

**Quarterly Ambient Air Quality
Monitoring Report for the Durham
York Energy Centre –January to
March 2016**

Durham York Energy Centre



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Sign-off Sheet

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QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

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QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

Executive Summary

The Regional Municipalities of Durham and York constructed the Durham York Energy Centre (DYEC) which is an Energy-from-Waste (EFW) Facility intended to provide a long-term, sustainable solution to manage municipal solid waste remaining after diversion from the Regions. The facility commenced commercial operation on February 1, 2016.

The Ambient Air Quality Monitoring Plan - Durham York Residual Waste Study (Stantec, 2012), was developed based on the Regional Council's mandate to provide ambient air quality monitoring in the area of the DYEC for a three year period. An ambient air quality monitoring and reporting program was also a requirement laid out in the Provincial Minister's Notice of Approval to Proceed with the Undertaking, detailed in Condition 11 of the Notice of Approval (MOECC, 2010). The air monitoring plan was also developed to satisfy the conditions of the Environmental Compliance Approval and the environmental mitigation and commitments set out in the Environmental Assessment (Jacques Whitford, 2009). The predominantly downwind station is located along Rundle Road, south of Baseline Road. The predominantly upwind station is sited at the Courtice Water Pollution Control Plant (WPCP). Since May 2013, measurements of the following air contaminants have been made at the two stations:

- Sulphur Dioxide (SO_2);
- Nitrogen Oxides (NO_x);
- Particulate Matter smaller than 2.5 microns ($\text{PM}_{2.5}$);
- Metals in total suspended particulate matter (TSP);
- Polycyclic Aromatic Hydrocarbons (PAHs); and,
- Dioxins and Furans.

Operation of the non-continuous monitors was temporarily discontinued from June 28, 2014 (after completion of the background air quality data collection period) onwards through the rest of construction and commissioning, as per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012). At the request of the Regional Municipality of Durham, dioxin and furan sampling was resumed from October 21, 2015 to January 25, 2016; however this additional sampling was outside the scope of the Ambient Monitoring Plan (Stantec, 2012). The EFW facility became fully operational on February 1, 2016, and monitoring of non-continuous air quality parameters resumed. The first sampling day for non-continuous monitors was February 6, 2016.

Meteorological data is also measured at the two stations. The predominantly downwind Rundle Road station measures horizontal wind speed, wind direction, atmospheric temperature, relative humidity and rainfall. The predominantly upwind Courtice WPCP Station measures atmospheric temperature, relative humidity, rainfall and barometric pressure. Wind speed and wind direction data at the predominantly upwind location are measured and provided by the Courtice Water Pollution Control Plant.

QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

This quarterly report provides a summary of the ambient air quality data collected at these two stations for the period January to March (Calendar Quarter 1). With the exception of the Rundle Thermo-Sharp PM_{2.5} monitor requiring manufacturer warranty repair for a heater circuit failure and a Courtice WPCP datalogger access issue, only minor instrumentation issues were encountered this quarter, with above acceptable data recovery rates for all measured air quality parameters. Additional details on instrumentation issues are presented in **Section 3.2** of this report.

The following observations and conclusions were made from a review of the measured ambient air quality monitoring data:

1. Measured concentrations of NO₂, SO₂ and PM_{2.5} were below the applicable O. Reg. 419/05 criteria or human health risk assessment (HHRA) health-based standards presented in **Table 2-2** of this report;
2. Since the Canadian Ambient Air Quality Standard (CAAQS) for PM_{2.5} is based on a 98th percentile level over 3 years, whereas the PM_{2.5} measurement period at both stations for this quarterly report was three months, there is insufficient data collected to determine with any certainty if exceedances of the CAAQS would occur. Therefore no comparison of the measured PM_{2.5} data during this quarter to the CAAQS was conducted for this report, as it would not be scientifically accurate or representative;
3. The maximum measured concentrations of TSP and all metals with MOECC air quality criteria were well below their applicable criteria (as presented in **Table 2-3** in this report);
4. The maximum measured concentrations of all PAHs with MOECC air quality criteria were well below their applicable criteria shown in **Table 2-4**, with the exception of the 24-hour benzo(a)pyrene concentration in one sample measured at the Courtice WPCP Station and one sample measured at the Rundle Road Station, which exceeded the applicable Ontario Ambient Air Quality Criteria by 17% and 315%, respectively. The current Ontario 24-hour B(a)P AAQC was introduced in 2011 and levels above this recently enacted AAQC are commonly measured throughout Ontario. The measurements were however, well below the MOECC Schedule 6 Upper Risk Threshold, the MOECC O. Reg. 419 24-hour average guideline, and the HHRA health based standard; and,
5. The maximum measured toxic equivalent dioxin and furan concentration was below the applicable criteria presented in **Table 2-4**.

In summary, the measured concentrations of the air contaminants monitored were below their applicable MOECC criteria during the monitoring period between January and March 2016, with the exception of benzo(a)pyrene. Furthermore, all measured levels of the monitored contaminants were below their applicable HHRA health-based standards.

QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

Abbreviations

AAQC	Ambient Air Quality Criteria
CAAQS	Canadian Ambient Air Quality Standards
CAC	Criteria Air Contaminants
D/Fs	Dioxins and Furans
DYEC	Durham York Energy Centre
EFW	Energy from Waste
MOECC	Ontario Ministry of the Environment and Climate Change
SO ₂	Sulphur Dioxide
NO _x	Nitrogen Oxides
PAH	Polycyclic aromatic hydrocarbons
Particulate	A particle of a solid or liquid that is suspended in air.
PCB	Polychlorinated biphenyl
PCDD/PCDF	Polychlorinated dibenzo-p-dioxins and dibenzofurans
PM	Particulate Matter
PM _{2.5}	Particulate Matter smaller than 2.5 microns
TEQ	Toxic equivalent quotient
TEQs	Toxic Equivalents
TSP	Total Suspended Particulate
WPCP	Water Pollution Control Plant

Elements	
Cd	Cadmium
Hg	Mercury
Pb	Lead
Al	Aluminum
As	Arsenic
Be	Beryllium
Cr	Chromium
Cu	Copper
Mn	Manganese
Ni	Nickel
Ag	Silver

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Tl	Thallium
Sn	Tin
V	Vanadium
Zn	Zinc
Miscellaneous	
°C	temperature in degrees Celsius
N/A	not available
%	percent
ppm	part per million
ppb	part per billion
ppt	part per trillion
min	minimum
max	maximum
µg/m ³	microgram per cubic metre

QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

Introduction
May 31, 2016

1.0 INTRODUCTION

1.1 BACKGROUND AND OBJECTIVES

The Regional Municipalities of Durham and York constructed the Durham York Energy Centre (DYEC) which is an Energy-from-Waste (EFW) Facility intended to provide a long-term, sustainable solution to manage municipal solid waste remaining after diversion from the Regions. The site location of the DYEC is shown in **Figure 1-1**. The facility commenced commercial operation on February 1, 2016.

A monitoring plan, Ambient Air Quality Monitoring Plan - Durham York Residual Waste Study (Stantec, 2012), was developed based on the Regional Council's mandate to provide ambient air quality monitoring in the area of the DYEC for a three year period.

The purposes of the ambient air quality monitoring program are to:

1. Quantify any measureable ground level concentrations resulting from emissions from the DYEC cumulative to local air quality, including validating the predicted concentrations from the dispersion modelling conducted in the Environmental Assessment (Jacques Whitford, 2009);
2. Monitor concentration levels of EFW-related air contaminants in nearby residential areas; and,
3. Quantify background ambient levels of air contaminants in the area.

Two monitoring stations in the vicinity of the DYEC were set up in April 2013. Since May 2013, the two stations have measured the following air contaminants:

- Sulphur Dioxide (SO_2);
- Nitrogen Oxides (NO_x);
- Particulate Matter smaller than 2.5 microns ($\text{PM}_{2.5}$);
- Metals in Total Suspended Particulate matter (TSP);
- Polycyclic Aromatic Hydrocarbons (PAHs); and,
- Dioxins and Furans.

This quarterly report provides a summary of the ambient air quality data collected at these two stations for the period January to March 2016.

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Operation of the non-continuous monitors was temporarily discontinued from June 28, 2014 (after completion of the background air quality data collection period) onwards through the rest of construction and commissioning, as per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012). At the request of the Region of Durham, dioxin and furan sampling was resumed from October 21, 2015 to January 25, 2016, however this additional sampling was outside the scope of the Ambient Monitoring Plan (Stantec, 2012). The EFW facility became fully operational starting February 1, 2016, and non-continuous monitoring resumed (as specified in the Ambient Monitoring Plan). The first sampling day for the non-continuous monitors was February 6, 2016.

1.2 LOCATIONS OF AMBIENT AIR QUALITY MONITORING STATIONS

The selection of sites for the monitoring stations was done in consultation with the Ontario Ministry of Environment and Climate Change (MOECC) and Durham/York representatives based on the results of air quality modelling done in support of the environmental assessment for the project, the locations of nearby sensitive receptors, and general MOECC siting criteria. Two monitoring stations (one predominantly downwind and one predominantly upwind) were chosen for the ambient air quality program. The final locations of the monitoring stations were influenced by the availability of electrical power, accessibility of each location, and security. Details of the siting requirements are detailed in the Monitoring Plan.

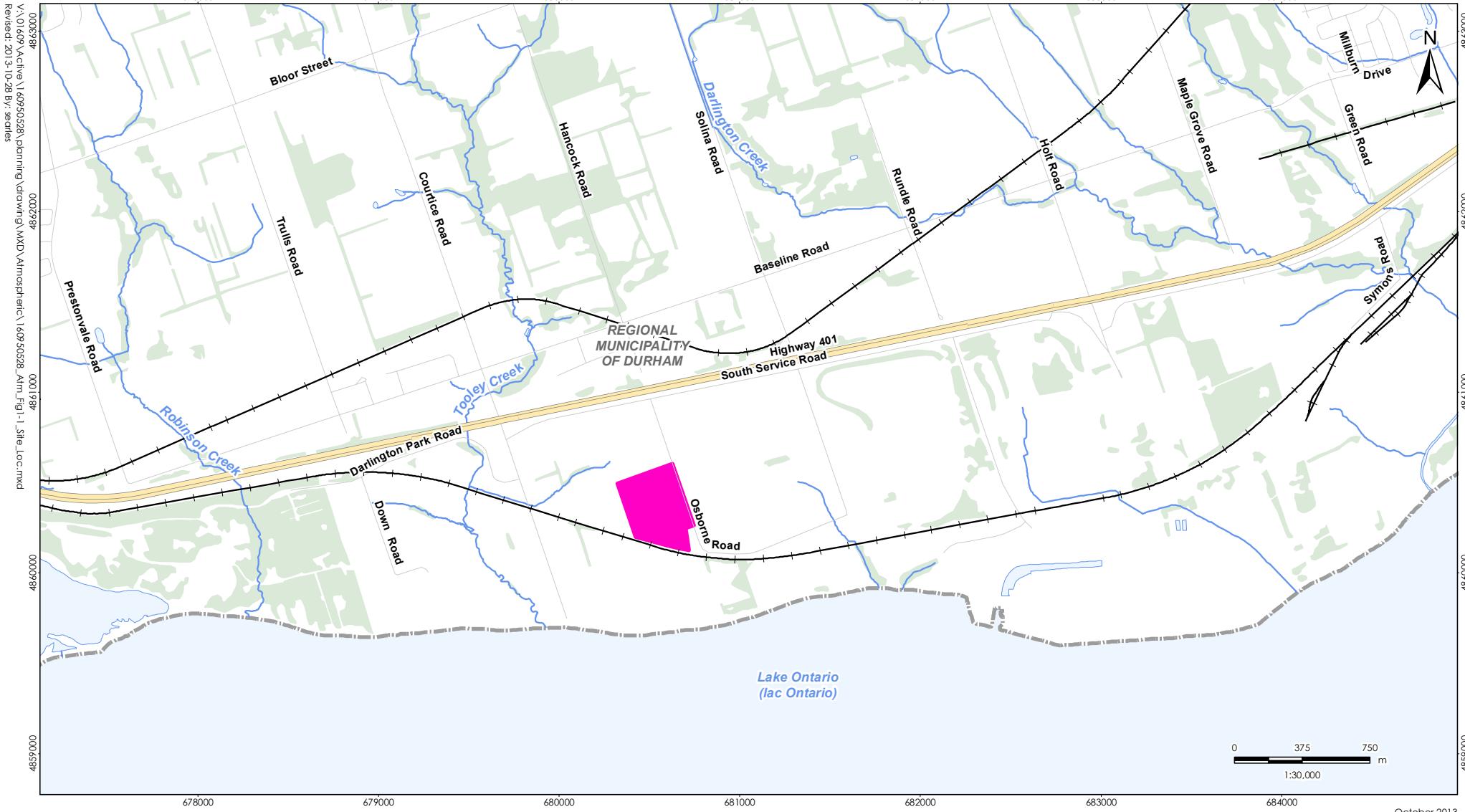
The selected downwind location is sited northeast of the DYEC in the vicinity of residential receptors predominantly downwind of the DYEC in this direction, and falls in the area where maximum annual concentrations are predicted to occur. The predominantly downwind Rundle Road Station, is located along Rundle Road, south of Baseline Road. Its location is shown in

Figure 1-2. The monitoring station measures all the air contaminants listed in **Section 1.1** and meteorological data. This station is referred to as the Rundle Road Station.

The predominately upwind Courtice WPCP Station, is sited at the Courtice Water Pollution Control Plant (WPCP), located to the southwest of the DYEC in order to measure background air quality in the predominantly upwind direction. The location is presented in **Figure 1-2**. This monitoring station measures the air contaminants presented in **Section 1.1**, as well as meteorological data, with the exception of wind speed and wind direction, which are measured and provided by the Courtice Water Pollution Control Plant.

A third Fence Line Station, which measures non-continuous parameters (metals and total particulate matter), was installed prior to full operation of the DYEC. As per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012), the Fence Line station, which collects non-continuous parameters began operation after the Facility's commissioning period was completed, and will run for a one year period. The location is presented in **Figure 1-2**.

Photographs of the Rundle Road, Courtice WPCP, and Fence Line ambient air quality monitoring stations are shown in **Figure 1-3** to **Figure 1-4**, respectively.



October 2013
160950528



Notes

1. Coordinate System: NAD 1983 UTM Zone 17N

2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.

Legend

- Durham York Energy Centre Site
- Railway
- Road
- Highway
- Watercourse
- Waterbody
- Wooded Area



Client/Project

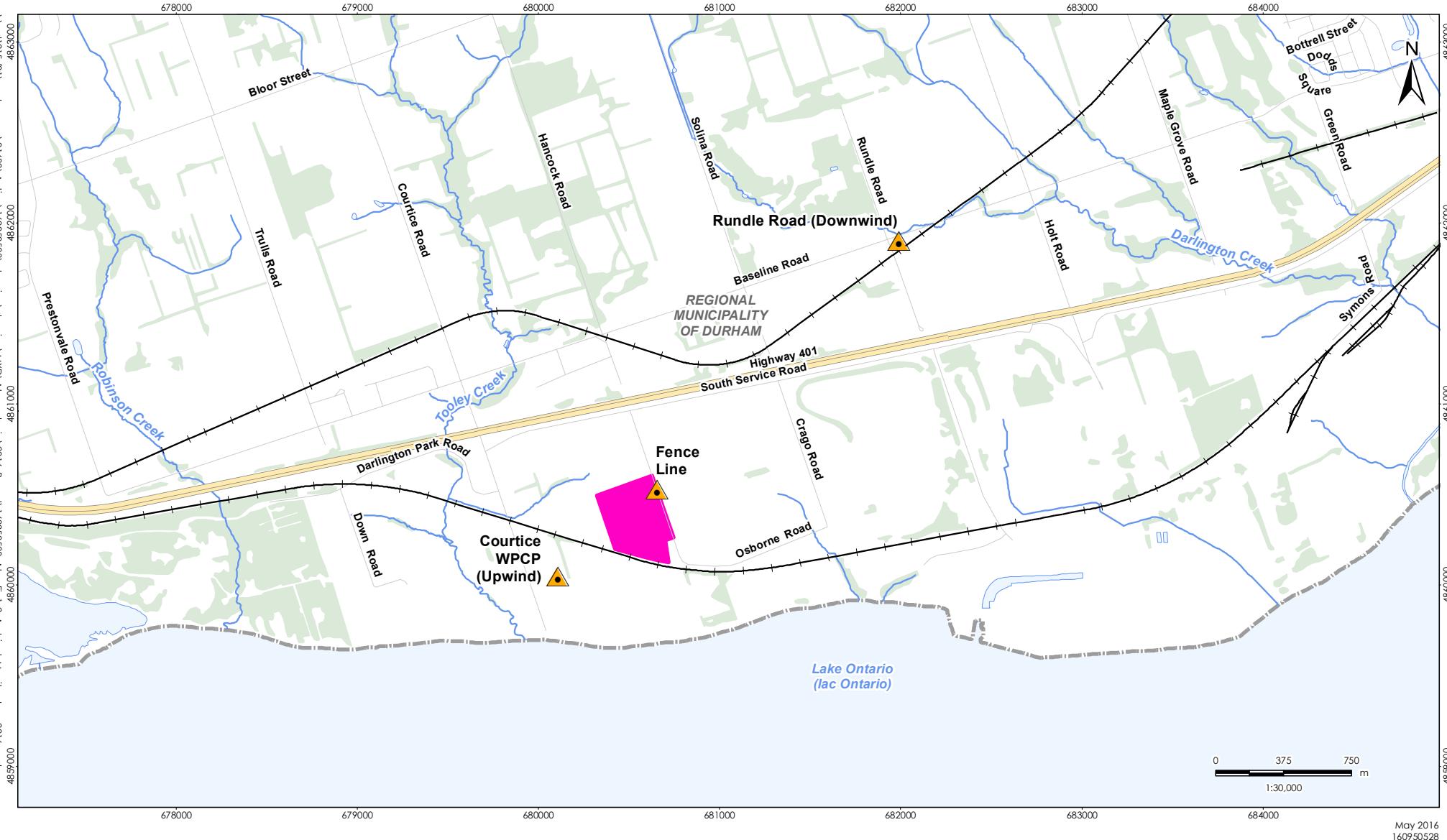
The Region of Durham
Durham York Energy Centre

Figure No.

1-1

Title

Site Location Plan



Legend

- A legend containing six entries, each consisting of a small colored square or triangle followed by a label: a yellow triangle for 'Station Location', a pink rectangle for 'Durham York Energy Centre Site', a black line with a cross for 'Railway', a grey line for 'Road', a yellow rectangle for 'Highway', and a blue line for 'Watercourse'.

Client/Project

The Region of Durham
Durham York Energy Centre

Figure No.

1-2

Title

Locations of Ambient Monitoring Stations

QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

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Figure 1-3 View of Rundle Road Ambient Air Quality Monitoring Station



Figure 1-4 View of Courtice WPCP Ambient Air Quality Monitoring Station



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Figure 1-5 View of Fence Line Ambient Air Quality Monitoring Station



QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

Key Components Assessed
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2.0 KEY COMPONENTS ASSESSED

2.1 METEOROLOGY

The following meteorological parameters are measured at the Rundle Road and Courtice WPCP monitoring stations.

Table 2-1 Summary of Meteorological Parameters Measured at Each Station

Courtice WPCP (Predominately Upwind) Ambient Air Quality Monitoring Station	Rundle Road (Predominately Downwind) Ambient Air Quality Monitoring Station
Wind Speed and Direction @ 20-m	Wind Speed and Direction @10-m
Ambient Temperature @ 2-m	Ambient Temperature @ 2-m
Relative Humidity	Relative Humidity
Rainfall	Rainfall
Barometric Pressure	

2.2 AIR QUALITY CONTAMINANTS OF CONCERN

The ambient air quality monitoring program for the DYEC includes the following contaminants specified in the Ambient Air Quality Monitoring Plan:

- Nitrogen Oxides (NO_x);
- Sulphur Dioxide (SO₂);
- Particulate Matter smaller than 2.5 microns (PM_{2.5});
- Total Suspended Particulate (TSP) matter and metals;
- Polycyclic Aromatic Hydrocarbons (PAHs); and,
- Dioxins and Furans (D/Fs).

Operation of the non-continuous monitors was temporarily discontinued between June 28, 2014 and January 31, 2016 as per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012).

At the request of the Region of Durham, dioxin and furan sampling was resumed from October 21, 2015 to January 25, 2016, however this additional sampling was outside the scope of the Ambient Monitoring Plan (Stantec, 2012). Results of the January 2016 dioxin and furan sampling are included in this report.

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The EFW facility started full commercial operation on February 1, 2016, and monitoring of non-continuous monitors resumed, as specified in the Ambient Monitoring Plan. The following contaminants were measured this quarter starting on February 6, 2016:

- Total Suspended Particulate (TSP) matter and metals,
- Polycyclic Aromatic Hydrocarbons (PAHs), and,
- Dioxins and Furans (D/Fs).

The following are lists of the specific metals, PAHs, and dioxins and furans being measured. Rationales for the choice of contaminants being monitored are provided in the Ambient Air Quality Monitoring Plan.

Metals:

- Aluminum (Al)
- Antimony (Sb)
- Arsenic (As)
- Barium (Ba)
- Beryllium (Be)
- Bismuth (Bi)
- Boron (B)
- Cadmium (Cd)
- Cobalt (Co)
- Copper (Cu)
- Chromium (Cr) (Total)
- Iron (Fe)
- Lead (Pb)
- Magnesium (Mg)
- Manganese (Mn)
- Mercury (Hg)
- Molybdenum (Mo)
- Nickel (Ni)
- Phosphorus (Ph)
- Selenium (Se)
- Silver (Ag)
- Strontium (Sr)
- Thallium (Tl)
- Tin (Sn)
- Titanium (Ti)
- Uranium (U)
- Vanadium (V)
- Zinc (Zn)
- Zirconium (Zr)

Polycyclic Aromatic Hydrocarbons:

- 1-Methylnaphthalene
- 2-Methylnaphthalene
- Acenaphthene
- Acenaphthylene
- Anthracene
- Benzo(a)anthracene
- Benzo(a)fluorene
- Benzo(a)pyrene
- Benzo(b)fluorene
- Benzo(b)fluoranthene
- Benzo(e)pyrene
- Benzo(g,h,i)perylene
- Benzo(k)fluoranthene
- Biphenol
- Chrysene
- Dibenz(a,h)anthracene
- Dibenz(a,c)anthracene
- Fluoranthene
- Indeno(1,2,3-cd)pyrene
- Naphthalene
- Perylene
- Phenanthrene
- Pyrene
- Tetralin
- o-Terphenyl
- Total PAHs

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Key Components Assessed
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Dioxins and furans:

- 2,3,7,8-Tetra CDD
- 1,2,3,7,8-Penta CDD
- 1,2,3,4,7,8-Hexa CDD
- 1,2,3,6,7,8-Hexa CDD
- 1,2,3,7,8,9-Hexa CDD
- 1,2,3,4,6,7,8-Hepta CDD
- Octa CDD
- Total Tetra CDD
- Total Penta CDD
- Total Hexa CDD
- Total Hepta CDD
- 2,3,7,8-Tetra CDF
- 1,2,3,7,8-Penta CDF
- 2,3,4,7,8-Penta CDF
- 1,2,3,4,7,8-Hexa CDF
- 1,2,3,6,7,8-Hexa CDF
- 2,3,4,6,7,8-Hexa CDF
- 1,2,3,7,8,9-Hexa CDF
- 1,2,3,4,6,7,8-Hepta CDF
- 1,2,3,4,7,8,9-Hepta CDF
- Octa CDF
- Total Tetra CDF
- Total Penta CDF
- Total Hexa CDF
- Total Hepta CDF
- Total toxic equivalency (I-TEQ)

2.3 AIR QUALITY CRITERIA

Two sets of standards were used for comparison to the air quality data as specified in the Ambient Air Monitoring Plan. The first set of standards is the limits reported in O. Reg. 419/05 (Schedules 3 and 6). These are compliance based standards used throughout the province of Ontario. However, not all chemicals have O. Reg. 419/05 criteria, or in some instances updated health-based standards were used in the human health risk assessment (HHRA) conducted in support of the Environmental Assessment (July 31, 2009 - December 10, 2009). These health-based values, which were reported in Table 7-2 (Summary of Inhalation TRVs and Inhalation Benchmarks Selected for CACs) and Table 7-3 (Inhalation TRVs and Inhalation Benchmarks for Selected COPCs) of the HHRA (Stantec, 2009) were used as the second set of standards.

The previously applicable 24-hour Canada-Wide Standard (CWS) for PM_{2.5} of 30 µg/m³ (98th percentile averaged over 3 consecutive years) has been superseded by the new Canadian Ambient Air Quality Standard (CAAQS) of 28 µg/m³ (98th percentile averaged over 3 consecutive years) and the annual objective of 10 µg/m³ as noted in **Table 2-2**. The proposed CAAQS 24-hour objective for 2020 is 27 µg/m³.

A summary of the relevant air quality criteria for the contaminants monitored in Q1 2016 is presented in **Table 2-2**.

QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

Key Components Assessed
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Table 2-2 Summary of Air Quality Criteria for CACs

Contaminant	CAS	O. Reg. 419/05 – Schedule 3/AAQC			HHRA Health-Based Standards		
		1-Hour ($\mu\text{g}/\text{m}^3$)	24-Hour ($\mu\text{g}/\text{m}^3$)	Annual ($\mu\text{g}/\text{m}^3$)	1-Hour ($\mu\text{g}/\text{m}^3$)	24-Hour ($\mu\text{g}/\text{m}^3$)	Annual ($\mu\text{g}/\text{m}^3$)
Sulphur dioxide	7446095	690	275	-	690	275	29
Nitrogen oxides ^A	10102-44-0	400	200	-	400	200	60
Contaminant	CAS	Canadian Ambient Air Quality Standards (CAAQS)			HHRA Health-Based Standards		
		1-Hour ($\mu\text{g}/\text{m}^3$)	24-Hour ($\mu\text{g}/\text{m}^3$)	Annual ($\mu\text{g}/\text{m}^3$)	1-Hour ($\mu\text{g}/\text{m}^3$)	24-Hour ($\mu\text{g}/\text{m}^3$)	Other time Period ($\mu\text{g}/\text{m}^3$)
PM _{2.5}	N/A	-	28 ^B	10 ^C	-	30 ^D	-

Notes:

- A. The Schedule 3 standards for NOx are based on health effects of NO₂, as NO₂ has adverse health effects at much lower concentrations than NO. Therefore the standard was compared to NO₂ in this report. However, as per the current April 2012 version of O. Reg. 419 Summary of Standards and Guidelines, the standard was also compared to the monitored NOx.
- B. Canadian Ambient Air Quality Standard for Respirable Particulate Matter, effective by 2015. The Respirable Particulate Matter Objective is referenced to the 98th percentile over 3 consecutive years.
- C. Annual Canadian Ambient Air Quality Standard for Respirable Particulate Matter, effective by 2015. The Respirable Particulate Matter Objective is referenced to the 3-year average of the annual average concentrations.
- D. HHRA Health-Based Standard for PM_{2.5} was selected referencing CCME (2006).

Table 2-3 Summary of Air Quality Criteria for Metals

Contaminant	CAS	O. Reg. 419/05 – Schedule 3/AAQC			HHRA Health-Based Standards		
		1-Hour ($\mu\text{g}/\text{m}^3$)	24-Hour ($\mu\text{g}/\text{m}^3$)	Other time Period ($\mu\text{g}/\text{m}^3$)	1-Hour ($\mu\text{g}/\text{m}^3$)	24-Hour ($\mu\text{g}/\text{m}^3$)	Annual ($\mu\text{g}/\text{m}^3$)
Total Particulate	NA	-	120	-	-	120	60
Aluminum	7429-90-5	-	4.8	-	-	-	-
Antimony	7440-36-0	-	25	-	5	25	0.2
Arsenic	7440-38-2	-	0.3	-	0.2	0.3	0.015 ^A 0.0043 ^B
Barium	7440-39-3	-	10	-	5	10	1
Beryllium	7440-41-7	-	0.01	-	0.02	0.01	0.007 ^A 0.0024 ^B
Bismuth	7440-69-9						-
Boron	7440-42-8	-	120	-	50	-	5
Cadmium	7440-43-9	-	0.025	0.005; annual	0.1	0.025	0.005 ^A 0.0098 ^B

QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

Key Components Assessed
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Table 2-3 Summary of Air Quality Criteria for Metals

Contaminant	CAS	O. Reg. 419/05 – Schedule 3/AAQC			HHRA Health-Based Standards		
		1-Hour (µg/m³)	24-Hour (µg/m³)	Other time Period (µg/m³)	1-Hour (µg/m³)	24-Hour (µg/m³)	Annual (µg/m³)
Chromium (Total)	7440-47-3	-	0.5	-	1	-	60
Cobalt	7440-48-4	-	0.1	-	0.2	0.1	0.1
Copper	8440-50-8	-	50	-	-	-	-
Iron	15438-31-0	-	4	-	-	-	-
Lead	7439-92-1	-	0.5	0.2; 30-day	1.5	0.5	0.5
Magnesium	7439-95-4				-		
Manganese	7439-96-5	-	0.4	-	-	-	-
Mercury	7439-97-6	-	2	-	0.6	2	0.3
Molybdenum	7439-87-7	-	120	-	-	-	-
Nickel	7440-02-0	-	0.2	0.04; annual	6	-	0.05
Phosphorus	7723-14-0	-	-	-	-	-	6.4×10^7
Selenium	7782-49-2	-	10	-	2	10	0.2
Silver	7440-22-4	-	1	-	0.1	1	0.01
Strontium	7440-24-6	-	120	-	-	-	-
Thallium	7440-28-0	-	-	-	1	-	0.1
Tin	7440-31-5	-	10	-	20	10	2
Titanium	7440-32-6	-	120	-	-	-	-
Vanadium	7440-62-2	-	2	-	0.5	1	1
Uranium	7440-61-1	-	1.5	0.03; annual	-	-	-
Zinc	7440-66-6	-	120	-	50	-	5
Zirconium	7440-67-7	-	20	-	-	-	-

Notes:

- A. Annual Average
- B. Carcinogenic Annual Average

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Table 2-4 Summary of Air Quality Criteria for PAHs and D/Fs

Contaminant	CAS	O. Reg. 419/05 – Schedule 3/AAQC			HHRA Health-Based Standards				Toxic Equivalency Factor Annual A, G (ng/m ³) ⁻¹
		1-Hour (ng/m ³)	24-Hour (ng/m ³)	Other time Period (ng/m ³)	1-Hour (ng/m ³)	24-Hour (ng/m ³)	Annual (ng/m ³)		
1-Methylnaphthalene	90-12-0	-	12,000	-	-	-	3,000	-	
2-Methylnaphthalene	91-57-6	-	10,000	-	-	-	3,000	-	
Acenaphthene	83-32-9	-	-	-	1,000	-	-	1	
Acenaphthylene	208-96-8	-	3,500	-	1,000	-	-	10	
Anthracene	120-12-7	-	200	-	500	-	50	-	
Benzo(a)anthracene	56-55-3	-	-	-	500	-	-	100	
Benzo(b)fluoranthene	205-99-2	-	-	-	500	-	-	100	
Benzo(k)fluoranthene	207-08-9	-	-	-	500	-	-	100	
Benzo(a)fluorene	238-84-6	-	-	-	500	-	50	-	
Benzo(b)fluorene	243-17-4	-	-	-	500	-	50	-	
Benzo (g,h,i) perylene	191-24-2	-	-	-	500	-	-	100	
Benzo(a)pyrene	50-32-8	-	0.05 ^B 5 ^C 1.1 ^D	0.01; annual	-	1	87 ^A	-	
Benzo(e)pyrene	192-97-2	-	-	-	500	-	-	10	
Biphenyl	92-52-4	-	-	-	-	-	224,000	-	
Chrysene	218-01-9				-			-	
Dibenzo(a,c)anthracene	215-58-7	-	-	-	-	-	-	100	
Dibenzo(a,h)anthracene	53-70-3	-	-	-	500	-	-	1,000	
Fluoranthene	206-44-0	-	-	-	500	-	-	1	
Indeno(1,2,3-cd)pyrene	193-39-5	-	-	-	500	-	-	100	
Naphthalene	91-20-3	-	22,500	-	-	22,500	3,000	-	
o-Terphenyl	84-15-1	-	-	-	50,000	-	5,000	-	
Perylene	198-55-0	-	-	-	500	-	-	1	

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May 31, 2016

Table 2-4 Summary of Air Quality Criteria for PAHs and D/Fs

Contaminant	CAS	O. Reg. 419/05 – Schedule 3/AAQC			HHRA Health-Based Standards				Toxic Equivalency Factor Annual A, G (ng/m ³) ⁻¹
		1-Hour (ng/m ³)	24-Hour (ng/m ³)	Other time Period (ng/m ³)	1-Hour (ng/m ³)	24-Hour (ng/m ³)	Annual (ng/m ³)		
Phenanthrene	85-01-8	-	-	-	500	-	-	-	1
Pyrene	129-00-0	-	-	-	500	-	-	-	1
Tetralin	119-64-2				-	-	-	-	-
Dioxins and Furans Total Toxic Equivalency ^e	NA	-	0.1 (pg TEQ/m ³) ^f 1 (pg TEQ/m ³) ^c	-	-	-	-	-	-

Notes:

- A. Carcinogenic Annual Average. Units in (ng/m³)⁻¹.
- B. Ontario Ambient Air Quality Criteria - The standard for benzo(a)pyrene (B(a)P) is for B(a)P as a surrogate for PAHs.
- C. O. Reg. 419 Schedule 6 Upper Risk Thresholds
- D. O. Reg. 419 24 Hour Guideline
- E. Application of the air standard for dioxins, furans, and dioxin-like PCBs requires the calculation of the total toxicity equivalent (TEQ) concentration contributed by all dioxin-like compounds in the mixture. TEQ is calculated using the methodology as per the O. Reg.419 Summary of Standards and Guidelines, and the corresponding WHO₂₀₀₅ toxic equivalency factors (TEFs).
- F. Ontario Ambient Air Quality Criteria
- G. Toxic Equivalency Factors (TEFs) are shown as benzo(a)pyrene equivalents.

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Instrumentation Summary

May 31, 2016

3.0 INSTRUMENTATION SUMMARY

3.1 INSTRUMENTATION

The measurement program at the monitoring sites includes both continuous and non-continuous monitors to sample air contaminant concentrations. The monitors were set up in April 2013, and monitoring started in May 2013.

Monitoring for respirable particulate matter (PM_{2.5}), nitrogen oxides (NO_x) and sulphur dioxide (SO₂) are conducted on a continuous basis. A summary of the continuous monitors and a brief description of their principle of operation are provided in **Table 3-1** below.

Table 3-1 Summary of Continuous Ambient Air Quality Monitors

Contaminant	Monitor	Principle of Operation	Range	Time Interval
PM _{2.5}	Thermo Sharp 5030 Synchronized Hybrid Ambient Real-time Particulate Monitor	Light Scattering Photometry / Beta Attenuation - Consists of a carbon14 source, detector and light scattering Nephelometer in a rack-mountable enclosure. The Thermo Sharp utilizes a continuous (non-step wise) hybrid mass measurement and a combination of beta attenuation and light scattering technology. The unit's filter tape is automatically advanced based upon a user defined frequency or particulate loading.	0-10 mg/m ³	1 minute
NO, NO ₂ , NO _x	API Model 200E Chemiluminescence Analyzer	Chemiluminescence - Uses a chemiluminescence detection principle and microprocessor technology for ambient continuous emissions monitoring (CEM). Measurements are automatically compensated for temperature and pressure changes.	0 – 1000 ppb	1 second
SO ₂	Teledyne Monitor Labs Sulphur Dioxide Analyzer Model T100	Pulsed Fluorescence - SO ₂ levels are measured based on the principle that SO ₂ has a strong ultraviolet (UV) absorption at a wavelength between 200 and 240 nanometres (nm). The absorption of photons at these wavelengths results in the emission of fluorescence photons at a higher wavelength. The amount of fluorescence measured is directly proportional to the concentration of SO ₂ .	0 – 1000 ppb	1 second

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Monitoring for metals in total suspended particulates (TSP), polycyclic aromatic hydrocarbons (PAHs) and dioxins and furans are conducted at both the Courtice WPCP (predominantly upwind) and Rundle Road (predominantly downwind) monitoring stations with non-continuous monitors, per the methodology and analyses described in the Ambient Air Monitoring Plan (Stantec, 2012) as presented in **Table 3-2**. Monitoring for metals in TSP is also conducted at the Fence Line Station.

As mentioned above, Stantec was requested to conduct additional dioxins and furans sampling on a 12-day schedule between October 21, 2015 and January 25, 2016. The methodology and analyses for the dioxins and furans sampling during this period follow those described in the Ambient Air Monitoring Plan (Stantec 2012) as presented in **Table 3-2**, with the exception of the sampling schedule (dioxins and furans sampling is on a 24-day schedule in the Ambient Monitoring Plan). The samples were submitted to Maxxam Analytics Inc., a Canadian Association for Laboratory Accreditation Inc. (CALA) / Standards Council of Canada (SCC) accredited laboratory, for analysis.

Table 3-2 Summary of Non-Continuous Ambient Air Quality Monitors

Contaminant	Sampler	Filter Media	Lab Analysis	Sampling Schedule
TSP and metals	Tisch Environmental TE-5170 mass-flow high volume sampler	Pre-weighed, conditioned Teflon coated glass fibre filters	Weighed for particulate loading and analysed using the Atomic Emission Spectroscopy / Inductively Coupled Plasma (AES/ICP) technique to determine metals content	24 hour sample taken every 6 days
PAHs				24 hour sample taken every 12 days
Dioxins and Furans	Tisch Environmental TE-1000 mass-flow high volume air sampler	Dual chambered sampling module with a Teflon-coated glass fibre filter and a Poly-Urethane Foam (PUF) cartridge	Gas Chromatography / Mass Spectrometry (GC/MS)	24 hour sample taken every 12 days (for January 2016 additional sampling) 24 hour sample taken every 24 days (from February 6, 2016 onwards)

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Instrumentation Summary

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Horizontal wind speed, wind direction, atmospheric temperature, relative humidity and rainfall are measured at the predominantly downwind Rundle Road Station. Atmospheric temperature, relative humidity, rainfall and barometric pressure are measured at the predominantly upwind Courtice WPCP Station. Wind speed and wind direction data at the predominantly upwind location are measured and provided by the Courtice Water Pollution Control Plant.

The meteorological sensors at the Rundle Road Station are mounted on an external 10-m aluminum tower and are logged using a digital data acquisition system (DAS). The meteorological equipment includes the following:

Table 3-3 Summary of Meteorological Equipment

Parameter	Equipment
Wind Speed/Wind Direction	Met One Instruments Inc. Model 034B
Temperature	Campbell Scientific Model HMP60
Relative Humidity	Campbell Scientific Model HMP60
Atmospheric Pressure	Campbell Scientific Model CS106
Rainfall	Texas Electronic TE525M

A Campbell Scientific CRX1000 station data acquisition system is used to collect continuous instrument monitoring data and status codes from the ambient air quality monitors. Continuous station data is maintained in the data loggers, and data is viewed locally using a laptop and the relevant DAS software applications. Remote data transmission is accomplished by the periodic transmission of collected station air quality data via cellular phone.

3.2 INSTRUMENTATION ISSUES

With the exception of the Rundle Thermo-Sharp PM_{2.5} monitor requiring manufacturer warranty repair for a heater circuit failure and a Courtice WPCP datalogger access issue, only minor instrumentation issues were encountered during this quarter. A summary of operational issues for each measurement parameter during the monitoring period is presented in **Tables 3-4 to 3-6**.

QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

Instrumentation Summary

May 31, 2016

**Table 3-4 Summary of Instrument Issues at Courtice WPCP Station
(Predominately Upwind)**

Parameter	Issues	Time Frame	Remedial Action
SO ₂	Low auto-calibration concentration.	January 29, 2016 - March 11, 2016	Replaced permeation tube on February 23 and cleaned a plugged valve and replaced permeation tube on March 11. Readings were not affected by the low auto-calibration issue.
NOx	Inconsistency between NO, NO ₂ and NO _x measurements due to loose datalogger connection.	January 14 - January 29, and March 10 - March 24, 2016	Connection repaired. Affected January NO ₂ readings were replaced by deriving NO ₂ concentrations from the NO _x - NO concentrations. Affected March data were replaced by data downloaded directly from the monitor. All data intact. Monthly check of cable connections added to scheduled routine maintenance.
PM _{2.5}	None		
TSP/Metals Hi-Vol.	Intermittent motor operation	February 3 - February 4, 2016	Replaced motor. All data intact.
PAH/ D/F Hi-Vol	Birds damaged sample pre-filter and started bird nest inside housing	March 28 – March 30, 2016	Removed nesting materials, cleaned hi-vol interior, and installed barrier to prevent bird access.
Other	Datalogger system compromised due to an external dial-in to the modem.	February 12 - February 16, 2016	Restarted software program. Password added to all modems to deny access to unauthorized users. Data from the datalogger was lost for this time period.

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Instrumentation Summary

May 31, 2016

**Table 3-5 Summary of Instrument Issues at Rundle Road Station
(Predominately Downwind)**

Parameter	Issues	Time Frame	Remedial Action
SO ₂	Torn pump diaphragm	Replaced January 29, 2016	Repaired pump and replaced diaphragm. All data intact.
	System error likely due to temporary power outage	Noted February 19, 2016	Re-set instrument. All data intact.
NOx	System error likely due to temporary power outage	Noted February 19, 2016	Re-set instrument. All data intact.
PM _{2.5}	Heater circuit failure and blown fuse	January 15 – 29, 2016	Monitor was removed and sent to the manufacturer to replace the fuse and upgrade the heater circuit relay under warranty. No data collected.
	Output data error due to broken physical connection	January 31 - February 10, 2016	Repaired wire connection. Data downloaded directly from the monitor. All data intact.
	High voltage power supply drifted	January 31 - February 10, 2016	Adjusted high voltage power supply. All data intact.
	System error likely due to temporary power outage	Noted February 19, 2016	Re-set instrument. All data intact.
TSP/Metals Hi-Vol.	None		
PAH/ D/F Hi-Vol	None		
Other	Unable to connect to data logger	February 16, 2016	Reset data logger. All data intact.
	Anemometer observed during site visit to be frozen in place due to freezing rain	March 24, 2016 – March 25, 2016	Anemometer could not be accessed due to safety concerns. Data during this time period showing evidence of the anemometer being frozen was invalidated.
	Power outage evident in data files	March 29, 2016 between 3:15 – 3:43	Invalidated hourly data for 3:00.

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Instrumentation Summary
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Table 3-6 Summary of Instrument Issues at Fence Line Station

Parameter	Issues	Time Frame	Remedial Action
TSP/Metals Hi-Vol.	Motor reacting slowly to mass flow controller adjustments	February 6 - February 16, 2016	Oriented temperature probe correctly and readjusted mass flow. 2 samples outside MOECC allowable flow rate – invalidated.

3.3 INSTRUMENTATION RECOVERY RATES

Data recovery rates for each continuous monitor at the three monitoring stations during Quarter 1 (January to March 2016) are presented in **Table 3-7** to **Table 3-8**.

Table 3-7 Summary of Data Recovery Rates for the Courteau WPCP Station (Predominately Upwind) – January to March 2016

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
SO ₂	2071	94.8% ^C
NO _x	2074	95.0% ^C
PM _{2.5}	2173	99.5% ^C
Temperature	2087	95.6% ^C
Rainfall	2087	95.6% ^C
Relative Humidity	2087	95.6% ^C
Pressure	2087	95.6% ^C
Wind Speed/Direction	2184	100.0% ^C
TSP/Metals ^A	10 ^D	100%
PAHs ^A	5 ^D	100%
Dioxins and Furans ^{A, B}	6 ^D	100%

Note:

- A. Monitoring as per the Ambient Air Monitoring Plan resumed on February 6, 2016 after the Facility was fully operational.
- B. Additional sampling for dioxins and furans was conducted from October 21, 2015 to January 25, 2016. The sampling was outside the scope of the Ambient Air Monitoring Plan.
- C. Includes instrumentation issues summarized in Table 3-3, quarterly MOECC audit and monthly calibrations.
- D. Number of filters/24-hour average samples.

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Instrumentation Summary

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Table 3-8 Summary of Data Recovery Rates for the Rundle Road Station (Predominately Downwind) – January to March 2016

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
SO ₂	2170	99.4% ^C
NOx	2173	99.5% ^C
PM _{2.5}	1841	84.3% ^C
Temperature	2183	100.0% ^C
Rainfall	2183	100.0% ^C
Relative Humidity	2183	100.0% ^C
Wind Speed/Direction	2208	100%
TSP/Metals ^A	10 ^D	100%
PAHs ^A	5 ^D	100%
Dioxins and Furans ^{A, B}	6 ^D	100%

Note:

- A. Monitoring as per the Ambient Air Monitoring Plan resumed on February 6, 2016 after the Facility was fully operational.
- B. Additional sampling for dioxins and furans was conducted from October 21, 2015 to January 25, 2016. The sampling was outside the scope of the Ambient Air Monitoring Plan.
- C. Includes instrumentation issues summarized in Table 3-4, quarterly MOECC audit, and monthly calibrations.
- D. Number of filters/24-hour average samples.

Table 3-9 Summary of Data Recovery Rates for the Fence Line Station – January to March 2016

Parameter	Valid Measurements ^B	Data Recovery Rate (%)
TSP/Metals ^A	8	80%

Note:

- A. Monitoring as per the Ambient Air Monitoring Plan started on February 6, 2016 after the Facility was fully operational.
- B. Number of filters/24-hour average samples.
- C. Two samples (February 6, 2016 and February 12, 2016) had a flow rate outside of the MOECC allowable range. This data was invalidated.

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Summary of Ambient Measurements
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4.0 SUMMARY OF AMBIENT MEASUREMENTS

The following sections provide summaries of the validated data and the validation done on each parameter.

4.1 METEOROLOGICAL DATA

A summary of the maximum, minimum, arithmetic mean, and standard deviation of the hourly average meteorological parameters measured at the two monitoring stations for the January to March 2016 period are presented in **Table 4-1**.

Table 4-1 Summary of Hourly Meteorological Measurements – January to March 2016

Parameter	Courtice WPCP Station (Predominately Upwind)	Rundle Road Station (Predominately Downwind)	Units
Temperature	Maximum	11.5	°C
	Minimum	-27.2	°C
	Mean (January)	-2.9	°C
	Mean (February)	-2.5	°C
	Mean (March)	1.6	°C
	Mean (Period)	-1.2	°C
	Standard Deviation	6.3	°C
Rainfall	Maximum	7.7	mm
	Minimum	0.0	mm
	Mean (January)	0.06	mm
	Mean (February)	0.06	mm
	Mean (March)	0.09	mm
	Mean (Period)	0.07	mm
	Standard Deviation	0.40	mm
Relative Humidity	Maximum	96.2	%
	Minimum	25.4	%
	Mean (January)	70.4	%
	Mean (February)	67.9	%
	Mean (March)	71.7	%
	Mean (Period)	70.1	%
	Standard Deviation	13.8	%

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Summary of Ambient Measurements
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Table 4-1 Summary of Hourly Meteorological Measurements – January to March 2016

Parameter	Courtice WPCP Station (Predominately Upwind)	Rundle Road Station (Predominately Downwind)	Units
Pressure ^A	Maximum	30.4	-
	Minimum	28.8	-
	Mean (January)	29.7	-
	Mean (February)	29.6	-
	Mean (March)	29.7	-
	Mean (Period)	29.7	-
	Standard Deviation	0.3	-
Wind Speed ^B	Maximum	47.6	km/hr
	Minimum	0.0	km/hr
	Mean (January)	15.0	km/hr
	Mean (February)	16.0	km/hr
	Mean (March)	11.7	km/hr
	Mean (Period)	14.2	km/hr
	Standard Deviation	7.7	km/hr

Notes:

- A. Pressure is not measured at the Rundle Road Station.
- B. Wind speed at Courtice WPCP Station measured at 20-m and at Rundle Road Station at 10-m.

At the Courtice WPCP Station (located near Lake Ontario), wind data were measured and provided by the Courtice Water Pollution Control Plant on a 20-m tower, while at the Rundle Road Station they are measured on a 10-m tower.

Wind roses showing the directionality and speed at each location are presented in **Figure 4-1**. The length of the radial barbs gives the total percent frequency of winds from the indicated direction, while portions of the barbs of different widths indicate the frequency associated with each wind speed category.

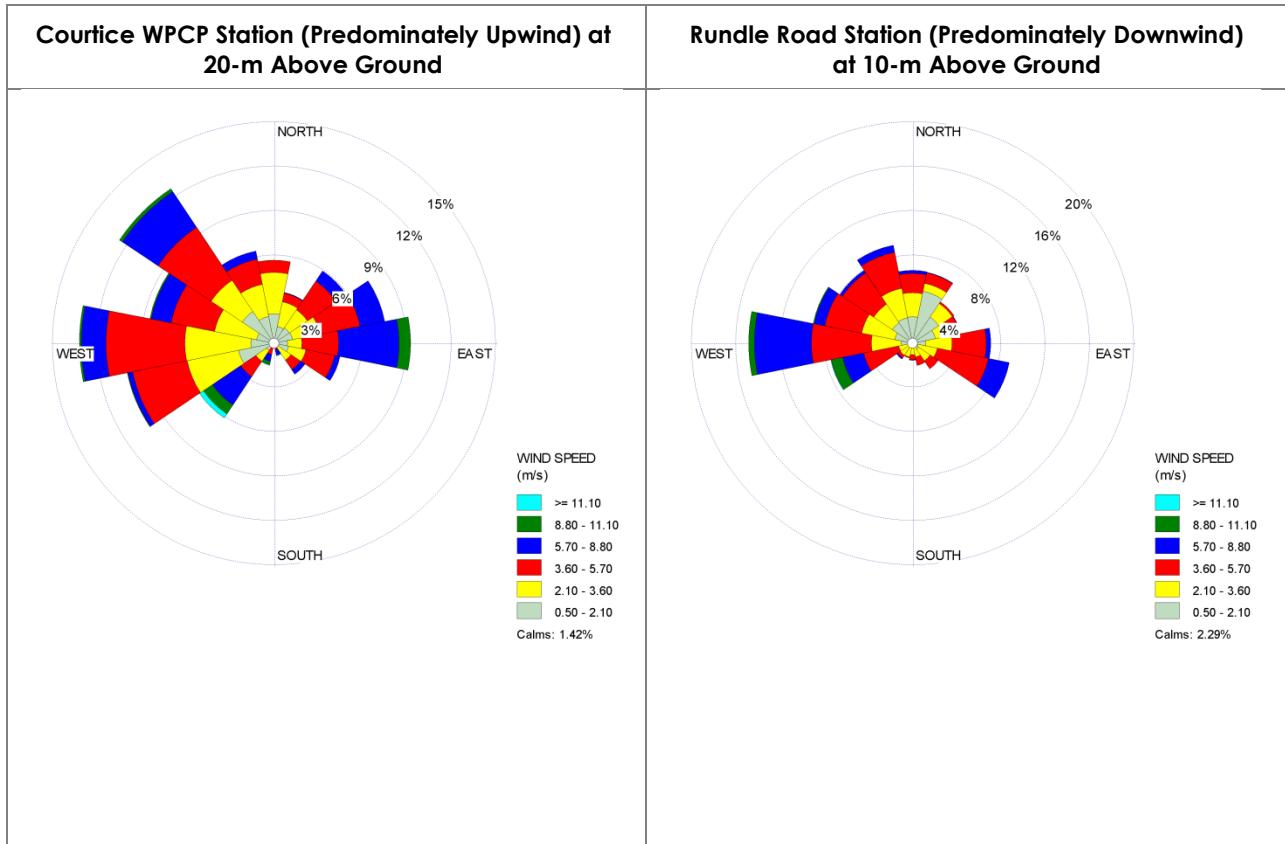
Winds over the three-month period at the Courtice WPCP Station occurred predominantly from west to northwesterly directions. Wind contribution from the south was low. Higher wind speeds occurred from easterly and southwesterly directions, and lower wind speeds from northerly directions.

At the Rundle Road Station, the wind rose over the three-month period showed predominant winds occurring from westerly directions. Higher wind speeds are noted occurring from the west-southwest.

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Summary of Ambient Measurements
May 31, 2016

Figure 4-1 Wind Roses for January to March 2016



4.2 CAC AMBIENT AIR QUALITY MEASUREMENTS

A summary of the maximum, minimum, arithmetic mean and standard deviation of the CAC pollutant concentrations measured at each station are presented in **Table 4-2**. Also presented in this table are the number of exceedances (if any occurred), of the relevant Ontario ambient air quality criteria (AAQC) or health-based standard for each contaminant. All monitored contaminants were below their applicable criteria during the period January to March 2016.

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Nitric oxide (NO) has no regulatory criteria as discussed in **Section 0** below. There are both hourly and daily AAQCs as well as O. Reg. 419 Schedule 3 criteria for NO_x which are based on health effects of NO₂. As specified in the MOECC's listing of AAQCs (MOECC, 2012a) the AAQC were compared to measured NO₂ concentrations in this report. However, as per the current April 2012 version of O. Reg. 419 Summary of Standards and Guidelines, the Schedule 3 criterion for NO_x (MOECC, 2012b) was compared to the monitored NO_x levels.

A comparison of the maximum measured data to their respective air quality criteria is presented graphically in **Figure 4-2**.

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Table 4-2 Summary of Ambient CAC Monitoring Data – January to March 2016

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Standards			Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
		ppb	µg/m³		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
SO ₂	1	250	690	Maximum	25.6	72.0	14.4	42.8
				Minimum	0.0	0.0	0.0	0.0
				Mean (January)	1.2	3.4	0.6	1.6
				Mean (February)	1.5	4.2	1.2	3.4
				Mean (March)	1.3	3.6	0.6	1.7
				Mean (Period)	1.3	3.7	0.8	2.2
				Standard Deviation	2.5	7.0	1.0	2.9
				# of Exceedances	0	0	0	0
SO ₂	24	100	275	Maximum	13.0	36.5	3.2	8.9
				Minimum	0.0	0.0	0.0	0.0
				Mean (January)	1.2	3.3	0.6	1.6
				Mean (February)	1.5	4.3	1.2	3.4
				Mean (March)	1.3	3.6	0.6	1.7
				Mean (Period)	1.3	3.7	0.8	2.2
				Standard Deviation	1.6	4.6	0.8	2.3
				# of Exceedances	0	0	0	0

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Table 4-2 Summary of Ambient CAC Monitoring Data – January to March 2016

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Standards			Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
		ppb	µg/m³		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
PM _{2.5}	24	N/A	28 ^A	Maximum	-	29.5	-	43.1
				Minimum	-	0.2	-	0.2
				Mean (January)	-	7.0	-	11.1
				Mean (February)	-	7.9	-	11.5
				Mean (March)	-	8.5	-	8.4
				Mean (Period)	-	7.8	-	10.1
				Standard Deviation	-	6.2	-	7.5
				# of Exceedances	-	N/A	-	N/A
NO ₂	1	200 ^B	400 ^B	Maximum	62.4	125.9	36.2	70.8
				Minimum	0.0	0.0	0.0	0.0
				Mean (January)	8.0	16.5	8.4	17.2
				Mean (February)	7.1	14.5	6.6	13.6
				Mean (March)	8.2	16.7	6.8	13.8
				Mean (Period)	7.8	16.0	7.3	14.9
				Standard Deviation	7.2	14.9	5.3	10.9
				# of Exceedances	0	0	0	0
	24	100 ^B	200 ^B	Maximum	23.1	47.8	18.8	39.0
				Minimum	1.3	2.8	0.3	0.6
				Mean (January)	7.9	16.4	8.3	17.0
				Mean (February)	7.1	14.6	6.8	14.0

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Table 4-2 Summary of Ambient CAC Monitoring Data – January to March 2016

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Standards			Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
		ppb	µg/m³		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
				Mean (March)	8.2	16.7	6.7	13.5
				Mean (Period)	7.8	16.0	7.3	14.8
				Standard Deviation	4.1	8.4	3.7	7.6
				# of Exceedances	0	0	0	0
NO _C	1	NA	NA	Maximum	58.5	79.9	30.7	43.1
				Minimum	0.0	0.0	0.0	0.0
				Mean (January)	2.2	2.9	2.3	3.1
				Mean (February)	1.5	2.0	2.0	2.7
				Mean (March)	2.4	3.2	2.5	3.3
				Mean (Period)	2.1	2.8	2.3	3.1
				Standard Deviation	4.9	6.6	2.2	2.9
				# of Exceedances	N/A	N/A	N/A	N/A
	24	NA	NA	Maximum	21.9	29.7	6.7	9.0
				Minimum	0.1	0.1	1.1	1.5
				Mean (January)	2.1	2.9	2.3	3.1
				Mean (February)	1.5	2.1	2.1	2.8
				Mean (March)	2.4	3.2	2.5	3.3
				Mean (Period)	2.1	2.8	2.3	3.1
				Standard Deviation	2.6	3.5	0.9	1.2
				# of Exceedances	N/A	N/A	N/A	N/A

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Table 4-2 Summary of Ambient CAC Monitoring Data – January to March 2016

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Standards			Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
		ppb	µg/m³		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
NOx	1	200 ^B	400 ^B	Maximum	85.3	178.9	57.1	123.0
				Minimum	0.0	0.0	0.0	0.0
				Mean (January)	10.1	20.9	9.5	19.5
				Mean (February)	8.1	16.7	7.4	15.2
				Mean (March)	10.5	21.4	7.9	16.0
				Mean (Period)	9.7	19.9	8.3	16.9
				Standard Deviation	11.0	22.8	6.6	13.6
				# of Exceedances	0	0	0	0
	24	100 ^B	200 ^B	Maximum	44.7	92.7	24.4	50.5
				Minimum	2.0	4.2	0.2	0.5
				Mean (January)	10.0	20.6	9.4	19.3
				Mean (February)	8.2	17.0	7.6	15.6
				Mean (March)	10.5	21.4	7.7	15.6
				Mean (Period)	9.7	19.9	8.2	16.9
				Standard Deviation	6.3	13.1	4.5	9.1
				# of Exceedances	0	0	0	0

Note:

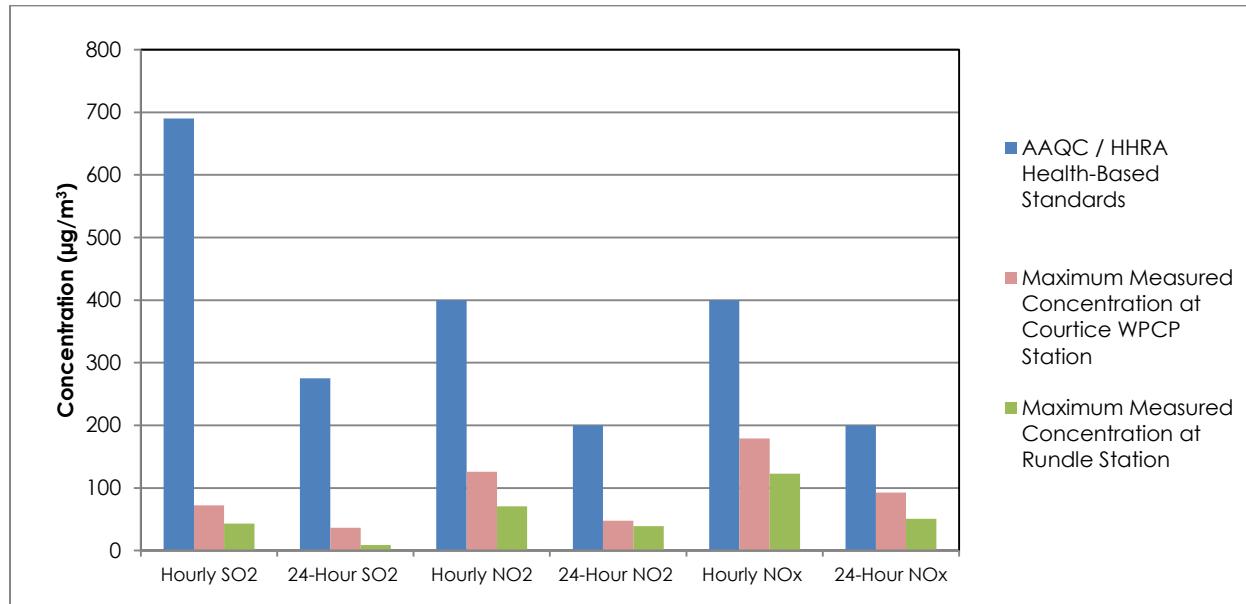
- A. Canadian Ambient Air Quality Standard for Respirable Particulate Matter. The Respirable Particulate Matter Objective is referenced to the 98th percentile over 3 consecutive years.
- B. As per current version (April 2012) of O. Reg. 419 Summary of Standards and Guidelines, the air standard for NOx is compared to a monitored NOx concentration, although the O. Reg. 419 Schedule 3 standard for NOx is based on health effects of NO₂.
- C. NO has no regulatory criteria.

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Figure 4-2 Comparison of NO₂ / NOx and SO₂ Ambient Air Quality Monitoring Data to Applicable Criteria



Detailed discussion for each measured contaminant is presented in the following sections.

4.2.1 Sulphur Dioxide (SO₂)

Data summaries are presented in **Appendix A** for sulphur dioxide for each station and month as well as time history plots of the hourly and 24-hour average SO₂ concentrations. For the hourly and 24-hour averages, the Ontario AAQCs of 690 $\mu\text{g}/\text{m}^3$ and 275 $\mu\text{g}/\text{m}^3$ are shown with blue lines in the respective plot. As shown in these figures, measured ambient SO₂ concentrations at both stations were well below the criteria. Periods of zero SO₂ concentrations shown in the data summaries for the Rundle Road Station (February 1-5, March 1-5 and March 17-21) and at the Courtice Station (March 11-14) are attributable to instrument negative zero drifts less than 5 ppb, which following MOECC protocols, do not require an offset adjustment and therefore were reported as zeros.

The maximum hourly and 24-hour average concentrations measured at the Courtice WPCP Station during January to March 2016 were 72.0 and 36.5 $\mu\text{g}/\text{m}^3$ respectively, which are 10.4% and 13.3% of the applicable 1-hour and 24-hour ambient air quality criteria.

The maximum hourly and 24-hour average concentrations measured at the Rundle Road Station during this quarter were 42.8 and 8.9 $\mu\text{g}/\text{m}^3$ respectively, which are 6.2% and 3.2% of the applicable 1-hour and 24-hour ambient air quality criteria.

Pollution roses of hourly average SO₂ concentrations measured at the Courtice WPCP Station and Rundle Road Station are presented in **Figure 4-3**. The pollution rose plots present measured

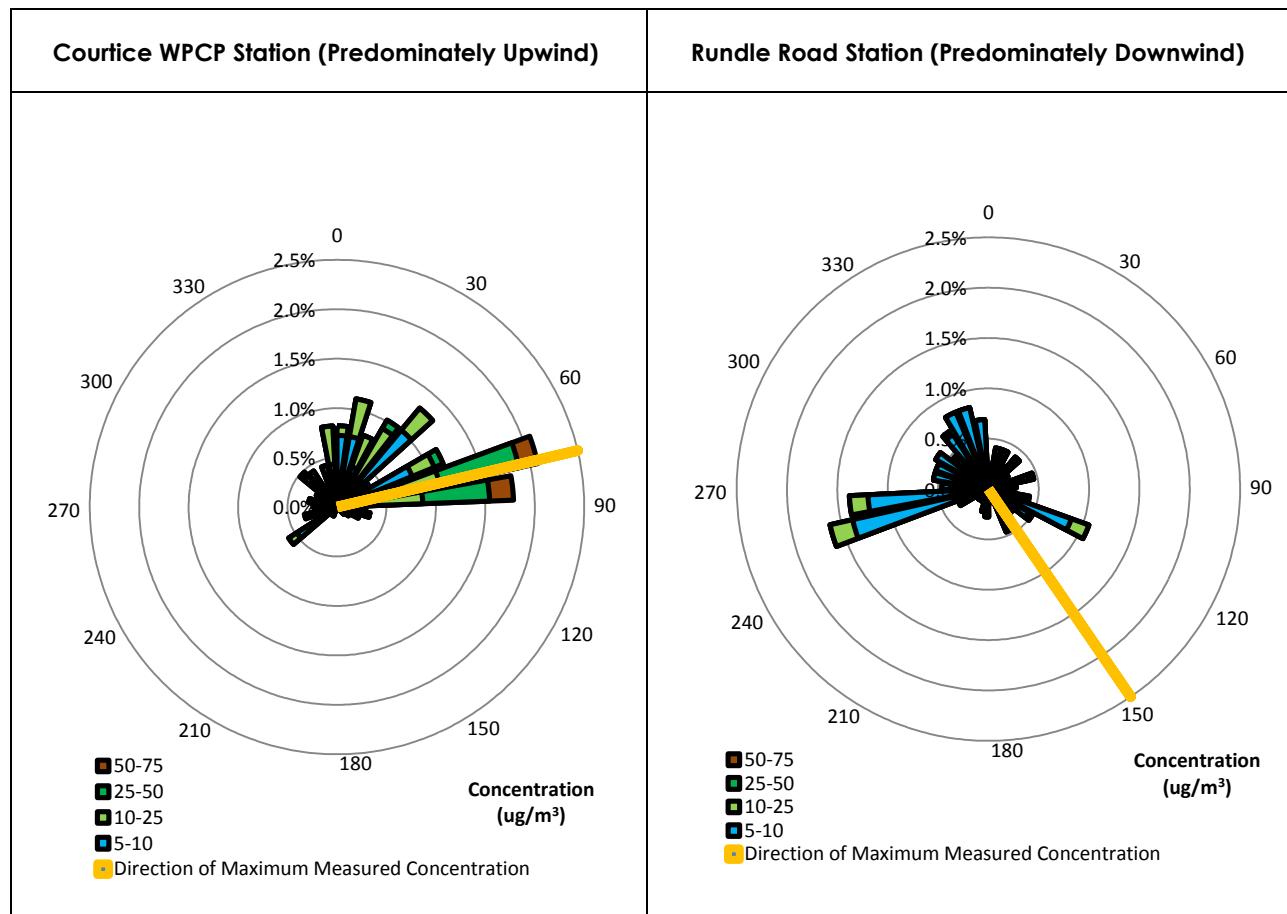
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hourly average contaminant concentrations versus measured wind direction (over 10° wind sectors). Concentrations less than 5 $\mu\text{g}/\text{m}^3$, which account for 84% of the measurements at the Courtice WPCP and 82% at the Rundle Road Station, have been removed from the plot to allow the distribution of maximum levels to be more clearly shown in the figure.

For the Courtice WPCP Station, higher hourly concentrations were measured when winds were blowing from easterly and east-northeasterly directions. The highest measured concentration at this station was from the east-northeast. For the Rundle Road Station, higher hourly concentrations occurred for west-southwesterly and southeasterly winds. The maximum measured concentration at this station occurred for southeasterly winds.

Figure 4-3 Pollution Roses of Measured Hourly Average SO₂ Concentrations – January to March 2016



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4.2.2 Nitrogen Dioxide (NO₂)

Nitrogen oxides (NO_x) are almost entirely made up of nitric oxide (NO) and nitrogen dioxide (NO₂). Together, they are often referred to as NO_x. Most NO₂ in the atmosphere is formed by the oxidation of NO, which is emitted directly by combustion processes, particularly those at high temperature and pressure. Exposure to both NO and NO₂ can result in adverse health effects to an exposed population. NO₂ is the regulated form of NO_x. Similar to other jurisdictions (e.g., Alberta Environment, World Health Organization), the O. Reg. 419/05 Schedule 3 standards for NO_x are based on health effects of NO₂, as health effects are seen at much lower concentrations of NO₂ than NO. In this report, because NO₂ is the regulated form of NO_x, the AAQC were compared to measured NO₂ concentrations (as per MOECC 2012a). However, as per the current April 2012 version of O. Reg. 419 Summary of Standards and Guidelines, the Schedule 3 NO_x criteria were also compared to the monitored NO_x concentrations (see **Section 4.2.3** below).

Data summaries are presented in **Appendix B** for nitrogen dioxide for each station and month as well as time history plots of the hourly and 24-hour average NO₂ concentrations. For the hourly and 24-hour averages, the Ontario AAQCs of 400 µg/m³ and 200 µg/m³ are shown with blue lines on the respective plot. As shown in these figures, measured ambient NO₂ concentrations at both stations were well below the criteria.

The maximum hourly and 24-hour average NO₂ concentrations measured at the Courtice WPCP Station during this quarter were 125.9 and 47.8 µg/m³ respectively, which are 31.5% and 23.9% of the applicable 1-hour and 24-hour ambient air quality criteria. At the Rundle Road Station, the maximum measured hourly and 24-hour average concentrations were 70.8 and 39.0 µg/m³, which are 17.7% and 19.5% of the applicable 1-hour and 24-hour ambient air quality criteria.

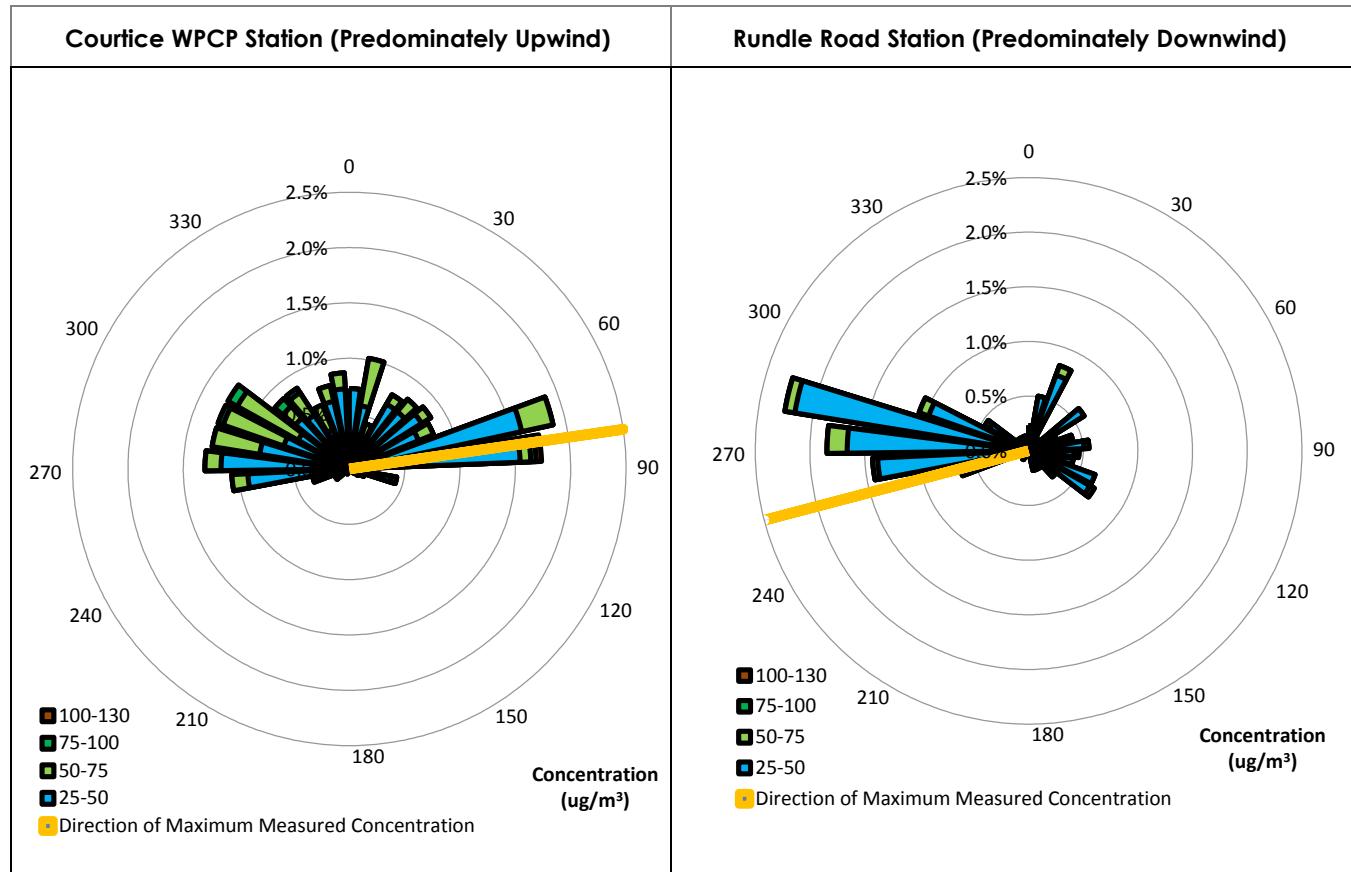
Pollution roses of measured hourly average NO₂ concentrations are presented in **Figure 4-4**. Concentrations less than 25 µg/m³, which account for 79% of the measurements at the Courtice WPCP and 83% at the Rundle Road Station, have been removed from the plot to allow the distribution of maximum levels to be more clearly shown in the figure.

The measured hourly average concentrations at the Courtice WPCP Station were higher for winds from easterly and northwesterly directions. The maximum measured hourly average NO₂ concentration for the Courtice WPCP Station occurred for an easterly wind. For the Rundle Road Station, higher measured hourly average concentrations occurred for winds blowing from the west. The maximum measured hourly average concentration at the Rundle Road Station was from the west-southwest.

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Figure 4-4 Pollution Roses of Measured Hourly Average NO₂ Concentrations – January to March 2016



4.2.3 Nitrogen Oxides (NO_x)

Data summaries are presented in **Appendix C** for nitrogen oxides for each station and month as well as time history plots of the hourly and 24-hour average NO_x concentrations. For the hourly and 24-hour averages, the O. Reg. 419 Schedule 3 criteria of 400 $\mu\text{g}/\text{m}^3$ and 200 $\mu\text{g}/\text{m}^3$ are shown with blue lines on the respective plot. As shown in these figures, the maximum measured ambient hourly and 24-hour average NO_x concentrations at the Courtice WPCP Station were below the criteria during this quarter. The measured concentrations at the Rundle Road Station were also well below the criteria.

As shown in **Table 4-2**, the maximum hourly average NO_x concentration measured at the Courtice WPCP Station was 178.9 $\mu\text{g}/\text{m}^3$, which is 44.7% of the 1-hour ambient criteria. The 24-hour average NO_x concentration measured at this station was 92.7 $\mu\text{g}/\text{m}^3$, which is 46.4% of the applicable 24-hour air quality criteria. At the Rundle Road Station, the maximum hourly and 24-hour average concentrations measured during this quarter were 123.0 and 50.5 $\mu\text{g}/\text{m}^3$, which are 30.7% and 25.2% of the applicable air quality criteria.

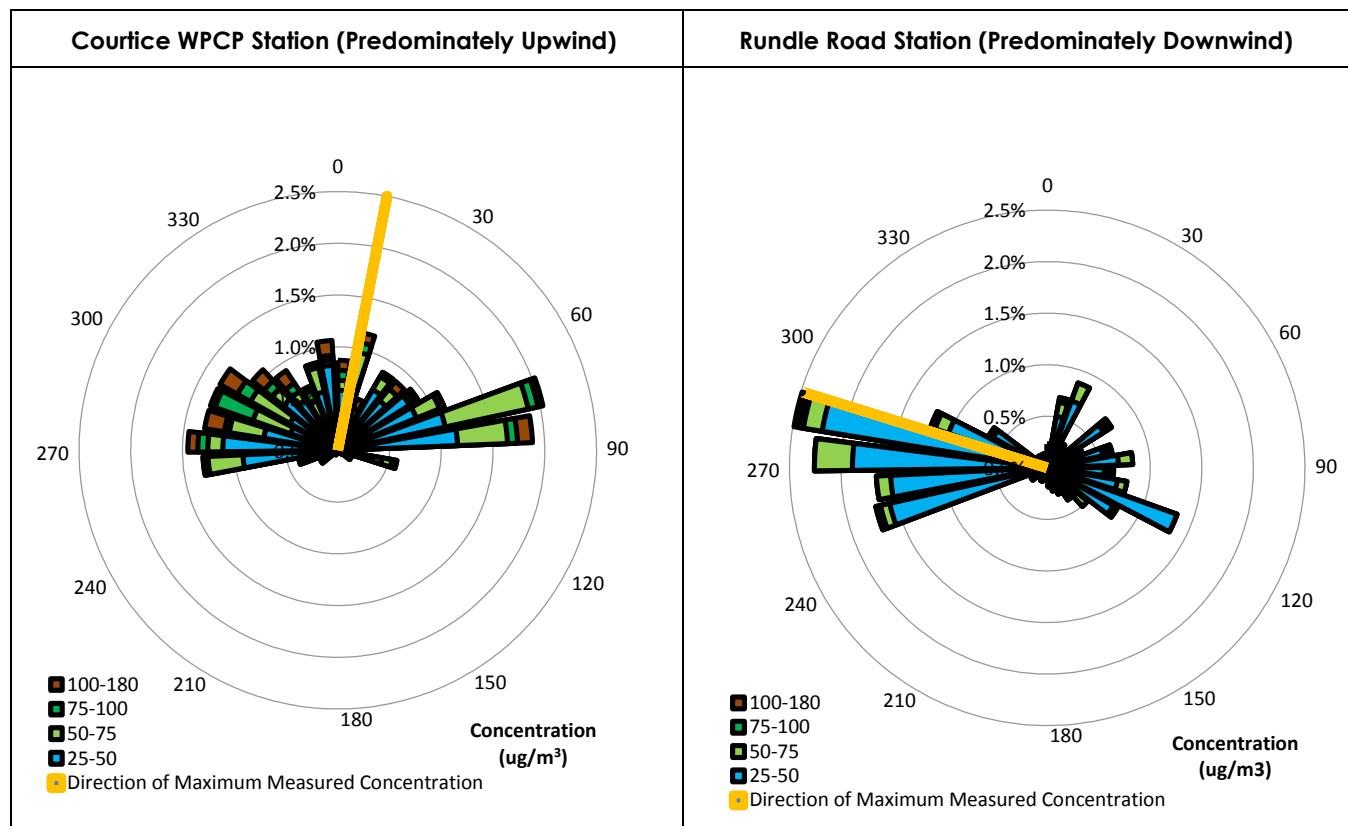
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Pollution roses of measured hourly average NO_x concentrations for the Courtice WPCP Station and the Rundle Road Station are presented in **Figure 4-5**. Concentrations less than 25 µg/m³, which account for 77% of the measurements at the Courtice WPCP and 77% at the Rundle Road Station, have been removed from the plot to allow the distribution of maximum levels to be more clearly shown in the figure.

In **Figure 4-5**, higher measured hourly average NO_x concentrations at the Courtice WPCP Station occurred for winds blowing from northwesterly and easterly directions. The maximum measured concentration was for a wind blowing from the north-northeast. At the Rundle Road Station, higher measured hourly average concentrations occurred for westerly winds. The maximum measured hourly average NO_x concentration occurred for a west-northwesterly wind.

Figure 4-5 Pollution Roses of Measured Hourly Average NO_x Concentrations – January to March 2016



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4.2.4 Particulate Matter Smaller than 2.5 Microns (PM_{2.5})

Data summaries and time history plots of measured 24-hour average concentrations are presented in **Appendix D** for PM_{2.5} for the Courtice WPCP and Rundle Road Stations. Periods of low PM_{2.5} concentrations were measured at the Courtice WPCP Station in January (such as on January 11 and 18-19) – Stantec reviewed the instrument log for these periods and found no reason to invalidate these data since the monitor was registering higher fluctuating levels on the previous and subsequent days and no error /warning codes were noted on the monitor during the station visits.

The maximum measured 24-hour average PM_{2.5} concentrations at the Courtice WPCP and the Rundle Road Stations were 29.5 µg/m³ and 43.1 µg/m³ during this quarter. It should be noted that since an exceedance of the criteria for PM_{2.5} requires the average of the 98th percentile levels in each of three consecutive years to be greater than 28 µg/m³ (CAAQS) or 30 µg/m³ (HHRA standard) whereas the PM_{2.5} measurement period at both stations in the report was three months, there is insufficient data in a quarter to determine with any certainty if exceedances of the CAAQS/HHRA criteria would occur. Discussion of PM_{2.5} measurements with respect to the CAAQS/HHRA criteria will be provided in the 2016 annual report, at which time sufficient data will have been collected to make preliminary comparisons.

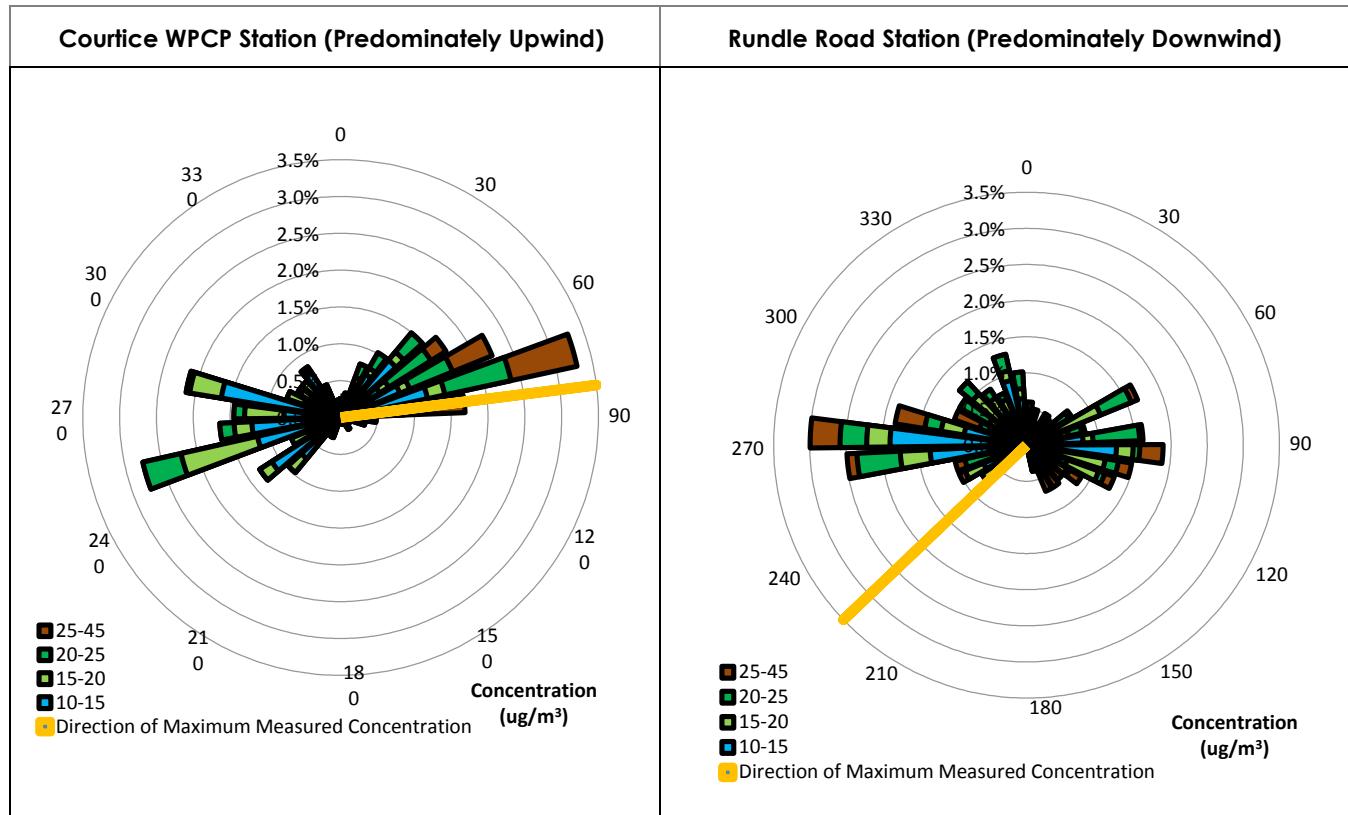
Pollution roses showing the measured 24-hour average ambient PM_{2.5} concentrations versus direction are shown in **Figure 4-6** for both monitoring stations. Concentrations less than 10 µg/m³, which account for 76% of the measurements at the Courtice WPCP and 48% at the Rundle Road Station, have been removed from the plot to allow the distribution of maximum levels to be more clearly shown in the figure.

The maximum measured concentrations occurred for east-northeasterly winds for the Courtice WPCP Station. The maximum measured concentration occurred for an easterly wind. For the Rundle Road Station, higher measured 24-hour average concentrations occurred for westerly and easterly winds. The maximum measured concentration occurred for a southwesterly wind.

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Figure 4-6 Pollution Roses of Measured 24-Hour Average PM_{2.5} Concentrations – January to March 2016



4.3 AMBIENT TSP / METALS CONCENTRATIONS

A summary of the maximum and minimum ambient TSP and metals concentrations (for a daily averaging period) are presented in **Table 4-3**. A detailed summary of the concentrations measured for each sample is presented in **Appendix F**.

The maximum measured concentrations of TSP and all metals with MOECC air quality criteria were well below their applicable 24-hour criteria (shown in Table 4-3 below) at all three stations.

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Table 4-3 Summary of Measured Ambient TSP/Metals Concentrations

Contaminant	Units	MOECC Criteria	HHRA Health Based Standard	Courtice WPCP (Predominately Upwind)			Rundle Road (Predominately Downwind)			Fence Line		
				Maximum	Minimum	No. of Exceedances	Maximum	Minimum	No. of Exceedances	Maximum	Minimum	No. of Exceedances
Particulate	µg/m³	120	120	30	9	0	32	10	0	51	13	0
Total Mercury (Hg)	µg/m³	2	2	1.33E-05	5.74E-06 A	0	1.86E-05	5.55E-06 A	0	1.24E-05	5.77E-06 A	0
Aluminum (Al)	µg/m³	4.8	-	9.99E-02	3.40E-02	0	1.41E-01	4.94E-02	0	1.85E-01	5.25E-02	0
Antimony (Sb)	µg/m³	25	25	3.38E-03 A	2.87E-03 A	0	3.10E-03 A	2.77E-03 A	0	3.37E-03 A	2.88E-03 A	0
Arsenic (As)	µg/m³	0.3	0.3	2.03E-03 A	1.72E-03 A	0	1.86E-03 A	1.66E-03 A	0	2.02E-03 A	1.73E-03 A	0
Barium (Ba)	µg/m³	10	10	8.09E-03	2.93E-03	0	9.66E-03	2.69E-03 A	0	1.11E-02	3.23E-03	0
Beryllium (Be)	µg/m³	0.01	0.01	3.38E-04 A	2.87E-04 A	0	3.10E-04 A	2.77E-04 A	0	3.37E-04 A	2.88E-04 A	0
Bismuth (Bi)	µg/m³	-	-	2.03E-03 A	1.72E-03 A	-	1.86E-03 A	1.66E-03 A	-	2.02E-03 A	1.73E-03 A	-
Boron (B)	µg/m³	120	-	2.03E-03 A	1.72E-03 A	0	1.86E-03 A	1.66E-03 A	0	2.02E-03 A	1.73E-03 A	0
Cadmium (Cd)	µg/m³	0.025	0.025	6.75E-04 A	5.74E-04 A	0	6.21E-04 A	5.55E-04 A	0	1.13E-02	5.77E-04 A	0
Chromium (Cr)	µg/m³	0.5	-	3.08E-03	1.44E-03 A	0	1.55E-03 A	1.39E-03 A	0	8.22E-03	1.44E-03 A	0
Cobalt (Co)	µg/m³	0.1	0.1	6.75E-04 A	5.74E-04 A	0	6.21E-04 A	5.55E-04 A	0	6.73E-04 A	5.77E-04 A	0
Copper (Cu)	µg/m³	50	-	1.27E-01	9.76E-03	0	6.31E-02	1.28E-02	0	4.10E-02	1.93E-02	0
Iron (Fe)	µg/m³	4	-	4.13E-01	9.05E-02	0	4.79E-01	1.33E-01	0	9.14E-01	1.01E-01	0
Lead (Pb)	µg/m³	0.5	0.5	4.59E-03	8.61E-04 A	0	4.26E-03	8.32E-04 A	0	6.69E-03	9.31E-04 A	0
Magnesium (Mg)	µg/m³	-	-	1.70E-01	5.52E-02	-	2.41E-01	5.55E-02	-	2.69E-01	8.02E-02	-
Manganese (Mn)	µg/m³	0.4	-	2.97E-02	2.76E-03	0	1.93E-02	3.33E-03 A	0	2.12E-02	4.67E-03	0
Molybdenum (Mo)	µg/m³	120	-	3.11E-03	8.61E-04 A	0	9.31E-04 A	8.32E-04 A	0	1.01E-03 A	8.65E-04 A	0
Nickel (Ni)	µg/m³	0.2	-	1.01E-03 A	8.61E-04 A	0	9.31E-04 A	8.32E-04 A	0	1.01E-03 A	8.65E-04 A	0
Phosphorus (P)	µg/m³	-	-	5.28E-02	7.18E-03 A	-	5.09E-02	7.17E-03 A	-	3.34E-01	7.21E-03 A	-
Selenium (Se)	µg/m³	10	10	3.38E-03 A	2.87E-03 A	0	3.10E-03 A	2.77E-03 A	0	3.37E-03 A	2.88E-03 A	0
Silver (Ag)	µg/m³	1	1	1.69E-03 A	1.44E-03 A	0	1.55E-03 A	1.39E-03 A	0	1.68E-03 A	1.44E-03 A	0
Strontium (Sr)	µg/m³	120	-	3.92E-03	1.61E-03	0	6.65E-03	1.58E-03 A	0	1.28E-02	1.85E-03	0
Thallium (Tl)	µg/m³	-	-	3.38E-03 A	2.87E-03 A	-	3.10E-03 A	2.77E-03 A	-	3.37E-03 A	2.88E-03 A	-
Tin (Sn)	µg/m³	10	10	3.38E-03 A	2.87E-03 A	0	3.10E-03 A	2.77E-03 A	0	3.37E-03 A	2.88E-03 A	0
Titanium (Ti)	µg/m³	120	-	6.75E-03	2.87E-03 A	0	8.07E-03	2.77E-03 A	0	1.72E-02	2.88E-03 A	0
Vanadium (V)	µg/m³	2	1	1.69E-03 A	1.44E-03 A	0	1.55E-03 A	1.39E-03 A	0	1.68E-03 A	1.44E-03 A	0
Zinc (Zn)	µg/m³	120	-	4.82E-02	9.10E-03	0	5.15E-02	7.79E-03	0	7.41E-02	1.32E-02	0
Zirconium (Zr)	µg/m³	20	-	1.69E-03 A	1.44E-03 A	0	1.55E-03 A	1.39E-03 A	0	1.68E-03 A	1.44E-03 A	0
Total Uranium (U)	µg/m³	1.5	-	1.52E-04 A	1.29E-04 A	0	1.40E-04 A	1.25E-04 A	0	1.52E-04 A	1.30E-04 A	0

Note: A. Measured concentration was less than the laboratory method detection limit.

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4.4 AMBIENT PAH CONCENTRATIONS

A summary of the maximum and minimum ambient PAH concentrations (for a daily averaging period) are presented in **Table 4-4**. In this summary, both individual PAHs as well as a total PAH concentration are reported. A detailed summary of the concentrations measured for each sample is presented in **Appendix G**.

The maximum measured concentrations of the PAHs with MOECC air quality criteria were well below their applicable 24-hour criteria, with the exception of two (2) measurements of benzo(a)pyrene (B(a)P) collected at the two monitoring stations.

The current Ontario 24-hour B(a)P AAQC was introduced in 2011 and levels above this recently enacted AAQC are commonly measured throughout Ontario. B(a)P measurement data available from the National Air Pollutant Surveillance (NAPS) network for Ontario in 2013 (for Simcoe, Toronto and Hamilton), all had maximum levels above the AAQC (varying between 136% - 6220% of the criteria). Available NAPS data for Ontario in 2012 (for Windsor, Toronto and Hamilton) showed maximum B(a)P levels at these stations that varied between 716% - 2920% of the criteria. In 2011, NAPS data available for seven Ontario stations (Windsor, Toronto, Etobicoke, Hamilton, Simcoe, Pt. Petrie and Burnt Island) showed exceedances at six of the seven stations, with only the remote Burnt Island Ontario station reporting a maximum level below the MOECC AAQC. In 2010, all of these stations, including the Burnt Island station, measured B(a)P levels above the AAQC.

Benzo(a)pyrene (B(a)P) is a byproduct of a wide variety of natural and man-made combustion processes (including motor vehicles, natural gas, wood, refuse, oil, forest fires, etc.) and is widely present in the environment (including being present in soil and water).

The B(a)P level in two (2) samples, one collected at the Courtice WPCP Station and one collected at the Rundle Road Station on February 18, 2016, exceeded the Ontario AAQC by 17% and 315%, respectively. All samples were however, well below the MOECC Schedule 6 Upper Risk Threshold, the MOECC O. Reg. 419 24-hour average guideline, and the HHRA health based standard. A summary of the wind directions and potential source contributions for these measurements is presented in **Table 4-5**.

Based on the air quality assessments completed during the Environmental Assessment Study and the Environmental Compliance Approval application for the DYEC, the facility will not be a significant contributor of B(a)P. Therefore, ambient B(a)P levels are not expected to be substantially impacted by the operation of the DYEC.

QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

Summary of Ambient Measurements
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Table 4-4 Summary of Measured Ambient PAH Concentrations

Contaminant	Units	MOECC Criteria	HHRA Health Based Standard	Courtice WPCP (Predominately Upwind)			Rundle Road (Predominately Downwind)		
				Maximum	Minimum	No. of Exceedances	Maximum	Minimum	No. of Exceedances
Benzo(a)pyrene	ng/m ³	0.05 ^A 5 ^B 1.1 ^C	1	5.85E-02	5.52E-03	1 0 0	2.07E-01	1.33E-02	1 0 0
1-Methylnaphthalene	ng/m ³	12,000	-	4.50E+00	1.61E+00	0	6.32E+00	1.33E+00	0
2-Methylnaphthalene	ng/m ³	10,000	-	8.25E+00	2.43E+00	0	1.00E+01	1.94E+00	0
Acenaphthene	ng/m ³	-	-	2.39E+00	4.75E-01	-	1.16E+00	2.60E-01	-
Acenaphthylene	ng/m ³	3,500	-	2.79E-01	6.87E-02 ^F	0	8.40E-01	7.24E-02 ^F	0
Anthracene	ng/m ³	200	-	1.10E-01 ^F	6.87E-02 ^F	0	1.08E-01 ^F	7.24E-02 ^F	0
Benzo(a)anthracene	ng/m ³	-	-	1.10E-01 ^F	6.87E-02 ^F	-	2.30E-01	7.24E-02 ^F	-
Benzo(a)fluorene	ng/m ³	-	-	2.20E-01 ^F	1.37E-01 ^F	-	2.17E-01 ^F	1.45E-01 ^F	-
Benzo(b)fluoranthene	ng/m ³	-	-	2.49E-01	1.03E-01 ^F	-	4.90E-01	7.24E-02 ^F	-
Benzo(b)fluorene	ng/m ³	-	-	2.20E-01 ^F	1.37E-01 ^F	-	2.17E-01 ^F	1.45E-01 ^F	-
Benzo(e)pyrene	ng/m ³	-	-	2.20E-01 ^F	1.37E-01 ^F	-	2.17E-01 ^F	1.45E-01 ^F	-
Benzo(g,h,i)perylene	ng/m ³	-	-	1.10E-01 ^F	6.87E-02 ^F	-	1.08E-01 ^F	7.24E-02 ^F	-
Benzo(k)fluoranthene	ng/m ³	-	-	1.10E-01 ^F	6.87E-02 ^F	-	1.08E-01 ^F	7.24E-02 ^F	-
Biphenyl	ng/m ³	-	-	2.12E+00	9.96E-01	-	2.24E+00	8.67E-01	-
Chrysene	ng/m ³	-	-	2.08E-01	6.87E-02 ^F	-	4.05E-01	7.24E-02 ^F	-
Dibenz(a,h)anthracene ^D	ng/m ³	-	-	1.10E-01 ^F	6.87E-02 ^F	-	1.08E-01 ^F	7.24E-02 ^F	-
Dibenzo(a,c) anthracene + Picene ^D	ng/m ³	-	-	4.39E-01 ^F	2.07E-01 ^F	-	4.33E-01 ^F	2.07E-01 ^F	-
Fluoranthene	ng/m ³	-	-	5.70E-01	3.72E-01	-	1.11E+00	3.15E-01	-

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Summary of Ambient Measurements
May 31, 2016

Table 4-4 Summary of Measured Ambient PAH Concentrations

Contaminant	Units	MOECC Criteria	HHRA Health Based Standard	Courtice WPCP (Predominately Upwind)			Rundle Road (Predominately Downwind)		
				Maximum	Minimum	No. of Exceedances	Maximum	Minimum	No. of Exceedances
Indeno (1,2,3-cd)pyrene	ng/m ³	-	-	1.10E-01 F	6.87E-02 F	-	1.81E-01	7.24E-02 F	-
Naphthalene	ng/m ³	22,500	22,500	2.11E+01	1.11E+01	0	3.51E+01	9.88E+00	0
o-Terphenyl	ng/m ³	-	-	2.20E-01 F	1.37E-01 F	-	2.17E-01 F	1.45E-01 F	-
Perylene	ng/m ³	-	-	2.20E-01 F	1.37E-01 F	-	2.17E-01 F	1.45E-01 F	-
Phenanthrene	ng/m ³	-	-	2.36E+00	1.36E+00	-	2.63E+00	1.17E+00	-
Pyrene	ng/m ³	-	-	5.28E-01	1.03E-01 F	-	1.02E+00	1.04E-01 F	-
Tetralin	ng/m ³	-	-	2.11E+00	8.79E-01	-	2.90E+00	6.36E-01	-
Total PAH E	ng/m ³	-	-	45.2	22.0	-	65.8	19.4	-

Notes:

- A. Ontario Ambient Air Quality Criteria. The standard for benzo(a)pyrene (B(a)P) is for B(a)P as a surrogate for PAHs.
- B. O. Reg. 419 Schedule 6 Upper Risk Thresholds.
- C. O. Reg. 419 24 Hour Guideline
- D. Based on laboratory analyses, dibenzo(a,c)anthracene co-elutes with dibenz(a,h)anthracene. Picene elutes after dibenz(a,h)anthracene
- E. The reported total PAH is the sum of all analysed PAH species.
- F. Measured concentration was less than the laboratory method detection limit.

QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

Summary of Ambient Measurements

May 31, 2016

Table 4-5 Source Contribution Analysis – Quarter 1 2016 B(a)P Exceedances

Date	Station	% above the MOECC B(a)P Criterion	Wind Direction (blowing from)	Potential Source Contributions
February 18, 2016	Courtice WPCP	17%	North	Land use in this direction is primarily agricultural with Highway 401 and a Canadian National (CN) rail line also located to the north.
February 18, 2016	Rundle Road	315%	North	Land use in this wind direction is mainly agricultural.

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Summary of Ambient Measurements
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4.5 AMBIENT DIOXINS AND FURANS CONCENTRATIONS

A summary of the maximum and minimum ambient dioxins and furans concentrations (for a daily averaging period) are presented in **Table 4-6**. In this summary, both individual dioxins and furans concentrations (pg/m^3) as well as the total toxic equivalency concentration (TEQ) are reported. A detailed summary of the concentrations measured for each sample is presented in **Appendix H**.

The maximum measured toxic equivalent dioxins and furans concentrations at both stations were below the applicable 24-hour criteria AAQC of $0.1 \text{ pg TEQ}/\text{m}^3$ (as shown in Table 4-6).

QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

Summary of Ambient Measurements
May 31, 2016

Table 4-6 Summary of Measured Ambient Dioxins and Furans Concentrations

Contaminant	Units	MOECC Criteria	HHRA Health Based Standard	Courtice WPCP (Predominately Upwind)			Rundle Road (Predominately Downwind)		
				Maximum	Minimum	No. of Exceedances	Maximum	Minimum	No. of Exceedances
2,3,7,8-Tetra CDD *	pg/m ³	-	-	5.27E-03 ^A	2.61E-03 ^A	N/A	4.81E-03 ^A	2.61E-03 ^A	N/A
1,2,3,7,8-Penta CDD	pg/m ³			7.31E-03	3.31E-03 ^A		6.64E-03	2.49E-03 ^A	
1,2,3,4,7,8-Hexa CDD	pg/m ³			1.12E-02 ^A	2.50E-03 ^A		8.86E-03	2.91E-03 ^A	
1,2,3,6,7,8-Hexa CDD	pg/m ³			2.45E-02	3.31E-03 ^A		1.47E-02	3.49E-03 ^A	
1,2,3,7,8,9-Hexa CDD	pg/m ³			3.03E-02	4.39E-03 ^A		2.21E-02 ^A	3.01E-03 ^A	
1,2,3,4,6,7,8-Hepta CDD	pg/m ³			2.09E-01	2.40E-02		2.37E-01	1.85E-02	
Octa CDD	pg/m ³			5.22E-01	1.64E-01		4.89E-01	9.22E-02	
Total Tetra CDD	pg/m ³			5.19E-02	3.04E-03 ^A		3.71E-02	2.61E-03 ^A	
Total Penta CDD	pg/m ³			9.05E-02	4.45E-03 ^A		2.79E-02	3.62E-03 ^A	
Total Hexa CDD	pg/m ³			2.19E-01	2.05E-02 ^A		1.37E-01	1.34E-02 ^A	
Total Hepta CDD	pg/m ³			4.54E-01	1.22E-01		4.40E-01	4.97E-02	
2,3,7,8-Tetra CDF **	pg/m ³			3.00E-02 ^A	2.64E-03 ^A		2.10E-02 ^A	4.48E-03 ^A	
1,2,3,7,8-Penta CDF	pg/m ³			1.10E-02	2.36E-03 ^A		6.36E-03	2.91E-03 ^A	
2,3,4,7,8-Penta CDF	pg/m ³			2.04E-02 ^A	2.36E-03 ^A		8.30E-03	2.91E-03 ^A	
1,2,3,4,7,8-Hexa CDF	pg/m ³			6.91E-02 ^A	2.92E-03 ^A		2.10E-02	2.49E-03 ^A	
1,2,3,6,7,8-Hexa CDF	pg/m ³			2.35E-02 ^A	2.78E-03 ^A		8.58E-03	2.35E-03 ^A	
2,3,4,6,7,8-Hexa CDF	pg/m ³			3.70E-02 ^A	2.92E-03 ^A		1.13E-02	2.49E-03 ^A	
1,2,3,7,8,9-Hexa CDF	pg/m ³			7.04E-03 ^A	3.20E-03 ^A		4.91E-03 ^A	2.63E-03 ^A	
1,2,3,4,6,7,8-Hepta CDF	pg/m ³			1.66E-01	3.59E-03 ^A		4.26E-02	3.76E-03 ^A	
1,2,3,4,7,8,9-Hepta CDF	pg/m ³			2.53E-02	2.78E-03 ^A		7.19E-03	2.77E-03 ^A	
Octa CDF	pg/m ³			1.82E-01	5.93E-03 ^A		4.95E-02	4.62E-03 ^A	
Total Tetra CDF	pg/m ³			3.05E-01	2.64E-03 ^A		9.16E-02	4.48E-03 ^A	
Total Penta CDF	pg/m ³			2.51E-01	2.36E-03 ^A		7.28E-02	2.91E-03 ^A	
Total Hexa CDF	pg/m ³			3.05E-01	2.92E-03 ^A		7.44E-02	3.33E-03 ^A	
Total Hepta CDF	pg/m ³			2.84E-01	4.00E-03 ^A		7.64E-02	4.05E-03 ^A	
TOTAL TOXIC EQUIVALENCY ^B	pg TEQ/m ³	0.1 ^C 1 ^D	-	0.044	0.011	0 0	0.026	0.011	0 0

Note:

- A. Measured concentration was less than the laboratory method detection limit.
- B. Total Toxicity Equivalent (TEQ) concentration contributed by all dioxins, furans and dioxin-like PCBs calculated as per O. Reg. 419 methodology using corresponding WHO₂₀₀₅ toxic equivalency factors (TEFs) and a value of half the minimum detection limit (MDL) substituted for concentrations less than the MDL.
- C. Ontario Ambient Air Quality Criteria
- D. O. Reg. 419 Schedule 6 Upper Risk Thresholds

* CDD - Chloro Dibenzo-p-Dioxin, ** CDF - Chloro Dibenzo-p-Furan

QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

Conclusions
May 31, 2016

5.0 CONCLUSIONS

This quarterly report provides a summary of the ambient air quality data collected at the two monitoring stations located predominantly upwind and downwind in the vicinity of the DYEC for the period January to March 2016.

The following observations and conclusions were made from a review of the measured ambient air quality monitoring data:

1. Measured concentrations of NO₂, SO₂ and PM_{2.5} were below the applicable O. Reg. 419/05 criteria or human health risk assessment (HHRA) health-based standards presented in **Table 2-2** of this report;
2. Since the Canadian Ambient Air Quality Standard (CAAQS) for PM_{2.5} is based on a 98th percentile level over 3 years, whereas the PM_{2.5} measurement period at both stations for this quarterly report was three months, there is insufficient data collected to determine with any certainty if exceedances of the CAAQS would occur. Therefore no comparison of the measured PM_{2.5} data during this quarter to the CAAQS was conducted for this report, as it would not be scientifically accurate or representative;
3. The maximum measured concentrations of TSP and all metals with MOECC air quality criteria were well below their applicable criteria (as presented in Table 2.3 in this report);
4. The maximum measured concentrations of all PAHs with MOE air quality criteria were well below their applicable criteria shown in Table 2.4, with the exception of the 24-hour benzo(a)pyrene concentration in one sample measured at the Courtice WPCP Station and one sample measured at the Rundle Road Station, which exceeded the applicable Ontario Ambient Air Quality Criteria by 17% and 315%, respectively. The measurements were however, well below the MOECC Schedule 6 Upper Risk Threshold, the MOE O. Reg. 419 24-hour average guideline, and the HHRA health based standard; and,
5. The maximum measured toxic equivalent dioxin and furan concentration was below the applicable criteria presented in Table 2.4.

In summary, the measured concentrations of the air contaminants monitored were below their applicable MOECC criteria during the monitoring period between January and March 2016, with the exception of benzo(a)pyrene. Furthermore, all measured levels of the monitored contaminants were below their applicable HHRA health-based standards.

QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

References
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**QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY
CENTRE –JANUARY TO MARCH 2016**

Appendix A SO₂ Data Summaries and Time History Plots
May 31, 2016

**Appendix A SO₂ DATA SUMMARIES AND TIME HISTORY
PLOTS**

		SO2 - COURTICE																													
		January 2016																													
		(µg/m³)																													
Hour																															
Day	Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>690	Days>275
1	0	0.1	0.2	0.8	0.3	0.2	0.1	0.0	0.2	0.2	0.4	0.5	0.2	0.2	0.2	0.4	0.5	0.3	0.3	0.3	0.5	0.2	0.2	0.0	0.2	24	0.8	0.0	0.3	0	0
2	0	0.2	0.1	0.2	0.1	0.0	0.1	0.7	0.2	0.2	0.8	0.9	0.5	0.4	0.3	0.2	0.2	0.3	0.2	0.7	1.3	1.1	1.1	1.3	0.4	24	1.3	0.0	0.5	0	0
3	0	1.7	0.9	0.9	1.0	0.9	1.1	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.4	0.3	0.2	0.0	0.1	1.1	1.2	1.2	0.0	0.0	0.0	24	1.7	0.0	0.7	0	0
4	0	1.2	3.8	4.8	8.5	3.7	4.8	1.6	6.2	7.6	5.0	2.0	4.1	3.7	6.6	2.3	2.7	1.5	0.0	0.0	7.5	6.0	1.5	10.3	24	10.3	0.0	4.0	0	0	
5	0	2.4	0.0	0.0	0.0	2.2	1.2	2.1	0.4	0.0	1.4	5.1	5.1	5.8	5.4	9.2	3.2	3.2	1.4	1.0	1.2	1.9	3.3	3.2	2.1	24	9.2	0.0	2.5	0	0
6	0	0.9	2.6	2.3	2.4	3.1	3.1	3.1	3.8	3.1	5.2	12.0	11.0	9.8	11.7	7.5	4.8	4.8	6.2	5.6	4.5	4.9	4.3	3.7	4.0	24	12.0	0.9	5.2	0	0
7	0	3.3	3.4	4.8	9.1	12.9	7.4	12.7	13.0	10.0	8.2	5.6	4.9	4.3	3.9	4.7	5.9	7.8	6.0	32.6	15.0	12.7	15.6	9.1	11.3	24	32.6	3.3	9.3	0	0
8	0	11.7	6.7	3.7	3.7	3.9	4.8	3.6	4.0	4.8	7.5	36.8	37.3	63.8	68.0	72.0	45.4	10.4	4.4	4.4	4.9	2.9	2.5	2.2	1.9	24	72.0	1.9	17.1	0	0
9	0	1.3	1.0	1.1	1.5	1.2	1.1	0.9	0.9	1.0	0.8	1.0	0.9	0.7	0.8	0.6	0.6	0.7	0.8	0.7	0.5	0.5	0.4	1.0	24	1.5	0.4	0.9	0	0	
10	0	0.8	1.2	0.9	1.0	1.0	0.7	2.5	23.2	4.4	2.7	2.1	1.8	1.7	1.6	1.0	1.6	1.6	1.0	0.9	0.8	0.5	0.3	0.3	0.3	24	23.2	0.3	2.3	0	0
11	0	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.5	0.5	0.3	1.9	1.3	1.3	1.3	24	1.9	0.1	0.4	0	0	
12	0	1.3	1.3	2.9	0.9	0.6	0.3	0.9	1.6	1.9	1.1	1.3	1.8	2.0	2.2	1.8	1.5	1.2	0.9	1.0	1.1	1.3	4.3	4.9	24	4.9	0.3	1.8	0	0	
13	0	2.3	1.1	0.2	0.3	0.7	3.1	2.0	0.3	0.3	0.3	1.2	0.9	0.2	0.1	0.1	0.2	0.2	1.0	2.1	1.9	2.7	1.6	1.5	24	3.1	0.1	1.1	0	0	
14	0	1.1	0.9	1.4	1.3	1.7	2.5	3.3	3.0	2.5	2.9	2.8	2.8	2.6	2.1	1.8	1.2	0.9	0.9	1.7	0.9	1.5	3.6	4.3	24	4.3	0.9	2.1	0	0	
15	0	2.3	2.9	4.1	1.8	14.4	15.2	28.1	29.2	29.1	59.1	33.5	5.8	36.0	57.7	47.5	47.7	65.8	28.4	13.9	8.2	5.2	3.9	4.5	24	65.8	1.8	23.4	0	0	
16	0	12.9	4.0	3.1	1.6	1.3	1.9	2.2	1.7	1.4	1.7	1.7	1.4	1.6	1.2	0.9	0.9	0.8	0.4	0.2	0.2	0.2	0.2	0.2	24	12.9	0.1	1.7	0	0	
17	0	0.2	0.2	0.2	0.4	0.6	1.8	1.6	0.8	2.2	2.0	2.1	1.3	1.5	2.0	1.7	0.6	0.3	0.2	0.2	0.2	0.2	0.2	24	2.2	0.2	0.9	0	0		
18	0	0.2	0.3	0.7	0.2	0.1	0.1	0.0	0.0	1.2	0.6	1.0	0.9	0.9	0.3	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.1	24	1.2	0.0	0.3	0	0		
19	0	2.0	4.0	6.3	6.0	1.8	0.3	0.5	1.4	1.1	0.4	0.0	0.0	0.3	0.0	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	24	6.3	0.0	1.1	0	0		
20	0	0.2	0.0	0.0	0.0	1.6	1.3	0.0	0.0	0.3	0.3	1.5	0.9	0.3	0.6	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	24	1.6	0.0	0.3	0	0		
21	0	0.0	0.0	0.3	0.1	0.0	0.2	0.3	0.2	2.2	5.2	2.8	1.9	1.2	0.7	6.1	1.6	0.0	0.0	0.3	0.0	0.0	0.0	24	6.1	0.0	1.0	0	0		
22	0	0.0	3.0	3.7	4.5	1.2	3.4	0.9	0.0	1.6	0.4	2.3	2.8	4.8	10.9	21.9	14.0	6.0	3.1	0.7	0.6	0.3	0.3	0.0	24	21.9	0.0	3.6	0	0	
23	0	2.5	5.6	9.6	5.1	3.6	8.9	14.6	8.9	6.9	11.2	7.8	3.0	0.4	0.5	0.2	1.1	0.9	0.3	0.1	0.0	0.0	0.0	0.0	24	14.6	0.0	3.9	0	0	
24	0	0.7	0.0	0.1	0.0	0.0	0.1	0.0	0.2	0.3	0.6	1.0	0.9	1.0	5.8	4.8	4.7	4.8	3.8	3.6	2.9	2.3	2.5	1.5	24	5.8	0.0	1.8	0	0	
25	0	1.0	1.2	2.2	1.9	3.6	3.3	1.7	1.7	2.4	3.6	5.1	4.4	3.3	2.9	2.6	3.0	2.7	2.3	2.3	2.3	2.0	2.4	3.8</							

		SO2 - COURTICE																														
		February 2016																														
		(µg/m³)																														
Hour																																
Day	Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>690	Days>275	
1	0	1.7	1.8	1.8	1.9	1.8	1.7	1.9	1.3	1.5	1.3	0.8	0.8	0.8	0.7	0.8	0.7	0.5	0.4	0.4	0.3	0.3	0.3	1.3	24	1.9	0.3	1.1	0	0		
2	0	0.3	0.2	0.8	0.3	0.3	1.9	0.7	4.1	0.8	1.3	1.4	5.9	21.6	2.7	1.5	1.2	0.9	3.5	3.3	6.0	3.7	4.2	34.0	24	34.0	0.2	4.7	0	0		
3	0	3.8	1.8	1.6	1.6	1.6	1.4	1.0	1.1	3.1	1.7	1.7	A	A	A	1.5	1.4	1.4	1.5	1.5	1.1	1.2	0.8	0.9	0.8	21	3.8	0.8	1.5	0	0	
4	0	0.8	0.8	1.0	0.9	1.2	0.9	0.7	0.7	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.6	0.9	0.9	0.8	1.3	0.3	24	1.7	0.0	0.6	0	0		
5	0	5.3	6.6	0.8	0.3	2.3	7.2	1.4	14.4	1.0	4.5	2.6	1.0	0.3	0.4	0.1	0.4	0.2	0.1	0.1	0.1	0.6	2.2	3.0	24	14.4	0.1	2.3	0	0		
6	0	2.6	1.7	3.3	4.1	3.3	2.5	2.1	1.8	1.2	1.2	0.6	0.2	0.2	0.3	0.9	1.4	0.6	1.5	3.2	2.3	1.6	2.0	1.5	24	4.1	0.2	1.7	0	0		
7	0	1.6	1.6	2.0	2.1	2.3	2.3	15.2	17.6	5.9	6.3	3.7	2.5	2.6	2.2	1.6	1.6	2.1	2.5	6.5	1.7	9.9	36.2	14.0	24	36.2	1.6	6.7	0	0		
8	0	18.2	37.4	41.3	37.9	31.3	45.0	39.8	46.3	54.4	57.6	63.6	35.1	35.0	38.1	31.5	36.9	46.2	49.3	11.3	10.1	20.9	48.7	16.4	24	63.6	10.1	36.3	0	0		
9	0	22.6	4.0	6.7	2.5	2.2	2.0	1.9	1.8	1.9	2.4	4.2	6.5	16.4	24.1	24.3	5.1	3.0	3.9	11.1	27.3	8.2	7.7	7.0	12.7	24	27.3	1.8	8.7	0	0	
10	0	9.3	17.9	4.6	3.0	2.3	1.7	1.6	1.5	1.1	1.4	1.4	0.6	1.0	1.0	1.6	1.6	1.4	1.6	2.0	3.3	2.1	1.1	1.3	0.8	24	17.9	0.6	2.7	0	0	
11	0	0.2	0.2	1.4	0.3	0.2	0.1	0.0	0.1	0.0	0.1	0.1	0.3	1.0	1.5	2.5	5.5	5.9	3.1	1.5	0.3	0.1	0.0	0.9	24	5.9	0.0	1.1	0	0		
12	0	0.8	1.6	1.6	3.6	5.7	2.3	1.7	2.8	1.3	1.0	0.7	M	M	M	M	M	M	M	M	M	M	M	M	11	5.7	0.7	0	0	0		
13	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0	0	0	0			
14	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0	0	0	0			
15	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0	0	0	0			
16	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	1.7	1.6	1.7	1.7	1.5	0.9	0.8	0.7	0.7	0.5	0.5	0	0	0	0
17	0	1.2	0.9	0.8	0.9	1.1	0.6	0.5	0.9	0.9	0.8	0.3	0.2	0.2	0.1	0.1	0.2	0.0	0.1	0.0	0.2	0.1	0.2	0.1	24	1.2	0.0	0.4	0	0		
18	0	0.1	0.8	0.8	1.0	1.1	0.0	0.0	0.4	1.1	2.9	6.2	8.6	3.8	1.0	0.8	1.1	1.4	1.0	0.9	0.7	1.7	2.9	1.0	24	8.6	0.0	1.7	0	0		
19	0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.5	1.0	1.1	1.6	1.6	1.7	1.9	1.7	1.7	1.6	1.8	2.0	2.2	3.7	2.8	2.2	24	3.7	0.5	1.5	0	0		
20	0	1.7	1.9	1.9	1.6	1.6	1.6	1.6	1.8	2.0	1.9	1.9	2.3	2.7	2.7	2.5	2.2	2.2	1.9	1.6	1.7	1.7	1.6	1.5	24	2.7	1.5	1.9	0	0		
21	0	1.4	1.2	1.2	0.9	1.0	0.9	1.3	1.1	1.1	1.0	2.0	3.2	2.7	1.0	0.9	1.4	1.8	1.0	0.9	0.9	0.9	0.9	0.7	24	3.2	0.7	1.3	0	0		
22	0	0.7	0.8	1.5	0.9	2.2	3.5	7.1	7.6	3.8	4.8	3.3	3.4	2.4	2.4	2.3	3.2	5.6	3.3	2.2	2.2	3.5	4.3	2.8	24	7.6	0.7	3.1	0	0		
23	0	4.6	3.3	8.2	8.9	17.8	5.5	1.5	1.7	1.9	5.1	C	C	C	C	9.1	10.0	8.1	7.5	9.6	5.9	5.3	5.3	5.3	19	17.8	1.5	6.6	0	0		
24	0	5.1	5.3	4.8	4.7	4.5	4.5	4.3	4.4	5.2	5.4	6.3	5.4	4.9	5.1	4.9	4.6	4.7	4.4	5.4	5.3	5.5	8.6	11.4	24	11.4	4.3	5.4	0	0		
25	0	11.3	5.5	4.7	4.3	4.2	3.8	3.7	3.6	3.6	3.7	3.4	3.2	3.1	3.1	3.1	3.0	2.7	2.6	2.5	2.5	2.8	3.7	3.5	24	11.3	2.5	3.8	0	0		
26	0	2.9	2.7	2.6	3.3	3.3	2.9	2.5	2.7	2.9	4.1	4.3	4.0	3.4	3.1	2.5	2.4	1.8	1.7	1.8	1.7	1.9	3.1	2.4	24	4.3	1.7	2.7	0	0		
27	0	1.8	2.3	2.6	3.3</																											

		SO2 - COURTICE																													
		March 2016																													
		(µg/m³)																													
Day	Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>690	Days>275
1	0	1.5	1.4	8.0	21.5	20.6	24.7	23.3	6.9	2.5	2.3	3.9	2.8	2.4	5.4	2.5	2.3	2.6	2.7	3.9	5.6	5.3	4.3	6.8	11.9	24	24.7	1.4	7.3	0	0
2	0	2.8	2.5	2.4	2.2	2.3	2.2	1.7	1.9	1.9	1.9	1.9	2.1	2.2	2.2	2.2	2.5	2.6	2.6	2.5	2.4	3.2	3.2	1.6	24	3.2	1.6	2.3	0	0	
3	0	2.3	2.5	2.5	5.1	2.9	9.5	22.7	3.4	4.9	2.2	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	10.6	18.6	20.1	20.3	13.1	24	22.7	1.8	6.6	0	0
4	0	17.1	9.3	15.3	7.4	4.5	19.1	28.6	28.3	4.7	2.4	2.3	2.1	1.8	1.7	1.7	1.7	1.7	1.7	1.7	2.1	4.5	11.5	9.5	4.8	24	28.6	1.7	7.7	0	0
5	0	6.1	4.2	4.7	8.3	10.1	3.2	2.4	2.5	3.9	3.4	1.9	1.8	1.8	1.9	2.0	1.9	1.7	1.8	2.4	3.2	5.7	4.8	2.0	2.6	24	10.1	1.7	3.5	0	0
6	0	1.8	1.9	1.8	1.8	1.7	1.8	2.7	2.4	2.4	2.4	2.4	2.5	2.5	2.9	2.9	2.8	3.6	2.8	2.5	2.4	2.5	2.6	2.9	24	3.6	1.7	2.4	0	0	
7	0	2.1	2.5	2.3	2.5	2.3	2.2	2.4	2.8	3.0	2.9	3.1	3.2	3.4	3.7	4.1	4.1	5.5	6.5	9.1	8.7	5.3	7.9	4.3	24	9.8	2.1	4.3	0	0	
8	0	7.4	6.5	14.7	7.1	4.2	3.7	3.6	3.4	3.7	3.6	3.4	3.6	3.1	3.2	3.1	3.1	2.9	2.9	3.7	3.8	4.3	5.6	4.6	24	14.7	2.9	4.5	0	0	
9	0	7.4	4.5	5.5	4.8	14.1	11.6	18.6	8.0	5.6	5.7	7.1	6.4	5.8	4.8	3.3	2.9	3.0	3.0	3.3	2.8	3.1	2.9	5.4	24	18.6	2.8	5.9	0	0	
10	0	4.7	3.0	3.1	11.2	4.5	3.7	3.0	3.8	4.0	3.0	3.0	3.7	2.9	3.0	2.9	2.7	2.4	2.4	2.4	2.4	2.2	2.4	2.0	24	11.2	2.0	3.4	0	0	
11	0	2.2	2.1	2.0	2.0	2.8	3.1	3.8	3.3	3.2	2.8	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20	3.8	0.0	1.4	0	0		
12	0	0.0	3.0	0.0	0.1	0.0	2.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	4.2	0.0	0.4	0	0		
13	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0	0		
14	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.9	0.0	0.4	0	0		
15	0	0.6	0.6	0.7	0.8	1.0	2.0	1.7	1.6	2.8	1.9	1.1	0.9	0.9	0.9	1.0	0.7	0.5	0.6	0.6	0.5	0.4	0.8	0.5	24	2.8	0.4	1.0	0	0	
16	0	2.3	1.3	0.9	0.7	0.4	0.5	0.6	0.5	0.6	0.6	0.9	0.5	0.4	0.4	0.8	0.8	0.9	0.8	0.8	0.9	2.6	6.5	4.0	24	6.5	0.4	1.2	0	0	
17	0	2.2	1.5	4.8	4.3	8.5	11.6	12.3	3.5	2.8	1.9	1.5	1.7	1.6	1.4	1.1	1.6	2.0	0.8	1.0	0.7	0.5	0.5	0.5	24	12.3	0.5	2.9	0	0	
18	0	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.4	1.7	2.0	0.4	0.5	0.3	0.5	0.5	0.7	0.0	0.0	0.0	0.0	0.9	0.0	24	2.0	0.0	0.5	0	0	
19	0	6.1	9.0	5.8	18.5	17.5	11.4	8.9	8.7	9.7	3.5	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.5	20.8	20.1	13.8	10.1	24	20.8	0.0	7.5	0	0	
20	0	16.6	5.5	3.5	4.6	4.6	1.4	0.4	0.3	0.1	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	8.8	9.1	16.1	1.1	2.0	24	16.6	0.0	3.1	0	0
21	0	11.7	5.5	1.2	0.6	0.5	4.9	1.0	1.1	0.8	0.4	0.7	1.4	2.0	0.9	0.5	0.1	0.3	0.1	0.0	0.1	0.3	0.4	0.6	24	11.7	0.0	1.5	0	0	
22	0	7.4	1.0	0.5	14.8	15.9	13.1	18.2	6.8	3.1	4.6	4.4	4.4	2.4	2.6	2.1	7.5	2.2	5.3	4.1	2.1	1.5	4.0	2.3	24	18.2	0.5	5.5	0	0	
23	0	3.2	4.5	6.1	6.1	6.9	4.1	9.6	3.5	3.4	2.4	2.3	2.6	3.8	2.5	1.7	0.5	0.7	1.7	0.5	0.6	1.2	0.5	0.4	24	9.6	0.3	2.9	0	0	
24	0	0.4	0.2	0.3	0.5	0.0	0.1	0.0	0.1	0.0	0.4	0.4	0.5	1.0	1.4	1.5	3.3	2.9	1.8	1.6	3.2	1.5	1.7	1.4	24	3.3	0.0	1.1	0	0	
25	0	1.4	1.5	2.0	1.9	2.0	1.5	1.4	1.2	1.1	1.0	0.9	0.7	0.7	0.5	0.5	0.5	0.4	0.4	0.4	0.6	24.4	29.7	31.6	24	31.6	0.4	4.4	0	0	
26	0	29.6	16.7	7.2	7.4	9.2	5.5	3.6	3.1	3.3	2.5	3.5	2.0	1.9	2.7	2.2	1.8	1.1	1.1	5.6	2.6	6.5	12.4	11.3	24	29.6	1.1	6.			

		SO2 - Rundle Road																													
		January 2016																													
		(µg/m³)																													
Hour																															
Day	Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>690	Days>275
1	0	0.3	0.3	0.8	0.8	0.5	0.4	0.4	0.6	0.4	0.9	1.0	0.4	0.5	0.8	0.7	0.6	0.5	0.6	0.4	0.4	0.3	0.5	0.5	0.4	24	1.0	0.3	0.6	0	0
2	0	0.4	0.4	0.3	0.3	0.1	0.4	0.6	0.6	0.7	0.9	1.1	1.1	0.8	0.8	0.8	0.8	0.5	0.5	1.0	1.9	1.2	1.7	1.8	0.9	24	1.9	0.1	0.8	0	0
3	0	1.7	1.2	1.1	1.2	1.1	1.2	1.2	1.1	1.1	1.1	1.1	0.9	0.6	0.5	0.7	0.4	0.5	0.4	0.2	0.1	0.4	0.0	0.0	0.3	24	1.7	0.0	0.8	0	0
4	0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.2	0.0	0.0	0	0
5	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	3.6	4.2	4.6	5.3	9.0	3.9	3.3	2.1	1.9	1.7	2.0	2.8	2.8	1.9	24	9.0	0.0	2.1	0	0
6	0	2.0	2.9	2.5	2.7	3.3	2.5	2.9	4.9	4.7	6.6	12.0	11.7	10.9	12.9	9.5	6.4	5.7	6.2	5.6	4.5	5.1	4.4	4.8	4.0	24	12.9	2.0	5.8	0	0
7	0	3.2	2.7	2.1	1.3	1.0	0.7	0.5	0.6	1.2	2.1	3.1	4.5	5.6	5.3	5.8	9.4	5.9	1.6	0.7	1.1	0.9	0.9	0.8	0.7	24	9.4	0.5	2.6	0	0
8	0	1.0	1.2	1.1	1.2	1.3	1.2	1.6	2.1	2.4	3.0	2.6	2.5	2.7	3.1	2.6	2.1	2.0	4.5	3.7	8.5	3.9	2.8	1.9	1.3	24	8.5	1.0	2.5	0	0
9	0	2.1	1.3	1.1	0.8	0.5	0.7	1.7	2.2	0.8	1.0	1.2	1.2	1.0	1.1	1.1	1.1	1.2	1.0	0.8	0.8	0.5	1.1	1.1	2.2	24	2.2	0.5	1.1	0	0
10	0	0.6	1.2	1.4	0.9	1.1	1.0	1.0	1.0	1.0	1.1	1.1	4.6	2.5	1.3	2.0	1.3	1.4	1.1	1.2	1.0	0.7	0.8	0.7	0.7	24	4.6	0.6	1.3	0	0
11	0	0.0	0.0	0.6	0.8	0.9	0.7	1.0	0.8	0.9	1.1	0.8	0.8	0.6	0.6	0.5	0.3	0.0	0.5	0.5	1.2	1.0	1.2	0.9	0.9	24	1.2	0.0	0.7	0	0
12	0	1.3	0.9	0.9	1.9	1.0	0.0	1.0	2.1	1.8	2.1	2.0	1.8	1.8	2.5	2.2	1.3	1.6	1.5	1.0	1.2	1.3	2.4	4.6	3.6	24	4.6	0.0	1.7	0	0
13	0	2.6	1.8	1.2	0.8	0.9	2.9	2.1	1.0	0.5	0.6	1.2	1.4	0.7	1.1	0.9	1.2	1.1	0.8	1.2	2.2	2.1	1.8	1.4	2.4	24	2.9	0.5	1.4	0	0
14	0	1.3	1.3	1.4	1.2	1.6	2.1	1.8	2.3	2.3	3.0	3.5	3.4	3.2	2.7	2.3	2.0	1.8	1.2	1.1	0.8	0.7	0.9	1.0	24	3.5	0.7	1.8	0	0	
15	0	0.8	1.2	1.1	0.8	0.9	0.6	1.0	0.8	0.9	1.3	1.2	1.2	1.1	1.2	1.4	1.6	1.6	1.4	1.4	1.2	1.2	2.0	1.6	24	2.0	0.6	1.2	0	0	
16	0	3.0	2.7	2.4	1.7	1.3	1.8	1.5	1.2	1.4	1.2	1.2	1.2	1.6	1.8	1.3	1.1	1.1	0.9	0.5	0.4	0.5	0.4	0.0	24	3.0	0.0	1.3	0	0	
17	0	0.4	0.5	0.7	0.7	1.0	1.8	1.6	1.1	1.5	2.1	2.0	1.8	1.5	2.0	1.4	1.1	0.8	0.9	0.7	0.5	0.5	0.7	0.7	24	2.1	0.4	1.1	0	0	
18	0	0.5	0.4	1.0	0.5	0.3	0.5	0.4	0.4	0.4	0.9	1.8	2.0	1.5	1.1	1.0	0.6	0.5	0.5	0.4	0.5	0.5	0.5	0.5	24	2.0	0.3	0.7	0	0	
19	0	1.6	3.3	5.9	4.9	2.5	1.3	1.1	1.4	1.9	1.5	1.2	1.3	1.1	1.0	0.9	0.8	0.6	0.6	0.4	0.4	0.5	0.5	0.4	24	5.9	0.4	1.5	0	0	
20	0	0.4	0.4	0.1	0.0	0.1	0.2	0.1	0.0	0.2	0.1	0.2	0.4	0.6	0.5	0.4	0.4	0.4	0.3	0.3	0.5	0.3	0.3	0.3	24	0.6	0.0	0.3	0	0	
21	0	0.4	0.1	0.2	0.4	0.3	0.3	0.3	0.4	0.7	1.9	3.7	1.8	1.2	1.2	1.1	1.0	0.7	0.8	0.6	0.9	0.8	0.7	0.5	24	3.7	0.1	0.9	0	0	
22	0	0.6	0.6	0.5	0.5	0.6	0.2	0.4	0.4	0.5	0.8	1.0	7.4	15.5	10.9	15.7	8.8	5.2	2.2	1.2	1.1	0.7	0.7	0.9	0.9	24	15.7	0.2	3.2	0	0
23	0	0.9	0.9	0.5	0.7	0.8	0.8	0.7	0.6	0.8	0.9	0.9	1.0	1.0	1.1	1.2	1.3	1.1	1.1	1.1	1.2	1.1	1.1	1.0	24	1.3	0.5	1.0	0	0	
24	0	1.1	1.1	1.1	1.0	1.0	1.0	0.9	1.0	1.0	1.3	1.7	1.8	1.9	3.2	5.2	4.3	4.5	4.0	3.7	3.3	2.5	1.9	1.9	2.2	24	5.2	0.9	2.2	0	0
25	0	1.9	2.6	1.9	1.4	1.2	1.																								

		SO2 - Rundle Road																													
		February 2016																													
		(µg/m³)																													
Hour																															
Day	Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>690	Days>275
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0	0	
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	7.7	0.0	0.5	0	0	
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	A	A	0.5	0.4	0.5	0.4	0.2	0.0	0.0	0.0	0.0	0.0	22	0.7	0.0	0.1	0	0	
4	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.5	0.6	0.6	0.5	0.6	0.4	0.3	0.6	0.5	0.4	0.3	0.3	24	0.6	0.0	0.3	0	0	
5	0.3	0.6	0.5	0.4	0.5	0.4	0.5	0.6	0.6	0.5	0.6	0.4	0.6	0.5	0.6	0.6	0.6	0.6	0.3	0.6	0.5	0.8	1.3	2.1	24	2.1	0.3	0.6	0	0	
6	2.0	1.4	1.9	3.3	2.8	2.1	1.9	1.3	1.0	1.3	1.2	1.1	1.1	1.7	1.9	1.3	1.4	2.8	2.6	1.7	1.9	1.6	2.0	3.3	24	3.3	1.0	1.8	0	0	
7	1.5	1.8	1.4	1.4	1.4	0.9	0.8	1.3	2.4	3.2	3.2	2.6	5.0	11.8	2.4	2.4	1.9	1.5	1.3	1.3	1.4	1.3	1.4	11.8	24	0.8	2.3	0	0		
8	1.0	1.1	0.8	1.0	1.1	0.8	0.9	1.1	1.1	1.2	1.3	1.2	1.5	1.5	1.3	1.2	1.3	1.2	1.1	1.4	1.0	1.3	1.1	1.0	24	1.5	0.8	1.1	0	0	
9	0.9	1.0	1.0	0.7	0.3	1.1	1.0	0.9	1.1	1.1	0.9	1.2	1.2	1.3	1.2	1.2	5.8	7.0	7.1	7.7	7.8	8.4	8.6	8.1	24	8.6	0.3	3.2	0	0	
10	8.1	8.1	8.0	7.9	7.8	7.8	7.3	6.6	7.0	6.7	6.5	6.8	7.0	6.8	7.4	8.1	8.2	8.1	9.3	9.0	8.3	8.0	7.5	24	9.3	6.5	7.7	0	0		
11	7.1	6.9	7.7	6.8	6.5	6.2	6.1	6.1	6.0	5.7	5.7	5.6	6.4	6.9	7.9	11.1	10.9	8.7	6.7	5.8	5.5	5.3	5.3	24	11.1	5.3	6.8	0	0		
12	6.0	6.1	6.3	6.8	8.9	7.9	7.6	7.1	8.1	7.2	7.3	8.4	7.7	6.9	6.8	7.6	6.9	6.0	5.7	5.8	5.9	5.8	6.1	24	8.9	5.7	6.9	0	0		
13	6.2	6.0	6.1	5.8	5.4	5.4	5.4	5.5	5.3	5.0	5.0	4.8	5.4	6.4	7.4	7.3	6.4	6.2	5.6	5.3	5.4	4.7	4.7	24	7.4	4.6	5.6	0	0		
14	4.8	4.7	4.7	4.7	4.8	4.7	4.6	4.6	4.6	4.7	6.2	12.1	8.3	6.9	6.2	5.8	5.7	4.9	4.8	4.8	5.2	4.8	24	12.1	4.6	5.5	0	0			
15	4.5	5.0	5.0	4.7	4.8	4.9	5.4	8.2	6.0	8.5	9.9	7.1	6.3	5.8	5.2	5.0	5.0	5.2	5.0	5.7	5.4	5.5	24	9.9	4.5	5.8	0	0			
16	5.5	5.3	5.0	4.9	5.0	5.1	5.0	4.9	5.0	4.9	5.1	5.1	5.3	5.4	5.4	5.3	5.1	5.0	4.9	4.9	5.0	4.8	24	5.5	4.8	5.1	0	0			
17	5.2	5.5	5.0	4.9	5.0	5.0	4.8	4.6	5.0	4.9	4.7	4.8	4.6	4.6	4.5	4.4	4.4	4.2	4.4	4.3	4.1	24	5.5	4.1	4.7	0	0				
18	4.2	4.4	4.0	4.0	3.8	4.0	4.0	7.0	5.9	5.0	8.7	30.4	42.8	7.5	5.9	0.0	6.6	4.6	4.9	5.1	5.1	5.0	24	42.8	0.0	7.6	0	0			
19	4.9	4.8	4.9	4.8	5.1	4.8	4.8	9.7	8.6	8.6	6.5	7.1	14.1	6.7	5.9	6.3	5.7	5.8	5.8	6.0	6.1	24	14.1	4.8	6.4	0	0				
20	5.8	5.1	5.5	5.2	5.2	5.3	5.3	5.5	5.7	5.7	5.8	6.0	6.3	6.2	5.9	5.8	5.3	5.2	5.2	5.0	4.7	4.5	4.1	24	6.3	4.1	5.4	0	0		
21	4.6	4.8	4.6	4.7	4.9	4.6	4.6	4.7	4.5	4.6	5.6	5.6	5.2	5.0	5.1	5.2	4.8	4.7	4.6	4.6	4.6	4.7	24	5.6	4.5	4.8	0	0			
22	4.7	4.5	4.5	4.7	4.7	4.8	4.8	5.9	6.2	6.5	12.9	7.4	6.5	6.3	9.3	11.5	7.2	6.6	5.3	4.8	4.8	4.6	24	12.9	4.5	6.2	0	0			
23	5.0	4.8	4.7	4.8	4.8	4.7	4.8	C	C	C	3.9	3.8	4.2	5.1	9.3	10.0	3.5	2.6	2.4	2.0	1.8	0.0	21	10.0	0.0	4.1	0	0			
24	2.7	2.8	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	2.2	1.8	1.8	1.9	1.9	1.9	1.9	2.0	1.9	2.0	1.9	24	2.8	1.8	2.0	0	0		
25	1.8	1.9	1.5	1.4	1.3	1.3	1.2	1.3	1.3	1.3	1.2	1.1	0.9	0.9	1.1	0.8	0.6	0.7	0.6	0.7	0.9	0.8	24	1.9	0.6	1.1	0	0			
26	0.6	0.3	0.5	0.8	0.5	0.4	0.4	0.3	1.8	2.2	1.8	1.6	1.3	1.1	1.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0	24	2.2	0.						

		SO2 - Rundle Road																													
		March 2016																													
		(µg/m³)																													
Hour																															
Day	Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>690	Days>275
1	0.0	0.0	0.0	0.7	0.9	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.0	0.1	0.1	24	0.9	0.0	0.1	0	0	
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.0	0.0	0.1	0.0	0.0	24	0.3	0.0	0.0	0	0	
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0	0	
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	24	0.1	0.0	0.0	0.0	0	
5	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.7	0.7	0.5	0.5	0.4	0.0	0.5	0.5	0.3	0.2	0.3	0.2	0.2	0.0	0.0	0.0	24	0.7	0.0	0.2	0	0	
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8	0.6	0.6	1.2	1.3	1.3	2.2	2.0	1.5	6.4	7.9	10.9	8.5	7.1	24	10.9	0.0	2.2	0	0		
7	13.7	9.5	9.0	11.9	9.9	5.6	7.7	7.5	6.9	8.6	5.9	7.0	13.1	8.3	11.2	8.3	9.1	9.5	7.2	9.3	7.2	6.9	7.3	5.1	24	13.7	5.1	8.6	0	0	
8	7.4	7.2	5.6	7.1	8.1	7.4	6.6	5.8	8.1	5.8	7.3	5.4	8.0	7.4	10.1	6.1	7.0	7.2	7.8	7.6	6.5	7.5	6.7	6.3	24	10.1	5.4	7.1	0	0	
9	6.3	7.2	5.4	7.5	4.6	8.8	6.2	8.7	9.9	7.8	11.2	9.0	9.6	6.9	7.5	7.4	8.5	7.7	10.1	8.4	8.4	6.5	6.4	6.9	24	11.2	4.6	7.8	0	0	
10	7.1	5.0	4.7	5.9	5.7	5.3	6.3	8.1	6.4	5.6	7.4	6.5	4.4	5.1	6.8	5.2	6.2	4.8	4.4	6.3	5.7	4.8	4.4	6.0	24	8.1	4.4	5.8	0	0	
11	5.0	5.6	5.7	4.7	5.1	5.7	7.5	C	C	2.1	4.0	3.5	2.9	2.8	1.0	1.3	1.1	0.7	0.7	0.1	0.2	0.0	0.0	0.0	22	7.5	0.0	2.7	0	0	
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.3	5.1	7.2	4.4	2.7	1.2	0.7	0.0	0.0	0.0	0.0	24	7.2	0.0	1.0	0	0	
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0	0	
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.4	0.2	0.2	0.4	0.3	0.3	0.4	0.7	0.1	0.3	24	0.7	0.0	0.2	0	0	
15	0.3	0.2	0.5	0.2	0.3	0.3	0.4	0.2	0.1	0.1	0.0	0.0	0.2	0.3	0.1	0.3	0.1	0.0	0.0	0.0	0.3	0.1	0.1	0.5	24	0.5	0.0	0.2	0	0	
16	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.7	0.4	0.3	0.4	0.4	0.1	0.5	0.4	0.6	0.4	0.3	0.1	0.2	0.1	0.1	24	0.7	0.0	0.2	0	0	
17	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.7	0.6	0.4	0.4	0.7	0.4	0.2	0.4	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	24	0.7	0.0	0.2	0	0	
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0	0	
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0	0	
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0	0	
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.2	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	1.2	0.0	0.1	0	0	
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.2	1.7	2.3	2.3	0.7	0.9	0.8	0.9	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2	24	2.3	0.0	0.5	0	0	
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.8	0.8	0.9	1.1	0.9	0.8	0.9	0.9	0.5	0.6	0.8	0.6	0.7	24	1.1	0.0	0.5	0	0			
24	0.8	0.7	0.6	0.6	0.7	0.7	0.6	0.6	0.9	1.2	0.7	1.1	1.1	1.5	1.4	1.3	1.4	1.4	1.3	1.4	1.5	1.4	1.5	24	1.5	0.6	1.0	0	0		
25	1.4	1.6	1.5	1.5	1.4	1.4	1.3	1.3	1.0	0.9	0.9	0.9	0.8	0.9	0.7	0.7	0.7	0.5	0.3	0											

Figure A-1 Time History Plots of Measured Hourly Average and 24-Hour Average SO₂ Concentrations- Courtice (WPCP) Station

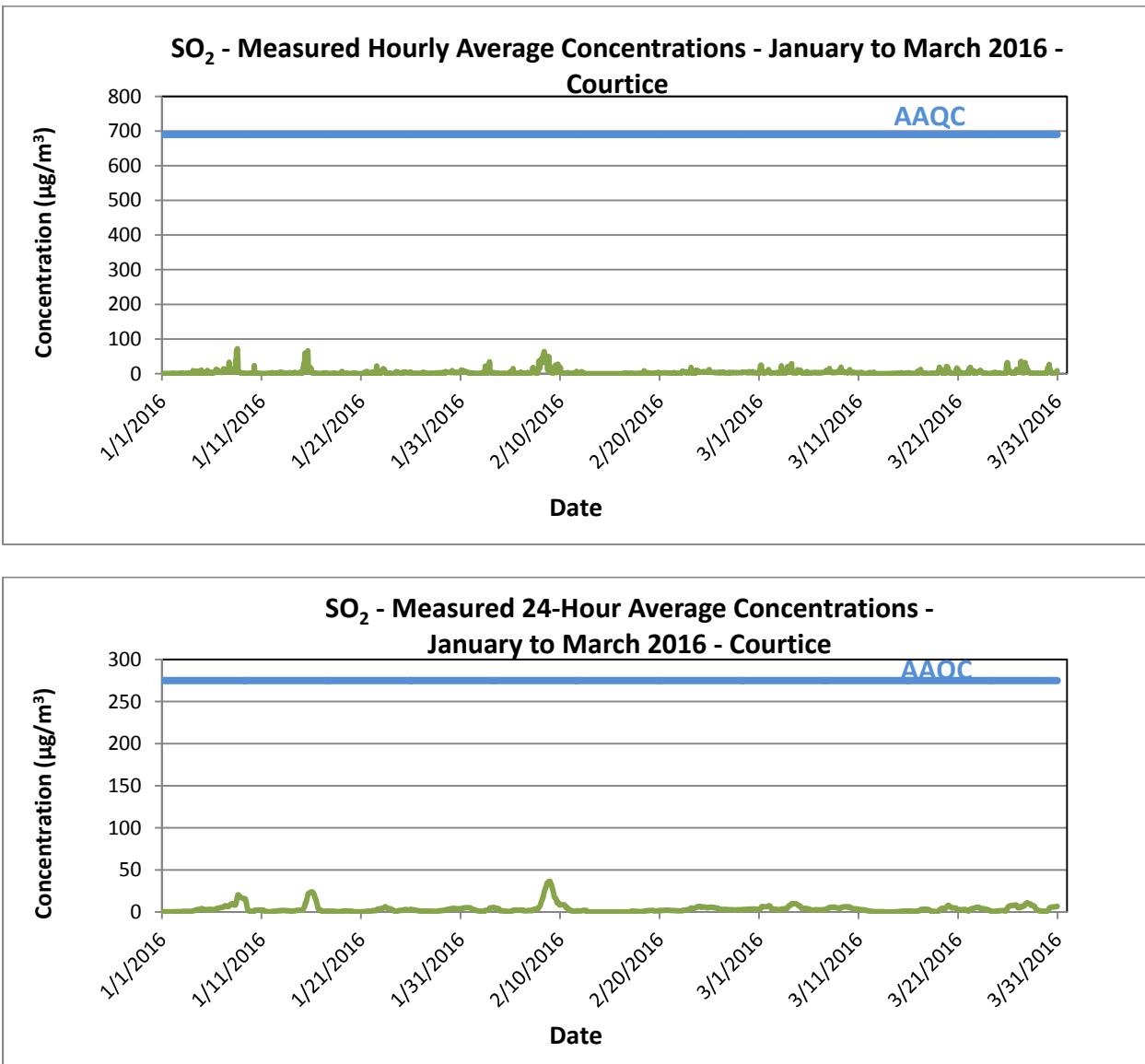
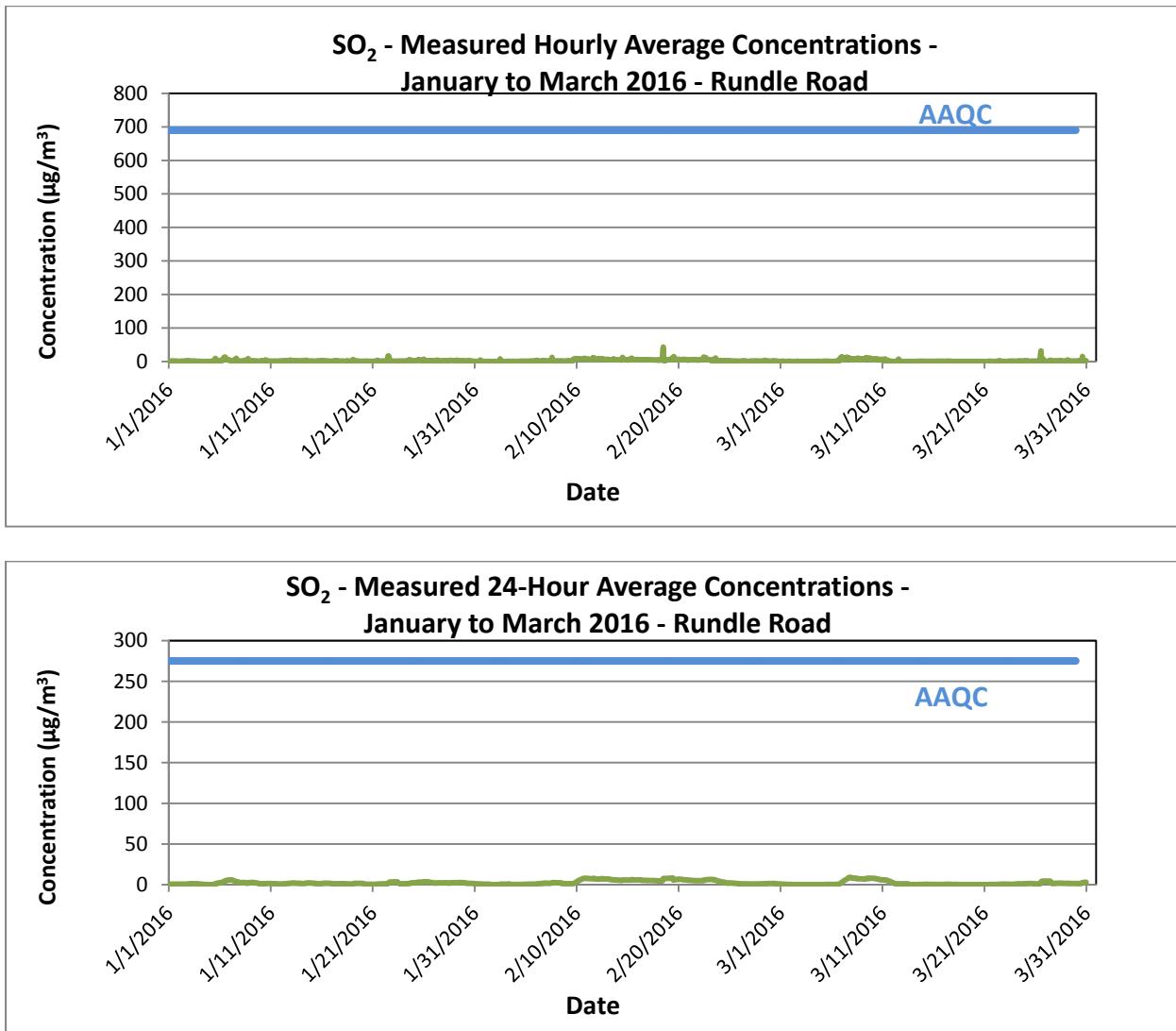


Figure A-2 Time History Plots of Measured Hourly Average and 24-Hour Average SO₂ Concentrations– Rundle Road Station



QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

Appendix B NO₂ Data Summaries and Time History Plots
May 31, 2016

Appendix B NO₂ DATA SUMMARIES AND TIME HISTORY PLOTS

		NO ₂ - COURTICE																								
		March 2016																								
		(µg/m ³)																								
Hour		0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Day		0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
1	7.8	7.7	5.4	7.3	8.9	6.8	8.2	9.6	10.6	14.4	6.2	7.2	6.2	6.5	8.9	10.7	9.4	8.1	7.3	7.0	7.9	7.4	5.8	6.9		
2	8.0	7.2	4.4	3.7	5.5	7.8	6.1	6.4	6.4	4.5	4.1	4.8	4.2	4.3	4.5	5.1	6.4	9.0	12.6	16.9	21.6	19.7	23.1	28.1	24	
3	34.5	57.2	54.3	30.7	30.5	24.9	15.8	23.2	17.6	9.7	4.9	3.3	4.8	2.9	3.1	5.6	5.1	6.6	40.9	29.7	39.1	36.4	28.1	22.3	24	
4	25.9	15.3	12.1	10.8	14.4	17.5	23.0	25.3	16.6	7.2	7.4	2.6	2.2	2.3	1.4	1.8	1.8	1.9	2.4	5.4	45.3	79.6	68.1	65.4	24	
5	62.6	36.1	32.7	24.7	23.0	21.4	18.6	22.0	20.0	8.2	3.3	2.8	2.9	2.8	2.7	2.7	2.8	3.1	3.8	11.6	40.2	35.3	35.6	32.4	24	
6	23.9	26.0	17.1	16.0	18.8	20.7	24.1	25.7	21.9	19.1	11.9	9.6	7.9	17.8	12.5	7.2	7.3	5.2	5.6	7.0	7.2	5.0	4.8	5.7	24	
7	5.1	5.4	5.5	6.2	5.6	5.8	5.7	6.9	8.5	10.7	12.1	14.2	14.4	13.0	12.2	10.7	12.7	15.9	59.1	59.7	56.6	47.1	36.5	33.5	24	
8	50.1	53.0	48.0	33.3	42.0	42.9	32.6	31.9	25.7	19.3	16.7	16.2	13.4	14.3	14.0	13.0	14.1	18.7	26.8	17.0	19.3	35.7	57.7	61.4	24	
9	56.3	58.1	52.8	58.1	56.6	62.6	59.1	52.0	25.7	11.8	10.1	9.1	8.7	7.4	5.6	6.4	7.6	7.6	8.2	8.1	9.2	29.7	23.8	76.5	24	
10	50.3	12.4	27.8	50.6	42.6	30.6	25.5	44.0	39.0	24.7	23.5	18.8	13.8	13.3	18.4	17.0	14.8	14.5	14.0	14.6	12.2	11.6	8.7	6.2	24	
11	6.1	5.4	5.1	6.4	8.2	5.1	7.1	8.6	7.6	6.7	C	C	2.7	2.5	6.3	6.8	13.1	20.5	51.8	60.7	51.6	13.2	3.8	21		
12	22.9	45.8	41.2	37.7	30.3	26.9	27.2	22.1	12.7	14.0	11.1	12.3	9.8	10.7	7.2	7.0	7.6	6.4	19.8	50.6	55.0	11.8	61.7	59.5	24	
13	56.4	49.9	22.3	6.9	23.4	22.6	10.2	8.6	6.8	4.6	3.3	1.7	4.4	3.9	3.7	8.2	5.6	3.5	5.8	7.8	8.1	10.5	14.0	9.0	24	
14	6.8	4.0	4.9	7.2	4.0	3.4	7.6	6.6	11.2	7.4	7.7	7.9	8.3	9.0	11.1	10.6	6.4	8.6	7.9	6.8	7.8	15.7	11.3	24		
15	7.4	6.3	10.1	17.9	28.1	33.8	27.9	30.2	32.4	20.4	16.6	9.6	8.8	6.2	6.2	4.8	10.9	13.6	15.2	13.4	16.5	13.7	22.7	17.5	24	
16	17.4	18.2	7.4	9.9	13.7	5.8	9.0	10.6	5.5	3.9	5.0	6.2	5.3	4.8	5.3	5.0	7.8	5.9	6.5	21.8	35.1	35.1	52.2	39.0	13.1	24
17	15.5	16.4	46.2	54.4	41.1	51.4	54.4	26.9	8.7	5.7	5.6	5.9	8.0	21.1	12.6	13.0	10.4	5.0	11.9	15.1	11.0	14.7	15.6	33.4	24	
18	23.3	18.7	14.2	18.6	31.7	41.1	32.1	15.3	6.9	6.9	6.2	5.0	4.2	3.3	3.8	3.4	4.5	7.4	6.4	9.4	7.6	8.0	6.2	5.4	24	
19	5.2	4.0	9.2	25.1	37.3	12.1	13.0	4.4	1.7	3.2	1.8	0.5	0.3	0.0	0.2	0.1	0.5	0.7	3.1	47.5	43.6	41.3	37.2	47.5	0.0	24
20	23.5	20.9	16.5	9.3	9.0	9.5	6.1	5.9	6.1	3.4	2.1	1.4	0.8	0.7	0.3	0.7	0.4	0.5	0.9	10.6	61.7	65.4	61.6	56.2	24	
21	50.3	49.8	44.2	10.5	25.8	40.7	48.0	41.9	19.7	5.8	5.2	5.4	3.2	3.5	3.9	3.2	3.7	4.6	9.1	13.3	24.4	32.0	73.5	62.1	24	
22	65.2	61.9	58.2	47.4	46.3	54.5	56.6	42.1	35.2	15.3	8.4	8.8	6.0	7.3	7.7	22.7	20.6	28.5	30.9	20.5	13.5	31.7	24.5	65.2	6.0	24
23	32.1	27.8	15.2	14.6	16.0	17.8	17.7	14.3	13.3	10.7	10.7	8.7	9.5	7.1	6.9	2.5	3.6	12.2	10.3	15.8	15.2	11.0	14.3	11.4	24	
24	12.3	12.4	5.4	6.3	7.0	6.0	5.2	9.4	11.2	8.6	7.1	10.3	7.8	9.7	10.2	11.2	10.9	9.1	9.6	9.2	10.8	13.1	12.4	10.6	24	
25	8.1	8.6	10.9	13.9	31.4	34.4	27.8	12.6	6.1	6.4	4.0	4.3	3.8	3.8	3.5	6.4	4.7	4.3	7.4	9.3	17.7	38.4	54.1	50.2	24	
26	49.0	37.7	33.1	28.9	27.7	22.4	24.6	21.7	15.5	7.0	5.7	2.6	2.1	1.4	1.4	1.3	1.4	3.1	13.6	11.6	29.5	29.8	19.4	32.0	24	
27	13.6	9.7	8.8	13.6	10.6	11.1	13.3	13.5	29.1	6.2	3.0	3.2	4.7	7.4	10.4	4.6	7.5	29.5	58.3	37.4	33.5	33.6	15.3	9.9	24	
28	5.2	20.3	9.2	7.6	12.0	16.9	7.8	5.9	3.7	3.4	3.0	2.9	3.8	8.5	6.0	5.1	5.8	4.6	5.5	5.1	6.5	7.4	6.4	5.9	24	
29	6.2	3.5	3.3	7.8	7.1	7.5	6.7	4.1	3.9	3.7	3.3	2.9	3.1	2.4												

		NO ₂ - Rundle Road																							
		January 2016																							
		(µg/m ³)																							
Day	Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
1	20.7	12.7	11.5	12.0	12.9	9.2	7.7	11.1	9.1	10.5	12.9	7.4	7.2	7.2	11.7	14.5	13.7	14.7	15.1	11.9	10.9	9.7	11.9	16.1	
2	19.0	19.0	20.4	18.9	20.2	24.0	21.0	11.2	10.2	14.3	17.8	15.1	13.1	13.0	12.6	13.4	16.6	13.7	11.8	13.4	11.1	11.3	9.6	7.1	
3	11.6	11.2	11.1	12.4	13.0	12.6	11.0	10.8	12.3	14.3	17.7	14.3	5.1	3.6	3.3	3.0	3.0	3.2	3.1	2.8	3.0	2.8	3.0	2.9	
4	2.8	2.9	2.6	2.4	2.6	2.3	3.8	3.4	3.7	4.6	4.3	3.7	3.8	3.5	3.7	4.1	4.5	4.2	3.2	4.1	4.6	6.1	5.9	4.5	
5	5.6	6.6	5.0	6.3	7.6	6.3	11.8	17.0	22.2	23.8	37.2	59.0	40.8	20.8	26.3	19.8	23.6	20.3	16.0	14.6	13.7	17.2	18.4	45.4	
6	28.1	17.4	24.8	39.2	47.9	43.6	44.9	56.0	61.2	44.1	25.1	20.2	19.5	20.4	19.1	19.3	22.1	26.5	30.3	34.7	42.4	27.8	47.1	24	
7	44.2	43.1	43.7	40.2	42.9	40.1	38.4	40.3	37.7	33.8	33.7	33.6	27.7	31.8	30.6	26.8	46.7	45.9	41.6	51.9	44.8	35.0	30.2	27.2	
8	21.4	19.4	18.3	19.3	18.9	20.0	27.7	25.5	25.0	21.8	22.6	24.8	23.8	22.1	26.4	27.5	26.2	33.2	28.8	39.6	34.4	24.9	34.2	22.8	
9	25.8	24.1	23.7	22.1	25.6	25.4	19.8	26.6	21.6	19.0	17.6	17.0	15.3	14.3	15.2	16.4	16.2	17.5	17.1	20.6	20.1	18.4	15.7	24	
10	9.6	16.3	9.7	9.4	8.5	7.6	8.0	8.0	6.3	8.6	8.5	7.0	15.0	12.6	9.7	16.4	8.4	6.3	7.0	6.7	6.4	5.5	6.2	7.9	
11	8.7	8.3	8.6	10.4	10.4	12.5	15.5	16.6	17.2	18.1	13.4	10.4	9.5	9.5	9.9	9.9	16.0	18.5	25.5	30.7	36.5	43.3	45.7	41.7	24
12	31.2	24.9	27.6	33.0	12.5	11.5	10.3	32.2	14.6	13.4	17.5	12.7	14.1	16.8	18.5	16.7	20.6	21.1	18.1	26.3	9.9	7.7	9.6	7.9	
13	6.1	6.4	5.2	6.5	7.7	5.4	17.5	19.8	23.2	20.7	26.4	31.3	12.7	15.3	14.7	17.0	24.3	22.8	28.8	32.1	29.9	35.7	32.1	28.7	
14	25.5	22.6	22.5	25.6	27.8	44.0	47.4	53.1	43.0	41.9	38.0	28.5	32.7	21.7	23.6	21.6	26.5	35.5	26.6	24.3	19.8	27.4	24.1	28.0	
15	13.1	17.1	21.4	11.6	19.9	15.9	18.6	22.4	22.3	21.6	16.5	13.9	13.3	15.0	17.6	21.9	26.6	22.7	23.8	23.4	26.2	30.7	34.6	36.5	
16	34.8	29.8	29.2	15.7	11.7	12.9	17.6	21.3	20.9	12.1	7.5	6.3	5.7	4.8	4.2	5.1	5.1	5.6	6.2	5.9	10.0	16.2	15.8	13.1	
17	9.6	13.5	17.9	11.0	4.5	5.5	11.1	7.1	10.5	16.3	10.5	9.7	10.0	10.8	15.3	6.5	7.0	6.9	5.9	5.7	8.9	12.7	17.4	22.7	
18	14.5	8.3	5.8	6.3	6.8	7.3	9.3	12.0	13.0	8.0	5.9	6.0	5.4	4.5	4.7	4.2	5.4	8.0	8.4	8.7	6.4	9.6	12.0	12.6	
19	5.3	3.5	7.3	4.6	4.1	5.2	10.6	16.7	23.8	32.2	9.8	4.7	5.3	5.7	5.1	5.7	7.5	6.5	5.0	5.2	5.3	4.7	4.0	24	
20	3.1	4.9	7.0	5.9	5.4	3.8	4.5	12.1	14.5	13.6	19.3	29.8	23.6	29.8	32.1	24.4	20.7	20.8	18.2	17.3	16.0	12.7	11.8	11.1	
21	8.0	7.0	6.3	5.4	4.8	6.1	9.2	14.5	9.6	6.5	4.2	3.5	3.3	4.1	4.1	4.3	6.5	7.8	6.9	6.4	7.5	6.0	5.9	5.3	
22	5.5	4.2	3.9	3.8	3.8	4.1	5.9	16.2	14.1	24.5	9.8	10.5	15.5	8.8	14.4	11.6	10.0	8.8	6.7	6.4	7.8	8.0	6.9	6.9	
23	5.8	5.3	5.0	3.9	3.8	3.7	3.9	4.6	5.1	3.9	3.8	3.8	3.6	3.3	3.6	3.3	4.3	5.5	12.1	13.5	5.4	5.9	4.3	24	
24	4.2	4.8	4.8	5.2	5.6	10.7	10.6	19.1	28.7	22.2	24.5	25.2	13.6	12.5	15.5	21.0	19.7	27.1	32.1	36.8	36.8	35.5	44.7	38.0	
25	33.5	50.3	45.9	41.5	41.9	48.4	57.2	37.7	18.1	18.3	23.0	28.6	24.5	17.8	19.1	18.9	20.9	22.4	27.7	33.1	42.4	45.7	50.8	50.1	
26	48.9	32.1	15.2	19.7	33.5	18.7	23.1	16.2	17.1	17.1	14.6	15.1	15.9	21.8	21.6	21.5	25.0	25.3	25.6	21.4	20.7	19.9	26.2	29.7	
27	23.2	21.6	20.6	22.8	11.6	4.1	4.3	4.9	8.3	8.7	6.3	4.7	4.5	4.4	5.3	5.4	11.8	24.9	24.4	18.9	18.2	12.3	9.2	12.0	
28	14.7	12.5	11.5	11.7	12.8	11.8	12.3	13.4	13.5	12.6	14.2	16.1	16.1	17.2	18.6	19.5	18.3	20.8	21.7	22.7	24.5	26.5	34.9	24	
29	49.8	45.6	28.7	14.1	7.0	5.3	4.7	4.7	4.9	4.7	3.8	9.7	C	C	5.8	5.6	5.7	6.2	6.3	6.2	6.7	7.5	7.0	6.5	
30	6.9	7.0	12.3	23.8	24.9	28.6	16.1	13.5	14.2	12.0	13.4	12.7	15.9	17.2	18.0	16.0	18.9	19.3	25.0	28.9	35.3	29.0	26.0	29.3	
31	37.																								

		NO ₂ - Rundle Road																								
		February 2016																								
		(µg/m ³)																								
Hour		0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Day																										
1		11.4	11.1	15.8	11.1	9.3	9.8	8.4	8.6	8.9	7.7	8.1	10.5	7.1	6.8	6.8	8.1	12.6	13.0	25.0	20.5	23.2	21.6	21.8	9.8	
2		6.2	5.2	5.6	6.9	5.2	5.4	4.9	14.5	11.1	9.7	6.0	9.5	14.0	13.3	17.1	15.5	9.5	10.6	11.8	12.6	14.4	15.4	15.8	11.2	
3		14.8	9.7	11.6	18.4	11.0	21.1	23.4	30.4	21.7	41.9	35.7	47.3	32.3	25.6	A	A	17.0	17.7	20.5	19.3	13.1	12.4	31.7	18.9	
4		18.1	12.4	15.6	15.4	17.4	9.6	8.4	21.1	14.6	13.0	8.0	6.9	6.1	6.9	7.9	5.8	5.8	6.2	5.5	4.8	4.5	5.0	4.7		
5		4.6	4.7	4.4	4.5	4.2	4.7	4.5	5.6	6.2	5.1	4.7	5.0	10.6	15.1	23.7	26.6	21.2	33.0	39.8	42.9	30.3	29.4	22.3	23.5	
6		22.9	25.2	25.1	37.5	30.6	27.3	25.7	26.7	25.0	20.1	14.7	16.2	16.7	14.2	13.8	14.1	15.2	14.5	15.0	13.2	18.4	17.3	22.4	22.0	
7		24.8	23.0	23.4	22.5	24.7	27.3	32.2	33.6	34.2	35.1	22.2	15.6	18.2	20.8	22.5	13.5	15.2	13.7	13.2	13.3	21.9	14.2	12.0	12.2	
8		13.0	16.6	13.9	13.0	14.0	15.9	24.7	18.9	14.4	14.8	16.1	14.1	16.1	16.6	14.1	13.7	14.1	19.3	13.5	16.9	13.9	22.1	16.5	15.9	
9		15.4	9.5	11.9	9.9	10.1	11.6	10.4	10.8	13.5	11.3	12.1	14.0	15.8	18.4	22.3	22.5	26.4	21.2	20.3	19.7	26.7	19.0	18.1	24	
10		20.7	13.1	12.6	11.3	9.2	9.0	9.6	11.2	12.5	7.6	7.0	6.8	8.6	7.2	7.0	7.7	8.4	6.6	7.1	6.7	6.2	7.3	8.0	24	
11		6.8	7.3	5.4	5.1	4.8	5.4	5.5	5.5	6.6	6.5	6.5	5.3	5.7	5.8	6.4	6.5	6.1	7.4	10.9	16.1	19.9	34.2	48.8	24	
12		54.2	59.9	44.4	30.5	34.6	31.4	28.0	42.3	37.6	33.5	24.2	17.7	16.9	16.9	20.0	24.4	25.5	13.4	14.5	6.4	5.6	5.0	5.3	5.0	
13		4.9	5.3	5.3	5.1	5.4	5.4	5.0	5.2	5.4	5.0	4.9	5.0	4.8	4.7	4.7	5.4	5.1	5.5	5.9	4.9	5.1	4.9	5.1	0	
14		5.1	6.5	6.2	6.8	7.1	9.0	13.7	8.0	6.8	5.3	6.1	9.4	12.8	6.6	6.3	7.8	8.5	12.6	18.4	17.5	19.3	20.7	19.3	18.6	
15		15.6	14.7	12.9	11.7	19.8	14.4	10.4	21.0	14.8	11.3	20.8	12.9	11.1	15.6	15.7	18.8	20.2	18.7	21.6	22.5	20.7	26.4	18.0	24	
16		20.6	25.6	24.2	25.4	24.2	23.6	16.2	16.1	17.3	15.8	19.2	14.1	11.9	11.4	10.8	12.1	13.1	10.9	9.4	8.5	9.6	9.7	13.4	47.0	
17		51.1	34.9	31.4	34.1	43.4	26.9	30.4	45.4	50.3	27.5	10.1	8.2	7.8	7.0	6.5	6.3	7.1	7.0	6.9	7.5	7.9	10.2	12.6	10.1	
18		11.7	7.6	7.1	11.0	10.0	11.2	14.3	41.2	27.4	11.7	16.8	27.2	21.1	7.1	7.4	3.5	1.6	19.5	30.5	29.9	39.0	37.1	34.1	41.2	
19		19.8	20.5	18.1	23.6	17.9	31.2	17.6	21.7	19.3	18.6	19.9	24.4	10.7	13.0	21.5	14.4	19.8	20.7	19.1	25.6	26.6	12.8	31.2	10.7	
20		16.0	13.5	14.8	12.9	11.6	13.7	10.4	11.6	14.1	12.8	15.3	14.3	14.1	12.7	13.4	13.0	7.3	7.3	7.4	7.3	8.7	7.2	7.2	7.3	
21		7.6	7.2	10.1	24.1	31.1	25.6	8.1	7.2	8.6	5.5	5.3	5.1	5.2	4.9	4.7	4.9	5.0	5.1	4.7	5.0	4.8	6.9	6.1	6.0	24
22		5.7	5.4	5.2	5.1	5.1	5.0	5.5	8.0	6.8	6.5	6.9	13.3	8.6	8.0	9.0	12.1	15.4	16.4	29.4	27.3	30.5	27.9	38.5	5.0	13.7
23		28.0	18.1	18.1	12.6	16.7	10.8	9.0	C	C	C	4.9	4.6	6.4	8.1	12.8	11.7	10.8	14.5	7.2	14.3	15.0	15.2	11.9	4.2	21
24		4.1	15.4	7.9	5.9	6.5	7.3	8.1	9.1	8.8	7.5	7.9	5.8	5.6	5.6	5.0	5.1	6.8	6.4	7.3	5.0	8.6	7.8	6.1	6.3	24
25		3.8	2.9	2.5	2.0	1.3	1.2	2.8	15.9	4.8	2.4	1.8	0.7	0.9	0.4	1.5	2.5	1.4	1.1	0.6	0.8	0.0	0.2	0.1	15.9	0.0
26		0.0	0.0	0.0	0.0	0.3	0.4	1.4	1.4	0.8	0.6	1.3	1.3	1.9	1.4	1.7	1.3	1.5	3.3	10.8	22.2	34.3	31.5	36.3	0.0	6.4
27		17.6	41.1	48.8	47.9	42.8	39.8	13.2	7.9	8.5	8.1	7.9	9.5	6.6	8.6	7.6	8.7	7.5	9.0	7.1	7.6	8.6	11.2	11.8	13.1	48.8
28		10.4	7.3	8.6	9.1	8.5	14.8	8.8	17.1	19.1	9.5	7.7	9.2	9.6	6.7	7.9	10.2	12.2	13.5	20.8	11.6	15.9	19.4	8.2	7.2	
29		17.7	9.8	5.5	13.0	6.7	1.8	1.8	2.9	3.3	2.9	5.1	9.0	12.2	9.0	10.8	10.7	11.4	4.9	1.7	1.1	1.2	0.9	0.4	1.2	17.7
30					</																					

		NO ₂ - Rundle Road																													
		March 2016																													
		(µg/m ³)																													
Day	Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>400	Days>200
1	0.4	0.2	0.7	1.2	0.8	0.8	2.2	6.2	6.5	5.4	6.7	3.0	3.3	2.4	2.5	3.2	2.7	5.7	5.7	2.0	2.8	9.6	1.7	1.7	24	9.6	0.2	3.2	0	0	
2	1.3	0.7	0.5	0.1	1.4	2.4	2.2	1.9	1.3	0.8	0.7	0.9	1.3	1.0	1.2	0.6	0.9	1.5	2.2	2.3	2.1	2.5	2.1	4.1	24	4.1	0.1	1.5	0	0	
3	6.0	9.0	10.4	3.8	5.7	4.2	6.0	11.6	7.8	6.2	2.9	1.7	1.1	1.8	2.6	5.7	3.0	5.6	8.7	10.9	18.7	15.9	11.3	20.6	24	20.6	1.1	7.5	0	0	
4	12.8	14.8	6.7	4.1	4.8	14.9	7.9	14.4	10.4	8.5	3.2	3.6	4.6	2.5	4.1	5.2	4.6	6.0	23.7	20.6	23.1	20.6	15.8	18.4	24	23.7	2.5	10.6	0	0	
5	17.1	15.7	11.3	12.7	9.3	10.0	7.5	7.9	9.6	8.1	4.3	3.9	4.0	3.1	3.8	3.7	4.0	7.6	17.2	20.8	15.8	16.9	10.0	7.7	24	20.8	3.1	9.7	0	0	
6	6.3	6.2	5.1	5.5	4.4	4.3	4.3	7.2	9.9	12.4	7.7	8.6	6.5	20.2	15.7	9.7	12.0	13.9	16.4	18.8	22.7	11.4	8.6	12.8	24	22.7	4.3	10.4	0	0	
7	9.8	9.5	8.7	12.0	12.5	10.5	13.8	15.8	17.7	18.2	23.1	27.3	24.6	23.1	25.4	26.3	23.0	25.5	28.8	36.6	33.7	43.9	56.6	54.1	24	56.6	8.7	24.2	0	0	
8	53.6	42.2	33.1	24.4	35.4	35.6	37.0	39.7	39.8	21.9	18.5	20.8	14.6	17.0	16.1	16.5	16.6	16.8	31.6	39.1	32.1	40.6	21.3	17.6	24	53.6	14.6	28.4	0	0	
9	25.6	11.7	17.1	29.2	22.3	19.5	19.7	33.1	34.3	24.9	25.5	17.6	22.2	20.2	18.0	17.6	21.7	17.6	19.8	27.6	22.6	41.9	70.8	68.6	24	70.8	11.7	27.0	0	0	
10	37.3	26.5	36.6	8.6	4.3	3.8	35.2	36.3	17.7	8.1	8.5	7.2	8.3	6.0	5.5	6.3	6.1	4.6	3.8	4.1	4.0	3.9	2.9	2.8	24	37.3	2.8	12.0	0	0	
11	1.8	2.1	1.7	1.9	1.6	1.8	2.9	C	C	5.9	4.9	4.7	4.7	9.9	12.7	14.8	22.7	36.6	28.1	24.7	23.1	34.8	33.2	21	36.6	1.6	13.1	0	0		
12	18.0	16.5	15.3	14.1	17.5	14.0	17.0	18.9	30.9	22.8	19.2	19.5	17.1	20.7	19.0	18.0	18.3	14.8	21.2	31.1	43.5	39.9	56.3	34.0	24	56.3	14.0	23.2	0	0	
13	27.6	33.8	15.4	10.0	9.8	13.0	14.8	7.9	10.7	17.0	6.3	7.4	7.1	6.5	5.5	9.9	10.0	13.3	13.5	12.8	11.6	17.3	15.1	13.6	24	33.8	5.5	12.9	0	0	
14	11.2	12.1	8.0	7.3	8.7	15.6	8.7	11.7	10.3	9.1	10.5	8.9	8.9	8.2	14.5	17.3	13.5	9.9	11.8	18.0	17.6	11.4	16.5	19.3	24	19.3	7.3	12.0	0	0	
15	16.2	17.5	17.0	13.7	13.4	15.7	24.4	20.3	16.7	11.0	9.1	6.5	6.0	6.2	6.3	7.2	17.1	5.9	5.8	6.0	6.2	8.0	7.0	6.5	24	24.4	5.8	11.2	0	0	
16	6.8	10.7	6.4	5.8	7.6	22.7	10.5	10.5	10.8	17.6	8.6	9.6	10.5	9.8	13.9	12.4	14.7	20.7	24.2	20.5	46.1	56.3	8.1	16.4	24	56.3	5.8	15.9	0	0	
17	43.1	35.8	27.4	21.2	20.6	21.1	19.2	37.1	23.3	17.1	17.2	16.1	15.9	15.8	25.7	12.4	6.5	22.1	39.9	6.8	7.1	7.3	7.2	8.9	24	43.1	6.5	19.8	0	0	
18	9.2	8.6	18.0	17.6	11.4	13.4	19.1	12.7	7.7	4.7	4.5	5.0	4.1	4.1	4.0	4.0	4.1	4.1	4.5	4.3	4.3	4.2	4.2	19.1	24	19.1	4.0	7.6	0	0	
19	4.1	3.9	3.9	6.0	4.6	4.2	4.8	4.6	4.1	4.0	3.8	5.0	4.5	5.6	7.6	5.2	5.2	9.1	9.4	7.9	9.8	10.7	10.0	12.8	24	12.8	3.8	6.3	0	0	
20	14.0	25.6	22.4	9.0	8.4	18.0	13.2	7.1	6.3	6.5	10.1	14.6	4.8	5.0	5.0	5.1	5.7	6.9	12.8	11.3	13.6	12.8	29.1	24.3	24	29.1	4.8	12.2	0	0	
21	25.8	20.4	9.0	5.2	6.7	11.1	17.1	23.2	17.7	6.4	4.9	5.1	4.7	4.5	4.3	4.4	4.0	4.0	4.4	6.8	9.7	36.4	26.6	21.8	24	36.4	4.0	11.8	0	0	
22	19.2	29.1	34.9	31.8	22.9	20.5	22.1	41.6	57.3	34.5	17.7	16.5	13.9	15.6	15.4	16.5	13.8	22.7	18.3	29.2	31.8	27.6	19.9	31.9	24	57.3	13.8	25.2	0	0	
23	28.8	18.5	11.1	9.1	9.2	11.0	10.6	12.5	9.7	7.7	10.4	6.3	6.0	6.3	6.0	9.2	15.6	18.4	23.5	19.8	9.3	15.6	7.9	10.7	24	28.8	6.0	12.2	0	0	
24	8.5	14.3	6.4	5.7	6.1	9.6	8.1	6.9	8.5	16.8	20.3	11.3	9.4	9.5	12.1	8.6	9.2	9.4	9.5	9.6	14.1	19.6	18.3	17.2	24	20.3	5.7	11.2	0	0	
25	16.2	13.4	13.6	13.4	13.3	28.4	43.2	16.2	7.0	6.2	5.8	5.5	5.2																		

Figure B-1 Time History Plots of Measured Hourly Average and 24-Hour Average NO₂ Concentrations – Courtice (WPCP) Station

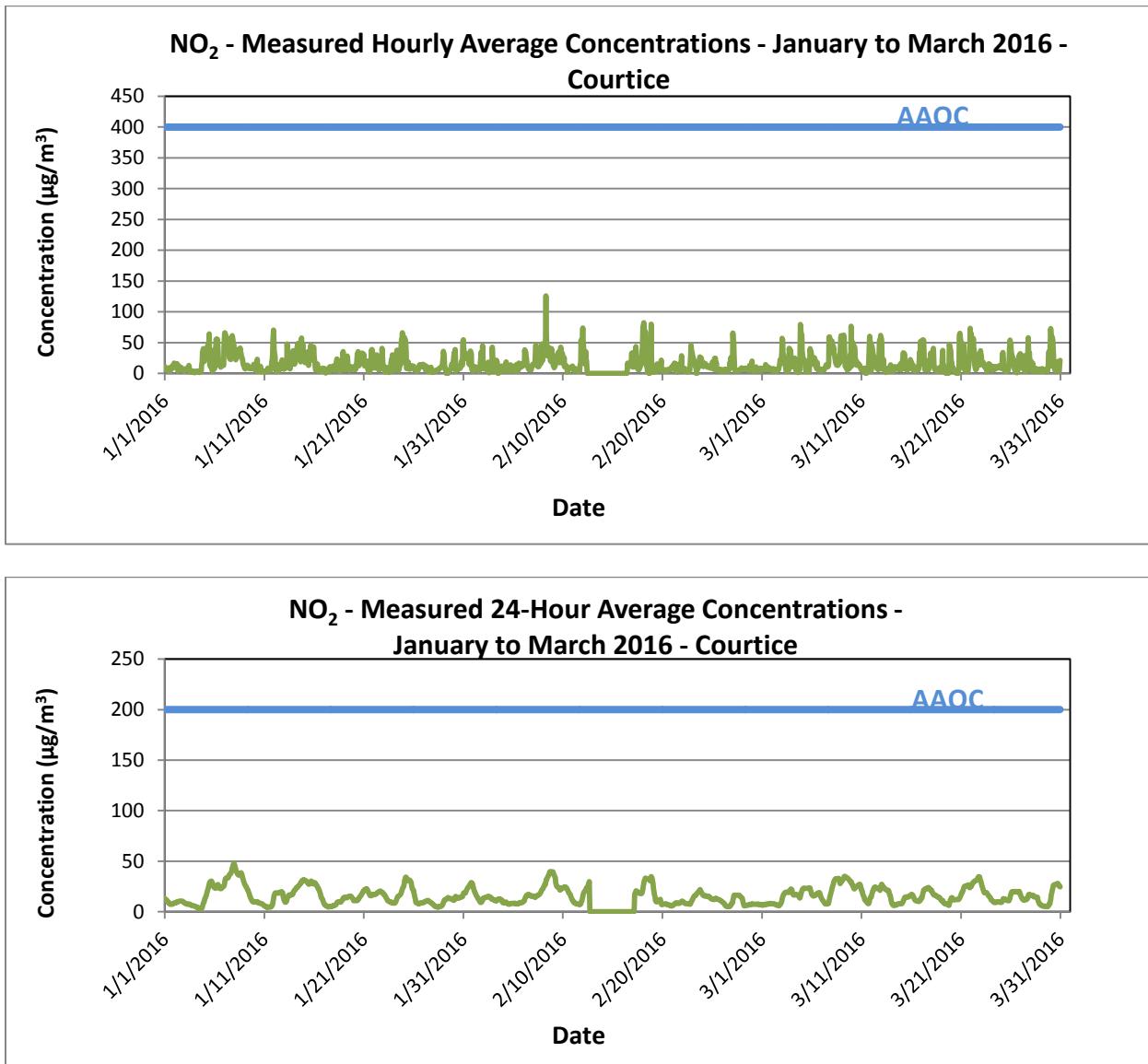
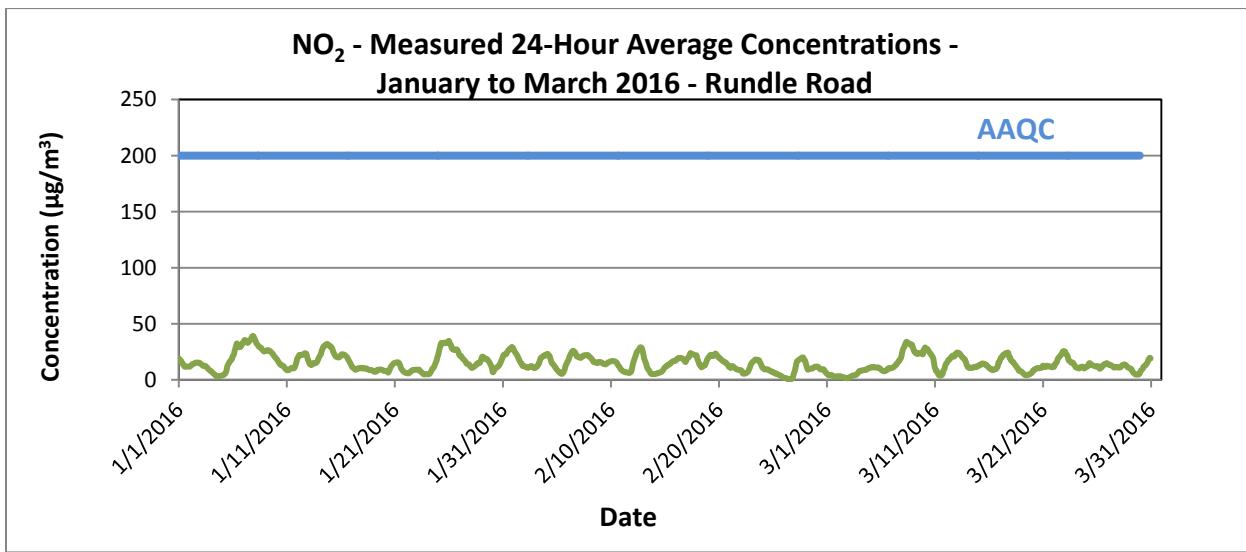
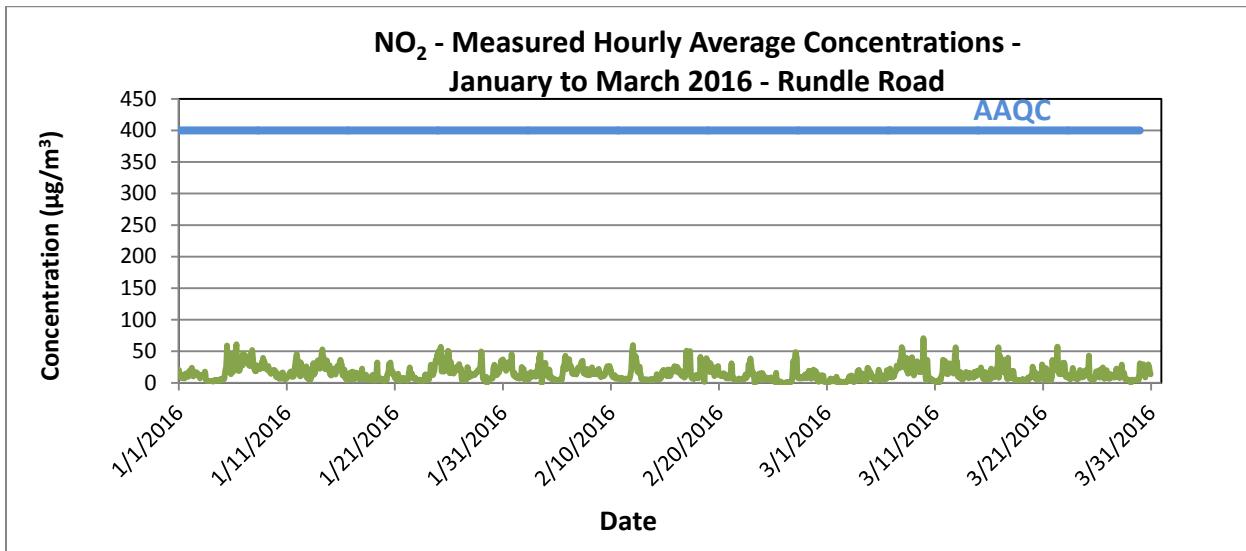


Figure B-2 Time History Plots of Measured Hourly Average and 24-Hour Average NO₂ Concentrations – Rundle Road Station



**QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY
CENTRE –JANUARY TO MARCH 2016**

Appendix C NOX Data Summaries and Time History Plots
May 31, 2016

**Appendix C NO_x DATA SUMMARIES AND TIME HISTORY
PLOTS**

		NOx		COURTICE																										
		February		2016																										
Hour																														
Day	Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300					
1	2.9	4.7	8.2	10.9	6.0	7.0	10.0	8.6	10.2	8.5	7.1	8.1	5.6	4.1	4.2	10.5	6.6	15.8	25.1	34.9	21.7	14.6	45.8	36.1	24	45.8	2.9	13.2	0	0
2	14.6	7.2	11.1	15.2	8.8	13.4	15.2	16.7	11.9	5.4	5.4	9.5	25.8	4.5	0.9	2.2	5.9	23.8	9.9	18.6	13.3	18.4	57.6	27.2	24	57.6	0.9	14.3	0	0
3	8.8	8.4	4.9	4.6	8.7	21.0	6.4	8.1	21.7	23.0	21.8	A	A	A	3.8	3.7	3.9	5.0	6.1	8.0	10.7	11.7	10.6	6.1	21	23.0	3.7	9.9	0	0
4	3.7	3.3	3.8	4.9	8.5	9.6	13.1	19.1	12.7	6.7	6.2	5.6	3.1	4.7	3.3	3.8	6.7	12.2	14.9	8.6	12.5	13.8	12.0	6.8	24	19.1	3.1	8.3	0	0
5	6.7	6.7	3.1	6.6	5.0	13.8	9.3	13.6	16.8	5.2	2.9	3.8	6.8	7.3	20.0	13.1	10.6	10.2	9.8	16.0	12.5	10.1	12.3	11.3	24	20.0	2.9	9.7	0	0
6	12.5	12.6	15.3	20.2	38.6	33.2	36.6	33.2	25.3	24.4	17.1	13.5	11.2	8.1	6.9	6.8	7.4	6.7	6.7	5.4	10.0	12.4	14.0	24	38.6	5.4	16.0	0	0	
7	15.3	14.0	14.7	15.0	15.7	17.6	46.7	61.0	58.6	48.4	22.1	10.8	13.7	12.9	10.5	16.6	16.9	15.0	35.6	18.4	31.2	55.4	21.9	24	61.0	10.5	25.4	0	0	
8	33.6	48.1	52.4	41.4	43.3	46.2	40.2	135.7	89.8	61.6	77.7	40.7	47.7	52.0	61.2	55.0	57.9	50.6	22.2	22.5	28.1	54.9	22.9	24	135.7	22.2	50.7	0	0	
9	38.5	12.7	16.9	9.8	12.4	13.1	16.5	19.9	23.3	21.1	27.6	30.7	42.0	57.7	43.0	21.3	20.0	23.1	34.2	51.0	41.5	44.3	36.5	35.9	24	57.7	9.8	28.9	0	0
10	31.6	16.2	17.9	26.0	11.2	13.0	11.3	13.1	13.8	13.8	12.7	2.6	7.7	7.7	8.4	10.2	10.5	9.5	9.2	8.9	10.0	6.7	11.7	24	31.6	2.6	12.3	0	0	
11	9.7	9.0	7.8	4.1	8.3	7.1	6.5	8.5	7.2	9.5	6.6	5.0	6.4	6.2	6.6	5.4	10.0	14.7	17.5	56.6	26.0	23.8	49.9	24	56.6	4.1	13.4	0	0	
12	83.7	60.3	41.6	21.5	27.5	17.6	15.3	37.2	27.0	23.9	10.5	M	M	M	M	M	M	M	M	M	M	M	M	11	83.7	10.5		0	0	
13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0						
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0						
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0						
16	M	M	M	M	M	M	M	M	M	M	M	23.5	17.6	17.4	18.4	16.7	12.1	13.2	12.4	16.1	16.5	33.5	22.3	12	33.5	12.1		0	0	
17	15.5	10.1	10.2	15.5	35.3	31.9	28.3	39.5	56.3	43.1	13.2	11.5	9.2	8.1	9.5	7.7	8.0	12.1	9.9	12.0	14.1	21.5	35.1	40.4	24	56.3	7.7	20.7	0	0
18	48.0	124.9	129.8	152.1	154.9	69.9	59.2	111.4	69.5	21.0	33.2	19.0	4.1	0.7	1.2	1.0	0.0	1.1	0.0	1.8	80.7	110.4	33.5	2.7	24	154.9	0.0	51.2	0	0
19	2.9	2.1	3.1	3.1	3.2	2.1	2.0	2.5	4.6	7.0	11.1	20.9	8.2	6.4	8.4	15.6	16.8	5.0	6.8	8.0	12.2	23.0	5.9	4.3	24	23.0	2.0	7.7	0	0
20	4.6	5.7	7.0	4.5	4.5	3.4	3.1	3.4	5.2	5.1	5.8	7.2	6.8	6.4	4.4	5.3	6.0	6.5	6.7	5.8	7.1	8.5	7.6	5.7	24	8.5	3.1	5.7	0	0
21	6.2	11.7	11.3	14.0	13.5	16.3	11.2	11.2	17.3	4.2	4.7	2.5	3.6	2.3	2.1	5.5	6.5	8.4	12.9	18.6	11.4	15.9	29.4	12.7	24	29.4	2.1	10.6	0	0
22	8.3	6.2	5.6	3.9	3.6	4.0	10.3	8.3	5.9	4.9	4.7	3.5	1.9	1.3	2.4	1.7	3.1	5.7	4.4	15.4	40.8	49.3	53.4	34.4	24	53.4	1.3	11.8	0	0
23	34.3	29.9	27.1	20.1	22.6	18.7	14.3	14.7	13.3	26.6	C	C	21.8	17.5	9.6	10.1	13.9	20.6	28.3	21.9	15.4	18.7	26.4	16.7	22	34.3	9.6	20.1	0	0
24	19.9	14.8	13.5	11.5	17.0	12.0	16.2	21.8	23.6	15.8	16.7	17.7	12.0	11.6	14.1	12.2	12.8	13.4	10.3	15.4	8.9	9.0	11.6	14.4	24	23.6	8.9	14.4	0	0
25	11.6	18.9	15.3	8.3	6.7	13.6	24.5	24.8	29.1	9.9	24.1	8.3	5.9	5.1																

		NOx		Rundle Road																							
		February		2016																							
Hour																											
Day	Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300		
1	0	11.8	11.1	15.4	11.0	9.1	9.8	8.4	8.8	9.6	8.4	9.6	11.9	7.5	7.3	7.0	8.8	13.5	13.3	25.4	20.7	23.8	22.2	21.6	9.6		
2	0	6.3	5.2	5.2	6.7	4.9	5.3	5.0	16.7	12.8	10.6	6.1	11.0	19.9	16.6	24.2	20.9	9.7	10.7	12.7	17.1	17.2	18.8	15.9	11.0		
3	0	27.8	10.2	14.6	25.6	11.1	27.5	25.3	34.6	22.9	49.8	40.3	56.1	35.5	28.7	A	A	17.7	18.0	20.7	19.6	13.0	12.4	32.9	19.1		
4	0	24.0	12.4	23.1	19.4	18.3	9.5	8.4	22.4	15.8	14.6	9.3	7.6	7.0	8.1	9.4	6.7	6.2	6.6	5.1	4.5	4.3	4.8	5.1	4.3		
5	0	4.5	4.7	4.3	4.5	4.1	4.7	4.5	5.9	6.8	5.6	5.1	5.1	12.5	17.6	28.3	30.1	22.0	33.8	40.7	44.0	30.5	30.0	22.4	23.6		
6	0	23.0	25.1	25.7	38.4	31.3	27.6	26.2	26.8	29.4	25.1	17.8	18.1	19.0	16.4	15.9	15.2	15.9	14.2	14.7	13.3	23.5	17.4	22.7	21.7		
7	0	25.2	23.3	23.3	22.6	24.9	27.7	32.7	35.1	47.9	64.9	28.9	17.7	20.8	30.7	35.8	13.9	15.2	13.8	13.0	13.6	30.2	14.6	11.8	14.2		
8	0	13.2	22.5	13.9	13.0	14.0	16.0	29.8	19.5	15.2	16.2	17.6	15.9	19.1	24.4	15.5	14.5	14.4	20.2	13.6	19.6	13.8	32.7	16.1	16.1		
9	0	21.0	9.4	15.0	10.1	10.0	20.3	10.3	10.5	17.3	11.7	13.4	16.2	19.3	23.4	26.9	24.6	27.8	21.8	20.5	21.9	21.1	37.8	18.6	9.4		
10	0	21.0	13.1	12.8	11.6	9.1	9.9	12.4	16.6	9.5	8.2	8.1	10.4	9.4	8.3	9.4	10.7	7.2	7.3	6.9	6.5	6.1	7.5	8.0	24		
11	0	6.8	7.1	5.2	4.8	4.4	5.0	6.4	5.6	7.7	8.4	8.2	7.8	6.3	6.6	7.1	7.7	7.1	6.1	7.3	10.6	16.2	20.5	34.9	49.6	24	
12	0	54.8	60.5	44.8	30.7	34.8	32.0	28.2	44.3	43.6	44.5	32.6	24.0	21.6	20.2	24.7	29.0	29.2	13.8	14.2	6.4	5.5	4.8	4.9	4.9	24	
13	0	4.3	5.1	5.1	4.8	5.4	5.6	4.7	5.0	6.2	5.1	5.3	5.4	5.4	5.0	5.1	5.7	5.3	5.8	6.0	4.6	4.5	4.9	4.9	4.4	24	
14	0	4.9	7.0	6.3	6.8	6.9	8.6	13.6	8.6	7.4	5.7	7.4	13.9	27.9	9.0	7.4	9.3	9.5	13.5	17.9	17.5	19.2	20.7	19.8	19.1	24	
15	0	15.9	14.9	12.9	11.7	27.0	14.5	11.3	30.2	21.2	13.6	30.2	16.8	13.3	17.6	17.3	20.3	21.8	19.9	26.0	26.1	23.4	34.2	18.5	24		
16	0	21.0	26.5	23.9	25.5	29.2	27.1	16.2	16.6	20.6	18.1	26.1	18.0	15.7	14.5	15.8	15.3	15.4	11.4	9.8	8.1	9.6	9.7	51.9	8.1	24	
17	0	53.1	36.0	32.0	34.3	44.8	27.8	31.3	50.6	72.7	36.8	11.2	9.1	9.2	8.2	8.6	7.3	8.9	8.4	7.0	7.3	7.4	10.7	13.0	10.3	24	
18	0	12.3	7.7	6.8	11.8	10.4	11.5	16.0	58.7	39.7	16.3	27.1	48.5	36.4	9.2	9.2	4.0	3.2	19.9	31.7	32.1	39.6	43.3	35.6	34.8	24	
19	0	20.7	20.9	18.7	25.1	18.6	41.6	18.4	17.9	30.1	25.0	28.5	22.4	31.3	35.5	12.1	14.4	29.7	14.6	20.3	21.3	19.0	27.2	27.3	13.3	24	
20	0	18.1	13.6	14.9	13.2	11.4	15.5	10.3	11.7	18.3	15.3	20.8	17.6	18.5	15.4	15.7	15.0	7.2	7.1	7.2	7.8	8.8	7.2	6.9	7.2	24	
21	0	7.3	6.8	9.7	25.9	31.9	26.9	8.2	7.7	8.9	5.7	4.9	4.8	5.9	5.4	4.4	4.6	5.5	5.0	4.4	4.9	4.5	6.9	31.9	4.4	24	
22	0	5.1	5.4	4.9	5.0	4.9	4.5	5.4	9.7	7.6	7.5	8.2	18.6	11.0	9.7	11.4	14.9	17.7	17.2	29.4	27.6	34.8	28.9	40.8	44.4	24	
23	0	36.2	18.4	22.0	12.4	21.3	10.8	9.0	C	C	C	6.8	6.4	9.3	11.3	19.1	16.5	13.6	14.8	7.2	13.7	23.3	14.9	18.2	3.4	21	
24	0	3.6	30.2	15.5	5.1	6.1	7.1	7.5	8.9	10.1	8.1	10.0	6.6	5.6	5.3	5.0	5.3	6.2	6.5	8.6	4.4	10.7	10.0	7.1	6.2	24	
25	0	3.0	2.0	1.4	1.0	0.6	0.7	2.2	18.0	5.4	3.2	1.4	0.3	0.1	0.0	1.4	2.5	1.5	0.3	0.0	0.3	0.0	0.0	0.0	18.0	0.0	24
26	0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.3	1.9	0.7	1.0	1.3	2.3	2.0	1.7	2.2	1.2	1.3	2.9	10.6	21.9	34.5	31.6	36.6	24	
27	0	17.0	42.0	48.6	48.2																						

Figure C-1 Time History Plots of Measured Hourly Average and 24-Hour Average NO_x Concentrations – Courtice (WPCP) Station

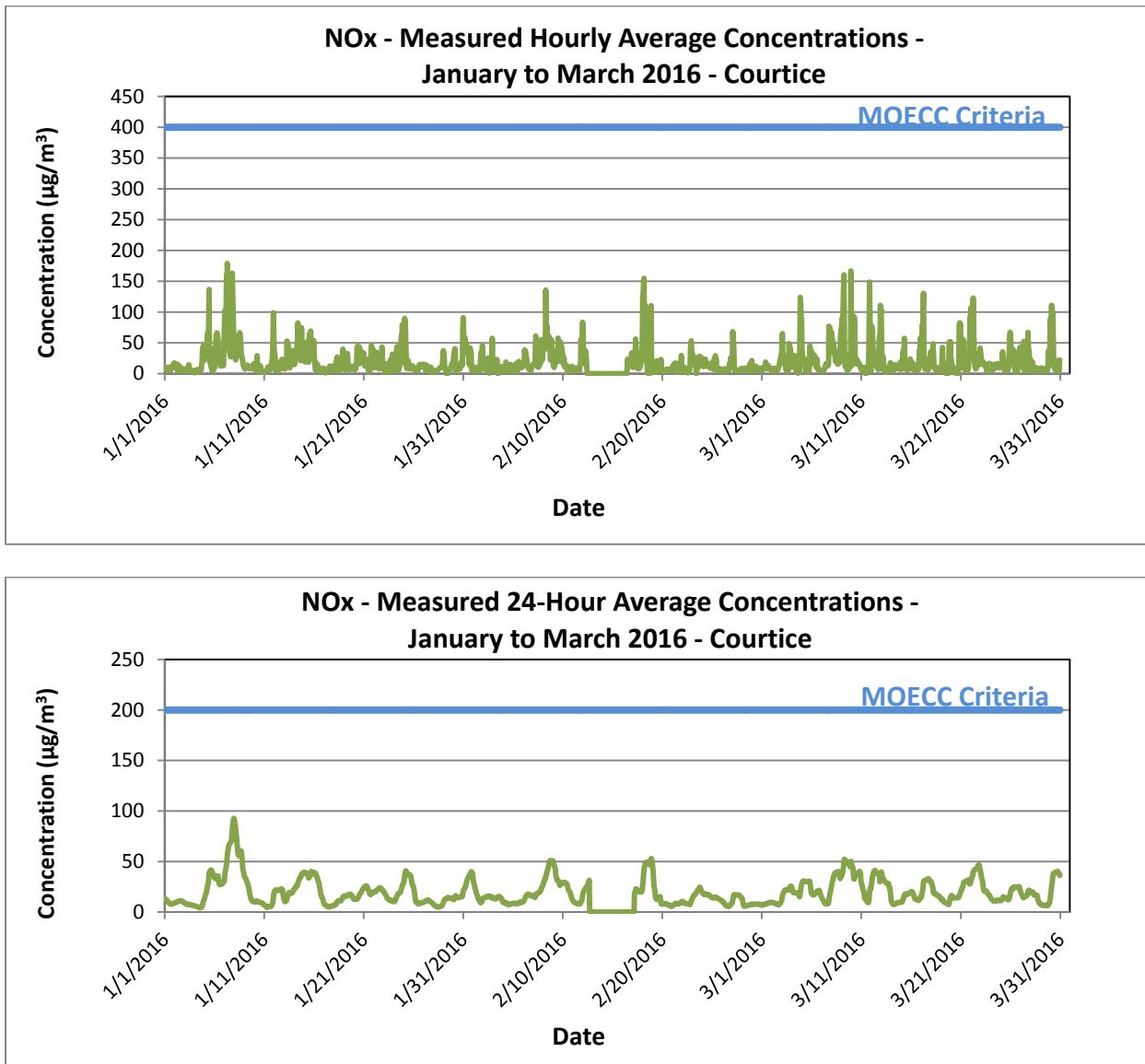
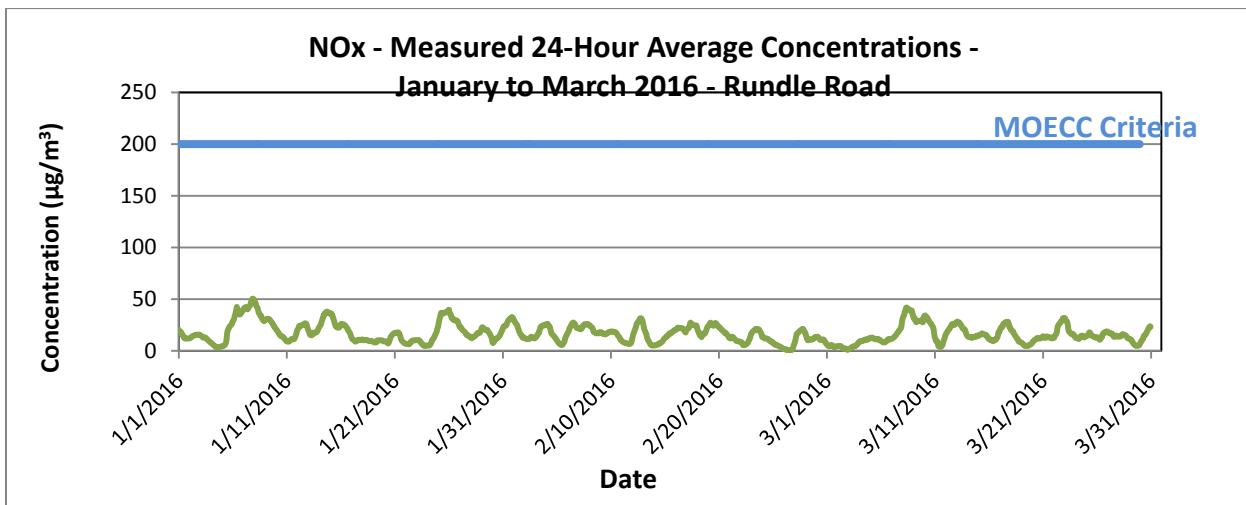
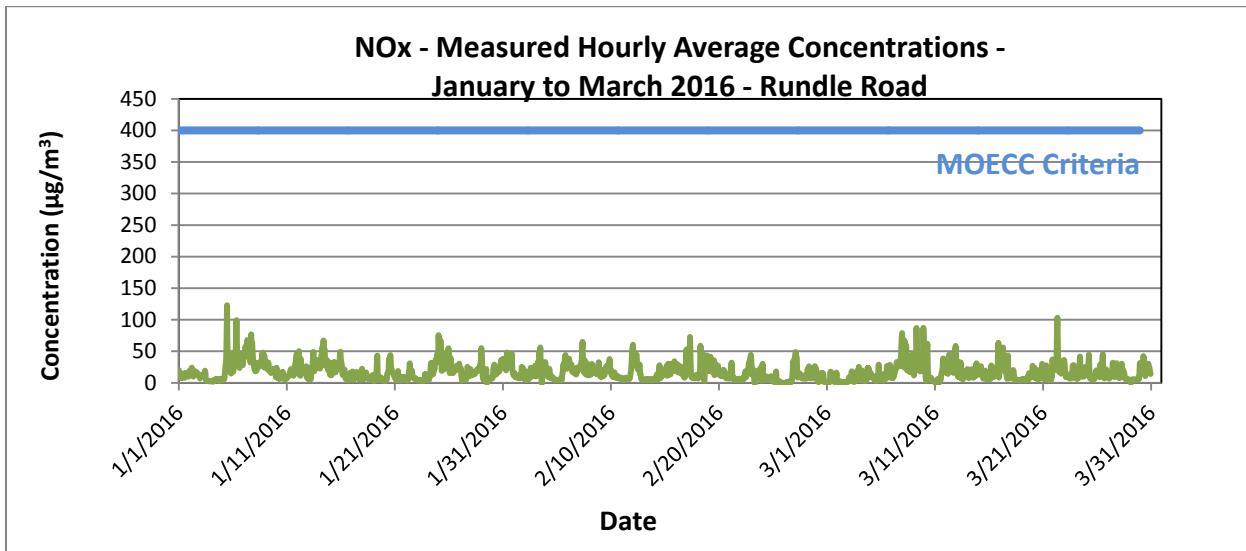


Figure C-2 Time History Plots of Measured Hourly Average and 24-Hour Average NO_x Concentrations – Rundle Road Station



QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

Appendix D PM2.5 Data Summaries and Time History Plots
May 31, 2016

Appendix D PM_{2.5} DATA SUMMARIES AND TIME HISTORY PLOTS

		PM _{2.5} - COURTICE																													
		January 2016		(µg/m ³)																											
		Hour																													
Day	Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average		
1	0	14.8	13.6	12.3	9.8	11.5	4.4	1.6	3.1	3.0	4.8	4.8	0.8	0.4	0.7	3.7	4.9	4.2	4.0	7.1	8.0	7.3	6.5	5.8	5.8	24	14.8	0.4	6.0		
2	0	5.8	6.2	6.8	5.8	4.3	6.3	14.3	8.3	8.7	11.0	11.9	9.3	8.0	8.2	8.4	8.1	6.6	6.4	6.5	6.6	3.8	3.1	2.1	0.9	24	14.3	0.9	7.0		
3	0	2.5	5.1	7.9	9.8	10.8	11.0	10.4	8.0	5.7	3.6	1.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	11.0	0.2	3.3		
4	0	0.8	2.4	3.5	3.2	2.5	2.0	1.6	0.9	1.4	1.4	0.8	0.2	0.2	0.2	0.2	0.2	0.2	0.3	1.3	2.5	2.3	4.9	8.4	4.8	24	8.4	0.2	1.9		
5	0	2.6	0.5	0.7	0.8	2.1	2.1	0.8	0.7	0.2	0.2	0.6	0.8	0.4	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.8	5.4	24	5.4	0.2	0.9		
6	0	2.2	2.6	3.8	7.8	9.3	10.5	11.3	10.0	11.2	10.1	2.5	4.4	3.1	3.4	2.4	2.4	5.0	9.3	10.2	11.0	9.8	8.8	6.3	12.4	24	12.4	2.2	7.1		
7	0	16.3	17.8	18.8	18.8	21.2	22.7	26.6	28.5	27.3	23.1	20.9	19.3	16.9	16.6	16.1	13.6	15.1	20.7	24.6	34.3	40.0	34.1	30.3	26.3	24	40.0	13.6	22.9		
8	0	24.2	23.0	20.6	20.7	22.0	20.6	18.1	17.5	14.7	14.5	32.4	36.5	44.9	46.4	51.1	17.2	9.5	9.8	11.3	12.1	10.8	10.6	11.4	18.0	24	51.1	9.5	21.6		
9	0	16.5	11.5	9.9	7.5	3.5	1.5	2.3	3.6	1.6	0.4	0.7	0.7	0.2	0.5	1.2	2.2	2.8	4.3	6.2	6.2	5.7	8.0	12.6	12.0	24	16.5	0.2	5.1		
10	0	3.3	1.9	2.8	2.3	3.2	2.9	10.6	34.9	1.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	34.9	0.2	2.7			
11	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	2.1	0.2	0.4			
12	0	1.4	1.0	3.1	2.8	2.4	2.7	2.5	2.4	3.1	2.4	1.5	2.9	3.6	6.4	9.3	8.9	5.5	5.3	5.5	7.6	1.2	0.2	0.3	0.2	24	9.3	0.2	3.4		
13	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.2	1.5	4.6	9.3	12.1	5.4	3.4	24	12.1	0.2	1.7		
14	0	4.5	4.2	4.3	5.5	5.8	8.9	12.3	13.7	16.4	17.3	14.3	11.4	11.3	8.9	8.6	7.4	7.7	12.0	15.5	10.3	15.6	26.8	25.9	13.6	24	26.8	4.2	11.8		
15	0	12.5	16.5	15.3	10.7	38.2	21.5	30.1	32.1	57.6	54.3	19.6	6.2	32.7	39.4	29.9	25.3	29.9	17.5	12.9	16.6	15.5	16.4	19.4	43.3	24	57.6	6.2	25.6		
16	0	24.9	17.3	18.6	1.7	0.4	1.7	2.7	3.0	4.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	24.9	0.2	3.2			
17	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	1.3	2.0	3.3	4.0	5.0	7.9	0.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	7.9	0.2	1.1			
18	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	2.8	3.1	24	3.1	0.2	0.4			
19	0	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	0.3	0.2	0.2			
20	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.5	1.2	1.2	0.2	0.2	1.4	3.4	2.2	0.3	0.3	1.1	2.2	4.5	4.3	3.9	8.4	24	8.4	0.2	1.5		
21	0	11.0	9.2	5.8	1.0	1.1	2.0	4.6	8.9	6.7	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	2.6	1.4	1.2	1.5	24	11.0	0.2	2.5		
22	0	1.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	13.8	0.2	2.5			
23	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	10.0	0.2	2.0			
24	0	4.5	6.3	7.5	6.7	6.3	6.5	6.0	4.6	6.8	4.4	1.5	0.5	2.3	5.4	9.3	10.4	10.3	12.2	17.9	20.6	18.8	20.5	17.0	18.5	24	20.6	0.5	9.4		
25	0	22.9	29.9	31.4	32.0	35.4	36.6	27.5	6.8	9.1	9.4	8.7	9.6	9.4	9.4	12.3	13.1	11.7	12.2	11.4	11.3	11.4	7.1	3.6	2.3	24	36.6	2.3	15.6		
26	0	1.6	0.9	1.7	1.6	2.4	2.0	2.0	2.4	3.8	4.2	4.3	9.7	12.4	6.4	5.3	13.6	16.5	17.3	18.2	15.5	9.1	11.9	10.1	5.1	2					

		PM _{2.5} - COURTICE																											
		February 2016		(µg/m ³)																									
		Hour																											
Day	Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average
1	0	9.6	11.3	6.3	2.1	2.3	0.5	0.6	0.3	0.6	0.8	0.8	1.0	0.9	0.9	0.9	1.3	1.6	2.3	3.1	4.4	4.6	4.8	6.8	6.2	24	11.3	0.3	3.1
2	0	4.0	3.4	2.9	2.6	2.2	3.2	3.5	3.8	4.4	4.2	4.1	10.9	20.7	5.4	3.6	3.5	3.1	4.8	4.7	7.7	8.3	7.1	10.7	9.8	24	20.7	2.2	5.8
3	0	7.3	7.8	7.7	7.5	8.6	11.4	12.5	11.2	34.6	3.2	2.2	A	A	A	2.1	4.0	7.0	7.7	5.4	5.8	9.8	4.5	5.5	7.1	21	34.6	2.1	8.2
4	0	9.2	10.5	9.7	12.7	7.5	1.5	1.7	2.6	1.9	0.9	1.0	1.0	0.9	0.7	0.7	0.8	0.9	1.7	2.0	1.2	1.3	2.0	2.1	1.8	24	12.7	0.7	3.2
5	0	1.6	1.6	1.6	2.3	2.0	1.8	1.8	7.5	4.1	2.2	2.3	2.4	4.0	6.0	9.8	9.4	11.8	14.6	13.0	10.1	9.1	12.0	13.8	13.3	24	14.6	1.6	6.6
6	0	14.9	16.0	16.5	15.9	17.2	17.5	18.8	20.8	21.9	18.7	14.6	17.5	17.4	17.0	15.1	11.6	5.5	5.4	6.4	9.9	10.8	11.4	13.2	14.4	24	21.9	5.4	14.5
7	0	18.4	26.4	31.1	32.1	33.2	34.3	38.5	38.7	32.8	27.4	20.2	15.5	15.3	15.0	14.2	15.4	16.5	18.1	17.0	16.0	23.5	45.4	25.3	22.6	24	45.4	14.2	24.7
8	0	17.5	31.4	37.3	32.5	31.8	33.0	21.2	24.0	46.3	56.6	70.5	29.7	25.6	29.8	21.1	13.8	15.4	13.3	5.3	5.6	7.2	17.5	8.5	18.7	24	70.5	5.3	25.6
9	0	25.7	6.1	10.3	3.6	3.8	4.2	4.6	4.9	5.3	6.4	13.1	24.3	53.2	47.0	26.7	8.6	6.6	12.2	34.4	14.9	12.0	9.9	9.9	24	53.2	3.6	15.4	
10	0	9.8	10.4	12.4	13.0	10.2	6.8	5.5	4.0	4.2	4.2	3.0	2.1	1.9	2.2	2.2	2.8	2.2	2.8	2.8	2.7	2.6	2.6	2.8	24	13.0	1.9	4.8	
11	0	3.2	4.0	4.8	4.4	4.4	4.2	4.0	3.9	4.3	4.8	4.9	4.1	2.5	2.3	2.4	2.6	2.7	3.5	4.4	5.2	6.7	5.1	4.7	5.0	24	6.7	2.3	4.1
12	0	7.1	7.9	6.0	5.6	6.7	5.1	5.3	6.4	6.0	6.4	7.3	6.2	5.2	5.0	5.4	6.4	7.2	6.6	4.6	3.7	2.5	3.4	3.5	24	7.9	2.5	5.6	
13	0	4.2	4.7	5.4	5.5	5.2	5.1	5.2	5.8	6.5	5.2	4.7	4.9	4.2	3.7	3.3	3.4	3.1	3.3	3.2	3.6	3.4	3.9	3.8	24	6.5	3.1	4.4	
14	0	3.6	2.8	2.3	2.8	2.9	2.7	3.5	3.9	3.6	2.1	1.7	1.7	1.8	4.2	2.1	1.6	1.5	2.1	3.1	5.6	5.5	4.9	3.5	24	5.6	1.5	3.1	
15	0	7.1	7.5	4.2	2.3	3.1	5.9	3.6	2.9	3.4	2.2	1.6	1.7	2.4	3.5	5.0	5.6	6.6	9.0	11.9	13.9	14.0	13.5	12.3	10.6	24	14.0	1.6	6.4
16	0	9.0	8.6	8.3	10.4	17.0	18.4	20.2	18.9	14.5	11.2	7.9	5.9	6.2	8.2	15.5	14.5	11.6	10.9	7.9	7.4	8.4	10.2	13.2	13.9	24	20.2	5.9	11.6
17	0	10.5	8.5	10.2	16.9	29.7	27.5	25.0	22.3	24.3	20.8	2.4	1.0	1.1	1.2	1.4	1.4	1.5	1.8	2.2	3.4	4.2	4.9	5.3	7.3	24	29.7	1.0	9.8
18	0	6.6	7.4	7.7	7.7	7.8	7.0	6.1	7.9	7.3	3.5	3.6	3.3	1.5	0.8	0.9	1.1	0.7	0.6	1.0	1.2	5.5	7.7	4.4	2.3	24	7.9	0.6	4.3
19	0	2.0	1.7	2.2	2.5	2.5	1.9	2.1	2.5	2.3	2.6	2.4	2.2	1.7	1.9	1.8	4.1	7.4	8.6	8.9	8.7	8.5	6.2	7.2	24	8.9	1.7	3.9	
20	0	10.4	8.8	2.8	8.0	11.6	10.1	8.0	4.5	1.7	1.2	1.3	1.4	1.3	1.1	0.9	1.1	0.9	1.2	1.7	2.2	2.7	3.5	1.9	1.9	24	11.6	0.9	3.8
21	0	1.7	2.1	2.9	3.2	3.4	3.6	3.1	2.8	6.0	3.3	3.6	5.1	3.3	1.3	1.5	2.7	3.3	2.7	3.9	5.0	4.7	7.0	7.8	6.5	24	7.8	1.3	3.8
22	0	6.3	6.9	6.7	6.8	6.1	7.4	6.6	4.1	4.5	4.3	7.0	7.9	7.1	5.3	5.4	5.4	4.8	5.1	6.5	6.0	5.7	8.2	6.4	8.7	24	8.7	4.1	6.2
23	0	6.5	6.6	10.6	10.2	15.6	6.0	2.9	3.3	3.6	5.3	C	C	4.6	4.7	5.0	5.9	7.9	8.7	7.8	6.1	5.6	6.1	7.8	6.8	22	15.6	2.9	6.7
24	0	13.3	15.4	17.0	17.4	13.0	11.8	11.2	11.5	10.5	6.5	6.2	4.3	2.4	1.1	0.9	1.0	0.9	0.5	0.5	0.4	0.3	0.3	0.7	24	17.4	0.3	6.6	
25	0	1.4	2.5	1.5	0.4	0.2	0.6	1.5	1.7	1.8	1.2	1.4	1.7	1.6	1.8	2.5	3.7	2.8	2.8	2.9	2.2	1.9	2.0	1.9	2.1	24	3.7	0.2	1.8
26	0	1.7	1.8	2.1	2.3	2.2	2.4	2.9	2.9	3.1	2.6	2.5	2.5	2.8	2.6	2.8	2.7	3.8	5.5	6.3	6.6	5.2	6.9	5.7	4.5	24	6.9	1.7	3.5
27	0	3.3	5.1</																										

		PM _{2.5} - COURTICE																											
		March 2016																											
		(µg/m ³)																											
Hour	Day	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average
	1	3.6	4.9	5.8	5.8	5.4	5.2	4.8	4.2	4.6	4.8	4.2	4.3	4.0	4.3	3.5	3.2	2.2	1.8	1.9	1.7	1.7	1.5	1.3	1.5	24	5.8	1.3	3.6
	2	1.9	1.9	1.9	1.8	1.5	1.4	1.4	1.5	1.7	1.8	1.4	1.7	1.6	1.3	1.4	1.6	1.7	1.9	2.7	3.6	4.2	4.2	4.1	4.8	24	4.8	1.3	2.2
	3	3.9	4.9	5.1	4.1	3.4	2.7	3.2	3.5	3.8	2.0	1.3	1.1	1.2	1.5	1.7	1.6	2.9	5.2	7.7	9.2	10.8	10.4	8.7	8.2	24	10.8	1.1	4.5
	4	6.9	6.4	5.9	5.7	6.4	5.6	6.3	6.7	6.0	3.1	2.3	2.4	2.3	2.3	2.4	3.1	2.7	2.9	3.8	4.9	8.8	14.1	18.1	18.1	24	18.1	2.3	6.1
	5	21.3	23.9	20.5	13.2	13.7	14.1	13.9	14.4	14.1	7.5	3.8	3.9	4.3	4.2	4.2	3.9	4.4	5.1	6.2	6.6	11.4	18.7	18.7	19.6	24	23.9	3.8	11.3
	6	19.3	20.0	17.6	15.7	15.1	18.7	15.5	16.5	14.9	11.3	10.0	9.6	7.1	12.5	11.3	12.8	12.3	12.8	13.9	11.6	10.5	13.5	16.9	24	20.0	7.1	13.8	
	7	18.0	18.6	18.6	20.8	23.7	19.2	15.6	14.9	16.5	16.4	17.5	17.7	17.1	16.1	15.3	14.9	14.8	16.3	22.8	24.2	25.9	28.1	26.3	24	28.1	14.8	19.2	
	8	25.4	27.8	30.5	32.6	32.5	32.3	31.8	32.1	29.6	27.4	25.2	25.6	24.8	23.6	23.2	22.1	23.3	24.7	23.9	22.3	20.9	22.4	25.7	23.8	24	32.6	20.9	26.4
	9	22.0	23.6	22.8	27.2	27.5	32.5	32.1	24.3	12.4	7.6	7.1	7.5	8.3	10.0	13.4	15.9	18.5	21.0	20.2	18.8	18.9	20.0	21.7	23.8	24	32.5	7.1	19.1
	10	24.5	26.2	26.2	21.9	15.7	14.0	22.8	27.8	16.5	10.0	7.8	3.4	1.3	2.0	2.3	4.5	6.9	7.1	5.1	5.1	5.4	6.8	7.8	8.6	24	27.8	1.3	11.7
	11	8.3	13.0	11.3	6.6	5.7	7.9	8.2	7.3	6.1	4.8	C	C	1.9	2.9	5.4	6.6	9.3	10.4	15.8	21.0	19.9	14.0	15.2	21	21.0	1.9	9.6	
	12	12.5	13.0	14.4	16.8	15.1	14.0	14.7	12.4	2.9	10.9	14.1	12.6	12.0	7.9	6.3	5.3	4.2	1.8	2.9	6.0	8.0	5.8	10.7	16.6	24	16.8	1.8	10.0
	13	18.6	13.5	16.9	20.2	19.5	14.3	9.4	4.7	2.6	2.0	1.4	1.4	1.6	1.3	1.0	0.9	0.9	1.4	1.3	1.3	1.4	1.6	1.5	1.9	24	20.2	0.9	5.9
	14	2.5	4.1	5.0	5.4	5.7	6.3	5.7	5.2	3.9	2.8	2.1	2.1	2.0	2.2	2.6	2.9	2.4	2.9	3.3	4.4	4.7	5.9	5.3	24	6.3	2.0	4.0	
	15	8.4	12.1	11.3	12.6	9.9	10.7	10.7	10.1	9.4	8.2	5.3	1.7	1.5	1.1	1.5	1.4	1.5	1.9	2.2	2.2	4.0	7.6	10.7	11.2	24	12.6	1.1	6.6
	16	11.0	7.0	5.9	6.7	6.3	4.3	4.9	3.9	3.7	4.0	4.1	4.8	7.0	10.5	12.6	11.1	9.3	7.0	5.1	4.9	1.7	2.2	2.0	3.3	24	12.6	1.7	6.0
	17	4.5	7.7	16.5	13.2	6.5	7.0	7.3	3.0	1.6	1.7	1.8	2.4	3.6	5.2	4.5	3.2	2.6	1.9	2.9	4.5	3.4	3.8	2.3	3.9	24	16.5	1.6	4.8
	18	3.4	2.6	2.3	2.8	3.5	3.5	3.1	1.8	1.6	2.1	2.5	2.0	2.2	1.5	1.6	1.4	1.2	1.4	2.2	2.2	2.3	2.1	2.1	24	3.5	1.2	2.2	
	19	2.1	2.0	2.5	4.1	4.7	3.1	3.9	2.1	1.8	1.6	1.5	1.4	1.4	1.3	1.3	1.7	1.9	2.6	3.8	6.2	10.5	18.1	22.4	24	22.4	1.3	4.3	
	20	25.1	21.5	10.0	6.3	4.6	3.6	3.6	2.7	3.2	3.7	3.6	3.4	2.8	2.5	2.3	2.2	2.0	2.0	2.4	3.7	6.7	10.1	12.5	9.9	24	25.1	2.0	6.3
	21	8.4	8.2	6.7	3.5	3.8	4.0	4.4	4.3	2.8	1.8	1.9	3.0	3.5	3.3	3.0	2.2	2.6	2.7	3.4	5.7	6.8	6.7	8.6	24	10.6	1.8	4.7	
	22	11.3	9.8	8.4	7.8	7.1	8.4	9.1	7.0	8.3	10.4	9.4	9.9	9.0	9.7	8.3	10.2	9.0	9.7	10.9	12.7	13.2	16.7	20.2	22.3	24	22.3	7.0	10.8
	23	19.0	18.3	16.1	16.7	19.2	17.2	4.2	4.5	2.0	1.5	2.2	2.4	3.2	3.0	3.4	2.9	3.1	4.4	4.2	4.6	4.3	3.7	5.9	4.9	24	19.2	1.5	7.1
	24	4.8	5.0	5.0	4.1	4.3	2.8	2.1	1.9	1.6	1.5	1.8	2.0	1.9	3.2	3.3	3.5	2.4	3.3	3.9	4.6	4.5	4.6	5.5	5.5	24	5.5	1.5	3.5
	25	5.2	7.2	11.2	14.9	19.9	23.3	14.5	3.2	1.6	1.9	2.0	2.4	2.3	2.7	3.1	3.5	4.0	4.7	6.8	8.4	9.6	11.7	14.1	17.3	24	23.3	1.6	8.1
	26	19.7	21.4	21.1	15.6	12.1	11.8	10.1	10.9	5.8	5.1	5.7	4.1	4.6	4.8	4.5	3.8	4.3	5.9	12.2	12.4	17.6	17.6	15.5	15.8	24	21.4	3.8	10.9
	27	18.1	16.1	13.2																									

		PM _{2.5} - Rundle Road																											
		January 2016																											
		(µg/m ³)																											
Day	Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average
1	0	15.6	14.6	12.9	11.6	13.2	8.6	5.7	6.7	7.1	9.1	9.3	5.6	6.2	7.2	9.3	10.1	9.4	8.7	11.7	11.4	10.8	10.0	9.7	24	15.6	5.6	9.9	
2	0	9.5	9.1	9.7	9.5	8.2	9.0	14.0	12.8	14.3	17.9	18.1	15.5	13.7	13.8	13.8	13.2	12.3	11.6	11.5	11.8	9.1	8.3	7.2	5.9	24	18.1	5.9	11.7
3	0	7.6	10.3	12.9	14.6	14.9	15.0	14.4	12.4	9.9	7.6	6.1	3.1	2.5	2.5	2.4	2.3	2.8	3.2	3.2	4.0	6.4	6.1	6.5	6.3	24	15.0	2.3	7.4
4	0	7.0	7.9	8.2	7.2	6.5	5.9	5.5	5.3	4.3	2.8	2.7	2.4	2.4	2.1	2.0	2.4	5.3	5.8	5.6	28.3	7.1	6.0	6.9	6.5	24	28.3	2.0	6.1
5	0	5.6	7.1	5.9	6.3	6.7	7.0	7.3	6.4	8.1	7.4	9.7	12.6	10.2	6.5	7.1	6.2	7.9	9.0	8.2	7.6	6.9	8.2	8.9	13.7	24	13.7	5.6	7.9
6	0	11.1	10.7	12.1	14.6	14.8	15.1	15.8	15.1	17.4	17.1	10.4	11.2	10.5	9.6	8.9	8.2	8.3	9.6	11.2	12.6	13.8	14.0	10.7	14.1	24	17.4	8.2	12.4
7	0	17.8	21.6	21.0	21.4	24.5	24.2	25.3	29.1	30.7	26.1	24.0	24.5	19.5	24.9	23.4	18.3	19.3	20.4	24.2	33.8	35.7	36.4	31.8	28.5	24	36.4	17.8	25.3
8	0	26.0	23.4	22.8	23.1	22.7	21.2	20.5	19.8	18.4	15.7	17.4	18.7	16.2	15.8	15.6	16.2	15.0	16.9	18.0	19.9	17.7	18.0	18.7	24.2	24	26.0	15.0	19.2
9	0	25.4	15.1	15.5	14.1	13.0	8.0	11.1	11.7	6.6	4.5	4.0	13.1	4.0	5.2	5.8	5.6	7.3	10.5	10.9	11.7	12.6	12.6	17.9	18.1	24	25.4	4.0	11.0
10	0	7.3	4.3	7.8	5.2	5.8	6.2	4.4	2.1	1.3	1.6	1.2	1.1	11.3	4.2	1.0	1.6	1.2	2.0	2.1	2.4	2.5	2.6	2.3	2.7	24	11.3	1.0	3.5
11	0	3.2	4.2	2.7	2.8	3.2	2.6	2.5	2.5	3.2	3.7	3.5	2.9	2.7	3.3	3.4	3.3	6.0	9.3	10.7	12.9	13.5	16.6	20.1	10.5	24	20.1	2.5	6.2
12	0	9.3	6.3	7.5	10.1	7.6	7.5	8.2	8.7	8.4	7.4	6.3	7.4	8.6	10.7	12.3	11.9	10.7	10.3	10.2	11.5	6.7	4.8	5.4	5.1	24	12.3	4.8	8.4
13	0	4.6	3.9	3.7	3.4	3.7	4.0	5.8	4.0	4.9	6.0	5.8	6.4	4.7	4.8	5.1	7.2	6.6	4.9	8.0	10.6	14.4	16.0	11.0	8.1	24	16.0	3.4	6.6
14	0	9.3	9.3	10.1	10.0	9.9	11.8	14.1	16.1	17.6	19.5	18.8	15.9	16.7	14.9	14.0	13.2	12.6	13.3	14.2	12.7	15.0	24.6	20.5	14.0	24	24.6	9.3	14.5
15	0	12.5	13.4	12.7	12.7	12.0	12.6	12.3	14.3	15.2	13.6	11.2	10.3	12.3	13.0	13.4	14.1	16.2	17.0	17.6	15.9	M	M	M	M	20	17.6	10.3	13.6
16	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0		
17	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0		
18	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0		
19	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0		
20	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0		
21	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0		
22	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0		
23	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0		
24	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0		
25	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0		
26	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0		
27	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0		
28	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0		
29	0	M	M	M	M	M	M	M	M	M	M	C	C	M	M	0.5	0.0	0.0	0.2	10.5	18.8	23.6	7	23.6	0.0				
30	0	25.2	31.2	26.8	27.3	32.7	34.3	25.8	29.3	31.5	30.7	37.8	30.7	30.9	26.7	18.4	18.3	16.7	11.1	0.3	0.5	0.8	0.7	3.4	1.4	24	37.8	0.3	20.5
31	0	0.5	6.3	7.4	7.6	7.4	7.7	7.5	7.2	7.5	8.0	8.9	7.7	8.1	1														

		PM _{2.5} - Rundle Road																											
		February 2016																											
		(µg/m ³)																											
Day	Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average
1	7.7	7.0	5.9	4.2	2.5	1.8	0.5	0.4	0.3	0.4	0.4	0.5	0.7	0.7	0.5	0.6	0.8	0.7	0.4	0.5	0.6	0.7	0.7	0.8	24	7.7	0.3	1.6	
2	0.6	0.5	0.4	0.7	1.2	1.5	2.5	2.2	2.6	3.9	6.1	10.1	20.4	32.5	20.7	15.5	16.5	9.0	4.3	1.6	1.5	1.8	2.2	2.3	24	32.5	0.4	6.7	
3	4.7	7.6	7.6	9.2	13.2	22.3	35.7	71.8	48.8	10.9	9.3	9.9	10.8	15.3	A	A	18.3	18.5	12.1	5.6	7.9	9.1	2.5	1.4	22	71.8	1.4	16.0	
4	1.5	2.0	2.3	2.4	3.0	2.0	0.5	0.5	0.6	0.6	0.4	0.3	0.4	0.4	0.4	0.5	0.3	0.3	0.4	0.3	0.2	0.2	0.9	0.4	24	3.0	0.2	0.9	
5	0.4	0.4	0.3	0.3	0.5	0.5	0.4	0.3	1.0	0.6	0.4	0.3	0.3	0.7	1.0	1.4	1.8	1.8	2.5	3.3	2.3	2.1	2.6	3.1	24	3.3	0.3	1.2	
6	5.1	8.8	12.3	10.1	12.6	13.6	13.0	14.6	11.0	16.7	13.9	12.9	16.5	17.3	17.4	15.9	12.3	5.4	5.6	27.3	73.4	71.6	60.7	60.9	24	73.4	5.1	22.0	
7	54.4	60.0	63.1	63.4	51.9	44.7	41.3	32.1	20.7	26.6	47.3	41.7	37.1	36.7	35.4	28.0	22.5	18.4	15.1	12.6	10.0	11.4	12.5	11.4	24	63.4	10.0	33.3	
8	8.9	5.6	4.5	2.3	1.2	1.8	1.9	2.2	3.6	5.1	5.4	6.0	5.9	7.5	7.1	7.7	8.7	8.0	9.2	5.6	3.6	2.1	1.3	24	9.2	1.2	5.1		
9	1.3	1.2	1.2	1.1	1.1	1.3	1.6	2.2	2.7	7.4	12.1	14.2	19.1	20.6	23.6	37.1	30.2	40.1	26.8	24.1	14.9	16.4	12.2	9.6	24	40.1	1.1	13.4	
10	12.1	9.6	7.6	5.7	7.9	7.9	6.3	4.6	2.3	2.9	2.8	3.6	2.7	3.1	M	6.0	3.8	2.3	2.0	1.9	1.8	1.1	1.8	1.9	23	12.1	1.1	4.4	
11	1.1	1.8	1.9	1.7	1.8	1.7	1.8	1.9	2.1	2.3	2.3	7.6	18.6	36.6	38.0	44.6	42.2	35.8	27.5	19.3	13.8	3.3	2.5	3.9	24	44.6	1.1	13.1	
12	15.5	25.5	27.6	31.6	37.0	32.5	33.2	38.6	39.0	43.6	49.8	45.4	44.8	42.1	40.5	38.7	33.1	18.1	11.9	5.1	1.3	0.2	0.2	0.3	24	49.8	0.2	27.3	
13	0.3	0.4	0.7	0.9	1.1	1.6	2.0	2.5	3.1	3.4	3.5	7.0	23.4	31.6	44.0	45.4	61.7	41.1	26.9	11.7	2.6	1.2	1.5	1.5	24	61.7	0.3	13.3	
14	1.6	1.8	1.6	1.6	2.0	1.9	2.3	2.0	4.9	29.3	47.4	60.3	104.6	64.4	47.4	46.2	45.1	53.9	41.9	34.6	31.0	27.5	21.6	18.3	24	104.6	1.6	28.9	
15	13.0	13.9	14.7	12.1	10.2	10.3	14.8	33.6	30.6	31.9	35.7	41.1	45.1	46.0	40.9	38.4	37.0	38.0	40.3	40.6	32.4	28.5	24.8	20.7	24	46.0	10.2	28.9	
16	20.2	18.9	22.3	25.9	22.6	22.9	18.1	13.8	10.5	9.1	7.4	6.8	6.9	8.6	13.7	14.7	10.8	10.1	6.1	4.3	4.6	5.4	6.5	7.8	24	25.9	4.3	12.4	
17	5.6	4.0	5.0	8.7	17.9	21.3	15.1	14.0	14.4	13.5	2.7	1.7	1.6	1.4	1.9	2.0	2.3	1.3	0.0	0.0	0.3	0.4	0.4	24	21.3	0.0	5.6		
18	0.3	0.3	0.3	0.5	0.4	0.8	0.7	1.2	0.9	3.5	28.9	91.7	85.5	18.3	16.5	15.1	2.4	3.4	5.7	9.0	14.6	12.7	11.3	10.4	24	91.7	0.3	13.9	
19	6.6	9.6	14.5	17.0	17.5	16.2	15.0	16.4	31.5	12.9	7.9	5.5	7.5	15.3	5.5	5.4	9.2	21.8	19.7	18.5	15.6	14.0	13.8	12.8	24	31.5	5.4	13.7	
20	13.1	9.6	5.9	7.2	8.4	7.0	5.0	3.4	1.0	0.2	0.3	0.6	2.0	2.2	3.0	3.0	3.0	4.6	3.7	2.3	2.2	0.8	0.6	0.6	24	13.1	0.2	3.7	
21	0.5	0.6	0.7	0.9	0.9	0.9	0.9	0.8	0.7	0.7	1.1	2.4	2.5	2.4	3.0	2.0	0.9	0.7	0.5	0.8	1.1	1.1	2.1	24	3.0	0.5	1.2		
22	1.8	1.5	1.5	1.8	1.5	2.0	1.8	1.4	1.0	0.7	1.4	12.4	7.8	6.8	7.4	9.6	11.5	11.8	8.1	2.0	2.4	2.2	2.0	2.2	24	12.4	0.7	4.3	
23	1.8	1.6	1.4	1.2	2.0	2.9	2.0	C	C	C	13.2	14.9	18.8	19.6	19.9	20.3	19.1	19.7	14.0	8.2	5.4	8.3	5.4	6.0	21	20.3	1.2	9.8	
24	9.2	16.5	17.1	14.3	11.4	9.7	9.8	10.0	9.1	8.2	5.2	5.9	5.0	3.1	2.4	2.7	2.8	2.7	2.5	2.8	2.4	2.2	2.1	2.6	24	17.1	2.1	6.6	
25	3.6	4.0	2.6	1.9	1.8	1.4	2.1	2.1	2.6	3.0	2.5	2.4	2.1	1.8	1.8	1.6	1.5	0.7	0.2	0.0	0.0	0.0	0.0	24	4.0	0.0	1.7		
26	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.6	0.8	1.5	3.4	5.4	8.3	10.2	9.8	11.8	11.7	11.6	9.2	2.9	3.5	3.9	2.3	24	11.8	0.0	4.0	
27	4.5	8.4	10.0	11.4	14.2	16.4	1																						

		PM _{2.5} - Rundle Road																											
		March 2016																											
		(µg/m ³)																											
Day	Hour	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average
1	0	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	1.3	3.0	3.8	5.0	6.1	7.3	8.0	7.6	5.9	6.3	5.9	5.5	7.0	24	8.0	0.0	3.1
2	0	7.2	7.5	4.6	2.2	1.3	1.1	1.3	1.5	1.0	3.4	10.7	8.2	11.0	7.3	6.4	4.3	4.3	17.6	33.0	12.7	0.8	0.7	0.2	0.8	24	33.0	0.2	6.2
3	0	1.4	1.1	1.4	1.0	0.9	0.8	1.1	1.4	4.2	3.7	5.5	6.5	7.7	8.1	8.9	9.6	9.3	11.1	10.3	7.2	2.8	2.2	2.0	2.4	24	11.1	0.8	4.6
4	0	4.4	7.1	8.6	8.5	8.4	8.0	8.2	8.1	6.9	8.7	7.2	8.0	9.4	7.2	7.1	8.1	6.6	7.1	10.8	6.5	2.8	3.8	9.6	11.8	24	11.8	2.8	7.6
5	0	12.2	9.6	11.0	12.7	12.5	9.7	8.9	11.3	8.7	5.5	3.3	4.4	4.6	4.5	4.4	3.9	4.2	5.0	7.2	6.3	5.8	9.5	7.7	24	12.7	3.3	7.5	
6	0	7.4	5.3	5.5	3.5	2.1	1.4	2.2	4.2	11.4	17.6	11.9	21.2	16.9	27.5	25.2	21.1	20.9	16.3	15.1	13.9	9.7	7.2	10.3	13.3	24	27.5	1.4	12.1
7	0	14.4	14.6	16.3	18.5	21.1	19.8	16.8	16.3	15.5	14.9	16.3	17.0	16.8	16.8	17.0	18.0	21.4	25.4	27.1	29.0	26.4	27.0	23.6	23.2	24	29.0	14.4	19.7
8	0	22.9	25.1	26.4	27.9	28.2	27.9	27.6	28.0	24.8	19.9	19.5	21.1	22.7	22.1	22.7	22.3	22.4	21.2	18.7	19.4	20.7	20.8	20.2	19.0	24	28.2	18.7	23.0
9	0	15.5	12.7	13.1	12.6	14.2	13.9	16.0	21.5	12.3	7.0	8.3	9.7	12.0	13.7	17.7	19.3	20.8	22.5	22.1	23.6	24.2	27.3	27.1	26.0	24	27.3	7.0	17.2
10	0	31.7	33.4	30.5	24.3	22.1	18.4	18.9	14.7	10.8	10.3	9.1	7.1	5.8	4.5	4.5	5.7	6.2	5.2	2.8	1.7	0.8	0.2	0.2	24	33.4	0.2	11.2	
11	0	0.5	2.0	1.7	0.8	0.4	1.1	1.8	C	C	1.8	1.6	2.2	3.5	5.5	9.3	12.5	16.3	15.3	11.8	8.0	4.4	2.8	4.0	21	16.3	0.4	5.1	
12	0	3.4	3.2	3.8	3.9	3.5	3.5	4.7	3.0	3.6	16.0	27.5	22.3	21.8	16.1	11.9	10.6	8.7	4.6	6.1	10.1	16.3	9.1	14.9	14.7	24	27.5	3.0	10.1
13	0	10.5	11.1	15.3	15.8	11.8	8.1	5.1	2.1	2.1	2.4	1.9	2.1	1.8	1.3	0.6	1.7	1.0	1.1	1.5	1.1	0.4	0.3	0.4	0.8	24	15.8	0.3	4.2
14	0	3.6	7.3	7.8	7.5	8.1	7.9	8.1	6.6	4.9	4.0	3.5	4.5	3.6	4.0	3.7	5.1	5.1	6.0	4.8	4.8	5.2	4.4	4.8	4.9	24	8.1	3.5	5.4
15	0	4.4	6.5	6.8	6.7	7.5	7.0	7.6	6.4	3.4	3.1	3.7	2.1	2.0	1.9	2.1	3.0	3.1	2.3	1.1	1.1	1.9	2.3	2.9	24	7.6	1.1	3.8	
16	0	2.5	1.5	1.3	1.6	1.3	1.1	1.1	0.9	2.3	3.6	3.3	3.9	5.1	6.4	8.2	10.0	14.8	18.7	12.5	9.7	4.6	5.6	3.4	2.2	24	18.7	0.9	5.2
17	0	3.3	8.9	10.8	13.0	7.4	3.8	2.7	3.6	4.7	7.5	7.7	8.3	10.3	12.5	9.8	8.3	7.5	7.5	7.8	6.4	4.5	2.8	1.0	0.5	24	13.0	0.5	6.7
18	0	1.8	2.8	2.4	1.5	0.9	0.6	0.9	1.1	2.6	3.7	4.4	3.9	3.5	2.4	1.8	1.8	0.7	0.9	1.0	1.2	0.4	0.2	0.5	0.2	24	4.4	0.2	1.7
19	0	0.0	0.0	0.2	0.2	0.5	0.3	0.2	0.4	0.2	0.0	0.0	0.2	0.2	0.0	0.2	0.0	0.2	0.3	0.0	0.4	0.9	1.6	4.4	10.5	24	10.5	0.0	0.9
20	0	20.6	12.7	6.0	2.9	1.9	1.7	1.6	1.1	1.3	3.0	5.7	6.9	4.9	7.0	5.2	5.0	6.9	9.7	4.7	3.5	1.5	2.7	4.3	3.3	24	20.6	1.1	5.2
21	0	3.2	2.7	1.1	0.9	2.8	2.1	1.4	2.2	6.0	7.7	11.6	18.1	16.9	16.2	13.2	7.6	5.4	4.4	5.1	7.3	11.2	11.3	8.4	6.8	24	18.1	0.9	7.2
22	0	11.6	6.7	4.1	4.3	4.2	2.5	2.1	3.6	18.9	36.2	38.3	35.9	30.3	26.6	25.6	26.9	25.1	23.6	18.5	21.4	17.7	18.3	18.4	20.0	24	38.3	2.1	18.4
23	0	17.9	15.7	15.1	15.7	18.5	15.2	4.4	4.3	2.1	1.4	2.3	2.5	2.8	3.3	4.6	3.6	3.8	4.1	4.5	4.0	1.4	0.5	0.3	0.5	24	18.5	0.3	6.2
24	0	0.8	0.7	0.8	0.3	0.3	0.0	0.0	0.0	1.1	2.9	3.8	5.3	7.4	10.3	9.7	7.9	8.3	10.1	8.6	7.7	6.7	8.9	8.4	9.6	24	10.3	0.0	5.0
25	0	7.9	8.0	13.4	15.2	21.4	25.4	19.3	4.7	0.5	0.3	0.2	0.0	0.3	0.6	1.5	1.5	1.6	1.9	3.7	3.2	3.0	2.0	1.5	24	25.4	0.0	5.8	
26	0	3.2	3.7	5.0	3.7	2.7	2.1	2.3	8.1	8.0	13.9	20.7	14.9	28.5	25.0	9.4	7.0	6.0	10.0	8.6	9.5	5.4	5						

Figure D-1 Time History Plot of Measured 24-Hour Average PM_{2.5} Concentrations – Courtice (WPCP) Station

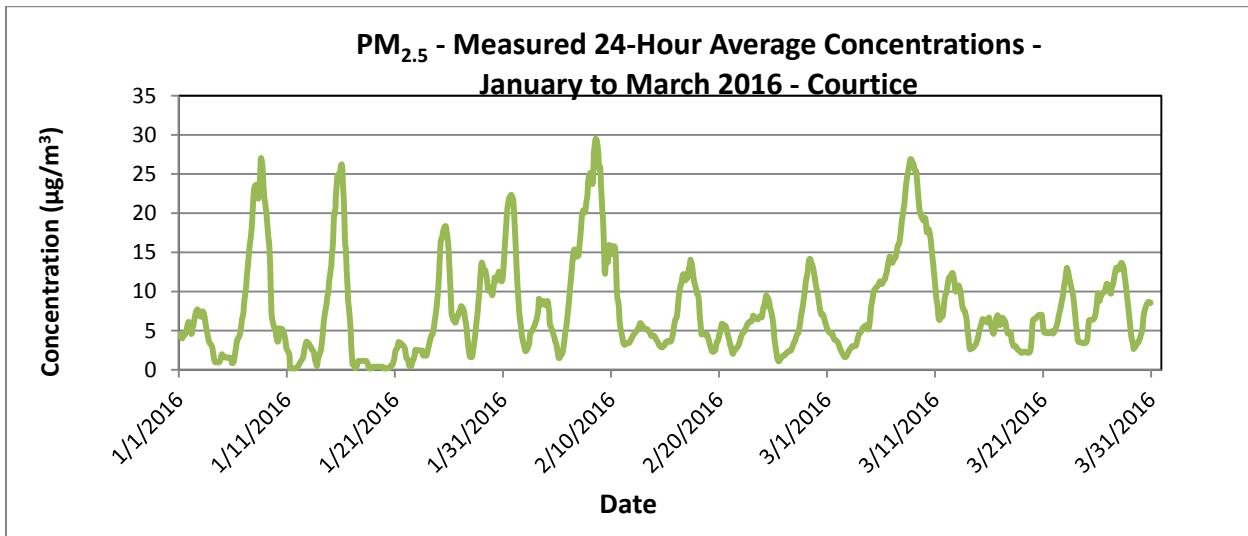
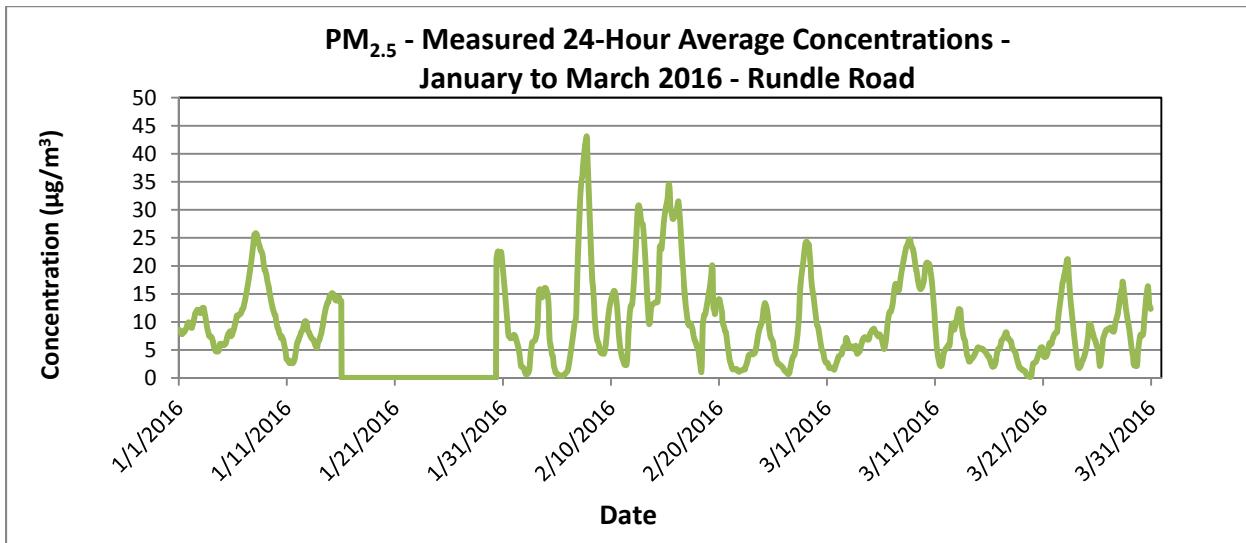


Figure D-2 Time History Plot of Measured 24-Hour Average PM_{2.5} Concentrations – Rundle Road Station



QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

Appendix E Continuous Parameter Edit Logs
May 31, 2016

Appendix E CONTINUOUS PARAMETER EDIT LOGS

EDIT LOG TABLE

Examples of Acceptable Edit Actions

Add offset of

Delete hours

Zero Correction

Slope Correction

Manual data entry for missing, but collected data
Invalidate span & zero check data

Invalidating span & zero check data
Invalidate data due to equipment

Invalidating data when instrumentation off-line

Marking data as out-of-range

Marking data as Out of Range

EDIT LOG TABLE

Examples of Acceptable Edit Actions

Add offset of

Delete hours

Zero Correction

Slope Correction

Manual data entry for missing, but collected data

Invalidating span & zero check data

Invalidating data due to equipment malfunctions and power failures

Invalidating data when instrumentation off-line

Marking data as out-of-range

Marking data as out-of-range

EDIT LOG TABLE

Examples of Acceptable Edit Actions

Add offset of

Delete hours

Zero Correction

Slope Correction

Manual data entry

Invalidating span & zero check data

Invalidating data due to equipment m

Invalidating data when instrumentation

Marking data as out-of-range

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Tim Hung		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com		
Station number:	N/A	Station Name:	Courtice WPCP Station					
Station address:	Courtice Water Pollution Control Plant	Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON					
Pollutant or parameter:	Temperature	Instrument make & model:	Campbell Scientific Model HMP60	Serial Number:				
Data edit period	Start date: 1-Jan-16	End date: 31-Mar-16					Time Zone : EST	
Edit #	Edit date	Editor's Name	Edit Action	Starting Date (dd/mm/yyyy)	Hour (xx:xx)	Ending Date (dd/mm/yyyy)	Hour (xx:xx)	Reason
1	16-Feb-16	Timothy Hung	Manual Entry	12-Feb-16	11:00	15-Feb-16	23:00	Data lost due to data logger being compromised. Replaced with Rundle Road Station for concentration calculations.
2	23-Feb-16	Timothy Hung	Manual Entry	16-Feb-16	00:00	16-Feb-16	11:00	Data lost due to data logger being compromised. Replaced with Rundle Road Station for concentration calculations.

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Tim Hung		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com		
Station number:	N/A	Station Name:	Courtice WPCP Station					
Station address:	Courtice Water Pollution Control Plant	Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON					
Pollutant or parameter:	Rainfall	Instrument make & model:	Texas Electronic TES25M	Serial Number:				
Data edit period	Start date: 1-Jan-16	End date: 31-Mar-16					Time Zone : EST	
Edit #	Edit date	Editor's Name	Edit Action	Starting Date (dd/mm/yyyy)	Hour (xx:xx)	Ending Date (dd/mm/yyyy)	Hour (xx:xx)	Reason
1	17-Feb-16	Timothy Hung	Manual Entry	12-Feb-16	11:00	15-Feb-16	23:00	Data lost due to data logger being compromised. Rainfall data from Rundle temporarily entered for use in non-continuous sampling bi-weekly report
2	23-Feb-16	Timothy Hung	Manual Entry	16-Feb-16	00:00	16-Feb-16	11:00	Data lost due to data logger being compromised. Rainfall data from Rundle temporarily entered for use in non-continuous sampling bi-weekly report
3	16-Apr-16	Timothy Hung	Invalidate	12-Feb-16	11:00	16-Feb-16	11:00	Data logger compromised. Replaced previously entered Rundle data with "M" based on equipment malfunction

Examples of Acceptable Edit Actions:

Add offset of

Delete hour

Zero Correction

Slope Correction

Manual data entry for missing, but collected data

Invalidating span & zero check data

Invalidating data due to equipment malfunctions and power failures.

Invalidating data when instrumentation off-line

Marking data as out-of-range

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program						
Contact	Greg Crooks / Connie Lim / Tim Hung		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com	
Station number:	N/A	Station Name:	Courtice WPCP Station				
Station address:	Courtice Water Pollution Control Plant	Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	Relative Humidity	Instrument make & model:	Campbell Scientific Model HMP60		Serial Number:		
Data edit period	Start date:	1-Jan-16	End date:	31-Mar-16	Time Zone : EST		
Edit #	Edit date	Editor's Name	Edit Action	Starting Date (dd/mm/yyyy)	Hour (xx:xx)	Ending Date (dd/mm/yyyy)	Hour (xxxx) Reason
1	17-Feb-16	Timothy Hung	Manual Entry	12-Feb-16	11:00	15-Feb-16	23:00 Data lost due to data logger being compromised. Data from Rundle temporarily entered for use in non-continuous sampling bi-weekly report
2	23-Feb-16	Timothy Hung	Manual Entry	16-Feb-16	00:00	16-Feb-16	11:00 Data lost due to data logger being compromised. Data from Rundle temporarily entered for use in non-continuous sampling bi-weekly report
3	16-Apr-16	Timothy Hung	Invalidate	12-Feb-16	11:00	16-Feb-16	11:00 Data logger compromised. Replaced previously entered Rundle data with "M" based on equipment malfunction

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program						
Contact	Greg Crooks / Connie Lim / Tim Hung		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com	
Station number:	N/A	Station Name:	Courtice WPCP Station				
Station address:	Courtice Water Pollution Control Plant	Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON				
Pollutant or parameter:	Atmospheric Pressure	Instrument make & model:	Campbell Scientific Model CS106		Serial Number:		
Data edit period	Start date:	1-Jan-16	End date:	31-Mar-16	Time Zone : EST		
Edit #	Edit date	Editor's Name	Edit Action	Starting Date (dd/mm/yyyy)	Hour (xx:xx)	Ending Date (dd/mm/yyyy)	Hour (xxxx) Reason
1	16-Feb-16	Timothy Hung	Manual Entry	12-Feb-16	11:00	15-Feb-16	23:00 Data lost due to data logger being compromised. Replaced with Oshawa Airport data for concentration calculations.
2	23-Feb-16	Timothy Hung	Manual Entry	16-Feb-16	00:00	16-Feb-16	11:00 Data lost due to data logger being compromised. Replaced with Oshawa Airport data for concentration calculations.

Examples of Acceptable Edit Actions:

- Add offset of
- Delete hours
- Zero Correction
- Slope Correction
- Manual data entry for missing, but collected data
- Invalidating span & zero check data
- Invalidating data due to equipment malfunctions and power failures.
- Invalidating data when instrumentation off-line
- Marking data as out-of-range

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Lisa Heatherington	Phone:	N/A	E-mail:	Lisa.Hetherington@Durham.ca			
Station number:	N/A	Station Name:	Courtice WPCP Station					
Station address:	Courtice Water Pollution Control Plant	Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON					
Pollutant or parameter:	Wind Speed/Wind direction	Instrument make & model:	N/A	Serial Number:				
Data edit period	Start date:	1-Jan-16	End date:	31-Mar-16	Time Zone : EST			
Edit #	Edit date	Editor's Name	Edit Action	Starting Date (dd/mm/yyyy)	Hour (xx:xx)	Ending Date (dd/mm/yyyy)	Hour (xx:xx)	Reason

Examples of Acceptable Edit Actions:

Add offset of

Delete hours

Zero Correction

Slope Correction

Manual data entry for missing, but collected data

Invalidating span & zero check data

Invalidating data due to equipment malfunctions and power failures.

Invalidating data when instrumentation off-line

Marking data as out-of-range

EDIT LOG TABLE

Examples of Acceptable Edit Actions:

Add offset of

Delete hours

Zero Correction

Slope Correction

Manual data entry for missing, but collected data

Manual data entry for missing, but c
Invalidate span 8; zero check data

Invalidation & zero check data

Invalidation due to equipment malfunction

Invalidating data when instrumentation off-line

EDIT LOG TABLE

Examples of Acceptable Edit Actions:

Examples of A
Add offset of

Invalidating span & zero check data

Add offset or
Delete hours

Invalidating data due to equipment malfunction

Delete hours

In invalidating data due to equipment failure

Zero Correction

EDIT LOG TABLE

Examples of Acceptable Edit Actions

Add offset of

Delete hours

Zero Correction

Slope Correction

Manual data entry for missing, but collected data

Invalidating span & zero check data

Invalidating data due to equipment malfunctions and power failures

Invalidating data when instrumentation off-line

Marking data as out-of-range

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program								
Contact	Greg Crooks / Connie Lim / Tim Hung	Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com				
Station number:	45200		Station Name:	Rundle Road Station					
Station address:	Rundle Road / Baseline Road		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON					
Pollutant or parameter:	Temperature	Instrument make & model:		Campbell Scientific Model HMP60		Serial Number:			
Data edit period	Start date:	1-Jan-16	End date:	31-Mar-16	Time Zone : EST				
Edit #	Edit date	Editor's Name	Edit Action	Starting	Ending	Reason			
				Date (dd-mm-yy)	Hour (xx:xx)	Date (dd-mm-yy)	Hour (xx:xx)		
1	11-Apr-16	TH	Invalidate	29-Mar-16	03:00	29-Mar-16	03:00	Invalidate due to half-hour power outage	

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program								
Contact	Greg Crooks / Connie Lim / Tim Hung	Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com				
Station number:	45200		Station Name:	Rundle Road Station					
Station address:	Rundle Road / Baseline Road		Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON					
Pollutant or parameter:	Rainfall	Instrument make & model:		Texas Electronic TE525M		Serial Number:			
Data edit period	Start date:	1-Jan-16	End date:	31-Mar-16	Time Zone : EST				
Edit #	Edit date	Editor's Name	Edit Action	Starting	Ending	Reason			
				Date (dd-mm-yy)	Hour (xx:xx)	Date (dd-mm-yy)	Hour (xx:xx)		
1	11-Apr-16	TH	Invalidate	29-Mar-16	03:00	29-Mar-16	03:00	Invalidate due to half-hour power outage	

Examples of Acceptable Edit Actions:

- Add offset of
- Delete hours
- Zero Correction
- Slope Correction
- Manual data entry for missing, but collected data
- Invalidating span & zero check data
- Invalidating data due to equipment malfunctions and power failures.
- Invalidating data when instrumentation off-line
- Marking data as out-of-range

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Tim Hung	Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com			
Station number:	45200	Station Name:	Rundle Road Station					
Station address:	Rundle Road / Baseline Road	Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON					
Pollutant or parameter:	Relative Humidity	Instrument make & model:	Campbell Scientific Model HMP60		Serial Number:			
Data edit period	Start date:	1-Jan-16	End date:	31-Mar-16				
Edit #	Edit date	Editor's Name	Edit Action	Starting	Ending	Reason		
				Date (dd-mm-yy)	Hour (xx:xx)	Date (dd-mm-yy)	Hour (xx:xx)	
1	11-Apr-16	TH	Invalidate	29-Mar-16	03:00	29-Mar-16	03:00	Invalidate due to half-hour power outage

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Tim Hung	Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com			
Station number:	45200	Station Name:	Rundle Road Station					
Station address:	Rundle Road / Baseline Road	Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON					
Pollutant or parameter:	Wind Speed/Wind Direction	Instrument make & model:	Met One Instruments Inc. Model 034B		Serial Number:			
Data edit period	Start date:	1-Jan-16	End date:	31-Mar-16				
Edit #	Edit date	Editor's Name	Edit Action	Starting	Ending	Reason		
				Date (dd-mm-yy)	Hour (xx:xx)	Date (dd-mm-yy)	Hour (xx:xx)	
1	11-Apr-16	TH	Invalidate	29-Mar-16	03:00	29-Mar-16	03:00	Invalidate due to half-hour power outage
2	11-Apr-16	TH	Invalidate	24-Mar-16	03:00	25-Mar-16	06:00	Anemometer frozen

Examples of Acceptable Edit Actions:

Add offset of

Delete hours

Zero Correction

Slope Correction

Manual data entry for missing, but collected data

InValidating span & zero check data

InValidating data due to equipment malfunctions and power failures.

InValidating data when instrumentation off-line

Marking data as out-of-range

**QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY
CENTRE –JANUARY TO MARCH 2016**

Appendix F Metals Data Summary
May 31, 2016

Appendix F METALS DATA SUMMARY

Metals and Total Particulates		Courtice WPCP Station															
Location Date	dd/mm/yyyy	Courtice 06/02/2016	Courtice 12/02/2016	Courtice 18/02/2016	Courtice 24/02/2016	Courtice 01/03/2016	Courtice 07/03/2016	Courtice 13/03/2016	Courtice 19/03/2016	Courtice 25/03/2016	Courtice 31/03/2016						
Start Time	hh:mm minutes	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00						
Sample Duration	Technician	24.24 TH	22.45 TH	23.89 TH	23.99 TH	23.39 TH	23.45 TH	23.53 TH	23.79 TH	23.83 TH	23.97 TH						
Filter Number	Analytical Report #	16011167 B628201	16011171 B632676	16012921 B635984	16012925 B639770	16020441 B644843	16020446 B651418	16021138 B652140	16021142 B659620	16021190 B662553	16021193 B665821						
Total Volumetric Flow	Am³/sample	1680.43	1499.24	1529.46	1557.55	1637.38	1656.89	1685.80	1741.25	1480.94	1508.51						
Analytical Results		Units	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	
Particulate	mg	37.0	5	35.8	5	27.4	5.0	14.4	5.0	30.1	5.0	49.2	5.0	21.3	5.0	26.9	5.0
Total Mercury (Hg)	µg	0.02	0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	
Aluminum (Al)	µg	130	50	125	50	78	50	53	50	86	50	115	50	91	50	124	50
Antimony (Sb)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Arsenic (As)	µg	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Barium (Ba)	µg	10.8	1.0	7.8	1.0	9.9	1.0	5.2	1.0	4.8	1.0	13.4	1.0	7.0	1.0	10.8	1.0
Beryllium (Be)	µg	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0
Bismuth (Bi)	µg	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Boron (B)	µg	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Cadmium (Cd)	µg	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0
Chromium (Cr)	µg	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Cobalt (Co)	µg	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0
Copper (Cu)	µg	105	5.0	87.9	5.0	122	5.0	15.2	5.0	34.8	5.0	111	5.0	63.1	5.0	95.3	5.0
Iron (Fe)	µg	339	50	363	50	299	50	141	50	240	50	634	50	485	50	720	50
Lead (Pb)	µg	4.1	3.0	3.5	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	7.6	3.0	<3.0	3.0	3.6	3.0
Magnesium (Mg)	µg	200	50	207	50	153	50	86	50	134	50	282	50	147	50	199	50
Manganese (Mn)	µg	12.0	1.0	44.5	1.0	6.6	1.0	4.3	1.0	7.0	1.0	22.7	1.0	9.5	1.0	13.9	1.0
Molybdenum (Mo)	µg	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	3.3	3.0	<3.0	3.0	<3.0	3.0
Nickel (Ni)	µg	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0
Phosphorus (P)	µg	<25	25	<25	25	<25	25	<25	25	<25	25	<25	25	<25	25	<25	25
Selenium (Se)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Silver (Ag)	µg	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Strontium (Sr)	µg	4.5	1.0	4.4	1.0	6.0	1.0	2.5	1.0	3.2	1.0	5.8	1.0	5.4	1.0	6.6	1.0
Thallium (Tl)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Tin (Sn)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Titanium (Ti)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Vanadium (V)	µg	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Zinc (Zn)	µg	42.5	5.0	52.8	5.0	20.0	5.0	21.1	5.0	14.9	5.0	79.9	5.0	19.3	5.0	18.3	5.0
Zirconium (Zr)	µg	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Total Uranium (U)	µg	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45
Calculated Concentrations		Quarter 1			Courtice 1	Courtice 2	Courtice 3	Courtice 4	Courtice 5	Courtice 6	Courtice 7	Courtice 8	Courtice 9	Courtice 10			
		Units	Maximum	Minimum	2/6/2016	2/12/2016	2/18/2016	2/24/2016	3/1/2016	3/7/2016	3/13/2016	3/19/2016	3/25/2016	3/31/2016			
Particulate	µg/m³	29.7	9.2	22.018	23.879	17.915	9.245	18.383	29.694	12.635	15.449	18.907	13.059				
Total Mercury (Hg)	µg/m³	1.33E-05	5.74E-06	1.19E-05	1.33E-05	6.54E-06	6.42E-06	1.22E-05	6.04E-06	5.93E-06	5.74E-06	6.75E-06	6.63E-06				
Aluminum (Al)	µg/m³	9.99E-02	3.40E-02	7.74E-02	8.34E-02	5.10E-02	3.40E-02	5.25E-02	6.94E-02	5.40E-02	7.12E-02	9.99E-02	6.63E-02				
Antimony (Sb)	µg/m³	3.38E-03	2.87E-03	2.98E-03	3.34E-03	3.27E-03	3.21E-03	3.05E-03	3.02E-03	2.97E-03	2.87E-03	3.38E-03	3.31E-03				
Arsenic (As)	µg/m³	2.03E-03	1.72E-03	1.79E-03	2.00E-03	1.96E-03	1.93E-03	1.83E-03	1.81E-03	1.78E-03	1.72E-03	2.03E-03	1.99E-03				
Barium (Ba)	µg/m³	8.09E-03	2.93E-03	6.43E-03	5.20E-03	6.47E-03	3.34E-03	2.93E-03	8.09E-0								

Metals and Total Particulates		Rundle Station			Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle						
Location	Date	dd/mm/yyyy			06/02/2016	12/02/2016	18/02/2016	24/02/2016	01/03/2016	07/03/2016	13/03/2016	19/03/2016	25/03/2016	31/03/2016											
Start Time		hh:mm			0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00						
Sample Duration		minutes			23.55	23.07	24.15	23.46	23.63	22.86	23.68	23.75	23.61	24.37	TH	TH	TH	TH	TH						
Technician					16011168	16011172	16012922	16012926	16020442	16020445	16021139	16021143	16021189	16021194	TH	TH	TH	TH	TH						
Analytical Report #					B628201	B632676	B635984	B639770	B644843	B651418	B652140	B659620	B662553	B665821	TH	TH	TH	TH	TH						
Total Volumetric Flow		Am³/sample			1687.04	1611.60	1743.96	1713.09	1681.38	1666.86	1728.39	1655.21	1708.17	1802.72	TH	TH	TH	TH	TH						
Analytical Results		Units			Value	RDL	Value	RDL	Value	RDL	Value	RDL													
Particulate		mg			35.1	5.0	51.2	5	41.9	5.0	16.6	5.0	30.7	5.0	52.9	5.0	21.9	5.0	23.0	5.0	23.5	5	24.8	5	
Total Mercury (Hg)		µg			<0.02	0.02	0.03	0.02	0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	
Aluminum (Al)		µg			132	50	227	50	178	50	86	50	83	50	181	50	99	50	103	50	104	50	123	50	
Antimony (Sb)		µg			<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	
Arsenic (As)		µg			<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	
Barium (Ba)		µg			11.0	1.0	10.4	1.0	9.5	1.0	4.6	1.0	4.6	1.0	16.1	1.0	8.4	1.0	7.2	1.0	7.0	1.0	10.2	1.0	
Beryllium (Be)		µg			<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	
Bismuth (Bi)		µg			<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	
Boron (B)		µg			<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	
Cadmium (Cd)		µg			<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	
Chromium (Cr)		µg			<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	
Cobalt (Co)		µg			<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	
Copper (Cu)		µg			97.6	5.0	20.9	5.0	110	5.0	21.9	5.0	29.7	5.0	51.5	5.0	38.7	5.0	57.1	5.0	92.5	5.0	51.9	5.0	
Iron (Fe)		µg			391	50	629	50	426	50	227	50	275	50	798	50	548	50	353	50	269	50	423	50	
Lead (Pb)		µg			4.0	3.0	4.2	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	7.1	3.0	3.1	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	
Magnesium (Mg)		µg			233	50	389	50	277	50	95	50	136	50	313	50	157	50	164	50	149	50	161	50	
Manganese (Mn)		µg			13.9	1.0	31.1	1.0	13.6	1.0	5.7	1.0	8.0	1.0	28.0	1.0	12.6	1.0	10.6	1.0	9.9	1.0	11.9	1.0	
Molybdenum (Mo)		µg			<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	
Nickel (Ni)		µg			<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	
Phosphorus (P)		µg			<25	25	25	25	<25	25	<25	25	<25	25	31	25	88	25	<25	25	<25	25	<25	25	
Selenium (Se)		µg			<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	
Silver (Ag)		µg			<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	
Strontium (Sr)		µg			4.2	1.0	8.6	1.0	11.6	1.0	2.7	1.0	3.2	1.0	7.8	1.0	4.6	1.0	5.2	1.0	4.0	1.0	4.2	1.0	
Thallium (Tl)		µg			<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	
Tin (Sn)		µg			<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	
Titanium (Ti)		µg			<10	10	13	10	12	10	<10	10	<10	10	11	10	<10	10	<10	10	<10	10	<10	10	
Vanadium (V)		µg			<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	85.8	5.0	27.9	5.0	12.9	5.0	25.3	5.0	22.6	5.0	
Zinc (Zn)		µg			46.2	5.0	55.4	5.0	20.6	5.0	17.1	5.0	13.5	5.0	85.8	5.0	27.9	5.0	12.9	5.0	25.3	5.0	22.6	5.0	
Zirconium (Zr)		µg			<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	
Total Uranium (U)		µg			<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	
Calculated Concentrations		Quarter 1			Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle						
		Units			1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8			
Particulate		µg/m³			31.8	9.7	20.806	31.770	24.026	9.690	18.259	31.736	12.671	13.896	13.757	13.757	2.6E-05	5.55E-06	5.85E-06	5.55E-06	6.04E-06	5.79E-06	6.22E-02	6.09E-02	6.82E-02
Total Mercury (Hg)		µg/m³			1.86E-05	5.55E-06	5.93E-06	1.86E-05	1.15E-05	5.84E-06	5.95E-06	6.00E-06	5.79E-06	6.04E-06	5.79E-06	1.41E-01	4.94E-02	1.09E-01	5.73E-02	3.02E-03	2.89E-03	3.02E-03	2.93E-03	2.77E-03	
Aluminum (Al)		µg/m³			1.41E-01	4.94E-02	7.82E-02	1.41E-01	1.02E-01	5.02E-02	4.94E-02	1.09E-01	5.73E-02	6.22E-02	6.09E-02	6.09E-02	1.30E-03	2.77E-03	3.10E-03	2.96E-03	2.87E-03	2.87E-03	2.93E-03	2.77E-03	
Antimony (Sb)		µg/m³			3.10E-03	2.77E-03	2.96E-03	3.10E-03	2.87E-03	2.92E-03	2.97E-03	3.00E-03	2.89E-03	3.02E-03	2.90E-03	2.90E-03	1.86E-03	4.94E-02	1.41E-01	5.73E-02	3.02E-03	2.93E-03	2.93E-03	2.77E-03	
Arsenic (As)		µg/m³			1.86E-03	1.66E-03	1.78E-03	1.86E-03	1.72E-03	1.75E-03	1.78E-03	1.80E													

*Non-continuous monitoring resumed February 2016 as per Ambient Air Monitoring Plan

*Non-continuous monitoring resumed February 2016 as per Ambient Air Monitoring Plan

Note: Feb 6 and Feb 12 sample flows are not within the acceptable flow range of 40 cfm +/- 10% as stipulated in the Operations Manual for Air Quality Monitoring in Ontario for HiVol Sampling.

**QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY
CENTRE –JANUARY TO MARCH 2016**

Appendix G PAHs Data Summary
May 31, 2016

Appendix G PAHS DATA SUMMARY

Polycyclic Aromatic Hydrocarbons		Courtice WPCP Station			2016						
Location Date	dd/mm/yyyy	Courtice 6/02/2016		Courtice 18/02/2016		Courtice 1/03/2016		Courtice 13/03/2016		Courtice 25/03/2016	
Start Time	hh:mm	0:00		0:00		0:00		0:00		0:00	
Sample Duration	minutes	23.81		24.27		24.5		24.6		24.4	
Technician	TH										
Filter Number	BTN779-01	BT750-01		BTQ056-01		BX0145-01		BX0306-01			
Maxxam ID	BVK674	BXA237		BYU834		CAH360		CCI909			
Maxxam Job #	B628182	B635960		B644821		B652160		B662572			
Total Volumetric Flow	Am ³ /sample	362.42		336.83		341.45		363.86		362.43	
Analytical Results	Units	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL
Benzo(a)pyrene	µg	0.0049	0.0014	0.0197	0.020	0.0085	0.030	0.0091	0.0040	0.0020	0.0018
1-Methylnaphthalene	µg	1.07	0.15	1.32	0.10	0.55	0.15	1.47	0.10	1.63	0.15
2-Methylnaphthalene	µg	1.65	0.15	2.08	0.10	0.83	0.15	2.22	0.10	2.99	0.15
Acenaphthene	µg	0.255	0.075	0.160	0.050	0.168	0.075	0.686	0.050	0.867	0.075
Acenaphthylene	µg	<0.075	0.075	0.094	0.050	0.090	0.075	<0.050	0.050	<0.075	0.075
Anthracene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Benzo(a)anthracene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Benzo(a)fluorene	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Benzo(b)fluoranthene	µg	<0.075	0.075	0.084	0.050	<0.075	0.075	0.062	0.050	<0.075	0.075
Benzo(b)fluorene	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Benzo(e)pyrene	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Benzo(g,h,i)perylene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Benzo(k)fluoranthene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Biphenyl	µg	0.62	0.15	0.51	0.10	0.34	0.15	0.61	0.10	0.77	0.15
Chrysene	µg	<0.075	0.075	0.070	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Dibenz(a,h)anthracene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Dibenzo(a,c) anthracene + Picene	µg	<0.3 (1)	0.3	<0.2 (1)	0.2	<0.3 (1)	0.3	<0.2 (1)	0.2	<0.15 (2)	0.15
Fluoranthene	µg	0.135	0.075	0.192	0.050	0.138	0.075	0.182	0.050	0.168	0.075
Indeno(1,2,3-cd)pyrene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Naphthalene	µg	7.65	0.11	6.24	0.072	3.79	0.11	6.64	0.072	7.65	0.11
o-Terphenyl	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Perylene	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Phenanthrene	µg	0.492	0.075	0.500	0.050	0.501	0.075	0.860	0.050	0.816	0.075
Pyrene	µg	<0.075	0.075	0.178	0.050	0.105	0.075	0.118	0.050	0.102	0.075
Tetralin	µg	0.62	0.15	0.71	0.10	0.30	0.15	0.68	0.10	0.60	0.15
Calculated Concentrations		Quarter 1			Courtice	Courtice	Courtice	Courtice	Courtice	Courtice	Courtice
					1	2	3	4	5		
		Units	Maximum	Minimum	6/02/2016	18/02/2016	1/03/2016	13/03/2016	25/03/2016		
Benzo(a)pyrene	ng/m ³	5.85E-02	5.52E-03	1.35E-02	5.85E-02	2.49E-02	2.50E-02	5.52E-03			
1-Methylnaphthalene	ng/m ³	4.50E+00	1.61E+00	2.95E+00	3.92E+00	1.61E+00	4.04E+00	4.50E+00			
2-Methylnaphthalene	ng/m ³	8.25E+00	2.43E+00	4.55E+00	6.18E+00	2.43E+00	6.10E+00	8.25E+00			
Acenaphthene	ng/m ³	2.39E+00	4.75E-01	7.04E-01	4.75E-01	4.92E-01	1.89E+00	2.39E+00			
Acenaphthylene	ng/m ³	2.79E-01	6.87E-02	1.03E-01	2.79E-01	2.64E-01	6.87E-02	1.03E-01			
Anthracene	ng/m ³	1.10E-01	6.87E-02	1.03E-01	7.42E-02	1.10E-01	6.87E-02	1.03E-01			
Benzo(a)anthracene	ng/m ³	1.10E-01	6.87E-02	1.03E-01	7.42E-02	1.10E-01	6.87E-02	1.03E-01			
Benzo(a)fluorene	ng/m ³	2.20E-01	1.37E-01	2.07E-01	1.48E-01	2.20E-01	1.37E-01	2.07E-01			
Benzo(b)fluoranthene	ng/m ³	2.49E-01	1.03E-01	1.03E-01	2.49E-01	1.10E-01	1.70E-01	1.03E-01			
Benzo(b)fluorene	ng/m ³	2.20E-01	1.37E-01	2.07E-01	1.48E-01	2.20E-01	1.37E-01	2.07E-01			
Benzo(e)pyrene	ng/m ³	2.20E-01	1.37E-01	2.07E-01	1.48E-01	2.20E-01	1.37E-01	2.07E-01			
Benzo(g,h,i)perylene	ng/m ³	1.10E-01	6.87E-02	1.03E-01	7.42E-02	1.10E-01	6.87E-02	1.03E-01			
Benzo(k)fluoranthene	ng/m ³	1.10E-01	6.87E-02	1.03E-01	7.42E-02	1.10E-01	6.87E-02	1.03E-01			
Biphenyl	ng/m ³	2.12E+00	9.96E-01	1.71E+00	1.51E+00	9.96E-01	1.68E+00	2.12E+00			
Chrysene	ng/m ³	2.08E-01	6.87E-02	1.03E-01	2.08E-01	1.10E-01	6.87E-02	1.03E-01			
Dibenz(a,h)anthracene	ng/m ³	1.10E-01	6.87E-02	1.03E-01	7.42E-02	1.10E-01	6.87E-02	1.03E-01			
Dibenzo(a,c) anthracene + Picene	ng/m ³	4.39E-01	2.07E-01	4.14E-01	2.97E-01	4.39E-01	2.75E-01	2.07E-01			
Fluoranthene	ng/m ³	5.70E-01	3.72E-01	3.72E-01	5.70E-01	4.04E-01	5.00E-01	4.64E-01			
Indeno(1,2,3-cd)pyrene	ng/m ³	1.10E-01	6.87E-02	1.03E-01	7.42E-02	1.10E-01	6.87E-02	1.03E-01			
Naphthalene	ng/m ³	2.11E+01	1.11E+01	2.11E+01	1.85E+01	1.11E+01	1.82E+01	2.11E+01			
o-Terphenyl	ng/m ³	2.20E-01	1.37E-01	2.07E-01	1.48E-01	2.20E-01	1.37E-01	2.07E-01			
Perylene	ng/m ³	2.20E-01	1.37E-01	2.07E-01	1.48E-01	2.20E-01	1.37E-01	2.07E-01			
Phenanthrene	ng/m ³	2.36E+00	1.36E+00	1.36E+00	1.48E+00	1.47E+00	2.36E+00	2.25E+00			
Pyrene	ng/m ³	5.28E-01	1.03E-01	1.03E-01	5.28E-01	3.08E-01	3.24E-01	2.81E-01			
Tetralin	ng/m ³	2.11E+00	8.79E-01	1.71E+00	2.11E+00	8.79E-01	1.87E+00	1.66E+00			
Total PAH	ng/m ³	4.52E+01	2.24E+01	3.70E+01	3.76E+01	2.24E+01	3.87E+01	4.52E+01			

Note:

RDL = Reportable Detection Limit

Non-continuous monitoring resumed February 2016 as per Ambient Air Monitoring Plan

1. At the time of initial laboratory analysis, Dibenzo(a,c) anthracene + Picene was not included in the lab's calibration standards. Upon Stantec's request, the data was reviewed and no peaks were found at the appropriate retention time. The estimated detection limit for these compounds is listed and used in determination of concentrations.

2. These parameters have not been subjected to Maxxam's standard validation process nor has it been accredited for the submitted matrix.

Polycyclic Aromatic Hydrocarbons		Rundle Road Station			2016							
Location Date	dd/mm/yyyy	Rundle 06/02/2016		Rundle 18/02/2016		Rundle 01/03/2016		Rundle 13/03/2016		Rundle 25/03/2016		
Start Time	hh:mm	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	
Sample Duration	minutes	23.93	23.93	23.75	23.49	23.76	23.76	23.49	23.76	23.76	23.76	
Technician	TH		TH	TH	TH	TH	TH	TH	TH	TH	TH	
Filter Number		BTN778-01	BTP748-01	BTQ055-01	BXO144-01	BXO307-01						
Maxaam ID		BVK675	BXA237	BYU835	CAH361	CC910						
Maxxam Job #		B628182	B635960	B644821	B652160	B662572						
Total Volumetric Flow	Am ³ /sample	363.78	330.88	346.10	345.46	361.61						
Analytical Results		Units	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL
Benzo(a)pyrene	µg	0.0126	0.0019	0.0686	0.020	<0.014	0.014	0.0071	0.0064	0.0048	0.0028	
1-Methylnaphthalene	µg	1.12	0.15	2.09	0.10	0.46	0.15	0.69	0.10	0.76	0.15	
2-Methylnaphthalene	µg	1.77	0.15	3.32	0.10	0.67	0.15	1.13	0.10	1.24	0.15	
Acenaphthene	µg	0.267	0.075	0.254	0.050	0.090	0.075	0.400	0.050	0.216	0.075	
Acenaphthylene	µg	<0.075	0.075	0.278	0.050	0.087	0.075	<0.050	0.050	<0.075	0.075	
Anthracene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	
Benzo(a)anthracene	µg	<0.075	0.075	0.076	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	
Benzo(a)fluorene	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	
Benzo(b)fluoranthene	µg	<0.075	0.075	0.162	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	
Benzo(b)fluorene	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	
Benzo(e)pyrene	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	
Benzo(g,h,i)perylene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	
Benzo(k)fluoranthene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	
Biphenyl	µg	0.59	0.15	0.74	0.10	0.30	0.15	0.37	0.10	0.39	0.15	
Chrysene	µg	<0.075	0.075	0.134	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	
Dibenz(a,h)anthracene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	
Dibenzo(a,c) anthracene + Picene	µg	<0.3 (I)	0.3	<0.2 (I)	0.2	<0.3 (I)	0.3	<0.2 (I)	0.2	<0.15	0.15	
Fluoranthene	µg	0.150	0.075	0.368	0.050	0.141	0.075	0.136	0.050	0.114	0.075	
Indeno(1,2,3-cd)pyrene	µg	<0.075	0.075	0.060	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	
Naphthalene	µg	7.51	0.11	11.6	0.072	3.42	0.11	3.79	0.072	4.94	0.11	
o-Terphenyl	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	
Perylene	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	
Phenanthrene	µg	0.459	0.075	0.870	0.050	0.405	0.075	0.572	0.050	0.468	0.075	
Pyrene	µg	0.078	0.075	0.338	0.050	0.102	0.075	0.076	0.050	<0.075	0.075	
Tetralin	µg	0.67	0.15	0.96	0.10	0.22	0.15	0.30	0.10	0.38	0.15	
Calculated Concentrations		Quarter 1			Rundle		Rundle		Rundle		Rundle	
		Units	Maximum	Minimum	1	2	3	4	5			
					2/6/2016	2/18/2016	3/1/2016	3/13/2016	25/03/2016			
Benzo(a)pyrene	ng/m ³	2.07E-01	1.33E-02	3.46E-02	2.07E-01	2.02E-02	2.06E-02					
1-Methylnaphthalene	ng/m ³	6.32E+00	1.33E+00	3.08E+00	6.32E+00	1.33E+00	2.00E+00					
2-Methylnaphthalene	ng/m ³	1.00E+01	1.94E+00	4.87E+00	1.00E+01	1.94E+00	3.27E+00					
Acenaphthene	ng/m ³	1.16E+00	2.60E-01	7.34E-01	7.68E-01	2.60E-01	1.16E+00					
Acenaphthylene	ng/m ³	8.40E-01	7.24E-02	1.03E-01	8.40E-01	2.51E-01	7.24E-02					
Anthracene	ng/m ³	1.08E-01	7.24E-02	1.03E-01	7.56E-02	1.08E-01	7.24E-02					
Benzo(a)anthracene	ng/m ³	2.30E-01	7.24E-02	1.03E-01	2.30E-01	1.08E-01	7.24E-02					
Benzo(a)fluorene	ng/m ³	2.17E-01	1.45E-01	2.06E-01	1.51E-01	2.17E-01	1.45E-01					
Benzo(b)fluoranthene	ng/m ³	4.90E-01	7.24E-02	1.03E-01	4.90E-01	1.08E-01	7.24E-02					
Benzo(b)fluorene	ng/m ³	2.17E-01	1.45E-01	2.06E-01	1.51E-01	2.17E-01	1.45E-01					
Benzo(e)pyrene	ng/m ³	2.17E-01	1.45E-01	2.06E-01	1.51E-01	2.17E-01	1.45E-01					
Benzo(g,h,i)perylene	ng/m ³	1.08E-01	7.24E-02	1.03E-01	7.56E-02	1.08E-01	7.24E-02					
Benzo(k)fluoranthene	ng/m ³	1.08E-01	7.24E-02	1.03E-01	7.56E-02	1.08E-01	7.24E-02					
Biphenyl	ng/m ³	2.24E+00	8.67E-01	1.62E+00	2.24E+00	8.67E-01	1.07E+00					
Chrysene	ng/m ³	4.05E-01	7.24E-02	1.03E-01	4.05E-01	1.08E-01	7.24E-02					
Dibenz(a,h)anthracene	ng/m ³	1.08E-01	7.24E-02	1.03E-01	7.56E-02	1.08E-01	7.24E-02					
Dibenzo(a,c) anthracene + Picene	ng/m ³	4.33E-01	2.07E-01	4.12E-01	3.02E-01	4.33E-01	2.89E-01					
Fluoranthene	ng/m ³	1.11E+00	3.15E-01	4.12E-01	1.11E+00	4.07E-01	3.94E-01					
Indeno(1,2,3-cd)pyrene	ng/m ³	1.81E-01	7.24E-02	1.03E-01	1.81E-01	1.08E-01	7.24E-02					
Naphthalene	ng/m ³	3.51E+01	9.88E+00	2.06E+01	3.51E+01	9.88E+00	1.10E+01					
o-Terphenyl	ng/m ³	2.17E-01	1.45E-01	2.06E-01	1.51E-01	2.17E-01	1.45E-01					
Perylene	ng/m ³	2.17E-01	1.45E-01	2.06E-01	1.51E-01	2.17E-01	1.45E-01					
Phenanthrene	ng/m ³	2.63E+00	1.17E+00	1.26E+00	2.63E+00	1.17E+00	1.66E+00					
Pyrene	ng/m ³	1.02E+00	1.04E-01	2.14E-01	1.02E+00	2.95E-01	2.20E-01					
Tetralin	ng/m ³	2.90E+00	6.36E-01	1.84E+00	2.90E+00	6.36E-01	8.68E-01					
Total PAH	ng/m ³	6.58E+01	1.94E+01	3.71E+01	6.58E+01	1.94E+01	2.33E+01					

Note:

RDL = Reportable Detection Limit

Non-continuous monitoring resumed February 2016 as per Ambient Air Monitoring Plan

1. At the time of initial laboratory analysis, Dibenzo(a,c) anthracene + Picene was not included in the lab's calibration standards. Upon Stantec's request, the data was reviewed and no peaks were found at the appropriate retention time. The estimated detection limit for these compounds is listed and used in determination of concentrations.

2. These parameters have not been subjected to Maxxam's standard validation process nor has it been accredited for the submitted matrix.

QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

Appendix H Dioxins and Furans Data Summary
May 31, 2016

Appendix H DIOXINS AND FURANS DATA SUMMARY

Dioxins and Furans		Courtice WPCP Station			2016			Courtice			Courtice		
Location	Date	dd/mm/yyyy			Courtice	1/01/2016		Courtice	13/1/2016		Courtice	25/01/2016	
Start Time	Stop Time	hh:mm	mm:ss	hh:mm	0:00	23:47	TH	0:00	22:43	TH	0:00	23:55	
Technician	Filter Number				BNV291-01			BPV118-01			BRH435-01		
Maxxam ID	Maxxam Job #				BRA130			BSX746			B609043		
Total Volumetric Flow	Am³/sample				359.87			317.22			383.27		
Analytical Results	Units	Value	EDL	WHO ₂₀₀₅ TEF	Value	EDL	WHO ₂₀₀₅ TEF	Value	EDL	WHO ₂₀₀₅ TEF			
2,3,7,8-Tetra CDD *	pg	<2.0	2.0	1	<2.1	2.1	1	<2.0	2.0	1			
1,2,3,7,8-Penta CDD *	pg	<2.6	2.6	1	<2.1	2.1	1	<2.8	2.8	1			
1,2,3,4,7,8-Hexa CDD *	pg	<1.8	1.8	0.1	<2.0	2.0	0.1	4.3	2.3	0.1			
1,2,3,6,7,8-Hexa CDD *	pg	2.8	1.9	0.1	<2.1	2.1	0.1	9.4	2.5	0.1			
1,2,3,7,8,9-Hexa CDD *	pg	4.7	1.6	0.1	2.4	1.9	0.1	11.6 (4)	2.1	0.1			
1,2,3,4,6,7,8-Hepta CDD *	pg	35.3	1.5	0.01	13.7	1.9	0.01	80.1	2.4	0.01			
Octa CDD *	pg	112	1.5	0.0003	63.3	2.2	0.0003	200	1.9	0.0003			
Total Tetra CDD *	pg	<5.0 (2)	5.0		<3.1 (2)	3.1		19.9	2.0				
Total Penta CDD *	pg	<3.2 (2)	3.2		<3.1 (2)	3.1		34.7	2.1				
Total Hexa CDD *	pg	24.0	1.7		11.8	2.0		83.8	2.3				
Total Hepta CDD *	pg	73.8	1.5		53.6	1.9		174	2.4				
2,3,7,8-Tetra CDF **	pg	<1.9	1.9	0.1	<2.5 (1)	2.5	0.1	<2.3	2.3	0.1			
1,2,3,7,8-Penta CDF **	pg	<1.7	1.7	0.03	<2.1	2.1	0.03	4.2	2.1	0.03			
2,3,4,7,8-Penta CDF **	pg	<1.7	1.7	0.3	<2.1	2.1	0.3	7.6	2.2	0.3			
1,2,3,4,7,8-Hexa CDF **	pg	<2.1	2.1	0.1	<1.9	1.9	0.1	26.5 (4)	2.0	0.1			
1,2,3,6,7,8-Hexa CDF **	pg	<2.0	2.0	0.1	<1.8	1.8	0.1	9.0	1.9	0.1			
2,3,4,6,7,8-Hexa CDF **	pg	<2.1	2.1	0.1	<1.9	1.9	0.1	14.2	2.1	0.1			
1,2,3,7,8,9-Hexa CDF **	pg	<2.3	2.3	0.1	<2.1	2.1	0.1	2.7	2.2	0.1			
1,2,3,4,6,7,8-Hepta CDF **	pg	3.6	1.7	0.01	2.2	1.7	0.01	63.7	1.8	0.01			
1,2,3,4,7,8,9-Hepta CDF **	pg	<2.0	2.0	0.01	<2.1	2.1	0.01	9.7	2.3	0.01			
Octa CDF **	pg	3.7	2.1	0.0003	6.1	2.0	0.0003	69.7	2.3	0.0003			
Total Tetra CDF **	pg	<1.9	1.9		2.6	2.2		117	1.9				
Total Penta CDF **	pg	<1.7	1.7		<2.1	2.1		96.2	2.1				
Total Hexa CDF **	pg	<2.1	2.1		<1.9	1.9		117	2.1				
Total Hepta CDF **	pg	5.6	1.8		5.1	1.9		109	2.0				
Toxic Equivalency	pg												

(1) RT = 3 seconds - PCDD/DF analysis - Peak detected exceeds expected retention time

(2) EDL = Estimated Detection Limit

(3) WHO₂₀₀₅ = Toxic Equivalency Factor detected does not meet ratio criteria and has resulted in an elevated detection limit

(4) RT=2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

(4) EMPC / Merged Peak

January samples are additional D/F sampling outside the scope of the Ambient Air Monitoring Plan, and conducted on a 12-day schedule.

The EFW facility became fully operational starting February 1, 2016, and monitoring of non-continuous monitors resumed as specified in the Ambient Monitoring Plan.

* CDD = Chlro Dibenzo-p-Dioxin ** CDF = Chlro Dibenzo-p-Furan

Calculated Concentrations	Quarter 1			Courtice			Courtice			Courtice		
	Units	Maximum	Minimum	A1 ^a			A2 ^a			A3 ^a		
				1/01/2016			13/1/2016			25/01/2016		
2,3,7,8-Tetra CDD *	pg/m³	5.27E-03	2.61E-03	0.003	0.003		0.003	0.003		0.003		
1,2,3,7,8-Penta CDD *	pg/m³	7.31E-03	3.31E-03	0.004	0.003		0.005	0.003		0.007		
1,2,3,4,7,8-Hexa CDD *	pg/m³	1.12E-02	5.20E-03	0.003	0.003		0.003	0.003		0.011		
1,2,3,6,7,8-Hexa CDD *	pg/m³	2.45E-02	3.31E-03	0.008	0.003		0.008	0.003		0.025		
1,2,3,7,8,9-Hexa CDD *	pg/m³	3.03E-02	4.39E-03	0.013	0.008		0.008	0.008		0.030		
1,2,3,4,6,7,8-Hepta CDD *	pg/m³	2.09E-01	2.40E-02	0.098	0.043		0.043	0.043		0.209		
Octa CDD *	pg/m³	5.22E-01	1.64E-01	0.311	0.200		0.200	0.200		0.522		
Total Tetra CDD *	pg/m³	5.19E-02	3.04E-03	0.007	0.005		0.005	0.005		0.052		
Total Penta CDD *	pg/m³	9.05E-02	4.45E-03	0.004	0.005		0.005	0.005		0.091		
Total Hexa CDD *	pg/m³	2.19E-01	2.05E-02	0.067	0.037		0.037	0.037		0.219		
Total Hepta CDD *	pg/m³	4.54E-01	1.22E-01	0.205	0.169		0.169	0.169		0.454		
2,3,7,8-Tetra CDF **	pg/m³	3.00E-02	2.64E-03	0.003	0.004		0.004	0.004		0.030		
1,2,3,7,8-Penta CDF **	pg/m³	1.10E-02	2.36E-03	0.002	0.003		0.003	0.003		0.011		
2,3,4,7,8-Penta CDF **	pg/m³	2.04E-02	2.36E-03	0.002	0.003		0.003	0.003		0.020		
1,2,3,4,7,8-Hexa CDF **	pg/m³	6.91E-02	2.92E-03	0.003	0.003		0.003	0.003		0.069		
1,2,3,6,7,8-Hexa CDF **	pg/m³	2.35E-02	2.78E-03	0.003	0.003		0.003	0.003		0.023		
2,3,4,6,7,8-Hexa CDF **	pg/m³	3.70E-02	2.92E-03	0.003	0.003		0.003	0.003		0.037		
1,2,3,7,8,9-Hexa CDF **	pg/m³	1.66E-01	3.59E-03	0.010	0.007		0.007	0.007		0.166		
1,2,3,4,6,7,8-Hepta CDF **	pg/m³	2.53E-02	2.78E-03	0.003	0.003		0.003	0.003		0.025		
Octa CDF **	pg/m³	1.82E-01	5.93E-03	0.010	0.019		0.019	0.019		0.182		
Total Tetra CDF **	pg/m³	3.05E-01	2.64E-03	0.003	0.008		0.008	0.008		0.305		
Total Penta CDF **	pg/m³	2.51E-01	2.36E-03	0.002	0.003		0.003	0.003		0.251		
Total Hexa CDF **	pg/m³	3.05E-01	2.92E-03	0.003	0.003		0.003	0.003		0.305		
Total Hepta CDF **	pg/m³	2.84E-01	4.00E-03	0.016	0.016		0.016	0.016		0.284		
Toxic Equivalency	pg TEO/m³	0.044	0.011	0.012	0.011		0.011	0.011		0.044		
Calculated TEC Concentrations	Units	Courtice			Courtice			Courtice			Courtice	
		1/2/2016			13/1/2016			1/25/2016				
2,3,7,8-Tetra CDD *	pg TEC/m³			0.003	0.003		0.003	0.003		0.003		
1,2,3,7,8-Penta CDD	pg TEC/m³			0.004	0.003		0.003	0.003		0.007		
1,2,3,4,7,8-Hexa CDD	pg TEC/m³			0.0003	0.0003		0.0003	0.0003		0.0011		
1,2,3,6,7,8-Hexa CDD	pg TEC/m³			0.0008	0.0003		0.0003	0.0003		0.0025		
1,2,3,7,8,9-Hexa CDD	pg TEC/m³			0.0013	0.0008		0.0008	0.0008		0.0030		
1,2,3,4,6,7,8-Hepta CDD	pg TEC/m³			0.0010	0.0004		0.0004	0.0004		0.0021		
Octa CDD	pg TEC/m³			0.00009	0.00006		0.00006	0.00006		0.000016		
Total Tetra CDD	pg TEC/m³											
Total Penta CDD	pg TEC/m³											
Total Hexa CDD	pg TEC/m³											
Total Hepta CDD	pg TEC/m³											
TOTAL TOXIC EQUIVALENCY	pg TEC/m³			0.012	0.011		0.011	0.011		0.044		

Notes:

EDL = Estimated Detection Limit

* CDD = Chlro Dibenzo-p-Dioxin ** CDF = Chlro Dibenzo-p-Furan

TEF = Toxic Equivalency Factor, TEC = Toxic Equivalency Quotient

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxicity Equivalency Factors for Dioxins and Dioxin-like Compounds

a) Samples A1 - A3 are additional D/F sampling outside the scope of the Ambient Air Monitoring Plan, and conducted on a 12-day schedule.

The EFW facility became fully operational starting February 1, 2016, and monitoring of non-continuous monitors resumed as specified in the Ambient Monitoring Plan.

Dioxins and Furans		Courcice WPCP Station			2016					
Location	Date	dd/mm/yyyy	hh:mm	mm	Courcice 6/02/2016			Courcice 1/03/2016		
Start Time	Sample Duration	hh:mm	mm	mm	0:00	24:51	24:51	0:00	24:44	24:44
Technician	Filter Number				TH	TH	TH	TH	TH	TH
Maxxam ID	Maxxam Job #				BN1779-01	BY1K74	BYU834	BKO306-01	CC909	B644821
Total Volumetric Flow	Am³/sample				362.42	341.45	362.43			8662572
Analytical Results	Units	Value	EDL	WHO ₂₀₀₅ TEF	Value	EDL	WHO ₂₀₀₅ TEF	Value	EDL	WHO ₂₀₀₅ TEF
2,3,7,8-Tetra CDD *	pg	<3.6	2.6	1	<3.6	2.6	1	<3.2	2.2	1
1,2,3,7,8-Penta CDD *	pg	<2.9	2.9	1	<3.1	3.1	1	<3.3	3.3	1
1,2,3,4,7,8-Hexa CDD *	pg	<3.6	3.6	0.1	<3.2	3.2	0.1	<3.1	3.1	0.1
1,2,3,6,7,8-Hexa CDD *	pg	<3.9	3.9	0.1	<3.5	3.5	0.1	<3.4	3.4	0.1
1,2,3,7,8,9-Hexa CDD *	pg	4.5	3.4	0.1	<3.0	3.0	0.1	<3.3 (1)	3.3	0.1
1,2,3,4,6,7,8-Hepta CDD *	pg	29.9	3.6	0.01	8.2	3.5	0.01	47.5	2.9	0.01
Octa CDD *	pg	107	2.4	0.0003	56.1	3.6	0.0003	105	3.2	0.0003
Total Tetra CDD *	pg	9.0	2.8		<3.1	3.1		<2.2	2.2	
Total Penta CDD *	pg	6.1	2.9		<3.1	3.1		<3.3	3.3	
Total Hexa CDD *	pg	26.4	3.6		<14 (1)	14		16.4	3.2	
Total Hepta CDD *	pg	68.6	3.6		41.7	3.5		90.1	2.9	
2,3,7,8-Tetra CDF **	pg	<0.3 (1)	6.3	0.1	<3.6	3.6	0.1	<2.7	2.7	0.1
1,2,3,7,8-Penta CDF **	pg	<3.5	3.5	0.03	<3.3	4.3	0.03	<2.7	2.7	0.03
2,3,4,7,8-Penta CDF **	pg	<3.5	3.5	0.3	<4.3	4.3	0.3	<2.7	2.7	0.3
1,2,3,4,7,8-Hexa CDF **	pg	<3.3	3.3	0.1	<3.2	3.2	0.1	<3.0	3.0	0.1
1,2,3,6,7,8-Hexa CDF **	pg	<3.2	3.2	0.1	<3.1	3.1	0.1	<2.9	2.9	0.1
2,3,4,6,7,8-Hexa CDF **	pg	<3.4	3.4	0.1	<3.4	3.4	0.1	<3.1	3.1	0.1
1,2,3,7,8,9-Hexa CDF **	pg	<3.6	3.6	0.1	<3.6	3.6	0.1	<3.4	3.4	0.1
1,2,3,4,6,7,8-Hepta CDF **	pg	5.3	2.7	0.01	<3.1	3.1	0.01	<2.6	2.6	0.01
1,2,3,4,7,8,9-Hepta CDF **	pg	<3.3	3.3	0.01	<3.9	3.9	0.01	<3.2	3.2	0.01
Octa CDF **	pg	<4.3 (2)	4.3	0.0003	7.8	3.5	0.0003	3.9	2.9	0.0003
Total Tetra CDF **	pg	15.3	3.9		<3.6	3.6		<2.7	2.7	
Total Penta CDF **	pg	<3.5	3.5		<4.3	4.3		<2.7	2.7	
Total Hexa CDF **	pg	4.6	3.4		<3.3	3.3		<3.1	3.1	
Total Hepta CDF **	pg	5.3	2.9		<3.5	3.5		<2.9	2.9	
Toxic Equivalency	pg									

(1) RT > 3 seconds - PCDD/DF analysis - Peak detected exceeds expected retention time

(from internal standard) by greater than 3 seconds.

(2) EMPC / Merged Peak - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit

(3) RT<2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

(4) EMPC / Merged Peak

January samples are additional D/F sampling outside the scope of the Ambient Air Monitoring Plan, and conducted on a 12-day schedule.

The EFW facility became fully operational starting February 1, 2016, and monitoring of non-continuous monitors resumed as specified in the Ambient Monitoring Plan.

* CDD = Chlro Dibenzo-p-Dioxin ** CDF = Chlro Dibenzo-p-Furan

Calculated Concentrations	Quarter 1			Courcice		Courcice		Courcice	
	Units	Maximum	Minimum	6/02/2016		1/03/2016		25/03/2016	
				1	2	3			
2,3,7,8-Tetra CDD *	pg/m³	5.27E-03	2.61E-03	0.004	0.005	0.003			
1,2,3,7,8-Penta CDD *	pg/m³	7.31E-03	3.31E-03	0.004	0.005	0.005			
1,2,3,4,7,8-Hexa CDD *	pg/m³	1.12E-02	2.50E-03	0.005	0.005	0.004			
1,2,3,6,7,8-Hexa CDD *	pg/m³	2.45E-02	3.31E-03	0.005	0.005	0.005			
1,2,3,7,8,9-Hexa CDD *	pg/m³	3.03E-02	4.39E-03	0.012	0.004	0.005			
1,2,3,4,6,7,8-Hepta CDD *	pg/m³	2.09E-01	2.40E-02	0.083	0.024	0.131			
Octa CDD *	pg/m³	5.22E-01	1.64E-01	0.295	0.164	0.290			
Total Tetra CDD *	pg/m³	5.19E-02	3.04E-03	0.025	0.007	0.003			
Total Penta CDD *	pg/m³	9.05E-02	4.45E-03	0.017	0.005	0.005			
Total Hexa CDD *	pg/m³	2.19E-01	2.05E-02	0.073	0.021	0.045			
Total Hepta CDD *	pg/m³	4.54E-01	1.22E-01	0.189	0.122	0.249			
2,3,7,8-Tetra CDF **	pg/m³	3.00E-02	2.64E-03	0.009	0.005	0.004			
1,2,3,7,8-Penta CDF **	pg/m³	1.10E-02	2.36E-03	0.005	0.006	0.004			
2,3,4,7,8-Penta CDF **	pg/m³	2.04E-02	2.36E-03	0.005	0.006	0.004			
1,2,3,4,7,8-Hexa CDF **	pg/m³	6.91E-02	2.92E-03	0.005	0.005	0.004			
1,2,3,6,7,8-Hexa CDF **	pg/m³	2.35E-02	2.78E-03	0.004	0.005	0.004			
2,3,4,6,7,8-Hexa CDF **	pg/m³	3.70E-02	2.92E-03	0.005	0.005	0.004			
1,2,3,7,8,9-Hexa CDF **	pg/m³	7.04E-03	3.20E-03	0.005	0.005	0.005			
1,2,3,4,6,7,8-Hepta CDF **	pg/m³	1.66E-01	3.59E-03	0.015	0.005	0.004			
1,2,3,4,7,8,9-Hepta CDF **	pg/m³	2.53E-02	2.78E-03	0.005	0.006	0.004			
Octa CDF **	pg/m³	1.82E-01	5.93E-03	0.006	0.023	0.011			
Total Tetra CDF **	pg/m³	3.05E-01	2.64E-03	0.042	0.005	0.004			
Total Penta CDF **	pg/m³	2.51E-01	2.36E-03	0.005	0.006	0.004			
Total Hexa CDF **	pg/m³	3.05E-01	2.92E-03	0.013	0.005	0.004			
Total Hepta CDF **	pg/m³	2.84E-01	4.00E-03	0.015	0.005	0.004			
Toxic Equivalency	pg TEO/m³	0.044	0.011	0.016	0.016	0.014			
Calculated TEO Concentrations		Units	Courcice		Courcice		Courcice		
			2/02/2016		01/03/2016		25/03/2016		
2,3,7,8-Tetra CDD *	pg TEO/m³		0.004		0.005		0.003		
1,2,3,7,8-Penta CDD	pg TEO/m³		0.004		0.005		0.005		
1,2,3,4,7,8-Hexa CDD	pg TEO/m³		0.0005		0.0005		0.0004		
1,2,3,6,7,8-Hexa CDD	pg TEO/m³		0.0005		0.0005		0.0005		
1,2,3,7,8,9-Hexa CDD	pg TEO/m³		0.0012		0.0004		0.0005		
1,2,3,4,6,7,8-Hepta CDD	pg TEO/m³		0.0008		0.0002		0.0013		
Octa CDD	pg TEO/m³		0.0009		0.00005		0.00009		
Total Tetra CDD	pg TEO/m³								
Total Penta CDD	pg TEO/m³								
Total Hexa CDD	pg TEO/m³								
Total Hepta CDD	pg TEO/m³								
2,3,7,8-Tetra CDF **	pg TEO/m³		0.0009		0.0005		0.0004		
1,2,3,7,8-Penta CDF	pg TEO/m³		0.0001		0.0002		0.0001		
2,3,4,7,8-Penta CDF	pg TEO/m³		0.001		0.002		0.001		
1,2,3,4,7,8-Hexa CDF	pg TEO/m³		0.0005		0.0005		0.0004		
1,2,3,6,7,8-Hexa CDF	pg TEO/m³		0.0004		0.0005		0.0004		
1,2,3,7,8,9-Hexa CDF	pg TEO/m³		0.0005		0.0005		0.0005		
1,2,3,4,6,7,8-Hepta CDF	pg TEO/m³		0.00015		0.00005		0.00004		
1,2,3,4,7,8,9-Hepta CDF	pg TEO/m³		0.00005		0.00006		0.00004		
Octa CDF	pg TEO/m³		0.00002		0.000007		0.000003		
Total Tetra CDF	pg TEO/m³								
Total Penta CDF	pg TEO/m³								
Total Hexa CDF	pg TEO/m³								
Total Hepta CDF	pg TEO/m³								
TOTAL TOXIC EQUIVALENCY	pg TEO/m³		0.016		0.016		0.014		

Notes:

EDL = Estimated Detection Limit

* CDD = Chlro Dibenzo-p-Dioxin, ** CDF = Chlro Dibenzo-p-Furan

TEF = Toxic Equivalency Factor, TEO = Toxic Equivalency Quotient

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxicity Equivalency Factors for Dioxins and Dioxin-like Compounds

a) Samples A1 - A3 are additional D/F sampling outside the scope of the Ambient Air Monitoring Plan, and conducted on a 12-day schedule.

The EFW facility became fully operational starting February 1, 2016, and monitoring of non-continuous monitors resumed as specified in the Ambient Monitoring Plan.

Dioxins and Furans		Rundle Road Station		2016		Rundle		Rundle			
Location	Date	dd/mm/yyyy		1/01/2016		13/01/2016		25/01/2016			
Start Time		NH:mm		0:00		0:00		0:00			
Sample Duration		minutes		23:48		23:51		23:43			
Technician				TH		TH		TH			
Filter Number				BNV290-01		BPV17-01		BRH436-01			
Maxxam ID						BBA131		BSX747			
Maxxam Job #						B609043		B618197			
Total Volumetric Flow		Am ³ /sample		361.20		315.16		361.37			
Analytical Results		Units		Value	EDL	WHO ₂₀₀₅ TEF	Value	EDL	WHO ₂₀₀₅ TEF		
2,3,7,8-Tetra CDD *		pg	<1.9	1.9	1	<2.0	2.0	1	<2.1	2.1	1
1,2,3,7,8-Penta CDD *		pg	<1.8	1.8	1	<2.0	2.0	1	2.4	2.2	1
1,2,3,4,7,8-Hexa CDD *		pg	<1	2.1	0.1	<2.0	2.0	0.1	2.2	2.2	0.1
1,2,3,6,7,8-Hexa CDD *		pg	2.7	2.3	0.1	<2.2	2.2	0.1	5.9	2.4	0.1
1,2,3,7,8,9-Hexa CDD *		pg	5.3	2.0	0.1	<1.9	1.9	0.1	8.0 (3)	2.1	0.1
1,2,3,4,6,7,8-Hepta CDD *		pg	41.9	1.6	0.01	17.0	2.1	0.01	64.8	2.0	0.01
Octa CDD *		pg	172	2.3	0.0003	78.8	2.9	0.0003	169	2.1	0.0003
Total Tetra CDD *		pg	<4.0 (1)	1.0		<3.3 (1)	3.3		5.7	2.1	
Total Penta CDD *		pg	2.4	1.8		<3.7 (1)	3.7		10.1	2.2	
Total Hexa CDD *		pg	27.5	2.1		7.6	2.0		49.6	2.2	
Total Hepta CDD *		pg	85.9	1.6		17.0	2.1		145	2.0	
2,3,7,8-Tetra CDF **		pg	2.9	2.4	0.1	2.3	1.9	0.1	7.6	2.1	0.1
1,2,3,7,8-Penta CDF **		pg	<2.1	2.1	0.03	<2.0	2.0	0.03	2.3	2.2	0.03
2,3,4,7,8-Penta CDF **		pg	<2.1	2.1	0.3	<2.0	2.0	0.3	3.0	2.2	0.3
1,2,3,4,7,8-Hexa CDF **		pg	<1.8	1.8	0.1	<2.1	2.1	0.1	7.6 (3)	2.0	0.1
1,2,3,6,7,8-Hexa CDF **		pg	<1.7	1.7	0.1	<2.0	2.0	0.1	3.1	1.9	0.1
2,3,4,6,7,8-Hexa CDF **		pg	<1.8	1.8	0.1	<2.1	2.1	0.1	4.2	2.1	0.1
1,2,3,7,8,9-Hexa CDF **		pg	<1.9	1.9	0.1	<2.3	2.3	0.1	2.2	2.2	0.1
1,2,3,4,6,7,8-Hepta CDF **		pg	4.3	1.6	0.01	3.8	1.9	0.01	15.4	1.9	0.01
1,2,3,4,7,8,9-Hepta CDF **		pg	<2.0	2.0	0.01	<2.4	2.4	0.01	2.6	2.3	0.01
Octa CDF **		pg	6.0	1.9	0.0003	<3.3	3.3	0.0003	17.9	2.1	0.0003
Total Tetra CDF **		pg	2.9	2.4		2.3	1.9		33.1	2.1	
Total Penta CDF **		pg	<2.1	2.1		<2.0	2.0		26.3	2.2	
Total Hexa CDF **		pg	2.9	1.8		<2.1	2.1		26.9	2.0	
Total Hepta CDF **		pg	7.1	1.8		3.8	2.1		27.6	2.1	
Toxic Equivalency		pg									

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

(2) RT = 3 seconds - PCDD/DF analysis - Peak detected exceeds expected retention time (from internal standard) by greater than 3 seconds.

(3) EMPC / Merged Peak

(4) RT=2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

January samples are additional D/F sampling outside the scope of the Ambient Air Monitoring Plan, and conducted on a 12-day schedule.

The EFW facility became fully operational starting February 1, 2016, and

*CDD = Chloro Dibenzo-p-Dioxin **CDF = Chloro Dibenzo-p-Furan

Calculated Concentrations	Quarter 1		Rundle		Rundle		Rundle		
	Units	Maximum	Minimum	1/01/2016		13/01/2016		25/01/2016	
				A1 ^a	A2 ^a	A3 ^a			
2,3,7,8-Tetra CDD *	pg/m ³	4.81E-03	2.61E-03	0.003	0.003	0.003			
1,2,3,7,8-Penta CDD	pg/m ³	6.64E-03	2.49E-03	0.002	0.003	0.007			
1,2,3,4,7,8-Hexa CDD	pg/m ³	8.86E-03	2.91E-03	0.003	0.003	0.009			
1,2,3,6,7,8-Hexa CDD	pg/m ³	1.47E-02	3.49E-03	0.007	0.003	0.015			
1,2,3,7,8,9-Hexa CDD	pg/m ³	2.21E-02	3.01E-03	0.015	0.003	0.022			
1,2,3,4,6,7,8-Hepta CDD	pg/m ³	2.37E-01	1.85E-02	0.116	0.054	0.179			
Octa CDD	pg/m ³	4.89E-01	9.22E-02	0.476	0.250	0.468			
Total Tetra CDD	pg/m ³	3.71E-02	2.61E-03	0.006	0.005	0.016			
Total Penta CDD	pg/m ³	2.79E-02	3.62E-03	0.007	0.006	0.028			
Total Hexa CDD	pg/m ³	1.37E-01	1.34E-02	0.076	0.024	0.137			
Total Hepta CDD	pg/m ³	4.40E-01	4.97E-02	0.238	0.054	0.401			
2,3,7,8-Tetra CDF **	pg/m ³	2.10E-02	4.48E-03	0.008	0.007	0.021			
1,2,3,7,8-Penta CDF	pg/m ³	6.36E-03	2.91E-03	0.003	0.003	0.006			
2,3,4,7,8-Penta CDF	pg/m ³	8.30E-03	2.91E-03	0.003	0.003	0.008			
1,2,3,4,7,8-Hexa CDF	pg/m ³	2.10E-02	2.49E-03	0.002	0.003	0.021			
1,2,3,6,7,8-Hexa CDF	pg/m ³	8.58E-03	2.35E-03	0.002	0.003	0.009			
1,2,3,6,7,8,9-Hexa CDF	pg/m ³	1.13E-02	2.49E-03	0.002	0.003	0.011			
1,2,3,7,8,9-Hexa CDF	pg/m ³	4.91E-03	2.63E-03	0.003	0.004	0.003			
1,2,3,4,6,7,8-Hepta CDF	pg/m ³	4.26E-02	3.76E-03	0.012	0.012	0.043			
1,2,3,4,7,8,9-Hepta CDF	pg/m ³	7.19E-03	2.77E-03	0.003	0.004	0.007			
Octa CDF	pg/m ³	4.95E-02	4.62E-03	0.017	0.005	0.050			
Total Tetra CDF	pg/m ³	9.16E-02	4.48E-03	0.008	0.007	0.092			
Total Penta CDF	pg/m ³	7.28E-02	2.91E-03	0.003	0.003	0.073			
Total Hexa CDF	pg/m ³	7.44E-02	3.33E-03	0.008	0.003	0.074			
Total Hepta CDF	pg/m ³	7.64E-02	4.05E-03	0.020	0.012	0.076			
Toxic Equivalency	pg/m ³	0.026	0.011	0.012	0.011	0.026			
TOTAL TOXIC EQUIVALENCY	pg TEQ/m ³								
Calculated TEQ Concentrations	Units			Rundle	Rundle	Rundle			
				01/01/2016	13/01/2016	25/01/2016			
2,3,7,8-Tetra CDD *	pg TEQ/m ³			0.003	0.003	0.003			
1,2,3,7,8-Penta CDD	pg TEQ/m ³			0.002	0.003	0.007			
1,2,3,4,7,8-Hexa CDD	pg TEQ/m ³			0.0003	0.0003	0.0009			
1,2,3,6,7,8-Hexa CDD	pg TEQ/m ³			0.0007	0.0003	0.0015			
1,2,3,7,8,9-Hexa CDD	pg TEQ/m ³			0.0015	0.0003	0.0022			
1,2,3,4,6,7,8-Hepta CDD	pg TEQ/m ³			0.0012	0.0005	0.0018			
Octa CDD	pg TEQ/m ³			0.00014	0.00008	0.00014			
Total Tetra CDD	pg TEQ/m ³			0.0008	0.0007	0.0021			
1,2,3,7,8-Penta CDF	pg TEQ/m ³			0.0001	0.0001	0.0002			
1,2,3,4,7,8-Penta CDF	pg TEQ/m ³			0.001	0.001	0.002			
1,2,3,6,7,8-Hexa CDF	pg TEQ/m ³			0.0002	0.0003	0.0021			
2,3,4,6,7,8-Hexa CDF	pg TEQ/m ³			0.0002	0.0002	0.0009			
1,2,3,7,8,9-Hexa CDF	pg TEQ/m ³			0.0003	0.0004	0.0003			
1,2,3,4,6,7,8-Hepta CDF	pg TEQ/m ³			0.00012	0.00012	0.00043			
1,2,3,4,7,8,9-Hepta CDF	pg TEQ/m ³			0.00003	0.00004	0.00007			
Octa CDF	pg TEQ/m ³			0.00005	0.00002	0.000015			
Total Tetra CDF	pg TEQ/m ³			0.012	0.011	0.026			
Total Penta CDF	pg TEQ/m ³								
Total Hexa CDF	pg TEQ/m ³								
Total Hepta CDF	pg TEQ/m ³								
TOTAL TOXIC EQUIVALENCY	pg TEQ/m ³								

Notes:

RDL = Reportable Detection Limit

* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

a) Samples A1 - A3 are additional D/F sampling outside the scope of the Ambient Air Monitoring Plan, and conducted on a 12-day schedule.

The EFW facility became fully operational starting February 1, 2016, and

monitoring of non-continuous monitors resumed as specified in the Ambient Air Monitoring Plan.

Dioxins and Furans		Rundie Road Station			2016									
Location	Date	dd/mm/yyyy	Rundie			Rundie			Rundie					
Start Time		Nmm/min	6/02/2016	0.00	23:23	0.00	23:25	0.00	23:23	0.00	23:25			
Sample Duration		minutes		TH	TH	TH	TH	TH	TH	TH	TH			
Technician				BN778-01	BN778-01	BVQ055-01	BVQ055-01	BXQ037-01	BXQ037-01	CC1910	CC1910			
Filter Number				BVK674	BVK674	BVY835	BVY835	B644821	B644821	B662572	B662572			
Maxxam ID				B628182	B628182	B644821	B644821	B662572	B662572					
Maxxam Job #														
Total Volumetric Flow		Am ³ /sample		363.78		346.10		345.46						
Analytical Results		Units	Value	EDL	WHO ₂₀₀₅	TEF	Value	EDL	WHO ₂₀₀₅	TEF	Value	EDL	WHO ₂₀₀₅	TEF
2,3,7,8-Tetra CDD *		pg	<3.5	3.5	1	<3.2	3.2	1	<1.8	1.8	1			
1,2,3,7,8-Penta CDD *		pg	<3.4	3.4	1	<3.5	3.5	1	<2.5	2.5	1			
1,2,3,4,7,8-Hexa CDD *		pg	<3.0	3.0	0.1	<3.4	3.4	0.1	<3.1	3.1	0.1			
1,2,3,6,7,8-Hexa CDD *		pg	3.4	3.2	0.1	<3.7	3.7	0.1	<4.3 (1)	4.3	0.1			
1,2,3,7,8,9-Hexa CDD *		pg	<5.1 (4)	5.1	0.1	<3.2	3.2	0.1	7.0	2.9	0.1			
1,2,3,4,6,7,8-Hepta CDD *		pg	34.0	3.8	0.01	6.4	3.4	0.01	82.0	2.8	0.01			
Octa CDD *		pg	112	4.1	0.0003	31.9	3.9	0.0003	169	3.1	0.0003			
Total Tetra CDD *		pg	13.5	3.5		<4.6 (1)	4.6		<1.8	1.8				
Total Penta CDD *		pg	6.7	3.4		<3.5	3.5		<2.5	2.5				
Total Hexa CDD *		pg	16.6	3.0		<9.3 (1)	9.3		29.6	3.2				
Total Hepta CDD *		pg	77.2	3.8		17.2	3.4		152	2.8				
2,3,7,8-Tetra CDF **		pg	<7.6 (1)	7.6	0.1	<3.1	3.1	0.1	<3.1	3.1	0.1			
1,2,3,7,8-Penta CDF **		pg	<3.5	3.5	0.03	<2.8	2.8	0.03	<3.0	3.0	0.03			
2,3,4,7,8-Penta CDF **		pg	<3.5	3.5	0.3	<2.8	2.8	0.3	<3.0	3.0	0.3			
1,2,3,4,7,8-Hexa CDF **		pg	<3.7 (1)	3.7	0.1	<3.0	3.0	0.1	<2.9	2.9	0.1			
1,2,3,6,7,8-Hexa CDF **		pg	<2.9	2.9	0.1	<2.9	2.9	0.1	<2.8	2.8	0.1			
2,3,4,6,7,8-Hexa CDF **		pg	<3.1	3.1	0.1	<2.2	2.2	0.1	<3.0	3.0	0.1			
1,2,3,7,8,9-Hexa CDF **		pg	<3.4	3.4	0.1	<3.4	3.4	0.1	<3.2	3.2	0.1			
1,2,3,4,6,7,8-Hepta CDF **		pg	2.2	2.9	0.01	<2.6	2.6	0.01	<3.9	3.7	0.01			
Octa CDF **		pg	<3.6	3.6	0.01	<3.2	3.2	0.01	<3.4	3.4	0.01			
Total Tetra CDF **		pg	5.7	3.4	0.0003	<3.2	3.2	0.0003	4.4	3.3	0.0003			
Total Penta CDF **		pg	17.4	3.1		<3.1	3.1		<3.1	3.1				
Total Hexa CDF **		pg	5.5	3.5		<2.8	2.8		<3.0	3.0				
Total Hepta CDF **		pg	5.5	3.1		<3.1	3.1		<3.0	3.0				
Toxic Equivalency		pg	7.2	3.2		<2.8	2.8		7.9	3.0				

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

(2) RT = 3 seconds - PCDD/DF analysis - Peak detected exceeds expected retention time (from internal standard) by greater than 3 seconds.

(3) EMPC / Merged Peak

(4) RT=2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 sec

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*CDD = Chloro Dibenzo-p-Dioxin, **CDF = Chloro Dibenzo-p-Furan

Calculated Concentrations	Quarter 1		Rundie			Rundie			Rundie			
	Units	Maximum	Minimum	6/02/2016			1/03/2016			25/03/2016		
				1	2	3	1	2	3	1	2	3
2,3,7,8-Tetra CDD *	pg/m ³	4.81E-03	2.61E-03	0.005			0.005			0.003		
1,2,3,7,8-Penta CDD	pg/m ³	6.64E-03	2.49E-03	0.005			0.005			0.004		
1,2,3,4,7,8-Hexa CDD	pg/m ³	8.86E-03	2.91E-03	0.004			0.005			0.004		
1,2,3,6,7,8-Hexa CDD	pg/m ³	1.47E-02	3.49E-03	0.009			0.005			0.006		
1,2,3,7,8,9-Hexa CDD	pg/m ³	2.21E-02	3.01E-03	0.007			0.005			0.020		
1,2,3,4,6,7,8-Hepta CDD	pg/m ³	2.37E-01	1.85E-02	0.093			0.018			0.237		
Octa CDD	pg/m ³	4.89E-01	9.22E-02	0.308			0.092			0.489		
Total Tetra CDD	pg/m ³	3.71E-02	2.61E-03	0.037			0.007			0.003		
Total Penta CDD	pg/m ³	2.79E-02	3.62E-03	0.018			0.005			0.004		
Total Hexa CDD	pg/m ³	1.37E-01	1.34E-02	0.046			0.013			0.086		
Total Hepta CDD	pg/m ³	4.40E-01	4.97E-02	0.212			0.050			0.440		
2,3,7,8-Tetra CDF **	pg/m ³	2.10E-02	4.48E-03	0.010			0.004			0.004		
1,2,3,7,8-Penta CDF	pg/m ³	6.36E-03	2.91E-03	0.005			0.004			0.004		
2,3,4,7,8-Penta CDF	pg/m ³	8.30E-03	2.91E-03	0.005			0.004			0.004		
1,2,3,4,7,8-Hexa CDF	pg/m ³	2.10E-02	2.49E-03	0.005			0.004			0.004		
1,2,3,6,7,8-Hexa CDF	pg/m ³	8.58E-03	2.35E-03	0.004			0.004			0.004		
2,3,4,6,7,8-Hexa CDF	pg/m ³	1.13E-02	2.49E-03	0.004			0.005			0.004		
1,2,3,7,8,9-Hexa CDF	pg/m ³	4.91E-03	2.63E-03	0.005			0.005			0.005		
1,2,3,4,6,7,8-Hepta CDF	pg/m ³	4.26E-02	3.76E-03	0.020			0.004			0.011		
1,2,3,4,7,8,9-Hepta CDF	pg/m ³	7.19E-03	2.77E-03	0.005			0.005			0.005		
Octa CDF	pg/m ³	4.95E-02	4.62E-03	0.016			0.005			0.013		
Total Tetra CDF	pg/m ³	9.16E-02	4.48E-03	0.048			0.004			0.004		
Total Penta CDF	pg/m ³	7.28E-02	2.91E-03	0.015			0.004			0.004		
Total Hexa CDF	pg/m ³	7.44E-02	3.33E-03	0.015			0.004			0.004		
Total Hepta CDF	pg/m ³	7.64E-02	4.05E-03	0.020			0.004			0.023		
Toxic Equivalency	pg/m ³	0.026	0.011	0.017			0.015			0.016		
Calculated TEQ Concentrations	Units			Rundie			Rundie			Rundie		
				2/6/2016			3/1/2016			3/25/2016		
2,3,7,8-Tetra CDD *	pg TEQ/m ³			0.005			0.005			0.003		
1,2,3,7,8-Penta CDD	pg TEQ/m ³			0.005			0.005			0.004		
1,2,3,4,7,8-Hexa CDD	pg TEQ/m ³			0.0004			0.0005			0.0004		
1,2,3,6,7,8-Hexa CDD	pg TEQ/m ³			0.0009			0.0005			0.0006		
1,2,3,7,8,9-Hexa CDD	pg TEQ/m ³			0.0007			0.0005			0.0020		
1,2,3,4,6,7,8-Hepta CDD	pg TEQ/m ³			0.0009			0.0002			0.0024		
Octa CDD	pg TEQ/m ³			0.0009			0.00009			0.000015		
Total Tetra CDD	pg TEQ/m ³			0.0010			0.0004			0.0004		
1,2,3,7,8-Penta CDF	pg TEQ/m ³			0.0001			0.0001			0.0001		
2,3,4,7,8-Penta CDF	pg TEQ/m ³			0.001			0.001			0.001		
1,2,3,6,7,8-Hexa CDF	pg TEQ/m ³			0.0005			0.0004			0.0004		
2,3,4,6,7,8-Hexa CDF	pg TEQ/m ³			0.0004			0.0005			0.0004		
1,2,3,7,8,9-Hexa CDF	pg TEQ/m ³			0.0005			0.0005			0.0005		
1,2,3,4,6,7,8-Hepta CDF	pg TEQ/m ³			0.00020			0.00004			0.000011		
1,2,3,4,7,8,9-Hepta CDF	pg TEQ/m ³			0.00005			0.00005			0.000005		
Octa CDF	pg TEQ/m ³			0.000005			0.0000001			0.000004		
Total Tetra CDF	pg TEQ/m ³			0.017			0.015			0.016		
Total Penta CDF	pg TEQ/m ³											
Total Hexa CDF	pg TEQ/m ³											
Total Hepta CDF	pg TEQ/m ³											
TOTAL TOXIC EQUIVALENCY	pg TEQ/m ³			0.017			0.015			0.016		

Notes:

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