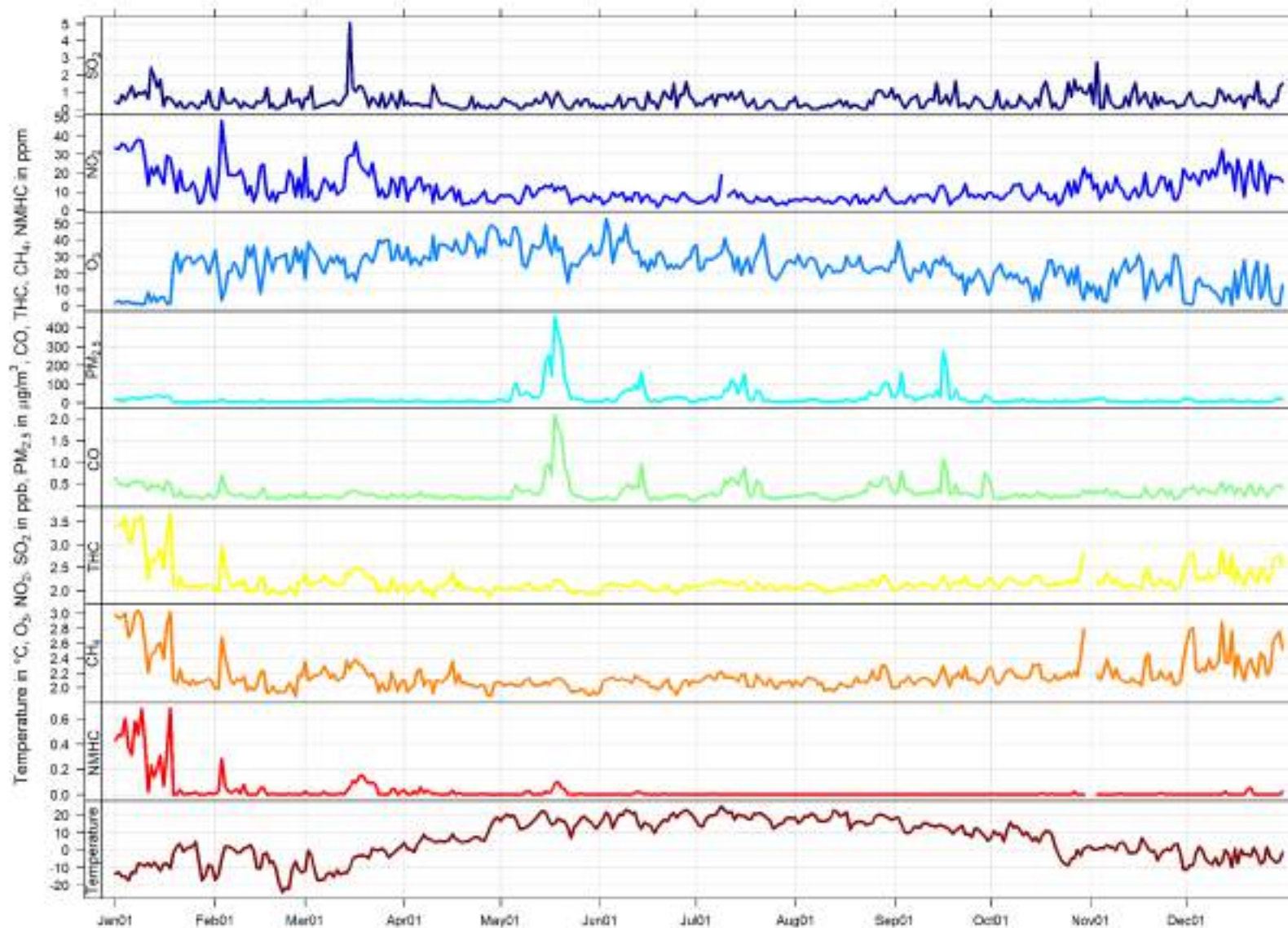


7 Henry Pirker Key Parameters - Continuous Monitoring Data - 2023 Summary

Henry Pirker Key Parameters - Continuous Monitoring Data - 2023 Summary

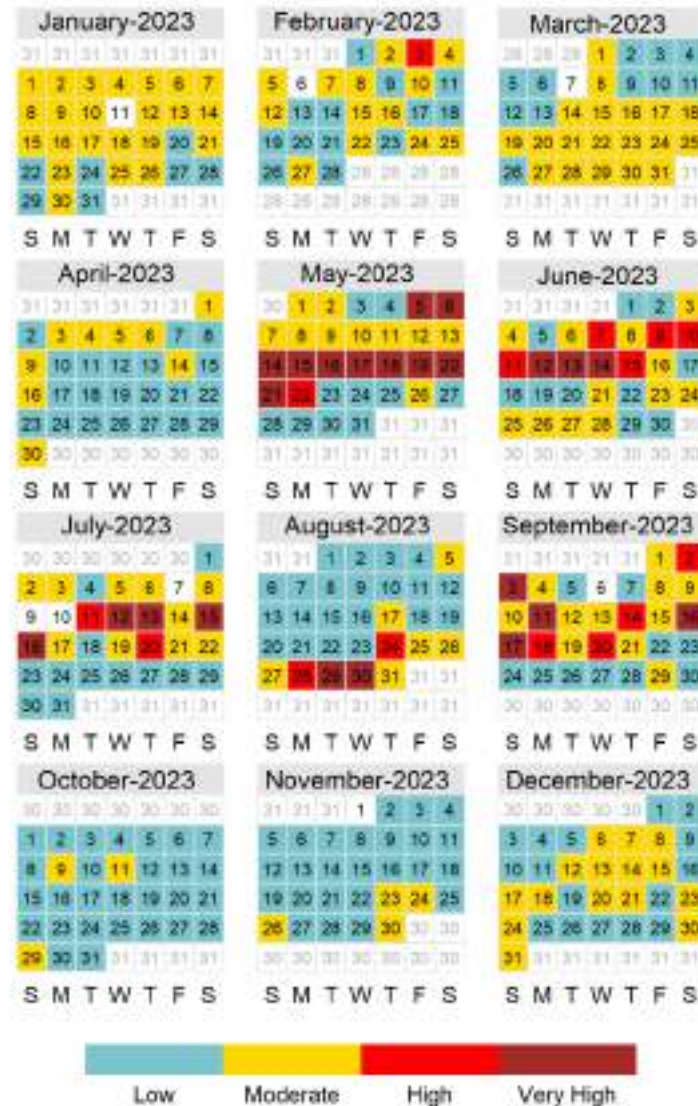
Henry Pirker Station	Parameter	Average	Maximum Values				Operational Time (%)	Valid Time (%)	Readings above AAAQO & AAAQG				
			24-hr	Date	1-hr	Date			1-hr	8-hr	24-hr	30-d	Annual
			Sulphur Dioxide SO ₂ measured in ppb	0.5	5.2	Mar 15			25.2	Nov 03 11:00	99.1%	94.3%	0
Hydrogen Sulphide H ₂ S measured in ppb	0.3	2.1	Feb 03	8.2	Feb 03 12:00	99.4%	94.7%	0	-	0	-	-	
Nitrogen Dioxide NO ₂ measured in ppb	11.4	49.0	Feb 03	72.9	Feb 03 11:00	99.4%	94.4%	0	-	-	-	0	
Nitrogen Oxides NO _x measured in ppb	19.4	139.6	Feb 03	304.8	Feb 03 11:00	99.4%	94.4%	-	-	-	-	-	
Nitric Oxide NO measured in ppb	7.9	90.2	Feb 03	231.5	Feb 03 11:00	99.4%	94.4%	-	-	-	-	-	
Ozone O ₃ measured in ppb	23.5	53.7	Jun 03	86.8	May 15 18:00	100.0%	95.3%	4	-	-	-	-	
Carbon Monoxide CO measured in ppm	0.30	2.1	May 18	7.3	May 19 19:00	100.0%	95.3%	0	0	-	-	-	
Total Hydrocarbons THC measured in ppm	2.20	3.6	Jan 09	4.6	Jan 04 07:00	96.4%	91.8%	-	-	-	-	-	
Methane CH ₄ measured in ppm	2.17	3.0	Jan 08	4.0	Apr 16 06:00	96.4%	91.8%	-	-	-	-	-	
Non Methane Hydrocarbons NMHC measured in ppm	0.03	0.7	Jan 09	1.0	Jan 18 02:00	96.4%	91.8%	-	-	-	-	-	
Particulate Matter PM _{2.5} measured in µg/m ³	23.3	465.6	May 18	1139.4	May 19 19:00	100.0%	99.7%	477	-	64	-	-	

2023 Daily Concentration Readings at Henry Pirker



7.1 Henry Pirker AQHI Calendar Plot for 2023

Hourly Maximum AQHI for 2023 at Henry Pirker



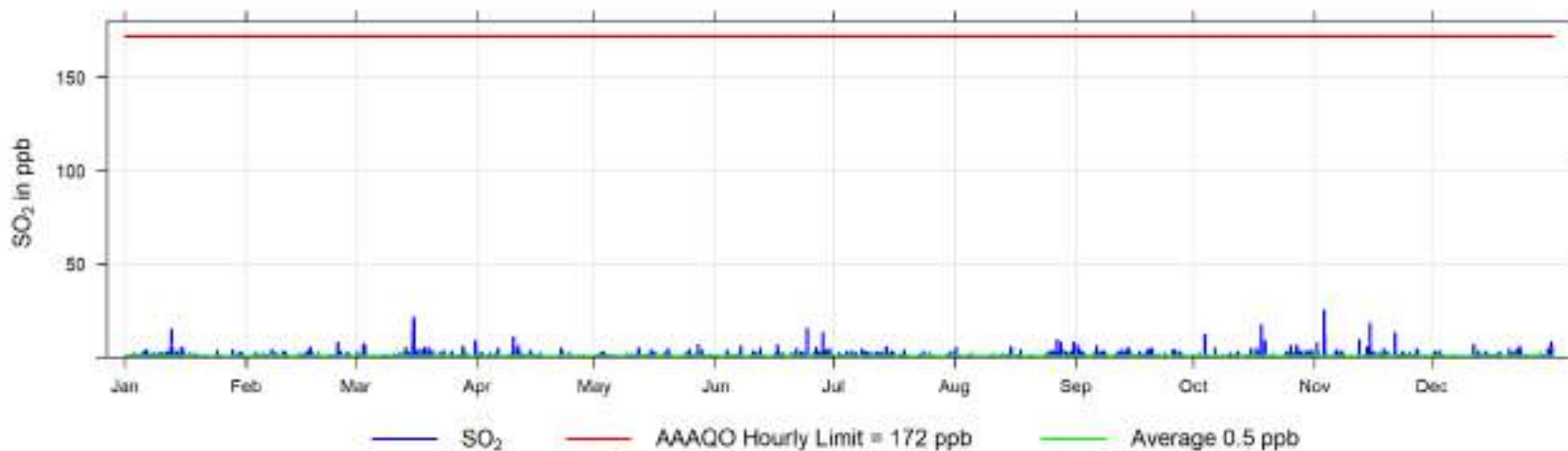
7.2 Sulphur Dioxide (SO₂) - Henry Pirker 2023 Summary

Sulphur Dioxide (SO₂) Frequency Distribution at Henry Pirker

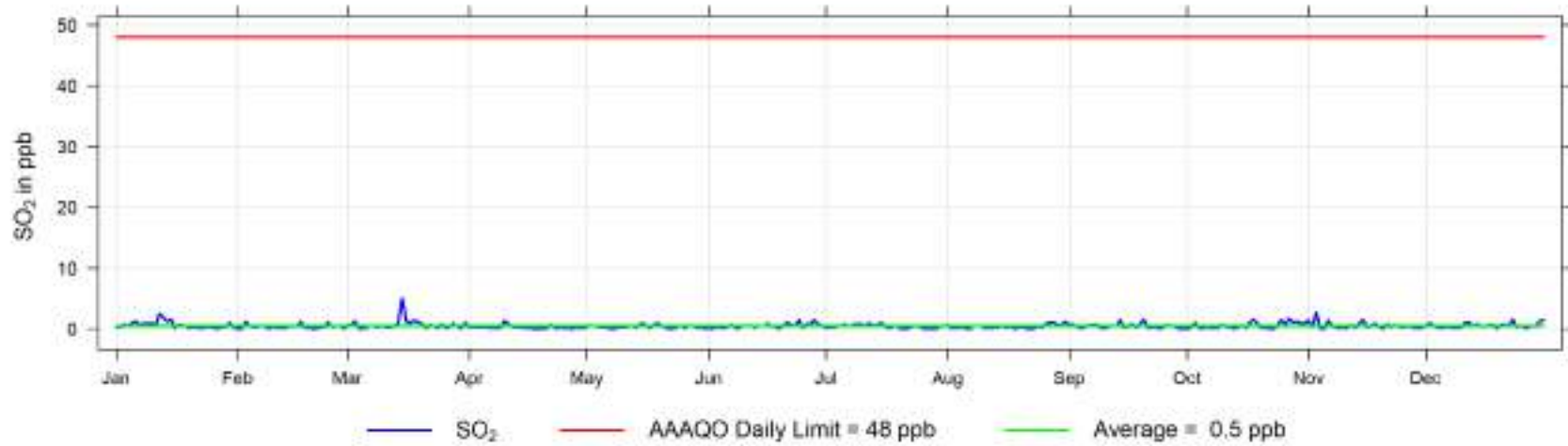
Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	MAXIMUM VALUES				Operational time (%)	Valid time (%)	Reportable Incidents		
		0 to 1 (ppb)	1 to 5 (ppb)	5 to 10 (ppb)	10 to 57 (ppb)	57 to 172 (ppb)	> 172 (ppb)		24-hr (ppb)	Date	1-hr (ppb)	Date			30-d 11 ppb	24-hr 48 ppb	1-hr 172 ppb
January 2023	708	79.1%	20.1%	0.4%	0.4%	0.0%	0.0%	0.7	2.9	Jan 12	15.1	Jan 12 23:00	100.0%	95.2%	0	0	0
February 2023	639	88.6%	11.1%	0.3%	0.0%	0.0%	0.0%	0.4	1.2	Feb 17	7.5	Feb 24 09:00	100.0%	95.1%	0	0	0
March 2023	703	82.4%	15.6%	1.3%	0.7%	0.0%	0.0%	0.7	5.2	Mar 15	21.5	Mar 15 20:00	99.2%	94.5%	0	0	0
April 2023	686	93.3%	6.3%	0.3%	0.1%	0.0%	0.0%	0.3	1.4	Apr 10	10.8	Apr 10 07:00	100.0%	95.3%	0	0	0
May 2023	710	90.7%	9.2%	0.1%	0.0%	0.0%	0.0%	0.4	1.0	May 19	6.5	May 27 11:00	100.0%	95.4%	0	0	0
June 2023	652	85.4%	13.7%	0.6%	0.3%	0.0%	0.0%	0.5	1.5	Jun 28	15.6	Jun 24 09:00	95.8%	90.6%	0	0	0
July 2023	701	86.4%	13.4%	0.1%	0.0%	0.0%	0.0%	0.4	1.0	Jul 15	5.2	Jul 14 12:00	99.2%	94.2%	0	0	0
August 2023	678	91.0%	8.3%	0.7%	0.0%	0.0%	0.0%	0.4	1.2	Aug 31	8.9	Aug 27 04:00	96.2%	91.1%	0	0	0
September 2023	686	85.4%	14.3%	0.3%	0.0%	0.0%	0.0%	0.5	1.6	Sep 20	6.3	Sep 01 10:00	100.0%	95.3%	0	0	0
October 2023	703	82.2%	16.8%	0.7%	0.3%	0.0%	0.0%	0.6	1.8	Oct 27	17.3	Oct 18 11:00	99.3%	94.5%	0	0	0
November 2023	685	88.8%	9.9%	0.7%	0.6%	0.0%	0.0%	0.6	2.7	Nov 03	25.2	Nov 03 11:00	100.0%	95.1%	0	0	0
December 2023	709	85.6%	13.8%	0.6%	0.0%	0.0%	0.0%	0.6	1.5	Dec 23	7.8	Dec 31 12:00	100.0%	95.3%	0	0	0
Annual	8260	86.6%	12.7%	0.5%	0.2%	0.0%	0.0%	0.5	5.2	Mar 15	25.2	Nov 03 11:00	99.1%	94.3%	0	0	0

AAAQO Objectives: Annual: 8ppb, 30-Day: 11ppb, 24-Hr: 48ppb, 1-Hr: 172ppb

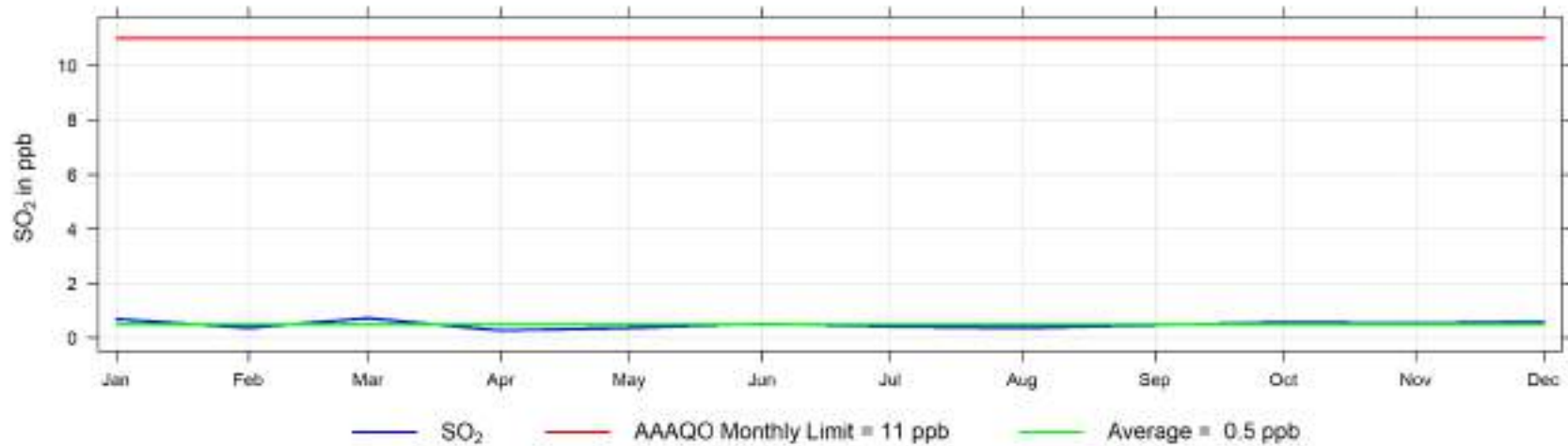
2023 Hourly Concentration Readings of SO₂ (in ppb) at Henry Pirker



2023 Daily Concentration Readings of SO₂ (in ppb) at Henry Pirker

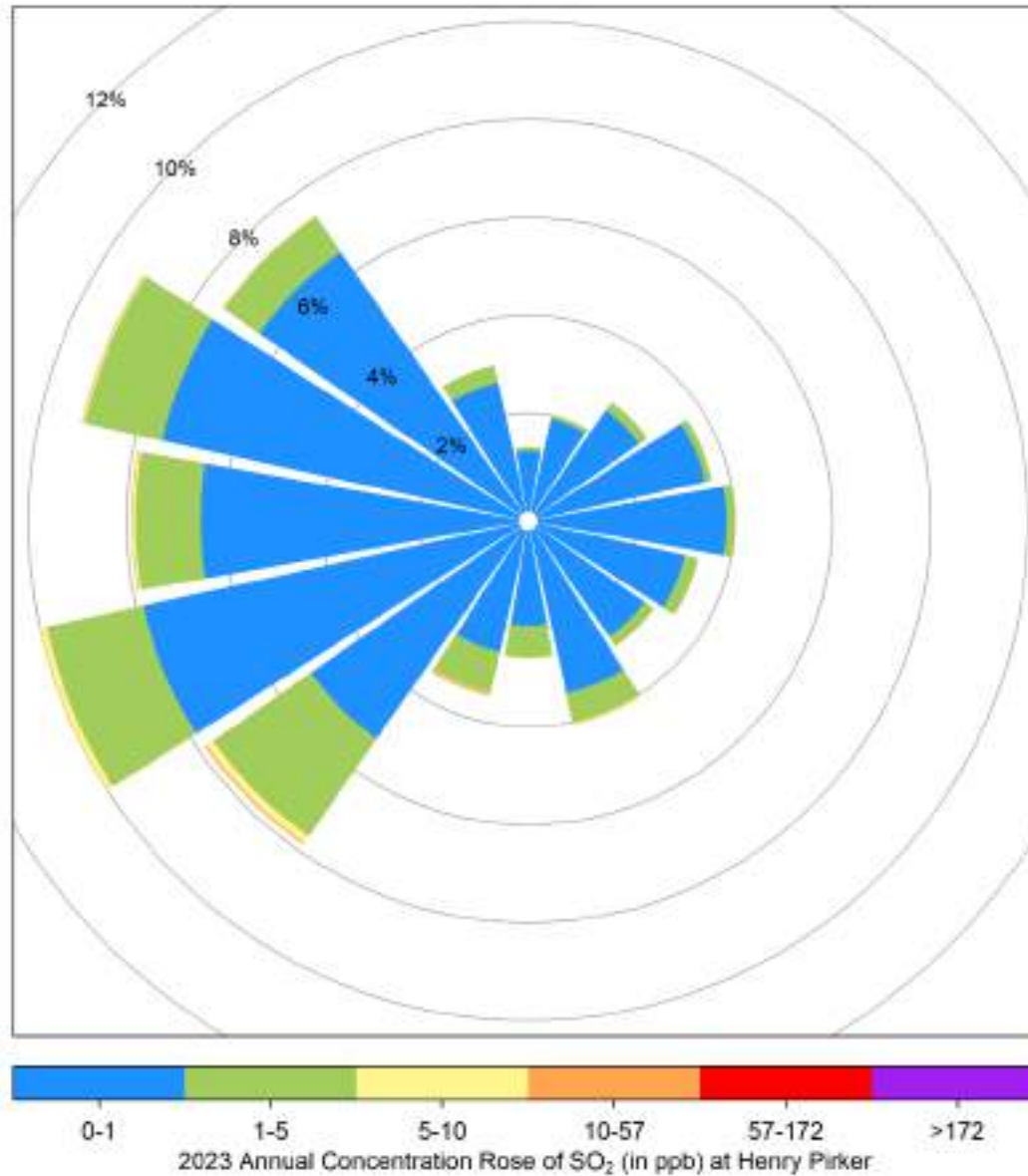


2023 Monthly Concentration Readings of SO₂ (in ppb) at Henry Pirker



Hourly Maximum SO₂ (in ppb) for 2023 at Henry Pirker





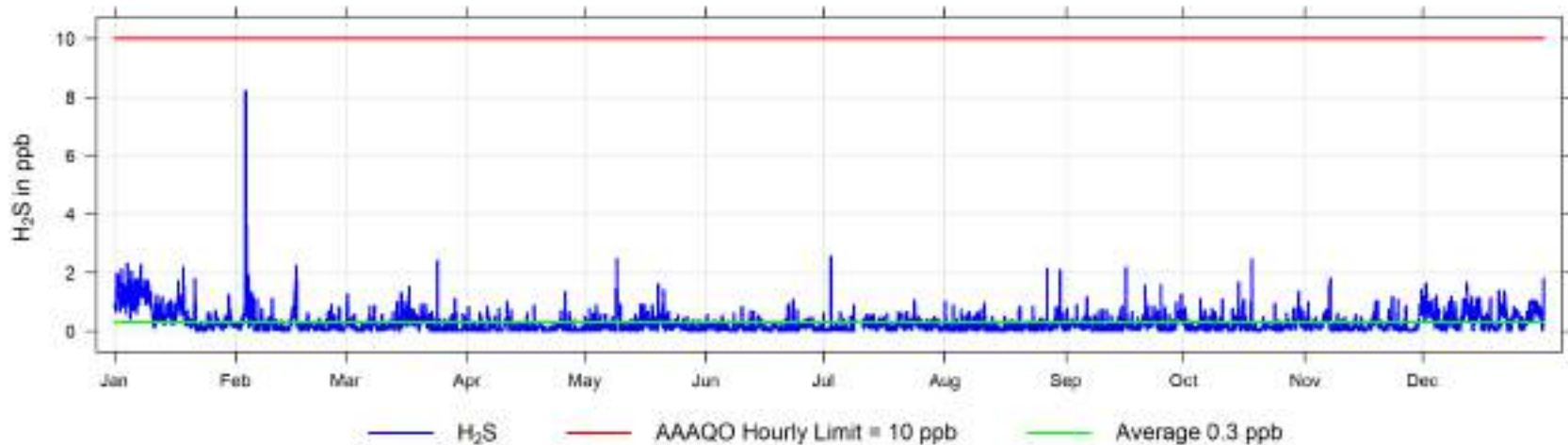
7.3 Hydrogen Sulphide (H₂S) - Henry Pirker 2023 Summary

Hydrogen Sulphide (H₂S) Frequency Distribution at Henry Pirker

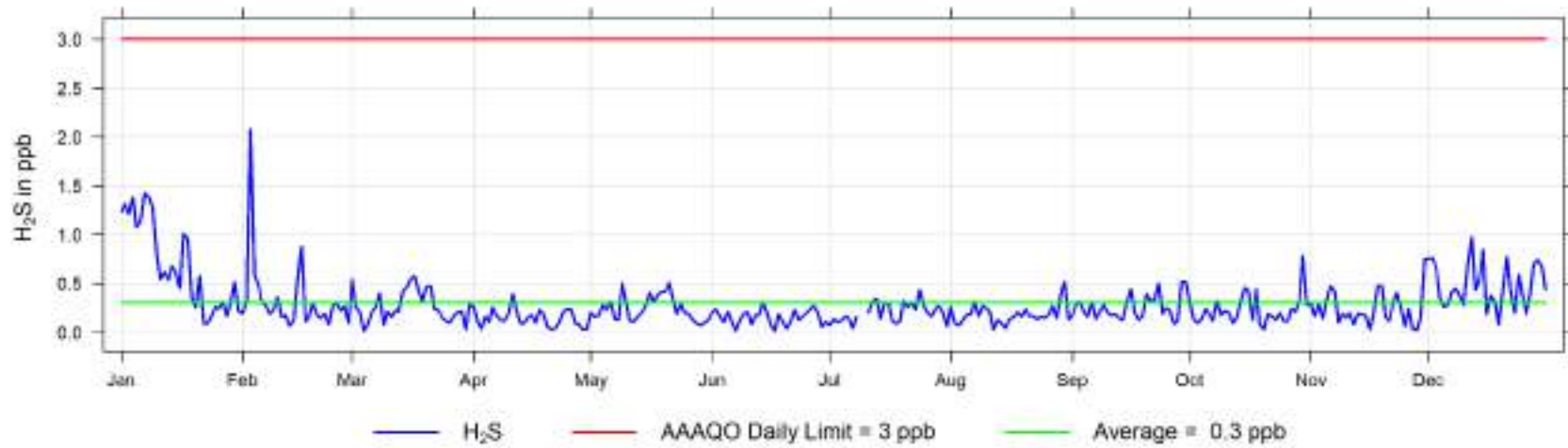
Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	MAXIMUM VALUES				Operational time (%)	Valid time (%)	Reportable Incidents	
		0 to 1 (ppb)	1 to 3 (ppb)	3 to 5 (ppb)	5 to 8 (ppb)	8 to 10 (ppb)	> 10 (ppb)		24-hr (ppb)	Date	1-hr (ppb)	Date			24-hr 3 ppb	1-hr 10 ppb
January 2023	708	73.4%	26.6%	0.0%	0.0%	0.0%	0.0%	0.7	1.4	Jan 07	2.3	Jan 04 10:00	100.0%	95.2%	0	0
February 2023	640	94.5%	4.8%	0.2%	0.3%	0.2%	0.0%	0.3	2.1	Feb 03	8.2	Feb 03 12:00	100.0%	95.2%	0	0
March 2023	708	98.9%	1.1%	0.0%	0.0%	0.0%	0.0%	0.3	0.6	Mar 17	2.4	Mar 24 11:00	99.9%	95.2%	0	0
April 2023	686	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1	0.4	Apr 11	1.3	Apr 26 01:00	100.0%	95.3%	0	0
May 2023	709	98.4%	1.6%	0.0%	0.0%	0.0%	0.0%	0.2	0.5	May 09	2.5	May 09 06:00	100.0%	95.3%	0	0
June 2023	685	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.2	0.3	Jun 14	1.1	Jun 23 07:00	100.0%	95.1%	0	0
July 2023	662	99.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.2	0.4	Jul 24	2.6	Jul 02 23:00	93.6%	89.0%	0	0
August 2023	707	99.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.2	0.5	Aug 30	2.2	Aug 27 04:00	99.9%	95.0%	0	0
September 2023	686	99.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.3	0.5	Sep 29	2.2	Sep 16 10:00	100.0%	95.3%	0	0
October 2023	708	98.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.2	0.8	Oct 30	2.5	Oct 18 09:00	100.0%	95.2%	0	0
November 2023	685	98.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.2	0.8	Nov 30	1.8	Nov 07 10:00	100.0%	95.1%	0	0
December 2023	709	92.9%	6.9%	0.1%	0.0%	0.0%	0.0%	0.5	1.0	Dec 12	3.3	Dec 31 23:59	100.0%	95.3%	0	0
Annual	8293	96.0%	3.9%	0.0%	0.0%	0.0%	0.0%	0.3	2.1	Feb 03	8.2	Feb 03 12:00	99.4%	94.7%	0	0

AAAQO Objectives: 24-Hr: 3ppb, 1-Hr: 10ppb

2023 Hourly Concentration Readings of H₂S (in ppb) at Henry Pirker

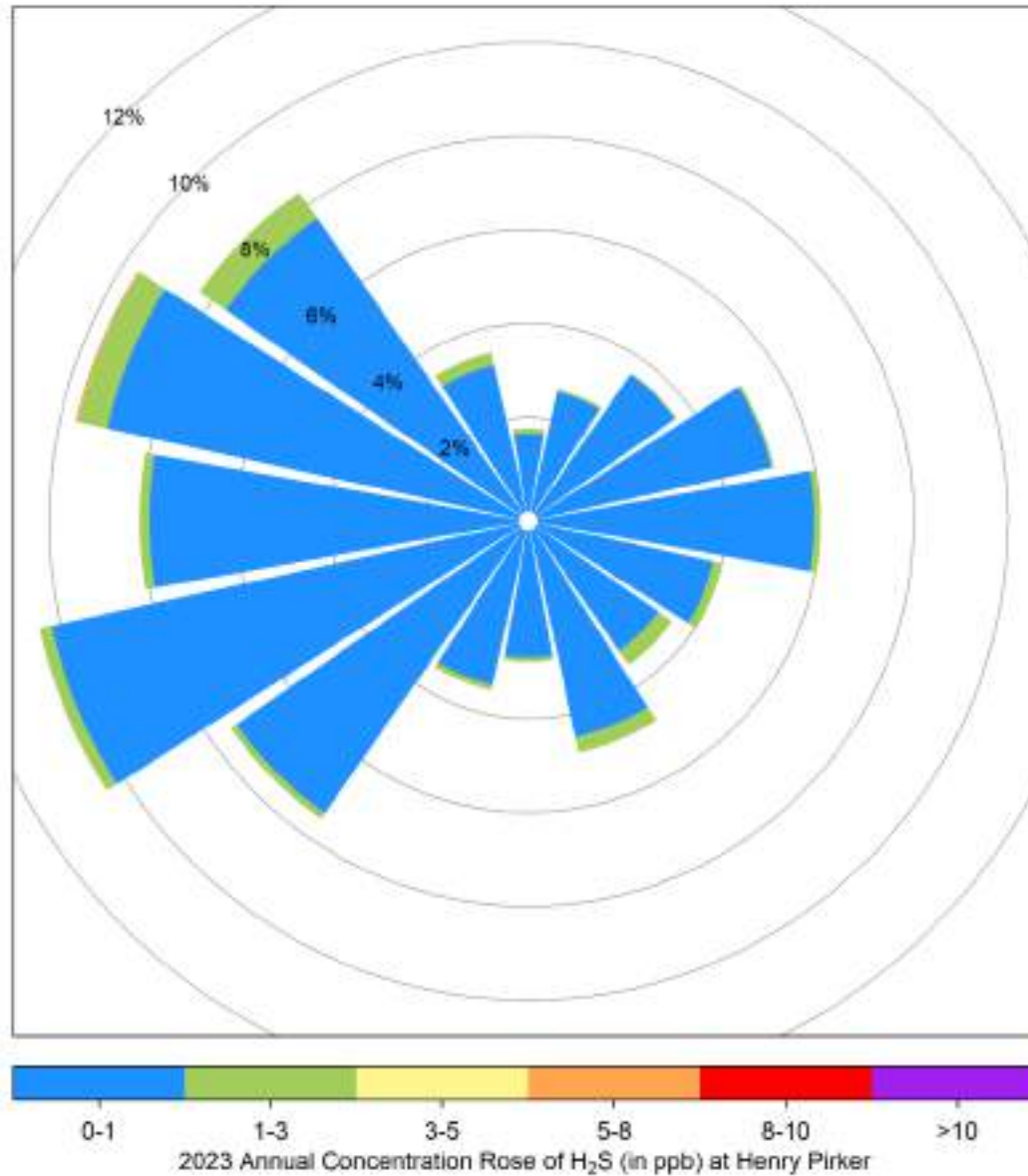


2023 Daily Concentration Readings of H₂S (in ppb) at Henry Pirker



Hourly Maximum H₂S (in ppb) for 2023 at Henry Pirker





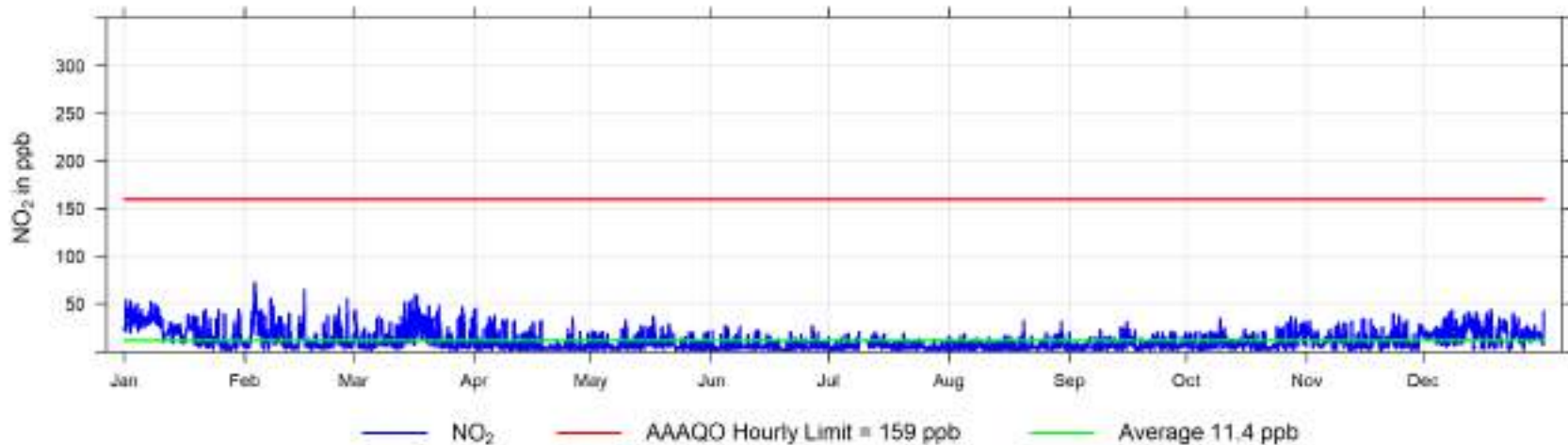
7.4 Nitrogen Dioxide (NO₂) - Henry Pirker 2023 Summary

Nitrogen Dioxide (NO₂) Frequency Distribution at Henry Pirker

Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	24-hr (ppb)	MAXIMUM VALUES		Operational time (%)	Valid time (%)	Reportable Incidents 1-hr 159 ppb	
		0 to 5 (ppb)	5 to 15 (ppb)	15 to 30 (ppb)	30 to 100 (ppb)	100 to 159 (ppb)	> 159 (ppb)			Date	1-hr (ppb)				Date
January 2023	707	9.6%	26.7%	31.8%	31.8%	0.0%	0.0%	21.8	38.0	Jan 08	53.9	Jan 01 15:00	100.0%	95.0%	0
February 2023	638	21.0%	41.8%	21.9%	15.2%	0.0%	0.0%	15.4	49.0	Feb 03	72.9	Feb 03 11:00	100.0%	94.9%	0
March 2023	706	21.5%	35.6%	26.9%	16.0%	0.0%	0.0%	16.2	35.5	Mar 17	59.1	Mar 16 22:00	99.9%	94.9%	0
April 2023	685	52.4%	30.1%	12.0%	5.5%	0.0%	0.0%	8.5	16.8	Apr 06	45.0	Apr 01 07:00	100.0%	95.1%	0
May 2023	708	40.3%	42.5%	16.7%	0.6%	0.0%	0.0%	8.6	13.6	May 09	37.4	May 17 00:00	100.0%	95.2%	0
June 2023	684	55.1%	37.0%	7.9%	0.0%	0.0%	0.0%	6.4	10.0	Jun 05	27.6	Jun 04 12:00	100.0%	95.0%	0
July 2023	661	54.5%	41.6%	3.9%	0.0%	0.0%	0.0%	5.7	10.4	Jul 13	21.4	Jul 12 22:00	93.7%	88.8%	0
August 2023	706	55.8%	39.2%	4.5%	0.4%	0.0%	0.0%	5.9	12.5	Aug 29	32.5	Aug 20 04:00	99.9%	94.9%	0
September 2023	681	42.1%	47.9%	9.8%	0.1%	0.0%	0.0%	7.3	13.8	Sep 23	31.2	Sep 15 21:00	99.9%	94.6%	0
October 2023	706	34.8%	40.2%	23.2%	1.7%	0.0%	0.0%	10.0	22.5	Oct 30	36.7	Oct 27 20:00	100.0%	94.9%	0
November 2023	683	26.4%	42.9%	27.8%	2.9%	0.0%	0.0%	11.8	21.9	Nov 30	39.9	Nov 23 09:00	100.0%	94.9%	0
December 2023	708	8.8%	23.7%	53.5%	14.0%	0.0%	0.0%	19.0	32.4	Dec 12	44.4	Dec 31 23:59	100.0%	95.2%	0
Annual	8273	35.2%	37.4%	20.0%	7.4%	0.0%	0.0%	11.4	49.0	Feb 03	72.9	Feb 03 11:00	99.4%	94.4%	0

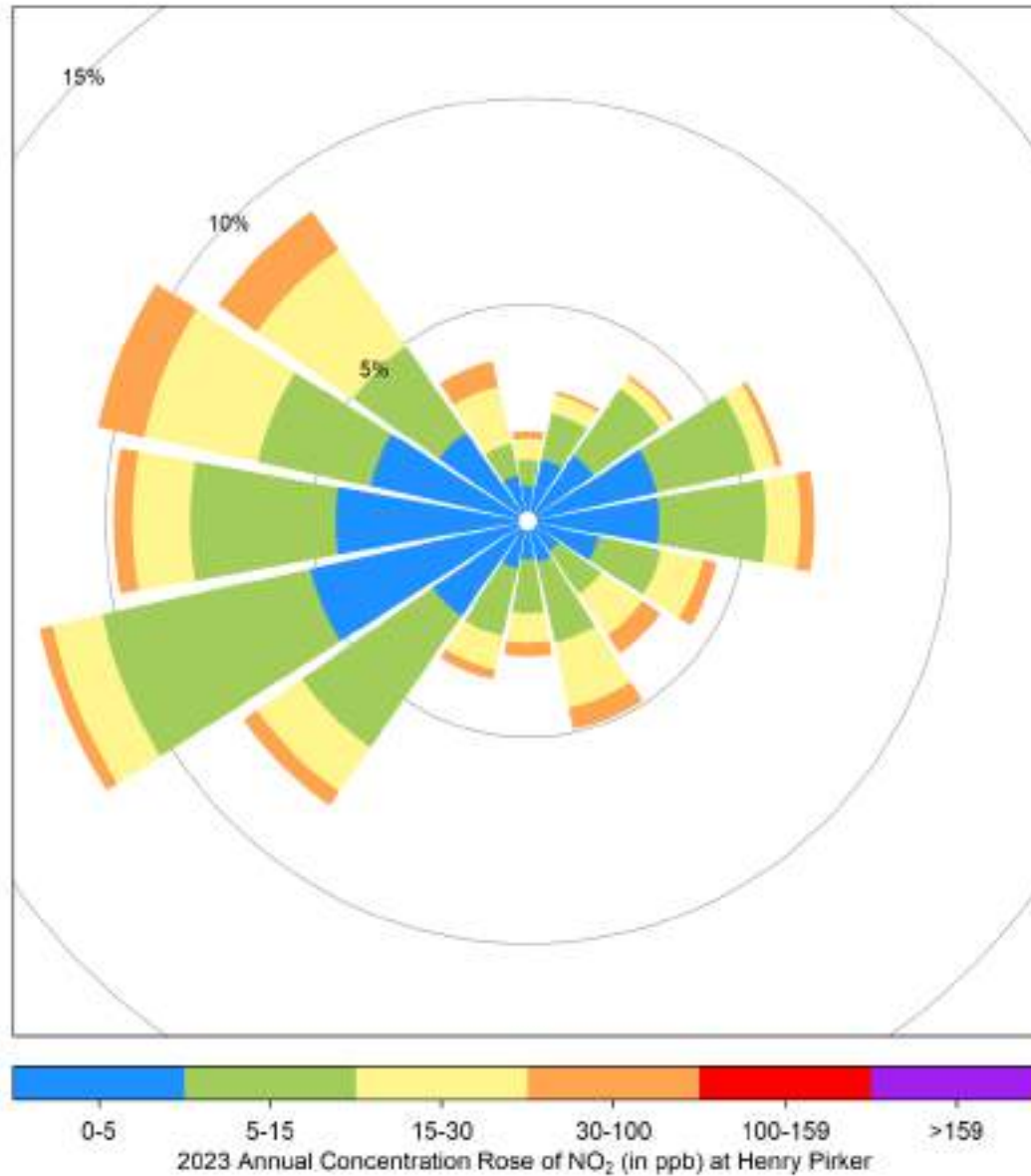
AAAQO Objectives: Annual: 24ppb, 1-Hr: 159ppb

2023 Hourly Concentration Readings of NO₂ (in ppb) at Henry Pirker



Hourly Maximum NO₂ (in ppb) for 2023 at Henry Pirker





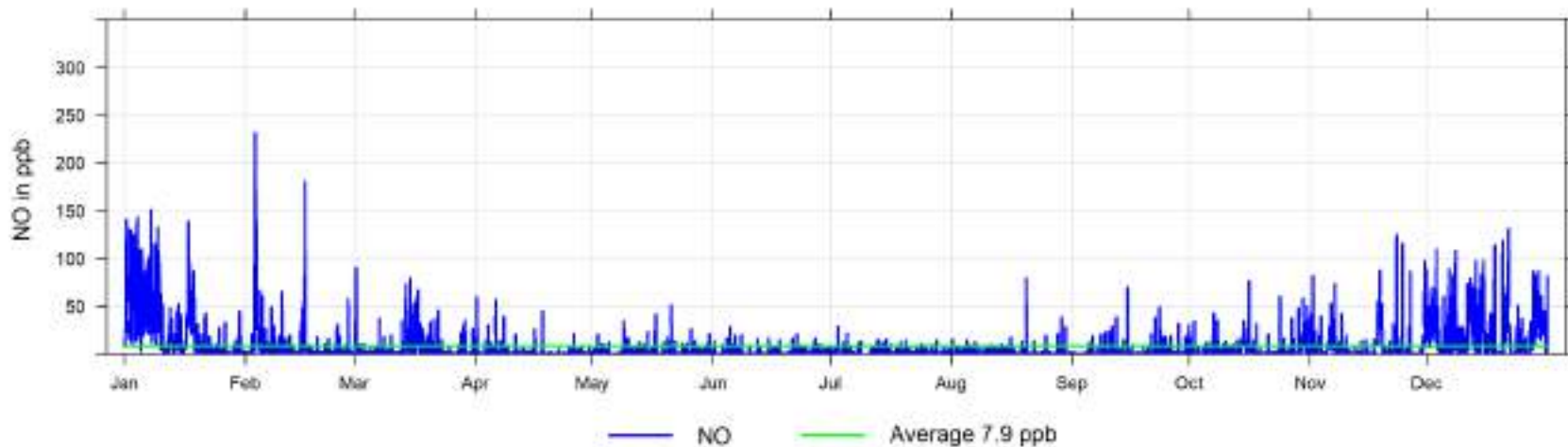
7.5 Nitric Oxide (NO) - Henry Pirker 2023 Summary

Nitric Oxide (NO) Frequency Distribution at Henry Pirker

Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	24-hr (ppb)	MAXIMUM VALUES			Operational time (%)	Valid time (%)
		0 to 5 (ppb)	5 to 15 (ppb)	15 to 30 (ppb)	30 to 100 (ppb)	100 to 159 (ppb)	> 159 (ppb)			Date	1-hr (ppb)	Date		
January 2023	707	39.2%	14.9%	15.0%	26.9%	4.1%	0.0%	25.8	70.4	Jan 09	151.0	Jan 07 19:00	100.0%	95.0%
February 2023	638	66.0%	18.5%	7.2%	6.0%	1.6%	0.8%	10.6	90.2	Feb 03	231.5	Feb 03 11:00	100.0%	94.9%
March 2023	706	75.1%	12.5%	6.7%	5.8%	0.0%	0.0%	6.2	25.5	Mar 01	90.4	Mar 01 12:00	99.9%	94.9%
April 2023	685	90.2%	6.6%	2.0%	1.2%	0.0%	0.0%	2.3	11.0	Apr 06	59.0	Apr 01 08:00	100.0%	95.1%
May 2023	708	84.7%	12.0%	2.1%	1.1%	0.0%	0.0%	2.7	10.1	May 21	51.3	May 21 07:00	100.0%	95.2%
June 2023	684	86.4%	11.7%	1.9%	0.0%	0.0%	0.0%	2.2	6.6	Jun 05	28.7	Jun 05 09:00	100.0%	95.0%
July 2023	661	87.4%	12.3%	0.3%	0.0%	0.0%	0.0%	2.0	4.1	Jul 02	29.3	Jul 02 23:00	93.7%	88.8%
August 2023	706	87.0%	10.8%	1.7%	0.6%	0.0%	0.0%	2.3	9.6	Aug 20	79.5	Aug 20 04:00	99.9%	94.9%
September 2023	681	84.3%	9.0%	5.1%	1.6%	0.0%	0.0%	3.1	10.7	Sep 23	70.1	Sep 15 08:00	99.9%	94.6%
October 2023	706	74.4%	16.0%	5.5%	4.1%	0.0%	0.0%	5.1	22.1	Oct 30	76.6	Oct 16 09:00	100.0%	94.9%
November 2023	683	69.8%	13.5%	7.3%	8.6%	0.7%	0.0%	9.2	43.6	Nov 30	125.1	Nov 23 10:00	100.0%	94.9%
December 2023	708	37.3%	12.9%	19.4%	29.2%	1.1%	0.1%	23.1	51.8	Dec 21	201.8	Dec 31 23:59	100.0%	95.2%
Annual	8273	73.5%	12.5%	6.2%	7.1%	0.6%	0.1%	7.9	90.2	MAXIMUM VALUES			99.4%	94.4%

AAAQO Objectives: none

2023 Hourly Concentration Readings of NO (in ppb) at Henry Pirker



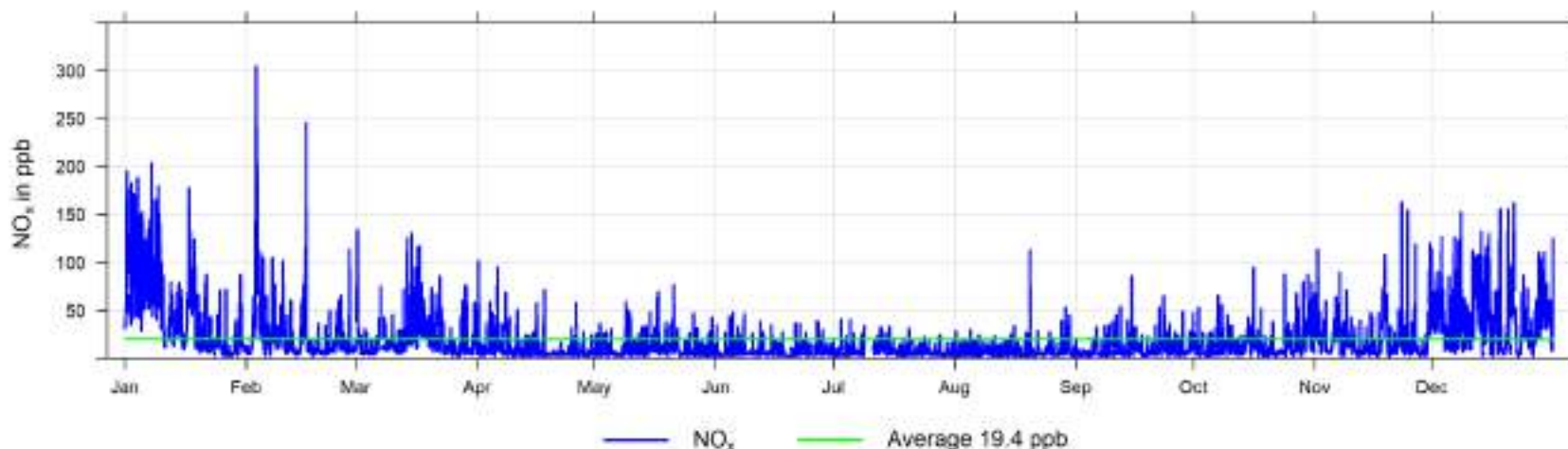
7.6 Oxides of Nitrogen (NO_x) - Henry Pirker 2023 Summary

Nitrogen Oxides (NO_x) Frequency Distribution at Henry Pirker

Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	24-hr (ppb)	MAXIMUM VALUES			Operational time (%)	Valid time (%)
		0 to 5 (ppb)	5 to 15 (ppb)	15 to 30 (ppb)	30 to 100 (ppb)	100 to 159 (ppb)	> 159 (ppb)			Date	1-hr (ppb)	Date		
January 2023	707	6.6%	24.5%	15.6%	39.9%	11.2%	2.3%	47.8	108.2	Jan 09	203.4	Jan 07 19:00	100.0%	95.0%
February 2023	638	8.0%	46.6%	20.5%	21.0%	2.0%	1.9%	26.1	139.6	Feb 03	304.8	Feb 03 11:00	100.0%	94.9%
March 2023	706	11.0%	40.7%	24.4%	22.2%	1.7%	0.0%	22.5	56.8	Mar 17	133.8	Mar 01 12:00	99.9%	94.9%
April 2023	685	46.6%	33.3%	11.2%	8.8%	0.1%	0.0%	10.9	28.0	Apr 06	101.0	Apr 01 08:00	100.0%	95.1%
May 2023	708	34.3%	41.7%	17.8%	6.2%	0.0%	0.0%	11.4	23.2	May 21	77.1	May 21 07:00	100.0%	95.2%
June 2023	684	45.0%	39.2%	12.3%	3.5%	0.0%	0.0%	8.6	16.6	Jun 05	47.4	Jun 05 09:00	100.0%	95.0%
July 2023	661	46.0%	40.5%	12.3%	1.2%	0.0%	0.0%	7.8	13.4	Jul 13	40.5	Jul 05 07:00	93.7%	88.8%
August 2023	706	49.3%	36.7%	12.0%	1.8%	0.1%	0.0%	8.2	18.8	Aug 29	112.3	Aug 20 04:00	99.9%	94.9%
September 2023	681	36.1%	43.5%	14.1%	6.3%	0.0%	0.0%	10.4	24.6	Sep 23	85.8	Sep 15 08:00	99.9%	94.6%
October 2023	706	29.2%	34.0%	23.9%	12.9%	0.0%	0.0%	15.2	44.9	Oct 30	94.8	Oct 16 08:00	100.0%	94.9%
November 2023	683	20.8%	37.3%	20.1%	19.6%	1.9%	0.3%	21.1	65.9	Nov 30	162.6	Nov 23 09:00	100.0%	94.9%
December 2023	708	7.6%	18.4%	16.4%	50.6%	6.6%	0.4%	42.3	83.1	Dec 12	246.5	Dec 31 23:59	100.0%	95.2%
Annual	8273	28.4%	36.3%	16.7%	16.2%	2.0%	0.4%	19.4	139.6	MAXIMUM VALUES		99.4%	94.4%	

AAAQO Objectives: none

2023 Hourly Concentration Readings of NO_x (in ppb) at Henry Pirker



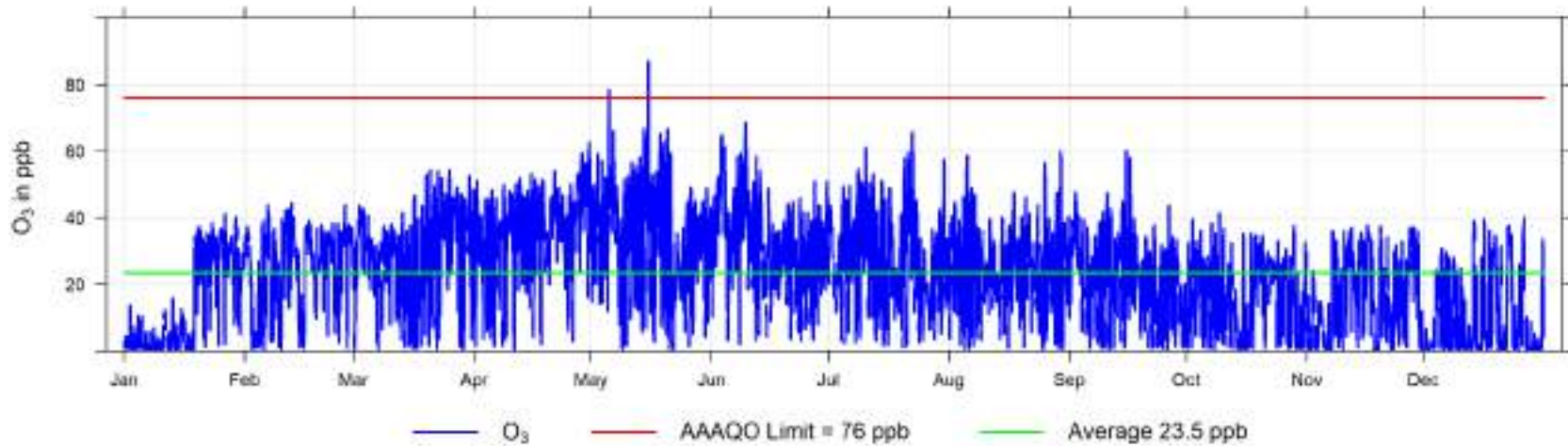
7.7 Ozone (O₃) - Henry Pirker 2023 Summary

Ozone (O₃) Frequency Distribution at Henry Pirker

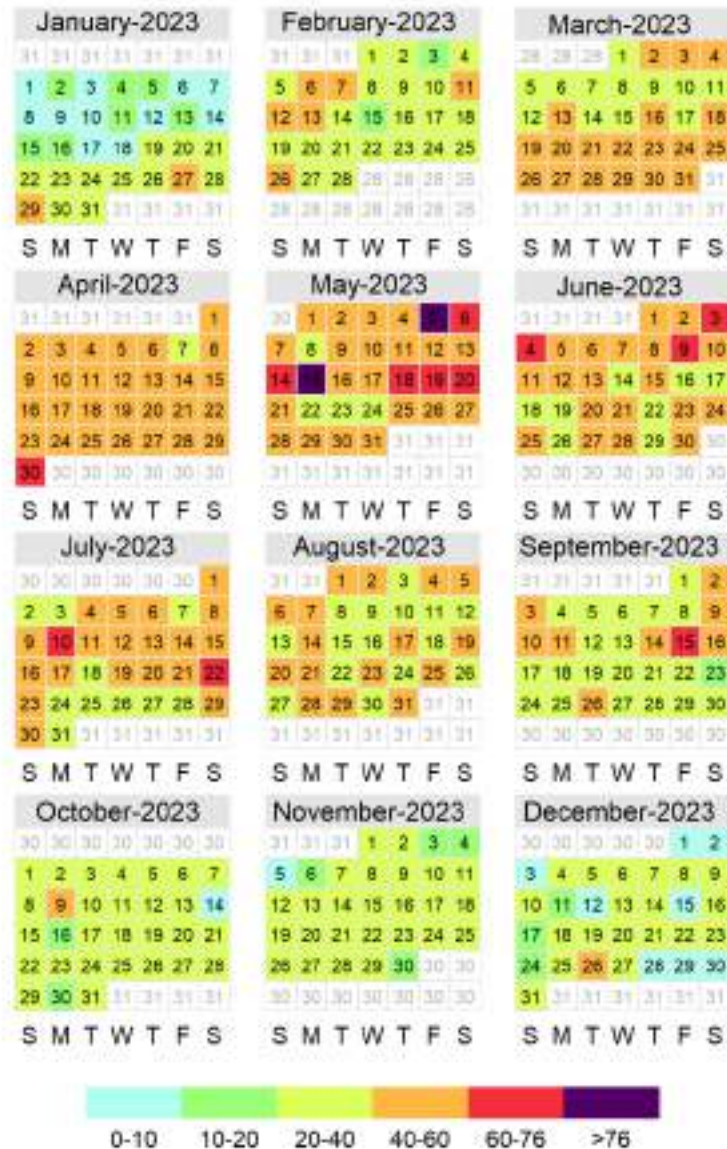
Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	24-hr (ppb)	MAXIMUM VALUES		Operational time (%)	Valid time (%)	Reportable Incidents 1-hr 76 ppb	
		0 to 10 (ppb)	10 to 20 (ppb)	20 to 40 (ppb)	40 to 60 (ppb)	60 to 76 (ppb)	> 76 (ppb)			Date	1-hr (ppb) Date				
January 2023	709	56.1%	9.6%	33.9%	0.4%	0.0%	0.0%	13.1	32.5	Jan 20	41.1	Jan 27 01:00	100.0%	95.3%	0
February 2023	640	18.4%	12.2%	65.6%	3.8%	0.0%	0.0%	24.7	36.1	Feb 11	44.4	Feb 13 00:00	100.0%	95.2%	0
March 2023	708	12.4%	13.0%	53.1%	21.5%	0.0%	0.0%	28.5	39.8	Mar 26	54.3	Mar 25 16:00	99.9%	95.2%	0
April 2023	686	7.6%	7.0%	41.5%	43.4%	0.4%	0.0%	35.3	48.9	Apr 28	62.7	Apr 30 14:00	100.0%	95.3%	0
May 2023	709	9.4%	15.1%	36.4%	34.1%	4.4%	0.6%	33.6	49.0	May 15	86.8	May 15 18:00	100.0%	95.3%	4
June 2023	686	5.7%	17.5%	48.1%	26.4%	2.3%	0.0%	31.7	53.7	Jun 03	68.5	Jun 09 16:00	100.0%	95.3%	0
July 2023	709	12.4%	20.9%	45.6%	20.5%	0.7%	0.0%	27.3	42.8	Jul 22	65.7	Jul 22 17:00	99.9%	95.3%	0
August 2023	708	14.7%	24.4%	51.3%	9.6%	0.0%	0.0%	24.1	30.6	Aug 17	59.9	Aug 29 17:00	99.9%	95.2%	0
September 2023	686	23.5%	25.2%	44.5%	6.7%	0.1%	0.0%	21.2	39.4	Sep 02	60.1	Sep 15 17:00	99.9%	95.3%	0
October 2023	709	33.4%	20.9%	45.4%	0.3%	0.0%	0.0%	16.8	27.7	Oct 19	41.4	Oct 09 14:00	100.0%	95.3%	0
November 2023	686	36.6%	19.0%	44.5%	0.0%	0.0%	0.0%	16.7	31.6	Nov 27	37.7	Nov 16 14:00	100.0%	95.3%	0
December 2023	709	64.7%	11.6%	23.6%	0.1%	0.0%	0.0%	10.1	27.0	Dec 19	40.1	Dec 26 21:00	100.0%	95.3%	0
Annual	8345	24.6%	16.4%	44.4%	13.9%	0.7%	0.0%	23.5	53.7	MAXIMUM VALUES		100.0%	95.3%	4	

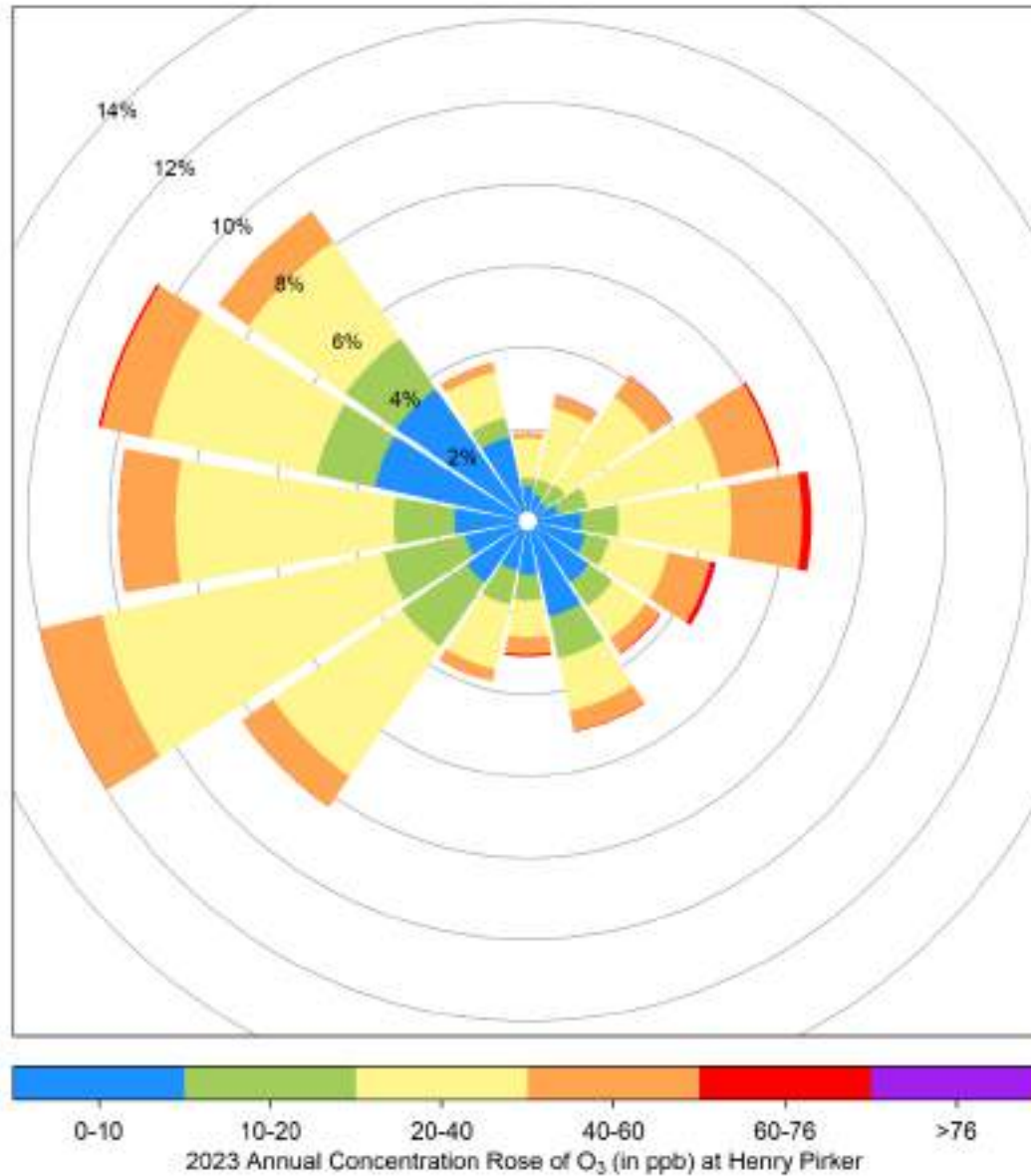
AAAQO Objectives: 1-Hr: 76ppb

2023 Hourly Concentration Readings of O₃ (in ppb) at Henry Pirker



Hourly Maximum O₃ (in ppb) for 2023 at Henry Pirker





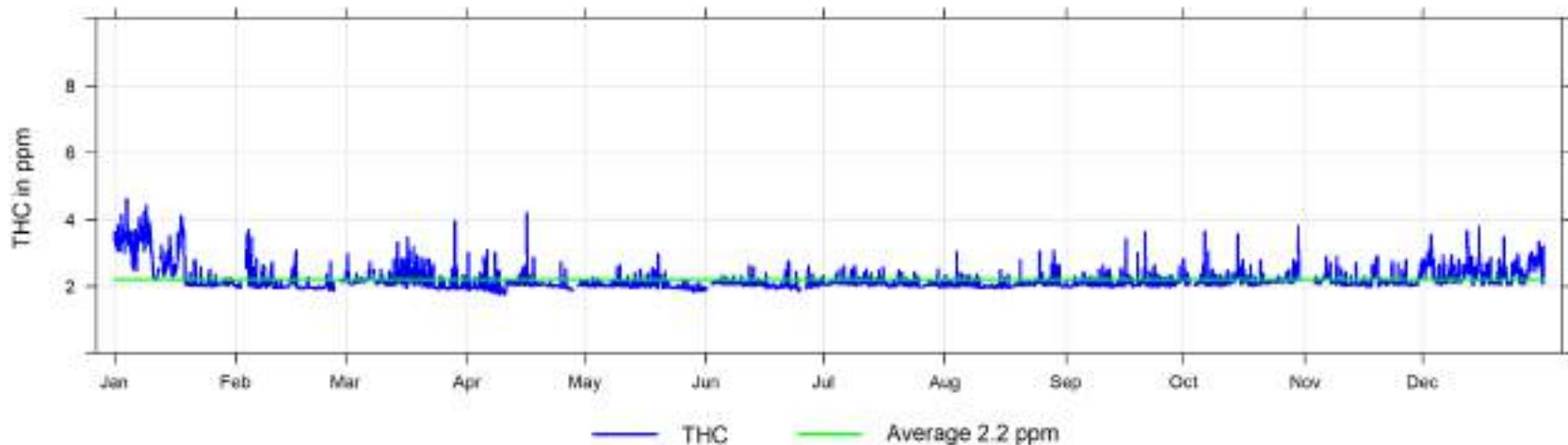
7.8 Total Hydrocarbons (THC) - Henry Pirker 2023 Summary

Total Hydrocarbons (THC) Frequency Distribution at Henry Pirker

Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppm)	24-hr (ppm)	MAXIMUM VALUES			Operational time (%)	Valid time (%)
		0 to 1.5 (ppm)	1.5 to 2 (ppm)	2 to 2.5 (ppm)	2.5 to 5 (ppm)	5 to 10 (ppm)	> 10 (ppm)			Date	1-hr (ppm)	Date		
January 2023	709	0.0%	3.5%	47.7%	48.8%	0.0%	0.0%	2.70	3.6	Jan 09	4.6	Jan 04 07:00	100.0%	95.3%
February 2023	581	0.0%	56.3%	35.6%	8.1%	0.0%	0.0%	2.09	2.5	Feb 04	3.7	Feb 04 05:00	91.2%	86.5%
March 2023	709	0.0%	20.7%	67.1%	12.1%	0.0%	0.0%	2.21	2.5	Mar 16	3.9	Mar 28 23:00	100.0%	95.3%
April 2023	646	0.0%	36.1%	59.1%	4.8%	0.0%	0.0%	2.06	2.4	Apr 16	4.2	Apr 16 06:00	94.7%	89.7%
May 2023	708	0.0%	45.8%	53.1%	1.1%	0.0%	0.0%	2.04	2.2	May 19	3.0	May 19 19:00	100.0%	95.2%
June 2023	620	0.0%	23.7%	74.8%	1.5%	0.0%	0.0%	2.08	2.2	Jun 12	2.8	Jun 22 05:00	90.6%	86.1%
July 2023	700	0.0%	14.9%	83.6%	1.6%	0.0%	0.0%	2.11	2.2	Jul 08	2.6	Jul 06 06:00	98.8%	94.1%
August 2023	699	0.0%	30.8%	65.5%	3.7%	0.0%	0.0%	2.09	2.3	Aug 28	3.1	Aug 28 20:00	98.7%	94.0%
September 2023	686	0.0%	14.4%	81.9%	3.6%	0.0%	0.0%	2.13	2.3	Sep 16	3.6	Sep 21 04:00	100.0%	95.3%
October 2023	653	0.0%	1.1%	91.9%	7.0%	0.0%	0.0%	2.21	2.4	Oct 29	3.8	Oct 30 07:00	92.1%	87.8%
November 2023	625	0.0%	2.6%	90.7%	6.7%	0.0%	0.0%	2.17	2.4	Nov 19	2.9	Nov 19 11:00	91.3%	86.8%
December 2023	709	0.0%	0.0%	63.9%	36.1%	0.0%	0.0%	2.42	2.9	Dec 12	3.8	Dec 15 12:00	100.0%	95.3%
Annual	8045	0.0%	20.8%	67.9%	11.3%	0.0%	0.0%	2.20	3.6	MAXIMUM VALUES			96.4%	91.8%

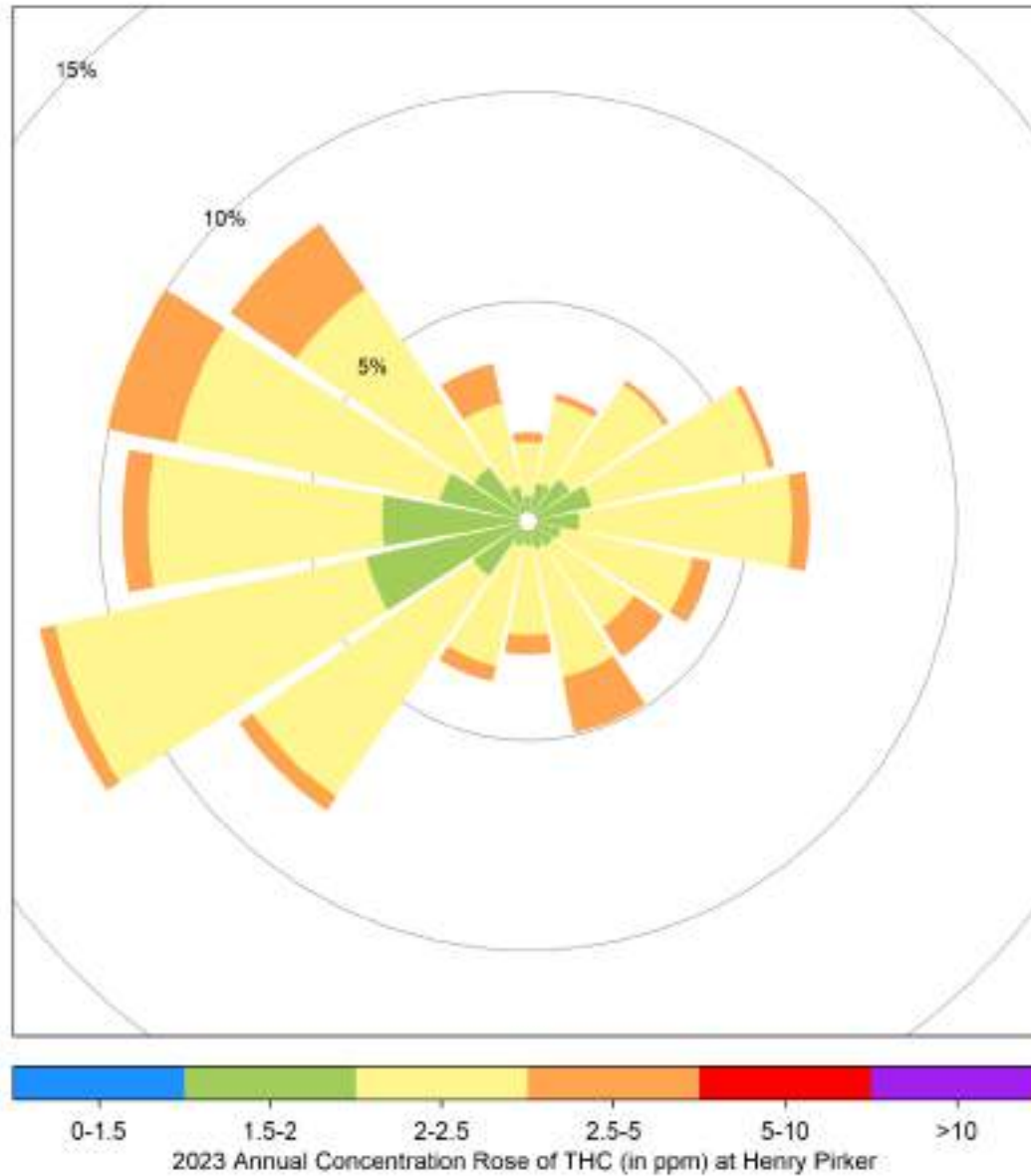
AAAQO Objectives: none

2023 Hourly Concentration Readings of THC (in ppm) at Henry Pirker



Hourly Maximum THC (in ppm) for 2023 at Henry Pirker





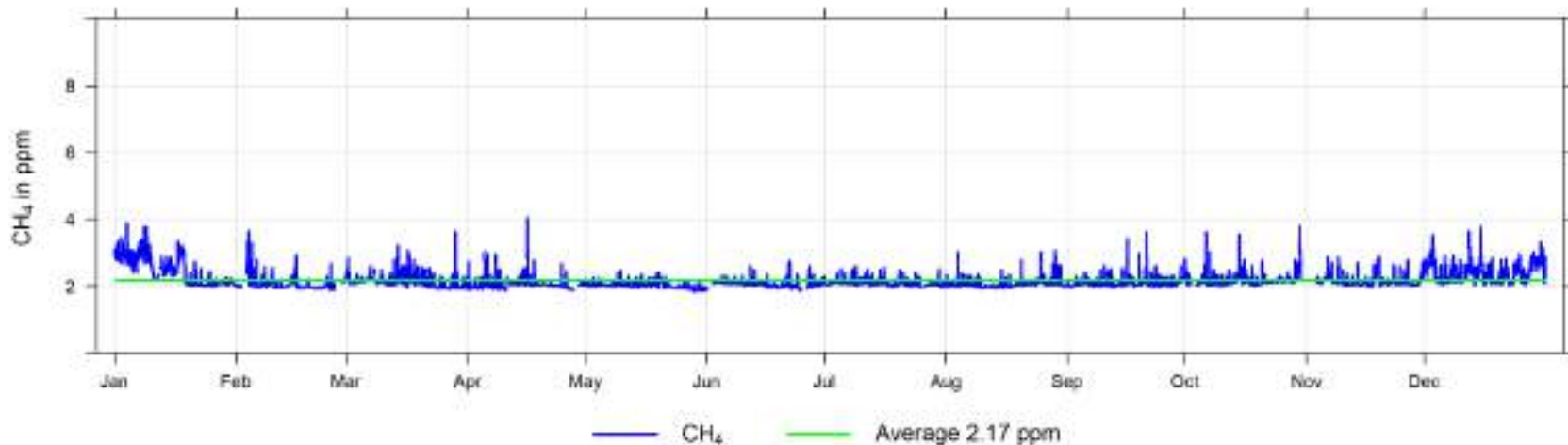
7.9 Methane (CH₄) - Henry Pirker 2023 Summary

Methane (CH₄) Frequency Distribution at Henry Pirker

Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppm)	24-hr (ppm)	MAXIMUM VALUES			Operational time (%)	Valid time (%)
		0 to 1.5 (ppm)	1.5 to 2 (ppm)	2 to 2.5 (ppm)	2.5 to 5 (ppm)	5 to 10 (ppm)	> 10 (ppm)			Date	1-hr (ppm)	Date		
January 2023	709	0.0%	4.2%	52.0%	43.7%	0.0%	0.0%	2.47	3.0	Jan 08	3.9	Jan 04 07:00	100.0%	95.3%
February 2023	581	0.0%	57.5%	37.2%	5.3%	0.0%	0.0%	2.07	2.4	Feb 04	3.7	Feb 04 05:00	91.2%	86.5%
March 2023	709	0.0%	20.9%	73.6%	5.5%	0.0%	0.0%	2.17	2.4	Mar 01	3.6	Mar 28 23:00	100.0%	95.3%
April 2023	646	0.0%	33.7%	61.6%	4.6%	0.0%	0.0%	2.07	2.4	Apr 16	4.0	Apr 16 06:00	94.7%	89.7%
May 2023	708	0.0%	46.3%	53.7%	0.0%	0.0%	0.0%	2.03	2.1	May 19	2.5	May 10 02:00	100.0%	95.2%
June 2023	620	0.0%	23.7%	75.2%	1.1%	0.0%	0.0%	2.08	2.2	Jun 12	2.8	Jun 22 05:00	90.6%	86.1%
July 2023	700	0.0%	16.6%	82.4%	1.0%	0.0%	0.0%	2.10	2.2	Jul 08	2.6	Jul 09 04:00	98.8%	94.1%
August 2023	699	0.0%	32.3%	64.2%	3.4%	0.0%	0.0%	2.08	2.3	Aug 28	3.1	Aug 28 20:00	98.7%	94.0%
September 2023	686	0.0%	17.2%	79.4%	3.4%	0.0%	0.0%	2.12	2.3	Sep 16	3.6	Sep 21 04:00	100.0%	95.3%
October 2023	653	0.0%	1.4%	92.2%	6.4%	0.0%	0.0%	2.20	2.4	Oct 29	3.8	Oct 30 07:00	92.1%	87.8%
November 2023	625	0.0%	3.5%	90.1%	6.4%	0.0%	0.0%	2.17	2.4	Nov 19	2.9	Nov 19 11:00	91.3%	86.8%
December 2023	709	0.0%	0.0%	65.2%	34.8%	0.0%	0.0%	2.41	2.9	Dec 12	3.8	Dec 15 12:00	100.0%	95.3%
Annual	8045	0.0%	21.4%	68.9%	9.6%	0.0%	0.0%	2.17	3.0	MAXIMUM VALUES			96.4%	91.8%

AAAQO Objectives: none

2023 Hourly Concentration Readings of CH₄ (in ppm) at Henry Pirker



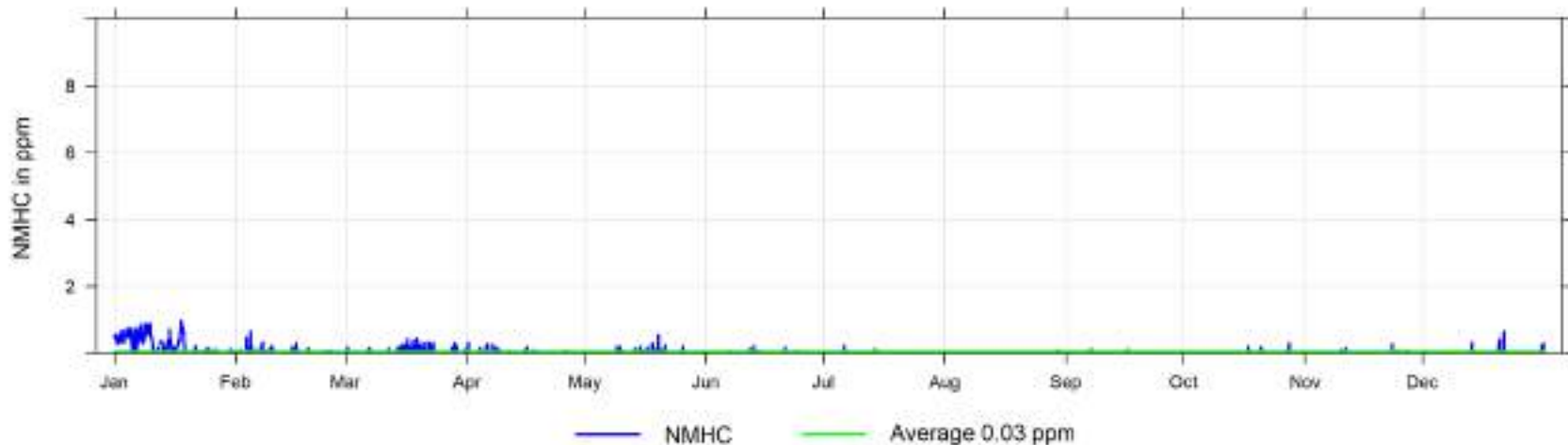
7.10 Nonmethane Hydrocarbons (NMHC) - Henry Pirker 2023 Summary

Nonmethane Hydrocarbons (NMHC) Frequency Distribution at Henry Pirker

Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppm)	24-hr (ppm)	MAXIMUM VALUES			Operational time (%)	Valid time (%)
		0 to 0.25 (ppm)	0.25 to 0.5 (ppm)	0.5 to 0.75 (ppm)	0.75 to 1 (ppm)	1 to 2 (ppm)	>2 (ppm)			Date	1-hr (ppm)	Date		
January 2023	709	61.5%	18.9%	16.8%	2.8%	0.0%	0.0%	0.22	0.7	Jan 09	1.0	Jan 18 02:00	100.0%	95.3%
February 2023	581	97.4%	2.4%	0.2%	0.0%	0.0%	0.0%	0.02	0.1	Feb 10	0.7	Feb 04 17:00	91.2%	86.5%
March 2023	709	96.8%	3.2%	0.0%	0.0%	0.0%	0.0%	0.04	0.2	Mar 19	0.4	Mar 19 06:00	100.0%	95.3%
April 2023	646	99.5%	0.5%	0.0%	0.0%	0.0%	0.0%	0.01	0.1	Apr 06	0.3	Apr 01 08:00	94.7%	89.7%
May 2023	708	99.0%	0.8%	0.1%	0.0%	0.0%	0.0%	0.01	0.1	May 19	0.5	May 19 19:00	100.0%	95.2%
June 2023	620	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00	0.0	Jun 13	0.2	Jun 13 07:00	90.6%	86.1%
July 2023	700	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00	0.0	Jul 06	0.2	Jul 06 06:00	98.8%	94.1%
August 2023	699	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00	0.0	Aug 29	0.1	Aug 29 21:00	98.7%	94.0%
September 2023	686	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00	0.0	Sep 07	0.1	Sep 07 08:00	100.0%	95.3%
October 2023	653	99.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.00	0.0	Oct 27	0.3	Oct 27 22:00	92.1%	87.8%
November 2023	625	99.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.00	0.0	Nov 23	0.3	Nov 23 09:00	91.3%	86.8%
December 2023	709	98.9%	0.8%	0.3%	0.0%	0.0%	0.0%	0.01	0.1	Dec 21	0.7	Dec 31 23:59	100.0%	95.3%
Annual	8045	96.1%	2.3%	1.4%	0.2%	0.0%	0.0%	0.03	0.7	MAXIMUM VALUES			96.4%	91.8%

AAAQO Objectives: none

2023 Hourly Concentration Readings of NMHC (in ppm) at Henry Pirker



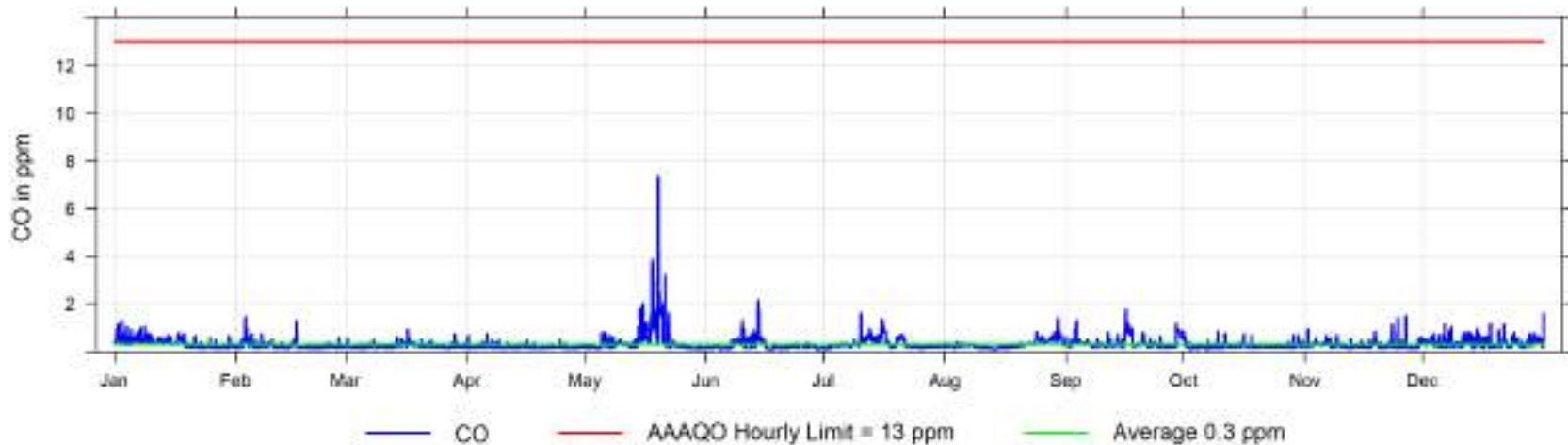
7.11 Carbon Monoxide (CO) - Henry Pirker 2023 Summary

Carbon Monoxide (CO) Frequency Distribution at Henry Pirker

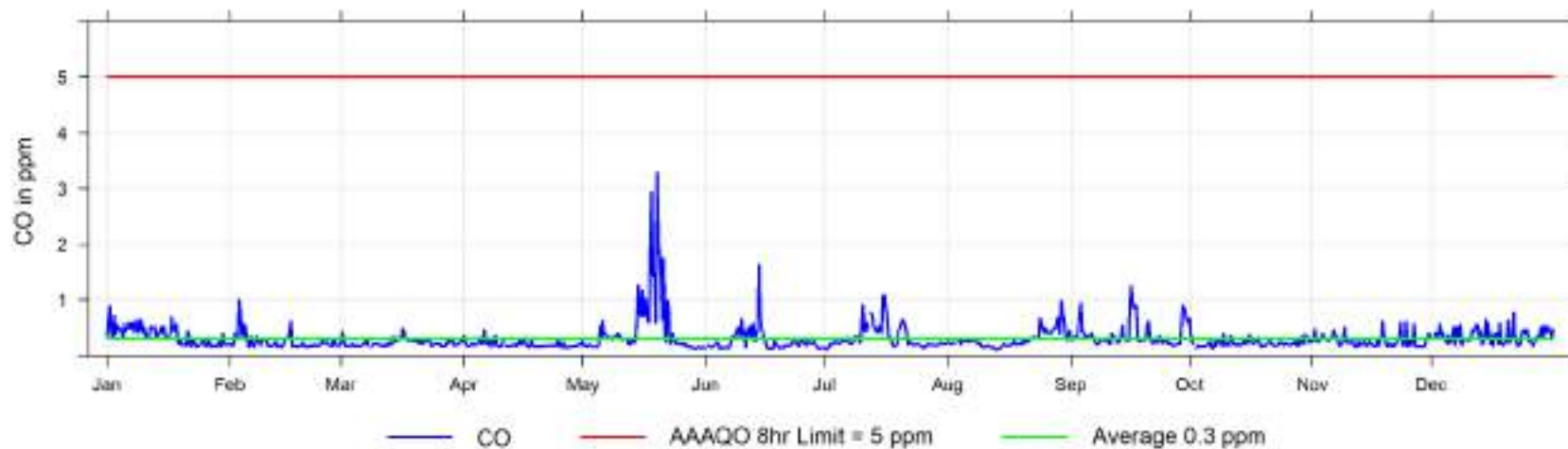
Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppm)	MAXIMUM VALUES				Operational time (%)	Valid time (%)	Reportable Incidents	
		0 to 0.1 (ppm)	0.1 to 1 (ppm)	1 to 2.5 (ppm)	2.5 to 5 (ppm)	5 to 13 (ppm)	> 13 (ppm)		24-hr (ppm)	Date	1-hr (ppm)	Date			8-hr 5 ppm	1-hr 13 ppm
January 2023	709	0.0%	98.9%	1.1%	0.0%	0.0%	0.0%	0.4	0.6	Jan 01	1.3	Jan 02 19:00	100.0%	95.3%	0	0
February 2023	640	0.0%	99.2%	0.8%	0.0%	0.0%	0.0%	0.2	0.7	Feb 03	1.5	Feb 03 11:00	100.0%	95.2%	0	0
March 2023	709	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.2	0.4	Mar 16	1.0	Mar 16 21:00	100.0%	95.3%	0	0
April 2023	685	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.2	0.3	Apr 06	0.7	Apr 06 07:00	100.0%	95.1%	0	0
May 2023	708	0.0%	87.1%	10.7%	1.8%	0.3%	0.0%	0.5	2.1	May 18	7.3	May 19 19:00	100.0%	95.2%	0	0
June 2023	686	0.4%	97.8%	1.7%	0.0%	0.0%	0.0%	0.3	1.0	Jun 14	2.2	Jun 14 11:00	100.0%	95.3%	0	0
July 2023	709	0.8%	97.2%	2.0%	0.0%	0.0%	0.0%	0.3	0.8	Jul 16	1.6	Jul 10 16:00	100.0%	95.3%	0	0
August 2023	708	1.4%	98.0%	0.6%	0.0%	0.0%	0.0%	0.3	0.7	Aug 29	1.4	Aug 29 21:00	99.9%	95.2%	0	0
September 2023	686	0.0%	96.5%	3.5%	0.0%	0.0%	0.0%	0.4	1.1	Sep 16	1.8	Sep 16 09:00	100.0%	95.3%	0	0
October 2023	709	0.6%	99.4%	0.0%	0.0%	0.0%	0.0%	0.2	0.4	Oct 01	0.9	Oct 01 01:00	100.0%	95.3%	0	0
November 2023	686	0.0%	99.1%	0.9%	0.0%	0.0%	0.0%	0.3	0.4	Nov 18	1.5	Nov 26 19:00	100.0%	95.3%	0	0
December 2023	709	0.0%	98.9%	1.1%	0.0%	0.0%	0.0%	0.4	0.5	Dec 12	2.2	Dec 31 23:59	100.0%	95.3%	0	0
Annual	8344	0.3%	0.0%	1.9%	0.2%	0.0%	0.0%	0.3	2.1	May 18	7.3	May 19 19:00	100.0%	95.3%	0	0

AAAQO Objectives: 8-Hr: 5ppm, 1-Hr: 13ppm

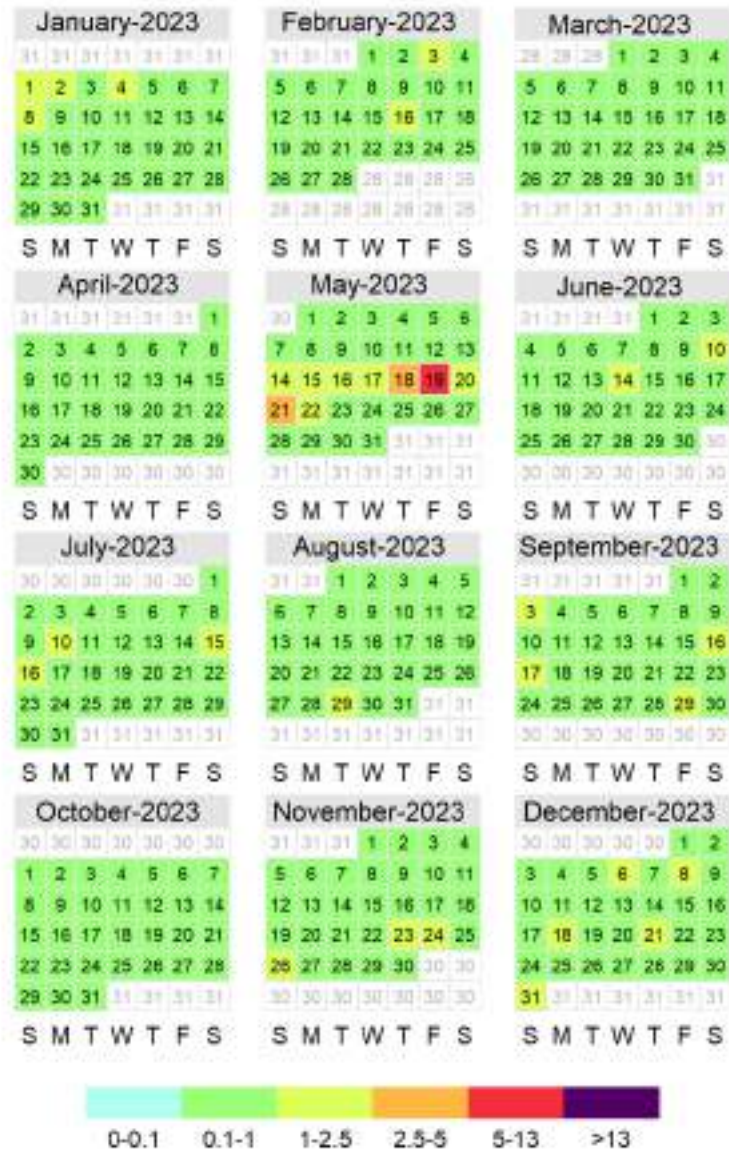
2023 Hourly Concentration Readings of CO (in ppm) at Henry Pirker

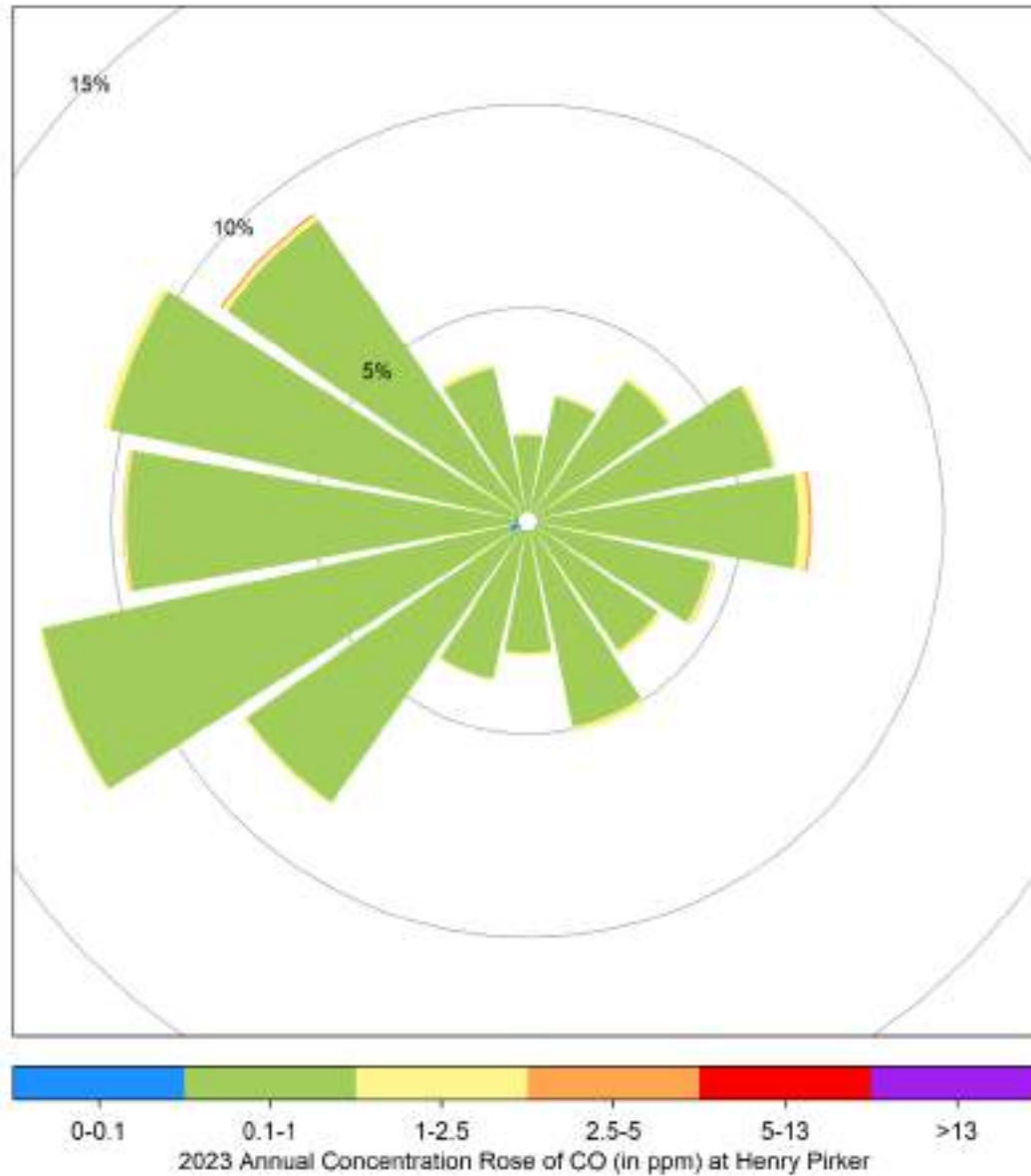


2023 8hr Concentration Readings of CO (in ppm) at Henry Pirker



Hourly Maximum CO (in ppm) for 2023 at Henry Pirker





7.12 Particulate Matter (PM_{2.5}) - Henry Pirker 2023 Summary

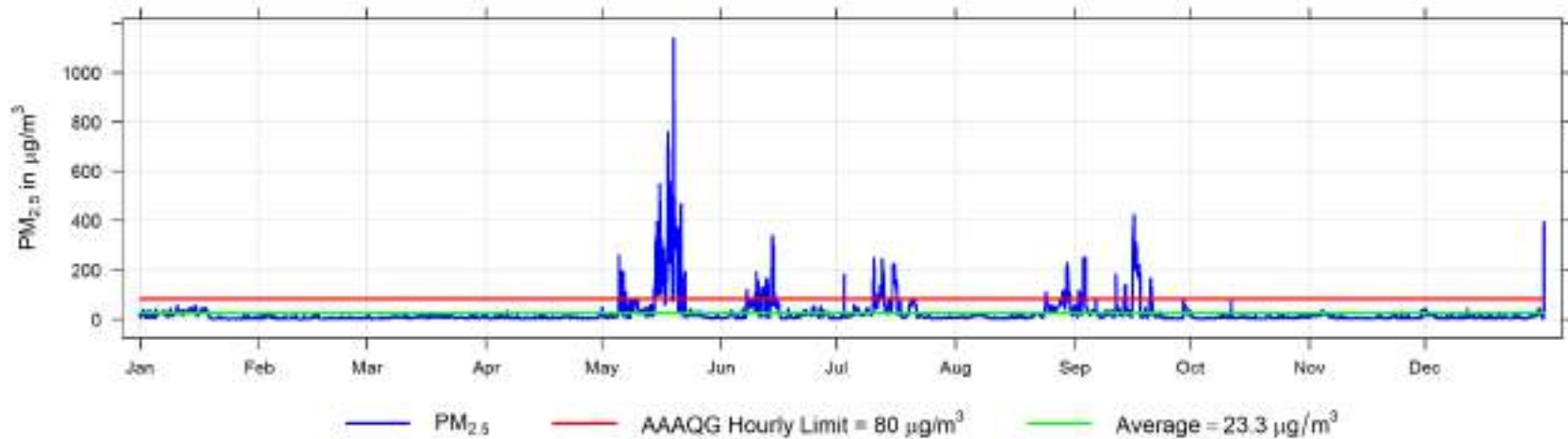
Particulate Matter (PM_{2.5}) Frequency Distribution at Henry Pirker

Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (µg/m ³)	24-hr (µg/m ³)	MAXIMUM VALUES		Operational time (%)	Valid time (%)	Reportable Incidents		
		0 to 5 (µg/m ³)	5 to 15 (µg/m ³)	15 to 30 (µg/m ³)	30 to 50 (µg/m ³)	50 to 80 (µg/m ³)	> 80 (µg/m ³)			Date	1-hr (µg/m ³)			Date	24-hr 29 µg/m ³	1-hr 80 µg/m ³
January 2023	742	37.5%	19.3%	27.0%	15.9%	0.4%	0.0%	14.9	38.8	Jan 17	55.5	Jan 15 07:00	100.0%	99.7%	5	0
February 2023	671	75.4%	20.6%	4.0%	0.0%	0.0%	0.0%	4.5	17.2	Feb 03	29.4	Feb 03 15:00	100.0%	99.9%	0	0
March 2023	742	35.0%	58.9%	6.1%	0.0%	0.0%	0.0%	7.2	12.5	Mar 31	24.7	Mar 15 22:00	100.0%	99.7%	0	0
April 2023	717	58.4%	38.5%	2.8%	0.3%	0.0%	0.0%	5.5	14.2	Apr 30	39.5	May 01 00:00	99.7%	99.6%	0	0
May 2023	743	7.1%	31.2%	16.6%	10.0%	10.2%	24.9%	84.8	465.6	May 18	1139.4	May 19 19:00	100.0%	99.9%	17	185
June 2023	715	23.8%	21.8%	22.1%	10.1%	12.4%	9.8%	33.3	162.2	Jun 14	337.8	Jun 14 11:00	100.0%	99.3%	10	70
July 2023	742	16.4%	34.2%	15.8%	10.9%	12.0%	10.6%	34.4	144.3	Jul 16	246.8	Jul 10 16:00	100.0%	99.7%	11	79
August 2023	742	24.4%	34.9%	18.9%	8.5%	7.3%	6.1%	23.4	112.9	Aug 29	225.4	Aug 29 23:00	99.9%	99.7%	8	45
September 2023	718	13.6%	25.3%	24.4%	16.6%	6.5%	13.5%	44.7	283.4	Sep 16	422.5	Sep 16 09:00	100.0%	99.7%	12	97
October 2023	742	46.1%	48.1%	5.4%	0.3%	0.1%	0.0%	6.5	18.2	Oct 11	75.5	Oct 11 15:00	100.0%	99.7%	0	0
November 2023	719	51.3%	31.8%	15.2%	1.7%	0.0%	0.0%	7.8	23.7	Nov 04	45.3	Nov 30 22:00	100.0%	99.9%	0	0
December 2023	742	38.0%	43.3%	16.0%	2.4%	0.1%	0.1%	10.0	43.2	Dec 31	708.2	Dec 31 23:59	99.9%	99.7%	1	1
Annual	8735	35.6%	34.0%	14.5%	6.4%	4.1%	5.4%	23.3	465.6	MAXIMUM VALUES		100.0%	99.7%	64	477	

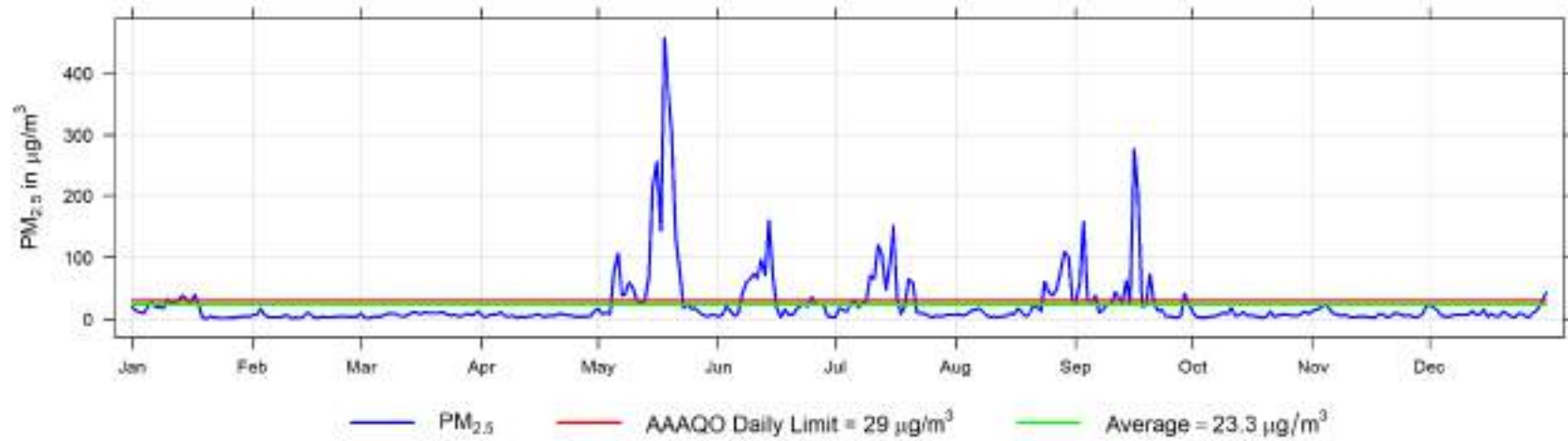
AAAQO Objectives: 24-Hr: 29 µg/m³, AAAQG Guideline: 1-Hr: 80 µg/m³

Note: correction of T640 data for Jan 01, 2023 to Dec 01, 2023 (when firmware update performed) resulted in a reduction of 1hr incidents by 15 and 24hr incidents by 4

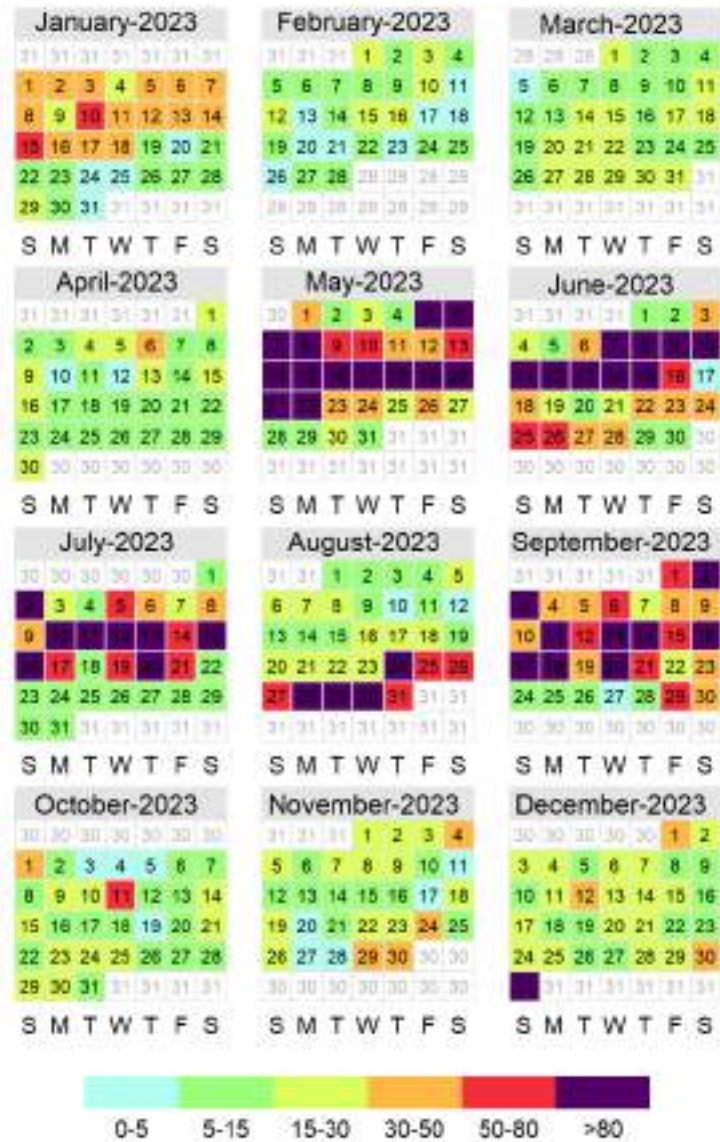
2023 Hourly Concentration Readings of PM_{2.5} in µg/m³ at Henry Pirker

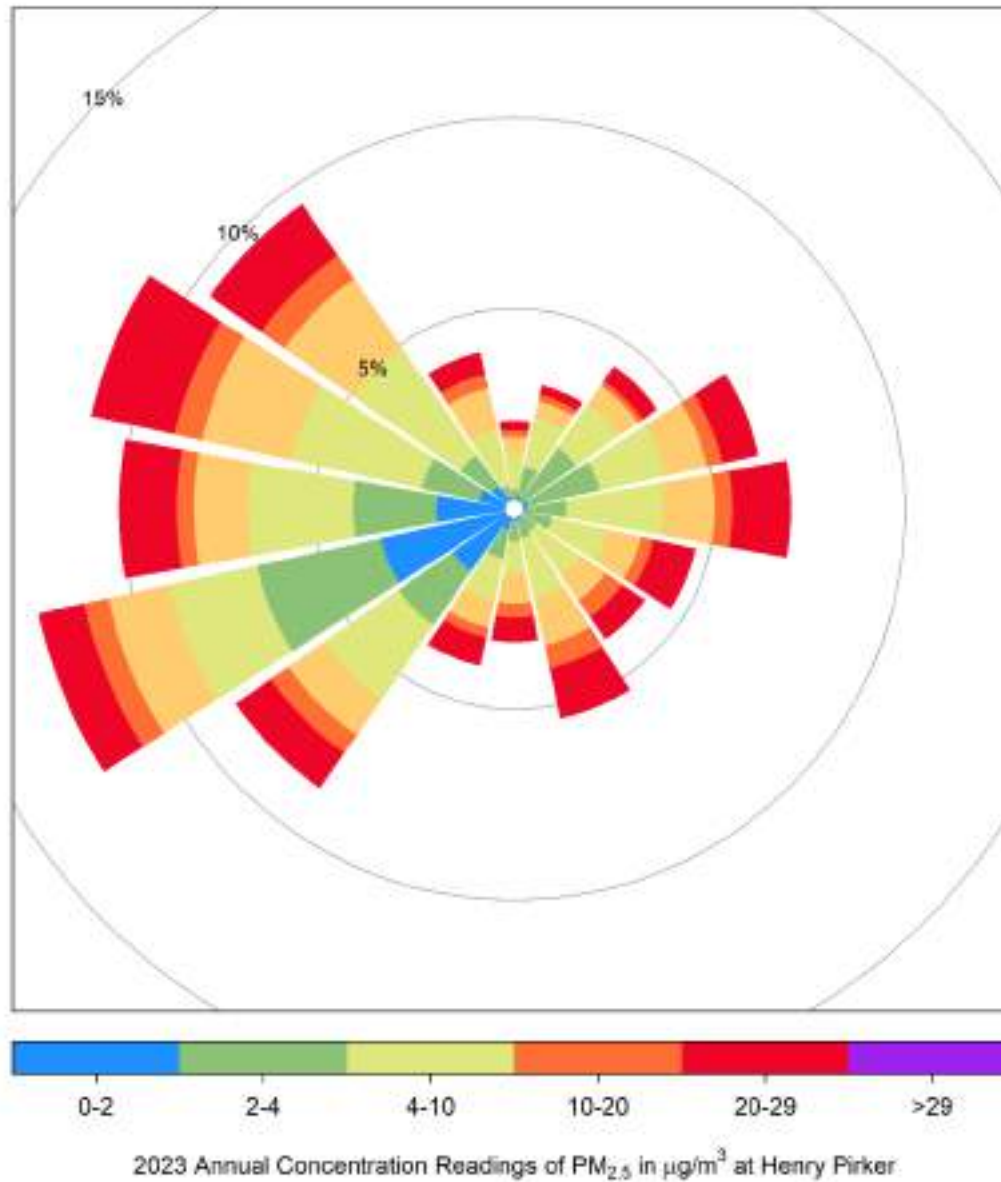


2023 Daily Concentration Readings of PM_{2.5} in $\mu\text{g}/\text{m}^3$ at Henry Pirker



Hourly Maximum PM_{2.5} (in µg/m³) for 2023 at Henry Pirker



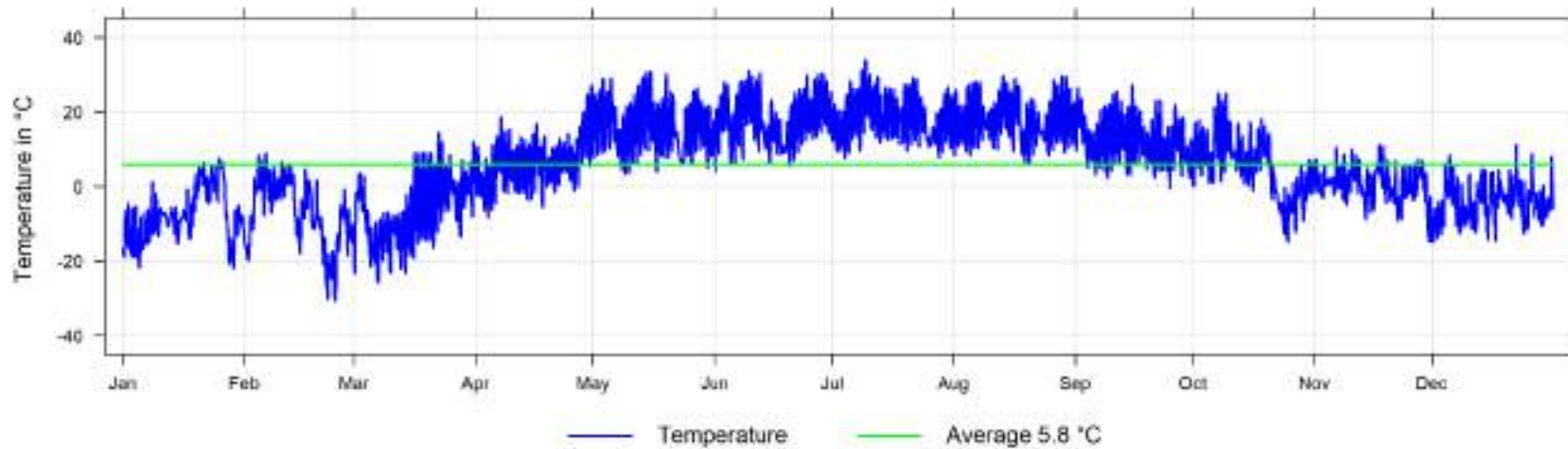


7.13 Temperature (ET) - Henry Pirker 2023 Summary

Temperature (ET) Frequency Distribution at Henry Pirker

Month	Valid Hours	Monthly Average (°C)	Maximum Values			Minimum Values			Operational time (%)	Valid time (%)		
			24-hr (°C)	Date	1-hr (°C)	Date	24-hr (°C)	Date			1-hr (°C)	Date
January 2023	744	-7.7	4.8	Jan 26	7.5	Jan 25 14:00	-17.1	Jan 28	-21.9	Jan 29 08:00	100.0%	100.0%
February 2023	672	-7.3	3.0	Feb 12	9.2	Feb 06 15:00	-24.0	Feb 22	-30.8	Feb 24 05:00	100.0%	100.0%
March 2023	744	-6.7	2.1	Mar 31	14.5	Mar 22 13:00	-17.1	Mar 06	-25.7	Mar 07 03:00	100.0%	100.0%
April 2023	720	6.5	18.8	Apr 30	27.2	Apr 30 17:00	-1.2	Apr 04	-8.4	Apr 04 06:00	100.0%	100.0%
May 2023	744	16.3	22.4	May 14	30.7	May 15 17:00	7.2	May 23	3.3	May 09 06:00	100.0%	100.0%
June 2023	720	18.0	23.1	Jun 28	31.0	Jun 09 17:00	9.7	Jun 18	4.0	Jun 01 05:00	100.0%	100.0%
July 2023	744	18.5	24.9	Jul 09	34.1	Jul 09 13:00	12.2	Jul 25	7.6	Jul 04 05:00	100.0%	100.0%
August 2023	743	17.9	22.8	Aug 13	29.6	Aug 28 15:00	11.6	Aug 18	6.2	Aug 19 06:00	99.9%	99.9%
September 2023	718	12.3	18.5	Sep 02	27.2	Sep 15 16:00	5.3	Sep 30	-0.6	Sep 25 04:00	100.0%	99.7%
October 2023	744	5.1	15.9	Oct 07	25.0	Oct 07 16:00	-8.3	Oct 25	-14.9	Oct 25 07:00	100.0%	100.0%
November 2023	720	0.3	7.2	Nov 17	11.2	Nov 17 16:00	-11.1	Nov 30	-14.8	Nov 30 09:00	100.0%	100.0%
December 2023	744	-4.4	1.7	Dec 05	11.3	Dec 22 12:00	-10.8	Dec 01	-14.8	Dec 01 08:00	100.0%	100.0%
8757		AVERAGE 5.8	24.9	MAXIMUM VALUES Jul 09 34.1 Jul 09 13:00			-24.0	MINIMUM VALUES Feb 22 -30.8 Feb 24 05:00			100.0%	100.0%

2023 Hourly Temperature Readings (in °C) at Henry Pirker

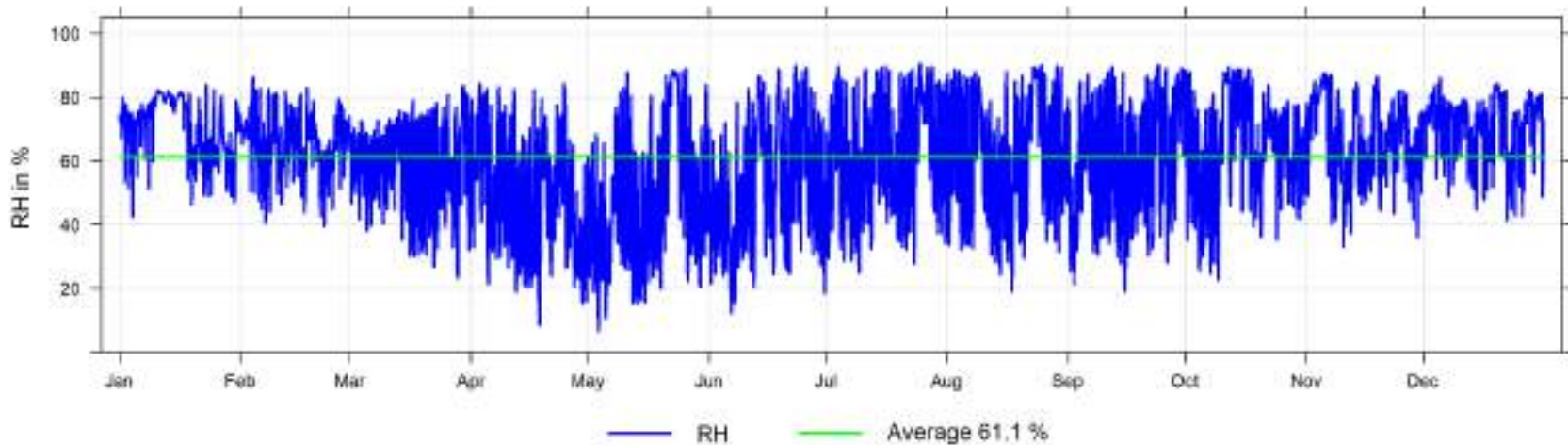


7.14 Relative Humidity (RH) - Henry Pirker 2023 Summary

Relative Humidity (RH) Frequency Distribution at Henry Pirker

Month	Valid Hours	Monthly Average (%)	Maximum Values		Operational time (%)	Valid time (%)	
			24-hr (%)	1-hr (%)			
January 2023	744	70.7	81.3	83.9	100.0%	100.0%	
February 2023	672	65.8	74.1	86.2	100.0%	100.0%	
March 2023	744	59.2	71.1	83.7	100.0%	100.0%	
April 2023	720	49.0	67.4	84.3	100.0%	100.0%	
May 2023	744	48.6	87.0	88.8	100.0%	100.0%	
June 2023	720	52.4	74.6	89.7	100.0%	100.0%	
July 2023	744	62.8	83.5	90.4	100.0%	100.0%	
August 2023	743	62.0	87.5	89.8	99.9%	99.9%	
September 2023	718	61.2	82.7	89.9	100.0%	99.7%	
October 2023	744	64.4	86.3	89.4	100.0%	100.0%	
November 2023	720	66.5	85.9	87.4	100.0%	100.0%	
December 2023	744	70.4	77.9	86.0	100.0%	100.0%	
		AVERAGE	MAXIMUM VALUES				
		8757	61.1	87.5	90.4	100.0%	100.0%

2023 Hourly Readings of Relative Humidity (in %) at Henry Pirker

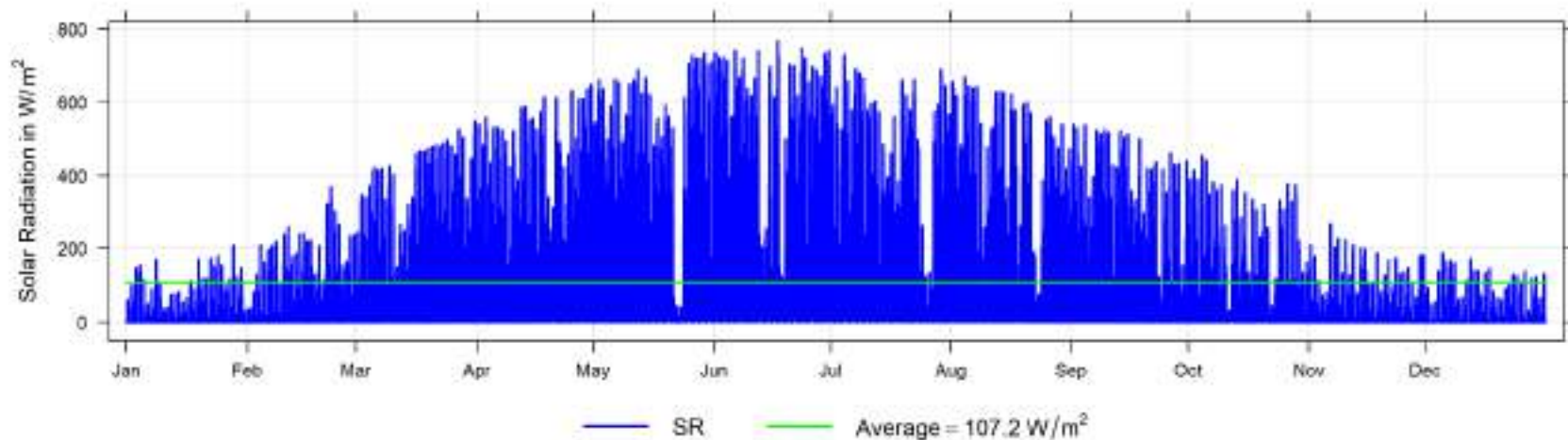


7.15 Solar Radiation (SR) - Henry Pirker 2023 Summary

Solar Radiation (SR) Frequency Distribution at Henry Pirker

Month	Valid Hours	Monthly Average (W/m ²)	Maximum Values			Operational time (%)	Valid time (%)		
			24-hr (W/m ²)	Date	1-hr (W/m ²)			Date	
January 2023	744	19.4	42.4	Jan 28	207.9	Jan 28 13:00	100.0%	100.0%	
February 2023	672	40.7	90.1	Feb 22	370.4	Feb 22 14:00	100.0%	100.0%	
March 2023	744	108.9	154.9	Mar 28	548.3	Mar 31 13:00	100.0%	100.0%	
April 2023	720	156.4	228.0	Apr 29	648.4	Apr 30 13:00	100.0%	100.0%	
May 2023	744	189.7	287.5	May 29	736.8	May 29 13:00	100.0%	100.0%	
June 2023	720	213.1	289.7	Jun 06	767.3	Jun 17 13:00	100.0%	100.0%	
July 2023	744	176.5	275.3	Jul 04	730.7	Jul 04 13:00	100.0%	100.0%	
August 2023	743	158.7	239.6	Aug 04	670.2	Aug 04 14:00	99.9%	99.9%	
September 2023	718	114.5	174.1	Sep 01	539.4	Sep 01 14:00	100.0%	99.7%	
October 2023	744	61.5	110.3	Oct 04	454.6	Oct 04 13:00	100.0%	100.0%	
November 2023	720	26.7	53.3	Nov 06	268.6	Nov 06 13:00	100.0%	100.0%	
December 2023	744	17.0	30.8	Dec 07	187.5	Dec 05 13:00	100.0%	100.0%	
		AVERAGE	MAXIMUM VALUES						
		8757	107.2	289.7	Jun 06	767.3	Jun 17 13:00	100.0%	100.0%

2023 Hourly Concentration Readings of Solar Radiation in W/m² at Henry Pirker

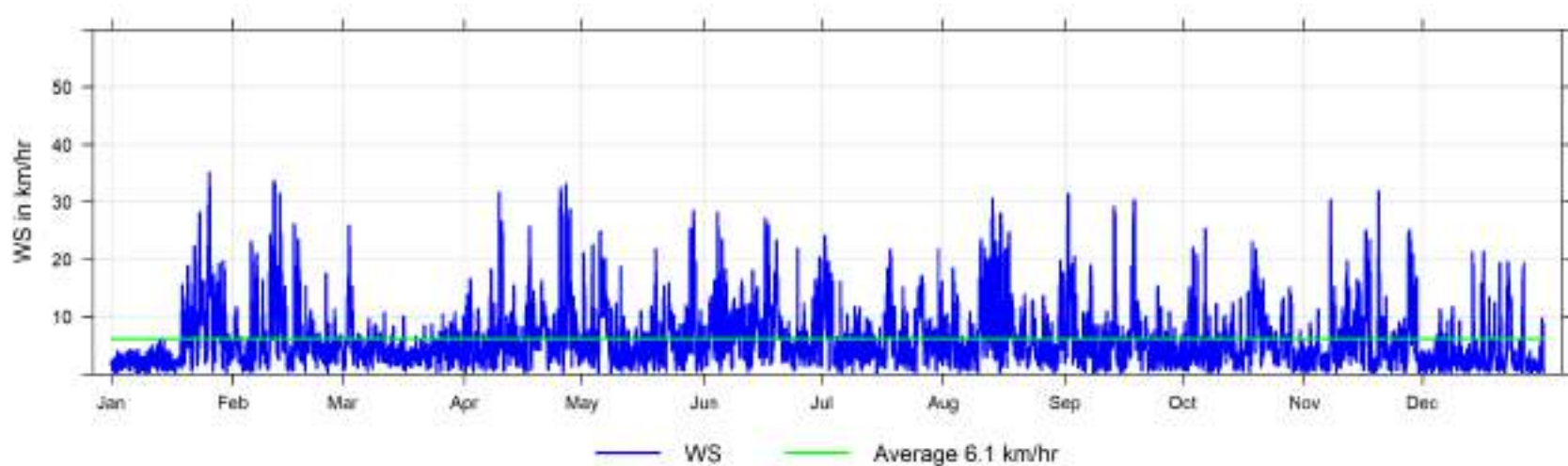


7.16 Wind Speed and Wind Direction (WS and WD) - Henry Pirker 2023 Summary

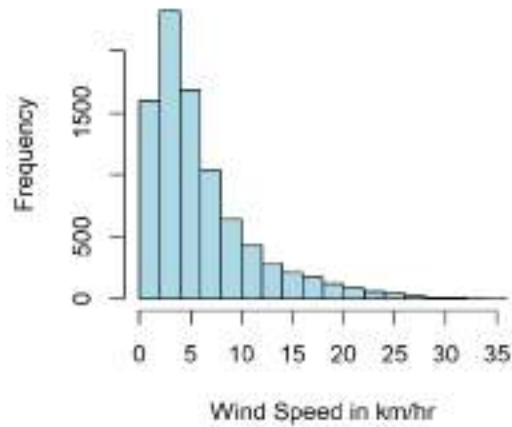
Wind Speed Frequency Distribution at Henry Pirker

Month	Valid Hours	Calm	% of Readings in Concentration Range					Monthly Average (km/hr)	24-hr (km/hr)	MAXIMUM VALUES			Operational time (%)	Valid time (%)
			0.5 to 5 (km/hr)	5 to 11 (km/hr)	11 to 19 (km/hr)	19 to 28 (km/hr)	>28 (km/hr)			Date	1-hr (km/hr)	Date		
January 2023	744	2.7%	66.1%	16.8%	10.9%	2.7%	0.8%	5.3	14.2	Jan 25	35.1	Jan 25 23:00	100.0%	100.0%
February 2023	672	0.9%	51.2%	31.0%	11.2%	5.1%	0.7%	6.8	17.6	Feb 11	33.6	Feb 11 13:00	100.0%	100.0%
March 2023	744	0.5%	70.3%	26.1%	2.2%	0.9%	0.0%	4.5	16.3	Mar 02	25.8	Mar 02 13:00	100.0%	100.0%
April 2023	720	1.5%	40.6%	39.7%	12.6%	4.3%	1.3%	7.3	17.5	Apr 25	33.0	Apr 26 19:00	100.0%	100.0%
May 2023	744	1.7%	48.5%	33.5%	11.7%	4.4%	0.1%	6.5	15.1	May 06	28.4	May 29 09:00	100.0%	100.0%
June 2023	720	0.3%	34.7%	43.2%	17.9%	3.8%	0.1%	7.7	15.5	Jun 19	28.3	Jun 04 14:00	100.0%	100.0%
July 2023	744	0.9%	49.3%	34.5%	13.3%	1.9%	0.0%	6.3	13.6	Jul 01	24.1	Jul 01 18:00	100.0%	100.0%
August 2023	743	0.8%	46.0%	32.7%	14.4%	5.7%	0.4%	7.1	16.7	Aug 13	30.6	Aug 13 14:00	99.9%	99.9%
September 2023	718	1.4%	53.8%	32.9%	8.4%	2.6%	1.0%	6.0	17.2	Sep 18	31.4	Sep 01 18:00	100.0%	99.7%
October 2023	744	1.7%	54.7%	31.3%	10.1%	2.2%	0.0%	5.7	12.3	Oct 19	25.3	Oct 06 16:00	100.0%	100.0%
November 2023	720	2.8%	52.9%	29.4%	10.8%	3.6%	0.4%	6.0	14.2	Nov 27	31.9	Nov 19 21:00	100.0%	100.0%
December 2023	744	4.6%	74.6%	13.7%	6.3%	0.8%	0.0%	3.7	9.6	Dec 22	21.4	Dec 16 18:00	100.0%	100.0%
Annual	8757	1.7%	53.6%	30.4%	10.8%	3.2%	0.4%	6.1	17.6	MAXIMUM VALUES			100.0%	100.0%

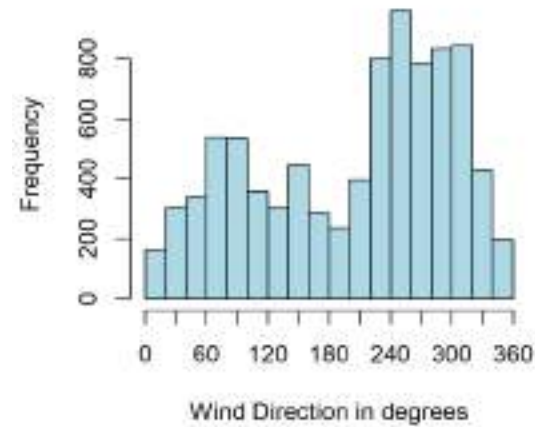
2023 Hourly Readings of Wind Speed (in km/hr) at Henry Pirker



2023 Wind Speed Histogram

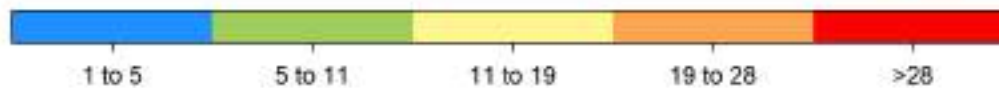
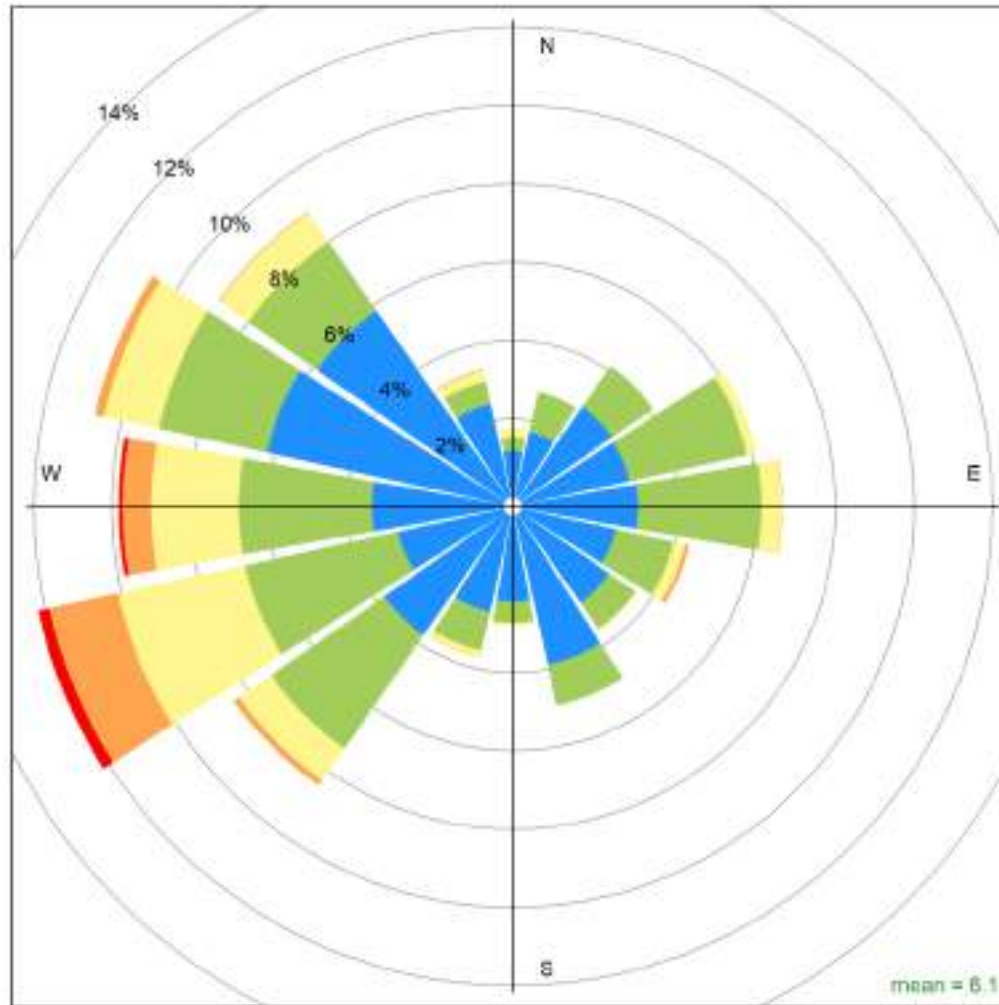


2023 Wind Direction Histogram



Wind Speed and Wind Direction Frequency Distribution at Henry Pirker

Direction	Number of Readings	% of wind speed range						Total %
		Calm (<0.5) (km/hr)	0.5 to 5 (km/hr)	5 to 11 (km/hr)	11 to 19 (km/hr)	19 to 28 (km/hr)	>28 (km/hr)	
N	181	0.1%	1.4%	0.4%	0.3%	0.0%	0.0%	2.1%
NNE	271	0.1%	1.9%	1.0%	0.0%	0.0%	0.0%	3.1%
NE	379	0.1%	3.0%	1.3%	0.0%	0.0%	0.0%	4.3%
ENE	555	0.1%	2.9%	3.1%	0.3%	0.0%	0.0%	6.3%
E	614	0.1%	3.2%	3.2%	0.5%	0.0%	0.0%	7.0%
ESE	406	0.1%	2.6%	1.5%	0.3%	0.1%	0.0%	4.6%
SE	345	0.1%	3.0%	0.8%	0.0%	0.0%	0.0%	3.9%
SSE	472	0.1%	4.2%	1.1%	0.0%	0.0%	0.0%	5.4%
S	285	0.1%	2.6%	0.5%	0.1%	0.0%	0.0%	3.3%
SSW	348	0.1%	2.7%	1.0%	0.2%	0.0%	0.0%	4.0%
SW	763	0.1%	3.9%	3.5%	1.0%	0.2%	0.0%	8.7%
WSW	1101	0.1%	3.0%	4.0%	3.3%	1.8%	0.3%	12.6%
W	889	0.0%	3.6%	3.4%	2.2%	0.7%	0.1%	10.1%
WNW	973	0.1%	6.5%	2.8%	1.4%	0.2%	0.0%	11.1%
NW	832	0.2%	6.2%	2.1%	0.9%	0.0%	0.0%	9.5%
NNW	347	0.2%	2.8%	0.6%	0.3%	0.0%	0.0%	4.0%
Total	8761	1.7%	53.7%	30.3%	10.8%	3.2%	0.4%	100.0%

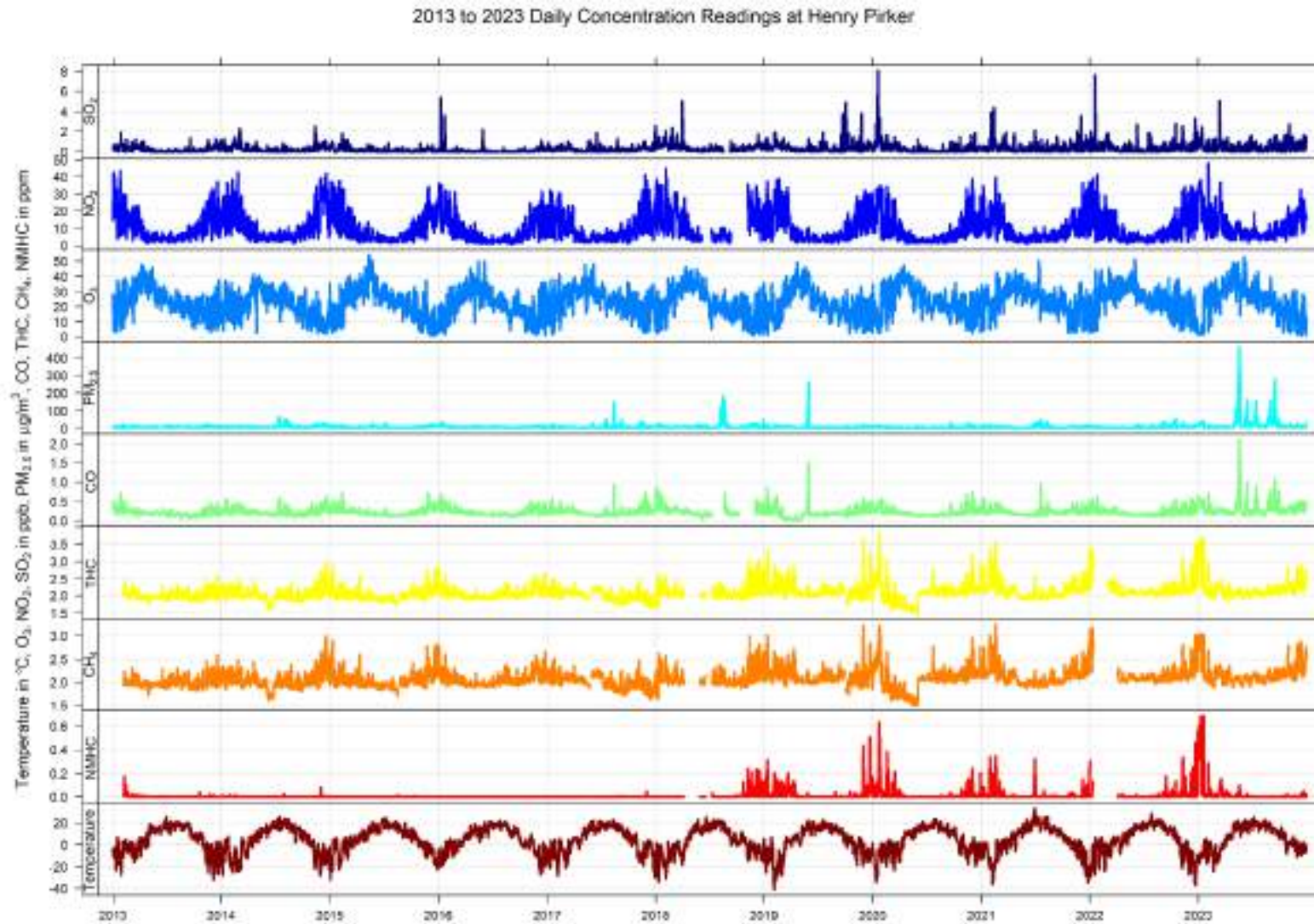


Henry Pirker 2023 Wind Rose, wind speed in km/hr

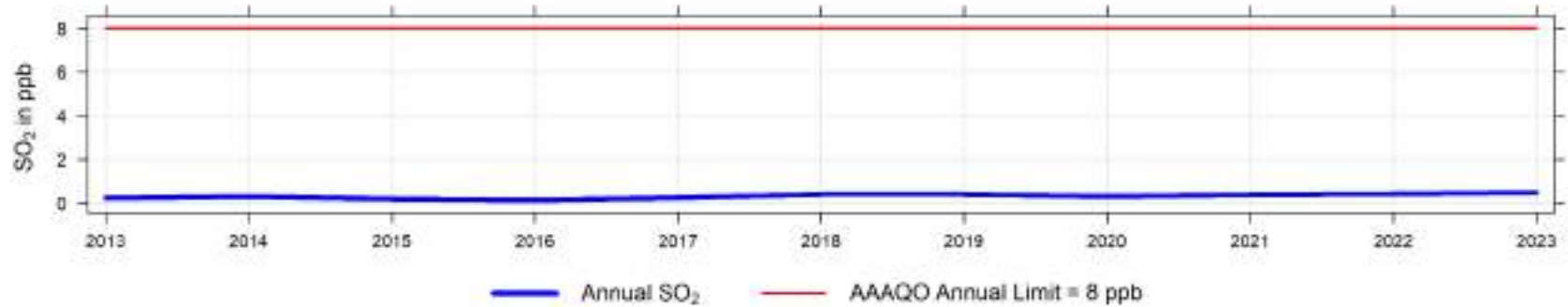
Calms (<1km/hr) = 5.6 %

7.17 Henry Pirker Annual Trends, 2013 to 2023

The following pages include historical annual charts collected between 2013 and 2023 at the Henry Pirker Station.



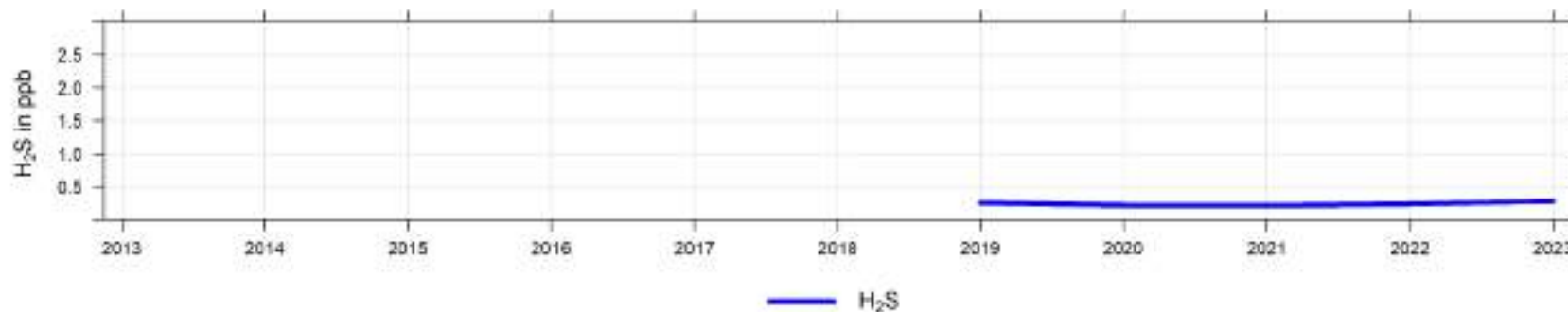
Years 2013 to 2023 Annual Concentration Readings of SO₂ (in ppb) at Henry Pirker



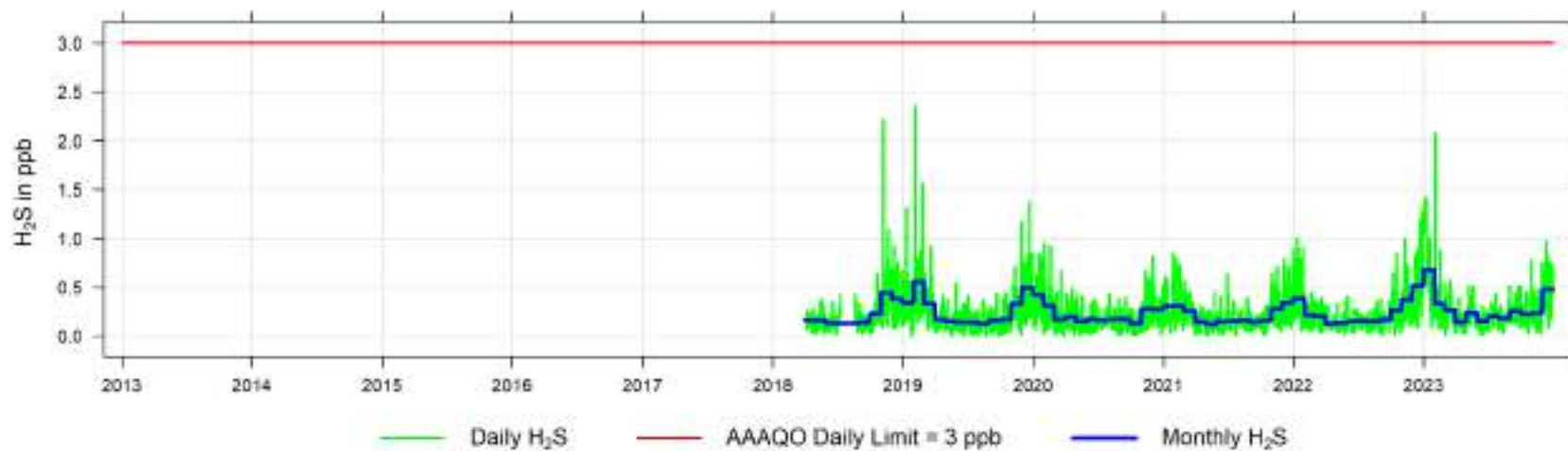
Years 2013 to 2023 Concentration Readings of SO₂ (in ppb) at Henry Pirker



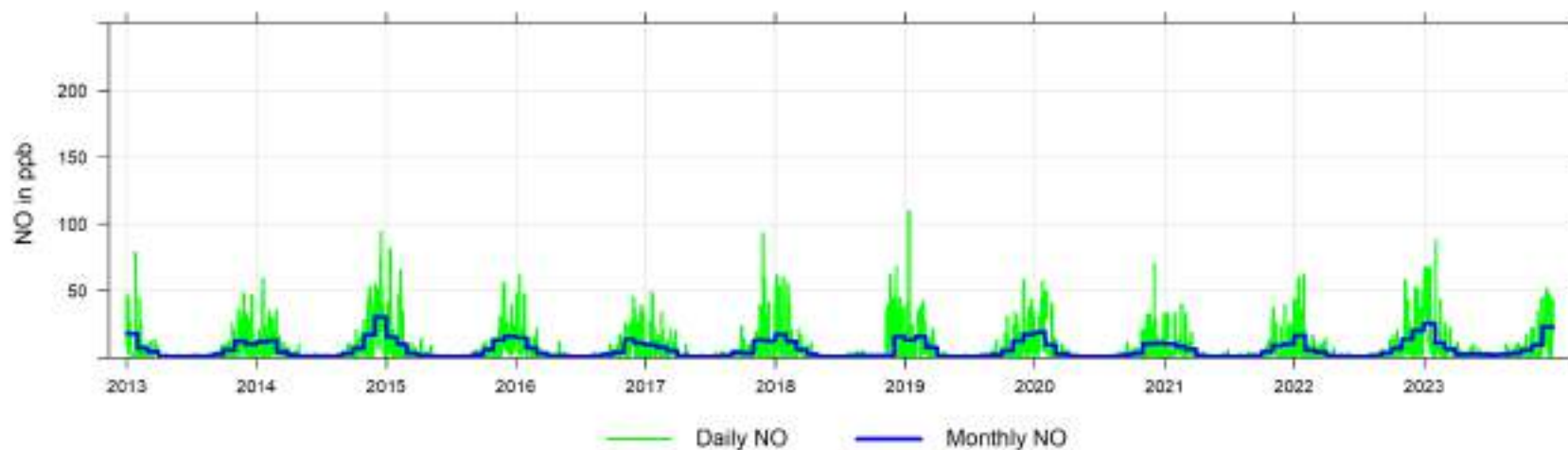
Years 2013 to 2023 Annual Concentration Readings of H₂S (in ppb) at Henry Pirker



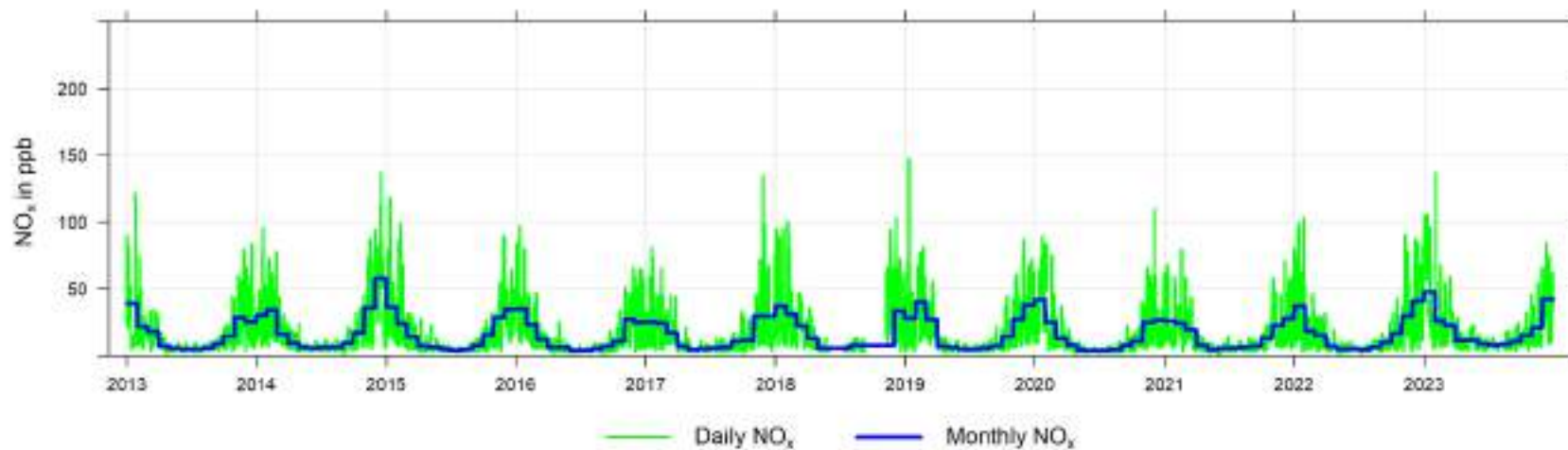
Years 2013 to 2023 Concentration Readings of H₂S (in ppb) at Henry Pirker



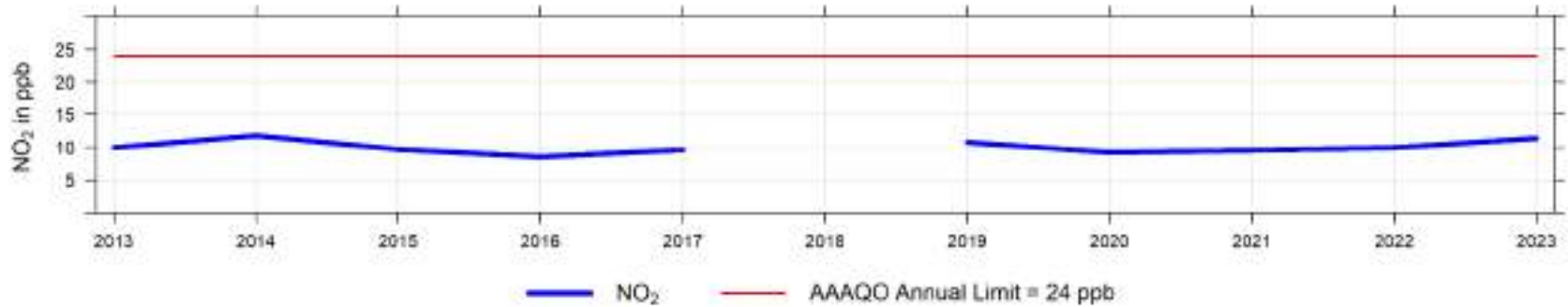
Years 2013 to 2023 Concentration Readings of NO (in ppb) at Henry Pirker



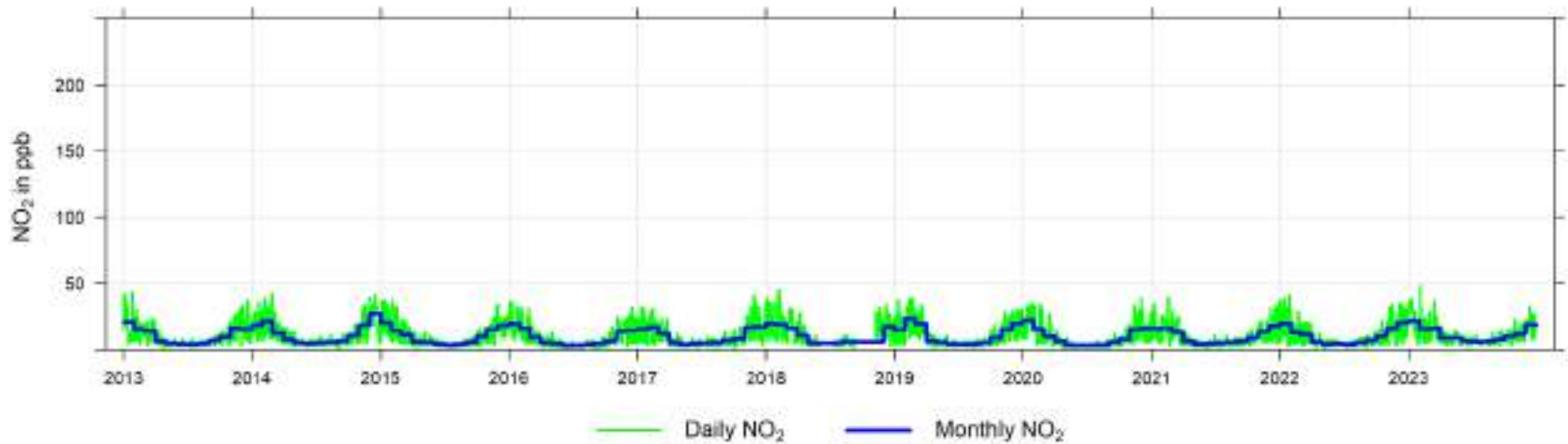
Years 2013 to 2023 Concentration Readings of NO_x (in ppb) at Henry Pirker



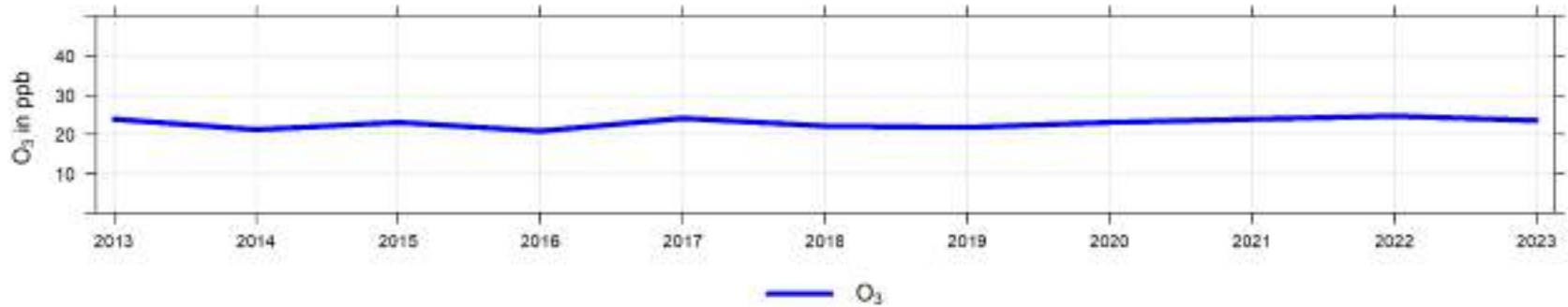
Years 2013 to 2023 Annual Concentration Readings of NO₂ (in ppb) at Henry Pirker



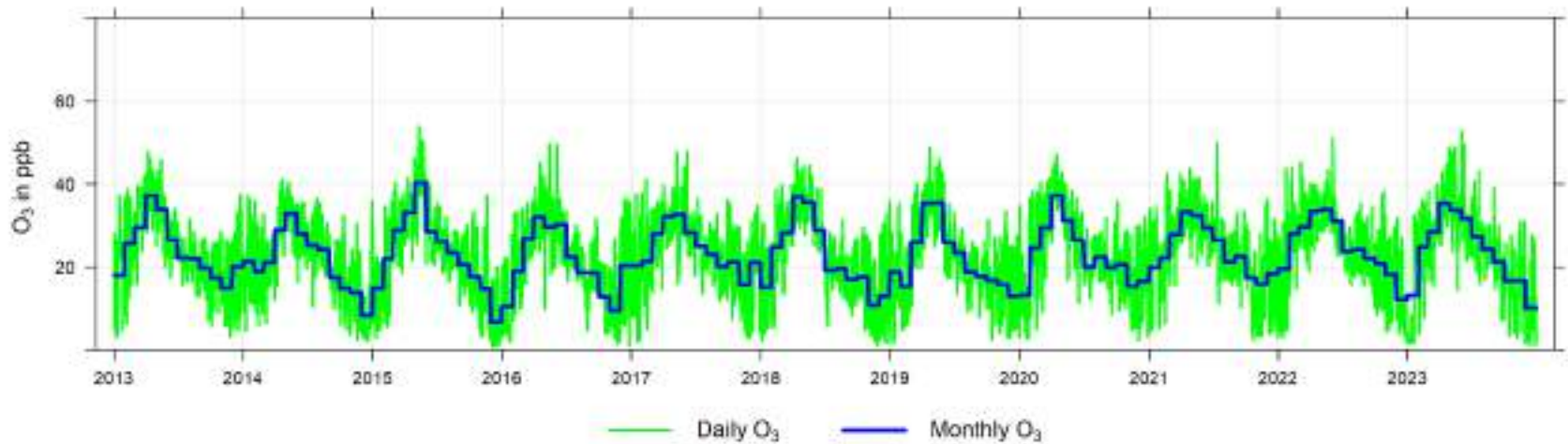
Years 2013 to 2023 Concentration Readings of NO₂ (in ppb) at Henry Pirker



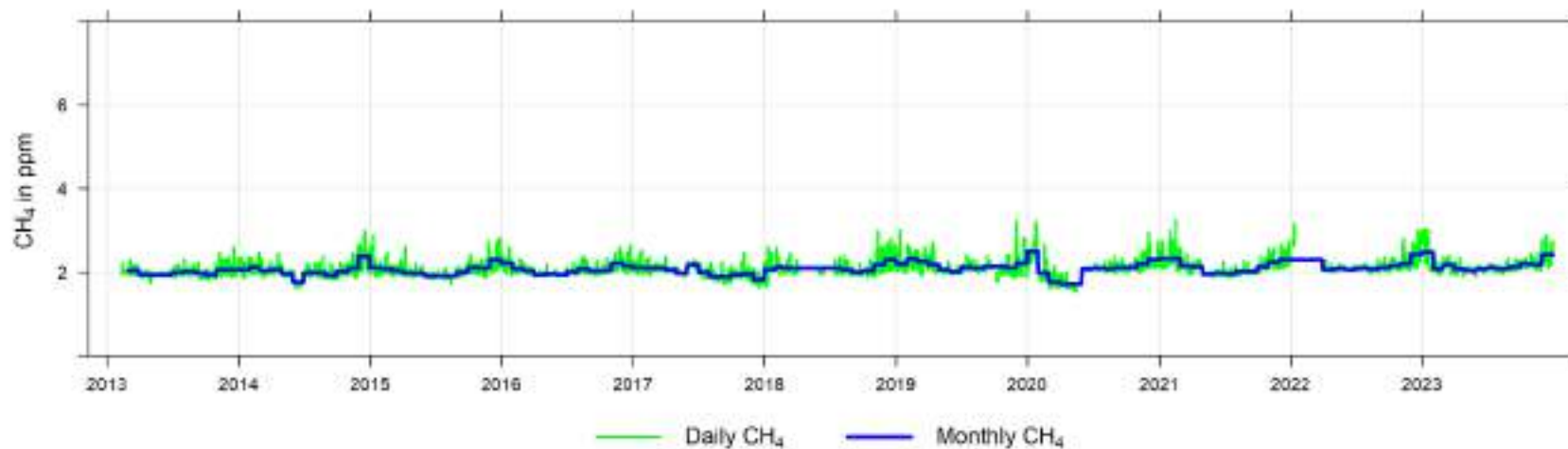
Years 2013 to 2023 Annual Concentration Readings of O₃ (in ppb) at Henry Pirker



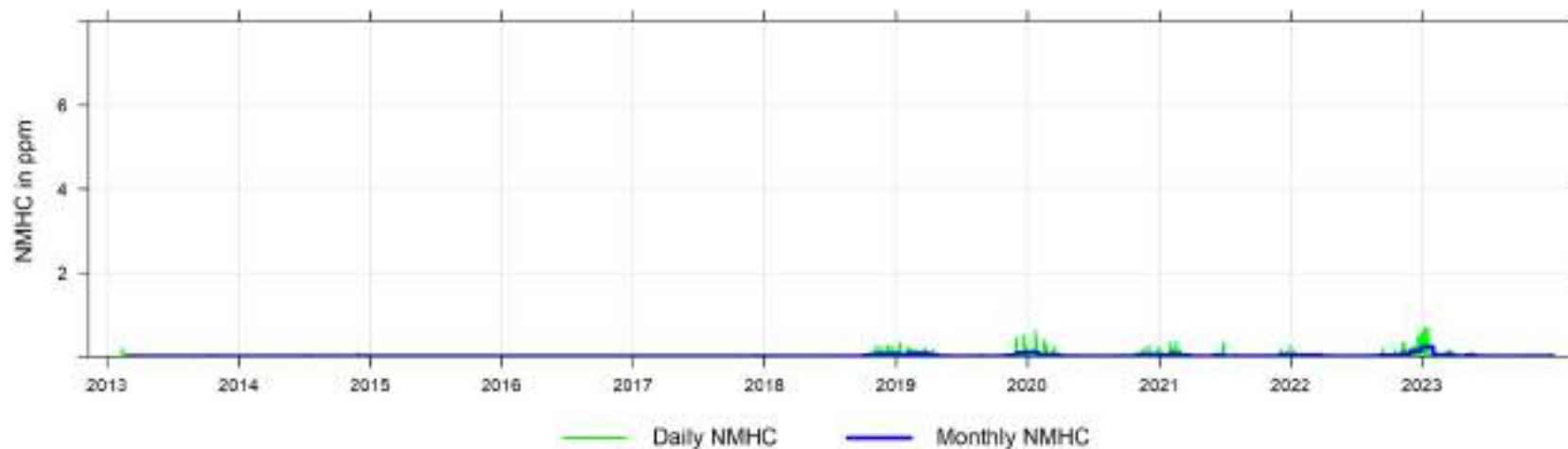
Years 2013 to 2023 Concentration Readings of O₃ (in ppb) at Henry Pirker



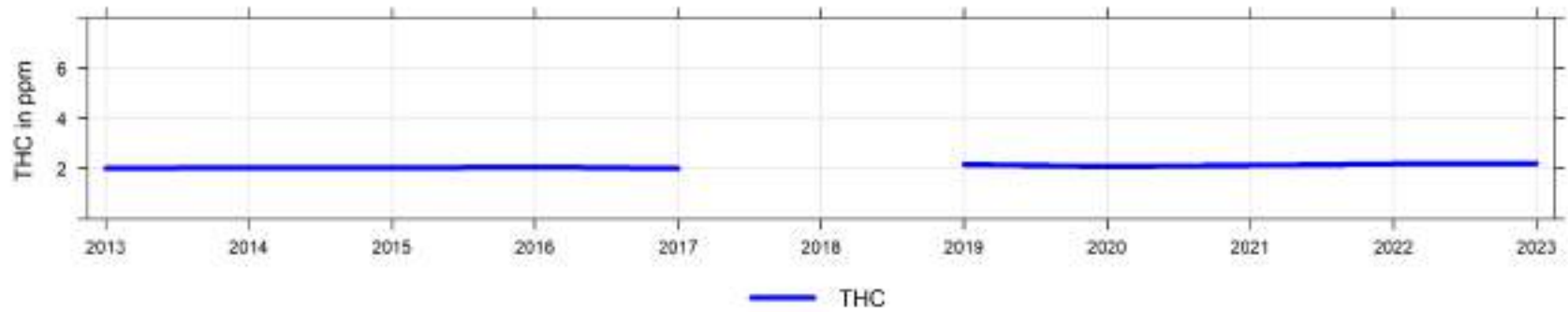
Years 2013 to 2023 Concentration Readings of CH₄ (in ppm) at Henry Pirker



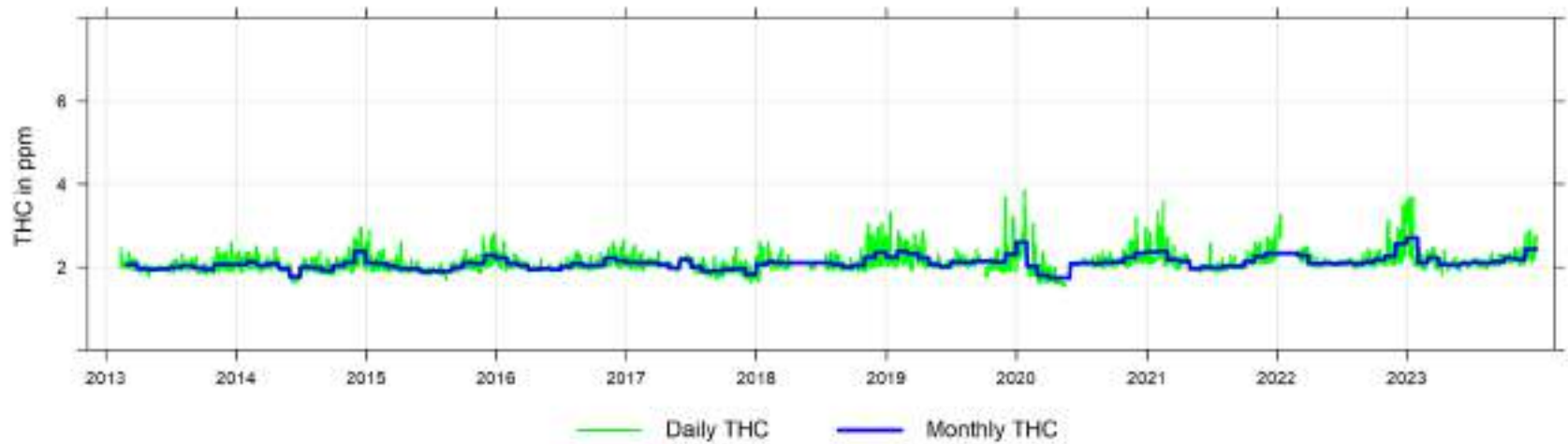
Years 2013 to 2023 Concentration Readings of NMHC (in ppm) at Henry Pirker



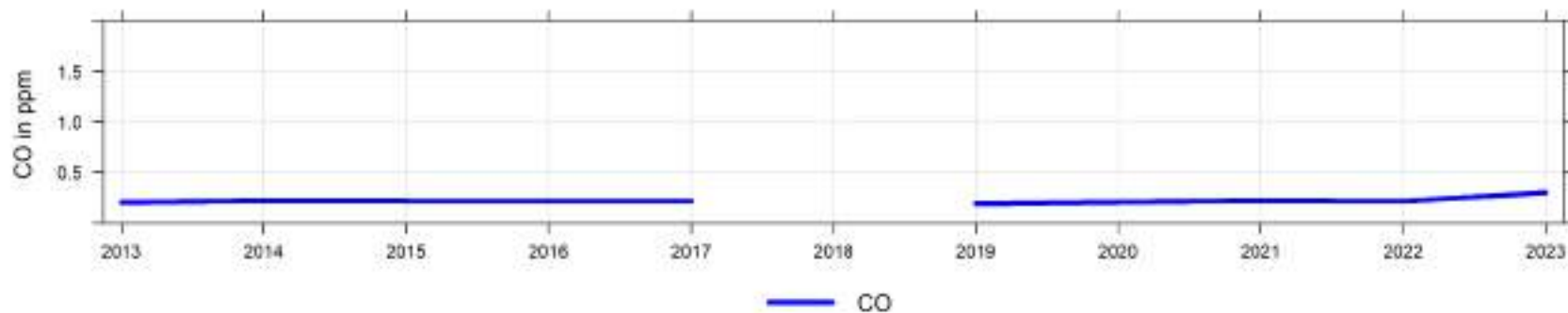
Years 2023 Annual Concentration Readings of THC (in ppm) at Henry Pirker



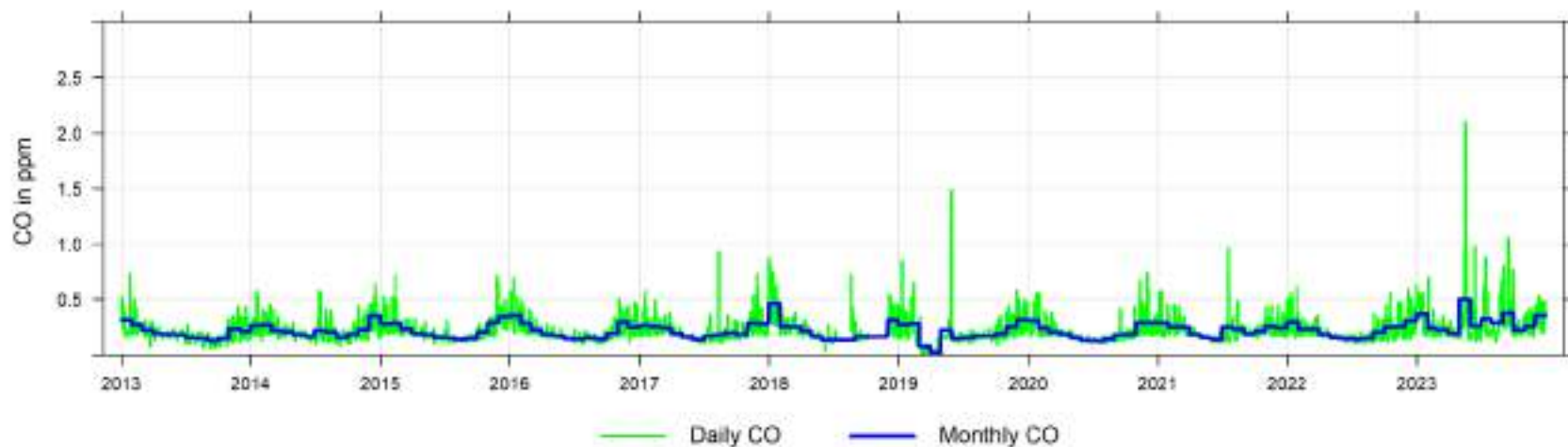
Years 2013 to 2023 Concentration Readings of THC (in ppm) at Henry Pirker



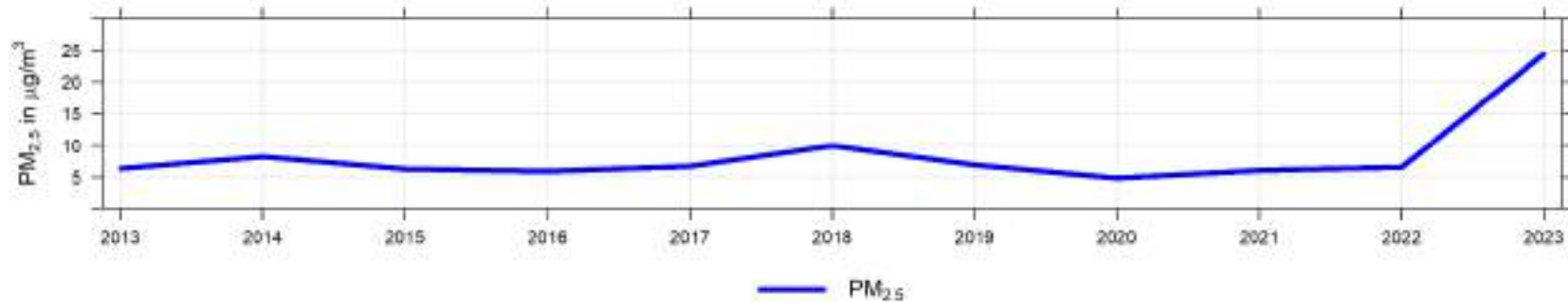
Years 2023 Annual Concentration Readings of CO (in ppm) at Henry Pirker



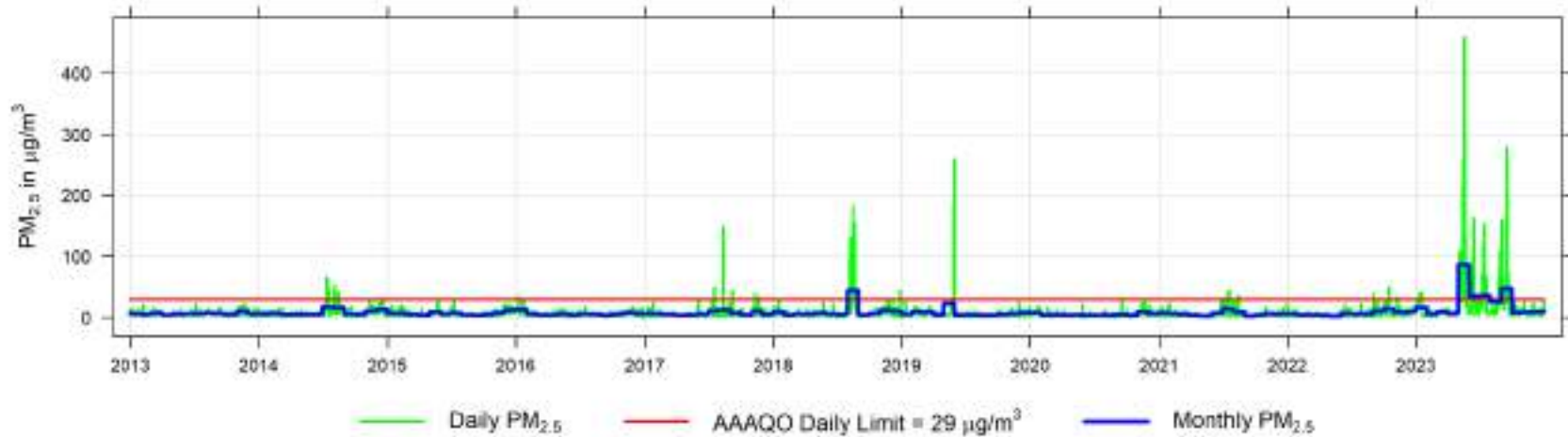
Years 2013 to 2023 Concentration Readings of CO (in ppm) at Henry Pirker



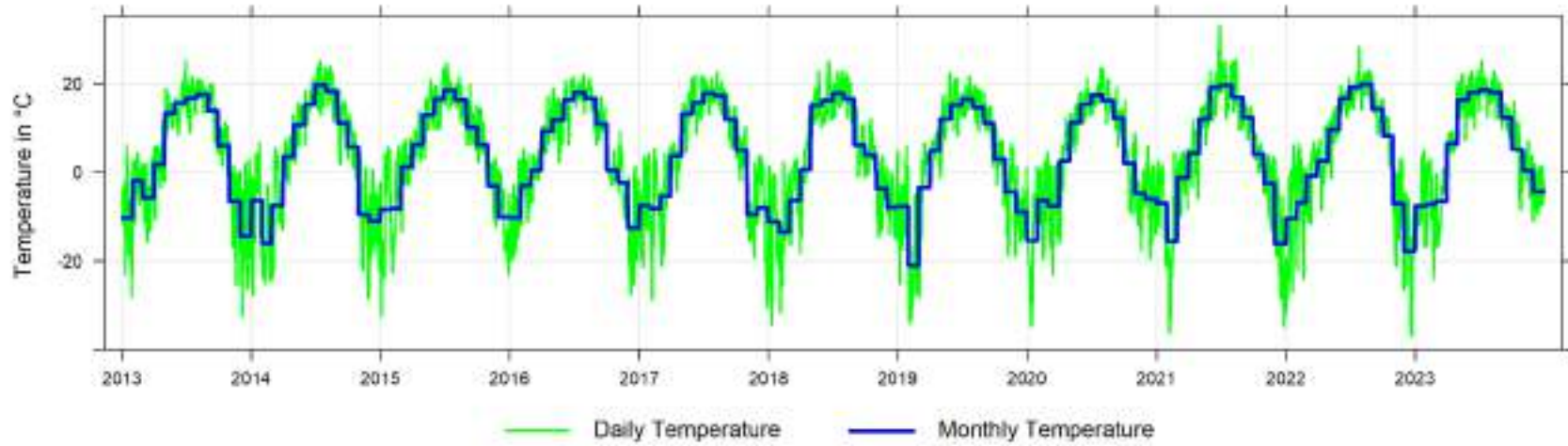
2013 to 2023 Annual Concentration Readings of PM_{2.5} in $\mu\text{g}/\text{m}^3$ at Henry Pirker



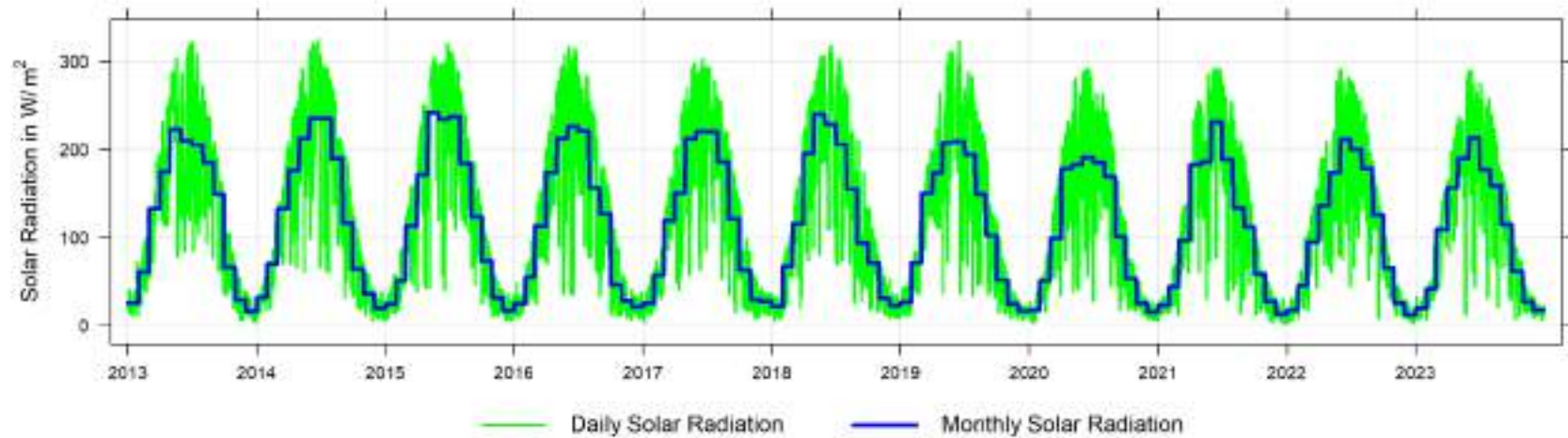
Years 2013 to 2023 Concentration Readings of PM_{2.5} in $\mu\text{g}/\text{m}^3$ at Henry Pirker



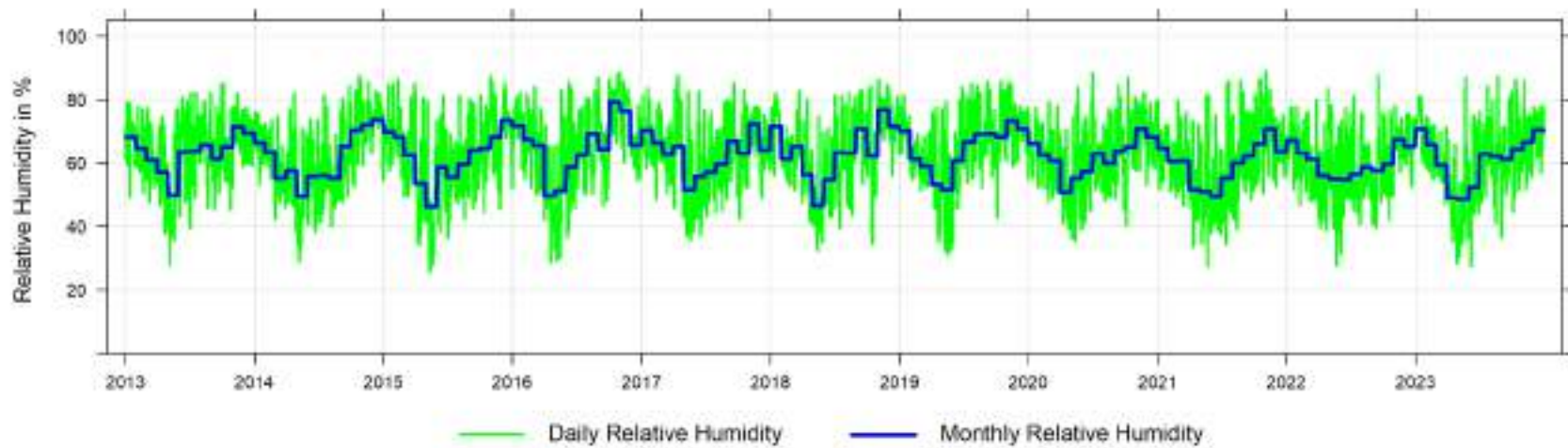
Years 2013 to 2023 Temperature Readings (in °C) at Henry Pirker



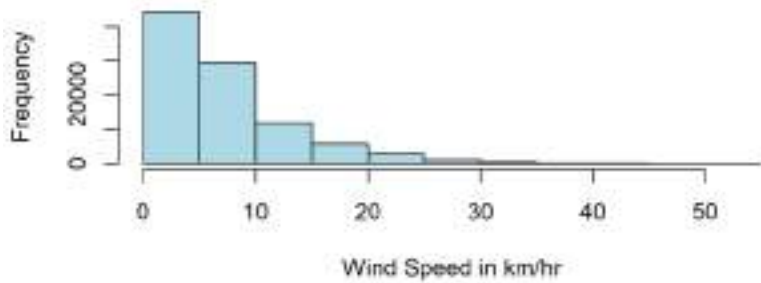
Years 2013 to 2023 Solar Radiation in W/m^2 at Henry Pirker



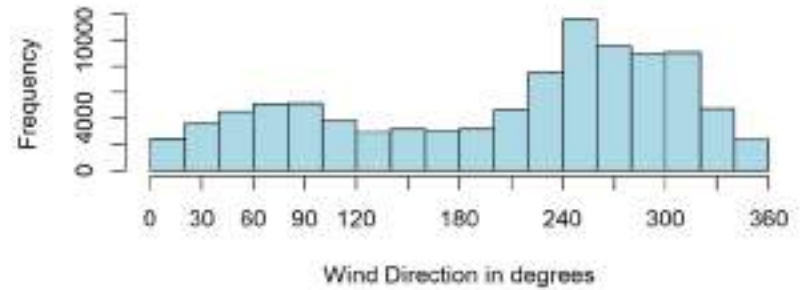
Years 2013 to 2023 Relative Humidity Readings (in %) at Henry Pirker



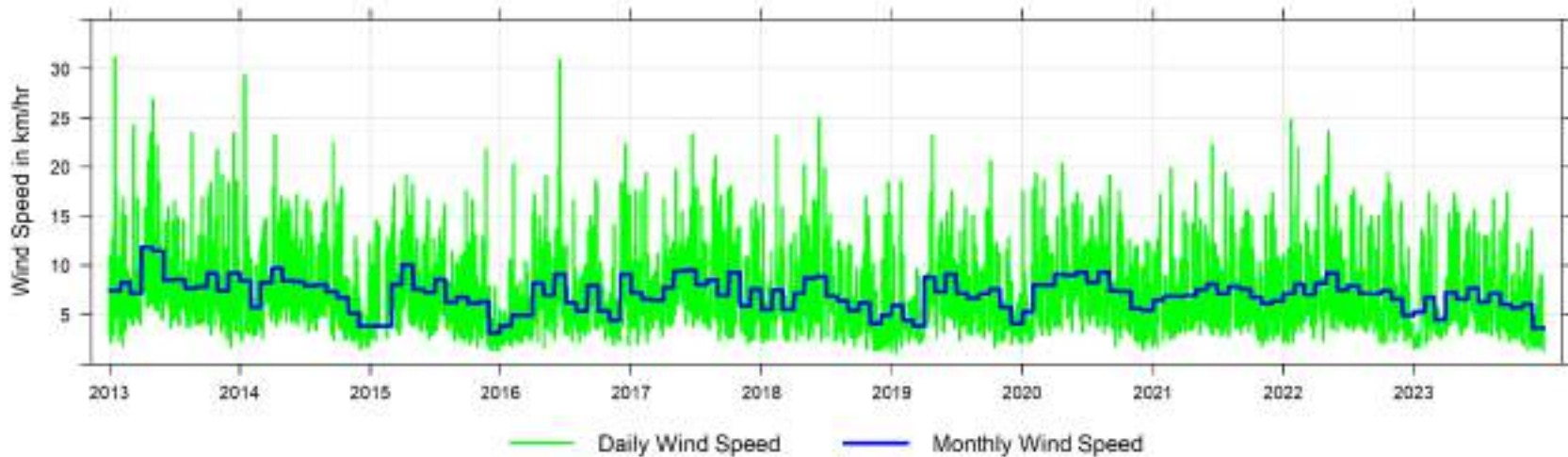
Years 2013 to 2023 Wind Speed Histogram

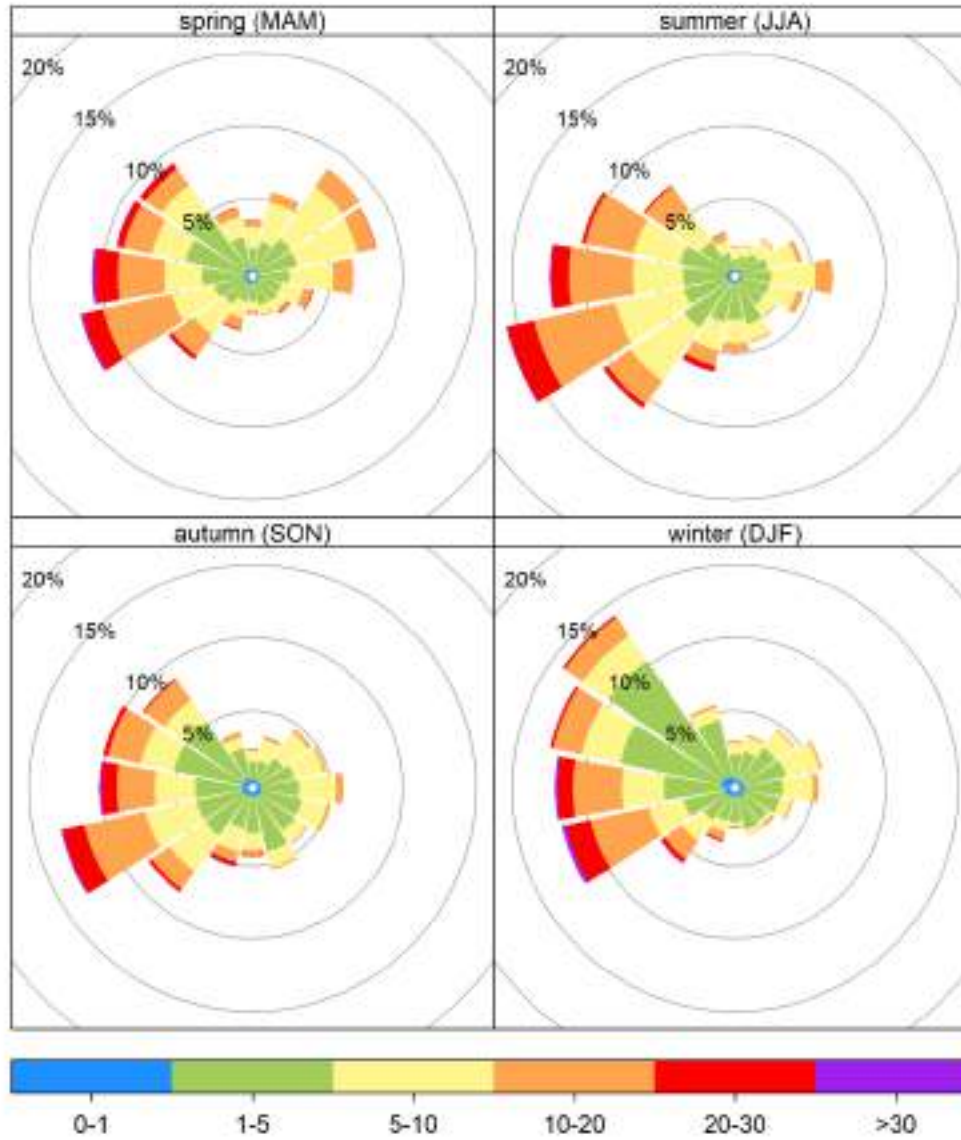


Years 2013 to 2023 Wind Direction Histogram

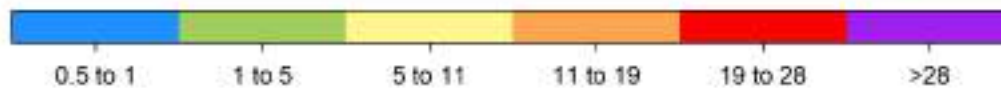
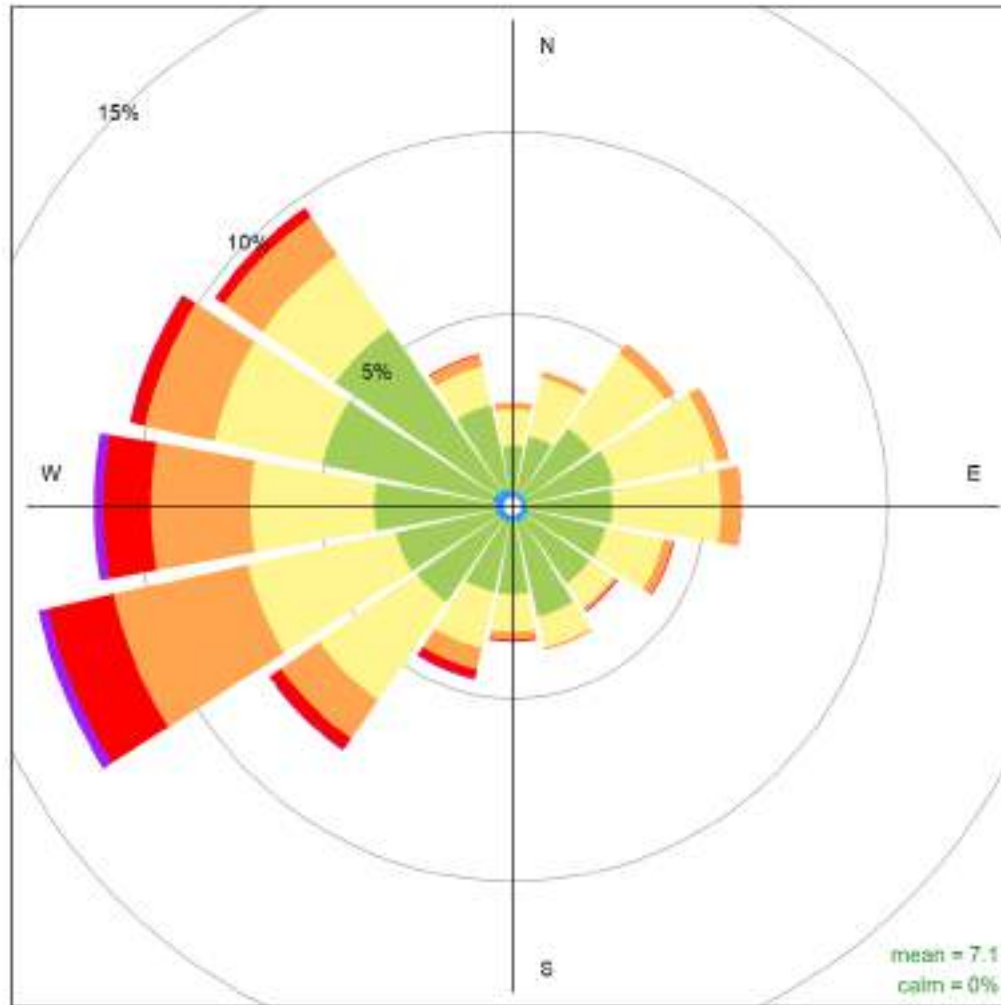


Years 2013 to 2023 Wind Speed Readings (in km/hr) at Henry Pirker





Henry Pirker 2013 to 2023 Seasonal Wind Rose, wind speed in km/hr



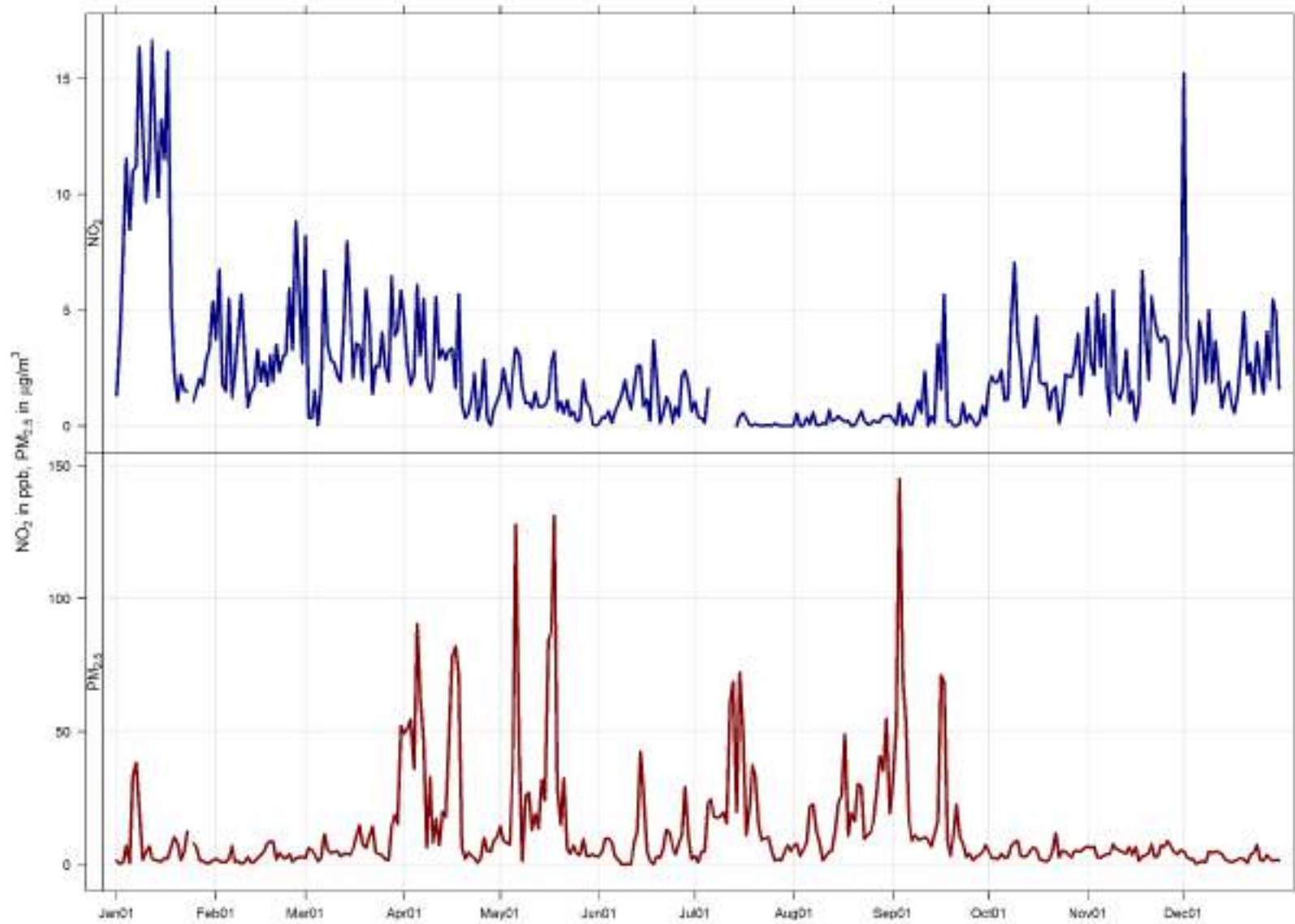
Henry Pirker 2013 to 2023 Wind Rose, wind speed in km/hr
Frequency of counts by wind direction (%)

8 Milner Key Parameters - Continuous Monitoring Data - 2023 Summary

Milner Key Parameters - Continuous Monitoring Data - 2023 Summary

Milner Station	Parameter	Average	Maximum Values				Operational Time (%)	Valid Time (%)	Readings above AAAQO & AAAQG				
			24-hr	Date	1-hr	Date			1-hr	8-hr	24-hr	30-d	Annual
			Nitrogen Dioxide NO ₂ measured in ppb	2.4	16.7	Jan 17			31.7	Feb 26 10:00	94.9%	90.0%	0
Nitrogen Oxides NO _x measured in ppb	3.6	31.7	Jan 17	98.9	Mar 14 09:00	94.9%	90.0%	-	-	-	-	-	
Nitric Oxide NO measured in ppb	0.9	15.9	Jan 15	68.9	Mar 14 09:00	94.9%	90.0%	-	-	-	-	-	
Particulate Matter PM _{2.5} measured in µg/m ³	12.6	149.1	Sep 03	344.8	Apr 18 06:00	95.7%	95.2%	243	-	40	-	-	

2023 Daily Concentration Readings at Milner



8.1 Nitrogen Dioxide (NO₂) - Milner 2023 Summary

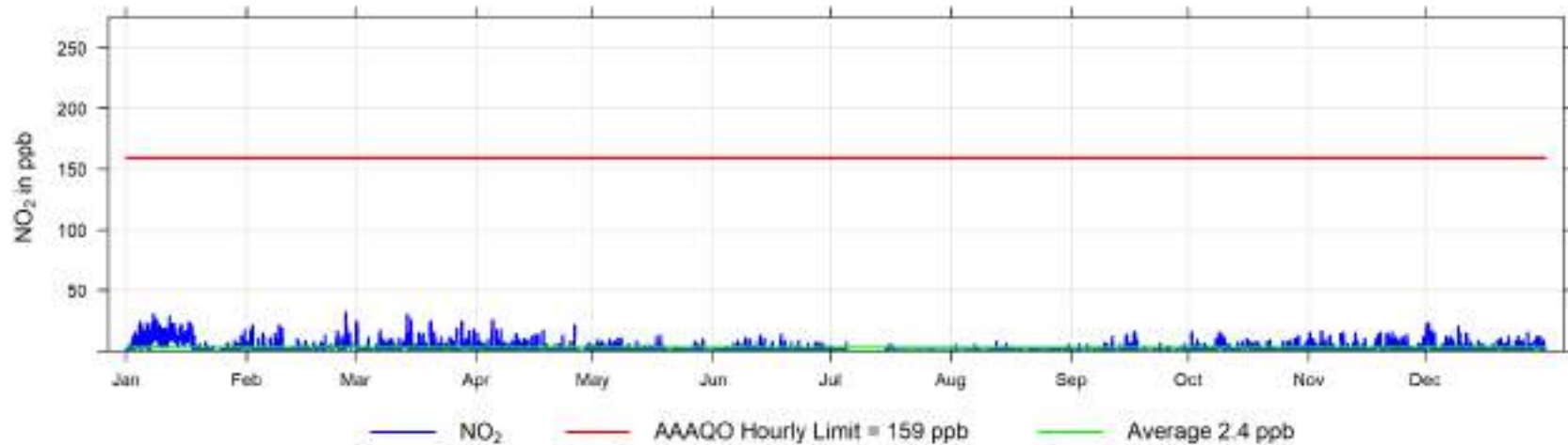
Nitrogen Dioxide (NO₂) Frequency Distribution at Milner

Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	24-hr (ppb)	MAXIMUM VALUES		Operational time (%)	Valid time (%)	Reportable Incidents 1-hr 159 ppb	
		0 to 5 (ppb)	5 to 15 (ppb)	15 to 30 (ppb)	30 to 100 (ppb)	100 to 159 (ppb)	> 159 (ppb)			Date	1-hr (ppb) Date				
January 2023	663	49.2%	34.8%	15.8%	0.2%	0.0%	0.0%	7.5	16.7	Jan 17	30.6	Jan 08 00:00	93.8%	89.1%	0
February 2023	624	82.5%	15.7%	1.6%	0.2%	0.0%	0.0%	3.3	8.8	Feb 26	31.7	Feb 26 10:00	97.5%	92.9%	0
March 2023	704	77.3%	18.6%	4.0%	0.1%	0.0%	0.0%	3.4	8.0	Mar 14	30.1	Mar 14 09:00	99.6%	94.6%	0
April 2023	652	84.5%	14.1%	1.4%	0.0%	0.0%	0.0%	2.4	5.9	Apr 05	25.6	Apr 05 08:00	96.1%	90.6%	0
May 2023	681	94.6%	5.4%	0.0%	0.0%	0.0%	0.0%	1.3	3.3	May 06	12.6	May 18 09:00	96.4%	91.5%	0
June 2023	684	94.2%	5.8%	0.0%	0.0%	0.0%	0.0%	1.1	3.7	Jun 18	13.2	Jun 18 10:00	100.0%	95.0%	0
July 2023	473	99.6%	0.4%	0.0%	0.0%	0.0%	0.0%		1.0	Jul 01	6.8	Jul 05 02:00	67.7%	63.6%	0
August 2023	669	99.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.2	0.7	Aug 12	7.3	Aug 12 19:00	95.0%	89.9%	0
September 2023	637	95.3%	4.4%	0.3%	0.0%	0.0%	0.0%	0.8	5.7	Sep 17	15.9	Sep 17 08:00	93.2%	88.5%	0
October 2023	701	88.6%	11.1%	0.3%	0.0%	0.0%	0.0%	2.3	6.4	Oct 09	15.7	Oct 01 23:00	99.6%	94.2%	0
November 2023	684	80.3%	19.0%	0.7%	0.0%	0.0%	0.0%	2.9	6.9	Nov 18	16.2	Nov 04 07:00	100.0%	95.0%	0
December 2023	707	79.9%	17.5%	2.5%	0.0%	0.0%	0.0%	3.0	15.3	Dec 01	23.5	Dec 01 18:00	100.0%	95.0%	0
Annual	7879	85.5%	12.3%	2.2%	0.0%	0.0%	0.0%	2.4	16.7	MAXIMUM VALUES		94.9%	90.0%	0	

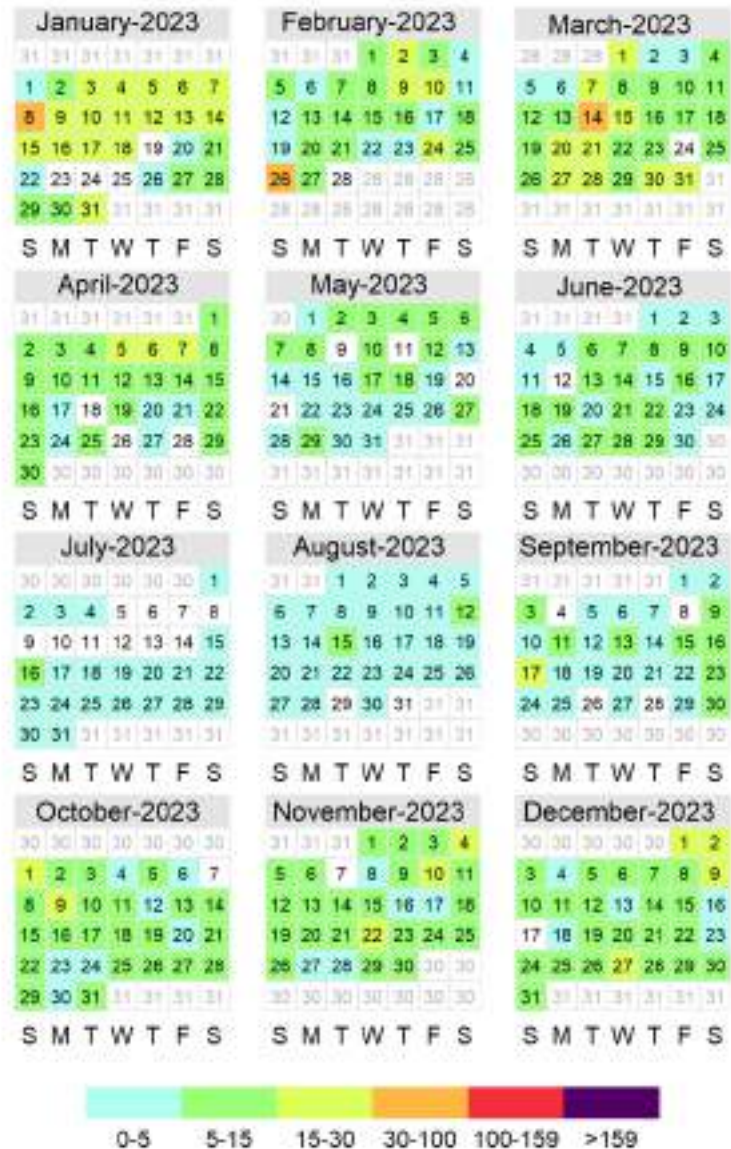
AAAQO Objectives: Annual: 24ppb, 1-Hr: 159ppb

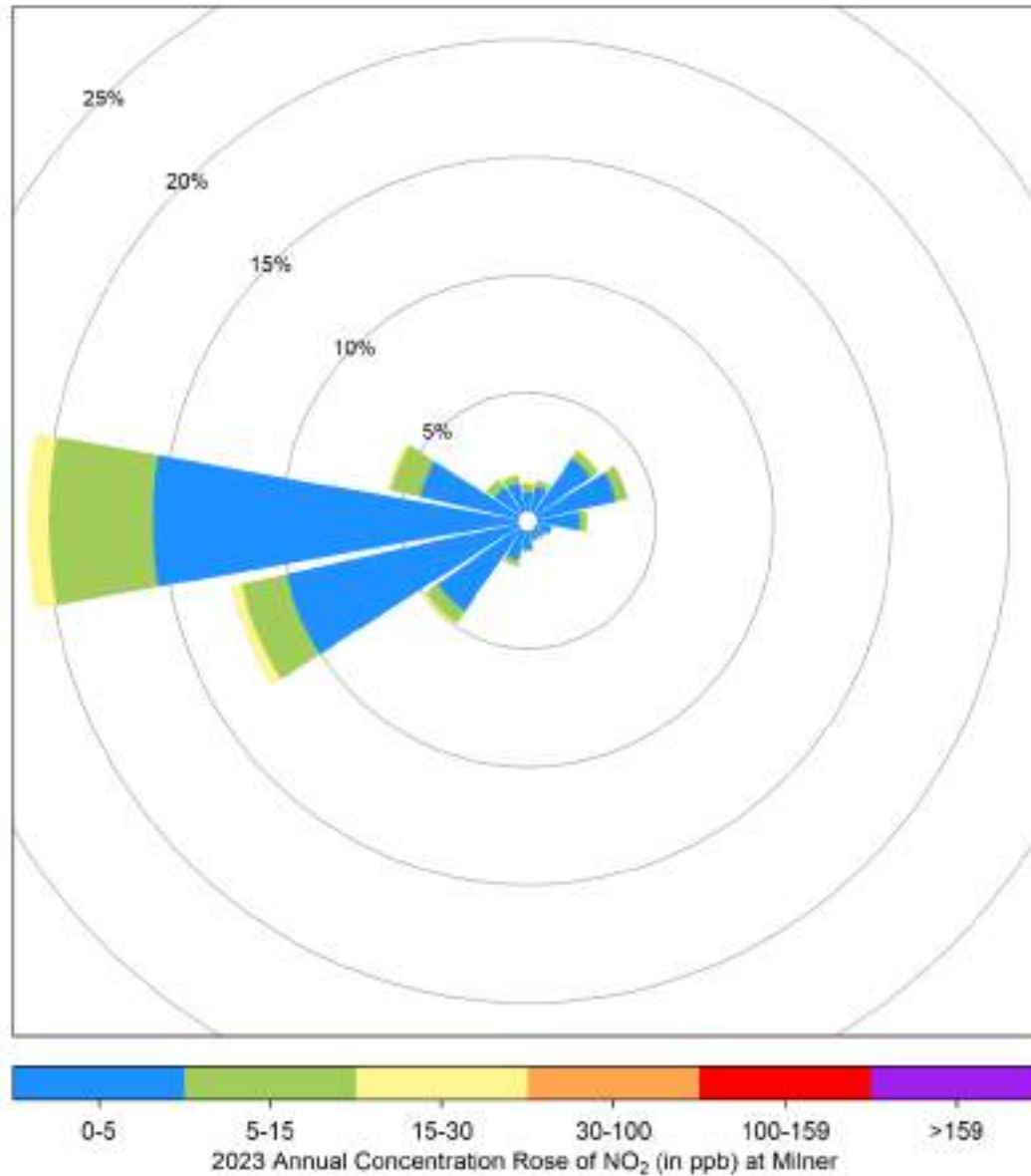
Note: In July 2023 when valid data below 75% uptime the monthly average not valid

2023 Hourly Concentration Readings of NO₂ (in ppb) at Milner



Hourly Maximum NO₂ (in ppb) for 2023 at Milner





8.2 Nitric Oxide (NO) - Milner 2023 Summary

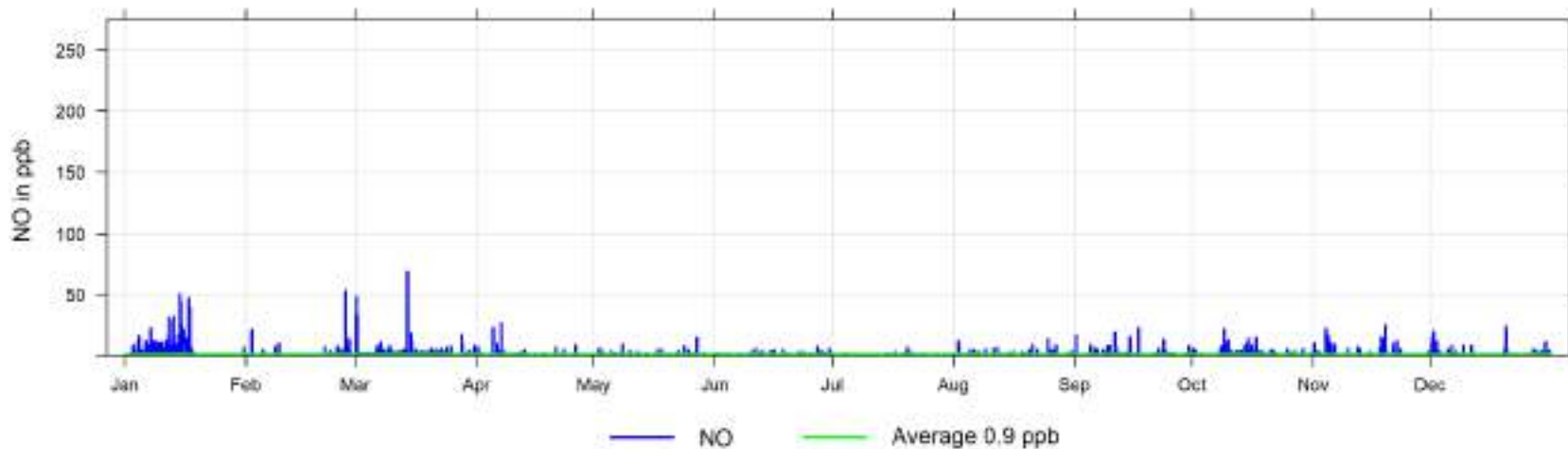
Nitric Oxide (NO) Frequency Distribution at Milner

Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	MAXIMUM VALUES				Operational time (%)	Valid time (%)
		0 to 5 (ppb)	5 to 15 (ppb)	15 to 30 (ppb)	30 to 100 (ppb)	100 to 159 (ppb)	> 159 (ppb)		24-hr (ppb)	Date	1-hr (ppb)	Date		
January 2023	663	81.9%	13.0%	3.2%	2.0%	0.0%	0.0%	2.9	15.9	Jan 15	50.2	Jan 15 04:00	93.8%	89.1%
February 2023	624	96.5%	2.9%	0.5%	0.2%	0.0%	0.0%	0.6	4.9	Feb 26	53.1	Feb 26 10:00	97.5%	92.9%
March 2023	704	94.5%	3.7%	0.9%	1.0%	0.0%	0.0%	2.3	10.9	Mar 14	68.9	Mar 14 09:00	99.6%	94.6%
April 2023	652	98.6%	1.1%	0.3%	0.0%	0.0%	0.0%	0.4	2.3	Apr 07	26.7	Apr 07 09:00	96.1%	90.6%
May 2023	681	98.7%	1.3%	0.0%	0.0%	0.0%	0.0%	0.4	1.3	May 27	14.7	May 27 09:00	96.4%	91.5%
June 2023	684	99.6%	0.4%	0.0%	0.0%	0.0%	0.0%	0.4	1.4	Jun 27	7.5	Jun 27 06:00	100.0%	95.0%
July 2023	473	99.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.6	0.6	Jul 20	6.6	Jul 20 07:00	67.7%	63.6%
August 2023	669	98.2%	1.8%	0.0%	0.0%	0.0%	0.0%	0.5	1.7	Aug 02	13.5	Aug 25 07:00	95.0%	89.9%
September 2023	637	96.2%	3.1%	0.6%	0.0%	0.0%	0.0%	0.7	3.0	Sep 17	22.9	Sep 17 10:00	93.2%	88.5%
October 2023	701	96.3%	3.6%	0.1%	0.0%	0.0%	0.0%	0.8	3.5	Oct 09	21.8	Oct 09 09:00	99.6%	94.2%
November 2023	684	94.9%	4.2%	0.9%	0.0%	0.0%	0.0%	0.7	4.6	Nov 04	25.3	Nov 19 12:00	100.0%	95.0%
December 2023	707	96.0%	3.4%	0.6%	0.0%	0.0%	0.0%	0.6	5.5	Dec 20	24.0	Dec 20 09:00	100.0%	95.0%
Annual	7879	95.9%	3.2%	0.6%	0.3%	0.0%	0.0%	0.9	15.9	Jan 15	68.9	Mar 14 09:00	94.9%	90.0%

AAAQO Objectives: none

Note: In July 2023 when valid data below 75% uptime the monthly average not valid

2023 Hourly Concentration Readings of NO (in ppb) at Milner



8.3 Oxides of Nitrogen (NO_x) - Milner 2023 Summary

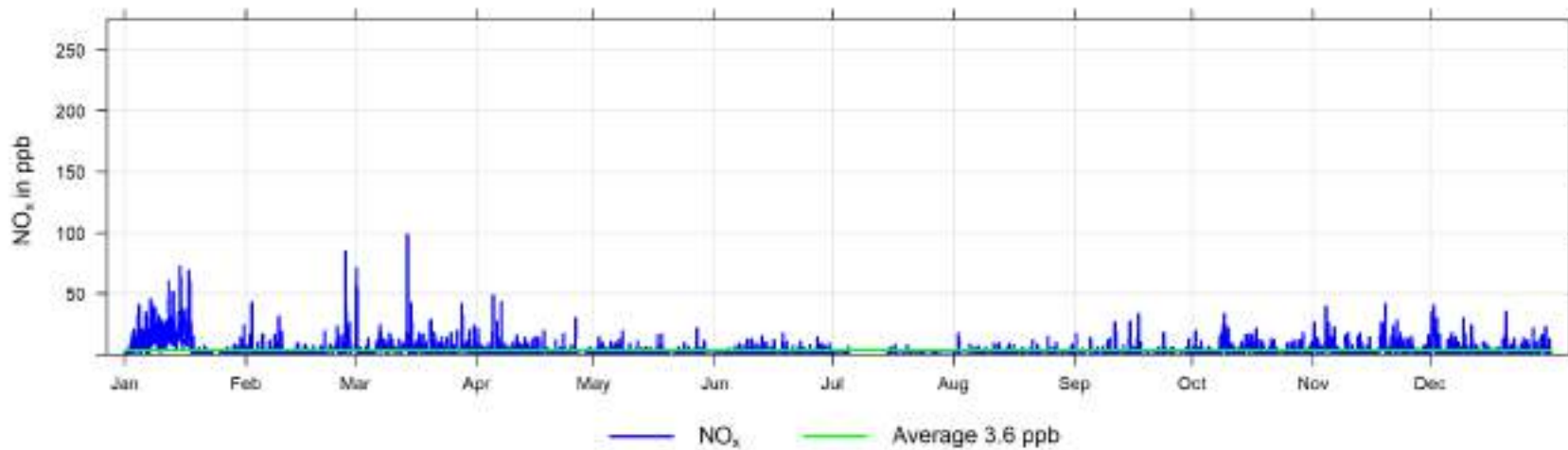
Nitrogen Oxides (NO_x) Frequency Distribution at Milner

Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	MAXIMUM VALUES				Operational time (%)	Valid time (%)
		0 to 5 (ppb)	5 to 15 (ppb)	15 to 30 (ppb)	30 to 100 (ppb)	100 to 159 (ppb)	> 159 (ppb)		24-hr (ppb)	Date	1-hr (ppb)	Date		
January 2023	663	47.4%	28.2%	17.0%	7.4%	0.0%	0.0%	10.4	31.7	Jan 17	72.6	Jan 15 04:00	93.8%	89.1%
February 2023	624	80.6%	14.4%	4.0%	1.0%	0.0%	0.0%	4.0	13.8	Feb 26	84.9	Feb 26 10:00	97.5%	92.9%
March 2023	704	62.9%	29.8%	5.0%	2.3%	0.0%	0.0%	6.0	18.7	Mar 14	98.9	Mar 14 09:00	99.6%	94.6%
April 2023	652	81.4%	16.6%	1.5%	0.5%	0.0%	0.0%	2.9	7.9	Apr 05	48.6	Apr 05 08:00	96.1%	90.6%
May 2023	681	91.6%	7.6%	0.7%	0.0%	0.0%	0.0%	1.6	3.4	May 07	22.2	May 27 09:00	96.4%	91.5%
June 2023	684	89.5%	10.1%	0.4%	0.0%	0.0%	0.0%	1.6	4.1	Jun 18	18.0	Jun 18 10:00	100.0%	95.0%
July 2023	473	98.9%	1.1%	0.0%	0.0%	0.0%	0.0%	1.2	1.2	Jul 01	8.2	Jul 17 08:00	67.7%	63.6%
August 2023	669	95.8%	4.0%	0.1%	0.0%	0.0%	0.0%	0.8	2.6	Aug 02	18.1	Aug 02 06:00	95.0%	89.9%
September 2023	637	91.8%	6.1%	1.7%	0.3%	0.0%	0.0%	1.4	8.5	Sep 17	33.8	Sep 17 10:00	93.2%	88.5%
October 2023	701	78.9%	19.0%	2.0%	0.1%	0.0%	0.0%	3.5	10.3	Oct 09	33.7	Oct 09 09:00	99.6%	94.2%
November 2023	684	69.7%	24.7%	4.8%	0.7%	0.0%	0.0%	4.8	12.6	Nov 18	41.9	Nov 19 12:00	100.0%	95.0%
December 2023	707	72.3%	21.8%	4.4%	1.6%	0.0%	0.0%	4.6	22.2	Dec 01	40.5	Dec 01 20:00	100.0%	95.0%
Annual	7879	80.1%	15.3%	3.5%	1.2%	0.0%	0.0%	3.6	31.7	Jan 17	98.9	Mar 14 09:00	94.9%	90.0%

AAAQO Objectives: none

Note: In July 2023 when valid data below 75% uptime the monthly average not valid

2023 Hourly Concentration Readings of NO_x (in ppb) at Milner



8.4 Particulate Matter (PM_{2.5}) - Milner 2023 Summary

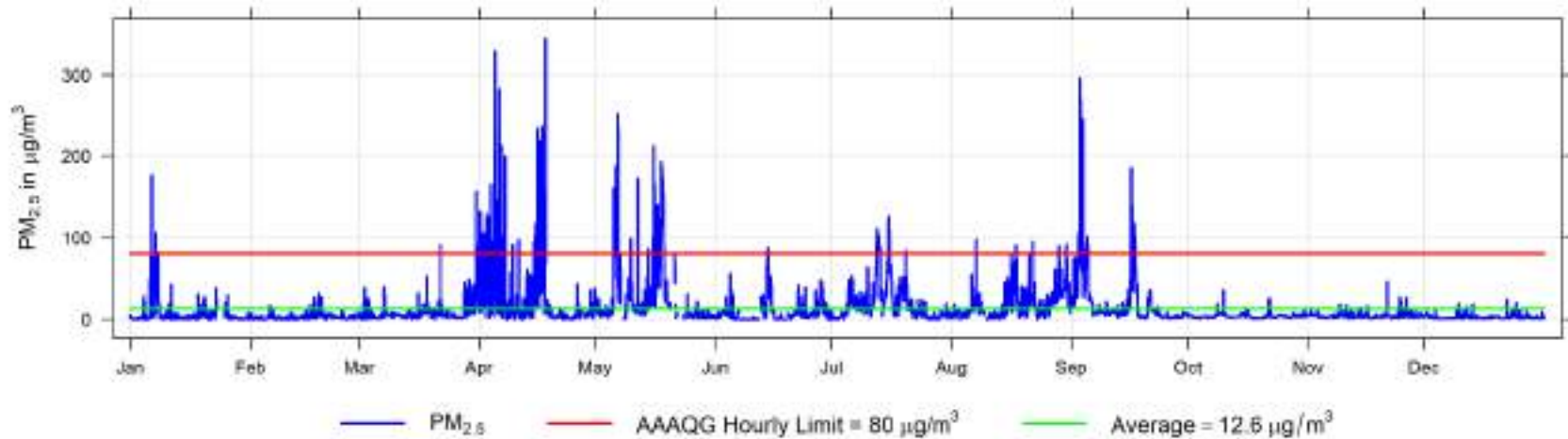
Particulate Matter (PM_{2.5}) Frequency Distribution at Milner

Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (µg/m ³)	24-hr (µg/m ³)	MAXIMUM VALUES		Operational time (%)	Valid time (%)	Reportable Incidents		
		0 to 5 (µg/m ³)	5 to 15 (µg/m ³)	15 to 30 (µg/m ³)	30 to 50 (µg/m ³)	50 to 80 (µg/m ³)	> 80 (µg/m ³)			Date	1-hr Date			24-hr 29 µg/m ³	1-hr 80 µg/m ³	
January 2023	690	76.5%	13.8%	5.5%	1.4%	2.0%	0.7%	6.2	37.8	Jan 07	176.8	Jan 06 12:00	93.4%	92.7%	2	5
February 2023	660	84.2%	13.5%	2.1%	0.2%	0.0%	0.0%	2.9	8.7	Feb 18	31.2	Feb 18 17:00	99.1%	98.2%	0	0
March 2023	727	54.2%	33.7%	6.6%	3.6%	1.2%	0.7%	8.2	51.4	Mar 31	156.2	Mar 31 06:00	98.1%	97.7%	1	5
April 2023	688	38.2%	21.2%	11.8%	9.0%	9.2%	10.6%	28.6	89.6	Apr 05	344.8	Apr 18 06:00	96.1%	95.6%	12	73
May 2023	647	26.6%	31.5%	18.5%	7.9%	4.5%	11.0%	28.6	125.4	May 06	252.2	May 06 18:00	87.1%	87.0%	6	71
June 2023	664	54.1%	31.2%	8.9%	3.6%	1.8%	0.5%	8.4	43.5	Jun 14	86.8	Jun 14 16:00	92.8%	92.2%	2	3
July 2023	678	25.2%	30.2%	23.5%	10.6%	5.9%	4.6%	20.4	74.3	Jul 15	126.1	Jul 15 18:00	91.5%	91.1%	6	31
August 2023	670	20.9%	33.0%	26.0%	15.1%	3.9%	1.2%	18.4	52.3	Aug 30	96.4	Aug 07 08:00	91.1%	90.1%	4	8
September 2023	717	32.6%	37.5%	10.7%	7.1%	5.4%	6.6%	21.6	149.1	Sep 03	296.0	Sep 03 07:00	99.7%	99.6%	7	47
October 2023	738	83.7%	14.6%	1.5%	0.1%	0.0%	0.0%	3.6	9.5	Oct 22	35.3	Oct 10 07:00	99.6%	99.2%	0	0
November 2023	718	76.0%	22.7%	1.1%	0.1%	0.0%	0.0%	4.1	6.9	Nov 26	46.1	Nov 21 11:00	100.0%	99.7%	0	0
December 2023	739	88.5%	10.7%	0.8%	0.0%	0.0%	0.0%	2.5	7.0	Dec 24	23.6	Dec 22 09:00	99.7%	99.3%	0	0
Annual	8336	55.1%	24.5%	9.8%	4.9%	2.8%	3.0%	12.6	149.1	MAXIMUM VALUES		95.7%	95.2%	40	243	

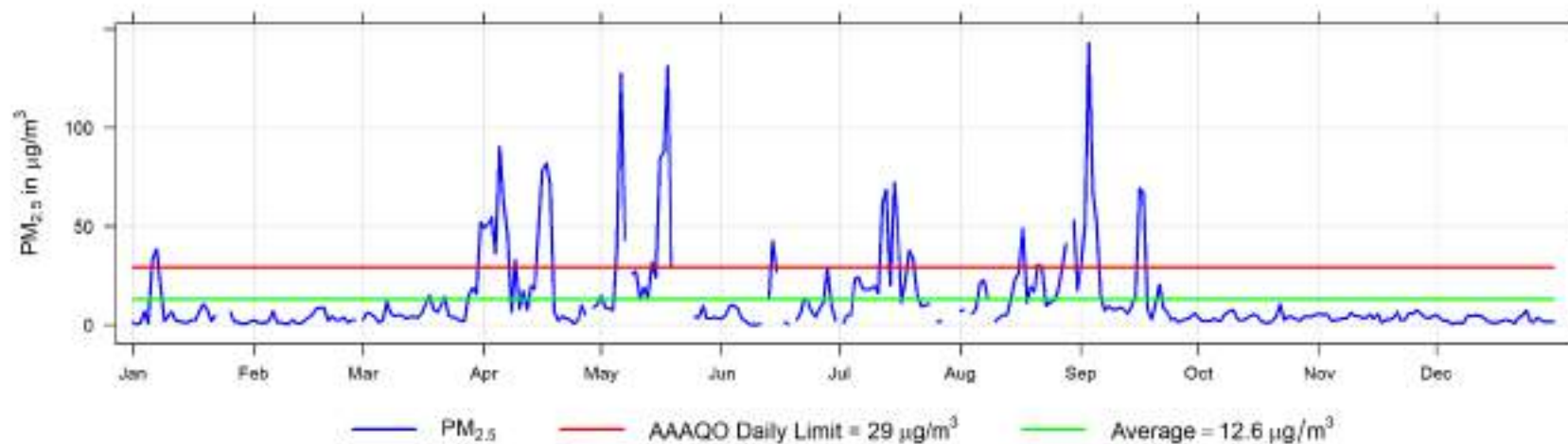
AAAQO Objectives: 24-Hr: 29 µg/m³, AAAQG Guideline: 1-Hr: 80 µg/m³

Note: correction of T640 data for Aug 29, 2023 to Dec 01, 2023 (when firmware update performed) resulted in a reduction of 1hr incidents by 3

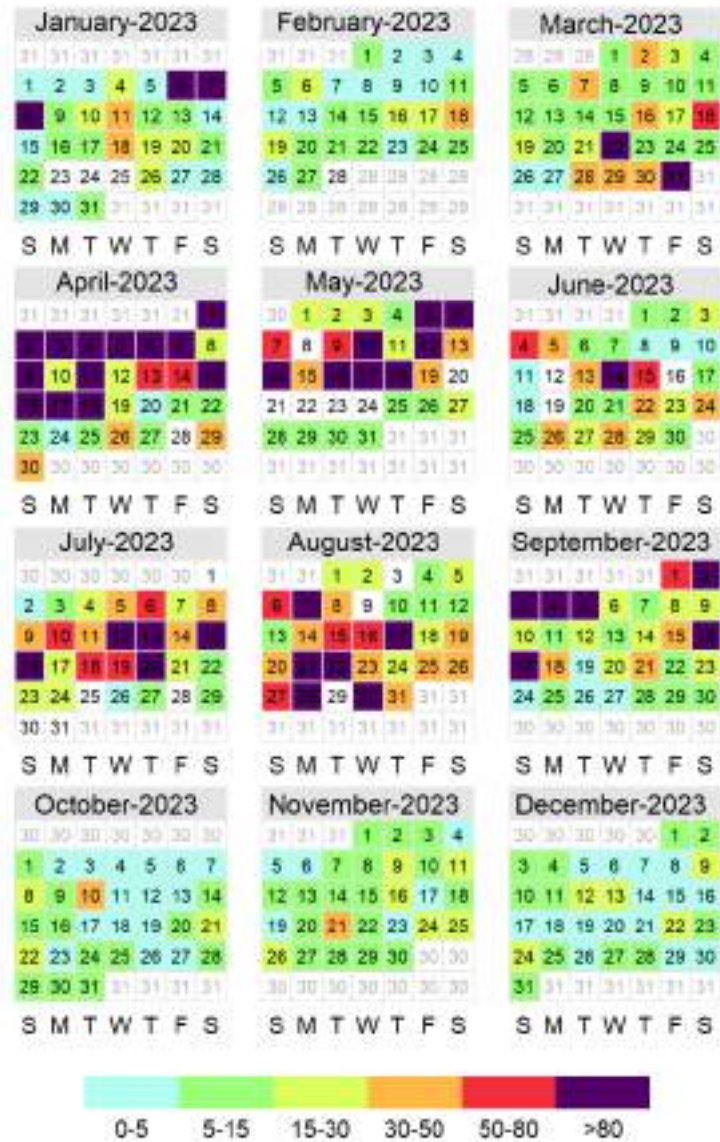
2023 Hourly Concentration Readings of PM_{2.5} in µg/m³ at Milner

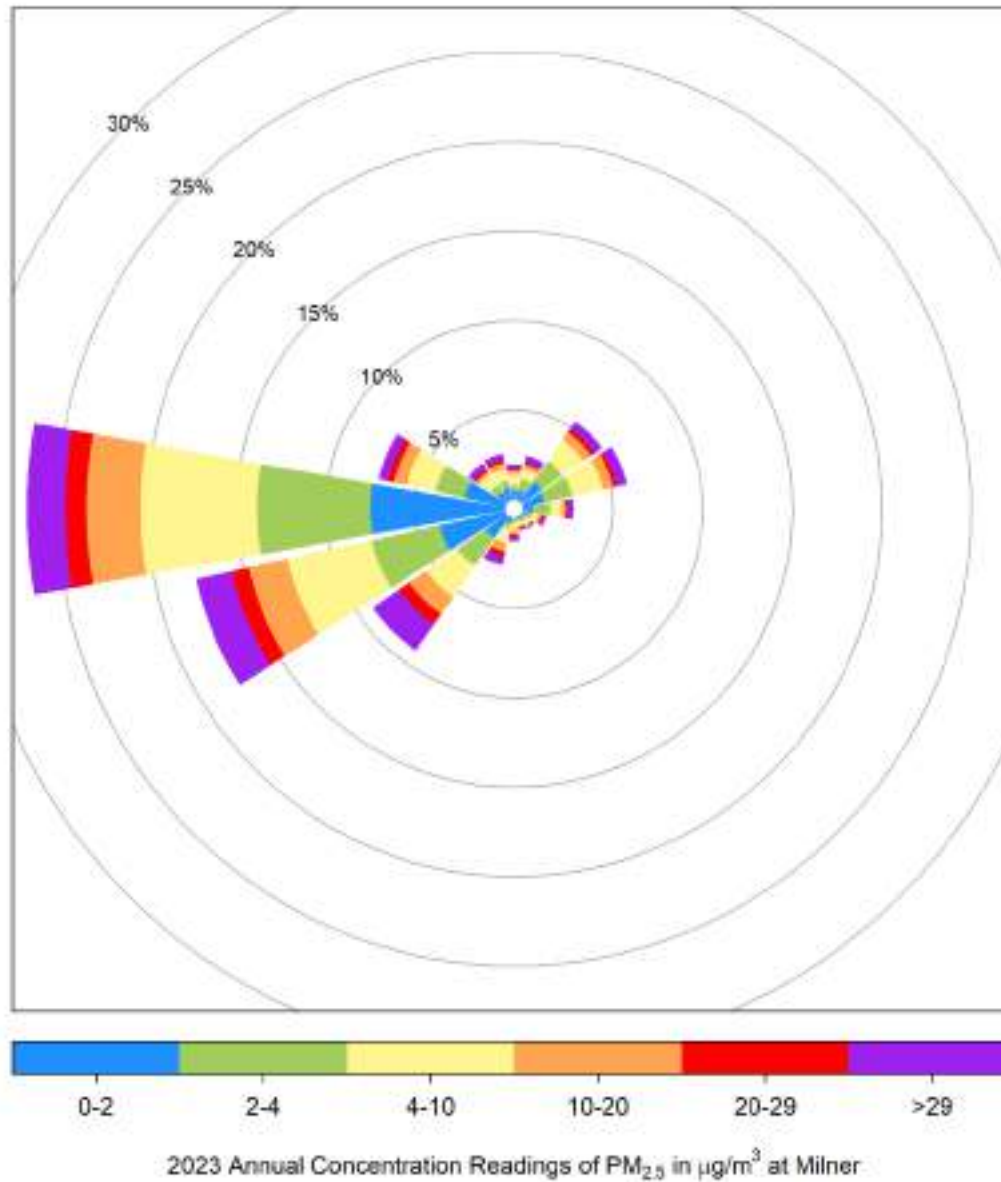


2023 Daily Concentration Readings of PM_{2.5} in $\mu\text{g}/\text{m}^3$ at Milner



Hourly Maximum PM_{2.5} (in µg/m³) for 2023 at Milner



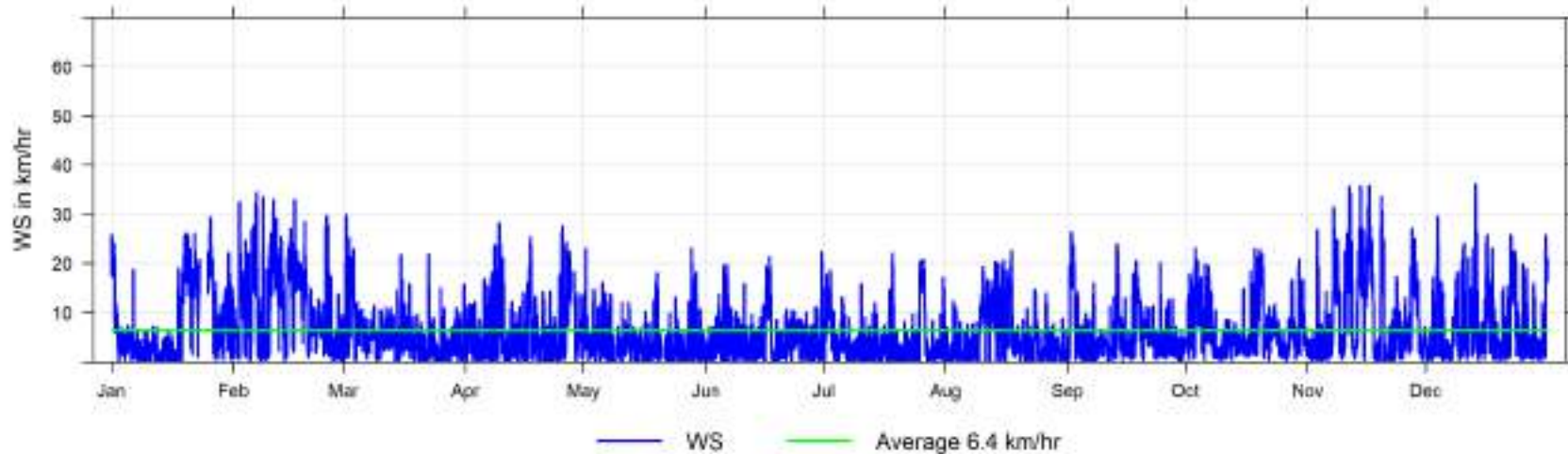


8.5 Wind Speed and Wind Direction (WS and WD) - Milner 2023 Summary

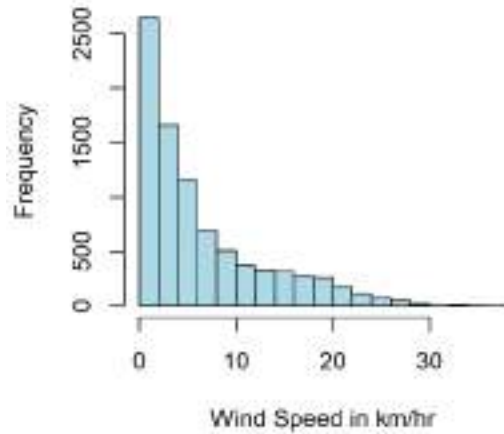
Wind Speed Frequency Distribution at Milner

Month	Valid Hours	Calm	% of Readings in Concentration Range					Monthly Average (km/hr)	24-hr (km/hr)	MAXIMUM VALUES			Operational time (%)	Valid time (%)
			0.5 to 5 (km/hr)	5 to 11 (km/hr)	11 to 19 (km/hr)	19 to 28 (km/hr)	>28 (km/hr)			Date	1-hr (km/hr)	Date		
January 2023	698	13.9%	39.8%	18.5%	17.0%	10.6%	0.1%	7.4	19.7	Jan 20	29.4	Jan 26 03:00	93.8%	93.8%
February 2023	672	2.5%	27.5%	22.3%	25.9%	19.2%	2.5%	11.5	23.5	Feb 06	34.5	Feb 06 19:00	100.0%	100.0%
March 2023	744	9.9%	46.6%	33.1%	7.5%	2.7%	0.1%	5.6	15.2	Mar 03	29.8	Mar 01 15:00	100.0%	100.0%
April 2023	703	14.7%	41.4%	21.5%	16.5%	5.8%	0.1%	6.4	16.1	Apr 27	28.2	Apr 09 15:00	97.6%	97.6%
May 2023	721	17.9%	52.4%	21.2%	7.9%	0.6%	0.0%	4.1	8.8	May 19	23.0	May 28 11:00	96.9%	96.9%
June 2023	720	12.8%	51.4%	27.9%	6.7%	1.3%	0.0%	4.5	11.0	Jun 17	22.3	Jun 30 14:00	100.0%	100.0%
July 2023	744	16.5%	52.0%	20.6%	8.9%	2.0%	0.0%	4.4	13.7	Jul 26	22.1	Jul 18 12:00	100.0%	100.0%
August 2023	744	20.3%	44.0%	20.0%	14.0%	1.7%	0.0%	4.9	13.7	Aug 17	22.5	Aug 17 18:00	100.0%	100.0%
September 2023	717	7.1%	57.5%	20.9%	10.7%	3.8%	0.0%	5.4	16.5	Sep 02	26.4	Sep 01 21:00	100.0%	99.6%
October 2023	742	1.1%	51.2%	26.1%	18.1%	3.5%	0.0%	6.7	14.8	Oct 20	23.1	Oct 03 11:00	99.7%	99.7%
November 2023	720	3.6%	46.3%	13.9%	19.0%	14.7%	2.5%	9.1	25.9	Nov 16	35.9	Nov 16 16:00	100.0%	100.0%
December 2023	744	3.0%	49.5%	19.4%	19.4%	8.3%	0.5%	7.4	16.6	Dec 10	36.2	Dec 13 15:00	100.0%	100.0%
Annual	8669	10.3%	46.6%	22.1%	14.3%	6.2%	0.5%	6.4	25.9	MAXIMUM VALUES			99.0%	99.0%

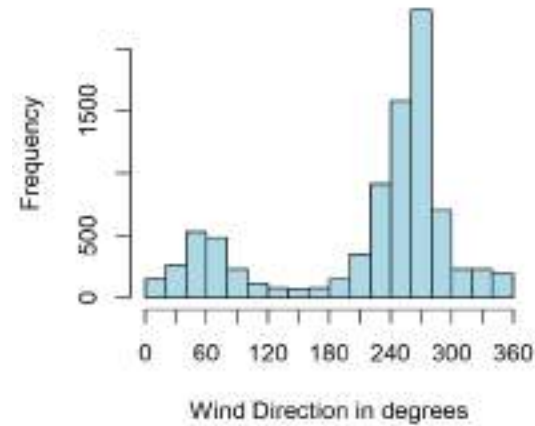
2023 Hourly Readings of Wind Speed (in km/hr) at Milner



2023 Wind Speed Histogram

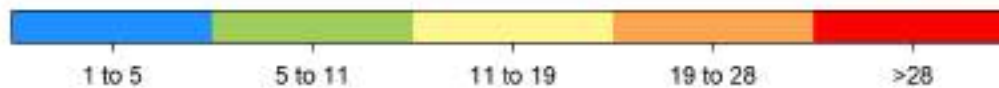
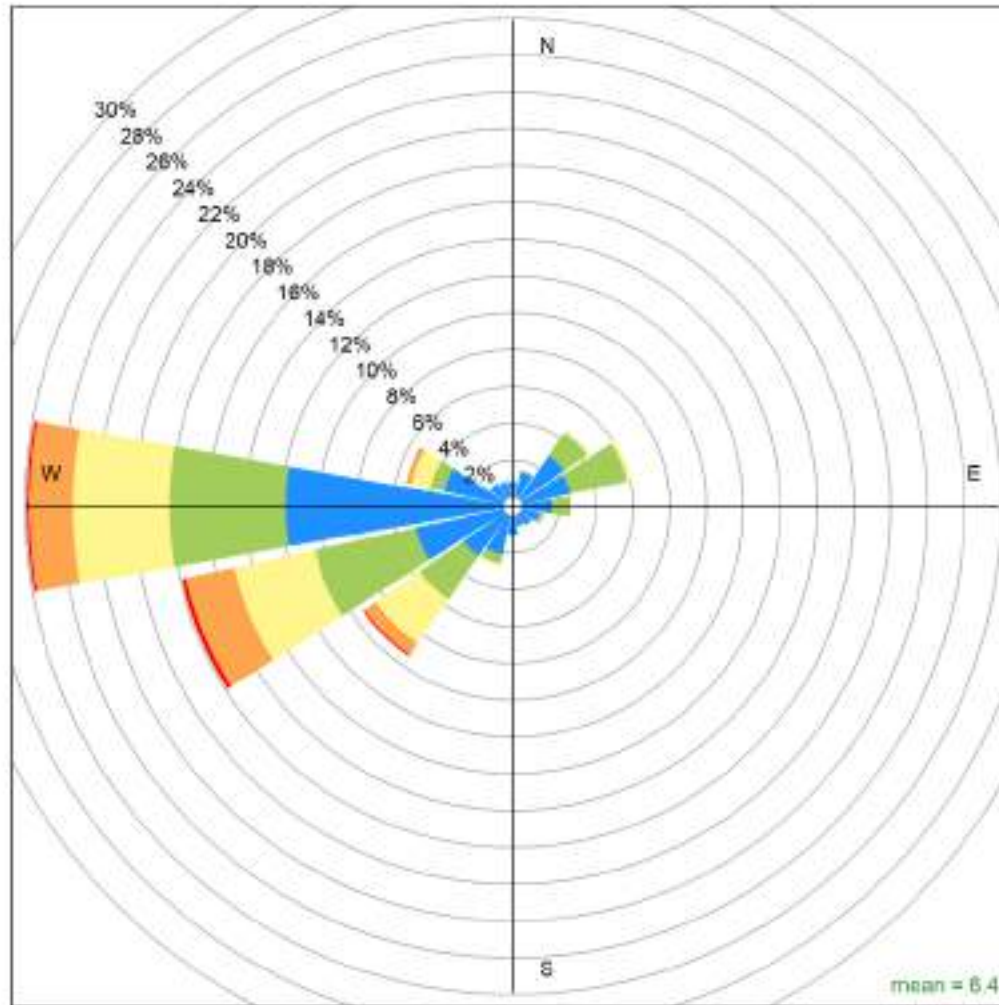


2023 Wind Direction Histogram



Wind Speed and Wind Direction Frequency Distribution at Milner

Direction	Number of Readings	% of wind speed range						Total %
		Calm (<0.5) (km/hr)	0.5 to 5 (km/hr)	5 to 11 (km/hr)	11 to 19 (km/hr)	19 to 28 (km/hr)	>28 (km/hr)	
N	183	0.9%	1.2%	0.0%	0.0%	0.0%	0.0%	2.1%
NNE	235	0.7%	1.9%	0.1%	0.0%	0.0%	0.0%	2.7%
NE	504	0.8%	3.4%	1.5%	0.1%	0.0%	0.0%	5.8%
ENE	583	0.4%	3.0%	3.1%	0.2%	0.0%	0.0%	6.7%
E	266	0.2%	1.9%	1.0%	0.0%	0.0%	0.0%	3.1%
ESE	126	0.1%	1.1%	0.2%	0.0%	0.0%	0.0%	1.5%
SE	83	0.1%	0.8%	0.0%	0.0%	0.0%	0.0%	1.0%
SSE	74	0.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.9%
S	124	0.2%	1.3%	0.0%	0.0%	0.0%	0.0%	1.4%
SSW	271	0.2%	2.3%	0.5%	0.1%	0.0%	0.0%	3.1%
SW	867	0.4%	3.0%	2.9%	2.9%	0.7%	0.1%	10.0%
WSW	1654	0.6%	5.4%	5.6%	4.5%	2.7%	0.2%	19.1%
W	2531	1.8%	13.4%	6.3%	5.2%	2.4%	0.1%	29.2%
WNW	682	1.4%	4.4%	0.8%	1.1%	0.3%	0.0%	7.9%
NW	247	1.3%	1.6%	0.0%	0.0%	0.0%	0.0%	2.8%
NNW	239	1.2%	1.5%	0.0%	0.0%	0.0%	0.0%	2.8%
Total	8669	10.3%	46.8%	22.1%	14.2%	6.1%	0.5%	100.0%



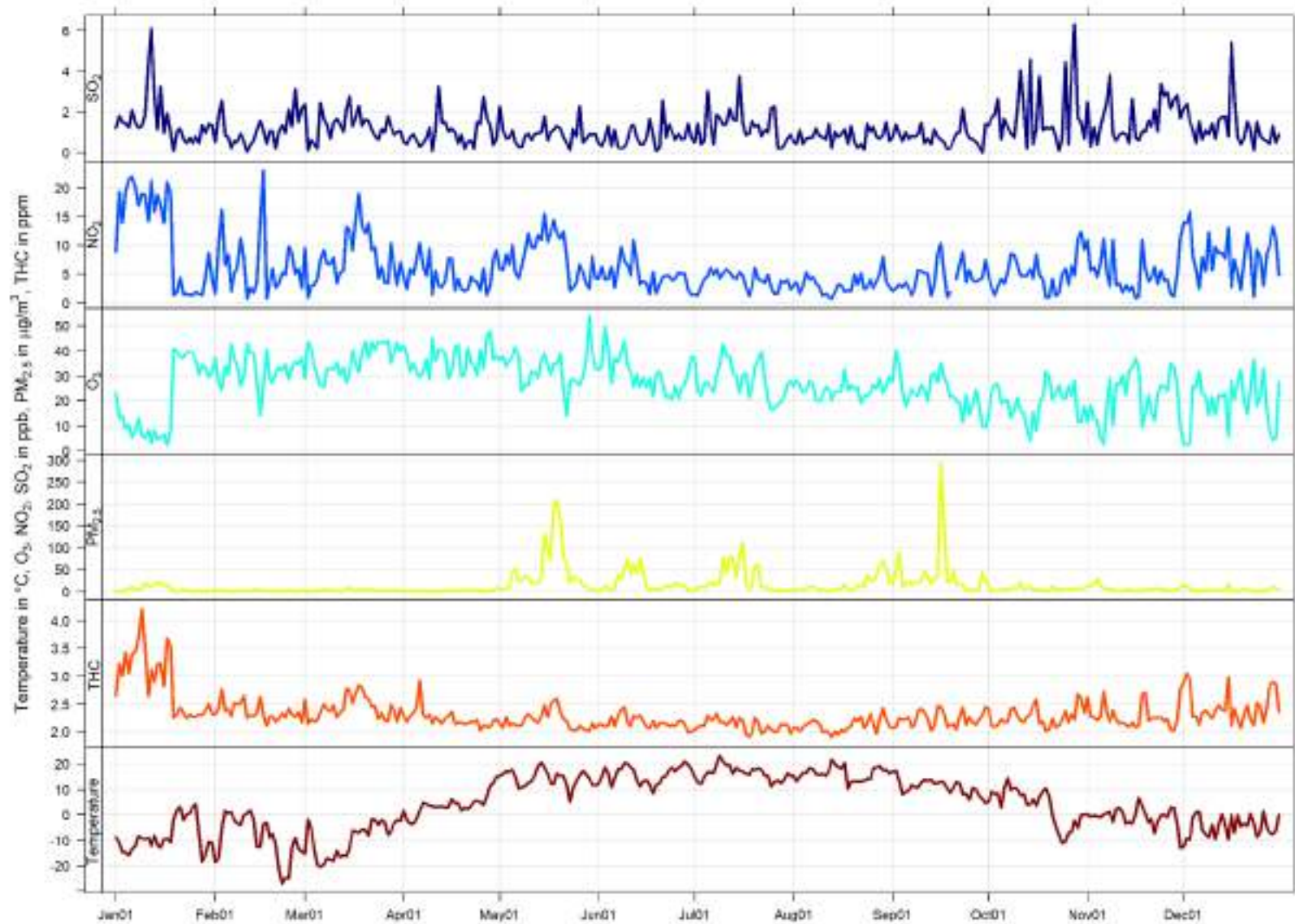
Milner 2023 Wind Rose, wind speed in km/hr
Calms (<1km/hr) = 17.6 %

9 Poplar Key Parameters - Continuous Monitoring Data - 2023 Summary

Poplar Key Parameters - Continuous Monitoring Data - 2023 Summary

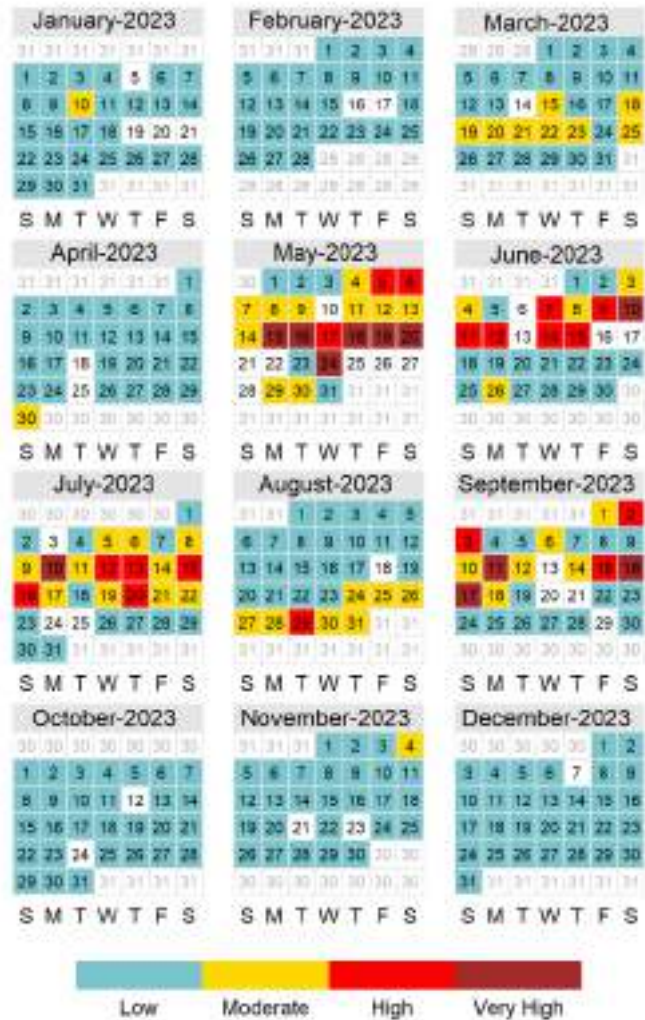
Poplar Station	Parameter	Average	Maximum Values				Operational Time (%)	Valid Time (%)	Readings above AAAQO & AAAQG				
			24-hr	Date	1-hr	Date			1-hr	8-hr	24-hr	30-d	Annual
			Sulphur Dioxide SO ₂ measured in ppb	1.2	6.0	Jan 12			58.0	Dec 16 15:00	99.0%	94.2%	0
Total Reduced Sulphur TRS measured in ppb	0.5	1.9	Apr 06	26.6	Apr 06 02:00	97.0%	92.3%	4	-	0	-	-	
Nitrogen Dioxide NO ₂ measured in ppb	6.1	22.0	Jan 06	35.0	Mar 21 07:00	98.2%	93.2%	0	-	-	-	0	
Nitrogen Oxides NO _x measured in ppb	7.8	44.0	Jan 17	91.0	May 21 02:00	98.2%	93.2%	-	-	-	-	-	
Nitric Oxide NO measured in ppb	1.6	22.6	Jan 17	67.9	May 21 02:00	98.2%	93.2%	-	-	-	-	-	
Ozone O ₃ measured in ppb	27.1	54.3	May 29	89.0	May 20 13:00	99.0%	94.3%	7	-	-	-	-	
Total Hydrocarbons THC measured in ppm	2.31	4.2	Jan 09	10.2	Apr 06 02:00	98.3%	93.6%	-	-	-	-	-	
Particulate Matter PM _{2.5} measured in µg/m ³	14.5	286.0	Sep 16	448.7	May 19 19:00	94.6%	94.2%	271	-	42	-	-	

2023 Daily Concentration Readings at Poplar



9.1 Poplar AQHI Calendar Plot for 2023

Hourly Maximum AQHI for 2023 at Poplar



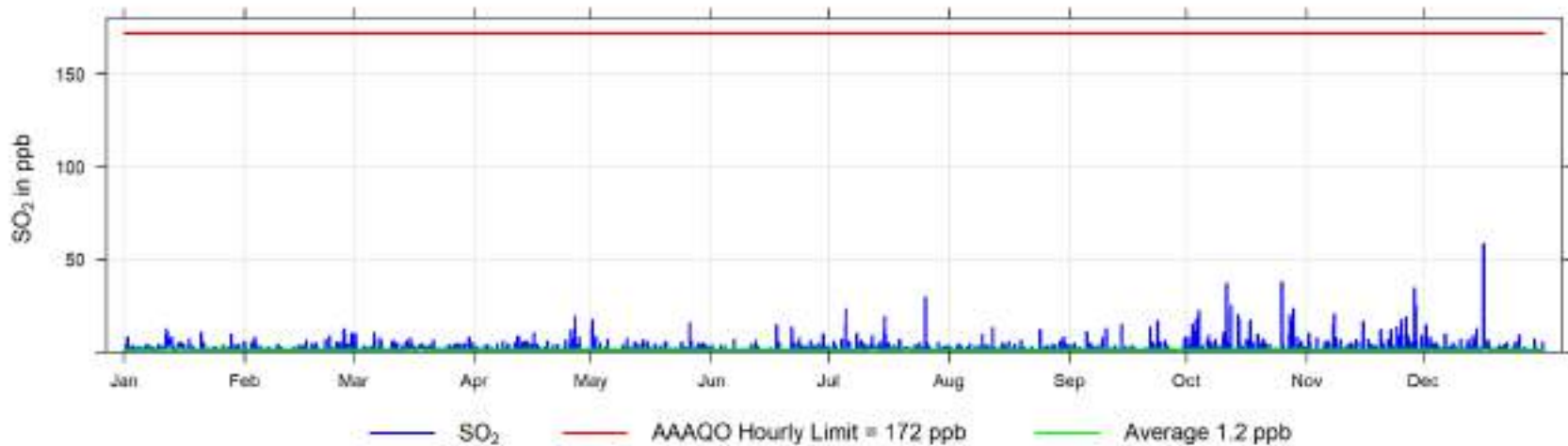
9.2 Sulphur Dioxide (SO₂) - Poplar 2023 Summary

Sulphur Dioxide (SO₂) Frequency Distribution at Poplar

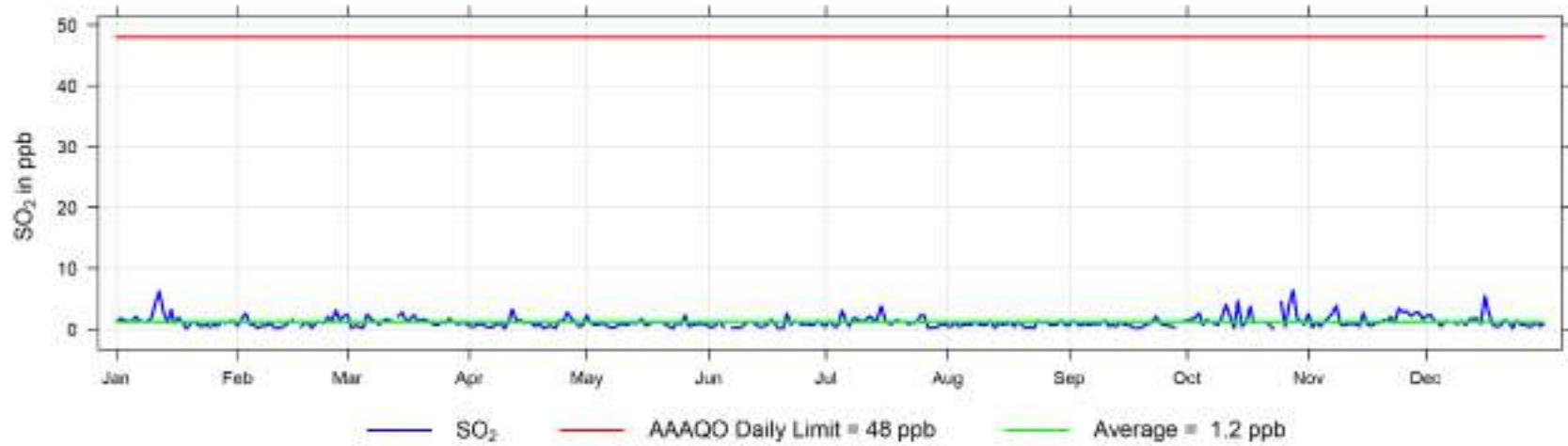
Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	MAXIMUM VALUES				Operational time (%)	Valid time (%)	Reportable Incidents		
		0 to 1 (ppb)	1 to 5 (ppb)	5 to 10 (ppb)	10 to 57 (ppb)	57 to 172 (ppb)	> 172 (ppb)		24-hr (ppb)	Date	1-hr (ppb)	Date			30-d 11 ppb	24-hr 48 ppb	1-hr 172 ppb
January 2023	708	48.3%	46.2%	4.8%	0.7%	0.0%	0.0%	1.5	6.0	Jan 12	12.4	Jan 11 20:00	100.0%	95.2%	0	0	0
February 2023	636	65.6%	31.9%	2.2%	0.3%	0.0%	0.0%	1.1	3.1	Feb 26	12.3	Feb 26 12:00	99.7%	94.6%	0	0	0
March 2023	692	53.9%	43.1%	2.9%	0.1%	0.0%	0.0%	1.3	2.7	Mar 15	10.2	Mar 06 06:00	97.7%	93.0%	0	0	0
April 2023	683	73.8%	23.1%	2.3%	0.7%	0.0%	0.0%	1.0	3.2	Apr 26	19.3	Apr 26 21:00	99.6%	94.9%	0	0	0
May 2023	709	73.6%	24.4%	1.6%	0.4%	0.0%	0.0%	0.9	2.3	May 26	17.2	May 01 10:00	100.0%	95.3%	0	0	0
June 2023	679	77.3%	20.8%	1.3%	0.6%	0.0%	0.0%	0.8	2.6	Jun 21	14.7	Jun 17 18:00	99.3%	94.3%	0	0	0
July 2023	705	59.0%	37.9%	2.0%	1.1%	0.0%	0.0%	1.3	3.7	Jul 15	29.1	Jul 25 22:00	99.6%	94.8%	0	0	0
August 2023	695	75.8%	23.0%	0.9%	0.3%	0.0%	0.0%	0.8	1.5	Aug 30	13.2	Aug 12 09:00	98.1%	93.4%	0	0	0
September 2023	654	79.5%	18.3%	1.4%	0.8%	0.0%	0.0%	0.8	2.1	Sep 23	16.8	Sep 23 14:00	95.3%	90.8%	0	0	0
October 2023	701	66.0%	25.5%	4.6%	3.9%	0.0%	0.0%	1.8	5.8	Oct 28	37.9	Oct 25 13:00	98.9%	94.2%	0	0	0
November 2023	686	64.0%	28.6%	4.8%	2.6%	0.0%	0.0%	1.6	3.4	Nov 24	34.3	Nov 28 16:00	100.0%	95.3%	0	0	0
December 2023	707	64.1%	33.1%	2.3%	0.4%	0.1%	0.0%	1.3	5.5	Dec 16	58.0	Dec 16 15:00	100.0%	95.0%	0	0	0
Annual	8255	66.7%	29.7%	2.6%	1.0%	0.0%	0.0%	1.2	6.0	MAXIMUM VALUES		99.0%	94.2%	0	0	0	

AAAQO Objectives: Annual: 8ppb, 30-Day: 11ppb, 24-Hr: 48ppb, 1-Hr: 172ppb

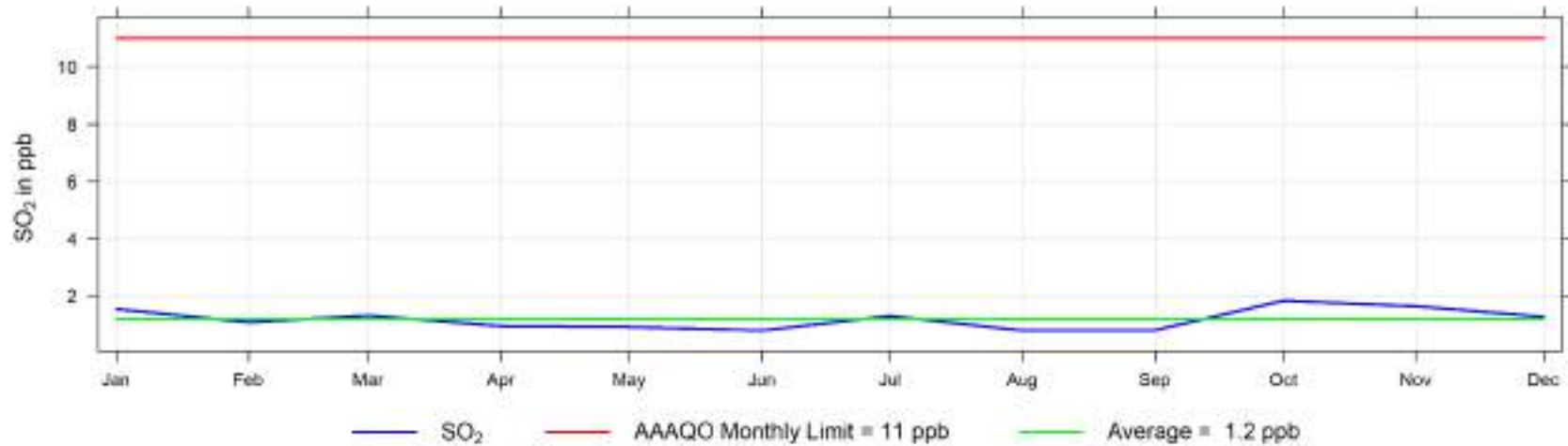
2023 Hourly Concentration Readings of SO₂ (in ppb) at Poplar



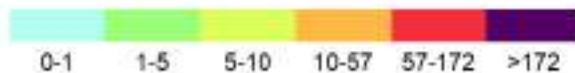
2023 Daily Concentration Readings of SO₂ (in ppb) at Poplar

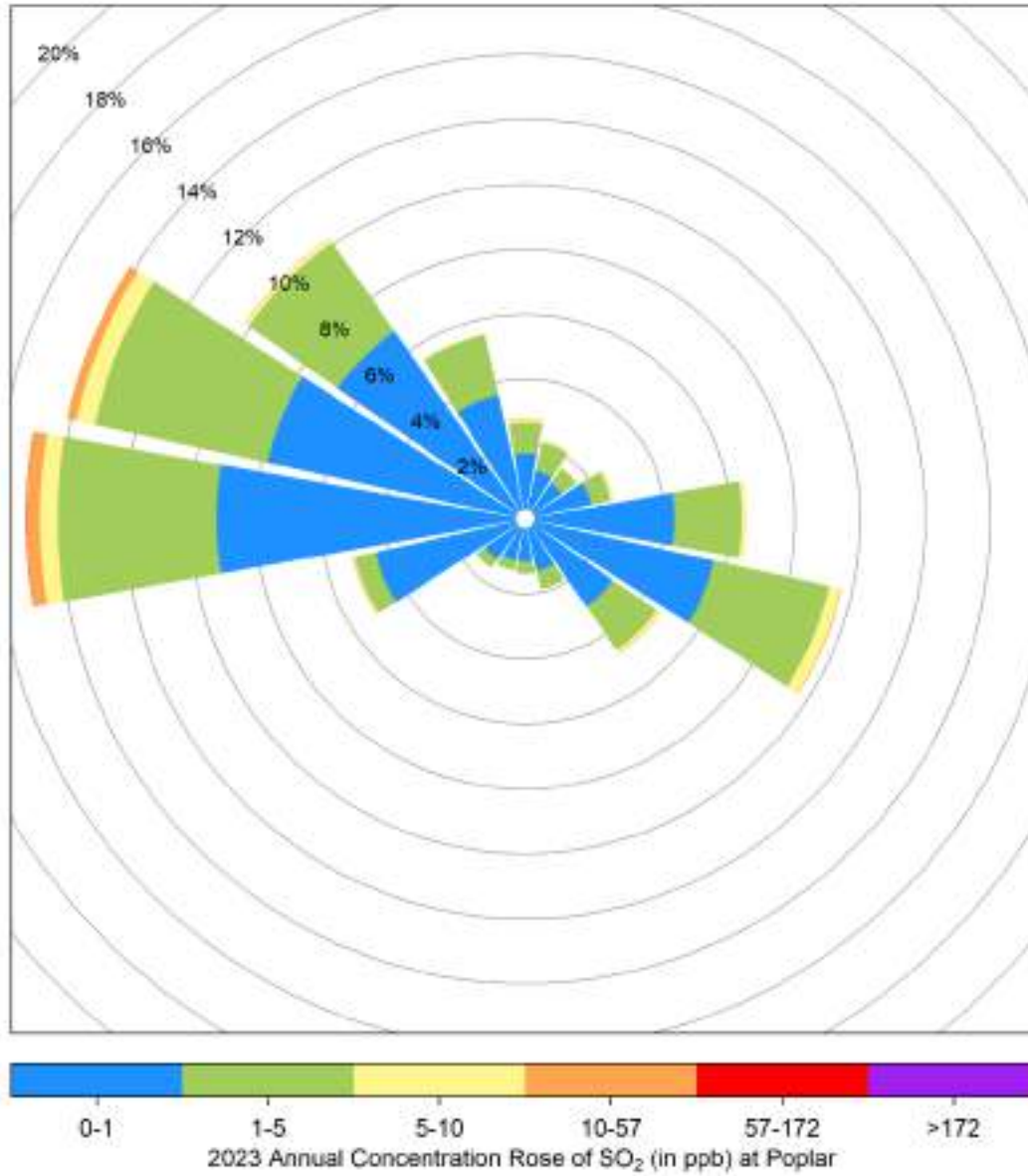


2023 Monthly Concentration Readings of SO₂ (in ppb) at Poplar



Hourly Maximum SO₂ (in ppb) for 2023 at Poplar





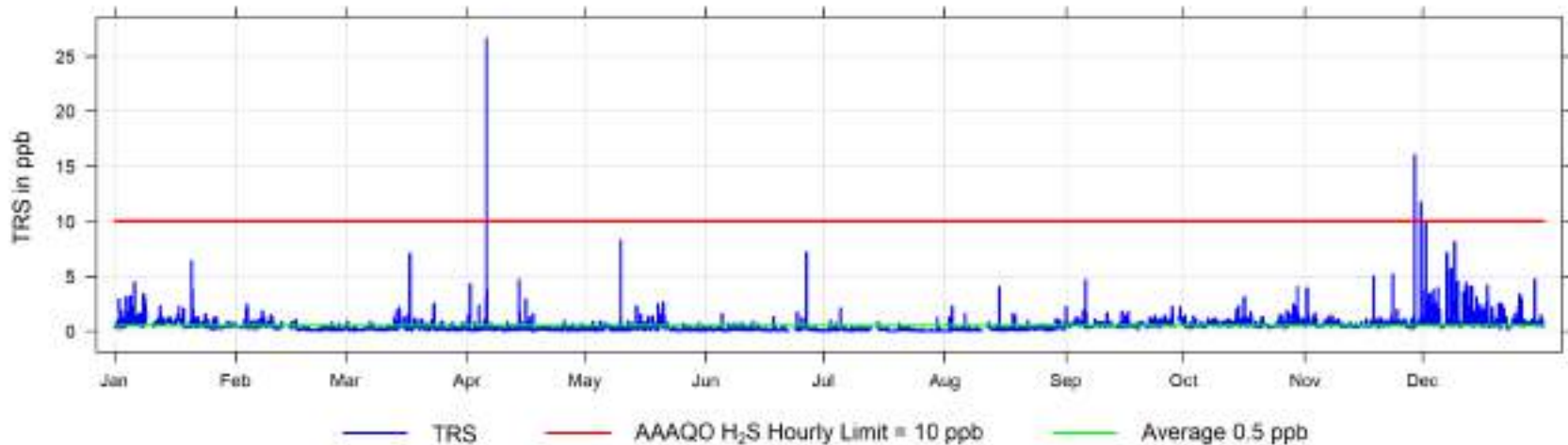
9.3 Total Reduced Sulphur (TRS) - Poplar 2023 Summary

Total Reduced Sulphur (TRS) Frequency Distribution at Poplar

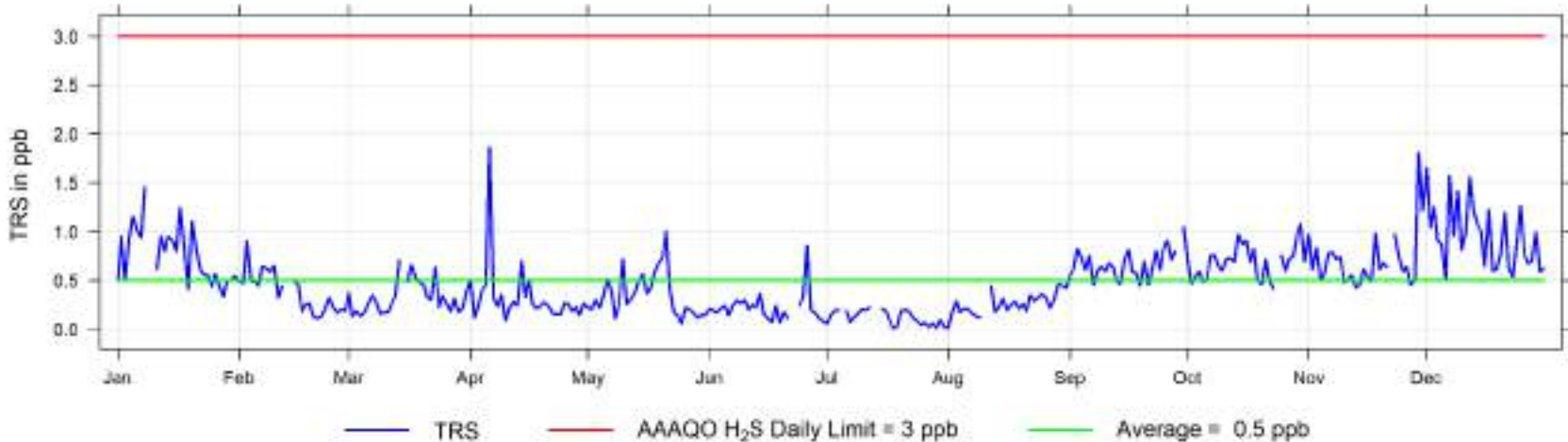
Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	MAXIMUM VALUES				Operational time (%)	Valid time (%)	Readings above H ₂ S Objective	
		0 to 1 (ppb)	1 to 3 (ppb)	3 to 5 (ppb)	5 to 8 (ppb)	8 to 10 (ppb)	> 10 (ppb)		24-hr (ppb)	Date	1-hr (ppb)	Date			24-hr 3 ppb	1-hr 10 ppb
January 2023	674	80.7%	18.1%	1.0%	0.1%	0.0%	0.0%	0.8	1.5	Jan 08	6.4	Jan 20 17:00	95.0%	90.6%	0	0
February 2023	606	96.9%	3.1%	0.0%	0.0%	0.0%	0.0%	0.4	0.9	Feb 03	2.4	Feb 03 20:00	94.9%	90.2%	0	0
March 2023	684	96.8%	3.1%	0.0%	0.1%	0.0%	0.0%	0.3	0.7	Mar 14	7.0	Mar 17 13:00	96.5%	91.9%	0	0
April 2023	682	97.7%	1.6%	0.6%	0.0%	0.0%	0.1%	0.3	1.9	Apr 06	26.6	Apr 06 02:00	99.6%	94.7%	0	1
May 2023	708	96.2%	3.7%	0.0%	0.0%	0.1%	0.0%	0.3	0.9	May 21	8.3	May 10 09:00	100.0%	95.2%	0	0
June 2023	645	98.6%	1.2%	0.0%	0.2%	0.0%	0.0%	0.2	0.8	Jun 26	7.2	Jun 26 19:00	94.0%	89.6%	0	0
July 2023	664	99.4%	0.6%	0.0%	0.0%	0.0%	0.0%	0.1	0.2	Jul 12	2.1	Jul 05 09:00	94.2%	89.2%	0	0
August 2023	676	98.2%	1.6%	0.1%	0.0%	0.0%	0.0%	0.3	0.5	Aug 29	4.0	Aug 15 00:00	95.6%	90.9%	0	0
September 2023	654	88.5%	11.3%	0.2%	0.0%	0.0%	0.0%	0.7	1.0	Sep 30	4.7	Sep 06 00:00	95.3%	90.8%	0	0
October 2023	700	88.4%	11.3%	0.3%	0.0%	0.0%	0.0%	0.7	1.0	Oct 29	4.0	Oct 30 00:00	98.9%	94.1%	0	0
November 2023	683	92.4%	6.7%	0.3%	0.1%	0.0%	0.4%	0.7	1.7	Nov 29	16.0	Nov 29 02:00	99.9%	94.9%	0	3
December 2023	709	77.4%	19.0%	2.7%	0.6%	0.3%	0.0%	1.0	1.7	Dec 01	10.0	Dec 01 18:00	100.0%	95.3%	0	0
Annual	8085	92.6%	6.8%	0.4%	0.1%	0.0%	0.0%	0.5	1.9	Apr 06	26.6	Apr 06 02:00	97.0%	92.3%	0	4

AAAQO H₂S Objectives: 24-Hr: 3ppb, 1-Hr: 10ppb

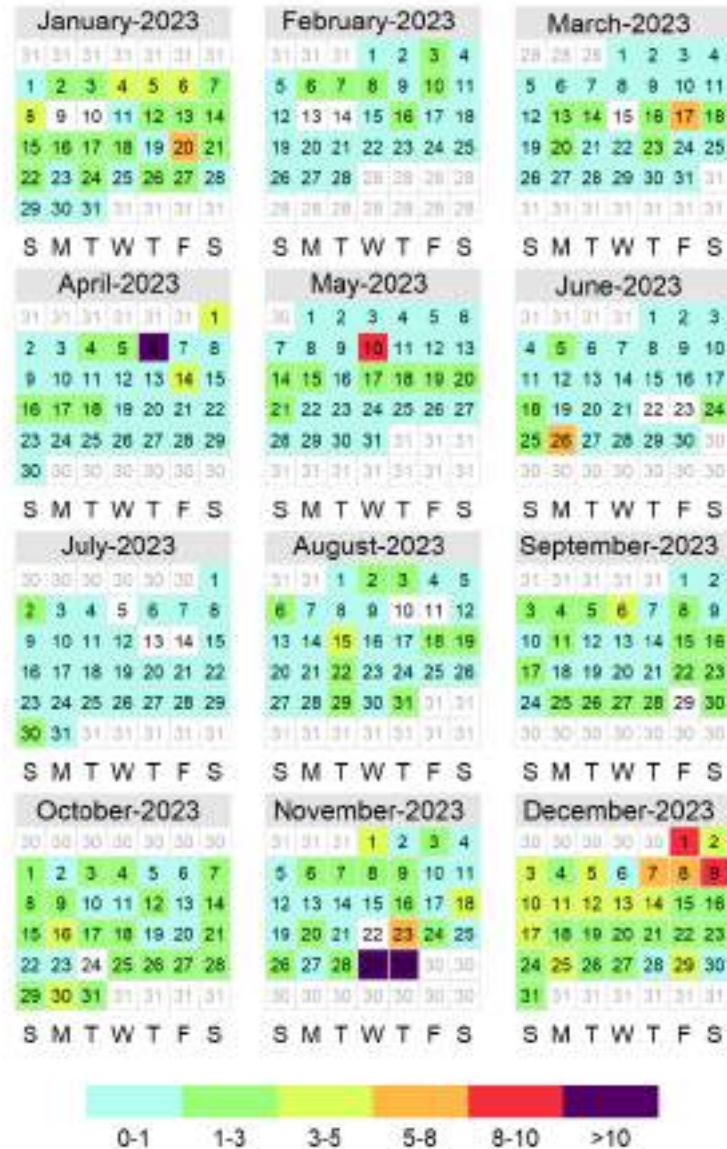
2023 Hourly Concentration Readings of TRS (in ppb) at Poplar

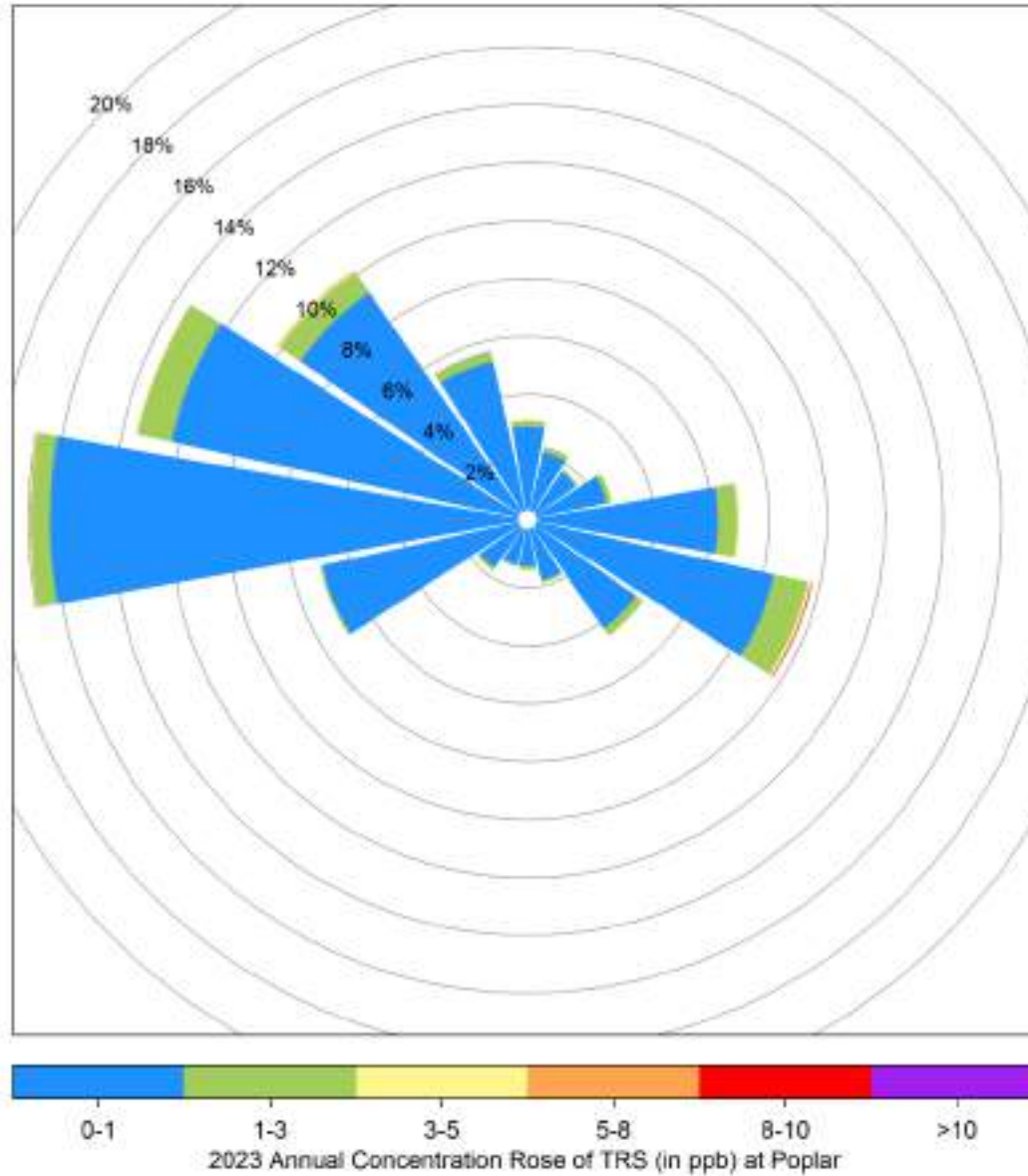


2023 Daily Concentration Readings of TRS (in ppb) at Poplar



Hourly Maximum TRS (in ppb) for 2023 at Poplar





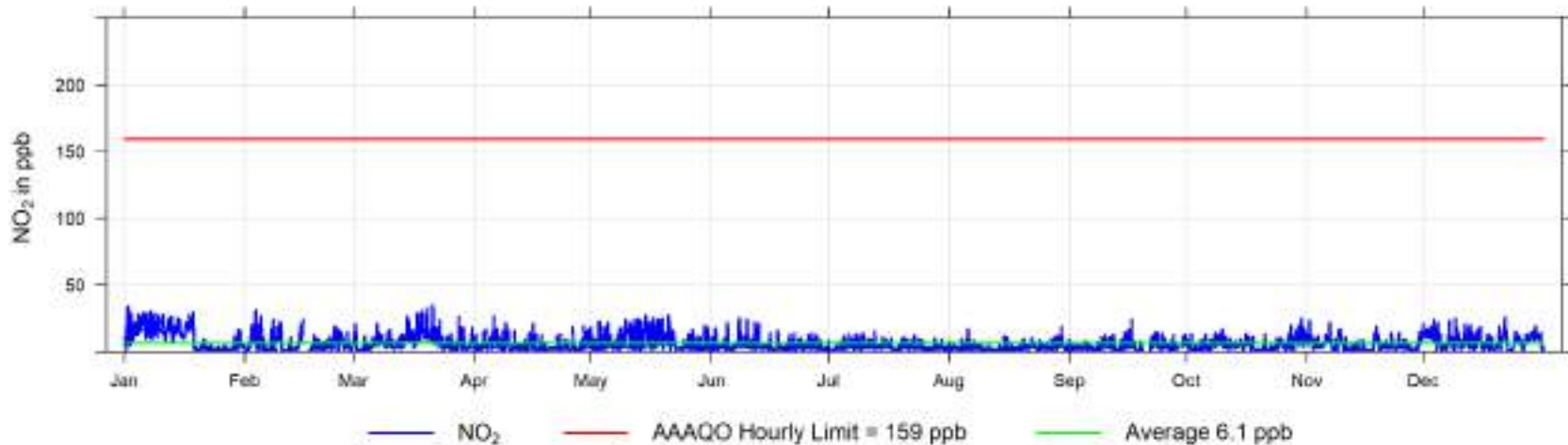
9.4 Nitrogen Dioxide (NO₂) - Poplar 2023 Summary

Nitrogen Dioxide (NO₂) Frequency Distribution at Poplar

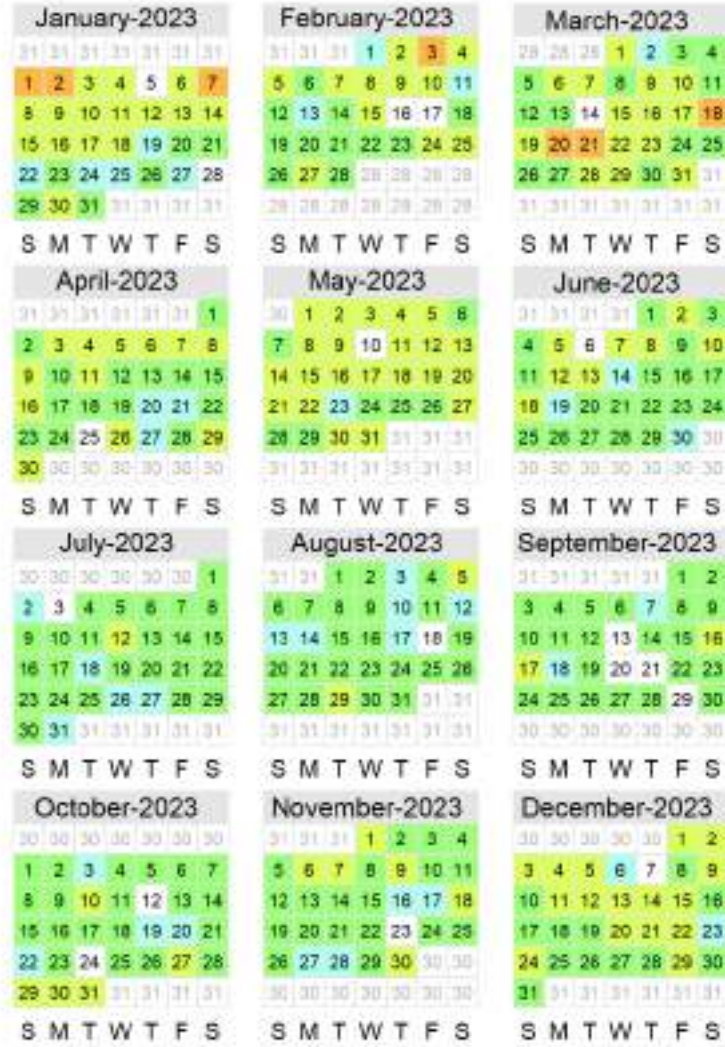
Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	24-hr (ppb)	MAXIMUM VALUES		Operational time (%)	Valid time (%)	Reportable Incidents 1-hr 159 ppb	
		0 to 5 (ppb)	5 to 15 (ppb)	15 to 30 (ppb)	30 to 100 (ppb)	100 to 159 (ppb)	> 159 (ppb)			Date	1-hr (ppb) Date				
January 2023	701	37.1%	24.5%	37.4%	1.0%	0.0%	0.0%	11.5	22.0	Jan 06	34.0	Jan 02 01:00	99.2%	94.2%	0
February 2023	604	60.6%	29.1%	9.8%	0.5%	0.0%	0.0%	6.0	15.6	Feb 03	31.1	Feb 03 18:00	94.9%	89.9%	0
March 2023	696	39.5%	49.6%	10.3%	0.6%	0.0%	0.0%	7.8	19.0	Mar 18	35.0	Mar 21 07:00	98.5%	93.5%	0
April 2023	681	65.1%	30.4%	4.6%	0.0%	0.0%	0.0%	4.8	10.6	Apr 06	26.5	Apr 06 02:00	99.6%	94.6%	0
May 2023	707	47.1%	33.8%	19.1%	0.0%	0.0%	0.0%	8.0	15.0	May 15	27.5	May 21 01:00	100.0%	95.0%	0
June 2023	678	67.8%	27.3%	4.9%	0.0%	0.0%	0.0%	4.8	10.4	Jun 12	25.4	Jun 08 04:00	99.4%	94.2%	0
July 2023	704	71.4%	28.4%	0.1%	0.0%	0.0%	0.0%	3.8	6.3	Jul 06	16.0	Jul 12 22:00	99.6%	94.6%	0
August 2023	694	79.8%	19.9%	0.3%	0.0%	0.0%	0.0%	3.1	8.0	Aug 29	18.9	Aug 29 21:00	98.1%	93.3%	0
September 2023	615	64.4%	34.6%	1.0%	0.0%	0.0%	0.0%	4.4	11.0	Sep 16	24.3	Sep 17 00:00	90.4%	85.4%	0
October 2023	699	54.8%	43.1%	2.1%	0.0%	0.0%	0.0%	5.0	12.2	Oct 30	25.0	Oct 30 18:00	98.9%	94.0%	0
November 2023	679	60.7%	36.1%	3.2%	0.0%	0.0%	0.0%	5.0	11.6	Nov 30	23.3	Nov 01 18:00	99.2%	94.3%	0
December 2023	706	36.0%	51.6%	12.5%	0.0%	0.0%	0.0%	8.2	16.0	Dec 03	26.0	Dec 22 00:00	100.0%	94.9%	0
Annual	8164	57.0%	34.0%	8.8%	0.2%	0.0%	0.0%	6.1	22.0	MAXIMUM VALUES		98.2%	93.2%	0	

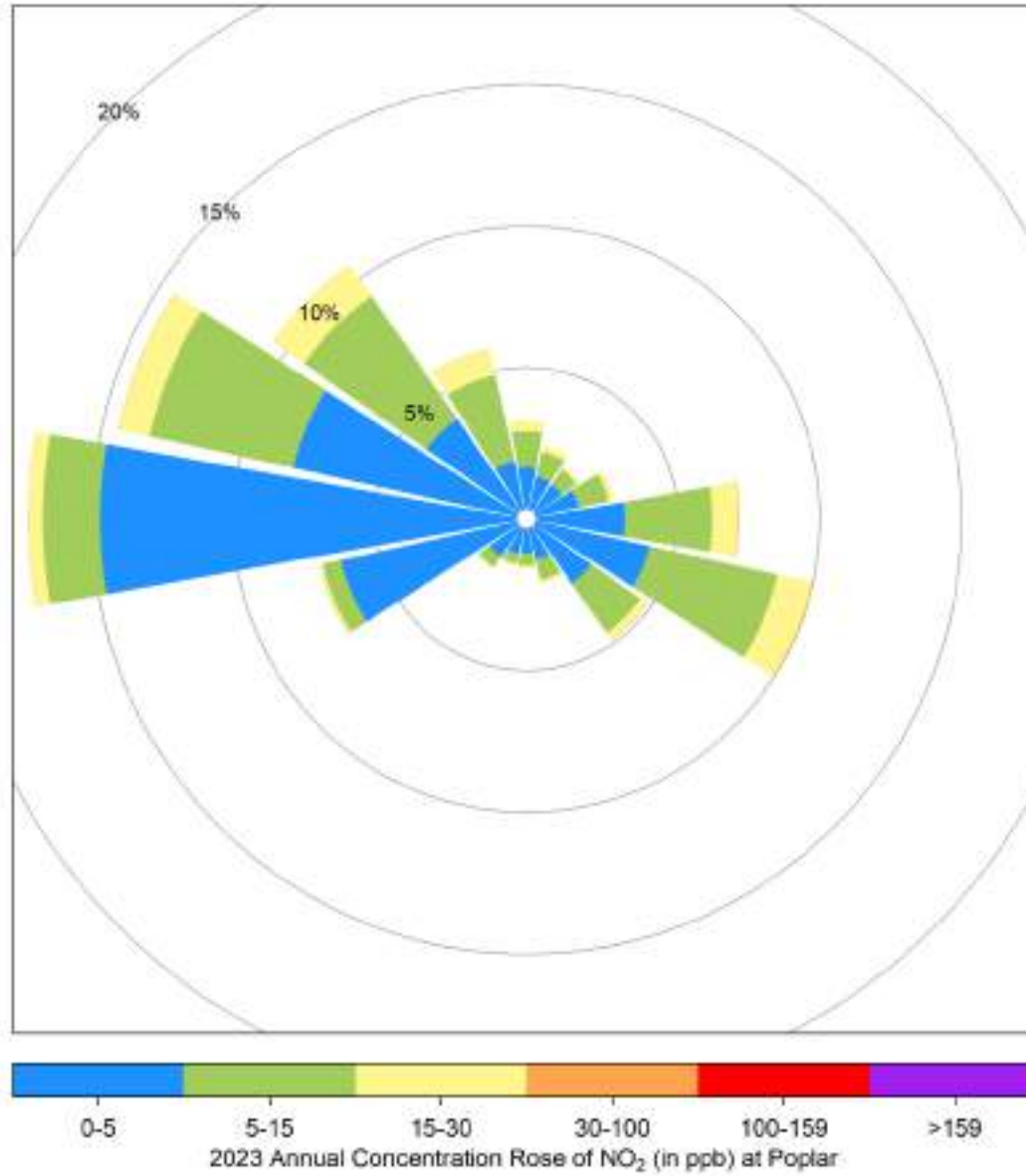
AAAQO Objectives: Annual: 24ppb, 1-Hr: 159ppb

2023 Hourly Concentration Readings of NO₂ (in ppb) at Poplar



Hourly Maximum NO₂ (in ppb) for 2023 at Poplar





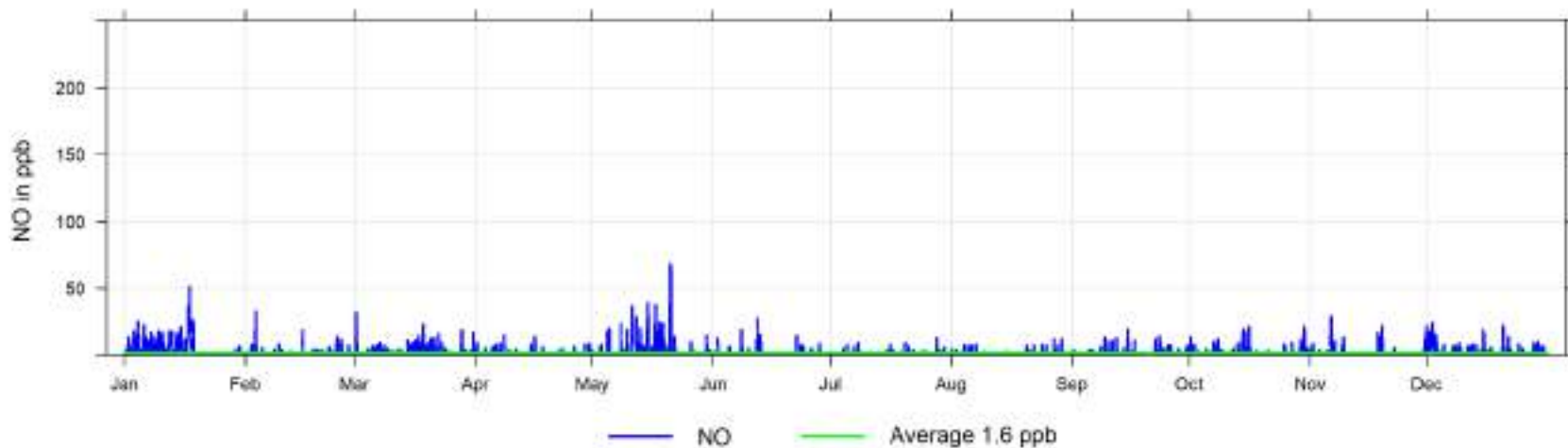
9.5 Nitric Oxide (NO) - Poplar 2023 Summary

Nitric Oxide (NO) Frequency Distribution at Poplar

Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	MAXIMUM VALUES				Operational time (%)	Valid time (%)
		0 to 5 (ppb)	5 to 15 (ppb)	15 to 30 (ppb)	30 to 100 (ppb)	100 to 159 (ppb)	> 159 (ppb)		24-hr (ppb)	Date	1-hr (ppb)	Date		
January 2023	701	72.2%	20.0%	7.1%	0.7%	0.0%	0.0%	4.0	22.6	Jan 17	51.3	Jan 17 18:00	99.2%	94.2%
February 2023	604	93.7%	5.8%	0.3%	0.2%	0.0%	0.0%	1.1	4.3	Feb 03	32.8	Feb 03 14:00	94.9%	89.9%
March 2023	696	86.5%	11.6%	1.7%	0.1%	0.0%	0.0%	2.0	6.6	Mar 18	31.6	Mar 01 12:00	98.5%	93.5%
April 2023	681	95.0%	5.0%	0.0%	0.0%	0.0%	0.0%	0.9	2.5	Apr 15	14.6	Apr 08 10:00	99.6%	94.6%
May 2023	707	86.8%	7.9%	3.7%	1.6%	0.0%	0.0%	2.8	14.8	May 21	67.9	May 21 02:00	100.0%	95.0%
June 2023	678	95.3%	3.4%	1.3%	0.0%	0.0%	0.0%	1.0	5.6	Jun 12	27.6	Jun 12 07:00	99.4%	94.2%
July 2023	704	97.3%	2.7%	0.0%	0.0%	0.0%	0.0%	0.7	2.3	Jul 28	12.7	Jul 28 08:00	99.6%	94.6%
August 2023	694	96.5%	3.5%	0.0%	0.0%	0.0%	0.0%	0.6	1.9	Aug 29	11.8	Aug 29 08:00	98.1%	93.3%
September 2023	615	94.1%	5.7%	0.2%	0.0%	0.0%	0.0%	1.1	3.3	Sep 15	19.4	Sep 15 09:00	90.4%	85.4%
October 2023	699	90.1%	7.3%	2.6%	0.0%	0.0%	0.0%	1.6	6.8	Oct 14	21.6	Oct 16 07:00	98.9%	94.0%
November 2023	679	91.5%	6.6%	1.9%	0.0%	0.0%	0.0%	1.4	9.4	Nov 06	29.2	Nov 06 10:00	99.2%	94.3%
December 2023	706	84.8%	13.6%	1.6%	0.0%	0.0%	0.0%	2.1	9.2	Dec 02	24.3	Dec 02 08:00	100.0%	94.9%
Annual	8164	90.3%	7.8%	1.7%	0.2%	0.0%	0.0%	1.6	22.6	Jan 17	67.9	May 21 02:00	98.2%	93.2%

AAAQO Objectives: none

2023 Hourly Concentration Readings of NO (in ppb) at Poplar



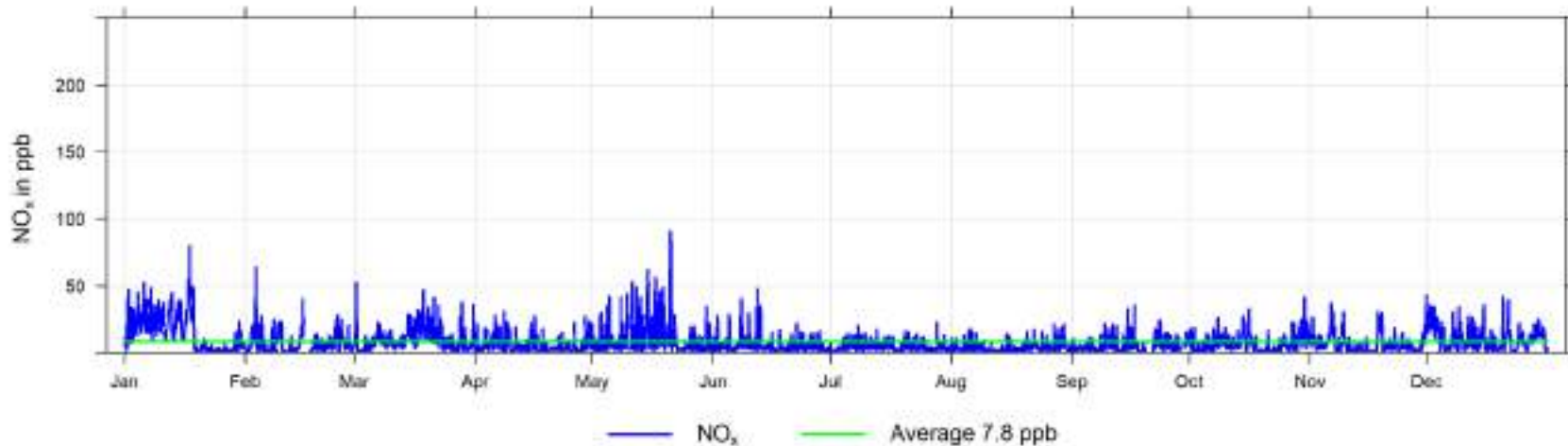
9.6 Oxides of Nitrogen (NO_x) - Poplar 2023 Summary

Nitrogen Oxides (NO_x) Frequency Distribution at Poplar

Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	24-hr (ppb)	MAXIMUM VALUES		Operational time (%)	Valid time (%)	
		0 to 5 (ppb)	5 to 15 (ppb)	15 to 30 (ppb)	30 to 100 (ppb)	100 to 159 (ppb)	> 159 (ppb)			Date	1-hr (ppb) Date			
January 2023	701	36.5%	16.3%	27.7%	19.5%	0.0%	0.0%	15.7	44.0	Jan 17	79.5	Jan 17 18:00	99.2%	94.2%
February 2023	604	56.0%	28.0%	14.9%	1.2%	0.0%	0.0%	7.1	20.1	Feb 03	64.0	Feb 03 14:00	94.9%	89.9%
March 2023	696	31.6%	47.8%	17.2%	3.3%	0.0%	0.0%	9.9	25.8	Mar 18	52.5	Mar 01 12:00	98.5%	93.5%
April 2023	681	61.7%	29.5%	8.7%	0.1%	0.0%	0.0%	5.8	12.8	Apr 06	30.8	Apr 08 10:00	99.6%	94.6%
May 2023	707	44.7%	31.1%	15.7%	8.5%	0.0%	0.0%	10.9	26.7	May 21	91.0	May 21 02:00	100.0%	95.0%
June 2023	678	63.9%	29.2%	5.0%	1.9%	0.0%	0.0%	5.8	16.1	Jun 12	47.8	Jun 12 07:00	99.4%	94.2%
July 2023	704	66.3%	32.5%	1.1%	0.0%	0.0%	0.0%	4.6	7.9	Jul 20	22.8	Jul 28 08:00	99.6%	94.6%
August 2023	694	74.4%	23.8%	1.9%	0.0%	0.0%	0.0%	3.8	10.0	Aug 29	21.5	Aug 29 21:00	98.1%	93.3%
September 2023	615	59.2%	34.8%	5.7%	0.3%	0.0%	0.0%	5.5	12.4	Sep 16	35.2	Sep 17 00:00	90.4%	85.4%
October 2023	699	48.9%	41.3%	8.7%	1.0%	0.0%	0.0%	6.7	18.8	Oct 30	41.4	Oct 30 18:00	98.9%	94.0%
November 2023	679	57.7%	29.5%	11.8%	1.0%	0.0%	0.0%	6.5	20.8	Nov 06	42.9	Nov 30 20:00	99.2%	94.3%
December 2023	706	34.7%	37.0%	26.2%	2.1%	0.0%	0.0%	10.4	23.5	Dec 02	41.8	Dec 20 13:00	100.0%	94.9%
Annual	8164	53.0%	31.7%	12.1%	3.3%	0.0%	0.0%	7.8	44.0	MAXIMUM VALUES		98.2%	93.2%	

AAAQO Objectives: none

2023 Hourly Concentration Readings of NO_x (in ppb) at Poplar



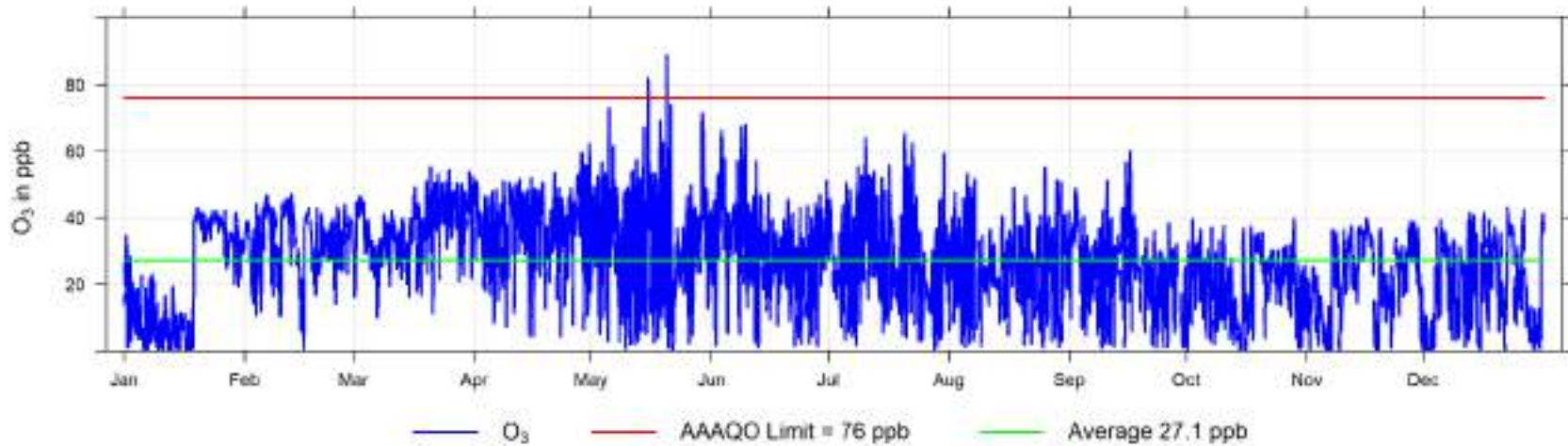
9.7 Ozone (O₃) - Poplar 2023 Summary

Ozone (O₃) Frequency Distribution at Poplar

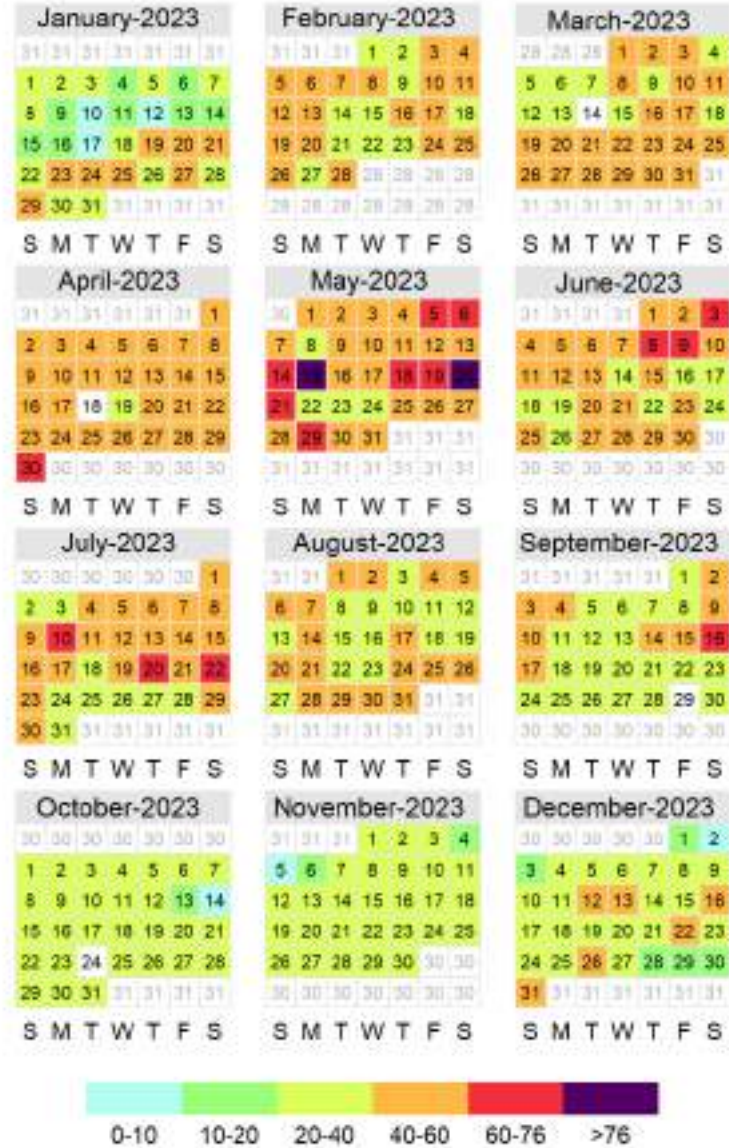
Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	24-hr (ppb)	MAXIMUM VALUES		Operational time (%)	Valid time (%)	Reportable Incidents 1-hr 76 ppb	
		0 to 10 (ppb)	10 to 20 (ppb)	20 to 40 (ppb)	40 to 60 (ppb)	60 to 76 (ppb)	> 76 (ppb)			Date	1-hr (ppb) Date				
January 2023	709	38.1%	15.1%	37.7%	9.2%	0.0%	0.0%	20.2	41.1	Jan 19	42.9	Jan 19 19:00	100.0%	95.3%	0
February 2023	639	2.0%	10.5%	63.7%	23.8%	0.0%	0.0%	32.5	43.3	Feb 06	47.3	Feb 12 23:00	99.7%	95.1%	0
March 2023	696	0.1%	2.9%	60.9%	36.1%	0.0%	0.0%	36.5	44.0	Mar 20	55.3	Mar 20 17:00	98.3%	93.5%	0
April 2023	679	2.1%	7.2%	47.7%	42.9%	0.1%	0.0%	36.4	47.2	Apr 28	62.2	Apr 30 15:00	99.0%	94.3%	0
May 2023	708	11.3%	15.3%	37.9%	29.1%	5.5%	1.0%	33.0	54.3	May 29	89.0	May 20 13:00	99.7%	95.2%	7
June 2023	682	7.9%	13.3%	55.1%	21.4%	2.2%	0.0%	30.5	50.3	Jun 03	67.9	Jun 09 17:00	99.4%	94.7%	0
July 2023	706	10.8%	21.4%	45.5%	21.0%	1.4%	0.0%	28.1	43.2	Jul 10	65.3	Jul 20 16:00	99.6%	94.9%	0
August 2023	699	13.2%	22.6%	54.1%	10.2%	0.0%	0.0%	24.7	32.6	Aug 17	55.0	Aug 25 18:00	98.5%	94.0%	0
September 2023	654	16.8%	20.9%	54.1%	8.0%	0.2%	0.0%	23.6	40.8	Sep 02	60.1	Sep 16 17:00	95.3%	90.8%	0
October 2023	702	22.6%	26.2%	51.1%	0.0%	0.0%	0.0%	19.3	31.7	Oct 19	39.6	Oct 28 16:00	98.9%	94.4%	0
November 2023	681	20.1%	23.1%	56.8%	0.0%	0.0%	0.0%	21.4	37.1	Nov 16	39.9	Nov 16 10:00	99.3%	94.6%	0
December 2023	709	30.6%	23.4%	43.4%	2.5%	0.0%	0.0%	19.3	36.2	Dec 23	43.0	Dec 22 15:00	100.0%	95.3%	0
Annual	8264	14.6%	16.8%	50.7%	17.0%	0.8%	0.1%	27.1	54.3	MAXIMUM VALUES		99.0%	94.3%	7	

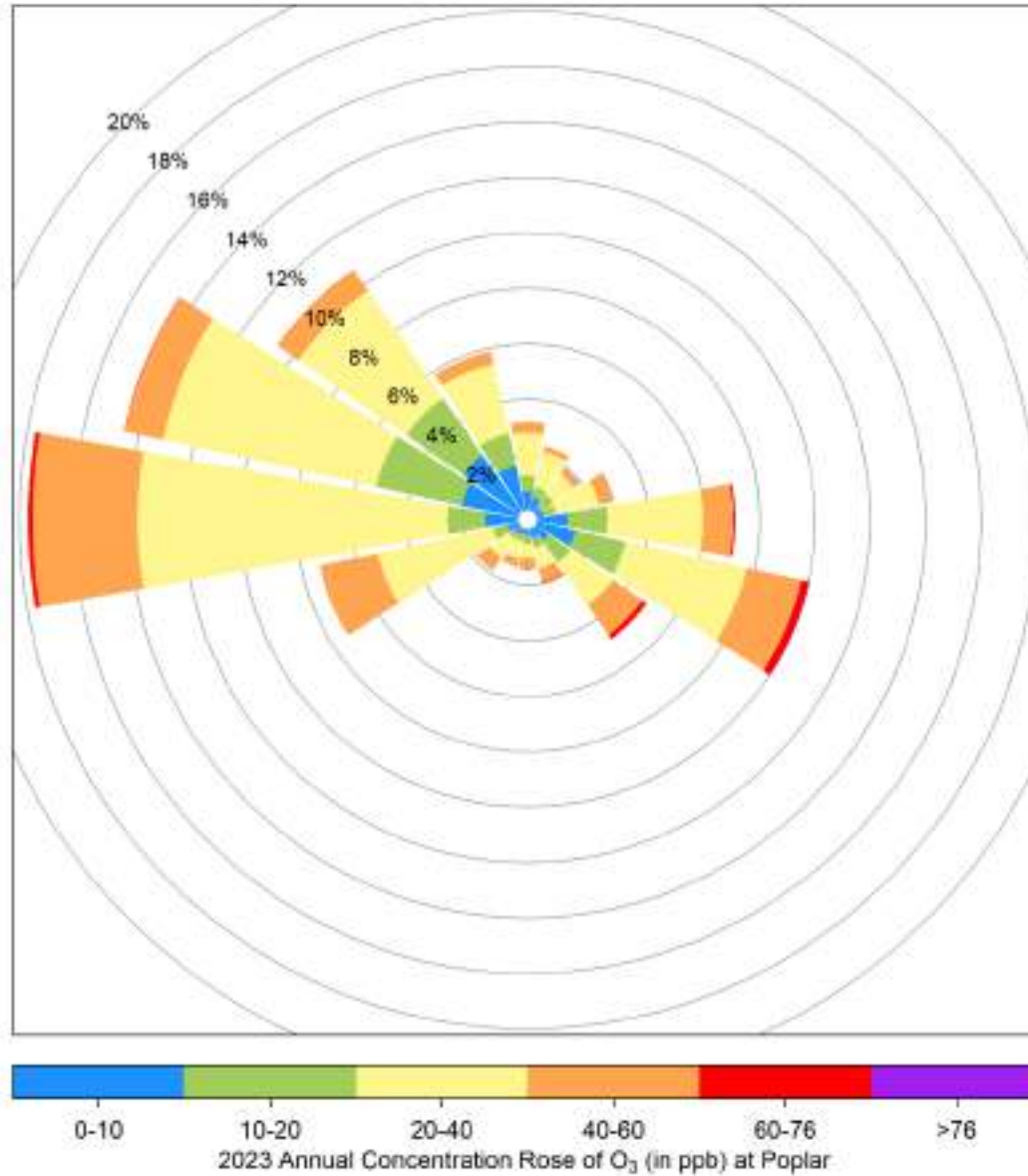
AAAQO Objectives: 1-Hr: 76ppb

2023 Hourly Concentration Readings of O₃ (in ppb) at Poplar



Hourly Maximum O₃ (in ppb) for 2023 at Poplar





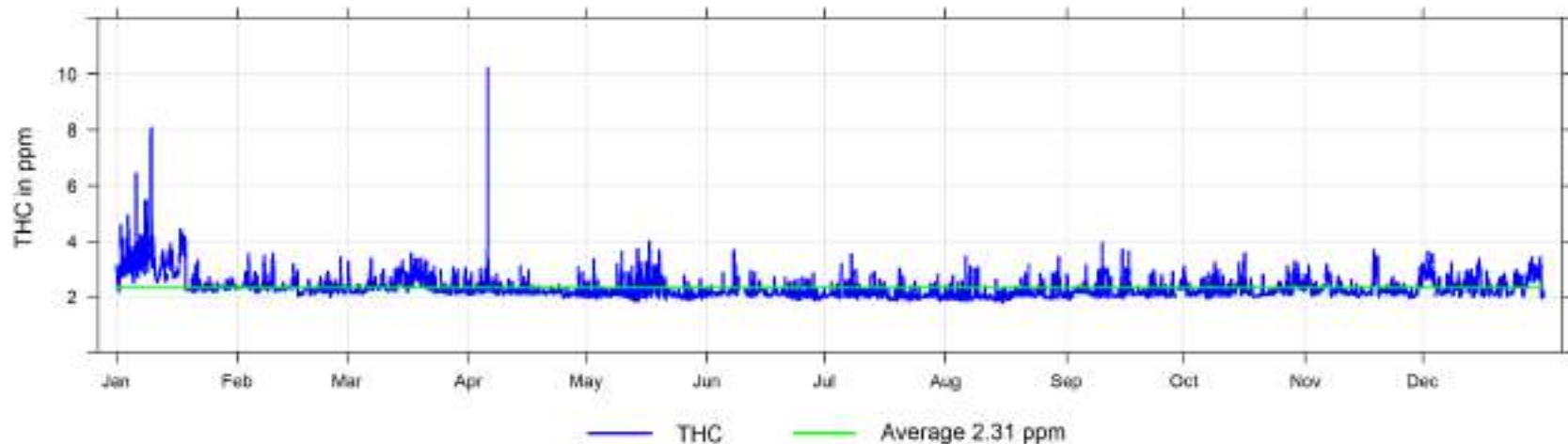
9.8 Total Hydrocarbons (THC) - Poplar 2023 Summary

Total Hydrocarbons (THC) Frequency Distribution at Poplar

Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppm)	24-hr (ppm)	MAXIMUM VALUES			Operational time (%)	Valid time (%)
		0 to 1.5 (ppm)	1.5 to 2 (ppm)	2 to 2.5 (ppm)	2.5 to 5 (ppm)	5 to 10 (ppm)	> 10 (ppm)			Date	1-hr (ppm)	Date		
January 2023	709	0.0%	0.0%	38.8%	60.4%	0.8%	0.0%	2.86	4.2	Jan 09	8.1	Jan 09 23:00	100.0%	95.3%
February 2023	636	0.0%	0.2%	79.1%	20.8%	0.0%	0.0%	2.36	2.7	Feb 03	3.6	Feb 03 20:00	99.4%	94.6%
March 2023	697	0.0%	0.0%	66.1%	33.9%	0.0%	0.0%	2.43	2.9	Mar 18	3.6	Mar 17 13:00	98.5%	93.7%
April 2023	679	0.0%	2.7%	87.6%	9.6%	0.0%	0.1%	2.24	2.9	Apr 06	10.2	Apr 06 02:00	99.0%	94.3%
May 2023	709	0.0%	25.2%	59.4%	15.4%	0.0%	0.0%	2.20	2.6	May 19	4.0	May 17 07:00	100.0%	95.3%
June 2023	646	0.0%	13.8%	78.0%	8.2%	0.0%	0.0%	2.16	2.4	Jun 08	3.7	Jun 07 22:00	94.3%	89.7%
July 2023	706	0.0%	37.5%	54.1%	8.4%	0.0%	0.0%	2.12	2.3	Jul 08	3.5	Jul 08 01:00	99.6%	94.9%
August 2023	686	0.0%	40.8%	50.9%	8.3%	0.0%	0.0%	2.11	2.4	Aug 29	3.4	Aug 06 05:00	96.6%	92.2%
September 2023	654	0.0%	10.2%	76.9%	12.8%	0.0%	0.0%	2.23	2.5	Sep 16	4.0	Sep 10 02:00	95.3%	90.8%
October 2023	687	0.0%	4.9%	78.3%	16.7%	0.0%	0.0%	2.26	2.7	Oct 29	3.6	Oct 16 11:00	97.0%	92.3%
November 2023	685	0.0%	6.3%	76.8%	16.9%	0.0%	0.0%	2.28	2.8	Nov 30	3.7	Nov 18 12:00	99.9%	95.1%
December 2023	709	0.0%	3.1%	58.3%	38.6%	0.0%	0.0%	2.45	3.1	Dec 02	3.6	Dec 02 07:00	100.0%	95.3%
Annual	8203	0.0%	12.1%	67.0%	20.8%	0.1%	0.0%	2.31	4.2	MAXIMUM VALUES			98.3%	93.6%

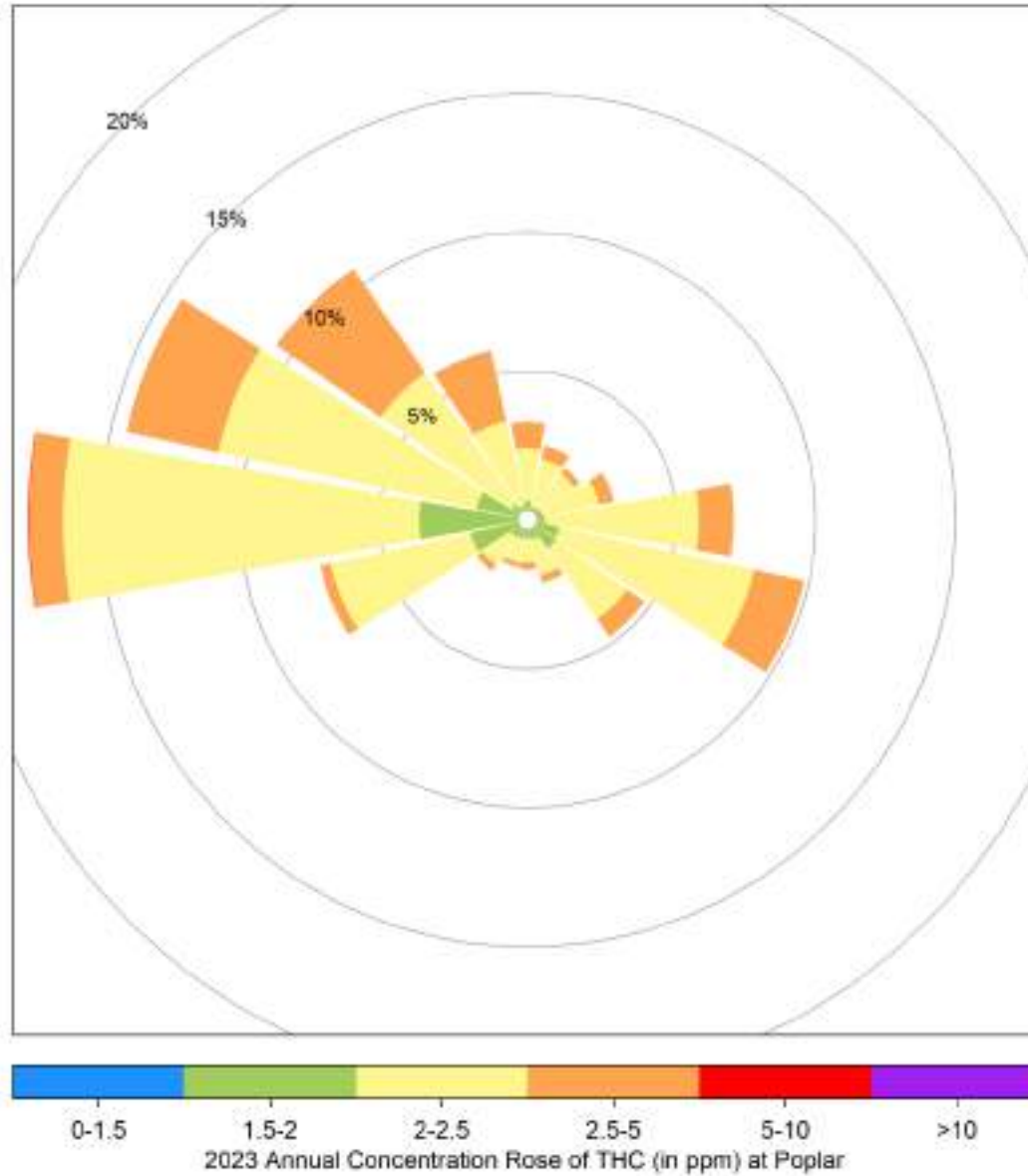
AAAQO Objectives: none

2023 Hourly Concentration Readings of THC (in ppm) at Poplar



Hourly Maximum THC (in ppm) for 2023 at Poplar





9.9 Particulate Matter (PM_{2.5}) - Poplar 2023 Summary

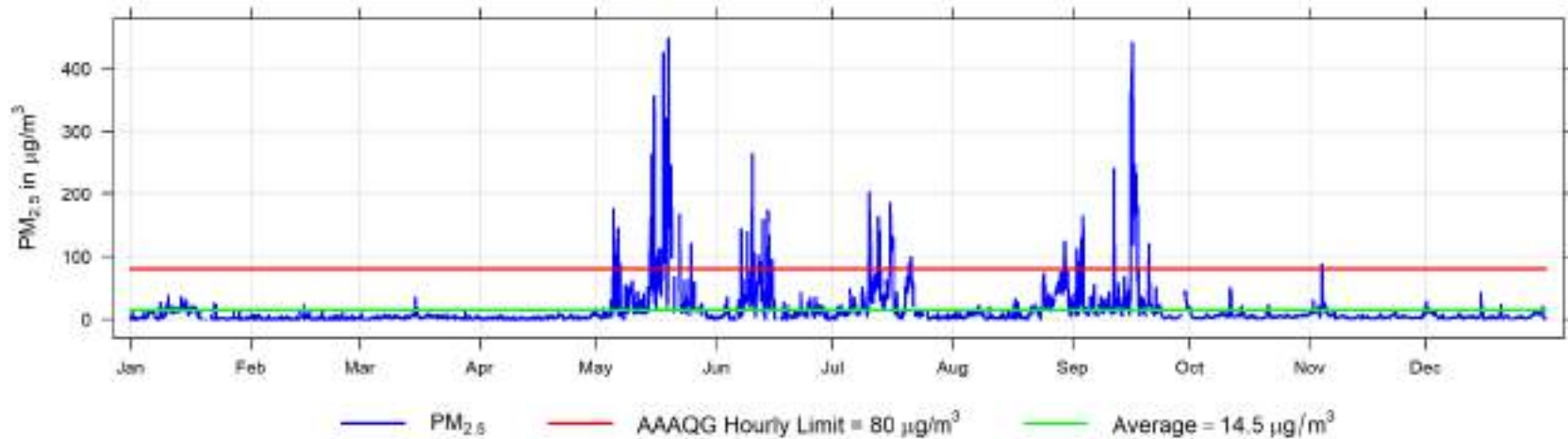
Particulate Matter (PM_{2.5}) Frequency Distribution at Poplar

Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (µg/m ³)	24-hr (µg/m ³)	MAXIMUM VALUES		Operational time (%)	Valid time (%)	Reportable Incidents		
		0 to 5 (µg/m ³)	5 to 15 (µg/m ³)	15 to 30 (µg/m ³)	30 to 50 (µg/m ³)	50 to 80 (µg/m ³)	> 80 (µg/m ³)			Date	Date			24-hr 29 µg/m ³	1-hr 80 µg/m ³	
January 2023	668	58.1%	24.7%	16.5%	0.7%	0.0%	0.0%	7.1	22.2	Jan 14	37.5	Jan 10 19:00	90.2%	89.8%	0	0
February 2023	650	91.5%	8.3%	0.2%	0.0%	0.0%	0.0%	1.6	4.5	Feb 13	23.3	Feb 14 15:00	97.2%	96.7%	0	0
March 2023	704	83.8%	15.3%	0.7%	0.1%	0.0%	0.0%	3.0	11.0	Mar 15	33.7	Mar 15 12:00	95.3%	94.6%	0	0
April 2023	707	90.7%	9.3%	0.0%	0.0%	0.0%	0.0%	2.1	9.0	Apr 30	14.0	May 01 00:00	98.6%	98.2%	0	0
May 2023	602	17.4%	22.9%	18.6%	15.0%	7.6%	18.4%	50.9	210.5	May 18	448.7	May 19 19:00	81.2%	80.9%	11	111
June 2023	644	31.5%	28.1%	18.2%	9.9%	8.4%	3.9%	21.4	74.6	Jun 14	263.7	Jun 10 07:00	89.6%	89.4%	8	25
July 2023	682	28.2%	28.4%	13.6%	11.4%	10.4%	7.9%	27.5	106.2	Jul 16	202.2	Jul 10 13:00	91.9%	91.7%	9	54
August 2023	721	39.0%	29.5%	16.0%	7.9%	6.2%	1.4%	15.5	71.3	Aug 29	123.9	Aug 29 20:00	97.2%	96.9%	5	10
September 2023	680	15.7%	27.8%	32.5%	9.6%	4.1%	10.3%	36.8	286.0	Sep 16	442.5	Sep 16 11:00	95.0%	94.4%	9	70
October 2023	735	59.2%	37.8%	2.2%	0.8%	0.0%	0.0%	5.0	19.3	Oct 11	49.1	Oct 11 14:00	98.9%	98.8%	0	0
November 2023	719	67.7%	26.1%	5.3%	0.6%	0.1%	0.1%	5.4	28.0	Nov 04	87.7	Nov 04 07:00	100.0%	99.9%	0	1
December 2023	741	71.7%	23.6%	4.2%	0.5%	0.0%	0.0%	4.7	18.3	Dec 15	41.7	Dec 15 07:00	99.9%	99.6%	0	0
Annual	8253	54.5%	23.5%	10.7%	4.7%	3.1%	3.5%	14.5	286.0	MAXIMUM VALUES		94.6%	94.2%	42	271	

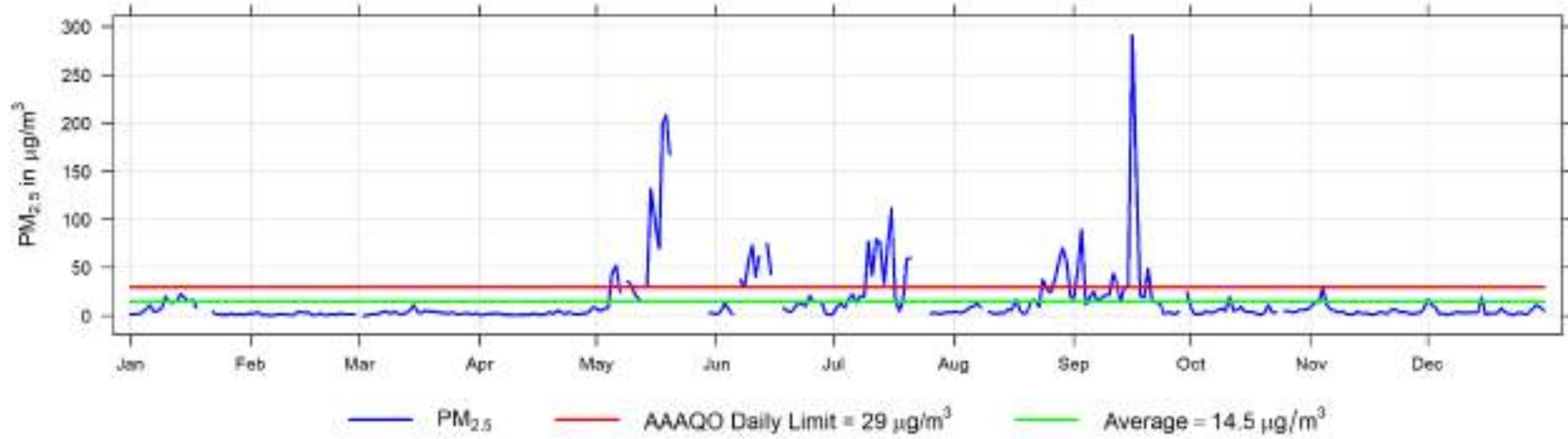
AAAQO Objectives: 24-Hr: 29 µg/m³, AAAQG Guideline: 1-Hr: 80 µg/m³

Note: correction of T640 data for Sep 07, 2023 to Dec 01, 2023 (when firmware update performed) resulted in a reduction of 1hr incidents by 1 and 24hr incidents by 1

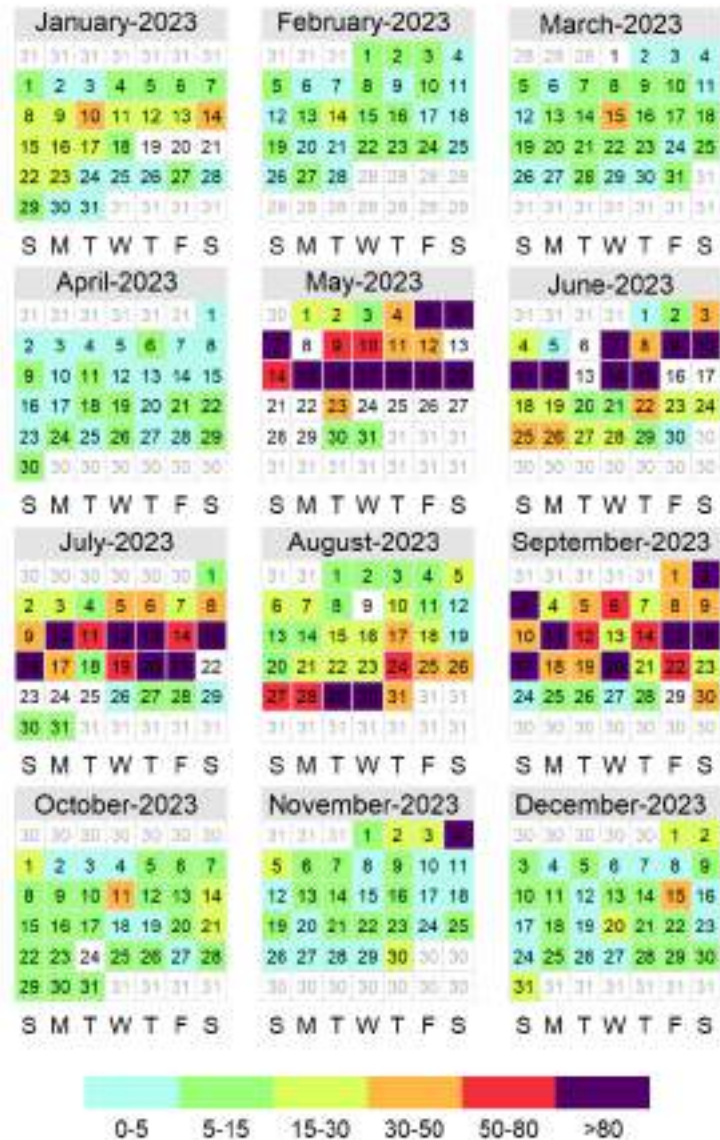
2023 Hourly Concentration Readings of PM_{2.5} in µg/m³ at Poplar

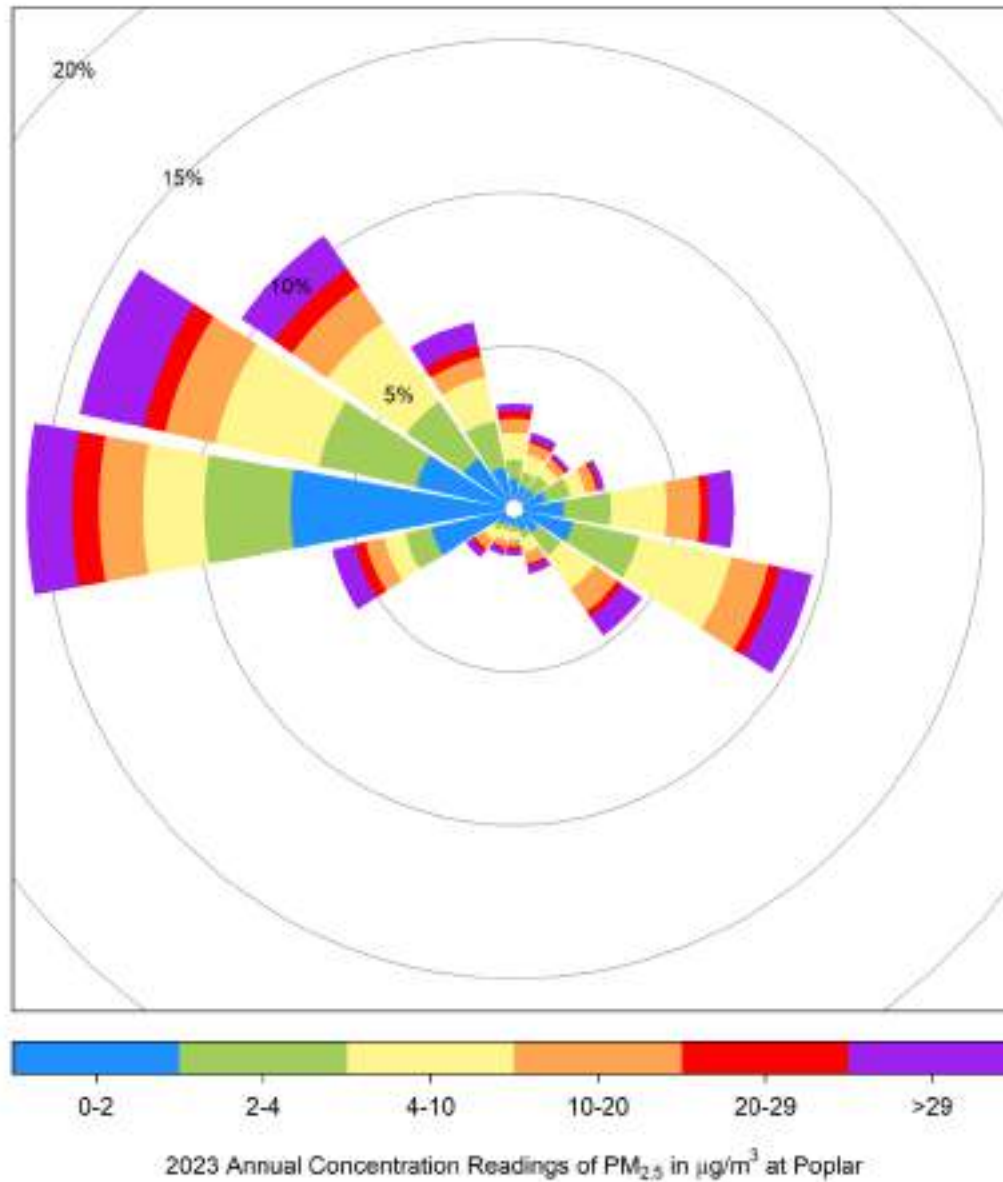


2023 Daily Concentration Readings of PM_{2.5} in $\mu\text{g}/\text{m}^3$ at Poplar



Hourly Maximum PM_{2.5} (in µg/m³) for 2023 at Poplar



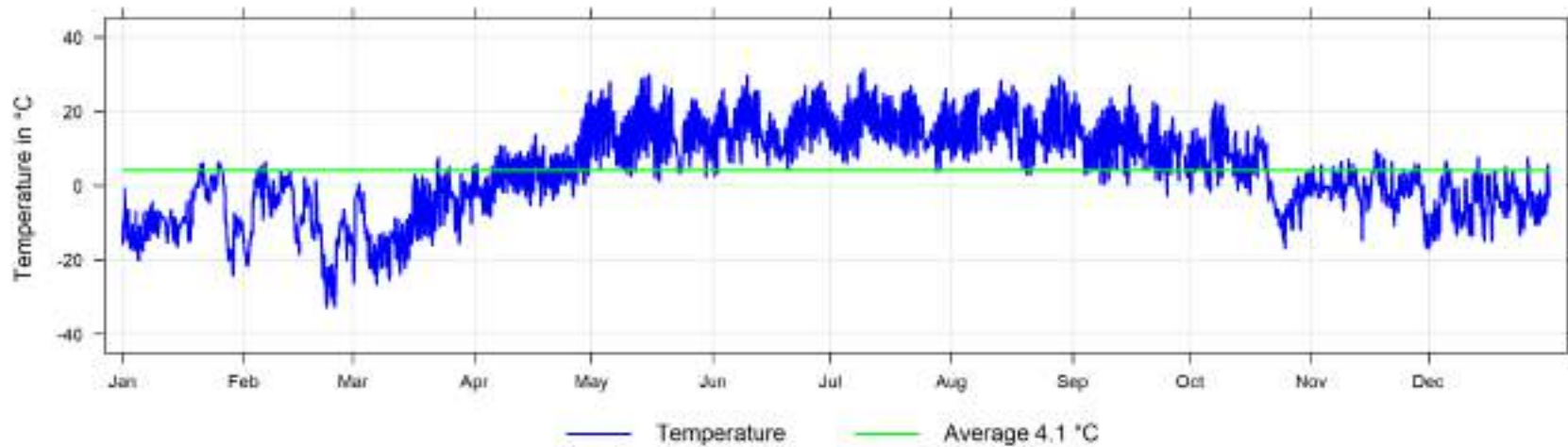


9.10 Temperature (ET) - Poplar 2023 Summary

Temperature (ET) Frequency Distribution at Poplar

Month	Valid Hours	Monthly Average (°C)	Maximum Values			Minimum Values			Operational time (%)	Valid time (%)			
			24-hr (°C)	Date	1-hr (°C)	Date	24-hr (°C)	Date			1-hr (°C)	Date	
January 2022	744	-8.3	3.9	Jan 26	6.2	Jan 25 14:00	-18.6	Jan 28	-24.1	Jan 29 08:00	100.0%	100.0%	
February 2022	670	-9.1	1.7	Feb 12	6.3	Feb 06 16:00	-27.0	Feb 22	-32.8	Feb 22 07:00	99.7%	99.7%	
March 2022	733	-9.6	-1.2	Mar 22	7.5	Mar 22 18:00	-20.5	Mar 06	-26.4	Mar 07 02:00	98.5%	98.5%	
April 2022	717	3.8	15.0	Apr 30	25.4	Apr 30 18:00	-3.4	Apr 03	-8.4	Apr 05 06:00	99.6%	99.6%	
May 2022	744	14.3	20.4	May 14	29.8	May 15 18:00	4.9	May 23	1.3	May 18 06:00	100.0%	100.0%	
June 2022	716	15.8	20.9	Jun 28	29.7	Jun 09 18:00	8.5	Jun 18	2.6	Jun 01 05:00	99.4%	99.4%	
July 2022	741	16.3	23.1	Jul 09	31.4	Jul 09 15:00	11.2	Jul 25	3.7	Jul 28 05:00	99.6%	99.6%	
August 2022	733	16.2	21.8	Aug 13	29.4	Aug 28 17:00	9.9	Aug 18	2.9	Aug 21 05:00	98.5%	98.5%	
September 2022	686	11.1	17.1	Sep 01	27.0	Sep 15 17:00	4.3	Sep 30	-2.7	Sep 25 07:00	95.3%	95.3%	
October 2022	736	3.4	14.0	Oct 07	22.7	Oct 07 16:00	-10.3	Oct 25	-16.9	Oct 25 08:00	98.9%	98.9%	
November 2022	720	-0.8	6.8	Nov 17	9.6	Nov 17 14:00	-13.3	Nov 30	-17.1	Dec 01 00:00	100.0%	100.0%	
December 2022	744	-4.7	1.3	Dec 26	7.5	Dec 26 10:00	-12.4	Dec 01	-16.5	Dec 01 03:00	100.0%	100.0%	
		AVERAGE	23.1	MAXIMUM VALUES			MINIMUM VALUES						
		8684	4.1	23.1	Jul 09	31.4	Jul 09 15:00	-27.0	Feb 22	-32.8	Feb 22 07:00	99.1%	99.1%

2023 Hourly Temperature Readings (in °C) at Poplar

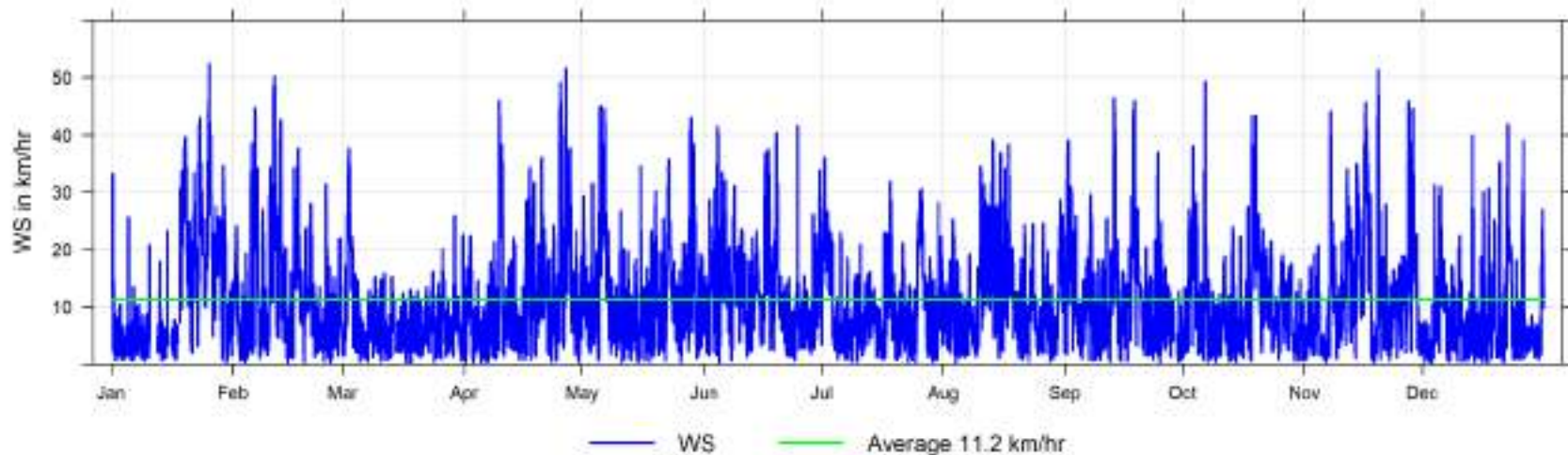


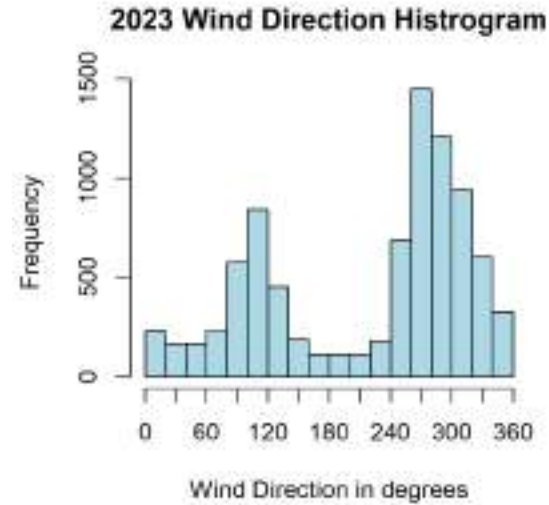
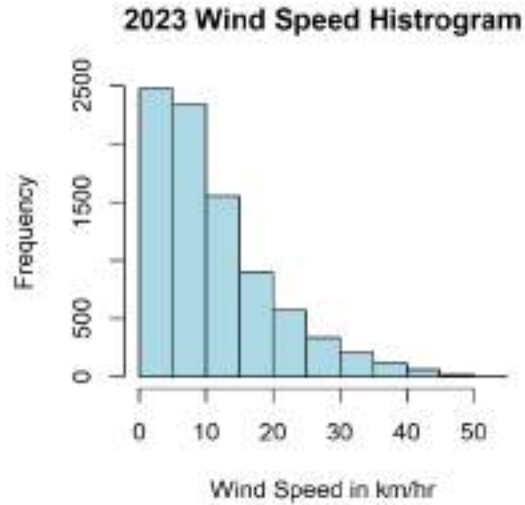
9.11 Wind Speed and Wind Direction (WS and WD) - Poplar 2023 Summary

Wind Speed Frequency Distribution at Poplar

Month	Valid Hours	Calm	% of Readings in Concentration Range					Monthly Average (km/hr)	24-hr (km/hr)	MAXIMUM VALUES			Operational time (%)	Valid time (%)
			0.5 to 5 (km/hr)	5 to 11 (km/hr)	11 to 19 (km/hr)	19 to 28 (km/hr)	>28 (km/hr)			Date	1-hr (km/hr)	Date		
January 2023	653	0.2%	36.1%	22.8%	15.2%	16.1%	9.6%	12.2	30.9	Jan 19	52.5	Jan 25 22:00	87.8%	87.8%
February 2023	670	0.9%	24.2%	30.3%	21.6%	13.9%	9.1%	12.7	31.7	Feb 11	50.2	Feb 11 14:00	99.7%	99.7%
March 2023	729	1.0%	36.5%	44.0%	13.4%	3.2%	1.9%	7.6	29.2	Mar 02	37.7	Mar 02 13:00	98.0%	98.0%
April 2023	717	1.1%	24.7%	30.1%	25.1%	9.9%	9.1%	12.1	29.0	Apr 25	51.7	Apr 26 19:00	99.6%	99.6%
May 2023	744	0.7%	20.0%	34.3%	26.3%	11.8%	6.9%	12.3	30.9	May 06	45.1	May 05 17:00	100.0%	100.0%
June 2023	716	0.1%	17.0%	32.3%	30.3%	14.0%	6.3%	12.7	25.4	Jun 19	41.6	Jun 24 20:00	99.4%	99.4%
July 2023	741	0.7%	28.3%	35.4%	23.6%	10.3%	1.8%	10.0	23.3	Jul 26	36.1	Jul 01 18:00	99.6%	99.6%
August 2023	733	0.4%	23.3%	35.9%	22.4%	13.1%	4.9%	11.4	24.3	Aug 13	39.1	Aug 13 14:00	98.5%	98.5%
September 2023	686	0.4%	27.6%	32.2%	23.9%	10.1%	5.8%	11.3	31.0	Sep 18	46.4	Sep 13 11:00	95.3%	95.3%
October 2023	736	0.7%	30.2%	30.2%	26.2%	8.4%	4.3%	10.5	26.1	Oct 19	49.3	Oct 06 16:00	98.9%	98.9%
November 2023	719	0.3%	28.5%	23.2%	25.6%	12.4%	10.0%	12.8	32.4	Nov 16	51.4	Nov 19 18:00	99.9%	99.9%
December 2023	744	1.7%	41.0%	28.9%	16.0%	8.7%	3.6%	8.8	20.5	Dec 22	41.8	Dec 22 19:00	100.0%	100.0%
Annual	8588	0.7%	28.1%	31.6%	22.5%	11.0%	6.1%	11.2	32.4	MAXIMUM VALUES			98.1%	98.1%

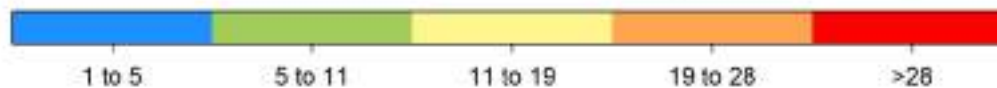
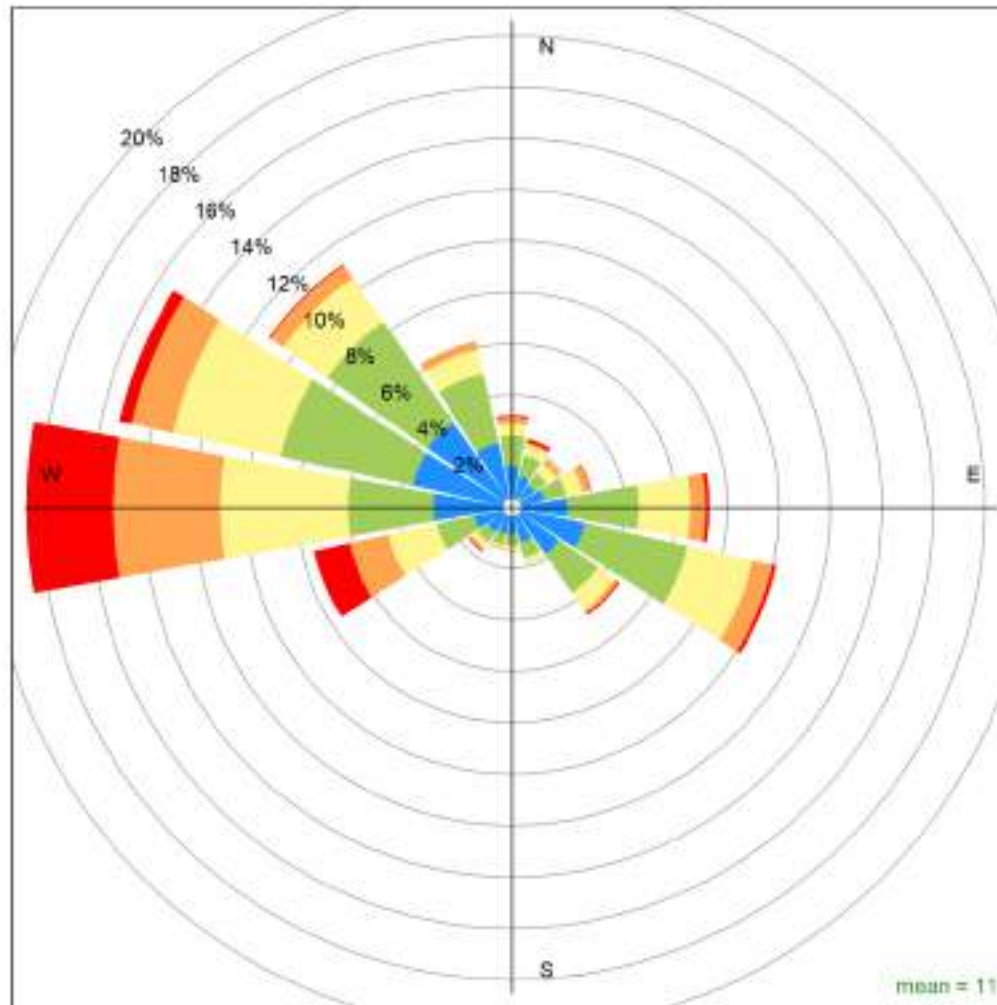
2023 Hourly Readings of Wind Speed (in km/hr) at Poplar





Wind Speed and Wind Direction Frequency Distribution at Poplar

Direction	Number of Readings	% of wind speed range						Total %
		Calm (<0.5) (km/hr)	0.5 to 5 (km/hr)	5 to 11 (km/hr)	11 to 19 (km/hr)	19 to 28 (km/hr)	>28 (km/hr)	
N	289	0.0%	1.4%	1.2%	0.5%	0.3%	0.1%	3.4%
NNE	212	0.0%	1.0%	0.8%	0.4%	0.1%	0.1%	2.5%
NE	175	0.0%	0.8%	0.5%	0.5%	0.2%	0.0%	2.0%
ENE	253	0.0%	1.0%	0.9%	0.7%	0.3%	0.0%	2.9%
E	642	0.0%	1.9%	2.8%	2.0%	0.6%	0.1%	7.5%
ESE	893	0.1%	2.7%	4.1%	2.6%	0.8%	0.2%	10.4%
SE	426	0.1%	2.0%	1.8%	0.8%	0.1%	0.1%	5.0%
SSE	173	0.0%	1.1%	0.6%	0.3%	0.0%	0.0%	2.0%
S	125	0.0%	0.8%	0.5%	0.2%	0.0%	0.0%	1.5%
SSW	122	0.1%	0.7%	0.4%	0.1%	0.0%	0.0%	1.4%
SW	163	0.0%	0.9%	0.5%	0.3%	0.1%	0.0%	1.9%
WSW	660	0.1%	1.2%	1.5%	1.9%	1.5%	1.4%	7.7%
W	1605	0.0%	2.8%	3.3%	5.0%	4.2%	3.4%	18.7%
WNW	1325	0.0%	3.7%	5.3%	4.3%	1.7%	0.5%	15.4%
NW	977	0.0%	3.8%	4.8%	2.1%	0.6%	0.1%	11.4%
NNW	548	0.0%	2.3%	2.8%	1.0%	0.3%	0.0%	6.4%
Total	8588	0.7%	28.1%	31.7%	22.5%	10.9%	6.0%	100.0%



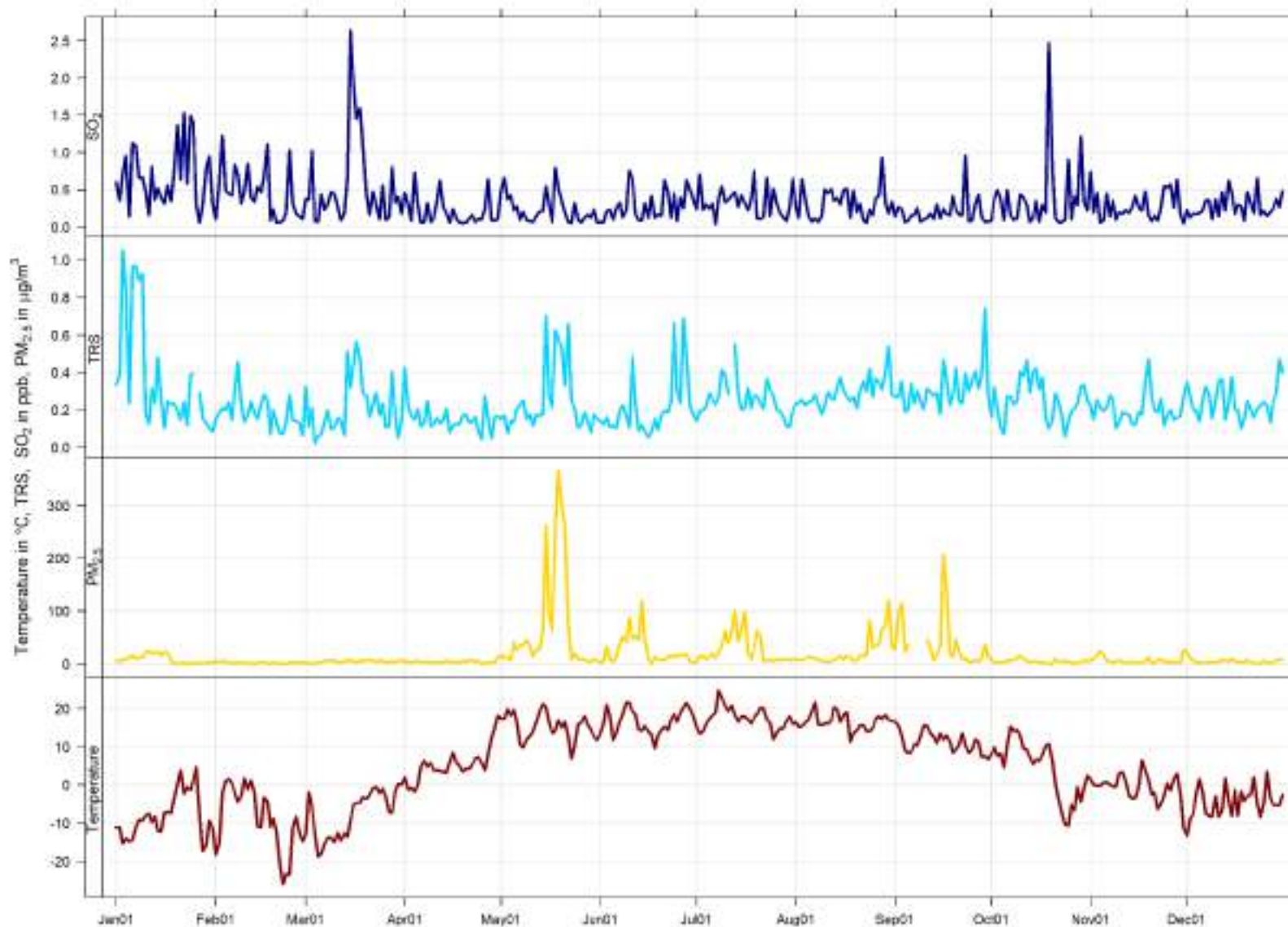
Poplar 2023 Wind Rose, wind speed in km/hr
Calms (<1km/hr) = 2.5 %

10 Smoky Heights Key Parameters - Continuous Monitoring Data - 2023 Summary

Smoky Heights Key Parameters - Continuous Monitoring Data - 2023 Summary

Smoky Heights Station	Parameter	Average	Maximum Values			Operational Time (%)	Valid Time (%)	Readings above AAAQO & AAAQG					
			24-hr	Date	1-hr			Date	1-hr	8-hr	24-hr	30-d	Annual
			Sulphur Dioxide SO ₂ measured in ppb	0.3	3.1			Mar 15	34.9	Oct 19 11:00	99.2%	94.4%	0
Total Reduced Sulphur TRS measured in ppb	0.2	1.0	Jan 03	3.4	Jan 07 19:00	95.3%	90.7%	0	-	0	-	-	
Particulate Matter PM _{2.5} measured in µg/m ³	17.9	368.6	May 19	990.0	May 19 19:00	97.5%	97.2%	359	-	49	-	-	

2023 Daily Concentration Readings at Smoky Heights



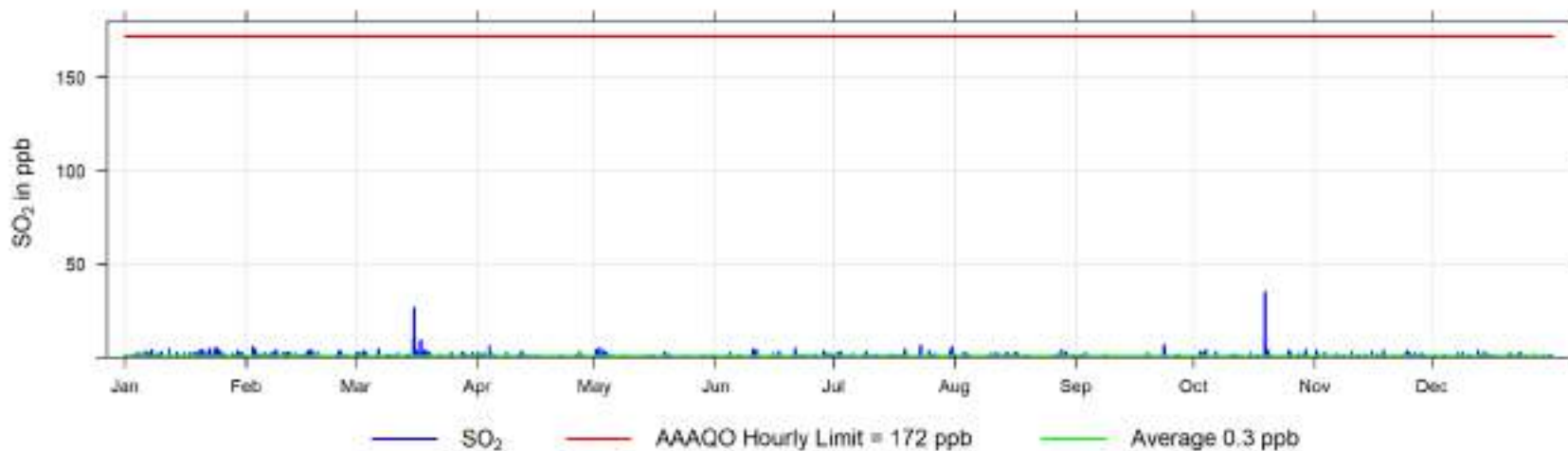
10.1 Sulphur Dioxide (SO₂) - Smoky Heights 2023 Summary

Sulphur Dioxide (SO₂) Frequency Distribution at Smoky Heights

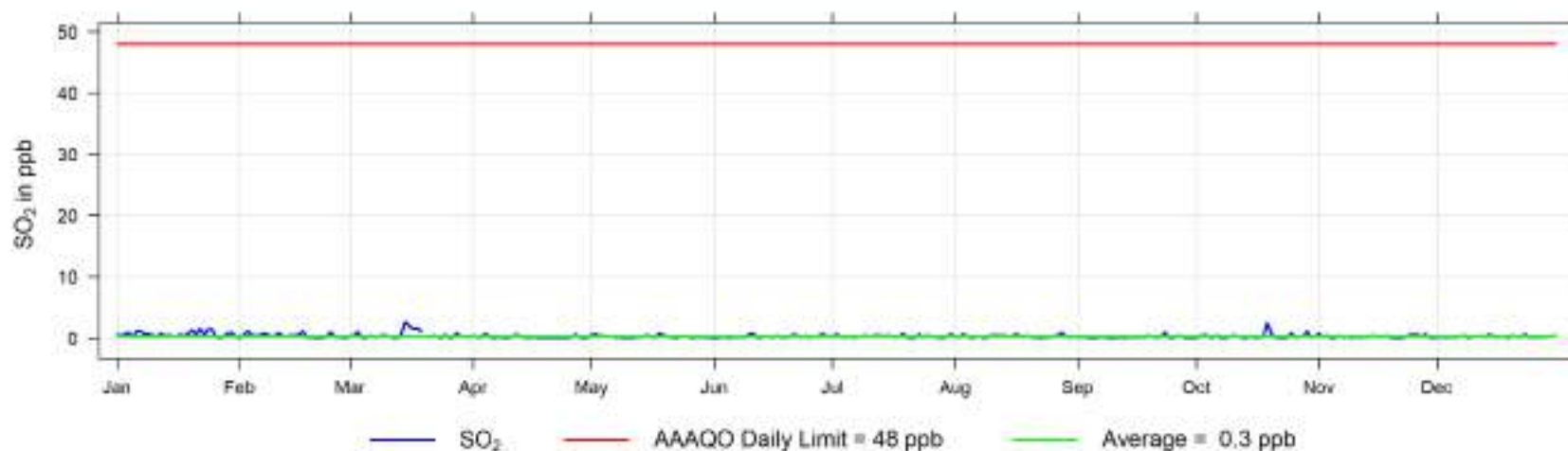
Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	MAXIMUM VALUES				Operational time (%)	Valid time (%)	Reportable Incidents		
		0 to 1 (ppb)	1 to 5 (ppb)	5 to 10 (ppb)	10 to 57 (ppb)	57 to 172 (ppb)	> 172 (ppb)		24-hr (ppb)	Date	1-hr (ppb)	Date			30-d 11 ppb	24-hr 48 ppb	1-hr 172 ppb
January 2023	708	79.1%	20.9%	0.0%	0.0%	0.0%	0.0%	0.7	1.5	Jan 22	4.9	Jan 24 00:00	100.0%	95.2%	0	0	0
February 2023	640	89.4%	10.5%	0.2%	0.0%	0.0%	0.0%	0.4	1.2	Feb 03	5.2	Feb 02 17:00	100.0%	95.2%	0	0	0
March 2023	700	85.0%	14.1%	0.4%	0.0%	0.0%	0.0%	0.6	3.1	Mar 15	26.4	Mar 15 22:00	99.3%	94.1%	0	0	0
April 2023	686	95.6%	4.2%	0.1%	0.0%	0.0%	0.0%	0.2	0.7	Apr 04	5.7	Apr 04 06:00	100.0%	95.3%	0	0	0
May 2023	676	96.0%	4.0%	0.0%	0.0%	0.0%	0.0%	0.2	0.8	May 18	4.9	May 02 08:00	95.2%	90.9%	0	0	0
June 2023	677	94.4%	5.6%	0.0%	0.0%	0.0%	0.0%	0.3	0.7	Jun 10	4.5	Jun 21 04:00	98.6%	94.0%	0	0	0
July 2023	699	94.8%	4.9%	0.3%	0.0%	0.0%	0.0%	0.3	0.7	Jul 19	5.9	Jul 23 08:00	98.7%	94.0%	0	0	0
August 2023	700	94.9%	5.1%	0.0%	0.0%	0.0%	0.0%	0.3	0.9	Aug 28	3.9	Aug 28 09:00	98.8%	94.1%	0	0	0
September 2023	686	97.7%	2.2%	0.1%	0.0%	0.0%	0.0%	0.2	0.9	Sep 23	6.4	Sep 23 11:00	100.0%	95.3%	0	0	0
October 2023	709	93.4%	6.2%	0.3%	0.1%	0.0%	0.0%	0.4	2.5	Oct 19	34.9	Oct 19 11:00	100.0%	95.3%	0	0	0
November 2023	684	93.3%	6.7%	0.0%	0.0%	0.0%	0.0%	0.3	0.8	Nov 01	3.3	Nov 01 12:00	99.7%	95.0%	0	0	0
December 2023	705	95.3%	4.7%	0.0%	0.0%	0.0%	0.0%	0.3	0.6	Dec 14	3.4	Dec 12 18:00	99.9%	94.8%	0	0	0
Annual	8270	92.4%	7.4%	0.1%	0.0%	0.0%	0.0%	0.3	3.1	MAXIMUM VALUES		99.2%	94.4%	0	0	0	

AAAQO Objectives: Annual: 8ppb, 30-Day: 11ppb, 24-Hr: 48ppb, 1-Hr: 172ppb

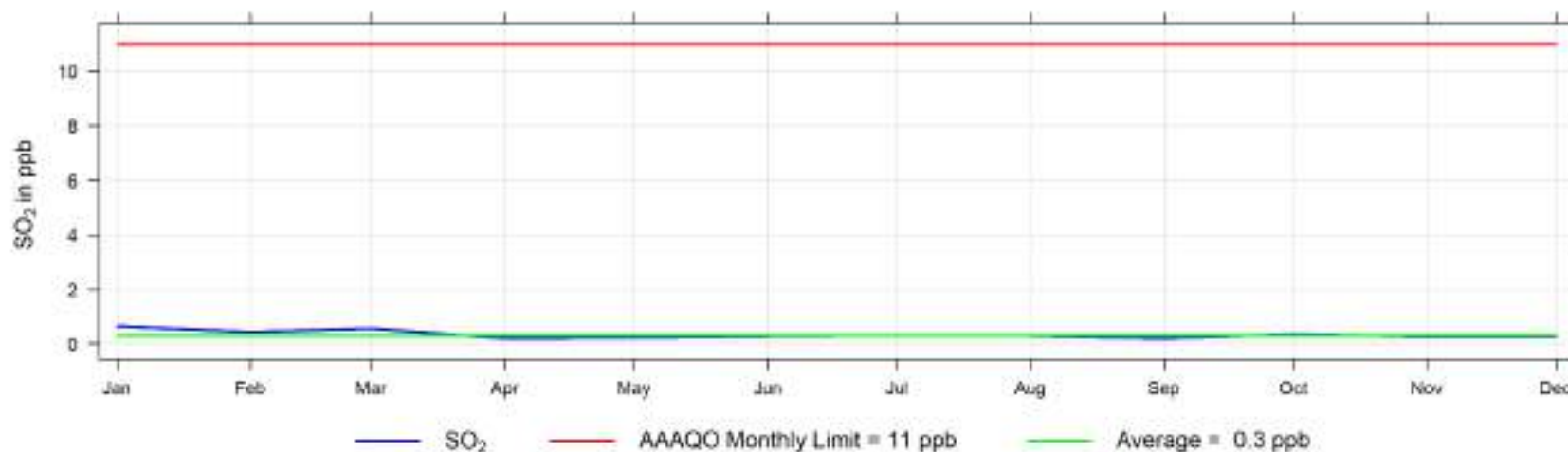
2023 Hourly Concentration Readings of SO₂ (in ppb) at Smoky Heights



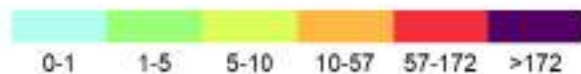
2023 Daily Concentration Readings of SO₂ (in ppb) at Smoky Heights

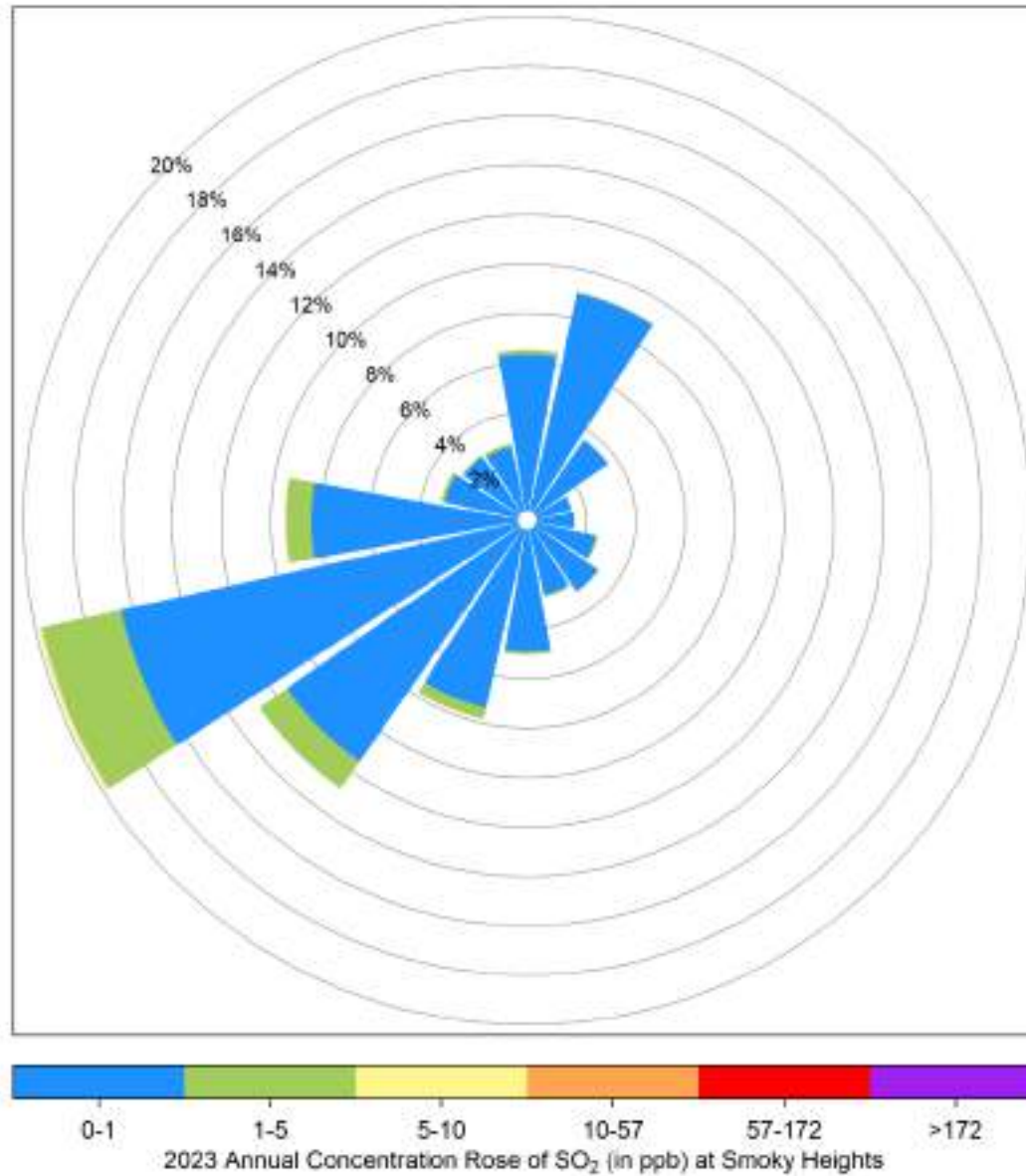


2023 Monthly Concentration Readings of SO₂ (in ppb) at Smoky Heights



Hourly Maximum SO₂ (in ppb) for 2023 at Smoky Heights





10.2 Total Reduced Sulphur (TRS) - Smoky Heights 2023 Summary

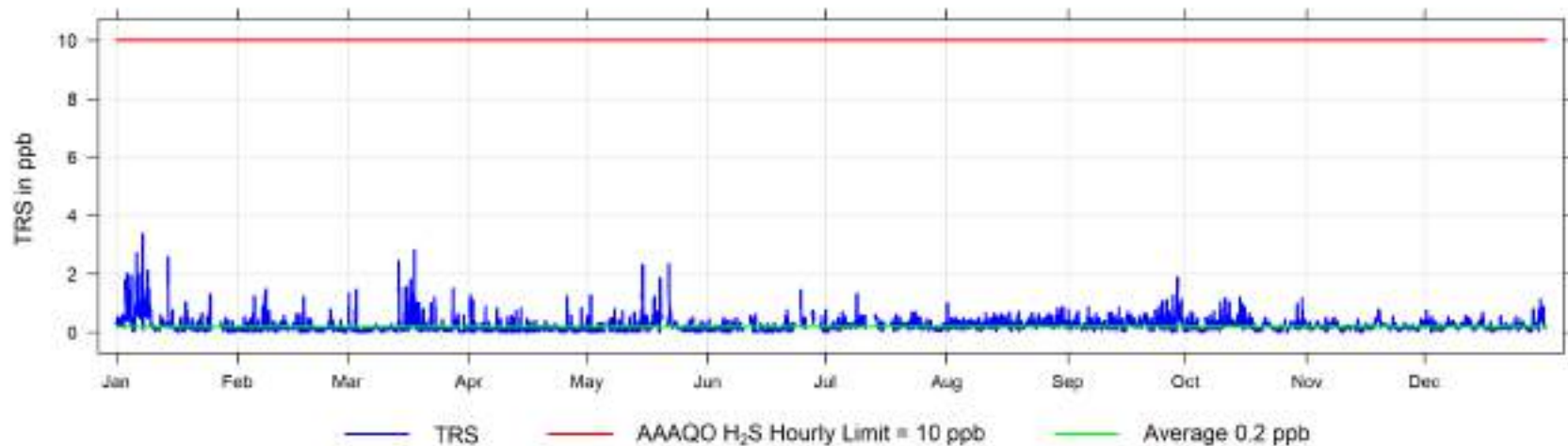
Total Reduced Sulphur (TRS) Frequency Distribution at Smoky Heights

Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	MAXIMUM VALUES				Operational time (%)	Valid time (%)	Reportable Incidents	
		0 to 1 (ppb)	1 to 3 (ppb)	3 to 5 (ppb)	5 to 8 (ppb)	8 to 10 (ppb)	> 10 (ppb)		24-hr (ppb)	Date	1-hr (ppb)	Date			24-hr 3 ppb	1-hr 10 ppb
January 2023	644	91.0%	8.9%	0.2%	0.0%	0.0%	0.0%	0.4	1.0	Jan 03	3.4	Jan 07 19:00	91.1%	86.6%	0	0
February 2023	640	99.1%	0.9%	0.0%	0.0%	0.0%	0.0%	0.2	0.5	Feb 08	1.5	Feb 08 07:00	100.0%	95.2%	0	0
March 2023	704	97.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.2	0.5	Mar 17	2.8	Mar 18 04:00	99.3%	94.6%	0	0
April 2023	685	99.3%	0.7%	0.0%	0.0%	0.0%	0.0%	0.2	0.4	Apr 01	1.3	Apr 01 11:00	100.0%	95.1%	0	0
May 2023	633	97.3%	2.7%	0.0%	0.0%	0.0%	0.0%	0.2	0.7	May 15	2.3	May 22 04:00	89.4%	85.1%	0	0
June 2023	533	99.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.3	0.3	Jun 25	1.4	Jun 24 18:00	78.5%	74.0%	0	0
July 2023	613	99.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.2	0.4	Jul 09	1.3	Jul 09 05:00	86.8%	82.4%	0	0
August 2023	700	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3	0.5	Aug 30	1.0	Aug 01 07:00	98.8%	94.1%	0	0
September 2023	686	98.7%	1.3%	0.0%	0.0%	0.0%	0.0%	0.3	0.7	Sep 29	1.9	Sep 29 01:00	100.0%	95.3%	0	0
October 2023	708	99.3%	0.7%	0.0%	0.0%	0.0%	0.0%	0.3	0.5	Oct 12	1.2	Oct 14 22:00	100.0%	95.2%	0	0
November 2023	684	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2	0.5	Nov 19	0.8	Nov 19 04:00	99.7%	95.0%	0	0
December 2023	709	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.2	0.5	Dec 30	1.1	Dec 30 15:00	99.9%	95.3%	0	0
Annual	7939	98.4%	1.6%	0.0%	0.0%	0.0%	0.0%	0.2	1.0	Jan 03	3.4	Jan 07 19:00	95.3%	90.7%	0	0

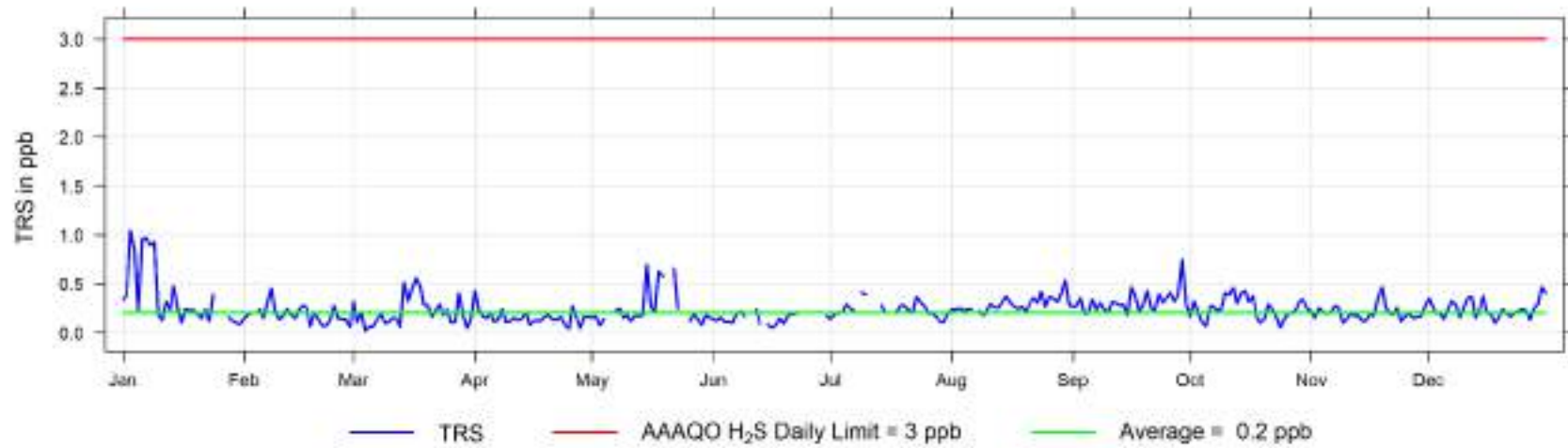
AAAQO H₂S Objectives: 24-Hr: 3ppb, 1-Hr: 10ppb

Note: In June 2023 when data below 75% uptime the monthly average not valid

2023 Hourly Concentration Readings of TRS (in ppb) at Smoky Heights

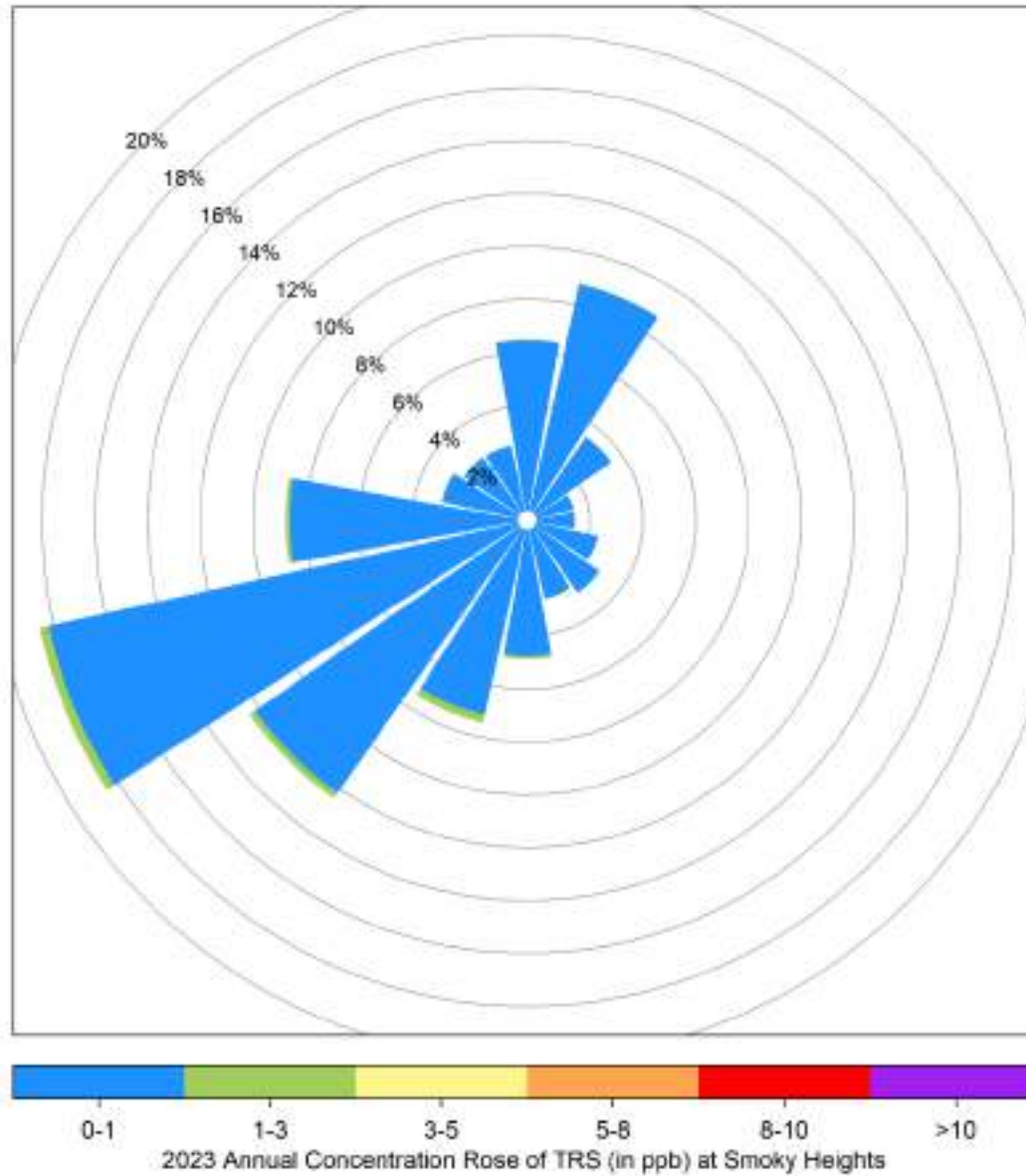


2023 Daily Concentration Readings of TRS (in ppb) at Smoky Heights



Hourly Maximum TRS (in ppb) for 2023 at Smoky Heights





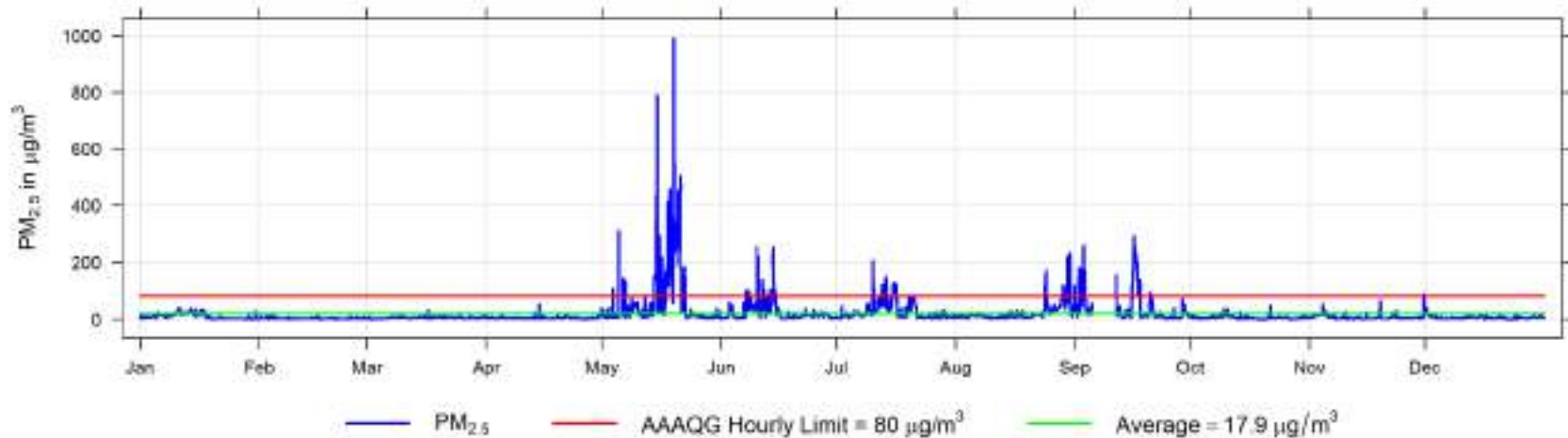
10.3 Particulate Matter (PM_{2.5}) - Smoky Heights 2023 Summary

Particulate Matter (PM_{2.5}) Frequency Distribution at Smoky Heights

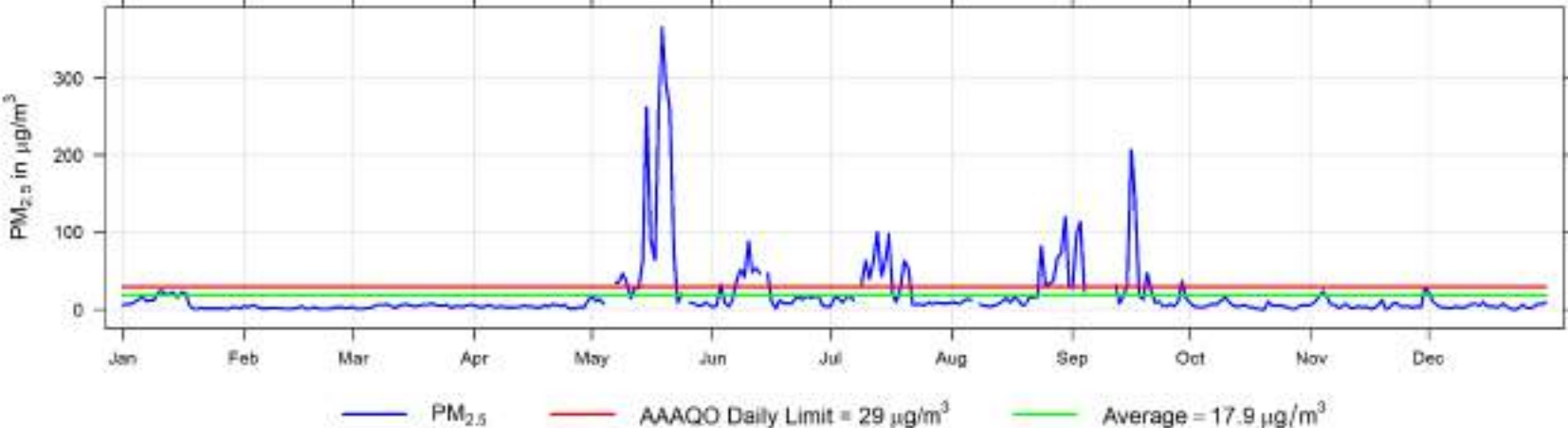
Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (µg/m ³)	24-hr (µg/m ³)	MAXIMUM VALUES			Operational time (%)	Valid time (%)	Reportable Incidents	
		0 to 5 (µg/m ³)	5 to 15 (µg/m ³)	15 to 30 (µg/m ³)	30 to 50 (µg/m ³)	50 to 80 (µg/m ³)	> 80 (µg/m ³)			Date	1-hr (µg/m ³)	Date			24-hr 29 µg/m ³	1-hr 80 µg/m ³
January 2023	743	46.4%	27.6%	23.4%	2.6%	0.0%	0.0%	9.0	23.3	Jan 11	39.2	Jan 11 10:00	100.0%	99.9%	0	0
February 2023	669	89.5%	9.6%	0.9%	0.0%	0.0%	0.0%	2.1	5.7	Feb 03	20.7	Feb 04 19:00	100.0%	99.6%	0	0
March 2023	734	58.4%	41.0%	0.4%	0.1%	0.0%	0.0%	4.5	7.8	Mar 21	31.4	Mar 16 22:00	99.3%	98.7%	0	0
April 2023	717	78.4%	20.5%	0.7%	0.3%	0.1%	0.0%	3.9	12.6	Apr 30	52.7	Apr 14 20:00	100.0%	99.6%	0	0
May 2023	704	10.7%	34.5%	17.5%	9.9%	7.8%	19.6%	71.2	368.6	May 19	990.0	May 19 19:00	95.0%	94.6%	13	138
June 2023	707	27.7%	26.7%	21.1%	11.6%	7.2%	5.7%	24.1	87.3	Jun 10	253.6	Jun 10 10:00	98.6%	98.2%	9	40
July 2023	733	14.1%	40.2%	16.2%	10.5%	11.7%	7.2%	27.7	96.4	Jul 13	204.8	Jul 10 11:00	98.8%	98.5%	11	53
August 2023	732	18.6%	42.5%	17.6%	10.8%	4.9%	5.6%	22.5	110.8	Aug 30	232.3	Aug 30 14:00	98.8%	98.4%	8	41
September 2023	575	17.7%	31.5%	18.8%	10.3%	7.0%	14.8%	38.8	210.2	Sep 16	292.4	Sep 16 10:00	80.0%	79.9%	8	85
October 2023	742	62.0%	34.5%	2.8%	0.7%	0.0%	0.0%	5.0	15.8	Oct 10	47.6	Oct 21 20:00	100.0%	99.7%	0	0
November 2023	717	63.5%	24.7%	9.6%	1.1%	0.8%	0.3%	6.7	27.9	Nov 30	87.1	Nov 30 16:00	99.7%	99.6%	0	2
December 2023	741	63.3%	34.1%	1.8%	0.8%	0.0%	0.0%	5.0	21.2	Dec 01	38.5	Dec 01 07:00	100.0%	99.6%	0	0
Annual	8514	45.9%	30.6%	10.9%	4.9%	3.3%	4.4%	17.9	368.6	MAXIMUM VALUES			97.5%	97.2%	49	359

AAAQO Objectives: 24-Hr: 29 µg/m³, AAAQG Guideline: 1-Hr: 80 µg/m³

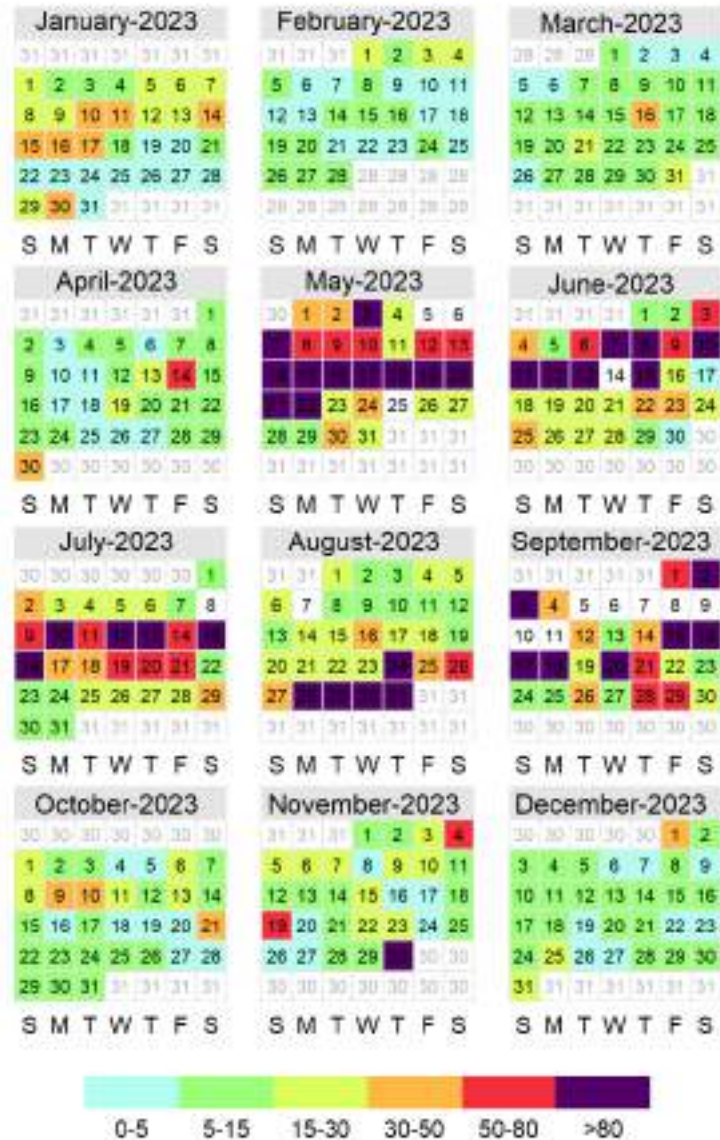
2023 Hourly Concentration Readings of PM_{2.5} in µg/m³ at Smoky Heights

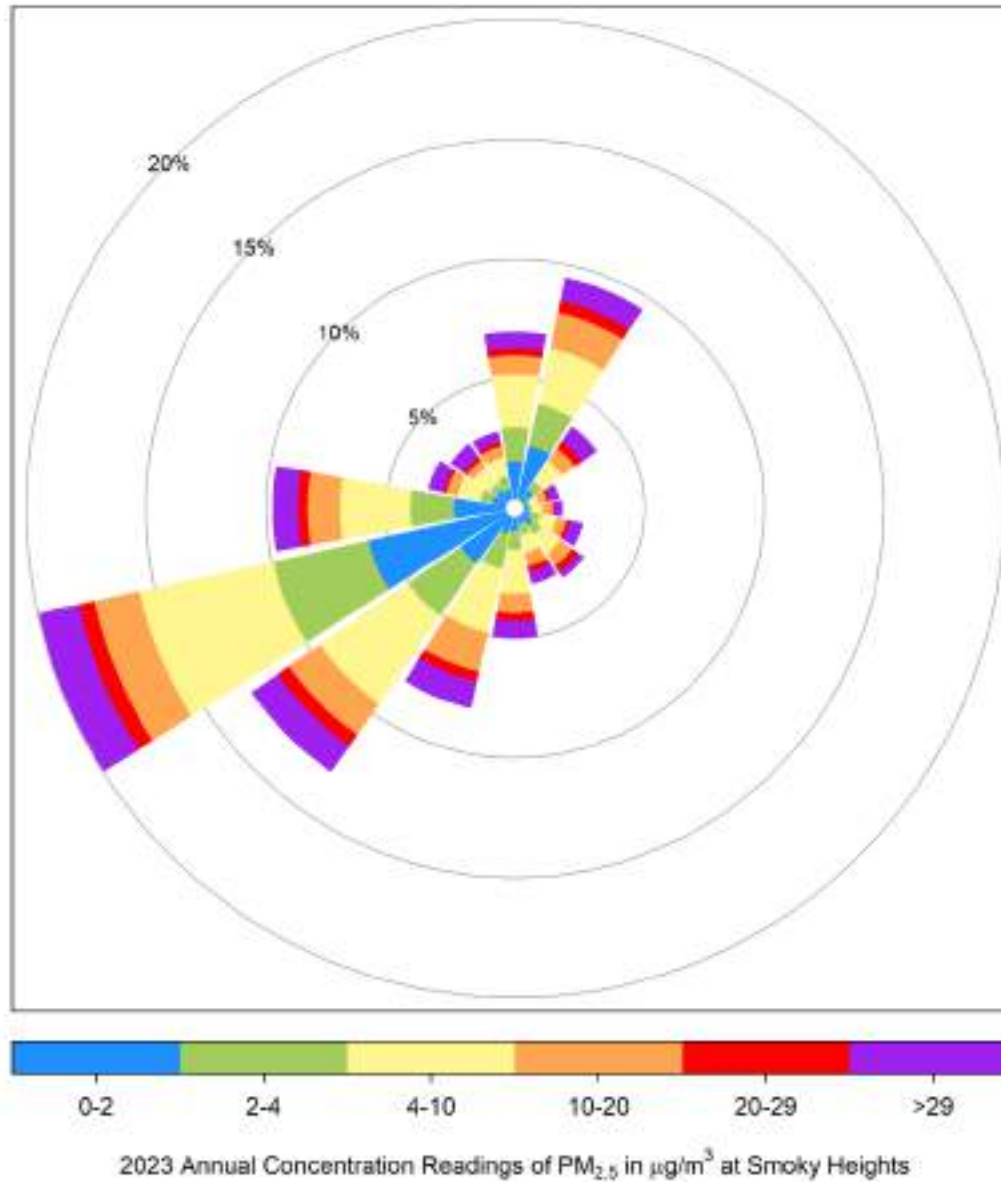


2023 Daily Concentration Readings of PM_{2.5} in µg/m³ at Smoky Heights



Hourly Maximum PM_{2.5} (in µg/m³) for 2023 at Smoky Heights



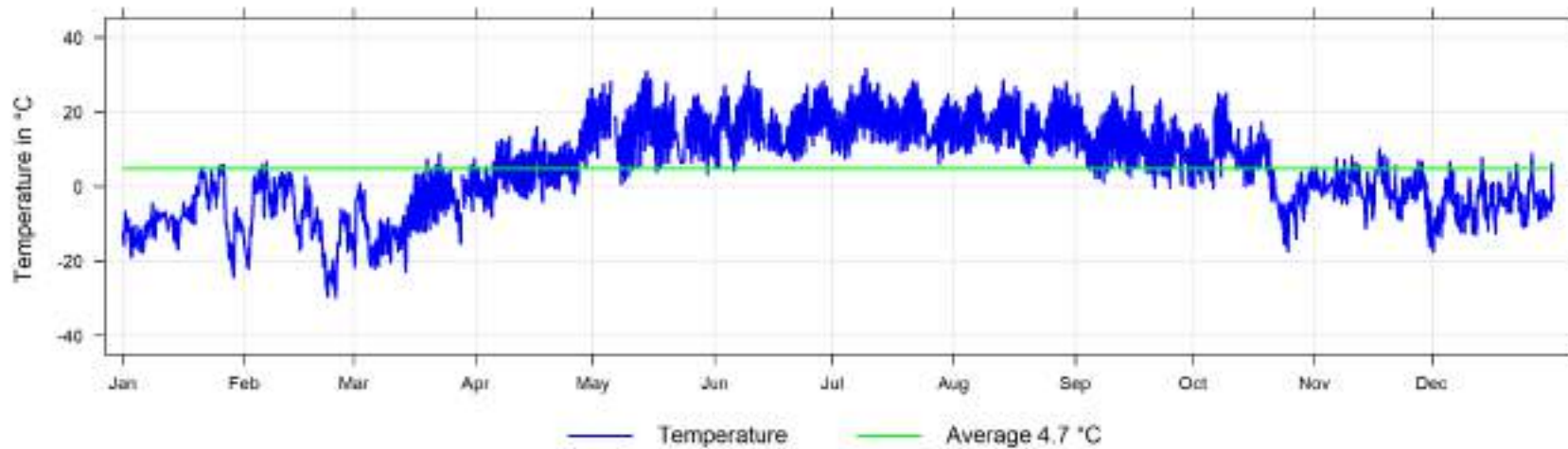


10.4 Temperature (ET) - Smoky Heights 2023 Summary

Temperature (ET) Frequency Distribution at Smoky Heights

Month	Valid Hours	Monthly Average (°C)	Maximum Values			Minimum Values			Operational time (%)	Valid time (%)			
			24-hr (°C)	Date	1-hr (°C)	Date	24-hr (°C)	Date			1-hr (°C)	Date	
January 2023	744	-8.1	4.4	Jan 26	5.8	Jan 26 19:00	-17.7	Jan 28	-24.3	Jan 29 08:00	100.0%	100.0%	
February 2023	672	-8.7	1.4	Feb 05	6.6	Feb 06 17:00	-25.9	Feb 22	-30.1	Feb 24 08:00	100.0%	100.0%	
March 2023	739	-7.7	0.2	Mar 31	8.9	Mar 22 17:00	-18.7	Mar 05	-22.9	Mar 14 08:00	99.3%	99.3%	
April 2023	720	5.2	18.2	Apr 30	26.3	Apr 30 18:00	-1.7	Apr 04	-8.3	Apr 05 07:00	100.0%	100.0%	
May 2023	708	15.1	21.2	May 14	30.8	May 14 16:00	7.0	May 23	0.6	May 08 04:00	95.2%	95.2%	
June 2023	710	16.6	21.8	Jun 09	30.9	Jun 09 16:00	9.6	Jun 18	4.2	Jun 06 01:00	98.6%	98.6%	
July 2023	735	17.3	22.8	Jul 09	31.6	Jul 09 16:00	11.9	Jul 25	5.9	Jul 28 05:00	98.8%	98.8%	
August 2023	733	16.5	20.6	Aug 13	28.5	Aug 13 17:00	11.1	Aug 18	5.9	Aug 20 04:00	98.8%	98.5%	
September 2023	720	11.2	16.6	Sep 01	26.9	Sep 15 17:00	6.9	Sep 30	-0.5	Sep 25 03:00	100.0%	100.0%	
October 2023	744	4.4	15.3	Oct 07	25.1	Oct 09 15:00	-10.6	Oct 24	-17.6	Oct 25 06:00	100.0%	100.0%	
November 2023	718	-0.6	6.5	Nov 17	10.4	Nov 17 15:00	-11.4	Nov 30	-16.4	Nov 30 09:00	99.7%	99.7%	
December 2023	744	-4.5	3.3	Dec 26	9.0	Dec 26 11:00	-13.0	Dec 01	-17.7	Dec 01 08:00	100.0%	100.0%	
		AVERAGE	22.8	MAXIMUM VALUES			MINIMUM VALUES						
		8687	4.7	22.8	Jul 09	31.6	Jul 09 16:00	-25.9	Feb 22	-30.1	Feb 24 08:00	99.2%	99.2%

2023 Hourly Temperature Readings (in °C) at Smoky Heights

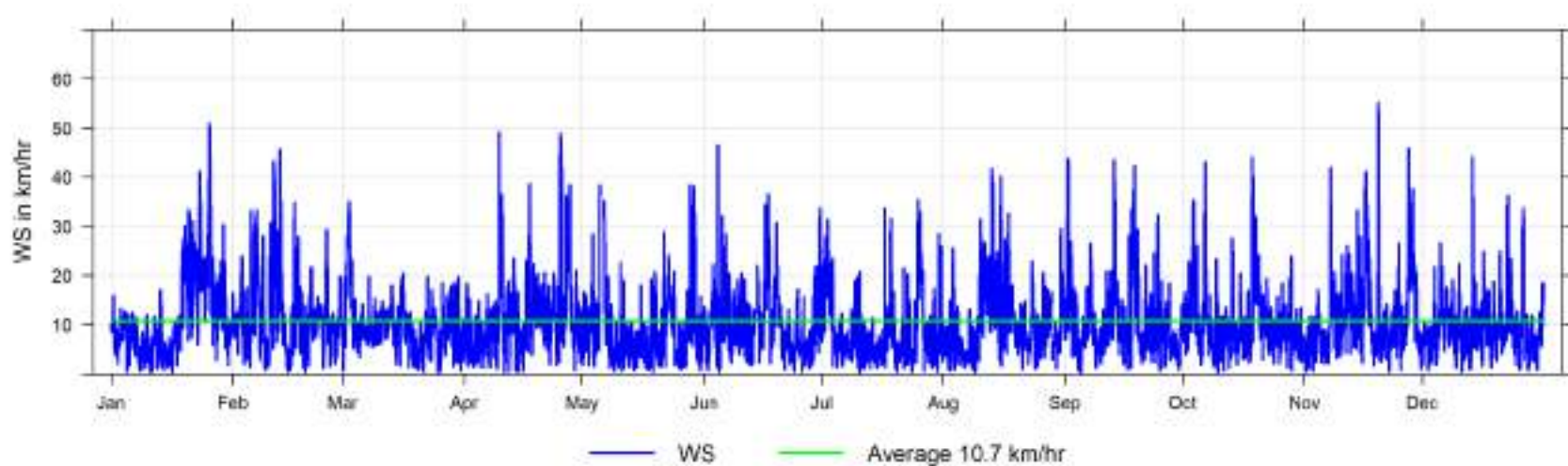


10.5 Wind Speed and Wind Direction (WS and WD) - Smoky Heights 2023 Summary

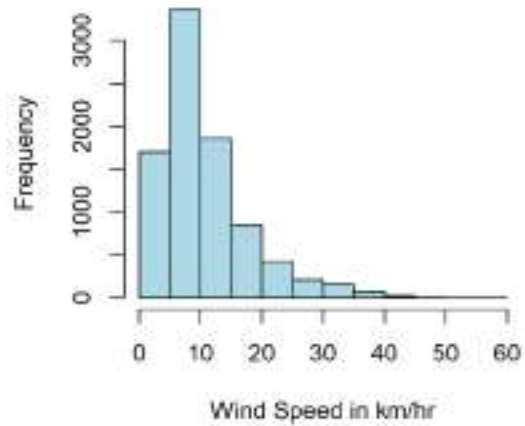
Wind Speed Frequency Distribution at Smoky Heights

Month	Valid Hours	Calm	% of Readings in Concentration Range					Monthly Average (km/hr)	24-hr (km/hr)	MAXIMUM VALUES			Operational time (%)	Valid time (%)
			0.5 to 5 (km/hr)	5 to 11 (km/hr)	11 to 19 (km/hr)	19 to 28 (km/hr)	>28 (km/hr)			Date	1-hr (km/hr)	Date		
January 2023	744	0.5%	17.5%	43.1%	21.1%	13.0%	4.7%	11.6	26.3	Jan 25	51.0	Jan 25 23:00	100.0%	100.0%
February 2023	672	0.3%	15.0%	35.6%	31.8%	11.8%	5.5%	12.4	25.5	Feb 11	45.7	Feb 13 01:00	100.0%	100.0%
March 2023	739	0.3%	14.3%	53.3%	26.3%	4.3%	1.5%	9.9	28.6	Mar 02	35.2	Mar 02 15:00	99.3%	99.3%
April 2023	720	0.4%	16.7%	40.4%	30.0%	6.9%	5.6%	11.6	25.7	Apr 27	49.2	Apr 09 22:00	100.0%	100.0%
May 2023	708	0.1%	29.5%	42.7%	19.1%	4.5%	4.1%	9.3	21.7	May 29	38.4	May 28 12:00	95.2%	95.2%
June 2023	710	0.4%	21.1%	41.5%	25.2%	8.0%	3.7%	10.6	22.8	Jun 17	46.5	Jun 04 15:00	98.6%	98.6%
July 2023	735	0.5%	31.6%	43.0%	13.7%	8.8%	2.3%	8.9	21.5	Jul 02	35.4	Jul 25 15:00	98.8%	98.8%
August 2023	733	0.1%	18.6%	46.5%	21.8%	9.8%	3.1%	10.8	24.3	Aug 13	41.9	Aug 13 10:00	98.8%	98.5%
September 2023	720	0.4%	19.4%	46.1%	22.5%	7.1%	4.4%	10.5	27.1	Sep 18	43.9	Sep 01 16:00	100.0%	100.0%
October 2023	744	0.1%	17.5%	46.5%	24.5%	8.1%	3.4%	10.7	25.1	Oct 19	44.1	Oct 18 16:00	100.0%	100.0%
November 2023	718	0.1%	16.3%	40.5%	27.2%	9.9%	6.0%	12.1	26.1	Nov 16	55.1	Nov 19 18:00	99.7%	99.7%
December 2023	744	0.1%	14.5%	54.8%	22.3%	5.5%	2.7%	10.1	20.6	Dec 26	44.1	Dec 13 19:00	100.0%	100.0%
Annual	8687	0.3%	19.3%	44.5%	23.8%	8.2%	3.9%	10.7	28.6	MAXIMUM VALUES			99.2%	99.2%

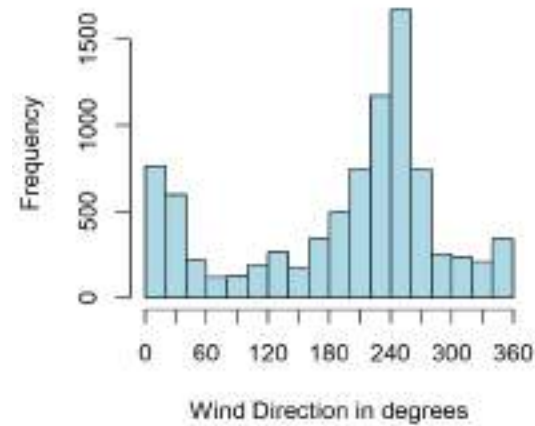
2023 Hourly Readings of Wind Speed (in km/hr) at Smoky Heights



2023 Wind Speed Histogram

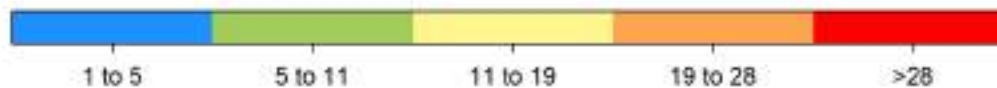
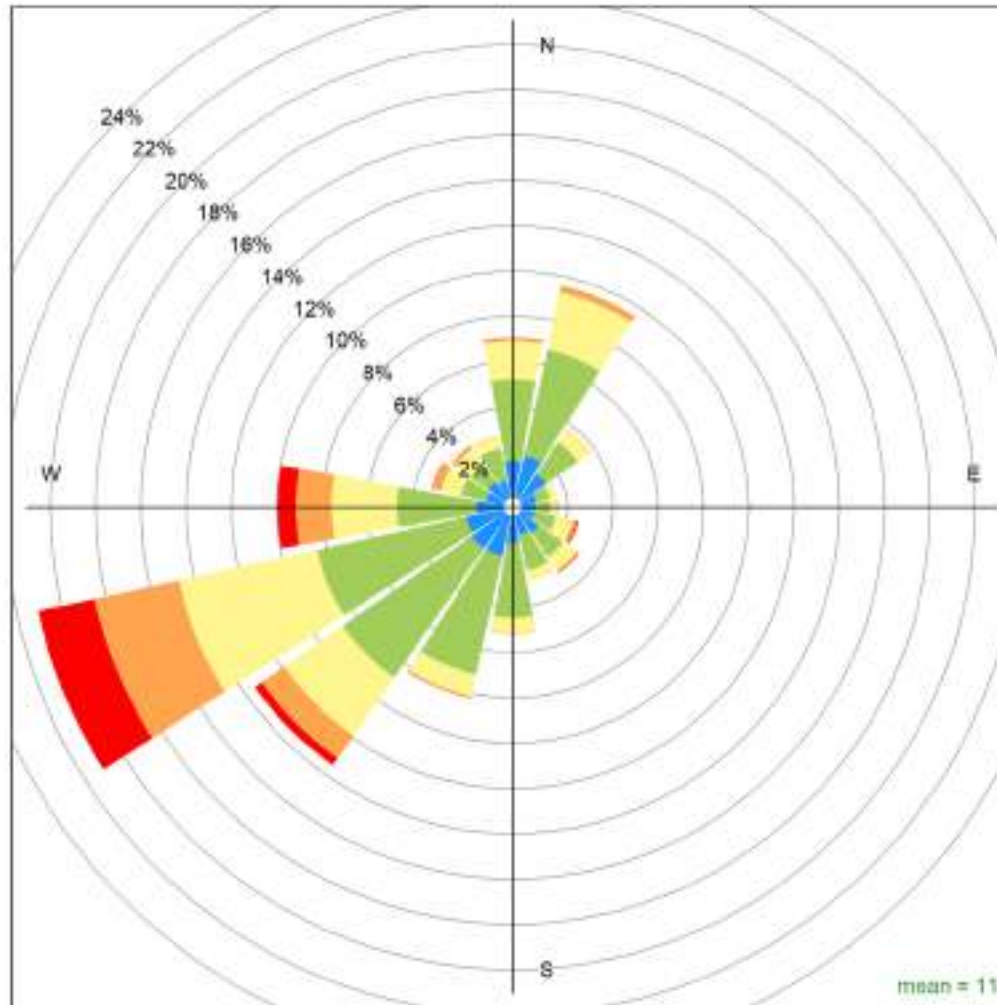


2023 Wind Direction Histogram



Wind Speed and Wind Direction Frequency Distribution at Smoky Heights

Direction	Number of Readings	% of wind speed range						Total %
		Calm (<0.5) (km/hr)	0.5 to 5 (km/hr)	5 to 11 (km/hr)	11 to 19 (km/hr)	19 to 28 (km/hr)	>28 (km/hr)	
N	616	0.0%	1.7%	3.6%	1.7%	0.1%	0.0%	7.1%
NNE	837	0.0%	1.9%	4.8%	2.6%	0.3%	0.0%	9.6%
NE	335	0.0%	1.4%	1.7%	0.7%	0.0%	0.0%	3.9%
ENE	137	0.0%	0.6%	0.6%	0.3%	0.0%	0.0%	1.6%
E	144	0.0%	0.6%	0.6%	0.3%	0.1%	0.0%	1.7%
ESE	226	0.0%	0.6%	1.0%	0.8%	0.2%	0.1%	2.6%
SE	279	0.0%	1.0%	1.3%	0.7%	0.1%	0.0%	3.2%
SSE	254	0.0%	0.9%	1.6%	0.4%	0.0%	0.0%	2.9%
S	457	0.0%	1.2%	3.3%	0.7%	0.0%	0.0%	5.3%
SSW	721	0.0%	1.9%	5.4%	1.0%	0.1%	0.0%	8.3%
SW	1180	0.0%	1.9%	7.0%	3.1%	1.2%	0.4%	13.6%
WSW	1835	0.0%	1.7%	6.7%	6.3%	3.8%	2.6%	21.1%
W	869	0.0%	1.2%	3.5%	2.9%	1.6%	0.8%	10.0%
WNW	290	0.1%	0.8%	1.1%	0.9%	0.4%	0.0%	3.3%
NW	257	0.0%	1.0%	0.9%	0.9%	0.2%	0.0%	3.0%
NNW	251	0.0%	0.8%	1.5%	0.6%	0.0%	0.0%	2.9%
Total	8688	0.3%	19.3%	44.6%	23.7%	8.1%	3.9%	100.0%

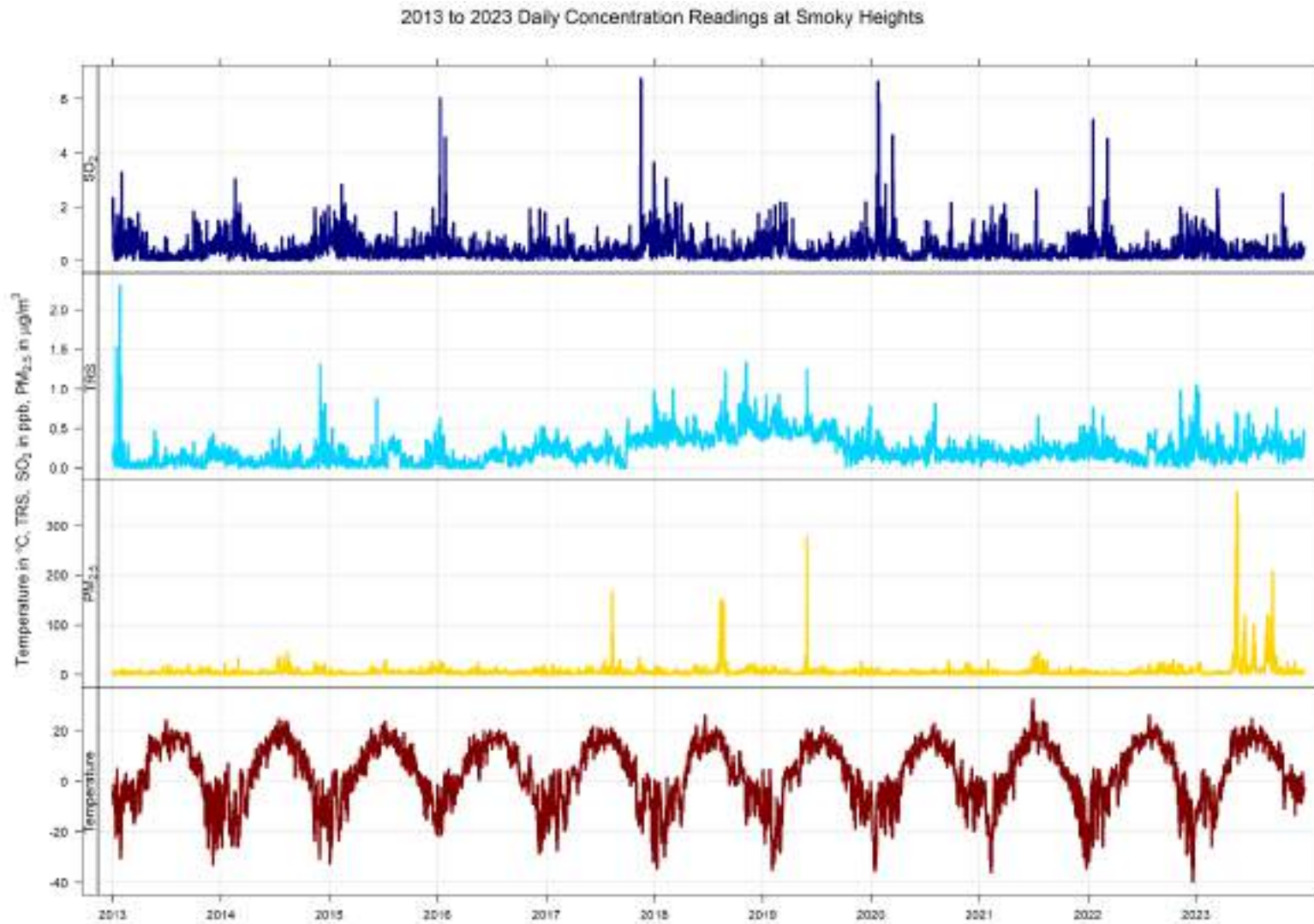


Smoky Heights 2023 Wind Rose, wind speed in km/hr

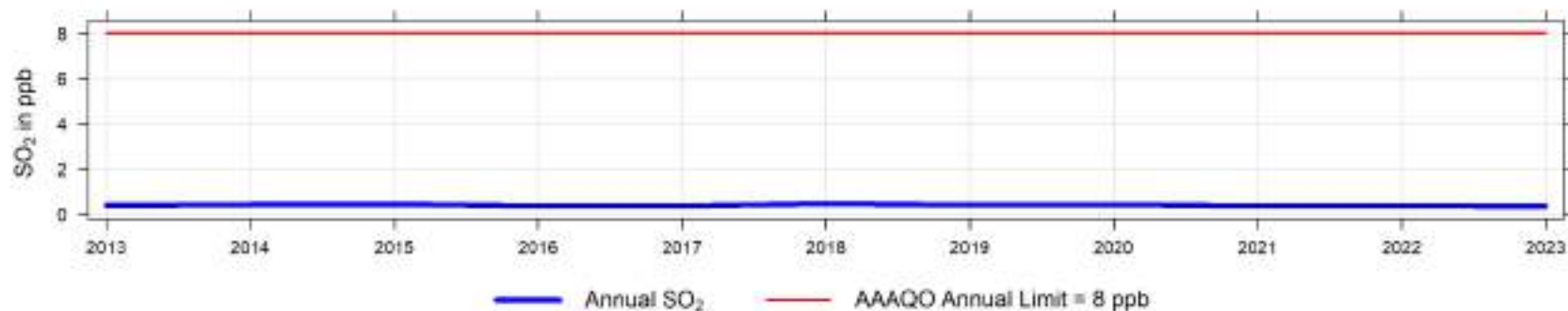
Calms (<1km/hr) = 1.1 %

10.6 Smoky Heights Annual Trends, 2013 to 2023

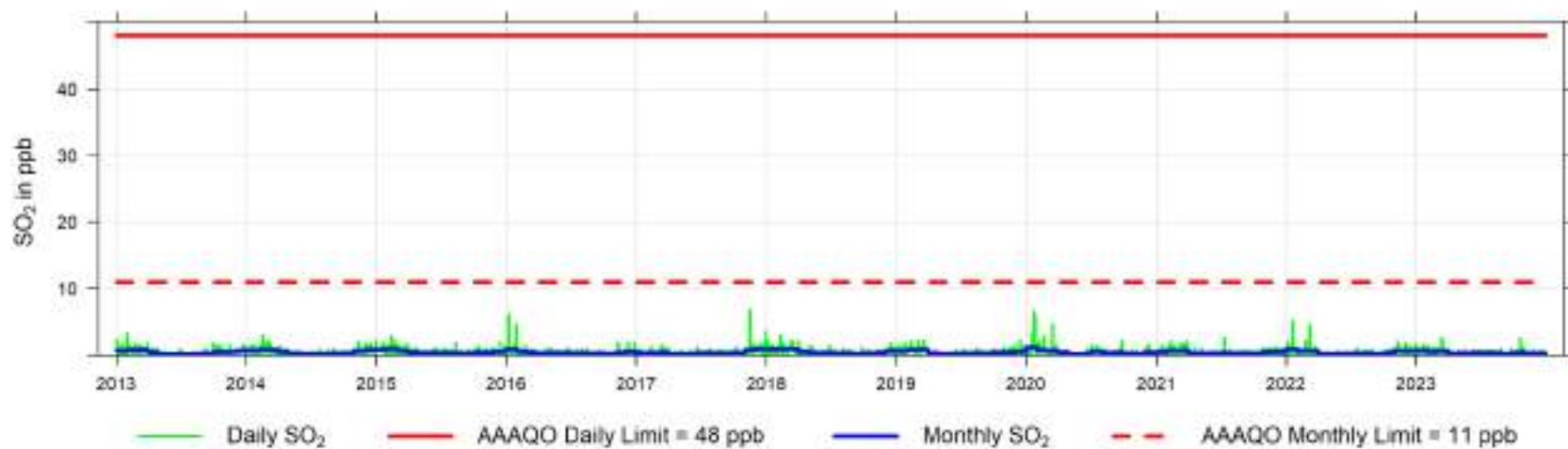
The following pages include historical annual charts collected between 2013 and 2023 at the Smoky Heights Station.



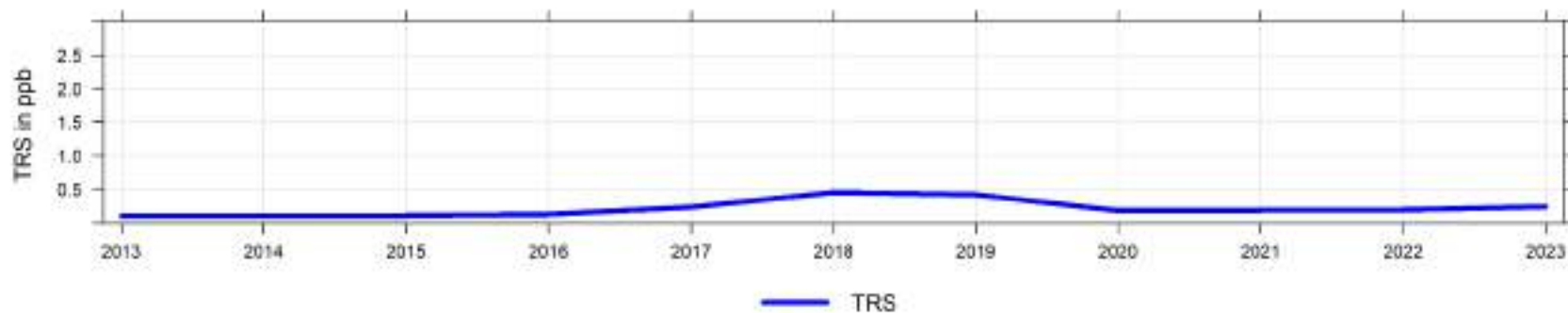
Years 2013 to 2023 Annual Concentration Readings of SO₂ (in ppb) at Smoky Heights



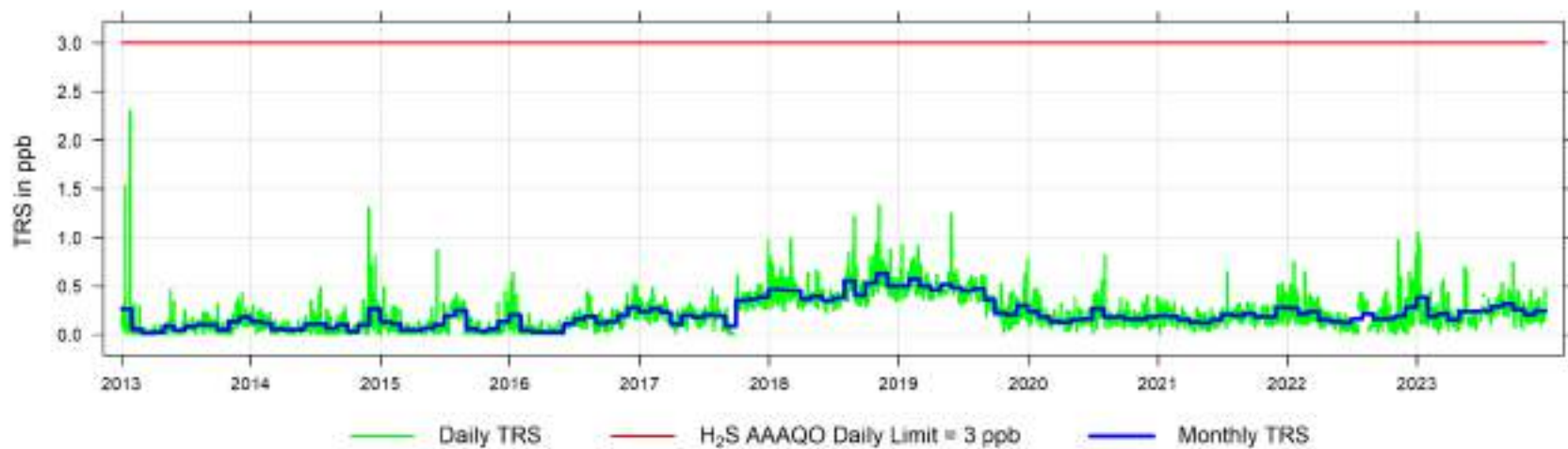
Years 2013 to 2023 Concentration Readings of SO₂ (in ppb) at Smoky Heights



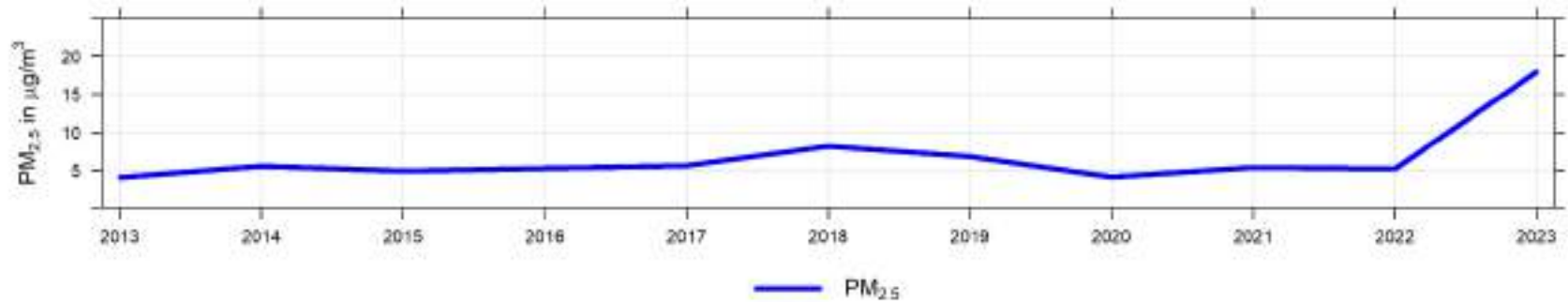
Years 2023 Annual Concentration Readings of TRS (in ppb) at Smoky Heights



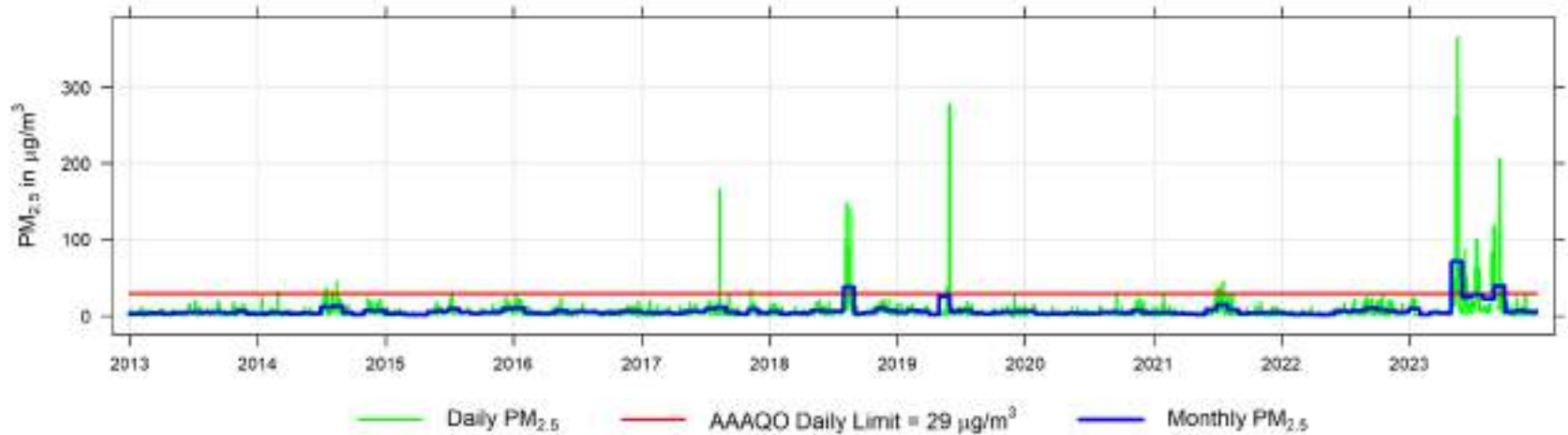
Years 2013 to 2023 Concentration Readings of TRS (in ppb) at Smoky Heights



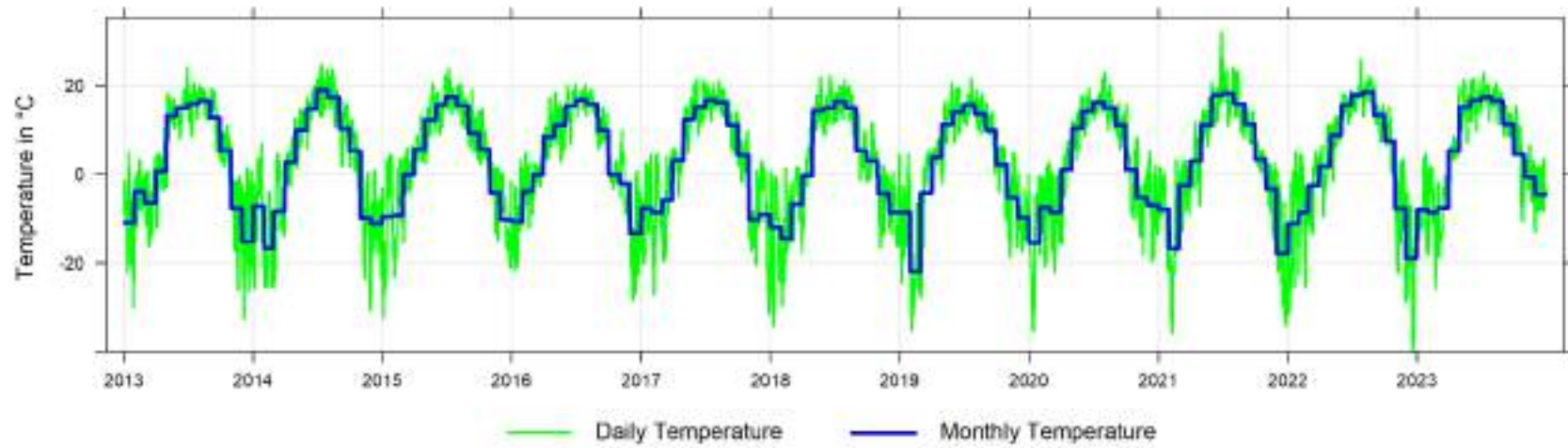
2013 to 2023 Annual Concentration Readings of PM_{2.5} in $\mu\text{g}/\text{m}^3$ at Smoky Heights



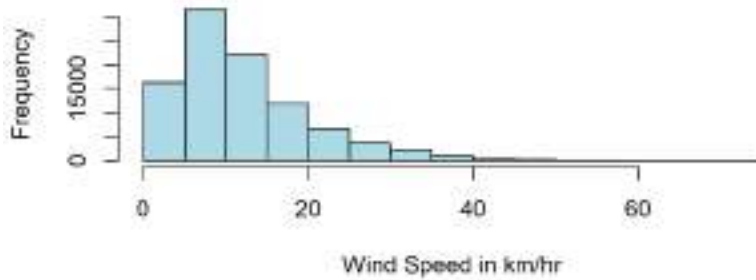
Years 2013 to 2023 Concentration Readings of PM_{2.5} in $\mu\text{g}/\text{m}^3$ at Smoky Heights



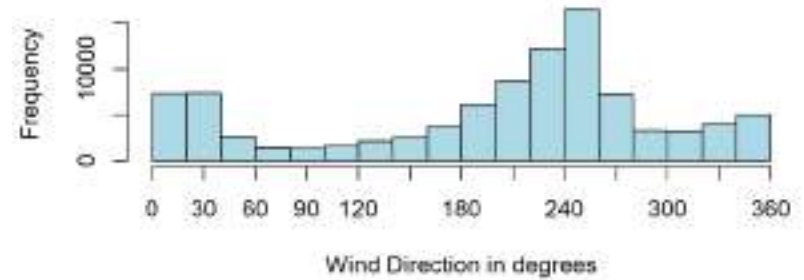
Years 2013 to 2023 Temperature Readings (in °C) at Smoky Heights



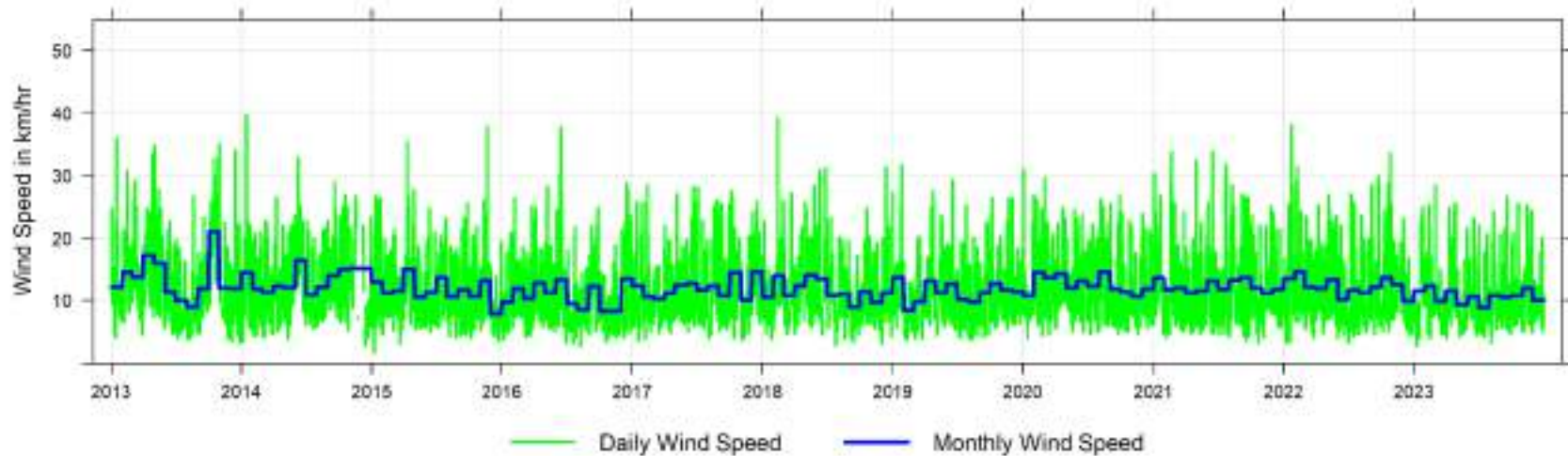
Years 2013 to 2023 Wind Speed Histogram

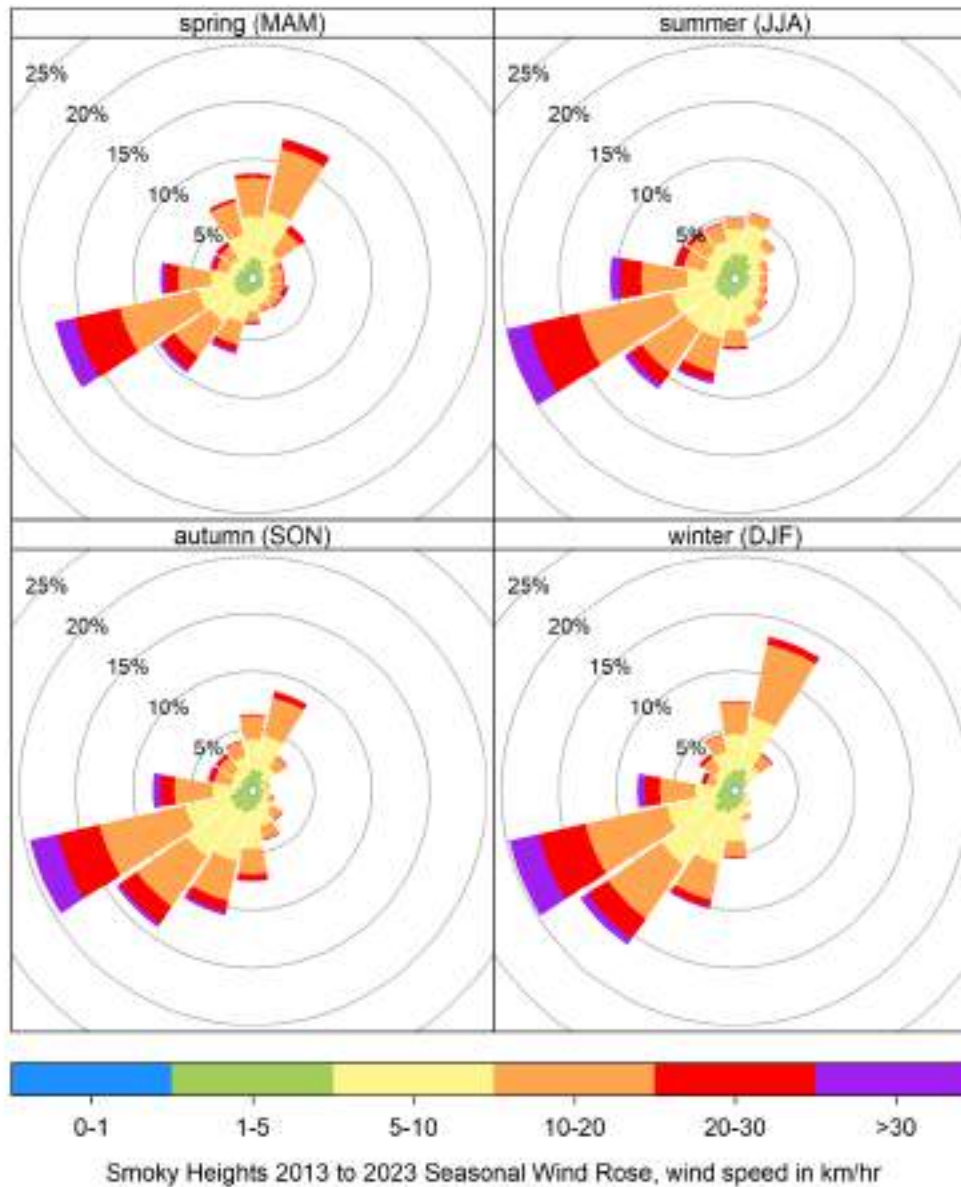


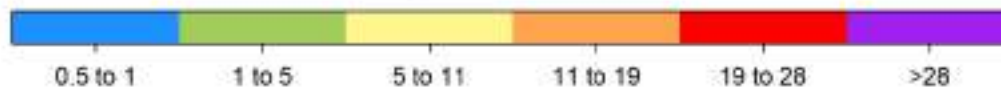
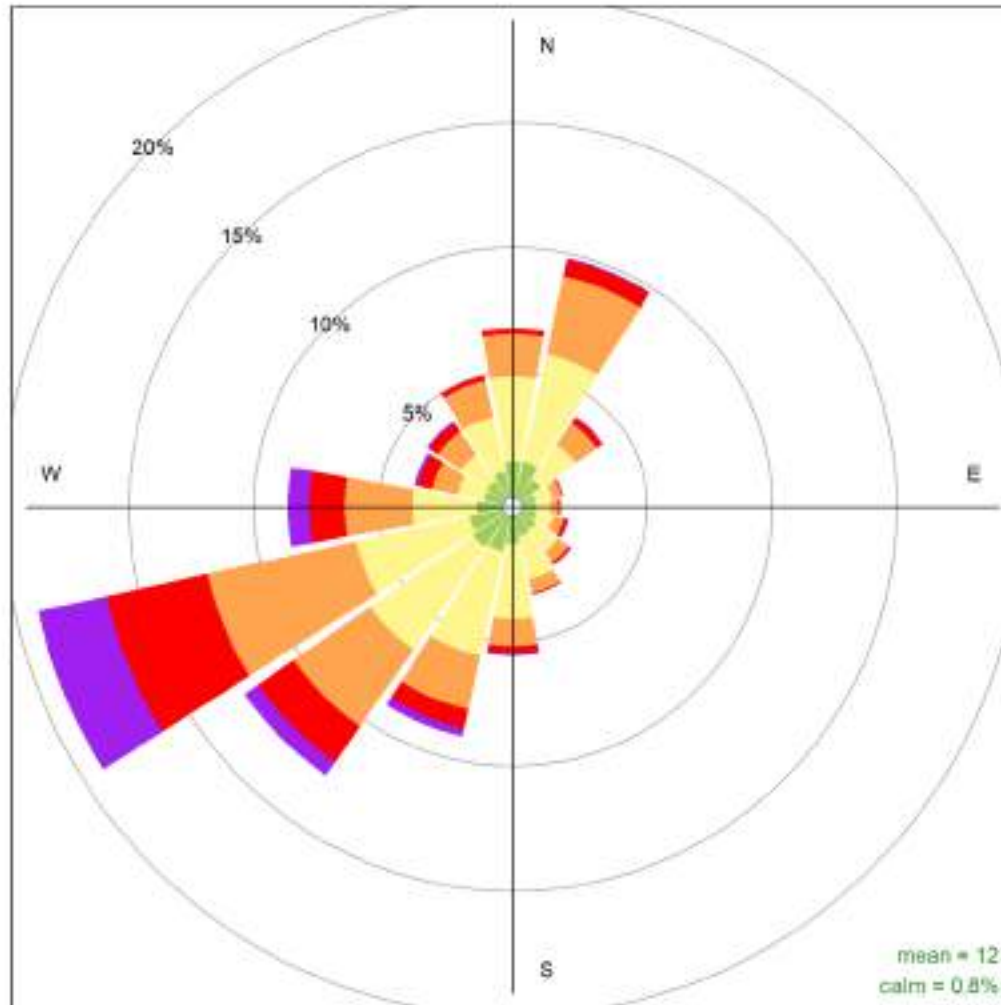
Years 2013 to 2023 Wind Direction Histogram



Years 2013 to 2023 Wind Speed Readings (in km/hr) at Smoky Heights







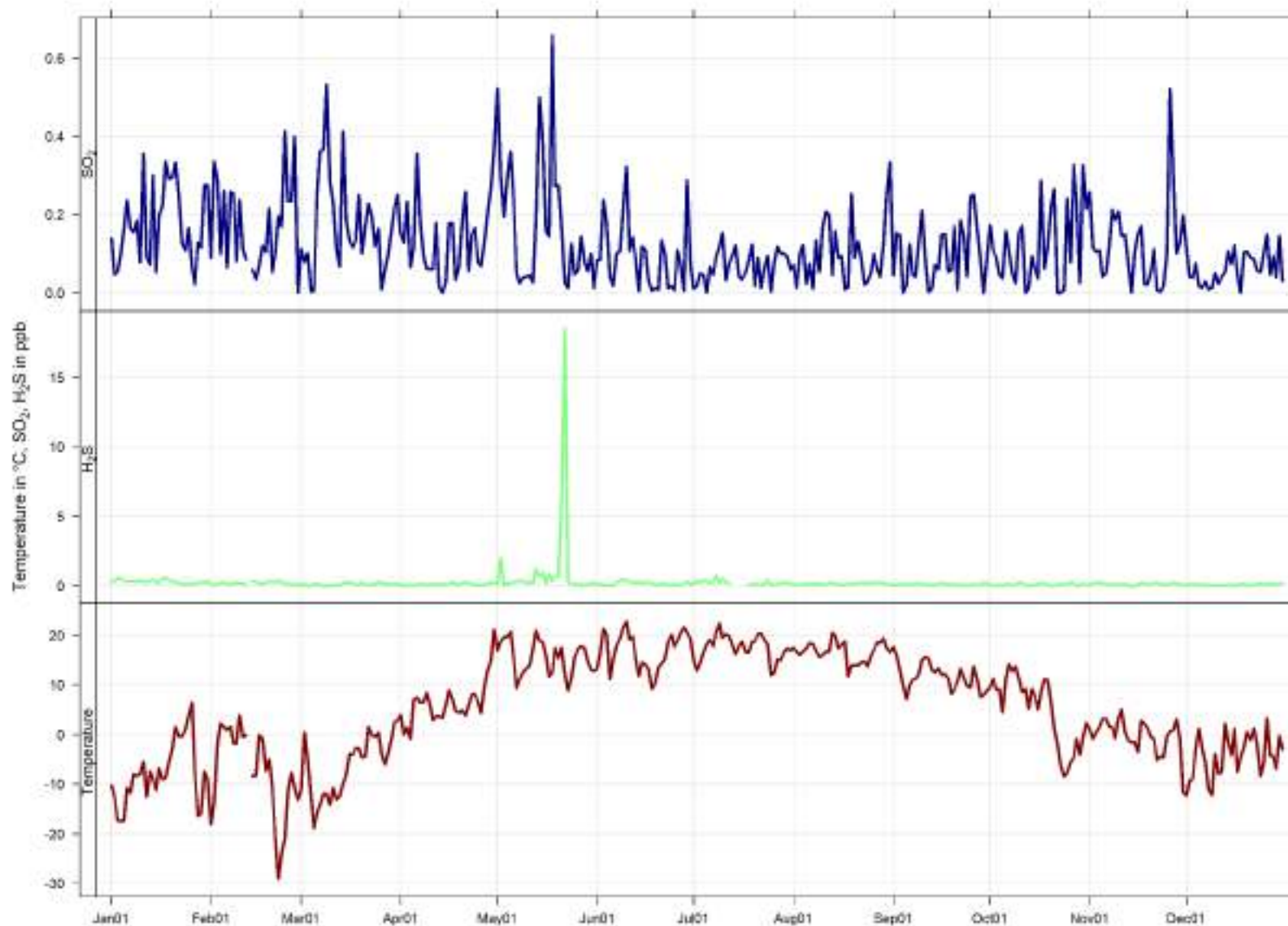
Smoky Heights 2013 to 2023 Wind Rose, wind speed in km/hr
Frequency of counts by wind direction (%)

11 Valleyview Key Parameters - Continuous Monitoring Data - 2023 Summary

Valleyview Key Parameters - Continuous Monitoring Data - 2023 Summary

Valleyview Station	Parameter	Average	Maximum Values			Operational Time (%)	Valid Time (%)	Readings above AAAQO & AAAQG				
			24-hr	Date	1-hr			Date	1-hr	24-hr	30-d	Annual
	Sulphur Dioxide SO ₂ measured in ppb	0.1	0.7	May 18	3.8	Apr 06 02:00	98.8%	94.0%	0	0	0	0
	Hydrogen Sulphide H ₂ S measured in ppb	0.2	18.5	May 22	100.1	May 22 15:00	97.0%	92.3%	12	2	-	-

2023 Daily Concentration Readings at Valleyview



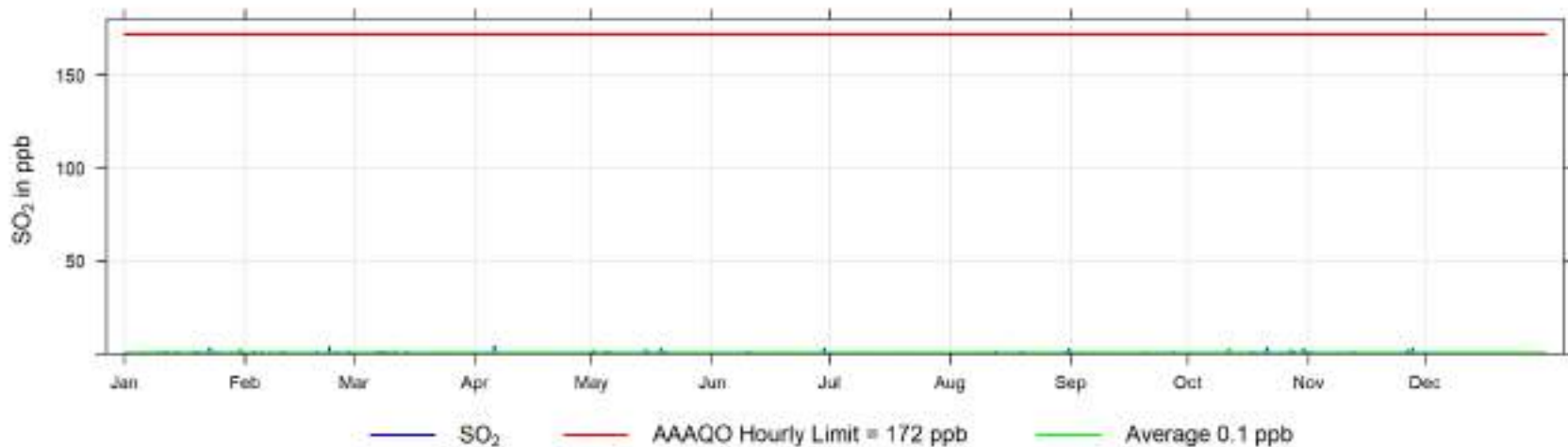
11.1 Sulphur Dioxide (SO₂) - Valleyview 2023 Summary

Sulphur Dioxide (SO₂) Frequency Distribution at Valleyview

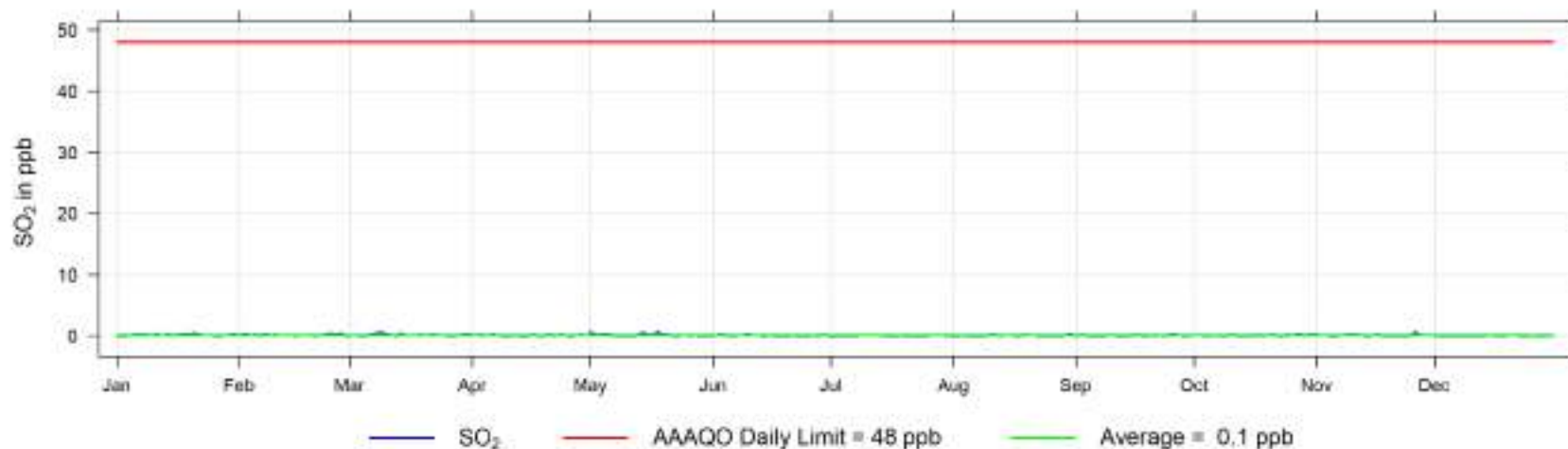
Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	MAXIMUM VALUES				Operational time (%)	Valid time (%)	Reportable Incidents		
		0 to 1 (ppb)	1 to 5 (ppb)	5 to 10 (ppb)	10 to 57 (ppb)	57 to 172 (ppb)	> 172 (ppb)		24-hr (ppb)	Date	1-hr (ppb)	Date			30-d 11 ppb	24-hr 48 ppb	1-hr 172 ppb
January 2023	709	99.4%	0.6%	0.0%	0.0%	0.0%	0.0%	0.2	0.4	Jan 11	2.5	Jan 22 19:00	100.0%	95.3%	0	0	0
February 2023	593	99.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.2	0.4	Feb 24	3.0	Feb 22 15:00	92.7%	88.2%	0	0	0
March 2023	709	99.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.2	0.5	Mar 09	1.3	Mar 11 15:00	100.0%	95.3%	0	0	0
April 2023	665	99.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.1	0.4	Apr 06	3.8	Apr 06 02:00	97.1%	92.4%	0	0	0
May 2023	706	98.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.2	0.7	May 18	2.2	May 18 16:00	100.0%	94.9%	0	0	0
June 2023	685	99.6%	0.4%	0.0%	0.0%	0.0%	0.0%	0.1	0.3	Jun 10	2.3	Jun 29 17:00	100.0%	95.1%	0	0	0
July 2023	678	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1	0.2	Jul 10	0.6	Jul 09 10:00	95.7%	91.1%	0	0	0
August 2023	708	99.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.1	0.3	Aug 31	2.1	Aug 31 11:00	100.0%	95.2%	0	0	0
September 2023	686	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1	0.3	Sep 25	1.0	Sep 20 12:00	100.0%	95.3%	0	0	0
October 2023	708	98.6%	1.4%	0.0%	0.0%	0.0%	0.0%	0.1	0.3	Oct 30	2.8	Oct 21 12:00	100.0%	95.2%	0	0	0
November 2023	686	99.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.1	0.5	Nov 26	2.4	Nov 27 18:00	100.0%	95.3%	0	0	0
December 2023	709	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1	0.1	Dec 30	0.5	Dec 16 19:00	100.0%	95.3%	0	0	0
Annual	8242	99.3%	0.7%	0.0%	0.0%	0.0%	0.0%	0.1	0.7	MAXIMUM VALUES		98.8%	94.0%	0	0	0	

AAAQO Objectives: Annual: 8ppb, 30-Day: 11ppb, 24-Hr: 48ppb, 1-Hr: 172ppb

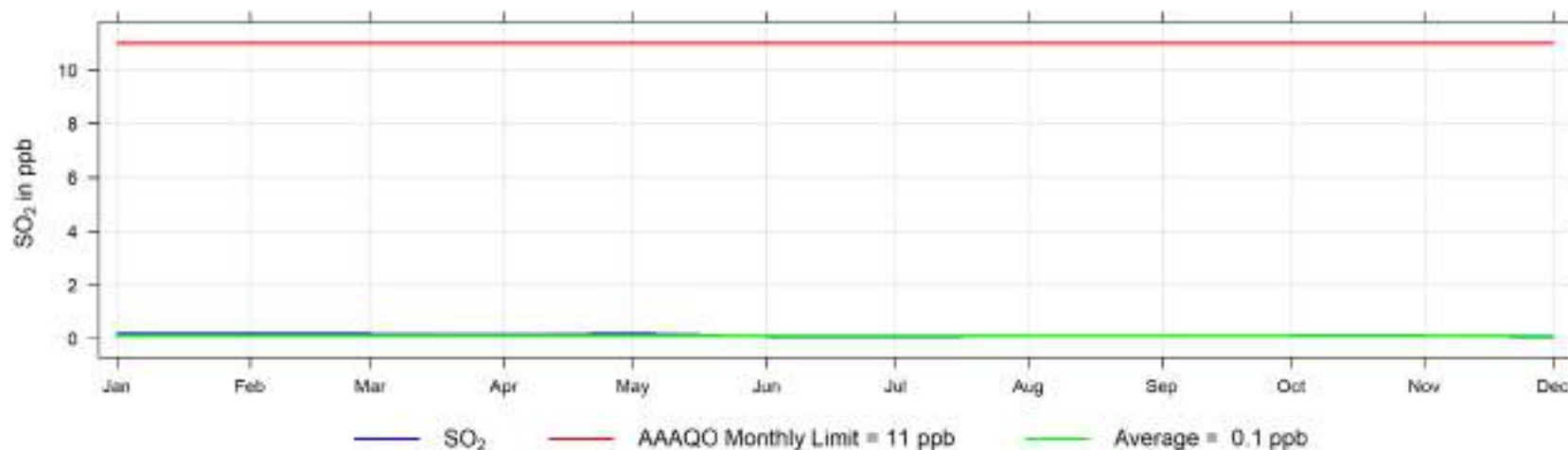
2023 Hourly Concentration Readings of SO₂ (in ppb) at Valleyview



2023 Daily Concentration Readings of SO₂ (in ppb) at Valleyview

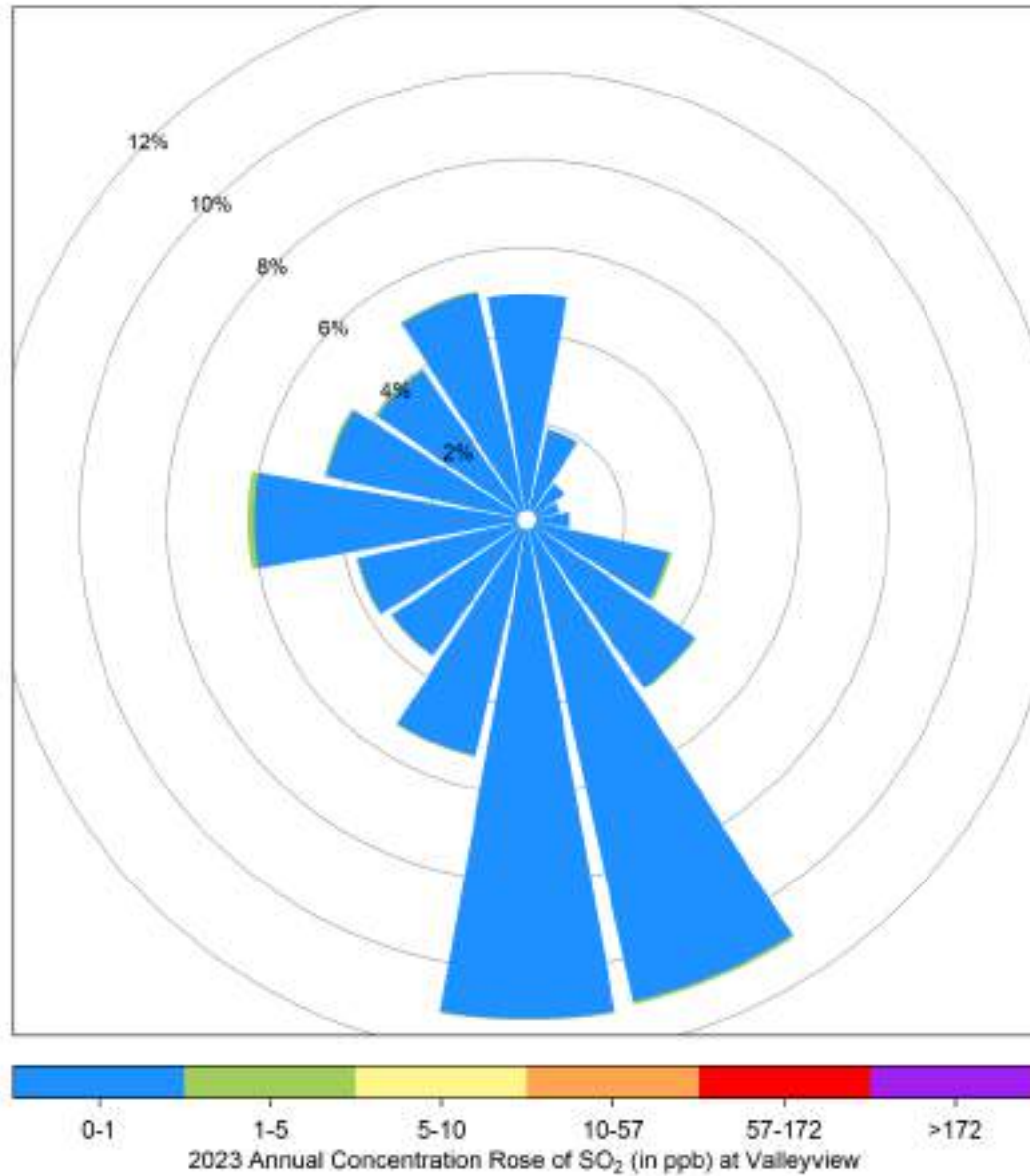


2023 Monthly Concentration Readings of SO₂ (in ppb) at Valleyview



Hourly Maximum SO₂ (in ppb) for 2023 at Valleyview





11.2 Hydrogen Sulphide (H₂S) - Valleyview 2023 Summary

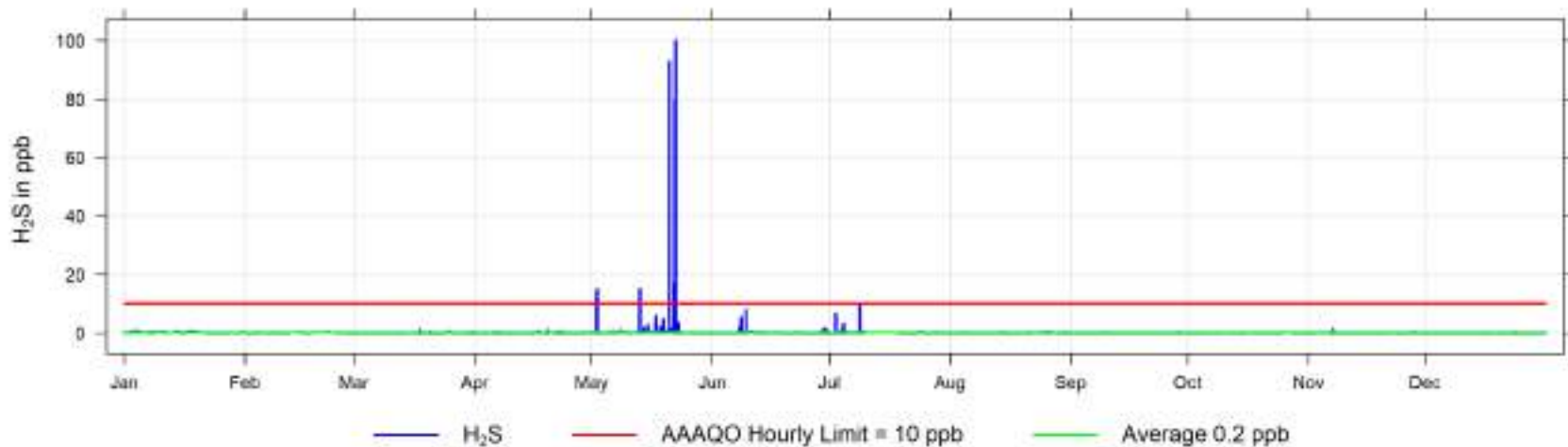
Hydrogen Sulphide (H₂S) Frequency Distribution at Valleyview

Month	Valid Hours	% of Readings in Concentration Range						Monthly Average (ppb)	MAXIMUM VALUES				Operational time (%)	Valid time (%)	Reportable Incidents	
		0 to 1 (ppb)	1 to 3 (ppb)	3 to 5 (ppb)	5 to 8 (ppb)	8 to 10 (ppb)	> 10 (ppb)		24-hr (ppb)	Date	1-hr (ppb)	Date			24-hr 3 ppb	1-hr 10 ppb
January 2023	709	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3	0.5	Jan 03	1.0	Jan 04 01:00	100.0%	95.3%	0	0
February 2023	591	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2	0.4	Feb 22	0.6	Feb 15 04:00	92.7%	87.9%	0	0
March 2023	709	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1	0.3	Mar 25	1.1	Mar 17 21:00	100.0%	95.3%	0	0
April 2023	664	99.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.1	0.3	Apr 17	1.2	Apr 19 18:00	97.1%	92.2%	0	0
May 2023	708	93.4%	4.0%	0.6%	0.4%	0.0%	1.7%	1.1	18.5	May 22	100.1	May 22 15:00	100.0%	95.2%	2	12
June 2023	685	99.0%	0.7%	0.0%	0.3%	0.0%	0.0%	0.2	0.4	Jun 09	7.9	Jun 09 14:00	100.0%	95.1%	0	0
July 2023	524	98.9%	0.4%	0.4%	0.2%	0.2%	0.0%	0.2	0.8	Jul 08	9.9	Jul 08 22:00	74.6%	70.4%	0	0
August 2023	709	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1	0.2	Aug 26	0.7	Aug 26 22:00	100.0%	95.3%	0	0
September 2023	686	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1	0.3	Sep 29	0.7	Sep 29 01:00	100.0%	95.3%	0	0
October 2023	709	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1	0.2	Oct 26	0.4	Oct 10 21:00	100.0%	95.3%	0	0
November 2023	686	99.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1	0.2	Nov 03	1.3	Nov 07 05:00	100.0%	95.3%	0	0
December 2023	708	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1	0.2	Dec 28	0.5	Dec 31 20:00	100.0%	95.2%	0	0
Annual	8088	99.2%	0.5%	0.1%	0.1%	0.0%	0.1%	0.2	18.5	May 22	100.1	May 22 15:00	97.0%	92.3%	2	12

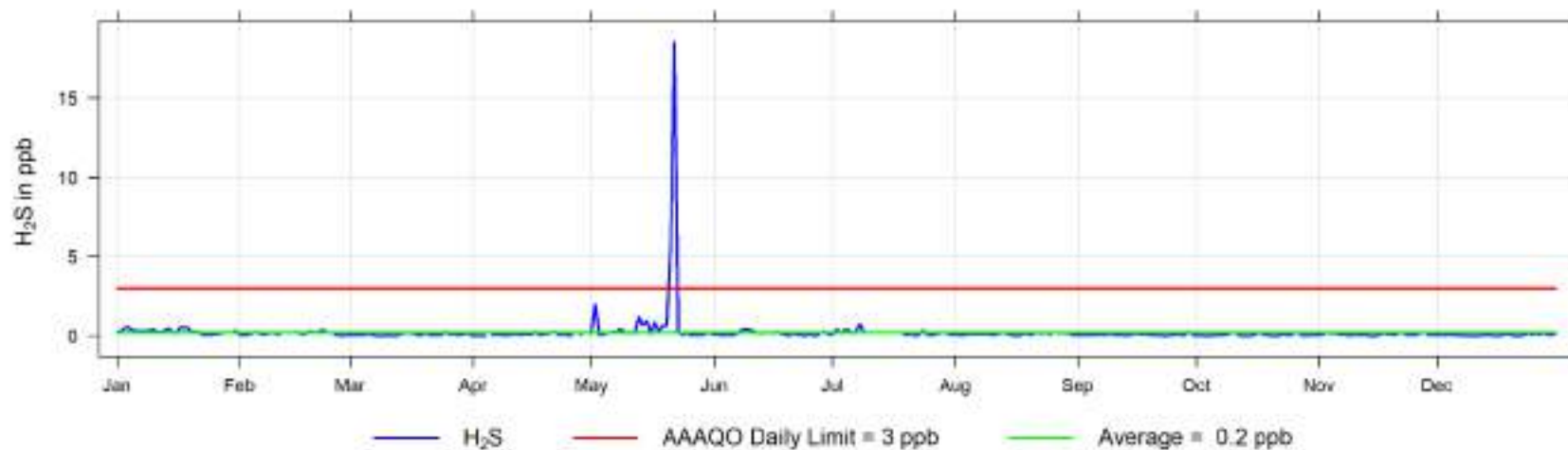
AAAQO Objectives: 24-Hr: 3ppb, 1-Hr: 10ppb

Note: In July 2023 when valid data below 75% uptime the monthly average not valid

2023 Hourly Concentration Readings of H₂S (in ppb) at Valleyview

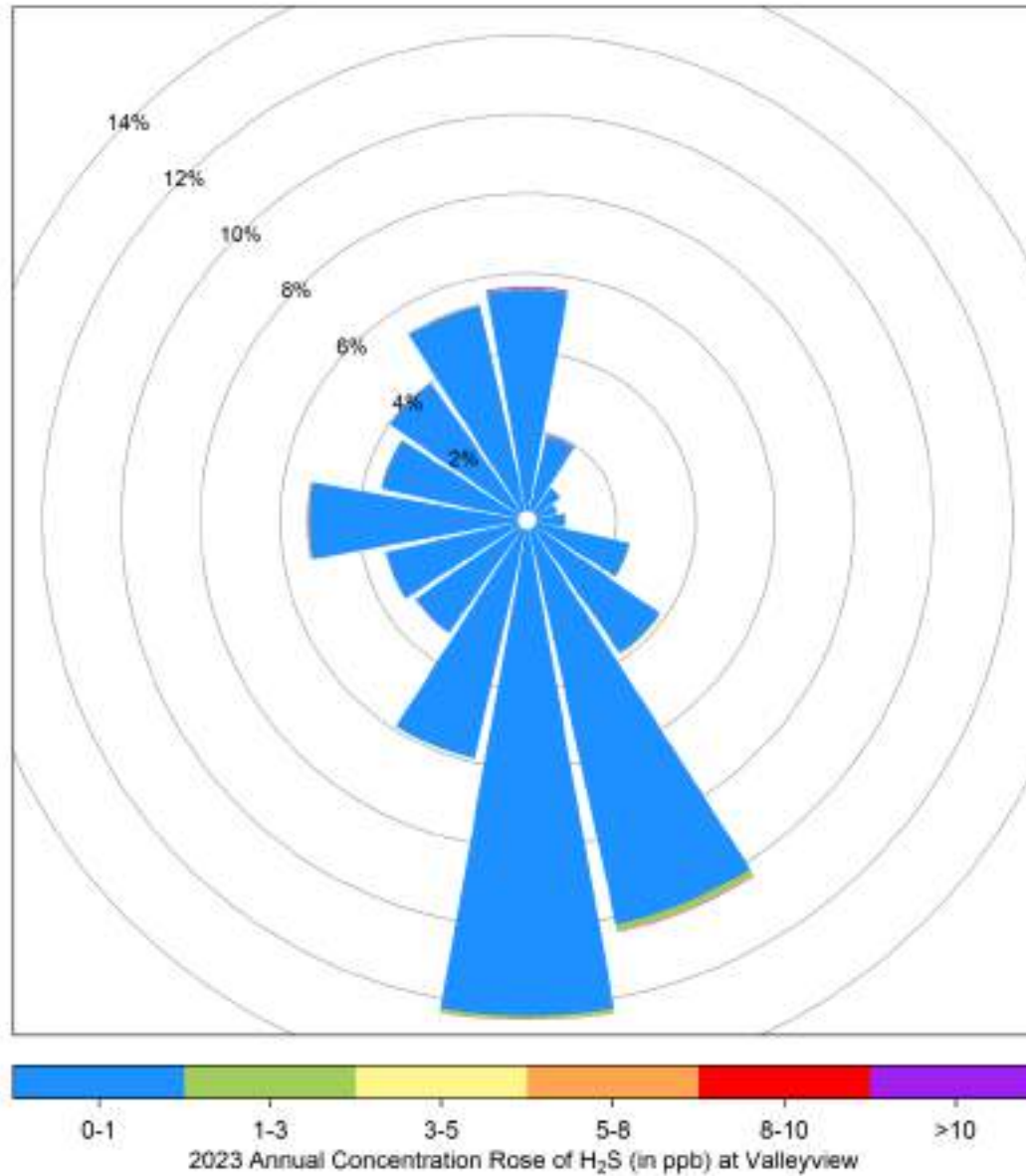


2023 Daily Concentration Readings of H₂S (in ppb) at Valleyview



Hourly Maximum H₂S (in ppb) for 2023 at Valleyview



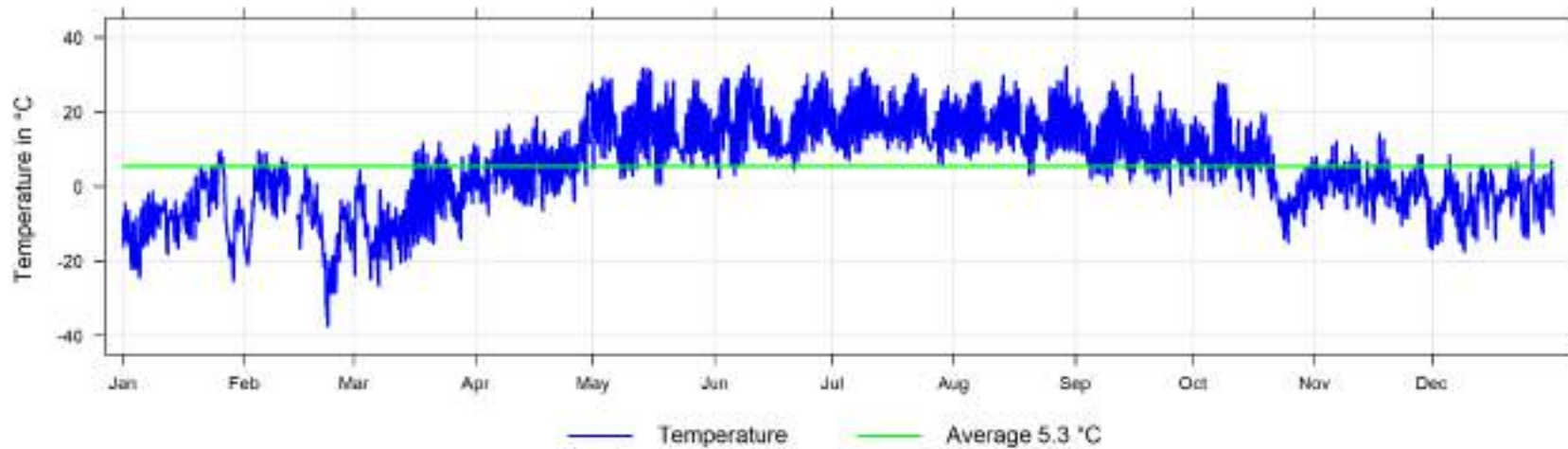


11.3 Temperature (ET) - Valleyview 2023 Summary

Temperature (ET) Frequency Distribution at Valleyview

Month	Valid Hours	Monthly Average (°C)	Maximum Values			Minimum Values			Operational time (%)	Valid time (%)			
			24-hr (°C)	Date	1-hr (°C)	Date	24-hr (°C)	Date			1-hr (°C)	Date	
January 2023	744	-8.0	6.1	Jan 26	9.7	Jan 26 01:00	-17.5	Jan 03	-25.3	Jan 29 07:00	100.0%	100.0%	
February 2023	623	-7.8	3.7	Feb 10	9.7	Feb 04 14:00	-28.9	Feb 22	-37.5	Feb 22 08:00	92.7%	92.7%	
March 2023	744	-6.5	2.9	Mar 31	12.0	Mar 22 17:00	-19.0	Mar 05	-26.6	Mar 07 08:00	100.0%	100.0%	
April 2023	697	6.2	15.1	Apr 29	27.7	Apr 30 18:00	-0.8	Apr 04	-7.8	Apr 04 07:00	97.1%	96.8%	
May 2023	744	15.4	20.9	May 13	31.7	May 13 16:00	8.7	May 23	0.7	May 17 06:00	100.0%	100.0%	
June 2023	718	16.9	22.4	Jun 10	32.4	Jun 09 15:00	9.2	Jun 18	2.3	Jun 02 05:00	100.0%	99.7%	
July 2023	744	17.4	22.3	Jul 09	31.8	Jul 09 15:00	11.8	Jul 25	6.1	Jul 29 06:00	100.0%	100.0%	
August 2023	744	16.6	20.8	Aug 13	32.1	Aug 29 16:00	11.6	Aug 18	3.0	Aug 20 06:00	100.0%	100.0%	
September 2023	720	11.6	17.7	Sep 01	30.0	Sep 15 16:00	7.3	Sep 05	-2.2	Sep 25 07:00	100.0%	100.0%	
October 2023	744	4.9	14.0	Oct 07	27.8	Oct 07 16:00	-8.4	Oct 24	-15.1	Oct 25 08:00	100.0%	100.0%	
November 2023	720	-0.2	5.1	Nov 11	14.3	Nov 17 15:00	-12.0	Nov 30	-16.8	Dec 01 00:00	100.0%	100.0%	
December 2023	744	-4.3	3.0	Dec 26	10.3	Dec 26 13:00	-11.9	Dec 01	-17.6	Dec 09 08:00	100.0%	100.0%	
		AVERAGE	MAXIMUM VALUES			MINIMUM VALUES							
		8686	5.3	22.4	Jun 10	32.4	Jun 09 15:00	-28.9	Feb 22	-37.5	Feb 22 08:00	99.1%	99.1%

2023 Hourly Temperature Readings (in °C) at Valleyview

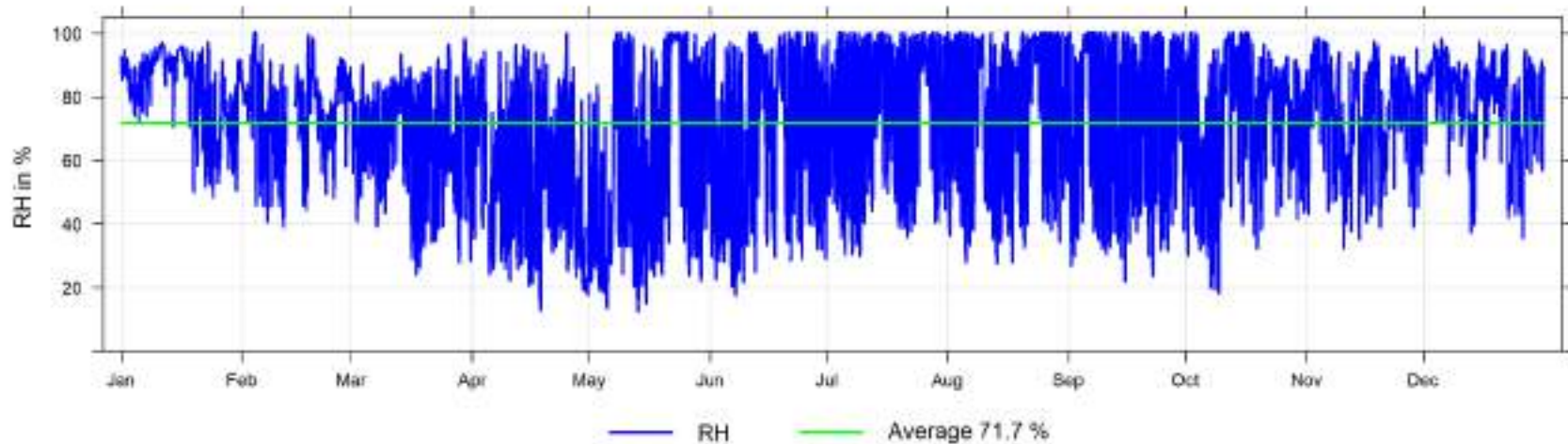


11.4 Relative Humidity (RH) - Valleyview 2023 Summary

Relative Humidity (RH) Frequency Distribution at Valleyview

Month	Valid Hours	Monthly Average (%)	Maximum Values		Date	Date	Operational time (%)	Valid time (%)	
			24-hr (%)	1-hr (%)					
January 2023	744	82.4	95.9	Jan 11	97.2	Jan 23 07:00	100.0%	100.0%	
February 2023	623	75.2	90.0	Feb 19	100.2	Feb 04 04:00	92.7%	92.7%	
March 2023	744	67.7	83.4	Mar 13	98.5	Mar 30 03:00	100.0%	100.0%	
April 2023	697	55.6	77.7	Apr 04	99.9	Apr 25 06:00	97.1%	96.8%	
May 2023	744	60.5	99.0	May 23	100.2	May 26 03:00	100.0%	100.0%	
June 2023	718	66.1	91.8	Jun 19	100.2	Jun 11 05:00	100.0%	99.7%	
July 2023	744	76.7	95.8	Jul 25	100.2	Jul 04 04:00	100.0%	100.0%	
August 2023	744	75.9	97.9	Aug 23	100.2	Aug 26 02:00	100.0%	100.0%	
September 2023	720	73.9	97.6	Sep 05	100.2	Sep 24 09:00	100.0%	100.0%	
October 2023	744	72.2	93.7	Oct 11	100.2	Oct 12 07:00	100.0%	100.0%	
November 2023	720	74.1	90.7	Nov 03	98.7	Nov 03 09:00	100.0%	100.0%	
December 2023	744	79.8	91.2	Dec 03	98.2	Dec 05 19:00	100.0%	100.0%	
		AVERAGE	MAXIMUM VALUES						
		8686	71.7	99.0	May 23	100.2	Aug 26 02:00	99.1%	99.1%

2023 Hourly Readings of Relative Humidity (in %) at Valleyview

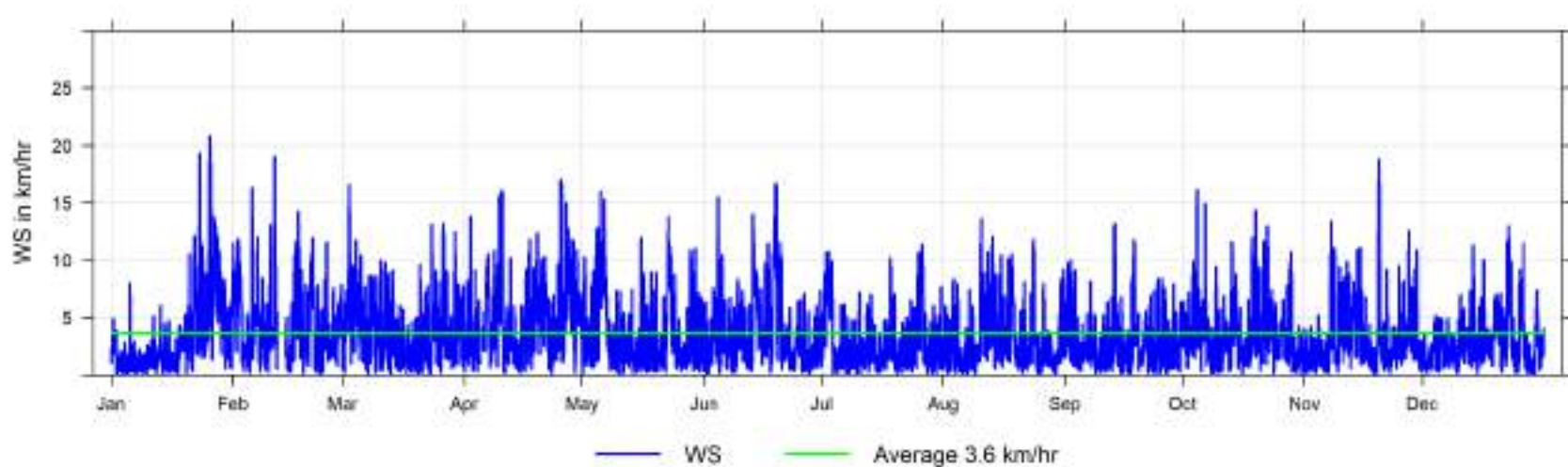


11.5 Wind Speed and Wind Direction (WS and WD) - Valleyview 2023 Summary

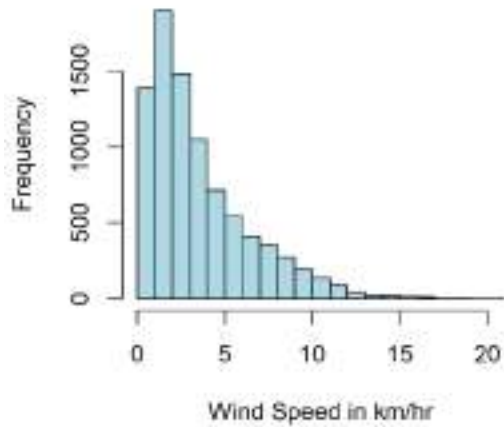
Wind Speed Frequency Distribution at Valleyview

Month	Valid Hours	Calm	% of Readings in Concentration Range					Monthly Average (km/hr)	24-hr (km/hr)	MAXIMUM VALUES			Operational time (%)	Valid time (%)
			0.5 to 5 (km/hr)	5 to 11 (km/hr)	11 to 19 (km/hr)	19 to 28 (km/hr)	>28 (km/hr)			Date	1-hr (km/hr)	Date		
January 2023	744	11.4%	66.8%	16.7%	4.4%	0.7%	0.0%	3.4	10.8	Jan 27	20.8	Jan 26 01:00	100.0%	100.0%
February 2023	623	4.5%	58.4%	32.6%	4.3%	0.2%	0.0%	4.5	8.2	Feb 02	19.1	Feb 11 16:00	92.7%	92.7%
March 2023	744	5.4%	62.6%	29.3%	2.7%	0.0%	0.0%	4.0	9.6	Mar 02	16.5	Mar 02 14:00	100.0%	100.0%
April 2023	697	3.3%	54.8%	37.0%	4.9%	0.0%	0.0%	4.9	9.1	Apr 25	17.0	Apr 25 12:00	97.1%	96.8%
May 2023	744	5.0%	69.9%	21.4%	3.8%	0.0%	0.0%	3.7	9.6	May 06	16.0	May 05 15:00	100.0%	100.0%
June 2023	718	4.9%	68.1%	23.3%	3.8%	0.0%	0.0%	3.9	10.5	Jun 19	16.7	Jun 19 08:00	100.0%	99.7%
July 2023	744	7.1%	75.3%	17.3%	0.3%	0.0%	0.0%	2.9	8.2	Jul 02	11.4	Jul 26 16:00	100.0%	100.0%
August 2023	744	7.1%	71.1%	20.4%	1.3%	0.0%	0.0%	3.2	7.3	Aug 18	13.6	Aug 10 17:00	100.0%	100.0%
September 2023	720	8.3%	75.3%	15.1%	1.3%	0.0%	0.0%	2.9	6.6	Sep 18	13.2	Sep 13 15:00	100.0%	100.0%
October 2023	744	4.8%	68.8%	23.9%	2.4%	0.0%	0.0%	3.7	8.3	Oct 04	16.1	Oct 04 14:00	100.0%	100.0%
November 2023	720	3.5%	77.8%	17.2%	1.5%	0.0%	0.0%	3.4	5.9	Nov 08	18.8	Nov 19 23:00	100.0%	100.0%
December 2023	744	4.4%	81.5%	13.2%	0.9%	0.0%	0.0%	2.9	6.4	Dec 23	13.0	Dec 23 00:00	100.0%	100.0%
Annual	8686	5.8%	69.2%	22.3%	2.6%	0.1%	0.0%	3.6	10.8	MAXIMUM VALUES			99.1%	99.1%

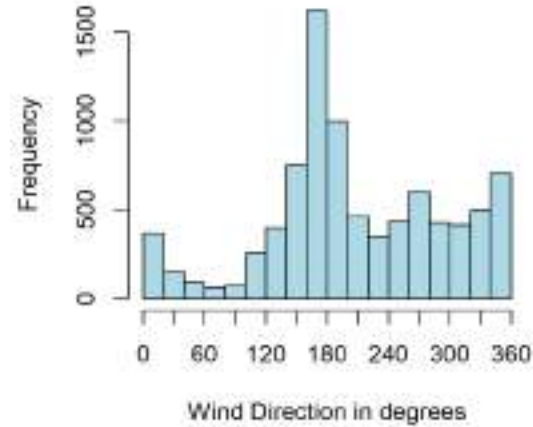
2023 Hourly Readings of Wind Speed (in km/hr) at Valleyview



2023 Wind Speed Histogram

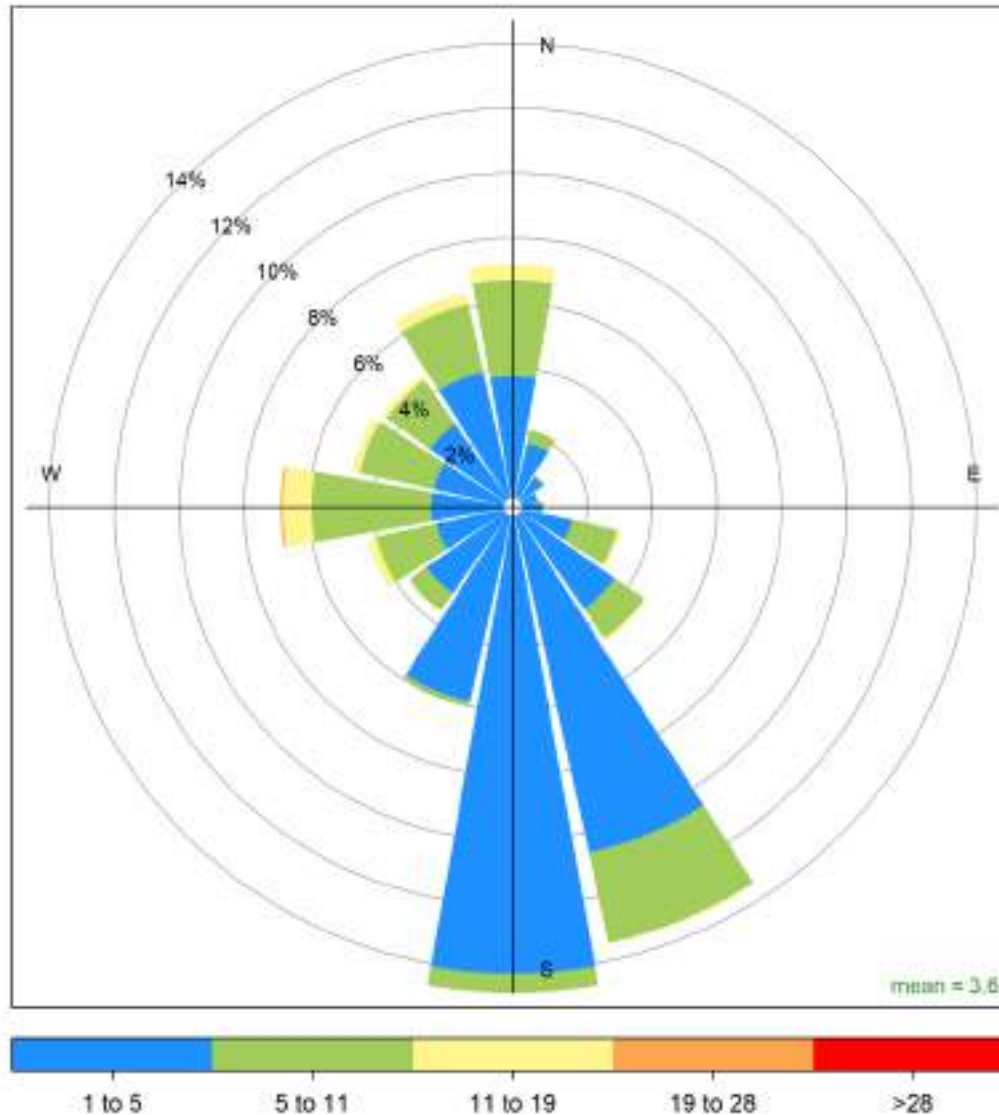


2023 Wind Direction Histogram



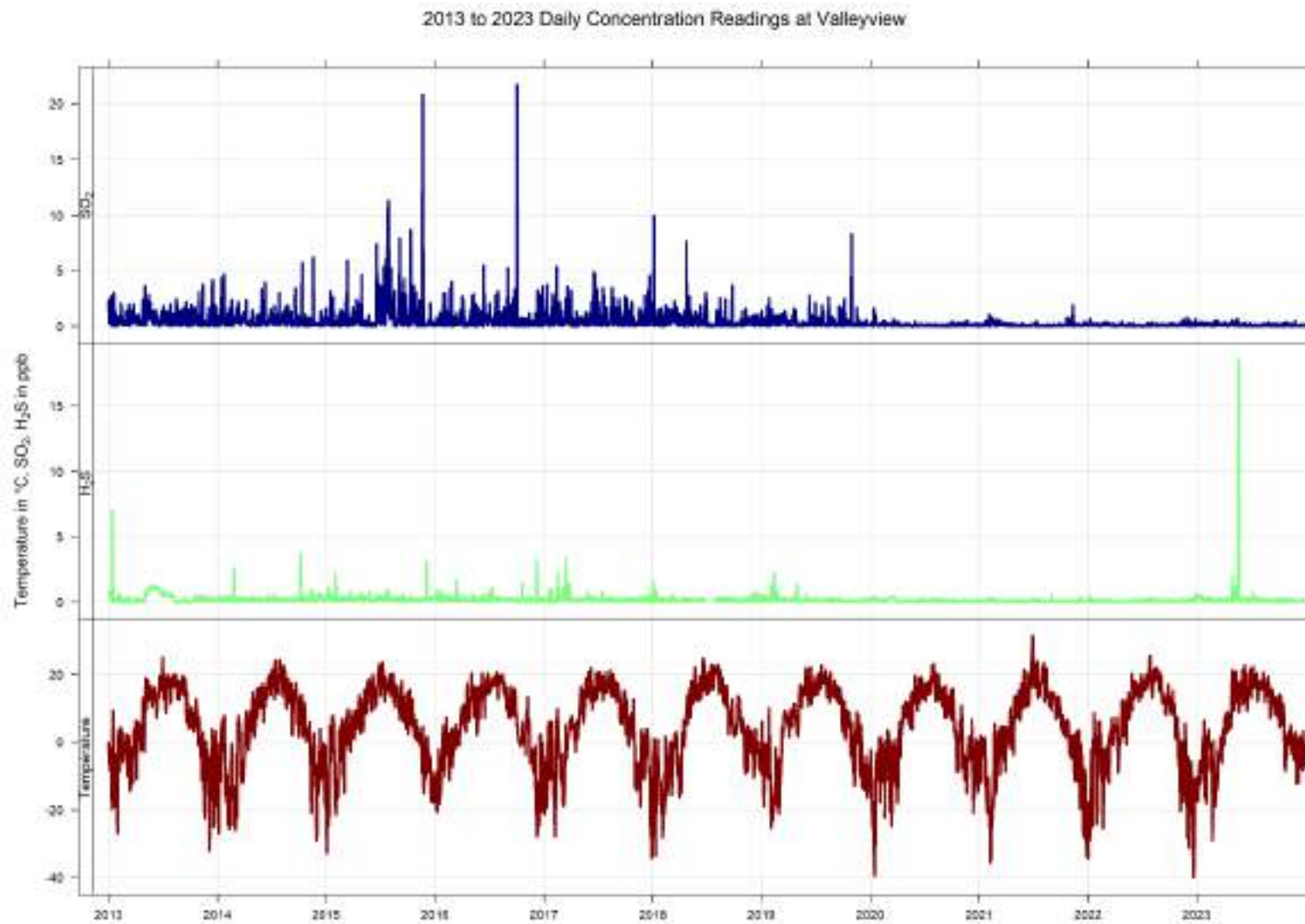
Wind Speed and Wind Direction Frequency Distribution at Valleyview

Direction	Number of Readings	% of wind speed range						Total %
		Calm (<0.5) (km/hr)	0.5 to 5 (km/hr)	5 to 11 (km/hr)	11 to 19 (km/hr)	19 to 28 (km/hr)	>28 (km/hr)	
N	676	0.2%	4.1%	3.0%	0.5%	0.0%	0.0%	7.8%
NNE	232	0.2%	2.0%	0.4%	0.0%	0.0%	0.0%	2.7%
NE	107	0.1%	1.1%	0.1%	0.0%	0.0%	0.0%	1.2%
ENE	70	0.1%	0.6%	0.0%	0.0%	0.0%	0.0%	0.8%
E	87	0.2%	0.7%	0.1%	0.0%	0.0%	0.0%	1.0%
ESE	313	0.2%	1.9%	1.4%	0.1%	0.0%	0.0%	3.6%
SE	494	0.4%	4.1%	1.1%	0.1%	0.0%	0.0%	5.7%
SSE	1345	0.5%	12.1%	2.8%	0.0%	0.0%	0.0%	15.5%
S	1515	0.5%	16.3%	0.6%	0.0%	0.0%	0.0%	17.4%
SSW	706	0.7%	7.2%	0.2%	0.0%	0.0%	0.0%	8.1%
SW	407	0.5%	3.5%	0.7%	0.0%	0.0%	0.0%	4.7%
WSW	459	0.5%	2.6%	1.9%	0.3%	0.0%	0.0%	5.3%
W	676	0.5%	2.6%	3.7%	0.9%	0.1%	0.0%	7.8%
WNW	478	0.3%	2.6%	2.3%	0.2%	0.0%	0.0%	5.5%
NW	485	0.4%	3.4%	1.6%	0.2%	0.0%	0.0%	5.6%
NNW	636	0.3%	4.5%	2.1%	0.4%	0.0%	0.0%	7.3%
Total	8686	5.8%	69.4%	22.1%	2.6%	0.1%	0.0%	100.0%

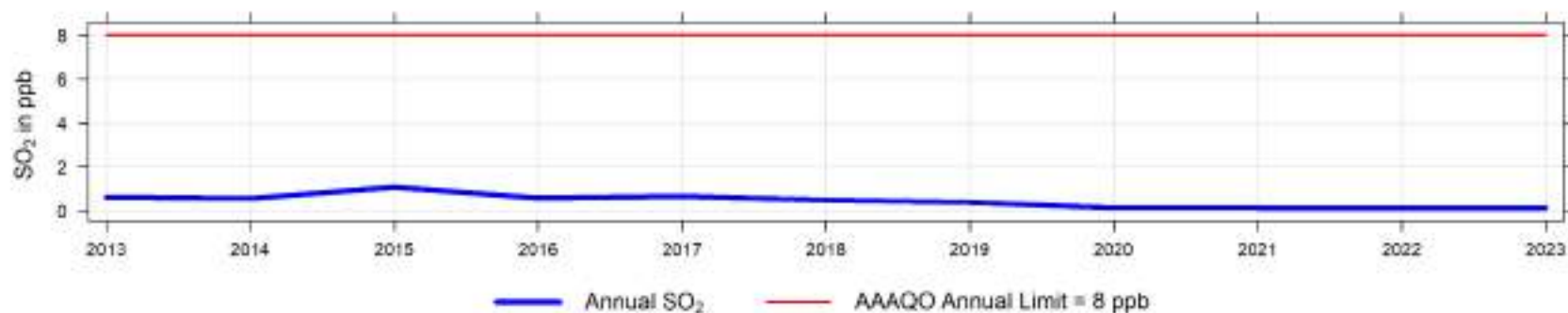


11.6 Valleyview Annual Trends, 2013 to 2023

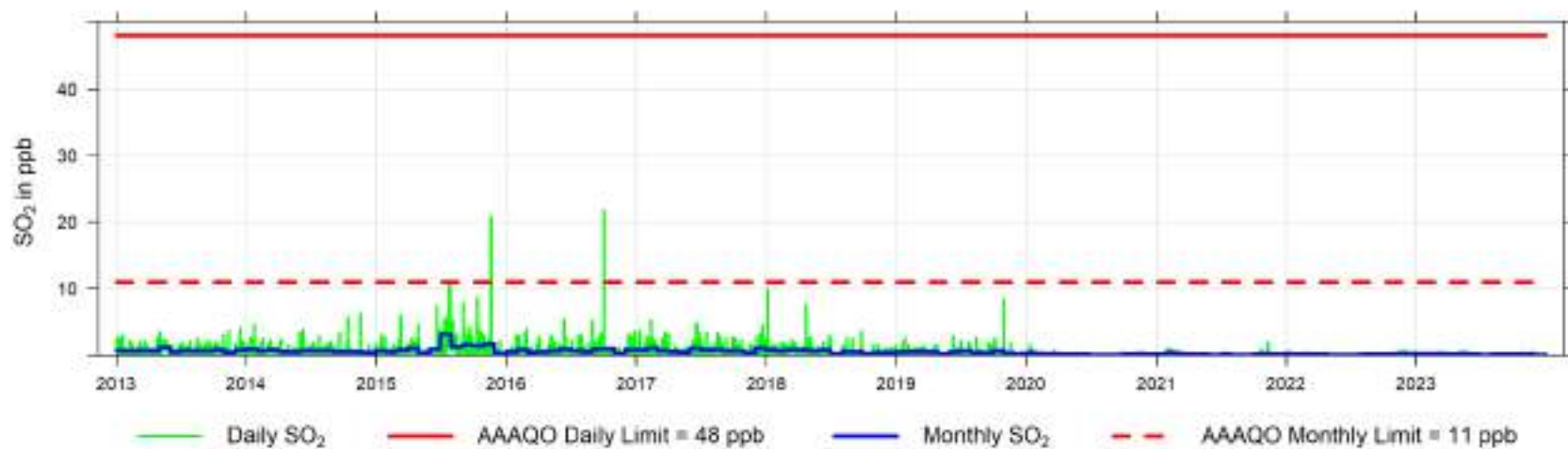
The following pages include historical annual charts collected between 2013 and 2023 at the Valleyview Station.



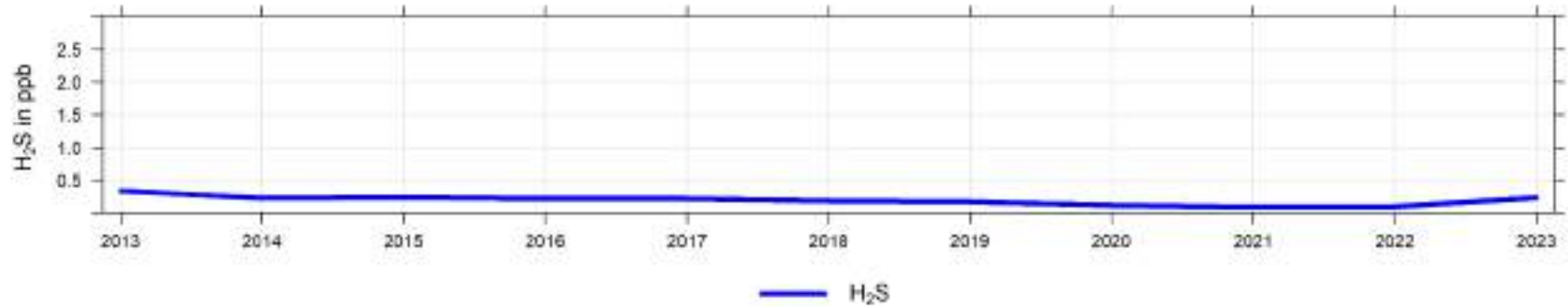
Years 2013 to 2023 Annual Concentration Readings of SO₂ (in ppb) at Valleyview



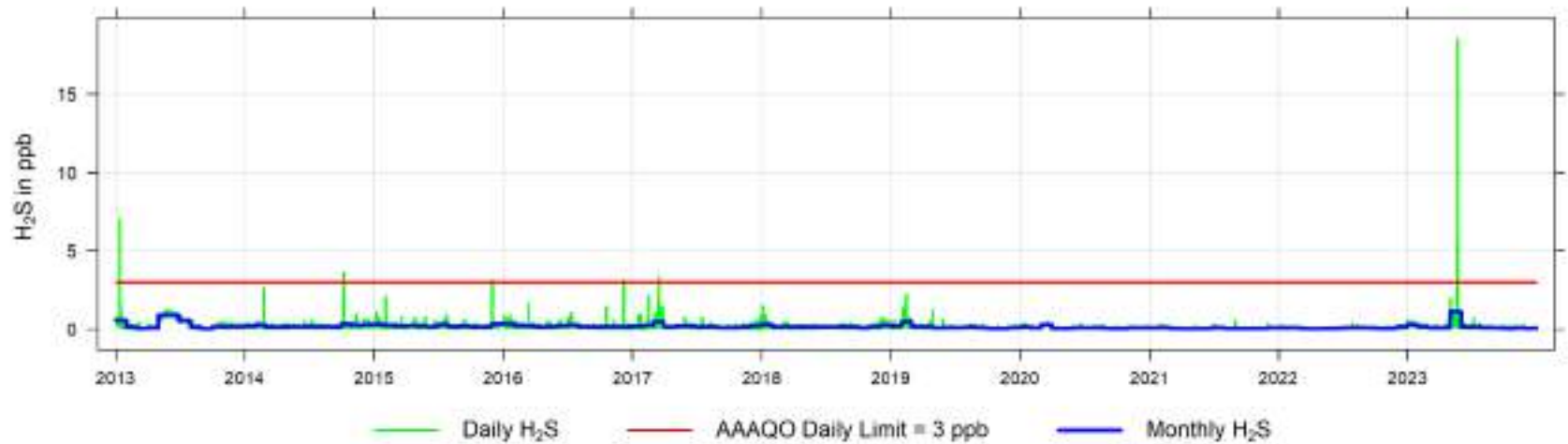
Years 2013 to 2023 Concentration Readings of SO₂ (in ppb) at Valleyview



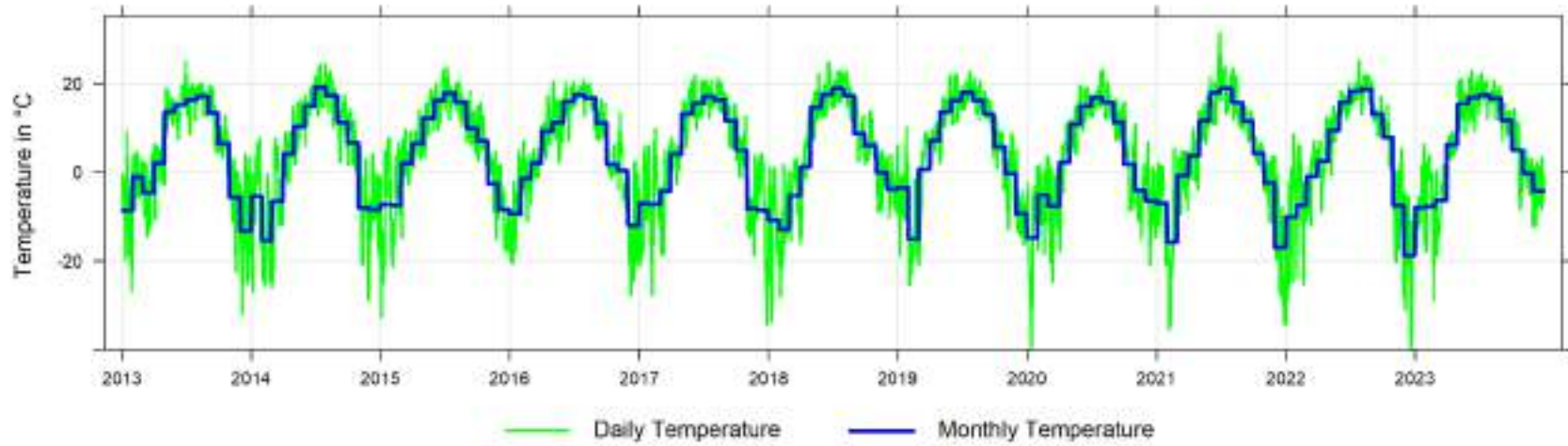
Years 2013 to 2023 Annual Concentration Readings of H₂S (in ppb) at Valleyview



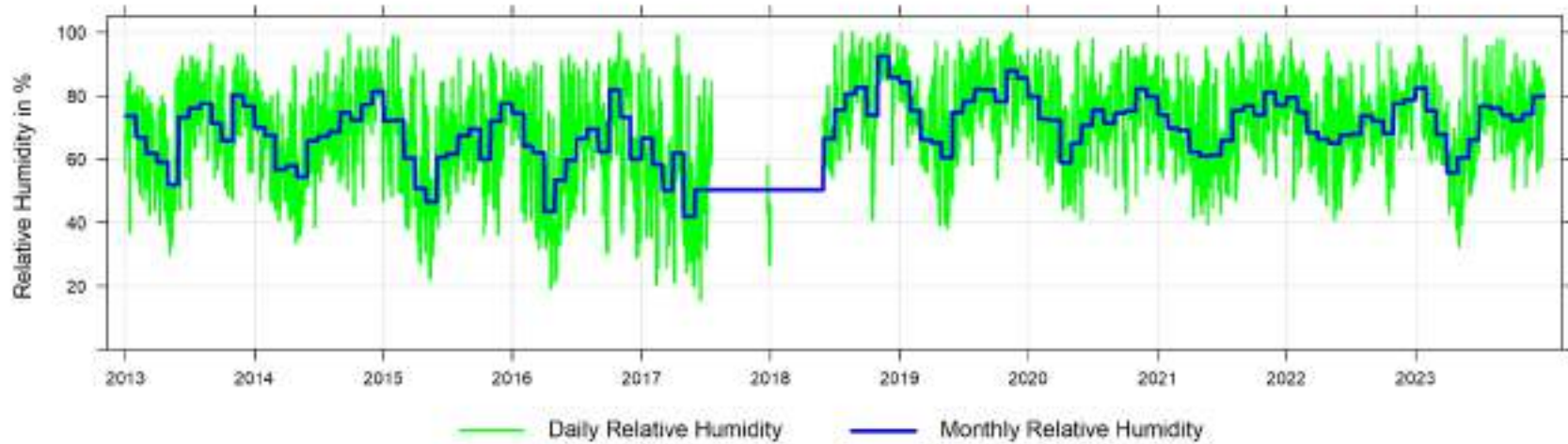
Years 2013 to 2023 Concentration Readings of H₂S (in ppb) at Valleyview



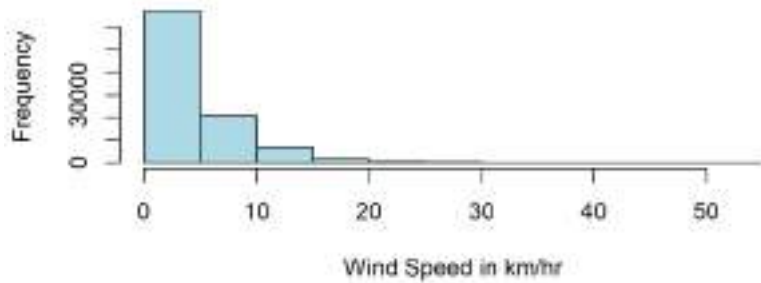
Years 2013 to 2023 Temperature Readings (in °C) at Valleyview



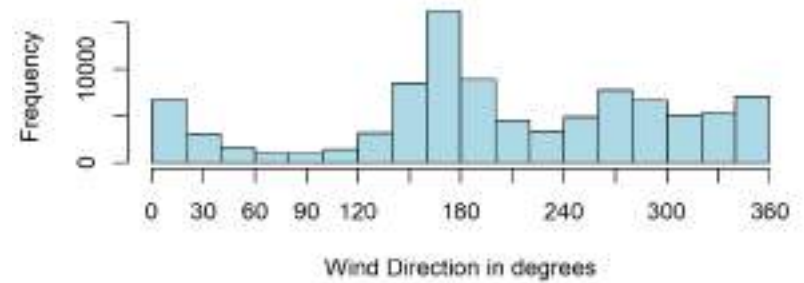
Years 2013 to 2023 Relative Humidity Readings (in %) at Valleyview



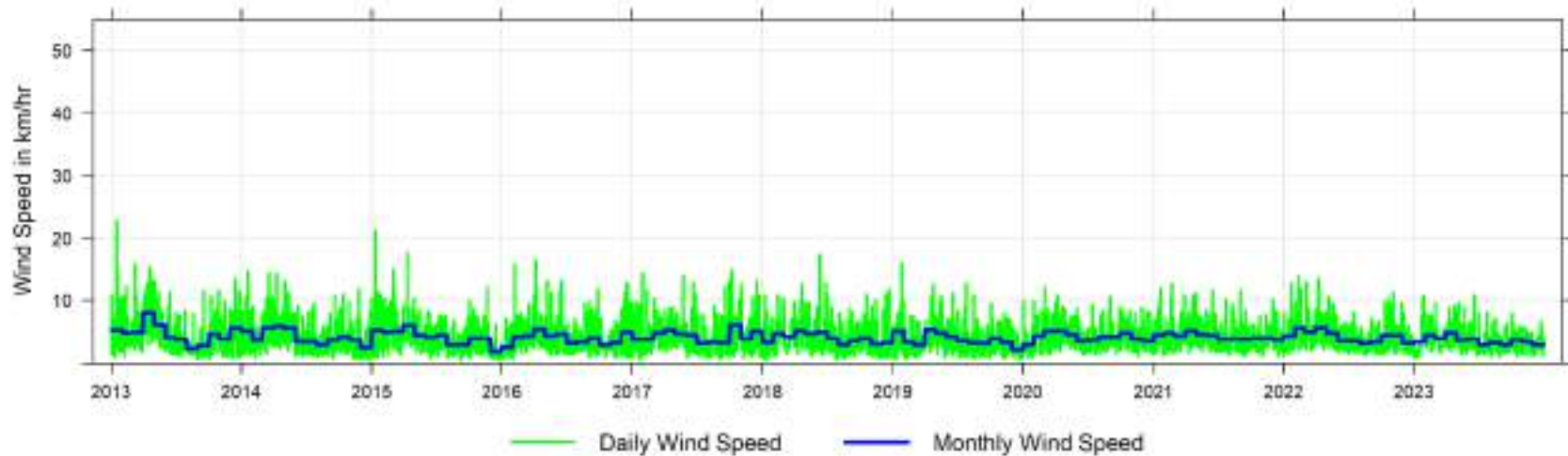
Years 2013 to 2023 Wind Speed Histogram

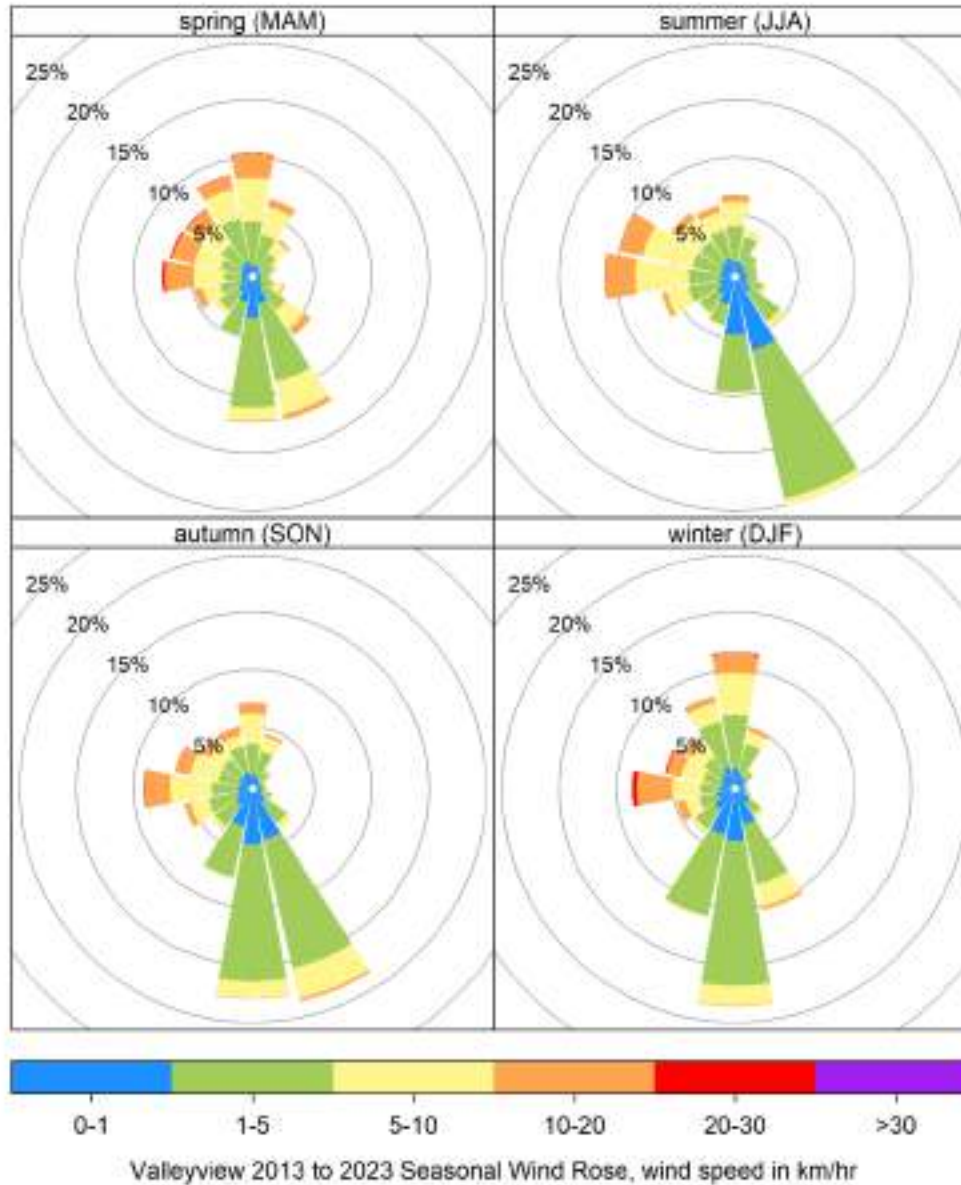


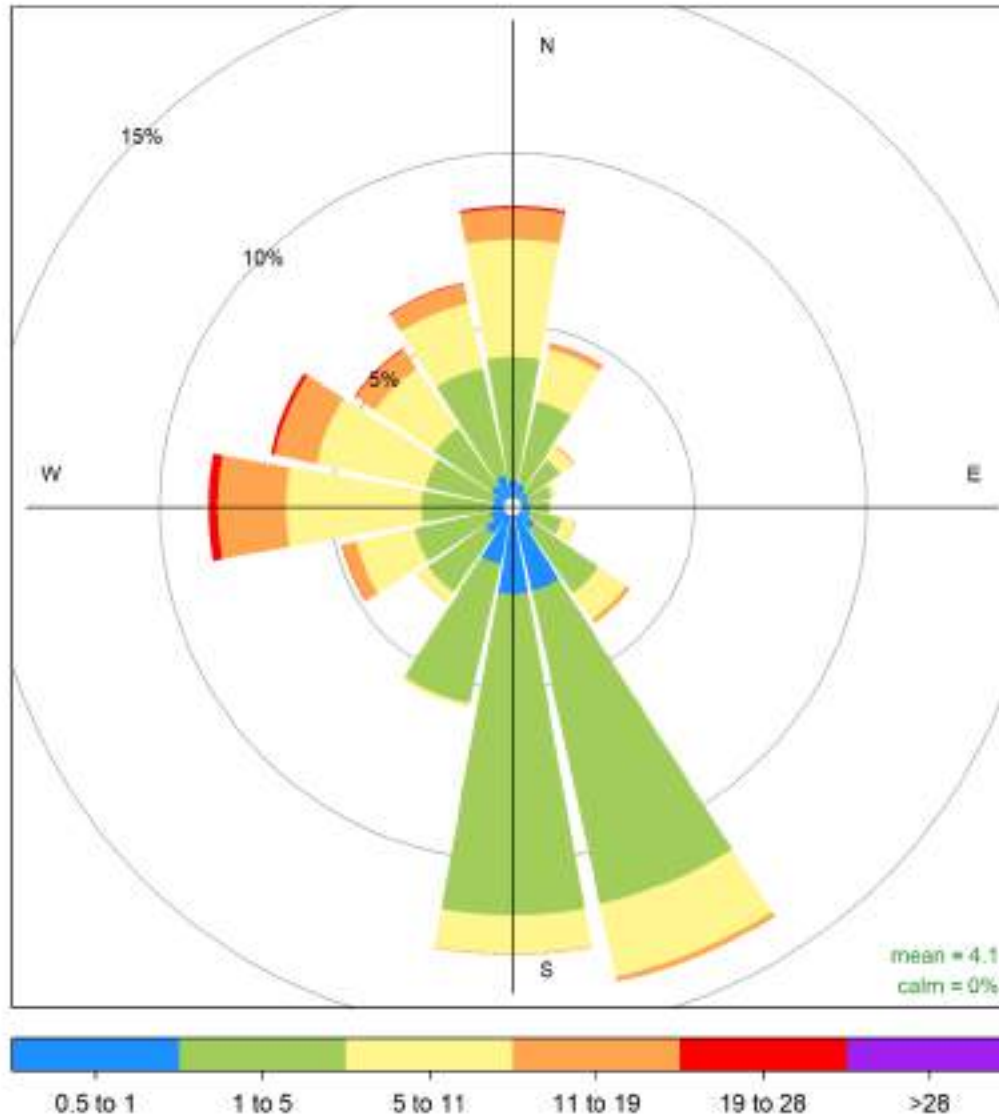
Years 2013 to 2023 Wind Direction Histogram



Years 2013 to 2023 Wind Speed Readings (in km/hr) at Valleyview







Valleyview 2013 to 2023 Wind Rose, wind speed in km/hr
Frequency of counts by wind direction (%)

12 Passive Monitoring Data - 2023 Summary

Samples that are listed as **NA** are primarily below detection limit of the passive monitoring, or not collected for that month.

12.1 O₃ Monitoring Passive Data - 2023 Summary

Ozone (O₃) passive summaries for 2023 are tabulated as follows:

O ₃ in ppb	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
Bay Tree	34.5	45.7	36.7	41.6	32.0	31.7	22.6	23.2	25.0	23.7	26.9	36.2
Crooked Creek	35.1	47.0	44.4	47.1	27.3	30.4	24.9	23.1	16.2	28.6	22.1	23.8
Kinuso	31.1	47.3	40.8	50.6	34.6	27.5	23.3	20.5	19.0	28.2	33.1	18.6

36 passive ozone samples collected over 12 months at 3 sites in PAZA

- Minimum annual average was 30.8ppb collected at Crooked Creek
- Maximum annual average was 31.7ppb collected at Bay Tree
- Maximum overall monthly average was 50.6ppb in April 2023

12.2 H₂S Monitoring Passive Data - 2023 Summary

Hydrogen Sulphide (H₂S) passive summaries for 2023 are tabulated as follows:

H ₂ S in ppb	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
Guy	0.2	0.1	0.1	0.1	0.3	0.3	0.2	0.2	0.3	0.3	0.0	0.1
Jayar1 Plant	0.1	0.1	0.1	NA	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0
Jayar2 14-8	0.1	0.1	0.1	0.0	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1
Jayar3 Bone Yard	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Jayar4 7-8 or 8-8 Pad	0.1	0.1	0.1	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Jayar5 Camp	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1
Girouxville 3	1.0	0.3	0.8	0.3	0.6	0.6	NA	0.7	1.5	0.5	0.2	0.4
Girouxville 4	0.5	0.2	0.1	0.4	0.7	0.6	NA	0.5	0.5	0.4	0.1	0.2
Duvernay 1	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0.1
Duvernay 2	0.2	0.1	0.1	0.1	NA	0.1	0.1	0.1	0.1	0.2	0.3	0.1
Duvernay 3	0.2	0.1	0.1	0.1	NA	0.1	0.1	0.1	0.1	0.2	0.3	0.1
Duvernay 4	0.2	0.1	0.1	0.1	0.3	0.1	0.3	0.1	0.1	0.2	0.3	0.1
Kakwa 1	NA	NA	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
Kakwa 2	NA	NA	0.1	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0
Kakwa 3	NA	NA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.7	0.2
Kakwa 4	NA	NA	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0

174 passive hydrogen sulphide samples collected over 12 months at 16 sites in PAZA

- Minimum annual average was 0.07ppb collected at Kakwa1
- Maximum annual average was 0.62ppb collected at Girouxville 3
- Maximum overall monthly average was 1.50ppb in September 2023

12.3 NO₂ Monitoring Data - 2023 Summary

Nitrogen Dioxide (NO₂) passive summaries for 2023 are tabulated as follows:

NO ₂ in ppb	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
Bay Tree	3.1	1.1	0.3	0.9	0.9	0.7	0.5	0.6	1.0	1.5	1.5	1.9
Forth Creek	1.2	0.3	0.1	0.4	1.4	2.5	1.1	1.0	0.9	0.9	0.9	0.9
Boone Creek	2.5	1.0	0.3	0.6	0.7	0.8	0.7	0.6	0.8	1.3	1.0	1.7
Steeprock Creek	1.8	0.4	0.1	0.5	0.5	0.4	0.4	0.3	0.4	0.7	0.8	1.0
Spirit River	2.0	0.7	0.3	0.8	5.2	5.3	1.0	1.3	1.3	1.3	1.5	1.6
Webber Creek	5.9	2.5	1.5	1.9	2.7	2.1	1.7	1.5	2.9	3.9	3.7	7.7
Hythe	3.4	1.1	0.4	0.8	2.4	1.9	1.4	0.8	1.1	1.6	1.7	3.4
Sylvester	1.8	0.6	0.2	0.2	0.5	0.5	0.4	0.3	0.5	0.8	0.8	0.9
Beaverlodge	5.9	2.1	1.8	1.0	1.3	1.1	1.2	1.0	1.8	2.5	2.8	4.1
Poplar	5.1	1.5	1.2	1.6	3.6	2.0	1.9	1.0	1.7	2.6	2.8	4.8
Saddle Hills	2.0	0.8	0.1	0.3	0.7	0.6	0.6	0.5	0.7	1.1	1.2	1.3
Wanham	2.4	0.7	0.1	0.3	0.7	0.9	0.6	0.4	0.9	1.2	1.4	1.8
Eaglesham	1.8	0.5	NA	0.3	2.2	2.0	0.5	0.5	0.7	0.9	0.8	1.2
Wembley	6.7	2.3	2.5	1.6	2.2	3.2	1.5	1.0	1.5	2.5	2.2	2.9
Pinto Creek	2.3	0.5	0.2	0.6	0.5	0.5	0.5	0.4	0.6	0.8	0.9	1.2
Grande Prairie I	14.9	8.4	7.6	4.0	2.8	2.3	2.2	2.1	7.4	6.5	7.1	13.5
Smoky Heights	5.2	1.2	0.6	0.5	1.2	1.1	0.7	0.8	1.3	1.6	1.9	3.6
Fitzsimmons	5.8	1.0	0.5	0.6	0.8	0.5	0.8	0.6	1.4	1.9	1.9	2.9
Gold Creek	6.7	4.2	1.7	1.7	1.5	1.3	1.1	1.3	2.3	3.3	4.7	6.5
Jean Cote	2.7	0.8	0.3	NA	3.0	2.3	0.7	0.7	1.0	1.8	1.2	1.7
Guy	2.1	0.5	0.2	0.6	4.8	5.3	0.9	0.5	0.9	1.2	0.1	1.7
Crooked Creek	4.6	1.0	0.4	0.3	1.5	0.7	0.6	0.6	1.0	1.7	2.1	2.7
Clouston Creek	2.6	0.7	0.5	0.4	3.0	1.6	0.5	0.6	0.9	1.1	1.2	2.2
McLennan	1.9	0.8	0.1	0.6	2.5	3.3	1.6	0.9	0.8	1.1	1.2	1.3
Sunset House	2.2	0.5	0.1	0.4	0.5	0.6	0.5	0.5	0.8	1.0	1.1	1.0
Peavine	1.2	0.5	0.1	0.4	0.6	0.4	0.6	0.5	0.6	1.1	1.3	1.6
Little Smoky	6.7	2.1	1.1	0.6	1.6	1.1	1.0	1.2	1.8	2.6	5.2	6.6
Kinuso	3.1	0.9	0.4	0.3	0.6	0.5	0.4	0.4	0.6	0.9	1.0	2.0
Deer Mountain	2.5	0.8	0.3	NA	0.4	0.5	0.4	0.4	0.6	0.8	0.9	0.9
Henry Pirker	16.1	8.4	5.7	3.3	2.8	2.8	2.4	2.5	4.9	7.1	7.1	13.1
East Prairie	1.2	0.6	0.4	0.6	2.1	0.4	0.4	0.3	NA	1.1	1.6	4.2
Jayar1 Plant	2.4	1.1	1.0	1.0	1.3	0.8	0.8	0.5	0.7	1.3	1.8	1.7
Jayar2 14-8	2.7	1.6	1.1	0.9	0.9	1.3	1.3	1.0	1.5	2.2	3.1	4.1
Jayar3 Bone Yard	1.6	3.9	0.5	0.3	0.6	1.7	0.6	0.6	0.6	1.1	1.6	0.8
Jayar4 7-8 or 8-8 Pad	1.6	0.7	0.5	0.3	1.0	0.5	0.7	0.5	0.6	1.3	1.5	1.1
Jayar5 Camp	3.6	3.8	1.6	2.4	1.8	1.5	1.2	2.4	1.8	2.0	5.4	2.6
Milner Pipeline	5.0	1.5	2.6	1.3	1.2	0.9	0.7	1.1	1.5	2.1	3.0	2.7

NO ₂ in ppb	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
Milner Bridge	2.6	0.9	1.4	0.8	0.4	0.4	0.5	0.7	0.7	1.9	2.1	1.8
Milner Wanyandie	3.3	0.9	0.8	0.6	0.5	0.4	0.5	0.4	0.6	2.0	1.3	1.1
Milner Ambient Trailer	4.5	1.6	2.0	1.4	0.9	1.0	0.9	1.2	1.8	3.6	2.8	3.1
Milner Powerline	11.0	4.6	2.7	1.7	1.2	3.3	2.3	2.3	2.6	5.8	6.5	6.6
Kakwa 1	NA	NA	1.9	3.8	2.4	1.2	2.2	1.4	1.9	3.6	3.4	4.0
Kakwa 2	NA	NA	1.4	3.7	4.3	2.4	2.4	2.1	3.1	4.6	6.5	5.9
Kakwa 3	NA	NA	1.5	2.2	1.7	1.6	2.1	2.7	4.1	3.7	8.9	6.1
Kakwa 4	NA	NA	1.5	5.5	4.3	3.1	2.2	3.8	5.0	7.0	11.6	7.2

528 passive nitrogen dioxide samples collected over 12 months at 45 sites in PAZA

- Minimum annual average was 0.6ppb collected at Steeprock Creek
- Maximum annual average was 6.6ppb collected at Grande Prairie
- Maximum overall monthly average was 16.1ppb in January 2023

12.4 SO₂ Monitoring Data - 2023 Summary

Sulphur Dioxide (SO₂) passive summaries for 2023 are tabulated as follows:

SO ₂ in ppb	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
Bay Tree	0.4	0.2	0.3	0.3	0.4	0.2	0.2	0.2	0.3	0.2	0.1	0.3
Forth Creek	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.2
Boone Creek	0.6	0.4	0.6	0.3	0.4	0.3	0.3	0.2	0.4	0.3	0.4	0.3
Steeprock Creek	0.5	0.4	0.7	0.3	0.3	0.3	0.7	0.2	0.2	0.3	0.3	0.2
Spirit River	0.4	0.3	0.3	0.3	0.4	0.3	0.4	0.3	0.4	0.4	0.3	0.3
Webber Creek	0.7	0.6	0.7	0.2	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.5
Hythe	0.7	0.6	0.8	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3
Sylvester	0.1	0.3	0.4	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1
Beaverlodge	1.4	1.2	1.4	0.7	0.7	0.4	0.4	0.5	0.4	0.7	0.5	0.8
Poplar	1.3	0.8	1.0	0.6	0.8	0.4	0.5	0.4	0.4	0.9	0.5	0.5
Saddle Hills	0.5	0.5	0.6	NA	0.5	0.3	0.3	0.3	0.2	0.3	0.3	0.5
Wanham	0.6	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.5	0.5	0.4	0.5
Eaglesham	0.3	0.2	0.3	0.4	0.2	0.2	0.2	0.3	0.2	0.1	0.1	0.1
Wembley	1.2	1.2	1.0	0.5	1.1	1.1	1.2	0.8	1.0	0.7	0.8	0.4
Pinto Creek	0.4	0.4	0.8	NA	0.2	0.2	0.3	0.2	0.1	0.2	0.1	0.1
Grande Prairie I	0.8	0.8	0.8	0.5	0.6	0.7	0.6	0.8	0.7	0.6	0.7	0.7
Smoky Heights	0.7	0.6	0.7	0.3	0.3	0.4	0.4	0.5	0.3	0.7	0.4	0.4
Fitzsimmons	0.3	0.3	0.4	0.2	0.3	0.2	0.2	0.3	0.3	0.3	0.2	0.1
Gold Creek	0.3	0.2	0.3	0.2	0.3	0.3	0.5	0.3	0.2	0.2	0.1	0.1
Jean Cote	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.2
Guy	0.2	0.2	0.3	NA	0.3	0.2	0.2	0.5	0.2	0.2	0.2	0.1

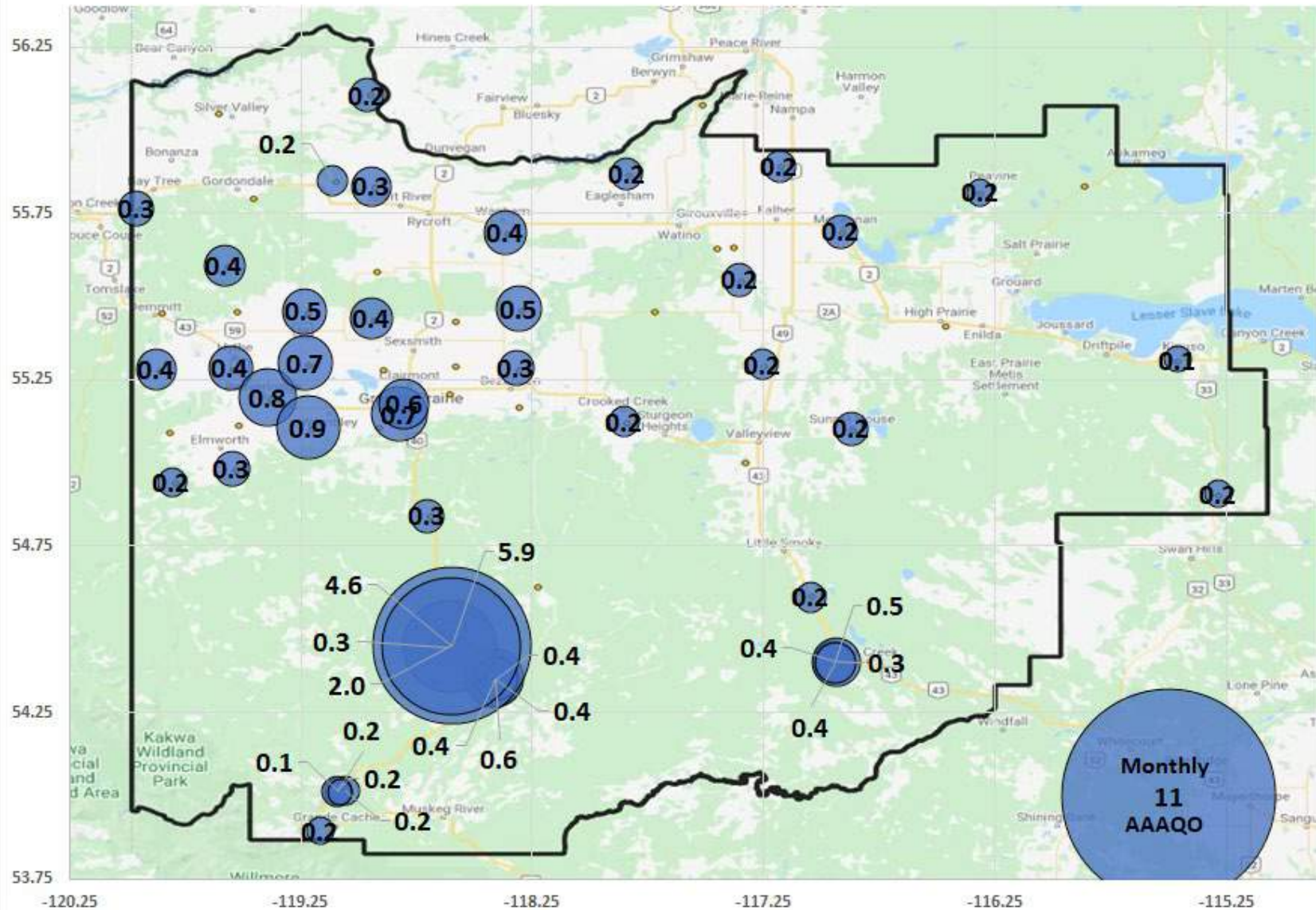
SO ₂ in ppb	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
Crooked Creek	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.1	0.2	0.1
Clouston Creek	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
McLennan	0.3	0.2	0.3	NA	0.4	0.3	0.2	0.3	0.2	0.1	0.2	0.2
Sunset House	0.3	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.2
Peavine	0.1	0.2	0.2	0.1	0.3	0.1	0.2	0.1	0.2	0.1	0.1	0.1
Little Smoky	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.1
Kinuso	0.1	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1
Deer Mountain	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1
Henry Pirker	0.7	0.6	0.7	0.2	0.5	0.6	0.6	0.5	0.5	0.7	0.7	0.5
East Prairie	0.1	0.2	0.2	0.1	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.1
Jayar1 Plant	0.2	0.3	1.4	0.2	0.6	0.6	0.4	0.4	0.2	0.3	0.1	0.2
Jayar2 14-8	0.3	0.5	0.8	0.4	0.5	0.4	0.6	0.4	0.7	0.5	0.9	0.6
Jayar3 Bone Yard	0.9	1.2	0.8	0.7	0.6	0.6	0.7	0.8	1.0	0.5	1.3	0.5
Jayar4 7-8 or 8-8 Pad	0.2	0.4	0.9	0.3	0.5	0.7	0.5	0.5	0.2	0.2	0.3	0.2
Jayar5 Camp	0.2	0.3	0.8	0.4	0.7	0.5	0.4	0.4	0.3	0.3	0.3	0.3
Duvernay 1	0.5	0.4	0.8	0.4	0.4	0.3	0.2	0.2	0.3	0.4	0.3	0.5
Duvernay 2	0.4	0.3	0.6	0.4	NA	0.4	0.2	0.2	0.2	0.3	0.2	0.5
Duvernay 3	0.6	1.1	0.6	0.7	NA	0.3	0.2	0.2	0.3	0.3	1.0	0.5
Duvernay 4	0.6	0.4	0.6	0.7	0.2	0.3	0.2	0.2	0.2	0.4	0.4	0.5
Milner Pipeline	0.1	0.1	0.2	0.2	0.1	NA	NA	NA	0.2	NA	NA	NA
Milner Bridge	0.2	0.1	0.2	NA	0.1	0.1	NA	0.2	0.2	NA	NA	NA
Milner Wanyandie	0.1	0.1	0.2	NA	0.2	NA	0.2	0.2	0.2	NA	NA	NA
Milner Ambient Trailer	0.1	0.2	0.2	NA	0.2	0.1	NA	0.4	0.2	NA	NA	NA
Milner Powerline	0.1	0.1	0.2	NA	NA	NA	NA	0.2	0.1	NA	NA	0.1
Kakwa 1	NA	NA	0.7	0.3	0.4	0.3	0.3	0.2	0.2	0.3	0.3	0.2
Kakwa 2	NA	NA	2.4	1.0	3.9	1.9	3.1	1.7	1.9	1.8	1.0	1.3
Kakwa 3	NA	NA	3.4	3.2	4.8	12.0	10.1	11.0	3.8	6.0	3.3	1.4
Kakwa 4	NA	NA	4.9	0.3	4.4	10.4	6.0	8.0	2.8	4.4	3.1	1.2

547 passive sulphur dioxide samples collected over 12 months at 49 sites in PAZA

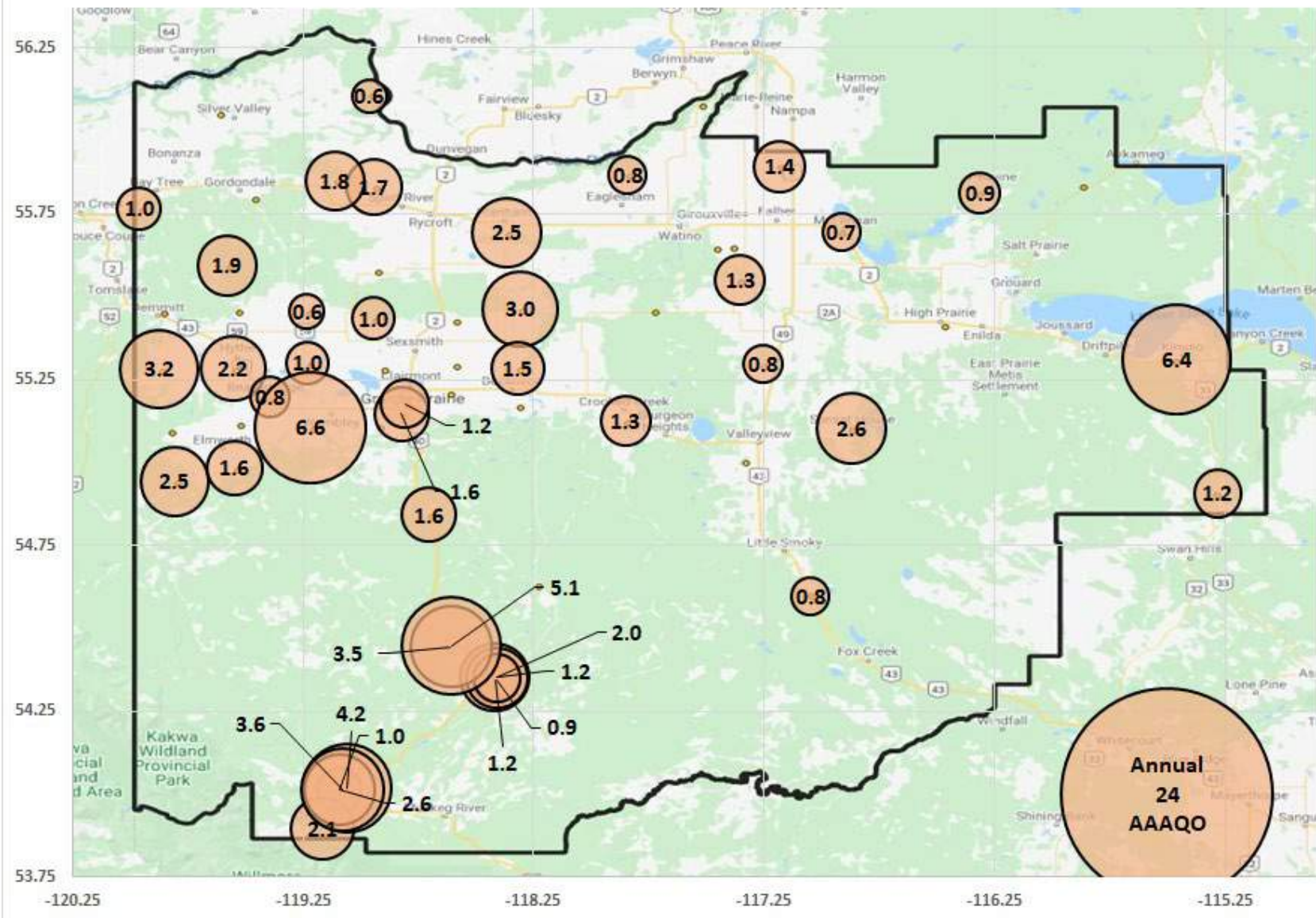
- Minimum annual average was 0.1ppb collected at Milner Powerline
- Maximum annual average was 5.9ppb collected at Kakwa 3
- Maximum overall monthly average was 12.0ppb in June 2023

12.5 Monitoring Passive Data Bubble Charts - 2023 Summary

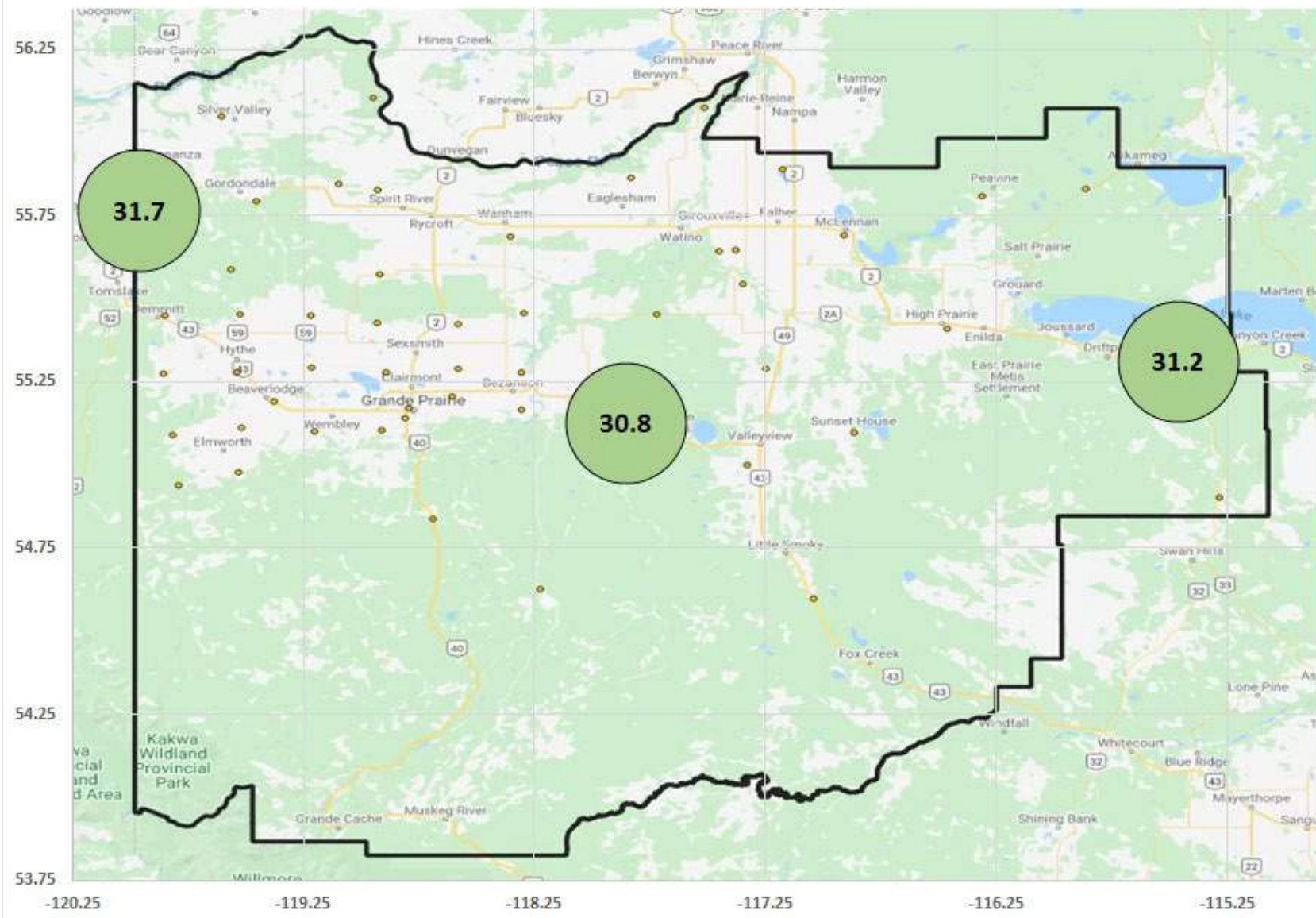
SO₂ Monthly Average (units in ppb)



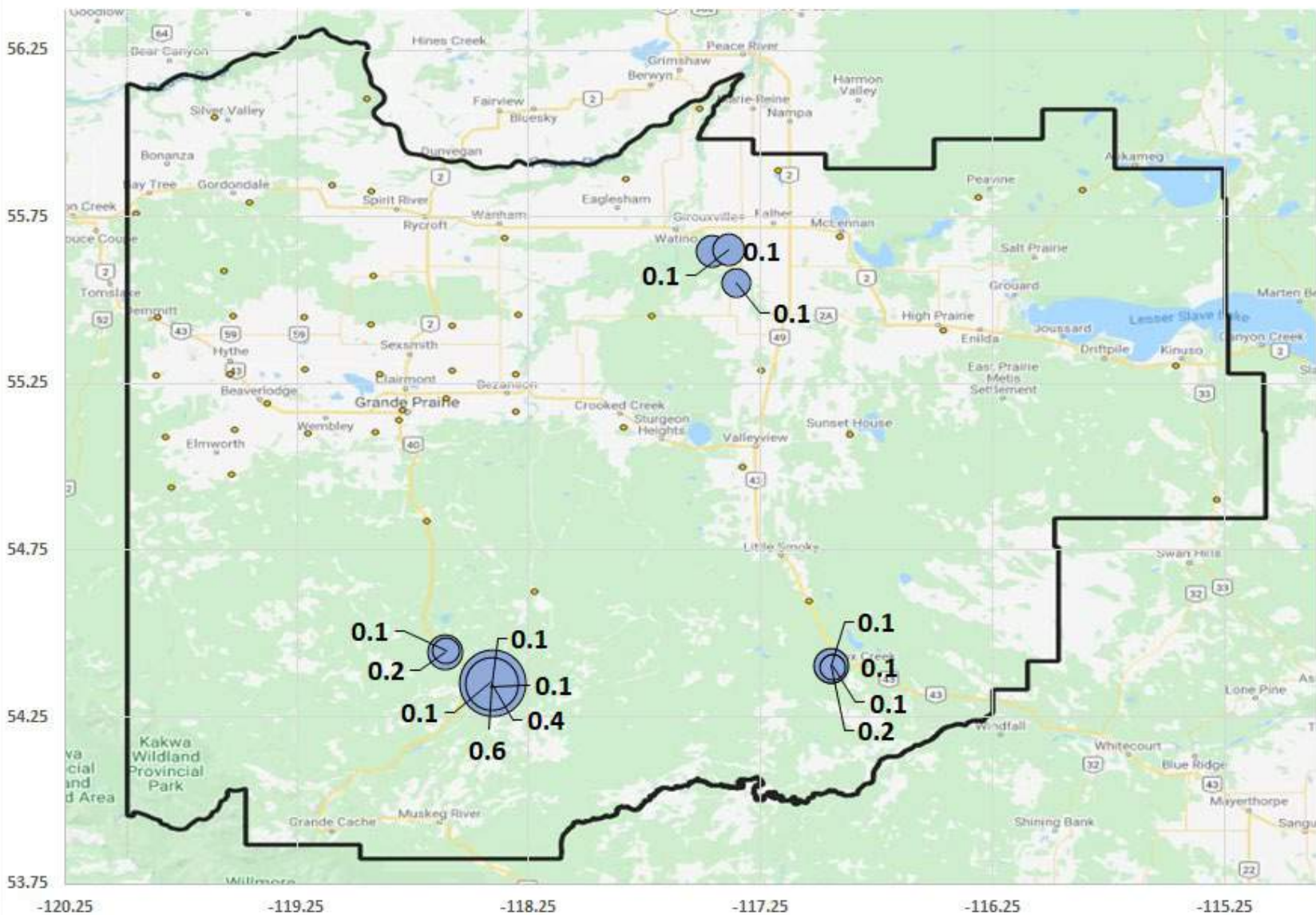
NO₂ Monthly Average (units in ppb)



O₃ Monthly Average (units in ppb)



H₂S Monthly Average (units in ppb)



13 Dustfall Monitoring Data - 2023 Summary

13.1 Dustfall Monitoring Passive Data - 2023 Summary

Dustfall summaries for 2023 are tabulated as follows:

Dustfall in mg/100cm ² /30day	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
Milner Pipeline	285.8	0.2	11.7	83.0	87.4	126.3	78.8	151.4	78.3	89.5	297.9	56.5
Milner Bridge	10.7	20.5	14.5	15.4	34.5	22.3	32.1	40.3	30.4	29.4	45.6	30.3
Milner Wanyandie	54.7	55.1	47.5	38.2	46.3	29.6	46.1	43.6	26.9	29.4	69.8	32.8
Milner Powerline	89.6	47.2	28.9	75.7	62.4	37.9	32.7	25.6	38.0	22.7	99.6	58.5
Milner Waste Pond	118.7	48.0	77.1	82.3	82.3	56.0	98.8	66.8	107.2	51.4	100.3	84.0

Note:

AAAQG for residential and recreation areas = 53 mg/100cm²/30day

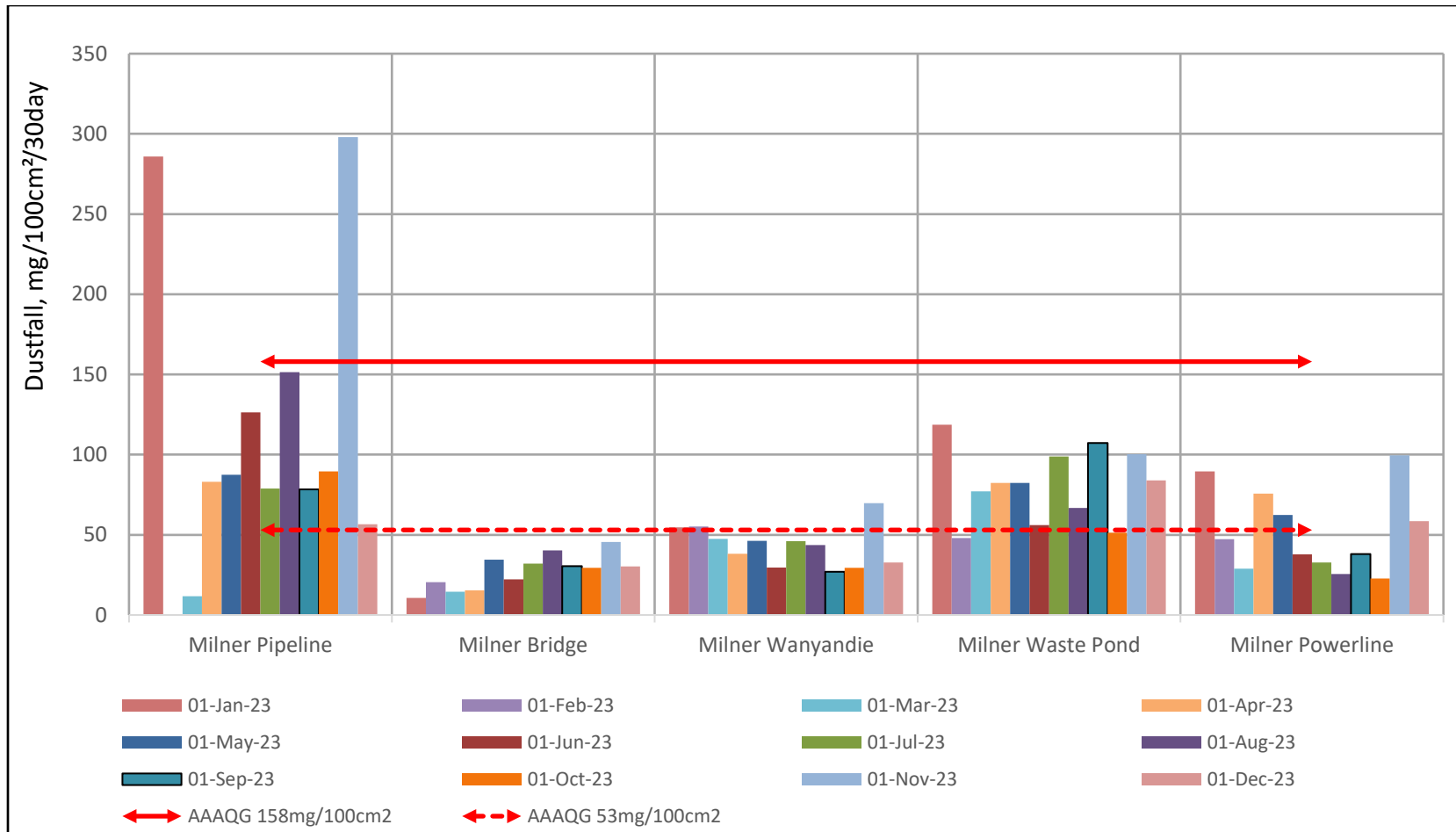
AAAQG for commercial and industrial areas = 158 mg/100cm²/30day

Wanyandie site compared to residential and recreation areas, all other sites compared to commercial and industrial areas

60 dustfall samples collected over 12 months at 5 sites in PAZA

- Minimum annual average was 27.2 mg/100cm²/30day collected at Milner Bridge
- Maximum annual average was 112.2 mg/100cm²/30day collected at Milner Pipeline
- Maximum overall monthly average was 297.9 mg/100cm²/30day collected in November 2023

There were five monthly events above the AAAQGs for dustfall, three based on the residential and recreational area and two based on the commercial and industrial area during 2023.



End of Report



Peace Airshed Zone Association

Ambient Annual Air Monitoring Report

2023 Annual