



# **Peace Airshed Zone Association**

## **Ambient Air Monitoring Network Summary**

**Continuous Ambient Air Quality Monitoring Program  
Monthly Report  
December 2017**

January 31, 2018

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

**RE: Peace Airshed Zone Association (PAZA) – December 2017 Ambient Air Report**

Enclosed is the PAZA Ambient Monitoring Network Report for the month of December 2017.

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
	Teepee Creek	SE-2-074-04-W6	00001635-02-00

<b>Company</b>	<b>Facility</b>	<b>LSD</b>	<b>EPEA Approval Number</b>
	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
	Pouce Coupe	16-07-078-11-W6	00000614-01-00

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

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

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

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

**Henry Pirker Station:**

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

**Evergreen Park Station:**

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

**Smoky Heights Station:**

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

**Beaverlodge Station:**

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

**Valleyview Station:**

- ◆ The measured ambient air quality was within the AAAQO for the Valleyview station.
- ◆ All analyzers and meteorological sensors at the Valleyview station had an operational uptime greater than 90% for the month of December, with the exception of the relative humidity sensor which returned an uptime of 26.2% due to instrument malfunctioning.

**Donnelly Station:**

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

**Rycroft-Portable Station:**

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

**Passive Monitoring - 27 Stations throughout the PAZA zone:**

There were six duplicate sites sampled in the month of December: Wembley and Gold Creek (SO<sub>2</sub>), Bay Tree (O<sub>3</sub>), Wembley and Pinto Creek (NO<sub>2</sub>), and Girouxville 4 (H<sub>2</sub>S). The passive sample analyses were performed by MAXXAM Analytics Inc.

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

- Monthly average concentrations for SO<sub>2</sub> passives ranged from 0.2 ppb to 1.4 ppb, with a mean of 0.4 ppb.
- Monthly average concentrations for NO<sub>2</sub> passives ranged from 0.6 ppb to 12.5 ppb, with a mean of 2.6 ppb.
- Monthly average concentrations for O<sub>3</sub> passives ranged from 37.1 ppb to 39.9 ppb, with a mean of 38.5 ppb.
- Monthly average concentrations for H<sub>2</sub>S passives ranged from 0.1 ppb to 0.3 ppb, with a mean of 0.2 ppb.

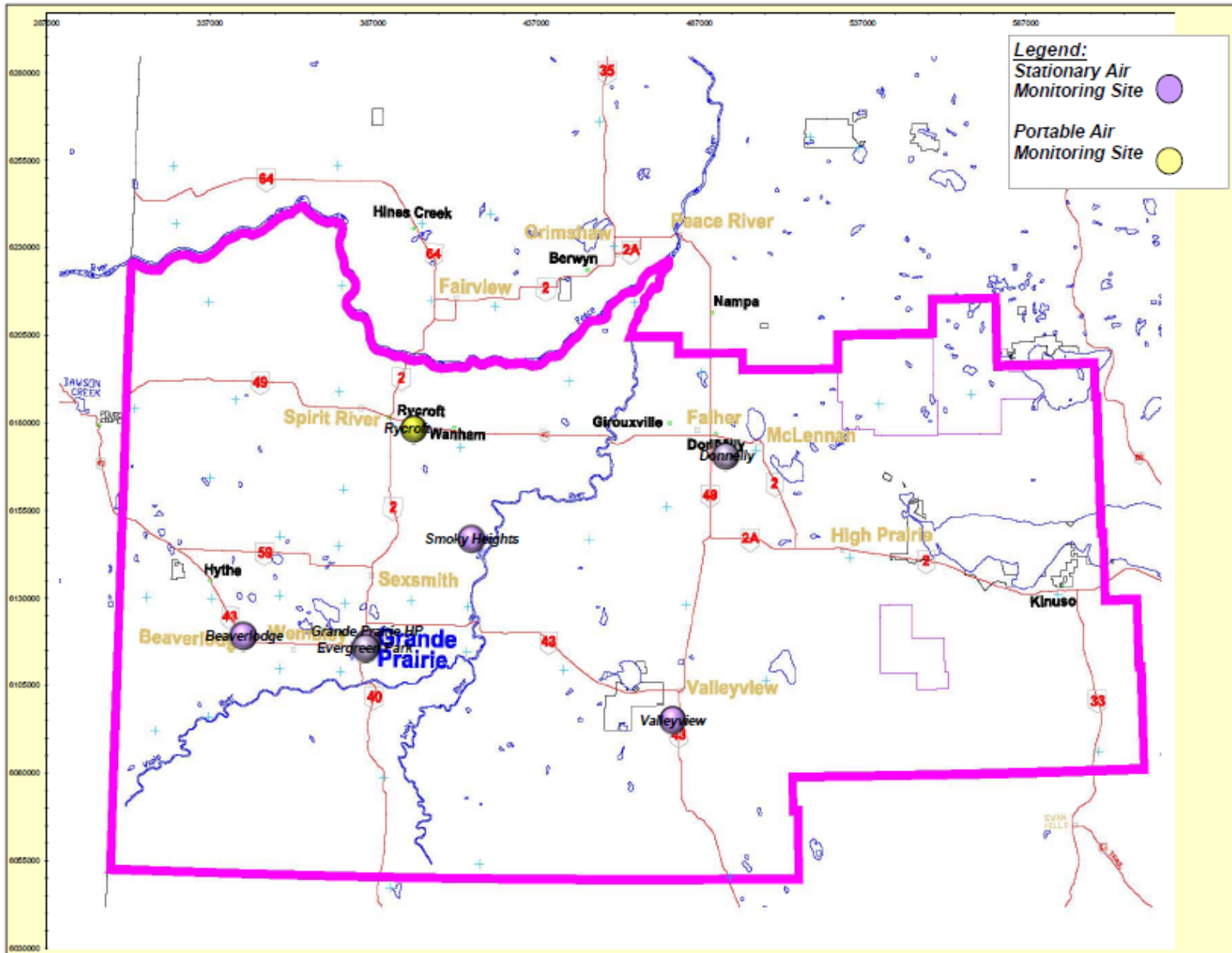
If you have any questions or concerns, please contact Patrick Andersen at 403.505.1041 or the PAZA office at 780.833.4343.

On Behalf of the  
Peace Airshed Zone Association



Patrick Andersen, B.Sc.  
Program Manager

# Location of PAZA Continuous Monitoring Stations



## PAZA Monthly Continuous Data Summary

Dec-2017 Peace Airshed Zone Association							Maximum Recorded Values					
Pollutant (units)	Objectives		Station	Monthly Average	Exceedence		1-hr		24-hr / 8-hr			
	1-hr	24-hr			1-hr	24-hr	Conc	Day	Conc	Day		
SO <sub>2</sub> (ppb)	172	48	Henry Pirker	0.5	0	0	8.2	Dec-31 20:00	2.6	Dec-31	99.7%	Dec-05
SO <sub>2</sub> (ppb)	172	48	Evergreen Park	0.2	0	0	11.7	Dec-31 16:00	1.3	Dec-31	100.0%	Dec-18
SO <sub>2</sub> (ppb)	172	48	Smoky Heights	0.9	0	0	10.9	Dec-31 23:00	2.8	Dec-31	100.0%	Dec-21
SO <sub>2</sub> (ppb)	172	48	Beaverlodge	0.2	0	0	3.3	Dec-19 12:00	1.3	Dec-30	100.0%	Dec-14
SO <sub>2</sub> (ppb)	172	48	Valleyview	1.0	0	0	16.0	Dec-26 16:00	4.5	Dec-22	100.0%	Dec-21
SO <sub>2</sub> (ppb)	172	48	Donnelly	0.3	0	0	1.8	Dec-31 08:00	1.0	Dec-31	99.6%	Dec-19
SO <sub>2</sub> (ppb)	172	48	Rycroft-Portable	0.4	0	0	6.1	Dec-04 22:00	1.2	Dec-20	100.0%	Dec-07
NO (ppb)			Henry Pirker	12.3	-	-	181.9	Dec-07 20:00	65.1	Dec-02	99.7%	Dec-05
NO <sub>2</sub> (ppb)	159	106	Henry Pirker	17.2	0	0	62.3	Dec-07 20:00	37.7	Dec-02	99.7%	Dec-05
NO <sub>x</sub> (ppb)			Henry Pirker	29.7	-	-	244.8	Dec-07 20:00	103.2	Dec-02	99.7%	Dec-05
NO (ppb)			Beaverlodge	0.6	-	-	18.5	Dec-31 12:00	5.2	Dec-31	100.0%	Dec-14
NO <sub>2</sub> (ppb)	159	106	Beaverlodge	4.1	0	0	28.4	Dec-31 08:00	17.6	Dec-31	100.0%	Dec-14
NO <sub>x</sub> (ppb)			Beaverlodge	4.7	-	-	35.9	Dec-31 11:00	22.8	Dec-31	100.0%	Dec-14
NO (ppb)			Rycroft-Portable	0.3	-	-	18.1	Dec-02 22:00	1.0	Dec-02	100.0%	Dec-07
NO <sub>2</sub> (ppb)	159	106	Rycroft-Portable	2.8	0	0	23.4	Dec-31 00:00	8.9	Dec-31	100.0%	Dec-07
NO <sub>x</sub> (ppb)			Rycroft-Portable	3.1	-	-	26.7	Dec-31 00:00	9.9	Dec-31	100.0%	Dec-07
O <sub>3</sub> (ppb)	82		Henry Pirker	21.1	0	-	40.0	Dec-07 13:00	34.9	Dec-23	99.7%	Dec-05
O <sub>3</sub> (ppb) - 8-hr			Henry Pirker		0				37.5	Dec-07		-
O <sub>3</sub> (ppb)	82		Beaverlodge	33.3	0	-	44.8	Dec-07 18:00	42.8	Dec-07	100.0%	Dec-14
O <sub>3</sub> (ppb) - 8-hr			Beaverlodge		0				43.4	Dec-07		-
O <sub>3</sub> (ppb)	82		Rycroft-Portable	34.3	0	-	46.7	Dec-07 09:00	43.2	Dec-07	100.0%	Dec-07
O <sub>3</sub> (ppb) - 8-hr			Rycroft-Portable		0				45.6	Dec-07		-
CO (ppm)	13		Henry Pirker	0.28	0	-	1.9	Dec-10 00:00	0.6	Dec-02	99.7%	Dec-06
CO (ppm) - 8-hr	5		Henry Pirker		0				1.1	Dec-10		-



## PAZA Monthly Continuous Data Summary – continued

Dec-2017 Peace Airshed Zone Association							Maximum Recorded Values					
							1-hr		24-hr / 8-hr			
THC (ppm)			Henry Pirker	1.8	-	-	5.4	Dec-22 08:00	2.2	Dec-02	99.6%	Dec-06
CH <sub>4</sub> (ppm)			Henry Pirker	1.8	-	-	5.4	Dec-22 08:00	2.2	Dec-31	99.6%	Dec-06
NMHC (ppm)			Henry Pirker	0.0	-	-	0.8	Dec-02 22:00	0.1	Dec-02	99.6%	Dec-06
THC (ppm)			Rycroft-Portable	1.9	-	-	2.2	Dec-31 00:00	2.1	Dec-31	99.9%	Dec-04
CH <sub>4</sub> (ppm)			Rycroft-Portable	1.9	-	-	2.2	Dec-31 00:00	2.1	Dec-31	99.9%	Dec-04
NMHC (ppm)			Rycroft-Portable	0.0	-	-	0.0	Dec-26 00:00	0.0	Dec-26	99.9%	Dec-04
TRS (ppb)			Henry Pirker	0.2	-	-	1.1	Dec-10 00:00	0.4	Dec-02	99.7%	Dec-06
TRS (ppb)			Evergreen Park	0.3	-	-	2.0	Dec-02 15:00	0.5	Dec-31	100.0%	Dec-18
TRS (ppb)			Smoky Heights	0.4	-	-	1.1	Dec-31 13:00	0.7	Dec-31	100.0%	Dec-21
TRS (ppb)			Rycroft-Portable	0.2	-	-	4.3	Dec-27 03:00	0.4	Dec-27	100.0%	Dec-04
H <sub>2</sub> S (ppb)	10	3	Valleyview	0.3	0	0	6.8	Dec-29 23:00	0.7	Dec-30	100.0%	Dec-21
H <sub>2</sub> S (ppb)	10	3	Donnelly	0.1	0	0	0.6	Dec-29 05:00	0.3	Dec-31	99.5%	Dec-19
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	30	Henry Pirker	5.1	0	0	30.5	Dec-02 20:00	14.6	Dec-02	99.7%	Oct-27
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	30	Evergreen Park	2.9	0	0	35.0	Dec-01 04:00	9.4	Dec-01	99.6%	Oct-19
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	30	Smoky Heights	3.8	0	0	49.8	Dec-30 00:00	8.1	Dec-11	99.5%	Oct-20
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	30	Beaverlodge	3.4	0	0	36.8	Dec-20 08:00	7.9	Dec-31	99.5%	Oct-04
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	30	Rycroft-Portable	1.7	0	0	27.5	Dec-19 04:00	7.0	Dec-19	99.6%	Oct-10
RH (%)			Henry Pirker	64.0	-	-	84.6	Dec-13 23:00	76.8	Dec-01	100.0%	-
RH (%)			Evergreen Park	68.7	-	-	93.3	Dec-13 22:00	85.7	Dec-01	100.0%	-
RH (%)			Beaverlodge	64.9	-	-	91.0	Dec-19 19:00	84.7	Dec-19	100.0%	-
RH (%)			Valleyview	41.3	-	-	67.8	Dec-25 00:00	58.9	Dec-24	26.2%	-
SR (W/m <sup>2</sup> )			Henry Pirker	26.8	-	-	252.3	Dec-07 13:00	42.2	Dec-03	100.0%	-
Temp (°C)			Henry Pirker	-8.1	-	-	8.4	Dec-09 16:00	3.7	Dec-07	100.0%	-
Temp (°C)			Evergreen Park	-8.5	-	-	9.6	Dec-08 15:00	4.4	Dec-12	100.0%	-
Temp (°C)			Smoky Heights	-9.2	-	-	6.4	Dec-10 07:00	2.8	Dec-07	100.0%	-
Temp (°C)			Beaverlodge	-6.8	-	-	9.5	Dec-09 15:00	6.3	Dec-09	100.0%	-
Temp (°C)			Valleyview	-8.7	-	-	9.7	Dec-12 09:00	4.1	Dec-12	100.0%	-
Temp (°C)			Donnelly	-8.6	-	-	8.2	Dec-09 15:00	3.9	Dec-09	100.0%	-
Temp (°C)			Rycroft-Portable	-7.8	-	-	8.9	Dec-11 16:00	4.2	Dec-10	100.0%	-

## PAZA Monthly Continuous Data Summary – continued

Dec-2017 Peace Airshed Zone Association							Maximum Recorded Values					
							1-hr		24-hr / 8-hr			
WSPD s (km/hr)			Henry Pirker	8.1	-	-	27.0	Dec-04 22:00	16.8	Dec-15	98.8%	-
WSPD s (km/hr)			Evergreen Park	11.2	-	-	54.0	Dec-12 08:00	31.1	Dec-15	98.0%	-
WSPD s (km/hr)			Smoky Heights	14.9	-	-	42.0	Dec-04 17:00	26.2	Dec-17	98.5%	-
WSPD s (km/hr)			Beaverlodge	10.2	-	-	46.0	Dec-12 07:00	25.4	Dec-15	100.0%	-
WSPD s (km/hr)			Valleyview	5.3	-	-	23.0	Dec-17 15:00	14.3	Dec-15	100.0%	-
WSPD s (km/hr)			Donnelly	13.0	-	-	40.0	Dec-17 06:00	24.3	Dec-15	100.0%	-
WSPD s (km/hr)			Rycroft-Portable	11.1	-	-	47.0	Dec-04 22:00	24.8	Dec-23	100.0%	-
WSPD v (km/hr)			Henry Pirker	5.0	-	-	27.0	Dec-04 22:00	16.5	Dec-15	98.8%	-
WSPD v (km/hr)			Evergreen Park	8.2	-	-	53.0	Dec-12 08:00	30.8	Dec-15	98.0%	-
WSPD v (km/hr)			Smoky Heights	10.7	-	-	42.0	Dec-04 17:00	25.5	Dec-17	98.5%	-
WSPD v (km/hr)			Beaverlodge	6.6	-	-	46.0	Dec-12 07:00	25.1	Dec-15	100.0%	-
WSPD v (km/hr)			Valleyview	3.1	-	-	22.0	Dec-17 15:00	13.6	Dec-15	100.0%	-
WSPD v (km/hr)			Donnelly	8.7	-	-	40.0	Dec-17 06:00	23.8	Dec-15	100.0%	-
WSPD v (km/hr)			Rycroft-Portable	6.9	-	-	47.0	Dec-04 22:00	24.2	Dec-23	100.0%	-
WDIR			Henry Pirker	W	-	-	-	-	-	-	98.8%	-
WDIR			Evergreen Park	WSW	-	-	-	-	-	-	98.0%	-
WDIR			Smoky Heights	WSW	-	-	-	-	-	-	98.5%	-
WDIR			Beaverlodge	W	-	-	-	-	-	-	100.0%	-
WDIR			Valleyview	W	-	-	-	-	-	-	100.0%	-
WDIR			Donnelly	SW	-	-	-	-	-	-	100.0%	-
WDIR			Rycroft-Portable	SW	-	-	-	-	-	-	100.0%	-

PAZA

Henry Pirker Station

Monthly Summary Tables, Graphs and  
Roses

## Hourly Averages

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Henry Pirker - December 2017

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0		Hours in Service: 744	
Maximum Value: 8.2 ppb on Dec 31 20:00		Maximum Daily Average: 2.6 ppb on Dec 31	
Minimum Value: 0 ppb on Dec 6 11:00		Hours of Data: 709	
Maximum Diurnal Average: 0.7 ppb at hour 20		Hours of Missing Data: 35	
Monthly Average: 0.46 ppb		Hours of Calibration: 33	
Minimum Daily Average: 0.1 ppb on Dec 19		Percent Operational Time: 99.7	
Minimum Diurnal Average: 0.3 ppb at hour 10		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.1 Median = 0.3 Q <sub>3</sub> = 0.5 P <sub>90</sub> = 0.9 P <sub>99</sub> = 4.8	

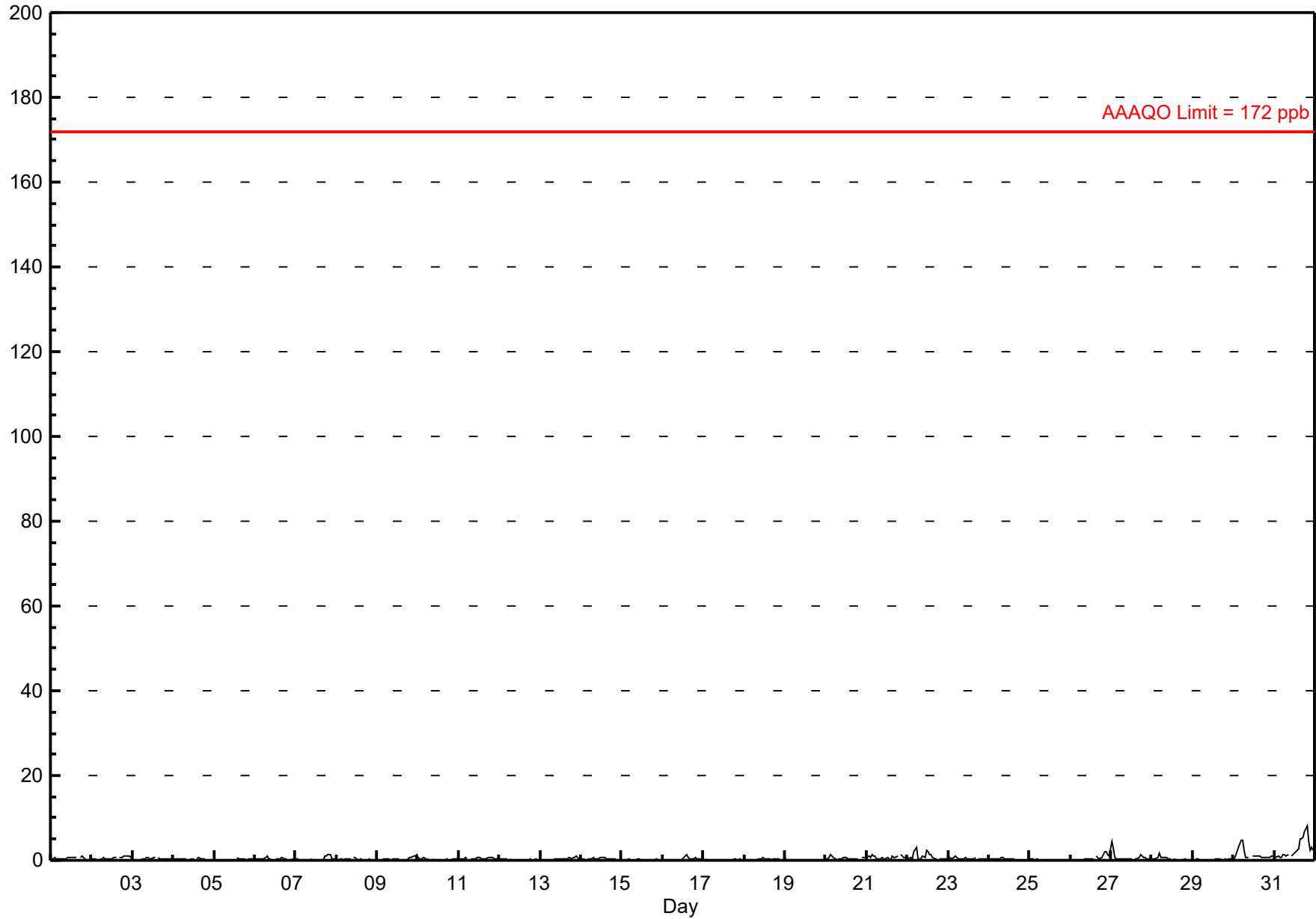
  

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	A	1	1	1	0	0	0	0	0.5	1.1	
2-Dec	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	A	1	1	1	1	1	1	1	1	0.5	1.0	
3-Dec	0	0	0	0	0	0	0	0	1	1	0	0	1	1	A	1	0	0	0	0	0	0	0	0	0.3	0.7	
4-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	1	0	0	0	0	0	0	0	0	0.2	0.6	
5-Dec	0	0	0	0	0	0	0	0	0	P	P	C	C	1	0	0	0	0	0	0	0	0	0	0	0.2	0.6	
6-Dec	0	0	0	0	0	0	1	1	0	0	0	A	0	0	0	0	1	0	0	0	0	0	0	0	0.3	0.9	
7-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	1	1	1	1	0	0	0	0.4	1.4	
8-Dec	0	0	0	0	0	0	0	0	0	0	0	A	1	1	0	0	0	0	0	0	0	0	0	0	0.2	0.7	
9-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	1	1	1	1	0.3	1.2	
10-Dec	1	0	0	1	0	0	0	A	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.7	
11-Dec	0	0	0	0	1	0	A	0	0	0	0	1	1	0	0	0	0	1	1	1	1	0	0	0	0.4	0.8	
12-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
13-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	0.4	0.9	
14-Dec	0	0	0	A	0	0	0	1	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0.4	0.8	
15-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	
16-Dec	0	A	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0.4	1.3	
17-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	
18-Dec	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5	
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
20-Dec	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	A	A	1	1	0.5	1.3	
21-Dec	1	1	1	1	1	1	0	0	1	1	0	0	1	0	0	1	1	1	1	A	1	1	1	1	0.7	1.4	
22-Dec	1	0	1	0	2	3	0	0	0	1	1	3	2	1	1	1	0	0	A	0	0	0	0	0	0.9	3.1	
23-Dec	0	1	0	1	1	1	0	0	0	0	1	0	0	0	0	0	1	A	0	0	0	0	0	0	0.4	0.9	
24-Dec	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.3	0.7	
25-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.1	0.3	
26-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	1	1	0	1	1	2	2	1	1	0.6	2.1	
27-Dec	4	3	1	0	0	0	0	0	0	0	0	0	0	A	0	0	1	1	1	1	1	0	0	0	0.7	4.5	
28-Dec	0	0	0	1	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.6	
29-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.2	0.2	
30-Dec	0	1	2	3	5	5	2	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1.4	4.9	
31-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	2	2	3	5	5	6	7	8	4	2	3	2	2.6	8.2
	0.4	0.4	0.4	0.4	0.6	0.5	0.4	0.3	0.3	0.3	0.3	0.5	0.5	0.4	0.4	0.6	0.5	0.5	0.6	0.7	0.6	0.5	0.4	0.4		Diurnal Average	
	4.5	2.6	2.1	3.0	4.9	4.8	2.3	1.1	1.5	1.0	0.9	2.5	2.1	2.2	2.7	5.0	5.0	5.5	6.7	8.2	4.3	2.4	2.9	2.4		Diurnal Maximum	

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

### Hourly Averages

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Henry Pirker - December 2017



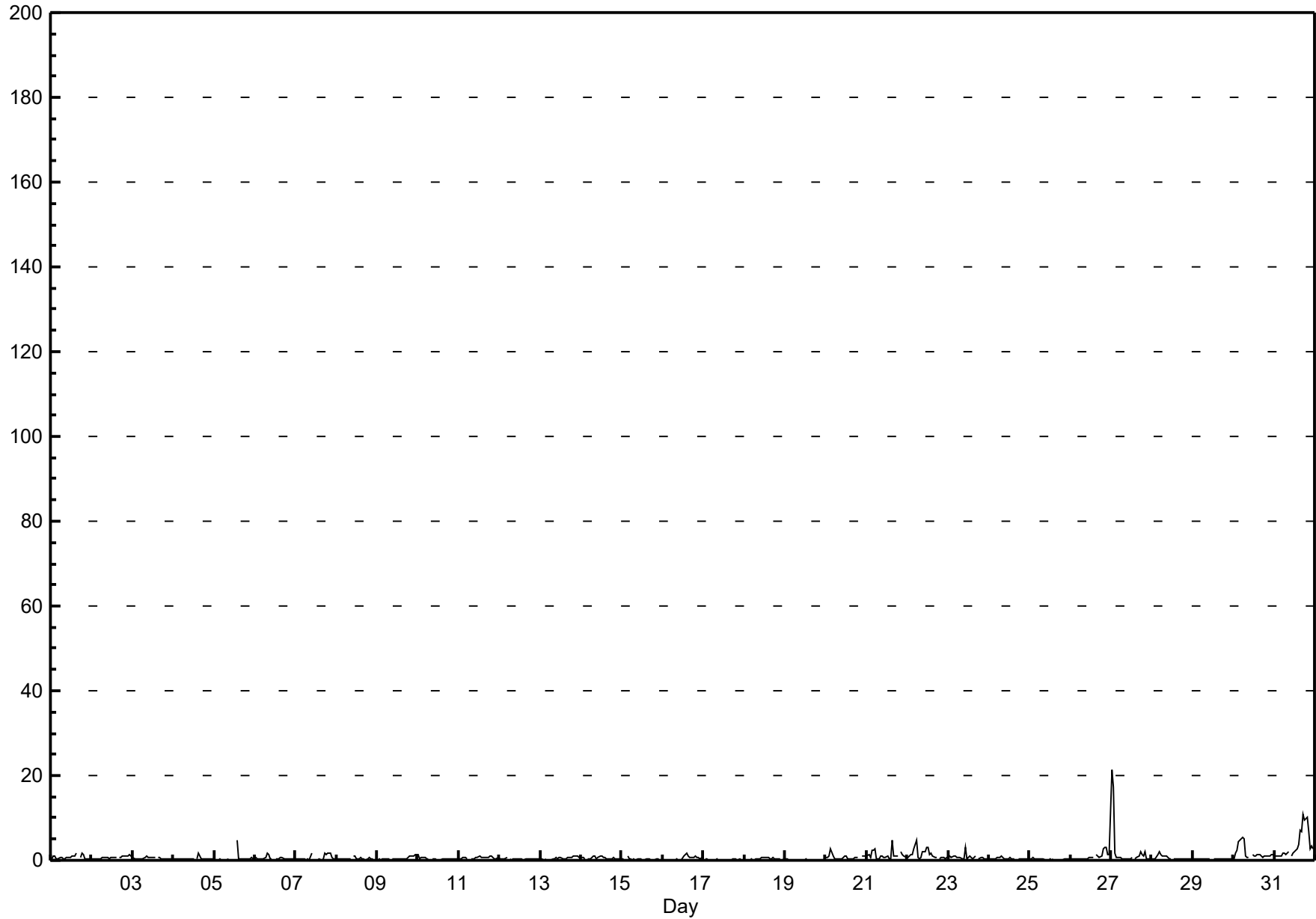
## Hourly Maximums

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Henry Pirker - December 2017

Maximum Value: 21.5 ppb on Dec 27 01:00		Maximum Daily Average: 3.6 ppb on Dec 31		Hours in Service: 744																						
Minimum Value: 0 ppb on Dec 25 17:00		Minimum Daily Average: 0.2 ppb on Dec 19		Hours of Data: 709																						
Maximum Diurnal Average: 1.2 ppb at hour 1		Minimum Diurnal Average: 0.5 ppb at hour 8		Hours of Missing Data: 35																						
Monthly Average: 0.74 ppb		Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.2 Q <sub>1</sub> = 0.3 Median = 0.4 Q <sub>3</sub> = 0.7 P <sub>90</sub> = 1.3 P <sub>99</sub> = 6.9		Hours of Calibration: 33																						
				Percent Operational Time: 99.7																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	1	1	0	0	1	1	0	0	1	1	1	1	1	1	2	A	1	2	1	0	0	0	0	0.8	1.8
2-Dec	0	0	0	0	0	0	1	1	1	1	0	1	1	1	1	A	1	1	1	1	1	1	1	1	0.7	1.3
3-Dec	1	0	0	0	0	0	0	1	1	1	1	1	1	1	A	1	1	0	0	0	0	0	0	0.5	0.9	
4-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	2	0	0	0	0	0	0	0	0.4	1.6	
5-Dec	0	0	0	0	0	0	0	0	0	P	P	C	C	5	0	0	0	0	0	0	0	0	1	0.5	4.8	
6-Dec	1	0	0	0	0	0	1	2	1	0	0	A	0	0	0	1	1	0	0	0	0	0	0	0.5	1.6	
7-Dec	0	0	0	0	0	0	0	0	0	2	A	0	0	0	0	0	0	2	1	2	2	1	0	0.6	1.8	
8-Dec	0	0	0	0	0	0	0	0	0	0	A	1	1	0	0	1	0	0	0	1	0	0	0	0.4	1.0	
9-Dec	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0.5	1.4	
10-Dec	1	0	1	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.4	
11-Dec	0	0	1	1	1	0	A	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0.6	1.0	
12-Dec	0	0	0	0	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6	
13-Dec	0	0	0	0	A	0	0	0	0	1	0	1	1	0	0	1	1	1	1	1	1	1	1	0.5	1.0	
14-Dec	1	1	0	A	0	0	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0	0	0	0.5	1.1	
15-Dec	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.9	
16-Dec	0	A	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	1	1	1	1	1	0	0.5	1.6	
17-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
18-Dec	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0	0	0	0	0	0.4	0.7	
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.2	0.3	
20-Dec	1	1	1	3	1	0	0	0	0	0	1	1	1	0	0	0	0	1	1	1	A	1	1	0.8	2.7	
21-Dec	1	1	1	2	2	3	0	0	1	1	1	1	1	0	0	5	1	1	1	1	A	2	1	1.3	4.8	
22-Dec	1	1	2	1	3	5	1	0	1	2	2	3	3	1	2	1	1	1	A	0	1	1	0	1.4	4.9	
23-Dec	1	1	1	1	1	1	1	1	0	0	3	0	1	1	0	1	1	A	0	1	1	0	0	0.7	3.0	
24-Dec	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0	A	0	0	0	0	0	0	0.4	1.0	
25-Dec	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.2	0.7	
26-Dec	0	0	0	0	0	0	0	0	0	0	0	1	1	1	A	1	1	1	1	3	3	3	1	0.9	3.0	
27-Dec	21	17	2	1	1	1	0	0	0	0	0	1	A	0	1	1	2	1	1	2	0	0	0	2.4	21.5	
28-Dec	0	0	0	1	2	1	1	1	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0.6	1.9	
29-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4	
30-Dec	0	2	2	5	5	5	5	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1.8	5.3	
31-Dec	1	1	1	1	1	2	2	1	2	A	1	2	2	3	4	7	7	11	10	10	7	3	3	3.6	10.8	
		1.2	1.1	0.6	0.7	0.8	0.8	0.6	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.6	1.0	0.7	0.9	0.9	1.0	0.9	0.7	0.6	0.6	Diurnal Average
		21.5	17.2	2.4	4.5	5.2	5.3	5.2	1.6	1.9	2.1	3.0	3.1	3.0	4.8	3.6	7.0	6.8	10.8	9.5	10.1	6.9	3.0	3.5	2.7	Diurnal Maximum
C - Calibration		P - Power Failure						A - Automated Daily Zero Span																		

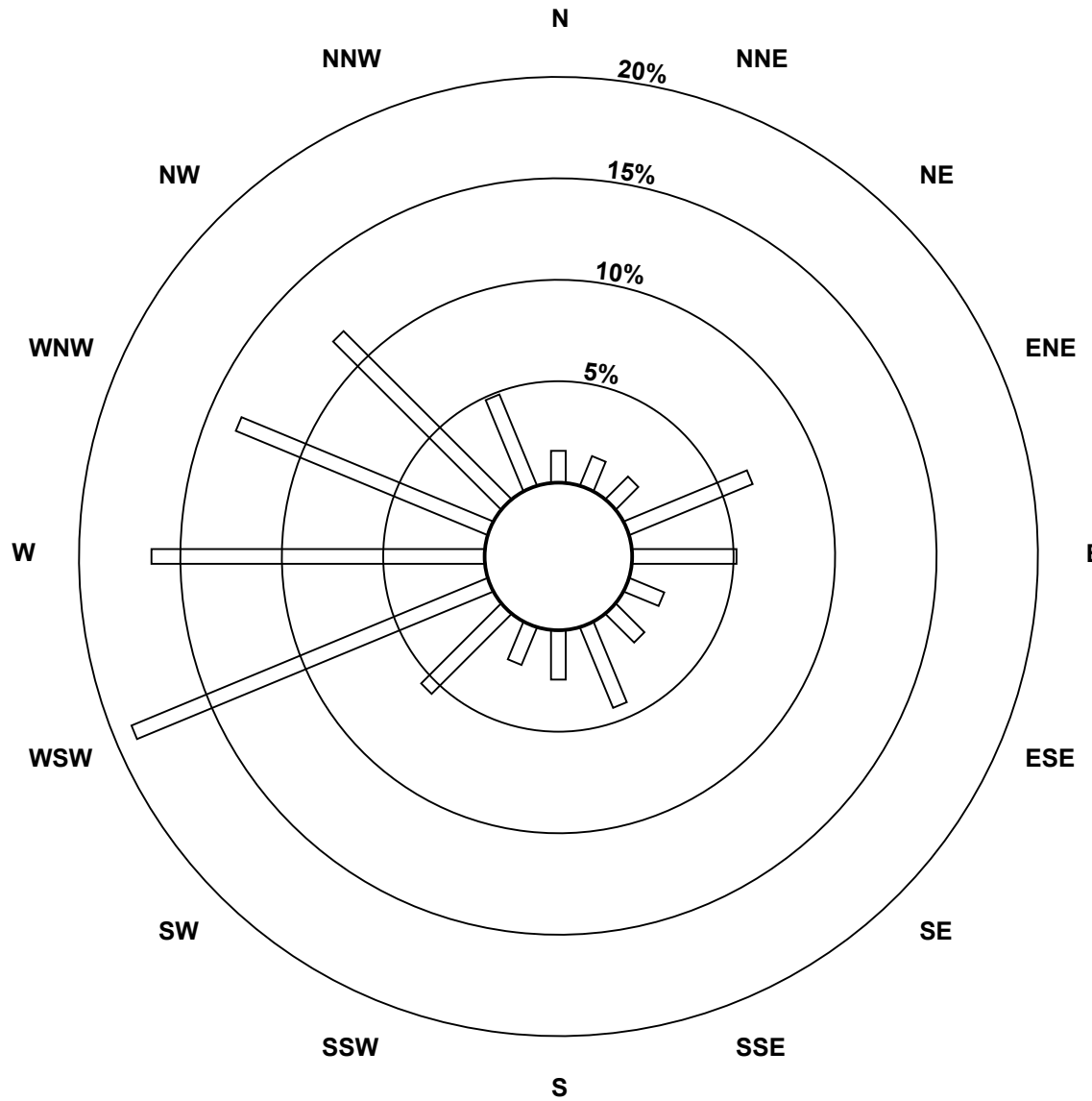
### Hourly Maximums

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Henry Pirker - December 2017

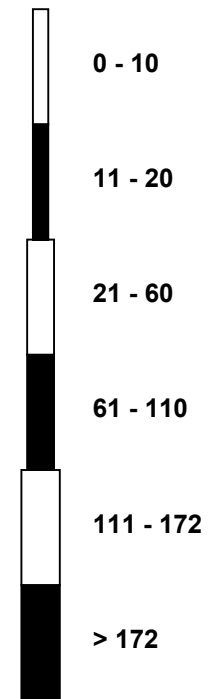


**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Henry Pirker - December 2017**



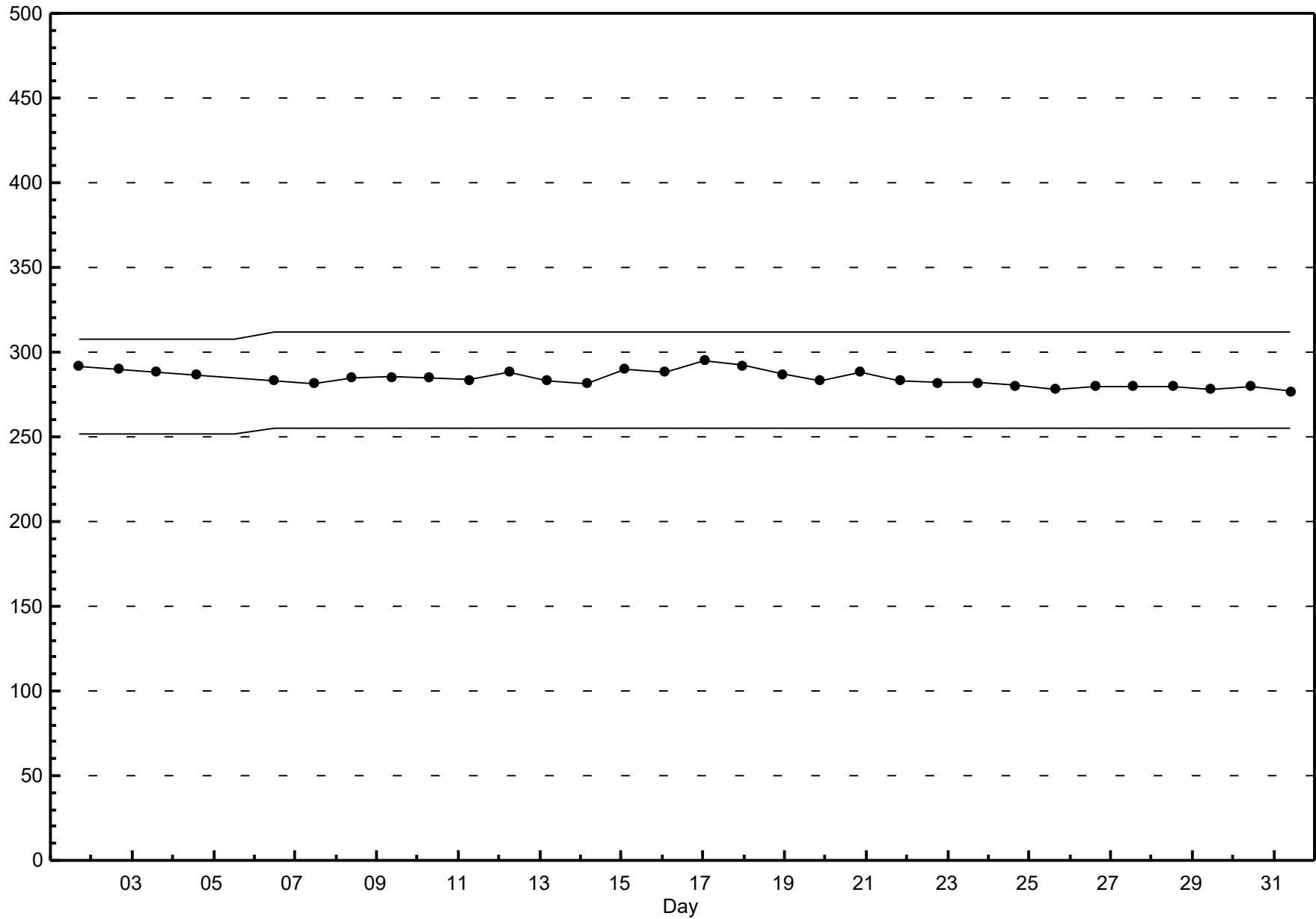
**Pollutant Classes (ppb)**





### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Henry Pirker - December 2017

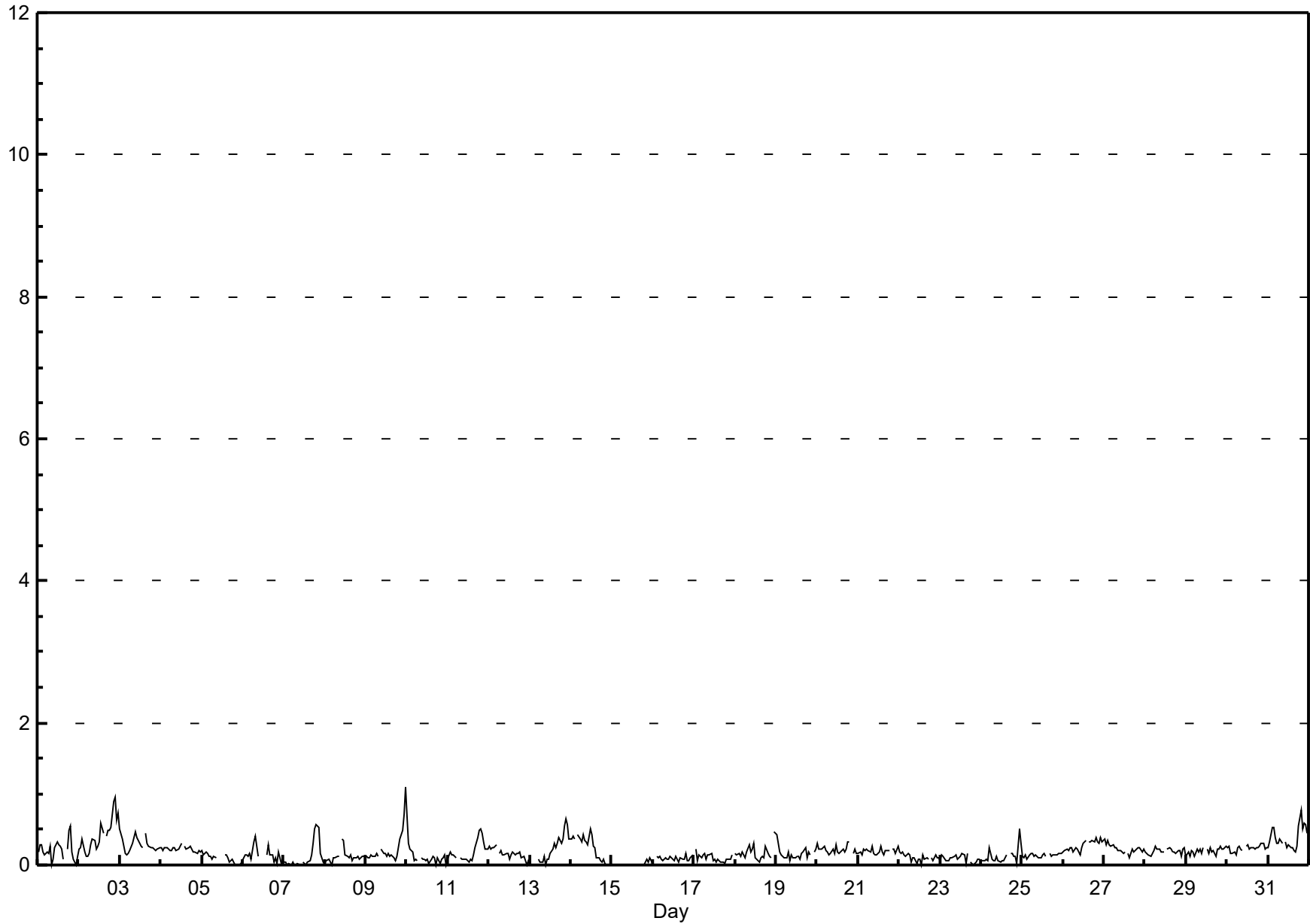


## Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Henry Pirker - December 2017

Maximum Value: 1.1 ppb on Dec 10 00:00		Maximum Daily Average: 0.4 ppb on Dec 2		Hours in Service: 744																							
Minimum Value: 0 ppb on Dec 1 09:00		Minimum Daily Average: 0.0 ppb on Dec 15		Hours of Data: 707																							
Maximum Diurnal Average: 0.2 ppb at hour 20		Minimum Diurnal Average: 0.2 ppb at hour 6		Hours of Missing Data: 37																							
Monthly Average: 0.18 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.2 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.3 P <sub>99</sub> = 0.7		Hours of Calibration: 35																							
				Percent Operational Time: 99.7																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	0	0	0	0	0.2	0.6	
2-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	A	0	0	0	1	1	1	1	1	0.4	1.0	
3-Dec	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.3	0.5	
4-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
5-Dec	0	0	0	0	0	0	0	0	0	P	P	0	A	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
6-Dec	0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0.1	0.4	
7-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	1	1	0	0	0	0.1	0.6	
8-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4	
9-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.2	1.1	
10-Dec	1	0	0	0	0	0	0	A	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.7	
11-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.2	0.5	
12-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
13-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0.2	0.7	
14-Dec	0	0	0	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5	
15-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	
16-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
17-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.1	0.2	
18-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5	
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
20-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	A	0	0	0.2	0.3	
21-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.2	0.3	
22-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.1	0.2	
23-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.1	0.2	
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	1	0	0.1	0.5	
25-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.1	0.2	
26-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.3	0.4	
27-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
28-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
29-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
30-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
31-Dec	0	0	1	1	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0.4	0.8	
		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	Diurnal Average		
		0.7	0.4	0.5	0.5	0.4	0.4	0.3	0.4	0.4	0.5	0.4	0.5	0.4	0.6	0.5	0.4	0.4	0.5	0.6	0.8	0.9	1.0	0.7	1.1	Diurnal Maximum	
C - Calibration		P - Power Failure					A - Automated Daily Zero Span																				

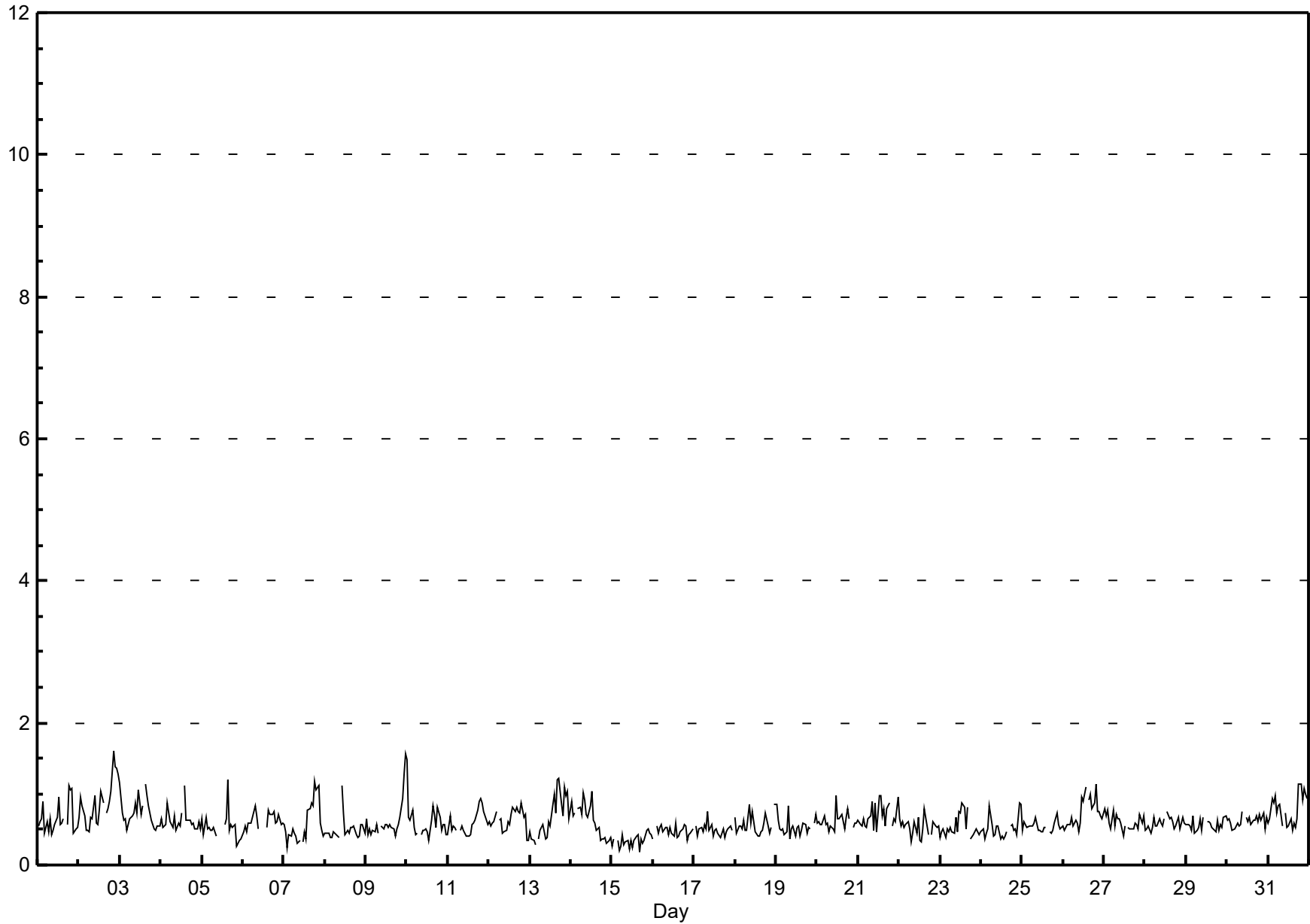


## Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

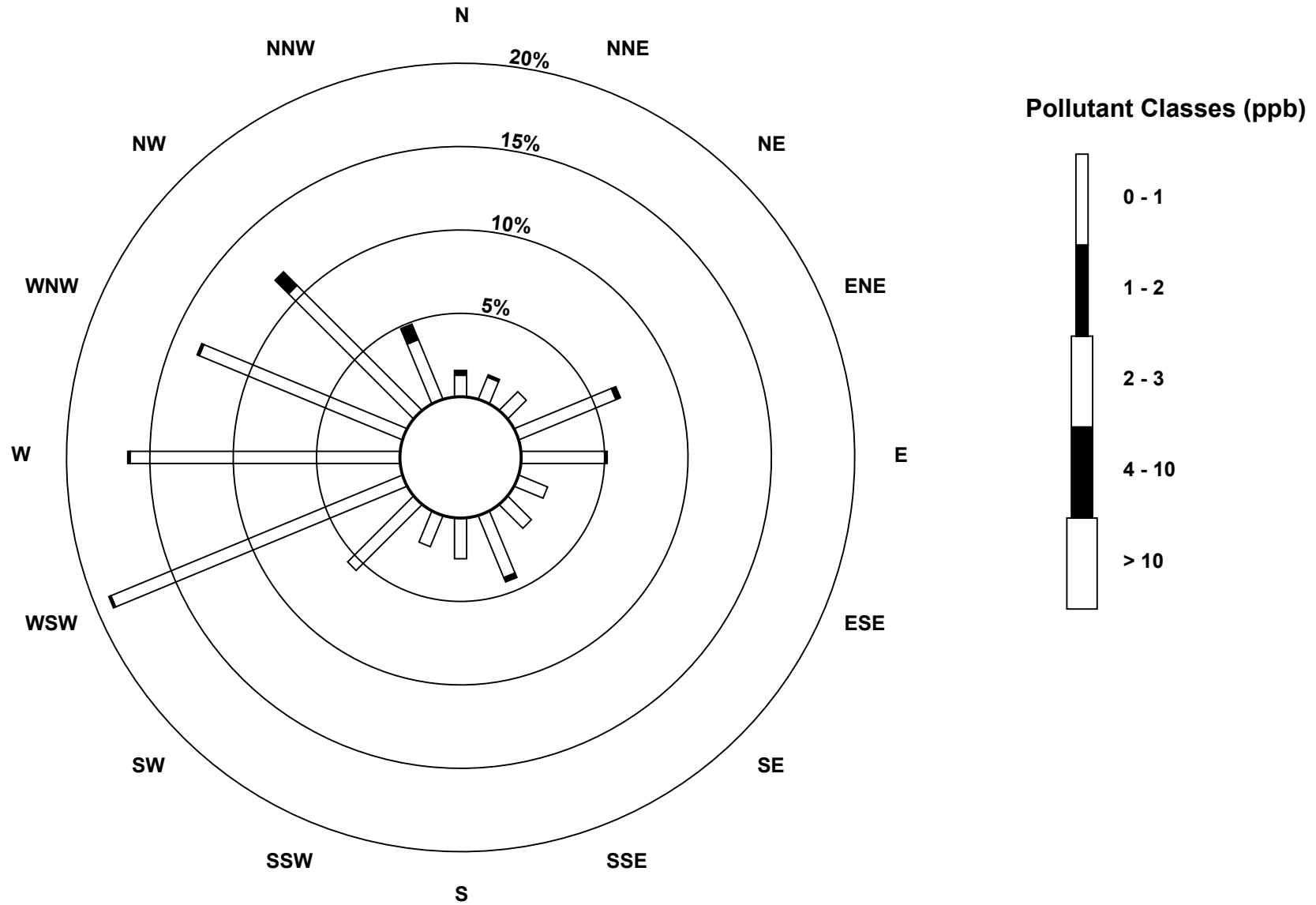
Henry Pirker - December 2017

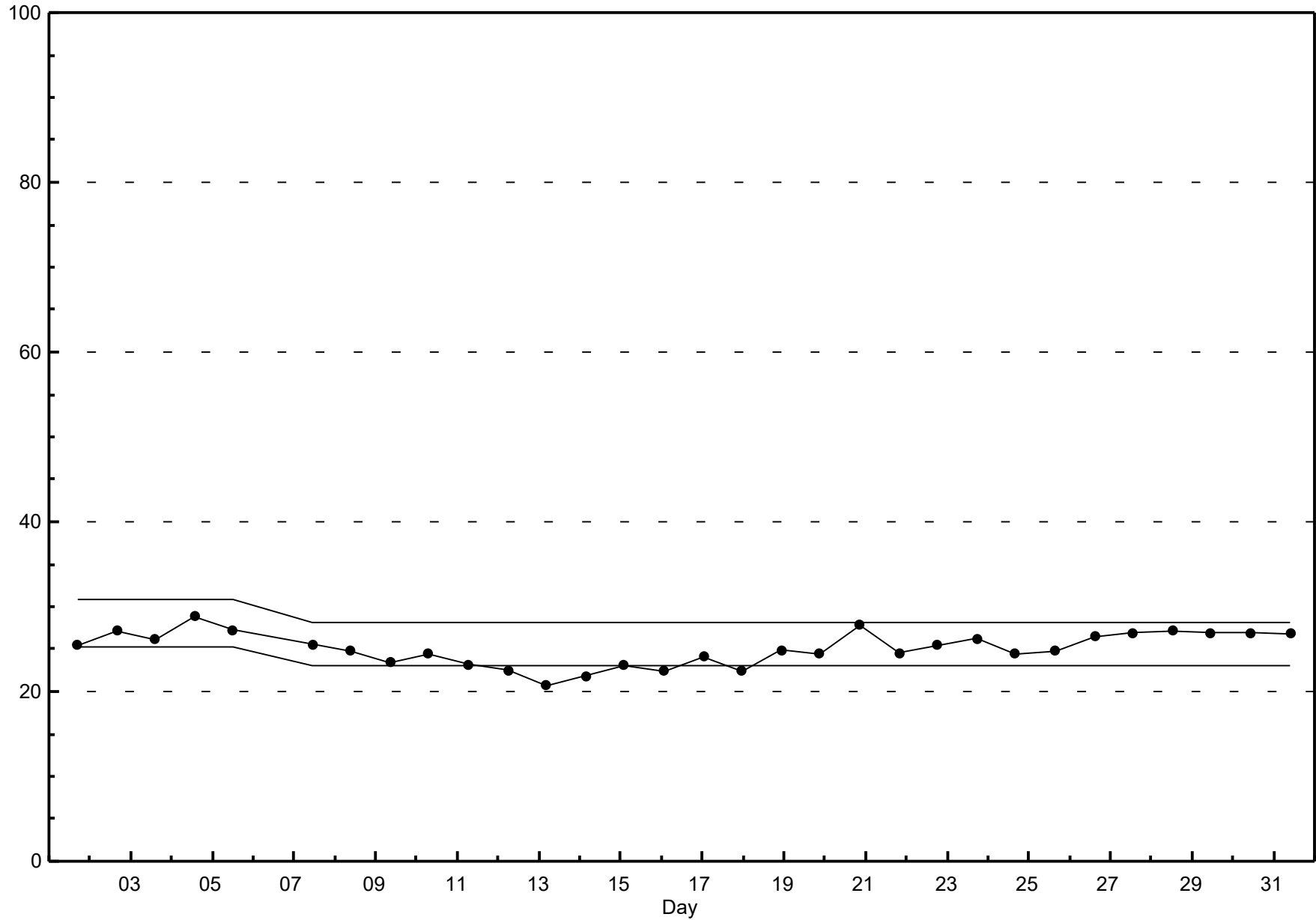
Maximum Value: 1.6 ppb on Dec 2 21:00		Maximum Daily Average: 0.9 ppb on Dec 2		Hours in Service: 744																						
Minimum Value: 0 ppb on Dec 15 17:00		Minimum Daily Average: 0.3 ppb on Dec 15		Hours of Data: 707																						
Maximum Diurnal Average: 0.7 ppb at hour 19		Minimum Diurnal Average: 0.5 ppb at hour 4		Hours of Missing Data: 37																						
Monthly Average: 0.60 ppb		Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 0.6 Q <sub>3</sub> = 0.7 P <sub>90</sub> = 0.9 P <sub>99</sub> = 1.3		Hours of Calibration: 35																						
				Percent Operational Time: 99.7																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	1	1	1	1	0	1	0	1	0	0	1	1	1	1	1	1	A	1	1	1	1	0	1	1	0.7	1.1
2-Dec	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	A	1	1	1	1	2	1	1	1	0.9	1.6
3-Dec	1	1	1	1	0	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0	1	1	0.7	1.2
4-Dec	1	1	1	1	1	1	1	1	1	0	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.6	1.1
5-Dec	1	0	1	1	1	0	0	1	0	P	P	1	A	1	1	1	0	1	1	1	0	0	0	0	0.5	1.2
6-Dec	0	1	0	1	1	1	1	1	1	1	C	C	C	C	1	1	1	1	1	1	1	1	1	1	0.6	0.8
7-Dec	1	0	0	0	0	1	0	0	0	0	A	0	0	0	1	1	1	1	1	1	1	0	0	0	0.6	1.2
8-Dec	0	0	0	0	0	0	0	0	0	0	A	1	1	0	0	1	1	1	0	0	0	1	1	0	0.5	1.1
9-Dec	1	0	1	0	0	0	1	0	A	1	1	1	1	1	1	1	1	0	1	1	1	1	1	2	0.6	1.6
10-Dec	1	1	1	1	1	0	0	A	0	0	0	1	0	0	1	1	1	1	1	1	0	1	1	0	0.6	1.5
11-Dec	0	1	0	1	1	0	A	0	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0.6	0.9
12-Dec	1	1	1	1	1	A	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0.6	0.9
13-Dec	0	0	0	0	A	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.2
14-Dec	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0.6	1.0
15-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.3	0.5
16-Dec	0	A	1	0	1	1	0	1	1	0	1	0	0	1	0	0	0	1	1	1	0	0	0	1	0.5	0.6
17-Dec	A	1	0	1	1	0	1	1	1	0	1	0	0	1	0	0	0	1	0	0	1	1	0	A	0.5	0.7
18-Dec	1	0	1	1	0	1	0	0	1	1	1	1	0	0	0	0	0	1	1	1	0	1	A	1	0.6	0.9
19-Dec	1	1	1	0	0	0	0	1	0	1	1	0	1	1	0	0	1	1	0	1	1	A	1	1	0.5	0.9
20-Dec	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	A	1	1	1	0.6	1.0
21-Dec	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	A	1	1	1	0.7	1.0
22-Dec	1	1	1	1	1	1	1	0	0	1	0	1	0	0	0	1	1	0	A	0	1	1	1	1	0.5	0.8
23-Dec	0	0	1	0	1	0	1	0	0	1	0	1	1	1	1	1	1	A	0	0	0	1	0	0	0.5	0.9
24-Dec	0	1	0	0	1	1	1	0	0	1	1	0	0	0	0	0	A	1	1	0	1	0	1	1	0.5	0.9
25-Dec	0	1	1	1	1	1	1	1	1	0	0	0	0	1	1	A	0	0	0	1	1	1	1	1	0.5	0.7
26-Dec	1	0	1	1	1	1	1	1	1	0	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.7	1.1
27-Dec	1	1	1	1	1	1	1	1	1	1	1	0	1	A	1	1	1	1	1	1	1	1	1	1	0.6	0.8
28-Dec	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.8
29-Dec	1	1	1	0	1	0	1	1	1	0	1	A	1	1	1	1	1	1	0	1	0	1	1	1	0.6	0.7
30-Dec	1	1	1	0	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.7
31-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0	1	1	1	1	1	1	1	1	1	0.8	1.1
		0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.6	0.5	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	Diurnal Average
		1.5	1.0	0.9	0.9	1.0	0.8	0.8	1.0	0.9	1.0	1.1	1.1	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.1	1.6	1.4	1.4	1.6	Diurnal Maximum
C - Calibration		P - Power Failure						A - Automated Daily Zero Span																		



**Pollutant Rose**

**Total Reduced Sulphur (TRS) - ppb**  
**Henry Pirker - December 2017**



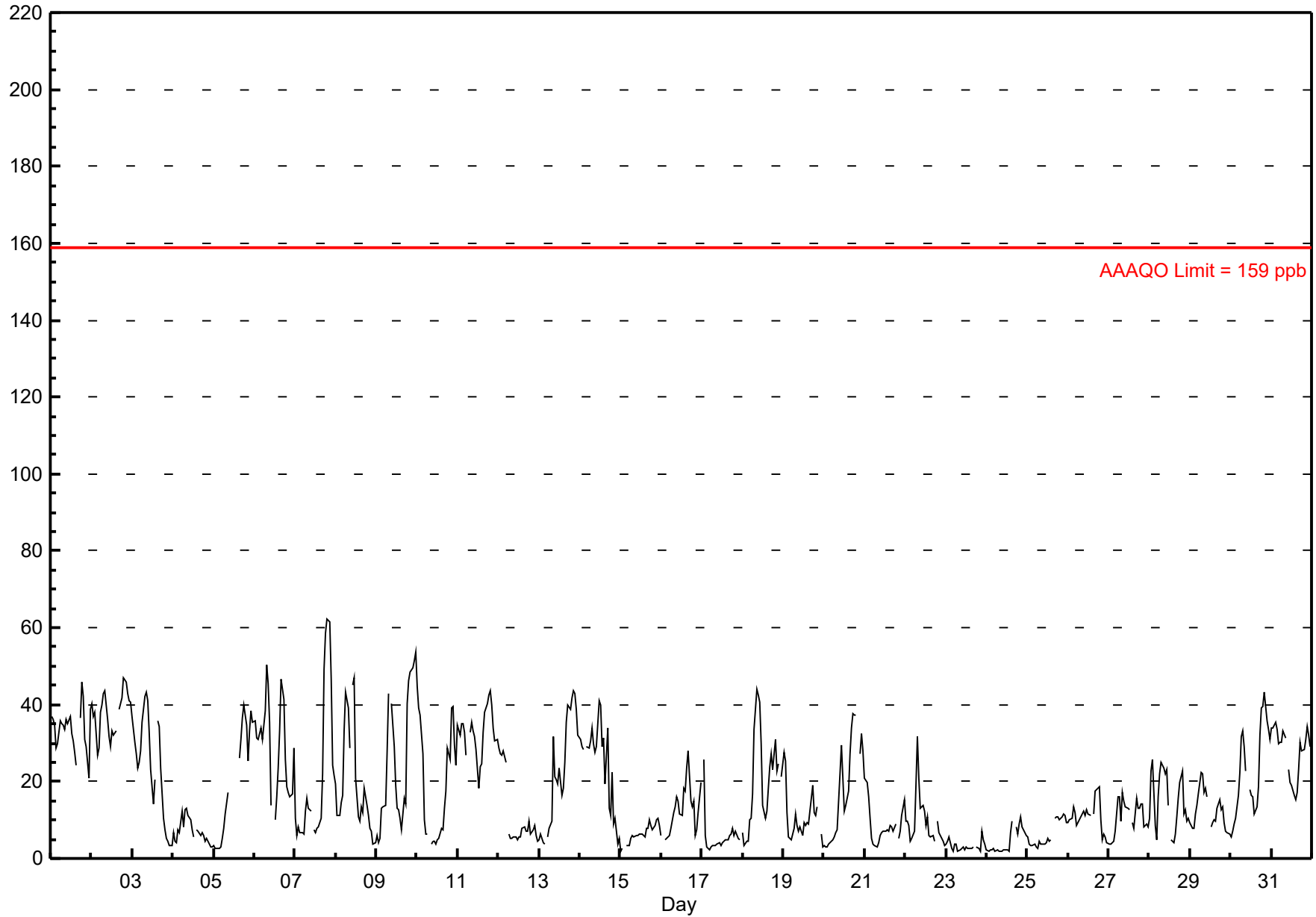


## Hourly Averages

## Nitrogen Dioxide (NO<sub>2</sub>) - ppb Henry Pirker - December 2017

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0		Hours in Service: 744																																														
Maximum Value: 62.3 ppb on Dec 7 20:00		Maximum Daily Average: 37.7 ppb on Dec 2																																														
Minimum Value: 2 ppb on Dec 23 21:00		Hours of Data: 707																																														
Maximum Diurnal Average: 22.7 ppb at hour 20		Hours of Missing Data: 37																																														
Monthly Average: 17.22 ppb		Hours of Calibration: 35																																														
Minimum Daily Average: 3.3 ppb on Dec 23		Percent Operational Time: 99.7																																														
Minimum Diurnal Average: 12.6 ppb at hour 15																																																
Percentiles: P <sub>1</sub> = 2.0 P <sub>10</sub> = 3.7 Q <sub>1</sub> = 6.2 Median = 12.2 Q <sub>3</sub> = 28.5 P <sub>90</sub> = 37.2 P <sub>99</sub> = 49.2																																																
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	37	36	35	29	30	36	35	35	33	36	35	37	33	31	28	24	A	37	46	42	31	29	21	39	33.6	46.0																						
2-Dec	40	37	38	27	29	38	40	43	44	36	32	29	33	32	33	A	39	40	42	47	46	43	41	41	37.7	46.8																						
3-Dec	37	30	27	24	25	28	36	42	43	41	33	23	14	20	A	36	34	23	10	8	5	4	3	3	24.0	43.2																						
4-Dec	7	4	4	7	7	12	8	13	13	11	10	7	6	A	7	7	6	7	6	4	5	4	3	3	7.0	13.0																						
5-Dec	3	2	3	3	3	5	8	12	17	P	P	C	C	C	C	26	31	37	40	35	25	33	38	35	19.8	40.1																						
6-Dec	36	31	31	32	34	31	38	50	45	35	14	A	10	16	23	33	46	41	26	19	17	16	17	29	29.2	50.2																						
7-Dec	10	6	8	7	7	6	12	16	13	12	A	7	7	8	8	11	22	49	58	62	62	47	24	22	21.1	62.3																						
8-Dec	20	11	11	15	17	33	43	39	29	A	A	45	47	21	11	10	13	12	18	14	11	8	7	4	4	19.2	47.0																					
9-Dec	6	4	5	13	14	14	28	43	A	A	40	29	19	13	13	10	7	16	14	40	46	49	50	52	54	25.1	53.8																					
10-Dec	45	39	37	27	10	6	6	A	A	4	4	4	4	5	5	8	8	13	17	29	26	39	39	30	24	18.7	44.9																					
11-Dec	35	32	35	35	33	27	A	A	33	35	33	32	28	18	24	25	33	38	40	43	44	40	34	30	31	32.9	43.5																					
12-Dec	29	27	27	28	25	A	6	5	5	6	6	5	6	5	8	8	7	7	10	6	7	8	6	4	11.0	28.9																						
13-Dec	5	6	4	4	A	6	8	10	32	21	20	19	23	16	18	25	36	40	39	42	44	43	39	32	23.1	43.8																						
14-Dec	31	29	28	A	29	29	30	34	30	28	29	41	40	29	31	19	34	13	11	22	9	10	4	5	24.6	41.0																						
15-Dec	2	3	A	3	4	3	5	6	6	6	6	6	6	6	6	8	8	10	8	7	9	10	11	9	6.4	10.5																						
16-Dec	6	A	5	5	6	6	8	12	13	16	15	11	11	18	18	24	28	15	13	15	6	7	12	20	12.6	27.9																						
17-Dec	A	26	6	3	2	3	3	3	4	4	4	3	4	4	5	5	6	6	8	6	7	5	5	A	5.6	25.6																						
18-Dec	7	3	4	4	10	10	17	33	44	42	41	30	14	10	12	18	24	27	23	31	23	24	A	21	20.6	44.0																						
19-Dec	28	25	12	5	5	5	8	12	9	7	8	6	9	8	9	9	12	19	12	11	13	A	6	3	10.6	27.7																						
20-Dec	3	3	3	4	5	5	6	7	8	22	29	21	12	14	17	27	34	38	37	37	A	27	33	28	18.3	37.5																						
21-Dec	21	20	16	10	5	4	3	3	4	6	7	7	7	7	7	9	8	7	9	A	5	7	11	15	8.6	20.7																						
22-Dec	10	10	9	4	5	7	19	32	21	13	14	12	8	11	6	6	6	5	A	10	7	5	4	3	9.9	31.8																						
23-Dec	4	5	6	2	2	4	4	2	2	3	3	2	3	3	3	3	3	A	3	2	2	7	5	4	3.3	7.2																						
24-Dec	2	2	2	2	3	2	2	2	2	2	2	2	2	2	7	10	A	8	6	9	11	8	7	6	4.4	10.8																						
25-Dec	5	4	3	3	4	3	3	4	4	4	4	4	5	4	5	A	10	11	11	10	11	12	11	9	6.3	11.7																						
26-Dec	9	10	10	13	12	8	9	11	12	12	11	13	12	11	A	12	17	18	19	10	5	6	5	4	10.9	18.6																						
27-Dec	4	4	4	5	7	16	16	10	17	15	13	13	A	9	8	16	13	13	14	14	14	8	9	8	10.8	17.0																						
28-Dec	10	23	26	9	5	16	22	25	23	22	23	A	5	4	6	11	16	20	23	11	13	10	10	15.1	25.7																							
29-Dec	9	8	8	11	14	17	22	22	17	18	16	A	8	9	10	10	13	15	13	13	9	7	7	6	12.3	22.3																						
30-Dec	6	7	9	11	16	22	32	33	29	23	A	18	17	16	12	13	19	32	39	40	43	36	34	31	23.3	43.2																						
31-Dec	34	34	36	33	30	30	30	33	31	A	23	20	19	16	15	17	23	30	28	28	31	34	32	29	27.8	35.6																						
																								16.7	16.0	15.1	12.7	13.1	14.4	16.9	20.8	19.6	18.6	18.1	16.1	13.1	12.7	12.6	15.0	19.7	21.8	22.5	22.7	19.8	19.5	17.1	17.8	Diurnal Average
																								44.9	39.0	38.2	34.9	33.9	37.9	43.4	50.2	45.5	42.4	45.3	47.0	39.9	31.9	33.1	35.6	46.4	49.2	58.5	62.3	61.5	49.6	51.5	53.8	Diurnal Maximum
C - Calibration P - Power Failure A - Automated Daily Zero Span																																																
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb																																																





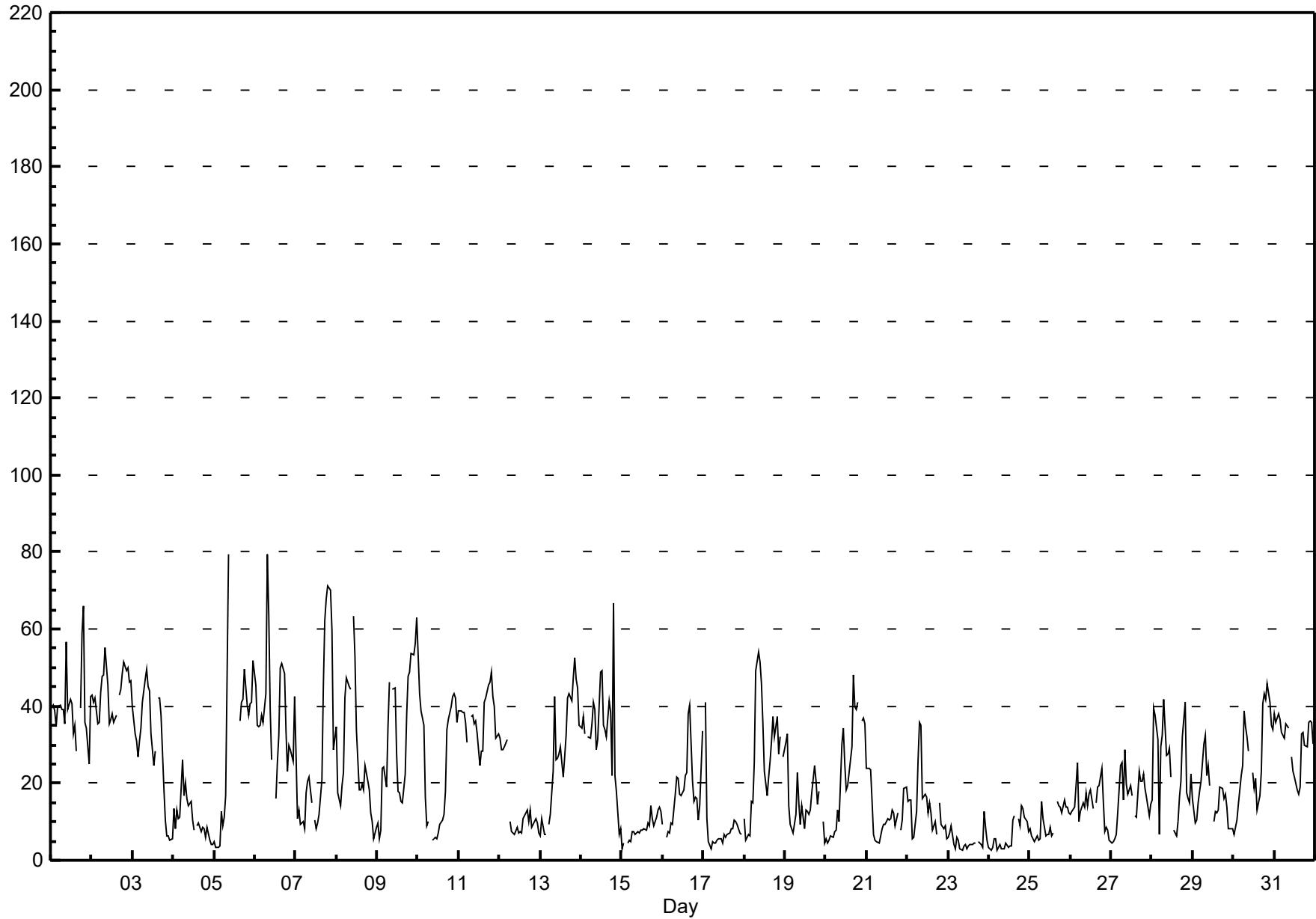
# Hourly Maximums

## Nitrogen Dioxide (NO<sub>2</sub>) - ppb Henry Pirker - December 2017

Maximum Value: 79.5 ppb on Dec 5 09:00		Maximum Daily Average: 43.5 ppb on Dec 2		Hours in Service: 744																						
Minimum Value: 3 ppb on Dec 24 02:00		Minimum Daily Average: 5.1 ppb on Dec 23		Hours of Data: 707																						
Maximum Diurnal Average: 29.6 ppb at hour 20		Minimum Diurnal Average: 16.7 ppb at hour 14		Hours of Missing Data: 37																						
Monthly Average: 22.28 ppb		Percentiles: P <sub>1</sub> = 3.1 P <sub>10</sub> = 5.5 Q <sub>1</sub> = 9.1 Median = 17.8 Q <sub>3</sub> = 34.9 P <sub>90</sub> = 43.0 P <sub>99</sub> = 65.5		Hours of Calibration: 35																						
				Percent Operational Time: 99.7																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	40	40	39	35	40	40	39	39	36	57	39	42	41	33	35	28	A	40	59	66	36	34	25	42	40.2	65.9
2-Dec	43	41	42	36	36	44	48	48	55	45	36	36	38	36	38	A	43	44	49	51	49	50	46	46	43.5	55.2
3-Dec	40	33	31	27	31	34	41	47	50	45	44	33	25	28	A	42	42	38	19	10	6	6	5	5	29.7	49.6
4-Dec	13	8	13	11	11	26	17	20	16	14	15	10	8	A	9	10	8	8	8	6	9	5	4	4	11.1	26.3
5-Dec	5	3	3	4	13	9	11	17	80	P	P	C	C	C	C	36	41	42	49	40	38	41	41	52	29.1	79.5
6-Dec	46	35	35	35	38	36	43	79	64	39	26	A	16	25	32	50	51	49	33	23	30	29	26	43	38.4	79.3
7-Dec	27	11	13	9	10	8	17	21	22	15	A	10	8	10	12	21	45	62	68	71	70	60	29	32	28.3	71.0
8-Dec	35	18	14	19	23	42	47	45	45	A	63	53	34	18	18	20	18	24	21	18	12	10	5	9	26.6	63.4
9-Dec	10	6	8	24	24	19	35	46	A	44	45	27	18	18	15	15	22	38	48	49	54	53	56	63	32.0	63.2
10-Dec	53	43	39	35	16	9	10	A	5	6	6	6	7	9	11	12	18	34	37	40	43	43	42	36	24.3	53.2
11-Dec	39	39	38	38	36	31	A	37	38	36	36	33	25	28	29	41	42	45	46	49	42	40	32	33	37.1	49.0
12-Dec	32	29	29	30	31	A	10	7	7	7	9	7	7	7	11	12	13	10	13	9	10	11	10	7	13.8	31.8
13-Dec	6	11	7	7	A	9	12	23	43	26	26	27	29	21	27	33	42	43	41	47	53	47	45	35	28.7	52.6
14-Dec	34	37	33	A	32	32	35	41	39	29	31	49	49	35	34	32	41	39	22	67	22	18	7	8	33.3	66.6
15-Dec	3	5	A	4	5	5	7	7	7	7	7	8	8	8	8	10	9	14	11	9	11	13	14	13	8.4	14.3
16-Dec	9	A	6	8	7	10	9	17	22	21	17	17	18	22	23	38	40	20	15	16	16	11	14	33	17.9	40.2
17-Dec	A	41	11	5	3	5	4	5	5	5	6	5	7	6	7	7	8	8	10	10	9	7	7	A	8.2	41.2
18-Dec	11	5	7	6	15	15	25	49	54	51	46	36	23	17	22	26	31	37	32	37	27	32	A	27	27.5	54.0
19-Dec	31	33	14	9	8	7	12	23	15	9	14	8	13	13	12	13	17	25	21	14	18	A	10	4	14.9	33.0
20-Dec	6	4	5	7	6	7	8	13	10	30	34	25	18	19	26	29	48	40	39	41	A	36	37	35	22.8	48.2
21-Dec	24	24	24	15	7	5	5	4	6	8	9	9	11	11	11	13	12	9	12	A	8	10	19	19	12.0	23.9
22-Dec	15	16	16	6	6	13	26	36	35	16	17	16	12	15	12	8	10	7	A	15	9	8	9	6	14.3	35.9
23-Dec	6	7	9	4	3	6	5	3	3	4	4	3	4	4	4	4	5	A	5	4	3	13	9	5	5.1	12.9
24-Dec	3	3	3	6	6	3	4	3	3	3	4	3	4	4	10	12	A	11	9	14	13	11	10	8	6.5	14.2
25-Dec	8	6	6	5	6	5	5	15	11	6	7	7	8	7	7	A	15	14	14	12	16	14	14	12	9.6	15.6
26-Dec	12	13	14	19	25	10	13	15	14	18	14	17	18	14	A	15	19	20	24	15	7	8	8	5	14.7	25.4
27-Dec	4	5	5	7	12	25	25	16	29	20	17	19	17	A	11	11	23	20	21	22	19	16	12	15	16.1	28.9
28-Dec	16	39	38	31	7	29	33	42	27	29	22	A	8	6	10	17	20	32	41	17	16	15	22	23.7	41.8	
29-Dec	16	10	11	15	18	20	30	32	22	24	19	A	10	13	12	13	19	19	16	17	14	8	8	8	16.3	32.3
30-Dec	7	8	10	14	22	25	39	35	32	28	A	23	19	21	13	17	23	41	43	42	46	41	35	34	26.8	45.9
31-Dec	38	36	38	36	33	33	32	35	34	A	27	23	22	18	17	19	33	33	30	30	36	36	36	30	30.6	38.1
		21.0	20.3	18.7	16.9	17.7	18.8	21.6	27.4	27.5	23.0	23.2	20.5	17.8	16.7	16.9	20.6	26.1	28.5	28.2	29.6	24.8	24.3	20.9	23.1	Diurnal Average
		53.2	43.2	42.3	38.5	40.0	43.5	47.6	79.3	79.5	56.6	63.4	53.1	49.2	35.9	37.5	50.1	51.1	62.2	67.7	71.0	70.1	59.8	56.4	63.2	Diurnal Maximum
C - Calibration		P - Power Failure						A - Automated Daily Zero Span																		

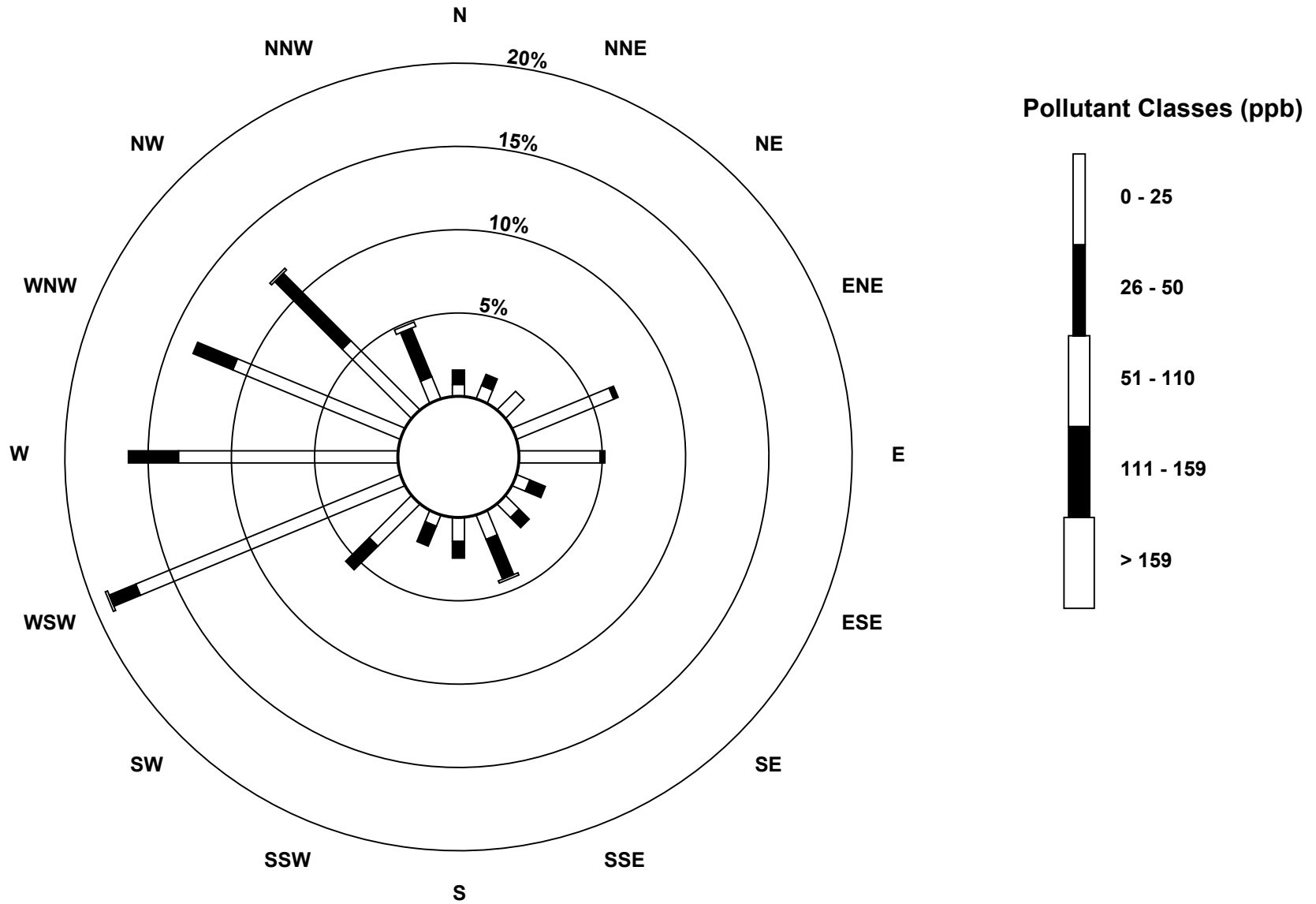
**Hourly Maximums**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Henry Pirker - December 2017**



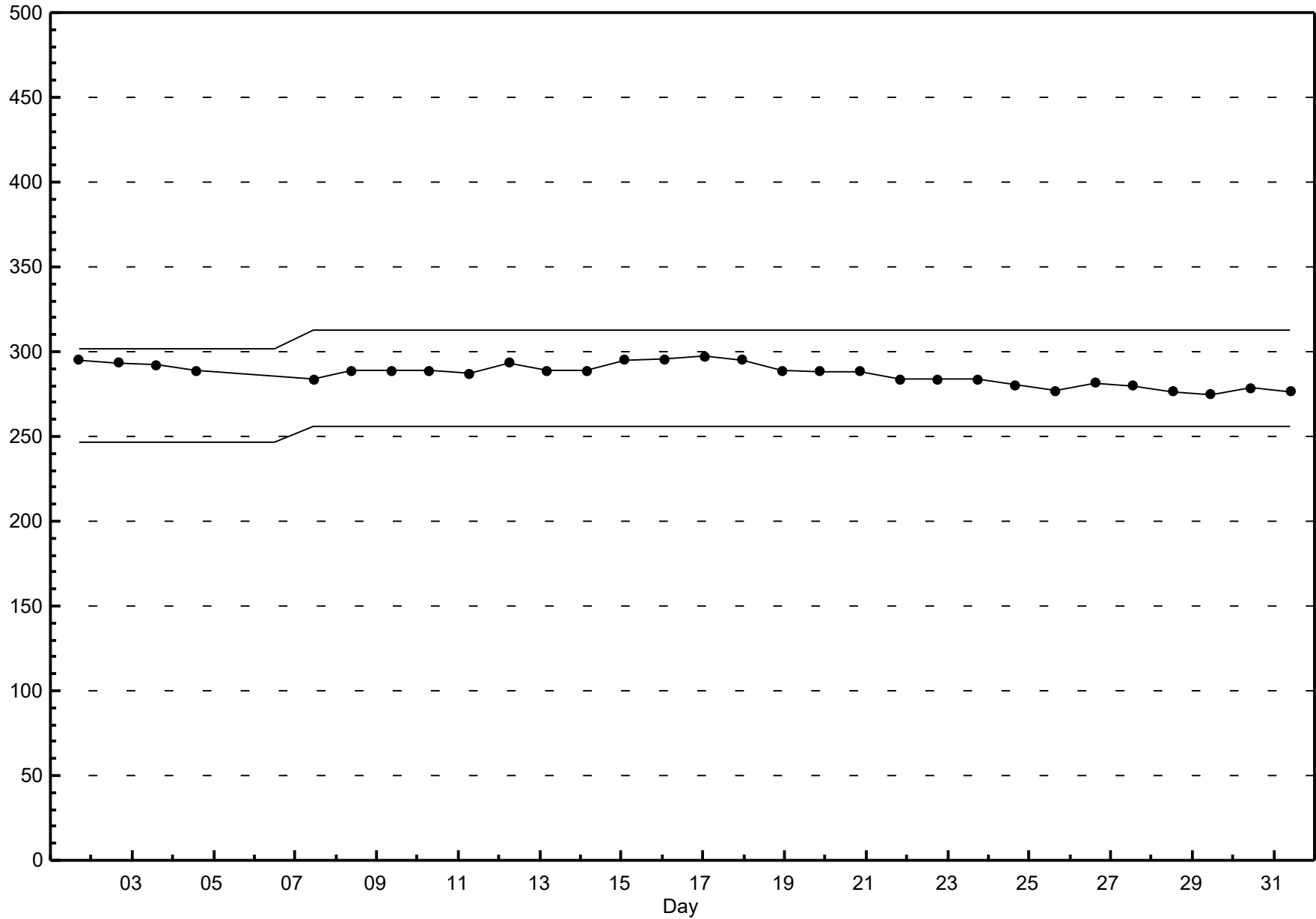
**Pollutant Rose**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Henry Pirker - December 2017**



### Span Responses

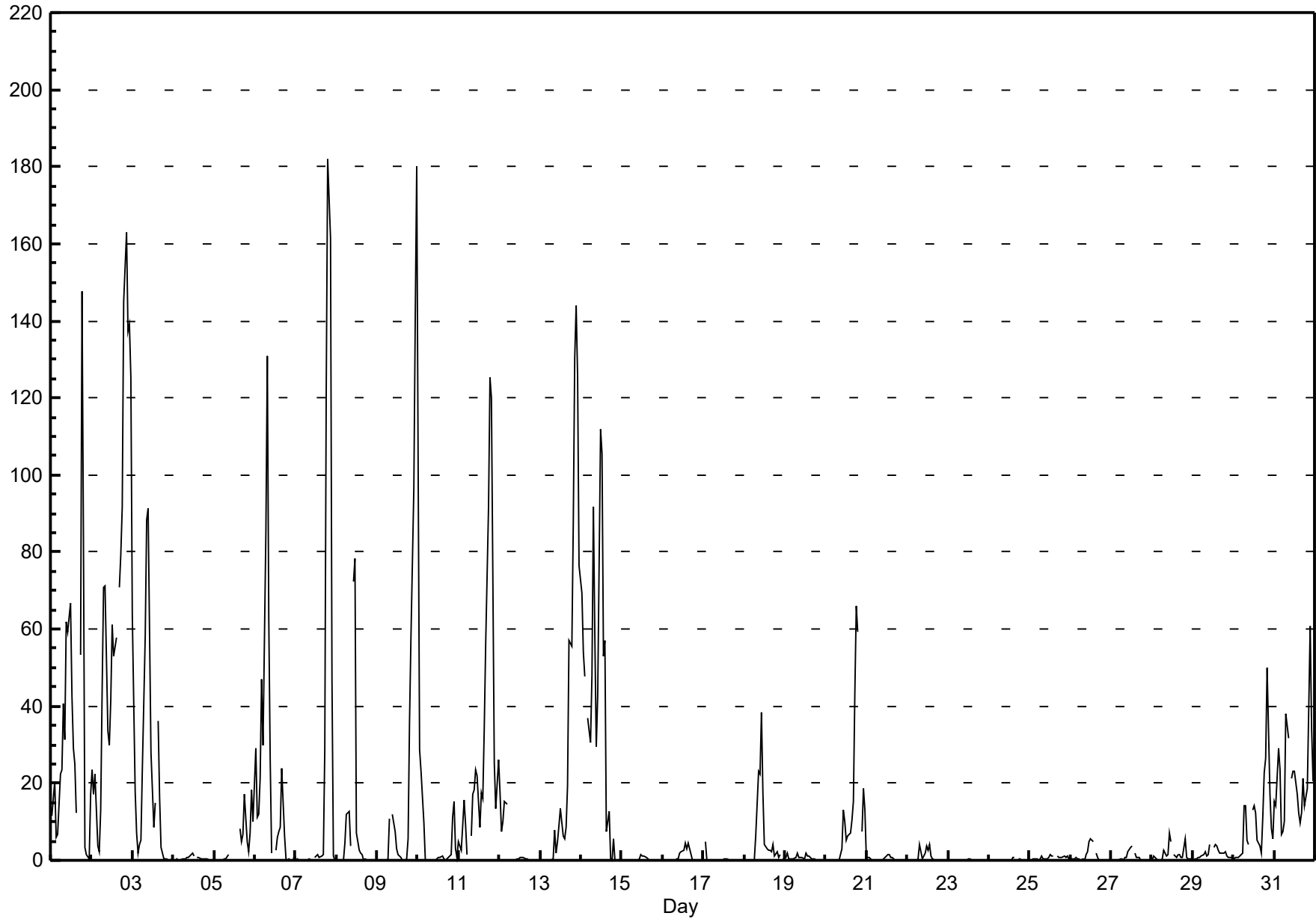
Nitrogen Dioxide (NO<sub>2</sub>)  
Henry Pirker - December 2017



## Hourly Averages

Nitrogen Oxide (NO) - ppb  
Henry Pirker - December 2017

Maximum Value: 181.9 ppb on Dec 7 20:00		Maximum Daily Average: 65.1 ppb on Dec 2		Hours in Service: 744																						
Minimum Value: 0 ppb on Dec 9 00:00		Minimum Daily Average: 0.1 ppb on Dec 23		Hours of Data: 707																						
Maximum Diurnal Average: 26.1 ppb at hour 20		Minimum Diurnal Average: 3.3 ppb at hour 4		Hours of Missing Data: 37																						
Monthly Average: 12.31 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.8 Q <sub>3</sub> = 8.8 P <sub>90</sub> = 40.3 P <sub>99</sub> = 143.6		Hours of Calibration: 35																						
				Percent Operational Time: 99.7																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	12	16	21	6	7	23	23	40	31	62	59	67	42	29	25	12	A	53	148	83	3	2	0	17	34.0	147.8
2-Dec	23	17	22	4	2	13	44	71	71	33	30	41	61	53	58	A	71	80	92	145	163	137	139	125	65.1	162.9
3-Dec	64	18	7	2	4	5	24	58	88	91	60	28	8	15	A	36	16	3	0	0	0	0	0	0	23.1	91.4
4-Dec	0	0	0	0	0	0	0	0	1	1	1	2	1	A	1	1	0	0	0	0	0	0	0	0	0.5	1.7
5-Dec	0	0	0	0	0	0	0	0	1	P	P	C	C	C	C	8	5	7	17	5	2	7	18	10	4.6	18.2
6-Dec	29	11	12	21	47	30	85	131	63	26	2	A	3	6	7	9	24	6	0	0	0	0	0	2	22.4	131.0
7-Dec	0	0	0	0	0	0	0	0	0	0	A	1	1	1	1	1	2	29	122	182	162	47	1	0	23.9	181.9
8-Dec	0	0	0	0	0	5	12	13	4	A	72	78	7	3	2	1	0	0	0	0	0	0	0	0	8.6	78.5
9-Dec	0	0	0	0	0	0	0	11	A	12	7	3	2	1	1	0	0	5	36	58	97	142	180	24.2	180.3	
10-Dec	102	29	23	10	0	0	0	A	0	0	0	0	1	1	1	0	0	0	1	2	11	15	3	1	8.7	102.0
11-Dec	5	3	9	16	9	2	A	6	17	18	23	22	9	18	16	34	56	92	125	120	73	25	13	26	32.1	125.4
12-Dec	17	7	10	15	15	A	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	3.0	17.4
13-Dec	0	0	0	0	A	0	0	0	8	2	5	9	13	6	6	9	19	57	56	87	130	144	126	77	32.8	144.1
14-Dec	69	54	48	A	37	31	48	92	58	29	43	112	105	53	57	8	13	0	0	6	0	0	0	0	37.5	111.9
15-Dec	0	0	A	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0.2	1.3
16-Dec	0	A	0	0	0	0	0	0	0	0	2	2	3	4	3	5	3	0	0	0	0	0	0	0	1.0	4.7
17-Dec	A	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	4.8
18-Dec	0	0	0	0	0	0	0	0	6	23	22	38	17	4	3	3	2	4	1	2	1	1	A	0	5.8	38.3
19-Dec	1	2	0	0	1	0	1	2	1	1	1	0	2	1	1	1	1	0	0	0	0	A	0	0	0.7	2.0
20-Dec	0	0	0	0	0	0	0	0	0	3	13	10	5	6	7	11	15	43	66	59	A	8	19	13	12.1	66.0
21-Dec	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	A	0	0	0	0	0.3	1.4
22-Dec	0	0	0	0	0	0	0	4	2	0	2	4	3	4	1	0	0	0	A	0	0	0	0	0	0.9	4.1
23-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.1	0.4
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	A	0	0	0	0	0	0	0	0.1	0.6
25-Dec	0	0	0	0	0	0	0	1	0	0	0	1	2	1	1	A	1	1	1	1	1	1	1	1	0.7	1.6
26-Dec	0	0	0	1	0	0	0	0	0	1	2	5	6	5	A	2	1	0	0	0	0	0	0	0	1.1	5.6
27-Dec	0	0	0	0	0	0	0	0	1	1	2	3	4	A	2	1	1	0	0	0	0	0	0	0	0.7	3.9
28-Dec	0	1	1	0	0	0	0	2	1	2	7	5	A	1	1	2	1	1	1	6	1	0	0	0	1.4	6.9
29-Dec	0	0	0	1	1	1	1	2	1	2	4	A	3	4	4	3	2	2	2	2	1	1	1	1	1.7	4.2
30-Dec	1	1	1	1	2	2	14	14	5	4	A	13	14	12	5	4	2	11	23	27	50	17	8	6	10.2	49.8
31-Dec	15	14	29	23	7	8	10	38	32	A	21	23	23	17	12	10	12	21	14	19	40	61	34	21	21.9	60.9
		11.3	6.0	6.1	3.3	4.4	4.0	8.9	16.5	13.7	11.1	14.2	16.1	11.2	8.9	7.8	5.6	8.5	13.7	22.5	26.1	23.2	18.8	16.9	16.0	Diurnal Average
		102.0	54.2	47.6	23.5	47.0	30.5	85.4	131.0	88.3	91.4	72.4	111.9	105.4	53.0	57.7	36.3	70.8	91.6	147.8	181.9	162.9	144.1	141.8	180.3	Diurnal Maximum
C - Calibration		P - Power Failure						A - Automated Daily Zero Span																		



# Hourly Maximums

Nitrogen Oxide (NO) - ppb

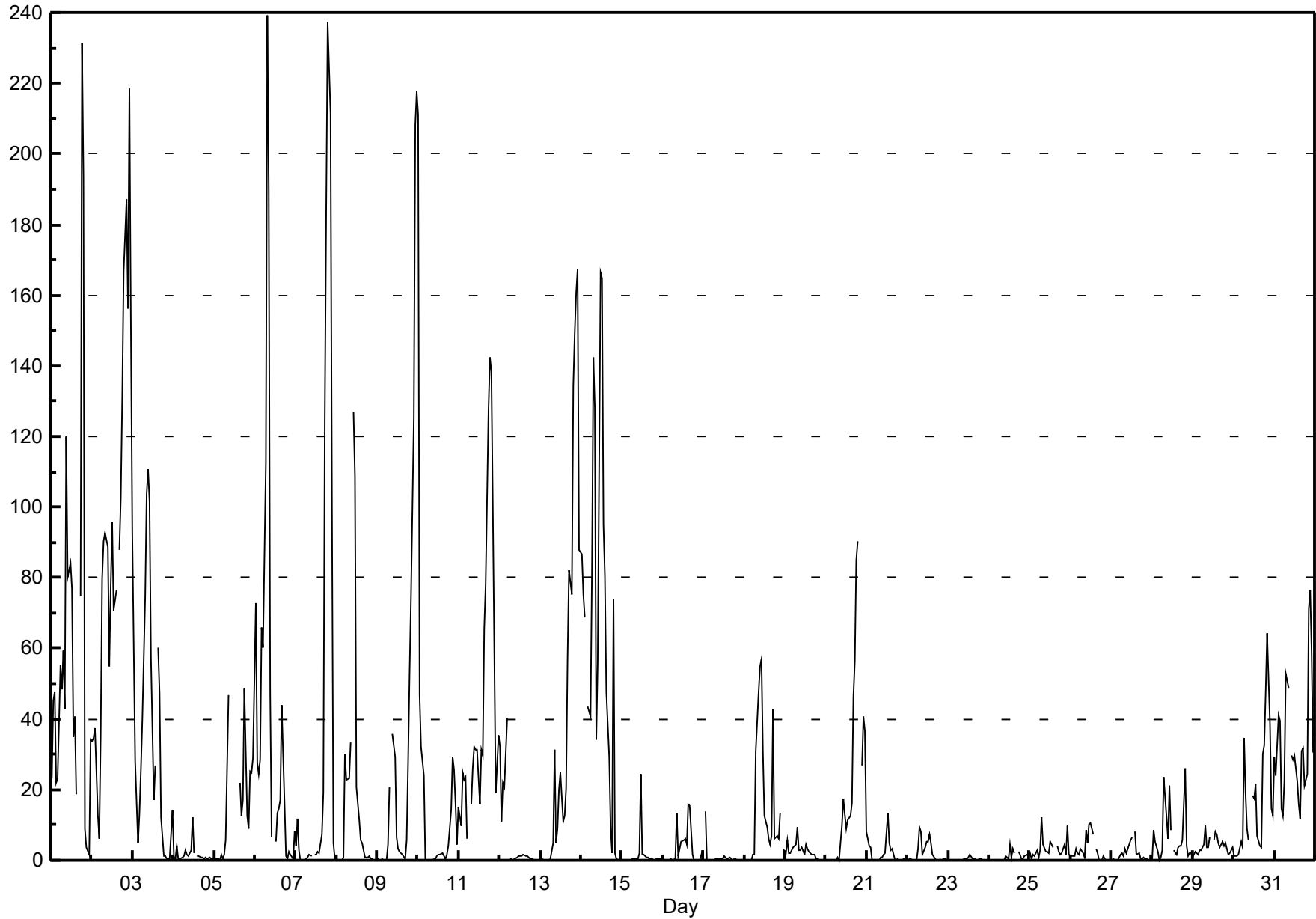
Henry Pirker - December 2017

Maximum Value: 239.4 ppb on Dec 6 08:00		Maximum Daily Average: 90.9 ppb on Dec 2		Hours in Service: 744																						
Minimum Value: 0 ppb on Dec 20 02:00		Minimum Daily Average: 0.3 ppb on Dec 23		Hours of Data: 707																						
Maximum Diurnal Average: 41.1 ppb at hour 20		Minimum Diurnal Average: 6.3 ppb at hour 4		Hours of Missing Data: 37																						
Monthly Average: 20.63 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.4 Median = 3.1 Q <sub>3</sub> = 22.5 P <sub>90</sub> = 68.5 P <sub>99</sub> = 210.9		Hours of Calibration: 35																						
				Percent Operational Time: 99.7																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	23	45	48	22	23	55	48	60	43	120	80	84	77	35	41	19	A	75	231	194	9	4	2	34	59.6	231.3
2-Dec	34	35	37	13	6	35	80	90	93	89	55	78	96	71	77	A	88	102	131	167	187	156	218	153	90.9	218.4
3-Dec	93	28	16	5	13	26	40	75	104	111	102	57	17	27	A	60	47	12	1	1	0	0	0	14	37.0	110.8
4-Dec	1	0	4	0	0	1	1	3	2	1	3	12	2	A	1	1	1	1	1	1	1	1	0	0	1.7	12.3
5-Dec	0	0	0	0	2	1	2	6	47	P	P	C	C	C	C	22	13	17	49	13	9	25	25	29	14.4	48.9
6-Dec	73	27	24	28	66	60	113	239	190	47	7	A	5	13	15	17	44	16	1	0	2	2	0	8	43.4	239.4
7-Dec	4	12	3	0	0	0	0	1	2	1	A	1	2	3	2	7	19	125	185	237	211	100	5	1	40.0	237.3
8-Dec	0	0	0	0	1	30	23	23	34	A	127	108	21	11	6	5	3	1	1	1	0	0	0	0	17.2	126.9
9-Dec	0	0	0	0	0	0	5	21	A	36	29	7	3	2	2	2	0	6	28	53	74	125	208	217	35.6	217.5
10-Dec	211	47	32	24	0	0	0	A	0	0	0	1	1	2	2	1	1	1	4	14	29	26	16	5	18.2	211.1
11-Dec	15	10	25	23	24	6	A	16	26	32	31	31	16	31	30	65	78	128	143	138	100	60	19	35	47.0	142.6
12-Dec	32	11	22	21	40	A	0	0	0	0	1	1	1	1	2	1	1	1	0	0	0	0	0	0	6.0	40.2
13-Dec	0	1	0	0	A	0	0	5	31	5	9	20	25	11	13	20	57	82	75	134	149	161	167	88	45.8	167.3
14-Dec	86	75	69	A	44	41	83	142	128	34	56	166	165	95	81	48	29	9	2	74	2	0	0	0	62.2	166.4
15-Dec	0	0	A	0	0	0	0	0	0	0	2	24	2	2	1	1	0	0	0	0	1	0	0	0	1.6	24.3
16-Dec	0	A	0	0	0	0	0	0	13	1	3	5	6	6	5	16	16	2	0	0	0	0	0	3	3.3	15.7
17-Dec	A	14	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	A	0.9	13.8
18-Dec	0	0	0	0	0	2	2	31	48	55	57	31	13	9	6	5	7	43	6	7	6	13	A	3	14.9	56.9
19-Dec	2	6	2	2	3	3	4	9	3	3	4	1	4	3	2	2	2	2	0	0	0	A	0	0	2.6	9.2
20-Dec	0	0	0	0	0	0	0	1	0	10	17	13	9	11	12	16	47	56	85	90	A	27	41	37	20.6	90.2
21-Dec	8	4	4	0	0	0	0	0	1	1	2	2	13	5	3	3	2	0	0	A	0	0	0	0	2.1	13.5
22-Dec	0	0	0	0	0	0	3	10	8	2	4	5	5	7	5	1	1	0	A	0	0	0	0	0	2.3	9.5
23-Dec	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	A	0	1	0	0	0	0	0.3	1.6
24-Dec	0	0	0	0	0	0	0	0	0	0	1	0	4	1	3	2	A	2	1	0	0	1	2	1	0.9	4.4
25-Dec	2	0	2	1	3	1	3	12	4	2	2	2	5	5	4	A	4	2	2	2	5	2	10	1	3.3	12.3
26-Dec	1	1	1	3	2	1	3	2	1	9	5	10	11	8	A	3	2	0	0	1	0	0	0	0	2.9	10.8
27-Dec	0	0	0	0	0	2	2	1	3	2	3	6	6	A	8	2	2	1	0	1	0	0	0	0	1.8	8.1
28-Dec	0	8	5	3	0	1	3	24	12	6	21	8	A	3	2	4	4	4	6	26	4	1	2	2	6.4	25.8
29-Dec	1	2	2	2	3	3	4	10	3	4	6	A	5	8	7	5	4	5	4	5	3	2	2	4	4.1	9.7
30-Dec	1	1	1	2	5	3	35	19	9	6	A	18	17	21	7	4	4	30	32	48	64	39	15	13	17.2	64.3
31-Dec	29	24	41	40	15	13	23	53	49	A	30	29	30	22	16	12	31	32	21	24	71	76	58	31	33.4	76.4
20.6		11.8	11.4	6.3	8.3	9.5	15.9	28.4	28.5	20.6	23.5	25.9	19.5	14.9	12.6	11.9	17.4	25.2	33.7	41.1	31.0	27.4	26.4	22.6	Diurnal Average	
211.1		75.2	68.9	39.6	65.8	60.2	112.8	239.4	189.8	120.0	126.9	166.4	164.7	95.3	80.7	65.5	87.8	127.8	231.3	237.3	211.4	160.9	218.4	217.5	Diurnal Maximum	
C - Calibration		P - Power Failure					A - Automated Daily Zero Span																			



**Hourly Maximums**

**Nitrogen Oxide (NO) - ppb**  
**Henry Pirker - December 2017**

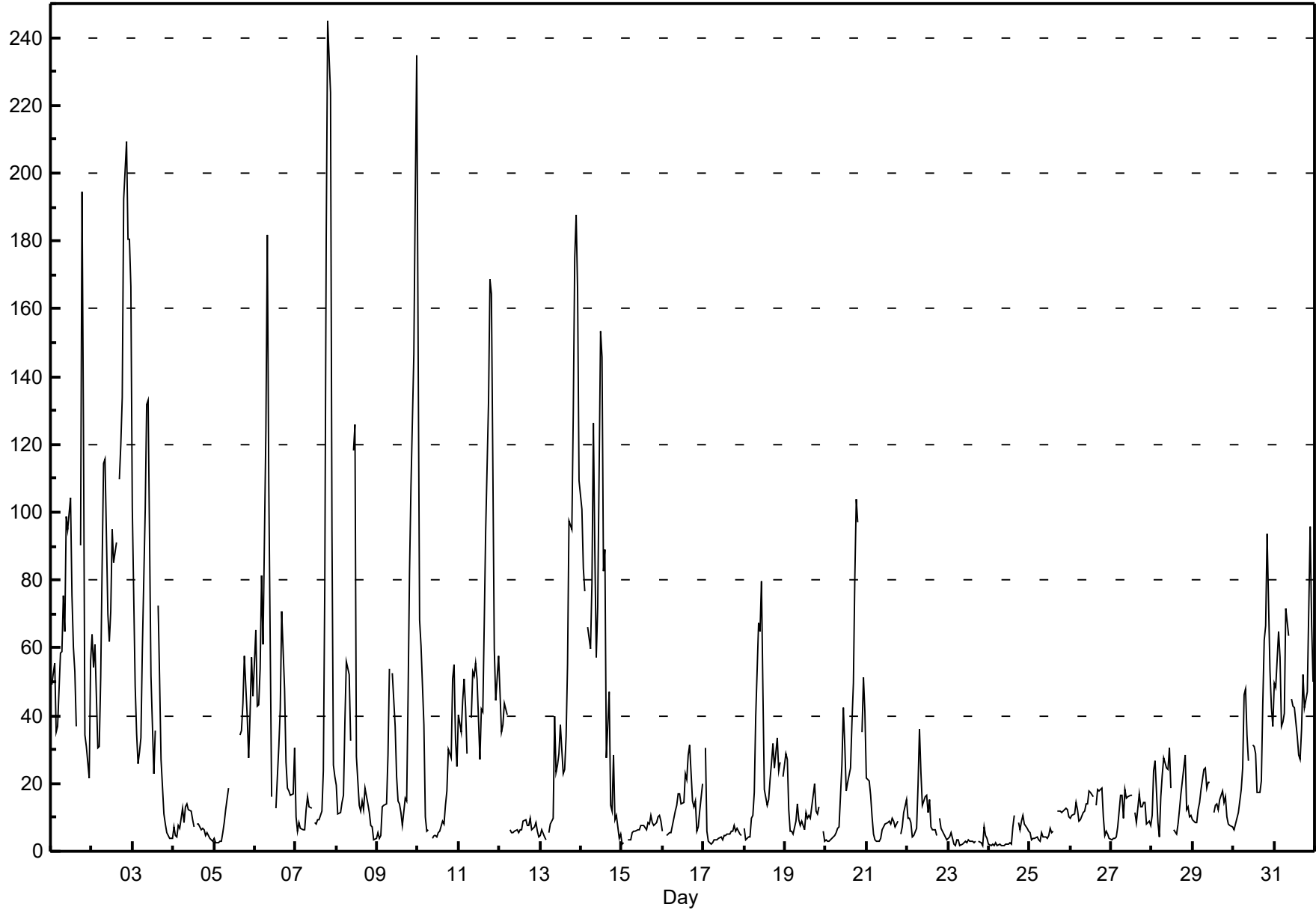


# Hourly Averages

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

Henry Pirker - December 2017

Maximum Value: 244.8 ppb on Dec 7 20:00		Maximum Daily Average: 103.2 ppb on Dec 2		Hours in Service: 744																						
Minimum Value: 2 ppb on Dec 23 21:00		Minimum Daily Average: 3.2 ppb on Dec 23		Hours of Data: 707																						
Maximum Diurnal Average: 49.0 ppb at hour 20		Minimum Diurnal Average: 16.0 ppb at hour 4		Hours of Missing Data: 37																						
Monthly Average: 29.69 ppb		Percentiles: P <sub>1</sub> = 1.9 P <sub>10</sub> = 3.6 Q <sub>1</sub> = 6.4 Median = 13.6 Q <sub>3</sub> = 37.2 P <sub>90</sub> = 75.4 P <sub>99</sub> = 191.6		Hours of Calibration: 35																						
				Percent Operational Time: 99.7																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	49	53	56	35	37	59	59	76	65	99	95	104	75	60	53	37	A	90	194	125	34	31	22	56	68.0	194.5
2-Dec	64	54	61	31	31	51	84	114	116	70	62	71	95	85	91	A	110	120	134	192	209	181	181	167	103.2	209.4
3-Dec	101	49	35	26	29	33	60	101	132	133	93	52	23	36	A	72	51	27	11	8	5	5	4	4	47.3	132.9
4-Dec	7	5	4	8	7	13	8	13	14	12	12	9	7	A	8	8	6	7	7	5	5	4	3	3	7.6	14.1
5-Dec	4	3	3	3	3	5	8	12	19	P	P	C	C	C	C	35	36	44	58	40	28	41	57	46	24.6	57.6
6-Dec	65	43	43	54	81	61	124	182	109	62	16	A	13	22	31	42	71	48	26	19	18	16	17	31	51.9	181.8
7-Dec	10	6	8	7	6	6	12	16	13	13	A	8	8	9	9	12	24	78	181	245	224	94	26	22	45.1	244.8
8-Dec	20	11	11	15	17	38	56	52	33	A	118	126	28	14	12	15	12	19	14	11	8	7	4	4	27.9	125.9
9-Dec	6	4	5	13	14	14	28	54	A	52	37	22	15	14	11	8	16	15	46	83	107	147	194	235	49.5	234.8
10-Dec	147	68	61	37	10	6	6	A	4	4	5	4	5	6	9	8	13	18	30	27	51	55	33	25	27.5	147.4
11-Dec	40	35	44	51	42	29	A	40	53	52	55	51	27	42	41	67	95	133	169	164	114	60	44	58	65.4	168.8
12-Dec	47	35	37	44	40	A	7	6	6	6	6	6	6	6	9	9	8	7	10	6	7	8	6	4	14.2	46.8
13-Dec	5	6	4	4	A	5	8	10	40	23	26	29	37	23	24	34	55	97	95	130	175	188	165	109	56.1	187.5
14-Dec	101	84	77	A	66	60	79	126	88	57	72	154	146	83	89	27	47	14	12	28	9	11	4	5	62.5	153.6
15-Dec	2	3	A	3	4	3	5	6	6	6	6	8	8	8	6	9	8	10	9	7	9	10	11	9	6.8	10.6
16-Dec	6	A	5	5	6	6	8	12	14	17	17	14	14	23	21	28	31	15	13	15	6	7	12	20	13.6	31.2
17-Dec	A	31	6	3	2	3	3	3	3	4	4	4	4	5	5	5	6	6	8	6	7	5	5	A	5.8	30.5
18-Dec	7	3	4	4	10	10	17	40	67	65	79	47	18	14	15	21	26	32	24	34	24	26	A	22	26.5	79.5
19-Dec	29	27	12	6	6	5	9	14	9	8	9	6	11	10	11	10	13	20	12	11	13	A	6	3	11.3	28.6
20-Dec	3	3	3	4	4	5	5	7	7	25	42	31	18	20	25	38	50	81	104	97	A	35	51	41	30.5	103.8
21-Dec	22	21	16	10	5	4	3	3	4	6	7	8	9	9	8	10	9	7	9	A	5	7	11	15	9.0	21.7
22-Dec	10	10	9	4	5	7	20	36	23	14	16	16	11	15	7	6	6	5	A	10	7	5	4	3	10.8	36.2
23-Dec	4	4	5	2	2	4	3	2	2	3	3	2	3	3	3	3	3	A	3	2	2	7	5	4	3.2	7.1
24-Dec	2	2	2	2	3	2	2	2	2	2	2	2	2	2	7	10	A	9	7	9	11	8	7	6	4.4	10.8
25-Dec	5	4	4	4	4	3	3	5	4	4	4	5	7	6	6	A	12	12	12	11	12	13	12	10	7.1	12.7
26-Dec	10	10	11	14	12	9	9	11	12	14	14	18	17	16	A	14	18	18	19	10	5	6	5	4	12.0	18.6
27-Dec	3	4	4	4	7	16	17	10	18	16	16	17	17	A	11	9	17	13	13	14	14	8	9	8	11.5	18.1
28-Dec	10	24	27	9	4	16	22	28	24	24	30	19	A	6	5	8	12	17	21	29	12	13	10	11	16.6	30.4
29-Dec	9	8	9	12	15	18	24	25	19	20	20	A	11	14	14	12	15	18	15	16	10	8	8	7	14.2	24.6
30-Dec	6	8	10	12	18	25	46	48	34	27	A	31	31	29	17	17	21	43	62	67	94	53	42	37	33.8	93.5
31-Dec	50	48	65	57	37	38	41	72	64	A	45	43	42	34	28	27	36	52	42	47	71	96	67	50	50.1	95.7
		28.1	22.1	21.3	16.0	17.6	18.5	25.9	37.5	33.5	29.9	32.6	32.4	24.5	21.9	20.6	20.7	28.5	35.8	45.3	49.0	43.2	38.5	34.1	33.9	Diurnal Average
		147.4	83.6	76.6	57.3	81.3	61.1	124.1	181.8	131.9	132.9	118.1	153.6	146.0	85.3	91.2	72.3	109.8	132.6	194.5	244.8	223.8	187.5	194.0	234.8	Diurnal Maximum
C - Calibration		P - Power Failure						A - Automated Daily Zero Span																		

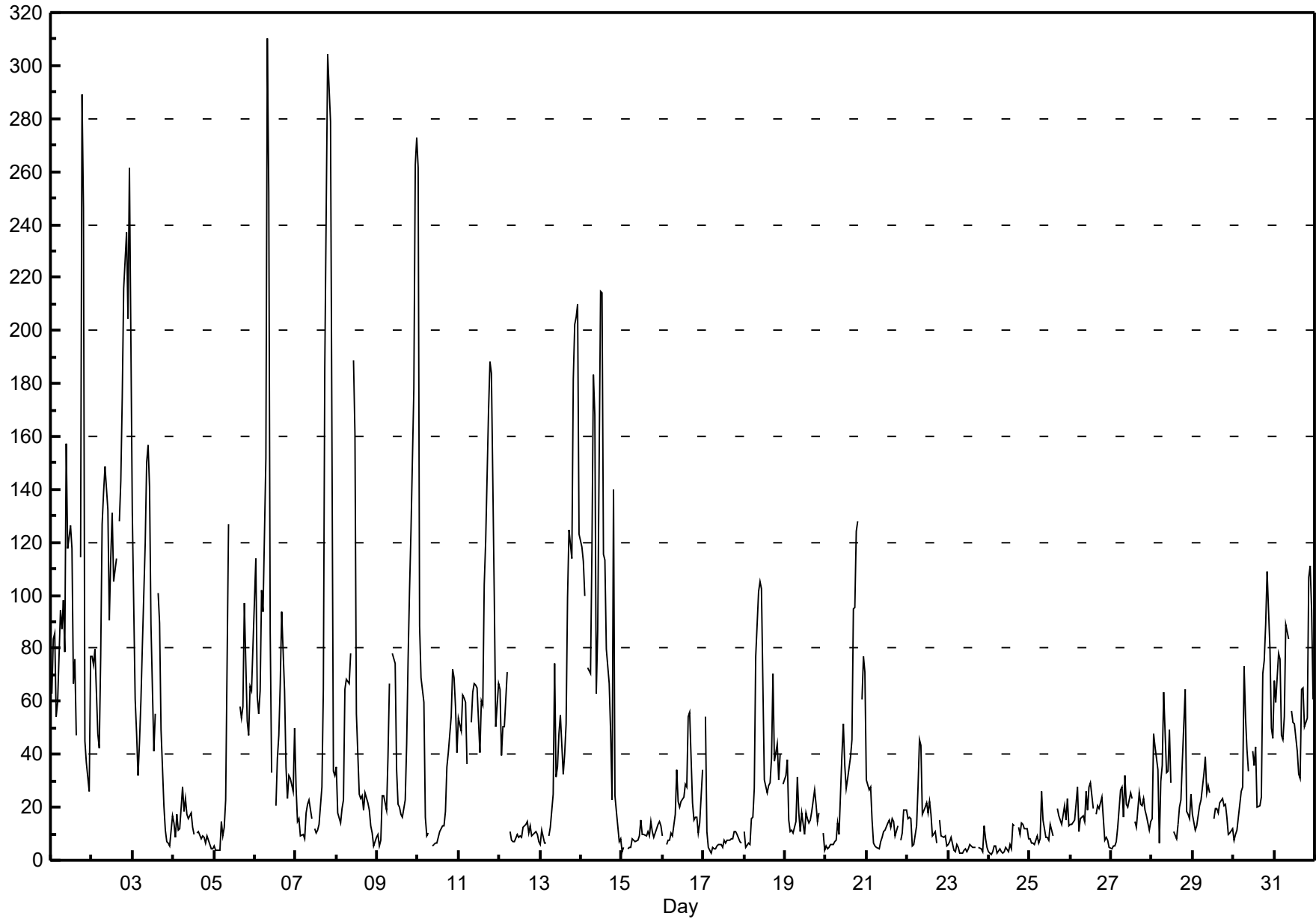


# Hourly Maximums

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

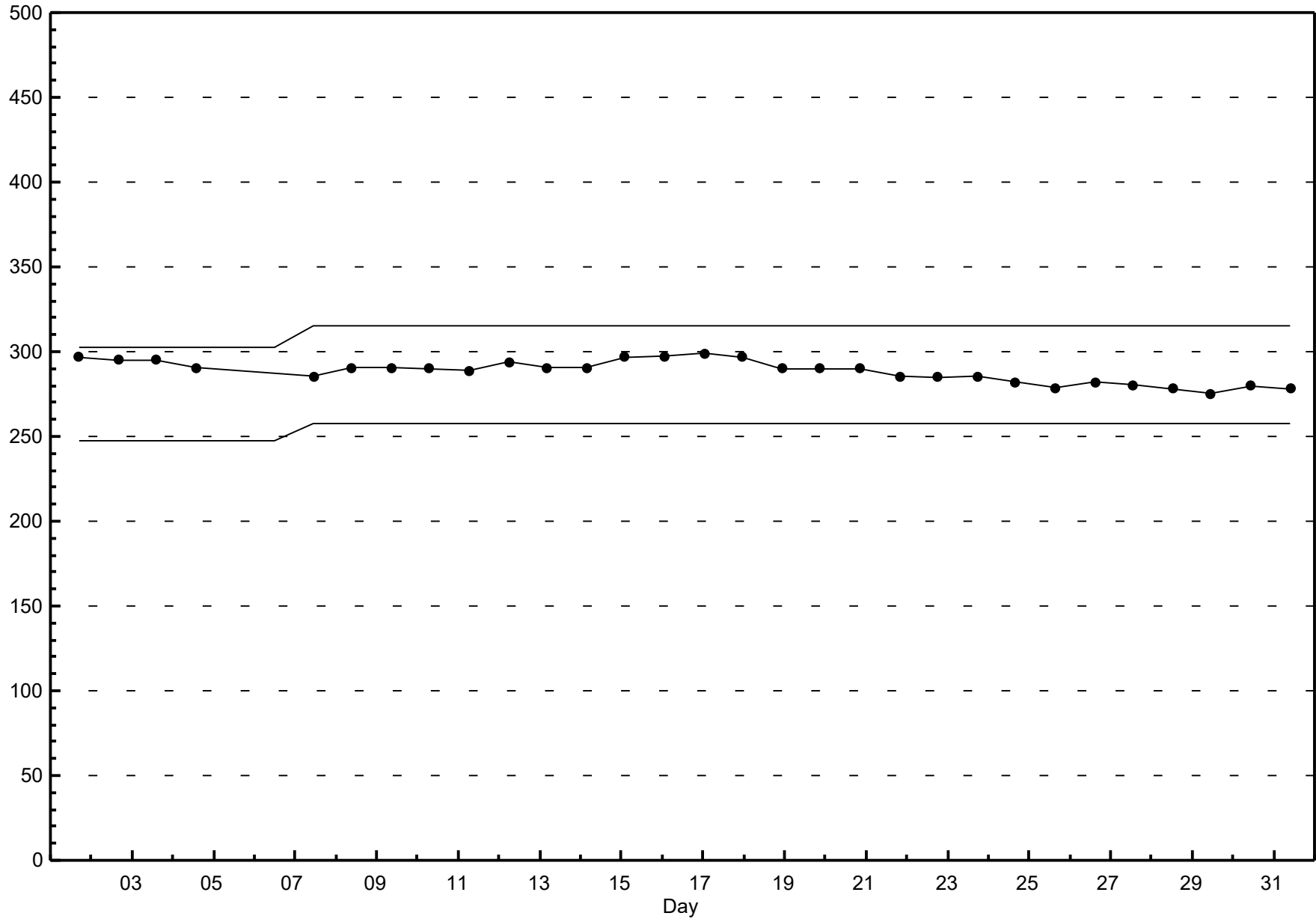
Henry Pirker - December 2017

Maximum Value: 310.4 ppb on Dec 6 08:00		Maximum Daily Average: 133.0 ppb on Dec 2		Hours in Service: 744																						
Minimum Value: 2 ppb on Dec 24 02:00		Minimum Daily Average: 5.2 ppb on Dec 23		Hours of Data: 707																						
Maximum Diurnal Average: 69.6 ppb at hour 20		Minimum Diurnal Average: 23.0 ppb at hour 4		Hours of Missing Data: 37																						
Monthly Average: 42.34 ppb		Percentiles: P <sub>1</sub> = 3.0 P <sub>10</sub> = 5.8 Q <sub>1</sub> = 10.0 Median = 20.8 Q <sub>3</sub> = 55.4 P <sub>90</sub> = 106.7 P <sub>99</sub> = 260.7		Hours of Calibration: 35																						
				Percent Operational Time: 99.7																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	63	84	86	54	60	94	88	98	79	158	118	126	118	67	76	47	A	114	289	246	45	37	26	77	97.8	289.3
2-Dec	77	74	80	48	42	77	127	139	149	132	91	114	131	105	114	A	128	143	175	216	237	204	261	198	133.0	261.2
3-Dec	131	61	47	32	45	60	81	120	150	157	141	89	41	55	A	101	90	49	20	11	7	7	5	17	66.0	156.5
4-Dec	14	9	18	11	12	28	18	24	18	16	18	13	10	A	10	11	8	9	9	7	9	6	5	4	12.4	27.5
5-Dec	5	4	4	4	15	9	12	23	127	P	P	C	C	C	C	58	54	58	97	53	47	66	64	81	43.4	127.0
6-Dec	114	62	56	64	102	94	152	310	252	86	33	A	21	39	47	67	94	64	35	23	32	31	26	50	80.6	310.4
7-Dec	28	15	16	9	10	8	18	21	23	15	A	12	10	11	14	28	65	186	246	304	279	157	34	32	67.0	304.4
8-Dec	36	18	14	19	23	64	68	67	78	A	189	161	55	25	23	24	19	25	21	19	13	10	5	9	42.9	188.9
9-Dec	10	5	8	24	24	19	39	67	A	78	74	34	21	20	17	16	23	44	76	102	124	178	263	273	66.9	273.0
10-Dec	261	88	69	60	16	9	10	A	5	6	6	6	9	11	13	13	18	35	40	54	72	69	58	40	42.3	261.4
11-Dec	54	49	63	61	60	36	A	52	63	67	66	65	41	60	58	104	121	170	188	184	142	99	50	67	83.5	188.2
12-Dec	65	40	50	51	71	A	11	8	7	7	10	9	9	9	13	14	15	10	13	9	11	11	10	7	19.9	71.1
13-Dec	6	11	6	6	A	9	12	25	74	31	35	47	55	32	40	51	99	125	114	182	202	205	210	123	74.1	209.9
14-Dec	118	113	100	A	73	70	118	183	168	63	87	215	214	115	113	80	67	48	23	140	24	18	7	8	94.2	214.5
15-Dec	3	5	A	4	5	5	8	8	7	8	9	15	10	10	9	11	9	15	11	9	12	14	14	13	9.3	15.4
16-Dec	9	A	6	7	7	10	9	17	34	22	20	22	24	29	28	54	56	22	15	16	16	10	14	34	21.1	55.6
17-Dec	A	54	11	5	3	5	4	4	6	6	6	5	8	6	7	8	8	8	11	11	10	7	7	A	9.1	54.4
18-Dec	11	5	6	6	15	16	27	77	101	105	102	66	30	26	28	30	38	71	37	44	31	40	A	29	41.0	105.3
19-Dec	32	38	15	11	11	10	15	32	18	11	18	10	18	16	14	15	18	26	21	15	18	A	10	4	17.2	38.2
20-Dec	5	4	5	6	6	7	8	14	10	40	52	36	27	31	39	46	95	95	124	128	A	61	77	71	43.0	128.1
21-Dec	31	26	27	15	6	5	5	4	7	9	11	11	14	15	13	15	14	9	13	A	8	10	19	19	13.4	30.6
22-Dec	16	16	16	5	6	13	28	45	44	18	20	22	18	22	17	9	11	7	A	15	9	9	9	6	16.5	45.4
23-Dec	6	7	9	4	3	6	5	3	3	4	4	3	4	6	5	5	5	A	5	4	3	13	8	5	5.2	12.9
24-Dec	3	2	3	5	5	3	4	3	3	3	5	4	6	5	14	13	A	12	10	14	13	12	12	8	7.0	14.1
25-Dec	8	6	6	6	9	6	8	26	15	9	9	8	14	11	9	A	19	17	15	14	20	15	23	13	12.5	26.1
26-Dec	13	14	15	21	28	11	16	17	15	26	19	27	29	20	A	17	20	20	24	16	7	8	8	5	17.2	29.3
27-Dec	4	5	5	7	13	27	28	17	32	21	20	25	23	A	15	12	25	21	21	23	19	17	11	15	17.7	32.0
28-Dec	16	48	43	34	7	30	36	64	33	34	50	29	A	11	8	14	20	23	38	65	18	17	16	25	29.4	64.7
29-Dec	17	11	13	17	21	23	32	39	26	28	25	A	16	20	19	18	22	23	21	21	16	10	10	12	20.1	39.1
30-Dec	8	10	12	16	26	28	73	54	42	34	A	41	36	43	20	21	24	71	75	89	109	80	50	46	43.7	108.9
31-Dec	68	60	78	76	47	45	54	89	84	A	56	52	52	41	32	31	64	65	51	54	107	111	94	61	64.0	111.4
		41.1	31.5	29.5	23.0	25.7	27.6	37.2	55.0	55.7	42.6	46.2	45.3	36.7	30.7	29.2	32.2	43.1	52.9	61.3	69.6	55.4	51.1	47.0	45.1	Diurnal Average
		261.4	113.0	99.9	75.9	102.1	94.3	152.1	310.4	252.2	157.6	188.9	214.5	214.1	115.3	113.7	104.1	128.2	186.0	289.3	304.4	278.7	205.1	262.7	273.0	Diurnal Maximum
C - Calibration		P - Power Failure						A - Automated Daily Zero Span																		



### Span Responses

Oxides of Nitrogen (NO<sub>x</sub>)  
Henry Pirker - December 2017



## Hourly Averages

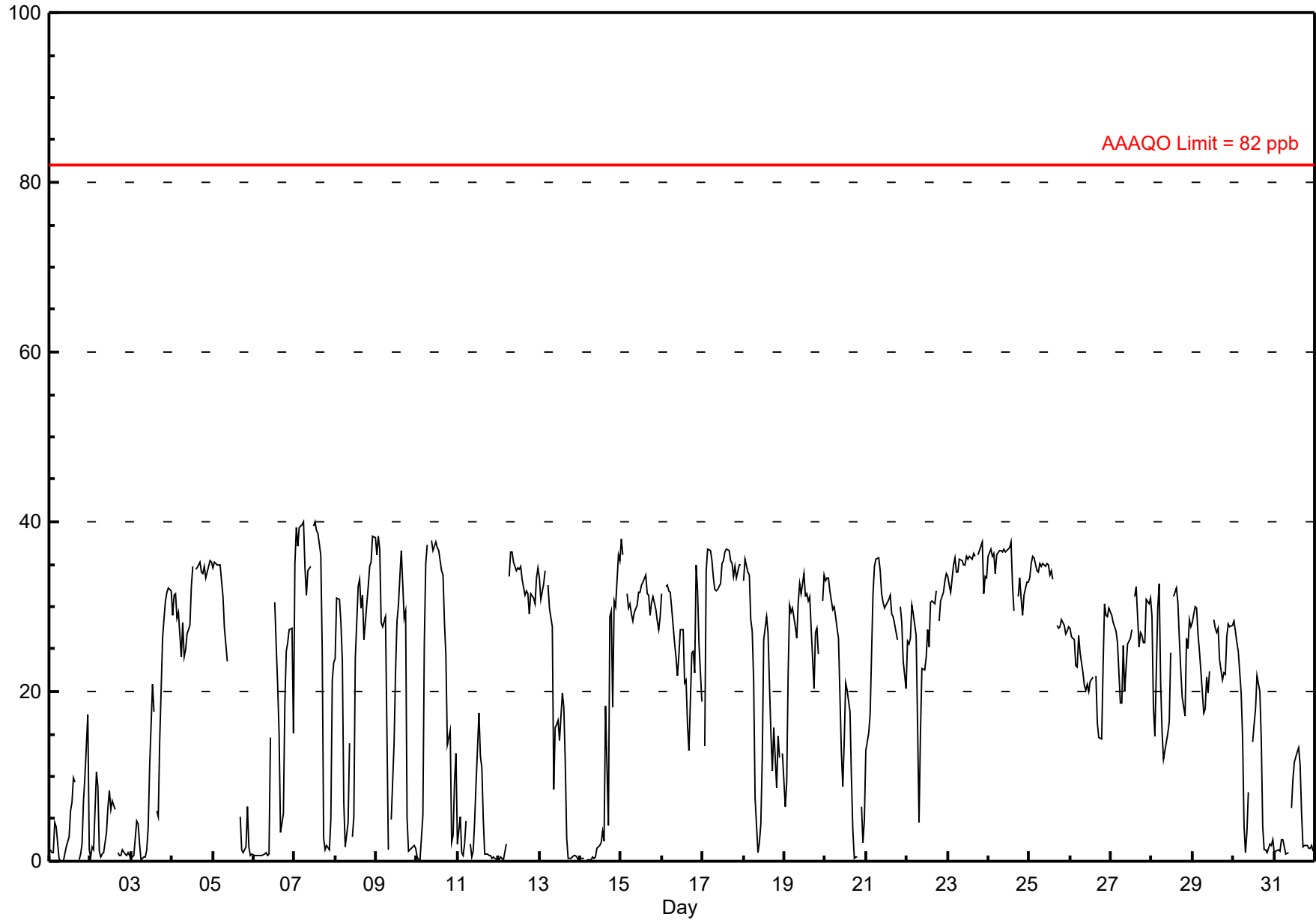
Ozone (O<sub>3</sub>) - ppb

Henry Pirker - December 2017

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 40.0 ppb on Dec 7 13:00	Maximum Daily Average: 34.9 ppb on Dec 23		Hours of Data:	707
Minimum Value: 0 ppb on Dec 1 08:00	Minimum Daily Average: 3.1 ppb on Dec 2		Hours of Missing Data:	37
Maximum Diurnal Average: 26.1 ppb at hour 15	Minimum Diurnal Average: 17.7 ppb at hour 18		Hours of Calibration:	35
Monthly Average: 21.05 ppb	Percentiles: P <sub>1</sub> = 0.2 P <sub>10</sub> = 0.9 Q <sub>1</sub> = 6.4 Median = 26.1 Q <sub>3</sub> = 31.9 P <sub>90</sub> = 35.2 P <sub>99</sub> = 38.9		Percent Operational Time:	99.7

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	1	1	1	5	4	0	0	0	0	1	2	3	6	7	10	9	A	0	1	2	7	10	17	1	3.9	17.3
2-Dec	1	2	1	10	9	1	1	1	1	3	7	8	6	7	6	A	1	1	1	1	1	1	1	1	3.1	10.4
3-Dec	0	1	3	5	4	2	0	0	1	1	4	11	21	18	A	6	5	14	26	29	31	32	32	32	12.1	32.2
4-Dec	29	31	31	29	29	24	28	24	25	27	28	32	35	A	34	35	35	34	34	35	33	35	35	35	31.2	35.4
5-Dec	35	35	35	35	35	33	31	27	24	P	P	29	A	C	C	C	5	1	1	2	6	2	1	1	18.7	35.3
6-Dec	1	1	1	1	1	1	1	1	1	1	15	A	31	25	21	15	3	6	18	25	26	27	27	15	11.4	30.6
7-Dec	35	39	37	39	40	40	35	31	34	35	A	40	40	39	39	36	25	3	1	2	1	5	21	23	27.9	40.0
8-Dec	24	31	31	28	24	7	2	5	14	A	3	5	24	32	33	30	31	26	30	32	35	35	38	38	24.3	38.2
9-Dec	36	38	37	28	28	29	15	1	A	5	14	22	28	30	34	37	29	30	5	1	1	2	2	2	19.7	38.2
10-Dec	1	0	0	5	26	35	37	A	38	37	37	38	37	37	34	34	28	24	14	15	2	3	9	13	21.9	37.8
11-Dec	2	5	1	1	2	5	A	2	0	1	5	9	17	12	11	5	1	1	1	1	0	0	0	0	3.6	17.5
12-Dec	0	1	0	0	2	A	34	36	37	35	34	35	34	35	33	31	32	32	29	32	31	30	33	35	26.1	36.5
13-Dec	33	31	33	34	A	33	30	28	8	16	16	17	14	20	18	12	3	0	0	1	1	1	1	0	15.1	34.3
14-Dec	0	0	0	A	0	0	0	0	0	1	2	2	2	4	2	18	4	29	30	18	31	30	36	35	10.7	36.1
15-Dec	38	36	A	31	30	30	29	28	29	30	32	32	33	33	34	32	31	29	31	31	30	28	27	29	31.0	38.0
16-Dec	31	A	32	33	32	32	30	26	24	22	24	27	27	21	21	16	13	25	25	22	35	32	26	19	25.9	34.9
17-Dec	A	14	34	37	37	35	33	32	32	32	33	35	35	36	37	37	35	35	34	35	33	35	35	A	33.7	36.8
18-Dec	33	36	34	34	28	27	21	7	1	2	4	12	26	29	27	21	15	11	16	9	15	12	A	13	18.8	35.7
19-Dec	6	9	22	30	29	30	28	26	30	33	32	34	31	32	31	31	28	20	27	27	24	A	31	34	27.2	33.9
20-Dec	33	33	33	32	30	30	29	27	26	13	9	14	21	20	18	10	4	0	1	0	A	6	2	5	17.3	33.4
21-Dec	13	15	17	24	32	35	36	36	34	32	30	30	31	31	31	29	29	28	26	A	30	28	24	20	27.8	35.8
22-Dec	26	26	26	30	29	27	16	5	15	23	23	24	27	25	31	31	30	32	A	28	31	32	33	34	26.2	34.0
23-Dec	34	33	32	35	36	34	34	36	35	35	35	36	36	36	36	36	36	36	A	36	37	38	32	33	34.9	37.6
24-Dec	36	37	36	36	34	36	37	37	36	37	37	37	37	38	33	29	A	31	33	31	29	31	33	33	34.5	37.6
25-Dec	33	35	36	36	34	34	35	35	35	35	35	35	34	34	33	A	28	27	28	28	28	27	27	28	32.2	35.9
26-Dec	27	26	26	23	23	27	25	22	21	20	21	20	21	22	A	22	16	15	14	23	30	29	29	30	23.1	30.3
27-Dec	29	28	28	27	26	19	19	25	20	23	26	26	27	A	31	32	25	27	27	26	26	31	30	31	26.4	32.4
28-Dec	29	18	15	30	33	21	15	12	14	15	16	25	A	31	32	30	26	23	19	17	26	25	29	28	23.0	32.6
29-Dec	28	30	30	27	25	22	17	18	22	20	22	A	29	28	27	27	24	21	22	22	26	28	28	28	24.8	30.0
30-Dec	28	27	26	25	20	15	4	1	3	8	A	14	16	18	22	20	14	4	1	1	1	2	2	3	12.0	28.4
31-Dec	1	1	1	1	3	2	2	1	1	A	6	10	12	13	13	11	6	2	2	2	2	1	2	1	4.2	13.4
	20.8	20.7	21.3	23.7	22.7	22.2	20.7	17.7	18.7	19.3	19.6	22.8	25.4	25.4	26.1	24.4	19.4	17.7	17.7	17.8	20.3	19.7	21.5	20.0	Diurnal Average	
	38.0	39.3	37.1	39.4	39.6	40.0	37.2	36.6	37.8	36.7	37.1	39.6	40.0	39.0	38.6	36.7	36.0	35.0	36.1	37.1	37.6	35.2	38.2	38.2	Diurnal Maximum	

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





## Hourly Maximums

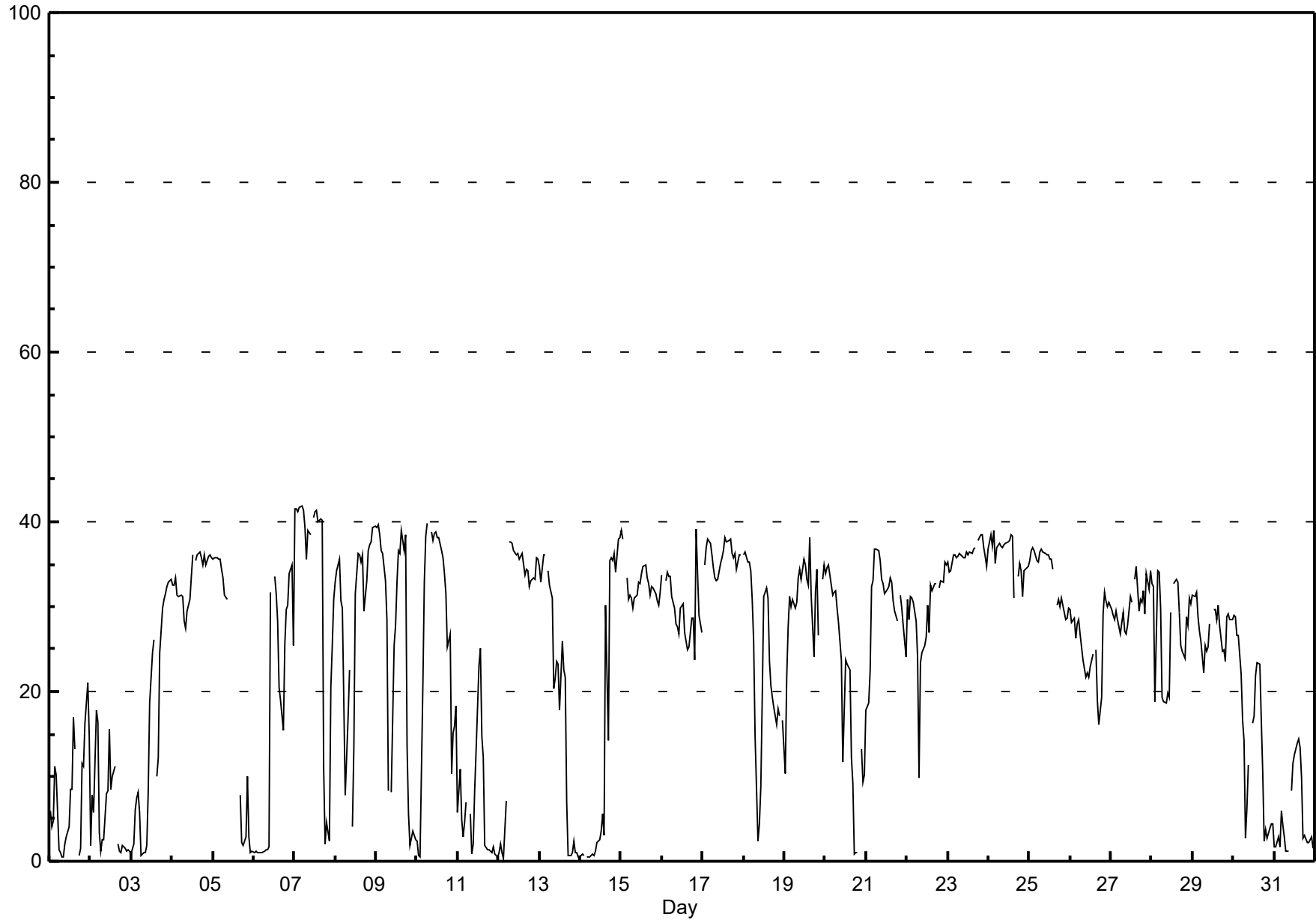
Ozone (O<sub>3</sub>) - ppb

Henry Pirker - December 2017

Maximum Value: 41.8 ppb on Dec 7 05:00		Maximum Daily Average: 36.2 ppb on Dec 23		Hours in Service: 744																						
Minimum Value: 0 ppb on Dec 12 04:00		Minimum Daily Average: 5.4 ppb on Dec 31		Hours of Data: 707																						
Maximum Diurnal Average: 28.9 ppb at hour 15		Minimum Diurnal Average: 20.7 ppb at hour 19		Hours of Missing Data: 37																						
Monthly Average: 24.12 ppb		Percentiles: P <sub>1</sub> = 0.6 P <sub>10</sub> = 1.8 Q <sub>1</sub> = 13.2 Median = 29.5 Q <sub>3</sub> = 34.5 P <sub>90</sub> = 36.7 P <sub>99</sub> = 41.2		Hours of Calibration: 35																						
				Percent Operational Time: 99.7																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	6	4	5	11	10	1	1	1	1	2	3	4	9	9	17	13	A	1	2	12	11	16	21	15	7.5	20.9
2-Dec	2	8	6	18	16	3	1	3	3	8	8	16	8	10	11	A	2	1	1	2	2	1	1	1	5.7	17.9
3-Dec	1	2	6	7	8	6	1	1	1	2	8	19	25	26	A	10	12	25	30	31	31	32	33	33	15.2	33.3
4-Dec	33	33	33	31	31	31	31	28	28	29	31	34	36	A	35	36	36	36	35	36	35	36	36	36	33.3	36.4
5-Dec	36	36	36	36	36	34	33	31	31	P	P	32	A	C	C	C	8	2	2	3	10	3	1	1	20.6	35.8
6-Dec	1	1	1	1	1	1	1	1	1	2	32	A	34	32	28	20	19	15	26	30	30	34	35	25	16.2	34.9
7-Dec	42	42	41	42	42	41	39	36	39	38	A	40	41	41	40	40	40	11	2	5	2	20	25	31	32.2	41.8
8-Dec	33	34	36	31	30	19	8	17	23	A	4	13	31	36	36	35	36	29	33	37	37	38	39	39	29.3	39.4
9-Dec	39	40	38	37	36	33	29	8	A	8	25	28	33	37	36	39	37	39	14	6	2	4	3	3	24.9	39.7
10-Dec	2	1	0	21	33	38	40	A	39	38	39	39	38	38	37	36	34	31	25	27	10	15	16	18	26.7	39.9
11-Dec	6	11	5	3	5	7	A	6	1	2	8	13	23	25	15	12	2	1	1	1	1	2	1	1	6.6	25.0
12-Dec	1	2	1	0	7	A	38	38	37	37	36	36	36	36	36	34	34	34	32	33	33	33	36	36	28.1	37.7
13-Dec	35	33	36	36	A	34	33	31	20	21	24	23	18	26	23	22	7	1	1	1	2	1	1	1	18.6	36.2
14-Dec	1	1	1	A	1	0	1	1	1	1	2	2	4	6	3	30	14	35	36	36	36	34	38	38	14.0	38.2
15-Dec	39	38	A	33	31	31	31	30	31	31	33	33	34	35	35	33	33	31	32	32	31	31	30	32	32.6	39.0
16-Dec	34	A	33	34	34	34	31	30	28	28	27	30	30	27	26	25	25	29	29	24	39	34	29	27	29.7	39.1
17-Dec	A	35	37	38	37	36	35	33	33	33	35	36	37	38	38	38	38	36	36	36	34	36	36	A	36.0	38.1
18-Dec	36	36	35	35	34	31	26	15	2	4	9	19	31	32	31	24	21	19	18	16	18	17	A	17	22.9	36.4
19-Dec	10	22	28	31	30	31	30	30	33	34	33	36	35	33	32	38	31	24	32	34	27	A	33	35	30.6	38.1
20-Dec	34	35	35	34	31	32	32	30	28	24	12	18	24	23	23	12	9	1	1	1	A	13	9	10	20.4	34.9
21-Dec	18	19	22	32	33	37	37	37	35	33	33	32	32	32	33	33	31	29	28	A	31	30	28	24	30.4	36.7
22-Dec	31	29	31	31	30	28	24	10	23	25	25	26	30	27	33	32	33	33	A	32	33	33	35	35	29.1	35.3
23-Dec	35	34	34	36	36	36	36	36	36	36	36	36	36	36	36	37	37	A	38	38	38	37	36	35	36.2	38.4
24-Dec	37	38	37	39	35	37	37	37	37	37	37	38	38	38	38	31	A	34	35	34	31	34	35	35	36.1	39.1
25-Dec	35	37	37	37	35	35	37	37	36	36	36	36	36	36	34	A	30	31	30	31	29	28	29	30	33.8	37.0
26-Dec	30	28	29	26	28	28	27	24	23	22	22	22	23	24	A	25	19	16	19	29	32	31	30	31	25.5	31.8
27-Dec	30	29	28	29	28	27	28	29	27	27	28	31	30	A	33	35	29	31	31	32	29	34	32	34	30.1	34.7
28-Dec	33	32	19	34	34	30	19	19	19	20	19	29	A	33	33	33	29	25	25	24	29	28	31	30	27.3	34.3
29-Dec	31	31	32	29	27	26	22	25	25	25	28	A	30	30	28	30	28	25	25	24	29	29	28	29	27.6	31.6
30-Dec	29	29	27	27	22	17	14	3	6	11	A	16	17	22	23	23	17	11	2	4	3	4	4	4	14.6	28.9
31-Dec	2	2	3	2	6	4	3	1	1	A	8	12	13	14	14	13	10	3	3	2	2	3	3	2	5.4	14.4
23.3		24.0	23.7	26.7	25.6	25.0	24.1	20.9	21.6	22.0	22.9	25.8	27.9	28.6	28.9	28.2	24.2	21.3	20.7	21.7	22.7	23.0	23.8	22.9	Diurnal Average	
41.5		41.6	41.2	41.7	41.8	41.4	39.9	37.6	39.1	38.5	38.6	40.5	41.2	41.3	40.0	40.3	40.1	38.6	37.7	38.4	39.1	37.6	39.3	39.4	Diurnal Maximum	
C - Calibration				P - Power Failure				A - Automated Daily Zero Span																		

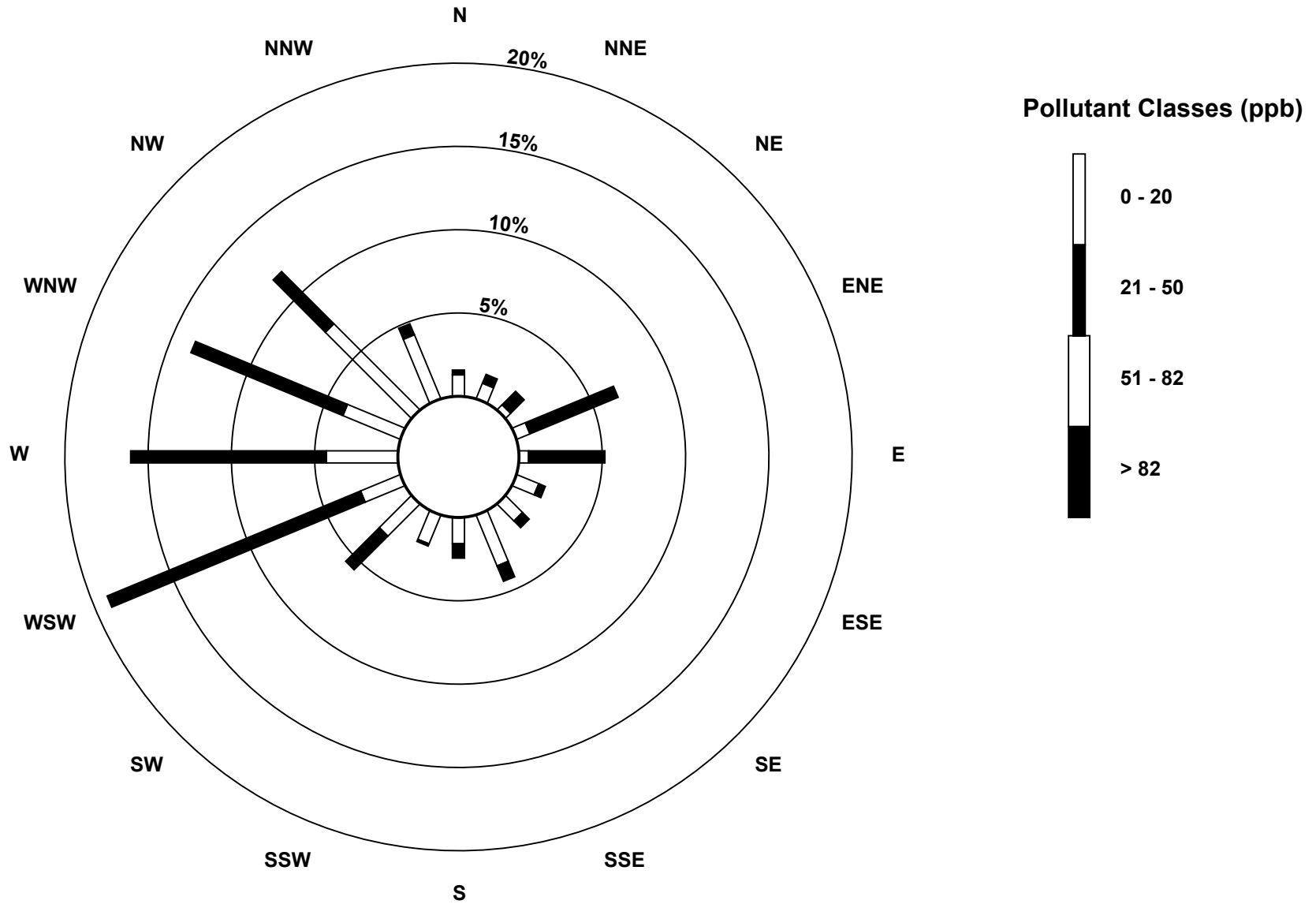
### Hourly Maximums

Ozone (O<sub>3</sub>) - ppb  
Henry Pirker - December 2017



**Pollutant Rose**

**Ozone (O<sub>3</sub>) - ppb**  
**Henry Pirker - December 2017**



# Eight Hour Running Averages

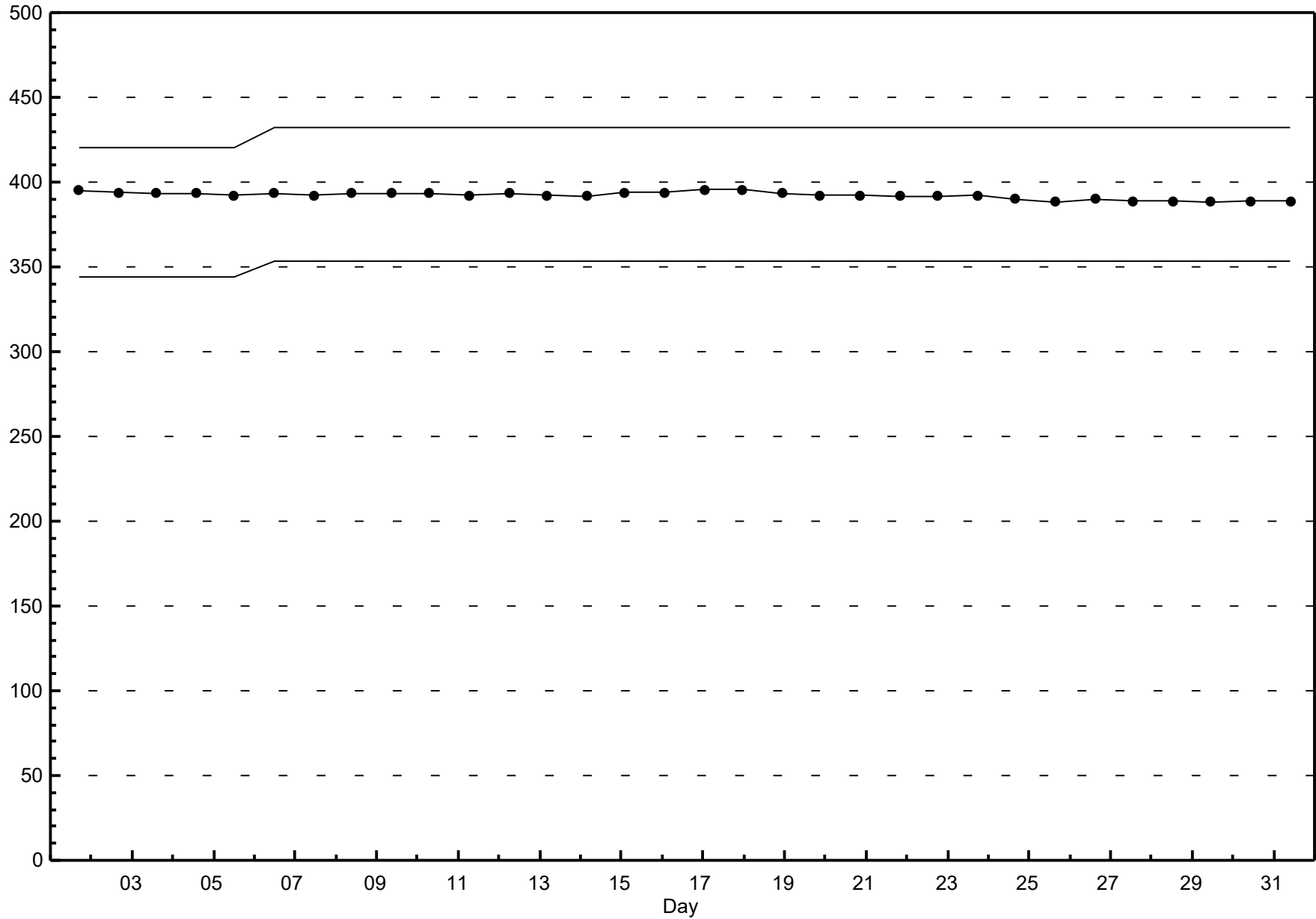
Ozone (O<sub>3</sub>) - ppb

Henry Pirker - December 2017

<b>Maximum Value: 37.5 ppb on Dec 7 16:00</b>																								Hours in Service: 744	
<b>Minimum Value: 0.3 ppb on Dec 14 07:00</b>																								Hours of Data: 735	
Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 2.3 Q <sub>1</sub> = 10.3 Median = 24.7 Q <sub>3</sub> = 31.2 P <sub>90</sub> = 34.6 P <sub>99</sub> = 36.7																								Hours of Missing Data: 9	
																								Hours of Calibration: 3	
																								Percent Operational Time: 99.2	
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Dec	6	6	5	4	3	2	2	2	1	1	1	1	1	2	4	5	5	5	5	5	5	6	7	6	6.7
2-Dec	5	5	5	6	6	5	3	3	3	3	4	4	3	4	5	6	6	5	4	3	3	2	1	1	6.4
3-Dec	1	1	1	1	2	2	2	2	2	2	2	3	5	7	8	9	9	11	14	17	18	20	22	25	25.1
4-Dec	28	30	31	31	31	30	29	28	28	27	27	27	28	28	29	31	32	33	34	35	34	34	34	35	34.6
5-Dec	34	35	35	35	35	35	34	33	32	31	31	30	N	N	N	N	N	N	N	N	N	3	3	2	35.0
6-Dec	2	2	2	2	1	1	1	1	1	1	3	3	7	11	13	15	16	17	17	18	17	18	18	18	18.5
7-Dec	22	27	29	31	33	34	35	37	37	36	36	36	36	36	37	37	36	32	28	23	18	14	12	10	37.5
8-Dec	10	14	17	21	23	24	21	19	18	16	12	8	8	12	17	20	23	23	27	30	31	32	32	33	33.3
9-Dec	34	35	36	36	35	34	31	27	25	20	17	16	16	17	19	24	25	28	27	24	21	17	13	9	36.2
10-Dec	5	2	1	2	5	9	13	15	20	25	31	35	37	37	37	36	35	34	31	28	24	19	16	14	37.1
11-Dec	10	8	6	5	5	5	4	3	2	2	2	3	6	7	7	8	8	8	7	6	4	2	1	1	10.3
12-Dec	0	0	0	0	1	1	5	10	16	21	25	30	35	35	35	34	34	33	33	32	32	31	31	32	35.0
13-Dec	32	32	32	33	33	33	33	32	28	26	24	21	20	19	17	15	14	12	10	8	7	4	2	1	33.1
14-Dec	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	4	4	8	11	13	17	20	24	27	26.6
15-Dec	31	32	32	34	34	34	33	32	31	30	30	30	30	31	31	32	32	32	32	32	31	31	30	30	34.0
16-Dec	30	30	30	30	30	31	31	31	30	29	28	27	26	25	24	23	22	22	22	21	22	24	24	24	31.2
17-Dec	26	25	26	28	28	29	30	32	32	34	34	34	33	34	34	35	35	35	36	35	35	35	35	35	35.5
18-Dec	34	34	34	34	34	32	30	28	24	19	16	13	13	13	14	15	17	18	20	19	18	16	14	13	34.4
19-Dec	12	11	12	15	17	20	21	23	26	29	30	30	30	31	31	32	31	30	29	28	27	27	27	27	31.6
20-Dec	28	30	31	31	32	32	32	31	30	28	24	22	21	20	19	16	14	12	11	9	8	6	3	3	32.2
21-Dec	4	6	8	12	14	18	22	26	29	31	32	33	33	32	32	31	30	30	29	29	29	29	28	26	33.0
22-Dec	26	26	26	26	26	26	25	23	22	21	21	20	20	20	22	25	27	28	29	29	30	31	31	31	31.4
23-Dec	32	32	32	33	33	34	34	34	34	35	35	35	35	35	35	36	36	36	36	36	36	36	35	35	36.4
24-Dec	35	35	35	35	35	35	36	36	36	36	36	36	37	37	36	35	35	34	34	33	32	31	31	32	36.8
25-Dec	32	32	33	33	34	34	35	35	35	35	35	35	35	35	34	34	33	32	31	30	30	28	28	28	35.0
26-Dec	28	27	27	27	26	26	26	25	24	23	23	22	22	21	21	21	20	20	19	19	20	21	22	23	27.5
27-Dec	25	27	28	29	28	27	26	25	24	23	23	23	23	24	26	27	27	28	28	28	28	28	28	28	28.7
28-Dec	28	27	26	26	27	26	24	22	20	19	20	19	17	18	21	23	25	26	27	26	26	25	24	24	28.3
29-Dec	24	25	27	28	28	27	26	25	24	23	22	21	21	22	24	25	25	25	25	25	25	25	25	25	27.8
30-Dec	25	26	27	27	26	24	22	18	15	13	11	9	9	9	12	15	16	15	14	12	10	8	6	4	27.0
31-Dec	2	2	2	2	2	2	2	2	2	2	2	3	5	6	8	9	10	9	9	8	6	5	3	2	10.1
35.0 35.4 36.2 35.7 35.0 35.3 35.6 37.1 36.9 36.4 36.3 36.9 37.1 36.8 37.5 36.2 35.7 35.9 36.1 36.4 35.7 35.4 35.0																									
Diurnal Maximums																									
N - Not Valid																									

### Span Responses

Ozone (O<sub>3</sub>)  
Henry Pirker - December 2017



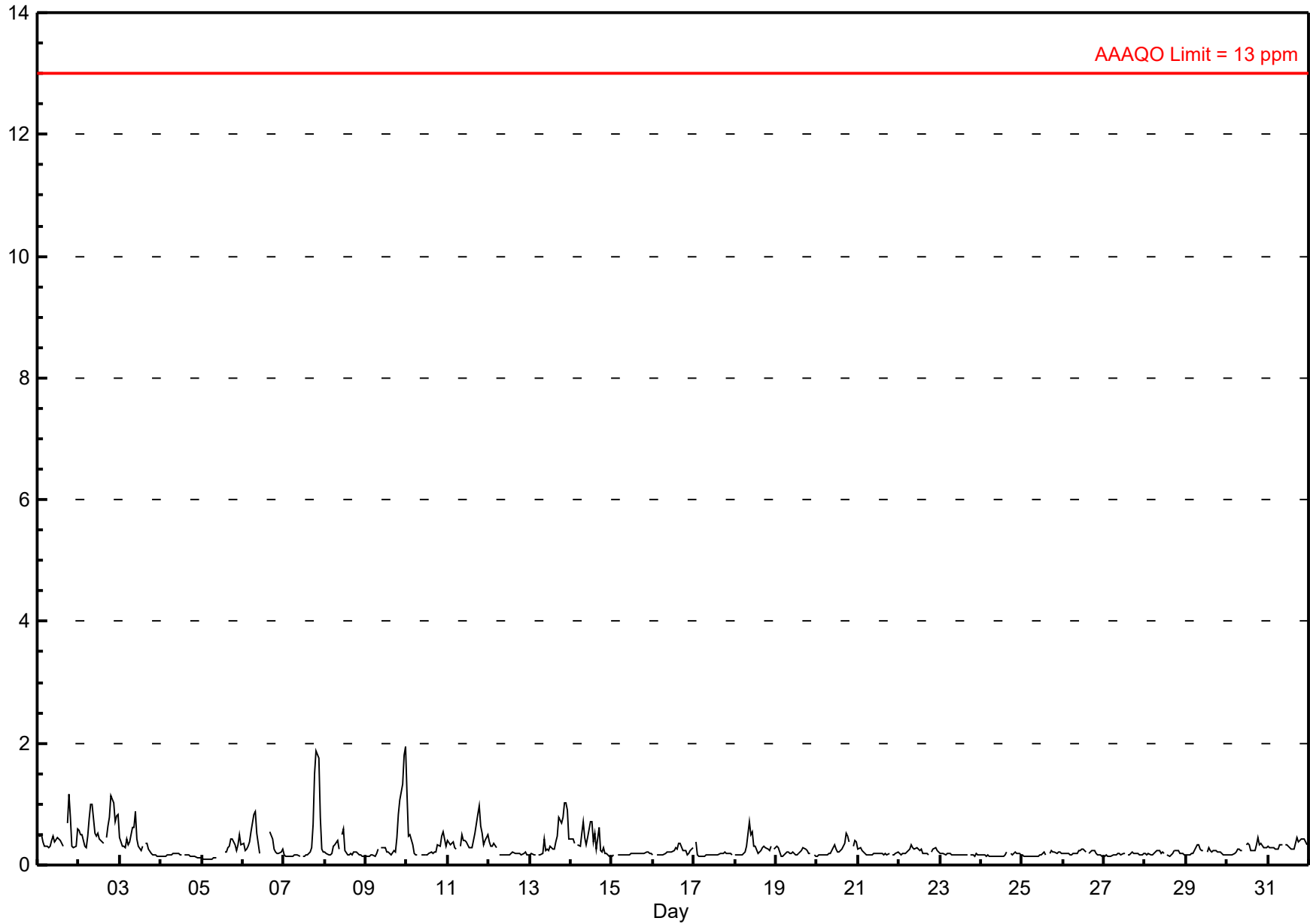
# Hourly Averages

**Carbon Monoxide (CO) - ppm**  
**Henry Pirker - December 2017**

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 744
Maximum Value: 1.94 ppm on Dec 10 00:00	Maximum Daily Average: 0.63 ppm on Dec 2
Minimum Value: 0.1 ppm on Dec 5 05:00	Hours of Data: 706
Maximum Diurnal Average: 0.39 ppm at hour 20	Hours of Missing Data: 38
Monthly Average: 0.282 ppm	Hours of Calibration: 36
Percentiles: P <sub>1</sub> = 0.11 P <sub>10</sub> = 0.15 Q <sub>1</sub> = 0.17 Median = 0.20 Q <sub>3</sub> = 0.31 P <sub>90</sub> = 0.48 P <sub>99</sub> = 1.09	Percent Operational Time: 99.7

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	0.5	0.5	0.5	0.4	0.3	0.3	0.3	0.3	0.4	0.5	0.4	0.5	0.4	0.4	0.3	0.3	A	0.7	1.2	0.8	0.3	0.3	0.3	0.6	0.45	1.16	
2-Dec	0.6	0.5	0.5	0.3	0.3	0.5	0.8	1.0	1.0	0.5	0.5	0.5	0.4	0.4	0.4	A	A	0.4	0.6	0.8	1.1	1.0	0.7	0.8	0.8	0.63	1.14
3-Dec	0.5	0.3	0.3	0.3	0.4	0.3	0.4	0.6	0.6	0.9	0.4	0.3	0.2	0.3	A	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.34	0.89
4-Dec	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.16	0.20	
5-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	P	P	0.2	A	0.2	0.2	0.3	0.3	0.4	0.4	0.3	0.2	0.3	0.5	0.3	0.23	0.50	
6-Dec	0.4	0.2	0.3	0.3	0.4	0.6	0.8	0.9	0.5	0.4	0.2	A	C	C	C	C	0.6	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.38	0.87	
7-Dec	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	A	0.1	0.2	0.2	0.2	0.2	0.3	0.7	1.5	1.9	1.8	0.8	0.3	0.2	0.42	1.88	
8-Dec	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.3	A	A	0.5	0.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.24	0.58	
9-Dec	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.3	A	A	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.8	1.1	1.3	1.8	1.9	0.47	1.94	
10-Dec	1.2	0.5	0.5	0.3	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.5	0.5	0.4	0.3	0.32	1.17	
11-Dec	0.4	0.3	0.4	0.4	0.3	0.3	A	0.3	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.5	0.8	1.0	0.6	0.5	0.3	0.4	0.5	0.43	0.97	
12-Dec	0.4	0.3	0.3	0.3	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	0.21	0.37	
13-Dec	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.4	0.2	0.3	0.2	0.3	0.3	0.3	0.4	0.5	0.8	0.7	0.8	1.0	1.0	0.9	0.4	0.42	1.02	
14-Dec	0.4	0.4	0.4	A	0.3	0.3	0.5	0.7	0.5	0.3	0.5	0.7	0.7	0.4	0.5	0.3	0.6	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.39	0.72	
15-Dec	0.1	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.18	0.22	
16-Dec	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.22	0.36	
17-Dec	A	0.4	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.18	0.37	
18-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.7	0.5	0.5	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	A	0.3	0.28	0.72	
19-Dec	0.3	0.3	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	A	0.2	0.1	0.21	0.32	
20-Dec	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	0.3	0.3	0.3	0.5	0.5	0.4	A	0.3	0.4	0.4	0.27	0.52	
21-Dec	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.19	0.29	
22-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	A	0.2	0.3	0.3	0.2	0.23	0.33	
23-Dec	0.2	0.2	0.2	0.2	0.2	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	0.17	0.20	
24-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.17	0.21	
25-Dec	0.2	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	0.2	0.2	0.2	0.2	0.2	0.17	0.23	
26-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.20	0.26	
27-Dec	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.17	0.21	
28-Dec	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	0.2	0.2	0.19	0.24	
29-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	A	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.22	0.34	
30-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	A	0.3	0.4	0.3	0.2	0.2	0.2	0.3	0.5	0.3	0.4	0.3	0.3	0.3	0.26	0.45	
31-Dec	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	A	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.33	0.44	
	0.28	0.24	0.23	0.21	0.21	0.22	0.26	0.30	0.30	0.28	0.27	0.27	0.25	0.24	0.23	0.23	0.29	0.34	0.39	0.39	0.36	0.34	0.33	0.32		Diurnal Average	
	1.17	0.50	0.51	0.37	0.42	0.56	0.84	1.00	0.99	0.89	0.53	0.70	0.72	0.40	0.52	0.41	0.63	0.84	1.49	1.88	1.77	1.32	1.79	1.94		Diurnal Maximum	

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



# Hourly Maximums

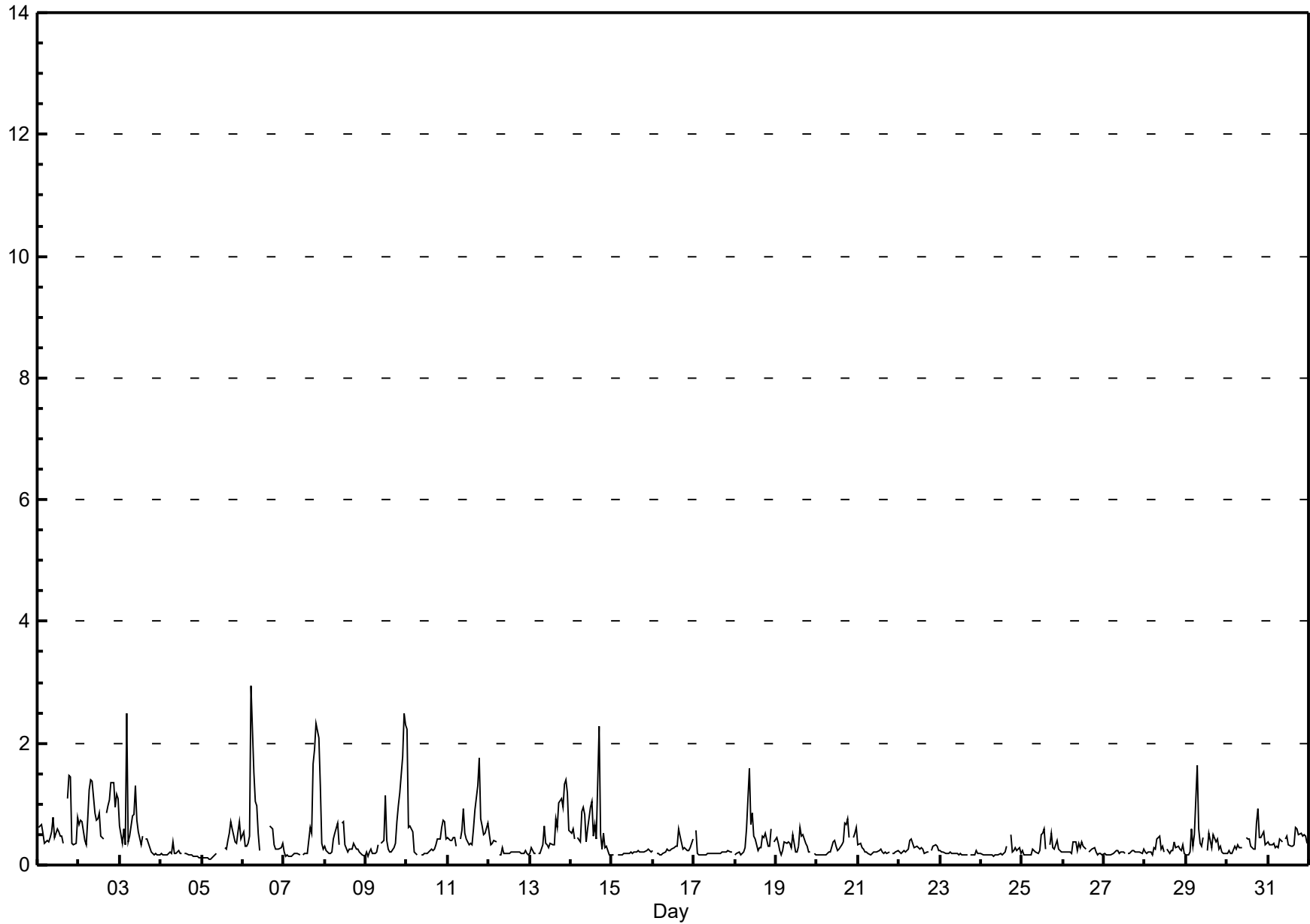
## Carbon Monoxide (CO) - ppm Henry Pirker - December 2017

Maximum Value: 2.94 ppm on Dec 6 06:00      Maximum Daily Average: 0.89 ppm on Dec 2 Minimum Value: 0.1 ppm on Dec 5 06:00      Minimum Daily Average: 0.18 ppm on Dec 4 Maximum Diurnal Average: 0.54 ppm at hour 19      Minimum Diurnal Average: 0.26 ppm at hour 4 Monthly Average: 0.389 ppm      Percentiles: P <sub>1</sub> = 0.13 P <sub>10</sub> = 0.17 Q <sub>1</sub> = 0.20 Median = 0.26 Q <sub>3</sub> = 0.44 P <sub>90</sub> = 0.71 P <sub>99</sub> = 2.21																								Hours in Service:	744																								
																								Hours of Data:	706																								
																								Hours of Missing Data:	38																								
																								Hours of Calibration:	36																								
																								Percent Operational Time:	99.7																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Dec	0.6	0.6	0.7	0.5	0.4	0.4	0.4	0.5	0.5	0.8	0.5	0.6	0.5	0.5	0.5	0.3	A	1.1	1.5	1.4	0.4	0.3	0.4	0.8	0.61	1.46																							
2-Dec	0.7	0.7	0.7	0.4	0.3	0.8	1.2	1.4	1.4	0.9	0.7	0.8	0.8	0.5	0.4	A	0.9	1.0	1.1	1.4	1.4	1.0	1.2	1.1	0.89	1.40																							
3-Dec	0.6	0.4	0.6	0.3	2.5	0.4	0.5	0.8	0.8	1.3	0.7	0.5	0.3	0.5	A	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.55	2.50																							
4-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.18	0.38																							
5-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	P	P	0.3	A	0.3	0.3	0.4	0.5	0.7	0.6	0.4	0.4	0.5	0.7	0.4	0.31	0.71																							
6-Dec	0.5	0.3	0.3	0.4	0.5	2.9	1.5	1.0	1.0	0.5	0.2	A	C	C	C	C	0.6	0.6	0.3	0.3	0.3	0.3	0.3	0.4	0.64	2.94																							
7-Dec	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	0.6	0.5	1.7	1.9	2.3	2.1	1.3	0.4	0.3	0.59	2.32																						
8-Dec	0.3	0.2	0.2	0.2	0.2	0.4	0.5	0.7	0.3	A	0.7	0.7	0.3	0.2	0.3	0.3	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.32	0.71																							
9-Dec	0.2	0.1	0.2	0.3	0.2	0.2	0.2	0.3	A	0.4	0.4	1.1	0.4	0.2	0.2	0.2	0.3	0.4	0.7	1.0	1.2	1.8	2.5	2.3	0.65	2.50																							
10-Dec	2.2	0.6	0.6	0.5	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.4	0.4	0.6	0.7	0.7	0.4	0.44	2.23																							
11-Dec	0.5	0.4	0.4	0.4	0.4	0.3	A	0.4	0.6	0.9	0.5	0.4	0.3	0.4	0.3	0.6	0.9	1.3	1.8	0.8	0.6	0.5	0.5	0.7	0.61	1.77																							
12-Dec	0.5	0.3	0.4	0.4	0.4	A	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.24	0.49																							
13-Dec	0.2	0.3	0.2	0.2	A	0.2	0.2	0.3	0.6	0.4	0.3	0.3	0.4	0.3	0.3	0.8	0.6	1.0	1.1	0.9	1.3	1.4	1.2	0.6	0.57	1.40																							
14-Dec	0.5	0.6	0.4	A	0.5	0.4	0.9	0.9	0.8	0.4	0.6	1.0	1.0	0.5	0.7	0.4	2.3	0.5	0.3	0.5	0.3	0.3	0.2	0.2	0.61	2.27																							
15-Dec	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.20	0.26																							
16-Dec	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.6	0.5	0.3	0.3	0.3	0.2	0.2	0.3	0.4	0.27	0.59																							
17-Dec	A	0.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.21	0.57																							
18-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.6	1.6	0.7	0.8	0.5	0.4	0.2	0.3	0.3	0.5	0.5	0.5	0.3	0.3	0.6	A	0.4	0.43	1.60																							
19-Dec	0.4	0.4	0.2	0.2	0.2	0.4	0.4	0.4	0.4	0.3	0.5	0.2	0.2	0.3	0.6	0.5	0.5	0.4	0.3	0.2	0.2	A	0.2	0.2	0.33	0.61																							
20-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.3	0.2	0.3	0.3	0.4	0.7	0.7	0.8	0.4	A	0.5	0.5	0.6	0.35	0.77																							
21-Dec	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.23	0.35																							
22-Dec	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	A	0.2	0.3	0.3	0.3	0.2	0.27	0.43																							
23-Dec	0.2	0.2	0.2	0.2	0.2	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	0.19	0.24																							
24-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	A	0.5	0.2	0.2	0.3	0.2	0.3	0.2	0.21	0.50																							
25-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.5	0.5	0.6	0.3	A	0.3	0.5	0.3	0.3	0.4	0.3	0.2	0.2	0.28	0.59																							
26-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.2	0.4	0.3	0.4	0.3	0.3	A	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.25	0.38																							
27-Dec	0.2	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	0.3	0.20	0.25																							
28-Dec	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.3	0.3	0.2	A	0.3	0.2	0.2	0.2	0.4	0.3	0.3	0.3	0.2	0.3	0.2	0.27	0.48																							
29-Dec	0.2	0.2	0.2	0.6	0.3	0.5	1.6	0.6	0.4	0.3	0.5	A	0.2	0.5	0.4	0.3	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.40	1.63																							
30-Dec	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	A	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.7	0.9	0.4	0.5	0.5	0.3	0.4	0.37	0.93																						
31-Dec	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	A	0.4	0.5	0.3	0.3	0.3	0.3	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.41	0.62																							
																								0.37	0.30	0.28	0.26	0.32	0.36	0.40	0.42	0.43	0.38	0.37	0.38	0.33	0.31	0.29	0.33	0.47	0.52	0.54	0.49	0.46	0.46	0.43	0.40	Diurnal Average	
																								2.23	0.74	0.72	0.59	2.50	2.94	1.63	1.40	1.60	1.30	0.85	1.15	1.03	0.59	0.65	0.77	2.27	1.66	1.90	2.32	2.10	1.79	2.50	2.30	Diurnal Maximum	
C - Calibration																								P - Power Failure				A - Automated Daily Zero Span																					



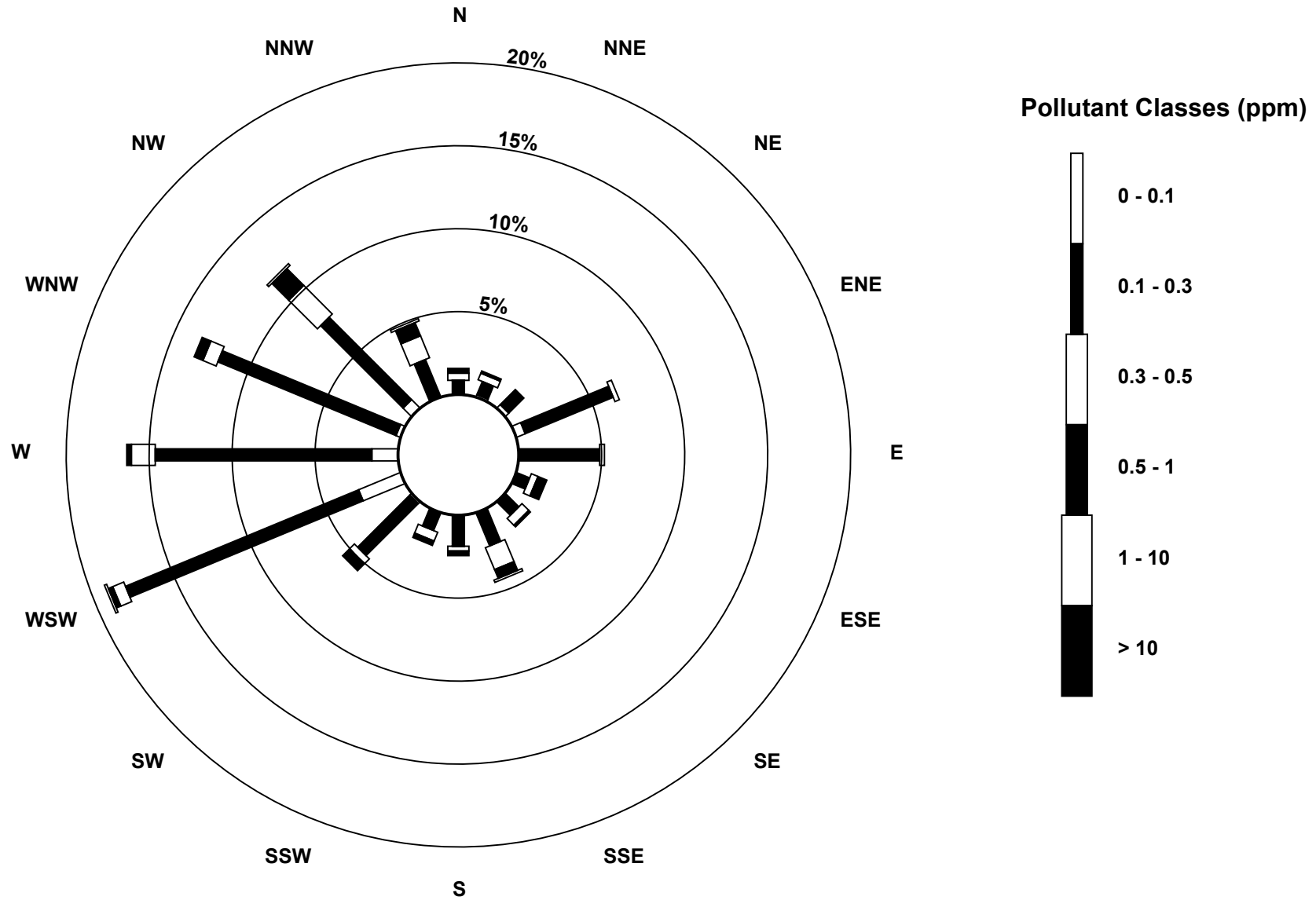
**Hourly Maximums**

**Carbon Monoxide (CO) - ppm**  
**Henry Pirker - December 2017**



**Pollutant Rose**

**Carbon Monoxide (CO) - ppm**  
**Henry Pirker - December 2017**



## Eight Hour Running Averages

Carbon Monoxide (CO) - ppm

Henry Pirker - December 2017

Number of Exceedences (AAAQO): 8-hr: 0	Hours in Service: 744
Maximum Value: 1.14 ppm on Dec 10 03:00	Hours of Data: 731
Minimum Value: 0.10 ppm on Dec 5 08:00	Hours of Missing Data: 13
	Hours of Calibration: 8
	Percent Operational Time: 99.3
Percentiles: P <sub>1</sub> = 0.11 P <sub>10</sub> = 0.16 Q <sub>1</sub> = 0.18 Median = 0.21 Q <sub>3</sub> = 0.33 P <sub>90</sub> = 0.50 P <sub>99</sub> = 0.88	

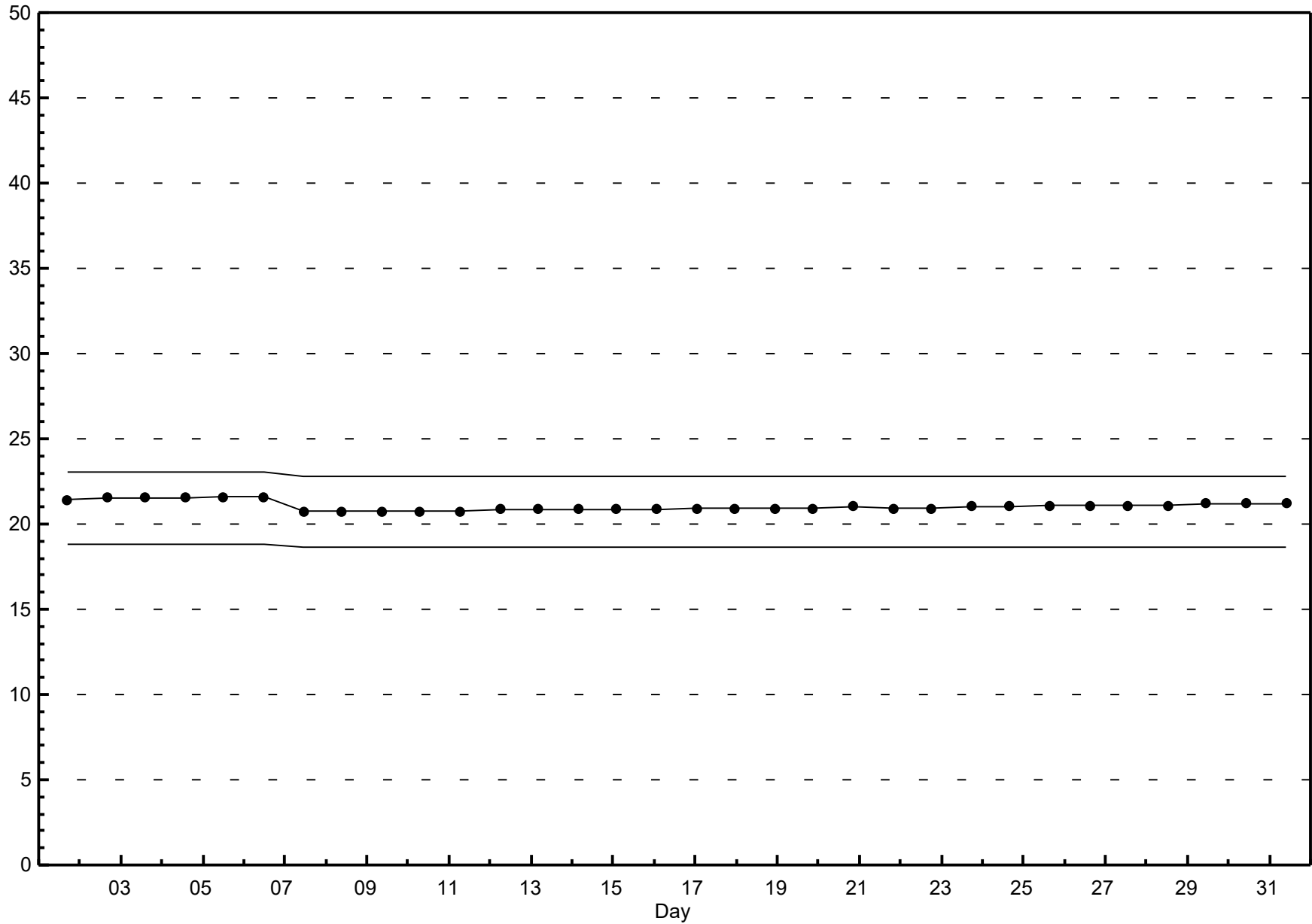
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Dec	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.6	0.6	0.5	0.6	0.59
2-Dec	0.6	0.6	0.5	0.4	0.4	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.8	0.79
3-Dec	0.8	0.8	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.80
4-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.18
5-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	N	N	N	N	N	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.36
6-Dec	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	N	N	N	N	N	N	N	N	0.3	0.3	0.3	0.56
7-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.6	0.8	0.9	0.9	0.9	0.92
8-Dec	0.9	0.9	0.7	0.5	0.3	0.2	0.2	0.2	0.2	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	0.91
9-Dec	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.6	0.8	1.0	0.98
10-Dec	1.1	1.1	1.1	1.1	1.0	0.8	0.6	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	1.14
11-Dec	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.59
12-Dec	0.6	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.57
13-Dec	0.2	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	0.4	0.4	0.5	0.6	0.7	0.8	0.8	0.76
14-Dec	0.8	0.7	0.7	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.3	0.3	0.3	0.3	0.75
15-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.20
16-Dec	0.2	0.2	0.2	0.2	0.2	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	0.3	0.3	0.2	0.28
17-Dec	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.25
18-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.39
19-Dec	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.28
20-Dec	0.2	0.2	0.2	0.2	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	0.3	0.4	0.4	0.4	0.40
21-Dec	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.39
22-Dec	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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.27
23-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.23
24-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.19
25-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.21
26-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.23
27-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.18
28-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.21
29-Dec	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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.27
30-Dec	0.2	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	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.32
31-Dec	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.39
	1.10	1.13	1.14	1.08	0.97	0.82	0.62	0.55	0.60	0.60	0.60	0.63	0.64	0.64	0.59	0.53	0.50	0.49	0.54	0.63	0.83	0.91	0.92	0.98	

Diurnal Maximums

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

### Span Responses

**Carbon Monoxide (CO)**  
**Henry Pirker - December 2017**

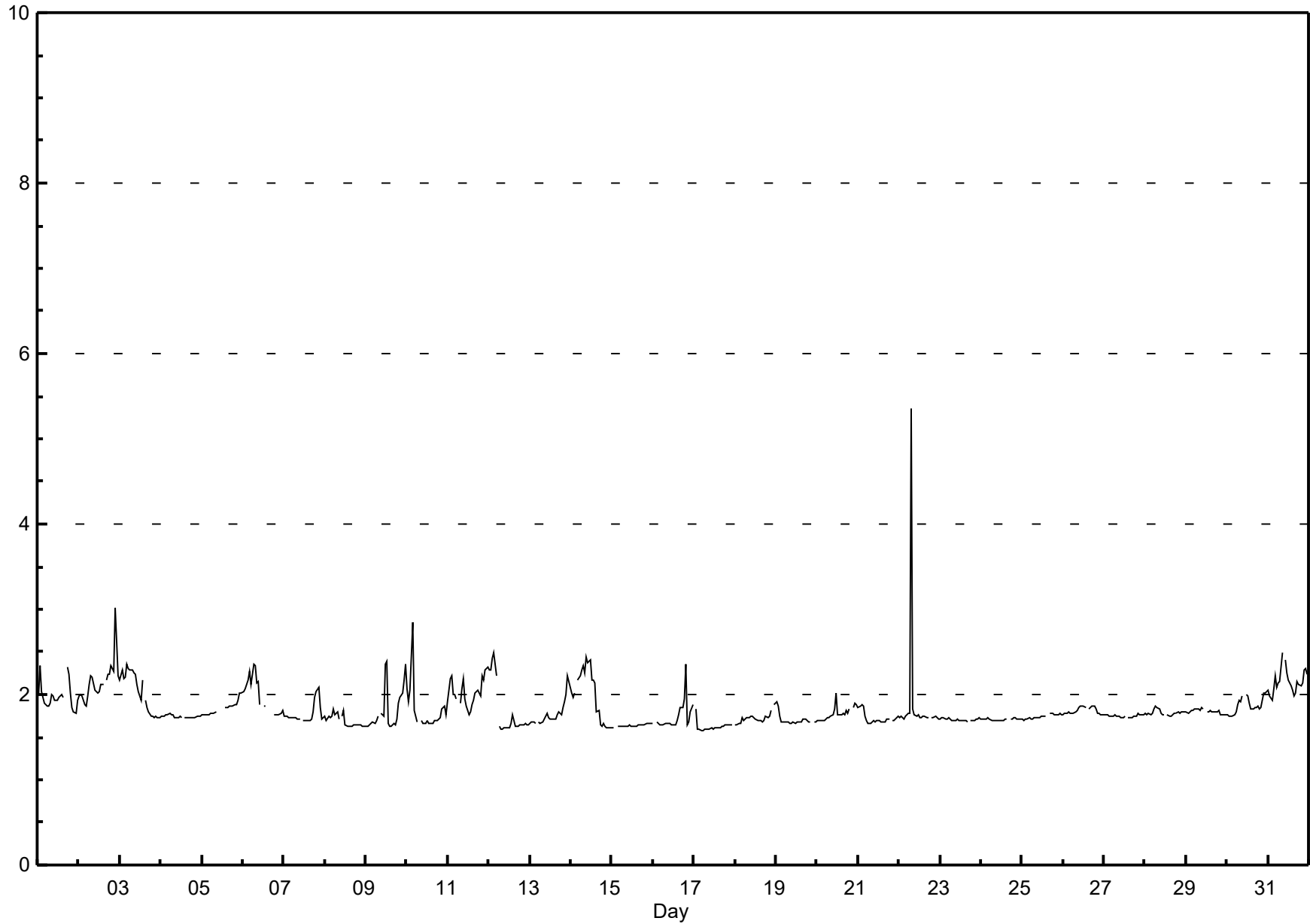


## Hourly Averages

Total Hydrocarbons (THC) - ppm

Henry Pirker - December 2017

Maximum Value: 5.36 ppm on Dec 22 08:00		Maximum Daily Average: 2.16 ppm on Dec 2		Hours in Service: 744																																												
Minimum Value: 1.6 ppm on Dec 17 05:00		Minimum Daily Average: 1.62 ppm on Dec 17		Hours of Data: 705																																												
Maximum Diurnal Average: 1.95 ppm at hour 8		Minimum Diurnal Average: 1.75 ppm at hour 16		Hours of Missing Data: 39																																												
Monthly Average: 1.825 ppm		Percentiles: P <sub>1</sub> = 1.59 P <sub>10</sub> = 1.64 Q <sub>1</sub> = 1.70 Median = 1.75 Q <sub>3</sub> = 1.87 P <sub>90</sub> = 2.14 P <sub>99</sub> = 2.42		Hours of Calibration: 36																																												
				Percent Operational Time: 99.6																																												
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	2.0	2.3	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	A	2.3	2.2	2.0	1.8	1.8	1.8	1.9	1.98	2.34																						
2-Dec	2.0	2.0	2.0	1.9	1.9	2.0	2.1	2.2	2.2	2.1	2.0	2.0	2.0	2.1	2.1	A	2.2	2.2	2.2	2.3	2.3	3.0	2.6	2.2	2.16	3.02																						
3-Dec	2.2	2.3	2.2	2.2	2.4	2.3	2.3	2.3	2.2	2.2	2.1	2.0	1.9	2.2	A	1.9	1.9	1.8	1.7	1.7	1.7	1.7	1.7	1.7	2.04	2.35																						
4-Dec	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.74	1.77																						
5-Dec	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	P	P	N	A	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.84	2.02																						
6-Dec	2.0	2.1	2.1	2.2	2.3	2.1	2.4	2.3	2.1	2.2	1.9	A	1.9	1.9	C	C	C	C	1.8	1.8	1.8	1.8	1.8	1.8	2.00	2.35																						
7-Dec	1.8	1.7	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.7	1.8	2.0	2.0	2.1	1.8	1.7	1.7	1.77	2.09																						
8-Dec	1.8	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.7	A	A	1.8	1.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.69	1.83																						
9-Dec	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.8	A	A	1.8	1.7	2.4	2.4	1.7	1.6	1.6	1.7	1.6	1.7	1.9	2.0	2.2	2.4	1.82	2.40																						
10-Dec	2.1	1.9	2.1	2.9	1.8	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.9	1.8	1.81	2.85																						
11-Dec	1.9	2.2	2.2	2.0	2.0	1.9	A	1.9	2.1	2.2	2.0	1.9	1.8	1.8	1.9	1.9	2.0	2.1	2.0	2.0	2.2	2.2	2.3	2.3	2.03	2.31																						
12-Dec	2.3	2.3	2.4	2.5	2.2	A	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.79	2.50																						
13-Dec	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.9	1.9	2.0	2.2	2.2	1.78	2.21																						
14-Dec	2.0	2.0	2.0	A	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.2	2.2	2.1	1.8	1.8	1.6	1.6	1.7	1.6	1.6	1.6	1.6	2.00	2.44																						
15-Dec	1.6	1.6	A	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.63	1.67																						
16-Dec	1.7	A	1.7	1.7	1.7	1.6	1.6	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.7	1.8	1.9	1.8	2.0	2.4	1.7	1.7	1.8	1.9	1.74	2.36																						
17-Dec	A	1.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	A	1.62	1.82																						
18-Dec	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	A	1.9	1.72	1.87																						
19-Dec	1.9	1.9	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.70	1.91																						
20-Dec	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	A	1.8	1.9	1.9	1.78	2.01																						
21-Dec	1.9	1.9	1.9	1.9	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.72	1.89																						
22-Dec	1.7	1.7	1.7	1.7	1.8	1.8	1.8	5.4	1.8	1.8	1.7	1.8	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.90	5.36																						
23-Dec	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.7	1.70	1.73																						
24-Dec	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.71	1.73																						
25-Dec	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.74	1.79																						
26-Dec	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	A	1.8	1.8	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.81	1.87																						
27-Dec	1.8	1.8	1.8	1.7	1.7	1.8	1.8	1.7	1.8	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.75	1.78																						
28-Dec	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.8	1.8	A	1.8	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.79	1.86																						
29-Dec	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.80	1.84																						
30-Dec	1.8	1.8	1.8	1.7	1.8	1.8	1.9	1.9	1.9	2.0	A	2.0	2.0	1.9	1.8	1.8	1.8	1.9	1.9	1.8	1.8	2.0	2.0	2.0	1.87	2.03																						
31-Dec	2.1	2.0	1.9	2.1	2.2	2.1	2.1	2.2	2.5	A	2.4	2.3	2.2	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.3	2.3	2.2	2.15	2.48																						
																								1.83	1.85	1.84	1.85	1.83	1.81	1.81	1.95	1.84	1.82	1.82	1.83	1.81	1.79	1.77	1.75	1.77	1.80	1.81	1.83	1.81	1.85	1.85	1.86	Diurnal Average
																								2.28	2.34	2.43	2.85	2.35	2.31	2.35	5.36	2.48	2.44	2.40	2.40	2.40	2.17	2.14	1.99	2.18	2.33	2.24	2.36	2.28	3.02	2.63	2.35	Diurnal Maximum
C - Calibration																								P - Power Failure				N - Not Valid				A - Automated Daily Zero Span																



# Hourly Maximums

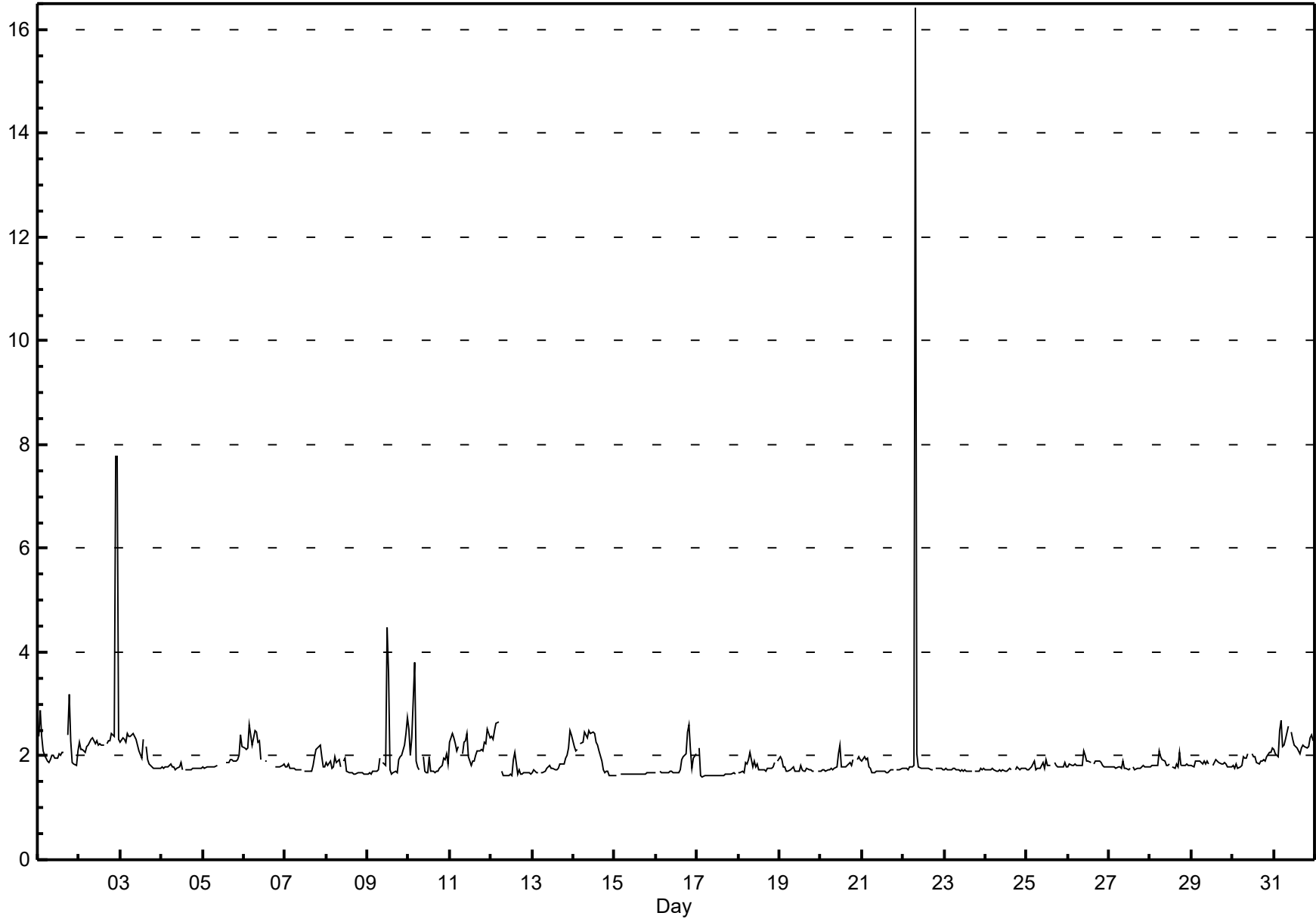
Total Hydrocarbons (THC) - ppm

Henry Pirker - December 2017

Maximum Value: 16.43 ppm on Dec 22 08:00		Maximum Daily Average: 2.73 ppm on Dec 2		Hours in Service: 744																							
Minimum Value: 1.6 ppm on Dec 17 04:00		Minimum Daily Average: 1.66 ppm on Dec 17		Hours of Data: 705																							
Maximum Diurnal Average: 2.39 ppm at hour 8		Minimum Diurnal Average: 1.81 ppm at hour 16		Hours of Missing Data: 39																							
Monthly Average: 1.931 ppm		Percentiles: P <sub>1</sub> = 1.62 P <sub>10</sub> = 1.67 Q <sub>1</sub> = 1.73 Median = 1.80 Q <sub>3</sub> = 1.98 P <sub>90</sub> = 2.28 P <sub>99</sub> = 2.98		Hours of Calibration: 36																							
				Percent Operational Time: 99.6																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	2.4	2.9	2.4	2.1	2.0	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	A	2.4	3.2	2.3	1.9	1.8	1.8	2.1	2.14	3.20	
2-Dec	2.3	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.2	A	2.2	2.3	2.3	2.4	2.4	7.8	7.8	2.3	2.73	7.78	
3-Dec	2.3	2.4	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.3	2.2	2.1	2.0	2.3	A	2.2	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.11	2.45	
4-Dec	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.7	1.8	1.8	1.9	1.7	A	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.77	1.88	
5-Dec	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	P	P	N	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.4	2.2	1.90	2.40	
6-Dec	2.2	2.1	2.2	2.6	2.4	2.2	2.5	2.5	2.3	2.3	1.9	A	1.9	1.9	C	C	C	C	1.8	1.8	1.8	1.8	1.8	1.9	2.09	2.61	
7-Dec	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.8	2.0	2.1	2.2	2.2	2.0	1.8	1.8	1.83	2.22	
8-Dec	1.9	1.8	1.9	1.8	1.8	2.0	1.9	1.9	1.8	A	A	1.9	2.0	1.7	1.7	1.7	1.6	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.77	2.00	
9-Dec	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.0	A	A	1.9	1.8	4.5	3.6	1.7	1.7	1.7	1.7	1.9	2.0	2.0	2.2	2.4	2.7	2.06	4.48	
10-Dec	2.5	2.0	2.3	3.8	1.9	1.8	1.7	A	A	2.0	1.7	1.7	1.7	2.0	1.7	1.7	1.7	1.7	1.8	1.8	2.0	1.9	2.0	1.9	1.96	3.81	
11-Dec	2.3	2.4	2.4	2.2	2.1	2.2	A	2.0	2.3	2.3	2.4	2.0	1.8	1.9	1.9	2.0	2.1	2.1	2.1	2.1	2.3	2.2	2.5	2.4	2.17	2.51	
12-Dec	2.4	2.3	2.5	2.6	2.6	A	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.9	2.1	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.87	2.64	
13-Dec	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.8	1.9	1.9	1.9	2.0	2.0	2.2	2.5	2.4	1.85	2.50	
14-Dec	2.2	2.1	2.1	A	2.2	2.3	2.5	2.4	2.3	2.5	2.4	2.5	2.4	2.3	2.2	2.1	1.9	1.7	1.7	1.7	1.7	1.6	1.6	1.6	2.09	2.49	
15-Dec	1.6	1.6	A	1.6	1.6	1.6	1.7	1.6	1.6	1.7	1.7	1.6	1.6	1.7	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.66	1.68	
16-Dec	1.7	A	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.9	2.0	2.0	2.4	2.6	2.1	1.7	2.0	2.0	1.85	2.61	
17-Dec	A	2.2	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	A	1.66	2.15	
18-Dec	1.7	1.7	1.7	1.7	1.9	1.9	1.9	2.1	1.8	1.9	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.7	1.8	1.9	A	1.9	1.79	2.06	
19-Dec	2.0	1.9	1.8	1.8	1.7	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.7	1.7	A	1.7	1.75	1.97	
20-Dec	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.7	1.8	1.8	2.0	2.2	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.9	A	1.9	2.0	1.9	1.83	2.21	
21-Dec	1.9	2.0	1.9	2.0	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.8	1.76	2.00	
22-Dec	1.8	1.8	1.8	1.7	1.8	1.8	1.8	16.4	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	A	1.8	1.8	1.8	1.8	1.7	2.41	16.43	
23-Dec	1.7	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.7	1.73	1.75	
24-Dec	1.7	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.7	A	1.7	1.8	1.8	1.7	1.8	1.8	1.8	1.74	1.79	
25-Dec	1.7	1.7	1.8	1.8	1.9	1.7	1.7	1.8	1.8	1.9	1.7	1.9	1.8	1.8	1.8	A	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.81	1.94	
26-Dec	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.1	2.0	1.9	1.9	1.9	A	1.8	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.86	2.10	
27-Dec	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.7	1.8	A	1.8	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.78	1.89	
28-Dec	1.8	1.8	1.8	1.8	1.8	2.1	2.0	1.9	1.9	1.8	1.8	1.9	A	1.8	1.8	1.8	1.8	2.1	1.8	1.8	1.8	1.8	1.8	1.8	1.86	2.10	
29-Dec	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.8	A	1.8	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.86	1.93	
30-Dec	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.0	2.0	2.1	A	2.0	2.0	2.0	1.9	1.8	1.9	1.9	1.9	1.9	2.0	2.1	2.1	2.2	1.93	2.16	
31-Dec	2.1	2.0	2.0	2.5	2.7	2.2	2.2	2.3	2.6	A	2.5	2.3	2.2	2.2	2.1	2.0	2.1	2.2	2.2	2.1	2.2	2.4	2.4	2.3	2.25	2.69	
		1.92	1.93	1.92	1.96	1.92	1.88	1.88	2.39	1.91	1.89	1.89	1.97	1.90	1.85	1.82	1.81	1.83	1.86	1.90	1.89	1.87	2.06	2.10	1.93	Diurnal Average	
		2.51	2.88	2.49	3.81	2.69	2.39	2.50	16.43	2.56	2.49	2.47	4.48	3.59	2.31	2.21	2.17	2.23	2.40	3.20	2.61	2.37	7.77	7.78	2.74	Diurnal Maximum	
C - Calibration		P - Power Failure						N - Not Valid				A - Automated Daily Zero Span															

**Hourly Maximums**

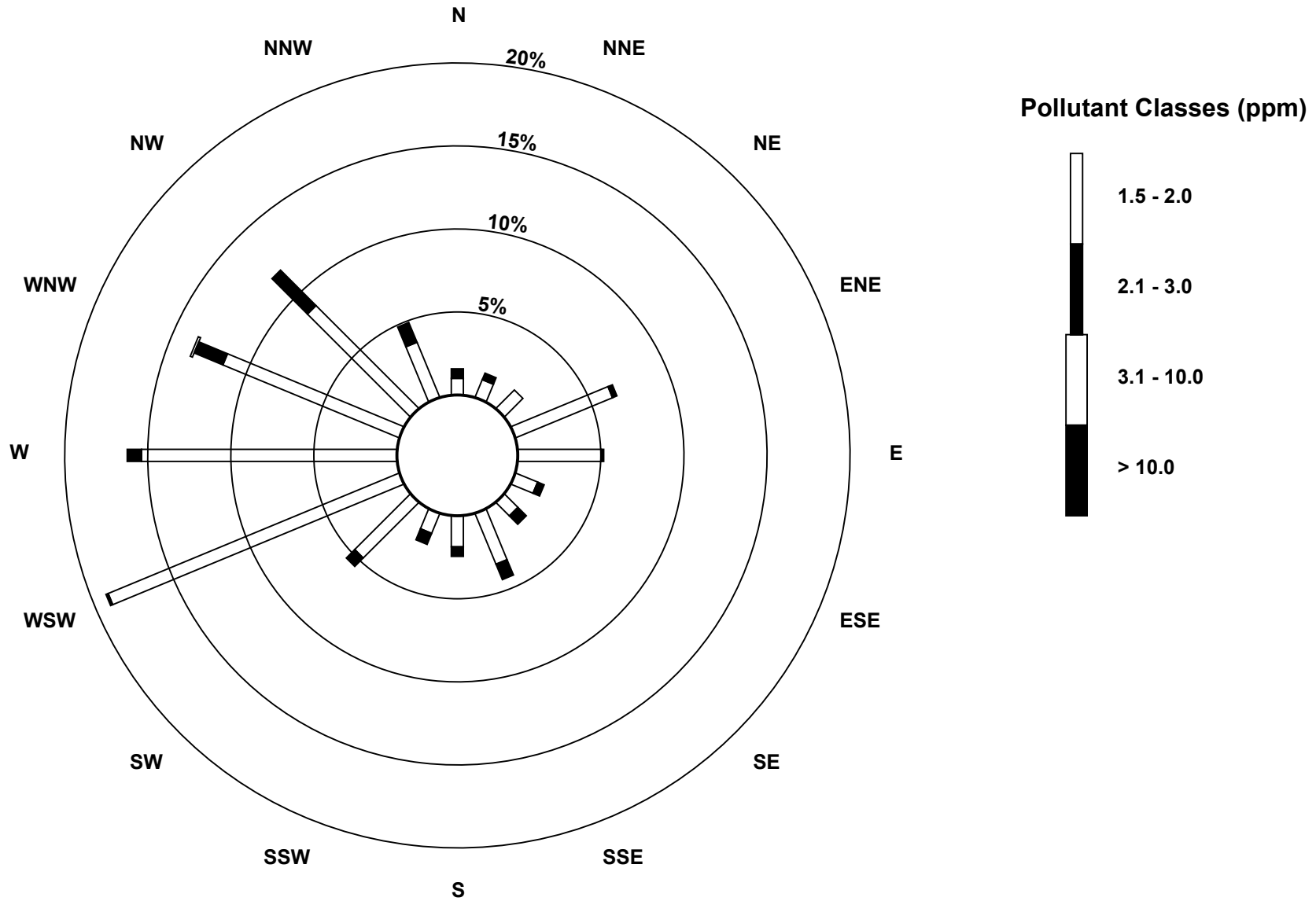
**Total Hydrocarbons (THC) - ppm**  
**Henry Pirker - December 2017**





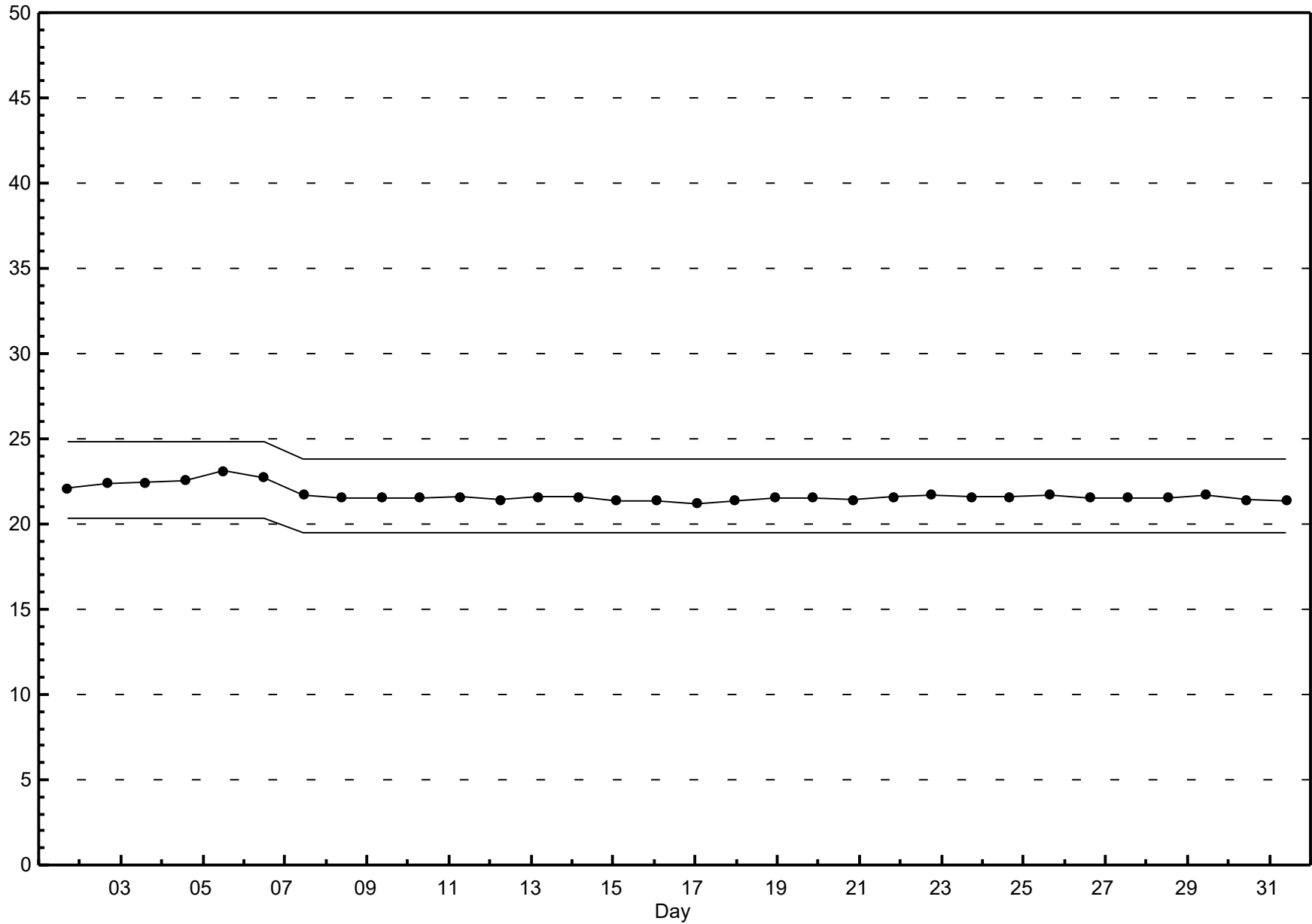
**Pollutant Rose**

**Total Hydrocarbons (THC) - ppm**  
**Henry Pirker - December 2017**



**Span Responses**

**Total Hydrocarbons (THC)**  
**Henry Pirker - December 2017**



# Hourly Averages

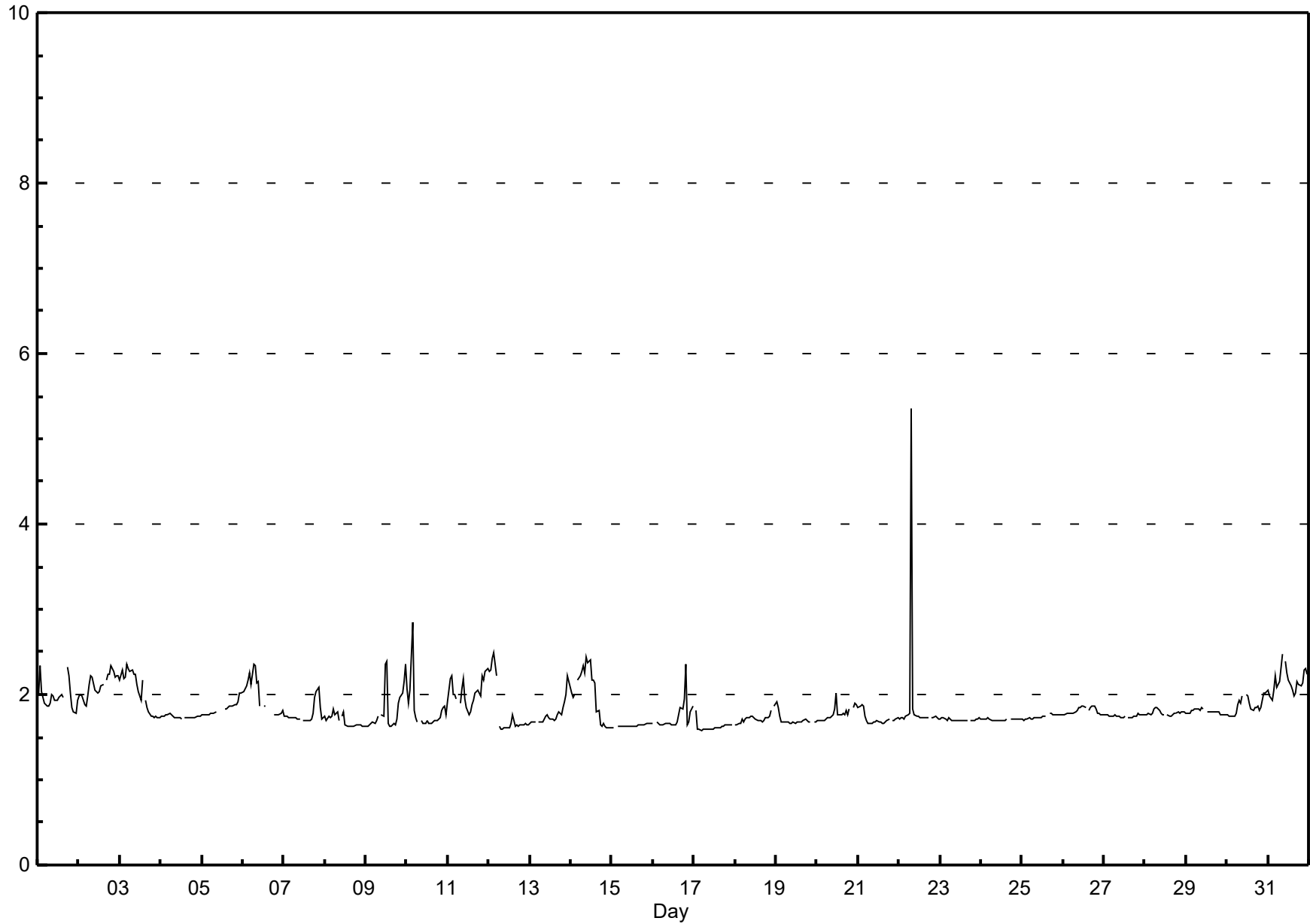
Methane (CH<sub>4</sub>) - ppm

Henry Pirker - December 2017

Maximum Value: 5.36 ppm on Dec 22 08:00	Maximum Daily Average: 2.15 ppm on Dec 31	Hours in Service: 744
Minimum Value: 1.6 ppm on Dec 17 05:00	Minimum Daily Average: 1.62 ppm on Dec 17	Hours of Data: 705
Maximum Diurnal Average: 1.95 ppm at hour 8	Minimum Diurnal Average: 1.75 ppm at hour 16	Hours of Missing Data: 39
Monthly Average: 1.822 ppm	Percentiles: P <sub>1</sub> = 1.60 P <sub>10</sub> = 1.64 Q <sub>1</sub> = 1.69 Median = 1.75 Q <sub>3</sub> = 1.87 P <sub>90</sub> = 2.14 P <sub>99</sub> = 2.39	Hours of Calibration: 36
		Percent Operational Time: 99.6

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	2.0	2.3	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	A	2.3	2.2	2.0	1.8	1.8	1.8	1.9	1.98	2.34	
2-Dec	2.0	2.0	2.0	1.9	1.9	2.0	2.1	2.2	2.2	2.1	2.0	2.0	2.0	2.1	2.1	A	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.11	2.33	
3-Dec	2.2	2.3	2.2	2.2	2.4	2.3	2.3	2.3	2.2	2.2	2.1	2.0	1.9	2.2	A	1.9	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.7	2.03	2.35	
4-Dec	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.74	1.77	
5-Dec	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	P	P	N	A	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.84	2.02	
6-Dec	2.0	2.1	2.1	2.2	2.3	2.1	2.3	2.3	2.1	2.2	1.9	A	1.9	1.9	C	C	C	C	1.8	1.8	1.8	1.8	1.8	1.8	2.00	2.35	
7-Dec	1.8	1.7	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.7	1.8	2.0	2.0	2.1	1.8	1.7	1.7	1.77	2.09	
8-Dec	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.7	A	1.7	1.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.69	1.82	
9-Dec	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	A	1.8	1.7	2.3	2.4	1.7	1.6	1.6	1.7	1.6	1.7	1.9	2.0	2.0	2.2	2.3	1.82	2.39
10-Dec	2.1	1.9	2.1	2.9	1.8	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.9	1.8	1.81	2.85	
11-Dec	1.9	2.2	2.2	2.0	2.0	1.9	A	1.9	2.1	2.2	2.0	1.9	1.8	1.8	1.9	1.9	2.0	2.1	2.0	2.0	2.2	2.2	2.3	2.3	2.03	2.31	
12-Dec	2.3	2.3	2.4	2.5	2.2	A	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.79	2.49	
13-Dec	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.9	1.9	2.0	2.2	2.2	1.78	2.21	
14-Dec	2.0	2.0	2.0	A	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.2	2.2	2.1	1.8	1.8	1.6	1.6	1.7	1.6	1.6	1.6	1.6	2.00	2.44	
15-Dec	1.6	1.6	A	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.64	1.67	
16-Dec	1.7	A	1.7	1.7	1.7	1.6	1.6	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.7	1.8	1.9	1.8	1.9	2.4	1.6	1.7	1.8	1.9	1.74	2.36	
17-Dec	A	1.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	A	1.62	1.82	
18-Dec	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	A	1.9	1.71	1.87	
19-Dec	1.9	1.9	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.70	1.91	
20-Dec	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	A	1.8	1.9	1.78	2.01	
21-Dec	1.9	1.9	1.9	1.9	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.72	1.89	
22-Dec	1.7	1.7	1.7	1.7	1.7	1.8	1.8	5.4	1.8	1.8	1.7	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.90	5.36	
23-Dec	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.7	1.70	1.72	
24-Dec	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.71	1.72	
25-Dec	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.7	1.8	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.74	1.78	
26-Dec	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.8	A	1.8	1.8	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.81	1.87	
27-Dec	1.8	1.8	1.8	1.7	1.7	1.8	1.8	1.7	1.8	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.75	1.78	
28-Dec	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.8	1.8	A	1.8	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.78	1.85	
29-Dec	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.80	1.84	
30-Dec	1.8	1.8	1.8	1.7	1.8	1.8	1.9	1.9	1.9	2.0	A	2.0	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.8	2.0	2.0	1.87	2.03	
31-Dec	2.1	2.0	1.9	2.1	2.2	2.1	2.1	2.2	2.5	A	2.4	2.3	2.2	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.3	2.3	2.2	2.15	2.48	
1.83 1.85 1.84 1.85 1.83 1.81 1.81 1.95 1.84 1.82 1.81 1.83 1.81 1.79 1.77 1.75 1.77 1.80 1.80 1.82 1.81 1.82 1.84 1.85																								Diurnal Average			
2.28 2.34 2.43 2.85 2.35 2.31 2.35 5.36 2.48 2.44 2.40 2.40 2.39 2.17 2.14 1.99 2.17 2.32 2.23 2.36 2.28 2.29 2.30 2.35																								Diurnal Maximum			

C - Calibration      P - Power Failure      N - Not Valid      A - Automated Daily Zero Span



## Hourly Maximums

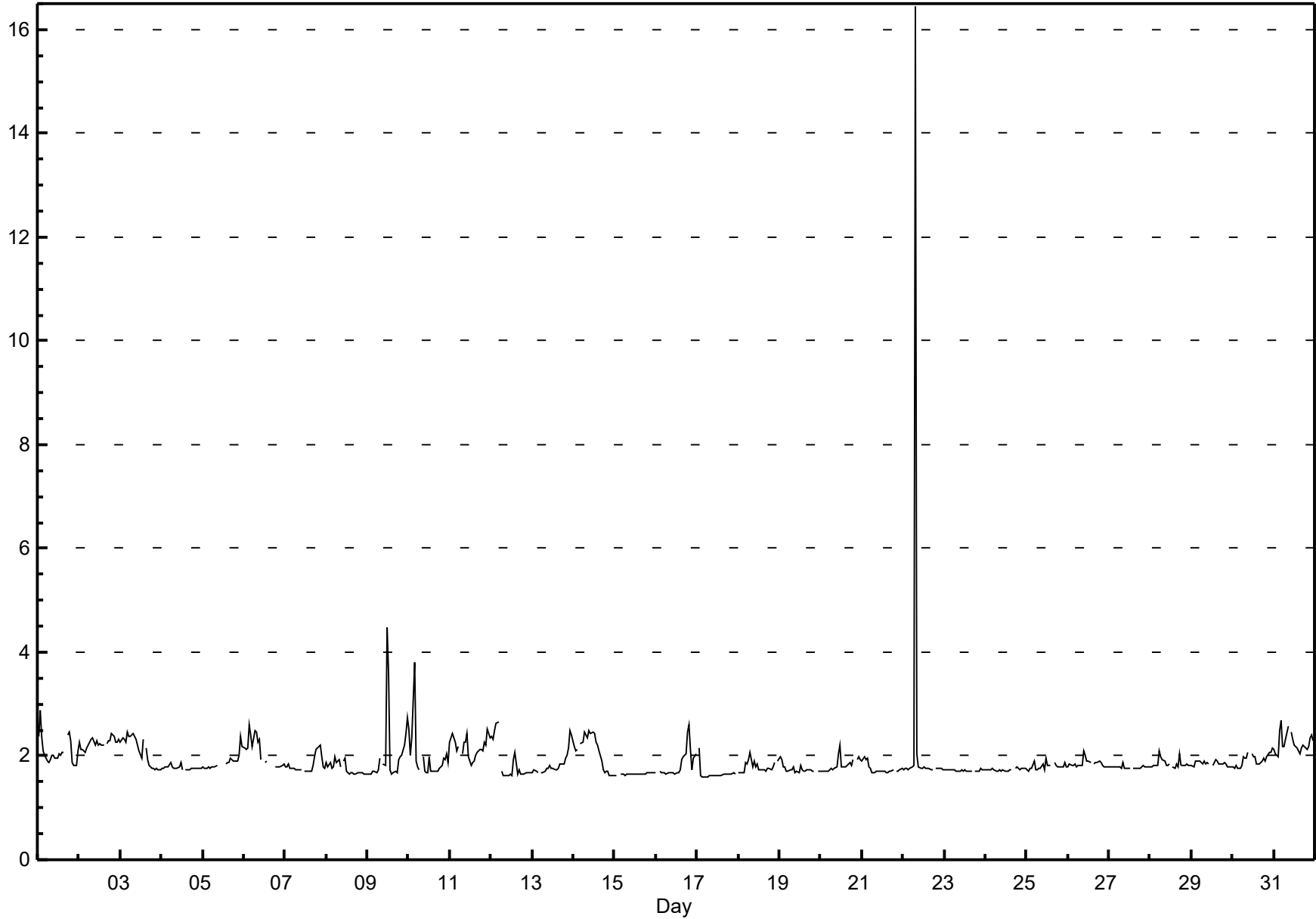
Methane (CH<sub>4</sub>) - ppm

Henry Pirker - December 2017

Maximum Value: 16.43 ppm on Dec 22 08:00      Maximum Daily Average: 2.41 ppm on Dec 22 Minimum Value: 1.6 ppm on Dec 17 05:00      Minimum Daily Average: 1.65 ppm on Dec 15 Maximum Diurnal Average: 2.39 ppm at hour 8      Minimum Diurnal Average: 1.81 ppm at hour 16 Monthly Average: 1.911 ppm      Percentiles: P <sub>1</sub> = 1.61 P <sub>10</sub> = 1.67 Q <sub>1</sub> = 1.72 Median = 1.79 Q <sub>3</sub> = 1.98 P <sub>90</sub> = 2.27 P <sub>99</sub> = 2.66																						Hours in Service: 744 Hours of Data: 705 Hours of Missing Data: 39 Hours of Calibration: 36 Percent Operational Time: 99.6				
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	2.4	2.9	2.4	2.1	2.0	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	A	2.4	2.5	2.3	1.9	1.8	1.8	2.1	2.10	2.87
2-Dec	2.3	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.2	A	2.2	2.3	2.3	2.4	2.4	2.3	2.3	2.3	2.25	2.44
3-Dec	2.3	2.3	2.3	2.3	2.5	2.4	2.4	2.4	2.4	2.3	2.2	2.1	2.0	2.3	A	2.2	1.9	1.8	1.8	1.8	1.7	1.8	1.7	1.7	2.11	2.45
4-Dec	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.7	1.7	1.8	1.9	1.7	A	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.77	1.88
5-Dec	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	P	P	N	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.4	2.2	1.89	2.39
6-Dec	2.1	2.1	2.2	2.6	2.4	2.2	2.5	2.5	2.3	2.3	1.9	A	1.9	1.9	C	C	C	C	1.8	1.8	1.8	1.8	1.8	1.8	2.09	2.61
7-Dec	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.8	2.0	2.1	2.2	2.2	2.0	1.8	1.8	1.83	2.21
8-Dec	1.9	1.8	1.9	1.7	1.8	2.0	1.9	1.9	1.8	A	1.9	1.9	1.7	1.7	1.7	1.7	1.6	1.7	1.7	1.7	1.7	1.7	1.6	1.6	1.76	1.99
9-Dec	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.0	A	1.9	1.8	4.5	3.6	1.7	1.7	1.7	1.7	1.9	2.0	2.0	2.2	2.4	2.7	2.05	4.48	
10-Dec	2.5	2.0	2.3	3.8	1.9	1.8	1.7	A	2.0	1.7	1.7	1.7	2.0	1.7	1.7	1.7	1.7	1.8	1.8	2.0	1.9	2.0	1.9	1.96	3.81	
11-Dec	2.3	2.4	2.4	2.3	2.1	2.2	A	2.0	2.3	2.3	2.4	2.0	1.8	1.9	2.0	2.1	2.1	2.1	2.1	2.3	2.2	2.5	2.3	2.17	2.50	
12-Dec	2.4	2.3	2.5	2.6	2.6	A	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.9	2.1	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.87	2.65	
13-Dec	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.8	1.9	1.9	1.8	2.0	2.0	2.2	2.5	2.4	1.85	2.50
14-Dec	2.2	2.1	2.1	A	2.2	2.3	2.5	2.4	2.3	2.5	2.4	2.5	2.4	2.3	2.2	2.1	1.9	1.7	1.7	1.7	1.7	1.6	1.6	1.6	2.09	2.49
15-Dec	1.6	1.6	A	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.65	1.68
16-Dec	1.7	A	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.9	2.0	2.0	2.5	2.6	2.1	1.7	2.0	2.0	1.84	2.61
17-Dec	A	2.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	A	1.65	2.15
18-Dec	1.7	1.7	1.7	1.7	1.9	1.9	1.9	2.1	1.8	1.9	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.7	1.8	1.9	A	1.9	1.79	2.07
19-Dec	2.0	1.9	1.8	1.8	1.7	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.75	1.98
20-Dec	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.7	1.8	1.8	2.0	2.2	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.9	A	1.9	2.0	1.9	1.83	2.20
21-Dec	1.9	2.0	1.9	2.0	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.7	1.8	1.75	1.99
22-Dec	1.7	1.8	1.7	1.7	1.8	1.8	1.8	16.4	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	A	1.8	1.8	1.8	1.7	1.7	2.41	16.43
23-Dec	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.7	1.7	1.7	1.7	1.7	1.72	1.75
24-Dec	1.7	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	A	1.7	1.8	1.8	1.7	1.8	1.8	1.8	1.74	1.78
25-Dec	1.7	1.7	1.8	1.8	1.9	1.7	1.7	1.8	1.8	1.9	1.7	1.9	1.8	1.8	1.8	A	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.80	1.95
26-Dec	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.1	2.0	1.9	1.9	1.9	A	1.8	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.86	2.09
27-Dec	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.8	A	1.8	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.78	1.88
28-Dec	1.8	1.8	1.8	1.8	1.8	2.1	2.0	1.9	1.9	1.8	1.8	1.8	A	1.8	1.8	1.8	1.8	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.85	2.10
29-Dec	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	A	1.8	1.9	1.9	1.9	1.9	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.85	1.93
30-Dec	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.0	2.0	2.1	A	2.0	2.0	2.0	1.9	1.8	1.9	1.9	1.9	1.9	2.0	2.1	2.1	2.2	1.93	2.16
31-Dec	2.1	2.0	2.0	2.5	2.7	2.2	2.2	2.3	2.6	A	2.5	2.3	2.2	2.2	2.1	2.0	2.1	2.2	2.2	2.1	2.2	2.3	2.4	2.3	2.25	2.69
1.92 1.93 1.92 1.96 1.92 1.88 1.87 2.39 1.91 1.89 1.89 1.97 1.90 1.84 1.82 1.81 1.83 1.86 1.88 1.89 1.87 1.87 1.92 1.92																								Diurnal Average		
2.51 2.87 2.49 3.81 2.69 2.38 2.50 16.43 2.57 2.49 2.46 4.48 3.59 2.31 2.21 2.16 2.23 2.39 2.46 2.61 2.37 2.35 2.50 2.73																								Diurnal Maximum		
C - Calibration      P - Power Failure      N - Not Valid      A - Automated Daily Zero Span																										

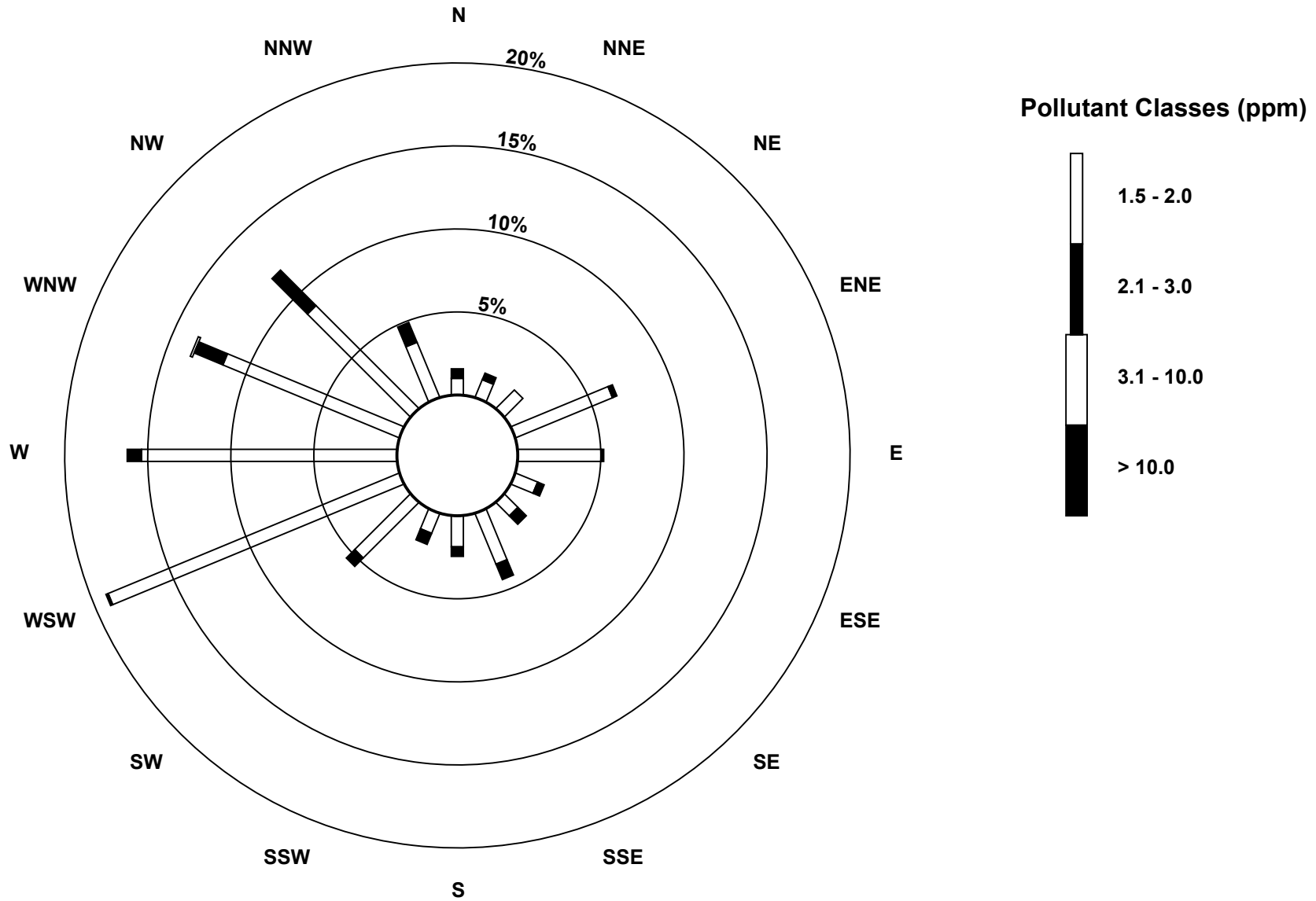
**Hourly Maximums**

**Methane (CH<sub>4</sub>) - ppm**  
**Henry Pirker - December 2017**



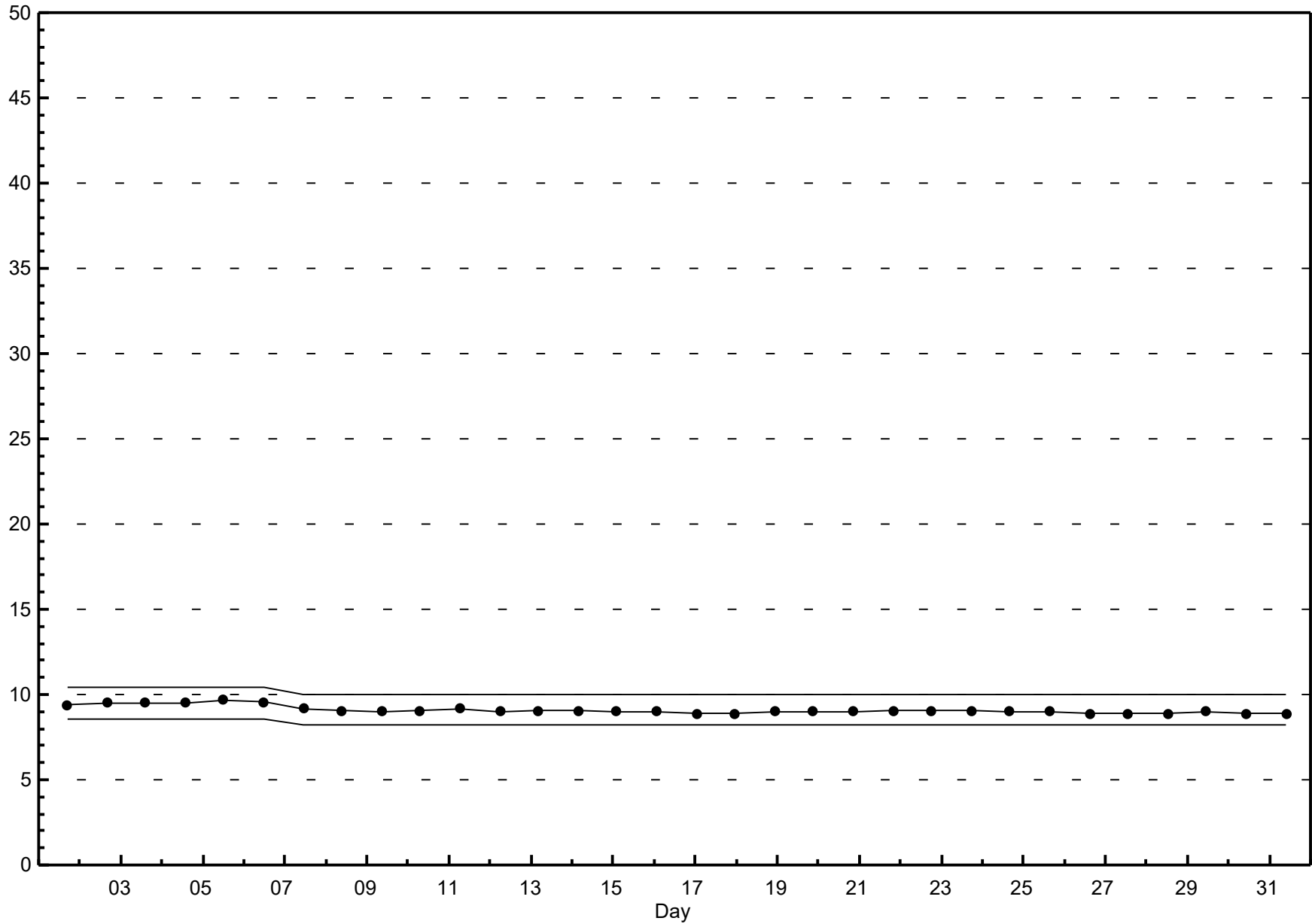
**Pollutant Rose**

**Methane (CH<sub>4</sub>) - ppm**  
**Henry Pirker - December 2017**



### Span Responses

Methane (CH<sub>4</sub>)  
Henry Pirker - December 2017



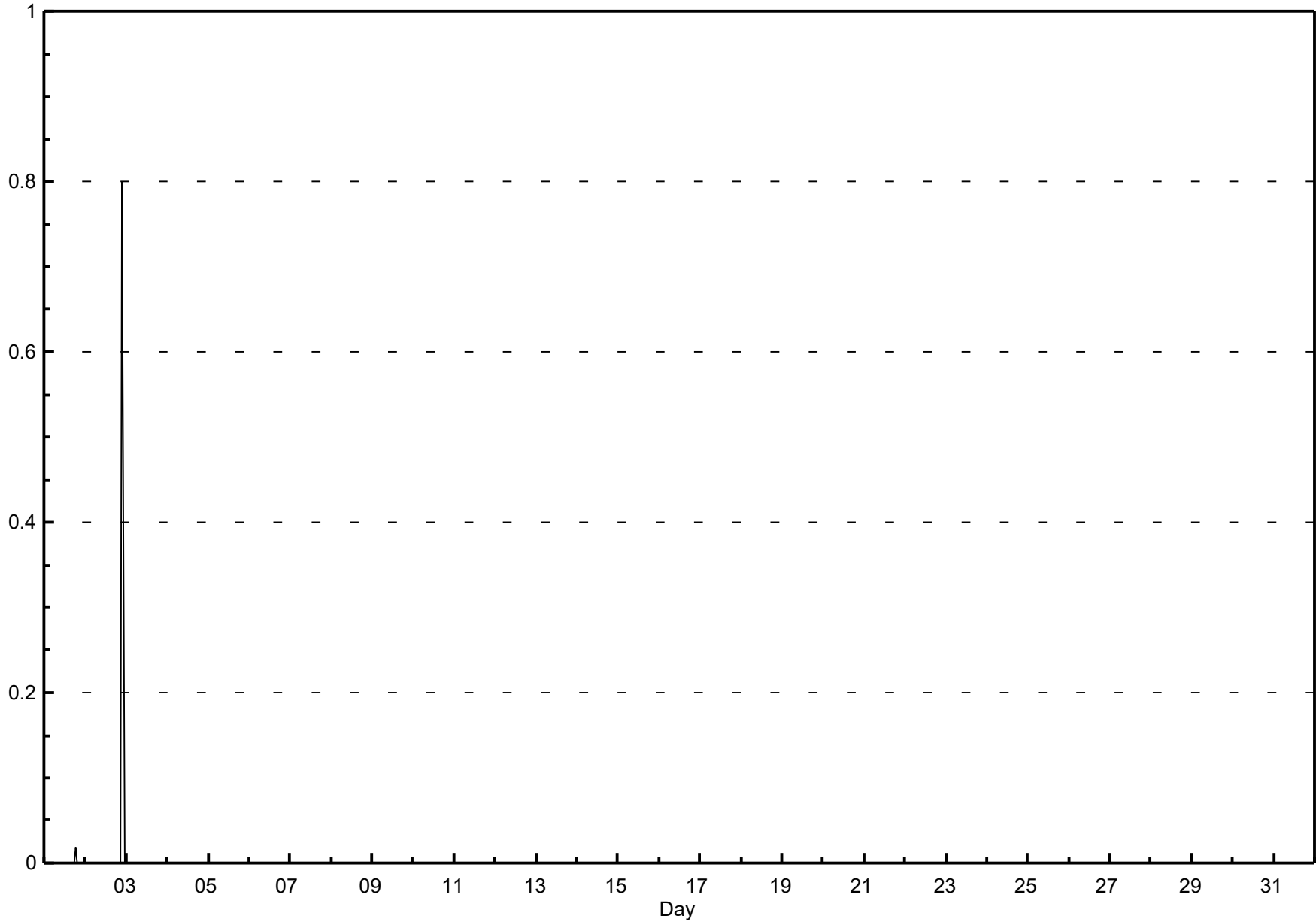


# Hourly Averages

## Non Methane Hydrocarbon (NMHC) - ppm

### Henry Pirker - December 2017

Maximum Value: 0.80 ppm on Dec 2 22:00 Minimum Value: 0.0 ppm on Dec 1 01:00 Maximum Diurnal Average: 0.03 ppm at hour 22 Monthly Average: 0.002 ppm		Maximum Daily Average: 0.05 ppm on Dec 2 Minimum Daily Average: 0.00 ppm on Dec 3 Minimum Diurnal Average: 0.00 ppm at hour 5 Percentiles: P <sub>1</sub> = 0.00 P <sub>10</sub> = 0.00 Q <sub>1</sub> = 0.00 Median = 0.00 Q <sub>3</sub> = 0.00 P <sub>90</sub> = 0.00 P <sub>99</sub> = 0.00		Hours in Service: 744 Hours of Data: 705 Hours of Missing Data: 39 Hours of Calibration: 36 Percent Operational Time: 99.6																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	0.0	0.0	0.0	0.0	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	0.02
2-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.4	0.0	0.05	0.80
3-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
4-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
5-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	P	P	N	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
6-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
7-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
8-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
9-Dec	0.0	0.0	0.0	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
10-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
11-Dec	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
12-Dec	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
13-Dec	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
14-Dec	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
15-Dec	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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-Dec	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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-Dec	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
18-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
19-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.00	0.00
20-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.00	0.00
21-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
22-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
23-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
25-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
26-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
27-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
28-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
29-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
30-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
31-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00	Diurnal Average		
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.80	0.40	0.00	Diurnal Maximum		
C - Calibration                      P - Power Failure                      N - Not Valid                      A - Automated Daily Zero Span																											

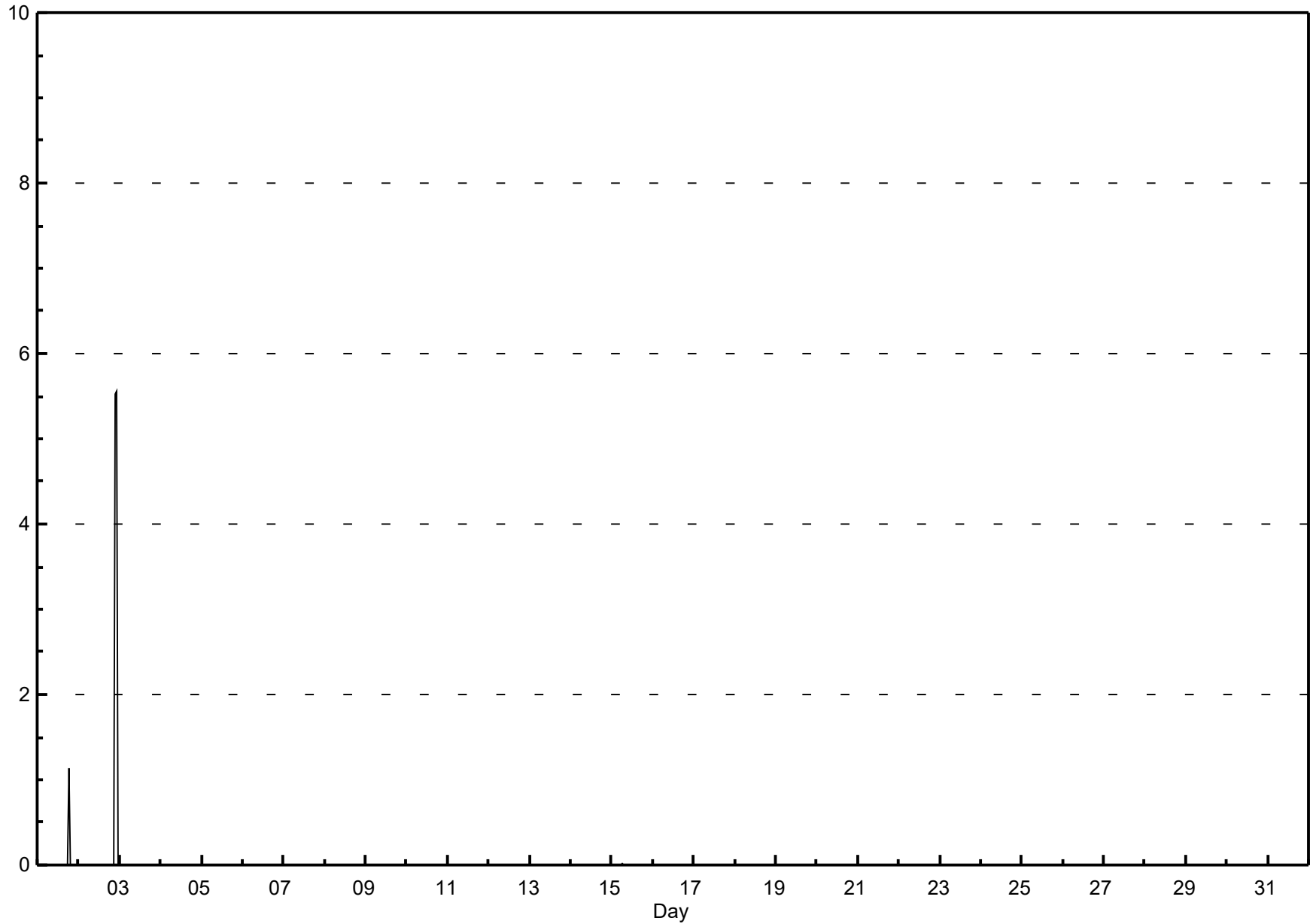


# Hourly Maximums

## Non Methane Hydrocarbon (NMHC) - ppm

### Henry Pirker - December 2017

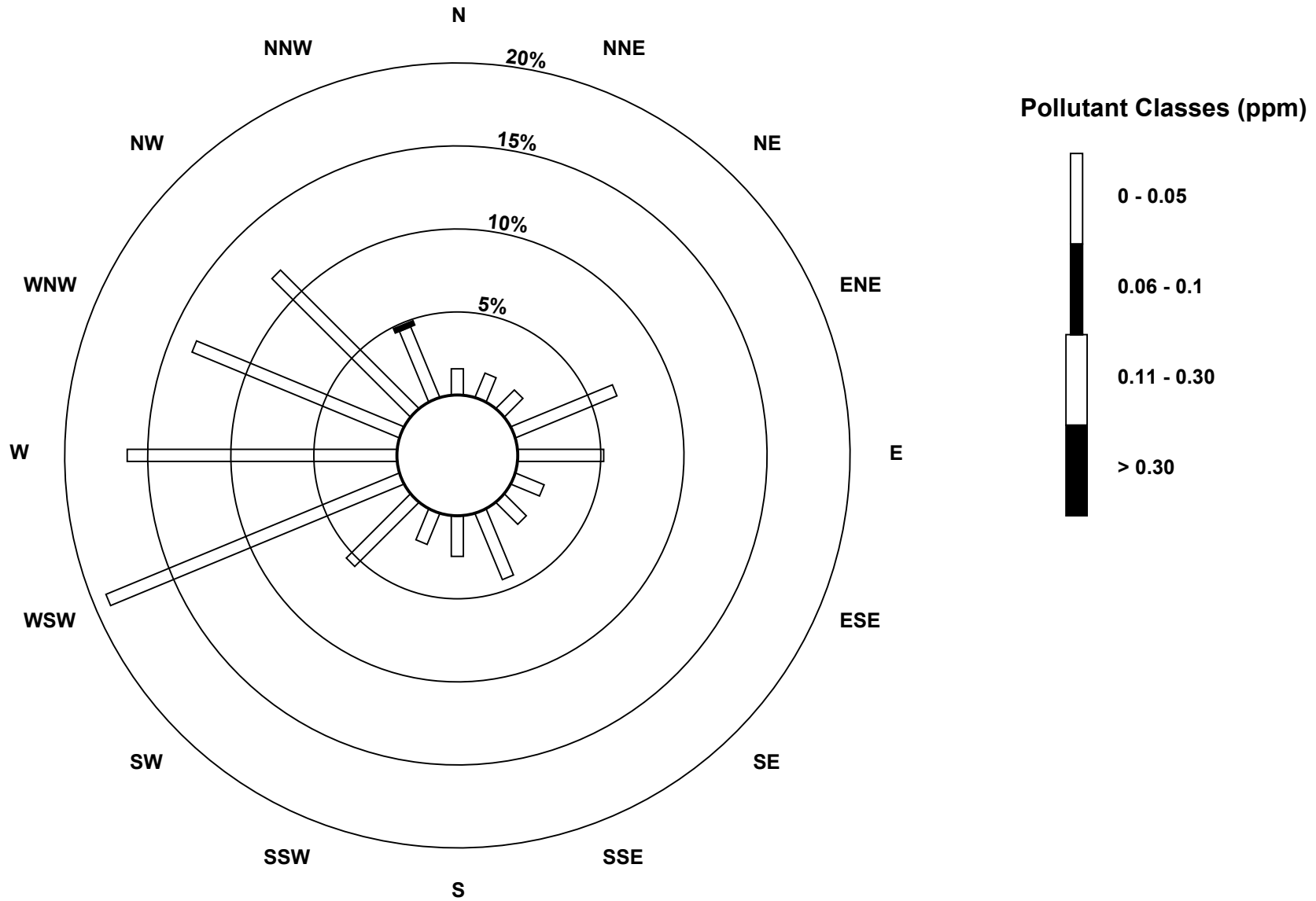
Maximum Value: 5.57 ppm on Dec 2 23:00      Maximum Daily Average: 0.48 ppm on Dec 2 Minimum Value: 0.0 ppm on Dec 3 03:00      Minimum Daily Average: 0.00 ppm on Dec 22 Maximum Diurnal Average: 0.19 ppm at hour 23      Minimum Diurnal Average: 0.00 ppm at hour 2 Monthly Average: 0.018 ppm      Percentiles: P <sub>1</sub> = 0.00 P <sub>10</sub> = 0.00 Q <sub>1</sub> = 0.00 Median = 0.00 Q <sub>3</sub> = 0.00 P <sub>90</sub> = 0.00 P <sub>99</sub> = 0.00																								Hours in Service: 744 Hours of Data: 705 Hours of Missing Data: 39 Hours of Calibration: 36 Percent Operational Time: 99.6		
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0.0	0.0	0.0	0.0	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	1.1	0.0	0.0	0.0	0.0	0.0	0.05	1.14
2-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	5.5	5.6	0.0	0.48	5.57
3-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
4-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
5-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	P	P	N	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
6-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
7-Dec	0.0	0.0	0.0	0.0	0.0	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
8-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
9-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
10-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
11-Dec	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
12-Dec	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
13-Dec	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
14-Dec	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
15-Dec	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.02
16-Dec	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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-Dec	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
19-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.00	0.00
20-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.00	0.00
21-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.00	0.00
22-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.00	0.00
23-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
24-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
25-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
26-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
27-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
28-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
29-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
30-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
31-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
																								Diurnal Average		
																								Diurnal Maximum		
C - Calibration																								P - Power Failure		
N - Not Valid																								A - Automated Daily Zero Span		

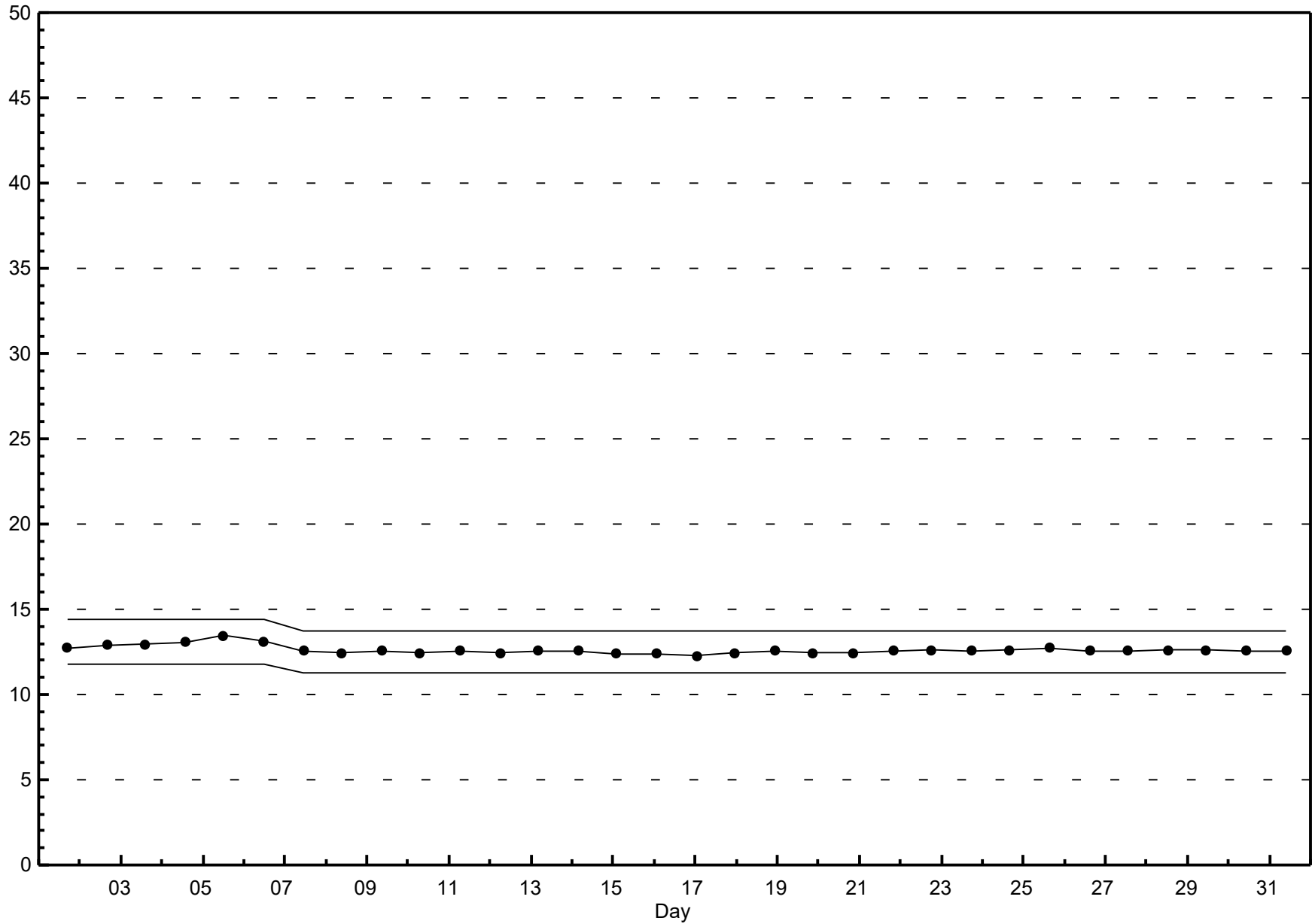


**Pollutant Rose**

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

**Henry Pirker - December 2017**





## Hourly Averages

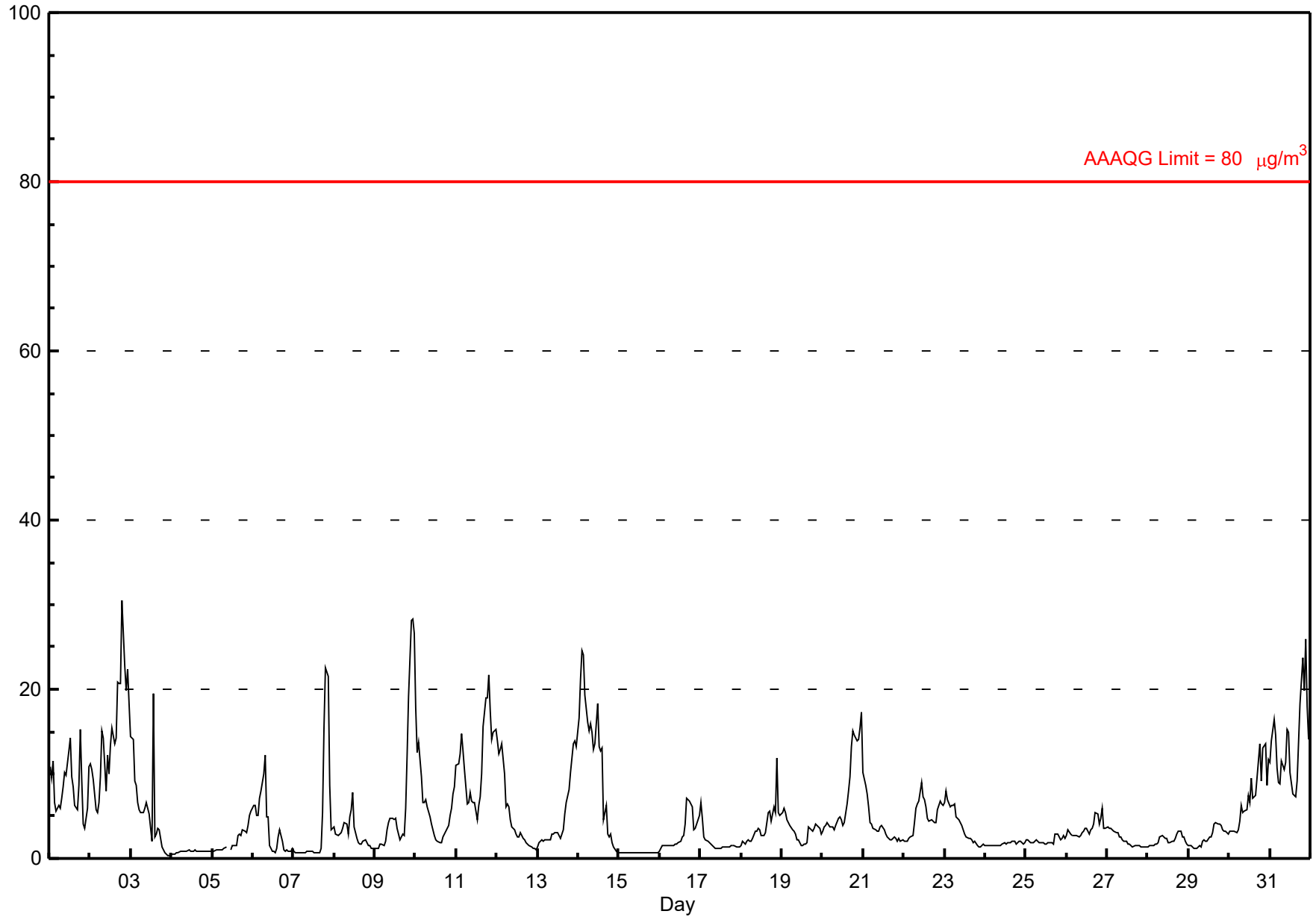
## Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

### Henry Pirker - December 2017

Number of Exceedences: 1-hr: 0 24-hr: 0	Hours in Service: 744
Maximum Value: 30.5 µg/m <sup>3</sup> on Dec 2 20:00	Maximum Daily Average: 14.6 µg/m <sup>3</sup> on Dec 2
Minimum Value: 0 µg/m <sup>3</sup> on Dec 4 00:00	Hours of Data: 742
Maximum Diurnal Average: 6.9 µg/m <sup>3</sup> at hour 20	Hours of Missing Data: 2
Monthly Average: 5.05 µg/m <sup>3</sup>	Hours of Calibration: 0
Minimum Daily Average: 0.7 µg/m <sup>3</sup> on Dec 15	Percent Operational Time: 99.7
Minimum Diurnal Average: 3.7 µg/m <sup>3</sup> at hour 15	
Percentiles: P <sub>1</sub> = 0.6 P <sub>10</sub> = 0.9 Q <sub>1</sub> = 1.7 Median = 3.1 Q <sub>3</sub> = 6.3 P <sub>90</sub> = 13.1 P <sub>99</sub> = 23.6	

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	11	10	11	7	6	6	6	7	8	10	10	13	14	10	8	6	6	9	15	9	4	4	6	11	8.6	15.3
2-Dec	11	11	9	6	5	7	10	15	14	8	12	10	13	15	14	14	21	21	21	31	23	20	22	18	14.6	30.5
3-Dec	14	14	9	9	7	6	5	5	6	7	6	5	2	19	2	3	3	3	1	1	1	0	0	0	5.5	19.5
4-Dec	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0
5-Dec	1	1	1	1	1	1	1	1	1	P	P	1	2	2	2	3	3	3	3	3	3	4	5	6	2.2	5.7
6-Dec	6	6	5	5	7	8	10	12	5	5	1	1	1	1	1	3	3	2	1	1	1	1	1	1	3.7	12.3
7-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	15	23	22	9	3	4	3.9	22.6
8-Dec	4	3	3	3	3	4	4	4	3	5	6	8	4	2	2	2	2	2	2	2	1	2	1	1	3.0	7.8
9-Dec	1	1	1	2	2	2	2	3	4	5	5	5	5	4	3	2	3	3	6	12	19	28	28	27	7.1	28.3
10-Dec	18	13	14	10	7	7	7	6	5	4	3	3	2	2	2	2	3	3	3	4	5	6	8	8	6.0	17.8
11-Dec	11	11	12	15	13	11	6	7	8	7	7	7	5	6	7	10	16	19	19	22	17	14	15	15	11.6	21.8
12-Dec	14	12	13	14	10	6	6	6	5	4	3	3	3	3	3	2	2	2	2	2	1	1	1	1	4.9	13.9
13-Dec	1	2	2	2	2	2	2	2	3	3	3	3	3	2	3	3	5	7	8	10	12	14	14	13	5.1	13.9
14-Dec	17	21	25	24	19	16	15	16	15	13	14	18	13	13	13	5	6	3	2	3	2	1	1	1	11.5	24.6
15-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.8
16-Dec	1	1	2	2	2	2	2	2	2	2	2	2	2	3	4	7	7	7	6	3	4	4	5	5	3.0	7.0
17-Dec	7	5	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1.9	6.5
18-Dec	1	2	2	2	2	2	2	2	3	3	4	3	3	3	4	5	6	4	6	6	12	5	5	5	3.8	11.9
19-Dec	5	6	6	5	4	4	3	3	3	2	2	2	1	2	2	2	4	3	3	4	4	4	4	3	3.3	5.9
20-Dec	3	4	4	4	4	4	4	3	4	5	5	5	4	4	6	8	10	13	15	15	14	14	15	17	7.6	17.3
21-Dec	10	9	8	6	4	4	4	3	3	3	4	4	3	3	3	2	2	2	3	2	2	2	2	2	3.8	10.1
22-Dec	2	2	2	2	3	3	4	6	6	7	9	7	7	6	5	4	5	4	4	4	6	7	6	6	4.9	8.9
23-Dec	7	8	7	6	6	6	6	5	5	4	4	3	3	3	2	2	2	2	2	2	1	1	1	2	3.8	8.0
24-Dec	2	1	2	1	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.7	2.1
25-Dec	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	2	2	3	2	2.1	2.9
26-Dec	3	3	3	3	3	3	3	3	3	3	3	4	4	3	3	4	4	5	5	4	5	6	4	4	3.5	6.0
27-Dec	4	4	4	3	3	3	3	3	3	2	2	2	2	2	2	1	1	2	2	1	1	1	1	1	2.2	3.7
28-Dec	1	1	1	2	2	2	2	2	3	2	2	2	2	2	2	2	2	3	3	3	3	3	2	2	2.2	3.2
29-Dec	2	2	1	1	1	1	2	1	2	2	2	2	3	2	3	4	4	4	4	4	3	3	3	3	2.5	4.2
30-Dec	3	3	3	3	3	3	4	6	5	6	6	8	7	9	7	7	9	11	14	9	13	14	9	12	7.3	13.6
31-Dec	11	14	16	15	11	9	9	11	10	11	15	15	10	8	7	7	9	14	18	24	20	26	18	14	13.5	25.9
	5.6	5.6	5.5	5.1	4.4	4.1	4.2	4.6	4.4	4.3	4.6	4.6	4.0	4.3	3.7	3.7	4.7	5.3	6.2	6.9	6.4	6.7	6.1	6.1	Diurnal Average	
	17.8	21.2	24.6	24.1	19.2	16.1	15.0	16.0	14.9	12.9	15.2	18.3	14.3	19.5	13.6	14.3	20.9	20.6	20.7	30.5	22.8	28.1	28.3	26.6	Diurnal Maximum	

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



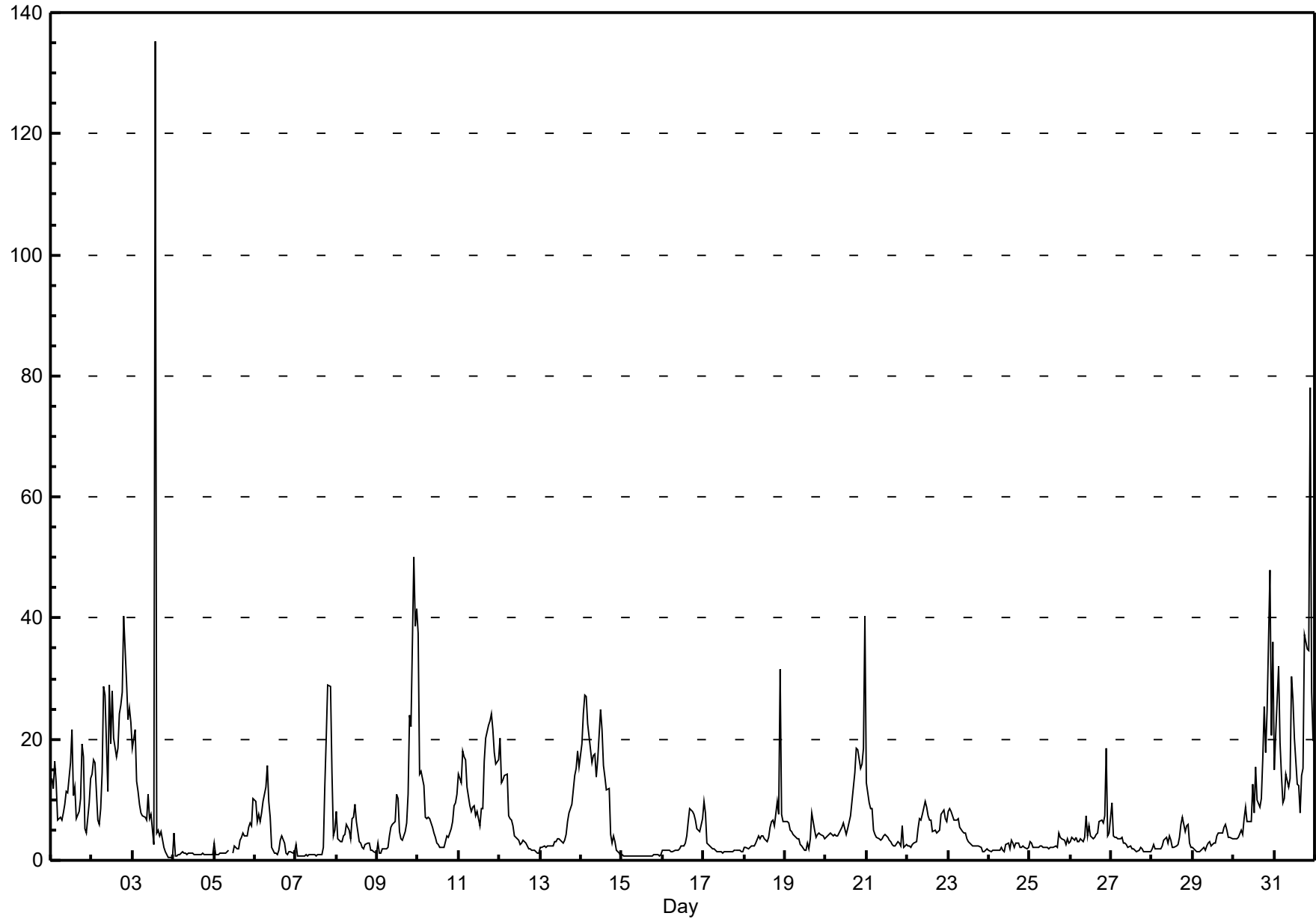


## Hourly Maximums

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

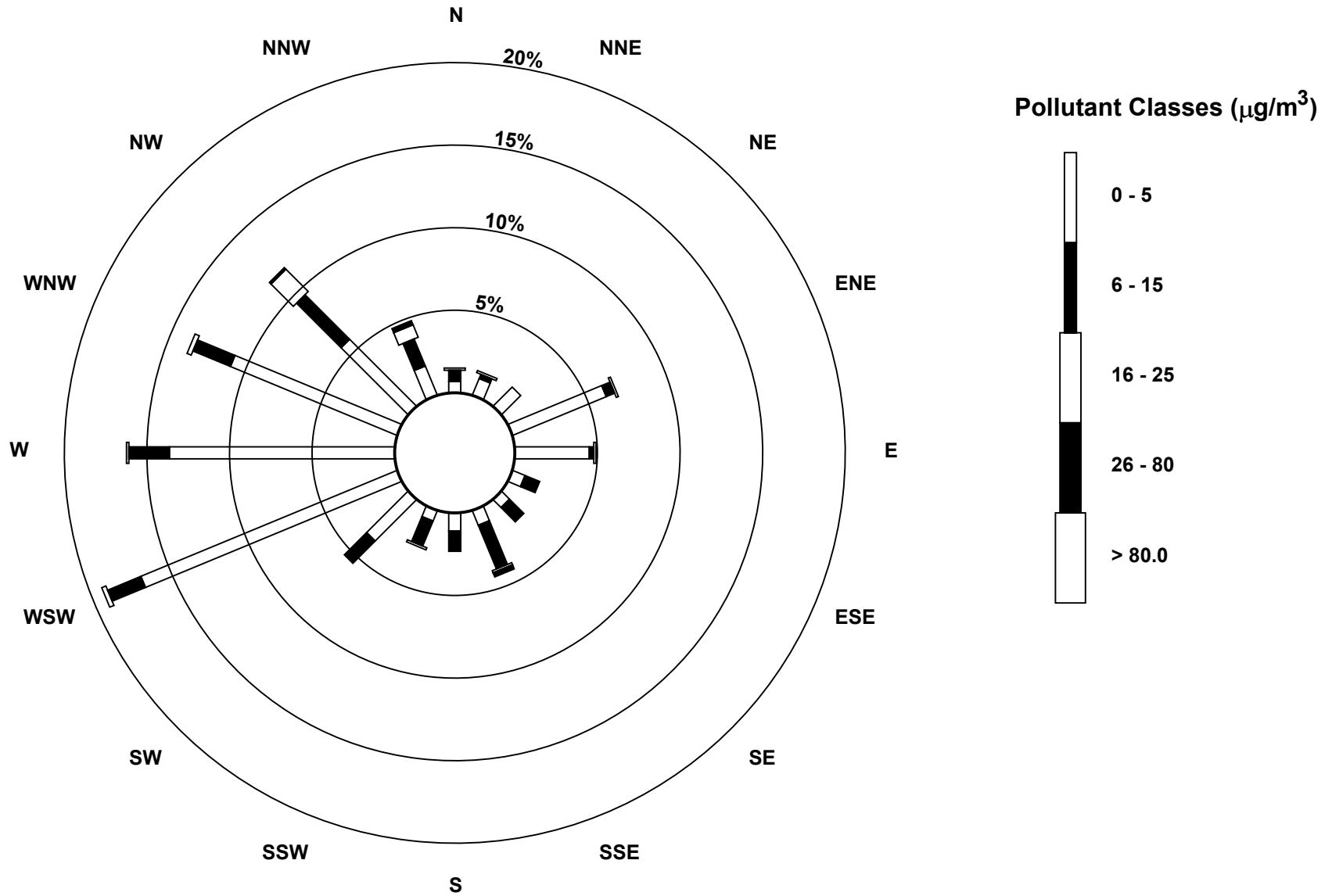
Henry Pirker - December 2017

Maximum Value: 135.3 µg/m <sup>3</sup> on Dec 3 14:00		Maximum Daily Average: 22.2 µg/m <sup>3</sup> on Dec 31		Hours in Service: 744																							
Minimum Value: 0 µg/m <sup>3</sup> on Dec 4 00:00		Minimum Daily Average: 0.8 µg/m <sup>3</sup> on Dec 15		Hours of Data: 742																							
Maximum Diurnal Average: 12.4 µg/m <sup>3</sup> at hour 22		Minimum Diurnal Average: 4.7 µg/m <sup>3</sup> at hour 6		Hours of Missing Data: 2																							
Monthly Average: 6.98 µg/m <sup>3</sup>		Percentiles: P <sub>1</sub> = 0.8 P <sub>10</sub> = 1.2 Q <sub>1</sub> = 2.1 Median = 3.8 Q <sub>3</sub> = 8.0 P <sub>90</sub> = 16.9 P <sub>99</sub> = 40.3		Hours of Calibration: 0																							
				Percent Operational Time: 99.7																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	14	12	16	13	7	7	7	8	9	11	11	16	22	11	12	7	8	10	19	17	5	4	9	13	11.2	21.6	
2-Dec	14	17	16	7	6	8	14	29	27	11	29	19	28	20	17	18	24	26	28	40	29	23	25	23	20.8	40.4	
3-Dec	19	22	13	11	9	8	7	7	7	11	7	8	3	135	4	5	4	5	2	1	1	1	1	0	12.1	135.3	
4-Dec	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.2	4.5	
5-Dec	3	1	1	1	1	1	1	1	2	P	P	1	2	2	2	3	4	5	4	4	5	6	6	10	3.0	10.2	
6-Dec	10	7	7	6	8	10	12	16	10	7	2	1	1	1	2	3	4	3	1	1	2	1	1	2	4.9	15.6	
7-Dec	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	12	20	29	29	15	4	5	5.5	29.0	
8-Dec	8	4	3	3	4	4	6	5	3	7	7	9	6	3	3	2	2	3	3	3	2	2	1	1	4.0	9.2	
9-Dec	3	1	1	2	2	2	2	4	6	6	6	11	10	5	4	3	5	6	11	24	22	50	39	42	11.1	50.0	
10-Dec	38	14	15	12	7	7	7	7	6	5	4	3	3	2	2	2	3	4	4	5	6	9	10	11	7.7	37.5	
11-Dec	14	13	18	17	17	12	9	8	9	9	7	8	6	9	8	16	20	22	23	24	22	18	16	17	14.2	24.2	
12-Dec	20	13	13	14	14	7	7	7	6	4	4	3	3	3	3	3	2	2	2	2	2	1	1	1	5.7	20.1	
13-Dec	2	2	2	2	2	2	2	2	3	3	4	3	3	3	3	4	7	8	9	12	14	15	18	15	6.0	18.0	
14-Dec	19	24	27	27	22	18	16	17	17	14	17	25	22	16	14	12	12	4	3	4	3	2	1	1	14.1	27.3	
15-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	0.9	
16-Dec	2	2	2	2	2	2	2	2	2	2	2	2	3	4	6	8	8	8	8	7	5	5	5	7	3.7	8.5	
17-Dec	10	8	3	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	2.2	9.8	
18-Dec	2	2	2	2	2	2	2	3	4	4	4	3	3	4	5	7	7	6	10	8	31	8	6	6	5.5	31.5	
19-Dec	6	7	6	5	5	4	4	4	3	3	2	2	3	2	3	8	5	4	4	4	4	4	4	4	4.1	7.8	
20-Dec	4	4	4	4	4	4	4	4	5	6	6	5	4	5	7	10	12	14	19	18	15	16	18	40	9.8	40.3	
21-Dec	13	9	8	8	5	4	4	3	3	4	4	4	4	3	3	3	2	2	3	3	2	6	2	3	4.5	12.8	
22-Dec	2	2	2	3	3	3	5	7	7	8	10	9	7	7	7	5	5	5	5	5	7	8	7	7	5.6	9.8	
23-Dec	8	8	8	7	7	7	7	6	5	5	4	4	3	3	2	2	2	2	2	2	1	2	2	2	4.2	8.5	
24-Dec	2	2	2	2	2	2	2	2	2	2	3	3	2	3	3	2	3	3	2	2	2	2	2	2	2.2	3.3	
25-Dec	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	4	3	3	3	3	3	2.6	4.4	
26-Dec	3	4	3	4	3	3	4	3	4	7	4	6	4	4	4	4	4	6	7	6	7	19	4	5	5.1	18.5	
27-Dec	10	4	4	4	4	4	4	3	3	3	2	2	2	2	2	1	2	2	2	2	2	1	1	2	2.7	9.5	
28-Dec	2	3	2	2	2	2	2	3	4	3	4	3	2	2	2	3	4	6	7	5	6	6	3	2	3.3	7.1	
29-Dec	2	2	1	1	1	2	2	2	2	3	3	2	3	3	4	5	5	5	6	6	5	4	4	4	3.1	5.9	
30-Dec	4	3	3	4	5	4	7	9	6	6	6	13	8	15	10	9	10	17	25	18	25	48	21	36	13.0	47.9	
31-Dec	15	21	32	19	14	10	10	14	12	14	30	26	20	13	12	8	14	15	37	35	35	78	28	20	22.2	78.0	
		8.3	6.9	7.1	6.1	5.3	4.7	5.1	5.9	5.5	5.4	6.3	6.4	5.9	9.2	4.8	4.9	6.1	6.9	8.6	9.5	8.8	12.4	7.9	9.2	Diurnal Average	
		37.5	24.3	32.1	27.1	22.5	18.2	16.3	28.8	27.2	13.7	30.4	26.5	27.9	135.3	17.0	18.4	24.3	25.7	37.3	40.4	34.7	78.0	38.8	41.5	Diurnal Maximum	
P - Power Failure																											



**Pollutant Rose**

**Particulate Matter 2.5 (PM<sub>2.5</sub>) -  $\mu\text{g}/\text{m}^3$**   
**Henry Pirker - December 2017**



# Hourly Averages

External Temperature (ET) - °C

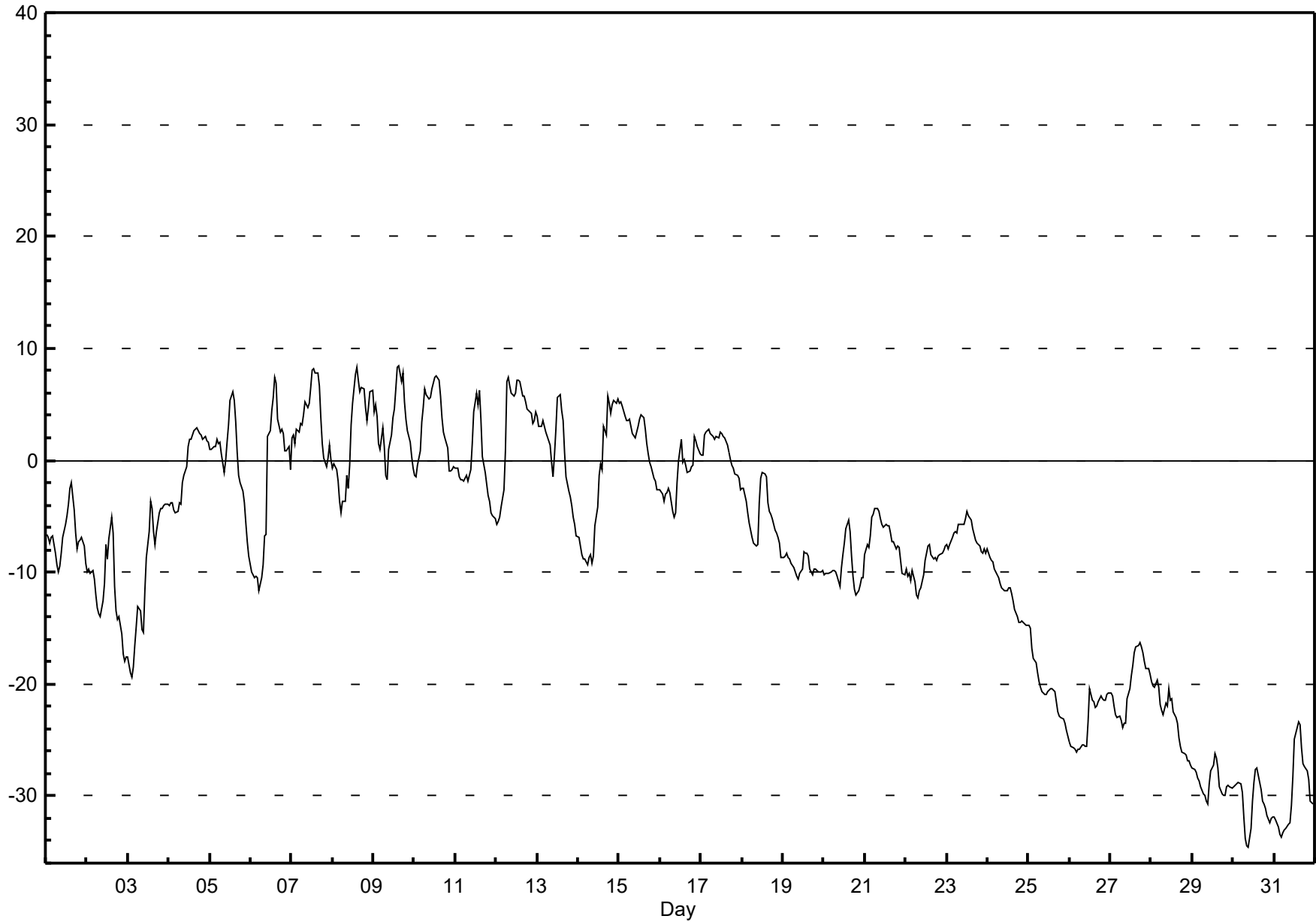
Henry Pirker - December 2017

Maximum Value: 8.4 °C on Dec 9 16:00		Maximum Daily Average: 3.7 °C on Dec 7		Hours in Service: 744																							
Minimum Value: -35 °C on Dec 30 10:00		Minimum Daily Average: -30.6 °C on Dec 30		Hours of Data: 744																							
Maximum Diurnal Average: -4.8 °C at hour 15		Minimum Diurnal Average: -9.6 °C at hour 9		Hours of Missing Data: 0																							
Monthly Average: -8.09 °C		Percentiles: P <sub>1</sub> = -32.9 P <sub>10</sub> = -25.9 Q <sub>1</sub> = -14.3 Median = -6.5 Q <sub>3</sub> = 1.0 P <sub>90</sub> = 4.4 P <sub>99</sub> = 7.7		Hours of Calibration: 0																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	-7	-7	-7	-7	-7	-8	-9	-10	-10	-8	-7	-6	-5	-4	-3	-2	-4	-7	-8	-7	-7	-7	-8	-9	-6.8	-2.0	
2-Dec	-10	-10	-10	-10	-11	-12	-13	-14	-14	-13	-11	-8	-9	-7	-5	-7	-11	-13	-14	-14	-16	-17	-18	-18	-11.8	-5.1	
3-Dec	-18	-19	-19	-19	-17	-15	-13	-13	-15	-15	-12	-9	-6	-4	-4	-6	-8	-6	-5	-4	-4	-4	-4	-4	-10.1	-3.7	
4-Dec	-4	-4	-4	-4	-5	-5	-4	-4	-2	-1	-1	1	2	2	2	3	3	3	2	2	2	2	2	2	-0.4	2.9	
5-Dec	1	1	1	1	2	1	2	1	-1	0	2	3	5	6	5	3	1	-1	-2	-3	-4	-6	-7	-9	0.1	6.1	
6-Dec	-10	-10	-10	-10	-11	-12	-11	-9	-7	-7	2	3	4	6	7	7	4	2	3	2	1	1	1	-1	-2.3	7.5	
7-Dec	2	2	2	3	2	3	3	4	5	5	5	7	8	8	8	8	7	4	2	0	-1	0	1	0	3.7	8.2	
8-Dec	-1	0	-1	-2	-4	-5	-4	-4	-1	-3	0	3	5	8	8	7	6	7	6	5	4	5	6	6	2.2	8.3	
9-Dec	4	5	4	2	1	3	1	-1	-2	1	2	4	5	6	8	8	7	7	8	5	4	3	2	0	-1	3.3	8.4
10-Dec	-1	-2	0	1	3	5	6	6	5	6	6	7	7	8	7	6	4	2	2	1	-1	-1	-1	-1	3.2	7.5	
11-Dec	-1	-1	-1	-2	-2	-2	-1	-2	-1	-1	2	4	6	5	6	4	0	-1	-2	-3	-4	-5	-5	-5	-0.5	6.2	
12-Dec	-6	-5	-5	-4	-3	1	7	7	7	6	6	6	7	7	7	6	6	5	5	4	4	3	4	4	3.3	7.4	
13-Dec	4	3	3	4	3	3	2	1	0	-2	0	3	6	6	4	4	1	-1	-3	-3	-4	-5	-6	-7	0.6	5.9	
14-Dec	-7	-8	-8	-9	-9	-9	-9	-8	-9	-9	-6	-4	-1	0	-1	3	2	6	5	4	5	5	5	6	-2.3	5.8	
15-Dec	5	5	5	4	4	4	4	3	2	2	3	3	4	4	4	3	1	1	0	-1	-2	-2	-3	-3	2.1	5.2	
16-Dec	-3	-3	-4	-3	-3	-3	-3	-5	-5	-5	-2	0	2	0	0	0	-1	-1	-1	0	2	2	1	1	-1.4	2.2	
17-Dec	0	1	2	3	3	2	2	2	2	2	2	3	2	2	2	1	1	0	0	-1	-1	-1	-2	-3	1.0	2.8	
18-Dec	-3	-2	-4	-5	-6	-6	-7	-7	-8	-8	-4	-2	-1	-1	-2	-4	-5	-5	-5	-6	-7	-7	-7	-9	-4.9	-1.1	
19-Dec	-9	-9	-8	-9	-9	-9	-10	-10	-10	-11	-10	-10	-8	-8	-8	-9	-10	-10	-10	-10	-10	-10	-10	-10	-9.4	-8.1	
20-Dec	-10	-10	-10	-10	-10	-10	-10	-10	-10	-11	-10	-8	-7	-6	-5	-6	-9	-10	-12	-12	-12	-11	-11	-10	-9.6	-5.3	
21-Dec	-8	-8	-8	-7	-5	-5	-4	-4	-5	-5	-6	-6	-6	-6	-7	-7	-7	-7	-8	-8	-8	-9	-10	-10	-6.7	-4.3	
22-Dec	-10	-10	-10	-11	-10	-11	-12	-12	-12	-11	-10	-9	-8	-8	-8	-8	-9	-9	-9	-9	-8	-8	-8	-8	-9.5	-7.5	
23-Dec	-8	-8	-8	-7	-7	-6	-6	-6	-6	-6	-6	-5	-5	-5	-5	-6	-7	-7	-7	-8	-8	-8	-8	-8	-6.7	-4.6	
24-Dec	-8	-9	-9	-9	-10	-10	-11	-11	-11	-12	-12	-12	-11	-11	-12	-13	-13	-14	-14	-15	-14	-15	-15	-15	-11.8	-7.9	
25-Dec	-15	-15	-17	-18	-18	-19	-20	-20	-21	-21	-21	-21	-21	-20	-20	-21	-22	-23	-23	-23	-23	-24	-24	-25	-20.5	-14.8	
26-Dec	-25	-26	-26	-26	-26	-26	-26	-25	-25	-26	-26	-23	-20	-21	-22	-22	-22	-22	-21	-21	-21	-22	-21	-21	-23.4	-20.4	
27-Dec	-21	-21	-22	-23	-23	-23	-23	-24	-24	-24	-21	-20	-19	-18	-17	-17	-17	-16	-17	-17	-18	-19	-19	-19	-20.0	-16.3	
28-Dec	-20	-20	-20	-20	-20	-22	-22	-23	-22	-22	-20	-21	-21	-22	-23	-24	-25	-26	-26	-26	-26	-27	-27	-27	-23.0	-19.7	
29-Dec	-28	-28	-28	-28	-29	-29	-30	-30	-30	-31	-29	-28	-27	-26	-27	-28	-29	-30	-30	-30	-29	-29	-29	-29	-28.8	-26.2	
30-Dec	-29	-29	-29	-29	-29	-30	-32	-34	-35	-35	-33	-30	-29	-28	-28	-29	-29	-30	-31	-31	-32	-32	-32	-32	-30.6	-27.5	
31-Dec	-32	-32	-33	-33	-34	-33	-33	-33	-33	-32	-31	-28	-25	-24	-23	-24	-26	-27	-27	-28	-29	-30	-31	-31	-29.6	-23.3	
		-8.8	-9.0	-9.2	-9.3	-9.2	-9.3	-9.2	-9.5	-9.6	-9.5	-8.0	-6.6	-5.4	-4.9	-4.8	-5.4	-6.8	-7.4	-7.9	-8.3	-8.6	-9.0	-9.1	-9.5	Diurnal Average	
		5.0	5.2	4.8	3.9	3.6	4.6	7.0	7.4	6.6	6.0	6.4	6.9	8.0	8.2	8.4	8.4	7.1	7.9	6.3	4.7	5.0	5.4	6.1	6.3	Diurnal Maximum	

**Hourly Averages**

**External Temperature (ET) - °C**

**Henry Pirker - December 2017**



# Hourly Averages

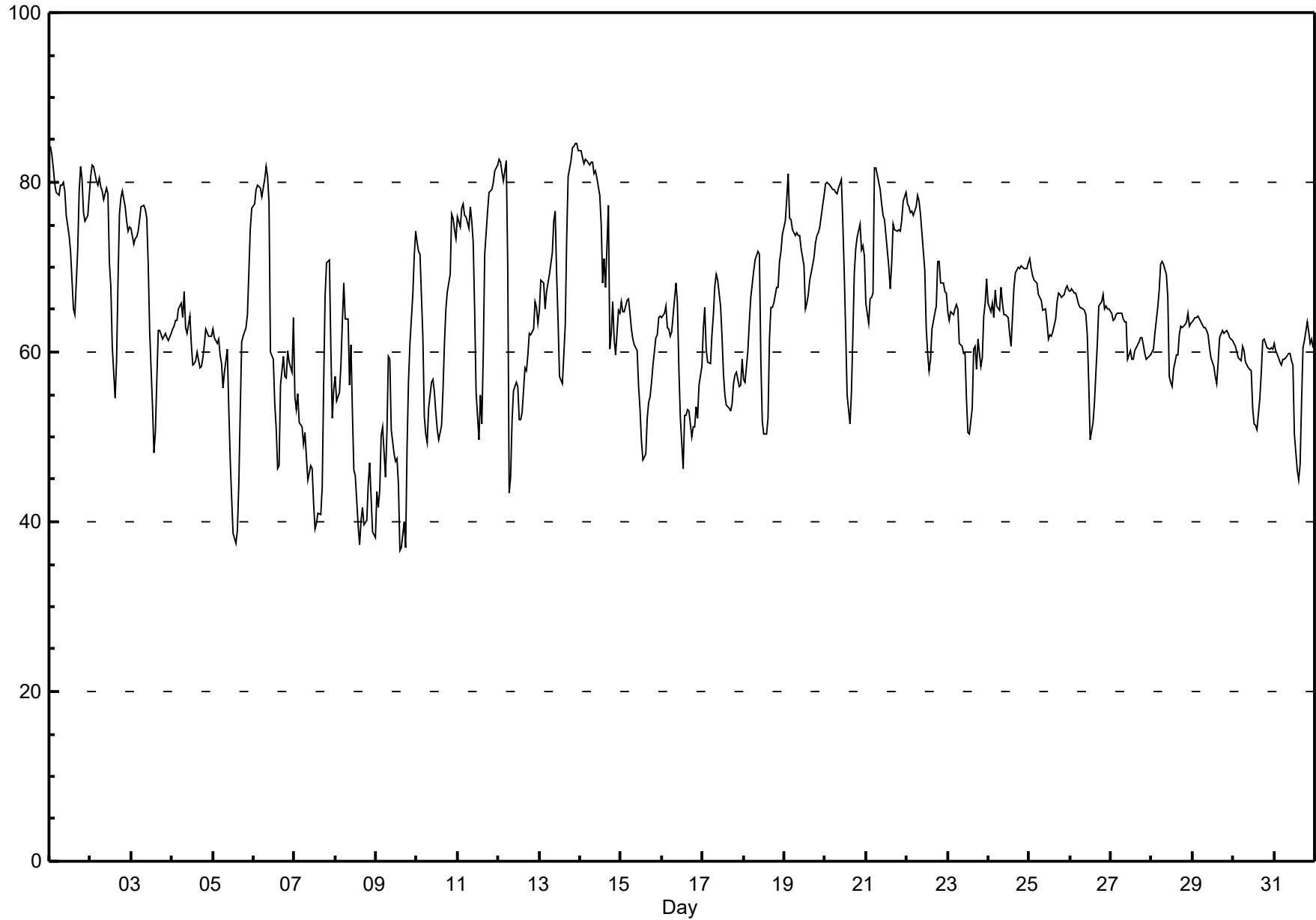
Relative Humidity (RH) - %

Henry Pirker - December 2017

Maximum Value: 84.6 % on Dec 13 23:00		Maximum Daily Average: 76.8 % on Dec 1		Hours in Service: 744																						
Minimum Value: 37 % on Dec 9 15:00		Minimum Daily Average: 49.8 % on Dec 8		Hours of Data: 744																						
Maximum Diurnal Average: 67.9 % at hour 3		Minimum Diurnal Average: 54.0 % at hour 15		Hours of Missing Data: 0																						
Monthly Average: 64.00 %		Percentiles: P <sub>1</sub> = 38.8 P <sub>10</sub> = 51.1 Q <sub>1</sub> = 58.4 Median = 63.6 Q <sub>3</sub> = 70.8 P <sub>90</sub> = 78.5 P <sub>99</sub> = 83.7		Hours of Calibration: 0																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	84	83	82	80	79	79	80	80	80	79	76	74	72	68	65	64	72	79	82	80	76	75	76	78	76.8	84.3
2-Dec	81	82	82	80	80	81	79	79	78	79	79	71	68	61	55	59	68	76	78	79	77	75	74	75	74.8	82.1
3-Dec	75	73	73	74	74	76	77	77	77	76	70	63	54	48	51	57	63	63	62	62	62	62	61	62	66.2	77.3
4-Dec	63	63	64	64	65	66	64	67	63	62	64	61	59	59	59	60	58	58	59	61	63	62	62	62	61.9	67.1
5-Dec	63	62	61	62	60	59	56	58	60	54	47	43	39	37	39	44	53	61	62	63	64	70	75	77	56.9	76.9
6-Dec	77	79	80	80	79	78	80	82	81	78	60	59	54	51	46	47	56	59	57	57	60	59	58	64	65.9	81.9
7-Dec	55	53	55	52	51	49	51	48	45	47	46	42	39	40	41	41	44	56	67	70	71	61	52	56	51.3	70.8
8-Dec	57	54	55	58	64	68	64	64	56	61	53	46	45	40	37	40	42	40	40	44	47	43	39	38	49.8	68.1
9-Dec	44	42	44	50	51	45	51	59	59	51	48	47	48	44	37	37	40	37	49	57	61	67	71	74	50.5	74.3
10-Dec	73	72	72	62	52	50	49	53	56	57	55	53	51	50	51	56	61	65	67	69	76	76	74	73	61.4	76.3
11-Dec	76	75	77	77	76	76	75	77	75	73	65	55	50	55	51	60	72	77	79	79	79	80	81	82	71.7	82.1
12-Dec	83	82	81	80	83	70	43	45	52	55	56	56	52	52	53	58	58	60	62	62	63	66	65	63	62.6	82.7
13-Dec	65	69	68	65	67	68	69	72	75	77	69	64	57	56	60	63	73	81	83	84	84	85	85	84	71.8	84.6
14-Dec	84	83	82	83	82	82	82	82	81	81	81	78	75	68	71	68	77	60	62	66	61	60	65	65	74.2	83.8
15-Dec	66	65	65	66	66	65	63	61	61	60	56	53	49	47	48	52	54	55	56	58	62	62	64	64	59.1	66.3
16-Dec	64	65	65	63	63	62	62	66	68	66	58	52	46	52	53	53	53	50	51	51	53	52	56	58	57.7	68.1
17-Dec	63	65	60	59	59	62	64	68	69	68	65	62	57	55	54	53	53	54	56	57	58	56	56	59	59.7	69.2
18-Dec	57	56	60	64	66	68	69	71	72	72	59	52	50	50	52	61	65	65	66	68	71	72	74	74	63.7	73.9
19-Dec	75	78	81	76	76	74	74	74	74	74	72	70	65	66	67	69	69	71	73	74	74	75	77	78	73.2	81.1
20-Dec	80	80	80	80	79	79	79	79	79	80	75	69	62	55	51	55	62	69	72	74	75	72	73	71	72.1	80.3
21-Dec	66	63	66	66	67	82	82	80	79	77	76	76	72	70	67	71	75	74	74	74	74	76	78	79	73.5	81.7
22-Dec	77	77	76	77	76	77	78	78	76	74	70	63	60	58	59	63	65	65	71	71	68	68	67	67	70.0	78.5
23-Dec	65	64	65	64	65	66	65	61	61	60	60	54	50	50	53	60	61	58	61	58	59	64	66	69	60.8	68.6
24-Dec	66	65	66	64	67	65	65	68	66	64	64	64	62	61	64	68	69	70	70	70	70	70	70	70	66.6	70.5
25-Dec	71	70	69	69	68	67	66	66	65	65	63	62	62	62	62	64	66	67	67	66	67	67	68	67	66.1	71.0
26-Dec	67	67	67	67	66	66	65	65	65	64	62	56	50	52	54	58	61	65	66	67	65	65	65	65	63.0	67.5
27-Dec	65	64	64	64	65	65	65	64	64	64	59	60	59	59	60	60	61	62	62	61	60	59	60	60	61.8	64.6
28-Dec	60	60	62	65	67	70	71	70	69	66	57	56	56	58	60	62	63	63	63	63	64	65	63	63	63.1	70.7
29-Dec	64	64	64	64	64	64	63	63	62	61	59	58	57	56	59	62	63	62	62	62	63	62	62	61	61.7	64.2
30-Dec	61	61	60	59	59	61	60	59	58	58	58	53	52	51	51	55	58	61	62	61	60	60	60	60	58.3	61.5
31-Dec	61	60	59	59	59	59	59	59	60	60	59	59	50	46	45	47	54	61	61	63	62	61	62	60	57.7	63.5
		67.9	67.6	67.9	67.5	67.6	67.6	66.8	67.6	67.3	66.6	62.8	59.1	55.6	54.2	54.0	56.8	60.9	62.7	64.6	65.6	66.0	66.0	66.3	67.1	Diurnal Average
		84.3	83.2	82.2	82.7	82.5	82.0	82.4	82.4	81.1	81.4	80.6	78.4	75.0	70.0	71.1	70.6	77.2	80.6	82.5	84.0	84.2	84.6	84.6	83.8	Diurnal Maximum

**Hourly Averages**

**Relative Humidity (RH) - %**  
**Henry Pirker - December 2017**



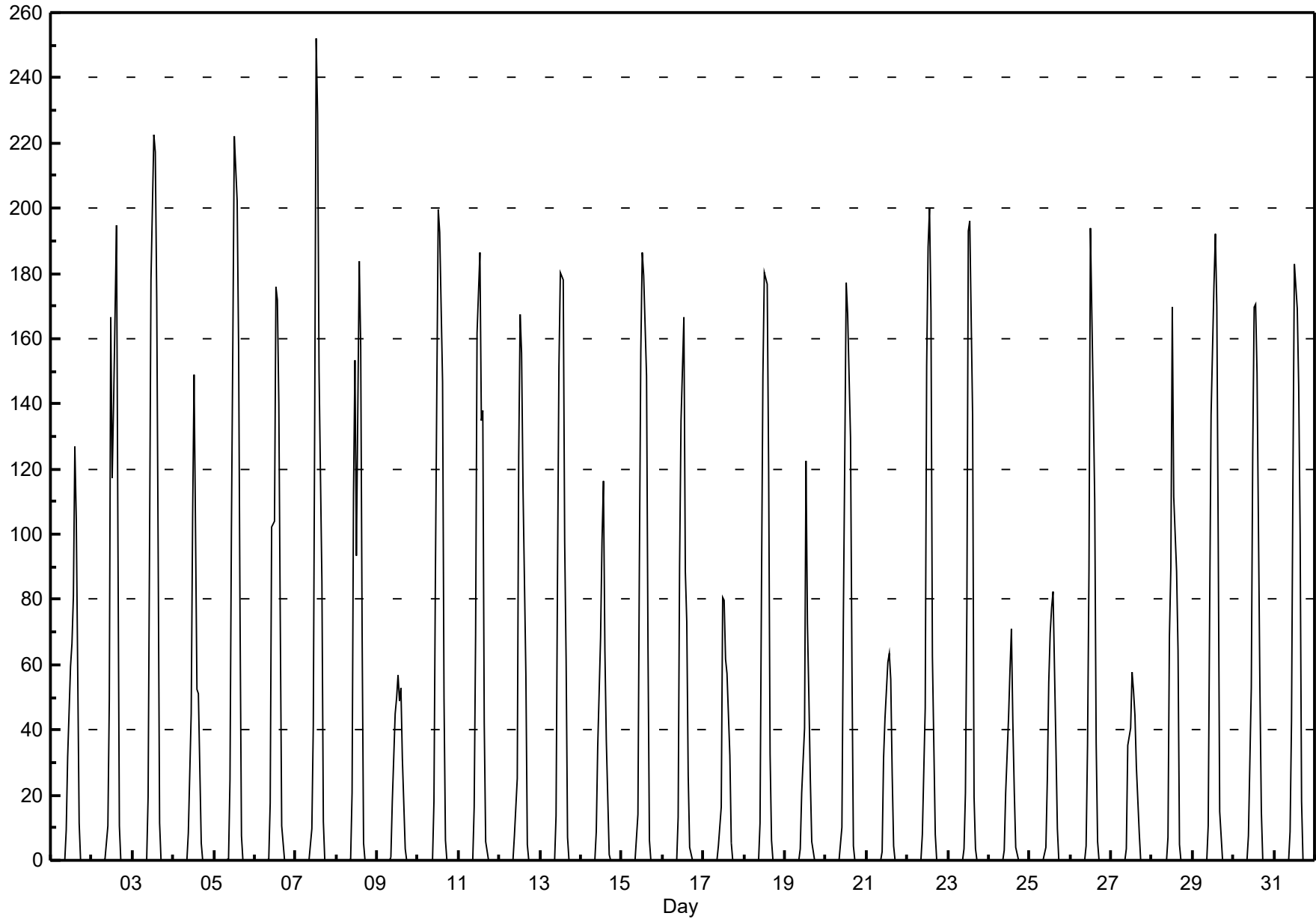
# Hourly Averages

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

Henry Pirker - December 2017

<b>Maximum Value: 252.3 W/m<sup>2</sup> on Dec 7 13:00</b>		<b>Maximum Daily Average: 42.2 W/m<sup>2</sup> on Dec 3</b>		Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																						
<b>Minimum Value: 0 W/m<sup>2</sup> on Dec 1 01:00</b>		<b>Minimum Daily Average: 11.0 W/m<sup>2</sup> on Dec 24</b>																								
<b>Maximum Diurnal Average: 149.0 W/m<sup>2</sup> at hour 13</b>		<b>Minimum Diurnal Average: 0.0 W/m<sup>2</sup> at hour 2</b>																								
<b>Monthly Average: 26.81 W/m<sup>2</sup></b>		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.0 Q <sub>3</sub> = 20.5 P <sub>90</sub> = 117.0 P <sub>99</sub> = 197.8																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	0	0	0	0	0	0	0	0	9	32	59	66	81	127	104	11	0	0	0	0	0	0	0	20.4	126.9
2-Dec	0	0	0	0	0	0	0	0	0	11	49	167	117	140	195	98	11	0	0	0	0	0	0	0	32.8	194.7
3-Dec	0	0	0	0	0	0	0	0	0	20	95	178	222	217	172	95	12	0	0	0	0	0	0	0	42.2	222.4
4-Dec	0	0	0	0	0	0	0	0	0	8	45	105	149	102	53	51	5	0	0	0	0	0	0	0	21.6	149.1
5-Dec	0	0	0	0	0	0	0	0	0	25	101	159	222	202	158	75	8	0	0	0	0	0	0	0	39.6	222.1
6-Dec	0	0	0	0	0	0	0	0	0	17	102	104	176	172	140	74	11	0	0	0	0	0	0	0	33.2	175.7
7-Dec	0	0	0	0	0	0	0	0	0	9	42	137	252	229	150	86	12	0	0	0	0	0	0	0	38.2	252.3
8-Dec	0	0	0	0	0	0	0	0	0	21	112	154	94	184	158	69	5	0	0	0	0	0	0	0	33.2	183.7
9-Dec	0	0	0	0	0	0	0	0	1	18	45	50	57	49	53	31	4	0	0	0	0	0	0	0	12.8	56.7
10-Dec	0	0	0	0	0	0	0	0	0	18	87	145	200	193	147	50	6	0	0	0	0	0	0	0	35.2	199.6
11-Dec	0	0	0	0	0	0	0	0	0	16	69	162	187	135	138	42	6	0	0	0	0	0	0	0	31.5	186.6
12-Dec	0	0	0	0	0	0	0	0	0	8	25	124	168	156	114	57	5	0	0	0	0	0	0	0	27.3	167.6
13-Dec	0	0	0	0	0	0	0	0	0	14	87	151	180	178	98	62	7	0	0	0	0	0	0	0	32.3	180.3
14-Dec	0	0	0	0	0	0	0	0	0	9	35	68	98	116	64	36	2	0	0	0	0	0	0	0	17.9	116.3
15-Dec	0	0	0	0	0	0	0	0	0	14	90	156	186	179	148	66	6	0	0	0	0	0	0	0	35.3	186.4
16-Dec	0	0	0	0	0	0	0	0	0	13	90	135	167	88	73	26	4	0	0	0	0	0	0	0	24.9	166.7
17-Dec	0	0	0	0	0	0	0	0	0	4	16	81	80	62	57	32	5	0	0	0	0	0	0	0	14.1	80.6
18-Dec	0	0	0	0	0	0	0	0	0	11	83	148	180	177	120	33	6	0	0	0	0	0	0	0	31.6	180.1
19-Dec	0	0	0	0	0	0	0	0	0	4	21	41	123	73	50	25	6	0	0	0	0	0	0	0	14.2	122.5
20-Dec	0	0	0	0	0	0	0	0	0	10	74	124	177	168	130	59	4	0	0	0	0	0	0	0	31.1	177.3
21-Dec	0	0	0	0	0	0	0	0	0	2	31	44	61	63	55	27	4	0	0	0	0	0	0	0	12.0	63.3
22-Dec	0	0	0	0	0	0	0	0	0	8	47	152	188	200	168	63	8	0	0	0	0	0	0	0	34.7	200.0
23-Dec	0	0	0	0	0	0	0	0	0	4	21	77	193	196	136	19	4	0	0	0	0	0	0	0	27.1	196.0
24-Dec	0	0	0	0	0	0	0	0	0	3	21	43	58	71	42	21	4	0	0	0	0	0	0	0	11.0	71.0
25-Dec	0	0	0	0	0	0	0	0	0	4	25	55	70	78	82	35	10	0	0	0	0	0	0	0	14.9	82.3
26-Dec	0	0	0	0	0	0	0	0	0	4	35	89	194	140	110	36	6	0	0	0	0	0	0	0	25.6	193.7
27-Dec	0	0	0	0	0	0	0	0	0	3	35	40	58	52	45	29	9	0	0	0	0	0	0	0	11.3	57.7
28-Dec	0	0	0	0	0	0	0	0	0	7	69	90	170	112	88	64	5	0	0	0	0	0	0	0	25.2	169.9
29-Dec	0	0	0	0	0	0	0	0	0	10	76	137	176	192	170	97	15	0	0	0	0	0	0	0	36.4	192.4
30-Dec	0	0	0	0	0	0	0	0	0	7	53	125	169	171	149	53	15	0	0	0	0	0	0	0	30.9	170.7
31-Dec	0	0	0	0	0	0	0	0	0	9	43	118	183	169	146	100	18	0	0	0	0	0	0	0	32.7	183.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	10.4	56.6	110.3	149.0	140.2	114.1	55.3	7.5	0.0	0.0	0.0	0.0	0.0	0.0	Diurnal Average	
		0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.9	24.6	112.2	178.1	252.3	228.7	194.7	104.2	18.0	0.1	0.0	0.0	0.0	0.0	0.0	Diurnal Maximum	





# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Henry Pirker - December 2017

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	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	4	3	3	4	1	3	2	3	2	2	3	1	3	2	3	3	4	1	3	3	5	4	2	3	1.0	4.6
Dir	154	133	85	118	163	332	299	307	340	306	313	257	221	256	175	164	168	170	224	267	259	247	218	122	217.3	258.7
2 Spd	3	2	3	4	2	2	1	2	1	3	3	2	3	2	2	2	3	2	1	1	2	3	2	3	0.7	4.1
Dir	183	159	235	246	310	155	103	138	147	199	163	193	316	308	299	321	300	336	201	162	320	349	341	342	263.4	245.6
3 Spd	3	3	4	1	3	0	1	2	2	2	4	3	4	2	5	6	5	10	13	14	15	14	14	16	5.4	15.9
Dir	307	325	305	5	309	235	186	315	275	311	305	310	283	311	279	270	259	247	243	243	239	250	251	242	259.2	241.6
4 Spd	11	10	10	9	9	7	9	4	12	9	8	15	18	23	19	20	23	21	23	27	24	27	24	25	16.0	27.0
Dir	260	259	277	260	256	255	264	275	237	257	288	259	253	249	249	260	251	263	261	262	258	251	250	248	256.3	250.7
5 Spd	22	19	19	20	20	15	19	10	8	9	10	5	4	4	4	6	5	6	7	6	6	3	4	2	9.3	21.8
Dir	247	249	251	248	254	257	264	270	256	282	274	286	259	261	280	261	263	274	277	266	283	329	331	324	262.0	246.8
6 Spd	4	2	2	1	1	2	2	4	5	5	8	11	8	6	2	5	4	3	6	7	8	8	4	6	4.0	11.2
Dir	338	305	301	27	3	290	109	209	265	274	265	281	286	291	140	261	232	265	270	278	286	275	288	243	274.3	280.9
7 Spd	10	9	8	12	6	13	13	15	15	13	17	20	20	19	16	8	5	1	1	1	0	5	6	3	9.5	19.9
Dir	257	285	235	250	254	252	251	260	264	258	256	257	255	244	240	282	299	356	337	317	248	233	229	230	255.5	256.8
8 Spd	4	6	7	2	1	2	3	5	6	1	2	6	9	10	9	11	11	12	14	10	10	16	20	16	7.5	19.7
Dir	244	256	220	264	264	203	221	242	222	201	237	230	261	280	291	279	286	269	252	292	295	273	271	263	265.6	271.5
9 Spd	13	13	10	3	8	9	4	3	4	5	5	2	3	11	16	11	6	10	1	1	1	1	1	1	5.3	16.2
Dir	257	265	278	299	251	247	270	313	244	213	218	280	322	258	240	275	234	270	210	106	164	307	162	331	258.7	240.2
10 Spd	2	1	2	5	9	13	18	17	19	23	24	24	18	18	10	9	5	5	6	3	1	2	4	3	8.7	24.4
Dir	315	160	145	189	236	249	260	269	268	264	262	267	263	267	277	294	294	275	273	329	325	32	114	141	264.2	266.7
11 Spd	2	3	3	3	4	3	2	4	4	1	1	3	4	3	1	2	0	1	3	2	3	3	1	2	0.8	4.2
Dir	142	136	132	168	203	175	316	157	151	157	211	220	226	276	262	306	278	326	312	318	324	299	355	338	223.7	151.0
12 Spd	3	3	2	1	3	13	21	26	23	24	18	17	22	20	14	13	25	19	15	14	13	9	10	12	13.5	26.3
Dir	326	289	301	120	201	239	233	245	251	250	259	286	266	267	269	283	268	265	258	264	249	238	242	256	257.8	245.0
13 Spd	9	4	8	6	8	9	10	5	5	5	6	7	5	4	3	2	1	3	2	2	1	1	1	1	4.1	9.5
Dir	250	318	285	294	291	287	285	310	333	307	279	283	273	307	306	328	15	323	322	248	4	342	296	277	293.1	285.2
14 Spd	2	2	3	1	2	2	2	2	4	1	1	0	2	3	2	8	1	11	10	5	13	11	14	9	4.2	14.1
Dir	313	333	311	243	308	331	26	294	321	284	267	14	282	301	293	288	247	277	288	301	284	269	282	251	285.5	282.2
15 Spd	16	21	18	13	16	19	22	23	21	21	20	18	16	18	17	16	14	16	16	13	12	9	10	10	16.5	22.8
Dir	283	271	249	239	243	247	257	254	252	251	248	249	256	252	248	248	251	258	249	248	245	244	234	242	251.6	253.9
16 Spd	11	10	10	14	14	14	12	6	5	7	8	5	5	4	3	3	5	6	5	5	11	4	4	2	6.1	14.3
Dir	241	233	231	245	246	245	240	237	310	256	236	227	229	235	190	122	156	159	168	159	222	184	163	209	226.8	245.6
17 Spd	1	7	9	14	16	17	19	20	21	21	21	25	18	19	20	16	13	14	15	15	13	14	12	10	15.3	25.3
Dir	57	242	237	246	252	240	243	238	246	242	244	252	263	261	259	273	257	253	247	247	246	251	249	242	249.4	251.8
18 Spd	12	12	6	3	4	4	5	2	3	3	4	4	4	6	5	5	6	6	6	4	4	3	3	2	3.9	12.1
Dir	252	263	291	266	228	278	253	331	164	272	301	305	352	317	313	309	299	316	335	321	315	346	325	324	293.3	252.4
19 Spd	2	2	3	6	6	6	4	5	6	6	5	5	4	3	3	4	4	2	1	3	4	5	4	6	2.4	6.5
Dir	350	60	69	57	58	64	61	62	65	62	74	83	29	34	37	102	93	75	190	309	288	284	291	272	48.6	61.6
20 Spd	6	5	6	7	7	7	6	5	5	4	4	3	7	6	3	3	3	3	3	3	1	1	1	4	3.0	7.0
Dir	244	231	239	232	215	211	184	189	155	157	157	179	232	269	256	175	272	295	311	331	201	295	164	304	224.7	232.2
21 Spd	6	4	4	8	11	13	14	16	15	12	9	9	9	10	10	9	8	6	7	8	10	8	6	6	8.4	16.4
Dir	297	342	307	291	312	297	292	299	302	316	314	322	336	347	344	327	313	298	307	301	293	283	266	247	307.1	298.5
22 Spd	7	5	8	7	10	6	4	5	8	9	8	10	11	10	12	13	12	13	11	11	14	13	14	13	9.3	14.1
Dir	258	261	287	301	312	290	281	283	252	253	249	252	272	260	292	289	287	289	282	256	261	272	278	281	275.3	261.1

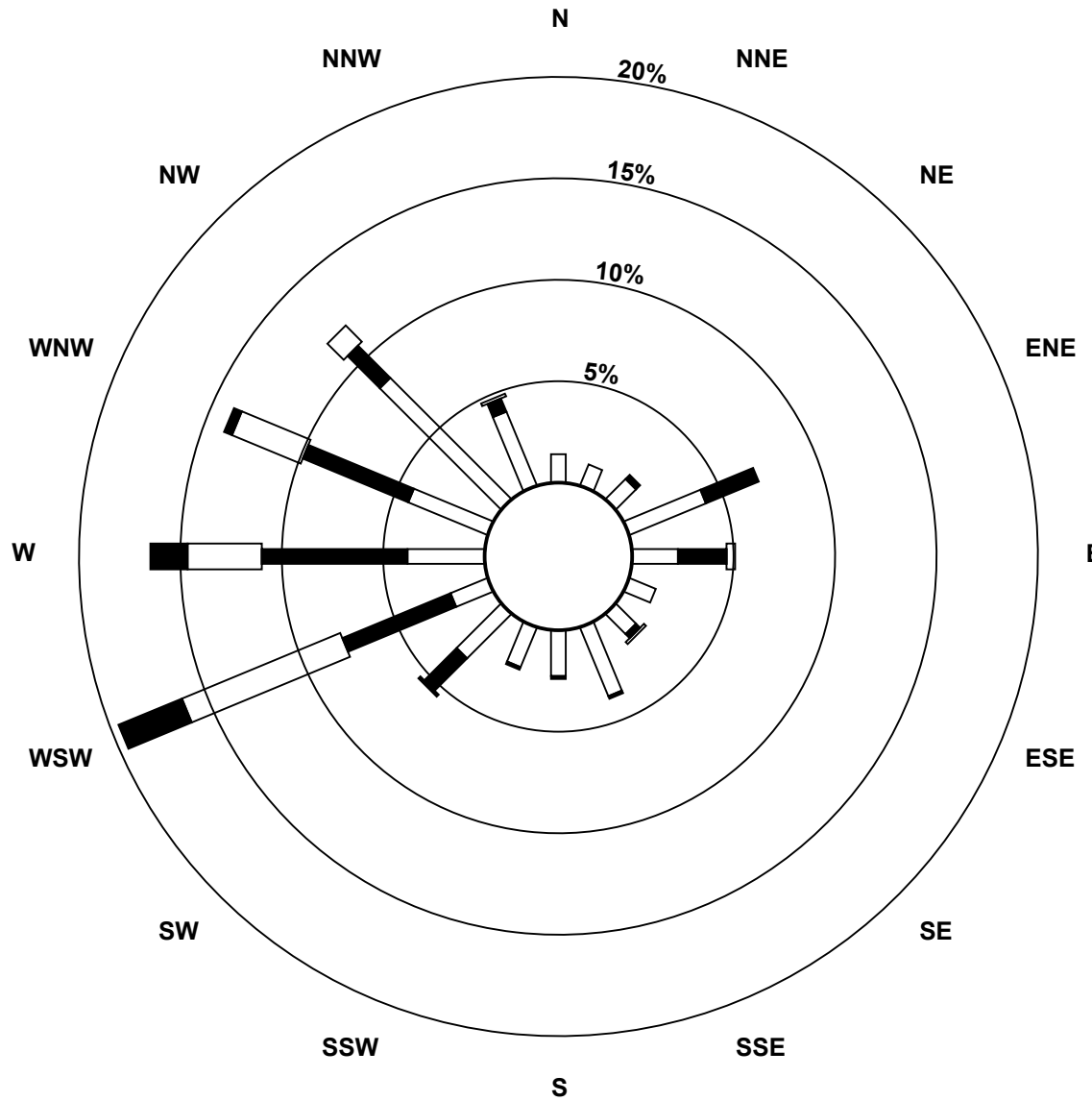
## Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Henry Pirker - December 2017

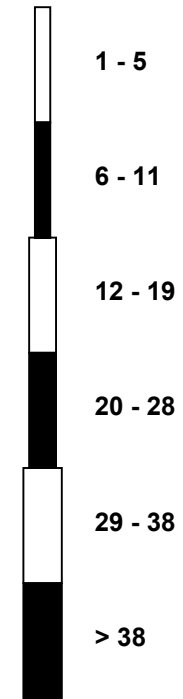
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	12	11	9	12	13	10	10	20	20	17	18	18	16	19	20	17	14	17	16	17	13	9	12	11	13.9	20.2
Dir	267	257	254	275	279	270	284	293	295	290	302	301	303	294	294	306	323	328	317	315	297	266	277	279	293.5	294.4
24 Spd	17	14	14	15	14	16	11	11	11	12	11	12	10	11	4	3	3	4	4	2	2	4	3	3	6.8	17.3
Dir	298	305	287	297	293	312	322	315	309	310	304	300	309	303	6	32	50	71	70	123	74	81	77	79	312.0	298.4
25 Spd	3	5	7	6	7	8	9	7	7	7	6	6	5	6	6	5	4	6	6	7	7	6	6	8	6.0	9.2
Dir	83	18	51	60	55	68	74	80	78	87	92	79	71	75	76	71	63	75	97	94	90	86	75	81	74.8	73.9
26 Spd	5	4	4	1	4	5	2	3	3	3	5	2	1	3	3	7	1	1	15	11	8	6	8	11	1.0	14.6
Dir	85	76	69	157	101	96	84	17	312	44	76	12	340	178	301	128	111	151	136	132	315	308	295	289	80.5	135.7
27 Spd	12	11	9	9	9	8	10	11	11	10	10	10	9	10	9	8	9	7	7	9	8	9	9	9	8.8	11.7
Dir	293	292	290	281	277	272	280	280	258	257	250	248	250	240	232	275	251	264	267	263	264	271	264	259	266.2	293.0
28 Spd	11	8	4	9	8	3	4	1	4	4	5	5	7	6	8	7	6	4	1	3	4	3	6	4	1.5	10.7
Dir	263	270	249	301	304	285	300	289	339	321	5	55	77	94	98	73	85	67	15	49	61	62	80	101	18.2	262.7
29 Spd	5	8	6	4	3	3	3	2	3	5	4	4	5	4	4	6	5	5	3	5	9	11	12	12	5.2	12.4
Dir	124	85	75	61	61	58	53	121	99	81	64	75	107	34	57	58	68	56	85	52	79	82	84	81	75.9	81.2
30 Spd	12	11	11	10	7	4	3	4	3	4	3	4	2	4	4	2	3	2	3	4	N	N	N	N	2.4	12.1
Dir	81	80	80	79	78	71	216	232	226	210	198	173	186	82	164	126	156	335	344	334	N	N	N	N	96.9	80.6
31 Spd	3	N	3	N	3	4	2	N	N	3	3	2	3	3	3	1	2	4	3	2	1	2	4	N	0.5	4.1
Dir	163	N	315	N	312	329	325	N	N	195	186	204	229	227	221	130	1	67	68	86	8	331	325	N	288.0	328.8
Spd	4.8	4.4	4.0	4.2	4.8	5.1	5.7	5.9	5.9	5.7	5.6	6.1	6.0	6.4	5.2	4.6	4.3	4.6	4.5	4.3	5.3	4.9	4.4	4.6	Diurnal Average	
Dir	264.2	270.9	266.4	264.3	268.8	262.8	263.2	267.2	265.5	263.8	264.8	267.6	270.2	270.6	266.7	280.9	271.4	279.1	266.1	270.7	269.4	266.3	265.8	258.9	Diurnal Maximum	
Spd	21.8	20.6	19.3	20.3	20.2	19.0	22.3	26.3	23.1	23.9	23.9	25.3	21.8	23.2	20.2	19.9	24.5	21.4	23.3	26.6	24.3	27.0	23.9	25.5	Diurnal Maximum	
Dir	246.8	271.1	251.0	248.5	254.0	246.7	257.5	245.0	251.0	249.8	261.9	251.8	265.6	248.7	294.4	259.7	267.8	262.8	261.4	262.2	257.8	250.7	249.7	248.2	Diurnal Maximum	
Maximum Speed Value: 27 km/h on Dec 4 22:00		Minimum Speed Value: 0 km/h on Dec 14 12:00										Hours in Service: 744														
Maximum Daily Speed Average: 16.5 km/h on Dec 15		Minimum Daily Speed Average: 0.5 km/h on Dec 2										Hours of Data: 735														
Maximum Diurnal Speed Average: 6.4 km/h at hour 14		Minimum Diurnal Speed Average: 4.0 km/h at hour 3										Hours of Missing Data: 9														
Monthly Average Velocity: 5.04 km/h 267.68 deg		Speed Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 1.8 Q <sub>1</sub> = 3.0 Median = 5.7 Q <sub>3</sub> = 10.9 P <sub>90</sub> = 16.6 P <sub>99</sub> = 24.3										Percent Operational Time: 98.8														
All monthly, daily, and diurnal averages have been calculated using vector methods																										
N - Not Valid																										
Frequency Distribution																										
		Speed Range (km/h)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	28	3	0	0	0	0	31																			
NorthEast	27	11	0	0	0	0	38																			
East	34	34	3	0	0	0	71																			
SouthEast	31	1	2	0	0	0	34																			
South	38	5	0	0	0	0	43																			
SouthWest	37	33	25	8	0	0	103																			
West	44	102	82	34	0	0	262																			
NorthWest	92	33	24	4	0	0	153																			
Total	331	222	136	46	0	0	735																			

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Henry Pirker - December 2017**



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



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Henry Pirker - December 2017

Maximum Speed: 27 km/h on Dec 4 22:00	Maximum Daily Speed Average: 16.8 km/h on Dec 15	Hours in Service: 744
Minimum Speed: 1 km/h on Dec 6 04:00	Minimum Daily Speed Average: 2.7 km/h on Dec 2	Hours of Data: 735
Maximum Diurnal Speed Average: 9.2 km/h at hour 14	Minimum Diurnal Speed Average: 7.2 km/h at hour 3	Hours of Missing Data: 9
Monthly Average Speed: 8.09 km/h	Percentiles: P <sub>1</sub> = 1.4 P <sub>10</sub> = 2.5 Q <sub>1</sub> = 3.7 Median = 6.2 Q <sub>3</sub> = 11.3 P <sub>90</sub> = 16.9 P <sub>99</sub> = 24.5	Percent Operational Time: 98.8

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	4	4	3	4	3	4	2	4	3	3	3	2	4	3	4	3	4	2	4	5	5	5	4	4	3.6	5.2																						
2-Dec	4	2	3	5	3	2	2	2	3	4	3	3	3	2	2	2	3	2	1	1	2	4	3	3	2.7	4.9																						
3-Dec	3	3	5	7	3	2	2	2	2	2	4	3	4	2	5	6	6	10	13	14	15	14	14	16	6.5	16.1																						
4-Dec	11	10	10	9	9	7	10	5	12	9	9	15	18	23	19	20	24	22	24	27	25	27	24	26	16.5	27.1																						
5-Dec	22	19	19	20	20	15	19	11	9	10	10	5	4	4	4	6	5	6	7	6	6	3	5	2	10.0	21.9																						
6-Dec	4	2	2	1	2	3	2	4	6	6	8	11	8	6	2	5	4	3	6	7	8	8	5	6	5.0	11.3																						
7-Dec	11	9	8	12	7	13	13	15	15	13	17	20	20	19	16	11	6	3	2	2	2	5	7	3	10.4	20.0																						
8-Dec	5	7	7	3	2	3	3	5	6	2	3	6	9	11	10	11	11	12	14	10	11	16	20	16	8.5	19.8																						
9-Dec	13	13	10	3	8	9	5	4	4	5	6	4	4	11	16	12	6	10	3	2	3	2	1	2	6.6	16.4																						
10-Dec	3	3	4	6	9	13	18	17	19	23	24	24	18	18	10	9	6	6	6	4	3	4	5	4	10.6	24.5																						
11-Dec	3	3	3	3	4	3	3	4	4	2	2	4	4	3	2	2	2	2	3	3	3	3	2	3	2.9	4.3																						
12-Dec	3	3	3	3	4	15	21	27	23	24	19	17	22	20	14	13	25	19	15	14	13	9	10	12	14.5	26.7																						
13-Dec	9	5	8	7	8	9	10	5	5	6	6	7	5	5	3	2	2	3	2	3	2	1	2	2	4.8	9.8																						
14-Dec	2	2	3	3	3	2	2	2	4	1	1	2	3	3	3	8	3	11	10	5	13	11	14	10	5.2	14.3																						
15-Dec	16	21	18	13	17	19	22	23	21	21	20	18	17	18	18	17	16	14	16	16	13	12	9	10	16.8	23.0																						
16-Dec	11	10	10	14	14	14	12	6	6	7	8	5	5	4	3	3	5	6	6	5	12	5	4	2	7.5	14.4																						
17-Dec	1	7	9	14	16	17	20	20	21	21	21	25	18	19	20	17	13	14	15	15	13	15	12	10	15.7	25.4																						
18-Dec	12	12	7	4	4	5	6	3	4	4	4	4	5	6	5	5	7	6	6	5	4	4	3	2	5.2	12.2																						
19-Dec	2	2	3	6	6	6	5	5	7	7	5	5	4	3	3	5	4	2	2	3	5	5	5	6	4.5	6.7																						
20-Dec	6	6	6	7	7	7	6	5	5	4	4	4	4	7	7	4	3	4	3	3	2	2	2	5	4.7	7.5																						
21-Dec	6	4	4	8	11	13	14	16	15	12	9	9	9	10	10	9	8	6	7	8	10	8	6	6	9.1	16.5																						
22-Dec	7	5	8	7	10	6	4	6	8	9	8	11	11	10	12	13	12	13	11	11	14	13	14	13	9.9	14.3																						
23-Dec	13	11	9	12	14	10	10	20	20	17	18	18	16	19	20	18	14	17	16	17	13	10	13	11	14.8	20.3																						
24-Dec	17	14	14	15	14	16	11	11	11	12	12	12	10	11	5	3	3	4	4	3	2	4	4	3	8.9	17.4																						
25-Dec	3	6	7	7	7	9	9	7	7	7	6	6	5	6	6	5	5	6	7	8	7	6	6	8	6.5	9.4																						
26-Dec	6	4	4	7	4	7	4	6	7	4	5	3	3	12	4	11	2	2	17	16	8	6	8	11	6.7	17.3																						
27-Dec	12	11	10	9	9	8	10	11	11	10	10	10	9	10	9	8	9	7	7	9	8	9	9	10	9.4	11.7																						
28-Dec	11	8	5	9	8	7	6	3	4	5	5	5	7	7	8	7	6	4	4	3	4	3	6	4	5.9	10.8																						
29-Dec	5	8	7	4	4	3	3	7	8	5	5	4	6	5	4	6	5	5	8	5	9	11	12	13	6.3	12.5																						
30-Dec	12	11	11	10	7	4	4	4	3	4	3	4	7	5	9	3	4	6	4	4	N	N	N	N	5.9	12.3																						
31-Dec	4	N	3	N	6	5	3	N	N	3	3	5	3	3	3	5	4	5	7	3	3	4	4	N	4.1	6.5																						
																								7.8	7.6	7.2	7.8	7.9	8.2	8.4	8.7	9.1	8.4	8.4	8.9	8.7	9.2	8.2	8.1	7.4	7.5	8.1	7.7	8.0	7.6	7.7	7.6	Diurnal Average
																								21.9	20.8	19.4	20.4	20.4	19.2	22.4	26.7	23.2	24.0	24.1	25.4	21.9	23.3	20.3	20.2	24.6	21.7	23.5	26.9	24.6	27.1	24.0	25.6	Diurnal Maximum

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

## Hourly Standard Deviations

Wind Direction (WD) - deg  
Henry Pirker - December 2017

Maximum Value: 94.7 deg on Dec 14 17:00																								Hours in Service:	744
Minimum Value: 4.4 deg on Dec 7 04:00																								Hours of Data:	735
Percentiles: P <sub>1</sub> = 5.2 P <sub>10</sub> = 6.7 Q <sub>1</sub> = 8.4 Median = 15.8 Q <sub>3</sub> = 32.4 P <sub>90</sub> = 57.8 P <sub>99</sub> = 88.0																								Hours of Missing Data:	9
																								Hours of Calibration:	0
																								Percent Operational Time:	98.8
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-Dec	13	32	31	27	88	52	64	47	28	40	31	73	32	44	43	28	26	75	42	48	12	20	62	38	88.4
2-Dec	54	51	31	36	70	16	45	37	64	20	15	66	19	32	18	41	16	41	68	40	14	37	49	14	70.3
3-Dec	33	16	21	62	33	79	64	45	32	18	15	15	28	25	8	6	13	9	8	8	7	8	8	9	79.1
4-Dec	11	13	12	8	11	16	16	48	11	16	22	7	7	5	7	10	8	8	8	7	9	6	5	5	48.4
5-Dec	5	5	6	5	7	7	8	27	10	27	12	22	16	11	9	11	14	19	21	10	15	29	13	47	46.7
6-Dec	10	20	31	59	63	76	48	27	34	26	18	7	9	17	67	24	18	38	12	10	10	18	50	15	76.3
7-Dec	17	25	15	4	16	6	8	6	7	5	8	6	7	9	8	42	29	70	60	71	91	17	12	52	91.3
8-Dec	36	14	15	47	51	58	28	25	44	56	58	16	13	17	17	10	9	10	9	18	24	6	7	7	58.1
9-Dec	11	9	13	37	9	20	32	38	28	18	35	71	55	14	7	35	31	14	86	80	68	62	83	57	85.9
10-Dec	51	78	74	28	15	8	8	13	6	6	6	5	7	7	12	10	29	14	12	41	75	68	33	32	78.2
11-Dec	35	21	42	30	21	49	48	15	11	69	83	32	16	27	32	50	88	78	32	53	20	19	82	74	88.2
12-Dec	49	49	43	85	53	37	9	10	7	5	16	14	7	6	7	7	5	7	6	6	7	11	10	7	84.6
13-Dec	8	33	9	18	12	7	13	17	8	25	7	11	21	27	23	26	46	18	51	50	87	66	68	79	86.6
14-Dec	61	45	26	92	58	35	53	65	15	68	76	89	64	44	47	17	95	16	15	22	7	15	8	22	94.7
15-Dec	10	10	6	10	15	10	7	7	8	6	6	7	8	6	6	6	6	8	6	6	6	7	8	7	15.1
16-Dec	7	8	7	6	6	7	9	13	30	11	11	17	13	32	33	15	22	10	7	18	16	41	21	49	49.3
17-Dec	60	41	9	9	9	7	7	7	6	7	7	7	8	8	7	9	9	8	6	5	8	7	8	8	59.9
18-Dec	7	8	30	43	28	34	38	74	26	43	10	32	13	16	13	10	9	24	6	13	14	29	19	23	74.1
19-Dec	30	75	18	12	11	12	17	17	14	13	13	17	24	21	26	27	27	39	61	53	32	23	29	24	75.4
20-Dec	27	33	23	22	23	21	16	19	14	6	11	34	14	20	36	18	36	15	33	29	45	77	90	12	89.6
21-Dec	21	9	18	15	5	8	6	5	6	7	6	6	10	10	8	8	7	11	7	6	8	6	17	8	21.1
22-Dec	18	28	8	10	5	12	33	15	8	8	11	20	10	17	10	5	5	6	12	11	9	9	14	7	33.0
23-Dec	18	9	15	11	7	7	10	5	7	7	6	8	6	6	6	14	7	6	7	7	9	12	12	8	18.3
24-Dec	6	6	9	14	7	8	11	7	6	7	7	7	12	8	30	30	22	18	20	46	50	26	24	23	50.3
25-Dec	36	32	13	13	13	11	13	19	22	18	20	14	17	14	12	16	13	10	11	10	8	11	11	8	36.5
26-Dec	23	22	18	58	34	34	57	52	66	32	20	50	77	66	67	81	85	58	82	80	8	9	7	6	84.6
27-Dec	6	8	7	7	8	12	8	8	12	7	7	8	9	10	15	12	7	24	18	10	15	18	15	15	24.0
28-Dec	8	12	21	22	7	66	33	66	40	29	24	30	14	21	16	13	14	19	74	23	20	23	14	26	74.2
29-Dec	23	10	11	13	18	18	18	42	43	24	24	28	29	23	23	15	16	13	46	13	13	8	8	7	46.2
30-Dec	8	7	7	7	14	26	38	20	27	17	24	31	43	39	48	48	36	73	23	23	N	N	N	N	72.6
31-Dec	48	N	12	N	36	20	22	N	N	26	33	39	28	24	30	66	67	37	46	48	77	30	9	N	77.0
61.4	78.2	74.5	91.8	88.4	79.1	64.2	74.1	66.0	69.2	83.1	88.6	77.2	65.9	67.2	80.6	94.7	77.9	85.9	80.1	91.3	76.9	89.6	78.6		
N - Not Valid																									

PAZA

Evergreen Park Station

Monthly Summary Tables, Graphs and  
Roses

## Hourly Averages

## Sulphur Dioxide (SO<sub>2</sub>) - ppb Evergreen Park - December 2017

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 11.7 ppb on Dec 31 16:00	Maximum Daily Average: 1.3 ppb on Dec 31		Hours of Data:	710
Minimum Value: 0 ppb on Dec 3 17:00	Minimum Daily Average: 0.0 ppb on Dec 19		Hours of Missing Data:	34
Maximum Diurnal Average: 0.6 ppb at hour 16	Minimum Diurnal Average: 0.1 ppb at hour 1		Hours of Calibration:	34
Monthly Average: 0.22 ppb	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.5 P <sub>99</sub> = 1.4		Percent Operational Time:	100.0

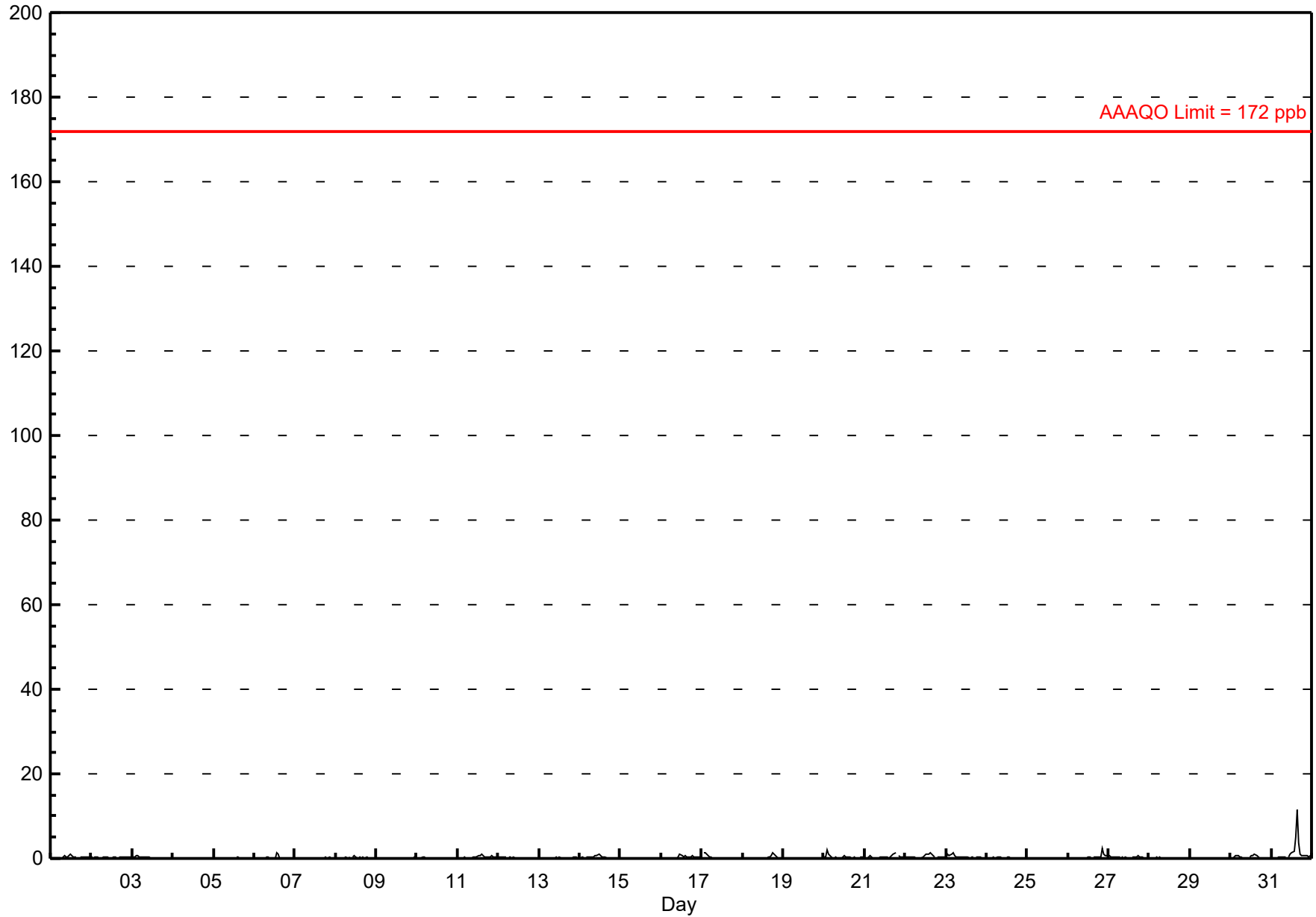
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	A	0	0	0	0	0	0	0	0.3	1.0
2-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	1	0	0	0	0	0.2	0.5
3-Dec	0	0	1	1	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.2	0.6
4-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.0	0.1
5-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
6-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	2	1	0	0	0	0	0	0	0	0	0	0.1	1.5
7-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
8-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	1	0	0	0	0	0	0	0	0	0	0	0.2	0.6
9-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
10-Dec	0	0	0	0	0	0	0	A	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
11-Dec	0	0	0	0	0	0	A	0	0	0	0	0	1	1	1	1	0	0	0	0	1	0	0	0	0.4	1.0
12-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
13-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
14-Dec	0	0	0	A	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.3	0.9
15-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
16-Dec	0	A	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0.3	0.9
17-Dec	A	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.2	1.3
18-Dec	0	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	1	1	1	0	0	0	0	0.2	1.4
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.0	0.1
20-Dec	0	0	2	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	A	0	0	0	0.3	1.9
21-Dec	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	A	1	0	0	0	0.3	1.2
22-Dec	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	A	0	0	0	0	0	0.4	1.2
23-Dec	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.4	1.3
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.1	0.3
25-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.1	0.2
26-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	2	1	1	0.3	2.4
27-Dec	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	1	0	0	0	0	0	0	0.3	0.6
28-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2
29-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
30-Dec	0	0	0	1	1	0	0	0	0	0	A	0	1	1	1	1	0	0	0	0	0	0	0	0	0.3	0.9
31-Dec	0	0	0	0	0	0	0	0	0	A	0	1	1	2	5	12	4	1	1	1	1	1	1	1	1.3	11.7
	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.3	0.3	0.3	0.4	0.6	0.3	0.2	0.2	0.2	0.2	0.2	0.1		Diurnal Average	
	0.5	1.3	1.9	1.2	1.3	0.7	0.4	0.4	0.6	0.7	0.8	1.0	1.2	1.7	5.0	11.7	3.6	0.9	1.4	0.6	2.4	1.1	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 (SO<sub>2</sub>) - ppb**  
**Evergreen Park - December 2017**



# Hourly Maximums

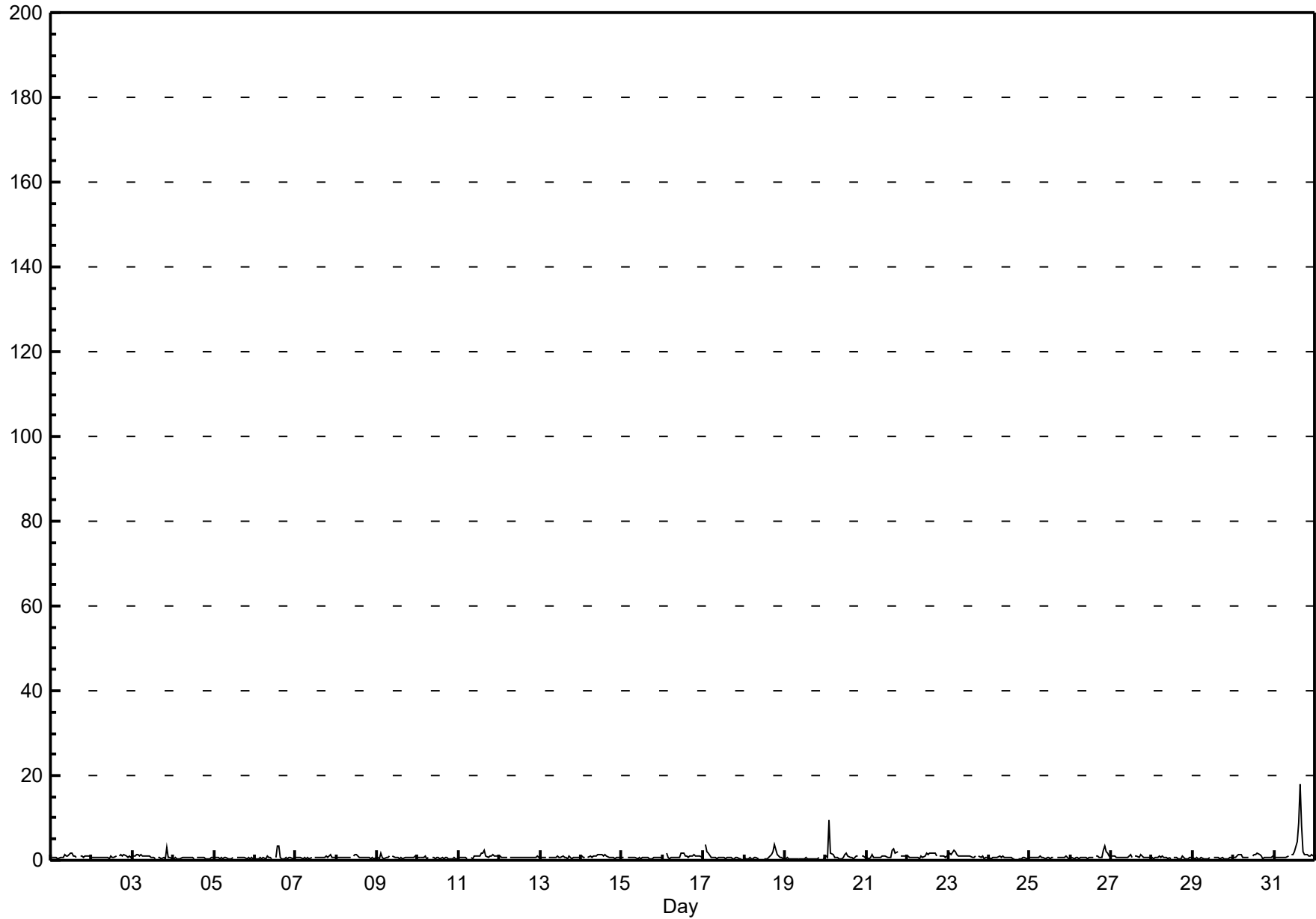
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Evergreen Park - December 2017

Maximum Value: 17.9 ppb on Dec 31 16:00		Maximum Daily Average: 2.6 ppb on Dec 31		Hours in Service: 744																							
Minimum Value: 0 ppb on Dec 19 18:00		Minimum Daily Average: 0.4 ppb on Dec 19		Hours of Data: 710																							
Maximum Diurnal Average: 1.4 ppb at hour 16		Minimum Diurnal Average: 0.6 ppb at hour 7		Hours of Missing Data: 34																							
Monthly Average: 0.84 ppb		Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 0.5 Median = 0.7 Q <sub>3</sub> = 0.9 P <sub>90</sub> = 1.2 P <sub>99</sub> = 3.6		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-Dec	1	1	1	1	0	1	1	1	1	1	1	2	2	1	1	1	A	1	1	1	1	1	1	1	0.9	1.7	
2-Dec	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	A	1	1	1	1	1	1	1	1	0.8	1.5	
3-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	0	A	1	1	0	1	0	3	1	1	1	0.9	2.9	
4-Dec	0	1	0	0	0	1	1	1	1	1	1	1	0	A	1	1	1	1	1	0	0	0	1	1	0.5	0.7	
5-Dec	1	1	1	0	1	0	1	1	0	0	0	1	A	1	1	1	1	1	1	0	1	0	1	0	0.6	0.8	
6-Dec	0	0	0	1	0	1	0	1	1	1	0	A	1	3	3	1	0	0	1	0	1	1	0	1	0.8	3.4	
7-Dec	1	1	1	1	0	1	0	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.3	
8-Dec	1	1	1	1	1	1	1	1	1	A	A	1	1	1	1	1	1	1	1	1	0	1	0	1	0.7	1.3	
9-Dec	1	0	2	1	0	1	1	1	A	A	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0.7	1.8	
10-Dec	1	1	1	1	1	1	1	A	A	1	1	0	1	1	0	1	1	0	0	0	0	1	0	0	0.6	1.1	
11-Dec	1	1	1	1	1	0	A	1	0	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1.0	2.4	
12-Dec	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0	
13-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	0.7	0.9	
14-Dec	1	1	1	A	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	0	1	1	1	0.9	1.5	
15-Dec	1	1	A	1	1	1	1	1	1	0	1	0	1	1	1	1	0	0	0	1	1	1	1	1	0.6	0.7	
16-Dec	1	A	2	1	0	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	0.9	1.8	
17-Dec	A	4	2	2	1	1	1	1	0	1	1	1	0	1	1	1	1	0	0	1	1	0	0	A	0.8	3.7	
18-Dec	1	0	0	1	1	0	1	1	0	C	C	C	0	0	1	1	1	2	4	1	1	1	0	0	0.8	3.6	
19-Dec	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	A	0	0.4	0.8	
20-Dec	1	1	9	2	1	1	1	1	0	0	1	1	2	1	1	1	0	1	1	1	A	1	1	1	1.3	9.4	
21-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	2	2	2	A	1	1	1	1	1.1	2.9	
22-Dec	1	1	1	1	1	1	1	0	1	1	1	2	1	2	2	2	2	1	A	1	1	1	1	1	1.0	1.7	
23-Dec	1	2	1	2	2	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1.1	2.3	
24-Dec	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	A	1	0	0	0	1	1	0	1	0.6	1.1	
25-Dec	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	A	1	1	1	1	1	1	1	0	0.6	0.9	
26-Dec	1	1	0	1	1	0	1	1	1	1	0	1	1	1	A	1	1	1	1	2	4	2	2	1	1.0	3.5	
27-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.8	1.4	
28-Dec	1	0	1	1	1	1	1	1	1	0	1	0	1	A	1	1	0	0	0	1	1	0	0	1	0.6	1.0	
29-Dec	1	0	1	0	0	0	0	0	0	0	1	A	1	1	1	1	0	0	1	0	0	0	1	1	0.5	0.8	
30-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	2	2	1	0	1	1	1	1	1	1	0.9	1.7	
31-Dec	1	1	1	1	1	1	1	1	1	A	1	1	2	4	9	18	8	2	1	1	1	1	1	1	2.6	17.9	
		0.7	0.7	1.1	0.8	0.7	0.6	0.6	0.7	0.7	0.7	0.7	0.9	0.9	1.0	1.2	1.4	1.0	0.8	0.9	0.8	0.9	0.7	0.7	0.7	Diurnal Average	
		1.1	3.7	9.4	2.3	2.1	1.4	1.1	1.0	1.2	1.2	1.4	1.7	1.9	4.2	8.9	17.9	8.1	2.1	3.6	2.3	3.5	2.2	1.6	1.1	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

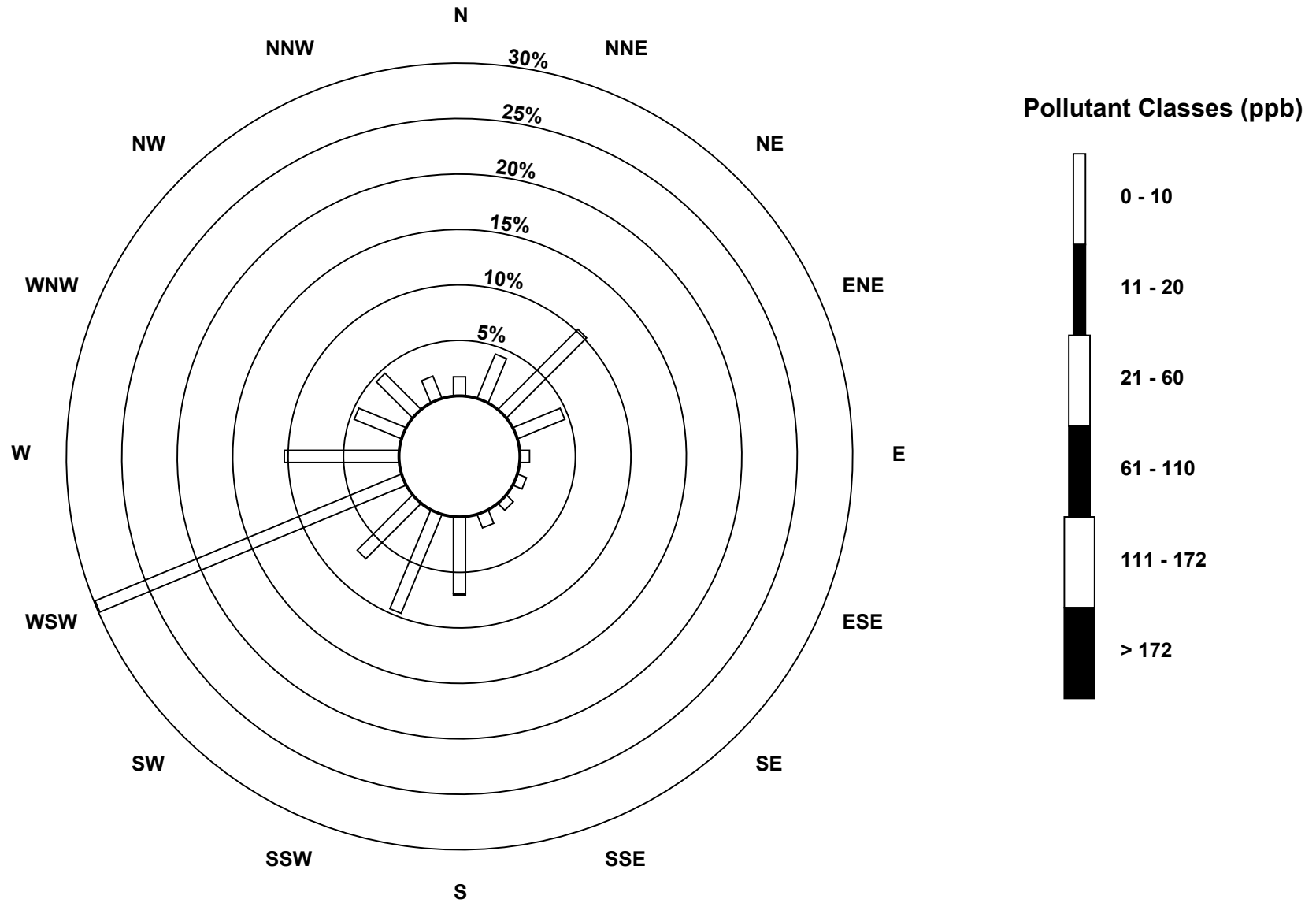
### Hourly Maximums

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Evergreen Park - December 2017



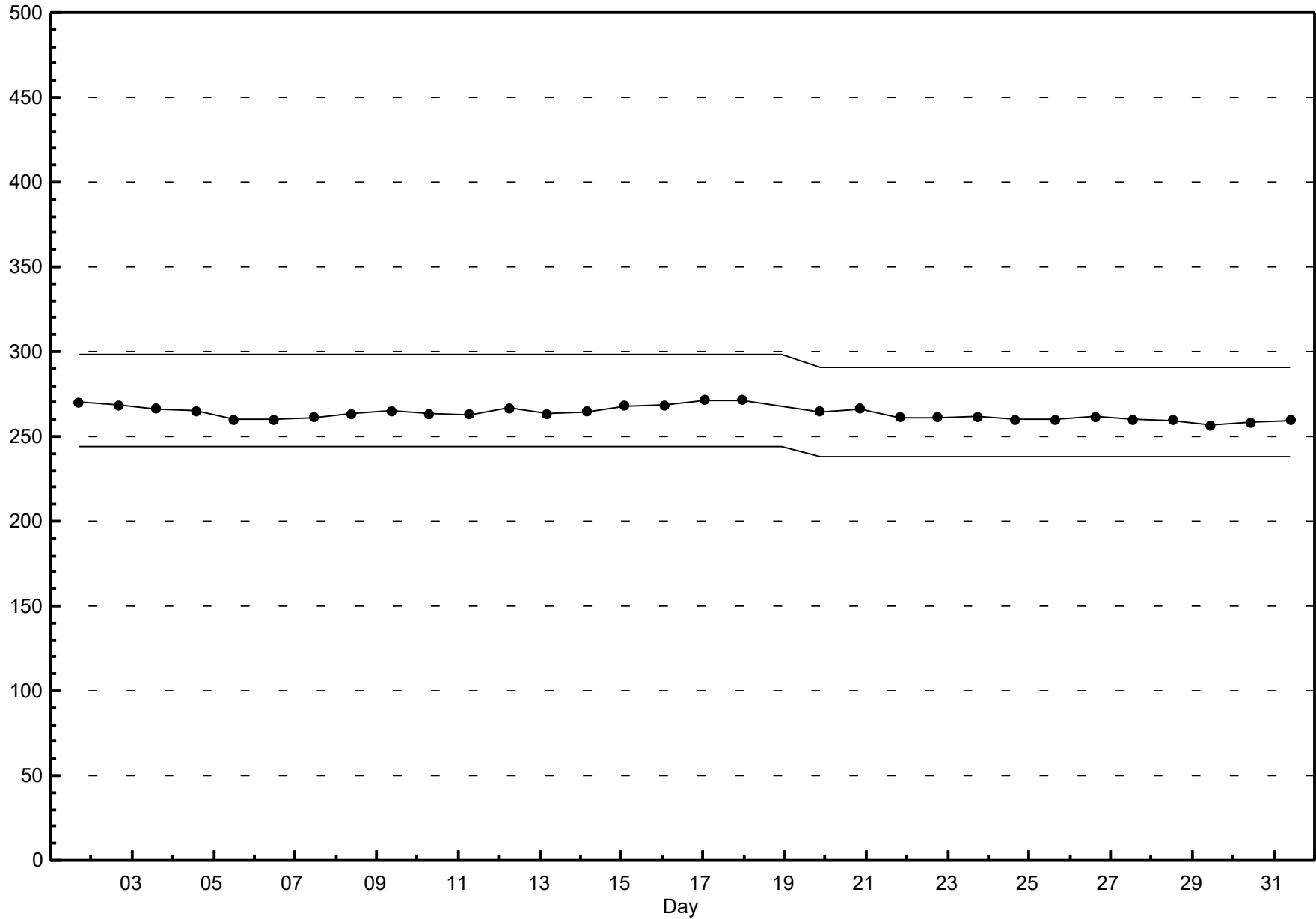
**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Evergreen Park - December 2017**



**Span Responses**

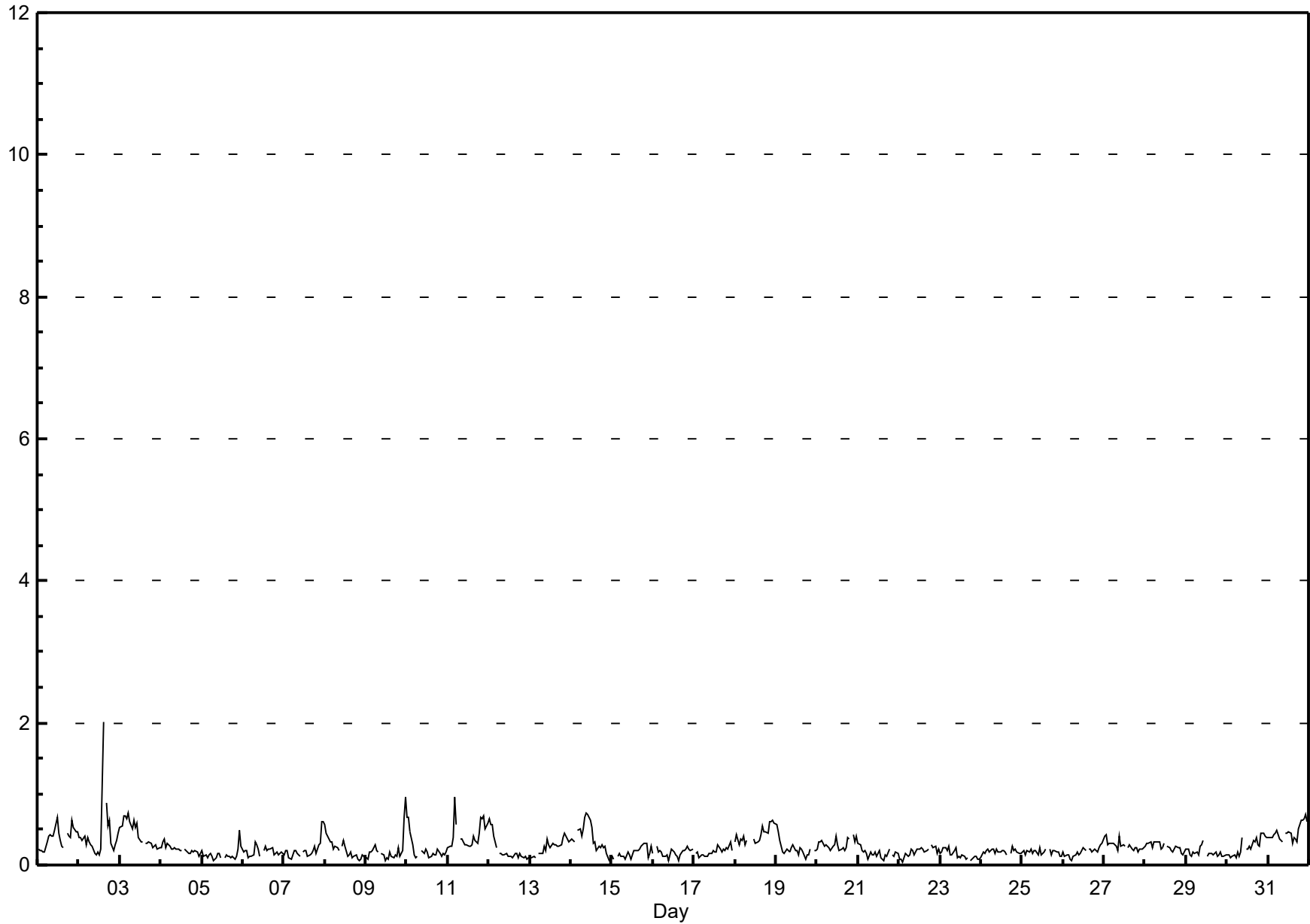
**Sulphur Dioxide (SO<sub>2</sub>)  
Evergreen Park - December 2017**



## Hourly Averages

**Total Reduced Sulphur (TRS) - ppb**  
**Evergreen Park - December 2017**

Maximum Value: 2.0 ppb on Dec 2 15:00		Maximum Daily Average: 0.5 ppb on Dec 31		Hours in Service: 744																						
Minimum Value: 0 ppb on Dec 22 03:00		Minimum Daily Average: 0.1 ppb on Dec 23		Hours of Data: 710																						
Maximum Diurnal Average: 0.3 ppb at hour 24		Minimum Diurnal Average: 0.2 ppb at hour 14		Hours of Missing Data: 34																						
Monthly Average: 0.25 ppb		Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.2 Median = 0.2 Q <sub>3</sub> = 0.3 P <sub>90</sub> = 0.5 P <sub>99</sub> = 0.7		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-Dec	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	A	0	0	0	1	1	0	0	0.4	0.7
2-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	A	1	1	1	0	0	0	0	0	0.4	2.0
3-Dec	1	1	1	1	1	1	1	1	1	1	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0.4	0.7
4-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.2	0.4
5-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
6-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
7-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	1	0.2	0.6
8-Dec	1	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	0.6
9-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	1	1	0.2	0.9
10-Dec	1	1	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.7
11-Dec	0	0	0	0	1	1	A	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0.4	1.0
12-Dec	1	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6
13-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
14-Dec	0	0	0	A	0	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.4	0.7
15-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
16-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
17-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.2	0.3
18-Dec	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	1	0	0	0	1	1	1	1	0.4	0.6
19-Dec	1	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	0.6
20-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.3	0.4
21-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.2	0.3
22-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.2	0.3
23-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.1	0.3
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.2	0.3
25-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.2	0.2
26-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.2	0.3
27-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.3	0.4
28-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.3	0.3
29-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.2	0.3
30-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
31-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0.5	0.7
		0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	Diurnal Average
		0.7	0.7	0.7	0.7	1.0	0.7	0.6	0.5	0.7	0.7	0.7	0.7	0.5	0.4	2.0	0.4	0.9	0.6	0.6	0.7	0.7	0.7	0.7	0.9	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								

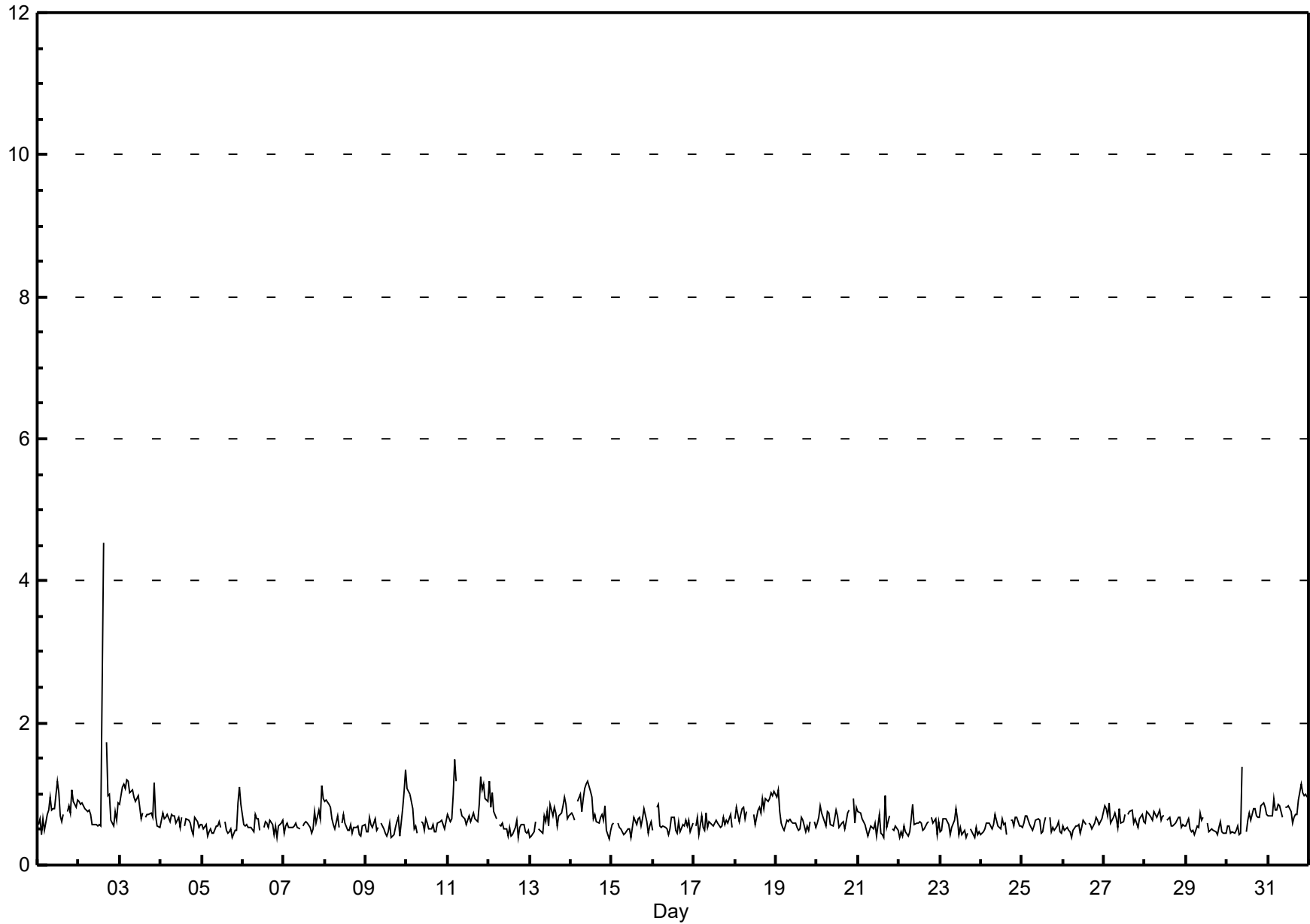


## Hourly Maximums

## Total Reduced Sulphur (TRS) - ppb Evergreen Park - December 2017

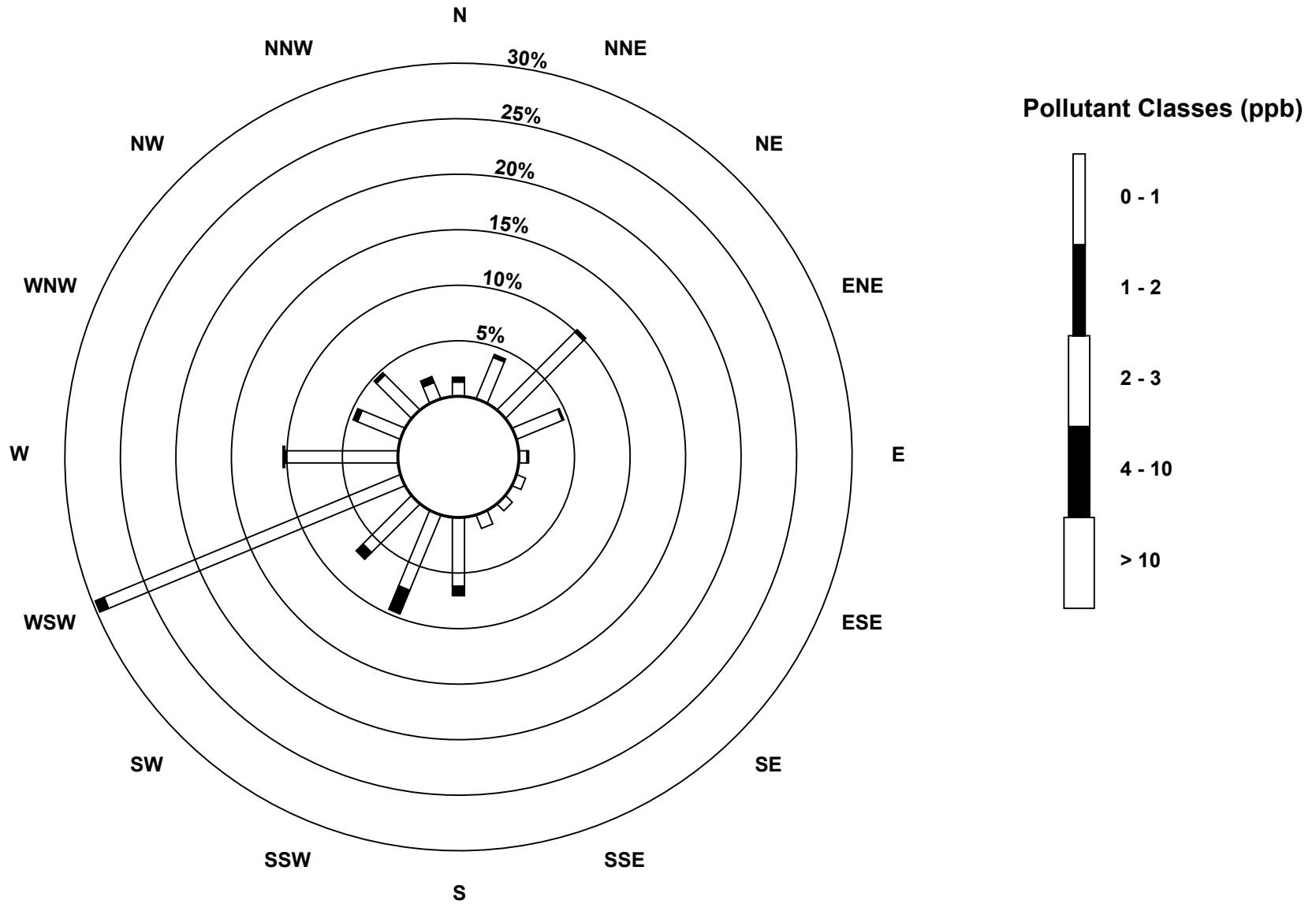
Maximum Value: 4.5 ppb on Dec 2 15:00		Maximum Daily Average: 0.9 ppb on Dec 2		Hours in Service: 744																							
Minimum Value: 0 ppb on Dec 14 23:00		Minimum Daily Average: 0.5 ppb on Dec 23		Hours of Data: 710																							
Maximum Diurnal Average: 0.7 ppb at hour 15		Minimum Diurnal Average: 0.6 ppb at hour 14		Hours of Missing Data: 34																							
Monthly Average: 0.65 ppb		Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 0.5 Median = 0.6 Q <sub>3</sub> = 0.7 P <sub>90</sub> = 0.9 P <sub>99</sub> = 1.2		Hours of Calibration: 34																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.8	1.2	
2-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	A	2	1	1	1	1	1	1	1	0.9	4.5	
3-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.9	1.2	
4-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0	0	1	1	1	1	0.6	0.7	
5-Dec	1	1	1	0	0	1	0	0	1	1	1	1	A	1	0	0	0	1	0	0	0	1	1	1	0.6	1.1	
6-Dec	1	1	1	1	1	1	0	1	1	1	0	A	1	1	1	1	1	0	1	0	1	1	1	1	0.6	0.7	
7-Dec	0	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0	1	1	1	1	1	1	1	0.6	1.1	
8-Dec	1	1	1	1	1	1	1	1	1	A	A	1	1	1	0	0	1	0	1	1	0	0	1	1	0.6	0.9	
9-Dec	0	0	1	1	1	1	0	1	A	1	1	0	0	0	1	0	0	1	1	1	0	1	1	1	0.6	1.3	
10-Dec	1	1	1	1	1	1	0	A	1	1	0	1	1	1	1	1	0	0	1	1	1	1	1	1	0.6	1.1	
11-Dec	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.5	
12-Dec	1	1	1	1	1	A	1	1	1	0	1	0	1	0	0	1	1	0	1	1	1	0	0	0	0.6	1.2	
13-Dec	0	0	0	1	A	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0	
14-Dec	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0.8	1.2	
15-Dec	1	1	A	1	1	1	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	0.6	0.8	
16-Dec	0	A	1	1	1	1	1	1	1	0	1	1	1	0	0	1	0	1	1	1	1	1	0	1	0.6	0.8	
17-Dec	A	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0.6	0.7	
18-Dec	1	1	1	1	1	1	1	1	C	C	C	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0	
19-Dec	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	0	1	0	1	0	1	A	1	0.6	1.1	
20-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0.7	0.9	
21-Dec	1	1	1	1	1	0	0	1	1	1	1	0	1	0	0	0	1	1	1	A	1	0	1	0	0.6	1.0	
22-Dec	0	0	0	1	0	0	0	1	1	1	1	1	1	0	1	1	1	1	A	1	1	1	0	1	0.6	0.9	
23-Dec	0	0	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	A	1	0	0	1	0	0	0.5	0.8	
24-Dec	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	A	1	1	1	1	1	1	1	1	0.6	0.7	
25-Dec	1	1	1	1	1	1	0	1	1	1	1	0	0	1	A	1	0	1	0	1	1	0	0	0	0.6	0.7	
26-Dec	1	0	1	0	0	0	0	1	1	1	0	1	1	1	A	1	1	1	1	1	1	1	1	1	0.5	0.7	
27-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.7	0.9	
28-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.8	
29-Dec	1	1	1	0	0	0	1	1	1	1	1	A	1	0	0	0	0	0	0	1	1	0	0	0	0.5	0.7	
30-Dec	1	1	0	0	0	0	1	0	0	1	A	0	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.4	
31-Dec	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1	
		0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	Diurnal Average
		1.2	1.1	1.1	1.1	1.5	1.2	1.0	1.0	1.1	1.4	1.2	1.2	1.0	0.8	4.5	0.8	1.7	1.0	1.0	1.2	1.2	1.1	1.1	1.3	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									





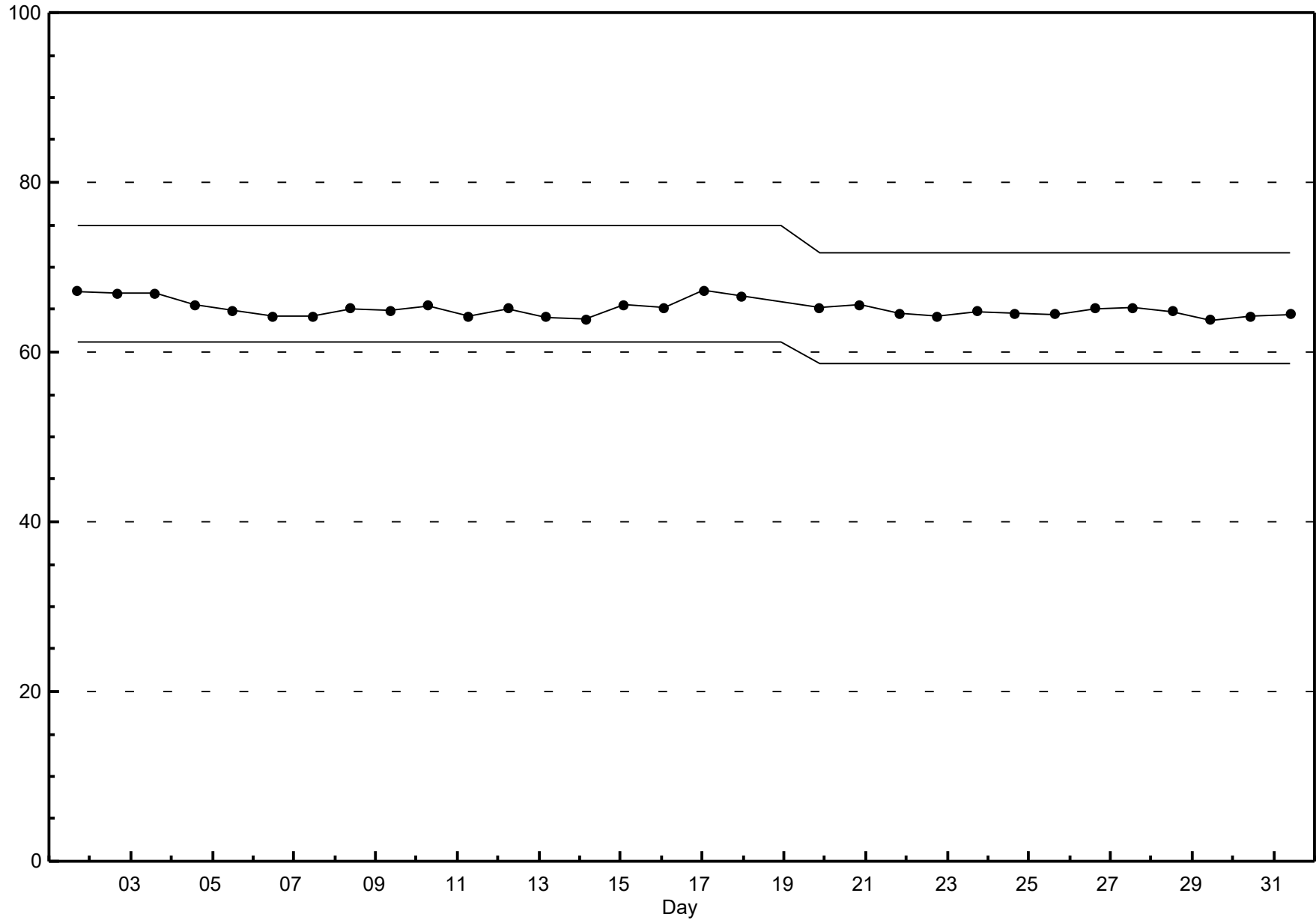
**Pollutant Rose**

**Total Reduced Sulphur (TRS) - ppb**  
**Evergreen Park - December 2017**



### Span Responses

**Total Reduced Sulphur (TRS)**  
**Evergreen Park - December 2017**



## Hourly Averages

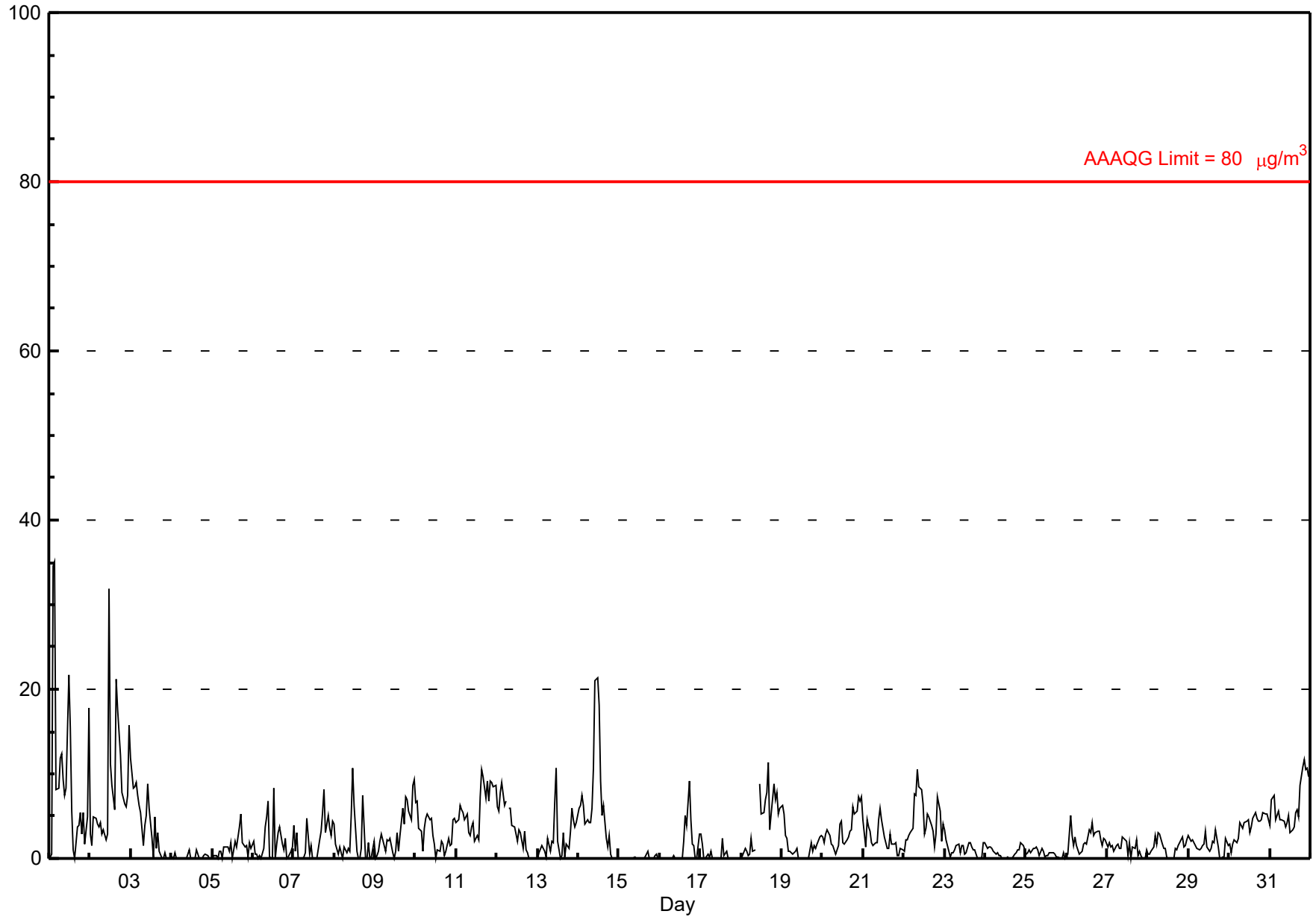
## Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

### Evergreen Park - December 2017

Number of Exceedences: 1-hr: 0 24-hr: 0	Hours in Service: 744
Maximum Value: 35.0 µg/m <sup>3</sup> on Dec 1 04:00	Maximum Daily Average: 9.4 µg/m <sup>3</sup> on Dec 1
Minimum Value: 0 µg/m <sup>3</sup> on Dec 1 16:00	Hours of Data: 741
Maximum Diurnal Average: 4.9 µg/m <sup>3</sup> at hour 12	Hours of Missing Data: 3
Monthly Average: 2.90 µg/m <sup>3</sup>	Hours of Calibration: 0
Minimum Daily Average: 0.1 µg/m <sup>3</sup> on Dec 15	Percent Operational Time: 99.6
Minimum Diurnal Average: 2.1 µg/m <sup>3</sup> at hour 14	
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.4 Median = 1.7 Q <sub>3</sub> = 4.2 P <sub>90</sub> = 7.0 P <sub>99</sub> = 20.8	

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	0	1	35	35	8	8	12	12	9	8	8	22	15	6	1	0	4	4	5	3	5	2	5	18	9.4	35.0																						
2-Dec	3	1	5	5	4	4	4	3	3	2	3	32	11	9	6	21	18	15	12	8	6	6	7	16	8.5	31.9																						
3-Dec	12	8	8	9	7	6	5	1	4	5	9	6	2	0	5	1	3	1	0	0	1	0	0	0	4.0	11.9																						
4-Dec	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0.2	1.0																						
5-Dec	0	0	0	0	1	1	0	1	1	1	1	2	0	2	1	3	4	5	2	1	2	0	2	1	1.3	5.2																						
6-Dec	2	1	1	0	0	0	1	4	5	7	0	0	8	0	2	3	4	2	1	2	0	0	1	1	1.9	8.3																						
7-Dec	4	1	3	0	0	0	0	1	5	1	2	0	0	0	2	3	5	8	3	5	4	3	4	4	2.2	8.2																						
8-Dec	4	2	1	1	1	0	1	1	1	1	5	11	6	1	0	0	1	7	0	0	2	0	0	2	2.0	10.7																						
9-Dec	0	0	1	2	3	1	1	2	2	2	1	0	1	3	1	3	6	4	7	7	6	5	9	9	3.1	9.3																						
10-Dec	7	7	4	3	1	3	5	5	5	5	3	2	0	1	1	2	2	0	1	2	2	2	5	5	2.9	6.9																						
11-Dec	4	5	6	6	5	5	5	3	3	4	4	2	3	2	7	10	10	7	9	7	9	9	8	9	5.9	10.5																						
12-Dec	6	6	8	9	6	7	N	6	6	4	4	3	2	3	3	1	3	1	1	0	0	0	0	0	3.4	8.9																						
13-Dec	0	1	2	1	1	0	2	1	2	2	7	11	2	0	0	3	0	2	1	3	6	5	4	4	2.5	10.8																						
14-Dec	6	6	7	6	4	5	4	4	6	11	21	21	18	9	5	6	2	1	3	0	0	0	0	0	6.1	21.4																						
15-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0.1	0.8																						
16-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	4	9	5	2	2	0	0	3	1.3	9.2																						
17-Dec	3	2	0	0	0	0	1	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0.4	2.8																						
18-Dec	0	0	1	1	0	1	2	1	1	1	M	M	9	5	5	7	8	11	3	5	9	7	8	5	6	4.4	11.3																					
19-Dec	6	5	3	2	1	1	0	1	1	1	0	0	0	0	0	0	0	2	1	2	1	2	3	3	1.4	6.3																						
20-Dec	3	2	3	3	3	2	2	1	0	1	4	4	2	2	2	3	3	3	6	5	6	7	7	7	3.4	7.4																						
21-Dec	5	1	5	4	3	2	2	2	2	5	6	5	3	2	1	1	3	2	2	2	0	0	1	1	2.4	6.0																						
22-Dec	1	2	2	3	3	4	8	7	11	9	8	7	3	4	5	5	4	3	1	3	7	6	2	4	4.6	10.5																						
23-Dec	3	2	1	0	1	1	1	2	2	1	2	2	0	1	2	2	1	1	1	0	0	0	0	2	1.1	3.4																						
24-Dec	2	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	2	1	1	0.7	1.9																						
25-Dec	1	1	1	1	1	1	1	1	0	1	1	0	0	0	1	1	1	0	0	0	0	0	1	0	0.6	1.3																						
26-Dec	0	0	5	3	2	3	2	0	1	1	2	2	2	3	3	4	3	3	3	3	2	1	2	2	2.2	5.0																						
27-Dec	1	2	1	1	1	2	2	1	1	3	2	2	0	2	0	1	1	2	0	1	0	0	0	1	1.2	2.6																						
28-Dec	0	1	1	1	3	2	3	3	2	1	1	0	0	0	0	0	1	1	2	2	3	1	2	2	1.3	3.0																						
29-Dec	3	2	2	2	1	1	1	1	1	2	3	1	1	1	2	2	3	1	0	0	0	0	2	1	1.5	3.4																						
30-Dec	2	1	2	2	2	2	4	4	3	4	4	5	3	4	5	5	5	4	4	5	5	5	5	5	3.8	5.4																						
31-Dec	4	7	7	5	5	6	5	5	4	4	4	5	3	3	4	5	6	5	9	11	12	11	11	10	6.2	11.7																						
																								2.6	2.2	3.7	3.5	2.2	2.2	2.5	2.4	2.7	2.8	3.5	4.9	3.0	2.1	2.1	3.2	3.4	3.1	2.9	2.7	2.9	2.4	2.8	3.8	Diurnal Average
																								11.9	8.4	34.5	35.0	8.2	8.4	11.8	12.4	10.5	10.7	21.0	31.9	18.1	9.2	7.3	21.2	17.6	14.9	12.3	10.9	11.7	10.5	10.6	17.8	Diurnal Maximum

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

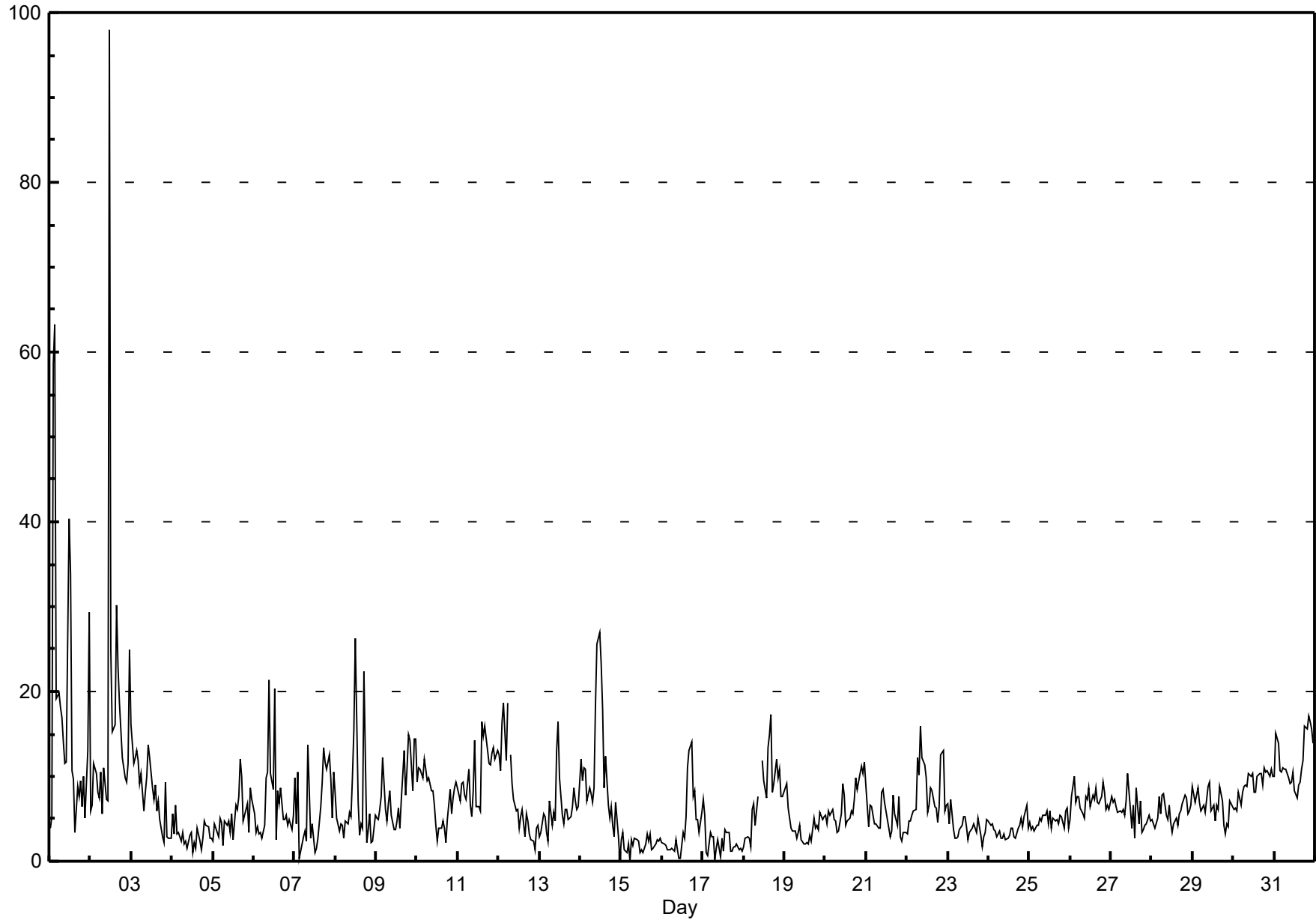


## Hourly Maximums

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

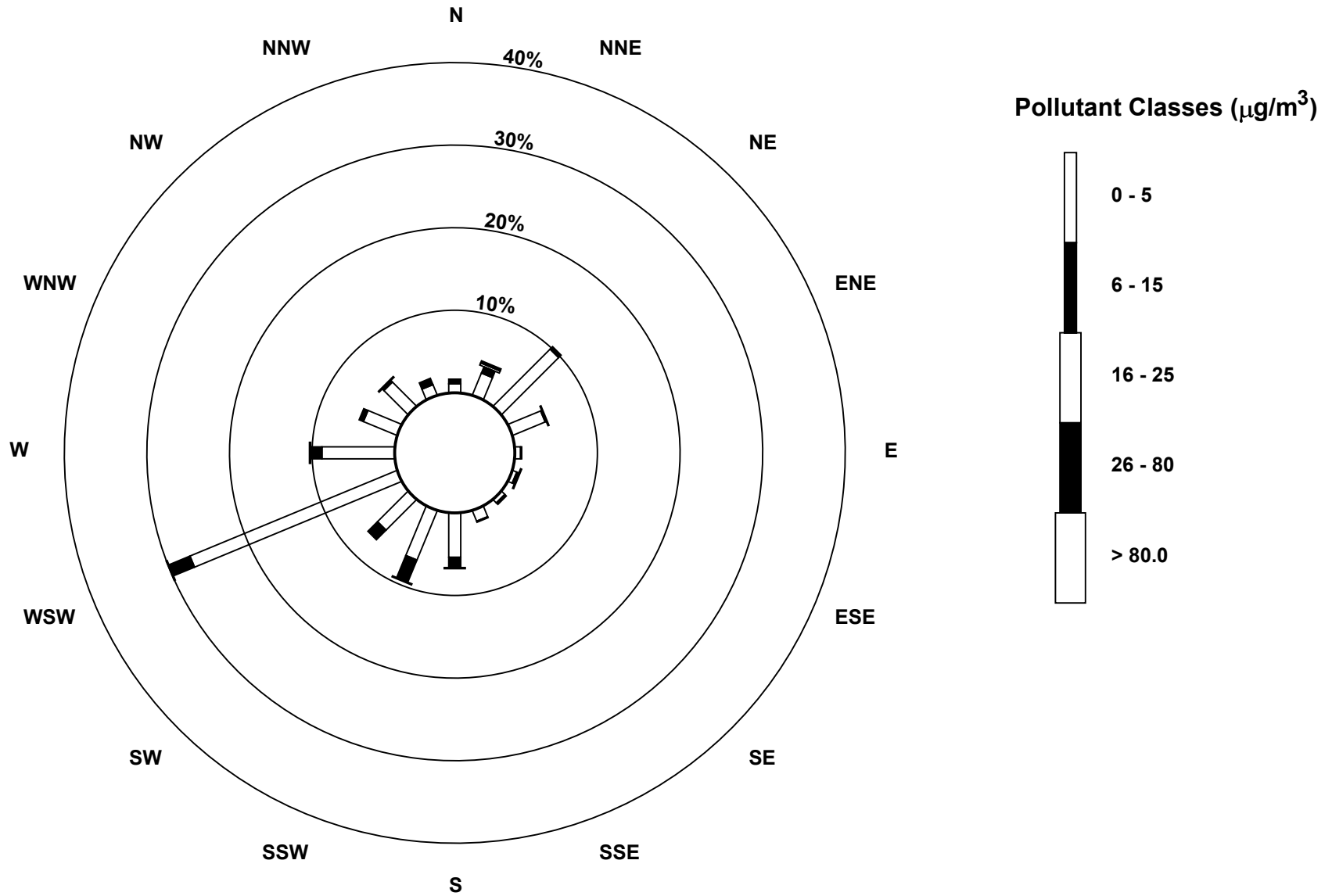
### Evergreen Park - December 2017

Maximum Value: 98.0 µg/m <sup>3</sup> on Dec 2 12:00 Minimum Value: 0 µg/m <sup>3</sup> on Dec 15 00:00 Maximum Diurnal Average: 11.3 µg/m <sup>3</sup> at hour 12 Monthly Average: 7.13 µg/m <sup>3</sup>		Maximum Daily Average: 17.9 µg/m <sup>3</sup> on Dec 1 Minimum Daily Average: 2.0 µg/m <sup>3</sup> on Dec 15 Minimum Diurnal Average: 5.8 µg/m <sup>3</sup> at hour 14 Percentiles: P <sub>1</sub> = 0.7 P <sub>10</sub> = 2.5 Q <sub>1</sub> = 3.8 Median = 5.9 Q <sub>3</sub> = 8.9 P <sub>90</sub> = 12.2 P <sub>99</sub> = 28.5		Hours in Service: 744 Hours of Data: 741 Hours of Missing Data: 3 Hours of Calibration: 0 Percent Operational Time: 99.6																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	4	5	59	63	19	20	18	17	14	11	12	40	34	11	10	3	9	8	10	6	10	5	13	29	17.9	63.3	
2-Dec	6	7	12	10	8	7	11	6	11	7	7	98	25	15	16	30	23	19	15	12	10	9	12	25	16.7	98.0	
3-Dec	16	12	12	13	12	9	10	6	8	10	14	12	9	7	9	6	7	5	3	2	9	3	3	3	8.3	16.2	
4-Dec	6	3	7	3	3	2	3	2	2	1	3	3	1	2	1	4	2	1	3	5	4	4	3	3	3.1	6.6	
5-Dec	2	4	3	3	5	5	2	5	4	5	3	6	2	7	6	8	12	10	5	6	7	3	9	7	5.4	12.0	
6-Dec	6	3	4	3	3	3	4	10	11	21	10	9	20	3	8	7	9	5	5	5	4	5	4	5	7.0	21.3	
7-Dec	10	4	11	0	2	3	3	2	14	3	4	3	1	1	3	6	9	13	12	11	13	10	5	11	6.4	13.8	
8-Dec	8	5	4	4	4	3	5	4	6	5	10	15	26	7	3	4	4	22	2	4	6	2	2	6	6.8	26.2	
9-Dec	5	5	6	8	12	6	5	7	8	5	4	4	5	6	4	7	13	8	11	15	14	8	14	14	8.1	14.9	
10-Dec	9	11	11	10	12	11	10	10	8	8	7	4	2	4	4	5	4	2	5	8	6	7	9	9	7.3	12.0	
11-Dec	9	7	9	9	8	7	11	7	5	8	14	6	6	6	16	15	16	13	12	11	13	13	12	13	10.3	16.4	
12-Dec	12	11	16	19	12	19	N	12	9	7	6	6	4	5	6	3	6	5	3	3	2	1	4	4	7.6	18.7	
13-Dec	3	3	6	5	3	2	7	4	6	5	13	17	10	5	4	6	6	5	5	6	9	7	6	6	6.3	16.5	
14-Dec	12	10	11	11	7	9	8	7	9	18	26	27	23	18	9	12	7	5	6	4	3	7	3	0	10.4	26.9	
15-Dec	3	3	1	1	2	0	3	2	3	2	2	1	1	1	2	3	2	3	1	1	2	3	2	3	2.0	3.4	
16-Dec	2	2	2	1	1	1	2	1	3	1	0	0	3	3	5	11	13	14	8	8	5	5	3	6	4.2	14.0	
17-Dec	7	5	1	1	3	3	3	0	2	2	1	3	1	4	3	3	1	1	2	2	2	1	2	1	2.3	7.4	
18-Dec	2	3	3	3	2	6	7	4	8	M	M	12	10	7	13	15	17	8	9	12	10	11	8	8	8.0	17.3	
19-Dec	9	9	6	5	4	3	4	3	3	4	2	2	2	2	2	3	2	5	4	4	4	6	5	5	4.1	9.1	
20-Dec	5	4	6	5	6	5	5	3	4	6	9	8	4	5	5	6	6	7	10	8	10	11	10	12	6.7	11.8	
21-Dec	9	4	7	6	5	4	4	4	4	8	9	7	5	4	3	3	8	6	4	8	3	2	3	3	5.2	8.9	
22-Dec	3	5	5	5	6	6	12	10	16	12	11	10	6	7	9	8	6	6	5	6	13	13	6	7	8.0	16.0	
23-Dec	7	4	7	4	3	3	3	4	4	5	5	4	3	3	4	4	4	3	5	3	2	3	3	5	4.0	7.3	
24-Dec	5	4	4	4	4	3	4	3	3	3	3	3	3	4	4	3	3	4	4	5	4	5	7	4	3.8	6.7	
25-Dec	5	4	4	4	4	4	5	5	5	5	6	4	6	4	5	5	5	4	5	5	4	6	6	4	4.8	6.3	
26-Dec	5	8	10	7	8	8	6	6	5	8	7	9	6	8	7	9	7	7	8	9	8	6	7	6	7.2	10.0	
27-Dec	8	7	7	6	6	6	6	6	5	7	10	6	4	7	3	9	4	7	3	4	4	4	5	5	5.8	10.3	
28-Dec	5	4	4	5	8	6	8	8	5	5	7	5	3	4	5	4	6	6	7	8	7	6	6	7	5.7	7.9	
29-Dec	9	7	8	9	7	6	7	6	7	9	9	6	7	5	7	6	9	7	4	3	4	4	7	6	6.6	9.3	
30-Dec	6	6	6	8	7	8	9	9	9	10	10	10	8	8	10	10	10	9	11	11	11	10	11	10	9.1	11.0	
31-Dec	10	15	14	11	11	11	11	11	10	9	9	11	8	7	9	9	11	12	16	16	17	16	16	14	11.8	17.1	
	6.7	6.0	8.5	8.0	6.4	6.1	6.5	5.9	6.8	7.2	7.8	11.3	8.1	5.8	6.3	7.4	7.8	7.5	6.5	6.9	7.1	6.4	6.6	7.8	Diurnal Average		
	16.2	15.0	58.7	63.3	19.1	19.8	18.1	16.9	16.0	21.3	25.7	98.0	34.0	17.9	16.4	30.2	23.0	22.3	16.0	15.7	17.1	16.4	15.7	29.3	Diurnal Maximum		
M - Maintenance		N - Not Valid																									



**Pollutant Rose**

**Particulate Matter 2.5 (PM<sub>2.5</sub>) -  $\mu\text{g}/\text{m}^3$**   
**Evergreen Park - December 2017**





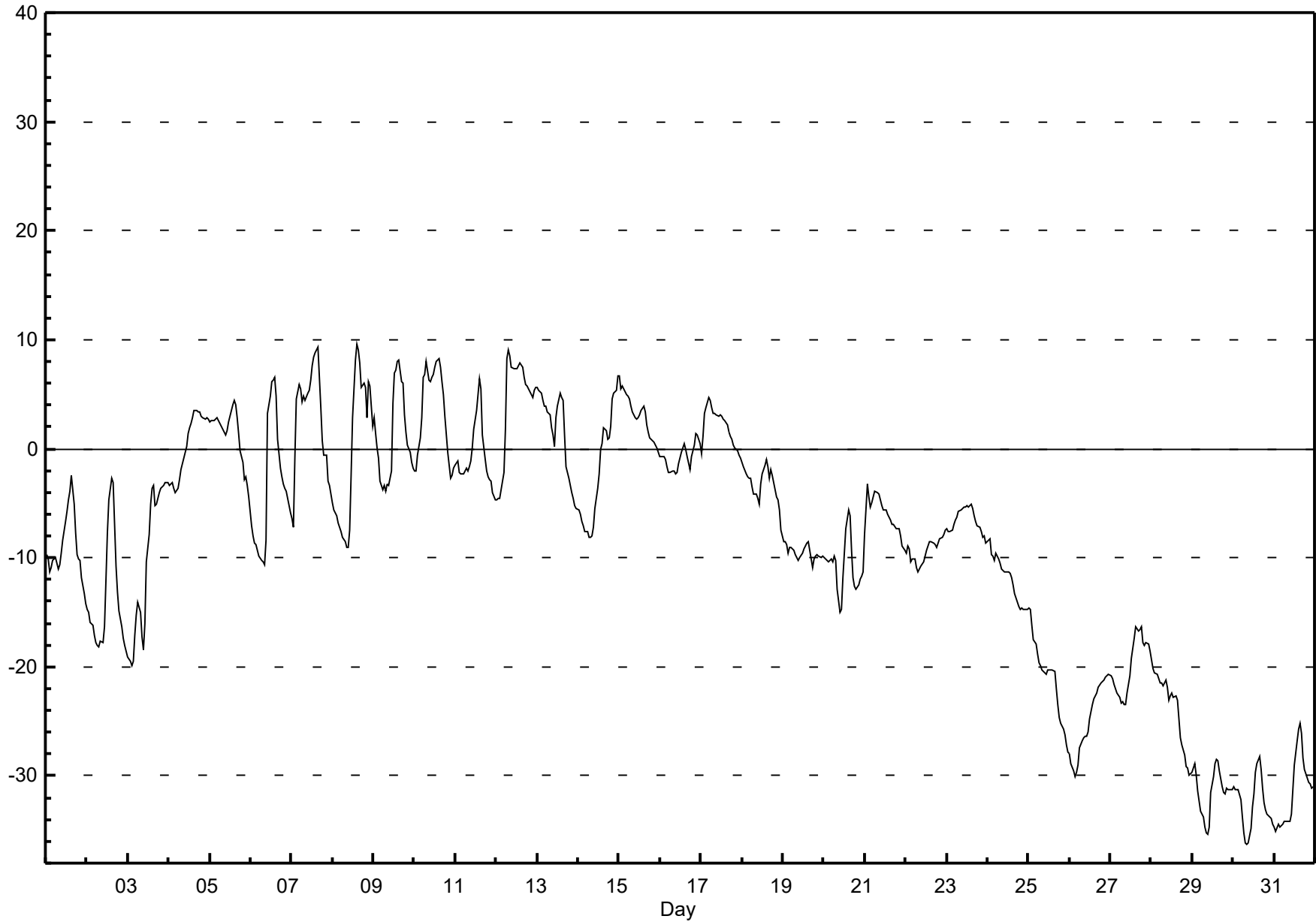
# Hourly Averages

## External Temperature (ET) - °C Evergreen Park - December 2017

<b>Maximum Value: 9.6 °C on Dec 8 15:00</b>		<b>Maximum Daily Average: 4.4 °C on Dec 12</b>		<b>Hours in Service: 744</b>																																												
<b>Minimum Value: -36 °C on Dec 30 09:00</b>		<b>Minimum Daily Average: -32.6 °C on Dec 30</b>		<b>Hours of Data: 744</b>																																												
<b>Maximum Diurnal Average: -4.8 °C at hour 15</b>		<b>Minimum Diurnal Average: -10.0 °C at hour 10</b>		<b>Hours of Missing Data: 0</b>																																												
<b>Monthly Average: -8.50 °C</b>		<b>Percentiles: P<sub>1</sub> = -34.8 P<sub>10</sub> = -28.5 Q<sub>1</sub> = -16.2 Median = -6.0 Q<sub>3</sub> = 0.4 P<sub>90</sub> = 4.9 P<sub>99</sub> = 8.4</b>		<b>Hours of Calibration: 0</b>																																												
				<b>Percent Operational Time: 100.0</b>																																												
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	-10	-10	-11	-11	-10	-10	-11	-11	-11	-10	-8	-7	-6	-5	-4	-2	-5	-8	-10	-10	-10	-12	-13	-14	-9.1	-2.4																						
2-Dec	-15	-15	-16	-16	-17	-18	-18	-18	-18	-18	-16	-12	-8	-5	-3	-3	-7	-11	-13	-15	-16	-17	-18	-19	-13.8	-2.7																						
3-Dec	-19	-20	-20	-19	-17	-15	-14	-15	-17	-18	-16	-10	-8	-5	-4	-3	-5	-5	-4	-4	-4	-3	-3	-3	-10.5	-3.1																						
4-Dec	-3	-3	-3	-4	-4	-4	-3	-2	-1	-1	0	1	2	2	3	3	4	3	3	3	3	3	3	3	0.4	3.6																						
5-Dec	2	3	3	3	3	3	2	2	2	2	1	2	3	3	4	4	4	3	1	0	-1	-3	-3	-4	1.3	4.5																						
6-Dec	-7	-8	-9	-9	-9	-10	-10	-10	-11	-8	3	5	6	6	7	5	1	-2	-3	-3	-4	-4	-5	-6	-3.5	6.6																						
7-Dec	-6	-7	-1	5	6	5	4	5	4	5	5	6	8	8	9	9	7	4	1	-1	-1	-3	-3	-4	2.7	9.4																						
8-Dec	-5	-6	-6	-7	-7	-8	-8	-9	-9	-9	-7	-2	3	8	10	9	8	6	6	6	3	6	6	2	-0.5	9.6																						
9-Dec	3	1	0	-1	-3	-4	-3	-4	-3	-3	-2	4	7	7	8	8	6	6	3	1	0	0	-1	-2	1.2	8.2																						
10-Dec	-2	-2	-1	1	3	7	7	8	6	6	7	7	7	8	8	7	6	5	3	0	-2	-3	-2	-2	3.5	8.2																						
11-Dec	-1	-1	-2	-2	-2	-2	-2	-2	-2	-1	0	2	3	5	6	6	1	-1	-2	-3	-3	-3	-4	-5	-0.6	6.5																						
12-Dec	-5	-5	-5	-4	-2	2	8	9	8	7	7	7	7	8	8	8	7	6	6	6	5	5	5	6	4.4	9.1																						
13-Dec	6	5	5	4	4	4	3	3	2	1	0	3	4	5	5	4	1	-2	-3	-3	-4	-5	-5	-6	1.4	5.7																						
14-Dec	-6	-6	-7	-7	-8	-8	-8	-8	-8	-7	-5	-4	-2	0	1	2	2	1	1	2	5	5	5	7	-2.2	6.7																						
15-Dec	7	5	6	5	5	5	5	4	3	3	3	3	3	4	4	3	2	1	1	1	1	0	0	0	3.1	6.7																						
16-Dec	-1	-1	-1	-1	-2	-2	-2	-2	-2	-2	-2	-1	0	0	0	0	-1	-2	-1	0	0	1	1	0	-0.8	1.4																						
17-Dec	0	1	3	4	5	4	4	3	3	3	3	3	3	3	3	2	1	1	1	0	0	0	-1	-1	2.0	4.8																						
18-Dec	-1	-2	-2	-3	-3	-3	-3	-4	-4	-5	-5	-3	-2	-2	-1	-2	-3	-2	-2	-4	-4	-5	-6	-8	-3.2	-1.0																						
19-Dec	-8	-8	-9	-10	-9	-9	-9	-10	-10	-10	-10	-10	-10	-9	-9	-9	-9	-9	-11	-10	-10	-10	-10	-10	-9.5	-8.5																						
20-Dec	-10	-10	-10	-10	-10	-10	-10	-10	-13	-15	-15	-12	-10	-7	-6	-6	-9	-12	-13	-13	-12	-12	-12	-11	-10.8	-5.5																						
21-Dec	-8	-3	-4	-5	-5	-4	-4	-4	-4	-5	-5	-6	-6	-6	-6	-7	-7	-7	-7	-7	-7	-8	-9	-9	-6.0	-3.2																						
22-Dec	-10	-9	-9	-10	-10	-10	-11	-11	-11	-11	-10	-10	-9	-9	-8	-9	-9	-9	-9	-9	-8	-8	-8	-7	-9.4	-7.5																						
23-Dec	-7	-8	-8	-7	-7	-7	-6	-6	-6	-5	-5	-5	-5	-5	-5	-5	-6	-7	-7	-7	-8	-8	-8	-9	-6.6	-5.1																						
24-Dec	-9	-8	-10	-10	-10	-10	-10	-11	-11	-11	-11	-11	-11	-11	-12	-13	-13	-14	-14	-15	-15	-15	-15	-15	-11.8	-8.3																						
25-Dec	-15	-15	-16	-17	-18	-19	-20	-20	-20	-21	-21	-20	-20	-20	-20	-20	-22	-24	-25	-25	-26	-26	-27	-28	-21.0	-14.5																						
26-Dec	-28	-29	-30	-30	-30	-29	-27	-27	-27	-26	-26	-26	-25	-23	-23	-23	-22	-22	-21	-21	-21	-21	-21	-21	-25.0	-20.7																						
27-Dec	-21	-21	-22	-22	-22	-23	-23	-23	-23	-23	-22	-21	-19	-18	-17	-16	-17	-17	-16	-18	-18	-18	-19	-19	-19.9	-16.3																						
28-Dec	-19	-20	-21	-21	-21	-22	-22	-22	-21	-22	-23	-23	-22	-23	-23	-23	-25	-26	-27	-28	-29	-29	-30	-30	-23.8	-19.3																						
29-Dec	-30	-29	-30	-31	-32	-33	-34	-35	-35	-35	-35	-32	-30	-29	-29	-29	-30	-31	-31	-32	-31	-31	-31	-31	-31.5	-28.5																						
30-Dec	-31	-31	-31	-31	-32	-34	-35	-36	-36	-36	-35	-33	-32	-30	-29	-28	-29	-31	-32	-33	-33	-34	-34	-34	-32.6	-28.2																						
31-Dec	-35	-35	-34	-35	-34	-34	-34	-34	-34	-34	-33	-31	-29	-27	-26	-25	-26	-28	-29	-30	-31	-31	-31	-31	-31.4	-25.2																						
																								-9.5	-9.5	-9.7	-9.8	-9.7	-9.6	-9.5	-9.6	-9.9	-10.0	-9.2	-7.5	-6.3	-5.3	-4.8	-4.9	-6.3	-7.6	-8.3	-8.8	-9.1	-9.3	-9.6	-10.0	Diurnal Average
																								6.7	5.5	5.8	5.2	5.9	6.6	8.3	9.1	8.5	7.5	7.4	7.4	7.6	8.4	9.6	9.4	7.8	6.0	6.0	5.7	5.0	6.2	5.8	6.7	Diurnal Maximum

**Hourly Averages**

**External Temperature (ET) - °C**  
**Evergreen Park - December 2017**



# Hourly Averages

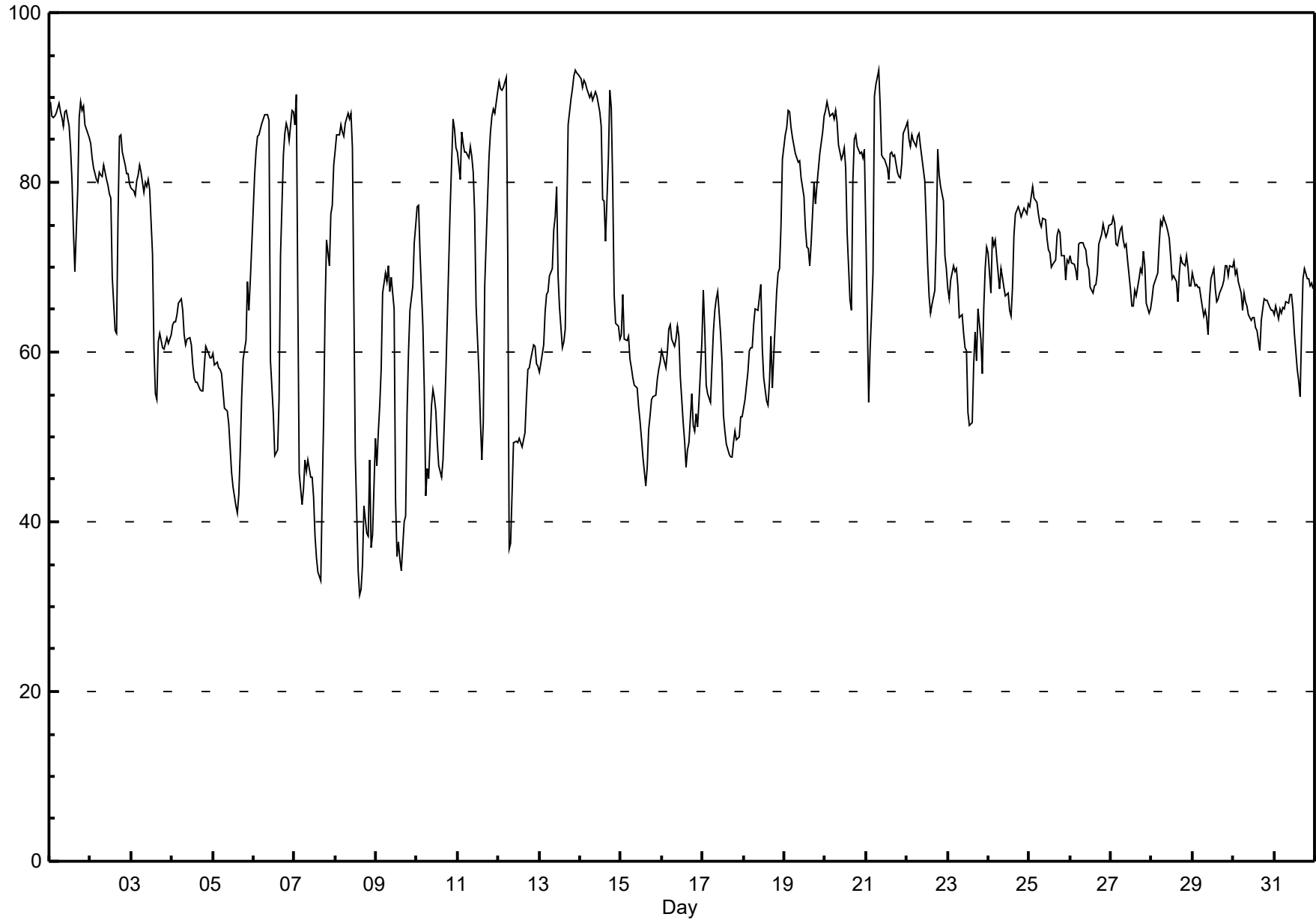
Relative Humidity (RH) - %

Evergreen Park - December 2017

Maximum Value: 93.3 % on Dec 13 22:00		Maximum Daily Average: 85.7 % on Dec 1		Hours in Service: 744																							
Minimum Value: 31 % on Dec 8 15:00		Minimum Daily Average: 55.3 % on Dec 5		Hours of Data: 744																							
Maximum Diurnal Average: 73.8 % at hour 1		Minimum Diurnal Average: 57.3 % at hour 15		Hours of Missing Data: 0																							
Monthly Average: 68.70 %		Percentiles: P <sub>1</sub> = 35.6 P <sub>10</sub> = 49.8 Q <sub>1</sub> = 60.1 Median = 68.4 Q <sub>3</sub> = 80.2 P <sub>90</sub> = 86.8 P <sub>99</sub> = 92.0		Hours of Calibration: 0																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	89	88	88	88	88	89	88	88	87	88	88	87	84	80	74	69	79	88	89	88	89	87	86	85	85.7	89.5	
2-Dec	85	83	82	80	80	81	81	81	82	80	80	79	78	69	63	62	76	85	86	83	82	81	81	80	79.1	85.6	
3-Dec	79	79	78	80	81	82	81	79	80	79	80	79	71	60	55	54	61	62	60	60	61	62	61	62	70.4	82.0	
4-Dec	63	64	64	64	66	66	65	62	61	61	62	61	58	57	56	56	56	55	55	58	61	60	59	59	60.5	66.2	
5-Dec	60	59	59	58	58	57	55	53	53	51	49	46	44	42	41	43	48	55	59	61	68	65	69	73	55.3	72.6	
6-Dec	81	84	85	86	86	87	88	88	88	87	59	53	48	48	48	54	71	83	86	87	86	85	89	88	76.9	88.5	
7-Dec	87	90	67	46	42	44	47	46	47	45	45	43	38	36	34	33	43	52	65	73	70	76	77	82	55.5	90.4	
8-Dec	84	86	86	87	86	85	87	88	87	88	84	66	48	34	31	32	35	42	39	38	47	37	38	50	61.9	88.2	
9-Dec	47	50	54	58	67	69	68	70	67	69	65	43	36	38	36	34	40	41	53	60	65	68	73	75	56.0	75.0	
10-Dec	77	77	72	63	55	43	46	45	54	56	55	53	49	47	45	47	52	58	64	77	82	87	86	84	61.5	87.4	
11-Dec	83	80	86	85	84	84	83	84	83	81	76	65	57	52	47	52	68	78	83	86	88	89	88	91	77.2	90.6	
12-Dec	92	91	91	91	92	72	37	37	43	49	50	49	50	49	49	50	55	58	58	59	61	61	59	58	60.9	92.4	
13-Dec	58	59	61	65	67	67	69	70	74	76	79	69	65	60	61	63	75	87	90	91	93	93	93	93	74.0	93.3	
14-Dec	92	91	92	92	91	90	91	90	90	91	90	88	87	78	78	73	83	91	89	80	67	63	63	62	83.3	92.2	
15-Dec	62	67	62	61	62	59	58	57	56	56	54	52	50	48	44	47	51	52	54	55	55	57	58	59	55.6	66.8	
16-Dec	60	59	58	60	63	63	61	61	62	63	62	57	52	50	46	49	49	55	51	51	53	51	54	61	56.3	63.2	
17-Dec	67	63	56	55	54	58	62	65	66	67	62	59	53	51	49	48	48	48	49	51	50	50	52	52	55.6	67.3	
18-Dec	53	54	58	60	61	60	63	65	65	66	68	60	57	54	54	56	62	56	60	67	69	70	75	83	62.4	82.6	
19-Dec	86	86	88	88	86	85	83	83	82	83	81	78	75	72	72	70	73	80	77	80	82	83	86	88	81.2	88.4	
20-Dec	89	90	89	88	88	87	88	87	84	83	83	84	82	74	66	65	80	85	86	84	83	84	83	84	83.2	89.5	
21-Dec	75	54	60	65	69	90	92	93	89	83	83	83	82	80	83	84	83	83	81	81	81	82	86	87	80.4	93.2	
22-Dec	87	85	84	86	85	84	86	86	84	83	80	75	70	67	65	66	67	73	84	81	80	78	71	70	78.2	87.1	
23-Dec	67	66	69	70	70	70	68	64	64	62	61	60	53	51	52	59	62	59	65	62	57	65	70	72	63.3	72.3	
24-Dec	72	67	74	73	73	71	67	70	69	68	67	67	65	64	68	74	76	77	77	76	76	77	76	77	71.7	77.5	
25-Dec	77	78	79	78	78	76	75	75	76	76	73	72	72	70	70	71	74	74	74	71	71	68	71	70	73.8	79.4	
26-Dec	71	71	70	70	68	73	73	73	72	72	70	70	68	67	68	68	69	73	74	75	74	74	74	75	71.3	75.1	
27-Dec	75	76	75	73	72	74	75	73	72	73	71	67	65	65	67	67	69	70	69	72	70	66	65	65	70.3	75.9	
28-Dec	66	68	68	69	73	75	75	76	75	74	73	71	69	69	68	66	69	71	71	70	71	70	68	68	70.6	76.0	
29-Dec	69	68	68	68	68	66	64	65	64	62	66	69	70	68	66	66	67	68	68	70	70	69	70	70	67.5	70.2	
30-Dec	71	69	70	68	67	65	67	66	65	64	64	64	64	63	63	60	64	65	66	66	66	65	65	65	65.5	70.7	
31-Dec	64	65	64	65	64	65	65	66	66	67	67	65	62	58	57	55	62	69	70	69	69	68	68	68	64.9	69.8	
		73.8	73.1	72.8	72.2	72.4	72.3	71.3	71.1	71.3	71.1	69.2	65.6	62.0	58.8	57.3	57.8	63.5	67.5	69.5	70.4	70.9	70.6	71.4	72.7	Diurnal Average	
		92.2	91.2	92.0	91.7	92.4	90.2	91.6	93.2	90.2	90.7	90.2	88.4	86.6	80.4	83.4	83.6	83.1	90.9	89.9	91.0	92.6	93.3	92.9	92.7	Diurnal Maximum	

**Hourly Averages**

**Relative Humidity (RH) - %  
Evergreen Park - December 2017**





Peace Airshed Zone Association

# Hourly Averages

Wind Speed (km/h)  
 Wind Direction (deg)  
 Evergreen Park - December 2017

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 Spd	1	1	3	1	3	3	0	0	0	0	1	2	6	4	5	2	2	1	5	8	0	1	1	1	1.2	8.4
Dir	196	36	28	116	190	24	125	248	31	206	19	200	246	227	187	189	194	129	181	196	317	62	175	71	194.0	195.7
2 Spd	1	1	1	0	0	1	1	2	7	2	0	1	0	2	5	3	1	2	1	2	2	0	0	0	0.9	6.8
Dir	188	231	25	8	50	155	147	199	192	162	72	30	211	262	280	274	242	201	199	195	183	332	5	17	215.8	191.6
3 Spd	1	1	0	1	0	3	1	1	1	1	3	7	7	10	9	8	9	14	18	23	25	27	31	27	9.1	31.0
Dir	216	220	238	198	191	194	204	38	211	210	295	306	257	259	247	243	241	236	236	239	239	247	245	242	243.9	244.6
4 Spd	18	26	14	11	15	11	16	24	26	25	26	34	36	39	35	43	47	35	33	41	44	42	36	35	29.5	47.5
Dir	252	242	250	251	239	239	233	230	229	228	236	241	240	243	240	248	246	244	248	250	247	243	240	240	242.0	246.1
5 Spd	31	36	34	35	34	32	32	26	21	17	16	6	11	8	10	8	14	9	10	5	4	6	5	2	16.7	35.6
Dir	244	246	245	244	247	248	248	250	252	259	262	293	270	261	295	265	253	252	252	261	279	298	298	268	253.1	245.5
6 Spd	1	1	0	0	1	2	2	3	1	8	30	21	13	9	4	3	1	0	2	1	1	0	3	3	2.8	29.7
Dir	250	231	31	60	30	196	32	208	64	229	236	244	264	302	25	44	49	76	28	61	359	63	54	213	251.2	236.4
7 Spd	1	1	15	24	27	23	23	19	15	21	25	22	30	31	28	18	2	3	1	2	2	3	5	0	13.8	31.0
Dir	246	70	252	248	252	251	243	247	246	238	238	237	244	244	244	254	8	217	278	278	169	189	203	8	244.2	243.8
8 Spd	0	2	1	1	1	1	0	1	2	1	1	3	15	19	16	12	12	12	14	8	4	16	10	5	5.9	19.4
Dir	201	233	279	27	182	201	148	50	187	168	194	251	229	252	273	291	261	244	238	258	330	251	238	282	253.6	252.0
9 Spd	10	7	7	2	3	1	4	1	7	1	7	11	17	15	18	5	4	4	0	2	2	3	4	2	5.4	17.6
Dir	237	252	250	256	225	250	215	174	198	168	191	234	235	241	236	233	242	262	133	177	201	197	198	212	230.2	236.4
10 Spd	1	0	6	6	15	22	29	39	24	37	36	27	28	25	18	13	16	11	4	1	1	3	1	1	14.2	38.7
Dir	216	188	178	190	227	237	247	248	256	249	250	251	252	261	271	282	270	257	230	232	251	51	118	182	250.0	248.5
11 Spd	6	4	2	5	5	4	2	3	3	2	2	4	5	3	2	1	1	0	2	0	1	3	1	1	2.0	6.1
Dir	188	165	41	195	198	202	215	158	185	206	187	238	231	276	297	273	31	252	212	297	222	234	182	240	208.1	188.0
12 Spd	4	2	2	5	9	24	41	53	47	47	45	41	37	31	26	27	34	31	28	22	17	22	30	30	26.6	53.2
Dir	327	183	206	195	202	227	227	239	244	243	241	243	245	246	254	254	251	254	251	246	239	232	236	238	241.8	239.2
13 Spd	26	20	12	9	9	13	10	12	7	6	5	14	14	11	9	4	1	0	1	1	1	0	1	1	6.9	26.5
Dir	235	243	289	299	301	269	270	252	314	308	251	250	256	285	281	266	349	5	163	196	193	174	193	186	264.3	235.5
14 Spd	1	1	1	0	1	0	3	0	0	0	0	0	2	3	2	4	2	3	4	3	9	8	17	24	2.7	24.5
Dir	35	31	232	110	183	255	42	287	333	96	186	310	15	212	205	249	64	52	243	230	257	261	244	238	244.8	238.4
15 Spd	15	23	31	29	32	37	35	40	39	38	35	35	34	32	36	36	30	28	29	30	26	23	24	24	30.8	40.1
Dir	256	253	244	244	239	239	248	244	244	246	244	247	245	242	245	246	244	247	244	244	238	241	240	242	244.3	243.6
16 Spd	20	21	22	24	18	19	16	16	17	17	16	11	8	7	4	6	5	7	8	7	6	6	1	11.4	24.0	
Dir	237	240	241	245	243	239	239	234	237	233	226	206	210	201	184	173	171	173	187	184	192	169	172	173	223.8	244.6
17 Spd	1	10	18	24	32	34	30	31	36	37	38	41	38	30	32	19	24	30	31	23	19	22	22	24	26.6	40.7
Dir	74	221	222	234	236	237	237	235	240	236	240	244	248	253	249	259	250	248	248	249	250	246	245	246	242.6	244.2
18 Spd	25	20	18	10	12	17	9	8	11	7	4	5	9	9	8	3	5	8	3	2	4	3	1	1	7.6	24.8
Dir	245	247	243	259	250	246	284	261	250	283	312	314	313	276	262	293	241	280	344	349	246	275	344	359	263.2	244.8
19 Spd	0	4	4	6	7	7	6	8	9	8	6	4	7	9	9	5	2	1	1	0	3	5	4	6	3.7	8.9
Dir	21	54	64	46	49	49	44	50	50	51	40	36	36	37	44	67	37	91	135	12	274	282	290	239	40.2	49.8
20 Spd	8	7	4	5	7	5	8	4	1	1	3	5	7	3	1	3	1	2	1	1	0	1	0	2	2.8	8.0
Dir	267	265	213	195	211	193	204	197	116	195	186	197	192	183	117	200	205	195	201	62	160	215	113	209	208.8	266.9
21 Spd	6	11	9	4	10	16	14	13	20	23	17	14	10	13	8	12	12	11	9	9	9	10	11	11	10.2	22.8
Dir	276	298	323	254	313	296	282	291	307	322	328	329	355	17	4	322	320	313	305	299	282	252	262	252	308.0	321.8
22 Spd	12	13	10	10	9	9	6	6	13	12	11	14	20	19	14	13	15	16	16	19	21	18	20	16	13.7	20.8
Dir	252	260	256	246	249	249	259	276	253	256	263	262	265	263	264	249	271	259	250	254	246	247	261	279	257.8	246.2



Peace Airshed Zone Association

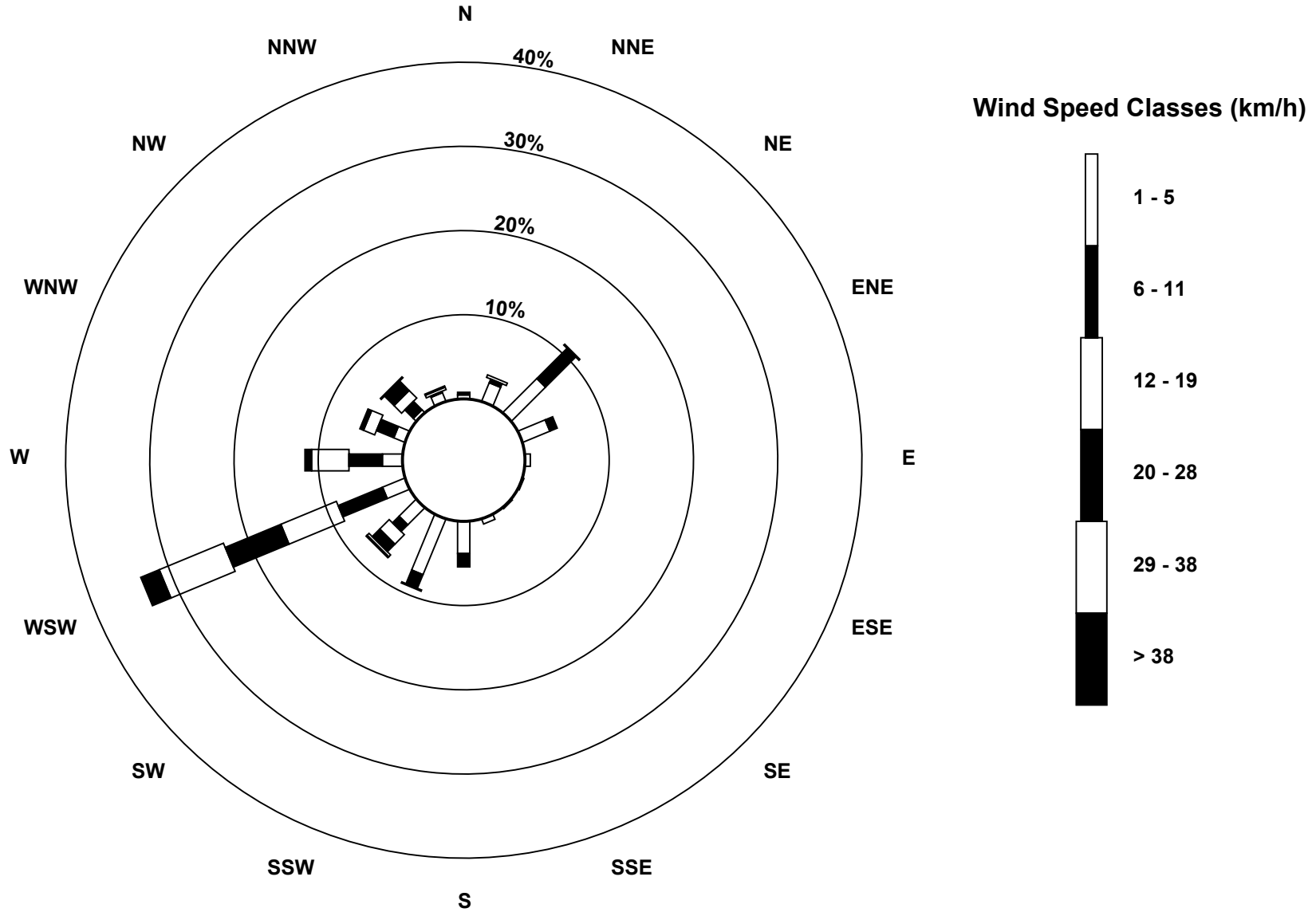
### Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Evergreen Park - December 2017

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	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	18	18	20	18	18	17	15	22	17	21	18	15	25	26	26	30	25	26	21	28	23	11	14	18	18.0	30.1
Dir	261	249	245	252	261	264	266	269	269	266	284	272	311	296	300	314	324	327	321	321	313	255	257	258	286.4	314.3
24 Spd	17	20	13	16	17	20	22	21	18	16	19	15	13	14	11	5	5	5	6	2	2	3	3	2	9.7	22.1
Dir	286	300	272	273	268	310	321	319	319	312	312	314	303	306	327	43	45	44	43	51	61	57	58	74	311.5	321.1
25 Spd	1	1	13	12	8	10	10	6	6	4	5	5	6	6	6	6	4	4	4	3	1	2	3	3	5.3	12.6
Dir	84	29	33	46	55	56	56	66	56	65	38	49	44	45	47	40	46	55	70	56	57	44	52	51	49.8	32.6
26 Spd	1	0	0	1	1	1	2	3	2	2	1	3	3	2	4	5	1	2	1	1	13	11	8	8	1.7	12.6
Dir	70	32	309	211	186	34	44	94	98	86	76	16	342	307	273	237	331	73	161	299	319	313	289	284	311.2	318.9
27 Spd	9	9	10	10	8	6	5	10	12	8	10	12	16	16	14	6	7	8	9	4	11	17	13	13	9.8	17.2
Dir	281	266	266	279	250	237	250	262	259	259	256	258	254	249	231	261	249	236	240	241	234	242	252	265	253.0	241.8
28 Spd	9	11	14	11	8	8	5	4	1	3	6	6	9	7	8	9	3	1	1	1	2	1	0	0	1.8	13.9
Dir	260	277	261	254	245	255	259	273	336	16	25	54	52	44	42	45	55	56	341	19	61	191	187	141	311.3	261.3
29 Spd	1	2	1	2	2	N	N	N	1	2	1	5	6	6	8	8	3	5	6	8	7	7	7	8	4.2	8.3
Dir	40	51	26	34	196	N	N	N	182	42	188	33	31	20	42	40	53	48	49	49	61	58	65	60	48.1	60.5
30 Spd	10	7	8	6	2	N	N	N	N	N	N	2	4	4	3	4	2	2	0	1	2	1	2	1	1.4	9.5
Dir	57	51	54	55	188	N	N	N	N	N	303	254	236	34	47	126	32	34	182	191	196	200	199	173	58.8	57.4
31 Spd	1	1	2	N	N	N	N	N	N	N	7	6	4	3	6	4	2	2	2	2	1	1	1	2	--	6.6
Dir	106	4	197	N	N	N	N	N	N	N	220	233	233	203	213	191	67	77	53	6	332	189	224	204	--	220.5
Spd	6.8	7.3	7.0	7.2	8.6	10.0	9.6	11.1	9.9	10.1	10.2	10.2	11.0	10.1	8.6	7.0	6.8	6.4	6.4	6.2	6.5	7.2	7.5	7.4	Diurnal Average	
Dir	251.8	254.1	252.9	248.5	245.0	248.8	250.6	249.7	252.1	253.1	251.6	253.6	256.6	261.1	261.7	266.3	262.3	258.8	251.5	255.0	253.8	247.1	244.8	247.3	Diurnal Maximum	
Spd	30.8	35.6	34.0	35.3	34.2	36.8	40.8	53.2	46.6	46.9	45.1	40.8	37.7	38.6	35.5	42.8	47.5	34.6	33.4	41.1	44.4	41.8	35.9	35.4	Diurnal Maximum	
Dir	244.5	245.5	244.8	243.9	246.9	239.2	226.7	239.2	243.7	242.9	240.7	242.5	248.3	242.6	245.4	247.6	246.1	243.7	247.9	250.2	246.5	243.0	239.8	240.1	Diurnal Maximum	
Maximum Speed Value: 53 km/h on Dec 12 08:00		Minimum Speed Value: 0 km/h on Dec 2 22:00										Hours in Service: 744														
Maximum Daily Speed Average: 30.8 km/h on Dec 15		Minimum Daily Speed Average: 0.9 km/h on Dec 2										Hours of Data: 729														
Maximum Diurnal Speed Average: 11.1 km/h at hour 8		Minimum Diurnal Speed Average: 6.2 km/h at hour 20										Hours of Missing Data: 15														
Monthly Average Velocity: 8.23 km/h 253.23 deg												Speed Percentiles: P <sub>1</sub> = 0.2 P <sub>10</sub> = 0.8 Q <sub>1</sub> = 1.9 Median = 6.8 Q <sub>3</sub> = 16.3 P <sub>90</sub> = 27.8 P <sub>99</sub> = 41.5												Percent Operational Time: 98.0		
All monthly, daily, and diurnal averages have been calculated using vector methods																										
N - Not Valid																										
Frequency Distribution																										
		Speed Range (km/h)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	23	3	1	0	0	0	27																			
NorthEast	72	43	2	0	0	0	117																			
East	19	0	0	0	0	0	19																			
SouthEast	14	0	0	0	0	0	14																			
South	78	23	0	0	0	0	101																			
SouthWest	52	22	30	42	39	15	200																			
West	31	54	64	20	14	3	186																			
NorthWest	18	20	12	14	1	0	65																			
Total	307	165	109	76	54	18	729																			

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Evergreen Park - December 2017**



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Evergreen Park - December 2017

Maximum Speed: 54 km/h on Dec 12 08:00	Maximum Daily Speed Average: 31.1 km/h on Dec 15	Hours in Service: 744
Minimum Speed: 0 km/h on Dec 6 03:00	Minimum Daily Speed Average: 2.2 km/h on Dec 2	Hours of Data: 729
Maximum Diurnal Speed Average: 14.8 km/h at hour 13	Minimum Diurnal Speed Average: 8.9 km/h at hour 1	Hours of Missing Data: 15
Monthly Average Speed: 11.23 km/h	Percentiles: P <sub>1</sub> = 0.7 P <sub>10</sub> = 1.6 Q <sub>1</sub> = 2.8 Median = 7.3 Q <sub>3</sub> = 16.7 P <sub>90</sub> = 28.0 P <sub>99</sub> = 41.7	Percent Operational Time: 98.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	1	1	3	2	4	5	1	1	1	1	1	3	6	4	5	2	3	3	7	9	4	2	3	4	3.2	9.1
2-Dec	2	2	1	1	1	3	2	3	7	4	1	1	1	2	5	4	1	2	2	2	2	1	3	1	2.2	6.9
3-Dec	2	1	2	2	1	3	1	1	1	1	4	7	8	11	9	8	9	14	18	23	25	27	31	28	9.8	31.2
4-Dec	19	26	15	11	15	11	16	24	27	26	26	34	36	39	35	43	48	35	34	41	45	42	36	36	29.9	47.7
5-Dec	31	36	34	35	34	32	32	26	21	17	16	8	13	9	11	8	14	9	10	5	4	6	5	3	17.6	35.8
6-Dec	2	2	0	0	2	2	2	3	3	9	30	21	14	11	5	3	2	1	3	2	2	2	3	4	5.3	29.9
7-Dec	3	3	16	24	28	23	23	20	15	21	25	23	30	31	28	20	6	4	3	5	3	3	5	2	15.1	31.2
8-Dec	1	2	2	2	1	1	3	1	3	3	2	4	15	20	17	13	12	12	15	10	6	17	11	6	7.4	20.2
9-Dec	10	8	8	3	4	3	5	4	7	2	7	12	18	15	18	7	5	6	2	2	3	3	4	3	6.5	17.8
10-Dec	3	2	7	6	16	23	29	40	25	37	36	27	28	25	19	14	16	11	5	3	3	4	4	2	16.0	39.5
11-Dec	6	5	3	5	6	4	2	3	3	3	2	4	5	5	2	2	2	2	2	2	2	4	2	2	3.2	6.4
12-Dec	5	3	3	5	9	25	41	54	47	47	45	41	38	31	27	27	34	31	28	23	17	22	30	30	27.5	53.6
13-Dec	27	20	13	9	9	15	11	12	8	7	6	14	14	11	10	4	1	1	3	2	2	2	1	1	8.4	26.6
14-Dec	1	1	3	2	1	1	3	1	1	2	1	1	3	4	3	5	4	4	5	5	9	9	17	25	4.5	24.7
15-Dec	16	24	31	29	32	37	35	40	39	38	35	36	35	32	36	36	30	28	29	30	26	23	24	24	31.1	40.4
16-Dec	20	21	22	24	18	19	16	16	17	17	17	16	12	9	7	4	6	5	7	8	7	7	7	2	12.7	24.1
17-Dec	2	11	18	25	33	34	30	32	37	37	39	41	38	31	32	19	25	30	31	23	19	22	22	24	27.2	40.9
18-Dec	25	20	18	10	13	17	10	9	11	8	4	5	10	10	8	4	5	9	5	2	4	3	1	2	8.9	24.9
19-Dec	1	4	4	6	7	7	7	9	9	9	9	6	4	8	9	9	6	2	1	2	4	6	6	7	5.6	9.3
20-Dec	9	8	6	6	7	5	8	4	1	1	4	5	8	4	1	3	1	3	2	3	1	1	1	2	3.9	9.2
21-Dec	6	11	9	6	10	17	14	13	21	23	17	14	11	14	9	13	12	11	10	10	9	10	11	11	12.2	23.1
22-Dec	12	13	10	10	9	10	7	6	13	12	11	15	21	19	15	13	15	16	16	19	21	19	21	17	14.1	21.0
23-Dec	19	18	20	18	18	17	16	22	18	21	19	15	25	26	26	31	26	27	22	28	24	11	14	18	20.9	30.8
24-Dec	19	21	14	16	17	21	22	21	18	16	19	16	14	15	13	5	5	5	6	3	3	4	3	3	12.5	22.5
25-Dec	2	2	13	13	8	10	11	7	7	4	5	6	7	7	7	6	4	5	4	3	1	2	3	3	5.7	13.2
26-Dec	2	2	2	1	2	2	3	4	3	2	2	4	4	4	5	5	2	2	1	3	13	11	8	8	3.9	12.8
27-Dec	9	9	11	10	8	6	5	10	12	8	10	12	16	17	15	8	7	8	10	5	11	17	14	13	10.5	17.3
28-Dec	10	12	14	11	8	8	5	5	2	4	6	6	9	7	9	9	3	3	1	2	4	2	1	1	5.8	14.2
29-Dec	2	2	2	2	2	N	N	N	N	2	2	2	6	6	7	8	8	3	6	6	8	7	8	9	5.0	8.6
30-Dec	10	7	8	7	2	N	N	N	N	N	N	2	5	4	4	5	3	2	2	1	2	2	1	1	3.7	9.7
31-Dec	1	1	2	N	N	N	N	N	N	N	N	7	6	5	3	6	5	2	3	3	2	1	1	2	--	7.1
	8.9	9.6	10.1	10.0	10.8	12.9	12.8	13.9	13.0	13.2	13.2	13.3	14.8	14.0	13.0	10.9	9.9	9.5	9.4	9.3	9.2	9.4	9.7	9.4	Diurnal Average	
	31.0	35.8	34.2	35.5	34.4	37.1	41.1	53.6	46.9	47.2	45.3	41.1	37.9	38.8	35.9	43.0	47.7	35.0	33.7	41.4	44.6	42.1	36.2	35.5	Diurnal Maximum	

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



# Hourly Standard Deviations

Wind Direction (WD) - deg  
Evergreen Park - December 2017

Maximum Value: 98.5 deg on Dec 19 20:00	Hours in Service: 744
Minimum Value: 4.7 deg on Dec 16 09:00	Hours of Data: 729
Percentiles: P <sub>1</sub> = 5.3 P <sub>10</sub> = 6.6 Q <sub>1</sub> = 10.8 Median = 21.1 Q <sub>3</sub> = 57.6 P <sub>90</sub> = 79.6 P <sub>99</sub> = 94.6	Hours of Missing Data: 15
	Hours of Calibration: 0
	Percent Operational Time: 98.0

Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Dec	74	72	36	84	87	59	97	95	92	88	84	66	22	41	28	80	63	86	56	44	89	67	91	81	97.0
2-Dec	83	84	79	55	90	79	61	24	11	75	76	30	69	56	23	35	59	69	90	46	60	92	89	89	92.4
3-Dec	77	69	93	57	96	27	62	71	76	49	36	14	24	12	11	6	9	5	7	7	5	7	7	7	96.2
4-Dec	18	8	25	9	7	7	9	6	5	6	9	8	8	5	7	6	5	9	9	7	6	8	6	6	25.2
5-Dec	7	6	5	6	7	7	7	8	7	16	19	62	27	18	24	24	15	10	8	13	26	13	19	33	61.5
6-Dec	72	61	73	86	90	75	64	62	74	61	6	14	18	38	36	47	62	95	55	67	82	83	37	70	94.8
7-Dec	77	87	24	5	6	8	6	7	7	5	5	6	6	6	6	37	77	16	75	72	70	66	23	77	87.1
8-Dec	90	55	80	93	70	66	86	68	77	84	89	69	10	18	24	24	10	9	6	45	41	21	16	28	93.1
9-Dec	11	22	24	83	60	69	60	91	17	91	50	28	13	10	7	90	60	38	70	67	86	51	28	78	91.4
10-Dec	88	97	41	35	31	10	8	12	12	7	7	9	7	10	15	23	12	13	28	82	94	65	83	78	96.7
11-Dec	44	36	66	29	14	36	77	23	26	61	71	27	19	45	40	65	90	86	76	81	73	48	82	76	90.0
12-Dec	55	89	78	32	26	15	7	8	7	6	6	6	6	6	9	11	6	7	7	7	7	7	5	7	88.6
13-Dec	6	13	27	18	20	26	17	11	29	25	11	8	12	25	28	30	84	79	74	90	83	92	79	72	91.8
14-Dec	50	47	95	69	69	86	50	87	68	95	91	91	74	38	71	46	68	58	65	83	17	31	11	8	95.3
15-Dec	18	10	8	6	7	8	7	7	6	7	7	7	6	6	8	7	6	7	6	6	6	6	5	5	18.0
16-Dec	6	5	6	6	6	6	6	5	5	8	7	7	15	23	20	24	16	21	12	12	14	38	20	93	93.0
17-Dec	65	15	6	8	6	6	6	6	7	6	7	6	7	8	7	12	11	6	6	7	9	6	6	6	65.3
18-Dec	5	5	6	18	19	10	18	18	9	32	15	21	22	25	21	20	24	20	54	32	23	49	31	42	54.0
19-Dec	72	37	27	12	15	24	19	19	20	20	22	28	23	18	19	32	41	45	65	99	54	32	40	41	98.5
20-Dec	30	24	47	20	25	18	23	40	58	88	59	13	10	33	74	30	91	56	86	73	68	78	85	76	91.4
21-Dec	29	18	11	61	17	19	14	16	15	10	12	14	27	15	21	16	10	14	15	19	18	10	12	9	60.8
22-Dec	7	14	12	10	12	9	21	19	8	10	15	12	11	11	18	10	11	10	9	9	8	14	14	16	21.3
23-Dec	15	9	9	9	10	12	16	12	13	14	19	13	12	13	13	12	9	12	13	10	13	19	11	10	19.3
24-Dec	23	23	14	18	13	15	11	11	12	16	16	20	20	21	42	25	25	21	20	55	46	36	27	36	54.9
25-Dec	35	37	19	16	28	18	19	31	24	34	26	31	17	28	21	19	19	10	15	14	29	20	28	32	36.8
26-Dec	93	89	92	79	64	84	59	49	50	47	65	37	66	67	53	17	58	37	71	76	12	15	18	17	93.1
27-Dec	16	14	15	14	12	9	22	18	13	14	16	14	12	9	12	41	27	16	42	27	9	6	22	16	41.9
28-Dec	21	15	11	11	9	8	20	20	50	36	16	19	21	23	23	16	17	74	63	73	65	65	87	92	92.2
29-Dec	70	26	34	45	76	N	N	N	71	74	87	15	16	28	15	14	34	21	14	10	14	12	15	15	87.2
30-Dec	12	11	10	11	59	N	N	N	N	N	38	39	32	48	43	65	40	37	92	56	27	45	46	56	91.6
31-Dec	64	53	66	N	N	N	N	N	N	N	21	15	34	37	12	26	30	53	58	51	68	77	36	46	77.1
	93.1	96.7	95.3	93.1	96.2	85.9	97.0	94.6	91.9	95.1	90.8	90.7	74.1	67.5	74.1	89.6	91.4	94.8	91.6	98.5	93.6	92.4	91.1	93.0	

N - Not Valid

PAZA

## Smoky Heights Station

Monthly Summary Tables, Graphs and  
Roses

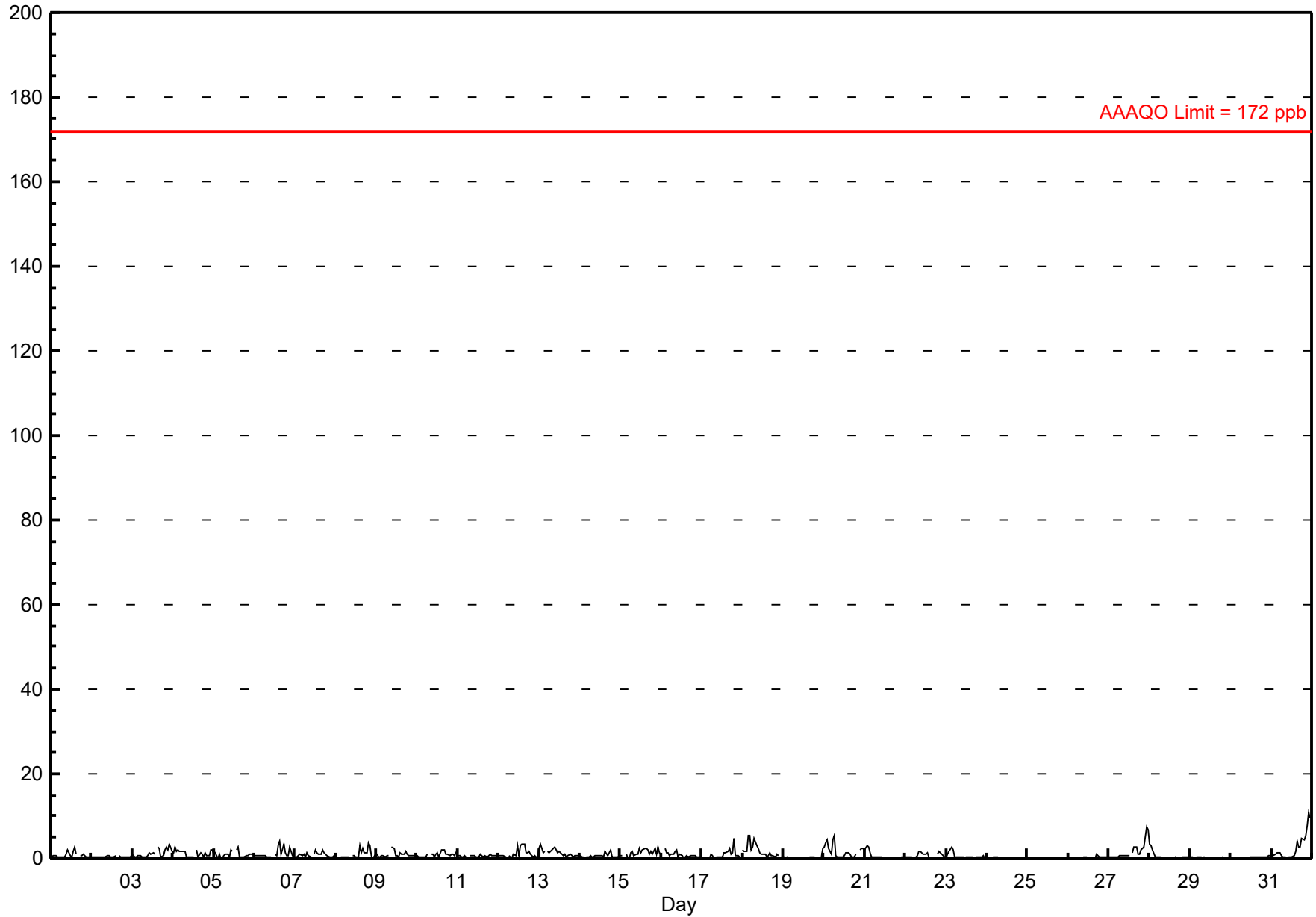
## Hourly Averages

## Sulphur Dioxide (SO<sub>2</sub>) - ppb Smoky Heights - December 2017

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 10.9 ppb on Dec 31 23:00	Maximum Daily Average: 2.8 ppb on Dec 31		Hours of Data:	709
Minimum Value: 0 ppb on Dec 24 20:00	Minimum Daily Average: 0.1 ppb on Dec 25		Hours of Missing Data:	35
Maximum Diurnal Average: 1.3 ppb at hour 23	Minimum Diurnal Average: 0.6 ppb at hour 9		Hours of Calibration:	35
Monthly Average: 0.88 ppb	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.2 Median = 0.5 Q <sub>3</sub> = 1.1 P <sub>90</sub> = 2.1 P <sub>99</sub> = 5.5		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	0	1	1	1	0	0	0	0	0	1	2	1	0	2	3	1	A	1	1	1	1	0	0	0	0.7	2.6																						
2-Dec	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	A	1	0	0	0	0	0	0	0	0.4	0.7																						
3-Dec	1	0	0	1	1	1	0	0	0	1	1	1	2	1	A	3	2	0	1	2	3	2	3	2	1.2	3.5																						
4-Dec	1	3	2	2	2	2	2	2	0	0	0	0	0	A	2	0	1	1	0	1	1	1	2	2	1.2	2.8																						
5-Dec	1	1	0	1	0	0	1	1	1	0	2	2	A	2	3	0	0	0	0	1	1	1	1	1	0.9	2.6																						
6-Dec	1	1	1	1	1	1	1	0	0	0	0	A	1	1	3	4	1	3	1	1	1	3	1	0	1.1	4.0																						
7-Dec	0	0	1	1	1	1	0	1	1	0	A	1	2	1	1	1	2	1	1	1	0	0	0	1	0.9	1.9																						
8-Dec	0	0	0	0	0	0	0	0	0	0	A	1	1	0	0	3	1	2	1	1	4	3	1	0	1	1.0	3.8																					
9-Dec	1	0	0	1	1	0	1	1	A	3	2	1	1	0	1	1	1	2	1	1	1	1	1	1	0.9	2.7																						
10-Dec	1	0	0	0	0	0	1	A	1	1	0	1	1	0	2	2	2	1	1	1	1	1	1	1	0.9	2.1																						
11-Dec	1	1	0	0	1	0	A	1	1	1	1	0	0	1	1	0	1	0	1	1	1	1	1	1	0.6	1.0																						
12-Dec	1	1	1	1	0	A	1	0	0	1	1	3	1	3	4	3	1	1	2	1	0	1	0	0	1.1	3.5																						
13-Dec	2	3	1	2	A	2	1	2	2	3	2	1	2	1	1	1	0	1	1	1	0	1	1	1	1.4	3.5																						
14-Dec	1	0	0	A	0	1	1	0	0	1	1	1	1	1	0	2	1	1	2	0	0	0	0	1	0.6	2.0																						
15-Dec	1	1	A	1	0	0	1	2	1	1	1	2	1	2	2	3	2	1	2	1	2	1	3	2	1.4	2.8																						
16-Dec	1	A	2	1	1	1	1	1	2	2	0	1	1	0	0	1	0	1	1	1	1	0	0	0	0.9	2.3																						
17-Dec	A	0	0	0	0	1	1	0	0	0	0	0	0	1	1	2	2	1	2	5	1	1	0	A	0.9	4.8																						
18-Dec	2	2	2	6	5	2	3	5	3	2	1	1	1	1	0	1	1	1	1	0	1	1	A	0	1.8	5.5																						
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.3	2.5																						
20-Dec	3	4	4	2	1	5	6	1	0	0	0	0	1	1	1	1	0	0	0	1	A	2	2	2	1.7	5.5																						
21-Dec	2	3	3	1	1	0	0	0	0	0	C	C	C	0	0	0	0	0	0	A	0	0	0	0	0.6	2.9																						
22-Dec	0	0	0	0	0	0	0	1	2	2	1	1	1	0	0	0	0	0	A	1	2	1	1	0	0.7	1.8																						
23-Dec	0	1	2	3	2	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	1	0	0.5	2.6																						
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.1	0.3																						
25-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.1	0.1																						
26-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	0	0	0	0	0	0	0.2	1.0																						
27-Dec	0	1	0	0	0	0	1	1	1	1	1	1	1	A	1	3	3	1	1	2	2	3	7	7	1.6	7.4																						
28-Dec	4	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	3.5																						
29-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5																						
30-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	1	1	0.2	0.7																						
31-Dec	0	1	1	1	2	1	1	1	0	A	0	0	0	1	2	4	3	3	5	4	5	8	11	10	2.8	10.9																						
																								0.8	0.9	0.9	0.9	0.7	0.7	0.8	0.7	0.6	0.8	0.7	0.7	0.7	0.8	1.2	1.2	1.0	0.8	0.9	1.1	1.0	1.0	1.3	1.2	Diurnal Average
																								3.5	3.8	4.3	5.5	5.3	4.6	5.5	4.6	2.9	2.8	2.2	3.1	1.9	3.0	3.5	4.1	2.8	3.3	4.8	4.8	5.4	7.9	10.9	9.5	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





Peace Airshed Zone Association

# Hourly Maximums

# Sulphur Dioxide (SO<sub>2</sub>) - ppb Smoky Heights - December 2017

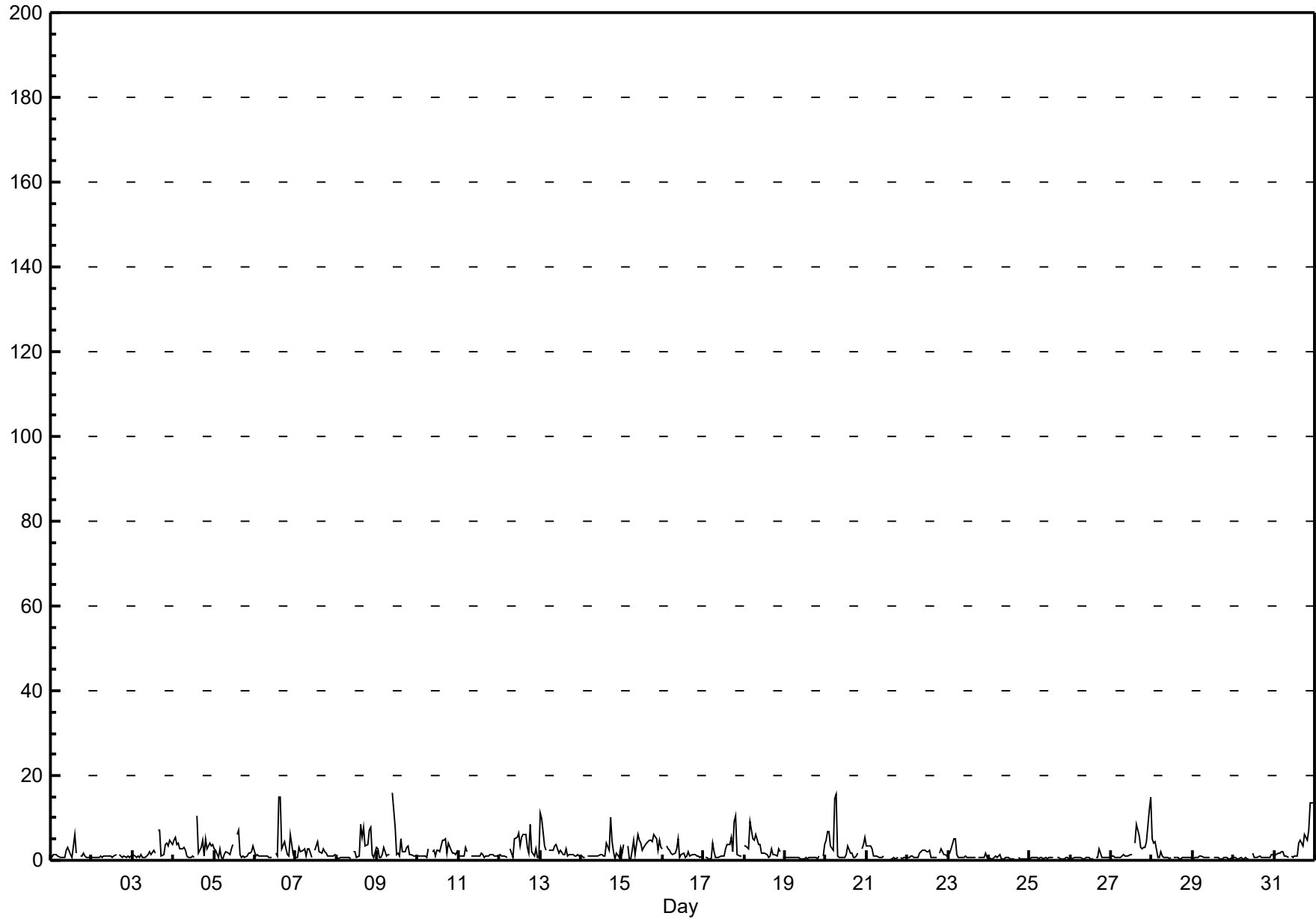
Maximum Value: 15.9 ppb on Dec 9 10:00	Maximum Daily Average: 4.0 ppb on Dec 31	Hours in Service: 744
Minimum Value: 0 ppb on Dec 24 13:00	Minimum Daily Average: 0.5 ppb on Dec 25	Hours of Data: 709
Maximum Diurnal Average: 3.3 ppb at hour 15	Minimum Diurnal Average: 1.2 ppb at hour 9	Hours of Missing Data: 35
Monthly Average: 1.98 ppb	Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 0.7 Median = 1.0 Q <sub>3</sub> = 2.5 P <sub>90</sub> = 4.6 P <sub>99</sub> = 13.1	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-Dec	1	1	1	1	1	1	1	1	1	2	3	1	1	4	6	2	A	1	1	2	1	1	1	1	1.5	6.2
2-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.9	1.3
3-Dec	1	1	1	1	1	1	1	1	1	1	2	1	2	2	A	7	7	1	1	4	4	3	5	4	2.4	7.2
4-Dec	5	6	4	4	3	3	3	2	1	1	1	1	1	A	11	2	3	5	1	5	3	4	3	4	3.2	10.6
5-Dec	3	2	1	3	1	0	1	2	2	1	3	4	A	6	7	1	1	1	1	1	2	2	2	3	2.1	7.1
6-Dec	1	1	1	1	1	1	1	1	1	1	1	A	2	1	15	15	3	4	3	1	1	6	1	1	2.8	14.9
7-Dec	1	1	3	2	2	3	1	3	3	1	A	3	3	4	2	2	3	2	2	1	1	1	1	1	1.9	4.3
8-Dec	1	0	1	1	1	1	1	1	1	0	A	2	2	1	1	8	5	8	4	4	7	8	1	1	2.6	8.5
9-Dec	3	1	1	1	3	1	1	1	1	A	16	8	1	2	1	5	2	2	3	4	1	1	1	1	2.7	15.9
10-Dec	1	1	1	1	1	1	3	A	2	2	1	2	3	2	5	5	5	2	4	2	2	2	1	2	2.2	5.0
11-Dec	1	1	1	1	3	2	A	1	1	1	1	1	1	2	1	1	1	1	1	2	1	1	1	1	1.2	2.9
12-Dec	1	1	1	1	1	A	3	2	1	5	5	6	3	5	6	6	3	2	9	2	1	3	1	1	3.0	8.6
13-Dec	11	10	3	3	A	2	2	2	4	4	3	2	2	1	1	3	1	1	1	1	1	1	1	1	2.7	11.1
14-Dec	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	4	2	10	4	2	0	2	1	3	1.8	10.1
15-Dec	2	4	A	3	0	0	3	5	1	6	5	4	2	3	4	5	5	5	5	6	5	2	5	3	3.6	6.0
16-Dec	3	A	3	3	2	2	1	2	3	5	1	1	2	1	1	2	1	1	1	1	1	1	1	1	1.7	5.0
17-Dec	A	1	1	0	0	4	2	1	1	1	1	1	1	3	4	4	5	2	9	10	1	1	1	A	2.5	10.5
18-Dec	3	3	3	9	7	5	5	6	4	4	2	2	2	1	1	1	3	1	1	1	1	3	2	A	3.0	9.1
19-Dec	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	1	1	1	0	1	A	1	4	0.8	3.9
20-Dec	5	7	7	3	2	15	16	1	1	1	1	1	1	3	2	2	1	1	1	2	A	3	4	5	3.6	15.7
21-Dec	4	4	3	3	1	1	1	1	1	1	1	C	C	C	0	0	1	0	1	A	1	0	1	1	1.2	3.5
22-Dec	1	1	1	1	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1	A	2	3	1	1	1.3	2.8
23-Dec	1	2	3	5	5	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	2	1	1.3	5.2
24-Dec	1	0	0	1	1	1	1	0	0	0	1	1	0	0	0	0	A	1	0	0	0	0	0	0	0.5	1.2
25-Dec	0	1	1	1	1	0	1	1	0	1	0	1	1	1	1	A	1	1	0	0	0	1	1	0	0.5	0.7
26-Dec	1	0	1	1	1	1	1	0	1	1	1	1	0	0	A	1	1	3	1	1	1	1	1	1	0.7	2.8
27-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	2	A	4	9	6	3	3	3	3	4	12	3.3	14.8
28-Dec	5	4	4	1	1	2	1	1	1	1	0	1	0	1	1	1	0	0	1	1	1	1	1	1	1.2	5.3
29-Dec	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0	0	1	1	1	0	0	0.6	1.0
30-Dec	1	1	0	0	1	1	0	1	0	0	A	2	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.6
31-Dec	1	1	2	2	2	2	1	1	1	A	1	1	1	1	4	5	4	3	6	5	7	14	13	14	4.0	13.7
	2.0	1.9	1.7	1.8	1.5	1.8	1.8	1.4	1.2	2.2	1.7	1.6	1.4	1.8	3.3	3.0	2.4	2.1	2.2	2.2	1.9	2.0	2.2	2.5	Diurnal Average	
	11.1	9.7	6.8	9.1	7.0	14.6	15.7	6.0	3.6	15.9	7.9	6.4	3.3	6.1	14.8	14.9	7.7	10.1	9.1	10.5	7.7	13.7	13.5	14.8	Diurnal Maximum	

C - Calibration                      A - Automated Daily Zero Span

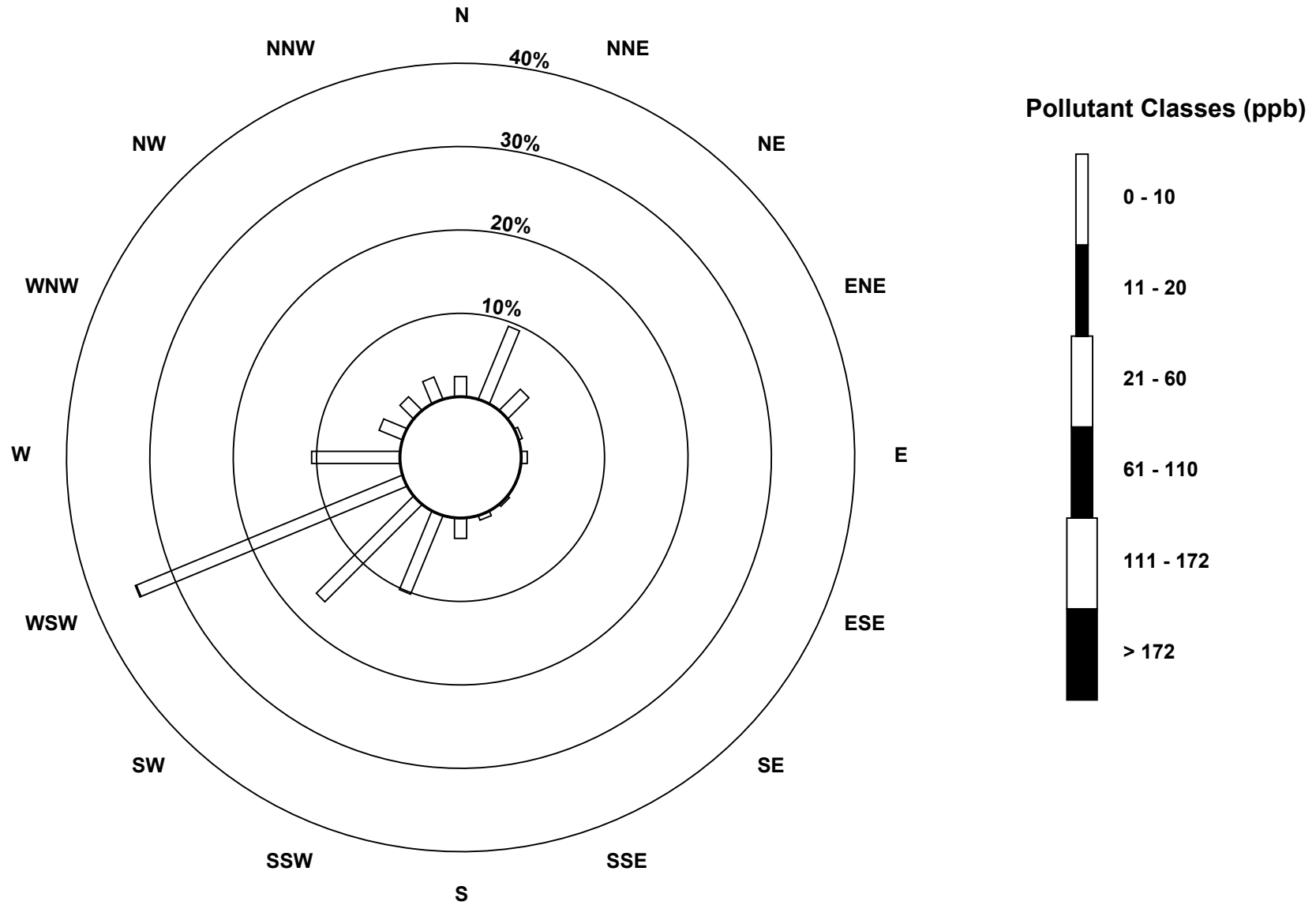
**Hourly Maximums**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Smoky Heights - December 2017**



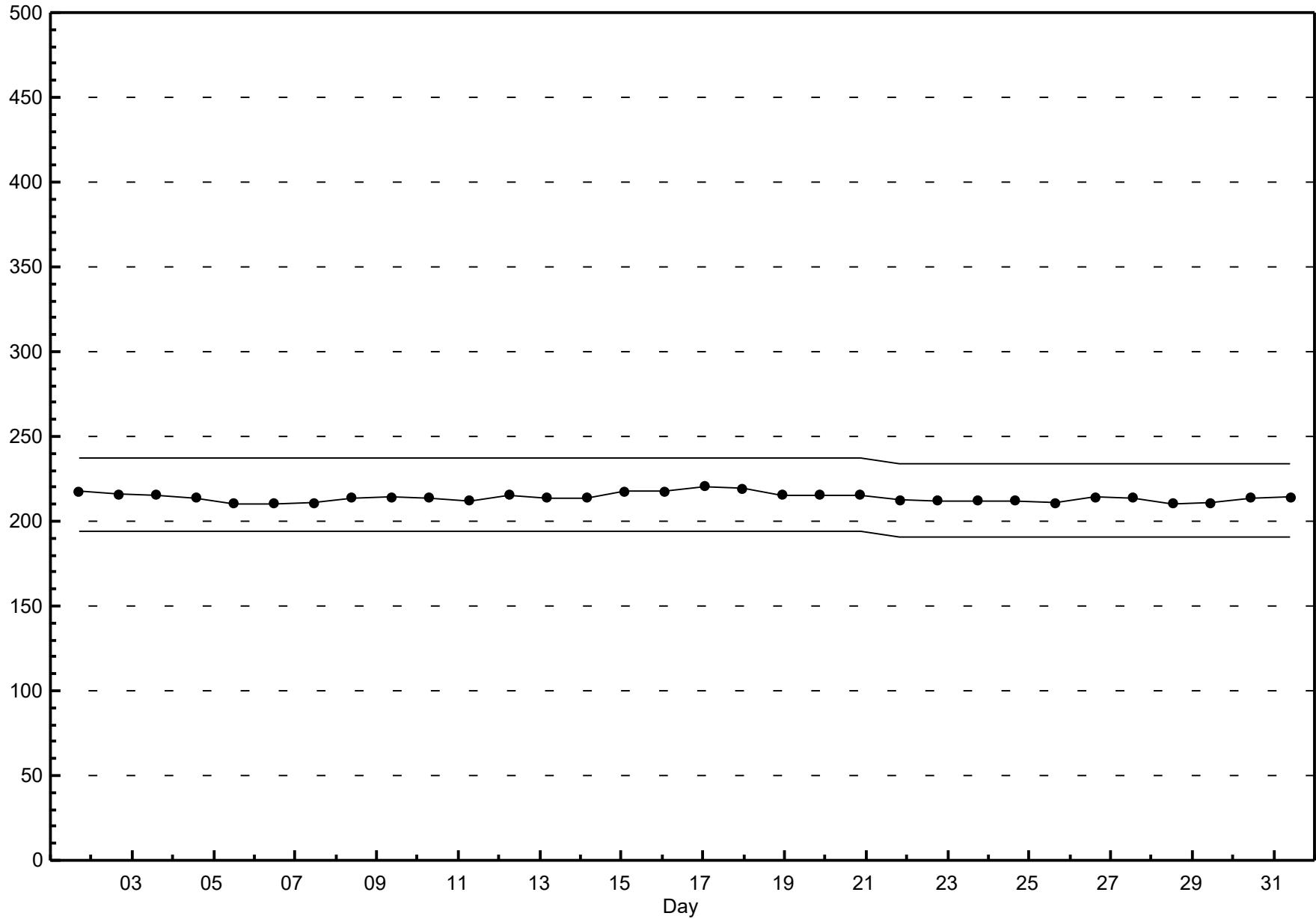
**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Smoky Heights - December 2017**



### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Smoky Heights - December 2017



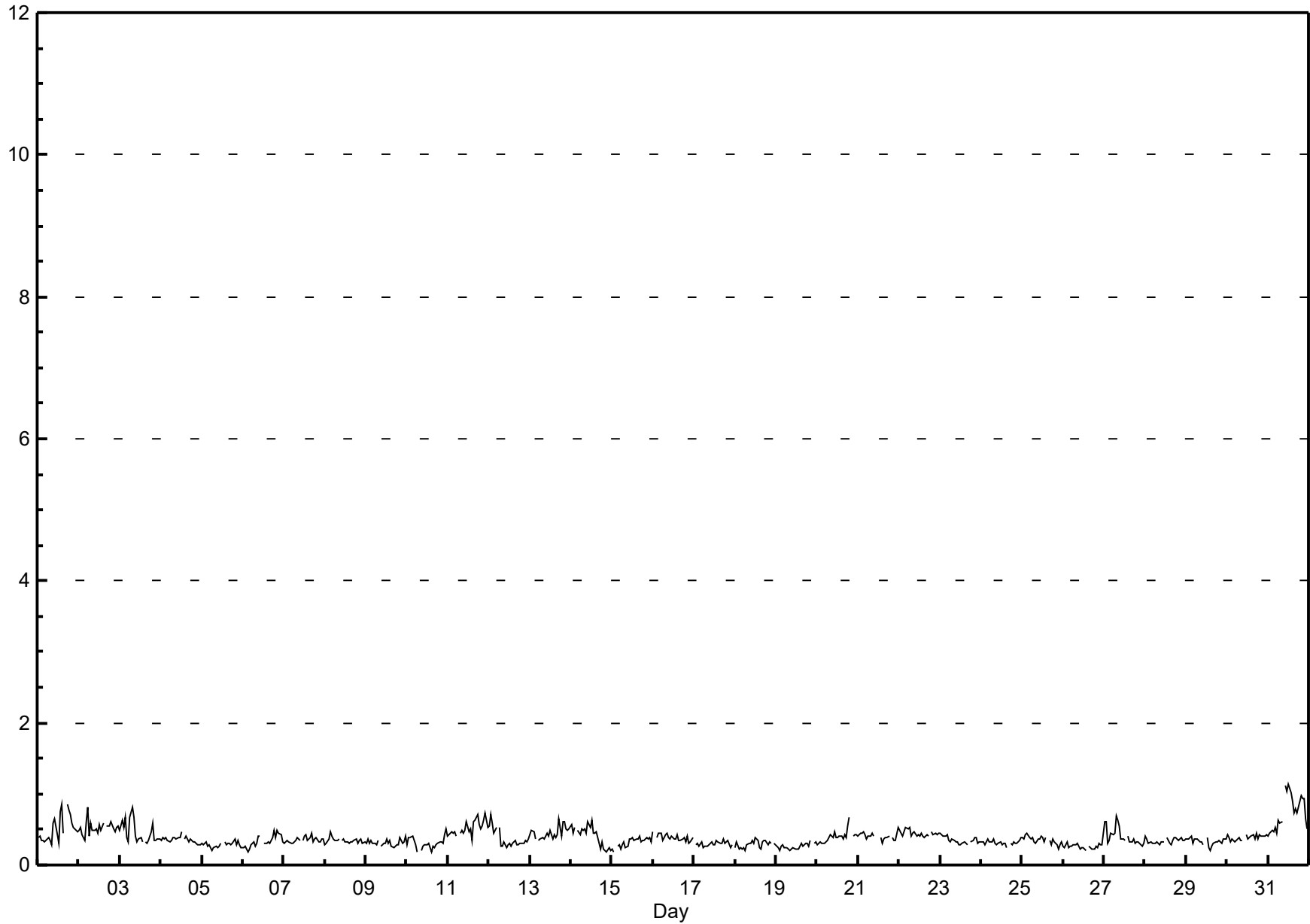


# Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Smoky Heights - December 2017

Maximum Value: 1.1 ppb on Dec 31 13:00      Maximum Daily Average: 0.7 ppb on Dec 31 Minimum Value: 0 ppb on Dec 14 22:00      Minimum Daily Average: 0.3 ppb on Dec 19 Maximum Diurnal Average: 0.4 ppb at hour 20      Minimum Diurnal Average: 0.4 ppb at hour 6 Monthly Average: 0.38 ppb      Percentiles: P <sub>1</sub> = 0.2 P <sub>10</sub> = 0.3 Q <sub>1</sub> = 0.3 Median = 0.4 Q <sub>3</sub> = 0.4 P <sub>90</sub> = 0.5 P <sub>99</sub> = 0.9		Hours in Service: 744	Hours of Data: 709	Hours of Missing Data: 35	Hours of Calibration: 35	Percent Operational Time: 100.0																				
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	A	1	1	1	1	1	0	0	0.5	0.9
2-Dec	0	1	0	0	1	1	0	1	0	0	1	0	1	0	1	A	1	1	1	1	1	0	1	1	0.5	0.8
3-Dec	0	1	1	1	0	0	1	1	1	0	0	0	0	0	A	0	0	0	0	1	0	0	0	0	0.5	0.8
4-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.4	0.5
5-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
6-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
7-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.4
8-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
9-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
10-Dec	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	0.5
11-Dec	0	0	0	0	0	0	A	0	0	0	0	1	0	1	0	1	1	1	1	1	1	1	1	1	0.5	0.7
12-Dec	1	1	1	0	1	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.7
13-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	0.4	0.6	
14-Dec	1	0	1	A	0	0	1	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.4	0.6
15-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
16-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.5
17-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.3	0.4
18-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.3	0.3
20-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	A	0	0	0	0.4	0.7
21-Dec	0	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	A	0	0	1	0.4	0.5
22-Dec	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.4	0.5
23-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.3	0.4
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.3	0.4
25-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.4	0.4
26-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.3	0.3
27-Dec	1	1	0	0	0	0	0	1	1	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.4	0.7
28-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
29-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
30-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.4
31-Dec	0	0	0	0	1	0	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.1
	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	Diurnal Average	
	0.6	0.7	0.6	0.7	0.6	0.8	0.7	0.8	0.7	0.6	1.1	1.0	1.1	1.0	0.9	0.7	0.8	0.8	0.8	1.0	0.9	0.9	0.7	0.5	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																								



## Hourly Maximums

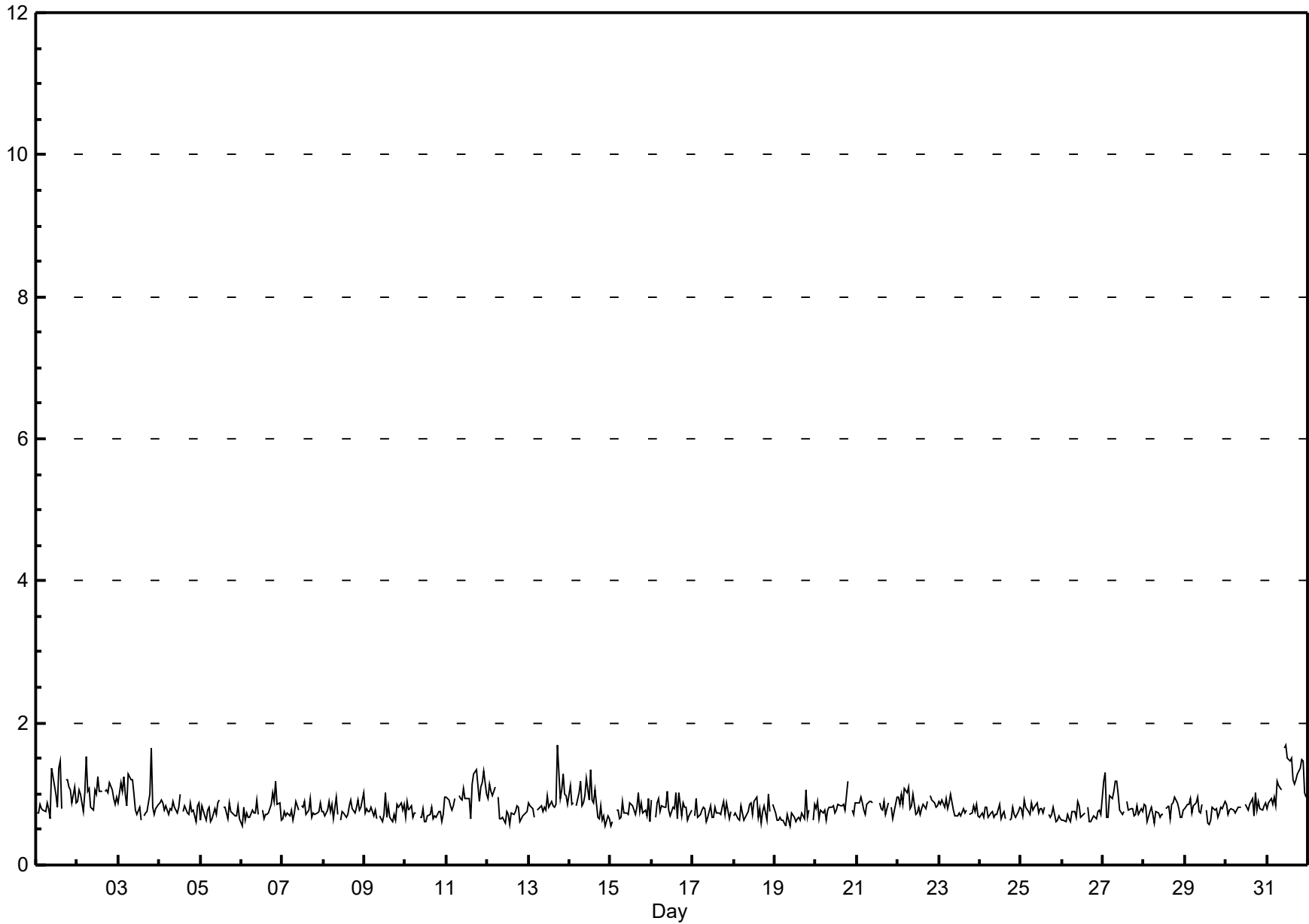
Total Reduced Sulphur (TRS) - ppb

Smoky Heights - December 2017

Maximum Value: 1.7 ppb on Dec 31 12:00		Maximum Daily Average: 1.2 ppb on Dec 31		Hours in Service: 744																							
Minimum Value: 1 ppb on Dec 15 01:00		Minimum Daily Average: 0.7 ppb on Dec 19		Hours of Data: 709																							
Maximum Diurnal Average: 0.9 ppb at hour 19		Minimum Diurnal Average: 0.8 ppb at hour 22		Hours of Missing Data: 35																							
Monthly Average: 0.82 ppb		Percentiles: P <sub>1</sub> = 0.6 P <sub>10</sub> = 0.7 Q <sub>1</sub> = 0.7 Median = 0.8 Q <sub>3</sub> = 0.9 P <sub>90</sub> = 1.0 P <sub>99</sub> = 1.5		Hours of Calibration: 35																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	1	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	1.5	
2-Dec	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1.0	1.5	
3-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	2	1	1	1	1	0.9	1.7	
4-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.8	1.0	
5-Dec	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9	
6-Dec	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.2	
7-Dec	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.8	0.9	
8-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0	
9-Dec	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0	
10-Dec	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9	
11-Dec	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.3	
12-Dec	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1	
13-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	0.9	1.7	
14-Dec	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.3	
15-Dec	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0	
16-Dec	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0	
17-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	0.9	
18-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0	
19-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.7	1.1	
20-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0.8	1.2	
21-Dec	1	1	1	1	1	1	1	1	1	1	C	C	C	1	1	1	1	1	1	A	1	1	1	1	0.8	1.0	
22-Dec	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	1.1	
23-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0.8	1.0	
24-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.7	0.8	
25-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.8	0.9	
26-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.7	0.9	
27-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.9	1.3	
28-Dec	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0	
29-Dec	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0	
30-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0	
31-Dec	1	1	1	1	1	1	1	1	1	A	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1.2	1.7	
		0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.8	0.8	0.8	Diurnal Average		
		1.2	1.3	1.0	1.3	1.1	1.5	1.3	1.2	1.2	1.4	1.6	1.7	1.5	1.5	1.5	1.2	1.3	1.7	1.3	1.7	1.5	1.5	1.3	Diurnal Maximum		
C - Calibration		A - Automated Daily Zero Span																									

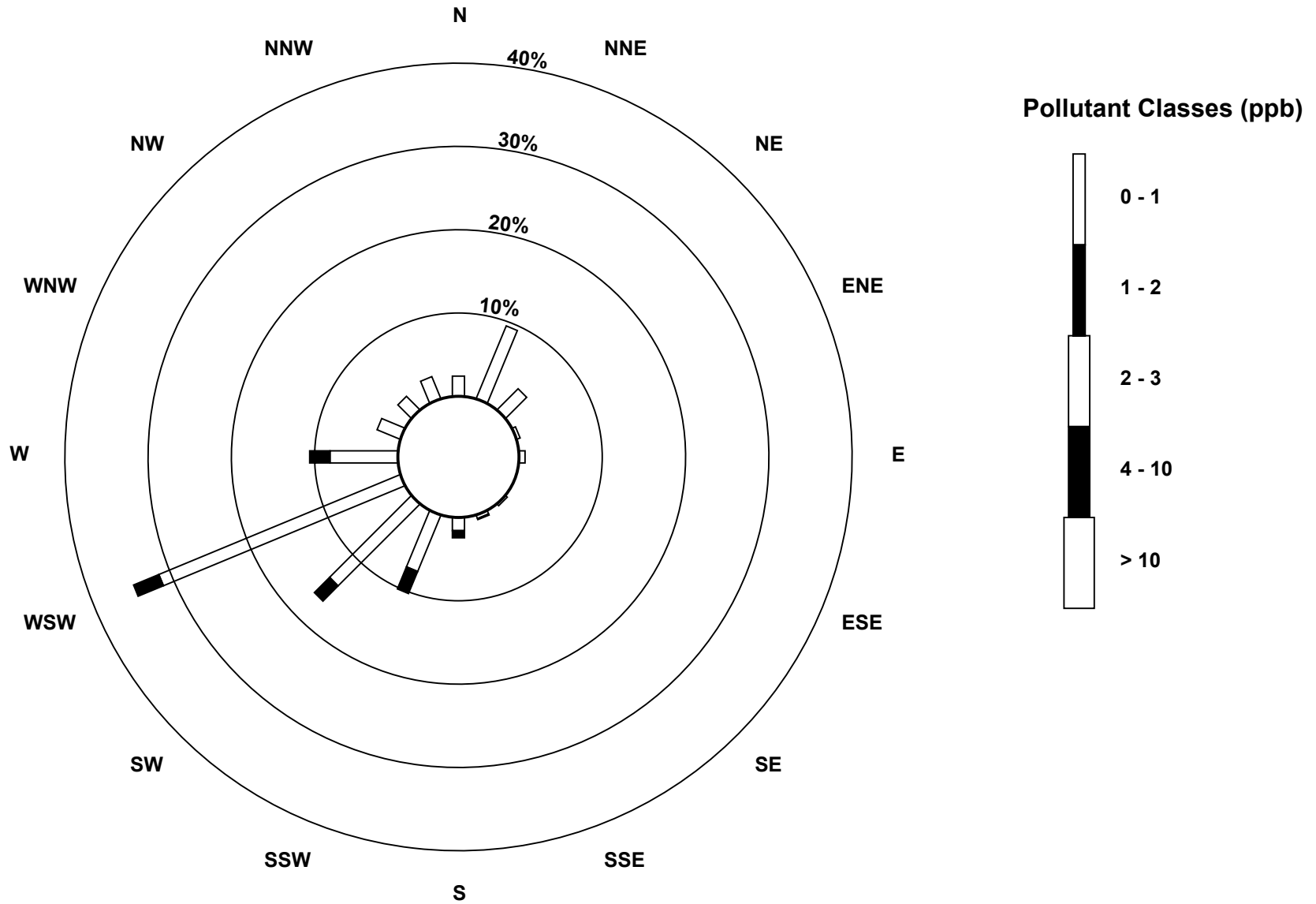
**Hourly Maximums**

**Total Reduced Sulphur (TRS) - ppb  
Smoky Heights - December 2017**



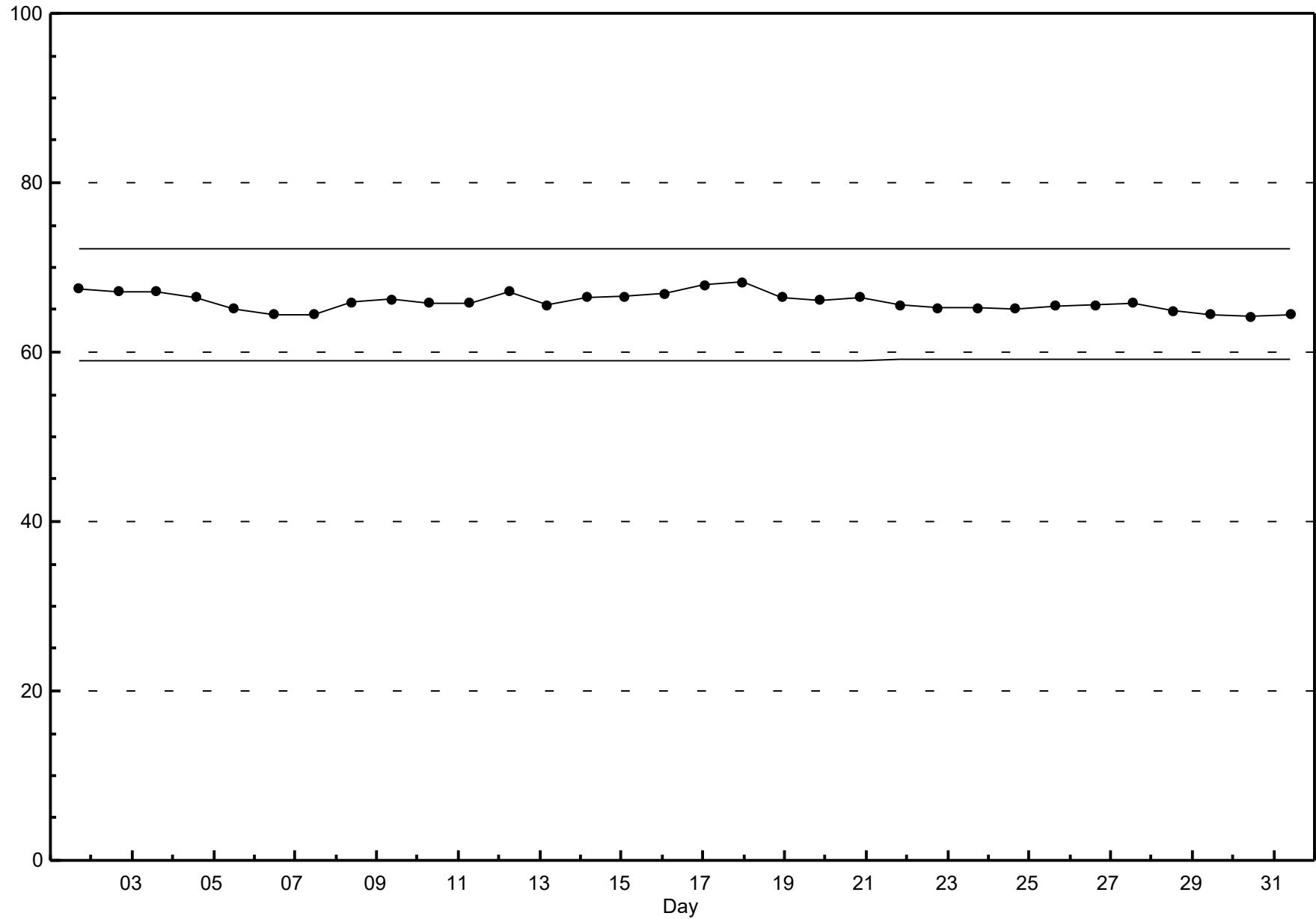
**Pollutant Rose**

**Total Reduced Sulphur (TRS) - ppb**  
**Smoky Heights - December 2017**



### Span Responses

**Total Reduced Sulphur (TRS)**  
**Smoky Heights - December 2017**



## Hourly Averages

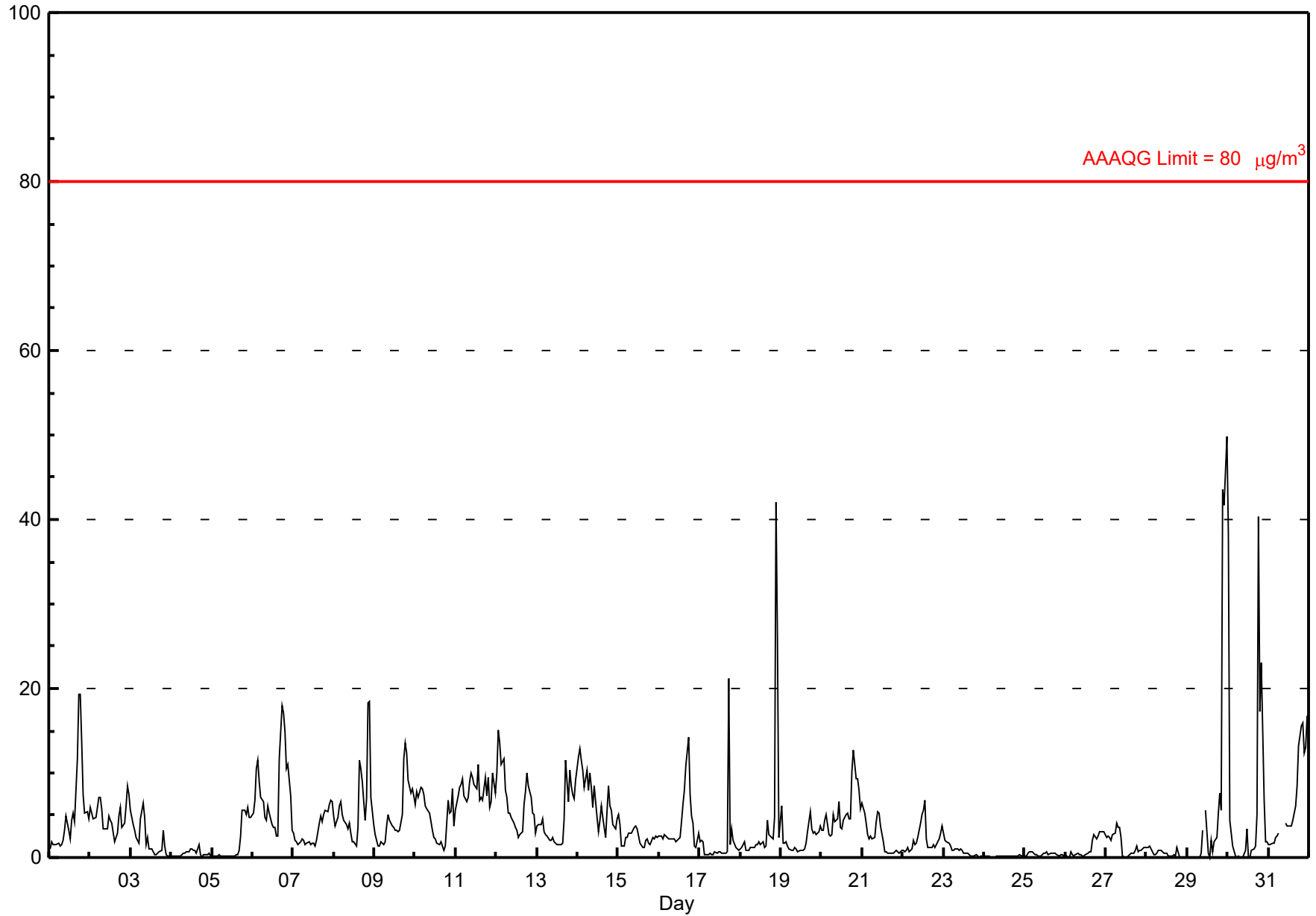
## Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

### Smoky Heights - December 2017

Number of Exceedences: 1-hr: 0 24-hr: 0	Hours in Service: 744
Maximum Value: 49.8 µg/m <sup>3</sup> on Dec 30 00:00	Maximum Daily Average: 8.1 µg/m <sup>3</sup> on Dec 11
Minimum Value: 0 µg/m <sup>3</sup> on Dec 24 05:00	Hours of Data: 740
Maximum Diurnal Average: 7.1 µg/m <sup>3</sup> at hour 22	Hours of Missing Data: 4
Monthly Average: 3.77 µg/m <sup>3</sup>	Hours of Calibration: 0
Minimum Daily Average: 0.2 µg/m <sup>3</sup> on Dec 24	Percent Operational Time: 99.5
Minimum Diurnal Average: 2.0 µg/m <sup>3</sup> at hour 13	
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.2 Q <sub>1</sub> = 0.7 Median = 2.3 Q <sub>3</sub> = 5.1 P <sub>90</sub> = 8.5 P <sub>99</sub> = 15.1	

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	1	2	2	2	2	2	1	1	2	3	5	3	2	4	5	4	12	19	19	14	7	5	5	5	5.3	19.4																						
2-Dec	6	5	5	5	6	7	7	6	3	3	3	5	4	4	2	2	3	5	6	4	4	6	8	7	4.9	8.5																						
3-Dec	6	4	3	2	2	2	5	6	5	2	2	1	1	1	0	0	1	1	1	3	1	0	0	0	2.1	6.4																						
4-Dec	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	2	0	0	0	0	0	0	0	0.5	1.6																						
5-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	6	6	5	6	5	5	1.6	5.9																						
6-Dec	5	7	11	12	9	7	7	5	4	6	5	4	3	4	3	3	12	18	17	15	10	11	7	3	7.8	18.0																						
7-Dec	3	2	2	1	2	2	2	2	2	2	1	2	2	1	2	4	5	4	5	6	5	6	7	7	3.2	6.8																						
8-Dec	5	4	5	6	7	5	4	4	3	4	3	2	2	1	3	12	11	9	4	7	18	19	7	4	6.2	18.5																						
9-Dec	3	2	1	1	2	1	2	4	5	4	4	4	3	3	3	3	5	12	14	12	9	8	8	7	5.0	13.6																						
10-Dec	6	8	7	8	8	8	6	6	5	4	3	2	2	2	2	2	1	1	1	7	5	5	8	4	4.7	8.3																						
11-Dec	6	7	8	9	9	7	7	7	9	10	9	9	8	11	7	7	7	9	7	9	6	7	10	8	8.1	11.1																						
12-Dec	10	15	14	11	12	8	7	5	5	5	4	3	3	2	3	3	6	8	10	8	7	5	5	3	6.8	15.1																						
13-Dec	4	4	4	5	3	3	3	2	2	2	2	2	1	1	2	2	5	11	7	10	9	8	7	9	4.4	11.4																						
14-Dec	12	13	11	10	8	10	8	10	8	6	9	5	3	4	6	5	2	6	9	6	6	4	3	5	7.1	12.8																						
15-Dec	5	4	1	1	2	2	3	3	3	3	4	3	3	2	1	1	2	2	2	1	2	2	3	2	2.5	5.2																						
16-Dec	2	2	2	3	2	2	2	2	2	2	2	2	2	4	6	8	11	14	8	5	4	1	1	3	4.0	14.2																						
17-Dec	2	2	2	0	0	0	0	0	0	1	1	1	1	1	1	1	1	21	2	3	2	1	1	1	1.8	21.1																						
18-Dec	1	1	2	1	1	1	1	1	1	1	2	2	2	2	1	1	4	3	2	2	5	42	26	2	4.5	42.0																						
19-Dec	6	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	3	5	3	3	3	3	3	4	2.1	6.0																						
20-Dec	3	3	4	5	3	3	3	5	4	4	7	4	3	4	5	5	5	5	10	13	9	9	8	6	5.4	12.7																						
21-Dec	6	5	4	3	2	2	2	2	4	5	5	4	2	1	1	1	1	1	1	1	1	1	1	1	2.3	6.5																						
22-Dec	1	1	1	1	1	1	2	2	2	2	4	5	6	7	2	1	1	1	2	1	1	2	3	4	2.2	6.7																						
23-Dec	3	2	2	2	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0.8	2.8																						
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4																						
25-Dec	0	0	0	1	1	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	0.4	0.7																						
26-Dec	0	0	0	1	0	0	0	1	0	0	0	0	0	1	1	1	2	3	2	2	3	3	3	3	1.2	3.1																						
27-Dec	2	2	2	2	3	3	4	4	4	2	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1.5	4.0																						
28-Dec	1	1	1	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.5	1.3																						
29-Dec	0	0	0	0	0	0	0	0	0	0	3	N	6	1	0	2	1	2	2	5	8	6	43	42	50	7.4	49.8																					
30-Dec	38	4	3	1	0	0	0	0	0	0	0	1	3	0	0	1	1	1	5	40	17	23	7	2	2	6.3	40.4																					
31-Dec	2	2	2	2	2	3	3	N	N	N	4	4	4	4	4	5	6	8	13	16	16	12	13	17	6.7	16.8																						
																								4.5	3.4	3.3	3.2	2.9	2.7	2.7	2.7	2.7	2.7	2.8	2.5	2.0	2.2	2.1	2.5	3.6	5.8	6.4	5.8	5.5	7.1	6.1	5.2	Diurnal Average
																								38.3	15.1	13.5	11.6	11.7	10.4	7.9	10.0	9.0	9.9	9.5	8.6	8.1	11.1	6.8	11.6	11.7	21.1	40.4	17.3	23.0	43.5	41.7	49.8	Diurnal Maximum

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



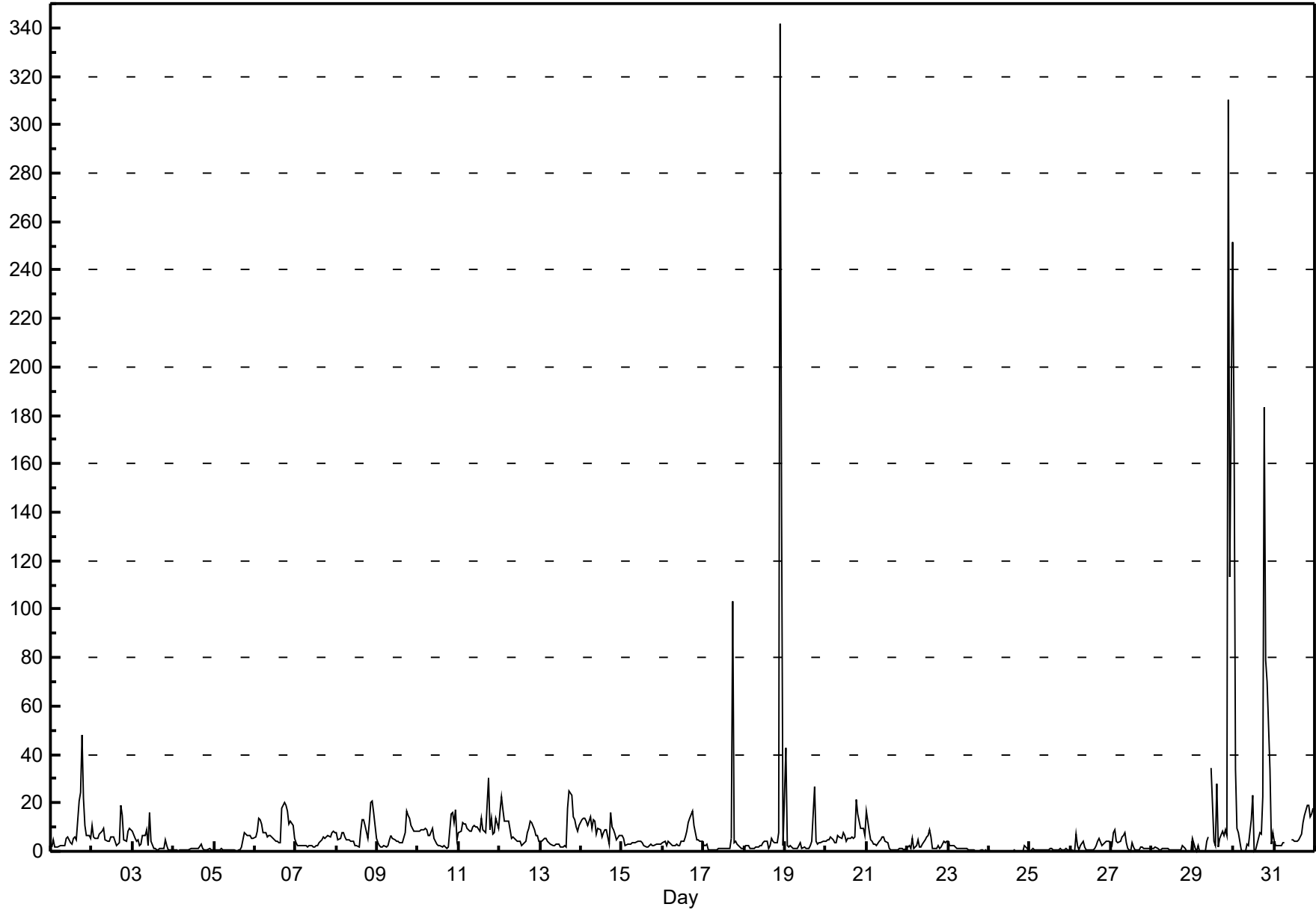


# Hourly Maximums

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

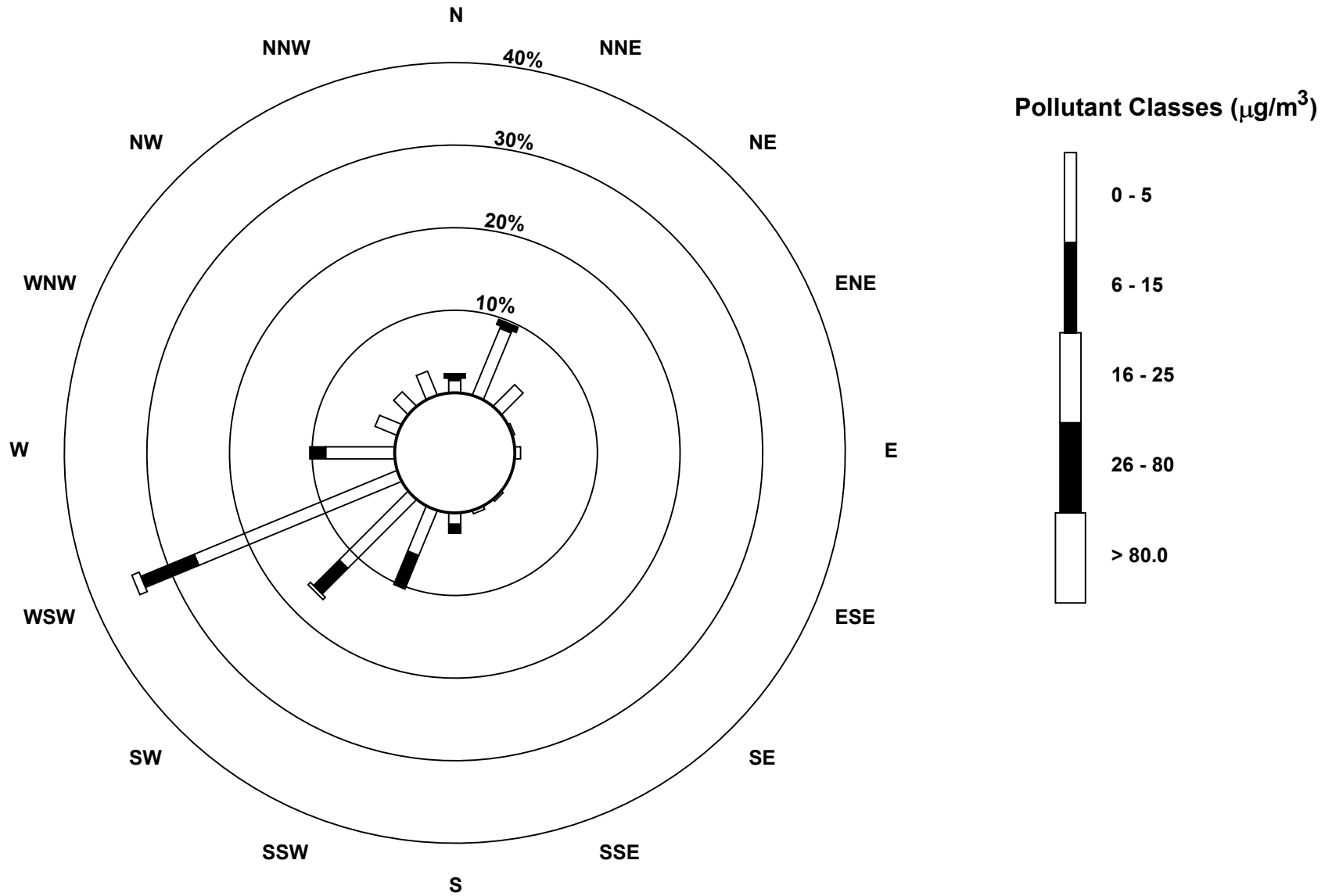
### Smoky Heights - December 2017

Maximum Value: 341.7 µg/m <sup>3</sup> on Dec 18 22:00		Maximum Daily Average: 34.8 µg/m <sup>3</sup> on Dec 29		Hours in Service: 744																							
Minimum Value: 0 µg/m <sup>3</sup> on Dec 24 06:00		Minimum Daily Average: 0.3 µg/m <sup>3</sup> on Dec 24		Hours of Data: 740																							
Maximum Diurnal Average: 27.4 µg/m <sup>3</sup> at hour 22		Minimum Diurnal Average: 2.9 µg/m <sup>3</sup> at hour 13		Hours of Missing Data: 4																							
Monthly Average: 7.32 µg/m <sup>3</sup>		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 1.2 Median = 3.4 Q <sub>3</sub> = 6.8 P <sub>90</sub> = 12.7 P <sub>99</sub> = 89.9		Hours of Calibration: 0																							
				Percent Operational Time: 99.5																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	2	5	2	2	2	2	2	3	3	5	6	4	3	6	6	5	21	24	48	22	10	6	6	5	8.3	47.8	
2-Dec	10	6	5	5	7	8	8	9	5	4	4	6	6	6	2	3	3	19	15	5	4	8	10	9	7.0	19.0	
3-Dec	9	5	4	5	2	3	7	7	9	2	16	4	1	1	0	0	1	1	1	5	3	0	0	0	3.7	16.1	
4-Dec	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	3	1	0	1	0	1	1	0	0.8	2.9	
5-Dec	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	2	5	8	7	6	7	5	6	2.2	7.5	
6-Dec	6	8	13	13	11	8	8	6	6	7	6	5	4	4	3	3	18	20	19	16	11	12	10	5	9.3	20.2	
7-Dec	3	2	2	2	2	2	3	2	3	3	2	2	2	2	3	5	6	6	6	6	6	8	9	8	3.9	8.5	
8-Dec	8	5	5	8	8	6	5	5	4	4	4	2	3	2	9	13	13	11	5	12	20	21	16	5	8.0	20.7	
9-Dec	4	3	2	2	2	2	5	6	6	5	4	4	4	3	4	8	16	15	14	11	9	9	8	8	6.0	16.3	
10-Dec	8	9	9	9	9	9	6	6	9	5	4	3	3	2	2	2	2	1	2	16	16	12	17	5	6.9	17.3	
11-Dec	8	8	12	11	11	9	8	8	10	10	10	10	9	13	9	8	8	31	9	14	7	8	13	9	10.6	30.5	
12-Dec	17	22	17	13	13	12	9	6	6	6	4	4	4	3	3	4	8	9	12	12	9	7	7	4	8.7	22.5	
13-Dec	4	4	5	6	4	3	3	2	2	3	3	3	2	2	2	2	18	25	23	14	13	10	8	11	7.2	24.7	
14-Dec	13	14	13	12	10	14	9	13	12	7	10	9	6	8	9	9	3	16	10	9	7	5	7	6	9.7	16.1	
15-Dec	6	5	2	3	3	3	4	3	4	4	4	4	3	2	2	2	3	3	2	2	3	3	3	3	3.2	6.3	
16-Dec	3	4	3	4	3	3	3	3	3	3	2	4	4	6	9	12	13	17	10	8	5	5	4	4	5.6	16.6	
17-Dec	2	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	6	104	3	4	3	2	1	1	5.9	103.5	
18-Dec	1	2	3	1	1	1	1	2	2	2	2	3	4	4	1	2	6	4	3	4	8	342	140	3	22.6	341.7	
19-Dec	42	3	2	2	2	1	1	1	2	4	1	2	1	1	1	3	4	27	4	3	4	3	4	4	5.1	42.5	
20-Dec	4	5	5	6	5	4	3	7	6	5	8	7	4	5	6	6	5	6	21	16	10	10	9	7	7.0	21.5	
21-Dec	17	9	5	4	3	3	2	4	5	6	6	4	3	1	1	1	1	1	1	1	1	1	1	1	3.3	16.6	
22-Dec	2	2	1	6	1	2	5	2	2	3	5	6	6	9	6	1	1	1	2	1	2	4	3	4	3.3	9.0	
23-Dec	4	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	0	0	0	1.1	4.1	
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0.3	2.4	
25-Dec	0	0	1	1	1	1	0	0	0	0	0	1	1	1	0	0	1	1	1	0	0	1	1	0	0.6	1.4	
26-Dec	0	0	0	7	2	1	2	4	2	0	0	0	0	1	1	3	4	5	3	3	4	4	4	4	2.4	7.3	
27-Dec	3	8	9	4	3	4	6	6	8	4	1	0	3	2	0	1	1	2	2	1	1	1	1	1	3.0	8.8	
28-Dec	1	1	2	1	1	0	1	1	1	1	1	1	0	0	0	1	0	3	1	0	0	0	0	0	0.8	2.6	
29-Dec	5	1	0	2	0	0	0	0	4	6	N	34	4	2	28	2	5	8	7	9	7	310	114	252	34.8	310.1	
30-Dec	175	34	9	8	0	0	0	0	3	2	13	23	0	0	3	8	7	22	183	79	70	34	3	8	28.6	183.4	
31-Dec	4	3	3	2	3	4	3	N	N	N	5	5	4	4	5	6	7	12	15	19	19	14	15	18	8.0	19.2	
		11.7	5.6	4.5	4.6	3.7	3.5	3.4	3.6	4.0	3.5	4.2	4.9	2.9	3.0	3.8	3.5	5.7	12.8	14.0	9.8	8.5	27.4	13.7	12.6	Diurnal Average	
		175.1	33.9	17.3	13.2	12.7	14.4	9.2	13.2	12.4	10.5	16.1	34.2	8.5	13.4	27.8	12.9	21.0	103.5	183.4	79.1	70.1	341.7	139.7	251.5	Diurnal Maximum	
N - Not Valid																											



**Pollutant Rose**

**Particulate Matter 2.5 (PM<sub>2.5</sub>) -  $\mu\text{g}/\text{m}^3$**   
**Smoky Heights - December 2017**



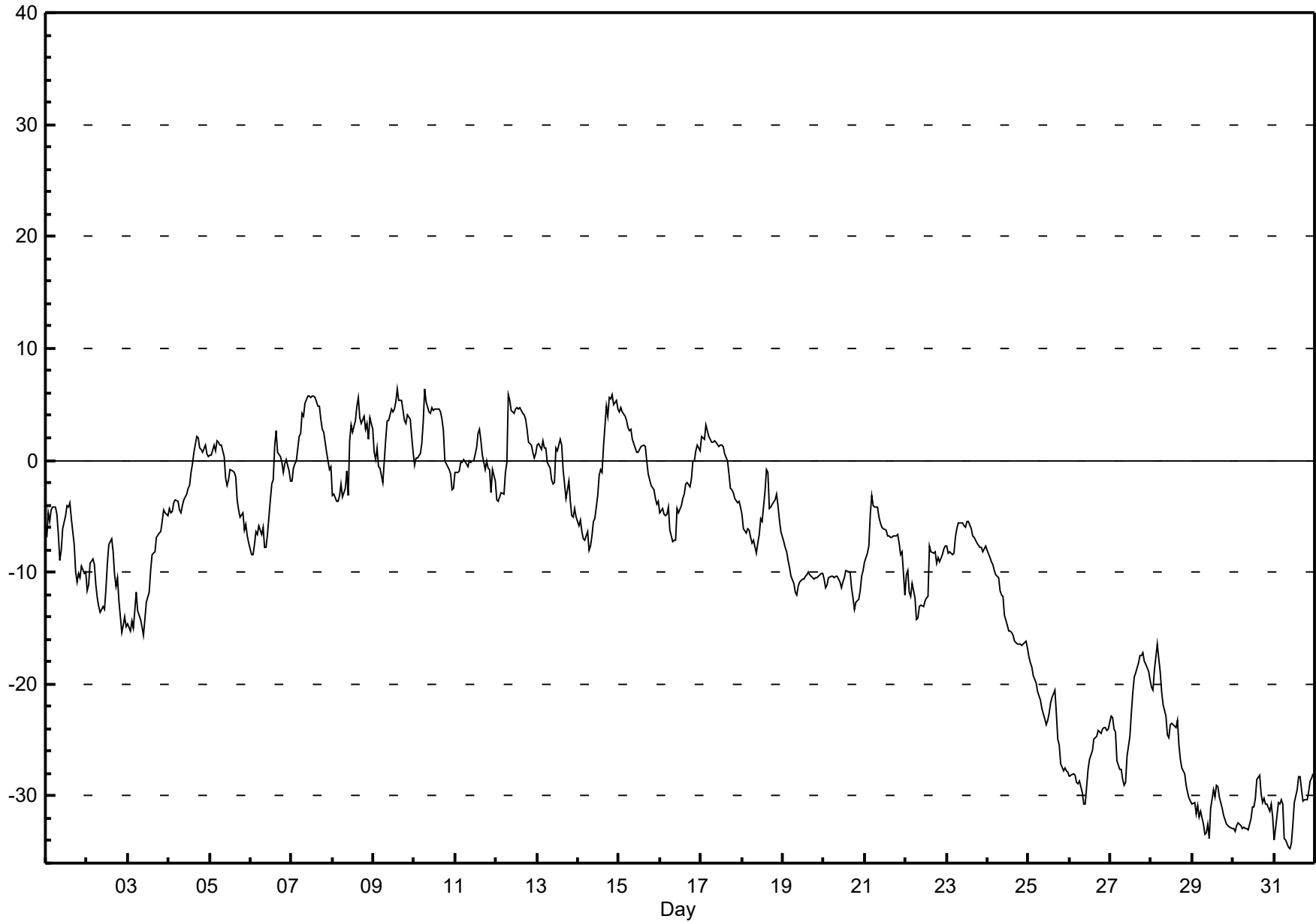
# Hourly Averages

External Temperature (ET) - °C  
Smoky Heights - December 2017

Maximum Value: 6.4 °C on Dec 10 07:00		Maximum Daily Average: 2.8 °C on Dec 7		Hours in Service: 744																						
Minimum Value: -35 °C on Dec 31 10:00		Minimum Daily Average: -31.5 °C on Dec 29		Hours of Data: 744																						
Maximum Diurnal Average: -7.2 °C at hour 15		Minimum Diurnal Average: -10.3 °C at hour 10		Hours of Missing Data: 0																						
Monthly Average: -9.19 °C		Percentiles: P <sub>1</sub> = -33.4 P <sub>10</sub> = -28.9 Q <sub>1</sub> = -14.8 Median = -6.5 Q <sub>3</sub> = -0.4 P <sub>90</sub> = 2.7 P <sub>99</sub> = 5.7		Hours of Calibration: 0																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	-7	-5	-5	-4	-4	-4	-5	-7	-9	-8	-6	-5	-4	-4	-4	-5	-8	-10	-11	-10	-10	-9	-10	-10	-6.9	-3.7
2-Dec	-12	-11	-9	-9	-9	-11	-12	-13	-14	-13	-13	-12	-9	-8	-7	-8	-10	-11	-11	-12	-15	-15	-14	-15	-11.4	-7.0
3-Dec	-15	-15	-14	-15	-13	-12	-13	-14	-15	-16	-14	-13	-12	-10	-8	-8	-8	-7	-7	-6	-6	-4	-5	-5	-10.7	-4.5
4-Dec	-4	-5	-5	-4	-3	-4	-4	-5	-4	-4	-3	-2	-2	-1	0	1	2	2	1	1	1	1	0	-1.7	2.1	
5-Dec	0	0	1	1	2	2	1	1	0	-2	-2	-2	-1	-1	-1	-2	-3	-4	-5	-5	-6	-6	-7	-7	-1.9	1.7
6-Dec	-8	-8	-7	-6	-7	-6	-7	-6	-8	-8	-7	-4	-2	-2	1	3	1	0	0	-1	0	0	-1	-2	-3.5	2.7
7-Dec	-2	-1	0	0	2	2	4	4	5	6	6	6	6	6	6	5	5	4	3	2	1	0	-1	-1	2.8	5.8
8-Dec	-3	-3	-4	-4	-3	-2	-3	-2	-1	-3	2	3	3	4	5	6	4	3	4	3	3	2	4	3	0.8	5.6
9-Dec	1	0	1	-1	-1	-2	0	2	4	4	5	4	5	5	6	5	5	4	4	3	4	4	2	1	2.7	6.3
10-Dec	0	0	0	1	1	3	6	5	4	4	5	4	5	5	5	4	4	3	0	-1	-1	-1	-3	-3	2.1	6.4
11-Dec	-1	-1	-1	0	0	0	0	-1	0	0	0	0	1	2	3	2	0	-1	0	-1	-1	-3	-1	-2	-0.2	2.7
12-Dec	-4	-4	-3	-3	-3	-1	0	6	5	4	4	5	5	5	5	4	4	4	3	2	1	1	0	1	1.7	5.9
13-Dec	1	1	1	2	1	1	0	-1	-2	-2	-2	1	1	2	1	-1	-2	-3	-2	-4	-5	-5	-4	-5	-1.1	1.8
14-Dec	-6	-5	-6	-7	-7	-6	-8	-8	-7	-5	-5	-3	-1	-1	-1	1	5	4	6	6	6	5	5	5	-1.5	5.8
15-Dec	4	5	4	4	4	3	3	3	2	1	1	1	1	1	1	1	0	-1	-2	-2	-3	-3	-4	-4	0.8	4.8
16-Dec	-5	-4	-5	-5	-5	-4	-6	-7	-7	-7	-4	-5	-4	-3	-3	-2	-2	-2	-2	0	0	1	1	1	-3.3	1.3
17-Dec	2	2	2	3	2	2	2	2	2	2	1	1	1	1	1	0	-1	-3	-3	-3	-3	-4	-4	-4	0.1	3.1
18-Dec	-5	-6	-6	-6	-6	-7	-7	-7	-8	-7	-7	-5	-5	-3	-1	-1	-4	-4	-4	-3	-3	-4	-5	-6	-5.1	-0.9
19-Dec	-7	-8	-8	-9	-10	-10	-11	-12	-12	-11	-11	-11	-11	-10	-10	-10	-10	-10	-11	-11	-10	-10	-10	-10	-10.2	-7.3
20-Dec	-11	-11	-11	-11	-10	-10	-10	-10	-10	-11	-11	-11	-10	-10	-10	-10	-11	-12	-13	-13	-12	-12	-10	-10	-11.0	-9.8
21-Dec	-9	-8	-8	-5	-3	-4	-4	-4	-5	-6	-6	-6	-6	-7	-7	-7	-7	-7	-7	-7	-7	-8	-8	-12	-6.6	-3.2
22-Dec	-10	-10	-12	-12	-11	-12	-14	-14	-13	-13	-13	-13	-12	-12	-8	-8	-8	-8	-9	-9	-9	-8	-8	-8	-10.6	-7.7
23-Dec	-8	-8	-8	-8	-8	-7	-6	-6	-6	-6	-6	-6	-5	-5	-6	-7	-7	-7	-7	-8	-8	-8	-8	-8	-7.0	-5.4
24-Dec	-8	-9	-9	-9	-10	-10	-11	-12	-12	-12	-14	-15	-15	-15	-16	-16	-16	-16	-16	-16	-17	-16	-16	-17	-13.5	-8.1
25-Dec	-18	-18	-19	-19	-20	-21	-21	-21	-22	-23	-24	-23	-23	-22	-21	-21	-23	-25	-25	-27	-28	-27	-28	-28	-22.7	-17.6
26-Dec	-28	-28	-28	-28	-29	-29	-29	-30	-31	-31	-29	-28	-27	-26	-25	-25	-25	-24	-24	-24	-24	-24	-24	-24	-26.8	-23.9
27-Dec	-23	-23	-24	-24	-27	-28	-28	-29	-29	-29	-27	-25	-23	-21	-19	-19	-18	-17	-17	-17	-18	-18	-19	-20	-22.5	-17.2
28-Dec	-20	-21	-19	-16	-18	-19	-21	-22	-23	-24	-25	-24	-24	-24	-24	-23	-25	-27	-28	-28	-29	-30	-30	-30	-23.8	-16.4
29-Dec	-31	-31	-32	-31	-32	-31	-33	-33	-33	-33	-34	-31	-29	-30	-29	-29	-30	-31	-32	-32	-32	-33	-33	-33	-31.5	-29.0
30-Dec	-33	-33	-33	-32	-33	-33	-33	-33	-33	-33	-32	-31	-31	-30	-29	-28	-30	-31	-30	-31	-31	-31	-31	-32	-31.5	-28.2
31-Dec	-34	-33	-31	-31	-30	-31	-34	-34	-35	-35	-34	-33	-31	-29	-28	-28	-29	-30	-30	-30	-30	-29	-28	-28	-31.0	-28.0
		-9.7	-9.7	-9.6	-9.4	-9.4	-9.4	-9.8	-9.9	-10.2	-10.3	-9.9	-9.0	-8.4	-7.9	-7.2	-7.3	-8.0	-8.7	-8.9	-9.2	-9.4	-9.6	-9.6	-10.1	Diurnal Average
		4.3	4.8	4.3	4.0	3.5	3.4	6.4	5.9	5.4	5.8	5.7	5.6	5.7	5.7	6.3	5.6	5.3	4.5	5.7	5.5	5.8	5.0	5.3	4.5	Diurnal Maximum

**Hourly Averages**

**External Temperature (ET) - °C**  
**Smoky Heights - December 2017**





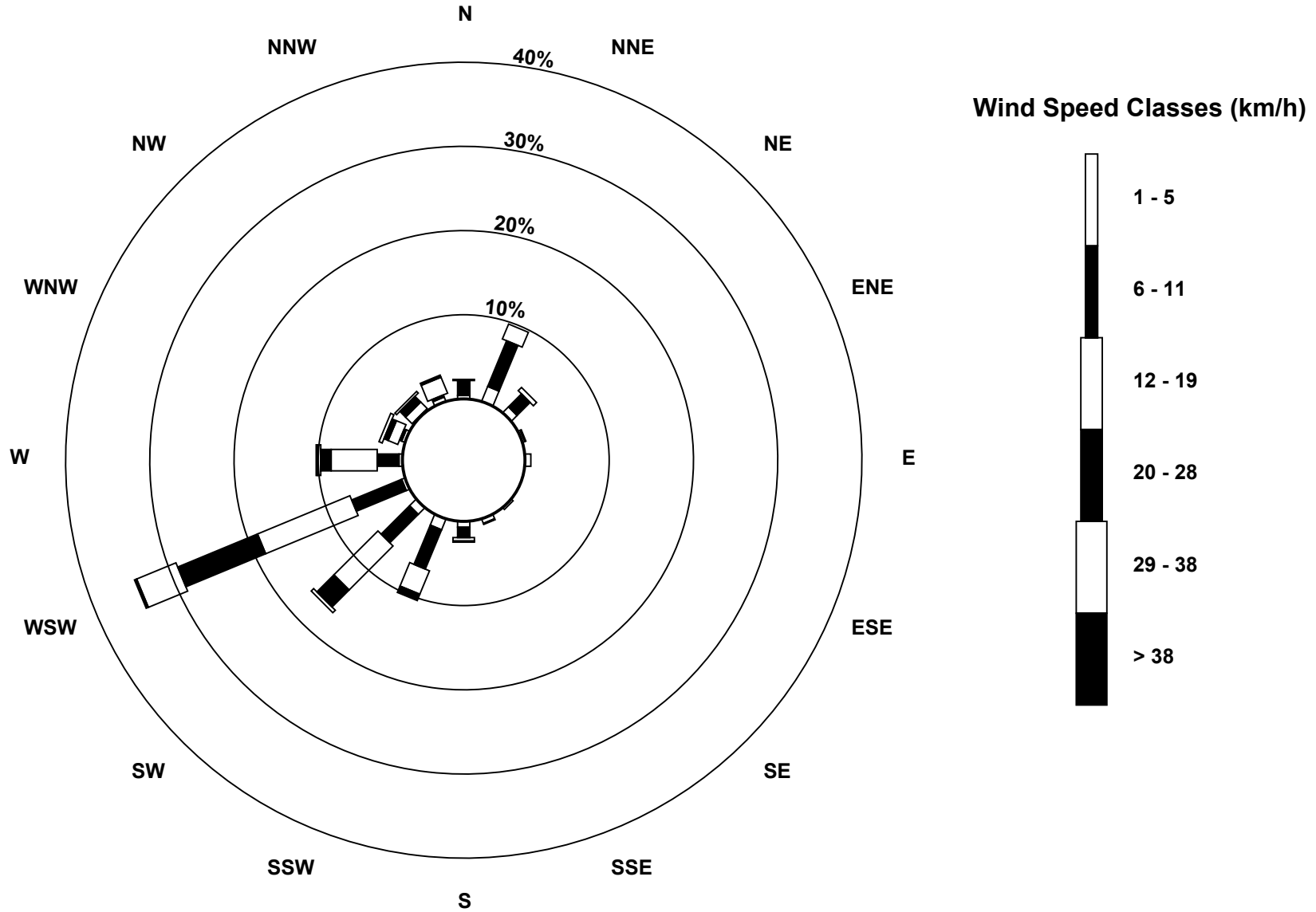
## Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Smoky Heights - December 2017

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	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	14	12	12	15	15	17	22	23	33	31	30	34	31	28	27	22	23	20	19	15	14	14	17	19	19.7	33.7
Dir	269	252	262	253	243	282	296	296	306	308	302	291	294	319	322	323	316	308	304	300	278	258	283	318	296.2	291.4
24 Spd	21	13	11	14	13	14	13	5	4	3	14	11	10	9	9	8	9	7	6	5	4	3	3	9	7.0	20.9
Dir	307	317	322	332	342	345	336	41	80	83	50	55	38	36	41	34	29	28	25	23	32	283	333	35	5.2	307.1
25 Spd	14	14	15	17	16	17	14	19	14	6	0	2	7	4	2	3	4	5	4	N	4	1	4	N	7.1	18.7
Dir	28	24	30	28	38	40	34	28	33	54	243	267	262	290	327	11	20	28	38	N	357	215	278	N	25.0	28.3
26 Spd	N	8	10	8	6	7	N	5	7	7	8	5	7	5	6	7	10	5	4	4	4	4	5	5	3.9	9.7
Dir	N	18	16	14	17	20	N	39	21	24	26	41	45	37	43	45	18	30	149	209	195	191	209	234	28.6	16.1
27 Spd	6	6	5	3	2	6	9	8	13	12	12	13	11	10	14	18	19	21	18	17	17	18	19	20	12.0	20.9
Dir	243	279	284	329	225	238	263	261	262	264	251	243	226	212	231	244	248	242	250	255	255	254	253	253	249.9	241.6
28 Spd	18	19	12	25	21	17	14	4	10	8	7	6	9	8	6	2	8	7	7	8	5	7	6	4	6.5	25.1
Dir	246	252	288	330	335	340	2	24	43	41	27	43	39	45	70	84	7	14	359	355	330	351	16	6	348.2	330.1
29 Spd	6	N	N	5	6	6	4	N	N	5	4	5	5	3	7	8	9	11	11	10	10	12	11	10	7.1	12.2
Dir	335	N	N	352	6	19	16	N	N	23	75	16	31	86	26	24	16	18	10	9	8	14	11	8	15.0	14.3
30 Spd	11	11	12	12	12	12	13	12	11	9	7	7	4	1	2	4	6	8	9	7	7	6	4	4	6.6	13.4
Dir	12	20	15	16	21	16	13	15	21	20	31	29	79	192	32	31	21	9	15	8	17	235	204	168	18.4	12.6
31 Spd	5	6	10	9	8	N	N	2	N	4	6	7	7	8	8	6	8	9	10	10	12	14	11	12	7.1	13.6
Dir	216	240	246	249	239	N	N	165	N	169	184	185	182	181	213	226	192	214	226	226	257	267	254	249	226.6	267.4
Spd	9.5	9.7	10.0	9.6	10.7	11.0	11.7	11.7	12.1	10.4	10.8	11.4	10.1	9.7	11.2	10.7	11.0	11.0	11.2	11.9	11.2	11.4	10.6	9.2	Diurnal Average	
Dir	249.0	249.2	251.5	254.1	255.3	255.2	253.7	251.9	253.3	254.8	251.0	249.4	244.1	243.2	250.6	254.2	260.2	255.5	252.6	252.3	252.5	249.2	252.8	246.6	Diurnal Maximum	
Spd	30.1	29.5	31.3	30.5	35.7	35.0	36.6	35.8	36.5	37.9	36.9	33.7	33.1	35.8	33.1	29.7	42.2	38.8	35.9	32.4	35.3	41.5	36.8	29.8	Diurnal Maximum	
Dir	252.4	251.0	256.2	229.6	268.6	267.2	246.6	254.2	253.7	256.6	257.3	291.4	245.5	249.6	252.6	250.6	259.9	247.6	242.7	246.0	249.8	254.7	255.0	254.0	Diurnal Maximum	
Maximum Speed Value: 42 km/h on Dec 4 17:00		Minimum Speed Value: 0 km/h on Dec 25 11:00		Hours in Service: 744																						
Maximum Daily Speed Average: 25.5 km/h on Dec 17		Minimum Daily Speed Average: 3.9 km/h on Dec 26		Hours of Data: 733																						
Maximum Diurnal Speed Average: 12.1 km/h at hour 9		Minimum Diurnal Speed Average: 9.2 km/h at hour 24		Hours of Missing Data: 11																						
Monthly Average Velocity: 10.72 km/h 251.87 deg				Speed Percentiles: P <sub>1</sub> = 2.4 P <sub>10</sub> = 5.5 Q <sub>1</sub> = 8.7 Median = 13.4 Q <sub>3</sub> = 19.1 P <sub>90</sub> = 25.8 P <sub>99</sub> = 36.4				Percent Operational Time: 98.5																		
All monthly, daily, and diurnal averages have been calculated using vector methods																										
N - Not Valid																										
Frequency Distribution																										
		Speed Range (km/h)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	7	32	19	0	0	0	58																			
NorthEast	10	42	14	0	0	0	66																			
East	7	1	0	0	0	0	8																			
SouthEast	3	1	0	0	0	0	4																			
South	9	31	14	5	0	0	59																			
SouthWest	12	76	108	53	18	0	267																			
West	4	39	90	63	29	3	228																			
NorthWest	4	3	18	14	4	0	43																			
Total	56	225	263	135	51	3	733																			

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Smoky Heights - December 2017**





# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

## Smoky Heights - December 2017

Maximum Speed: 42 km/h on Dec 4 17:00	Maximum Daily Speed Average: 26.2 km/h on Dec 17	Hours in Service: 744
Minimum Speed: 2 km/h on Dec 25 22:00	Minimum Daily Speed Average: 6.5 km/h on Dec 26	Hours of Data: 733
Maximum Diurnal Speed Average: 17.3 km/h at hour 9	Minimum Diurnal Speed Average: 12.8 km/h at hour 24	Hours of Missing Data: 11
Monthly Average Speed: 14.94 km/h	Percentiles: P <sub>1</sub> = 3.5 P <sub>10</sub> = 6.3 Q <sub>1</sub> = 9.0 Median = 13.6 Q <sub>3</sub> = 19.3 P <sub>90</sub> = 25.7 P <sub>99</sub> = 36.5	Percent Operational Time: 98.5

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-Dec	10	8	11	9	7	7	8	9	8	7	6	6	10	13	8	7	4	6	8	10	14	10	4	6	8.1	14.1																						
2-Dec	11	12	14	12	14	10	11	11	7	6	8	11	11	7	10	11	10	10	11	9	9	12	11	11	10.3	14.2																						
3-Dec	11	11	14	9	12	9	6	5	5	5	6	14	13	15	22	22	20	19	17	17	19	25	24	18	14.1	25.1																						
4-Dec	15	13	14	22	26	24	22	15	15	16	18	19	18	20	23	23	42	39	36	32	35	42	37	30	24.9	42.3																						
5-Dec	30	30	31	28	36	35	33	27	22	18	16	17	15	19	23	20	16	15	16	16	10	11	10	11	21.0	35.7																						
6-Dec	8	11	16	12	14	19	14	11	11	13	12	17	15	7	18	18	18	18	17	19	21	20	19	14	15.1	20.8																						
7-Dec	9	9	8	15	21	21	33	36	36	38	37	33	21	30	23	17	20	16	9	17	9	12	10	9	20.4	37.9																						
8-Dec	11	9	12	8	12	15	11	13	22	19	22	16	15	18	32	30	22	26	25	25	21	18	23	23	18.7	31.7																						
9-Dec	23	21	22	20	18	20	19	21	26	18	26	24	18	15	25	19	14	16	17	16	16	13	12	11	18.7	26.3																						
10-Dec	6	9	10	7	10	25	37	33	34	32	34	28	28	26	21	23	22	17	15	14	13	5	6	11	19.3	36.7																						
11-Dec	12	11	13	10	11	12	8	9	11	10	10	12	13	13	15	12	8	11	13	7	11	12	11	10	11.0	15.1																						
12-Dec	7	8	8	8	9	15	17	34	35	30	28	27	26	24	21	21	21	20	17	19	18	15	13	13	18.9	34.8																						
13-Dec	16	18	19	20	20	19	21	19	17	16	18	18	11	16	14	13	14	15	14	15	10	15	12	9	15.8	20.7																						
14-Dec	7	8	8	11	10	10	10	16	16	14	11	14	12	12	11	19	24	25	33	29	30	21	22	15	16.2	33.4																						
15-Dec	18	21	25	27	25	24	30	34	30	26	27	27	25	26	27	26	22	22	25	22	23	23	22	24	25.0	34.5																						
16-Dec	22	23	20	19	21	20	17	19	17	17	18	16	17	14	14	17	21	19	21	23	23	20	18	17	18.9	23.4																						
17-Dec	25	27	23	31	29	26	28	30	28	30	30	31	33	36	33	27	20	18	21	22	21	19	20	18	26.2	35.9																						
18-Dec	19	21	24	23	22	19	18	19	14	15	9	9	12	13	17	12	12	9	8	8	9	8	8	11	14.2	23.9																						
19-Dec	9	11	12	11	10	11	10	9	7	8	5	7	8	10	8	4	4	4	5	4	6	6	7	8	7.7	11.8																						
20-Dec	12	14	17	16	18	19	18	18	18	15	13	14	12	13	14	12	9	11	12	14	10	12	12	5	13.7	18.8																						
21-Dec	8	9	7	15	22	19	15	18	14	13	13	16	16	17	15	14	14	13	12	16	16	15	16	10	14.4	22.4																						
22-Dec	15	9	6	4	12	9	6	13	15	16	13	14	13	13	16	23	22	16	16	15	16	15	10	12	13.3	23.4																						
23-Dec	15	12	12	15	16	18	22	23	33	31	30	34	31	28	27	22	23	20	19	16	14	14	19	19	21.4	33.8																						
24-Dec	21	13	11	14	13	14	14	6	4	5	14	11	10	9	9	8	9	7	7	5	4	3	5	9	9.4	21.1																						
25-Dec	14	14	15	17	17	17	14	19	14	6	2	2	8	6	2	3	4	5	4	N	5	2	6	N	8.9	18.8																						
26-Dec	N	8	10	8	7	7	N	6	8	7	8	5	7	6	6	7	10	6	5	4	5	5	5	5	6.5	9.8																						
27-Dec	6	7	7	7	4	6	9	8	13	12	12	13	11	10	14	18	19	21	18	17	17	18	19	20	12.8	21.0																						
28-Dec	18	19	14	25	21	17	14	5	10	8	7	6	9	8	7	5	8	7	8	9	9	7	6	7	10.5	25.3																						
29-Dec	6	N	N	10	7	6	6	N	N	5	5	5	5	4	7	8	9	11	11	10	10	12	11	10	7.9	12.2																						
30-Dec	11	11	12	12	12	12	13	12	11	9	7	7	5	4	3	4	6	8	9	7	7	12	5	8	8.6	13.4																						
31-Dec	5	6	10	9	8	N	N	4	N	7	7	7	7	8	9	7	8	10	10	10	12	14	11	12	8.5	13.6																						
																								13.3	13.5	14.2	14.7	15.6	16.2	16.7	16.6	17.3	15.3	15.2	15.4	14.7	14.7	15.9	15.2	15.3	14.9	14.7	14.9	14.2	14.1	13.3	12.8	Diurnal Average
																								30.1	29.5	31.4	30.5	35.7	35.1	36.7	35.8	36.5	37.9	36.9	33.8	33.2	35.9	33.1	29.8	42.3	39.2	36.0	32.4	35.4	41.5	36.8	29.8	Diurnal Maximum

N - Not Valid

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

## Hourly Standard Deviations

Wind Direction (WD) - deg  
Smoky Heights - December 2017

Maximum Value: 85.7 deg on Dec 25 11:00	Hours in Service: 744
Minimum Value: 1.8 deg on Dec 16 05:00	Hours of Data: 733
Percentiles: P <sub>1</sub> = 2.1 P <sub>10</sub> = 3.1 Q <sub>1</sub> = 4.5 Median = 7.4 Q <sub>3</sub> = 12.8 P <sub>90</sub> = 24.4 P <sub>99</sub> = 57.4	Hours of Missing Data: 11
	Hours of Calibration: 0
	Percent Operational Time: 98.5

Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Dec	16	11	8	8	16	14	15	13	12	36	29	34	29	14	24	15	49	24	33	15	16	24	48	39	49.1
2-Dec	9	7	17	12	9	7	5	7	14	19	10	6	12	22	12	7	5	17	7	22	13	24	8	8	24.5
3-Dec	8	11	4	10	8	28	23	18	26	50	25	13	6	7	3	2	3	2	11	3	4	5	3	10	49.5
4-Dec	5	15	5	6	6	3	4	5	2	6	3	4	5	10	15	7	4	8	4	3	3	3	2	2	14.9
5-Dec	2	4	2	6	3	3	3	3	4	5	7	3	5	7	2	2	4	3	4	4	29	35	10	15	35.0
6-Dec	11	8	5	14	5	3	7	15	8	8	11	3	40	30	4	5	3	3	3	7	4	7	4	7	40.1
7-Dec	22	21	14	16	10	22	2	2	2	2	2	3	17	3	2	6	3	34	17	9	12	11	10	14	34.0
8-Dec	7	22	9	29	31	11	14	13	8	10	4	11	11	9	8	3	7	3	9	3	4	6	6	9	31.3
9-Dec	5	4	4	3	6	4	9	4	4	10	5	6	6	8	5	6	11	11	6	5	4	10	15	19	18.8
10-Dec	56	24	23	32	24	9	3	8	6	4	4	3	2	6	3	3	4	7	10	11	41	25	24	10	56.5
11-Dec	10	10	10	15	12	14	7	12	4	5	6	7	11	17	4	15	9	14	8	64	13	8	12	14	64.2
12-Dec	33	14	16	20	16	13	22	5	5	4	4	3	5	7	5	4	6	4	15	8	4	7	3	8	32.7
13-Dec	8	5	3	5	3	7	3	6	7	5	6	11	12	15	9	9	6	5	10	6	25	14	26	10	26.3
14-Dec	11	7	4	10	21	10	10	8	9	11	6	6	10	13	18	32	4	4	5	2	3	5	9	17	32.1
15-Dec	6	7	4	4	5	3	5	3	3	5	4	5	3	2	3	2	2	2	3	3	3	2	3	4	7.0
16-Dec	5	3	2	2	2	6	4	2	3	3	4	7	11	5	5	5	5	3	3	4	8	7	17	11	16.9
17-Dec	4	3	6	4	3	6	3	3	4	4	3	3	5	3	3	4	5	7	3	3	4	3	2	7	7.5
18-Dec	3	3	3	3	3	3	3	3	3	8	15	9	11	44	4	18	9	18	19	17	19	10	8	6	44.2
19-Dec	8	5	4	8	6	4	4	4	6	8	10	12	6	6	13	25	27	34	32	31	33	34	20	24	34.5
20-Dec	14	10	7	7	9	7	6	7	8	7	3	5	8	8	4	11	7	14	3	20	11	5	7	21	20.7
21-Dec	24	8	24	15	4	4	10	8	6	6	6	6	7	6	7	6	7	7	11	6	5	5	3	16	23.9
22-Dec	12	18	31	29	7	14	17	8	5	8	6	9	7	11	11	6	6	7	10	6	11	9	14	5	31.0
23-Dec	10	13	7	5	9	20	4	4	4	5	4	4	7	7	6	6	5	6	5	8	8	4	22	10	22.0
24-Dec	8	13	12	10	11	10	19	12	20	63	7	12	8	10	9	7	7	6	9	9	31	47	58	8	62.8
25-Dec	5	6	5	4	9	7	7	4	8	10	86	29	22	34	24	14	8	20	16	N	55	59	48	N	85.7
26-Dec	N	5	6	14	11	6	N	22	11	7	7	12	7	22	14	10	9	41	32	19	18	33	9	13	40.9
27-Dec	6	21	29	38	52	18	4	11	3	5	9	8	6	6	10	7	4	5	6	3	3	4	4	4	51.6
28-Dec	4	4	36	7	6	7	10	34	12	8	12	8	9	10	24	61	7	10	9	6	40	11	8	40	60.7
29-Dec	5	N	N	41	16	4	34	N	N	6	33	19	9	38	6	7	7	5	5	5	9	4	6	7	41.3
30-Dec	6	5	4	6	4	4	4	4	4	5	10	7	33	46	56	12	10	10	6	21	22	82	38	42	81.7
31-Dec	18	23	6	8	10	N	N	49	N	38	9	7	7	10	26	25	8	12	6	12	15	4	10	6	49.0
	56.5	24.1	36.1	41.3	51.6	28.2	33.9	49.0	26.4	62.8	85.7	34.1	40.1	46.4	55.6	60.7	49.1	40.9	32.8	64.2	54.8	81.7	58.0	42.2	

N - Not Valid

PAZA

## Beaverlodge Station

Monthly Summary Tables, Graphs and  
Roses

## Hourly Averages

## Sulphur Dioxide (SO<sub>2</sub>) - ppb Beaverlodge - December 2017

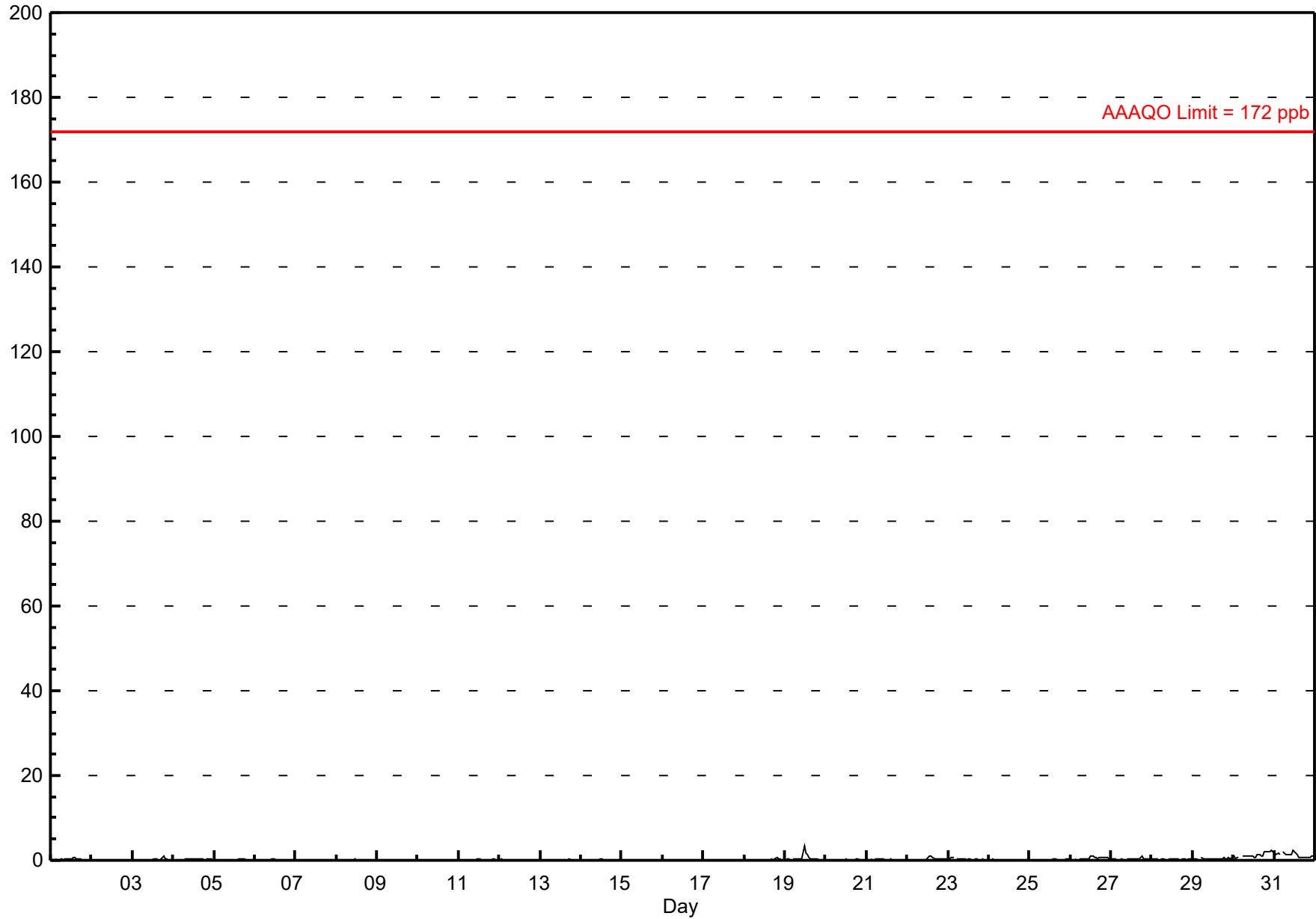
Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 3.3 ppb on Dec 19 12:00	Maximum Daily Average: 1.3 ppb on Dec 30		Hours of Data:	710
Minimum Value: 0 ppb on Dec 8 20:00	Minimum Daily Average: 0.0 ppb on Dec 9		Hours of Missing Data:	34
Maximum Diurnal Average: 0.4 ppb at hour 12	Minimum Diurnal Average: 0.2 ppb at hour 2		Hours of Calibration:	34
Monthly Average: 0.23 ppb	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.5 P <sub>99</sub> = 2.0		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0.2	0.6
2-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
3-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.2	0.9
4-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
5-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
6-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
7-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
8-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3
9-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
10-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1
11-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
12-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
13-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
14-Dec	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	0.2
15-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
16-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
17-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
18-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.1	0.5
19-Dec	0	0	0	0	A	0	0	0	0	0	0	3	2	1	1	0	0	0	0	0	0	0	0	0	0.5	3.3
20-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
21-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
22-Dec	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	1.0
23-Dec	0	0	1	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7
24-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
26-Dec	0	0	0	0	A	0	0	0	0	0	0	0	1	1	1	1	0	1	1	1	1	1	1	1	0.4	1.0
27-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0.3	0.9
28-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.3	0.5
29-Dec	0	0	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0.4	0.7
30-Dec	1	0	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	1.3	2.3
31-Dec	2	1	2	1	A	2	2	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1.2	2.4
	0.2	0.2	0.2	0.2	--	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	Diurnal Average	
	1.7	1.2	1.6	1.4	--	2.1	1.8	1.4	1.4	1.5	1.5	3.3	2.0	1.4	1.2	1.3	1.1	1.2	2.2	2.1	2.0	2.1	2.3	2.0	Diurnal Maximum	

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

### Hourly Averages

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Beaverlodge - December 2017



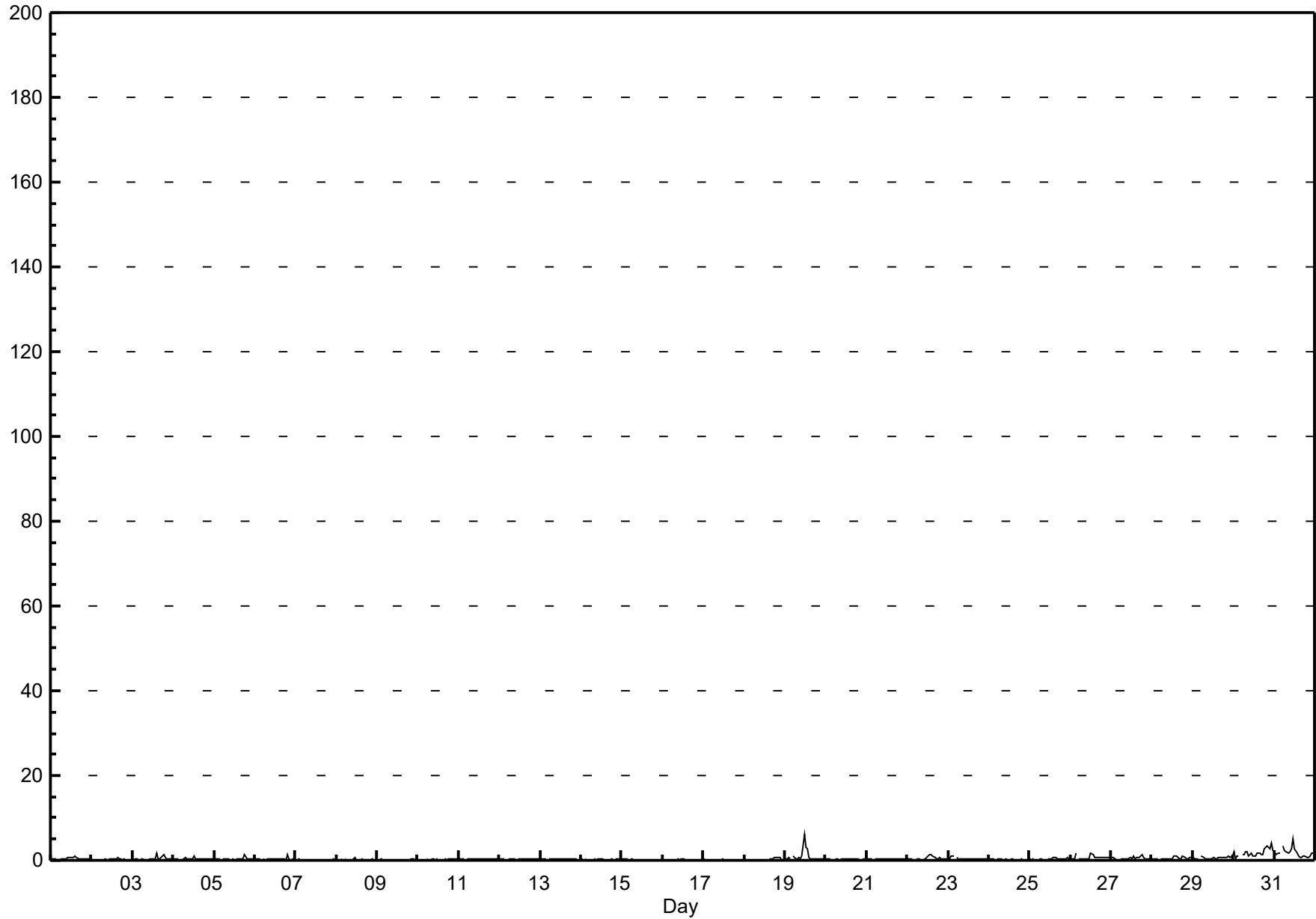
# Hourly Maximums

## Sulphur Dioxide (SO<sub>2</sub>) - ppb Beaverlodge - December 2017

Maximum Value: 6.0 ppb on Dec 19 12:00		Maximum Daily Average: 1.8 ppb on Dec 30		Hours in Service: 744																						
Minimum Value: 0 ppb on Dec 8 20:00		Minimum Daily Average: 0.1 ppb on Dec 7		Hours of Data: 710																						
Maximum Diurnal Average: 0.7 ppb at hour 12		Minimum Diurnal Average: 0.3 ppb at hour 2		Hours of Missing Data: 34																						
Monthly Average: 0.40 ppb		Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.2 Median = 0.2 Q <sub>3</sub> = 0.4 P <sub>90</sub> = 0.8 P <sub>99</sub> = 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-Dec	0	0	0	0	A	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0.4	0.9
2-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0.2	0.6
3-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	2	0	0	1	1	1	0	0	0	0	0.4	1.7
4-Dec	0	0	0	0	A	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.3	1.1
5-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.3	1.3
6-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.3	1.2
7-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
8-Dec	0	0	0	0	A	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6
9-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
10-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
11-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
12-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
13-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
14-Dec	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	0.4
15-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
16-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
17-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
18-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0.2	0.8
19-Dec	0	0	1	0	A	1	0	0	1	0	1	6	3	3	1	0	0	0	0	0	0	0	0	0	0.9	6.0
20-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
21-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
22-Dec	0	0	0	0	A	0	0	0	0	0	0	1	1	1	1	1	1	0	0	1	0	0	0	0	0.4	1.2
23-Dec	0	0	1	1	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.9
24-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0.3	0.8
26-Dec	0	0	0	2	A	0	0	0	0	0	0	2	1	1	1	1	1	1	1	1	1	1	1	1	0.6	1.7
27-Dec	1	1	0	0	A	0	0	0	0	0	0	1	0	1	0	1	1	1	1	1	1	0	0	0	0.5	1.2
28-Dec	0	0	0	0	A	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	0	0	1	1	0.5	1.1
29-Dec	1	0	0	0	A	1	1	0	0	0	0	1	0	0	1	1	1	1	1	1	1	1	1	1	0.6	1.0
30-Dec	2	0	1	1	A	1	1	2	2	1	2	1	1	2	2	1	1	3	3	3	4	3	4	2	1.8	4.1
31-Dec	2	1	2	2	A	4	2	2	2	2	3	5	3	2	1	1	1	1	1	1	1	1	2	2	1.8	5.1
		0.3	0.3	0.3	0.4	--	0.4	0.3	0.3	0.3	0.3	0.4	0.7	0.6	0.5	0.5	0.4	0.3	0.4	0.5	0.4	0.4	0.4	0.4	0.4	Diurnal Average
		2.0	1.5	1.8	1.8	--	3.5	2.3	2.1	2.0	2.0	2.7	6.0	3.0	2.7	1.7	1.6	1.3	1.5	2.8	3.2	3.5	2.6	4.1	2.4	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								

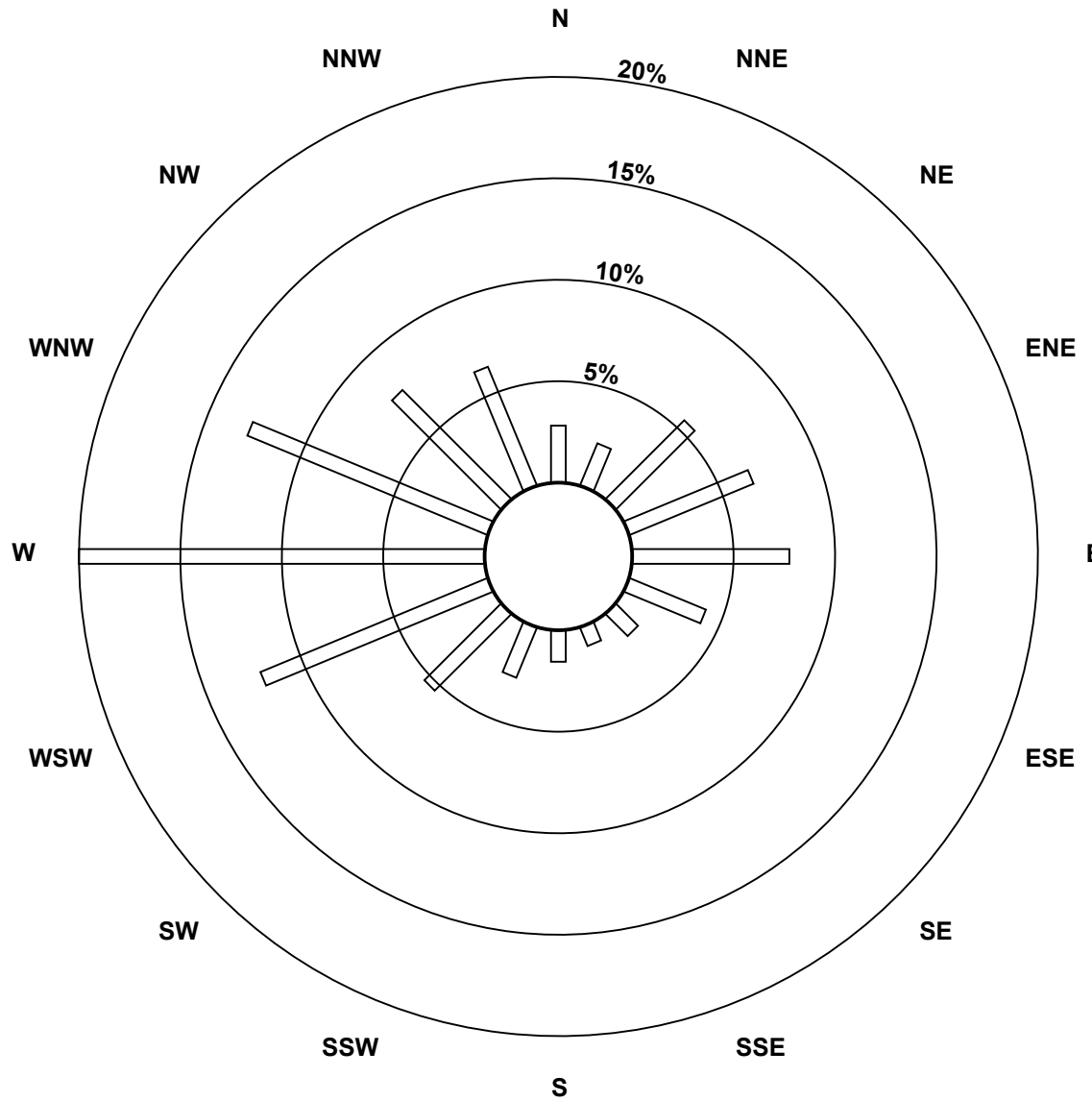
### Hourly Maximums

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Beaverlodge - December 2017

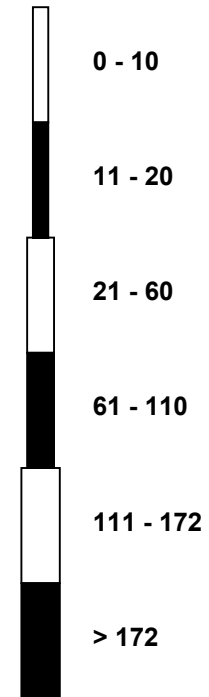


**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Beaverlodge - December 2017**



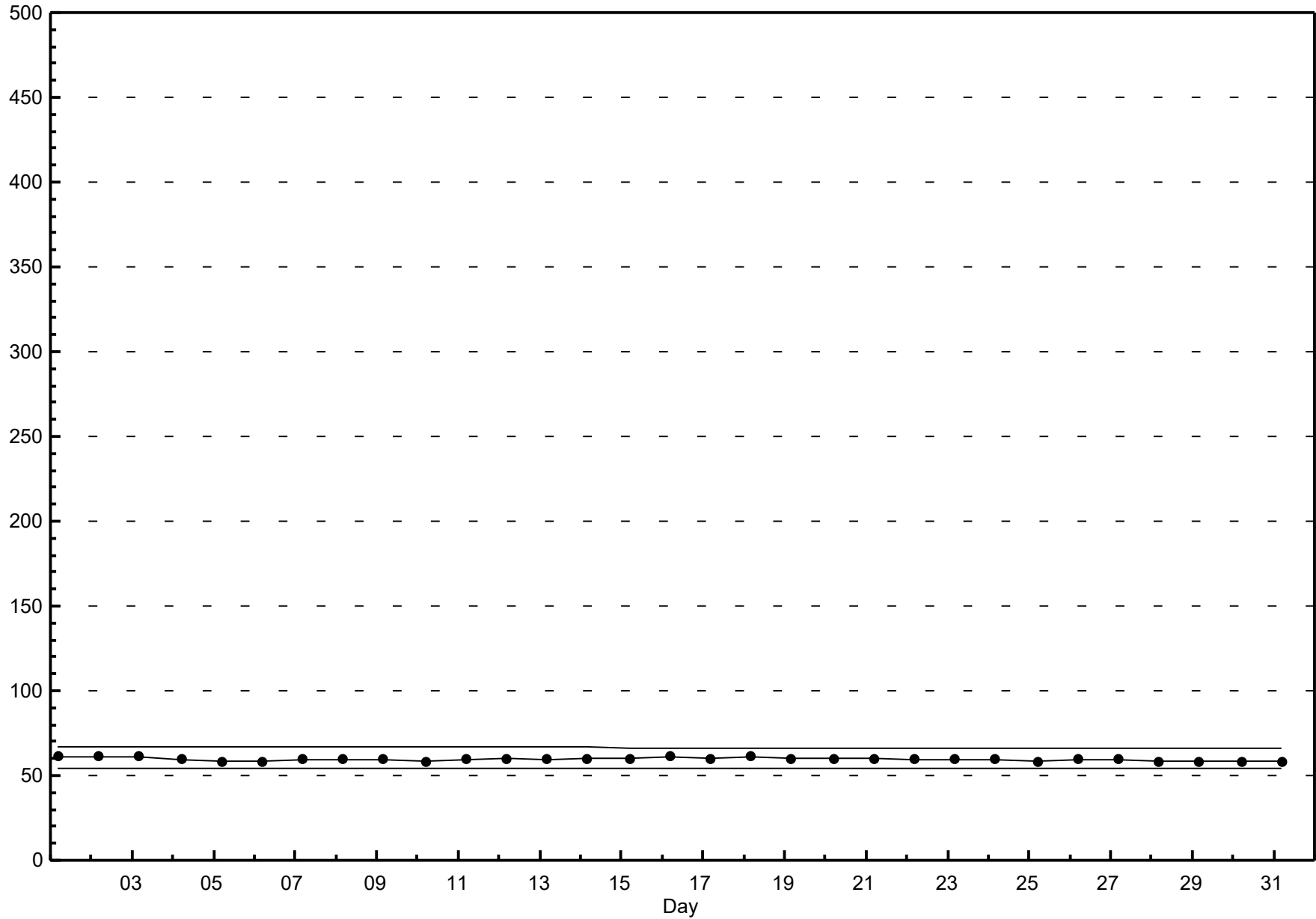
**Pollutant Classes (ppb)**





### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Beaverlodge - December 2017



# Hourly Averages

## Nitrogen Dioxide (NO<sub>2</sub>) - ppb Beaverlodge - December 2017

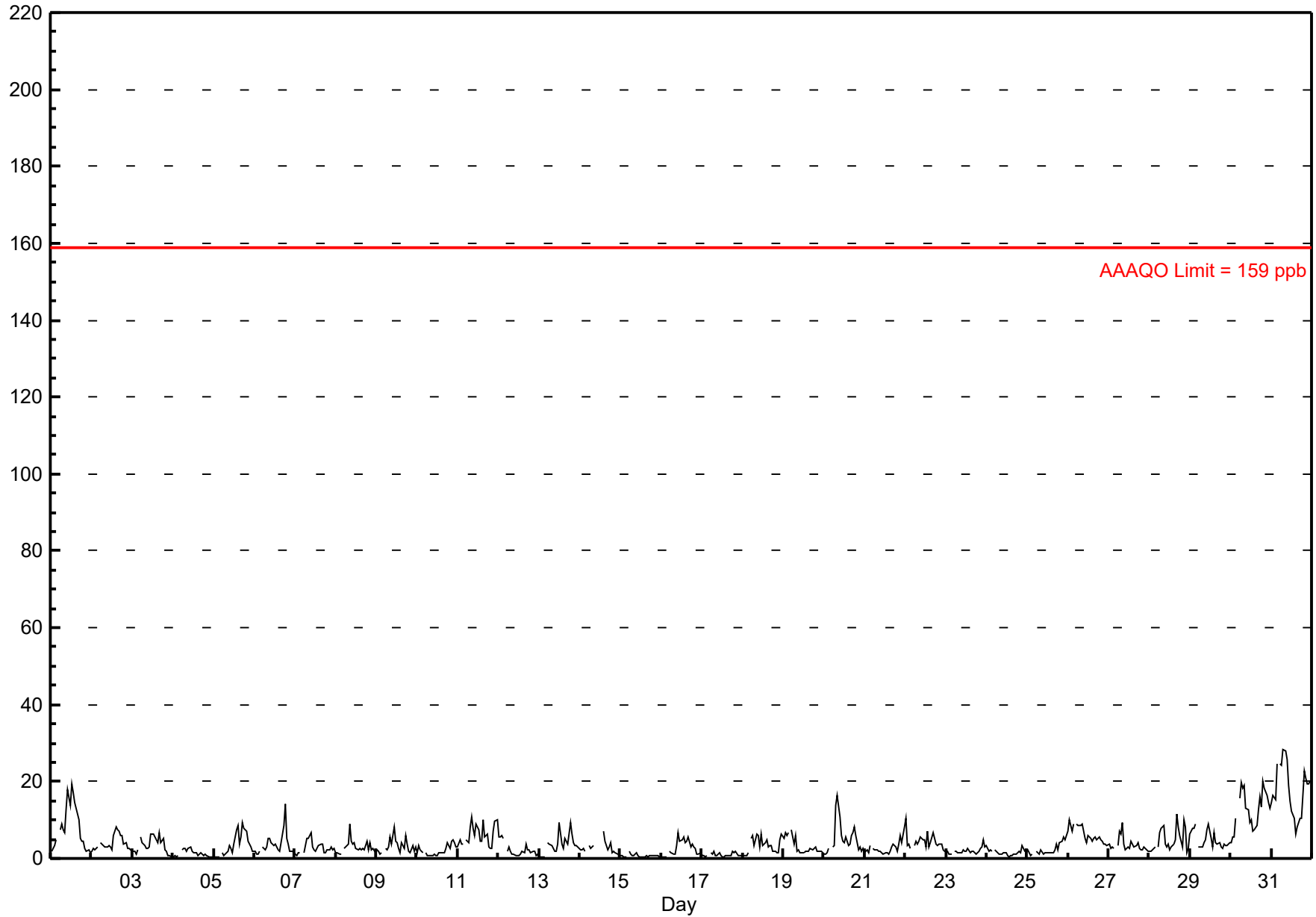
Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 744
Maximum Value: 28.4 ppb on Dec 31 08:00	Maximum Daily Average: 17.6 ppb on Dec 31
Minimum Value: 0 ppb on Dec 5 02:00	Hours of Data: 708
Maximum Diurnal Average: 5.7 ppb at hour 9	Hours of Missing Data: 36
Monthly Average: 4.14 ppb	Hours of Calibration: 36
Minimum Daily Average: 0.7 ppb on Dec 15	Percent Operational Time: 100.0
Minimum Diurnal Average: 2.8 ppb at hour 3	
Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.8 Q <sub>1</sub> = 1.6 Median = 2.9 Q <sub>3</sub> = 5.0 P <sub>90</sub> = 8.7 P <sub>99</sub> = 22.0	

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	2	2	3	5	A	8	9	7	7	13	18	14	19	17	14	13	10	5	5	4	3	2	2	2	8.0	19.5
2-Dec	2	3	2	3	A	4	4	4	3	3	3	3	2	6	8	7	7	6	6	4	4	2	3	2	4.0	8.2
3-Dec	2	2	1	2	A	5	4	3	3	3	3	6	6	6	5	4	7	4	5	2	2	1	1	1	3.4	6.6
4-Dec	1	1	0	1	A	2	3	3	2	2	3	2	1	1	2	1	1	1	1	1	1	1	0	0	1.3	3.1
5-Dec	0	0	0	0	A	2	1	1	2	4	2	2	4	7	9	4	5	9	8	7	5	4	3	2	3.5	9.3
6-Dec	2	1	1	2	A	3	2	3	5	5	4	3	4	3	2	2	4	9	14	5	4	2	2	2	3.6	14.0
7-Dec	1	1	2	2	A	2	3	5	5	7	3	2	2	3	3	4	4	2	1	2	2	3	2	3	2.7	6.7
8-Dec	1	1	1	1	A	3	3	4	9	4	4	4	3	2	3	2	2	4	2	4	2	3	2	2	2.9	9.1
9-Dec	2	2	1	1	A	3	2	3	6	4	8	5	4	3	1	4	3	6	4	2	2	3	2	3	3.1	8.2
10-Dec	2	3	2	2	A	2	1	1	1	1	1	1	1	1	2	1	2	3	4	3	4	5	4	3	2.1	4.7
11-Dec	3	5	4	4	A	5	4	8	11	8	6	9	7	4	4	10	6	6	3	3	3	7	10	10	6.1	10.8
12-Dec	6	5	6	5	A	2	3	2	1	1	1	1	1	1	2	1	4	2	2	1	2	2	1	1	2.3	6.0
13-Dec	1	0	0	0	A	4	4	3	2	2	2	4	9	4	3	5	5	4	9	7	4	4	3	3	3.6	9.3
14-Dec	2	2	2	2	A	3	3	3	3	C	C	C	C	C	7	5	2	3	4	1	2	1	1	1	2.7	7.0
15-Dec	1	1	0	0	A	2	1	1	1	2	1	0	0	1	0	1	1	1	1	1	1	1	1	1	0.7	1.9
16-Dec	0	0	0	1	A	2	1	1	1	3	7	4	5	5	4	5	6	3	4	3	3	1	1	2	2.7	6.6
17-Dec	1	1	1	1	A	2	1	2	1	1	1	1	0	0	1	1	1	1	2	2	2	1	1	1	1.0	1.8
18-Dec	1	1	1	1	A	5	6	3	6	6	3	6	3	4	5	3	3	3	2	2	2	1	5	6	3.4	6.4
19-Dec	5	7	6	7	A	8	4	6	2	2	1	1	2	2	2	2	3	2	3	3	2	2	2	1	3.2	7.6
20-Dec	1	1	1	3	A	3	3	14	16	11	6	5	4	6	3	4	6	7	8	6	2	3	2	2	5.1	16.5
21-Dec	2	2	2	3	A	3	2	2	2	2	1	1	1	1	1	2	3	4	3	2	4	6	4	8	2.7	8.3
22-Dec	10	3	4	3	A	3	4	4	5	6	5	5	3	7	3	4	7	5	4	3	4	4	2	2	4.3	10.4
23-Dec	2	2	1	1	A	2	2	1	1	2	2	2	2	3	1	2	2	2	1	2	2	3	5	3	2.0	5.0
24-Dec	3	2	2	2	A	2	2	1	1	1	1	1	1	1	1	1	1	1	2	2	1	3	2	2	1.6	3.3
25-Dec	2	2	1	1	A	2	2	1	2	1	1	2	2	1	1	2	2	4	2	4	5	6	5	6	2.4	6.1
26-Dec	7	10	7	9	A	9	9	9	9	7	5	4	6	5	5	5	6	5	6	5	4	4	4	3	6.2	10.1
27-Dec	4	3	3	2	A	3	7	6	9	4	2	3	3	4	4	3	4	4	3	2	2	3	2	2	3.6	9.1
28-Dec	2	2	2	3	A	3	7	8	8	4	3	4	2	3	4	5	12	8	6	3	10	8	2	3	4.8	11.6
29-Dec	6	8	8	9	A	3	3	3	4	5	8	9	5	3	7	4	4	4	3	2	4	3	3	4	4.9	9.0
30-Dec	4	6	6	11	A	16	20	18	19	13	13	9	10	7	8	8	13	16	13	20	18	16	14	13	12.7	20.2
31-Dec	15	16	15	25	A	25	24	28	28	26	19	15	12	10	6	8	9	11	10	23	21	19	19	20	17.6	28.4
	3.0	3.1	2.8	3.6	--	4.4	4.6	5.1	5.7	5.0	4.6	4.2	4.2	4.1	3.8	3.9	4.5	4.6	4.5	4.2	4.1	4.0	3.6	3.6	Diurnal Average	
	14.6	16.3	15.1	24.7	--	24.7	24.4	28.4	28.0	25.7	19.1	15.0	19.5	17.1	14.5	12.9	12.6	16.0	14.0	22.8	20.7	19.4	19.2	20.2	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 (NO<sub>2</sub>) - ppb**  
**Beaverlodge - December 2017**



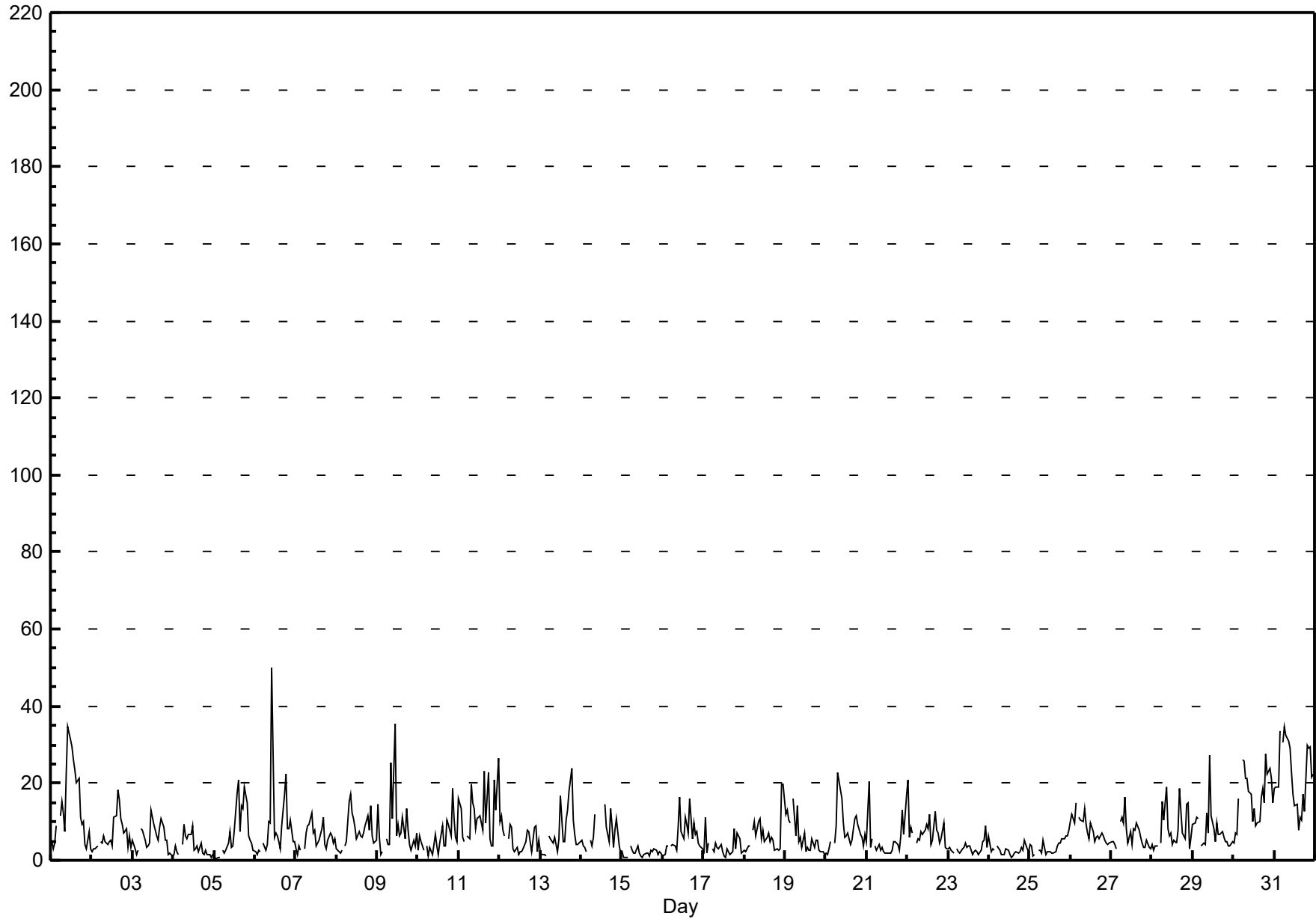
# Hourly Maximums

## Nitrogen Dioxide (NO<sub>2</sub>) - ppb Beaverlodge - December 2017

Maximum Value: 49.9 ppb on Dec 6 11:00		Maximum Daily Average: 22.1 ppb on Dec 31		Hours in Service: 744																							
Minimum Value: 0 ppb on Dec 5 02:00		Minimum Daily Average: 1.9 ppb on Dec 15		Hours of Data: 708																							
Maximum Diurnal Average: 10.8 ppb at hour 11		Minimum Diurnal Average: 4.6 ppb at hour 3		Hours of Missing Data: 36																							
Monthly Average: 7.40 ppb		Percentiles: P <sub>1</sub> = 0.9 P <sub>10</sub> = 1.9 Q <sub>1</sub> = 3.1 Median = 5.3 Q <sub>3</sub> = 9.4 P <sub>90</sub> = 15.9 P <sub>99</sub> = 31.0		Hours of Calibration: 36																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	5	3	5	9	A	11	15	12	7	22	35	31	30	26	23	20	21	11	9	10	4	3	7	3	14.1	34.6	
2-Dec	2	3	3	4	A	5	4	7	5	4	5	5	4	11	12	18	16	11	9	7	8	3	6	3	6.7	18.3	
3-Dec	5	3	2	3	A	8	8	5	3	4	4	13	9	8	6	5	9	11	9	5	5	2	2	1	5.6	12.9	
4-Dec	2	4	2	2	A	4	9	6	6	7	7	9	3	3	4	2	4	2	2	2	2	1	1	1	3.7	9.3	
5-Dec	1	0	1	1	A	3	2	3	4	7	3	4	8	17	21	7	14	14	19	15	6	5	4	3	7.1	21.0	
6-Dec	2	1	2	2	A	4	3	4	10	10	50	6	7	6	5	3	9	17	22	8	8	10	5	5	8.7	49.9	
7-Dec	3	1	4	3	A	3	7	9	9	12	7	8	4	5	5	8	11	4	3	5	7	6	4	6	5.9	12.1	
8-Dec	3	3	2	2	A	4	5	15	17	12	11	9	6	8	6	6	7	9	12	8	14	6	5	5	7.6	17.3	
9-Dec	15	6	1	2	A	6	4	4	25	11	36	6	9	6	7	11	5	13	8	4	3	5	4	7	8.7	35.6	
10-Dec	3	6	5	3	A	4	1	3	1	4	7	4	2	4	9	4	4	11	9	6	18	11	6	5	5.6	18.5	
11-Dec	16	13	6	5	A	6	6	20	15	13	8	11	11	10	8	23	10	23	5	4	4	21	13	27	12.1	26.6	
12-Dec	10	11	8	6	A	6	9	8	3	2	3	2	2	2	3	5	8	7	5	2	8	9	2	5	5.6	11.4	
13-Dec	2	1	2	1	A	7	6	4	6	4	2	5	17	5	5	11	13	18	24	10	7	4	4	5	7.1	23.9	
14-Dec	5	4	3	2	A	5	4	6	12	C	C	C	C	C	15	8	5	14	9	3	8	11	4	2	6.6	14.6	
15-Dec	2	1	1	1	A	4	2	2	2	4	2	1	1	1	2	2	1	3	2	3	3	2	2	2	1.9	3.9	
16-Dec	1	1	4	4	A	4	4	4	3	9	16	7	6	11	10	7	16	6	10	7	8	4	4	3	6.4	16.2	
17-Dec	2	11	2	4	A	3	2	4	3	3	4	2	1	1	3	2	2	2	8	3	7	5	2	2	3.5	11.3	
18-Dec	3	2	4	4	A	8	10	6	10	11	6	8	5	6	7	5	6	5	2	3	3	3	20	20	6.7	19.8	
19-Dec	12	13	11	10	A	16	6	14	5	6	3	7	2	3	3	3	6	3	5	5	3	2	2	2	6.1	15.9	
20-Dec	2	1	3	5	A	4	9	23	20	16	10	6	6	7	4	5	8	11	12	9	7	6	4	7	8.0	22.6	
21-Dec	5	21	3	5	A	4	3	4	3	3	2	2	2	2	3	5	5	4	2	6	13	7	17	5.3	20.6		
22-Dec	21	6	9	7	A	5	6	5	8	7	8	9	8	12	4	5	13	8	7	4	6	10	3	3	7.5	20.8	
23-Dec	3	4	3	2	A	3	2	2	3	3	4	3	4	4	2	2	3	2	1	3	5	5	9	3	3.3	8.8	
24-Dec	6	2	3	3	A	4	2	1	1	2	3	3	2	1	1	2	2	2	2	3	3	5	3	2	2.5	6.2	
25-Dec	4	4	1	1	A	3	3	2	5	1	2	2	2	2	2	2	4	4	4	6	5	7	6	8	3.5	7.8	
26-Dec	10	12	10	15	A	11	10	10	13	9	7	5	10	8	5	6	6	6	7	6	5	4	4	4	8.0	14.8	
27-Dec	5	5	4	3	A	10	11	10	17	8	4	7	4	8	8	10	8	6	5	3	3	5	3	3	6.6	16.5	
28-Dec	4	2	4	4	A	4	15	11	19	8	6	7	4	5	4	8	19	13	7	5	15	15	3	6	8.2	18.9	
29-Dec	9	10	11	11	A	4	5	4	12	7	27	12	8	5	10	7	7	8	6	5	5	4	4	5	8.0	27.2	
30-Dec	5	7	7	16	A	26	26	21	21	18	17	10	13	9	10	10	16	19	15	27	22	24	21	15	16.4	27.5	
31-Dec	19	19	19	34	A	30	35	32	31	29	23	17	14	14	8	11	11	17	13	30	29	30	22	22	22.1	34.5	
		6.0	5.9	4.6	5.5	--	7.0	7.6	8.5	9.7	8.6	10.8	7.4	6.8	7.0	6.9	7.1	8.6	9.1	8.3	7.0	7.6	7.8	6.0	6.5	Diurnal Average	
		20.8	20.6	19.1	33.6	--	30.4	34.5	32.3	30.9	29.2	49.9	31.5	29.5	26.0	23.5	23.0	21.1	22.8	23.9	29.8	29.0	29.6	21.7	26.6	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

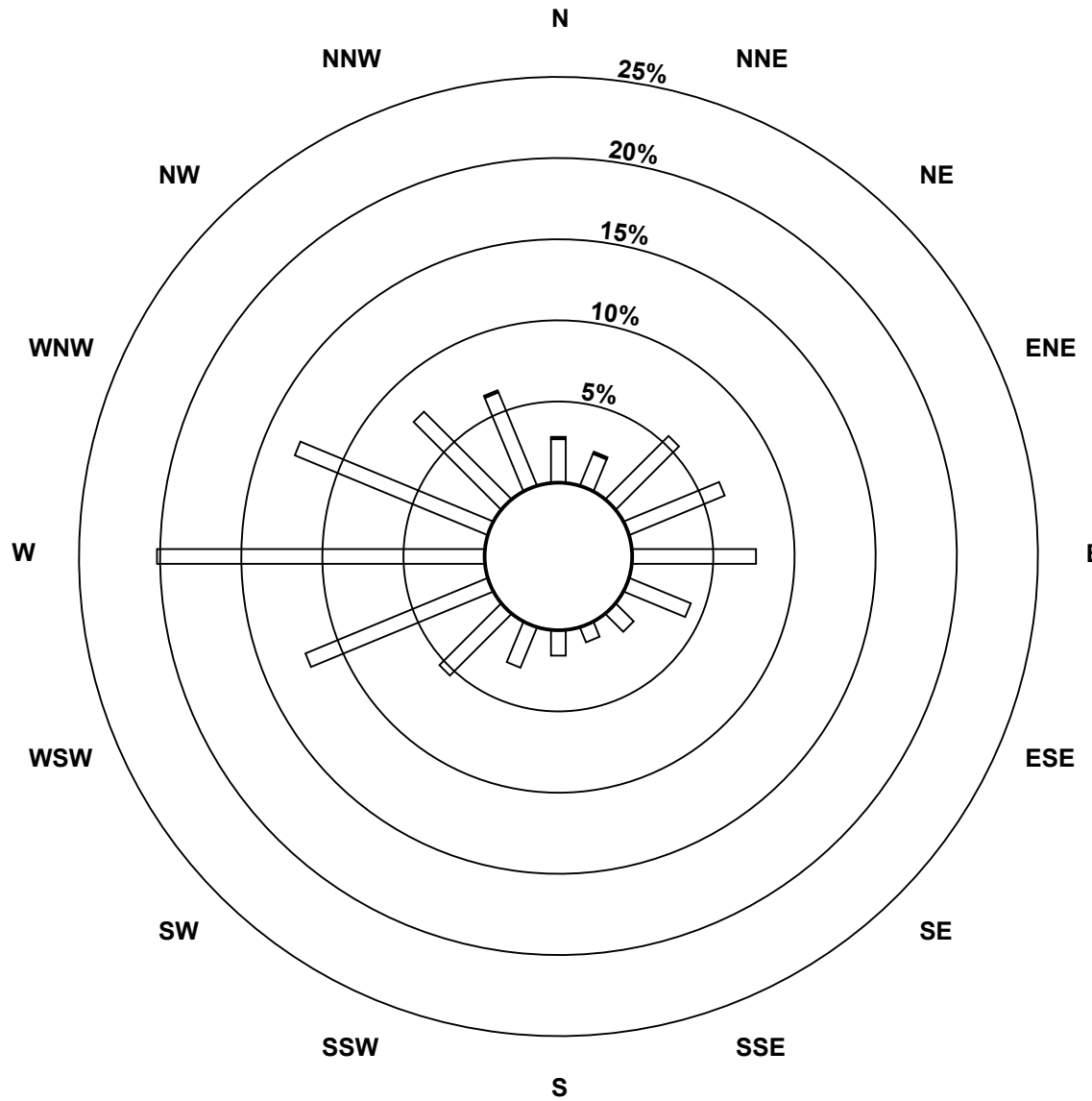
**Hourly Maximums**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Beaverlodge - December 2017**

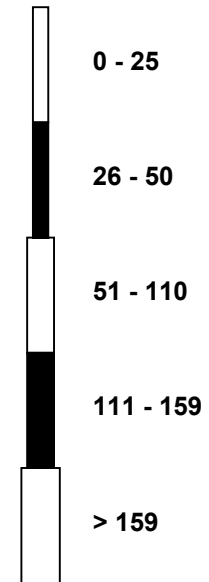


**Pollutant Rose**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Beaverlodge - December 2017**

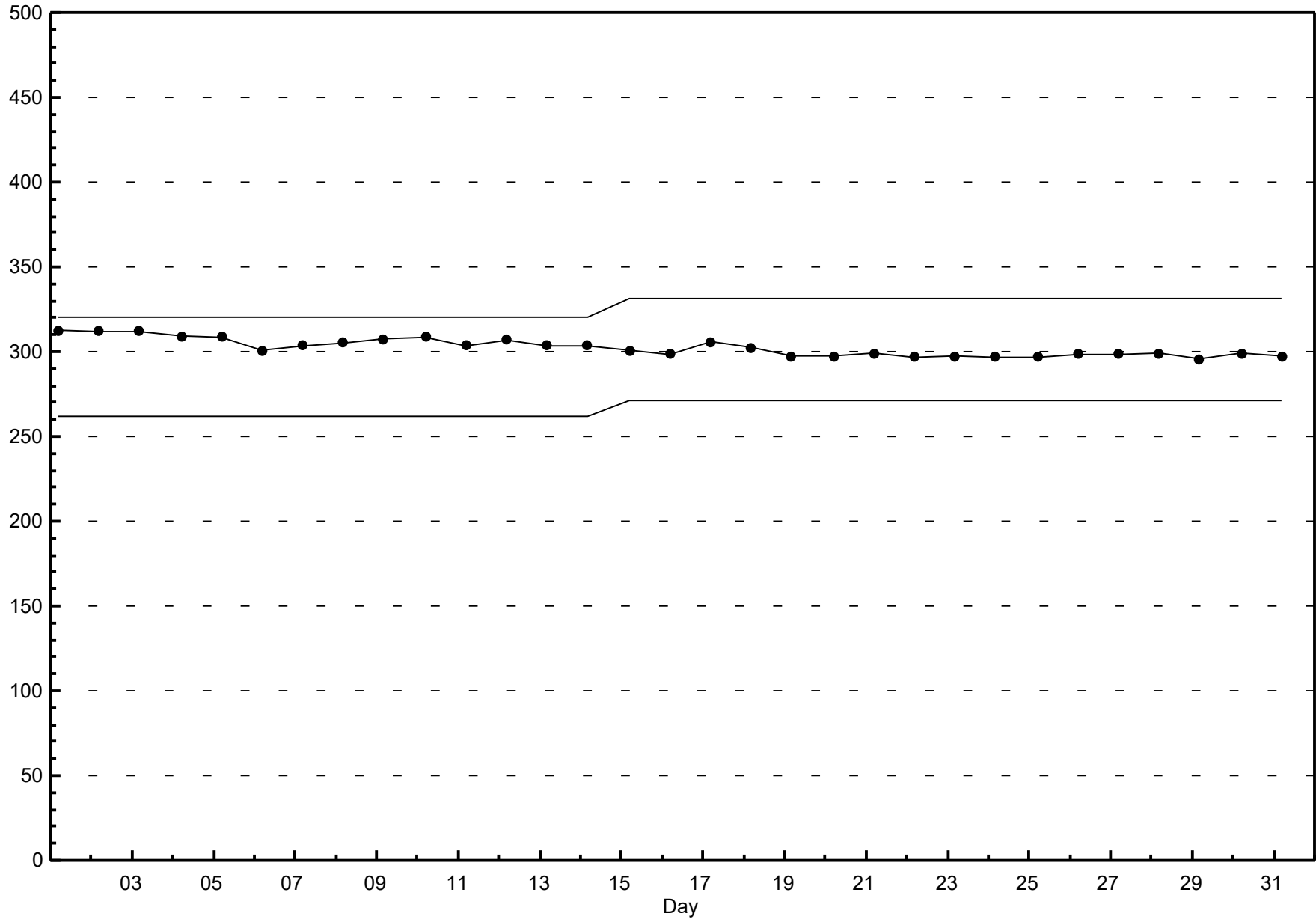


**Pollutant Classes (ppb)**



### Span Responses

Nitrogen Dioxide (NO<sub>2</sub>)  
Beaverlodge - December 2017



# Hourly Averages

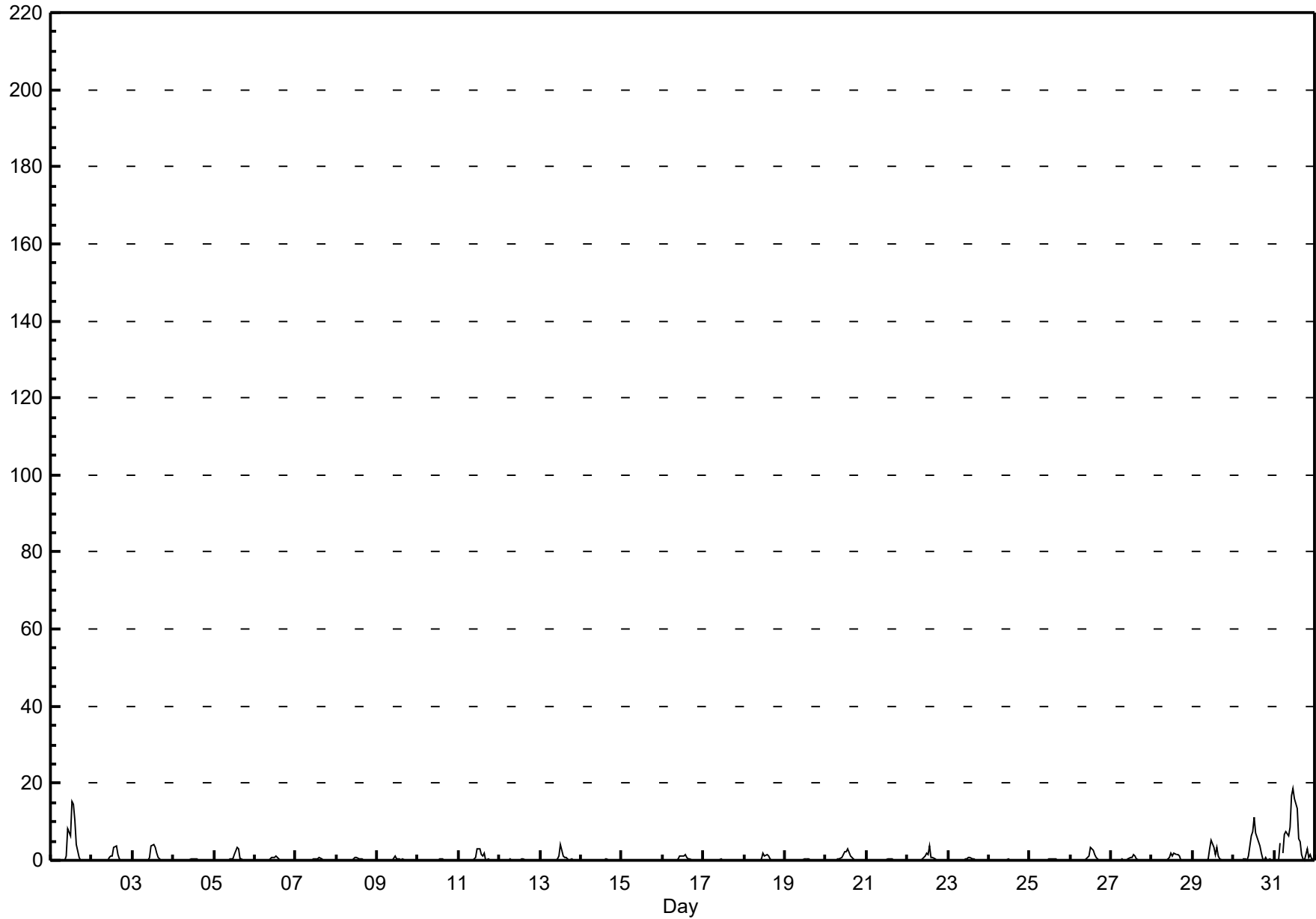
## Nitrogen Oxide (NO) - ppb Beaverlodge - December 2017

Maximum Value: 18.5 ppb on Dec 31 12:00		Maximum Daily Average: 5.2 ppb on Dec 31		Hours in Service: 744																						
Minimum Value: 0 ppb on Dec 1 23:00		Minimum Daily Average: 0.0 ppb on Dec 24		Hours of Data: 708																						
Maximum Diurnal Average: 2.5 ppb at hour 13		Minimum Diurnal Average: 0.0 ppb at hour 3		Hours of Missing Data: 36																						
Monthly Average: 0.57 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.0 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 1.2 P <sub>99</sub> = 9.7		Hours of Calibration: 36																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	0	0	0	A	0	0	0	0	1	8	6	15	15	10	4	1	0	0	0	0	0	0	0	2.7	15.3
2-Dec	0	0	0	0	A	0	0	0	0	0	1	1	1	3	4	2	0	0	0	0	0	0	0	0	0.5	3.8
3-Dec	0	0	0	0	A	0	0	0	0	0	1	4	4	3	2	1	0	0	0	0	0	0	0	0	0.7	3.9
4-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
5-Dec	0	0	0	0	A	0	0	0	0	0	0	0	1	3	3	0	0	0	0	0	0	0	0	0	0.4	3.4
6-Dec	0	0	0	0	A	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0.2	1.0
7-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0.1	0.6
8-Dec	0	0	0	0	A	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0.2	0.8
9-Dec	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	1.1
10-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
11-Dec	0	0	0	0	A	0	0	0	0	0	1	3	3	1	1	2	0	0	0	0	0	0	0	0	0.5	3.2
12-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
13-Dec	0	0	0	0	A	0	0	0	0	0	0	1	4	1	1	1	0	0	0	0	0	0	0	0	0.4	4.2
14-Dec	0	0	0	0	A	0	0	0	0	C	C	C	C	C	1	0	0	0	0	0	0	0	0	0	0.1	0.5
15-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1
16-Dec	0	0	0	0	A	0	0	0	0	0	1	1	1	2	1	0	0	0	0	0	0	0	0	0	0.3	1.6
17-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
18-Dec	0	0	0	0	A	0	0	0	0	0	0	2	1	1	1	0	0	0	0	0	0	0	0	0	0.3	1.8
19-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
20-Dec	0	0	0	0	A	0	0	0	1	1	1	2	2	3	1	1	0	0	0	0	0	0	0	0	0.5	3.2
21-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
22-Dec	0	0	0	0	A	0	0	0	0	0	1	2	1	4	1	1	0	0	0	0	0	0	0	0	0.4	3.8
23-Dec	0	0	0	0	A	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0.1	0.8
24-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.1	0.5
26-Dec	0	0	0	0	A	0	0	0	0	0	1	1	3	2	1	1	0	0	0	0	0	0	0	0	0.5	3.3
27-Dec	0	0	0	0	A	0	0	0	0	0	0	1	1	2	1	1	0	0	0	0	0	0	0	0	0.3	1.5
28-Dec	0	0	0	0	A	0	0	0	0	0	1	2	1	2	2	1	1	0	0	0	0	0	0	0	0.4	1.8
29-Dec	0	0	0	0	A	0	0	0	0	0	3	5	3	2	4	1	0	0	0	0	0	0	0	0	0.8	5.1
30-Dec	0	0	0	0	A	0	0	0	0	1	6	8	11	7	6	4	2	0	0	1	0	0	0	0	2.0	11.1
31-Dec	0	0	0	5	A	2	7	7	6	9	17	18	16	13	6	5	1	0	0	3	1	1	0	0	5.2	18.5
		0.0	0.0	0.0	0.2	--	0.1	0.3	0.3	0.3	0.5	1.6	2.1	2.5	2.3	1.6	0.9	0.3	0.1	0.0	0.1	0.1	0.1	0.0	0.0	Diurnal Average
		0.1	0.1	0.1	4.6	--	2.0	6.9	7.3	6.3	8.7	16.8	18.5	16.1	14.6	10.4	4.7	1.9	0.3	0.2	3.1	0.9	1.4	0.3	0.3	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								



**Hourly Averages**

**Nitrogen Oxide (NO) - ppb**  
**Beaverlodge - December 2017**



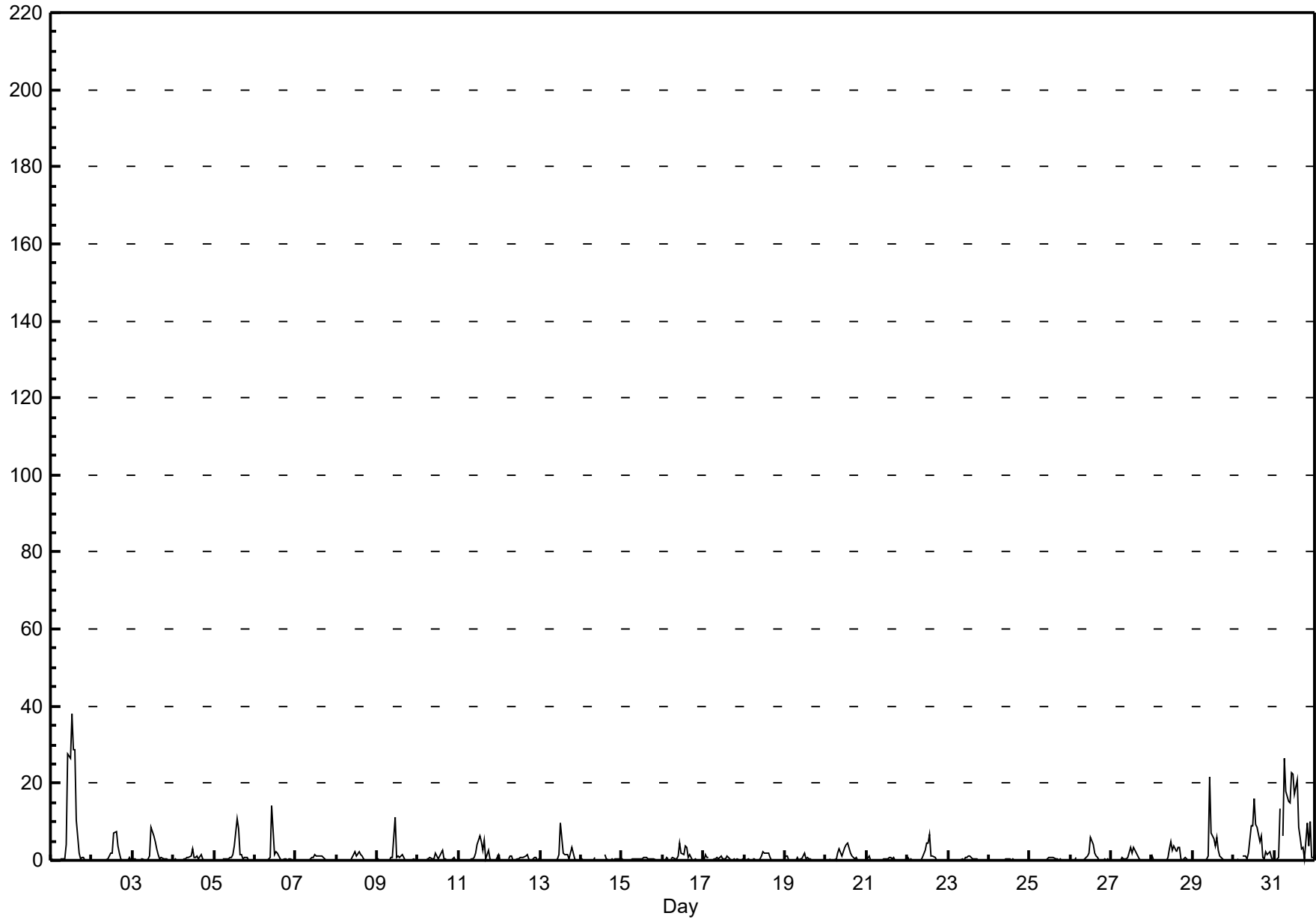
## Hourly Maximums

## Nitrogen Oxide (NO) - ppb Beaverlodge - December 2017

Maximum Value: 38.2 ppb on Dec 1 13:00		Maximum Daily Average: 9.8 ppb on Dec 31		Hours in Service: 744																							
Minimum Value: 0 ppb on Dec 21 01:00		Minimum Daily Average: 0.2 ppb on Dec 24		Hours of Data: 708																							
Maximum Diurnal Average: 4.6 ppb at hour 13		Minimum Diurnal Average: 0.2 ppb at hour 3		Hours of Missing Data: 36																							
Monthly Average: 1.38 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.1 Median = 0.2 Q <sub>3</sub> = 0.8 P <sub>90</sub> = 3.1 P <sub>99</sub> = 20.8		Hours of Calibration: 36																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	0	0	0	0	A	0	1	1	0	4	28	26	38	29	29	10	2	0	1	1	0	0	0	0	7.4	38.2	
2-Dec	0	0	0	0	A	0	0	0	0	0	1	2	2	7	7	4	2	0	0	0	0	0	1	0	1.2	7.4	
3-Dec	1	0	0	0	A	0	0	0	0	0	1	8	6	5	3	1	0	1	0	0	0	0	0	0	1.3	8.5	
4-Dec	0	0	0	0	A	0	0	0	1	1	1	3	1	1	1	0	1	0	0	0	0	0	0	0	0.5	3.2	
5-Dec	0	0	0	0	A	0	0	0	0	1	1	1	4	11	8	1	1	0	1	1	0	0	0	0	1.3	11.0	
6-Dec	0	0	0	0	A	0	0	0	0	1	14	2	2	2	1	0	0	0	0	0	0	0	0	0	1.0	14.1	
7-Dec	0	0	0	0	A	0	0	0	0	1	1	2	1	1	1	1	1	0	0	0	0	0	0	0	0.4	1.6	
8-Dec	0	0	0	0	A	0	0	0	0	1	2	2	1	2	1	1	0	0	0	0	0	0	0	0	0.5	2.2	
9-Dec	0	0	0	0	A	0	0	0	1	1	11	1	1	1	1	1	0	0	0	0	0	0	0	0	0.8	11.1	
10-Dec	0	0	0	0	A	0	0	1	0	0	2	1	0	1	3	0	0	0	0	0	0	0	1	0	0.5	2.7	
11-Dec	0	0	0	0	A	0	0	0	0	1	2	4	6	5	3	5	0	3	0	0	0	0	0	1	1.4	6.5	
12-Dec	0	0	0	0	A	0	1	1	0	0	1	0	1	1	1	1	2	0	0	0	1	1	0	1	0.5	1.6	
13-Dec	0	0	0	0	A	0	0	0	0	0	0	2	10	2	1	2	1	0	3	2	0	0	0	0	1.1	9.8	
14-Dec	0	0	0	0	A	0	0	0	1	C	C	C	C	C	2	0	0	0	0	0	0	1	0	0	0.3	1.6	
15-Dec	0	0	0	0	A	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0.3	0.8	
16-Dec	0	0	1	0	A	0	1	0	0	1	4	2	1	4	3	1	2	0	0	0	0	0	0	0	1.0	4.4	
17-Dec	0	1	1	1	A	0	0	1	1	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0.5	1.4	
18-Dec	0	0	0	0	A	0	0	0	0	0	1	2	2	2	2	1	0	0	0	0	0	0	0	0	0.6	2.2	
19-Dec	1	1	0	0	A	0	0	1	0	0	0	2	0	1	1	0	0	0	0	0	0	0	0	0	0.4	1.9	
20-Dec	0	0	0	0	A	0	0	2	3	1	2	3	4	4	2	1	1	0	1	0	0	0	0	0	1.1	4.4	
21-Dec	0	1	0	0	A	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0.3	1.3	
22-Dec	1	0	0	0	A	0	0	0	0	1	3	4	4	7	1	1	1	0	0	0	0	0	0	0	1.0	6.6	
23-Dec	0	0	0	0	A	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0.3	1.3	
24-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5	
25-Dec	0	0	0	0	A	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0.3	0.7	
26-Dec	0	0	0	1	A	0	0	0	0	1	1	2	6	4	2	1	1	0	0	0	0	0	0	0	0.9	6.0	
27-Dec	0	0	0	0	A	0	1	0	0	0	1	3	2	3	3	2	1	0	0	0	0	0	0	0	0.7	3.3	
28-Dec	1	0	0	0	A	0	0	0	0	1	3	5	3	4	2	3	3	0	0	1	0	0	0	0	1.2	5.0	
29-Dec	0	0	0	0	A	0	0	0	0	1	22	7	6	4	6	3	1	0	0	0	0	0	0	0	2.2	21.6	
30-Dec	0	0	0	0	A	1	1	1	0	2	9	9	16	9	8	5	7	1	0	2	1	2	1	0	3.3	16.0	
31-Dec	0	0	1	13	A	6	26	18	15	15	23	22	17	21	9	6	3	3	0	10	4	10	1	1	9.8	26.4	
		0.3	0.2	0.2	0.6	--	0.4	1.1	0.9	0.8	1.2	4.5	4.0	4.6	4.4	3.3	1.8	1.0	0.4	0.3	0.6	0.3	0.6	0.2	0.2	Diurnal Average	
		1.2	1.4	0.8	13.4	--	6.2	26.4	17.8	15.1	14.8	27.5	26.3	38.2	28.7	28.7	10.3	6.5	3.2	3.3	9.9	3.8	10.0	0.8	1.5	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

**Hourly Maximums**

**Nitrogen Oxide (NO) - ppb**  
**Beaverlodge - December 2017**

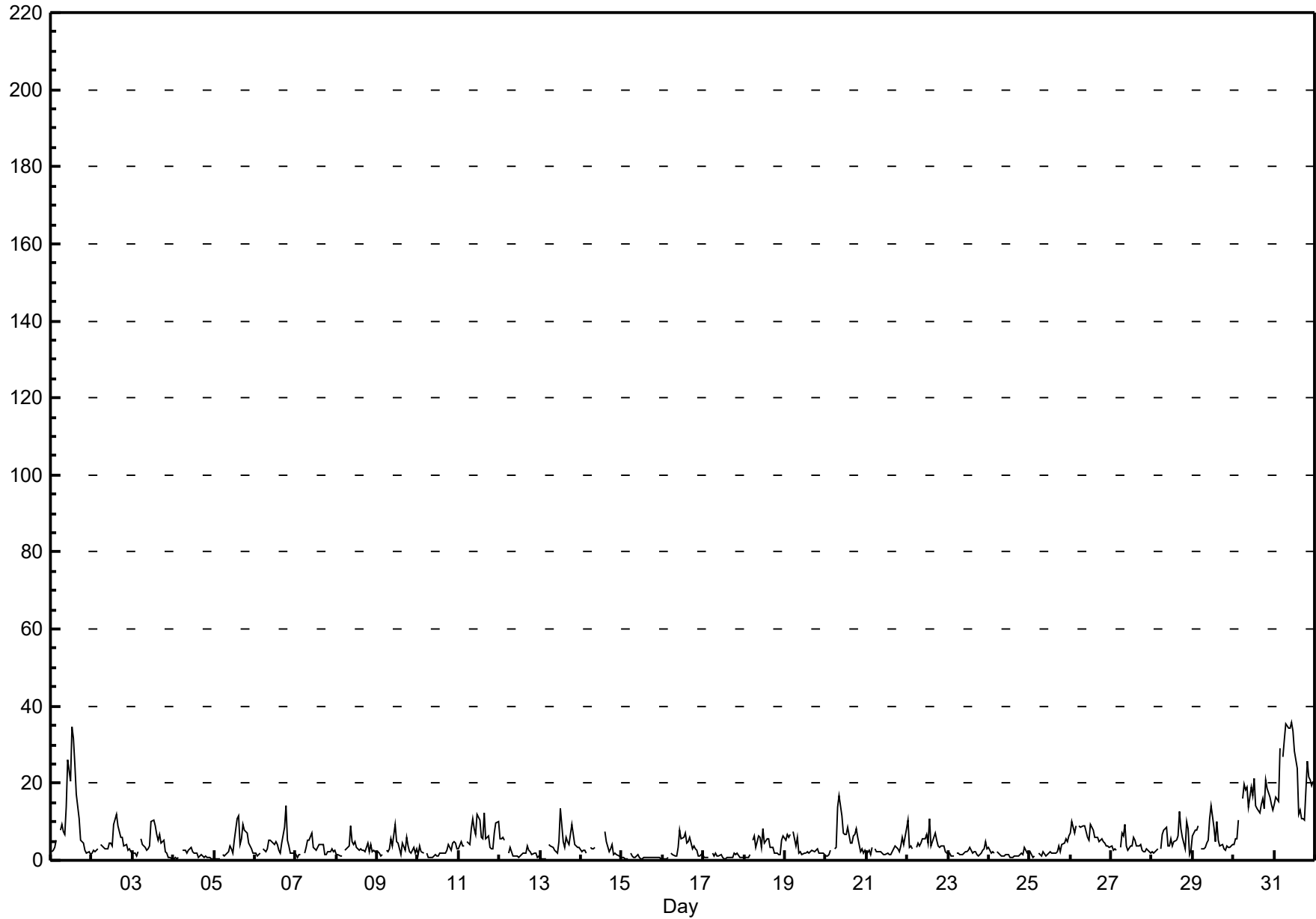


# Hourly Averages

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

Beaverlodge - December 2017

Maximum Value: 35.9 ppb on Dec 31 11:00		Maximum Daily Average: 22.8 ppb on Dec 31		Hours in Service: 744																							
Minimum Value: 0 ppb on Dec 5 02:00		Minimum Daily Average: 0.8 ppb on Dec 15		Hours of Data: 708																							
Maximum Diurnal Average: 6.8 ppb at hour 13		Minimum Diurnal Average: 2.8 ppb at hour 3		Hours of Missing Data: 36																							
Monthly Average: 4.74 ppb		Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 0.9 Q <sub>1</sub> = 1.8 Median = 3.1 Q <sub>3</sub> = 5.5 P <sub>90</sub> = 10.2 P <sub>99</sub> = 30.7		Hours of Calibration: 36																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	2	3	3	5	A	8	9	7	7	14	26	20	35	32	25	17	11	5	5	5	3	2	2	2	10.7	34.8	
2-Dec	2	3	2	3	A	4	4	4	3	3	4	4	4	9	12	9	8	6	6	4	4	2	3	2	4.5	12.1	
3-Dec	2	2	1	2	A	6	4	3	3	3	4	10	10	9	7	5	7	4	5	2	2	1	1	1	4.0	10.5	
4-Dec	0	1	0	1	A	2	3	3	2	3	4	2	2	2	2	1	2	1	1	1	1	1	0	1	1.4	3.5	
5-Dec	0	0	0	0	A	2	1	1	2	4	3	2	5	11	11	4	6	9	8	7	5	4	3	2	4.0	11.4	
6-Dec	2	1	1	2	A	3	2	3	5	5	5	4	5	4	3	2	4	9	14	5	4	2	2	2	3.9	14.1	
7-Dec	1	1	2	2	A	2	3	5	5	7	3	3	2	3	4	4	4	2	2	2	2	3	2	3	2.9	7.0	
8-Dec	1	1	1	1	A	3	3	4	9	5	4	5	3	3	3	3	2	4	2	4	2	3	2	2	3.1	9.1	
9-Dec	2	2	1	1	A	3	2	3	6	4	9	5	5	3	2	4	3	6	4	2	2	3	2	3	3.3	9.3	
10-Dec	2	4	2	2	A	2	1	1	1	1	1	1	1	2	2	2	2	3	4	3	5	5	4	3	2.2	4.8	
11-Dec	3	5	4	4	A	5	4	8	11	8	7	12	10	6	6	12	6	6	3	3	3	7	10	10	6.6	12.1	
12-Dec	6	5	6	5	A	2	3	2	1	1	1	1	1	1	2	2	4	2	2	1	2	2	1	1	2.4	6.0	
13-Dec	1	0	0	0	A	4	4	3	3	2	2	5	14	5	3	6	5	4	9	7	4	4	3	3	4.0	13.6	
14-Dec	2	2	3	2	A	3	3	3	3	C	C	C	C	C	8	5	2	3	4	1	2	1	1	1	2.8	7.6	
15-Dec	1	1	1	1	A	2	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	2.0	
16-Dec	0	0	0	1	A	2	1	1	1	4	8	6	6	7	5	5	6	3	4	3	3	1	1	2	3.0	7.8	
17-Dec	1	1	1	1	A	2	1	2	1	1	2	1	1	0	1	1	1	1	2	2	2	1	1	1	1.0	1.9	
18-Dec	1	1	1	1	A	5	6	3	6	6	3	8	4	6	6	3	3	3	2	2	2	1	5	6	3.7	8.1	
19-Dec	5	7	6	7	A	8	4	6	2	2	2	2	2	2	2	2	3	2	3	3	2	2	2	1	3.3	7.6	
20-Dec	1	1	1	3	A	3	3	14	17	11	7	7	7	9	4	4	6	7	8	6	2	3	2	3	5.6	16.9	
21-Dec	2	2	2	3	A	3	2	2	2	2	2	1	2	2	2	2	3	4	3	2	4	6	4	8	2.8	8.3	
22-Dec	10	4	4	3	A	3	4	4	5	6	6	7	4	11	4	5	7	5	4	3	4	4	2	2	4.7	10.8	
23-Dec	2	2	1	1	A	2	2	1	1	2	2	2	2	3	2	2	2	2	1	2	3	3	5	3	2.1	5.0	
24-Dec	3	2	2	2	A	2	2	1	1	1	2	2	1	1	1	1	1	1	2	2	1	3	2	2	1.6	3.4	
25-Dec	2	2	1	1	A	2	2	1	2	1	2	2	2	2	2	2	2	4	2	4	5	6	5	6	2.6	6.2	
26-Dec	7	10	7	9	A	9	9	9	9	7	6	5	9	8	6	6	6	5	6	5	4	4	4	3	6.7	10.2	
27-Dec	4	3	3	3	A	3	7	6	9	4	2	4	4	6	5	4	4	4	3	2	2	3	2	2	3.9	9.2	
28-Dec	2	2	2	3	A	3	7	8	8	4	4	5	4	5	5	6	13	8	6	3	10	8	2	3	5.3	12.6	
29-Dec	7	8	8	9	A	3	3	3	4	5	11	14	9	5	10	5	4	4	3	2	4	3	3	4	5.7	14.1	
30-Dec	4	6	6	11	A	16	20	18	19	14	19	17	21	14	14	12	15	16	13	21	19	17	15	13	14.7	21.1	
31-Dec	15	16	15	29	A	27	31	36	34	34	36	34	29	24	12	13	11	11	10	26	22	21	20	20	22.8	35.9	
		3.0	3.1	2.8	3.8	--	4.6	4.9	5.4	5.9	5.5	6.2	6.4	6.8	6.5	5.4	4.8	4.9	4.7	4.6	4.3	4.2	4.1	3.6	3.7	Diurnal Average	
		14.6	16.3	15.2	29.2	--	26.7	31.2	35.6	34.2	34.4	35.9	33.6	34.8	31.7	24.9	17.2	14.5	16.2	14.1	25.9	21.6	20.8	19.5	20.5	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									



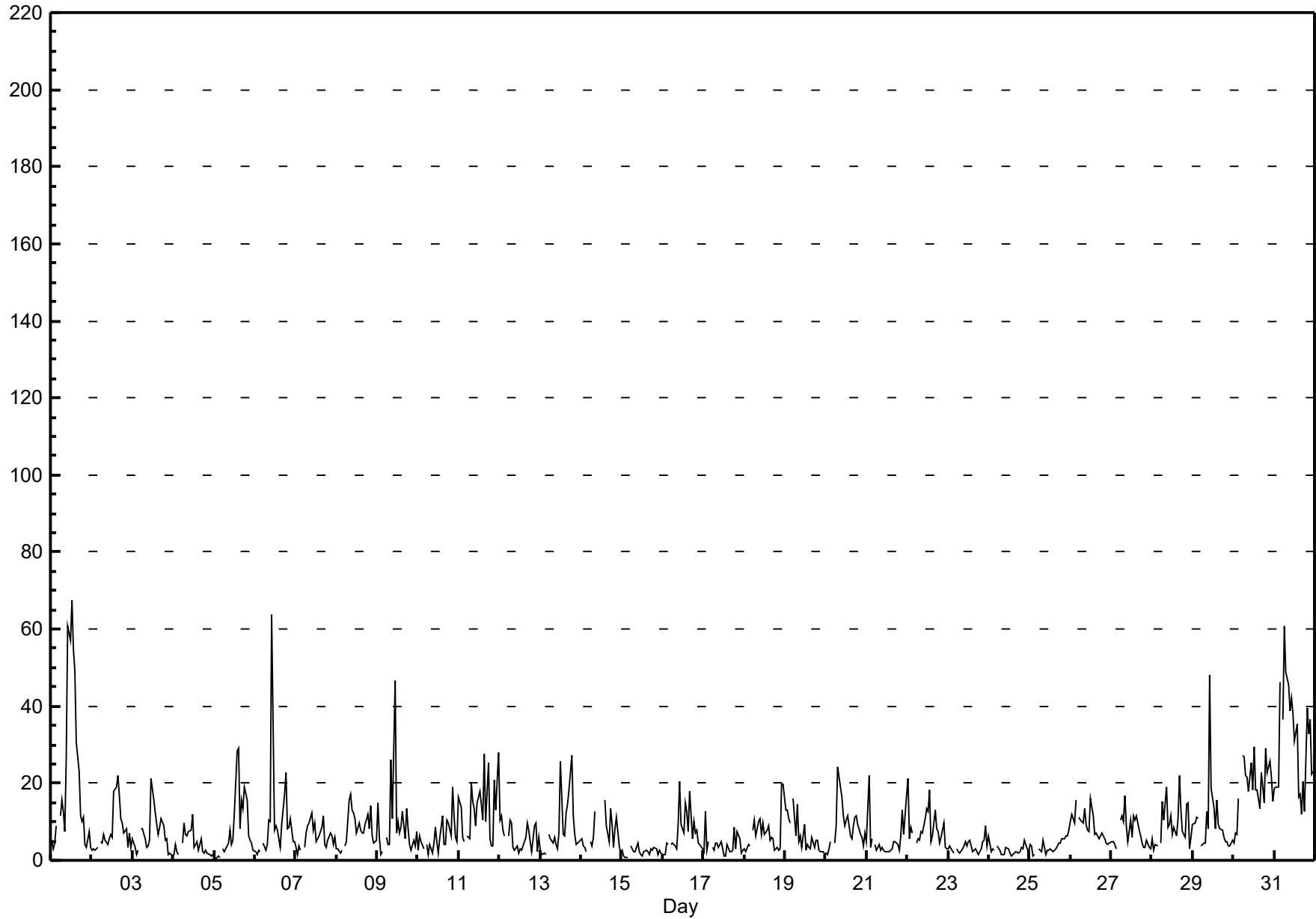
# Hourly Maximums

## Oxides of Nitrogen (NO<sub>x</sub>) - ppb Beaverlodge - December 2017

Maximum Value: 67.7 ppb on Dec 1 13:00		Maximum Daily Average: 31.0 ppb on Dec 31		Hours in Service: 744																							
Minimum Value: 1 ppb on Dec 5 02:00		Minimum Daily Average: 2.2 ppb on Dec 15		Hours of Data: 708																							
Maximum Diurnal Average: 15.0 ppb at hour 11		Minimum Diurnal Average: 4.7 ppb at hour 3		Hours of Missing Data: 36																							
Monthly Average: 8.66 ppb		Percentiles: P <sub>1</sub> = 1.1 P <sub>10</sub> = 2.2 Q <sub>1</sub> = 3.2 Median = 5.7 Q <sub>3</sub> = 10.5 P <sub>90</sub> = 18.2 P <sub>99</sub> = 46.2		Hours of Calibration: 36																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	5	3	5	9	A	11	16	13	8	26	61	57	68	55	49	31	23	11	10	11	4	3	7	3	21.2	67.7	
2-Dec	2	3	3	3	A	5	4	7	5	4	6	7	6	18	19	22	17	11	10	7	8	3	7	3	7.8	22.1	
3-Dec	6	3	2	3	A	8	8	5	4	4	5	21	16	12	9	7	9	11	9	5	6	2	2	1	6.8	21.3	
4-Dec	2	4	2	2	A	4	10	7	6	7	8	12	3	4	5	3	6	2	2	3	2	1	1	1	4.2	12.1	
5-Dec	1	1	1	1	A	3	2	3	5	8	4	5	12	28	29	8	16	14	19	15	6	5	4	3	8.4	29.1	
6-Dec	2	2	2	2	A	4	3	4	10	10	64	8	9	8	6	3	9	17	23	8	9	11	5	5	9.7	63.9	
7-Dec	3	1	4	3	A	3	7	9	10	12	8	10	5	6	6	9	12	4	3	5	7	6	4	6	6.2	12.4	
8-Dec	3	3	2	3	A	4	5	16	17	13	12	11	7	10	8	7	7	9	12	8	14	6	5	5	8.1	17.3	
9-Dec	15	6	1	2	A	6	4	4	26	11	47	7	10	7	9	13	6	13	8	4	3	5	4	7	9.5	46.6	
10-Dec	3	6	5	3	A	4	1	4	2	4	9	5	2	6	12	4	4	11	10	6	19	11	6	5	6.1	18.9	
11-Dec	16	14	6	5	A	6	6	20	15	14	9	15	18	14	11	28	10	25	6	4	4	21	13	28	13.3	27.9	
12-Dec	10	12	8	6	A	6	10	10	3	2	4	2	3	2	4	6	10	8	5	2	9	10	2	6	6.1	11.5	
13-Dec	3	2	2	1	A	7	6	4	6	4	3	7	26	7	6	12	14	18	27	12	7	4	4	5	8.1	27.1	
14-Dec	6	4	3	2	A	5	4	6	13	C	C	C	C	C	16	9	5	14	9	3	8	11	4	2	6.8	15.5	
15-Dec	3	1	1	1	A	4	3	2	2	4	2	1	1	2	3	2	2	3	2	3	3	2	3	2	2.2	4.3	
16-Dec	1	1	5	4	A	4	5	4	3	9	21	9	7	15	13	8	18	6	10	7	8	4	4	3	7.3	20.5	
17-Dec	2	13	3	5	A	3	3	4	4	3	5	3	1	1	4	2	2	3	9	3	8	6	2	3	3.9	12.6	
18-Dec	3	2	4	4	A	8	10	6	10	11	7	10	7	8	9	5	6	5	3	3	3	3	20	20	7.2	19.8	
19-Dec	13	13	11	10	A	16	6	15	5	6	3	9	3	4	3	3	6	3	5	5	3	2	2	2	6.4	15.9	
20-Dec	2	2	3	5	A	5	9	24	21	17	12	9	10	11	6	6	9	11	12	9	7	6	4	7	8.9	24.2	
21-Dec	5	22	3	6	A	4	3	4	3	3	2	2	2	2	3	3	5	5	4	3	6	13	7	17	5.5	21.9	
22-Dec	21	6	9	7	A	5	6	5	8	7	11	13	13	18	5	6	13	8	7	5	6	10	3	3	8.5	21.1	
23-Dec	3	4	3	2	A	3	2	2	3	4	5	4	5	5	2	3	3	2	1	3	5	5	9	4	3.5	8.8	
24-Dec	6	2	3	3	A	4	3	1	1	2	3	3	2	1	1	2	2	2	2	3	3	5	3	2	2.6	6.2	
25-Dec	4	4	1	1	A	3	3	2	5	1	3	3	3	3	2	3	4	5	5	6	5	7	6	8	3.7	7.8	
26-Dec	10	12	10	15	A	11	10	10	13	9	8	7	16	12	7	7	6	6	7	6	5	4	4	4	8.8	15.9	
27-Dec	5	5	4	3	A	10	12	10	17	9	5	11	6	12	11	12	8	6	5	3	3	5	3	3	7.2	16.7	
28-Dec	5	3	4	4	A	4	15	11	19	9	9	11	7	9	6	11	22	13	7	6	15	15	3	6	9.3	21.9	
29-Dec	9	10	11	11	A	4	5	4	13	8	48	19	14	8	16	9	8	8	6	5	5	4	4	5	10.1	48.2	
30-Dec	5	7	7	16	A	27	27	22	21	18	25	18	29	18	18	14	23	19	15	29	23	26	22	15	19.3	29.3	
31-Dec	19	19	19	46	A	37	61	49	46	39	42	38	31	35	16	17	12	21	13	39	33	36	23	23	31.0	60.8	
		6.2	6.0	4.7	6.0	--	7.4	8.6	9.3	10.5	9.3	15.0	11.3	11.4	11.4	10.1	8.8	9.5	9.5	8.5	7.5	7.9	8.2	6.1	6.7	Diurnal Average	
		21.1	21.9	19.1	46.2	--	36.5	60.8	48.9	45.6	38.9	63.9	57.0	67.7	54.7	49.3	30.6	23.1	25.3	27.1	39.4	32.7	36.4	22.5	27.9	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

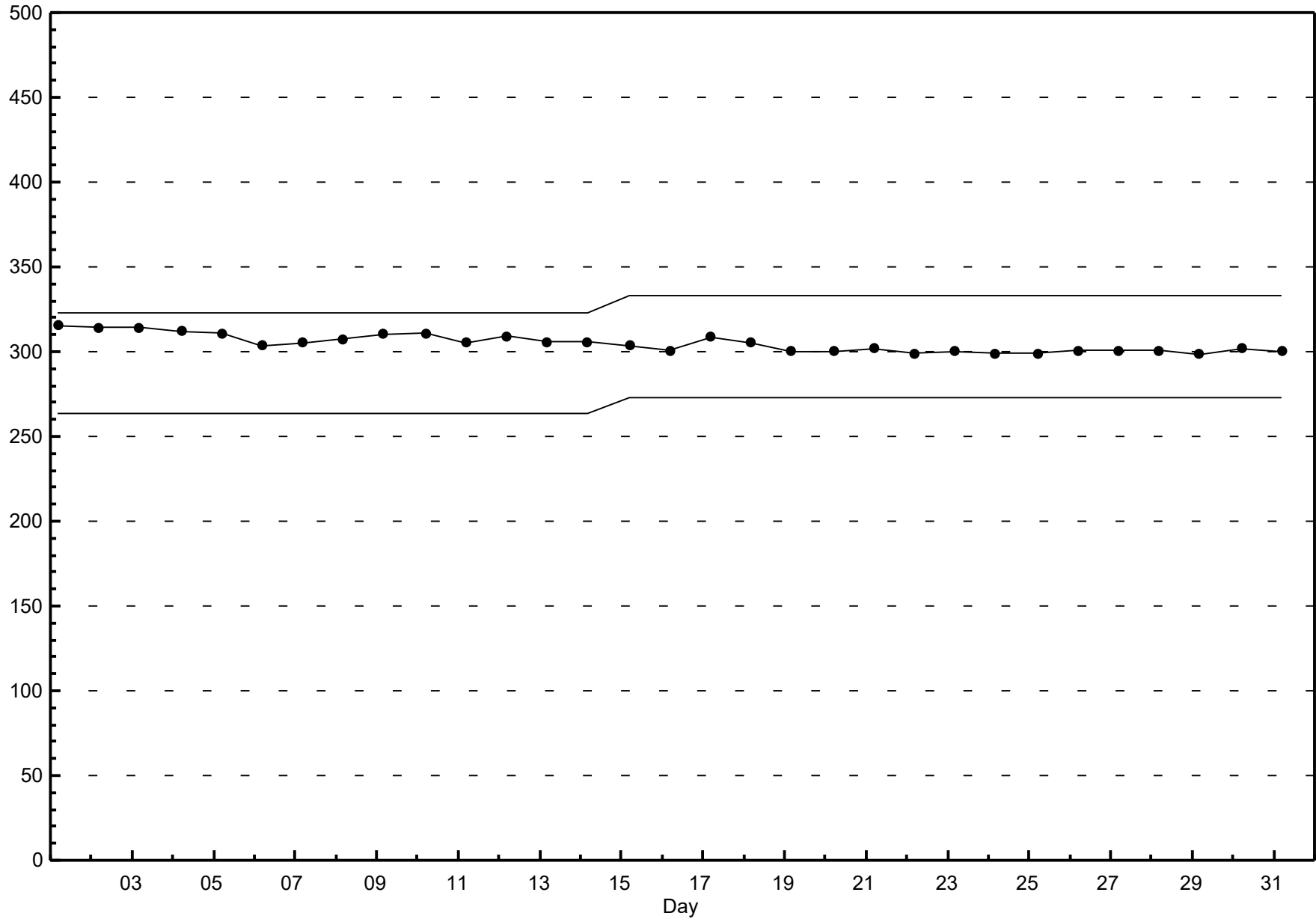
**Hourly Maximums**

**Oxides of Nitrogen (NO<sub>x</sub>) - ppb**  
**Beaverlodge - December 2017**



### Span Responses

Oxides of Nitrogen (NO<sub>x</sub>)  
Beaverlodge - December 2017





## Hourly Averages

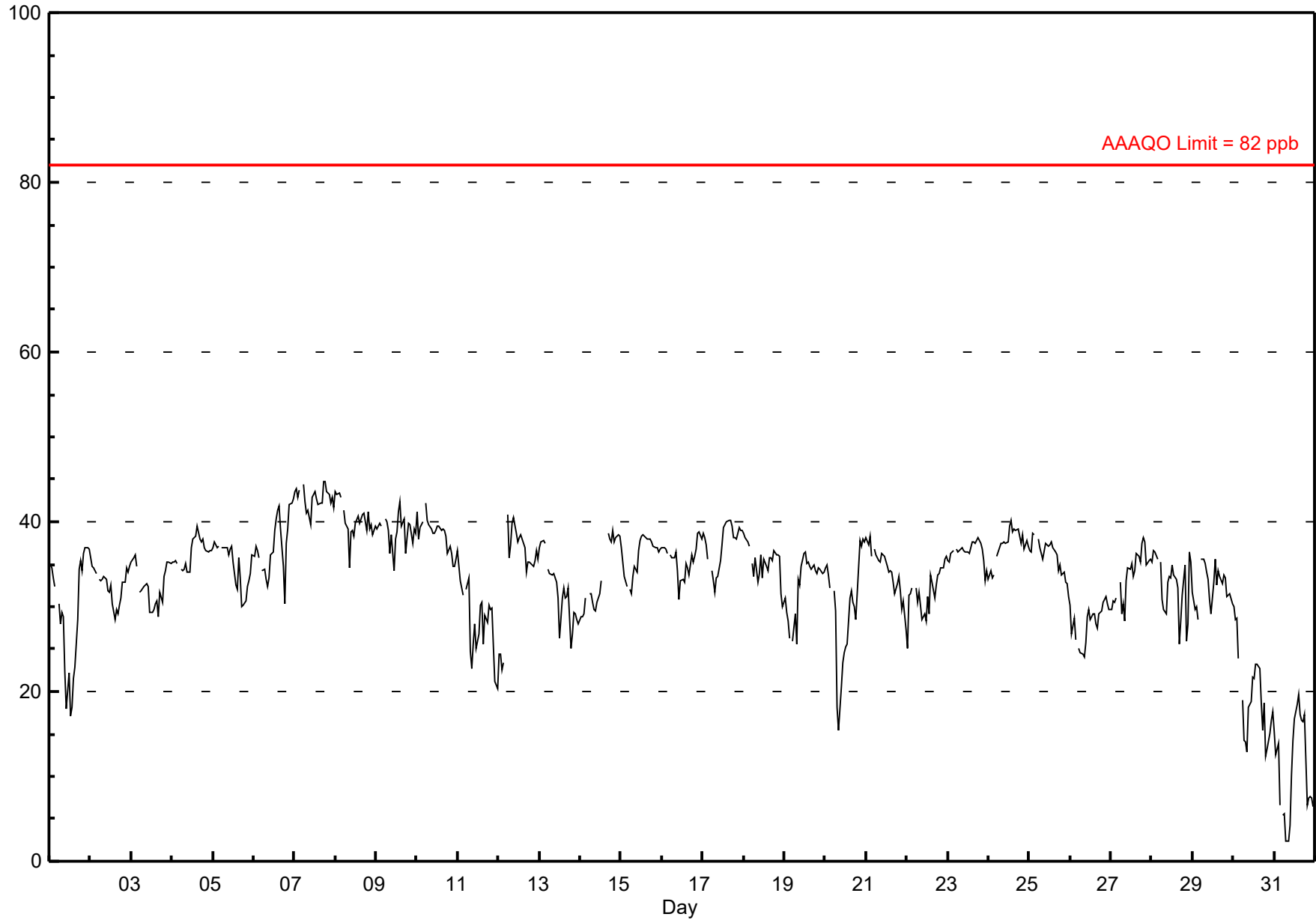
Ozone (O<sub>3</sub>) - ppb

Beaverlodge - December 2017

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 44.8 ppb on Dec 7 18:00	Maximum Daily Average: 42.8 ppb on Dec 7		Hours of Data:	710
Minimum Value: 2 ppb on Dec 31 08:00	Minimum Daily Average: 10.9 ppb on Dec 31		Hours of Missing Data:	34
Maximum Diurnal Average: 34.4 ppb at hour 1	Minimum Diurnal Average: 31.3 ppb at hour 9		Hours of Calibration:	34
Monthly Average: 33.26 ppb	Percentiles: P <sub>1</sub> = 6.3 P <sub>10</sub> = 25.3 Q <sub>1</sub> = 30.8 Median = 34.7 Q <sub>3</sub> = 37.4 P <sub>90</sub> = 39.4 P <sub>99</sub> = 43.6		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	35	34	33	32	A	30	28	29	29	22	18	22	17	18	22	23	28	34	35	34	36	37	37	37	29.3	36.9	
2-Dec	36	35	35	34	A	33	33	33	34	33	32	32	33	30	29	30	29	30	31	33	33	34	34	35	32.6	35.8	
3-Dec	35	36	36	35	A	32	32	32	33	33	32	29	29	30	30	31	29	32	30	33	34	35	35	35	32.6	36.1	
4-Dec	35	35	35	35	A	34	34	34	35	34	34	37	38	38	39	38	38	38	38	37	37	36	37	37	36.3	39.5	
5-Dec	37	38	37	37	A	37	37	37	37	36	37	37	35	33	32	36	33	30	30	31	32	33	34	36	34.8	37.6	
6-Dec	36	37	37	36	A	34	34	33	32	33	36	36	39	40	41	42	39	35	30	38	39	42	42	43	37.2	42.8	
7-Dec	44	44	43	44	A	44	42	41	41	40	43	43	44	43	42	42	42	45	45	44	43	42	43	42	42.8	44.8	
8-Dec	44	43	43	43	A	41	40	39	35	39	39	38	40	41	40	40	41	41	39	41	39	40	38	40	40.2	43.5	
9-Dec	39	40	40	39	A	40	40	39	36	39	34	38	39	41	42	39	40	36	38	40	40	37	39	39	38.9	42.3	
10-Dec	41	38	39	40	A	42	40	40	39	39	39	39	40	39	39	39	39	38	36	37	36	35	35	36	38.5	42.1	
11-Dec	37	33	32	31	A	32	33	25	23	26	28	25	27	30	31	26	29	28	30	30	30	25	21	20	28.3	36.6	
12-Dec	24	24	23	23	A	41	36	37	40	40	39	38	38	39	38	37	34	35	35	35	35	35	37	36	34.7	40.8	
13-Dec	37	38	38	38	A	34	34	34	34	33	33	31	26	31	32	31	31	32	25	27	29	29	29	28	31.9	37.8	
14-Dec	29	29	29	31	A	31	32	30	30	29	30	32	33	C	C	C	39	38	38	39	38	38	38	38	33.6	38.9	
15-Dec	37	35	34	32	A	32	32	33	35	34	37	38	38	39	38	38	38	38	38	38	37	37	37	36	37	36.1	38.5
16-Dec	37	37	37	36	A	36	36	36	36	34	31	33	33	33	35	35	34	36	35	36	37	39	39	38	35.6	38.9	
17-Dec	39	38	37	36	A	34	33	32	33	33	35	37	39	40	40	40	40	40	38	38	38	39	39	39	37.3	40.2	
18-Dec	39	38	38	37	A	35	34	36	33	34	36	33	36	35	34	36	36	35	37	36	36	36	32	30	35.2	38.6	
19-Dec	31	29	28	26	A	26	29	26	33	33	35	36	36	35	35	35	34	35	34	34	35	34	34	34	32.5	36.4	
20-Dec	35	35	34	32	A	32	30	18	15	21	23	25	25	26	31	32	31	30	28	31	38	37	38	38	29.7	38.0	
21-Dec	38	37	38	36	A	37	36	35	35	36	36	36	35	34	34	34	33	32	33	34	32	30	31	27	34.3	38.3	
22-Dec	25	31	32	32	A	32	31	32	30	28	29	28	31	29	34	33	31	33	34	34	35	35	36	36	31.7	36.0	
23-Dec	35	35	36	37	A	37	36	37	37	37	37	36	36	36	38	38	37	38	38	37	37	35	33	34	36.4	38.1	
24-Dec	33	34	33	34	A	36	37	37	38	38	38	38	38	39	40	39	39	39	38	37	38	37	38	37	37.2	40.2	
25-Dec	37	37	39	38	A	38	37	36	36	37	37	37	37	38	37	37	36	34	35	34	34	33	33	31	36.0	38.7	
26-Dec	30	27	29	26	A	25	25	24	24	26	29	30	29	29	29	28	28	29	30	31	31	31	30	30	28.2	31.3	
27-Dec	30	31	30	31	A	33	29	30	28	33	35	34	35	34	34	36	36	35	37	38	38	35	35	36	33.7	38.1	
28-Dec	35	37	36	36	A	35	31	30	29	33	34	33	35	34	33	32	26	28	31	35	26	28	36	35	32.5	36.6	
29-Dec	32	30	30	29	A	36	36	35	34	33	31	29	33	36	32	34	34	33	34	33	31	31	31	30	32.5	35.6	
30-Dec	30	28	29	24	A	19	14	14	13	18	19	22	22	23	23	23	19	15	19	12	13	15	17	18	19.5	30.0	
31-Dec	15	13	14	7	A	5	6	2	2	4	10	14	17	18	20	17	17	16	17	7	7	8	7	7	10.9	19.6	
	34.4	34.1	34.0	33.1	--	33.4	32.4	31.6	31.3	31.9	32.4	32.8	33.4	33.7	34.1	34.0	33.5	33.5	33.5	33.6	33.7	33.6	33.7	33.4	Diurnal Average		
	43.6	43.9	43.4	43.7	--	44.4	42.5	40.9	41.3	40.4	42.9	43.3	43.6	42.8	42.3	42.2	42.2	44.8	44.7	43.6	43.2	42.3	42.8	42.8	Diurnal Maximum		

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



# Hourly Maximums

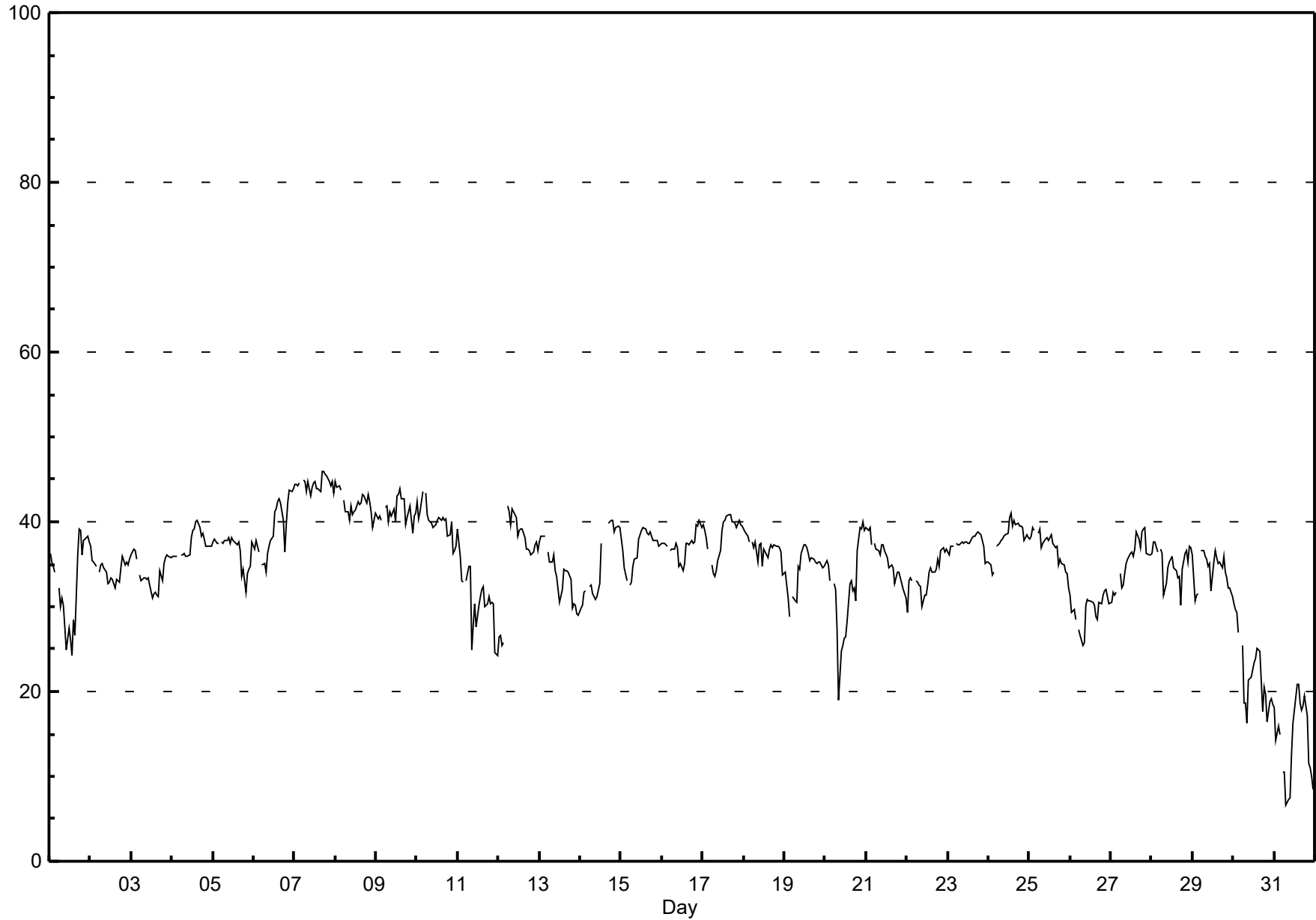
Ozone (O<sub>3</sub>) - ppb

Beaverlodge - December 2017

Maximum Value: 46.0 ppb on Dec 7 17:00		Maximum Daily Average: 44.5 ppb on Dec 7		Hours in Service: 744																							
Minimum Value: 7 ppb on Dec 31 08:00		Minimum Daily Average: 14.2 ppb on Dec 31		Hours of Data: 710																							
Maximum Diurnal Average: 35.9 ppb at hour 15		Minimum Diurnal Average: 33.5 ppb at hour 9		Hours of Missing Data: 34																							
Monthly Average: 35.04 ppb		Percentiles: P <sub>1</sub> = 10.8 P <sub>10</sub> = 28.3 Q <sub>1</sub> = 32.8 Median = 36.3 Q <sub>3</sub> = 38.5 P <sub>90</sub> = 41.1 P <sub>99</sub> = 44.8		Hours of Calibration: 34																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	36	35	35	34	A	32	30	31	30	28	25	27	26	24	28	27	36	39	39	36	38	38	38	38	32.7	39.1	
2-Dec	37	35	35	35	A	34	35	35	35	34	33	33	33	33	32	33	33	33	35	36	35	35	35	36	34.3	37.2	
3-Dec	36	37	37	36	A	34	33	33	33	33	33	33	31	32	32	31	31	34	33	35	36	36	36	36	33.9	36.8	
4-Dec	36	36	36	36	A	36	36	36	36	36	36	38	39	39	40	40	39	38	39	38	37	37	37	37	37.4	40.2	
5-Dec	38	38	38	38	A	38	37	38	38	38	37	38	38	38	37	38	37	33	34	32	34	34	35	38	36.6	38.2	
6-Dec	37	38	37	36	A	35	35	34	36	37	38	38	41	42	42	43	42	40	36	40	42	44	44	44	39.2	43.9	
7-Dec	44	44	44	45	A	45	45	44	45	43	44	45	45	44	44	44	46	46	46	45	45	44	45	43	44.5	46.0	
8-Dec	45	44	44	44	A	43	41	41	40	42	41	41	41	42	42	42	43	43	42	43	42	41	39	41	42.1	44.8	
9-Dec	41	40	41	40	A	42	42	40	41	41	41	40	43	43	44	43	43	40	40	41	42	39	41	41	41.2	43.9	
10-Dec	42	40	41	44	A	43	41	40	40	39	40	40	40	41	40	41	40	40	38	38	40	36	37	37	40.0	43.6	
11-Dec	39	36	33	33	A	33	35	35	25	28	30	28	30	31	32	32	30	30	31	30	30	30	25	24	30.9	39.2	
12-Dec	26	27	25	26	A	42	41	40	41	41	40	38	39	39	39	38	37	37	37	36	36	37	38	37	36.4	41.9	
13-Dec	38	38	38	38	A	36	35	35	36	34	34	32	30	32	34	34	34	34	33	30	30	30	29	29	33.8	38.3	
14-Dec	30	30	32	32	A	32	32	31	31	31	31	33	38	C	C	C	40	40	40	40	39	39	39	39	35.0	40.2	
15-Dec	38	37	35	33	A	33	33	35	36	36	38	39	39	39	39	39	39	39	38	38	38	38	37	37	36.9	39.4	
16-Dec	38	37	37	37	A	37	37	37	37	37	35	35	34	35	38	37	37	38	37	38	40	40	40	39	37.3	40.1	
17-Dec	40	39	38	37	A	35	34	34	34	35	37	39	40	40	41	41	41	40	40	40	39	40	40	39	38.4	40.8	
18-Dec	39	39	38	38	A	38	37	38	35	37	37	35	37	36	36	37	37	37	37	37	37	37	36	34	36.9	39.2	
19-Dec	34	33	31	29	A	31	31	30	35	34	36	37	37	37	36	35	36	36	35	35	35	35	35	35	34.3	37.3	
20-Dec	35	35	35	33	A	33	32	27	19	25	25	26	27	28	33	33	32	32	31	37	39	39	40	39	32.0	40.0	
21-Dec	39	39	39	37	A	37	37	37	36	37	37	37	36	35	35	35	35	33	34	34	33	33	32	31	35.6	39.4	
22-Dec	29	33	33	33	A	33	33	33	32	30	31	31	33	34	35	34	34	34	36	35	37	37	36	37	33.6	36.9	
23-Dec	36	36	37	37	A	38	37	37	38	38	38	38	38	37	38	38	38	39	39	39	38	37	35	35	37.4	38.9	
24-Dec	35	35	34	34	A	37	37	38	38	38	39	39	40	41	39	40	40	40	40	39	39	38	39	38	38.2	41.0	
25-Dec	38	38	39	39	A	39	39	37	37	38	38	38	38	38	38	37	37	35	36	35	35	34	34	32	36.9	39.4	
26-Dec	31	29	30	28	A	27	27	25	26	30	31	31	31	30	29	28	31	30	31	32	32	31	30	29.6	32.0		
27-Dec	30	32	31	32	A	34	32	33	34	35	36	36	36	36	37	39	38	37	39	39	39	36	36	36	35.4	39.3	
28-Dec	36	38	38	36	A	37	36	31	33	35	35	36	36	35	34	33	33	30	34	36	37	35	37	37	35.2	37.7	
29-Dec	36	31	31	32	A	37	37	36	36	35	35	32	35	37	36	35	35	35	36	34	33	32	31	34.2	36.6		
30-Dec	30	30	29	27	A	25	19	19	16	21	22	23	23	24	25	25	21	18	20	20	17	19	19	18	22.2	30.4	
31-Dec	18	14	16	15	A	11	11	7	7	8	13	16	18	21	21	19	18	18	19	17	12	11	10	9	14.2	20.9	
		35.8	35.3	35.1	34.6	--	35.0	34.4	33.7	33.5	34.0	34.4	34.5	35.2	35.5	35.9	35.7	35.8	35.4	35.7	35.6	35.7	35.3	35.0	34.8	Diurnal Average	
		44.8	44.4	44.2	44.6	--	44.8	44.8	43.6	44.8	43.1	44.1	44.7	44.8	44.0	43.9	43.6	46.0	45.9	45.6	45.4	44.8	44.3	44.8	43.9	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

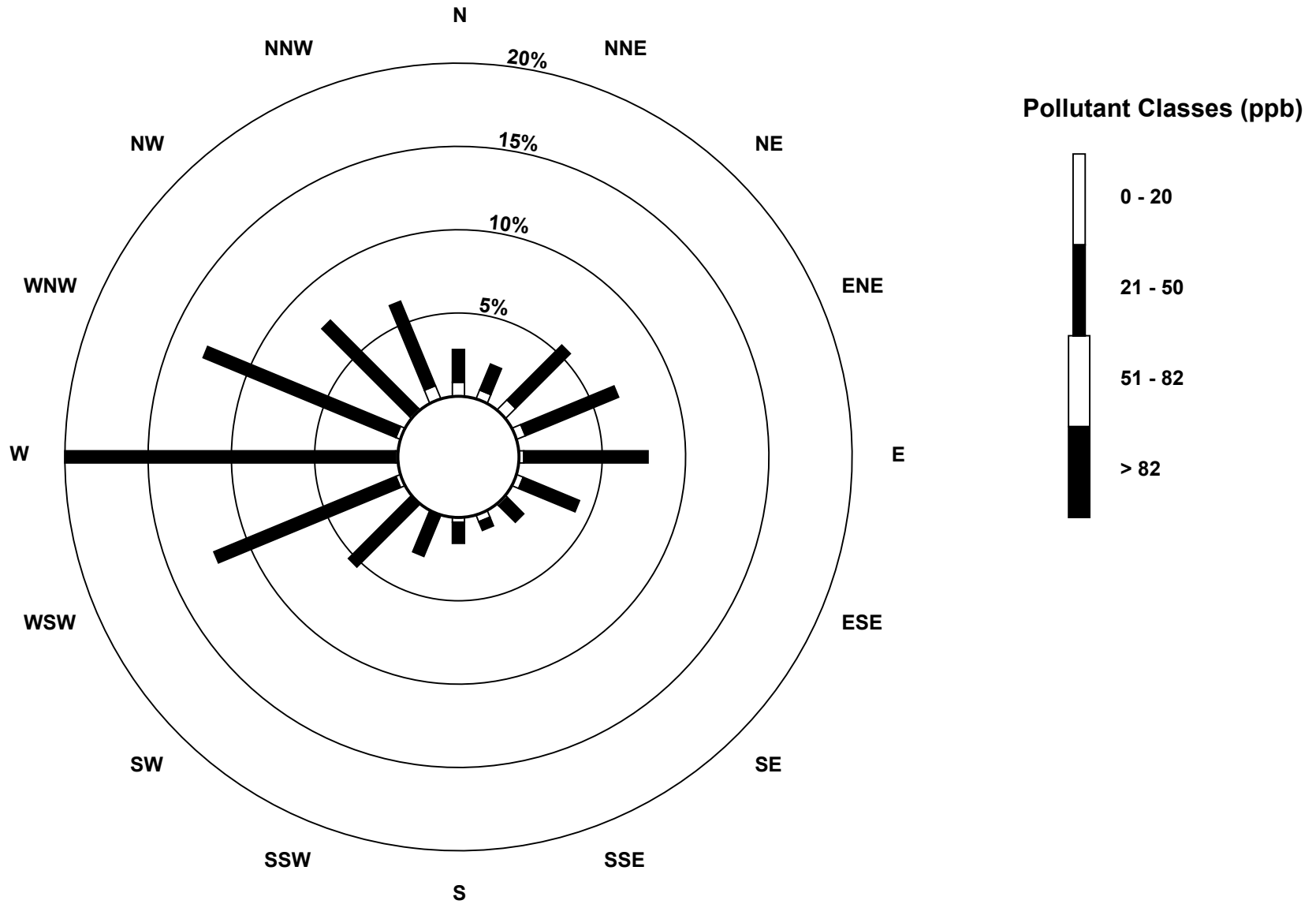
### Hourly Maximums

Ozone (O<sub>3</sub>) - ppb  
Beaverlodge - December 2017



**Pollutant Rose**

**Ozone (O<sub>3</sub>) - ppb**  
**Beaverlodge - December 2017**



# Eight Hour Running Averages

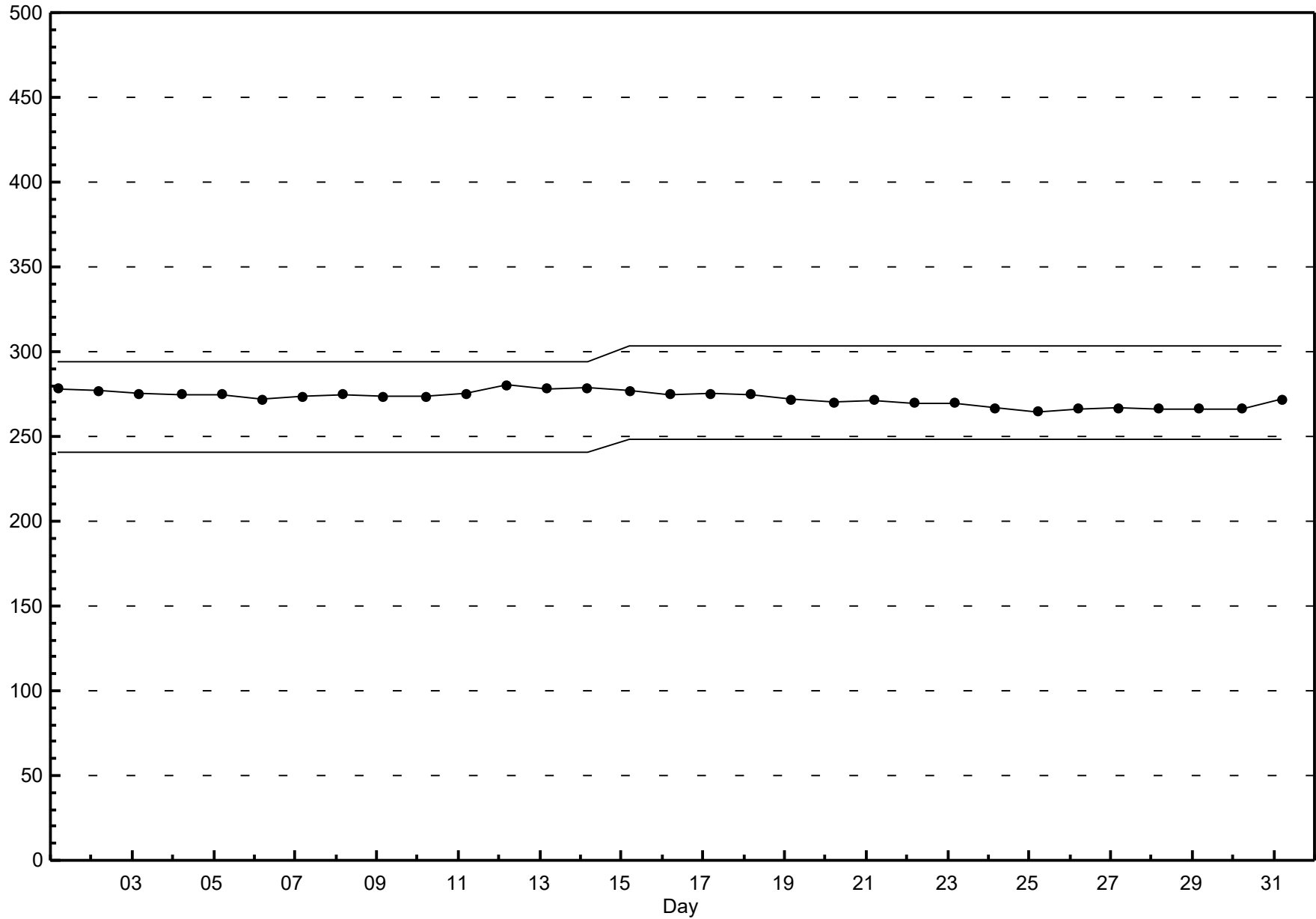
Ozone (O<sub>3</sub>) - ppb

Beaverlodge - December 2017

Maximum Value: 43.4 ppb on Dec 7 07:00																					Hours in Service:	744			
Minimum Value: 5.2 ppb on Dec 31 11:00																					Hours of Data:	738			
Percentiles: P <sub>1</sub> = 10.7 P <sub>10</sub> = 26.7 Q <sub>1</sub> = 31.0 Median = 34.6 Q <sub>3</sub> = 37.1 P <sub>90</sub> = 39.1 P <sub>99</sub> = 43.2																					Hours of Missing Data:	6			
																					Hours of Calibration:	6			
																					Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Dec	34	34	34	34	34	33	33	32	31	29	27	26	25	23	22	21	21	23	25	27	29	31	33	35	34.9
2-Dec	36	36	36	36	36	35	35	34	34	34	33	33	33	32	32	31	31	30	30	31	31	31	32	32	35.9
3-Dec	33	34	35	35	35	35	34	34	34	33	33	32	32	31	31	31	30	30	30	31	31	32	32	33	35.0
4-Dec	34	34	35	35	35	35	35	35	35	35	34	35	35	36	36	37	37	38	38	38	38	38	37	37	38.0
5-Dec	37	37	37	37	37	37	37	37	37	37	37	37	37	36	35	35	35	34	33	32	32	32	32	32	37.1
6-Dec	33	34	34	35	35	36	36	35	35	34	34	34	35	36	37	38	38	39	38	38	38	38	38	38	38.6
7-Dec	39	40	42	43	43	43	43	43	43	42	42	42	42	42	42	42	43	43	43	43	43	43	43	43	43.4
8-Dec	43	43	43	43	43	43	42	42	41	40	39	39	39	39	39	39	40	40	40	40	40	40	40	40	43.3
9-Dec	40	39	40	39	39	39	40	40	39	39	38	38	38	38	39	39	39	39	39	39	40	39	39	39	39.7
10-Dec	39	39	39	39	39	40	40	40	40	40	40	40	40	39	39	39	39	39	39	38	38	37	37	36	40.1
11-Dec	36	36	35	34	34	34	33	32	30	29	28	27	27	27	27	28	28	28	29	29	29	29	27	27	36.2
12-Dec	26	26	25	24	23	25	27	30	32	34	37	39	39	38	39	39	38	37	37	36	36	36	35	35	38.6
13-Dec	36	36	36	37	37	37	36	36	36	35	34	33	32	32	32	31	31	31	30	29	30	30	29	29	36.8
14-Dec	28	28	29	29	29	29	30	30	30	31	31	31	31	31	N	N	N	N	N	N	N	38	38	38	38.2
15-Dec	38	38	37	36	36	35	34	34	33	33	34	34	35	36	36	37	37	38	38	38	38	38	37	37	38.1
16-Dec	37	37	37	37	37	37	37	36	36	36	35	35	34	34	34	34	33	34	34	35	35	36	36	37	37.1
17-Dec	37	38	38	38	38	37	36	36	35	34	34	34	35	35	36	37	38	39	39	39	39	39	39	39	39.4
18-Dec	39	39	38	38	38	38	37	37	36	35	35	34	35	35	35	35	35	35	35	36	36	36	35	35	38.7
19-Dec	34	33	32	31	30	29	29	28	28	29	30	31	32	33	34	35	35	35	35	35	35	35	34	34	35.2
20-Dec	34	34	34	34	34	34	33	31	28	26	24	23	24	23	23	25	27	28	28	29	31	32	33	34	34.3
21-Dec	35	36	37	38	37	37	37	37	36	36	36	36	36	35	35	35	35	34	34	33	33	33	32	31	37.5
22-Dec	30	30	30	30	30	30	30	31	31	31	31	30	30	30	30	30	30	31	32	32	33	33	34	34	34.0
23-Dec	35	35	35	36	36	36	36	36	36	37	37	37	37	37	37	37	37	37	37	37	37	37	37	36	37.4
24-Dec	36	35	35	34	34	34	35	35	36	36	37	37	37	38	38	38	39	39	39	39	39	38	38	38	39.0
25-Dec	38	37	37	38	37	38	37	37	37	37	37	37	37	37	37	37	37	37	36	36	36	35	34	34	37.7
26-Dec	33	32	31	30	30	29	28	27	26	26	26	26	27	27	28	28	29	29	29	29	30	30	30	30	33.0
27-Dec	30	30	30	30	30	31	31	31	30	31	31	32	32	32	33	34	35	35	35	36	36	36	36	36	36.4
28-Dec	36	36	36	36	36	36	35	34	33	33	32	32	32	33	33	33	32	32	32	32	31	30	30	31	36.4
29-Dec	31	32	31	31	31	32	32	32	33	33	33	33	33	33	33	33	33	33	33	34	33	33	33	32	33.6
30-Dec	32	31	31	29	29	27	25	23	20	19	17	17	18	18	19	20	21	21	21	19	18	17	17	16	31.8
31-Dec	16	15	15	14	14	13	11	9	7	6	5	6	8	9	11	13	15	16	17	16	15	14	12	11	17.1
43.3 43.1 43.0 42.9 43.0 43.3 43.4 43.1 42.8 42.2 42.2 42.1 42.3 42.1 42.1 42.2 42.3 43.0 43.2 43.2 43.2 43.1 43.2 43.1																									
Diurnal Maximums																									
N - Not Valid																									

### Span Responses

Ozone (O<sub>3</sub>)  
Beaverlodge - December 2017



## Hourly Averages

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

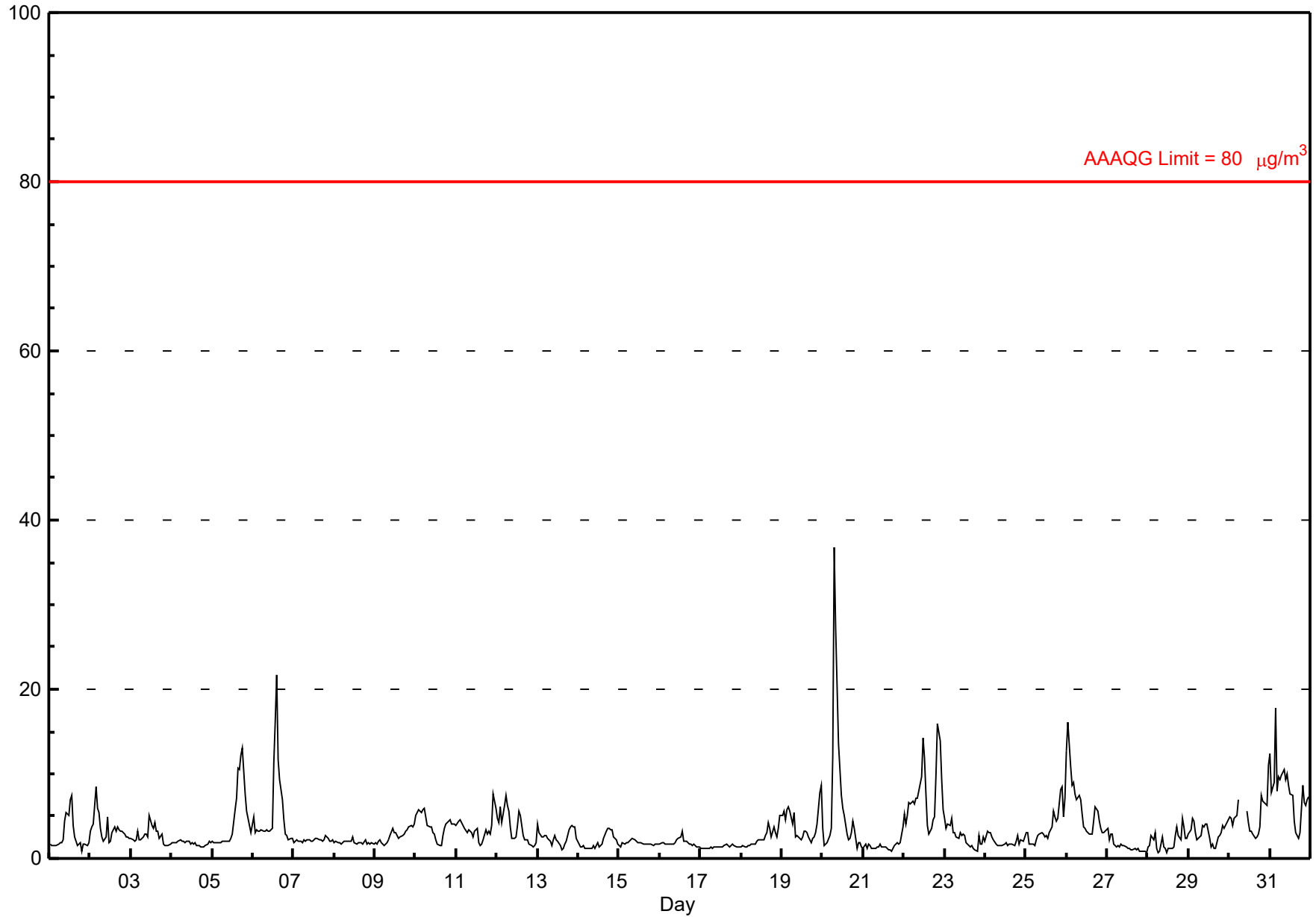
### Beaverlodge - December 2017

Number of Exceedences: 1-hr: 0 24-hr: 0	Hours in Service: 744
Maximum Value: 36.8 µg/m <sup>3</sup> on Dec 20 08:00	Maximum Daily Average: 7.9 µg/m <sup>3</sup> on Dec 31
Minimum Value: 1 µg/m <sup>3</sup> on Dec 28 12:00	Hours of Data: 740
Maximum Diurnal Average: 4.1 µg/m <sup>3</sup> at hour 8	Hours of Missing Data: 4
Monthly Average: 3.35 µg/m <sup>3</sup>	Hours of Calibration: 0
Minimum Daily Average: 1.4 µg/m <sup>3</sup> on Dec 17	Percent Operational Time: 99.5
Minimum Diurnal Average: 2.8 µg/m <sup>3</sup> at hour 16	
Percentiles: P <sub>1</sub> = 0.9 P <sub>10</sub> = 1.4 Q <sub>1</sub> = 1.7 Median = 2.4 Q <sub>3</sub> = 3.8 P <sub>90</sub> = 6.3 P <sub>99</sub> = 15.8	

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	2	1	1	2	2	2	2	2	2	4	5	5	7	7	4	2	2	2	2	1	2	2	2	2	2.7	7.5																						
2-Dec	3	4	4	8	6	5	4	3	2	3	5	2	2	3	4	3	4	3	3	3	3	2	3	2	3.5	8.4																						
3-Dec	2	2	2	2	3	2	2	2	3	3	3	5	4	4	4	3	3	2	3	2	2	2	2	2	2.7	5.1																						
4-Dec	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	2	2	2	1.8	2.2																						
5-Dec	2	2	2	2	2	2	2	2	2	2	2	2	3	6	7	11	11	12	13	8	6	5	4	3	4.6	13.0																						
6-Dec	5	3	3	3	3	3	3	3	3	3	3	4	11	16	22	12	9	7	5	3	3	2	2	2	5.6	21.7																						
7-Dec	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2.2	2.7																						
8-Dec	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	1.9	2.5																						
9-Dec	2	2	2	2	2	2	2	2	2	3	4	3	3	3	2	3	3	3	3	3	4	4	4	4	2.7	4.1																						
10-Dec	5	5	6	5	6	6	5	4	4	4	3	3	2	2	1	2	3	4	4	4	5	4	4	4	3.9	5.9																						
11-Dec	4	4	5	4	4	4	3	3	3	3	3	3	4	2	2	2	3	3	3	3	4	8	6	6	3.5	7.7																						
12-Dec	5	4	6	4	6	8	6	6	4	2	2	2	4	6	5	3	2	2	2	2	1	1	2	2	3.7	7.5																						
13-Dec	4	3	3	2	3	3	2	2	2	2	3	2	2	1	1	1	2	2	3	4	4	4	4	2	2.5	4.1																						
14-Dec	2	1	1	2	1	1	1	1	1	1	1	2	1	2	2	2	3	4	4	3	3	3	2	2	2.0	3.6																						
15-Dec	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.8	2.3																						
16-Dec	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2	2	2	2	2	2	2	1	1	1	1.9	3.2																						
17-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	2	2	1	1	1	1.4	1.7																						
18-Dec	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	3	4	4	2	4	3	3	4	5	2.4	5.0																						
19-Dec	5	6	5	6	6	6	4	5	3	3	3	2	3	3	3	3	2	2	2	2	3	4	8	9	4.0	8.6																						
20-Dec	4	1	2	2	3	4	12	37	27	14	10	7	6	5	3	2	2	3	4	4	1	2	2	1	6.6	36.8																						
21-Dec	1	2	1	2	2	1	1	1	1	1	2	1	1	1	1	1	1	1	2	2	2	2	2	4	1.5	3.7																						
22-Dec	5	4	5	7	6	7	6	7	7	8	10	14	12	8	4	3	4	4	5	10	16	14	9	6	7.5	15.9																						
23-Dec	5	4	4	4	5	3	3	2	2	3	3	3	3	2	2	1	2	1	1	1	3	2	2	3	2.6	4.7																						
24-Dec	2	3	3	3	3	2	2	2	2	1	1	2	2	1	2	2	2	2	2	3	2	2	2	3	2.0	3.2																						
25-Dec	3	3	2	2	2	2	2	3	3	3	3	3	3	2	3	4	6	5	4	5	8	8	5	7	3.7	8.4																						
26-Dec	13	16	11	9	9	8	7	7	7	5	4	4	3	3	3	3	4	6	6	4	4	3	3	3	6.0	16.0																						
27-Dec	4	2	3	3	2	1	2	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1.5	3.6																						
28-Dec	1	2	3	2	3	1	1	1	3	1	1	1	1	1	1	1	3	4	3	2	5	4	2	2	2.0	4.7																						
29-Dec	3	3	5	4	3	2	3	3	4	4	4	4	2	1	2	1	1	3	3	3	4	4	4	5	3.1	4.7																						
30-Dec	5	5	4	5	5	7	N	N	N	N	6	4	3	3	3	2	3	3	4	7	7	7	6	11	4.9	11.0																						
31-Dec	12	8	9	18	8	10	9	10	11	9	10	9	8	7	4	3	3	2	3	9	7	6	7	7	7.9	17.7																						
																								3.5	3.3	3.3	3.7	3.4	3.3	3.2	4.1	3.7	3.3	3.4	3.3	3.4	3.4	3.2	2.8	2.9	3.1	3.2	3.3	3.5	3.3	3.3	3.5	Diurnal Average
																								12.6	16.0	10.9	17.7	9.0	9.7	12.2	36.8	27.3	13.5	10.5	14.3	11.9	16.3	21.7	11.7	10.6	12.2	13.0	9.8	15.9	13.8	9.2	11.0	Diurnal Maximum

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



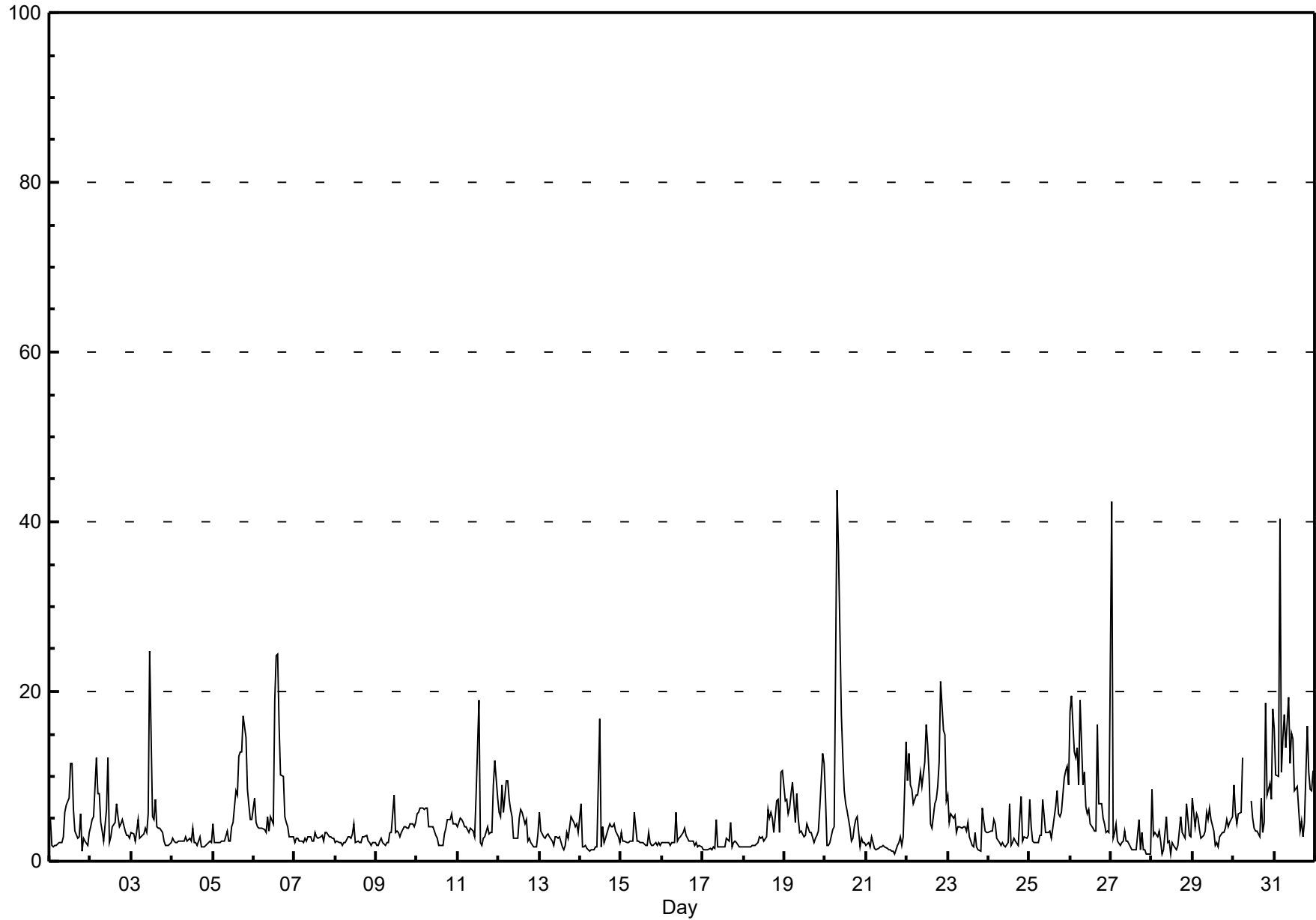


# Hourly Maximums

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

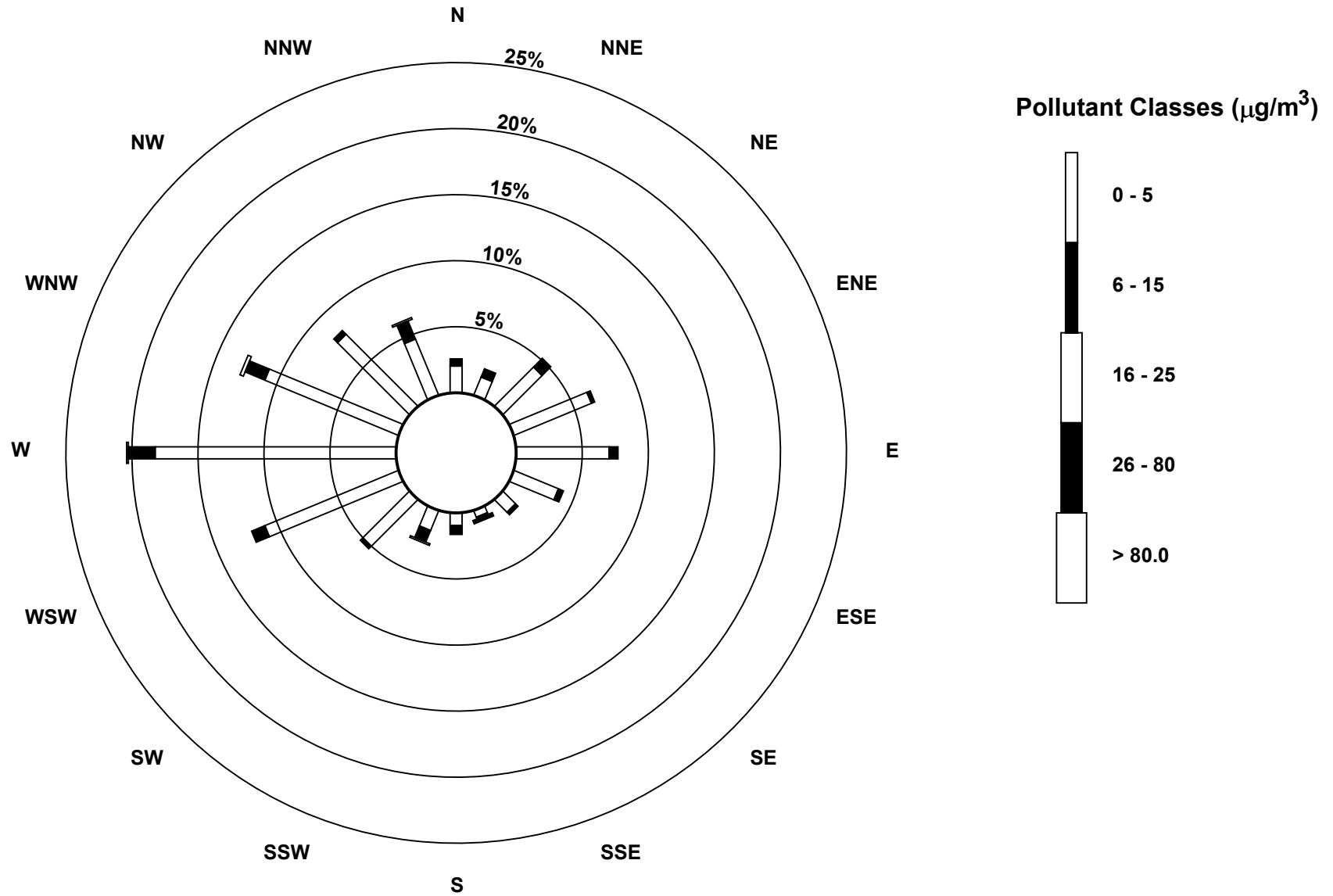
## Beaverlodge - December 2017

Maximum Value: 43.8 µg/m <sup>3</sup> on Dec 20 08:00 Minimum Value: 1 µg/m <sup>3</sup> on Dec 21 18:00 Maximum Diurnal Average: 6.9 µg/m <sup>3</sup> at hour 1 Monthly Average: 4.75 µg/m <sup>3</sup>		Maximum Daily Average: 11.9 µg/m <sup>3</sup> on Dec 31 Minimum Daily Average: 2.0 µg/m <sup>3</sup> on Dec 17 Minimum Diurnal Average: 3.7 µg/m <sup>3</sup> at hour 16 Percentiles: P <sub>1</sub> = 1.2 P <sub>10</sub> = 1.7 Q <sub>1</sub> = 2.2 Median = 3.4 Q <sub>3</sub> = 5.3 P <sub>90</sub> = 9.2 P <sub>99</sub> = 23.9		Hours in Service: 744 Hours of Data: 740 Hours of Missing Data: 4 Hours of Calibration: 0 Percent Operational Time: 99.5																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	5	2	2	2	2	2	2	2	3	6	7	8	11	11	6	4	3	3	6	1	3	2	2	3	4.0	11.5	
2-Dec	4	5	5	12	8	8	5	4	2	6	12	2	3	4	5	7	5	4	4	5	4	3	3	3	5.1	12.2	
3-Dec	3	3	2	4	5	3	3	3	4	3	6	25	5	5	7	4	4	4	3	2	2	2	2	2	4.4	24.7	
4-Dec	3	2	2	2	2	2	2	2	3	2	3	2	4	2	2	2	3	2	2	2	2	2	2	2	2.3	3.9	
5-Dec	4	2	2	2	2	2	2	2	4	2	2	4	5	8	8	12	13	13	17	15	9	7	5	5	6.2	17.1	
6-Dec	8	5	4	4	4	4	4	3	5	4	5	4	19	24	24	16	10	10	5	5	4	3	3	3	7.5	24.5	
7-Dec	2	3	3	2	2	2	3	2	3	3	2	2	3	3	3	3	3	2	3	3	3	3	3	3	2.7	3.4	
8-Dec	2	2	2	2	2	2	2	3	3	3	3	4	2	2	2	2	3	3	3	2	2	2	2	2	2.5	4.3	
9-Dec	2	2	2	3	2	2	2	2	3	3	8	3	4	3	3	3	4	4	4	4	4	4	4	5	3.4	7.8	
10-Dec	6	6	6	6	6	6	6	4	4	4	4	3	3	2	2	2	3	4	5	5	6	4	4	4	4.4	6.3	
11-Dec	4	5	5	5	4	4	3	4	4	4	3	8	19	2	2	3	3	4	3	3	3	9	12	8	5.1	19.1	
12-Dec	6	5	9	6	9	9	7	6	5	3	3	3	5	6	6	4	5	2	3	2	2	2	2	3	4.7	9.5	
13-Dec	6	4	3	3	3	3	3	2	2	3	3	3	3	2	1	2	3	3	5	5	5	4	4	3	3.2	5.8	
14-Dec	7	2	2	2	1	1	1	1	1	2	2	17	2	4	2	3	4	4	4	4	4	4	3	2	3.3	16.9	
15-Dec	3	2	2	2	2	2	2	2	6	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2.4	5.8	
16-Dec	2	2	2	2	2	2	2	2	6	2	3	3	3	4	3	3	2	2	2	2	2	2	2	2	2.5	5.8	
17-Dec	1	1	1	1	1	1	2	1	5	2	2	2	2	2	3	2	5	2	2	2	2	2	2	2	2.0	4.8	
18-Dec	2	2	2	2	2	2	2	2	2	3	3	3	2	3	6	5	6	5	3	7	7	3	10	11	3.9	10.7	
19-Dec	7	7	6	6	8	9	5	8	5	3	4	3	3	4	4	3	3	2	3	3	4	6	13	11	5.5	12.7	
20-Dec	7	2	2	2	4	4	23	44	37	17	12	8	7	6	4	2	3	4	5	5	2	3	2	2	8.6	43.8	
21-Dec	2	2	2	3	2	1	1	1	2	2	2	2	1	1	1	1	1	1	2	2	3	2	3	14	2.3	14.2	
22-Dec	9	13	9	9	7	8	8	9	10	9	12	16	14	10	4	4	7	7	9	12	21	15	15	7	10.1	21.3	
23-Dec	8	5	6	5	5	3	4	4	4	4	4	4	5	3	2	2	3	2	1	1	6	5	4	3	3.9	7.8	
24-Dec	3	4	4	5	4	3	2	2	2	2	2	2	7	2	2	3	2	2	5	8	2	3	3	3	3.1	7.6	
25-Dec	7	4	2	2	2	2	3	3	7	3	3	3	4	3	4	7	8	6	5	6	10	11	11	9	5.3	11.2	
26-Dec	18	20	13	12	13	9	19	9	10	7	6	6	4	4	4	4	16	7	7	5	4	3	4	3	8.6	19.6	
27-Dec	42	3	3	4	2	2	2	2	4	2	2	2	1	1	1	1	5	1	3	1	1	1	1	1	3.9	42.3	
28-Dec	8	3	3	3	4	2	1	1	5	2	2	1	2	2	1	2	4	5	3	3	7	5	3	3	3.2	8.5	
29-Dec	8	4	6	5	4	3	3	4	6	5	6	5	4	2	2	2	3	3	3	4	5	4	5	5	4.1	7.5	
30-Dec	9	6	4	6	6	12	N	N	N	N	7	5	4	4	4	3	8	3	5	19	8	9	7	18	7.3	18.6	
31-Dec	16	10	10	40	11	14	17	13	19	11	15	14	8	9	6	4	5	3	5	16	10	8	8	11	11.9	40.4	
		6.9	4.4	4.1	5.3	4.3	4.3	4.8	5.1	5.9	4.2	4.8	5.5	5.2	4.6	4.1	3.7	4.8	3.9	4.3	5.0	4.8	4.4	4.7	5.0	Diurnal Average	
		42.3	19.6	12.9	40.4	13.4	14.4	23.2	43.8	36.7	17.3	15.1	24.7	19.1	24.2	24.5	16.1	16.1	12.9	17.1	18.6	21.3	15.4	14.9	18.0	Diurnal Maximum	
N - Not Valid																											



**Pollutant Rose**

**Particulate Matter 2.5 (PM<sub>2.5</sub>) - μg/m<sup>3</sup>**  
**Beaverlodge - December 2017**



# Hourly Averages

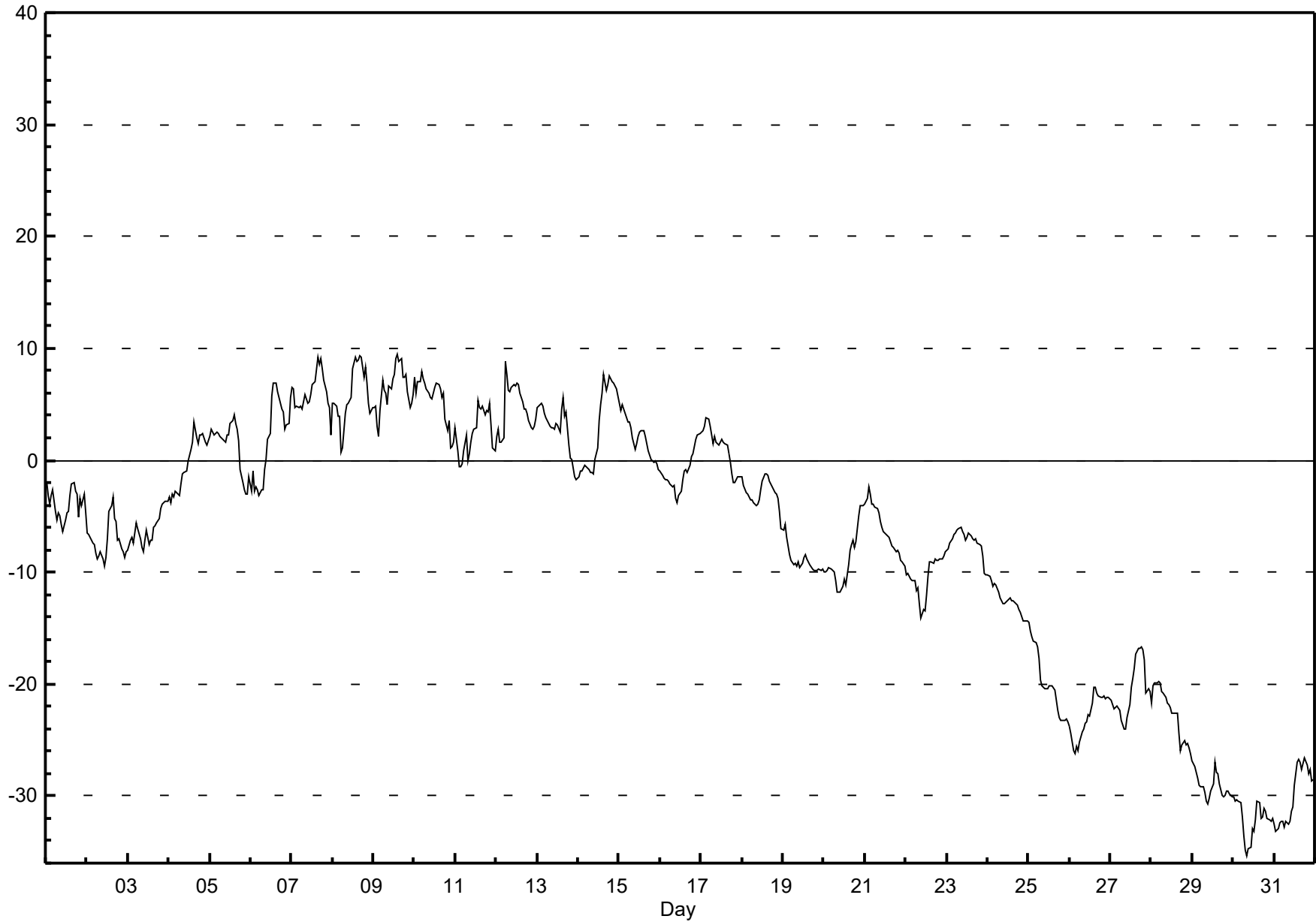
External Temperature (ET) - °C

Beaverlodge - December 2017

<b>Maximum Value: 9.5 °C on Dec 9 15:00</b>		<b>Maximum Daily Average: 6.3 °C on Dec 9</b>		Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																						
<b>Minimum Value: -35 °C on Dec 30 09:00</b>		<b>Minimum Daily Average: -32.1 °C on Dec 30</b>																								
<b>Maximum Diurnal Average: -5.1 °C at hour 16</b>		<b>Minimum Diurnal Average: -7.8 °C at hour 10</b>																								
<b>Monthly Average: -6.77 °C</b>		Percentiles: P <sub>1</sub> = -32.9 P <sub>10</sub> = -26.0 Q <sub>1</sub> = -12.4 Median = -3.7 Q <sub>3</sub> = 2.6 P <sub>90</sub> = 5.8 P <sub>99</sub> = 9.0																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	-2	-3	-4	-3	-3	-5	-5	-5	-5	-6	-6	-5	-5	-3	-2	-2	-3	-3	-5	-3	-4	-3	-5	-3.9	-2.0	
2-Dec	-6	-7	-7	-7	-8	-8	-9	-9	-8	-9	-10	-9	-7	-5	-4	-3	-5	-5	-7	-7	-8	-8	-9	-8	-7.2	-3.2
3-Dec	-8	-7	-7	-7	-6	-6	-6	-7	-8	-8	-7	-6	-8	-7	-7	-6	-6	-6	-5	-4	-4	-4	-4	-4	-6.2	-3.7
4-Dec	-3	-4	-3	-3	-3	-3	-3	-2	-1	-1	-1	0	1	1	2	3	2	2	2	2	2	2	1	2	-0.3	3.4
5-Dec	2	3	2	2	3	2	2	2	2	2	2	2	3	4	4	3	3	2	-1	-2	-3	-3	-3	-1	1.3	4.0
6-Dec	-3	-1	-3	-2	-3	-3	-3	-3	-1	0	2	2	6	7	7	7	6	5	5	4	3	3	3	6	1.9	7.0
7-Dec	7	6	5	5	5	5	5	5	6	5	5	6	7	7	7	9	9	9	8	7	6	5	5	2	6.1	9.2
8-Dec	5	5	5	4	4	1	1	4	5	5	5	6	8	9	9	9	9	9	7	8	7	5	4	5	5.8	9.3
9-Dec	5	5	3	2	4	7	6	6	5	7	6	7	8	9	9	9	9	7	7	8	6	5	5	6	6.3	9.5
10-Dec	7	6	7	7	8	7	7	6	6	6	5	6	6	7	7	6	6	6	4	3	4	1	1	2	5.5	7.9
11-Dec	3	1	-1	-1	0	1	2	0	1	2	2	3	3	5	5	5	5	4	4	4	5	3	1	1	2.4	5.3
12-Dec	2	3	2	2	2	9	8	6	6	7	7	7	7	7	6	5	5	5	4	4	3	3	3	4	4.7	8.9
13-Dec	5	5	5	5	4	4	4	3	3	3	3	3	3	3	5	6	4	4	1	0	0	-1	-1	-2	2.8	5.6
14-Dec	-1	-1	-1	-1	0	-1	-1	-1	-1	-1	0	1	4	5	6	8	6	7	8	7	7	7	6	6	2.8	7.7
15-Dec	5	4	5	4	4	3	3	3	2	1	1	2	3	3	3	2	1	1	1	0	0	0	0	-1	2.1	5.0
16-Dec	-1	-1	-2	-2	-2	-2	-2	-2	-2	-3	-4	-3	-3	-2	-1	-1	-1	-1	0	1	1	2	2	2	-1.1	2.4
17-Dec	3	3	3	4	4	3	2	1	2	2	1	2	2	2	1	1	1	0	-1	-2	-2	-1	-2	-1	1.1	3.8
18-Dec	-1	-2	-3	-3	-3	-4	-4	-4	-4	-4	-4	-3	-2	-1	-1	-1	-2	-2	-3	-3	-3	-5	-6	-6	-2.9	-1.2
19-Dec	-6	-6	-7	-8	-8	-9	-9	-9	-9	-9	-10	-9	-9	-8	-9	-9	-9	-10	-10	-10	-10	-10	-10	-10	-8.9	-5.7
20-Dec	-10	-10	-10	-10	-10	-10	-10	-11	-12	-12	-12	-11	-11	-11	-9	-8	-8	-7	-8	-7	-5	-4	-4	-4	-8.8	-4.0
21-Dec	-4	-3	-2	-3	-4	-4	-4	-4	-5	-5	-6	-6	-7	-7	-7	-7	-8	-8	-8	-8	-8	-9	-9	-9	-6.1	-2.4
22-Dec	-10	-10	-10	-11	-11	-11	-12	-11	-13	-14	-13	-13	-12	-10	-9	-9	-9	-9	-9	-9	-9	-9	-9	-8	-10.4	-8.2
23-Dec	-8	-8	-7	-7	-7	-7	-6	-6	-6	-6	-7	-7	-7	-7	-7	-7	-7	-7	-8	-8	-8	-9	-10	-10	-7.3	-5.9
24-Dec	-10	-10	-11	-11	-11	-11	-12	-12	-13	-13	-13	-13	-12	-12	-13	-13	-13	-13	-13	-14	-14	-14	-14	-14	-12.5	-10.2
25-Dec	-15	-15	-16	-16	-16	-17	-18	-20	-20	-20	-20	-20	-20	-20	-20	-21	-21	-22	-23	-23	-23	-23	-23	-23	-19.9	-14.5
26-Dec	-24	-24	-26	-26	-26	-26	-25	-24	-24	-24	-23	-23	-23	-22	-20	-20	-21	-21	-21	-21	-21	-21	-21	-21	-22.9	-20.2
27-Dec	-21	-22	-22	-22	-22	-22	-23	-24	-24	-24	-23	-22	-20	-20	-19	-17	-17	-17	-17	-17	-18	-21	-20	-21	-20.6	-16.7
28-Dec	-22	-20	-20	-20	-20	-20	-21	-21	-21	-22	-22	-23	-23	-23	-23	-23	-24	-26	-25	-25	-25	-25	-26	-26	-22.6	-19.8
29-Dec	-27	-27	-28	-28	-29	-29	-29	-30	-30	-31	-30	-30	-29	-27	-28	-28	-29	-30	-30	-30	-30	-30	-30	-30	-29.1	-26.8
30-Dec	-30	-30	-30	-30	-31	-32	-34	-35	-35	-35	-35	-33	-33	-32	-31	-31	-32	-32	-31	-31	-32	-32	-32	-32	-32.1	-30.1
31-Dec	-32	-33	-33	-32	-32	-32	-33	-32	-33	-32	-31	-31	-29	-27	-27	-27	-28	-27	-27	-27	-28	-28	-29	-28	-29.9	-26.6
																								Diurnal Average		
																								Diurnal Maximum		

**Hourly Averages**

**External Temperature (ET) - °C**  
**Beaverlodge - December 2017**



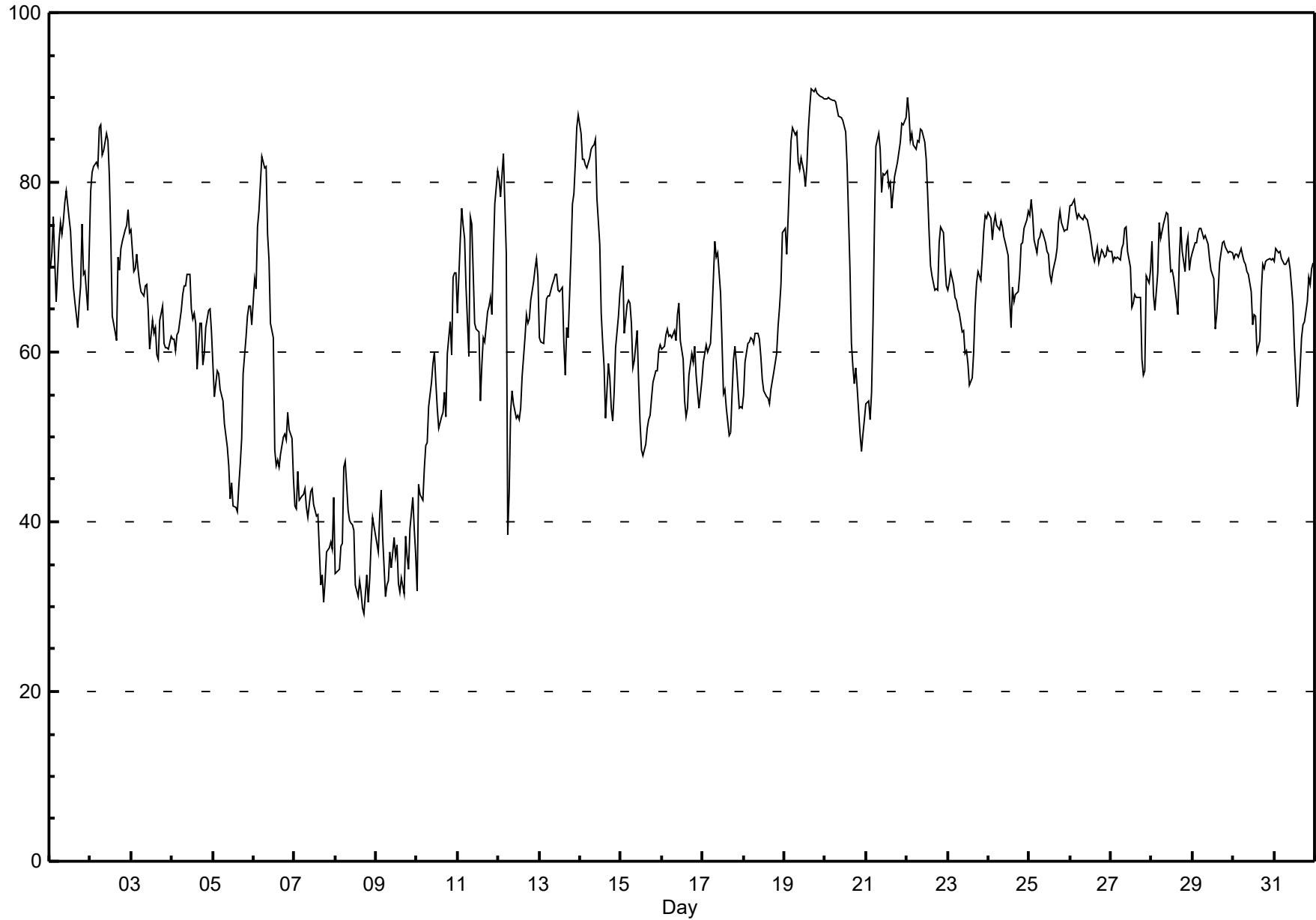
# Hourly Averages

## Relative Humidity (RH) - % Beaverlodge - December 2017

Maximum Value: 91.0 % on Dec 19 19:00		Maximum Daily Average: 84.7 % on Dec 19		Hours in Service: 744																						
Minimum Value: 29 % on Dec 8 18:00		Minimum Daily Average: 36.3 % on Dec 9		Hours of Data: 744																						
Maximum Diurnal Average: 68.7 % at hour 8		Minimum Diurnal Average: 58.3 % at hour 16		Hours of Missing Data: 0																						
Monthly Average: 64.87 %		Percentiles: P <sub>1</sub> = 31.6 P <sub>10</sub> = 43.6 Q <sub>1</sub> = 57.8 Median = 67.0 Q <sub>3</sub> = 73.5 P <sub>90</sub> = 81.9 P <sub>99</sub> = 89.9		Hours of Calibration: 0																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	70	72	76	71	66	73	75	74	75	78	79	76	74	70	68	66	63	66	68	75	69	70	65	72	71.2	79.0
2-Dec	79	81	82	82	82	86	87	83	84	86	85	81	73	64	62	61	71	70	72	73	74	75	77	74	76.9	86.7
3-Dec	74	70	70	72	70	68	67	67	68	68	65	60	64	62	63	60	59	64	65	61	61	61	60	62	65.0	74.4
4-Dec	61	61	60	62	62	65	67	68	68	69	69	65	64	65	63	58	63	63	59	60	63	65	65	62	63.7	69.1
5-Dec	59	55	58	57	56	55	54	52	49	47	43	45	42	42	41	44	47	50	57	62	64	65	65	63	52.9	65.5
6-Dec	69	67	75	77	80	83	82	82	74	71	63	62	49	47	47	47	48	50	50	50	53	51	50	45	61.2	83.1
7-Dec	42	41	46	42	43	43	44	42	40	44	44	42	41	41	41	33	34	30	33	36	37	38	37	43	39.9	46.0
8-Dec	34	34	34	37	37	46	47	41	40	40	39	33	31	33	32	30	29	34	30	33	37	40	38	36.3	47.1	
9-Dec	37	36	41	44	38	31	33	33	37	35	38	36	37	33	32	33	31	38	36	34	39	43	39	36	36.3	43.7
10-Dec	32	44	43	43	46	49	49	54	56	59	60	56	53	51	52	53	55	52	60	64	60	69	69	69	54.1	69.3
11-Dec	65	73	77	75	73	68	59	76	75	69	63	63	62	54	58	62	61	65	65	66	64	71	77	81	67.7	81.3
12-Dec	80	78	81	83	71	38	43	53	55	54	52	53	52	53	57	62	64	63	64	66	68	70	71	69	62.6	83.3
13-Dec	62	61	61	64	66	67	67	68	68	69	69	67	67	68	61	57	63	62	72	78	79	82	86	88	68.8	88.0
14-Dec	86	83	83	82	82	83	84	84	84	85	78	73	65	61	58	52	59	57	53	52	55	61	64	67	70.4	85.8
15-Dec	68	70	62	66	66	66	63	58	59	62	57	52	49	48	49	51	52	52	55	57	58	58	60	61	58.3	70.1
16-Dec	60	61	62	63	62	62	62	63	61	64	66	61	59	54	52	53	57	60	59	61	57	55	53	57	59.4	65.7
17-Dec	59	60	61	60	61	64	69	73	71	72	67	61	55	56	53	50	51	55	59	61	59	53	54	53	59.9	73.1
18-Dec	55	59	61	61	62	62	61	62	62	62	59	57	55	55	55	54	56	57	58	60	63	65	68	74	60.0	74.0
19-Dec	75	72	76	81	85	86	86	86	82	82	83	81	80	82	86	89	91	91	91	90	90	90	90	90	84.7	91.0
20-Dec	90	90	90	90	90	90	90	89	88	88	87	87	86	82	70	61	58	56	58	56	50	48	50	52	74.7	89.9
21-Dec	54	54	52	55	63	75	84	86	84	79	81	81	81	80	80	77	79	81	82	83	85	87	87	88	76.6	87.7
22-Dec	90	88	85	86	84	84	85	85	86	86	85	83	79	74	70	69	67	68	67	73	75	74	70	68	78.3	89.9
23-Dec	67	68	70	68	66	66	65	65	62	62	60	60	59	56	57	60	65	68	69	69	71	74	76	76	65.8	76.2
24-Dec	76	76	73	75	76	75	74	75	75	74	73	71	66	63	68	66	67	67	69	73	73	75	76	77	72.1	76.6
25-Dec	76	78	76	73	72	73	74	74	74	73	72	72	69	68	69	71	72	75	77	75	74	74	74	76	73.5	77.9
26-Dec	77	77	78	77	76	76	76	76	76	76	76	75	74	71	71	72	72	70	72	72	71	71	72	72	74.0	77.9
27-Dec	72	71	71	71	71	71	72	73	75	75	72	70	65	66	67	67	66	66	59	57	58	69	68	70	68.4	74.8
28-Dec	73	67	65	69	75	73	74	75	77	76	73	69	70	69	66	64	71	75	72	69	72	74	70	71	71.2	76.5
29-Dec	72	73	73	74	75	75	73	74	73	73	71	70	69	63	64	67	71	73	73	72	72	72	72	72	71.4	74.6
30-Dec	71	71	71	71	72	71	71	70	69	69	67	63	64	64	60	61	67	70	70	71	71	71	71	71	68.7	72.2
31-Dec	71	72	72	72	71	71	70	70	71	70	68	66	61	54	55	58	62	63	64	66	69	68	70	70	66.7	72.3
		66.3	66.6	67.2	67.8	67.8	67.6	68.0	68.7	68.4	68.2	66.6	64.4	61.8	59.5	59.0	58.3	60.4	61.5	62.7	63.6	64.1	65.7	66.1	66.7	Diurnal Average
		89.9	89.8	89.9	89.9	89.7	89.7	89.5	88.7	87.7	87.6	87.3	86.7	85.9	82.0	86.0	88.8	91.0	90.7	91.0	90.5	90.3	90.2	90.0	89.8	Diurnal Maximum

**Hourly Averages**

**Relative Humidity (RH) - %  
Beaverlodge - December 2017**







Peace Airshed Zone Association

# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Beaverlodge - December 2017

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	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	4	3	3	3	4	1	0	0	1	5	2	3	1	1	2	2	10	14	14	3	4	3	6	2	1.5	14.5
Dir	72	134	84	93	66	94	70	131	185	250	358	30	174	129	51	130	250	246	236	212	260	46	236	228	230	236
2 Spd	2	1	1	4	2	2	2	5	3	3	3	5	3	2	1	3	3	7	2	3	1	2	3	4	0.9	7.3
Dir	92	88	146	220	266	115	63	56	65	72	96	55	66	77	86	298	212	234	217	200	102	167	71	61	104	234
3 Spd	4	5	7	8	10	11	10	9	12	11	11	3	3	2	4	1	5	13	13	7	7	12	10	16	6.0	15.6
Dir	57	355	328	311	303	300	298	298	294	300	299	267	87	100	58	127	216	243	243	243	256	268	254	265	282	265
4 Spd	13	11	12	10	16	10	13	15	17	11	7	15	18	21	20	30	29	29	20	21	34	23	20	23	17.9	34.3
Dir	263	265	260	248	262	247	239	246	240	232	234	248	253	247	250	270	246	247	252	273	276	262	263	272	256	276
5 Spd	28	36	30	30	35	39	38	28	21	14	4	9	9	9	9	12	9	9	0	3	3	3	4	1	15.0	39.4
Dir	268	270	268	269	272	274	274	280	286	292	272	260	290	273	277	268	275	276	347	202	56	64	51	265	274	274
6 Spd	2	3	3	2	1	4	2	3	5	9	5	1	17	19	22	20	14	13	11	7	8	13	5	19	7.0	21.9
Dir	54	263	72	71	103	54	85	66	232	229	227	256	285	290	276	273	279	279	280	255	237	250	273	283	273	276
7 Spd	18	11	8	10	16	15	17	13	13	16	18	14	16	11	11	6	19	26	29	16	9	7	6	2	13.4	28.7
Dir	287	297	292	266	265	265	257	284	294	282	271	274	271	277	266	279	260	273	273	281	284	307	261	224	275	273
8 Spd	7	9	4	2	2	5	3	8	11	7	7	5	11	19	11	11	12	12	13	11	11	12	9	13	7.7	18.9
Dir	288	291	270	16	306	55	65	307	275	287	272	262	290	276	259	248	262	279	261	247	231	237	252	227	266	276
9 Spd	9	7	3	4	9	6	8	8	7	13	6	6	12	18	22	12	15	8	6	7	1	4	4	2	6.8	22.5
Dir	254	233	221	48	275	269	246	254	242	301	266	291	273	281	269	256	290	300	278	297	231	80	70	254	273	269
10 Spd	7	3	1	17	33	32	37	38	31	32	23	39	35	15	13	10	8	2	2	7	4	2	3	16.0	39.4	
Dir	286	301	248	254	262	262	263	268	276	270	264	266	268	274	258	258	281	282	348	46	282	53	180	55	268	266
11 Spd	4	3	2	1	4	4	5	4	3	2	1	3	4	1	3	2	1	5	3	3	5	2	0	1	2.0	5.0
Dir	57	193	187	125	57	46	49	178	102	119	84	124	57	116	59	77	109	66	80	75	55	69	205	27	79	49
12 Spd	6	1	3	3	12	34	46	35	20	16	18	31	29	33	23	22	19	17	11	10	14	15	18	16	18.0	45.9
Dir	35	284	297	315	231	243	241	246	258	269	266	269	273	263	255	244	253	265	257	241	257	250	252	254	255	241
13 Spd	22	22	27	17	11	10	8	7	12	13	10	8	1	4	1	5	5	5	3	1	3	2	4	4	6.5	26.7
Dir	266	268	273	274	292	281	286	278	283	313	311	296	251	100	286	309	35	347	300	63	94	114	69	75	287	273
14 Spd	4	4	2	5	2	2	3	2	2	3	3	2	5	9	11	15	16	16	15	21	20	21	16	11	5.8	21.5
Dir	110	118	46	58	81	93	81	58	89	70	75	89	271	245	261	278	247	268	289	279	283	276	278	248	273	279
15 Spd	17	14	24	17	24	31	31	33	26	19	29	35	35	31	31	33	30	26	24	20	16	22	20	18	25.1	35.4
Dir	256	258	268	254	250	250	257	265	255	260	266	271	275	269	265	266	266	269	272	272	272	277	277	272	265	275
16 Spd	16	16	17	17	18	18	17	16	18	11	8	4	1	5	8	9	9	12	11	11	11	10	8	13	11.0	18.4
Dir	271	268	262	261	262	266	264	265	266	241	218	207	99	208	217	205	220	228	226	226	237	239	255	263	249	266
17 Spd	10	14	25	42	39	33	23	21	30	26	29	31	40	38	31	30	25	18	13	8	10	11	13	20	23.8	41.6
Dir	240	246	241	251	258	253	251	253	259	263	250	266	269	265	262	261	271	263	246	234	236	258	274	270	258	251
18 Spd	24	13	11	10	13	13	12	12	10	10	8	6	8	10	10	5	4	5	5	5	6	7	5	3	8.0	24.0
Dir	273	268	263	281	286	291	291	280	285	306	299	294	305	294	299	335	348	340	340	318	347	354	339	29	297	273
19 Spd	3	6	4	4	1	2	6	5	8	3	9	9	3	3	6	6	6	6	5	5	3	4	4	3	2.5	9.4
Dir	24	10	35	114	179	120	85	52	111	63	111	95	102	351	20	101	138	93	126	175	215	260	270	238	94	111
20 Spd	7	7	9	11	11	12	8	5	6	5	4	4	2	4	5	4	3	2	2	0	7	7	5	10	3.5	11.7
Dir	233	241	232	223	210	207	195	147	148	177	197	194	161	52	55	81	77	101	73	183	234	283	251	233	209	207
21 Spd	8	6	10	8	12	14	15	15	15	14	12	13	17	17	13	12	13	11	8	9	7	6	2	5	9.7	17.5
Dir	242	260	313	333	324	316	299	307	321	346	349	352	357	356	351	341	339	338	320	327	312	271	231	301	327	357
22 Spd	7	6	5	8	12	10	3	6	1	1	3	4	3	7	13	13	9	9	9	13	12	11	11	12	7.1	13.4
Dir	297	317	319	336	325	317	302	296	185	58	239	42	12	302	319	312	299	289	280	292	282	286	302	301	305	292

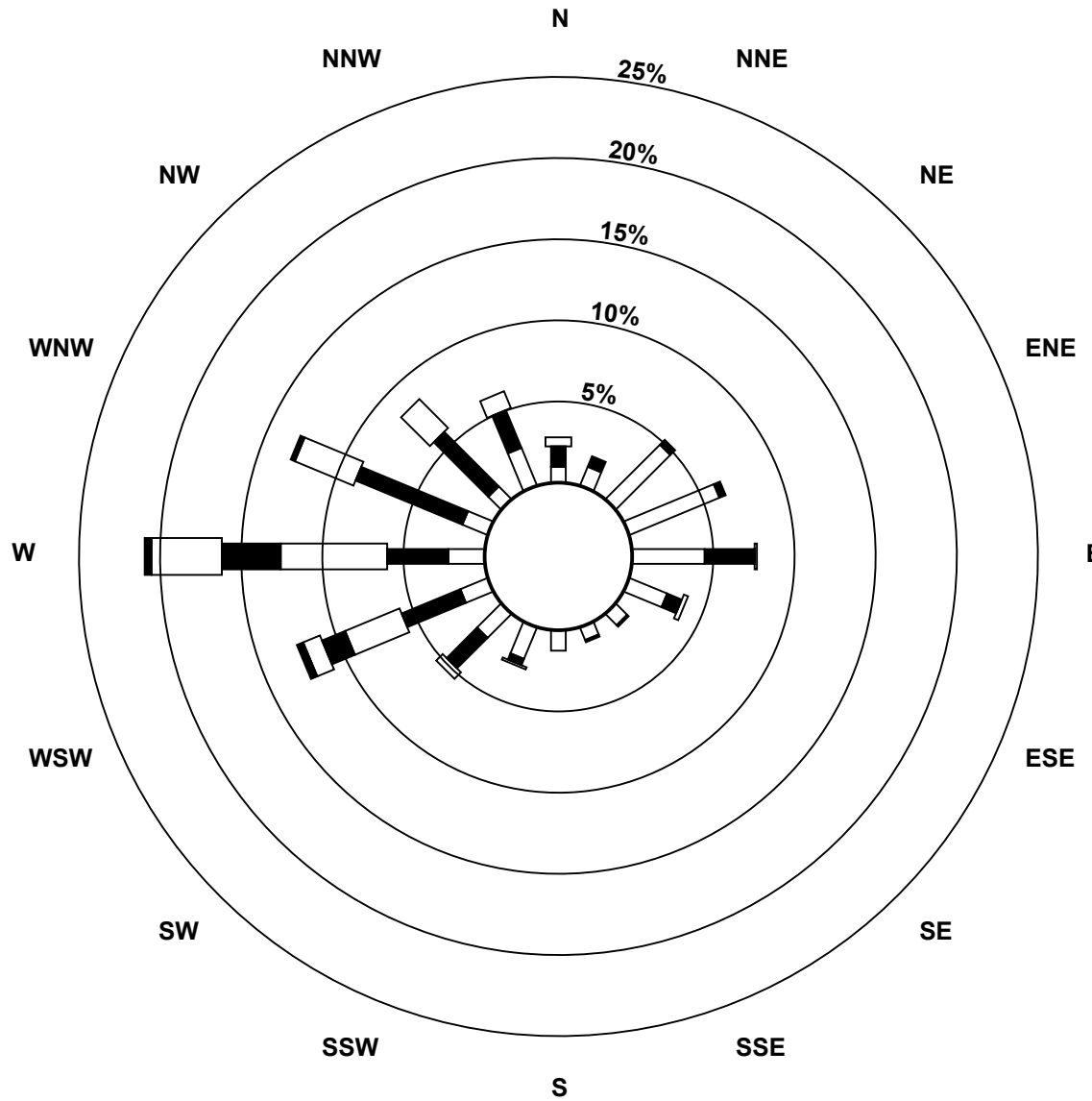
# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Beaverlodge - December 2017

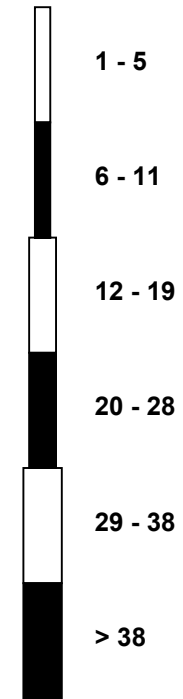
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
23 Spd	14	12	12	10	14	14	13	15	17	15	13	13	9	13	17	16	16	16	17	12	7	9	9	12	12.6	17.4	
Dir	300	287	278	289	300	302	304	310	303	289	311	299	307	330	318	317	316	322	338	329	315	284	292	298	307	318	
24 Spd	10	12	11	10	10	11	11	11	10	10	9	7	8	8	9	7	6	7	6	5	6	6	9	9	11	8.6	11.9
Dir	294	307	300	303	309	334	336	323	314	301	299	292	302	308	281	314	328	339	341	330	352	309	318	318	313	307	
25 Spd	9	11	10	9	8	6	5	15	12	11	11	12	10	9	8	8	8	8	9	9	9	9	6	3	6.4	15.0	
Dir	328	3	2	352	2	1	78	96	103	86	94	107	95	106	99	96	84	81	88	90	91	87	97	191	75	96	
26 Spd	2	2	2	2	1	4	1	2	3	1	3	3	9	7	8	14	13	11	10	10	10	9	10	12	5.6	14.2	
Dir	213	214	59	50	127	274	335	334	283	18	293	343	314	334	322	318	327	334	333	324	315	318	314	311	320	318	
27 Spd	10	10	6	5	10	9	9	7	3	1	1	1	2	1	2	1	1	5	9	5	5	3	1	1	3.3	10.3	
Dir	310	315	322	335	304	303	298	299	290	45	117	56	85	135	161	263	230	236	281	277	286	91	86	116	300	315	
28 Spd	6	6	8	8	8	7	5	6	5	7	8	8	10	7	4	2	4	6	6	8	2	2	7	8	3.5	10.4	
Dir	42	347	320	324	331	344	311	316	326	358	12	13	18	17	135	90	108	88	76	40	264	229	122	121	14	18	
29 Spd	7	5	5	4	7	5	5	5	4	2	2	1	2	0	2	3	4	4	6	7	8	7	7	6	3.8	7.6	
Dir	114	93	97	93	80	71	99	87	55	52	202	223	36	218	238	40	30	51	91	81	71	82	84	68	80	71	
30 Spd	6	4	4	2	2	1	1	2	1	2	1	1	3	2	1	1	4	5	4	1	1	1	2	3	1.1	5.6	
Dir	88	99	105	198	319	354	344	2	35	350	285	177	233	250	58	206	79	68	71	344	21	48	54	92	70	88	
31 Spd	2	2	2	2	2	1	1	1	1	1	1	1	0	2	2	2	2	3	1	1	1	2	1	2	0.5	3.1	
Dir	107	241	19	329	343	347	283	32	349	343	315	354	95	189	163	109	64	55	119	275	46	257	342	39	19	55	
Spd	5.9	6.1	6.2	6.3	8.7	8.8	8.5	7.9	7.4	6.6	5.5	6.2	7.5	7.6	7.3	7.3	7.0	7.0	5.8	4.9	5.2	5.1	4.4	5.5	Diurnal Average		
Dir	279	279	278	275	277	274	268	276	274	283	274	277	285	280	276	276	274	277	276	278	276	274	276	273	Diurnal Maximum		
Spd	28.4	35.6	30.0	41.6	39.1	39.4	45.9	37.9	31.1	32.0	28.8	39.4	40.5	38.3	31.2	32.7	29.6	29.1	28.7	21.5	34.3	22.6	20.5	23.0	Diurnal Maximum		
Dir	268	270	268	251	258	274	241	268	276	270	266	266	269	265	262	266	266	247	273	279	276	262	263	272	Diurnal Maximum		
Maximum Speed Value: 46 km/h on Dec 12 07:00																			Minimum Speed Value: 0 km/h on Dec 1 07:00					Hours in Service: 744			
Maximum Daily Speed Average: 25.1 km/h on Dec 15																			Minimum Daily Speed Average: 0.5 km/h on Dec 31					Hours of Data: 744			
Maximum Diurnal Speed Average: 8.8 km/h at hour 6																			Minimum Diurnal Speed Average: 4.4 km/h at hour 23					Hours of Missing Data: 0			
Monthly Average Velocity: 6.61 km/h 276.5 deg																			Speed Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 1.6 Q <sub>1</sub> = 3.4 Median = 7.7 Q <sub>3</sub> = 12.7 P <sub>90</sub> = 20.9 P <sub>99</sub> = 37.5					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	25	20	11	0	0	0	56																				
NorthEast	64	5	0	0	0	0	69																				
East	65	31	3	0	0	0	99																				
SouthEast	22	6	0	0	0	0	28																				
South	23	2	0	0	0	0	25																				
SouthWest	26	35	18	3	4	1	87																				
West	28	59	86	37	35	7	252																				
NorthWest	17	75	36	0	0	0	128																				
Total	270	233	154	40	39	8	744																				

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Beaverlodge - December 2017**



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



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Beaverlodge - December 2017

Maximum Speed: 46 km/h on Dec 12 07:00	Maximum Daily Speed Average: 25.4 km/h on Dec 15	Hours in Service: 744
Minimum Speed: 1 km/h on Dec 30 22:00	Minimum Daily Speed Average: 2.1 km/h on Dec 31	Hours of Data: 744
Maximum Diurnal Speed Average: 12.2 km/h at hour 6	Minimum Diurnal Speed Average: 8.0 km/h at hour 23	Hours of Missing Data: 0
Monthly Average Speed: 10.16 km/h	Percentiles: P <sub>1</sub> = 1.4 P <sub>10</sub> = 2.6 Q <sub>1</sub> = 4.1 Median = 7.9 Q <sub>3</sub> = 12.9 P <sub>90</sub> = 20.9 P <sub>99</sub> = 37.6	Percent Operational Time: 100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	6	3	4	4	4	2	2	2	2	5	4	4	3	2	5	2	12	14	15	4	6	3	7	4	4.9	15.0
2-Dec	3	3	2	5	4	3	4	5	4	3	3	5	3	3	3	4	4	7	3	4	3	4	4	4	3.7	7.4
3-Dec	5	6	7	9	10	11	10	9	12	11	11	6	3	3	4	2	5	13	14	7	8	12	10	16	8.4	15.9
4-Dec	13	11	12	10	16	11	13	15	17	11	7	15	18	21	20	31	29	29	21	21	34	23	21	23	18.5	34.5
5-Dec	28	36	30	30	35	39	38	28	21	15	4	10	9	9	9	12	9	9	5	4	3	3	4	2	16.3	39.4
6-Dec	2	4	3	2	2	4	3	4	7	9	8	5	18	19	22	20	14	13	11	7	9	14	8	19	9.5	22.1
7-Dec	18	12	9	10	16	15	17	13	13	16	18	14	16	11	11	7	19	27	29	17	11	7	7	4	14.1	28.7
8-Dec	7	9	5	5	5	5	4	9	12	8	8	7	11	19	11	11	12	12	13	12	11	13	9	13	9.7	19.1
9-Dec	9	7	5	4	10	7	8	8	7	14	7	7	13	18	23	13	15	10	7	7	4	4	4	4	8.9	22.6
10-Dec	7	5	3	17	33	32	37	38	31	32	23	39	35	15	13	13	10	8	6	3	10	4	3	3	17.7	39.4
11-Dec	4	4	4	5	4	5	5	5	4	2	3	3	4	2	3	3	2	5	4	5	5	4	3	4	3.8	5.1
12-Dec	7	3	6	5	15	34	46	35	20	16	18	32	29	33	23	22	19	17	11	10	14	15	18	16	19.4	46.4
13-Dec	22	22	27	17	12	10	8	7	12	13	10	8	5	4	2	5	5	5	4	3	3	2	4	4	9.0	26.8
14-Dec	5	4	4	5	3	3	3	3	3	3	3	3	8	9	11	15	17	16	16	22	20	21	17	11	9.4	21.6
15-Dec	17	15	25	17	25	31	32	33	27	19	29	35	36	31	31	33	30	26	24	20	16	22	20	18	25.4	35.6
16-Dec	16	16	17	17	18	18	17	16	18	11	8	6	2	6	9	9	10	12	11	11	11	10	8	14	12.1	18.5
17-Dec	10	14	25	42	39	33	24	21	30	26	29	31	41	38	31	30	25	18	14	8	10	11	13	20	24.2	41.7
18-Dec	24	13	11	10	13	13	12	12	10	10	8	6	8	10	10	6	4	5	5	5	6	7	6	4	9.1	24.0
19-Dec	4	7	5	4	4	5	6	5	8	4	10	9	4	5	6	8	6	7	5	5	4	5	5	4	5.5	9.5
20-Dec	7	7	10	11	11	12	8	5	6	5	4	4	3	5	6	4	3	2	2	2	7	8	6	10	6.1	12.0
21-Dec	8	7	10	8	12	14	16	15	15	14	12	14	18	17	13	12	13	11	8	9	7	6	3	5	11.1	17.5
22-Dec	7	6	6	8	12	10	4	6	2	1	3	4	4	7	13	13	9	9	9	13	12	11	11	12	8.1	13.4
23-Dec	14	12	12	11	14	14	13	15	17	15	13	13	9	14	17	16	16	16	17	12	7	9	9	12	13.2	17.4
24-Dec	10	12	11	10	11	11	11	11	10	10	9	8	8	8	10	8	7	8	6	6	7	9	9	11	9.2	11.9
25-Dec	9	11	10	9	9	6	10	15	12	11	11	12	10	9	8	8	8	8	9	9	9	9	6	4	9.4	15.5
26-Dec	3	2	4	3	2	4	3	3	3	3	6	5	9	7	8	14	13	11	10	10	10	9	10	12	6.9	14.4
27-Dec	10	10	6	6	10	10	10	7	3	2	2	2	2	2	3	4	4	6	9	5	6	4	3	2	5.3	10.5
28-Dec	6	7	8	8	8	7	5	6	5	7	9	8	10	7	4	3	5	6	7	8	4	4	7	8	6.5	10.4
29-Dec	7	5	5	5	7	5	5	6	4	3	3	2	2	1	3	4	4	6	7	7	8	7	7	6	4.8	8.0
30-Dec	6	4	5	2	2	2	2	2	1	2	2	3	3	3	2	2	4	5	4	1	1	1	2	3	2.7	6.2
31-Dec	3	2	2	2	2	2	2	2	2	1	2	3	1	2	2	2	2	3	2	2	1	3	2	3	2.1	3.2
	9.6	9.0	9.4	9.6	11.9	12.2	12.1	11.7	10.9	9.8	9.2	10.4	11.1	11.0	10.8	10.9	10.8	11.1	9.9	8.3	8.7	8.6	8.0	9.0	Diurnal Average	
	28.4	35.6	30.0	41.7	39.2	39.4	46.4	38.1	31.3	32.1	28.9	39.4	40.6	38.4	31.4	32.7	29.7	29.2	28.7	21.6	34.5	22.7	20.6	23.0	Diurnal Maximum	

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

# Hourly Standard Deviations

Wind Direction (WD) - deg  
Beaverlodge - December 2017

Maximum Value: 96.4 deg on Dec 1 07:00																		Hours in Service: 744							
Minimum Value: 2.0 deg on Dec 4 08:00																		Hours of Data: 744							
Percentiles: P <sub>1</sub> = 2.8 P <sub>10</sub> = 4.8 Q <sub>1</sub> = 7.1 Median = 14.7 Q <sub>3</sub> = 38.3 P <sub>90</sub> = 65.2 P <sub>99</sub> = 87.9																		Hours of Missing Data: 0							
																		Hours of Calibration: 0							
																		Percent Operational Time: 100.0							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Dec	51	26	34	38	41	85	96	82	42	28	68	46	87	48	84	49	42	9	15	72	69	52	21	76	96.4
2-Dec	62	58	56	24	93	40	68	24	42	39	36	11	25	25	62	56	25	13	41	32	58	59	29	30	93.2
3-Dec	19	31	10	11	4	6	10	7	3	3	6	66	31	15	17	59	9	6	4	12	25	5	11	11	65.8
4-Dec	9	7	7	13	7	20	8	2	3	11	14	4	8	6	7	9	3	4	12	12	7	5	6	3	20.2
5-Dec	3	3	3	4	6	3	3	4	5	17	21	17	7	8	13	7	8	8	86	65	67	40	14	85	85.9
6-Dec	59	37	24	55	67	12	67	49	76	16	64	86	7	5	7	6	3	6	7	30	65	12	70	5	85.9
7-Dec	5	22	25	4	4	3	4	7	7	4	6	8	4	7	6	32	8	5	4	17	65	38	57	79	79.3
8-Dec	30	6	57	66	70	31	48	35	19	42	36	60	7	11	21	16	20	10	8	19	13	8	21	10	70.3
9-Dec	18	16	58	49	52	35	16	13	26	25	41	27	20	12	6	16	9	60	33	18	81	20	11	75	80.8
10-Dec	17	72	80	14	4	5	6	6	7	5	4	3	3	13	10	15	15	10	68	37	74	22	52	76	80.4
11-Dec	36	57	63	74	22	59	14	27	35	46	83	38	20	64	24	54	64	18	33	51	15	76	87	76	86.8
12-Dec	41	63	62	64	70	5	8	8	11	8	9	4	5	6	8	6	4	4	10	7	4	4	3	5	69.6
13-Dec	5	5	3	3	10	6	9	18	12	7	8	8	76	19	88	25	22	22	52	84	29	30	21	22	87.6
14-Dec	25	25	74	60	39	40	35	40	52	24	20	69	70	7	19	17	9	13	10	7	5	5	9	39	73.8
15-Dec	6	12	6	5	8	5	4	5	5	5	4	4	5	5	5	4	3	3	5	4	4	4	4	4	11.5
16-Dec	3	3	3	4	4	3	5	4	5	18	6	68	45	17	18	16	25	4	7	8	6	12	21	6	68.4
17-Dec	11	5	5	3	3	4	6	9	5	6	5	6	5	4	6	8	8	5	15	10	7	6	8	4	15.3
18-Dec	4	5	6	8	3	6	6	6	5	8	7	6	6	7	7	15	20	9	9	8	11	13	40	37	39.6
19-Dec	47	19	58	29	70	79	9	36	22	40	9	9	37	62	25	41	22	22	20	16	50	29	33	46	78.9
20-Dec	19	22	17	10	12	12	14	7	21	12	33	29	24	36	12	9	17	46	44	90	12	8	34	8	89.8
21-Dec	8	36	15	16	8	9	6	5	9	11	7	7	5	6	7	7	5	7	9	7	17	9	46	23	46.3
22-Dec	8	19	35	9	5	9	39	12	78	93	61	39	41	23	7	7	11	10	13	4	6	9	6	10	93.4
23-Dec	7	10	13	11	5	8	8	8	6	9	11	8	12	10	6	6	5	7	9	9	16	9	4	5	15.7
24-Dec	7	10	7	13	14	12	11	8	16	13	15	14	20	18	11	16	22	18	22	26	25	8	8	10	26.2
25-Dec	10	12	5	10	14	10	69	16	21	13	16	9	19	18	19	21	12	15	11	6	6	6	12	43	68.6
26-Dec	32	46	67	66	70	18	60	43	36	87	63	67	12	14	11	9	11	11	10	11	9	7	8	6	87.1
27-Dec	11	12	12	13	10	9	14	8	32	50	73	71	54	70	56	82	94	28	7	12	71	27	66	53	93.9
28-Dec	9	31	8	10	8	13	18	10	15	8	4	5	5	5	50	42	37	17	25	8	62	62	24	14	62.0
29-Dec	11	13	20	23	15	24	34	25	24	34	88	56	46	91	47	24	14	51	29	26	18	24	18	31	90.6
30-Dec	38	39	38	62	41	29	43	25	39	33	71	86	38	54	84	66	28	24	25	46	42	58	25	29	86.4
31-Dec	64	47	47	32	22	47	67	58	53	55	54	78	89	45	26	31	23	17	78	54	63	50	65	35	88.8
	64.0	72.0	80.4	74.0	93.2	84.7	96.4	82.3	78.2	93.4	87.8	86.4	88.8	90.6	87.6	82.2	93.9	59.6	85.9	89.8	80.8	76.1	86.8	85.3	

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

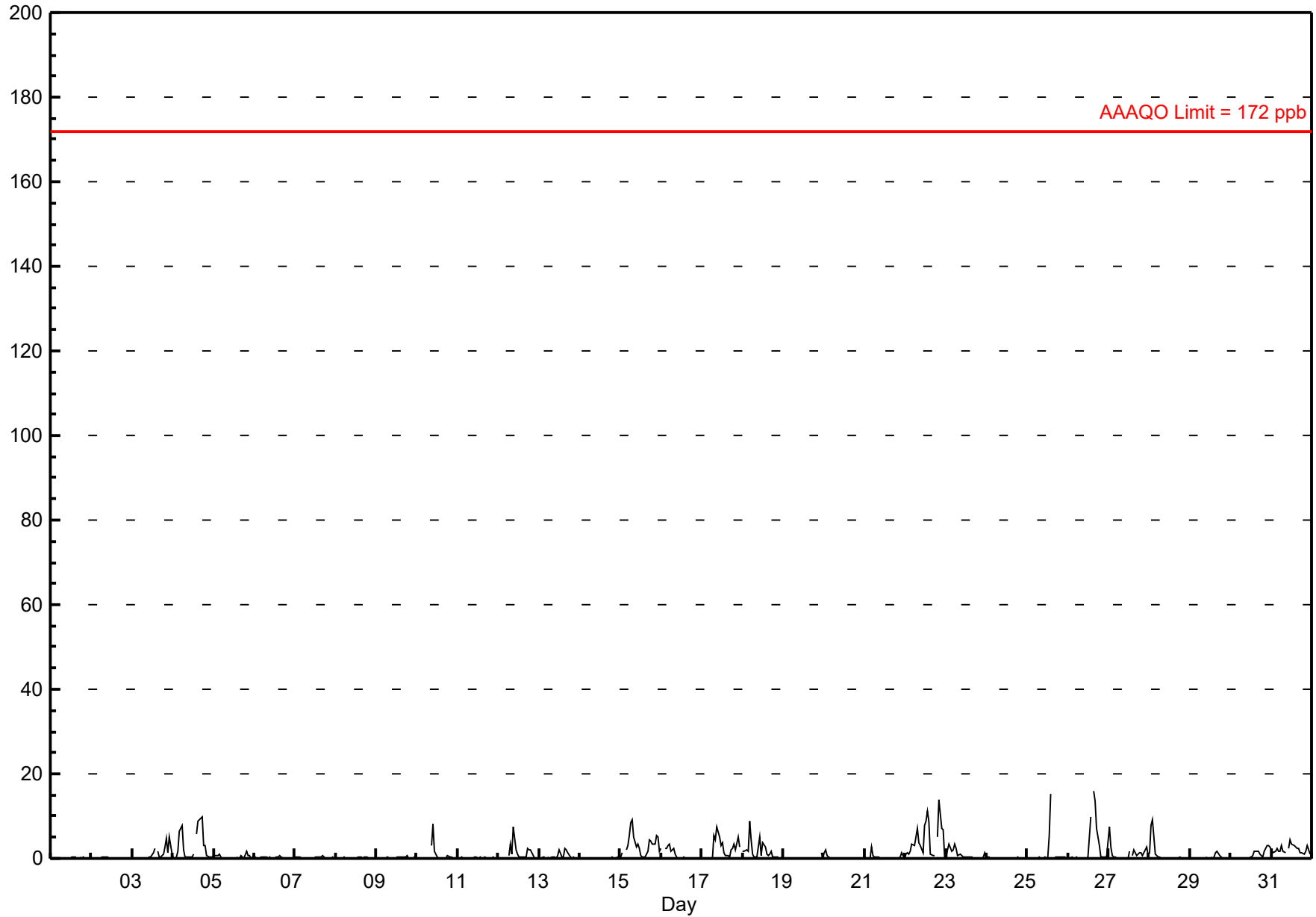
## Hourly Averages

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Valleyview - December 2017**

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 744
Maximum Value: 16.0 ppb on Dec 26 16:00	Maximum Daily Average: 4.5 ppb on Dec 22
Minimum Value: 0 ppb on Dec 1 07:00	Hours of Data: 708
Maximum Diurnal Average: 1.5 ppb at hour 16	Hours of Missing Data: 36
Monthly Average: 0.99 ppb	Hours of Calibration: 36
Minimum Daily Average: 0.1 ppb on Dec 24	Percent Operational Time: 100.0
Minimum Diurnal Average: 0.4 ppb at hour 24	
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.2 Q <sub>3</sub> = 0.9 P <sub>90</sub> = 2.9 P <sub>99</sub> = 9.7	

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.1	0.3
2-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.1	0.4
3-Dec	0	0	0	0	0	0	0	0	0	0	0	1	2	A	2	0	0	1	3	5	1	5	1	1.0	4.9	
4-Dec	0	0	0	2	6	8	2	0	0	0	0	1	A	6	9	10	10	3	3	1	0	0	0	2.7	10.0	
5-Dec	1	1	1	1	0	0	0	0	0	0	0	A	0	0	0	0	1	0	0	2	1	1	0	0.3	1.7	
6-Dec	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	0.8	
7-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	1	0	0	0	0	0	0	0.2	0.6	
8-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4	
9-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	1	0	1	0	0	0	0.2	0.8	
10-Dec	0	0	0	0	0	0	0	A	3	8	2	1	0	0	0	0	0	0	1	0	0	0	0	0.7	8.0	
11-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
12-Dec	0	0	0	0	0	A	1	3	1	8	2	1	0	0	0	0	0	2	2	2	1	0	0	1.0	7.6	
13-Dec	0	0	0	0	A	0	0	0	0	0	0	1	2	0	0	3	2	1	0	0	0	0	0	0.5	2.5	
14-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4	
15-Dec	0	1	A	2	3	5	9	9	5	3	3	2	1	0	0	1	2	4	4	3	3	5	5	3.3	9.2	
16-Dec	2	A	2	2	3	3	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	3.3	
17-Dec	A	0	0	0	0	0	0	5	4	8	5	3	4	1	1	1	0	2	3	3	2	5	3	2.3	7.5	
18-Dec	2	2	2	2	9	4	1	0	0	3	5	1	4	3	1	1	1	2	0	0	0	0	0	1.8	8.9	
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1.3	
20-Dec	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	2.0	
21-Dec	0	0	0	0	3	1	0	0	0	0	0	0	0	0	C	C	C	C	0	A	0	0	1	0.3	2.6	
22-Dec	1	1	1	2	3	3	5	7	4	3	1	8	9	11	9	1	1	1	1	A	5	14	7	4.5	13.7	
23-Dec	0	2	3	2	2	4	2	1	1	1	0	0	0	0	0	0	0	A	0	0	0	0	1	0.9	3.5	
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.1	0.4	
25-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	6	15	A	0	0	0	0	0	0	0	1.1	15.4	
26-Dec	0	0	0	0	0	0	0	0	0	0	0	0	10	A	16	14	7	3	0	0	0	0	0	2.3	16.0	
27-Dec	8	3	1	0	0	0	0	0	0	0	0	2	A	1	2	1	1	1	1	1	1	2	3	1.2	7.6	
28-Dec	1	8	9	1	1	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.9	9.3	
29-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	2	1	0	0	0	0	0	0.2	1.6	
30-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	1	2	2	2	1	1	0	2	3	3	0.8	3.2	
31-Dec	2	2	2	2	2	2	3	2	1	A	2	4	3	3	3	2	2	1	1	1	1	2	3	2.1	4.3	
	0.7	0.8	0.8	0.6	1.1	1.1	0.9	1.1	0.7	1.2	0.8	0.8	1.0	1.4	1.4	1.5	1.4	1.3	0.8	0.9	1.1	1.0	1.1	0.4	Diurnal Average	
	7.6	7.8	9.3	2.4	8.9	7.8	8.6	9.2	5.0	8.0	5.2	7.7	8.6	11.2	15.4	16.0	13.7	10.0	4.2	5.2	13.7	7.1	6.9	2.6	Diurnal Maximum	

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





# Hourly Maximums

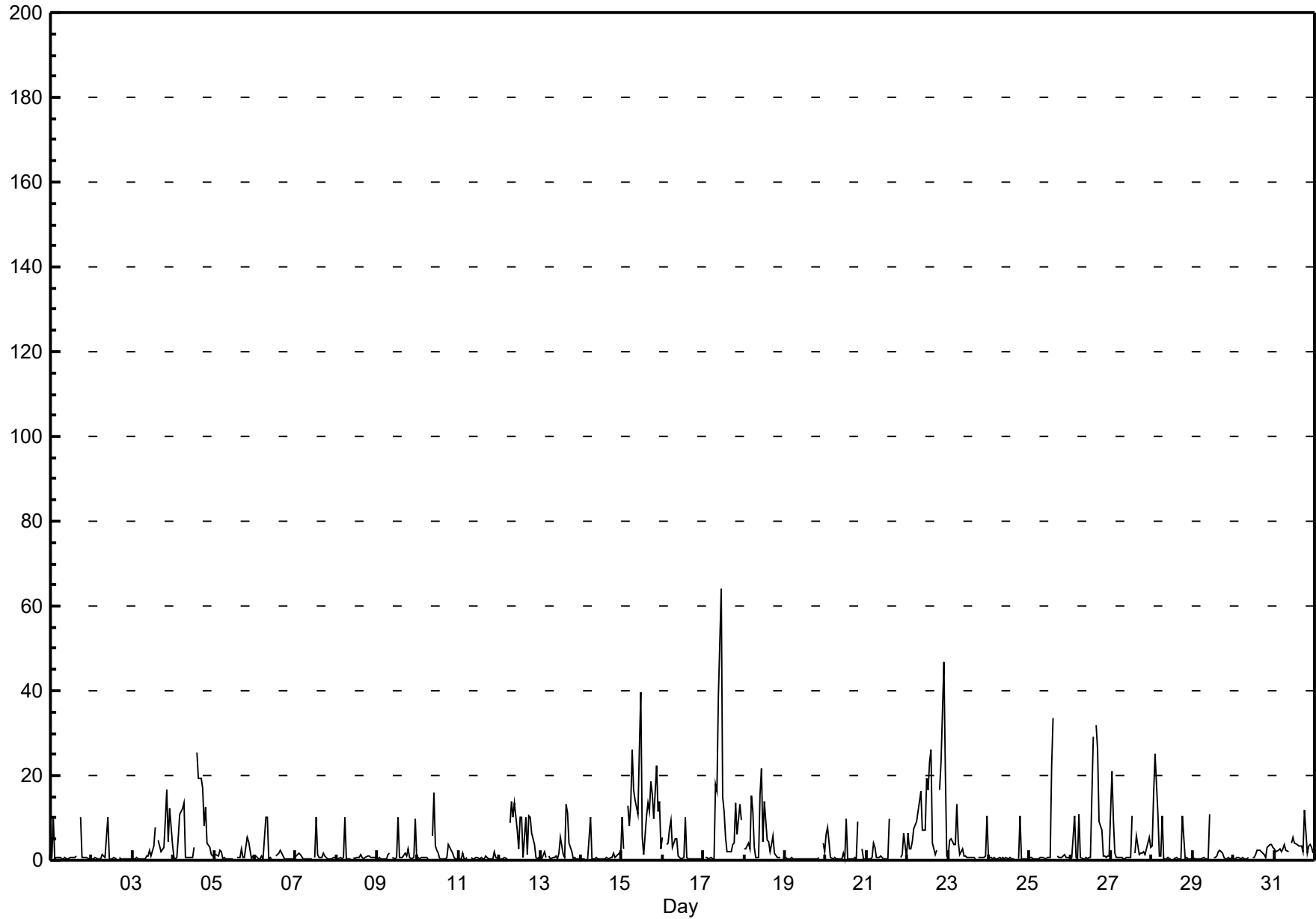
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Valleyview - December 2017

Maximum Value: 63.9 ppb on Dec 17 11:00		Maximum Daily Average: 13.8 ppb on Dec 15		Hours in Service: 744																							
Minimum Value: 0 ppb on Dec 3 06:00		Minimum Daily Average: 0.6 ppb on Dec 19		Hours of Data: 708																							
Maximum Diurnal Average: 5.4 ppb at hour 11		Minimum Diurnal Average: 1.3 ppb at hour 24		Hours of Missing Data: 36																							
Monthly Average: 3.39 ppb		Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 0.7 Q <sub>3</sub> = 3.0 P <sub>90</sub> = 10.5 P <sub>99</sub> = 27.6		Hours of Calibration: 36																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	1	10	0	1	1	1	0	0	1	0	0	1	1	1	1	1	A	10	1	1	1	1	0	1	1.4	10.2	
2-Dec	0	0	1	0	1	0	1	1	1	10	0	0	0	1	0	A	1	0	0	0	0	0	0	0	1.0	10.3	
3-Dec	0	0	1	0	0	0	0	0	1	1	2	1	3	8	A	5	3	2	3	10	17	4	12	4	3.4	16.5	
4-Dec	1	0	1	5	11	12	14	1	1	1	1	1	3	A	25	19	19	17	8	13	4	3	1	1	7.0	25.5	
5-Dec	2	1	1	2	2	0	1	0	0	0	0	0	A	1	1	1	3	1	1	5	4	2	0	1	1.3	5.4	
6-Dec	1	1	0	0	1	0	10	10	0	1	0	A	1	1	2	3	2	0	0	0	0	0	0	0	1.6	10.2	
7-Dec	1	1	2	1	0	0	0	0	0	0	0	A	1	10	1	1	1	2	1	1	0	0	1	1	1.2	10.2	
8-Dec	0	0	1	0	1	10	0	0	0	0	A	1	0	1	1	1	1	0	1	1	1	1	1	1	1.0	10.0	
9-Dec	0	1	0	0	0	0	1	2	A	1	0	1	10	1	1	1	2	1	3	1	0	1	10	1	1.6	10.2	
10-Dec	1	0	1	1	1	1	0	A	6	16	3	2	2	1	0	0	0	1	4	2	2	1	0	0	1.9	15.8	
11-Dec	0	0	2	0	0	1	A	1	0	0	1	1	0	1	0	0	1	1	0	0	1	2	1	0	0.6	2.1	
12-Dec	0	0	0	1	0	A	9	14	10	14	7	3	10	10	1	10	1	11	10	6	4	1	0	1	5.3	13.9	
13-Dec	1	0	2	1	A	1	0	1	1	1	0	2	5	1	1	13	11	4	2	1	1	0	0	0	2.2	13.3	
14-Dec	0	0	0	A	0	10	0	0	0	1	0	0	0	0	1	0	1	1	2	1	1	2	1	1	1.0	10.1	
15-Dec	10	3	A	13	8	13	26	17	14	11	26	40	6	1	11	13	11	19	16	10	22	11	14	3	13.8	39.8	
16-Dec	5	A	4	4	8	10	3	5	5	1	1	1	10	1	0	0	0	0	1	0	0	0	0	0	2.7	10.1	
17-Dec	A	1	1	0	1	0	0	18	16	39	64	15	12	5	2	2	2	4	4	14	6	13	10	A	10.4	63.9	
18-Dec	3	3	4	3	15	11	3	1	1	16	22	4	14	5	4	2	4	6	2	1	1	1	A	1	5.4	21.6	
19-Dec	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	4	2	0.6	4.0	
20-Dec	6	8	4	1	0	1	0	0	0	0	2	0	10	0	0	0	0	1	0	9	A	3	0	0	2.1	9.7	
21-Dec	0	0	0	1	4	3	1	1	1	1	0	0	0	10	C	C	C	C	0	A	1	2	6	1	1.7	9.7	
22-Dec	6	3	3	4	7	9	11	14	16	7	7	19	17	23	26	4	1	2	A	17	23	47	21	1	12.6	46.9	
23-Dec	1	5	5	4	4	13	4	1	3	1	1	1	1	1	1	1	0	A	1	1	1	1	1	11	2.6	13.2	
24-Dec	1	1	0	1	0	0	1	0	1	0	1	0	1	0	0	0	A	0	11	0	0	0	0	0	0.9	10.5	
25-Dec	1	1	0	0	0	0	1	1	1	0	1	1	1	22	34	A	1	1	1	1	1	1	1	1	3.0	33.6	
26-Dec	0	1	11	1	0	11	1	0	0	1	0	1	1	29	A	32	26	9	7	1	1	1	1	1	5.8	31.8	
27-Dec	21	9	2	1	1	1	1	0	1	1	1	1	11	A	2	6	2	2	2	2	1	3	5	3	3.2	20.9	
28-Dec	3	15	25	11	1	1	11	0	0	1	0	0	0	1	0	0	0	0	11	0	1	0	0	0	3.7	25.0	
29-Dec	1	0	0	0	0	0	1	0	0	0	0	0	11	A	1	1	2	2	2	1	0	1	0	1	1.1	10.7	
30-Dec	0	0	1	1	1	1	0	0	0	1	A	1	1	1	2	2	2	2	1	1	3	4	4	3	1.4	3.8	
31-Dec	3	2	2	3	2	3	4	2	2	A	4	5	4	4	4	3	3	2	12	2	3	4	3	2	3.3	11.9	
		2.4	2.3	2.5	2.0	2.4	3.8	3.5	3.1	2.8	4.3	5.4	3.5	4.3	4.8	4.4	4.5	3.7	3.4	3.4	3.4	3.4	3.4	1.3	Diurnal Average		
		20.9	15.5	25.0	12.8	15.1	13.2	26.1	17.9	16.4	38.7	63.9	39.8	16.6	29.1	33.6	31.8	26.1	18.7	15.7	16.7	23.2	46.9	21.4	10.6	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

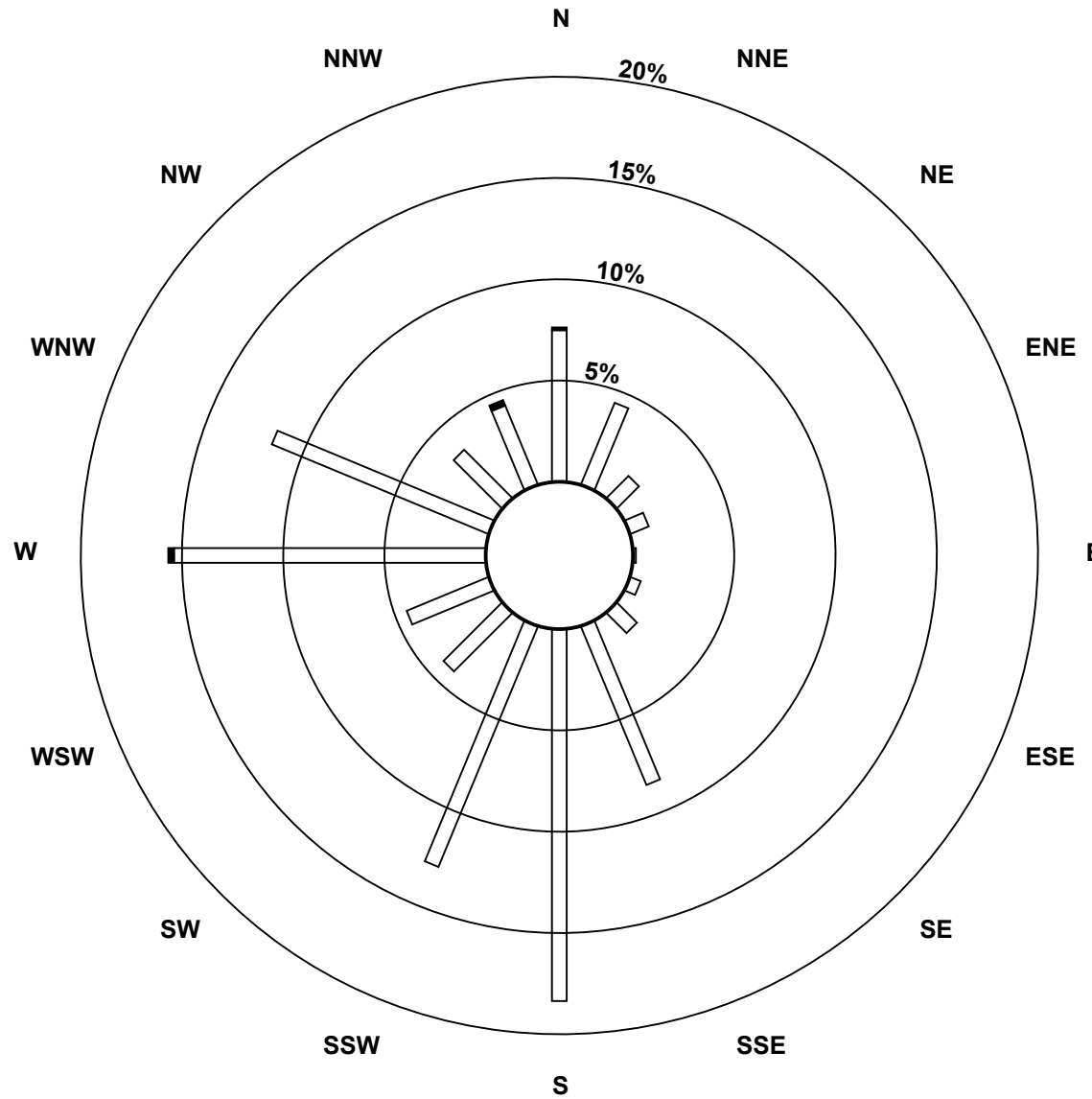
**Hourly Maximums**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Valleyview - December 2017**

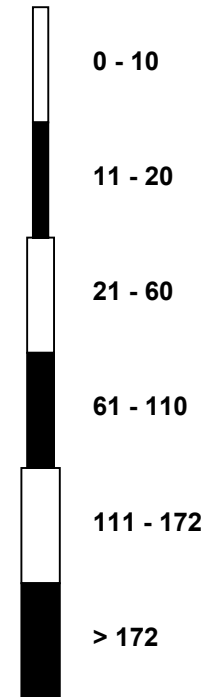


**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Valleyview - December 2017**

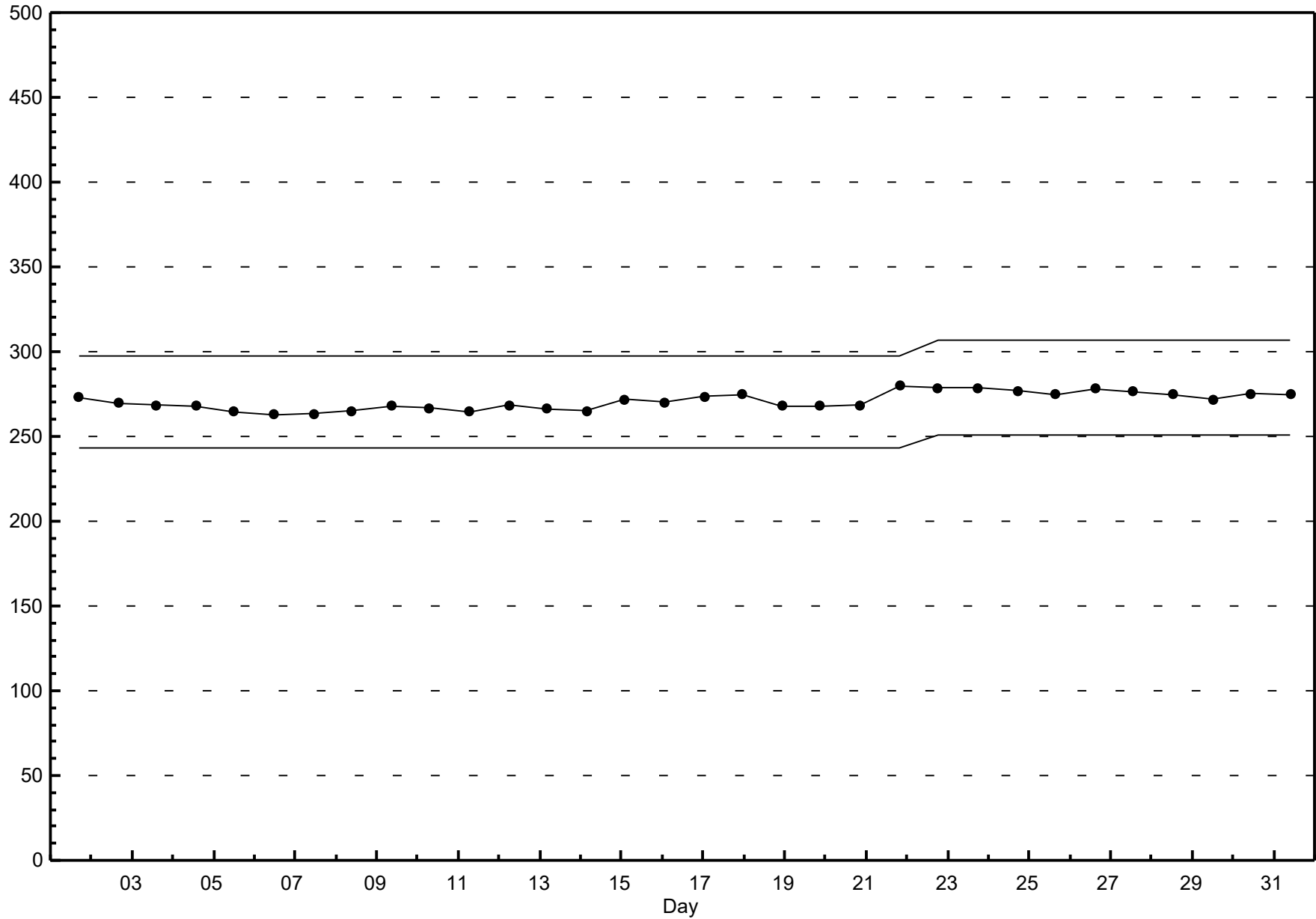


**Pollutant Classes (ppb)**



### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Valleyview - December 2017



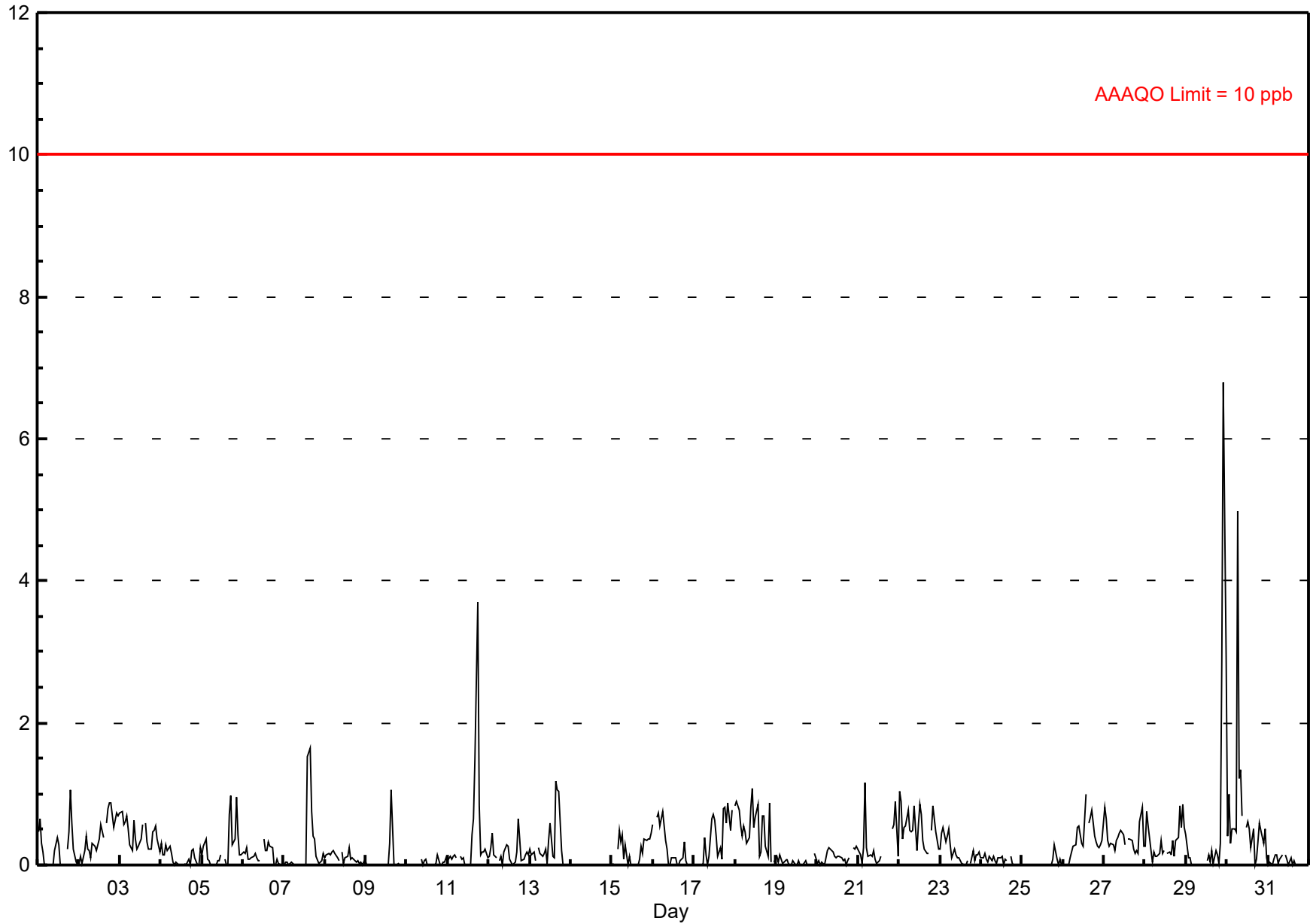
## Hourly Averages

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

Valleyview - December 2017

Number of Exceedences (AAAQO):		1-hr: 0		24-hr: 0		Hours in Service:		744																		
Maximum Value: 6.8 ppb on Dec 29 23:00		Maximum Daily Average: 0.7 ppb on Dec 30		Hours of Data:		708		Hours of Missing Data: 36																		
Minimum Value: 0 ppb on Dec 1 05:00		Minimum Daily Average: 0.0 ppb on Dec 14		Hours of Calibration: 36		Hours of Missing Data: 36		Percent Operational Time: 100.0																		
Maximum Diurnal Average: 0.5 ppb at hour 23		Minimum Diurnal Average: 0.2 ppb at hour 8		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.3 P <sub>90</sub> = 0.6 P <sub>99</sub> = 1.5																						
Monthly Average: 0.25 ppb																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	1	0	0	0	0.2	1.1
2-Dec	0	0	0	0	0	0	0	0	0	0	0	0	1	0	A	1	1	1	1	1	1	1	1	1	0.4	0.9
3-Dec	1	1	1	1	1	1	0	0	1	0	0	0	1	A	1	0	0	0	0	0	0	1	0	0	0.4	0.7
4-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
5-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	1	1	0	0	1	0	0	0	0	0.2	1.0
6-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
7-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	2	2	1	0	0	0	0	0	0	0	0.2	1.7
8-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
9-Dec	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0.1	1.1
10-Dec	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
11-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	1	4	1	0	0	0	0	0	0.4	3.7
12-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.2	0.6
13-Dec	0	0	0	0	A	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0.3	1.2
14-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
15-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
16-Dec	1	A	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.7
17-Dec	A	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1	1	1	0	1	A	0.4	0.9
18-Dec	1	1	1	1	0	1	0	0	0	1	1	1	1	0	0	1	1	0	0	1	0	1	0	0	0.5	1.1
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2
20-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.1	0.3
21-Dec	0	0	0	0	1	0	0	0	0	0	0	0	0	0	C	C	C	C	0	A	1	1	1	0	0.3	1.2
22-Dec	1	1	0	1	1	1	0	0	0	1	0	1	1	1	0	0	0	0	A	0	1	0	0	0	0.5	1.0
23-Dec	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.2	0.5
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.1	0.2
25-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.0	0.3
26-Dec	0	0	0	0	0	0	0	0	1	1	0	0	0	1	A	1	1	1	0	0	0	0	0	0	0.3	1.0
27-Dec	1	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	1	0	0.4	0.8
28-Dec	0	1	1	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	1	1	0.3	0.8
29-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	3	7	3	0.6	6.8
30-Dec	0	1	0	1	1	0	5	1	1	1	A	1	1	1	0	1	0	0	0	1	0	0	1	0	0.7	5.0
31-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
		0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.2	0.3	0.3	0.5	0.2	Diurnal Average	
		1.0	1.0	0.8	0.7	1.2	0.8	5.0	1.2	1.3	0.8	1.1	0.7	0.9	1.0	1.5	1.7	1.5	3.7	0.9	1.1	1.0	2.9	6.8	2.9	Diurnal Maximum

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



## Hourly Maximums

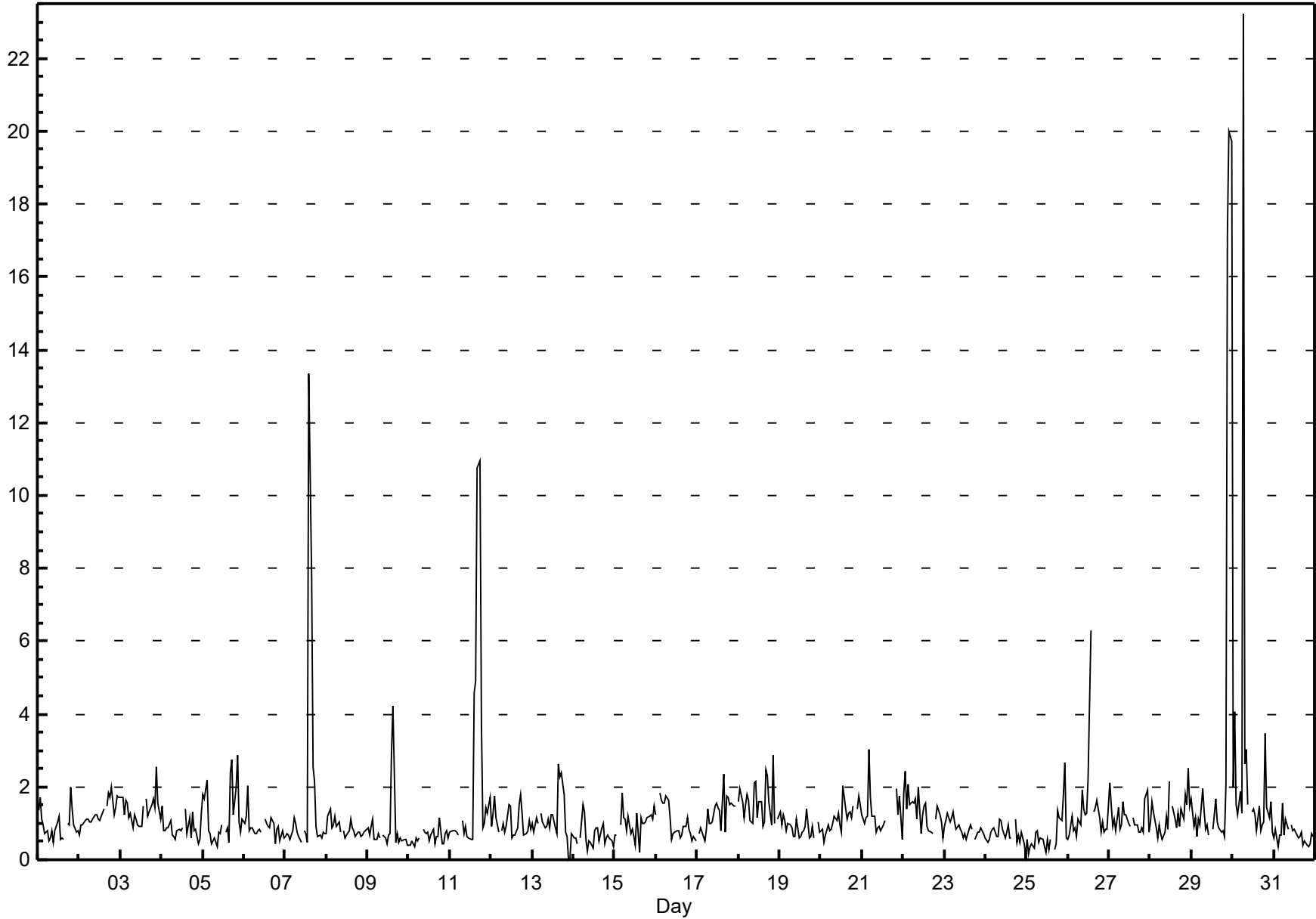
Hydrogen Sulphide (H<sub>2</sub>S) - ppb

Valleyview - December 2017

Maximum Value: 23.2 ppb on Dec 30 07:00		Maximum Daily Average: 3.4 ppb on Dec 29		Hours in Service: 744																							
Minimum Value: 0 ppb on Dec 13 22:00		Minimum Daily Average: 0.6 ppb on Dec 10		Hours of Data: 708																							
Maximum Diurnal Average: 1.8 ppb at hour 7		Minimum Diurnal Average: 0.9 ppb at hour 12		Hours of Missing Data: 36																							
Monthly Average: 1.22 ppb		Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 0.7 Median = 0.9 Q <sub>3</sub> = 1.3 P <sub>90</sub> = 1.7 P <sub>99</sub> = 10.6		Hours of Calibration: 36																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	1	2	1	1	1	1	1	1	1	0	1	1	1	1	1	1	A	1	1	2	1	1	1	1	0.9	2.0	
2-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	2	2	2	1	1	2	2	1.3	2.0	
3-Dec	2	2	1	2	2	1	1	1	1	1	1	1	1	1	A	2	1	1	2	2	1	3	2	1	1.4	2.6	
4-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0	1	1	0.9	1.5	
5-Dec	2	2	2	1	1	0	1	1	0	1	1	1	A	1	1	0	2	3	1	2	3	1	1	1	1.2	2.9	
6-Dec	1	1	2	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0	1	1	1	1	1	0.9	2.0	
7-Dec	1	1	1	1	1	1	1	1	1	0	A	1	1	0	13	8	3	2	1	1	1	1	1	1	1.7	13.3	
8-Dec	1	1	1	1	1	1	1	1	1	A	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.4	
9-Dec	1	1	1	1	1	1	1	1	1	A	1	0	1	1	3	4	0	1	0	1	1	1	1	0	0.9	4.2	
10-Dec	0	0	1	0	1	1	1	A	1	1	1	1	1	1	1	0	1	1	1	1	0	0	1	1	0.6	1.2	
11-Dec	1	1	1	1	1	1	A	1	1	1	1	1	1	1	5	5	11	11	4	1	1	1	1	2	2.2	11.0	
12-Dec	1	1	2	1	1	A	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1.0	1.8	
13-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	3	2	2	2	1	1	0	0	1	1.1	2.6	
14-Dec	1	1	0	A	1	1	1	1	0	1	0	0	1	1	1	1	1	1	0	1	1	1	1	0	0.7	1.5	
15-Dec	1	1	A	1	2	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1.0	1.8	
16-Dec	1	A	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.8	
17-Dec	A	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1	2	2	2	2	2	1	1	A	1.2	2.4	
18-Dec	2	2	2	1	2	2	2	1	1	2	2	1	2	2	1	1	2	2	2	1	3	1	A	1	1.6	2.9	
19-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0.9	1.4	
20-Dec	1	1	0	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	A	1	2	1	1.1	2.0	
21-Dec	1	1	1	1	3	2	1	1	1	1	1	1	1	1	C	C	C	C	2	A	2	1	2	1	1.3	3.0	
22-Dec	2	2	1	2	2	2	2	2	1	2	1	1	1	2	1	1	1	1	A	1	1	1	1	1	1.3	2.4	
23-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0.9	1.3	
24-Dec	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0	1	0	1	0	0	0.7	1.1	
25-Dec	1	0	0	0	0	1	1	0	1	1	0	0	1	0	1	A	0	0	1	1	1	2	3	1	0.7	2.7	
26-Dec	1	1	1	1	1	1	1	1	2	1	1	1	2	6	A	1	1	2	1	1	1	1	1	1	1.3	6.3	
27-Dec	2	1	1	1	1	1	1	1	2	1	1	1	1	A	1	1	1	1	1	1	1	2	2	1	1.1	2.1	
28-Dec	1	2	1	1	1	1	1	1	1	1	1	2	A	1	1	1	1	1	1	1	1	2	2	1	1.2	2.5	
29-Dec	2	1	1	1	1	1	2	1	1	1	1	1	A	1	1	2	1	1	1	1	1	2	17	20	3.4	20.0	
30-Dec	2	4	2	1	2	1	23	3	3	1	A	1	1	1	1	1	1	1	1	3	1	1	2	1	2.6	23.2	
31-Dec	1	1	0	1	1	2	1	1	1	A	1	1	1	1	1	1	1	0	1	0	0	0	1	1	0.7	1.6	
		1.1	1.1	1.1	1.0	1.0	1.1	1.8	1.0	1.0	1.0	0.9	0.9	0.9	1.2	1.5	1.5	1.5	1.5	1.2	1.1	1.1	1.5	1.7	1.5	Diurnal Average	
		2.1	4.1	2.2	2.1	3.0	1.8	23.2	2.6	3.0	2.1	2.1	2.1	2.2	6.3	13.3	7.8	10.7	11.0	3.7	3.5	2.9	17.2	20.0	19.7	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

**Hourly Maximums**

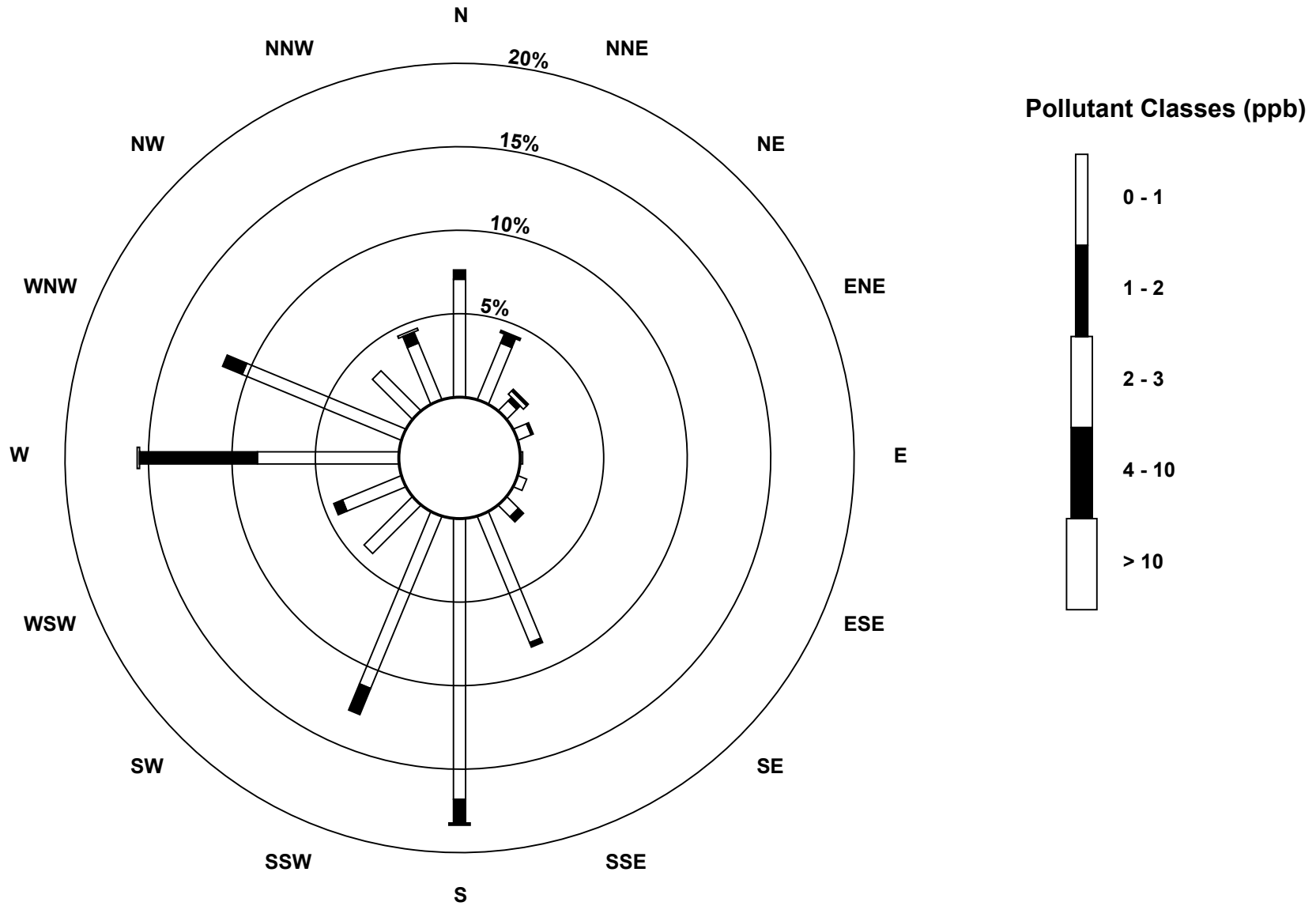
**Hydrogen Sulphide (H<sub>2</sub>S) - ppb**  
**Valleyview - December 2017**





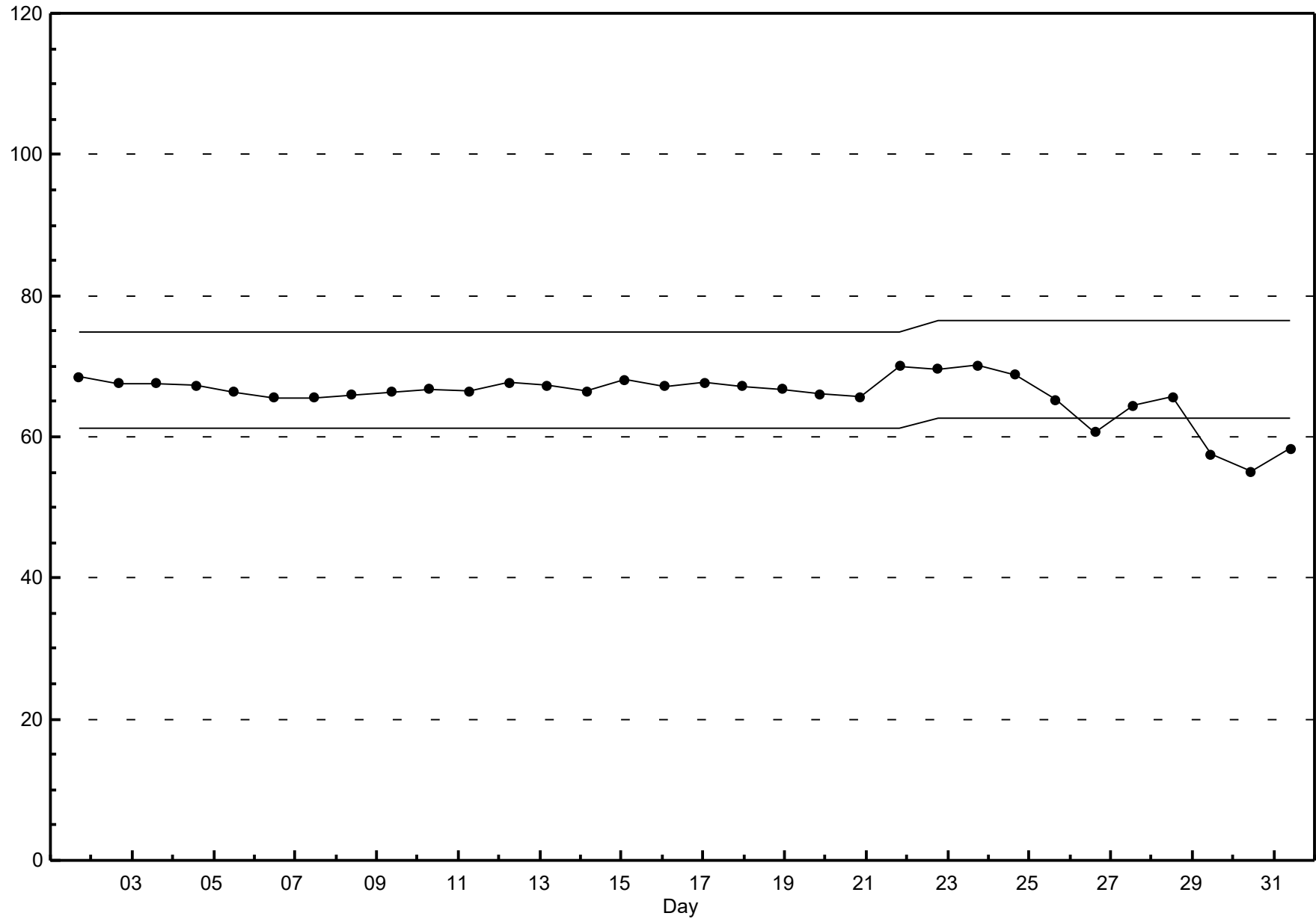
**Pollutant Rose**

**Hydrogen Sulphide (H<sub>2</sub>S) - ppb**  
**Valleyview - December 2017**



### Span Responses

Hydrogen Sulphide (H<sub>2</sub>S)  
Valleyview - December 2017



# Hourly Averages

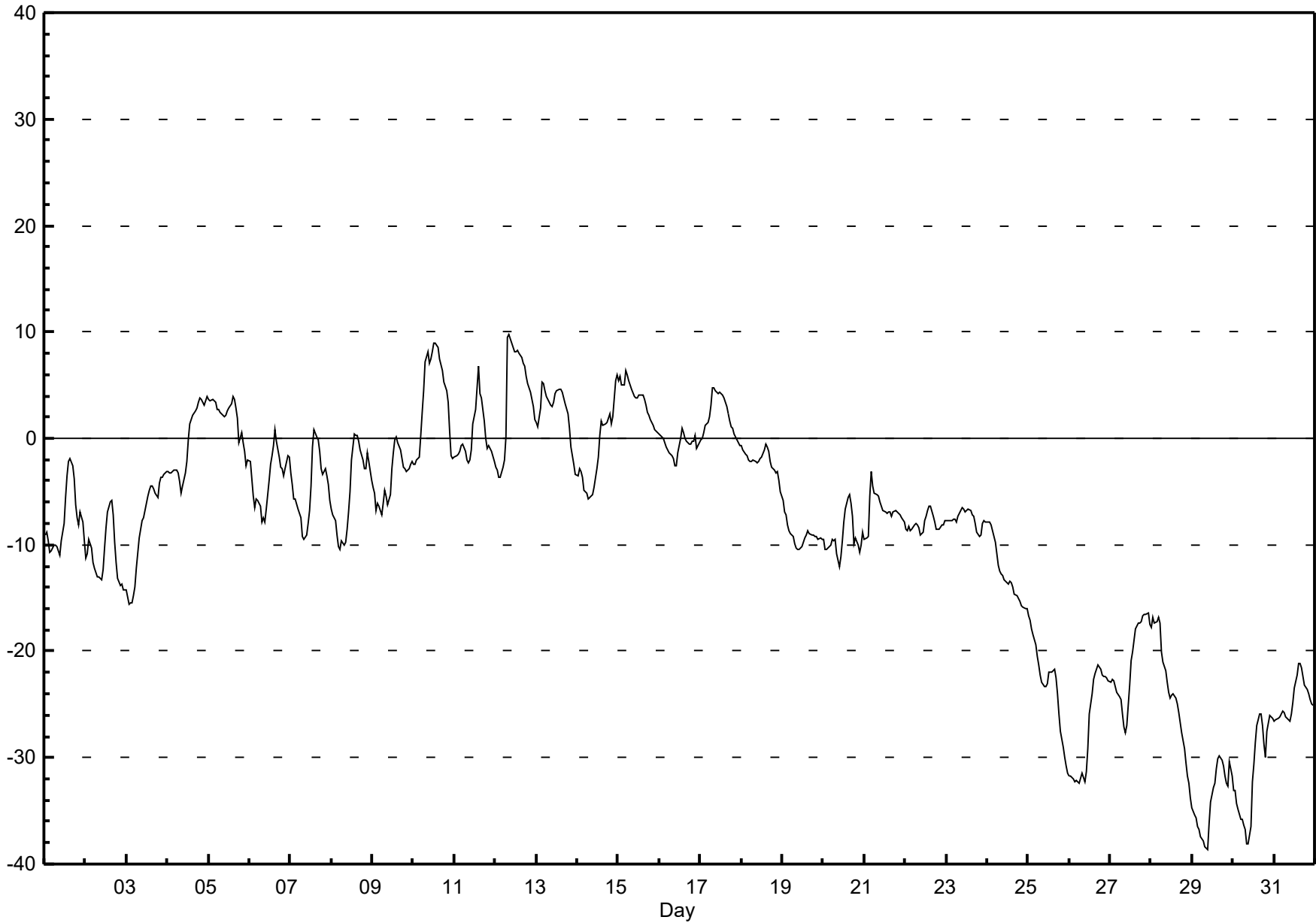
External Temperature (ET) - °C

Valleyview - December 2017

<b>Maximum Value: 9.7 °C on Dec 12 09:00</b>		<b>Maximum Daily Average: 4.1 °C on Dec 12</b>		Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																							
<b>Minimum Value: -39 °C on Dec 29 10:00</b> <b>Maximum Diurnal Average: -5.9 °C at hour 15</b> <b>Monthly Average: -8.66 °C</b>		<b>Minimum Daily Average: -34.0 °C on Dec 29</b> <b>Minimum Diurnal Average: -10.2 °C at hour 10</b> Percentiles: P <sub>1</sub> = -36.7 P <sub>10</sub> = -26.4 Q <sub>1</sub> = -13.7 Median = -6.6 Q <sub>3</sub> = -0.7 P <sub>90</sub> = 3.6 P <sub>99</sub> = 8.4																									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	-9	-9	-10	-11	-11	-10	-10	-10	-11	-11	-10	-8	-4	-2	-2	-3	-4	-6	-7	-8	-7	-8	-10	-7.7	-1.9		
2-Dec	-11	-11	-9	-10	-12	-12	-13	-13	-13	-13	-12	-10	-8	-7	-6	-6	-7	-10	-12	-13	-14	-14	-14	-14	-11.0	-5.8	
3-Dec	-14	-16	-15	-16	-15	-14	-12	-9	-9	-8	-7	-7	-5	-5	-4	-4	-5	-5	-6	-4	-4	-4	-3	-3	-8.1	-3.1	
4-Dec	-3	-3	-3	-3	-3	-3	-3	-4	-5	-4	-3	-2	0	1	2	2	3	3	3	4	4	3	4	4	-0.4	3.9	
5-Dec	4	4	4	3	3	3	3	2	2	2	2	3	3	3	4	4	3	2	0	0	0	-1	-3	-2	2.0	4.0	
6-Dec	-2	-4	-5	-7	-6	-6	-6	-8	-7	-8	-7	-4	-2	-2	-1	1	0	-2	-3	-3	-4	-3	-2	-2	-3.8	0.8	
7-Dec	-3	-4	-6	-6	-7	-7	-7	-9	-10	-9	-8	-7	-4	-1	1	0	0	-1	-3	-3	-3	-4	-4	-6	-4.6	0.9	
8-Dec	-7	-7	-8	-9	-10	-10	-10	-10	-10	-9	-7	-5	-2	0	0	0	0	-1	-2	-3	-3	-3	-1	-2	-4	-5.0	0.4
9-Dec	-5	-5	-7	-6	-6	-7	-6	-5	-5	-6	-5	-3	-1	0	0	0	0	-1	-2	-3	-3	-3	-2	-2	-3.7	0.1	
10-Dec	-2	-2	-2	-2	0	2	4	7	8	7	8	8	9	9	9	7	7	6	5	5	3	1	-2	-2	3.9	9.0	
11-Dec	-2	-2	-2	-1	-1	-1	-1	-2	-2	-2	-1	1	3	5	7	4	4	2	0	-1	-1	-1	-1	-2	0.1	6.7	
12-Dec	-3	-3	-4	-4	-3	-2	0	10	10	9	8	8	8	8	8	8	7	7	6	5	4	4	3	2	4.1	9.7	
13-Dec	1	1	3	5	5	4	4	3	3	3	3	4	5	5	5	4	4	3	2	1	-1	-2	-2	-3	2.6	5.3	
14-Dec	-4	-3	-3	-4	-5	-5	-6	-6	-5	-5	-5	-3	-2	0	2	1	1	2	2	2	1	2	5	6	-1.2	6.0	
15-Dec	5	6	5	5	6	6	5	5	5	4	4	4	4	4	4	4	3	2	2	2	1	1	1	1	3.7	6.3	
16-Dec	0	0	0	0	-1	-1	-1	-2	-2	-3	-3	-1	0	1	1	0	0	-1	-1	0	0	0	-1	0	-0.6	0.9	
17-Dec	0	0	1	1	2	2	3	5	5	5	4	4	4	4	4	3	2	2	1	1	0	0	0	-1	2.1	4.8	
18-Dec	-1	-1	-1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-1	-1	-1	-1	-2	-3	-3	-3	-3	-4	-5	-2.1	-0.6	
19-Dec	-6	-7	-7	-8	-9	-9	-9	-10	-10	-10	-10	-10	-10	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9.0	-5.9	
20-Dec	-10	-10	-10	-10	-10	-10	-10	-10	-11	-12	-11	-10	-8	-7	-6	-5	-6	-7	-10	-9	-10	-11	-10	-9	-9.2	-5.3	
21-Dec	-10	-9	-9	-5	-3	-4	-5	-5	-5	-6	-6	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-8	-6.7	-3.1	
22-Dec	-8	-9	-8	-9	-9	-8	-8	-8	-8	-9	-9	-8	-7	-7	-6	-6	-7	-8	-8	-9	-9	-8	-8	-8	-8.0	-6.3	
23-Dec	-8	-8	-8	-8	-8	-8	-8	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-8	-9	-9	-9	-8	-8	-8	-7.6	-6.6	
24-Dec	-8	-8	-8	-9	-9	-10	-12	-13	-13	-13	-13	-14	-14	-13	-14	-14	-15	-15	-15	-15	-16	-16	-16	-16	-12.8	-7.8	
25-Dec	-17	-17	-18	-18	-19	-20	-21	-22	-23	-23	-23	-23	-22	-22	-22	-22	-22	-24	-26	-27	-29	-30	-31	-31	-23.1	-16.6	
26-Dec	-32	-32	-32	-32	-32	-32	-32	-31	-32	-32	-31	-29	-26	-24	-23	-22	-22	-21	-22	-22	-22	-22	-23	-23	-27.2	-21.3	
27-Dec	-23	-23	-23	-23	-24	-24	-25	-26	-27	-28	-27	-23	-21	-20	-19	-18	-17	-17	-17	-17	-16	-17	-16	-17	-21.2	-16.4	
28-Dec	-18	-17	-17	-17	-17	-17	-20	-21	-22	-23	-24	-24	-24	-24	-25	-26	-27	-28	-29	-31	-32	-32	-32	-34	-23.9	-16.8	
29-Dec	-35	-35	-36	-36	-37	-37	-38	-38	-38	-39	-36	-34	-33	-32	-31	-30	-30	-30	-31	-32	-32	-33	-30	-32	-34.0	-29.9	
30-Dec	-33	-33	-34	-35	-36	-36	-36	-37	-38	-38	-36	-32	-31	-29	-27	-26	-26	-27	-29	-30	-28	-26	-26	-26	-31.4	-25.9	
31-Dec	-27	-26	-26	-26	-26	-26	-26	-26	-26	-27	-26	-25	-23	-22	-21	-21	-22	-22	-23	-24	-24	-25	-25	-25	-24.6	-21.1	
		-9.3	-9.5	-9.7	-9.7	-9.7	-9.8	-10.0	-9.7	-10.0	-10.2	-9.7	-8.6	-7.4	-6.5	-5.9	-6.0	-6.4	-7.2	-8.0	-8.4	-8.7	-8.9	-9.0	-9.4	Diurnal Average	
		5.4	5.9	5.0	5.3	6.3	5.9	5.4	9.5	9.7	9.4	8.5	8.1	8.9	9.0	8.6	7.7	7.0	6.8	5.9	5.1	4.4	3.6	5.4	6.0	Diurnal Maximum	

**Hourly Averages**

**External Temperature (ET) - °C**  
**Valleyview - December 2017**



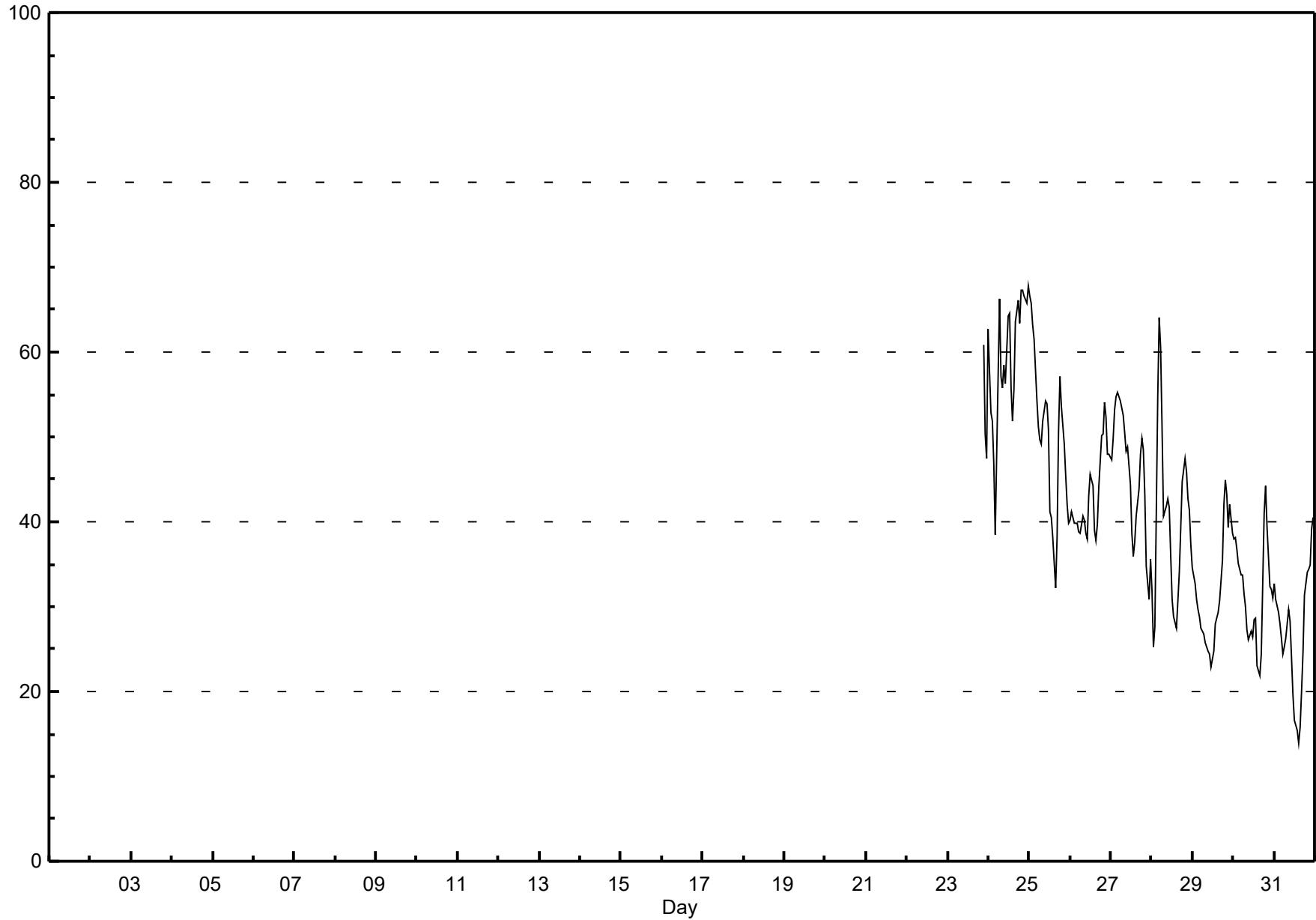
## Hourly Averages

Relative Humidity (RH) - %  
Valleyview - December 2017

Maximum Value: 67.8 % on Dec 25 00:00      Maximum Daily Average: 58.9 % on Dec 24 Minimum Value: 14 % on Dec 31 15:00      Minimum Daily Average: 26.9 % on Dec 31 Maximum Diurnal Average: 48.8 % at hour 20      Minimum Diurnal Average: 32.5 % at hour 15 Monthly Average: 41.25 %      Percentiles: P <sub>1</sub> = 15.4 P <sub>10</sub> = 25.7 Q <sub>1</sub> = 30.9 Median = 40.1 Q <sub>3</sub> = 50.3 P <sub>90</sub> = 58.4 P <sub>99</sub> = 67.1																								Hours in Service: 744	Hours of Data: 195	Hours of Missing Data: 549	Hours of Calibration: 0	Percent Operational Time: 26.2																				
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
2-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
3-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
4-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
5-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
6-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
7-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
8-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
9-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
10-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
11-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
12-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
13-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
14-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
15-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
16-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
17-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
18-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
19-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
20-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
21-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
22-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
23-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
24-Dec	63	53	52	47	38	48	66	57	56	58	56	64	65	56	52	56	64	66	63	67	67	67	66	68	58.9	67.8																						
25-Dec	67	66	63	62	54	51	50	49	52	54	54	51	41	40	38	32	38	51	57	54	49	45	42	40	50.0	66.6																						
26-Dec	40	41	40	40	40	39	39	41	40	39	38	43	46	44	39	38	40	44	50	50	54	52	48	48	43.0	54.0																						
27-Dec	47	50	53	55	55	54	53	53	51	48	49	44	39	36	38	41	44	48	50	49	43	35	31	36	45.8	55.2																						
28-Dec	32	25	28	55	64	60	51	41	42	43	42	36	31	29	27	31	34	39	45	47	46	43	41	37	40.4	64.1																						
29-Dec	35	33	31	30	29	27	27	26	25	25	24	23	25	28	29	29	31	35	42	45	43	39	42	39	31.7	44.8																						
30-Dec	38	38	37	35	34	34	32	30	27	26	27	27	28	29	23	22	24	33	41	44	39	32	32	31	31.8	44.3																						
31-Dec	33	31	29	28	26	24	25	26	30	28	24	20	17	15	14	16	20	25	31	34	34	35	39	41	26.9	40.5																						
																								44.2	42.1	41.6	43.8	42.6	42.3	42.8	40.3	40.3	40.2	39.3	38.5	36.3	34.7	32.5	33.0	36.8	42.6	47.5	48.8	47.1	45.5	43.5	42.9	Diurnal Average
																								66.6	65.8	63.2	61.6	64.1	60.4	66.3	57.1	55.7	58.4	56.2	64.2	64.5	55.7	51.9	55.6	63.6	66.1	63.4	67.3	67.2	66.6	65.7	67.8	Diurnal Maximum
N - Not Valid																																																

**Hourly Averages**

**Relative Humidity (RH) - %  
Valleyview - December 2017**





Peace Airshed Zone Association

# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Valleyview - December 2017

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 Spd	1	1	2	1	1	1	1	1	0	0	1	0	1	1	2	1	1	1	1	1	1	1	2	0	0.6	2.2
Dir	324	207	204	226	211	236	185	170	59	181	341	285	276	247	175	195	156	354	339	204	211	217	205	242	222	205
2 Spd	1	3	3	2	1	1	2	2	2	0	1	2	2	1	1	2	0	0	1	1	1	1	1	2	1.3	3.3
Dir	192	192	195	198	202	223	211	209	203	220	211	190	181	177	186	192	334	210	178	164	182	206	189	191	195	195
3 Spd	0	1	2	1	1	1	1	2	1	1	1	2	1	9	11	11	8	6	2	8	9	12	11	10	4.0	11.8
Dir	206	208	200	196	187	183	176	234	64	211	158	146	117	278	276	275	260	246	224	266	271	273	270	284	263	273
4 Spd	5	4	3	2	4	4	2	1	2	2	2	2	4	2	4	5	6	10	10	10	15	16	19	20	5.7	20.3
Dir	303	299	311	268	260	257	204	211	165	169	164	167	239	213	257	254	259	263	273	276	285	292	284	284	273	284
5 Spd	19	20	21	19	17	13	16	15	16	13	13	10	9	7	4	5	3	4	1	4	3	3	2	1	9.4	20.6
Dir	282	279	279	282	286	296	288	293	287	295	304	305	308	309	293	285	282	282	126	263	301	287	169	183	288	279
6 Spd	1	2	3	2	1	1	1	2	2	2	2	1	1	2	2	1	2	2	2	1	2	2	2	2	1.5	3.1
Dir	120	145	149	161	183	168	195	198	194	199	186	188	238	230	217	215	168	166	156	143	166	173	171	177	176	149
7 Spd	2	2	3	3	5	4	3	3	3	4	3	2	2	2	0	2	1	1	1	3	3	3	1	1	2.1	4.6
Dir	205	218	215	210	163	155	180	202	198	189	189	190	169	180	342	265	207	187	163	171	181	193	204	206	190	163
8 Spd	3	2	1	1	2	2	2	3	4	4	4	4	4	2	0	1	2	2	4	4	5	4	3	3	2.6	5.1
Dir	199	192	204	211	204	199	194	205	193	200	193	190	178	183	196	187	172	194	205	196	164	143	152	158	186	164
9 Spd	3	3	3	2	2	3	5	6	4	3	4	3	2	0	1	1	1	2	2	3	3	3	4	3	2.5	5.5
Dir	147	158	156	150	152	186	214	214	193	181	180	179	188	330	250	205	197	204	200	187	187	191	188	181	186	214
10 Spd	2	0	1	3	4	2	3	12	15	17	21	19	15	12	11	9	9	7	2	1	1	1	1	1	5.9	20.7
Dir	204	242	234	178	172	185	187	271	276	268	280	281	288	294	308	313	290	281	213	178	198	178	182	176	276	280
11 Spd	1	1	2	3	2	3	2	0	2	2	2	2	2	2	1	2	1	1	1	1	0	2	0	0	1.3	3.3
Dir	127	199	197	188	180	179	184	278	199	193	195	178	183	179	177	348	275	186	193	182	285	209	201	158	190	188
12 Spd	0	1	1	2	2	2	5	17	18	20	21	22	18	18	13	8	7	6	3	2	2	1	1	1	7.1	21.6
Dir	5	17	178	198	178	189	229	251	254	269	278	279	287	289	297	294	281	273	251	207	205	176	137	155	270	279
13 Spd	2	2	3	11	10	9	7	9	9	10	9	12	10	8	7	9	11	8	5	0	2	1	1	1	5.9	11.7
Dir	166	175	250	284	283	285	286	284	285	287	297	284	281	299	299	281	277	275	289	110	144	167	172	172	282	284
14 Spd	2	3	1	0	1	1	2	3	1	1	4	4	2	2	3	3	3	2	2	2	2	2	6	2	2.1	5.6
Dir	174	178	176	191	226	203	197	193	195	210	186	183	199	177	188	185	169	185	199	216	180	222	245	224	196	245
15 Spd	2	1	1	11	17	10	11	20	20	19	20	18	20	17	16	15	15	14	15	15	16	13	14	16	13.9	20.4
Dir	194	234	230	266	271	270	270	264	273	275	278	278	280	282	287	283	278	272	274	273	275	271	271	274	274	280
16 Spd	16	14	12	11	9	10	9	8	8	3	3	3	3	3	2	3	4	6	5	6	7	5	5	6	4.4	15.8
Dir	275	275	275	274	268	273	271	267	257	223	181	168	175	177	168	169	169	167	168	169	168	178	164	167	236	275
17 Spd	4	3	3	3	2	1	8	14	14	18	15	18	22	21	22	18	13	12	12	12	11	6	7	9	10.3	22.4
Dir	166	170	177	180	186	207	251	262	261	265	278	276	275	280	281	280	283	275	276	278	272	264	266	273	270	281
18 Spd	10	10	11	12	10	11	9	12	11	10	8	6	7	9	8	6	1	2	1	2	3	7	4	4	6.8	11.8
Dir	278	278	277	276	265	273	282	283	284	279	281	285	266	277	288	288	250	256	349	298	299	327	347	345	283	283
19 Spd	7	6	7	8	7	5	5	4	4	5	5	4	3	4	4	3	3	1	1	1	1	2	1	2	3.7	8.3
Dir	7	1	7	4	8	355	356	4	11	22	20	14	2	350	358	5	46	78	20	349	28	305	351	327	5	4
20 Spd	3	5	4	3	6	3	4	2	1	3	2	4	4	4	3	2	2	0	2	1	0	1	2	1	1.9	5.7
Dir	283	288	265	245	243	210	208	194	149	181	192	169	175	177	173	185	166	180	196	203	236	220	153	155	211	243
21 Spd	2	2	2	2	10	8	7	7	11	8	11	12	13	12	10	12	7	10	10	7	6	7	8	9	6.5	12.6
Dir	170	190	182	293	279	292	296	315	341	7	356	359	3	6	348	349	334	325	333	317	285	282	276	288	327	3
22 Spd	8	4	4	4	4	6	1	5	10	7	9	9	11	11	8	9	11	13	13	13	10	9	8	10	8.1	13.2
Dir	271	276	276	258	268	268	267	251	283	272	254	276	273	274	281	294	289	291	283	284	273	286	289	299	279	283

## Hourly Averages

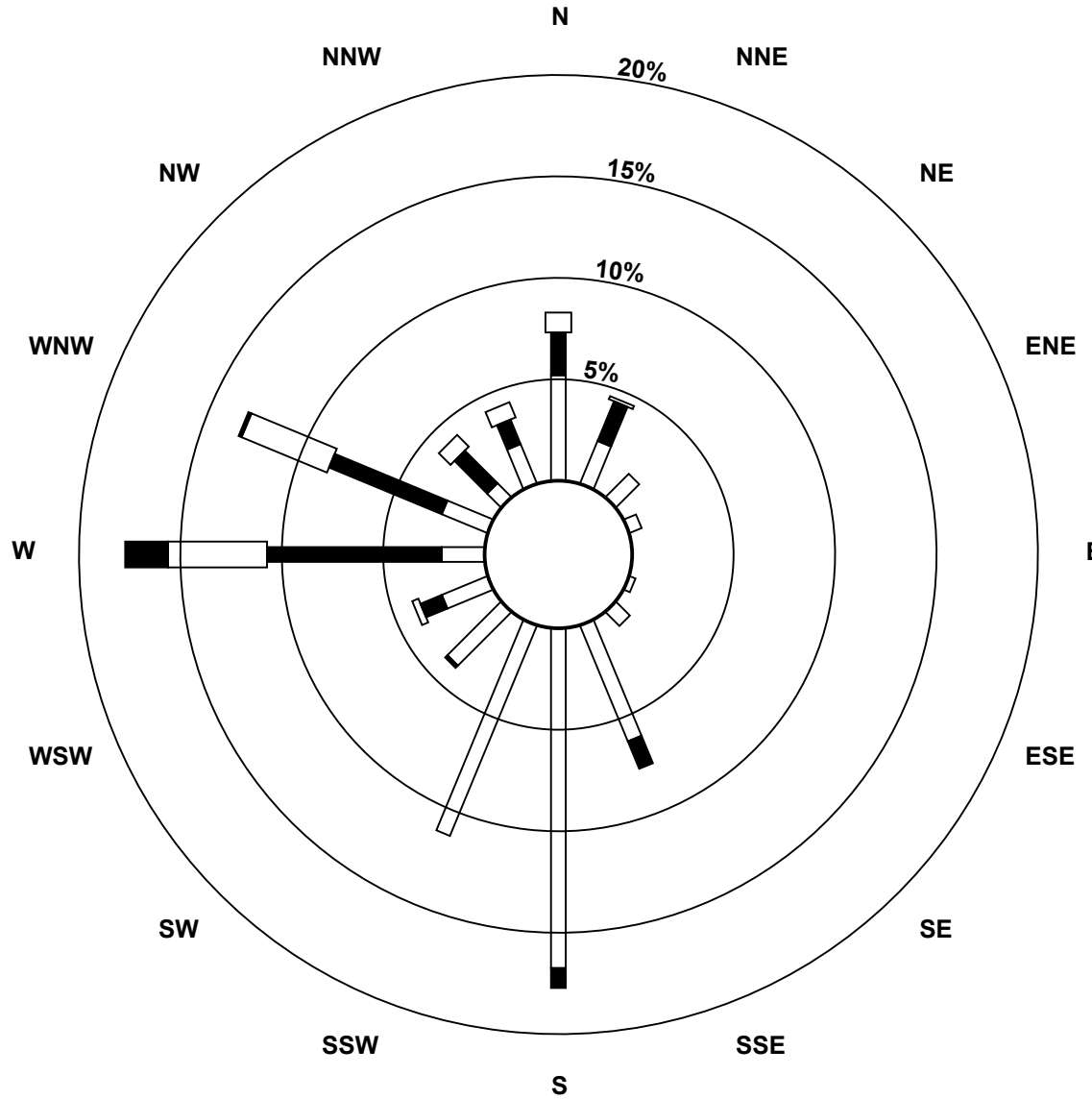
Wind Speed (km/h)  
Wind Direction (deg)  
Valleyview - December 2017

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	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	10	10	7	6	7	11	13	12	12	11	12	10	11	13	19	17	15	14	12	7	3	8	10	7	9.8	19.4
Dir	294	281	282	284	278	276	281	301	289	305	323	322	313	322	333	331	328	329	351	359	349	302	285	292	311	333
24 Spd	10	12	11	16	15	16	12	9	6	4	6	5	6	3	2	4	5	3	4	3	4	4	3	3	6.2	16.4
Dir	308	322	322	325	321	330	21	12	10	359	19	351	354	48	76	5	4	2	30	8	0	11	9	21	348	325
25 Spd	7	7	9	8	11	8	9	11	5	3	1	1	0	1	2	1	1	0	0	0	0	0	0	0	3.4	10.8
Dir	16	7	10	23	18	13	12	12	11	43	54	32	147	3	4	66	69	75	99	193	168	222	204	184	17	18
26 Spd	0	0	0	0	0	0	0	0	0	0	1	3	1	1	0	1	0	0	3	4	1	2	4	4	1.0	4.5
Dir	270	281	246	274	281	307	281	331	18	52	356	339	309	12	358	341	333	240	357	322	40	333	311	310	330	322
27 Spd	4	1	1	1	1	1	0	1	1	1	1	1	3	4	4	4	2	4	4	4	3	7	7	1	2.1	6.7
Dir	276	266	179	155	167	194	157	180	174	198	198	175	234	235	236	250	234	230	235	243	234	271	262	168	239	271
28 Spd	4	9	8	4	6	8	12	11	10	8	7	6	5	7	6	6	4	3	2	0	0	0	0	1	3.9	11.8
Dir	247	268	271	302	310	330	7	19	15	31	24	22	26	5	341	340	358	330	333	318	132	341	290	154	348	7
29 Spd	1	1	0	0	0	0	0	0	0	0	0	1	1	3	3	4	4	3	3	4	2	1	1	2	1.1	4.2
Dir	181	177	176	182	198	175	169	174	184	167	114	231	345	345	338	340	355	12	13	351	350	39	38	42	357	351
30 Spd	2	2	3	2	2	2	2	1	1	0	1	0	1	1	2	2	1	0	0	2	7	8	5	5	0.6	7.7
Dir	14	12	5	5	350	342	21	5	180	171	173	144	13	3	39	49	75	346	201	135	165	164	170	174	116	164
31 Spd	5	7	7	6	6	8	6	6	4	6	5	6	5	5	3	3	2	3	3	3	5	4	2	3	4.6	8.1
Dir	159	170	168	165	165	168	175	175	177	171	175	169	172	173	185	185	179	178	170	171	173	166	162	175	171	168
Spd	2.5	2.7	2.5	2.9	3.2	3.0	2.7	4.1	4.2	3.8	3.8	3.7	4.0	4.1	4.1	3.9	3.0	3.1	2.3	2.4	2.3	2.6	2.8	2.5	Diurnal Average	
Dir	276	274	270	278	276	280	281	277	278	276	284	283	284	292	296	296	287	279	283	270	254	265	261	269	Diurnal Maximum	
Spd	18.9	20.0	20.6	18.8	16.8	16.0	16.2	20.4	19.9	20.1	21.1	21.6	21.6	20.7	22.4	18.1	15.2	14.3	14.8	15.3	16.0	15.6	18.7	20.3	Diurnal Maximum	
Dir	282	279	279	282	286	330	288	264	273	269	278	279	275	280	281	280	328	329	274	273	275	292	284	284	Diurnal Maximum	
Maximum Speed Value: 22 km/h on Dec 17 15:00		Minimum Speed Value: 0 km/h on Dec 25 18:00												Hours in Service: 744												
Maximum Daily Speed Average: 13.9 km/h on Dec 15		Minimum Daily Speed Average: 0.6 km/h on Dec 1												Hours of Data: 744												
Maximum Diurnal Speed Average: 4.2 km/h at hour 9		Minimum Diurnal Speed Average: 2.3 km/h at hour 19												Hours of Missing Data: 0												
Monthly Average Velocity: 3.14 km/h 279.2 deg		Speed Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.6 Q <sub>1</sub> = 1.4 Median = 3.1 Q <sub>3</sub> = 7.9 P <sub>90</sub> = 12.2 P <sub>99</sub> = 20.5												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	64	30	7	0	0	0	101																			
NorthEast	17	4	0	0	0	0	21																			
East	7	0	0	0	0	0	7																			
SouthEast	31	0	0	0	0	0	31																			
South	214	20	0	0	0	0	234																			
SouthWest	85	4	0	0	0	0	89																			
West	37	81	58	16	0	0	192																			
NorthWest	24	27	17	1	0	0	69																			
Total	479	166	82	17	0	0	744																			

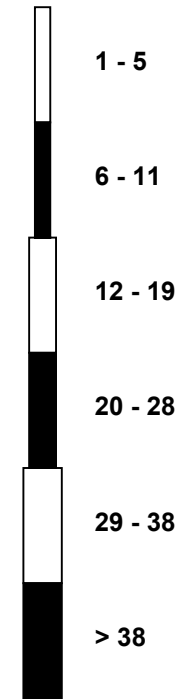


**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Valleyview - December 2017**



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



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Valleyview - December 2017

Maximum Speed: 23 km/h on Dec 17 15:00	Maximum Daily Speed Average: 14.3 km/h on Dec 15	Hours in Service: 744
Minimum Speed: 0 km/h on Dec 25 18:00	Minimum Daily Speed Average: 1.4 km/h on Dec 1	Hours of Data: 744
Maximum Diurnal Speed Average: 6.5 km/h at hour 8	Minimum Diurnal Speed Average: 4.3 km/h at hour 20	Hours of Missing Data: 0
Monthly Average Speed: 5.27 km/h	Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.8 Q <sub>1</sub> = 1.7 Median = 3.2 Q <sub>3</sub> = 8.0 P <sub>90</sub> = 12.3 P <sub>99</sub> = 20.7	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-Dec	1	2	2	1	1	1	1	1	1	1	1	3	3	3	2	1	1	1	2	1	1	1	2	0	1.4	3.0
2-Dec	1	3	3	2	1	1	2	2	2	0	1	2	2	1	1	2	1	1	1	1	1	1	1	2	1.4	3.3
3-Dec	0	1	2	1	1	1	1	3	1	1	1	2	2	10	11	11	8	6	3	8	9	12	11	10	4.8	11.8
4-Dec	6	5	3	3	4	4	2	2	2	2	2	2	4	2	5	5	6	11	10	10	15	16	19	20	6.7	20.5
5-Dec	19	20	21	19	17	13	16	15	16	13	13	10	9	7	4	5	3	4	2	4	3	3	2	2	10.0	20.8
6-Dec	1	2	3	2	1	1	1	2	2	2	2	1	1	2	2	1	2	2	2	1	2	2	2	2	1.8	3.1
7-Dec	2	2	3	4	5	4	3	3	3	4	3	2	3	2	2	2	1	1	1	3	3	3	1	1	2.5	4.7
8-Dec	3	2	1	1	2	2	2	3	5	4	4	4	2	1	2	2	2	2	4	4	5	4	3	3	2.8	5.4
9-Dec	3	3	3	2	2	3	5	6	4	3	4	3	3	2	1	2	2	1	2	2	3	3	4	3	2.8	5.5
10-Dec	2	1	2	3	4	2	3	12	15	17	21	19	16	12	11	9	10	7	3	2	1	1	1	2	7.2	20.9
11-Dec	1	1	2	3	2	3	2	1	2	2	2	2	2	2	2	2	1	1	1	1	1	2	0	0	1.7	3.3
12-Dec	1	2	1	2	2	2	6	18	18	20	21	22	19	18	13	8	7	6	4	3	2	1	1	2	8.3	21.8
13-Dec	2	2	4	11	10	9	7	9	10	11	9	12	10	8	7	9	11	8	5	1	2	1	1	1	6.7	11.8
14-Dec	2	3	1	0	1	1	2	3	1	1	4	4	3	2	3	3	3	2	2	2	2	3	6	2	2.4	5.7
15-Dec	2	1	2	11	17	11	12	20	20	19	20	18	21	18	16	15	15	14	15	15	16	13	14	17	14.3	20.7
16-Dec	16	14	12	11	9	10	9	8	8	3	3	3	3	3	2	3	4	6	5	6	7	5	5	6	6.7	15.9
17-Dec	5	3	3	3	2	1	8	14	14	18	15	18	22	21	23	18	13	12	12	12	11	6	7	9	11.2	22.6
18-Dec	11	10	11	12	10	11	10	12	11	10	8	6	7	9	9	6	2	2	2	3	3	7	4	4	7.4	12.0
19-Dec	7	6	7	8	7	5	5	4	4	5	5	4	3	4	4	3	3	1	1	2	2	3	1	2	4.1	8.4
20-Dec	4	6	5	4	6	4	5	2	1	3	2	4	4	4	3	2	2	0	2	1	1	1	2	1	2.7	5.9
21-Dec	2	2	3	3	11	8	7	7	11	9	11	13	13	12	10	12	7	10	11	7	6	7	9	9	8.3	12.9
22-Dec	8	5	4	4	4	6	2	5	10	7	9	9	12	11	9	9	11	13	13	13	10	9	9	10	8.5	13.4
23-Dec	11	10	8	7	7	11	13	12	12	11	12	10	11	13	20	18	15	14	13	7	3	8	10	7	10.9	19.5
24-Dec	10	12	11	16	15	17	12	9	6	4	7	6	6	3	3	5	5	4	4	3	4	4	4	3	7.2	16.6
25-Dec	7	7	9	8	11	8	9	11	5	3	2	1	1	1	2	1	1	0	0	0	0	0	0	0	3.7	11.0
26-Dec	0	0	0	0	0	0	0	0	1	0	1	3	1	1	1	1	1	1	3	5	1	3	4	4	1.4	4.7
27-Dec	4	1	1	1	1	1	0	1	1	1	1	1	3	4	4	5	2	4	4	4	3	7	7	2	2.6	6.8
28-Dec	4	9	8	4	6	9	12	11	10	8	7	6	5	7	7	6	4	3	2	0	0	1	0	1	5.4	12.0
29-Dec	1	1	0	0	0	0	0	0	0	0	0	0	1	1	3	3	4	4	3	3	4	3	1	1	1.6	4.3
30-Dec	2	3	3	2	2	2	2	1	1	1	1	0	1	2	2	2	1	1	1	2	7	8	5	5	2.4	7.8
31-Dec	5	7	7	6	6	8	6	6	4	6	5	6	5	5	3	3	2	3	3	3	5	4	2	3	4.7	8.2
	4.6	4.6	4.6	5.0	5.5	5.1	5.3	6.5	6.5	6.1	6.3	6.3	6.3	6.2	6.0	5.7	4.8	4.6	4.4	4.3	4.3	4.5	4.4	4.4	Diurnal Average	
	19.1	20.1	20.8	18.9	17.0	16.6	16.4	20.5	20.1	20.3	21.2	21.8	21.9	20.9	22.6	18.2	15.3	14.4	14.9	15.5	16.1	15.9	18.8	20.5	Diurnal Maximum	

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

# Hourly Standard Deviations

Wind Direction (WD) - deg  
Valleyview - December 2017

Maximum Value: 97.6 deg on Dec 1 12:00																		Hours in Service: 744							
Minimum Value: 4.6 deg on Dec 9 23:00																		Hours of Data: 744							
Percentiles: P <sub>1</sub> = 5.7 P <sub>10</sub> = 7.7 Q <sub>1</sub> = 9.4 Median = 14.9 Q <sub>3</sub> = 29.4 P <sub>90</sub> = 56.8 P <sub>99</sub> = 85.0																		Hours of Missing Data: 0							
																		Hours of Calibration: 0							
																		Percent Operational Time: 100.0							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Dec	58	38	9	43	33	52	31	38	79	73	95	98	84	70	30	41	45	78	77	50	22	8	8	60	97.6
2-Dec	83	9	8	17	23	28	14	14	12	43	44	17	9	31	26	11	75	72	45	35	22	23	15	8	82.5
3-Dec	33	21	16	10	10	8	16	63	53	31	37	20	64	27	7	6	7	9	12	13	8	6	12	12	64.3
4-Dec	15	17	26	55	34	23	32	28	8	9	17	13	25	29	47	21	13	15	14	13	12	11	8	8	54.7
5-Dec	8	7	7	8	9	10	8	8	8	10	10	9	11	10	16	14	29	22	63	22	23	26	41	30	63.1
6-Dec	46	15	6	25	39	30	27	19	12	21	17	44	50	34	13	21	13	13	12	20	22	23	23	25	50.2
7-Dec	25	23	11	29	15	10	15	22	11	10	14	26	51	42	85	40	58	40	35	15	7	7	19	15	85.5
8-Dec	9	15	20	27	35	23	16	23	8	13	9	10	29	68	23	11	9	21	16	9	20	8	12	12	67.6
9-Dec	16	15	28	29	17	18	7	6	20	10	9	11	13	90	78	39	27	16	15	7	8	5	5	6	90.2
10-Dec	34	69	42	12	28	54	13	26	8	7	7	8	10	11	10	7	10	10	46	85	28	46	29	29	85.5
11-Dec	47	18	12	7	18	9	68	85	17	19	9	13	13	15	60	52	45	53	34	44	71	12	34	47	84.7
12-Dec	83	55	49	46	18	11	27	14	9	8	7	7	9	8	9	11	14	28	36	45	32	15	39	27	83.3
13-Dec	19	18	40	9	8	10	12	10	9	9	10	7	10	17	10	6	6	8	20	80	28	26	20	26	80.0
14-Dec	9	8	16	57	36	14	12	11	17	48	8	6	27	16	9	16	12	13	17	15	13	24	10	16	57.3
15-Dec	29	22	57	28	10	15	12	7	8	9	8	9	9	9	10	8	7	7	7	8	7	8	8	7	57.4
16-Dec	7	7	7	6	8	7	8	8	12	23	9	10	8	9	11	8	5	6	8	7	6	8	10	8	22.8
17-Dec	13	19	12	12	12	78	11	8	9	9	9	9	9	8	9	8	9	7	7	7	8	10	11	10	78.3
18-Dec	9	8	8	8	8	9	9	8	9	9	11	17	16	12	14	14	44	30	81	31	30	6	13	13	81.3
19-Dec	11	7	10	7	9	10	9	12	12	12	13	17	22	13	13	15	36	53	34	80	59	60	86	49	86.2
20-Dec	58	16	38	30	21	28	26	17	18	5	19	8	11	10	14	11	13	21	17	11	81	68	32	27	81.4
21-Dec	44	21	13	63	8	11	12	9	17	11	9	8	10	9	11	7	9	9	9	8	14	11	14	11	63.4
22-Dec	19	22	36	23	23	27	81	24	17	16	9	14	11	9	13	13	9	9	10	10	10	16	17	13	81.1
23-Dec	11	10	17	19	15	10	8	13	11	11	8	9	11	8	7	6	7	7	20	9	33	12	7	14	33.0
24-Dec	15	8	9	6	7	17	10	12	17	21	15	26	17	27	39	17	13	20	18	16	17	12	25	14	39.4
25-Dec	11	10	12	11	9	15	12	11	16	30	80	52	92	24	22	37	32	77	87	60	27	47	70	51	91.9
26-Dec	56	64	56	61	52	70	67	57	75	76	55	19	61	42	61	76	51	79	31	21	23	54	19	23	79.2
27-Dec	11	44	22	28	12	11	54	19	32	36	21	25	23	19	21	20	32	18	17	36	40	15	20	51	53.6
28-Dec	45	11	15	24	14	24	11	11	10	11	11	12	13	17	14	11	12	14	14	84	86	57	71	36	85.9
29-Dec	20	43	73	19	84	27	76	75	73	51	95	76	57	8	11	11	5	8	10	13	34	41	51	22	95.4
30-Dec	27	15	16	30	12	17	19	80	16	56	56	85	41	21	15	15	16	48	69	37	8	8	9	9	85.4
31-Dec	8	7	7	7	8	8	11	10	10	8	10	7	11	14	14	11	10	12	8	8	6	7	10	7	14.3
83.3	69.4	73.0	63.4	83.8	78.3	81.1	84.7	79.5	76.1	95.4	97.6	91.9	90.2	85.5	75.7	75.0	79.2	87.4	85.5	85.9	68.2	86.2	60.4		

PAZA

Donnelly Station

Monthly Summary Tables, Graphs and  
Roses

## Hourly Averages

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

Donnelly - December 2017

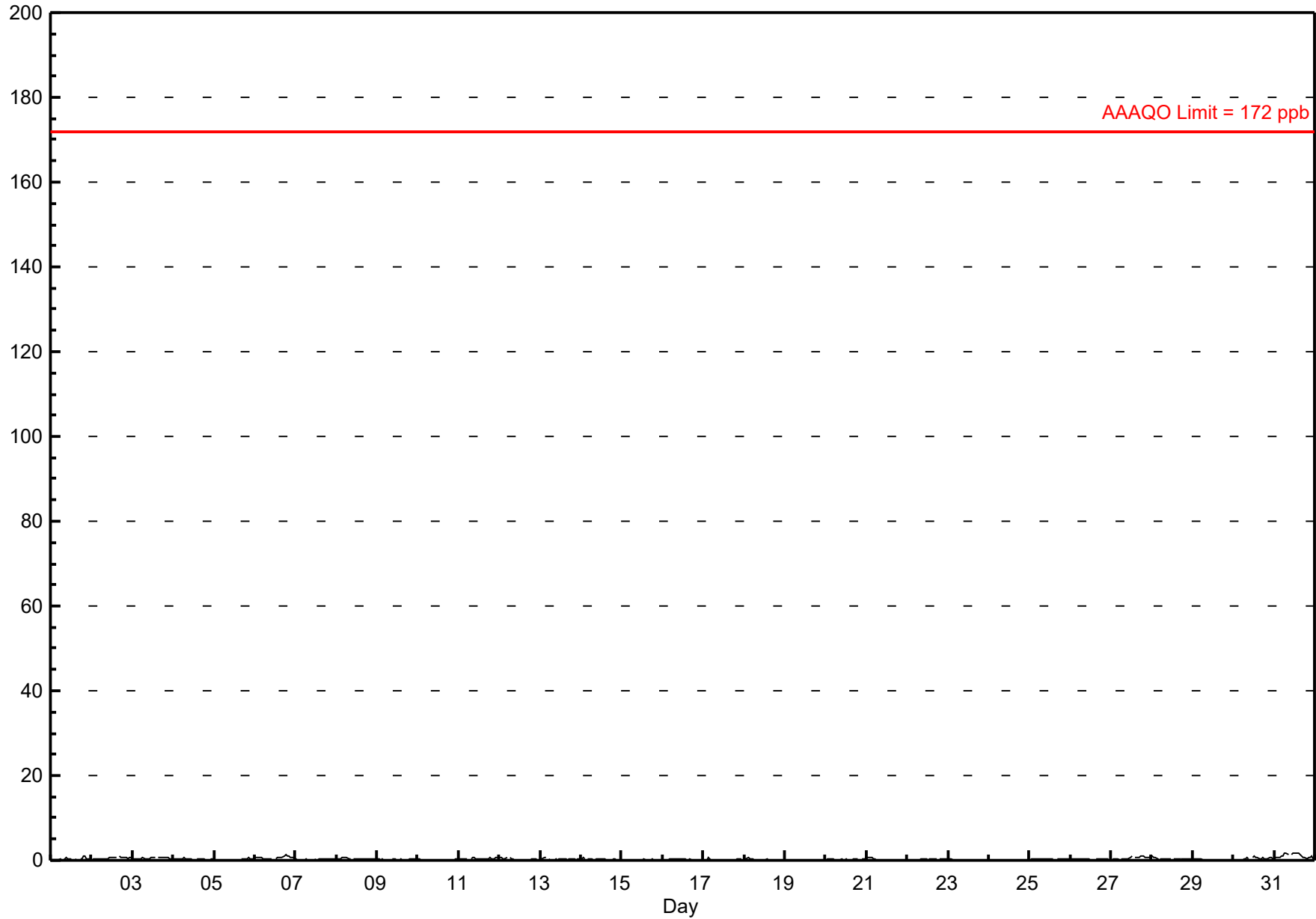
Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 1.8 ppb on Dec 31 08:00	Maximum Daily Average: 1.0 ppb on Dec 31		Hours of Data:	706
Minimum Value: 0 ppb on Dec 10 09:00	Minimum Daily Average: 0.1 ppb on Dec 10		Hours of Missing Data:	38
Maximum Diurnal Average: 0.3 ppb at hour 20	Minimum Diurnal Average: 0.2 ppb at hour 10		Hours of Calibration:	35
Monthly Average: 0.28 ppb	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.2 Q <sub>3</sub> = 0.4 P <sub>90</sub> = 0.6 P <sub>99</sub> = 1.5		Percent Operational Time:	99.6

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	A	0	0	1	1	0	0	0	0.3	1.1
2-Dec	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	A	1	1	1	1	1	0	1	1	0.5	1.1
3-Dec	0	0	0	0	0	1	1	0	0	0	0	1	1	1	A	1	1	1	1	1	1	1	1	0	0.5	0.8
4-Dec	0	0	0	0	0	0	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.3	0.5
5-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	P	P	P	0	0	0	0	0	1	0	0	0.2	0.6
6-Dec	1	1	1	1	1	0	0	0	0	0	0	A	0	1	1	1	1	1	1	1	1	1	1	0	0.6	1.2
7-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
8-Dec	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.7
9-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
10-Dec	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
11-Dec	0	0	0	0	0	0	A	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0.4	0.7
12-Dec	1	1	0	0	1	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.7
13-Dec	0	0	1	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6
14-Dec	0	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
15-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
16-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
17-Dec	A	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.6
18-Dec	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.7
19-Dec	0	0	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0	A	0	0.1	0.1
20-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	0.4
21-Dec	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.2	0.7
22-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.2	0.3
23-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.1	0.2
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.1	0.2
25-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.2	0.3
26-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.3	0.5
27-Dec	0	0	0	0	0	0	0	0	0	0	0	1	1	A	1	1	1	1	1	1	1	1	1	1	0.5	1.1
28-Dec	1	1	1	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.3	1.0
29-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
30-Dec	0	0	0	0	0	0	0	0	1	0	A	1	1	1	1	0	0	1	0	0	0	1	1	0	0.4	1.0
31-Dec	0	1	1	1	1	1	2	2	1	A	1	2	2	2	2	1	1	1	1	1	1	1	1	0	1.0	1.8
	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	Diurnal Average	
	1.0	0.8	0.8	0.8	0.9	1.0	1.6	1.8	1.2	0.6	1.5	1.6	1.7	1.6	1.6	1.2	1.1	1.1	1.2	1.1	1.1	0.8	1.0	0.9	Diurnal Maximum	

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

### Hourly Averages

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Donnelly - December 2017



## Hourly Maximums

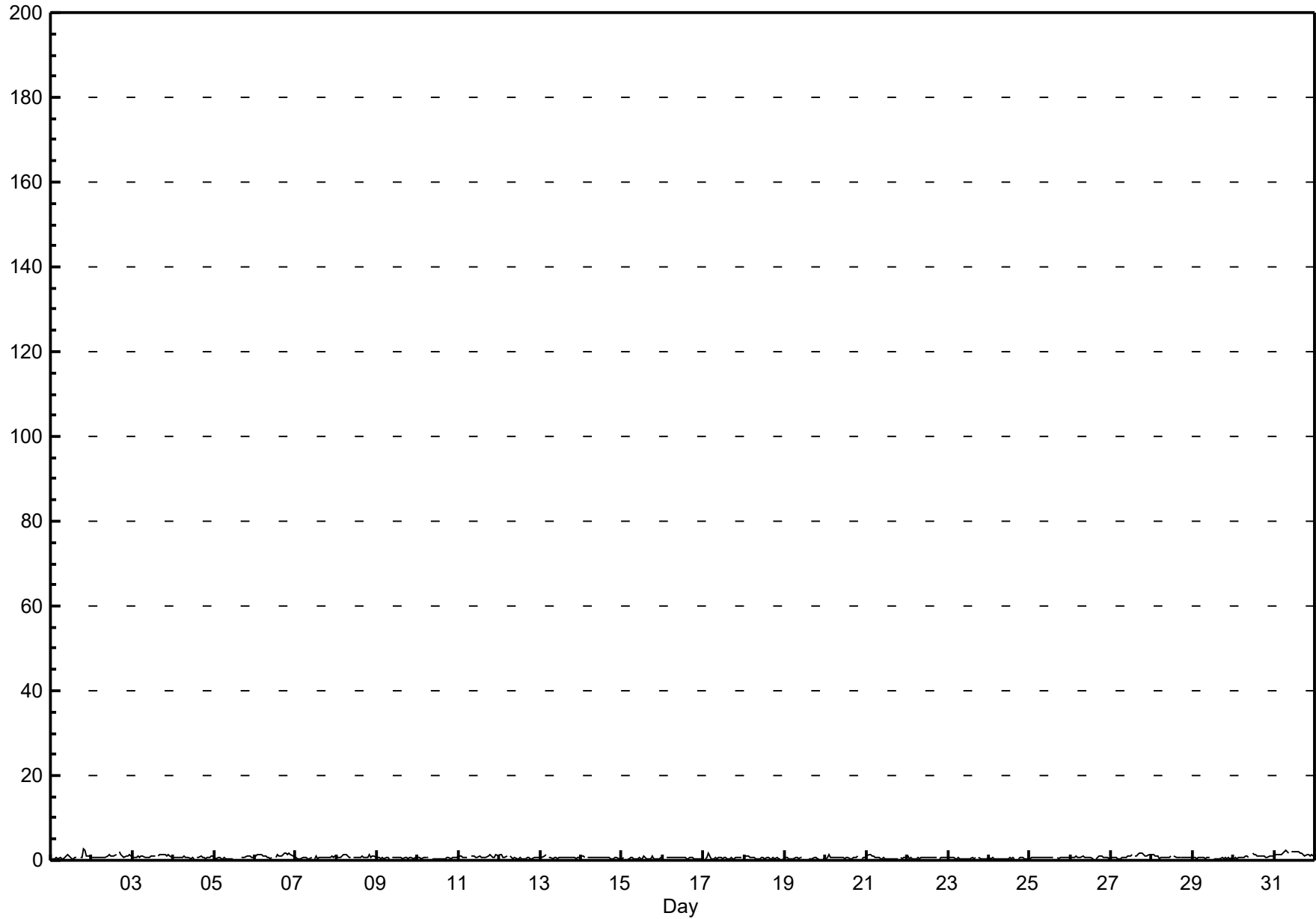
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Donnelly - December 2017

Maximum Value: 2.6 ppb on Dec 1 20:00		Maximum Daily Average: 1.6 ppb on Dec 31		Hours in Service: 744																						
Minimum Value: 0 ppb on Dec 16 22:00		Minimum Daily Average: 0.5 ppb on Dec 24		Hours of Data: 706																						
Maximum Diurnal Average: 0.8 ppb at hour 20		Minimum Diurnal Average: 0.6 ppb at hour 16		Hours of Missing Data: 38																						
Monthly Average: 0.71 ppb		Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 0.6 Q <sub>3</sub> = 0.8 P <sub>90</sub> = 1.2 P <sub>99</sub> = 2.2		Hours of Calibration: 35																						
				Percent Operational Time: 99.6																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	0	0	1	1	1	0	0	1	1	1	1	0	0	1	1	A	1	1	3	2	1	1	1	0.8	2.6
2-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	2	1	1	1	1	1	1	1	1.0	2.1
3-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1.0	1.4
4-Dec	1	1	1	1	1	1	1	1	1	1	1	1	0	A	1	1	1	1	1	0	1	1	1	1	0.7	1.1
5-Dec	1	0	1	1	0	0	1	0	0	1	0	0	A	P	P	P	1	1	1	1	1	1	1	1	0.6	1.0
6-Dec	1	1	1	1	1	1	1	1	1	0	1	A	1	1	1	1	1	2	2	2	2	1	1	1	1.1	1.8
7-Dec	1	0	0	0	1	1	1	0	0	1	A	0	1	1	1	1	1	1	1	1	1	1	1	1	0.6	1.1
8-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.3
9-Dec	1	1	0	1	0	1	1	0	A	1	1	1	1	1	1	0	1	1	1	1	1	0	1	1	0.6	1.0
10-Dec	1	1	1	1	1	1	1	A	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	0.5	0.8
11-Dec	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2
12-Dec	1	1	1	1	1	A	1	1	1	1	0	0	1	0	0	0	1	1	0	0	1	1	1	1	0.7	1.3
13-Dec	1	1	1	1	A	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	1.2
14-Dec	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	0	0	0.6	0.9
15-Dec	0	1	A	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0.5	1.1
16-Dec	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0.5	0.8
17-Dec	A	0	1	2	0	0	0	1	0	1	0	1	1	1	0	1	0	1	0	0	1	1	1	1	0.6	1.6
18-Dec	1	1	1	1	1	1	1	0	0	0	1	1	0	1	0	0	0	1	0	1	0	0	0	0	0.6	1.1
19-Dec	1	1	0	0	0	0	1	1	0	1	1	C	C	C	0	0	0	1	1	0	0	A	1	1	0.5	0.7
20-Dec	0	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	1	1	A	0	1	1	0.6	1.2
21-Dec	1	1	1	1	1	1	1	1	0	0	1	0	0	0	1	0	0	0	0	0	A	1	0	1	0.6	1.3
22-Dec	1	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	A	0	1	1	1	1	0.6	0.9
23-Dec	1	1	1	1	0	0	1	0	0	0	0	0	0	0	1	0	1	A	1	0	0	0	0	0	0.5	0.6
24-Dec	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	A	0	1	1	1	0	1	0	0.5	0.7
25-Dec	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0	1	1	1	1	1	1	0.6	0.8
26-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0	1	1	1	1	1	1	1	0	0.7	1.1
27-Dec	1	1	1	1	0	0	1	1	1	1	1	1	1	A	1	1	2	2	2	1	1	1	1	1	1.0	1.7
28-Dec	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.8	1.4
29-Dec	1	1	0	1	1	1	1	0	1	1	1	A	0	0	0	0	0	1	0	1	1	0	1	0	0.5	0.7
30-Dec	0	1	0	1	1	1	1	1	1	1	A	2	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.6
31-Dec	1	1	1	1	1	2	2	2	2	A	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1.6	2.3
		0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.8	0.8	0.8	0.8	0.8	0.7	0.8	0.7	Diurnal Average	
		1.4	1.4	1.3	1.6	1.2	1.5	2.2	2.3	1.8	1.1	2.2	2.2	2.0	2.1	1.7	2.1	1.7	1.8	2.6	2.3	1.4	1.4	1.4	Diurnal Maximum	
C - Calibration		P - Power Failure						A - Automated Daily Zero Span																		

**Hourly Maximums**

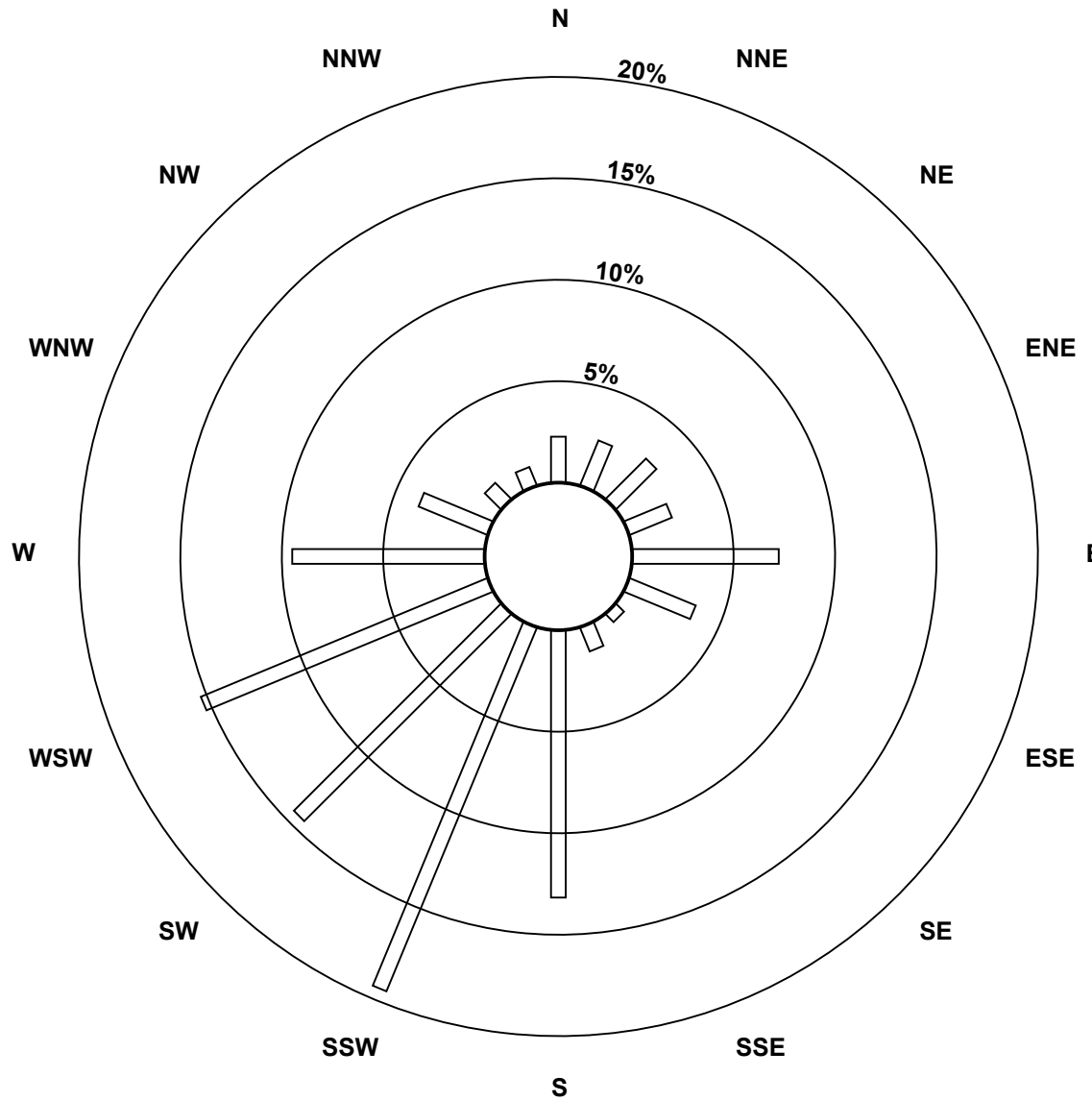
**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Donnelly - December 2017**



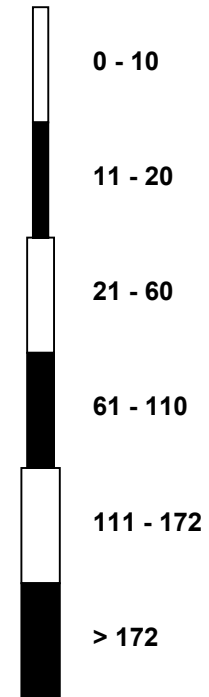


**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Donnelly - December 2017**

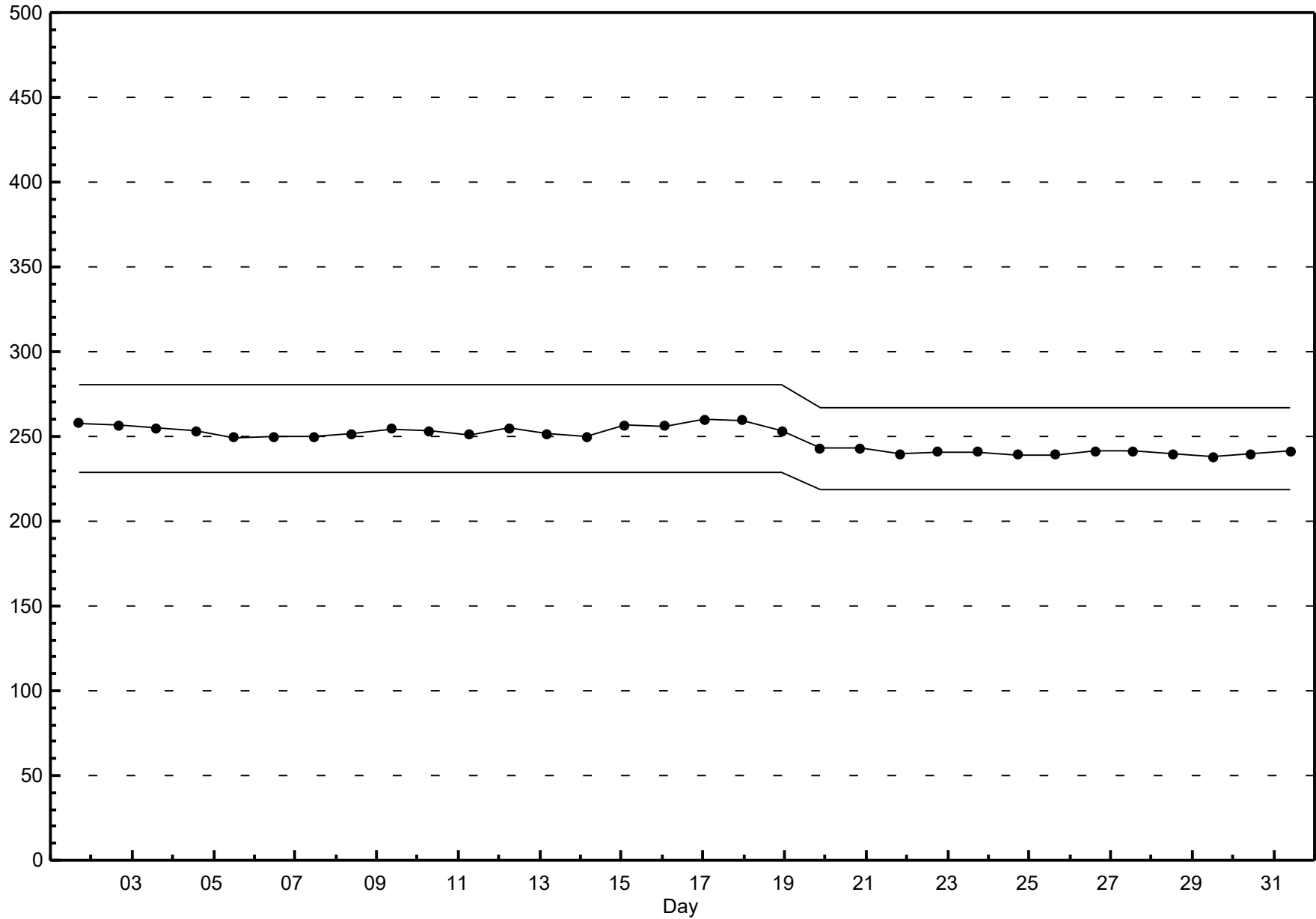


**Pollutant Classes (ppb)**



### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Donnelly - December 2017



## Hourly Averages

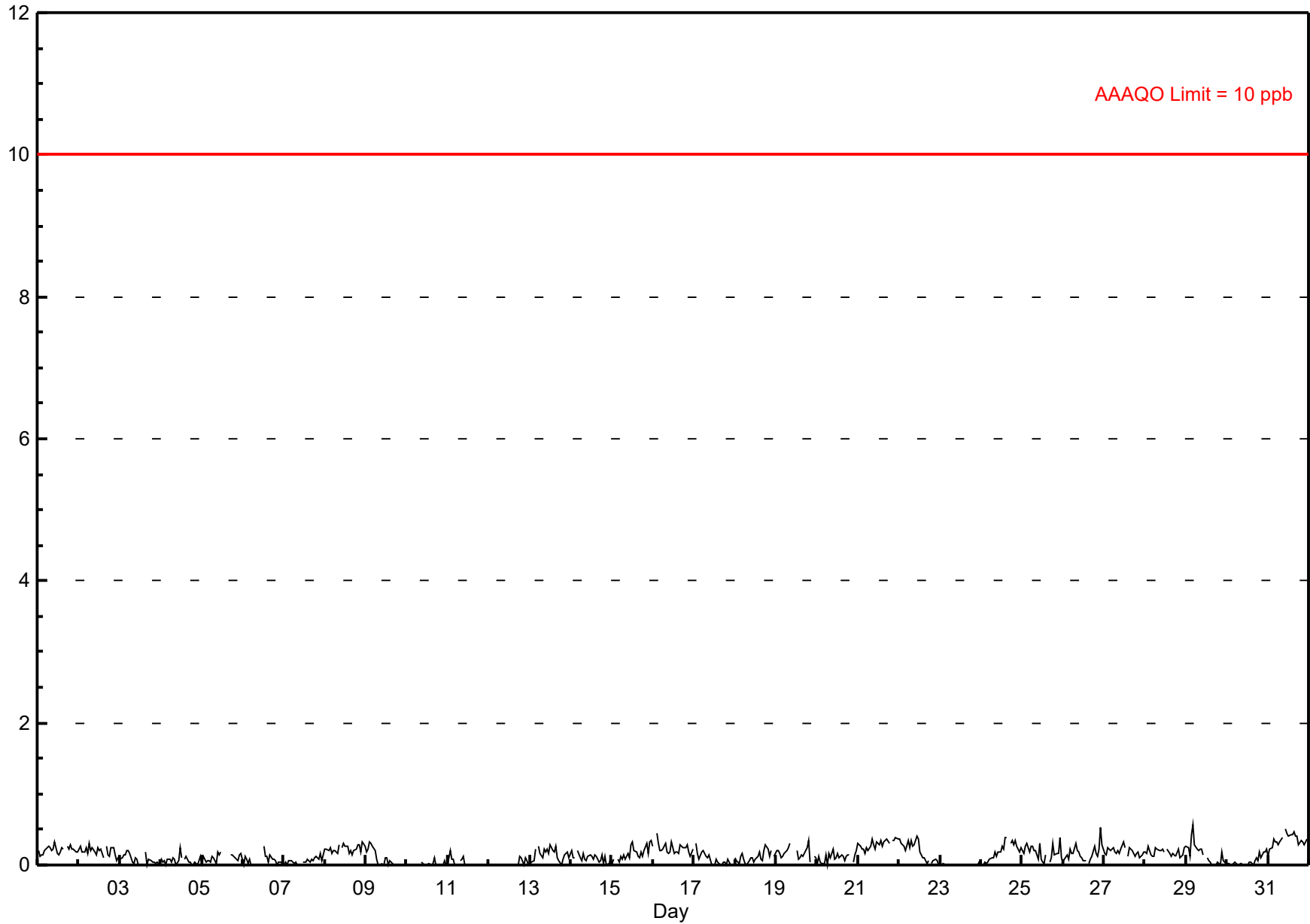
Hydrogen Sulphide (H<sub>2</sub>S) - ppb

Donnelly - December 2017

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 0.6 ppb on Dec 29 05:00      Maximum Daily Average: 0.3 ppb on Dec 31		Hours in Service: 744 Hours of Data: 705 Hours of Missing Data: 39 Hours of Calibration: 35 Percent Operational Time: 99.5																								
Minimum Value: 0 ppb on Dec 3 12:00 Maximum Diurnal Average: 0.2 ppb at hour 12 Monthly Average: 0.13 ppb		Minimum Daily Average: 0.0 ppb on Dec 23 Minimum Diurnal Average: 0.1 ppb at hour 17 Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.3 P <sub>99</sub> = 0.4																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	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	0.3
2-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.2	0.3
3-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.1	0.2
4-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.1	0.2
5-Dec	0	0	0	0	0	0	0	0	0	0	0	A	P	P	P	N	0	0	0	0	0	0	0	0	0.1	0.2
6-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
7-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
8-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
9-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
10-Dec	0	0	0	0	0	0	0	A	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
11-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2
12-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
13-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
14-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
15-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
16-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
17-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
18-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
19-Dec	0	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0	0	A	0	0.2	0.3
20-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.1	0.2
21-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.3	0.4
22-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.2	0.4
23-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.0	0.0
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.2	0.4
25-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.2	0.4
26-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	0.2	0.5
27-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.2	0.3
28-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
29-Dec	0	0	0	0	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.6
30-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
31-Dec	0	0	0	0	0	0	0	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
																								Diurnal Average		
																								Diurnal Maximum		
C - Calibration      P - Power Failure      N - Not Valid      A - Automated Daily Zero Span Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb      24-hr 3 ppb																										

**Hourly Averages**

**Hydrogen Sulphide (H<sub>2</sub>S) - ppb**  
**Donnelly - December 2017**



## Hourly Maximums

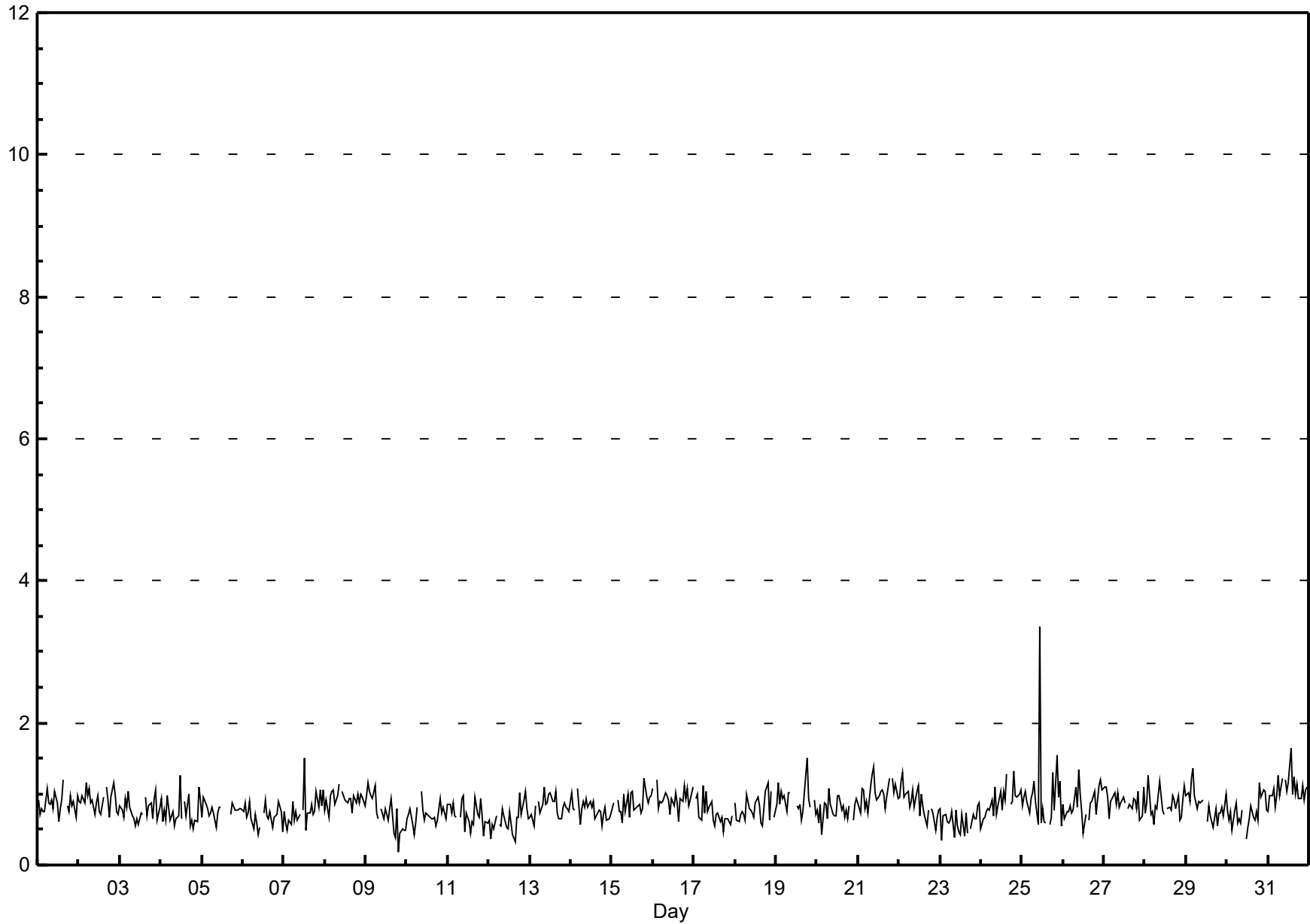
Hydrogen Sulphide (H<sub>2</sub>S) - ppb

Donnelly - December 2017

Maximum Value: 3.3 ppb on Dec 25 11:00		Maximum Daily Average: 1.1 ppb on Dec 31		Hours in Service: 744																							
Minimum Value: 0 ppb on Dec 9 20:00		Minimum Daily Average: 0.6 ppb on Dec 23		Hours of Data: 705																							
Maximum Diurnal Average: 0.9 ppb at hour 11		Minimum Diurnal Average: 0.7 ppb at hour 17		Hours of Missing Data: 39																							
Monthly Average: 0.82 ppb		Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.6 Q <sub>1</sub> = 0.7 Median = 0.8 Q <sub>3</sub> = 1.0 P <sub>90</sub> = 1.1 P <sub>99</sub> = 1.4		Hours of Calibration: 35																							
				Percent Operational Time: 99.5																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.9	1.2	
2-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.9	1.2	
3-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.8	1.1	
4-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.8	1.3	
5-Dec	1	1	1	1	1	1	1	1	1	1	1	A	P	P	P	N	1	1	1	1	1	1	1	1	0.8	1.0	
6-Dec	1	1	1	1	1	1	1	1	1	0	1	A	1	1	1	1	1	1	1	1	1	1	1	0	0.7	0.9	
7-Dec	1	1	0	1	1	1	1	1	1	1	A	1	1	0	1	1	1	1	1	1	1	1	1	1	0.8	1.5	
8-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1	
9-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0	0	1	0	0	1	0	0	0.7	1.2	
10-Dec	1	1	1	1	0	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0	
11-Dec	1	1	1	1	1	1	A	1	1	1	0	1	1	0	1	1	1	1	1	1	1	0	1	1	0.7	1.0	
12-Dec	1	0	1	1	1	A	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0.7	1.0	
13-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1	
14-Dec	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1	
15-Dec	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2	
16-Dec	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2	
17-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	A	0.7	1.1	
18-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.2	
19-Dec	1	1	1	1	1	1	1	1	1	1	C	C	C	1	1	1	1	1	2	1	1	A	A	1	0.9	1.5	
20-Dec	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0.8	1.1	
21-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1.0	1.4	
22-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0	1	1	0.9	1.3	
23-Dec	1	0	1	1	1	1	1	1	0	1	1	0	0	1	0	1	0	A	1	1	1	1	1	1	0.6	0.9	
24-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.9	1.3	
25-Dec	1	1	1	1	1	1	1	1	1	1	3	1	1	1	A	1	1	1	1	1	2	1	1	1	1.0	3.3	
26-Dec	1	1	1	1	1	1	1	1	1	1	1	0	1	A	1	1	1	1	1	1	1	1	1	1	0.9	1.3	
27-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.9	1.1	
28-Dec	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.9	1.3	
29-Dec	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.8	1.4	
30-Dec	1	1	1	0	1	1	1	1	1	1	A	0	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.2	
31-Dec	1	1	1	1	1	1	1	1	1	A	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1.1	1.7	
		0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.8	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.9	0.8	0.8	0.8	Diurnal Average		
		1.1	1.2	1.3	1.2	1.4	1.1	1.3	1.2	1.3	1.4	3.3	1.3	1.5	1.7	1.0	1.3	1.1	1.3	1.5	1.3	1.5	1.1	1.2	1.1	Diurnal Maximum	
C - Calibration		P - Power Failure						N - Not Valid				A - Automated Daily Zero Span															

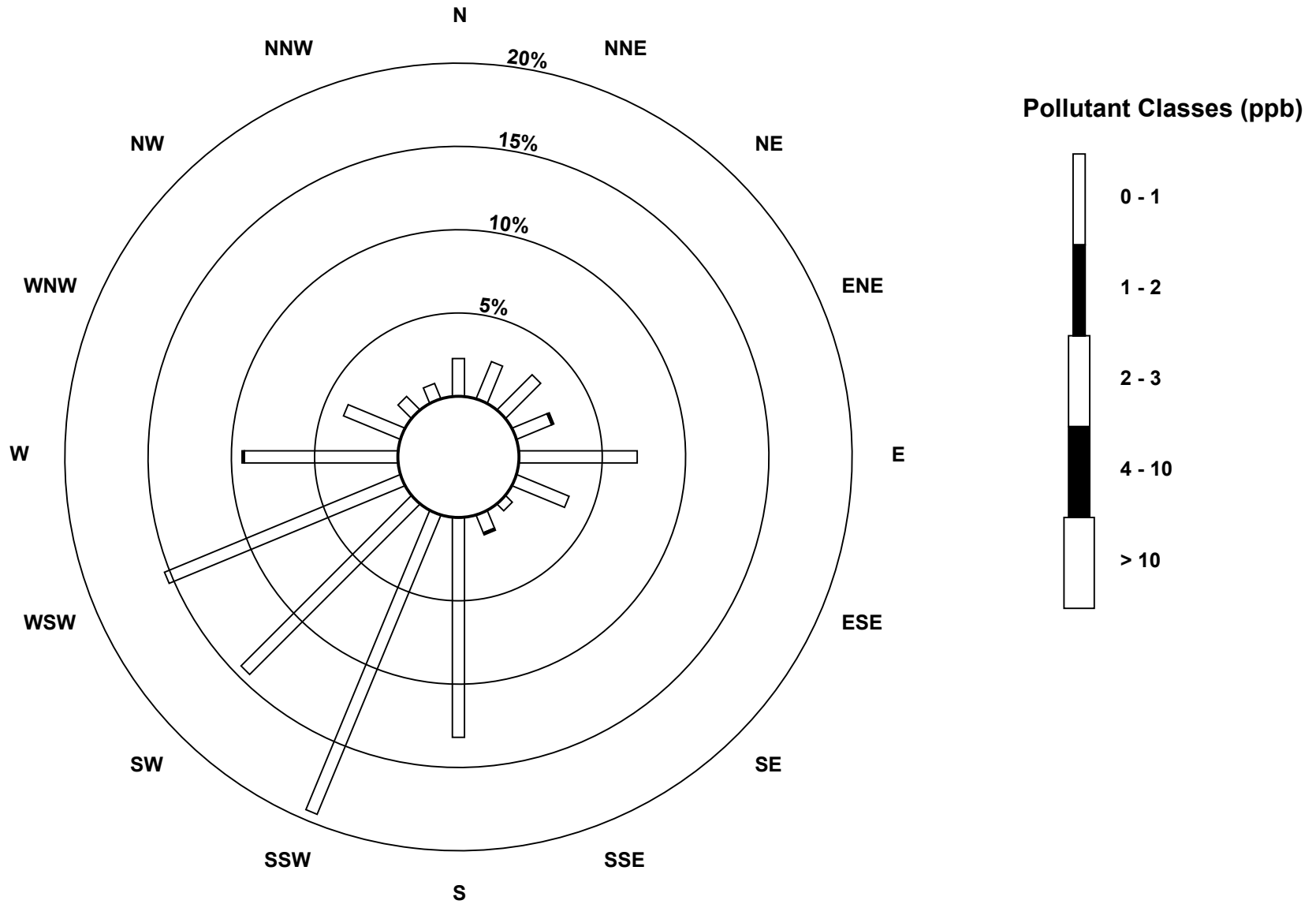
**Hourly Maximums**

**Hydrogen Sulphide (H<sub>2</sub>S) - ppb**  
**Donnelly - December 2017**



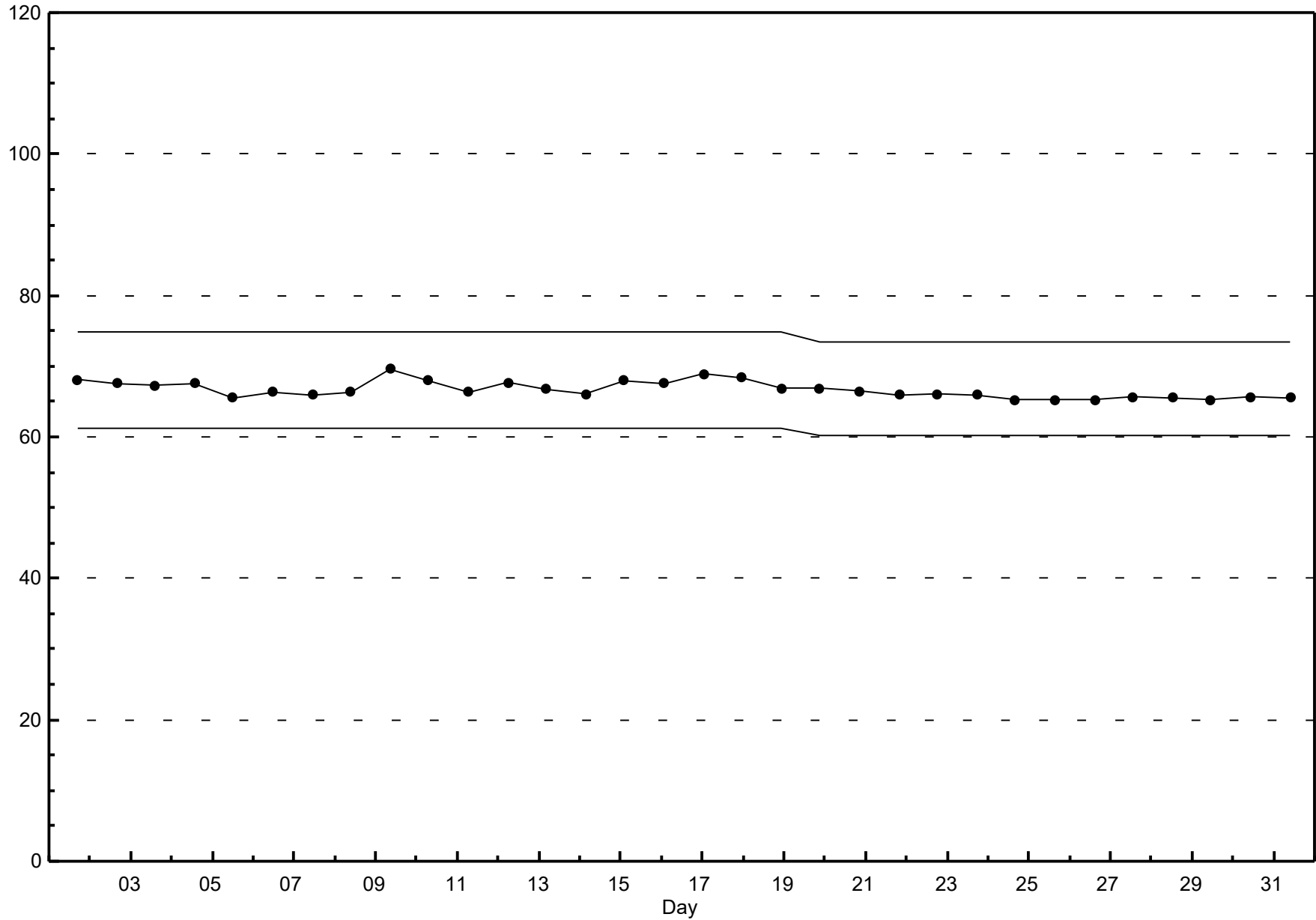
**Pollutant Rose**

**Hydrogen Sulphide (H<sub>2</sub>S) - ppb**  
**Donnelly - December 2017**



### Span Responses

Hydrogen Sulphide (H<sub>2</sub>S)  
Donnelly - December 2017





# Hourly Averages

External Temperature (ET) - °C

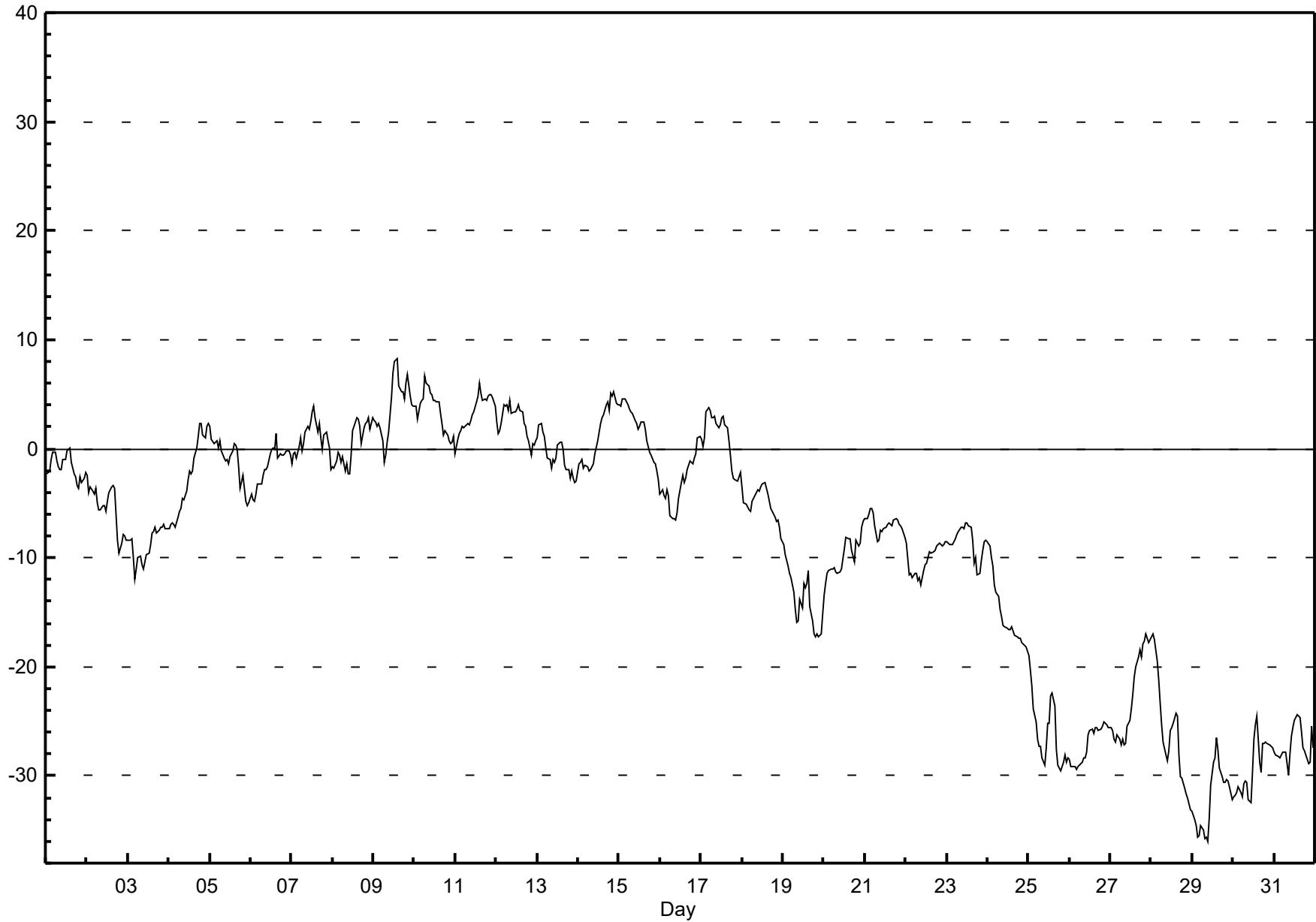
Donnelly - December 2017

Maximum Value: 8.2 °C on Dec 9 15:00		Maximum Daily Average: 3.9 °C on Dec 9		Hours in Service: 744																																												
Minimum Value: -36 °C on Dec 29 10:00		Minimum Daily Average: -32.1 °C on Dec 29		Hours of Data: 744																																												
Maximum Diurnal Average: -6.9 °C at hour 15		Minimum Diurnal Average: -9.7 °C at hour 10		Hours of Missing Data: 0																																												
Monthly Average: -8.60 °C		Percentiles: P <sub>1</sub> = -34.6 P <sub>10</sub> = -27.9 Q <sub>1</sub> = -16.3 Median = -5.1 Q <sub>3</sub> = 0.4 P <sub>90</sub> = 3.2 P <sub>99</sub> = 5.5		Hours of Calibration: 0																																												
				Percent Operational Time: 100.0																																												
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	-2	-2	-2	-1	0	0	-1	-2	-2	-2	-1	-1	0	0	0	-1	-2	-3	-3	-4	-3	-3	-3	-2	-1.7	0.0																						
2-Dec	-2	-4	-4	-4	-4	-4	-5	-6	-6	-5	-5	-6	-5	-4	-4	-3	-4	-6	-8	-10	-9	-8	-8	-8	-5.4	-2.4																						
3-Dec	-8	-8	-8	-10	-12	-11	-10	-10	-11	-11	-10	-10	-10	-9	-8	-8	-7	-8	-7	-7	-7	-7	-7	-7	-8.8	-7.0																						
4-Dec	-7	-7	-7	-7	-7	-6	-6	-6	-5	-5	-4	-3	-2	-2	-2	-1	0	1	2	2	1	1	2	2	-2.6	2.4																						
5-Dec	2	1	0	1	1	0	1	0	-1	-1	-1	-1	-1	0	0	0	0	-2	-4	-2	-4	-5	-5	-5	-1.1	2.1																						
6-Dec	-4	-5	-5	-4	-3	-3	-3	-2	-2	-2	-2	-1	0	0	0	1	-1	0	-1	-1	0	0	-1	-1.6	1.3																							
7-Dec	-1	-1	0	-1	0	1	0	1	2	2	2	2	3	4	3	2	2	1	0	1	2	1	0	-2	1.0	3.9																						
8-Dec	-2	-2	-1	0	-1	-1	-1	-2	-1	-2	-2	-1	2	2	3	3	2	0	2	2	2	3	2	3	0.4	2.8																						
9-Dec	3	2	2	2	2	1	-1	-1	1	2	5	7	8	8	8	6	5	5	5	6	7	5	4	4	3.9	8.2																						
10-Dec	4	4	3	4	4	5	7	6	6	5	5	4	4	4	4	3	2	1	2	1	1	0	1	1	3.4	6.7																						
11-Dec	0	1	1	2	2	2	2	2	2	3	3	3	4	5	6	5	4	5	4	5	5	5	5	4	3.3	6.1																						
12-Dec	3	1	2	2	4	4	4	3	4	3	3	3	4	4	3	3	2	2	1	1	-1	0	0	1	2.5	4.5																						
13-Dec	1	2	2	2	1	0	-1	-1	-2	-1	-1	-1	0	1	1	0	-1	-2	-2	-3	-2	-3	-3	-3	-0.7	2.4																						
14-Dec	-1	-1	-1	-2	-2	-2	-2	-2	-2	-1	0	1	2	2	3	3	4	4	4	5	5	5	4	4	1.3	5.3																						
15-Dec	4	4	5	5	4	4	4	3	3	3	2	2	2	2	2	2	1	0	0	-1	-1	-1	-2	-3	1.8	4.6																						
16-Dec	-4	-4	-4	-5	-4	-4	-6	-6	-6	-6	-6	-5	-3	-2	-3	-3	-2	-1	-1	-1	-1	-1	1	1	-3.2	1.1																						
17-Dec	1	0	1	3	4	4	3	3	3	2	2	2	3	3	2	2	1	-1	-2	-3	-3	-3	-2	-2	0.9	3.8																						
18-Dec	-3	-5	-5	-5	-6	-6	-5	-4	-4	-4	-4	-4	-3	-3	-4	-4	-5	-5	-6	-6	-7	-7	-7	-8	-5.0	-3.1																						
19-Dec	-9	-10	-10	-11	-11	-12	-13	-15	-16	-16	-14	-15	-12	-13	-12	-11	-14	-16	-17	-17	-17	-17	-15	-15	-13.8	-8.8																						
20-Dec	-13	-12	-11	-11	-11	-11	-11	-11	-11	-11	-11	-10	-9	-8	-8	-8	-9	-10	-10	-8	-9	-9	-7	-7	-10.0	-6.7																						
21-Dec	-6	-6	-6	-6	-5	-6	-7	-9	-8	-7	-8	-7	-7	-7	-7	-7	-6	-6	-6	-7	-7	-7	-8	-8	-6.9	-5.5																						
22-Dec	-9	-10	-12	-11	-12	-11	-11	-12	-12	-13	-11	-11	-11	-10	-9	-10	-9	-9	-9	-9	-9	-9	-9	-9	-10.2	-8.6																						
23-Dec	-9	-9	-9	-9	-9	-8	-8	-8	-7	-7	-7	-7	-7	-7	-7	-8	-11	-10	-12	-11	-10	-9	-8	-8	-8.5	-6.9																						
24-Dec	-9	-9	-10	-11	-12	-13	-14	-15	-15	-16	-16	-16	-17	-17	-16	-17	-17	-17	-17	-17	-18	-18	-18	-19	-15.2	-8.5																						
25-Dec	-19	-20	-22	-24	-25	-27	-27	-27	-28	-29	-27	-25	-25	-23	-22	-24	-28	-29	-29	-30	-29	-28	-29	-28	-26.0	-19.0																						
26-Dec	-28	-29	-29	-29	-29	-29	-29	-29	-28	-28	-28	-26	-26	-26	-26	-26	-26	-26	-26	-25	-25	-25	-25	-26	-27.1	-25.1																						
27-Dec	-26	-26	-27	-27	-26	-27	-27	-27	-27	-27	-25	-25	-24	-22	-21	-20	-19	-18	-19	-18	-18	-17	-18	-17	-22.8	-17.0																						
28-Dec	-17	-17	-18	-20	-21	-23	-25	-27	-28	-29	-28	-26	-26	-25	-24	-25	-28	-30	-30	-31	-32	-32	-33	-33	-26.1	-17.0																						
29-Dec	-33	-34	-35	-36	-35	-35	-35	-36	-36	-36	-34	-31	-29	-28	-27	-28	-29	-30	-31	-31	-30	-30	-31	-32	-32.1	-26.5																						
30-Dec	-32	-32	-31	-31	-32	-32	-31	-30	-31	-32	-32	-30	-27	-25	-25	-29	-30	-27	-27	-27	-27	-27	-27	-27	-29.2	-24.5																						
31-Dec	-28	-28	-28	-28	-28	-28	-28	-28	-30	-28	-26	-26	-25	-24	-24	-25	-26	-27	-28	-28	-29	-29	-26	-27	-27.2	-24.3																						
																								-8.3	-8.5	-8.7	-8.7	-8.8	-9.0	-9.3	-9.5	-9.6	-9.7	-9.1	-8.4	-7.6	-7.1	-6.9	-7.3	-8.1	-8.5	-8.9	-8.8	-8.8	-8.8	-8.9	-9.0	Diurnal Average
																								4.0	4.0	4.5	4.6	4.4	4.5	6.7	6.0	5.7	5.1	4.9	6.9	8.0	8.2	8.2	5.7	5.2	5.2	4.6	6.0	6.8	5.3	4.7	4.1	Diurnal Maximum

**Hourly Averages**

**External Temperature (ET) - °C**

**Donnelly - December 2017**



## Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Donnelly - December 2017

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	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	13	14	16	19	18	18	19	16	17	17	15	17	8	8	9	13	12	17	18	17	19	13	12	12	14.7	19.4
Dir	181	185	181	183	180	176	172	170	171	175	184	182	182	178	194	205	193	182	189	188	187	197	189	186	183	172
2 Spd	15	17	17	14	15	16	8	2	3	9	11	13	12	13	13	15	12	7	5	7	8	16	14	10.6	17.3	
Dir	189	193	193	194	223	245	247	211	203	187	181	187	190	197	215	227	229	242	231	178	169	163	182	198	204	193
3 Spd	15	16	16	12	8	8	9	8	11	11	10	12	13	12	10	10	10	7	8	3	9	9	9	7	9.8	16.4
Dir	200	205	234	245	216	209	217	221	214	203	199	199	205	208	209	211	225	201	206	244	238	252	249	235	217	234
4 Spd	8	7	5	3	2	5	10	14	15	15	16	18	16	16	19	21	19	18	20	22	25	28	32	36	14.6	36.0
Dir	226	231	212	159	120	168	184	188	190	191	194	199	204	214	214	215	215	219	235	250	242	244	254	259	223	259
5 Spd	30	27	28	30	29	29	25	25	27	25	24	21	21	19	23	28	33	21	15	9	7	7	11	13	21.0	32.8
Dir	260	255	254	258	266	265	280	276	270	268	269	259	257	258	265	268	269	267	258	251	252	215	201	194	261	269
6 Spd	12	11	14	15	14	16	15	18	19	18	16	15	18	15	16	15	10	12	11	14	14	14	15	14	14.1	19.3
Dir	196	195	188	187	193	201	192	192	197	192	186	197	205	218	226	237	218	226	231	216	220	225	218	205	206	197
7 Spd	13	13	16	18	18	17	19	21	18	18	17	16	21	16	14	17	18	7	7	8	9	8	8	4	14.1	21.2
Dir	209	208	213	207	204	200	214	210	204	200	195	195	205	201	206	206	213	235	207	208	216	202	199	188	206	210
8 Spd	9	12	11	18	10	10	18	17	18	15	16	18	19	19	18	17	12	11	9	17	17	13	14	18	14.6	19.2
Dir	202	209	211	212	211	201	197	183	198	189	203	204	207	209	211	222	217	210	206	205	213	231	218	226	208	209
9 Spd	18	19	18	17	14	12	6	7	13	13	17	21	29	29	27	21	21	18	17	22	20	14	8	11	17.0	28.9
Dir	224	223	225	223	232	208	234	214	225	214	223	238	236	231	231	217	214	218	216	234	238	213	207	211	225	231
10 Spd	13	13	8	17	13	19	33	36	39	34	25	25	25	22	21	18	18	18	16	14	8	11	13	11	17.5	38.6
Dir	212	225	198	203	197	209	236	246	252	259	277	269	262	264	265	254	256	260	253	244	227	185	182	185	243	252
11 Spd	13	16	16	16	16	14	13	16	14	14	17	18	13	11	10	14	12	15	16	16	16	15	16	12	14.4	17.6
Dir	200	191	190	181	182	182	180	186	181	172	174	180	182	180	169	182	182	180	176	180	182	176	178	180	181	180
12 Spd	9	10	8	10	17	21	22	13	19	16	19	21	19	15	15	12	10	17	9	10	14	17	17	17	13.6	21.7
Dir	188	188	227	206	194	198	213	245	241	249	259	258	261	267	253	249	246	249	232	234	211	209	220	224	232	213
13 Spd	14	18	16	14	16	14	8	10	11	16	12	10	11	13	14	5	2	6	6	4	8	8	11	12	10.0	17.6
Dir	226	228	234	236	241	244	240	234	214	233	253	269	275	257	255	241	214	202	202	182	199	200	195	194	232	228
14 Spd	10	8	14	13	13	13	17	15	17	19	19	19	17	18	19	21	20	15	9	17	9	6	8	9	12.9	21.5
Dir	166	167	173	178	176	176	182	181	181	183	185	183	183	186	185	198	227	245	222	235	237	255	225	253	195	198
15 Spd	11	19	22	23	29	30	29	28	29	29	24	19	25	32	31	29	23	25	23	23	22	22	18	16	23.8	31.9
Dir	250	214	228	242	242	238	240	246	252	256	261	262	252	265	263	257	251	249	248	250	252	257	247	249	249	265
16 Spd	15	17	12	14	16	13	12	12	13	13	13	13	15	15	16	14	18	21	22	23	22	22	21	18	14.9	23.1
Dir	250	246	245	230	232	232	201	198	193	193	195	195	197	207	208	192	178	174	173	176	177	189	204	191	200	176
17 Spd	24	20	21	31	38	40	32	29	27	27	20	25	31	34	25	29	27	21	15	11	9	12	13	15	22.6	40.0
Dir	178	183	209	227	235	240	243	241	247	251	246	240	249	254	252	261	255	242	246	230	201	206	228	242	237	240
18 Spd	11	11	14	16	13	12	17	17	22	23	20	16	14	10	1	6	5	4	3	2	6	5	8	7	9.3	23.3
Dir	246	241	244	252	255	252	261	262	266	269	270	276	277	292	307	255	267	270	294	345	1	25	4	2	270	269
19 Spd	11	10	11	11	5	4	3	3	3	2	2	4	4	3	6	3	1	1	2	1	2	5	1	3	2.9	11.1
Dir	27	31	34	36	15	17	31	53	68	91	105	41	65	40	43	125	249	179	79	52	159	210	247	202	46	36
20 Spd	8	9	14	13	10	12	13	12	13	7	11	11	9	11	11	9	14	14	12	14	11	11	9	10	10.7	14.4
Dir	215	223	230	233	215	197	213	199	190	187	178	188	193	182	192	196	197	193	197	200	206	205	209	211	202	193
21 Spd	12	10	12	16	15	12	7	3	4	7	8	9	11	12	11	10	11	11	11	17	17	18	17	15	9.8	17.7
Dir	217	220	237	256	267	303	350	325	353	344	333	318	304	311	305	301	300	295	286	270	270	276	276	279	284	276
22 Spd	15	15	12	12	9	10	12	10	9	13	15	14	13	14	19	20	21	16	22	24	23	21	15	17	14.8	24.0
Dir	271	268	245	244	241	240	246	253	226	212	238	237	254	259	271	270	269	260	268	269	276	275	280	278	260	269

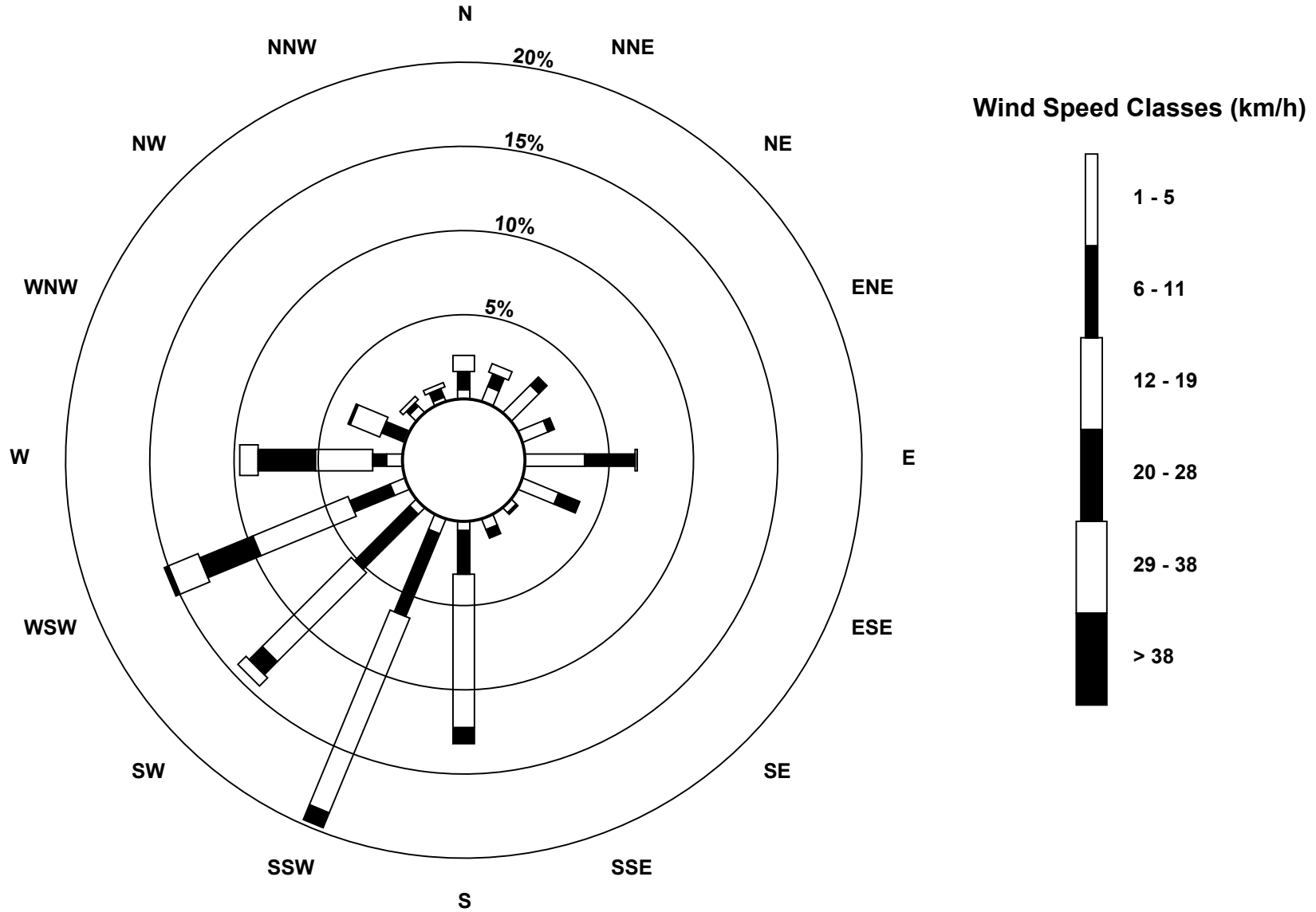
## Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Donnelly - December 2017

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	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	19	21	16	15	18	19	19	18	18	19	20	18	18	17	15	14	7	9	7	7	11	14	17	19	14.5	20.9
Dir	273	276	265	250	255	274	285	286	292	291	290	289	288	296	304	344	332	331	287	251	229	253	290	289	283	276
24 Spd	17	15	16	16	18	13	12	17	18	8	6	8	5	3	3	3	3	3	2	3	4	5	8	10	7.1	18.0
Dir	297	303	351	354	9	10	11	21	30	13	10	38	40	19	81	81	102	106	95	105	61	58	38	28	12	9
25 Spd	10	15	17	10	6	5	3	1	2	1	2	1	2	1	2	2	3	4	3	5	5	3	3	3.0	17.2	
Dir	9	15	19	13	24	44	55	309	278	239	19	69	49	46	96	187	126	116	117	108	115	117	96	100	43	19
26 Spd	3	5	8	9	8	9	9	9	8	3	5	4	6	5	6	5	10	11	8	11	10	8	6	3	0.8	11.0
Dir	93	94	101	104	102	104	100	101	98	105	110	98	70	46	357	308	272	283	295	273	275	284	277	277	61	273
27 Spd	3	5	5	5	3	9	11	11	12	13	13	14	15	14	15	13	13	15	15	15	11	12	14	14	11.0	15.5
Dir	256	258	235	216	215	208	220	228	211	217	217	208	203	198	206	202	203	221	213	233	233	235	228	231	218	221
28 Spd	13	14	15	16	16	14	10	5	2	2	2	2	4	5	4	3	3	3	2	3	3	1	1	2	3.6	16.2
Dir	243	286	292	344	1	1	9	2	279	204	222	329	10	50	55	10	245	258	19	52	69	43	90	56	336	1
29 Spd	2	0	2	5	4	4	3	3	2	2	1	2	3	2	2	3	5	5	5	8	10	10	6	5	3.8	10.1
Dir	93	70	61	68	72	93	87	86	137	85	104	72	87	56	88	90	95	97	99	99	100	98	97	68	91	100
30 Spd	3	6	6	5	5	8	9	8	3	2	2	6	8	4	1	1	1	9	13	11	10	8	10	8	5.9	12.8
Dir	88	82	92	93	65	76	94	97	100	41	52	83	116	116	73	272	101	100	101	100	103	100	101	102	95	101
31 Spd	7	9	9	7	10	10	5	3	4	7	8	10	10	7	6	3	2	4	4	4	6	6	8	8	4.9	10.3
Dir	102	101	101	96	99	102	101	161	148	118	153	178	187	190	217	269	75	120	116	93	86	86	124	63	121	102
Spd	8.2	8.4	8.2	8.7	8.3	8.5	8.7	8.6	9.6	9.5	9.1	9.3	9.9	9.6	9.5	9.8	9.6	8.7	7.6	8.2	8.0	7.8	7.8	7.5	Diurnal Average	
Dir	224	225	225	225	227	224	226	226	225	226	227	226	229	235	236	235	233	229	223	224	220	221	222	228	Diurnal Maximum	
Spd	29.5	26.8	28.0	31.1	38.3	40.0	32.9	36.5	38.6	34.0	25.0	25.5	31.3	34.0	30.9	28.8	32.8	24.9	22.7	24.0	25.2	27.8	32.4	36.0	Diurnal Maximum	
Dir	260	255	254	227	235	240	236	246	252	259	277	240	249	254	263	261	269	249	248	269	242	244	254	259	Diurnal Maximum	
Maximum Speed Value: 40 km/h on Dec 17 06:00																		Minimum Speed Value: 0 km/h on Dec 29 02:00						Hours in Service:		744
Maximum Daily Speed Average: 23.8 km/h on Dec 15																		Minimum Daily Speed Average: 0.8 km/h on Dec 29						Hours of Data:		744
Maximum Diurnal Speed Average: 9.9 km/h at hour 13																		Minimum Diurnal Speed Average: 7.5 km/h at hour 24						Hours of Missing Data:		0
Monthly Average Velocity: 8.69 km/h 226.9 deg																		Speed Percentiles: P <sub>1</sub> = 0.9 P <sub>10</sub> = 3.3 Q <sub>1</sub> = 7.7 Median = 12.8 Q <sub>3</sub> = 17.0 P <sub>90</sub> = 21.5 P <sub>99</sub> = 34.0						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	9	12	12	0	0	0	33																			
NorthEast	22	12	2	0	0	0	36																			
East	43	35	2	0	0	0	80																			
SouthEast	12	4	0	0	0	0	16																			
South	10	38	116	11	0	0	175																			
SouthWest	11	60	125	27	10	2	235																			
West	10	19	56	44	17	1	147																			
NorthWest	5	9	8	0	0	0	22																			
Total	122	189	321	82	27	3	744																			

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Donnelly - December 2017**



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Donnelly - December 2017

Maximum Speed: 40 km/h on Dec 17 06:00	Maximum Daily Speed Average: 24.3 km/h on Dec 15	Hours in Service: 744
Minimum Speed: 1 km/h on Dec 29 02:00	Minimum Daily Speed Average: 4.1 km/h on Dec 29	Hours of Data: 744
Maximum Diurnal Speed Average: 14.3 km/h at hour 4	Minimum Diurnal Speed Average: 11.1 km/h at hour 19	Hours of Missing Data: 0
Monthly Average Speed: 12.96 km/h	Percentiles: P <sub>1</sub> = 1.3 P <sub>10</sub> = 3.6 Q <sub>1</sub> = 7.9 Median = 12.9 Q <sub>3</sub> = 17.1 P <sub>90</sub> = 21.7 P <sub>99</sub> = 34.0	Percent Operational Time: 100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	13	14	16	19	18	18	19	16	17	17	15	17	8	8	9	13	12	17	18	17	19	14	12	13	14.9	19.4
2-Dec	15	17	17	15	15	16	8	3	4	9	11	13	12	13	13	13	15	13	7	5	7	8	16	14	11.6	17.3
3-Dec	15	16	17	12	8	8	9	8	11	11	10	12	13	12	10	10	10	7	8	4	9	10	9	7	10.3	16.7
4-Dec	8	7	6	4	3	5	10	14	15	15	16	18	16	16	19	21	19	18	20	22	25	28	33	36	16.3	36.0
5-Dec	30	27	28	30	29	29	25	25	27	25	24	21	21	19	23	28	33	21	15	9	8	7	11	13	21.9	32.9
6-Dec	12	11	14	15	14	16	15	18	19	18	16	15	18	15	16	15	11	12	11	14	14	14	15	14	14.7	19.3
7-Dec	13	13	16	18	18	17	19	21	18	18	17	16	21	16	14	17	18	7	7	8	9	8	8	5	14.3	21.3
8-Dec	9	12	11	18	10	10	18	17	19	15	16	18	19	19	18	17	13	11	9	17	17	13	14	18	14.9	19.3
9-Dec	18	20	19	17	14	12	6	7	13	13	17	21	29	29	27	21	21	18	17	22	20	15	8	11	17.3	28.9
10-Dec	13	13	8	17	13	19	33	37	39	34	26	25	25	22	21	18	18	18	16	14	8	11	13	11	19.7	38.6
11-Dec	13	16	16	16	16	14	13	16	14	14	17	18	13	11	10	14	12	15	16	16	16	15	16	12	14.6	17.6
12-Dec	9	10	8	10	17	21	23	14	19	16	19	21	19	15	15	12	10	17	10	10	14	17	17	17	15.0	22.6
13-Dec	14	18	16	14	16	14	8	10	11	17	12	11	12	13	14	6	2	6	6	4	8	8	11	12	11.0	17.7
14-Dec	10	8	14	13	13	13	17	15	17	19	19	19	17	18	19	22	21	15	9	17	9	6	8	9	14.4	21.8
15-Dec	12	19	23	23	29	30	29	28	29	29	24	19	25	32	31	29	23	25	23	23	22	23	19	16	24.3	31.9
16-Dec	15	17	12	14	16	13	12	12	13	13	13	13	15	15	16	14	18	21	22	23	22	22	21	18	16.3	23.1
17-Dec	24	20	21	31	38	40	32	29	27	27	20	26	31	34	25	29	27	21	15	11	9	13	13	15	24.1	40.0
18-Dec	11	11	14	16	14	12	17	17	22	23	20	16	14	10	3	6	6	4	3	3	6	5	8	7	11.2	23.3
19-Dec	11	10	11	11	5	4	4	3	3	2	4	4	5	3	6	4	3	1	2	1	3	5	1	4	4.7	11.1
20-Dec	8	9	14	13	10	12	13	12	13	7	11	11	9	11	11	9	14	15	12	14	11	11	9	10	11.2	14.5
21-Dec	12	10	12	16	15	12	7	3	4	7	8	9	11	12	11	10	11	11	12	17	17	18	17	15	11.6	17.7
22-Dec	15	15	12	12	9	10	12	10	10	13	15	14	13	14	19	20	21	16	22	24	23	21	15	18	15.6	24.0
23-Dec	19	21	16	15	18	19	19	18	18	19	20	18	18	17	15	14	7	9	7	7	11	15	17	19	15.8	20.9
24-Dec	18	15	16	17	18	13	12	17	18	8	7	8	6	4	3	3	3	3	2	3	4	5	8	10	9.2	18.2
25-Dec	10	15	17	10	6	5	3	1	2	1	2	1	2	1	2	2	3	4	4	4	5	5	3	3	4.7	17.3
26-Dec	3	5	8	9	8	9	9	9	8	4	6	4	6	5	6	6	11	11	9	11	10	8	6	3	7.2	11.0
27-Dec	3	5	6	5	3	9	11	11	12	13	13	14	15	14	15	13	13	15	15	15	11	12	14	14	11.5	15.5
28-Dec	13	14	16	16	16	14	10	5	2	3	3	3	4	5	4	3	4	3	2	3	3	1	1	2	6.3	16.4
29-Dec	2	1	2	5	4	4	3	3	3	2	2	2	3	2	3	4	5	5	6	8	10	10	6	5	4.1	10.1
30-Dec	4	6	7	5	6	8	9	8	4	2	4	7	8	5	1	2	2	9	13	11	10	8	10	8	6.5	12.8
31-Dec	7	9	9	7	10	10	5	4	6	7	8	10	10	7	6	3	3	4	4	5	6	6	9	8	6.8	10.3
	12.3	13.1	13.5	14.3	14.0	14.2	13.9	13.3	14.1	13.6	13.4	13.5	14.0	13.5	13.1	12.9	12.5	12.0	11.1	11.6	11.9	11.6	11.8	11.9	Diurnal Average	
	29.6	26.8	28.0	31.4	38.3	40.0	33.2	36.6	38.6	34.1	25.7	25.6	31.4	34.0	31.0	28.9	32.9	24.9	22.7	24.0	25.3	27.9	32.5	36.0	Diurnal Maximum	

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

# Hourly Standard Deviations

Wind Direction (WD) - deg

Donnelly - December 2017

Maximum Value: 88.6 deg on Dec 19 18:00																		Hours in Service: 744								
Minimum Value: 1.2 deg on Dec 5 17:00																		Hours of Data: 744								
Percentiles: P <sub>1</sub> = 1.8 P <sub>10</sub> = 2.8 Q <sub>1</sub> = 3.9 Median = 6.1 Q <sub>3</sub> = 11.8 P <sub>90</sub> = 26.1 P <sub>99</sub> = 68.8																		Hours of Missing Data: 0								
																		Hours of Calibration: 0								
																		Percent Operational Time: 100.0								
Day	Hourly Period Ending At (MST)																								Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	5	4	4	2	2	3	2	3	3	3	4	4	7	8	21	8	7	4	4	4	3	8	6	4	21.4	
2-Dec	6	4	5	12	8	3	8	28	40	11	6	4	4	5	3	8	7	10	27	10	7	17	6	8	39.7	
3-Dec	4	3	10	8	8	5	8	9	4	5	7	5	9	5	7	11	13	13	5	49	10	7	8	13	48.9	
4-Dec	8	6	17	19	30	16	8	3	3	4	4	2	5	5	2	2	6	13	3	5	3	3	5	3	29.8	
5-Dec	4	3	2	3	3	5	5	3	3	1	1	5	3	3	4	1	1	5	5	6	16	17	6	4	17.1	
6-Dec	3	5	3	5	3	4	3	5	2	4	3	5	4	8	8	5	13	5	8	5	5	5	3	5	12.6	
7-Dec	7	5	4	3	4	4	4	3	4	6	2	4	2	2	3	3	7	18	17	6	13	7	29	49	48.9	
8-Dec	4	5	2	3	5	5	3	6	4	5	5	5	4	3	2	7	8	5	5	5	9	10	7	7	9.9	
9-Dec	7	7	4	4	4	5	6	14	13	11	8	4	6	5	3	3	4	2	7	6	7	5	14	13	10	14.4
10-Dec	10	11	9	7	7	3	9	4	2	3	15	8	5	6	5	3	2	2	4	4	24	8	6	9	24.4	
11-Dec	12	5	3	6	3	3	2	2	4	5	3	3	3	6	5	2	4	4	2	2	3	3	4	6	12.4	
12-Dec	14	5	15	12	3	4	18	11	10	4	6	5	5	8	7	5	10	5	31	8	4	5	3	4	30.6	
13-Dec	4	5	3	6	5	4	4	7	9	15	7	8	8	13	5	44	83	12	9	12	7	12	4	7	82.6	
14-Dec	8	8	4	3	3	4	3	5	3	2	3	2	3	2	3	10	18	5	6	8	14	10	12	16	18.0	
15-Dec	12	11	13	6	3	2	2	6	3	4	4	5	3	3	4	3	2	2	2	2	2	3	4	5	12.6	
16-Dec	4	3	5	4	4	13	5	4	3	3	3	4	4	6	3	11	5	2	4	2	2	10	7	7	13.1	
17-Dec	2	3	7	8	2	3	2	3	3	3	3	5	5	2	2	4	9	2	3	21	6	6	10	4	21.4	
18-Dec	3	4	4	3	20	10	5	4	4	2	3	4	4	10	77	23	41	18	24	28	11	21	14	10	77.0	
19-Dec	9	9	7	5	15	18	24	15	16	18	70	42	30	15	10	43	59	89	26	37	38	15	59	43	88.6	
20-Dec	5	8	8	8	19	7	14	9	6	8	7	7	8	7	4	6	4	6	6	3	5	6	5	6	18.7	
21-Dec	5	6	15	6	6	17	8	19	22	9	5	8	6	4	5	4	6	7	13	4	4	3	5	5	22.5	
22-Dec	7	7	4	5	12	9	9	7	20	4	5	5	8	8	3	3	2	6	3	4	3	2	4	4	20.4	
23-Dec	8	3	7	8	5	5	4	3	3	3	3	3	3	4	5	15	20	8	18	11	5	16	5	3	19.6	
24-Dec	4	3	10	10	7	9	9	5	7	15	18	16	16	42	13	30	20	18	35	29	15	9	9	7	41.6	
25-Dec	10	10	6	5	6	17	28	34	38	66	25	47	68	47	71	25	38	15	7	9	12	7	21	26	70.6	
26-Dec	10	7	6	6	6	5	5	6	6	62	48	15	8	16	21	26	8	9	13	5	6	5	6	7	62.0	
27-Dec	10	6	24	6	27	5	4	7	9	8	10	3	4	5	6	8	9	3	6	4	9	8	9	4	26.6	
28-Dec	14	6	5	18	6	5	8	10	37	37	44	55	22	11	12	30	34	29	26	12	18	26	62	28	61.5	
29-Dec	30	69	31	15	15	17	15	19	65	46	49	17	29	52	21	33	9	16	8	5	5	6	37	29	69.1	
30-Dec	62	10	7	29	42	13	5	8	53	59	83	19	17	15	68	56	63	5	4	4	6	6	5	6	83.2	
31-Dec	6	5	6	6	4	5	6	34	54	6	26	5	6	10	17	39	46	28	22	26	13	8	30	8	53.7	
	61.9	69.1	30.6	28.8	41.6	18.3	28.0	33.7	65.1	66.3	83.2	55.0	68.0	52.5	77.0	55.8	82.6	88.6	35.0	48.9	37.7	26.0	61.5	48.9		

PAZA

Portable – Rycroft Station

Monthly Summary Tables, Graphs and  
Roses



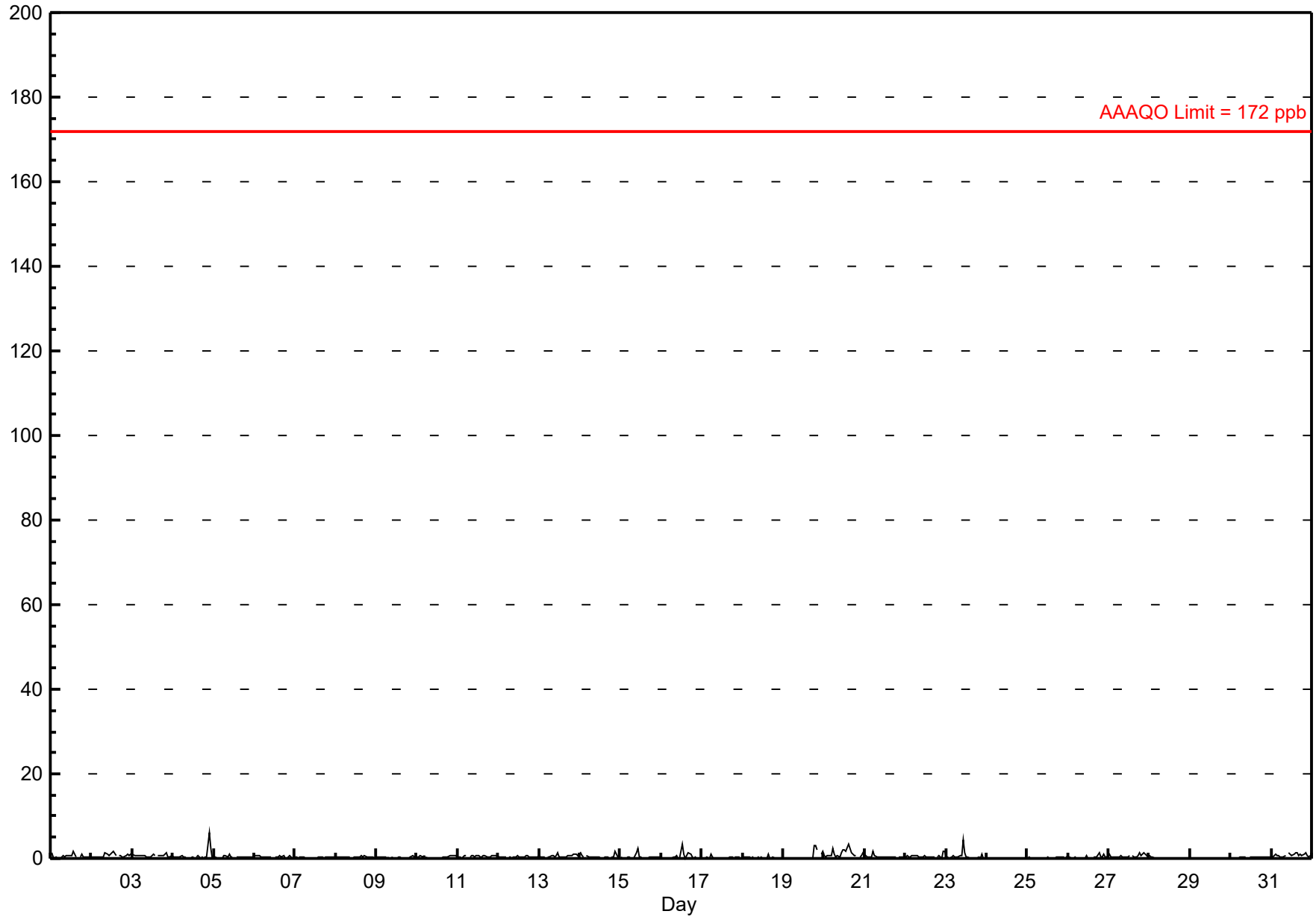
## Hourly Averages

## Sulphur Dioxide (SO<sub>2</sub>) - ppb Portable Rycroft - December 2017

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 6.1 ppb on Dec 4 22:00	Maximum Daily Average: 1.2 ppb on Dec 20		Hours of Data:	710
Minimum Value: 0 ppb on Dec 9 12:00	Minimum Daily Average: 0.0 ppb on Dec 29		Hours of Missing Data:	34
Maximum Diurnal Average: 0.7 ppb at hour 22	Minimum Diurnal Average: 0.3 ppb at hour 3		Hours of Calibration:	34
Monthly Average: 0.41 ppb	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.3 Q <sub>3</sub> = 0.5 P <sub>90</sub> = 0.8 P <sub>99</sub> = 2.2		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-Dec	1	0	0	0	0	0	0	1	0	1	1	1	1	2	1	0	A	0	1	0	0	0	0	0	0.5	1.8	
2-Dec	0	0	0	0	0	0	0	0	1	1	1	1	1	2	1	A	1	1	0	0	1	1	1	1	0.7	1.8	
3-Dec	1	1	1	1	1	1	1	1	0	0	0	0	1	1	A	1	1	1	1	1	1	0	0	1	0.7	1.3	
4-Dec	0	0	0	0	0	1	0	1	0	0	0	0	0	A	0	1	0	0	0	0	0	6	2	0	0.7	6.1	
5-Dec	0	0	0	0	0	0	1	1	0	1	0	0	A	0	0	0	0	0	0	0	1	0	0	0	0.3	1.2	
6-Dec	1	1	1	1	0	0	0	0	0	0	0	A	0	0	0	1	0	1	0	0	0	1	0	0	0.4	0.6	
7-Dec	0	0	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
8-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0.3	0.6	
9-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.2	0.5	
10-Dec	0	0	1	0	1	0	0	A	A	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0.3	0.8	
11-Dec	0	0	0	0	1	1	A	0	1	1	0	1	1	0	0	1	1	0	0	0	1	1	1	1	0.5	0.8	
12-Dec	0	0	0	0	0	A	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0.4	0.7	
13-Dec	1	0	0	0	A	0	0	1	1	0	1	2	0	0	0	0	0	1	1	1	1	1	1	1	0.6	1.5	
14-Dec	1	1	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0.4	1.5	
15-Dec	0	0	A	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	2.2	
16-Dec	0	A	0	0	0	0	0	0	0	1	0	0	3	1	0	1	1	1	0	0	0	0	0	0	0.4	3.5	
17-Dec	A	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.1	
18-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0.2	1.1	
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	2	A	1	2	0.5	3.0	
20-Dec	1	0	1	1	1	2	1	0	1	1	1	2	2	2	3	2	1	1	1	1	A	0	1	1	1.2	3.3	
21-Dec	1	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.4	1.8	
22-Dec	0	1	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	A	0	1	0	2	0.6	1.8	
23-Dec	0	0	0	0	1	0	0	0	1	1	4	1	0	0	0	0	0	A	0	0	0	1	0	0	0.5	4.5	
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.0	0.1	
25-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.1	0.3	
26-Dec	0	0	0	0	0	0	0	0	0	0	0	1	0	0	A	0	0	0	1	0	0	1	0	0	0.3	1.2	
27-Dec	1	0	0	0	0	0	0	1	0	0	0	0	1	A	1	0	0	1	1	1	1	1	1	1	0.6	1.2	
28-Dec	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.8	
29-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	
30-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4	
31-Dec	0	0	1	1	1	0	0	0	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0.7	1.4
	0.4	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.7	0.5	0.5	Diurnal Average		
	1.4	0.7	0.9	0.8	0.8	2.3	1.0	0.8	1.5	1.4	4.5	1.9	3.5	1.8	3.3	2.2	1.3	1.2	3.0	3.0	2.1	6.1	2.5	1.8	Diurnal Maximum		

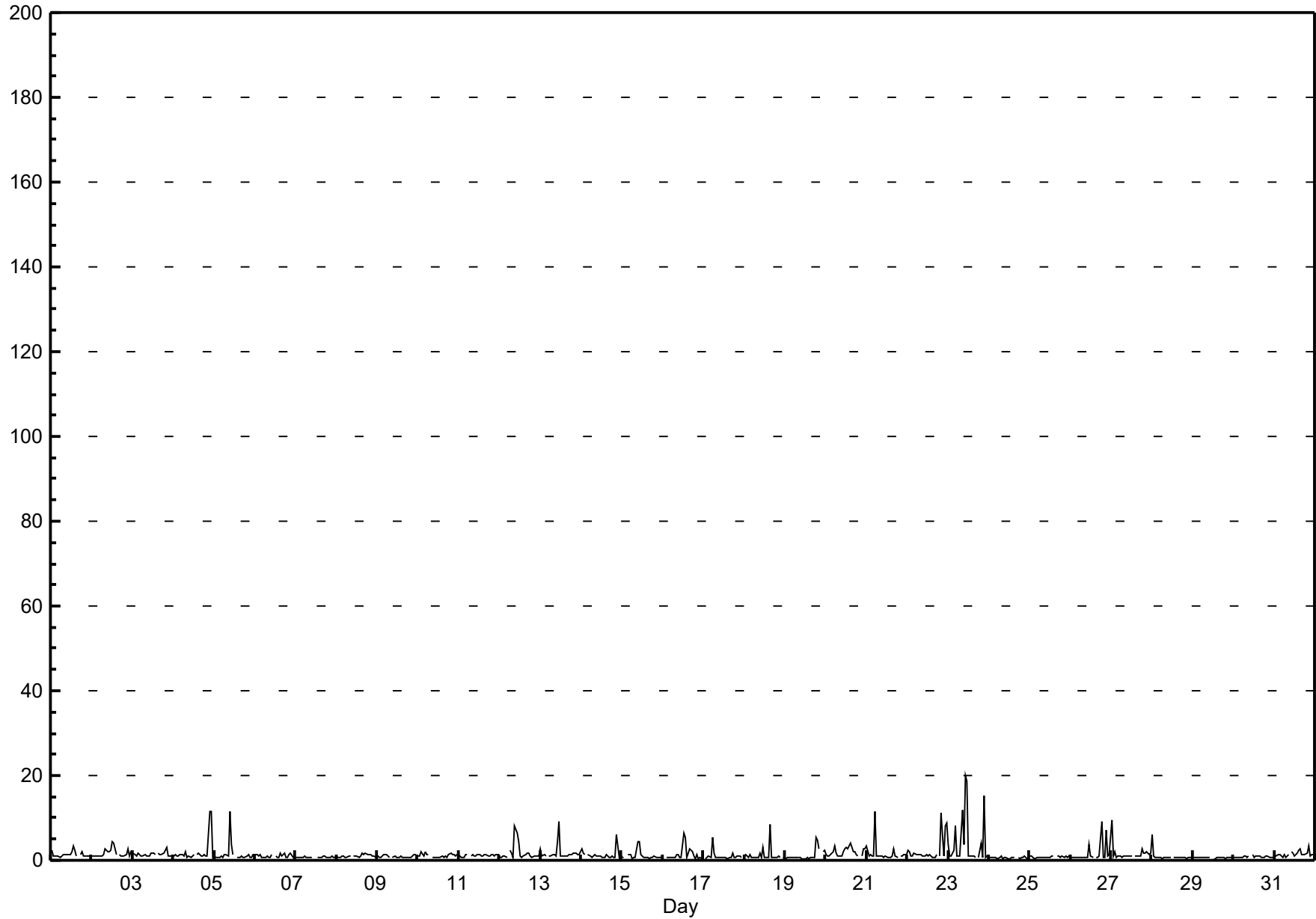
C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb    24-hr 48 ppb    30-day 11 ppb



## Hourly Maximums

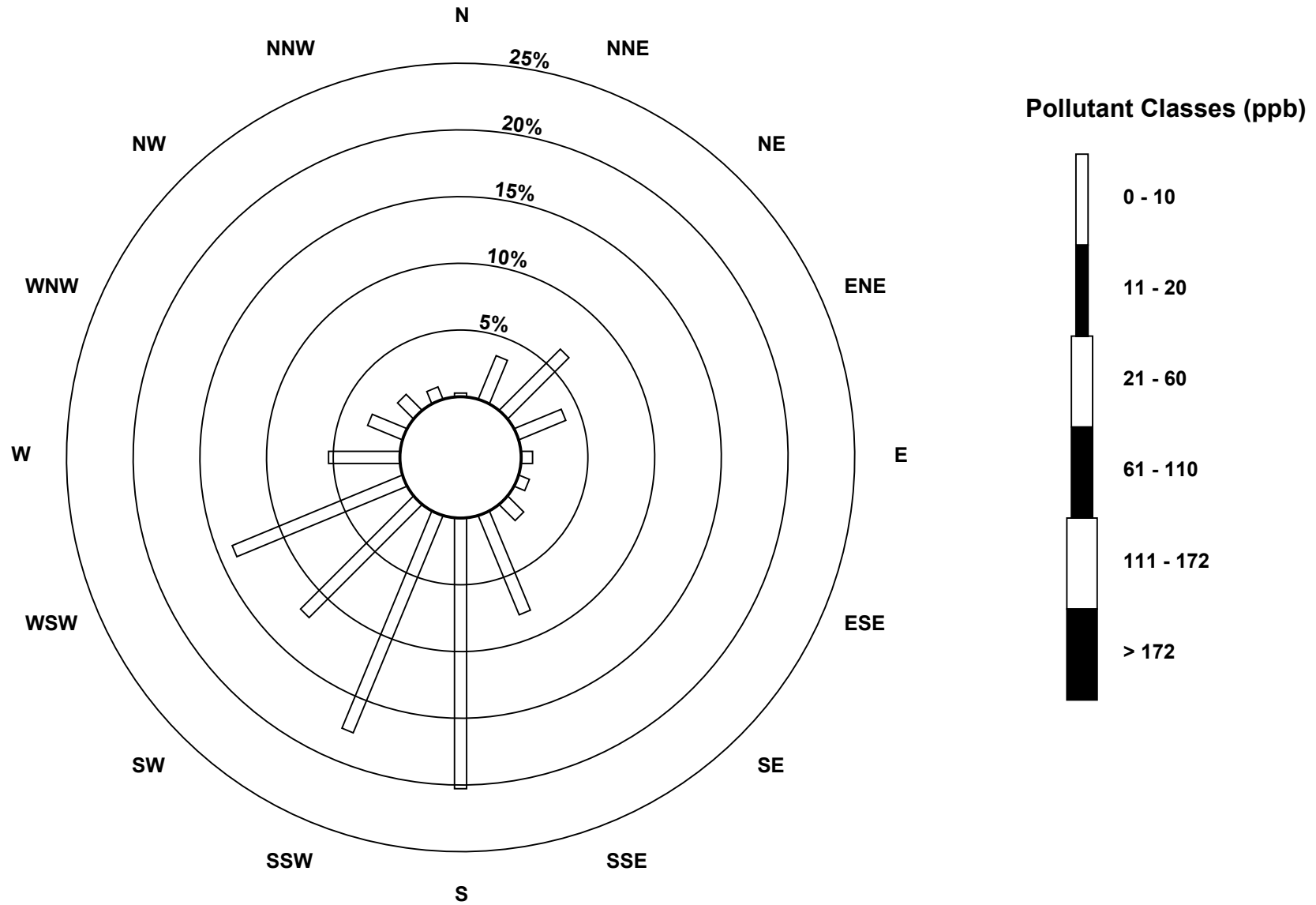
## Sulphur Dioxide (SO<sub>2</sub>) - ppb Portable Rycroft - December 2017

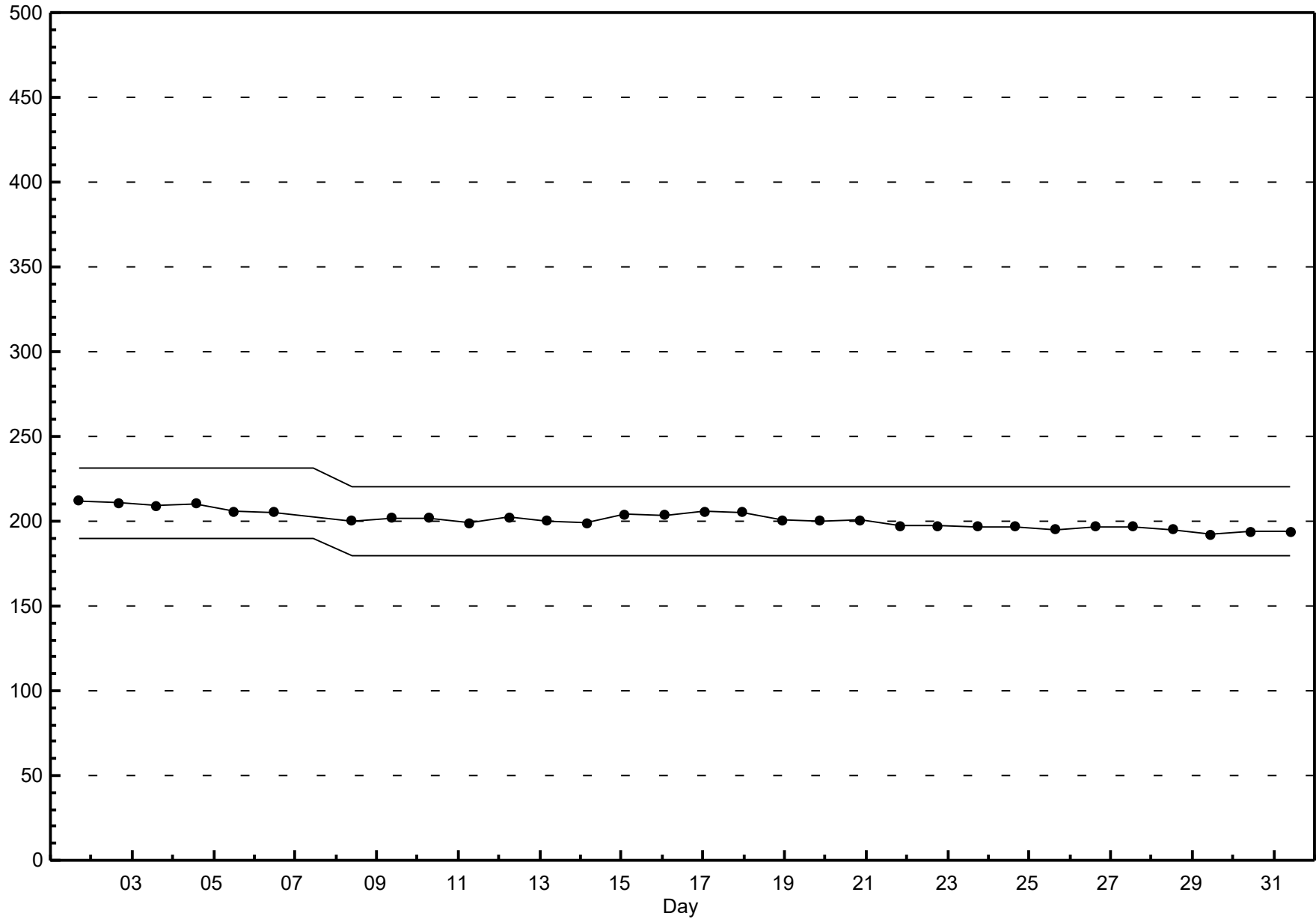
Maximum Value: 20.1 ppb on Dec 23 11:00		Maximum Daily Average: 4.3 ppb on Dec 23		Hours in Service: 744																						
Minimum Value: 0 ppb on Dec 16 20:00		Minimum Daily Average: 0.6 ppb on Dec 29		Hours of Data: 710																						
Maximum Diurnal Average: 2.3 ppb at hour 12		Minimum Diurnal Average: 1.0 ppb at hour 3		Hours of Missing Data: 34																						
Monthly Average: 1.41 ppb		Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.6 Q <sub>1</sub> = 0.8 Median = 0.9 Q <sub>3</sub> = 1.3 P <sub>90</sub> = 2.1 P <sub>99</sub> = 11.5		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-Dec	2	1	1	1	1	1	1	1	1	1	1	2	3	2	1	A	1	2	1	1	1	1	1	1	1.4	3.4
2-Dec	1	1	1	1	1	1	1	1	3	2	2	2	4	4	2	A	1	1	1	1	1	3	1	2	1.7	4.3
3-Dec	2	1	1	2	1	1	1	1	1	1	1	2	2	1	A	2	1	1	2	3	3	1	1	1	1.4	3.0
4-Dec	1	1	1	1	1	1	1	2	1	1	1	1	1	A	1	2	1	1	1	1	1	11	11	1	2.0	11.5
5-Dec	1	1	1	1	1	1	1	1	1	12	4	1	A	1	1	1	1	1	1	1	1	1	1	1	1.5	11.6
6-Dec	1	1	1	2	1	1	1	1	1	1	1	A	1	1	1	2	1	2	1	1	1	2	1	1	1.1	1.8
7-Dec	1	1	1	1	1	1	1	1	1	1	1	C	C	C	1	1	1	1	1	1	1	1	1	1	0.8	1.0
8-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1.0	1.8
9-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.5
10-Dec	1	1	2	1	2	1	1	A	A	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1.1	2.2
11-Dec	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	1.5
12-Dec	1	1	1	1	1	A	2	2	1	8	6	4	1	1	1	2	2	1	1	1	1	1	1	1	1.8	8.2
13-Dec	3	1	1	1	A	1	1	1	1	1	4	9	1	1	1	1	1	1	2	2	2	2	1	1	1.7	9.2
14-Dec	3	2	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	1	1	1	1.3	6.1
15-Dec	1	1	A	1	1	1	0	1	1	4	4	1	1	1	1	0	1	1	1	1	1	1	1	1	1.2	4.5
16-Dec	1	A	1	1	1	1	1	1	1	1	1	7	5	1	2	3	2	1	0	1	0	1	0	1	1.4	6.5
17-Dec	A	0	1	1	1	5	2	1	1	1	1	1	1	0	1	1	2	1	1	1	1	1	A	1	1.0	5.4
18-Dec	1	1	1	1	1	1	1	1	1	2	1	3	1	1	8	1	1	1	1	1	1	A	1	1	1.3	8.4
19-Dec	0	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	1	5	5	3	A	2	2	1.2	5.4
20-Dec	1	1	1	1	2	4	2	1	1	1	2	3	3	3	4	3	2	2	1	1	A	1	3	3	2.0	4.0
21-Dec	4	1	1	1	1	11	1	1	1	1	1	1	1	1	1	3	1	1	A	1	1	1	1	1	1.6	11.4
22-Dec	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	A	1	11	1	8	9	2.3	11.1	
23-Dec	4	1	1	2	8	1	1	1	12	4	20	19	1	1	1	1	A	1	4	1	15	1	1	4.3	20.1	
24-Dec	1	1	1	1	1	0	1	1	0	1	1	0	0	1	1	1	A	1	0	1	1	0	1	1	0.6	0.9
25-Dec	1	1	1	0	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.8	1.0
26-Dec	1	1	1	1	1	1	1	1	1	1	4	1	1	A	1	1	1	9	1	1	7	1	1	1	1.5	9.3
27-Dec	10	1	2	1	1	1	1	1	1	1	1	1	A	1	1	1	1	3	2	2	2	1	2	1.7	9.5	
28-Dec	6	1	1	1	1	1	0	1	1	1	1	1	A	1	1	1	1	1	0	1	1	1	1	0.9	6.2	
29-Dec	1	1	1	1	1	1	1	1	1	1	1	A	0	1	1	1	1	1	0	1	1	1	1	1	0.6	0.7
30-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.3
31-Dec	1	1	1	1	1	1	1	1	1	A	2	2	1	2	2	3	1	1	1	2	3	1	1	1	1.5	3.2
		1.8	1.0	1.0	1.0	1.2	1.5	1.0	1.0	1.3	1.8	2.2	2.3	1.3	1.3	1.1	1.4	1.1	1.2	1.5	1.3	1.5	2.3	1.6	1.4	Diurnal Average
		9.5	2.0	2.2	2.4	8.0	11.4	2.3	2.1	11.9	11.6	20.1	18.7	6.5	5.3	4.0	8.4	2.9	2.2	9.3	4.9	11.1	15.1	11.5	8.9	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								



**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Portable Rycroft - December 2017**



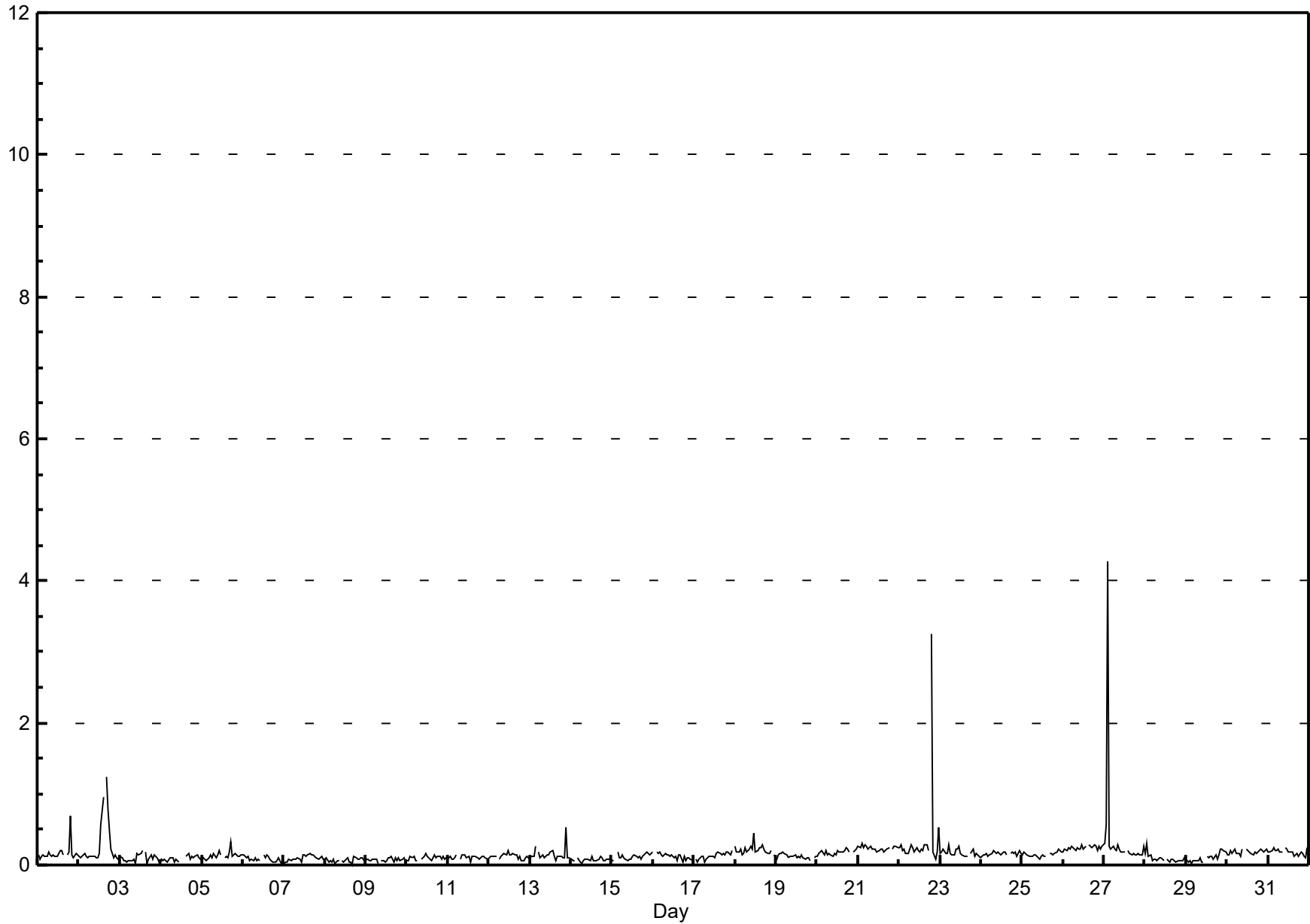


## Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Portable Rycroft - December 2017

Maximum Value: 4.3 ppb on Dec 27 03:00		Maximum Daily Average: 0.4 ppb on Dec 27		Hours in Service:	744																						
Minimum Value: 0 ppb on Dec 8 17:00		Minimum Daily Average: 0.1 ppb on Dec 8		Hours of Data:	710																						
Maximum Diurnal Average: 0.3 ppb at hour 3		Minimum Diurnal Average: 0.1 ppb at hour 7		Hours of Missing Data:	34																						
Monthly Average: 0.15 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.2 P <sub>99</sub> = 0.5		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-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	0	0	0	0	0.2	0.7	
2-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	A	1	1	0	0	0	0	0	0	0.3	1.2	
3-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.1	0.2	
4-Dec	0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
5-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	
6-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
7-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
8-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	
9-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	
10-Dec	0	0	0	0	0	0	0	A	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
11-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	
12-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
13-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.1	0.5	
14-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	
15-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
16-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
17-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.1	0.2	
18-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5	
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
20-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	A	0	0	0.2	0.2	
21-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.2	0.3	
22-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	3	0	0	0	1	0.4	3.2	
23-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.2	0.3	
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.2	0.2	
25-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.1	0.2	
26-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
27-Dec	0	1	4	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.4	4.3	
28-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	
29-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
30-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2	
31-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2	
		0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.3	0.1	0.2	0.1	0.1	Diurnal Average		
		0.3	0.6	4.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.2	0.6	1.0	0.3	1.2	0.8	0.5	3.2	0.2	0.5	0.3	0.5	Diurnal Maximum		
C - Calibration		A - Automated Daily Zero Span																									



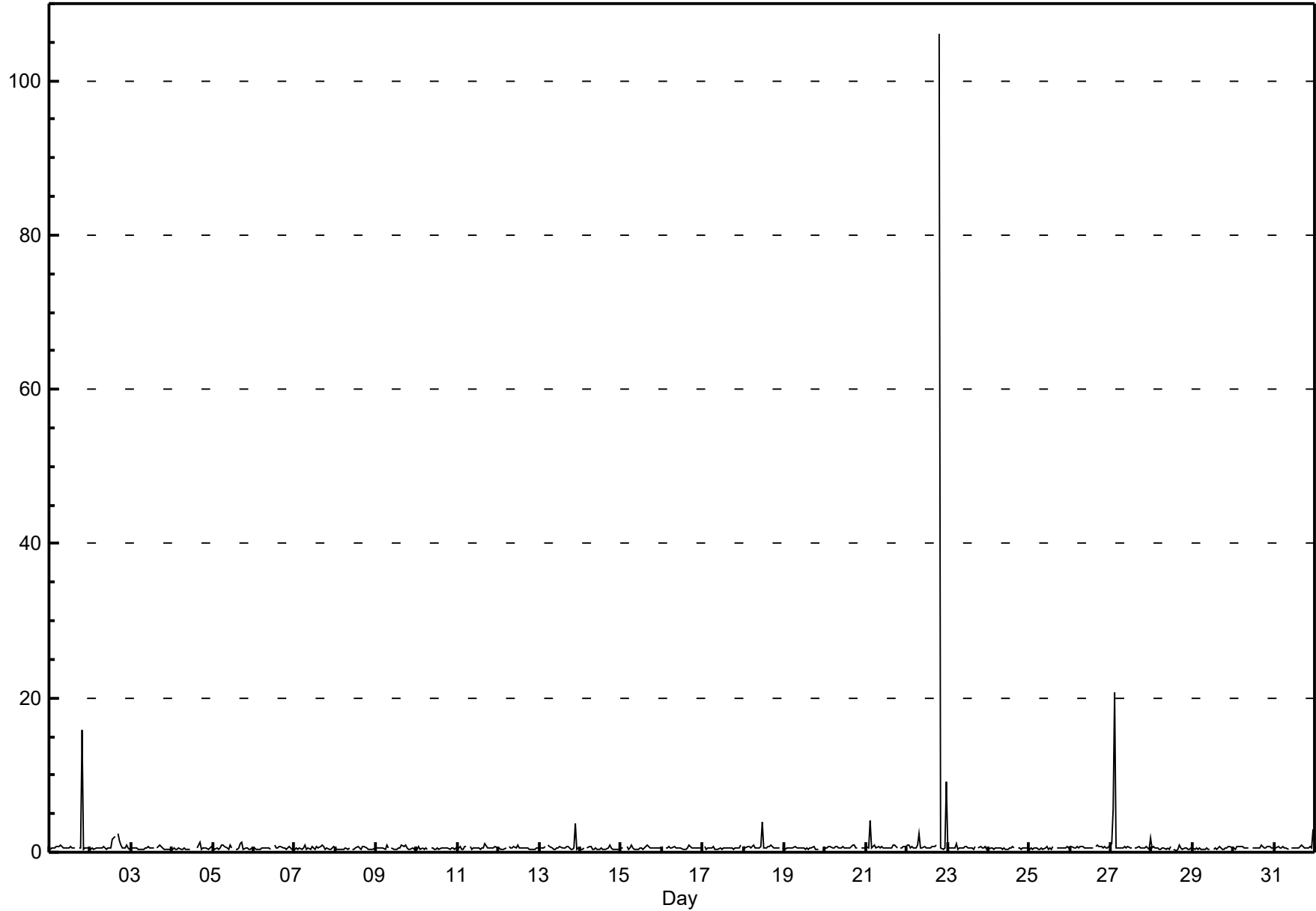


## Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

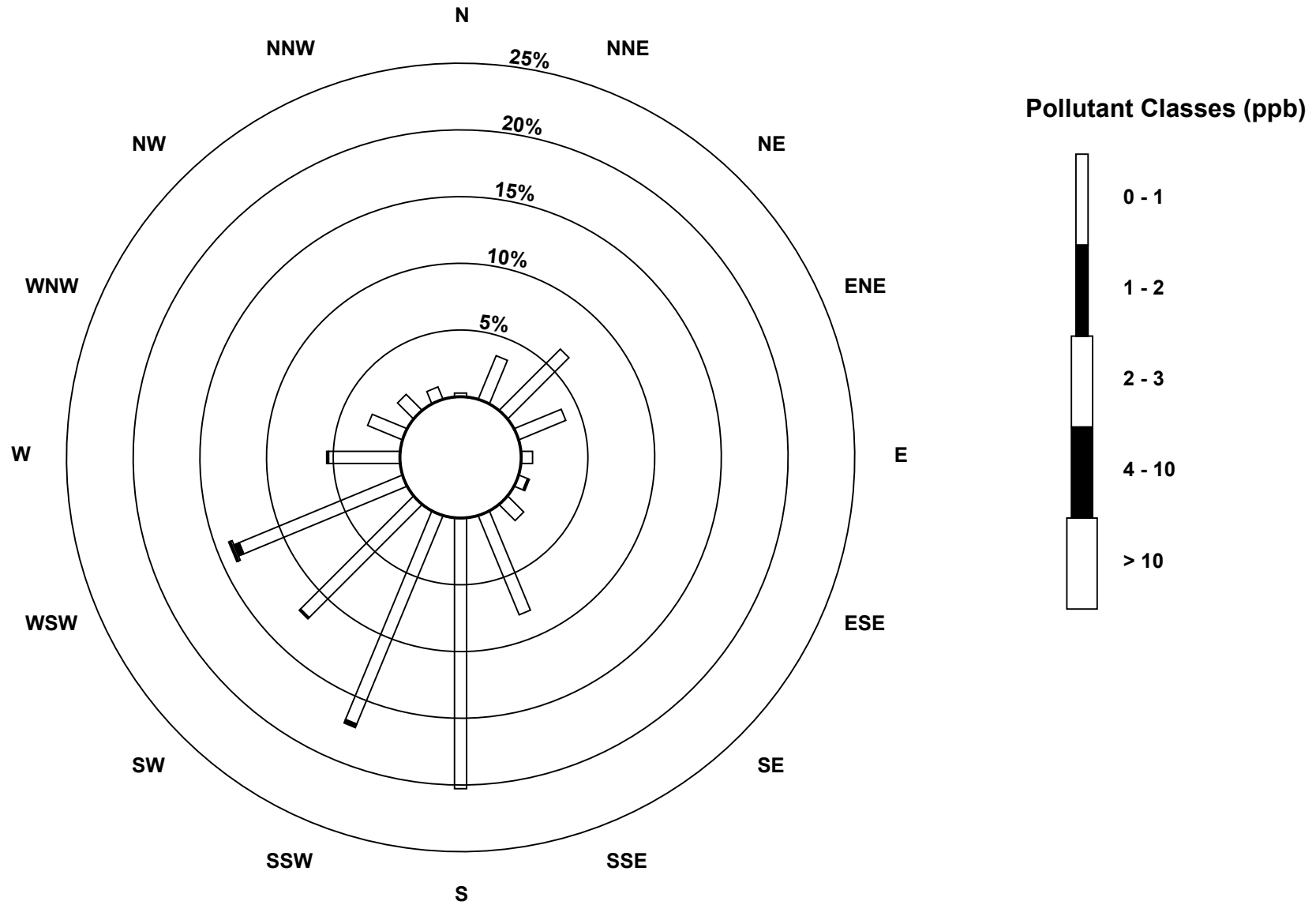
Portable Rycroft - December 2017

Maximum Value: 106.0 ppb on Dec 22 20:00		Maximum Daily Average: 5.7 ppb on Dec 22		Hours in Service:	744																						
Minimum Value: 0 ppb on Dec 28 15:00		Minimum Daily Average: 0.5 ppb on Dec 8		Hours of Data:	710																						
Maximum Diurnal Average: 4.5 ppb at hour 20		Minimum Diurnal Average: 0.5 ppb at hour 19		Hours of Missing Data:	34																						
Monthly Average: 0.82 ppb		Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 0.5 Q <sub>3</sub> = 0.6 P <sub>90</sub> = 0.8 P <sub>99</sub> = 3.9		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-Dec	0	0	1	1	1	1	1	1	1	0	1	0	1	1	1	1	A	1	1	16	0	0	1	1	1.3	15.9	
2-Dec	0	1	0	1	1	1	1	1	1	0	1	1	1	2	2	A	2	2	1	1	0	1	1	0	0.8	2.4	
3-Dec	1	1	0	1	0	0	0	0	1	1	1	1	1	1	A	1	1	1	1	0	0	0	0	0	0.5	0.9	
4-Dec	0	1	0	0	1	0	0	1	0	0	0	C	C	C	C	1	1	0	1	0	0	0	1	1	0.5	1.3	
5-Dec	1	0	0	0	1	1	1	1	1	0	1	1	A	0	0	1	1	1	0	1	1	0	0	1	0.6	1.2	
6-Dec	1	0	0	0	0	1	1	0	1	0	0	A	1	0	1	1	1	1	1	0	0	1	0	0	0.5	1.0	
7-Dec	0	0	0	1	0	0	1	0	1	0	1	1	1	0	1	1	1	1	0	1	0	0	1	1	0.6	0.9	
8-Dec	0	0	0	0	0	0	1	0	0	1	0	0	1	1	0	1	1	1	0	0	0	0	0	1	0.5	0.8	
9-Dec	0	1	1	1	1	0	1	1	A	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0.6	0.9	
10-Dec	0	1	0	1	0	1	0	A	1	1	0	0	1	0	0	1	0	1	0	0	1	0	0	0	0.5	0.7	
11-Dec	0	1	0	0	1	1	A	1	0	1	0	1	1	0	0	1	1	0	0	1	1	1	1	0	0.6	1.1	
12-Dec	0	0	0	0	1	A	1	1	1	1	1	1	0	0	1	1	1	1	0	0	0	0	1	1	0.5	1.0	
13-Dec	1	1	1	1	A	1	1	1	0	0	1	0	1	1	0	0	1	1	0	0	1	4	0	0	0.7	3.7	
14-Dec	0	0	1	A	0	1	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0.5	1.0	
15-Dec	1	1	A	1	0	0	1	0	0	0	0	1	1	0	1	1	1	1	0	1	1	0	1	1	0.6	1.0	
16-Dec	1	A	1	0	1	1	0	1	1	1	0	1	0	0	0	0	1	1	0	1	1	1	1	1	0.6	0.9	
17-Dec	A	1	0	1	1	0	1	0	0	0	0	0	1	1	1	1	0	1	0	1	1	1	1	A	0.5	0.9	
18-Dec	1	1	1	1	1	1	1	1	1	1	1	4	1	1	1	1	1	1	1	1	0	0	A	0	0.8	4.0	
19-Dec	0	1	1	1	1	1	1	1	1	0	1	1	0	1	0	1	0	1	0	0	0	A	0	0	0.5	0.8	
20-Dec	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	A	1	1	0.6	0.9	
21-Dec	1	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0.8	4.0	
22-Dec	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	A	106	1	0	1	9	5.7	106.0	
23-Dec	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	A	1	1	1	1	1	1	0	0.6	1.1	
24-Dec	0	0	0	0	1	0	1	1	0	1	0	0	1	1	1	A	1	0	0	1	1	1	1	1	0.5	0.7	
25-Dec	0	1	0	0	1	0	0	1	0	1	1	0	1	0	1	A	1	1	1	1	0	1	1	1	0.5	0.7	
26-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.7	0.9	
27-Dec	1	6	21	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0	1	1	0	2	1.8	20.7	
28-Dec	1	1	1	1	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.5	0.9	
29-Dec	0	0	1	0	0	0	0	0	0	0	0	A	0	1	0	0	1	0	0	0	1	1	1	0	0.5	0.7	
30-Dec	1	0	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0	1	1	1	1	1	0.6	1.0	
31-Dec	1	1	1	1	1	1	1	0	0	A	1	1	1	0	1	1	1	1	1	1	1	1	1	3	0.7	2.9	
		0.6	0.7	1.3	0.5	0.6	0.6	0.7	0.6	0.5	0.5	0.6	0.7	0.6	0.6	0.6	0.6	0.9	0.7	0.5	4.5	0.5	0.7	0.5	0.9	Diurnal Average	
		1.2	5.7	20.7	0.8	0.8	1.1	1.0	2.4	0.8	0.7	0.9	4.0	1.0	1.7	2.1	1.0	2.4	1.6	0.9	106.0	0.7	3.7	0.9	9.1	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									



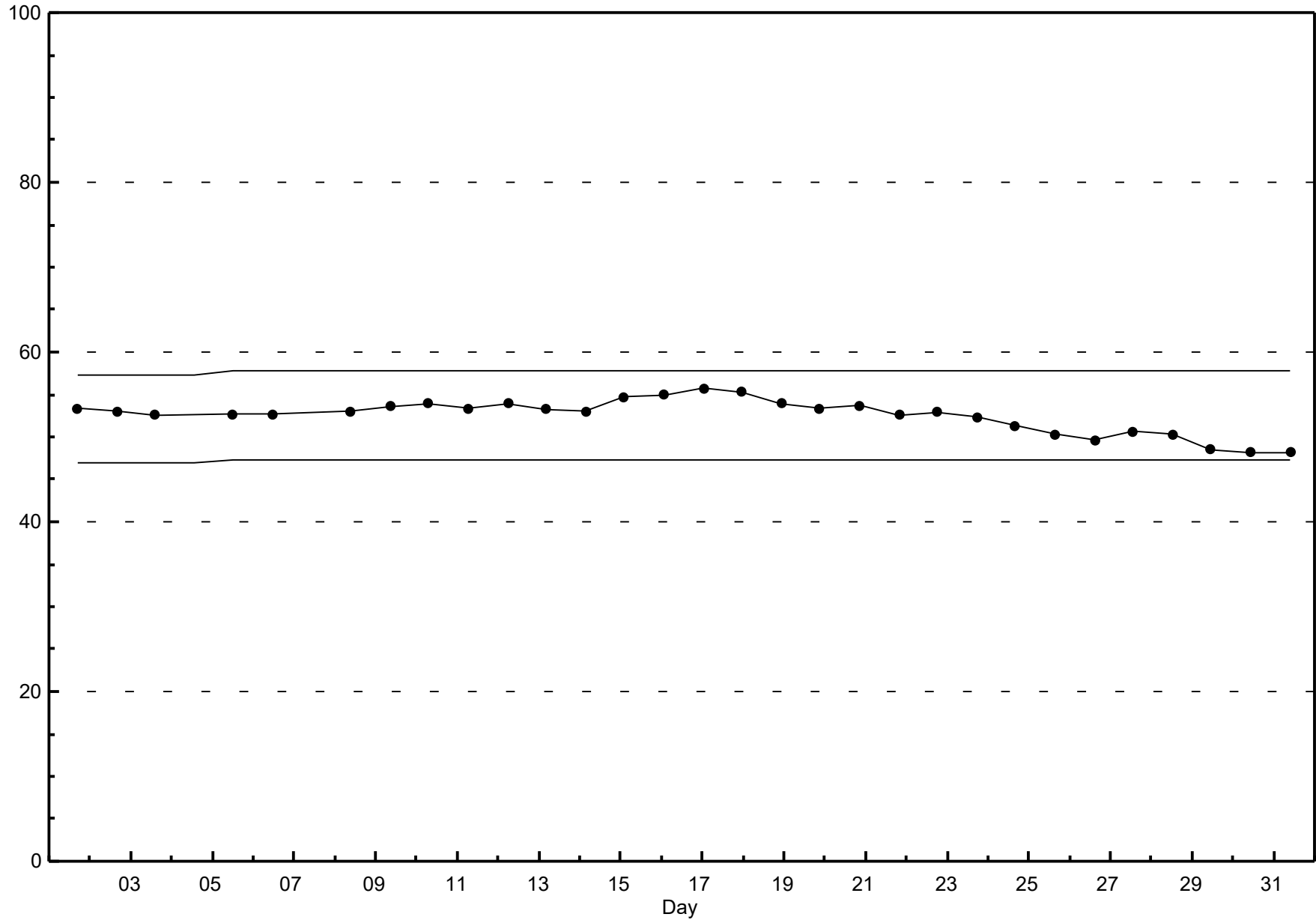
**Pollutant Rose**

**Total Reduced Sulphur (TRS) - ppb**  
**Portable Rycroft - December 2017**



**Span Responses**

**Total Reduced Sulphur (TRS)  
Portable Rycroft - December 2017**



## Hourly Averages

## Nitrogen Dioxide (NO<sub>2</sub>) - ppb Portable Rycroft - December 2017

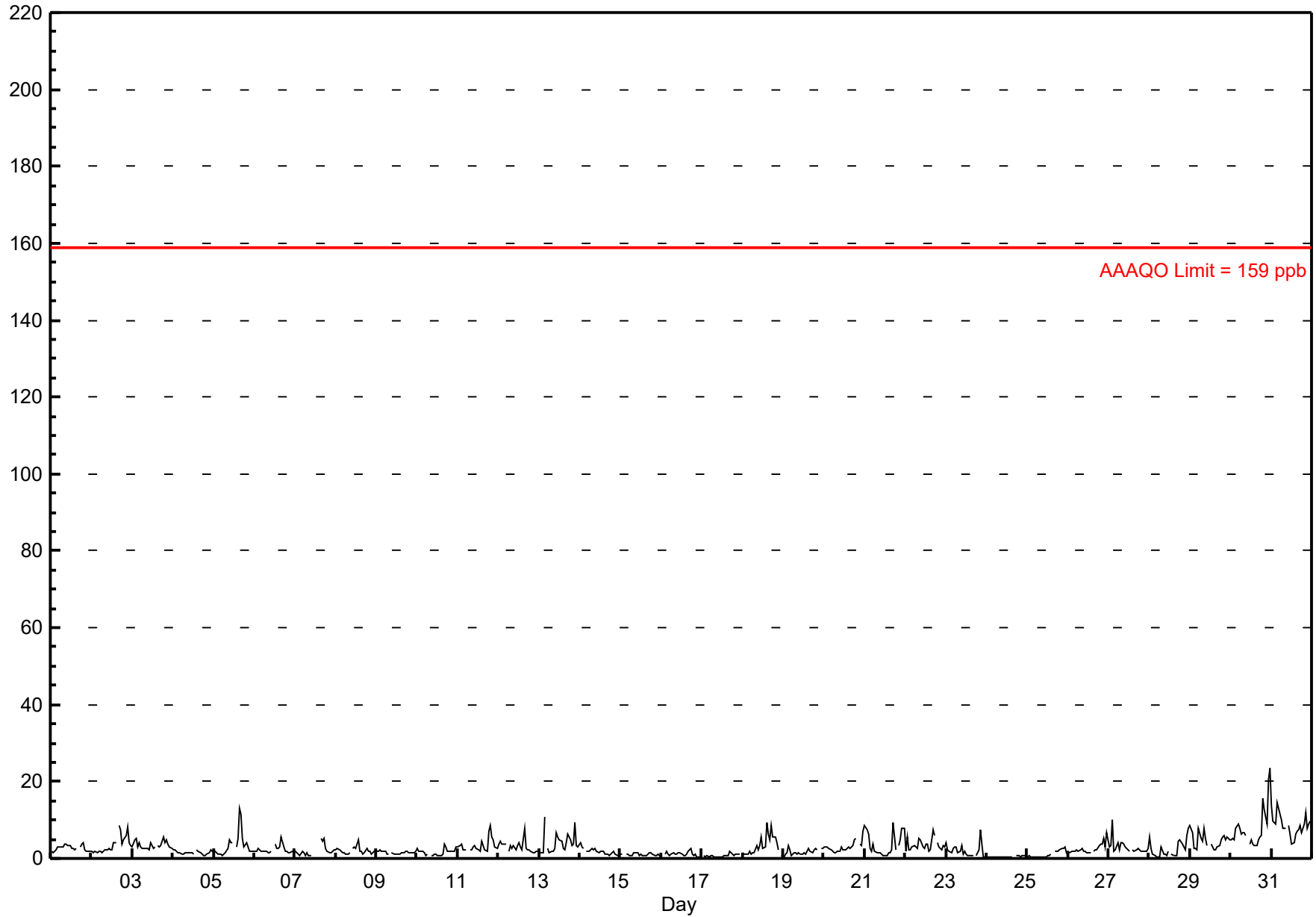
Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 23.4 ppb on Dec 31 00:00	Maximum Daily Average: 8.9 ppb on Dec 31		Hours of Data:	708
Minimum Value: 0 ppb on Dec 25 08:00	Minimum Daily Average: 0.4 ppb on Dec 24		Hours of Missing Data:	36
Maximum Diurnal Average: 3.7 ppb at hour 24	Minimum Diurnal Average: 2.1 ppb at hour 7		Hours of Calibration:	36
Monthly Average: 2.82 ppb	Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.7 Q <sub>1</sub> = 1.3 Median = 2.0 Q <sub>3</sub> = 3.4 P <sub>90</sub> = 5.7 P <sub>99</sub> = 13.0		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	2	2	2	2	3	3	3	3	4	4	3	3	3	3	2	3	A	3	4	4	2	2	2	2	2.7	3.9	
2-Dec	2	1	2	2	2	2	2	2	2	2	2	2	2	4	4	A	8	7	4	5	6	8	4	3	3.5	8.5	
3-Dec	3	5	5	3	4	3	3	3	2	3	2	4	3	3	A	3	3	4	6	4	5	4	3	3	3.4	5.6	
4-Dec	2	2	2	2	1	1	1	2	2	1	1	1	1	A	2	2	1	1	1	1	1	2	2	2	1.6	2.4	
5-Dec	2	2	1	1	1	1	1	2	3	5	4	4	A	3	5	13	12	5	3	4	3	2	2	2	3.5	13.0	
6-Dec	2	2	3	2	2	2	2	2	1	1	2	A	4	2	2	3	6	3	2	2	1	2	2	2	2.2	5.5	
7-Dec	2	2	1	1	2	1	1	2	1	1	C	C	C	C	C	5	5	5	3	2	1	2	2	2	2.1	5.4	
8-Dec	2	3	2	2	2	1	1	1	1	1	A	A	3	3	2	5	2	2	1	1	3	2	2	1	2	2.0	4.8
9-Dec	2	2	2	2	2	2	1	1	1	A	A	2	1	1	1	1	2	2	2	2	2	2	1	2	1.6	2.1	
10-Dec	2	2	2	2	2	1	1	A	A	1	1	1	1	1	1	1	4	3	2	2	2	2	2	3	1.6	3.6	
11-Dec	3	4	4	2	2	2	A	2	2	3	3	3	2	2	5	3	2	2	7	8	6	5	3	3	3.4	8.5	
12-Dec	4	4	4	4	4	A	2	3	3	3	2	3	4	3	2	8	3	2	2	2	2	2	2	2	3.0	8.0	
13-Dec	2	2	2	11	A	3	2	2	2	3	7	6	5	4	3	2	4	6	5	3	4	9	3	3	4.0	11.0	
14-Dec	4	3	2	A	2	2	2	3	2	3	2	2	2	2	2	1	1	1	1	1	2	1	1	1	1.8	4.1	
15-Dec	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.5	
16-Dec	1	A	1	2	1	1	1	1	1	1	2	1	1	1	1	1	2	3	1	1	1	0	1	0	1.1	2.5	
17-Dec	A	1	0	1	1	1	1	0	0	1	0	0	0	1	1	1	2	2	1	1	1	1	1	A	0.8	1.8	
18-Dec	1	1	1	1	2	1	1	2	3	2	3	6	3	3	9	6	5	9	6	6	4	2	A	1	3.5	9.4	
19-Dec	0	1	2	3	2	1	2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	A	3	3	1.7	3.2	
20-Dec	3	3	3	3	2	2	1	1	2	2	3	2	2	2	3	3	3	3	5	5	A	4	3	7	3.0	7.1	
21-Dec	8	7	6	3	2	4	2	1	1	1	1	1	1	1	2	2	9	2	A	3	5	8	8	3.5	9.4		
22-Dec	2	6	2	2	3	4	3	3	5	5	3	3	4	4	2	2	7	6	A	4	3	2	3	3	3.5	7.4	
23-Dec	4	2	2	1	3	3	3	2	2	3	1	2	1	1	1	1	A	1	2	7	4	1	0	2.0	7.5		
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	2	2	2	2	2	3	3	2	1.1	3.0	
25-Dec	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	A	2	2	2	2	2	3	3	2	1.1	3.0	
26-Dec	2	2	2	2	2	2	2	2	3	2	2	2	1	1	A	2	2	2	3	4	4	5	3	7	2.5	6.7	
27-Dec	3	3	10	2	2	4	2	4	4	4	3	2	2	A	2	2	2	3	2	2	2	2	3	2.9	9.9		
28-Dec	6	2	1	1	0	0	0	3	1	1	1	2	A	1	1	1	1	5	5	4	3	2	6	8	2.4	7.7	
29-Dec	9	7	2	2	2	8	5	5	8	5	3	A	4	3	2	2	3	3	5	5	6	5	5	5	4.6	8.8	
30-Dec	5	5	5	8	9	8	6	7	7	6	A	4	5	4	3	4	5	6	6	16	13	9	21	23	7.9	23.4	
31-Dec	14	10	9	15	13	12	10	8	8	A	9	6	4	4	6	7	7	8	7	9	12	8	9	10	8.9	14.7	
	3.2	2.9	2.7	2.8	2.5	2.5	2.1	2.3	2.5	2.4	2.4	2.4	2.2	2.2	2.4	2.9	3.4	3.7	3.1	3.5	3.5	3.2	3.3	3.7	Diurnal Average		
	13.9	9.8	9.9	14.7	13.1	11.7	10.0	7.9	8.0	6.1	8.6	6.4	4.9	4.8	9.4	13.0	11.5	9.4	7.3	15.7	12.8	9.5	20.6	23.4	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 (NO<sub>2</sub>) - ppb  
Portable Rycroft - December 2017



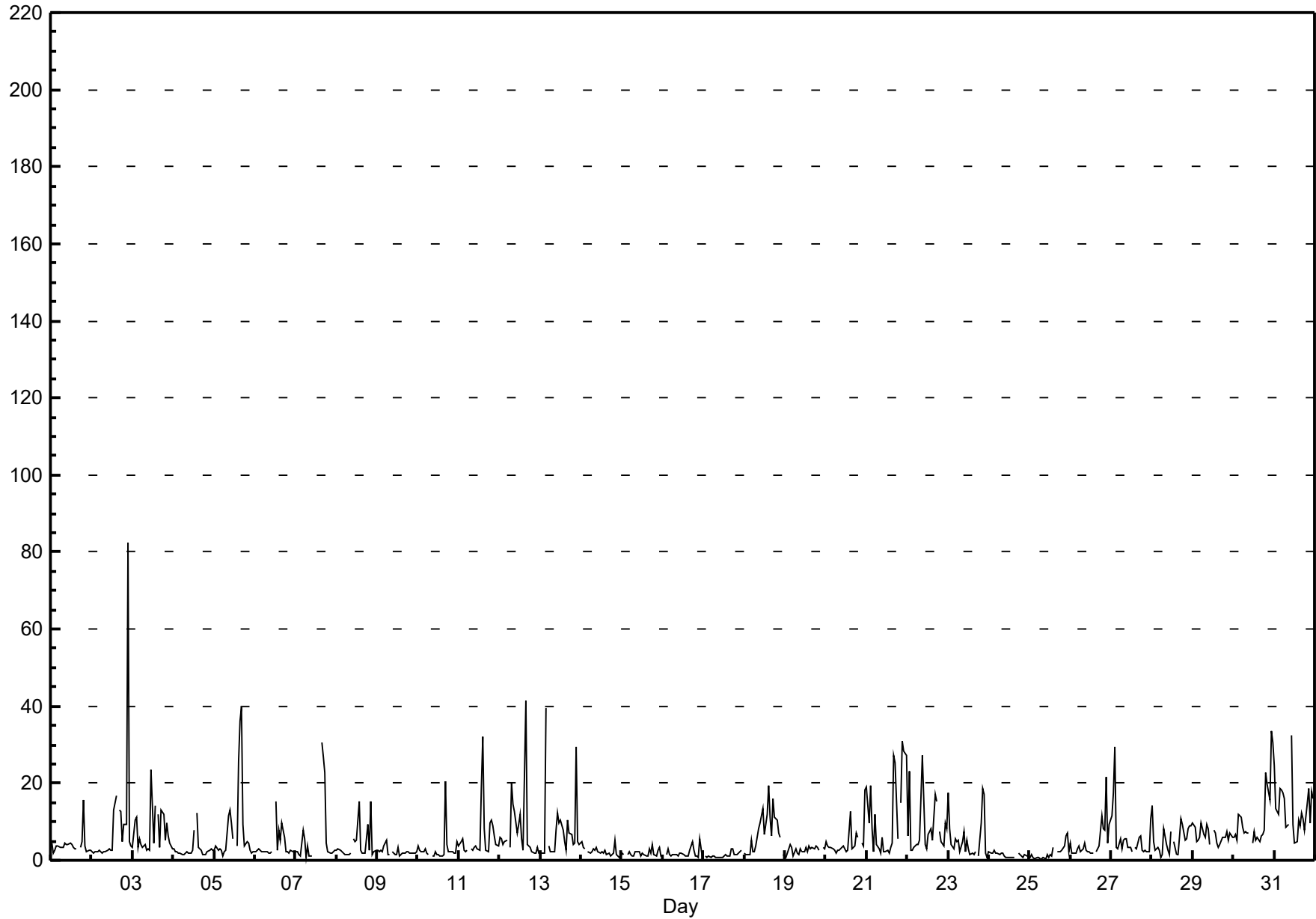
## Hourly Maximums

## Nitrogen Dioxide (NO<sub>2</sub>) - ppb Portable Rycroft - December 2017

Maximum Value: 82.6 ppb on Dec 2 22:00		Maximum Daily Average: 13.8 ppb on Dec 31		Hours in Service:	744																					
Minimum Value: 0 ppb on Dec 25 08:00		Minimum Daily Average: 1.3 ppb on Dec 17		Hours of Data:	708																					
Maximum Diurnal Average: 9.4 ppb at hour 22		Minimum Diurnal Average: 3.0 ppb at hour 7		Hours of Missing Data:	36																					
Monthly Average: 5.51 ppb		Percentiles: P <sub>1</sub> = 0.6 P <sub>10</sub> = 1.3 Q <sub>1</sub> = 2.0 Median = 3.0 Q <sub>3</sub> = 6.0 P <sub>90</sub> = 12.4 P <sub>99</sub> = 31.7		Hours of Calibration:	36																					
				Percent Operational Time:	100.0																					
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	5	2	3	4	4	4	3	3	5	4	4	4	4	3	3	3	A	4	5	16	4	2	3	3	4.0	15.7
2-Dec	2	2	2	2	3	2	2	2	2	3	3	3	13	17	A	13	13	5	9	9	83	5	4	4	8.7	82.6
3-Dec	3	10	11	3	5	4	3	4	3	3	2	23	4	14	A	12	3	13	12	5	10	6	4	3	7.1	23.3
4-Dec	3	2	2	2	2	1	2	2	2	2	2	3	8	A	12	3	3	2	2	1	2	2	3	3	2.9	12.5
5-Dec	3	4	3	3	3	1	2	2	12	13	10	5	A	4	26	36	40	9	4	5	4	3	2	2	8.5	39.8
6-Dec	2	3	3	3	2	2	2	2	2	2	2	A	15	3	8	5	10	6	2	2	2	3	2	2	3.7	15.4
7-Dec	2	2	1	1	8	5	1	4	1	1	C	C	C	C	C	31	27	23	5	2	2	2	2	2	6.4	30.5
8-Dec	3	3	3	2	2	2	2	1	2	A	6	5	5	15	3	2	2	2	9	3	15	1	2	3	4.0	15.4
9-Dec	2	2	3	2	4	5	1	1	A	2	2	1	3	1	1	2	2	2	2	2	2	2	2	2	2.2	5.3
10-Dec	4	3	2	2	3	2	2	A	1	1	2	2	1	1	1	1	21	4	2	2	2	2	2	5	3.0	20.7
11-Dec	4	5	5	3	2	3	A	3	3	3	4	3	3	19	32	8	3	2	10	10	9	6	4	4	6.4	32.2
12-Dec	6	6	4	5	5	A	3	20	15	13	7	9	12	6	3	41	4	4	3	2	2	2	3	2	7.7	41.5
13-Dec	2	2	2	40	A	4	2	2	2	8	12	10	10	8	5	3	11	7	7	4	5	30	5	4	8.0	39.6
14-Dec	5	3	3	A	2	2	2	3	3	3	2	2	2	2	2	2	2	1	2	2	5	1	1	1	2.4	5.3
15-Dec	2	2	A	2	2	1	1	1	2	2	2	1	2	1	1	1	3	2	4	1	1	3	3	1	1.9	4.2
16-Dec	1	A	2	3	2	1	2	2	2	1	2	2	2	1	1	1	3	5	3	1	1	1	6	1	1.9	5.6
17-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	2	1	1	2	2	A	1.3	3.1
18-Dec	2	2	1	1	5	2	2	4	8	10	11	13	7	12	19	11	6	16	11	10	7	6	A	1	7.4	19.4
19-Dec	1	2	3	4	3	1	3	2	1	3	2	2	4	2	4	3	4	3	4	3	3	A	3	3	2.7	4.1
20-Dec	5	4	3	3	3	2	2	3	3	3	4	3	2	3	13	3	3	4	7	6	A	4	4	18	4.5	18.2
21-Dec	19	10	19	8	2	12	4	3	2	6	2	2	2	3	4	27	25	6	A	15	31	29	27	11.4	30.9	
22-Dec	6	23	2	3	4	4	4	5	16	27	4	3	7	7	8	5	17	15	A	8	5	4	10	8	8.5	27.1
23-Dec	18	8	4	3	6	5	5	2	5	8	2	5	3	2	2	1	2	A	1	10	19	17	2	1	5.7	18.8
24-Dec	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	A	2	2	1	1	1	1	1	1.4	2.5
25-Dec	1	1	1	0	1	1	0	0	1	1	1	1	2	1	4	A	2	2	2	3	4	6	7	2	1.9	7.1
26-Dec	4	2	2	2	3	4	2	3	4	3	2	2	2	2	A	2	3	4	12	8	8	22	5	9	4.7	21.7
27-Dec	11	17	29	3	3	5	3	5	6	5	4	3	2	A	3	3	6	6	3	2	3	2	2	11	6.1	29.3
28-Dec	14	5	3	3	3	1	1	8	4	3	2	7	A	5	2	1	6	11	9	5	5	8	9	9	5.4	14.2
29-Dec	10	8	5	5	6	10	7	6	9	8	4	A	8	7	4	4	4	6	6	6	7	5	7	6	6.5	9.9
30-Dec	6	7	5	12	11	8	7	8	7	7	A	4	7	5	6	5	6	7	8	23	20	16	33	31	10.8	33.4
31-Dec	24	14	12	19	18	18	16	9	9	A	32	9	4	5	10	9	12	11	8	15	19	10	18	16	13.8	32.3
		5.7	5.2	4.7	4.9	4.0	3.9	3.0	3.8	4.5	5.0	4.7	4.7	4.5	5.2	7.0	7.1	8.5	7.1	5.2	5.7	6.4	9.4	6.0	6.2	Diurnal Average
		24.5	23.1	29.3	39.6	18.4	17.6	16.0	20.0	16.2	27.1	32.3	23.3	15.4	18.9	32.2	41.5	39.8	25.3	11.9	22.6	19.8	82.6	33.4	30.6	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								

**Hourly Maximums**

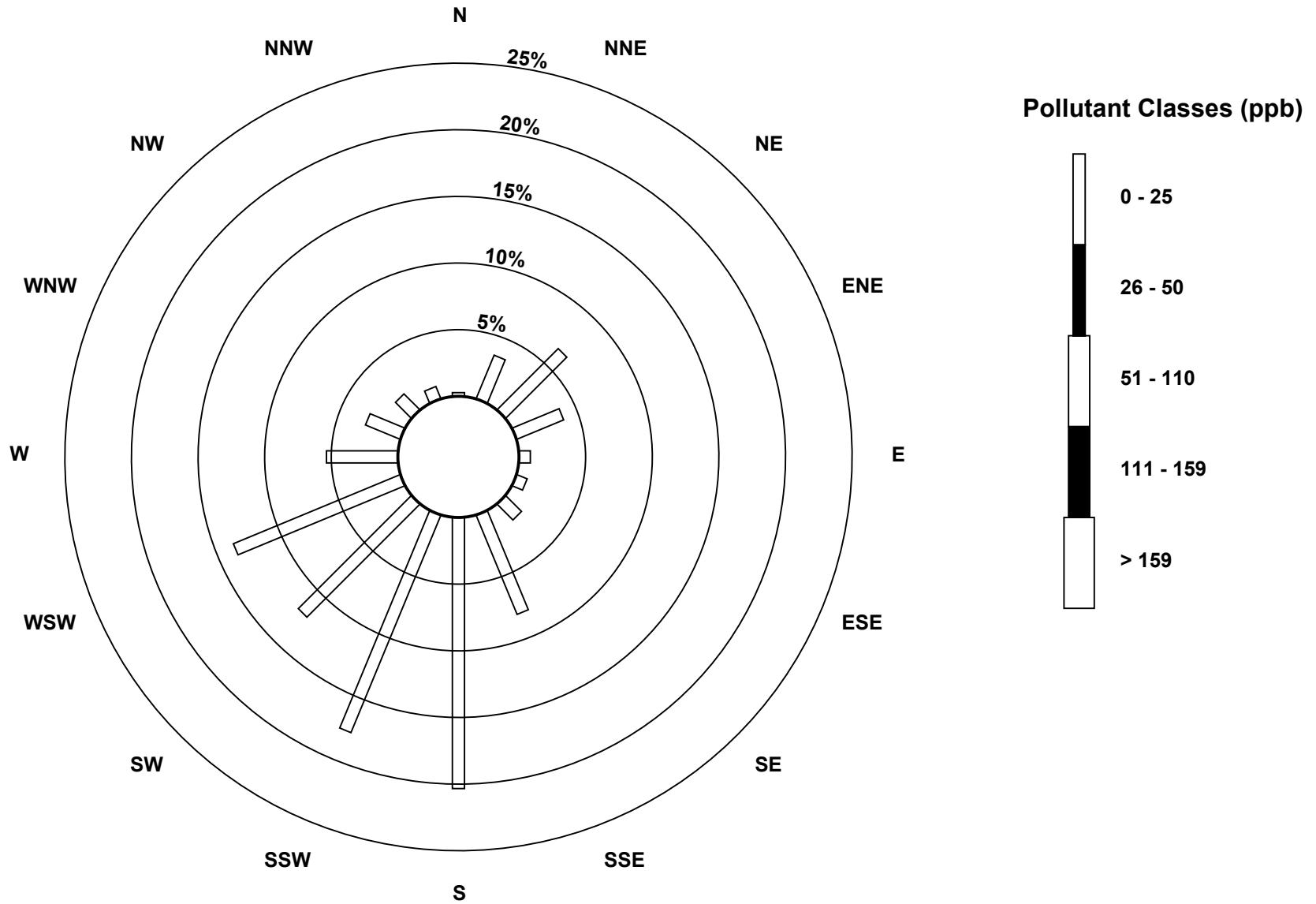
**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Portable Rycroft - December 2017**

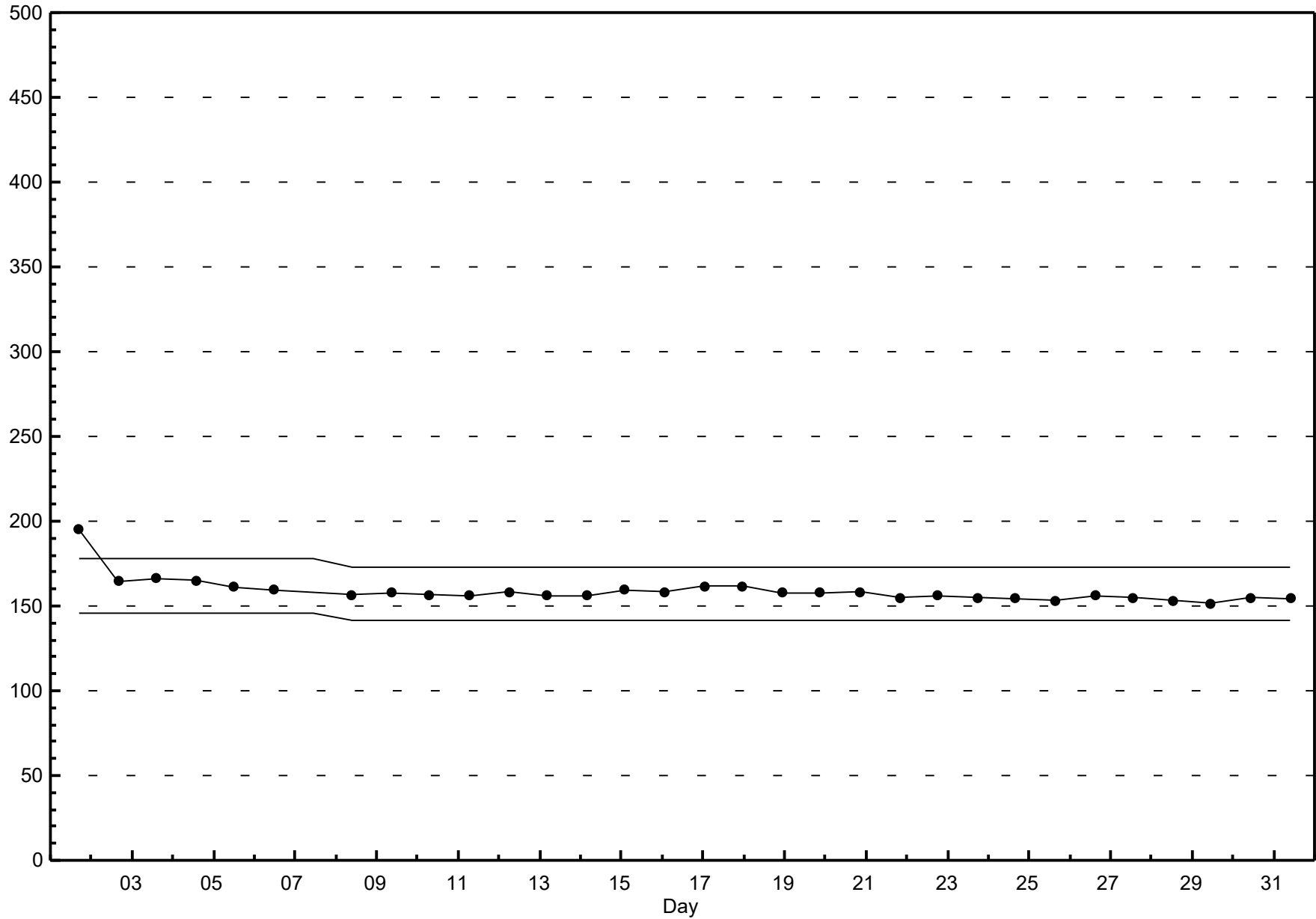




**Pollutant Rose**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Portable Rycroft - December 2017**





## Hourly Averages

## Nitrogen Oxide (NO) - ppb Portable Rycroft - December 2017

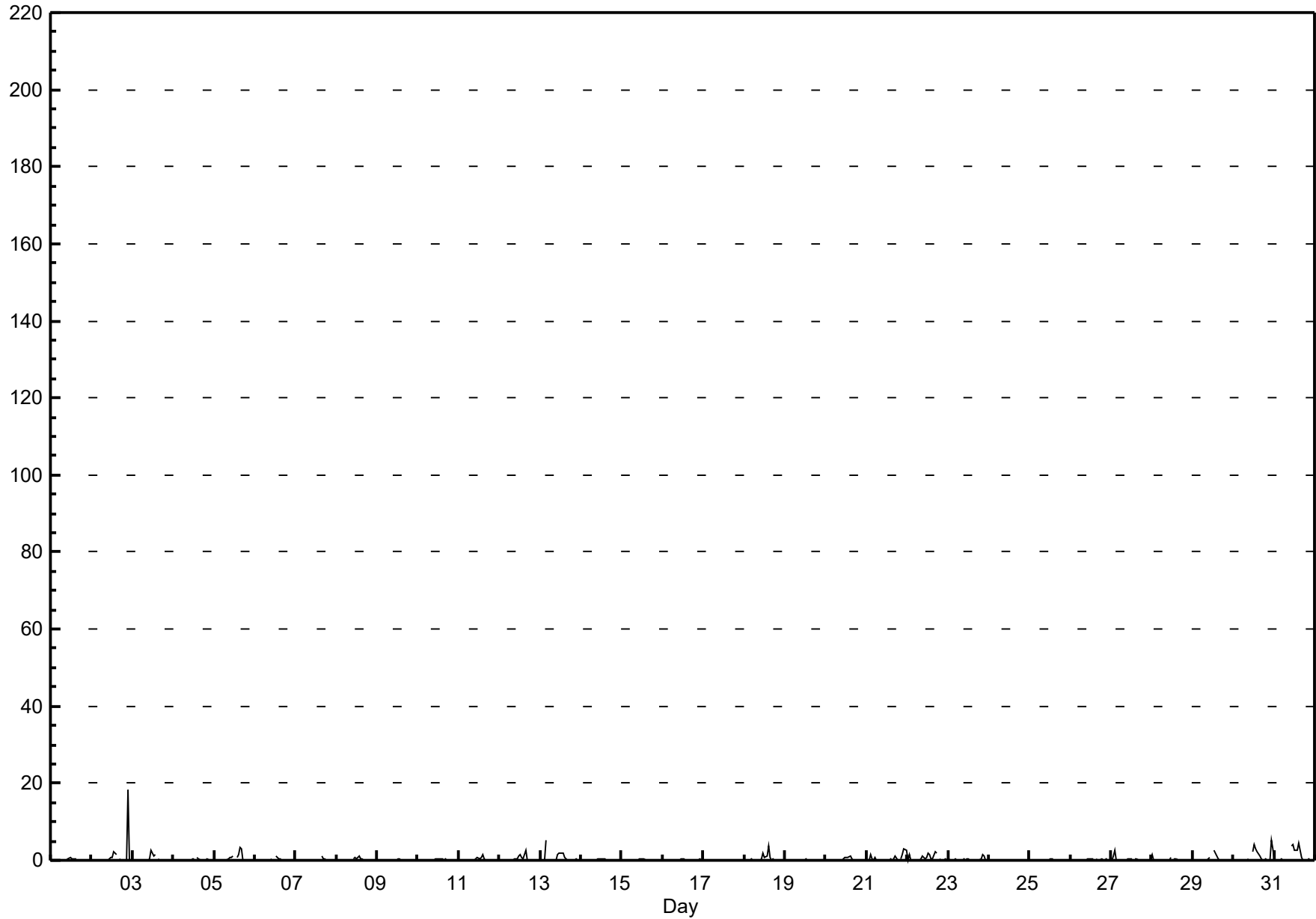
Maximum Value: 18.1 ppb on Dec 2 22:00	Maximum Daily Average: 1.0 ppb on Dec 2	Hours in Service: 744
Minimum Value: 0 ppb on Dec 1 01:00	Minimum Daily Average: 0.0 ppb on Dec 24	Hours of Data: 708
Maximum Diurnal Average: 0.9 ppb at hour 13	Minimum Diurnal Average: 0.0 ppb at hour 7	Hours of Missing Data: 36
Monthly Average: 0.30 ppb	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.0 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.8 P <sub>99</sub> = 3.6	Hours of Calibration: 36
		Percent Operational Time: 100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	A	0	0	0	0	0	0	0	0.1	0.6
2-Dec	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	A	0	0	0	0	0	18	0	0	1.0	18.1
3-Dec	0	0	0	0	0	0	0	0	0	0	0	3	1	2	A	0	0	0	0	0	0	0	0	0	0.3	2.5
4-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	1	0	0	0	0	0	0	0	0	0	0.1	0.8
5-Dec	0	0	0	0	0	0	0	0	0	1	1	1	A	1	2	3	3	0	0	0	0	0	0	0	0.6	3.4
6-Dec	0	0	0	0	0	0	0	0	0	0	0	A	1	1	1	0	0	0	0	0	0	0	0	0	0.1	1.1
7-Dec	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	1	0	0	0	0	0	0	0	0.1	1.0
8-Dec	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0.2	1.3
9-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
10-Dec	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
11-Dec	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	0	0	0	0	0	0	0	0	0	0.2	1.5
12-Dec	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	3	0	0	0	0	0	0	0	0.3	2.5
13-Dec	0	0	0	5	A	0	0	0	0	0	1	2	2	2	1	0	0	0	0	0	0	0	0	0	0.6	5.1
14-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
15-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
16-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
17-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
18-Dec	0	0	0	0	0	0	0	0	0	0	0	2	1	1	4	1	0	0	0	0	0	0	0	0	0.4	3.7
19-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.1	0.2
20-Dec	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	A	0	0	0.2	1.2
21-Dec	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	A	0	2	3	2	0.6	3.1
22-Dec	0	2	0	0	0	0	0	0	0	1	0	1	2	2	0	0	2	2	A	1	0	0	0	0	0.6	2.1
23-Dec	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	2	1	0	0	0.3	1.7
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.0	0.1
25-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.0	0.3
26-Dec	0	0	0	0	0	0	0	0	0	0	0	1	1	1	A	0	0	0	0	0	0	0	0	0	0.2	0.5
27-Dec	0	1	3	0	0	0	0	0	0	0	0	1	1	A	1	0	0	0	0	0	0	0	0	0	0.3	2.7
28-Dec	1	0	0	0	0	0	0	0	0	0	0	0	1	A	1	0	0	0	0	0	0	0	0	0	0.2	1.3
29-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	2.7
30-Dec	0	0	0	0	0	0	0	0	0	0	1	A	3	2	1	1	0	0	0	0	0	0	0	0	0.3	2.7
31-Dec	0	0	0	0	0	0	0	0	0	0	A	2	4	3	2	1	0	0	0	0	0	0	5	3	1.0	5.4
	0	0	0	0	0	0	0	0	0	0	A	4	4	2	3	4	3	1	0	0	0	0	0	0	1.0	4.3
	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.8	0.9	0.9	0.8	0.6	0.3	0.2	0.0	0.1	0.1	0.7	0.3	0.2	Diurnal Average	
	1.3	1.7	2.7	5.1	0.5	0.6	0.1	0.2	0.4	1.1	3.8	4.2	4.2	2.8	4.3	3.4	2.9	1.8	0.3	0.5	1.7	18.1	5.4	3.0	Diurnal Maximum	

C - Calibration                      A - Automated Daily Zero Span

**Hourly Averages**

**Nitrogen Oxide (NO) - ppb**  
**Portable Rycroft - December 2017**



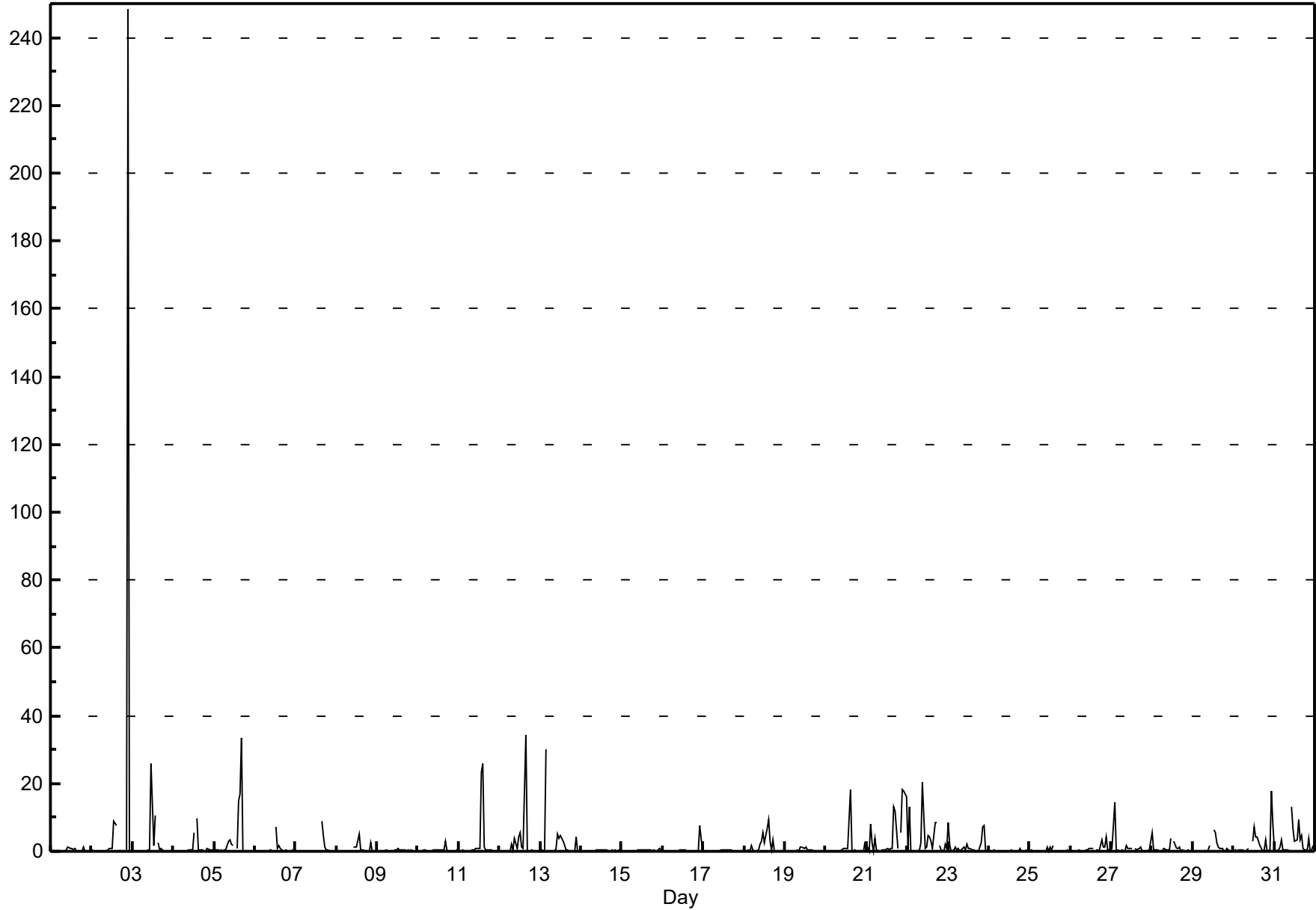
## Hourly Maximums

## Nitrogen Oxide (NO) - ppb Portable Rycroft - December 2017

Maximum Value: 248.2 ppb on Dec 2 22:00		Maximum Daily Average: 11.8 ppb on Dec 2		Hours in Service: 744																							
Minimum Value: 0 ppb on Dec 3 01:00		Minimum Daily Average: 0.2 ppb on Dec 17		Hours of Data: 708																							
Maximum Diurnal Average: 9.6 ppb at hour 22		Minimum Diurnal Average: 0.2 ppb at hour 7		Hours of Missing Data: 36																							
Monthly Average: 1.69 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.2 Median = 0.2 Q <sub>3</sub> = 0.7 P <sub>90</sub> = 3.2 P <sub>99</sub> = 21.7		Hours of Calibration: 36																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	A	0	0	1	0	0	0	0	0.4	1.3	
2-Dec	0	0	0	0	0	0	0	0	0	0	1	1	1	9	8	A	1	0	0	0	0	248	0	0	11.8	248.2	
3-Dec	0	0	0	0	0	0	0	0	0	0	1	26	2	10	A	2	0	1	0	0	0	0	0	0	2.0	26.0	
4-Dec	0	0	0	0	0	0	0	0	0	0	0	1	5	A	10	1	0	0	0	0	1	0	0	0	0.9	9.6	
5-Dec	0	0	0	0	0	0	0	0	3	3	2	2	A	1	15	17	33	0	0	0	0	0	0	0	3.4	33.4	
6-Dec	0	0	0	0	0	0	0	0	0	0	0	A	7	1	2	1	0	0	0	0	0	0	0	0	0.6	7.1	
7-Dec	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	9	5	1	0	0	0	0	0	0	0.9	9.1	
8-Dec	0	0	0	0	0	0	0	0	0	0	A	1	1	1	5	1	0	0	0	0	0	2	0	0	0.7	5.2	
9-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.2	1.0	
10-Dec	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0.3	3.0	
11-Dec	0	0	0	0	0	0	A	0	0	0	1	1	1	23	26	1	0	0	0	0	0	0	0	0	2.4	25.8	
12-Dec	0	0	0	0	0	A	0	2	1	4	1	4	6	1	1	34	0	0	0	0	0	0	0	0	2.4	34.2	
13-Dec	0	0	0	30	A	0	0	0	0	1	5	4	5	3	2	0	0	0	0	0	0	4	0	0	2.5	30.2	
14-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
15-Dec	0	0	A	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	1	0	0.3	0.8	
16-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0.5	7.6	
17-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.2	0.4	
18-Dec	0	0	0	0	2	0	0	0	0	2	3	5	3	7	9	3	0	4	0	0	0	0	A	0	1.8	9.5	
19-Dec	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	1	0	0	0	0	A	0	0	0.4	1.4	
20-Dec	0	0	0	0	0	0	0	0	0	0	1	1	1	1	18	1	0	0	0	0	A	0	0	2	1.2	18.4	
21-Dec	2	0	8	2	0	4	0	0	0	1	0	0	1	1	1	1	13	12	1	A	6	18	18	16	4.6	18.1	
22-Dec	0	13	0	0	0	0	0	0	3	20	1	1	5	4	3	1	8	8	A	2	0	0	2	1	3.2	20.5	
23-Dec	9	2	0	0	1	0	1	0	1	1	0	2	1	1	0	0	0	A	0	2	7	8	0	0	1.7	8.6	
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	1	0	0	0	0	0	0.2	0.7	
25-Dec	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	A	0	0	0	0	0	0	1	0	0.3	1.9	
26-Dec	0	0	0	0	0	0	0	0	0	1	1	1	1	1	A	0	0	0	4	1	1	4	0	1	0.7	4.3	
27-Dec	1	8	14	0	0	0	0	0	0	2	1	1	1	A	1	1	1	1	0	0	0	0	3	1.5	14.4		
28-Dec	6	0	0	0	0	0	0	1	0	0	1	4	A	3	1	1	1	0	0	0	1	0	0	0	0.9	5.7	
29-Dec	0	0	0	0	0	0	0	0	0	0	2	A	6	5	2	1	1	1	0	0	1	0	0	0	0.9	6.3	
30-Dec	0	0	0	0	0	0	0	0	0	1	A	3	7	4	4	2	1	0	0	3	0	0	18	8	2.3	17.9	
31-Dec	1	0	0	1	3	0	0	0	0	A	13	7	3	3	9	3	5	1	0	0	4	0	0	2	2.5	13.2	
		0.8	0.9	0.9	1.3	0.4	0.3	0.2	0.3	0.4	1.4	1.4	2.4	2.2	3.1	4.2	2.9	2.7	1.1	0.4	0.5	0.9	9.6	1.7	1.2	Diurnal Average	
		8.6	12.9	14.4	30.2	3.3	4.0	0.7	2.2	2.8	20.5	13.2	26.0	7.2	23.2	25.8	34.2	33.4	11.7	3.6	3.2	7.3	248.2	17.9	16.2	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

**Hourly Maximums**

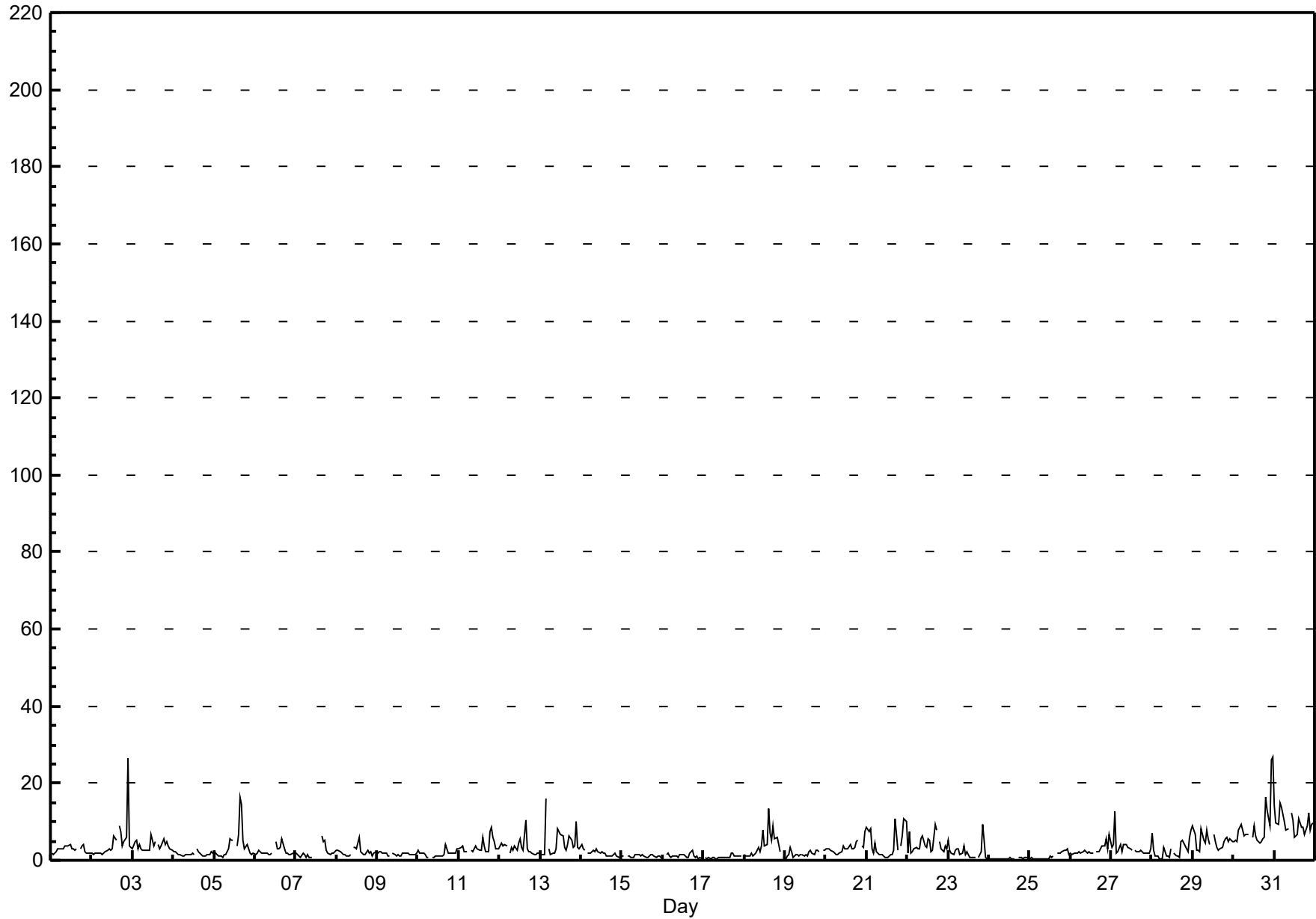
**Nitrogen Oxide (NO) - ppb**  
**Portable Rycroft - December 2017**



## Hourly Averages

## Oxides of Nitrogen (NO<sub>x</sub>) - ppb Portable Rycroft - December 2017

Maximum Value: 26.7 ppb on Dec 31 00:00		Maximum Daily Average: 9.9 ppb on Dec 31		Hours in Service: 744																							
Minimum Value: 0 ppb on Dec 25 08:00		Minimum Daily Average: 0.5 ppb on Dec 24		Hours of Data: 708																							
Maximum Diurnal Average: 3.9 ppb at hour 24		Minimum Diurnal Average: 2.1 ppb at hour 7		Hours of Missing Data: 36																							
Monthly Average: 3.13 ppb		Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.8 Q <sub>1</sub> = 1.4 Median = 2.2 Q <sub>3</sub> = 3.7 P <sub>90</sub> = 6.7 P <sub>99</sub> = 14.4		Hours of Calibration: 36																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	2	1	2	2	3	3	3	3	4	4	4	4	3	3	3	3	A	3	4	4	2	2	2	2	2.8	4.0	
2-Dec	2	1	2	2	2	2	2	2	2	2	3	3	3	6	5	A	9	7	4	5	6	26	4	3	4.5	26.4	
3-Dec	3	5	5	3	4	3	3	3	3	3	3	7	4	5	A	4	3	4	6	4	5	4	3	3	3.7	6.7	
4-Dec	2	2	2	2	1	1	1	2	2	2	2	2	A	3	2	2	1	1	1	1	2	2	2	1.7	3.0		
5-Dec	2	2	1	1	1	1	1	2	3	6	5	5	A	4	7	17	15	5	3	4	3	2	2	2	4.0	16.6	
6-Dec	2	2	2	2	2	2	2	2	1	1	2	A	5	3	3	3	6	3	2	2	1	2	2	2	2.3	5.7	
7-Dec	2	2	1	1	2	1	1	2	1	1	C	C	C	C	C	6	5	5	3	2	2	2	2	2	2.2	6.4	
8-Dec	3	3	2	2	2	1	1	1	1	1	A	A	3	3	3	6	2	2	1	2	3	2	2	1	2	2.2	6.1
9-Dec	2	2	2	2	2	2	1	1	1	A	2	1	1	2	1	1	2	2	2	2	2	2	1	2	1.6	2.2	
10-Dec	2	2	2	2	2	1	1	A	1	1	1	1	1	1	1	1	4	3	2	2	2	2	2	3	1.7	3.9	
11-Dec	3	4	4	2	2	2	A	2	2	3	4	3	3	3	6	4	2	2	7	9	6	5	3	3	3.6	8.6	
12-Dec	4	4	4	4	4	A	2	3	3	4	3	4	6	3	3	11	3	2	2	2	2	2	2	2	3.3	10.6	
13-Dec	2	2	2	16	A	3	2	2	2	3	8	7	7	6	3	3	4	6	5	3	4	10	3	3	4.6	16.1	
14-Dec	4	3	3	A	2	2	2	3	2	3	2	2	2	2	2	1	1	1	1	1	2	1	1	1	1.9	4.2	
15-Dec	1	1	A	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	2	1	1	1	1	1	1.1	1.6	
16-Dec	1	A	1	2	1	1	1	1	1	1	2	2	2	1	1	1	2	3	1	1	1	0	1	0	1.1	2.5	
17-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	A	0.9	1.9	
18-Dec	1	1	1	1	2	1	2	2	3	2	4	8	4	4	13	7	5	9	6	6	4	2	A	1	3.9	13.3	
19-Dec	1	1	2	3	2	1	2	1	1	1	1	2	1	2	3	2	2	2	2	2	2	A	3	3	1.8	3.3	
20-Dec	3	3	3	3	2	2	1	1	2	2	4	3	3	3	4	3	3	3	5	5	A	4	3	7	3.2	7.3	
21-Dec	9	8	8	3	2	5	2	1	1	1	1	1	1	2	2	3	11	2	A	4	6	11	10	4.1	10.9		
22-Dec	2	7	2	2	3	4	3	3	6	6	4	3	6	5	2	3	10	8	A	5	3	2	4	3	4.1	9.5	
23-Dec	5	2	2	2	3	3	3	2	2	4	1	2	1	1	1	1	1	A	1	2	9	5	1	0	2.3	9.2	
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	A	1	1	1	1	1	0	0.5	0.8	
25-Dec	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	A	2	2	2	2	2	3	3	2	1.1	3.1	
26-Dec	2	2	2	2	2	2	2	2	3	2	2	2	2	2	A	2	2	2	4	4	4	6	3	7	2.7	6.9	
27-Dec	3	4	13	2	2	4	2	4	4	4	3	3	3	A	3	2	2	3	2	2	2	2	3	3	3.3	12.8	
28-Dec	7	3	1	1	0	0	0	3	1	1	1	3	A	2	1	1	1	5	5	4	3	2	6	8	2.6	7.8	
29-Dec	9	7	2	2	2	8	5	5	8	6	4	A	7	5	3	3	3	3	5	5	6	5	6	5	4.9	8.9	
30-Dec	5	5	5	8	9	8	6	7	7	7	A	6	9	6	5	5	5	6	6	16	13	9	26	27	8.9	26.7	
31-Dec	14	10	9	15	14	12	10	8	8	A	12	11	6	7	11	10	8	9	7	9	12	8	9	10	9.9	15.0	
		3.3	3.0	2.9	3.0	2.5	2.5	2.1	2.3	2.6	2.5	2.9	3.2	3.1	3.0	3.3	3.5	3.7	3.8	3.2	3.6	3.6	3.9	3.7	3.9	Diurnal Average	
		14.3	9.9	12.8	16.1	13.7	11.9	10.1	8.0	8.0	6.6	12.4	10.6	9.0	6.8	13.3	16.6	14.5	10.7	7.4	16.3	13.0	26.4	26.2	26.7	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									





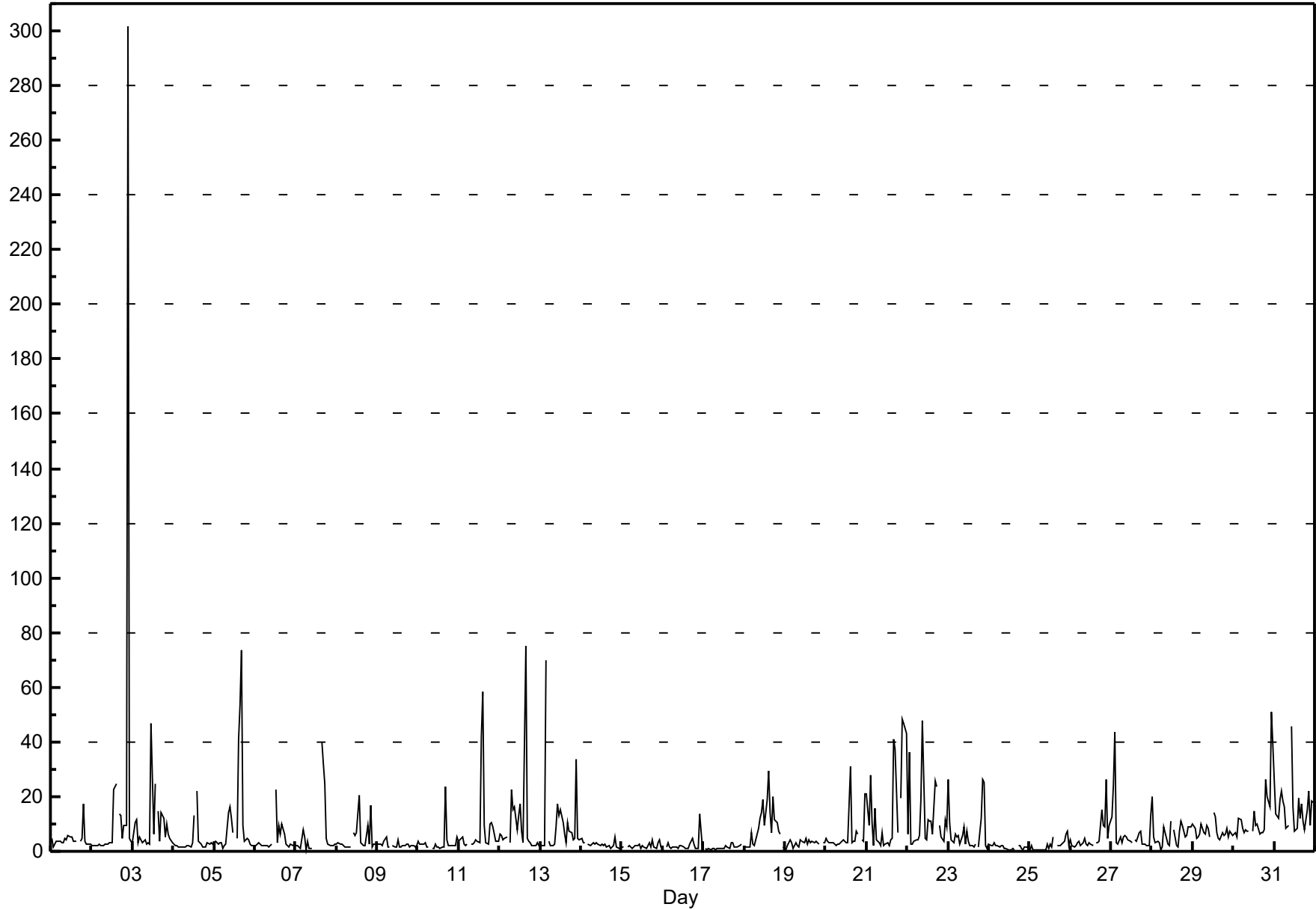
## Hourly Maximums

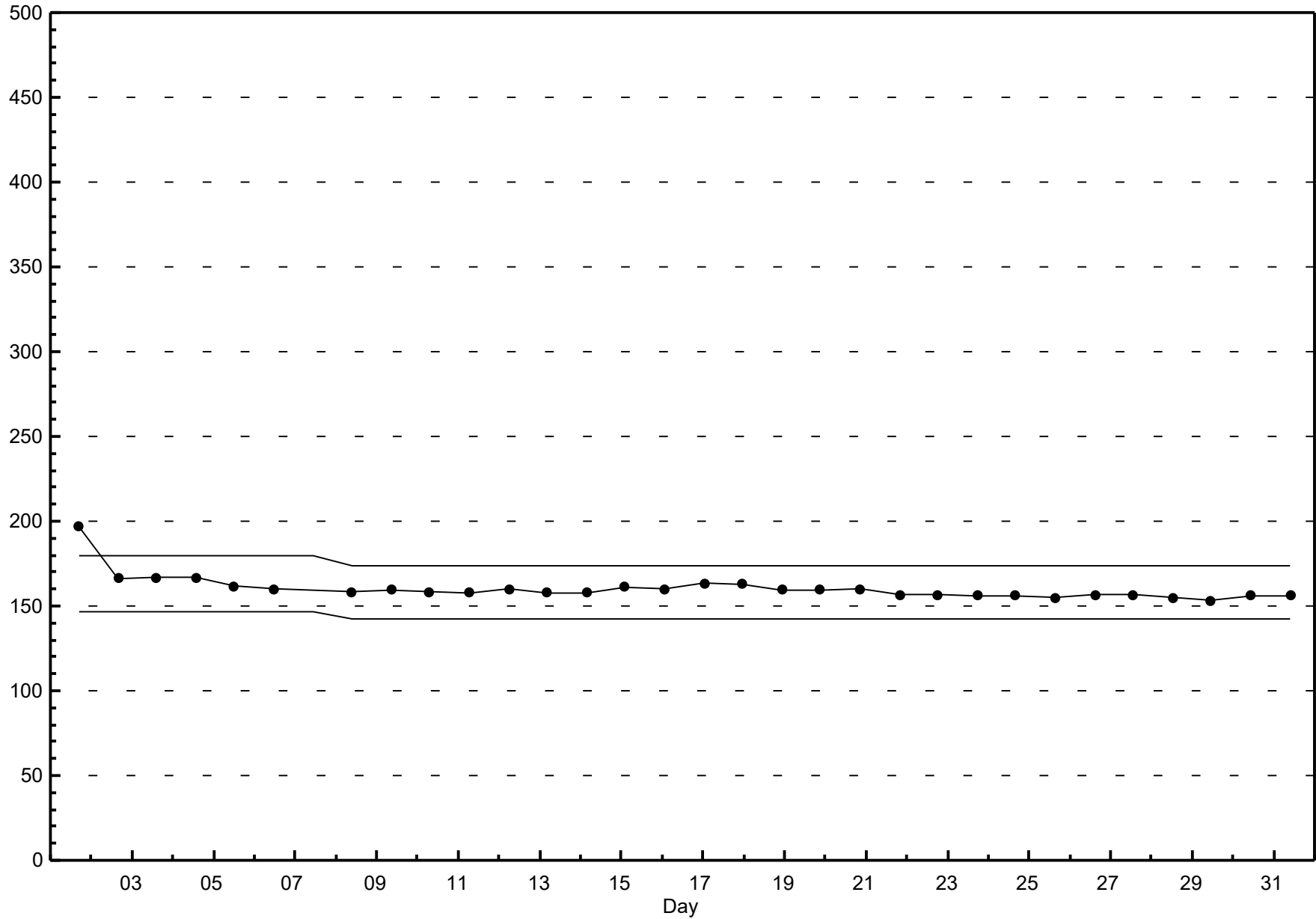
## Oxides of Nitrogen (NO<sub>x</sub>) - ppb Portable Rycroft - December 2017

Maximum Value: 301.7 ppb on Dec 2 22:00		Maximum Daily Average: 19.1 ppb on Dec 2		Hours in Service: 744																																													
Minimum Value: 0 ppb on Dec 25 08:00		Minimum Daily Average: 1.4 ppb on Dec 17		Hours of Data: 708																																													
Maximum Diurnal Average: 18.0 ppb at hour 22		Minimum Diurnal Average: 3.0 ppb at hour 7		Hours of Missing Data: 36																																													
Monthly Average: 7.05 ppb		Percentiles: P <sub>1</sub> = 0.6 P <sub>10</sub> = 1.4 Q <sub>1</sub> = 2.1 Median = 3.2 Q <sub>3</sub> = 7.0 P <sub>90</sub> = 15.9 P <sub>99</sub> = 49.4		Hours of Calibration: 36																																													
Percent Operational Time: 100.0																																																	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Dec	5	2	2	4	4	3	3	3	5	4	6	5	5	4	3	4	A	3	5	17	4	2	3	3	4.3	17.1																							
2-Dec	2	2	2	2	3	2	2	2	2	3	3	3	3	22	25	A	14	13	5	9	9	302	5	4	19.1	301.7																							
3-Dec	3	10	11	3	5	4	3	4	3	3	3	47	6	25	A	15	3	14	12	5	10	6	4	3	8.9	46.6																							
4-Dec	3	2	2	2	2	1	2	2	2	2	2	3	13	A	22	4	3	2	2	2	3	3	3	3	3.6	21.8																							
5-Dec	3	4	3	3	3	1	2	3	14	16	12	7	A	5	41	53	73	9	4	5	4	2	2	2	11.9	73.4																							
6-Dec	2	3	3	3	2	2	2	2	2	2	3	A	23	3	10	6	10	6	2	2	2	3	2	2	4.2	22.8																							
7-Dec	2	2	1	1	8	5	1	4	1	1	C	C	C	C	C	40	32	25	5	2	2	2	2	3	7.3	40.2																							
8-Dec	3	3	3	3	2	2	1	2	A	A	7	6	7	21	3	2	2	2	9	3	17	1	2	3	4.6	20.7																							
9-Dec	2	2	3	2	4	5	1	1	A	A	2	2	2	4	2	2	2	2	2	2	2	2	2	2	2.3	5.3																							
10-Dec	4	3	3	2	3	2	2	A	A	1	1	3	2	2	1	1	2	24	4	2	2	2	2	5	3.2	23.8																							
11-Dec	4	5	5	3	2	3	A	3	3	3	4	4	3	42	58	10	3	2	10	11	9	6	4	4	8.7	58.4																							
12-Dec	6	6	4	5	5	A	3	22	15	16	8	13	17	7	3	75	5	4	3	2	2	2	3	2	10.0	74.9																							
13-Dec	2	2	2	70	A	4	2	2	2	9	17	13	15	11	6	3	11	7	7	4	5	34	5	4	10.3	70.0																							
14-Dec	5	3	3	A	2	2	2	3	3	3	3	2	3	2	3	2	2	1	2	2	5	1	1	1	2.5	5.4																							
15-Dec	2	2	A	2	2	1	1	1	2	2	3	1	2	2	1	2	3	2	4	1	1	3	4	2	2.0	4.3																							
16-Dec	1	A	2	3	2	1	2	2	1	1	2	2	2	1	1	1	3	5	3	1	1	1	13	1	2.2	13.4																							
17-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	3	3	2	1	1	2	3	A	1.4	3.0																							
18-Dec	2	2	1	1	7	3	2	4	9	12	14	19	9	19	29	14	7	20	11	10	7	6	A	1	9.2	29.2																							
19-Dec	1	2	3	4	3	1	3	2	1	4	4	3	5	3	4	3	4	3	4	3	3	A	3	3	3.0	4.9																							
20-Dec	5	4	3	3	3	2	2	3	3	3	4	4	3	3	31	3	3	4	7	6	A	4	4	21	5.6	31.1																							
21-Dec	21	10	28	11	2	16	4	3	2	7	2	3	3	2	4	5	41	37	7	A	20	48	47	43	15.9	48.5																							
22-Dec	6	36	2	3	4	4	4	6	19	48	5	4	12	11	11	6	25	24	A	9	5	4	12	9	11.7	47.7																							
23-Dec	26	10	4	3	6	5	6	2	6	9	3	7	4	2	2	1	3	A	1	12	26	25	2	1	7.3	26.4																							
24-Dec	2	2	2	3	2	2	2	2	2	1	1	1	1	1	1	1	A	2	2	1	1	2	1	1	1.5	3.0																							
25-Dec	1	2	1	0	1	1	0	0	1	1	3	1	2	2	5	A	2	2	2	3	4	6	8	2	2.2	7.5																							
26-Dec	4	2	2	2	3	4	2	3	5	3	2	3	3	2	A	3	3	4	15	10	9	26	5	10	5.4	26.2																							
27-Dec	12	24	43	3	3	5	3	5	6	5	4	4	3	A	4	4	7	7	3	3	3	2	2	13	7.4	43.4																							
28-Dec	20	5	3	4	3	1	2	9	5	3	2	11	A	8	2	2	7	11	9	5	6	9	9	9	6.2	20.0																							
29-Dec	10	8	5	5	6	10	7	6	10	8	5	A	14	13	7	5	4	7	6	6	8	5	7	6	7.3	14.1																							
30-Dec	6	7	5	12	11	8	7	8	7	7	A	7	15	9	10	6	7	7	8	26	20	16	51	39	13.1	50.8																							
31-Dec	26	14	12	19	22	18	16	9	9	A	46	16	7	8	20	12	17	11	8	15	22	10	19	18	16.3	45.9																							
6.4		6.0		5.5		6.0		4.2		4.0		3.0		3.9		4.7		6.3		6.0		6.9		6.7		8.3		11.1		9.9		11.1		8.1		5.4		6.1		7.1		18.0		7.6		7.3		Diurnal Average	
26.2		36.4		43.4		70.0		22.0		18.3		16.2		22.5		19.0		47.7		45.9		46.6		22.8		42.3		58.4		74.9		73.4		37.3		15.0		26.1		26.4		301.7		50.8		43.0		Diurnal Maximum	
C - Calibration																								A - Automated Daily Zero Span																									

**Hourly Maximums**

**Oxides of Nitrogen (NO<sub>x</sub>) - ppb**  
**Portable Rycroft - December 2017**





## Hourly Averages

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

Portable Rycroft - December 2017

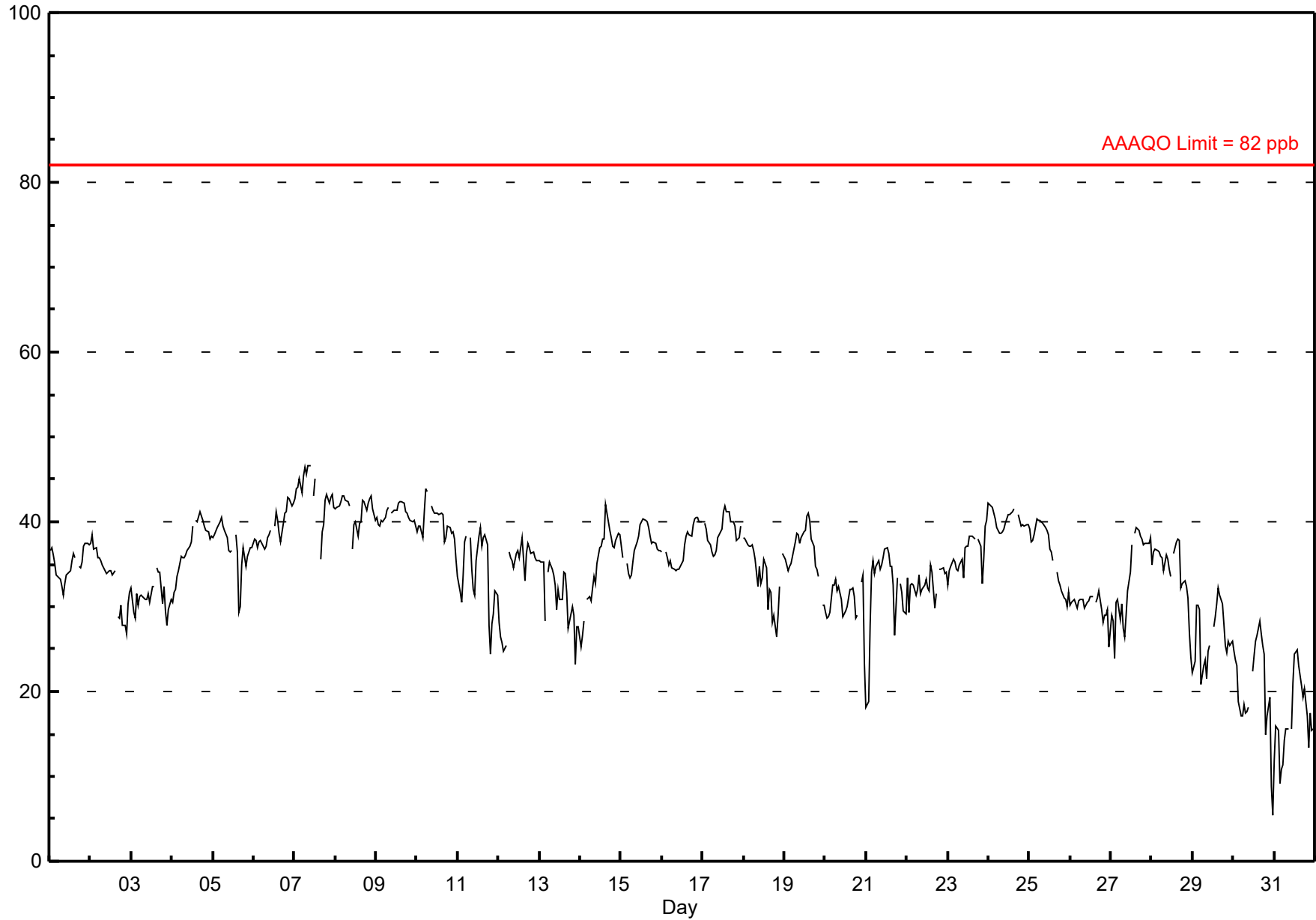
Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 46.7 ppb on Dec 7 09:00	Maximum Daily Average: 43.2 ppb on Dec 7		Hours of Data:	710
Minimum Value: 5 ppb on Dec 31 00:00	Minimum Daily Average: 17.0 ppb on Dec 31		Hours of Missing Data:	34
Maximum Diurnal Average: 36.5 ppb at hour 15	Minimum Diurnal Average: 32.8 ppb at hour 24		Hours of Calibration:	34
Monthly Average: 34.33 ppb	Percentiles: P <sub>1</sub> = 14.0 P <sub>10</sub> = 26.5 Q <sub>1</sub> = 31.1 Median = 35.5 Q <sub>3</sub> = 38.7 P <sub>90</sub> = 41.0 P <sub>99</sub> = 45.1		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	37	37	36	35	34	33	33	32	31	33	34	34	34	35	36	36	A	35	35	35	37	37	37	37	35.0	37.5
2-Dec	37	38	37	37	36	36	35	35	35	34	34	34	34	34	34	A	29	29	30	28	28	27	30	32	33.2	38.5
3-Dec	32	29	29	31	30	31	31	31	31	31	32	30	32	32	A	35	34	34	30	32	29	28	30	31	31.2	34.5
4-Dec	31	32	32	34	34	36	36	36	36	37	37	38	40	A	40	40	41	41	40	39	39	39	38	38	37.1	41.2
5-Dec	38	38	39	40	40	41	39	39	38	37	36	37	A	38	36	29	30	35	37	35	36	36	37	37	37.0	40.5
6-Dec	38	38	37	38	38	37	37	37	38	39	39	A	40	41	40	39	38	40	41	41	43	43	42	42	39.3	42.9
7-Dec	43	44	44	45	43	45	46	46	47	47	A	43	45	C	C	36	39	40	43	43	42	43	43	42	43.2	46.7
8-Dec	42	42	42	42	43	43	42	42	42	A	37	40	40	38	40	40	43	42	41	42	43	43	42	40	41.4	43.1
9-Dec	40	40	39	40	40	41	41	42	A	41	41	41	41	42	42	42	42	41	41	41	40	40	40	40	40.9	42.4
10-Dec	39	40	39	38	41	44	44	A	42	41	41	41	41	41	41	41	38	38	40	39	39	39	38	36	39.9	43.9
11-Dec	34	32	30	34	38	38	A	38	34	32	31	35	38	39	37	38	39	37	28	24	28	29	32	31	33.8	39.3
12-Dec	28	26	26	25	25	A	36	36	35	35	36	37	36	37	38	33	36	37	37	36	36	36	35	35	33.9	38.2
13-Dec	35	35	35	28	A	34	35	34	34	33	30	32	31	31	34	34	32	27	29	30	29	23	28	28	31.4	35.3
14-Dec	25	27	28	A	31	31	31	32	33	33	35	37	37	38	38	42	40	39	38	37	37	38	39	38	35.0	42.0
15-Dec	37	36	A	35	34	33	34	35	37	38	38	40	40	40	40	40	39	38	38	38	37	37	37	37	37.3	40.3
16-Dec	36	A	36	36	35	35	35	34	34	34	34	35	35	37	38	39	39	38	40	40	40	40	40	40	37.1	40.5
17-Dec	A	40	39	38	37	36	36	36	37	38	39	39	41	42	41	41	40	40	40	39	38	38	40	A	38.9	41.9
18-Dec	38	38	37	37	37	37	37	36	32	35	33	33	36	35	30	32	32	28	29	27	29	32	A	36	33.7	38.2
19-Dec	36	35	34	35	35	36	38	39	38	38	38	39	39	41	41	40	38	37	35	34	33	A	30	30	36.4	41.0
20-Dec	29	29	29	29	33	33	33	32	32	31	29	29	30	30	32	32	32	31	29	29	A	33	34	23	30.5	33.7
21-Dec	18	19	28	34	35	34	35	35	34	35	36	37	37	36	35	35	33	27	33	A	33	32	30	29	32.1	37.0
22-Dec	33	29	33	33	32	31	32	34	31	32	33	33	32	32	35	34	30	32	A	34	34	35	34	34	32.7	35.0
23-Dec	32	34	35	36	35	34	34	35	36	33	37	37	37	38	38	38	38	A	38	37	33	36	39	40	36.2	40.2
24-Dec	42	42	42	41	40	39	39	39	39	39	40	41	41	41	41	41	A	41	40	39	40	40	40	40	40.2	42.2
25-Dec	39	38	38	39	40	40	40	40	40	39	39	38	37	36	35	A	34	33	33	32	31	31	30	32	36.3	40.3
26-Dec	30	31	31	30	30	31	31	31	30	30	30	31	31	31	A	30	31	32	30	28	29	29	30	25	30.1	31.8
27-Dec	29	28	24	30	31	29	30	28	27	29	32	34	37	A	39	39	39	38	38	37	38	37	38	38	33.4	39.3
28-Dec	35	36	37	37	36	36	36	34	36	36	34	34	A	36	38	38	38	32	33	33	32	31	27	24	34.3	37.9
29-Dec	22	24	30	30	30	21	23	24	22	25	25	A	28	29	30	32	31	30	28	25	25	26	25	26	26.6	32.1
30-Dec	25	24	23	19	17	17	18	17	18	18	A	22	24	26	27	28	27	25	24	15	17	19	9	5	20.3	28.3
31-Dec	12	16	15	9	11	11	14	16	16	A	16	21	24	25	23	22	21	19	20	17	13	17	15	16	17.0	24.9
	33.1	33.2	33.5	33.8	34.1	34.2	34.4	34.1	33.8	34.5	34.4	35.3	35.8	35.8	36.5	36.1	35.2	34.6	34.5	33.7	33.6	33.8	33.6	32.8	Diurnal Average	
	42.7	43.9	44.1	45.1	43.4	45.4	46.4	45.6	46.7	46.6	41.4	43.0	45.1	42.2	42.4	42.4	42.6	42.3	42.6	43.2	42.9	43.1	43.2	42.2	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 (O<sub>3</sub>) - ppb  
Portable Rycroft - December 2017



## Hourly Maximums

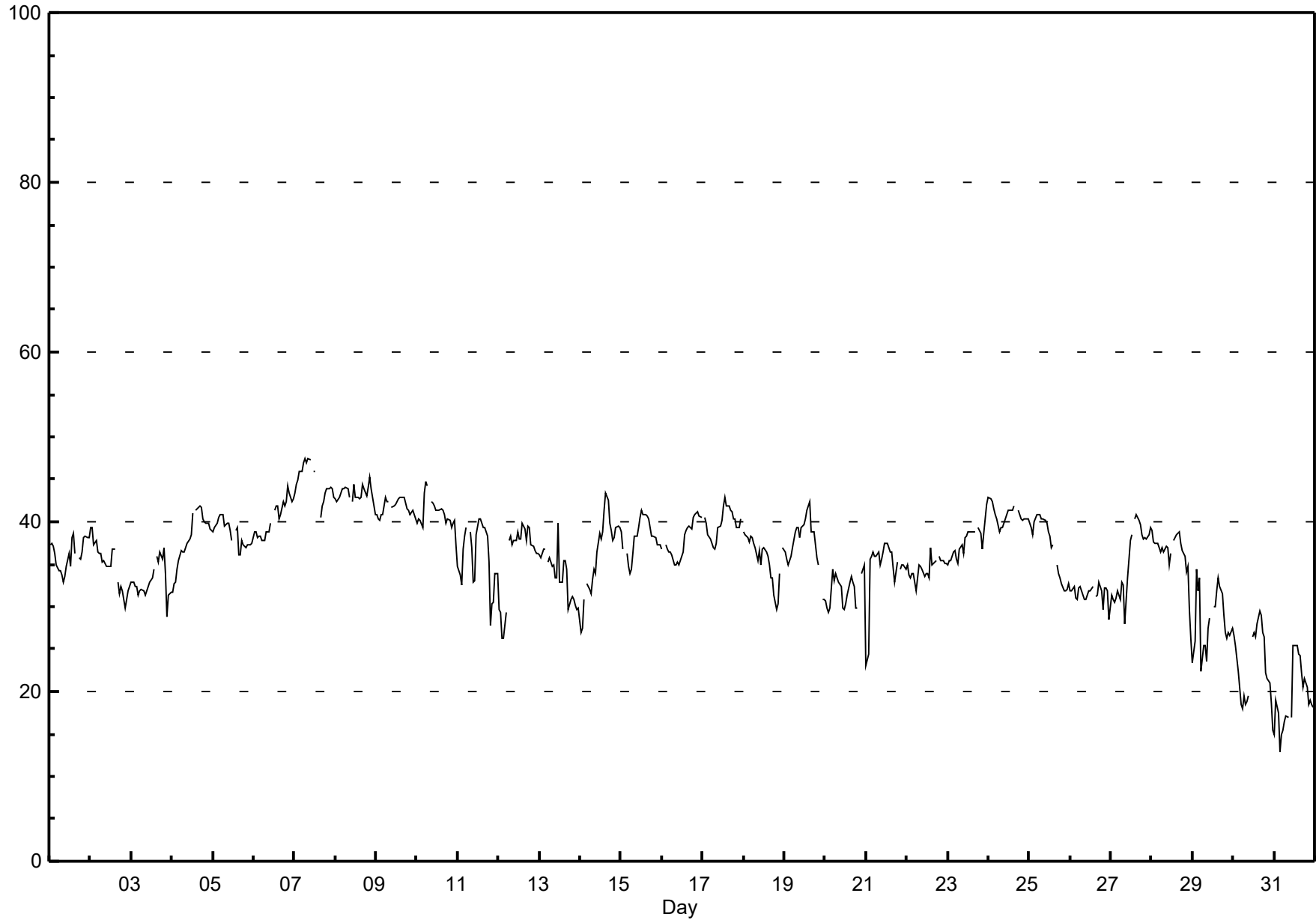
Ozone (O<sub>3</sub>) - ppb

### Portable Rycroft - December 2017

Maximum Value: 47.5 ppb on Dec 7 09:00		Maximum Daily Average: 44.8 ppb on Dec 7		Hours in Service: 744																							
Minimum Value: 13 ppb on Dec 31 04:00		Minimum Daily Average: 19.4 ppb on Dec 31		Hours of Data: 710																							
Maximum Diurnal Average: 38.1 ppb at hour 15		Minimum Diurnal Average: 34.6 ppb at hour 1		Hours of Missing Data: 34																							
Monthly Average: 35.88 ppb		Percentiles: P <sub>1</sub> = 16.9 P <sub>10</sub> = 29.3 Q <sub>1</sub> = 32.9 Median = 36.9 Q <sub>3</sub> = 39.9 P <sub>90</sub> = 41.9 P <sub>99</sub> = 46.0		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-Dec	37	37	37	36	35	34	34	34	33	33	35	36	35	38	39	36	A	36	36	36	38	38	38	38	36.2	38.6	
2-Dec	39	39	37	38	36	36	36	35	35	35	35	35	35	37	37	A	33	31	32	32	30	31	32	32	34.8	39.3	
3-Dec	33	33	32	32	31	32	32	32	31	32	32	33	33	34	A	36	35	36	36	37	34	29	31	32	33.0	37.0	
4-Dec	32	33	33	34	35	37	36	36	37	37	38	38	41	A	41	42	42	42	40	40	40	40	39	39	38.0	41.9	
5-Dec	39	39	40	41	41	41	41	40	40	40	39	38	A	39	39	36	36	38	37	37	37	37	37	37	38.7	40.9	
6-Dec	39	39	38	38	38	38	38	39	39	39	40	A	41	42	42	40	41	42	42	42	44	43	42	43	40.5	44.2	
7-Dec	43	44	45	46	46	47	47	47	47	47	A	46	46	C	C	40	42	42	42	43	44	44	44	43	44.8	47.5	
8-Dec	43	42	43	43	44	44	44	44	43	A	42	44	43	43	43	43	44	44	43	44	45	44	43	41	43.3	45.3	
9-Dec	41	40	40	41	41	43	42	42	A	42	42	42	42	43	43	43	43	42	41	41	41	41	41	40	41.6	42.8	
10-Dec	40	40	40	39	43	45	44	A	42	42	42	41	41	41	41	41	41	40	40	40	39	40	40	37	41.0	44.8	
11-Dec	35	34	33	37	38	39	A	39	37	33	33	38	40	40	40	39	39	38	35	28	30	30	34	34	35.9	40.3	
12-Dec	30	29	26	26	29	A	38	38	37	38	38	39	38	38	40	39	38	40	39	37	37	37	36	36	35.8	39.8	
13-Dec	36	36	37	37	A	35	36	35	35	33	33	40	33	33	35	35	34	30	31	31	31	30	30	30	33.7	39.8	
14-Dec	27	27	31	A	33	32	32	33	34	34	36	39	38	39	41	43	43	40	39	38	38	39	40	39	36.3	43.4	
15-Dec	39	37	A	36	35	34	34	36	38	38	39	40	41	41	41	41	40	39	38	38	38	37	37	37	38.2	41.3	
16-Dec	37	A	37	37	36	36	36	35	35	35	35	35	36	38	39	39	39	39	40	41	41	41	41	40	37.9	41.1	
17-Dec	A	40	40	38	38	37	37	37	37	39	39	40	42	43	42	42	41	41	40	40	39	39	40	A	39.8	42.8	
18-Dec	39	39	38	38	38	38	37	37	35	37	35	37	36	36	35	33	33	33	31	30	30	34	A	37	35.7	38.9	
19-Dec	36	36	35	35	36	37	39	39	39	38	39	40	41	42	42	39	39	37	36	35	A	31	31	31	37.5	42.4	
20-Dec	31	30	29	30	34	33	34	33	33	32	30	30	30	31	33	34	33	32	30	30	A	34	34	35	32.0	34.9	
21-Dec	23	24	36	36	36	36	36	36	35	36	36	37	37	37	36	36	35	33	35	A	34	35	35	34	34.6	37.4	
22-Dec	35	34	33	34	34	32	33	35	35	34	34	34	34	33	37	35	35	35	A	36	35	35	35	35	34.5	36.9	
23-Dec	35	35	35	36	37	36	35	37	37	36	38	38	39	39	39	39	39	A	39	39	37	39	40	42	37.7	42.0	
24-Dec	43	43	42	42	41	40	39	39	39	40	40	41	41	41	41	42	A	41	41	40	40	40	40	40	40.9	42.8	
25-Dec	40	39	38	40	41	41	41	40	40	40	40	39	38	37	37	A	35	34	33	33	32	32	32	33	37.2	40.9	
26-Dec	32	32	32	31	31	32	32	31	31	31	31	32	32	32	A	31	31	33	32	30	32	32	32	29	31.5	32.9	
27-Dec	31	31	30	31	32	31	33	33	28	31	33	38	38	A	40	41	40	40	38	38	38	38	38	39	35.3	40.9	
28-Dec	39	38	37	37	36	37	36	37	36	37	35	36	A	38	39	39	39	37	37	36	34	35	30	26	36.2	38.9	
29-Dec	23	26	34	32	33	22	25	25	24	27	29	A	30	30	32	33	32	31	29	27	26	27	27	27	28.4	34.4	
30-Dec	27	25	24	22	18	18	19	18	19	19	A	26	27	26	28	29	29	27	26	22	21	21	19	15	23.0	29.5	
31-Dec	15	19	17	13	15	15	16	17	17	A	17	25	25	25	24	24	22	20	21	20	18	19	19	18	19.4	25.5	
		34.6	34.7	35.1	35.3	35.5	35.3	35.5	35.4	35.1	35.8	35.8	37.2	37.1	37.1	38.1	37.8	37.1	36.6	36.2	35.5	35.4	35.4	35.3	34.7	Diurnal Average	
		43.4	44.4	45.0	45.9	46.9	47.4	47.0	47.5	47.3	42.4	46.0	46.0	42.9	42.8	43.4	44.4	43.9	43.5	44.1	45.3	44.1	43.9	42.9	42.9	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

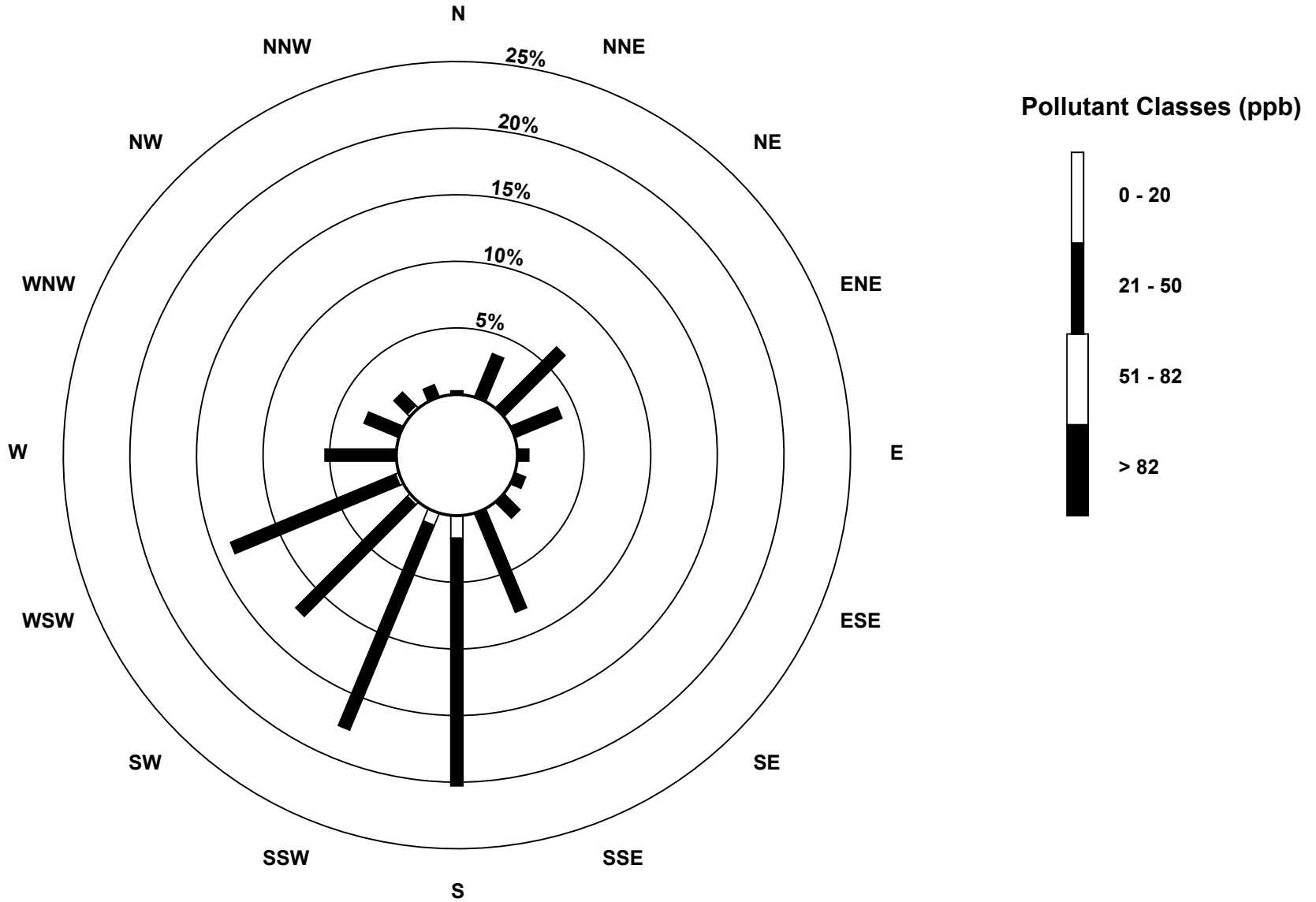
**Hourly Maximums**

**Ozone (O<sub>3</sub>) - ppb**  
**Portable Rycroft - December 2017**



### Pollutant Rose

Ozone (O<sub>3</sub>) - ppb  
Portable Rycroft - December 2017





# Eight Hour Running Averages

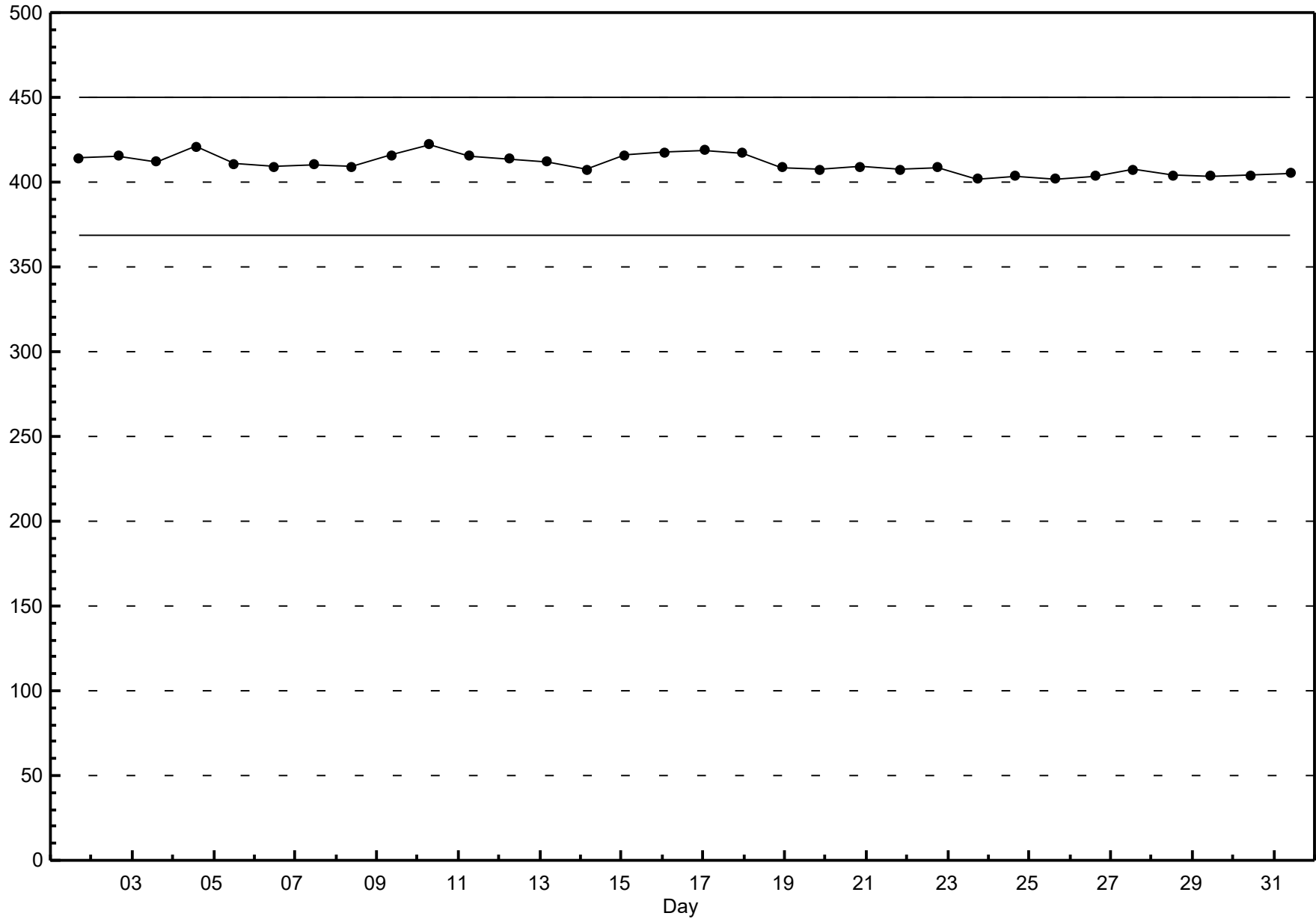
Ozone (O<sub>3</sub>) - ppb

Portable Rycroft - December 2017

Maximum Value: 45.6 ppb on Dec 7 11:00																					Hours in Service:	744			
Minimum Value: 11.1 ppb on Dec 31 06:00																					Hours of Data:	740			
Percentiles: P <sub>1</sub> = 13.5 P <sub>10</sub> = 27.9 Q <sub>1</sub> = 31.1 Median = 35.4 Q <sub>3</sub> = 38.7 P <sub>90</sub> = 40.6 P <sub>99</sub> = 44.1																					Hours of Missing Data:	4			
																					Hours of Calibration:	4			
																					Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Dec	38	38	38	37	36	36	35	35	34	34	33	33	33	33	34	34	35	35	35	35	36	36	36	36	38.3
2-Dec	36	37	37	37	37	37	37	36	36	36	35	35	35	34	34	34	33	33	32	31	30	29	29	29	37.4
3-Dec	29	30	29	30	30	31	31	31	30	31	31	31	31	31	31	32	32	33	33	33	32	32	32	31	32.9
4-Dec	31	30	31	31	31	32	33	34	34	35	36	36	37	37	38	38	39	39	40	40	40	40	40	39	40.2
5-Dec	39	39	39	39	39	39	39	39	39	39	39	38	38	38	37	36	35	35	35	34	35	34	34	35	39.3
6-Dec	36	37	37	37	37	37	37	37	37	38	38	38	38	39	39	39	39	39	40	40	40	41	41	41	41.1
7-Dec	42	42	43	43	43	44	44	45	45	45	46	46	46	N	N	N	N	41	41	40	41	41	41	42	45.6
8-Dec	42	42	42	42	42	42	42	42	42	42	41	41	41	40	40	40	40	41	41	41	41	42	42	42	42.5
9-Dec	42	41	41	41	41	40	40	40	40	41	41	41	41	41	42	42	42	42	42	42	42	41	41	41	41.8
10-Dec	40	40	40	39	40	40	40	41	41	41	42	42	42	42	41	41	41	40	40	40	39	39	39	38	42.0
11-Dec	38	37	36	35	35	35	34	35	35	35	35	35	36	36	36	36	37	36	35	34	33	32	31	31	37.7
12-Dec	30	28	28	28	28	28	28	29	30	31	33	34	36	36	36	36	36	36	36	36	36	36	36	36	36.4
13-Dec	36	36	36	35	34	34	34	34	34	33	33	33	33	32	32	32	32	31	31	31	31	30	29	28	36.1
14-Dec	27	27	27	27	27	28	29	29	30	31	32	33	34	35	35	37	37	38	39	39	39	39	39	38	38.7
15-Dec	38	38	37	37	37	36	35	35	35	35	35	36	37	38	38	39	39	39	39	39	39	38	38	38	39.5
16-Dec	37	37	37	37	36	36	36	35	35	35	35	35	35	35	36	37	37	38	38	39	39	40	40	40	39.7
17-Dec	40	40	40	40	39	39	38	37	37	37	37	37	38	38	39	40	40	40	41	41	40	40	40	39	40.6
18-Dec	39	39	38	38	38	38	37	37	36	36	35	35	34	34	33	33	32	32	31	30	30	30	30	30	39.0
19-Dec	31	32	33	34	35	35	36	36	36	36	37	37	38	39	39	39	39	39	39	38	37	37	35	34	39.2
20-Dec	33	32	31	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	32.8
21-Dec	28	26	26	27	28	28	28	30	32	34	35	35	35	36	36	36	35	34	34	34	33	32	32	31	35.7
22-Dec	31	31	31	31	31	31	32	32	32	32	32	32	32	32	33	33	33	33	33	33	33	33	33	33	33.4
23-Dec	34	34	34	34	34	34	34	34	34	35	35	35	35	36	36	37	37	38	38	38	37	37	37	37	37.9
24-Dec	38	38	39	39	40	41	41	40	40	40	39	39	39	40	40	41	41	41	41	41	40	40	40	40	40.9
25-Dec	40	39	39	39	39	39	39	39	39	40	40	39	39	38	38	37	36	35	34	34	34	33	32	32	39.8
26-Dec	31	31	31	31	31	31	31	31	30	30	30	30	31	31	31	31	31	31	30	30	30	30	29	29	31.4
27-Dec	29	28	28	28	28	28	28	29	28	28	29	30	31	31	32	34	36	37	38	38	38	38	38	38	38.3
28-Dec	37	37	37	37	37	37	36	36	36	36	35	35	35	35	36	36	36	36	35	35	35	34	33	31	37.4
29-Dec	29	28	28	28	27	26	25	25	25	25	24	24	25	26	27	29	29	29	30	29	29	28	27	27	29.8
30-Dec	26	25	25	24	23	22	21	20	19	18	18	18	19	21	22	23	25	26	26	25	24	23	21	18	26.3
31-Dec	16	15	14	13	12	11	12	13	14	13	13	15	17	19	20	21	22	21	22	21	20	19	18	17	22.0
<div style="display: flex; justify-content: space-between;"> <span>42.1</span><span>42.4</span><span>42.7</span><span>43.2</span><span>43.2</span><span>43.6</span><span>44.2</span><span>44.6</span><span>45.1</span><span>45.4</span><span>45.6</span><span>45.3</span><span>45.5</span><span>45.6</span><span>41.6</span><span>41.7</span><span>41.8</span><span>41.8</span><span>41.8</span><span>41.7</span><span>41.5</span><span>41.8</span><span>42.0</span><span>42.0</span> </div> <p style="text-align: center;">Diurnal Maximums</p>																									
N - Not Valid																									

### Span Responses

Ozone (O<sub>3</sub>)  
Portable Rycroft - December 2017



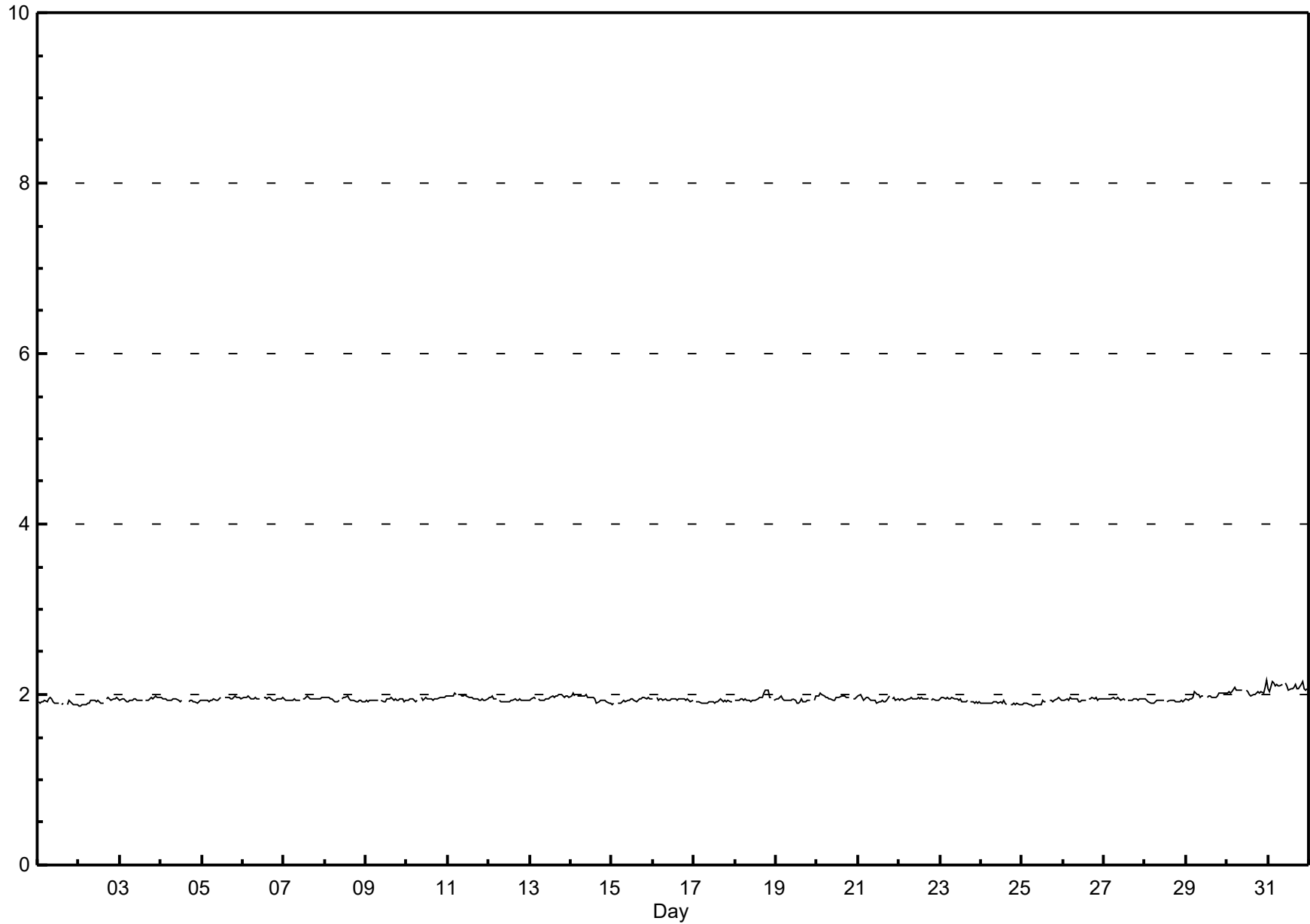
## Hourly Averages

**Total Hydrocarbons (THC) - ppm**  
**Portable Rycroft - December 2017**

Maximum Value: 2.16 ppm on Dec 31 00:00		Maximum Daily Average: 2.09 ppm on Dec 31		Hours in Service: 744																																														
Minimum Value: 1.9 ppm on Dec 2 02:00		Minimum Daily Average: 1.90 ppm on Dec 24		Hours of Data: 709																																														
Maximum Diurnal Average: 1.96 ppm at hour 3		Minimum Diurnal Average: 1.94 ppm at hour 10		Hours of Missing Data: 35																																														
Monthly Average: 1.949 ppm		Percentiles: P <sub>1</sub> = 1.88 P <sub>10</sub> = 1.91 Q <sub>1</sub> = 1.93 Median = 1.94 Q <sub>3</sub> = 1.96 P <sub>90</sub> = 1.99 P <sub>99</sub> = 2.12		Hours of Calibration: 34																																														
				Percent Operational Time: 99.9																																														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																										
1-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	M	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.91	1.96																							
2-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	2.0	2.0	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.92	1.97																							
3-Dec	1.9	1.9	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	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.94	1.98																							
4-Dec	2.0	1.9	2.0	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	C	C	C	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.93	1.97																							
5-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.95	1.98																							
6-Dec	2.0	2.0	2.0	2.0	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	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	1.96	1.98																							
7-Dec	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	2.0	2.0	2.0	2.0	1.9	1.9	2.0	1.9	1.9	2.0	2.0	2.0	2.0	1.95	1.98																							
8-Dec	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	A	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.94	1.98																							
9-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.9	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.94	1.96																							
10-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.95	1.98																							
11-Dec	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	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.97	2.01																							
12-Dec	2.0	2.0	2.0	2.0	2.0	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.94	1.99																							
13-Dec	1.9	1.9	2.0	2.0	A	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	2.0	2.0	2.0	2.0	2.0	2.0	1.96	2.00																							
14-Dec	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.96	2.01																							
15-Dec	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	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.93	1.96																							
16-Dec	1.9	A	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.94	1.96																							
17-Dec	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.91	1.94																							
18-Dec	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	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	A	1.9	1.96	2.06																								
19-Dec	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	2.0	1.94	1.99																								
20-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	1.9	1.9	2.0	1.97	2.01																								
21-Dec	2.0	2.0	2.0	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	A	2.0	2.0	1.9	1.9	1.94	2.00																								
22-Dec	1.9	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	1.9	2.0	1.9	1.9	A	1.9	2.0	1.9	1.9	1.9	1.95	1.96																								
23-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.94	1.97																							
24-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.90	1.92																							
25-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.91	1.96																								
26-Dec	1.9	1.9	1.9	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	2.0	2.0	2.0	2.0	1.9	2.0	1.9	2.0	1.94	1.97																								
27-Dec	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.95	1.97																								
28-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.92	1.94																								
29-Dec	2.0	1.9	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	2.0	2.0	2.0	2.0	1.98	2.03																								
30-Dec	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.1	A	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.04	2.16																								
31-Dec	2.1	2.0	2.2	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.09	2.16																								
																								1.95	1.95	1.96	1.95	1.95	1.95	1.95	1.95	1.94	1.94	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	Diurnal Average
																								2.07	2.03	2.16	2.13	2.09	2.12	2.11	2.11	2.12	2.05	2.14	2.09	2.05	2.06	2.08	2.08	2.11	2.08	2.07	2.11	2.15	2.07	2.08	2.16	2.04	2.16	Diurnal Maximum
C - Calibration																								M - Maintenance						A - Automated Daily Zero Span																				

**Hourly Averages**

**Total Hydrocarbons (THC) - ppm**  
**Portable Rycroft - December 2017**



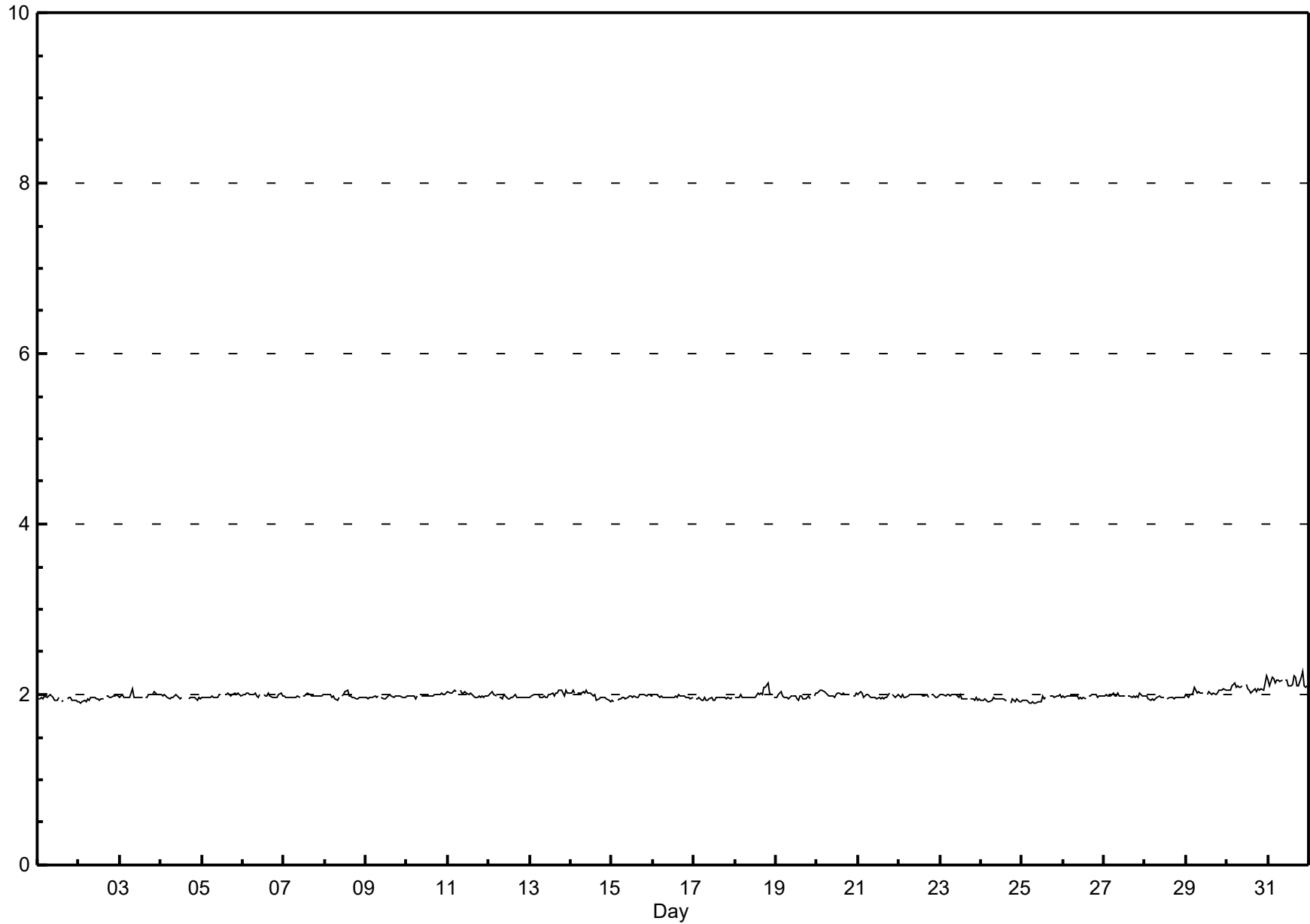
## Hourly Maximums

## Total Hydrocarbons (THC) - ppm Portable Rycroft - December 2017

Maximum Value: 2.28 ppm on Dec 31 21:00		Maximum Daily Average: 2.15 ppm on Dec 31		Hours in Service: 744																							
Minimum Value: 1.9 ppm on Dec 2 02:00		Minimum Daily Average: 1.94 ppm on Dec 24		Hours of Data: 709																							
Maximum Diurnal Average: 2.00 ppm at hour 3		Minimum Diurnal Average: 1.98 ppm at hour 10		Hours of Missing Data: 35																							
Monthly Average: 1.988 ppm		Percentiles: P <sub>1</sub> = 1.91 P <sub>10</sub> = 1.95 Q <sub>1</sub> = 1.96 Median = 1.98 Q <sub>3</sub> = 2.00 P <sub>90</sub> = 2.03 P <sub>99</sub> = 2.18		Hours of Calibration: 34																							
				Percent Operational Time: 99.9																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	1.9	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	M	1.9	1.9	A	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.95	2.00	
2-Dec	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	1.9	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.96	2.00	
3-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	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	2.0	1.99	2.07	
4-Dec	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	1.9	2.0	C	C	C	1.9	2.0	2.0	2.0	2.0	1.9	2.0	1.9	1.97	2.00	
5-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.99	2.02	
6-Dec	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	2.0	2.0	2.0	2.0	1.99	2.02	
7-Dec	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	2.0	2.0	2.0	2.0	1.98	2.01	
8-Dec	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	A	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	1.98	2.06	
9-Dec	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	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.97	2.00	
10-Dec	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	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.98	2.01	
11-Dec	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	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.01	2.04	
12-Dec	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.97	2.04	
13-Dec	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	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.00	2.06	
14-Dec	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.99	2.05	
15-Dec	1.9	1.9	A	1.9	1.9	1.9	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.97	2.01	
16-Dec	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	1.97	2.00	
17-Dec	A	1.9	1.9	2.0	1.9	1.9	2.0	1.9	1.9	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	1.95	1.97	
18-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	A	2.0	2.0	2.00	2.14	
19-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.0	1.9	2.0	2.0	2.0	A	2.0	2.0	1.98	2.03	
20-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.01	2.05	
21-Dec	2.0	2.0	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	1.9	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	1.98	2.03	
22-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	1.99	2.00	
23-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	A	1.9	1.9	2.0	1.9	2.0	1.9	2.0	1.98	2.01	
24-Dec	1.9	1.9	2.0	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	2.0	1.9	2.0	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.94	1.97	
25-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.95	2.00	
26-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	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	2.0	1.98	2.00	
27-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.99	2.01	
28-Dec	2.0	2.0	2.0	1.9	2.0	1.9	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	2.0	2.0	2.0	1.96	1.98	
29-Dec	2.0	2.0	2.0	2.0	2.0	2.1	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	2.1	2.1	2.1	2.1	2.02	2.08	
30-Dec	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.1	2.0	2.0	2.0	2.1	2.0	2.1	2.0	2.1	2.0	2.1	2.1	2.08	2.22	
31-Dec	2.2	2.1	2.2	2.2	2.1	2.2	2.2	2.2	2.2	A	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.2	2.3	2.1	2.1	2.1	2.15	2.28	
		1.99	1.99	2.00	1.99	1.99	1.99	1.98	1.99	1.99	1.98	1.98	1.98	1.98	1.99	1.98	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	Diurnal Average		
		2.17	2.09	2.21	2.19	2.14	2.16	2.16	2.15	2.16	2.11	2.17	2.16	2.10	2.10	2.11	2.22	2.21	2.10	2.10	2.20	2.28	2.10	2.14	2.22	Diurnal Maximum	
C - Calibration		M - Maintenance						A - Automated Daily Zero Span																			

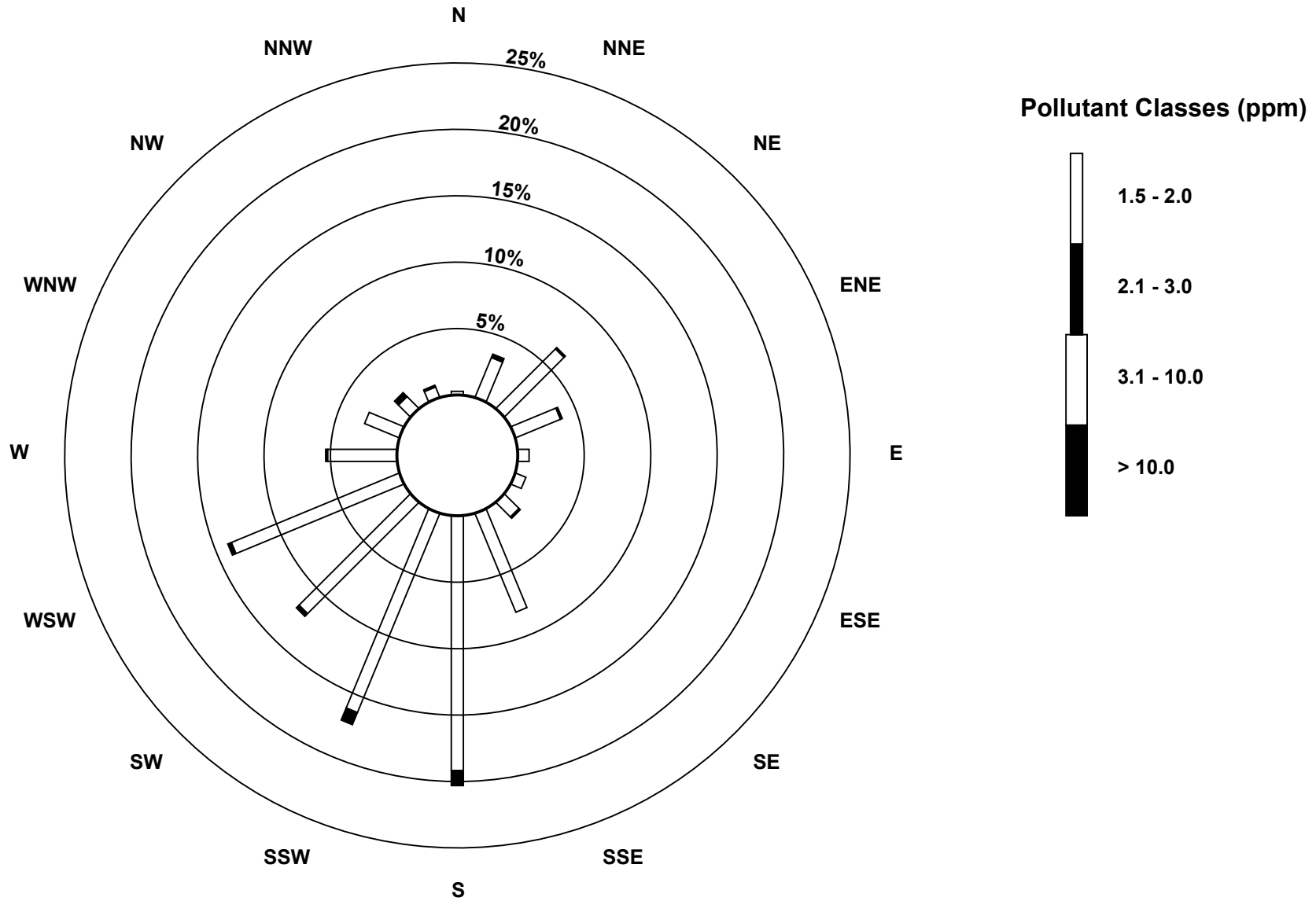
**Hourly Maximums**

**Total Hydrocarbons (THC) - ppm**  
**Portable Rycroft - December 2017**



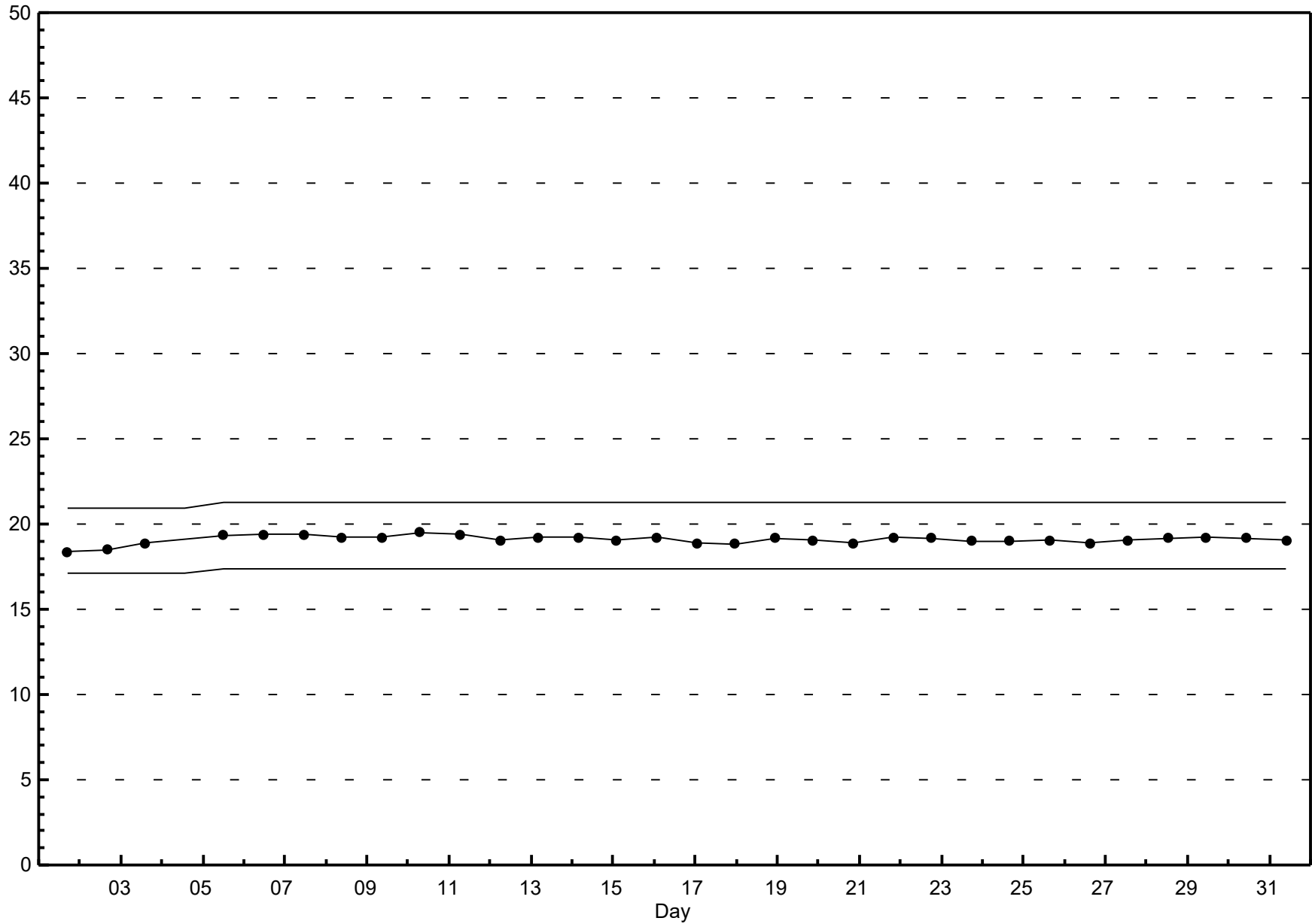
**Pollutant Rose**

**Total Hydrocarbons (THC) - ppm**  
**Portable Rycroft - December 2017**



**Span Responses**

**Total Hydrocarbons (THC)  
Portable Rycroft - December 2017**





## Hourly Averages

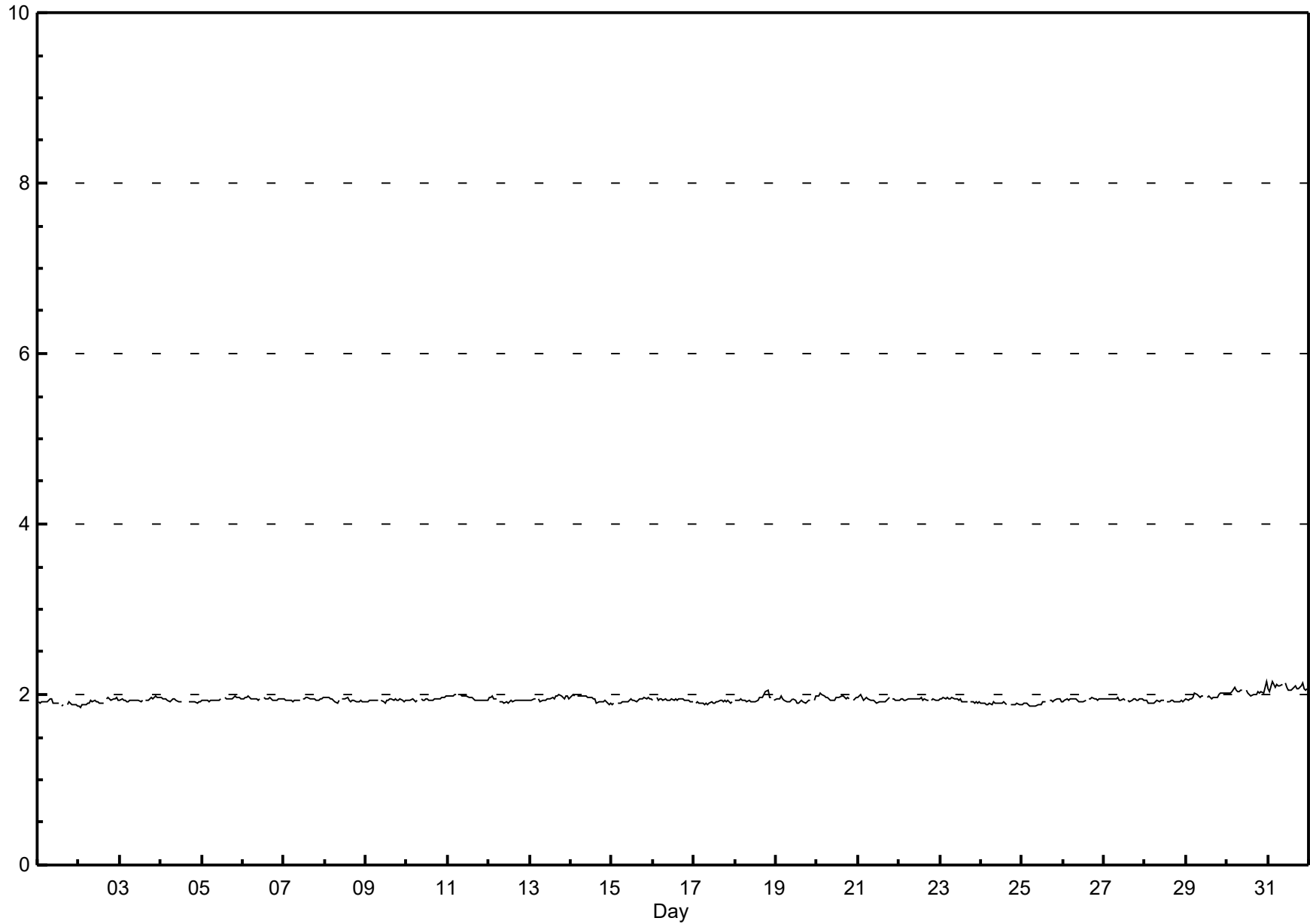
Methane (CH<sub>4</sub>) - ppm

Portable Rycroft - December 2017

Maximum Value: 2.16 ppm on Dec 31 00:00      Maximum Daily Average: 2.09 ppm on Dec 31 Minimum Value: 1.9 ppm on Dec 2 02:00      Minimum Daily Average: 1.89 ppm on Dec 24 Maximum Diurnal Average: 1.95 ppm at hour 3      Minimum Diurnal Average: 1.94 ppm at hour 10 Monthly Average: 1.944 ppm      Percentiles: P <sub>1</sub> = 1.87 P <sub>10</sub> = 1.90 Q <sub>1</sub> = 1.92 Median = 1.94 Q <sub>3</sub> = 1.96 P <sub>90</sub> = 1.99 P <sub>99</sub> = 2.11																						Hours in Service:	744				
																						Hours of Data:	709				
																						Hours of Missing Data:	35				
																						Hours of Calibration:	34				
																						Percent Operational Time:	99.9				
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	M	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.90	1.96
2-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	2.0	1.9	1.9	1.9	2.0	2.0	1.9	1.91	1.96	
3-Dec	1.9	1.9	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	2.0	2.0	2.0	2.0	2.0	2.0	1.94	1.97	
4-Dec	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	C	C	C	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.93	1.97	
5-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.94	1.98	
6-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	A	2.0	2.0	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.95	1.98	
7-Dec	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	2.0	2.0	1.9	1.9	2.0	1.9	1.9	1.9	2.0	2.0	1.94	1.97	
8-Dec	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.93	1.97	
9-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.93	1.95	
10-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	1.94	1.98	
11-Dec	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	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.96	2.01	
12-Dec	2.0	2.0	2.0	2.0	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.93	1.99	
13-Dec	1.9	1.9	2.0	2.0	A	1.9	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	2.0	2.0	2.0	2.0	2.0	1.96	1.99	
14-Dec	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.95	2.00	
15-Dec	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	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.93	1.96	
16-Dec	1.9	A	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.94	1.96	
17-Dec	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.91	1.94	
18-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	A	1.9	1.95	2.05	
19-Dec	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	2.0	1.93	1.99	
20-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	1.9	1.9	2.0	1.96	2.01	
21-Dec	2.0	2.0	2.0	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	A	1.9	2.0	1.9	1.9	1.94	2.00	
22-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.9	A	1.9	2.0	1.9	1.9	1.9	1.94	1.96	
23-Dec	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.93	1.96	
24-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.89	1.92	
25-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.90	1.95	
26-Dec	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	A	1.9	1.9	2.0	1.9	2.0	1.9	1.9	1.9	2.0	1.94	1.96	
27-Dec	1.9	2.0	1.9	1.9	1.9	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.94	1.97	
28-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.92	1.94	
29-Dec	2.0	1.9	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	2.0	2.0	2.0	2.0	1.98	2.02	
30-Dec	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.1	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.03	2.16	
31-Dec	2.1	2.0	2.2	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.09	2.15	
	1.94	1.94	1.95	1.95	1.94	1.94	1.94	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.94	1.95	1.95	1.95	1.95	1.94	1.95	Diurnal Average		
	2.07	2.03	2.15	2.13	2.09	2.11	2.10	2.10	2.11	2.05	2.14	2.09	2.05	2.06	2.07	2.08	2.11	2.07	2.07	2.11	2.14	2.07	2.08	2.16	Diurnal Maximum		
C - Calibration	M - Maintenance						A - Automated Daily Zero Span																				

**Hourly Averages**

**Methane (CH<sub>4</sub>) - ppm**  
**Portable Rycroft - December 2017**



## Hourly Maximums

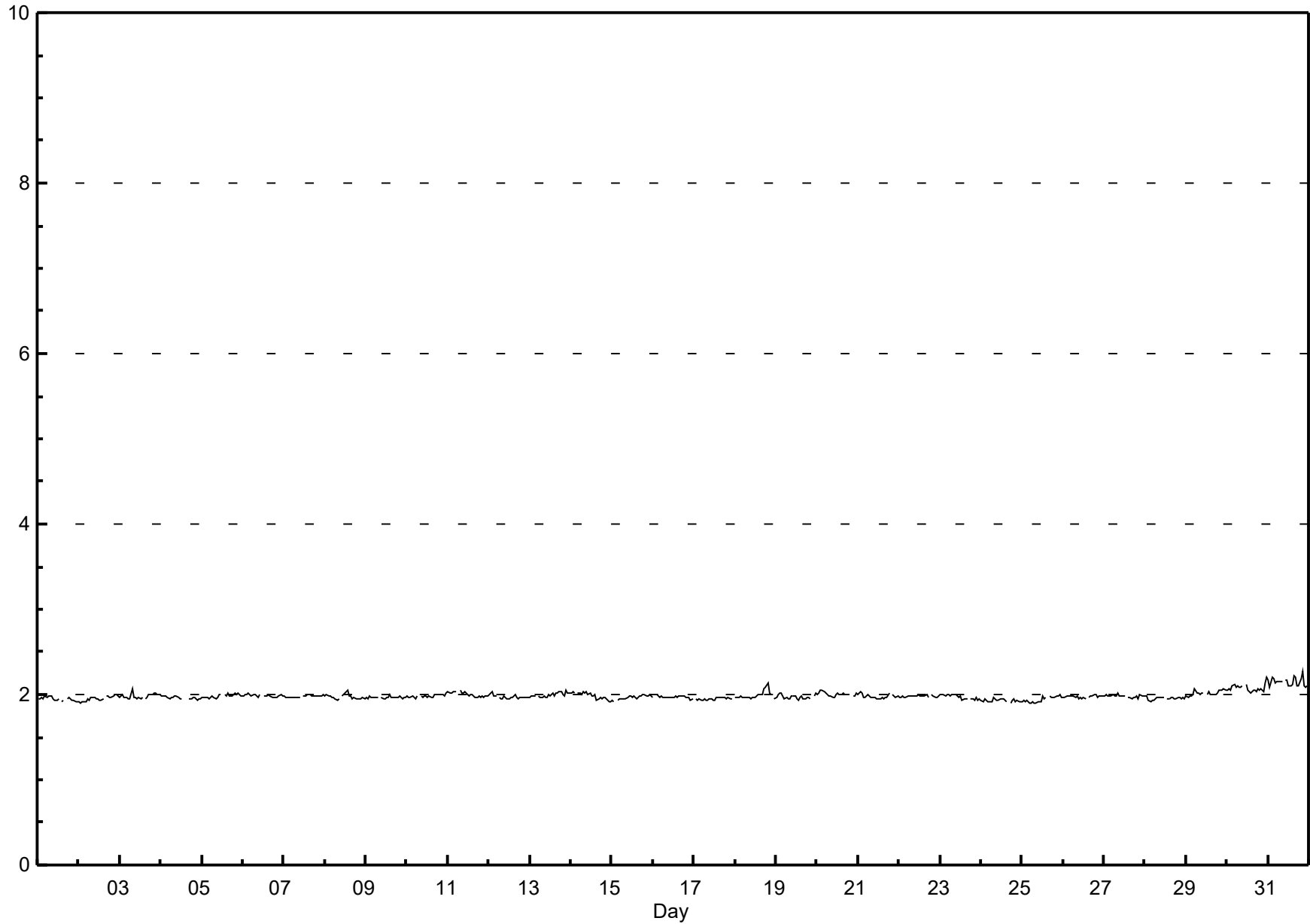
Methane (CH<sub>4</sub>) - ppm

Portable Rycroft - December 2017

Maximum Value: 2.27 ppm on Dec 31 21:00		Maximum Daily Average: 2.15 ppm on Dec 31		Hours in Service: 744																							
Minimum Value: 1.9 ppm on Dec 2 02:00		Minimum Daily Average: 1.93 ppm on Dec 24		Hours of Data: 709																							
Maximum Diurnal Average: 1.99 ppm at hour 3		Minimum Diurnal Average: 1.98 ppm at hour 10		Hours of Missing Data: 35																							
Monthly Average: 1.983 ppm		Percentiles: P <sub>1</sub> = 1.91 P <sub>10</sub> = 1.94 Q <sub>1</sub> = 1.96 Median = 1.98 Q <sub>3</sub> = 2.00 P <sub>90</sub> = 2.03 P <sub>99</sub> = 2.18		Hours of Calibration: 34																							
				Percent Operational Time: 99.9																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	1.9	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	M	1.9	1.9	A	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.95	1.98
2-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.95	2.00
3-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	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	2.0	2.0	1.98	2.06
4-Dec	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	1.9	2.0	C	C	C	1.9	1.9	2.0	2.0	2.0	1.9	2.0	1.9	1.96	1.99	
5-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.98	2.01	
6-Dec	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	2.0	2.0	2.0	2.0	1.99	2.01	
7-Dec	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	2.0	2.0	2.0	2.0	1.98	2.01	
8-Dec	2.0	2.0	2.0	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	1.9	1.9	1.9	2.0	1.9	1.9	1.97	2.05	
9-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.96	1.99	
10-Dec	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	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.98	2.01	
11-Dec	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	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.00	2.04	
12-Dec	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	1.9	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.97	2.04	
13-Dec	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	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.00	2.06	
14-Dec	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	1.9	2.0	2.0	1.9	1.9	1.9	1.99	2.04	
15-Dec	1.9	1.9	A	1.9	1.9	1.9	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.97	2.00	
16-Dec	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.97	2.00	
17-Dec	A	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	1.9	1.9	A	1.95	1.97	
18-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	A	2.0	2.0	1.99	2.13	
19-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	A	2.0	2.0	1.97	2.02
20-Dec	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.00	2.05	
21-Dec	2.0	2.0	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	1.9	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	1.98	2.03	
22-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	1.98	2.00	
23-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	A	1.9	1.9	2.0	1.9	2.0	1.9	2.0	1.97	2.00	
24-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.93	1.96	
25-Dec	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	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.94	1.99	
26-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	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	2.0	1.98	2.00	
27-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.98	2.01	
28-Dec	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	A	1.9	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.96	1.98	
29-Dec	2.0	2.0	2.0	2.0	2.0	2.1	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	2.1	2.0	2.1	2.1	2.02	2.08	
30-Dec	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.0	2.1	2.2	2.08	2.21	
31-Dec	2.2	2.1	2.2	2.2	2.1	2.2	2.2	2.1	2.2	A	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.2	2.3	2.1	2.1	2.1	2.15	2.27	
		1.98	1.98	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.99	1.98	1.99	1.99	1.99	1.98	1.98	1.99	Diurnal Average		
		2.17	2.09	2.20	2.18	2.14	2.15	2.16	2.15	2.16	2.10	2.18	2.16	2.10	2.09	2.11	2.22	2.21	2.10	2.11	2.19	2.27	2.10	2.13	2.21	Diurnal Maximum	
C - Calibration		M - Maintenance						A - Automated Daily Zero Span																			

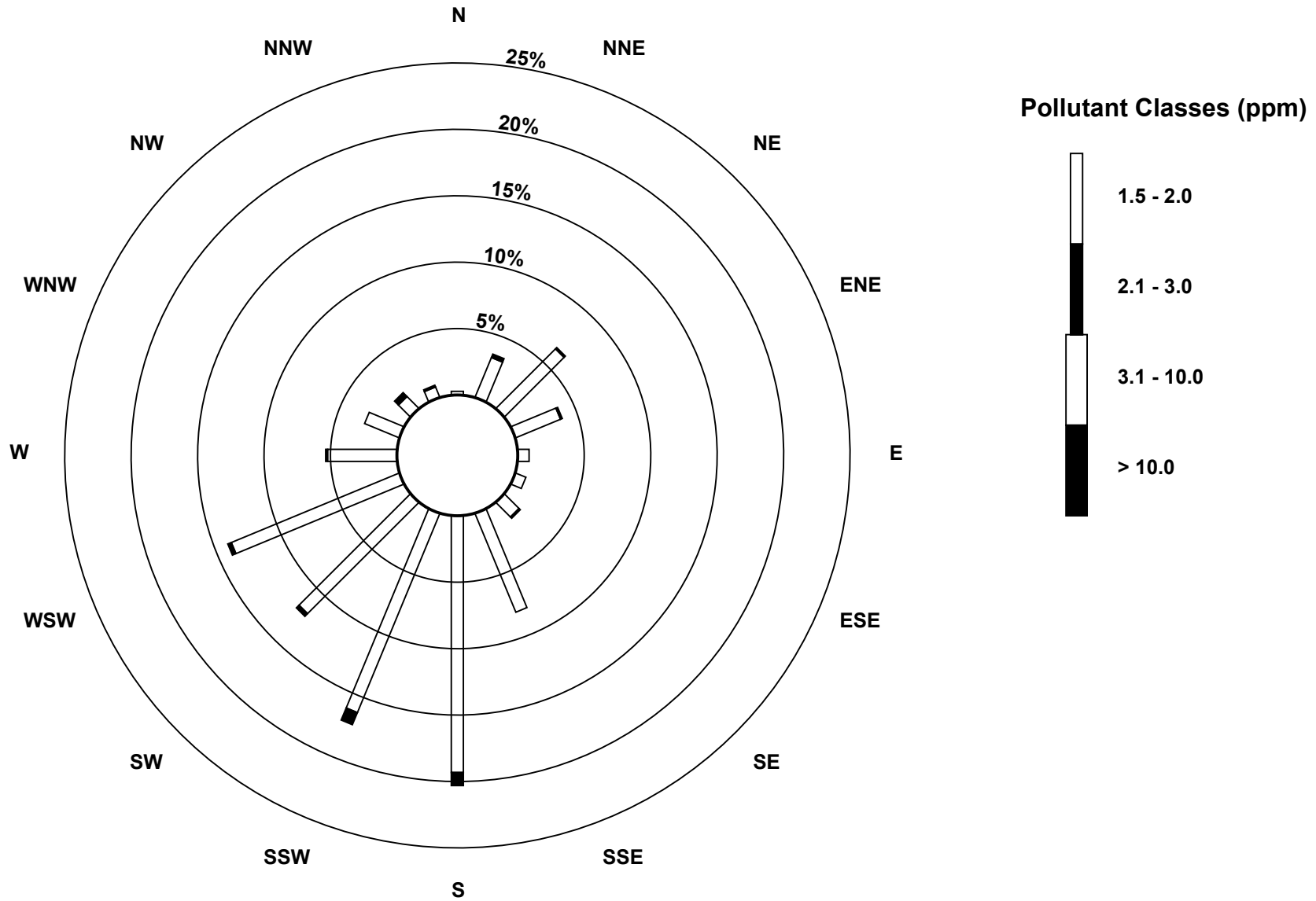
**Hourly Maximums**

**Methane (CH<sub>4</sub>) - ppm**  
**Portable Rycroft - December 2017**



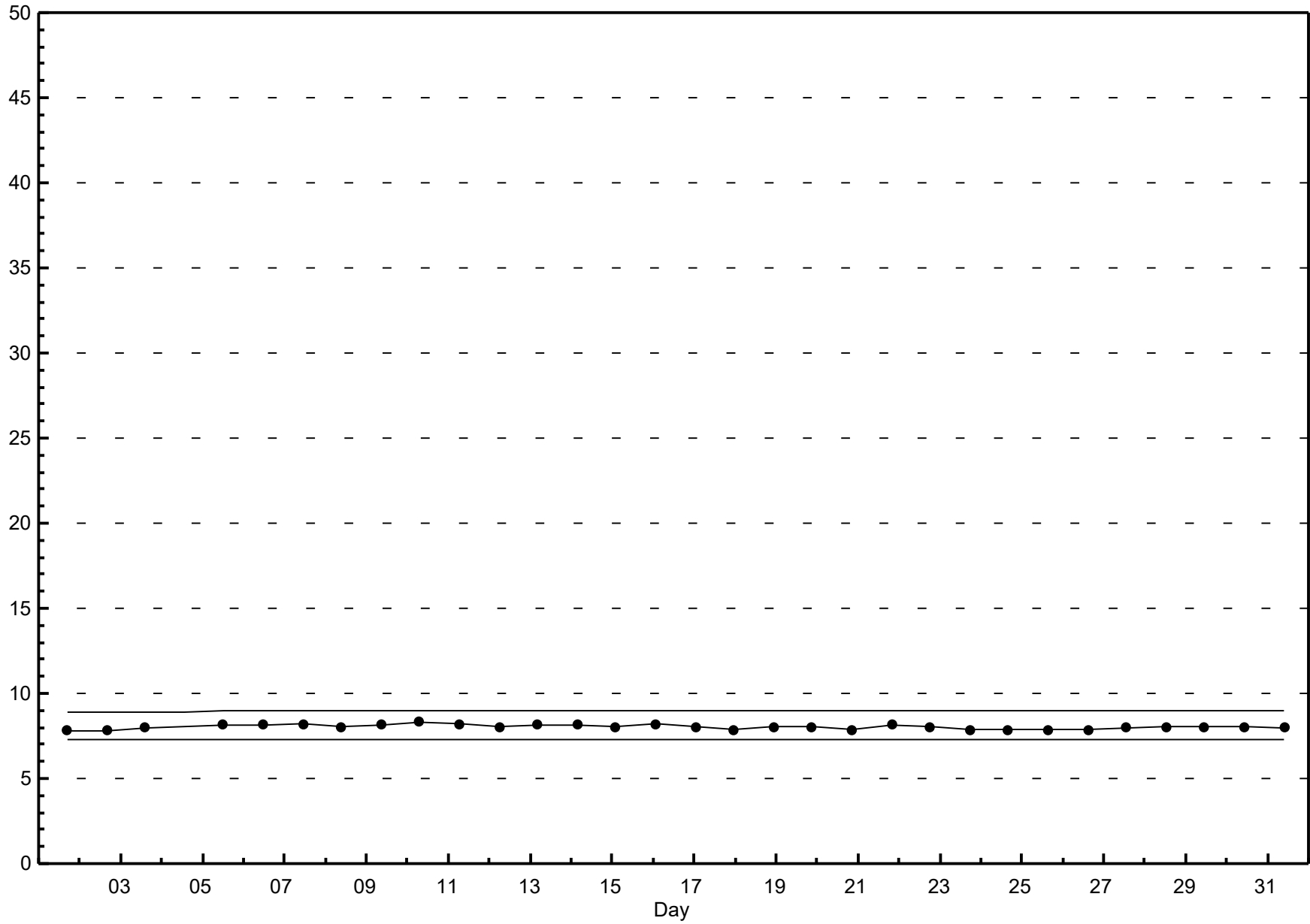
**Pollutant Rose**

**Methane (CH<sub>4</sub>) - ppm**  
**Portable Rycroft - December 2017**



### Span Responses

Methane (CH<sub>4</sub>)  
Portable Rycroft - December 2017

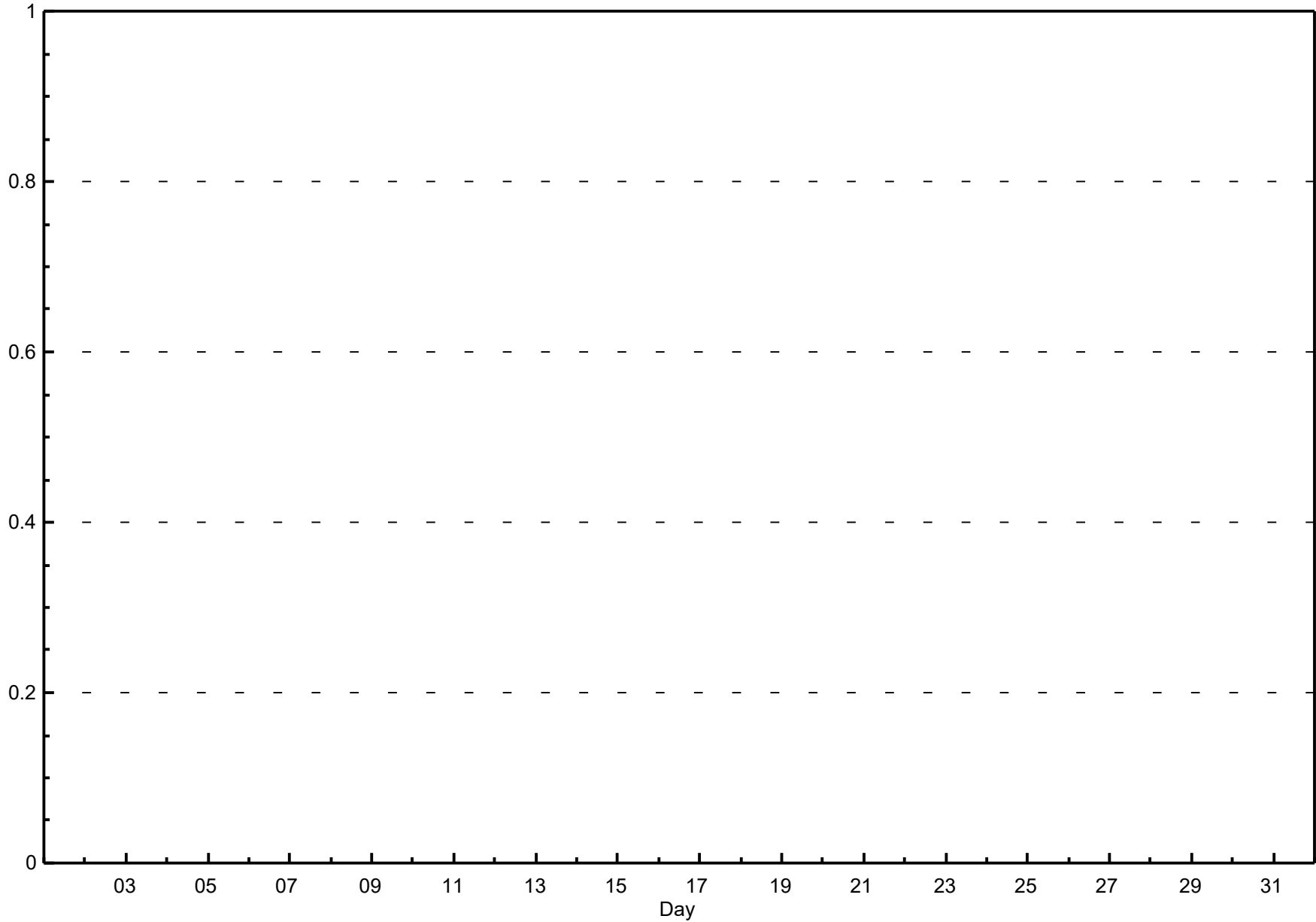


## Hourly Averages

Non Methane Hydrocarbon (NMHC) - ppm

Portable Rycroft - December 2017

Maximum Value: 0.00 ppm on Dec 26 00:00																								Hours in Service: 744			
Maximum Daily Average: 0.00 ppm on Dec 26																								Hours of Data: 709			
Minimum Value: 0.0 ppm on Dec 1 01:00																								Hours of Missing Data: 35			
Minimum Daily Average: 0.00 ppm on Dec 2																								Hours of Calibration: 34			
Maximum Diurnal Average: 0.00 ppm at hour 24																								Percent Operational Time: 99.9			
Monthly Average: 0.000 ppm																								Percentiles: P <sub>1</sub> = 0.00 P <sub>10</sub> = 0.00 Q <sub>1</sub> = 0.00 Median = 0.00 Q <sub>3</sub> = 0.00 P <sub>90</sub> = 0.00 P <sub>99</sub> = 0.00			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	M	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
2-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
3-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
4-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
5-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
6-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
7-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
8-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
9-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
10-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
11-Dec	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
12-Dec	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
13-Dec	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
14-Dec	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
15-Dec	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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-Dec	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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-Dec	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
19-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.00	0.00
20-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.00	0.00
21-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
22-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
23-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
24-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
25-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
26-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
27-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
28-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
29-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
30-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
31-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
																								0.00	0.00		
																								0.00	0.00		





# Hourly Maximums

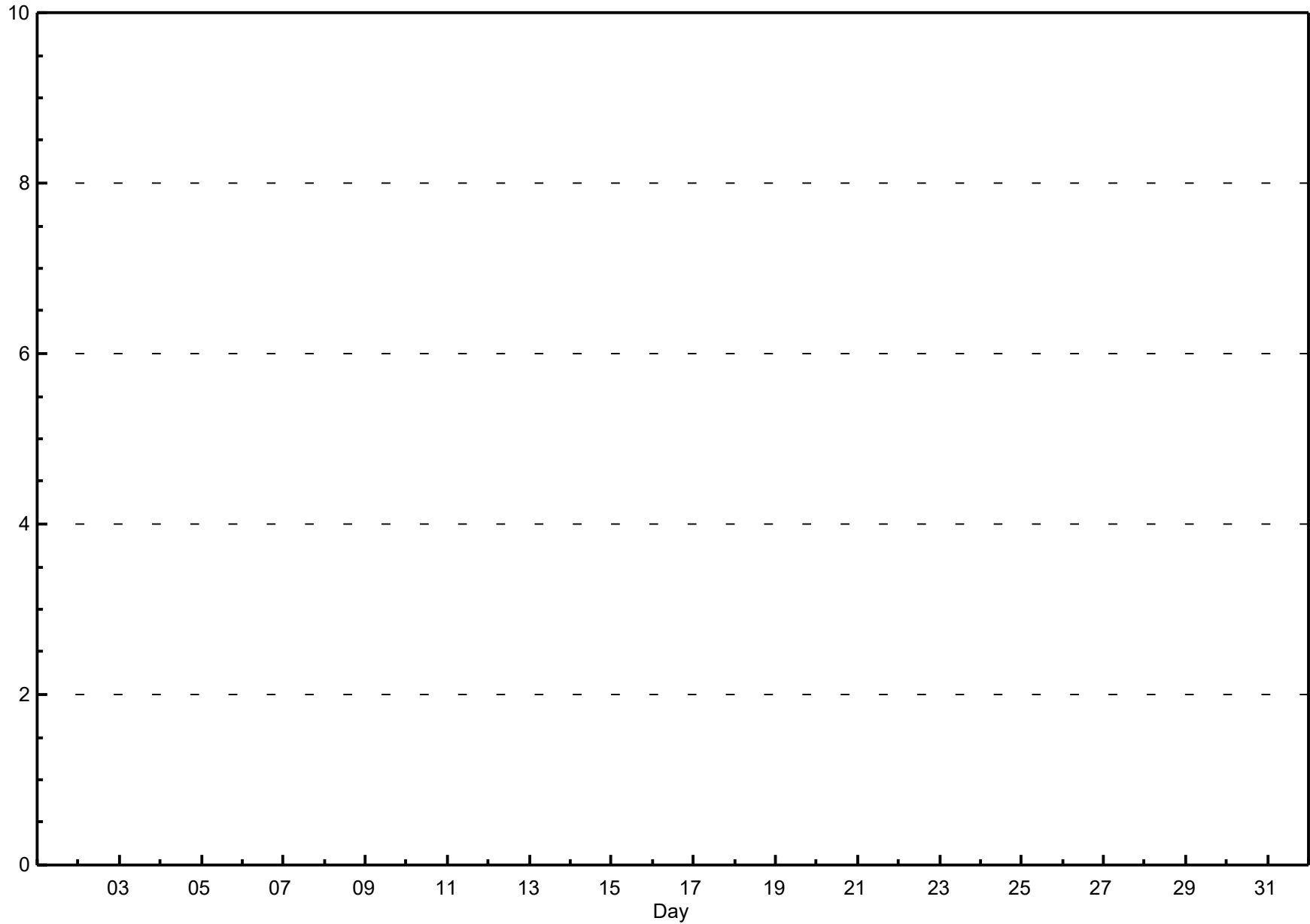
## Non Methane Hydrocarbon (NMHC) - ppm

### Portable Rycroft - December 2017

Maximum Value: 0.00 ppm on Dec 7 13:00	Maximum Daily Average: 0.00 ppm on Dec 25	Hours in Service: 744
Minimum Value: 0.0 ppm on Dec 1 22:00	Minimum Daily Average: 0.00 ppm on Dec 3	Hours of Data: 709
Maximum Diurnal Average: 0.00 ppm at hour 13	Minimum Diurnal Average: 0.00 ppm at hour 22	Hours of Missing Data: 35
Monthly Average: 0.000 ppm	Percentiles: P <sub>1</sub> = 0.00 P <sub>10</sub> = 0.00 Q <sub>1</sub> = 0.00 Median = 0.00 Q <sub>3</sub> = 0.00 P <sub>90</sub> = 0.00 P <sub>99</sub> = 0.00	Hours of Calibration: 34
		Percent Operational Time: 99.9

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

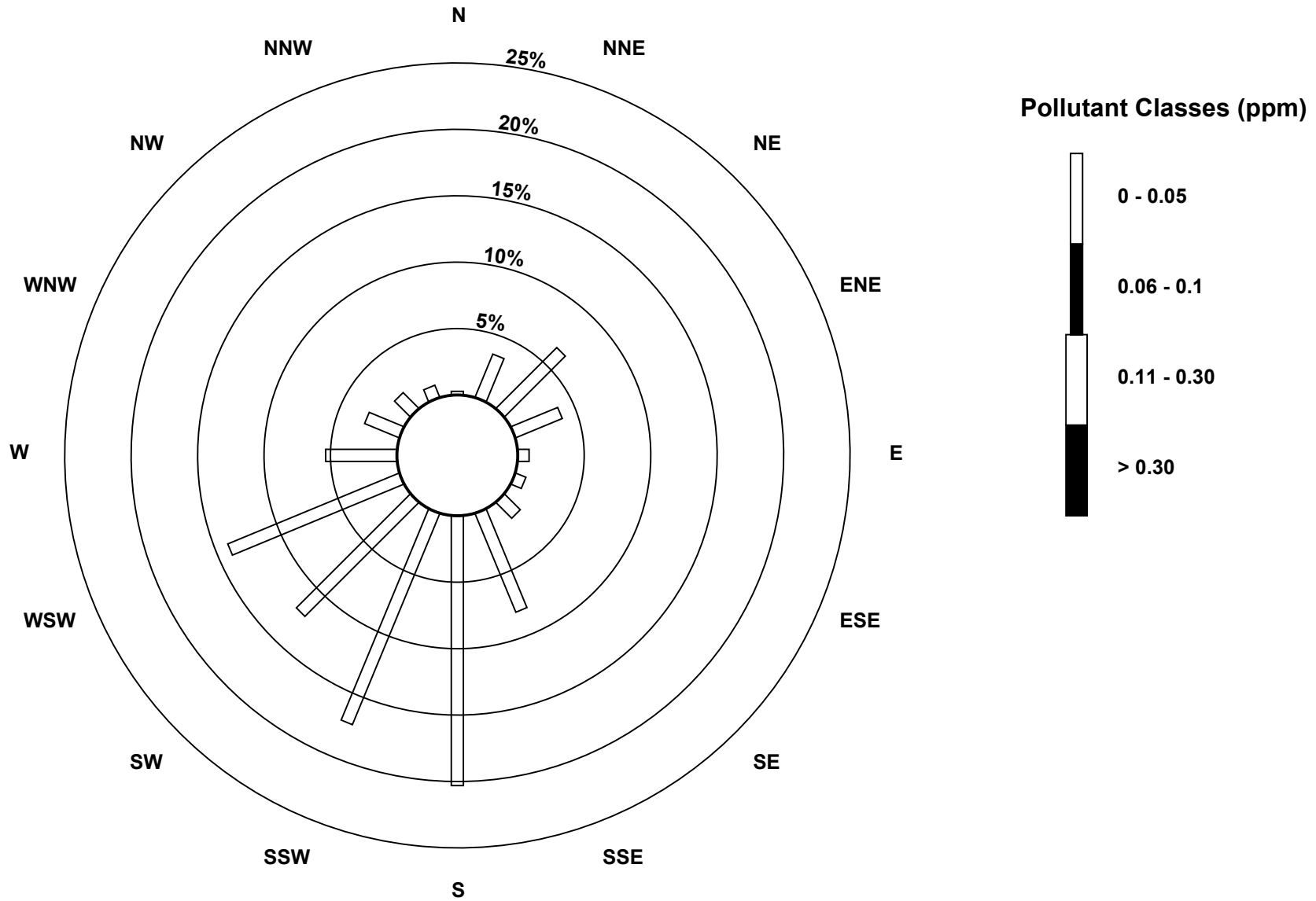
C - Calibration                      M - Maintenance                      A - Automated Daily Zero Span

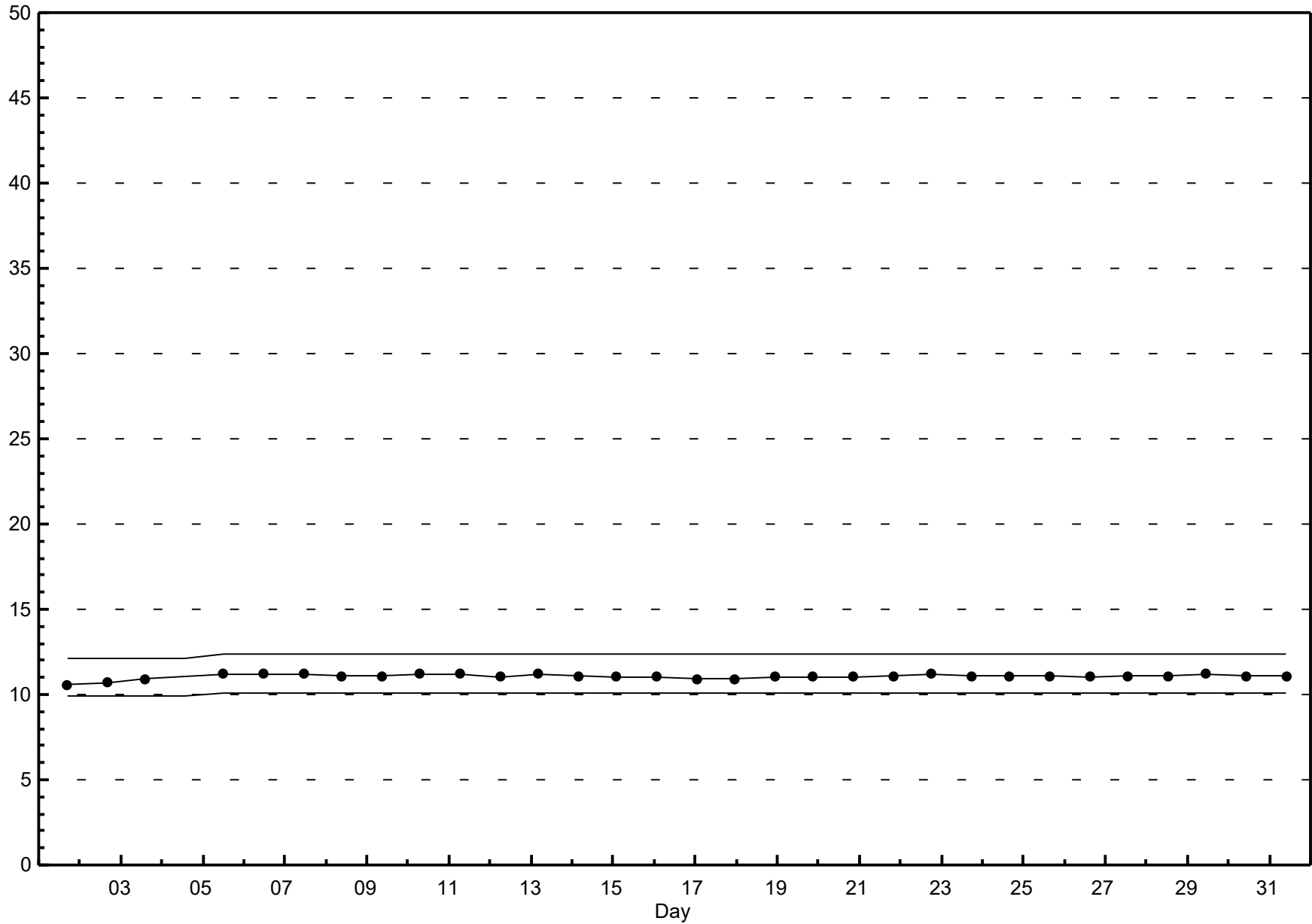


**Pollutant Rose**

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

**Portable Rycroft - December 2017**





## Hourly Averages

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

Portable Rycroft - December 2017

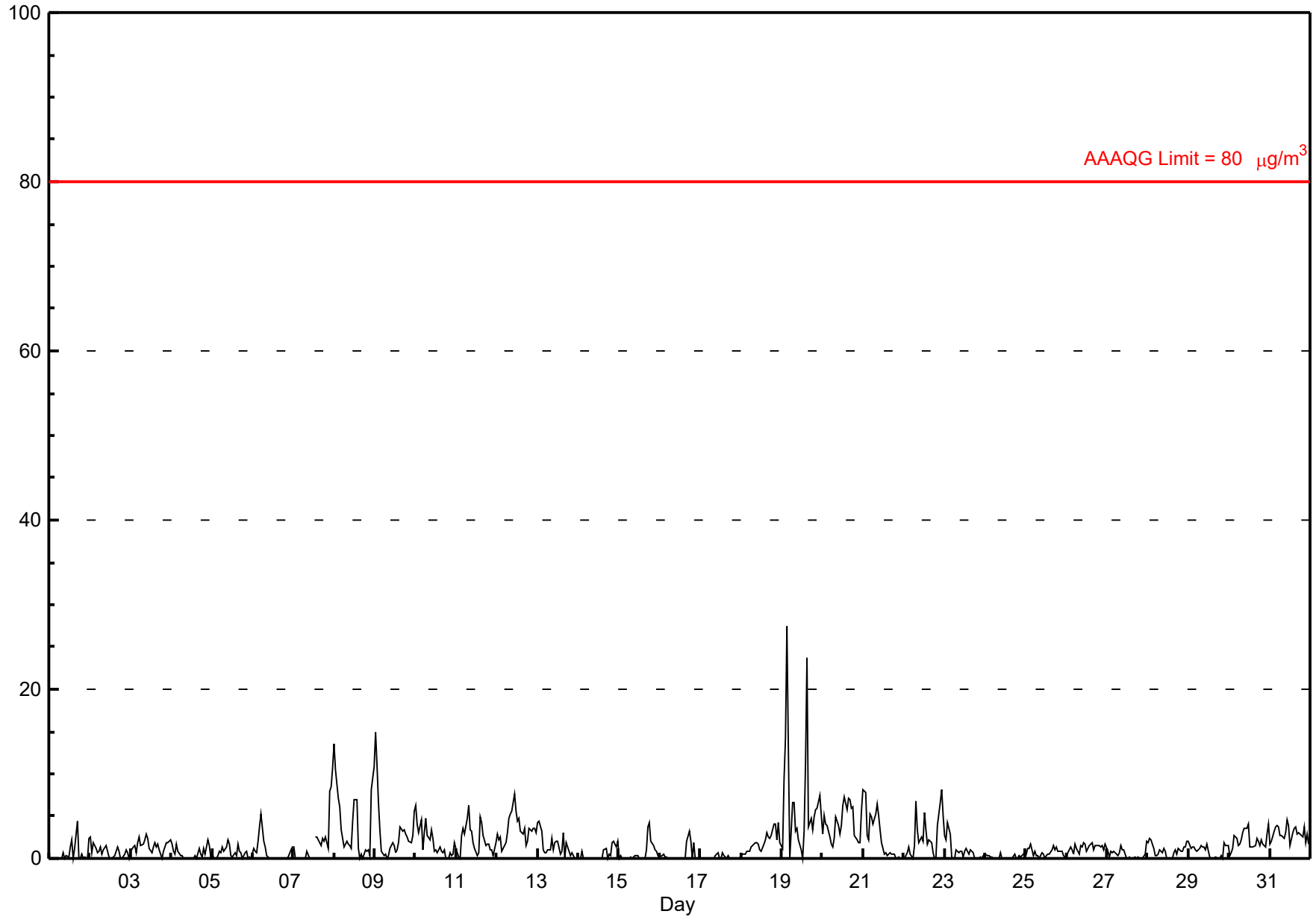
Number of Exceedences: 1-hr: 0 24-hr: 0	Hours in Service: 744
Maximum Value: 27.5 µg/m <sup>3</sup> on Dec 19 04:00	Maximum Daily Average: 7.0 µg/m <sup>3</sup> on Dec 19
Minimum Value: 0 µg/m <sup>3</sup> on Dec 1 01:00	Hours of Data: 741
Maximum Diurnal Average: 2.4 µg/m <sup>3</sup> at hour 4	Hours of Missing Data: 3
Monthly Average: 1.72 µg/m <sup>3</sup>	Hours of Calibration: 0
Minimum Daily Average: 0.1 µg/m <sup>3</sup> on Dec 17	Percent Operational Time: 99.6
Minimum Diurnal Average: 1.2 µg/m <sup>3</sup> at hour 13	
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.2 Median = 1.0 Q <sub>3</sub> = 2.2 P <sub>90</sub> = 4.2 P <sub>99</sub> = 9.7	

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0	0	0	0	0	0	0	0	1	0	0	0	1	2	0	1	4	0	0	0	0	0	0	2	0.6	4.5
2-Dec	2	1	2	1	1	1	1	1	1	2	1	0	0	0	0	1	1	1	0	0	1	1	1	0	0.8	2.5
3-Dec	1	1	1	1	2	2	2	2	2	3	2	1	1	1	2	1	2	1	0	1	1	2	2	2	1.5	2.8
4-Dec	2	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	2	0	0.6	2.2
5-Dec	1	0	0	0	1	1	1	1	1	2	2	0	0	1	0	2	1	1	0	1	1	0	0	0	0.7	2.1
6-Dec	1	1	1	2	4	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.8	5.2
7-Dec	1	0	0	0	0	0	0	0	1	0	M	M	M	3	2	2	1	2	2	3	1	8	9	11	2.2	10.8
8-Dec	14	11	7	6	3	2	1	2	2	2	1	4	7	7	1	0	0	0	1	1	1	0	8	11	3.9	13.5
9-Dec	15	11	7	3	1	0	0	0	0	1	2	2	1	1	2	4	3	3	3	2	2	2	3	6	3.1	14.8
10-Dec	6	4	3	5	1	3	5	3	2	3	2	1	1	1	1	1	1	1	0	0	1	0	1	2	2.0	6.3
11-Dec	1	0	0	3	4	3	5	6	3	3	2	1	0	1	5	4	3	2	2	2	1	1	0	2	2.2	6.3
12-Dec	3	2	2	1	1	2	3	5	5	6	8	6	4	5	3	3	4	1	2	4	3	4	4	3	3.5	7.6
13-Dec	4	4	3	1	1	1	1	1	2	1	2	2	2	1	1	3	0	2	1	0	1	0	0	0	1.4	4.3
14-Dec	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	2	2	1	2	0.5	2.1
15-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	4	2	2	1	1	0	0.7	4.2
16-Dec	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	2	0	2	0	0	0	0.4	3.2
17-Dec	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0.1	0.7
18-Dec	0	1	1	1	1	1	1	2	2	2	1	1	1	2	2	3	3	2	3	4	4	2	4	2	1.9	4.2
19-Dec	1	9	14	28	13	0	7	7	3	4	2	1	0	3	11	24	4	5	3	5	6	6	7	5	7.0	27.5
20-Dec	3	5	4	4	2	2	1	2	5	4	3	4	6	7	6	7	7	6	6	3	2	2	2	6	4.1	7.3
21-Dec	8	8	3	2	5	5	4	5	6	5	3	2	0	1	0	1	1	1	0	0	0	0	0	0	2.5	8.2
22-Dec	0	0	1	1	1	0	1	7	3	2	3	2	5	3	2	2	2	1	0	0	4	7	8	5	2.5	8.1
23-Dec	3	2	4	3	0	0	0	1	1	1	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0.9	4.2
24-Dec	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0.2	0.8
25-Dec	0	1	1	2	0	1	0	0	0	1	1	0	0	1	0	1	1	1	1	1	1	1	0	0	0.7	1.6
26-Dec	0	1	1	1	1	2	1	1	1	1	2	2	1	1	2	2	1	1	2	2	1	2	1	2	1.3	1.9
27-Dec	1	0	1	1	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0.5	2.0
28-Dec	2	2	2	1	0	0	0	1	1	1	1	0	0	0	0	1	1	0	1	1	1	1	1	2	0.9	2.3
29-Dec	2	1	1	1	1	1	1	2	1	1	1	2	0	0	0	0	0	0	0	0	0	2	2	2	0.9	2.0
30-Dec	0	1	1	3	2	2	2	2	3	4	4	4	1	1	1	2	2	2	2	2	2	1	3	4	2.1	4.1
31-Dec	2	2	3	4	4	4	3	3	2	3	5	4	1	3	4	4	3	3	3	3	4	2	3	2	3.0	4.5
	2.4	2.3	2.2	2.4	1.7	1.2	1.5	1.7	1.7	1.7	1.7	1.3	1.2	1.5	1.6	2.2	1.7	1.5	1.3	1.2	1.4	1.6	2.1	2.4	Diurnal Average	
	14.8	10.9	14.2	27.5	13.2	5.2	6.5	6.7	6.4	5.6	7.6	5.6	6.9	7.3	11.4	23.7	6.9	5.9	6.1	4.9	5.8	7.9	8.5	10.8	Diurnal Maximum	

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

### Hourly Averages

PM2.5 (PM<sub>2.5</sub>) -  $\mu\text{g}/\text{m}^3$   
Portable Rycroft - December 2017



## Hourly Maximums

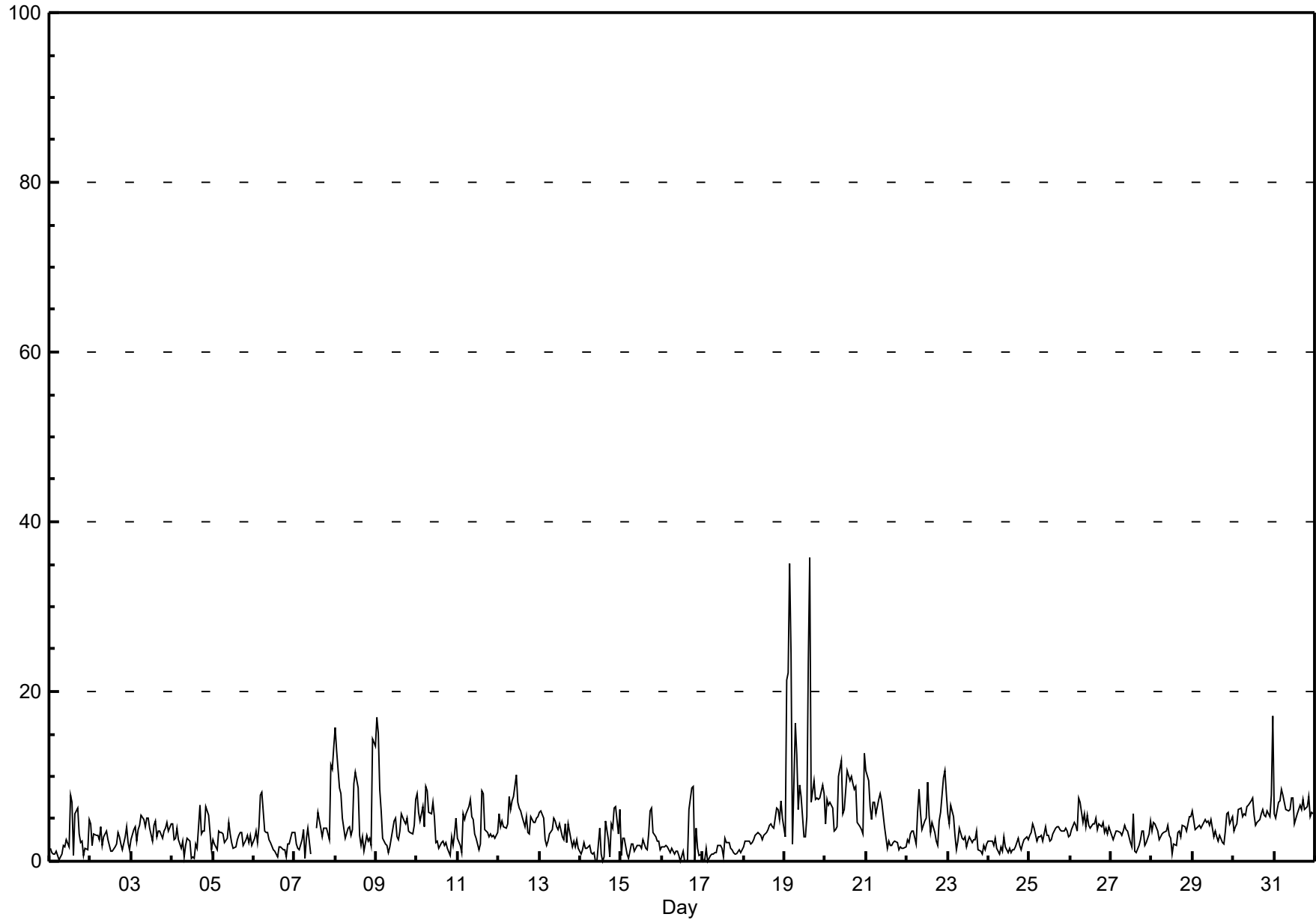
PM2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

Portable Rycroft - December 2017

Maximum Value: 35.7 µg/m <sup>3</sup> on Dec 19 16:00		Maximum Daily Average: 12.2 µg/m <sup>3</sup> on Dec 19		Hours in Service: 744																							
Minimum Value: 0 µg/m <sup>3</sup> on Dec 14 10:00		Minimum Daily Average: 1.2 µg/m <sup>3</sup> on Dec 17		Hours of Data: 741																							
Maximum Diurnal Average: 5.2 µg/m <sup>3</sup> at hour 24		Minimum Diurnal Average: 3.2 µg/m <sup>3</sup> at hour 13		Hours of Missing Data: 3																							
Monthly Average: 4.03 µg/m <sup>3</sup>		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 1.2 Q <sub>1</sub> = 2.1 Median = 3.4 Q <sub>3</sub> = 5.1 P <sub>90</sub> = 7.2 P <sub>99</sub> = 13.2		Hours of Calibration: 0																							
				Percent Operational Time: 99.6																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	2	1	1	1	1	0	1	1	2	2	3	2	8	7	1	6	6	3	2	2	1	2	1	5	2.4	7.8	
2-Dec	4	2	3	3	3	3	4	2	3	4	3	2	1	1	2	2	3	3	2	1	3	4	2	1	2.5	4.3	
3-Dec	3	4	4	2	4	4	5	5	4	5	5	4	2	4	5	3	4	4	3	4	4	5	4	4	3.9	5.5	
4-Dec	4	3	3	4	3	2	2	0	2	3	2	0	0	0	2	2	7	3	4	4	6	5	3	1	2.8	6.7	
5-Dec	2	2	1	4	3	3	3	2	3	5	3	2	1	2	2	3	3	3	2	3	3	2	3	2	2.7	4.6	
6-Dec	3	4	2	4	8	8	4	3	3	3	2	1	1	1	0	2	2	1	1	1	2	2	3	3	2.7	8.2	
7-Dec	3	2	2	1	3	4	0	3	4	1	M	M	M	4	6	4	3	4	4	4	3	11	11	13	4.2	13.4	
8-Dec	16	13	9	8	5	4	3	4	4	3	4	9	11	9	3	2	3	1	3	2	3	2	14	13	6.1	15.8	
9-Dec	17	15	8	6	3	2	2	1	2	3	5	5	3	3	4	6	5	4	5	4	3	3	4	7	5.0	17.0	
10-Dec	8	6	5	6	4	9	8	6	6	7	5	2	2	2	2	2	2	2	2	1	3	2	3	5	4.2	8.8	
11-Dec	3	2	1	6	5	6	6	7	5	5	3	3	1	2	8	8	4	3	3	3	3	3	3	3	4.0	8.3	
12-Dec	6	4	5	4	4	4	8	6	7	8	10	7	6	6	5	4	5	3	3	5	5	5	5	5	5.4	10.2	
13-Dec	6	6	5	3	2	2	3	4	5	5	4	4	4	3	3	4	2	4	3	2	2	2	3	2	3.4	5.9	
14-Dec	1	1	2	2	2	2	1	1	1	0	0	4	1	0	0	5	3	1	4	4	6	6	3	6	2.3	6.4	
15-Dec	1	3	3	1	0	1	2	2	1	2	2	2	2	2	2	1	3	6	6	3	3	2	2	1	2.3	6.3	
16-Dec	2	2	2	2	1	1	2	1	1	1	1	0	1	0	0	0	6	9	9	0	4	2	1	1	1.9	8.8	
17-Dec	0	0	2	0	1	1	1	1	1	2	2	1	0	3	2	2	2	1	1	1	1	1	1	1	1.2	2.8	
18-Dec	2	2	2	2	2	2	3	3	3	3	3	3	3	3	4	4	4	4	4	6	6	5	7	5	3.6	7.2	
19-Dec	3	21	22	35	24	2	16	13	6	9	8	3	3	5	23	36	7	9	7	8	7	8	9	8	12.2	35.7	
20-Dec	4	7	7	7	6	4	4	4	10	12	6	6	8	11	10	10	9	9	9	5	4	4	3	13	7.1	12.8	
21-Dec	11	9	7	5	7	7	6	7	8	7	6	4	2	2	2	2	2	2	2	1	2	2	1	2	4.4	10.7	
22-Dec	3	2	3	4	4	2	6	9	6	4	5	5	9	5	3	5	3	2	2	5	6	10	11	8	5.0	10.7	
23-Dec	6	4	7	5	3	1	2	4	3	2	3	2	2	3	2	3	3	4	1	1	1	2	1	2	2.8	6.5	
24-Dec	2	2	2	2	3	1	1	2	1	3	2	1	1	1	1	1	2	3	2	1	2	3	3	3	1.9	2.9	
25-Dec	3	3	4	4	2	3	3	3	2	4	3	3	2	3	3	4	4	4	4	4	4	4	4	3	3.3	4.4	
26-Dec	3	4	5	4	4	8	7	5	6	4	5	4	4	4	4	5	4	4	4	5	3	4	3	4	4.4	7.5	
27-Dec	3	2	3	4	4	3	3	4	4	4	4	2	2	6	1	1	2	3	4	3	2	2	3	5	3.0	5.6	
28-Dec	4	5	4	4	3	3	3	3	4	4	3	3	1	2	2	3	4	3	4	4	4	4	5	5	3.5	5.3	
29-Dec	6	4	4	4	4	4	5	5	5	5	4	5	3	4	3	2	3	2	2	4	6	6	4	5	4.1	5.9	
30-Dec	4	4	4	6	6	5	6	5	6	7	7	7	5	4	5	5	6	6	5	5	6	5	8	17	6.1	17.1	
31-Dec	6	5	7	7	8	8	7	6	6	6	7	7	4	6	6	7	6	7	6	6	8	5	6	6	6.4	8.5	
		4.4	4.7	4.5	4.8	4.2	3.5	4.1	3.9	4.0	4.2	4.0	3.5	3.2	3.5	3.8	4.6	3.9	3.8	3.7	3.3	3.7	3.9	4.4	5.2	Diurnal Average	
		17.0	21.3	22.2	35.1	24.4	8.8	16.3	12.6	10.0	11.8	10.2	9.2	10.6	10.6	23.4	35.7	9.2	9.4	8.8	7.5	7.6	11.3	14.4	17.1	Diurnal Maximum	
M - Maintenance																											

### Hourly Maximums

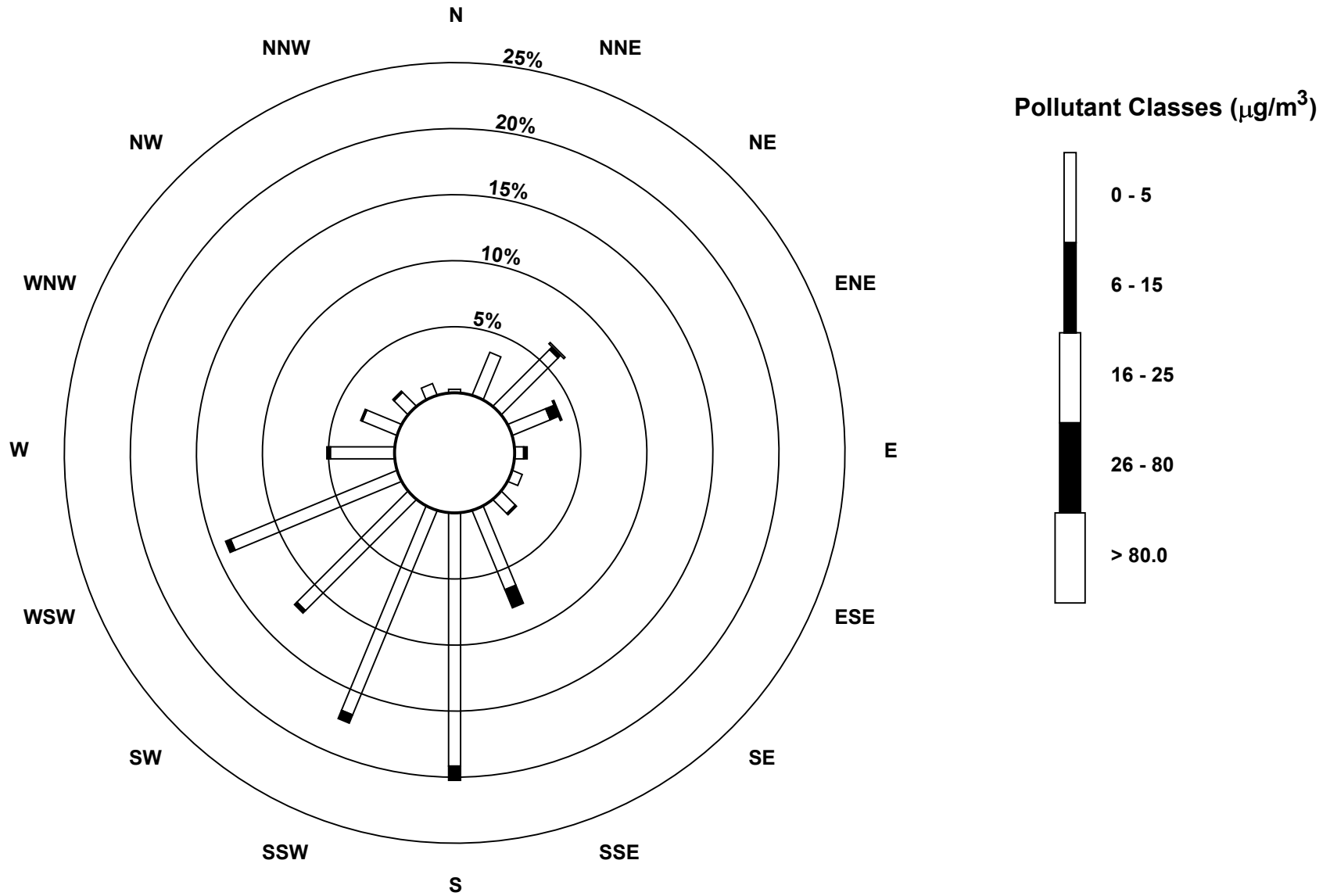
PM2.5 (PM<sub>2.5</sub>) -  $\mu\text{g}/\text{m}^3$   
Portable Rycroft - December 2017





**Pollutant Rose**

**PM<sub>2.5</sub> (PM<sub>2.5</sub>) - μg/m<sup>3</sup>**  
**Portable Rycroft - December 2017**



# Hourly Averages

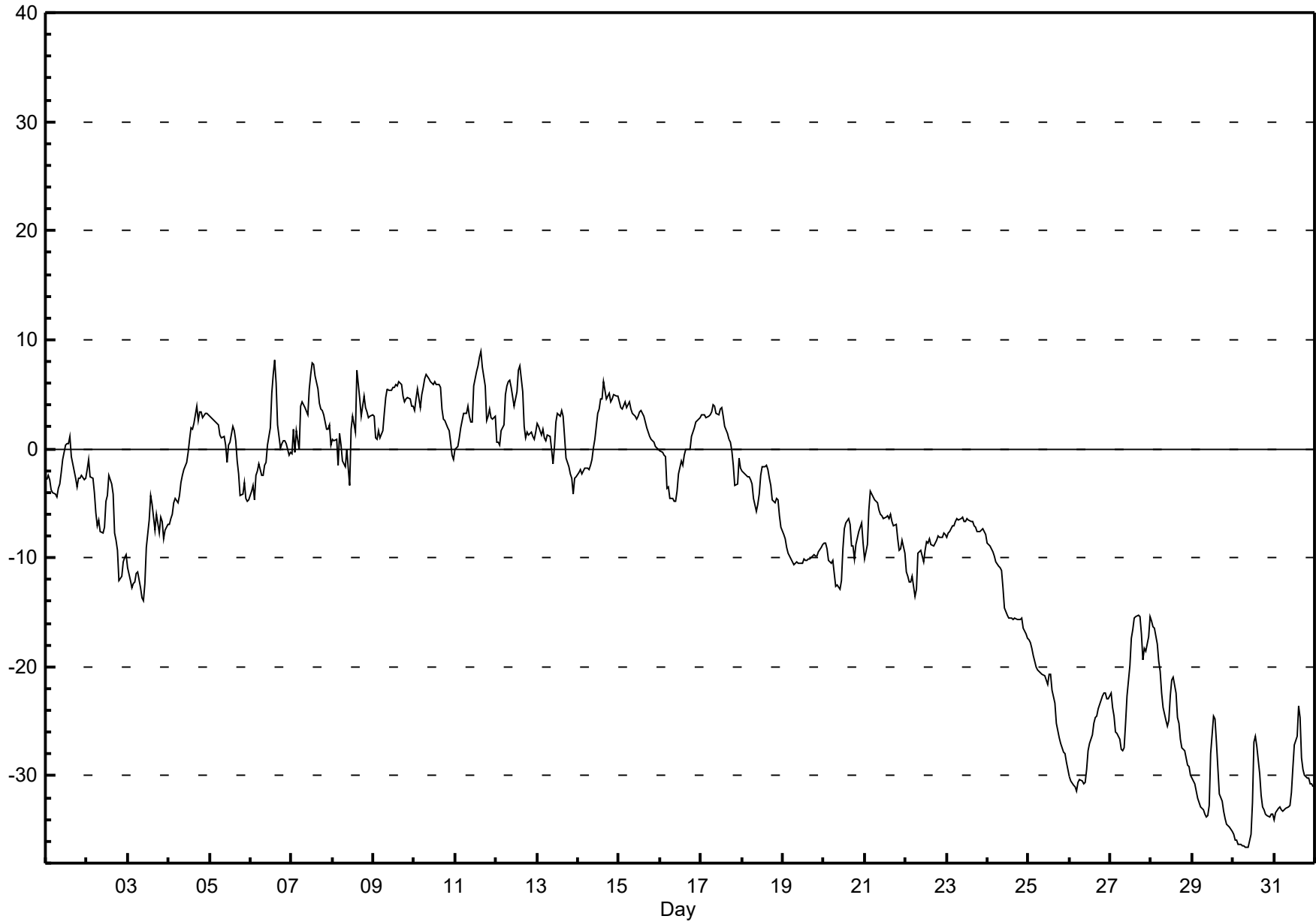
External Temperature (ET) - °C  
 Portable Rycroft - December 2017

Maximum Value: 8.9 °C on Dec 11 16:00	Maximum Daily Average: 4.2 °C on Dec 10	Hours in Service: 744
Minimum Value: -37 °C on Dec 30 09:00	Minimum Daily Average: -33.6 °C on Dec 30	Hours of Data: 744
Maximum Diurnal Average: -5.1 °C at hour 15	Minimum Diurnal Average: -8.8 °C at hour 10	Hours of Missing Data: 0
Monthly Average: -7.80 °C	Percentiles: P <sub>1</sub> = -35.9 P <sub>10</sub> = -29.1 Q <sub>1</sub> = -12.9 Median = -4.4 Q <sub>3</sub> = 1.7 P <sub>90</sub> = 4.3 P <sub>99</sub> = 7.6	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-Dec	-3	-2	-3	-4	-4	-4	-4	-4	-3	-2	-1	0	1	0	1	-1	-2	-3	-3	-3	-3	-2	-3	-3	-2.3	1.2	
2-Dec	-2	-1	-3	-3	-4	-6	-7	-6	-8	-8	-7	-5	-4	-2	-3	-4	-8	-8	-9	-12	-12	-10	-10	-10	-6.4	-1.0	
3-Dec	-11	-12	-13	-12	-12	-11	-11	-13	-14	-14	-12	-9	-7	-4	-5	-6	-7	-6	-8	-6	-7	-8	-7	-7	-9.3	-4.3	
4-Dec	-7	-6	-6	-5	-5	-5	-4	-3	-2	-2	-1	0	1	2	2	2	4	3	3	3	3	3	3	3	-0.6	3.9	
5-Dec	3	3	3	2	2	2	1	1	1	0	-1	0	1	2	2	1	-1	-2	-4	-4	-3	-5	-5	-5	-0.2	2.9	
6-Dec	-4	-3	-5	-2	-2	-1	-3	-2	-1	-1	0	2	5	7	8	6	2	0	0	1	1	0	-1	0	0.3	8.2	
7-Dec	0	2	0	2	0	4	4	4	4	3	6	7	8	8	7	6	4	4	4	3	2	2	2	0	3.4	7.8	
8-Dec	1	1	1	-1	1	0	-1	-2	0	-2	-3	2	3	2	7	6	5	3	5	4	3	3	3	3	1.8	7.2	
9-Dec	3	1	1	2	1	2	3	5	5	5	6	6	6	6	6	6	6	5	4	5	5	5	4	4	4.1	6.1	
10-Dec	3	5	6	4	5	6	6	7	6	6	6	6	6	6	6	6	4	3	3	2	2	1	-1	-1	4.2	6.8	
11-Dec	0	0	1	2	3	3	3	4	3	3	2	6	7	8	8	9	7	6	3	3	4	3	3	3	3.9	8.9	
12-Dec	1	1	0	2	2	5	6	6	6	6	4	5	5	7	8	5	2	1	2	1	2	1	1	2	3.3	7.6	
13-Dec	2	2	1	2	1	1	1	1	0	-1	0	3	3	3	4	3	1	-1	-2	-2	-3	-4	-3	-3	0.4	3.6	
14-Dec	-2	-2	-2	-2	-2	-2	-2	-1	-1	0	1	3	4	5	5	6	5	5	5	4	5	5	5	5	1.9	6.2	
15-Dec	4	4	4	4	4	4	4	4	3	3	3	3	3	3	3	2	2	2	1	1	1	0	0	0	2.6	4.3	
16-Dec	0	0	-1	-1	-4	-3	-5	-5	-5	-5	-4	-2	-1	-1	-1	0	0	0	1	2	2	2	3	3	-1.0	2.8	
17-Dec	3	3	3	3	3	3	3	4	4	3	3	4	4	3	2	1	1	1	0	-2	-3	-3	-1	-2	1.7	4.0	
18-Dec	-2	-2	-2	-3	-3	-3	-3	-5	-6	-5	-4	-2	-2	-2	-2	-2	-3	-3	-5	-5	-5	-5	-6	-7	-3.5	-1.6	
19-Dec	-8	-8	-9	-10	-10	-10	-11	-11	-10	-11	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-9	-9	-9	-9	-9.8	-7.8
20-Dec	-9	-9	-9	-10	-10	-10	-11	-13	-13	-13	-12	-9	-7	-7	-6	-7	-9	-9	-10	-9	-8	-7	-7	-9	-9.3	-6.5	
21-Dec	-10	-9	-6	-4	-4	-4	-5	-5	-6	-6	-6	-6	-6	-6	-6	-7	-7	-7	-8	-9	-9	-9	-8	-10	-6.7	-4.0	
22-Dec	-11	-12	-12	-12	-12	-14	-13	-10	-9	-9	-10	-9	-9	-9	-8	-9	-9	-9	-8	-8	-8	-8	-8	-8	-9.7	-7.8	
23-Dec	-8	-8	-8	-7	-7	-7	-6	-7	-6	-6	-7	-7	-6	-6	-7	-7	-7	-7	-8	-8	-7	-7	-8	-8	-7.0	-6.3	
24-Dec	-9	-9	-9	-9	-10	-10	-11	-11	-11	-13	-15	-15	-16	-15	-16	-16	-16	-16	-16	-16	-15	-16	-17	-17	-13.4	-8.7	
25-Dec	-17	-18	-18	-19	-20	-20	-20	-21	-21	-21	-21	-22	-21	-21	-22	-23	-25	-26	-27	-27	-28	-28	-29	-29	-22.6	-17.5	
26-Dec	-30	-31	-31	-31	-31	-31	-30	-30	-31	-31	-29	-28	-27	-26	-25	-25	-25	-24	-23	-23	-22	-22	-23	-23	-27.1	-22.4	
27-Dec	-22	-24	-25	-26	-26	-27	-28	-28	-27	-25	-23	-20	-17	-17	-16	-15	-15	-15	-17	-19	-18	-19	-17	-15	-20.9	-15.2	
28-Dec	-16	-16	-16	-18	-19	-20	-22	-24	-25	-25	-23	-21	-21	-22	-25	-25	-27	-27	-28	-28	-29	-29	-30	-30	-23.5	-15.8	
29-Dec	-30	-31	-31	-32	-32	-33	-33	-34	-34	-34	-33	-28	-24	-25	-27	-29	-32	-32	-33	-34	-34	-35	-35	-35	-31.7	-24.5	
30-Dec	-35	-36	-36	-36	-36	-36	-36	-37	-37	-37	-35	-32	-27	-26	-27	-30	-32	-33	-33	-33	-34	-34	-34	-33	-33.6	-26.3	
31-Dec	-34	-33	-33	-33	-33	-33	-33	-33	-33	-33	-32	-29	-27	-26	-24	-25	-28	-29	-30	-30	-30	-31	-31	-31	-30.6	-23.6	
	-8.1	-8.1	-8.3	-8.3	-8.5	-8.5	-8.6	-8.6	-8.7	-8.8	-8.5	-6.9	-5.7	-5.3	-5.1	-5.8	-7.0	-7.6	-8.0	-8.3	-8.4	-8.6	-8.6	-8.7	Diurnal Average		
	4.2	4.6	5.5	4.3	5.0	5.6	6.4	6.8	6.5	6.2	6.0	6.9	7.8	7.7	8.4	8.9	7.4	5.8	5.1	4.6	4.6	5.0	4.9	4.8	Diurnal Maximum		

**Hourly Averages**

**External Temperature (ET) - °C**  
**Portable Rycroft - December 2017**





Peace Airshed Zone Association

# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Portable Rycroft - December 2017

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	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	6	6	8	7	8	9	11	11	10	7	9	8	9	10	11	10	8	11	13	9	8	11	10	9	8.9	13.0
Dir	186	183	181	184	173	180	175	179	177	173	162	166	155	192	200	185	182	159	181	197	190	189	189	183	180.2	181.4
2 Spd	10	12	5	5	4	7	7	7	7	7	8	7	6	8	16	8	3	2	3	6	9	10	8	7	6.2	15.7
Dir	199	230	200	207	176	182	170	175	182	175	176	171	160	233	249	240	246	118	133	171	176	178	175	184	193.9	248.7
3 Spd	7	6	6	6	6	7	4	8	8	8	9	5	4	2	3	3	5	5	1	4	3	3	3	1	4.1	8.6
Dir	192	244	190	191	202	185	168	182	175	186	178	204	165	125	178	220	188	215	299	187	322	115	78	90	187.8	177.8
4 Spd	5	6	6	6	5	8	8	11	12	12	14	9	10	12	11	13	23	14	26	24	42	47	44	38	15.5	46.8
Dir	166	167	159	164	168	176	183	186	190	195	190	201	209	218	210	212	226	209	225	236	244	239	238	236	219.8	238.6
5 Spd	37	30	28	28	35	37	31	31	30	24	11	9	5	12	16	11	7	2	6	5	4	8	9	8	16.5	37.2
Dir	236	231	231	232	238	238	241	238	246	255	254	229	212	228	237	242	238	180	209	176	115	147	176	179	232.6	236.1
6 Spd	8	8	7	9	11	11	7	7	7	7	5	6	4	2	3	5	5	7	7	7	7	8	8	9	6.5	11.3
Dir	171	179	185	183	184	190	199	197	163	177	204	247	221	153	144	169	204	189	181	192	211	236	193	172	190.0	189.5
7 Spd	7	4	5	4	4	5	4	2	4	5	5	9	13	15	20	8	7	6	2	6	7	8	7	7	5.1	20.2
Dir	200	220	203	174	240	216	169	36	172	192	263	244	234	242	253	242	242	274	192	140	149	146	156	161	215.4	252.7
8 Spd	6	8	6	2	5	5	3	3	8	7	4	7	5	2	3	4	7	5	2	1	8	7	8	14	3.4	13.8
Dir	165	152	148	150	144	158	125	94	63	74	72	71	73	189	178	167	208	209	214	186	226	208	168	181	155.5	181.5
9 Spd	12	6	5	4	6	4	7	10	11	11	15	8	7	10	9	10	10	8	11	10	9	8	10	13	8.8	14.9
Dir	192	195	196	201	198	218	203	206	208	205	192	207	204	201	205	211	206	206	189	187	173	173	182	179	196.5	192.3
10 Spd	11	7	5	4	8	14	20	31	30	30	32	29	24	21	14	15	15	3	7	5	5	7	7	8	13.6	31.6
Dir	192	188	204	195	195	208	218	226	227	228	232	235	232	233	231	232	244	203	218	165	120	183	175	184	220.8	233.2
11 Spd	7	7	9	8	7	7	8	12	10	9	10	12	13	8	4	4	5	6	7	10	9	6	11	11	8.1	13.2
Dir	170	170	175	190	186	183	165	160	151	159	164	157	170	186	226	172	171	164	176	164	173	178	166	176	170.4	170.2
12 Spd	8	6	8	8	8	13	10	10	17	23	19	24	13	4	4	7	5	8	10	10	10	9	9	7	9.3	24.2
Dir	230	210	182	179	175	185	219	235	237	246	264	255	238	220	204	236	203	201	196	196	200	198	196	202	220.3	255.1
13 Spd	9	8	6	14	10	6	6	5	6	6	15	14	14	11	13	14	7	7	8	8	6	0	9	9	7.3	14.6
Dir	201	199	221	250	252	249	188	211	210	224	256	264	266	253	237	231	213	192	180	179	172	203	156	161	223.9	256.4
14 Spd	10	12	10	8	9	10	13	12	9	10	12	10	8	12	12	29	11	13	18	22	25	18	18	10	12.4	28.8
Dir	159	163	171	152	152	151	166	185	198	181	172	186	198	179	202	238	204	203	204	194	193	200	194	214	190.5	237.8
15 Spd	9	10	9	13	13	22	26	24	26	26	29	32	31	29	27	29	28	27	28	30	28	27	28	24	23.7	32.2
Dir	214	198	214	212	212	225	228	229	231	233	235	236	236	236	237	238	237	235	235	238	239	241	242	238	233.1	236.1
16 Spd	23	24	23	17	8	7	7	9	9	11	12	12	9	7	9	14	10	13	14	13	17	15	17	13	12.4	24.0
Dir	236	236	238	231	191	208	197	193	184	187	188	185	189	197	195	191	192	190	200	201	196	209	198	205	206.1	236.1
17 Spd	16	14	12	11	15	18	19	26	27	22	21	23	29	26	30	27	26	20	15	8	9	10	21	22	19.1	30.3
Dir	206	212	215	213	210	214	218	225	229	226	224	225	230	231	239	233	232	228	224	208	193	207	233	239	224.8	239.2
18 Spd	23	23	23	23	24	20	20	14	11	12	14	18	19	19	18	16	13	12	4	7	7	6	12	12	12.8	23.6
Dir	238	239	237	236	241	238	242	269	263	276	257	251	243	242	248	255	256	248	278	268	300	341	43	55	250.9	241.3
19 Spd	12	12	14	11	9	10	10	6	6	7	8	7	11	10	5	7	3	1	4	3	2	2	3	6	6.0	13.6
Dir	48	49	53	60	61	52	63	68	49	50	44	50	34	39	76	42	70	245	273	31	79	89	153	185	53.9	53.0
20 Spd	4	6	10	13	8	6	7	7	8	10	8	7	7	8	9	4	5	5	5	9	7	5	5	4	6.4	12.5
Dir	209	205	186	183	190	145	147	139	148	162	166	162	165	181	186	191	174	169	171	168	179	190	187	325	174.0	182.9
21 Spd	2	6	11	22	26	23	23	20	14	16	17	17	15	16	14	18	16	12	14	14	17	13	19	16	14.6	25.9
Dir	216	203	231	244	238	252	270	292	292	295	295	300	295	282	272	276	267	242	245	249	239	236	249	255	263.2	237.7
22 Spd	15	11	8	7	8	6	8	15	14	15	15	17	23	23	24	21	20	22	20	24	26	21	19	17	15.9	25.5
Dir	259	242	215	214	208	200	218	236	238	239	236	236	253	254	267	258	252	246	244	246	259	274	256	251	247.7	259.3



Peace Airshed Zone Association

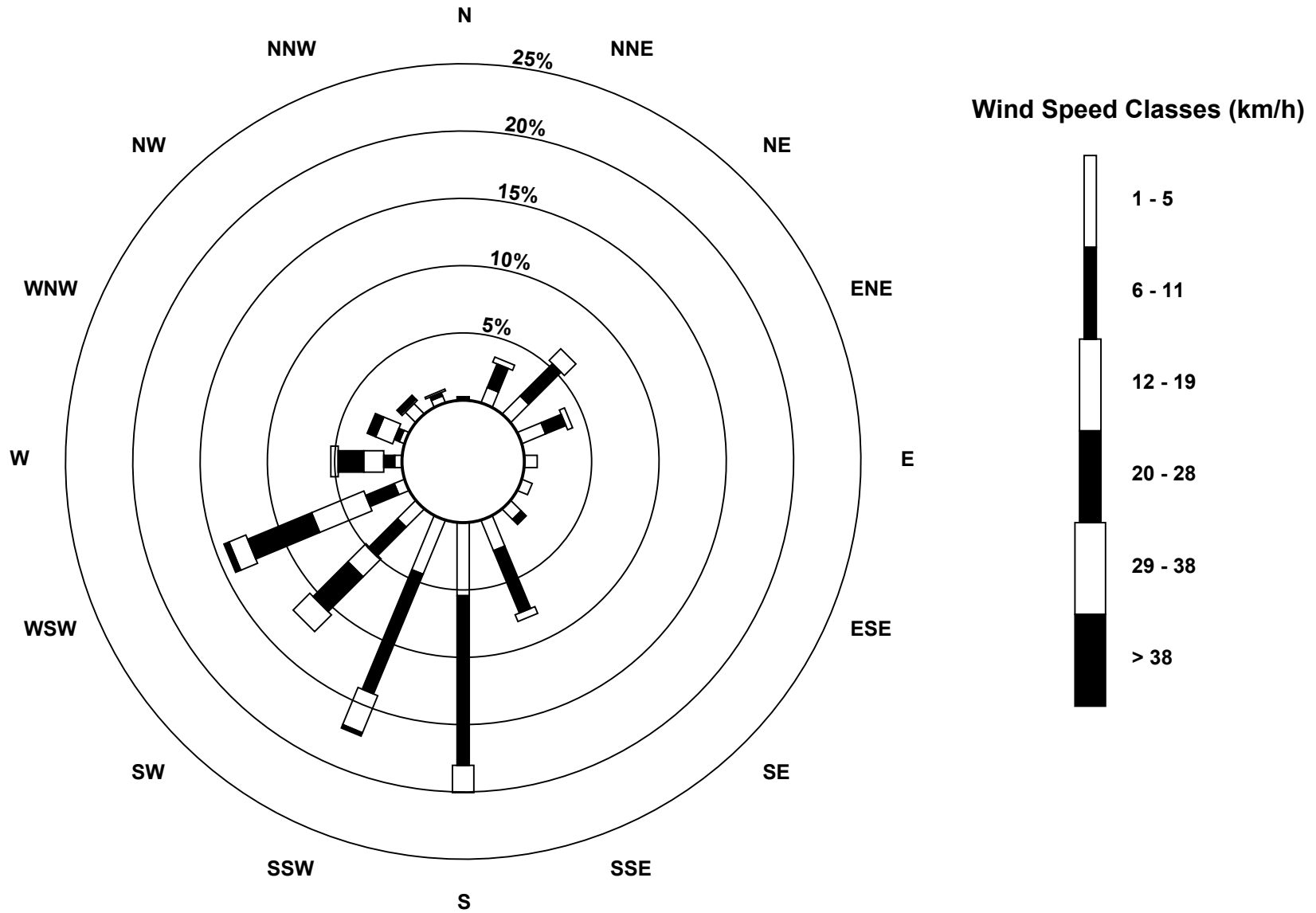
# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Portable Rycroft - December 2017

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	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	19	20	22	28	22	25	27	29	23	20	31	30	28	26	27	26	29	20	20	20	20	27	26	29	24.2	31.4
Dir	248	260	259	264	253	252	255	262	264	253	259	255	266	292	286	279	273	282	264	255	249	258	281	281	265.2	259.1
24 Spd	28	19	20	21	20	17	16	17	14	9	16	16	13	10	9	8	6	4	4	2	1	9	12	12	7.0	28.0
Dir	301	303	313	318	315	290	280	279	287	24	63	69	66	65	54	53	44	52	41	113	89	27	34	39	344.0	301.3
25 Spd	11	13	17	15	17	15	10	7	5	8	8	10	8	10	7	7	7	7	4	5	4	5	7	8.8	17.5	
Dir	46	48	46	42	33	24	25	30	24	30	46	44	38	31	34	64	64	72	72	70	36	45	35	47	41.7	32.9
26 Spd	6	3	3	4	3	4	2	2	4	1	3	2	5	5	4	8	7	8	9	6	7	7	2	3	1.9	8.6
Dir	52	40	64	46	63	30	17	14	30	97	56	297	312	314	297	298	290	270	256	233	235	249	214	247	302.3	255.9
27 Spd	9	11	9	5	5	4	6	7	7	6	5	5	8	5	8	10	11	11	8	6	8	8	5	17	6.9	17.2
Dir	277	263	251	218	224	210	218	202	186	186	195	193	208	186	226	231	235	233	206	202	186	184	180	241	219.4	241.5
28 Spd	21	25	28	22	15	15	13	9	5	6	3	4	6	8	6	3	3	4	7	3	3	2	2	2	4.6	27.5
Dir	248	258	277	272	282	321	332	330	340	49	76	42	14	25	37	108	52	49	46	67	141	167	202	174	301.8	276.8
29 Spd	5	4	2	4	2	4	5	2	5	5	2	1	3	6	7	9	9	11	10	8	7	5	6	1	2.7	10.5
Dir	173	156	93	78	150	177	174	171	172	160	154	235	340	2	17	32	42	51	42	43	38	51	21	313	58.5	51.4
30 Spd	2	1	2	4	4	4	4	5	5	5	4	3	2	7	7	8	4	2	2	1	2	3	3	1	1.0	8.0
Dir	26	142	167	176	177	175	182	177	174	174	176	189	336	6	13	33	40	58	259	285	168	173	218	189	154.0	32.7
31 Spd	2	2	5	2	3	2	3	4	3	2	3	4	3	4	3	2	3	2	1	1	2	2	1	1	1.1	5.3
Dir	136	210	244	323	236	193	203	184	191	212	213	233	209	204	314	335	29	21	192	177	55	70	322	199	219.2	243.8
Spd	7.2	7.0	6.4	6.5	6.6	7.1	7.4	8.0	7.7	7.1	7.1	7.2	6.9	6.6	7.6	7.7	7.0	5.8	6.5	6.7	7.1	6.9	6.8	6.9	Diurnal Average	
Dir	224.9	225.0	225.6	227.4	222.6	222.6	222.8	227.1	223.4	220.8	223.2	229.1	233.1	239.2	242.7	239.7	234.6	221.4	218.3	212.2	216.0	220.1	215.9	219.8		
Spd	37.2	29.9	27.9	28.3	34.5	36.7	31.5	31.1	30.1	29.7	31.6	32.2	31.1	29.4	30.3	29.0	29.5	26.7	27.5	29.5	41.6	46.8	43.7	37.9	Diurnal Maximum	
Dir	236.1	231.5	230.8	263.8	238.1	237.6	241.0	226.3	226.6	227.9	233.2	236.1	235.7	236.2	239.2	238.2	273.4	234.6	235.2	238.5	243.5	238.6	237.6	236.1		
Maximum Speed Value: 47 km/h on Dec 4 22:00		Minimum Speed Value: 0 km/h on Dec 13 22:00										Hours in Service: 744														
Maximum Daily Speed Average: 24.2 km/h on Dec 23		Minimum Daily Speed Average: 1.0 km/h on Dec 31										Hours of Data: 744														
Maximum Diurnal Speed Average: 8.0 km/h at hour 8		Minimum Diurnal Speed Average: 5.8 km/h at hour 18										Hours of Missing Data: 0														
Monthly Average Velocity: 6.92 km/h 225.45 deg		Speed Percentiles: P <sub>1</sub> = 1.1 P <sub>10</sub> = 2.9 Q <sub>1</sub> = 5.4 Median = 8.2 Q <sub>3</sub> = 14.0 P <sub>90</sub> = 23.4 P <sub>99</sub> = 32.5										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	4	8	0	0	0	0	12																			
NorthEast	24	41	16	0	0	0	81																			
East	16	6	1	0	0	0	23																			
SouthEast	18	18	1	0	0	0	37																			
South	47	170	34	2	0	0	253																			
SouthWest	32	67	48	48	23	3	221																			
West	4	15	29	36	6	0	90																			
NorthWest	12	4	7	4	0	0	27																			
Total	157	329	136	90	29	3	744																			

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Portable Rycroft - December 2017**



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

## Portable Rycroft - December 2017

Maximum Speed: 47 km/h on Dec 4 22:00	Maximum Daily Speed Average: 24.8 km/h on Dec 23	Hours in Service: 744
Minimum Speed: 1 km/h on Dec 29 12:00	Minimum Daily Speed Average: 3.0 km/h on Dec 31	Hours of Data: 744
Maximum Diurnal Speed Average: 12.0 km/h at hour 12	Minimum Diurnal Speed Average: 9.3 km/h at hour 18	Hours of Missing Data: 0
Monthly Average Speed: 11.07 km/h	Percentiles: P <sub>1</sub> = 1.7 P <sub>10</sub> = 3.5 Q <sub>1</sub> = 5.8 Median = 8.4 Q <sub>3</sub> = 14.2 P <sub>90</sub> = 23.4 P <sub>99</sub> = 32.5	Percent Operational Time: 100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	7	6	8	7	8	9	11	11	10	8	9	8	9	11	12	10	8	11	13	10	8	11	10	10	9.3	13.1
2-Dec	10	13	5	5	4	7	8	7	7	7	8	8	6	10	16	8	4	2	3	6	9	10	8	8	7.4	16.0
3-Dec	7	6	7	7	6	7	4	8	8	8	9	7	5	3	4	4	6	6	2	4	5	4	3	2	5.4	8.7
4-Dec	5	6	6	6	5	8	8	11	12	12	14	9	10	12	11	14	23	14	26	25	42	47	44	38	17.0	46.8
5-Dec	37	30	28	28	35	37	31	31	30	24	11	9	5	12	16	12	7	3	6	6	4	8	9	9	17.8	37.3
6-Dec	8	8	8	9	11	11	7	7	7	8	6	6	5	3	3	5	5	7	7	7	8	8	8	9	7.1	11.4
7-Dec	7	5	5	5	5	7	5	3	5	6	7	9	13	16	20	9	7	6	3	6	7	8	8	8	7.4	20.3
8-Dec	6	8	6	2	5	5	4	3	8	7	4	7	6	3	3	4	7	6	3	4	8	8	8	14	5.8	13.9
9-Dec	12	6	6	4	7	5	7	10	11	12	15	8	7	10	9	10	10	9	12	10	9	8	10	13	9.1	15.0
10-Dec	11	7	6	4	8	14	20	31	30	30	32	29	24	21	14	15	15	4	7	5	6	8	7	8	14.7	31.6
11-Dec	7	7	9	8	7	7	8	12	10	10	10	12	13	8	4	4	6	7	7	10	9	7	11	11	8.4	13.3
12-Dec	8	6	9	9	8	13	11	10	17	23	19	24	13	4	5	7	5	8	10	10	10	9	9	7	10.6	24.3
13-Dec	9	8	6	14	10	7	7	5	6	6	15	15	14	11	13	14	8	7	8	8	6	2	9	9	9.0	14.7
14-Dec	10	12	10	8	9	10	13	12	9	10	12	11	8	12	14	29	11	13	18	22	25	18	18	11	13.5	28.9
15-Dec	10	10	10	13	13	22	26	24	26	27	29	32	31	29	27	29	28	27	28	30	28	27	28	24	24.0	32.2
16-Dec	23	24	24	17	8	7	7	9	10	11	12	12	9	7	9	14	10	13	14	13	17	15	17	13	13.2	24.0
17-Dec	16	14	12	11	15	18	19	26	27	22	21	23	29	26	30	27	26	20	15	8	9	10	21	22	19.5	30.4
18-Dec	23	23	23	23	24	20	20	15	11	13	14	18	19	19	18	16	14	12	5	7	7	6	13	12	15.6	23.7
19-Dec	12	12	14	11	9	10	10	6	6	7	8	7	11	10	6	7	4	3	5	4	3	2	4	6	7.4	13.7
20-Dec	5	7	10	13	8	7	7	7	9	10	8	7	7	8	9	4	6	5	5	9	7	5	5	6	7.2	12.6
21-Dec	3	7	12	22	26	23	23	20	14	16	17	17	16	16	14	18	16	12	14	14	17	13	20	16	16.1	25.9
22-Dec	15	12	8	7	8	6	8	15	14	15	15	17	23	23	24	21	21	22	20	24	26	22	19	17	16.7	25.6
23-Dec	19	20	22	28	22	25	27	29	24	20	31	30	28	26	27	26	29	21	20	20	20	27	26	29	24.8	31.4
24-Dec	28	19	20	21	20	17	17	17	14	16	16	16	13	10	9	8	6	5	5	3	3	9	12	12	13.2	28.4
25-Dec	11	13	17	16	18	15	10	8	6	8	8	10	8	10	10	8	7	7	7	4	5	4	5	7	9.1	17.6
26-Dec	6	3	4	4	4	4	4	3	4	2	3	3	5	5	4	8	7	8	9	6	7	7	2	3	4.8	8.7
27-Dec	9	11	9	5	5	4	6	7	7	6	5	7	9	6	8	10	11	11	8	6	8	8	5	17	7.9	17.3
28-Dec	21	25	28	22	15	16	13	10	6	6	3	5	6	8	6	3	3	5	7	3	3	2	2	2	9.1	27.6
29-Dec	5	4	2	4	4	4	5	2	5	5	2	1	3	6	8	9	9	11	10	8	7	5	6	2	5.2	10.5
30-Dec	3	3	2	4	4	4	4	5	5	5	4	3	2	7	7	8	4	3	2	2	2	3	3	1	3.8	8.2
31-Dec	3	2	5	3	3	2	3	4	4	2	3	4	3	4	3	3	4	3	2	2	3	3	2	2	3.0	5.4
	11.4	10.9	10.9	11.0	10.8	11.3	11.4	11.8	11.6	11.7	11.9	12.0	11.6	11.5	11.7	11.7	10.6	9.3	9.7	9.5	10.5	10.4	11.3	11.2	Diurnal Average	
	37.3	30.0	27.9	28.3	34.5	36.7	31.5	31.1	30.1	29.7	31.6	32.2	31.2	29.4	30.4	29.0	29.5	26.7	27.6	29.6	41.7	46.8	43.7	37.9	Diurnal Maximum	

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

# Hourly Standard Deviations

Wind Direction (WD) - deg  
 Portable Rycroft - December 2017

Maximum Value: 84.9 deg on Dec 13 22:00																								Hours in Service:	744
Minimum Value: 1.5 deg on Dec 18 03:00																								Hours of Data:	744
Percentiles: P <sub>1</sub> = 2.0 P <sub>10</sub> = 3.2 Q <sub>1</sub> = 4.9 Median = 8.3 Q <sub>3</sub> = 15.8 P <sub>90</sub> = 35.2 P <sub>99</sub> = 71.1																								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-Dec	13	10	6	13	17	6	3	3	3	8	10	16	14	19	20	7	6	11	6	17	11	5	6	7	20.4
2-Dec	17	13	8	11	13	11	17	9	10	8	11	7	13	40	11	7	49	45	32	15	4	6	4	5	48.7
3-Dec	5	15	13	15	4	14	33	10	4	6	6	41	21	83	21	36	10	20	74	22	64	52	20	54	82.6
4-Dec	18	7	9	9	21	10	7	4	4	5	5	3	7	5	6	17	8	4	6	8	5	2	2	3	20.5
5-Dec	2	3	3	3	2	3	2	2	5	5	12	9	4	5	5	7	14	45	9	19	22	9	6	5	45.5
6-Dec	7	8	9	4	5	5	8	12	14	12	17	14	25	50	18	25	12	7	15	10	13	17	8	4	50.3
7-Dec	13	25	17	32	54	36	72	71	34	22	43	13	7	11	7	18	9	14	48	11	18	6	10	15	72.0
8-Dec	12	12	42	69	13	12	25	37	12	19	26	23	69	55	42	49	17	16	81	82	15	11	17	5	81.8
9-Dec	5	9	12	18	17	23	11	5	3	7	6	3	5	4	5	3	3	8	5	5	10	8	6	5	22.9
10-Dec	5	10	20	16	11	8	4	4	3	3	4	2	3	3	3	4	5	38	14	33	35	12	12	8	37.9
11-Dec	10	11	8	9	8	6	16	7	9	9	9	9	7	8	20	14	10	12	9	8	6	26	8	5	25.7
12-Dec	8	14	13	13	18	11	18	12	5	11	8	5	10	22	40	12	12	5	8	5	3	4	6	6	39.7
13-Dec	4	5	13	5	13	19	20	13	14	20	6	6	7	4	4	4	26	7	9	7	33	85	14	17	84.9
14-Dec	8	4	8	11	7	5	4	8	4	6	9	18	6	5	22	5	4	5	3	3	4	4	4	14	22.0
15-Dec	13	10	11	7	4	7	3	3	3	3	2	2	3	3	3	3	3	2	2	2	2	2	2	3	12.9
16-Dec	2	2	2	9	9	4	6	7	6	5	4	4	7	7	8	6	9	5	5	4	7	4	7	6	9.5
17-Dec	4	4	7	5	3	4	5	4	3	4	3	3	3	5	3	2	3	3	4	11	7	12	3	2	12.3
18-Dec	2	2	1	2	4	3	4	21	6	21	3	3	4	3	2	5	6	39	6	18	10	18	6	6	38.5
19-Dec	5	6	5	7	9	8	8	16	7	7	12	10	5	7	17	8	35	84	46	40	45	35	46	10	83.6
20-Dec	26	21	5	5	16	11	11	5	10	4	11	8	10	11	4	8	16	15	14	12	6	9	7	69	68.8
21-Dec	59	13	25	3	3	7	5	7	5	2	3	4	6	5	5	3	7	5	13	12	5	7	7	6	59.2
22-Dec	3	31	11	5	15	6	10	5	9	10	6	5	9	8	8	3	3	4	4	5	4	10	5	9	31.0
23-Dec	8	3	3	3	3	4	4	6	8	4	3	2	6	4	3	4	2	5	7	3	3	5	4	4	7.7
24-Dec	9	6	4	5	9	10	6	5	6	60	8	6	6	9	9	7	12	13	23	40	56	6	4	7	60.5
25-Dec	10	8	8	12	6	5	6	12	10	11	11	12	16	4	5	18	7	4	3	19	5	17	21	5	21.2
26-Dec	11	56	62	11	36	38	52	46	32	34	31	46	17	18	25	12	7	9	10	8	9	12	29	19	61.9
27-Dec	12	16	11	9	6	11	9	9	9	6	9	35	28	24	14	16	11	10	19	5	5	9	11	6	34.8
28-Dec	6	4	4	6	11	17	5	6	53	28	33	14	13	6	17	24	12	16	6	21	39	62	13	29	62.5
29-Dec	8	17	34	13	51	16	6	20	4	7	56	49	10	7	6	8	5	4	5	10	8	19	7	46	56.1
30-Dec	48	66	26	6	8	10	7	6	5	6	7	15	44	4	9	16	13	77	30	68	40	35	21	55	76.7
31-Dec	28	35	11	51	29	30	8	11	12	30	22	11	13	25	24	59	43	44	64	71	56	55	50	66	71.1
59.2	65.7	61.9	69.1	53.9	37.7	72.0	70.7	53.1	60.5	56.1	49.0	68.6	82.6	41.5	59.4	48.7	83.6	80.9	81.8	63.6	84.9	49.8	68.8		



# PAZA

## Monthly Passive Data Summary

## PAZA Passive Results for December 2017

Station Number	Station Name	SO2 ppb	O3 ppb	NO2 ppb	H2S ppb	Site Legal
<b>Duplicates</b>						
2a	Bay Tree		40.4			
2b	Bay Tree		39.4			
24a	Wembley	0.3		2.8		
24b	Wembley	0.3		2.9		
25a	Pinto Creek			0.7		
25b	Pinto Creek			1.2		
32a	Gold Creek	0.2				
32b	Gold Creek	0.2				
64a	Girouxville 4				0.3	
64b	Girouxville 4				0.3	
2	Bay Tree	0.2	39.9	0.9		13-16-078-13 W6M
4	Gordondale	0.4		1.5		04-34-078-10 W6M
5	Boone Creek	0.3		1.0		16-36-074-11 W6M
9	Spirit River	0.4		1.2		08-12-079-07 W6M
14	Sylvester	0.2		0.7		08-06-069-12 W6M
16	Beaverlodge	0.4		2.2		15-36-071-10 W6M
18	Saddle Hills	0.8		1.1		04-25-074-07 W6M
19	Wanham	0.4		0.9		16-22-077-03 W6M
21	Eaglesham	0.2		0.9		16-21-079-25 W5M
24	Wembley	0.3		2.8		12-31-070-08 W6M
25	Pinto Creek	0.2		1.0		04-24-069-11 W6M
27	Grande Prairie I	0.4		12.5		08-15-071-06 W6M
28	Clairmont Lake	0.6		3.1		09-06-073-04 W6M
29	Smoky Heights	0.9		2.7		04-06-075-02 W6M
32	Gold Creek	0.2		6.8		06-33-067-05 W6M
35	Jean Cote	0.3		1.0		12-35-079-21 W5M
36	Guy	1.4		1.0	0.1	03-04-076-22 W5M
37	Crooked Creek	0.4	37.1	3.4		16-01-071-26 W5M
39	Clouston Creek	0.4		1.2		12-01-073-22 W5M
40	McLennan	0.3		1.1		03-29-077-19 W5M
43	High Prairie	0.2		1.2		16-13-074-17 W5M
44	Peavine	0.2		0.7		03-05-079-15 W5M
46	Little Smoky	0.3		4.5		12-01-065-21 W5M
47	Kinuso	0.2	BDL	1.2		12-10-073-10 W5M
49	Grande Prairie HP	0.4		12.3		17-26-071-06 W6M
50	East Prairie	0.2		0.6		13-02-072-15 W5M
63	Girouxville 3				0.2	14-02-077-23 W5M
64	Girouxville 4				0.3	4-08-077-22 W5M

\*BDL = Below Detection Level

\*N/S - No sample

## Passive Summary for December 2017

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

Passive Summary for December 2017 (PAZA Zone)				
<b>Mean</b>	<b>0.4</b>	<b>38.5</b>	<b>2.6</b>	<b>0.2</b>
<b>Standard Deviation</b>	<b>0.3</b>	<b>2.0</b>	<b>3.2</b>	<b>0.1</b>
<b>Minimum</b>	<b>0.2</b>	<b>37.1</b>	<b>0.6</b>	<b>0.1</b>
<b>Minimum At</b>	<b>East Prairie (#50)</b>	<b>Crooked Creek (#37)</b>	<b>East Prairie (#50)</b>	<b>Guy (#36)</b>
<b>Maximum</b>	<b>1.4</b>	<b>39.9</b>	<b>12.5</b>	<b>0.3</b>
<b>Maximum At</b>	<b>Guy (#36)</b>	<b>Bay Tree (#2)</b>	<b>Grande Prairie I (#27)</b>	<b>Girouxville 4 (#64a)</b>

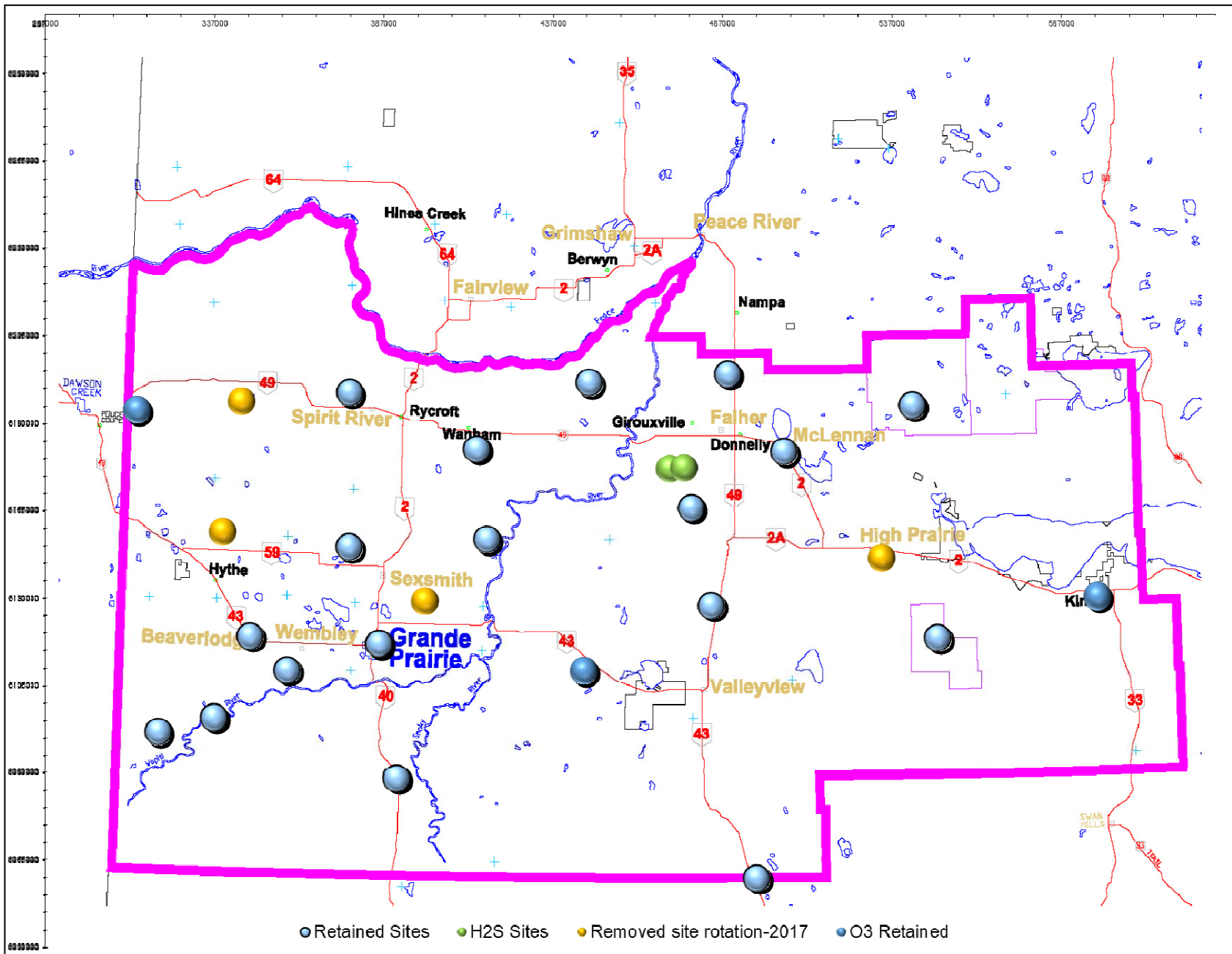
### Comparison between Continuous and Passive monitoring at Beaverlodge (passive #16 Beaverlodge)

	SO <sub>2</sub>	NO <sub>2</sub>
<b>PAZA Beaverlodge station</b>	<b>0.2</b>	<b>4.1</b>
<b>PAZA Beaverlodge passive</b>	<b>0.4</b>	<b>2.2</b>

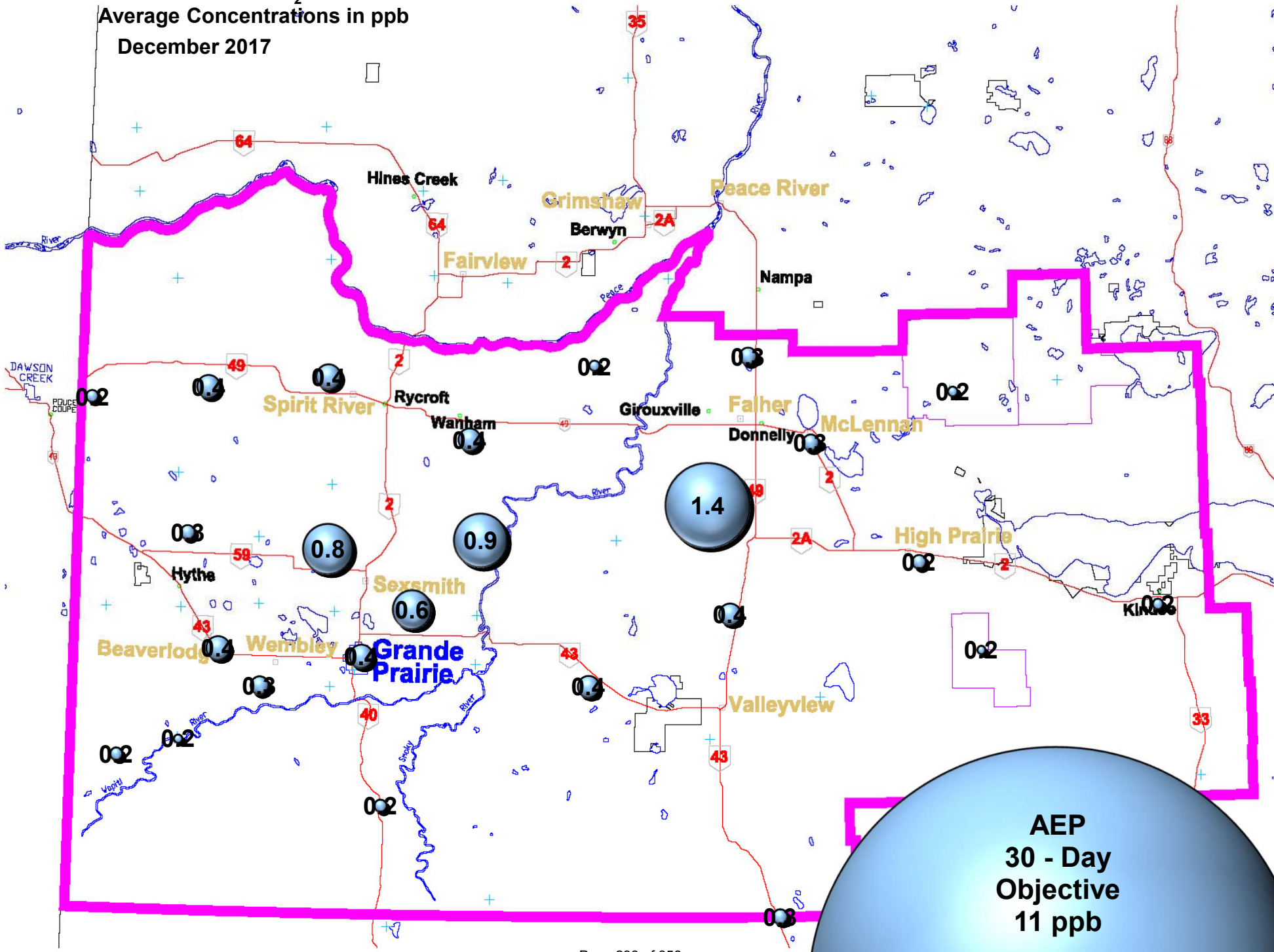
### Comparison between Continuous and Passive monitoring at Henry Pirker (passive #49 Grande Prairie HP)

	SO <sub>2</sub>	NO <sub>2</sub>
<b>PAZA Henry Pirker station</b>	<b>0.5</b>	<b>17.2</b>
<b>PAZA Grande Prairie passive</b>	<b>0.4</b>	<b>12.5</b>

# Location of PAZA Passive Monitoring Stations

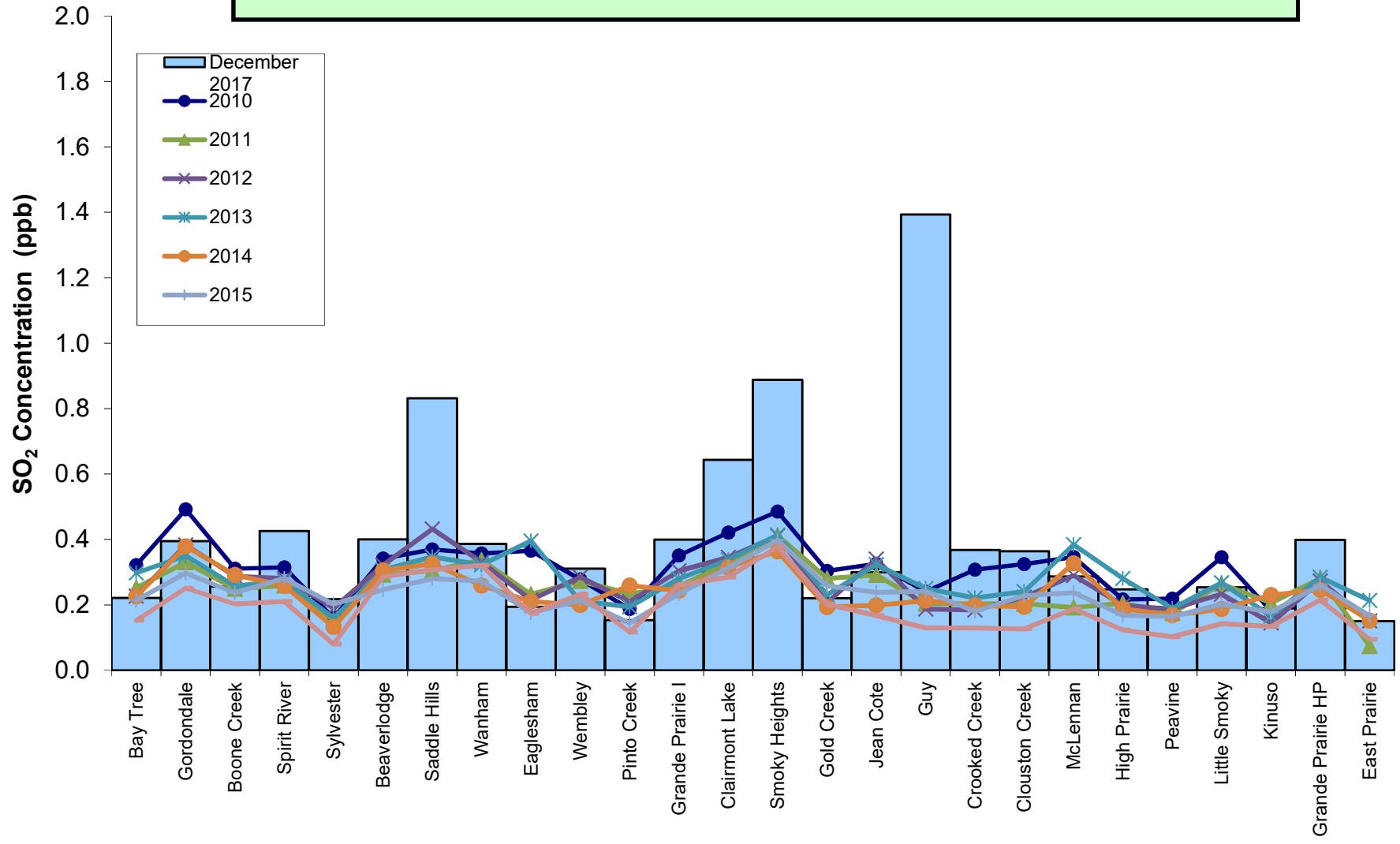


**PAZA Passive SO<sub>2</sub> Stations**  
**Average Concentrations in ppb**  
**December 2017**

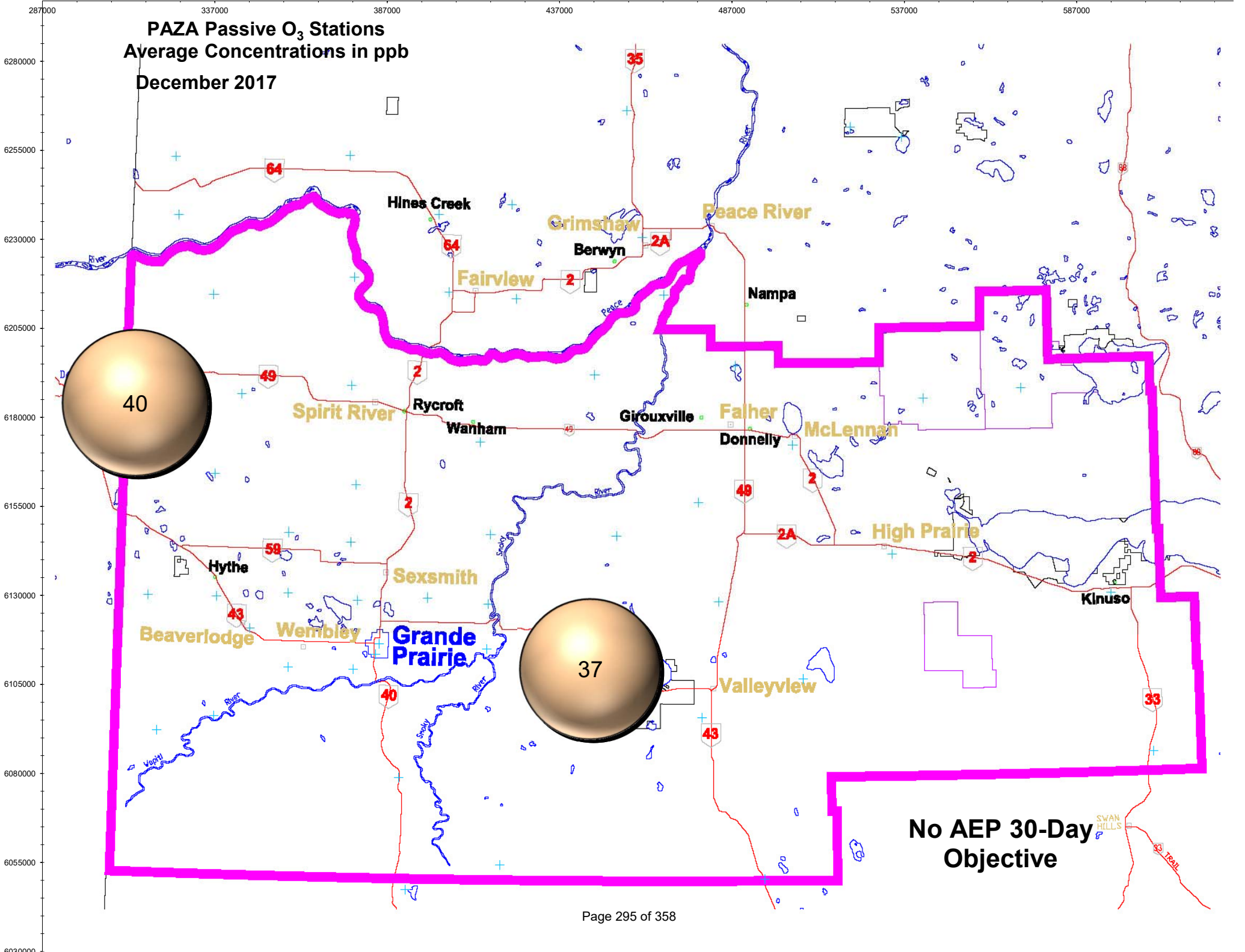


**AEP**  
**30 - Day**  
**Objective**  
**11 ppb**

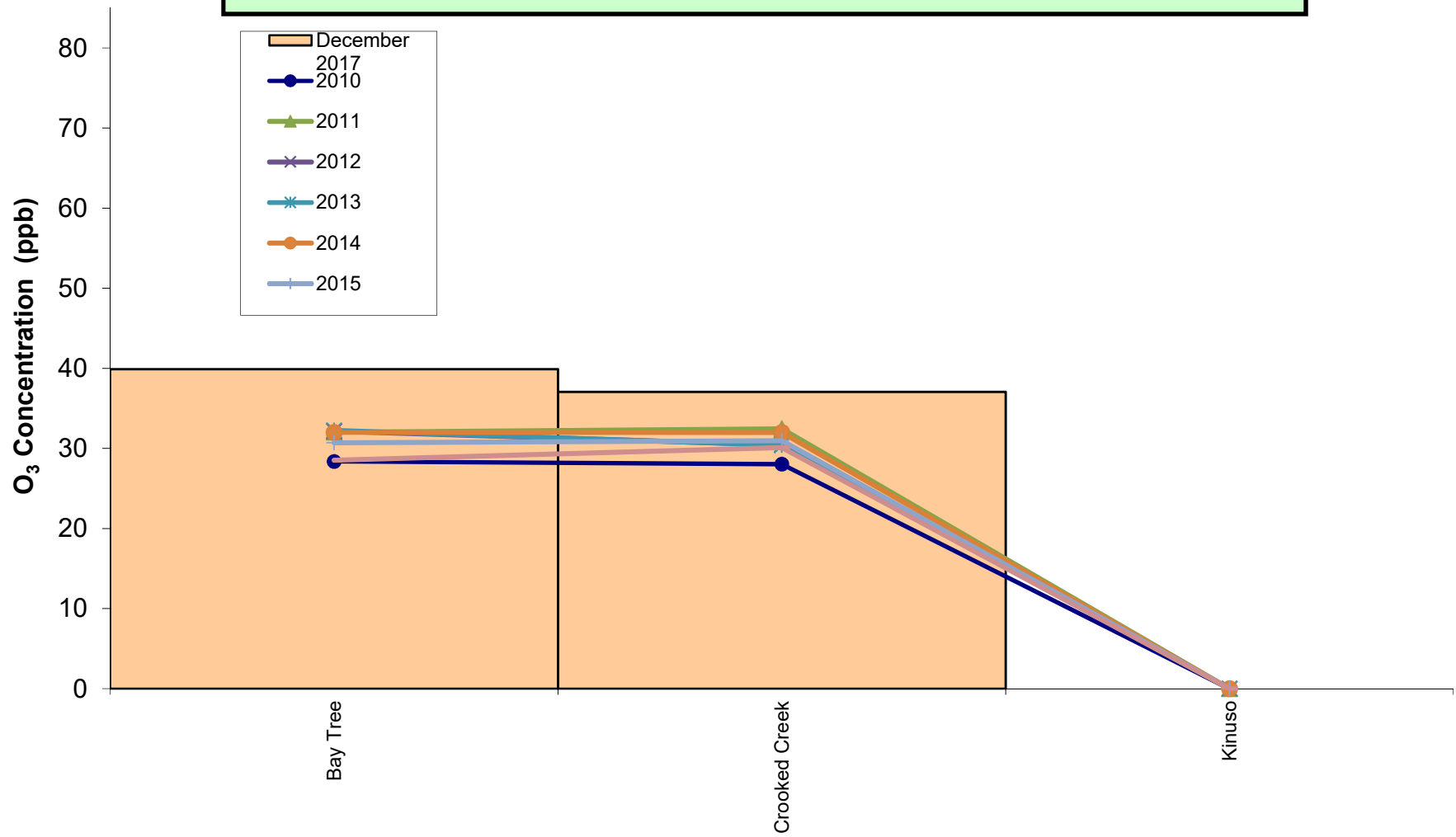
**Alberta Ambient Air Quality Objective - 30-day Objective is 11 ppb**



# PAZA Passive O<sub>3</sub> Stations Average Concentrations in ppb December 2017



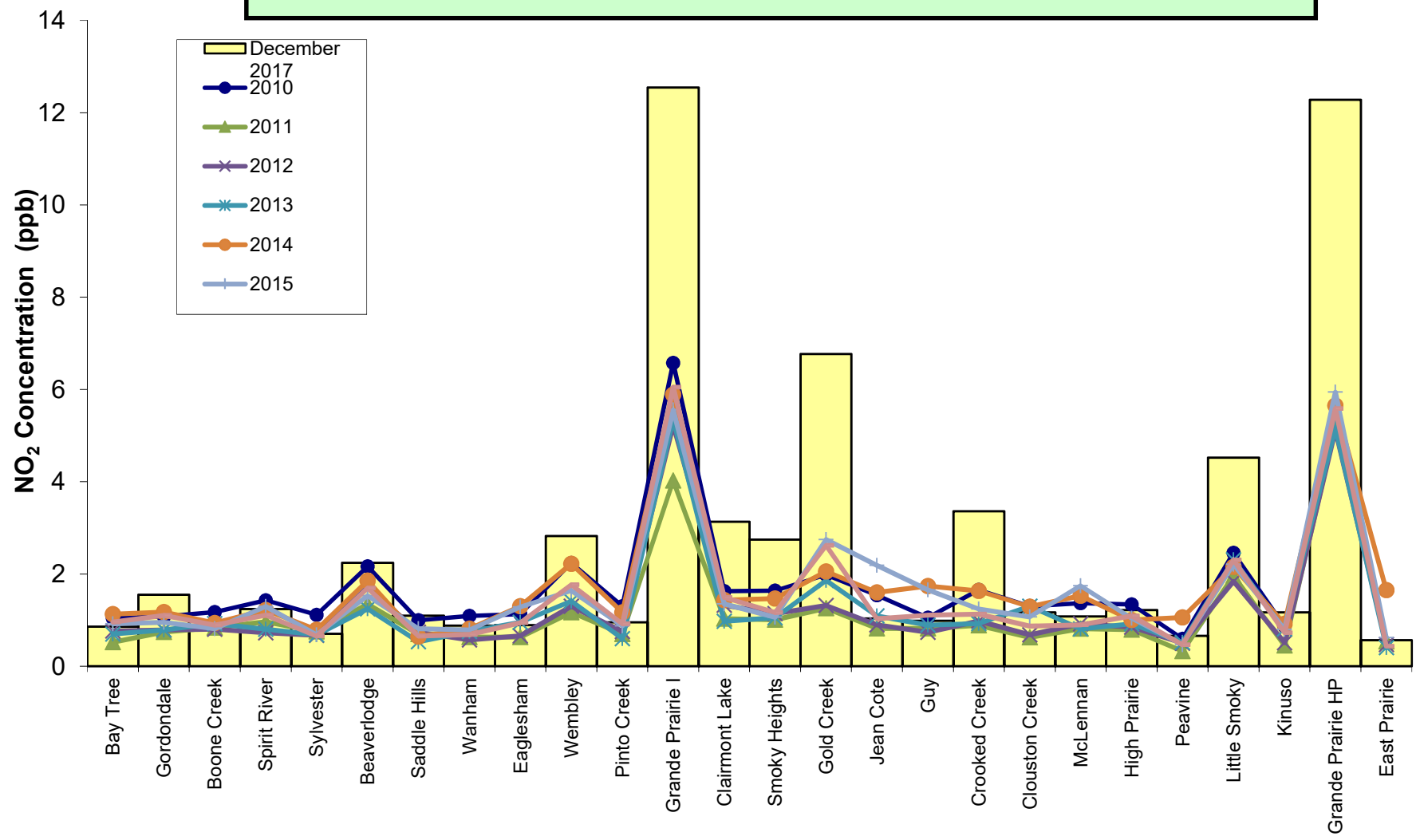
### Alberta Ambient Air Quality Objective - No Annual O<sub>3</sub> Objective



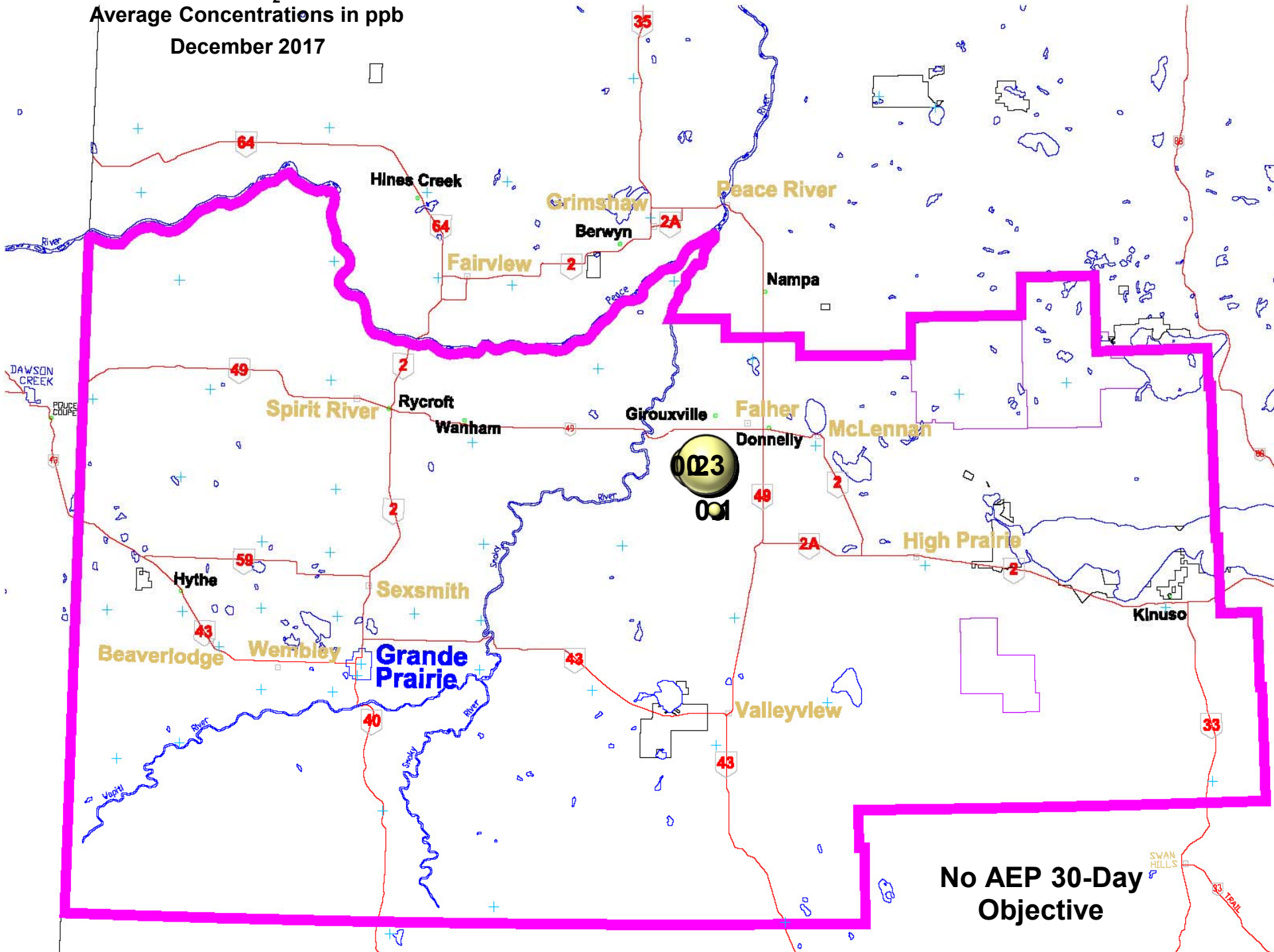


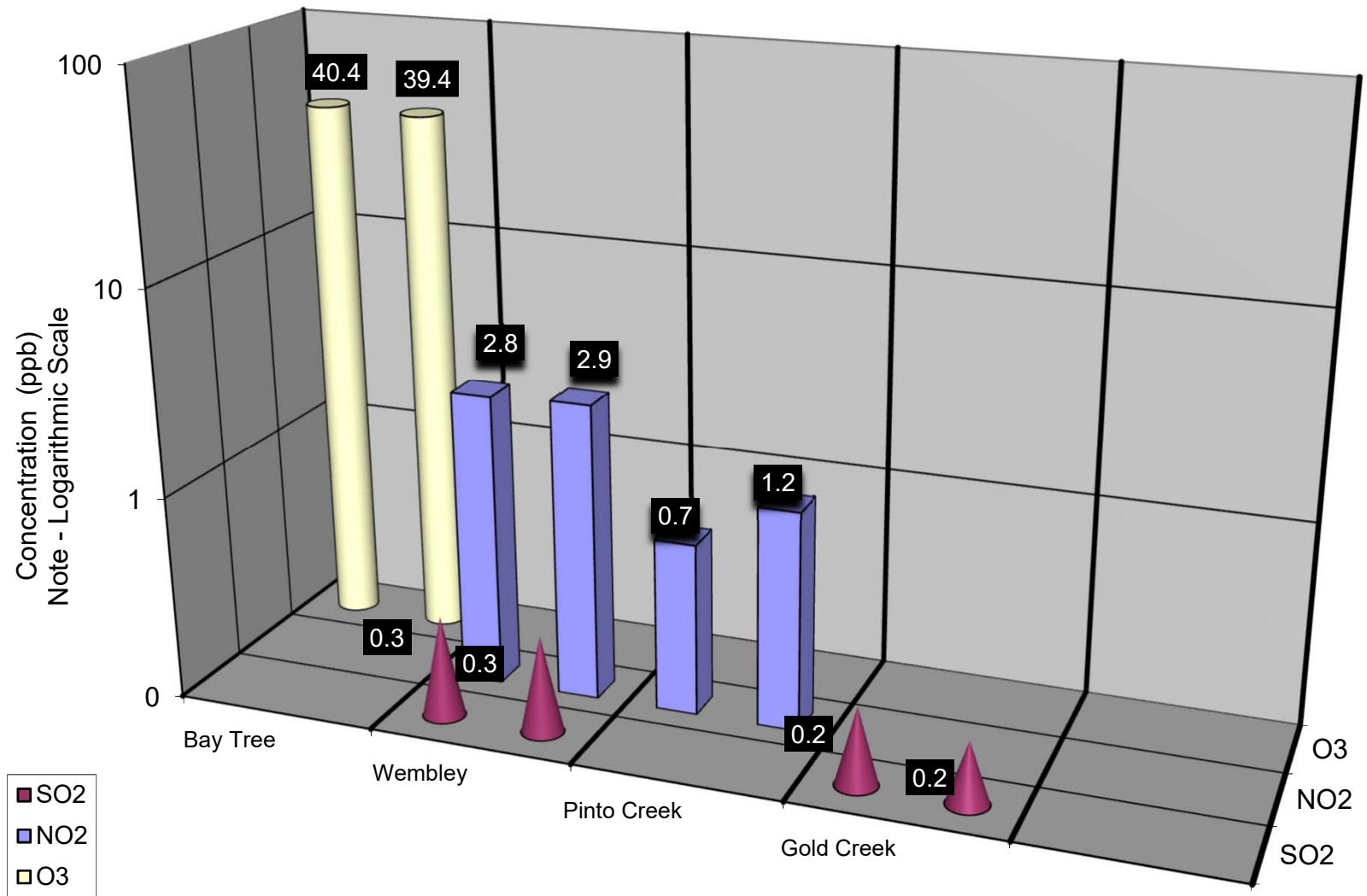


**Alberta Ambient Air Quality Objective - Annual NO<sub>2</sub> Objective is 24 ppb**



**PAZA Passive H<sub>2</sub>S Stations  
Average Concentrations in ppb  
December 2017**





Duplicate Summary Chart

# December 2017 Calibration Reports

**PAZA - Henry Pirker Station with the following calibrations:  
SO<sub>2</sub>, NO, NO<sub>2</sub>, NO<sub>x</sub>, O<sub>3</sub>, CO, THC, and TRS**

**PAZA – Evergreen Park Station with the following calibrations:  
SO<sub>2</sub> and TRS**

**PAZA – Smoky Heights Station with the following calibrations:  
SO<sub>2</sub> and TRS**

**PAZA – Beaverlodge Station with the following calibrations:  
SO<sub>2</sub>, NO, NO<sub>2</sub>, NO<sub>x</sub>, and O<sub>3</sub>**

**PAZA – Valleyview Station with the following calibrations:  
SO<sub>2</sub> and H<sub>2</sub>S**

**PAZA – Donnelly Station with the following calibrations:  
SO<sub>2</sub> and H<sub>2</sub>S**

**PAZA – Rycroft Station with the following calibrations:  
SO<sub>2</sub>, NO, NO<sub>2</sub>, NO<sub>x</sub>, O<sub>3</sub>, THC, and TRS**

# Calibration Report



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

### Station Information

Calibration Date	December 18, 2017	Previous Calibration	November 23, 2017
Station Number	2	Station Location	Evergreen Park
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	9:55	End Time (MST)	12:00
Barometric Pressure	0.903 ATM	Station Temperature	22.0 Deg C
Calibrator	EnviroNics 6103	Serial Number	6586
Cal Gas Concentration	49.6 ppm	Cal Gas Expiry Date	5/4/2019
Correction factor	0.030487	Cal Gas Cylinder #	LL107945
DACS make	CR3000	DACS serial No.	5236
DACS voltage range	0 - 5 volt	DACS channel #	6
	<u>Before</u>		<u>After</u>
Calculated slope	0.999376	Calculated slope	0.989160
Calculated intercept	0.221953	Calculated intercept	0.302266
Analyzer make	Teco 43i	Analyzer serial #	701120008

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	12.7		12.7	
coefficient	1.246		1.246	
Lamp Voltage	832	volts	835	volts
Chamber Temp	45	Deg C	45	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	663.8	mm Hg	669.5	mm Hg
Sample Flow	0.431	ccm	0.436	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)
4997	0.0	0.00	0.3	N/A
4997	40.01	394.0	398.3	0.9891
4997	19.99	197.6	199.1	0.9924
4997	9.98	98.9	99.1	0.9981
4997	0.0	0.0	0.3	As Found Zero
4997	39.98	393.7	398.3	As Found Span
Average Correction Factor				0.9932

Calculated value of As Found Response: 397.976 ppm      Percent Change of As Found: -1.1%

	before calibration		after calibration	
Auto zero	0.2	ppm	0.3	ppm
Auto span	273.2	ppm	268.6	ppm

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA



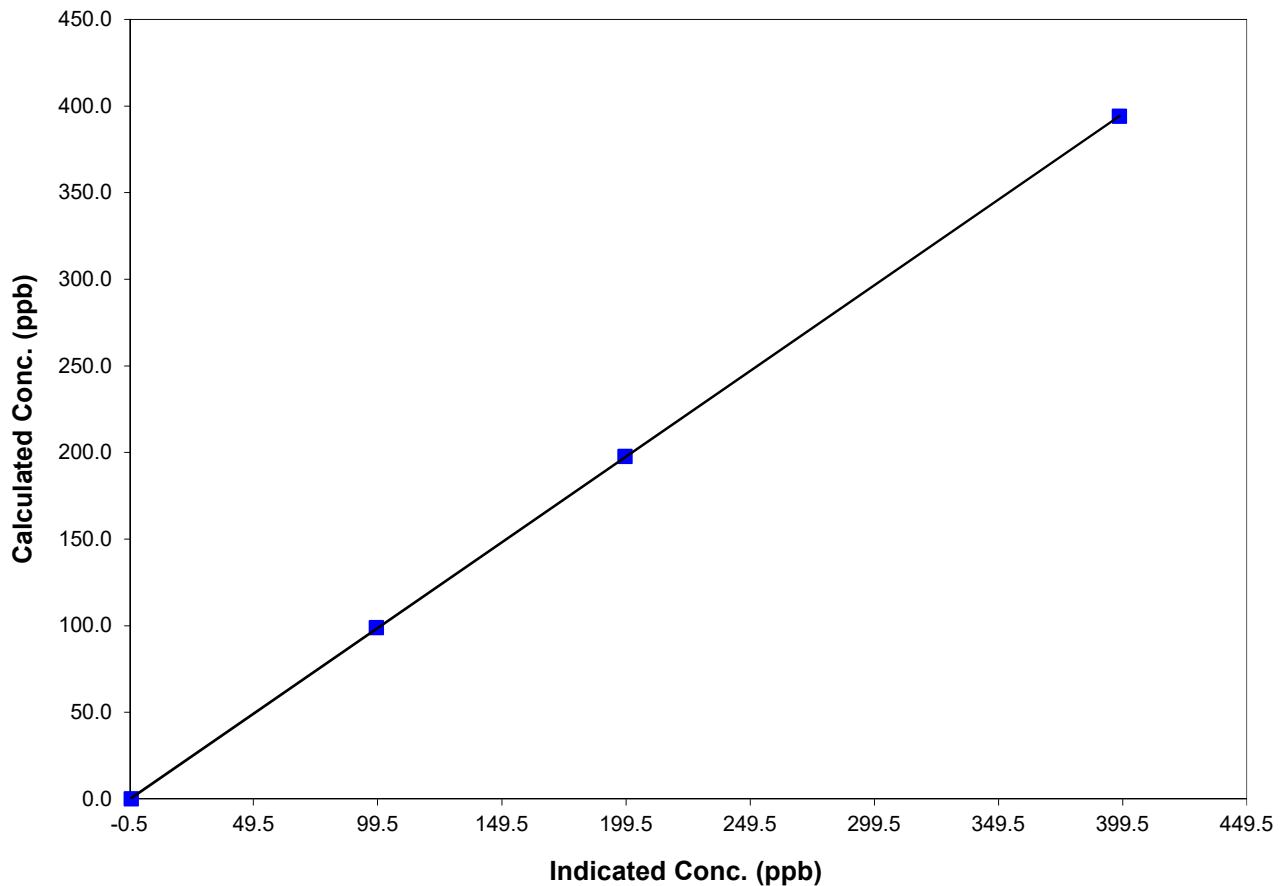
### Station Information

Calibration Date	December 18, 2017	Previous Calibration	November 23, 2017
Station Number	2	Station Location	Evergreen Park
Start Time (MST)	9:55	End Time (MST)	12:00
Analyzer make/model	Teco 43i	Analyzer serial #	701120008

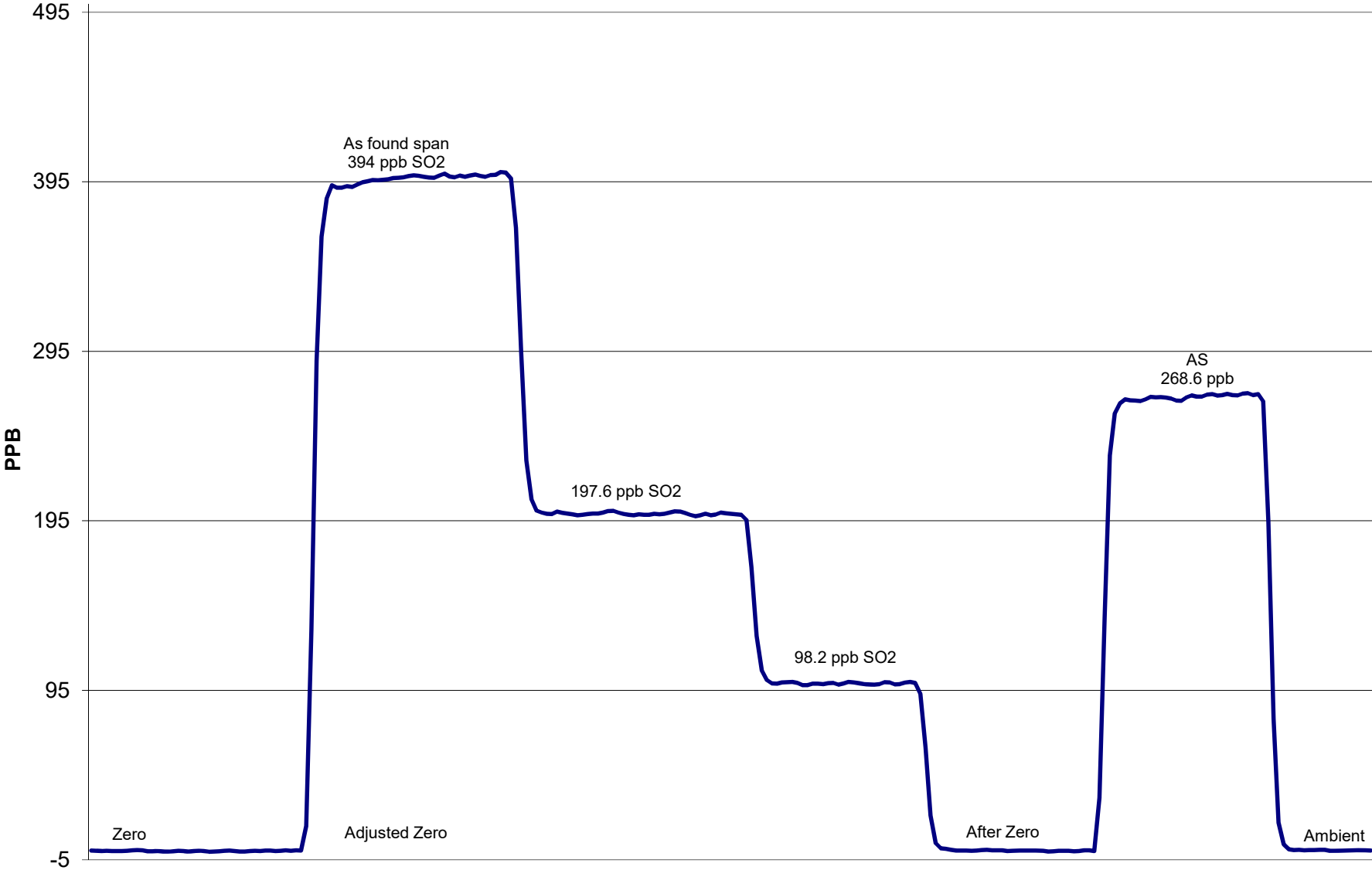
### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.3	N/A	Correlation Coefficient	0.999989
394.0	398.3	0.9891		
197.6	199.1	0.9924	Slope	0.989160
98.9	99.1	0.9981		
			Intercept	0.302266

## SO2 Calibration Curve



# SO2 Calibration



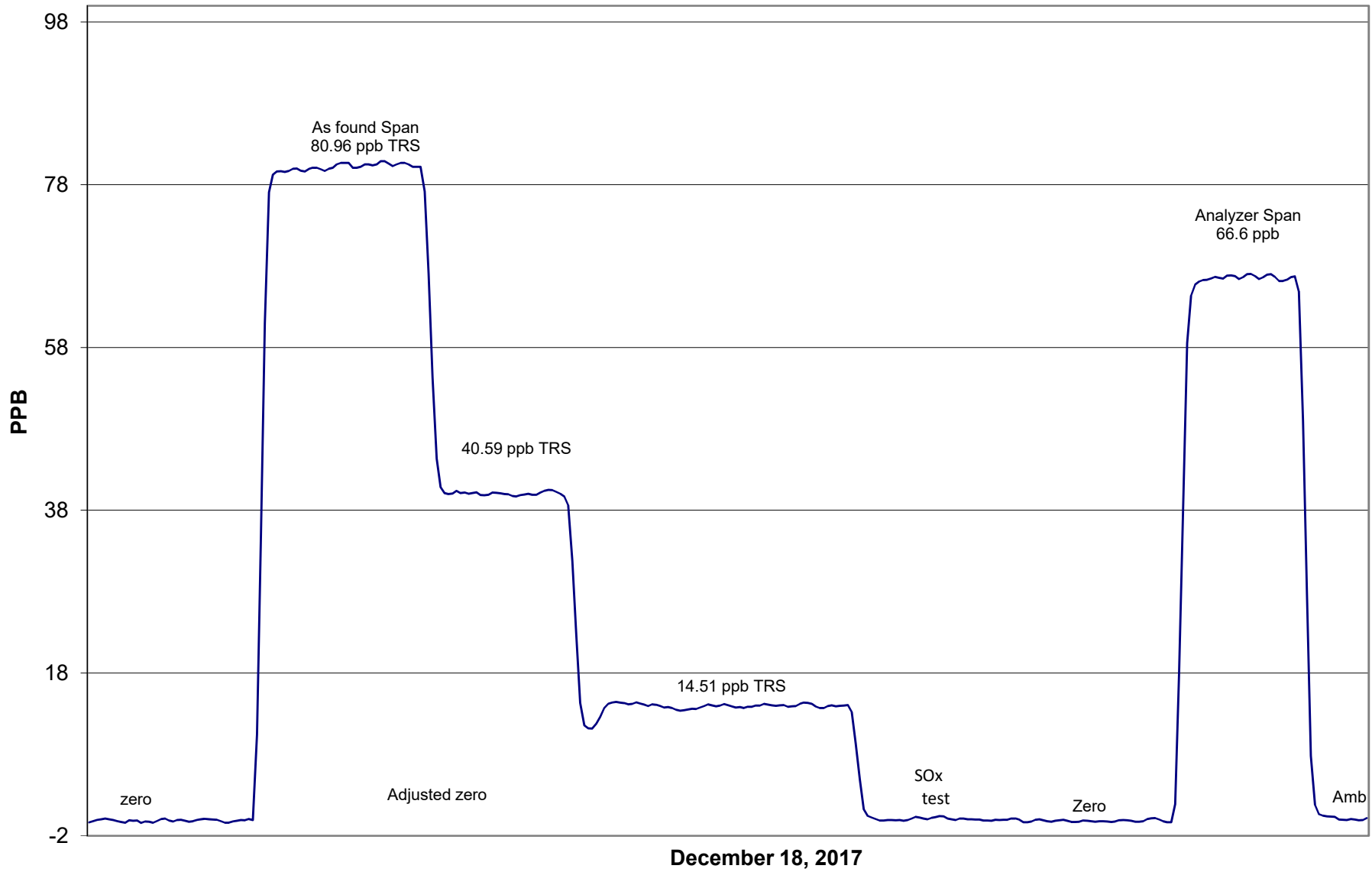
December 18, 2017







# TRS Calibration



# Calibration Report



Parameter SO<sub>2</sub>

Air Monitoring Network PAZA

## Station Information

Calibration Date	December 21, 2017	Previous Calibration	November 14, 2017
Station Number	3	Station Location	Smokey Heights
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	11:35	End Time (MST)	13:50:00 PM
Barometric Pressure	0.924 ATM	Station Temperature	19.0 Deg C
Calibrator	EnviroNics 6103	Serial Number	6586
Cal Gas Concentration	49.6 ppm	Cal Gas Cert Date	10/10/2020
Correction factor	0.031517	Cal Gas Cylinder #	LL104185
DACS make	CR3000	DACS serial No.	5238
DACS voltage range	0 - 5 volt	DACS channel #	6
	<u>Before</u>		<u>After</u>
Calculated slope	0.992283	Calculated slope	0.989754
Calculated intercept	1.203361	Calculated intercept	-1.052619
Analyzer make	Teco 43i	Analyzer serial #	701120009

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	14.2		14.2	
coefficient	0.966		0.966	
Lamp Voltage	948	volts	948	volts
Chamber Temp	44.8	Deg C	45	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	672.6	mm Hg	674.2	mm Hg
Sample Flow	0.444	lpm	0.444	lpm
Lamp Intensity	88	%	87	%

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
4996	0.0	0.00	0.7	N/A
4996	39.95	393.47	398.1	0.9885
4996	19.97	197.47	201.9	0.9782
4996	9.99	98.98	100.6	0.9835
4996	0.0	0.00	0.7	As Found Zero
4996	39.95	393.47	398.1	As Found Span
Average Correction Factor				0.9834

Calculated value of As Found Response: 395.459 ppb      Percent Change of As Found: -0.5%

	before calibration		after calibration	
Auto zero	0.7	ppb	0.8	ppb
Auto span	213.6	ppb	212.9	ppb

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA

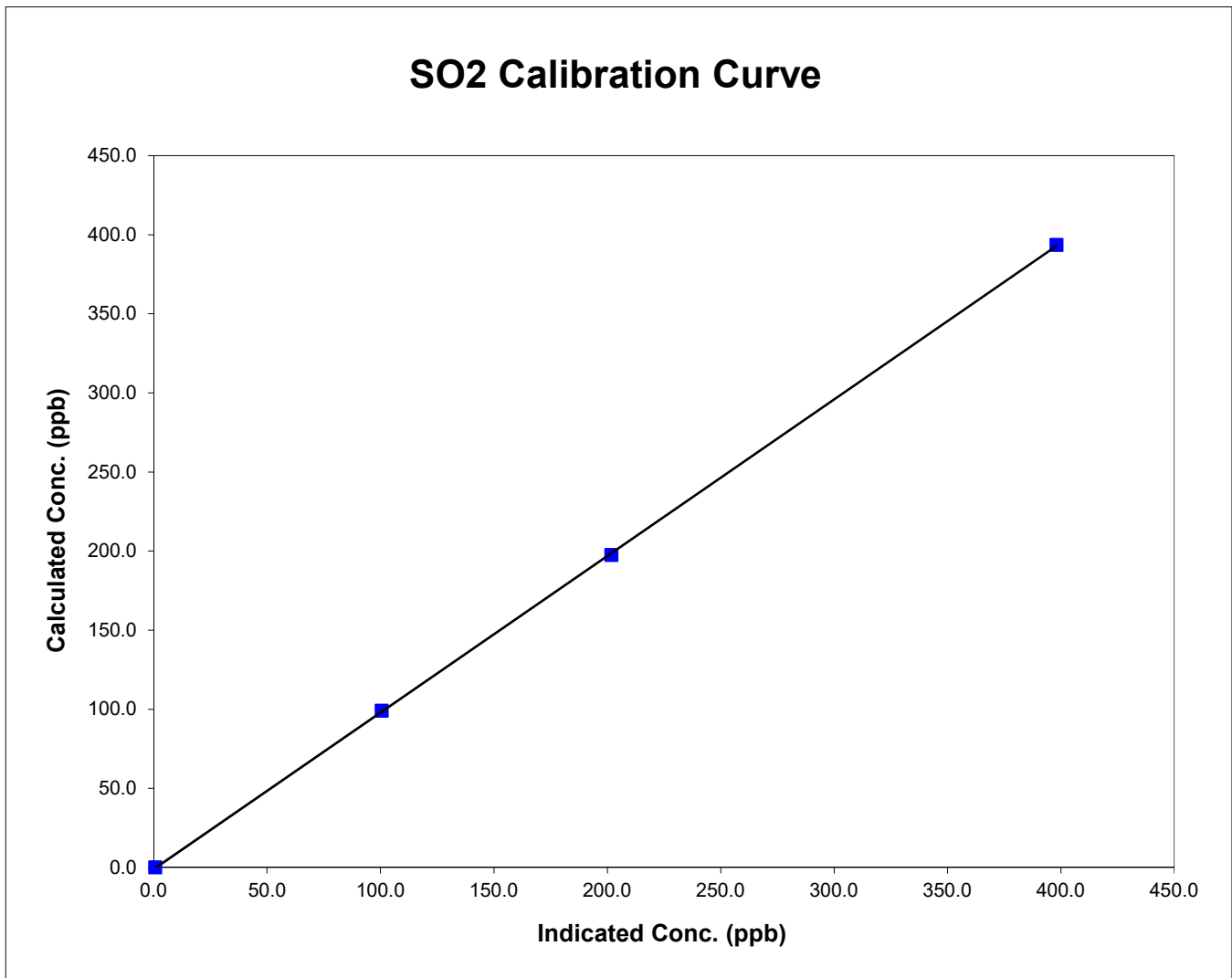


## Station Information

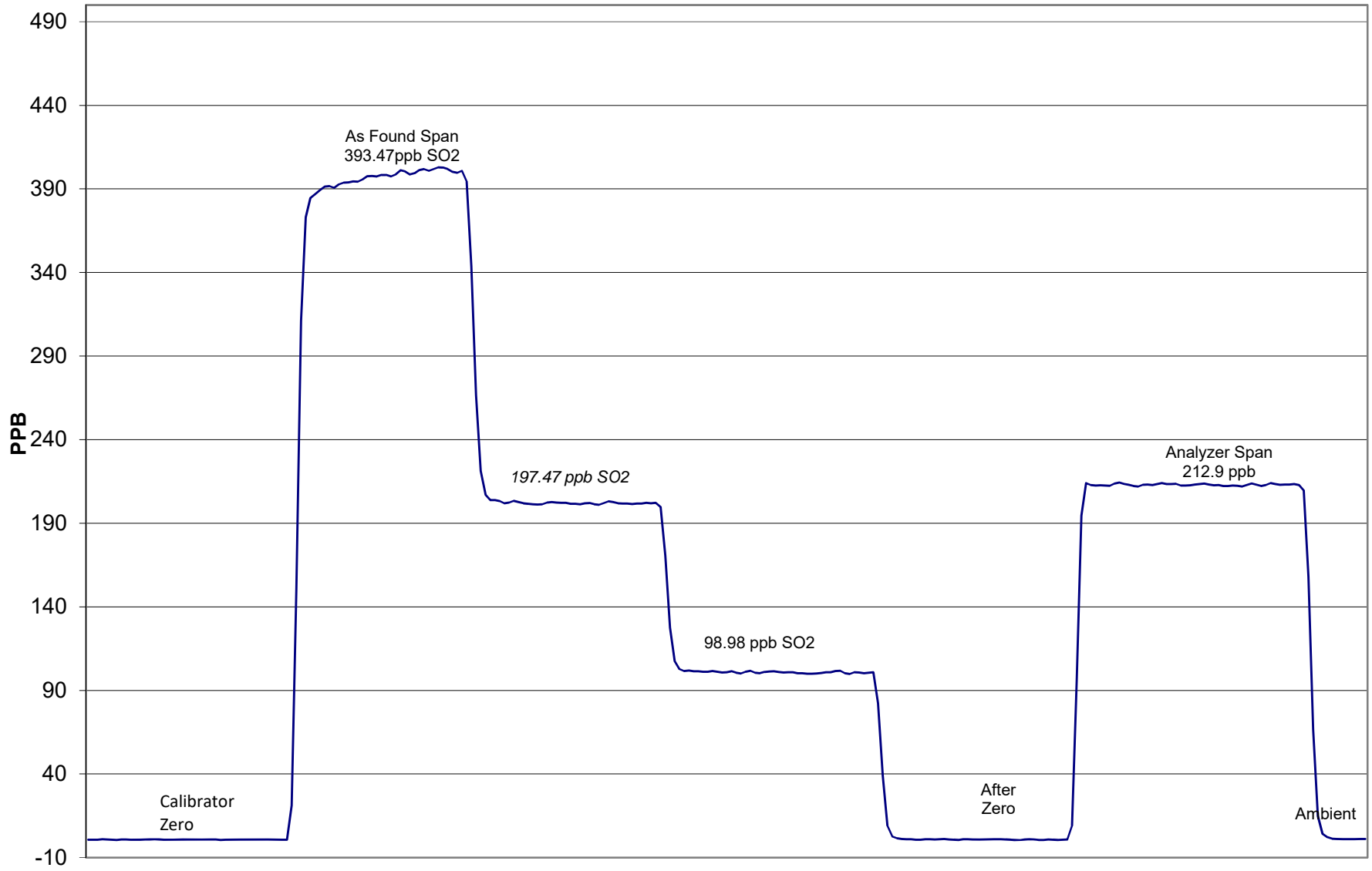
Calibration Date	December 21, 2017	Previous Calibration	November 14, 2017
Station Number	3	Station Location	Smokey Heights
Start Time (MST)	11:35	End Time (MST)	13:50:00 PM
Analyzer make/model	Teco 43i	Analyzer serial #	701120009

## Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.7	N/A	Correlation Coefficient	0.999974
393.5	398.1	0.9885		
197.5	201.9	0.9782		
99.0	100.6	0.9835	Slope	0.989754
			Intercept	-1.052619



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



December 21, 2017

# Calibration Report



Parameter TRS  
 Air Monitoring Network PAZA

### Station Information

Calibration Date	December 21, 2017		Previous Calibration	November 14, 2017	
Station Number	3		Station Location	Smokey Heights	
Reason:	<b>Routine</b>	Install	Removal	Other:	
Start Time (MST)	10:10		End Time (MST)	12:45	
Barometric Pressure	0.923	ATM	Station Temperature	19.0	Deg C
Calibrator	EnviroNics 6103		Serial Number	6586	
Cal Gas Conc	10.2	ppm	Cal Gas Expiry Date	02/23/2019	
Correction factor	0.031483		Cal Gas Cylinder #	EY00003480	
DACS make	CR3000		DACS serial No.	5238	
DACS voltage range	0 - 5 volt		DACS channel #	5	
	<u>Before</u>			<u>After</u>	
Calculated slope	1.007049		Calculated slope	1.011646	
Calculated intercept	-0.228587		Calculated intercept	-0.595710	
Analyzer make	TEI Model 43I APSAA		Analyzer serial #	1153630151	

	before		after	
Concentration range	100	ppb	100	ppb
Background	14.1	ppb	14.1	ppb
coefficient	1.027		1.027	
Lamp Voltage	812	volts	812	volts
Chamber Temp	45.1	Deg C	45	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	676.8	mm Hg	675.6	mm Hg
Sample Flow	0.424	lpm	0.424	lpm
Lamp Intensity	92	mv	92	mv

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
4996	0.0	0.00	0.7	N/A
4996	39.95	80.92	80.7	1.0029
4996	19.97	40.61	40.5	1.0016
6998	9.99	14.54	14.9	0.9771
4996	9.99		1.0	Sox test
4996	0.0	0.00	0.7	As Found Zero
4996	39.95	80.92	80.7	As Found Span
Average Correction Factor				0.9939

Calculated value of As Found Response: 80.27 ppb      Percent Change of As Found: 0.8%

	before calibration		after calibration	
Auto zero	0.5	ppb	0.7	ppb
Auto span	66.0	ppb	65.3	ppb

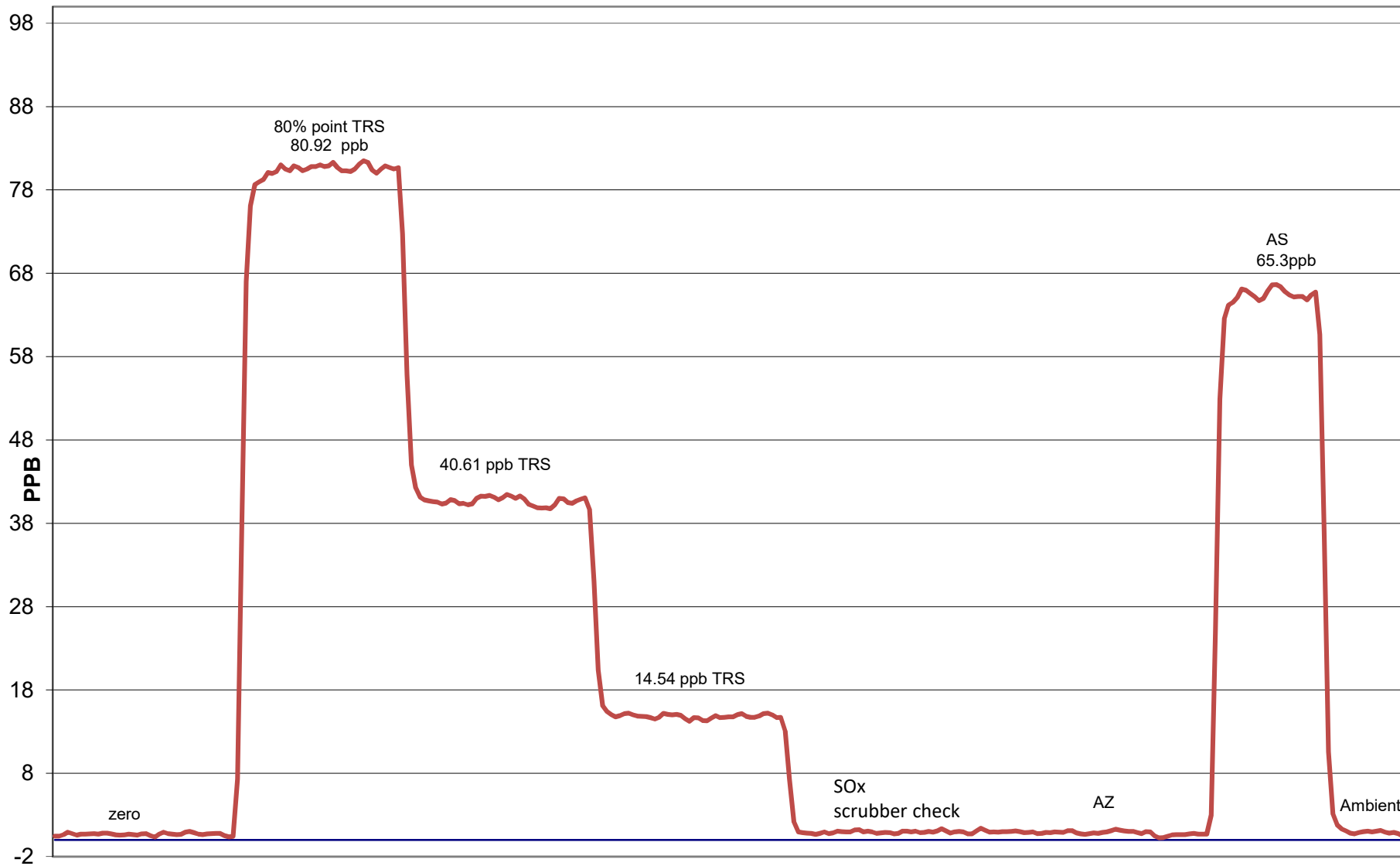
Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii





# Smokey Heights TRS Calibration



December 21, 2017

# Calibration Report



Parameter SO2

Air Monitoring Network PAZA

## Station Information

Calibration Date	December 14, 2017	Previous Calibration	November 10, 2017
Station Number	4	Station Location	Beaverlodge
Reason:	<b>Routine</b>	Install	Removal
			Other:
Start Time (MST)	14:10	End Time (MST)	16:55
Barometric Pressure	0.921 atm	Station Temperature	20.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3016
Cal Gas Concentration	10.5 ppm	Cal Gas Expiry Date	1/12/2019
Gas Cert Reference	FF16108		
DACS make	CR3000	DACS serial No.	5237
DACS voltage range	0 - 5 volt	DACS channel #	5
	<u>Before</u>		<u>After</u>
DACS Scale High	100	DACS slope	100
DACS Scale Low	0	DACS intercept	0
Calculated slope	0.993906	Calculated slope	0.988468
Calculated intercept	0.159730	Calculated intercept	0.177556
Analyzer make	TEI Model 43i-TLE	Analyzer serial #	713021137

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	2.89		2.87	
Coefficient	0.975		0.975	
PMT	-768.2	V	-768.2	V
UV Lamp Voltage	1126	V	1122	V
Chamber Temp	44.9	Deg C	45.1	Deg C
Pressure	661.8	mm Hg	659.2	mm Hg
Sample Flow	0.492	LPM	0.483	LPM
Lamp Intensity	94	%	94	%

## Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.00	0.0	0.0	N/A
4995	39.94	83.3	84.2	0.9894
4995	19.97	41.8	42.0	0.9953
4995	9.97	20.9	20.8	1.0057
4995	0.00	0.0	0.0	As found zero
4995	39.94	83.3	84.2	As found span
Average Correction Factor				0.9968

Calculated value of As Found Response: 83.817 ppm      Percent Change of As Found: -0.6%

	before calibration		after calibration	
Auto zero	0.2	ppb	0.2	ppb
Auto span	60.1	ppb	60.0	ppb

Notes: No adjustments needed.

Calibration Performed By: Grover Christiansen

# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA



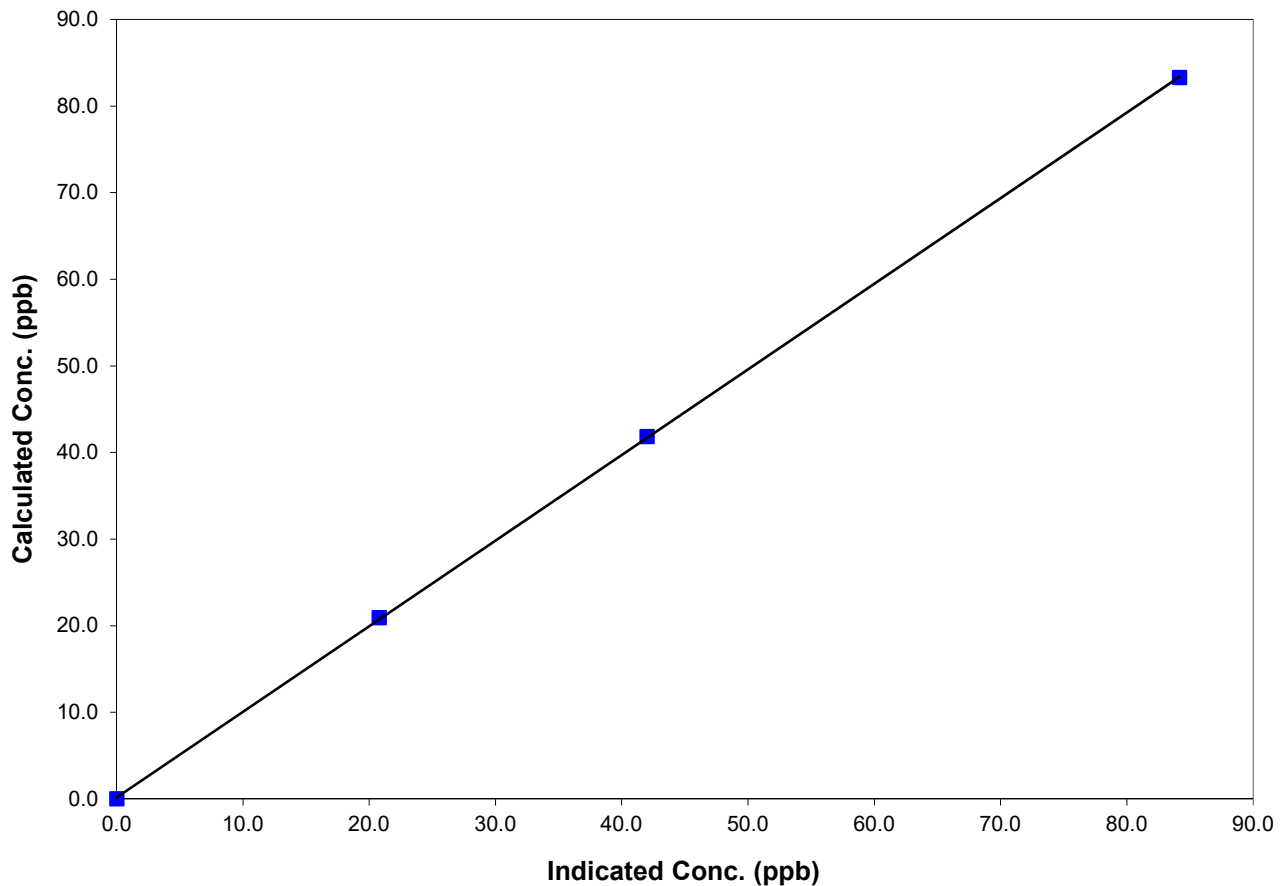
## Station Information

Calibration Date	December 14, 2017	Previous Calibration	November 10, 2017
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	14:10	End Time (MST)	16:55
Analyzer make/model	TEI Model 43i-TLE	Analyzer serial #	713021137

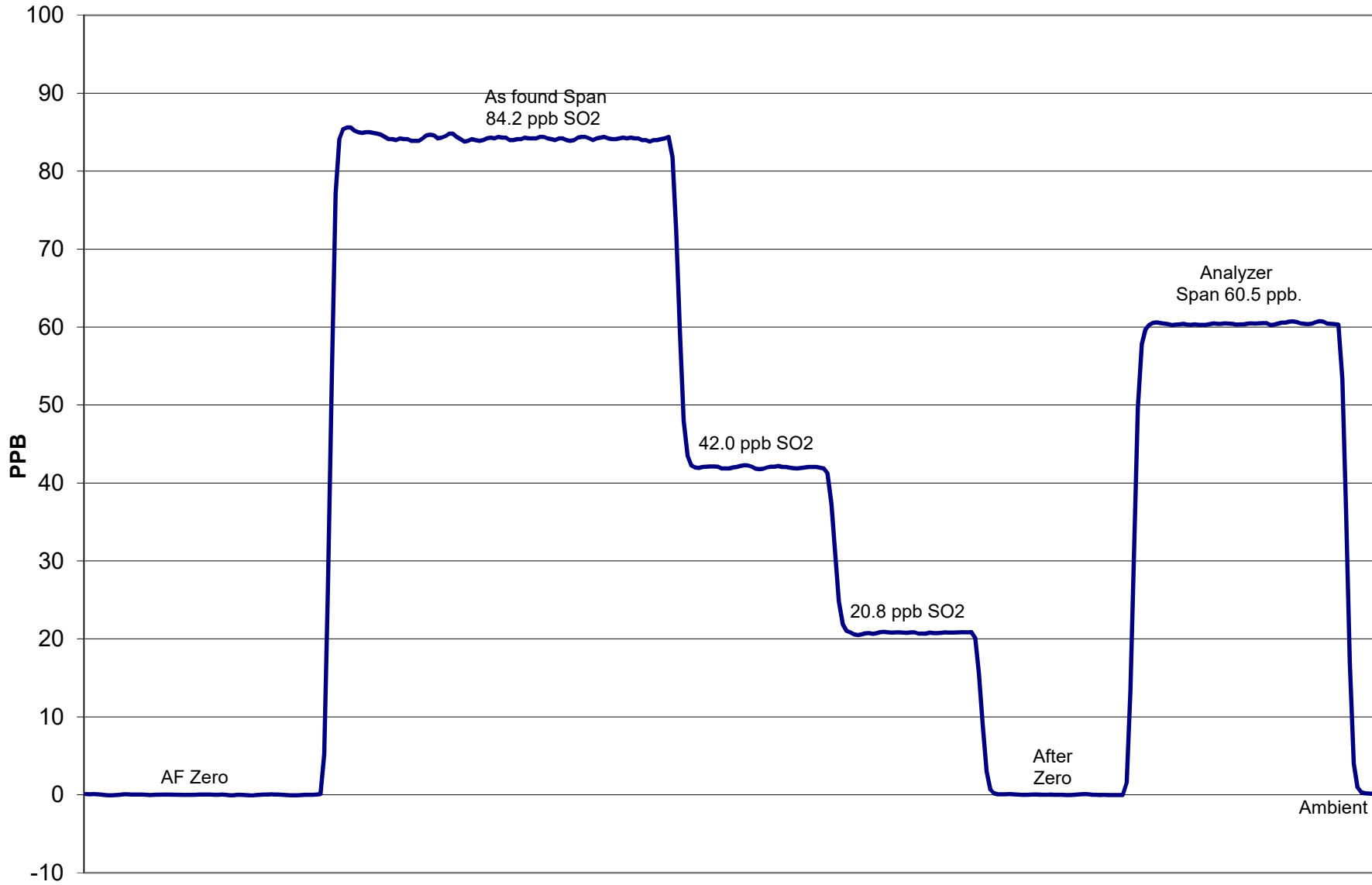
## Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A	Correlation Coefficient	0.999976
83.3	84.2	0.9894		
41.8	42.0	0.9953	Slope	0.988468
20.9	20.8	1.0057		
			Intercept	0.177556

## SO2 Calibration Curve



# SO2 Calibration



December 14, 2017



# Calibration Report



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

## Station Information

Calibration Date: December 14, 2017 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	39.94	400.6	399.8	0.8	399.5	399.5	-0.7	1.0026	1.0007	
2	4995	19.97	201.1	200.7	0.4	198.9	198.5	-0.5	1.0111	1.0111	
3	4995	9.97	100.6	100.4	0.2	97.5	97.5	-0.1	1.0316	1.0302	
AFZ	4995	0.00	0.0	0.0	0.0	-0.1	-0.1	-0.1	0.0000	0.0000	
AFS	4995	39.94	400.6	399.8	0.8	412.6	410.6	1.2	0.9709	0.9737	
									Average Correction Factor	1.0151	1.0140

As Found Concentrations: NO<sub>x</sub>= 412.8 NO= 410.5 As Found Percent Change NO<sub>x</sub>= 3.0% NO= 2.7%

## GPT Calibration Data

Dilution Flow 4995 ccm Source Gas Flow 39.94 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	400.6	399.1	1.5	399.0	399.1	-0.8	1.0039	1.0000	N/A	N/A	
300	400.6	84.5	316.1	399.3	84.5	314.2	1.0033	1.0000	1.0061	99.4%	
200	400.6	183.5	217.2	399.8	183.5	215.7	1.0020	1.0000	1.0068	99.3%	
100	400.6	282.2	118.4	400.1	282.2	117.3	1.0013	1.0000	1.0098	99.0%	
							Average Correction Factor	1.0022	1.0000	1.0076	99.2%

## AIC Data

Parameter	Previous calibration				Current calibration			
	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	0.0	-0.1	-0.1	ppb	-0.1	-0.2	-0.1	ppb
Auto span	302.2	298.9	2.6	ppb	305.2	302.6	1.9	ppb

Calibration Performed By: Grover Christiansen

# Calibration Summary



Parameter NO<sub>2</sub>

Air Monitoring Network PAZA

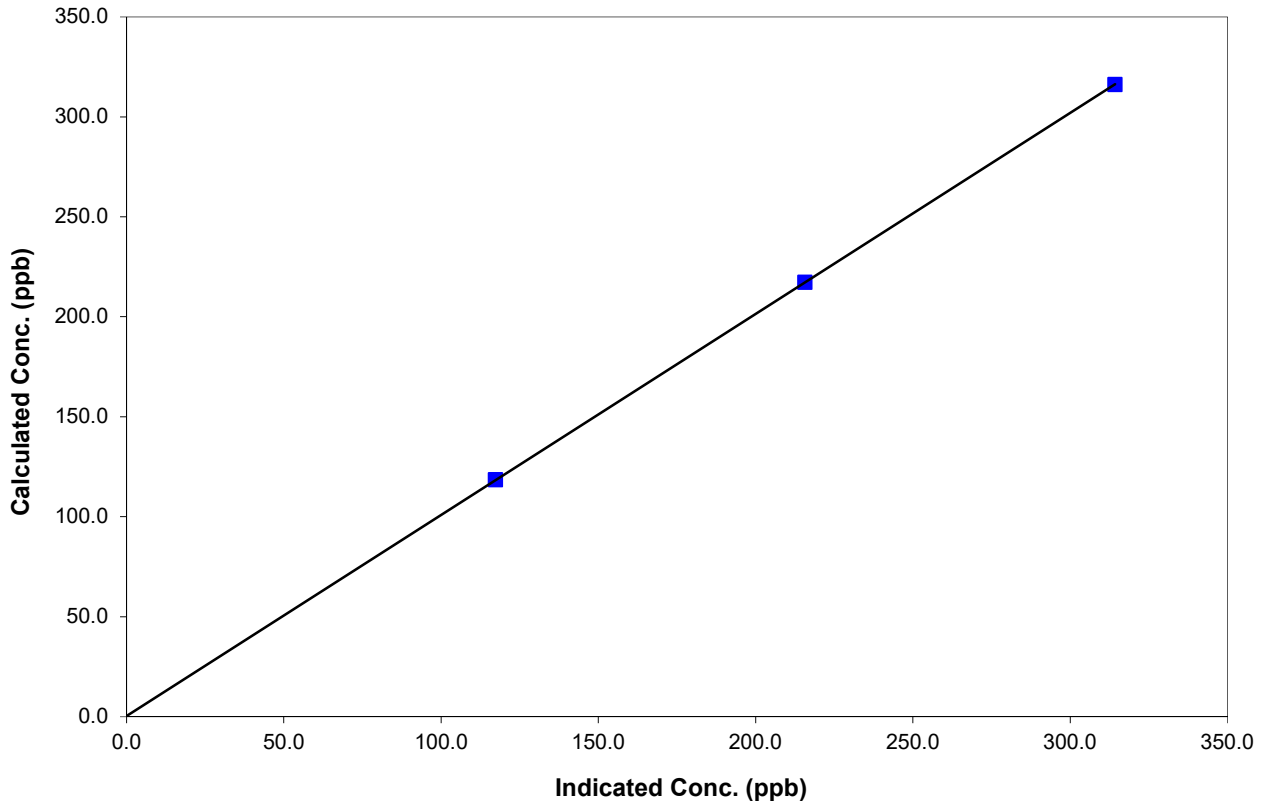
### Station Information

Calibration Date	December 14, 2017	Previous Calibration	November 8, 2017
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	9:15	End Time (MST)	14:05
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	0.999999
316.1	314.2	1.0061		
217.2	215.7	1.0068	Slope	1.005465
118.4	117.3	1.0098		
			Intercept	0.284131

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



# Calibration Summary



Parameter NO<sub>x</sub>

Air Monitoring Network PAZA

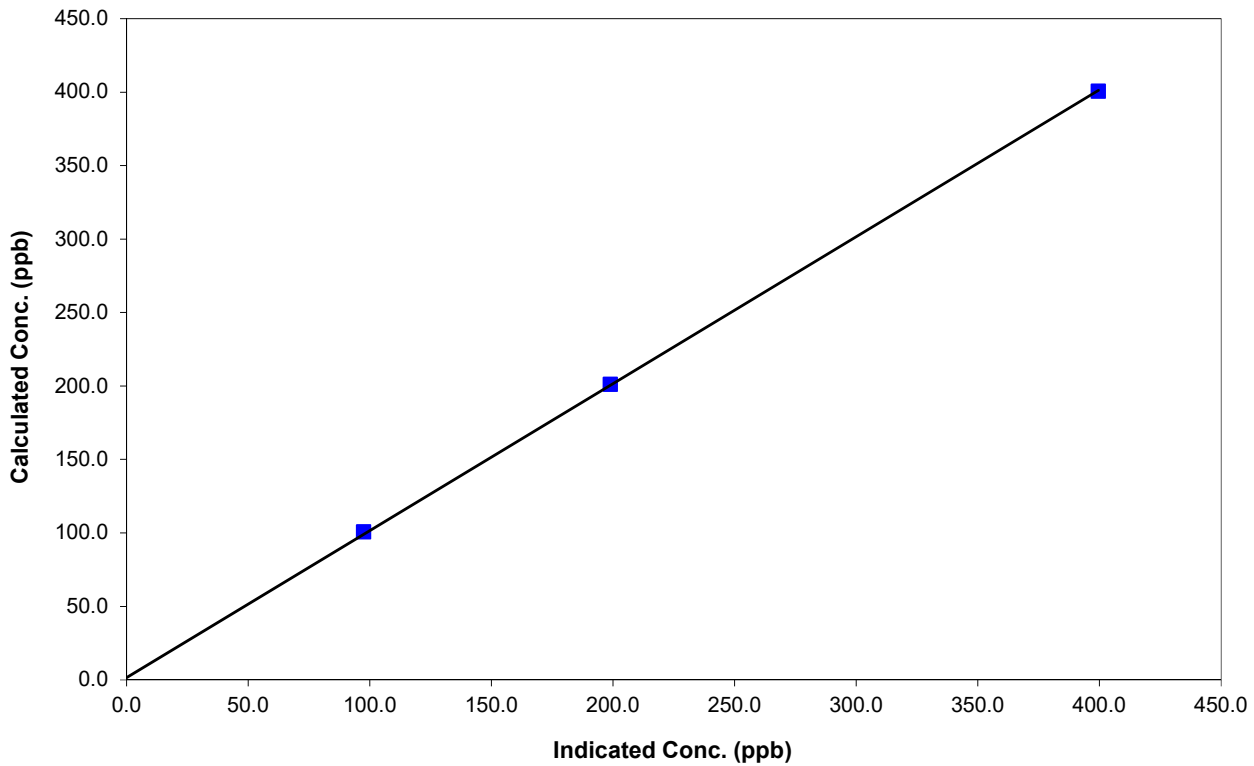
## Station Information

Calibration Date	December 14, 2017	Previous Calibration	November 8, 2017
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	9:15	End Time (MST)	14:05
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	0.999941
400.6	399.5	1.0026		
201.1	198.9	1.0111	Slope	1.000522
100.6	97.5	1.0316		
			Intercept	1.511070

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





# Calibration Summary



Parameter NO  
 Air Monitoring Network PAZA

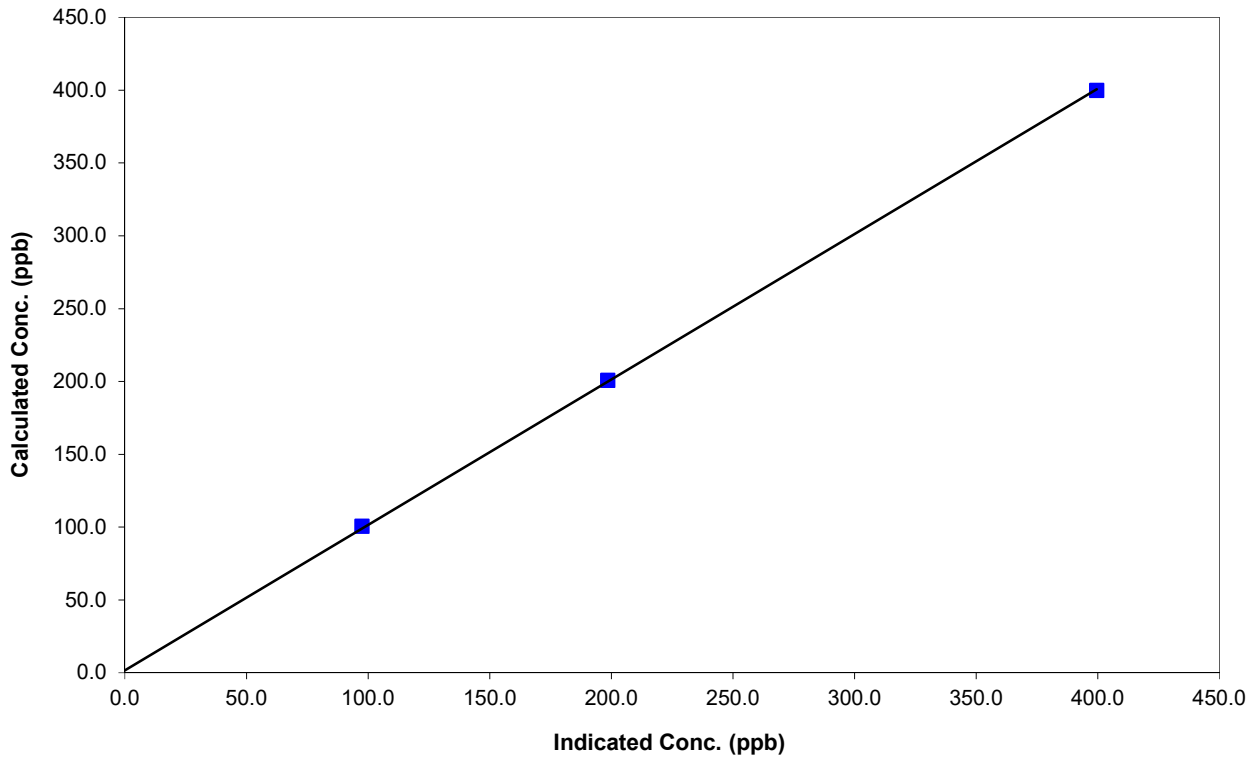
## Station Information

Calibration Date	December 14, 2017	Previous Calibration	November 8, 2017
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	9:15	End Time (MST)	14:05
Analyzer make	TEI 42i	Analyzer serial #	906535068

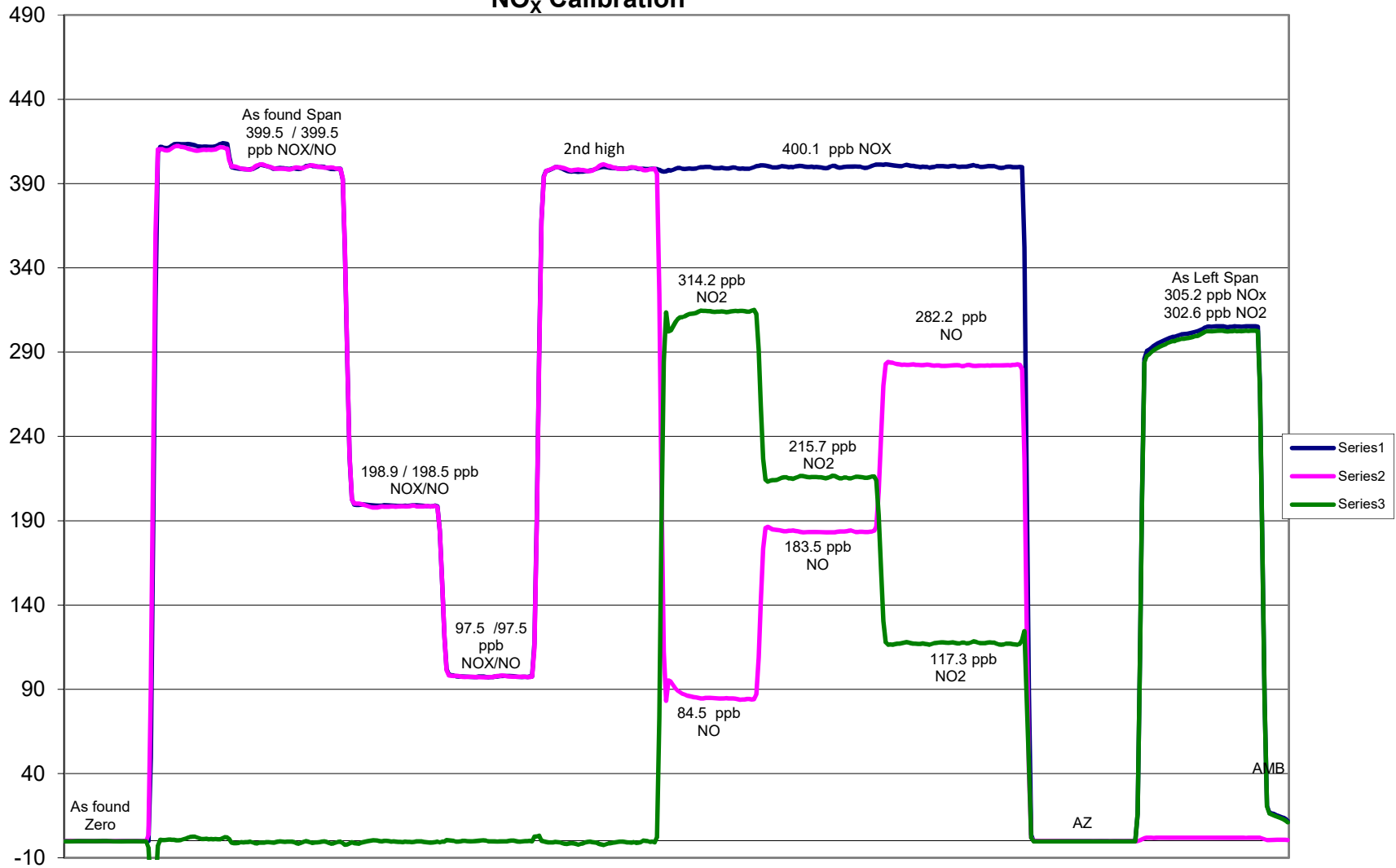
## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A	Correlation Coefficient	0.999932
399.8	399.5	1.0007		
200.7	198.5	1.0111	Slope	0.998609
100.4	97.5	1.0302		
			Intercept	1.608141

## NO Calibration Curve



# NO<sub>x</sub> Calibration

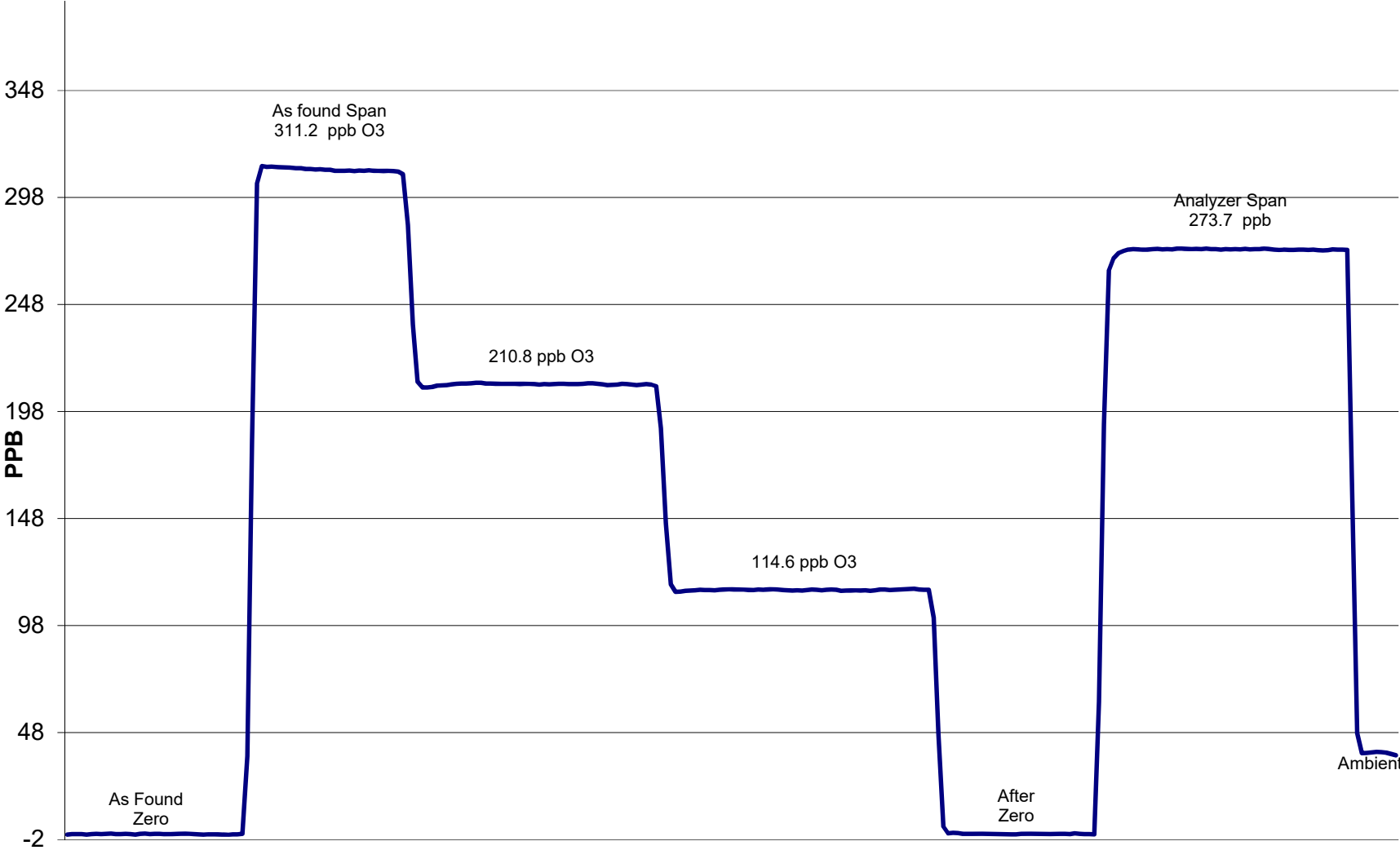


December 14, 2017





# O3 Calibration



December 14, 2017

# Calibration Report



Parameter SO2

Air Monitoring Network PAZA

## Station Information

Calibration Date	December 21, 2017	Previous Calibration	November 23 2017
Station Number	6	Station Location	Valleyview
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	14:41	End Time (MST)	17:25
Barometric Pressure	0.929 atm	Station Temperature	22.0 Deg C
Calibrator	EnviroNics	Serial Number	3016
Cal Gas Concentration	50.3 ppm	Cal Gas Exp Date	April 5, 2019
Gas Cylinder Num.	CC503633		
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	1.009356	Calculated slope	0.999119
Calculated intercept	0.026748	Calculated intercept	-0.114440
Analyzer make	TEI Model 43i - APSCB	Analyzer serial #	701120010

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Background	7.3		7.6	
Coefficient	0.847		0.894	
UV Lamp Voltage	793	LPM	795	LPM
Chamber Temp	45	V	44.8	V
Perm Gas Temp	45	C	45	C
Pressure	638.6	in Hg	684.3	in Hg
Sample Flow	0.491	LPM	0.462	LPM
Lamp Intensity	92	Hz	90	%

## 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)
4930	0.00	0.0	0.5	N/A
4930	40.80	412.9	413.8	0.9978
4930	20.20	205.3	204.7	1.0030
4930	9.80	99.8	100.1	0.9973
4930	0.00	0.0	0.5	As found zero
4930	40.80	412.9	390.8	As found span
Average Correction Factor				0.9994

Calculated value of As Found Response: 393.9 ppb      Percent Change of As Found: 4.6%

	before calibration		after calibration	
Auto zero	0.6	ppb	0.6	ppb
Auto span	272.3	ppb	279.7	ppb

Notes: Span adjustment made

Calibration Performed By: Raminder Gill

# Calibration Summary



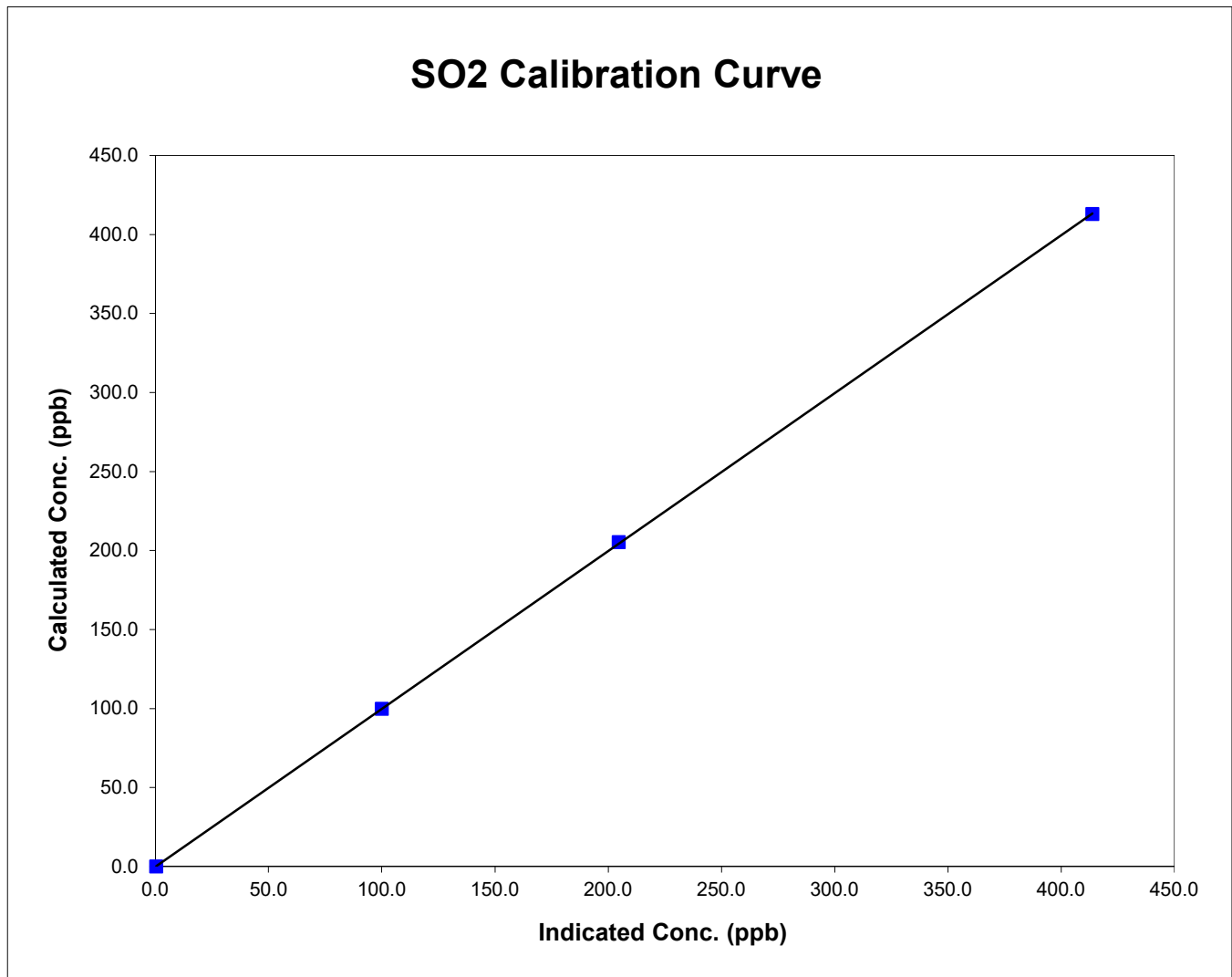
Parameter SO2  
 Air Monitoring Network PAZA

### Station Information

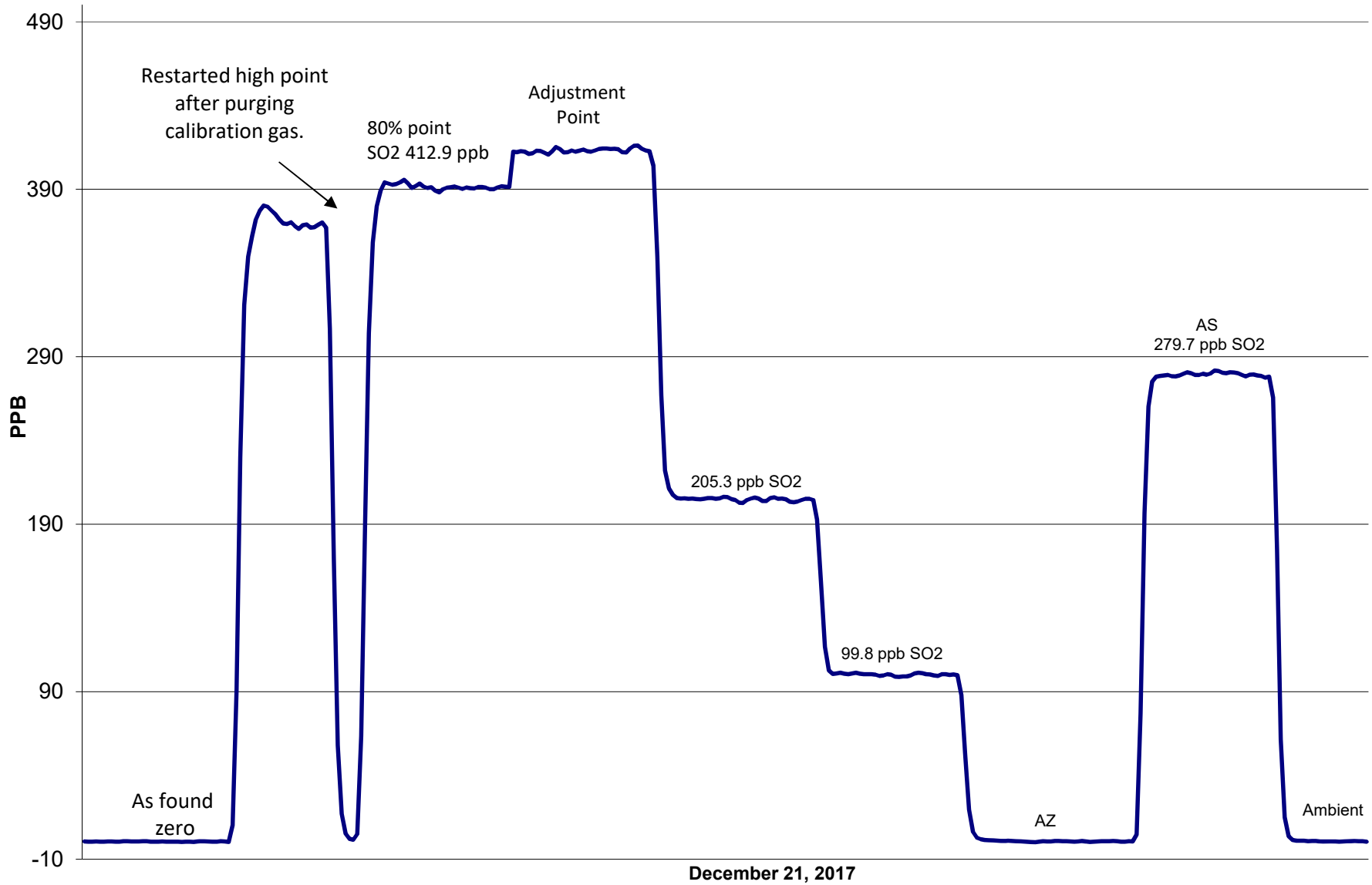
Calibration Date	December 21, 2017	Previous Calibration	November 23 2017
Station Number	6	Station Location	Valleyview
Start Time (MST)	14:41	End Time (MST)	17:25
Analyzer make/model	TEI Model 43i - APSCB	Analyzer serial #	701120010

### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.5	N/A	Correlation Coefficient	0.999988
412.9	413.8	0.9978		
205.3	204.7	1.0030		
99.8	100.1	0.9973	Slope	0.999119
			Intercept	-0.114440



### SO2 Calibration





# Calibration Report



AIR QUALITY MONITORING

Parameter H2S

Air Monitoring Network PAZA

## Station Information

Calibration Date	December 21, 2017	Previous Calibration	November 16 2017
Station Number	6	Station Location	Valleyview
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	14:41	End Time (MST)	18:15
Barometric Pressure	0.929 atm	Station Temperature	22.0 Deg C
Calibrator	SABIO 2010	Serial Number	9900912
Cal Gas Concentration	9.78 ppm	Cal Gas Expiry Date	02/23/2019
Gas Cert Reference	EY0000380		
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	1.015330	Calculated slope	0.987504
Calculated intercept	-0.208614	Calculated intercept	0.266962
Analyzer make	TEI Model 450i-APHAA	Analyzer serial #	1170050144

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Back Ground	13.9	ppb	14.8	ppb
Coefficient	1.001		1.069	
Lamp Voltage	764	v	764	v
Chamber Temp	45	c	45.2	c
Convertor	324.7	c	325.4	c
Pressure	561.00	mm Hg	570.60	mm Hg
Sample Flow	0.925	ccm	0.942	lpm
Lamp Intensity	89	%	90	%

## 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)
4950	0.00	0.0	-0.3	N/A
4950	40.80	80.0	80.7	0.9903
4950	20.60	40.5	40.7	0.9965
6900	10.10	14.3	14.2	1.0032
4950	0.00	0.0	-0.2	As found zero
4950	40.80	80.0	74.8	As found span
Average Correction Factor				0.9966

Calculated value of As Found Response: 75.92 ppb      Percent Change of As Found: 5.0%

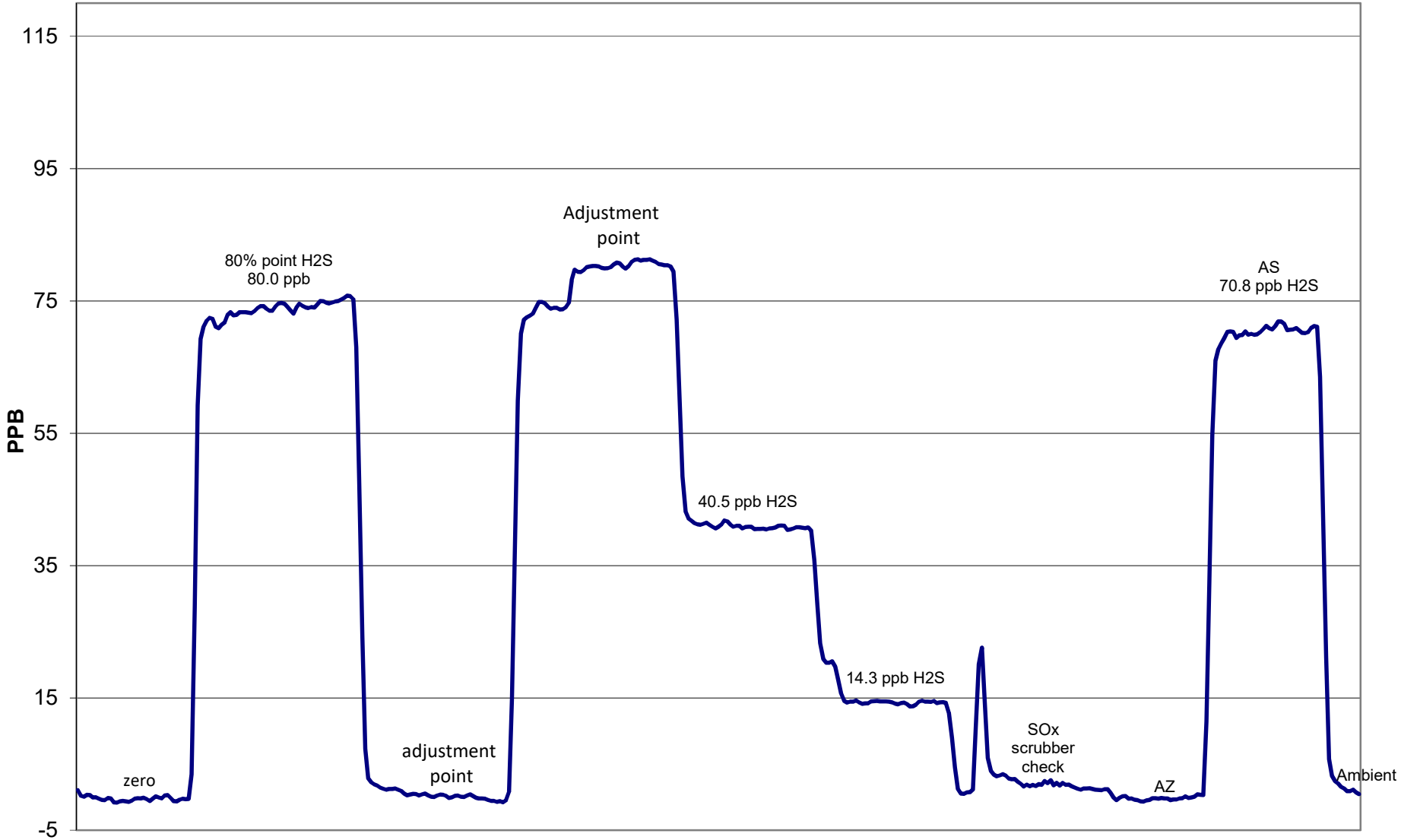
	before calibration		after calibration	
Auto zero	-0.3	ppb	-0.1	ppb
Auto span	70.2	ppb	70.8	ppb

Notes: Zero/span adjustments made

Calibration Performed By: Raminder Gill



# H2S Calibration



December 21, 2017

# Calibration Report



AIR QUALITY MONITORING

Parameter SO<sub>2</sub>

Air Monitoring Network PAZA

## Station Information

Calibration Date	December 19, 2017	Previous Calibration	November 9, 2017
Station Number	1	Station Location	Donnelly
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	10:50	End Time (MST)	13:30:00 PM
Barometric Pressure	0.926 atm	Station Temperature	20.0 Deg C
Calibrator	EnviroNics 6103	Serial Number	6586
Cal Gas Concentration	49.6 ppm	Cal Gas Expiry Date	10/24/2020
Correction factor	0.031477	Cal Gas Cylinder #	LL107945
DACS make	CR1000	DACS serial No.	3980
DACS voltage range	0 - 5 volt	DACS channel #	6
	<u>Before</u>		<u>After</u>
Calculated slope	1.001728	Calculated slope	0.995140
Calculated intercept	-1.355644	Calculated intercept	-0.054215
Analyzer make	Teco 43i	Analyzer serial #	1207452008

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	7		6.7	
coefficient	1.064		1.020	
Lamp Voltage	855	volts	854	volts
Chamber Temp	45	Deg C	45	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	680.3	mm Hg	682.6	mm Hg
Sample Flow	0.435	ccm	0.437	ccm
Lamp Intensity	96	%	97	%

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
4997	0.0	0.00	0.9	N/A
4997	39.96	393.5	395.7	0.9944
4997	19.98	197.5	198.7	0.9943
4997	10.01	99.2	98.5	1.0064
4997	0.0	0.0	0.9	As Found Zero
4997	39.99	393.8	412.3	As Found Span
Average Correction Factor				0.9984

Calculated value of As Found Response: 410.744 ppb      Percent Change of As Found: **-4.3%**

	before calibration		after calibration	
Auto zero	1.0	ppb	0.9	ppb
Auto span	256.9	ppb	241.4	ppb

Notes: Span adjustment made

Calibration Performed By: Dmytro Dolotii

# Calibration Summary



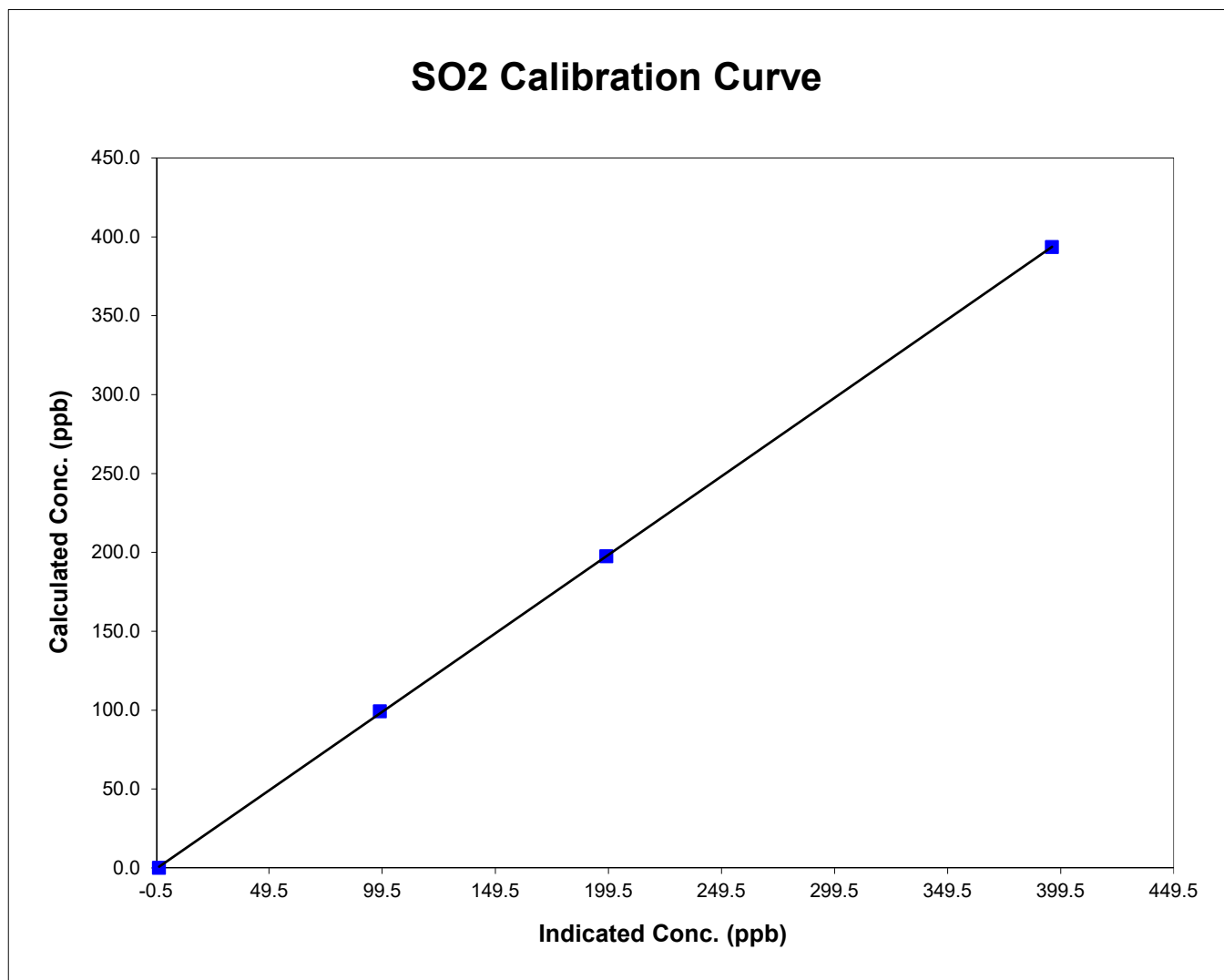
Parameter SO2  
 Air Monitoring Network PAZA

### Station Information

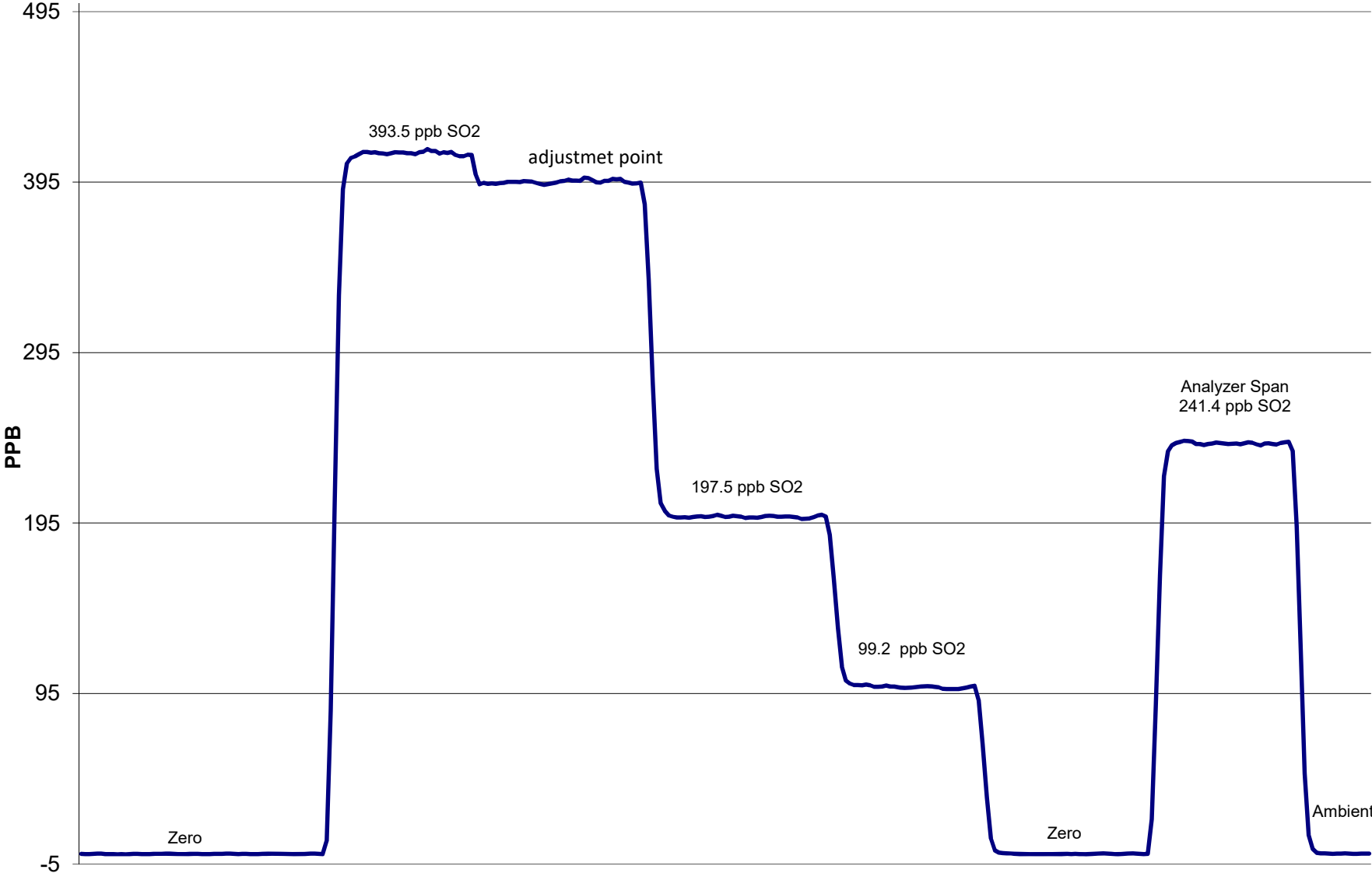
Calibration Date	December 19, 2017	Previous Calibration	November 9, 2017
Station Number	1	Station Location	Donnely
Start Time (MST)	10:50	End Time (MST)	13:30:00 PM
Analyzer make/model	Teco 43i	Analyzer serial #	1207452008

### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.9	N/A	Correlation Coefficient	0.999975
393.5	395.7	0.9944		
197.5	198.7	0.9943	Slope	0.995140
99.2	98.5	1.0064		
			Intercept	-0.054215



# SO2 Calibration



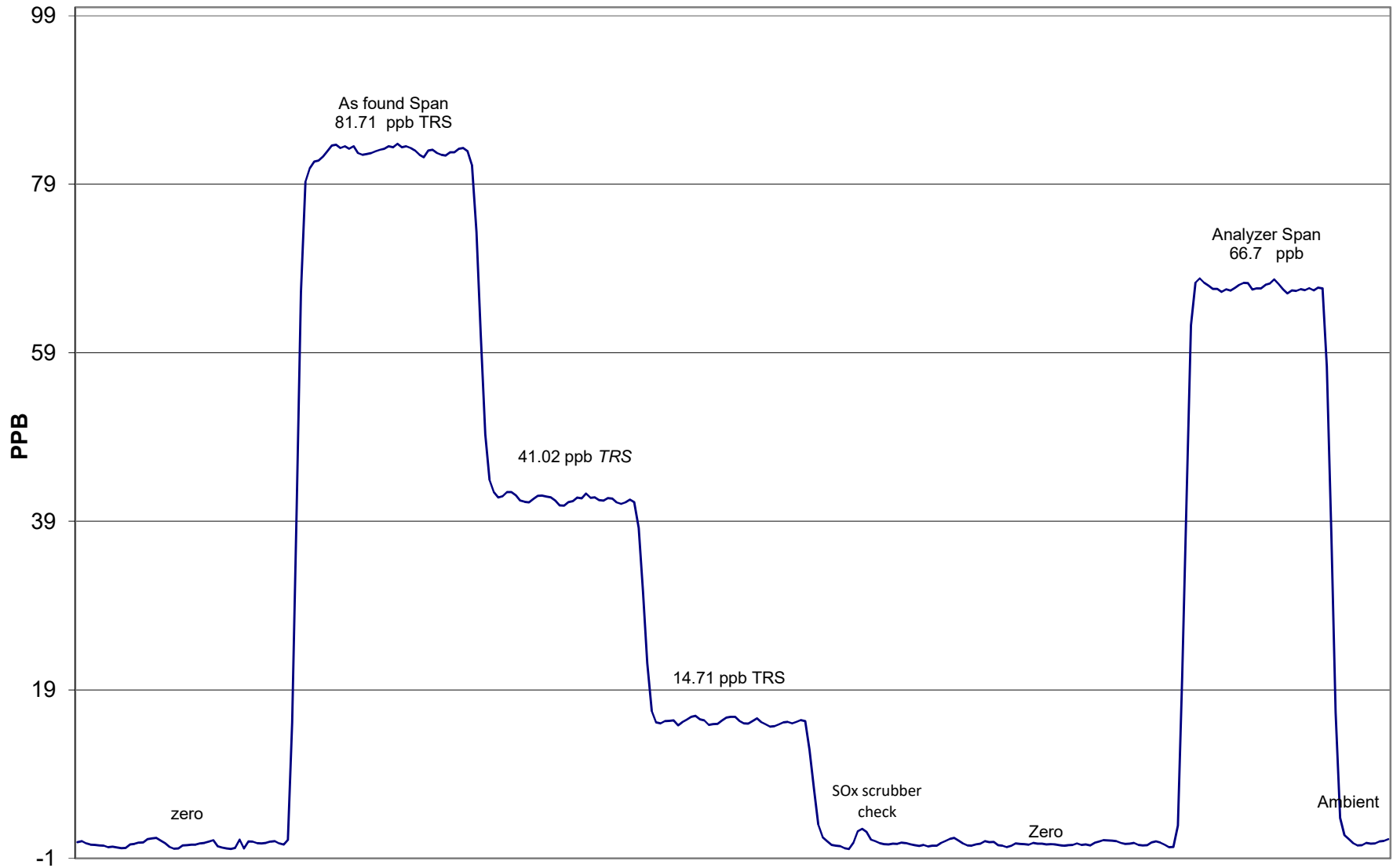
December 19, 2017







# H2S Calibration



December 19, 2017

# Calibration Report



AIR QUALITY MONITORING

Parameter SO2  
Air Monitoring Network

PAZA

## Station Information

Calibration Date	December 7, 2017	Previous Calibration	November 8, 2017
Station Number	10	Station Location	Rycroft
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	10:20	End Time (MST)	12:50
Barometric Pressure	0.931 Atm	Station Temperature	20.0 Deg C
Calibrator	EnviroNics 6103	Serial Number	6586
Cal Gas Concentration	49.6 ppm	Cal Gas Expiry Date	10/24/2020
Gas Cert Reference	LL107945		
DACS make	CR3000	DACS serial No.	5407
DACS voltage range	0 - 5 Volt	DACS channel #	2
	<u>Before</u>		<u>After</u>
DACS Scale High	500	DACS slope	500
DACS Scale Low	0	DACS intercept	0
Calculated slope	0.999570	Calculated slope	1.002900
Calculated intercept	0.207968	Calculated intercept	0.451948
Analyzer make	TEI 43C	Analyzer serial #	436610005

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Background	24.3		23.5	
Coefficient	1.001		1.042	
UV Lamp Voltage	895	V	897	V
Chamber Temp	44.7	C	44.9	C
Perm Gas Temp	45	C	45	C
Pressure	682.9	mm Hg	683.2	mm Hg
Sample Flow	0.470	LPM	0.471	LPM
Lamp Intesity	30385	Hz	30323	Hz

## Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
4996	0.00	0.0	0.7	N/A
4996	39.96	393.6	392.6	1.0025
4996	19.99	197.7	196.0	1.0085
4996	9.98	98.9	97.1	1.0189
4996	0.00	0.0	0.7	As found zero
4996	39.96	393.6	408.3	As found span
Average Correction Factor				1.0100

Calculated value of As Found Response: 407.621 ppb      Percent Change of As Found: -3.6%

	before calibration		after calibration	
Auto zero	0.3	ppb	0.3	ppb
Auto span	207.0	ppb	201.6	ppb

Notes: Span adjustment made

Calibration Performed By: Dmytro Dolotii

# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA



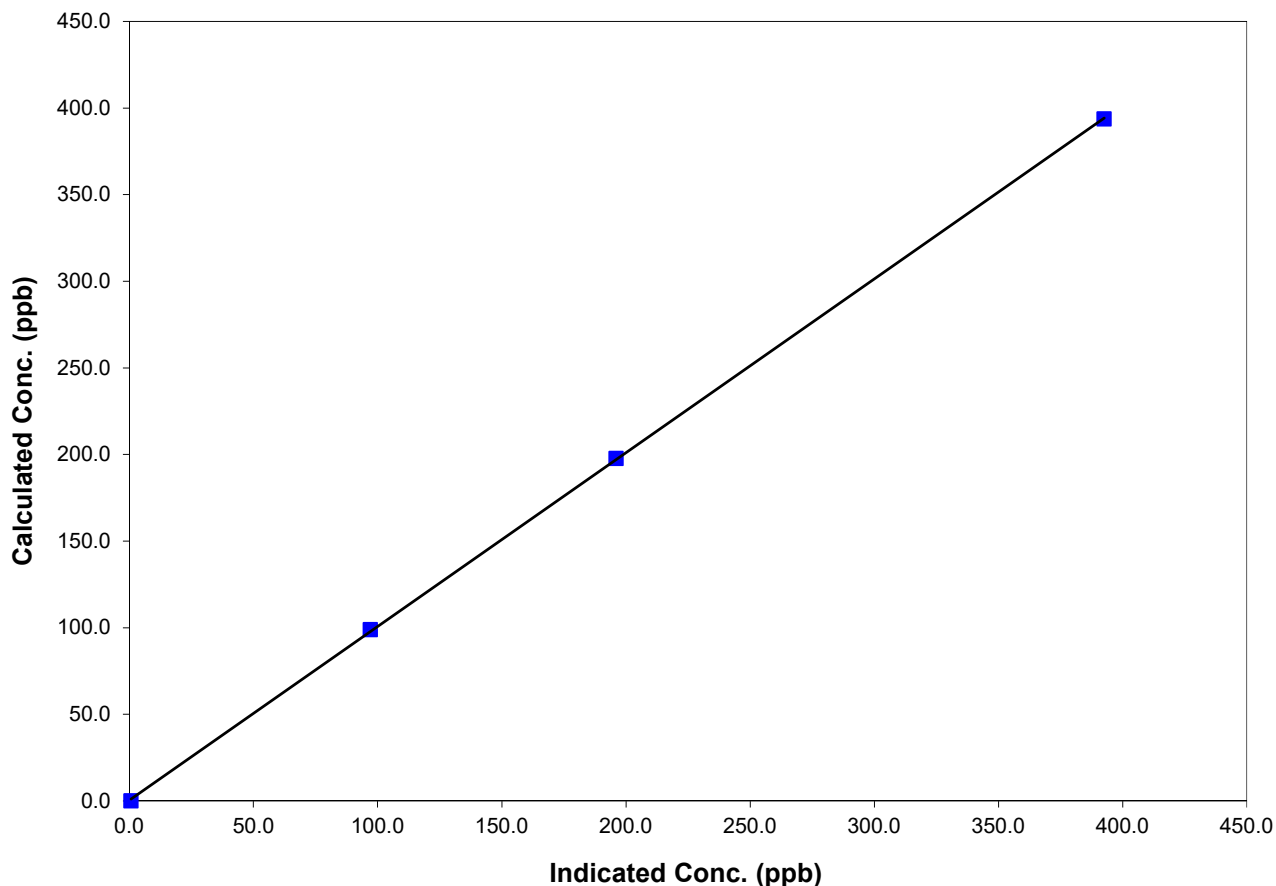
### Station Information

Calibration Date	December 7, 2017	Previous Calibration	November 8, 2017
Station Number	10	Station Location	Rycroft
Start Time (MST)	10:20	End Time (MST)	12:50
Analyzer make/model	TEI 43C	Analyzer serial #	436610005

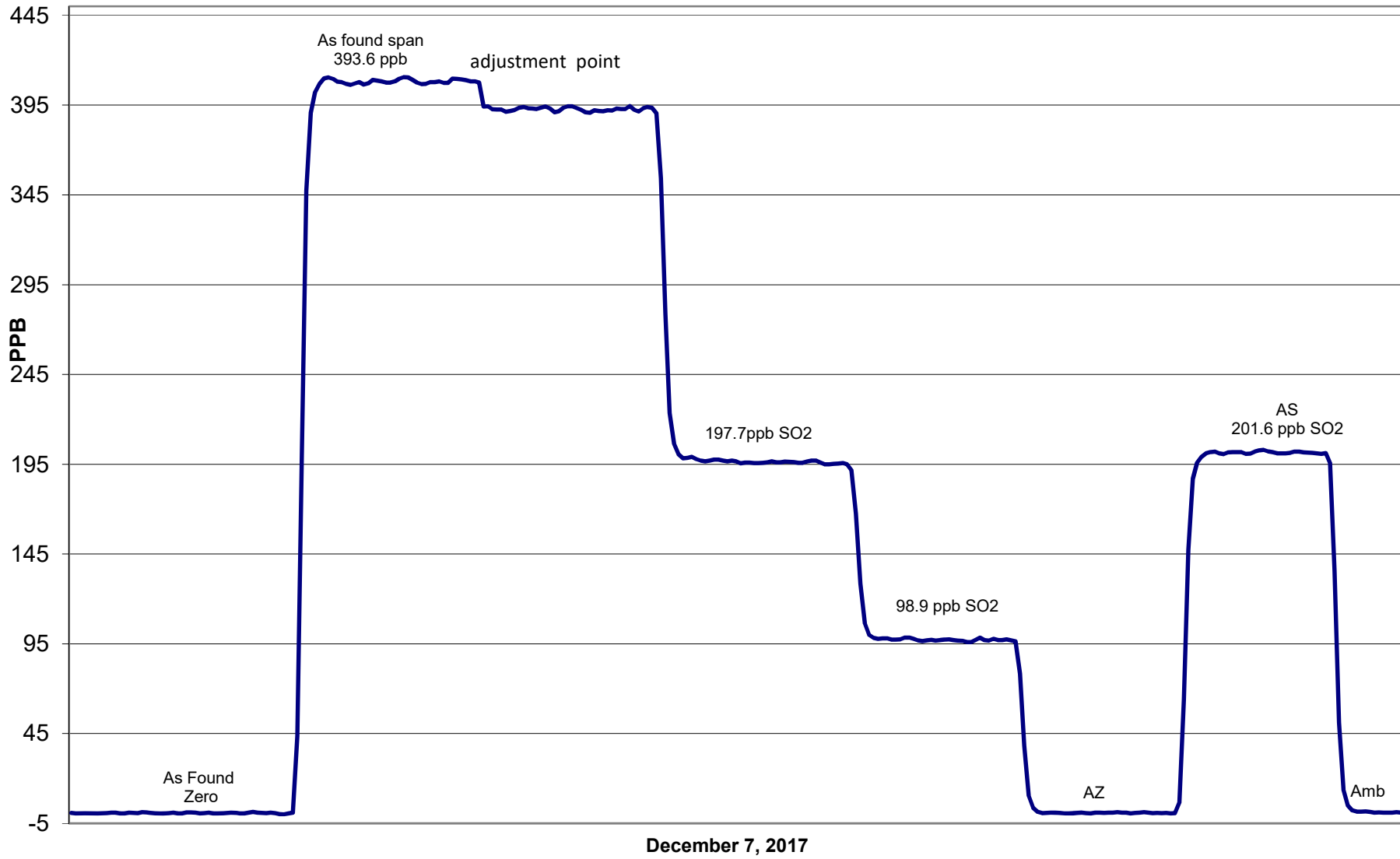
### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.7	N/A	Correlation Coefficient	0.999961
393.6	392.6	1.0025		
197.7	196.0	1.0085	Slope	1.002900
98.9	97.1	1.0189		
			Intercept	0.451948

## SO2 Calibration Curve



# SO2 Calibration





# Calibration Report



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

## Station Information

Calibration Date: December 7, 2017 Station Location: Rycroft

## Calibration Data

	Dilution flow rate (ccm)	Source gas flow rate (ccm)	Calculated NOx conc (ppb)	Calculated NO conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor
zero	4996	0.00	0.0	0.0	0.0	0.1	0.1	0.1	N/A	N/A
1	4996	39.96	412.6	411.8	0.8	412.3	410.3	0.4	1.0007	1.0038
2	4996	19.99	207.2	206.8	0.4	205.8	204.7	0.3	1.0070	1.0105
3	4996	9.98	103.7	103.5	0.2	102.1	102.0	0.2	1.0156	1.0143
AFZ	4996	0.00	0.0	0.0	0.0	0.1	0.1	0.1	0.0000	0.0000
AFS	4996	39.96	412.6	411.8	0.8	419.1	416.2	1.1	0.9846	0.9894
Average Correction Factor									1.0078	1.0095

As Found Concentrations: NO<sub>x</sub>= 418.9 NO= 415.9 As Found Percent Change NO<sub>x</sub>= 1.5% NO= 1.0%

## GPT Calibration Data

Dilution Flow 4995 ccm Source Gas Flow 39.94 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	406.6	406.6	0.0	409.2	406.6	0.8	0.9936	1.0000	N/A	N/A
300	406.6	115.8	290.8	408.7	115.8	291.0	0.9950	1.0000	0.9993	100.1%
200	406.6	213.0	193.6	408.8	213.0	193.7	0.9946	1.0000	0.9997	100.0%
100	406.6	311.9	94.7	408.1	311.9	94.4	0.9963	1.0000	1.0033	99.7%
Average Correction Factor							0.9953	1.0000	1.0008	99.9%

## AIC Data

Parameter	Previous calibration				Current calibration			
	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	0.2	0.1	0.2	ppb	0.4	0.1	0.3	ppb
Auto span	158.4	156.7	1.1	ppb	156.7	154.9	1.2	ppb

Calibration Performed By: Dmytro Dolotii

# Calibration Summary



Parameter NO<sub>2</sub>

Air Monitoring Network PAZA

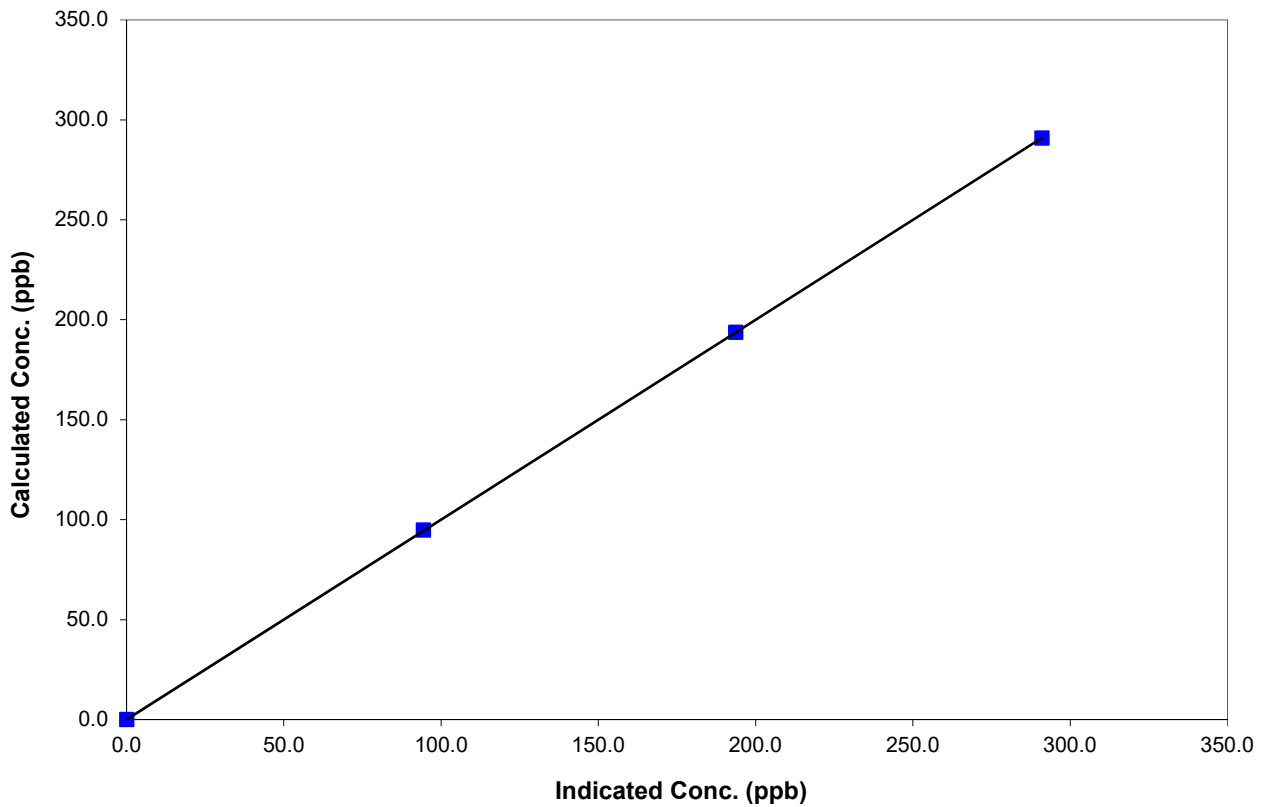
## Station Information

Calibration Date	December 7, 2017	Previous Calibration	November 8, 2017
Station Number	10	Station Location	Rycroft
Start Time (MST)	10:25	End Time (MST)	14:50:00 PM
Analyzer make	TEI 42i	Analyzer serial #	0701120011

## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A	Correlation Coefficient	0.999997
290.8	291.0	0.9993		
193.6	193.7	0.9997	Slope	0.999288
94.7	94.4	1.0033		
			Intercept	0.087230

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



# Calibration Summary



Parameter NO<sub>x</sub>

Air Monitoring Network PAZA

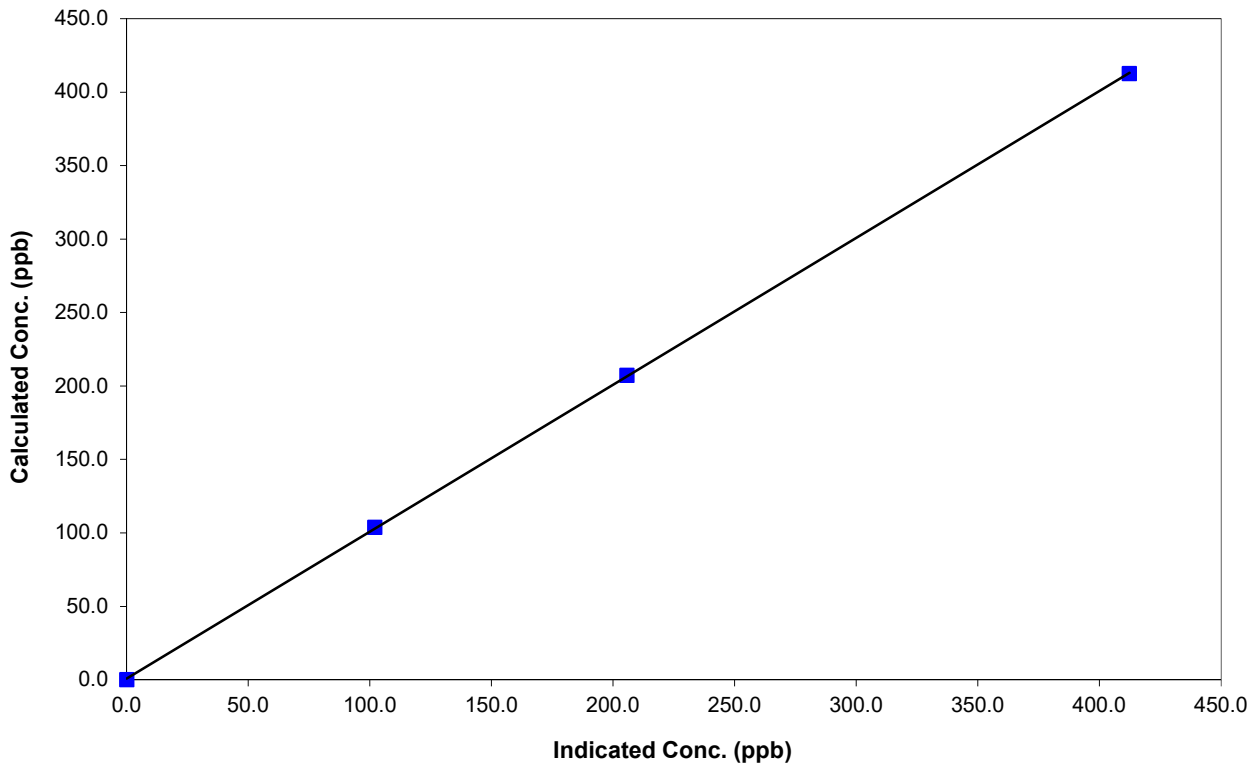
## Station Information

Calibration Date	December 7, 2017	Previous Calibration	November 8, 2017
Station Number	10	Station Location	Rycroft
Start Time (MST)	10:25	End Time (MST)	14:50:00 PM
Analyzer make	TEI 42i	Analyzer serial #	0701120011

## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A	Correlation Coefficient	0.999977
412.6	412.3	1.0007		
207.2	205.8	1.0070	Slope	0.999942
103.7	102.1	1.0156		
			Intercept	0.812421

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





# Calibration Summary



Parameter NO  
 Air Monitoring Network PAZA

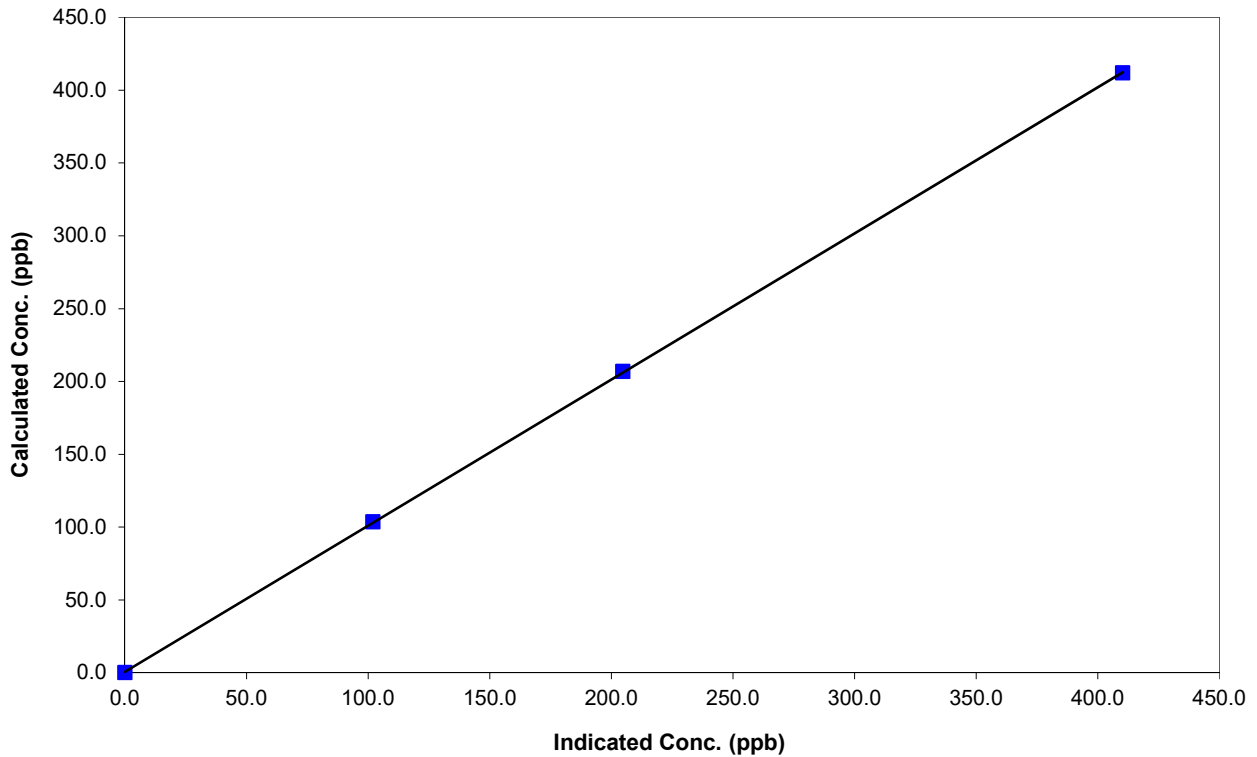
## Station Information

Calibration Date	December 7, 2017	Previous Calibration	November 8, 2017
Station Number	10	Station Location	Rycroft
Start Time (MST)	10:25	End Time (MST)	14:50:00 PM
Analyzer make	TEI 42i	Analyzer serial #	0701120011

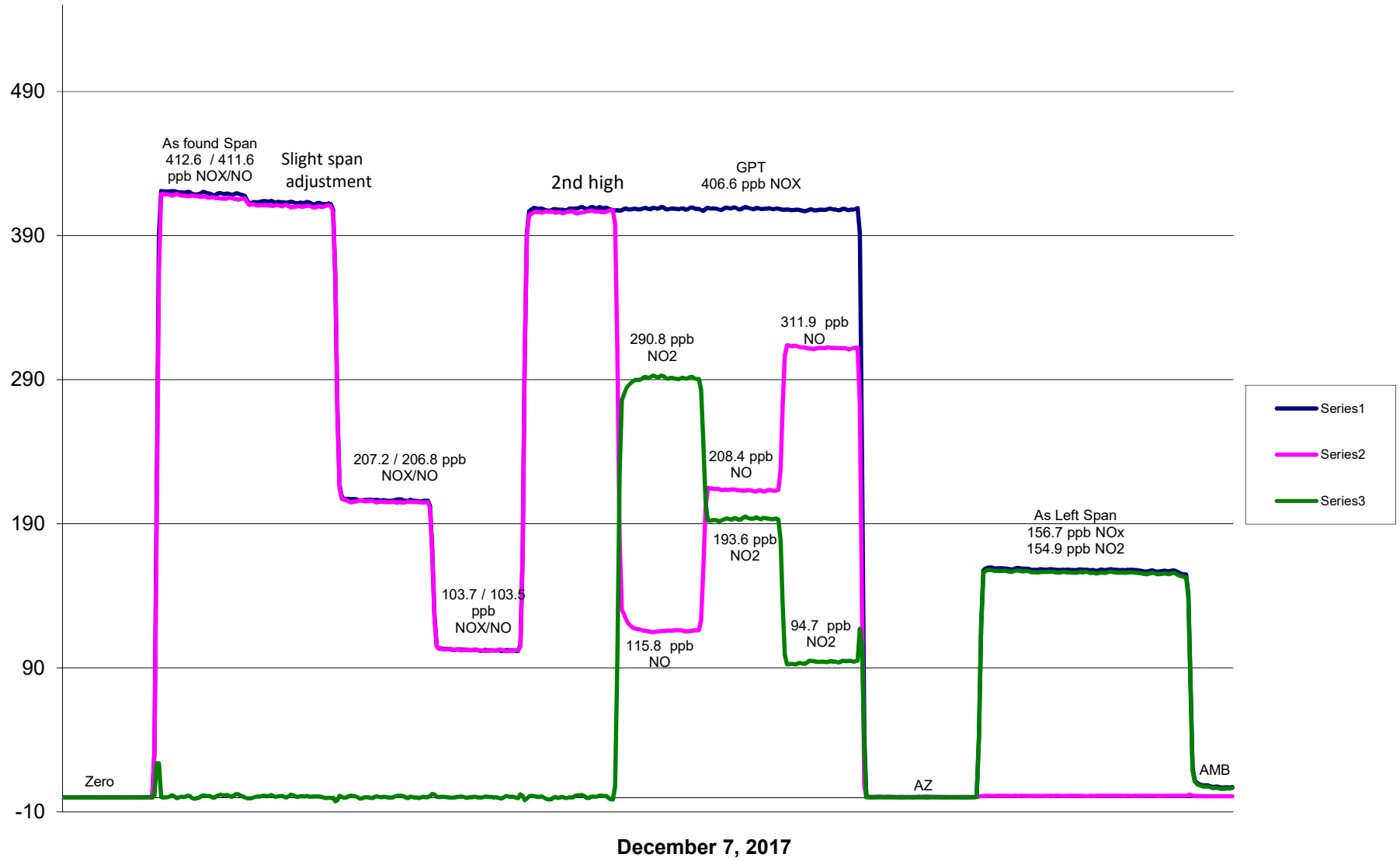
## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A	Correlation Coefficient	0.999982
411.8	410.3	1.0038		
206.8	204.7	1.0105	Slope	1.003473
103.5	102.0	1.0143		
			Intercept	0.649731

## NO Calibration Curve



# NO<sub>x</sub> Calibration



# Calibration Report



AIR QUALITY MONITORING

Parameter 03

Air Monitoring Network PAZA

## Station Information

Calibration Date	December 7 2017	Previous Calibration	November 8 2017
Station Number	10	Station Location	Rycroft
Reason:	<b>Routine</b>	Install	Removal
		Other:	
Start Time (MST)	13:15:00 PM	End Time (MST)	15:15:00 PM
Barometric Pressure	0.940 atm	Station Temperature	20.0 Deg C
Calibrator	EnviroNics 6103	Serial Number	6586
DACS make	CR3000	DACS serial No.	5407
DACS voltage range	0 - 5 Volts	DACS channel #	6
	Before		After
Calculated slope	0.998761	Calculated slope	0.979046
Calculated intercept	-0.503504	Calculated intercept	-0.021790
Analyzer make	TEI Model 49C	Analyzer serial #	49C-0609716240

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Offset	-0.5	ppb	-0.5	ppb
Span	1.004		1.004	
Cell A intensity	60532	Hz	59385	Hz
Cell B intensity	61722	Hz	60696	Hz
Pressure	680.80	in Hg	681.80	in Hg
CellA Flow	0.718	ccm	0.718	ccm
Cell B Flow	0.704	cmm	0.704	cmm

## Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4996	0.00	0.0	0.5	N/A
4996	0.30	290.8	297.6	0.9773
4996	0.20	193.6	197.2	0.9816
4996	0.10	94.7	96.2	0.9840
4996	0.00	0.0	0.5	As found zero
4996	0.30	290.8	297.6	As found span
Average Correction Factor				0.9810

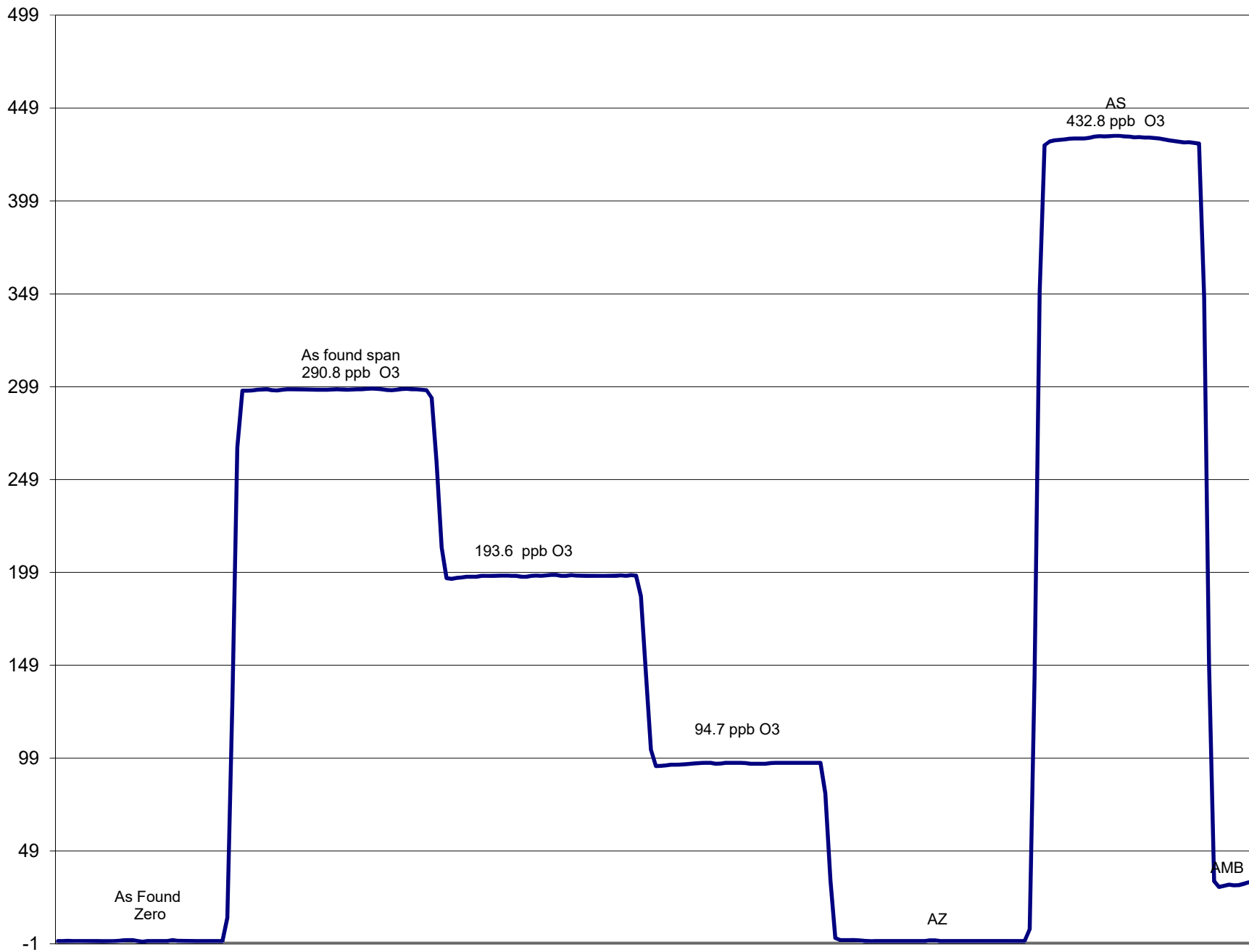
Calculated value of As Found Response: 296.1 ppm      Percent Change of As Found: 1.8%

	before calibration		after calibration	
Auto zero	0.5	ppb	0.5	ppb
Auto span	404.2	ppb	432.8	ppb

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii





**December 7 2017**

# Calibration Report



Parameter CH4 / NMHC / THC

Air Monitoring Network PAZA

## Station Information

Calibration Date	December 4, 2017	Previous Calibration	November 7, 2017
Station Number	1	Station Location	Rycroft
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	13:30:00 PM	End Time (MST)	15:40:00 PM
Barometric Pressure	0.943 atm	Station Temperature	21.0 Deg C
Calibrator	EnviroNics 6103	Serial Number	6586
Cal Gas CH4 Conc	404 ppm CH4	Cal Gas Expiry Date	3/28/2014
Cal Gas C3H8 Conc	201 552.75 ppm CH4	Cal Gas Cylinder #	LL34988
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 5 volt	DACS channel #	SE 12,13,14

Analyzer make TEI 55I-A3PHAA Analyzer serial # 1151980005

	before		after	
Concentration range	0-20 (CH4, NMHC); 0-40 (THC)	ppm	0-20 (CH4, NMHC); 0-40 (THC)	ppm
Air pressure	34.7	PSI	34.7	PSI
Fuel pressure	49.4	PSI	49.4	PSI
Carrier pressure	40.1	PSI	40.1	PSI
CH4 cal factor				E <sup>-4</sup>
NMHC cal factor				E <sup>-4</sup>
Rt		Sec		Sec
Pk Index				

## 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)
2000	0.00	0.00	0.01	N/A
2000	64.93	12.70	12.79	0.9931
2000	40.97	8.11	8.16	0.9936
2000	15.96	3.20	3.18	1.0047
2000	0.00	0.00	0.01	As Found Zero
2000	64.93	12.70	12.79	As Found Span
Average Correction Factor				0.9971

Calculated value of As Found Response: 12.780 ppm Percent Change of As Found: -0.6%

	Before		After
Calculated slope	1.003800	Calculated slope	0.993050
Calculated intercept	-0.045099	Calculated intercept	0.006972

## Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.01	ppm	0.00	ppm
Auto span	7.92	ppm	8.13	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)
2000	0.00	0.00	0.00	N/A
2002	64.93	17.36	17.37	0.9997
2000	40.97	11.10	11.06	1.0036
2000	15.96	4.38	4.26	1.0279
2000	0.00	0.00	0.00	As Found Zero
2000	64.93	17.38	17.37	As Found Span
Average Correction Factor				1.0104

Calculated value of As Found Response: 17.240 ppm      Percent Change of As Found: 0.8%

	<u>Before</u>		<u>After</u>
Calculated slope	0.990149	Calculated slope	0.997744
Calculated intercept	0.042077	Calculated intercept	0.056362

**Final Zero/Span Data**

	before calibration		after calibration	
Auto zero	0.00	ppm	0.00	ppm
Auto span	11.05	ppm	11.03	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)
2000	0.00	0.00	0.01	N/A
2000	64.93	30.08	30.20	0.9961
2000	40.97	19.21	19.22	0.9995
2000	15.96	7.57	7.47	1.0142
2000	0.00	0.00	0.01	As Found Zero
2000	64.93	30.08	30.20	As Found Span
Average Correction Factor				1.0033

Calculated value of As Found Response: 30.031 ppm      Percent Change of As Found: 0.2%

	<u>Before</u>		<u>After</u>
Calculated slope	0.994897	Calculated slope	0.995354
Calculated intercept	-0.003080	Calculated intercept	0.057100

**Final Zero/Span Data**

	before calibration		after calibration	
Auto zero	0.01	ppm	0.00	ppm
Auto span	18.96	ppm	19.16	ppm

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

# Calibration Summary



Parameter CH4  
 Air Monitoring Network PAZA

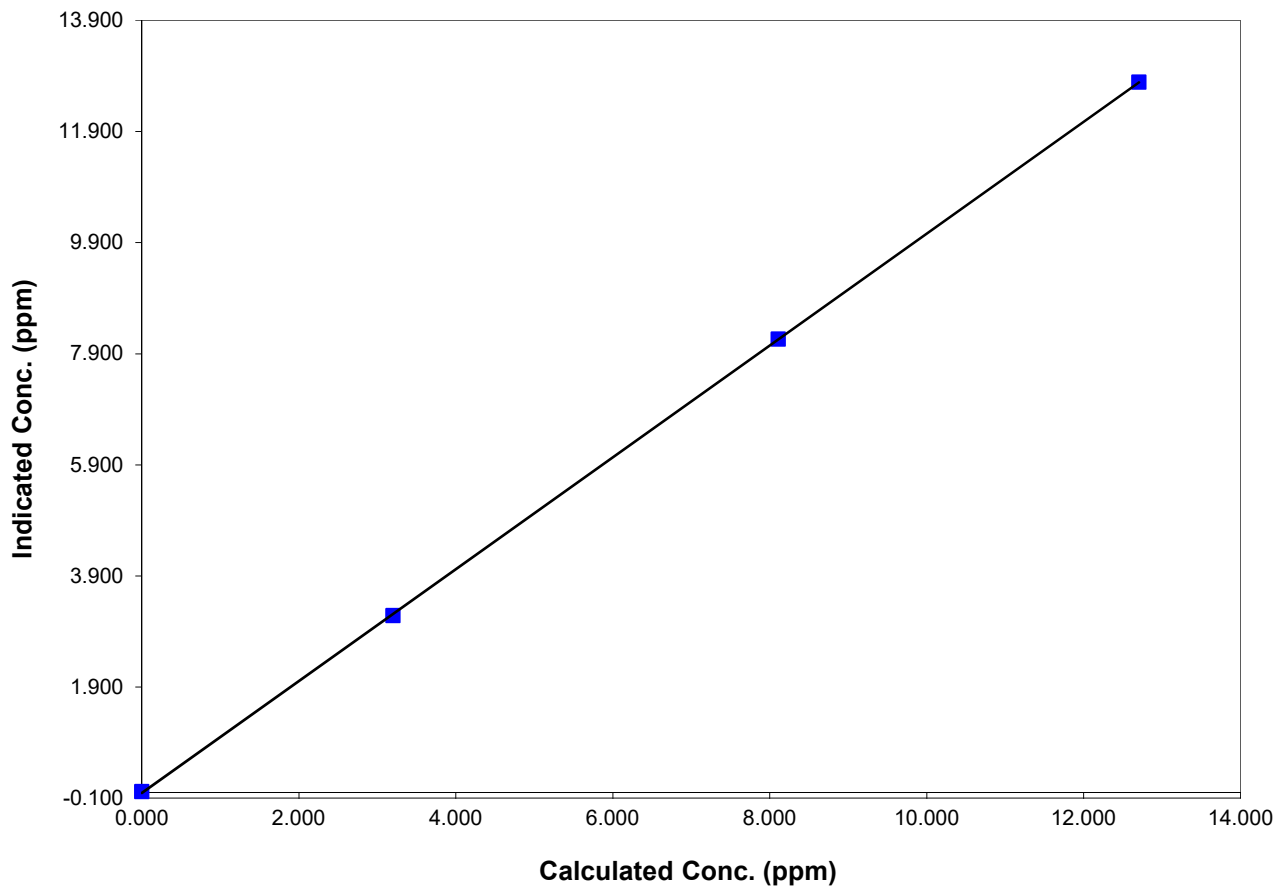
### Station Information

Calibration Date	December 4, 2017	Previous Calibration	November 7, 2017
Station Number	1	Station Location	Rycroft
Start Time (MST)	13:30:00 PM	End Time (MST)	15:40:00 PM
Analyzer make/model	TEI 55I-A3PHAA	Analyzer serial #	1151980005

### Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.015	N/A	Correlation Coefficient	0.999985
12.703	12.791	0.9931		
8.110	8.162	0.9936	Slope	0.993050
3.198	3.184	1.0047		
			Intercept	0.006972

## CH4 Calibration Data







# Calibration Summary



Parameter THC  
 Air Monitoring Network PAZA

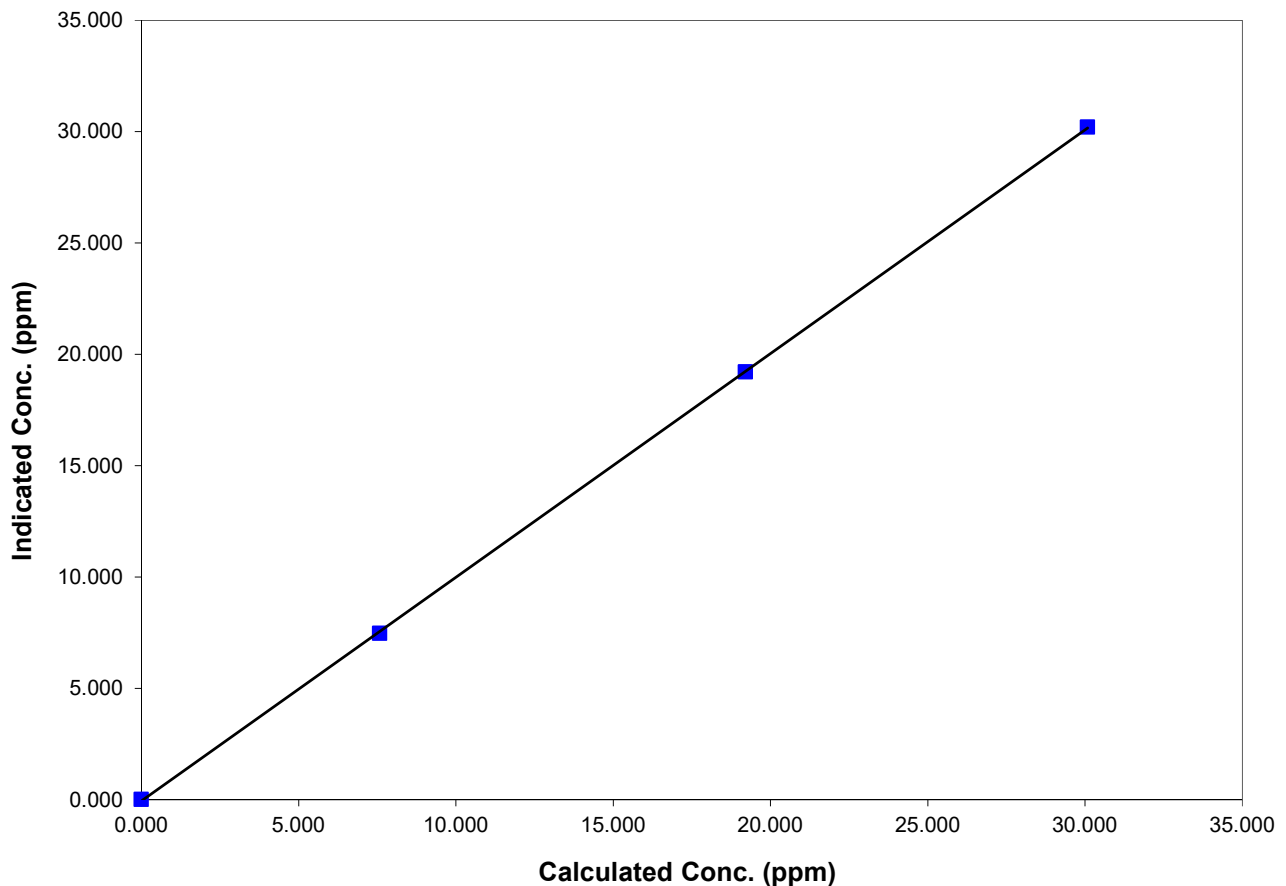
### Station Information

Calibration Date	December 4, 2017	Previous Calibration	November 7, 2017
Station Number	1	Station Location	Rycroft
Start Time (MST)	13:30:00 PM	End Time (MST)	15:40:00 PM
Analyzer make/model	TEI 55I-A3PHAA	Analyzer serial #	1151980005

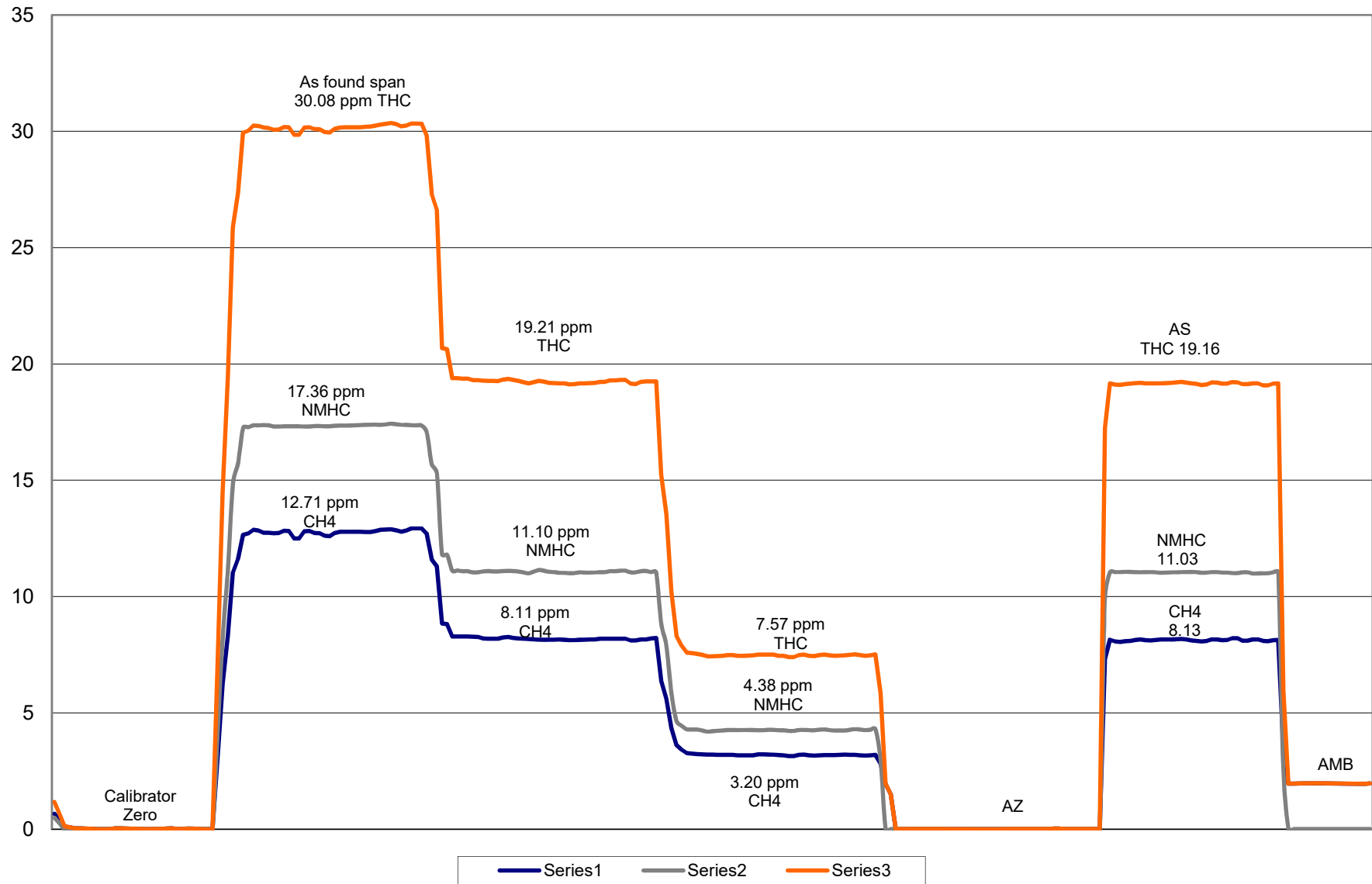
### Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.014	N/A	Correlation Coefficient	0.999974
30.084	30.202	0.9961		
19.206	19.216	0.9995	Slope	0.995354
7.574	7.468	1.0142		
			Intercept	0.057100

## THC Calibration Data



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



# Calibration Report



Parameter TR3

Air Monitoring Network PAZA

AIR QUALITY MONITORING

## Station Information

Calibration Date	December 4, 2017	Previous Calibration	November 7, 2017
Station Name	PAZA Rover	Station Location	Rycroft
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	11:35 AM	End Time (MST)	14:40:00 PM
Barometric Pressure	0.943 mbar	Station Temperature	21.0 Deg C
Calibrator	EnviroNics 6103	Serial Number	6586
Cal Gas Concentration	10.3 ppm	Cal Gas Expiry Date	2/2/2020
Gas Cert Reference	EY0000340		
DACS make	CR3000	DACS serial No.	5407
DACS voltage range	0 - 5 Volt	DACS channel #	1
	<u>Before</u>		<u>After</u>
DACS Scale High	100	DACS slope	100
DACS Scale Low	0	DACS intercept	0
Calculated slope	1.012113	Calculated slope	0.993087
Calculated intercept	-0.070359	Calculated intercept	0.279926
Analyzer make	TEI 43I	Analyzer serial #	1153630152

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	10.9	ppb	11.1	ppb
Coefficient	1.062		1.084	
Lamp Voltage	783	V	782	V
Chamber Temp	45	C	45	C
Perm gas Temp	45	C	45	C
Pressure	674.9	mmHg	683.8	mmHg
Sample Flow	0.389	lpm	0.393	lpm
Lamp Intensity	85	Hz	85	Hz

## Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
4996	0.0	0.0	0.1	N/A
4996	39.96	81.7	82.2	0.9945
4998	20.01	41.1	40.8	1.0058
6996	9.97	14.7	14.2	1.0314
			0.3	Sox Test
4996	0.00	0.0	0.1	As found zero
4996	39.96	81.7	80.5	As found span
Average Correction Factor				1.0106

Calculated value of As Found Response: 81.33 ppb      Percent Change of As Found: 0.5%

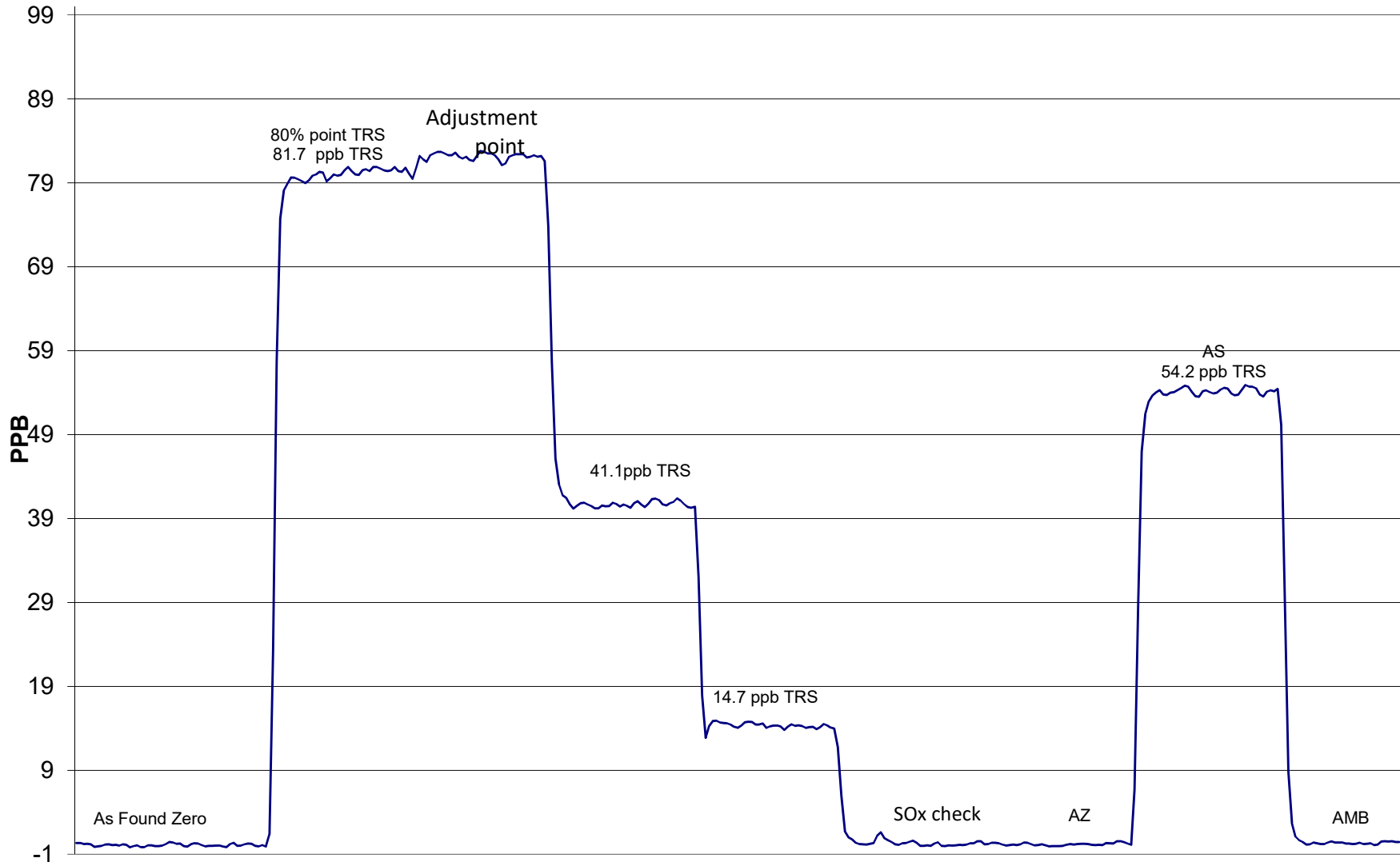
	before calibration		after calibration	
Auto zero	0.2	ppb	0.2	ppb
Auto span	51.7	ppb	54.2	ppb

Notes: Slight span adjustment made  
Sox scrubber check performed

Calibration Performed By: Dmytro Dolotii



# TRS Calibration



December 4, 2017