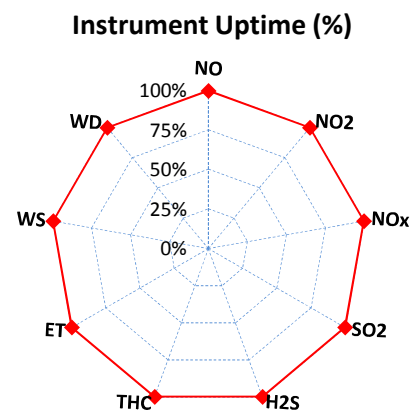
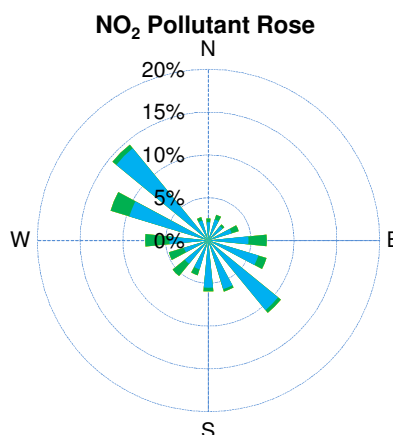
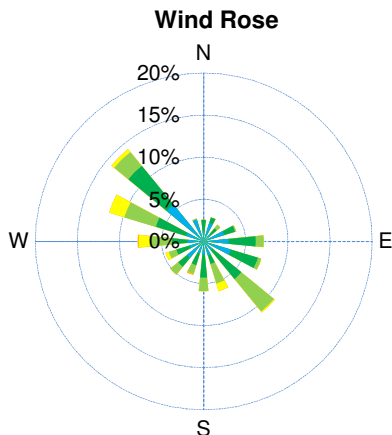
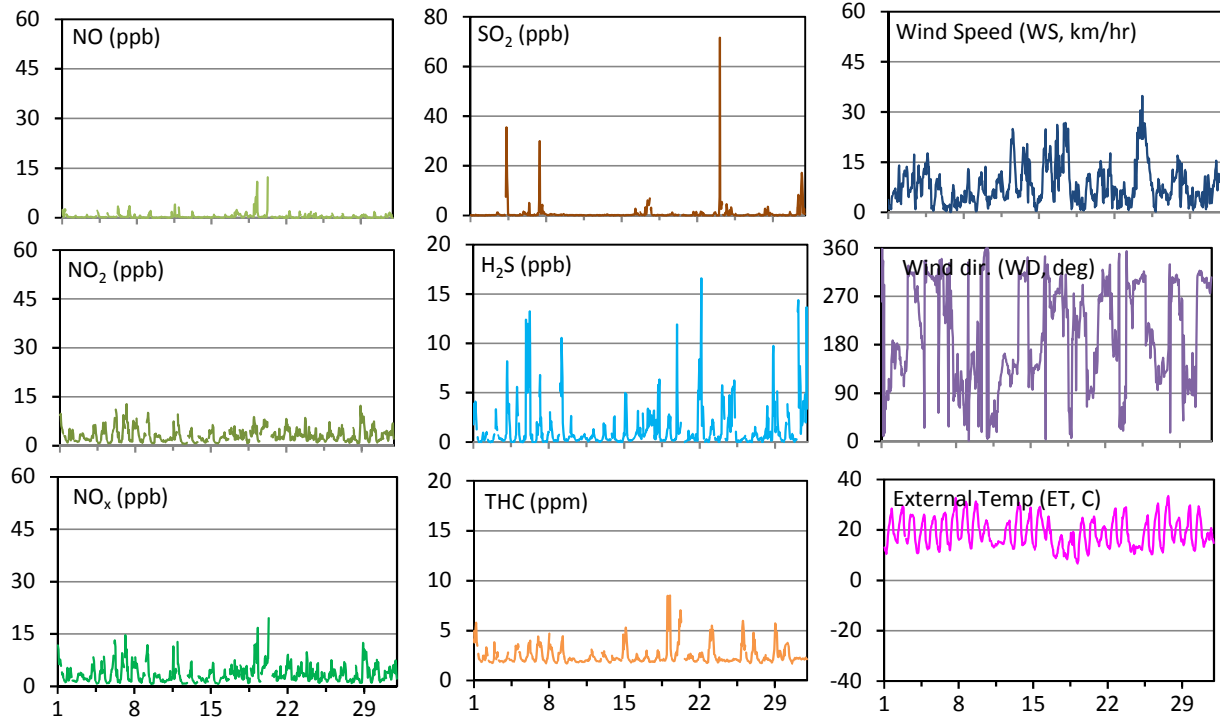


Husky Energy East Station - July 2017 Summary Report

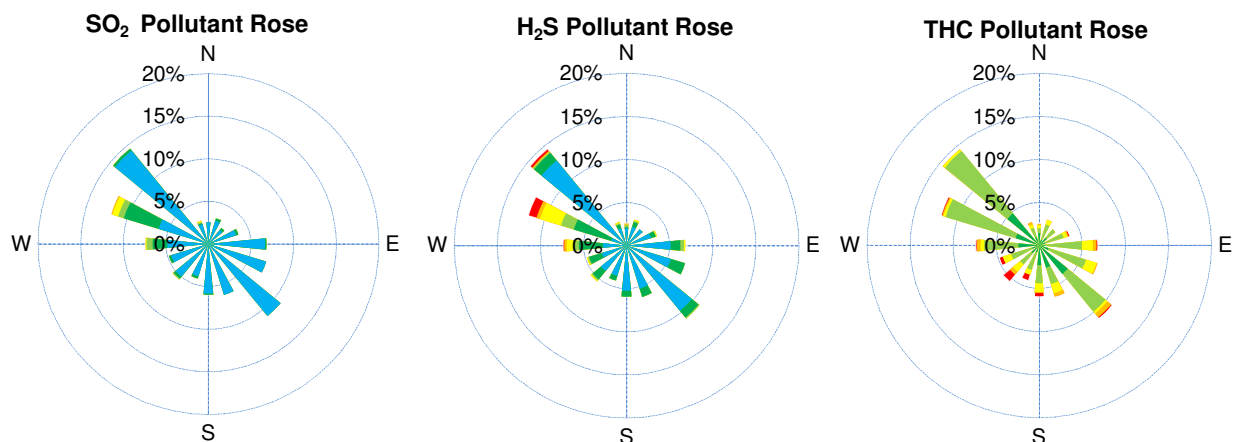
Pollutants		Month Records		24-Hour Records				1-Hour Records			
Name	Conc. Unit	Avg. Conc.	Uptime	Maximum		SAAQS Standards	Exceed Days	Maximum		SAAQS Standards	Exceed Hours
				Conc.	Time			Conc.	Time		
NO	ppb	0.4	99.7%	1.7	Jul-19	-	-	12.2	Jul-20 07:00	-	-
NO ₂	ppb	3.1	99.7%	4.9	Jul-7	106	0	12.8	Jul-07 05:00	159	0
NO _x	ppb	3.5	99.7%	6.2	Jul-19	-	-	19.6	Jul-20 07:00	-	-
SO ₂	ppb	0.8	99.7%	4.8	Jul-24	48	0	71.7	Jul-24 03:00	172	0
H ₂ S	ppb	1.3	99.7%	3.9	May-22	3.6	1	12.2	Jul-22 04:00	11.0	10
THC	ppm	2.5	99.7%	3.9	Jul-19	-	-	8.5	Jul-19 01:00	-	-

SAAQS: Saskatchewan Ambient Air Quality Standards



Parameters	Unit	Color Code for Wind Spd & Pollutant Conc. Class					
Wind Speed	km/hr	1 ≤ WS < 5	5 ≤ WS < 10	10 ≤ WS < 20	20 ≤ WS < 30	30 ≤ WS < 40	WS ≥ 40
SO ₂	ppb	0 ≤ C < 1	1 ≤ C < 5	5 ≤ C < 10	10 ≤ C < 57	57 ≤ C < 172	C ≥ 172
NO ₂	ppb	0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 212	C ≥ 212
H ₂ S	ppb	0 ≤ C < 1	1 ≤ C < 3.6	3.6 ≤ C < 5	5 ≤ C < 8	8 ≤ C < 11	C ≥ 11
THC	ppm	0 ≤ C < 1	1 ≤ C < 2	2 ≤ C < 3	3 ≤ C < 4	4 ≤ C < 5	C ≥ 5

Husky Energy East Station - July 2017 Summary Report



Monthly Update

*Air monitoring data has been slope, intercept, and baseline corrected. Data may change after validation process.

*All compliance parameters were within the Saskatchewan Ambient Air Quality Standards, with the exception of ten 1-hour H₂S exceedance events and one 24-hour H₂S exceedance event. Refer to the exceedance summary table for details.

*All compliance parameters are above 90% operational. Operational issues include a short power disruption at the station.

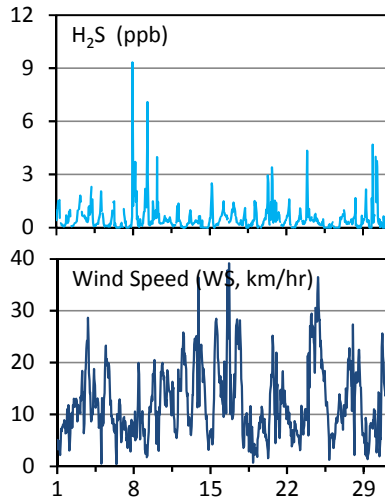
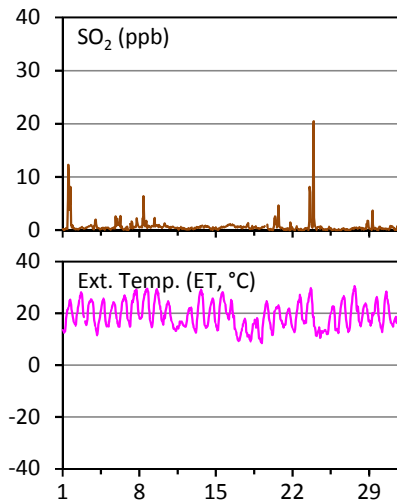
Exceedance Summary

1-hour Exceedance Information			Summary of Other Parameters During Exceedance						
Pollutant	Conc. ppb	Exceedance Time mmm-dd hh:mm	WS km/hr	WD deg	ET C	SO ₂ ppb	H ₂ S ppb	NO ₂ ppb	THC ppm
H2S	16.6	Jul-22 04:00	5.4	307	13.0	0.3	16.6	5.1	2.4
H2S	14.4	Jul-31 04:00	8.1	301	15.3	0.4	14.4	4.1	2.2
H2S	13.7	Jul-31 23:00	9.5	302	15.6	0.9	13.7	3.7	2.2
H2S	13.2	Jul-06 06:00	2.4	278	13.3	0.6	13.2	9.9	4.0
H2S	13.2	Jul-31 03:00	6.2	298	14.2	0.0	13.2	4.2	2.3
H2S	12.4	Jul-05 22:00	7.3	299	17.5	1.6	12.4	3.9	2.4
H2S	12.0	Jul-06 02:00	2.4	291	12.2	0.6	12.0	7.3	3.5
H2S	11.9	Jul-19 22:00	5.2	291	16.0	0.2	11.9	5.3	2.5
H2S	11.4	Jul-06 00:00	4.7	304	14.3	0.9	11.4	5.0	2.5
H2S	11.1	Jul-06 03:00	2.8	294	12.5	0.5	11.1	8.6	3.8
24-hour Exceedance Information			WS	WD	ET	SO ₂	H ₂ S	NO ₂	THC
H2S	5.0	Jul-31	9.2	296	16.8	3.7	5.0	3.7	2.2

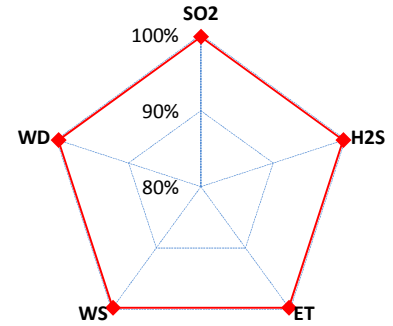
Husky Energy West Station - July 2017 Summary Report

Pollutants		Month Records		24-Hour Records				1-Hour Records			
Name	Conc. Unit	Avg. Conc.	Uptime	Maximum		AAAQO / SAAQS	Exceed Days	Maximum		AAAQO / SAAQS	Exceed Hours
				Conc.	Time			Conc.	Time		
SO ₂	ppb	0.4	99.7%	3.0	Jul-23	48 / 48	0 / 0	6.4	Jul-23 23:00	172 / 172	0 / 0
H ₂ S	ppb	0.5	99.7%	1.3	Jul-9	3 / 3.6	0 / 0	9.0	Jul-07 23:00	10 / 11.0	0 / 0

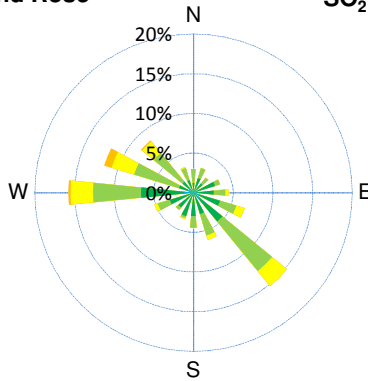
AAAQO: Alberta Ambient Air Quality Objectives; SAAQS: Saskatchewan Ambient Air Quality Standards.



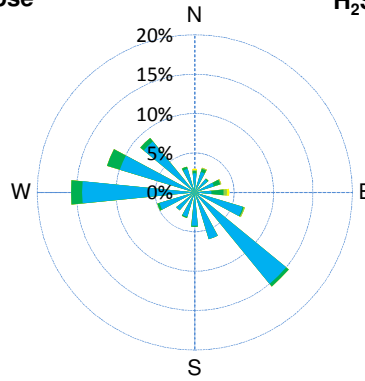
Uptime (%)



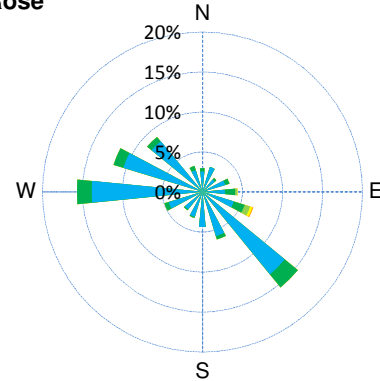
Wind Rose



SO₂ Rose



H₂S Rose



Parameters	Unit	Color Code for Wind Spd & Pollutant Conc. Class					
Wind Speed	km/hr	1 ≤ WS < 5	5 ≤ WS < 10	10 ≤ WS < 20	20 ≤ WS < 30	30 ≤ WS < 40	WS ≥ 40
SO ₂	ppb	0 ≤ C < 1	1 ≤ C < 5	5 ≤ C < 10	10 ≤ C < 57	57 ≤ C < 172	C ≥ 172
H ₂ S	ppb	0 ≤ C < 1	1 ≤ C < 3.6	3.6 ≤ C < 5	5 ≤ C < 8	8 ≤ C < 11	C ≥ 11

Monthly Update

*Air monitoring data has been slope, intercept, and baseline corrected. Data may change after validation process.

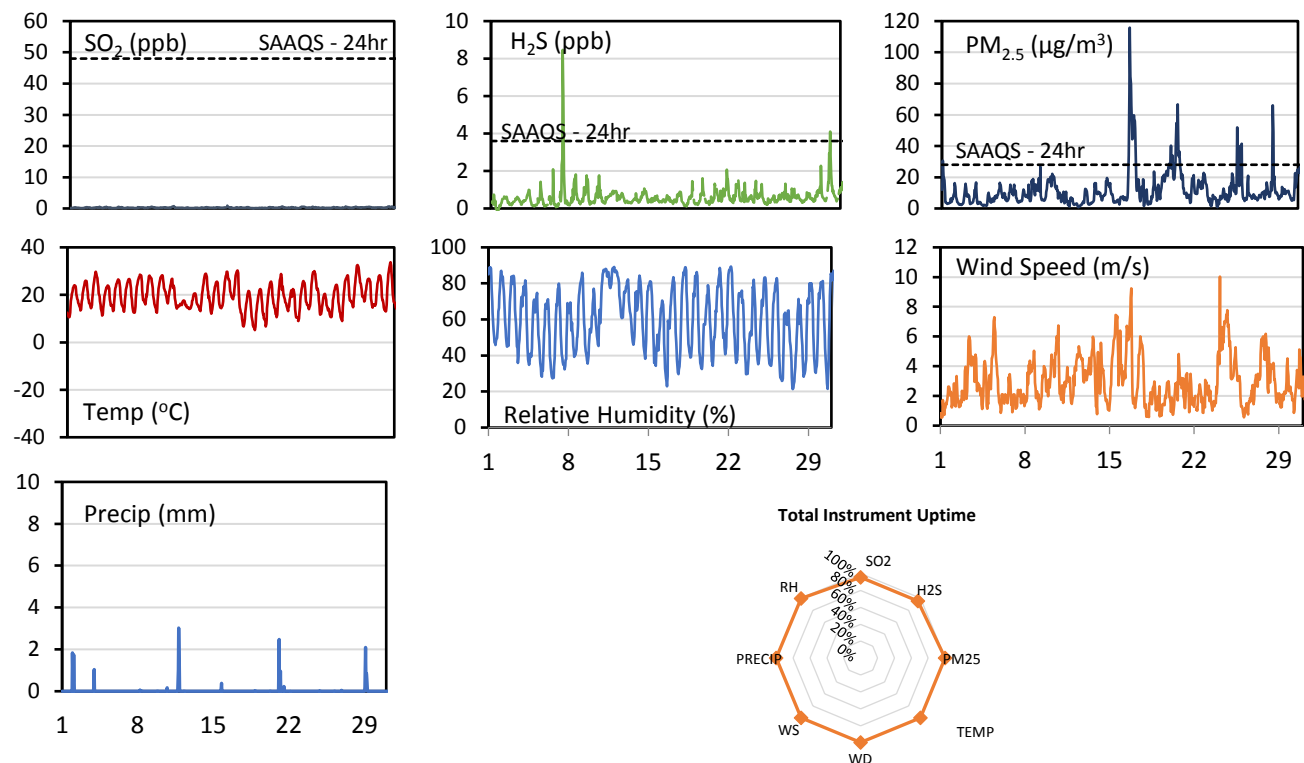
*All compliance parameters were within the Alberta Ambient Air Quality Objectives and the Saskatchewan Ambient Air Quality Standards

*All compliance parameters are above 90% operational. Operational issues include a short power disruption.

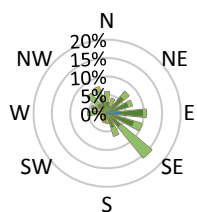
WYAMZ Kindersley Station - July 2017 Summary Report

Pollutants		Month Records		24-Hour Records				1-Hour Records			
Name	Conc. Unit	Avg. Conc.	Total Uptime	Maximum		SAAQS Standard	Exceed Days	Maximum		SAAQS Standard	Exceed Hours
				Conc.	Time			Conc.	Time		
SO ₂	ppb	0.3	96%	0.4	Jul-28	48	0	0.9	Jul-15 13:00	172	0
H ₂ S	ppb	0.6	96%	1.2	Jul-07	3.6	0	8.5	Jul-07 04:00	11	0
PM _{2.5}	µg/m ³	11.6	100%	32.5	Jul-20	28	1	115.8	Jul-16 20:00	-	-

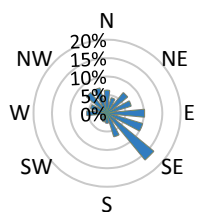
SAAQS: Saskatchewan Ambient Air Quality Standards



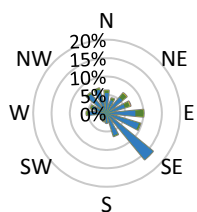
Wind Rose



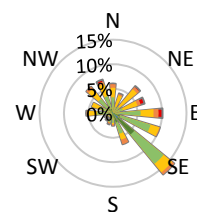
SO₂ Pollutant Rose



H₂S Pollutant Rose



H₂S Pollutant Rose



Parameters	Unit	Color Code for Wind Speed and Pollution Concentration Class					
Wind Speed	m/s	0.3 ≤ WS < 1.4	1.4 ≤ WS < 3.1	3.1 ≤ WS < 7.8	7.8 ≤ WS < 10.8	10.8 ≤ WS < 13.6	WS ≥ 13.6
SO ₂	ppb	0 ≤ C < 1	1 ≤ C < 5	5 ≤ C < 10	10 ≤ C < 57	57 ≤ C < 172	C ≥ 172
H ₂ S	ppb	0 ≤ C < 1	1 ≤ C < 3.6	3.6 ≤ C < 5	5 ≤ C < 8	8 ≤ C < 10.8	C ≥ 10.8
PM _{2.5}	µg/m ³	0 ≤ C < 2	2 ≤ C < 4	4 ≤ C < 10	10 ≤ C < 20	20 ≤ C < 30	C ≥ 30

Monthly Update

- Achieved 100% of scheduled uptime for all parameters
- Downtime of 4% results from routine daily Internal Zeroes and Spans

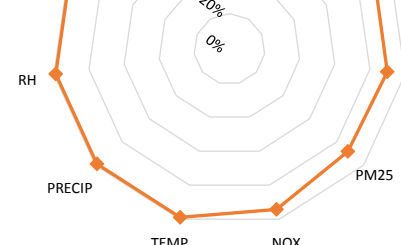
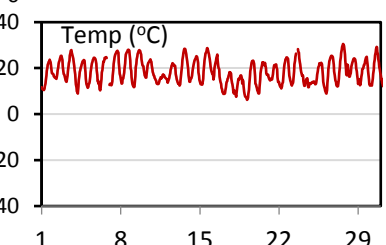
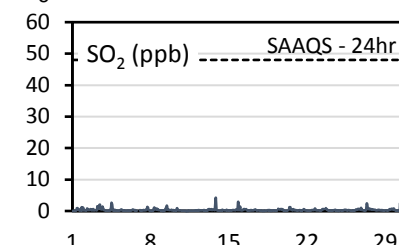
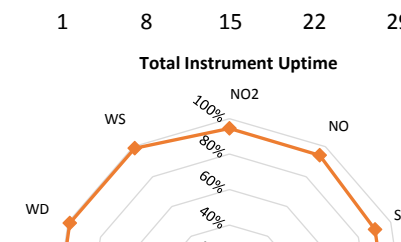
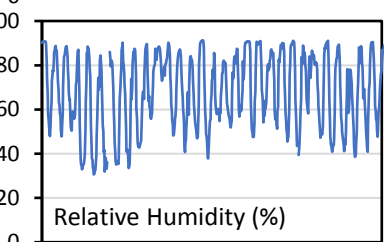
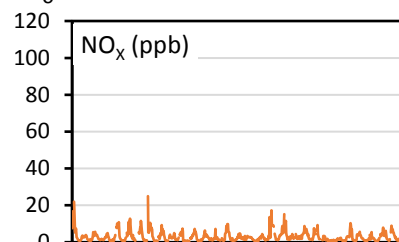
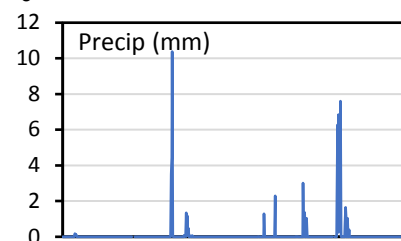
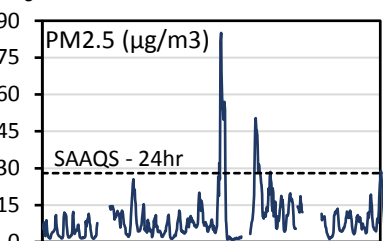
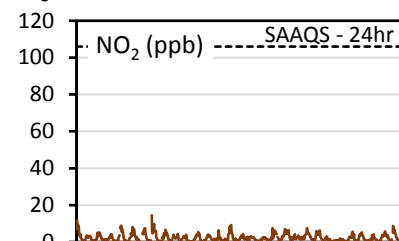
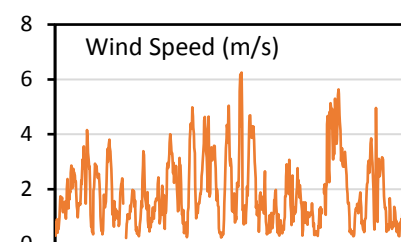
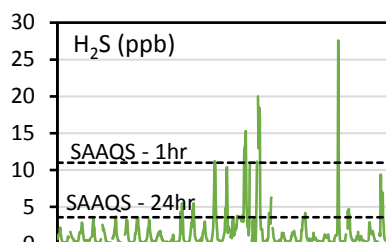
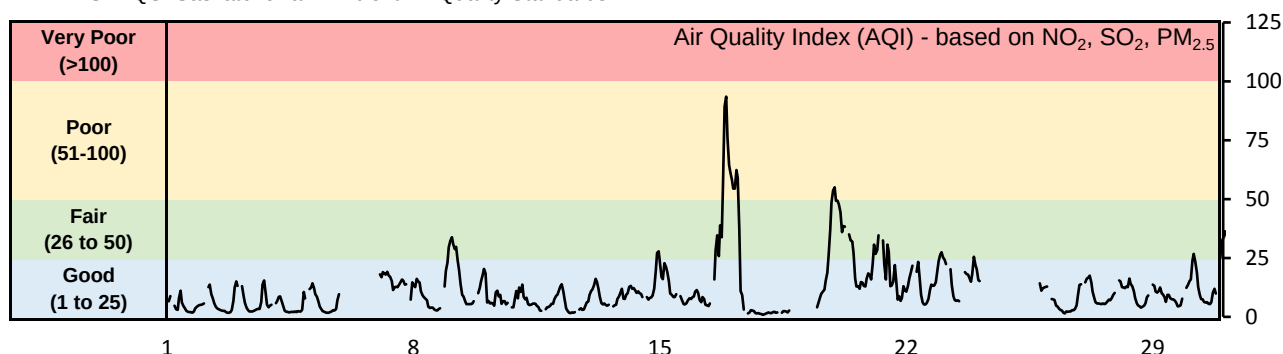
Exceedance Summary (24- Hour Average - Exceedances Highlighted)

Exceedance Day	SO ₂ ppb	PM _{2.5} µg/m ³	H ₂ S ppb	Temp °C	WD deg	WS m/s
Jul-20	0.3	32.5	0.7	19.4	91.6	2.3

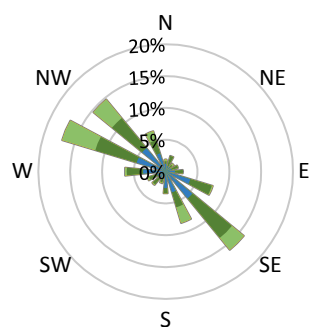
WYAMZ Maidstone Station - July 2017 Summary Report

Pollutants		Month Records		24-Hour Records				1-Hour Records			
Name	Conc. Unit	Avg. Conc.	Total Uptime	Maximum		SAAQS Standard	Exceed Days	Maximum		SAAQS Standard	Exceed Hours
				Conc.	Time			Conc.	Time		
NO	ppb	0.7	94%	2.3	Jul-19	-	-	13.0	Jul-01 04:00	-	-
NO ₂	ppb	2.3	94%	3.6	Jul-20	106	0	14.5	Jul-07 21:00	159	0
NO _x	ppb	3.0	94%	5.5	Jul-01	-	-	25.0	Jul-07 21:00	-	-
SO ₂	ppb	0.3	90%	0.8	Jul-30	48	0	4.2	Jul-13 20:00	172	0
H ₂ S	ppb	1.5	90%	5.5	Jul-17	3.6	2	27.6	Jul-26 06:00	11	14
PM _{2.5}	µg/m ³	9.4	88%	23.3	Jul-16	28	0	85.1	Jul-16 21:00	-	-

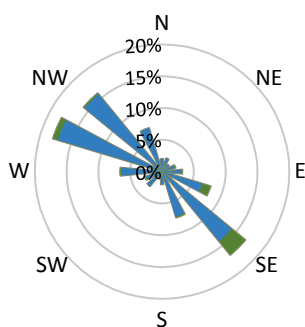
SAAQS: Saskatchewan Ambient Air Quality Standards



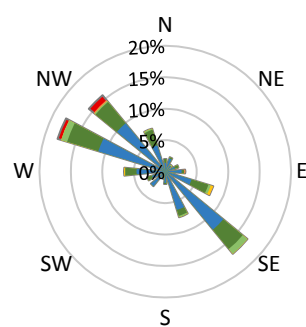
Wind Rose



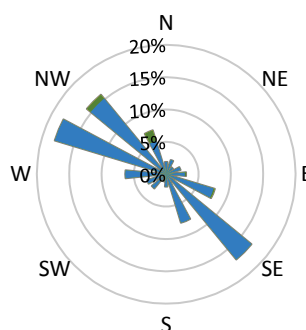
SO₂ Pollutant Rose



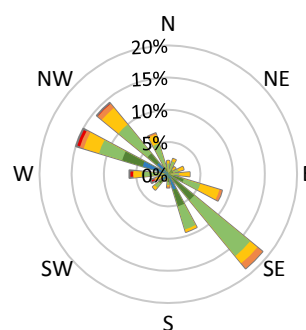
H₂S Pollutant Rose



NO₂ Pollutant Rose



PM_{2.5} Pollutant Rose



Parameters	Unit	Color Code for Wind Speed and Pollution Concentration Class					
Wind Speed	m/s	$0.3 \leq WS < 1.4$	$1.4 \leq WS < 3.1$	$3.1 \leq WS < 7.8$	$7.8 \leq WS < 10.8$	$10.8 \leq WS < 13.6$	$WS \geq 13.6$
SO ₂	ppb	$0 \leq C < 1$	$1 \leq C < 5$	$5 \leq C < 10$	$10 \leq C < 57$	$57 \leq C < 172$	$C \geq 172$
NO ₂	ppb	$0 \leq C < 5$	$5 \leq C < 15$	$15 \leq C < 30$	$30 \leq C < 100$	$100 \leq C < 212$	$C \geq 212$
H ₂ S	ppb	$0 \leq C < 1$	$1 \leq C < 3.6$	$3.6 \leq C < 5$	$5 \leq C < 8$	$8 \leq C < 10.8$	$C \geq 10.8$
PM _{2.5}	$\mu\text{g}/\text{m}^3$	$0 \leq C < 2$	$2 \leq C < 4$	$4 \leq C < 10$	$10 \leq C < 20$	$20 \leq C < 30$	$C \geq 30$

Monthly Update

- Achieved >98% of scheduled uptime for all parameters except PM_{2.5} (88%)
- NO/NO₂/NO_x downtime of 4% results from routine daily Internal Zeroes and Spans
- SO₂/H₂S downtime of 8% results from routine daily Internal Zeroes and Spans
- Particulate downtime due to instrument issues

WYAMZ Maidstone Station - July 2017 Summary Report

Exceedance Summary (1- Hour Average - Exceedances Highlighted)

Exceedance Time	AQI	NO ₂	NO	SO ₂	PM _{2.5}	NO _x	H ₂ S	Temp	WD	WS
-	-	ppb	ppb	ppb	µg/m ³	ppb	ppb	°C	deg	m/s
Jul-15 04:00	21.2	5.9	0.3	0.2	15.9	6.1	11.2	13.3	169.9	0.3
Jul-17 19:00	1.6	0.6	0.2	0.1	1.3	0.8	12.1	15.1	300.8	3.8
Jul-17 20:00	1.3	1.3	0.4	0.1	1.0	1.7	13.1	13.5	301.7	3.0
Jul-17 21:00	1.2	1.3	0.3	0.1	1.0	1.6	13.2	13.2	308.4	2.8
Jul-17 22:00	0.9	0.5	0.3	0.2	0.7	0.8	14.4	11.3	322.9	2.4
Jul-17 23:00	1.1	1.8	0.3	0.1	0.9	2.1	15.3	9.8	288.5	1.3
Jul-18 23:00	-	1.9	0.5	0.2	0.0	2.4	11.2	8.8	207.2	0.4
Jul-19 01:00	-	5.2	6.0	0.2	0.0	11.2	20.0	7.6	261.0	0.5
Jul-19 02:00	-	5.0	12.3	0.2	0.0	17.3	12.9	7.2	325.4	1.0
Jul-19 03:00	-	6.2	3.9	0.1	0.0	10.1	17.5	6.9	291.8	0.4
Jul-19 04:00	-	4.8	4.3	0.1	0.0	9.0	18.5	6.2	282.2	0.4
Jul-19 05:00	-	5.3	3.8	0.2	0.0	9.1	17.2	6.4	321.9	1.0
Jul-26 06:00	4.7	5.5	4.8	0.1	3.8	10.3	27.6	10.5	128.8	0.4
Jul-26 07:00	4.4	4.6	4.9	0.2	3.5	9.5	12.0	13.5	133.6	1.0

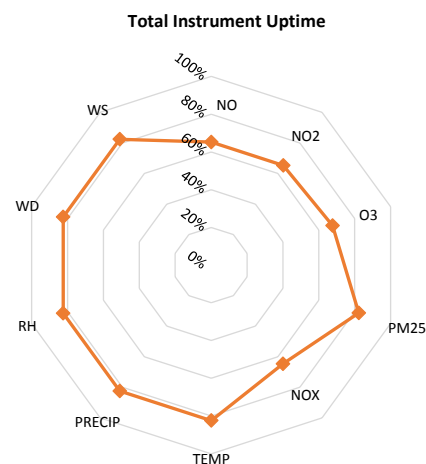
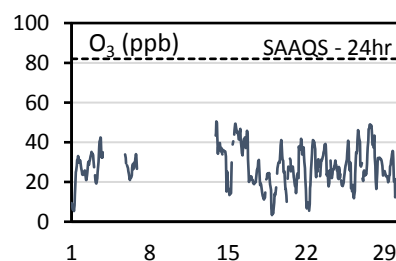
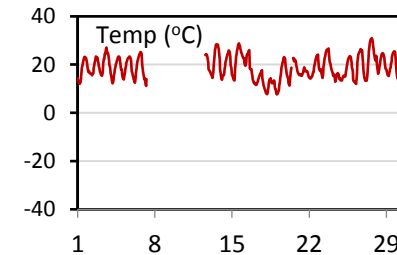
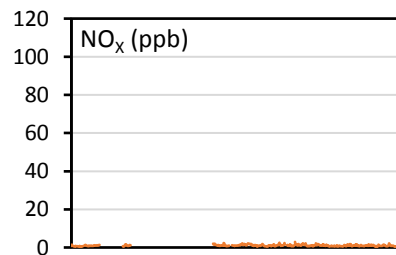
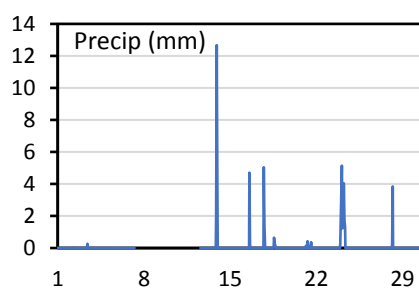
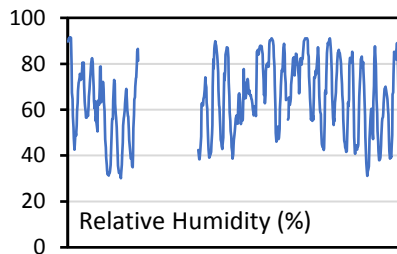
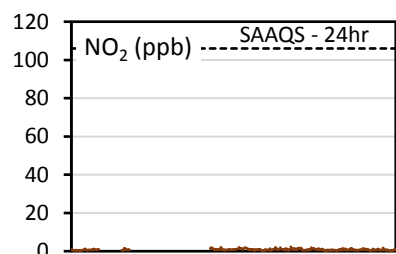
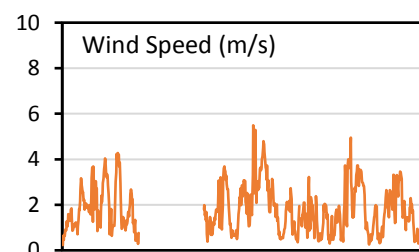
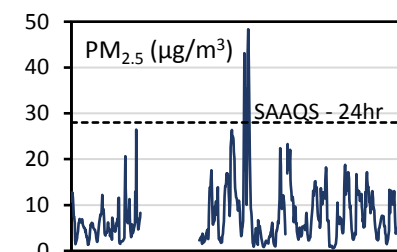
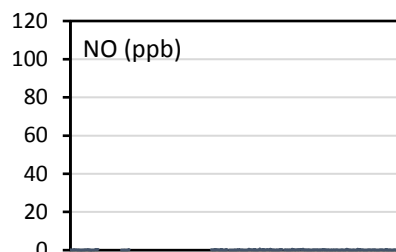
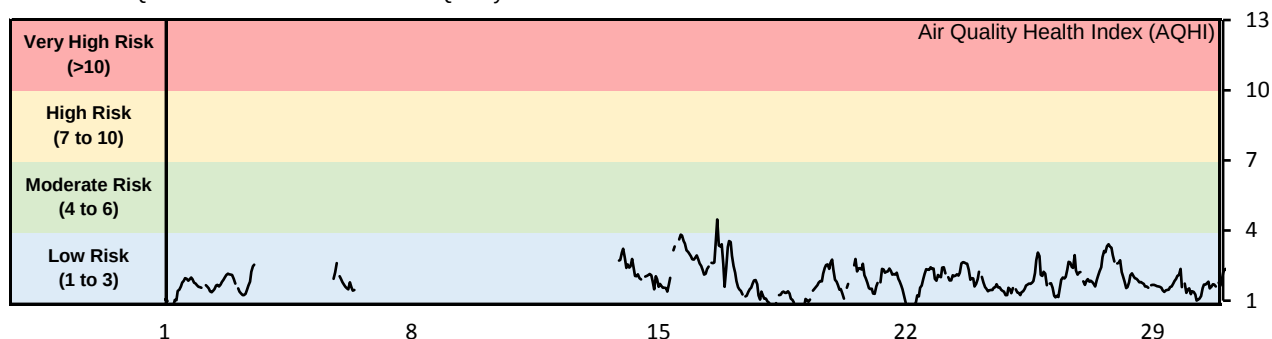
Exceedance Summary (24- Hour Average - Exceedances Highlighted)

Exceedance Day	AQI	NO ₂	NO	SO ₂	PM _{2.5}	NO _x	H ₂ S	Temp	WD	WS
-	-	ppb	ppb	ppb	µg/m ³	ppb	ppb	°C	deg	m/s
Jul-17	21.6	1.4	0.3	0.2	16.1	1.7	5.5	13.2	286.5	2.9
Jul-19	27.6	3.0	2.3	0.4	19.9	5.3	4.8	14.9	255.6	0.9

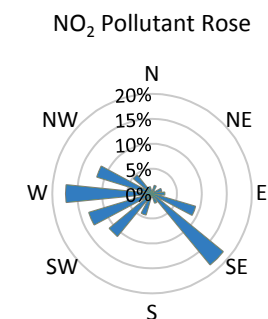
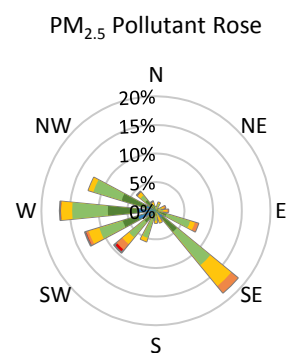
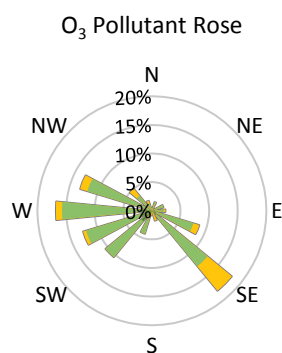
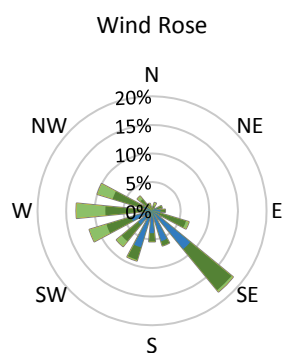
WYAMZ Meadow Lake Station - July 2017 Summary Report

Pollutants		Month Records		24-Hour Records				1-Hour Records			
Name	Conc. Unit	Avg. Conc.	Total Uptime	Maximum		SAAQS Standard	Exceed Days	Maximum		SAAQS Standard	Exceed Hours
				Conc.	Time			Conc.	Time		
NO	ppb	0.2	65%	0.3	Jul-18	-	-	0.8	Jul-18 08:00	-	-
NO ₂	ppb	0.8	65%	1.4	Jul-13	106	0	2.3	Jul-21 07:00	159	0
NO _x	ppb	1.0	65%	1.8	Jul-13	-	-	2.9	Jul-21 07:00	-	-
O ₃	ppb	27.4	68%	46.2	Jul-13	-	-	50.5	Jul-13 23:00	82	0
PM _{2.5}	µg/m ³	7.8	82%	17.4	Jul-15	28	0	48.4	Jul-17 00:00	-	-

SAAQS: Saskatchewan Ambient Air Quality Standards



WYAMZ Meadow Lake Station - July 2017 Summary Report



Parameters	Unit	Color Code for Wind Speed and Pollution Concentration Class					
Wind Speed	m/s	$0.3 \leq WS < 1.4$	$1.4 \leq WS < 3.1$	$3.1 \leq WS < 7.8$	$7.8 \leq WS < 10.8$	$10.8 \leq WS < 13.6$	$WS \geq 13.6$
O ₃	ppb	$0 \leq C < 10$	$10 \leq C < 20$	$20 \leq C < 40$	$40 \leq C < 60$	$60 \leq C < 82$	$C \geq 82$
NO ₂	ppb	$0 \leq C < 5$	$5 \leq C < 15$	$15 \leq C < 30$	$30 \leq C < 100$	$100 \leq C < 212$	$C \geq 212$
PM _{2.5}	$\mu\text{g}/\text{m}^3$	$0 \leq C < 2$	$2 \leq C < 4$	$4 \leq C < 10$	$10 \leq C < 20$	$20 \leq C < 30$	$C \geq 30$

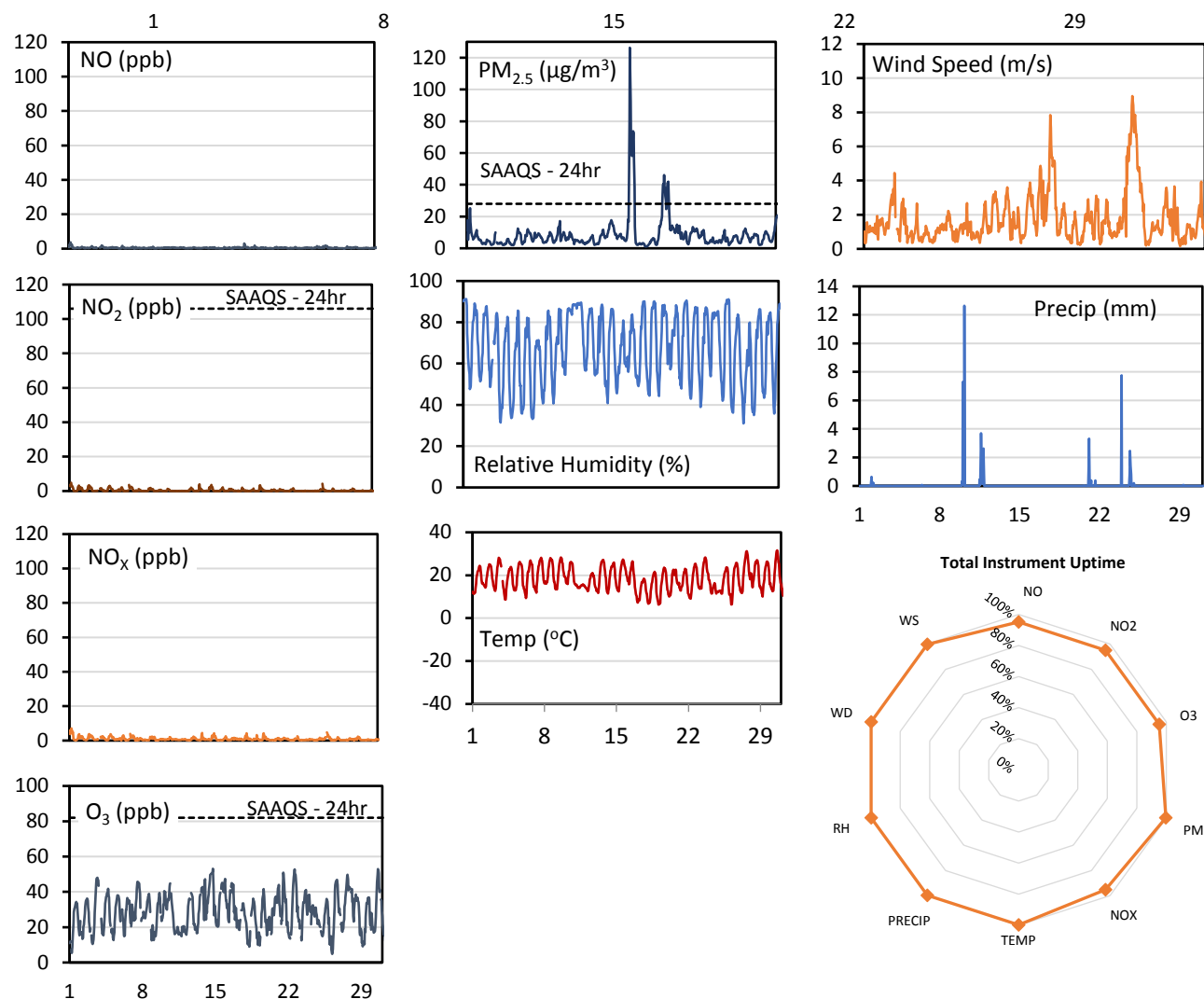
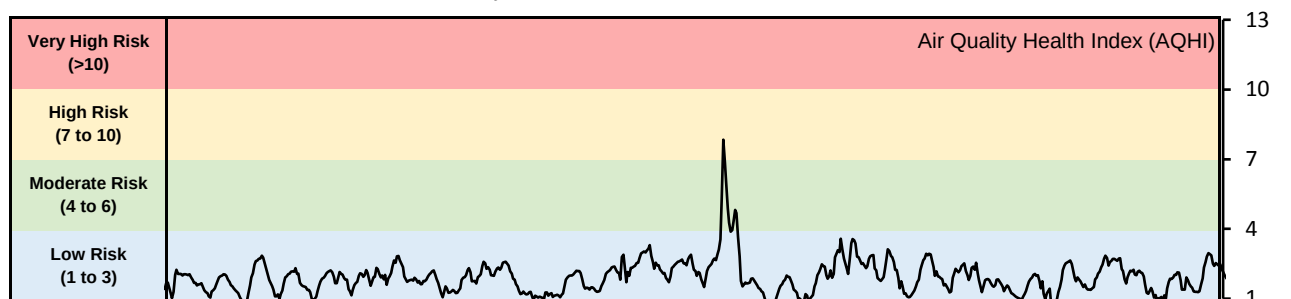
Monthly Update

- Downtime due to instrument issues
- Downtime of 4% results from routine daily Internal Zeroes and Spans

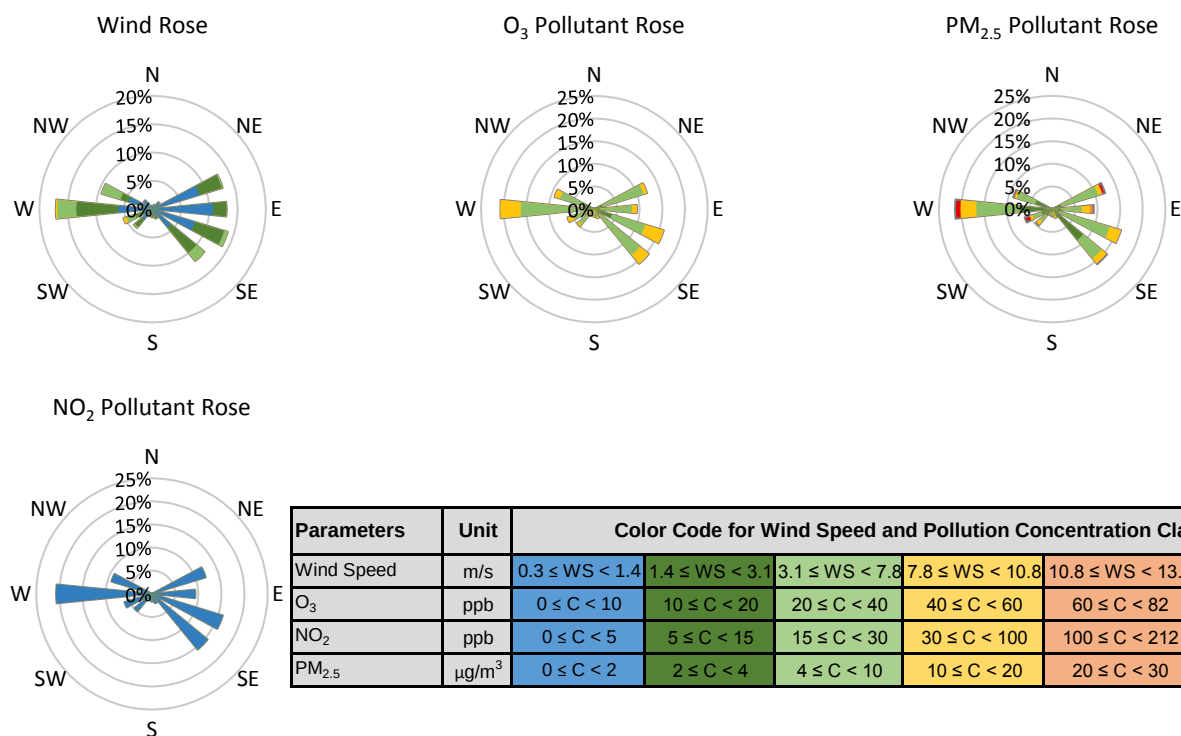
WYAMZ Unity Station - July 2017 Summary Report

Pollutants		Month Records		24-Hour Records				1-Hour Records			
Name	Conc. Unit	Avg. Conc.	Total Uptime	Maximum		SAAQS Standard	Exceed Days	Maximum		SAAQS Standard	Exceed Hours
				Conc.	Time			Conc.	Time		
NO	ppb	0.5	95%	1.0	Jul-01	-	-	3.7	Jul-01 05:00	-	-
NO ₂	ppb	0.4	95%	1.6	Jul-01	106	0	4.8	Jul-01 04:00	159	0
NO _x	ppb	1.0	95%	2.7	Jul-01	-	-	7.1	Jul-01 05:00	-	-
O ₃	ppb	28.4	95%	39.9	Jul-14	-	-	53.1	Jul-14 18:00	82	0
PM _{2.5}	µg/m ³	8.7	100%	28.9	Jul-20	28	1	126.3	Jul-16 20:00	-	-

SAAQS: Saskatchewan Ambient Air Quality Standards



WYAMZ Unity Station - July 2017 Summary Report



Parameters	Unit	Color Code for Wind Speed and Pollution Concentration Class						
Wind Speed	m/s	$0.3 \leq WS < 1.4$	$1.4 \leq WS < 3.1$	$3.1 \leq WS < 7.8$	$7.8 \leq WS < 10.8$	$10.8 \leq WS < 13.6$	$WS \geq 13.6$	
O ₃	ppb	$0 \leq C < 10$	$10 \leq C < 20$	$20 \leq C < 40$	$40 \leq C < 60$	$60 \leq C < 82$	$C \geq 82$	
NO ₂	ppb	$0 \leq C < 5$	$5 \leq C < 15$	$15 \leq C < 30$	$30 \leq C < 100$	$100 \leq C < 212$	$C \geq 212$	
PM _{2.5}	$\mu\text{g}/\text{m}^3$	$0 \leq C < 2$	$2 \leq C < 4$	$4 \leq C < 10$	$10 \leq C < 20$	$20 \leq C < 30$	$C \geq 30$	

Monthly Update

- Achieved >99% of scheduled uptime for all parameters
- Downtime of 4% results from routine daily Internal Zeroes and Spans

Exceedance Summary (24- Hour Average - Exceedances Highlighted)

Exceedance Time	AQHI	NO ₂	NO	O ₃	PM _{2.5}	NO _x	Temp	WD	WS
	-	ppb	ppb	ppb	$\mu\text{g}/\text{m}^3$	ppb	°C	deg	m/s
Jul-20	2.8	0.3	0.4	27.9	28.9	0.6	16.8	79.1	1.4