

**Quarterly Ambient Air Quality
Monitoring Report for the Durham
York Energy Centre – July to
September 2017**

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 – JULY TO SEPTEMBER 2017**

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QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE – JULY TO SEPTEMBER 2017

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 the remaining municipal solid waste after waste 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:

- Continuously monitored
 - Sulphur Dioxide (SO_2)
 - Nitrogen Oxides (NO_x), and
 - Particulate Matter smaller than 2.5 microns ($\text{PM}_{2.5}$).
- Non-continuously monitored
 - Metals in Total Suspended Particulate (TSP) matter
 - 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). The EFW facility became fully operational on February 1, 2016, and monitoring of non-continuous air quality parameters resumed.

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 on February 1, 2016 upon start of commercial operations. The Fence Line Station was scheduled to run for a one-year period but this period has been extended by one year for a total of two years at the request of the Regional Municipality of Durham.

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Meteorological data is also measured at the Courtice WPCP and Rundle Road 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.

This quarterly report provides a summary of the ambient air quality data collected at the three stations for the period July to September (Calendar Quarter 3). Some operational issues at the sites were encountered this quarter including the Courtice WPCP Station PM_{2.5} monitor pump tripping off. Data recovery rates for all measured air quality parameters for this quarter were acceptable. Additional details on instrumentation issues are presented in Section 3.2 of this report.

Site personnel noted ongoing Highway 418 construction on the north and south sides of Highway 401 between Courtice and Crago Roads during Quarter 3, 2017.

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 air quality evaluation criteria or human health risk assessment (HHRA) health-based criteria 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 3 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 Standards, were below their applicable Standards (as presented in **Table 2-3** in this report).
4. The maximum measured concentrations of PAHs with MOECC air quality Standards were well below their applicable criteria shown in **Table 2-4**, with the exception of 24-hour benzo(a)pyrene (B(a)P) concentrations measured on September 16 at both the Courtice WPCP Station and Rundle Road Station. Measured concentrations of B(a)P exceeded the applicable Ontario Ambient Air Quality Criteria (AAQC) by 63% and 125% at the Courtice WPCP Station and Rundle Road Station, respectively. The current Ontario 24-hour B(a)P AAQC was introduced in 2011 and levels above this AAQC are commonly measured throughout Ontario. The measurements were however, well below the MOECC Schedule 6 Upper Risk Threshold, the MOECC O. Reg. 419/05 24-hour average guideline, and the HHRA health based criterion.

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5. The maximum measured toxic equivalent dioxin and furan concentration was below the applicable Standard presented in **Table 2-4**.

In summary, the measured concentrations of the air contaminants monitored were below their applicable MOECC Standards during the July to September 2017 monitoring period with the exception of benzo(a)pyrene. Furthermore, all measured levels of the monitored contaminants were below their applicable HHRA health-based criteria.

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Abbreviations

AAQC	Ambient Air Quality Criteria
ACB List	Air Contaminants Benchmarks List: Standards, Guidelines, and Screening Levels for Assessing Point of Impingement Concentrations of Air Contaminants
CAAQS	Canadian Ambient Air Quality Standards
CAC	Criteria Air Contaminants
CDD	Chlorinated Dibenzo-p-dioxins
CDF	Chlorinated Dibenzo-p-furans
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
NOx	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

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Cr	Chromium
Cu	Copper
Mn	Manganese
Ni	Nickel
Ag	Silver
Ti	Titanium
Tl	Thallium
Sn	Tin
V	Vanadium
Zn	Zinc
Zr	Zirconium

Miscellaneous

°C	Temperature in degrees Celsius
N/A	Not Available
%	Percent
µg	microgram
ppm	Parts per million
ppb	Parts per billion
ppbv	Parts per billion by volume
ppt	Parts per trillion
min	Minimum
max	Maximum
mm	Millimetre
m	Metre
nm	nanometre
km/hr	Kilometres per hour
mg/m ³	Milligrams per cubic metre
µg/m ³	Microgram per cubic metre
ng/m ³	Nanograms per cubic metre
pg/m ³	Picograms per cubic metre
pg TEQ/m ³	Picograms of toxic exposure equivalents per cubic metre

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Introduction
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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.

An Ambient Air Quality Monitoring Plan – Durham York Residual Waste Study (Ambient Monitoring Plan) was developed and included two monitoring stations referred to as the Courtice Water Pollution Control Plant (WPCP) Station and the Rundle Road Station (as well as a temporary Fence Line Station). The plan developed for these stations was 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 measurable 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 (Courtice WPCP and Rundle Road 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:

- Continuously monitored criteria air contaminants (CACs)
 - Sulphur Dioxide (SO_2)
 - Nitrogen Oxides (NO_x), and
 - Particulate Matter smaller than 2.5 microns ($\text{PM}_{2.5}$).
- Non-continuously monitored
 - Metals in Total Suspended Particulate (TSP) matter
 - 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

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rest of construction and commissioning, as per Section 1.2 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).

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 on February 1, 2016 upon start of commercial operations. The Fence Line Station was scheduled to run for a one-year period but this period has been extended by one year for a total of two years at the request of the Regional Municipality of Durham.

This quarterly report provides a summary of the ambient air quality data collected at the three stations for the period July to September 2017 (Q3).

1.2 LOCATIONS OF AMBIENT AIR QUALITY MONITORING STATIONS

The selection of sites for the monitoring stations was accomplished in consultation with the Ontario Ministry of Environment and Climate Change (MOECC) and Regional Municipality of Durham and 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 provided in the Ambient Monitoring Plan.

The Rundle Road Station is sited northeast of the DYEC in the vicinity of residential receptors predominantly downwind of the DYEC, and within the area where maximum annual concentrations are predicted to occur. This predominantly downwind station is located along Rundle Road, south of Baseline Road. Its location is shown in **Figure 1-2** and **Figure 1-3**. The monitoring station measures all the air contaminants listed in Section 1.1 and meteorological data.

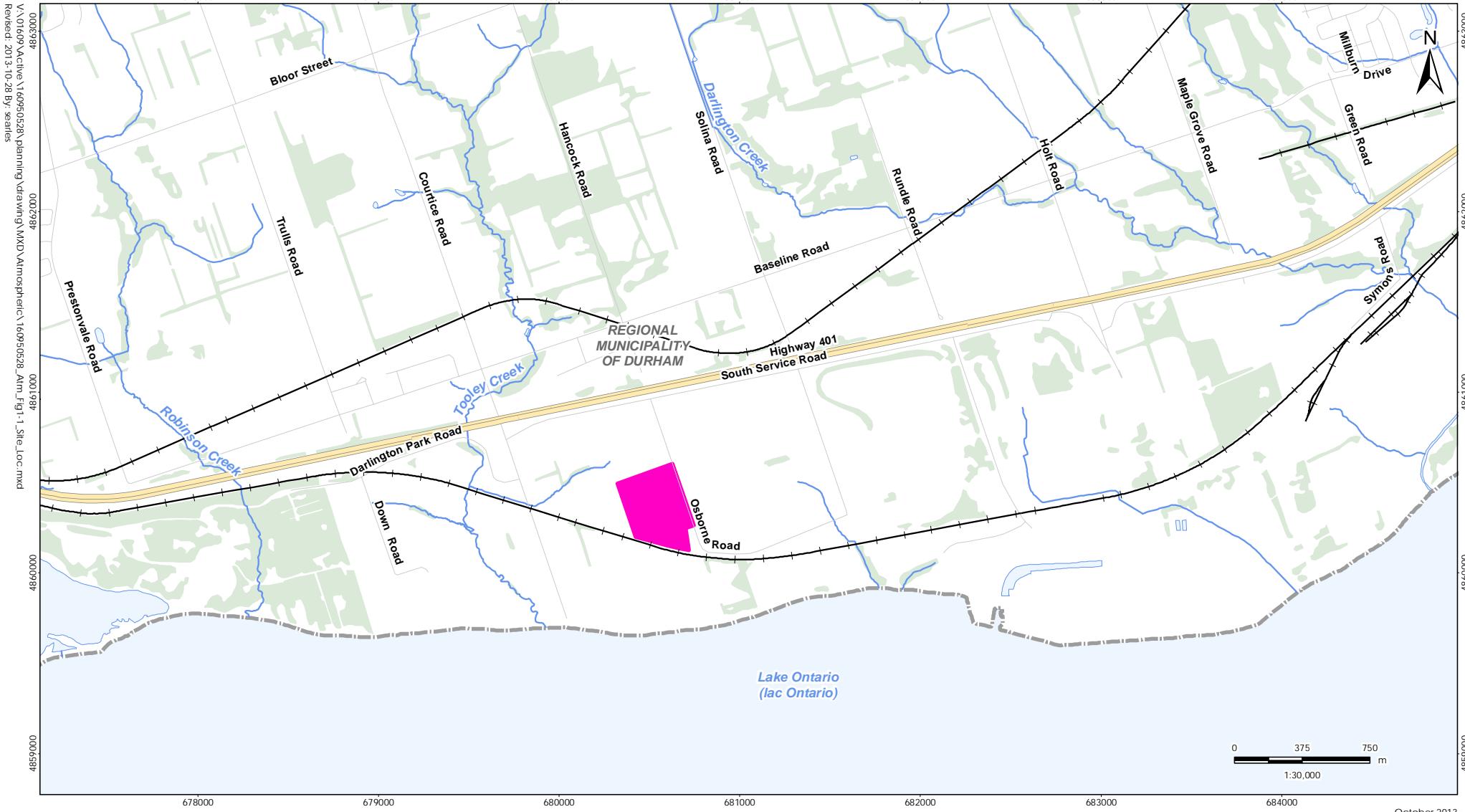
The predominately upwind Courtice WPCP Station is located at the Courtice Water Pollution Control Plant (WPCP) to the southwest of the DYEC with the objective of measuring background air quality in a predominantly upwind location. The location is presented in **Figure 1-2** and **Figure 1-4**. This monitoring 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

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parameters began operation after the Facility's commissioning period was completed. The Fence Line Station was scheduled to run for a one-year period but this period has been extended by one year for a total of two years. The location is presented in **Figure 1-2** and **Figure 1-5**.



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

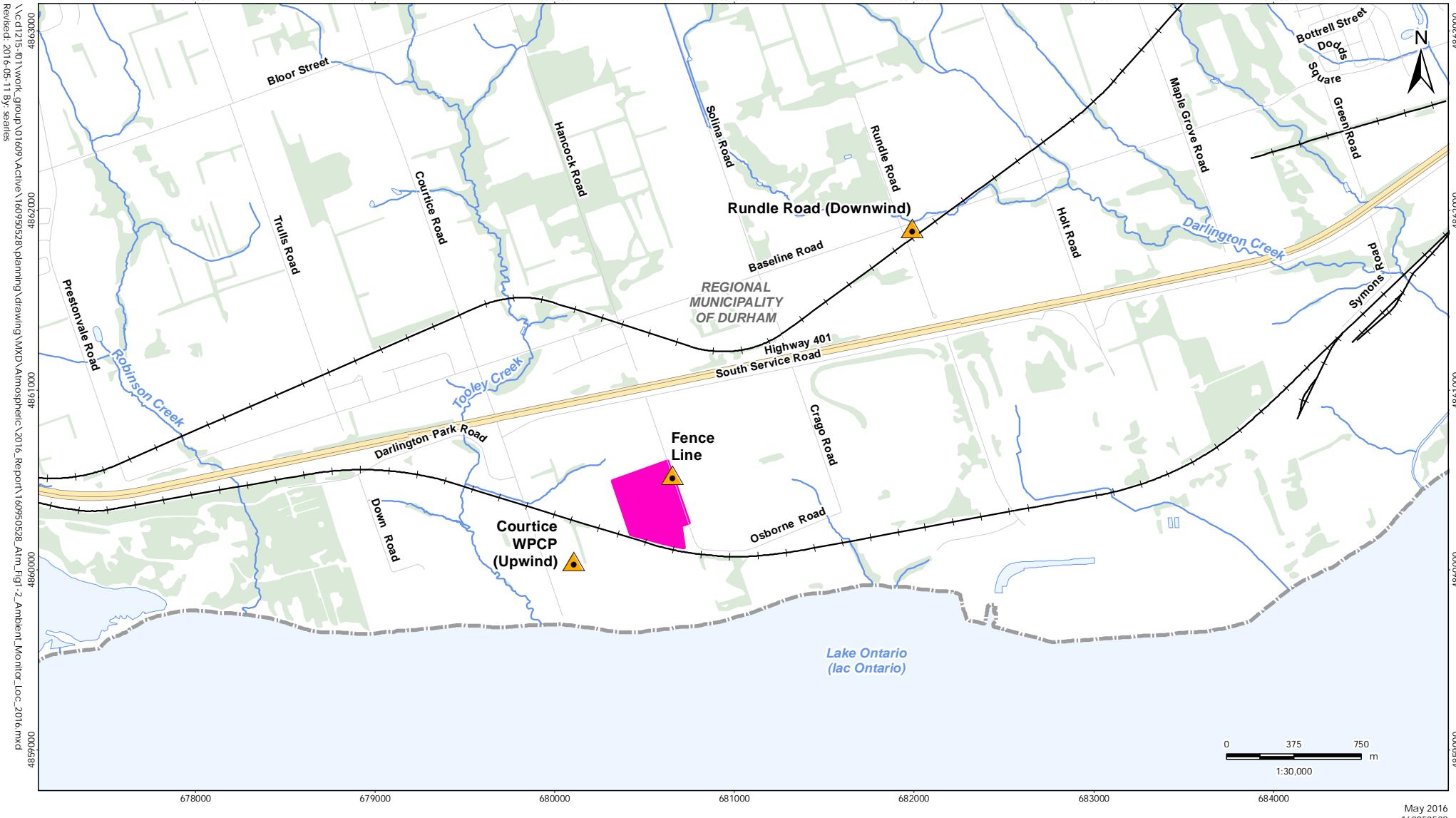
The Region of Durham
Durham York Energy Centre

Figure No.

1-1

Title

Site Location Plan



Legend

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

Client/Project

The Region of Durham
Durham York Energy Centre

Figure No.

1-2

Title

Locations of Ambient Monitoring Stations

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N

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



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



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



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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 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 Monitoring Plan (Stantec, 2012):

- Continuously monitored criteria air contaminants (CACs)
 - Sulphur Dioxide (SO₂)
 - Nitrogen Oxides (NO_x), and
 - Particulate Matter smaller than 2.5 microns (PM_{2.5}).
- Non-continuously monitored
 - Metals in Total Suspended Particulate (TSP) matter
 - Polycyclic Aromatic Hydrocarbons (PAHs), and
 - Dioxins and Furans.

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). 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 (Stantec, 2012).

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 Monitoring Plan (Stantec, 2012).

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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

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
- 1,2,3,7,8,9-Hexa 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-Hepta 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)

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Key Components Assessed
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2.3 AIR QUALITY CRITERIA

Several evaluation criteria were used for comparison to the air quality data as specified in the Ambient Air Monitoring Plan (Stantec, 2012). The first set was the Ontario Ambient Air Quality Criteria (AAQC) developed by the MOECC (MOECC, 2012). The second set of criteria was the Standards reported in O. Reg. 419/05 (Schedules 3 and 6) and the MOECC Guidelines and Jurisdictional Screening Levels. In December 2016, O. Reg. 419/05 Standards, Guidelines, and Jurisdictional Screening Levels were consolidated into a new format known as the “Air Contaminants Benchmarks List: Standards, Guidelines and Screening Levels for Assessing Point of Impingement Concentrations of Air Contaminants” (MOECC, 2016) (ACB List).

Not all chemicals have regulatory limits, or in some instances updated health-based criteria 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 another set of criteria.

Additionally, federal ambient air quality standards were considered. 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.

Summaries of the relevant air quality criteria for the contaminants monitored in Q3 2017 are presented in **Table 2-2** to **Table 2-4**.

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Table 2-2 Summary of Air Quality Criteria for CACs

Contaminant	CAS	O. Reg. 419/05 – Schedule 3 Standards /AAQC			HHRA Health-Based Criteria		
		1-Hour (ppb / µg/m³)	24-Hour (ppb / µg/m³)	Annual (ppb / µg/m³)	1-Hour (ppb / µg/m³)	24-Hour (ppb / µg/m³)	Annual (ppb / µg/m³)
Sulphur dioxide	7446095	250 / 690	100 / 275	20 / 55	250 / 690	100 / 275	11 / 29
Nitrogen Dioxide	10102-44-0	200 / 400	100 / 200	-	200 / 400	100 / 200	30 / 60
Contaminant	CAS	Canadian Ambient Air Quality Standards (CAAQS)			HHRA Health-Based Criteria		
		1-Hour (µg/m³)	24-Hour (µg/m³)	Annual (µg/m³)	1-Hour (µg/m³)	24-Hour (µg/m³)	Other time Period (µg/m³)
PM _{2.5}	N/A	-	28 ^A	10 ^B	-	30 ^C	-

- A. Canadian Ambient Air Quality Standards (CAAQS) for Respirable Particulate Matter and Ozone, effective by 2015 (CCME, 2012). The Respirable Particulate Matter Objective is referenced to the 98th percentile daily average concentration averaged over 3 consecutive years.
- B. 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.
- C. HHRA Health-Based criterion 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 Standards, Guidelines and Screening Levels			HHRA Health-Based Criteria		
		1-Hour (µg/m³)	24-Hour (µg/m³)	Other time Period (µg/m³)	1-Hour (µg/m³)	24-Hour (µg/m³)	Annual (µg/m³)
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

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Table 2-3 Summary of Air Quality Criteria for Metals

Contaminant	CAS	O. Reg. 419/05 – Schedule 3 Standards, Guidelines and Screening Levels			HHRA Health-Based Criteria		
		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 ($\mu\text{g}/\text{m}^3$)
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	-	-	-	-

- 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 Standards, Guidelines and Screening Levels			HHRA Health-Based Criteria			
		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)	Toxic Equivalency Factor Annual ^{A, G} (ng/m ³) ⁻¹
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	-

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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 Standards, Guidelines and Screening Levels			HHRA Health-Based Criteria				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)		
Perylene	198-55-0	-	-	-	500	-	-	-	1
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	-	-	-	-	-	-

- 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. 419/05 Schedule 6 Upper Risk Thresholds.
- D. O. Reg. 419/05 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. 419/05 Summary of Standards and Guidelines, and the corresponding WHO2005 toxic equivalency factors (i-TEFs).
- F. O. Reg. 419/05 Schedule 3 Standard phased in after July 1, 2016.
- G. Toxic Equivalency Factors (TEFs) are shown as benzo(a)pyrene equivalents.

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3.0 INSTRUMENTATION SUMMARY AND FIELD CONDITIONS

3.1 INSTRUMENTATION

The measurement program at the monitoring stations includes both continuous and non-continuous monitors to sample air contaminant concentrations.

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	Teledyne 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 API Model T100	Pulsed Florescence - 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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Two manually operated, hi-volume air samplers are installed at both the Courtice WPCP (predominantly upwind) and Rundle Road (predominantly downwind) Stations to collect metals in total suspended particulate (TSP), polycyclic aromatic hydrocarbons (PAHs), and dioxins and furans. Sampling for these contaminants is conducted following the methodology and analyses described in the Ambient Monitoring Plan (Stantec, 2012), as presented in **Table 3-2**. Monitoring for metals in TSP is also conducted at the Fence Line Station. 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	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
Dioxins and Furans				24-hour sample taken every 24 days.

Horizontal wind speed, wind direction, atmospheric temperature, relative humidity, and rainfall are measured at the predominantly downwind Rundle Road Station. The meteorological sensors at the Rundle Road Station are mounted on an external 10 m aluminum tower. 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 on a 20-m tower and are provided by the Courtice Water Pollution Control Plant.

The meteorological equipment is summarized in **Table 3-3**.

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Table 3-3 Summary of Meteorological Equipment

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

A Campbell Scientific CRX1000 data acquisition system (DAS) is used to collect continuous instrument monitoring data and status codes from the continuous 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

The following operational issues were encountered at the stations this quarter:

- An issue was encountered with the Courtice WPCP Station PM_{2.5} monitor pump tripping off intermittently.
- The Air Conditioning unit at Rundle Road unexpectedly malfunctioned, leading to larger than normal changes in the enclosure temperature.

A summary of operational issues for each measurement parameter during the monitoring period is presented in **Table 3-4** to **Table 3-6**.

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

Parameter	Issues	Time Frame	Remedial Action
SO ₂	None		
NO _x	None		
PM _{2.5}	Inlet pump turned off	5-Jul-17 to 6-Jul-17; 2-Aug-17	Restarted pump. Invalidated measurements during this time.
TSP/Metals Hi-Vol	None.		
PAH/ D/F Hi-Vol	None.		
Other	None		

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

Parameter	Issues	Time Frame	Remedial Action
SO ₂	None		
NO _x	None		
PM _{2.5}	None		
TSP/Metals Hi-Vol	None		
PAH/ D/F Hi-Vol	None.		
Other	Enclosure air conditioning unit shut off. Evidence of power outage.	25-Aug-17 to 28-Aug-17 25-Aug-17	AC Unit restarted. Data reviewed and deemed valid. Data reviewed and appears valid.

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

Parameter	Issues	Time Frame	Remedial Action
TSP/Metals Hi-Vol	None		

3.3 INSTRUMENTATION RECOVERY RATES

Data recovery rates for each continuous monitor at the three monitoring stations during Quarter 3 (July to September 2017) are presented in **Table 3-7** to **Table 3-9**.

Table 3-7 Summary of Data Recovery Rates for the Courtice WPCP Station (Predominately Upwind) – July to September 2017

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
SO ₂	2199	99.6% ^
NO _x	2200	99.6% ^
PM _{2.5}	2156	97.6% ^
Temperature	2208	100.0% ^
Rainfall	2208	100.0% ^
Relative Humidity	2208	100.0% ^

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Table 3-7 Summary of Data Recovery Rates for the Courtice WPCP Station (Predominately Upwind) – July to September 2017

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
Pressure	2208	100.0% ^A
Wind Speed/Direction	2208	100.0% ^A
TSP/Metals	15 ^B	100%
PAHs	8 ^B	100%
Dioxins and Furans	5 ^B	100%

A. Includes instrumentation issues summarized in Table 3-4, quarterly MOECC audit and monthly calibrations.

B. Number of filters/24-hour average samples.

Table 3-8 Summary of Data Recovery Rates for the Rundle Road Station (Predominately Downwind) – July to September 2017

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
SO ₂	2199	99.6% ^A
NO _x	2198	99.5% ^A
PM _{2.5}	2187	99.0% ^A
Temperature	2208	100.0% ^A
Rainfall	2208	100.0% ^A
Relative Humidity	2208	100.0% ^A
Wind Speed/Direction	2208	100.0% ^A
TSP/Metals	15 ^B	100 %
PAHs	8 ^B	100%
Dioxins and Furans	5 ^B	100%

A. Includes instrumentation issues summarized in Table 3-5, quarterly MOECC audit, and monthly calibrations.

B. Number of filters/24-hour average samples.

Table 3-9 Summary of Data Recovery Rates for the Fence Line Station – July to September 2017

Parameter	Valid Measurements ^B	Data Recovery Rate (%)
TSP/Metals ^A	15	100%

A. Includes instrumentation issues summarized in Table 3-6.

B. Number of filters/24-hour average samples.

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3.4 CONTINUOUS MONITOR INTERNAL CALIBRATIONS

Summaries of the Courtice WPCP and Rundle Road Station SO₂ and NO_x monitor daily internal zero checks for Q3 2017 are presented in **Appendix A**. Daily internal zero checks are informal checks of an analyzer's response intended as a quick, convenient way to check for possible analyzer malfunction or calibration drift. They are not recommended as a basis for analyzer zero or span adjustments, calibration updates, or adjustment of ambient data (Environment Canada, 1995).

All internal zero calibrations of the SO₂ and NO_x analyzers at the Courtice WPCP and Rundle Road Stations were less than 5 ppb throughout Q3.

3.5 FIELD CONDITION OBSERVATIONS

During Q3 2017 activities in the vicinity of the ambient air monitoring stations were observed that had the potential to be affecting air quality levels during the period. These observations were noted by Stantec and Valley Environmental Services personnel during field visits.

Construction of Highway 418, which will connect with Highway 401 between Courtice Road and Crago Road was ongoing during this quarter. Highway 418 will provide a north-south link between Highway 401 and the Phase 2 expansion of Highway 407. The Highway 401/418 interchange will be located almost directly north of the DYEC. Throughout the quarter, excavator/ dump truck crews were observed working in a large area immediately north of the DYEC between Energy Drive and Highway 401 for the relocation/re-alignment of South Service Road. The new South Service Road will be located immediately south of the existing South Service Road and run between Courtice Road and Crago Road. A photograph of South Service Road realignment construction during Q3 is shown in **Figure 3-1**.

On the north side of Highway 401, the highway construction contractor has located a construction camp along Baseline Road about 1.5 km west of the Rundle Road Station. A photograph of construction activities during Q3 2017 just south of Highway 401 and about 1 km south of the Rundle Road Station is presented in **Figure 3-2**. A photograph of the construction area continuing north of Baseline Road is presented in **Figure 3-3**.

Other activities in the vicinity of the monitoring stations that had the potential to affect local air quality included trucks idling while loading and unloading supplies at the WPCP Chemical Building about 50 m north of the Courtice WPCP Station.

During Q3, there were some periods where waste feed to a boiler was halted, and times where the boilers were offline due to either planned or unexpected maintenance. Times when feed stops occurred and when either boiler was offline are summarized in **Table 3-10**.

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Table 3-10 Summary of Boiler Operational Status in Q3 2017

Boiler	Date	Time	Status
Boiler 1	July 31 – August 1	17:08 – 05:20	Boiler Offline
	August 3 – August 5	09:07 – 16:56	Boiler Offline
	August 6	06:17 – 07:33	Feedstop
	August 6 – August 7	12:53 – 14:32	Boiler Offline
	August 13	05:32 – 08:34	Feedstop
	August 13 – August 20	15:59 – 23:34	Boiler Offline
	September 21	14:27 – 15:13	Feedstop
Boiler 2	July 31 – August 2	17:08 – 03:31	Boiler Offline
	August 20 – August 28	16:44 – 17:47	Boiler Offline
	September 21	08:27 – 11:34	Feedstop

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Figure 3-1 Looking South on South Service Road Realignment Construction (July 28, 2017)



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Figure 3-2 View Looking west from Crago Road at Road Dust from Highway 418 Construction Activities South of Highway 401 (July 28, 2017)



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Figure 3-3 View Looking South on Baseline Road at the Highway 418 Construction Area (July 28, 2017)



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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 completed 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 July to September 2017 period are presented in **Table 4-1**.

Table 4-1 Summary of Hourly Meteorological Measurements – July to September 2017

Parameter		Courtice WPCP Station (Predominately Upwind)	Rundle Road Station (Predominately Downwind)	Units
Temperature	Maximum	29.4	29.8	°C
	Minimum	6.1	4.7	°C
	Mean (July)	19.9	19.9	°C
	Mean (August)	18.9	18.7	°C
	Mean (September)	17.4	16.8	°C
	Mean (Period)	18.8	18.5	°C
	Standard Deviation	3.8	4.3	°C
Rainfall	Maximum	15.2	13.2	mm
	Minimum	0.0	0.0	mm
	Mean (July)	0.12	0.12	mm
	Mean (August)	0.09	0.10	mm
	Mean (September)	0.05	0.06	mm
	Mean (Period)	0.09	0.09	mm
	Standard Deviation	0.69	0.71	mm
Relative Humidity	Maximum	95.3	98.7	%
	Minimum	31.4	35.1	%
	Mean (July)	73.8	77.2	%
	Mean (August)	75.7	79.6	%
	Mean (September)	74.6	80.0	%
	Mean (Period)	74.7	78.9	%
	Standard Deviation	12.2	14.5	%

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Table 4-1 Summary of Hourly Meteorological Measurements – July to September 2017

Parameter		Courtice WPCP Station (Predominately Upwind)	Rundle Road Station (Predominately Downwind)	Units
Pressure ^A	Maximum	30.2	-	in Hg
	Minimum	29.3	-	in Hg
	Mean (July)	29.7	-	in Hg
	Mean (August)	29.7	-	in Hg
	Mean (September)	29.7	-	in Hg
	Mean (Period)	29.7	-	in Hg
	Standard Deviation	0.2	-	in Hg
Wind Speed ^B	Maximum	38.8	25.2	km/hr
	Minimum	0.1	0.0	km/hr
	Mean (July)	8.2	7.6	km/hr
	Mean (August)	9.0	7.7	km/hr
	Mean (September)	8.6	6.4	km/hr
	Mean (Period)	8.6	7.2	km/hr
	Standard Deviation	5.2	4.4	km/hr

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.

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

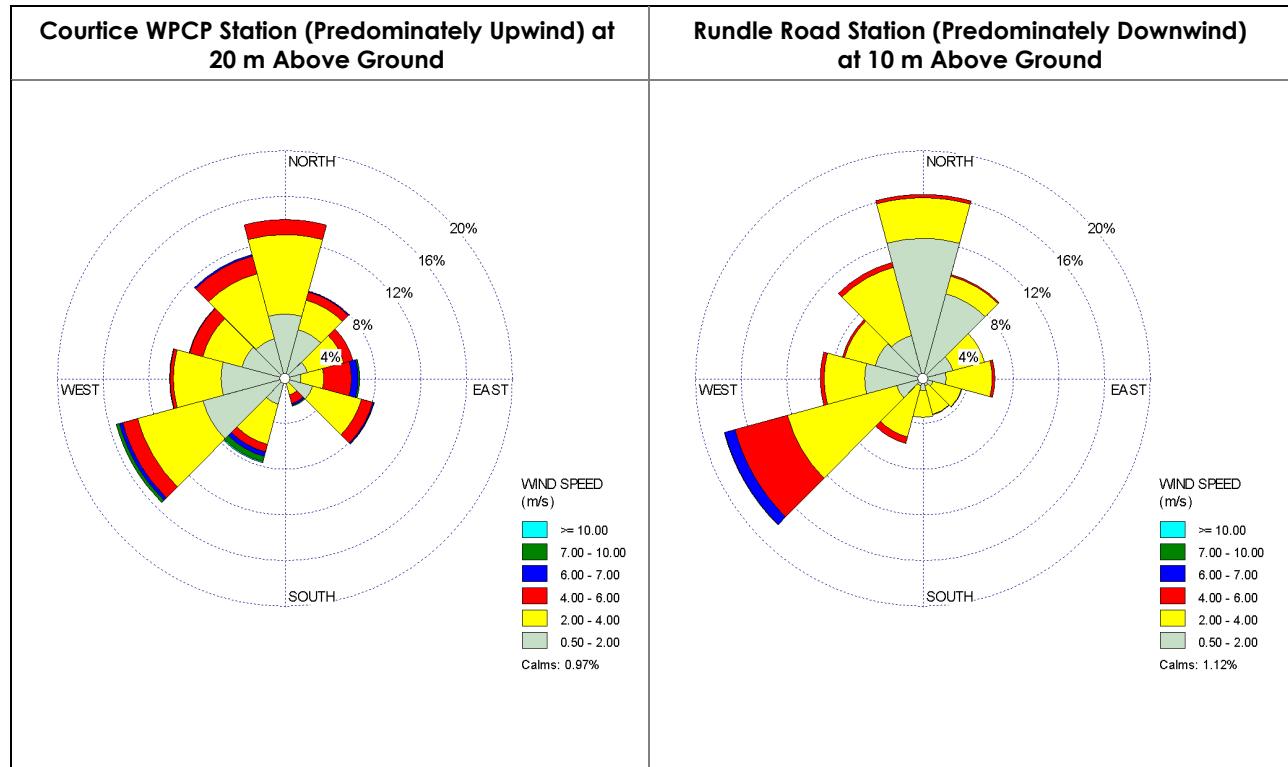
Winds over the three-month period at the Courtice WPCP Station occurred predominantly from southwesterly and northerly directions. Wind contribution from the south was low. Higher wind speeds occurred from southwestern direction.

At the Rundle Road Station, the wind rose over the three-month period shows winds predominantly occurring from west-southwesterly and northerly directions. Higher wind speeds occurred from west-southwesterly direction relative to other directions.

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Figure 4-1 Wind Roses for July to September 2017



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 O. Reg. 419/05 Schedule 3 Standards, Ontario Ambient Air Quality Criteria (AAQC) or health-based criteria for each contaminant. All monitored contaminants were below their applicable criteria during the period July to September 2017.

Nitric oxide (NO) has no regulatory criteria as discussed in Section 4.2.2 below. There are both hourly and daily AAQCs NO₂ which are based on health effects of NO₂; therefore, the AAQC were compared to measured NO₂ concentrations in this report.

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 – July to September 2017

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Criteria			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	95.6	257.7	61.0	159.7
				Minimum	0.0	0.0	0.0	0.0
				Mean (July)	0.7	1.9	0.4	1.1
				Mean (August)	1.4	3.9	0.2	0.5
				Mean (September)	3.9	10.5	0.8	2.1
				Mean (Period)	2.0	5.4	0.5	1.2
				Standard Deviation	4.8	13.1	1.6	4.3
				# of Exceedances	0	0	0	0
	24	100	275	Maximum	18.2	49.0	5.2	13.7
				Minimum	0.0	0.0	0.0	0.0
				Mean (July)	0.7	1.8	0.4	1.0
				Mean (August)	1.4	3.9	0.2	0.5
				Mean (September)	3.8	10.4	0.8	2.1
				Mean (Period)	2.0	5.3	0.5	1.2
				Standard Deviation	2.7	7.2	0.6	1.7
				# of Exceedances	0	0	0	0

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Table 4-2 Summary of Ambient CAC Monitoring Data – July to September 2017

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Criteria			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	-	70.6	-	16.4
				Minimum	-	1.2	-	0.4
				Mean (July)	-	7.7	-	5.8
				Mean (August)	-	10.6	-	6.1
				Mean (September)	-	8.2	-	7.8
				Mean (Period)	-	8.9	-	6.5
				Standard Deviation	-	7.2	-	3.5
				# of Exceedances	-	N/A	-	N/A
NO ₂	1	200	400	Maximum	37.8	71.5	28.9	54.3
				Minimum	0.0	0.0	0.0	0.0
				Mean (July)	4.3	8.2	2.2	4.2
				Mean (August)	4.9	9.4	2.9	5.5
				Mean (September)	7.2	13.9	7.5	14.3
				Mean (Period)	5.4	10.4	4.1	7.9
				Standard Deviation	5.7	11.0	4.4	8.5
				# of Exceedances	0	0	0	0
	24	100	200	Maximum	15.5	29.7	14.0	26.6
				Minimum	0.7	1.2	0.0	0.0
				Mean (July)	4.2	8.0	2.2	4.1
				Mean (August)	5.0	9.5	2.9	5.5

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Table 4-2 Summary of Ambient CAC Monitoring Data – July to September 2017

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Criteria			Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
		(ppb)	(µg/m³)		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
NO ₂ ^b	1	N/A	N/A	Mean (September)	7.2	13.9	7.6	14.5
				Mean (Period)	5.4	10.4	4.2	8.0
				Standard Deviation	3.1	5.9	3.4	6.6
				# of Exceedances	0	0	0	0
				Maximum	53.7	67.6	27.7	34.1
				Minimum	0.0	0.0	0.0	0.0
				Mean (July)	2.3	2.9	1.4	1.7
				Mean (August)	2.9	3.6	1.6	2.0
NO ₂ ^b	24	N/A	N/A	Mean (September)	3.7	4.7	2.6	3.3
				Mean (Period)	3.0	3.7	1.9	2.3
				Standard Deviation	5.6	7.0	2.3	2.9
				# of Exceedances	N/A	N/A	N/A	N/A
				Maximum	12.0	15.2	5.5	6.8
				Minimum	0.0	0.0	0.2	0.2
				Mean (July)	2.3	2.8	1.4	1.7
				Mean (August)	2.9	3.6	1.6	2.0

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Table 4-2 Summary of Ambient CAC Monitoring Data – July to September 2017

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Criteria			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	N/A	N/A	Maximum	79.7	154.0	56.7	106.7
				Minimum	0.0	0.0	0.0	0.0
				Mean (July)	6.7	12.8	3.5	6.7
				Mean (August)	7.8	14.9	4.4	8.5
				Mean (September)	10.9	21.1	10.1	19.4
				Mean (Period)	8.4	16.2	6.0	11.4
				Standard Deviation	10.2	19.7	6.2	11.8
				# of Exceedances	N/A	N/A	N/A	N/A
	24	N/A	N/A	Maximum	26.2	50.2	18.7	35.8
				Minimum	0.6	1.2	0.0	0.1
				Mean (July)	6.5	12.4	3.5	6.6
				Mean (August)	7.9	15.1	4.4	8.5
				Mean (September)	10.9	21.1	10.2	19.7
				Mean (Period)	8.4	16.2	6.0	11.5
				Standard Deviation	5.2	10.0	4.4	8.5
				# of Exceedances	N/A	N/A	N/A	N/A

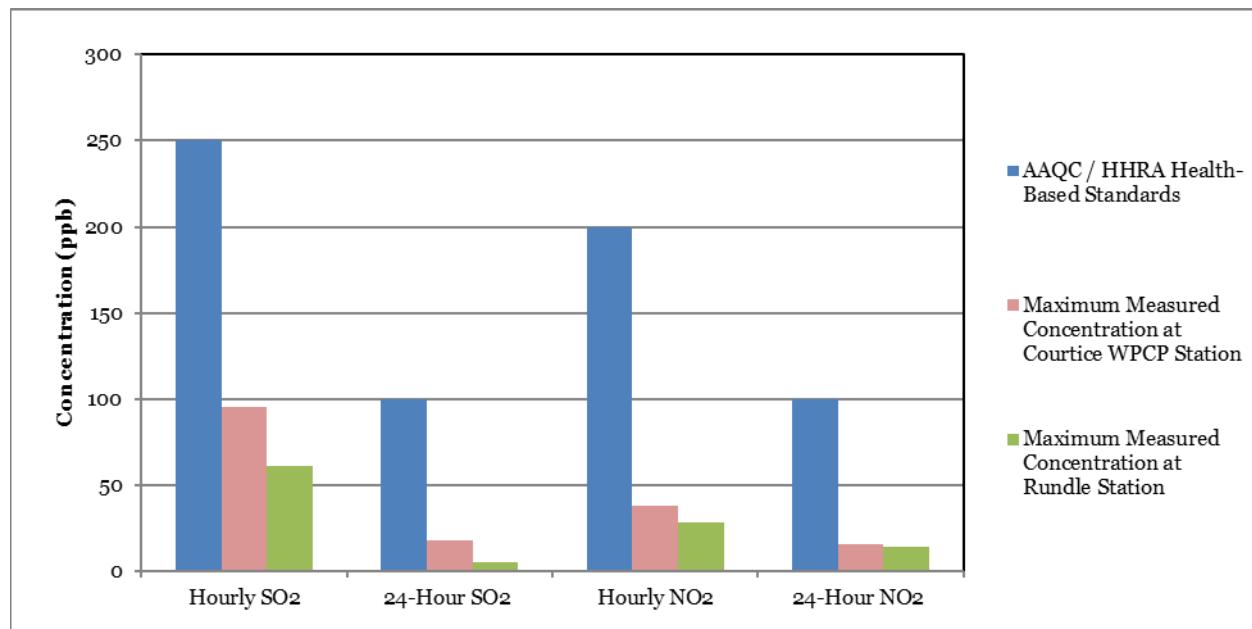
A. Canadian Ambient Air Quality Standard for Respirable Particulate Matter. The Respirable Particulate Matter Objective is referenced to the 98th percentile over 3 consecutive years.

B. NO has no regulatory criteria.

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Figure 4-2 Comparison of NO₂ 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 B** 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 250 ppb and 100 ppb (690 µg/m³ and 275 µg/m³) 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 Ontario AAQCs.

The maximum hourly and 24-hour average SO₂ concentrations measured at the Courtice WPCP Station during July to September 2017 were 95.6 and 18.2 ppb (257 and 49.0 µg/m³) respectively, which are 38.2% and 18.2% of the applicable 1-hour and 24-hour Ontario AAQCs. The maximum hourly and 24-hour average SO₂ concentrations measured at the Rundle Road Station during this quarter were 61.0 and 5.2 ppb (160 and 13.7 µg/m³) respectively, which are 24.4% and 5.2% of the applicable 1-hour and 24-hour Ontario AAQCs.

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 hourly average contaminant concentrations versus measured wind direction (over 10° wind sectors). Concentrations less than 5 µg/m³, which account for 76% of the measurements at the Courtice WPCP and 96% at the Rundle Road Station, have been removed from the plot to allow

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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 the north-northeastern directions. For the Rundle Road Station, higher hourly concentrations occurred for east-southeasterly and southwesterly winds.

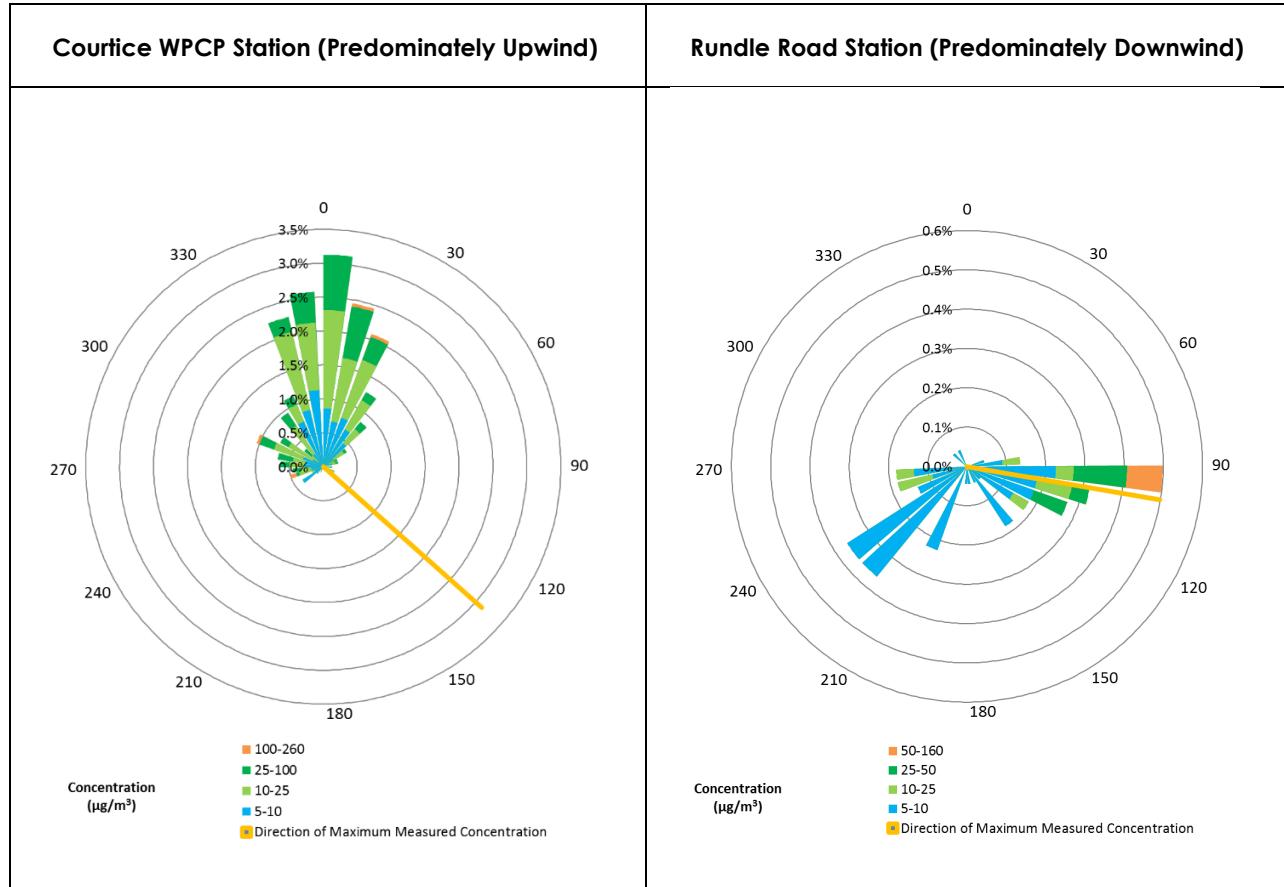
The maximum hourly SO₂ concentration measured at the Courtice WPCP was 95.6 ppb (257.7 µg/m³) and occurred on September 11, 2017 at 18:00. During this time, winds were blowing from the southeast for which the Courtice WPCP is upwind. The maximum hourly SO₂ concentration measured at the Rundle Road Station occurred on September 13, 2017 at 12:00, measuring 61.0 ppb (160 µg/m³). During this time, winds occurred for an east-southeasterly wind for which a CP railroad, Highway 401 and the St. Mary's Cement plant were upwind.

The maximum 24-hour average SO₂ concentrations at the Courtice WPCP and Rundle Road Stations were 18.2 and 5.2 ppb (49.0 and 13.7 µg/m³) and occurred on September 13, 2017 and September 14, 2017 respectively. The wind directions during the 24-hour measurements at the Courtice WPCP and Rundle Road Stations were both from the northeast. The Courtice WPCP, and St. Mary's Cement were upwind of the Courtice WPCP Station, while for the Rundle Road Station measurement, a CP railroad and local roads were generally upwind of the station for this wind direction.

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Figure 4-3 Pollution Roses of Measured Hourly Average SO₂ Concentrations – July to September 2017



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. However, as per the current (December 2016) version of the ACB List, 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 C** 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

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and 24-hour averages, the Ontario AAQCs of 200 ppb and 100 ppb ($400 \mu\text{g}/\text{m}^3$ and $200 \mu\text{g}/\text{m}^3$) are shown with blue lines on the respective plot. As shown in these figures, measured ambient NO₂ concentrations at both stations were well below the Ontario AAQCs.

The maximum hourly and 24-hour average NO₂ concentrations measured at the Courtice WPCP Station during this quarter were 37.8 and 15.5 ppb ($71.5 \mu\text{g}/\text{m}^3$ and $29.7 \mu\text{g}/\text{m}^3$) respectively, which are 19.0% and 15.5% of the applicable 1-hour and 24-hour Ontario AAQCs. At the Rundle Road Station, the maximum measured hourly and 24-hour average concentrations were 28.9 and 14.0 ppb ($54.3 \mu\text{g}/\text{m}^3$ and $26.6 \mu\text{g}/\text{m}^3$), which are 14.0% and 14.0% of the applicable 1-hour and 24-hour Ontario AAQCs.

Pollution roses of measured hourly average NO₂ concentrations are presented in **Figure 4-4**. To more clearly show the distribution of maximum levels in the figures, concentrations less than $10 \mu\text{g}/\text{m}^3$, which account for 63% of the measurements at the Courtice WPCP Station and 64% at the Rundle Road Station, have been removed from the plots. The measured hourly average concentrations at the Courtice WPCP Station were higher for winds from northeasterly directions. For the Rundle Road Station, higher measured hourly average concentrations occurred for winds blowing from the southwest and from the east.

The maximum measured hourly average NO₂ concentration at the Courtice WPCP was 37.8 ppb ($71.5 \mu\text{g}/\text{m}^3$) on September 24, 2017 at 20:00. During this hour, the wind at the Courtice WPCP Station was blowing from the northwest, for which Highway 401 and the CN Railroad were upwind. The measured hourly average NO₂ concentration at the MOECC Oshawa Station in the same hour was 6 ppb which is lower than that at the Courtice WPCP Station, suggesting the elevated hourly average concentration was due to local emissions sources.

The maximum measured hourly average NO₂ concentration at the Rundle Road Station was 28.9 ppb ($54.3 \mu\text{g}/\text{m}^3$) on September 13, 2017 at 12:00, at which time winds were blowing from the east-southeast. A CP railroad, Highway 401 and Highway 418 construction areas were upwind of the Rundle Road Station for this direction. At the same time, the measured NO₂ concentration at the MOECC Oshawa Station was 20 ppb, which is similar to the Rundle Station and suggests that the elevated Rundle Road Station measurement was due to distant emission sources.

The maximum measured 24-hour average NO₂ concentration at the Courtice WPCP Station of 15.5 ppb ($29.7 \mu\text{g}/\text{m}^3$) occurred on September 15, 2017. The wind direction during this measurement was from the west for which Highway 401 and local businesses were upwind. The measured 24-hour NO₂ concentration at the MOECC Oshawa Station for the same day was 8.2 ppb which is lower than that at the Courtice WPCP Station, suggesting the elevated hourly concentration was due to local emission sources.

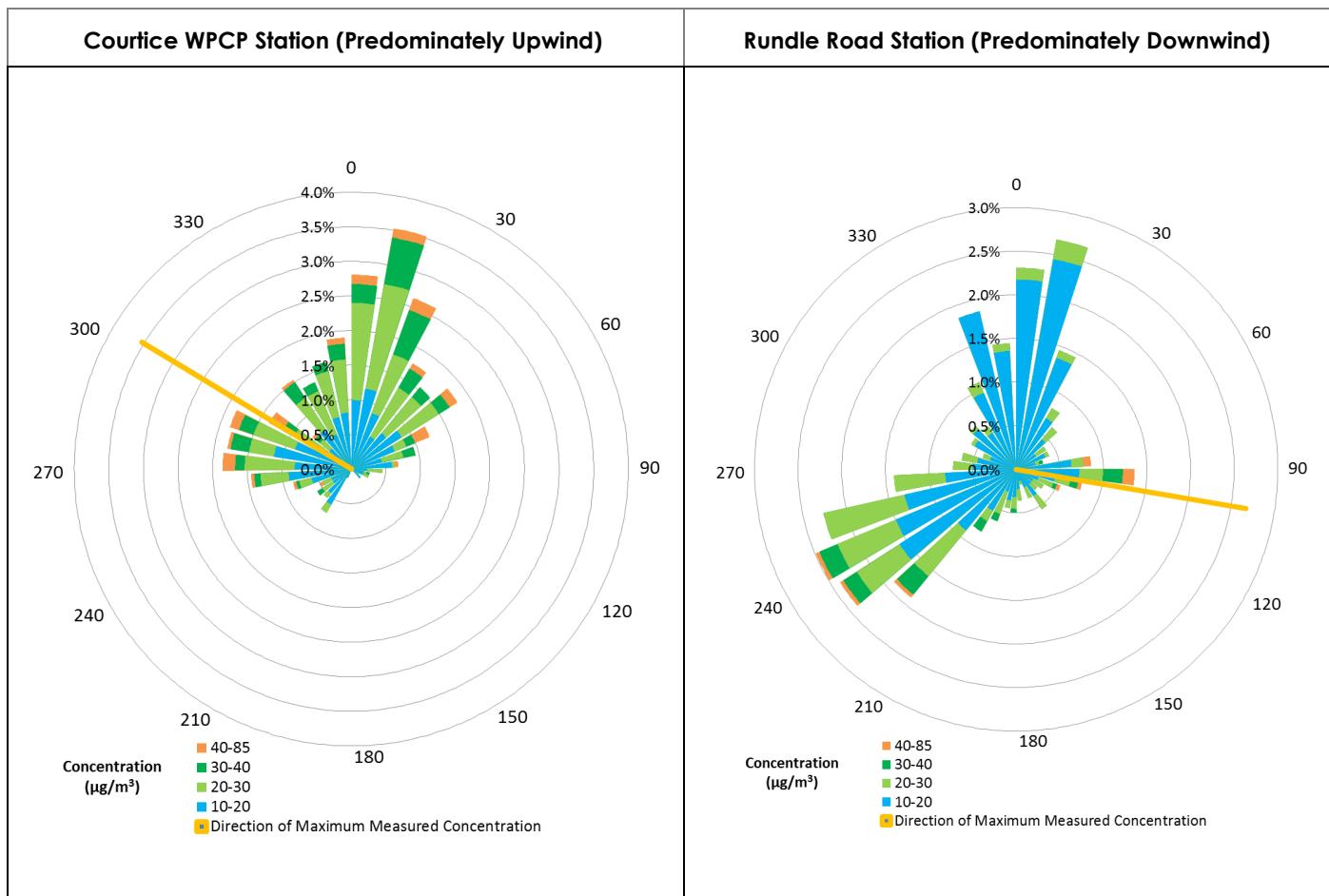
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The maximum measured 24-hour average NO₂ concentration of 14.0 ppb (26.6 µg/m³) at the Rundle Road Station occurred on September 15, 2017. Winds were from the southwest for which the DYEC, a CP railroad, Highway 401 and Highway 418 construction activities are upwind. The measured 24-hour average NO₂ concentration at the MOECC Oshawa Station for the same day was 9.6 ppb which is lower to that measured at the Rundle Road Station, suggesting the elevated 24-hour concentration was due to local emission sources.

The maximum measured hourly and 24-hour average NO₂ concentrations of 27 ppb and 14 ppb respectively at the MOECC Oshawa Station during this quarter were comparable to the maximum levels measured at the Courtice WPCP and Rundle Road Stations.

Figure 4-4 Pollution Roses of Measured Hourly Average NO₂ Concentrations – July to September 2017



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4.2.3 Nitrogen Oxides (NOx)

Data summaries are presented in **Appendix D** for nitrogen oxides for each station and month as well as time history plots of the hourly and 24-hour average NOx concentrations.

As shown in **Table 4-2**, the maximum hourly average NOx concentration measured at the Courtice WPCP Station was 79.7 ppb (154 $\mu\text{g}/\text{m}^3$) and the maximum 24-hour average NOx concentration measured was 26.2 ppb (50.2 $\mu\text{g}/\text{m}^3$). At the Rundle Road Station, the maximum hourly and 24-hour average concentrations measured during this quarter were 56.7 and 18.7 ppb (106.77 and 35.8 $\mu\text{g}/\text{m}^3$).

Pollution roses of measured hourly average NOx concentrations for the Courtice WPCP Station and the Rundle Road Station are presented in **Figure 4-5**. Concentrations less than 25 $\mu\text{g}/\text{m}^3$, which account for 78% and 88% of the measurements at the Courtice WPCP and Rundle Road Stations, respectively, have been removed from the plots to allow the distribution of maximum levels to be more clearly shown in the figures. Higher measured hourly average NOx concentrations at the Courtice WPCP Station occurred for winds blowing from north-northeasterly directions. At the Rundle Road Station, higher measured hourly average concentrations occurred for southwesterly and easterly wind directions.

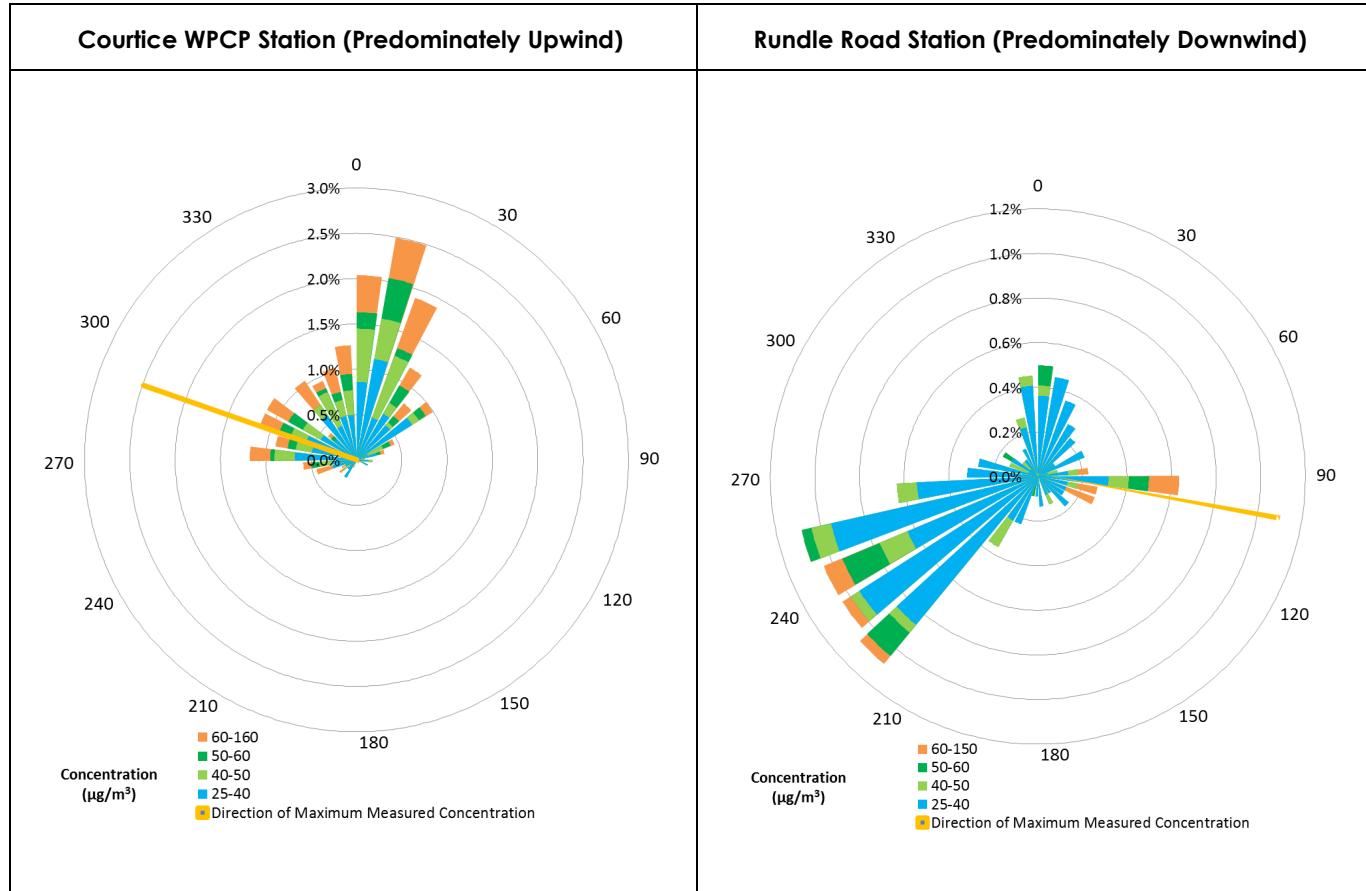
The maximum measured hourly average NOx concentrations at the Courtice WPCP and Rundle Road Stations were 79.7 and 56.7 ppb (154 and 106.7 $\mu\text{g}/\text{m}^3$) and occurred on September 15, 2017 at 6:00 and September 13, 2017 at 12:00, respectively. Winds at the Courtice WPCP Station during the measurement were blowing from the west-northwest for which agricultural lands, a CN railroad and Highway 401 were upwind. Winds at the Rundle Road Station were from the east-southeast for which Highway 401 local roads, and agricultural activities were upwind.

The maximum measured 24-hour average NOx concentrations at the Courtice WPCP and Rundle Road Stations of 26.2 and 18.7 ppb (50.2 and 35.8 $\mu\text{g}/\text{m}^3$) were both observed on September 15 and September 14, 2017, respectively. Wind at the Courtice WPCP were from the west, to which local roads and Highway 401 were upwind. Winds at the Rundle Road Station were from the northeast during the period, to which a CN Railroad and local roads were upwind.

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Figure 4-5 Pollution Roses of Measured Hourly Average NO_x Concentrations – July to September 2017



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 E** for PM_{2.5} for the Courtice WPCP and Rundle Road Stations. The maximum measured 24-hour average PM_{2.5} concentrations at the Courtice WPCP and the Rundle Road Stations were 70.6 $\mu\text{g}/\text{m}^3$ and 16.4 $\mu\text{g}/\text{m}^3$ 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 calendar years to be greater than 28 $\mu\text{g}/\text{m}^3$ (CAAQS) or 30 $\mu\text{g}/\text{m}^3$ (HHRA criteria) 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 2017 annual report, at which time sufficient data will have been collected to make 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 $\mu\text{g}/\text{m}^3$,

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which account for 64% of the measurements at the Courtice WPCP Station and 81% 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. Higher measured 24-hour average concentrations occurred for westerly and northeasterly winds for both stations.

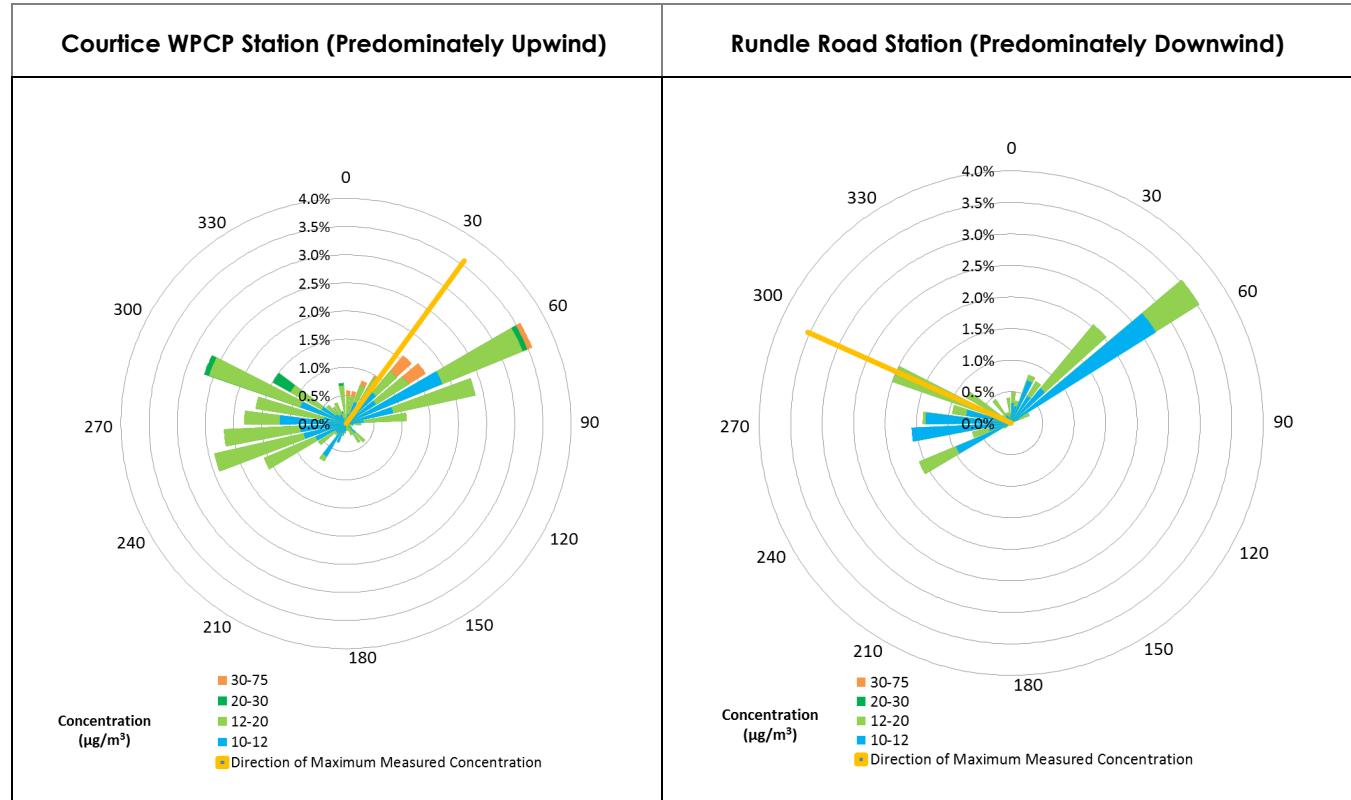
The maximum measured 24-hour average PM_{2.5} concentrations at the Courtice WPCP and Rundle Road Stations occurred on August 27, 2017 and September 24, 2017 measuring 70.6 and 16.4 µg/m³ respectively. The maximum measured concentration at the Courtice WPCP Station occurred when winds were blowing from the northeast. The likely source of the elevated concentration was from a fire at the Waste Management transfer facility north of Highway 401 that occurred on the same day. Based on the DYEC's operational records, the opacity measured by the continuous emission monitors on each boiler during this period was 0%. The maximum measured concentration at the Rundle Road Station occurred when winds were from the northwest for which local roads, Highway 418 construction and agricultural fields are upwind. The MOECC Oshawa Station measured a 24-hour average concentration of 4.5 µg/m³ on the same day suggesting the Rundle Road Station was influenced by local emission sources.

The maximum measured 24-hour average PM_{2.5} concentration at the MOECC Oshawa Station during Q3 was 15.1 µg/m³, which is comparable to the maximum measurements at both stations during this quarter.

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Figure 4-6 Pollution Roses of Measured 24-Hour Average PM_{2.5} Concentrations – July to September 2017



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 G**.

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. A summary of the wind direction and potential source contributions for this measurement is presented in **Table 4-4**.

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

Contaminant	Units	MOECC Standard	HHRA Health Based Criteria	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	55.8	12.3	0	91.1	17.2	0	86.1	14.9	0
Total Mercury (Hg)	µg/m³	2	2	3.09E-05 A	5.99E-06 A	0	1.86E-05 A	6.16E-06	0	7.41E-05 A	5.79E-06 A	0
Aluminum (Al)	µg/m³	4.8	-	3.45E-01	3.34E-02	0	3.91E-01	4.30E-02	0	5.83E-01	4.46E-02	0
Antimony (Sb)	µg/m³	25	25	3.25E-03 A	2.99E-03 A	0	3.36E-03 A	3.08E-03 A	0	3.17E-03 A	2.89E-03 A	0
Arsenic (As)	µg/m³	0.3	0.3	4.14E-03 A	1.80E-03 A	0	2.02E-03 A	1.85E-03 A	0	1.90E-03 A	1.73E-03 A	0
Barium (Ba)	µg/m³	10	10	2.05E-02	4.13E-03	0	2.06E-02	3.17E-03	0	2.76E-02	3.36E-03	0
Beryllium (Be)	µg/m³	0.01	0.01	3.25E-04 A	2.99E-04 A	0	3.36E-04 A	3.08E-04 A	0	3.17E-04 A	2.89E-04 A	0
Bismuth (Bi)	µg/m³	-	-	1.95E-03 A	1.80E-03 A	-	2.02E-03 A	1.85E-03 A	-	1.90E-03 A	1.73E-03 A	-
Boron (B)	µg/m³	120	-	4.51E-03 A	1.80E-03 A	0	4.92E-03 A	1.85E-03 A	0	4.91E-03 A	1.73E-03 A	0
Cadmium (Cd)	µg/m³	0.025	0.025	6.49E-04 A	5.99E-04 A	0	6.72E-04 A	6.16E-04 A	0	6.34E-04 A	5.78E-04 A	0
Chromium (Cr)	µg/m³	0.5	-	1.03E-02 A	1.50E-03 A	0	4.66E-03 A	1.54E-03 A	0	7.67E-02	1.44E-03	0
Cobalt (Co)	µg/m³	0.1	0.1	6.49E-04 A	5.99E-04 A	0	6.72E-04 A	6.16E-04 A	0	6.34E-04 A	5.78E-04 A	0
Copper (Cu)	µg/m³	50	-	9.85E-02	1.62E-02	0	2.29E-01	2.21E-02	0	1.02E-01	1.15E-02	0
Iron (Fe)	µg/m³	4	-	1.01E+00	1.51E-01	0	9.07E-01	1.35E-01	0	1.66E+00	1.36E-01	0
Lead (Pb)	µg/m³	0.5	0.5	7.46E-03	9.39E-04	0	5.18E-03	9.23E-04	0	7.78E-03 A	8.69E-04 A	0
Magnesium (Mg)	µg/m³	-	-	5.43E-01	5.46E-02	-	6.83E-01	7.83E-02	-	1.07E+00	9.21E-02	-
Manganese (Mn)	µg/m³	0.4	-	5.25E-02	4.51E-03	0	3.47E-02	4.81E-03	0	9.69E-02	6.42E-03	0
Molybdenum (Mo)	µg/m³	120	-	3.15E-03	8.98E-04 A	0	3.13E-02	9.28E-04	0	3.43E-03 A	8.67E-04 A	0
Nickel (Ni)	µg/m³	0.2	-	1.97E-03 A	8.98E-04 A	0	1.01E-03 A	9.23E-04 A	0	3.23E-03 A	8.67E-04 A	0
Phosphorus (P)	µg/m³	-	-	5.34E-02	8.02E-03	-	6.18E-02	1.84E-02	-	7.66E-02	1.65E-02	-
Selenium (Se)	µg/m³	10	10	3.25E-03 A	2.99E-03 A	0	3.36E-03 A	3.08E-03 A	0	3.17E-03 A	2.89E-03 A	0
Silver (Ag)	µg/m³	1	1	1.62E-03 A	1.50E-03 A	0	1.68E-03 A	1.54E-03 A	0	1.59E-03 A	1.44E-03 A	0
Strontium (Sr)	µg/m³	120	-	1.38E-02	1.28E-03	0	2.61E-02	1.60E-03	0	2.60E-02	1.65E-03	0
Thallium (Tl)	µg/m³	-	-	3.25E-03 A	2.99E-03 A	-	3.36E-03 A	3.08E-03 A	-	3.17E-03 A	2.89E-03 A	-
Tin (Sn)	µg/m³	10	10	3.25E-03 A	2.99E-03 A	0	3.36E-03 A	3.08E-03 A	0	3.17E-03 A	2.89E-03 A	0
Titanium (Ti)	µg/m³	120	-	2.08E-02 A	2.99E-03	0	2.46E-02	3.17E-03 A	0	3.35E-02	2.90E-03 A	0
Vanadium (V)	µg/m³	2	1	1.62E-03 A	1.50E-03 A	0	1.68E-03 A	1.54E-03 A	0	1.59E-03 A	1.44E-03 A	0
Zinc (Zn)	µg/m³	120	-	5.25E-02	1.05E-02	0	7.67E-02	1.23E-02	0	6.89E-02	1.31E-02	0
Zirconium (Zr)	µg/m³	20	-	1.62E-03 A	1.50E-03 A	0	1.68E-03 A	1.54E-03 A	0	1.59E-03 A	1.44E-03 A	0
Total Uranium (U)	µg/m³	1.5	-	1.46E-04 A	1.35E-04 A	0	1.51E-04 A	1.39E-04 A	0	1.43E-04 A	1.30E-04 A	0

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

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Summary of Ambient Measurements
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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 4-5**. 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 H**.

The maximum measured concentrations of the PAHs with MOECC AAQCs were below their applicable 24-hour criteria, with the exception of benzo(a)pyrene (B(a)P) measurements collected at both stations on September 16, 2017.

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% - 6,220% 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% - 2,920% of the Ontario AAQCs. 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 samples collected at the Courtice WPCP Station and Rundle Station on September 16, 2017 exceeded the Ontario AAQC by 63% and 125% respectively. The B(a)P samples were however, well below the MOECC Schedule 6 Upper Risk Threshold, the MOECC O. Reg. 419/05 24-hour average guideline, and the HHRA health based criterion. Summaries of the wind direction and potential source contributions for these measurements are 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.

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

Contaminant	Units	MOECC Standards	HHRA Health Based Criteria	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	8.14E-02	1.24E-02 F	1 0 0	1.13E-02	1.15E-02 F	1 0 0
1-Methylnaphthalene	ng/m ³	12,000	-	1.97E+01	3.44E+00	0	2.94E+01	3.09E+00	0
2-Methylnaphthalene	ng/m ³	10,000	-	3.35E+01	5.91E+00	0	6.92E+01	5.60E+00	0
Acenaphthene	ng/m ³	-	-	1.70E+01	1.91E+00	-	4.41E+01	1.93E+00	-
Acenaphthylene	ng/m ³	3,500	-	7.63E-01	7.06E-02 F	0	7.18E-01	7.28E-02 F	0
Anthracene	ng/m ³	200	-	6.02E-01	9.89E-02 F	0	3.11E+00	1.15E-01 F	0
Benzo(a)anthracene	ng/m ³	-	-	1.10E-01 F	7.06E-02	-	1.15E-01 F	7.06E-02 F	-
Benzo(a)fluorene	ng/m ³	-	-	2.20E-01 F	1.41E-01 F	-	3.95E-01	1.46E-01 F	-
Benzo(b)fluoranthene	ng/m ³	-	-	1.10E-01 F	7.06E-02 F	-	1.15E-01 F	7.06E-02 F	-
Benzo(b)fluorene	ng/m ³	-	-	2.20E-01 F	1.41E-01 F	-	2.29E-01 F	1.41E-01 F	-
Benzo(e)pyrene	ng/m ³	-	-	2.20E-01 F	1.41E-01 F	-	2.29E-01 F	1.41E-01 F	-
Benzo(g,h,i)perylene	ng/m ³	-	-	1.10E-01 F	7.06E-02 F	-	1.15E-01 F	7.06E-02 F	-
Benzo(k)fluoranthene	ng/m ³	-	-	1.10E-01 F	7.06E-02 F	-	1.15E-01 F	7.06E-02 F	-
Biphenyl	ng/m ³	-	-	9.67E+00	1.49E+00	-	1.42E+01	9.48E-01	-
Chrysene	ng/m ³	-	-	1.10E-01 F	7.06E-02 F	-	1.15E-01 F	7.06E-02 F	-
Dibenz(a,h)anthracene ^D	ng/m ³	-	-	1.10E-01 F	7.06E-02 F	-	1.15E-01 F	7.06E-02 F	-
Dibenzo(a,c) anthracene + Picene ^D	ng/m ³	-	-	2.20E-01 F	1.41E-01 F	-	2.23E-01 F	1.37E-01 F	-
Fluoranthene	ng/m ³	-	-	2.64E+00	5.34E-01	-	1.39E+01	4.22E-01	-

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

Contaminant	Units	MOECC Standards	HHRA Health Based Criteria	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	7.06E-02 ^F	-	1.15E-01 ^F	7.06E-02 ^F	-
Naphthalene	ng/m ³	22,500	22,500	9.22E+01	1.60E+01	0	8.54E+01	1.05E+01	0
o-Terphenyl	ng/m ³	-	-	2.20E-01 ^F	1.41E-01 ^F	-	2.29E-01 ^F	1.41E-01 ^F	-
Perylene	ng/m ³	-	-	2.20E-01 ^F	1.41E-01 ^F	-	2.29E-01 ^F	1.41E-01 ^F	-
Phenanthrene	ng/m ³	-	-	1.64E+01	2.81E+00	-	6.98E+01	2.24E+00	-
Pyrene	ng/m ³	-	-	1.16E+00	1.08E-01 ^F	-	5.59E+00	1.15E-01 ^F	-
Tetralin	ng/m ³	-	-	4.88E+00	9.60E-01	-	3.84E+00	9.61E-01	-
Total PAH ^E	ng/m ³	-	-	1.97E+01	3.44E+00	-	3.09E+02	2.91E+01	-

- 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. 419/05 Schedule 6 Upper Risk Thresholds.
- C. O. Reg. 419/05 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 analyzed PAH species.
- F. Measured concentration was less than the laboratory method detection limit.

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Table 4-5 Source Contribution Analysis – Quarter 3 2017 B(a)P Exceedances

Date	Station	% above the MOECC B(a)P Criterion	Wind Direction (blowing from)	Potential Source Contributions
16-Sep-17	Courtice WPCP	63%	Northeast	Highway 401, local roads, the CN railroad and DYEC are located upwind of the Courtice WPCP Station, as are agricultural and rural residential areas farther north. Potential sources could be vehicle or locomotive exhaust emissions, or agricultural activities
	Rundle Road	125%	North	Land use in this direction is mainly agricultural with some residences. Potential sources could be agricultural activities, a residence with a poorly controlled combustion source operating, or vehicle exhaust.

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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 I**.

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

On July 18, 2017, the measured dioxin and furan concentration measured at the Crago Road Station (which is not part of the MOECC approved monitoring network) was equal to the MOECC criteria (Stantec, 2017) and the measured concentrations at the Rundle Road and the Courtice WPCP Stations were also elevated relative to levels measured in the first six months of the year. At the request of the Region, additional sampling (supplementary to the MOECC dioxin and furan sampling schedule) was carried out on August 23, 2017 for all three monitoring stations. The results of the supplementary August 23 sampling were consistent with measurements made prior to and after the July 18th measurements. The additional August 23rd sample results are included in **Appendix I** and reflected in the results and analysis presented in **Table 4-6**.

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

Contaminant	Units	MOECC Standards	HHRA Health Based Criteria	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	-	-	4.47E-03 A	4.22E-03 A	N/A	4.69E-03 A	3.84E-03	N/A
1,2,3,7,8-Penta CDD	pg/m ³			7.12E-03 A	4.45E-03		8.38E-03 A	4.11E-03	
1,2,3,4,7,8-Hexa CDD	pg/m ³			2.93E-02 A	4.70E-03		3.72E-02 A	4.39E-03	
1,2,3,6,7,8-Hexa CDD	pg/m ³			6.46E-02 A	4.70E-03		8.24E-02 A	4.25E-03	
1,2,3,7,8,9-Hexa CDD	pg/m ³			1.17E-01 A	4.30E-03		1.47E-01 A	3.84E-03	
1,2,3,4,6,7,8-Hepta CDD	pg/m ³			1.35E+00 A	4.73E-03		1.67E+00	1.37E-02	
Octa CDD	pg/m ³			4.85E+00	2.41E-02		7.87E+00	3.59E-02	
Total Tetra CDD	pg/m ³			2.42E-02 A	4.22E-03 A		3.58E-02 A	4.60E-03	
Total Penta CDD	pg/m ³			2.72E-02 A	4.45E-03		5.91E-02 A	4.11E-03	
Total Hexa CDD	pg/m ³			6.09E-01 A	4.73E-03		7.76E-01 A	4.25E-03	
Total Hepta CDD	pg/m ³			2.47E+00 A	4.73E-03		3.15E+00	1.37E-02	
2,3,7,8-Tetra CDF **	pg/m ³			1.15E-02	4.30E-03		1.05E-02 A	4.25E-03	
1,2,3,7,8-Penta CDF	pg/m ³			4.61E-03 A	4.48E-03 A		4.97E-03 A	4.11E-03	
2,3,4,7,8-Penta CDF	pg/m ³			4.75E-03 A	4.48E-03 A		4.97E-03 A	4.11E-03	
1,2,3,4,7,8-Hexa CDF	pg/m ³			4.73E-03	4.48E-03 A		1.19E-02 A	3.84E-03	
1,2,3,6,7,8-Hexa CDF	pg/m ³			4.47E-03 A	4.26E-03		4.55E-03 A	3.70E-03	
2,3,4,6,7,8-Hexa CDF	pg/m ³			4.75E-03 A	4.55E-03		4.69E-03 A	3.98E-03	
1,2,3,7,8,9-Hexa CDF	pg/m ³			1.23E-02	4.75E-03 A		1.07E-02	4.25E-03	
1,2,3,4,6,7,8-Hepta CDF	pg/m ³			4.51E-02 A	3.87E-03		5.88E-02 A	3.70E-03	
1,2,3,4,7,8,9-Hepta CDF	pg/m ³			1.15E-02	4.48E-03 A		5.42E-03 A	4.60E-03	
Octa CDF	pg/m ³			7.12E-02 A	4.59E-03		1.11E-01 A	3.98E-03	
Total Tetra CDF	pg/m ³			1.15E-02	4.30E-03		6.99E-02	4.54E-03	
Total Penta CDF	pg/m ³			5.93E-03 A	4.55E-03		1.26E-02 A	4.45E-03	
Total Hexa CDF	pg/m ³			1.71E-02 A	4.73E-03		3.44E-02 A	3.98E-03	
Total Hepta CDF	pg/m ³			1.11E-01 A	4.45E-03		1.35E-01 A	4.25E-03	
TOTAL TOXIC EQUIVALENCY ^B	pg TEQ/m ³	0.1 1 C	-	5.15E-02	1.41E-02	0	6.47E-02	1.28E-02	0

- 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. 419/05 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. O. Reg. 419/05 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 – JULY TO SEPTEMBER 2017

Conclusions
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5.0 CONCLUSIONS

This quarterly report provides a summary of the ambient air quality data collected at the three monitoring stations located predominantly upwind and downwind in the vicinity of the DYEC for the period July to September 2017.

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 evaluation criteria or human health risk assessment (HHRA) health-based criteria 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 Standards, were below their applicable Standards (as presented in **Table 2-3** in this report).
4. The maximum measured concentrations of PAHs with MOECC air quality Standards were well below their applicable criteria shown in **Table 2-4**, with the exception of 24-hour benzo(a)pyrene (B(a)P) concentrations measured on September 16, 2017 at both the Courtice WPCP Station and Rundle Road Station. Measured concentrations of B(a)P exceeded the applicable Ontario Ambient Air Quality Criteria (AAQC) by 63% and 125% at the Courtice WPCP Station and Rundle Road Station, respectively. The current Ontario 24-hour B(a)P AAQC was introduced in 2011 and levels above this AAQC are commonly measured throughout Ontario. The measurements were however, well below the MOECC Schedule 6 Upper Risk Threshold, the MOECC O. Reg. 419/05 24-hour average guideline, and the HHRA health based criterion.
5. The maximum measured toxic equivalent dioxin and furan concentration was below the applicable Standard presented in **Table 2-4**.

In summary, the measured concentrations of the air contaminants monitored were below their applicable MOECC Standards during the July to September 2017 monitoring period, with the exception of benzo(a)pyrene. Furthermore, all measured levels of the monitored contaminants were below their applicable HHRA health-based criteria.

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References
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6.0 REFERENCES

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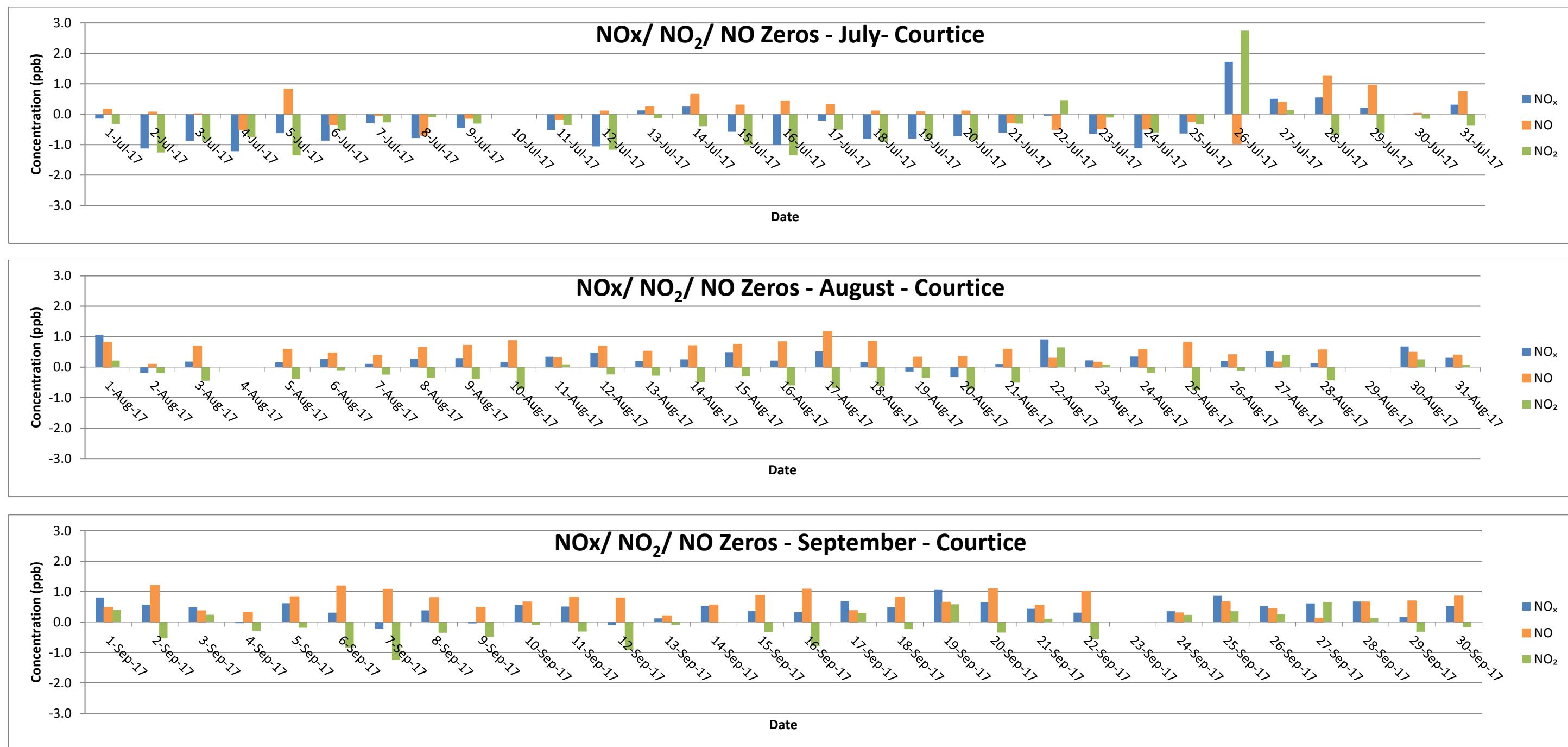
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Appendix A SO₂ and NO_x Instrument Daily Internal Zero Calibration Summaries
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**Appendix A SO₂ AND NO_x INSTRUMENT DAILY INTERNAL
ZERO CALIBRATION SUMMARIES**

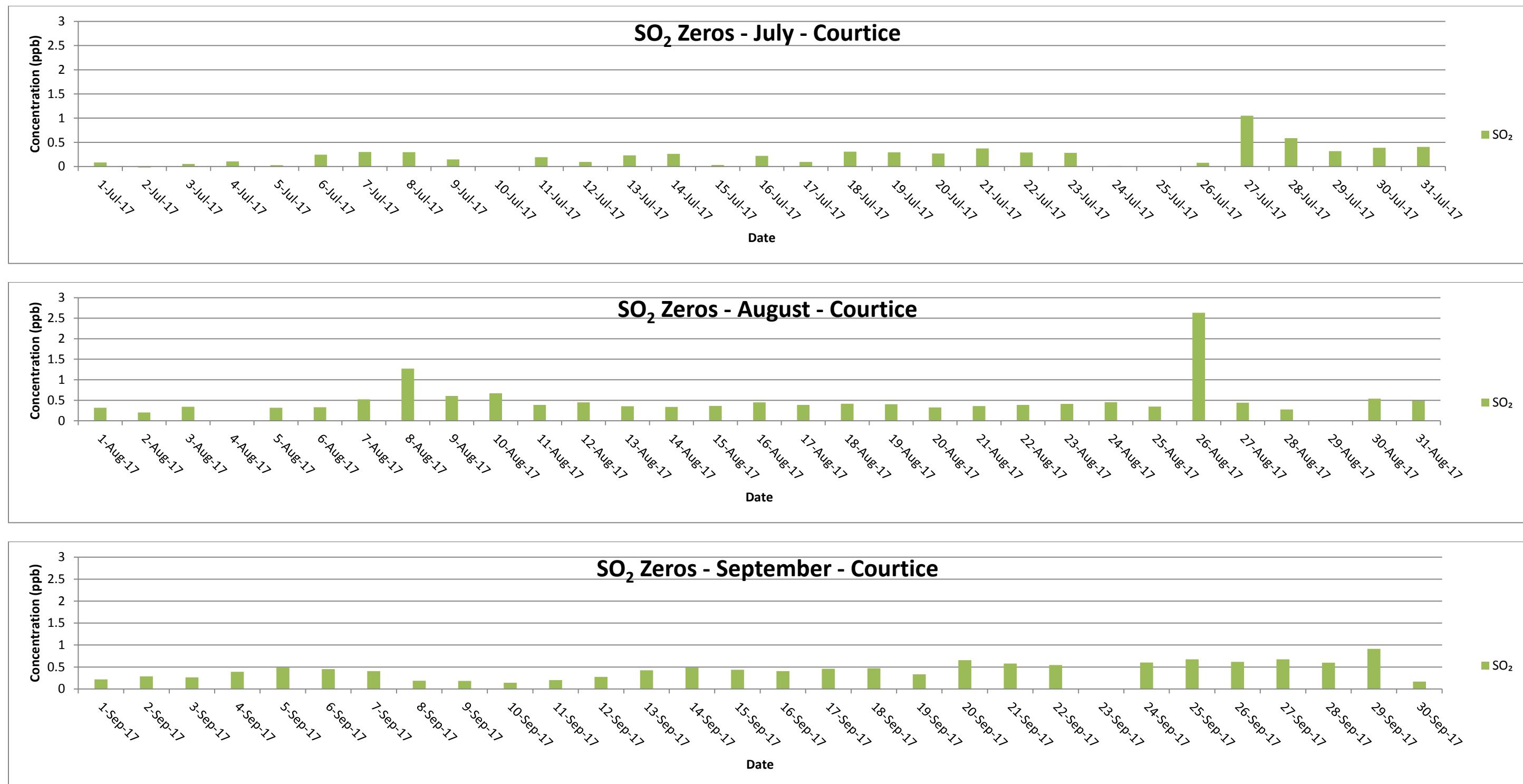
Figure A-1 Daily NOx/ NO₂/ NO Internal Zero Calibrations – Courtice WPCP Station



Notes:

- Auto-calibrations occur every 25 hours

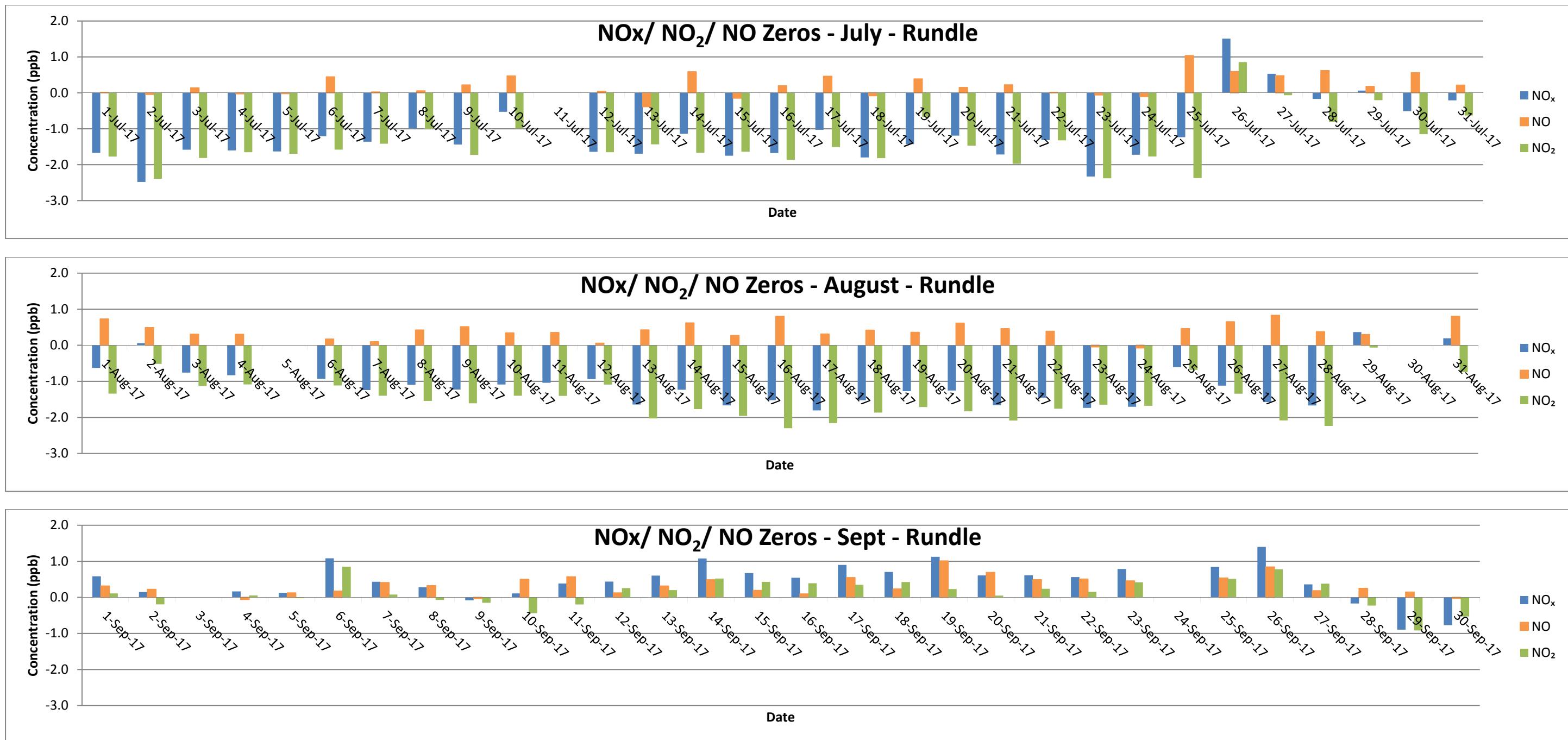
Figure A-2 Daily SO₂ Internal Zero Calibrations – Courtice WPCP Station



Notes:

Auto-calibrations occur every 25 hours.

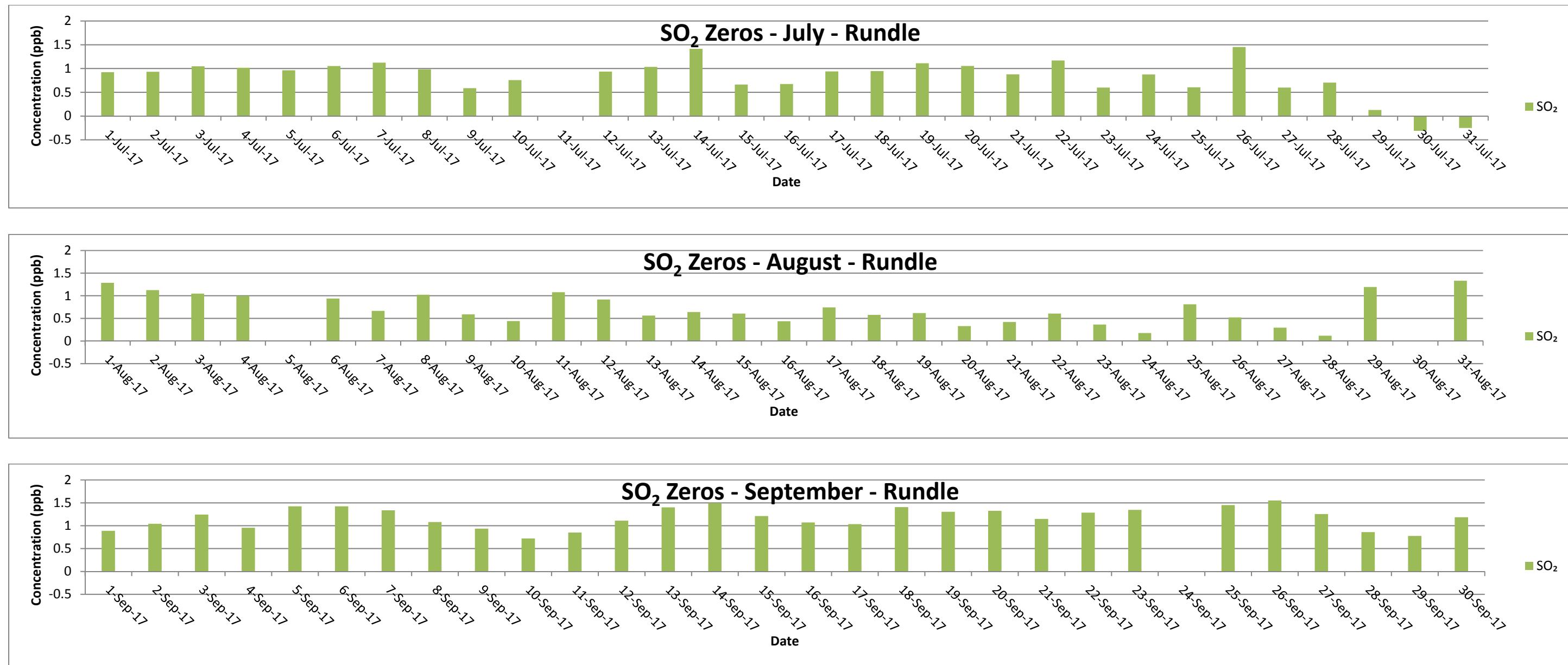
Figure A-3 Daily NOx/ NO₂/ NO Internal Zero Calibrations –Rundle Road Station



Notes:

- Auto-calibrations occur every 25 hours

Figure A-4 Daily SO₂ Internal Zero Calibrations – Rundle Road Station



Notes:

Auto-calibrations occur every 25 hours

**QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY
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Appendix B SO₂ Data Summaries and Time History Plots
November 14, 2017

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

SO ₂ - COURTICE July 2017 (ppb)																															
	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	Hrs>250	Days>100	
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	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	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	24	0.4	0.0	0.0	0.0	0	0
3	0.2	0.4	0.2	0.4	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	1.4	2.4	1.0	1.8	24	2.4	0.0	0.3	0	0	0
4	5.2	3.2	3.0	0.6	0.9	0.7	0.7	1.2	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.0	2.8	3.1	1.0	24	5.2	0.0	1.0	0	0	0
5	3.7	1.7	1.7	2.0	5.9	4.9	3.8	1.4	0.6	0.3	0.1	0.0	0.0	0.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.2	1.8	24	5.9	0.0	1.3	0	0	0
6	1.5	1.4	2.4	2.2	2.8	1.9	1.2	0.6	0.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	24	2.8	0.0	0.6	0	0	0
7	0.2	0.0	0.1	0.2	0.4	0.2	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	24	0.4	0.0	0.1	0	0	0
8	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.1	0.0	0.0	0.0	0.2	0.1	0.1	24	0.8	0.0	0.1	0	0	0
9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.9	0.3	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.9	0.0	0.1	0	0	0
10	0.0	0.0	0.0	0.0	0.9	1.1	0.5	0.4	0.1	0.0	0.0	0.1	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	1.1	0.0	0.2	0	0	0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	24	0.1	0.0	0.0	0	0	0
12	0.1	0.1	0.3	0.2	0.2	0.1	0.1	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	24	0.3	0.0	0.0	0	0	0
13	0.0	0.0	0.1	1.0	0.4	0.0	0.0	0.0	0.7	0.6	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	1.0	0.0	0.1	0	0	0
14	0.0	0.0	0.4	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	0.3	0.4	0.0	24	0.4	0.0	0.0	0	0	0
15	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	24	0.4	0.0	0.0	0	0	0
16	7.1	8.2	9.1	9.4	8.0	3.1	0.8	0.5	0.4	0.3	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	24	9.4	0.0	2.0	0	0	0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.7	24	0.7	0.0	0.1	0	0	0	
18	0.6	0.9	1.3	1.4	1.6	1.4	0.5	0.2	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	24	1.6	0.0	0.4	0	0	0	
19	1.5	3.0	1.9	2.9	5.9	3.9	0.5	0.1	0.2	0.5	0.1	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	24	5.9	0.0	0.9	0	0	0
20	8.6	9.2	12.0	4.8	2.6	2.0	1.1	0.9	0.5	0.4	1.1	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	24	12.0	0.0	2.0	0	0	0
21	3.7	2.8	2.4	3.7	2.7	2.7	0.9	0.4	0.0	0.0	0.2	0.6	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	3.7	0.0	0.9	0	0	0
22	0.2	0.4	5.9	4.6	5.4	1.8	2.3	1.2	0.9	0.7	0.7	0.5	0.6	0.3	0.4	0.3	0.1	0.0	0.0	0.0	0.1	0.0	0.2	24	5.9	0.0	1.1	0	0	0	
23	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.5	1.8	0.8	0.7	0.4	0.2	0.7	0.2	0.2	0.2	0.8	0.3	0.2	0.1	0.1	1.3	24	1.8	0.1	0.4	0	0	0	
24	1.4	0.9	2.8	2.5	3.0	1.0	0.8	0.7	0.5	0.4	0.5	0.6	0.2	0.1	1.6	1.0	1.2	1.1	0.9	0.6	0.4	0.8	0.6	0.6	24	3.0	0.1	1.0	0	0	0
25	0.8	1.6	1.3	1.0	1.8	2.4	1.8	1.5	1.7	1.9	1.5	1.4	1.8	1.0	1.1	1.0	0.1	0.0	0.0	0.0	1.6	5.9	3.4	24	5.9	0.0	1.5	0	0	0	
26	5.6	4.9	4.2	4.0	6.8	3.4	1.7	1.1	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.5	0.1	0.1	0.0	0.0	24	6.8	0.0	1.4	0	0	0
27	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	C	C	C	C	0.8	0.8	0.8	0.8	0.6	0.8	0.9	0.9	0.9	0.9	20	0.9	0.0	0.4	0	0	0
28	1.0	1.1	1.2	1.3	1.8	1.7	1.5	1.7	1.7	2.0	1.4	2.7	1.4	2.2	2.1	2.2	2.6	2.6	2.0	2.4	4.7	3.0	3.8	2.9	24	4.7	1.0	2.1	0	0	0
29	3.7	5.6	7.6	6.3	6.0	5.3	6.9	6.5	3.8	1.9	1.6	0.9	0.6	0.6	0.4	0.4	0.3	0.4	0.4	0.6	0.6	0.5	24	7.6	0.3	2.6	0	0	0		
30	0.4	0.4	0.4	0.4	0.4	0.6	0.6	0.4	0.4	0.3	0.1	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.3	0.4	0.3	0.2	0.1	24	0.6	0.1	0.3	0	0	0	
31	1.9	0.9	2.1	1.5	0.8	0.6	0.6	0.5	0.4	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.4	24	2.1	0.1	0.5	0	0	0	
Count	31	31	31	31	31	31	31	31	31	31	30	30	30	30	31	31	31	31	31	31	31	31	31	31	740						
Maximum	9.2	12.0	9.4	8.0	5.3	6.9	6.5	3.8	2.0	1.6	2.7	1.8	2.2	2.1	2.2	2.6	2.6	2.0	2.4	4.7	3.0	5.9	3.4	24							
Minimum	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	20							
Average	1.5	1.5	2.0	1.6	1.9	1.3	0.9	0.7	0.5	0.4	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.3	0.4	0.6	0.7							
Percentiles	10	20	30	40	50	60	70	80	90	95	99	100																			
Data	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.9	2.0	3.7</																				

		SO ₂ - COURTICE August 2017 (ppb)																													
		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>250	Days>100
1	0.4	0.4	0.4	0.8	1.2	1.4	1.0	0.4	0.2	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	0.7	24	1.4	0.1	0.4	0	0
2	0.8	0.6	0.5	0.7	1.0	1.6	1.2	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.4	24	1.6	0.1	0.4	0	0	
3	0.3	0.3	0.4	0.4	0.6	0.7	0.6	0.3	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	24	0.7	0.1	0.2	0	0
4	1.0	0.5	0.4	0.3	0.2	0.2	0.1	0.1	0.2	0.2	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	0.2	24	1.0	0.1	0.2	0	0
5	0.2	0.5	0.4	0.3	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	9.3	24	9.3	0.0	0.7	0	0
6	1.2	1.6	2.1	19.9	39.3	18.1	4.2	1.4	0.8	0.7	0.7	0.8	0.8	0.9	0.6	0.3	0.2	0.2	0.2	0.3	0.3	0.5	0.3	24	39.3	0.2	4.0	0	0		
7	0.4	2.1	5.8	9.2	3.8	4.7	2.3	2.0	0.8	1.0	1.2	1.3	0.9	0.9	0.8	0.6	0.4	0.3	0.1	0.8	2.6	3.0	3.3	3.5	24	9.2	0.1	2.2	0	0	
8	1.2	1.0	1.9	1.4	1.0	12.1	5.7	1.4	0.6	0.6	0.5	0.4	0.4	0.3	0.4	0.3	0.1	0.1	0.1	0.2	0.1	0.0	0.3	0.6	24	12.1	0.0	1.3	0	0	
9	0.3	0.5	1.3	1.7	3.0	3.7	1.1	0.7	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.5	0.2	0.2	0.1	0.1	0.2	0.7	1.1	0.9	24	3.7	0.1	0.8	0	0	
10	1.0	1.0	1.1	0.9	1.3	1.6	2.1	1.0	0.5	0.3	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.7	0.8	0.8	0.6	24	2.1	0.1	0.6	0	0	
11	0.5	0.7	0.7	0.4	0.4	0.7	1.0	0.6	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	24	1.0	0.1	0.3	0	0	
12	0.2	0.2	0.1	0.3	0.3	0.5	0.4	0.3	0.5	0.3	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	24	0.5	0.1	0.2	0	0	
13	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.6	0.9	0.5	0.9	24	0.9	0.1	0.3	0	0	
14	0.7	0.6	1.4	3.4	3.6	6.3	3.6	1.7	0.8	0.5	0.6	0.3	0.1	0.1	0.4	0.4	0.2	0.3	0.3	0.4	0.4	0.7	0.6	0.6	24	6.3	0.1	1.2	0	0	
15	2.6	3.0	2.2	1.5	1.6	1.2	1.6	1.0	0.9	0.7	0.6	0.6	0.3	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	24	3.0	0.1	0.8	0	0	
16	0.2	0.2	0.4	0.7	1.2	0.8	0.5	0.7	1.4	0.4	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.8	6.8	5.7	4.5	24	6.8	0.1	1.2	0	0		
17	4.2	3.6	1.8	1.5	1.0	1.4	0.7	0.6	0.4	1.3	1.2	0.5	0.3	0.5	0.5	0.9	1.3	2.4	1.8	1.4	1.1	1.8	1.3	0.8	24	4.2	0.3	1.3	0	0	
18	0.7	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.0	0.5	0.4	0.3	0.3	0.2	0.2	0.2	24	1.0	0.2	0.3	0	0	
19	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	0.7	0.3	0.2	0.2	0.1	0.2	0.2	0.2	0.2	24	0.7	0.1	0.2	0	0	
20	0.2	2.3	2.2	5.5	15.6	8.9	7.9	4.2	1.5	0.8	0.4	0.2	0.2	0.1	0.1	0.1	0.4	0.1	0.2	0.2	0.1	0.2	0.2	0.2	24	15.6	0.1	2.2	0	0	
21	0.4	3.7	5.8	10.5	5.4	10.1	7.3	2.5	0.8	0.3	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.7	0.2	0.2	0.2	0.2	0.2	0.2	24	10.5	0.1	2.1	0	0	
22	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	1.4	0.6	0.4	0.2	0.2	24	1.4	0.2	0.3	0	0	
23	0.4	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	0.1	0.2	0.2	0.1	0.0	0.1	0.2	24	0.4	0.0	0.2	0	0	
24	0.5	0.4	6.6	0.7	2.9	1.2	1.1	0.6	0.4	0.6	0.7	1.0	0.3	0.7	0.2	0.5	0.2	0.2	0.2	14.5	9.2	3.6	4.0	2.3	24	14.5	0.2	2.2	0	0	
25	2.4	4.0	14.3	18.1	13.4	9.2	7.9	5.5	4.0	2.6	2.9	2.2	2.0	1.3	0.5	0.3	0.2	0.3	0.1	1.1	5.6	9.4	1.8	15.9	24	18.1	0.1	5.2	0	0	
26	5.4	5.5	3.3	2.0	13.5	13.7	21.8	2.3	1.1	0.7	0.4	0.2	0.4	0.4	0.4	0.4	0.4	0.2	0.2	15.2	15.0	8.4	13.5	10.0	24	21.8	0.2	5.7	0	0	
27	10.1	15.0	31.1	34.3	18.8	10.0	15.4	3.5	2.3	1.5	1.2	0.9	0.6	0.4	0.4	0.4	0.4	0.2	0.4	0.6	0.6	0.5	0.5	0.6	24	34.3	0.2	6.2	0	0	
28	0.5	0.7	0.6	0.6	1.2	1.0	0.8	0.7	0.5	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	24	1.2	0.1	0.4	0	0	
29	0.3	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.5	0.6	0.9	1.0	0.8	1.3	24	1.3	0.0	0.3	0	0	
30	3.1	3.4	8.0	11.0	5.5	3.4	4.6	3.4	2.1	0.8	0.5	0.4	0.4	0.5	C	C	0.5	0.4	0.7	1.3	5.6	1.5	1.9	0.9	22	11.0	0.4	2.7	0	0	
31	0.7	0.5	1.4	0.9	0.5	0.6	0.7	1.1	1.2	1.3	1.7	0.7	0.7	0.2	0.2	0.1	0.2	0.8	1.9	1.0	0.2	2.3	2.3	2.3	24	2.3	0.1	0.8	0	0	
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	742						
Maximum	10.1	15.0	31.1	34.3	39.3	18.1	21.8	5.5	4.0	2.6	2.9	2.2	2.0	1.3	1.0	0.9	1.3	2.4	2.3	15.2	15.0	9.4	13.5	15.9	24						
Minimum	0.2	0.2	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.1	22						
Average	1.3	1.7	3.1	4.1	4.4	3.7	3.1	1.2	0.7	0.6	0.5	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.4	1.3	1.8	1.3	1.5	1.7							
Percentiles	10	20	30	40	50	60	70	80	90	95	99	100																		39.3	
Data	0.1	0.1																													

		SO ₂ - Rundle Road July 2017 (ppb)																													
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>250	Days>100
Day																															
1	0.1	0.2	0.1	0.1	0.0	0.2	0.1	0.0	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.3	0.3	0.2	0.1	0.1	0.0	0.0	24	0.3	0.0	0.1	0	0
2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.4	0.4	0.2	0.2	0.6	0.6	0.3	0.1	0.1	0.1	0.0	0.0	0.0	24	0.6	0.0	0.2	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	0.1	0.2	0.1	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	24	0.3	0.0	0.0	0	0
4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.4	0.2	0.1	0.0	0.0	0.1	0.1	24	0.4	0.0	0.1	0	0
5	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.5	0.8	2.8	10.8	13.5	1.7	1.2	0.5	0.3	0.0	0.2	0.4	0.3	0.1	0.2	0.2	24	13.5	0.0	1.4	0	0	
6	0.1	0.0	0.0	0.2	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	2.1	3.0	1.5	1.0	0.9	0.5	0.4	0.4	0.6	0.4	0.4	0.4	24	3.0	0.0	0.6	0	0	
7	0.5	0.8	0.5	0.4	0.3	0.4	0.5	0.5	0.5	0.6	0.8	0.8	0.9	1.3	0.9	1.0	0.9	1.1	0.9	0.3	0.4	0.5	0.4	0.3	24	1.3	0.3	0.7	0	0	
8	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0	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	24	1.7	0.0	0.2	0	0	
9	0.1	0.1	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.0	0.3	1.3	1.6	0.5	0.3	0.2	0.3	0.2	0.1	0.3	0.3	0.2	0.2	0.2	24	1.6	0.0	0.3	0	0	
10	0.1	0.0	0.0	0.1	0.0	0.0	0.2	0.2	0.2	0.3	0.7	0.8	1.1	1.1	0.5	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	24	1.1	0.0	0.3	0	0	
11	0.2	0.2	0.0	0.0	0.0	0.1	0.1	0.3	0.3	0.2	0.2	0.6	1.0	0.7	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	24	1.0	0.0	0.3	0	0	
12	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.0	0.0	0.1	24	0.3	0.0	0.1	0	0	
13	0.0	0.0	0.4	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	24	0.4	0.0	0.1	0	0	
14	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	24	0.3	0.0	0.1	0	0	
15	0.1	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.5	0.5	0.7	0.6	0.3	0.3	0.5	0.8	0.6	0.5	0.4	0.1	0.0	0.0	0.0	24	0.8	0.0	0.3	0	0	
16	0.0	0.0	0.1	0.0	0.0	0.3	0.3	0.5	0.6	0.6	0.7	0.7	0.5	0.1	0.3	0.4	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.0	24	0.7	0.0	0.2	0	0	
17	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.1	0.0	0.1	0.3	0.4	0.1	1.5	0.5	0.4	0.1	0.0	0.1	0.1	0.1	0.1	24	1.5	0.0	0.2	0	0	
18	0.2	0.2	0.1	0.2	0.4	0.2	0.2	0.3	0.2	0.9	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.4	0.3	0.2	24	0.9	0.1	0.2	0	0	
19	0.1	0.1	0.1	0.1	0.2	0.4	0.5	1.6	2.0	1.7	1.0	0.9	1.0	0.7	1.0	0.6	0.5	0.2	0.1	0.1	0.1	0.0	0.0	0.0	24	2.0	0.0	0.5	0	0	
20	0.1	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.6	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.7	0.6	0.5	0.3	0.1	0.0	0.1	24	0.7	0.0	0.2	0	0	
21	0.1	0.2	0.1	0.2	0.4	0.4	0.4	0.6	0.4	0.2	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	24	0.6	0.0	0.2	0	0	
22	0.0	0.1	0.0	0.0	0.1	0.1	0.3	0.3	0.1	0.1	0.5	0.4	0.2	0.4	0.7	1.5	1.4	0.6	0.2	0.3	0.2	0.2	0.2	0.2	24	1.5	0.0	0.3	0	0	
23	0.2	0.3	0.3	0.0	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.2	0.3	0.1	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	24	0.3	0.0	0.2	0	0	
24	0.2	0.1	0.1	0.2	0.2	0.1	0.0	0.1	0.1	0.1	0.5	1.2	0.5	0.5	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	24	1.2	0.0	0.2	0	0	
25	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	
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.2	0.3	0.4	1.3	1.8	1.8	1.8	2.1	2.0	2.2	2.2	2.3	24	2.5	0.0	0.8	0	0	
27	2.7	3.0	3.3	3.6	3.6	3.7	4.0	4.1	C	C	1.7	1.5	1.3	1.1	1.0	0.9	0.6	0.8	0.7	0.6	0.6	0.5	0.4	0.2	22	4.1	0.2	1.8	0	0	
28	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.2	1.8	1.6	1.5	1.4	1.4	1.3	1.2	1.1	1.3	1.4	1.3	1.3	1.3	1.1	1.1	1.1	24	1.8	0.0	0.9	0	0	
29	1.1	1.1	1.1	1.0	1.0	0.9	1.0	0.9	0.8	0.8	0.7	0.8	0.7	0.9	1.0	0.9	0.8	0.7	0.8	0.9	1.0	1.0	0.7	0.5	24	1.1	0.5	0.9	0	0	
30	0.7	0.6	0.7	0.7	0.6	0.7	0.5	0.6	0.5	0.5	0.5	0.4	0.4	0.4	1.1	0.7	0.5	0.4	0.4	0.4	0.6	0.4	0.5	0.0	0.3	24	1.1	0.0	0.5	0	0
31	0.3	0.4	0.4	0.5	0.4	0.5	0.5	0.5	0.4	0.3	0.4	0.4	0.4	0.8	0.8	0.4	2.0	0.5	0.6	0.5	0.7	0.6	0.7	0.5	24	2.0	0.3	0.6	0	0	
Count	31	31	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	742						
Maximum	2.7	3.0	3.3	3.6	3.6	3.7	4.0	4.1	1.8	2.0	2.8	10.8	13.5	3.0	1.5	1.5	2.0	1.8	1.8	2.1	2.0	2.2	2.3	2.5	24						
Minimum	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	22						
Average	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.5	0.8	0.9	0.6	0.4	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	24						
Percentiles	10	20	30	40	50	60	70	80	90	95	99	100																	13.5		
Data	0.0	0.0	0.1	0.1	0.2	0.2	0.4	0.5	0.5	1.0																					

SO ₂ - Rundle Road																															
September 2017																															
(ppb)																															
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>250	Days>100
1	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.0	0.0	0.2	0.2	0.2	0.2	0.0	0.0	0.2	0.3	0.4	0.4	0.2	0.2	0.2	0.2	0.2	24	0.4	0.0	0.2	0	0
2	0.1	0.2	0.3	0.2	0.3	0.2	0.1	0.3	0.4	1.4	2.9	2.8	1.2	0.5	0.8	0.4	0.4	0.3	0.4	1.0	0.7	0.4	0.4	0.4	0.4	24	2.9	0.1	0.7	0	0
3	0.4	0.3	0.4	0.4	0.4	0.3	0.3	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	24	0.5	0.3	0.4	0	0
4	0.6	0.6	0.5	0.6	0.6	0.6	0.9	1.0	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.5	1.1	0.7	0.8	0.7	0.7	24	1.1	0.5	0.7	0	0
5	0.7	0.7	0.7	0.7	0.6	0.8	0.5	0.7	0.7	0.7	0.9	1.1	1.1	1.2	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	24	1.2	0.5	0.7	0	0
6	0.6	0.6	0.6	0.7	0.6	0.5	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.6	24	0.7	0.5	0.6	0	0
7	0.6	0.6	0.6	0.6	0.6	0.5	0.6	0.6	0.7	0.6	0.9	0.9	1.0	0.8	0.6	0.7	0.6	0.6	0.5	0.5	0.5	0.5	0.6	0.6	0.6	24	1.0	0.5	0.6	0	0
8	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.2	0.3	24	0.5	0.1	0.3	0	0
9	0.2	0.3	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	24	0.3	0.0	0.1	0	0
10	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.7	0.2	0.2	0.2	0.2	0.3	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.2	24	0.7	0.0	0.2	0	0
11	0.2	0.3	0.3	0.4	0.3	0.3	0.5	0.3	0.6	0.5	0.5	0.6	0.4	0.4	0.3	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0.4	0.5	0.5	24	0.6	0.2	0.4	0	0
12	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.4	0.7	1.5	2.5	2.0	1.4	1.6	1.9	1.5	1.1	1.0	0.6	0.5	0.5	0.5	0.6	0.5	24	2.5	0.4	0.9	0	0
13	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.7	0.8	1.3	1.4	6.6	61.0	23.5	4.9	9.2	3.5	2.0	1.5	1.0	0.8	0.8	0.7	0.8	24	61.0	0.6	5.2	0	0	
14	0.7	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.9	1.2	1.2	1.3	1.7	2.0	1.6	2.1	2.0	1.9	1.9	1.3	1.5	1.2	0.9	0.7	0.6	24	2.1	0.6	1.2	0	0
15	0.6	0.6	0.6	0.7	0.6	0.7	0.6	0.8	0.6	0.6	0.7	0.7	0.7	0.9	1.0	0.9	0.8	0.8	0.6	0.5	0.5	0.4	0.5	0.5	0.5	24	1.0	0.4	0.7	0	0
16	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.8	1.0	1.0	1.6	2.5	2.7	2.6	2.4	1.9	1.3	0.7	0.6	0.5	0.7	0.6	24	2.7	0.5	1.1	0	0	
17	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.6	0.7	0.9	2.7	3.5	0.9	0.5	0.6	0.5	0.5	0.6	0.8	0.7	0.5	0.6	0.6	0.5	24	3.5	0.5	0.8	0	0	
18	0.5	0.6	0.6	0.5	0.5	0.4	0.5	0.5	0.6	1.5	2.2	2.4	0.6	0.6	0.6	0.5	0.5	0.5	0.6	0.5	0.6	0.6	0.5	0.5	24	2.4	0.4	0.7	0	0	
19	0.6	0.7	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.6	C	C	1.2	3.8	11.3	11.9	10.0	2.3	1.0	0.8	0.8	0.6	0.5	0.5	22	11.9	0.5	2.3	0	0	
20	0.6	0.5	0.6	0.5	0.4	0.3	0.4	0.3	0.4	0.5	0.6	2.8	1.6	1.0	0.7	0.5	0.4	0.4	0.4	0.4	0.5	0.6	0.5	0.5	24	2.8	0.3	0.6	0	0	
21	0.5	0.4	0.4	0.3	0.4	0.4	0.4	0.7	1.2	1.3	0.7	0.7	0.5	0.4	0.3	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.5	0.5	24	1.3	0.3	0.5	0	0	
22	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.5	0.6	2.5	0.7	0.7	0.6	0.4	0.5	0.4	0.3	0.1	0.2	0.4	0.4	0.5	24	2.5	0.1	0.5	0	0	
23	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.6	2.0	2.2	2.5	2.5	2.0	1.4	2.1	2.3	2.8	4.4	1.4	0.6	0.4	0.4	0.3	0.4	24	4.4	0.3	1.3	0	0
24	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.7	0.8	0.6	0.7	0.9	0.9	0.9	1.0	0.9	0.7	0.6	0.5	0.4	0.4	0.5	24	1.0	0.4	0.6	0	0	
25	0.6	0.8	0.6	0.5	0.5	0.5	0.7	0.5	0.5	0.5	4.9	2.8	0.7	0.6	0.6	0.6	0.6	0.6	0.5	0.6	0.8	0.7	0.5	0.4	24	4.9	0.4	0.9	0	0	
26	0.6	0.5	0.7	0.5	0.5	0.5	0.6	0.7	1.4	1.3	0.8	1.7	C	0.7	0.9	0.9	1.1	0.9	0.6	0.5	0.4	0.4	0.4	0.4	23	1.7	0.4	0.7	0	0	
27	0.4	0.5	0.6	0.6	0.8	0.9	0.7	0.8	1.7	2.1	1.9	1.5	2.0	1.4	0.5	0.4	0.3	0.3	0.1	0.1	0.0	0.2	0.1	24	2.1	0.0	0.7	0	0		
28	0.1	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.1	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.4	0.0	0.1	0	0	
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.6	A	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	23	0.7	0.0	0.3	0	0	
30	0.3	0.1	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	24	0.3	0.1	0.2	0	0	
31	Count	30	30	30	30	30	30	30	30	30	30	29	29	28	30	30	30	30	30	30	30	30	30	30	30	716					
Maximum	0.7	0.8	0.7	0.7	0.8	0.9	0.9	1.0	2.0	4.9	2.9	6.6	61.0	23.5	11.3	11.9	10.0	4.4	1.5	1.5	1.2	0.9	0.7	0.8	24						
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22						
Average	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.9	1.1	1.4	3.0	1.6	1.2	1.3	1.1	0.8	0.6	0.5	0.5	0.4	0.4	0.4	24						
Percentiles	10	20	30	40	50	60	70	80	90	95	99	100																	Maximum Hourly	61.0	
Data	0.1	0.3	0.4	0.4	0.5	0.6	0.																								

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

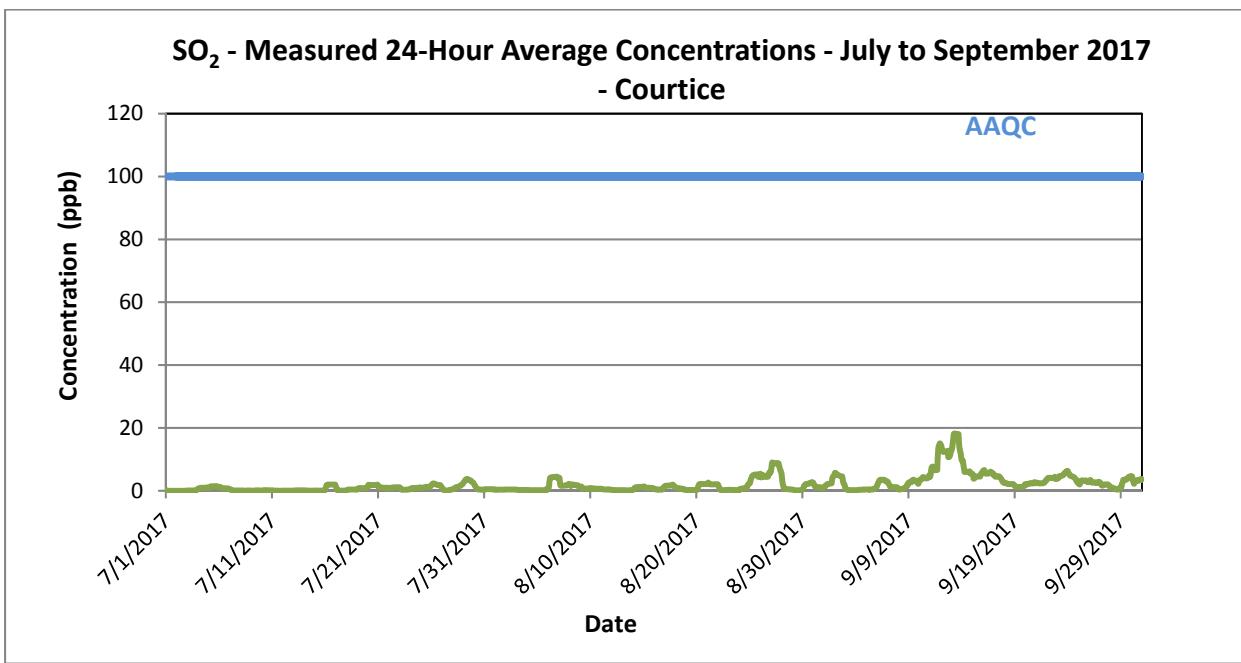
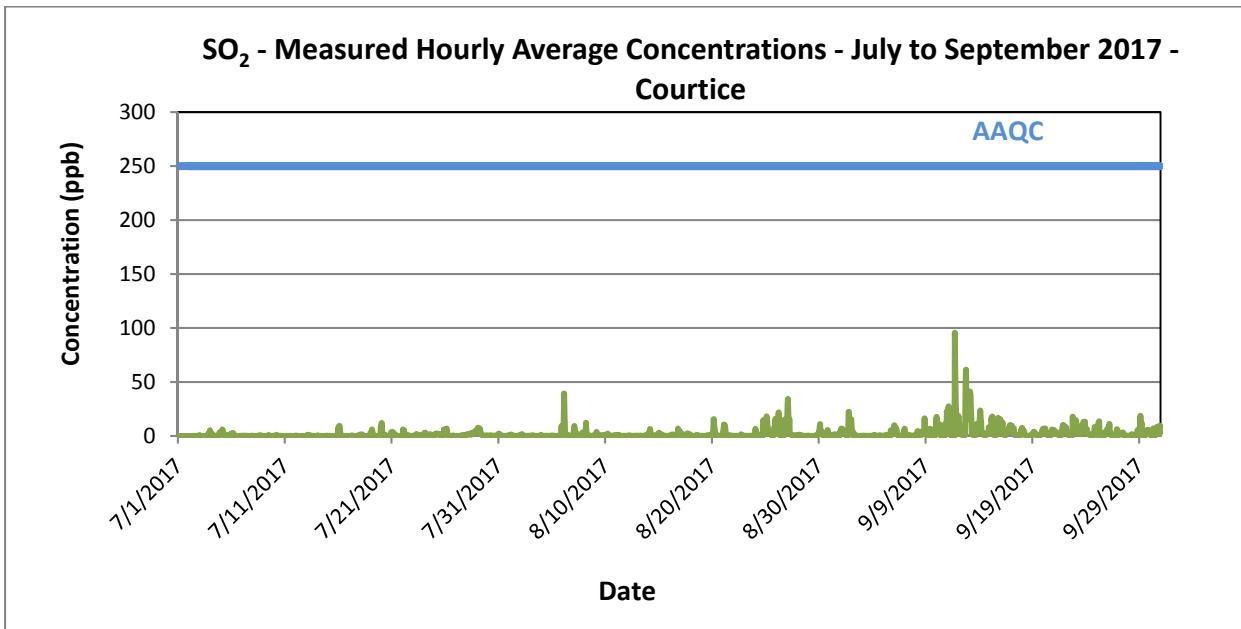
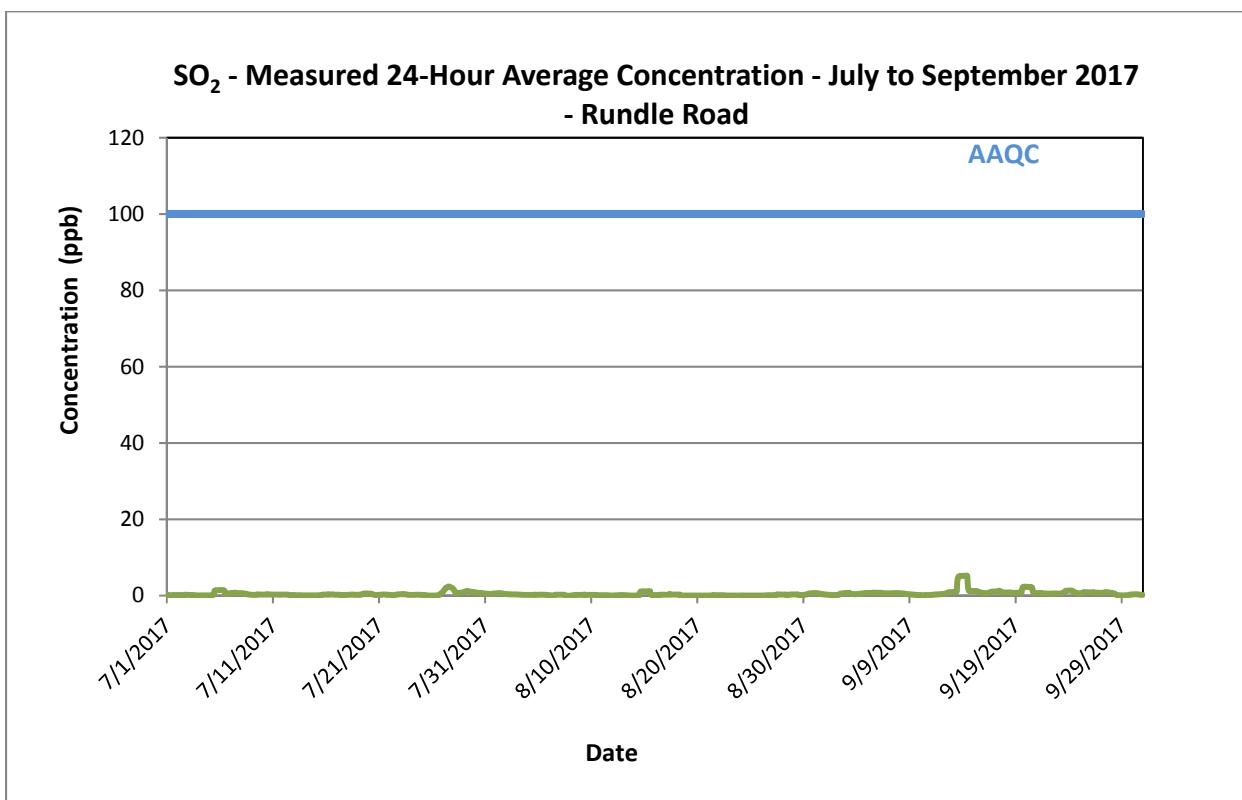
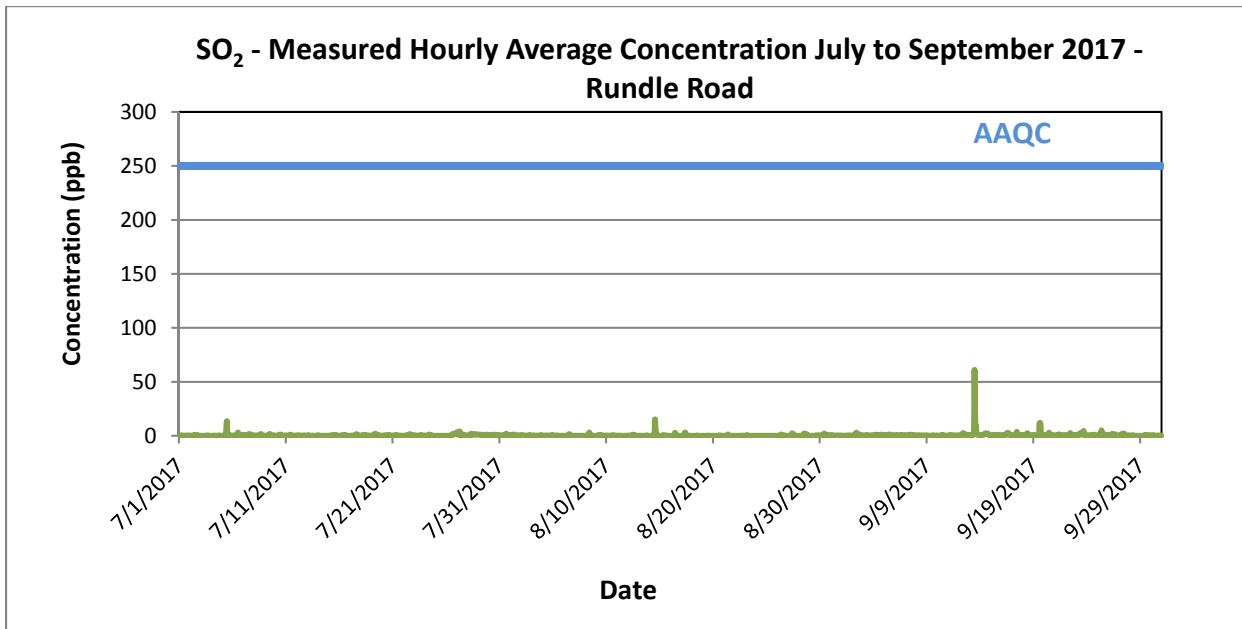


Figure B-2 Time History Plots of Measured Hourly Average and 24 Hour Average SO₂ Concentrations – Rundle Road Station



QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE – JULY TO SEPTEMBER 2017

Appendix C NO₂ Data Summaries and Time History Plots
November 14, 2017

Appendix C NO₂ DATA SUMMARIES AND TIME HISTORY PLOTS

		NO ₂ - COURTICE July 2017 (ppb)																												
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	Hrs>200	Days>100
1	0.7	0.9	0.6	2.2	2.9	3.9	4.0	6.2	1.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.5	2.1	3.7	1.7	1.3	1.5	24	6.2	0.0	1.4	0	0	
2	3.7	3.9	2.1	1.4	1.1	2.2	2.1	0.7	1.2	1.2	0.0	0.0	1.9	1.8	0.7	1.0	0.1	0.0	0.0	1.3	3.0	5.2	2.1	1.6	24	5.2	0.0	1.6	0	0
3	3.4	2.5	6.3	3.5	3.3	2.6	1.4	0.5	0.1	0.0	0.5	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.4	18.7	15.2	14.6	9.0	24	18.7	0.0	3.5	0	0
4	11.9	9.1	9.1	4.5	3.2	2.6	2.5	5.0	0.7	0.5	0.3	0.4	0.0	0.0	0.4	0.1	0.0	0.0	0.0	1.2	10.0	17.1	14.3	13.3	24	17.1	0.0	4.4	0	0
5	12.8	11.9	12.5	9.6	11.6	15.6	12.3	8.8	4.0	1.4	0.3	0.0	0.0	0.1	2.3	1.0	1.0	0.0	0.0	1.0	4.3	21.0	20.3	18.8	24	21.0	0.0	7.1	0	0
6	14.3	12.9	13.5	12.9	15.1	14.8	12.8	11.1	7.7	5.5	5.3	4.9	2.3	1.0	0.5	0.3	0.1	0.0	0.0	1.1	2.9	6.8	20.3	14.3	24	20.3	0.0	7.5	0	0
7	7.0	1.7	1.7	7.7	13.1	9.5	4.9	2.5	1.7	3.6	4.4	3.8	3.4	3.8	1.4	0.9	1.1	0.6	0.7	1.1	4.9	8.2	4.2	4.5	24	13.1	0.6	4.0	0	0
8	12.6	12.4	5.7	3.5	1.7	1.1	1.1	0.7	0.6	0.2	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.3	1.4	3.3	5.1	7.1	11.0	24	12.6	0.0	2.9	0	0
9	8.0	4.3	5.9	9.1	9.8	8.1	2.3	1.7	1.1	1.4	1.7	2.5	2.5	0.1	0.0	1.3	0.5	0.0	0.0	0.0	0.4	1.1	2.9	24	9.8	0.0	2.7	0	0	
10	2.6	1.9	0.9	1.1	1.3	13.3	6.0	2.7	1.1	1.0	0.7	0.8	0.7	0.4	0.0	0.0	0.1	0.4	0.8	2.2	1.2	1.3	1.5	1.0	24	13.3	0.0	1.8	0	0
11	3.4	1.7	0.9	0.9	5.0	3.3	1.2	7.7	5.1	1.6	1.8	1.6	1.1	0.6	0.0	0.0	0.0	0.0	0.5	2.4	16.5	22.8	25.2	24	25.2	0.0	4.3	0	0	
12	14.9	8.9	9.0	7.0	6.9	17.0	12.6	8.5	3.0	0.3	0.0	0.0	0.6	0.2	0.0	1.0	4.5	1.1	1.1	3.5	0.6	2.7	2.3	6.3	24	17.0	0.0	4.7	0	0
13	4.5	3.2	3.0	3.3	2.7	4.1	3.4	1.7	7.9	6.3	2.9	2.5	1.9	3.7	4.2	0.3	1.4	5.1	5.7	0.2	1.2	8.3	7.9	4.4	24	8.3	0.2	3.7	0	0
14	4.5	3.8	3.1	3.2	8.4	5.2	4.6	5.7	6.9	5.8	1.6	1.0	0.9	1.1	1.0	0.2	1.4	1.9	1.3	1.2	4.0	6.4	7.4	8.5	24	8.5	0.2	3.7	0	0
15	2.1	1.4	1.3	1.4	1.5	1.8	2.2	1.6	0.9	0.3	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.5	1.6	2.1	4.6	24	4.6	0.0	1.1	0	0	
16	4.8	8.6	6.9	8.0	7.6	6.1	1.7	1.6	1.3	1.0	1.1	0.5	1.8	2.4	1.2	0.8	3.0	3.6	3.9	3.6	6.1	6.5	6.5	6.3	24	8.6	0.5	4.0	0	0
17	8.3	3.0	3.9	6.0	9.5	8.4	5.2	6.5	6.6	5.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	8.3	15.8	20.0	24	20.0	0.0	5.1	0	0	
18	13.3	13.8	10.4	13.9	14.7	13.0	9.4	2.5	2.1	2.7	1.4	1.0	0.2	2.6	2.1	0.8	0.4	0.0	0.0	0.8	1.4	9.9	14.8	5.1	24	14.8	0.0	5.7	0	0
19	7.1	20.4	15.7	14.3	15.2	12.8	1.4	2.0	2.4	3.7	4.9	4.1	4.5	1.8	0.8	0.6	0.0	3.2	2.4	3.2	5.3	4.3	5.7	4.2	24	20.4	0.0	5.8	0	0
20	7.1	14.8	15.2	12.5	13.8	11.4	9.5	9.3	6.2	5.0	14.0	14.1	4.0	1.9	0.1	0.0	0.0	0.0	0.0	0.0	0.4	1.8	15.2	23.4	24	23.4	0.0	7.5	0	0
21	19.7	14.6	13.0	12.4	15.5	18.3	15.8	12.5	6.4	4.9	1.1	1.4	1.3	0.7	1.2	0.5	1.7	1.8	2.3	3.9	5.1	10.7	12.8	15.7	24	19.7	0.5	8.0	0	0
22	14.4	11.0	11.3	8.9	9.9	8.7	9.0	11.2	11.7	9.1	5.7	2.9	2.8	2.1	1.8	3.7	1.9	0.7	0.7	1.6	4.5	6.5	7.0	24	14.4	0.7	6.2	0	0	
23	3.4	3.1	3.7	4.3	3.5	4.3	3.6	3.8	6.2	0.5	2.9	1.6	0.2	0.9	0.5	0.4	1.0	2.2	6.3	1.9	3.3	3.9	2.2	1.7	24	6.3	0.2	2.7	0	0
24	1.7	2.1	4.4	4.3	5.0	6.6	6.5	5.0	2.4	2.3	1.6	0.4	0.0	0.4	3.7	2.6	1.5	1.3	1.7	1.7	3.5	2.3	2.1	2.6	24	6.6	0.0	2.7	0	0
25	1.2	1.3	1.4	1.7	2.3	2.5	3.0	2.4	1.9	1.7	1.4	1.3	1.3	1.2	0.8	0.8	0.6	0.0	0.0	0.0	0.5	19.2	17.4	12.9	24	19.2	0.0	3.2	0	0
26	11.6	11.7	9.8	7.9	9.6	9.5	9.3	8.0	1.0	0.0	0.0	0.0	0.0	2.7	12.2	3.6	2.8	3.7	6.3	6.7	0.8	0.4	0.6	0.6	24	12.2	0.0	4.9	0	0
27	11.6	14.2	14.8	4.9	13.8	8.1	7.7	9.9	9.1	8.7	C	C	3.7	2.9	1.5	0.8	1.4	1.9	3.1	4.7	10.8	8.0	5.0	5.1	22	14.8	0.8	6.9	0	0
28	5.3	3.1	5.7	2.9	3.3	3.9	5.0	4.3	3.5	3.7	3.0	2.6	1.9	2.4	3.1	2.6	2.0	1.9	3.1	7.2	9.8	7.6	5.9	4.7	24	9.8	1.9	4.1	0	0
29	4.2	3.0	2.3	2.1	1.9	2.0	2.1	2.2	2.0	2.2	1.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	3.4	2.0	1.9	24	4.2	0.0	1.6	0	0	
30	2.6	1.7	1.3	1.2	1.3	1.9	1.3	1.1	1.1	1.3	0.6	0.3	0.1	1.0	2.2	1.5	1.9	2.2	0.7	4.2	4.4	3.6	2.8	3.5	24	4.4	0.1	1.8	0	0
31	6.1	13.7	11.2	10.8	10.6	10.9	11.7	11.5	5.8	7.0	7.5	6.3	4.5	2.4	2.3	2.4	3.5	5.7	9.4	11.5	13.6	3.2	14.1	16.9	24	16.9	2.3	8.4	0	0
Count	31	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	31	31	31	31	742					
Maximum	19.7	20.4	15.7	14.3	15.5	18.3	15.8	11.7	9.1	14.0	14.1	4.5	3.8	12.2	3.7	4.5	5.7	9.4	11.5	18.7	21.0	22.8	25.2	24						
Minimum	0.7	0.9	0.6	0.9	1.1	1.1	1.1	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.6	22						
Average	7.4	7.1	6.7	6.0	7.3	7.5	5.7	5.1	3.7	2.9	2.2	1.9	1.3	1.2	1.4	0.9	1.0	1.2	1.6	2.3	4.5	7.1	8.5	8.2						
Percentiles	10	20	30	40	50	60	70	80	90	95	99	100													Maximum Hourly		25.2			
Data	0.0	0.6	1.2	1.7	2.4	3.5																								

		NO ₂ - COURTICE August 2017 (ppb)																													
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>200	Days>100
Day																															
1	13.1	12.0	9.2	12.1	16.4	10.4	10.1	7.5	4.0	1.9	1.6	1.7	1.0	0.8	1.0	1.0	2.5	1.1	6.2	12.3	13.5	9.7	19.1	15.2	24	19.1	0.8	7.6	0	0	
2	15.4	13.1	12.0	12.7	15.2	13.8	12.1	6.9	3.5	0.9	0.7	0.9	1.1	1.1	0.7	1.4	5.4	6.5	8.9	7.2	5.0	18.0	16.4	11.7	24	18.0	0.7	7.9	0	0	
3	11.9	10.6	13.2	11.8	14.4	16.2	15.7	14.3	5.4	4.2	3.3	2.9	2.2	1.5	1.1	0.8	0.7	0.8	1.8	0.7	1.3	0.6	1.2	1.5	24	16.2	0.6	5.8	0	0	
4	0.6	0.5	0.3	0.4	0.3	0.7	1.0	0.7	0.9	0.9	0.8	0.8	0.4	0.3	0.9	0.5	0.5	0.7	0.4	0.5	0.6	0.4	1.3	2.7	24	2.7	0.3	0.7	0	0	
5	2.0	1.2	2.0	2.2	1.0	1.1	0.6	0.7	0.7	0.4	0.4	0.4	0.3	0.4	0.6	0.3	0.5	0.6	0.9	2.2	3.0	4.7	6.9	24	6.9	0.3	1.4	0	0		
6	9.9	12.9	10.4	7.5	4.8	6.4	6.4	4.2	4.5	3.9	3.2	2.7	1.7	0.9	0.6	0.5	0.4	0.9	2.1	4.2	3.4	5.2	10.8	4.3	24	12.9	0.4	4.7	0	0	
7	5.4	8.4	7.6	5.4	5.2	6.8	4.4	4.6	5.7	5.0	3.3	3.5	4.3	4.0	2.8	1.5	0.9	1.0	1.2	4.9	5.2	13.3	10.9	10.5	24	13.3	0.9	5.2	0	0	
8	6.3	10.2	8.6	8.9	10.8	9.5	6.8	5.8	3.3	3.1	2.5	2.4	7.8	6.1	1.9	0.3	0.0	0.2	0.8	1.0	1.2	0.9	1.5	2.0	24	10.8	0.0	4.2	0	0	
9	5.2	6.0	13.1	13.1	12.5	5.3	6.3	3.9	4.2	5.7	3.9	2.7	2.4	2.9	2.4	4.1	5.4	7.4	10.6	7.6	11.7	14.8	15.9	14.1	24	15.9	2.4	7.6	0	0	
10	13.9	12.6	12.3	14.7	14.9	15.3	16.8	13.8	9.8	3.1	3.8	2.7	2.6	1.4	1.2	1.3	3.1	4.7	4.8	3.4	14.8	14.1	16.3	15.1	24	16.8	1.2	9.0	0	0	
11	15.7	12.6	14.7	15.0	10.3	8.0	15.3	4.6	3.2	1.8	1.7	1.5	1.7	1.4	1.4	1.2	1.2	1.8	1.1	1.1	9.0	11.9	9.1	24	15.7	1.1	6.1	0	0		
12	9.0	10.8	2.7	3.9	9.0	13.8	8.6	10.9	7.5	4.1	2.8	2.1	1.2	0.8	3.6	1.3	1.2	1.4	2.2	1.6	3.5	4.5	4.9	5.4	24	13.8	0.8	4.9	0	0	
13	2.3	2.1	3.9	2.0	2.2	2.2	1.4	1.2	0.8	1.7	1.2	1.3	2.5	0.9	0.2	0.0	0.0	0.2	0.5	5.0	15.8	14.7	2.4	6.7	24	15.8	0.0	3.0	0	0	
14	6.9	5.3	5.0	11.2	10.5	13.5	12.8	10.1	6.1	5.7	2.7	2.1	1.3	1.3	1.0	0.3	0.5	2.7	4.5	5.0	11.7	19.0	14.8	12.4	24	19.0	0.3	6.9	0	0	
15	11.7	12.4	11.7	10.5	13.2	16.5	14.4	10.4	10.1	8.5	7.6	1.4	1.1	1.3	4.6	5.5	4.0	2.9	4.5	6.5	11.6	6.6	4.2	4.0	24	16.5	1.1	7.7	0	0	
16	3.9	2.2	1.8	2.5	4.8	7.4	5.2	3.6	2.5	3.0	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.6	12.7	17.8	13.6	13.1	24	17.8	0.0	4.1	0	0	
17	13.8	9.6	8.8	8.2	12.1	11.7	11.0	10.5	1.4	1.2	0.7	0.7	2.5	1.4	3.3	4.5	11.7	15.9	13.2	9.2	9.4	14.6	12.8	8.6	24	15.9	0.7	8.2	0	0	
18	8.1	7.6	7.5	1.8	1.3	1.6	1.5	0.9	0.7	0.7	0.3	0.2	0.2	0.2	0.3	0.6	1.5	2.0	2.8	3.9	3.8	4.2	3.0	24	8.1	0.2	2.3	0	0		
19	5.1	3.5	2.2	6.2	1.7	1.4	2.6	3.3	2.6	1.5	1.8	1.2	0.8	0.6	0.7	0.8	1.1	1.7	4.1	1.7	1.1	2.0	3.6	5.0	24	6.2	0.6	2.3	0	0	
20	3.2	4.4	5.3	4.7	5.9	7.7	6.8	3.9	3.7	3.4	3.8	2.4	2.2	2.0	1.0	0.6	0.4	0.4	0.5	0.8	1.0	1.1	2.0	1.9	24	7.7	0.4	2.9	0	0	
21	7.2	3.2	13.0	11.3	10.5	11.9	13.5	13.9	3.8	2.8	1.4	1.6	0.8	0.8	0.9	0.8	1.2	1.4	1.4	4.3	1.8	1.3	14.1	8.4	24	14.1	0.8	5.5	0	0	
22	5.4	3.9	3.2	2.6	1.9	1.0	0.9	0.8	0.7	0.9	1.0	1.0	1.1	1.7	1.3	0.5	2.6	3.2	2.1	3.5	2.9	3.5	3.8	5.1	24	5.4	0.5	2.3	0	0	
23	3.6	2.4	2.6	3.3	3.8	3.7	3.8	5.1	5.2	5.0	2.9	1.6	0.9	0.5	0.9	1.4	1.9	1.9	3.0	4.2	7.5	5.7	4.6	3.9	24	7.5	0.5	3.3	0	0	
24	5.0	8.7	7.7	11.3	12.3	11.0	7.9	2.6	1.5	1.5	1.4	1.7	1.8	1.5	0.9	1.6	2.2	1.9	2.0	7.2	10.3	7.5	5.6	3.3	24	12.3	0.9	4.9	0	0	
25	3.9	4.9	6.0	7.4	4.6	3.0	4.7	4.7	4.7	5.8	6.4	3.7	7.3	5.0	0.6	1.6	0.0	0.2	0.6	4.7	13.2	22.8	13.3	11.8	24	22.8	0.0	5.9	0	0	
26	5.2	2.1	2.4	2.6	3.6	6.8	5.6	5.3	3.8	2.9	0.8	0.6	0.6	0.8	0.6	0.2	0.2	0.0	0.0	7.0	19.1	13.1	10.7	7.4	24	19.1	0.0	4.5	0	0	
27	8.0	7.1	6.6	9.1	5.4	5.8	5.4	2.5	2.8	0.5	0.4	0.4	0.2	0.1	0.0	1.3	3.6	1.6	3.4	9.4	9.2	10.3	8.5	6.3	24	10.3	0.0	4.5	0	0	
28	6.0	6.4	4.3	6.6	14.5	12.7	11.8	7.9	3.9	1.4	1.0	1.2	1.2	1.2	1.7	1.0	0.8	0.9	1.2	2.8	1.6	1.8	1.3	24	14.5	0.8	3.9	0	0		
29	0.9	0.9	1.2	1.0	1.1	1.6	1.7	1.2	1.0	1.2	0.9	0.9	1.0	1.6	2.0	1.9	4.5	6.5	11.6	12.1	10.1	10.8	10.6	24	12.1	0.9	3.6	0	0		
30	9.1	9.4	8.7	8.4	9.6	8.0	7.0	4.9	5.0	1.3	0.7	0.5	0.5	1.4	C	C	0.7	1.5	5.4	9.4	18.6	22.4	14.6	12.8	22	22.4	0.5	7.3	0	0	
31	8.9	3.0	2.3	2.9	2.8	2.7	3.7	3.2	2.1	1.9	1.4	0.9	0.9	1.0	0.7	1.1	1.5	4.2	4.2	5.0	5.6	10.4	8.1	24	10.4	0.7	3.3	0	0		
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	742						
Maximum	15.7	13.1	14.7	15.0	16.4	16.5	16.8	14.3	10.1	8.5	7.6	3.7	7.8	6.1	4.6	5.5	11.7	15.9	13.2	19.1	18.6	22.8	19.1	15.2	24						
Minimum	0.6	0.5	0.3	0.4	0.3	0.7	0.6	0.7	0.7	0.4	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.4	1.2	22						
Average	7.3	6.8	6.8	7.1	7.6	7.7	7.3	5.6	3.7	2.8	2.1	1.5	1.7	1.4	1.3	1.3	1.8	2.3	3.5	5.1	7.3	8.9	8.6	7.5							
Percentiles	10	20	30	40	50	60	70	80	90	95	99	100																	Maximum Hourly 22.8		
Data	0.6	1.0																													

NO ₂ - Rundle Road August 2017 (ppb)																																		
	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	Hrs>200	Days>100				
1	3.7	4.4	5.2	1.2	0.8	1.5	1.3	1.6	4.2	0.5	0.6	2.9	0.4	0.1	0.2	0.5	3.3	3.3	2.5	1.7	4.4	5.4	8.7	4.4	24	8.7	0.1	2.6	0	0				
2	1.9	0.5	0.6	0.0	0.0	0.0	0.8	5.4	7.0	5.3	2.8	2.6	2.5	2.7	0.8	1.2	0.9	0.8	0.6	5.0	12.2	7.6	4.6	4.3	24	12.2	0.0	2.9	0	0				
3	1.2	0.2	0.0	0.0	0.0	0.4	1.7	5.7	7.6	4.3	2.4	1.8	2.0	0.8	4.2	0.3	1.7	1.4	2.2	3.8	2.0	6.2	5.0	9.4	24	9.4	0.0	2.7	0	0				
4	4.4	2.2	3.2	5.9	2.8	3.0	2.5	2.5	3.8	1.0	0.6	2.1	2.1	1.2	1.8	2.6	1.4	1.1	0.8	0.6	1.5	2.0	1.7	2.0	24	5.9	0.6	2.2	0	0				
5	2.4	1.2	1.6	1.9	0.5	0.5	0.0	0.1	0.2	1.5	0.3	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	24	2.4	0.0	0.4	0	0				
6	0.8	1.0	0.2	0.0	0.0	0.0	0.0	0.6	3.3	2.9	3.4	1.9	0.7	0.7	2.2	0.1	1.1	0.0	0.1	0.2	0.4	4.3	1.5	0.0	24	4.3	0.0	1.1	0	0				
7	5.9	2.5	0.5	0.0	0.4	0.0	0.3	0.4	4.3	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	4.3	2.8	8.6	5.4	3.0	2.7	1.6	24	8.6	0.0	1.9	0	0				
8	0.0	1.5	0.1	0.0	0.0	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5	6.8	2.6	0.6	1.5	2.8	8.8	9.9	10.5	9.2	5.4	2.7	24	10.5	0.0	2.9	0	0
9	13.6	9.7	10.9	12.8	10.8	12.2	14.9	9.2	7.2	9.2	6.2	3.6	7.1	4.8	3.6	1.3	2.0	9.9	4.4	3.4	1.9	0.8	1.3	0.1	24	14.9	0.1	6.7	0	0				
10	0.0	0.0	0.0	0.2	0.0	0.3	1.2	7.0	9.2	7.6	1.7	1.1	1.2	5.3	1.4	1.1	3.8	3.9	6.0	6.0	5.8	5.7	2.1	0.5	24	9.2	0.0	3.0	0	0				
11	0.0	0.0	4.1	5.3	3.0	2.0	3.0	9.7	4.2	4.2	2.1	1.4	1.6	2.8	4.2	3.2	1.7	3.3	5.0	5.6	1.7	1.2	1.6	3.3	24	9.7	0.0	3.1	0	0				
12	7.5	9.9	2.8	1.2	2.2	1.8	11.9	6.8	0.9	0.0	2.7	2.5	0.5	1.3	1.1	2.9	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	11.9	0.0	2.4	0	0				
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.3	2.4	0.0	0.0	0.0	0.0	0.5	2.3	3.2	2.4	0.4	5.6	0.7	24	5.6	0.0	0.8	0	0				
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	4.6	7.1	4.9	3.6	1.9	1.6	0.6	13.3	5.5	2.5	0.8	2.3	7.5	2.8	1.6	0.9	0.0	24	13.3	0.0	2.7	0	0			
15	1.1	0.0	0.0	0.2	3.5	12.8	6.4	5.1	6.0	8.7	7.2	6.2	5.1	4.5	5.5	4.6	4.8	7.7	6.6	0.7	0.0	0.0	0.0	0.0	24	12.8	0.0	4.0	0	0				
16	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.1	2.5	3.4	1.1	3.3	0.0	0.0	0.0	2.0	3.1	3.2	2.8	1.1	1.3	0.2	24	3.4	0.0	1.0	0	0				
17	0.3	0.0	0.0	0.0	0.2	0.7	2.4	3.9	2.3	1.6	2.1	2.3	0.0	0.0	0.2	1.5	2.2	7.5	3.0	3.5	0.9	0.6	1.9	1.2	24	7.5	0.0	1.6	0	0				
18	1.3	1.2	7.3	8.7	9.9	13.2	10.5	2.9	2.2	0.9	1.1	0.5	0.1	0.3	0.7	0.7	1.9	3.1	2.1	2.0	0.0	1.4	3.5	1.8	24	13.2	0.0	3.2	0	0				
19	1.5	0.0	0.0	0.0	0.0	0.0	0.8	0.7	3.3	0.8	1.2	1.9	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	3.3	0.0	0.5	0	0				
20	0.0	0.0	0.0	0.3	0.4	0.3	0.5	0.6	2.1	1.7	4.2	2.8	2.3	2.1	1.2	0.8	0.1	0.7	1.4	1.8	3.8	2.9	3.1	1.2	24	4.2	0.0	1.4	0	0				
21	0.3	1.6	0.8	0.5	0.1	0.6	1.7	6.4	4.4	3.7	3.7	3.6	3.6	3.0	1.5	2.0	1.6	4.1	5.7	10.3	6.3	4.7	6.7	2.7	24	10.3	0.1	3.3	0	0				
22	2.2	2.0	4.5	5.7	4.8	5.9	3.4	2.5	3.4	4.2	5.6	3.1	1.8	2.3	4.3	3.0	6.8	0.6	0.0	0.0	0.3	1.2	6.7	24	6.8	0.0	3.1	0	0					
23	7.6	5.7	4.2	6.2	7.2	9.4	9.2	8.5	7.8	6.8	5.6	3.1	2.4	3.1	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	24	16.5	0.0	4.8	0	0					
24	14.6	13.4	6.1	2.3	0.7	1.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	6.0	7.2	1.4	0.0	0.0	0.0	0.0	24	14.6	0.0	2.3	0	0				
25	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	1.1	1.9	4.3	5.6	2.2	3.2	0.9	0.0	24	5.6	0.0	0.8	0	0				
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	4.1	2.1	0.1	1.5	0.7	0.0	0.5	0.0	2.1	2.9	3.6	2.1	1.3	0.2	0.0	24	4.1	0.0	0.9	0	0				
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	4.7	3.7	0.1	0.4	0.0	0.0	2.0	0.3	1.3	1.6	2.4	1.2	0.0	2.5	24	4.7	0.0	0.9	0	0				
28	3.2	0.0	0.0	0.0	0.6	1.2	3.1	3.7	3.9	4.0	3.0	2.0	1.5	5.4	5.5	4.8	2.8	5.7	6.1	1.9	1.4	5.0	9.6	3.9	24	9.6	0.0	3.3	0	0				
29	5.2	2.5	2.9	2.5	3.5	5.7	5.4	4.1	3.1	2.9	0.9	0.0	0.2	C	C	8.4	9.6	11.4	12.0	11.0	10.1	9.9	8.9	21	12.0	0.0	5.7	0	0					
30	8.9	8.7	8.9	8.1	8.0	7.8	8.0	9.0	10.5	9.3	12.8	10.1	9.4	10.2	10.4	10.1	10.7	15.7	14.5	12.5	11.7	11.8	12.6	10.3	24	15.7	7.8	10.4	0	0				
31	9.4	8.8	7.8	7.6	7.4	7.2	7.9	7.5	7.2	7.5	7.1	5.7	6.3	5.7	6.6	6.9	6.8	6.5	5.4	5.2	4.8	5.1	4.7	24	9.4	4.7	6.7	0	0					
Count	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	30	31	31	31	31	31	31	31	31	741									
Maximum	14.6	13.4	10.9	12.8	10.8	13.2	14.9	9.7	10.5	9.3	12.8	10.1	9.4	10.2	13.3	10.1	10.7	15.7	14.5	12.5	12.2	11.8	12.6	16.5	24									
Minimum	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	21									
Average	3.1	2.5	2.3	2.3	2.2	2.8	3.3	3.5	3.7	3.2	3.0	2.3	2.1	2.3	2.5	1.8	2.4	3.4	3.7	3.9	3.3	3.1	3.4	2.9										
Percentiles	10	20	30	40	50	60	70	80	90	95	99	100														Maximum Hourly		16.5						
Data	0.0	0.0	0.4	1.1	1.7	2.5	3.6	5.4	7.8	9.9	13.3	16.5																						

NO ₂ - Rundle Road																														
September 2017																														
(ppb)																														
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	Hrs>200	Days>100
1	4.6	4.5	4.3	4.6	4.8	5.2	5.8	6.9	6.2	6.8	6.9	6.9	7.2	7.9	7.8	8.1	8.3	10.6	11.9	9.9	8.1	7.4	6.3	6.0	24	11.9	4.3	6.9	0	0
2	5.6	5.4	7.9	6.6	6.2	6.0	6.0	6.5	8.4	7.0	14.2	10.9	7.4	7.1	8.4	6.1	6.6	11.3	6.4	8.3	8.1	7.4	6.9	6.8	24	14.2	5.4	7.6	0	0
3	6.6	6.8	7.3	6.7	10.4	6.7	7.0	7.1	7.4	7.6	7.6	6.8	7.0	7.6	7.8	8.9	9.2	9.6	9.5	12.0	9.2	10.1	13.2	8.9	24	13.2	6.6	8.4	0	0
4	9.7	11.3	10.1	10.2	8.4	8.5	9.7	7.6	7.6	8.5	8.2	9.3	7.4	7.9	8.8	8.3	8.7	9.1	10.5	11.0	11.9	10.5	10.3	8.1	24	11.9	7.4	9.2	0	0
5	7.3	8.1	9.6	11.9	11.8	14.1	12.0	14.8	13.8	10.0	13.2	10.9	7.8	10.2	9.5	10.5	10.6	9.6	8.5	8.4	11.3	14.7	7.8	6.2	24	14.8	6.2	10.5	0	0
6	6.1	6.6	7.5	6.6	6.7	6.8	10.4	10.5	10.0	12.6	9.2	7.9	9.9	11.0	11.0	10.4	11.4	11.4	14.8	14.2	12.8	13.9	9.0	24	14.8	6.1	10.0	0	0	
7	7.6	8.0	7.9	7.1	7.3	7.2	8.1	8.7	9.7	9.3	13.3	12.7	10.9	11.4	10.8	15.1	13.1	11.5	12.2	10.5	10.9	10.9	12.1	24	15.1	7.1	10.5	0	0	
8	9.0	7.2	6.7	6.6	6.2	7.2	8.2	8.7	8.7	7.8	7.3	8.1	7.1	7.7	7.0	7.1	6.8	6.8	7.4	8.0	6.0	6.1	6.2	6.0	24	9.0	6.0	7.2	0	0
9	5.9	5.7	5.6	5.7	5.5	5.5	5.7	5.9	6.2	5.8	5.6	5.8	5.9	5.9	6.2	6.5	6.5	8.5	7.8	7.4	7.4	7.4	7.0	24	8.5	5.5	6.4	0	0	
10	7.6	8.0	5.6	5.7	5.5	5.5	5.3	5.9	6.4	6.6	5.8	6.8	6.4	9.2	6.9	7.6	7.6	8.0	9.6	8.0	7.6	6.4	5.5	5.2	24	9.6	5.2	6.8	0	0
11	5.6	6.2	6.0	9.1	7.2	7.8	7.3	9.2	11.8	13.4	13.4	11.6	11.5	10.5	10.0	9.7	10.2	10.5	9.4	8.3	7.6	7.2	6.7	5.7	24	13.4	5.6	9.0	0	0
12	5.4	5.2	5.4	5.0	5.0	5.6	6.5	11.0	14.1	17.1	23.1	17.2	13.4	12.4	17.7	13.9	14.1	12.4	11.2	9.4	8.8	8.5	8.2	8.4	24	23.1	5.0	10.8	0	0
13	7.7	6.7	10.1	9.1	9.4	10.1	12.5	13.0	19.6	21.2	17.7	17.6	28.9	25.0	13.0	15.3	17.4	15.4	12.8	10.9	11.1	9.3	8.2	6.8	24	28.9	6.7	13.7	0	0
14	6.4	6.9	6.7	5.9	6.2	6.4	6.5	11.9	16.8	17.7	18.3	17.0	16.5	19.0	17.0	12.9	12.5	14.3	14.0	18.3	20.4	12.7	9.9	8.5	24	20.4	5.9	12.6	0	0
15	10.7	10.2	8.6	8.4	11.1	12.7	14.2	14.0	13.4	20.7	19.0	15.8	13.3	16.0	15.2	13.5	12.4	13.5	14.6	11.7	9.8	8.9	7.1	24	20.7	6.5	12.6	0	0	
16	6.1	6.6	5.2	5.4	5.8	5.7	5.1	6.0	8.2	13.7	14.0	12.9	13.8	11.8	10.7	13.6	10.9	11.4	10.3	7.8	7.4	6.4	7.1	6.5	24	14.0	5.1	8.8	0	0
17	7.7	7.1	7.0	7.3	6.5	6.4	6.8	7.4	8.1	10.4	21.4	23.8	12.0	8.1	11.7	9.7	9.7	10.2	11.6	13.0	10.1	9.3	8.4	24	23.8	6.4	10.1	0	0	
18	10.4	8.7	8.2	8.3	8.0	8.0	11.1	13.7	13.3	19.7	20.3	22.7	10.9	11.8	8.4	8.8	11.0	10.1	10.5	11.1	9.6	8.3	7.5	6.6	24	22.7	6.6	11.1	0	0
19	7.3	7.4	7.1	6.9	7.1	7.4	8.6	9.3	11.1	12.7	0.4	C	C	9.5	18.7	18.7	17.7	4.8	6.9	6.6	3.9	2.5	2.4	2.1	22	18.7	0.4	8.1	0	0
20	1.7	1.6	3.4	1.8	1.6	1.9	4.6	4.3	4.0	3.6	5.2	7.8	4.3	8.6	9.0	7.6	6.8	4.3	3.1	2.2	3.1	2.8	2.2	2.2	24	9.0	1.6	4.1	0	0
21	2.0	2.7	1.7	2.3	1.5	3.3	3.9	6.3	7.3	5.6	5.2	1.9	6.4	1.7	1.6	1.9	1.9	6.2	7.0	8.0	5.6	3.7	4.4	2.6	24	8.0	1.5	3.9	0	0
22	1.9	1.6	1.6	1.8	0.9	1.9	3.2	4.1	7.8	6.7	2.7	4.5	2.8	4.7	3.7	2.4	2.2	4.6	5.6	3.8	3.1	4.0	3.5	6.4	24	7.8	0.9	3.6	0	0
23	2.1	2.7	2.3	2.7	3.0	3.3	4.5	6.0	24.6	23.1	20.2	18.8	10.8	7.7	5.1	4.7	3.2	4.6	3.7	3.3	5.1	4.8	4.7	2.5	24	24.6	2.1	7.2	0	0
24	5.3	3.1	3.2	3.4	2.4	1.3	1.3	1.8	1.6	3.5	4.3	6.8	6.4	6.2	2.5	2.9	4.0	5.7	7.8	5.8	3.7	5.4	3.4	4.1	24	7.8	1.3	4.0	0	0
25	4.0	2.3	1.9	2.1	2.7	3.2	8.2	7.3	11.3	26.5	11.7	2.9	3.3	4.6	6.1	4.7	7.6	11.0	8.9	14.5	7.7	7.9	6.2	2.9	24	26.5	1.9	7.1	0	0
26	1.9	1.6	1.5	2.0	2.2	5.2	8.1	9.5	11.4	7.6	5.0	C	C	3.1	4.0	3.3	5.7	6.4	12.2	4.5	6.2	5.6	4.9	2.4	22	12.2	1.5	5.2	0	0
27	1.4	1.6	11.7	2.9	6.5	10.0	8.5	11.6	8.5	9.5	12.9	11.9	12.1	3.8	1.2	0.6	1.1	0.8	0.4	0.6	0.5	1.6	0.7	0.0	24	12.9	0.0	5.0	0	0
28	0.0	0.6	2.1	6.8	0.6	1.5	1.1	3.0	0.4	0.4	2.5	1.0	0.0	0.5	0.4	0.2	0.1	0.4	0.0	0.3	4.2	2.6	1.0	0.0	24	6.8	0.0	1.2	0	0
29	0.0	0.0	0.0	0.0	0.0	0.8	3.2	7.4	5.4	5.5	4.3	8.1	A	2.2	1.7	1.6	5.0	3.1	1.8	0.4	0.0	0.0	0.0	0.0	23	8.1	0.0	2.2	0	0
30	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	0.4	1.0	0.4	0.9	0.0	0.0	24	1.0	0.0	0.1	0	0
Count	30	30	30	30	30	30	30	30	30	30	30	28	27	30	30	30	30	30	30	30	30	30	30	30	715					
Maximum	10.7	11.3	11.7	11.9	11.8	14.1	14.2	14.8	24.6	26.5	23.1	23.8	28.9	25.0	18.7	18.7	17.7	15.4	14.8	18.3	20.4	14.7	13.2	14.9	24					
Minimum	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	22					
Average	5.2	5.1	5.5	5.4	5.4	5.8	6.8	8.0	9.4	10.7	10.4	10.3	9.0	8.4	8.1	7.8	8.1	8.2	8.4	8.0	7.4	6.9	6.1	5.3						
Percentiles	10	20	30	40	50	60	70	80	90	95	99	100																	Maximum Hourly	28.9
Data	1.6	3.2</																												

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

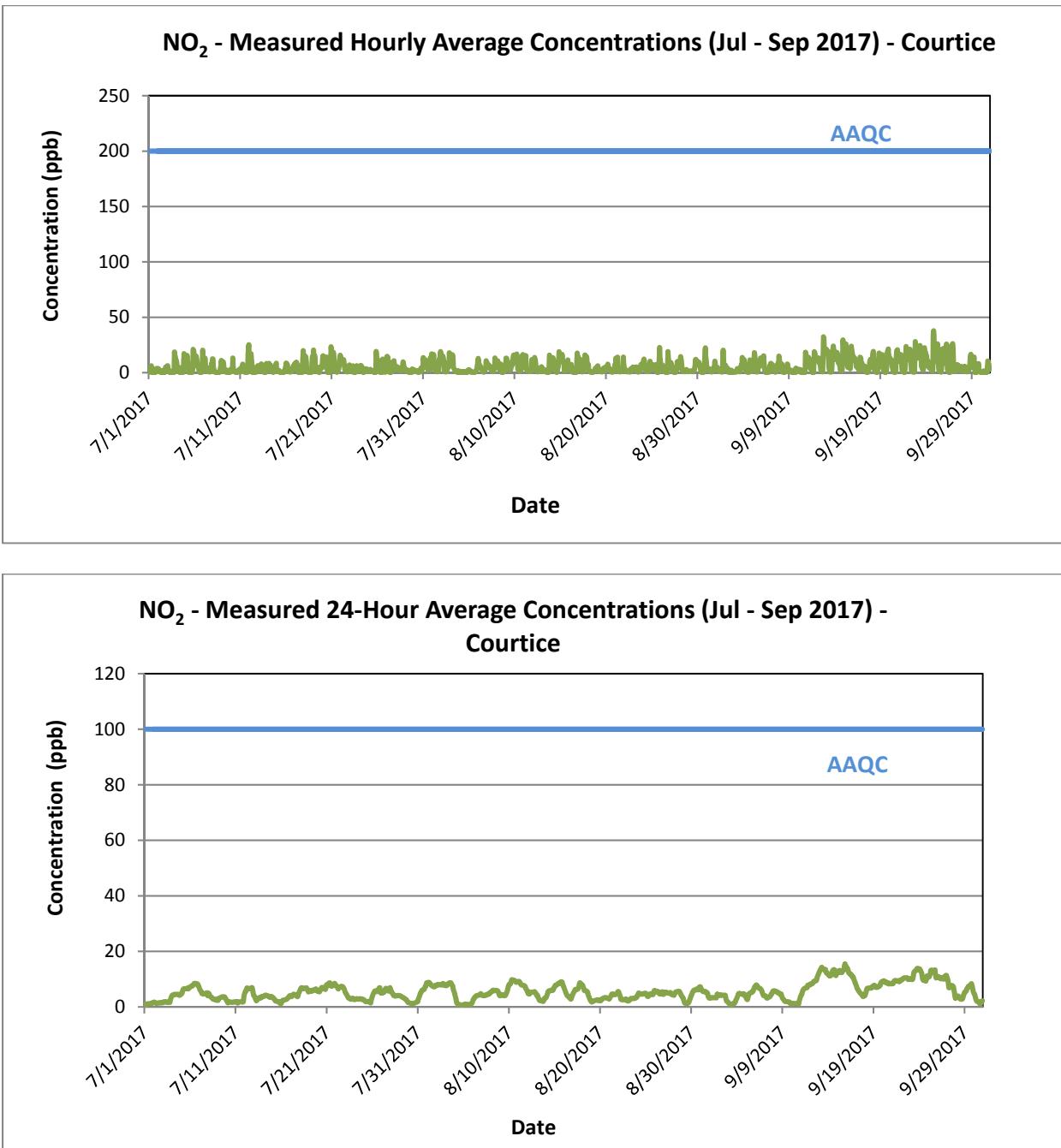
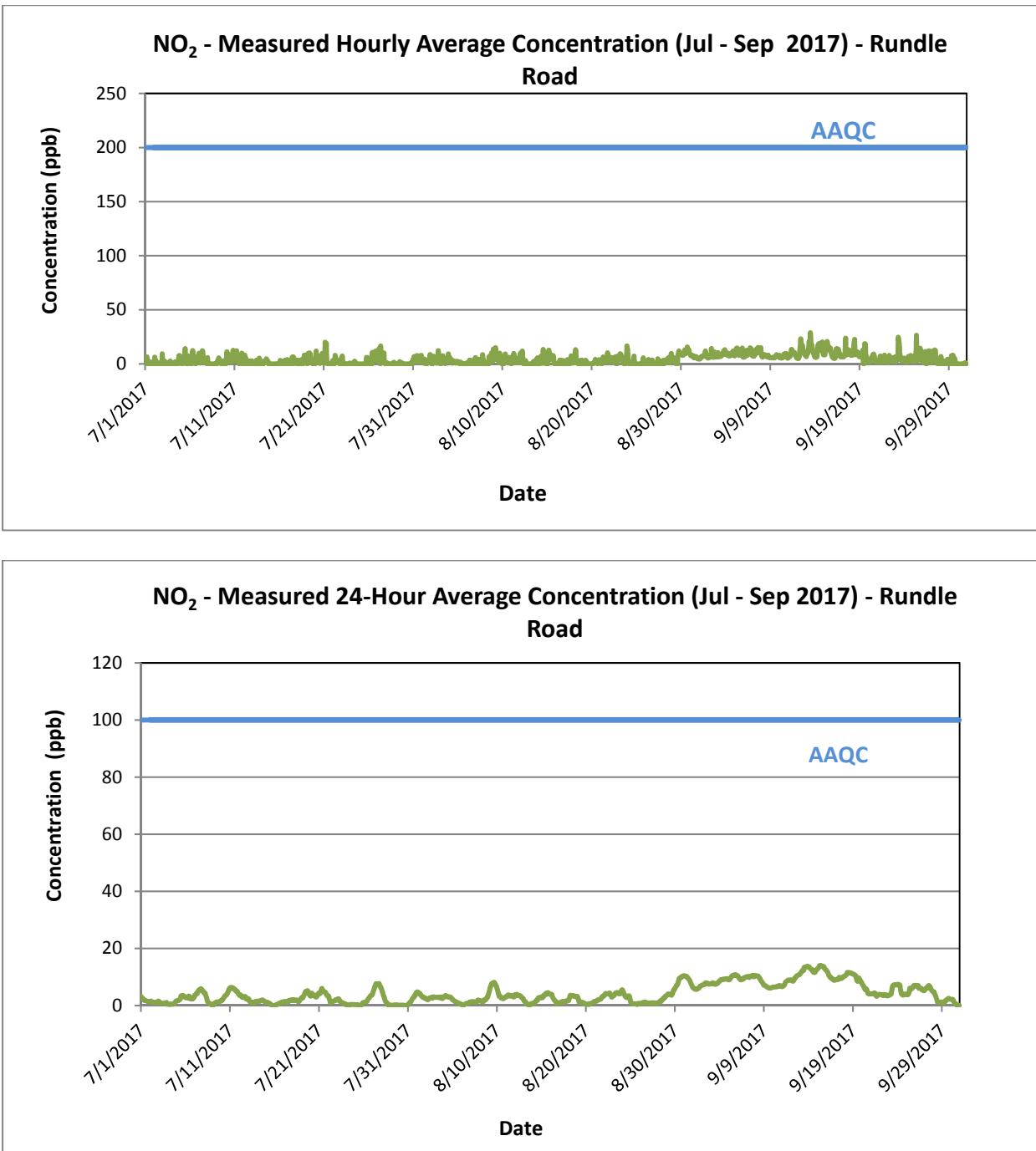


Figure C-2 Time History Plots of Measured Hourly Average and 24 Hour Average NO₂ Concentrations – Rundle Road Station



**QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY
CENTRE – JULY TO SEPTEMBER 2017**

Appendix D NOX Data Summaries and Time History Plots
November 14, 2017

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

		NOx		COURTICE																											
		July		2017																											
Hour		(ppb)																													
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>200	Days>100
1	0.7	0.8	0.7	2.1	3.0	4.1	4.3	7.2	2.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.7	2.1	3.8	1.8	1.7	1.6	24	7.2	0.0	1.6	0	0		
2	4.2	4.2	2.1	1.4	1.2	2.6	3.0	1.3	2.3	2.3	0.4	0.0	2.9	2.2	1.0	1.2	0.2	0.0	0.0	1.5	3.0	5.1	2.1	1.7	24	5.1	0.0	1.9	0	0	
3	3.7	2.7	7.2	3.7	4.1	2.9	2.1	1.0	0.5	0.2	1.1	1.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.2	23.0	17.9	17.4	10.0	24	23.0	0.0	4.2	0	0	
4	25.3	15.0	14.8	7.0	4.7	3.8	4.8	12.6	1.6	1.4	1.0	0.9	0.2	0.0	0.6	0.3	0.0	0.0	0.9	19.9	54.2	37.9	29.9	24	54.2	0.0	9.9	0	0		
5	33.3	20.7	18.6	11.3	26.4	49.2	27.9	16.8	6.9	2.6	0.8	0.0	0.0	0.4	3.8	1.4	1.7	0.0	0.0	1.4	5.2	28.7	33.1	39.5	24	49.2	0.0	13.7	0	0	
6	25.1	24.1	20.1	22.4	26.9	31.8	25.7	24.7	13.6	9.1	8.2	6.7	2.8	1.1	0.5	0.3	0.0	0.0	0.0	1.1	2.8	7.1	21.2	14.6	24	31.8	0.0	12.1	0	0	
7	7.2	1.8	1.6	8.2	15.7	11.0	5.6	2.6	2.2	5.0	5.9	4.7	3.8	4.5	1.3	0.8	1.1	0.7	0.6	1.0	5.0	8.5	4.7	4.6	24	15.7	0.6	4.5	0	0	
8	13.0	13.0	6.3	3.8	2.2	1.6	2.2	1.2	1.2	0.9	0.5	0.4	0.2	0.3	0.5	0.4	0.2	0.6	1.8	3.6	5.4	7.2	13.7	24	13.7	0.2	3.4	0	0		
9	12.6	4.9	6.3	9.6	11.5	9.5	3.2	2.2	1.8	2.0	3.1	4.4	3.6	0.1	0.0	1.4	0.4	0.0	0.0	0.0	0.0	0.9	2.9	24	12.6	0.0	3.4	0	0		
10	2.9	2.2	0.8	1.0	1.6	16.7	7.7	6.3	1.2	1.1	0.9	1.0	0.9	0.4	0.0	0.0	0.1	0.4	0.8	2.2	1.3	1.1	1.5	0.8	24	16.7	0.0	2.2	0	0	
11	3.7	1.9	0.9	1.1	5.6	3.5	1.4	14.7	8.2	2.3	2.6	2.2	1.4	0.8	0.0	0.0	0.0	0.0	0.3	2.4	17.1	25.7	30.0	24	30.0	0.0	5.2	0	0		
12	17.3	9.5	9.9	7.4	8.1	23.0	16.9	11.5	4.3	0.2	0.1	0.0	0.7	0.1	0.2	1.0	4.7	1.3	1.2	3.9	0.7	3.8	2.7	7.5	24	23.0	0.0	5.7	0	0	
13	5.6	3.8	3.6	4.2	3.0	4.8	5.4	2.5	12.5	8.4	3.9	3.3	2.7	5.3	5.8	0.5	1.9	6.8	7.2	0.2	1.3	9.3	8.7	5.6	24	12.5	0.2	4.8	0	0	
14	4.8	3.8	3.1	3.5	9.8	6.0	6.4	7.6	11.9	9.3	2.8	1.4	1.2	2.0	1.8	0.4	1.8	2.2	1.3	1.7	4.4	6.9	8.4	10.1	24	11.9	0.4	4.7	0	0	
15	2.5	1.6	1.6	1.6	2.0	2.5	2.9	2.5	1.6	0.9	0.3	1.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.8	1.9	2.2	5.1	24	5.1	0.0	1.4	0	0	
16	5.4	9.9	7.8	12.5	11.3	9.7	2.2	2.3	2.2	1.8	1.6	0.5	2.0	2.9	1.2	0.8	3.3	4.2	4.7	4.0	6.3	7.1	6.7	6.7	24	12.5	0.5	4.9	0	0	
17	8.6	3.2	4.3	6.7	10.2	10.0	6.9	8.7	9.6	7.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	18.6	33.5	35.6	24	35.6	0.0	7.2	0	0	
18	23.8	21.3	13.7	24.0	26.1	26.3	18.0	3.6	3.1	3.7	2.0	1.6	0.4	3.1	2.3	0.7	0.3	0.0	0.0	1.0	1.5	11.0	15.4	5.2	24	26.3	0.0	8.7	0	0	
19	10.8	39.1	33.1	36.7	50.8	42.0	1.2	2.0	2.9	5.5	6.8	5.0	5.4	2.0	0.7	0.5	0.0	3.3	2.9	3.5	5.5	4.5	5.9	4.2	24	50.8	0.0	11.4	0	0	
20	7.8	17.1	24.8	15.9	29.0	19.6	25.3	17.8	9.3	6.4	17.1	22.6	5.9	2.9	0.2	0.0	0.0	0.0	0.0	0.3	1.8	18.6	34.5	24	34.5	0.0	11.5	0	0		
21	33.7	38.7	23.9	22.4	24.4	41.4	30.7	20.9	8.6	6.6	1.3	1.9	1.6	0.9	1.3	0.5	2.0	2.2	3.0	4.4	5.2	11.0	13.9	22.4	24	41.4	0.5	13.4	0	0	
22	23.8	12.7	17.4	15.3	15.8	18.3	36.5	28.3	24.2	12.5	6.7	3.0	3.5	2.4	2.1	4.1	1.9	0.6	0.4	0.5	1.6	4.8	6.9	8.0	24	36.5	0.4	10.5	0	0	
23	4.1	3.5	4.1	4.8	4.0	5.0	4.7	5.7	10.2	0.7	4.3	2.6	0.2	1.4	0.6	0.4	1.4	2.9	8.4	2.1	4.6	5.1	2.6	2.0	24	10.2	0.2	3.5	0	0	
24	1.8	2.3	4.8	4.7	5.2	7.5	9.9	13.5	4.3	3.9	2.4	1.0	0.0	0.2	5.4	4.1	2.6	2.5	2.5	2.1	7.0	3.8	3.4	4.3	24	13.5	0.0	4.1	0	0	
25	1.6	1.6	1.6	2.1	3.3	2.8	4.1	3.4	3.0	2.6	2.2	2.0	2.4	1.7	1.2	1.5	0.8	0.0	0.0	0.0	0.6	28.3	47.1	49.0	24	49.0	0.0	6.8	0	0	
26	51.9	45.9	39.3	29.4	36.0	40.4	29.7	14.2	1.9	0.0	0.0	0.0	0.0	4.8	11.4	3.3	2.8	3.7	6.4	6.5	0.6	0.2	0.2	0.4	24	51.9	0.0	13.7	0	0	
27	13.0	15.3	16.3	4.5	14.3	8.0	8.4	11.7	9.9	9.9	C	C	5.2	3.9	1.8	1.0	1.8	2.4	3.5	5.4	12.2	10.6	6.3	7.0	22	16.3	1.0	7.8	0	0	
28	8.5	4.4	7.9	4.1	4.4	5.7	8.3	6.8	6.3	6.6	5.0	4.3	3.3	3.7	4.8	4.0	3.2	3.3	6.0	8.7	12.3	10.2	8.7	7.3	24	12.3	3.2	6.2	0	0	
29	5.6	4.4	3.4	3.5	3.0	3.2	3.9	3.9	3.2	3.8	2.8	0.9	0.3	0.5	0.2	0.1	0.0	0.0	0.5	4.4	4.8	3.1	3.1	24	5.6	0.0	2.6	0	0		
30	5.3	2.6	2.2	1.9	2.0	3.0	2.2	2.1	2.0	2.1	1.1	0.9	0.7	2.2	3.6	2.6	2.9	3.3	1.3	5.2	7.0	4.7	3.7	4.7	24	7.0	0.7	2.9	0	0	
31	7.2	17.5	14.4	20.8	18.4	17.7	24.2	24.2	9.3	11.2	12.1	10.1	6.4	3.1	3.2	2.9	4.2	7.2	11.7	13.8	15.3	4.0	20.1	31.4	24	31.4	2.9	12.9	0	0	
Count	31	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	31	31	31	31	742						
Maximum	51.9	45.9	39.3	36.7	50.8	49.2	36.5	28.3	24.2	12.5	17.1	22.6	6.4	5.3	11.4	4.1	4.7	7.2	11.7	13.8	23.0	54.2	47.1	49.0	24						
Minimum	0.7	0.8	0.7	1.0	1.2	1.6	1.2	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4	22							
Average	12.1	11.3	10.2	9.6	12.4	14.0	10.8	9.2	5.9	4.2	3.2	2.8	1.9	1.7	1.8	1.1	1.3	1.5	2.1												

		NOx		COURTICE																											
		August 2017																													
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>200	Days>100
1	34.6	31.7	20.3	27.7	45.1	43.9	47.6	17.7	7.5	3.2	2.4	2.4	1.5	1.3	1.3	1.5	3.3	1.5	6.9	13.6	14.3	11.1	24.6	39.1	24	47.6	1.3	16.8	0	0	
2	55.0	43.9	26.6	27.8	48.9	55.9	55.4	12.4	4.6	1.5	1.1	1.5	1.6	1.4	1.1	2.0	5.9	7.0	10.3	8.1	5.7	22.2	20.8	14.0	24	55.9	1.1	18.1	0	0	
3	16.8	14.8	18.3	16.5	21.1	23.2	25.4	21.2	7.4	5.8	4.4	3.7	2.7	1.8	1.6	1.0	1.1	1.1	2.4	1.0	1.7	0.8	1.7	1.9	24	25.4	0.8	8.2	0	0	
4	1.3	1.0	0.7	0.9	0.8	1.0	1.4	1.1	1.4	1.4	1.4	1.3	0.8	0.9	1.6	0.8	1.0	0.9	0.8	1.0	0.9	0.9	0.8	1.7	3.2	24	3.2	0.7	1.2	0	0
5	2.6	2.0	2.5	2.8	1.4	1.6	1.1	1.2	1.4	1.1	1.1	0.9	1.0	1.0	1.4	0.9	1.0	1.4	1.3	2.9	3.9	5.8	8.6	24	8.6	0.9	2.1	0	0		
6	14.3	31.9	18.7	9.5	6.5	16.8	14.9	9.4	10.0	7.6	5.8	4.8	2.9	1.7	1.3	1.0	0.9	1.6	2.9	5.1	4.0	6.6	13.4	6.1	24	31.9	0.9	8.2	0	0	
7	6.6	13.1	13.4	8.4	9.2	16.2	8.9	7.0	10.3	7.2	5.0	5.2	5.9	5.5	4.5	2.3	1.6	1.6	1.8	6.1	6.3	35.0	24.4	27.3	24	35.0	1.6	9.7	0	0	
8	22.9	24.1	22.7	18.8	19.0	16.5	17.9	22.6	7.9	7.3	5.1	4.2	13.7	10.0	2.9	0.9	0.5	0.5	1.3	1.5	1.7	1.4	2.0	2.5	24	24.1	0.5	9.5	0	0	
9	5.8	6.7	16.6	14.4	21.9	6.3	10.1	6.0	6.9	9.0	6.0	4.0	3.6	3.7	3.1	5.1	6.4	8.7	12.0	8.5	14.7	25.3	23.8	19.9	24	25.3	3.1	10.3	0	0	
10	18.0	15.8	16.8	21.8	22.6	33.1	52.6	39.4	16.8	4.2	5.6	3.9	3.6	1.7	1.5	2.0	4.0	5.5	5.7	3.9	15.8	15.2	17.3	16.6	24	52.6	1.5	14.3	0	0	
11	17.1	14.5	16.6	17.9	11.3	11.1	41.3	6.3	4.2	2.3	2.3	2.1	2.3	1.9	2.0	1.6	1.6	2.3	1.5	1.3	1.4	10.0	13.1	10.1	24	41.3	1.3	8.2	0	0	
12	9.7	11.6	3.2	4.5	10.0	17.7	10.8	14.1	12.2	6.4	4.3	3.2	1.8	1.2	4.4	1.9	1.7	2.0	3.0	2.2	4.3	5.1	5.8	6.4	24	17.7	1.2	6.2	0	0	
13	3.1	3.3	5.2	3.0	3.7	4.0	2.5	2.3	1.4	3.8	2.2	2.3	4.0	1.5	0.7	0.5	0.5	0.9	1.0	6.6	22.3	18.8	3.2	9.7	24	22.3	0.5	4.4	0	0	
14	9.3	6.7	6.1	16.2	17.9	27.7	26.5	17.1	10.6	10.2	4.6	3.4	2.0	1.9	1.6	0.8	0.9	3.7	5.7	6.5	12.6	24.3	18.4	16.5	24	27.7	0.8	10.5	0	0	
15	14.6	18.5	16.4	17.7	27.5	30.7	29.0	17.3	15.3	12.3	9.7	2.2	1.6	1.9	5.7	6.8	5.0	3.5	5.1	7.4	13.3	7.6	5.2	24	30.7	1.6	11.6	0	0		
16	4.7	3.0	2.7	3.1	5.7	8.8	7.6	6.3	5.1	5.6	1.0	0.7	0.5	0.6	0.5	0.5	0.2	0.8	3.6	20.8	33.8	18.6	20.5	24	33.8	0.2	6.5	0	0		
17	23.8	13.2	11.1	10.3	16.0	16.5	19.8	2.9	2.0	1.4	1.3	4.0	2.4	4.6	5.9	15.6	20.4	15.3	10.4	11.5	17.5	16.6	10.3	24	23.8	1.3	11.2	0	0		
18	9.4	9.2	9.2	2.8	2.1	2.4	2.2	1.5	1.5	1.4	1.0	0.7	0.7	0.9	1.0	1.1	2.1	2.7	3.3	4.7	4.4	4.8	3.3	24	9.4	0.7	3.0	0	0		
19	5.8	4.1	3.2	7.3	2.3	2.0	3.7	3.6	4.5	4.1	2.5	2.2	2.1	1.2	1.1	1.6	2.2	2.5	5.4	2.3	1.8	3.0	4.7	6.1	24	7.3	1.1	3.2	0	0	
20	4.1	5.5	7.1	6.2	10.4	15.5	15.7	8.4	6.9	6.5	6.6	4.0	3.5	2.9	1.5	1.4	1.1	0.9	1.3	1.2	1.5	1.5	2.5	2.5	24	15.7	0.9	5.0	0	0	
21	8.4	4.3	17.3	17.9	18.6	25.7	40.6	39.2	5.5	4.1	2.1	2.4	1.2	1.2	1.4	1.4	1.7	2.3	1.9	4.9	2.3	2.0	15.8	9.5	24	40.6	1.2	9.7	0	0	
22	6.4	4.3	4.0	3.2	2.4	1.2	1.3	1.2	1.3	1.5	1.5	1.6	1.4	2.3	1.9	0.9	3.3	4.0	3.2	4.4	3.8	4.2	4.5	5.6	24	6.4	0.9	2.9	0	0	
23	4.1	3.0	3.2	3.9	4.4	4.3	5.1	7.9	8.9	8.9	5.4	2.5	1.6	1.2	1.5	2.3	3.7	3.0	4.2	5.4	8.3	6.5	5.3	4.5	24	8.9	1.2	4.5	0	0	
24	5.7	10.6	9.0	14.1	16.6	19.1	18.5	5.8	3.5	3.3	2.6	3.1	3.3	2.7	2.0	2.7	3.5	2.7	2.8	8.9	15.0	10.0	8.7	5.0	24	19.1	2.0	7.5	0	0	
25	6.4	6.5	7.2	12.5	6.8	5.3	9.7	9.7	12.8	15.2	18.2	9.0	18.6	12.1	1.3	2.9	0.4	0.9	1.1	5.3	17.8	51.8	18.4	14.8	24	51.8	0.4	11.0	0	0	
26	8.5	2.9	3.4	3.4	4.6	11.4	11.5	11.9	8.8	6.7	1.7	1.2	1.1	1.4	1.1	0.9	0.7	0.6	15.2	48.8	17.6	13.5	10.5	24	48.8	0.6	8.2	0	0		
27	13.8	8.3	7.6	11.0	6.4	7.5	7.5	3.4	4.5	0.4	0.5	0.3	0.4	0.4	0.4	2.3	5.3	2.5	5.6	11.6	10.1	11.3	9.8	24	13.8	0.3	5.8	0	0		
28	6.6	7.8	5.0	7.4	17.3	14.6	17.1	14.2	5.4	1.9	1.4	1.6	1.6	1.6	2.0	1.3	1.3	1.5	1.8	3.5	2.0	2.2	1.9	24	17.3	1.3	5.1	0	0		
29	1.6	1.3	1.5	1.4	1.5	2.0	2.0	1.7	1.5	1.9	1.4	1.4	1.6	1.4	2.2	3.0	2.8	6.0	7.6	12.9	13.3	11.2	11.9	24	13.3	1.3	4.4	0	0		
30	10.3	11.8	10.2	10.0	12.3	10.6	13.1	8.6	8.9	2.6	1.3	1.0	1.4	2.4	C	C	1.5	2.3	6.8	10.3	20.8	15.9	14.1	22	24.8	1.0	9.1	0	0		
31	9.9	3.7	3.5	4.3	3.7	3.6	6.1	5.0	4.3	4.3	3.3	2.5	2.3	2.4	1.9	2.6	2.9	2.5	6.5	5.0	6.2	6.6	13.3	10.7	24	13.3	1.9	4.9	0	0	
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	742						
Maximum	55.0	43.9	26.6	27.8	48.9	55.9	55.4	39.4	16.8	15.2	18.2	9.0	18.6	12.1	5.7	6.8	15.6	20.4	15.3	48.8	22.3	51.8	24.6	39.1	24						
Minimum	1.3	1.0	0.7	0.9	0.8	1.0	1.1	1.1	1.3	0.4	0.5	0.3	0.4	0.4	0.4	0.5	0.4	0.2	0.8	1.0	0.9	0.8	1.7	22							
Average	11.7	10.9	10.0	10.5	12.8	14.7	16.9	11.1	6.6	4.9	3.6	2.6	3.0	2.4	2.0	2															

		NOx COURTICE		September 2017																											
Hour				(ppb)																											
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	Hrs>200	Days>100	
1	5.1	4.9	7.3	5.3	6.4	4.7	7.0	5.1	2.9	2.4	2.2	2.0	2.0	2.3	1.9	2.7	1.9	1.3	3.7	18.2	27.2	18.7	6.3	3.8	24	27.2	1.3	6.0	0	0	
2	4.4	4.8	9.6	4.5	5.4	5.9	7.4	7.1	2.3	0.9	1.1	0.9	1.3	2.1	1.4	1.6	3.9	3.1	3.1	1.2	1.2	1.3	1.1	1.0	24	9.6	0.9	3.2	0	0	
3	1.3	1.2	1.3	1.1	1.3	1.3	1.2	1.5	2.7	5.3	3.5	1.8	2.2	2.4	1.9	1.5	2.1	5.3	4.8	7.7	5.6	7.6	15.0	8.1	24	15.0	1.1	3.7	0	0	
4	7.9	11.4	9.5	13.6	9.1	8.7	3.6	2.0	2.2	1.8	1.4	1.1	0.9	1.0	0.9	0.8	1.7	2.6	14.5	7.3	1.7	2.1	4.4	3.6	24	14.5	0.8	4.7	0	0	
5	3.1	1.9	3.5	5.0	7.1	21.0	44.0	58.0	23.2	11.0	8.8	4.4	1.3	1.8	4.6	3.9	7.8	6.6	9.4	12.3	12.0	12.7	22.5	16.2	24	58.0	1.3	12.6	0	0	
6	10.3	8.2	8.0	8.7	12.2	12.2	39.1	18.6	10.6	3.6	1.6	1.1	0.7	0.9	1.1	1.4	1.7	1.2	1.4	1.1	1.0	1.0	9.5	8.7	24	39.1	0.7	6.8	0	0	
7	7.0	11.3	5.8	7.8	11.3	8.8	12.5	9.8	7.0	7.6	10.3	5.0	2.0	1.1	1.5	4.5	7.4	6.8	8.4	8.9	3.9	7.5	21.1	19.8	24	21.1	1.1	8.2	0	0	
8	14.5	11.6	6.1	8.1	8.5	10.9	21.0	11.6	2.3	3.6	1.9	2.0	1.5	1.8	2.2	2.4	4.5	2.6	6.0	5.3	9.5	11.8	5.9	3.8	24	21.0	1.5	6.6	0	0	
9	2.1	1.9	2.1	3.2	4.7	3.1	4.3	1.6	1.9	1.7	0.5	1.4	0.6	0.6	0.5	0.8	0.5	0.7	5.3	6.2	3.3	2.5	2.1	2.2	24	6.2	0.5	2.2	0	0	
10	1.4	1.6	3.8	4.1	2.0	6.7	3.9	7.4	1.2	1.2	1.3	0.6	0.0	0.0	0.0	0.1	0.2	0.0	0.1	3.7	26.4	31.0	19.9	24	31.0	0.0	6.0	0	0		
11	11.8	12.6	7.2	20.0	31.4	31.9	49.2	23.8	9.0	7.6	7.2	5.3	3.6	2.3	0.9	1.0	0.2	0.1	21.7	34.7	38.6	47.8	24.2	24	49.2	0.1	17.3	0	0		
12	23.4	17.9	16.4	22.5	26.2	26.2	30.4	16.9	16.5	20.0	17.5	9.3	4.6	2.5	2.3	1.7	1.3	1.2	33.6	50.7	56.6	37.2	26.4	24	56.6	1.2	20.4	0	0		
13	28.8	22.8	34.8	47.8	22.0	24.3	24.8	34.4	19.8	7.6	4.6	2.6	1.4	1.2	1.6	1.5	1.1	3.9	13.0	14.6	25.1	34.7	34.5	24	47.8	1.1	17.8	0	0		
14	19.2	19.3	13.7	33.5	33.7	29.4	34.0	38.3	27.4	24.8	14.0	14.8	20.7	11.7	7.2	4.0	2.6	2.3	7.9	2.8	2.0	10.2	57.6	45.7	24	57.6	2.0	19.9	0	0	
15	23.7	37.0	37.5	13.2	17.5	63.6	79.7	50.4	17.6	17.0	11.3	7.0	10.7	12.8	16.0	12.5	7.2	4.5	8.3	22.4	25.3	29.9	24.6	30.9	24	79.7	4.5	24.2	0	0	
16	32.2	21.8	14.6	16.8	17.9	21.1	30.2	24.3	12.7	8.1	7.7	8.5	7.6	6.9	4.7	4.0	2.8	2.7	11.9	14.6	13.2	14.6	9.4	24	32.2	2.7	13.3	0	0		
17	10.6	3.9	4.4	2.7	2.2	4.3	6.6	8.2	2.5	1.7	1.7	1.1	0.9	1.0	0.9	1.0	0.9	1.9	3.3	6.8	8.8	14.0	12.7	24	14.0	0.9	4.7	0	0		
18	9.9	9.2	5.9	10.1	18.5	21.0	26.1	17.7	11.7	2.3	2.3	1.6	1.9	1.1	0.7	0.7	1.2	2.2	10.7	4.5	11.9	20.9	25.4	24	26.1	0.7	9.7	0	0		
19	11.9	10.8	11.6	8.6	11.0	13.4	30.2	25.1	9.6	3.0	3.2	2.6	1.6	C	1.3	1.0	1.2	7.7	10.8	20.2	19.1	27.9	16.4	17.0	23	30.2	1.0	11.5	0	0	
20	13.8	11.0	19.0	14.5	20.2	14.5	23.7	10.5	11.0	5.1	6.2	1.1	0.9	1.0	1.0	1.0	1.0	3.5	20.6	25.5	36.4	41.9	19.9	23.1	24	41.9	0.9	13.6	0	0	
21	20.7	17.0	15.7	12.9	20.7	23.4	33.0	24.0	14.4	3.8	1.6	1.6	1.7	1.6	0.9	0.7	0.7	4.2	11.6	30.0	51.0	26.4	37.8	35.4	24	51.0	0.7	16.3	0	0	
22	16.7	13.6	20.0	13.7	24.3	19.6	45.2	24.5	17.0	7.9	1.8	1.5	1.7	1.9	1.2	0.9	1.0	1.0	1.6	16.5	35.2	21.8	14.4	19.9	24	45.2	0.9	13.5	0	0	
23	20.9	17.4	22.3	17.7	21.6	22.9	40.9	33.5	39.8	37.9	32.4	20.8	8.1	6.0	4.8	3.4	2.5	2.9	6.2	24.8	23.4	17.7	19.6	20.6	24	40.9	2.5	19.5	0	0	
24	10.8	19.0	14.4	12.2	6.1	10.8	13.0	9.2	8.5	5.0	4.5	7.0	6.5	6.8	3.5	2.5	1.8	1.6	2.7	44.7	42.9	35.6	16.3	13.1	24	44.7	1.6	12.4	0	0	
25	14.8	11.5	16.4	11.3	21.6	29.0	66.3	54.7	13.1	5.8	2.1	2.4	1.6	2.3	1.3	1.2	1.2	4.7	22.3	8.4	15.6	16.1	24.9	23.4	24	66.3	1.2	15.5	0	0	
26	15.5	12.6	9.5	11.7	16.9	22.7	55.1	30.1	4.4	3.3	3.0	2.1	1.2	C	1.2	0.9	1.1	8.1	6.2	9.1	26.2	26.4	27.9	28.4	23	55.1	0.9	14.1	0	0	
27	17.8	2.1	1.3	1.5	2.8	2.6	2.0	2.6	4.2	6.1	9.7	7.7	8.6	4.6	3.8	4.4	3.2	4.5	3.4	3.2	6.3	4.8	2.6	24	17.8	1.3	4.7	0	0		
28	2.0	5.3	5.1	5.5	6.2	5.5	8.6	4.3	2.5	3.7	2.3	2.4	1.8	1.7	2.1	2.8	2.7	5.7	5.7	8.2	16.3	19.8	27.3	20.5	24	27.3	1.7	7.0	0	0	
29	12.4	10.0	5.8	14.1	11.7	17.2	29.1	17.2	7.5	A	A	0.6	0.9	1.9	9.5	12.6	10.5	7.4	13.0	2.3	2.3	2.3	2.0	1.2	22	29.1	0.6	8.7	0	0	
30	2.6	1.3	1.6	0.8	1.2	1.4	1.6	4.9	2.8	1.4	1.7	1.3	0.4	0.6	0.9	1.5	0.9	7.2	17.1	13.2	10.7	8.5	6.1	24	17.1	0.4	4.0	0	0		
31																									716						
Count	30	30	30	30	30	30	30	30	30	29	29	30	30	28	30	30	30	30	30	30	30	30	30	30	24	716					
Maximum	32.2	37.0	37.5	47.8	33.7	63.6	79.7	58.0	39.8	37.9	32.4	20.8	20.7	12.8	16.0	12.6	10.5	8.1	33.6	50.7	56.6	47.8	57.6	45.7	24						
Minimum	1.3	1.2	1.3	0.8	1.2	1.3	1.2	1.5	1.2	0.9	0.5	0.6	0.0	0.0	0.1	0.2	0.0	0.1	1.1	1.0	1.0	1.1	1.0	22							
Average	12.5	11.2	11.1	11.7	13.4	16.3	25.8	19.2	10.3	7.3	5.8	4.1	3.3	2.9	2.7	2.6	2.6	3.6	9.6	14.3	18.5	18.2	16.2								
Percentiles	10	20	30	40	50	60	70	80	90	95	99	100																			

NOx Rundle Road																															
September 2017																															
	(ppb)																														
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	Hrs>200	Days>100	
1	6.1	5.8	6.2	6.2	6.4	6.9	7.7	9.0	8.0	8.4	8.5	8.5	8.8	9.7	9.2	9.5	9.8	12.0	13.4	11.9	11.2	11.5	7.7	7.5	24	13.4	5.8	8.7	0	0	
2	7.1	6.9	11.4	8.5	7.8	7.6	7.7	8.1	10.2	8.5	17.6	12.9	8.8	8.9	10.5	7.3	8.5	14.1	7.6	9.8	9.3	8.4	8.0	7.9	24	17.6	6.9	9.3	0	0	
3	7.7	8.0	8.8	8.1	14.1	8.3	8.7	9.0	9.2	9.8	9.9	8.5	8.7	9.3	9.3	10.7	10.8	11.4	12.1	14.9	11.2	11.7	15.0	10.7	24	15.0	7.7	10.2	0	0	
4	11.6	13.1	11.8	11.9	11.1	11.7	11.3	8.8	9.4	10.2	9.9	11.0	8.9	9.5	10.3	9.7	10.0	10.6	12.6	13.6	13.9	12.3	12.4	9.8	24	13.9	8.8	11.1	0	0	
5	9.0	9.8	11.9	14.2	14.1	18.7	18.9	24.6	20.4	12.3	16.9	13.4	9.4	12.2	11.5	12.5	12.7	11.7	11.7	12.7	21.6	12.3	11.7	24	24.6	9.0	14.2	0	0		
6	11.2	10.8	11.6	9.7	9.6	9.4	18.1	15.5	13.9	15.8	10.8	9.4	11.7	12.8	13.1	11.9	12.9	13.0	16.7	18.1	17.1	16.1	12.8	11.6	24	18.1	9.4	13.1	0	0	
7	10.6	10.7	10.3	9.5	9.6	9.7	11.9	12.8	13.5	12.6	18.9	16.5	13.7	13.8	12.6	18.1	16.2	14.5	15.4	13.1	13.5	13.9	15.9	24	23.2	9.5	13.8	0	0		
8	12.9	10.9	10.3	10.1	9.9	11.8	20.0	15.8	11.9	10.4	9.6	10.2	8.9	9.6	8.7	8.8	8.5	8.5	9.6	10.8	9.5	9.9	8.5	8.1	24	20.0	8.1	10.5	0	0	
9	8.1	7.6	7.3	7.6	7.5	7.2	7.7	7.9	7.2	7.1	7.3	7.3	7.3	7.6	7.9	7.9	10.1	9.5	9.3	9.3	9.1	8.7	8.9	24	10.1	7.1	8.0	0	0		
10	10.0	10.9	8.4	8.4	8.1	7.8	7.8	8.2	8.1	8.3	7.2	8.4	7.7	11.9	8.2	9.3	9.0	9.7	12.9	13.8	10.4	10.4	11.8	9.8	24	13.8	7.2	9.5	0	0	
11	9.5	9.4	8.9	18.9	11.3	13.6	22.2	20.7	16.3	17.1	16.3	13.8	13.3	12.0	11.7	11.4	11.8	12.4	13.0	13.2	13.2	11.9	11.3	10.8	24	22.2	8.9	13.5	0	0	
12	10.9	8.7	9.9	9.7	10.0	13.4	26.4	19.9	17.1	21.6	32.2	19.8	15.0	14.0	19.6	15.4	15.3	13.8	13.7	13.0	12.3	12.1	13.0	24	32.2	8.7	15.4	0	0		
13	10.6	9.8	19.1	13.9	12.2	12.3	15.1	16.4	23.5	24.1	19.5	20.1	56.7	38.2	14.9	17.9	20.1	17.5	14.7	15.1	16.5	15.1	14.0	11.8	24	56.7	9.8	18.7	0	0	
14	10.9	10.2	10.0	9.8	13.5	11.3	14.2	21.6	19.4	21.6	21.9	19.5	18.4	21.5	18.5	14.2	13.8	15.6	15.8	20.7	23.0	15.4	14.4	24	23.0	9.8	16.2	0	0		
15	15.9	15.3	11.0	10.2	14.3	17.8	29.2	21.4	15.6	27.9	22.7	18.0	14.8	17.8	16.7	14.9	13.8	14.9	16.7	14.4	13.3	13.2	12.3	24	29.2	10.2	16.5	0	0		
16	12.5	11.8	10.6	10.6	11.1	10.8	12.8	11.8	10.0	16.8	16.0	14.6	15.6	13.2	12.2	15.9	12.0	13.0	12.6	12.7	13.4	13.2	12.1	24	16.8	10.0	12.9	0	0		
17	12.4	10.8	9.8	9.6	8.8	8.8	9.2	9.4	9.4	12.0	25.5	28.3	13.3	9.2	13.5	11.0	11.2	11.7	13.3	15.6	12.7	12.6	12.4	24	28.3	8.8	12.6	0	0		
18	14.5	12.2	10.5	10.6	10.2	10.6	14.1	17.9	15.4	26.1	32.1	37.2	12.4	13.5	10.0	10.6	12.6	11.7	12.4	14.2	13.4	12.4	13.9	24	37.2	10.0	15.0	0	0		
19	11.7	11.1	10.5	10.4	10.5	11.4	15.0	14.3	13.9	16.2	7.8	C	C	16.8	32.2	33.1	26.6	5.6	7.7	7.2	5.1	3.6	2.9	2.6	22	33.1	2.6	12.5	0	0	
20	2.1	1.9	5.8	2.4	2.3	3.0	9.3	7.4	7.6	6.2	8.2	15.7	7.0	14.8	14.7	11.2	8.9	5.1	4.1	2.8	3.0	3.9	3.7	2.8	24	15.7	1.9	6.4	0	0	
21	2.4	4.4	2.6	2.8	2.0	4.6	7.1	10.8	10.0	7.4	8.6	2.7	8.1	2.7	2.4	2.6	2.5	6.9	7.8	9.2	7.3	4.8	12.4	3.7	24	12.4	2.0	5.7	0	0	
22	2.5	1.9	2.5	3.0	1.3	2.4	4.8	6.5	11.2	9.3	3.7	6.0	6.1	6.0	4.8	3.2	2.8	5.3	6.5	4.8	3.7	5.3	4.0	15.7	24	15.7	1.3	5.1	0	0	
23	2.5	4.0	2.7	3.3	4.6	3.9	7.4	10.9	37.4	36.7	30.9	28.0	14.1	9.1	5.8	5.5	3.6	5.1	4.2	3.7	5.5	5.6	6.6	3.3	24	37.4	2.5	10.2	0	0	
24	8.8	5.0	4.4	3.9	3.2	1.9	2.5	3.2	1.9	4.5	5.4	8.0	7.4	7.2	3.1	3.4	4.6	6.2	8.3	6.3	4.1	6.2	3.8	4.6	24	8.8	1.9	4.9	0	0	
25	5.1	3.0	2.2	2.5	3.1	4.0	27.5	12.0	15.0	42.5	42.5	15.6	4.0	4.3	6.0	7.8	8.7	12.1	9.5	16.7	8.0	8.5	6.8	3.2	24	42.5	2.2	9.8	0	0	
26	2.4	1.9	2.0	3.0	3.0	6.2	14.7	16.3	14.6	11.2	6.8	C	C	3.7	4.6	3.7	6.1	6.5	12.2	4.8	8.4	5.6	7.4	2.5	22	16.3	1.9	6.7	0	0	
27	1.6	1.6	19.2	4.0	9.9	11.2	17.5	17.0	10.5	11.8	16.6	15.0	15.1	4.8	1.8	1.0	1.8	1.2	0.5	0.7	0.5	2.0	0.8	0.0	24	19.2	0.0	6.9	0	0	
28	0.0	0.6	2.0	6.8	0.8	2.1	2.3	6.5	2.4	2.3	5.8	3.1	0.1	1.3	1.0	0.5	0.3	0.7	0.1	0.7	7.7	3.6	1.5	0.0	24	7.7	0.0	2.2	0	0	
29	0.0	0.0	0.0	0.0	0.0	2.6	6.8	14.4	10.1	6.7	5.6	13.5	A	2.5	2.1	2.5	5.8	3.2	1.9	0.3	0.0	0.0	0.0	0.0	23	14.4	0.0	3.4	0	0	
30	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	0.7	1.4	0.5	1.1	0.0	0.0	24	1.4	0.0	0.2	0	0	
31	Count	30	30	30	30	30	30	30	30	30	30	28	27	30	30	30	30	30	30	30	30	30	30	30	715						
	Maximum	15.9	15.3	19.2	18.9	14.3	18.7	29.2	24.6	37.4	42.5	32.2	37.2	56.7	38.2	32.2	33.1	26.6	17.5	16.7	20.7	23.0	21.6	15.9	23.2	24					
	Minimum	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	0.1	0.3	0.0	0.0	0.0	0.0	22					
	Average	7.7	7.3	8.1	7.6	7.7	8.4	12.6	12.5	14.2	13.9	13.3	11.7	10.6	9.9	9.6	9.6	9.6	9.5	9.9	10.2	9.8	9.4	9.0	8.2						
	Percentiles	10	20	30																											

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

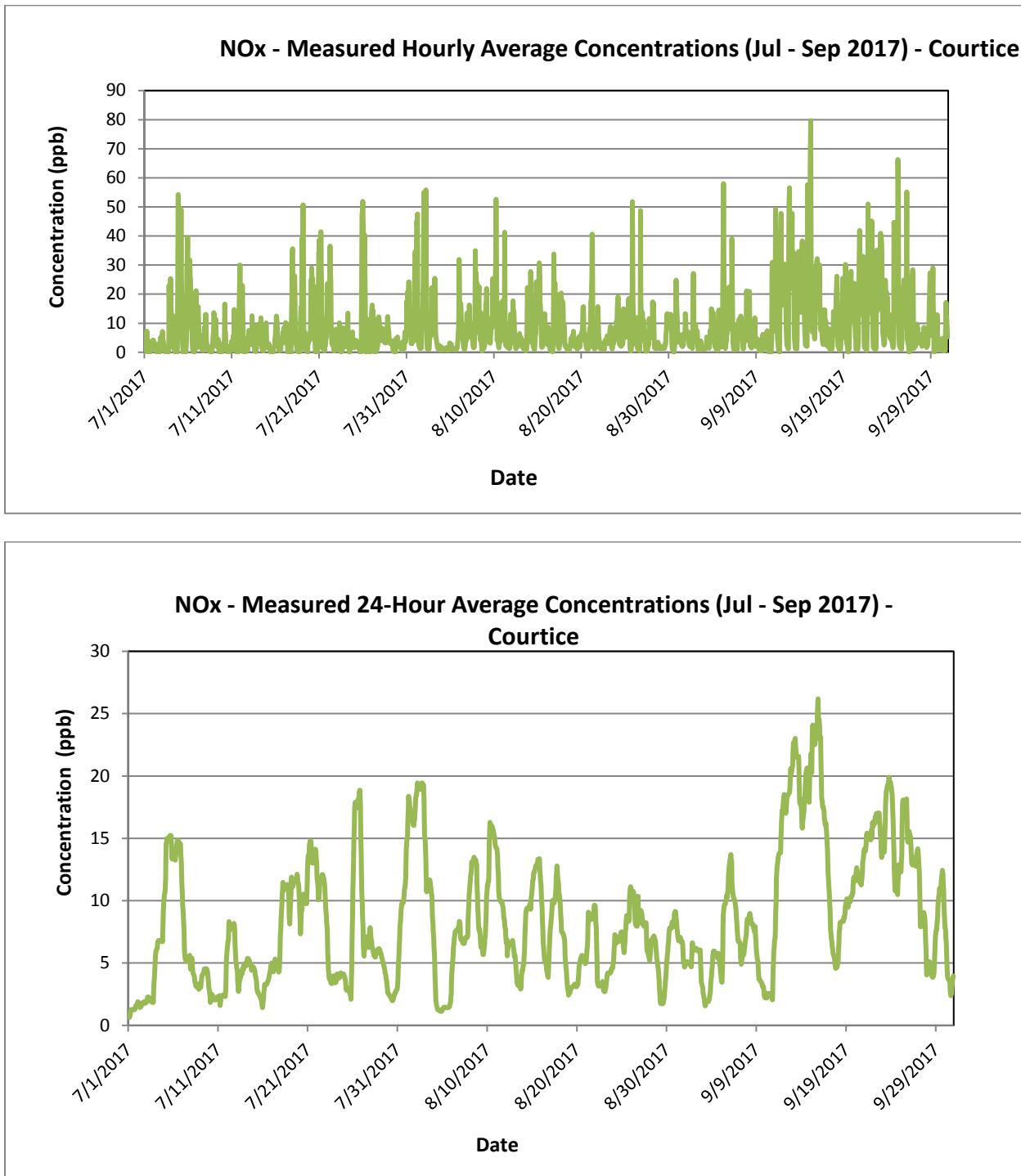
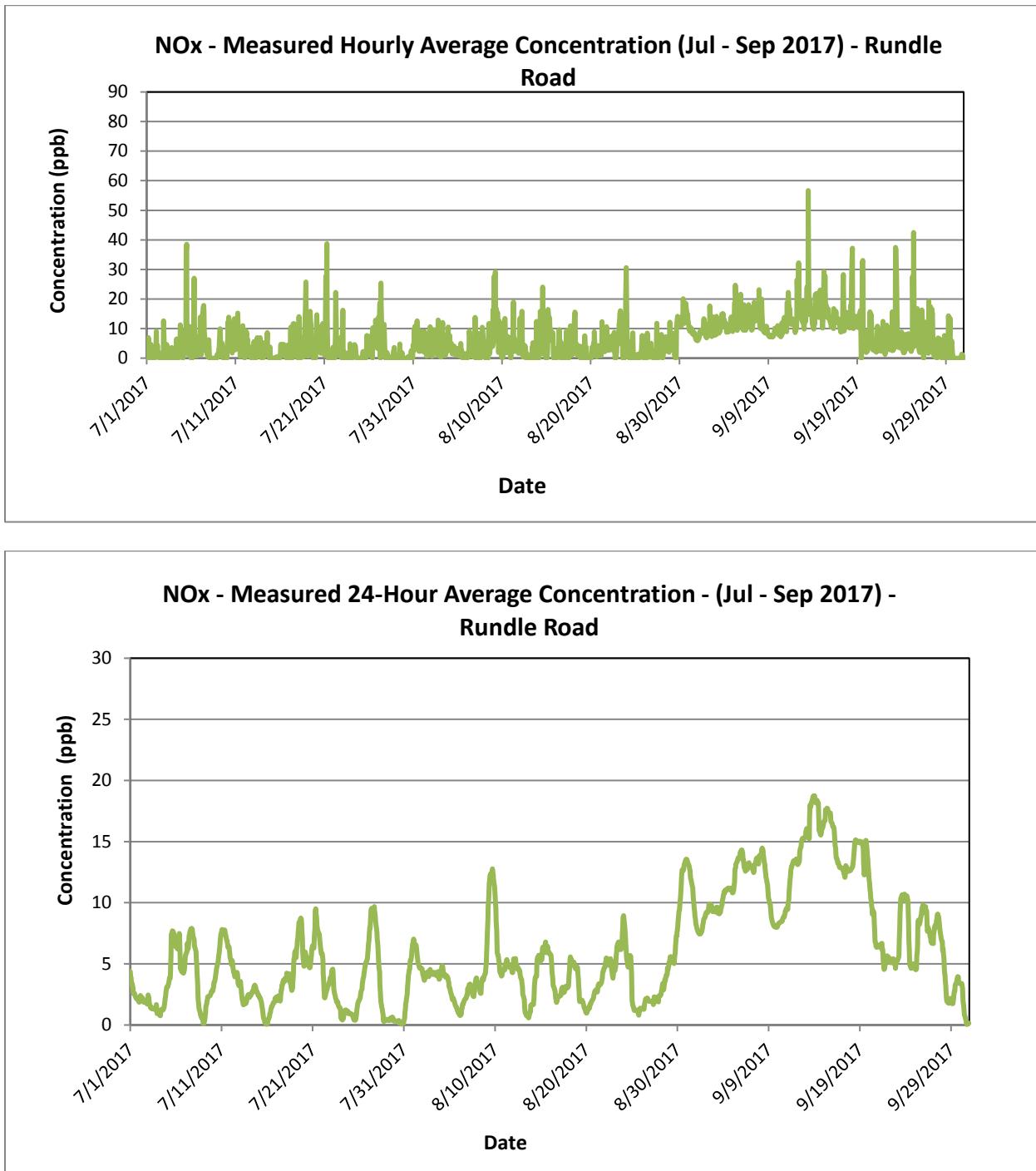


Figure D-2 Time History Plots of Measured Hourly Average and 24 Hour Average NO_x Concentrations – Rundle Road Station



QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE – JULY TO SEPTEMBER 2017

Appendix E PM2.5 Data Summaries and Time History Plots
November 14, 2017

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

PM _{2.5} - COURTICE July 2017 (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	9.4	11.0	10.6	11.1	10.3	11.4	11.1	10.8	C	8.3	10.2	10.5	7.0	3.5	3.7	7.8	6.5	4.5	7.0	6.7	8.5	7.0	11.4	14.1	23	14.1	3.5	8.8	
2	11.4	9.9	7.5	6.0	4.2	5.6	6.7	7.1	5.6	4.5	2.5	2.6	3.4	3.5	2.6	2.3	2.3	2.9	3.2	2.9	2.8	6.7	8.7	8.9	24	11.4	2.3	5.2	
3	16.1	11.3	6.1	4.4	3.8	3.6	4.0	3.2	1.6	1.3	2.3	3.0	2.4	2.2	2.1	1.6	0.7	0.6	0.7	1.2	3.3	3.8	4.8	7.9	24	16.1	0.6	3.8	
4	6.7	4.8	4.7	3.6	3.7	3.4	3.1	3.0	2.7	4.0	C	4.9	5.5	6.4	7.1	6.4	4.7	3.9	4.3	4.9	8.5	10.3	12.5	14.5	23	14.5	2.7	5.8	
5	10.1	7.5	8.1	7.5	7.9	10.7	9.2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	7	10.7	7.5			
6	M	M	M	M	M	M	M	M	6.8	8.6	9.7	10.7	9.5	9.0	8.7	8.6	2.9	2.1	3.0	5.3	8.5	11.5	15.1	16.2	16	16.2	2.1		
7	8.7	6.8	9.3	14.9	22.5	20.8	15.8	15.1	14.8	18.4	22.1	18.9	19.1	16.9	15.6	16.2	14.8	13.8	14.5	12.9	6.2	7.4	5.9	6.4	24	22.5	5.9	14.1	
8	7.5	6.5	8.9	9.5	7.8	7.5	6.1	3.9	3.8	3.9	3.5	2.7	2.7	2.4	2.7	2.7	2.8	1.8	1.8	2.1	2.9	4.6	7.8	7.8	24	9.5	1.8	4.7	
9	6.8	5.6	6.6	6.9	6.1	5.4	4.0	3.2	2.5	2.3	2.9	3.5	4.3	4.0	4.1	4.9	5.4	4.9	5.2	5.2	5.2	5.8	6.7	7.4	24	7.4	2.3	5.0	
10	4.8	3.3	4.1	5.0	5.8	7.2	5.7	6.3	6.4	7.3	8.2	7.9	8.1	8.0	8.0	9.2	8.6	6.8	8.1	9.0	9.7	10.3	10.1	10.7	24	10.7	3.3	7.4	
11	15.5	10.7	3.1	3.4	5.5	4.3	4.9	28.5	17.9	13.2	16.0	23.4	15.1	7.6	5.4	4.1	3.4	3.8	4.3	4.9	5.4	8.6	11.4	15.0	24	28.5	3.1	9.8	
12	12.0	10.4	11.4	10.4	12.4	13.1	12.0	10.2	8.5	7.6	13.5	19.3	13.6	13.6	13.4	13.9	14.1	10.2	8.0	6.1	6.2	7.4	6.3	5.8	24	19.3	5.8	10.8	
13	3.6	3.0	3.6	3.4	3.0	2.7	2.3	2.3	2.6	2.3	2.5	3.2	2.6	2.0	2.3	2.7	3.1	4.3	4.6	4.0	4.5	6.0	5.9	4.7	24	6.0	2.0	3.4	
14	4.2	4.3	4.7	4.9	5.5	5.3	7.4	10.2	15.5	13.8	15.0	22.5	24.4	18.9	16.6	14.1	11.2	8.9	9.8	4.8	1.6	2.7	5.1	3.7	24	24.4	1.6	9.8	
15	1.9	2.1	1.9	2.3	4.7	5.4	5.2	5.1	3.8	3.3	3.2	3.7	5.9	8.8	6.8	4.8	3.9	4.5	7.0	10.6	5.0	5.7	5.9	6.6	24	10.6	1.9	4.9	
16	9.4	10.6	8.8	8.7	8.4	8.8	8.0	8.1	6.7	6.6	7.3	7.6	14.1	10.7	10.6	11.3	11.9	10.4	8.9	10.8	11.0	10.5	10.1	10.2	24	14.1	6.6	9.6	
17	9.5	9.3	9.8	8.8	8.4	8.5	8.7	8.5	6.7	7.1	6.8	6.9	6.8	6.0	5.7	5.2	3.3	3.1	3.6	6.6	9.1	10.4	13.3	13.6	24	13.6	3.1	7.7	
18	13.8	13.8	12.4	12.7	13.4	12.8	10.7	6.7	5.5	6.3	7.4	9.2	12.0	17.3	12.4	11.0	11.2	9.1	8.4	8.6	9.4	11.7	15.5	13.8	24	17.3	5.5	11.1	
19	16.1	18.6	21.1	21.2	25.8	24.0	14.1	14.6	13.5	13.9	15.6	17.9	17.1	15.0	13.6	10.5	9.8	5.2	5.5	6.1	12.5	15.5	15.3	24	25.8	5.2	14.9		
20	15.1	14.9	15.2	14.9	15.3	14.6	15.0	12.2	12.1	12.6	15.4	15.0	11.8	9.7	8.3	8.4	7.3	6.2	5.4	5.8	6.0	8.0	9.9	10.0	24	15.4	5.4	11.2	
21	12.9	13.4	15.0	17.4	20.6	19.5	15.7	14.5	11.4	11.6	11.8	11.4	10.6	9.9	11.7	9.2	8.5	8.0	7.2	6.9	7.5	8.5	12.2	15.9	24	20.6	6.9	12.1	
22	11.3	9.4	10.6	11.0	11.2	11.1	11.5	12.1	11.3	11.2	11.4	11.8	11.7	11.2	11.5	12.3	11.3	11.0	10.4	10.6	11.6	14.5	17.3	21.5	24	21.5	9.4	12.0	
23	20.2	17.6	16.5	15.5	15.4	15.0	14.0	11.5	8.6	6.7	7.9	10.2	11.1	9.4	8.0	7.0	5.6	5.0	5.3	3.5	3.3	3.2	2.9	24	20.2	2.9	9.4		
24	2.7	2.7	3.1	3.6	3.6	3.3	3.7	4.6	6.5	7.1	6.6	5.8	5.7	5.4	4.3	4.7	4.6	3.6	3.6	2.5	2.0	1.8	1.7	24	7.1	1.7	4.0		
25	1.4	1.4	1.5	1.6	1.8	2.0	2.2	2.0	2.3	2.1	1.9	1.9	2.2	2.4	2.0	2.2	1.9	1.7	1.6	1.4	2.5	2.7	3.7	24	5.9	1.4	2.2		
26	6.2	4.2	5.1	5.8	6.2	7.6	6.7	6.2	2.4	2.1	2.2	2.1	2.2	C	C	0.0	0.5	1.1	1.4	1.1	1.0	0.6	0.6	0.5	22	7.6	0.0	3.0	
27	0.9	1.4	1.8	1.2	3.3	3.3	4.5	11.5	12.8	13.4	C	6.9	18.0	18.0	8.7	4.6	7.9	10.1	10.2	9.5	11.3	10.6	10.5	8.1	23	18.0	0.9	8.2	
28	5.9	6.1	7.3	7.8	8.6	8.3	7.7	7.2	7.1	6.4	6.1	5.9	4.8	4.5	3.9	4.1	3.8	1.6	2.0	3.0	3.8	4.8	5.1	5.1	24	8.6	1.6	5.5	
29	6.1	8.4	7.8	7.1	7.0	6.8	5.8	4.7	4.0	3.5	3.4	4.1	4.9	5.3	5.2	5.3	3.8	2.8	3.2	3.1	3.2	3.8	4.5	4.7	24	8.4	2.8	4.9	
30	5.4	6.1	6.2	6.7	6.5	6.5	6.0	4.3	2.8	3.5	2.9	3.2	2.9	3.7	5.0	5.5	5.9	5.8	7.1	8.0	8.7	12.2	12.0	11.0	24	12.2	2.8	6.2	
31	12.5	13.8	13.2	12.8	12.3	11.7	9.0	7.4	4.8	5.0	4.7	5.7	6.8	6.7	6.9	7.3	10.2	7.5	6.1	6.7	8.4	8.6	9.8	11.4	24	13.8	4.7	8.7	
Count	30	30	30	30	30	30	29	29	30	28	30	30	29	29	30	30	30	30	30	30	30	30	30	30	714				
Maximum	20.2	18.6	21.1	21.2	25.8	24.0	15.8	28.5	17.9	18.4	22.1	23.4	24.4	18.9	16.6	16.2	14.8	13.8	14.5	12.9	11.6	14.5	17.3	21.5	24				
Minimum	0.9	1.4	1.5	1.2	1.8	2.0	2.2	1.6	1.3	1.9	1.9	2.2	2.0	2.0	0.0	0.5	0.6	0.7	1.1	1.0	0.6	0.6	0.5	7					
Average	8.9	8.3	8.2	8.3	9.0	9.0	8.0	8.4	7.3	7.3	7.9	8.7	8.9	8.4	7.5	7.0	6.4	5.7	5.7	5.8	6.1	7.4	8.8	9.4					
Percentiles	10	20	30	40	50	60	70	80	90	95	99	100													Maximum Hourly	28.5			
Data	2.4	3.5	4.7	5.8	6.8	8.1	9.9	11.5	14.6	16.1	22.1	28.5													Maximum Daily	14.9			
																									Monthly Average	7.7			
Notes	C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down S - Temporary source affected short term readings																												

PM _{2.5} - COURTICE August 2017 (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	12.1	12.5	13.0	13.0	14.5	14.8	13.9	11.1	11.3	T	18.0	21.5	20.2	18.2	16.3	16.1	16.2	13.0	13.1	16.1	21.1	21.2	19.0	19.1	23	21.5	11.1	15.9					
2	20.1	19.1	18.8	19.5	20.8	24.9	26.4	M	M	M	M	M	M	13.8	13.4	13.7	15.8	19.2	18.7	16.8	15.9	15.1	14.3	14.4	14.6	21.7	21.3	19.1	13.5	17	26.4	8.6	
3	13.1	12.2	13.7	13.7	14.0	14.4	14.5	13.8	13.4	13.7	15.8	19.2	18.7	16.8	15.9	15.1	14.3	14.4	14.6	14.7	14.7	14.4	13.6	12.8	24	19.2	12.2	14.7					
4	10.9	12.3	11.0	11.5	11.3	11.0	11.3	11.0	11.9	11.5	11.3	11.4	11.8	11.9	12.3	11.6	12.3	12.6	13.6	12.1	11.1	9.8	10.1	10.7	24	13.6	9.8	11.5					
5	11.5	12.2	12.5	12.5	11.6	10.1	9.3	9.0	9.0	8.7	8.6	8.1	7.9	7.3	6.0	5.6	5.7	5.7	5.7	5.9	6.4	7.0	8.9	10.3	24	12.5	5.6	8.6					
6	18.9	15.0	13.6	12.5	11.8	11.8	11.2	9.3	10.3	11.6	11.6	12.3	12.4	12.6	12.3	12.5	14.2	13.6	13.0	13.1	13.7	12.9	14.5	14.3	13.0	24	18.9	9.3	12.9				
7	13.6	16.0	18.0	16.3	14.6	13.7	12.8	12.7	12.1	12.3	11.6	11.2	10.8	10.6	10.1	10.1	12.2	13.8	13.2	15.8	17.6	16.9	18.3	17.5	24	18.3	10.1	13.8					
8	15.9	14.5	14.4	13.8	11.8	12.4	13.0	10.1	8.9	10.1	10.0	9.3	11.9	11.4	11.2	10.8	10.4	10.7	12.3	14.0	15.2	14.7	15.5	18.4	24	18.4	8.9	12.5					
9	23.3	22.7	23.1	23.5	22.8	20.7	18.7	15.5	14.6	14.5	T	8.5	9.4	9.7	8.9	4.2	4.5	6.1	5.8	6.3	7.4	8.6	9.2	8.9	23	23.5	4.2	12.9					
10	9.3	9.1	11.5	13.8	15.1	18.0	19.5	14.4	14.4	15.1	11.6	11.7	11.8	11.6	12.5	11.7	11.5	11.8	13.3	13.7	17.4	19.6	21.7	20.8	24	21.7	9.1	14.2					
11	21.6	19.6	18.5	14.3	10.5	8.9	11.1	6.8	6.7	6.2	6.9	7.5	8.4	8.8	9.2	8.4	7.7	8.2	6.3	3.8	5.6	6.3	6.9	24	21.6	3.8	9.5						
12	8.3	10.9	7.5	6.8	12.3	15.3	17.8	14.5	13.6	14.3	14.8	15.4	11.7	8.9	2.7	3.2	4.5	3.9	5.4	6.9	6.8	9.8	13.1	9.6	24	17.8	2.7	9.9					
13	7.0	7.2	9.1	9.7	12.7	14.2	9.2	3.6	2.9	5.6	5.6	6.2	6.0	3.8	3.4	2.5	2.4	2.6	3.9	7.2	10.1	10.2	7.7	11.6	24	14.2	2.4	6.8					
14	13.7	11.5	11.3	11.2	10.4	9.8	8.7	9.9	9.1	5.6	5.6	5.6	T	6.9	7.0	5.3	5.5	5.3	6.1	7.7	8.8	9.8	11.4	12.6	13.4	23	13.7	5.3	9.0				
15	12.7	13.9	13.1	12.0	10.8	13.2	11.8	7.4	6.7	7.0	9.2	6.5	5.7	5.9	7.9	8.3	8.0	10.3	8.6	4.9	7.4	9.1	9.9	12.1	24	13.9	4.9	9.3					
16	14.5	11.4	10.7	11.3	11.9	12.3	11.8	8.1	6.8	5.6	4.1	3.6	3.0	3.0	3.1	3.2	3.0	3.5	3.9	5.5	8.5	11.5	11.6	10.0	24	14.5	3.0	7.6					
17	9.5	8.5	8.3	8.8	8.3	8.3	6.9	5.4	2.6	2.5	2.3	1.9	3.0	3.8	4.0	4.3	5.2	7.4	6.6	4.8	4.9	5.1	4.4	3.4	24	9.5	1.9	5.4					
18	3.8	4.0	4.4	5.2	5.5	7.9	7.3	4.7	2.1	1.9	2.0	2.5	2.8	3.0	1.9	2.8	3.8	2.6	1.6	1.9	3.6	5.7	4.5	4.0	24	7.9	1.6	3.7					
19	5.8	3.1	2.2	2.7	2.2	2.3	2.9	4.5	4.5	5.6	6.5	6.2	4.4	3.9	2.3	2.1	3.9	4.3	4.5	4.6	4.6	5.5	7.6	14.5	24	14.5	2.1	4.6					
20	13.0	11.4	9.0	9.7	10.3	10.6	10.4	6.5	5.1	6.2	9.3	12.7	11.1	10.2	10.4	11.1	10.2	11.0	12.0	12.0	11.0	11.2	11.8	11.6	24	13.0	5.1	10.3					
21	12.6	12.1	13.8	15.9	16.7	18.5	19.3	14.5	9.0	9.0	T	10.9	10.8	11.3	11.2	9.6	8.8	8.6	9.9	11.0	11.2	10.8	12.4	13.1	23	19.3	8.6	12.2					
22	13.6	12.3	13.2	13.1	12.2	12.1	11.8	11.1	10.3	10.9	11.7	11.8	11.9	9.2	2.6	3.2	3.8	2.9	2.3	3.0	3.4	3.9	6.9	8.8	24	13.6	2.3	8.6					
23	7.7	7.0	7.5	7.8	8.1	8.2	7.0	5.5	6.7	7.7	7.5	6.8	7.0	6.6	5.6	2.4	1.8	1.2	2.0	2.9	3.9	3.2	3.8	3.2	24	8.2	1.2	5.5					
24	4.5	4.7	4.1	4.2	3.8	3.8	3.6	2.1	1.2	1.0	1.2	T	0.0	0.0	0.0	0.0	2.5	5.1	7.6	10.4	6.2	2.3	1.8	1.6	23	10.4	0.0	3.1					
25	2.0	2.7	3.7	3.6	3.3	2.5	1.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.1	2.8	9.5	6.5	5.1	6.0	24	9.5	0.0	2.2					
26	2.2	1.4	1.5	2.0	2.7	3.5	3.1	2.2	1.1	1.2	0.5	0.7	1.3	1.3	1.2	0.9	0.9	0.5	1.3	8.2	21.7	209.5	256.4	150.2	24	256.4	0.5	28.1					
27	99.9	250.5	207.2	185.2	214.8	66.0	12.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.8	0.7	1.2	1.3	1.4	1.8	24	250.5	0.0	43.5					
28	2.0	2.0	2.3	2.5	3.3	4.2	4.7	4.5	4.4	3.8	4.4	4.5	5.1	6.5	7.4	6.2	5.4	6.0	7.1	7.7	9.2	8.5	6.1	5.0	24	9.2	2.0	5.1					
29	6.3	6.2	6.4	6.5	6.5	6.6	6.2	5.2	5.9	4.2	3.4	2.2	2.1	2.9	3.9	3.8	4.7	5.6	6.0	6.8	7.8	7.3	6.5	6.0	24	7.8	2.1	5.4					
30	5.2	4.2	4.5	4.4	4.8	4.4	4.9	3.0	1.9	1.4	2.1	3.1	3.9	4.2	C	C	3.8	3.3	3.7	5.1	6.2	8.6	8.8	22	8.9	1.4	4.6						
31	9.2	7.0	5.4	5.5	5.3	6.3	7.7	7.6	4.5	2.6	0.9	0.8	0.8	0.8	0.8	0.8	1.5	2.1	2.5	2.9	4.1	3.6	3.9	3.6	24	9.2	0.8	3.8					
Count	31	31	31	31	31	31	31	30	30	29	28	28	30	30	30	30	31	31	31	31	31	31	31	31	730								
Maximum	99.9	250.5	207.2	185.2	214.8	66.0	26.4	15.5	14.6	15.1	18.0	21.5	20.2	18.2	16.3	16.1	16.6	18.8	20.7	21.7	21.7	209.5	256.4	150.2	24								
Minimum	2.0	1.4	1.5	2.0	2.2	2.3	1.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.8	0.7	1.2	1.3	1.4	1.6	17								
Average	13.7	18.0	16.6	15.9	16.9	12.6	10.7	7.8	7.0	6.9	7.1	7.7	7.4	7.0	6.6	6.3	6.6	6.9	7.5	8.3	9.7	16.0	17.6	14.5									
Percentiles	10	20	30	40	50	60	70	80	90	95	99	100																Maximum Hourly	256.4				
Data	2.1	3.6	5.1	6.5	8.5	10.2</td																											

PM _{2.5} - COURTICE																													
September 2017																													
(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	3.0	3.0	3.1	3.0	3.0	2.8	3.0	2.0	1.2	1.1	1.1	1.1	1.1	1.2	1.3	1.4	2.8	9.1	10.1	9.5	8.2	4.8	3.9	24	10.1	1.1	3.4		
2	3.7	3.9	4.6	4.3	4.0	3.7	3.2	3.1	1.9	1.6	1.7	1.8	1.9	2.1	2.3	2.6	2.8	3.0	2.8	2.5	2.2	2.2	2.0	24	4.6	1.6	2.7		
3	2.7	2.2	2.2	1.6	1.1	1.0	0.8	0.8	1.0	0.9	0.8	0.8	1.2	1.4	2.4	4.5	6.5	8.3	15.2	14.1	15.4	17.3	17.3	15.4	24	17.3	0.8	5.6	
4	18.2	19.2	18.5	16.5	13.9	12.9	11.8	11.1	10.2	7.1	7.5	7.6	7.5	8.0	9.7	10.8	11.0	11.8	14.6	16.1	13.5	12.2	5.6	2.4	24	19.2	2.4	11.6	
5	3.5	5.9	6.4	8.0	9.6	12.1	12.1	14.1	12.4	11.7	10.8	10.7	T	10.5	8.3	8.5	9.8	9.2	9.1	8.9	9.8	10.0	9.1	8.5	23	14.1	3.5	9.5	
6	8.5	6.8	5.2	4.8	4.6	4.6	5.5	4.8	4.8	3.9	4.2	5.0	5.4	5.6	5.9	6.7	6.9	5.4	5.1	4.3	4.4	4.2	5.8	7.6	24	8.5	3.9	5.4	
7	5.5	5.3	4.2	3.9	3.3	2.0	1.6	1.0	0.8	1.1	1.4	1.7	1.8	1.7	2.3	2.4	1.8	1.2	1.4	2.1	2.4	2.1	3.2	2.5	24	5.5	0.8	2.4	
8	1.5	1.2	1.1	1.1	1.2	1.9	1.8	1.4	1.2	1.2	1.4	1.4	1.7	1.8	1.9	2.1	3.0	5.5	5.2	6.6	7.6	6.1	5.8	24	7.6	1.1	2.7		
9	6.9	7.0	7.0	5.9	5.1	4.7	3.3	1.7	1.1	0.7	0.7	0.8	0.6	0.6	0.5	0.5	1.2	5.0	3.8	5.4	4.4	4.5	4.4	4.2	24	7.0	0.5	3.3	
10	4.8	5.7	6.2	5.4	4.6	3.9	3.6	2.6	1.4	0.9	0.9	1.0	1.2	1.2	1.3	1.4	1.4	1.6	3.2	5.1	6.2	8.0	8.7	7.3	24	8.7	0.9	3.7	
11	7.3	8.6	7.2	7.1	7.0	6.8	8.7	5.2	2.1	2.1	2.4	2.2	1.9	1.8	1.7	1.8	1.7	1.7	2.7	4.7	5.9	8.0	7.9	6.4	24	8.7	1.7	4.7	
12	7.1	7.7	8.4	7.4	7.8	7.8	7.5	5.0	3.8	6.0	5.7	5.4	5.3	4.4	3.9	3.8	3.1	2.6	4.7	8.6	12.9	14.2	12.9	12.7	24	14.2	2.6	7.0	
13	13.0	12.2	13.5	14.3	12.0	13.0	11.5	9.6	7.8	5.2	6.4	5.9	4.4	4.4	5.6	4.7	3.4	3.0	3.6	5.1	6.4	6.9	9.2	9.4	24	14.3	3.0	7.9	
14	7.3	6.4	6.3	7.9	8.9	10.1	11.0	11.8	10.4	14.8	10.2	T	25.7	19.0	12.6	8.3	5.3	4.5	5.4	7.1	6.9	3.7	7.7	7.6	23	25.7	3.7	9.5	
15	8.4	8.3	7.2	6.0	6.7	9.4	14.9	12.1	7.9	7.8	7.0	7.3	18.0	12.6	11.3	10.8	7.6	6.4	8.1	11.6	14.6	16.5	14.2	15.3	24	18.0	6.0	10.4	
16	17.0	17.7	18.0	16.9	16.1	15.0	14.7	15.9	14.3	11.5	9.4	12.8	11.0	7.3	4.6	4.9	4.0	3.9	4.6	10.4	14.6	14.0	13.7	16.3	24	18.0	3.9	12.0	
17	12.2	11.1	10.5	9.1	8.6	9.6	10.2	11.1	10.0	9.7	15.3	15.3	14.8	14.7	11.9	11.0	9.1	8.8	11.3	11.7	12.7	11.7	11.6	11.4	24	15.3	8.6	11.4	
18	10.9	9.7	9.2	8.8	9.4	10.5	11.2	11.2	9.9	8.5	11.1	T	10.1	9.7	8.6	8.3	7.9	6.3	6.6	8.4	10.0	11.3	11.2	11.3	23	11.3	6.3	9.6	
19	11.4	11.2	10.9	10.4	9.7	9.1	9.9	9.8	9.3	10.3	10.9	13.8	17.0	C	15.6	17.9	16.2	12.1	12.3	12.3	13.0	14.5	13.1	13.2	23	17.9	9.1	12.3	
20	12.7	12.3	13.1	13.3	13.2	13.8	13.8	13.2	11.7	9.4	11.4	12.6	13.1	14.0	14.3	12.8	11.3	10.6	10.0	11.4	12.3	12.7	13.4	24	14.3	9.4	12.5		
21	11.9	10.1	8.7	7.2	6.7	8.3	11.7	10.4	10.5	10.9	12.0	13.5	12.2	11.2	8.3	8.4	8.4	7.7	8.4	11.8	12.5	14.1	12.9	12.7	24	14.1	6.7	10.4	
22	12.0	10.8	10.6	10.8	10.5	10.4	10.7	10.3	6.1	4.2	4.6	5.7	6.9	6.9	6.7	6.6	5.6	4.5	6.0	7.8	9.1	11.6	11.1	13.0	24	13.0	4.2	8.5	
23	11.0	9.8	11.1	12.5	12.7	14.3	14.7	12.5	12.1	14.5	14.3	13.0	11.1	10.9	9.4	10.8	10.2	13.5	15.2	16.1	22.3	23.3	26.0	24	26.0	9.4	14.4		
24	23.4	22.3	21.2	20.6	19.2	18.5	20.3	18.3	17.2	18.6	20.4	28.5	30.4	32.4	21.3	14.3	11.3	11.7	12.7	15.5	18.0	19.5	21.0	19.4	24	32.4	11.3	19.8	
25	19.4	15.5	14.6	12.4	11.8	13.7	18.4	21.8	10.7	10.7	11.3	11.5	10.5	10.8	11.4	11.6	12.3	12.7	14.2	14.3	15.7	16.1	17.5	24	21.8	10.5	14.0		
26	13.3	11.6	11.1	10.8	11.6	13.0	14.8	15.5	14.1	15.9	17.1	T	17.1	C	13.5	13.2	13.5	13.9	15.3	17.8	21.6	24.1	22.7	20.8	22	24.1	10.8	15.6	
27	11.9	5.9	5.8	5.9	7.1	7.3	7.2	7.0	7.0	7.0	8.1	10.2	11.4	9.7	4.3	2.2	1.1	0.7	0.4	0.2	0.5	0.8	0.9	0.8	24	11.9	0.2	5.1	
28	1.0	1.4	1.4	1.8	1.5	1.7	2.3	2.2	1.5	1.7	1.8	2.8	3.1	2.9	2.6	3.1	2.1	1.8	2.1	2.5	3.8	3.9	5.7	8.4	24	8.4	1.0	2.6	
29	8.7	6.3	4.1	3.1	2.7	2.5	2.4	1.6	2.0	A	A	2.7	5.9	9.3	9.2	7.2	7.5	4.3	3.9	3.4	3.3	2.6	2.3	22	9.3	1.6	4.4		
30	2.1	1.8	1.9	2.1	2.1	2.3	2.2	1.6	1.6	1.4	1.3	1.2	1.3	1.2	1.3	1.4	1.4	2.4	17.7	7.6	5.6	3.9	4.4	3.7	24	17.7	1.2	3.1	
Count	30	30	30	30	30	30	30	30	30	29	29	27	29	28	30	30	30	30	30	30	30	30	30	30	712				
Maximum	23.4	22.3	21.2	20.6	19.2	18.5	20.3	21.8	17.2	18.6	20.4	28.5	30.4	32.4	21.3	17.9	16.2	13.9	17.7	17.8	22.3	24.1	26.0	24.6	24				
Minimum	1.0	1.2	1.1	1.1	1.0	0.8	0.8	0.8	0.8	0.7	0.7	0.8	0.6	0.6	0.5	0.5	1.1	0.7	0.4	0.2	0.5	0.8	0.9	0.8	22				
Average	9.3	8.7	8.4	8.1	7.9	8.2	8.8	8.3	6.9	6.9	7.3	7.3	8.7	7.8	7.1	6.8	6.3	6.1	7.8	8.7	9.9	10.3	10.2	9.9					
Percentiles	10	20	30	40	50	60	70	80	90	95	99	100													Maximum Hourly	32.4			
Data	1.4	2.4	4.2	5.9	7.6	9.6	11.1	12.7	15.2	18.0	23.4	32.4													Maximum Daily	19.8			
																									Monthly Average	8.2			
Notes																													

PM _{2.5} - Rundle Road August 2017 (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	11.3	9.2	9.5	10.0	11.9	11.4	13.2	T	8.3	5.7	7.0	8.2	8.5	8.2	7.2	7.5	8.0	7.3	5.6	7.7	7.8	8.5	8.6	8.1	23	13.2	5.6	8.6	
2	8.9	7.7	8.7	9.7	9.2	11.4	18.7	13.5	9.7	6.3	5.8	7.0	8.1	9.1	7.8	6.9	6.6	9.0	8.9	8.3	8.8	9.7	9.8	9.5	24	18.7	5.8	9.1	
3	8.5	6.1	7.4	8.0	7.9	9.6	11.5	15.2	12.1	9.1	10.2	12.4	12.7	11.3	9.0	8.9	10.2	8.9	9.4	9.7	9.8	9.6	7.6	5.5	24	15.2	5.5	9.6	
4	3.0	4.1	2.0	2.8	3.0	3.3	4.4	5.7	7.1	4.7	5.2	7.1	6.6	6.6	5.9	4.6	4.7	3.6	5.5	3.5	2.9	0.2	0.0	0.0	24	7.1	0.0	4.0	
5	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.1	1.4	0.7	0.9	1.2	1.1	0.7	0.0	0.0	0.5	0.0	0.1	0.4	1.2	1.9	3.3	4.2	24	4.2	0.0	0.8	
6	5.8	5.7	4.8	4.3	4.6	5.3	5.7	2.9	3.0	3.4	4.2	4.4	3.1	2.2	1.9	2.7	2.7	2.5	2.8	3.2	2.7	3.0	3.2	3.4	24	5.8	1.9	3.6	
7	3.9	2.8	3.0	3.5	3.9	4.2	4.7	4.5	4.9	2.8	2.5	2.7	2.3	2.4	2.3	1.8	2.9	3.3	2.9	6.0	6.0	4.7	7.7	8.9	24	8.9	1.8	3.9	
8	8.3	6.8	4.0	5.6	5.6	5.1	5.9	4.2	3.6	3.6	4.7	4.0	7.2	6.5	4.9	4.4	4.4	4.4	7.4	11.1	13.0	9.9	6.9	7.4	24	13.0	3.6	6.2	
9	16.0	15.0	14.5	15.8	15.4	17.4	17.8	13.4	11.8	10.8	9.3	T	13.6	13.0	10.9	6.4	8.6	8.0	8.8	8.6	8.0	8.0	9.2	9.4	23	17.8	6.4	11.7	
10	9.8	11.9	19.2	20.3	18.8	18.6	22.5	28.7	24.7	12.8	4.7	5.1	5.8	5.7	6.4	7.1	7.6	8.3	9.2	9.8	12.7	13.3	14.1	14.1	24	28.7	4.7	13.0	
11	13.4	11.7	11.8	12.7	12.3	11.5	11.7	10.8	6.2	5.1	5.4	6.2	7.0	7.7	8.1	8.3	8.7	6.9	7.1	6.1	2.6	3.0	2.9	3.8	24	13.4	2.6	8.0	
12	7.0	7.5	5.1	4.7	8.3	8.2	15.4	13.6	8.3	5.5	11.5	12.2	9.6	7.4	6.0	11.6	15.5	13.2	11.2	10.3	8.1	8.6	8.1	6.1	24	15.5	4.7	9.3	
13	5.9	5.0	4.5	5.1	5.8	6.5	5.1	3.2	2.3	1.5	3.0	3.2	3.1	2.8	2.5	2.0	2.3	1.6	2.0	3.4	7.0	8.3	8.7	9.1	24	9.1	1.5	4.3	
14	11.9	6.5	6.3	6.3	5.2	4.8	9.1	7.3	12.7	T	5.8	5.4	3.3	4.6	5.2	4.7	5.4	3.3	4.6	6.2	6.9	10.7	18.6	7.9	23	18.6	3.3	7.1	
15	7.9	5.8	6.1	8.2	8.7	17.0	14.0	8.3	6.7	4.7	5.3	5.1	5.3	6.0	6.4	6.5	8.1	8.1	5.0	2.0	3.3	2.4	3.0	4.0	24	17.0	2.0	6.6	
16	6.5	6.0	6.2	6.4	7.6	7.7	8.9	4.6	4.8	2.9	2.8	3.9	2.2	2.4	2.1	2.5	4.5	7.1	6.6	8.6	8.4	13.1	11.3	24	15.3	2.1	6.3		
17	7.7	5.0	4.3	4.4	5.0	5.6	6.2	4.9	2.3	1.8	1.6	0.9	0.7	0.7	1.0	1.8	2.3	2.4	1.9	1.7	1.9	2.1	2.3	24	7.7	0.7	2.9		
18	2.8	2.8	3.4	4.0	4.8	6.0	6.7	3.9	2.5	1.5	2.0	2.1	2.1	2.1	0.5	0.7	2.3	0.4	0.2	0.4	0.2	0.3	0.3	0.2	24	6.7	0.2	2.2	
19	0.9	0.2	0.2	0.2	0.2	0.2	0.5	1.9	2.9	3.5	4.5	3.9	3.9	0.9	0.2	1.1	1.5	1.3	0.8	0.8	0.8	1.3	1.6	1.9	24	4.5	0.2	1.4	
20	2.3	2.2	3.0	3.9	4.4	5.3	8.3	9.0	6.2	4.2	4.9	5.9	7.5	7.4	8.9	10.2	10.2	9.0	9.4	8.6	7.8	8.2	8.3	8.2	24	10.2	2.2	6.8	
21	8.6	9.2	11.2	13.5	15.3	15.4	17.6	16.6	11.3	10.6	12.3	13.0	12.7	11.8	T	11.0	11.0	9.7	11.3	12.8	14.5	15.9	14.8	14.7	23	17.6	8.6	12.8	
22	14.9	14.1	15.0	13.9	12.9	12.7	11.8	11.9	13.0	13.4	14.0	13.1	11.9	8.9	2.1	2.6	3.9	2.0	1.1	0.9	0.6	0.2	0.5	1.3	24	15.0	0.2	8.2	
23	2.0	2.7	3.3	5.4	6.2	6.7	10.9	13.8	13.6	13.8	13.5	11.1	9.6	10.2	7.2	3.4	2.6	1.9	2.9	3.8	2.6	1.5	2.5	3.6	24	13.8	1.5	6.4	
24	3.9	2.7	2.3	2.2	2.3	2.5	2.3	1.6	1.5	T	0.0	0.0	0.0	0.0	0.0	0.0	1.7	2.5	3.7	3.1	3.5	3.3	2.8	2.3	23	3.9	0.0	1.9	
25	2.3	1.4	1.6	1.8	2.4	2.6	3.3	1.9	1.3	0.1	0.3	0.6	1.2	1.1	0.0	0.0	0.0	0.0	0.0	3.7	4.5	5.4	3.0	24	5.4	0.0	1.7		
26	3.7	4.9	4.7	5.0	4.8	6.3	5.9	2.4	1.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.4	19.8	9.0	8.9	9.4	24	19.8	0.0	4.4		
27	8.2	7.6	8.0	7.9	7.4	7.1	6.9	3.5	0.7	0.3	0.6	2.2	1.8	1.9	1.6	1.7	2.6	4.0	5.0	7.1	9.8	10.5	9.6	9.4	24	10.5	0.3	5.2	
28	8.4	7.3	6.6	6.5	6.9	6.5	5.9	4.1	2.7	3.5	5.1	6.7	8.5	11.2	13.1	14.8	10.6	6.4	3.8	2.7	2.0	1.1	0.7	0.6	24	14.8	0.6	6.1	
29	1.1	1.0	1.3	1.9	2.5	3.0	3.4	3.8	3.2	2.2	2.0	1.6	1.8	C	C	1.8	1.9	2.1	3.2	5.1	4.9	5.0	5.2	21	5.2	1.0	2.8		
30	4.6	4.8	4.8	4.8	5.2	5.0	5.8	5.9	3.7	1.9	1.9	2.1	2.7	2.4	2.2	2.7	3.7	4.4	5.6	6.6	7.1	10.3	11.7	24	11.7	1.9	5.0		
31	9.7	6.7	4.8	4.5	5.4	5.2	7.2	7.5	4.5	2.9	0.6	0.2	0.5	0.7	0.6	1.0	1.5	2.3	3.6	6.8	8.7	7.8	7.5	24	9.7	0.2	4.5		
Count	31	31	31	31	31	31	31	30	31	29	31	30	31	30	29	30	31	31	31	31	31	31	31	31	736				
Maximum	16.0	15.0	19.2	20.3	18.8	18.6	22.5	28.7	24.7	13.8	14.0	13.1	13.6	13.0	13.1	14.8	15.5	13.2	11.4	19.8	14.5	15.9	18.6	14.7	24				
Minimum	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.1	0.7	0.1	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	21				
Average	6.8	5.9	6.1	6.6	6.9	7.5	8.7	7.6	6.4	4.8	4.9	5.1	5.3	5.3	4.3	4.5	5.0	4.6	5.2	6.0	6.0	6.4	6.7	6.2					
Percentiles	10	20	30	40	50	60	70	80	90	95	99	100															Maximum Hourly	28.7	
Data	0.7	2.1	2.9	4.0	5.1	6.5	8.0	9.2	12.0	14.0	18.7	28.7														Maximum Daily	13.0		
																										Monthly Average	6.0		

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A - MOE Audit M - Equipment

PM _{2.5} - Rundle Road																													
September 2017																													
(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	7.7	7.9	7.7	7.6	6.4	5.4	5.2	3.4	1.7	1.0	0.9	0.8	0.7	0.8	0.8	0.9	1.1	4.4	5.0	6.6	6.1	6.7	4.9	4.2	24	7.9	0.7	4.1	
2	3.8	4.2	5.1	4.5	4.5	4.5	4.6	3.7	2.3	1.9	2.0	2.0	1.9	1.8	1.7	1.4	1.5	1.7	1.9	2.1	1.9	1.8	1.9	2.0	24	5.1	1.4	2.7	
3	2.2	2.0	2.1	2.0	1.7	1.3	1.2	1.2	1.3	1.1	0.9	0.6	0.8	0.9	1.0	2.3	2.5	2.7	3.1	5.8	6.0	6.5	15.0	11.0	24	15.0	0.6	3.1	
4	15.2	14.7	14.3	13.5	12.3	12.7	12.4	11.0	9.7	6.6	6.2	6.2	6.0	6.0	6.9	7.9	9.9	10.9	13.3	19.9	28.2	27.9	14.8	6.8	24	28.2	6.0	12.2	
5	7.7	9.6	9.3	10.2	11.4	11.7	10.9	14.2	13.0	10.2	10.7	9.2	10.4	9.5	6.2	T	9.1	7.7	7.6	8.2	11.0	8.1	6.9	4.6	23	14.2	4.6	9.5	
6	4.9	5.4	4.6	3.9	4.0	4.1	5.8	6.5	6.2	3.3	3.5	4.5	4.0	3.9	4.0	5.3	5.4	4.5	5.1	5.7	5.6	4.9	5.0	6.6	24	6.6	3.3	4.9	
7	5.9	5.3	4.6	4.3	3.9	2.2	1.9	1.7	0.7	0.6	1.6	2.0	2.3	2.3	4.1	4.6	3.5	2.7	2.5	3.5	3.9	3.1	3.3	3.6	24	5.9	0.6	3.1	
8	2.7	1.8	1.9	2.0	1.6	1.8	3.3	2.6	2.3	1.9	2.1	2.1	2.0	1.8	2.0	2.5	2.9	3.4	5.0	6.1	6.2	5.7	4.9	24	6.2	1.6	3.0		
9	4.8	4.8	4.9	4.6	4.0	4.4	3.4	2.6	1.4	1.0	0.8	0.7	0.6	0.6	0.5	1.0	3.9	4.2	6.2	7.6	6.8	6.5	6.7	24	7.6	0.5	3.4		
10	5.9	6.3	6.5	5.5	4.8	3.8	4.0	2.9	1.2	0.4	0.4	1.0	1.1	1.3	0.8	0.9	1.1	1.4	16.3	13.3	3.9	4.9	5.0	4.5	24	16.3	0.4	4.1	
11	4.8	4.9	4.5	4.7	4.0	3.8	4.9	5.0	1.4	0.9	0.9	0.7	0.5	0.1	0.2	0.9	1.4	1.9	5.6	4.8	5.7	8.1	9.6	7.1	24	9.6	0.1	3.6	
12	6.5	7.1	6.7	8.4	6.9	6.4	9.0	7.1	2.8	1.3	1.1	1.9	2.1	1.5	1.9	1.1	1.5	2.4	4.6	5.7	7.8	9.7	11.0	11.6	24	11.6	1.1	5.3	
13	9.6	8.1	11.8	10.3	11.1	11.8	12.5	12.0	8.3	4.9	6.3	5.9	5.5	3.2	2.3	3.3	2.9	1.9	1.9	3.1	3.8	3.6	3.9	5.0	24	12.5	1.9	6.4	
14	4.8	4.2	4.8	4.6	5.1	6.6	11.9	12.5	13.0	T	11.8	11.3	11.8	15.0	11.9	6.6	4.3	5.9	5.9	7.8	7.7	5.0	5.3	4.0	23	15.0	4.0	7.9	
15	5.5	3.7	2.9	2.3	3.6	6.6	13.4	8.4	9.1	10.6	8.8	7.7	16.2	16.5	14.7	10.4	7.1	8.7	9.2	9.5	12.2	15.1	14.3	13.5	24	16.5	2.3	9.6	
16	12.4	14.0	15.0	14.6	15.7	15.2	14.2	17.2	19.7	17.4	10.5	9.5	5.5	1.2	1.3	2.1	2.7	2.9	13.8	27.5	12.5	14.0	14.6	15.1	24	27.5	1.2	12.0	
17	10.1	7.4	8.7	8.3	7.9	8.2	9.9	17.4	14.7	10.0	18.3	18.9	9.3	8.8	9.2	10.3	10.3	11.8	11.4	13.3	12.4	10.4	10.0	9.9	24	18.9	7.4	11.1	
18	9.0	7.2	7.0	7.2	7.3	8.3	11.3	12.6	12.9	14.8	17.2	13.1	9.7	9.5	T	9.9	9.7	6.5	7.4	9.8	10.8	10.4	10.1	10.5	23	17.2	6.5	10.1	
19	10.7	10.5	10.4	10.5	9.9	8.8	9.0	10.4	9.3	8.3	6.1	C	C	19.5	15.4	17.9	14.9	9.3	9.1	9.7	6.9	7.8	10.1	12.7	22	19.5	6.1	10.8	
20	9.2	8.1	9.0	9.1	9.1	11.3	11.8	13.6	13.2	11.6	10.9	11.6	11.4	13.1	12.3	12.0	11.5	10.0	10.0	10.8	12.3	13.2	13.0	24	13.7	8.1	11.3		
21	12.0	9.3	7.8	6.3	6.1	7.4	9.7	12.5	10.8	9.6	9.3	7.5	8.4	6.3	5.2	5.3	6.3	6.8	8.0	9.8	10.5	13.0	16.1	13.8	24	16.1	5.2	9.1	
22	14.1	12.6	11.6	10.6	10.4	10.9	10.5	9.6	7.1	4.3	2.9	4.2	6.5	7.7	7.1	7.3	7.7	8.5	12.2	12.2	11.0	16.6	19.9	15.5	24	19.9	2.9	10.0	
23	12.5	11.5	10.4	11.4	12.1	13.3	13.5	14.6	14.4	12.9	12.9	12.2	10.4	9.3	7.8	8.1	8.3	10.6	12.1	13.7	15.3	19.9	21.2	19.3	24	21.2	7.8	12.8	
24	23.0	19.6	19.4	20.4	18.3	15.2	16.9	20.4	15.8	13.6	13.3	18.5	20.3	17.9	11.3	9.1	9.6	9.9	12.7	13.8	13.2	15.5	17.7	18.3	24	23.0	9.1	16.0	
25	17.5	14.2	11.8	9.8	9.2	9.8	11.0	12.9	14.8	13.4	13.4	10.7	11.7	12.0	12.5	10.1	10.5	10.9	13.4	15.4	15.6	16.8	17.5	13.9	24	17.5	9.2	12.9	
26	14.1	13.3	12.0	11.1	11.5	12.4	14.1	18.5	17.9	T	15.7	C	C	14.4	13.9	12.5	13.5	13.4	16.2	17.2	22.6	23.0	20.5	14.8	21	23.0	11.1	15.4	
27	14.4	14.8	10.0	11.9	10.8	12.3	14.3	12.6	10.5	9.0	10.0	12.8	13.7	9.3	2.7	0.3	0.4	0.2	0.2	0.2	0.2	0.4	0.3	0.2	24	14.8	0.2	7.1	
28	0.4	0.5	1.2	1.7	1.9	2.7	3.3	3.9	3.0	3.3	3.5	6.0	3.2	3.8	3.3	4.1	3.2	1.8	2.1	3.0	5.3	4.9	6.8	9.1	24	9.1	0.4	3.4	
29	8.6	7.2	5.4	4.1	3.6	3.1	3.3	3.4	2.2	2.8	3.7	2.7	A	5.3	9.0	10.3	7.5	7.1	3.3	3.8	3.7	3.2	3.0	3.2	23	10.3	2.2	4.8	
30	3.3	3.2	3.1	2.8	2.8	2.8	2.7	2.3	2.3	2.1	1.3	1.0	0.9	0.9	1.0	0.8	0.9	1.4	3.9	6.8	16.7	21.3	6.4	5.4	24	21.3	0.8	4.0	
31																													
Count	30	30	30	30	30	30	30	30	30	28	30	28	27	30	29	29	30	30	30	30	30	30	30	30	711				
Maximum	23.0	19.6	19.4	20.4	18.3	15.2	16.9	20.4	19.7	17.4	18.3	18.9	20.3	19.5	15.4	17.9	14.9	13.4	16.3	27.5	28.2	27.9	21.2	19.3	24				
Minimum	0.4	0.5	1.2	1.7	1.6	1.3	1.2	0.7	0.4	0.4	0.6	0.5	0.1	0.2	0.3	0.4	0.2	0.2	0.2	0.4	0.3	0.2	0.2	21					
Average	8.8	8.1	7.8	7.6	7.4	7.6	8.7	9.2	8.1	6.4	6.9	6.6	6.6	6.8	5.9	5.8	5.7	5.9	7.5	9.1	9.5	10.3	10.0	9.0					
Percentiles	10	20	30	40	50	60	70	80	90	95	99	100																	
Data	1.4	2.7	3.9	5.3	6.9	9.1	10.5	12.4	14.7	17.2	21.1	28.2</																	

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

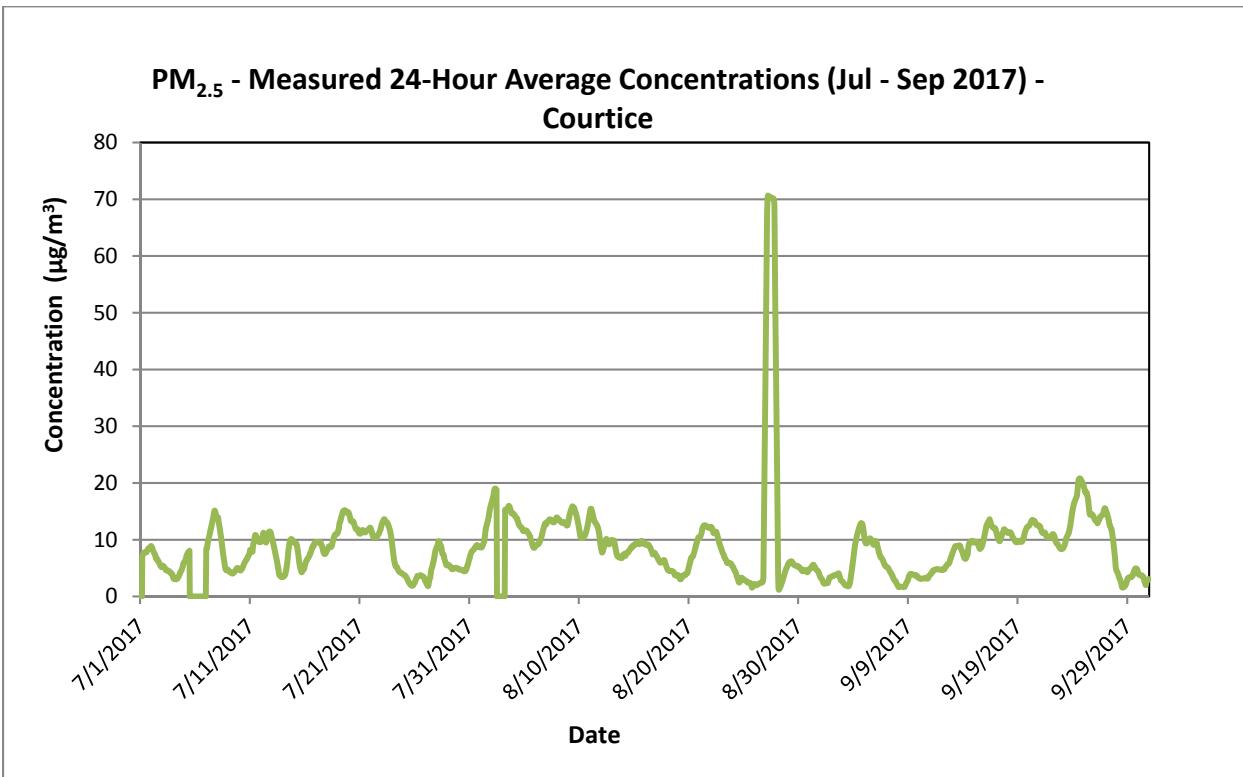
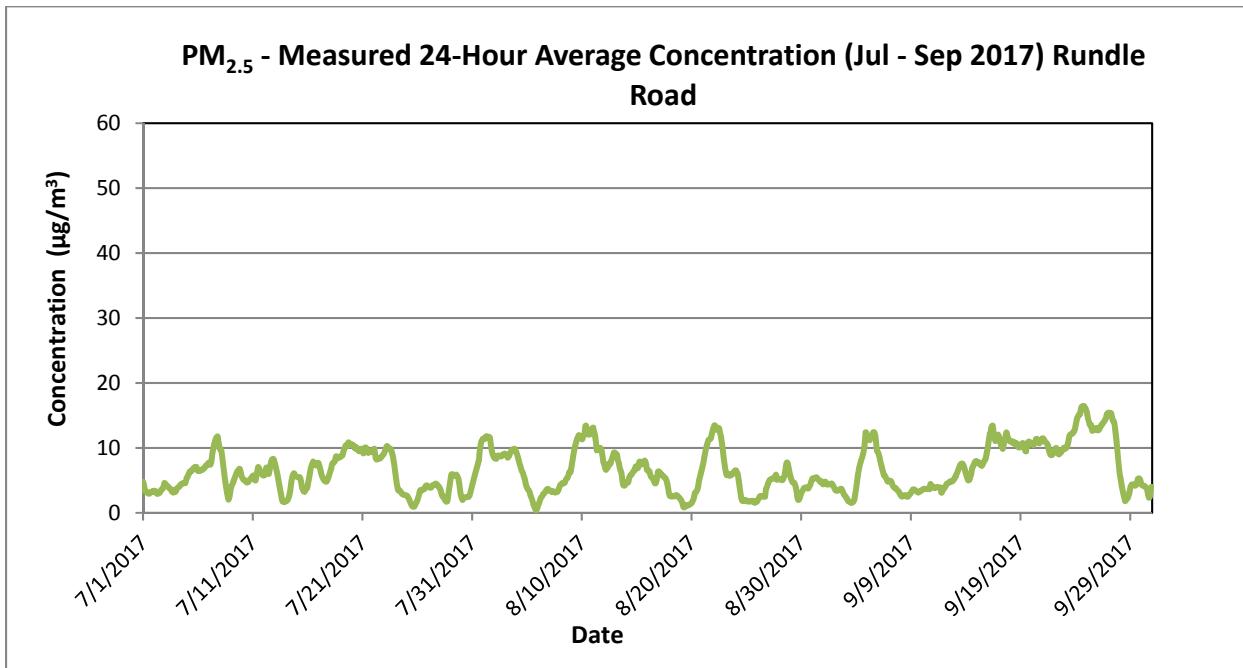


Figure E-2 Time History Plot of Measured 24 Hour Average PM_{2.5} Concentrations – Rundle Road Station



**QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY
CENTRE – JULY TO SEPTEMBER 2017**

Appendix F Continuous Parameter Edit Logs
November 14, 2017

Appendix F CONTINUOUS PARAMETER EDIT LOGS

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program						
Contact	Greg Crooks / Connie Lim / Brian Bylhouwer	Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, brian.bylhouwer@stantec.com		
Station number:	N/A	Station Name:	Courtice WPCP Station (Upwind)				
Station address:	Courtice Water Pollution Control Plant	Emitter Address:	The Region of Durham, 605 Rosland Rd, Whitby, ON				
Pollutant or parameter:	SO ₂	Instrument make & model:			Teledyne Monitor Labs Sulphur Dioxide Analyzer Model T100	Serial Number:	565
Data edit period	Start date:	1-Jul-17	End date:	30-Sep-17		Time Zone : EST	
Edit #	Edit date	Editor's Name	Edit Action	Starting Date (dd/mm/yyyy)	Hour (xxxx)	Ending Date (dd/mm/yyyy)	Hour (xxxx) Reason
82	8-Aug-17	TH	Invalidate	27-Jul-17	10:00	27-Jul-17	13:00 Monthly calibration
83	16-Aug-17	BB	Data review	20-Jul-17	00:00	20-Jul-17	04:00
84	16-Aug-17	BB	Data review	16-Jul-17	00:00	16-Jul-17	05:00
85	16-Aug-17	BB	Data review	1-Jul-17	00:00	2-Jul-17	11:00
86	16-Aug-17	BB	Data review	3-Jul-17	05:00	3-Jul-17	19:00
87	16-Aug-17	BB	Data review	4-Jul-17	11:00	4-Jul-17	17:00
88	16-Aug-17	BB	Data review	11-Jul-17	16:00	11-Jul-17	21:00
89	16-Aug-17	BB	Data review	12-Jul-17	08:00	12-Jul-17	15:00
90	16-Aug-17	BB	Data review	13-Jul-17	16:00	13-Jul-17	22:00
91	16-Aug-17	BB	Data review	14-Jul-17	10:00	15-Jul-17	21:00
92	16-Aug-17	BB	Data review	16-Jul-17	11:00	17-Jul-17	21:00
93	16-Aug-17	BB	Data review	18-Jul-17	10:00	18-Jul-17	21:00
94	16-Aug-17	BB	Data review	19-Jul-17	11:00	19-Jul-17	23:00

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

Test

Instances of repeating zero values in these timeframes were due to negative instrument zero drift less than -5 ppb and rounded to 0 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied.

Project Name	Durham York Energy Centre Ambient Air Monitoring Program									
Contact	Greg Crooks / Connie Lim / Brian Bylhouwer	Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, brian.bylhouwer@stantec.com					
Station number:	N/A	Station Name:	Courtice WPCP Station (Upwind)							
Station address:	Courtice Water Pollution Control Plant	Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON							
Pollutant or parameter:	SO ₂	Instrument make & model:	Teledyne Monitor Labs Sulphur Dioxide Analyzer Model T100		Serial Number:	565				
Data edit period	Start date: 1-Jul-17	End date: 30-Sep-17	Time Zone : EST							
Edit #	Edit date	Editor's Name	Edit Action	Starting	Ending	Reason				
				Date (dd/mm/yyyy)	Hour (xxxx)	Date (dd/mm/yyyy)	Hour (xxxx)			
95	7-Oct-17	BB	Data review	6-Aug-17 04:00	7-Aug-17 06:00	An elevated SO ₂ level of 39 ppb was measured at the Courtice WPCP station without a corresponding trend at the Rundle Road Station. Elevated NOx levels were also measured. Winds were westerly during this time. Potential emission sources in this direction include highway 401 or agricultural activities. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.				
96	7-Oct-17	BB	Data review	24-Aug-17 19:00	25-Aug-17 06:00	An elevated SO ₂ level of 18 ppb was measured at the Courtice WPCP station without a corresponding trend at the Rundle Road Station. Winds were northerly during this time. Potential emission sources in this direction include highway 401 or agricultural activities. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.				
97	7-Oct-17	BB	Data review	26-Aug-17 19:00	27-Aug-17 07:00	An elevated SO ₂ level of 34 ppb was measured at the Courtice WPCP station without a corresponding trend at the Rundle Road Station. Elevated concentrations of NOx and PM _{2.5} were also measured at this time. Winds were northerly. Potential source is fire at Waste Management facility north of Highway 401 and DYEC that was reported during this time. The data was deemed valid.				
98	7-Oct-17	BB	Data review	13-Aug-17 14:00	13-Aug-17 18:00	Instances of repeating 0.1 ppb measurements. Data was reviewed - measurements were varying but were rounded to 0.1 ppb				
99	7-Oct-17	BB	Invalidate	30-Aug-17 14:00	30-Aug-17 15:00	Monthly Calibration				
100	9-Oct-17	BB	Data review	11-Sep-17 18:00	11-Sep-17 20:00	An elevated SO ₂ level of 96 ppb was measured at the Courtice WPCP station without a corresponding trend at the Rundle Road Station. Winds were northerly during this time. Potential emission sources in this direction include highway 401 or agricultural activities. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.				
101	9-Oct-17	BB	Data review	12-Sep-17 19:00	13-Sep-17 05:00	An elevated SO ₂ level of 61 ppb was measured at the Courtice WPCP station without a corresponding trend at the Rundle Road Station. Winds were northerly during this time. SO ₂ emissions from DYEC were negligible during this time. Potential emission sources in this direction include highway 401 or agricultural activities. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.				
102	9-Oct-17	BB	Invalidate	26-Sep-17 13:00	26-Sep-17 14:00	Calibration				
103	9-Oct-17	BB	Invalidate	19-Sep-17 13:00	26-Sep-17 14:00	Monthly Calibration				
104	9-Oct-17	BB	Invalidate	29-Sep-17 09:00	29-Sep-17 10:00	Quarterly Audit				
105	9-Oct-17	BB	Data review	10-Sep-17 13:00	10-Sep-17 19:00	Instances of repeating zero values in this timeframe were due to negative instrument zero drift less than -5 ppb and rounded to 0 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied.				

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

Test

Project Name	Durham York Energy Centre Ambient Air Monitoring Program											
Contact	Greg Crooks / Connie Lim / Brian Bylhouwer	Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, brian.bylhouwer@stantec.com							
Station number:	N/A	Station Name:	Courtice WPCP Station (Upwind)									
Station address:	Courtice Water Pollution Control Plant	Emitter Address:	The Region of Durham, 605 Rossland Rd, Whitby, ON									
Pollutant or parameter:	NOx	Instrument make & model:	API Model 200E Chemiluminescence Analyzer			Serial Number:	675					
Data edit period	Start date:	1-Jul-17	End date:	30-Sep-17	Time Zone : EST							
Edit #	Edit date	Editor's Name	Edit Action	Starting	Ending	Reason						
				Date (dd/mm/yyyy)	Hour (xxxx)	Date (dd/mm/yyyy)	Hour (xxxx)					
51	3-Aug-17	TH	Invalidate minute data	26-Jul-17	13:25	26-Jul-17	13:35	Replace molybdenum convertors.				
52	8-Aug-17	TH	Invalidate	27-Jul-17	10:00	27-Jul-17	11:00	Monthly calibration				
53	9-Oct-17	BB	Data review	4-Jul-17	19:00	5-Jul-17	08:00	An elevated NOx level of 54 ppb was measured at the Courtice WPCP station without a corresponding trend at the Rundle Road Station. Concentrations of SO ₂ were also elevated during this time, indicating a potential local combustion source. Winds were northerly during this time. Potential sources include agricultural activities, a CN railroad or local roads. The data was deemed valid.				
54	9-Oct-17	BB	Data review	19-Jul-17	00:00	19-Jul-17	06:00	An elevated NOx level of 51 ppb was measured at the Courtice WPCP station without a corresponding trend at the Rundle Road Station. Concentrations of SO ₂ were also elevated during this time, indicating a potential local combustion source. Winds were northerly during this time. Potential sources include agricultural activities, a CN railroad or local roads. The data was deemed valid.				
55	9-Oct-17	BB	Data review	25-Jul-17	22:00	26-Jul-17	08:00	An elevated NOx level of 52 ppb was measured at the Courtice WPCP station without a corresponding trend at the Rundle Road Station. SO ₂ concentrations were also elevated during this time indicating a combustion source. Winds were northerly during this time. Potential sources include agricultural activities, a CN railroad or local roads. The data was deemed valid.				
56	7-Oct-17	BB	Invalidate	30-Aug-17	14:00	30-Aug-17	15:00	Monthly Calibration				
57	7-Oct-17	BB	Data review	1-Aug-17	23:00	2-Aug-17	07:00	An elevated NOx level of 56 ppb was measured at the Courtice WPCP station without a corresponding trend at the Rundle Road Station. Winds were northerly during this time. Potential sources include highway 401, a CN railroad or local roads. The data was deemed valid.				
58	7-Oct-17	BB	Data review	10-Aug-17	04:00	10-Aug-17	08:00	An elevated NOx level of 52 ppb was measured at the Courtice WPCP station without a corresponding trend at the Rundle Road Station. Winds were northerly during this time. Potential sources include highway 401, a CN railroad or local roads. The data was deemed valid.				
59	7-Oct-17	BB	Data review	25-Aug-17	00:00	25-Aug-17	23:00	An elevated NOx level of 52 ppb was measured at the Courtice WPCP station without a corresponding trend at the Rundle Road Station. Concentrations of SO ₂ were also elevated during this time, indicating a potential local combustion source. Winds were westerly and northerly during this time. Potential sources include highway 401, a CN railroad or local roads. The data was deemed valid.				
60	7-Oct-17	BB	Data review	26-Aug-17	18:00	26-Aug-17	22:00	An elevated NOx level of 49 ppb was measured at the Courtice WPCP station without a corresponding trend at the Rundle Road Station. Concentrations of SO ₂ and PM _{2.5} were also elevated during this time, indicating a potential local combustion source. Winds were north-northeasterly during this time. Potential source was fire reported at DYEC during this time. The data was deemed valid.				
61	7-Oct-17	BB	Data review	16-Aug-17	13:00	16-Aug-17	17:00	Instances of repeating zero values in this timeframe were due to negative instrument zero drift less than -5 ppb and rounded to 0 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied.				
62	7-Oct-17	BB	Data review	23-Aug-17	00:00	23-Aug-17	05:00	Instances of repeating 0.6 ppb measurements. Data was reviewed - measurements were varying but were rounded to 0.6 ppb				
63	9-Oct-17	BB	Data review	15-Sep-17	22:00	16-Sep-17	08:00	An elevated NOx level of 80 ppb was measured at the Courtice WPCP station without a corresponding trend at the Rundle Road Station. Winds were northerly during this time. Potential sources include highway 401, a CN railroad or local roads. The data was deemed valid.				
64	9-Oct-17	BB	Data review	9-Sep-17	11:00	9-Sep-17	14:00	Instances of repeating zero values in this timeframe were due to negative instrument zero drift less than -5 ppb and rounded to 0 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied.				
65	9-Oct-17	BB	Data review	10-Sep-17	12:00	10-Sep-17	18:00					
66	9-Oct-17	BB	Invalidate	26-Sep-17	13:00	26-Sep-17	14:00	Calibration				
67	9-Oct-17	BB	Invalidate	19-Sep-17	13:00	26-Sep-17	14:00	Monthly Calibration				
68	9-Oct-17	BB	Invalidate	29-Sep-17	09:00	29-Sep-17	10:00	Quarterly Audit				

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

Test

Project Name	Durham York Energy Centre Ambient Air Monitoring Program											
Contact	Greg Crooks / Connie Lim / Brian Bylhouwer	Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, brian.bylhouwer@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:	PM _{2.5}	Instrument make & model:	Thermo Sharp 5030 Synchronized Hybrid Ambient Real-time Particulate Monitor		Serial Number:	E-1569						
Data edit period	Start date:	1-Jul-17	End date:	30-Sep-17		Time Zone : EST						
Edit #	Edit date	Editor's Name	Edit Action	Starting	Ending	Reason						
				Date (dd/mm/yyyy)	Hour (xx:xx)	Date (dd/mm/yyyy)	Hour (xx:xx)					
51	3-Aug-17	TH	Invalidate minute data	27-Jul-17 22:08	27-Jul-17 22:08	Elevated concentration observed during filter tape advance						
52	3-Aug-17	TH	Invalidate minute data	28-Jul-17 00:06	31-Jul-17 16:06	Invalidate concentration peaks during filter tape advances at 00:09, 08:09 and 16:09						
53	3-Aug-17	TH	Invalidate minute data	13-Jul-17 13:22	13-Jul-17 13:25	Zero check						
54	3-Aug-17	TH	Invalidate minute data	20-Jul-17 11:17	20-Jul-17 11:25	Zero check						
55	8-Aug-17	TH	Invalidate minute data	27-Jul-17 11:00	27-Jul-17 11:10	Monthly calibration						
56	8-Aug-17	TH	Invalidate	27-Jul-17 10:00	27-Jul-17 10:00	Monthly calibration						
57	8-Aug-17	TH	Invalidate	1-Jul-17 08:00	1-Jul-17 08:00	Check for debris						
58	8-Aug-17	TH	Invalidate	4-Jul-17 10:00	4-Jul-17 10:00	Zero check						
59	8-Aug-17	TH	Zero correction	27-Jun-17 10:00	4-Jul-17 09:00	Offset of 1.2 µg/m³ applied due to zero drift.						
60	8-Aug-17	TH	Invalidate	5-Jul-17 07:00	6-Jul-17 07:00	Pump was off. Invalidate data						
61	8-Aug-17	TH	Invalidate	26-Jul-17 13:00	26-Jul-17 14:00	Remove monitor and install original						
62	10-Aug-17	TH	Zero correction	26-Jul-17 15:00	27-Jul-17 09:00	Offset of 1.0 µg/m³ applied due to zero drift.						
63	20-Oct-17	TH	Invalidate	27-Jul-17 09:00	27-Jul-17 10:00	Zero check						
64	7-Oct-17	BB	Data review	11-Jul-17 08:00	11-Jul-17 12:00	Elevated levels of up to 28 µg/m³ were measured. Concentrations were also high at Oshawa in the two hours prior, when winds were northerly. At the time of elevated concentrations, winds were southwesterly. The data was deemed valid.						
65	7-Oct-17	BB	Data review	27-Jul-17 07:00	27-Jul-17 14:00	Elevated levels of up to 18 µg/m³ were measured without a corresponding trend at the Rundle or Oshawa Stations. Winds were westerly - potential emission sources in this direction include agricultural activities. The data was deemed valid.						
66	7-Oct-17	BB	Invalidate	30-Aug-17 14:00	30-Aug-17 15:00	Monthly Calibration						
67	7-Oct-17	BB	Zero correction	27-Jul-17 11:00	1-Aug-17 09:00	Offset of -0.2 µg/m³ applied due to zero drift.						
	7-Oct-17	BB	Invalidate	1-Aug-17 09:00	1-Aug-17 10:00	Zero check						
68	7-Oct-17	BB	Invalidate	2-Aug-17 07:00	2-Aug-17 13:00	Pump turned off. Data invalidated						
69	7-Oct-17	BB	Zero correction	1-Aug-17 11:00	8-Aug-17 10:00	Offset of 4.2 µg/m³ applied due to zero drift.						
	7-Oct-17	BB	Invalidate	8-Aug-17 10:00	8-Aug-17 11:00	Zero check						
70	7-Oct-17	BB	Invalidate	14-Aug-17 11:00	14-Aug-17 12:00	Zero check. Data invalidated						
71	7-Oct-17	BB	Invalidate	21-Aug-17 10:00	21-Aug-17 11:00	Zero check. Data invalidated						
72	7-Oct-17	BB	Invalidate	24-Aug-17 11:00	24-Aug-17 12:00	Zero check. Data invalidated						
73	7-Oct-17	BB	Data review	26-Jul-17 21:00	27-Jul-17 05:00	Elevated levels of up to 256 µg/m³ were measured without a corresponding trend at the Rundle or Oshawa Stations. Winds were north-northeasterly. Fire was reported at the DYEC, and was likely primary contributor to elevated concentrations. The data was deemed valid.						
74	9-Oct-17	BB	Data review	24-Sep-17 11:00	24-Sep-17 14:00	Elevated levels of up to 32 µg/m³ were measured without a corresponding trend at Oshawa and lower concentrations at Rundle. Elevated Concentrations of NOx were also measured at this time, indicating a potential local combustion source. Winds were westerly during this time. Potential emission sources in this direction include agricultural activities. The data was deemed valid.						
75	9-Oct-17	BB	Zero correction	30-Aug-17 16:00	5-Sep-17 10:00	Offset of -0.6 µg/m³ applied due to zero drift.						
	9-Oct-17	BB	Invalidate	5-Sep-17 11:00	5-Sep-17 12:00	Zero check						
76	9-Oct-17	BB	Invalidate	26-Sep-17 13:00	26-Sep-17 14:00	Calibration						
77	9-Oct-17	BB	Invalidate	19-Sep-17 13:00	19-Sep-17 14:00	Monthly Calibration						
78	9-Oct-17	BB	Invalidate	29-Sep-17 09:00	29-Sep-17 10:00	Quarterly Audit						
79	10-Oct-17	BB	Invalidate	14-Sep-17 11:00	14-Sep-17 12:00	Zero check. Data invalidated						
80	10-Oct-17	BB	Invalidate	18-Sep-17 11:00	18-Sep-17 12:00	Zero check. Data invalidated						
81	10-Oct-17	BB	Invalidate	26-Sep-17 11:00	26-Sep-17 12:00	Zero check. Data invalidated						

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

Test

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Brian Bylhouwer	Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, brian.bylhouwer@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-Jul-17	End date:	30-Sep-17	Time Zone : EST			
Edit #	Edit date	Editor's Name	Edit Action	Starting	Ending	Reason		
				Date (dd/mm/yyyy)	Hour (xxxx)	Date (dd/mm/yyyy)		
						Hour (xxxx)		

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program							
Contact	Greg Crooks / Connie Lim / Brian Bylhouwer	Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, brian.bylhouwer@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 TE525M		Serial Number:			
Data edit period	Start date:	1-Jul-17	End date:	30-Sep-17	Time Zone : EST			
Edit #	Edit date	Editor's Name	Edit Action	Starting	Ending	Reason		
				Date (dd/mm/yyyy)	Hour (xxxx)	Date (dd/mm/yyyy)		
						Hour (xxxx)		

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 / Brian Bylhouwer	Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, brian.bylhouwer@stantec.com		
Station number:	N/A	Station Name:	Courtice WPCP Station				
Station address:	Courtice Water Pollution Control Plant				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-Jul-17	End date:	30-Sep-17			
Edit #	Edit date	Editor's Name	Edit Action	Starting	Ending	Time Zone : EST	
				Date (dd/mm/yyyy)	Hour (xxxx)	Date (dd/mm/yyyy)	Hour (xxxx)

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program						
Contact	Greg Crooks / Connie Lim / Brian Bylhouwer	Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, brian.bylhouwer@stantec.com		
Station number:	N/A	Station Name:	Courtice WPCP Station				
Station address:	Courtice Water Pollution Control Plant				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-Jul-17	End date:	30-Sep-17			
Edit #	Edit date	Editor's Name	Edit Action	Starting	Ending	Time Zone : EST	
				Date (dd/mm/yyyy)	Hour (xxxx)	Date (dd/mm/yyyy)	Hour (xxxx)

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-Jul-17	End date: 30-Sep-17			Time Zone : EST			
Edit #	Edit date	Editor's Name	Edit Action	Starting Date (dd/mm/yyyy)	Hour (xxxx)	Ending Date (dd/mm/yyyy)	Hour (xxxx)	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

Project Name	Durham York Energy Centre Ambient Air Monitoring Program										
Contact	Greg Crooks / Connie Lim / Brian Bylhouwer	Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, brian.bylhouwer@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:	SO ₂	Instrument make & model:	Teledyne Monitor Labs Sulphur Dioxide Analyzer		Serial Number:	565					
Data edit period	Start date:	1-Jul-17	End date:	30-Sep-17		Time Zone : EST					
Edit #	Edit date	Editor's Name	Edit Action	Starting		Ending		Reason			
				Date (dd-mm-yy)	Hour (xxxx)	Date (dd-mm-yy)	Hour (xxxx)				
44	9-Aug-17	TH	Invalidate minute data	27-Jul-17	07:50	27-Jul-17	07:59	Monthly calibration			
45	10-Aug-17	TH	Invalidate minute data	26-Jul-17	12:10	26-Jul-17	12:15	Replace sample inlet			
46	10-Aug-17	TH	Invalidate	27-Jul-17	08:00	27-Jul-17	09:00	Monthly calibration			
47	4-Oct-17	BB	Data Review	5-Jul-17	10:00	5-Jul-17	13:00	Elevated levels of 12 ppb were measured without a corresponding trend at the Courtice WPCP. Elevated NOx levels were also measured in the same time period suggesting a local combustion source. Winds were easterly during this time. Potential emission sources in this direction include St. Mary's Cement Facility or the CP railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.			
48	4-Oct-17	BB	Data Review	2-Jul-17	23:00	3-Jul-17	13:00	Instances of repeating zero values in these timeframes were due to negative instrument zero drift less than -5 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied			
49	4-Oct-17	BB	Data Review	5-Jul-17	10:00	5-Jul-17	13:00				
50	4-Oct-17	BB	Data Review	11-Jul-17	16:00	17-Jul-17	04:00				
51	4-Oct-17	BB	Data Review	23-Jul-17	20:00	26-Jul-17	08:00				
52	7-Oct-17	BB	Invalidate	29-Aug-17	13:00	29-Aug-17	15:00	Monthly calibration			
53	7-Oct-17	BB	Data Review	14-Aug-17	14:00	14-Aug-17	16:00	Elevated levels of 15 ppb were measured without a corresponding trend at the Courtice WPCP. Elevated NOx levels were also measured in the same time period suggesting a local combustion source. Winds were easterly during this time. Potential emission sources in this direction include St. Mary's Cement Facility or the CP railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.			
54	7-Oct-17	BB	Data Review	2-Aug-17	08:00	2-Aug-17	18:00				
55	7-Oct-17	BB	Data Review	3-Aug-17	00:00	3-Aug-17	15:00				
56	7-Oct-17	BB	Data Review	4-Aug-17	15:00	4-Aug-17	20:00				
57	7-Oct-17	BB	Data Review	5-Aug-17	13:00	6-Aug-17	08:00				
58	7-Oct-17	BB	Data Review	6-Aug-17	18:00	8-Aug-17	02:00				
59	7-Oct-17	BB	Data Review	8-Aug-17	21:00	9-Aug-17	06:00				
60	7-Oct-17	BB	Data Review	9-Aug-17	14:00	10-Aug-17	12:00				
61	7-Oct-17	BB	Data Review	10-Aug-17	21:00	12-Aug-17	06:00				
62	7-Oct-17	BB	Data Review	12-Aug-17	18:00	14-Aug-17	08:00				
63	7-Oct-17	BB	Data Review	14-Aug-17	22:00	15-Aug-17	03:00				
64	7-Oct-17	BB	Data Review	15-Aug-17	14:00	20-Aug-17	13:00				
65	7-Oct-17	BB	Data Review	20-Aug-17	22:00	27-Aug-17	08:00				
66	7-Oct-17	BB	Data Review	27-Aug-17	15:00	28-Aug-17	10:00				
67	7-Oct-17	BB	Data Review	28-Aug-17	20:00	29-Aug-17	12:00				
68	7-Oct-17	BB	Data Review	30-Aug-17	01:00	30-Aug-17	07:00				
69	7-Oct-17	BB	Data Review	31-Aug-17	05:00	31-Aug-17	21:00				

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

Test

Instances of repeating zero values in these timeframes were due to negative instrument zero drift less than -5 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied

Project Name	Durham York Energy Centre Ambient Air Monitoring Program						
Contact	Greg Crooks / Connie Lim / Brian Bylhouwer	Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, brian.bylhouwer@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:	SO ₂	Instrument make & model:	Teledyne Monitor Labs Sulphur Dioxide Analyzer	Serial Number:	565		
Data edit period	Start date:	1-Jul-17	End date:	30-Sep-17	Time Zone : EST		
Edit #	Edit date	Editor's Name	Edit Action	Starting Date (dd-mm-yy)	Hour (xx:xx)	Ending Date (dd-mm-yy)	
						Reason	
70	9-Oct-17	BB	Data Review	13-Sep-17	11:00	13-Sep-17 14:00	Elevated levels of up to 61 ppb were measured without a corresponding trend at the Courtice WPCP. Elevated NOx levels were also measured in the same time period suggesting a local combustion source. Winds were easterly during this time. Potential emission sources in this direction include St. Mary's Cement Facility or the CP railroad. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.
71	9-Oct-17	BB	Invalidate	26-Sep-17	11:00	26-Sep-17 12:00	Calibration
72	9-Oct-17	BB	Invalidate	19-Sep-17	10:00	19-Sep-17 11:00	Monthly Calibration
73	9-Oct-17	BB	Invalidate	29-Sep-17	11:00	29-Sep-17 12:00	Quarterly Audit
74	9-Oct-17	BB	Data Review	1-Sep-17	07:00	1-Sep-17 15:00	
75	9-Oct-17	BB	Data Review	1-Sep-17	20:00	1-Sep-17 23:00	
76	9-Oct-17	BB	Data Review	2-Sep-17	00:00	3-Sep-17 00:00	
77	9-Oct-17	BB	Data Review	3-Sep-17	11:00	3-Sep-17 21:00	
78	9-Oct-17	BB	Data Review	4-Sep-17	09:00	4-Sep-17 17:00	
79	9-Oct-17	BB	Data Review	4-Sep-17	23:00	5-Sep-17 03:00	
80	9-Oct-17	BB	Data Review	5-Sep-17	23:00	6-Sep-17 02:00	
81	9-Oct-17	BB	Data Review	6-Sep-17	07:00	6-Sep-17 13:00	
82	9-Oct-17	BB	Data Review	7-Sep-17	17:00	8-Sep-17 20:00	
83	9-Oct-17	BB	Data Review	10-Sep-17	03:00	10-Sep-17 07:00	
84	9-Oct-17	BB	Data Review	12-Sep-17	01:00	12-Sep-17 05:00	
85	9-Oct-17	BB	Data Review	15-Sep-17	08:00	15-Sep-17 13:00	
86	9-Oct-17	BB	Data Review	15-Sep-17	23:00	16-Sep-17 08:00	
87	9-Oct-17	BB	Data Review	17-Sep-17	00:00	17-Sep-17 06:00	
88	9-Oct-17	BB	Data Review	19-Sep-17	05:00	19-Sep-17 09:00	
89	9-Oct-17	BB	Data Review	21-Sep-17	19:00	22-Sep-17 05:00	
90	9-Oct-17	BB	Data Review	23-Sep-17	02:00	23-Sep-17 06:00	
91	9-Oct-17	BB	Data Review	24-Sep-17	02:00	24-Sep-17 09:00	
92	9-Oct-17	BB	Data Review	28-Sep-17	10:00	29-Sep-17 10:00	
93	9-Oct-17	BB	Data Review	30-Sep-17	09:00	30-Sep-17 22:00	

Instances of repeating zero values in these timeframes were due to negative instrument zero drift less than -5 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied

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

Test

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program						
Contact	Greg Crooks / Connie Lim / Brian Bylhouwer	Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, brian.bylhouwer@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		API Model 200E Chemiluminescence Analyzer		Serial Number:
Pollutant or parameter:	NOx	Instrument make & model:			675		
Data edit period	Start date:	1-Jul-17	End date:	30-Sep-17	Time Zone : EST		
Edit #	Edit date	Editor's Name	Edit Action	Starting (dd-mm-yy)	Hour (xxxx)	Ending (dd-mm-yy)	Reason
35	3-Aug-17	TH	Invalidate minute data	26-Jul-17	09:58	26-Jul-17	09:59
36	9-Aug-17	TH	Invalidate minute data	27-Jul-17	07:50	27-Jul-17	07:59
37	10-Aug-17	TH	Invalidate	26-Jul-17	10:00	26-Jul-17	10:00
38	10-Aug-17	TH	Invalidate	27-Jul-17	08:00	27-Jul-17	08:00
39	4-Oct-17	BB	Data review	21-Jul-17	03:00	21-Jul-17	06:00
40	4-Oct-17	BB	Data review	3-Jul-17	01:00	3-Jul-17	17:00
41	4-Oct-17	BB	Data review	8-Jul-17	03:00	8-Jul-17	23:00
42	4-Oct-17	BB	Data review	14-Jul-17	23:00	16-Jul-17	00:00
43	4-Oct-17	BB	Data review	21-Jul-17	11:00	21-Jul-17	23:00
44	4-Oct-17	BB	Data review	23-Jul-17	10:00	25-Jul-17	17:00
45	4-Oct-17	BB	Data review	27-Jul-17	22:00	30-Jul-17	23:00
46	7-Oct-17	BB	Invalidate	29-Aug-17	13:00	29-Aug-17	15:00
47	7-Oct-17	BB	Data review	9-Aug-17	02:00	9-Aug-17	08:00
48	7-Oct-17	BB	Data review	14-Aug-17	14:00	14-Aug-17	16:00
49	7-Oct-17	BB	Data review	24-Aug-17	00:00	24-Aug-17	02:00
50	7-Oct-17	BB	Data review	5-Aug-17	15:00	5-Aug-17	19:00
51	7-Oct-17	BB	Data review	12-Aug-17	18:00	13-Aug-17	09:00
52	7-Oct-17	BB	Data review	15-Aug-17	21:00	16-Aug-17	04:00
53	7-Oct-17	BB	Data review	19-Aug-17	02:00	19-Aug-17	05:00
54	7-Oct-17	BB	Data review	19-Aug-17	15:00	19-Aug-17	23:00
55	7-Oct-17	BB	Data review	23-Aug-17	16:00	23-Aug-17	19:00
56	7-Oct-17	BB	Data review	24-Aug-17	21:00	25-Aug-17	02:00
57	7-Oct-17	BB	Data review	26-Aug-17	00:00	26-Aug-17	06:00
58	7-Oct-17	BB	Data review	27-Aug-17	02:00	27-Aug-17	06:00
59	9-Oct-17	BB	Invalidate	26-Sep-17	11:00	26-Sep-17	12:00
60	9-Oct-17	BB	Invalidate	19-Sep-17	10:00	19-Sep-17	11:00
61	9-Oct-17	BB	Invalidate	29-Sep-17	11:00	29-Sep-17	12:00
62	9-Oct-17	BB	Data review	13-Sep-17	11:00	13-Sep-17	13:00
63	9-Oct-17	BB	Data review	27-Sep-17	19:00	28-Sep-17	03:00
64	9-Oct-17	BB	Data review	29-Sep-17	00:00	29-Sep-17	04:00
65	9-Oct-17	BB	Data review	29-Sep-17	21:00	30-Sep-17	17:00

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

Test

An elevated NOx level of 39 ppb was measured, with a corresponding trend at the Oshawa or Courtice stations. Winds were westerly during this time. Potential emission sources in this direction include Highway 418 construction activities, local roads and businesses. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.

Instances of repeating zero values in these timeframes were due to negative instrument zero drift less than -5 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied

An elevated NOx level of 29 ppb was measured, with a corresponding trend at the Oshawa and Courtice stations. Winds were westerly during this time. SO₂ and PM_{2.5} were not elevated during this time, indicating a regional source. Potential emission sources in this direction include Highway 418 construction activities and regional highway traffic. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.

An elevated NOx level of 24 ppb was measured, without a corresponding trend at the Oshawa or Courtice stations. Winds were northerly during this time, and elevated concentrations of SO₂ were also measured at this time, indicating a local combustion source. Potential emission sources in this direction include Highway 401, local roads and businesses. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.

An elevated NOx level of 31 ppb was measured, with a corresponding trend at the Oshawa and Courtice stations. Winds were westerly during this time. SO₂ and PM_{2.5} were not elevated during this time, indicating a regional source. Potential emission sources in this direction include Highway 418 construction activities and regional highway traffic. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.

Instances of repeating zero values in these timeframes were due to negative instrument zero drift less than -5 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied

An elevated NOx level of 57 ppb was measured, without a corresponding trend at the Oshawa or Courtice stations. Winds were easterly during this time.. Elevated concentrations of SO₂ were also measured, indicating a local combustion source. Potential emission sources in this direction include Highway 401, local roads and businesses. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.

Instances of repeating zero values in these timeframes were due to negative instrument zero drift less than -5 ppb. As per the MOECC Ambient Monitoring Guideline, no drift correction was applied

Project Name	Durham York Energy Centre Ambient Air Monitoring Program										
Contact	Greg Crooks / Connie Lim / Brian Bylhouwer		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, brian.bylhouwer@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:	PM _{2.5}	Instrument make & model:		Thermo Sharp 5030 Synchronized Hybrid Ambient Real-time	Serial Number:	E-1569					
Data edit period	Start date:	1-Jul-17	End date:	30-Sep-17		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)				
74	3-Aug-17	TH	Invalidate minute data	1-Jul-17	00:09	31-Jul-17	16:09	Invalidate concentration peaks during filter tape advances at 00:09, 08:09 and 16:09.			
75	3-Aug-17	TH	Invalidate minute data	13-Jul-17	13:55	13-Jul-17	14:03	Zero check			
76	3-Aug-17	TH	Invalidate minute data	20-Jul-17	08:25	20-Jul-17	08:38	Zero check			
77	3-Aug-17	TH	Invalidate minute data	26-Jul-17	10:49	26-Jul-17	11:05	Maintenance of unit			
78	9-Aug-17	TH	Invalidate minute data	27-Jul-17	07:50	27-Jul-17	07:59	Monthly calibration			
79	10-Aug-17	TH	Invalidate	4-Jul-17	08:00	4-Jul-17	08:00	Zero check			
80	10-Aug-17	TH	Zero correction	27-Jun-17	13:00	4-Jul-17	07:00	Offset of 1.0 µg/m³ applied due to zero drift.			
81	10-Aug-17	TH	Invalidate	27-Jul-17	08:00	27-Jul-17	08:00	Monthly calibration			
82	10-Aug-17	TH	Invalidate	28-Jul-17	08:00	28-Jul-17	08:00	Leak check			
83	10-Aug-17	TH	Invalidate	28-Jul-17	14:00	28-Jul-17	14:00	Potential malfunction with nephelometer stabilizing error being displayed.			
84	10-Aug-17	TH	Zero correction	20-Jul-17	09:00	27-Jul-17	07:00	Offset of 1.1 µg/m³ applied due to zero drift.			
85	4-Oct-17	BB	Data review	28-Jul-17	17:00	29-Jul-17	03:00	Elevated levels of 16 µg/m³ were measured without a corresponding trend at the Courtice or Oshawa Stations. Winds were northerly during this time. Potential emission sources in this direction include local roads and businesses, and agricultural activity. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.			
86	4-Oct-17	BB	Invalidate	28-Jul-17	08:00	28-Jul-17	08:00	Leak check			
87	7-Oct-17	BB	Invalidate	29-Aug-17	13:00	29-Aug-17	15:00	Monthly calibration			
88	7-Oct-17	BB	Data review	10-Aug-17	01:00	10-Aug-17	09:00	Elevated levels of 29 µg/m³ were measured without a corresponding trend at the Courtice or Oshawa Stations. Winds were northerly during this time. Potential emission sources in this direction include local roads and businesses, and agricultural activity. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.			
89	7-Oct-17	BB	Invalidate	1-Aug-17	07:00	1-Aug-17	08:00	Zero check			
90	7-Oct-17	BB	Invalidate	8-Aug-17	11:00	8-Aug-17	12:00	Zero check			
91	7-Oct-17	BB	Zero correction	1-Aug-17	09:00	8-Aug-17	11:00	Offset of 1.1 µg/m³ applied due to zero drift.			
92	7-Oct-17	BB	Invalidate	14-Aug-17	07:00	14-Aug-17	08:00	Zero check			
93	7-Oct-17	BB	Invalidate	21-Aug-17	14:00	21-Aug-17	15:00	Zero check			
94	7-Oct-17	BB	Data review	19-Aug-17	02:00	19-Aug-17	06:00	Repeating values of 0.2 µg/m³ were investigated. Measurements fluctuated, but appear as 0.2 µg/m³ due to round off.			
95	9-Oct-17	BB	Invalidate	26-Sep-17	11:00	26-Sep-17	12:00	Calibration			
96	9-Oct-17	BB	Invalidate	19-Sep-17	10:00	19-Sep-17	11:00	Monthly Calibration			
97	9-Oct-17	BB	Invalidate	29-Sep-17	11:00	29-Sep-17	12:00	Quarterly Audit			
98	9-Oct-17	BB	Data review	4-Sep-17	19:00	4-Sep-17	22:00	Elevated levels of 28 µg/m³ were measured without a corresponding trend at the Courtice or Oshawa Stations. Winds were southerly during this time. Potential emission sources in this direction include Highway 401, local roads and businesses, and agricultural activity. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.			
99	9-Oct-17	BB	Data review	16-Sep-17	18:00	16-Sep-17	20:00	Elevated levels of 27 µg/m³ were measured without a corresponding trend at the Courtice or Oshawa Stations. Winds were northerly during this time. Potential emission sources in this direction include local roads and businesses, and agricultural activity. Minute data was reviewed and measurements were reasonably consistent throughout this time period. Therefore, the data was deemed valid.			
100	9-Oct-17	BB	Invalidate	5-Sep-17	15:00	5-Sep-17	16:00	Zero Check. Data invalidated.			
101	10-Oct-17	BB	Invalidate	14-Sep-17	09:00	14-Sep-17	09:00	Zero check			
102	10-Oct-17	BB	Zero correction	5-Sep-17	17:00	14-Sep-17	08:00	Offset of 1.4 µg/m³ applied due to zero drift.			
103	10-Oct-17	BB	Zero correction	18-Sep-17	14:00	18-Sep-17	15:00	Zero check			
			Invalidate	14-Sep-17	10:00	18-Sep-17	13:00	Offset of -1.3 µg/m³ applied due to zero drift.			
			Invalidate	26-Sep-17	09:00	26-Sep-17	10:00	Zero Check. Data invalidated.			

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

Test

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program					
Contact	Greg Crooks / Connie Lim / Brian Bylhouwer		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, brian.bylhouwer@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-Jul-17	End date:	30-Sep-17		Time Zone : EST
Edit #	Edit date	Editor's Name	Edit Action	Starting (dd-mm-yy)	Ending (dd-mm-yy)	Reason

EDIT LOG TABLE

Project Name	Durham York Energy Centre Ambient Air Monitoring Program					
Contact	Greg Crooks / Connie Lim / Brian Bylhouwer		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, brian.bylhouwer@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-Jul-17	End date:	30-Sep-17		Time Zone : EST
Edit #	Edit date	Editor's Name	Edit Action	Starting (dd-mm-yy)	Ending (dd-mm-yy)	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

Project Name	Durham York Energy Centre Ambient Air Monitoring Program						
Contact	Greg Crooks / Connie Lim / Brian Bylhouwer		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, brian.bylhouwer@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-Jul-17	End date:	30-Sep-17		Time Zone : EST	
Edit #	Edit date	Editor's Name	Edit Action	Starting Date (dd-mm-yy)	Hour (xx:xx)	Ending Date (dd-mm-yy)	Reason

EDIT LOG TABLE

Contact	Greg Crooks / Connie Lim / Brian Bylhouwer		Phone:	905-944-7777	E-mail:	greg.crooks@stantec.com, connie.lim@stantec.com, brian.bylhouwer@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-Jul-17	End date:	30-Sep-17		Time Zone : EST	
Edit #	Edit date	Editor's Name	Edit Action	Starting Date (dd-mm-yy)	Hour (xx:xx)	Ending Date (dd-mm-yy)	Reason
1	9-Aug-17	TH	Invalidate minute data	26-Jul-17	11:23	26-Jul-17	11:32
							Maintenance

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 – JULY TO SEPTEMBER 2017**

Appendix G Metals Data Summary
November 14, 2017

Appendix G METALS DATA SUMMARY

Metals and Total Particulates Location Date	Courtice WPCP Station dd/mm/yyyy	Courtice 06/07/2017	Courtice 12/07/2017	Courtice 18/07/2017	Courtice 24/07/2017	Courtice 30/07/2017	Courtice 05/08/2017	Courtice 11/08/2017	Courtice 17/08/2017	Courtice 23/08/2017	Courtice 29/08/2017	Courtice 04/09/2017	Courtice 10/09/2017	Courtice 16/09/2017	Courtice 22/09/2017	Courtice 28/09/2017	
Start Time	hhmm	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	Hours	23.07	23.67	23.08	23.22	23.47	23.6	22.96	24.08	23.57	24.17	23.25	23.48	23.67	23.87		
Technician		17061507	17061514	17061918	17061924	17071306	17071310	17071955	17071959	17080136	17080142	17081477	17081482	17083143	17083147	17091559	
Analytical Report #		B7E4487	B7E9410	B7F6109	B7G5143	B7G5133	B7H1994	B7H5250	B7I2518	B7J1056	B7J2450	B7K2195	B7K3556	B7L2558	B7L5381		
Total Volumetric Flow	Am³/sample	1540.32	1618.68	1559.35	1568.70	1598.80	1597.67	1555.91	1623.63	1598.08	1670.52	1610.38	1558.15	1568.74	1573.84	1544.74	
Analytical Results	Units	Value	RDL	Value	RDL												
Particulate	mg	85.9	5	55	5	71.1	5	55.5	5	48.7	5	37.2	5	74.4	5	44.5	5
Total Mercury (Hg)	µg	0.03	0.02	0.05	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
Aluminum (Al)	µg	532	50	227	50	234	50	322	50	55	50	148	50	377	50	78	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	31.5	1.0	15.6	1.0	22.2	1.0	9.3	1.0	7.0	1.0	6.6	1.0	12.0	1.0	11.2	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
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	8.8	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	11.0	5.0	16.8	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	120	5.0	42.5	5.0	111	5.0	36.4	5.0	49.7	5.0	37.0	5.0	102	5.0	35.3	5.0
Iron (Fe)	µg	1550	50	662	50	929	50	684	50	399	50	241	50	566	50	1410	50
Lead (Pb)	µg	6.0	3.0	5.3	3.0	5.4	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	4.6	3.0	6.2	3.0
Magnesium (Mg)	µg	836	50	323	50	471	50	332	50	224	50	123	50	220	50	570	50
Manganese (Mn)	µg	45.6	1.0	20.4	1.0	26.0	1.0	21.6	1.0	14.0	1.0	7.2	1.0	14.8	1.0	85.2	1.0
Molybdenum (Mo)	µg	4.7	3.0	3.1	3.0	3.6	3.0	<3.0	3.0	3.1	3.0	<3.0	3.0	4.9	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	80	25	74	25	74	25	58	25	25	28	25	77	25	35	25	32
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	21.3	1.0	9.2	1.0	14.8	1.0	10.8	1.0	10.6	1.0	2.8	1.0	4.8	1.0	21.0	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	32	10	12	10	16	10	18	10	<10	10	<10	10	19	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	72.9	5.0	57.3	5.0	52.5	5.0	20.6	5.0	18.3	5.0	27.2	5.0	39.2	5.0	50.5	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 3		32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
	Units	Maximum															
		Minimum															
Particulate	µg/m³	55.77	12.32	55.77	33.98	45.60	35.38	3									

Metals and Total Particulates Location Date	Rundle Road Station			Rundle																														
				dd/mm/yyyy		06/07/2017		12/07/2017		18/07/2017		24/07/2017		30/07/2017		05/08/2017		11/08/2017		17/08/2017		23/08/2017		29/08/2017		04/09/2017		10/09/2017		16/09/2017		22/09/2017		28/09/2017
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	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	0:00		
Sample Duration	Hours	23.77	23.78	23.17	23.23	TH	TH																											
Technician		17061508	17061515	17061921	17061925	17071307	17071311	17071956	17071960	17080139	17080140	17081478	17081484	17083142	17083149	17091558	17091556	17091558	17091556	17091558	17091556	17091558	17091556	17091558	17091556	17091558	17091556	17091558	17091556	17091558	17091556	17091558	17091556	
Filter Number		B7E4487	B7E9410	B7F6109	B7G5133	B7H1994	B7H5250	B7I2518	B7I4150	B7J1056	B7J2450	B7K2195	B7K3556	B7L2558	B7L5381																			
Total Volumetric Flow	Am³/sample	1610.34	1618.84	1566.87	1568.76	1575.31	1557.85	1568.62	1553.41	1617.07	1550.30	1503.64	1488.64	1507.19	1489.01	1624.36																		
Analytical Results	Units	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL			
Particulate	µg/m³	82.7	5	64.8	5	74.1	5	43.8	5	30.4	5	29.0	5	42.9	5	47.5	5	46.1	5	43.0	5	40.9	5	25.6	5	55.9	5	66.4	5	148	5			
Total Mercury (Hg)	µg	0.03	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	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02			
Aluminum (Al)	µg	446	50	284	50	265	50	195	50	119	50	67	50	163	50	204	50	193	50	187	50	95	50	98	50	229	50	464	50	635	50			
Antimony (Sb)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<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	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0			
Barium (Ba)	µg	33.2	1.0	17.7	1.0	18.2	1.0	8.0	1.0	5.0	1.0	5.6	1.0	16.0	1.0	11.9	1.0	15.8	1.0	11.3	1.0	12.4	1.0	8.0	1.0	17.4	1.0	26.7	1.0	23.7	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	<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	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0			
Boron (B)	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	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0			
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	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0			
Chromium (Cr)	µg	7.5	5.0	5.7	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	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	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0			
Copper (Cu)	µg	167	5.0	76.2	5.0	359	5.0	117	5.0	80.2	5.0	34.4	5.0	81.5	5.0	56.9	5.0	60.8	5.0	50.3	5.0	47.1	5.0	88.9	5.0	93.1	5.0	119	5.0	93.5	5.0			
Iron (Fe)	µg	1460	50	887	50	1050	50	50	434	50	270	50	718	50	569	50	692	50	633	50	342	50	299	50	734	50	1180	50	1360	50				
Lead (Pb)	µg	7.9	3.0	5.5	3.0	5.3	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	3.0	<3.0	3.0	<3.0	3.0			
Magnesium (Mg)	µg	695	50	415	50	477	50	232	50	163	50	122																						

Notes

Calculated Concentrations	Quarter 3			32	33	34	35	36	37	38	39	40	41	42	43	44	45	46		
	Units	Maximum	Minimum	06/07/2017	12/07/2017	18/07/2017	24/07/2017	30/07/2017	05/08/2017	11/08/2017	17/08/2017	23/08/2017	29/08/2017	04/09/2017	10/09/2017	14/09/2017	22/09/2017	28/09/2017		
Particulate	µg/m³	86.09	14.94	86.09	80.85	47.49	46.95	21.74	18.28	74.58	41.04	23.47	51.67	26.33	14.94	26.29	75.60	50.71		
Total Mercury (Hg)	µg/m³	7.41E-05	5.79E-06	2.53E-05	7.41E-05	1.85E-05	6.19E-06	6.16E-06	1.86E-05	6.34E-06	6.21E-06	6.14E-06	6.14E-06	5.79E-06	1.16E-05	2.44E-05	6.20E-06			
Aluminum (Al)	µg/m³	5.83E-01	4.46E-02	5.83E-01	3.76E-01	2.12E-01	2.50E-01	6.84E-02	4.46E-02	3.42E-01	2.07E-01	1.01E-01	2.15E-01	8.99E-02	5.10E-02	1.28E-01	4.88E-01	3.09E-01	3.10E-03	
Antimony (Sb)	µg/m³	3.17E-03	2.89E-03	3.17E-03	3.09E-03	3.09E-03	3.09E-03	3.08E-03	3.06E-03	3.11E-03	3.17E-03	3.10E-03	3.07E-03	2.94E-03	2.90E-03	2.89E-03	3.05E-03	3.10E-03		
Arsenic (As)	µg/m³	1.90E-03	1.73E-03	1.90E-03	1.85E-03	1.85E-03	1.86E-03	1.85E-03	1.83E-03	1.86E-03	1.90E-03	1.86E-03	1.84E-03	1.76E-03	1.74E-03	1.73E-03	1.83E-03	1.86E-03		
Barium (Ba)	µg/m³	2.76E-02	3.36E-03	2.70E-02	1.74E-02	1.56E-02	9.53E-03	3.57E-03	3.36E-03	1.75E-02	1.19E-02	9.69E-03	1.07E-02	8.29E-03	6.02E-03	7.22E-03	2.76E-02	1.30E-02		
Beryllium (Be)	µg/m³	3.17E-04	2.89E-04	3.17E-04	3.09E-04	3.09E-04	3.09E-04	3.08E-04	3.06E-04	3.11E-04	3.17E-04	3.10E-04	3.07E-04	2.94E-04	2.90E-04	2.89E-04	3.05E-04	3.10E-04		
Bismuth (Bi)	µg/m³	1.90E-03	1.73E-03	1.90E-03	1.85E-03	1.85E-03	1.86E-03	1.85E-03	1.83E-03	1.86E-03	1.90E-03	1.86E-03	1.84E-03	1.76E-03	1.74E-03	1.73E-03	1.83E-03	1.86E-03		
Boron (B)	µg/m³	4.91E-03	1.73E-03	1.90E-03	1.85E-03	1.85E-03	1.86E-03	3.69E-03	1.83E-03	1.86E-03	1.90E-03	1.86E-03	4.91E-03	4.06E-03	1.74E-03	1.73E-03	4.76E-03	1.86E-03		
Cadmium (Cd)	µg/m³	6.34E-04	5.78E-04	6.33E-04	6.17E-04	6.18E-04	6.19E-04	6.16E-04	6.11E-04	6.21E-04	6.34E-04	6.21E-04	6.14E-04	5.88E-04	5.79E-04	5.78E-04	6.10E-04	6.20E-04		
Chromium (Cr)	µg/m³	7.67E-02	1.44E-03	1.25E-02	2.20E-02	8.21E-03	7.67E-02	4.56E-03	1.53E-03	1.68E-02	4.50E-03	8.57E-03	1.00E-02	1.47E-03	1.45E-03	1.44E-03	1.15E-02	5.15E-03		
Cobalt (Co)	µg/m³	6.34E-04	5.78E-04	6.33E-04	6.17E-04	6.18E-04	6.19E-04	6.16E-04	6.11E-04	6.21E-04	6.34E-04	6.21E-04	6.14E-04	5.88E-04	5.79E-04	5.78E-04	6.10E-04	6.20E-04		
Copper (Cu)	µg/m³	1.02E-01	1.15E-02	9.05E-02	1.02E-01	5.19E-02	4.24E-02	3.07E-02	3.86E-02	8.76E-02	5.89E-02	4.95E-02	5.07E-02	3.84E-02	3.65E-02	1.15E-02	4.46E-02	3.16E-02		
Iron (Fe)	µg/m³	1.66E+00	1.36E-01	1.66E+00	1.43E+00	7.04E-01	1.07E+00	1.96E-01	1.36E-01	1.35E+00	6.85E-01	4.48E-01	8.11E-01	2.68E-01	2.59E-01	3.76E-01	1.42E+00	7.19E-01		
Lead (Pb)	µg/m³	7.78E-03	8.69E-04	6.46E-03	7.78E-03	4.63E-03	2.23E-03	9.24E-04	9.17E-04	7.27E-03	2.79E-03	7.26E-03	4.48E-03	3.76E-03	8.69E-04	3.58E-03	5.06E-03	9.30E-04		
Magnesium (Mg)	µg/m³	1.07E+00	9.21E-02	1.07E+00	7.59E-01	3.93E-01	3.19E-01	1.15E-01	9.66E-02	6.53E-01	2.97E-01	1.76E-01	4.15E-01	1.73E-01	9.21E-02	1.64E-01	6.34E-01	3.38E-01		
Manganese (Mn)	µg/m³	9.69E-02	6.42E-03	7.47E-02	9.69E-02	2.82E-02	3.03E-02	6.77E-03	6.42E-03	9.65E-02	2.51E-02	1.48E-02	5.47E-02	1.16E-02	8.05E-03	1.10E-02	7.01E-02	3.16E-02		
Molybdenum (Mo)	µg/m³	3.43E-03	8.67E-04	9.50E-04	9.26E-04	9.28E-04	9.24E-04	9.17E-04	9.32E-04	9.33E-03	2.73E-03	3.13E-03	2.41E-03	2.26E-03	8.67E-04	2.99E-03	9.30E-04			
Nickel (Ni)	µg/m³	3.23E-03	8.67E-04	9.50E-04	9.26E-04	9.26E-04	2.29E-03	9.24E-04	9.17E-04	9.32E-04	9.52E-04	9.22E-04	8.82E-04	8.69E-04	8.67E-04	9.14E-04	9.30E-04			
Phosphorus (P)	µg/m³	7.66E-02	1.65E-02	7.66E-02	6.29E-02	5.43E-02	7.05E-02	2.09E-02	1.65E-02	5.41E-02	5.65E-02	2.92E-02	3.50E-02	4.29E-02	1.68E-02	2.08E-02	6.71E-02	5.39E-02		
Selenium (Se)	µg/m³	3.17E-03	2.89E-03	3.17E-03	3.09E-03	3.09E-03	3.09E-03	3.06E-03	3.06E-03	3.11E-03	3.17E-03	3.10E-03	3.07E-03	2.94E-03	2.90E-03	2.89E-03	3.05E-03	3.10E-03		
Silver (Ag)	µg/m³	1.59E-03	1.44E-03	1.58E-03	1.54E-03	1.54E-03	1.55E-03	1.54E-03	1.53E-03	1.55E-03	1.59E-03	1.55E-03	1.54E-03	1.47E-03	1.45E-03	1.44E-03	1.52E-03	1.55E-03		
Strontium (Sr)	µg/m³	2.60E-02	1.65E-03	2.40E-02	2.41E-02	8.52E-03	8.29E-03	2.22E-03	1.65E-03	2.13E-02	1.07E-02	3.04E-03	1.39E-02	3.06E-03	2.08E-03	4.05E-03	2.10E-02	9.61E-03		
Thallium (Tl)	µg/m³	3.17E-03	2.89E-03	3.17E-03	3.09E-03	3.09E-03	3.09E-03	3.08E-03	3.06E-03	3.11E-03	3.17E-03	3.10E-03	3.07E-03	2.94E-03	2.90E-03	2.89E-03	3.05E-03	3.10E-03		
Tin (Sn)	µg/m³	3.17E-03	2.89E-03	3.17E-03	3.09E-03	3.09E-03	3.09E-03	3.08E-03	3.06E-03	3.11E-03	3.17E-03	3.10E-03	3.07E-03	2.94E-03	2.90E-03	2.89E-03	3.05E-03	3.10E-03		
Titanium (Ti)	µg/m³	3.35E-02	2.90E-03	3.35E-02	1.91E-02	1.36E-02	1.48E-02	3.08E-03	3.06E-03	1.80E-02	1.14E-02	3.10E-03	1.11E-02	2.94E-03	2.90E-03	6.93E-03	2.87E-02	2.11E-02		
Vanadium (V)	µg/m³	1.59E-03	1.44E-03	1.58E-03	1.54E-03	1.55E-03	1.54E-03	1.53E-03	1.55E-03	1.59E-03	1.55E-03	1.54E-03	1.47E-03	1.45E-03	1.44E-03	1.52E-03	1.55E-03			
Zinc (Zn)	µg/m³	6.89E-02	1.31E-02	6.46E-02	6.00E-02	4.12E-02	2.49E-02	1.31E-02	1.88E-02	4.11E-02	2.39E-02	6.89E-02	2.19E-02	2.93E-02	1.55E-02	2.70E-02	4.34E-02	1.91E-02		
Zirconium (Zr)	µg/m³	1.59E-03	1.44E-03	1.58E-03	1.54E-03	1.54E-03	1.55E-03	1.54E-03	1.53E-03	1.55E-03	1.59E-03	1.55E-03	1.54E-03	1.47E-03	1.45E-03	1.44E-03	1.52E-03	1.55E-03		
Total Uranium (U)	µg/m³	1.43E-04	1.30E-04	1.42E-04	1.39E-04	1.39E-04	1.39E-04	1.39E-04	1.38E-04	1.40E-04	1.43E-04	1.40E-04	1.38E-04	1.32E-04	1.30E-04	1.30E-04	1.37E-04	1.39E-04		

**QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY
CENTRE – JULY TO SEPTEMBER 2017**

Appendix H PAHs Data Summary
November 14, 2017

Appendix H PAHS DATA SUMMARY

Polycyclic Aromatic Hydrocarbons		Courtice WPCP Station			Courtice 6/07/2017		Courtice ¹ 18/07/2017		Courtice 30/07/2017		Courtice 11/08/2017		Courtice 23/08/2017		Courtice 4/09/2017		Courtice 16/09/2017		Courtice 28/09/2017	
Location Date		dd/mm/yyyy		hh:mm hours	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		
Start Time				0:00																
Sample Duration				hours	23.61	24.13	24.1	23.55	23.39	23.55	23.77	23.49								
Technician					TH	TH	TH	TH	TZ	TZ	TZ	TZ								
Filter Number		EJC532-01	ELE942-01	EPI568-01	EPJ222-01	EUE070-01	EUE078-01	EXJ840-01	EXJ985-01											
Maxxam ID		ESE972	EUM738	EWF289	EYD915	EZU083	FBK149	FDM733	FFS185											
Maxxam Job #		B7E4477	B7F6574	B7G5096	B7H5202	B7I3985	B7J2435	B7K3605	B7L5373											
Total Volumetric Flow	Am ³ /sample	344.08	379.15	354.26	347.10	348.62	340.42	334.16	341.50											
Analytical Results		Units			Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL		
Benzo(a)pyrene	µg	0.0056	0.0029	0.0080	0.0016	0.0044	0.0026	0.0047	0.0026	0.0055	0.0022	0.0044	0.0011	0.0272	0.0010	<0.017	0.030			
1-Methylnaphthalene	µg	3.88	0.10	6.43	0.15	1.54	0.10	3.16	0.15	1.20	0.15	1.69	0.15	6.57	0.10	1.33	0.15			
2-Methylnaphthalene	µg	6.91	0.10	10.6	0.15	2.73	0.10	5.35	0.15	2.06	0.15	2.97	0.15	11.2	0.10	2.47	0.15			
Acenaphthene	µg	4.21	0.050	5.49	0.075	2.20	0.050	2.86	0.075	0.665	0.075	1.04	0.075	5.69	0.050	1.51	0.075			
Acenaphthylene	µg	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.075	0.075	<0.075	0.075	0.255	0.050	<0.075	0.075			
Anthracene	µg	0.131	0.050	<0.075	0.075	0.124	0.050	<0.075	0.075	<0.075	0.075	<0.075	0.075	0.201	0.050	<0.075	0.075			
Benzo(a)anthracene	µg	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.075	0.075	<0.075	0.075	<0.050	0.050	<0.075	0.075			
Benzo(a)fluorene	µg	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.15	0.15	<0.15	0.15	<0.10	0.10	<0.15	0.15			
Benzo(b)fluorene	µg	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.075	0.075	<0.050	0.050	<0.075	0.075					
Benzo(b)fluorene	µg	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.15	0.15	<0.15	0.15	<0.10	0.10	<0.15	0.15			
Benzo(e)pyrene	µg	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.15	0.15	<0.15	0.15	<0.10	0.10	<0.15	0.15			
Benzo(g,h,i)perylene	µg	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.075	0.075	<0.075	0.075	<0.050	0.050	<0.075	0.075			
Benzo(k)fluoranthene	µg	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.075	0.075	<0.050	0.050	<0.075	0.075					
Biphenyl	µg	1.92	0.10	2.21	0.15	0.83	0.10	1.49	0.15	0.62	0.15	0.93	0.15	3.23	0.10	0.51	0.15			
Chrysene	µg	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.075	0.075	<0.075	0.075	<0.050	0.050	<0.075	0.075			
Dibenz(a,h)anthracene	µg	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.075	0.075	<0.050	0.050	<0.075	0.075					
Dibenz(a,c) anthracene + Picene ¹	µg	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.10	0.10			
Fluoranthene	µg	0.686	0.050	0.783	0.075	0.674	0.050	0.612	0.075	0.186	0.075	0.336	0.075	0.883	0.050	0.188	0.075			
Indeno(1,2,3-cd)pyrene	µg	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.075	0.075	<0.050	0.050	<0.075	0.075					
Naphthalene	µg	14.9	0.072	21.0	0.11	5.78	0.072	15.1	0.11	5.58	0.11	8.48	0.11	30.8	0.10	5.66	0.11			
o-Terphenyl	µg	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.15	0.15	<0.15	0.15	<0.10	0.10	<0.15	0.15			
Perylene	µg	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.15	0.15	<0.15	0.15	<0.10	0.10	<0.15	0.15			
Phenanthrene	µg	4.86	0.050	4.64	0.075	2.88	0.050	3.34	0.075	0.980	0.075	1.53	0.075	5.48	0.050	1.07	0.075			
Pyrene	µg	0.253	0.050	0.291	0.075	0.276	0.050	0.216	0.075	<0.075	0.075	0.172	0.075	0.388	0.050	0.101	0.075			
Tetralin	µg	0.83	0.10	0.93	0.15	0.34	0.10	0.71	0.15	0.85	0.15	0.47	0.15	1.63	0.10	0.39	0.15			
Calculated Concentrations		Quarter 3																		
					16	17	18	19	20	21	22	23								
		Units	Maximum	Minimum	6/07/2017	18/07/2017	30/07/2017	11/08/2017	23/08/2017	4/09/2017	16/09/2017	28/09/2017								
Benzo(a)pyrene	ng/m ³	8.14E-02	1.24E-02	0.016	2.11E-02	1.24E-02	1.35E-02	1.58E-02	1.29E-02	8.14E-02	4.39E-02									
1-Methylnaphthalene	ng/m ³	1.97E+01	3.44E+00	1.13E+01	1.70E+01	4.35E+00	9.10E+00	3.44E+00	4.96E+00	1.97E+01	3.89E+00									
2-Methylnaphthalene	ng/m ³	3.35E+01	5.91E+00	2.01E+01	2.80E+01	7.17E+00	1.54E+01	5.91E+00	8.72E+00	3.35E+01	7.23E+00									
Acenaphthene	ng/m ³	1.70E+01	1.91E+00	1.22E+01	1.45E+01	6.21E+00	8.24E+00	1.91E+00	3.06E+00	1.70E+01	4.42E+00									
Acenaphthylene	ng/m ³	7.43E-01	7.06E-02	7.27E-02	9.89E-02	7.06E-02	1.08E-01	1.08E-01	1.10E-01	7.63E-01	1.10E-01									
Anthracene	ng/m ³	6.02E-01	9.89E-01	3.81E-01	9.89E-02	3.50E-01	1.08E-01	1.08E-01	1.10E-01	6.02E-01	1.10E-01									
Benzo(a)anthracene	ng/m ³	1.10E-01	7.06E-02	9.89E-02	7.06E-02	1.08E-01	1.08E-01	1.10E-01	1.10E-01	7.48E-02	1.10E-01									
Benzo(a)fluorene	ng/m ³	2.20E-01	1.41E-01	1.45E-01	1.98E-01	1.41E-01	2.16E-01	2.15E-01	2.20E-01	1.50E-01	2.20E-01									
Benzo(b)fluoranthene	ng/m ³	1.10E-01	7.06E-02	7.27E-02	9.89E-02	7.06E-02	1.08E-01	1.08E-01	1.10E-01	7.48E-02	1.10E-01									
Benzo(b)fluorene	ng/m ³	2.20E-01	1.41E-01	1.45E-01	1.98E-01	1.41E-01	2.16E-01	2.15E-01	2.20E-01	1.50E-01	2.20E-01									
Benzo(e)pyrene	ng/m ³	2.20E-01	1.41E-01	1.45E-01	1.98E-01	1.41E-01	2.16E-01	2.15E-01	2.20E-01	1.50E-01	2.20E-01									
Benzo(g,h,i)perylene	ng/m ³	1.10E-01	7.06E-02	7.27E-02	9.89E-02	7.06E-02	1.08E-01	1.08E-01	1.10E-01	7.48E-02	1.10E-01									
Benzo(k)fluoranthene	ng/m ³	1.10E-01	7.06E-02	7.27E-02	9.89E-02	7.06E-02	1.08E-01	1.08E-01	1.10E-01	7.48E-02	1.10E-01									
Biphenyl	ng/m ³	9.67E+00	1.49E+00	5.58E+00	5.83E+00	2.34E+00	4.29E+00	4.29E+00	4.78E+00	2.73E+00	9.67E+00	1.49E+00								
Chrysene	ng/m ³	1.10E-01	7.06E-02	7.27E-02	9.89E-02	7.06E-02	1.08E-01	1.08E-01	1.10E-01	7.48E-02	1.10E-01									
Dibenz(a,h)anthracene	ng/m ³	1.10E-01	7.06E-02	7.27E-02	9.89E-02	7.06E-02	1.08E-01	1.08E-01	1.10E-01	7.48E-02	1.10E-01									
Dibenz(a,c) anthracene + Picene ¹	ng/m ³	2.20E-01	1.41E-01	1.45E-01	1.98E-01	1.41E-01	2.16E-01	2.15E-01	2.20E-01	1.50E-01	2.20E-01									
Fluoranthene	ng/m ³	2.64E+00	5.34E-01	1.99E+00	2.07E+00	1.90E+00	1.76E+00	5.34E-01	9.87E-01	2.64E+00	5.51E-01									
Indeno(1,2,3-cd)pyrene	ng/m ³	1.10E-01	7.06E-02	7.27E-02	9.89E-02	7.06E-02	1.08E-01	1.08E-01	1.10E-01	7.48E-02	1.10E-01									
Naphthalene	ng/m ³	9.22E+01	1.60E+01	4.33E+01	5.54E+01	1.63E+01	4.35E+01	1.60E+01	2.49E+01	9.22E+01	1.66E+01									
o-Terphenyl	ng/m ³	2.20E-01	1.41E-01	1.45E-01	1.98E-01	1.41E-01	2.16E-01	2.15E-01	2.20E-01	1.50E-01	2.20E-01									
Perylene	ng/m ³	2.20E-01	1.41E-01	1.45E-01	1.98E-01	1.41E-01	2.16E-01	2.15E-01	2.20E-01	1.50E-01	2.20E-01									
Phenanthrene	ng/m ³	1.64E+01	2.81E+00	1.41E+01	1.22E+01	8.13E+00	9.62E+00	2.81E+00	4.49E+00	1.64E+01										

Polycyclic Aromatic Hydrocarbons		Rundle Road Station										
Location Date	dd/mm/yyyy	Rundle 6/07/2017	Rundle 18/07/2017 ^{2,3}	Rundle 30/07/2017	Rundle 11/08/2017	Rundle 23/08/2017	Rundle 4/09/2017	Rundle 16/09/2017	Rundle 28/09/2017			
Start Time	hh:mm	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00			
Sample Duration	hours	23.95	23.41	23.92	24.01	24.11	23.78	23.76	24.07			
Technician		TH	TH	TH	TH	TZ	TZ	TZ	TZ			
Filter Number	EJC533-01	ELE941-01	EP1567-01	EPJ221-01	EU066-01	EU079-01	EXJ839-01	FDM732-01	EXJ983-01			
Maxxam ID	ESE973	EUM739	EWF290	EYD916	EUJ084	FBK150	FDM732-01	FFS186				
Maxxam Job #	B7E4477	B7F6574	B7G5096	B7H5202	B7I3985	B7J2435	B7K3605	B7L5373				
Total Volumetric Flow	Am ³ /sample	354.00	351.92	343.40	341.08	364.59	336.96	314.95	326.90			
Analytical Results		Units	Value	RDL	Value	RDL	Value	RDL	Value	RDL	Value	RDL
Benz(a)pyrene	µg	0.0158	0.0030	0.0102	0.0036	0.0063	0.0017	0.0071	0.0028	0.0042	0.0026	0.0046
1-Methylnaphthalene	µg	10.4	0.10	7.79	0.15	1.22	0.10	9.32	0.15	3.29	0.15	2.70
2-Methylnaphthalene	µg	24.5	2.0	15.7	0.15	2.20	0.10	19.2	0.15	6.16	0.15	5.10
Acenaphthene	µg	15.6	0.050	10.8	0.075	1.45	0.050	10.8	0.075	3.33	0.075	3.23
Acenaphthylene	µg	0.240	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.075	0.075	<0.075
Anthracene	µg	1.10	0.050	0.720	0.075	0.158	0.050	0.447	0.075	0.191	0.075	0.233
Benz(a)anthracene	µg	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.075	0.075	<0.075
Benz(a)fluorene	µg	0.14	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.15	0.15	<0.15
Benz(b)fluoranthene	µg	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.075	0.075	<0.075
Benz(b)fluorene	µg	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.15	0.15	<0.15
Benz(e)pyrene	µg	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.15	0.15	<0.15
Benz(g,h)perylene	µg	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.075	0.075	<0.075
Benz(k)fluoranthene	µg	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.075	0.075	<0.075
Biphenyl	µg	5.04	0.10	3.47	0.15	0.64	0.10	3.80	0.15	1.44	0.15	1.41
Chrysene	µg	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.075	0.075	<0.075
Dibenz(a,h)anthracene	µg	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.075	0.075	<0.075
Dibenzo(a,c) anthracene + Picene ¹	µg	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.10
Fluoranthene	µg	4.91	0.050	2.88	0.075	0.664	0.050	1.97	0.075	0.786	0.075	1.70
Indeno(1,2,3-cd)pyrene	µg	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.075	0.075	<0.075
Naphthalene	µg	19.6	0.072	17.6	0.11	3.61	0.072	25.3	0.11	11.1	0.11	26.9
o-Terphenyl	µg	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.15	0.15	<0.15
Perylene	µg	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.15	0.15	<0.15
Phenanthrene	µg	24.7	1.0	13.8	0.075	2.59	0.050	10.5	0.075	4.10	0.075	4.89
Pyrene	µg	1.98	0.050	1.15	0.075	0.280	0.050	0.726	0.075	0.355	0.075	0.509
Tetralin	µg	0.59	0.10	0.80	0.15	0.33	0.10	0.84	0.15	1.40	0.15	0.94
Calculated Concentrations		Quarter 3										
		Units	Maximum	Minimum	6/07/2017	18/07/2017	30/07/2017	11/08/2017	23/08/2017	4/09/2017	16/09/2017	28/09/2017
					16	17	18	19	20	21	22	23
Benzo(a)pyrene	ng/m ³	0.1127	0.0115	0.045	2.90E-02	1.83E-02	2.08E-02	1.15E-02	1.37E-02	1.13E-01	4.59E-02	
1-Methylnaphthalene	ng/m ³	2.94E+01	3.09E+00	2.94E+01	2.21E+01	3.55E+00	2.73E+01	9.02E+00	8.01E+00	2.68E+01	3.09E+00	
2-Methylnaphthalene	ng/m ³	6.92E+01	5.60E+00	6.92E+01	4.46E+01	6.41E+00	5.63E+01	1.69E+01	1.51E+01	5.02E+01	5.60E+00	
Acenaphthene	ng/m ³	4.41E+01	1.93E+00	4.41E+01	3.07E+01	4.22E+00	3.17E+01	9.13E+00	9.59E+00	3.21E+01	1.93E+00	
Acenaphthylene	ng/m ³	7.18E-01	7.28E-02	6.78E-01	1.07E-01	7.28E-02	1.10E-01	1.03E-01	1.11E-01	7.18E-01	1.15E-01	
Anthracene	ng/m ³	3.11E+00	1.15E-01	3.11E+00	2.05E+00	4.60E-01	1.31E+00	5.24E+01	6.91E+01	1.67E+00	1.15E-01	
Benz(a)anthracene	ng/m ³	1.15E-01	7.06E-02	7.06E-02	1.07E-01	7.28E-02	1.10E-01	1.03E-01	1.11E-01	7.94E-02	1.15E-01	
Benz(a)fluorene	ng/m ³	3.95E-01	1.46E-01	3.95E-01	2.13E-01	1.46E-01	2.20E-01	2.06E-01	2.23E-01	1.59E-01	2.29E-01	
Benz(b)fluoranthene	ng/m ³	1.15E-01	7.06E-02	7.06E-02	1.07E-01	7.28E-02	1.10E-01	1.03E-01	1.11E-01	7.94E-02	1.15E-01	
Benz(b)fluorene	ng/m ³	2.29E-01	1.41E-01	1.41E-01	2.13E-01	1.46E-01	2.20E-01	2.04E-01	2.23E-01	1.59E-01	2.29E-01	
Benz(e)pyrene	ng/m ³	2.29E-01	1.41E-01	1.41E-01	1.41E-01	1.46E-01	2.20E-01	2.06E-01	2.23E-01	1.59E-01	2.29E-01	
Benz(g,h)perylene	ng/m ³	1.15E-01	7.06E-02	7.06E-02	1.07E-01	7.28E-02	1.10E-01	1.03E-01	1.11E-01	7.94E-02	1.15E-01	
Benz(k)fluoranthene	ng/m ³	1.15E-01	7.06E-02	7.06E-02	1.07E-01	7.28E-02	1.10E-01	1.03E-01	1.11E-01	7.94E-02	1.15E-01	
Biphenyl	ng/m ³	1.42E+01	9.48E-01	1.42E+01	9.86E+00	1.86E+00	1.11E+01	3.95E+00	4.18E+00	1.10E+01	9.48E-01	
Chrysene	ng/m ³	1.15E-01	7.06E-02	7.06E-02	1.07E-01	7.28E-02	1.10E-01	1.03E-01	1.11E-01	7.94E-02	1.15E-01	
Dibenz(a,h)anthracene	ng/m ³	1.15E-01	7.06E-02	7.06E-02	1.07E-01	7.28E-02	1.10E-01	1.03E-01	1.11E-01	7.94E-02	1.15E-01	
Dibenzo(a,c) anthracene + Picene	ng/m ³	2.23E-01	1.37E-01	1.41E-01	2.13E-01	1.46E-01	2.20E-01	1.37E-01	2.23E-01	1.59E-01	1.53E-01	
Fluoranthene	ng/m ³	1.39E+01	4.22E-01	1.39E+01	8.18E+00	1.93E+00	5.78E+00	2.16E+00	3.35E+00	5.40E+00	4.22E-01	
Indeno(1,2,3-cd)pyrene	ng/m ³	1.15E-01	7.06E-02	7.06E-02	1.07E-01	7.28E-02	1.10E-01	1.03E-01	1.11E-01	7.94E-02	1.15E-01	
Naphthalene	ng/m ³	8.54E+01	1.05E+01	5.54E+01	5.00E+01	1.05E+01	7.42E+01	3.04E+01	2.88E+01	8.54E+01	1.09E+01	
o-Terphenyl	ng/m ³	2.29E-01	1.41E-01	1.41E-01	2.13E-01	1.46E-01	2.20E-01	2.06E-01	2.23E-01	1.59E-01	2.29E-01	
Perylene	ng/m ³	2.29E-01	1.41E-01	1.41E-01	2.13E-01	1.46E-01	2.20E-01	2.06E-01	2.23E-01	1.59E-01	2.29E-01	
Phenanthrene	ng/m ³	6.98E+01	2.24E+00	6.98E+01	3.92E+01	7.54E+00	3.08E+01	1.12E+01	1.45E+01	3.04E+01	2.24E+00	
Pyrene	ng/m ³	5.59E+00	1.15E-01	5.59E+00	3.27E+00	8.15E-01	2.13E+00	9.74E-01	1.51E+00	2.37E+00	1.15E-01	
Tetralin	ng/m ³	3.84E+00	9.61E-01	1.67E+00	2.27E+00	9.61E-01	2.46E+00	3.84E+00	1.37E+00	2.98E+00	1.53E+00	
Total PAH	ng/m ³	3.09E+02	2.91E+01	3.09E+02	2.14E+02	3.97E+01	2.45E+02	9.02E+01	8.94E+01	2.51E+02	2.91E+01	

Note:

RDL = Reportable Detection Limit

1. These parameters are not accredited for the submitted matrix.

2. Timer dial stopped just before the scheduled end was reached but the sample still ran for sufficient duration to be deemed valid.

3. Average sample flows were greater than 8.8cfm. As discussed with the MOECC, these samplers are to run at their maximum allowable flow rate.

Test for which exceed
% Exceeded

QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE – JULY TO SEPTEMBER 2017

Appendix I Dioxins and Furans Data Summary
November 14, 2017

Appendix I DIOXINS AND FURANS DATA SUMMARY

Dioxins and Furans		Courlince WPCP Station			Courlince ^a 18/07/2017			Courlince 11/08/2017			Courlince 23/08/2017			Courlince 4/09/2017			Courlince 28/09/2017		
Location Date	dd/mm/yyyy	hh:mm	hours																
Start Time		0:00			0:00			0:00			0:00			0:00			0:00		
Sample Duration		24.13			23.55			23.39			23.55			23.49			23.49		
Technician		TH			TH			TZ			TZ			TZ			TZ		
Filter Number		ELE942-01			EPJ222-01			EUE070-01			EUO078-01			FBK149			B72435		
Maxxam ID		EUM738			EYD915			EZU083			B7H5202			B73985					
Maxxam Job #		B7F6574																	
Total Volumetric Flow	Am ³ /sample	379.15			347.10			348.62			340.42			341.50					
Analytical Results	Units	Value	EDL	WHO ₂₀₀₅ TEF	Value	EDL	WHO ₂₀₀₅ TEF	Value	EDL	WHO ₂₀₀₅ TEF	Value	EDL	WHO ₂₀₀₅ TEF	Value	EDL	WHO ₂₀₀₅ TEF			
2,3,7,8-Tetra CDD *	pg	<3.2	3.2	1	<3.1	3.1	1	<3.0	3.0	1	<2.9	2.9	1	<3.0	3.0	1			
1,2,3,7,8-Penta CDD *	pg	<5.4 (1)	5.4	1	<3.1	3.1	1	<3.1	3.1	1	<3.2	3.2	1	<3.1	3.1	1			
1,2,3,4,7,8-Hexa CDD *	pg	11.1	3.4	0.1	<3.3	3.3	0.1	<3.4	3.4	0.1	<3.2	3.2	0.1	<3.4	3.4	0.1			
1,2,3,6,7,8-Hexa CDD *	pg	24.5	3.6	0.1	<3.5	3.5	0.1	<3.3	3.3	0.1	<3.2	3.2	0.1	<3.3	3.3	0.1			
1,2,3,7,8,9-Hexa CDD *	pg	44.2 (2)	3.2	0.1	<3.3	3.3	0.1	<3.0	3.0	0.1	<3.5 (1)	3.5	0.1	<3.0	3.0	0.1			
1,2,3,4,6,7,8-Hepta CDD *	pg	510	3.2	0.01	10.7	3.2	0.01	<3.3	3.3	0.01	22.6	2.5	0.01	13.7	3.2	0.01			
Octa CDD *	pg	1840	3.5	0.0003	38.2	3.3	0.0003	8.4	3.3	0.0003	85.8	3.1	0.0003	12.6	3.0	0.0003			
Total Tetra CDD *	pg	<3.2	3.2		8.4	3.1		<3.0	3.0		<3.4 (1)	3.4		<10 (1)	10				
Total Penta CDD *	pg	10.3	3.4		3.7	3.1		<3.1	3.1		<3.2	3.2		<8.0 (1)	8.0				
Total Hexa CDD *	pg	231	3.4		<5.7 (1)	5.7		<3.3	3.3		4.9	3.1		<18 (1)	18				
Total Hepta CDD *	pg	935	3.2		22.9	3.2		<3.3	3.3		46.8	2.5		30.7	3.2				
2,3,7,8-Tetra CDF **	pg	<3.3 (3)	3.3	0.1	<3.4	3.4	0.1	<3.0	3.0	0.1	3.9	3.0	0.1	<3.1	3.1	0.1			
1,2,3,7,8-Penta CDF **	pg	<3.4	3.4	0.03	<3.2	3.2	0.03	<3.2	3.2	0.03	<3.1	3.1	0.03	<3.2	3.2	0.03			
2,3,4,7,8-Penta CDF **	pg	<3.4	3.4	0.3	<3.3	3.3	0.3	<3.2	3.2	0.3	<3.1	3.1	0.3	<3.1	3.1	0.3			
1,2,3,4,7,8-Hexa CDF **	pg	<3.4	3.4	0.1	<3.2	3.2	0.1	<3.3	3.3	0.1	<3.1	3.1	0.1	<3.3	3.3	0.1			
1,2,3,6,7,8-Hexa CDF **	pg	<3.3	3.3	0.1	<3.1	3.1	0.1	<3.1	3.1	0.1	<2.9	2.9	0.1	<3.1	3.1	0.1			
2,3,4,6,7,8-Hexa CDF **	pg	<3.5	3.5	0.1	<3.3	3.3	0.1	<3.3	3.3	0.1	<3.1	3.1	0.1	<3.3	3.3	0.1			
1,2,3,7,8,9-Hexa CDF **	pg	<3.6	3.6	0.1	<3.7	3.7	0.1	<3.6	3.6	0.1	4.2	3.4	0.1	<3.6	3.6	0.1			
1,2,3,4,6,7,8-Hepta CDF **	pg	17.1	3.0	0.01	3.4	2.8	0.01	<2.7	2.7	0.01	5.3	2.7	0.01	24.9	2.4	0.01			
1,2,3,4,7,8-Hepta CDF **	pg	<4.5 (1)	4.5	0.01	<3.7	3.7	0.01	<3.7	3.7	0.01	3.9	3.7	0.01	<3.3	3.3	0.01			
Octa CDF **	pg	27.0	3.3	0.0003	5.0	3.3	0.0003	<3.2	3.2	0.0003	9.3	2.6	0.0003	5.6	3.0	0.0003			
Total Tetra CDF **	pg	3.5	3.2		<3.4	3.4		<3.0	3.0		3.9	3.0		<3.1	3.1				
Total Penta CDF **	pg	10.5	3.5		<3.2	3.2		<3.2	3.2		<3.1	3.1		<3.2	3.2				
Total Hexa CDF **	pg	6.5	3.5		<3.3	3.3		<3.3	3.3		4.2	3.1		<3.3	3.3				
Total Hepta CDF **	pg	42.0	3.2		3.4	3.2		<3.1	3.1		9.2	3.2		29.1	2.8				
Toxic Equivalency	pg																		

Notes:
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
(2) EMPC / Merged Peak
(3) RT > 3 seconds - PCDD/DF analysis - Peak detected exceeds expected retention time (from internal standard) by greater than 3 seconds.
(4) Average sample flows were greater than 8.8cfm. As discussed with the MOECC, these samples are to run at their maximum allowable flow rate.

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

Calculated Concentrations	Units	Quarter 3			18/07/2017			11/08/2017			23/08/2017			4/09/2017			28/09/2017		
		9	10	11	9	10	11	9	10	11	9	10	11	9	10	11	9	10	11
2,3,7,8-Tetra CDD *	pg/m ³	4.47E-03	4.22E-03	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.004	0.004	0.004	0.004	0.004	
1,2,3,7,8-Penta CDD *	pg/m ³	4.45E-03	0.007	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
1,2,3,4,7,8-Hexa CDD *	pg/m ³	2.93E-02	4.70E-03	0.029	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
1,2,3,6,7,8-Hexa CDD *	pg/m ³	6.46E-02	4.70E-03	0.065	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
1,2,3,7,8,9-Hexa CDD *	pg/m ³	1.17E-01	4.30E-03	0.117	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
1,2,3,4,6,7,8-Hepta CDD *	pg/m ³	1.35E+00	4.73E-03	1.345	0.031	0.031	0.031	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
Octa CDD *	pg/m ³	4.85E+00	2.41E-02	4.853	0.110	0.110	0.110	0.024	0.024	0.024	0.025	0.025	0.025	0.037	0.037	0.037	0.037	0.037	
Total Tetra CDD *	pg/m ³	2.42E-02	4.22E-03	0.004	0.024	0.024	0.024	0.004	0.004	0.004	0.005	0.005	0.005	0.015	0.015	0.015	0.015	0.015	
Total Penta CDD *	pg/m ³	2.72E-02	4.45E-03	0.027	0.011	0.011	0.011	0.004	0.004	0.004	0.005	0.005	0.005	0.012	0.012	0.012	0.012	0.012	
Total Hexa CDD *	pg/m ³	6.09E-01	4.73E-03	6.09	0.008	0.008	0.008	0.005	0.005	0.005	0.014	0.014	0.014	0.026	0.026	0.026	0.026	0.026	
Total Hepta CDD *	pg/m ³	2.47E+00	4.73E-03	2.466	0.066	0.066	0.066	0.017	0.017	0.017	0.037	0.037	0.037	0.090	0.090	0.090	0.090	0.090	
2,3,7,8-Tetra CDF **	pg/m ³	1.15E-02	4.30E-03	0.004	0.005	0.005	0.005	0.004	0.004	0.004	0.011	0.011	0.011	0.005	0.005	0.005	0.005	0.005	
1,2,3,7,8-Penta CDF **	pg/m ³	4.49E-03	4.48E-03	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
2,3,4,7,8-Penta CDF **	pg/m ³	4.75E-03	4.48E-03	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
1,2,3,4,7,8-Hexa CDF **	pg/m ³	4.83E-03	4.48E-03	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
1,2,3,4,6,7,8-Hepta CDF **	pg/m ³	4.54E-03	4.24E-03	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	
2,3,7,8,9-Hexa CDF **	pg/m ³	1.23E-02	4.75E-03	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
1,2,3,4,6,7,8-Hepta CDF **	pg/m ³	1.15E-02	4.48E-03	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
Octa CDF **	pg/m ³	7.12E-02	4.59E-03	0.071	0.014	0.014	0.014	0.005	0.005	0.005	0.027	0.027	0.027	0.016	0.016	0.016	0.016	0.016	
Total Tetra CDF **	pg/m ³	1.15E-02	4.30E-03	0.009	0.005	0.005	0.005	0.004	0.004	0.004	0.011	0.011	0.011	0.005	0.005	0.005	0.005	0.005	
Total Penta CDF **	pg/m ³	5.93E-03	4.55E-03	0.006	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
Total Hexa CDF **	pg/m ³	1.71E-02	4.73E-03	0.017	0.005	0.005	0.005	0.005	0.005	0.005	0.012	0.012	0.012	0.005	0.005	0.005	0.005	0.005	
Total Hepta CDF **	pg/m ³	1.11E-01	4.45E-03	0.111	0.010	0.010													

Dioxins and Furans		Rundle Road Station			Rundle ¹ 18/07/2017			Rundle 11/08/2017			Rundle 23/08/2017			Rundle 4/09/2017			Rundle 28/09/2017			
Location Date		dd/mm/yyyy	hh:mm	hours	0:00	23.41	1:00	24.01	1:00	24.11	1:00	23.78	1:00	24.07	1:00	23.78	1:00			
Start Time																				
Sample Duration																				
Technician																				
Filter Number					ELE941-01		EPJ221-01		EUE066-01		EUQ079-01									
Maxam ID					EUM739		EYD916		EUZ084		FBK150									
Maxam Job #					B7f4574		B7H5202		B73985		B7J2435									
Total Volumetric Flow		Am ³ /sample			351.92		341.08		364.59		336.96		326.90							
Analytical Results		Units			Value	EDL	WHO ₂₀₀₅ TEF	Value	EDL	WHO ₂₀₀₅ TEF	Value	EDL	WHO ₂₀₀₅ TEF	Value	EDL	WHO ₂₀₀₅ TEF	Value	EDL	WHO ₂₀₀₅ TEF	
2,3,7,8-Tetra CDD *		pg	<3.3	3.3	1	<3.1	3.1	1	<2.8	2.8	1	<3.1	3.1	1	<3.2	3.2	1	<3.2	3.2	1
1,2,3,7,8-Penta CDD *		pg	<5.9 (1)	5.9	1	<3.4	3.4	1	<3.0	3.0	1	<2.9	2.9	1	<3.2	3.2	1	<3.2	3.2	1
1,2,3,4,7,8-Hexa CDD *		pg	13.1	3.4	0.1	<3.1	3.1	0.1	<3.2	3.2	0.1	<3.3	3.3	0.1	<3.0	3.0	0.1	<3.0	3.0	0.1
1,2,3,6,7,8-Hexa CDD *		pg	29.0	3.6	0.1	<3.4	3.4	0.1	<3.1	3.1	0.1	<3.2	3.2	0.1	<2.9	2.9	0.1	<2.9	2.9	0.1
1,2,3,7,8,9-Hexa CDD *		pg	51.6 (2)	3.2	0.1	<3.1	3.1	0.1	<2.8	2.8	0.1	<3.1	3.1	0.1	<2.7	2.7	0.1	<2.7	2.7	0.1
1,2,3,4,6,7,8-Hepta CDD *		pg	586	3.1	0.01	8.3	3.1	0.01	5.0	2.9	0.01	21.3	2.5	0.01	3.3	2.9	0.01	3.3	2.9	0.01
Octa CDD *		pg	27.70	3.1	0.0003	28.4	3.3	0.0003	13.1	2.7	0.0003	88.9	3.1	0.0003	11.8	2.7	0.0003	11.8	2.7	0.0003
Total Tetra CDD *		pg	4.1	3.3		12.2	3.1		3.1	2.8		<3.1	3.1		<11 (1)	11		<11 (1)	11	
Total Penta CDD *		pg	20.8	3.3		6.3	3.4		3.0	2.9		<2.9	2.9		<7.9 (1)	7.9		<7.9 (1)	7.9	
Total Hexa CDD *		pg	27.3	3.4		3.5	3.2		<3.1 (1)	3.1		14.4	3.1		<16 (1)	16		<16 (1)	16	
2,3,7,8,10-CDF **		pg	11.10	3.1		19.0	3.1		5.0	2.9		4.0	2.5		3.3	2.9		3.3	2.9	
1,2,3,7,8-Penta CDF **		pg	<4.7 (4)	7.4	0.1	<3.1	3.1	0.1	<3.1 (2)	3.1	0.1	<3.5 (2)	3.5	0.1	<3.1	3.1	0.1	<3.1	3.1	0.1
2,3,4,7,8-Hexa CDF **		pg	<3.5	3.5	0.03	<2.2	3.2	0.03	<3.0	3.0	0.03	<3.0	3.0	0.03	<3.1	3.1	0.03	<3.1	3.1	0.03
1,2,3,4,7,8-Hexa CDF **		pg	<3.5	3.5	0.3	<3.3	3.3	0.3	<3.0	3.0	0.3	<3.0	3.0	0.3	<2.8	2.8	0.1	<2.8	2.8	0.1
1,2,3,7,8,9-Hexa CDF **		pg	4.2	3.2	0.1	<2.9	2.9	0.1	<2.8	2.8	0.1	<2.7	2.7	0.1	<2.8	2.8	0.1	<2.7	2.7	0.1
2,3,4,6,7,8-Hexa CDF **		pg	<3.2	3.2	0.1	<2.8	2.8	0.1	<2.7	2.7	0.1	<3.0	3.0	0.1	<3.0	3.0	0.1	<3.0	3.0	0.1
2,3,4,7,8-Hexa CDF **		pg	<3.3	3.3	0.1	<3.0	3.0	0.1	<2.9	2.9	0.1	<3.0	3.0	0.1	<3.0	3.0	0.1	<3.0	3.0	0.1
1,2,3,7,8,9-Hexa CDF **		pg	<3.5	3.5	0.1	<3.4	3.4	0.1	<3.1	3.1	0.1	<3.4	3.4	0.1	<3.1	3.1	0.1	<3.1	3.1	0.1
1,2,3,4,6,7,8-Hepta CDF **		pg	20.7	3.0	0.01	3.3	2.8	0.01	<2.7	2.7	0.01	4.7	2.3	0.01	<2.2	2.2	0.01	<2.2	2.2	0.01
1,2,3,4,7,8-Hepta CDF **		pg	<3.5	3.5	0.01	<3.7	3.7	0.01	<3.7	3.7	0.01	<3.1	3.1	0.01	<3.0	3.0	0.01	<3.0	3.0	0.01
Octa CDF **		pg	39.1	3.3	0.0003	4.2 (1)	4.2	0.0003	<2.9	2.9	0.0003	7.3	3.0	0.0003	<3.2	3.2	0.0003	<3.2	3.2	0.0003
Total Tetra CDF **		pg	24.6	3.5		<3.1	3.1		3.1	2.9		<3.5	3.5		<3.1	3.1		<3.1	3.1	
Total Penta CDF **		pg	<3.5	3.5		4.3	3.2		3.4	3.0		<3.0	3.0		<3.1	3.1		<3.1	3.1	
Total Hexa CDF **		pg	12.1	3.3		<3.0	3.0		<2.9	2.9		7.0	3.0		<2.9	2.9		<2.9	2.9	
Total Hepta CDF **		pg	47.5	3.3		3.3	3.2		<3.1	3.1		4.7	2.6		<2.6	2.6		<2.6	2.6	
Toxic Equivalency		pg																		

(1) Timer dial stopped just before the scheduled end was reached but the sample still ran for sufficient duration to be deemed valid.

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

Calculated Concentrations	Quarter 3			18/07/2017			11/08/2017			23/08/2017			4/09/2017			28/09/2017			
	Units	Maximum	Minimum																
2,3,7,8-Tetra CDD *	pg/m ³	4.89E-03	3.84E-03	0.005			0.005			0.004			0.005			0.005			
1,2,3,7,8-Penta CDD *	pg/m ³	8.38E-03	4.11E-03	0.008			0.005			0.004			0.004			0.005			
1,2,3,4,7,8-Hexa CDD *	pg/m ³	3.72E-02	4.39E-03	0.037			0.005			0.004			0.005			0.005			
1,2,3,6,7,8-Hexa CDD *	pg/m ³	8.24E-02	4.25E-03	0.082			0.005			0.004			0.005			0.004			
1,2,3,7,8,9-Hexa CDD *	pg/m ³	1.47E-01	3.84E-03	0.147			0.005			0.004			0.009			0.004			
1,2,3,4,6,7,8-Hepta CDD *	pg/m ³	1.67E+00	1.01E-02	1.665			0.024			0.014			0.063			0.010			
Octa CDD *	pg/m ³	7.87E+00	3.59E-02	7.871			0.083			0.036			0.264			0.036			
Total Tetra CDD *	pg/m ³	3.58E-02	4.60E-03	0.012			0.036			0.009			0.005			0.017			
Total Penta CDD *	pg/m ³	5.91E-02	4.11E-03	0.059			0.018			0.004			0.004			0.012			
Total Hexa CDD *	pg/m ³	7.74E-01	4.25E-03	0.776			0.010			0.004			0.043			0.024			
Total Hepta CDD *	pg/m ³	3.15E+00	1.01E-02	3.154			0.056			0.014			0.137			0.010			
2,3,7,8-Tetra CDF **	pg/m ³	1.05E-02	4.25E-03	0.011			0.005			0.004			0.005			0.005			
1,2,3,7,8-Penta CDF **	pg/m ³	4.97E-03	4.11E-03	0.005			0.005			0.004			0.004			0.005			
2,3,4,7,8-Hexa CDF **	pg/m ³	4.97E-03	4.11E-03	0.005			0.005			0.004			0.004			0.005			
1,2,3,4,7,8-Hexa CDF **	pg/m ³	1.19E-02	3.84E-03	0.012			0.004			0.004			0.004			0.004			
2,3,4,6,7,8-Hexa CDF **	pg/m ³	4.55E-03	3.70E-03	0.005			0.004			0.004			0.004			0.004			
2,3,4,7,8,9-Hexa CDF **	pg/m ³	1.07E-02	4.25E-03	0.005			0.005			0.004			0.011			0.005			
1,2,3,7,8,9-Hexa CDF **	pg/m ³	5.88E-02	3.36E-03	0.059			0.010			0.004			0.014			0.003			
1,2,3,4,7,8-Hepta CDF **	pg/m ³	5.42E-03	4.59E-03	0.005			0.005			0.005			0.005			0.005			
Octa CDF **	pg/m ³	1.11E-01	3.98E-03	0.111			0.006			0.004			0.022			0.005			
Total Tetra CDF **	pg/m ³	6.99E-02	4.54E-03	0.070			0.005			0.009			0.010			0.005			
Total Penta CDF **	pg/m ³	1.24E-02	4.45E-03	0.005			0.013			0.009			0.004			0.005			
Total Hexa CDF **	pg/m ³	3.44E-02	3.98E-03	0.034			0.004			0.004			0.021			0.004			
Total Hepta CDF **	pg/m ³	1.35E-01	3.98E-03	0.135			0.010			0.004			0.014			0.004			
Toxic Equivalency	pg TEQ/m ³	6.47E-02	1.28E-02	0.065			0.015			0.013			0.016			0.015			
Calculated TEQ Concentrations	Units				18/07/2017		11/08/2017		23/08/2017		4/09/2017		28/09/2017						
2,3,7,8-Tetra CDD *	pg TEQ/m ³				0.005		0.005		0.004		0.005		0.005		0.005		0.005		0.005
1,2,3,7,8-Penta CDD	pg TEQ/m ³				0														