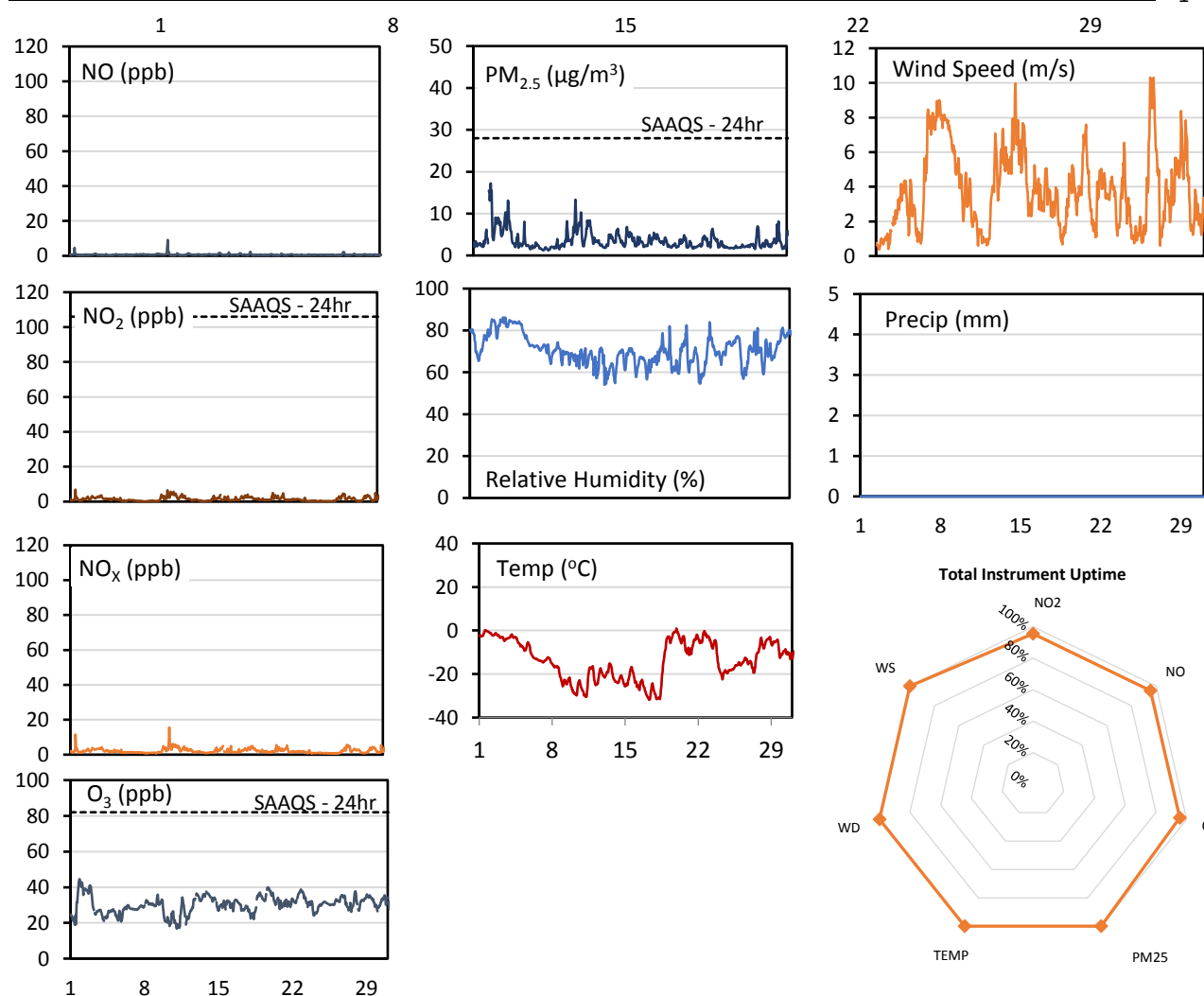
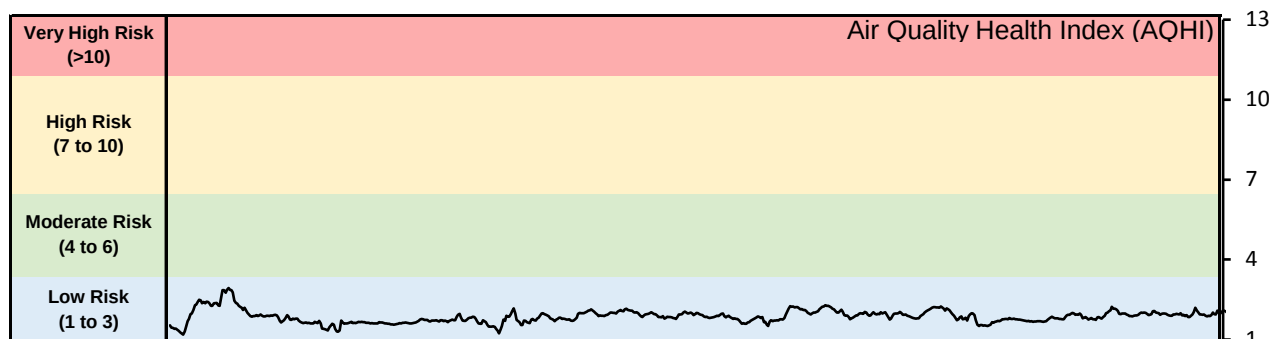


SESAA Esterhazy Station - December 2016 Summary Report

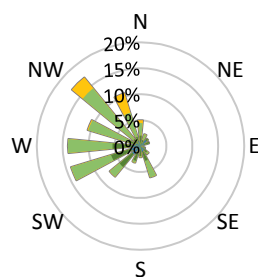
Pollutants		Month Records		24-Hour Records				1-Hour Records			
Name	Conc. Unit	Avg. Conc.	Total Uptime	Maximum		SAAQS Standard	Exceed Days	Maximum		SAAQS Standard	Exceed Hours
				Conc.	Time			Conc.	Time		
NO	ppb	0.7	95%	1.6	Dec-10	-	-	9.1	Dec-10 12:00	-	-
NO ₂	ppb	1.4	96%	3.2	Dec-11	106	0	6.8	Dec-01 12:00	159	0
NO _x	ppb	2.1	95%	4.7	Dec-10	-	-	15.6	Dec-10 12:00	-	-
O ₃	ppb	30.3	96%	38.9	Dec-02	-	-	44.5	Dec-01 20:00	82	0
PM _{2.5}	µg/m ³	3.6	100%	7.7	Dec-02	28	0	17.2	Dec-02 16:00	-	-

SAAQS: Saskatchewan Ambient Air Quality Standards

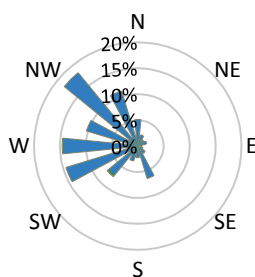


SESAA Esterhazy Station - December 2016 Summary Report

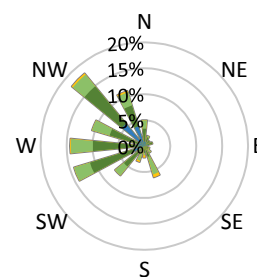
Wind Rose



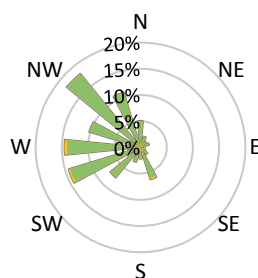
NO₂ Pollutant Rose



PM_{2.5} Pollutant Rose



O₃ Pollutant Rose



Parameters	Unit	Color Code for Wind Speed and Pollution Concentration Class					
Wind Speed	m/s	$0.3 \leq WS < 1.4$	$1.4 \leq WS < 3.1$	$3.1 \leq WS < 7.8$	$7.8 \leq WS < 10.8$	$10.8 \leq WS < 13.6$	$WS \geq 13.6$
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}	ug/m ³	$0 \leq C < 2$	$2 \leq C < 4$	$4 \leq C < 10$	$10 \leq C < 20$	$20 \leq C < 30$	$C \geq 30$

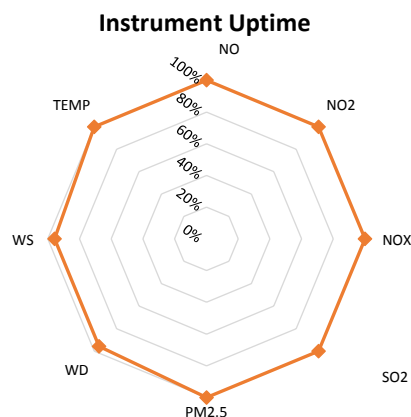
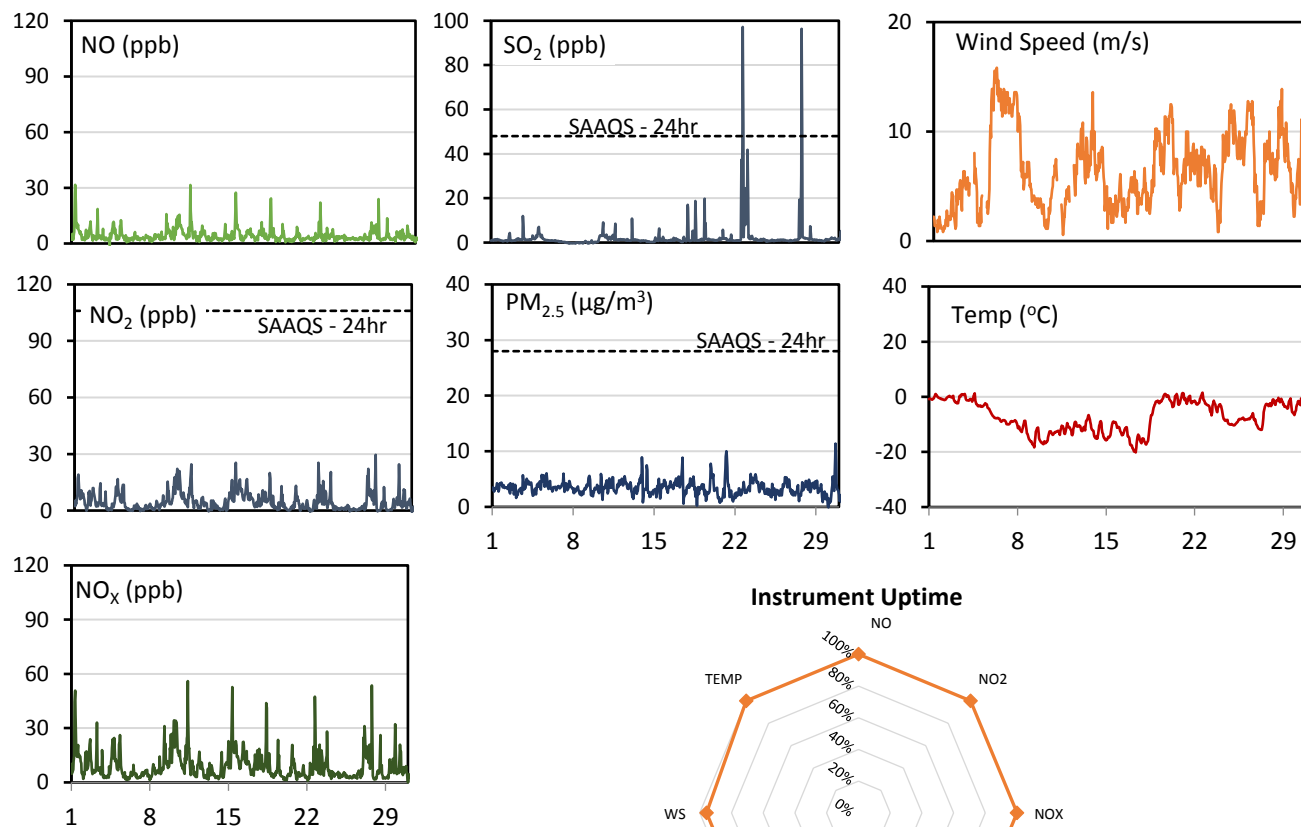
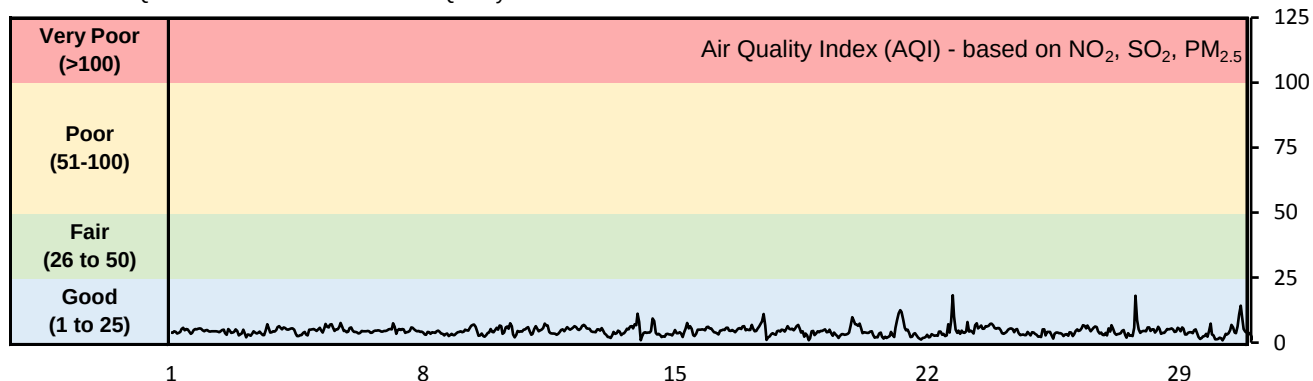
Monthly Update

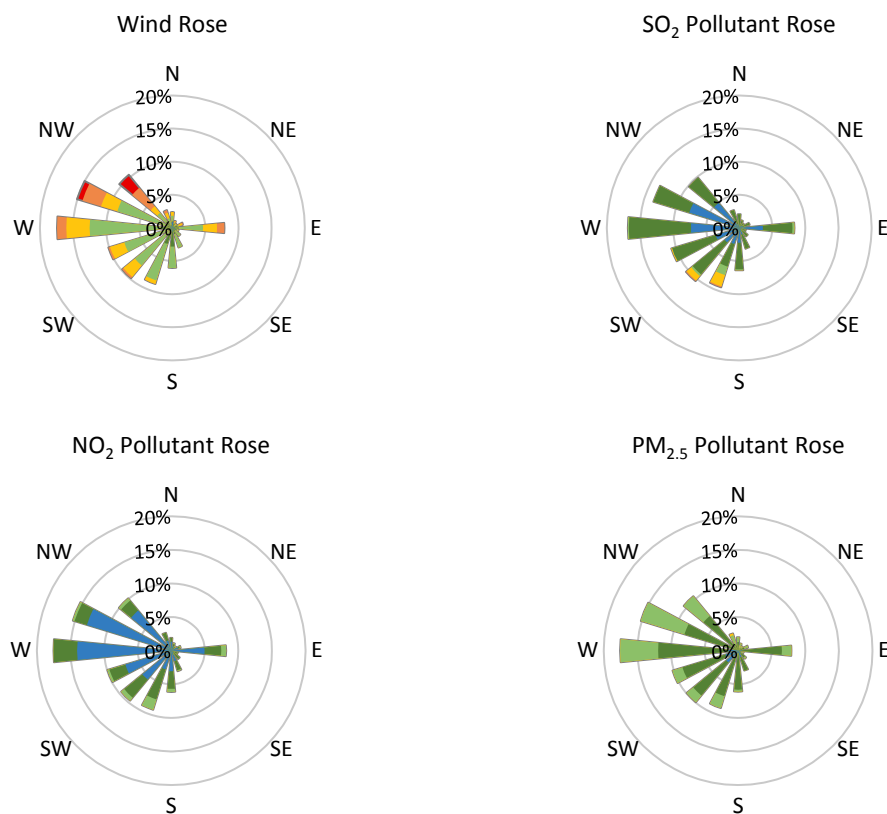
- Achieved >99% of scheduled uptime for all parameters
- Downtime of 4% results from routine daily Internal Zeroes and Spans

SESAA Estevan Station - December 2016 Summary Report

Pollutants		Month Records		24-Hour Records				1-Hour Records			
Name	Conc. Unit	Avg. Conc.	Uptime	Maximum		SAAQS Standard	Exceed Days	Maximum		SAAQS Standard	Exceed Hours
				Conc.	Time			Conc.	Time		
NO	ppb	4.3	100%	8.4	Dec-01	-	-	31.6	Dec-01 08:00	-	-
NO ₂	ppb	4.6	100%	11.5	Dec-15	106	0	29.6	Dec-27 19:00	159	0
NO _x	ppb	8.9	100%	19.7	Dec-10	-	-	56.0	Dec-11 09:00	-	-
SO ₂	ppb	2.2	100%	13.4	Dec-22	48	0	97.2	Dec-22 17:00	172	0
PM _{2.5}	µg/m ³	3.4	100%	4.4	Dec-23	28	0	11.4	Dec-30 17:00	-	-

SAAQS: Saskatchewan Ambient Air Quality Standards





Parameters	Unit	Color Code for Wind Speed and Pollution Concentration Class						
Wind Speed	m/s	$0.3 \leq WS < 1.4$	$1.4 \leq WS < 3.1$	$3.1 \leq WS < 7.8$	$7.8 \leq WS < 10.8$	$10.8 \leq WS < 13.6$	$WS \geq 13.6$	
NO ₂	ppb	$0 \leq C < 5$	$5 \leq C < 15$	$15 \leq C < 30$	$30 \leq C < 100$	$100 \leq C < 212$	$C \geq 212$	
SO ₂	ppb	$1 \leq C < 5$	$6 \leq C < 15$	$16 \leq C < 30$	$31 \leq C < 100$	$101 \leq C < 212$	$C \geq 213$	
PM _{2.5}	µg/m ³	$0 \leq C < 2$	$2 \leq C < 4$	$4 \leq C < 10$	$10 \leq C < 20$	$20 \leq C < 30$	$C \geq 30$	

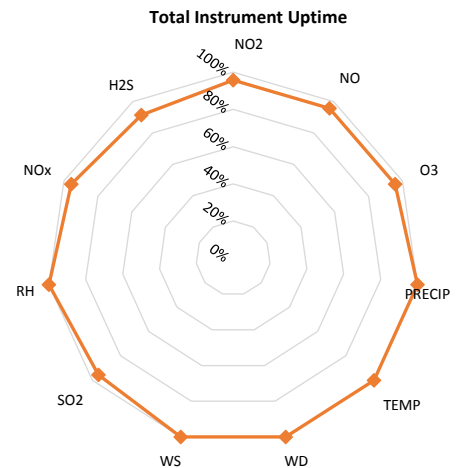
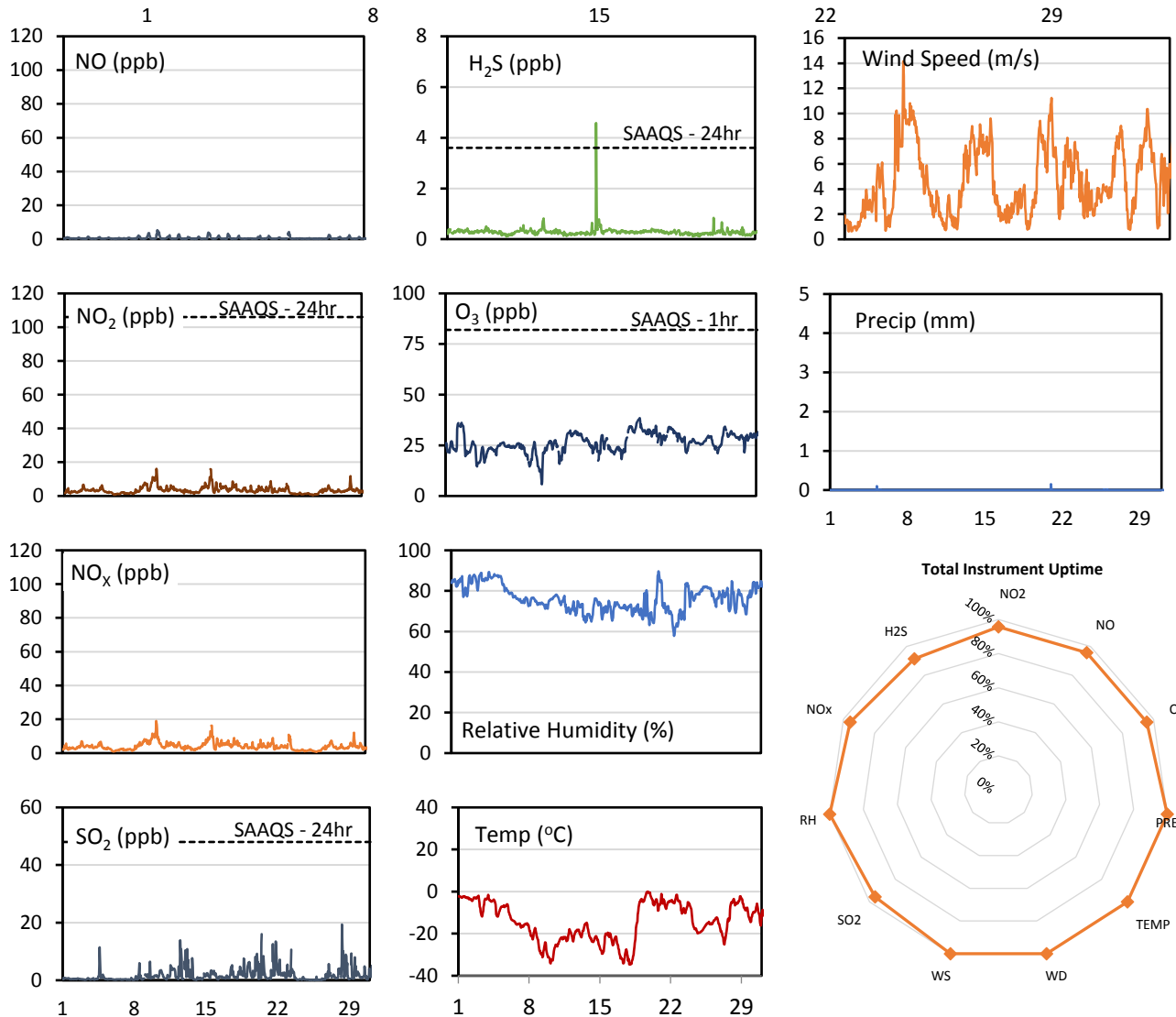
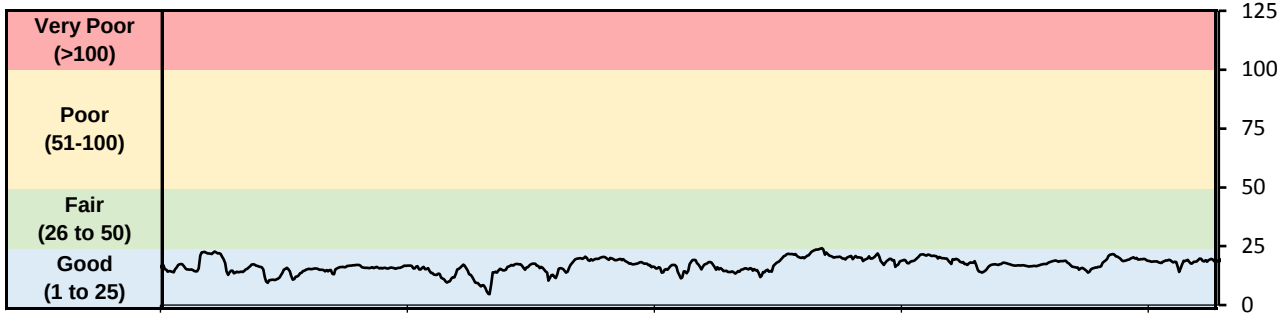
Monthly Update

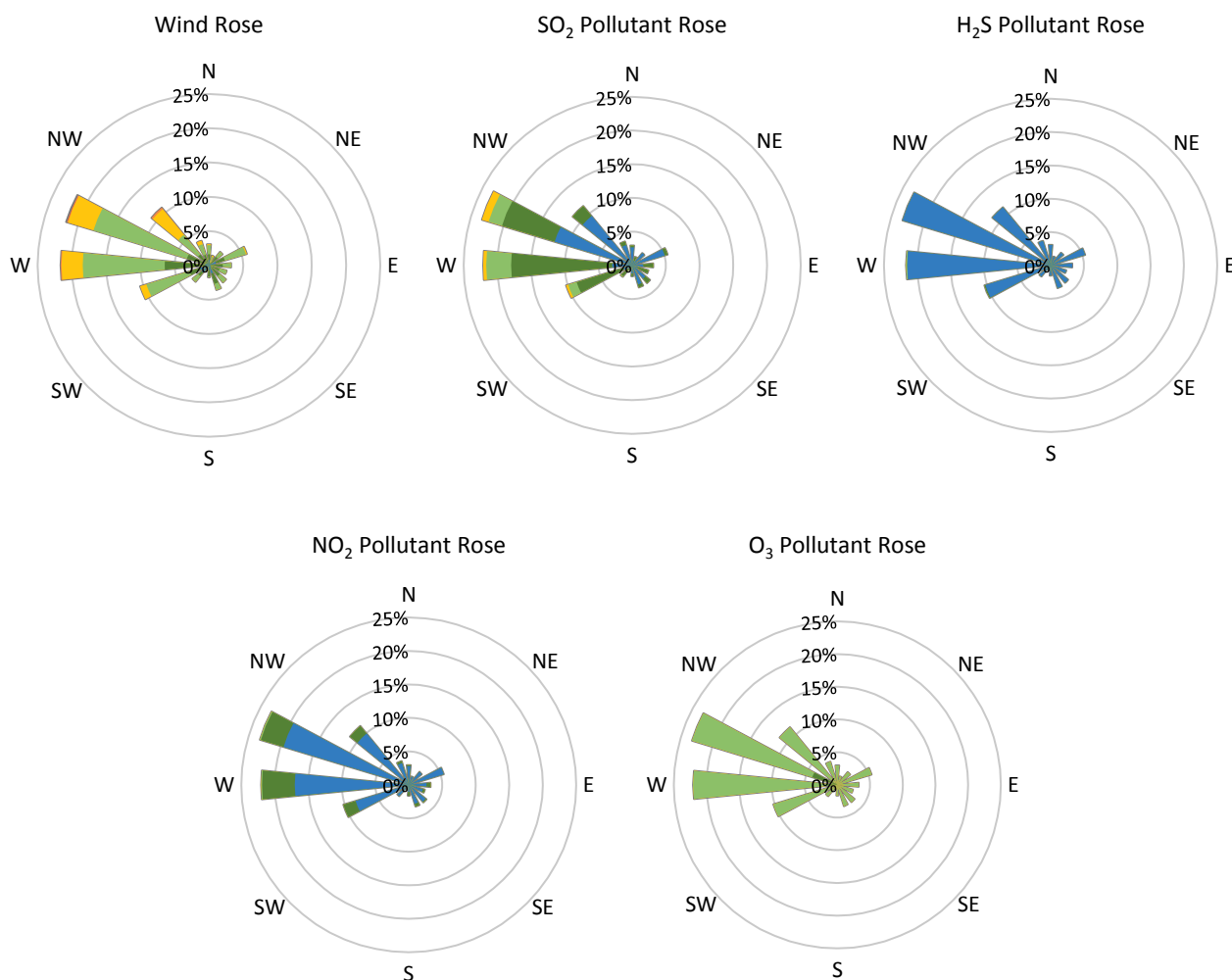
- Achieved 100% uptime for all parameters except wind speed and direction (data discarded)
- Wind speed and direction taken from Estevan Airport

SESAA Glen Ewen Station - December 2016 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	0.6	96%	1.5	Dec-10	-	-	5.3	Dec-10 09:00	-	-
NO ₂	ppb	3.4	96%	7.5	Dec-15	106	0	16.1	Dec-10 07:00	159	0
NO _x	ppb	4.0	96%	8.9	Dec-10	-	-	19.0	Dec-10 07:00	-	-
SO ₂	ppb	1.8	96%	4.9	Dec-28	48	0	19.4	Dec-28 07:00	172	0
H ₂ S	ppb	0.3	91%	0.6	Dec-15	3.6	0	4.6	Dec-15 12:00	11	0
O ₃	ppb	26.4	96%	34.5	Dec-19	-	-	38.4	Dec-19 18:00	82	0

SAAQS: Saskatchewan Ambient Air Quality Standards





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	$0 \leq C < 1$	$1 \leq C < 3.6$	$3.6 \leq C < 5$	$5 \leq C < 8$	$8 \leq C < 10.8$	$C \geq 10.8$
O ₃	ppb	$0 \leq C < 10$	$10 \leq C < 20$	$20 \leq C < 40$	$40 \leq C < 60$	$60 \leq C < 82$	$C \geq 82$

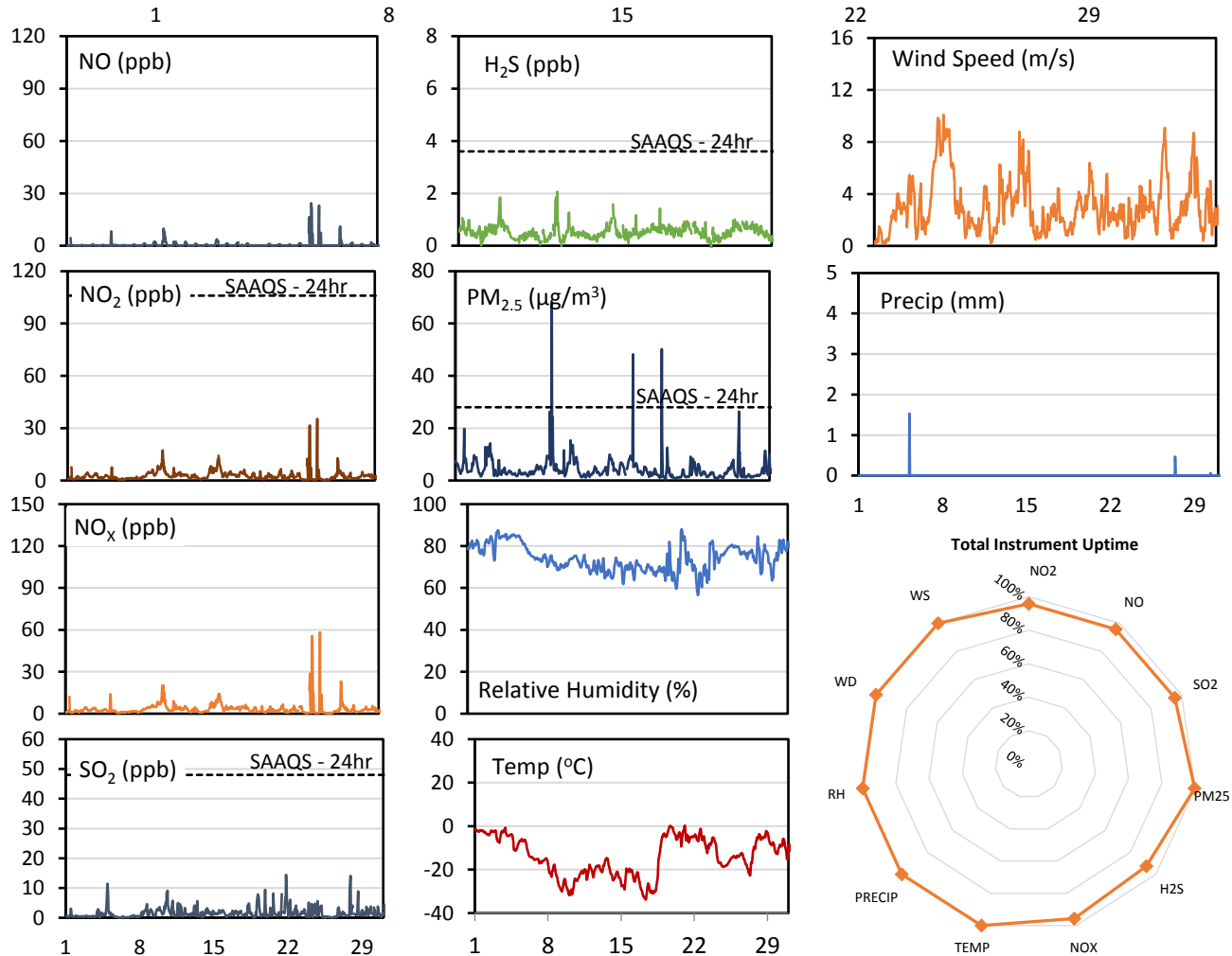
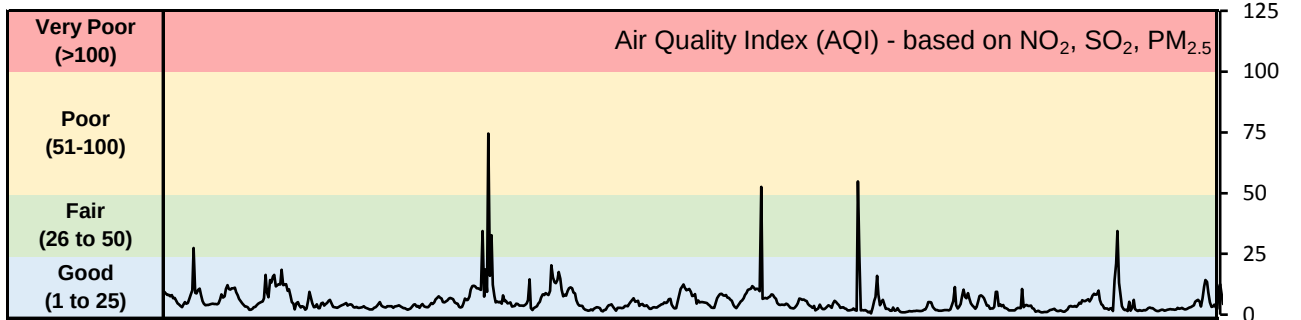
Monthly Update

- Achieved 100% of scheduled uptime for all parameters except H₂S (95.6%)
- Downtime of 4% results from routine daily Internal Zeroes and Spans

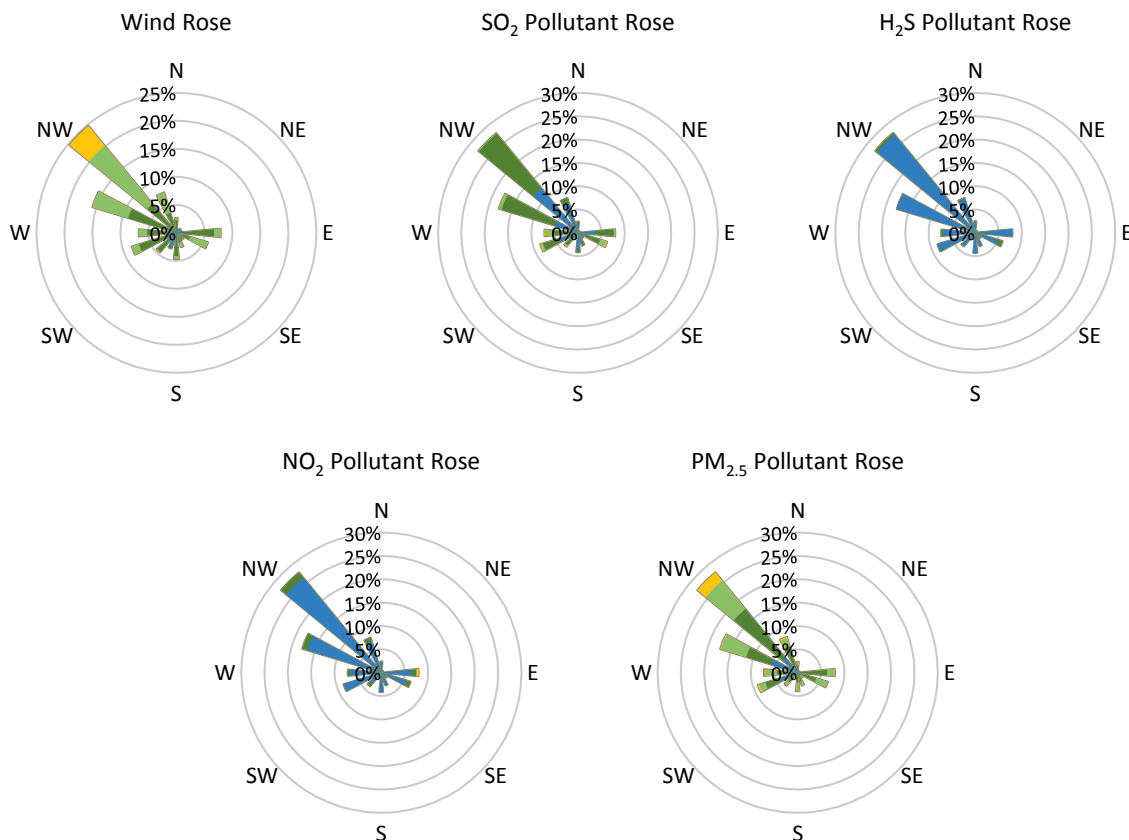
SESAA Oxbow Station - December 2016 Summary Report

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	0.6	96%	3.6	Dec-24	-	-	24.3	Dec-24 15:00	-	-
NO ₂	ppb	2.8	96%	7.4	Dec-15	106	0	35.3	Dec-25 09:00	159	0
NO _x	ppb	3.3	96%	8.6	Dec-10	-	-	58.3	Dec-25 09:00	-	-
SO ₂	ppb	1.6	96%	3.4	Dec-21	48	0	14.4	Dec-21 20:00	172	0
H ₂ S	ppb	0.5	92%	0.8	Dec-15	3.6	0	2.1	Dec-10 11:00	11	0
PM _{2.5}	µg/m ³	4.3	100%	9.9	Dec-10	28	0	68.0	Dec-10 05:00	-	-

SAAQS: Saskatchewan Ambient Air Quality Standards



SESAA Oxbow Station - December 2016 Summary Report



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	
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 < 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	

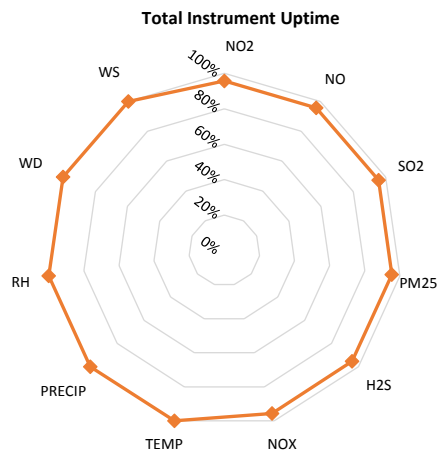
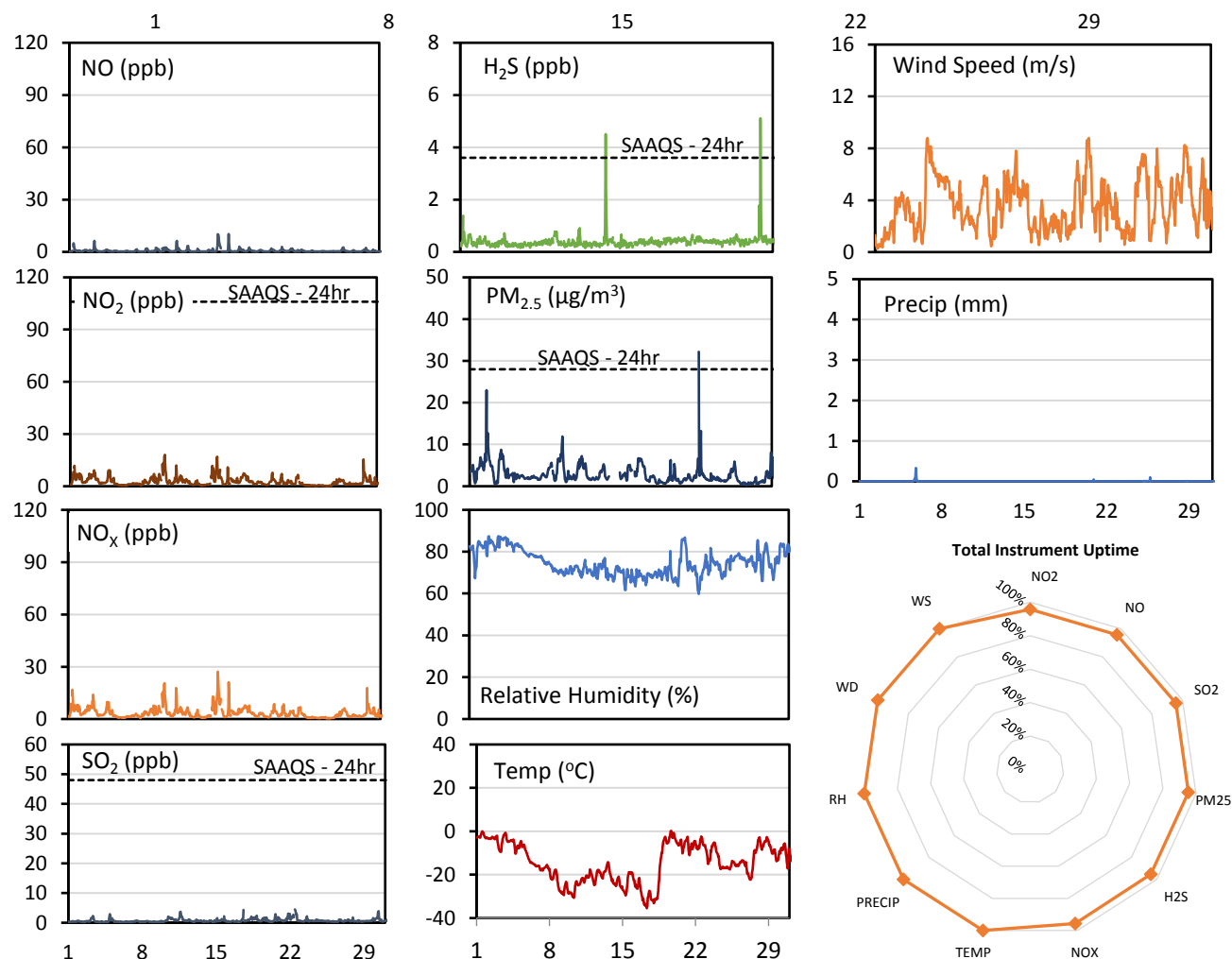
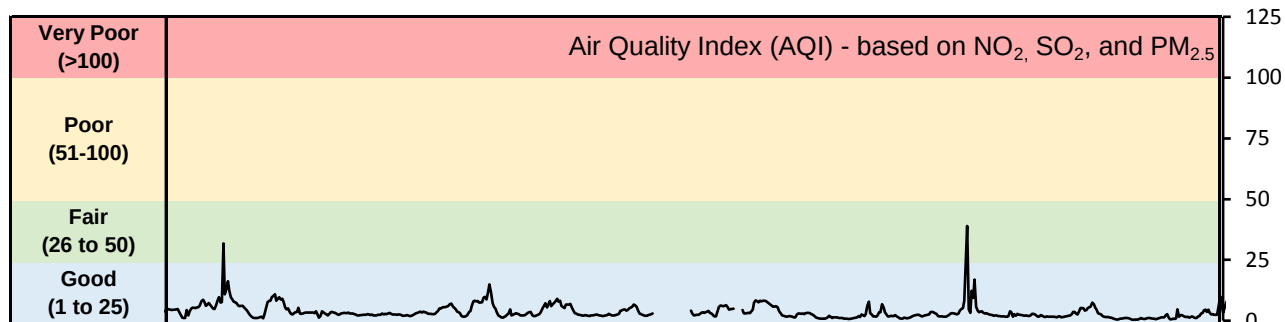
Monthly Update

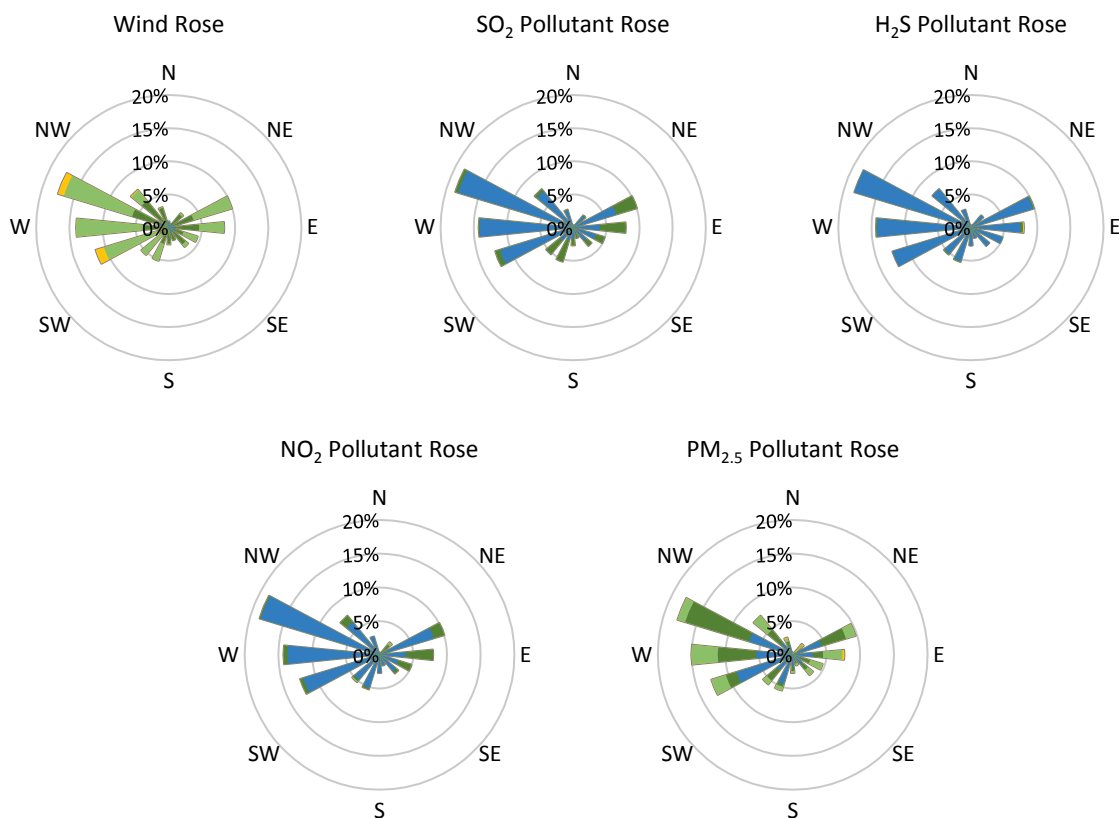
- Achieved >99% of scheduled uptime for all parameters except H₂S (96.7%)
- All compliance parameters are above 90% data validity
- Downtime of 4% results from routine daily internal zeroes and spans

SESAA Stoughton Station - December 2016 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	96%	2.4	Dec-15	-	-	10.3	Dec-16 10:00	-	-
NO ₂	ppb	2.7	96%	6.3	Dec-15	106	0	18.1	Dec-10 06:00	159	0
NO _x	ppb	3.4	96%	8.7	Dec-15	-	-	27.2	Dec-15 09:00	-	-
SO ₂	ppb	0.7	96%	1.8	Dec-22	48	0	4.5	Dec-22 11:00	172	0
H ₂ S	ppb	0.4	95%	0.8	Dec-29	3.6	0	5.1	Dec-29 20:00	11	0
PM _{2.5}	µg/m ³	2.8	95%	7.3	Dec-02	28	0	32.2	Dec-23 18:00	-	-

SAAQS: Saskatchewan Ambient Air Quality Standards





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}	$\mu\text{g}/\text{m}^3$	$0 \leq C < 2$	$2 \leq C < 4$	$4 \leq C < 10$	$10 \leq C < 20$	$20 \leq C < 30$	$C \geq 30$	

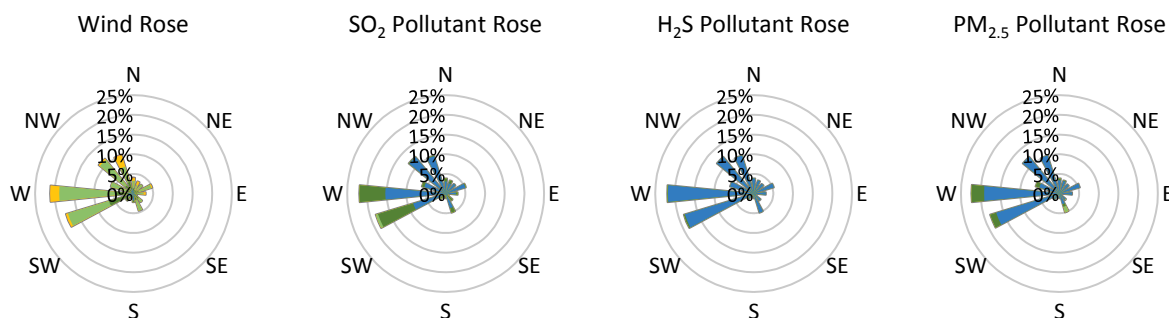
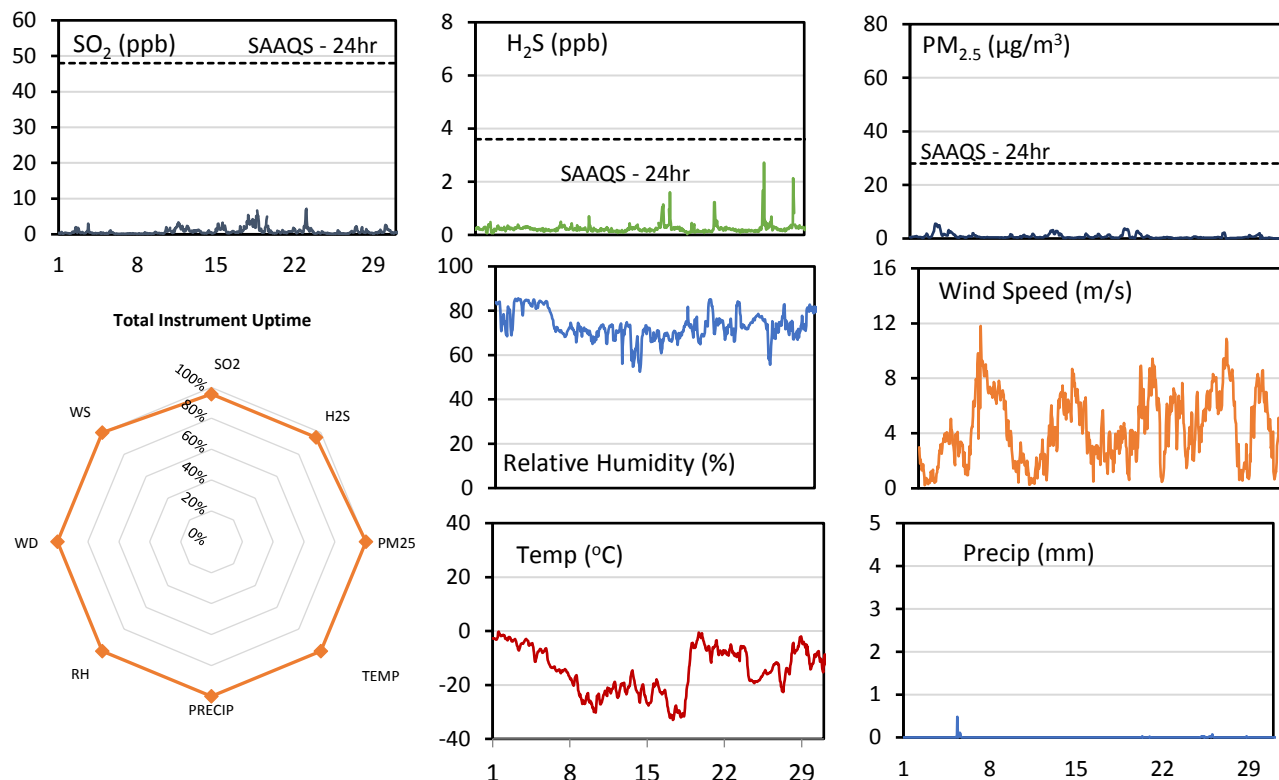
Monthly Update

- Achieved >99% of scheduled uptime for all parameters except PM_{2.5} (95.4%)
- Downtime of 4% due to routine daily internal zeroes and spans
- All compliance parameters are above 90% validity

SESAA Wauchope Station - December 2016 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	0.8	96%	3.1	Dec-18	48	0	7.2	Dec-23 01:00	172	0
H ₂ S	ppb	0.2	96%	0.6	Dec-18	3.6	0	2.7	Dec-27 08:00	11	0
PM _{2.5}	µg/m ³	0.8	100%	3.0	Dec-03	28	0	5.6	Dec-03 00:00	-	-

SAAQS: Saskatchewan Ambient Air Quality Standards



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

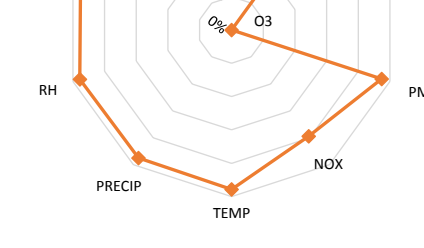
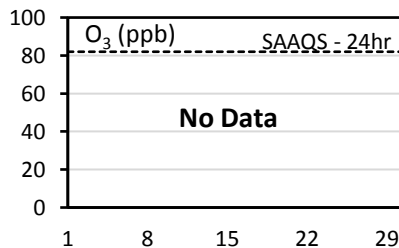
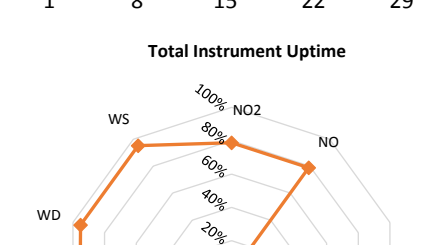
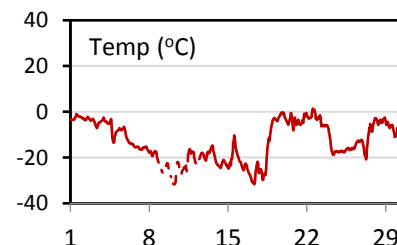
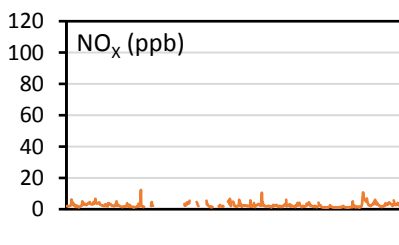
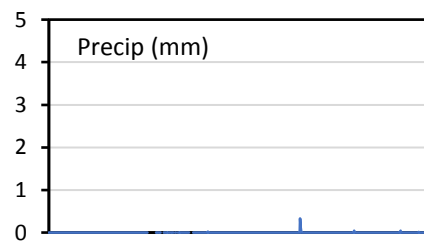
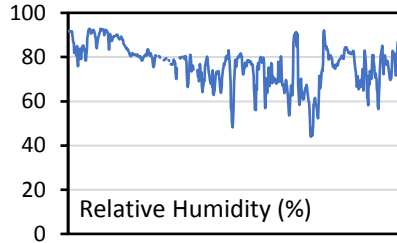
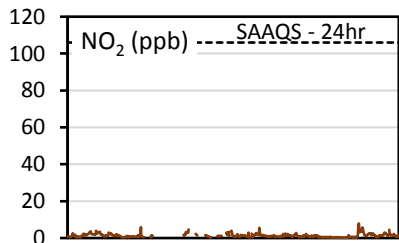
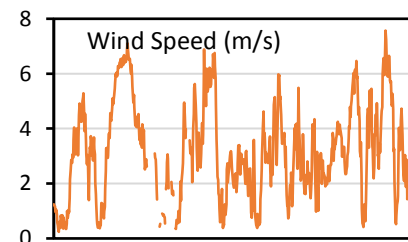
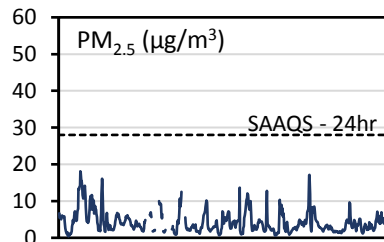
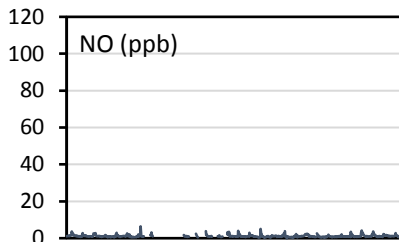
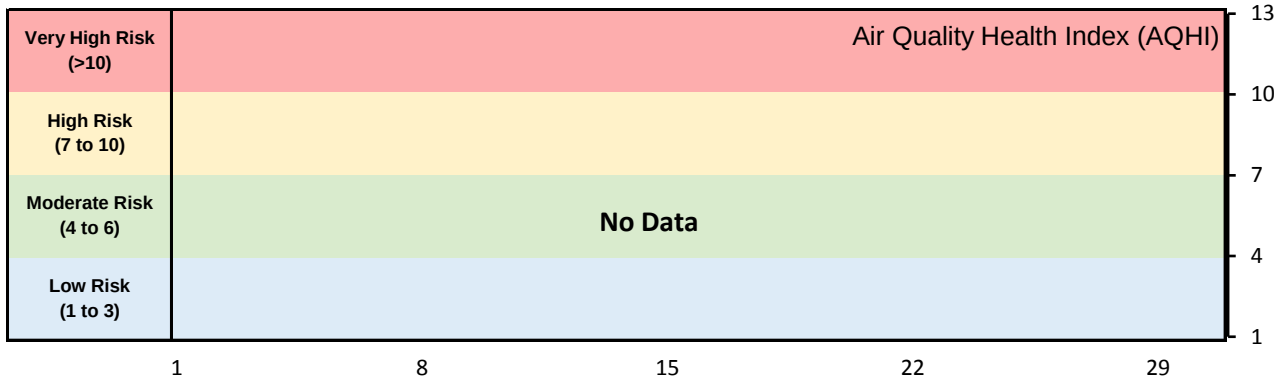
Monthly Update

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

SESAA Wawota Station - December 2016 Summary Report

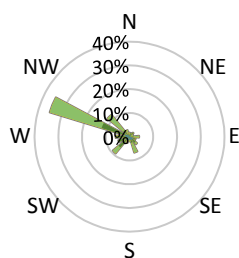
Pollutants		Month Records		24-Hour Records				1-Hour Records			
Name	Conc. Unit	Avg. Conc.	Uptime	Maximum		SAAQS Standard	Exceed Days	Maximum		SAAQS Standard	Exceed Hours
				Conc.	Time			Conc.	Time		
NO	ppb	1.2	79%	1.7	Dec-08	-	-	6.4	Dec-07 15:00	-	-
NO ₂	ppb	1.3	79%	3.0	Dec-27	106	0	7.9	Dec-27 09:00	159	0
NO _x	ppb	2.5	79%	4.5	Dec-27	-	-	12.3	Dec-07 15:00	-	-
O ₃	ppb	NoData	0%	NoData	NoData	-	-	NoData	NoData	82	0
PM _{2.5}	µg/m ³	4.3	95%	9.8	Dec-03	28	0	18.1	Dec-02 23:00	-	-

SAAQS: Saskatchewan Ambient Air Quality Standards

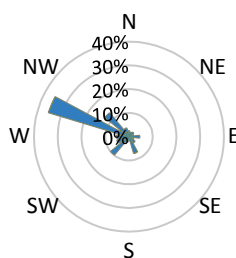


SESAA Wawota Station - December 2016 Summary Report

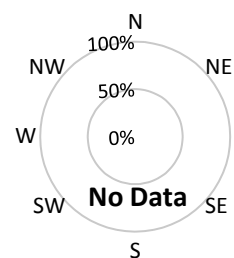
Wind Rose



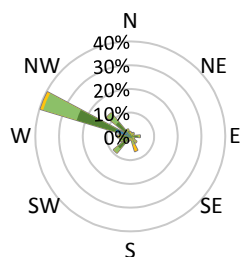
NO₂ Pollutant Rose



O₃ Pollutant Rose



PM_{2.5} 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	
O ₃	ppb	0 ≤ C < 10	10 ≤ C < 20	20 ≤ C < 40	40 ≤ C < 60	60 ≤ C < 82	C ≥ 82	
NO ₂	ppb	0 ≤ C < 5	5 ≤ C < 15	15 ≤ C < 30	30 ≤ C < 100	100 ≤ C < 212	C ≥ 212	
PM _{2.5}	µg/m ³	0 ≤ C < 2	2 ≤ C < 4	4 ≤ C < 10	10 ≤ C < 20	20 ≤ C < 30	C ≥ 30	

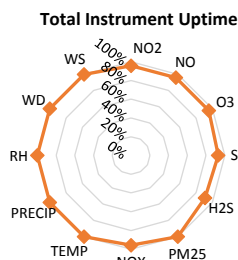
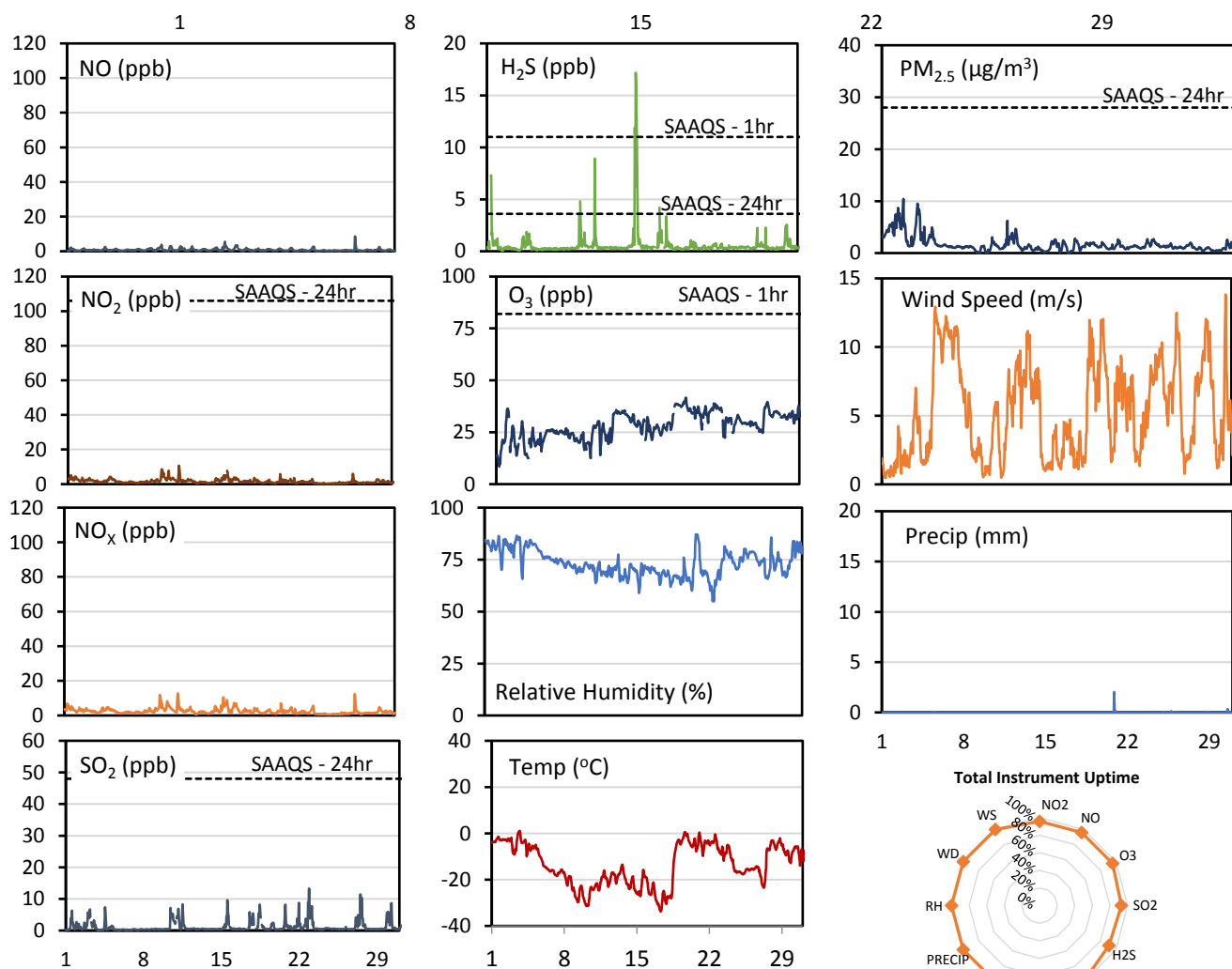
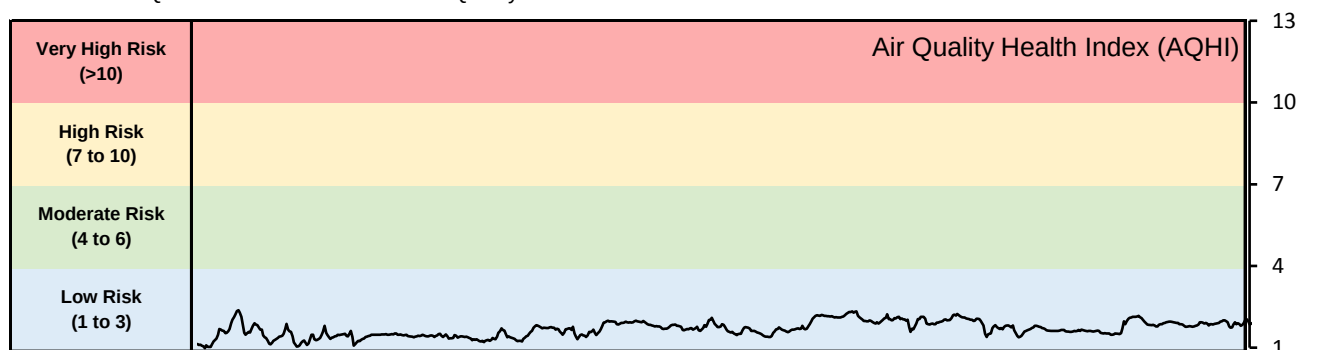
Monthly Update

- Achieved 82% of scheduled uptime for NO/NO₂/NO_x, 0% for O₃, and 95-96% uptime for all other parameters
- Downtime of 4% due to routine daily internal zeroes and spans
- Additional downtime for NO/NO₂/NO_x due to operational issues
- O₃ analyzer removed for repair

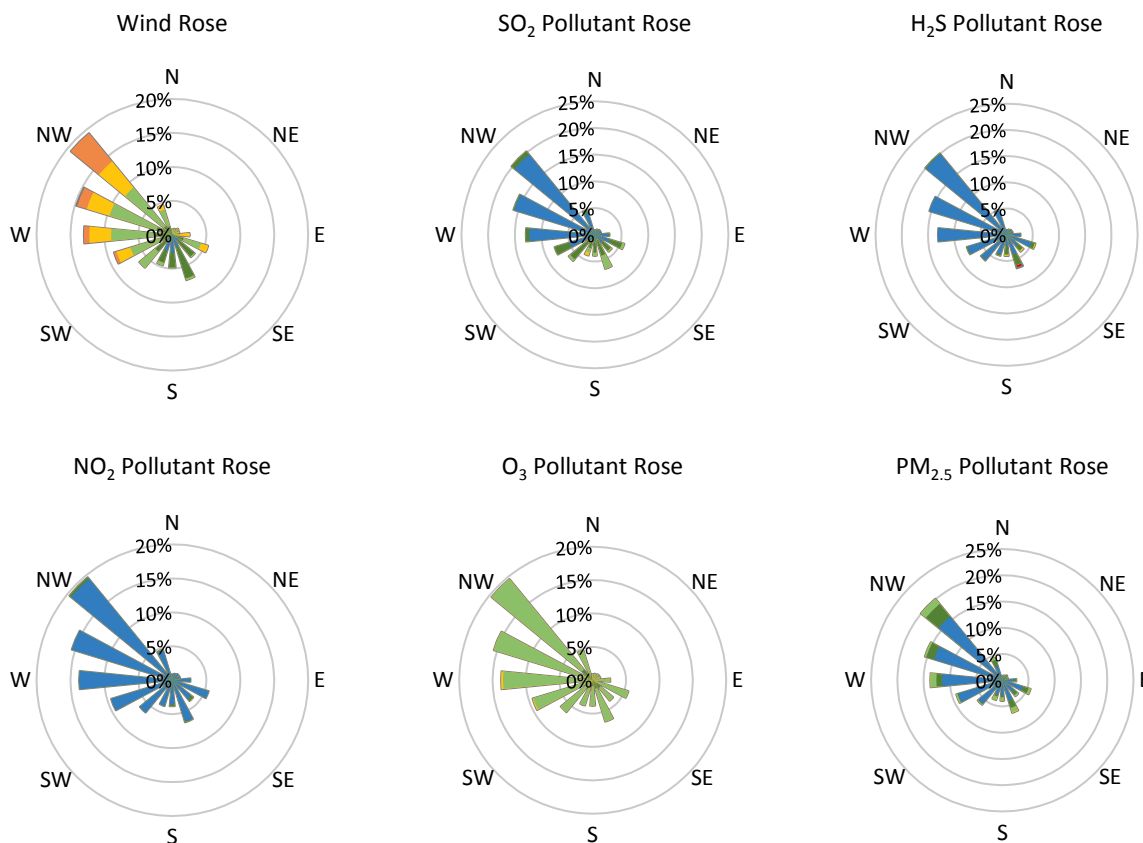
SESAA Weyburn Station - December 2016 Summary Report

Pollutants		Month Records		24-Hour Records				1-Hour Records			
Name	Conc. Unit	Avg. Conc.	Uptime	Maximum		SAAQS Standard	Exceed Days	Maximum		SAAQS Standard	Exceed Hours
				Conc.	Time			Conc.	Time		
NO	ppb	0.8	96%	1.5	Dec-15	-	-	8.6	Dec-27 09:00	-	-
NO ₂	ppb	1.7	96%	3.5	Dec-09	106	0	10.7	Dec-11 07:00	159	0
NO _x	ppb	2.5	96%	4.9	Dec-15	-	-	12.7	Dec-11 07:00	-	-
SO ₂	ppb	1.2	93%	3.4	Dec-27	48	0	13.3	Dec-22 21:00	172	0
H ₂ S	ppb	0.6	91%	4.0	Dec-15	3.6	1	17.2	Dec-15 09:00	11	4
O ₃	ppb	28.4	96%	38.5	Dec-19	-	-	41.6	Dec-19 18:00	82	0
PM _{2.5}	µg/m ³	1.7	100%	6.2	Dec-02	28	0	10.4	Dec-02 20:00	-	-

SAAQS: Saskatchewan Ambient Air Quality Standards



SESAA Weyburn Station - December 2016 Summary Report



Parameters	Unit	Color Code for Wind Speed and Pollution Concentration Class					
Wind Speed	m/s	$0.3 \leq WS < 1.4$	$1.4 \leq WS < 3.1$	$3.1 \leq WS < 7.8$	$7.8 \leq WS < 10.8$	$10.8 \leq WS < 13.6$	$WS \geq 13.6$
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	$0 \leq C < 1$	$1 \leq C < 3.6$	$3.6 \leq C < 5$	$5 \leq C < 8$	$8 \leq C < 10.8$	$C \geq 10.8$
O ₃	ppb	$0 \leq C < 10$	$10 \leq C < 20$	$20 \leq C < 40$	$40 \leq C < 60$	$60 \leq C < 82$	$C \geq 82$
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 >100% of scheduled uptime for all parameters except for H₂S (95%) and SO₂ (97%)
- Downtime of 4% due to routine daily Internal Zeroes and Spans

Exceedance Summary (1- Hour Average - Exceedances Highlighted)

Exceedance Time	AQHI	NO ₂	NO	SO ₂	O ₃	NO _x	H ₂ S	PM _{2.5}	Temp	WD	WS
	-	ppb	ppb	ppb	ppb	ppb	ppb	$\mu\text{g}/\text{m}^3$	°C	deg	m/s
Dec-15 07:00	1.6	2.1	0.8	1.9	27.7	2.8	11.9	0.7	-26.1	152.4	1.5
Dec-15 09:00	1.7	4.1	1.7	1.0	24.6	5.9	17.2	0.8	-26.7	162.5	1.5
Dec-15 10:00	1.7	4.9	3.5	1.5	24.0	8.4	15.3	1.3	-24.7	150.3	1.1
Dec-15 11:00	1.8	5.1	5.5	4.5	25.1	10.6	12.9	2.0	-22.5	151.0	1.6

Exceedance Summary (24- Hour Average - Exceedances Highlighted)

Exceedance Time	AQHI	NO ₂	NO	SO ₂	O ₃	NO _x	H ₂ S	PM _{2.5}	Temp	WD	WS
	-	ppb	ppb	ppb	ppb	ppb	ppb	$\mu\text{g}/\text{m}^3$	°C	deg	m/s
Dec-15	1.8	3.4	1.5	2.0	27.7	4.9	4.0	1.4	-22.0	211.9	2.0