



Peace Airshed Zone Association

Ambient Air Monitoring Network Summary

Ambient Air Quality Monitoring Program

Monthly Report

December 2025

January 31, 2026

Alberta Environment and Protected Areas

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

Subject: **Peace Airshed Zone Association (PAZA)**
December 2025 Ambient Air Quality Monitoring Report

Please find enclosed the PAZA Ambient Air Quality Monitoring Network Report for the month of December 2025.

The representative of the Person Responsible for this monitoring program is:

Mandeep Dhaliwal, B.Sc., P.Chem.
Program Manager
Box 21135
Grande Prairie, Alberta T8V 6W7
Email: Mandeep@paza.ca
Phone: 403-608-9697

This report was prepared by Dr. Kevin McCullum, P.Eng., and reviewed by Mandeep Dhaliwal. PAZA has retained the services of WSP Canada Inc. to conduct continuous ambient monitoring and Dr. Kevin McCullum, P.Eng. to provide data validation and reporting.

This report is submitted by PAZA on behalf of the industrial member companies to satisfy the requirements of the facility Operating Approvals listed in Table A

The monthly summary report includes the operational summaries and hourly continuous monitoring and monthly passive results. The Milner station is being reported under the PAZA Monthly report.

Continuous Monitoring:

Eight (8) Stations including Henry Pirker (Grande Prairie), Dunes, Smoky Heights, Beaverlodge, Valleyview, Fox Creek, Happy Valley-Portable and Milner.
Detailed Summaries are included in the report.

Calibration and Data Submission:

Monthly report, hourly data and calibration reports for December 2025 were submitted to the ETS data system.

Table A. PAZA members with Facility Operating Approvals

Company	Facility	LSD	EPEA Approval No.
Advantage Oil & Gas Ltd.	Glacier	05-02-076-13-W6	00262479-00-00
Alberta Power (2000) Ltd. (an ATCO company)	Sturgeon	SW-06-069-21-W5	00010283-02-02
ATCO Power Canada	Poplar Hill	11-19-073-08-W6	00067774-01-01
ATCO Power Canada	Valleyview	SW-06-069-21-W5	00147709-01-01
AltaGas Ltd.	Pouce Coupe	03-03-081-13-W6	00247673-00-00
	Gordondale	02-26-068-25-W5	00287474-00-00
Apache Canada Ltd.	House Mountain	01-08-070-10-W5	00010137-02-02
ARC Resources Ltd.	ARC Ante Creek	02-26-068-25-W5	00266694-01-00
Birchcliff Energy Ltd.	Pouce Coupe	03-22-078-12-W6	00252529-00-00
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
	Sturgeon/Valleyview	02-02-069-22-W5	00001633-02-00
Canfor Forest Products	Grande Prairie	SW-23-071-06-W6	00152645-01-00
Conocophillips Canada Energy Partnership	Wembley	06-19-073-08-W6	00000212-01-00
Encana Corporation	Sexsmith	04-08-075-07-W6	00010002-01-00
Enerplus Resources	Pouce Coupe	SW-06-069-21-W5	00001464-02-03
Exshaw Oil Corporation	Spirit River	03-10-077-07-W6	00344521-00-00
Grande Prairie Generation Inc.	Northern Prairie Power Project	04-19-073-08-W6	00238762-00-00
Inception Exploration Ltd.	Gold Creek	03-26-069-05-W6	00335317-00-02
KANATA Energy Group Ltd.	Valhalla	13-21-076-09-W6	00017620-02-02
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
	Sunset House	06-22-070-20-W5	00138884-01-00
Milner Power Limited Partnership	H.R. Milner thermal electric power plant	SE-15-058-08-W6	00009814-03-03
NorthRiver Midstream Inc.	Fourth Creek	16-11-082-09-W6	00000263-01-00
	Gordondale	11-26-079-09-W6	00011495-01-01
	Pouce Coupe/Bonanza	03-23-080-13-W6	00070203-01-01
Pembina Pipeline Corporation	Kakwa River	08-13-063-05 W6	00335342-01-00
Penn West Petroleum Ltd.	Tangent	13-29-080-23-W5	00001746-02-00
	Pouce Coupe	16-07-078-11-W6	00000614-01-00
Petrus Resources	Rycroft	08-25-077-06-W6	00011351-02-00
	Spirit River	08-34-077-06-W6	00011096-02-00
Strathcona Resources Ltd.	Jayar Sour Gas Processing Plant	06-08-062-03 W6	03612040-00-00
Suncor Energy Inc.	Progress	07-22-078-09-W6	00011428-02-00
Tidewater Midstream and Infrastructure Ltd.	Pipestone Sour Gas Plant	NW-35-70-9 W6	00403309-00-00
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

Concentrations in excess of the Clean Air (Maximum Levels) Regulation:

There were no readings above the AAAQO or AAAQG

Operational times less than 90 percent

The Henry Pirker station in Grande Prairie was primarily shut down over the month of December. The only exception was Solar Radiation and Wind Speed / Direction. This downtime stems from November when vandals cut power to station twice so equipment was removed to prevent further damage (reference number 448140).

Air Incidents

None to report

Deviations from Authorized Monitoring Methods

None to report

Passive Monitoring

54 Stations throughout the PAZA zone

- Passive sample analyses were performed by Bureau Veritas Laboratories
- Field notes indicated issues with limited access due to roads not plowed, one Site at Milner was able to walk to the other at Girouxville 3 was not collected due to not being able to access (to much snow)

There were 20 duplicates sampled in the month of December:

- Eight SO₂ duplicates located at Sylvester, McLennan, Gift Lake, Kinuso, Duvernay 3, Kakwa 3, Milner Ambient Trailer, Jayar5 Camp
 - RPD ranging from 0% to 40% (no fails)
- One O₃ duplicate at Crooked Creek
 - RPD of 26% (no fail)
- Seven NO₂ duplicates at Silver Valley, Hythe, Wanham, Deer Mountain, Kakwa 2, Milner Powerline, Jayar3 Bone Yard
 - RPD ranging from 3% to 38% (no fails)
- Four H₂S duplicates at Duvernay 3, Girouxville 4, Kakwa 1, Jayar4 7-8 or 8-8 Pad
 - RPD ranging from 5% to 29% (no fails)

Dustfall Monitoring

- Five Stations collected Total Dustfall and Fixed Dustfall
- Total dustfall ranged from 10.3 to 91.0 mg/100cm²/30day
- RPD was 8 to 53% (one fail with Fixed Dustfall, readings of 3.7 and 6.4)

I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization, and reporting requirements.

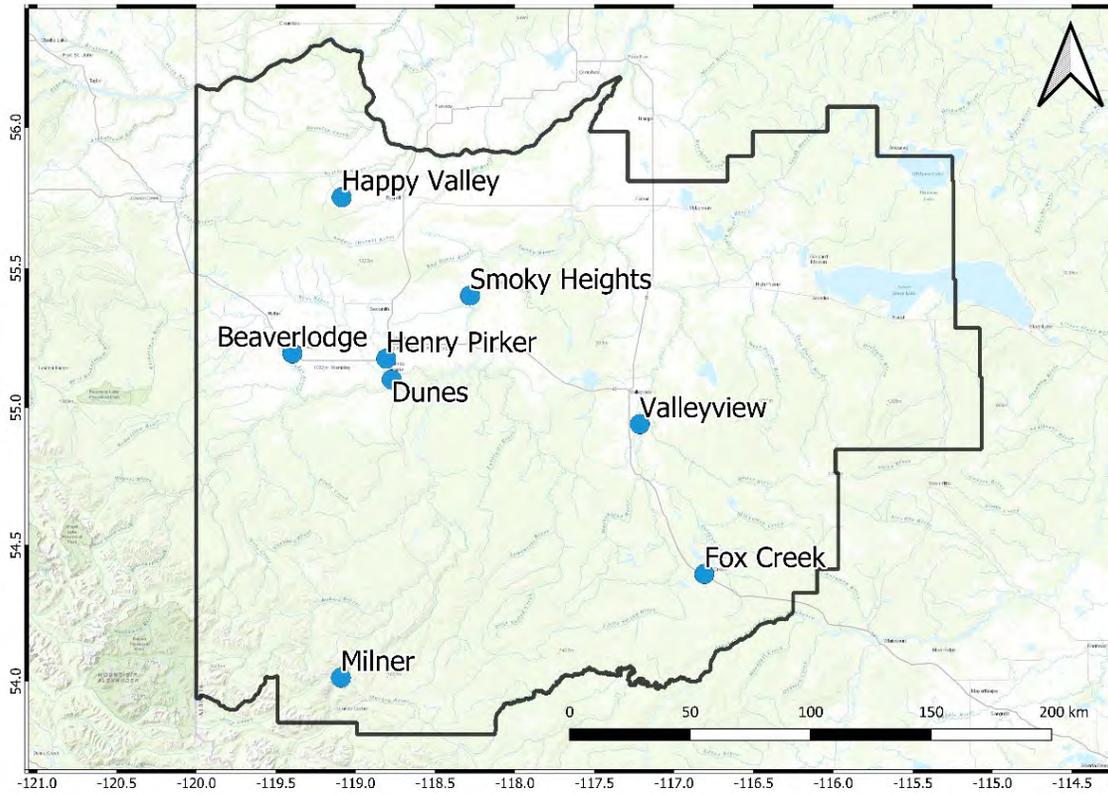


Mandeep Dhaliwal, B.Sc., P.Chem.
Program Manager

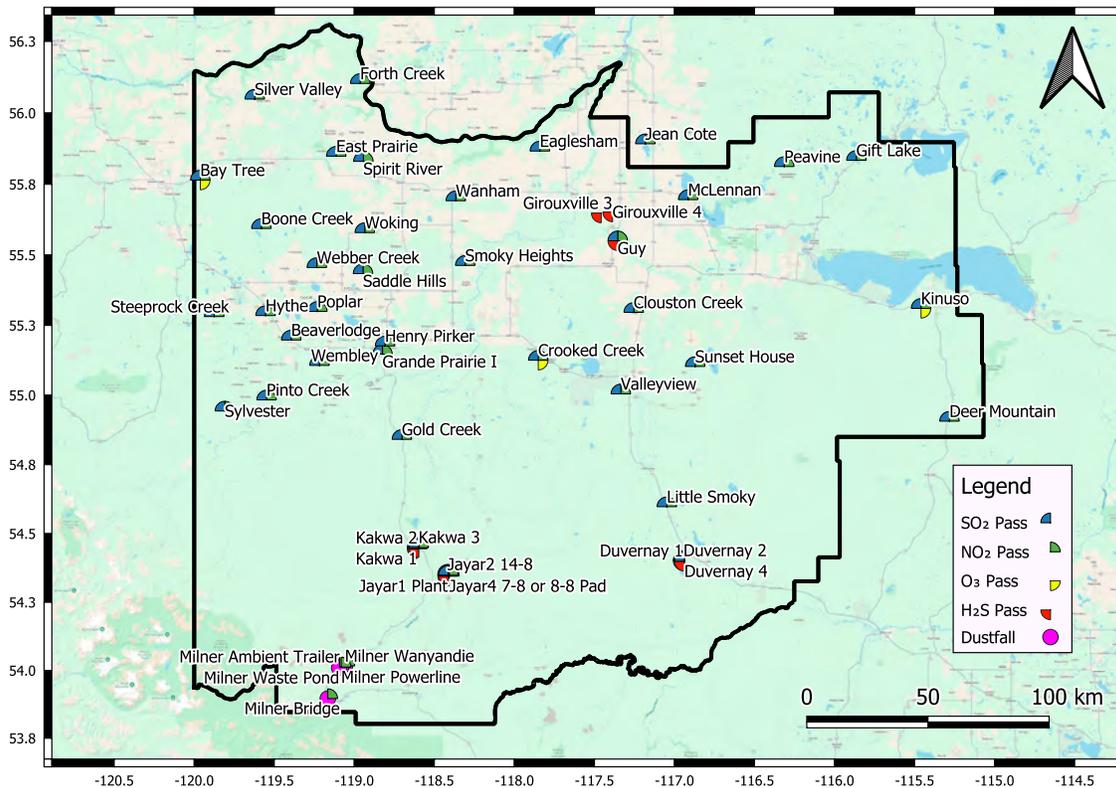
TABLE OF CONTENTS

1	DECEMBER 2025 MONTHLY STATION SUMMARIES	2
1.1	Beaverlodge Air Monitoring Station	2
1.2	Dunes Air Monitoring Station	2
1.3	Grande Prairie - Henry Pirker Air Monitoring Station.....	3
1.4	Smoky Heights Air Monitoring Station	3
1.5	Valleyview Air Monitoring Station	4
1.6	Fox Creek Air Monitoring Station	4
1.7	Happy Valley Air Monitoring Station	5
1.8	Milner Air Monitoring Station.....	5
2	BEAVERLODGE CHARTS.....	6
3	DUNES CHARTS	16
4	GRANDE PRAIRIE - HENRY PIRKER CHARTS.....	25
5	SMOKY HEIGHTS CHARTS.....	30
6	VALLEYVIEW CHARTS	38
7	FOX CREEK CHARTS	45
8	HAPPY VALLEY (PORTABLE) CHARTS.....	55
9	MILNER CHARTS	68
10	PASSIVE MONITORING DATA.....	75
11	DUSTFALL MONITORING DATA.....	84
12	END OF REPORT	85

PAZA Continuous Monitoring Station Locations



PAZA Passive Monitoring Station Locations



1 December 2025 Monthly Station Summaries

The following summaries are for the equipment and data results from the continuous ambient work

1.1 Beaverlodge Air Monitoring Station

PAZA - December 2025 Beaverlodge Station Report

Parameter	December			Operational	Maximum	1-hour			24-hour			Exceedance				Calibration Date
	Average	Minimum	Valid			Max	Objective	Max Day and Time	Max	Objective	Max Day	1hr	8hr	24hr	30d	
NO (ppb)	0.8	0.0	94.9%	100.0%	28.3	-	Dec-16 14:00	6.1	-	Dec-13	-	-	-	-	Dec 09, 2025	
NO ₂ (ppb)	6.3	0.7	94.9%	100.0%	31.5	159	Dec-13 09:00	19.4	-	Dec-13	0	-	-	-	Dec 09, 2025	
NO _x (ppb)	7.1	0.7	94.9%	100.0%	57.3	-	Dec-13 09:00	25.5	-	Dec-13	-	-	-	-	Dec 09, 2025	
O ₃ (ppb)	24.0	0.3	95.4%	100.0%	44.4	76	Dec-28 18:00	41.7	-	Dec-29	0	-	-	-	Dec 09, 2025	
PM _{2.5} (µg/m ³)	4.9	0.1	99.7%	100.0%	22.6	80	Dec-03 07:00	14.4	29	Dec-13	0	-	0	-	Dec 09, 2025	
SO ₂ (ppb)	1.7	0.1	95.3%	100.0%	19.0	172	Dec-13 21:00	5.6	48	Dec-13	0	-	0	0	Dec 09, 2025	
	Average	Minimum	Valid	Operational	Maximum											
Temp (°C)	-16.9	-30.1	100.0%	100.0%	6.0	<div style="border: 1px solid black; padding: 5px;"> Note: Valid hours must be greater than 75% Operational hours must be greater than 90% </div>										
RH (%)	76.1	57.3	100.0%	100.0%	97.8											
WS (km/hr)	9.9	0.2	100.0%	100.0%	23.2											
WD (deg)	326	0.8	100.0%	100.0%	359.6	Average Wind Direction		326	NNW							

Update Summary:

Parameter	Make	Model	Equipment summary
NO/NO ₂ /NO _x	Thermo	42iQ	No operational issues noted during the month
O ₃	Thermo	49iQ	No operational issues noted during the month
PM _{2.5}	API	T640	No operational issues noted during the month; no readings above AAAQO or AAAQG
SO ₂	Thermo	43i-TLE	No operational issues noted during the month
Met Equip	MetOne	50.5	No operational issues noted during the month

1.2 Dunes Air Monitoring Station

PAZA - December 2025 Dunes Station Report

Parameter	December			Operational	Maximum	30min / 1-hour			24-hour			Exceedance				Calibration Date
	Average	Minimum	Valid			Max	Objective	Max Day and Time	Max	Objective	Max Day	1hr	8hr	24hr	30d	
PM _{2.5} (µg/m ³)	4.5	0.0	99.7%	100.0%	31.2	80	Dec-03 08:00	13.6	29	Dec-03	0	-	0	-	Dec-05-2025	
SO ₂ (ppb)	1.1	0.0	95.3%	100.0%	27.5	172	Dec-10 13:00	2.8	48	Dec-10	0	-	0	0	Dec-05-2025	
TRS (ppb)	0.5	0.1	95.3%	100.0%	4.7	5	Dec-30 04:30	0.8	3	Dec-01	0	-	0	-	Dec-05-2025	
	Average	Minimum	Valid	Operational	Maximum											
Temp (°C)	-17.2	-33.4	100.0%	100.0%	6.7	<div style="border: 1px solid black; padding: 5px;"> Note: Valid hours must be greater than 75% Operational hours must be greater than 90% </div>										
RH (%)	75.8	51.0	100.0%	100.0%	99.9											
WS (km/hr)	3.6	0.0	100.0%	100.0%	11.8											
WD (deg)	343	0.2	100.0%	100.0%	358.3	Average Wind Direction		343	NNW							

Update Summary:

Parameter	Make	Model	Equipment summary
PM _{2.5}	Thermo	SHARP 5030	No Operational issues noted during the month
SO ₂	Thermo	43i	No Operational issues noted during the month
TRS	Thermo	43i	No Operational issues noted during the month
Met Equip	Gil/RMYoung	MetPak/RMY86004	No Operational issues noted during the month

1.3 Grande Prairie - Henry Pirker Air Monitoring Station

PAZA - December 2025 Henry Pirker Station Report

Parameter	December				Max	1-hour			8-hour / 24-hour			Exceedance				Calibration Date
	Average	Minimum	Valid	Operational		Objective	Max Day and Time	Max	Objective	Max Day	1hr	8hr	24hr	30d		
NO (ppb)																
NO ₂ (ppb)																
NO _x (ppb)																
O ₃ (ppb)																
PM _{2.5} (µg/m ³)																
SO ₂ (ppb)																
H ₂ S (ppb)																
CH ₄ (ppm)																
THC (ppm)																
NMHC (ppm)																
CO (ppm)																
	Average	Minimum	Valid	Operational	Maximum											
Temp (°C)						Note: Valid hours must be greater than 75% Operational hours must be greater than 90%										Dec 12, 2024
RH (%)																Dec 12, 2024
SR (W/m ²)	11.4	0.0	62.1%	62.1%	288.6											Dec 12, 2024
WS (km/hr)	5.6	0.2	62.1%	62.1%	18.9											Dec 12, 2024
WD (deg)	309	0.7	62.1%	62.1%	359.2	Average Wind Direction 309 NW										Dec 12, 2024

Update Summary:

Parameter	Make	Model	Equipment summary
NO/NO ₂ /NO _x	Thermo	42i	November vandals cut power to station, equipment removed to prevent damage, month of December not in operation
O ₃	TECO	49i	November vandals cut power to station, equipment removed to prevent damage, month of December not in operation
PM _{2.5}	API	T640	November vandals cut power to station, equipment removed to prevent damage, month of December not in operation
SO ₂	Thermo	43i-TLE	November vandals cut power to station, equipment removed to prevent damage, month of December not in operation
H ₂ S	TEI	450i	November vandals cut power to station, equipment removed to prevent damage, month of December not in operation
THC/CH ₄ /NMHC	TEI	55i	November vandals cut power to station, equipment removed to prevent damage, month of December not in operation
CO	Thermo	48i-TLE	November vandals cut power to station, equipment removed to prevent damage, month of December not in operation
Met Equip	MetOne	50.5	Dec 12, power restored to logger and PC so wind and solar data could be collected; Valid uptime <75%, valid month at 62.1%

1.4 Smoky Heights Air Monitoring Station

PAZA - December 2025 Smoky Heights Station Report

Parameter	December				Max	30min / 1-hour			24-hour			Exceedance				Calibration Date
	Average	Minimum	Valid	Operational		Objective	Max Day and Time	Max	Objective	Max Day	1hr	8hr	24hr	30d		
PM _{2.5} (µg/m ³)	4.3	0.0	99.9%	100.0%	40.5	80	Dec-01 02:00	10.4	29	Dec-13	0	-	0	-	Dec 10, 2025	
SO ₂ (ppb)	0.5	0.0	95.3%	100.0%	10.8	172	Dec-26 09:00	2.7	48	Dec-11	0	-	0	0	Dec 10, 2025	
TRS (ppb)	0.2	0.0	95.2%	100.0%	0.7	5	Dec-01 01:00	0.4	3	Dec-01	0	-	0	-	Dec 10, 2025	
	Average	Minimum	Valid	Operational	Maximum											
Temp (°C)	-18.4	-33.0	100.0%	100.0%	5.1	Note: Valid hours must be greater than 75% Operational hours must be greater than 90%										Aug 02, 2025
WS (km/hr)	9.6	0.2	100.0%	100.0%	34.4											Aug 02, 2025
WD (deg)	336	0.2	100.0%	100.0%	359.3	Average Wind Direction 336 WNW										Aug 02, 2025

Update Summary:

Parameter	Make	Model	Equipment summary
PM _{2.5}	Sharp	5030	No Operational issues noted during the month, no readings above the AAAQG or AAAQO
SO ₂	TECO	43i	No Operational issues noted during the month
TRS	TEI	43i APSAA	No Operational issues noted during the month, no readings above the AAAQG
Met Equip	MetOne	50.5	No Operational issues noted during the month

1.5 Valleyview Air Monitoring Station

PAZA - December 2025 Valleyview Station Report

Parameter	December				1-hour			24-hour			Exceedance				Calibration Date
	Average	Minimum	Valid	Operational	Max	Objective	Max Day and Time	Max	Objective	Max Day	1hr	8hr	24hr	30d	
SO ₂ (ppb)	0.2	0.0	95.4%	100.0%	4.9	172	Dec-19 10:00	0.9	48	Dec-24	0	-	0	0	Dec 04, 2025
H ₂ S (ppb)	0.1	0.0	95.3%	100.0%	0.6	10	Dec-18 18:00	0.4	3	Dec-23	0	-	0	-	Dec 04, 2025
	Average	Minimum	Valid	Operational	Maximum										
Temp (°C)	-16.5	-34.4	100.0%	100.0%	6.5	<div style="border: 1px solid black; padding: 5px;"> Note: Valid hours must be greater than 75% Operational hours must be greater than 90% </div>									
RH (%)	80.6	62.5	100.0%	100.0%	99.2										
WS (km/hr)	4.0	0.1	100.0%	100.0%	15.8										
WD (deg)	319	0.2	100.0%	100.0%	359.8	<div style="border: 1px solid black; padding: 2px;"> Average Wind Direction 319 NW </div>									

Update Summary:

Parameter	Make	Model	Equipment summary
SO ₂	TEI	43i-APSCB	No operational issues noted during the month
H ₂ S	TEI	450i-APHAA / 43C	No operational issues noted during the month
Met Equip	RMYoung	RMY86004	No operational issues noted during the month

1.6 Fox Creek Air Monitoring Station

PAZA - December 2025 Fox Creek Station Report

Parameter	December				1-hour			8-hour / 24-hour			Exceedance				Calibration Date	
	Average	Minimum	Valid	Operational	Max	Objective	Max Day and Time	Max	Objective	Max Day	1hr	8hr	24hr	30d		
NO (ppb)	9.2	0.0	95.0%	100.0%	153.1	-	Dec-16 19:00	29.2	-	Dec-30	-	-	-	-	Dec 08, 2025	
NO ₂ (ppb)	10.3	0.2	95.0%	100.0%	38.0	159	Dec-16 20:00	18.0	-	Dec-16	0	-	-	-	Dec 08, 2025	
NO _x (ppb)	19.8	0.6	95.0%	100.0%	188.6	-	Dec-16 19:00	47.0	-	Dec-16	-	-	-	-	Dec 08, 2025	
O ₃ (ppb)	17.1	0.0	95.3%	100.0%	38.8	76	Dec-29 13:00	25.3	-	Dec-21	0	-	-	-	Dec 08, 2025	
PM _{2.5} (µg/m ³)	5.8	0.4	99.7%	100.0%	75.6	80	Dec-09 22:00	14.3	29	Dec-14	0	-	0	0	Dec 08, 2025	
SO ₂ (ppb)	0.5	0.0	95.2%	100.0%	2.8	172	Dec-11 14:00	1.3	48	Dec-11	0	-	0	0	Dec 08, 2025	
H ₂ S (ppb)	0.2	0.0	95.2%	100.0%	1.1	10	Dec-16 19:00	0.6	3	Dec-25	0	-	0	-	Dec 08, 2025	
	Average	Minimum	Valid	Operational	Maximum											
Temp (°C)	-14.8	-31.0	100.0%	100.0%	5.7	<div style="border: 1px solid black; padding: 5px;"> Note: Valid hours must be greater than 75% Operational hours must be greater than 90% </div>										Sep 17, 2025
WS (km/hr)	5.6	0.1	100.0%	100.0%	14.2											Sep 17, 2025
WD (deg)	177	0.2	100.0%	100.0%	360.0	<div style="border: 1px solid black; padding: 2px;"> Average Wind Direction 177 S </div>										Sep 17, 2025

Update Summary:

Parameter	Make	Model	Equipment summary
NO/NO ₂ /NO _x	Thermo	42IQ	No operational issues noted during the month
O ₃	TECO	49i	No operational issues noted during the month
PM _{2.5}	API	T640	No operational issues noted during the month; no readings above AAAQG or AAAQO
SO ₂	TEI	43I-TLE	No operational issues noted during the month
H ₂ S	TEI	450i	No operational issues noted during the month
Met Equip	MetOne	50.5	No operational issues noted during the month

1.7 Happy Valley Air Monitoring Station

PAZA - December 2025 Happy Valley Station Report

Parameter	December			30min / 1-hour				24-hour		Exceedance				Calibration Date	
	Average	Minimum	Valid	Operational	Max	Objective	ix Day and Time	Max	Objective	Max Day	1hr	8hr	24hr		30d
NO (ppb)	0.4	0.0	91.4%	96.1%	5.1	-	Dec-16 17:00	1.0	-	Dec-23	-	-	-	-	Dec 01, 2025
NO ₂ (ppb)	3.0	0.2	91.4%	96.1%	12.7	159	Dec-20 09:00	8.2	-	Dec-13	0	-	-	-	Dec 01, 2025
NO _x (ppb)	3.5	0.4	91.4%	96.1%	16.9	-	Dec-20 09:00	9.1	-	Dec-13	-	-	-	-	Dec 01, 2025
O ₃ (ppb)	27.8	9.8	94.0%	98.3%	44.4	76	Dec-28 20:00	41.5	-	Dec-29	0	-	-	-	Dec 03, 2025
PM _{2.5} (µg/m ³)	4.1	0.1	98.9%	99.2%	48.3	80	Dec-28 00:00	7.4	29	Dec-11	0	-	0	-	Dec 02, 2025
SO ₂ (ppb)	0.8	0.0	94.4%	98.9%	27.4	172	Dec-08 13:00	3.2	48	Dec-11	0	-	0	0	Dec 01, 2025
TRS (ppb)	0.4	0.1	94.5%	99.1%	4.5	5	Dec-25 03:30	0.7	-	Dec-25	0	-	-	-	Dec 01, 2025
CH ₄ (ppm)	2.1	1.9	93.8%	98.5%	2.7	-	Dec-11 20:00	2.2	-	Dec-25	-	-	-	-	Dec 01, 2025
THC (ppm)	2.1	1.9	93.8%	98.5%	7.7	-	Dec-02 15:00	2.3	-	Dec-02	-	-	-	-	Dec 01, 2025
NMHC (ppm)	0.0	0.0	93.8%	98.5%	5.6	-	Dec-02 15:00	0.3	-	Dec-02	-	-	-	-	Dec 01, 2025
Average	Minimum	Valid	Operational	Maximum											
Temp (°C)	-19.7	-34.1	99.2%	99.2%	4.7										
WS (km/hr)	10.6	0.0	99.2%	99.2%	36.9										
WD (deg)	281	0.0	99.2%	99.2%	358.3										
											Note: Valid hours must be greater than 75% Operational hours must be greater than 90%				
Average Wind Direction										281	W				

Update Summary:

Parameter	Make	Model	Equipment summary
NO/NO ₂ /NO _x	TEI	42i	Calibration Dec 1, removal calibration to rebuild pump and replace scrubber, left overnight to stabilize, Dec 2, install calibration, no issues (16hrs removed, 5hrs maintenance); Dec 4, data failure due to communication and UPS, 6hrs removed; Dec 6 AIC failed, ran later to show all ok (1hr)
O ₃	TEI	49i	Dec 2, install calibration for nitrogen, ozone checks, 5hrs maintenance flagged; Dec 4, data failure due to communication and UPS, 6hrs removed; Dec 6, 1hr maintenance to work on nitrogen
PM _{2.5}	API	T640	Dec 4, data failure due to communication and UPS, 6hrs removed; no readings above AAAQG or AAAQO
SO ₂	TEI	43i	Dec 4, data failure due to communication and UPS, 6hrs removed; Dec 6, 1hr maintenance to work on nitrogen
TRS	TEI	43i	Dec 4, data failure due to communication and UPS, 6hrs removed; Dec 6, 1hr maintenance to work on nitrogen
THC/CH ₄ /NMHC	TEI	55i	Dec 2, install calibration for nitrogen, one hour missing for NMHC, removed for all three channels; 5hrs maintenance flagged; Dec 4, data failure due to communication and UPS, upon startup THC stuck in waiting mode, relit after fuel pressure adjustment (9 hrs removed); Dec 6, 1hr maintenance to work on nitrogen
Met Equip	MetOne	50.5	Dec 4, data failure due to communication and UPS, 6hrs removed

1.8 Milner Air Monitoring Station

PAZA - December 2025 Milner Station Report

Parameter	December			1-hour				24-hour		Exceedance				Calibration Date	
	Average	Minimum	Valid	Operational	Max	Objective	Max Day and Time	Max	Objective	Max Day	1hr	8hr	24hr		30d
NO (ppb)	1.2	0.0	94.9%	99.9%	32.5	-	Dec-18 13:00	5.5	-	Dec-18	-	-	-	-	Dec 14, 2025
NO ₂ (ppb)	5.3	0.0	94.9%	99.9%	28.9	159	Dec-20 02:00	13.9	-	Dec-20	0	-	-	-	Dec 14, 2025
NO _x (ppb)	6.5	0.0	94.9%	99.9%	52.4	-	Dec-18 13:00	18.1	-	Dec-20	-	-	-	-	Dec 14, 2025
PM _{2.5} (µg/m ³)	5.1	0.1	99.9%	100.0%	53.3	80	Dec-18 17:00	13.4	29	Dec-08	0	-	0	-	Dec 14, 2025
Average	Minimum	Valid	Operational	Maximum											
WS (km/hr)	6.4	0.1	100.0%	100.0%	26.7										
WD (deg)	278	1.4	100.0%	100.0%	357.7										
											Note: Valid hours must be greater than 75% Operational hours must be greater than 90%				
Average Wind Direction										278	W				

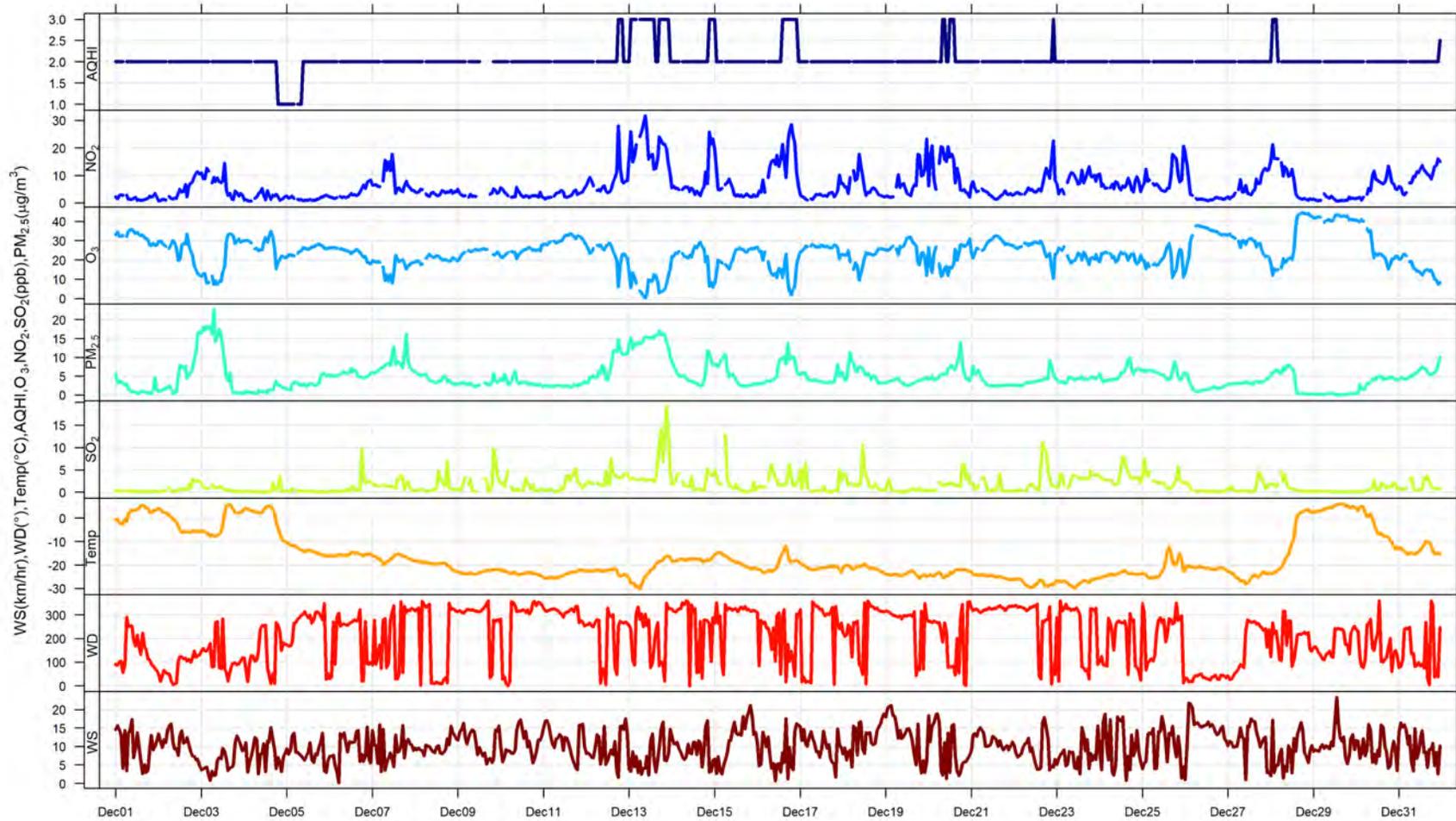
Update Summary:

Parameter	Make	Model	Equipment summary
NO/NO ₂ /NO _x	Thermo	42i	Dec 6 to 13, zeros all failed and removed, spans ok; Dec 15, AIC fail (1hr removed), no other AIC fails
PM _{2.5}	API	T640	No operational issues noted during the month, no readings above AAAQG or AAAQO
Met Equip	MetOne	50.5	No operational issues noted during the month

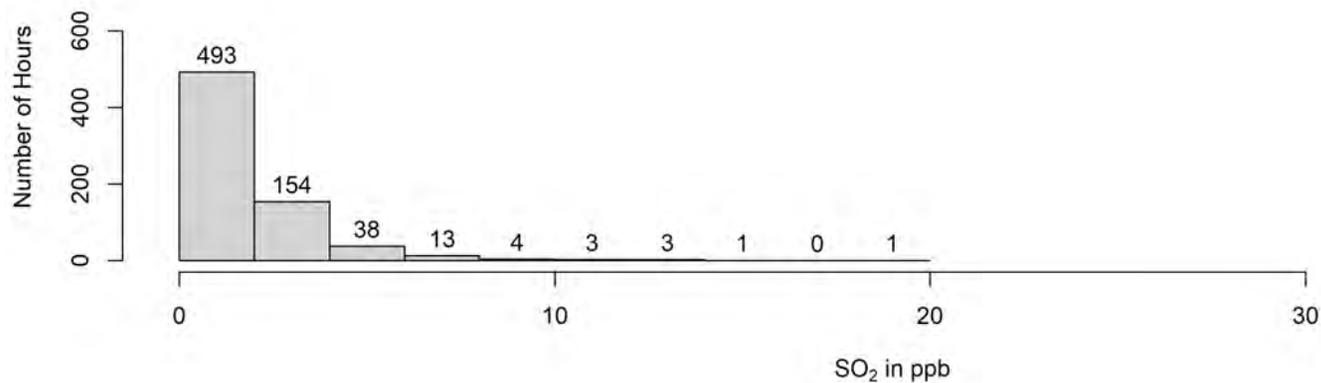
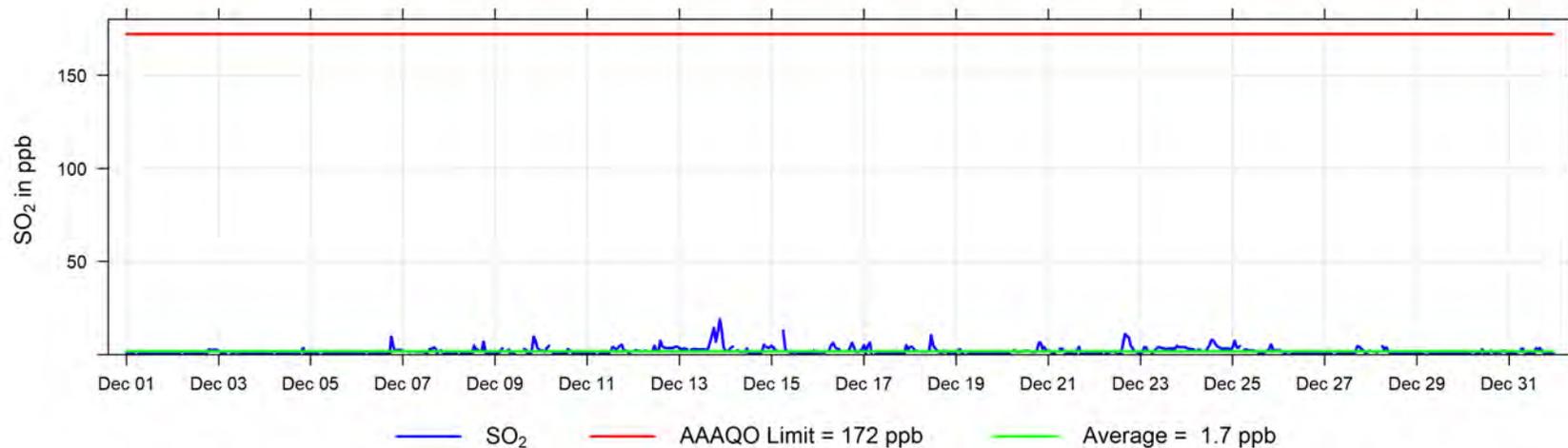
2 Beaverlodge Charts

The following pages include the charts and histograms for Beaverlodge Station

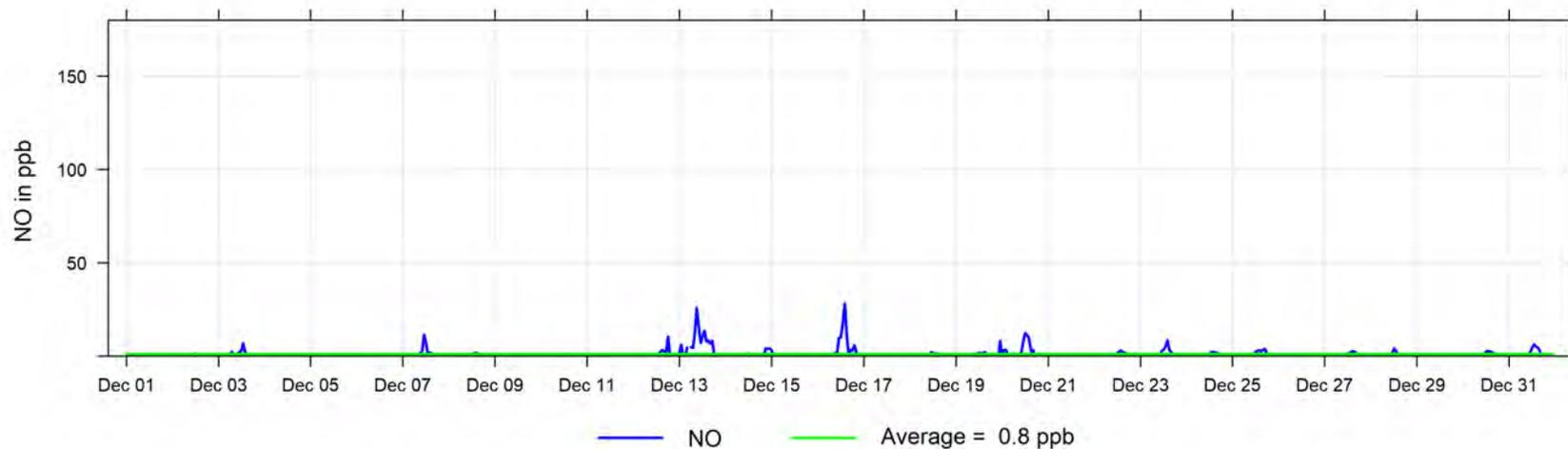
December 2025 Concentration Readings at Beaverlodge Station



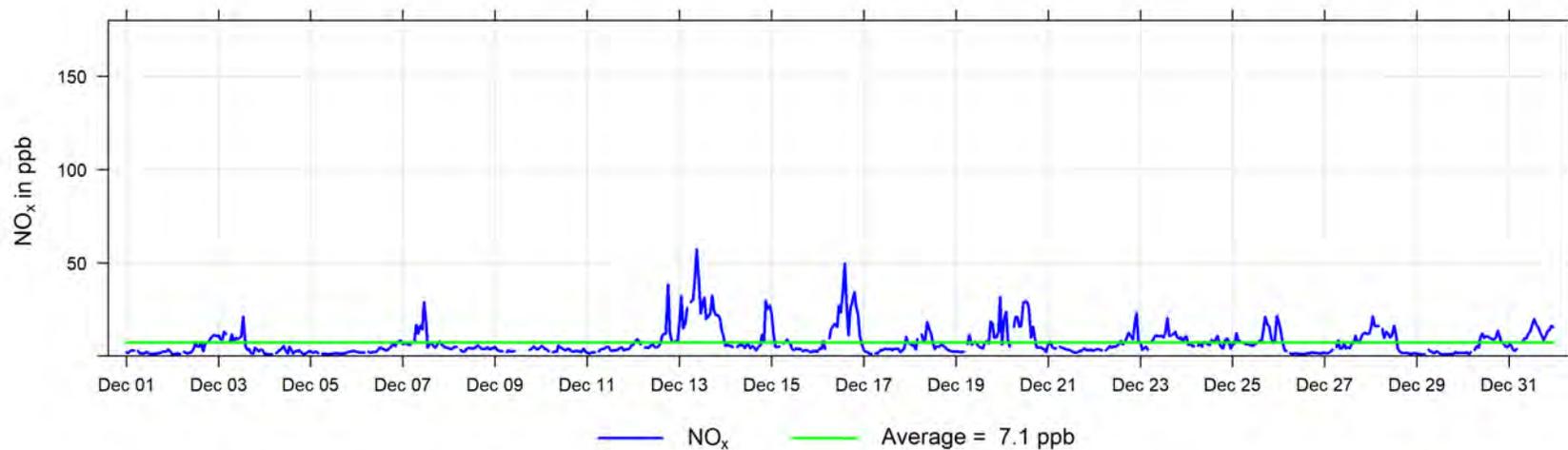
December 2025 Hourly Concentration Readings of SO₂ (in ppb) at Beaverlodge



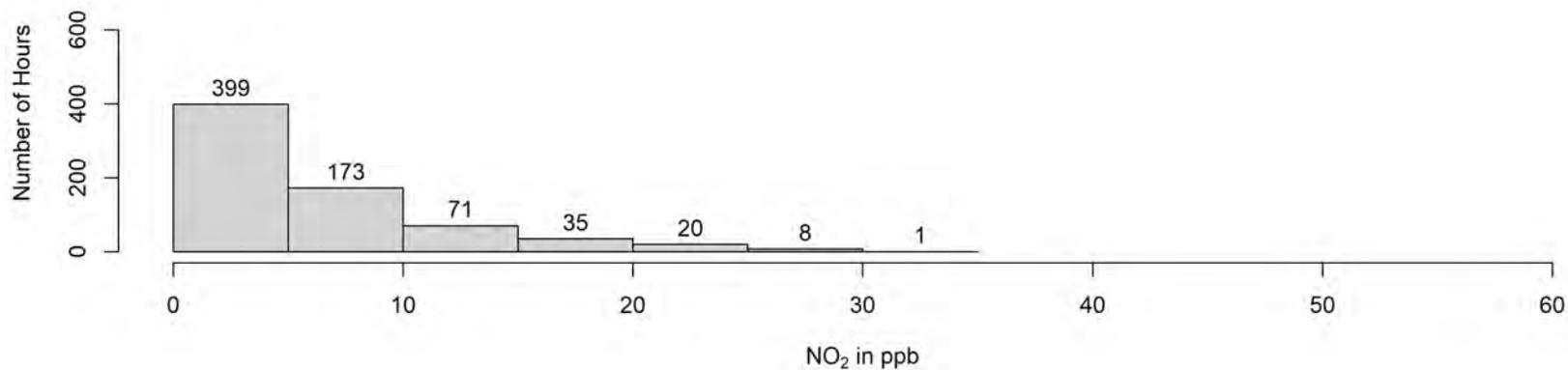
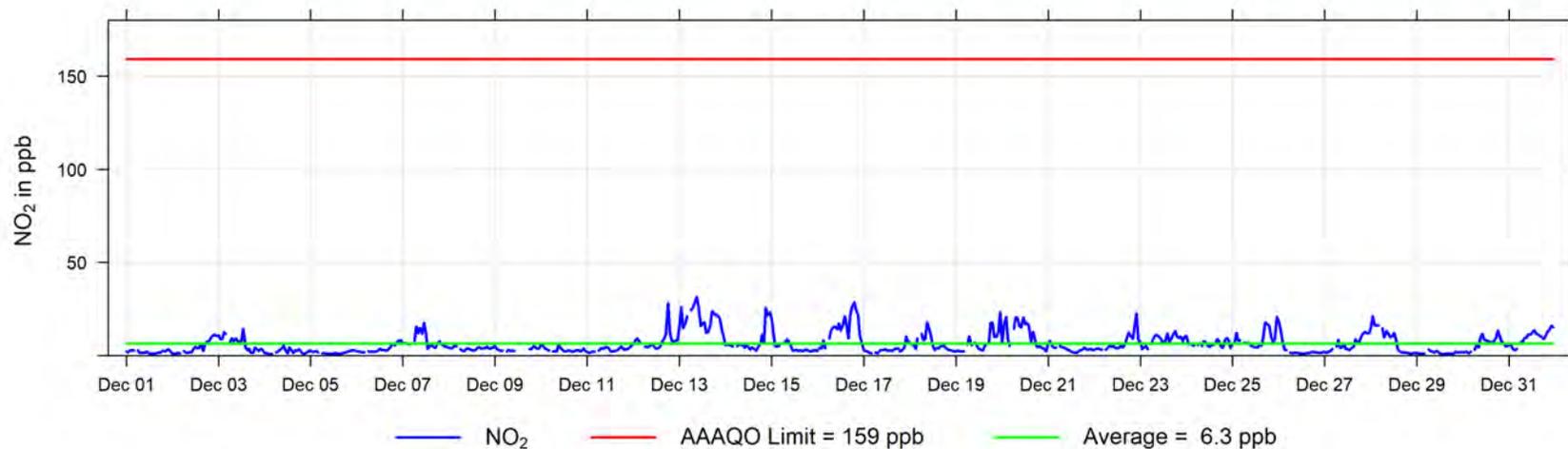
December 2025 Hourly Concentration Readings of NO (in ppb) at Beaverlodge



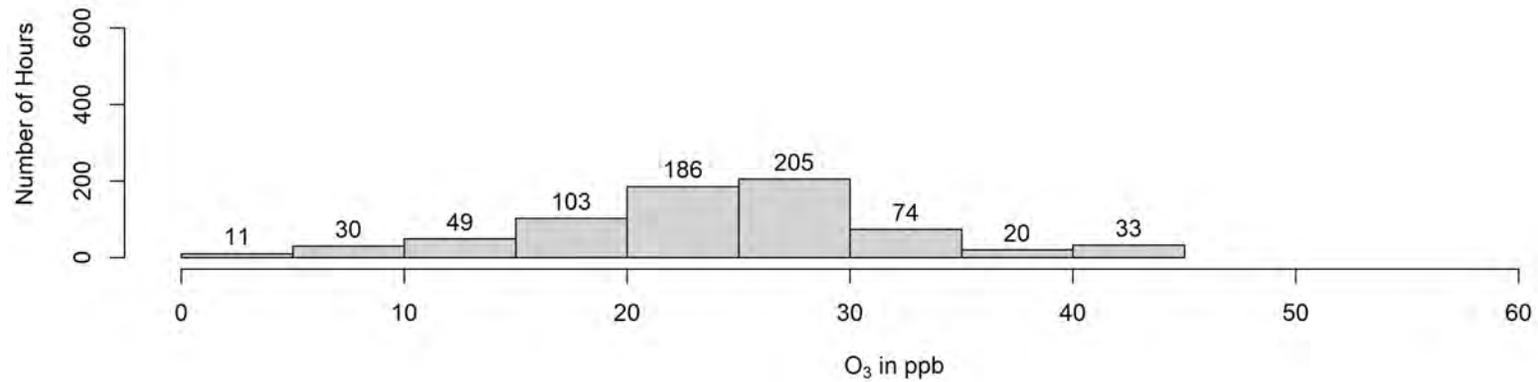
December 2025 Hourly Concentration Readings of NO_x (in ppb) at Beaverlodge



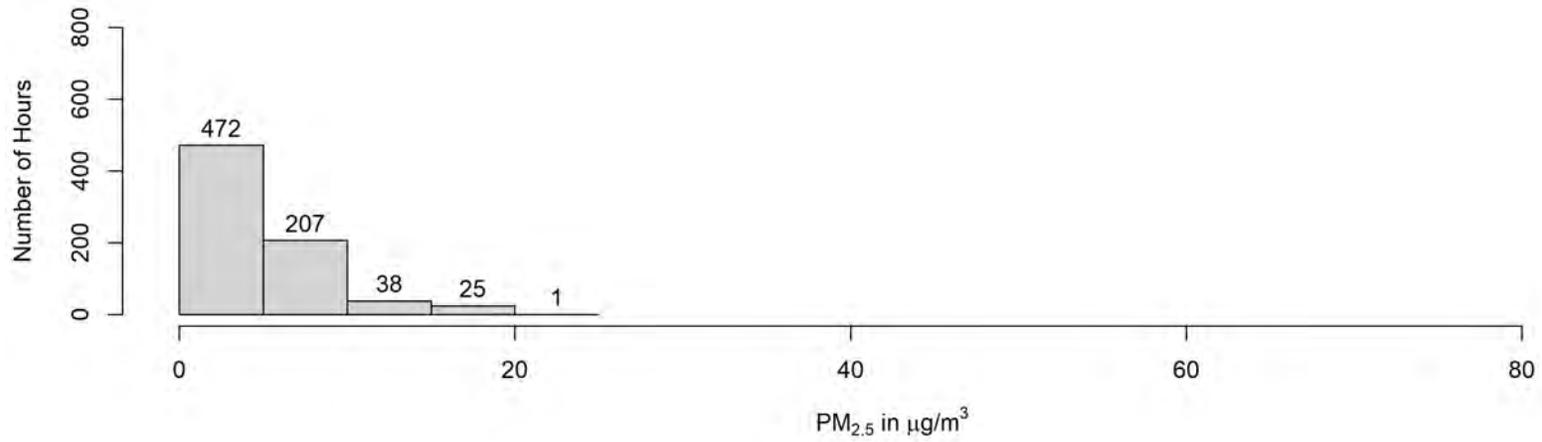
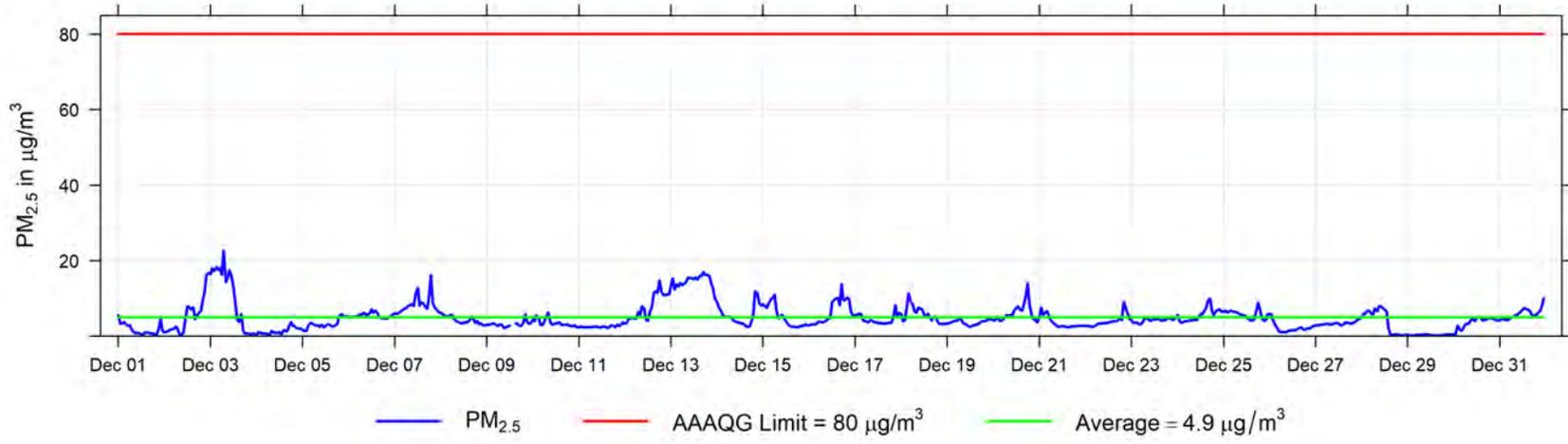
December 2025 Hourly Concentration Readings of NO₂ (in ppb) at Beaverlodge



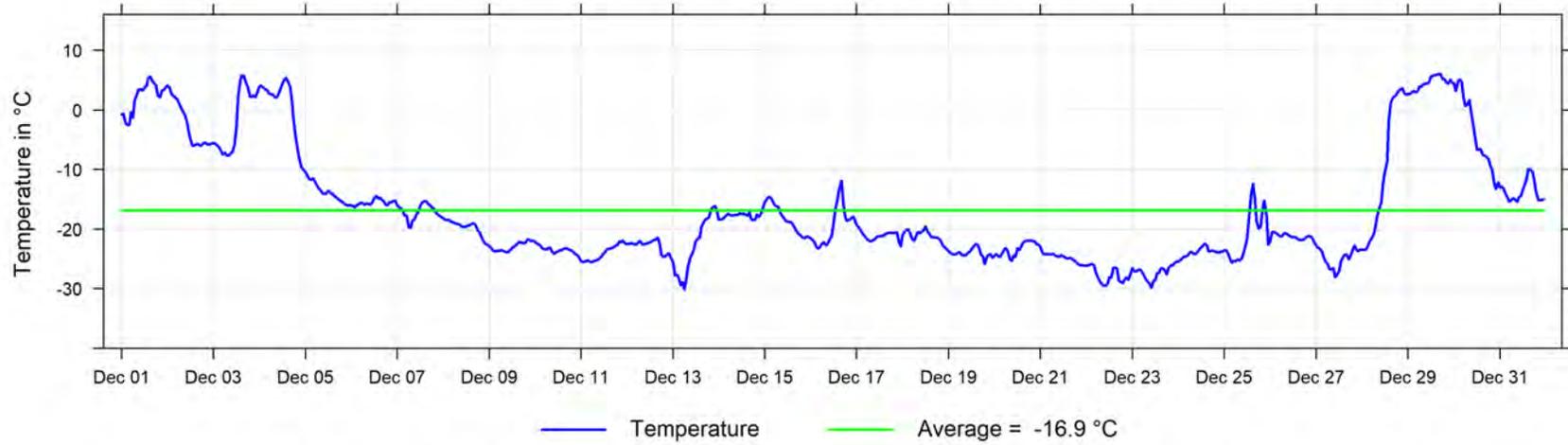
December 2025 Hourly Concentration Readings of O₃ (in ppb) at Beaverlodge



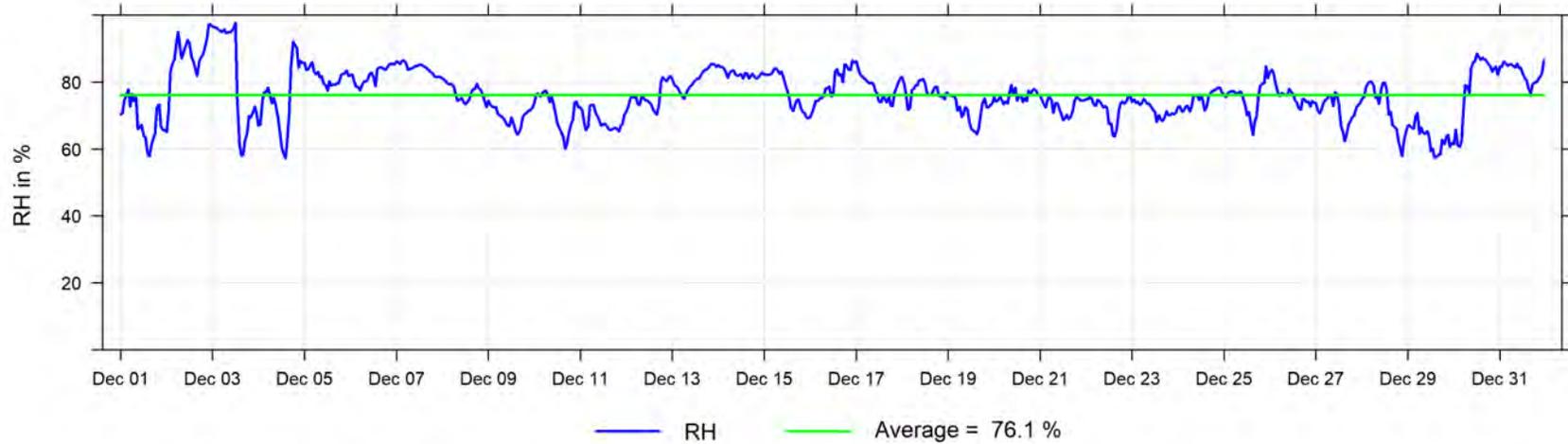
December 2025 Hourly Concentration Readings of PM_{2.5} in $\mu\text{g}/\text{m}^3$ at Beaverlodge



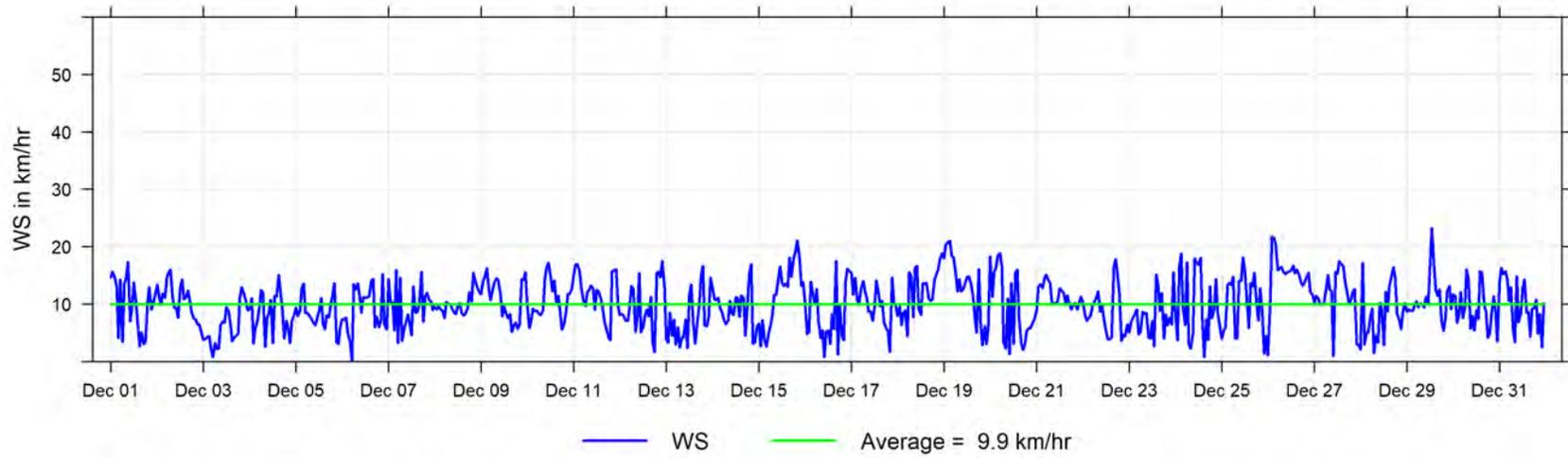
December 2025 Hourly Temperature Readings (in °C) at Beaverlodge



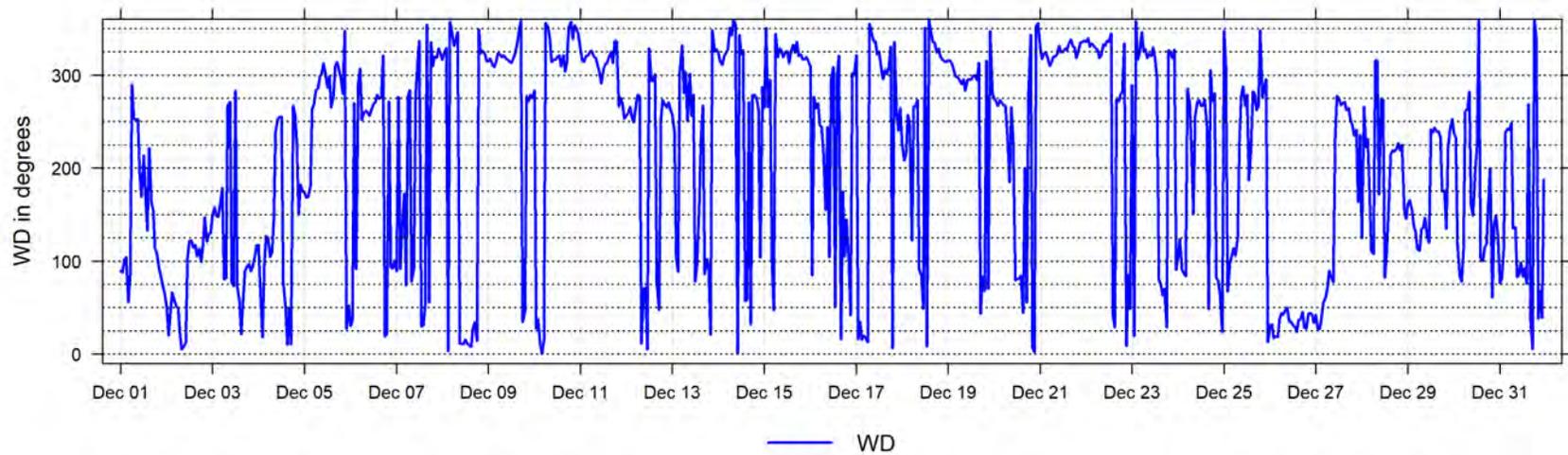
December 2025 Hourly Readings of Relative Humidity (in %) at Beaverlodge



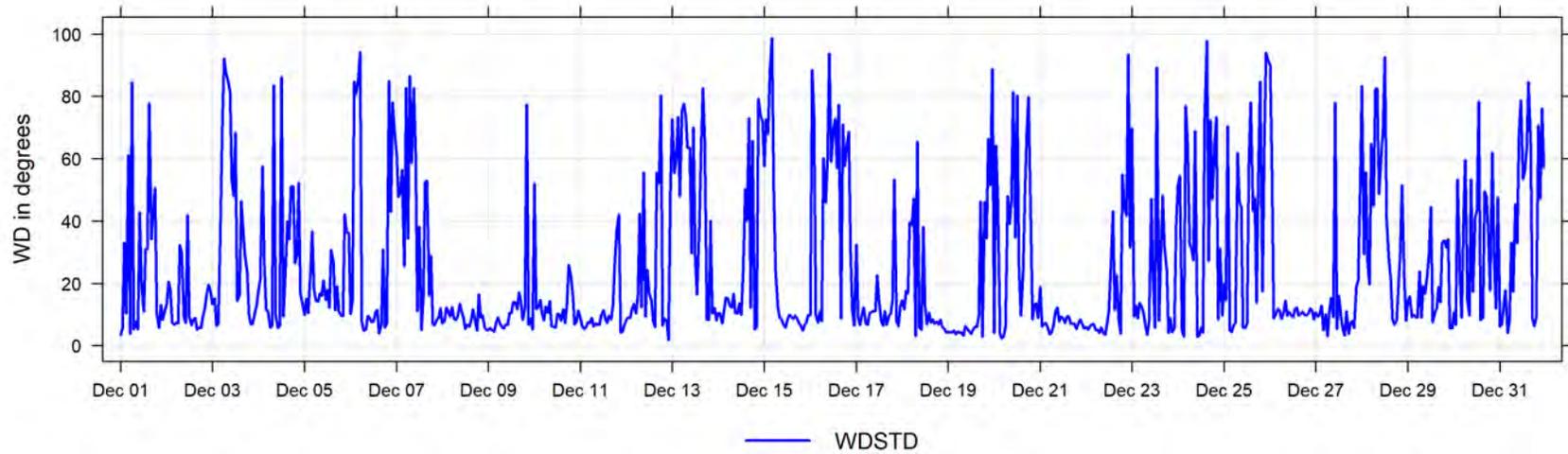
December 2025 Hourly Readings of Wind Speed (in km/hr) at Beaverlodge

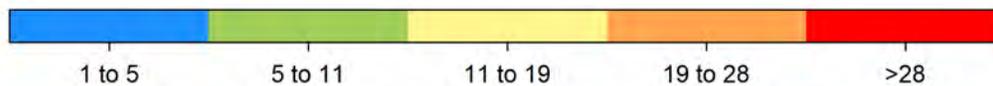
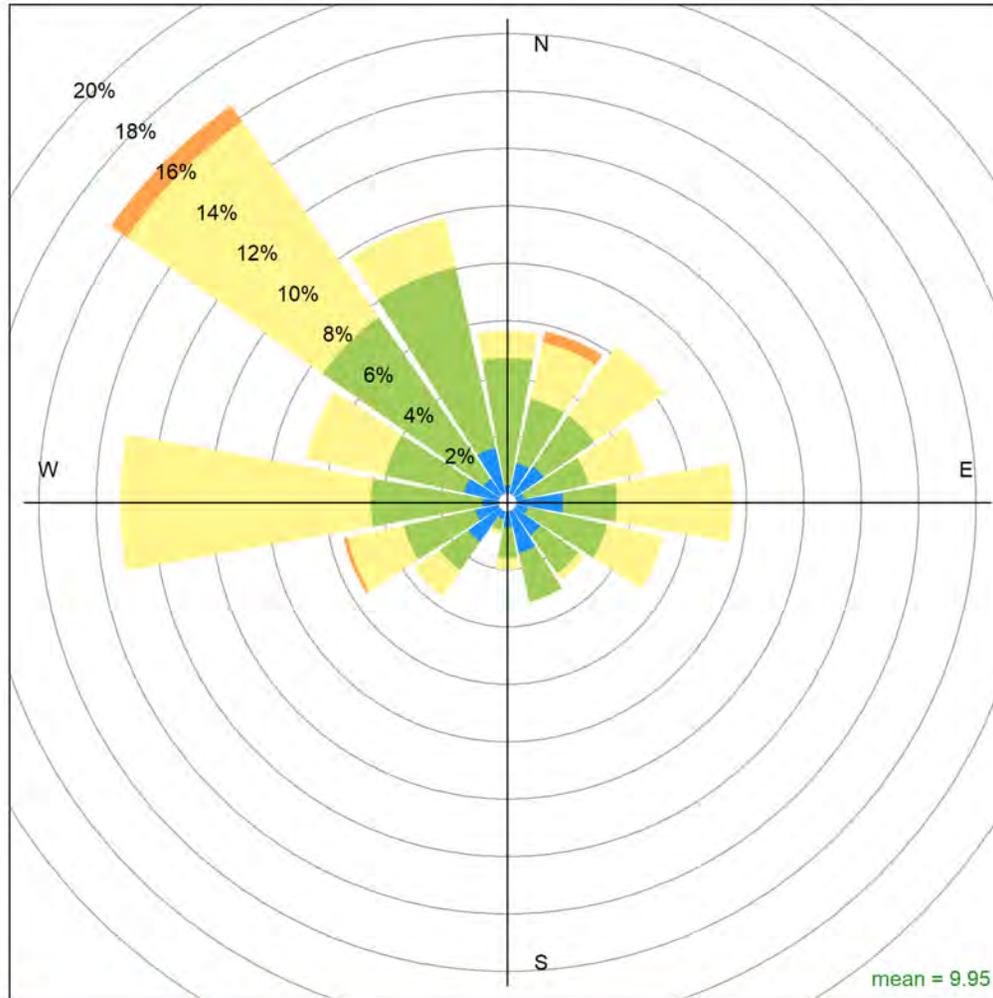


December 2025 Hourly Readings of Wind Direction (in degrees) at Beaverlodge



December 2025 Hourly Readings of Wind Direction Standard Deviation (in degrees) at Beaverlodge

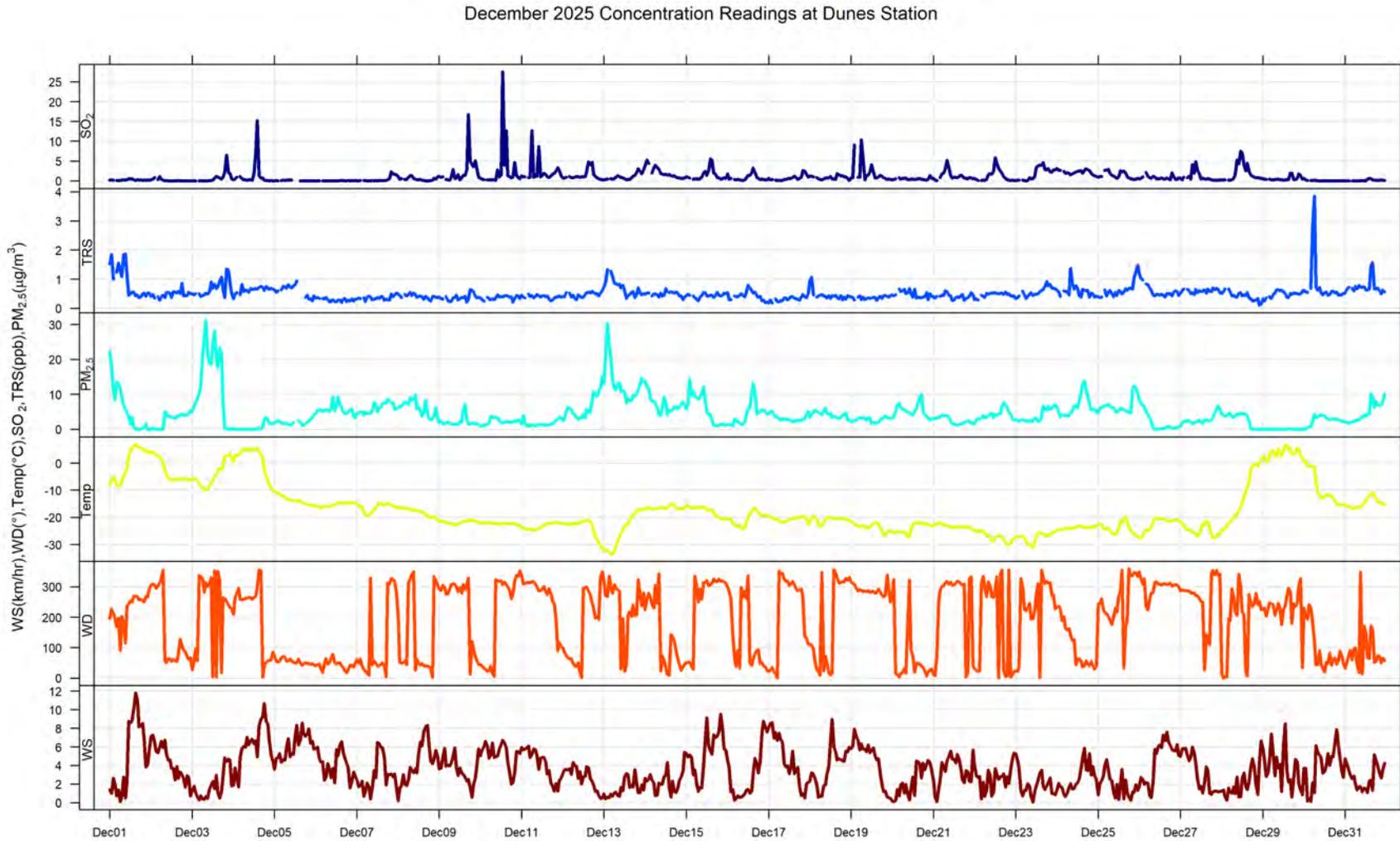




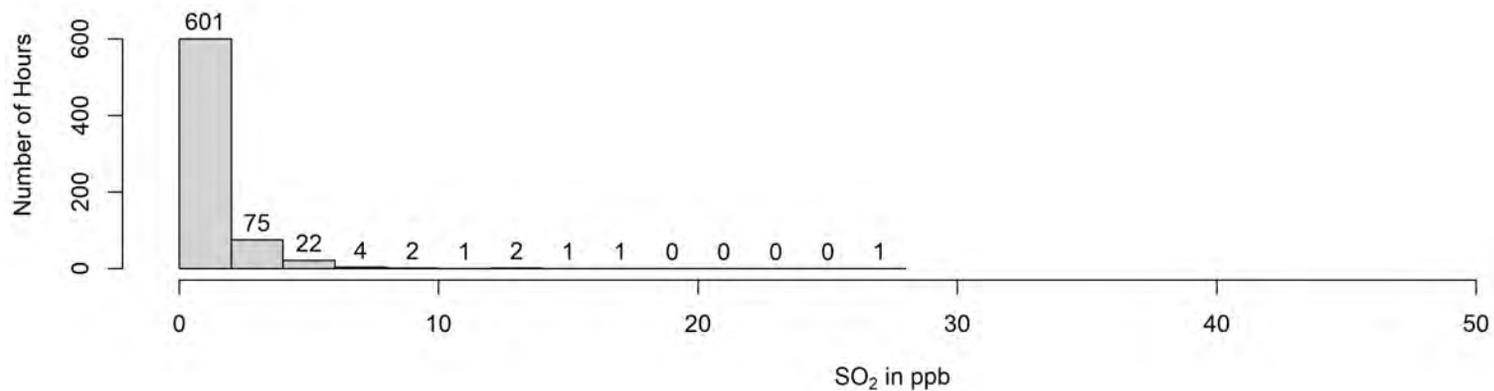
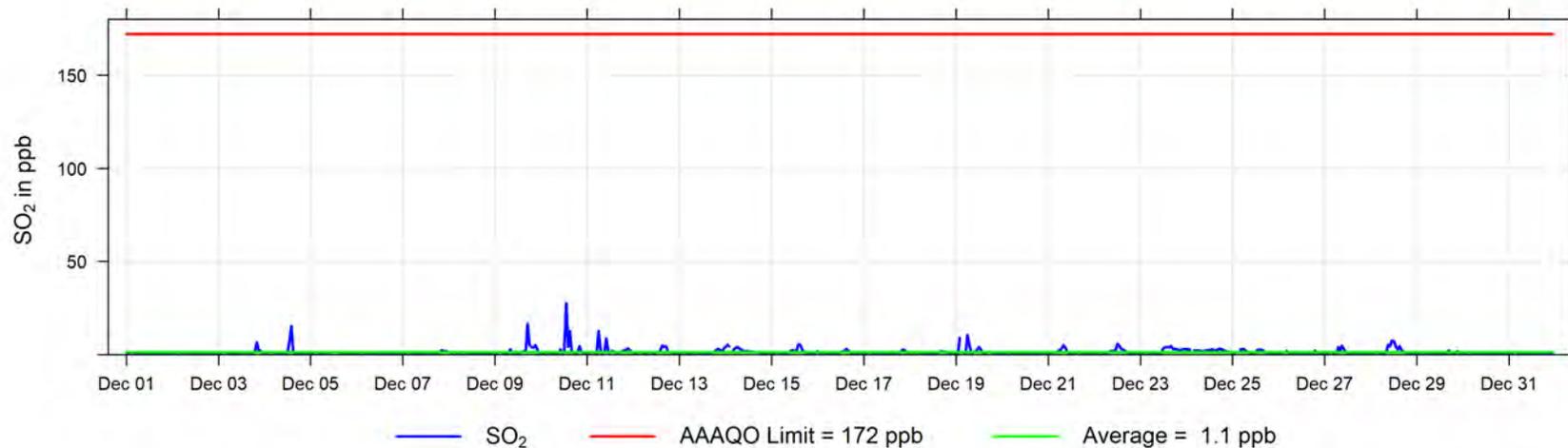
Beaverlodge December 2025 Wind Rose, wind speed in km/hr
Calms (<1km/hr) = 0.5 %

3 Dunes Charts

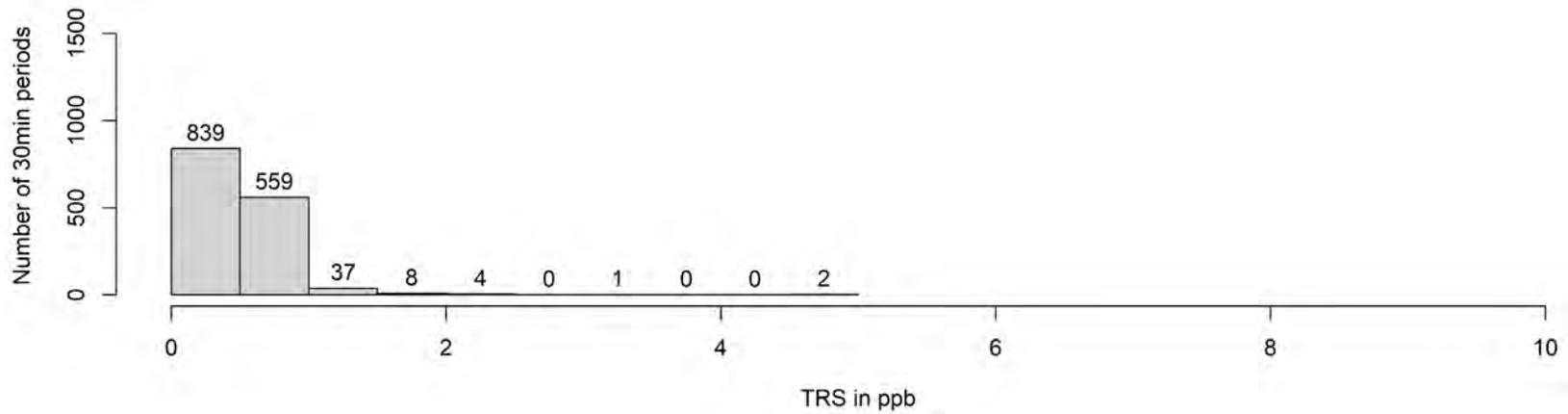
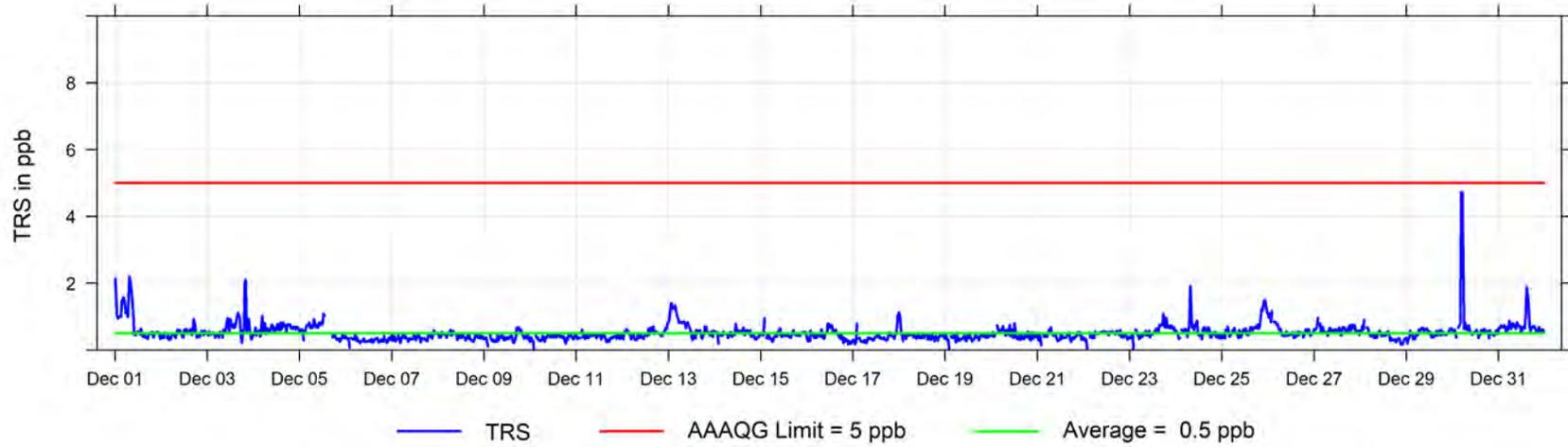
The following pages include the charts and histograms for Dunes Station



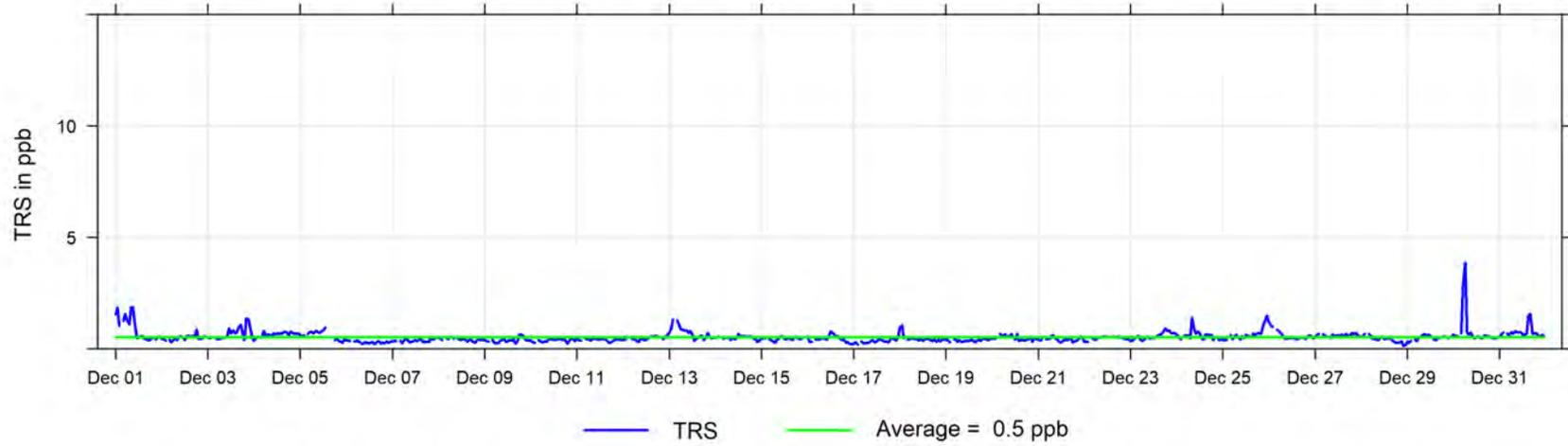
December 2025 Hourly Concentration Readings of SO₂ (in ppb) at Dunes



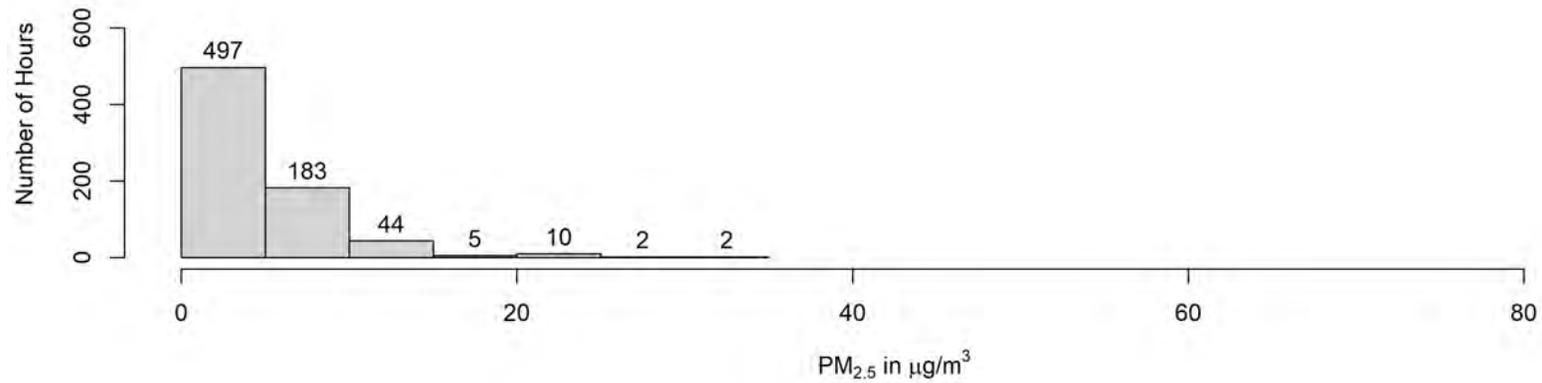
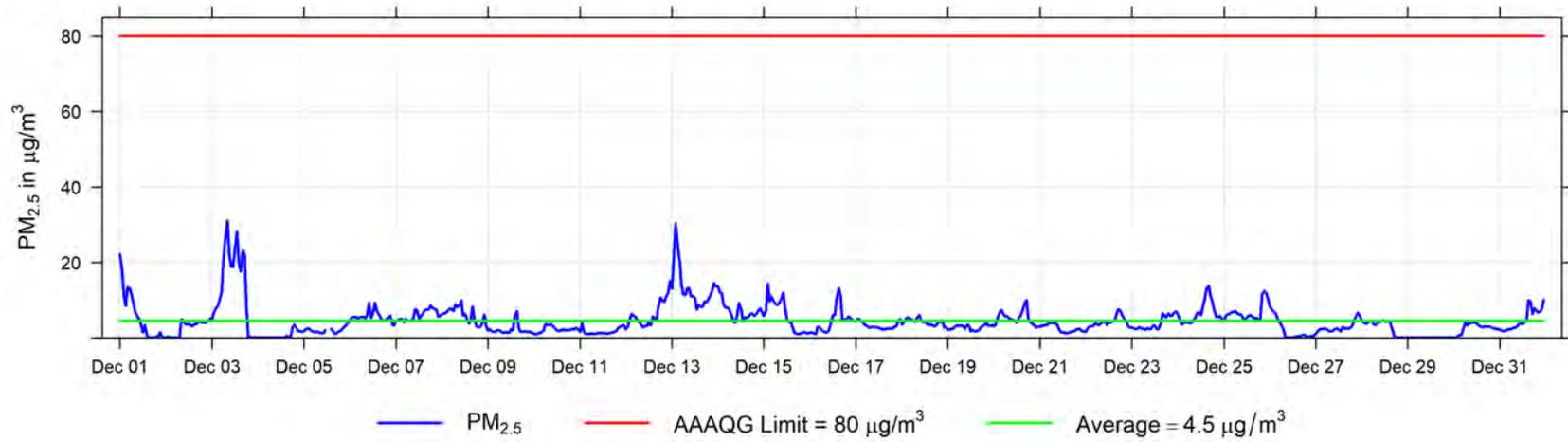
December 2025 30 min Concentration Readings of TRS (in ppb) at Dunes



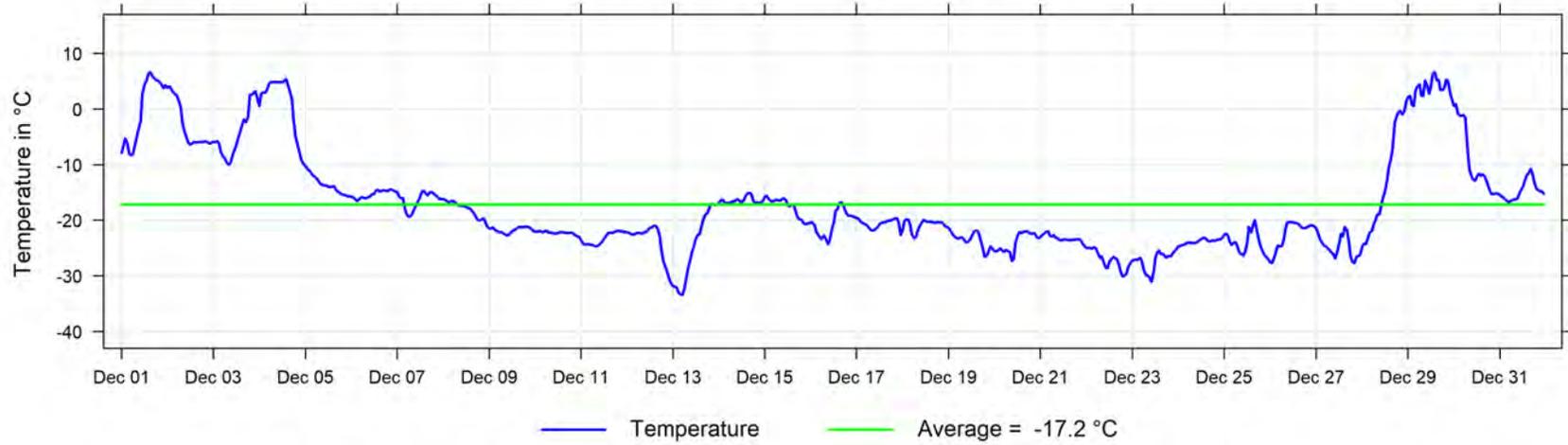
December 2025 Hourly Concentration Readings of TRS (in ppb) at Dunes



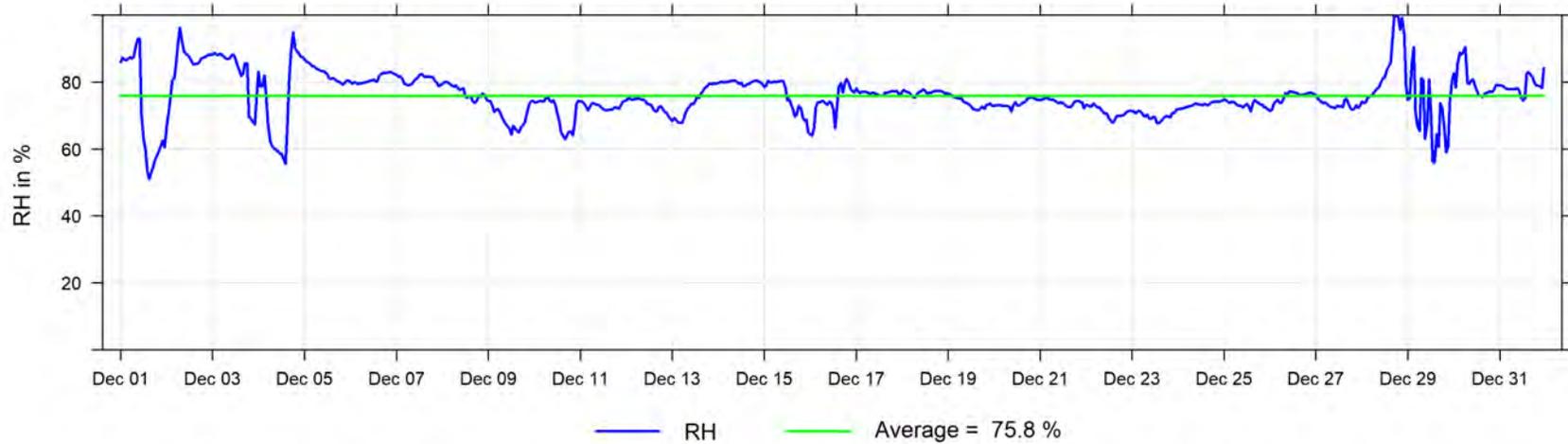
December 2025 Hourly Concentration Readings of PM_{2.5} in $\mu\text{g}/\text{m}^3$ at Dunes



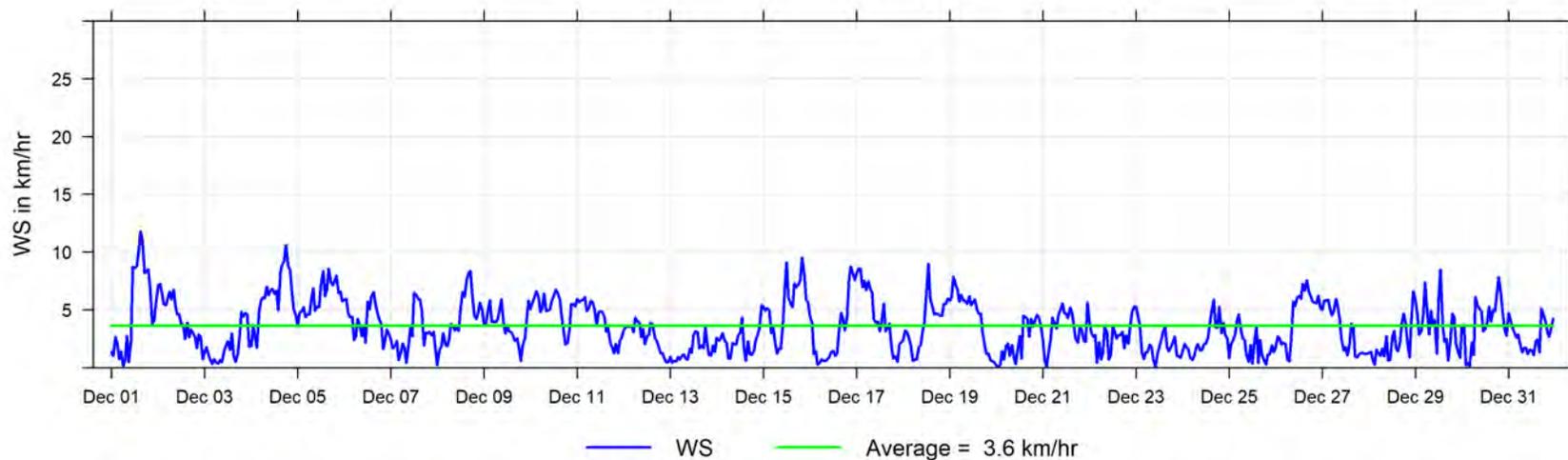
December 2025 Hourly Temperature Readings (in °C) at Dunes



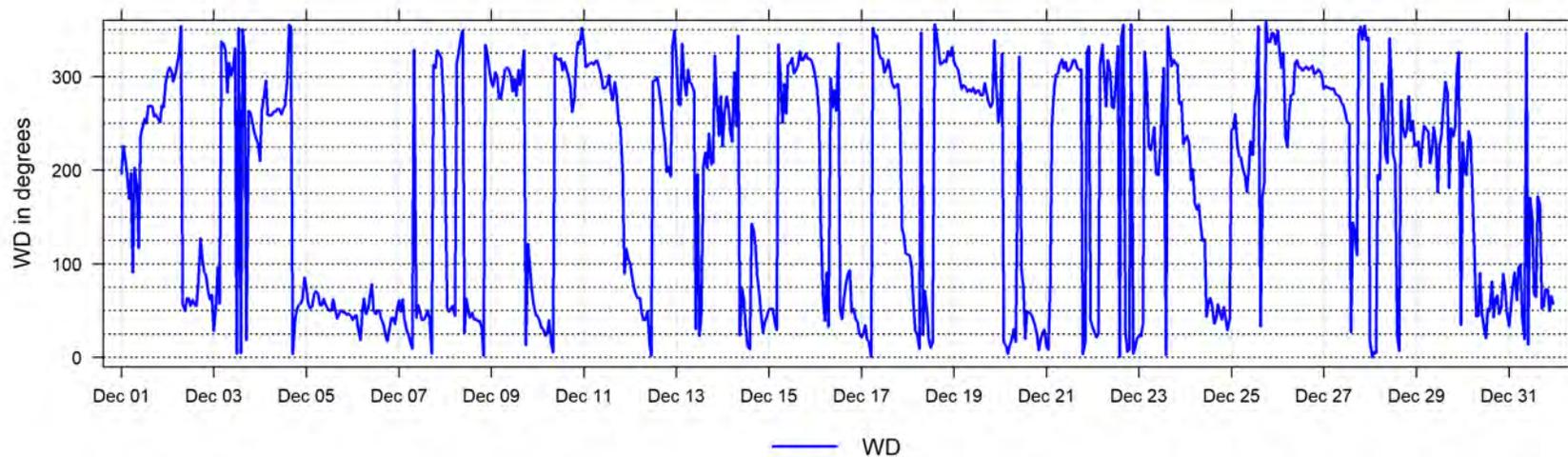
December 2025 Hourly Readings of Relative Humidity (in %) at Dunes



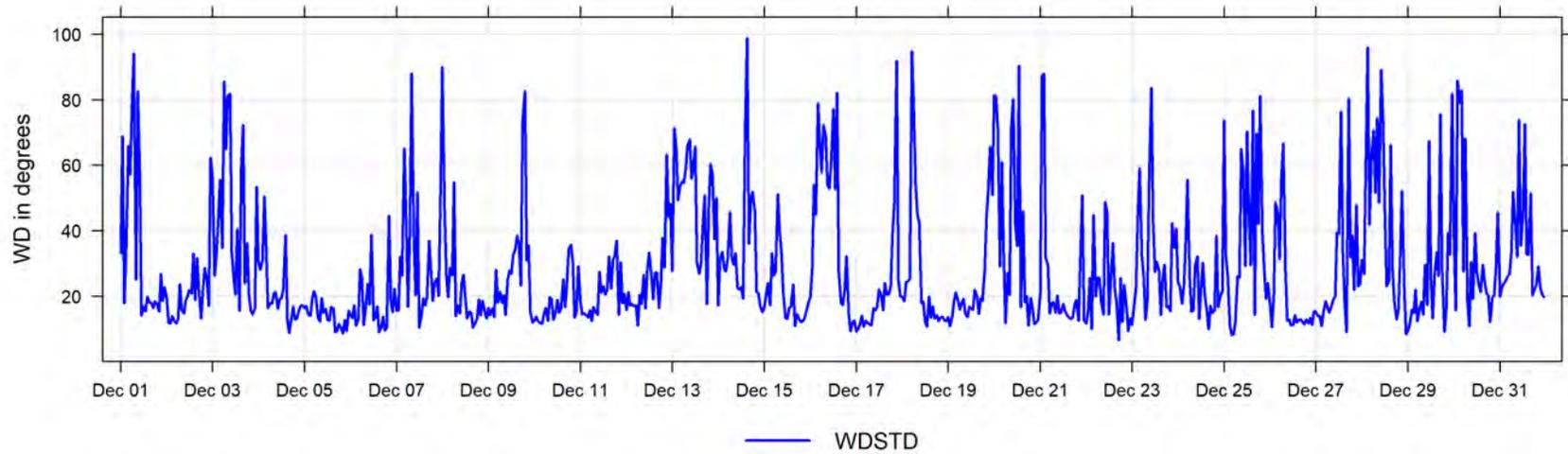
December 2025 Hourly Readings of Wind Speed (in km/hr) at Dunes

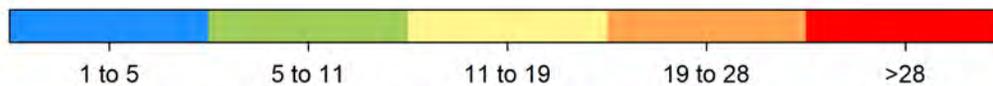
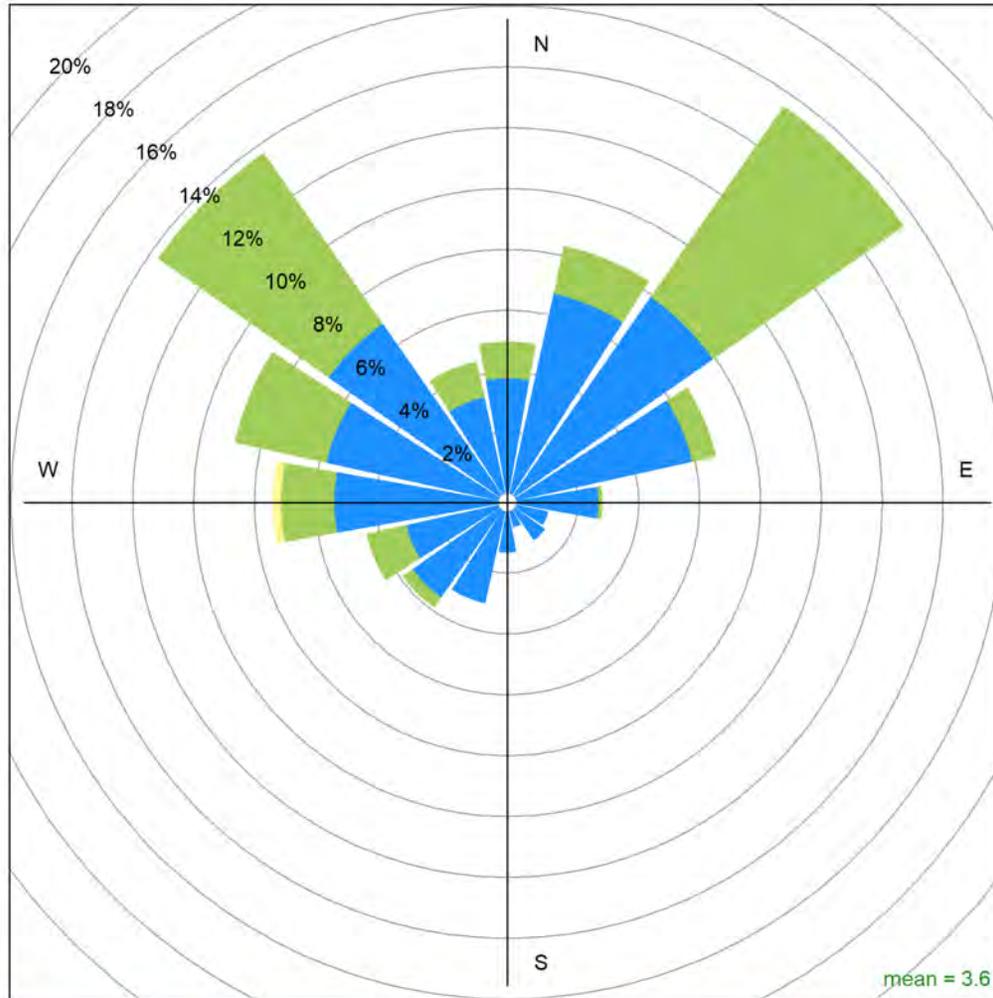


December 2025 Hourly Readings of Wind Direction (in degrees) at Dunes



December 2025 Hourly Readings of Wind Direction Standard Deviation (in degrees) at Dunes





Dunes December 2025 Wind Rose, wind speed in km/hr

Calms (<1km/hr) = 11.7 %

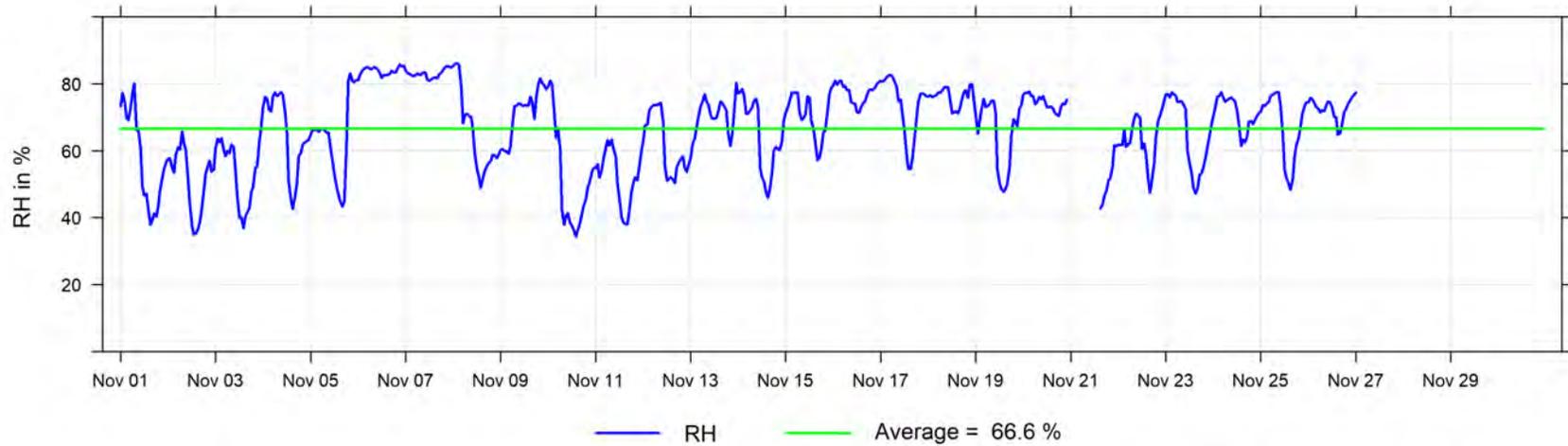
4 Grande Prairie - Henry Pirker Charts

The following pages only include meteorology charts due to Henry Pirker Station not in operation in Grande Prairie

December 2025 Concentration Readings at Henry Pirker Station

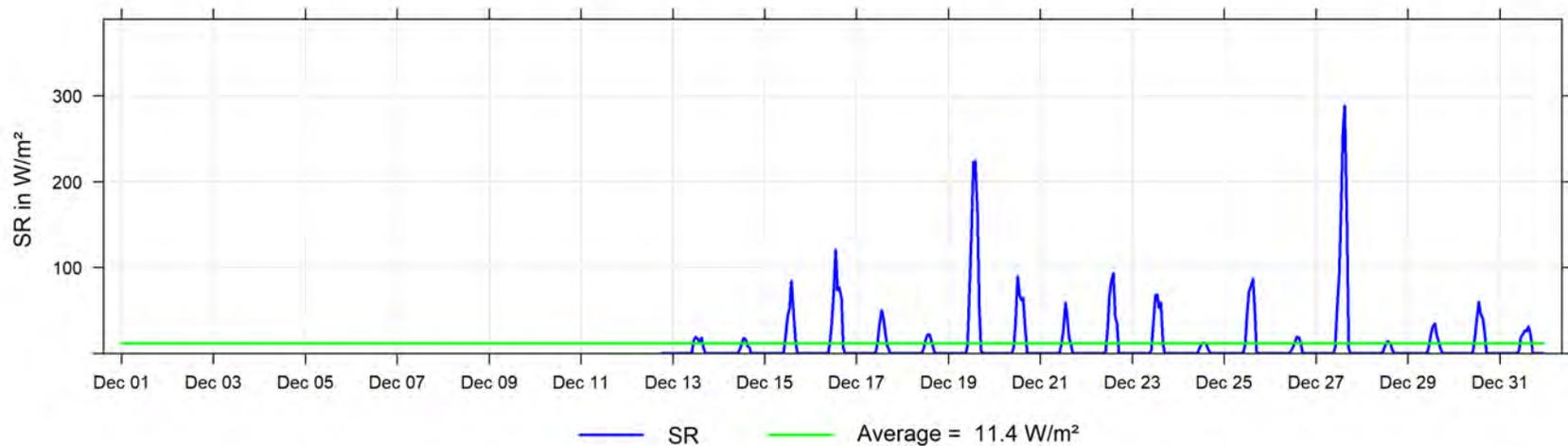


November 2025 Hourly Readings of Relative Humidity (in %) at Henry Pirker



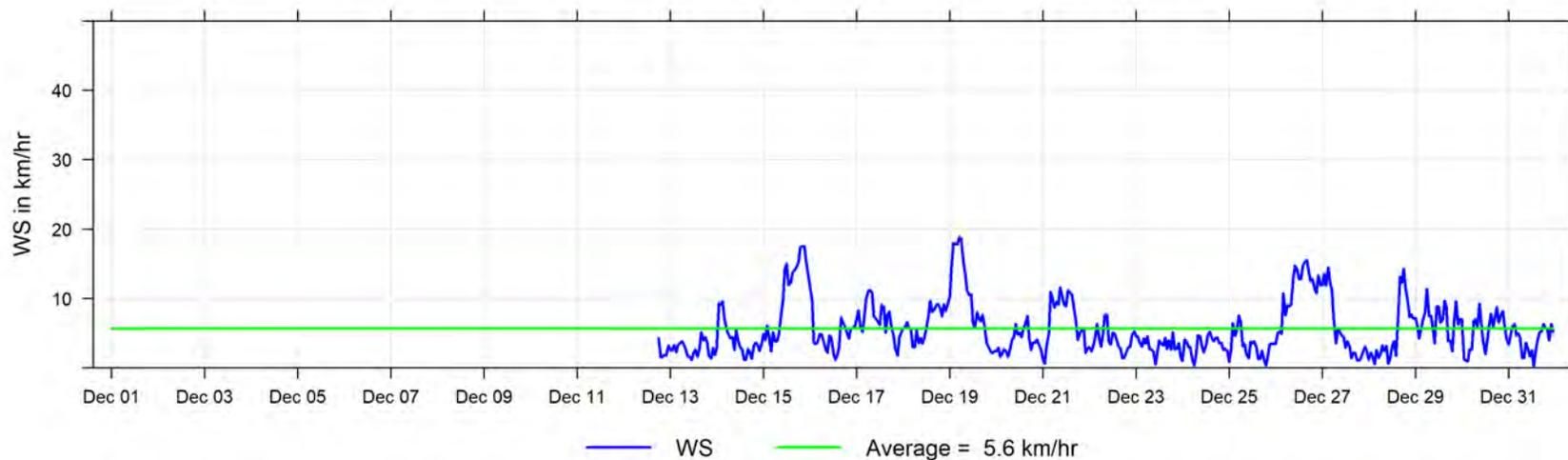
Average shown for reference only, monthly average is not valid

December 2025 Hourly Readings of Solar Radiation (in W/m²) at Henry Pirker



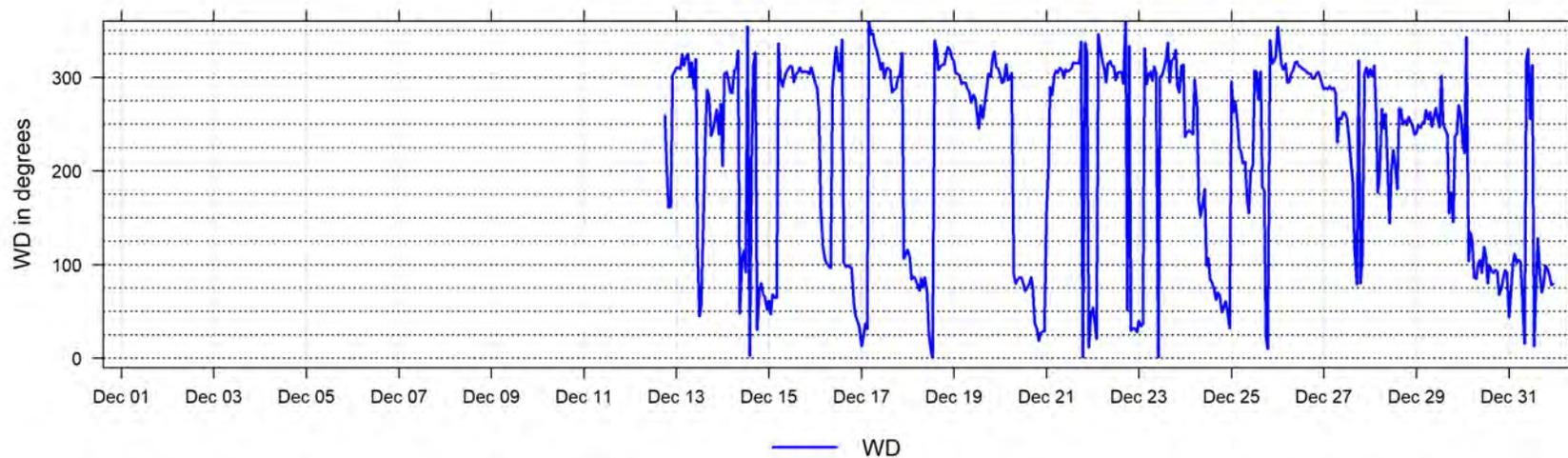
Average shown for reference only, monthly average is not valid

December 2025 Hourly Readings of Wind Speed (in km/hr) at Henry Pirker

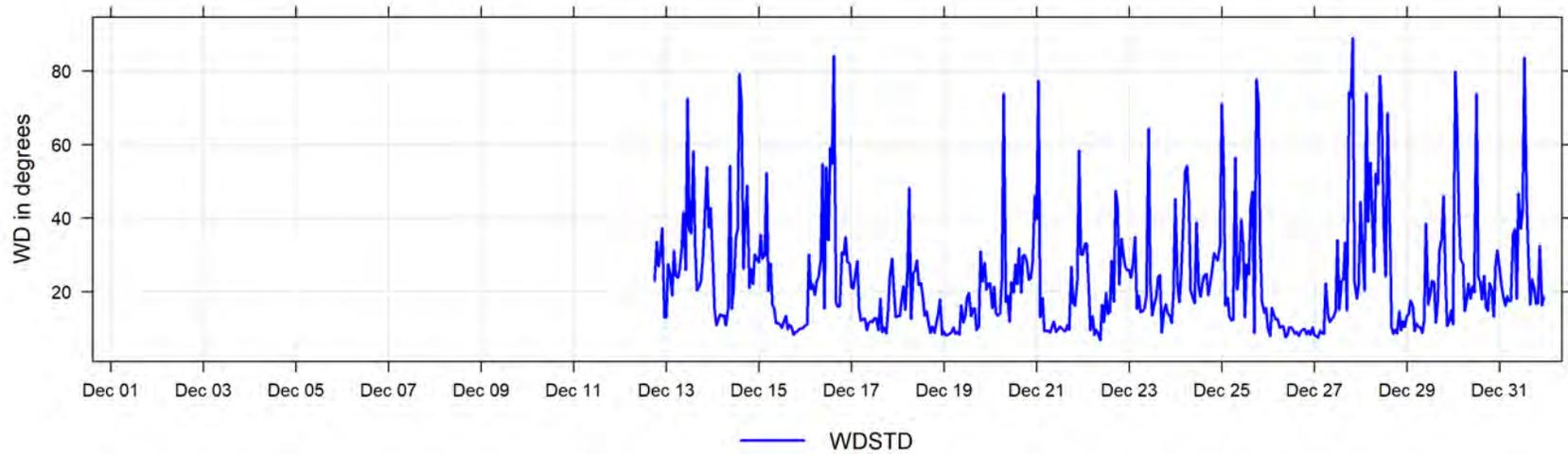


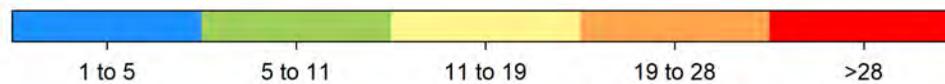
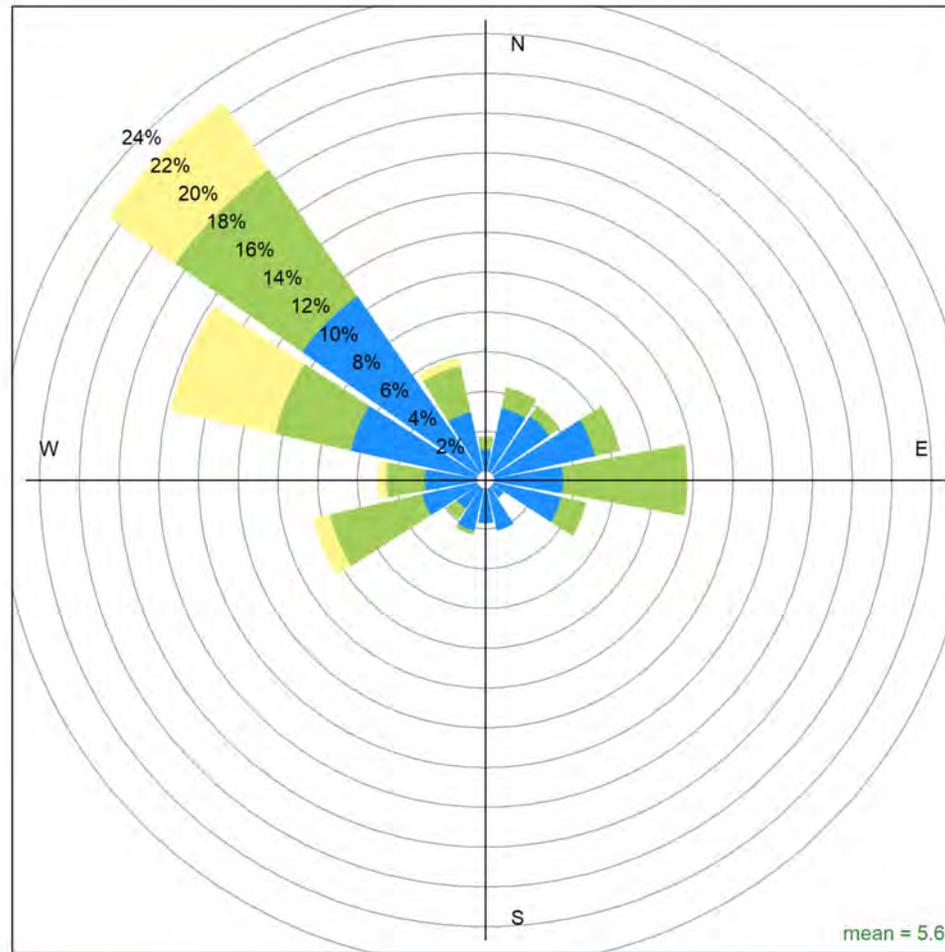
Average shown for reference only, monthly average is not valid

December 2025 Hourly Readings of Wind Direction (in degrees) at Henry Pirker



December 2025 Hourly Readings of Wind Direction Standard Deviation (in degrees) at Henry Pirker





Henry Pirker December 2025 Wind Rose, wind speed in km/hr

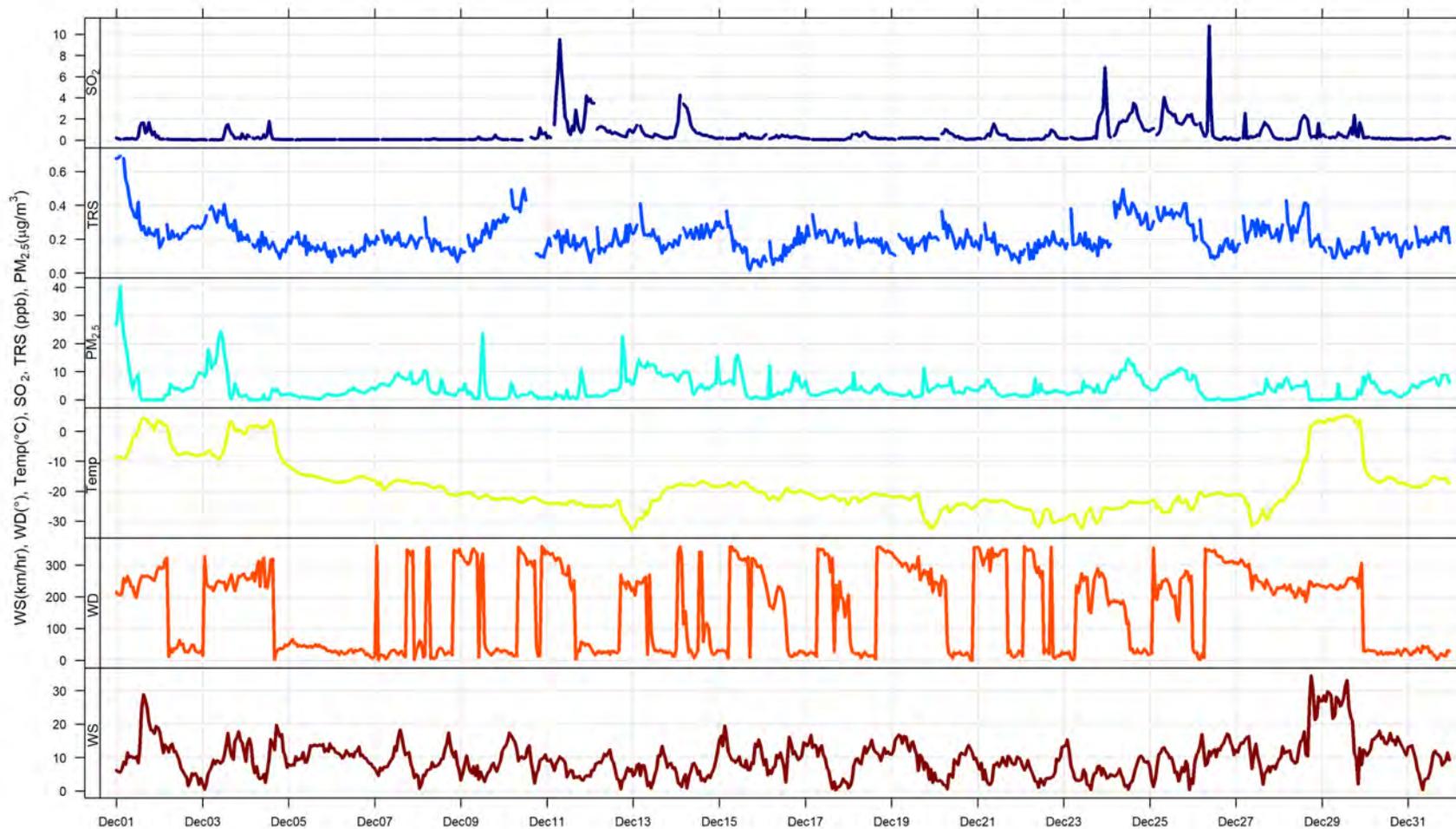
Calms (<1km/hr) = 2.2 %

Average shown for reference only, monthly average is not valid

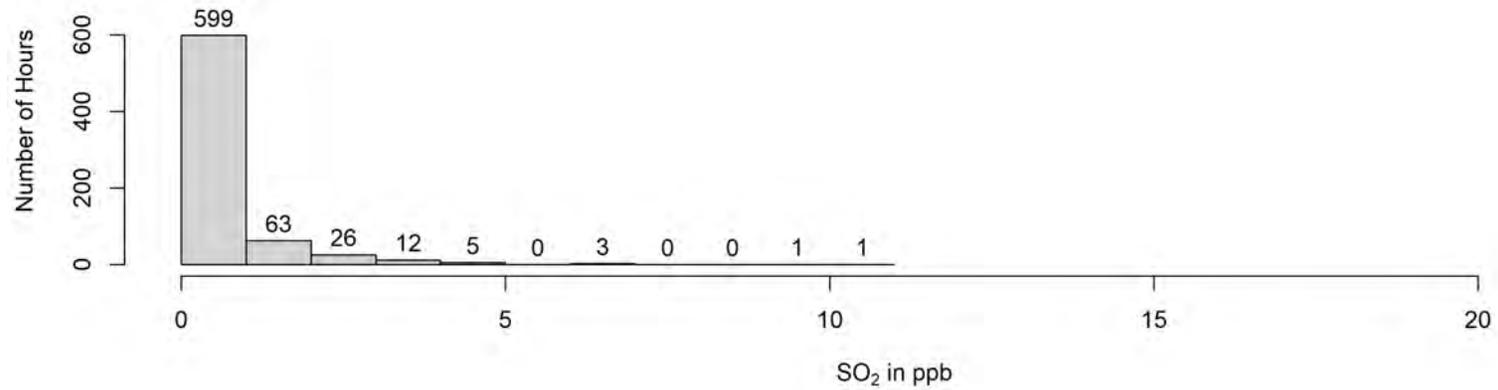
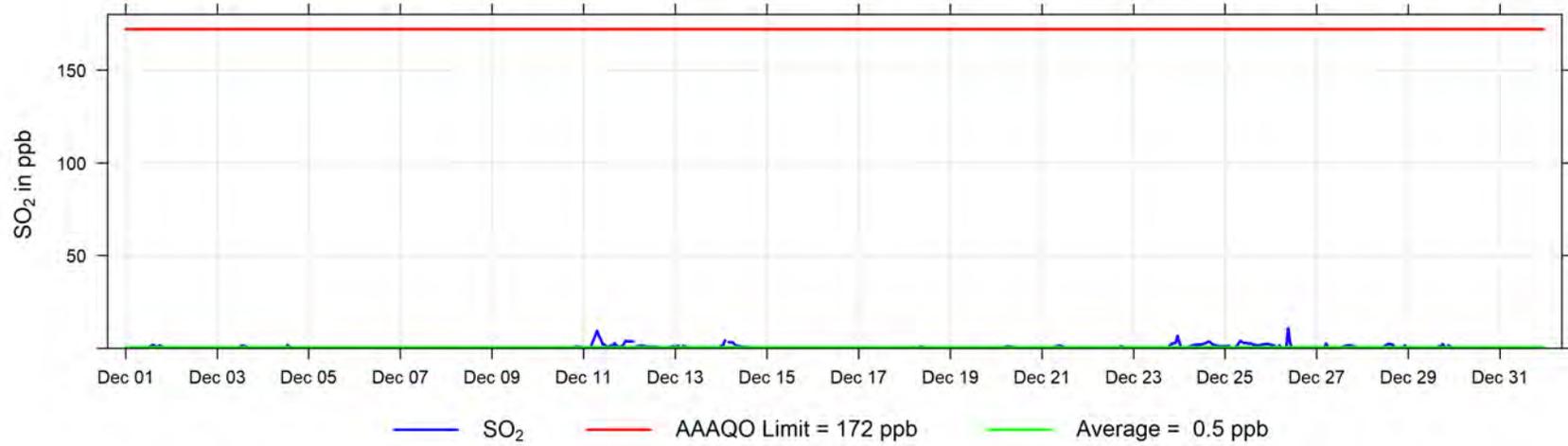
5 Smoky Heights Charts

The following pages include the charts and histograms for Smoky Heights Station

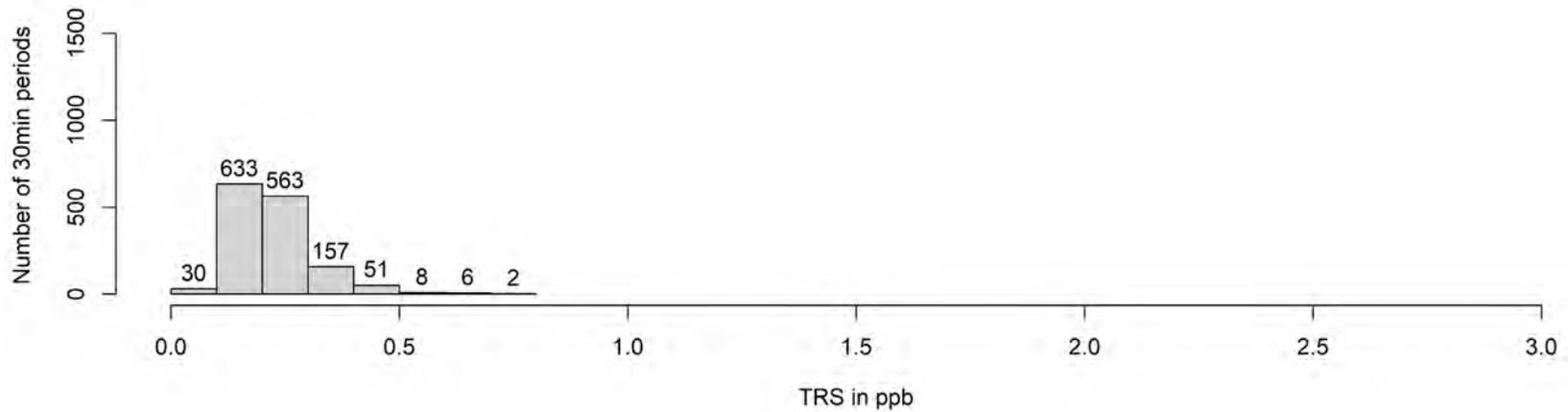
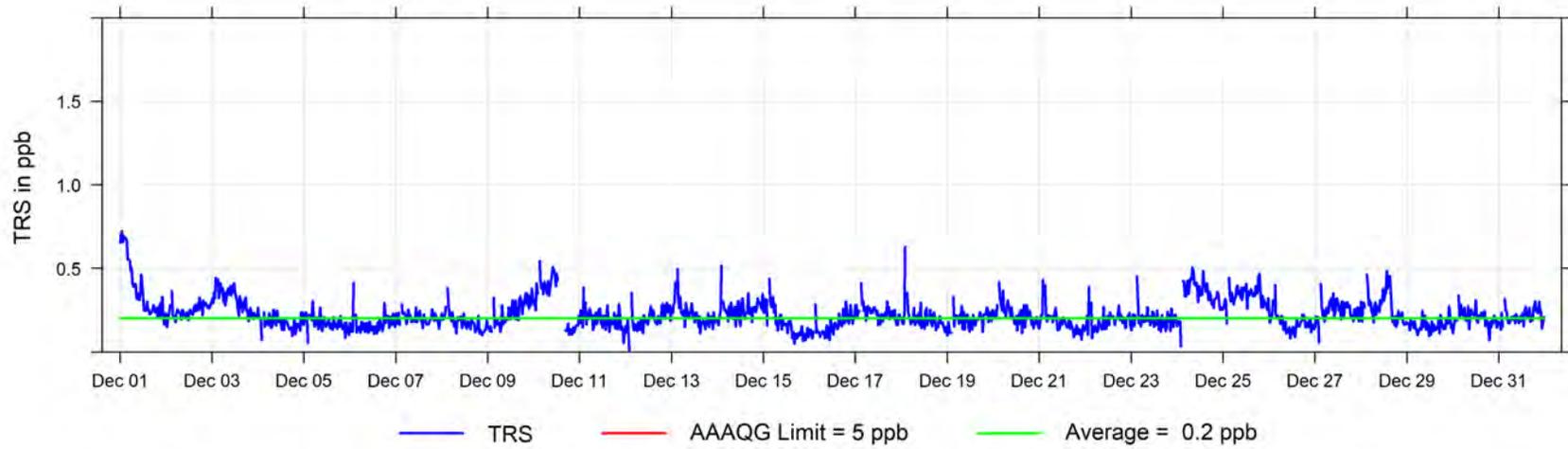
December 2025 Concentration Readings at Smoky Heights Station



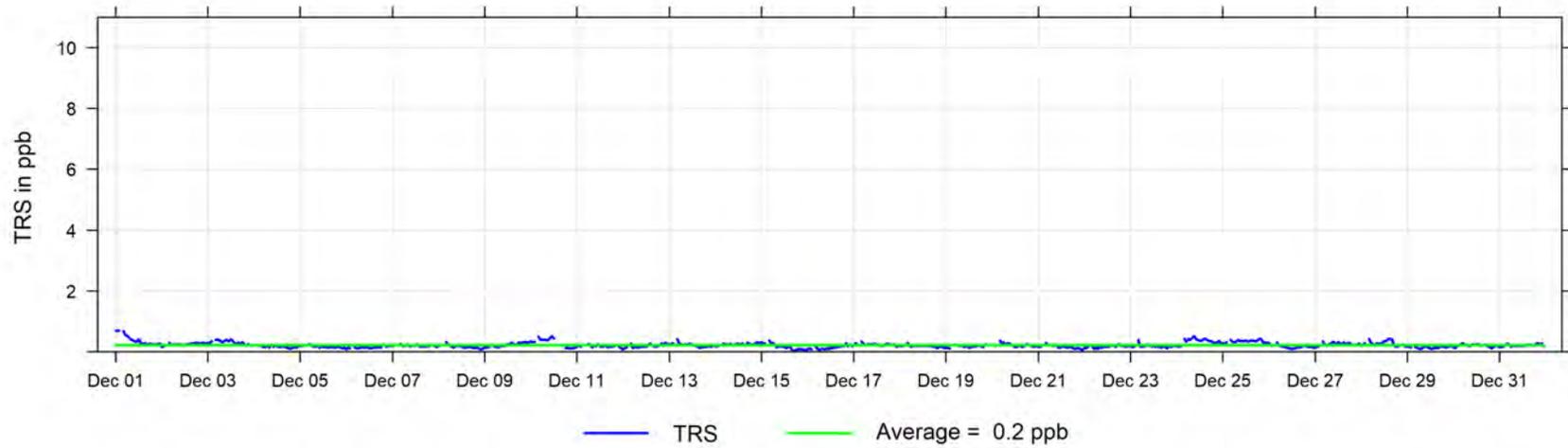
December 2025 Hourly Concentration Readings of SO₂ (in ppb) at Smoky Heights



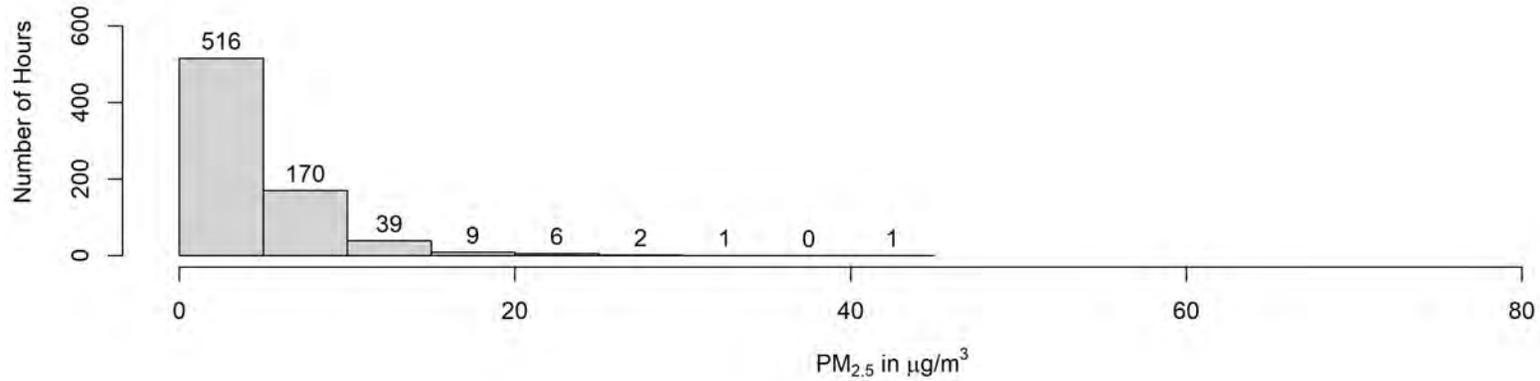
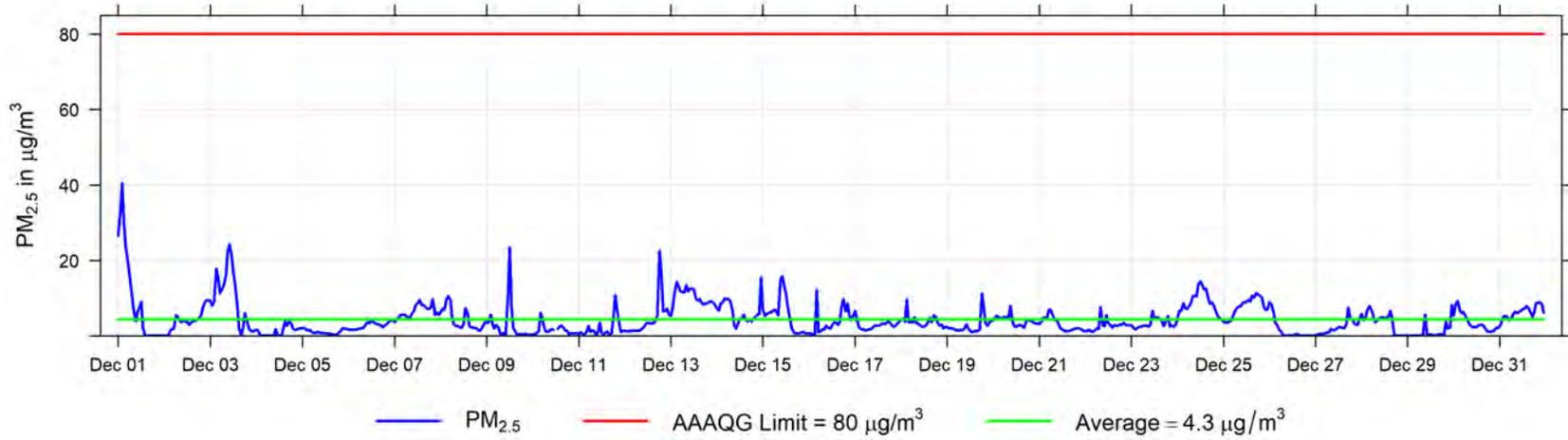
December 2025 30 min Concentration Readings of TRS (in ppb) at Smoky Heights



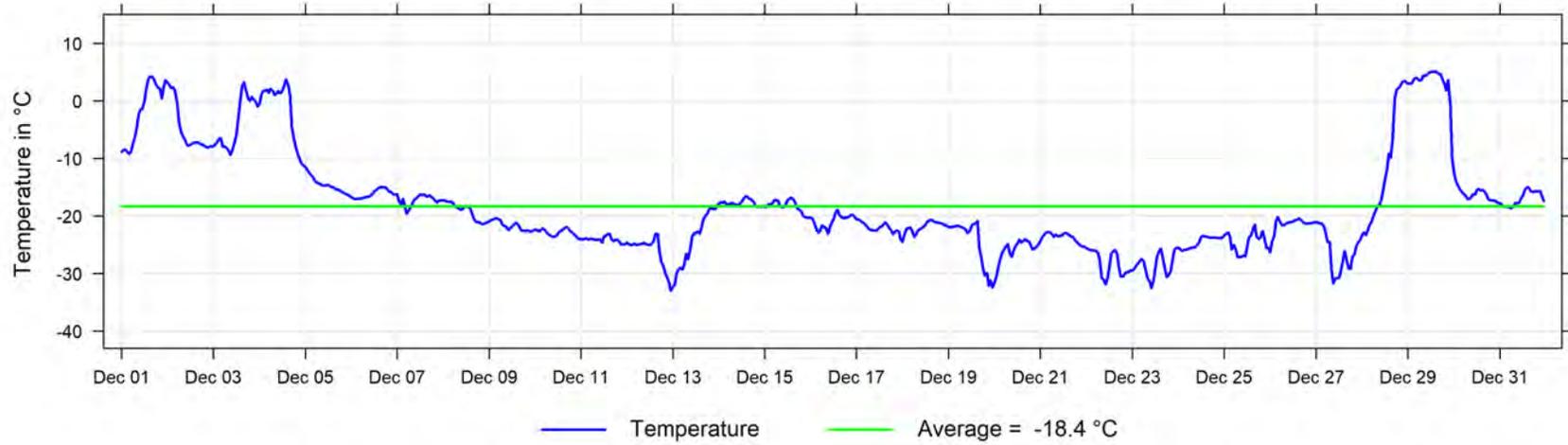
December 2025 Hourly Concentration Readings of TRS (in ppb) at Smoky Heights



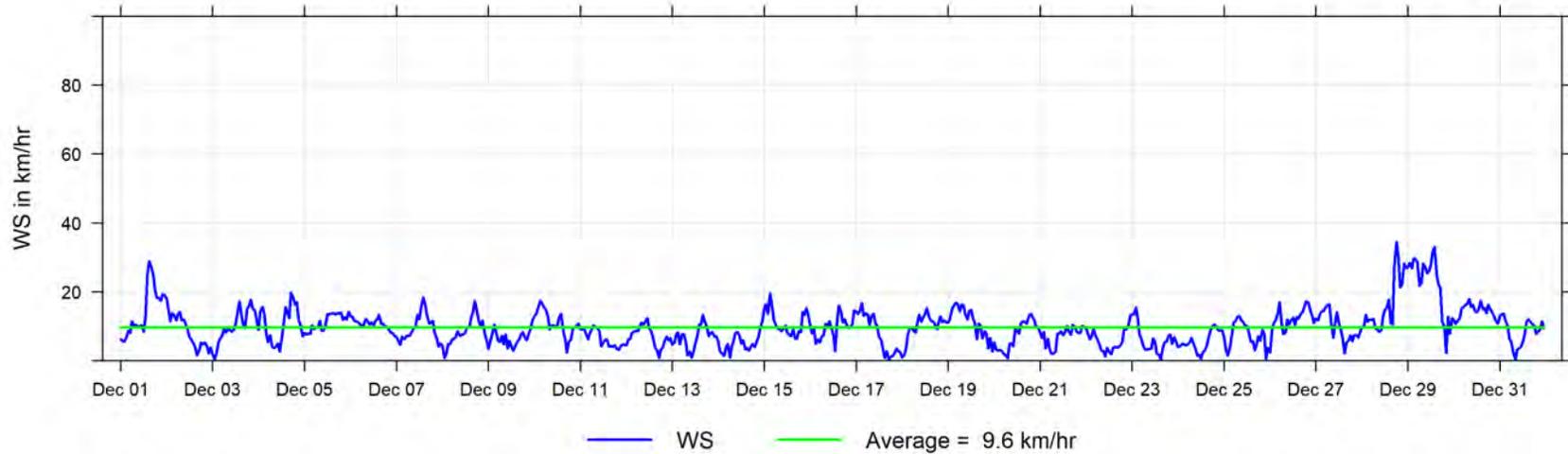
December 2025 Hourly Concentration Readings of PM_{2.5} in $\mu\text{g}/\text{m}^3$ at Smoky Heights



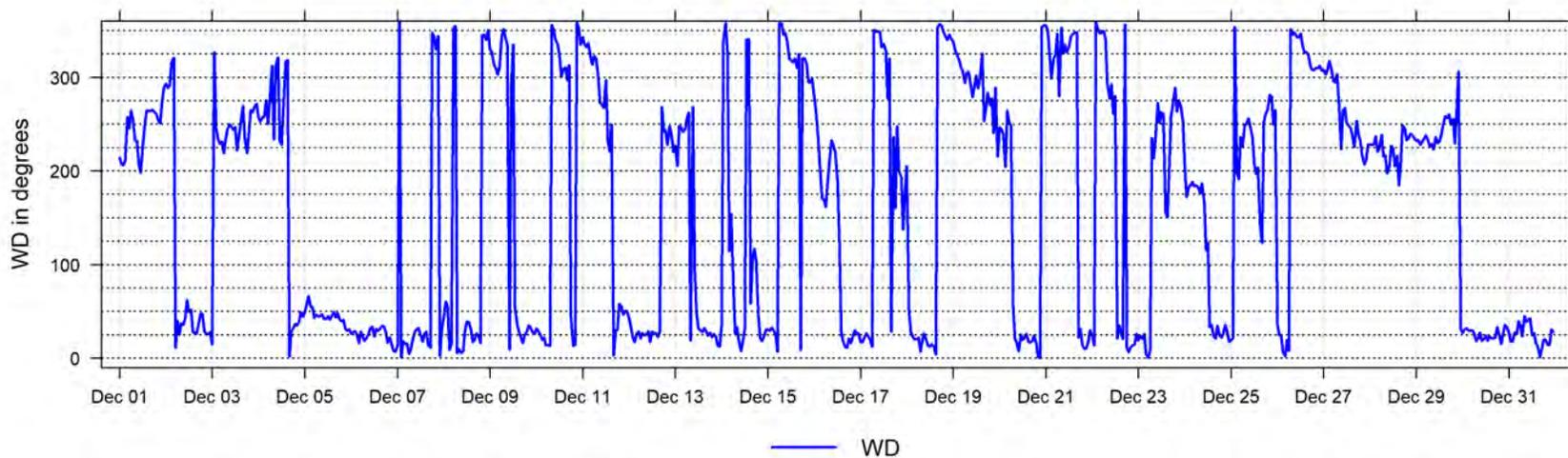
December 2025 Hourly Temperature Readings (in °C) at Smoky Heights



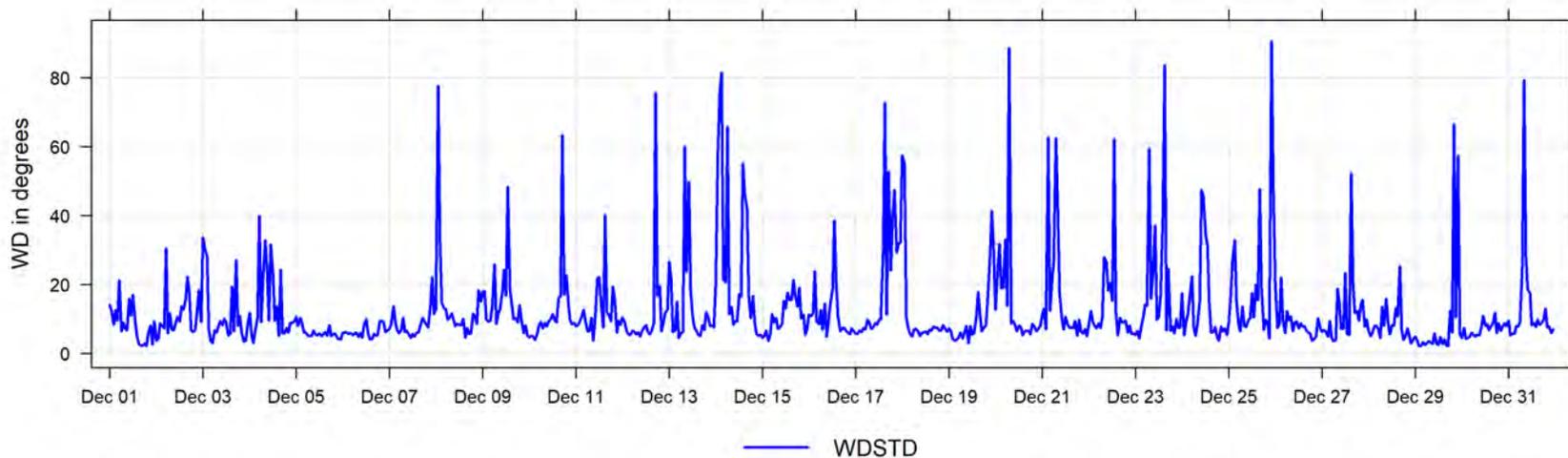
December 2025 Hourly Readings of Wind Speed (in km/hr) at Smoky Heights

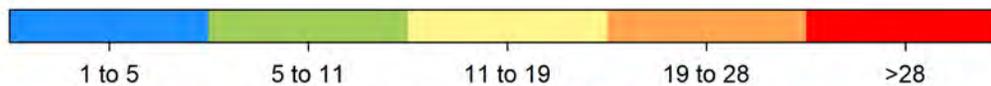
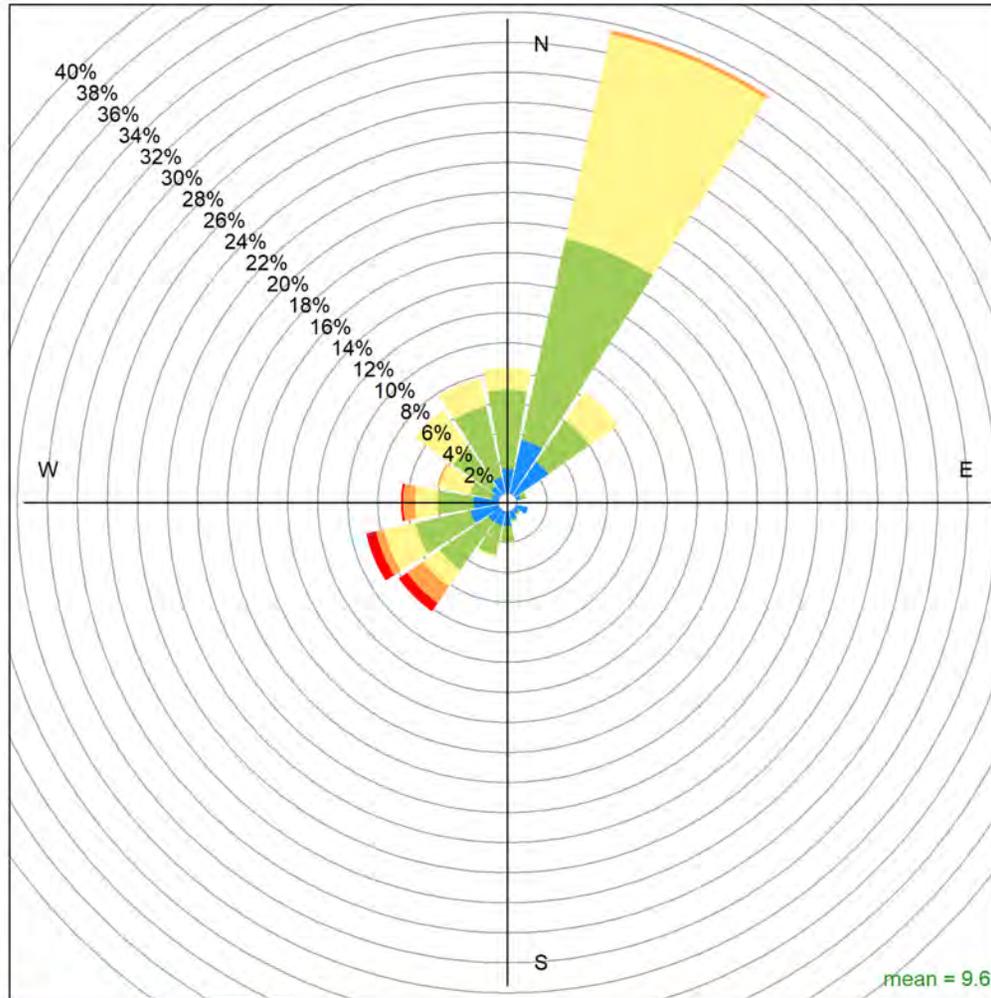


December 2025 Hourly Readings of Wind Direction (in degrees) at Smoky Heights



December 2025 Hourly Readings of Wind Direction Standard Deviation (in degrees) at Smoky Heights





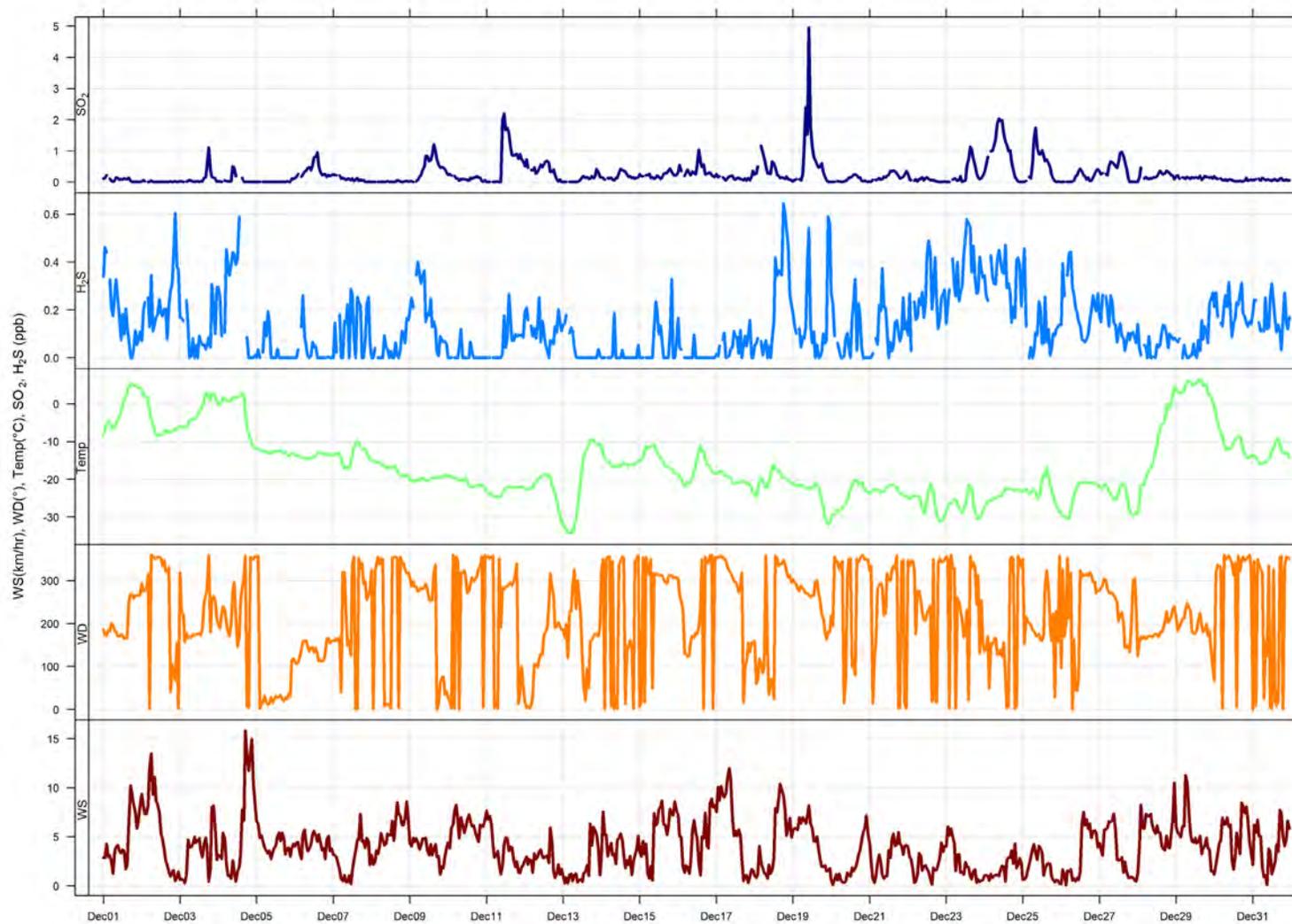
Smoky Heights December 2025 Wind Rose, wind speed in km/hr

Calms (<1km/hr) = 1.7 %

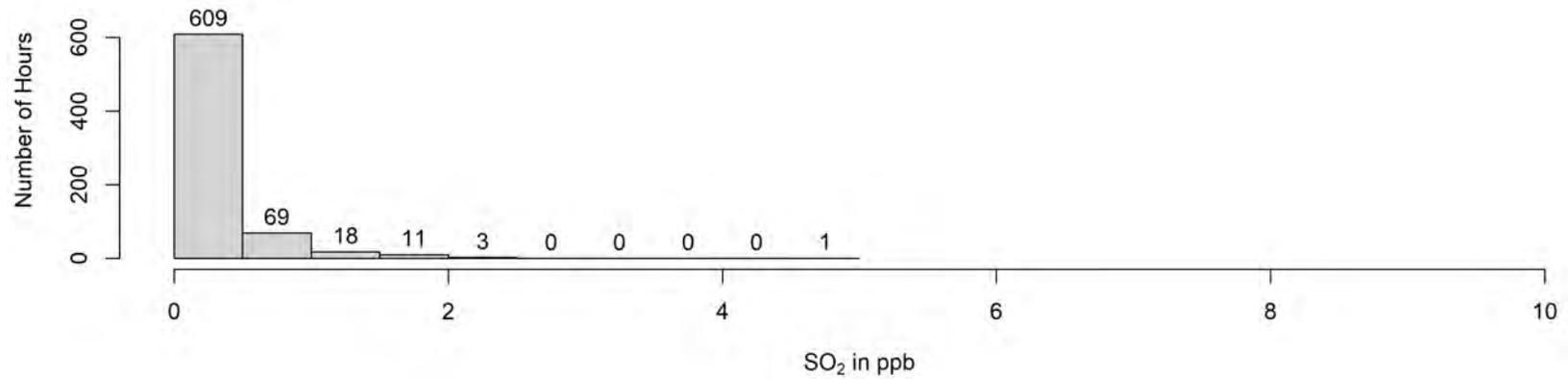
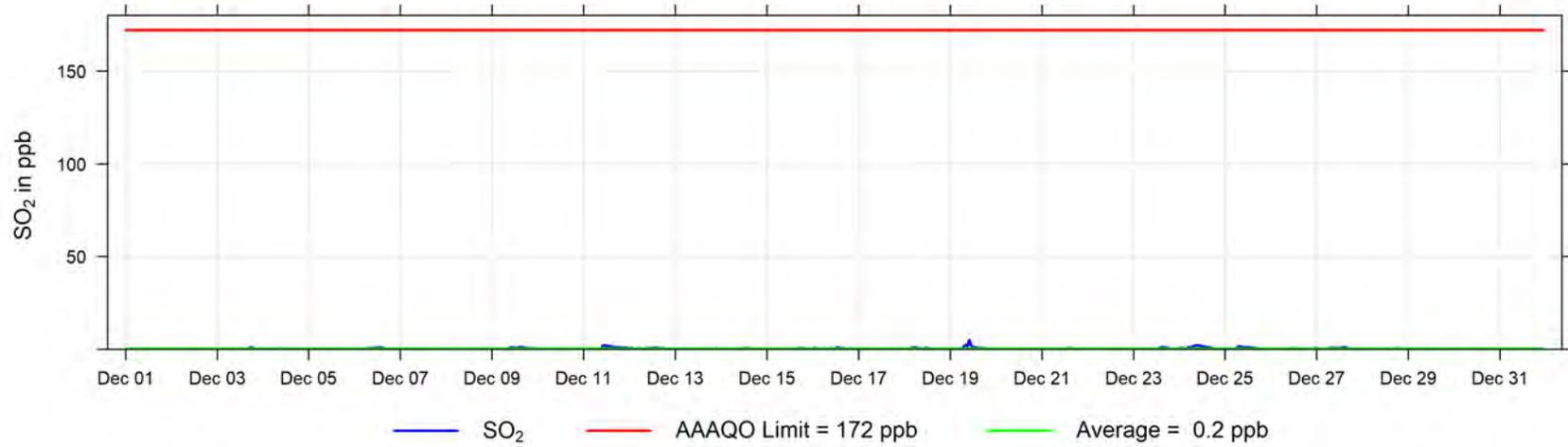
6 Valleyview Charts

The following pages include the charts and histograms for Valleyview Station

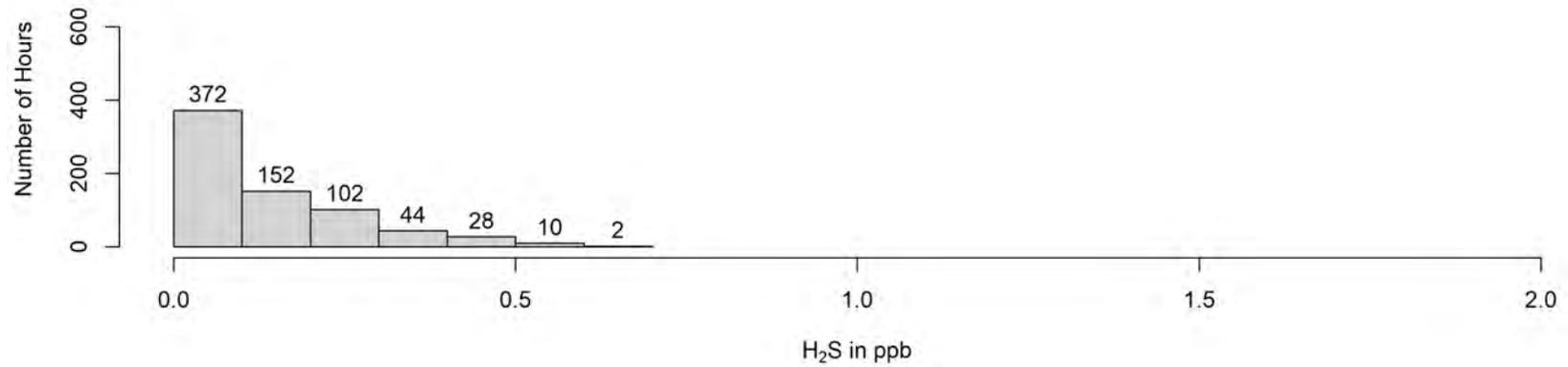
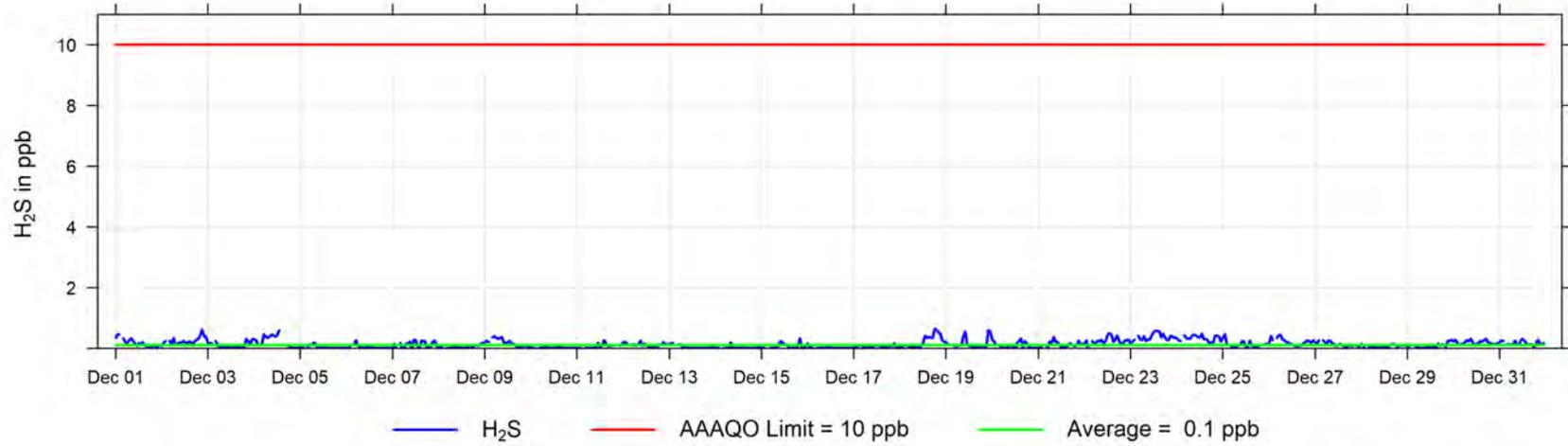
December 2025 Concentration Readings at Valleyview Station



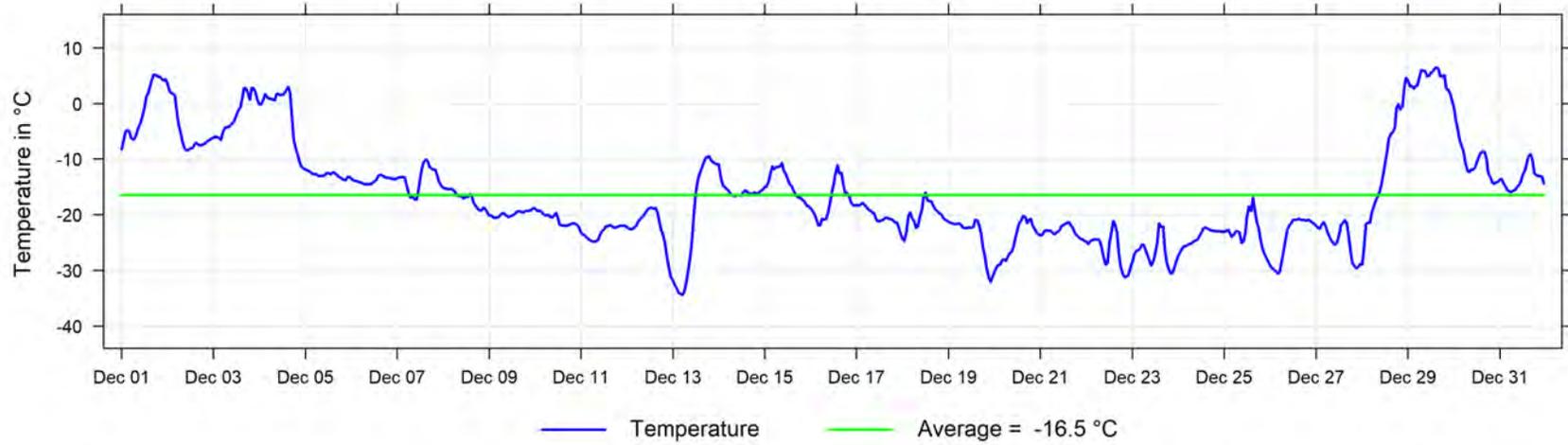
December 2025 Hourly Concentration Readings of SO₂ (in ppb) at Valleyview



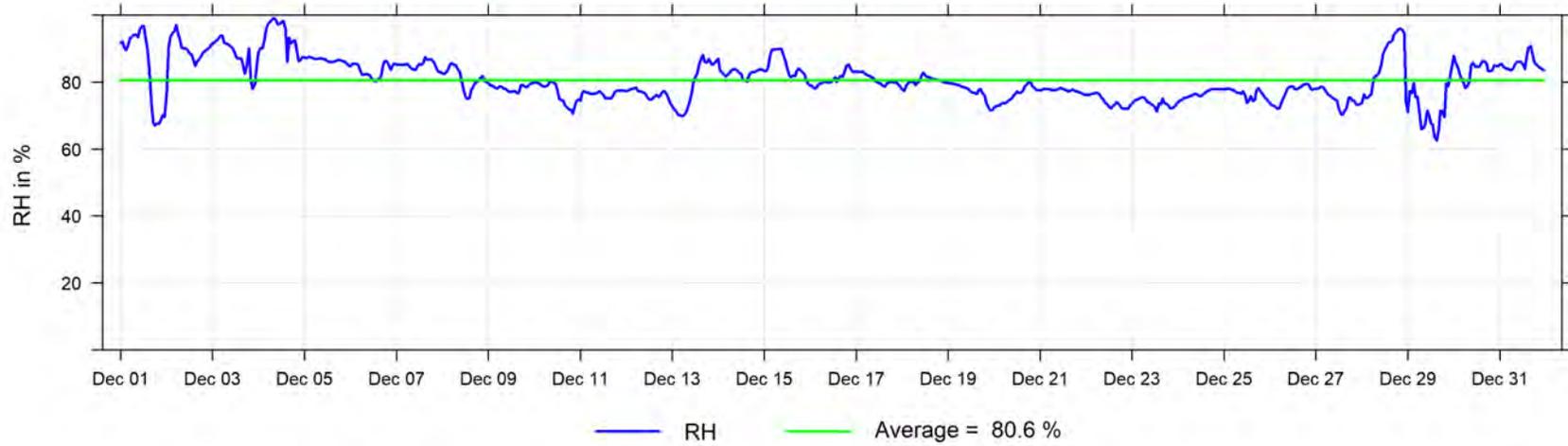
December 2025 Hourly Concentration Readings of H₂S (in ppb) at Valleyview



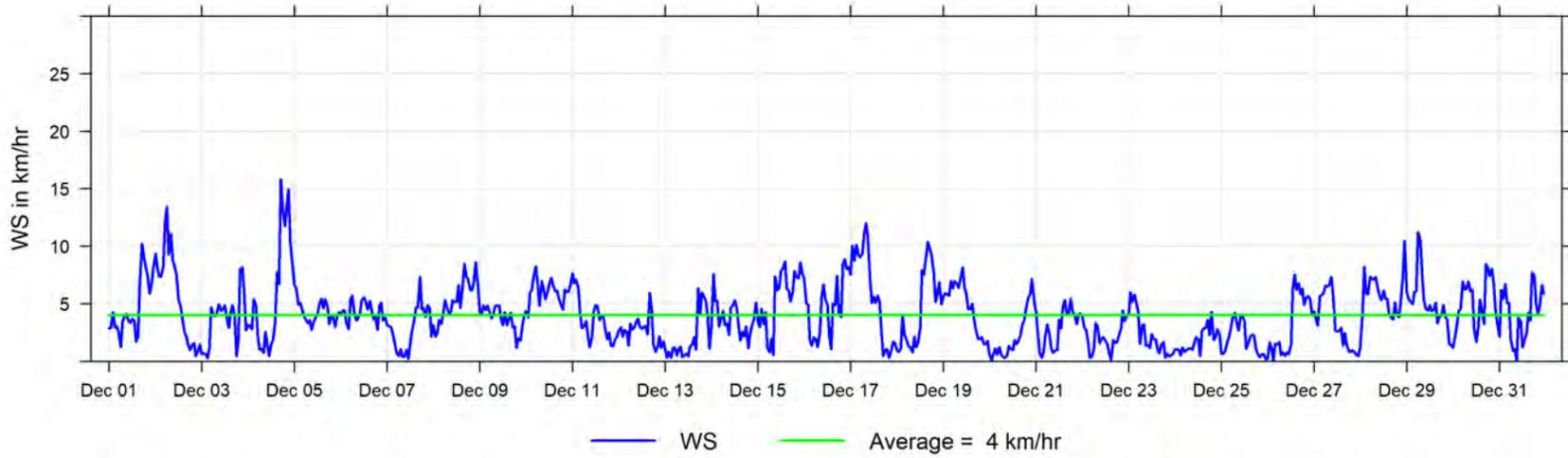
December 2025 Hourly Temperature Readings (in °C) at Valleyview



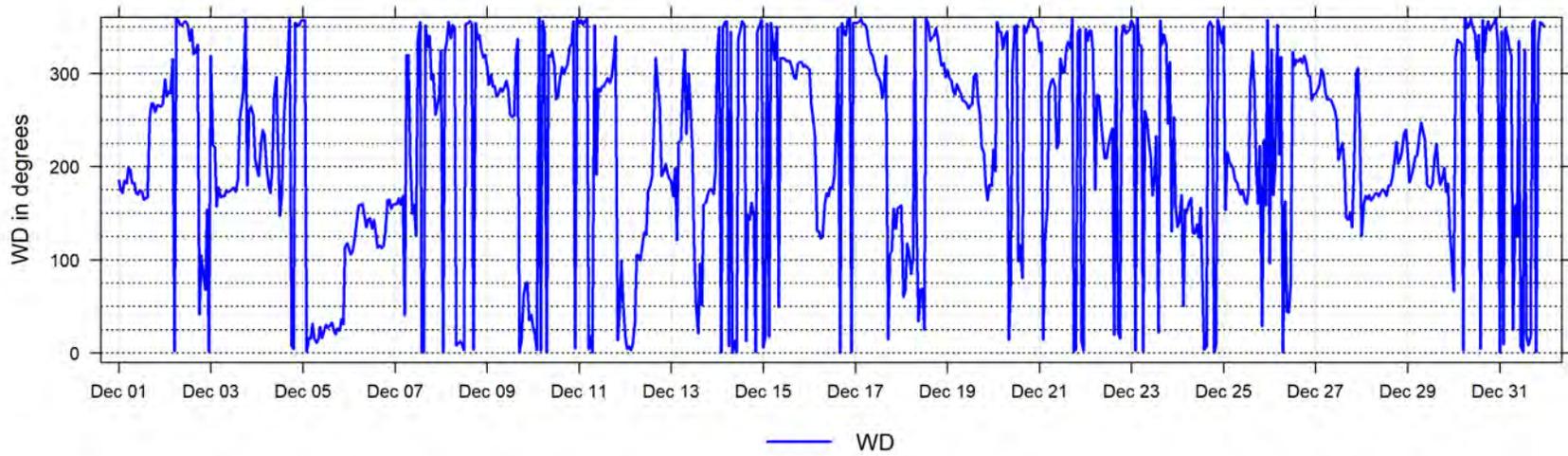
December 2025 Hourly Readings of Relative Humidity (in %) at Valleyview



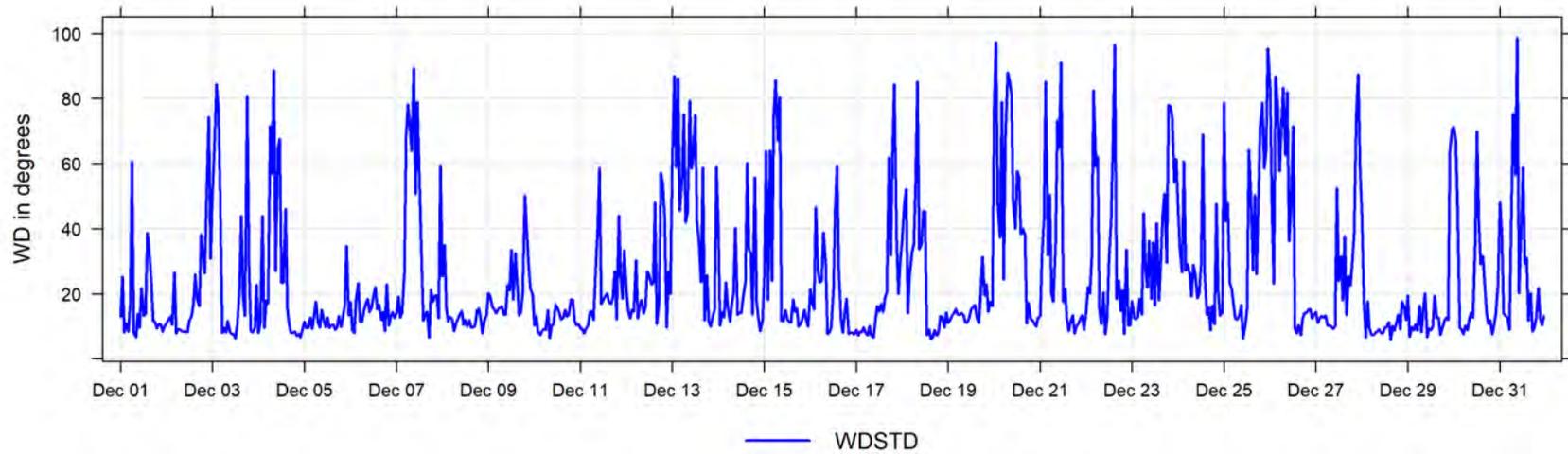
December 2025 Hourly Readings of Wind Speed (in km/hr) at Valleyview

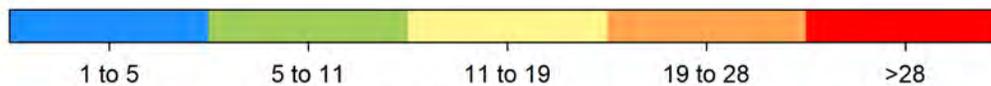
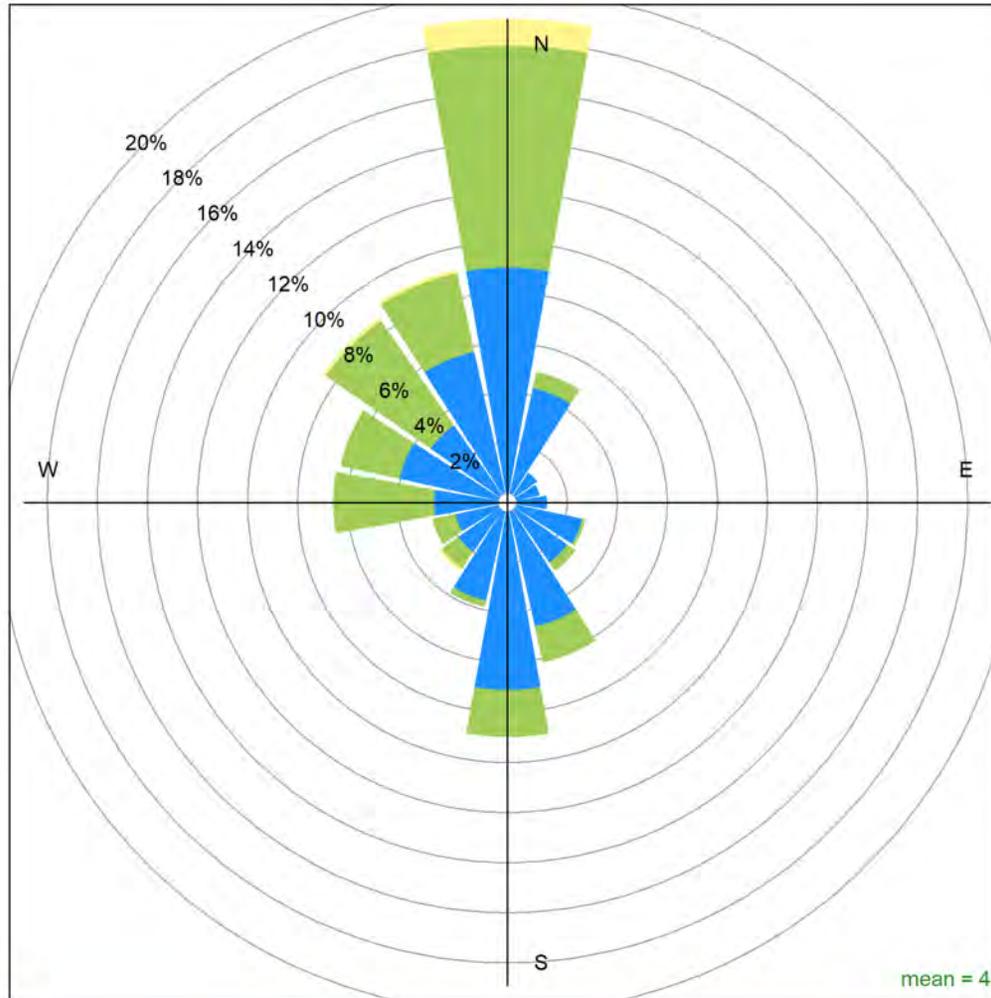


December 2025 Hourly Readings of Wind Direction (in degrees) at Valleyview



December 2025 Hourly Readings of Wind Direction Standard Deviation (in degrees) at Valleyview





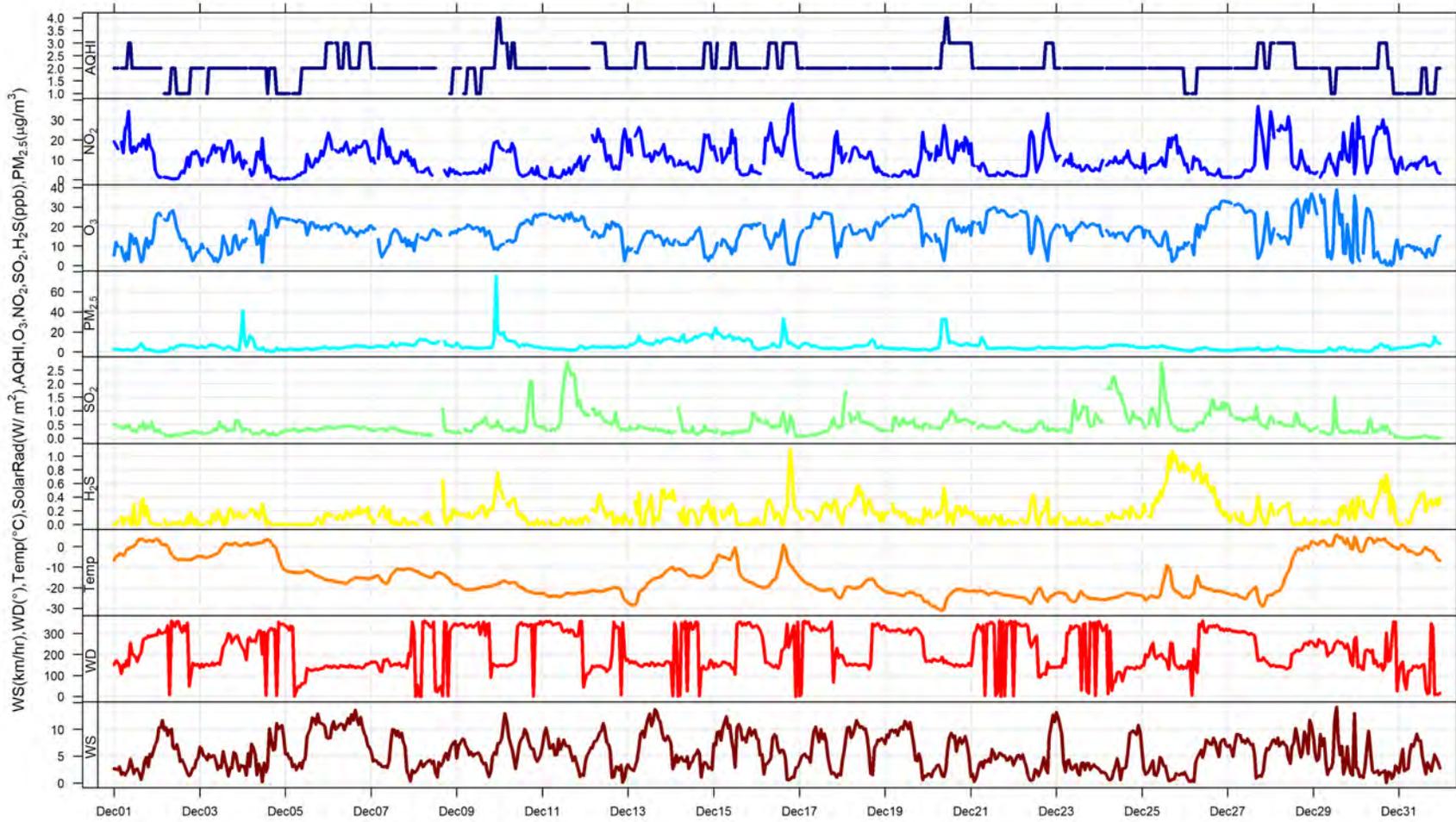
Valleyview December 2025 Wind Rose, wind speed in km/hr

Calms (<1km/hr) = 11.7 %

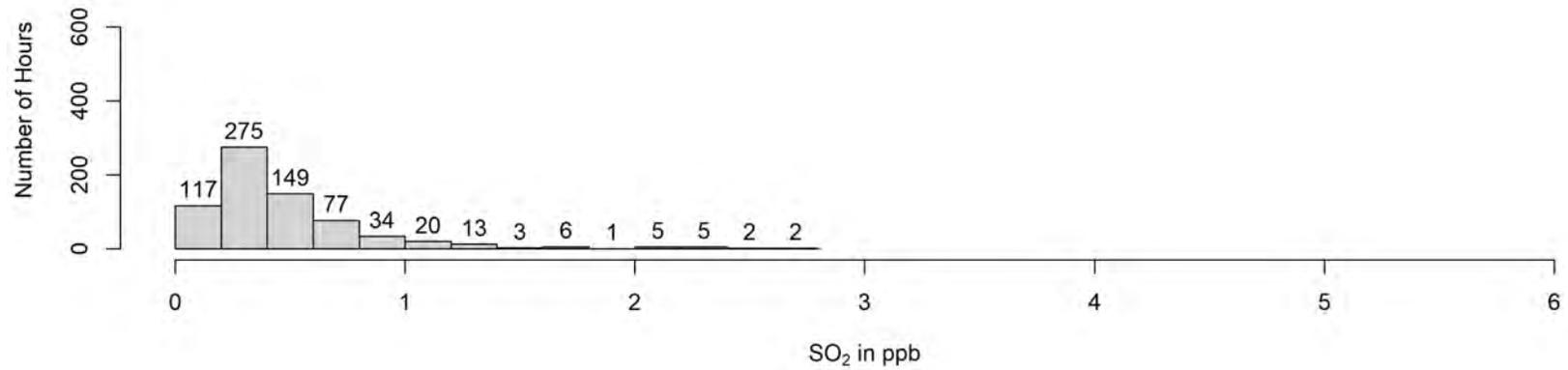
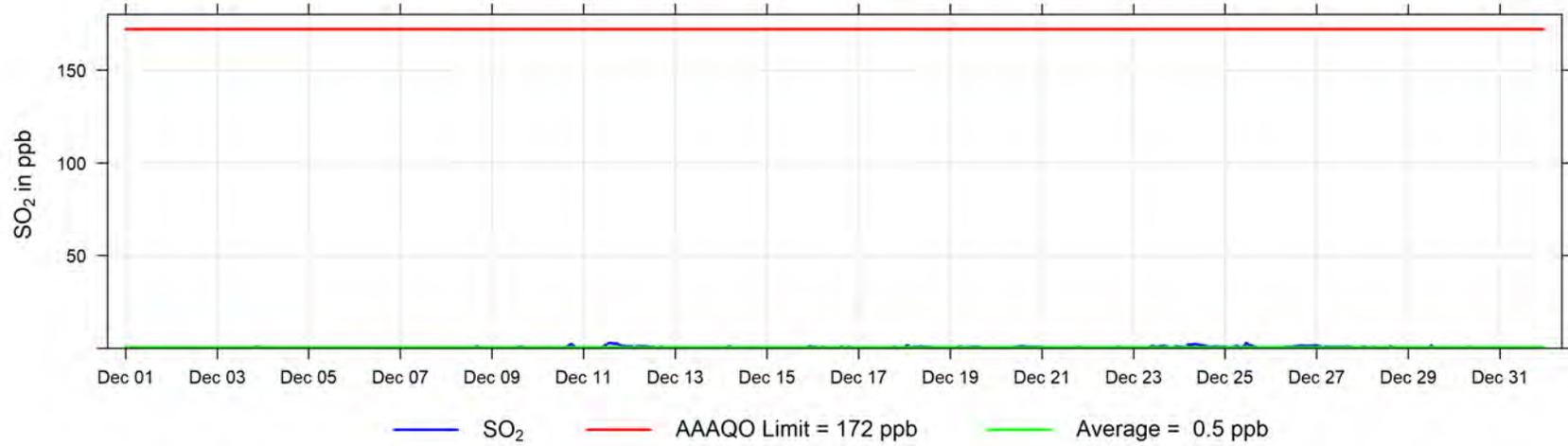
7 Fox Creek Charts

The following pages include the charts and histograms for Fox Creek Station

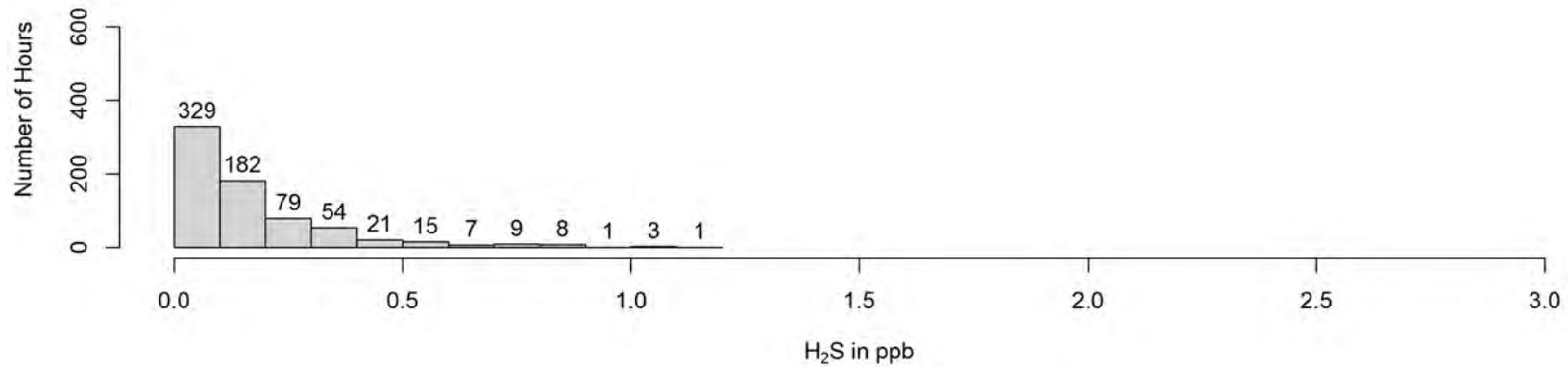
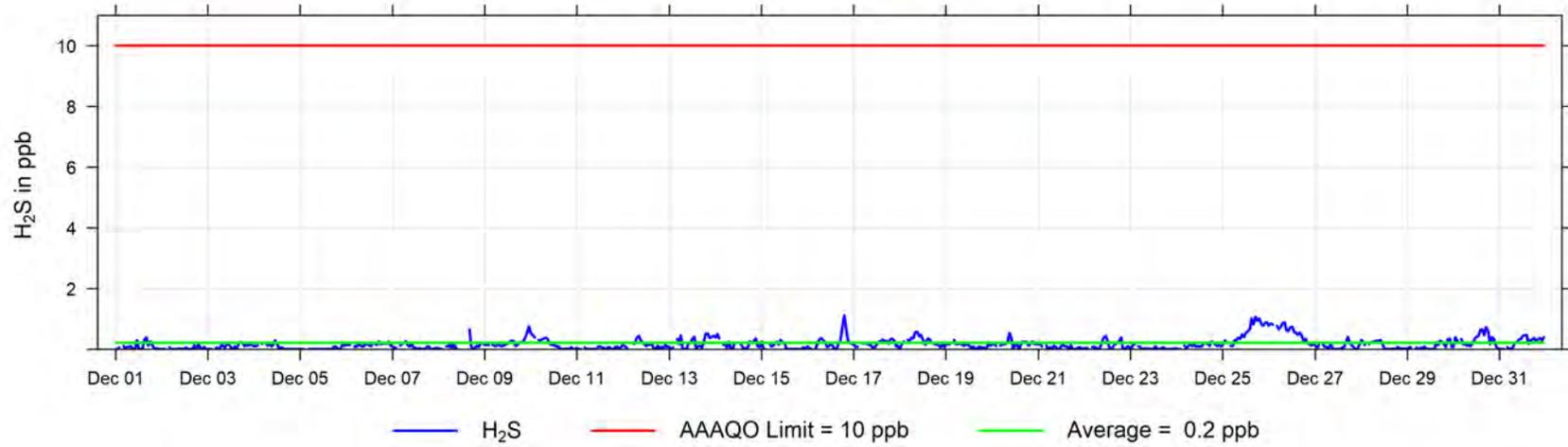
December 2025 Concentration Readings at Fox Creek Station



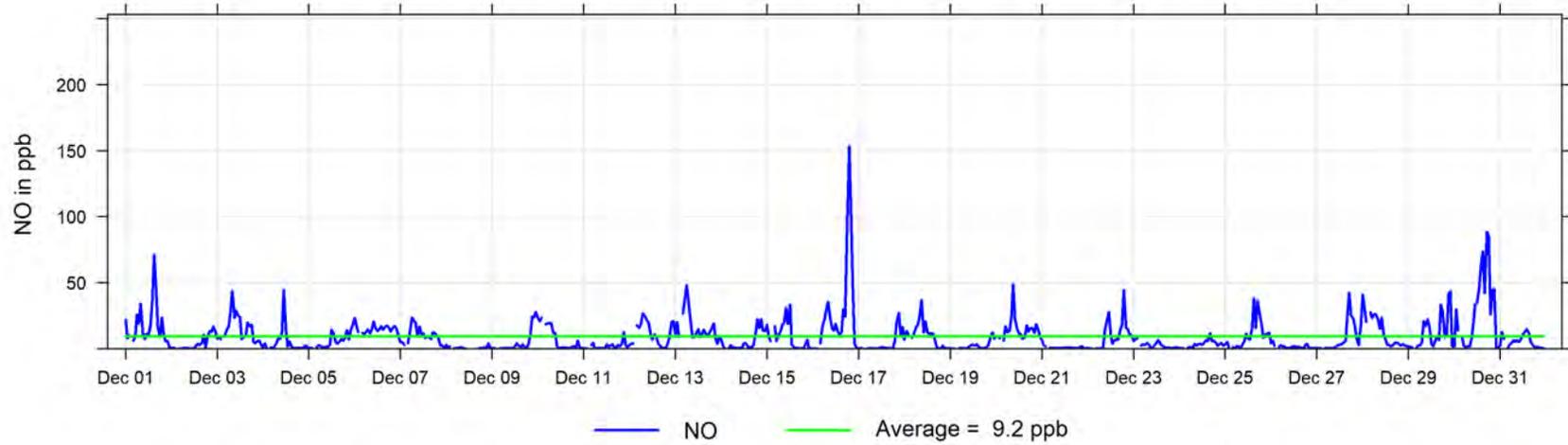
December 2025 Hourly Concentration Readings of SO₂ (in ppb) at Fox Creek



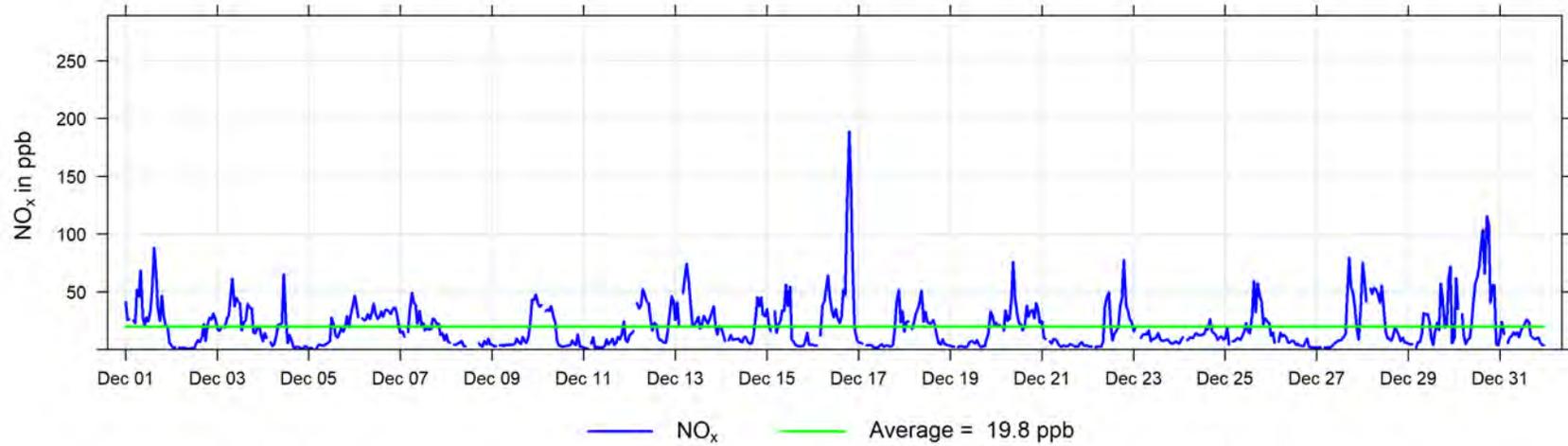
December 2025 Hourly Concentration Readings of H₂S (in ppb) at Fox Creek



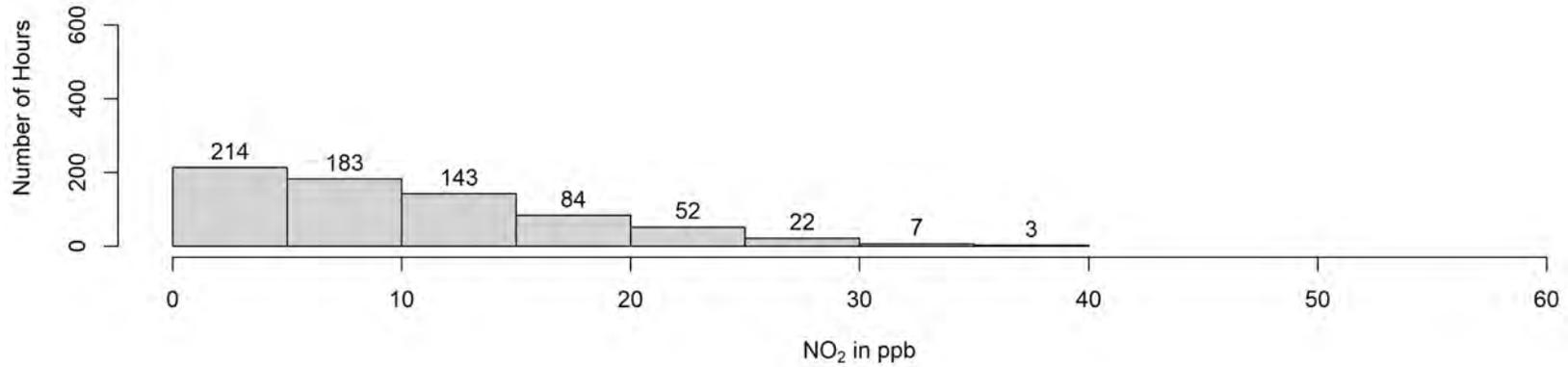
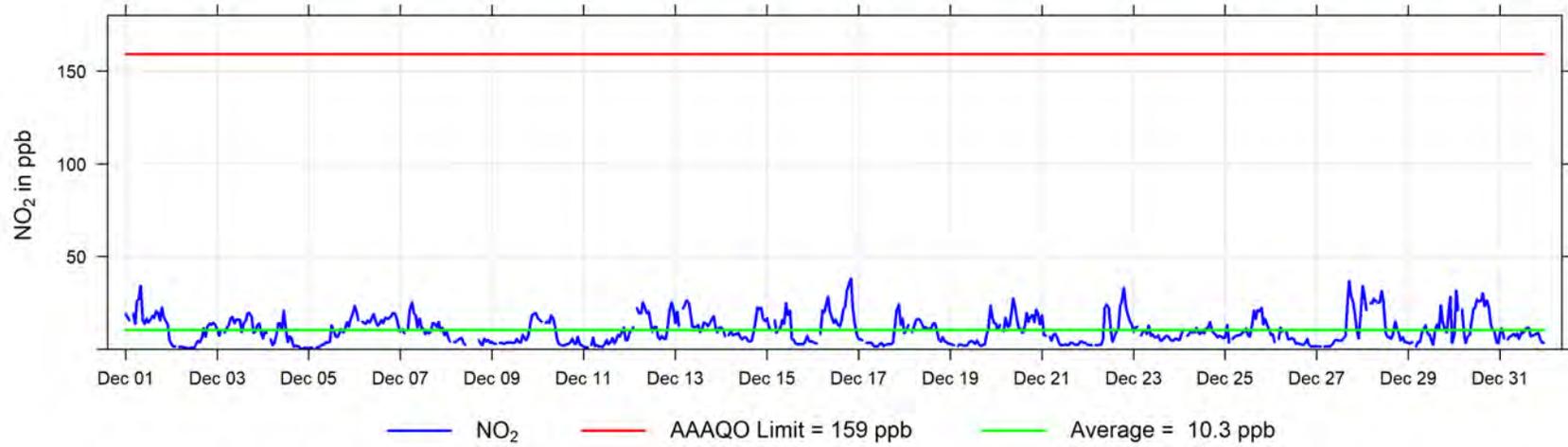
December 2025 Hourly Concentration Readings of NO (in ppb) at Fox Creek



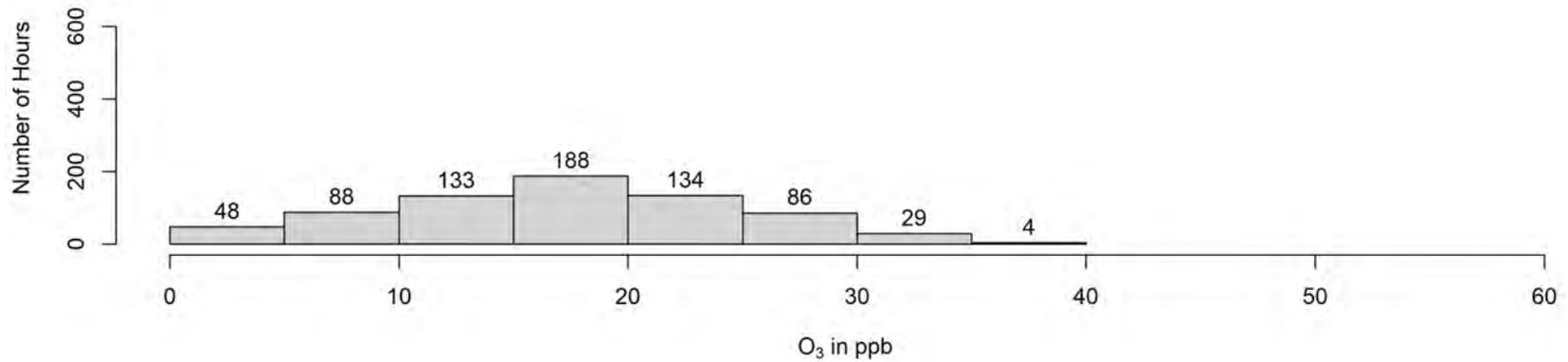
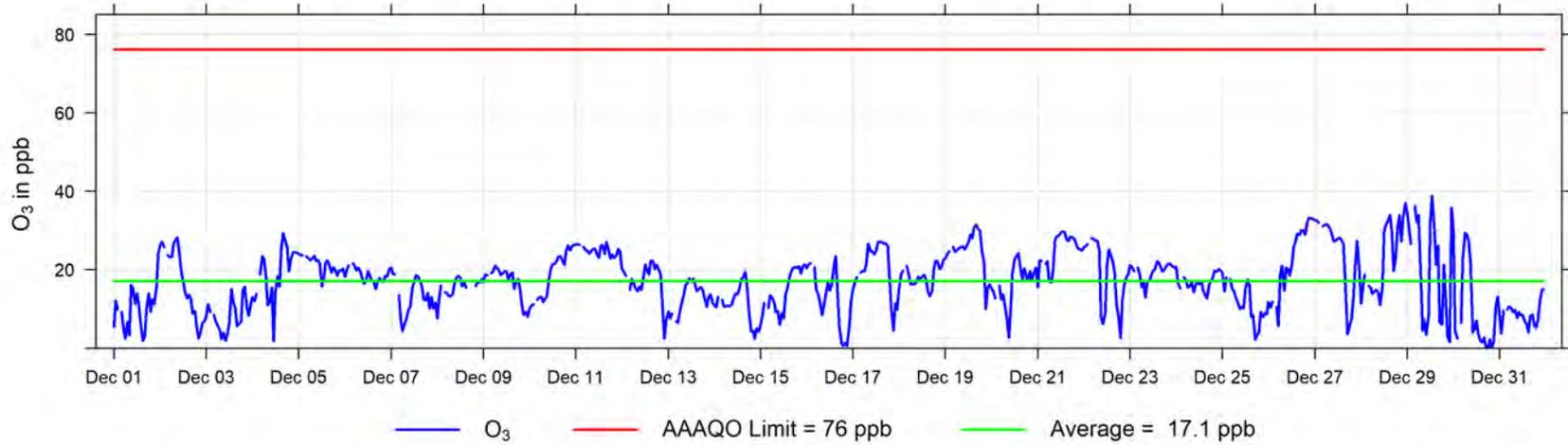
December 2025 Hourly Concentration Readings of NO_x (in ppb) at Fox Creek



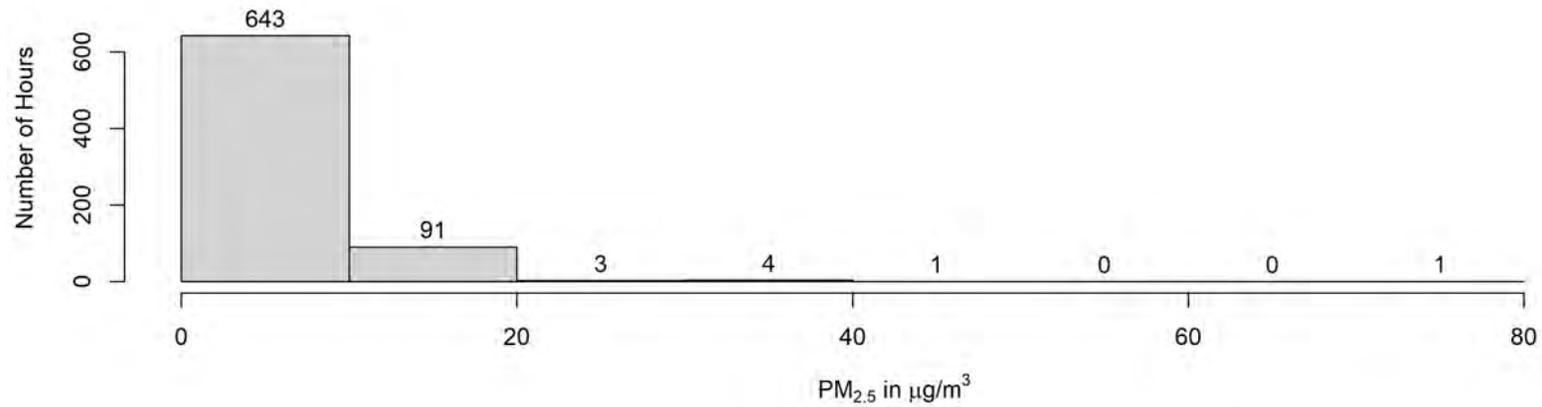
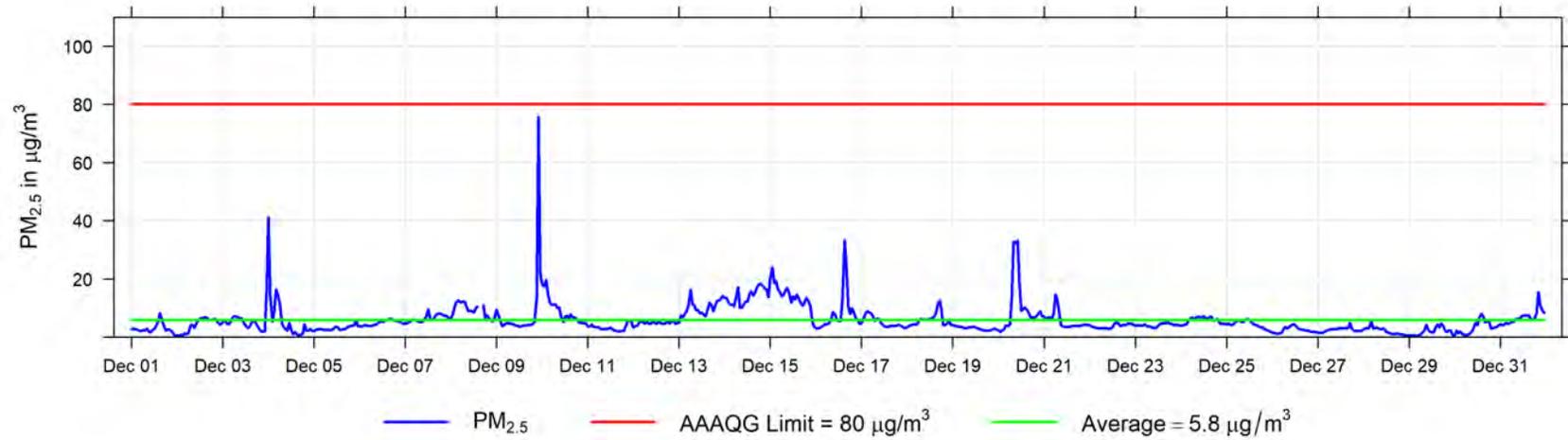
December 2025 Hourly Concentration Readings of NO₂ (in ppb) at Fox Creek



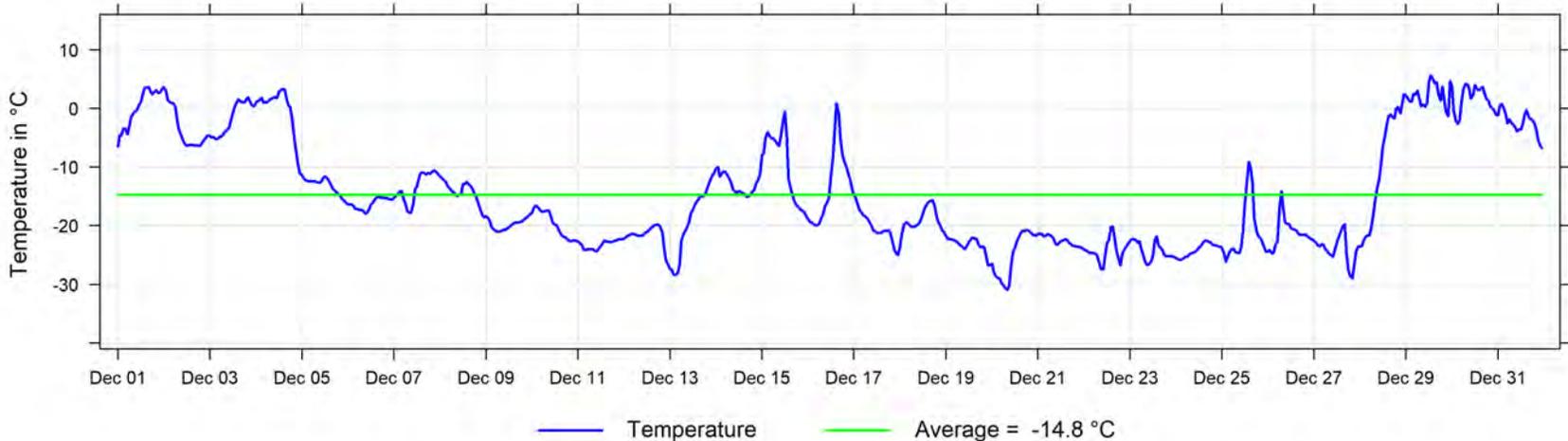
December 2025 Hourly Concentration Readings of O₃ (in ppb) at Fox Creek



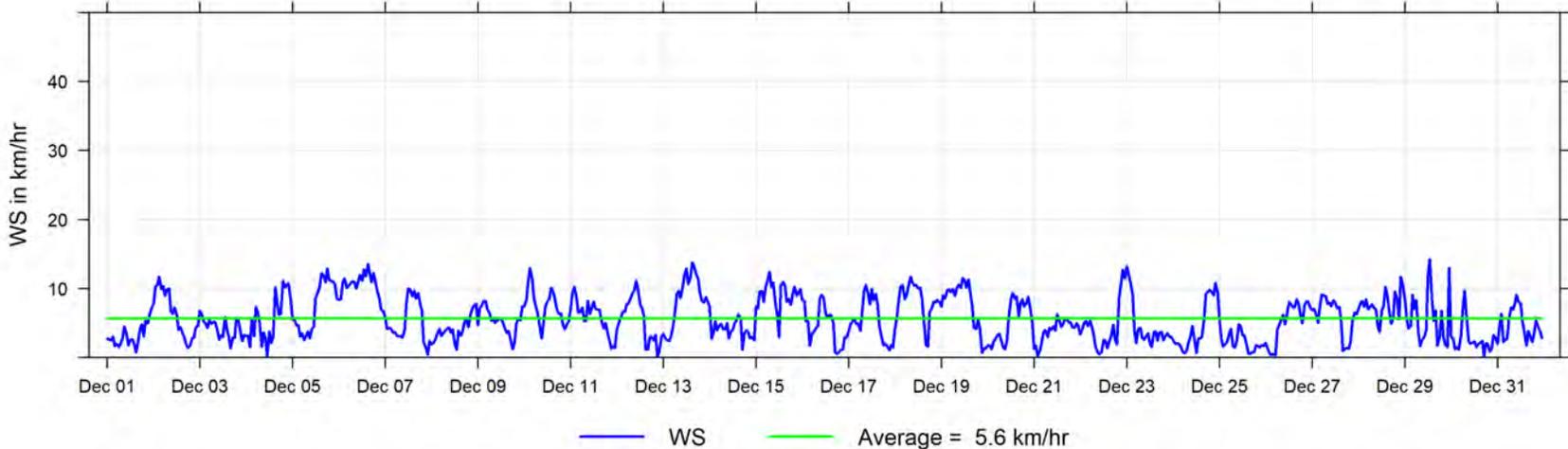
December 2025 Hourly Concentration Readings of PM_{2.5} in $\mu\text{g}/\text{m}^3$ at Fox Creek



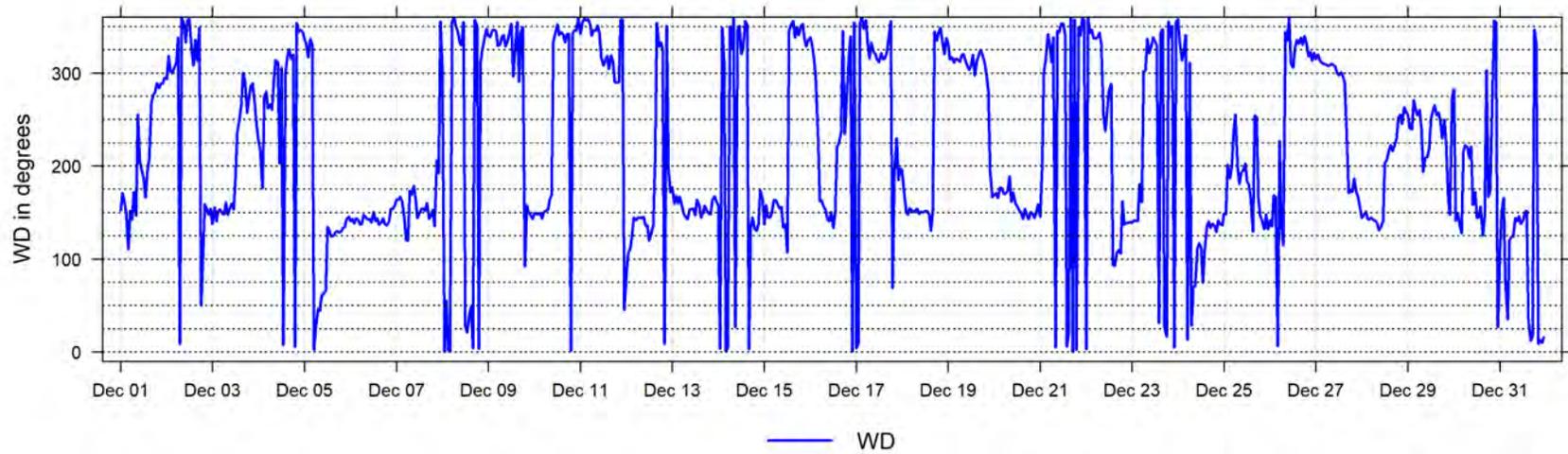
December 2025 Hourly Temperature Readings (in °C) at Fox Creek



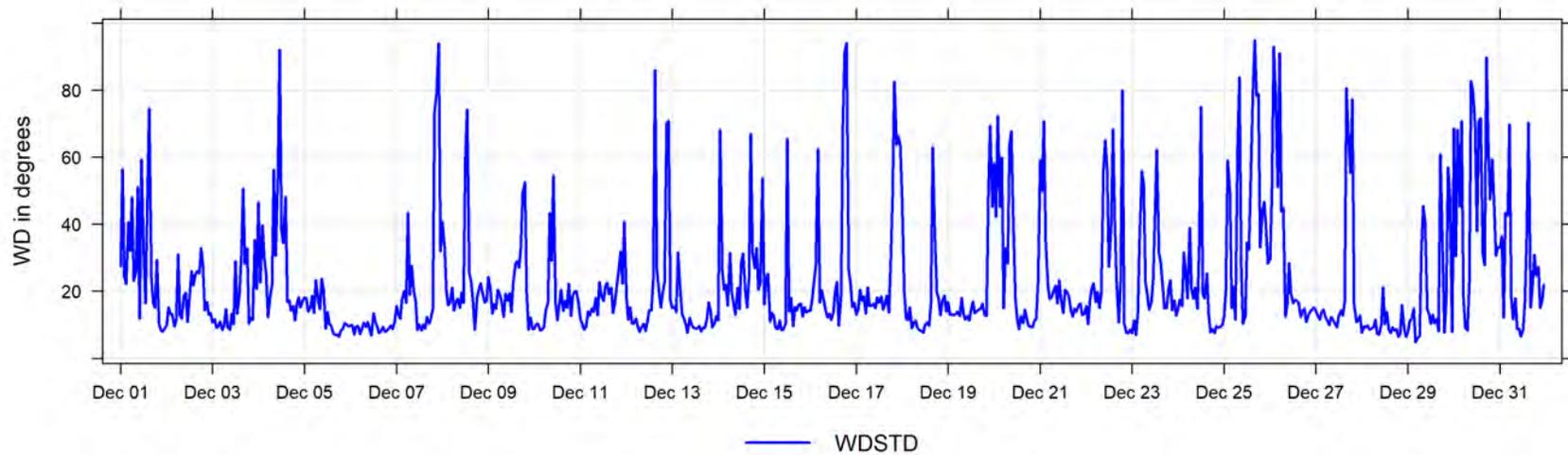
December 2025 Hourly Readings of Wind Speed (in km/hr) at Fox Creek

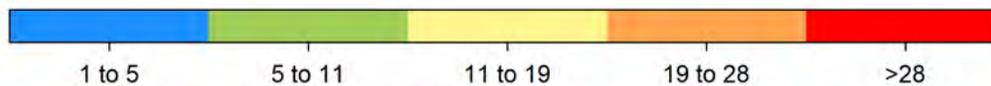
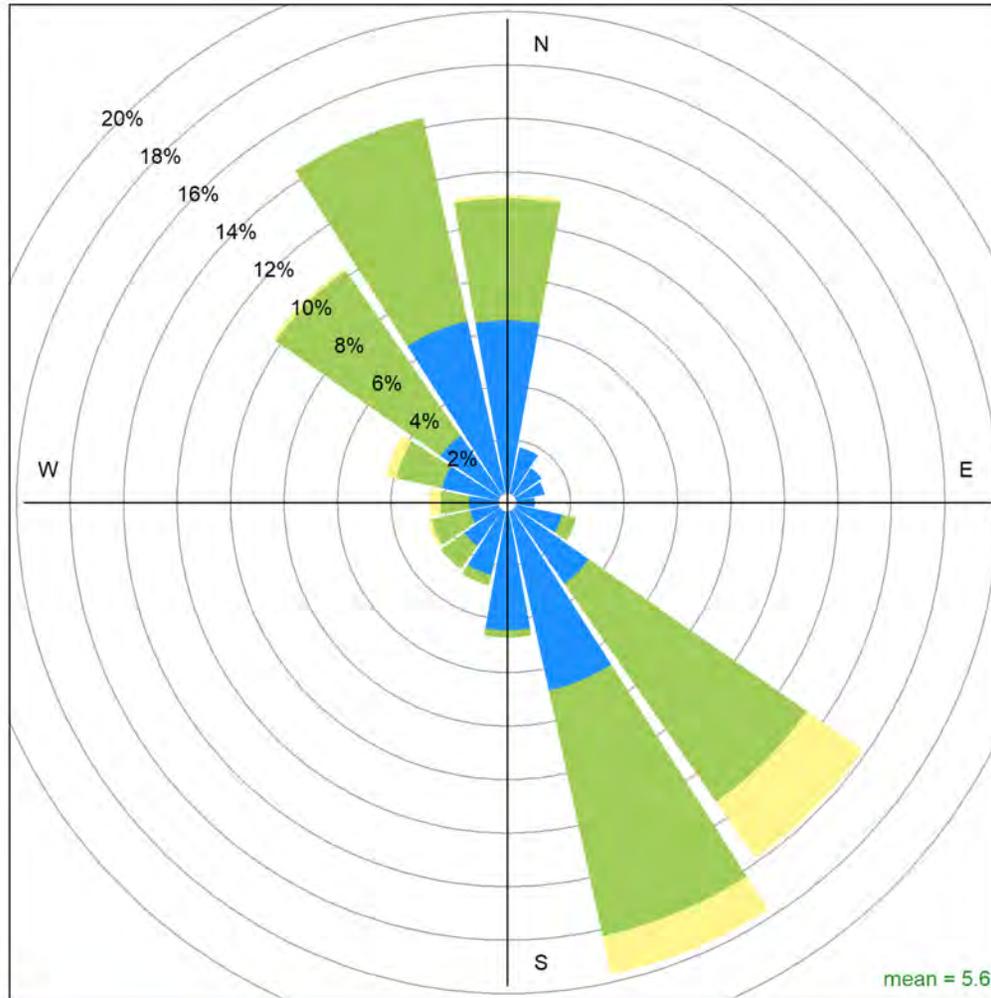


December 2025 Hourly Readings of Wind Direction (in degrees) at Fox Creek



December 2025 Hourly Readings of Wind Direction Standard Deviation (in degrees) at Fox Creek





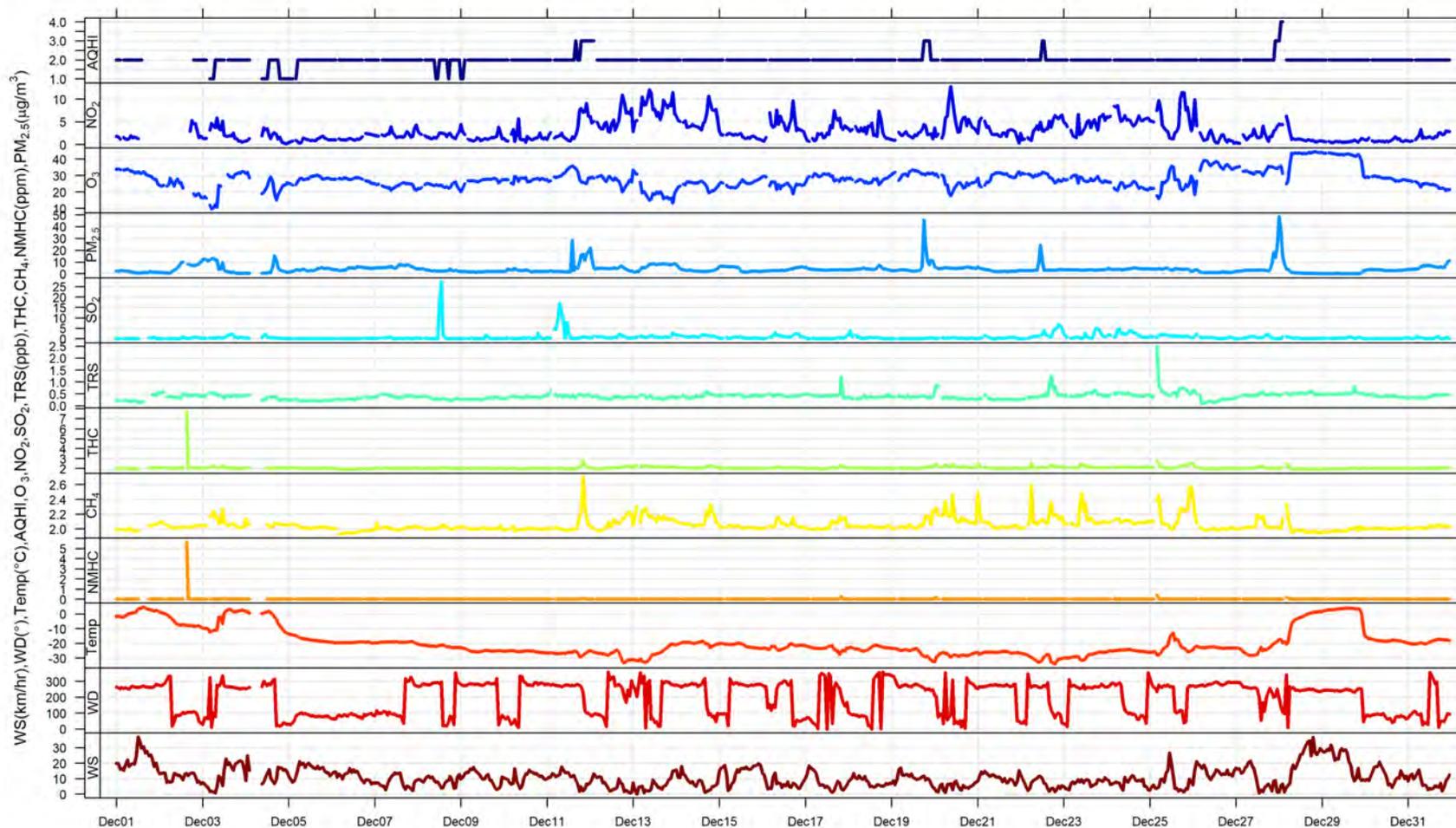
Fox Creek December 2025 Wind Rose, wind speed in km/hr

Calms (<1km/hr) = 3.9 %

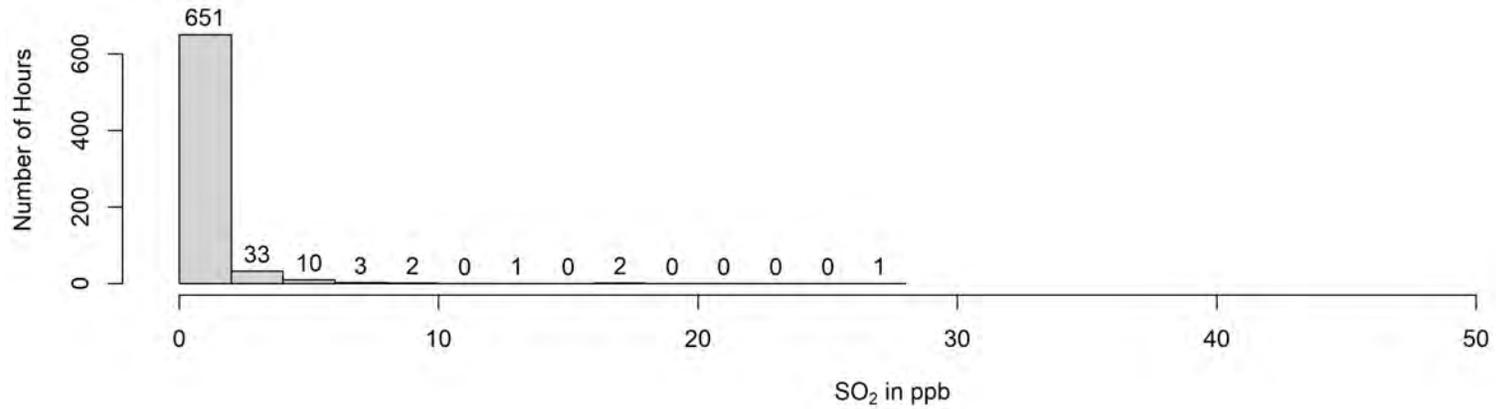
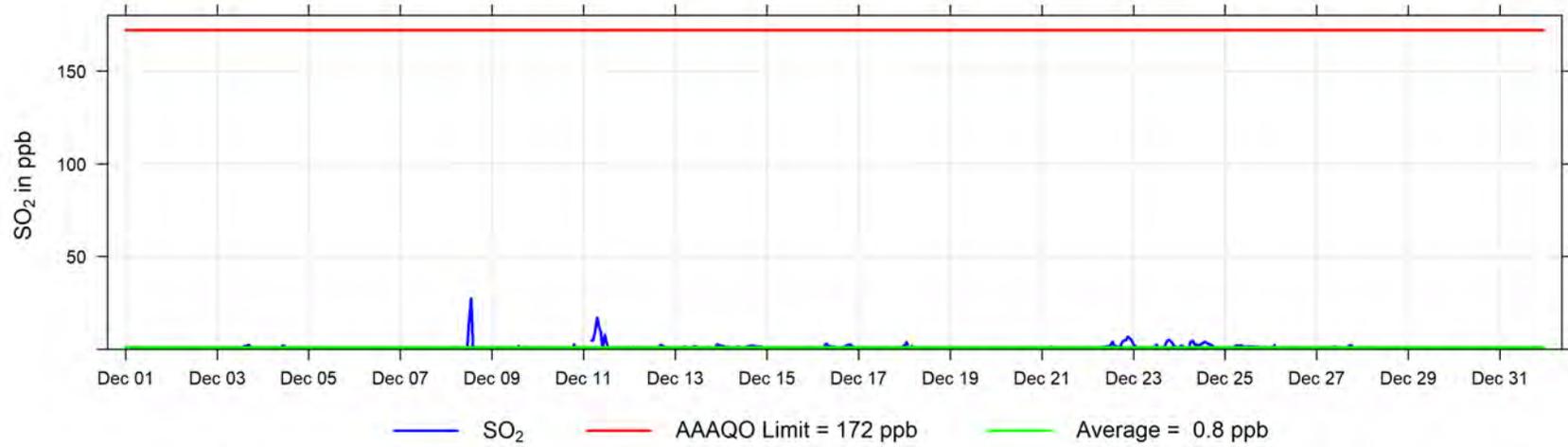
8 Happy Valley (Portable) Charts

The following pages include the charts and histograms for Happy Valley Portable Station

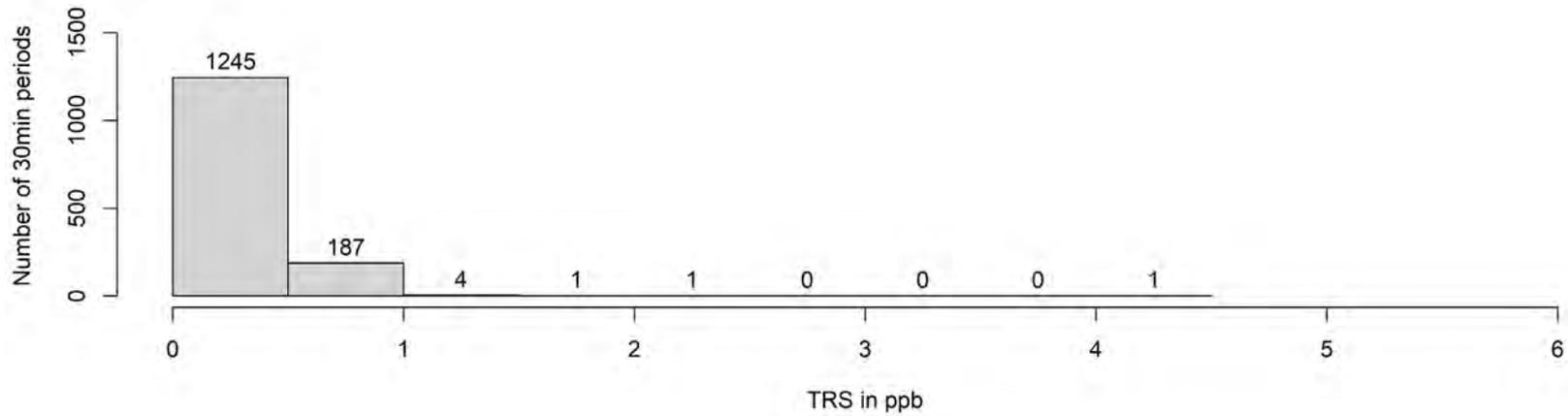
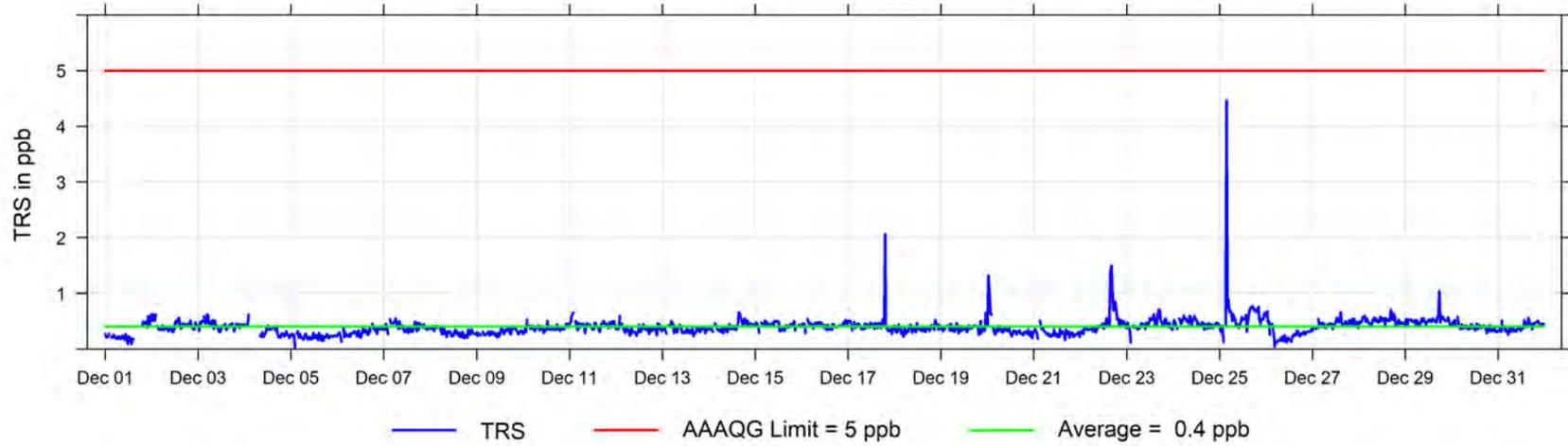
December 2025 Concentration Readings at Happy Valley Station



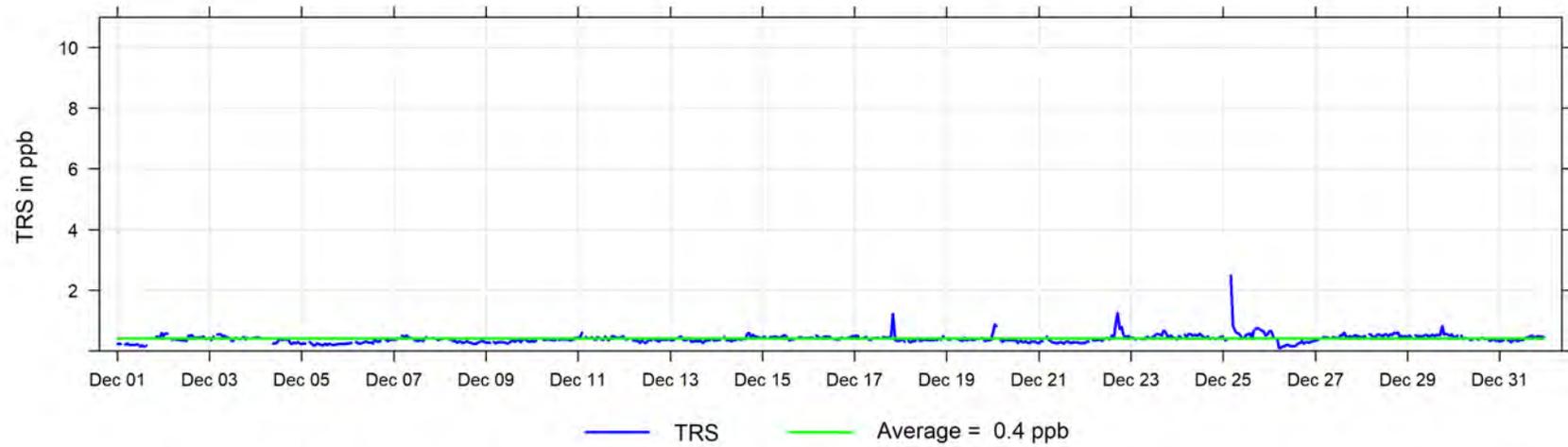
December 2025 Hourly Concentration Readings of SO₂ (in ppb) at Happy Valley



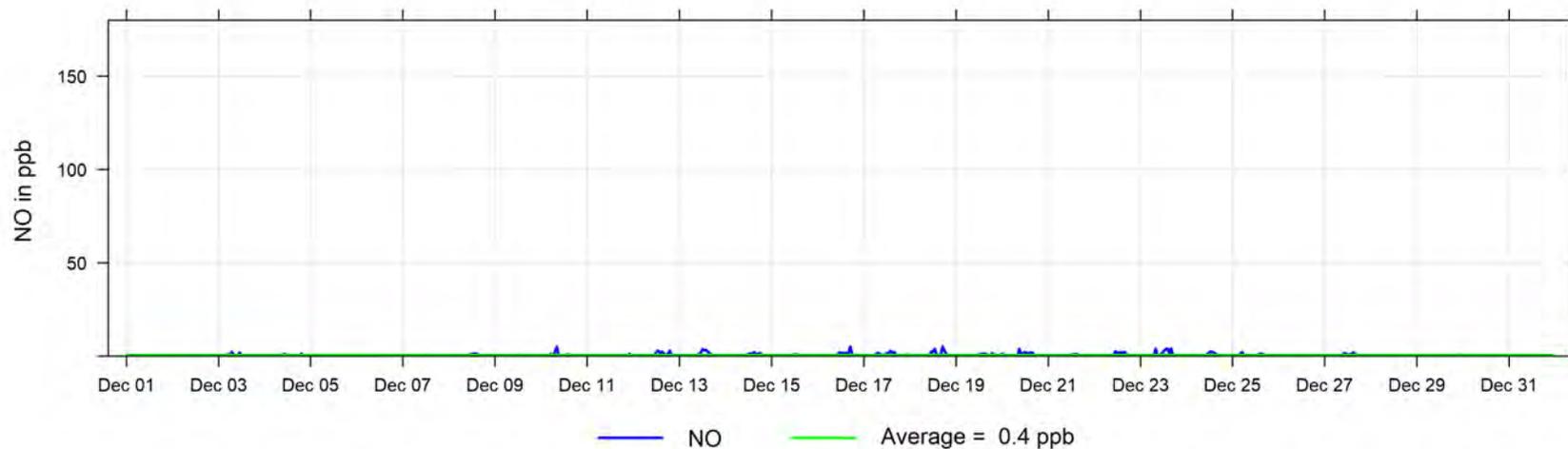
December 2025 30 min Concentration Readings of TRS (in ppb) at Happy Valley



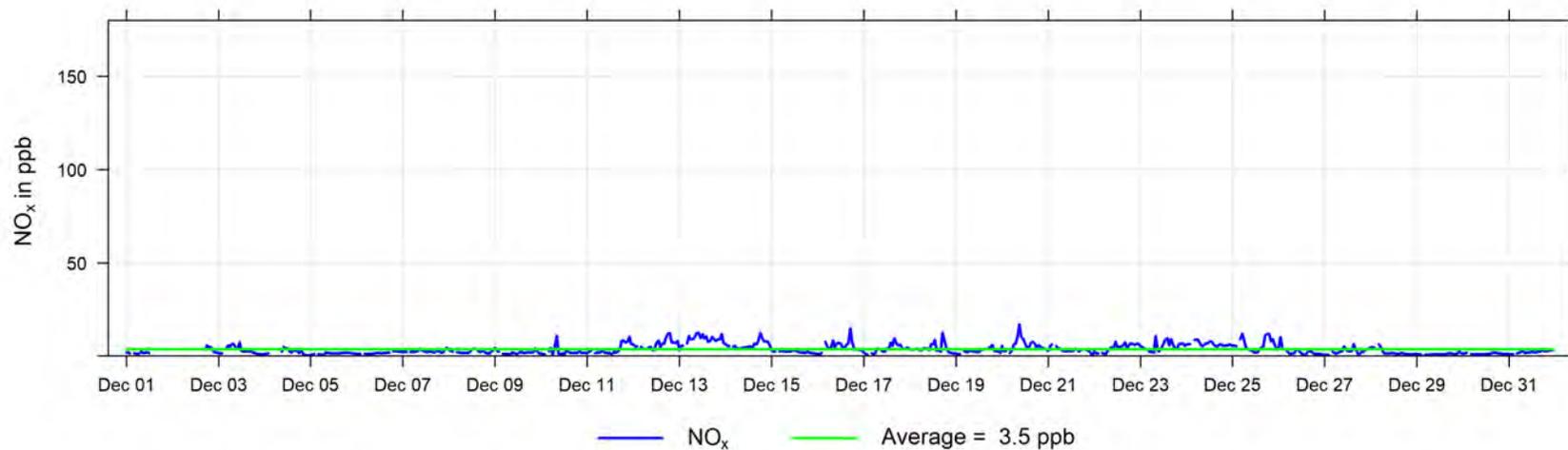
December 2025 Hourly Concentration Readings of TRS (in ppb) at Happy Valley



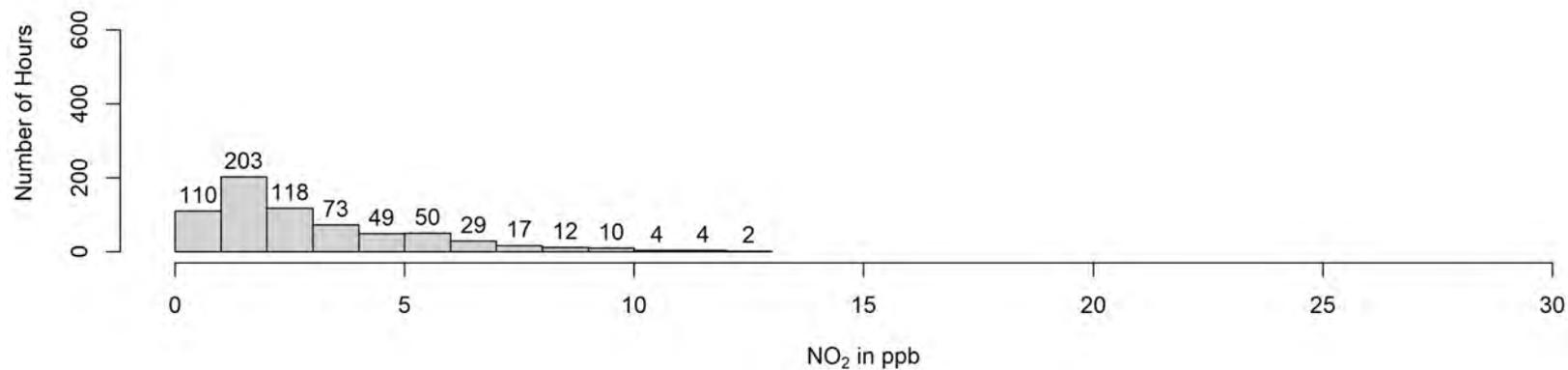
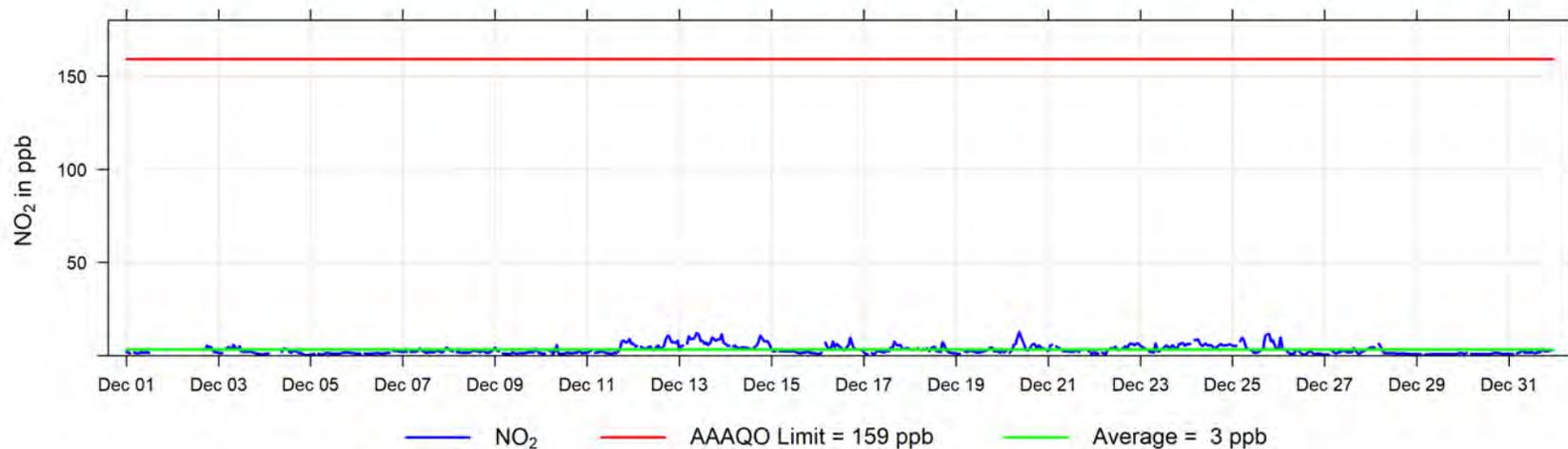
December 2025 Hourly Concentration Readings of NO (in ppb) at Happy Valley



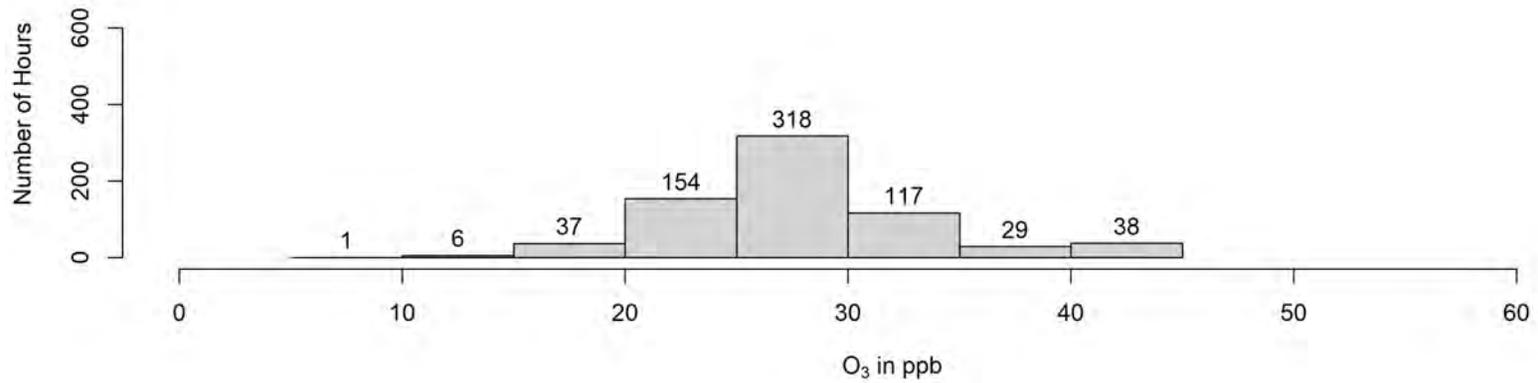
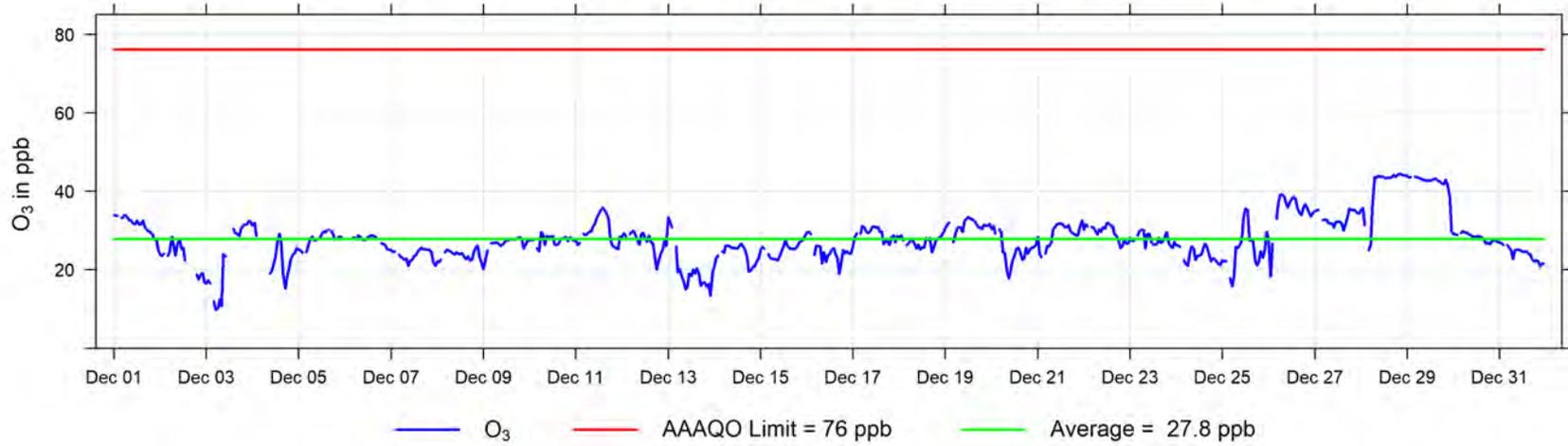
December 2025 Hourly Concentration Readings of NO_x (in ppb) at Happy Valley



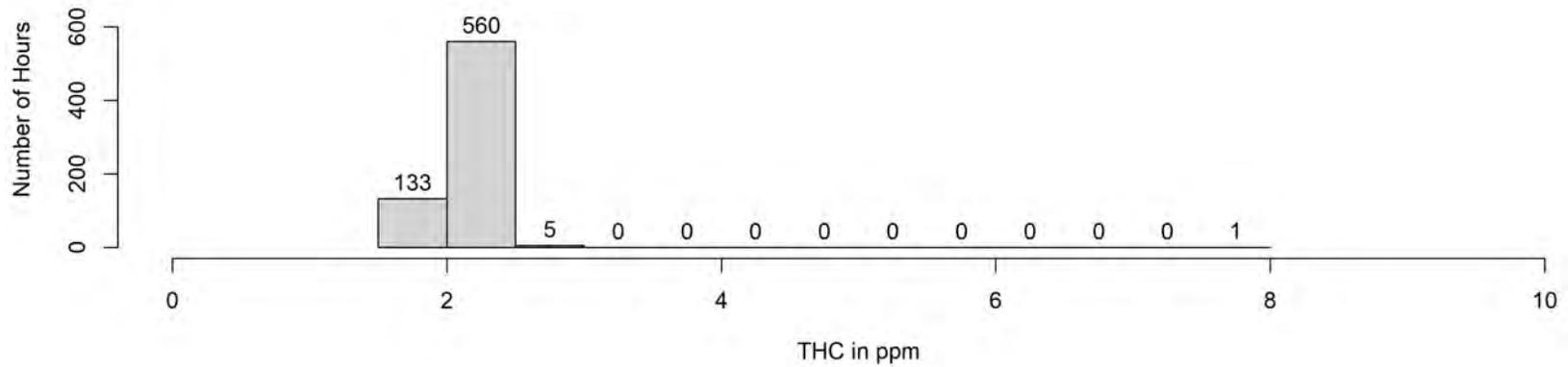
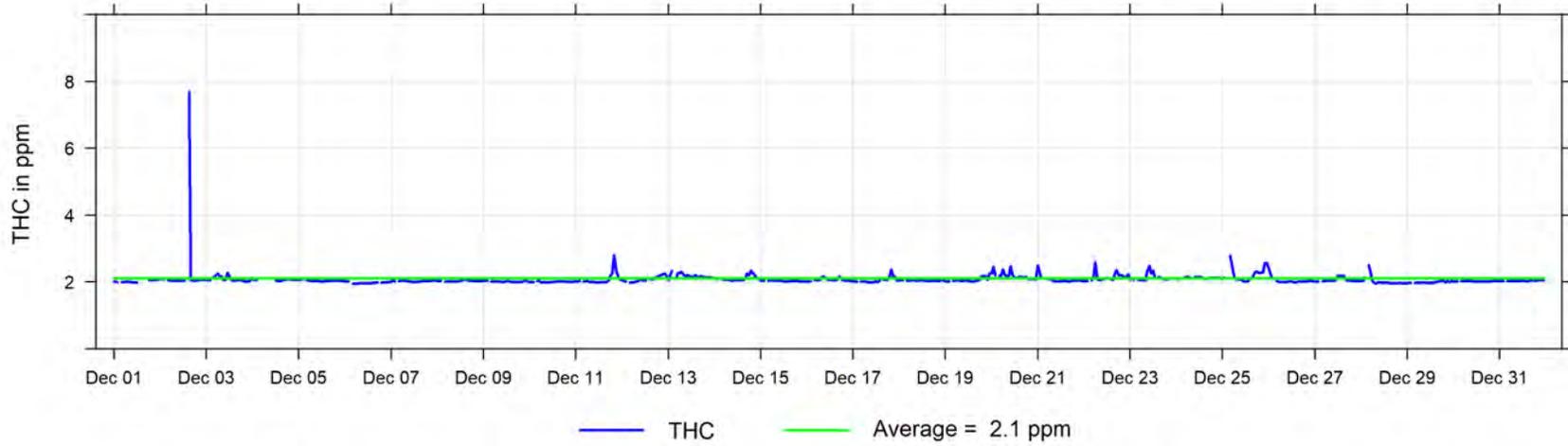
December 2025 Hourly Concentration Readings of NO₂ (in ppb) at Happy Valley



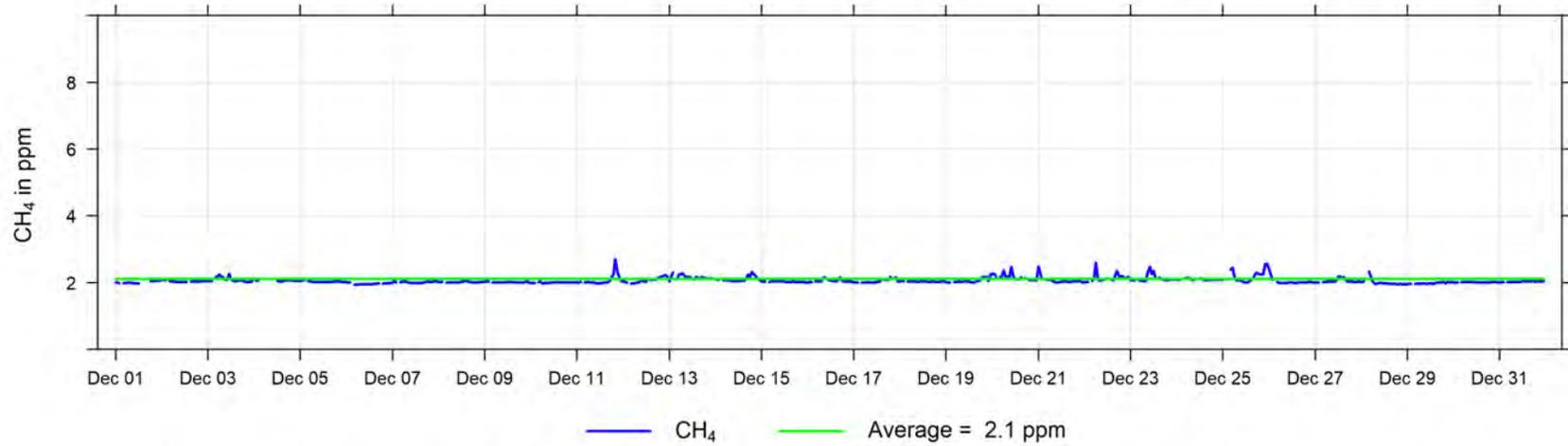
December 2025 Hourly Concentration Readings of O₃ (in ppb) at Happy Valley



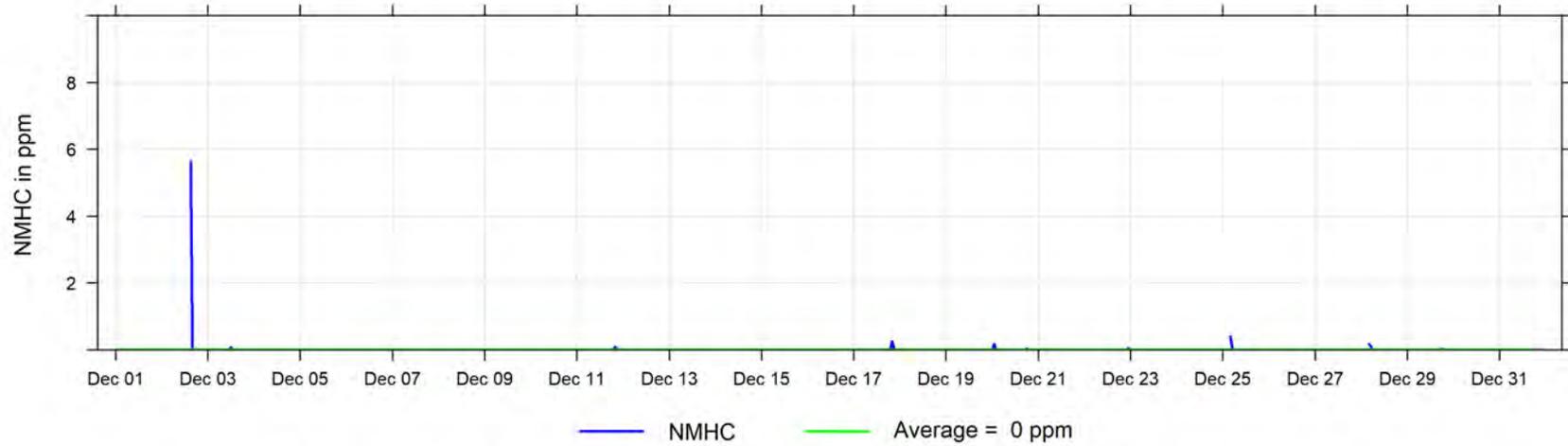
December 2025 Hourly Concentration Readings of THC (in ppm) at Happy Valley



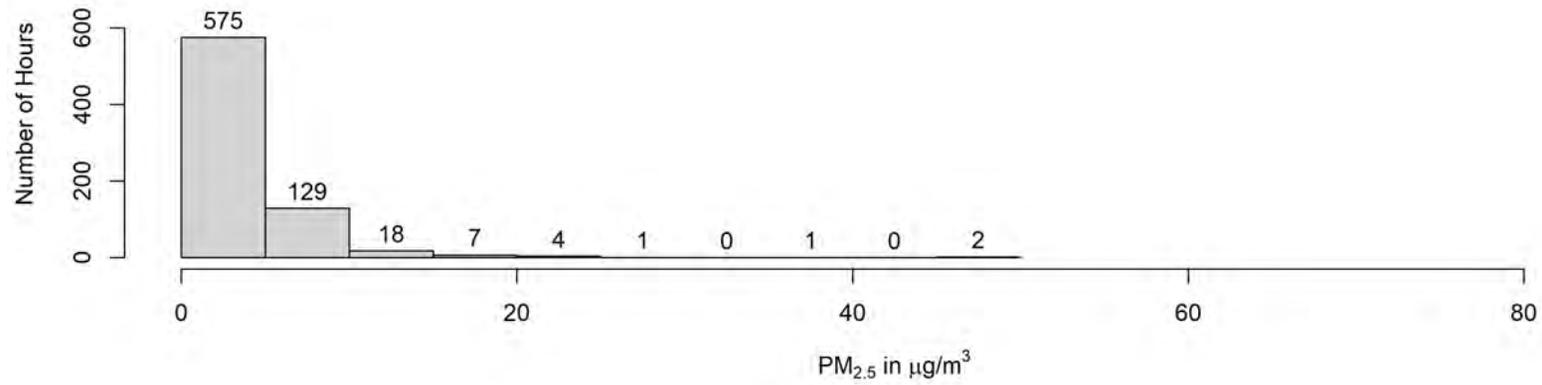
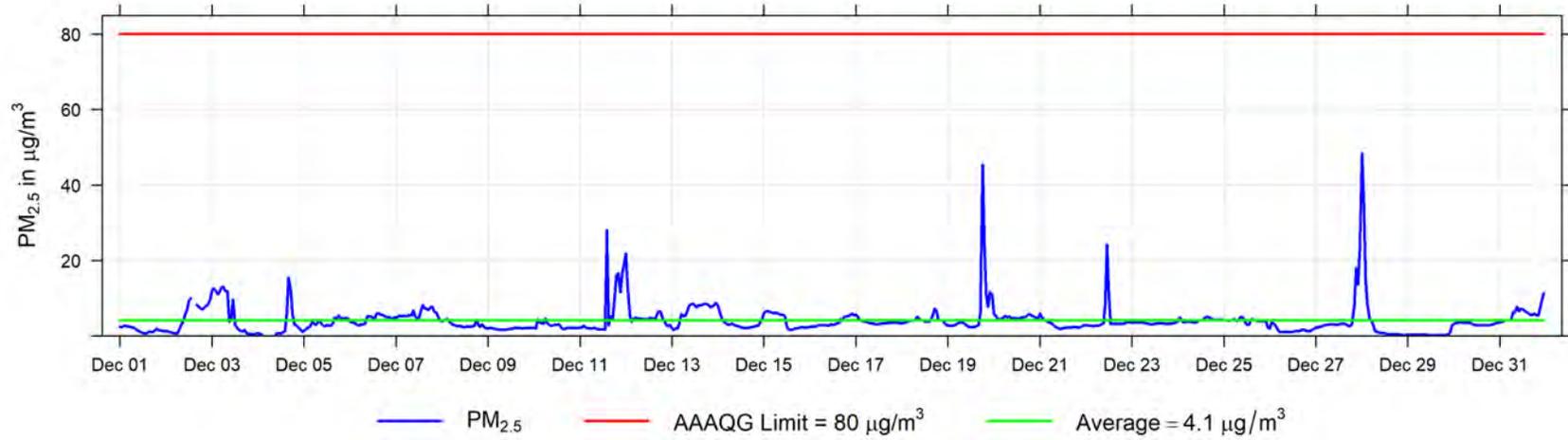
December 2025 Hourly Concentration Readings of CH₄ (in ppm) at Happy Valley



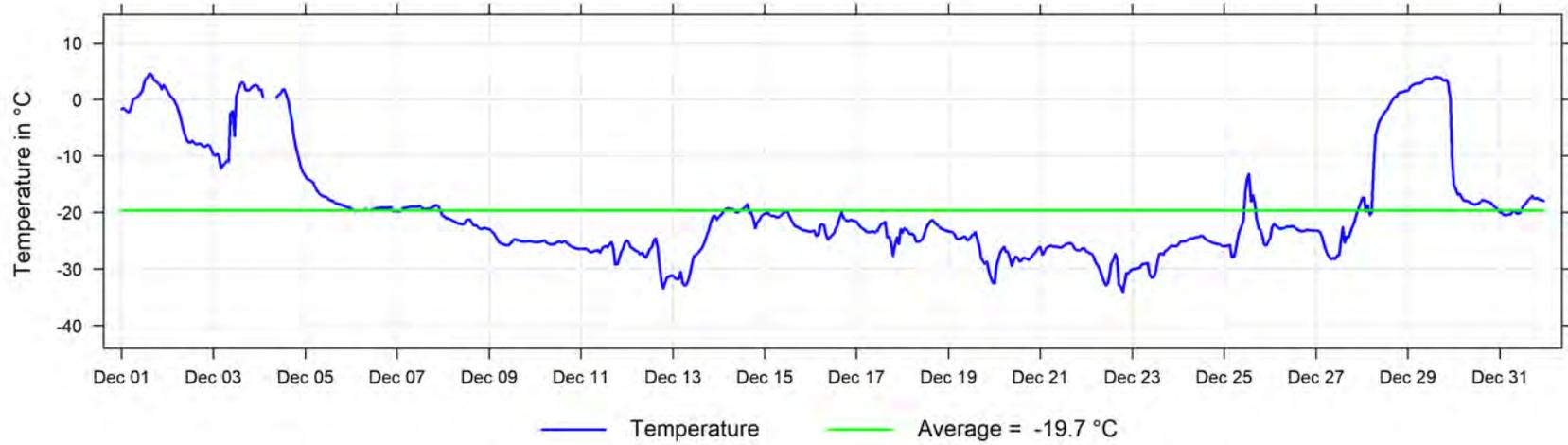
December 2025 Hourly Concentration Readings of NMHC (in ppm) at Happy Valley



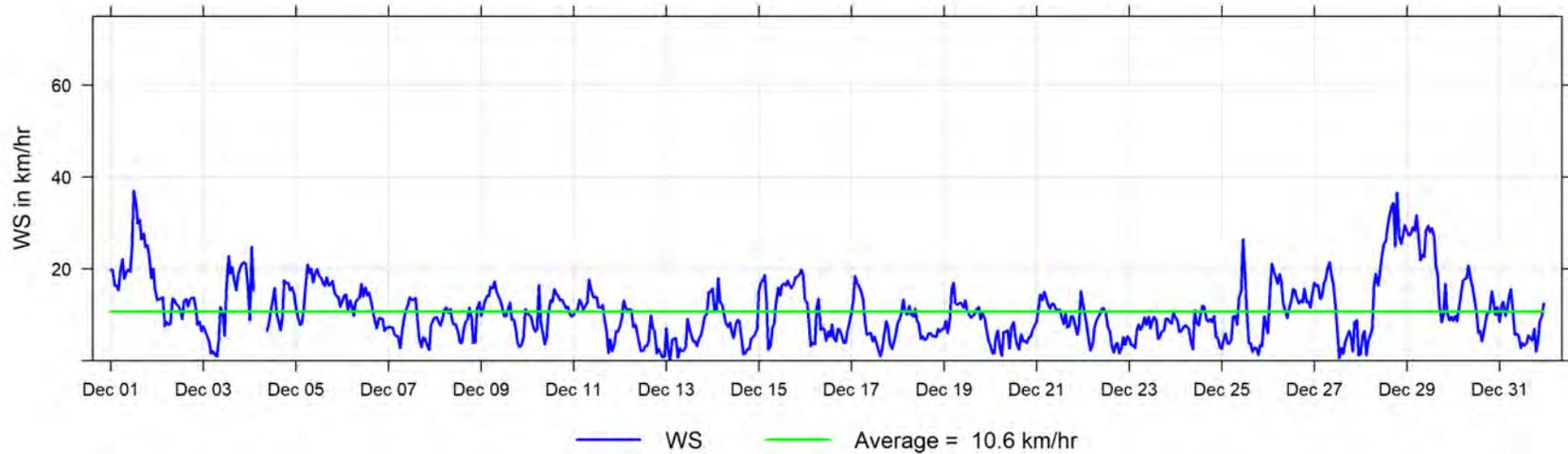
December 2025 Hourly Concentration Readings of PM_{2.5} in $\mu\text{g}/\text{m}^3$ at Happy Valley



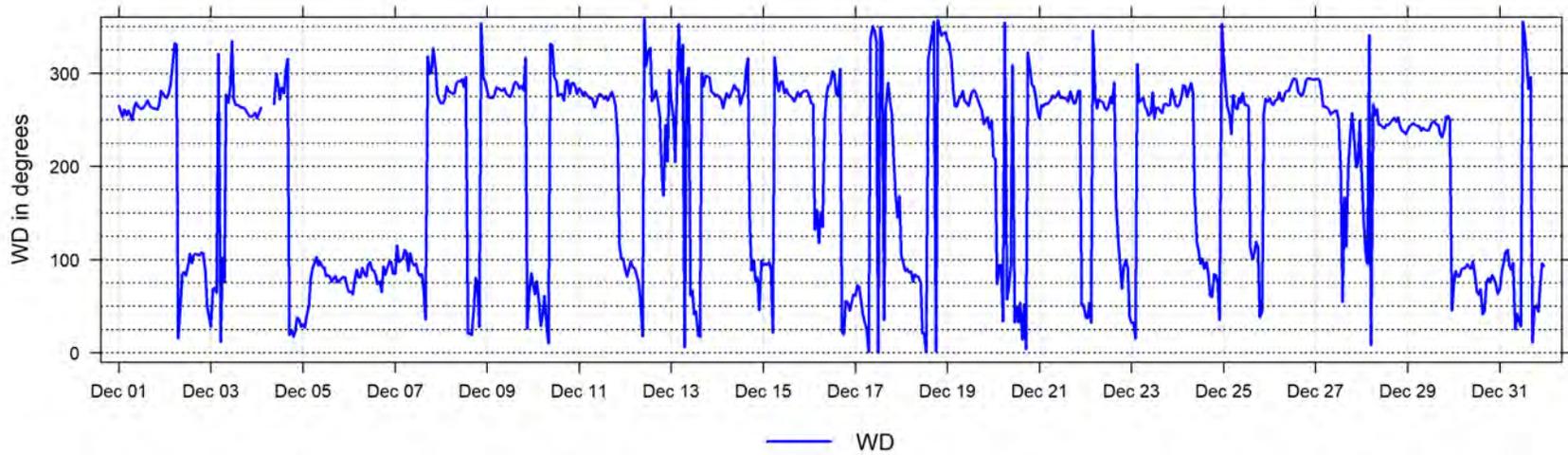
December 2025 Hourly Temperature Readings (in °C) at Happy Valley



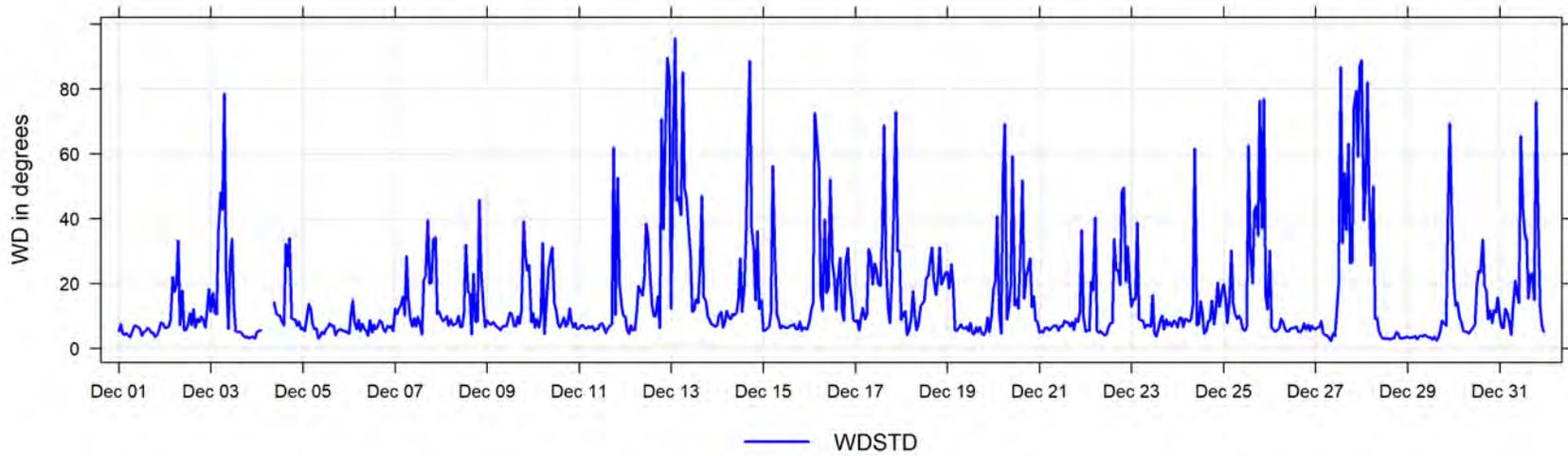
December 2025 Hourly Readings of Wind Speed (in km/hr) at Happy Valley

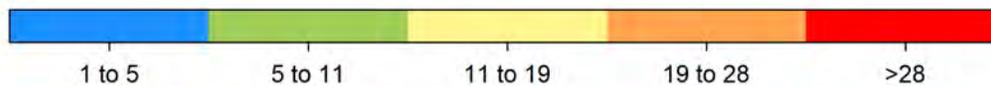
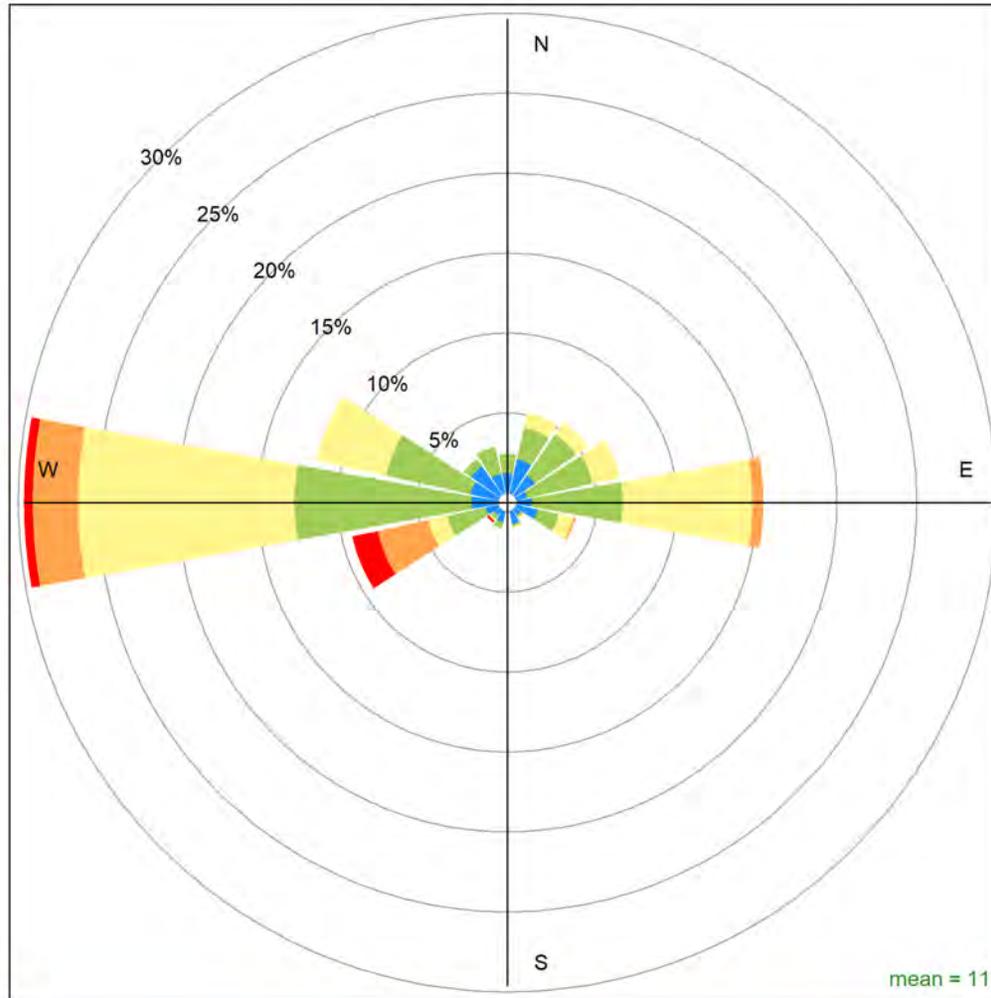


December 2025 Hourly Readings of Wind Direction (in degrees) at Happy Valley



December 2025 Hourly Readings of Wind Direction Standard Deviation (in degrees) at Happy Valley



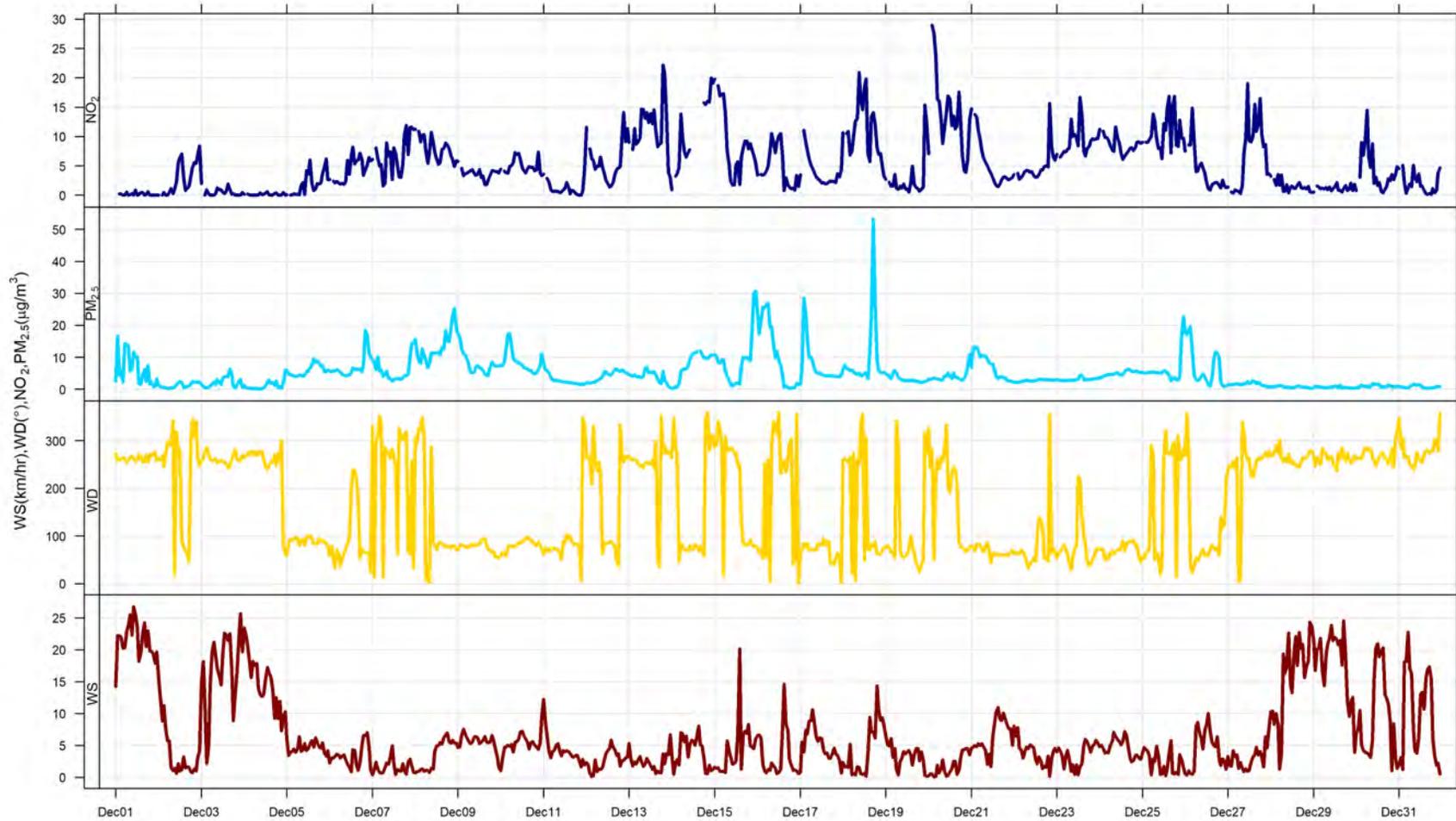


Happy Valley December 2025 Wind Rose, wind speed in km/hr
Calms (<1km/hr) = 0.9 %

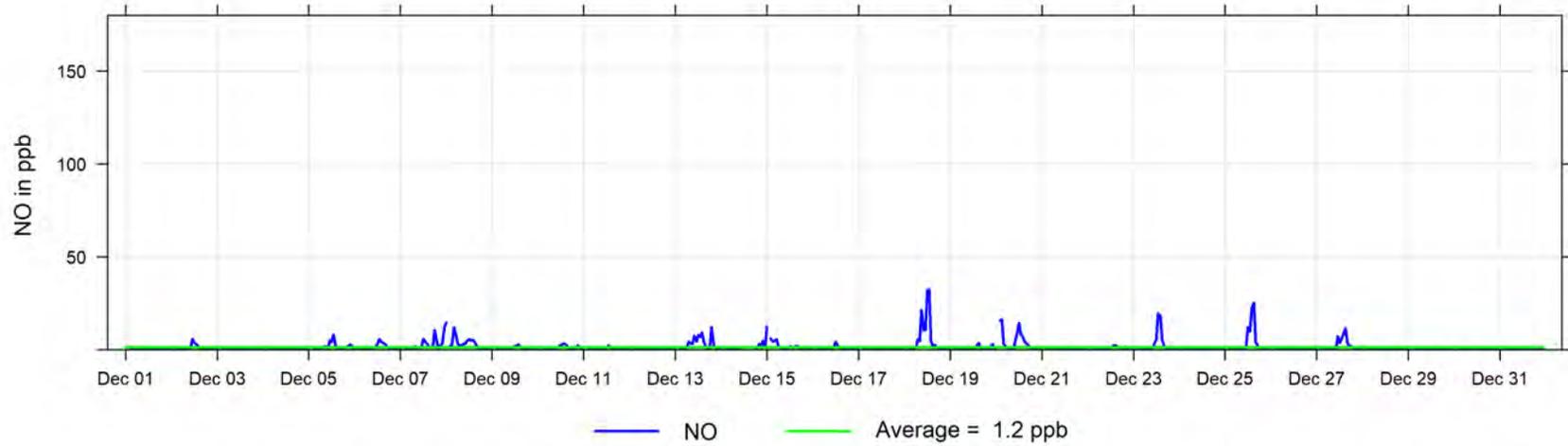
9 Milner Charts

The following pages include the charts and histograms for Milner Station

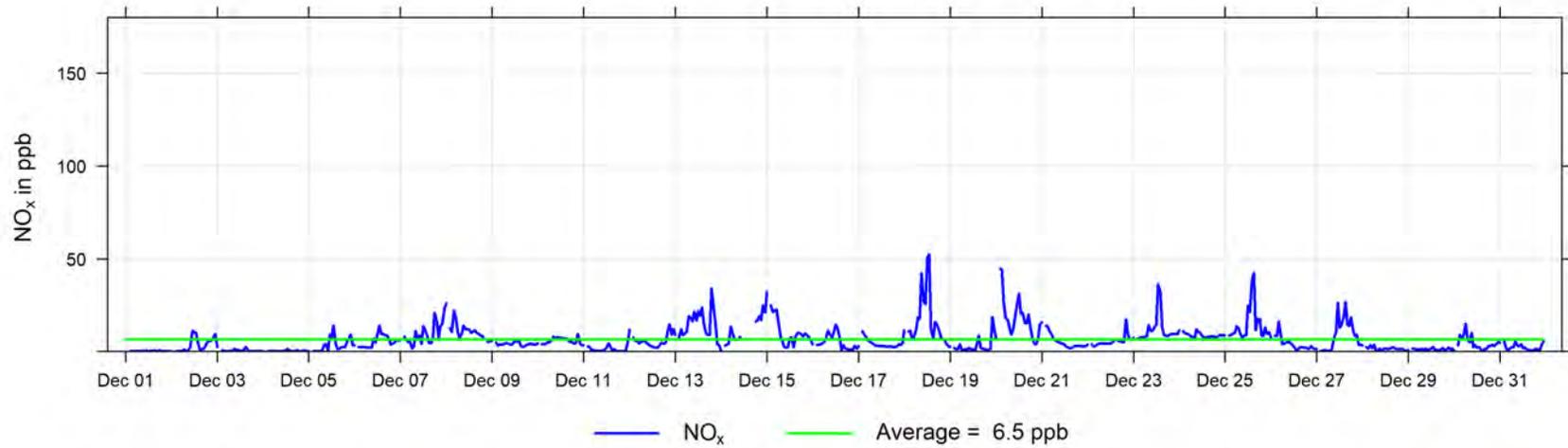
December 2025 Concentration Readings at Milner Station



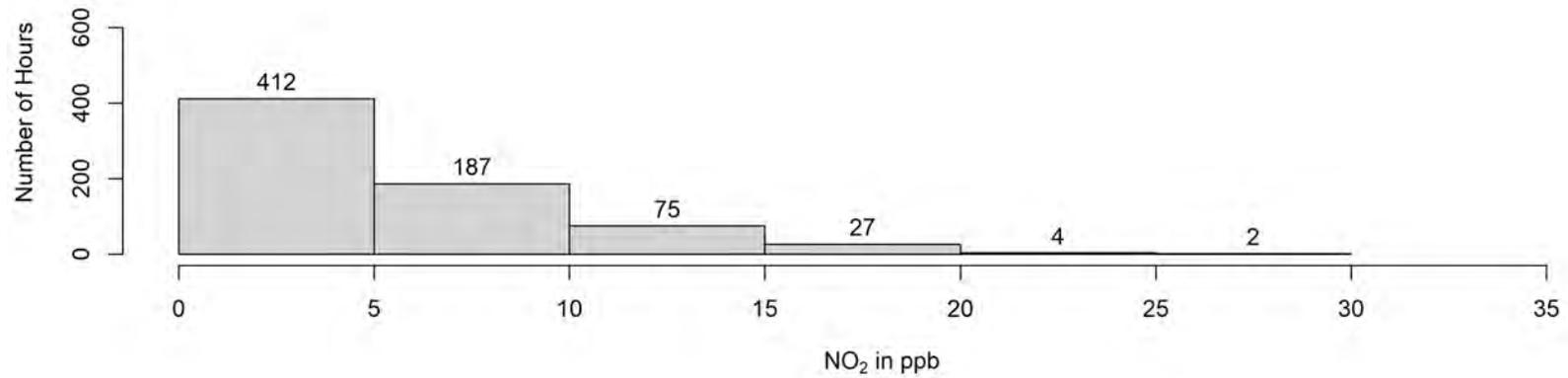
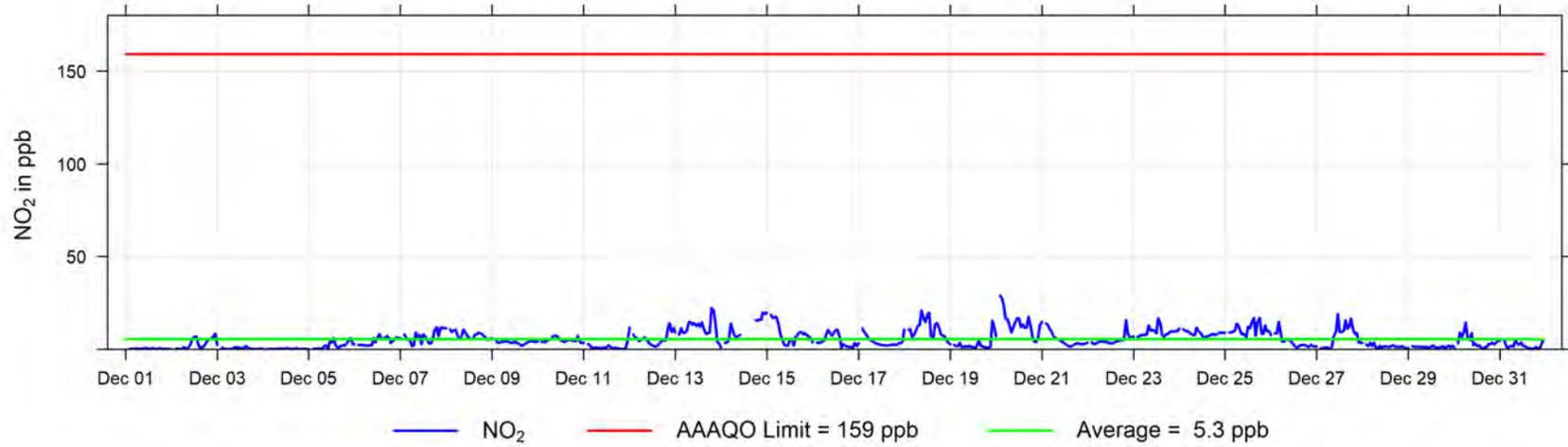
December 2025 Hourly Concentration Readings of NO (in ppb) at Milner



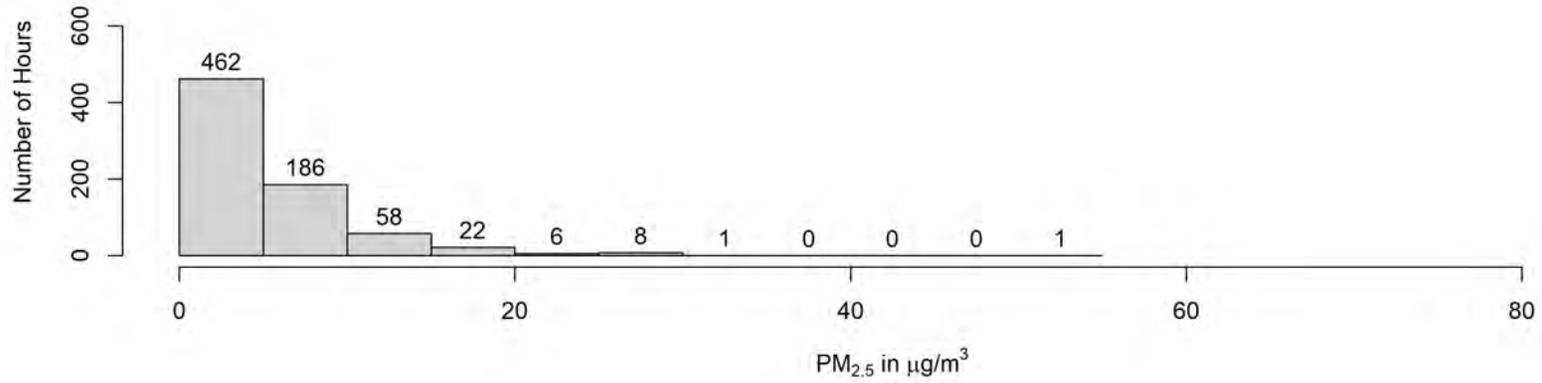
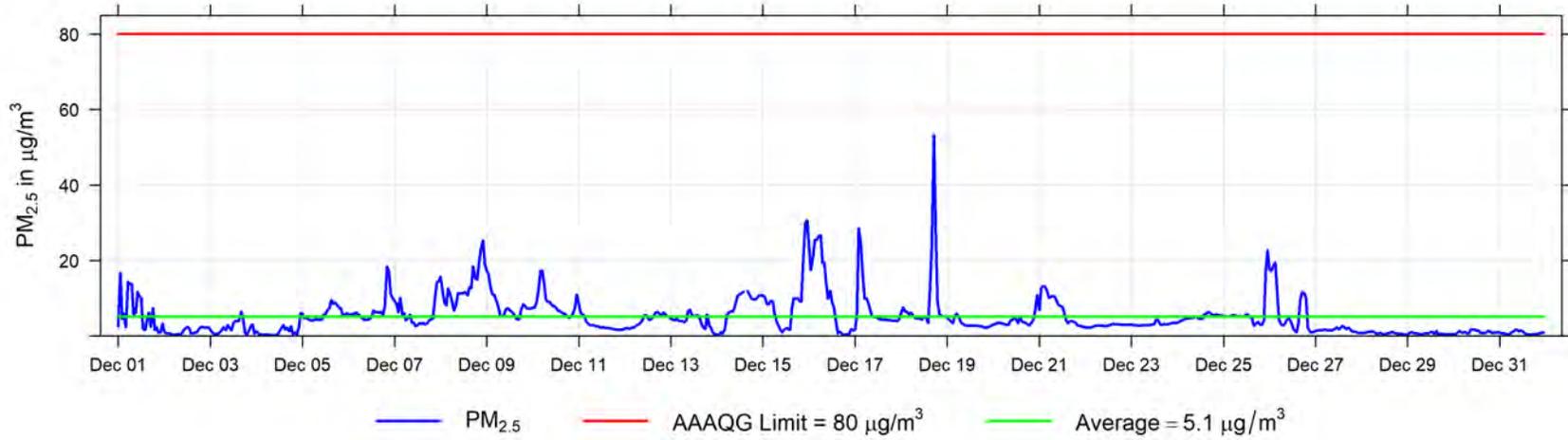
December 2025 Hourly Concentration Readings of NO_x (in ppb) at Milner



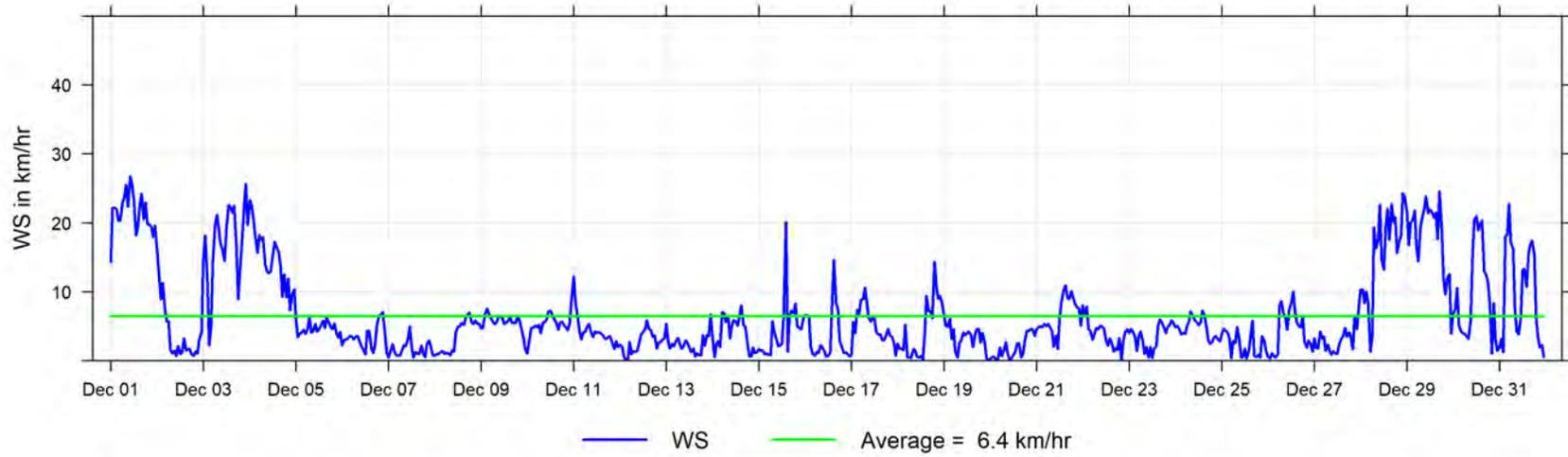
December 2025 Hourly Concentration Readings of NO₂ (in ppb) at Milner



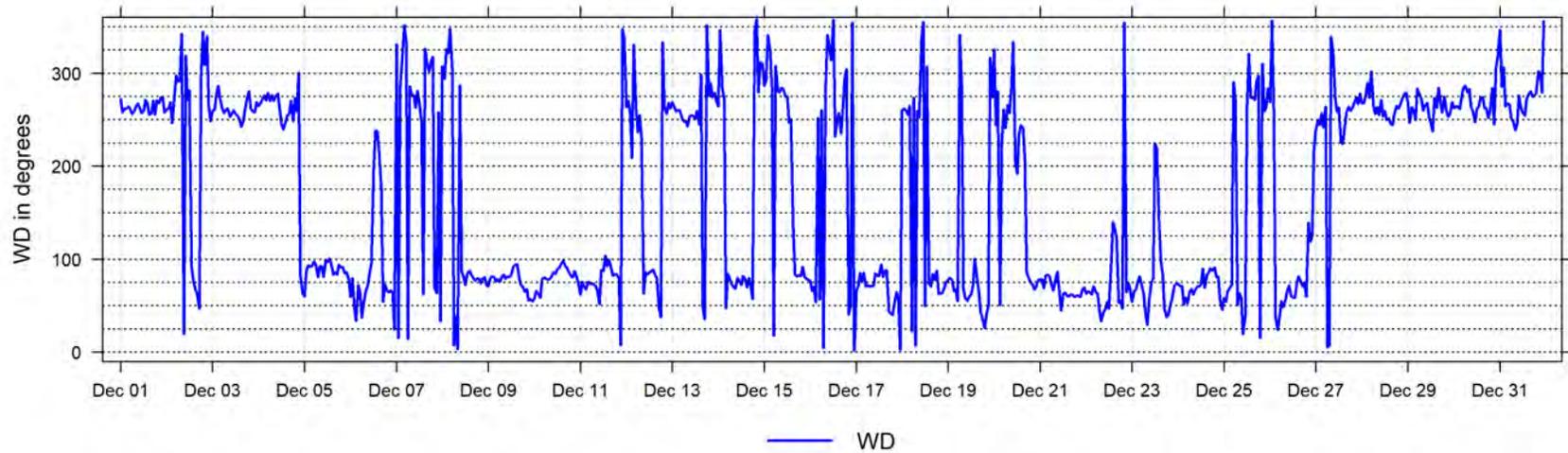
December 2025 Hourly Concentration Readings of PM_{2.5} in µg/m³ at Milner



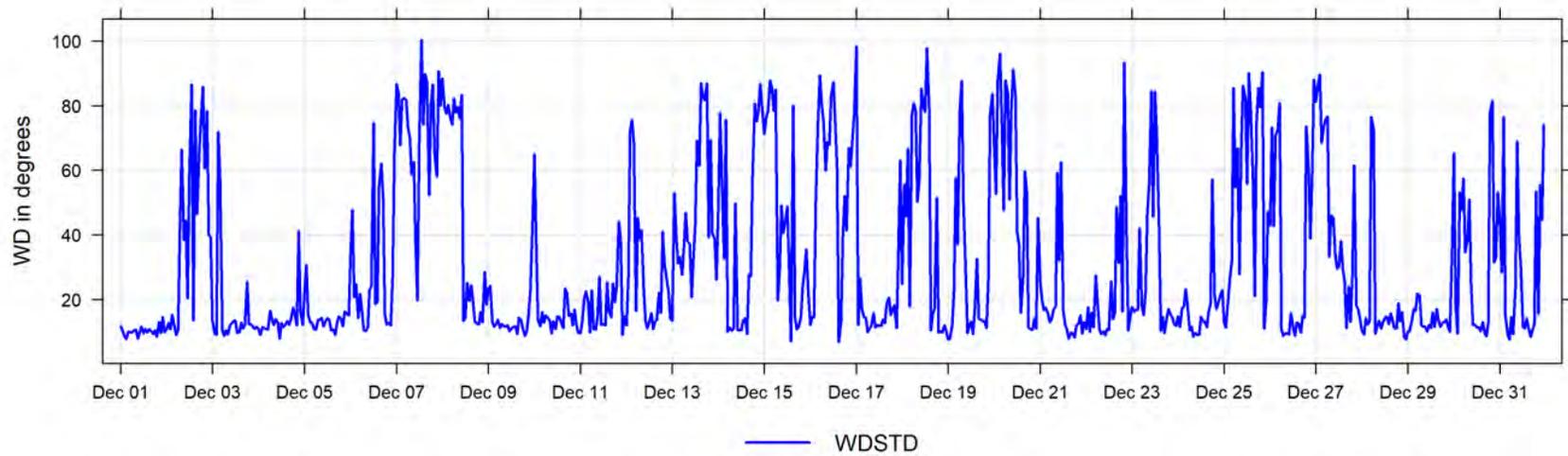
December 2025 Hourly Readings of Wind Speed (in km/hr) at Milner

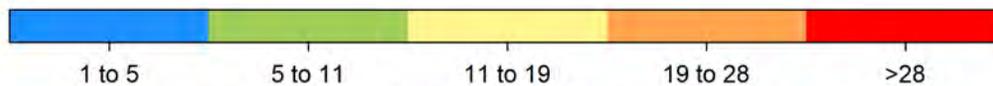
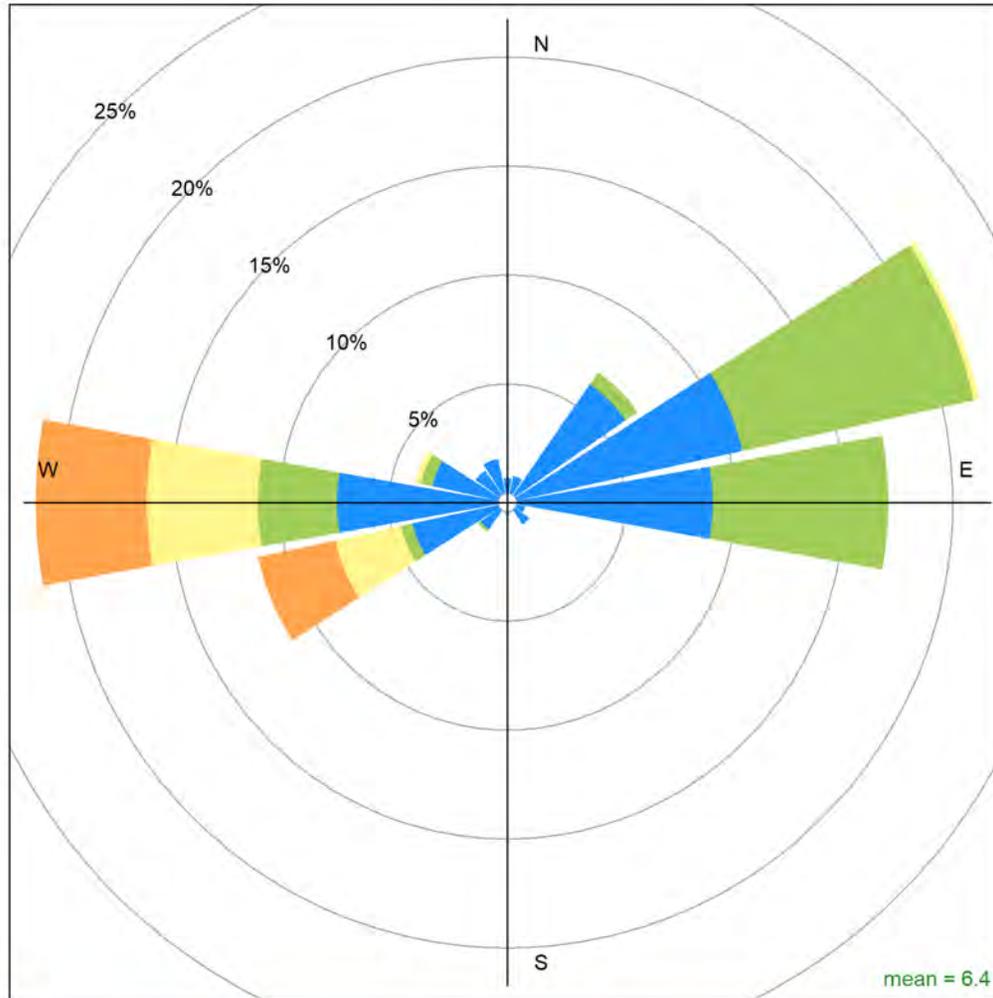


December 2025 Hourly Readings of Wind Direction (in degrees) at Milner



December 2025 Hourly Readings of Wind Direction Standard Deviation (in degrees) at Milner





Milner December 2025 Wind Rose, wind speed in km/hr

Calms (<1km/hr) = 11 %

10 Passive Monitoring Data

Peace Airshed Zone Association - PAZA Passive Stations for December 2025

Station Number	Station Name	SO2 ppb	O3 ppb	NO2 ppb	H2S ppb	LSD
Duplicates						
1a	Silver Valley			1.1		08-27-081-11 W6M
1b	Silver Valley			1.6		
12a	Hythe			2.4		14-36-072-11 W6M
12b	Hythe			3.0		
14a	Sylvester	0.9				08-06-069-12 W6M
14b	Sylvester	1.2				
19a	Wanham			1.5		16-22-077-03 W6M
19b	Wanham			1.1		
37a	Crooked Creek		33.0			16-01-071-26 W5M
37b	Crooked Creek		42.9			
40a	McLennan	0.3				03-29-077-19 W5M
40b	McLennan	0.3				
45a	Gift Lake	0.2				10-07-079-12 W5M
45b	Gift Lake	0.1				
47a	Kinuso	0.2				12-10-073-10 W5M
47b	Kinuso	0.3				
48a	Deer Mountain			1.1		15-22-068-09 W5M
48b	Deer Mountain			1.5		
D3a	Duvernay 3	1.2			0.32	04-33-062-20 W5M
D3b	Duvernay 3	1.2			0.36	
G4a	Girouxville 4				0.27	04-08-077-22 W5M
G4b	Girouxville 4				0.29	
K2a	Kakwa 2			4.0		08-13-063-05 W6M
K2b	Kakwa 2			4.5		
K3a	Kakwa 3	7.1				12-18-063-04 W6M
K3b	Kakwa 3	6.5				
K1a	Kakwa 1				0.09	01-13-063-05 W6M
K1b	Kakwa 1				0.12	
M10a	Milner Powerline			4.0		06-14-058-08 W6M
M10b	Milner Powerline			5.9		
M9Ba	Milner Ambient Trailer	0.6				09-15-058-08 W6M
M9Bb	Milner Ambient Trailer	0.4				
J3Da	Jayar3 Bone Yard			3.2		14-08-062-03 W6M
J3Db	Jayar3 Bone Yard			3.1		
J5Da	Jayar5 Camp	0.8				11-08-062-03 W6M
J5Db	Jayar5 Camp	0.9				
J4Da	Jayar4 7-8 or 8-8 Pad				0.19	10-08-062-03 W6M
J4Db	Jayar4 7-8 or 8-8 Pad				0.20	

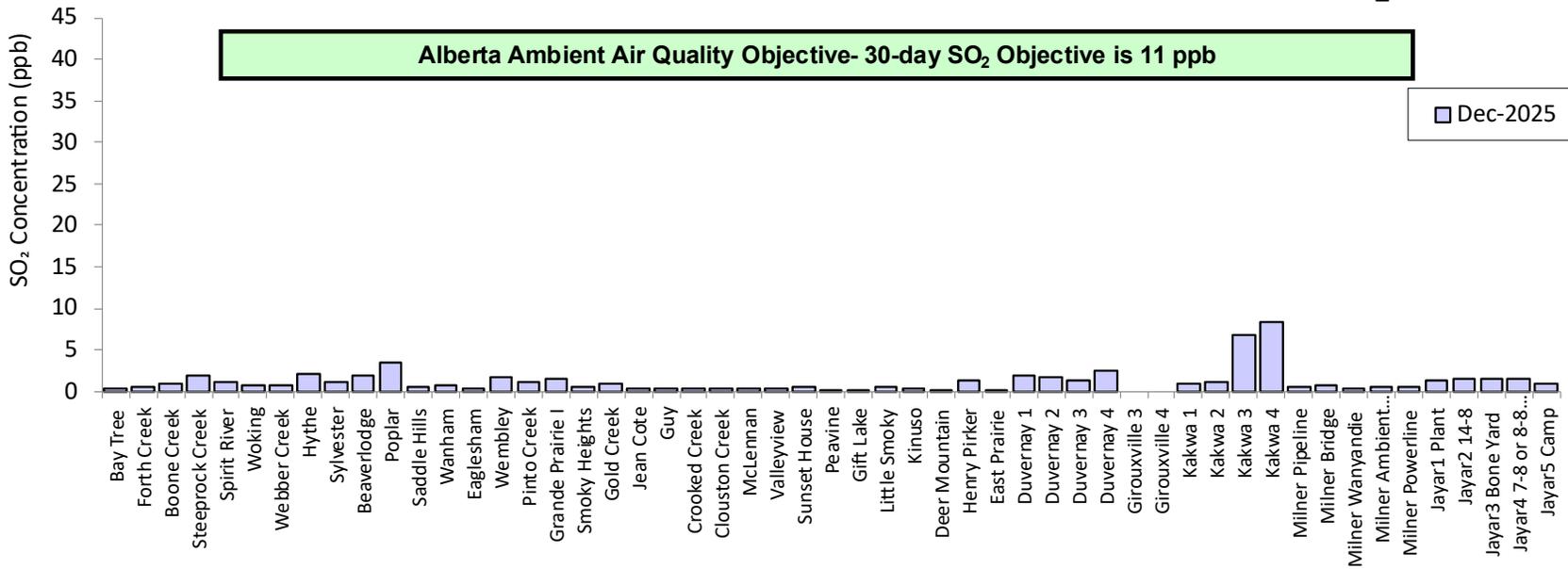
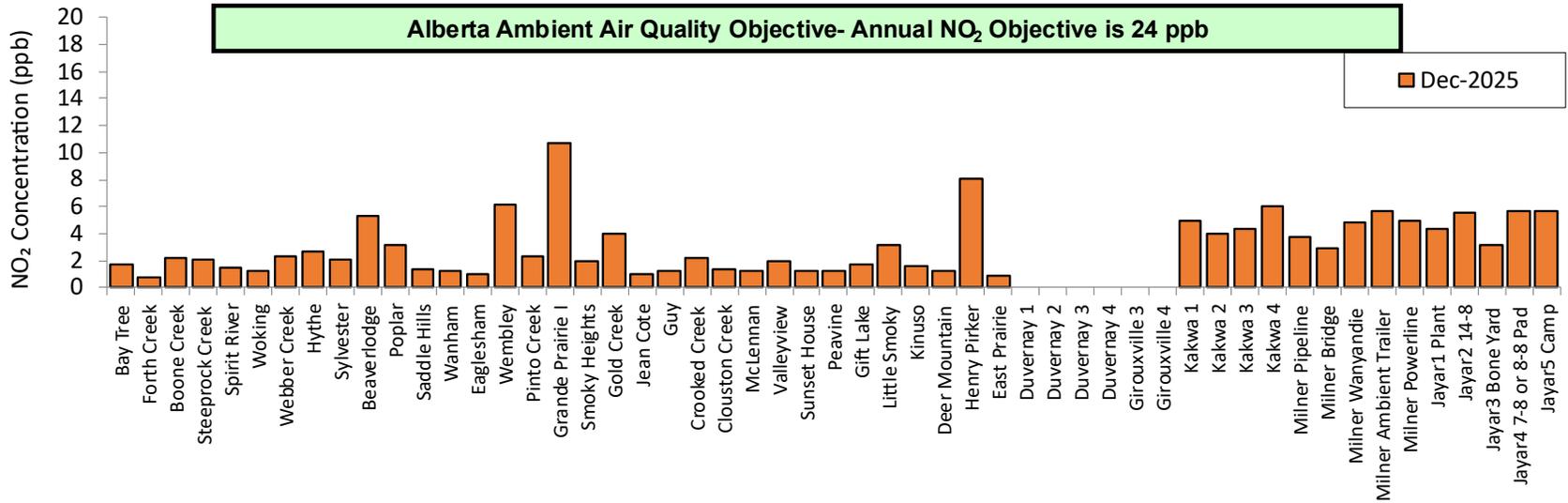
Station Number	Station Name	SO2 ppb	O3 ppb	NO2 ppb	H2S ppb	LSD
1	Silver Valley	0.4	-	1.4	-	08-27-081-11 W6M
2	Bay Tree	0.4	36.9	1.8	-	13-16-078-13 W6M
3	Forth Creek	0.4	-	0.7	-	04-13-082-07 W6M
5	Boone Creek	0.9	-	2.2	-	01-23-076-11 W6M
7	Steeprock Creek	1.8	-	2.0	-	09-35-072-13 W6M
9	Spirit River	1.1	-	1.5	-	08-12-079-07 W6M
10	Woking	0.7	-	1.3	-	01-13-076-07 W6M
11	Webber Creek	0.7	-	2.3	-	09-36-074-09 W6M
12	Hythe	2.2	-	2.7	-	14-36-072-11 W6M
14	Sylvester	1.1	-	2.1	-	08-06-069-12 W6M
16	Beaverlodge	1.9	-	5.3	-	15-36-071-10 W6M
17	Poplar	3.4	-	3.2	-	13-06-073-08 W6M
18	Saddle Hills	0.5	-	1.3	-	04-25-074-07 W6M
19	Wanham	0.6	-	1.3	-	16-22-077-03 W6M
21	Eaglesham	0.2	-	1.0	-	16-21-079-25 W5M
24	Wembley	1.6	-	6.2	-	12-31-070-08 W6M
25	Pinto Creek	1.1	-	2.3	-	04-24-069-11 W6M
27	Grande Prairie I	1.5	-	10.7	-	08-15-071-06 W6M
29	Smoky Heights	0.5	-	1.9	-	04-06-075-02 W6M
32	Gold Creek	0.9	-	3.9	-	06-33-067-05 W6M
35	Jean Cote	0.3	-	1.0	-	12-35-079-21 W5M
36	Guy	0.3	-	1.2	0.2	03-04-076-22 W5M
37	Crooked Creek	0.4	37.9	2.2	-	16-01-071-26 W5M
39	Clouston Creek	0.2	-	1.3	-	12-01-073-22 W5M
40	McLennan	0.3	-	1.3	-	03-29-077-19 W5M
41	Valleyview	0.4	-	2.0	-	09-30-069-22 W5M
42	Sunset House	0.5	-	1.2	-	05-32-070-19 W5M
44	Peavine	0.2	-	1.2	-	03-05-079-15 W5M
45	Gift Lake	0.1	-	1.8	-	10-07-079-12 W5M
46	Little Smoky	0.4	-	3.1	-	12-01-065-21 W5M
47	Kinuso	0.2	31.6	1.6	-	12-10-073-10 W5M
48	Deer Mountain	0.2	-	1.3	-	15-22-068-09 W5M
49	Henry Pirker	1.2	-	8.0	-	17-26-071-06 W6M
50	East Prairie	0.2	-	0.9	-	11-13-079-08 W6M
D1	Duvernay 1	1.9	-	-	0.20	04-33-062-20 W5M
D2	Duvernay 2	1.7	-	-	0.22	04-33-062-20 W5M
D3	Duvernay 3	1.2	-	-	0.34	04-33-062-20 W5M
D4	Duvernay 4	2.5	-	-	0.30	04-33-062-20 W5M
G3	Girouxville 3	-	-	-	Not Collected	14-02-077-23 W5M
G4	Girouxville 4	-	-	-	0.28	04-08-077-22 W5M
K1	Kakwa 1	1.0	-	4.9	0.11	01-13-063-05 W6M
K2	Kakwa 2	1.2	-	4.0	0.14	08-13-063-05 W6M
K3	Kakwa 3	6.8	-	4.4	0.18	12-18-063-04 W6M
K4	Kakwa 4	8.3	-	6.0	0.24	06-18-063-04 W6M
M1	Milner Pipeline	0.5	-	3.7	-	12-14-058-08 W6M
M2	Milner Bridge	0.7	-	2.9	-	08-06-057-08 W6M
M3	Milner Wanyandie	0.3	-	4.8	-	11-13-058-08 W6M
M4	Milner Ambient Trailer	0.5	-	5.7	-	09-15-058-08 W6M
M5	Milner Powerline	0.6	-	5.0	-	06-14-058-08 W6M
J1	Jayar1 Plant	1.3	-	4.3	0.23	06-08-062-03 W6M
J2	Jayar2 14-8	1.5	-	5.5	0.28	07-08-062-03 W6M
J3	Jayar3 Bone Yard	1.5	-	3.2	0.17	14-08-062-03 W6M
J4	Jayar4 7-8 or 8-8 Pad	1.5	-	5.7	0.20	10-08-062-03 W6M
J5	Jayar5 Camp	0.9	-	5.7	0.37	11-08-062-03 W6M

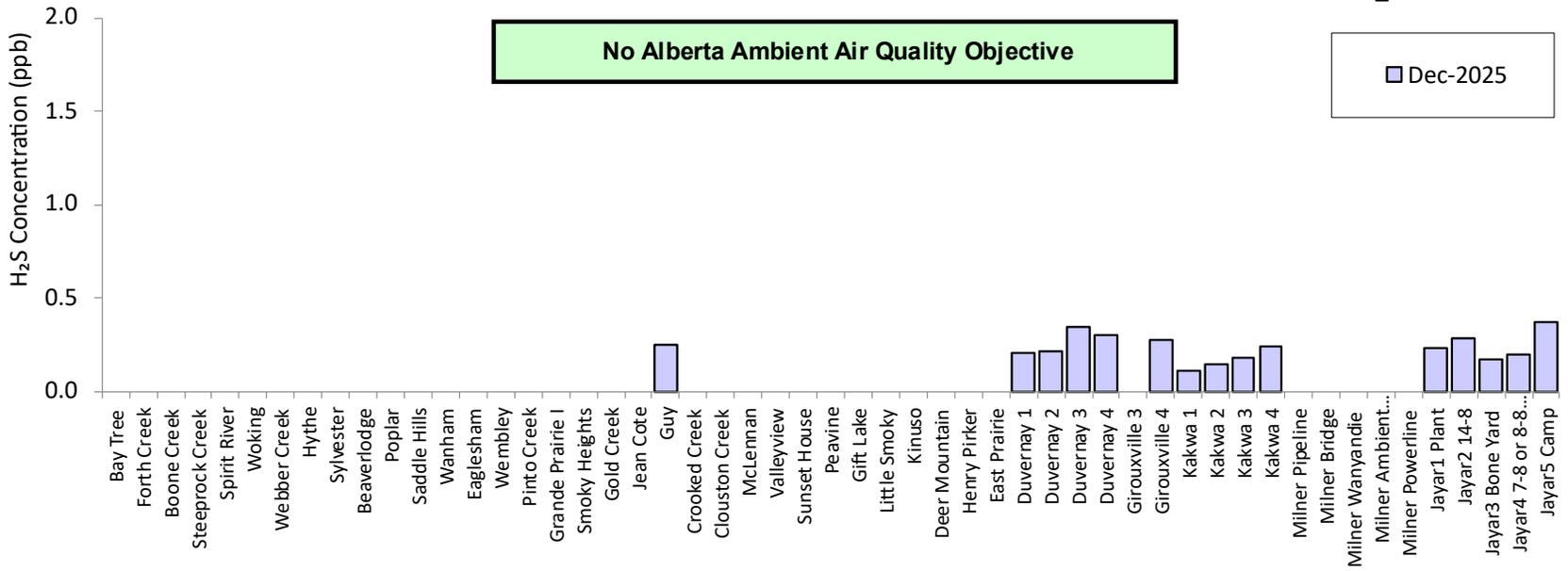
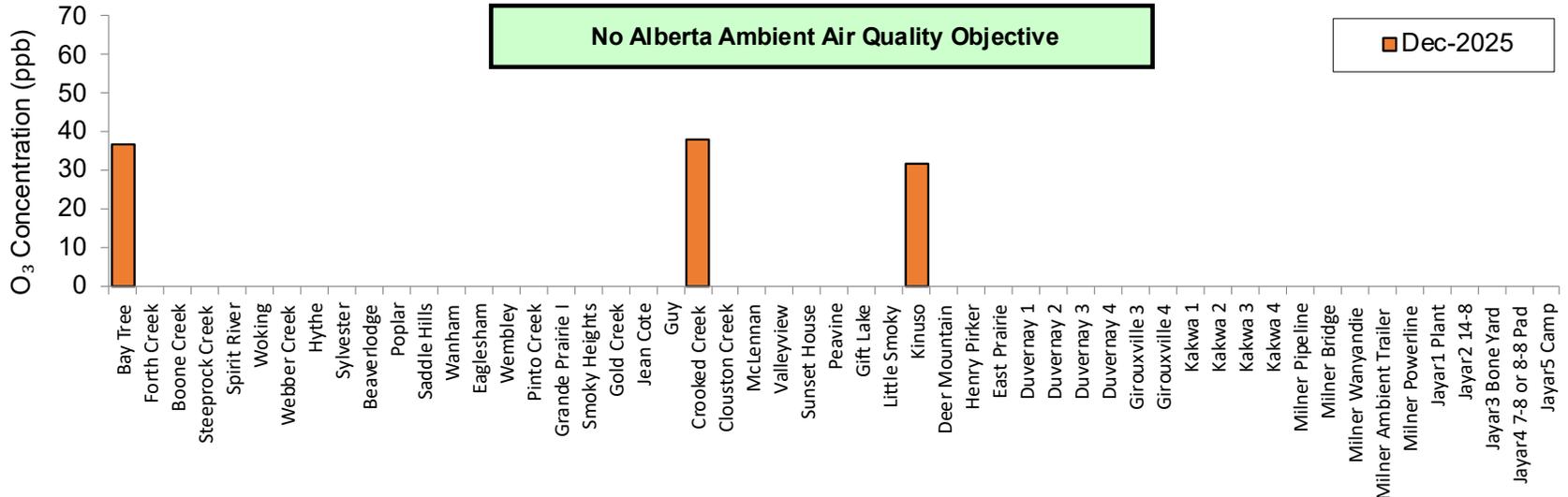
Passive Summary for December 2025

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

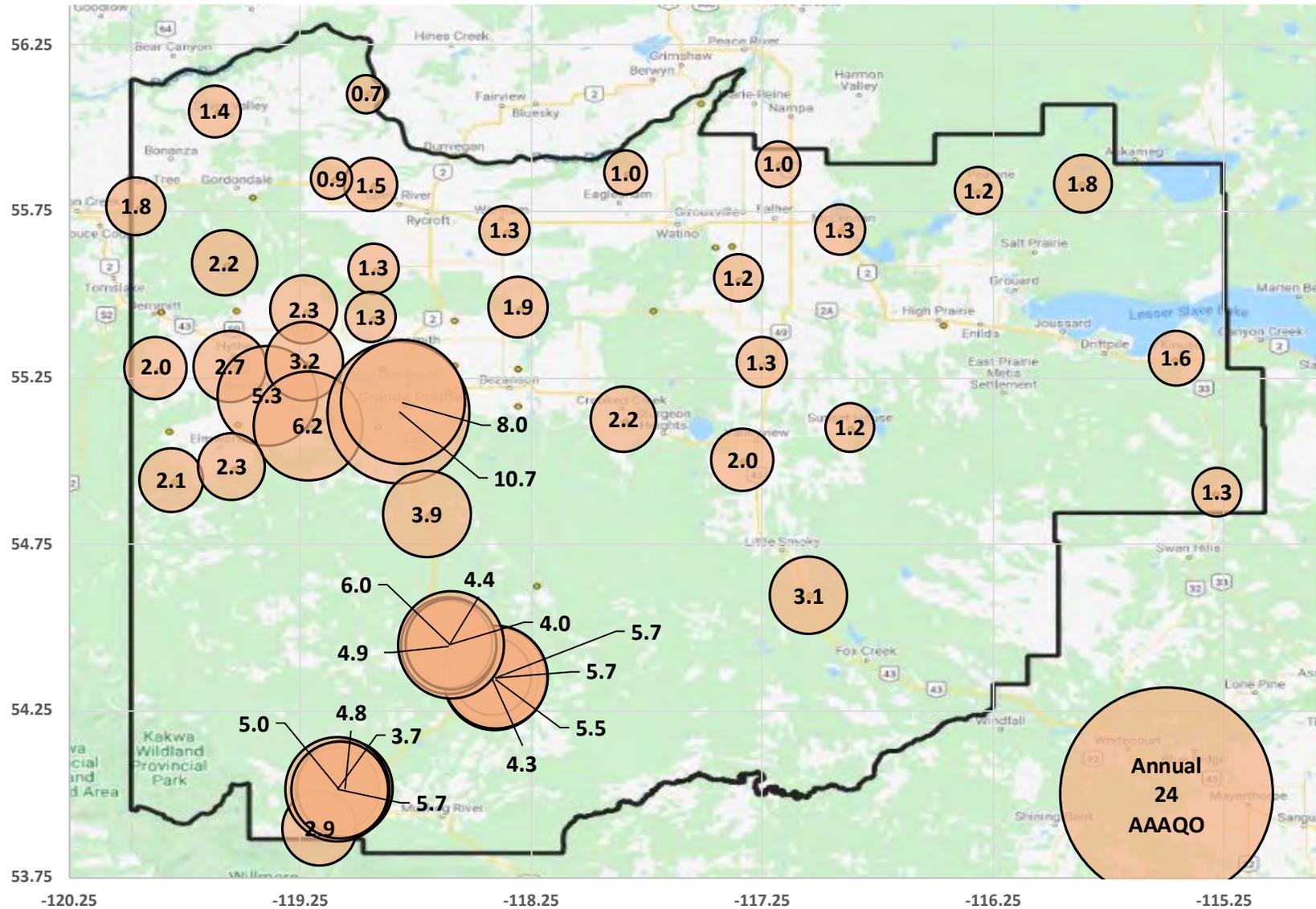
Passive Summary for December 2025 (PAZA)				
Mean	1.2	35.5	3.1	0.2
Standard Deviation	1.5	3.4	2.1	0.1
Minimum	0.1	31.6	0.7	0.1
	Gift Lake (#45)	Kinuso (#47)	Forth Creek (#3)	Kakwa 1 (#K1)
Maximum	8.3	37.9	10.7	0.4
	Kakwa 4 (#K4)	Crooked Creek (#37)	Grande Prairie I (#27)	Jayar5 Camp (#J5)

Continuous and Passive Monitoring Comparison				
PAZA Beaverlodge Station	1.7	24.0	6.3	-
Beaverlodge Passive (#16)	1.9	-	5.3	-
PAZA Henry Pirker Station	-	-	-	-
Henry Pirker passive (#49)	1.2	-	8.0	-
Milner Station	-	-	5.3	-
Milner passive	0.5	-	5.7	-

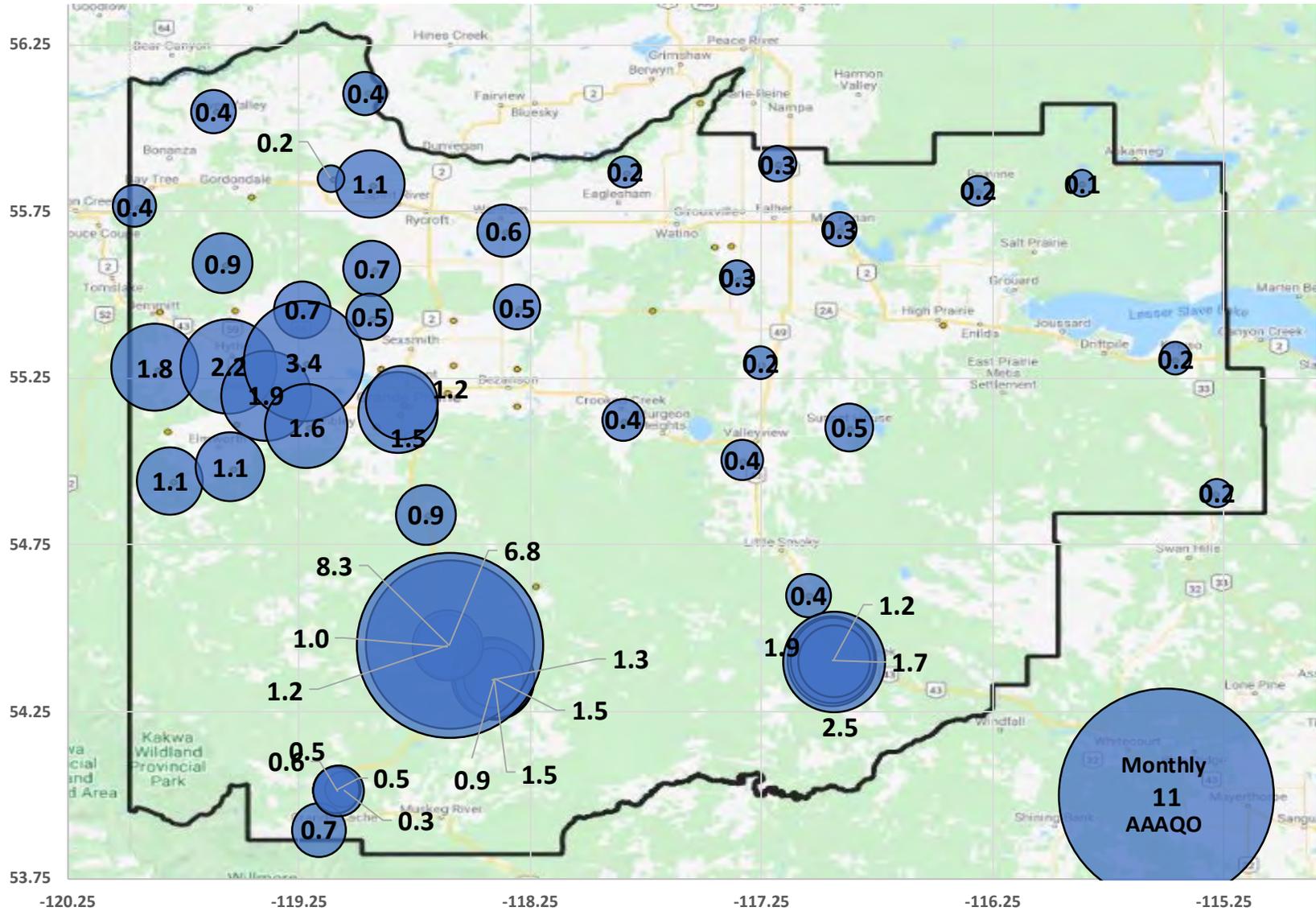




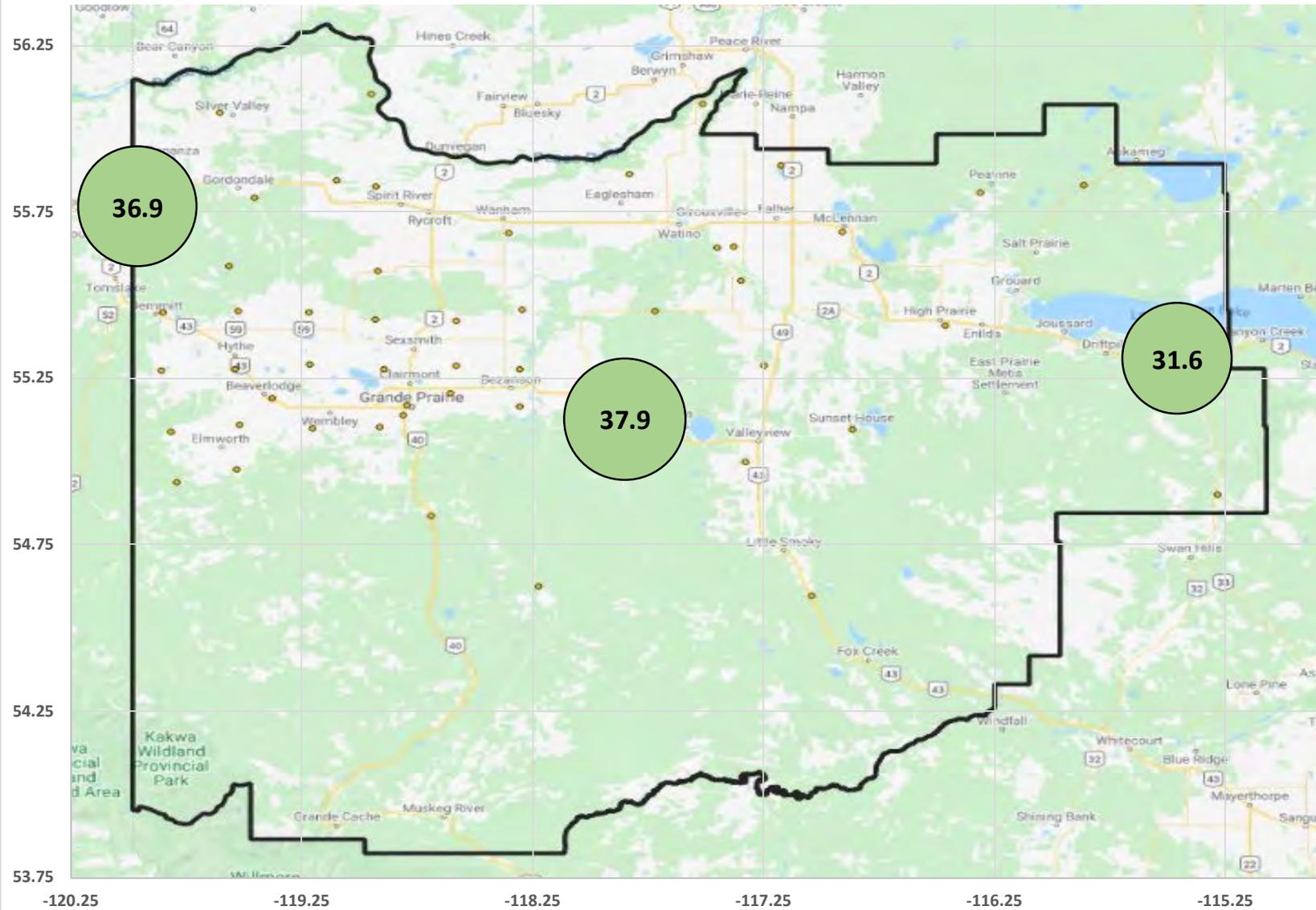
NO₂ Monthly Average (units in ppb)



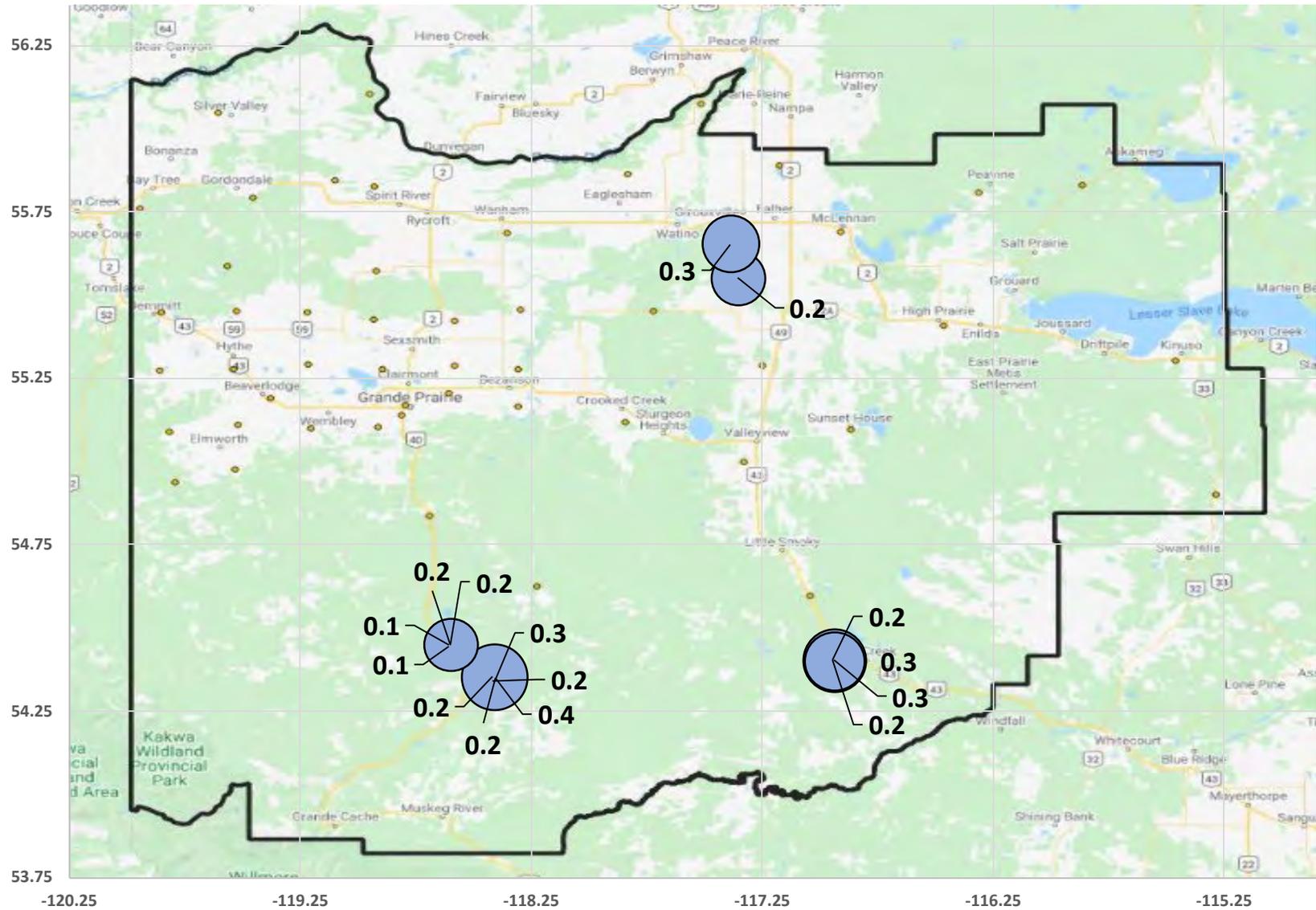
SO₂ Monthly Average (units in ppb)



O₃ Monthly Average (units in ppb)



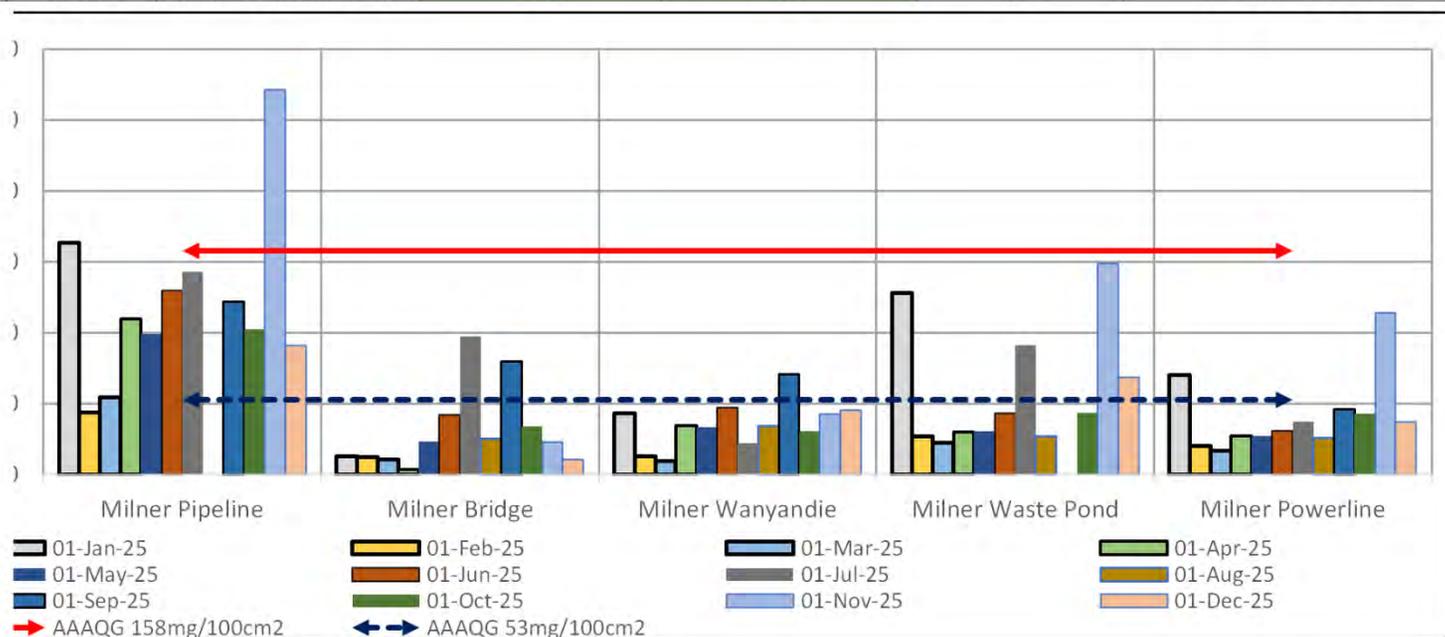
H₂S Monthly Average (units in ppb)



11 Dustfall Monitoring Data

Milner Dustfall Samples December 2025

Exposure Month	Year	Sample	Total Dustfall (30 day) mg/100cm ² /30day	Fixed Dustfall (30 day) mg/100cm ² /30day	Exposure days	Field Notes
December	2025	Milner Pipeline	91.0	24.6	33	
December	2025	Milner Bridge	10.3	3.9	33	
December	2025	Milner Wanyandie	45.2	0.0	33	
December	2025	Milner Waste Pond	68.6	8.1	33	
December	2025	Milner Powerline	36.8	6.4	33	
December	2025	Milner Powerline Dup	39.9	3.7	33	RPD, 8% / 53%



End of Report



Peace Airshed Zone Association

Ambient Air Monitoring Report

December 2025