	1	1	1	2	3	2	2	3	2	2	2	1	1	2	2	1	1	1	1.4	2.9					
27-Nov	2	2	2	3	3	3	4	3	3	3	3	3	3	2	2	2	1	1	2	2	1	1	1	2	2.2	4.4					
28-Nov	2	3	1	2	3	2	2	2	3	2	3	3	4	3	2	1	1	1	3	4	3	4	4	3	2.5	4.0					
29-Nov	2	2	1	2	3	2	1	1	2	3	3	2	2	2	2	1	0	0	1	1	1	0	1	1	1.6	3.0					
30-Nov	1	1	1	2	2	2	1	1	1	1	1	1	2	2	2	1	0	1	0	0	1	0	0	2	1.1	1.9					
3.2 3.1 3.1 3.3 3.0 3.2 3.3 3.6 3.7 4.0 4.2 4.7 5.2 4.8 5.1 5.0 5.1 4.9 4.8 4.6 4.2 4.3 4.0 3.5																									Diurnal Average						
16.8 17.3 17.8 18.9 15.1 14.5 19.4 20.6 17.5 14.7 17.0 17.8 16.5 17.9 19.9 18.3 23.6 20.3 20.5 17.7 16.3 15.9 20.7 17.3																									Diurnal Maximum						
All monthly, daily, and diurnal averages have been calculated using scalar methods																															

Hourly Standard Deviations

Wind Direction (WD) - deg
Valleyview - November 2015

Maximum Value: 96.9 deg on Nov 3 01:00																			Hours in Service: 720						
Minimum Value: 4.6 deg on Nov 28 20:00																			Hours of Data: 720						
																			Hours of Missing Data: 0						
Percentiles: P ₁ = 5.5 P ₁₀ = 7.3 Q ₁ = 9.4 Median = 16.1 Q ₃ = 30.7 P ₉₀ = 55.6 P ₉₉ = 84.1																			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-Nov	84	66	84	60	35	67	21	24	50	54	41	23	24	15	11	11	16	20	41	75	12	9	8	43	84.4
2-Nov	73	75	23	36	21	25	36	16	37	22	41	42	44	28	29	17	29	29	24	23	42	39	94	91	94.1
3-Nov	97	53	55	32	33	19	35	27	23	21	13	17	24	38	29	44	86	23	31	40	12	7	8	6	96.9
4-Nov	8	6	6	6	6	6	7	6	7	9	12	9	11	35	19	15	13	9	8	8	9	26	10	19	34.9
5-Nov	14	22	56	80	15	18	44	41	14	18	13	9	12	17	23	16	14	26	33	62	22	11	17	26	80.2
6-Nov	31	33	7	9	24	6	6	5	7	7	8	9	12	9	7	8	7	6	6	8	5	8	7	8	32.5
7-Nov	40	83	86	85	55	35	11	31	19	23	77	42	16	33	14	24	34	15	28	26	9	18	22	21	86.1
8-Nov	19	36	20	25	13	38	62	33	62	77	37	18	16	18	24	39	45	47	34	49	28	9	77	77	77.4
9-Nov	32	31	30	28	58	68	67	29	76	27	21	19	15	14	12	21	14	7	8	7	7	6	7	6	75.6
10-Nov	6	8	5	6	6	10	9	6	6	8	7	7	7	8	7	7	6	7	5	9	7	14	9	13	13.9
11-Nov	15	25	13	17	37	28	23	23	10	19	39	10	13	14	21	16	10	9	8	11	8	13	19	10	38.7
12-Nov	8	12	11	8	10	18	27	37	27	8	6	8	6	8	8	8	8	6	11	6	7	10	8	12	36.5
13-Nov	7	8	6	10	42	12	51	58	19	14	15	21	13	10	10	10	9	7	14	9	12	31	9	7	58.1
14-Nov	13	23	10	15	12	10	65	62	28	16	16	9	11	15	52	28	25	58	71	89	42	79	9	92	92.2
15-Nov	68	52	33	61	28	47	16	10	9	9	9	10	10	8	9	9	8	11	7	7	8	8	7	8	67.8
16-Nov	12	11	9	9	11	10	21	35	20	6	9	10	12	10	10	10	9	11	7	10	8	7	7	6	34.9
17-Nov	6	6	6	6	14	30	18	21	15	15	21	21	95	38	74	17	10	6	11	12	9	8	13	12	94.9
18-Nov	13	11	54	83	32	79	75	28	45	17	25	48	53	36	63	9	8	63	39	38	14	7	5	13	82.8
19-Nov	22	16	14	10	68	18	29	86	52	62	49	26	38	24	46	16	23	62	17	81	47	9	7	65	85.7
20-Nov	40	35	47	16	30	17	11	14	14	9	11	10	7	10	8	26	16	17	19	33	73	8	18	32	72.7
21-Nov	48	37	35	21	31	8	8	19	14	11	36	29	19	19	12	15	9	8	9	9	11	11	10	8	48.2
22-Nov	7	7	8	7	9	8	8	9	9	8	8	9	10	11	7	10	13	24	45	19	18	25	21	25	45.4
23-Nov	61	21	26	21	14	40	69	81	82	16	69	47	21	15	11	10	11	8	6	6	8	9	7	8	82.0
24-Nov	8	8	9	10	13	9	10	11	17	19	18	17	21	21	29	15	9	5	14	11	22	40	26	29	40.0
25-Nov	15	10	54	22	18	26	23	15	10	29	39	18	22	12	28	62	65	42	33	23	28	61	45	17	65.4
26-Nov	20	37	47	26	20	25	21	45	50	18	8	17	16	16	20	11	17	67	22	14	35	21	35	83	83.4
27-Nov	70	30	18	13	9	10	8	10	11	21	11	9	14	13	23	23	24	44	15	9	22	53	34	28	70.2
28-Nov	15	10	28	30	13	7	10	16	8	31	10	26	8	9	14	62	25	26	10	5	10	8	11	7	62.2
29-Nov	12	14	14	7	10	12	16	8	10	11	9	10	12	23	24	38	51	77	27	24	56	35	13	16	77.4
30-Nov	59	41	18	10	12	10	28	16	17	9	18	56	38	32	27	63	78	34	47	83	22	22	58	11	83.3
	96.9	82.7	86.1	84.8	68.0	78.7	74.7	85.7	82.0	76.8	76.9	55.7	94.9	38.1	73.7	63.0	86.2	77.4	71.3	89.2	72.7	78.9	94.1	92.2	

PAZA

Falher Station

Monthly Summary Tables, Graphs and Roses

Hourly Averages

Sulphur Dioxide (SO₂) - ppb

Falher - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 1.6 ppb on Nov 25 01:00 Maximum Daily Average: 0.6 ppb on Nov 28																								Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0		
Minimum Value: 0 ppb on Nov 1 09:00 Maximum Diurnal Average: 0.2 ppb at hour 23 Monthly Average: 0.18 ppb																								Minimum Daily Average: 0.0 ppb on Nov 2 Minimum Diurnal Average: 0.1 ppb at hour 20 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 = 1.2		
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-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.0	0.1
2-Nov	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
3-Nov	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	0.1
4-Nov	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
5-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.1	0.2
6-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.1	0.1
7-Nov	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
8-Nov	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	0.5
9-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
10-Nov	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
11-Nov	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
12-Nov	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
13-Nov	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
14-Nov	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
15-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
16-Nov	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
17-Nov	0	0	A	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.2	1.4
18-Nov	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
19-Nov	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
20-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.2	0.3
21-Nov	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
22-Nov	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
23-Nov	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
24-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	2	1	0.2	1.5
25-Nov	2	2	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	A	0	0	0	0	0	0	0.5	1.6
26-Nov	0	0	1	1	0	0	1	1	1	1	1	C	C	C	1	A	0	0	0	0	0	0	0	0	0.5	1.0
27-Nov	0	0	1	1	1	0	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.3	0.7
28-Nov	0	1	1	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	0	0.6	1.0
29-Nov	0	0	0	0	0	1	0	1	1	1	1	0	A	0	0	0	0	0	0	0	1	1	2	1	0.6	1.6
30-Nov	1	0	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0	0	0	0	0	1	0	0	0.6	1.2
																								Diurnal Average	Diurnal Maximum	

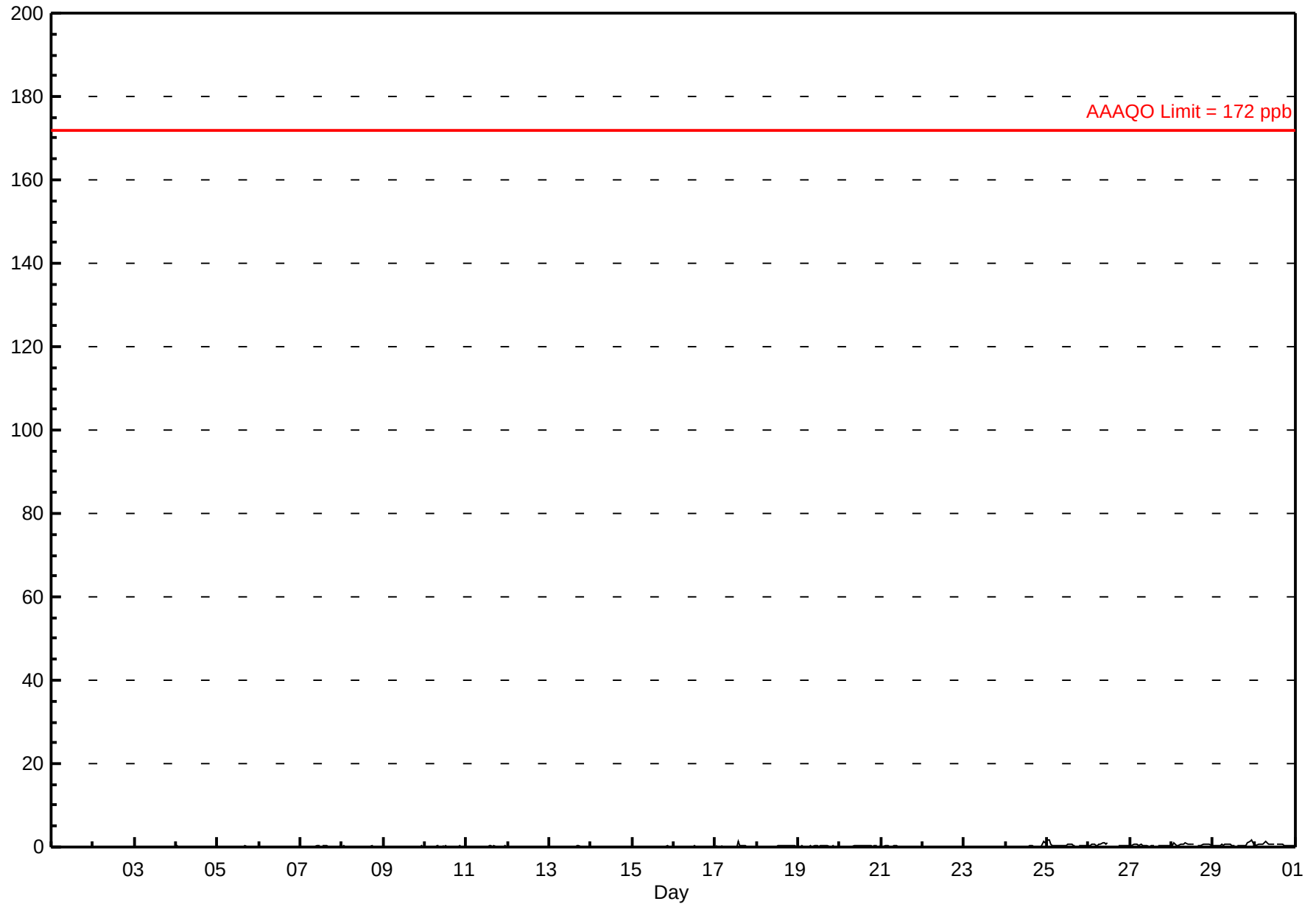
C - CalibrationA - Automated Daily Zero Span

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 - November 2015



Hourly Maximums

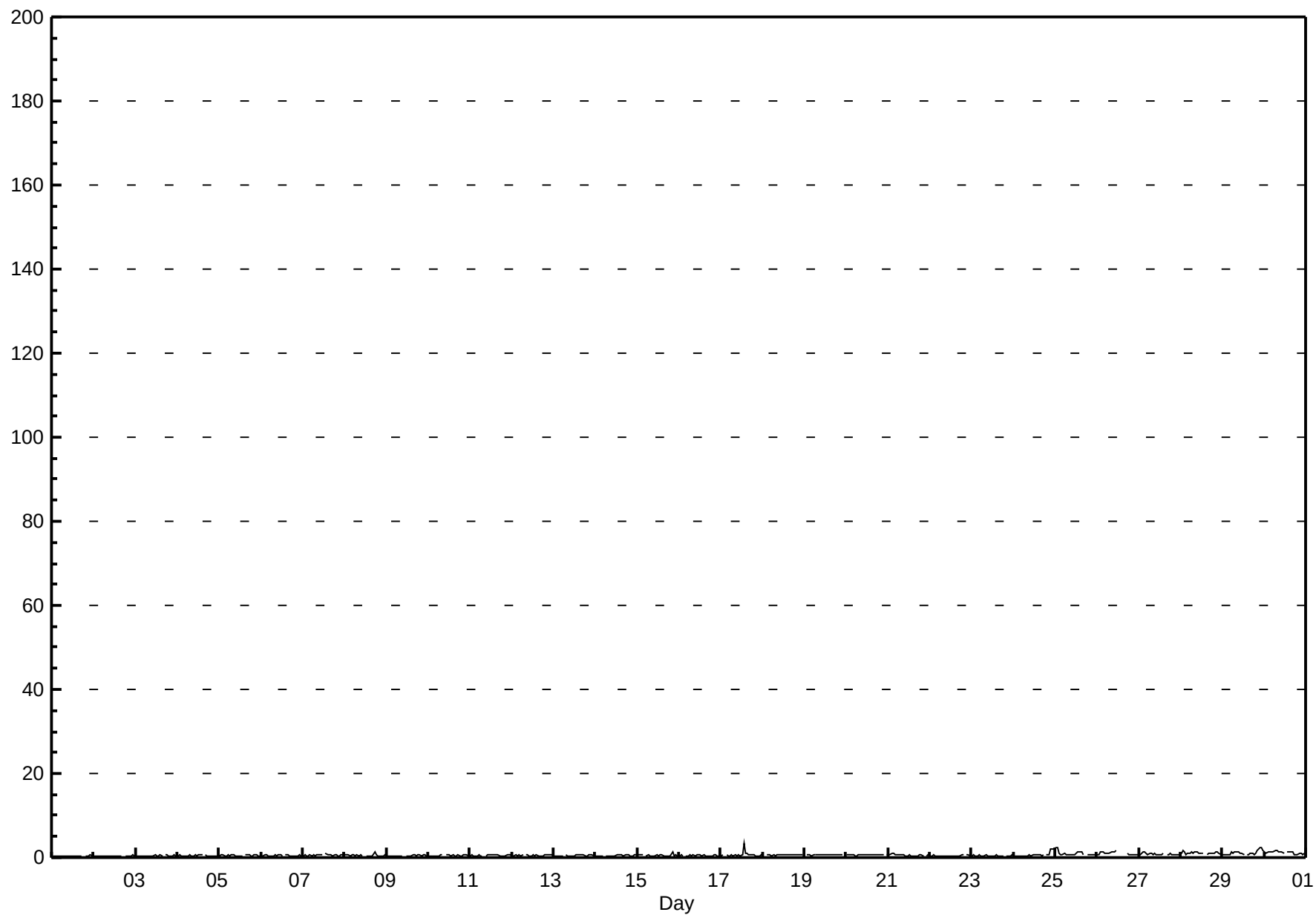
Sulphur Dioxide (SO₂) - ppb

Falher - November 2015

Maximum Value: 3.5 ppb on Nov 17 14:00																			Maximum Daily Average: 1.2 ppb on Nov 30							Hours in Service: 720	
Minimum Value: 0 ppb on Nov 2 05:00																			Minimum Daily Average: 0.3 ppb on Nov 2							Hours of Data: 686	
Maximum Diurnal Average: 0.7 ppb at hour 14																			Minimum Diurnal Average: 0.6 ppb at hour 20							Hours of Missing Data: 34	
Monthly Average: 0.62 ppb																			Percentiles: P ₁ = 0.3 P ₁₀ = 0.4 Q ₁ = 0.4 Median = 0.5 Q ₃ = 0.7 P ₉₀ = 1.1 P ₉₉ = 2.0							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-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	1	0	0.4	0.5	
2-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	1	0	0.3	0.7	
3-Nov	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	A	1	1	0	0	0	1	0	0.4	0.7	
4-Nov	0	1	0	0	0	0	0	1	0	0	1	0	1	1	1	A	1	0	0	0	0	0	0	0	0.5	0.7	
5-Nov	0	1	1	0	0	1	0	1	1	0	0	0	0	0	A	1	1	1	0	0	1	1	0	0	0.5	0.6	
6-Nov	0	0	1	1	0	0	0	0	1	0	1	1	0	A	1	1	0	0	0	0	0	0	1	0	0.5	0.8	
7-Nov	0	1	0	0	1	1	1	0	1	1	1	1	A	1	1	1	1	1	1	1	0	0	1	1	0.6	0.9	
8-Nov	1	1	1	0	1	1	0	1	0	1	1	A	0	0	0	0	0	1	1	0	0	0	0	1	0.5	1.3	
9-Nov	0	0	0	0	0	0	0	0	0	0	A	0	1	0	1	1	1	0	1	1	0	1	1	0	0.5	0.7	
10-Nov	0	0	0	0	0	0	0	1	1	A	1	1	1	0	1	0	0	1	0	0	1	1	1	0	0.5	0.7	
11-Nov	0	1	0	1	1	1	0	0	A	0	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0.5	0.8	
12-Nov	0	0	1	0	1	0	1	A	1	1	0	0	1	0	1	0	0	0	0	1	1	1	1	1	0.5	0.7	
13-Nov	0	0	0	0	0	0	A	1	0	0	0	0	1	1	1	1	1	1	0	0	1	1	1	0	0.5	0.8	
14-Nov	0	0	0	0	0	A	0	0	1	0	0	0	1	1	1	1	0	1	1	1	0	0	1	1	0.5	0.7	
15-Nov	1	1	1	1	A	0	1	0	0	0	0	1	0	1	1	0	0	0	0	0	1	0	1	0	0.5	1.4	
16-Nov	0	1	0	A	0	0	1	0	1	0	1	1	1	1	1	0	0	0	0	0	1	1	0	0	0.5	0.7	
17-Nov	0	1	A	1	0	0	1	0	1	0	1	0	1	4	1	1	1	1	1	1	0	0	0	1	0.7	3.5	
18-Nov	0	A	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.8	
19-Nov	A	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0.6	0.8	
20-Nov	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0.6	0.7	
21-Nov	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	0	0	1	1	0	A	0	1	0.6	0.9	
22-Nov	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	A	1	1	0	0.4	0.6	
23-Nov	0	1	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	A	0	0	0	1	0.4	0.6	
24-Nov	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	1	A	1	1	2	2	2	0.7	2.1	
25-Nov	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1.0	2.4	
26-Nov	1	1	1	1	1	1	1	1	1	1	1	2	C	C	C	1	A	1	1	1	1	1	1	1	1.0	1.8	
27-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.8	1.3	
28-Nov	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1.2	1.7	
29-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	2	2	2	2	1.2	2.3	
30-Nov	1	1	1	1	1	1	2	2	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1.2	1.7	
0.6		0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.6	Diurnal Average		
2.3		2.4	1.5	1.4	1.4	1.3	1.7	1.7	1.4	1.5	1.3	1.8	1.2	3.5	1.3	1.2	1.3	1.3	1.2	1.1	1.8	2.3	2.2	2.0	Diurnal Maximum		
C - Calibration		A - Automated Daily Zero Span																									

Hourly Maximums

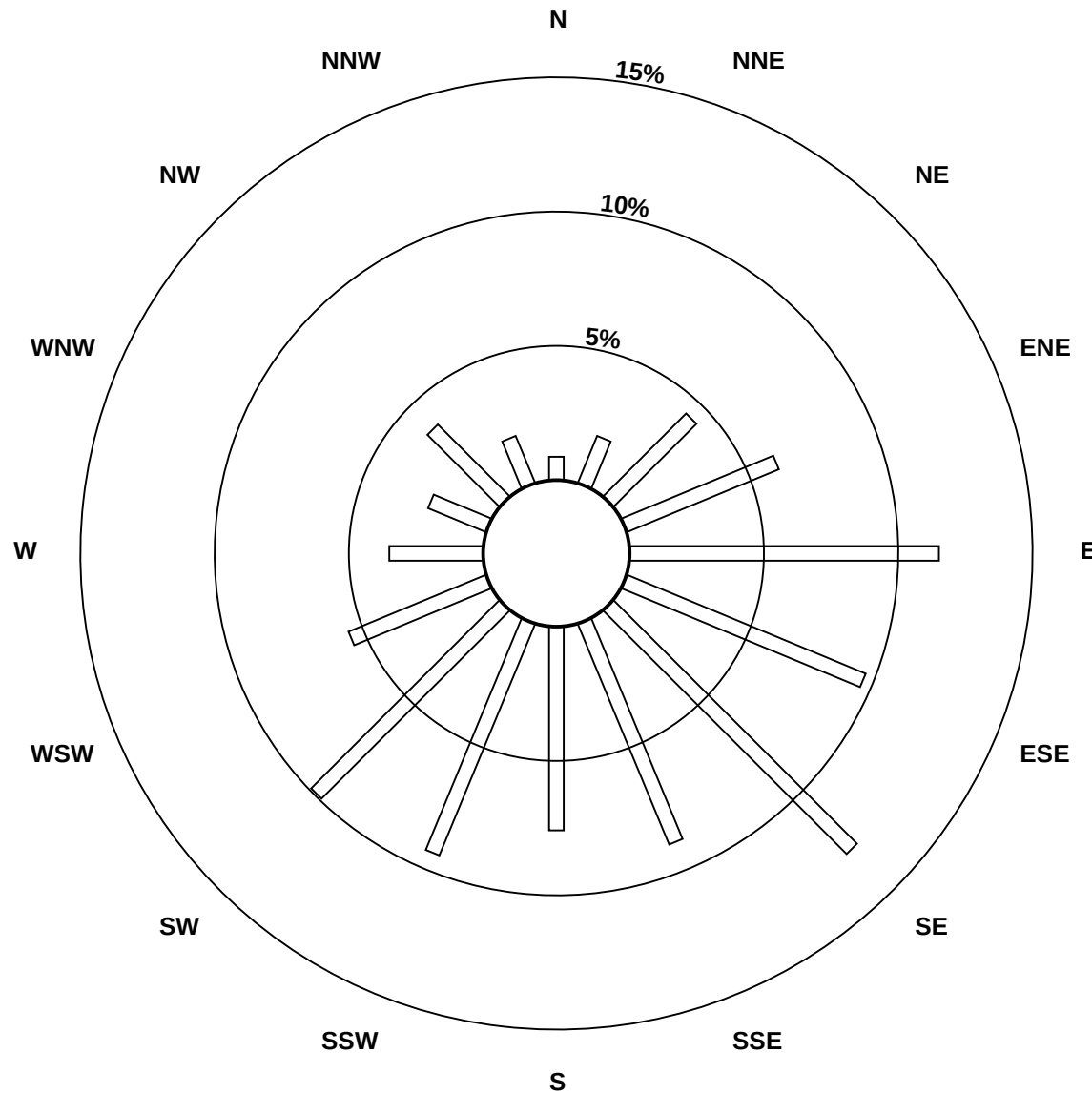
Sulphur Dioxide (SO₂) - ppb
Falher - November 2015



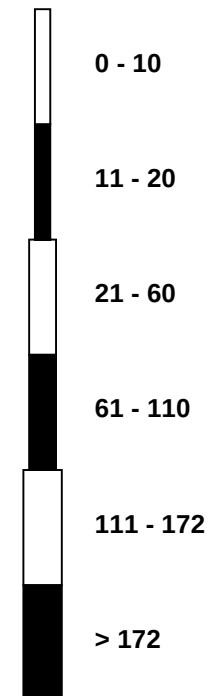
Pollutant Rose

Sulphur Dioxide (SO₂) - ppb

Falher - November 2015

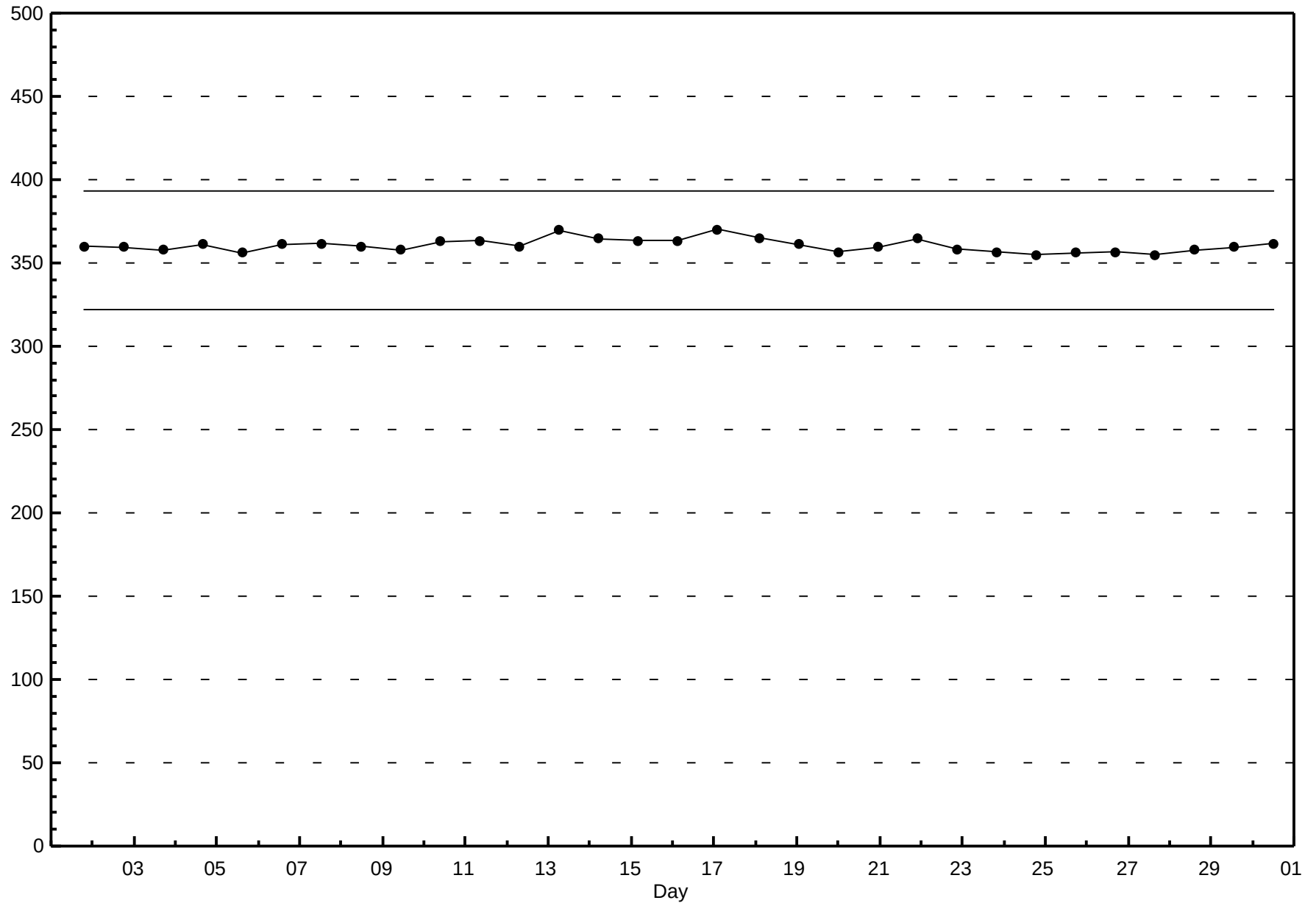


Pollutant Classes (ppb)



Span Responses

Sulphur Dioxide (SO₂)
Falher - November 2015

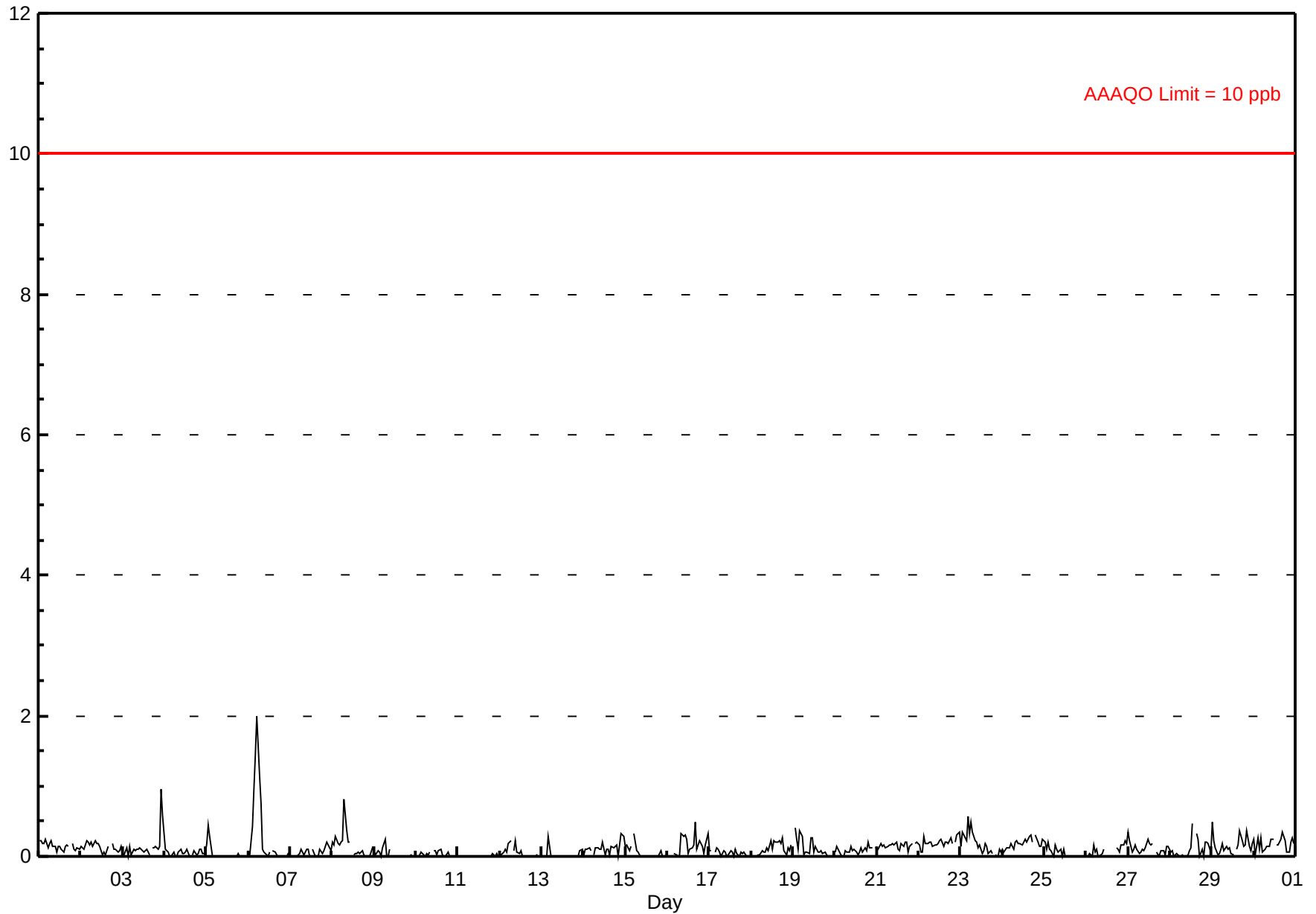


Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 2.0 ppb on Nov 6 06:00 Maximum Daily Average: 0.3 ppb on Nov 6																			Hours in Service: 720 Hours of Data: 685 Hours of Missing Data: 35 Hours of Calibration: 35 Percent Operational Time: 100.0							
Minimum Value: 0 ppb on Nov 3 04:00 Maximum Diurnal Average: 0.2 ppb at hour 5 Monthly Average: 0.11 ppb																			Minimum Daily Average: 0.0 ppb on Nov 11 Minimum Diurnal Average: 0.1 ppb at hour 13 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.2 P ₉₀ = 0.2 P ₉₉ = 0.7							
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-Nov	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
2-Nov	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
3-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	1	1	0.1	1.0
4-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.1	0.1
5-Nov	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	0.4
6-Nov	0	0	0	1	1	2	1	1	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.3	2.0
7-Nov	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	0.2
8-Nov	0	0	0	0	0	0	0	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.8
9-Nov	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
10-Nov	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
11-Nov	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
12-Nov	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
13-Nov	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3
14-Nov	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
15-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3
16-Nov	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	0.5
17-Nov	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
18-Nov	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
19-Nov	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
20-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.1	0.2
21-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	0.2
22-Nov	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	0.4
23-Nov	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.2	0.6
24-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.2	0.3
25-Nov	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
26-Nov	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	A	0	0	0	0	0	0	0	0.1	0.2
27-Nov	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	0.4
28-Nov	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	0.5
29-Nov	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	0.5
30-Nov	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
																									Diurnal Average	
																									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 - November 2015



Hourly Maximums

Hydrogen Sulphide (H₂S) - ppb

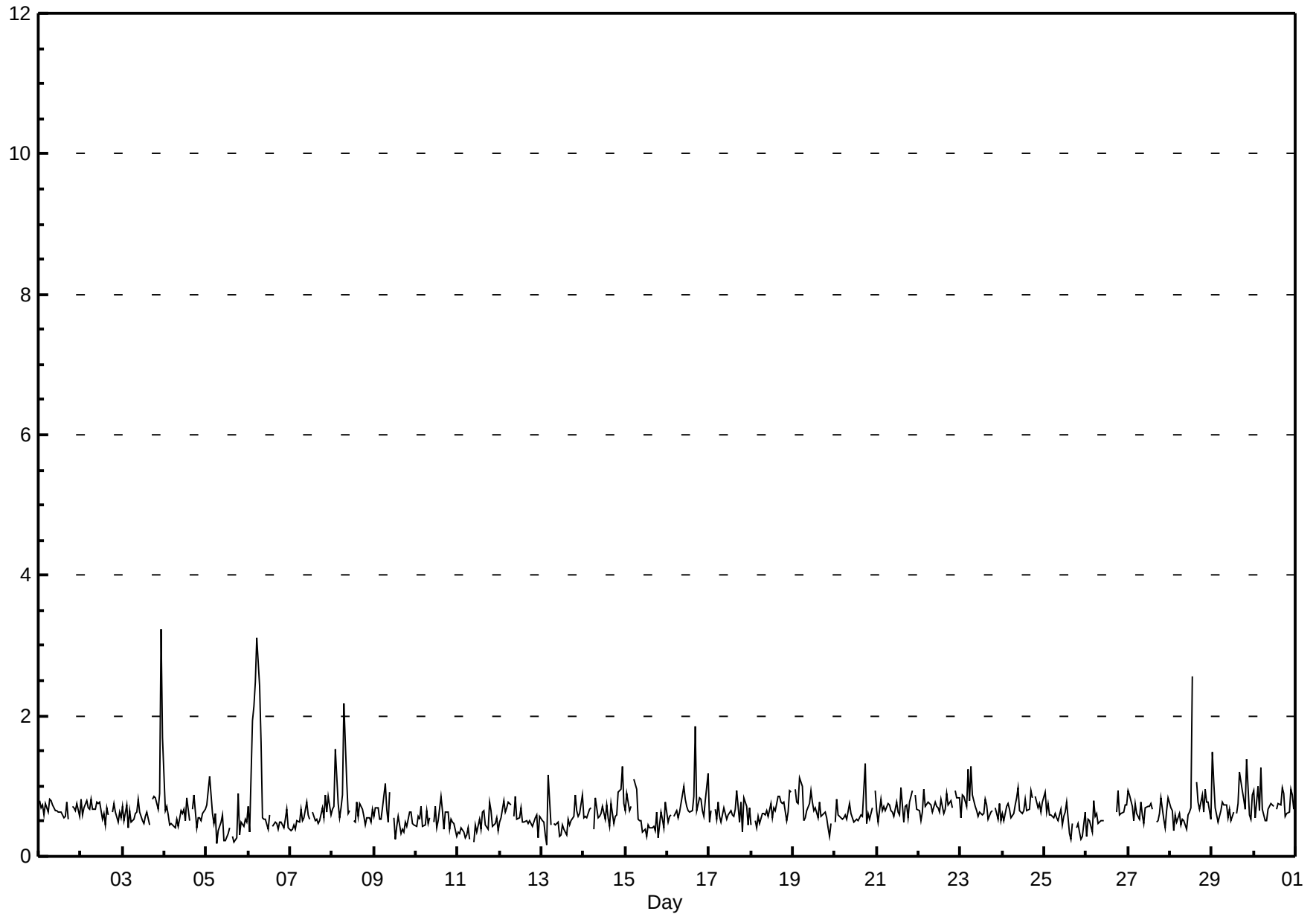
Falher - November 2015

Maximum Value: 3.2 ppb on Nov 3 23:00																			Maximum Daily Average: 1.0 ppb on Nov 6										Hours in Service: 720	
Minimum Value: 0 ppb on Nov 13 04:00																			Minimum Daily Average: 0.4 ppb on Nov 11										Hours of Data: 685	
Maximum Diurnal Average: 0.7 ppb at hour 5																			Minimum Diurnal Average: 0.6 ppb at hour 13										Hours of Missing Data: 35	
Monthly Average: 0.65 ppb																			Percentiles: P ₁ = 0.2 P ₁₀ = 0.4 Q ₁ = 0.5 Median = 0.6 Q ₃ = 0.7 P ₉₀ = 0.9 P ₉₉ = 2.1										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-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0.7	0.8				
2-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	A	1	1	1	0	1	1	0.7	0.8				
3-Nov	1	1	1	0	1	0	1	1	1	1	1	1	0	1	1	0	A	1	1	1	1	1	3	2	0.8	3.2				
4-Nov	1	1	1	0	0	0	0	1	0	1	1	1	1	1	0	A	1	1	0	1	1	1	1	1	0.6	0.9				
5-Nov	1	1	1	1	0	1	0	0	0	1	0	0	0	0	A	0	0	0	0	1	0	0	0	1	0	0.5	1.1			
6-Nov	1	0	2	2	2	3	2	2	1	1	1	0	1	A	0	0	0	0	0	0	0	1	1	0	1.0	3.1				
7-Nov	0	0	0	0	1	0	1	0	1	1	1	1	A	1	1	1	0	1	1	1	1	1	1	1	0.6	0.9				
8-Nov	1	1	2	1	1	1	1	2	1	1	1	A	1	0	1	1	1	1	1	0	1	1	0	1	0.8	2.2				
9-Nov	1	1	1	1	1	1	1	1	0	1	A	1	0	0	1	0	0	0	0	0	1	1	0	0	0.6	1.0				
10-Nov	0	1	1	1	0	0	1	0	1	A	0	1	0	0	1	1	0	1	1	0	1	0	0	0	0.5	0.9				
11-Nov	0	0	0	0	0	0	0	0	A	0	0	0	1	0	1	1	0	0	1	1	0	0	1	0	0.4	0.8				
12-Nov	0	1	1	1	1	1	1	A	1	1	1	1	1	0	0	0	0	1	0	0	1	1	0	1	0.6	0.9				
13-Nov	1	0	0	0	1	0	A	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	0.5	1.2				
14-Nov	1	1	1	1	1	A	0	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	0.7	1.3				
15-Nov	1	1	1	1	A	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	1	1	0	1	0.6	1.1				
16-Nov	0	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	0.8	1.8				
17-Nov	0	1	A	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	1	0.6	0.9				
18-Nov	0	A	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9				
19-Nov	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	A	0.7	1.1				
20-Nov	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	A	1	0.6	1.3				
21-Nov	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	A	1	1	0.7	1.0				
22-Nov	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	1.0				
23-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0.7	1.3				
24-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0.7	1.0				
25-Nov	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	A	0	0	0	0	0	1	0.5	0.9				
26-Nov	0	1	1	0	1	1	1	0	1	0	1	C	C	C	C	1	A	1	1	1	1	1	1	1	0.6	0.9				
27-Nov	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	A	0	1	1	1	1	0	1	1	0.7	0.9				
28-Nov	1	1	0	1	0	1	0	1	1	0	1	1	1	3	A	1	1	1	1	1	1	1	1	1	0.7	2.6				
29-Nov	1	1	1	0	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.8	1.5				
30-Nov	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	1.3				
0.6		0.6	0.7	0.6	0.7	0.7	0.7	0.7	0.6	0.7	0.6	0.6	0.6	0.7	0.6	0.6	0.7	0.6	0.7	0.6	0.7	0.6	0.7	0.7	Diurnal Average					
1.5		1.1	1.9	2.1	2.5	3.1	2.4	2.2	1.1	1.0	0.9	0.8	0.7	2.6	1.0	1.0	1.8	1.3	0.9	0.9	1.4	1.0	3.2	1.7	Diurnal Maximum					
C - Calibration				A - Automated Daily Zero Span																										

Hourly Maximums

Hydrogen Sulphide (H₂S) - ppb

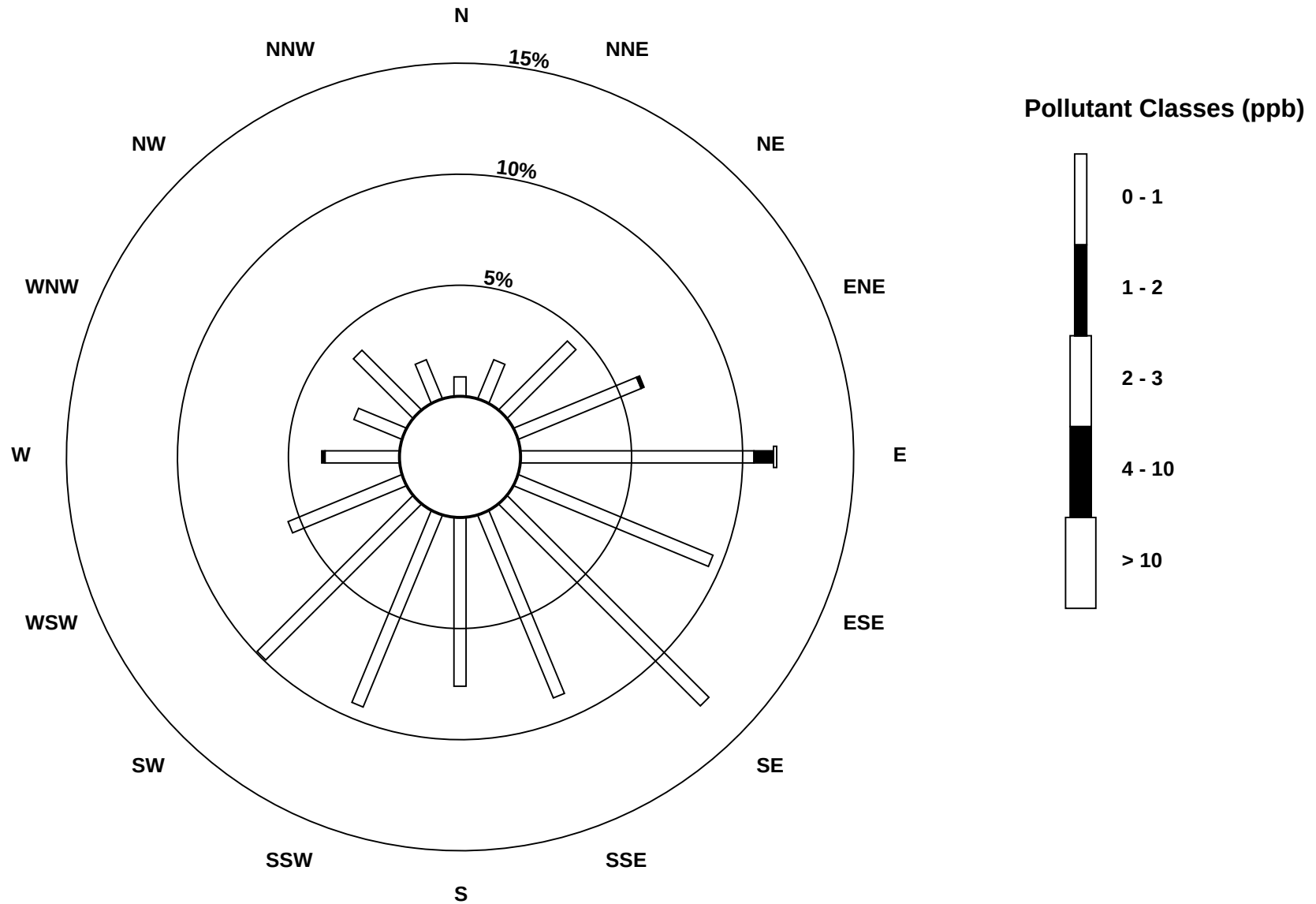
Falher - November 2015



Pollutant Rose

Hydrogen Sulphide (H₂S) - ppb

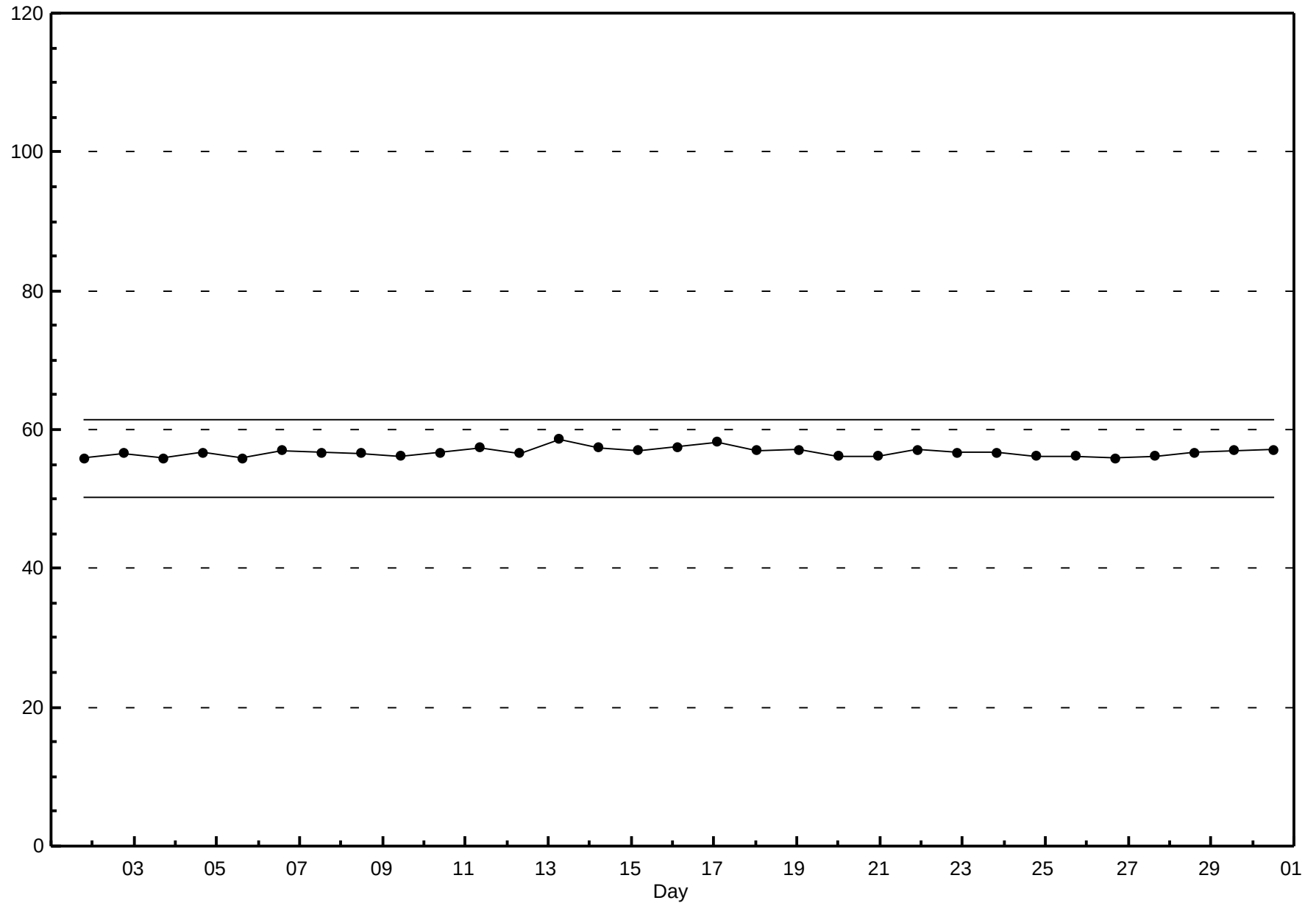
Falher - November 2015



Span Responses

Hydrogen Sulphide (H_2S)

Falher - November 2015



Hourly Averages

External Temperature (ET) - °C

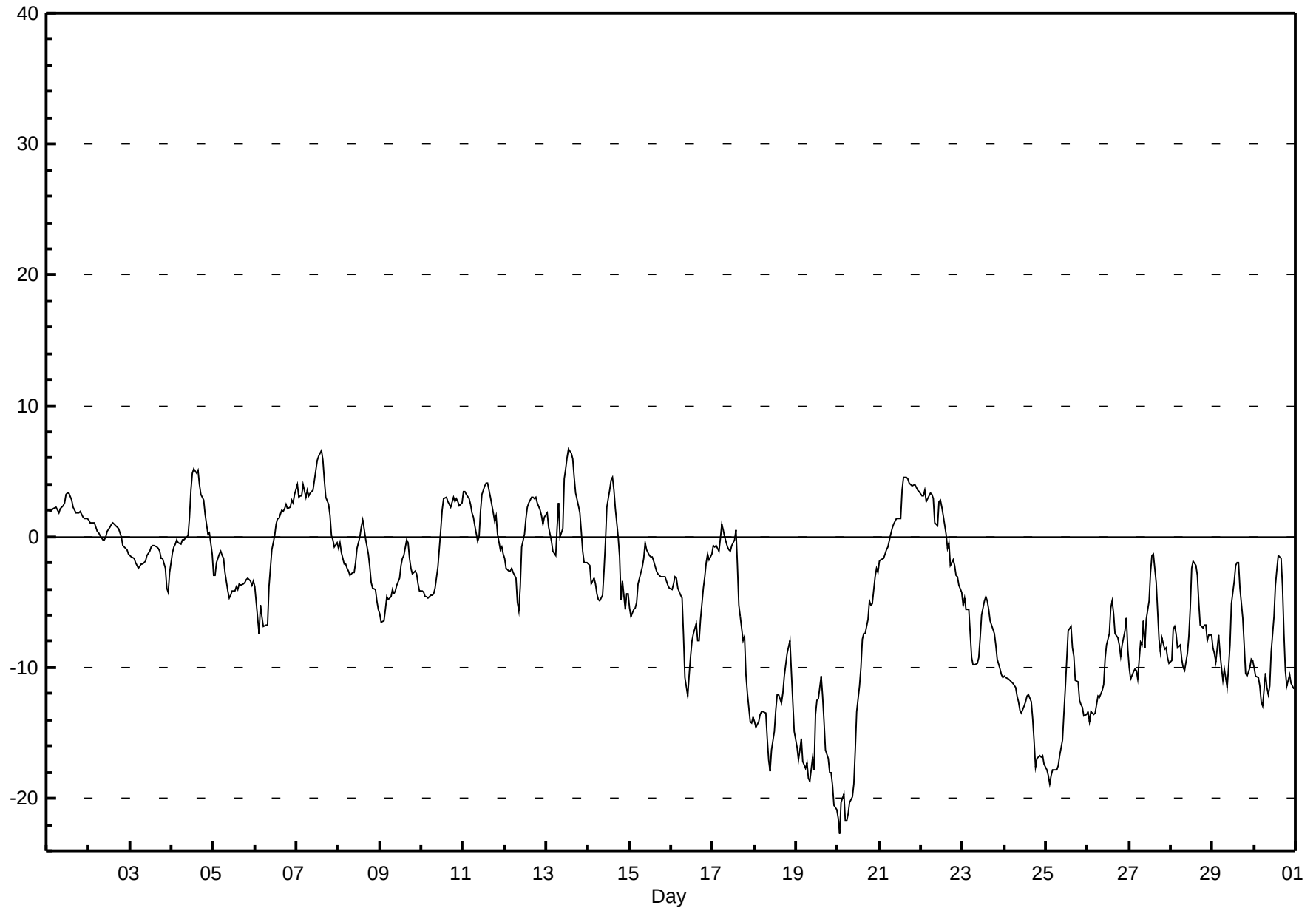
Falher - November 2015

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 6.7 °C on Nov 13 14:00 Maximum Daily Average: 3.2 °C on Nov 7																								Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0		
Minimum Value: -23 °C on Nov 20 02:00 Maximum Diurnal Average: -1.3 °C at hour 15 Monthly Average: -4.39 °C												Minimum Daily Average: -16.4 °C on Nov 19 Minimum Diurnal Average: -6.1 °C at hour 9 Percentiles: P ₁ = -20.4 P ₁₀ = -13.3 Q ₁ = -8.7 Median = -3.1 Q ₃ = 0.4 P ₉₀ = 2.9 P ₉₉ = 5.9														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Nov	2	2	2	2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	2	2	2	1	1	2.2	3.4	
2-Nov	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	0	0	-1	-1	-1	-1	0.3	1.3	
3-Nov	-1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-1	-1	-1	-1	-1	-1	-1	-2	-2	-2	-4	-4	-3	-1.8	-0.6	
4-Nov	-1	-1	-1	0	0	-1	0	0	0	0	2	4	5	5	5	5	4	3	3	2	1	0	0	-1	1.4	5.2
5-Nov	-3	-3	-2	-1	-1	-1	-2	-3	-4	-5	-4	-4	-4	-4	-4	-4	-4	-4	-3	-3	-3	-4	-3	-3.2	-1.2	
6-Nov	-4	-5	-7	-5	-6	-7	-7	-7	-4	-2	-1	0	1	1	1	2	2	2	2	2	2	3	3	3	-1.2	3.2
7-Nov	4	3	3	3	4	3	4	3	3	4	4	5	6	6	7	6	4	3	2	2	0	0	-1	0	3.2	6.5
8-Nov	-1	0	-1	-2	-2	-2	-3	-3	-3	-3	-2	-1	0	1	1	1	0	-1	-2	-4	-4	-4	-5	-6	-1.9	1.3
9-Nov	-6	-7	-6	-6	-5	-5	-5	-4	-4	-4	-4	-3	-2	-2	-1	0	0	-2	-2	-3	-3	-3	-4	-4	-3.5	-0.2
10-Nov	-4	-4	-5	-5	-5	-5	-4	-4	-4	-2	-1	1	2	3	3	3	2	2	3	3	3	3	2	3	-0.4	3.0
11-Nov	3	3	3	3	2	2	2	1	0	0	2	3	4	4	4	4	3	2	1	2	0	-1	-1	-1	1.9	4.1
12-Nov	-2	-2	-3	-3	-2	-3	-3	-5	-6	-4	-1	0	1	2	3	3	3	3	3	3	2	2	1	1	-0.3	3.0
13-Nov	2	1	0	0	-1	-1	1	3	0	1	4	5	6	7	6	6	4	3	2	2	0	-1	-2	-2	1.9	6.7
14-Nov	-2	-2	-4	-3	-4	-4	-5	-5	-4	-3	0	2	4	4	5	4	2	0	-2	-5	-3	-6	-4	-4	-1.7	4.5
15-Nov	-5	-6	-6	-5	-5	-4	-3	-2	-2	0	-1	-1	-2	-2	-2	-3	-3	-3	-3	-3	-3	-3	-4	-4	-3.1	-0.5
16-Nov	-4	-4	-3	-3	-4	-4	-5	-8	-11	-12	-11	-9	-8	-7	-7	-8	-8	-6	-4	-3	-2	-1	-2	-1	-5.6	-1.4
17-Nov	-1	-1	-1	-1	0	1	1	0	-1	-1	-1	-1	0	1	-2	-5	-6	-8	-8	-11	-12	-14	-14	-14	-4.1	1.0
18-Nov	-14	-15	-14	-14	-13	-13	-13	-15	-17	-18	-16	-15	-13	-12	-12	-13	-12	-11	-10	-9	-8	-10	-13	-15	-13.1	-8.0
19-Nov	-16	-17	-16	-15	-17	-18	-17	-18	-19	-17	-18	-14	-13	-12	-11	-12	-14	-16	-17	-18	-18	-19	-21	-21	-16.4	-10.6
20-Nov	-21	-23	-20	-20	-22	-22	-21	-20	-20	-19	-16	-13	-11	-10	-8	-7	-7	-6	-5	-5	-5	-3	-2	-3	-13.0	-2.5
21-Nov	-2	-2	-2	-1	-1	-1	0	1	1	1	1	1	1	4	4	5	4	4	4	4	4	4	3	1.8	4.5	
22-Nov	3	3	4	3	3	3	3	3	1	1	3	3	2	2	0	-1	0	-2	-2	-2	-3	-3	-4	-4	0.6	3.5
23-Nov	-5	-5	-6	-6	-7	-9	-10	-10	-10	-9	-8	-6	-5	-5	-5	-6	-6	-7	-7	-8	-9	-10	-11	-11	-7.5	-4.6
24-Nov	-11	-11	-11	-11	-11	-11	-12	-12	-13	-13	-13	-13	-13	-12	-12	-13	-14	-16	-18	-17	-17	-17	-17	-17	-13.4	-10.6
25-Nov	-18	-18	-19	-18	-18	-18	-18	-17	-17	-16	-13	-11	-9	-7	-7	-9	-9	-11	-11	-13	-13	-13	-14	-14	-13.8	-6.9
26-Nov	-13	-14	-13	-14	-13	-13	-12	-12	-12	-11	-9	-8	-7	-5	-5	-6	-7	-8	-8	-9	-8	-7	-6	-9	-9.7	-4.9
27-Nov	-10	-11	-10	-10	-10	-11	-8	-8	-6	-8	-6	-5	-3	-1	-1	-3	-6	-8	-9	-8	-9	-8	-9	-10	-7.5	-1.3
28-Nov	-10	-7	-7	-7	-9	-8	-9	-10	-10	-9	-8	-5	-2	-2	-2	-3	-5	-7	-7	-7	-7	-8	-7	-8	-6.8	-1.9
29-Nov	-8	-9	-10	-8	-9	-10	-11	-10	-12	-10	-8	-5	-3	-2	-2	-2	-4	-6	-8	-10	-11	-10	-9	-9	-7.8	-2.0
30-Nov	-10	-11	-11	-11	-13	-13	-10	-12	-12	-11	-9	-6	-4	-2	-1	-2	-4	-7	-10	-11	-11	-11	-11	-12	-9.0	-1.5
-5.2 -5.5 -5.5 -5.3 -5.6 -5.8 -5.6 -5.9 -6.1 -5.7 -4.5 -3.2 -2.1 -1.4 -1.3 -1.9 -2.6 -3.5 -3.8 -4.3 -4.6 -5.0 -5.3 -5.5 3.9 3.4 3.5 3.1 3.9 3.4 3.6 3.1 3.4 3.6 4.4 5.2 6.0 6.7 6.5 5.9 4.5 4.1 4.0 3.9 3.9 3.8 3.5 3.4																								Diurnal Average		
																								Diurnal Maximum		

Hourly Averages

External Temperature (ET) - °C

Falher - November 2015



Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Falher - November 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	9	11	10	14	16	20	13	15	19	22	18	19	22	21	22	20	20	15	13	12	12	10	9	7	14.8	22.4
Dir	13	35	19	45	61	70	82	55	52	60	67	73	69	56	46	41	48	42	35	38	35	31	23	27	51	46
2 Spd	5	6	5	3	5	6	9	12	12	10	8	6	6	4	4	3	4	4	4	6	8	8	9	9	4.7	12.4
Dir	33	49	65	80	247	253	242	237	231	231	212	232	234	251	268	269	244	242	259	265	271	270	270	265	250	237
3 Spd	9	11	9	10	10	9	7	9	8	5	2	5	3	2	5	6	5	5	7	10	9	11	9	11	2.2	11.5
Dir	255	252	253	252	245	271	292	323	330	328	286	303	289	251	236	214	179	177	152	146	122	104	83	88	237	104
4 Spd	13	15	15	15	14	14	17	18	18	17	17	18	23	21	18	11	12	10	10	10	8	5	3	2	11.0	22.6
Dir	126	137	130	135	134	135	137	146	151	153	169	185	207	211	216	208	205	206	214	203	224	225	257	252	173	207
5 Spd	6	6	9	7	8	10	13	16	17	20	20	14	10	11	12	7	6	8	7	6	6	8	8	8	4.9	20.0
Dir	22	67	18	23	25	343	332	318	309	306	309	310	318	286	272	330	34	57	82	138	148	148	146	157	332	309
6 Spd	7	6	7	9	11	11	12	11	11	15	16	18	17	15	20	23	25	23	20	14	12	12	8	13	12.7	24.8
Dir	151	152	100	99	81	89	99	98	117	126	133	142	156	144	132	135	140	144	151	163	164	165	169	186	137	140
7 Spd	16	12	12	12	10	11	12	11	12	10	8	11	14	11	15	14	10	9	12	8	1	4	7	5	9.9	16.0
Dir	196	182	206	202	227	198	202	196	190	204	219	205	209	223	223	248	220	194	187	197	148	172	194	210	205	196
8 Spd	7	7	1	7	2	1	0	0	3	5	8	11	11	9	5	9	9	9	10	10	11	7	5	6	4.7	11.3
Dir	184	233	131	174	207	228	108	264	264	262	295	325	331	343	318	316	308	295	307	315	321	327	298	324	304	321
9 Spd	9	9	7	6	7	2	3	5	8	6	10	8	6	7	4	6	17	15	16	16	19	18	13	14	7.1	19.3
Dir	339	5	21	42	46	54	63	103	110	103	126	137	163	174	169	142	135	143	131	125	130	135	136	135	122	130
10 Spd	15	16	17	18	19	19	18	18	17	17	18	22	21	19	14	13	18	17	17	19	21	19	17	20	17.5	21.7
Dir	131	130	129	132	128	127	127	120	114	125	132	140	146	153	145	131	131	131	126	135	147	144	143	175	136	140
11 Spd	19	19	29	36	33	27	28	26	21	18	23	26	27	30	26	23	20	24	17	28	22	21	23	24	23.9	35.9
Dir	196	197	204	221	220	221	222	213	202	198	211	225	232	232	229	225	222	235	224	217	204	198	196	199	215	221
12 Spd	23	19	18	19	20	18	16	14	15	10	15	24	29	29	26	24	21	22	24	22	21	19	19	16	18.5	29.1
Dir	191	180	179	180	185	185	175	134	107	102	121	129	133	139	141	149	125	133	147	154	153	152	145	148	150	139
13 Spd	16	14	16	14	15	13	14	21	15	15	27	29	30	35	34	31	30	27	24	19	19	15	16	19	17.7	34.7
Dir	160	137	148	130	105	125	175	206	187	186	210	220	223	231	228	226	220	217	214	214	201	179	173	171	199	231
14 Spd	16	15	16	16	13	18	17	18	17	16	16	18	20	17	13	8	4	7	12	13	13	12	4	4	11.3	20.3
Dir	190	183	152	156	135	120	132	134	135	151	159	194	214	221	221	216	180	145	132	133	143	105	154	141	160	214
15 Spd	2	10	8	9	2	9	7	5	7	12	11	16	21	23	27	29	30	30	28	25	23	20	21	18	12.7	30.2
Dir	35	69	37	5	57	70	84	2	5	54	22	335	330	323	319	316	314	310	313	308	301	284	278	270	323	314
16 Spd	13	11	15	19	15	10	12	9	4	5	6	8	10	13	17	17	18	21	26	28	30	25	22	18	8.3	30.2
Dir	273	258	242	227	226	209	200	183	133	65	108	135	128	111	106	86	74	69	75	88	121	110	93	94	117	121
17 Spd	21	27	29	22	21	33	34	31	29	27	21	17	10	12	14	14	18	9	17	8	4	12	16	17	15.9	34.5
Dir	124	140	146	152	176	202	203	197	197	205	206	215	216	267	252	187	219	227	269	238	179	150	178	186	192	203
18 Spd	17	19	18	25	21	20	18	12	9	7	6	7	7	8	12	11	11	13	13	14	12	12	13	11	7.2	24.8
Dir	192	176	178	190	197	190	195	187	170	123	132	87	119	62	63	59	35	51	70	86	102	92	88	56	137	190
19 Spd	10	7	2	2	2	0	1	4	0	2	3	1	1	4	2	0	0	1	5	7	7	7	5	6	1.0	9.5
Dir	78	101	88	44	82	195	184	193	242	249	86	199	172	4	12	155	76	284	252	259	222	189	159	130	158	78
20 Spd	3	3	4	4	5	5	6	6	5	5	5	5	8	10	13	14	14	13	14	14	15	17	17	20	6.4	20.3
Dir	117	98	112	81	80	58	53	61	59	80	81	108	119	122	147	148	147	143	156	174	187	210	210	205	150	205
21 Spd	22	23	23	26	25	21	23	30	34	31	23	18	20	32	42	41	38	32	32	29	26	27	25	22	27.0	42.5
Dir	205	209	209	204	206	189	205	213	217	219	217	205	199	226	235	238	238	230	230	230	232	230	228	224	221	235
22 Spd	21	22	25	21	22	24	23	23	21	20	16	15	14	11	5	10	12	10	8	5	3	7	2	7	13.4	25.0
Dir	229	230	236	233	239	242	243	240	236	253	274	264	241	238	234	223	237	208	205	248	186	247	36	139	237	236

Hourly Averages

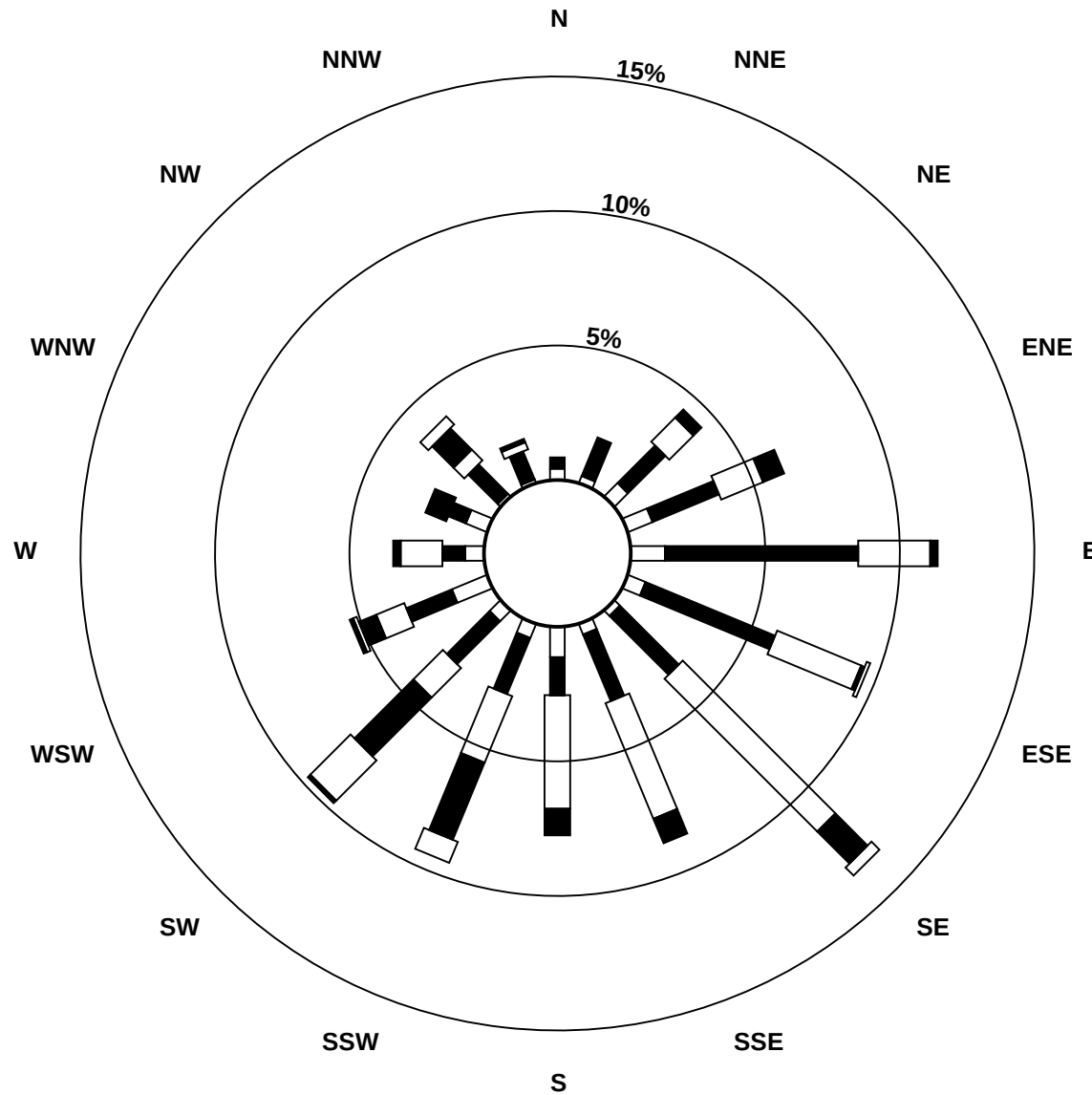
Wind Speed (km/h)
Wind Direction (deg)
Falher - November 2015

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	8	5	4	6	6	3	9	6	5	8	6	1	5	11	18	22	24	23	22	23	24	21	18	19	8.9	23.9
Dir	183	225	78	89	78	1	50	346	50	296	314	345	290	323	325	314	310	301	299	290	286	275	260	257	299	286
24 Spd	16	17	15	13	11	9	13	14	14	17	16	12	13	13	10	9	10	11	14	15	15	14	13	13	5.2	17.0
Dir	261	264	261	258	245	221	207	199	190	183	182	190	163	160	157	124	106	86	69	82	69	67	74	88	168	264
25 Spd	12	11	10	9	11	10	9	9	11	9	8	8	7	6	7	9	11	13	13	11	10	11	10	12	8.6	13.1
Dir	88	90	86	106	108	119	110	111	123	101	137	163	181	204	187	166	155	145	143	133	119	110	112	116	126	143
26 Spd	12	10	12	11	13	14	13	12	11	11	11	13	12	12	12	12	13	15	11	11	10	12	10	7	10.5	14.8
Dir	110	91	92	92	87	89	100	106	108	104	105	118	128	139	149	130	122	136	152	164	159	167	165	146	122	136
27 Spd	8	8	11	6	6	9	12	10	10	10	12	11	12	12	9	15	14	14	13	14	12	12	11	11	10.0	15.3
Dir	126	120	139	137	74	124	148	154	158	142	155	161	156	168	159	158	159	156	143	139	120	109	94	85	140	158
28 Spd	12	14	10	11	11	13	13	12	11	15	11	11	8	7	11	10	10	12	10	10	7	10	10	10	10.6	15.4
Dir	95	117	113	116	98	111	111	95	97	109	93	94	99	93	99	100	112	118	73	110	112	100	80	72	101	109
29 Spd	11	11	10	8	9	10	12	11	10	8	10	10	10	9	10	8	7	9	10	12	11	11	11	9	9.7	12.2
Dir	111	94	88	80	81	99	76	81	89	81	73	83	87	101	110	112	107	94	78	111	94	79	77	90	90	76
30 Spd	10	14	11	14	12	13	11	8	9	9	12	8	7	9	7	5	6	10	10	8	9	7	7	8	8.6	13.6
Dir	103	102	89	82	93	88	85	87	60	72	76	97	114	118	127	107	101	82	71	51	43	45	45	41	83	102
Spd	6.1	6.4	6.2	6.5	5.7	6.3	6.7	6.3	5.9	5.3	5.5	5.9	6.5	5.7	5.5	4.7	4.7	4.9	4.5	5.6	5.6	5.8	5.1	5.6	Diurnal Average	
Dir	167	158	159	165	160	158	166	171	161	160	164	175	181	195	197	189	175	164	160	165	161	155	156	162	Diurnal Maximum	
Spd	22.6	26.9	29.3	35.9	32.6	33.4	34.5	31.3	34.1	31.4	26.8	28.7	30.3	34.7	42.5	41.5	38.0	32.3	31.7	28.9	30.2	27.0	24.5	23.5	Diurnal Maximum	
Dir	191	140	204	221	220	202	203	197	217	219	210	220	223	231	235	238	238	230	230	230	121	230	228	199		
Maximum Speed Value: 42 km/h on Nov 21 15:00																									Hours in Service: 720	
Maximum Daily Speed Average: 27.0 km/h on Nov 21																									Hours of Data: 720	
Maximum Diurnal Speed Average: 6.7 km/h at hour 7																									Hours of Missing Data: 0	
Minimum Speed Value: 0 km/h on Nov 19 16:00																									Percent Operational Time: 100.0	
Minimum Daily Speed Average: 1.0 km/h on Nov 19																										
Minimum Diurnal Speed Average: 4.5 km/h at hour 19																										
Monthly Average Velocity: 5.59 km/h 167.5 deg																										
Speed Percentiles: P ₁ = 0.9 P ₁₀ = 5.0 Q ₁ = 8.2 Median = 11.8 Q ₃ = 17.5 P ₉₀ = 23.0 P ₉₉ = 33.8																										
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	4		13		1		0		0		0		18													
NorthEast	10		26		15		5		0		0		56													
East	14		72		57		7		0		0		150													
SouthEast	7		43		88		22		4		0		164													
South	13		23		51		17		3		0		107													
SouthWest	7		34		23		44		19		2		129													
West	16		14		17		6		0		0		53													
NorthWest	2		18		8		12		3		0		43													
Total	73		243		260		113		29		2		720													

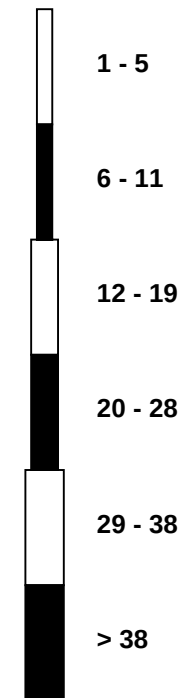
Wind Rose

Wind Speed (WS) (km/h)

Falher - November 2015



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Falher - November 2015

Maximum Speed: 43 km/h on Nov 21 15:00																				Maximum Daily Speed Average: 27.8 km/h on Nov 21										Hours in Service: 720	
Minimum Speed: 0 km/h on Nov 19 06:00																				Minimum Daily Speed Average: 3.5 km/h on Nov 19										Hours of Data: 720	
Maximum Diurnal Speed Average: 14.7 km/h at hour 15																				Minimum Diurnal Speed Average: 12.3 km/h at hour 23										Hours of Missing Data: 0	
Monthly Average Speed: 13.43 km/h																				Percentiles: P ₁ = 1.4 P ₁₀ = 5.3 Q ₁ = 8.4 Median = 11.9 Q ₃ = 17.8 P ₉₀ = 23.0 P ₉₉ = 33.8										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-Nov	9	11	10	14	16	20	14	15	19	22	18	19	22	22	23	21	20	15	13	12	12	10	9	7	15.5	22.5					
2-Nov	6	7	5	3	6	6	9	12	12	11	8	7	6	4	4	3	4	4	4	6	8	8	10	9	6.7	12.4					
3-Nov	9	11	10	10	10	9	7	9	8	5	3	5	3	3	6	6	5	5	7	10	9	12	9	11	7.6	11.6					
4-Nov	13	15	15	15	14	14	17	18	18	17	17	18	23	21	18	11	12	10	10	11	8	6	4	4	13.7	22.7					
5-Nov	6	7	9	7	8	10	13	16	17	20	20	14	10	12	12	8	6	9	7	6	6	8	8	8	10.3	20.2					
6-Nov	7	6	7	9	11	11	12	11	11	15	16	18	17	15	20	23	25	23	20	14	12	12	8	13	14.0	24.9					
7-Nov	16	13	13	12	10	11	12	11	12	10	8	11	14	11	15	14	11	9	12	9	2	4	8	6	10.6	16.0					
8-Nov	7	7	3	7	3	1	1	0	3	5	8	11	11	9	5	10	9	9	10	10	11	7	6	7	6.6	11.4					
9-Nov	9	9	7	6	7	2	3	5	8	6	10	8	6	7	4	6	17	15	16	17	19	18	13	14	9.7	19.3					
10-Nov	15	16	17	18	19	19	18	18	17	17	18	22	22	19	14	13	18	17	17	20	21	19	17	20	18.0	21.7					
11-Nov	19	19	29	36	33	27	28	27	21	19	23	26	27	30	26	24	20	24	17	28	22	21	23	24	24.6	36.2					
12-Nov	23	19	18	19	20	18	17	15	15	10	15	24	29	29	26	24	21	22	24	22	21	19	19	16	20.2	29.2					
13-Nov	16	14	16	15	15	13	15	21	15	15	27	29	30	35	34	31	30	27	24	19	19	15	16	19	21.3	34.9					
14-Nov	16	16	16	16	14	18	17	18	17	16	16	19	20	18	14	8	5	8	13	13	13	12	4	5	13.8	20.3					
15-Nov	4	10	9	9	5	9	7	5	8	12	12	16	21	23	27	29	30	30	28	25	23	21	21	19	16.8	30.3					
16-Nov	13	11	15	19	15	10	12	9	4	5	6	8	10	14	17	17	18	21	26	28	30	25	22	18	15.7	30.4					
17-Nov	21	27	29	22	21	34	35	31	29	27	21	17	10	12	15	15	18	10	17	9	4	12	16	17	19.6	34.5					
18-Nov	17	19	19	25	21	20	19	13	9	7	7	7	8	8	12	12	11	13	13	14	12	12	13	11	13.4	24.9					
19-Nov	10	7	3	2	2	0	1	4	0	2	3	2	1	4	2	0	1	2	6	7	7	7	5	6	3.5	9.7					
20-Nov	3	4	4	4	5	5	6	6	5	5	5	5	8	11	13	14	14	13	14	14	15	17	17	20	9.4	20.3					
21-Nov	22	23	23	26	25	21	23	30	34	31	23	18	20	32	43	42	38	32	32	29	26	27	25	22	27.8	42.5					
22-Nov	21	22	25	21	22	24	23	23	21	21	16	15	14	11	5	10	12	10	8	6	3	7	5	8	14.7	25.0					
23-Nov	8	5	5	6	6	4	10	6	6	8	7	2	5	11	18	22	24	23	22	23	24	21	18	19	12.6	24.0					
24-Nov	16	17	15	13	11	10	13	15	14	17	16	12	13	13	10	9	10	11	14	15	15	14	13	13	13.3	17.2					
25-Nov	12	11	10	9	11	10	9	9	11	10	8	8	7	6	8	9	11	13	13	11	10	11	11	12	10.0	13.4					
26-Nov	12	10	12	11	14	15	13	12	12	11	11	13	12	12	12	13	13	15	11	11	10	12	10	7	11.8	15.0					
27-Nov	8	8	11	7	7	9	12	10	10	11	13	11	13	12	9	15	14	14	13	14	12	12	11	11	11.2	15.4					
28-Nov	12	14	10	11	11	14	13	12	13	16	11	11	8	7	11	10	10	12	10	10	7	10	11	10	11.1	15.7					
29-Nov	11	11	10	8	10	11	12	11	11	8	10	10	10	9	10	8	7	9	10	12	12	11	12	9	10.1	12.4					
30-Nov	11	14	11	14	12	13	11	9	10	10	12	8	7	9	8	5	6	10	10	8	9	7	7	8	9.4	13.7					
12.4 12.7 12.8 13.3 12.8 12.9 13.3 13.4 13.0 12.9 13.0 13.1 13.6 14.3 14.7 14.4 14.6 14.6 14.7 14.4 13.5 13.2 12.3 12.4																								Diurnal Average							
22.7 27.0 29.4 36.2 32.7 33.5 34.5 31.4 34.1 31.5 27.3 28.8 30.4 34.9 42.5 41.5 38.1 32.3 31.8 28.9 30.4 27.0 24.5 23.5																								Diurnal Maximum							
All monthly, daily, and diurnal averages have been calculated using scalar methods																															

Hourly Standard Deviations

Wind Direction (WD) - deg

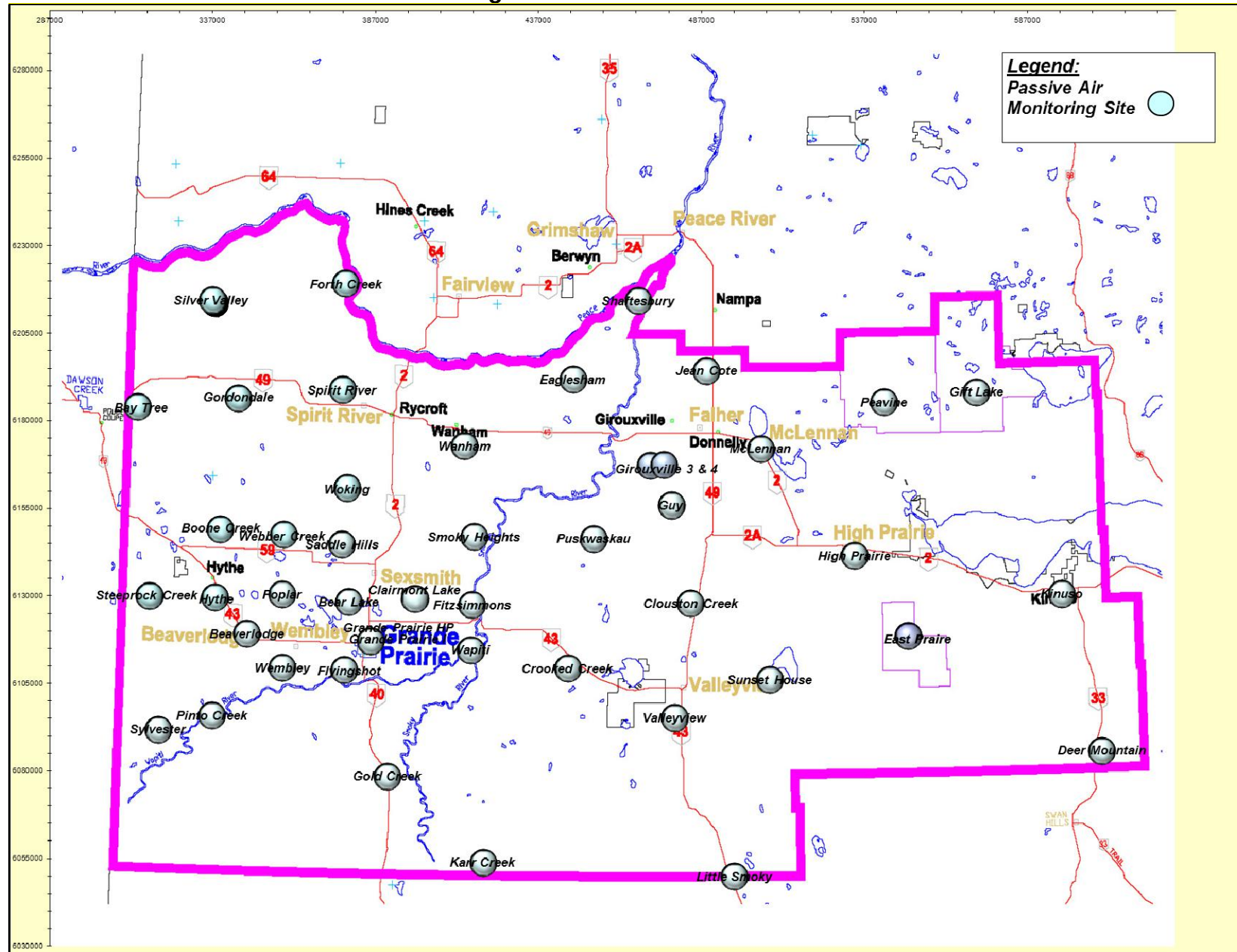
Falher - November 2015

Maximum Value: 95.7 deg on Nov 8 03:00																			Hours in Service: 720						
Minimum Value: 1.4 deg on Nov 12 06:00																			Hours of Data: 720						
Percentiles: P ₁ = 1.8 P ₁₀ = 3.0 Q ₁ = 4.5 Median = 7.6 Q ₃ = 12.1 P ₉₀ = 21.4 P ₉₉ = 63.1																			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-Nov	9	10	6	8	5	7	16	6	3	3	6	5	6	9	6	4	4	5	4	3	5	3	6	5	15.7
2-Nov	12	8	6	27	53	13	5	5	4	6	10	13	10	16	18	11	12	11	7	9	6	11	8	7	53.0
3-Nov	7	5	9	7	8	11	16	6	10	27	36	17	28	29	14	14	12	11	5	9	12	8	5	7	36.0
4-Nov	9	4	4	2	7	7	3	2	2	5	3	10	5	7	5	4	8	8	10	8	25	26	34	39	39.4
5-Nov	24	27	6	7	16	14	5	8	7	6	7	13	17	18	15	22	24	8	12	10	7	4	4	8	27.3
6-Nov	11	11	11	4	5	3	6	4	8	3	3	6	3	9	2	3	2	3	3	5	3	4	5	7	11.3
7-Nov	3	7	18	9	12	20	2	5	5	11	11	5	4	4	3	13	25	5	7	16	38	22	17	64	64.3
8-Nov	13	16	96	7	24	4	61	35	41	17	16	7	5	12	16	7	13	9	4	5	4	7	15	14	95.7
9-Nov	5	6	8	9	6	5	12	15	7	12	8	12	13	12	11	13	5	3	8	3	3	7	3	2	15.2
10-Nov	2	2	3	3	2	3	2	6	4	3	4	5	4	4	5	5	8	8	5	6	5	5	11	8	10.9
11-Nov	9	9	6	7	5	4	3	4	2	4	5	5	4	4	3	7	4	7	6	3	7	2	3	2	8.8
12-Nov	5	3	1	3	2	1	7	22	5	8	4	4	3	5	4	9	4	4	4	3	3	6	4	12	22.0
13-Nov	9	9	11	19	9	8	23	5	5	6	11	5	5	6	4	4	3	4	4	3	7	11	4	4	22.8
14-Nov	6	12	5	4	8	5	8	3	3	7	10	19	5	12	8	12	20	17	10	5	6	10	16	36	36.0
15-Nov	71	16	20	18	60	17	9	20	17	8	16	9	2	4	2	2	4	3	2	3	4	9	3	7	70.5
16-Nov	4	6	4	4	4	3	6	18	27	13	21	6	8	11	7	8	10	3	2	6	6	8	4	4	27.3
17-Nov	9	4	2	8	10	5	4	2	2	3	5	4	13	10	21	14	6	27	16	25	23	7	14	3	26.7
18-Nov	2	5	6	2	3	3	6	6	12	26	37	13	24	23	8	16	5	10	6	10	2	10	13	8	36.7
19-Nov	12	4	33	45	17	89	18	23	57	19	51	46	63	17	22	75	71	53	15	9	22	28	10	7	88.9
20-Nov	24	13	11	10	5	6	3	8	8	6	6	9	4	9	6	9	4	7	3	9	9	2	2	2	24.2
21-Nov	2	2	2	3	3	4	6	2	3	3	7	7	3	8	3	2	3	2	2	2	3	3	2	3	8.4
22-Nov	2	2	3	2	4	3	3	2	3	24	11	8	5	10	15	11	4	11	11	62	20	12	66	20	66.2
23-Nov	18	27	48	24	42	76	25	22	29	19	29	58	10	14	5	5	4	4	3	6	4	9	5	8	75.7
24-Nov	5	7	7	9	7	20	8	7	7	6	4	6	11	6	7	13	4	10	7	2	6	2	2	5	19.7
25-Nov	4	7	8	17	8	7	12	5	8	13	9	13	8	16	16	14	13	13	13	7	15	13	10	13	16.6
26-Nov	10	4	5	10	8	5	7	8	16	9	5	11	6	4	5	10	10	10	5	21	8	7	11	22	22.1
27-Nov	13	11	12	36	22	10	7	16	16	15	12	16	22	17	22	6	9	9	9	4	13	4	10	5	36.0
28-Nov	8	12	8	5	9	8	12	11	27	12	9	5	11	12	9	6	9	10	11	11	14	16	13	17	27.4
29-Nov	12	14	12	14	21	14	10	15	11	11	10	11	7	8	8	11	8	8	5	12	14	12	5	4	21.4
30-Nov	9	8	8	7	5	8	11	8	9	23	7	13	6	7	7	8	11	8	9	10	6	8	10	5	23.1
	70.5	27.3	95.7	44.9	60.4	88.9	61.2	35.1	56.8	27.4	50.9	58.4	62.9	28.5	22.3	75.4	71.3	53.0	15.7	62.2	38.1	27.6	66.2	64.3	

PAZA

Monthly Passive Data Summary

Location of PAZA Passive Monitoring Stations



PAZA Passive Results for November 2015

Station Number	Station Name	SO2 ppb	O3 ppb	NO2 ppb	H2S ppb	Site Legal
Duplicates						
4a	Gordondale	0.3	34.7	1.1		
4b	Gordondale	0.3	31.2	1.2		
37a	Crooked Creek	0.3	29.8	2.1		
37b	Crooked Creek	0.1	32.0	2.2		
38a	Karr Creek	0.1	26.3	1.1		
38b	Karr Creek	0.2	24.6	1.1		
50a	East Prairie	0.1	27.0	0.9		
50b	East Prairie	0.1	26.8	0.8		
64a	Girouxville 4				0.4	
64b	Girouxville 4				0.2	
1	Silver Valley	0.2	25.9	1.8		08-27-081-11 W6M
2	Bay Tree	0.1	27.2	0.9		13-16-078-13 W6M
3	Fourth Creek	0.3	33.8	0.7		04-13-082-07 W6M
4	Gordondale	0.3	33.0	1.2		04-34-078-10 W6M
5	Boone Creek	0.1	33.5	1.0		16-36-074-11 W6M
7	Steeprock Creek	0.1	42.3	0.5		09-35-072-13 W6M
9	Spirit River	0.3	34.5	1.0		08-12-079-07 W6M
10	Woking	0.5	33.5	1.0		01-13-076-07 W6M
11	Webber Creek	0.2	23.3	2.6		09-36-074-09 W6M
12	Hythe	0.2	29.6	1.4		14-36-072-11 W6M
14	Sylvester	BDL	26.6	0.3		08-06-069-12 W6M
16	Beaverlodge	0.1	31.1	1.7		15-36-071-10 W6M
17	Poplar	0.3	30.6	1.7		13-06-073-08 W6M
18	Saddle Hills	0.2	33.4	0.9		04-25-074-07 W6M
19	Wanham	0.1	38.4	0.8		16-22-077-03 W6M
20	Shaftesbury	0.2	34.0	1.0		04-03-082-23 W5M
21	Eaglesham	0.1	24.3	1.3		16-21-079-25 W5M
23	Bear Lake	0.2	26.7	3.0		15-31-072-06 W6M
24	Wembley	0.2	25.0	1.6		12-31-070-08 W6M
25	Pinto Creek	BDL	32.5	0.7		04-24-069-11 W6M
26	Flyingshot	0.2	22.6	2.2		15-36-070-07 W6M
27	Grande Prairie I	0.2	24.5	12.0		08-15-071-06 W6M

PAZA Passive Results for November 2015 (Continued)

28	Clairmont Lake	0.3	32.3	2.3	09-06-073-04 W6M
29	Smoky Heights	0.2	25.6	N/S	04-06-075-02 W6M
30	Fitzsimmons	0.1	22.7	2.1	15-36-072-03 W6M
32	Gold Creek	0.4	16.8	4.5	06-33-067-05 W6M
33	Wapiti	0.2	28.3	2.5	02-25-071-03 W6M
34	Puskwaskau	0.3	29.8	0.7	15-35-074-25 W5M
35	Jean Cote	0.1	26.4	2.4	12-35-079-21 W5M
36	Guy	0.3	34.2	1.0	03-04-076-22 W5M
37	Crooked Creek	0.2	30.9	2.2	16-01-071-26 W5M
38	Karr Creek	0.1	25.4	1.1	10-16-065-02 W6M
39	Clouston Creek	0.4	29.0	2.1	12-01-073-22 W5M
40	McLennan	0.2	27.1	2.0	03-29-077-19 W5M
41	Valleyview	0.1	29.1	1.4	09-30-069-22 W5M
42	Sunset House	0.1	37.7	1.2	05-32-070-19 W5M
43	High Prairie	0.1	26.6	1.4	16-13-074-17 W5M
44	Peavine	0.4	26.3	0.8	03-05-079-15 W5M
45	Gift Lake	0.1	25.0	1.1	0.3 10-07-079-12 W5M
46	Little Smoky	0.1	23.0	3.7	12-01-065-21 W5M
47	Kinuso	0.1	21.7	0.9	12-10-073-10 W5M
65	Deer Mountain 2	0.1	22.2	0.8	15-22-068-09 W5M
49	Grande Prairie HP	0.2	20.6	11.9	17-26-071-06 W6M
50	East Prairie	0.1	26.9	0.8	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 November 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 November 2015 (PAZA Zone)				
Mean	0.2	28.5	2.0	0.3
Standard Deviation	0.1	5.2	2.4	0.0
Minimum	0.1	16.8	0.3	0.3
Minimum At	Kinuso (#47)	Gold Creek (#32)	Sylvester (#14)	Girouxville 3 (#63)
Maximum	0.5	42.3	12.0	0.3
Maximum At	Woking (#10)	Steepprock Creek (#7)	Grande Prairie I (#27)	Gift Lake (#45)

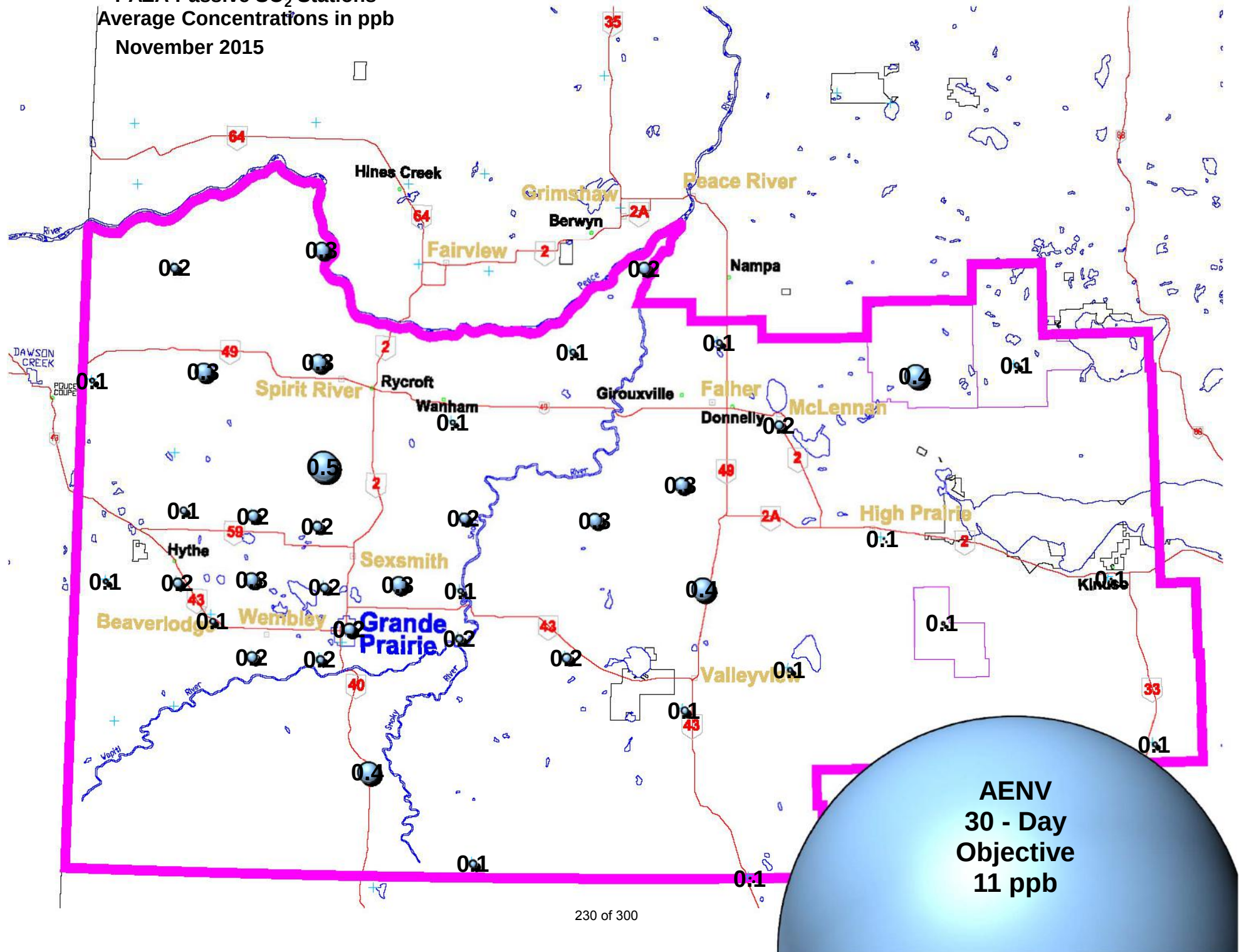
Comparison between Continuous and Passive monitoring at Beaverlodge (passive #16 Beaverlodge)

	SO ₂	O ₃	NO ₂
PAZA Beaverlodge station	0.2	28.0	3.5
PAZA Beaverlodge passive	0.1	31.1	1.7

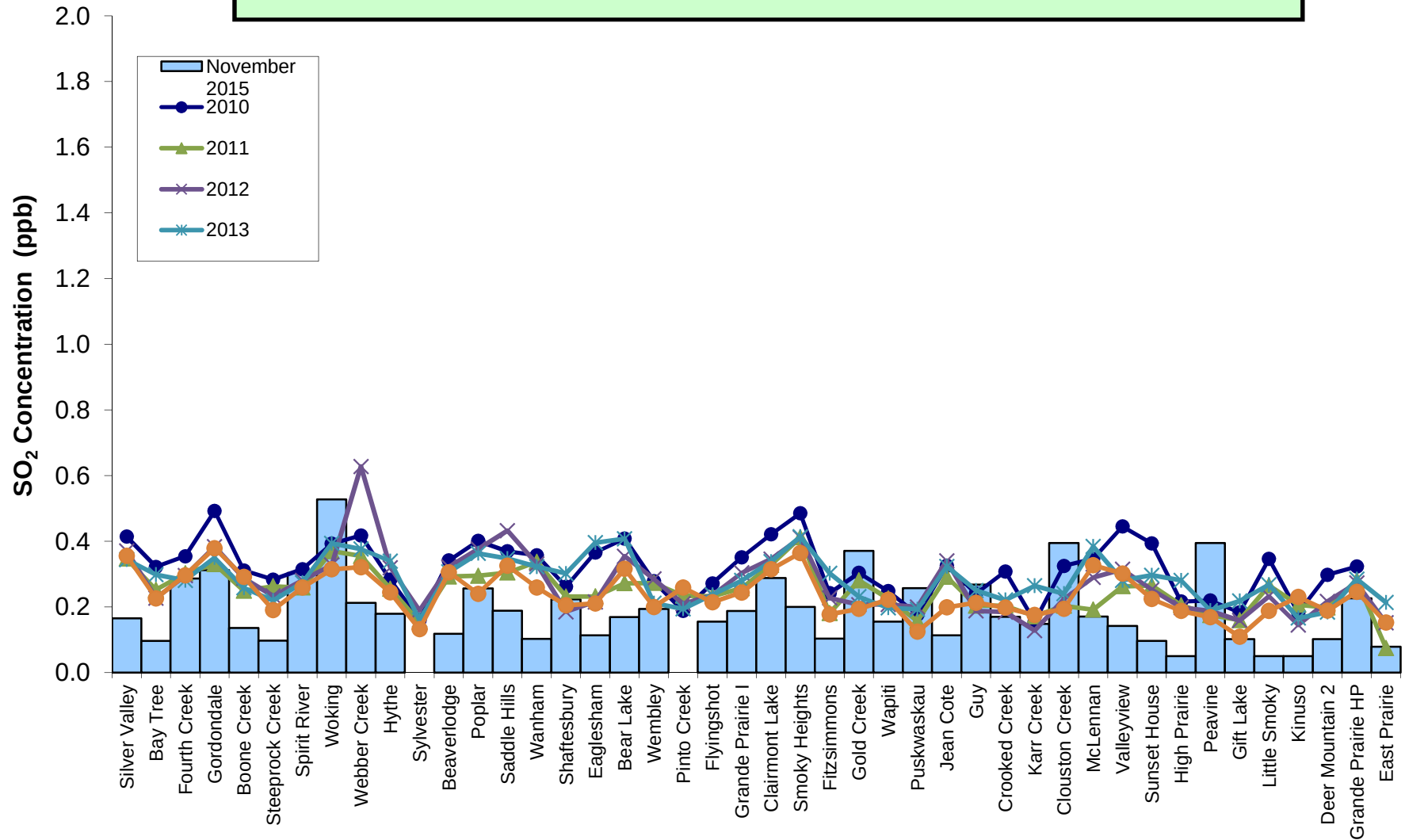
Comparison between Continuous and Passive monitoring at Henry Pirker (passive #49 Grande Prairie HP)

	SO ₂	O ₃	NO ₂
PAZA Henry Pirker station	0.2	14.6	15.3
PAZA Grande Prairie passive	0.2	20.6	11.9

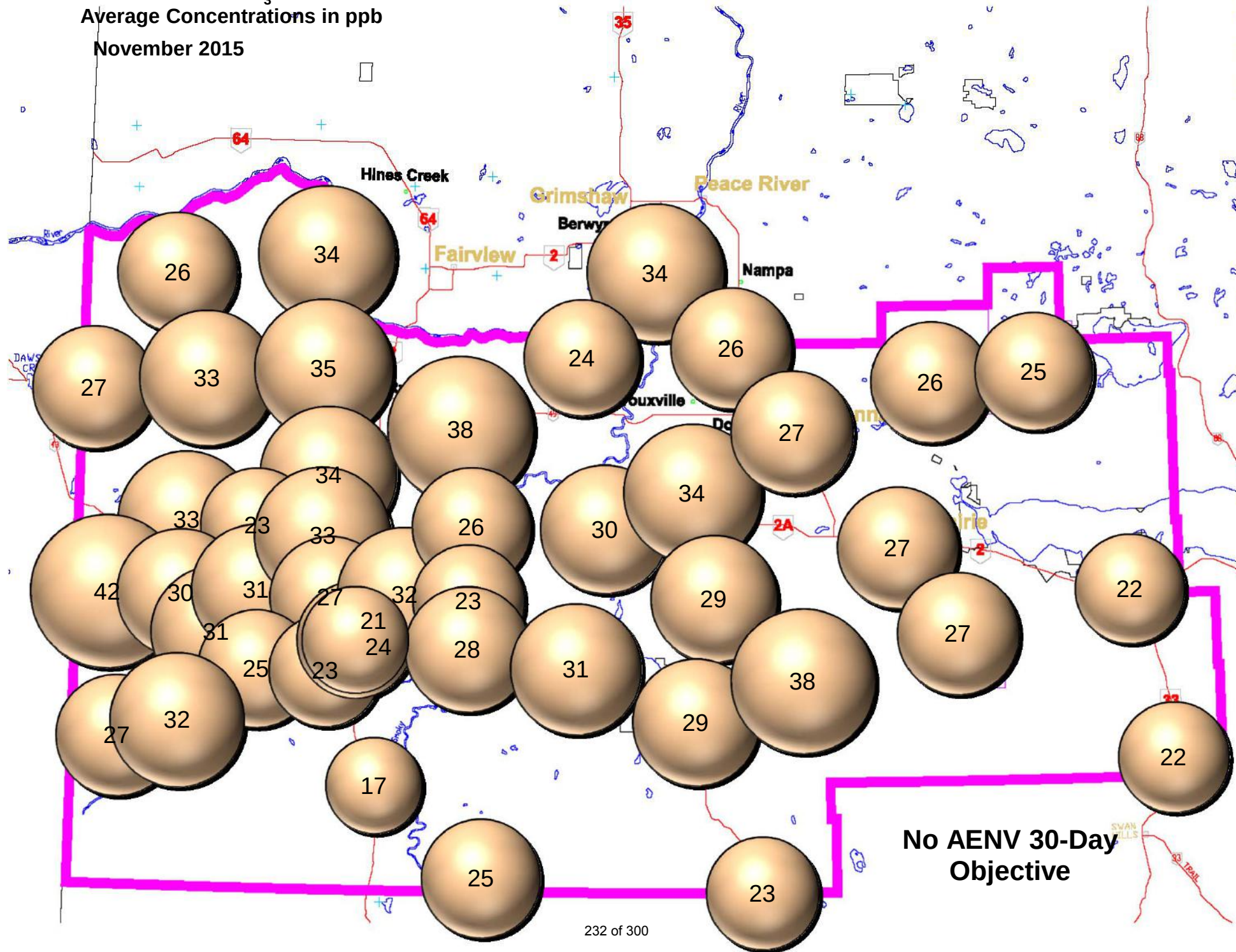
PAZA Passive SO₂ Stations
Average Concentrations in ppb
November 2015



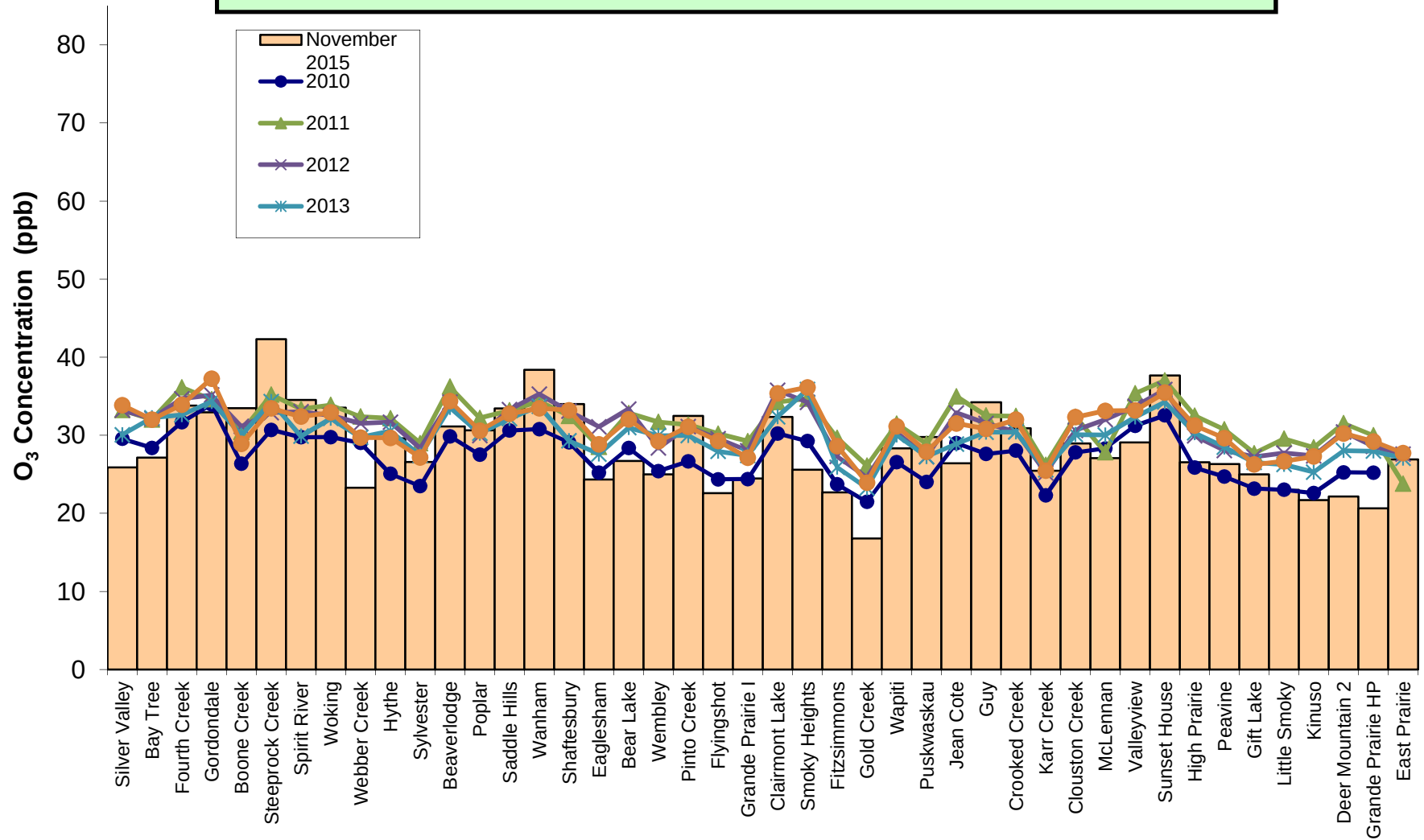
Alberta Ambient Air Quality Objective - 30-day Objective is 11 ppb



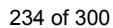
PAZA Passive O₃ Stations
Average Concentrations in ppb
November 2015



Alberta Ambient Air Quality Objective - No Annual O₃ Objective

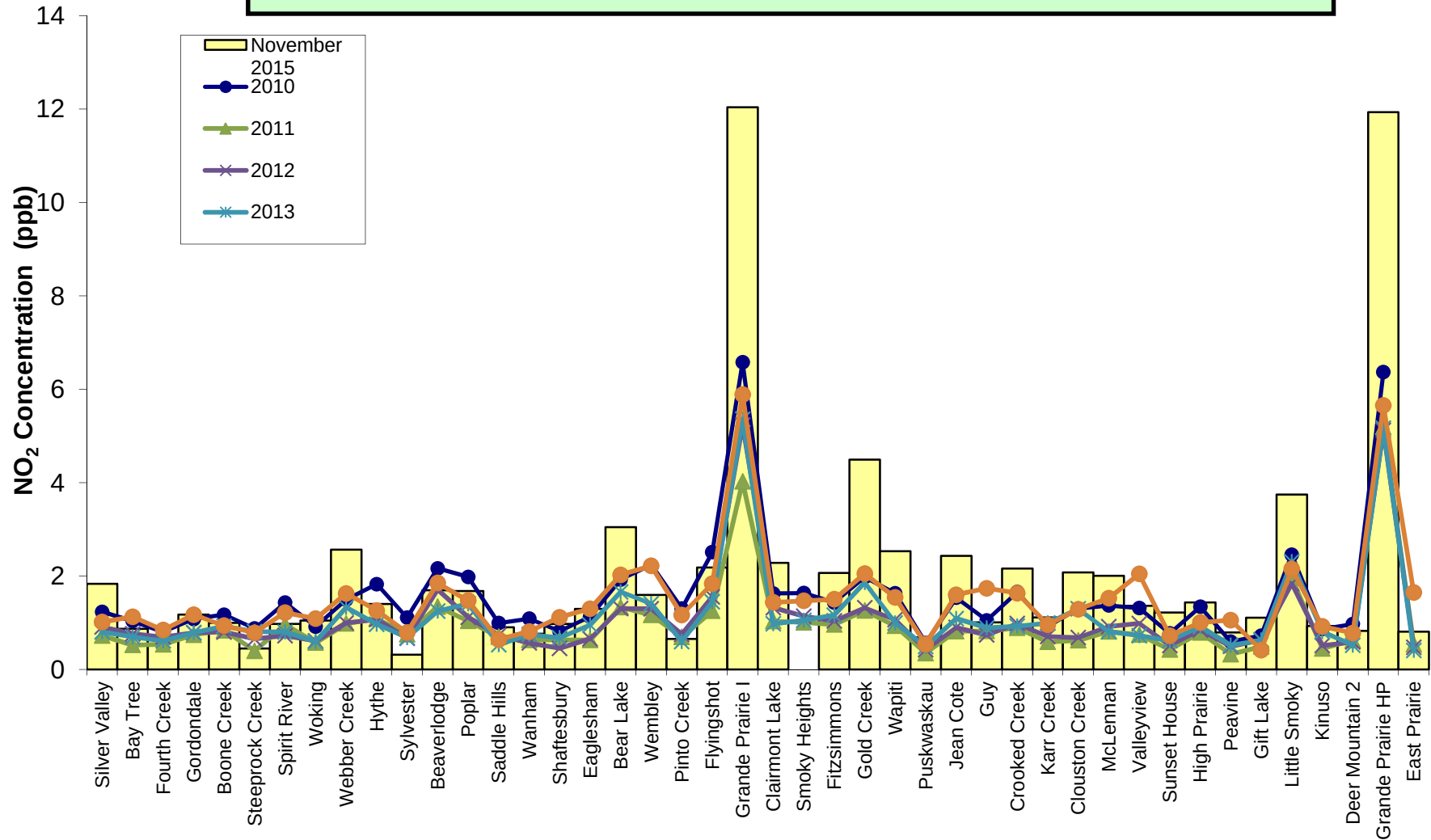


November 2015

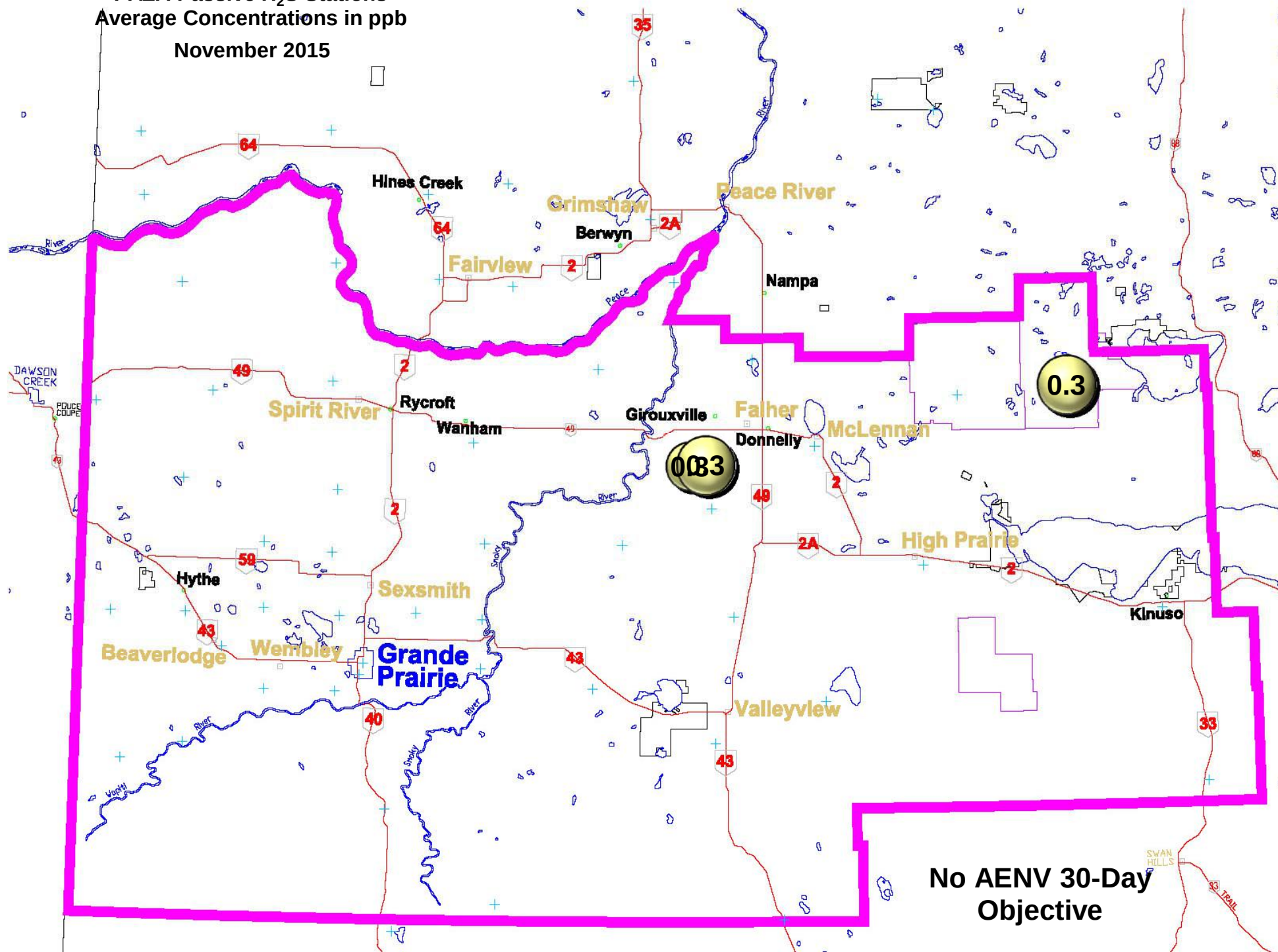


**AENV
Annual
Objective
24 ppb**

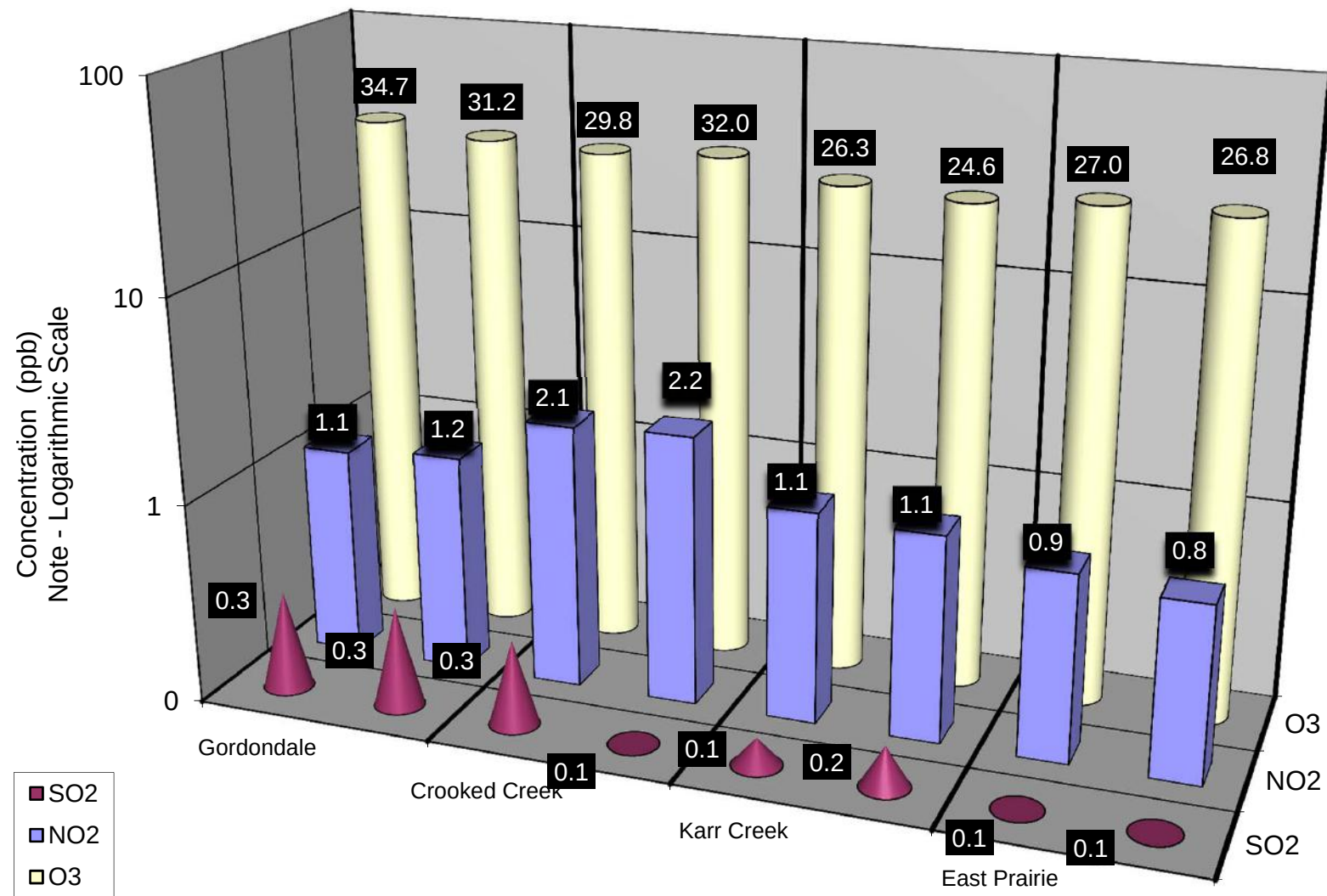
Alberta Ambient Air Quality Objective - Annual NO₂ Objective is 24 ppb



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



**No AENV 30-Day
Objective**



Duplicate Summary Chart

PAZA

ALBERTA ENVIRONMENT AND SUSTAINABLE RESOURCES INCIDENT 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:	306119	Reported To (AESRD Contact):	Jessica
Date & Time Incident Reported to AESRD:	Nov 27 2015 21:00	Reported By:	Christopher Hendrickson
Reported on Behalf of:	PAZA	Approval Number (if applicable):	N/A
Location(s) of Incident:	Henry Pirker		
Start Date & Time of Incident:	Nov 27, 2015 19:00	End Date & Time of Incident:	Nov27, 2015 20:00
Reason or Nature of Incident:			
PM2.5 hourly exceedance between 19:00 and 20:00 PM2.5 limit is 80 µg/m3. Hourly average was 97.7 µg/m3. Winds were WS 1.1 km/h WD 277.1 Degrees.			
Immediate Actions Taken:			
Confirmed validity of data and proceeded to call in the exceedance to AEMERA			
Investigation Details:			
N/A			
Actions Taken to Prevent Reoccurrence (if any):			
N/A			
Additional Actions Required (if any):			
N/A			
Report Completed By:	Christopher Hendrickson	Date Report Submitted:	Nov 27 2015
7-Day Letter Due Date:	Dec 4 2015		

November 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

Parameter SO2

Air Monitoring Network PAZA



Station Information

Calibration Date	November 4, 2015	Previous Calibration	October 16, 2015
Station Number	1	Station Location	Henry Pirker
Reason:	☒ Routine	☐ Install	☐ Removal
			☐ Other:
Start Time (MST)	9:30	End Time (MST)	12:17
Barometric Pressure	721.000 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	0.992491	Calculated slope	0.995118
Calculated intercept	1.055981	Calculated intercept	0.954661
Analyzer make	TEI 43I-TLE	Analyzer serial #	1507864682 (AMU 2006)

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	1.46		1.46	
Coefficient	1.038		1.038	
Pressure	667.6	mm Hg	666.1	mm Hg
Flow	0.440	lpm	0.440	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	0.2	N/A
4995	39.93	394.2	395.7	0.9961
4995	19.97	197.9	197.3	1.0029
4995	9.97	99.0	97.4	1.0162
4995	0.00	0.0	0.2	As Found Zero
4995	39.93	394.2	395.7	As Found Span
Average Correction Factor				1.0051

Calculated value of As Found Response: 393.6 ppb Percent Change of As Found: 0.1%

	before calibration		after calibration	
Auto zero	0.3	ppb	0.1	ppb
Auto span	288.1	ppb	293.8	ppb

Notes:

No adjustment made

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



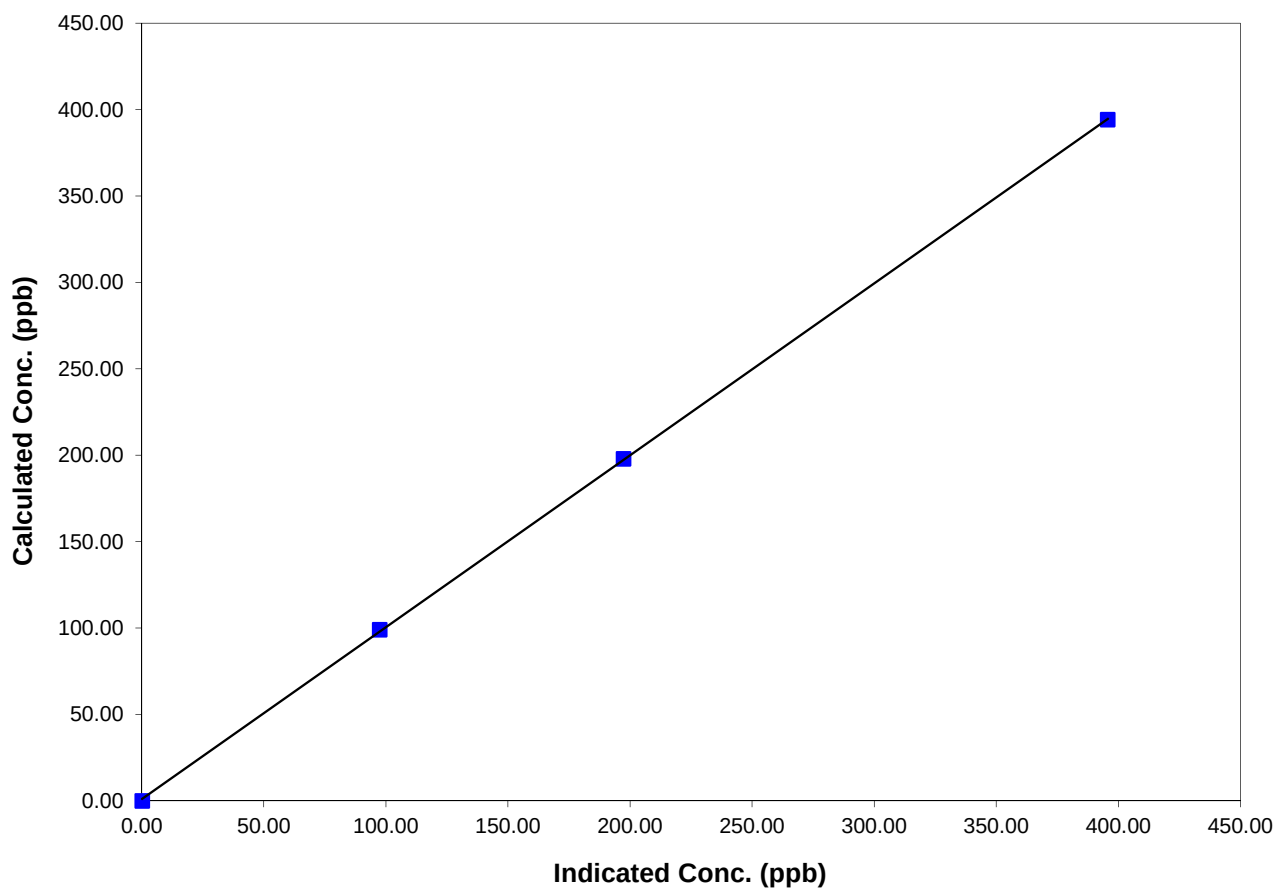
Station Information

Calibration Date	November 4, 2015	Previous Calibration	October 16, 2015
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:30	End Time (MST)	12:17
Analyzer make/model	TEI 43I-TLE	Analyzer serial #	1507864682 (AMU 2006)

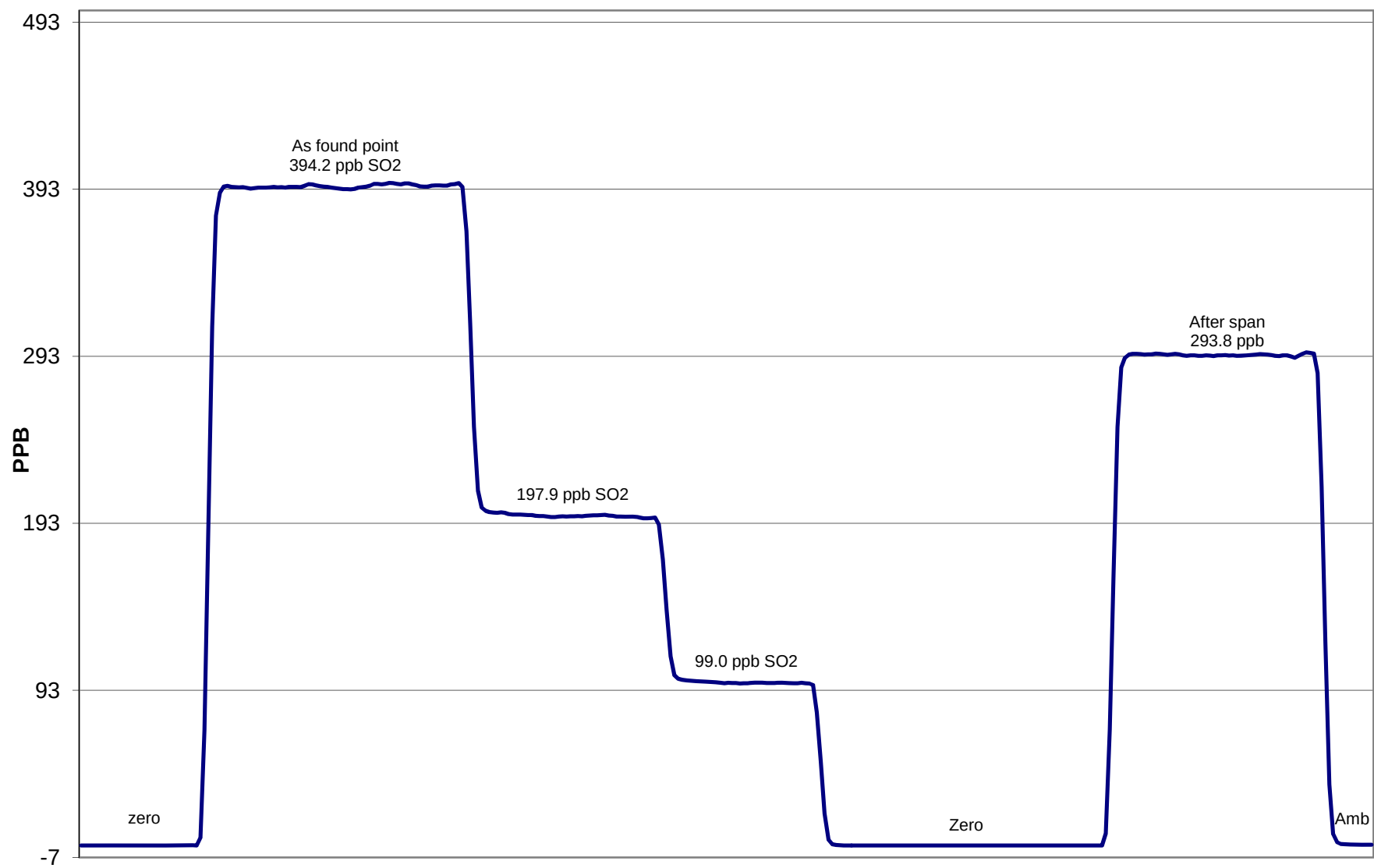
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.2	N/A	Correlation Coefficient	0.999964
394.2	395.7	0.9961		
197.9	197.3	1.0029		
99.0	97.4	1.0162	Slope	0.995118
			Intercept	0.954661

SO2 Calibration Curve



SO2 Calibration



November 4, 2015

Calibration Report

Parameter

NO_x-NO-NO₂

Air Monitoring Network

PAZA



Station Information

Calibration Date	November 3, 2015	Previous Calibration	October 16, 2015
Station Number	1	Station Location	Henry Pirker
Reason:	Routine	Installation	Removal
Start Time (MST)	9:30	End Time (MST)	13:50:00 PM
Barometric Pressure	721.000 mm	Station Temperature	21.0 Deg C
Calibrator	EnviroNics	Serial Number	6586
NO Cal Gas Conc	50.9 ppm	Cal Gas Expiry Date	October 5, 2018
NOx Cal Gas Conc	51.2 ppm	Cal Gas Serial #	LL103793

DACS Information

DACS make	CR3000	DACS serial No.	5408
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Parameter		NO2	NOx	NO
Before	Data Slope	1.000501	1.003140	0.997343
	Data Offset	-0.340070	-0.125743	0.099328
After	Data Slope	0.995053	1.002284	0.997343
	Data Offset	0.006877	0.120214	0.238597
Channel #		8	6	7
Voltage Range		0 - 5 VDC	0 - 5 VDC	0 - 5 VDC

Analyzer Information

Analyzer make/model	42i	Analyzer serial #	906535087
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Test Point	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
NO offset	5.4	mV	5.6	mV
NOx bkgnd	5.5	mV	5.7	mV
NO coefficient	0.917		0.956	
NOx coefficient	1.000		1.000	
NO2 conv temp	322.4	Deg C	322.6	Deg C
Cooler Temp	-2.7	Deg C	-2.7	Deg C
PMT Volt	-844.3	mV	-844.3	mV
R Cell Press	165.8	in Hg	166.4	in Hg
Sample Flow	0.622	LPM	0.630	LPM

Notes:

Span adjustment made

First GPT point was submit with calibrator photometer on-noticed it, put photometer on off position

Last NOX GPT point was interrupted by daily zero/span check

Calibration Report

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



Station Information

Calibration Date: November 3, 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	0.2	0.3	0.1	N/A	N/A
1	4995	39.92	405.9	403.6	2.4	405.1	404.8	0.5	1.0021	0.9970
2	4995	19.96	203.8	202.6	1.2	202.9	202.3	0.2	1.0042	1.0012
3	4995	9.93	101.6	101.0	0.6	100.9	100.6	0.3	1.0066	1.0036
AFZ	4995	0.00	0.0	0.0	0.0	0.2	0.3	0.1	0.0000	0.0000
AFS	4995	39.92	405.9	403.6	0.8	387.9	387.9	0.1	1.0465	1.0405
Average Correction Factor									1.0043	1.0006

As Found Concentrations: NO_x= 388.7 NO= 386.6 As Found Percent Change NO_x= -4.2% NO= -4.2%

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	0.3	0.3	0.0	0.2	0.3	0.1	N/A	N/A	N/A	N/A
NO point	405.1	405.1	0.0	405.4	405.1	0.0	0.9995	1.0000	N/A	N/A
300	405.1	75.6	329.6	407.2	75.6	331.3	0.9950	1.0000	0.9948	100.5%
200	405.1	183.5	221.6	407.0	183.5	222.6	0.9954	1.0000	0.9957	100.4%
100	405.1	298.2	106.9	406.6	298.2	107.4	0.9964	1.0000	0.9955	100.4%
Average Correction Factor							0.9956	1.0000	0.9953	100.5%

AIC Data

	Previous calibration				Current calibration			
Parameter	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	0.2	0.1	0.3	ppb	0.7	0.5	0.4	ppb
Auto span	362.0	358.5	3.2	ppb	378.3	374.5	3.1	ppb

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter NO₂

Air Monitoring Network PAZA



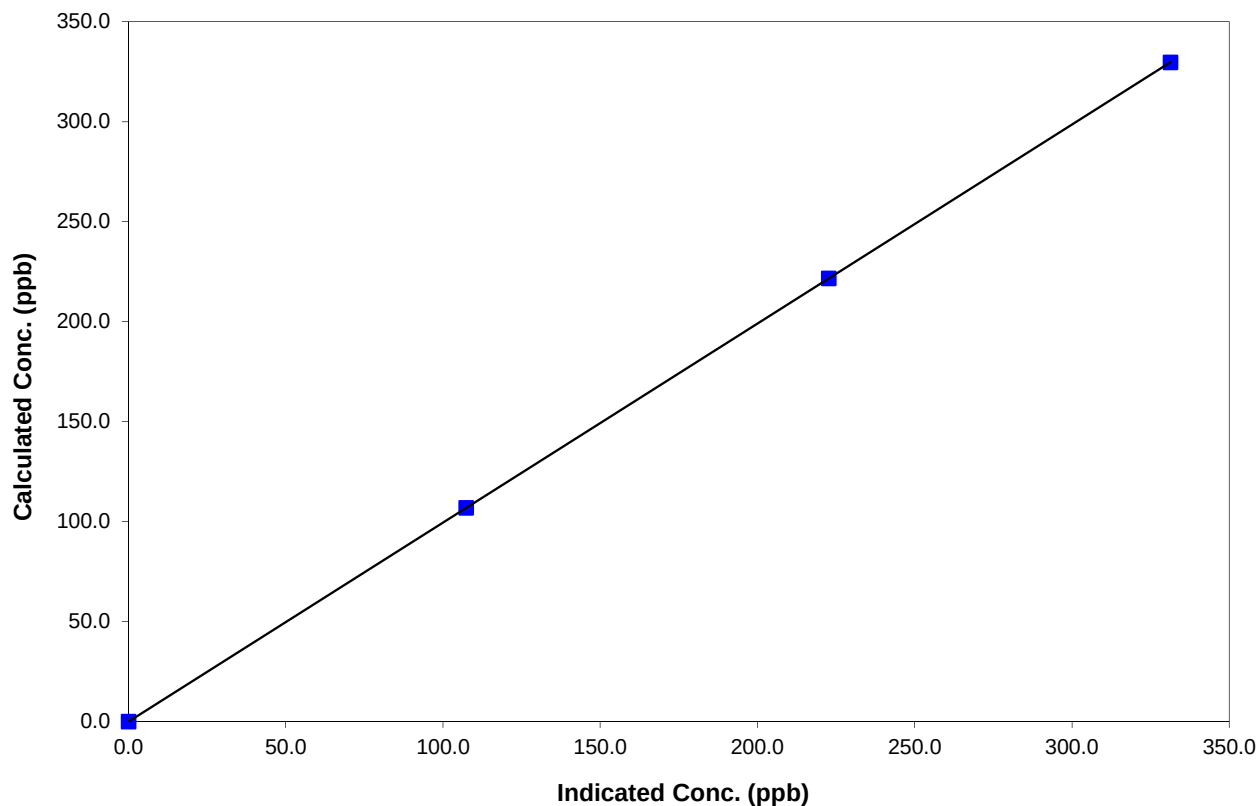
Station Information

Calibration Date	November 3, 2015	Previous Calibration	October 16, 2015
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:30	End Time (MST)	13:50:00 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	0.999999
329.6	331.3	0.9948		
221.6	222.6	0.9957		
106.9	107.4	0.9955	Slope	0.995053
			Intercept	0.006877

NO₂ Calibration Curve



Calibration Summary

Parameter NO_x

Air Monitoring Network PAZA



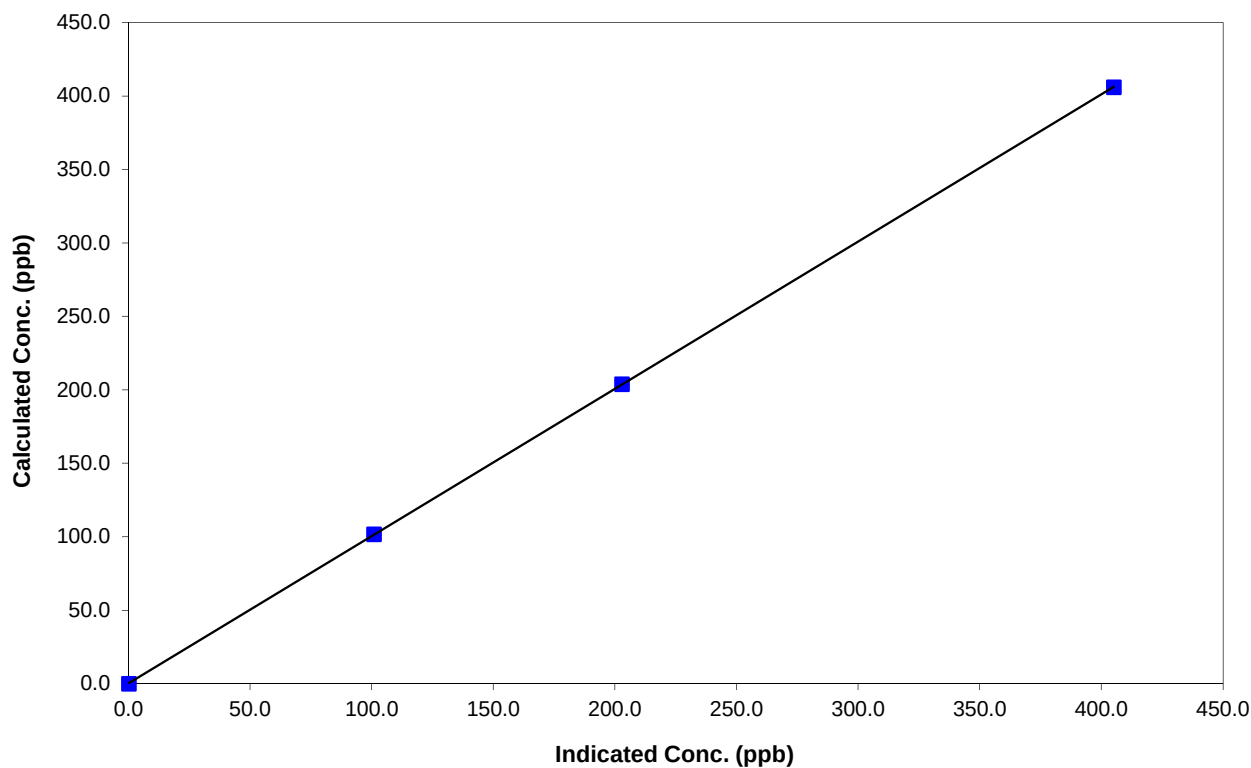
Station Information

Calibration Date	November 3, 2015	Previous Calibration	October 16, 2015
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:30	End Time (MST)	13:50:00 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	0.2	N/A	Correlation Coefficient	0.999996
405.9	405.1	1.0021		
203.8	202.9	1.0042		
101.6	100.9	1.0066	Slope	1.002284
			Intercept	0.120214

NO_x Calibration Curve



Calibration Summary

Parameter NO

Air Monitoring Network PAZA



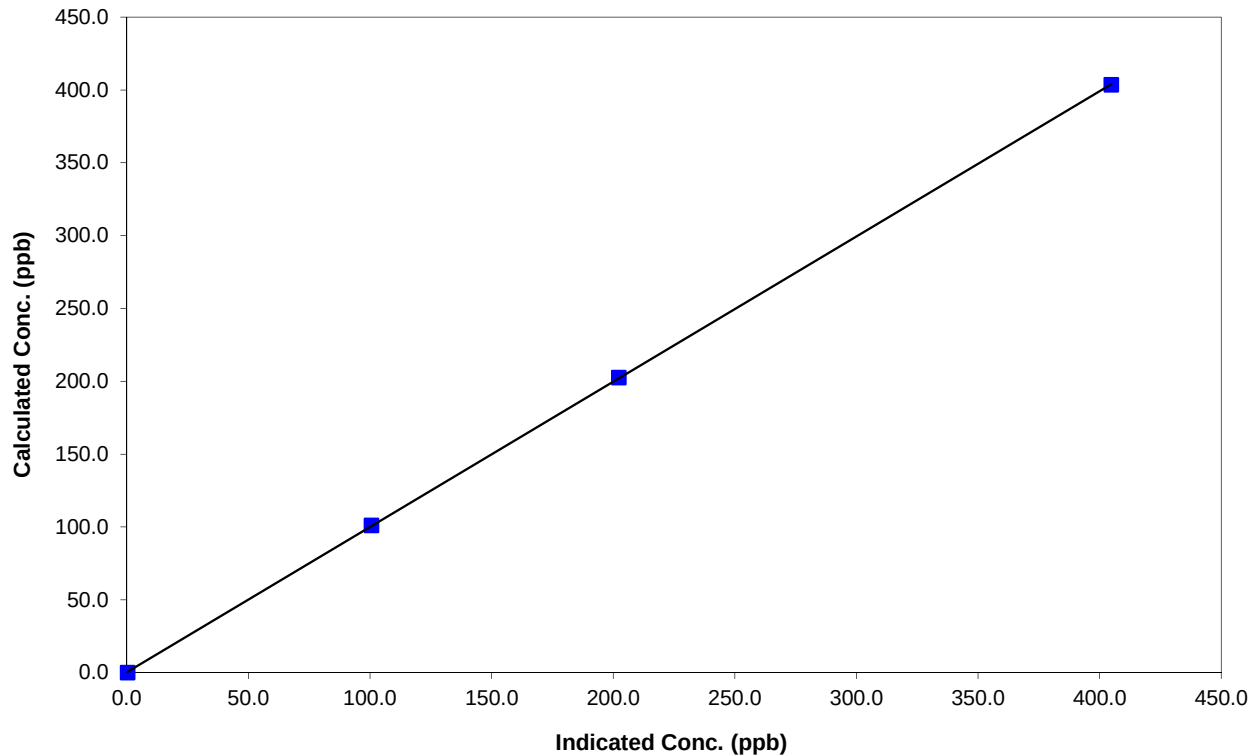
Station Information

Calibration Date	November 3, 2015	Previous Calibration	October 16, 2015
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:30	End Time (MST)	13:50:00 PM
Analyzer make	42i	Analyzer serial #	906535087

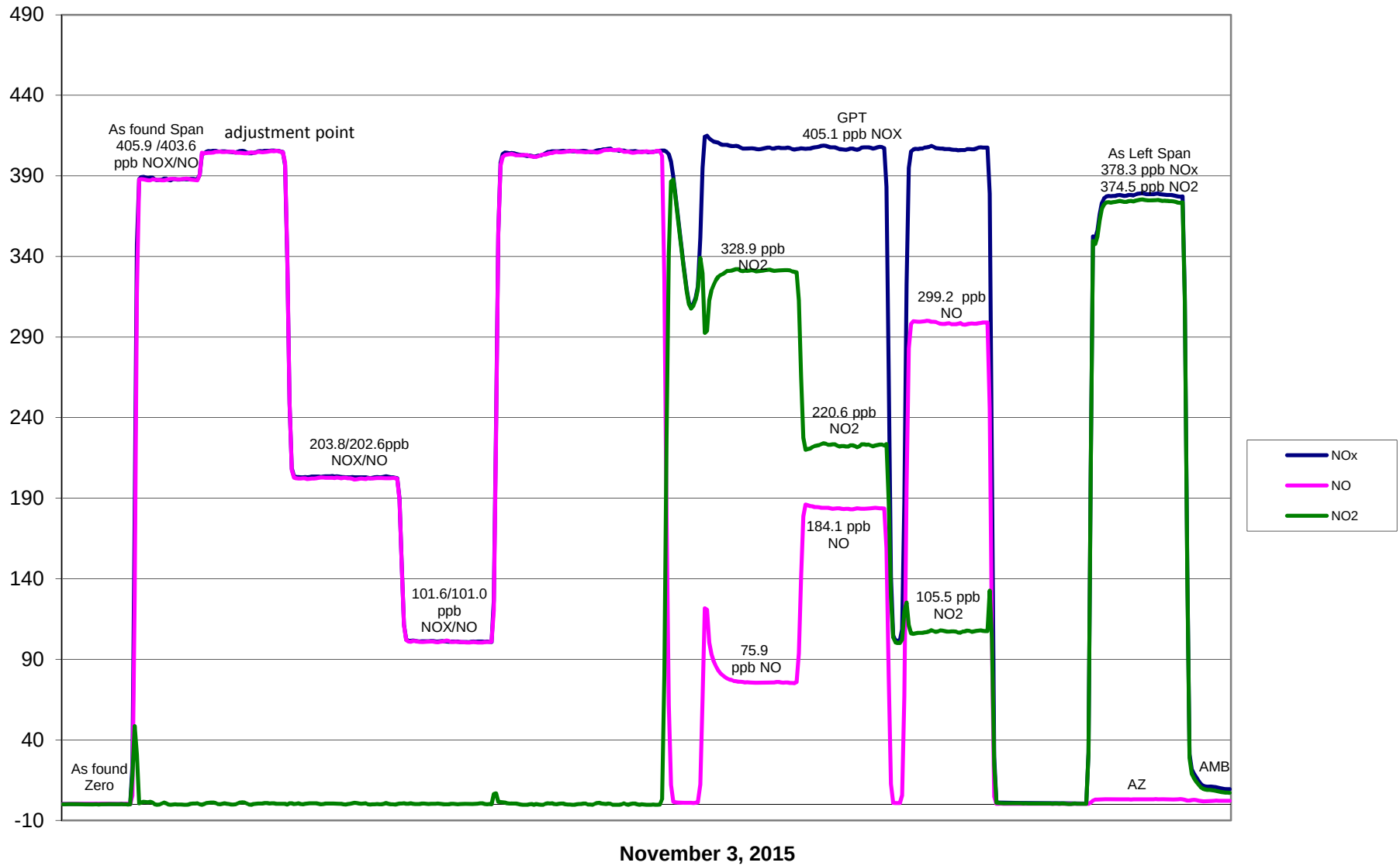
Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.3	N/A	Correlation Coefficient	0.999990
403.6	404.8	0.9970		
202.6	202.3	1.0012		
101.0	100.6	1.0036	Slope	0.997343
			Intercept	0.238597

NO Calibration Curve



NO_x Calibration



Calibration Report



Parameter 03

Air Monitoring Network PAZA

Station Information

Calibration Date	November 4, 2015	Previous Calibration	October 16, 2015
Station Number	1	Station Location	Henry Pirker
Reason:	Routine	Install	Removal
		Other:	

Start Time (MST)	13:25:00 PM	End Time (MST)	16:15:00 PM
Barometric Pressure	721.000 mm	Station Temperature	21.0 Deg C
Calibrator	EnviroNics	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	0.999595	Calculated slope	1.001575
Calculated intercept	-0.929969	Calculated intercept	-0.106146

Analyzer make	Teco 49I	Analyzer serial #	1507964699 (AMU:2015)
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	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
offset	-1.90	ppb	-1.90	ppb
slope	1.002		1.032	
Lamp temp	53.7	mV	53.7	mV
Lamp Intensity A/B	88979/98968	mV	90000/99786	mV
Pressure	688.3	mm Hg	692.8	mm Hg
Flow A	0.728	ccm	0.732	ccm
Flow B	0.730	ccm	0.733	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	0.4	N/A
5035	0.3	329.6	330.2	0.9983
5035	0.2	221.6	219.7	1.0087
5035	0.1	106.9	107.2	0.9972
5035	0.0	0.0	0.4	As found zero
5035	0.3	329.6	319.7	As found span
Average Correction Factor				1.0014

Calculated value of As Found Response: 318.2 ppm Percent Change of As Found: -3.4%

	before calibration		after calibration	
Auto zero	0.7	ppb	0.7	ppb
Auto span	355.8	ppb	369.1	ppb

Notes: Span adjustment made
Last dilution point was Interrupted by daily zero/span check

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter 03

Air Monitoring Network PAZA



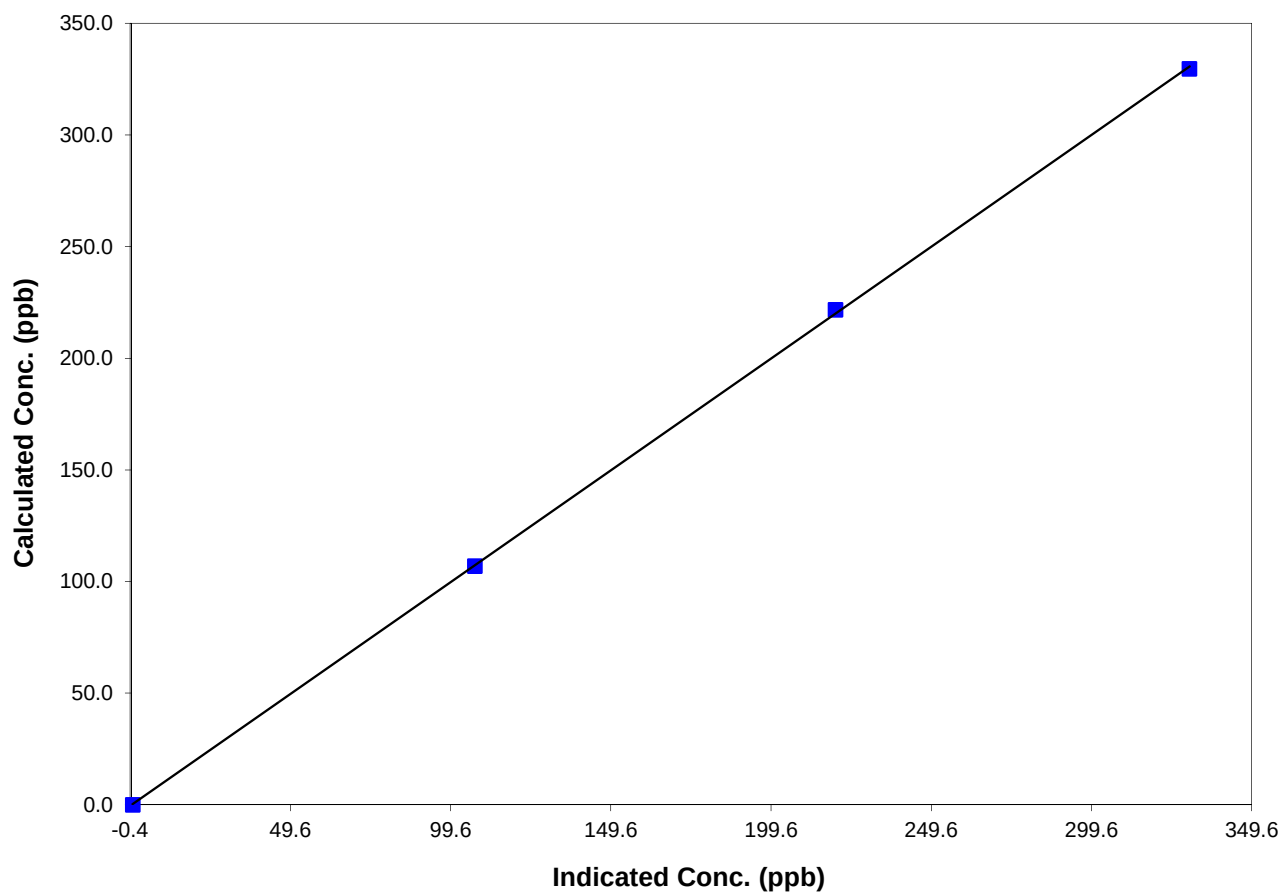
Station Information

Calibration Date	November 4, 2015	Previous Calibration	October 16, 2015
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	13:25:00 PM	End Time (MST)	16:15:00 PM
Analyzer make/model	Teco 49I	Analyzer serial #	1507964699 (AMU:2015)

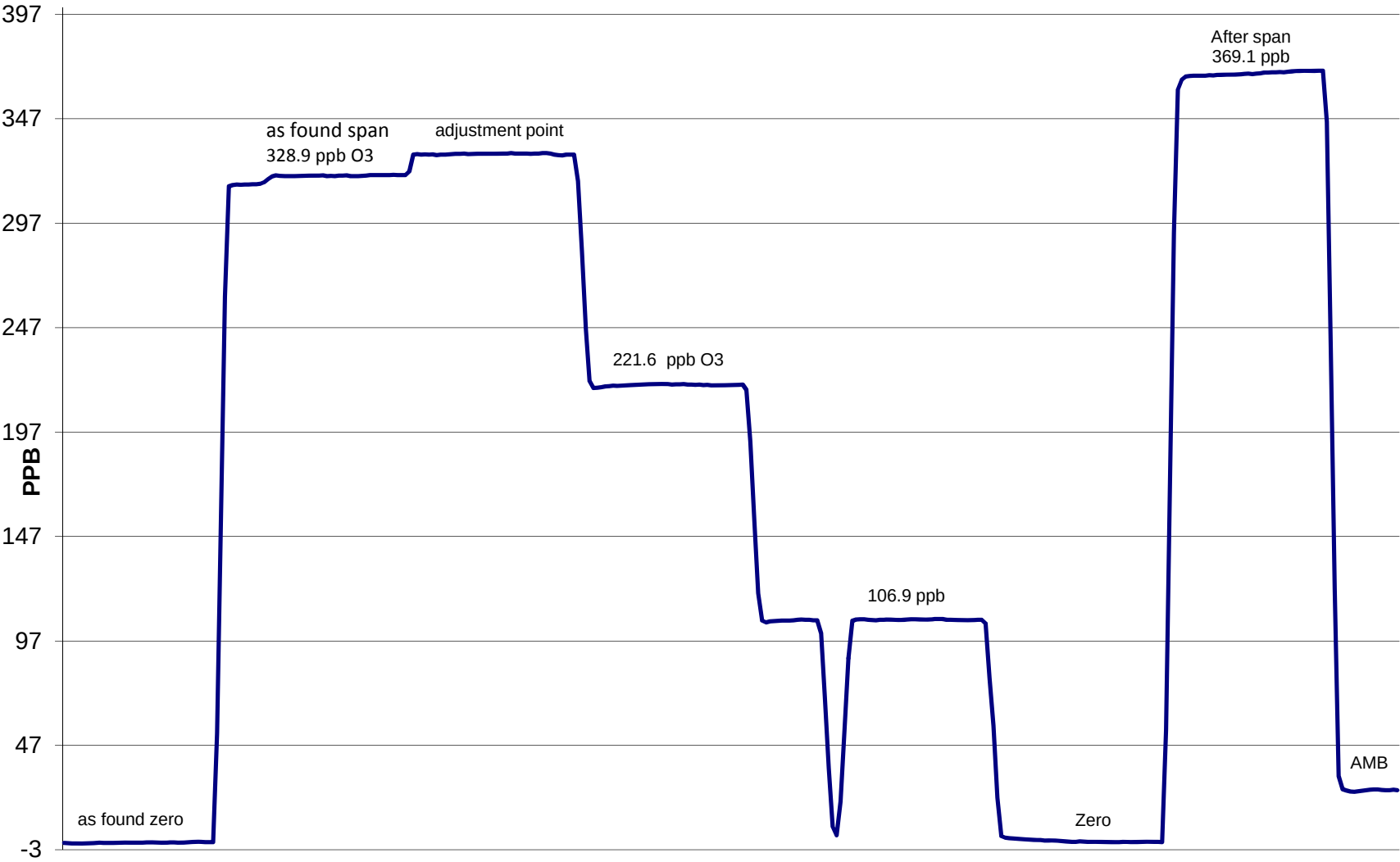
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.4	NA	Correlation Coefficient	0.999935
329.6	330.2	0.9983		
221.6	219.7	1.0087		
106.9	107.2	0.9972	Slope	1.001575
			Intercept	-0.106146

O3 Calibration Curve



O3 Calibration



November 4, 2015

Calibration Report



Parameter CO

Air Monitoring Network PAZA

Station Information

Calibration Date	November 3, 2015	Previous Calibration	October 13, 2015
Station Number	1	Station Location	Henry Pirker
Reason:	Routine	☐ Install	☐ Removal
		☐ Other:	
Start Time (MST)	12:45	End Time (MST)	15:15:00 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	1.010238	Calculated slope	1.012271
Calculated intercept	-0.156808	Calculated intercept	-0.145085
Analyzer make	Model 48I-TLE	Analyzer serial #	1408761378

	before		after	
Concentration range	0 - 50	ppm	0 - 50	ppm
CO zero setting	3.178		3.384	
CO span setting	1.001		1.001	
Sample pressure	694.7	mm Hg	707.3	mm Hg
Sample Flow	0.451	LPM	0.459	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	39.60	1.0105
4995	34.96	20.14	20.10	1.0022
4995	17.96	10.38	10.57	0.9825
4995	0.00	0.00	0.23	As Found Zero
4995	69.94	40.02	40.22	As Found Span
Average Correction Factor				0.9984

Calculated value of As Found Response: 40.238 ppm Percent Change of As Found: -0.6%

	before calibration		after calibration	
Auto zero	-0.01	ppm	-0.02	ppm
Auto span	19.63	ppm	19.59	ppm

Notes: Zero adjustment made

Ran out of zero air in the bottle, which caused a spike on the last point.

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter CO

Air Monitoring Network PAZA



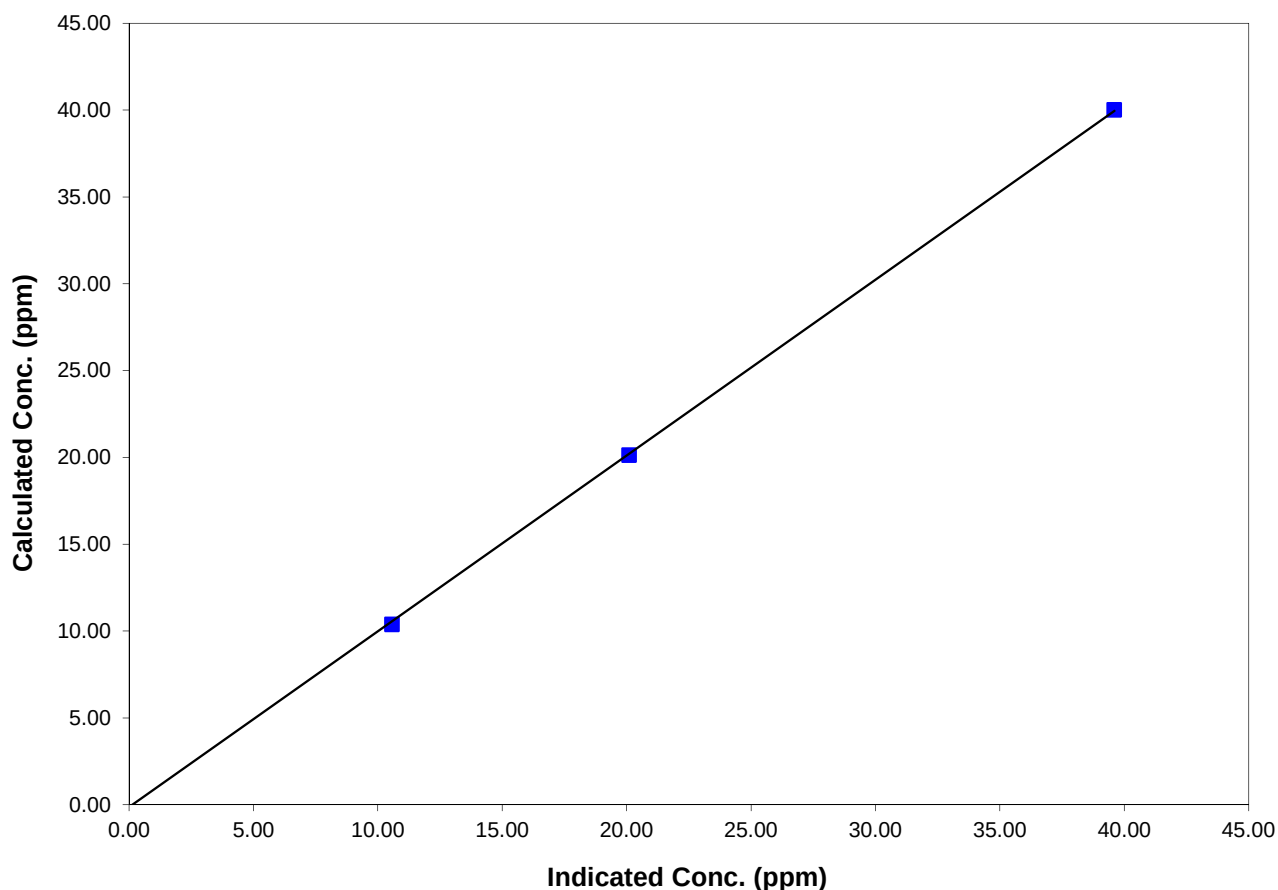
Station Information

Calibration Date	November 3, 2015	Previous Calibration	October 13, 2015
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	12:45	End Time (MST)	15:15:00 PM
Analyzer make/model	Model 48I-TLE	Analyzer serial #	1408761378

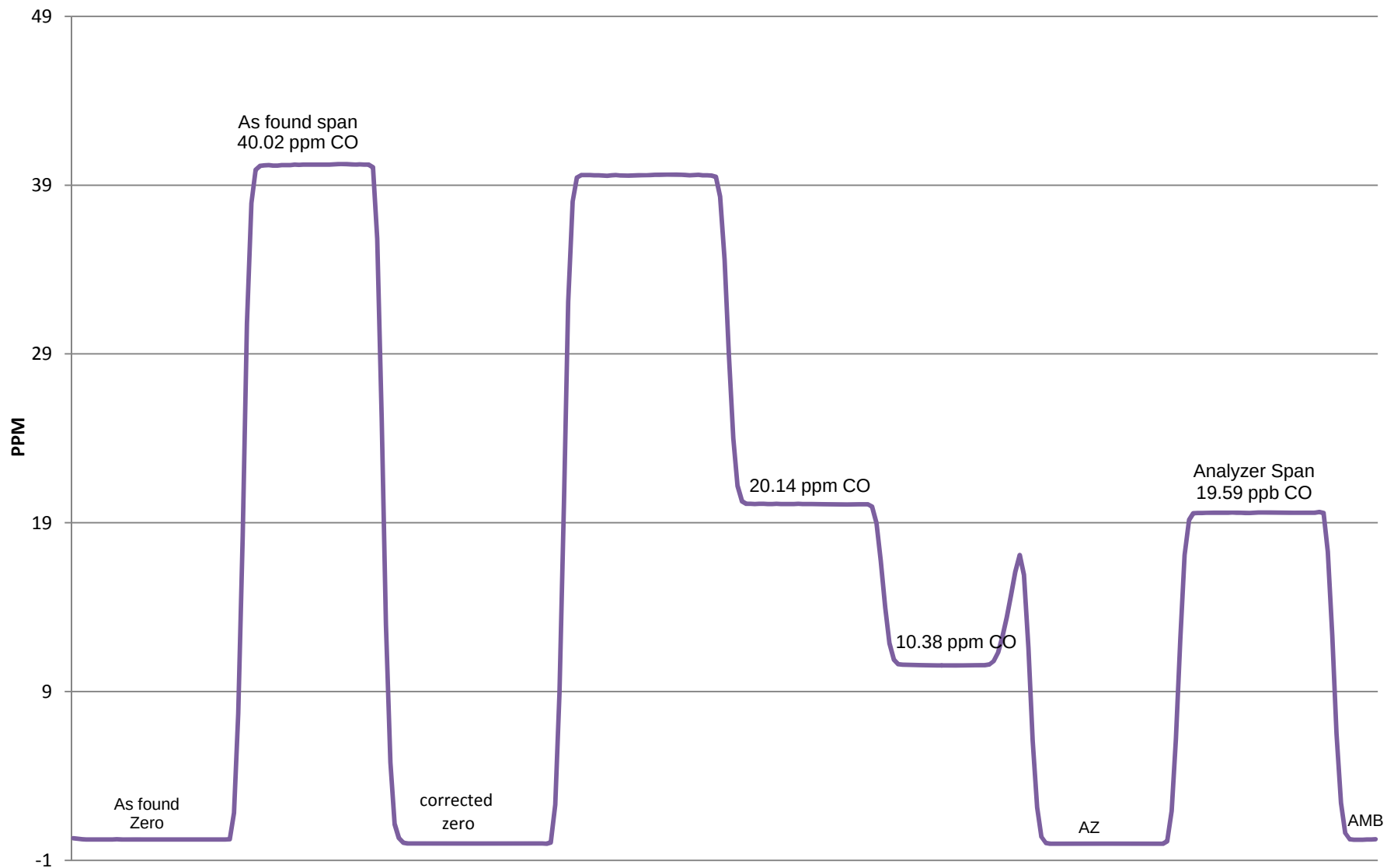
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	-0.007	N/A		
40.017	39.602	1.0105	Correlation Coefficient	0.999930
20.142	20.098	1.0022		
10.383	10.567	0.9825	Slope	1.012271
			Intercept	-0.145085

CO Calibration Curve



CO Calibration



November 3, 2015

Calibration Report



Parameter CH4 / NMHC / THC

Air Monitoring Network PAZA

Station Information

Calibration Date	November 3, 2015	Previous Calibration	October 15, 2015
Station Number	1	Station Location	Henry Pirker
Reason:	☒ Routine	☐ Install	☐ Removal
			☐ Other:

Start Time (MST)	11:20	End Time (MST)	13:30:00 PM
Barometric Pressure	726.00 mm/hg	Station Temperature	21.0 Deg C
Calibrator	EnviroNics 6103	Serial Number	6586
Cal Gas CH4 Conc	386 ppm CH4	Cal Gas Expiry Date	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 55I	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	12.83	1.0050
1996	40.96	7.76	7.70	1.0083
1996	15.99	3.07	3.03	1.0131
1996	0.00	0.00	0.02	As Found Zero
1996	68.93	12.89	12.83	As Found Span
Average Correction Factor				1.0088

Calculated value of As Found Response: 12.788 ppm Percent Change of As Found: 0.8%

	Before		After
Calculated slope	0.998240	Calculated slope	1.005939
Calculated intercept	0.003545	Calculated intercept	0.002055

Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.03	ppm	0.03	ppm
Auto span	9.55	ppm	9.33	ppm

NMHC Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
1996	0.00	0.00	0.02	N/A
1996	68.96	19.01	18.89	1.0063
1996	40.96	11.45	11.55	0.9913
1996	15.99	4.52	4.67	0.9688
1996	0.00	0.00	0.02	As Found Zero
1996	68.93	19.00	18.89	As Found Span
Average Correction Factor				0.9888

Calculated value of As Found Response: 18.724 ppm Percent Change of As Found: 1.5%

	<u>Before</u>		<u>After</u>
Calculated slope	0.997718	Calculated slope	1.008346
Calculated intercept	-0.103890	Calculated intercept	-0.110308

Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.02	ppm	0.02	ppm
Auto span	13.29	ppm	12.96	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	31.70	1.0065
1996	40.96	19.21	19.23	0.9991
1996	15.99	7.59	7.68	0.9879
1996	0.00	0.00	0.03	As Found Zero
1996	68.93	31.89	31.70	As Found Span
Average Correction Factor				0.9978

Calculated value of As Found Response: 31.527 ppm Percent Change of As Found: 1.1%

	<u>Before</u>		<u>After</u>
Calculated slope	0.998629	Calculated slope	1.007926
Calculated intercept	-0.092704	Calculated intercept	-0.100836

Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.02	ppm	0.02	ppm
Auto span	22.83	ppm	22.29	ppm

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter CH4

Air Monitoring Network PAZA



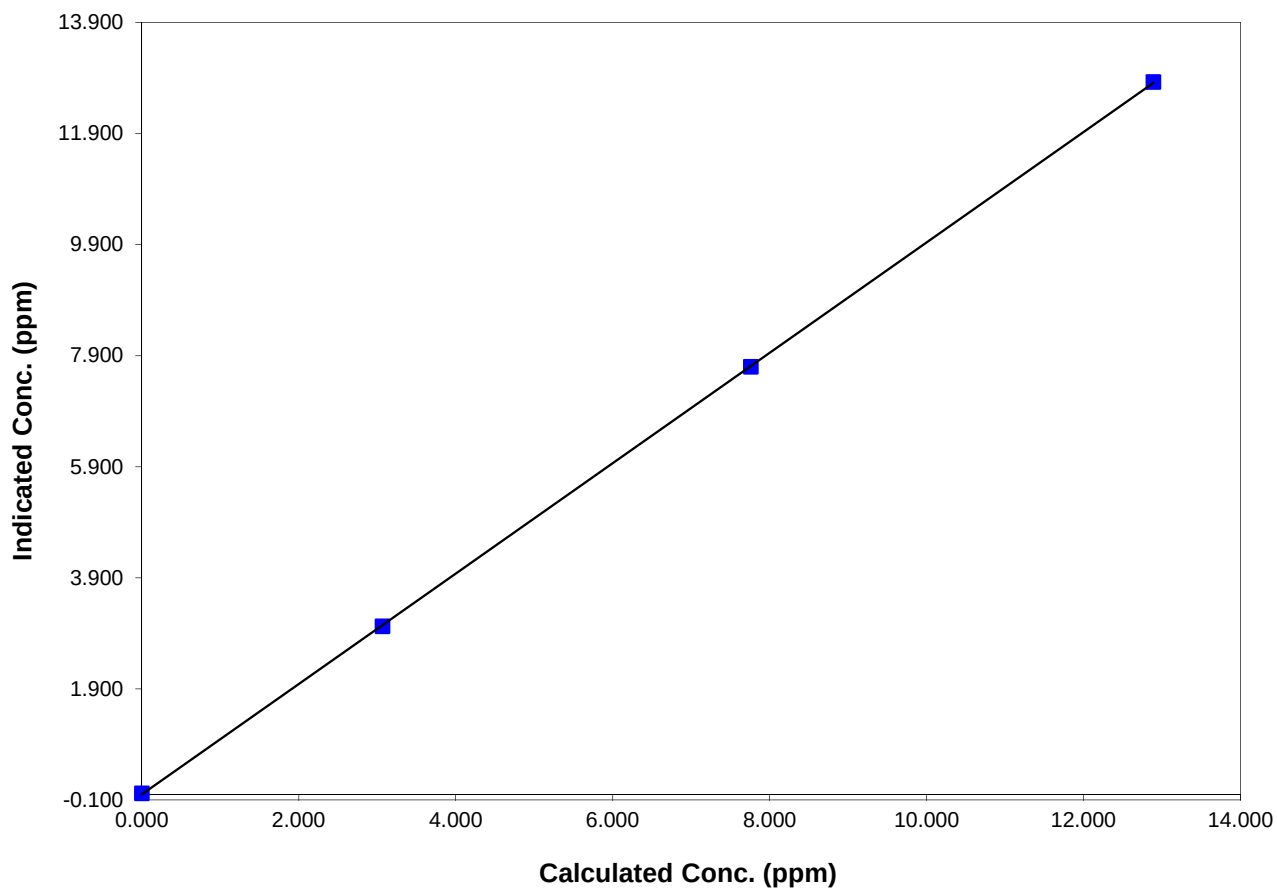
Station Information

Calibration Date	November 3, 2015	Previous Calibration	October 15, 2015
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	11:20	End Time (MST)	13:30:00 PM
Analyzer make/model	TEI 55I	Analyzer serial #	1134650658

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.019	N/A	Correlation Coefficient	0.999986
12.891	12.827	1.0050		
7.762	7.698	1.0083		
3.068	3.028	1.0131	Slope	1.005939
			Intercept	0.002055

CH4 Calibration Data



Calibration Summary

Parameter NMHC

Air Monitoring Network PAZA



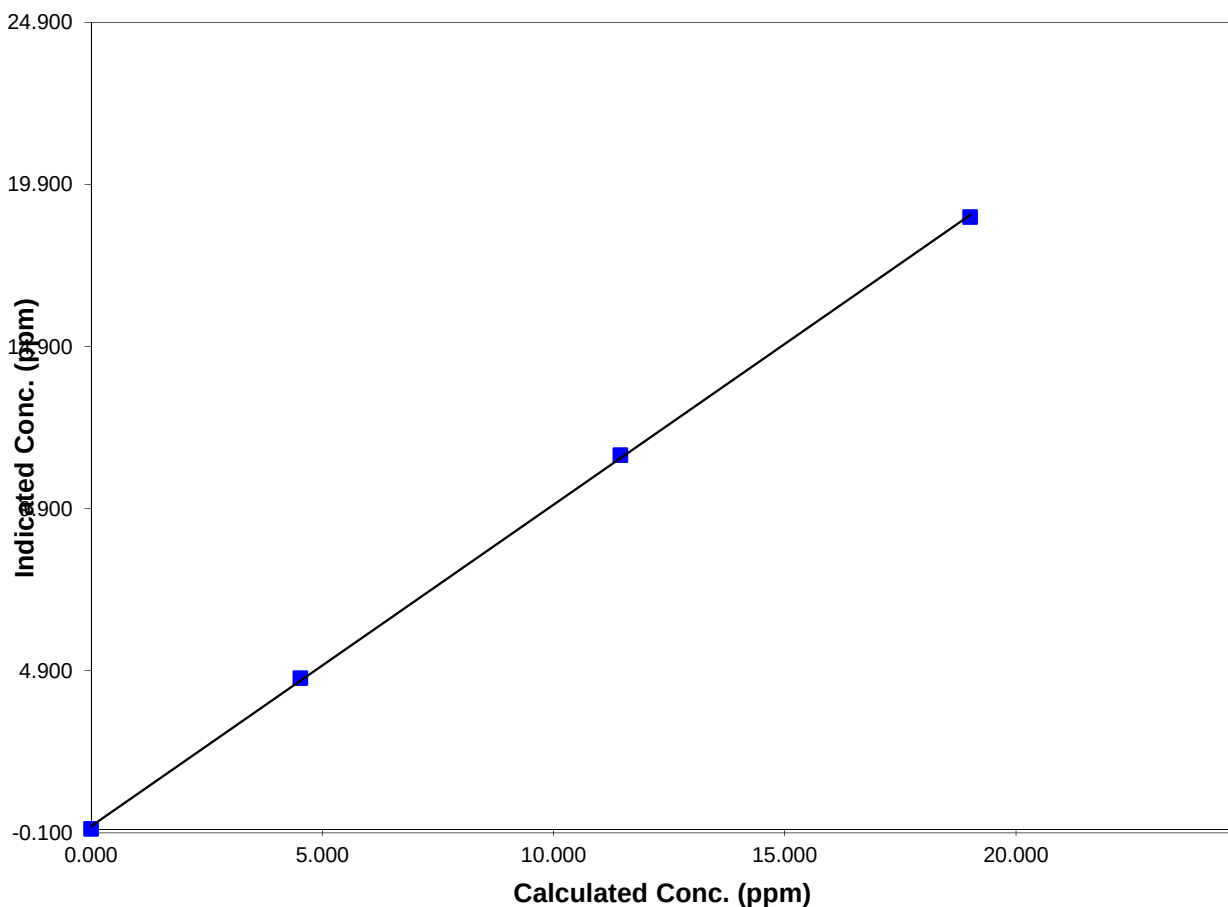
Station Information

Calibration Date	November 3, 2015	Previous Calibration	October 15, 2015
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	11:20	End Time (MST)	13:30:00 PM
Analyzer make/model	TEI 55I	Analyzer serial #	1134650658

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.020	N/A	Correlation Coefficient	0.999873
19.010	18.892	1.0063		
11.447	11.547	0.9913		
4.524	4.670	0.9688	Slope	1.008346
			Intercept	-0.110308

NMHC Calibration Data



Calibration Summary

Parameter THC

Air Monitoring Network PAZA



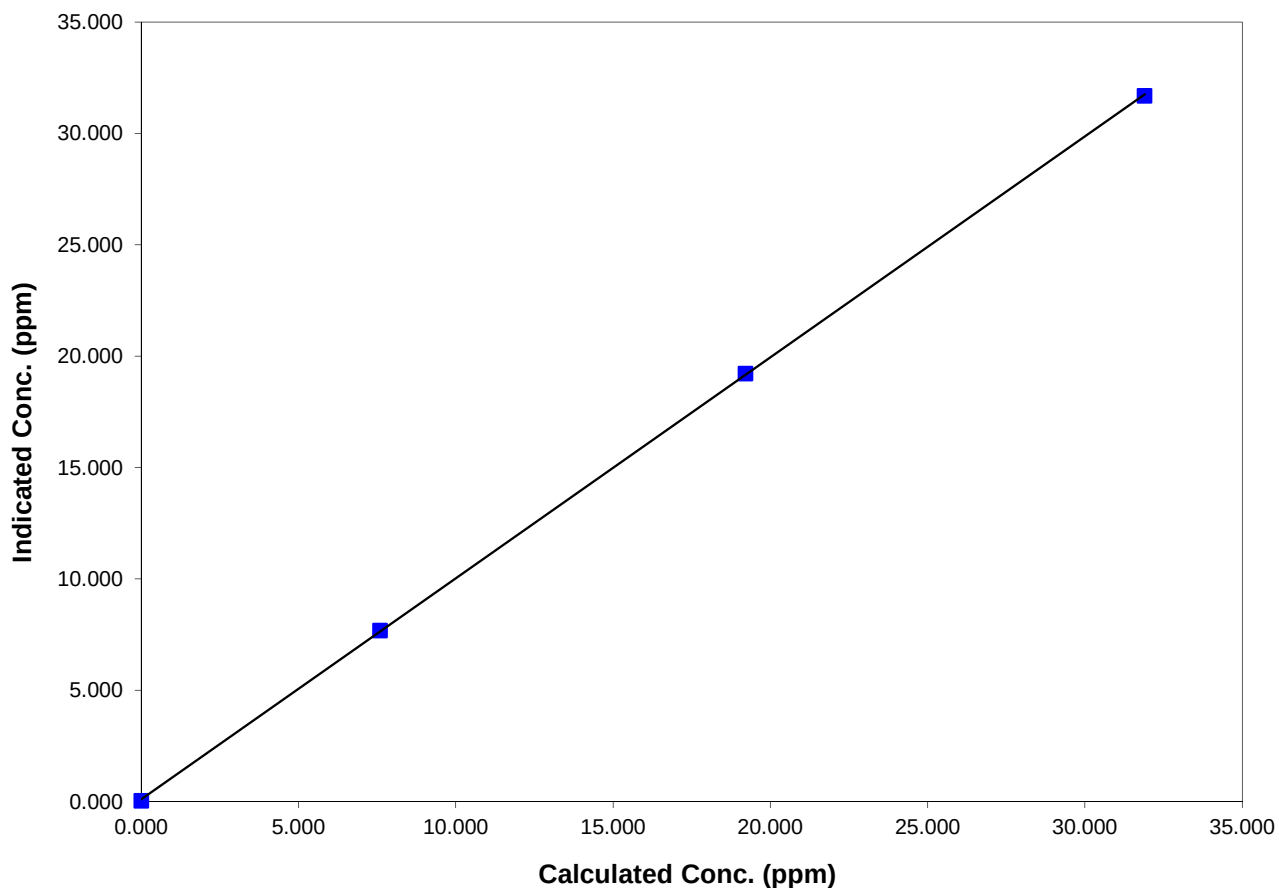
Station Information

Calibration Date	November 3, 2015	Previous Calibration	October 15, 2015
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	11:20	End Time (MST)	13:30:00 PM
Analyzer make/model	TEI 55I	Analyzer serial #	1134650658

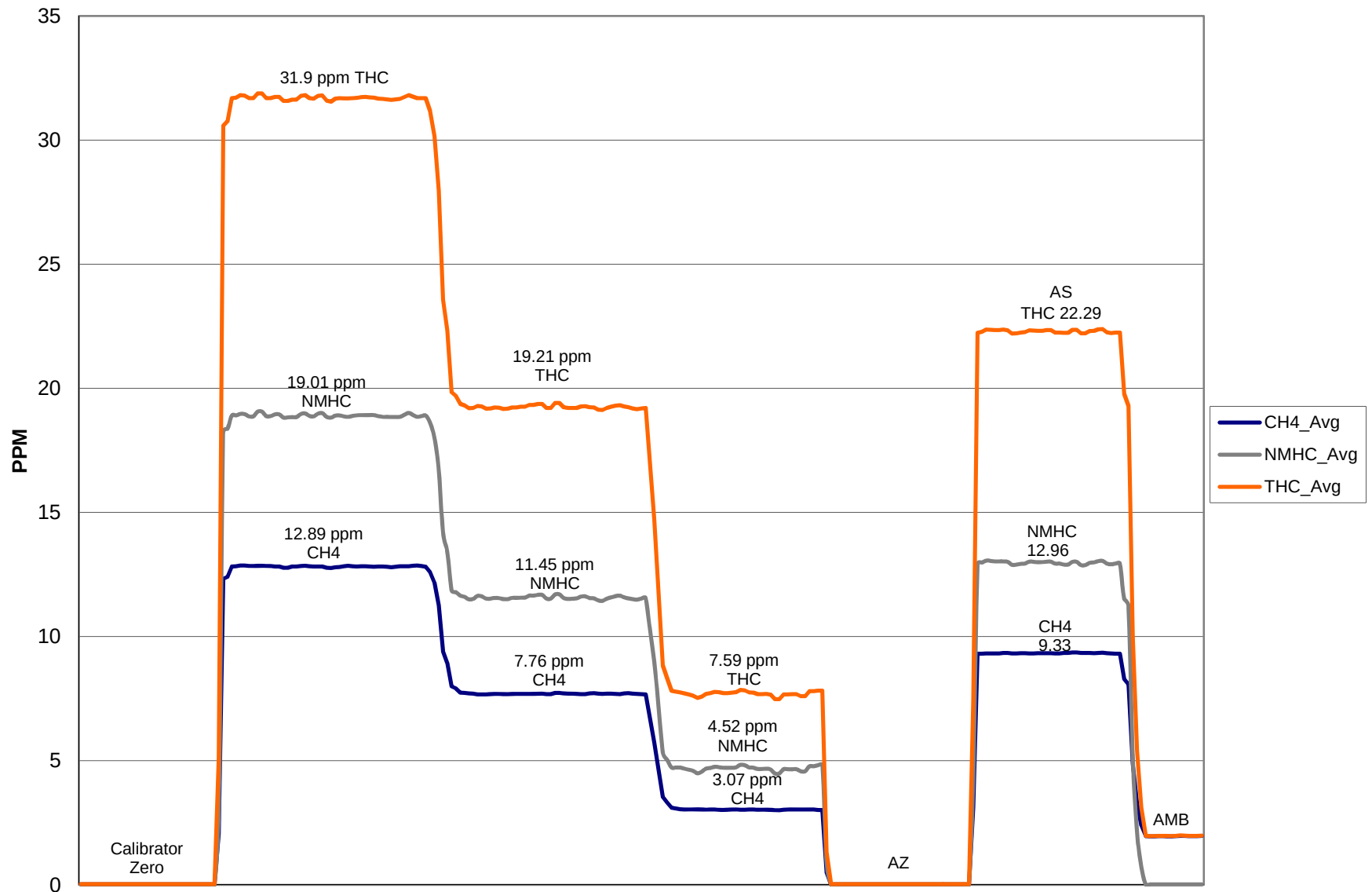
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.033	N/A	Correlation Coefficient	0.999974
31.901	31.696	1.0065		
19.209	19.226	0.9991		
7.592	7.685	0.9879	Slope	1.007926
			Intercept	-0.100836

THC Calibration Data



THC/CH₄/NMHC Calibration



Calibration Report

Parameter TR5

Air Monitoring Network PAZA



Station Information

Calibration Date	November 10, 2015	Previous Calibration	October 13, 2015
Station Number	1	Station Location	Henry Pirker
Reason:	☒ Routine	☐ Install	☐ Removal
		☐ Other:	
Start Time (MST)	10:20	End Time (MST)	12:55
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	0.986504	Calculated slope	0.996902
Calculated intercept	0.056275	Calculated intercept	0.447999
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	659.6	mm Hg	659.5	mm Hg
Flow	0.447	ccm	0.448	ccm
Lamp Voltage	899	v	897	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	0.13	N/A
4995	39.93	81.84	81.73	1.0014
4995	19.95	41.05	40.82	1.0058
6995	9.95	14.66	13.51	1.0851
4995	0.00	0.00	0.13	As Found Zero
4995	39.93	81.84	81.73	As Found Span
Average Correction Factor				1.0308

Calculated value of As Found Response: 80.6 ppb Percent Change of As Found: 1.6%

	before calibration		after calibration	
Auto zero	0.04	ppb	0.12	ppb
Auto span	33.26	ppb	31.47	ppb

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

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter TRS

Air Monitoring Network PAZA



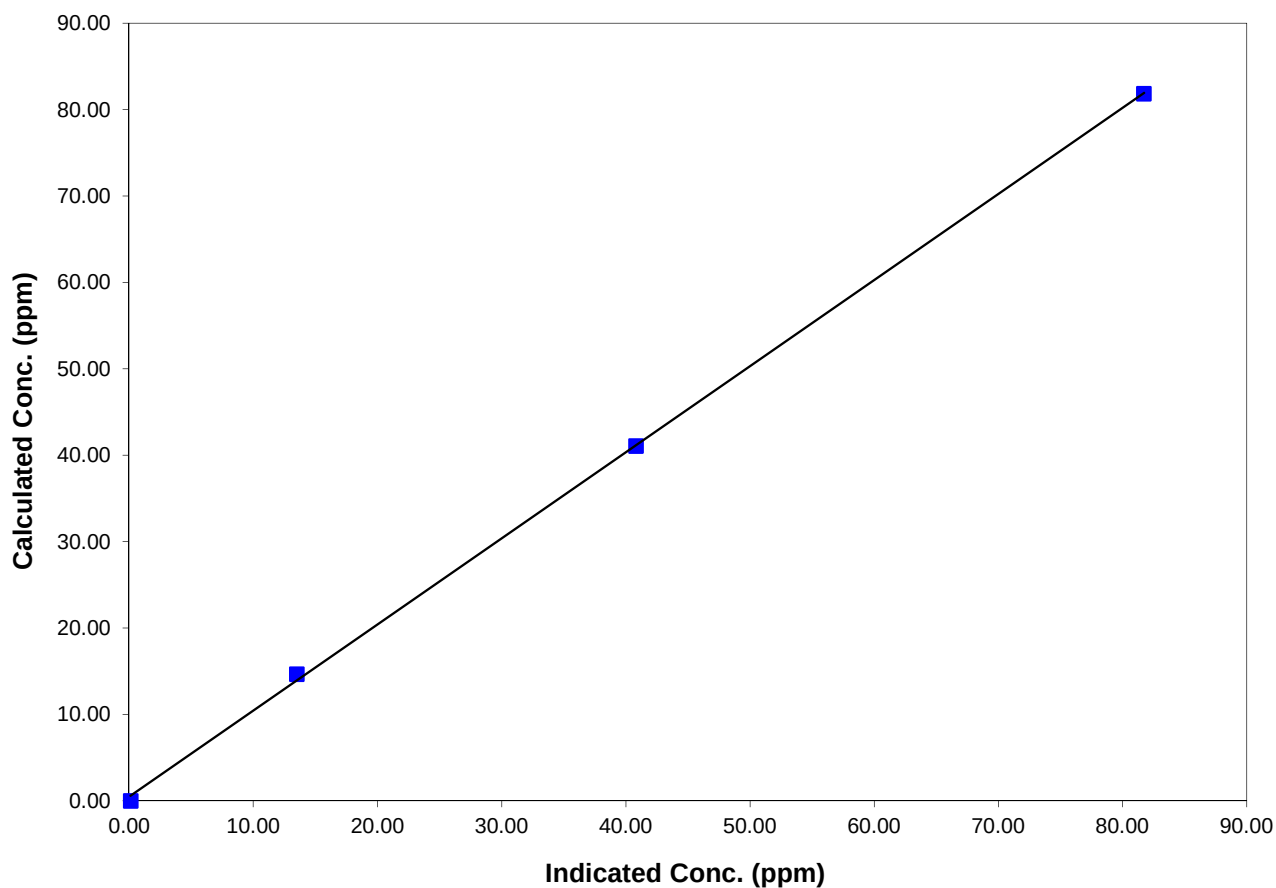
Station Information

Calibration Date	November 10, 2015	Previous Calibration	October 13, 2015
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	10:20	End Time (MST)	12:55
Analyzer make/model	TEI 45C	Analyzer serial #	630718528

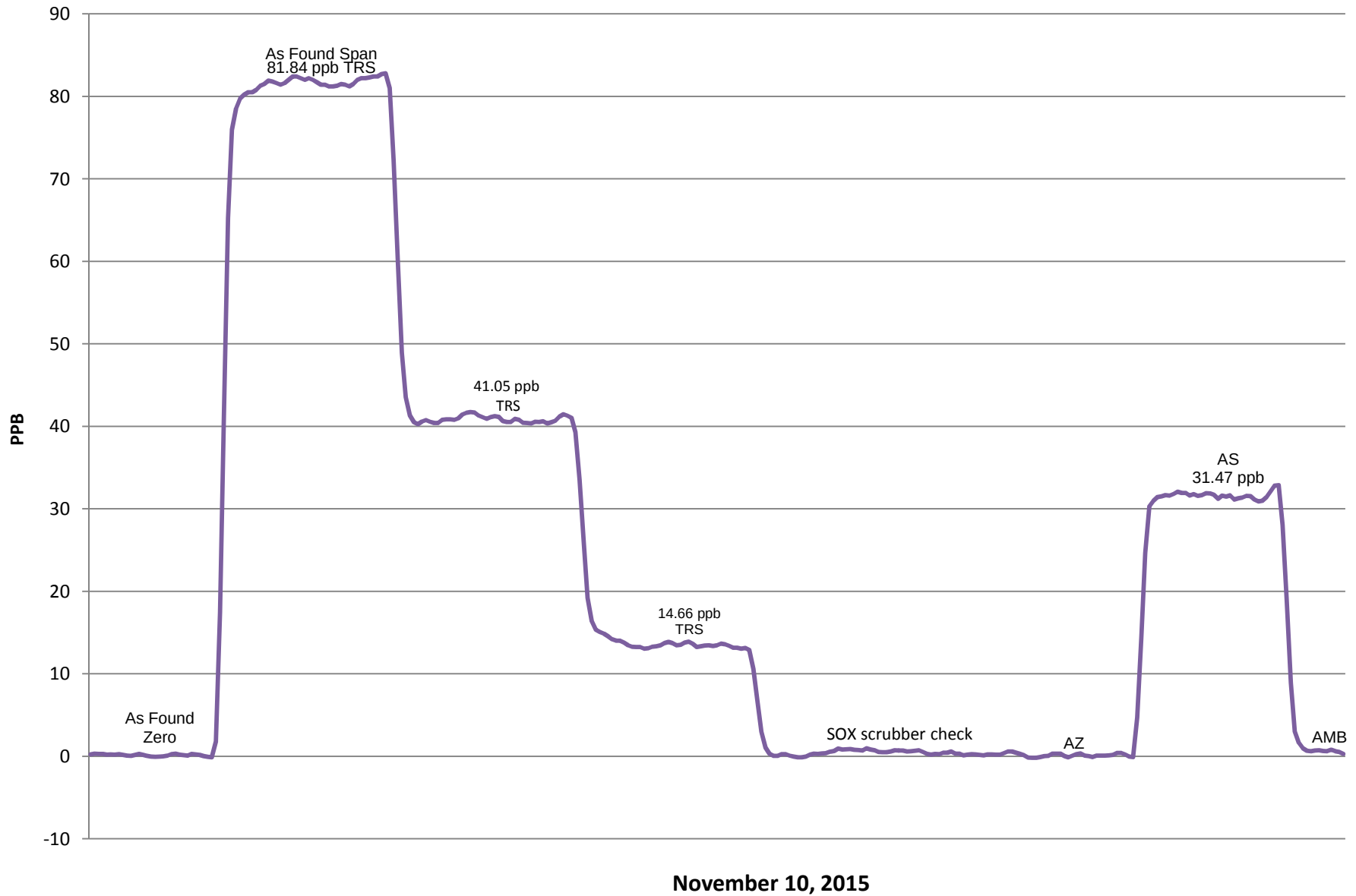
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.131	N/A	Correlation Coefficient	0.999767
81.844	81.728	1.0014		
41.054	40.819	1.0058		
14.659	13.509	1.0851	Slope	0.996902
			Intercept	0.447999

TRS Calibration Curve



TRS Calibration



Calibration Report



Parameter SO₂

Air Monitoring Network PAZA

Station Information

Calibration Date	November 5 2015	Previous Calibration	October 19 2015
Station Number	2	Station Location	Evergreen Park
Reason:	Routine	Install	Removal
		Other:	
Start Time (MST)	9:40	End Time (MST)	11:55
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	0.996026	Calculated slope	1.016953
Calculated intercept	0.685035	Calculated intercept	1.049128
Analyzer make	Teco 43i	Analyzer serial #	701120008

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	11.6		11.6	
coefficient	1.233		1.233	
Lamp Voltage	830	volts	830	volts
Chamber Temp	45.3	Deg C	45	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	667.1	mm Hg	669.8	mm Hg
Sample Flow	0.449	ccm	0.45	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	0.4	N/A
4995	39.93	394.2	387.5	1.0173
4995	19.97	197.9	192.2	1.0295
4995	9.95	98.8	95.1	1.0388
4995	0.0	0.0	0.4	As Found Zero
4995	39.93	394.9	387.5	As Found Span
Average Correction Factor				1.0285

Calculated value of As Found Response: 386.201 ppm Percent Change of As Found: 2.2%

	before calibration		after calibration	
Auto zero	0.4	ppm	0.4	ppm
Auto span	261.2	ppm	257.7	ppm

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



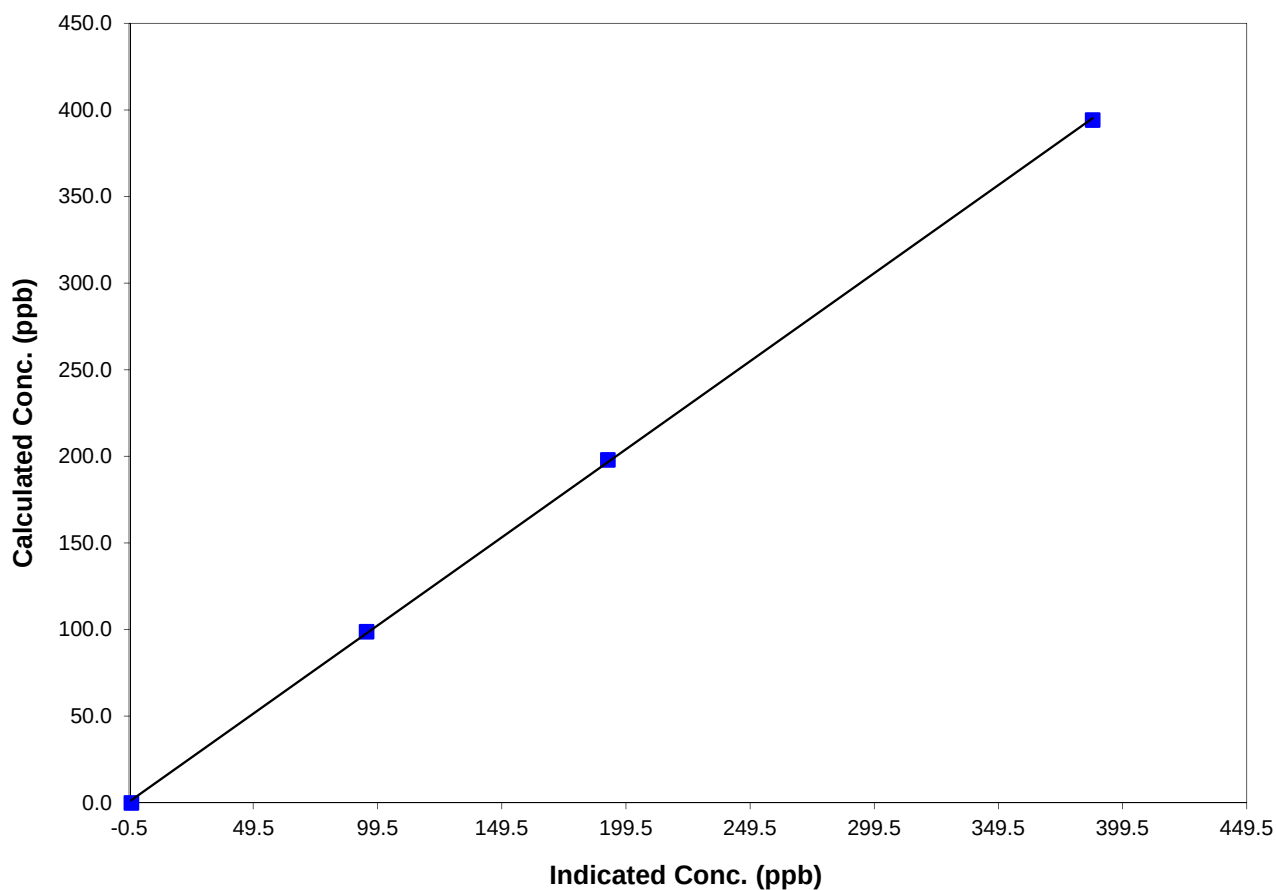
Station Information

Calibration Date	November 5 2015	Previous Calibration	October 19 2015
Station Number	2	Station Location	Evergreen Park
Start Time (MST)	9:40	End Time (MST)	11:55
Analyzer make/model	Teco 43i	Analyzer serial #	701120008

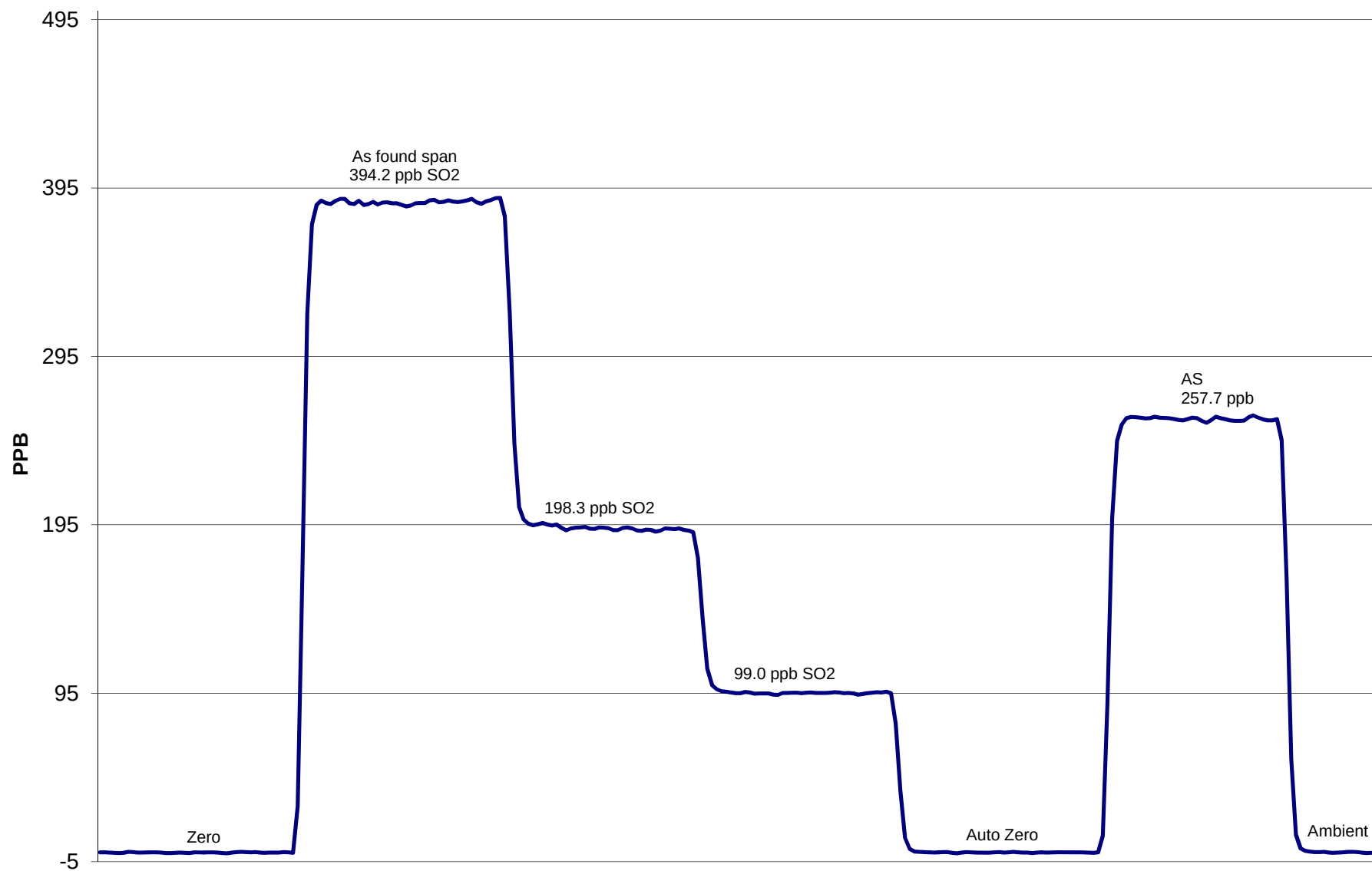
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.4	N/A	Correlation Coefficient	0.999930
394.2	387.5	1.0173		
197.9	192.2	1.0295		
98.8	95.1	1.0388	Slope	1.016953
			Intercept	1.049128

SO2 Calibration Curve



SO2 Calibration



November 5 2015

Calibration Report



Parameter TRS

Air Monitoring Network PAZA

Station Information

Calibration Date	November 5 2015	Previous Calibration	October 19 2015
Station Number	2	Station Location	Evergreen Park
Reason:	Routine	Install	Removal
			Other:
Start Time (MST)	8:05	End Time (MST)	10:50
Barometric Pressure	0.920 ATM	Station Temperature	21.0 Deg C
Calibrator	Envionics	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	1.010160	Calculated slope	1.027775
Calculated intercept	-0.488882	Calculated intercept	-0.481948

Analyzer make TEI Model 43C Analyzer serial # 3.199E+13

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	42.6	ppb	42.6	ppb
coefficient	0.963		0.963	
Lamp Voltage	1166	volts	1160	volts
Chamber Temp	44.1	Deg C	44	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	642.2	mm Hg	643.3	mm Hg
Sample Flow	0.593	ccm	0.590	ccm
Lamp Intensity	30,190	mv	30,346	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	0.6	N/A
4995	39.93	81.84	80.2	1.0200
4995	19.97	41.10	40.2	1.0228
6995	9.97	14.69	14.8	0.9956
4995	9.97		5.8	Sox Test
4995	0.00	0.00	0.6	As Found Zero
4995	39.93	81.84	80.2	As Found Span
Average Correction Factor				1.0128

Calculated value of As Found Response: 79.95 ppm Percent Change of As Found: **2.3%**

	before calibration		after calibration	
Auto zero	0.5	ppm	0.6	ppm
Auto span	74.0	ppm	73.8	ppm

Notes: No adjustment made
Sox scrubber check performed, scrubber material replaced

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter TRS

Air Monitoring Network PAZA



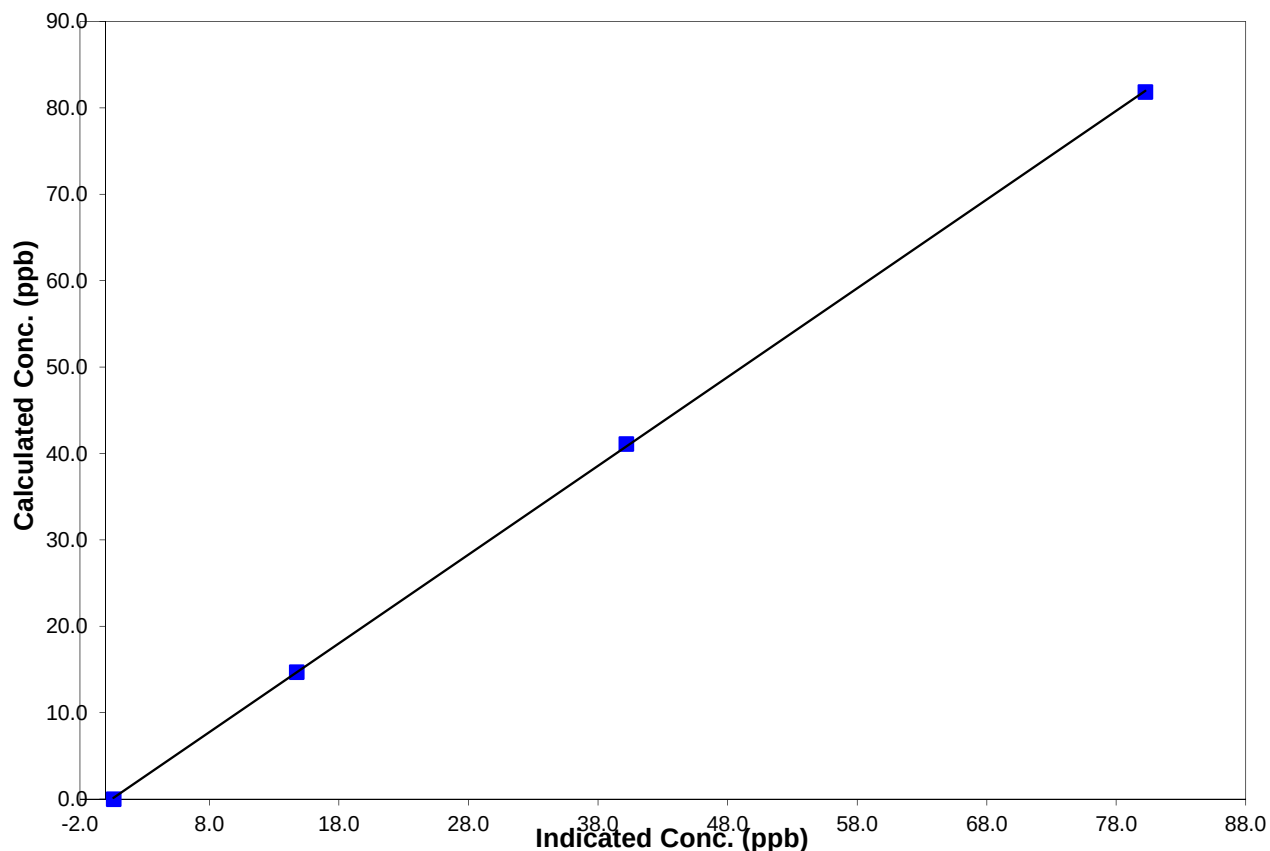
Station Information

Calibration Date	November 5 2015	Previous Calibration	October 19 2015
Station Number	2	Station Location	Evergreen Park
Start Time (MST)	8:05	End Time (MST)	10:50
Analyzer make/model	TEI Model 43C	Analyzer serial #	31990000000491

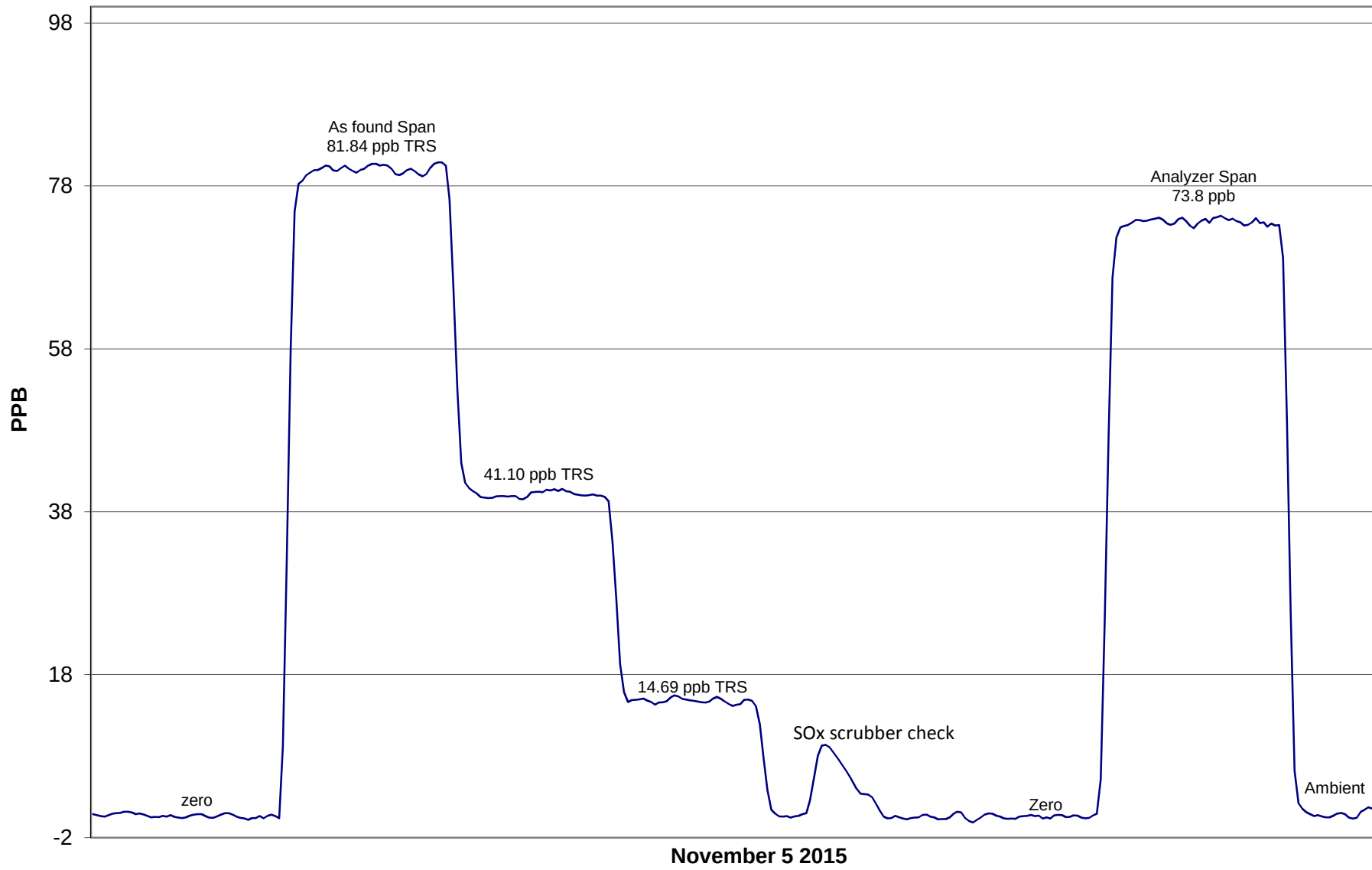
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.6	N/A	Correlation Coefficient	0.999968
81.8	80.2	1.0200		
41.1	40.2	1.0228		
14.7	14.8	0.9956	Slope	1.027775
			Intercept	-0.481948

TRS Calibration Curve



TRS Calibration



Calibration Report



Parameter SO₂

Air Monitoring Network PAZA

Station Information

Calibration Date	November 20, 2015	Previous Calibration	October 29, 2015
Station Number	3	Station Location	Smokey Heights
Reason:	Routine	Install	Removal
			Other:
Start Time (MST)	13:39:00 PM	End Time (MST)	16:00:00 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
	Before		After
Calculated slope	0.990908	Calculated slope	1.007244
Calculated intercept	0.043643	Calculated intercept	0.302428
Analyzer make	Teco 43i	Analyzer serial #	701120009

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	12.1		12.1	
coefficient	0.952		0.952	
Lamp Voltage	938	volts	940	volts
Chamber Temp	45	Deg C	45	Deg C
Perm Gas Temp	44.96	Deg C	45	Deg C
Pressure	674.1	mm Hg	672.9	mm Hg
Sample Flow	0.445	lpm	0.449	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	1.1	N/A
4995	39.93	394.15	391.9	1.0057
4995	19.97	197.91	194.9	1.0157
4995	9.97	99.00	97.1	1.0198
4995	0.0	0.00	1.1	As Found Zero
4995	39.93	394.15	391.9	As Found Span
Average Correction Factor				1.0137

Calculated value of As Found Response: 387.331 ppm Percent Change of As Found: 1.7%

	before calibration		after calibration	
Auto zero	0.8	ppb	1.0	ppb
Auto span	218.1	ppb	211.0	ppb

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



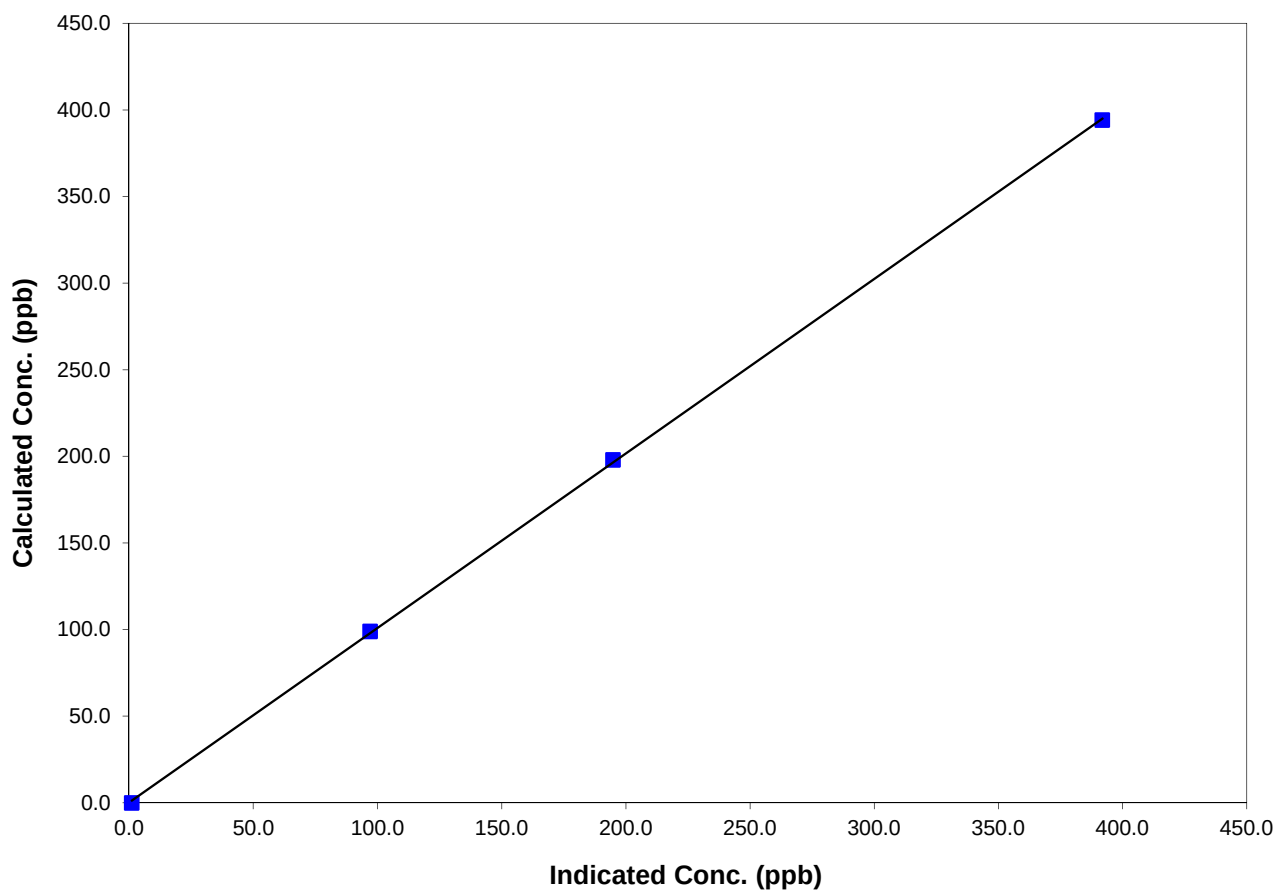
Station Information

Calibration Date	November 20, 2015	Previous Calibration	October 29, 2015
Station Number	3	Station Location	Smokey Heights
Start Time (MST)	13:39:00 PM	End Time (MST)	16:00:00 PM
Analyzer make/model	Teco 43i	Analyzer serial #	701120009

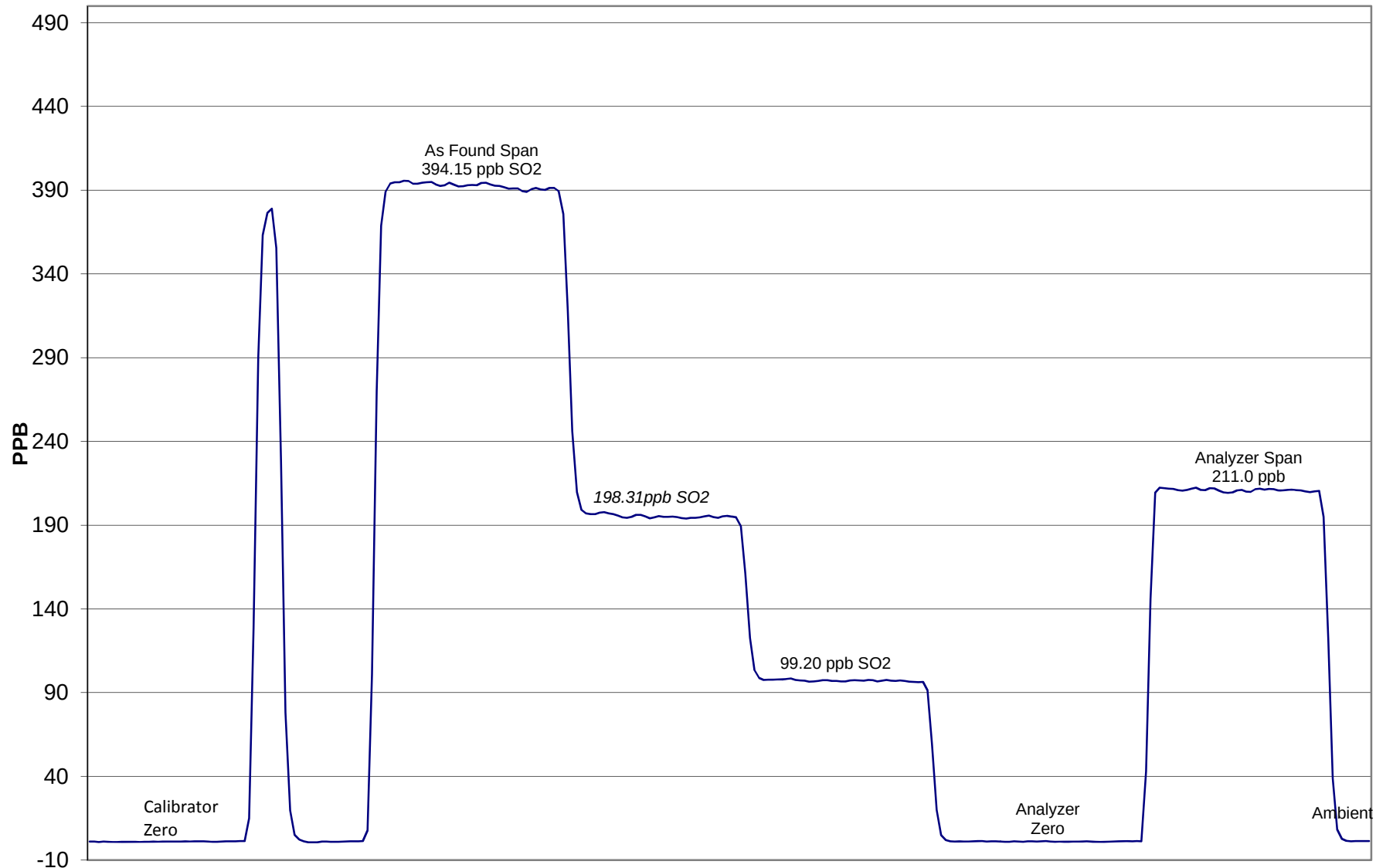
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	1.1	N/A	Correlation Coefficient	0.999937
394.2	391.9	1.0057		
197.9	194.9	1.0157		
99.0	97.1	1.0198	Slope	1.007244
			Intercept	0.302428

SO2 Calibration Curve



Smokey Heights SO₂ Calibration



November 20, 2015

Calibration Report



Parameter TRS

Air Monitoring Network PAZA

Station Information

Calibration Date	November 20, 2015	Previous Calibration	October 29, 2015
Station Number	3	Station Location	Smokey Heights
Reason:	Routine	Install	Removal
			Other:
Start Time (MST)	10:10	End Time (MST)	14:35:00 PM
Barometric Pressure	0.927 ATM	Station Temperature	20.0 Deg C
Calibrator	Envionics	Serial Number	6586
Cal Gas Conc	10.32 ppm	Cal Gas Expiry Date	08/07/2016
Correction factor	0.031511	Cal Gas Cylinder #	BLM00586
DACS make	CR3000	DACS serial No.	5238
DACS voltage range	0 - 5 volt	DACS channel #	5
	<u>Before</u>		<u>After</u>
Calculated slope	0.993595	Calculated slope	0.994925
Calculated intercept	1.067642	Calculated intercept	2.122096

Analyzer make TEI Model 43C Analyzer serial # 0436610005

	before		after	
Concentration range	100	ppb	100	ppb
Background	21.5	ppb	23.7	ppb
coefficient	0.923		0.999	
Lamp Voltage	862	volts	871	volts
Chamber Temp	43.7	Deg C	43.7	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	620.7	mm Hg	601.6	mm Hg
Sample Flow	0.598	lpm	0.589	lpm
Lamp Intensity	34,638	mv	35,071	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)
4998	0.0	0.00	0.1	N/A
4998	39.96	81.86	81.5	1.0043
4998	19.97	41.07	36.3	1.1303
6998	9.97	14.68	11.8	1.2411
4998	9.97			Sox test
4998	0.0	0.00	0.1	As Found Zero
4998	39.96	81.86	73.8	As Found Span
Average Correction Factor				1.1253

Calculated value of As Found Response: 74.25 ppm Percent Change of As Found: 9.3%

	before calibration		after calibration	
Auto zero	0.3	ppm	-0.1	ppm
Auto span	30.5	ppm	33.3	ppm

Notes: span adjuatment made
needs new parts(new lamp& board)
Sox scrubber check skipped due to the analyzer issues

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter TRS

Air Monitoring Network PAZA



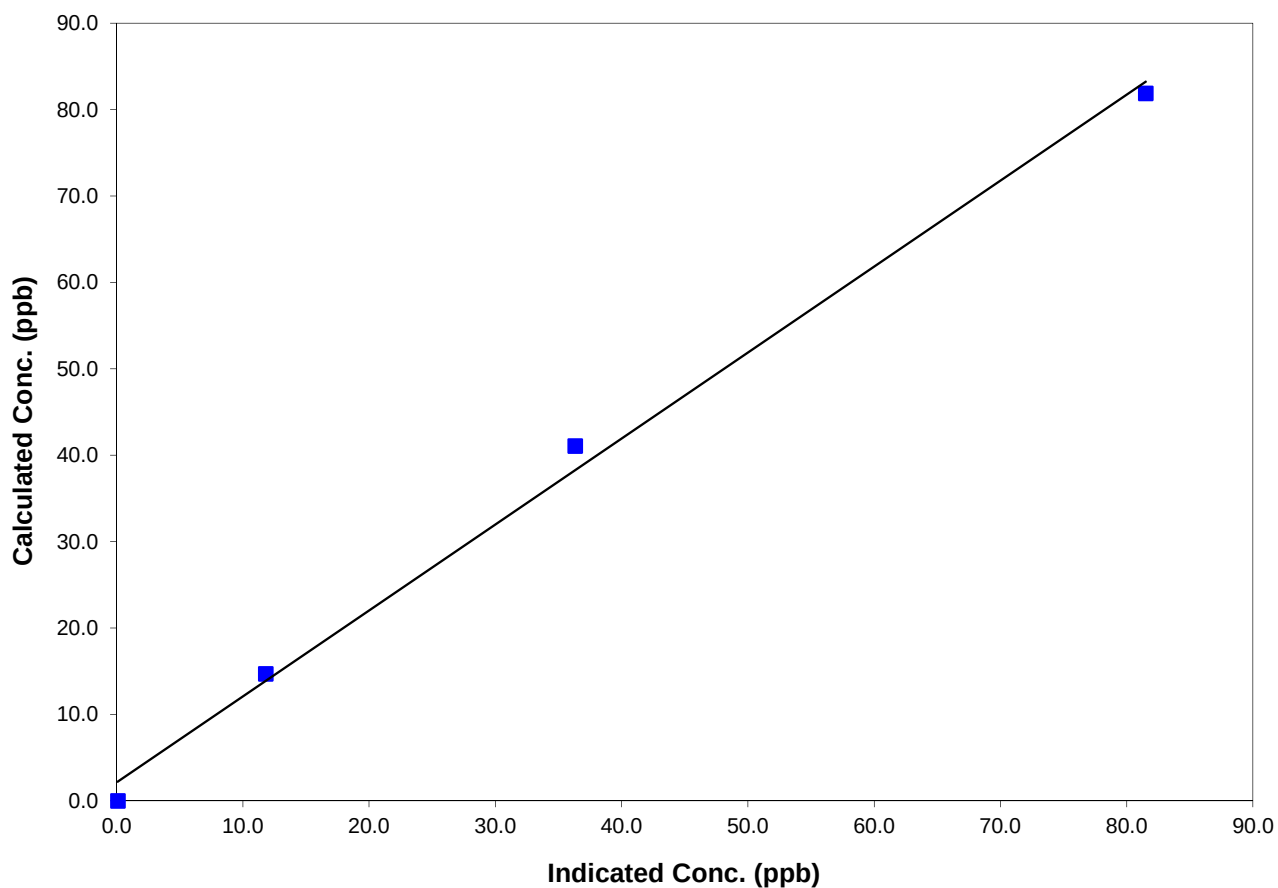
Station Information

Calibration Date	November 20, 2015	Previous Calibration	October 29, 2015
Station Number	3	Station Location	Smokey Heights
Start Time (MST)	10:10	End Time (MST)	14:35:00 PM
Analyzer make/model	TEI Model 43C	Analyzer serial #	0436610005

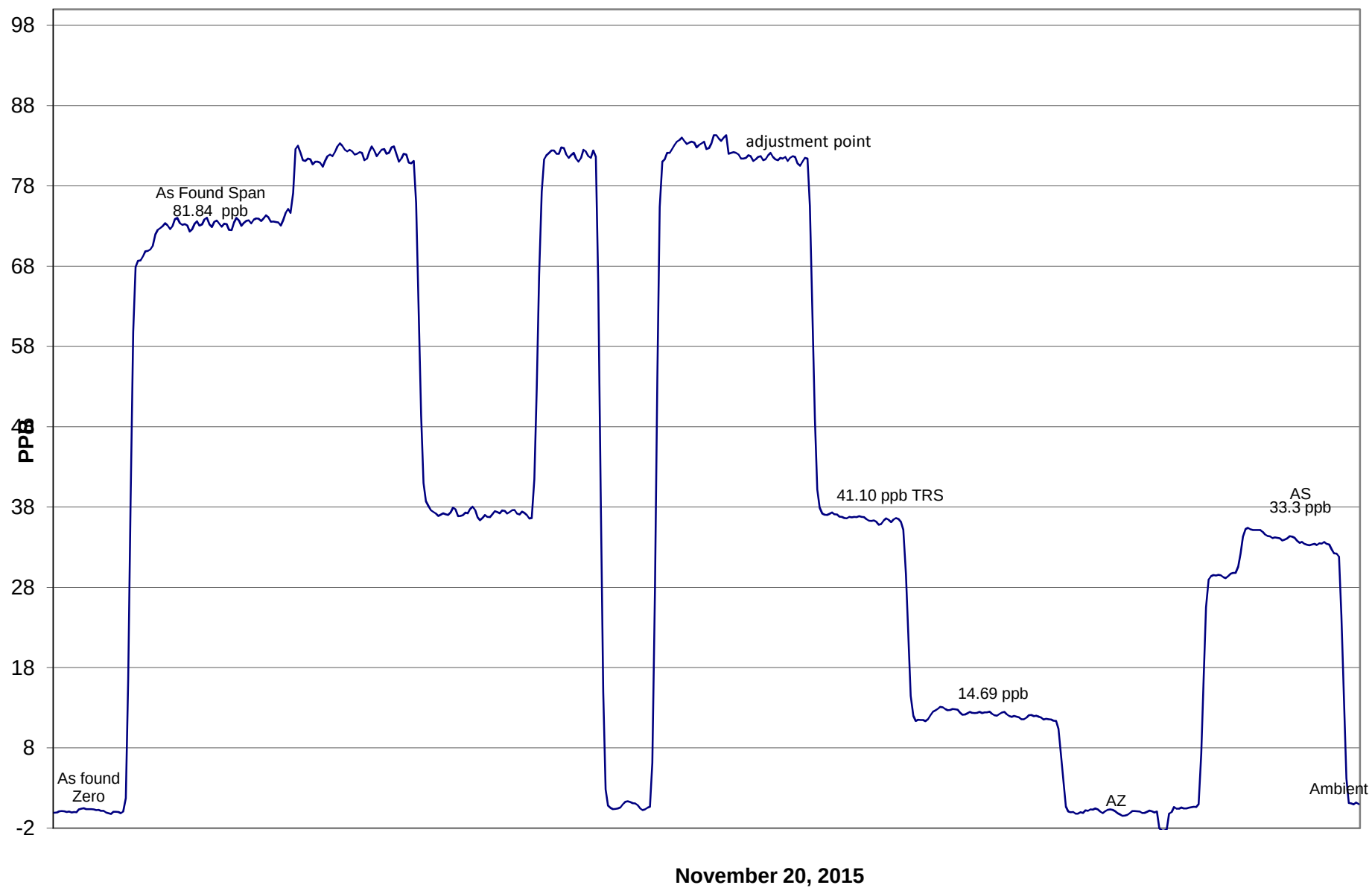
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A	Correlation Coefficient	0.996052
81.9	81.5	1.0043		
41.1	36.3	1.1303		
14.7	11.8	1.2411	Slope	0.994925
			Intercept	2.122096

TRS Calibration Curve



Smokey Heights TRS Calibration



Calibration Report

Parameter SO2

Air Monitoring Network PAZA



Station Information

Calibration Date	November 12, 2015	Previous Calibration	October 9, 2015
Station Number	4	Station Location	Beaverlodge
Reason:	Routine	Install	Removal
		Other:	
Start Time (MST)	14:05:00 PM	End Time (MST)	16:25:00 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	0.997905	Calculated slope	0.998185
Calculated intercept	-0.026292	Calculated intercept	-0.217252
Analyzer make	TEI Model 43i-TLE	Analyzer serial #	713021137

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	2.69		2.69	
Coefficient	1.018		1.018	
PMT	-768.1	V	-768.5	V
UV Lamp Voltage	1098	V	1088	V
Chamber Temp	44.8	Deg C	45	Deg C
Pressure	656.5	mm Hg	649.2	mm Hg
Sample Flow	0.451	LPM	0.448	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	86.0	0.9958
4994	19.96	43.0	43.3	0.9924
4994	9.96	21.5	21.7	0.9886
4994	0.00	0.0	0.2	As found zero
4994	39.92	85.6	86.0	As found span
Average Correction Factor				0.9923

Calculated value of As Found Response: 85.591 ppm Percent Change of As Found: 0.1%

	before calibration		after calibration	
Auto zero	0.1	ppb	0.0	ppb
Auto span	61.5	ppb	62.1	ppb

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



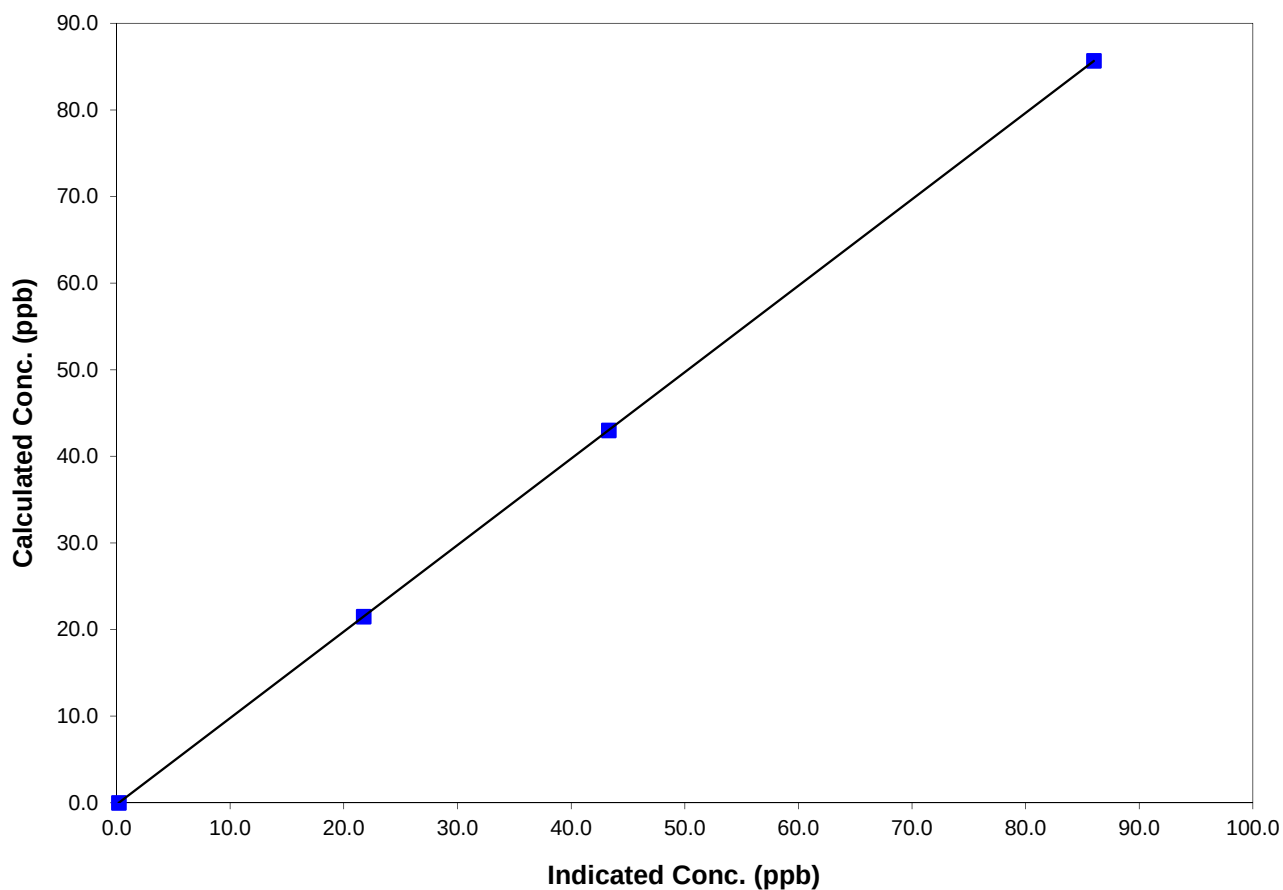
Station Information

Calibration Date	November 12, 2015	Previous Calibration	October 9, 2015
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	14:05:00 PM	End Time (MST)	16:25:00 PM
Analyzer make/model	TEI Model 43i-TLE	Analyzer serial #	713021137

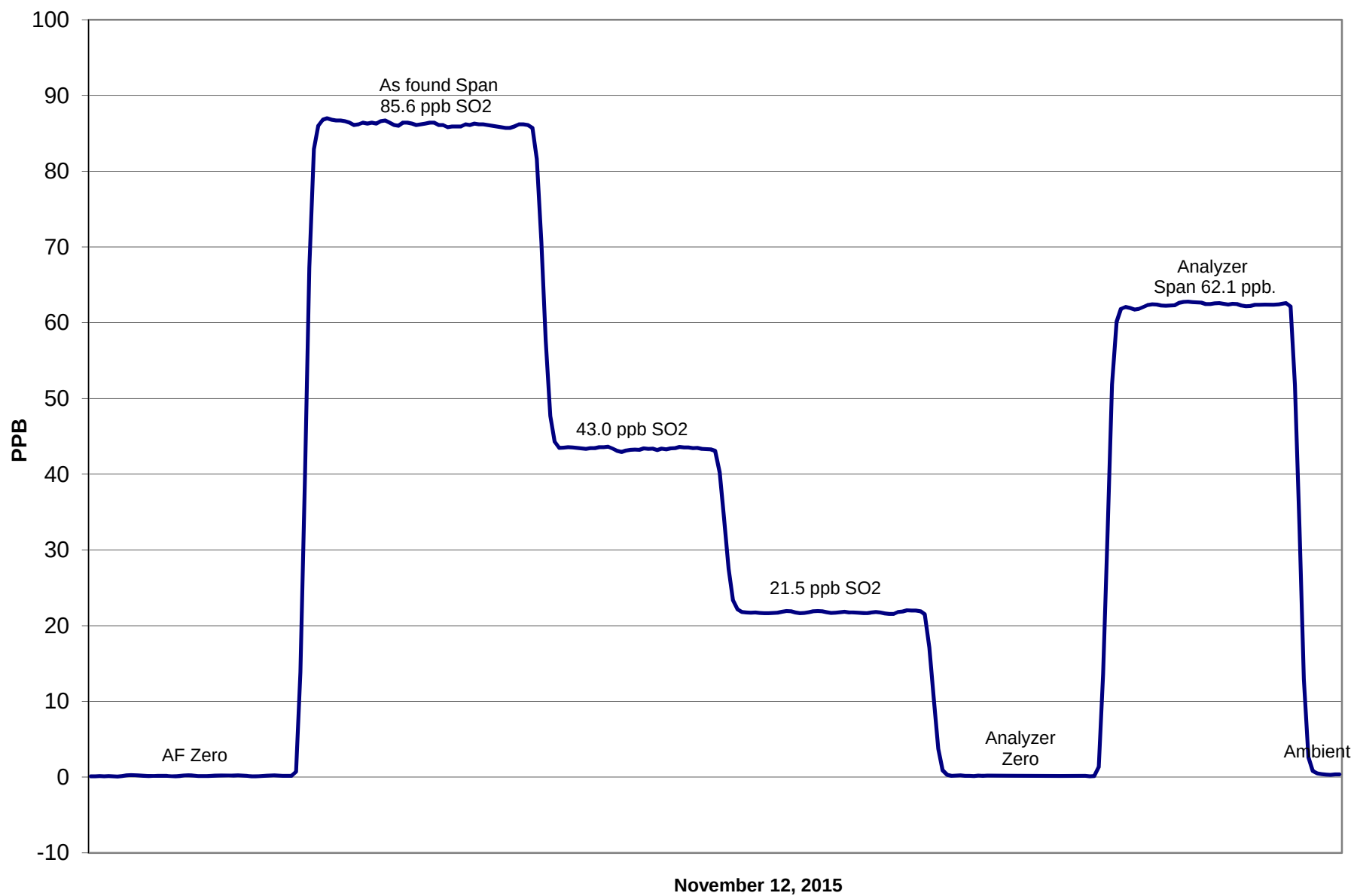
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.2	N/A	Correlation Coefficient	1.000000
85.6	86.0	0.9958		
43.0	43.3	0.9924		
21.5	21.7	0.9886	Slope	0.998185
			Intercept	-0.217252

SO2 Calibration Curve



SO2 Calibration



Calibration Report

Parameter

NO_x-NO-NO₂

Air Monitoring Network

PAZA



Station Information

Calibration Date	November 12 2015	Previous Calibration	October 7 2015		
Station Number	4	Station Location	Beaverlodge		
Reason:	Routine	Installation	Removal		
Other:					
Start Time (MST)	9:50	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	
NOx Cal Gas Conc	51.2	ppm	Cal Gas Serial #	LL103793	

DACS Information

DACS make	CR3000	DACS serial No.	5237																																		
<table><thead><tr><th colspan="2">Parameter</th><th>NO2</th><th>NOx</th><th>NO</th></tr></thead><tbody><tr><td rowspan="2">Before</td><td>Data Slope</td><td>0.990663</td><td>1.002146</td><td>1.002943</td></tr><tr><td>Data Offset</td><td>-1.466093</td><td>-0.234446</td><td>-0.055133</td></tr><tr><td rowspan="2">After</td><td>Data Slope</td><td>0.998473</td><td>0.999885</td><td>1.000731</td></tr><tr><td>Data Offset</td><td>-0.374424</td><td>0.100102</td><td>0.257754</td></tr><tr><td colspan="2">Channel #</td><td>8</td><td>6</td><td>7</td></tr><tr><td colspan="2">Voltage Range</td><td>0 - 5 VDC</td><td>0 - 5 VDC</td><td>0 - 5 VDC</td></tr></tbody></table>					Parameter		NO2	NOx	NO	Before	Data Slope	0.990663	1.002146	1.002943	Data Offset	-1.466093	-0.234446	-0.055133	After	Data Slope	0.998473	0.999885	1.000731	Data Offset	-0.374424	0.100102	0.257754	Channel #		8	6	7	Voltage Range		0 - 5 VDC	0 - 5 VDC	0 - 5 VDC
Parameter		NO2	NOx	NO																																	
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	Data Offset	-0.374424	0.100102	0.257754																																	
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
NOx bkgnd	3.1	mV	3.0	mV
NO coefficient	1.108		1.080	
NOx coefficient	1.005		1.005	
NO2 conv temp	327.1	Deg C	327.0	Deg C
PMT Temp	-2.9	Deg C	-2.9	Deg C
PMT Volt	-729.6	mV	-730.0	mV
R Cell Press	184.3	in Hg	182.8	in Hg
Sample Flow	0.727	LPM	0.727	LPM

Notes: Span adjustments made

Calibration Report

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



Station Information

Calibration Date: November 12 2015 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	0.1	-0.1	0.1	N/A	N/A
1	4995	39.92	405.9	403.6	2.4	406.0	403.2	2.0	0.9999	1.0009
2	4995	19.96	203.8	202.6	1.2	203.7	201.8	1.0	1.0006	1.0040
3	4995	9.93	101.6	101.0	0.6	101.2	100.7	0.3	1.0038	1.0029
AFZ	4995	0.00	0.0	0.0	0.0	0.1	-0.1	0.1	0.0000	0.0000
AFS	4995	39.92	405.9	403.6	0.8	417.6	414.7	2.2	0.9720	0.9731
Average Correction Factor									1.0014	1.0026

As Found Concentrations: NO_x= 418.2 NO= 416.0 As Found Percent Change NO_x= 3.0% NO= 3.1%

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	0.1	-0.1	0.1	N/A	N/A	N/A	N/A
NO point	404.2	404.2	0.0	406.4	404.2	1.4	0.9945	1.0000	N/A	N/A
300	404.2	71.9	332.3	405.9	71.9	333.1	0.9957	1.0000	0.9977	100.2%
200	404.2	179.7	224.5	405.7	179.7	225.2	0.9963	1.0000	0.9971	100.3%
100	404.2	295.7	108.5	405.8	295.7	109.5	0.9960	1.0000	0.9907	100.9%
Average Correction Factor							0.9960	1.0000	0.9952	100.5%

AIC Data

	Previous calibration				Current calibration			
Parameter	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	0.1	0.0	0.0	ppb	0.0	-0.1	-0.1	ppb
Auto span	265.1	261.5	2.7	ppb	285.9	282.8	2.2	ppb

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter NO₂

Air Monitoring Network PAZA



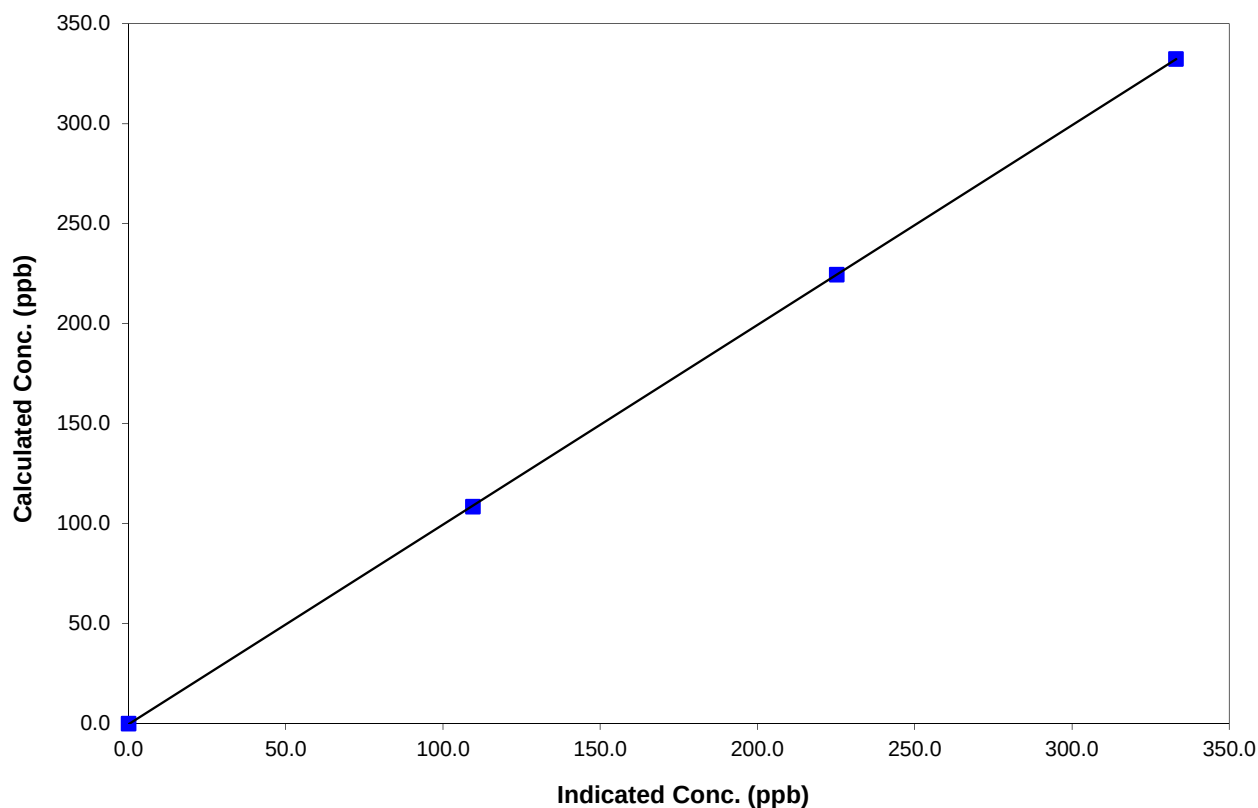
Station Information

Calibration Date	November 12 2015	Previous Calibration	October 7 2015
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	9:50	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
332.3	333.1	0.9977		
224.5	225.2	0.9971		
108.5	109.5	0.9907	Slope	0.998473
			Intercept	-0.374424

NO₂ Calibration Curve



Calibration Summary

Parameter NO_x

Air Monitoring Network PAZA



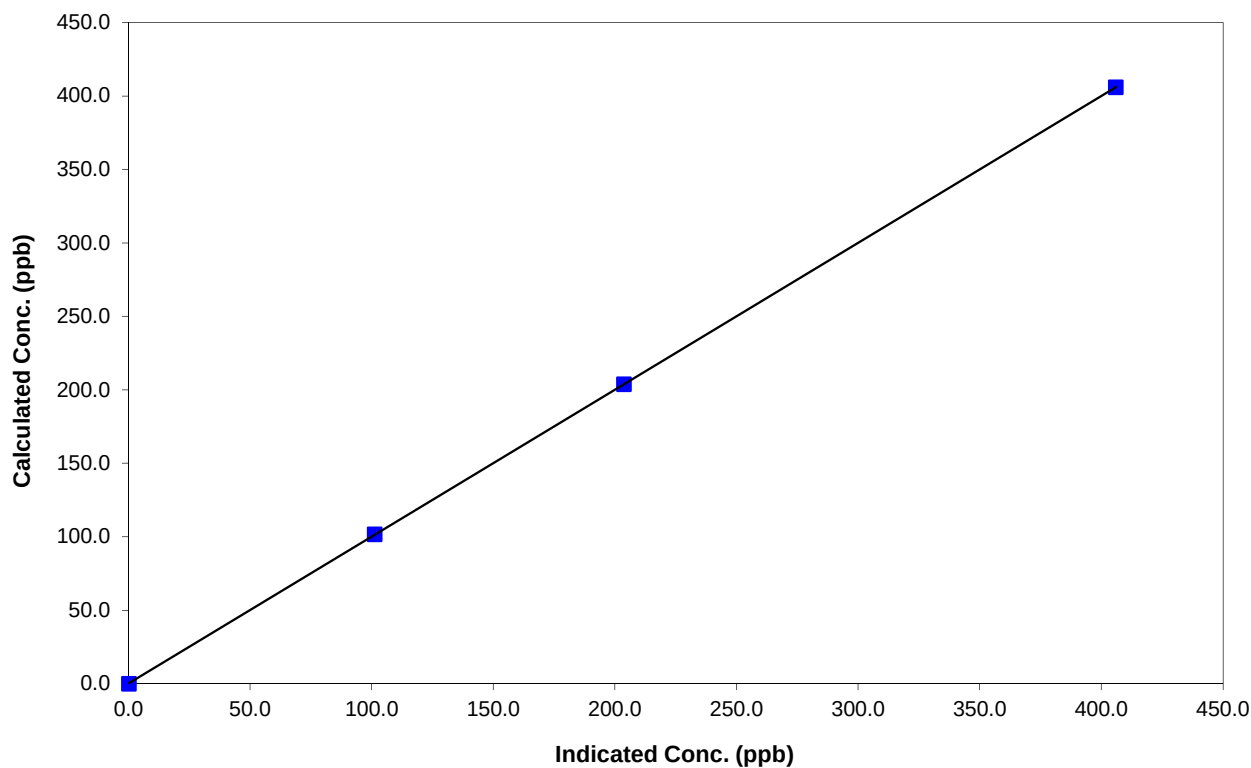
Station Information

Calibration Date	November 12 2015	Previous Calibration	October 7 2015
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	9:50	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	0.999998
405.9	406.0	0.9999		
203.8	203.7	1.0006		
101.6	101.2	1.0038	Slope	0.999885
			Intercept	0.100102

NO_x Calibration Curve



Calibration Summary

Parameter NO

Air Monitoring Network PAZA



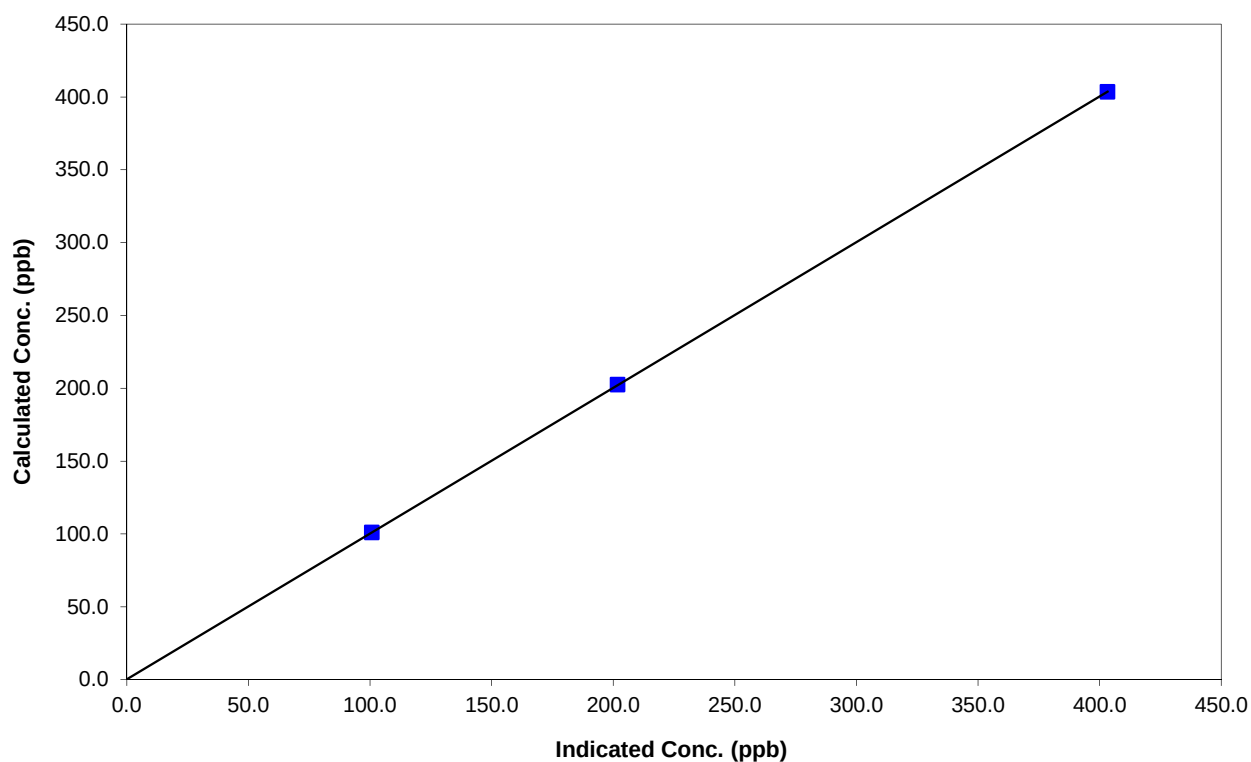
Station Information

Calibration Date	November 12 2015	Previous Calibration	October 7 2015
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	9:50	End Time (MST)	13:55:00 PM
Analyzer make	TEI 42i	Analyzer serial #	906535068

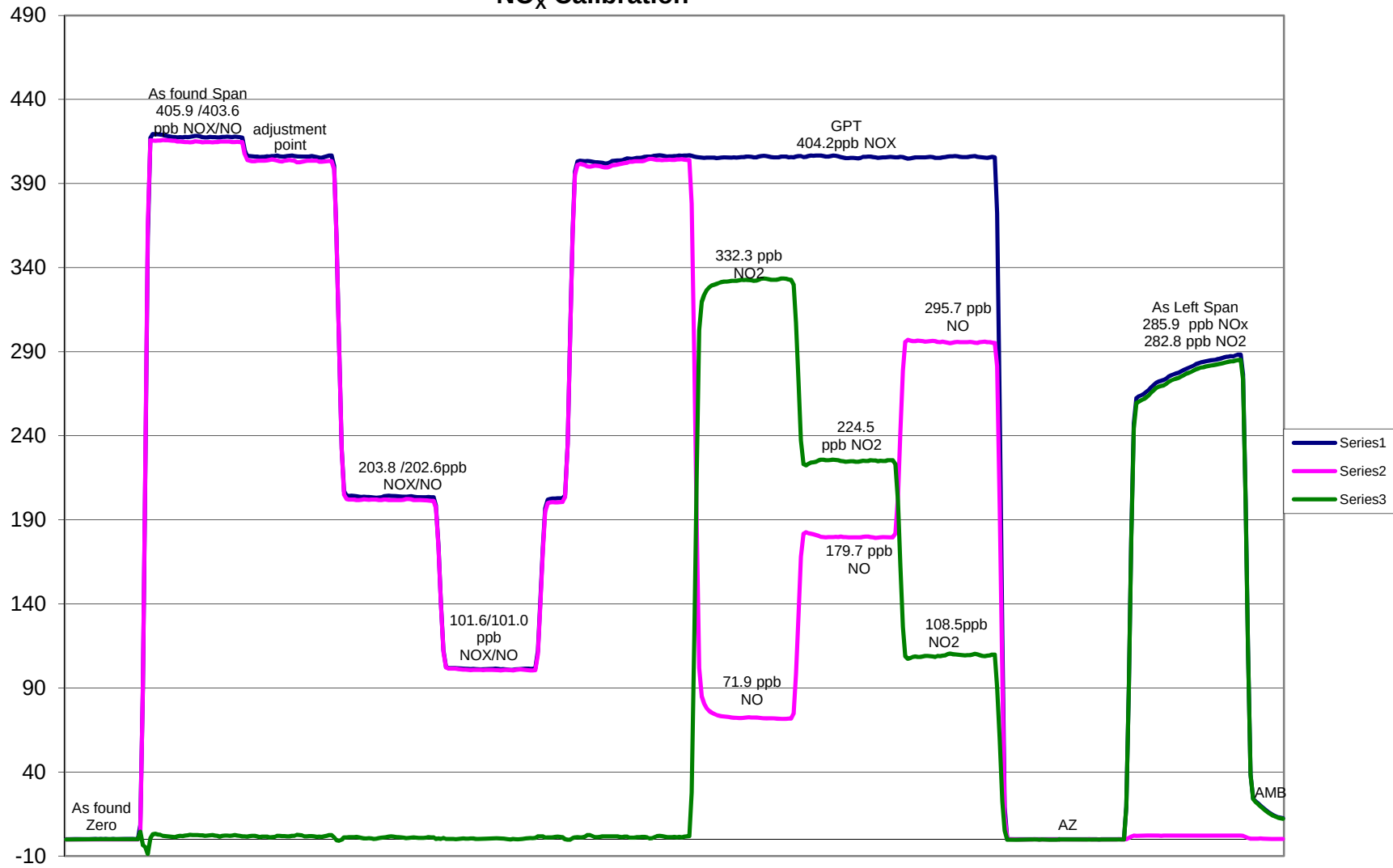
Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A	Correlation Coefficient	0.999997
403.6	403.2	1.0009		
202.6	201.8	1.0040		
101.0	100.7	1.0029	Slope	1.000731
			Intercept	0.257754

NO Calibration Curve



NO_x Calibration



November 12 2015

Calibration Report



Parameter 03

Air Monitoring Network PAZA

Station Information

Calibration Date	November 12, 2015	Previous Calibration	October 7, 2015
Station Number	4	Station Location	Beaverlodge
Reason:	Routine	Install	Removal
		Other:	

Start Time (MST)	12:55	End Time (MST)	14:55:00 PM
Barometric Pressure	0.928 atm	Station Temperature	20.0 Deg C
Calibrator	EnviroNics	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	0.991951	Calculated slope	1.014104
Calculated intercept	-1.744873	Calculated intercept	0.850821

Analyzer make	Teco 49i	Analyzer serial #	1136451236,AMU 1879
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	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
offset	-0.30	ppb	-0.30	ppb
slope	1.004		1.004	
Lamp temp	53.8	mV	53.8	mV
Lamp Intensity A/B	54370/59374	mV	55112/60138	mV
Pressure	673.3	mm Hg	665.7	mm Hg
Flow A	0.776	LPM	0.772	LPM
Flow B	0.738	LPM	0.732	LPM

Calibration Data

Dilution air flow rate (cc/min)	Calibrator Setting	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
5035	0.00	0.0	0.3	N/A
5035	0.30	332.3	328.6	1.0113
5035	0.20	224.5	218.2	1.0289
5035	0.10	108.5	105.6	1.0277
5035	0.00	0.0	0.3	As found zero
5035	0.30	332.3	328.6	As found span
Average Correction Factor				1.0226

Calculated value of As Found Response: 323.9 ppm Percent Change of As Found: -2.5%

	before calibration		after calibration	
Auto zero	-0.2	ppb	0.3	ppb
Auto span	269.6	ppb	262.1	ppb

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter 03

Air Monitoring Network PAZA



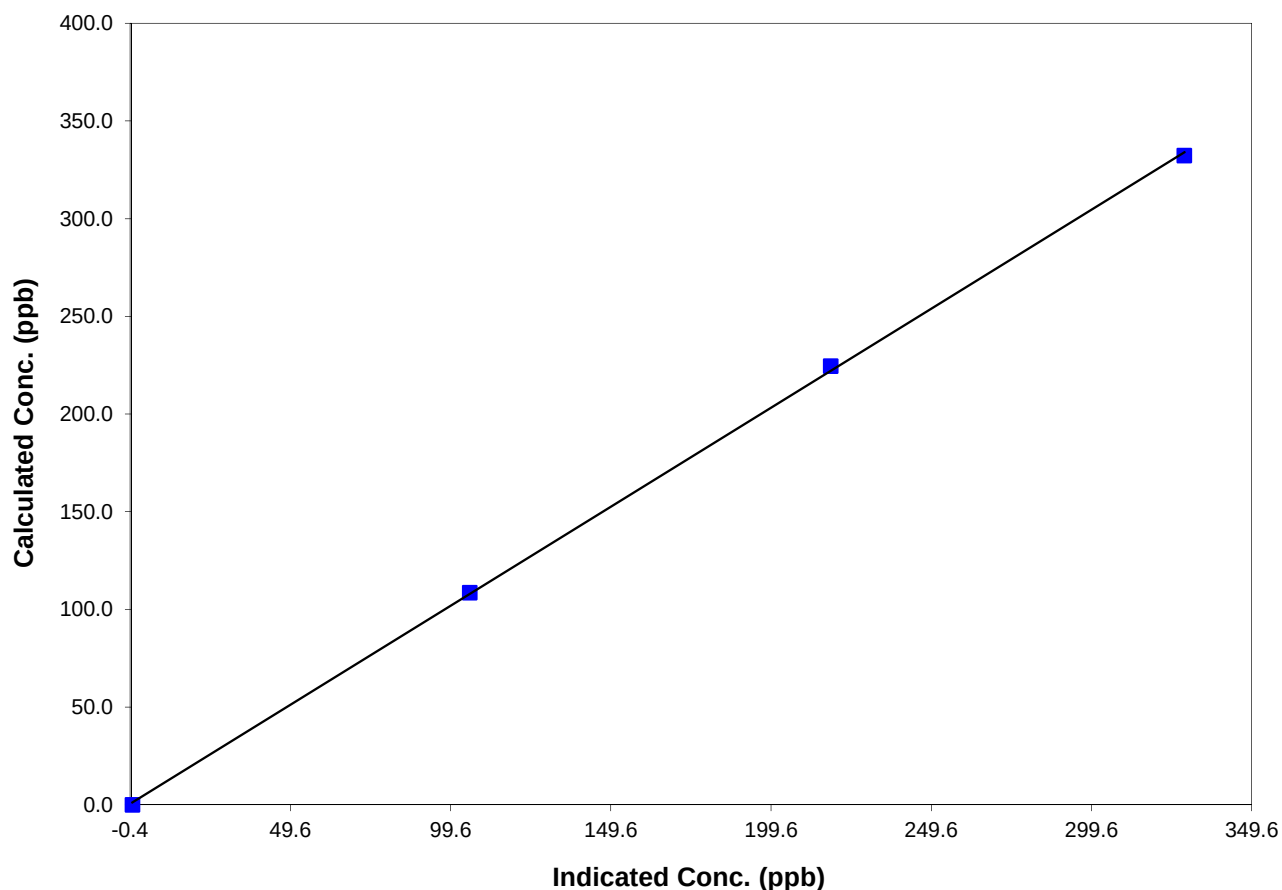
Station Information

Calibration Date	November 12, 2015	Previous Calibration	October 7, 2015
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	12:55	End Time (MST)	14:55:00 PM
Analyzer make/model	Teco 49i	Analyzer serial #	1136451236,AMU 1879

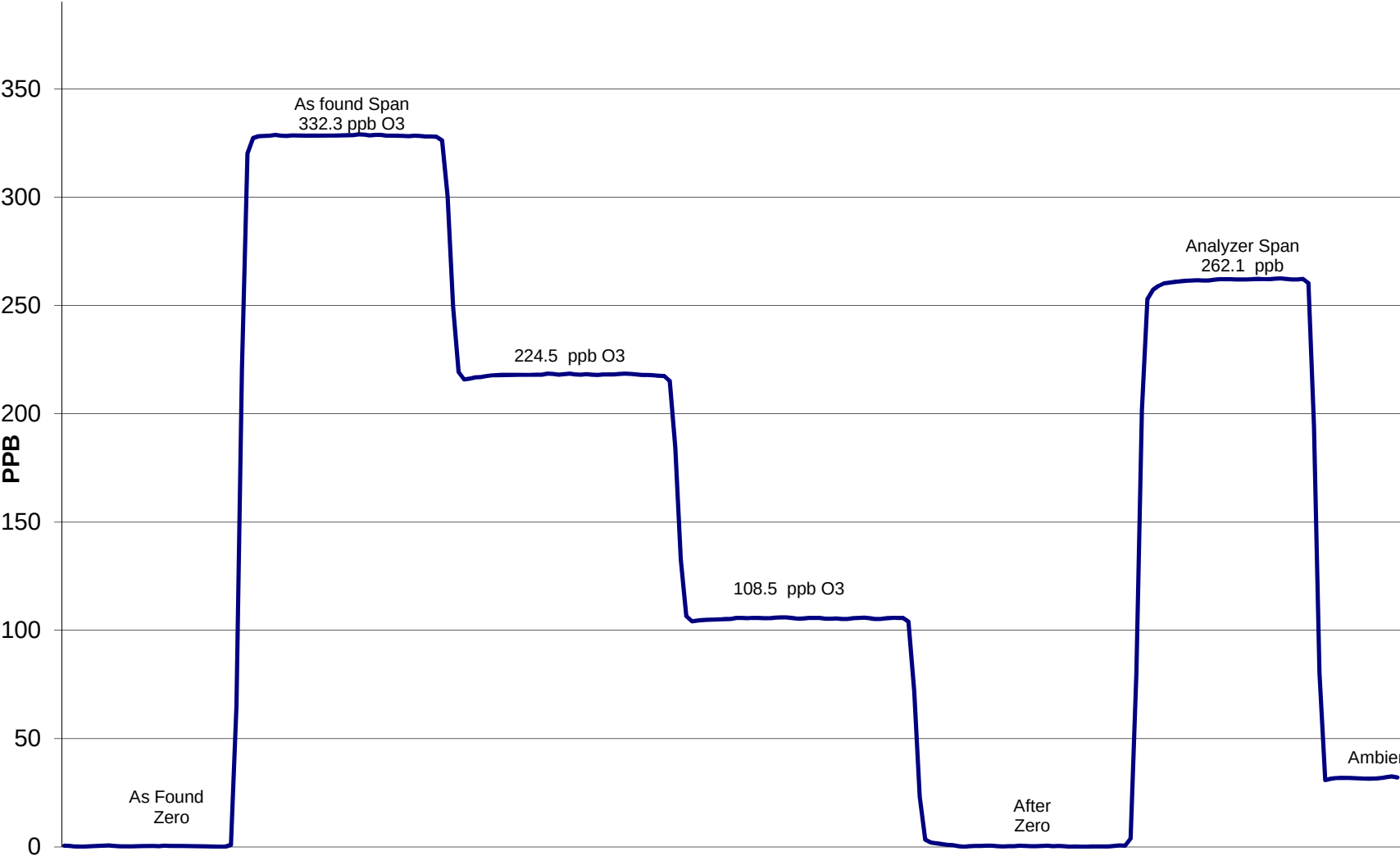
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.3	NA	Correlation Coefficient	0.999831
332.3	328.6	1.0113		
224.5	218.2	1.0289		
108.5	105.6	1.0277	Slope	1.014104
			Intercept	0.850821

O3 Calibration Curve



O3 Calibration



November 12, 2015

Calibration Report

Parameter SO2

Air Monitoring Network PAZA



Station Information

Calibration Date	November 9 2015	Previous Calibration	October 22 2015
Station Number	6	Station Location	Valleyview
Reason:	Routine	Install	Removal Other:
Start Time (MST)	12:35	End Time (MST)	14:50:00 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	1.012601	Calculated slope	1.013327
Calculated intercept	0.707907	Calculated intercept	0.884280
Analyzer make	TEI 43C	Analyzer serial #	609716239

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Background	15.5		15.6	
Coefficient	1.012		1.012	
UV Lamp Voltage	735	LPM	736	LPM
Chamber Temp	43	V	43	V
Perm Gas Temp	45	C	45	C
Pressure	673.1	in Hg	674.1	in Hg
Sample Flow	0.487	LPM	0.488	LPM
Lamp Intensity	47606	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	388.9	1.0134
4995	19.97	197.9	193.2	1.0243
4995	9.95	98.8	95.7	1.0329
4995	0.00	0.0	0.5	As found zero
4995	39.93	394.2	388.9	As found span
Average Correction Factor				1.0235

Calculated value of As Found Response: 394.1 ppm Percent Change of As Found: 0.0%

	before calibration		after calibration	
Auto zero	0.6	ppm	0.4	ppm
Auto span	279.6	ppm	279.0	ppm

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



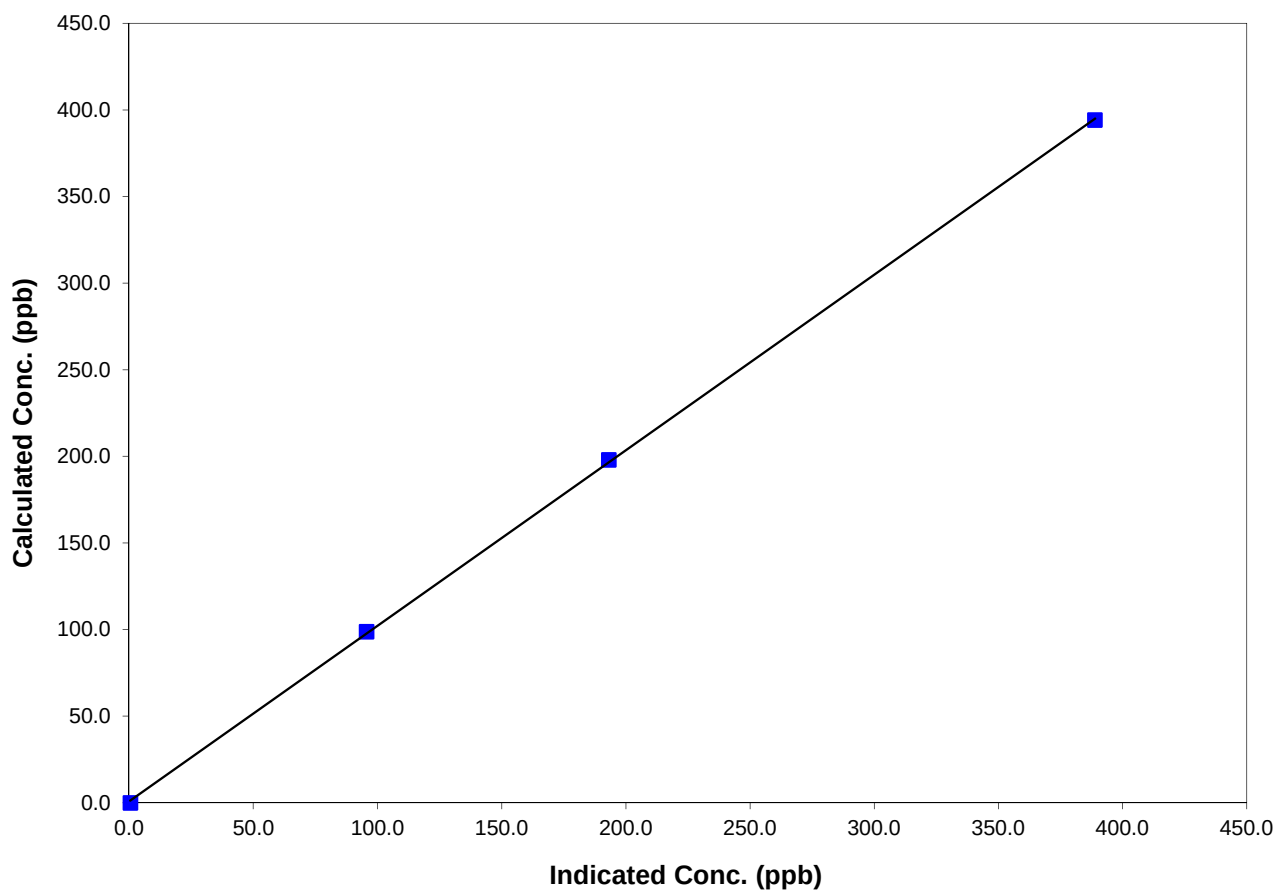
Station Information

Calibration Date	November 9 2015	Previous Calibration	October 22 2015
Station Number	6	Station Location	Valleyview
Start Time (MST)	12:35	End Time (MST)	14:50:00 PM
Analyzer make/model	TEI 43C	Analyzer serial #	609716239

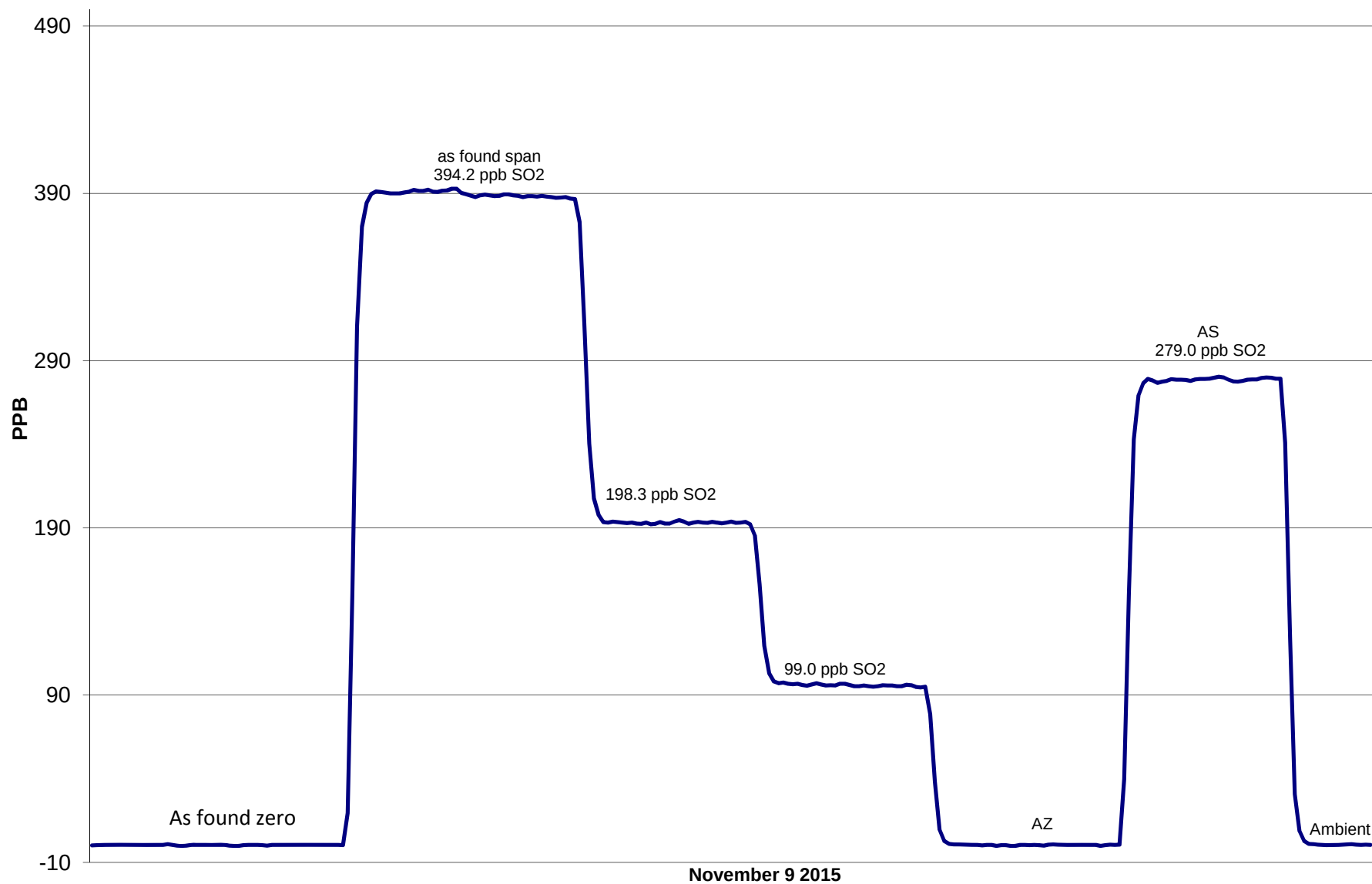
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.5	N/A	Correlation Coefficient	0.999940
394.2	388.9	1.0134		
197.9	193.2	1.0243		
98.8	95.7	1.0329	Slope	1.013327
			Intercept	0.884280

SO2 Calibration Curve



SO2 Calibration



Calibration Report



Parameter H2S
Air Monitoring Network

PAZA

Station Information

Calibration Date	November 9 2015	Previous Calibration	October 22 2015
Station Number	6	Station Location	Valleyview
Reason:	Routine	Install	Removal
		Other:	
Start Time (MST)	10:55	End Time (MST)	13:25:00 PM
Barometric Pressure	0.929 atm	Station Temperature	20.5 Deg C
Calibrator	EnviroNics	Serial Number	6586
Cal Gas Concentration	10.32 ppm	Cal Gas Expiry Date	July 03 2016
Gas Cert Reference	LL110781		
DACS make	CR3000	DACS serial No.	5409
DACS voltage range	0 - 5 volt	DACS channel #	9
	<u>Before</u>		<u>After</u>
DACS Scale High	100	DACS slope	100
DACS Scale Low	0	DACS intercept	0
Calculated slope	1.004818	Calculated slope	1.005405
Calculated intercept	-0.425601	Calculated intercept	-0.280188

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

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Back Ground	7.5	ppb	7.5	ppb
Coefficient	0.871		0.871	
Lamp Voltage	791	v	790	v
Chamber Temp	45	c	45	c
Perm Oven Temp	45	c	45	c
Pressure	551.90	mm Hg	550.30	mm Hg
Sample Flow	0.378	ccm	0.378	lpm
Lamp Intensity	91	%	91	%

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
4997	39.91	81.8	81.7	1.0003
4997	19.94	41.0	40.8	1.0041
6995	9.97	14.7	14.7	0.9962
4997	9.97		2.8	Sox Test
4997	0.00	0.0	0.5	As found zero
4997	39.93	81.8	81.7	As found span
Average Correction Factor				1.0002

Calculated value of As Found Response: 81.20 ppm Percent Change of As Found: 0.7%

	before calibration		after calibration	
Auto zero	0.7	ppm	0.5	ppm
Auto span	66.8	ppm	67.1	ppm

Notes: No adjustment made
Sox scrubber test performed

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter H2S

Air Monitoring Network PAZA



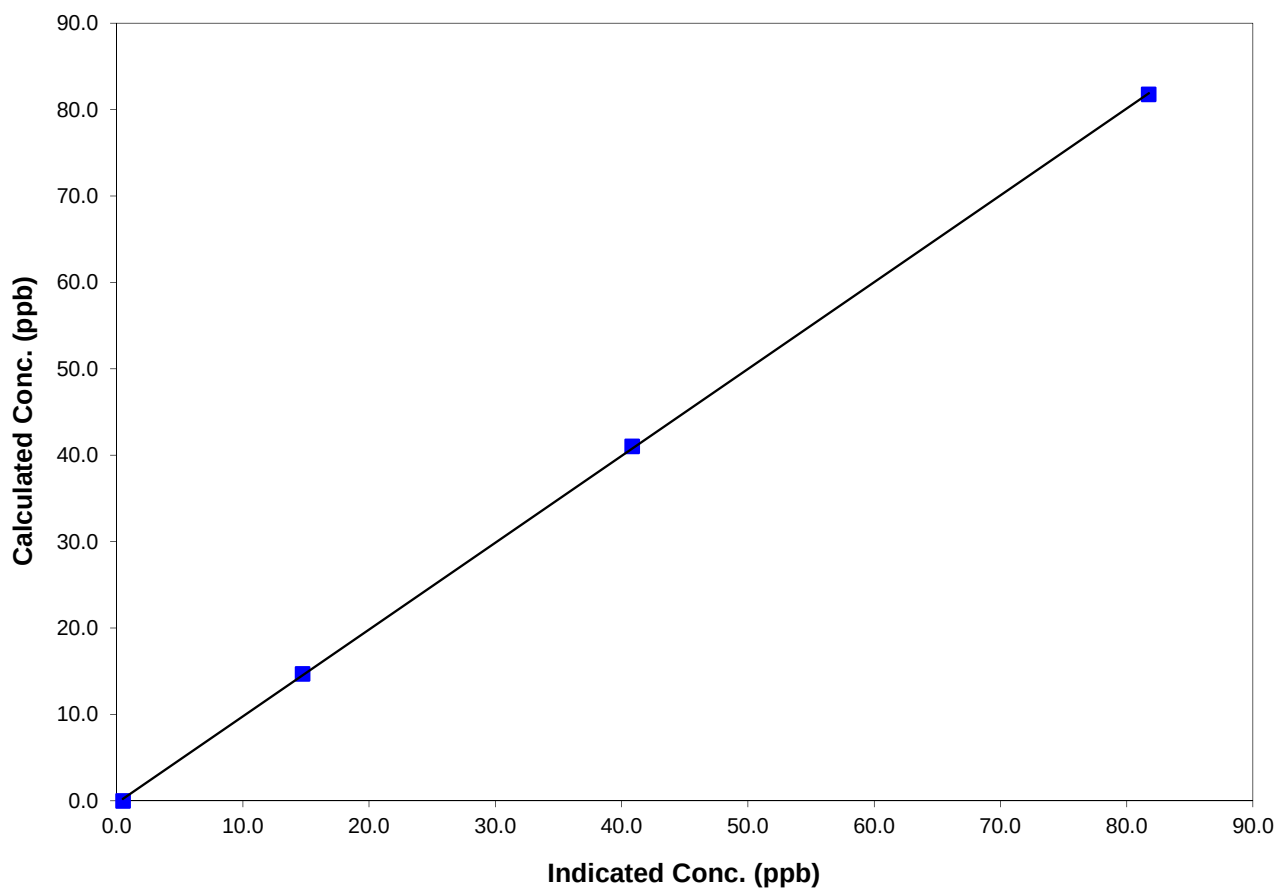
Station Information

Calibration Date	November 9 2015	Previous Calibration	October 22 2015
Station Number	6	Station Location	Valleyview
Start Time (MST)	10:55	End Time (MST)	13:25:00 PM
Analyzer make/model	TEI Model 43i - APSCB	Analyzer serial #	701120010

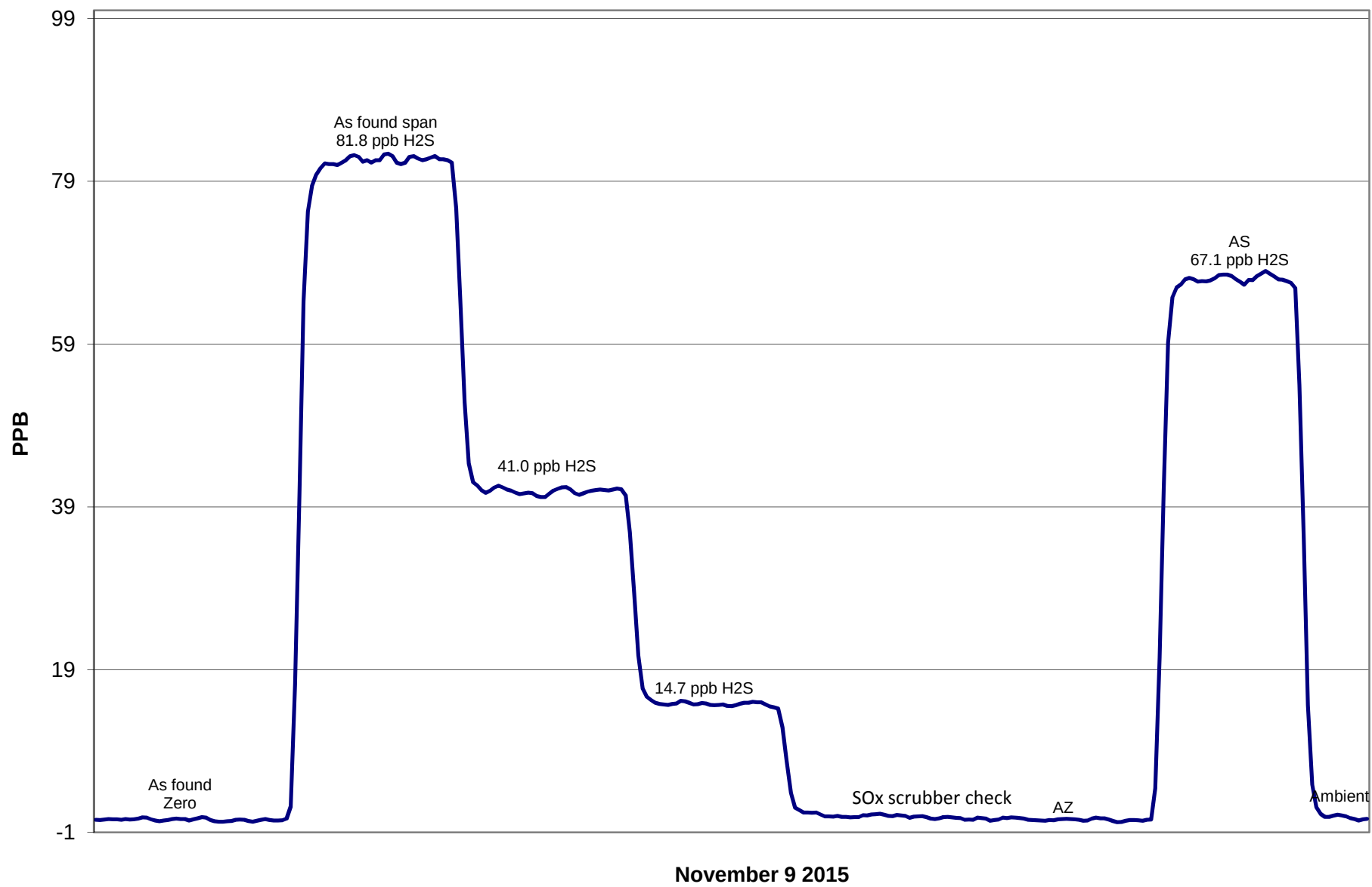
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.5	N/A	Correlation Coefficient	0.999962
81.8	81.7	1.0003		
41.0	40.8	1.0041		
14.7	14.7	0.9962	Slope	1.005405
			Intercept	-0.280188

H2S Calibration Curve



H2S Calibration



Calibration Report

Parameter SO₂

Air Monitoring Network PAZA



Station Information

Calibration Date	November 26, 2015	Previous Calibration	October 21, 2015
Station Number	1	Station Location	Falher
Reason:	Routine	Install	Removal
			Other:
Start Time (MST)	12:40	End Time (MST)	14:45:00 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
	Before		After
Calculated slope	0.996489	Calculated slope	0.994073
Calculated intercept	0.328046	Calculated intercept	-0.080650
Analyzer make	Teco 43i	Analyzer serial #	1207452008

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	6.5		6.5	
coefficient	0.905		0.905	
Lamp Voltage	857	volts	857	volts
Chamber Temp	44.9	Deg C	45	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	685.6	mm Hg	683.4	mm Hg
Sample Flow	0.407	ccm	0.407	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	0.8	N/A
4995	39.93	394.2	396.9	0.9930
4995	19.96	197.8	198.8	0.9952
4995	9.97	99.0	98.9	1.0010
4995	0.0	0.0	0.8	As Found Zero
4995	39.93	394.2	396.9	As Found Span
Average Correction Factor				0.9964

Calculated value of As Found Response: 395.047 ppm Percent Change of As Found: **-0.2%**

	before calibration		after calibration	
Auto zero	0.7	ppm	0.9	ppm
Auto span	356.1	ppm	352.9	ppm

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



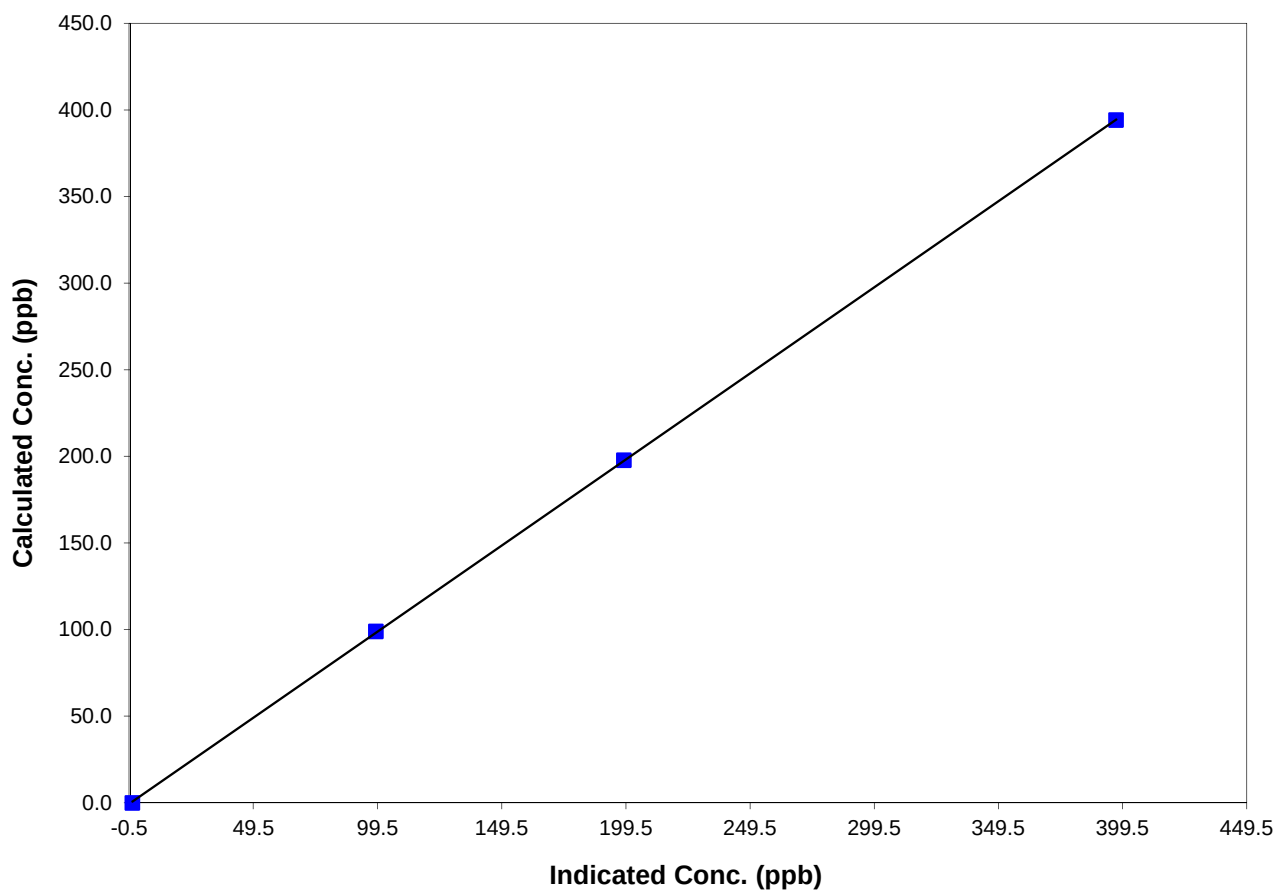
Station Information

Calibration Date	November 26, 2015	Previous Calibration	October 21, 2015
Station Number	1	Station Location	Falher
Start Time (MST)	12:40	End Time (MST)	14:45:00 PM
Analyzer make/model	Teco 43i	Analyzer serial #	1207452008

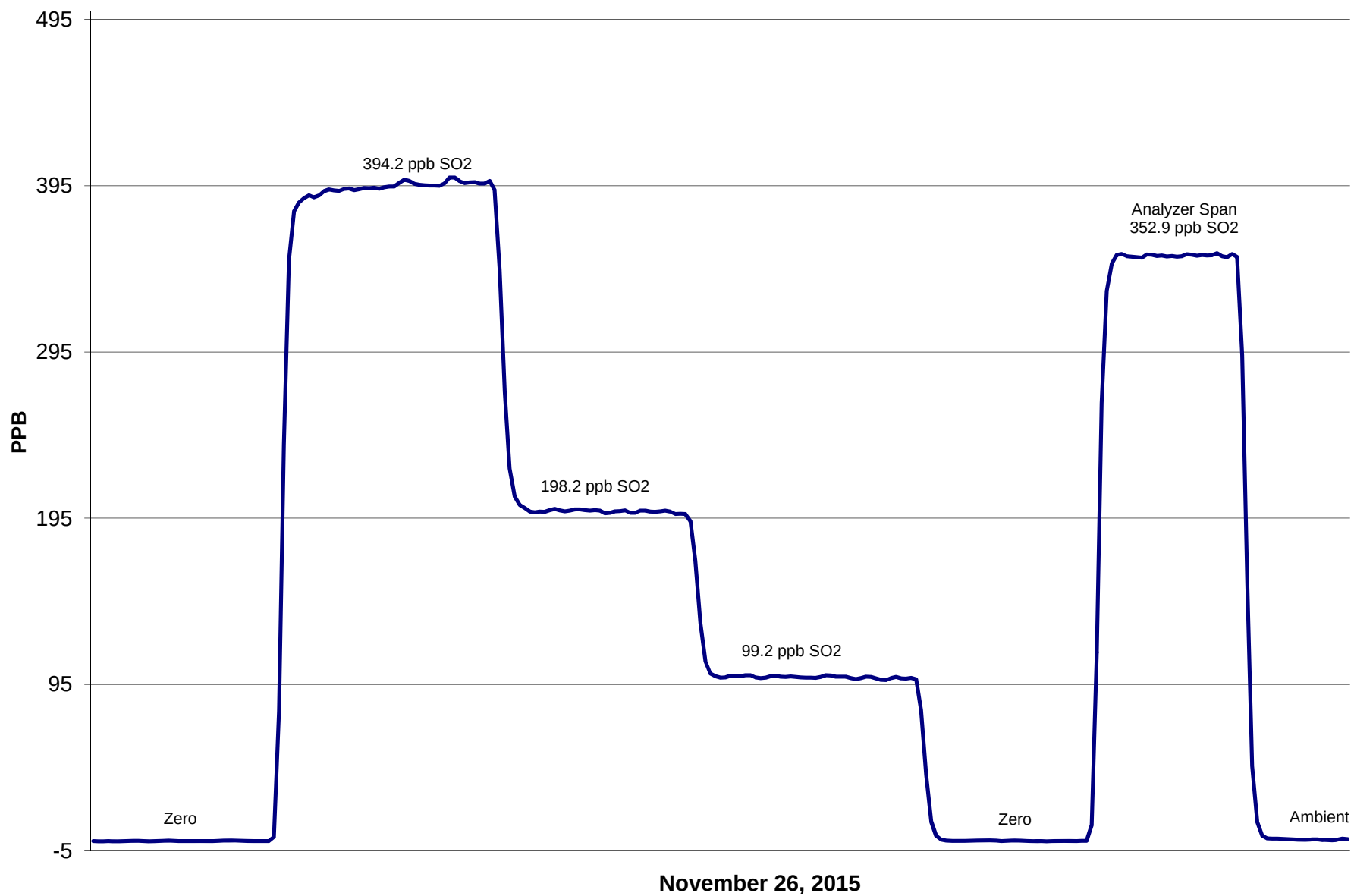
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.8	N/A	Correlation Coefficient	0.999984
394.2	396.9	0.9930		
197.8	198.8	0.9952		
99.0	98.9	1.0010	Slope	0.994073
			Intercept	-0.080650

SO2 Calibration Curve



SO2 Calibration



Calibration Report



Parameter H2S

Air Monitoring Network PAZA

Station Information

Calibration Date	November 26, 2015	Previous Calibration	October 21, 2015
Station Number	1	Station Location	Falher
Reason:	Routine	Install	Removal
		Other:	
Start Time (MST)	11:10	End Time (MST)	13:40:00 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	0.988674	Calculated slope	0.980439
Calculated intercept	0.118233	Calculated intercept	-0.065826
Analyzer make	Thermo 450i	Analyzer serial #	1207452006

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	15.3	ppb	15.3	ppb
coefficient	1.109		1.109	
Lamp Voltage	805	volts	805	volts
Chamber Temp	45	Deg C	45	Deg C
Perm Gas Temp	44.99	Deg C	45	Deg C
Pressure	523.8	mm Hg	522.1	mm Hg
Sample Flow	0.871	lpm	0.872	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	0.1	N/A
4995	39.93	81.84	83.6	0.9788
4995	19.96	41.07	41.8	0.9825
6994	9.97	14.69	15.1	0.9756
4995	0.00	0.00	0.1	As Found Zero
4995	39.93	81.84	83.6	As Found Span
Average Correction Factor				0.9790

Calculated value of As Found Response: 82.65 ppm Percent Change of As Found: **-1.0%**

	before calibration		after calibration	
Auto zero	-0.1	ppm	0.3	ppm
Auto span	56.6	ppm	56.1	ppm

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

Calibration Summary

Parameter H2S

Air Monitoring Network PAZA



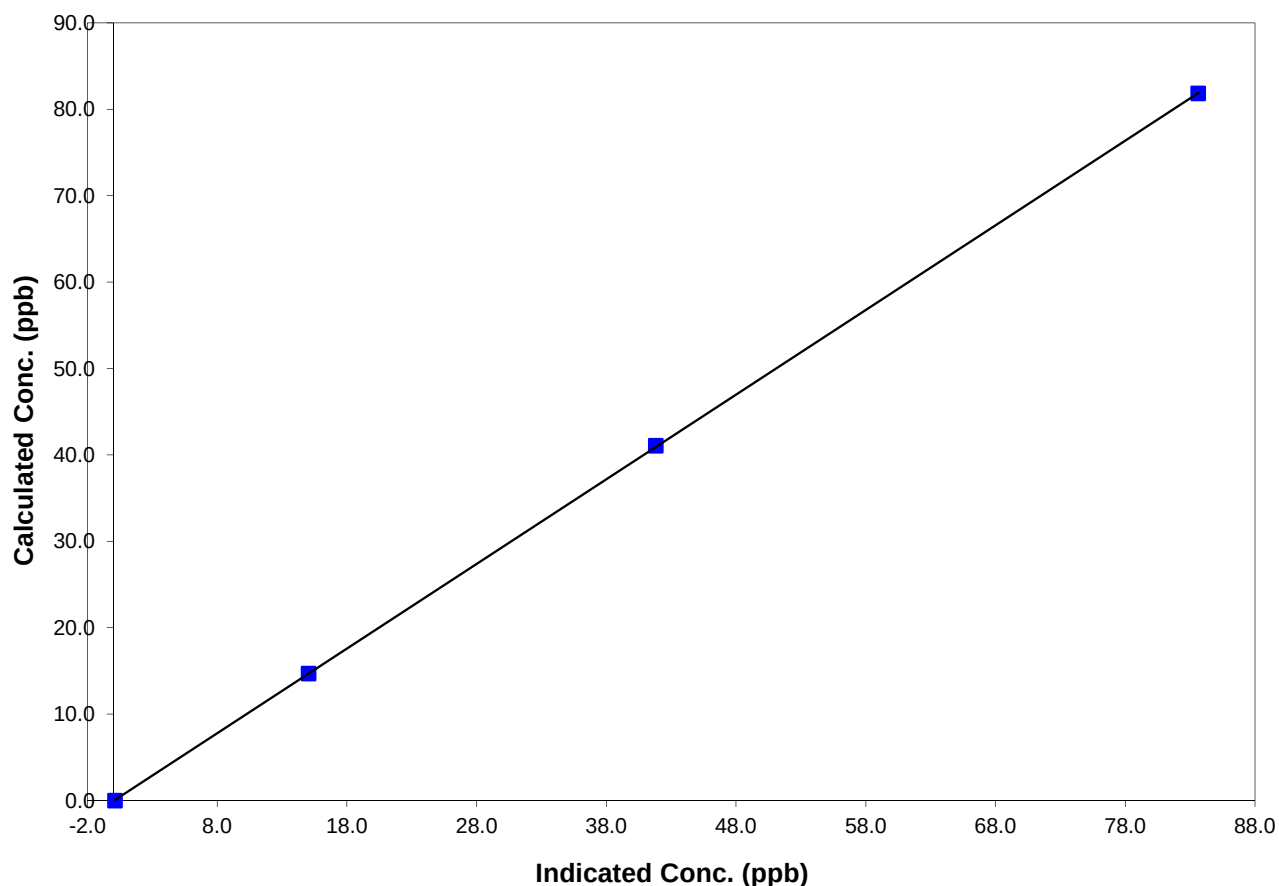
Station Information

Calibration Date	November 26, 2015	Previous Calibration	October 21, 2015
Station Number	1	Station Location	Falher
Start Time (MST)	11:10	End Time (MST)	13:40:00 PM
Analyzer make/model	Thermo 450i	Analyzer serial #	1207452006

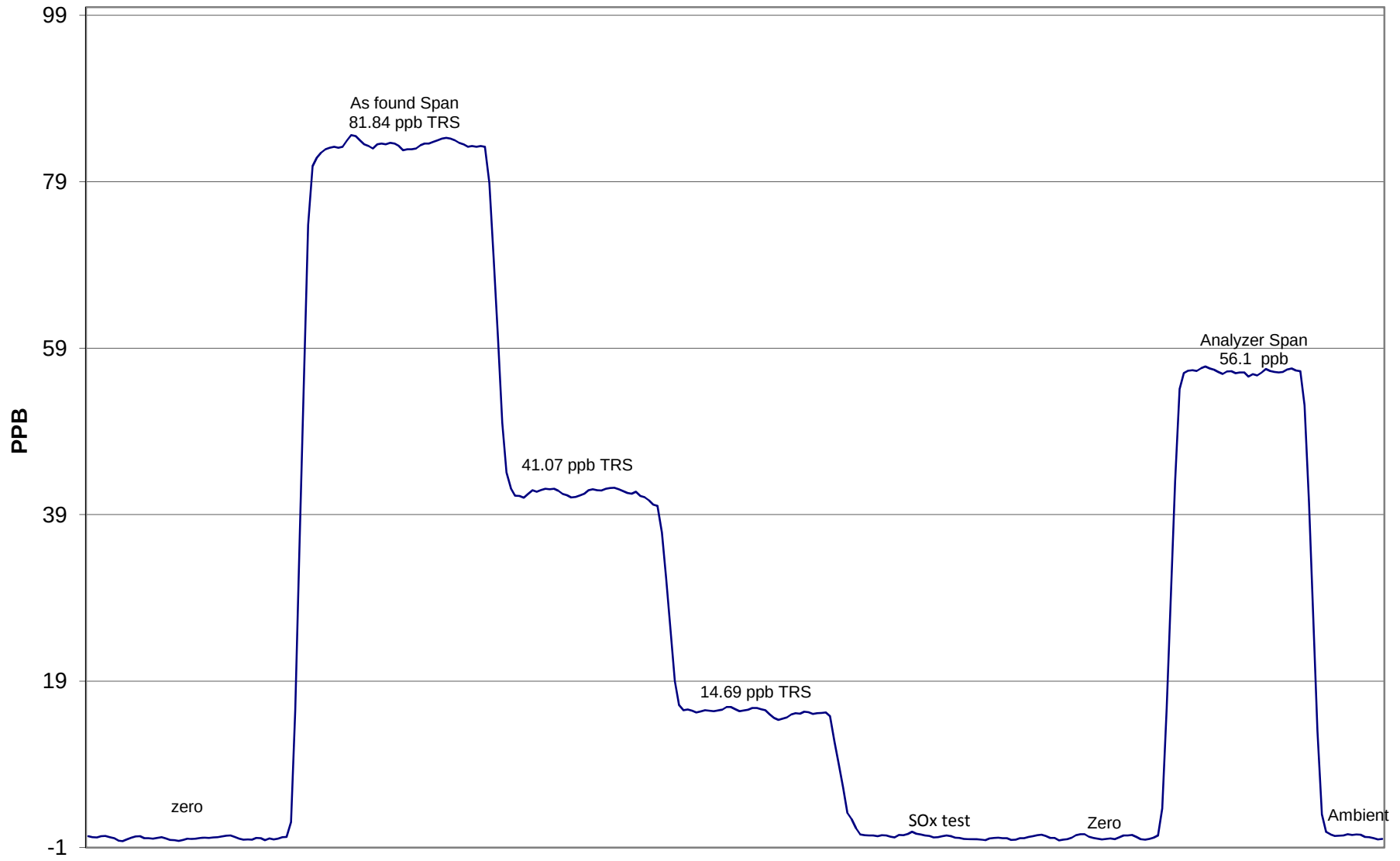
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A	Correlation Coefficient	0.999991
81.8	83.6	0.9788		
41.1	41.8	0.9825		
14.7	15.1	0.9756	Slope	0.980439
			Intercept	-0.065826

TRS Calibration Curve



H2S Calibration



November 26, 2015