

2014 Monitoring Results

Air Quality Events and Alberta Objectives Exceedances Summary

The 2014 exceedances of the Alberta Ambient Air Quality Objectives (AAAQO) are summarized as follows:

- **Benzene:** The 1-hour AAAQO for Benzene was exceeded at the Scotford 2 Station five times in 2014. There were four 1-hour exceedances during a single episode in February and one in March. The source for these AAAQO exceedances was assigned to local industry.
- **SO₂:** The 1-hour AAAQO for SO₂ was exceeded at the Redwater Industrial AQM Station twenty six times during 2014. There were 3 exceedances of the 24 hour AAAQO. There were no exceedances of the 30 day average AAAQO. The source for these AAAQO exceedances was assigned to local industry.
- **H₂S:** There were no exceedances of the 1-hour or 24-hour AAAQO for H₂S. All of the exceedances reported in 2013 were assigned to natural processes in the wetland near the Scotford 2 Station. The Scotford 2 Station was moved in April of 2014 because of pipeline construction beginning in May. The new location for the station has no nearby wetlands.
- **PM_{2.5}:** There were thirteen 1-hour Guideline exceedances and twelve 24-hour AAAQO exceedances throughout the network. Most of the events were regional and observed at multiple stations. Sixteen of the exceedances occurred during two events that were recorded at several stations concurrently.
 - July 11 & 13, 2014 due to long range transportation of forest fire smoke:
 - One 24-hour exceedance each at the Elk Island, Fort Saskatchewan, Lamont County and Redwater Industrial AQM Stations
 - Two 24-hour exceedances at the Bruderheim Station
 - November 13 & 14, 2014 due to temperature inversion conditions resulting in deterioration of air quality over the entire region:
 - Four 1-hour and one 24-hour exceedance at the Fort Saskatchewan Station
 - Two 1-hour and one 24-hour exceedance at the Lamont County Station
 - One 1-hour and one 24-hour exceedance at the Bruderheim Station

Two isolated events accounted for two PM_{2.5} exceedances:

- One 24-hour exceedance on August 16, 2014 at the Bruderheim Station due to nearby harvesting operations.
- One 1-hour exceedance on November 29, 2014 at the Redwater Industrial AQM Station attributed to activity south west of and relatively near the air monitoring station.

Air quality events experienced in the entire Capitol Region during cold weather conditions resulted in two exceedances:

- One 1-hour exceedance on January 10, 2014 at the Lamont County Station
- One 1-hour exceedance on January 14, 2014 at the Fort Saskatchewan AQM Station

Four 1-hour exceedances at the Fort Saskatchewan Station on December 27, 2014 and one 24-hour exceedance at the Bruderheim Station on December 18, 2014 were not attributable to a specific source or event.

2014 Exceedances Summary table

Exceedances of the Alberta Ambient Air Quality Objectives (AAAQOs) reported in the FAP Airshed during 2014 and previous four years are listed in the following table.

Parameter Measured		2014	2013	2012	2011	2010
Ammonia (NH ₃)	1-hr	0	0	0	0	1
Benzene (C ₆ H ₆)	1-hr	5	0	1	2	0
Carbon Monoxide (CO)	1-hr	0	0	0	0	0
	8-hr	0	0	0	0	0
Ethyl benzene (C ₆ H ₅ CH ₂ CH ₃)	1-hr	0	0	0	0	0
Ethylene (C ₂ H ₄)	1-hr	0	0	0	0	0
	3-day	0	0	0	0	0
	Annual	0	0	0	0	0
Hydrogen Sulphide (H ₂ S)	1-hr	0	147	163	15	0
	24-hr	0	29	28	2	0
Nitrogen dioxide (NO ₂)	1-hr	0	0	0	0	1
	24-hr	0	0	0	0	0
	Annual	0	0	0	0	0
Ozone (O ₃)	1-hr	0	0	0	4	0
Styrene (C ₆ H ₅ CH=CH ₃)	1-hr	0	0	0	0	0
Sulphur dioxide (SO ₂)	1-hr	26	6	7	30	42
	24-hr	3	2	0	2	6
	30-day	0	0	0	0	n/a
	Annual	0	0	0	0	0
Particulate Matter Fine (PM _{2.5})	1-hr	13	15	28	47	n/a
	24-hr	12	11	9	15	39

Toluene (C ₆ H ₅ CH ₃)	1-hr	0	0	0	0	0
Xylenes (o-, m- and p- isomers)	1-hr	0	0	0	0	0