

Ambient Air Monitoring and Reporting Plan Summary – 2014

Below is a summary of the Air Quality Monitoring (AQM) program during the period of **January to December 2014**. The summary below presents the annual data from the three (3) air quality monitoring stations as outlined in the Georgetown South Project Ambient Air Monitoring and Reporting Plan. These results have been audited and validated by the Ontario Ministry of the Environment and Climate Change (MOECC).

Carbon Monoxide (CO)

		Monitoring Stations		
		STN 35020 Wallace	STN 35021 Weston	STN 35022 Strachan
Measured Annual Mean ($\mu\text{g}/\text{m}^3$)		240	218	252
Averaging time – 1 Hour				
Hours Above AAQC		0	0	0
Predicted Total Exceedances of AAQC*	1 Hour	0		

Regulatory Levels: CO 1 Hour AAQC – $36,200 \mu\text{g}/\text{m}^3$

* As per the 2009 Air Quality Assessment. Further analysis was not required.

Particulate Matter < 2.5 μm (PM_{2.5})

		Monitoring Stations		
		STN 35020 Wallace	STN 35021 Weston	STN 35022 Strachan
Measured Annual Mean ($\mu\text{g}/\text{m}^3$)		10	10	10
Averaging time – 24 Hour				
Days Above CWS		9*	6*	3*
Days Above WHO		13	9	6
Predicted Total Exceedances of CWS**	# days	15		

Regulatory Levels: PM_{2.5} 24 Hour CWS – $30 \mu\text{g}/\text{m}^3$
 PM_{2.5} 24 Hour WHO – $25 \mu\text{g}/\text{m}^3$
 PM_{2.5} 24 Hour CAAQS – $28 \mu\text{g}/\text{m}^3$ (New standard to be applied in 2015)
 PM_{2.5} Annual CAAQS – $10 \mu\text{g}/\text{m}^3$ (New standard to be applied in 2015)
 PM_{2.5} Annual CAAQS – $8.8 \mu\text{g}/\text{m}^3$ (New standard to be applied in 2020)

* This does not mean an exceedance of the CWS as the CWS is based on the three-year average of the 98th percentile. There were 18 observed exceedances of the MOECC 24 hour clock average Reference Level for PM_{2.5} of $30 \mu\text{g}/\text{m}^3$ at the three (3) ambient air quality monitoring stations. These occurred on 10 different days during the year. Thirteen of the observed PM_{2.5} exceedances took place on five (5) days with three (3) of the days (February 9, 19 and 20) having all three (3) station reporting an exceedance. Due to the clustering of the observations in February at the Metrolinx ambient air quality monitoring stations, it was concluded that the observations were part of a larger regional air quality episode including localized events. The other observed exceedances were likely related to statutory holiday fireworks and construction activities located in close proximity to the station.

**As per the 2011 Enhanced Air Quality Assessment.

Nitrogen Dioxide (NO₂)

	Monitoring Stations		
	STN 35020 Wallace	STN 35021 Weston	STN 35022 Strachan
Measured Annual Mean (µg/m³)	28	31	29
Averaging time – 1 Hour			
Hours Above AAQC	0	0	0
Hours Above WHO	0	0	0
Averaging time – 24 Hour			
Hours Above AAQC	0	0	0
Predicted Total Exceedances of AAQC*	1 Hour	0	
	24 Hour	0	

Regulatory Levels: NO₂ 1 Hour AAQC – 400 µg/m³
 NO₂ 1 Hour WHO – 200 µg/m³
 NO₂ 24 Hour AAQC – 200 µg/m³
 NO₂ Annual WHO – 40 µg/m³

* As per the 2011 Enhanced Air Quality Assessment.

Sulphur Dioxide (SO₂)

	Monitoring Stations		
	STN 35020 Wallace	STN 35021 Weston	STN 35022 Strachan
Measured Annual Mean (µg/m³)	1.1	1.1	0.8
Averaging time – 1 Hour			
Hours Above AAQC	0	0	0
Averaging time – 24 Hour			
Days Above AAQC	0	0	0
Days Above WHO	0	0	0
Predicted Total Exceedances of AAQC*	1 Hour	0**	
	24 Hour	5	

Regulatory Levels: SO₂ 1 Hour AAQC – 690 µg/m³
 SO₂ 24 Hour AAQC – 275 µg/m³
 SO₂ 24 Hour WHO – 20 µg/m³

* As per the 2011 Enhanced Air Quality Assessment.

** 1 Hour SO₂ did not have predicted exceedances in original modelling for the 2009 Air Quality Assessment and further investigation was not necessary.

Glossary/Terms

AAQC – Ambient Air Quality Criteria are provincial emission guidelines set by the Ontario Ministry of the Environment and Climate Change.

CO – Carbon Monoxide is a colourless, odourless and tasteless but poisonous gas produced primarily by incomplete burning of fossil fuels.

CAAQS – Canadian Ambient Air Quality Standards have been developed and replace the CWS for fine particulate matter (PM_{2.5}).

CWS – The Canada Wide Standard is developed jointly by the Federal government and the Provinces – including Ontario – and is used as a guideline for particulate matter.

NO₂ – Nitrogen dioxide gases are oxides of nitrogen and are produced during high temperature combustion.

PM_{2.5} – Particulate matter describes a mixture of microscopic solid particles and liquid droplets suspended in air. PM_{2.5} refers to particulate matter less than 2.5 microns in size.

SO₂ – Sulphur dioxide is a colourless gas that smells like burnt matches; it can also be a precursor to sulphates which are a main component in particulate matter.

WHO – World Health Organization is the authority within the United Nations responsible for international public health (www.who.int/en/).

For more details on the data, please see the full report at gotransit.com/gts