REPORT

DURHAM YORK ENERGY CENTRE

COURTICE, ONTARIO

2023 Q1 AMBIENT AIR QUALITY MONITORING REPORT

RWDI #2205149

May 10, 2023

SUBMITTED TO:

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1 INTRODUCTION

RWDI AIR Inc. (RWDI) was retained by Durham Region and York Region (the Regions) to conduct discrete and continuous air quality ambient monitoring at the Durham York Energy Centre (DYEC) monitoring stations. The facility address is 1835 Energy Drive, Clarington, Ontario. The DYEC is a facility that manages post diversion municipal solid waste from Durham Region and York Region to create energy from waste combustion. Commercial operation of the DYEC commenced on February 1, 2016. The site location is shown below in Figure 1.

Condition 11 of the Environmental Assessment Notice of Approval and Condition 7(4) of the Environmental Compliance Approval (ECA) requires ambient air monitoring to be undertaken by the DYEC. An Ambient Air Monitoring and Reporting Plan was prepared and approved by the Ministry of Environment, Conservation and Parks (MECP) to satisfy these conditions. Two (2) monitoring stations were established to monitor ambient air quality around the DYEC and quantify the background ambient air quality levels and DYEC contributed emissions to ambient air quality levels.

This monitoring plan was developed based on the Regional Council mandate to provide ambient monitoring in the area of the DYEC. The purposes of the ambient monitoring program are to:

- 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 (2009a);
- Monitor concentration levels of EFW-related air contaminants in nearby residential areas; and,
- Quantify background ambient levels of air contaminants in the area.

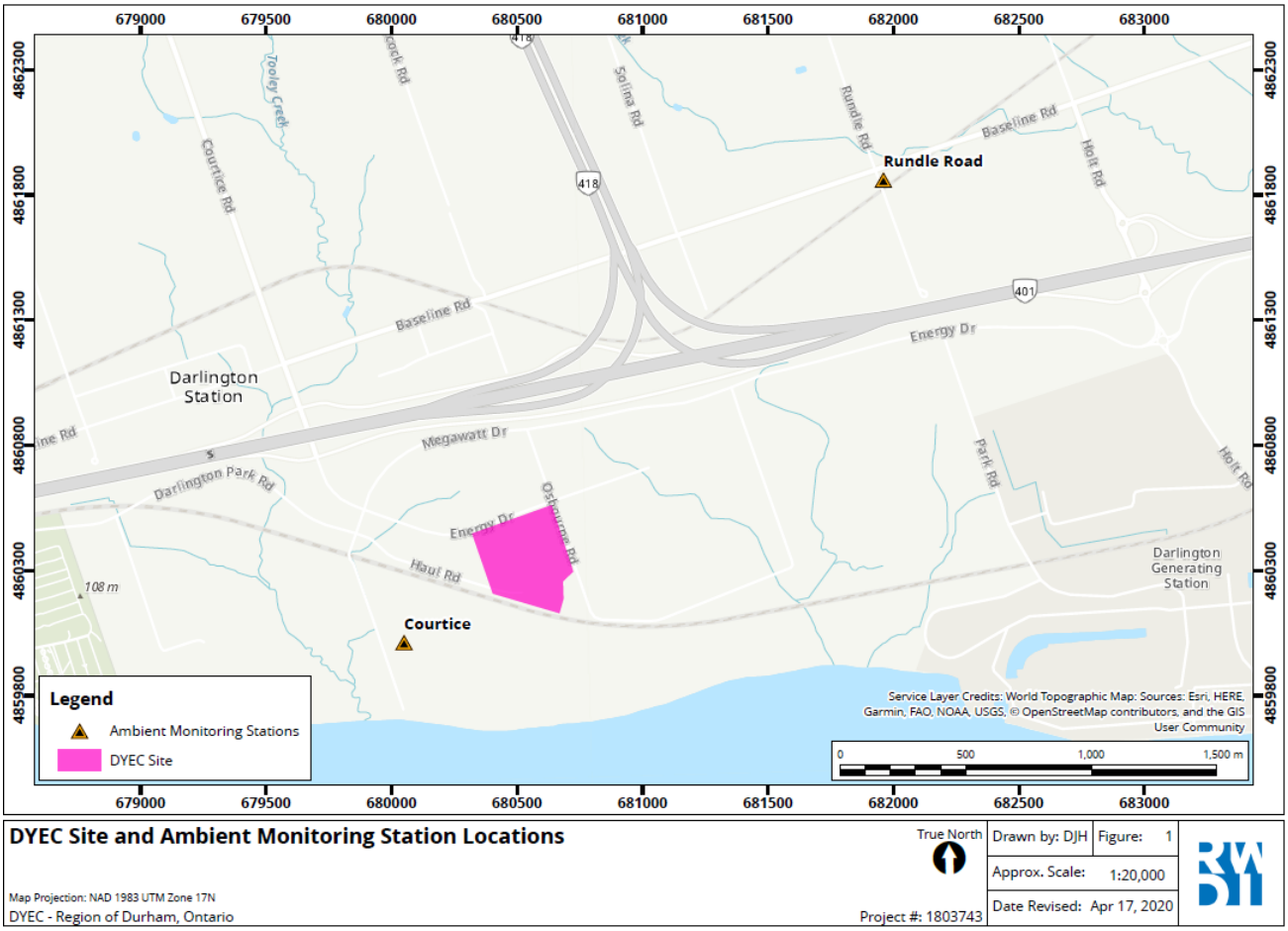
The facility has two (2) monitoring stations which collect continuous and discrete ambient measurements, known as the Courtice Station and Rundle Road Station. The station locations are shown in Figure 1. The Courtice and Rundle Road Stations were operational in May of 2013 and have been operated on behalf of the Region of Durham by Stantec Consulting Ltd. since that time up until July 31, 2018. RWDI has overseen the operation of the stations on behalf of the Region of Durham since August 1, 2018.

The Courtice and Rundle Road Stations continuously monitor the following air quality parameters: Particulate Matter less than 2.5 microns ($PM_{2.5}$), Nitrogen Oxides (NO_X) and Sulfur Dioxide (SO_2). In addition, both discretely monitor the following air quality parameters: Total Suspended Particulate (TSP), Metals, Dioxins and Furans (D&F) and Polycyclic Aromatic Hydrocarbons (PAHs).

Continuous meteorological data is collected at the Courtice and Rundle Road Stations. The Rundle Road Station collects the following meteorological parameters: wind speed, wind direction, ambient temperature, precipitation and relative humidity. The Courtice Station collects the following meteorological parameters: wind speed, wind direction, ambient temperature, ambient pressure, precipitation and relative humidity. The meteorological towers at both stations are approximately 10 meters tall.

Throughout this monitoring period there were eighty-nine (89) exceedance events of the rolling 10-minute SO_2 AAQC and thirty-one (31) exceedance events of the rolling 1-hour SO_2 AAQC at the Courtice station. There were two (2) exceedances of the Benzo(a) Pyrene AAQC at the Courtice and two (2) exceedances of the Benzo(a) Pyrene AAQC at the Rundle Road stations. The exceedances occurred at both stations on February 5 and March 13, 2023. Data recovery rates were acceptable and valid for all measured Q1 continuous and discrete parameters.

Figure 1: DYEC Site and Ambient Monitoring Station Locations



1.1 Sampling Locations

The Station sites were selected in consultation with a working group that included representatives from the MECP, the Region of Durham, York Region, and the Energy from Waste Advisory Committee (EFWAC), as required by Condition 11.3 of the Environmental Assessment Notice of Approval. The Courtice Station is predominantly upwind of the DYEC and is located on the Courtice WPCP property just southwest of the DYEC. The Rundle Road Station is predominantly downwind of the DYEC and is located just southeast of the intersection of Baseline Road and Rundle Road just northeast of the DYEC. Pictures of the two (2) Stations are presented as Figure 2 and 3.

Figure 2: Rundle Road Station

Figure 3: Courtice Station

2 SAMPLING METHODOLOGY

The Rundle Road and Courtice Stations are both equipped with the following continuous monitors: Thermo Scientific Model 5030 SHARP (Synchronized Hybrid Ambient Real-time Particulate) monitor ($PM_{2.5}$ analyzer), Teledyne Nitrogen Oxides Analyzer Model T200 (NO_X analyzer), and a Teledyne Sulfur Dioxide Analyzer Model T100 (SO_2 analyzer). Both Stations also have the following periodic monitors: High Volume (Hi-Vol) Air Sampler outfitted with a TSP inlet head as approved by the United States Environmental Protection Agency (U.S. EPA), and a Hi-Vol Air Sampler outfitted with a polyurethane foam plug and circular quartz filter for measuring PAH's and D&F's as approved by U.S. EPA.

2.1 Nitrogen Oxide Analyzers

The Teledyne T200 Nitrogen Oxide (NO_X) analyzers use chemiluminescence detection, coupled with microprocessor technology to provide sensitivity and stability for ambient air quality applications. The instrument determines real-time concentration of nitric oxide (NO), total nitrogen oxides (NO_X) (the sum of NO and NO_2), and nitrogen dioxide (NO_2). The amount of NO is measured by detecting the chemiluminescence reaction that occurs in the reaction cell when NO molecules are exposed to ozone (O_3). The NO and O_3 molecules collide in the reaction cell and enter a higher energy state. When these excited molecules return to a stable energy state, they emit a photon of light which is proportional to the amount of NO in the sample stream of gas entering the analyzer. To determine the total NO_X ($NO+NO_2$) measurement, sample gas is periodically bypassed through a heated molybdenum converter cartridge that converts any NO_2 molecules in the sample stream into NO (any existing NO molecules in the stream remain as is). The instrument will switch the sample stream through the converter periodically and then through the reaction cell where the same chemiluminescence reaction occurs with ozone.

The resultant response produced is now the sum of NO and converted NO_2 producing a NO_X measurement. The resultant NO_2 determination is the NO_X measurement subtracted from the NO measurement.

The NO_X analyzers were zero and span checked daily using the internal zero and span (IZS) system and calibrated once a month using either EPA protocol span gases and a dilution system or an ESA permeation tube calibrator. Automatic IZS checks were performed on a daily basis commencing at approximately 01:45 and ending at 02:15. The checks consisted of a 10-minute zero check, a 10-minute span check and a 10-minute purge. These checks provide a way to monitor daily performance of the analyzer using an external charcoal and purafil zeroing cartridge for the zero, and an internal permeation oven with a permeation tube for the span. These IZS checks are not for calibration purposes but are merely a diagnostic tool to identify instrument drift.

The instrument collects data using its own data acquisition system (DAS) on a 5-minute interval. Data is collected from the instrument directly to an EnviDAS logger at 1-min, 5-min and 60-min intervals. The logger can be accessed remotely, and all instrument parameters can be examined as well as the measurement data. This allows the tracking of instrument performance. Data was also collected at 1-minute intervals by an external datalogger using analog output connections as a back-up. The measurement data was averaged using Envista processing software over a 1-hour and 24-hour period to compare to the applicable ambient air quality criteria.

2.2 Sulphur Dioxide Analyzers

The Teledyne T100 Sulphur Dioxide (SO_2) Analyzer is a microprocessor-controlled analyzer that determines the concentration of SO_2 in a sample gas drawn through the instrument. In the sample chamber, sample gas is excited by ultraviolet light causing the SO_2 to absorb energy from the light and move to an active state (SO_2*). These active SO_2* molecules must decay into a stable state back to SO_2, and when this happens a photon of light is released which is recognized by the instrument as fluorescence. The instrument measures the amount of florescence to determine the amount of SO_2 present in the sample gas.

The SO_2 analyzers were zero and span checked daily using the IZS system and calibrated once a month using either EPA protocol span gases and a dilution system or an ESA permeation tube calibrator. Automatic IZS checks were performed on a daily basis commencing at approximately 01:45 and ending at 02:15. The checks consisted of a 10-minute zero check, a 10-minute span check and a 10-minute purge. These checks provide a way to monitor daily performance of the analyzer using an external charcoal and purafil zeroing cartridge for the zero, and an internal permeation oven with a permeation tube for the span. These IZS checks are not for calibration purposes but are merely a diagnostic tool to identify instrument drift.

The instrument collects data using its own data acquisition system (DAS) on a 5-minute interval. Data is collected from the instrument directly to an EnviDAS logger at 1-min, 5-min and 60-min intervals. The logger can be accessed remotely, and all instrument parameters can be examined as well as the measurement data. This allows the tracking of instrument performance. Data was also collected at 1-minute intervals by an external datalogger using analog output connections as a back-up. The measurement data was averaged using Envista processing software over a 1-hour and 24-hour period to compare to the applicable ambient air quality criteria.

2.3 SHARP 5030 $PM_{2.5}$ Analyzers

The SHARP 5030 is a hybrid nephelometric/radiometric particulate mass monitor capable of providing precise, real-time measurements with a superior detection limit. The SHARP incorporates a high sensitivity light scattering photometer whose output signal is continuously referenced to the time-averaged measurement of an integral beta attenuating mass sensor. The SHARP also incorporates a dynamic inlet heating system designed to maintain the relative humidity of the air passing through the filter tape constant.

The SHARP is calibrated once a month to ensure accuracy and validity of its data. The $PM_{2.5}$ inlet head and sharp cut cyclone is cleaned monthly as well to ensure proper performance. The monthly calibration process consists of the following: zeroing the nephelometer if necessary, calibration of ambient temperature, calibration of barometric pressure, and calibration of the flow.

The instrument collects data using its own data acquisition system (DAS) on a 5-minute interval. Data is collected from the instrument directly to an EnviDAS logger at 1-min, 5-min and 60-min intervals. The logger can be accessed remotely, and all instrument parameters can be examined as well as the measurement data. This allows the tracking of instrument performance. Data was also collected at 1-minute intervals by an external datalogger using analog output connections as a back-up. The measurement data was averaged using Envista processing software over a 1-hour and 24-hour period to compare to the applicable ambient air quality criteria.

2.4 TSP High Volume Air Samplers

The Tisch TE-5170 Total Suspended Particulate (TSP) high volume (Hi-Vol) air samplers were outfitted with a TSP gabled inlet capable of collecting particulate of all aerodynamic diameters. Each Hi-Vol is equipped with a mass flow controller, which ensures a flow rate of 40 cubic feet per minute (CFM), a chart recorder for measuring cfm flow throughout the run time, an elapsed timer and a wheel timer for starting and stopping each sample. In the latter part of 2019, the pin-based wheel timer was modified with an automated relay system controlled by a data logger to toggle the sampler on and off, and the chart recorder system was replaced by a digital pressure transducer to record the blower output pressure. Teflon coated glass fibre filters are outfitted at the top of the hi-vol samplers where air is drawn through the filter, thereby collecting TSP. Each Hi-Vol is calibrated quarterly (every three months) to ensure accuracy and validity of the volume of air drawn through the sampler.

The Teflon coated glass fibre filter media was pre and post weighed by ALS Laboratories in Burlington, Ontario. The filters are then analyzed for total particulate weight, metals analysis and mercury.

2.5 Polyurethane Foam Samplers

The D&F, and PAH samples were collected using Tisch TE-1000 samplers, which are listed as reference devices for U.S. EPA Methods TO-9 and TO-13. The samplers use a collection filter that is 'backed-up' by a polyurethane foam (PUF) plug. The airborne compounds present in the particulate phase are collected on the Teflon coated glass fibre filter and any compounds present in the vapour phase are absorbed in the PUF plug. Each PUF sampler is equipped with a mass flow controller, which can sustain 8 CFM of flow over the sampling period, an elapsed timer and a wheel timer for starting and stopping each sample.

In the latter part of 2019, the pin-based wheel timer was modified with an automated relay system controlled by a data logger to toggle the sampler on and off, and the chart recorder system was replaced by a digital pressure transducer to record the blower output pressure. Each PUF sampler is calibrated quarterly (every three months) to ensure accuracy and validity of the volume of air drawn through the sampler.

The filter and PUF media/glassware is proofed and analyzed by ALS Laboratories in Burlington, Ontario. The filters and PUF/XAD plugs are then analyzed for PAH's and D&F's.

2.6 Meteorological Towers

Meteorological data was collected from the Rundle Road and Courtice Stations. This is done so that a vector could be associated with the applicable contaminant concentrations. The Rundle Road and Courtice Stations are outfitted with a Campbell Scientific HMP60 Temperature / Relative Humidity probe, and a Texas Instruments TE525M rain gauge. Meteorological data was collected at 1-minute intervals and was averaged using Envista processing software over a 1-hour period.

3 AIR QUALITY CRITERIA AND STANDARDS

The monitored contaminant concentrations were compared to air quality criteria and standards set by the MECP and by Environment Canada. The MECP developed Ambient Air Quality Criteria (AAQCs) which are the maximum desirable concentrations in the outdoor air, based on effects to the environment and health (MECP, 2012). Not all contaminants have an applicable regulatory limit; therefore, other criteria were used for comparison. These included human health risk assessment (HHRA) criteria.

Environment Canada has established a Canadian Ambient Air Quality Standard (CAAQS) which are health-based air quality objectives for the outdoor air (Environment Canada, 2013). The current CAAQS' for $PM_{2.5}$ are 27 µg/m^3 for the 3-year average of annual 98th percentile 24-hour concentration, and 8.8 µg/m^3 for the 3-year average of annual average concentrations (in effect as of 2020). The CAAQS' are listed in **Table 1**. No direct comparison to the 2020 CAAQS' is appropriate for this report, as the standards are only applicable to 3-year averaged data which is provided in the annual reports.

Table 1: $PM_{2.5}$, SO_2 and NO_2 CAAQS' by Implementation Year

Parameter	Averaging Time	Year Applied		Statistical Form
		2020	2025	
Fine Particulate Matter ($PM_{2.5}$)	24-hour	27 µg/m³		The 3-year average of the annual 98th percentile of the daily 24-hour average concentrations
	Annual	8.8 µg/m³		The 3-year average of the annual average of all 1-hour concentrations
Sulphur Dioxide (SO_2)	1-hour	70 ppb	65 ppb	The 3-year average of the annual 99th percentile of the SO_2 daily maximum 1-hour average concentrations
	Annual	5 ppb	4 ppb	The average over a single calendar year of all 1-hour average SO_2 concentrations
Nitrogen Dioxide (NO_2)	1-hour	60 Ppb	42 ppb	The 3-year average of the annual 98th percentile of the daily maximum 1-hour average concentrations
	Annual	17 Ppb	12 Ppb	The average over a single calendar year of all 1-hour average concentrations

(CCME,2019)

All applicable criteria and standards are shown in the 'Summary of Ambient Measurements' section of this report.

4 MECP AUDITS

There was an MECP audit conducted on March 29, 2023. All instruments met their respective audit criteria.

5 SUMMARY OF AMBIENT MEASUREMENTS

Ambient air quality monitoring results for all contaminants sampled at the Courtice and Rundle Road Stations are discussed herein. Summary statistics from January to March 2023 are presented in a summary format below and in a more detailed matrix format in **Appendix A** for continuous measurements and **Appendix B** for discrete measurements.

5.1 Meteorological Station Results

5.1.1 Courtice Station Results

The Courtice Station collected the following meteorological parameters: wind speed, wind direction, relative humidity, ambient temperature, ambient pressure and precipitation. The meteorological tower at the station is at a height of approximately 10 meters tall. The Courtice Station maintained a minimum average of 98% of data collection for all of the parameters measured during Q1. Hourly statistics from the meteorological station are presented in **Table 2**. A wind rose showing trends in wind speed and wind direction during Q1 is provided in **Figure 4**.

Figure 4: Wind Roses of Hourly Wind Speed and Wind Direction – January to March 2023

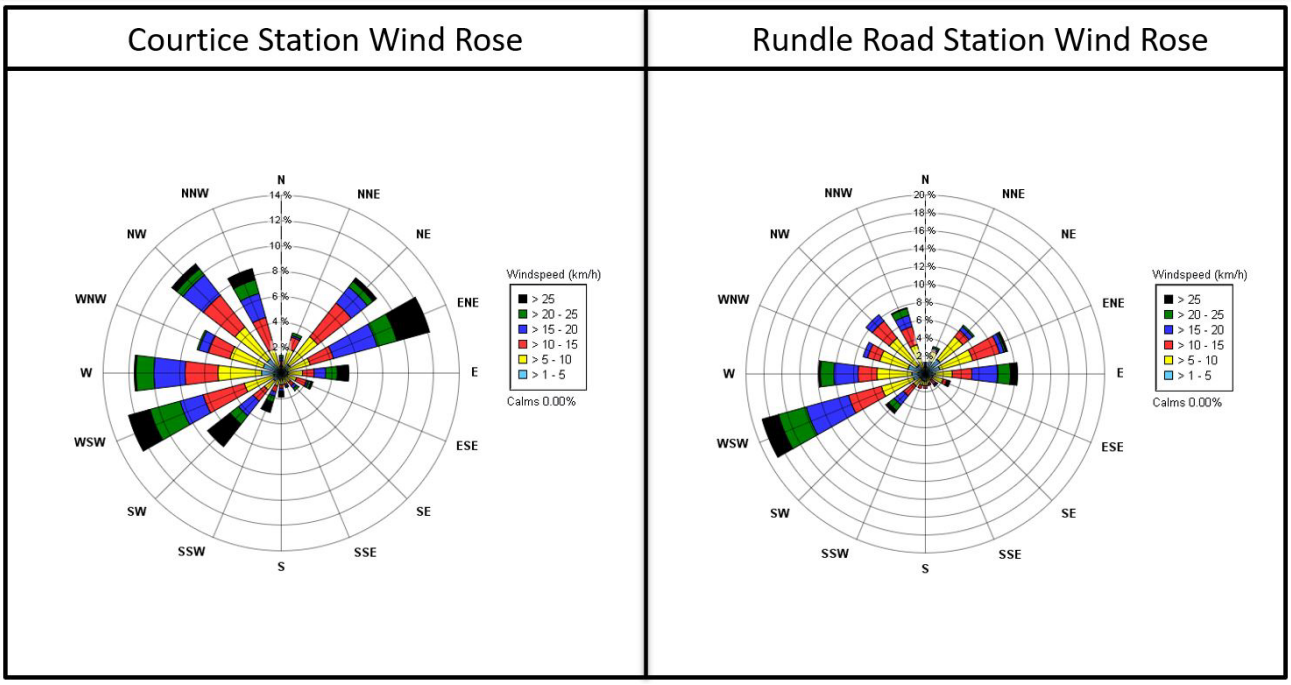


Table 2: Hourly Statistics from the Courtice Meteorological Station

Courtice Station MET Statistics	Maximum 1 hr. Mean					Minimum 1 hr. Mean					Monthly Mean					Total	% Valid hours					
Parameter	**WS**	**Temp**	**RH**	**Pres**	**Rain**	**WS**	**Temp**	**RH**	**Pres**	**Rain**	**WS**	**Temp**	**RH**	**Pres**	**Rain**	**Rain**	**WS**	**WD**	**Temp**	**RH**	**Pres**	**Rain**
Units	**(km/hr.)**	**(°C)**	**(%)**	**"Hg**	**mm**	**(km/hr.)**	**(°C)**	**(%)**	**"Hg**	**mm**	**(km/hr.)**	**(°C)**	**(%)**	**"Hg**	**mm**	**mm**	**(%)**					
January	41.0	4.9	100.0	30.1	11.0	0.9	-11.2	37.4	29.1	0.0	12.2	-0.8	76.5	29.7	0.1	60.4	99.7	98.0	100.0	100.0	100.0	100.0
February	45.2	10.4	100.0	30.4	4.3	1.0	-25.2	37.9	29.1	0.0	15.4	-1.6	66.5	29.7	0.1	42.2	100.0	99.3	100.0	100.0	100.0	100.0
March	45.3	10.6	100.0	30.2	4.6	0.5	-7.9	24.9	29.1	0.0	14.7	0.8	66.2	29.7	0.1	50.0	100.0	97.7	100.0	100.0	100.0	100.0
Q1 Arithmetic Mean											14.1	-0.5	69.9	29.7	0.1	152.6	99.9	98.3	100.0	100.0	100.0	100.0

5.1.2 Rundle Road Station Results

The Rundle Road Station collected the following meteorological parameters: wind speed, wind direction, relative humidity, ambient temperature and precipitation. The meteorological tower at the station is at a height of approximately 10 meters tall. The Rundle Road Station maintained a minimum average of 96% data collection for all of the meteorological parameters measured during Q1. Hourly statistics from the meteorological station is presented in **Table 3**. A wind rose showing trends in wind speed and wind direction during Q1 is provided in **Figure 4**.

Table 3: Hourly Statistics from the Rundle Road Meteorological Station

Rundle Road Station MET Statistics	Maximum 1 hr. Mean				Minimum 1 hr. Mean				Monthly Mean				Total	% Valid Hours				
Parameter	**WS**	**Temp**	**RH**	**Rain**	**WS**	**Temp**	**RH**	**Rain**	**WS**	**Temp**	**RH**	**Rain**	**Rain**	**WS**	**WD**	**Temp**	**RH**	**Rain**
Units	**(km/hr.)**	**(°C)**	**(%)**	**mm**	**(km/hr.)**	**(°C)**	**(%)**	**mm**	**(km/hr.)**	**(°C)**	**(%)**	**mm**	**mm**	**(%)**				
January	33.0	4.6	100.0	10.4	0.0	-12.2	39.7	0.0	9.5	-1.3	83.3	0.1	54.0	97.8	94.1	100.0	100.0	100.0
February	37.6	10.0	100.0	5.2	0.5	-27.2	39.2	0.0	12.2	-2.2	72.5	0.1	43.5	100.0	99.0	100.0	100.0	100.0
March	36.2	10.1	100.0	4.8	0.1	-8.4	26.8	0.0	11.9	0.4	71.1	0.1	59.5	100.0	96.1	100.0	100.0	100.0
Q1 Arithmetic Mean									11.1	-1.0	75.7	0.1	157.0	99.3	96.3	100.0	100.0	100.0

5.2 NO_X, SO_2 and $PM_{2.5}$ Summary Table Results

Table 4 provides a summary of Maximum 1-hour Rolling Means, Maximum 24-hour Rolling Means, Monthly Means, Quarterly Means and Percent valid data for the Courtice Station. **Table 5** provides a summary of Maximum 1-hour Means, Maximum 24-hour Means, Monthly Means, Quarterly Means and Percent valid data for the Rundle Road Station. **Table 6** provides a summary of exceedance statistics for both Courtice and Rundle Road Stations. At the Courtice Station, there were eighty-nine (89) exceedance events of the rolling 10-minute SO_2 AAQC and thirty-one (31) exceedance events of the 1-hour SO_2 AAQC in Q1.

Table 4: Summary of Courtice Station Continuous Data Statistics

Courtice Monitoring Station Data Statistics	Maximum Rolling 10 min Mean	Maximum Rolling 1 hr Mean					Maximum 24 hr Rolling Mean					Monthly Mean					% Valid Hours				
Compound	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2
Units	ppb	(µg/m³)	ppb				(µg/m³)	ppb				(µg/m³)	ppb				(%)				
AAQC/CAAQS	67				200	40	27[A]			100											
January	421.7	41.7	70.3	42.1	28.9	133.9	17.0	23.6	7.8	15.7	15.2	6.2	7.5	1.6	5.9	3.6	99.9	99.7	99.7	99.7	99.6
February	213.2	84.6	79.8	40.3	39.5	123.4	49.2	31.2	10.0	21.2	22.7	8.5	7.4	1.4	6.0	3.1	99.3	97.2	97.2	97.2	96.9
March	289.4	60.7	60.0	24.2	37.8	84.3	23.3	18.4	3.4	15.1	15.7	5.3	6.8	1.1	5.8	2.4	98.9	99.5	99.5	99.5	99.5
Q1 Arithmetic Mean												6.6	7.2	1.4	5.9	3.0	99.4	98.8	98.8	98.8	98.7

[A] The 24-hour $PM_{2.5}$ CAAQS applies to the 98th percentile over 3 consecutive years.

Table 5: Summary of Rundle Road Station Continuous Data Statistics

Rundle Road Monitoring Station Data Statistics	Maximum Rolling 10 min Mean	Maximum Rolling 1 hr Mean					Maximum 24 hr Rolling Mean					Monthly Mean					% Valid Hours				
Compound	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2
Units	ppb	(µg/m³)	ppb				(µg/m³)	ppb				(µg/m³)	ppb				(%)				
AAQC/CAAQS	67				200	40	27[A]			100											
January	8.3	50.8	55.8	37.6	23.2	4.2	15.5	13.9	5.0	9.8	0.6	6.3	6.1	1.5	4.7	0.2	99.6	99.6	99.6	99.6	99.7
February	2.6	29.8	64.3	38.2	32.0	2.1	16.9	18.7	6.1	13.9	0.8	6.2	6.6	1.4	5.3	0.4	99.7	99.4	99.4	99.4	99.7
March	10.3	48.4	46.2	19.7	28.6	3.0	14.5	18.0	3.7	14.3	0.8	5.4	5.4	0.9	4.5	0.3	99.5	99.6	99.6	99.6	99.6
Q1 Arithmetic Mean												6.0	6.0	1.2	4.8	0.3	99.6	99.5	99.5	99.5	99.7

[A] The 24-hour $PM_{2.5}$ CAAQS applies to the 98th percentile over 3 consecutive years.

Table 6: Summary of Exceedance Statistics

Event Statistics	Rolling Mean > 10 min AAQC for Courtice	Rolling Mean > 10 min AAQC for Rundle Road	Mean > 1 hr AAQC for Courtice Monitoring Station			Mean > 1 hr AAQC for Rundle Road Monitoring Station			Rolling Mean > 24 hr AAQC for Courtice Monitoring Station			Rolling Mean > 24 hr AAQC for Rundle Road Monitoring Station		
Compound	SO_2	SO_2	$PM_{2.5}$	NO_2	SO_2	$PM_{2.5}$	NO_2	SO_2	$PM_{2.5}$	NO_2	SO_2	$PM_{2.5}$	NO_2	SO_2
Units	No.	No.	No.			No.			No.			No.		
January	20	0		0	5		0	0	N/A	0		N/A	0	
February	39	0		0	18		0	0	N/A	0		N/A	0	
March	30	0		0	8		0	0	N/A	0		N/A	0	
Q1 Total	89	0		0	31		0	0	N/A	0		N/A	0	

5.3 Oxides of Nitrogen Results

5.3.1 Courtice Station Results

Data recovery levels were high for oxides of nitrogen (98.8% valid data). Monitoring results were compared to the AAQC for NO_2 only, as it is the only parameter that has AAQC values for 1-hour and 24-hour averaging periods (there are no AAQC's for NO or NO_X). There were no exceedances above the AAQC values for the entirety of the sampling period for rolling 1-hour and 24-hour averaged data. The highest NO_2 value seen among the 1-hour rolling averages was 39.5 ppb, which is 19.8% of the AAQC. The highest NO_2 value seen among the rolling 24-hour averages was 21.2 ppb, which is 21.2% of the AAQC. The measurements are summarized in **Table 4** above. A pollution rose is presented in **Figure 5** for the Courtice Station during Q1 composed of hourly average NO_2 concentrations. A pollution rose indicates the percentage of time that the wind originates from a given direction coupled with the pollutant measurement for that time in either ppb or micrograms per meter cubed. In order to show where possible major sources of pollutants are coming from, levels below 5 ppb were omitted from the graphic wind rose representation.

The Courtice Station pollution rose in **Figure 5** shows the majority of the NO_2 impacts were largely from the northeast to east-northeast and west. The Station is downwind of the DYEC when winds are from the northeast and east-northeast directions, which happened frequently during the monitoring period, therefore it is likely that the DYEC contributed to the observed concentrations. There are additional impacts from the west-southwest to northwest which indicates reception from surrounding industry or the highway and railway corridors.

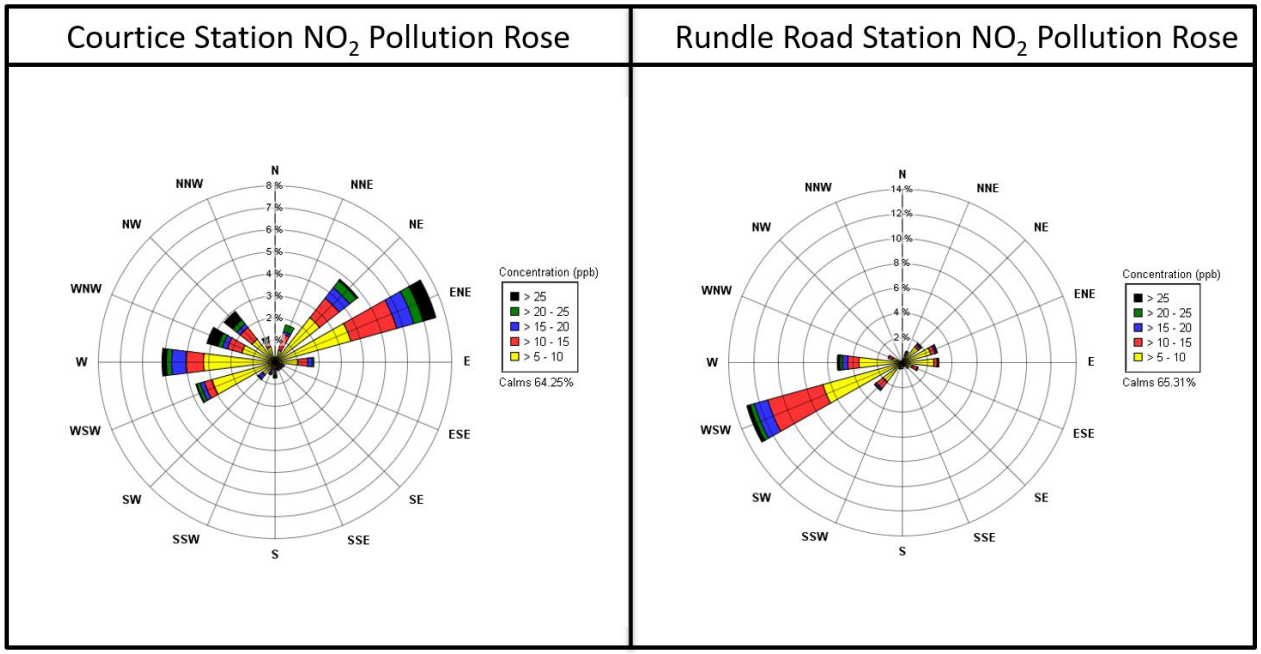
5.3.2 Rundle Road Station Results

Data recovery levels were high for oxides of nitrogen (99.5% valid data). There were no exceedances above the AAQC values for the entirety of the sampling period for rolling 1-hour and 24-hour averaged data. The highest NO_2 value seen among the 1-hour rolling averages was 32.0 ppb, which is 16.0% of the AAQC. The highest NO_2 value seen among the rolling 24-hour averages was 14.3 ppb, which is 14.3% of the AAQC. The measurements are summarized in **Table 5** above.

A pollution rose is presented in **Figure 5** for the Rundle Road Station during Q1 composed of hourly average NO_2 concentrations. In order to show where possible major sources of pollutants are coming from, levels below 5 ppb were omitted from the graphic wind rose representation.

The Rundle Road Station pollution rose in **Figure 5** shows that the majority of elevated NO_2 events at the Rundle Road Station occurred when winds were from the west-southwest to west. The Station is downwind of the DYEC when winds are from the south-southwest and southwest directions. Elevated concentrations were infrequent from the south-southwest and southwest during the monitoring period, therefore it is unlikely that the DYEC contributed to the observed concentrations. There are additional impacts from the west-southwest to west which indicates reception from surrounding industry or the highway and railway corridors.

Figure 5: Pollution Roses of Hourly Average NO_2 Concentrations – January to March 2023



5.4 Sulphur Dioxide Results

5.4.1 Courtice Station Results

Data recovery levels were high for sulphur dioxide (98.7% valid data). Monitoring results were compared to the AAQC for 10-minute and 1-hour rolling average periods. In 2023, there have been more frequent SO_2 concentrations elevated above the AAQC's than in previous years due to the new limits imposed at the start of 2020. The highest SO_2 value seen among the 10-min rolling averages was 421.7 ppb, which is 629.4% of the AAQC. The highest SO_2 value seen among the 1-hour rolling averages was 133.9 ppb, which is 334.8% of the AAQC. There were eighty-nine (89) exceedance events above the rolling 10-minute AAQC and thirty-one (31) exceedance events above the rolling 1-hour AAQC. A table outlining the interpretation of the exceedance period can be found in **Appendix E**.

The SO_2 statistical results are summarized in **Table 4** above. A pollution rose is presented in **Figure 6** for the Courtice Station during Q1 composed of hourly average SO_2 concentrations. In order to show where possible major sources of pollutants are coming from, levels below 5 ppb were omitted from the graphic wind rose representation. A pollution rose is presented in **Figure 7** for the Courtice Station during Q1 composed of 5-minute average SO_2 concentrations with levels below 67 ppb omitted to illustrate directionality of exceedance concentrations.

The Courtice Station pollution rose in **Figure 6** shows that the majority of elevated SO_2 events at Courtice occurred from the north-northeast to east-northeast directions. The events were possibly a result of emissions from surrounding industrial sources with contributions from the DYEC in the east-northeast direction. The Courtice Station pollution rose in **Figure 7** shows that <0.58% of the 5-min SO_2 events are elevated >67 ppb and the majority occurred from the north-northwest to north-northeast directions. The pollution rose indicates that the DYEC was not a contributor to SO_2 levels at the station and that the levels may be related to other industrial activity nearby.

A Technical Memorandum summarizing the DYEC SO_2 continuous emissions monitoring system (CEMS) data during the exceedance events recorded at the Courtice and Rundle Road Ambient Monitoring Stations for Q1, is included in **Appendix G**. The Memorandum indicates that based on the in-stack concentration levels measured by the CEMS, that there were no unusual levels of SO2 emissions during the ambient Station exceedance events and that the facility's impact on ambient air quality would be expected to be quite low.

5.4.2 Rundle Road Station Results

Data recovery levels were high for sulphur dioxide (99.7% valid data). Monitoring results were compared to the AAQC for 10-minute and 1-hour rolling average periods. The highest SO_2 value seen among the 10-min rolling averages was 10.3 ppb, which is 15.4% of the AAQC. The highest SO_2 value seen among the 1-hour rolling averages was 4.2 ppb, which is 10.5% of the AAQC.

The SO_2 statistical results are summarized in **Table 5** above. A pollution rose is presented in **Figure 6** for the Rundle Road Station during Q1 composed of hourly average SO_2 concentrations. In order to show where possible major sources of pollutants are coming from, levels below 5 ppb were omitted from the graphic wind rose representation. A pollution rose is presented in **Figure 7** for the Rundle Road Station during Q1 composed of 5-minute average SO_2 concentrations with levels below 67 ppb omitted to illustrate directionality of exceedance concentrations.

The Rundle Road Station pollution rose in **Figure 6** shows that no elevated SO_2 events occurred at the Rundle Road Station during Q1 of 2023. The pollution rose indicates that the DYEC was not a contributor to SO_2 levels at the station and that the levels may be related to other industrial activity nearby. The Rundle Road Station pollution rose in **Figure 7** shows that there were no SO_2 concentrations >67 ppb during Q1 of 2023.

Figure 6: Pollution Roses of Hourly Average SO_2 Concentrations – January to March 2023

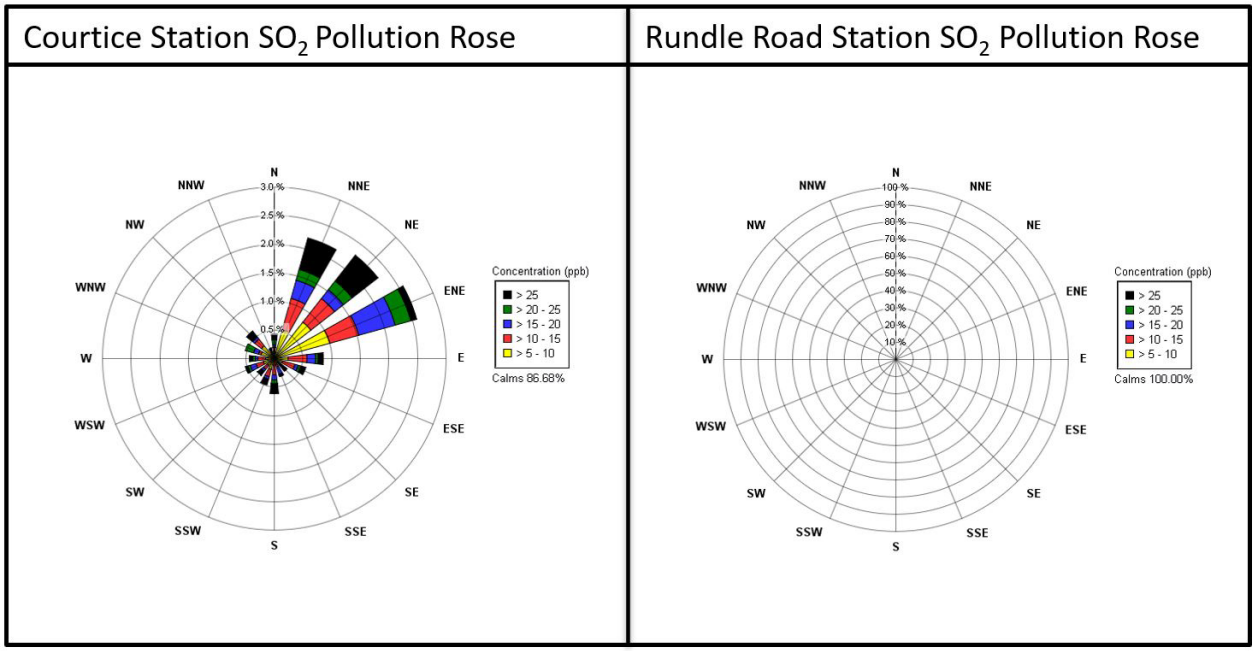
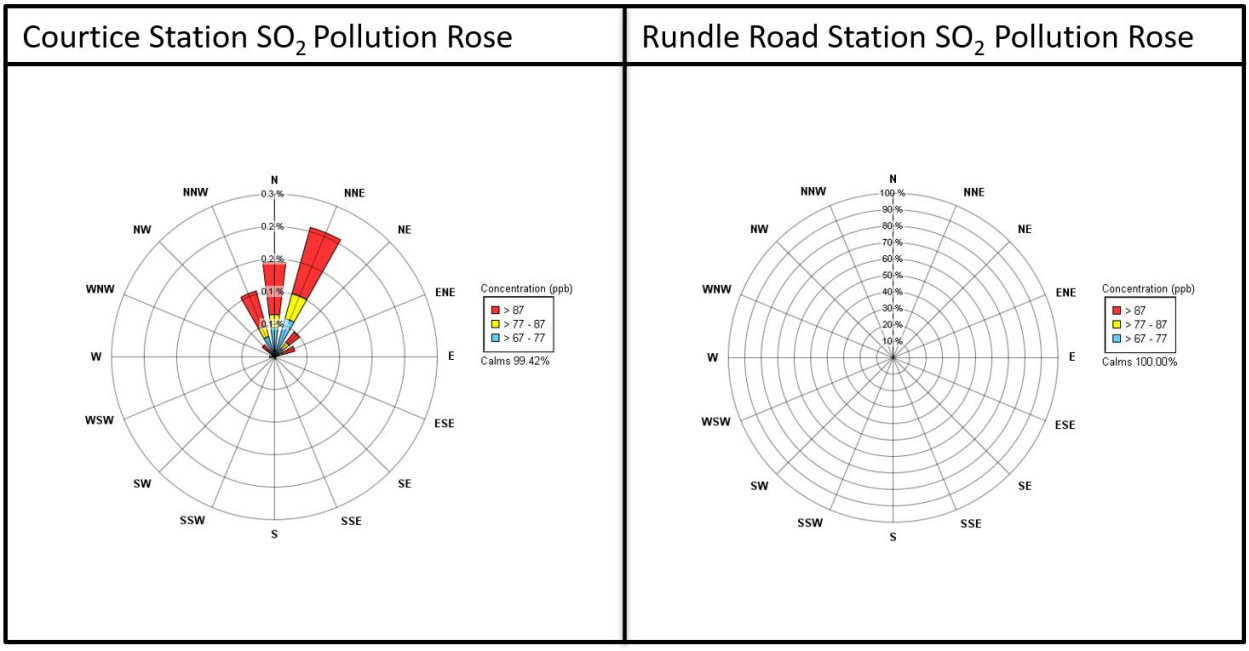


Figure 7: Pollution Roses of 5-minute Average SO_2 Concentrations >67 ppb – January to March 2023



5.5 Fine Particulate Matter ($PM_{2.5}$) Results

5.5.1 Courtice Station Results

Data recovery levels were high for particulate matter less than 2.5 microns (99.4% valid data). There is no 1-hour AAQC or standard for $PM_{2.5}$, but there is a 24-hour CAAQS of 27 µg/m^3 for the 3-year average of the annual 98th percentile 24-hour concentrations, and 8.8 µg/m^3 for the 3-year average of the annual average concentrations (in effect as of 2020). Note that since the reported data is only quarterly and the CAAQS is applicable to the 3-year average, the CAAQS' for $PM_{2.5}$ was not applicable to the data. The highest $PM_{2.5}$ value seen among the 1-hour rolling averages was 84.6 µg/m^3 and the highest value seen among the 24-hour rolling averages was 49.2 µg/m^3. The results are summarized in **Table 4** above. A pollution rose is presented in **Figure 8** for the Courtice Station during Q1 composed of hourly average $PM_{2.5}$ concentrations. In order to show where possible major sources of pollutants are coming from, levels below 5 µg/m^3 were omitted from the graphic wind rose representation.

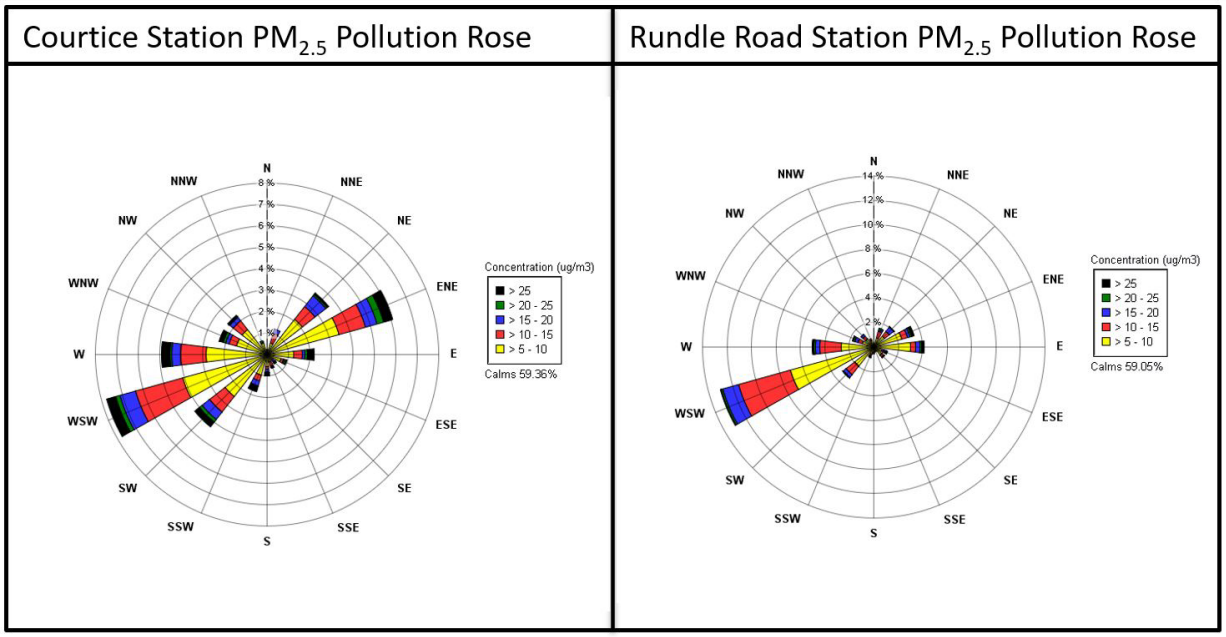
The Courtice Station pollution rose in **Figure 8** shows that the majority of elevated $PM_{2.5}$ events at Courtice occurred when winds were from the northeast to east-northeast and southwest to west, which places the station downwind of the DYEC occasionally. Other contributions are in line with nearby industrial activity.

5.5.2 Rundle Road Station Results

Data recovery levels were high for particulate matter less than 2.5 microns (99.6% valid data). The highest $PM_{2.5}$ value seen among the 1-hour rolling averages was 50.8 µg/m^3 and the highest value seen among the 24-hour rolling averages was 16.9 µg/m^3. The results are summarized in **Table 5** above. A pollution rose is presented in **Figure 8** for the Rundle Road Station during Q1 composed of hourly average $PM_{2.5}$ concentrations. In order to show where possible major sources of pollutants are coming from, levels below 5 µg/m^3 were omitted from the graphic wind rose representation.

The Rundle Road pollution rose in **Figure 8** shows that the majority of elevated $PM_{2.5}$ events at the Rundle Road Station occurred when winds were from the west-southwest to west. Elevated concentrations were infrequent from the south-southwest and southwest during the monitoring period, therefore it is unlikely that the DYEC contributed to the observed concentrations. Other possible contributions include surrounding industry, nearby high traffic areas and urban background.

Figure 8: Pollution Roses of Hourly Average $PM_{2.5}$ Concentrations – January to March 2023



5.6 TSP and Metals Hi-Vol Results

All of the TSP Hi-Vols operated on a discrete schedule every 6 days according to the NAPS schedule during Q1 with the sample days being: January 6, 12, 18, 24, 30, February 5, 11, 17, 23, March 1, 7, 13, 19, 25, and 31, 2023.

5.6.1 Courtice Station Results

Data recovery levels were very high for the TSP sampler at the Courtice Station (100% valid data). There were no exceedances of any of the AAQC's or HHRA Criteria for TSP, mercury or metals during Q1. **Table 7** is a summary of the statistics for this station.

Table 7: Summary of TSP Sampler Courtice Station

Contaminant	Units	MECP Criteria	HHRA Health Based Criteria	No. > Criteria	Geometric Mean	Arithmetic Mean	Q1 Minimum Concentration	Q1 Maximum Concentration	January Maximum Concentration	February Maximum Concentration	March Maximum Concentration	Number of Valid Samples	% Valid data
Particulate (TSP)	µg/m³	*120*	*120*	0	11.2	13.6	3.19	30.38	30.38	20.22	17.18	15	100
Total Mercury (Hg)	µg/m³	*2*	*2*	0	4.10E-06	4.54E-06	2.96E-06	8.60E-06	6.82E-06	8.60E-06	7.82E-06	15	100
Aluminum (Al)	µg/m³	*4.8*	-	0	1.03E-01	1.13E-01	5.31E-02	1.94E-01	1.74E-01	1.94E-01	1.85E-01	15	100
Antimony (Sb)	µg/m³	*25*	*25*	0	5.96E-04	6.85E-04	2.25E-04	1.65E-03	1.07E-03	1.65E-03	6.96E-04	15	100
Arsenic (As)	µg/m³	*0.3*	*0.3*	0	9.11E-04	9.11E-04	8.88E-04	9.36E-04	9.36E-04	9.21E-04	9.14E-04	15	100
Barium (Ba)	µg/m³	*10*	*10*	0	4.27E-03	4.70E-03	2.11E-03	8.46E-03	8.46E-03	4.20E-03	6.12E-03	15	100
Beryllium (Be)	µg/m³	*0.01*	*0.01*	0	1.52E-05	1.52E-05	1.48E-05	1.56E-05	1.56E-05	1.54E-05	1.52E-05	15	100
Bismuth (Bi)	µg/m³	-	-	-	5.46E-04	5.46E-04	5.33E-04	5.62E-04	5.62E-04	5.53E-04	5.48E-04	15	100
Boron (B)	µg/m³	*120*	-	0	4.55E-03	4.55E-03	4.44E-03	4.68E-03	4.68E-03	4.61E-03	4.57E-03	15	100
Cadmium (Cd)	µg/m³	*0.025*	*0.025*	0	1.85E-04	2.24E-04	3.52E-05	4.63E-04	4.63E-04	4.02E-04	4.25E-04	15	100
Chromium (Cr)	µg/m³	*0.5*	-	0	1.18E-03	1.27E-03	1.01E-03	3.54E-03	1.06E-03	3.54E-03	2.13E-03	15	100
Cobalt (Co)	µg/m³	*0.1*	*0.1*	0	8.23E-05	8.64E-05	4.98E-05	1.36E-04	1.08E-04	1.36E-04	1.29E-04	15	100
Copper (Cu)	µg/m³	*50*	-	0	1.56E-02	1.90E-02	5.58E-03	5.97E-02	5.97E-02	2.78E-02	2.28E-02	15	100
Iron (Fe)	µg/m³	*4*	-	0	2.31E-01	2.43E-01	1.28E-01	3.88E-01	3.54E-01	3.88E-01	3.49E-01	15	100
Lead (Pb)	µg/m³	*0.5*	*0.5*	0	1.89E-03	2.21E-03	8.56E-04	7.64E-03	3.14E-03	7.64E-03	2.64E-03	15	100
Magnesium (Mg)	µg/m³	-	-	-	1.29E-01	1.40E-01	5.22E-02	2.88E-01	2.25E-01	1.27E-01	2.88E-01	15	100
Manganese (Mn)	µg/m³	*0.4*	-	0	6.96E-03	9.23E-03	2.60E-03	4.30E-02	4.30E-02	1.76E-02	1.21E-02	15	100
Molybdenum (Mo)	µg/m³	*120*	-	0	7.12E-04	8.40E-04	2.30E-04	1.67E-03	1.67E-03	9.29E-04	9.02E-04	15	100
Nickel (Ni)	µg/m³	*0.2*	-	0	1.02E-03	1.13E-03	5.34E-04	2.57E-03	1.60E-03	2.57E-03	2.14E-03	15	100
Phosphorus (P)	µg/m³	-	-	-	2.28E-01	2.28E-01	2.22E-01	2.34E-01	2.34E-01	2.30E-01	2.29E-01	15	100
Selenium (Se)	µg/m³	*10*	*10*	0	4.15E-04	4.25E-04	3.85E-04	8.60E-04	4.06E-04	8.60E-04	3.96E-04	15	100
Silver (Ag)	µg/m³	*1*	*1*	0	3.19E-05	3.52E-05	2.66E-05	9.60E-05	9.60E-05	2.76E-05	7.74E-05	15	100
Strontium (Sr)	µg/m³	*120*	-	0	3.10E-03	3.75E-03	8.90E-04	9.01E-03	9.01E-03	3.49E-03	6.56E-03	15	100
Thallium (Tl)	µg/m³	-	-	-	2.73E-05	2.73E-05	2.66E-05	2.81E-05	2.81E-05	2.76E-05	2.74E-05	15	100
Tin (Sn)	µg/m³	*10*	*10*	0	8.04E-04	9.04E-04	1.82E-04	1.77E-03	1.28E-03	1.53E-03	1.77E-03	15	100
Titanium (Ti)	µg/m³	*120*	-	0	4.65E-03	5.08E-03	3.25E-03	8.53E-03	8.52E-03	6.72E-03	8.53E-03	15	100
Uranium (Ur)	µg/m³	*1.5*	-	0	1.20E-05	1.81E-05	4.33E-06	1.02E-04	1.02E-04	3.30E-05	1.78E-05	15	100
Vanadium (V)	µg/m³	*2*	*1*	0	1.52E-03	1.52E-03	1.48E-03	1.56E-03	1.56E-03	1.54E-03	1.52E-03	15	100
Zinc (Zn)	µg/m³	*120*	-	0	4.11E-02	6.15E-02	1.44E-02	3.67E-01	6.09E-02	3.67E-01	9.09E-02	15	100
Zirconium (Zr)	µg/m³	*20*	-	0	6.07E-04	6.07E-04	5.92E-04	6.24E-04	6.24E-04	6.14E-04	6.09E-04	15	100

Note: All non-detectable results were reported as 1/2 of the detection limit

5.6.2 Rundle Road Station Results

Data recovery levels were very high for the TSP sampler at the Rundle Road Station (100% valid data). There were no exceedances of any of the AAQC's or HHRA Criteria for TSP, mercury or metals during Q1. **Table 8** is a summary of the Station statistics.

Table 8: Summary of TSP Sampler Rundle Road Station

Contaminant	Units	MECP Criteria	HHRA Health Based Criteria	No. > Criteria	Geometric Mean	Arithmetic Mean	Q1 Minimum Concentration	Q1 Maximum Concentration	January Maximum Concentration	February Maximum Concentration	March Maximum Concentration	Number of Valid Samples	% Valid data
Particulate (TSP)	µg/m³	*120*	*120*	0	12.9	15.4	1.27	28.26	25.44	14.84	28.26	15	100
Total Mercury (Hg)	µg/m³	*2*	*2*	0	4.49E-06	5.09E-06	2.94E-06	1.10E-05	7.08E-06	1.10E-05	8.49E-06	15	100
Aluminum (Al)	µg/m³	*4.8*	-	0	1.23E-01	1.38E-01	5.78E-02	2.51E-01	1.19E-01	2.51E-01	2.51E-01	15	100
Antimony (Sb)	µg/m³	*25*	*25*	0	4.08E-04	4.89E-04	8.09E-05	8.67E-04	8.67E-04	8.36E-04	6.63E-04	15	100
Arsenic (As)	µg/m³	*0.3*	*0.3*	0	9.11E-04	9.11E-04	8.81E-04	9.71E-04	9.15E-04	9.23E-04	9.71E-04	15	100
Barium (Ba)	µg/m³	*10*	*10*	0	4.69E-03	5.05E-03	2.01E-03	8.87E-03	8.87E-03	5.75E-03	6.99E-03	15	100
Beryllium (Be)	µg/m³	*0.01*	*0.01*	0	1.52E-05	1.52E-05	1.47E-05	1.62E-05	1.53E-05	1.54E-05	1.62E-05	15	100
Bismuth (Bi)	µg/m³	-	-	-	5.47E-04	5.47E-04	5.29E-04	5.83E-04	5.49E-04	5.54E-04	5.83E-04	15	100
Boron (B)	µg/m³	*120*	-	0	4.56E-03	4.56E-03	4.41E-03	4.85E-03	4.58E-03	4.61E-03	4.85E-03	15	100
Cadmium (Cd)	µg/m³	*0.025*	*0.025*	0	2.30E-04	3.36E-04	5.31E-05	1.23E-03	4.46E-04	1.23E-03	9.46E-04	15	100
Chromium (Cr)	µg/m³	*0.5*	-	0	1.23E-03	1.33E-03	1.00E-03	2.70E-03	1.04E-03	2.70E-03	2.65E-03	15	100
Cobalt (Co)	µg/m³	*0.1*	*0.1*	0	9.39E-05	1.00E-04	6.18E-05	2.09E-04	1.01E-04	2.09E-04	1.57E-04	15	100
Copper (Cu)	µg/m³	*50*	-	0	1.82E-02	2.30E-02	4.24E-03	7.51E-02	5.26E-02	7.51E-02	3.09E-02	15	100
Iron (Fe)	µg/m³	*4*	-	0	2.40E-01	2.52E-01	1.15E-01	3.98E-01	3.19E-01	3.38E-01	3.98E-01	15	100
Lead (Pb)	µg/m³	*0.5*	*0.5*	0	2.26E-03	2.61E-03	1.14E-03	7.69E-03	3.05E-03	7.69E-03	2.84E-03	15	100
Magnesium (Mg)	µg/m³	-	-	-	1.42E-01	1.55E-01	6.78E-02	2.92E-01	1.73E-01	2.21E-01	2.92E-01	15	100
Manganese (Mn)	µg/m³	*0.4*	-	0	6.85E-03	7.38E-03	2.97E-03	1.32E-02	9.79E-03	1.07E-02	1.32E-02	15	100
Molybdenum (Mo)	µg/m³	*120*	-	0	5.64E-04	7.88E-04	1.17E-04	2.24E-03	2.05E-03	2.24E-03	1.46E-03	15	100
Nickel (Ni)	µg/m³	*0.2*	-	0	1.06E-03	1.22E-03	6.67E-04	4.34E-03	9.90E-04	4.34E-03	1.46E-03	15	100
Phosphorus (P)	µg/m³	-	-	-	2.28E-01	2.28E-01	2.20E-01	2.43E-01	2.29E-01	2.31E-01	2.43E-01	15	100
Selenium (Se)	µg/m³	*10*	*10*	0	4.13E-04	4.21E-04	3.82E-04	7.94E-04	3.97E-04	7.94E-04	4.21E-04	15	100
Silver (Ag)	µg/m³	*1*	*1*	0	3.39E-05	3.82E-05	2.64E-05	1.00E-04	1.00E-04	6.27E-05	8.14E-05	15	100
Strontium (Sr)	µg/m³	*120*	-	0	3.82E-03	4.22E-03	2.01E-03	7.22E-03	5.92E-03	6.70E-03	7.22E-03	15	100
Thallium (Tl)	µg/m³	-	-	-	2.73E-05	2.73E-05	2.64E-05	2.91E-05	2.75E-05	2.77E-05	2.91E-05	15	100
Tin (Sn)	µg/m³	*10*	*10*	0	7.92E-04	8.74E-04	1.82E-04	1.36E-03	1.22E-03	1.29E-03	1.36E-03	15	100
Titanium (Ti)	µg/m³	*120*	-	0	4.17E-03	4.52E-03	3.24E-03	9.70E-03	3.36E-03	6.46E-03	9.70E-03	15	100
Uranium (Ur)	µg/m³	*1.5*	-	0	1.25E-05	1.69E-05	6.82E-06	8.79E-05	8.79E-05	2.76E-05	1.52E-05	15	100
Vanadium (V)	µg/m³	*2*	*1*	0	1.52E-03	1.52E-03	1.47E-03	1.62E-03	1.53E-03	1.54E-03	1.62E-03	15	100
Zinc (Zn)	µg/m³	*120*	-	0	5.49E-02	7.67E-02	2.02E-02	2.47E-01	1.37E-01	2.47E-01	1.04E-01	15	100
Zirconium (Zr)	µg/m³	*20*	-	0	6.07E-04	6.08E-04	5.88E-04	6.47E-04	6.10E-04	6.15E-04	6.47E-04	15	100

Note: All non-detectable results were reported as 1/2 of the detection limit

5.7 PAH Results

All of the PUF Hi-Vols operated on a discrete schedule every 12 days for PAH's according to the NAPS schedule during Q1 with the sample days being: January 12, 24, February 5, 17, March 1, 13 and 25, 2023.

5.7.1 Courtice Station Results

Data recovery levels were very high for the PAH results at the Courtice Station (100% valid data). There were two (2) exceedances of the Benzo(a) Pyrene AAQC during Q1 of 2023. There were no other exceedances of any of the AAQC's or HHRA Criteria.

The first BaP exceedance occurred on February 5, 2023. Since the winds were predominantly coming from the SW to the WSW, the Courtice Station was upwind of the DYEC during the sampling period. It is unlikely that the measured BaP exceedance is attributable to the Energy Centre operations.

The second BaP exceedance occurred on March 13, 2023. Since the winds were predominantly coming from the NW, the Courtice Station was crosswind of the DYEC during the sampling period. It is unlikely that the measured BaP exceedance is attributable to the Energy Centre operations.

Table 9 outlines the statistics summary for this station.

Table 9: Statistics Summary of PAH Results for Courtice Station

Contaminant	Units	MECP Criteria (µg/m³)	No. > Criteria	Arithmetic Mean	Minimum Q1 Concentration	Maximum Q1 Concentration	January Maximum Concentration	February Maximum Concentration	March Maximum Concentration	Number of Valid Samples	% Valid data
1-Methylnaphthalene	ng/m³	12000	0	2.34E+00	7.47E-01	4.39E+00	4.39E+00	2.80E+00	1.38E+00	7	100
2-Methylnaphthalene	ng/m³	10000	0	3.79E+00	1.43E+00	7.00E+00	7.00E+00	4.55E+00	2.55E+00	7	100
Acenaphthene	ng/m³	-	-	8.09E-01	2.59E-01	1.85E+00	1.85E+00	8.11E-01	8.34E-01	7	100
Acenaphthylene	ng/m³	3500	0	2.17E-01	2.62E-02	6.52E-01	6.52E-01	1.54E-01	1.14E-01	7	100
Anthracene	ng/m³	200	0	4.06E-02	1.42E-02	9.61E-02	9.61E-02	5.46E-02	3.88E-02	7	100
Benzo(a)Anthracene	ng/m³	-	-	1.87E-02	1.47E-03	4.90E-02	2.23E-02	4.90E-02	1.55E-02	7	100
Benzo(a)fluorene	ng/m³	-	-	3.62E-02	2.01E-02	5.32E-02	5.32E-02	5.10E-02	4.70E-02	7	100
Benzo(a)Pyrene (Historically High)	ng/m³	0.05	2	3.40E-02	1.29E-02	7.68E-02	2.48E-02	7.68E-02	5.42E-02	7	100
Benzo(b)Fluoranthene	ng/m³	-	-	6.91E-02	1.69E-02	1.51E-01	9.85E-02	1.51E-01	7.06E-02	7	100
Benzo(b)fluorene	ng/m³	-	-	9.48E-03	1.56E-03	2.41E-02	2.41E-02	7.99E-03	9.27E-03	7	100
Benzo(e)Pyrene	ng/m³	-	-	3.90E-02	1.29E-02	7.93E-02	5.32E-02	7.93E-02	4.09E-02	7	100
Benzo(g,h,i)Perylene	ng/m³	-	-	4.47E-02	1.18E-02	9.24E-02	5.20E-02	9.24E-02	5.76E-02	7	100
Benzo(k)Fluoranthene	ng/m³	-	-	5.78E-02	2.88E-02	1.27E-01	6.82E-02	1.27E-01	7.21E-02	7	100
Biphenyl	ng/m³	-	-	1.89E+00	2.35E-02	4.42E+00	4.42E+00	1.94E+00	1.21E+00	7	100
Chrysene	ng/m³	-	-	9.22E-02	2.54E-02	1.76E-01	1.47E-01	1.76E-01	9.33E-02	7	100
Dibenzo(a,h)Anthracene	ng/m³	-	-	5.02E-03	3.00E-04	1.15E-02	4.24E-03	1.15E-02	6.88E-03	7	100
Fluoranthene	ng/m³	-	-	5.04E-01	2.10E-01	1.03E+00	1.03E+00	5.48E-01	4.31E-01	7	100
Fluorene	ng/m³	-	-	1.04E+00	5.13E-01	2.15E+00	2.15E+00	1.10E+00	9.34E-01	7	100
Indeno(1,2,3-cd)Pyrene	ng/m³	-	-	4.38E-02	1.42E-02	8.98E-02	5.02E-02	8.98E-02	5.42E-02	7	100
Naphthalene	ng/m³	22500	0	1.06E+01	2.96E+00	2.44E+01	2.44E+01	2.24E+01	5.24E+00	7	100
o-Terphenyl	ng/m³	-	-	7.04E-03	1.47E-03	1.68E-02	1.68E-02	7.80E-03	4.97E-03	7	100
Perylene	ng/m³	-	-	3.66E-03	2.99E-04	1.25E-02	3.00E-04	1.25E-02	5.06E-03	7	100
Phenanthrene	ng/m³	-	-	1.84E+00	9.56E-01	3.60E+00	3.60E+00	1.94E+00	1.67E+00	7	100
Pyrene	ng/m³	-	-	2.70E-01	1.27E-01	5.14E-01	5.14E-01	2.52E-01	2.45E-01	7	100
Tetralin	ng/m³	-	-	8.21E-01	1.61E-01	2.55E+00	2.55E+00	1.35E+00	3.06E-01	7	100
Total PAH	ng/m³	-	-	24.62	9.02	52.62	52.62	37.04	15.28	7	100

Notes: All non-detectable results were reported as 1/2 of the detection limit

5.7.2 Rundle Road Station Results

Data recovery levels were high for the PAH results at the Rundle Road Station (86% valid data). There were two (2) exceedances of the Benzo(a) Pyrene AAQC during Q1 of 2023. There were no other exceedances of any of the AAQC's or HHRA Criteria.

The first BaP exceedance occurred on February 5, 2023. Since the winds were predominantly coming from the WSW, the Rundle Road Station was crosswind of the DYEC during the sampling period. It is unlikely that the measured BaP exceedance is attributable to the Energy Centre operations.

The second BaP exceedance occurred on March 13, 2023. Since the winds were predominantly coming from the WNW to NNW, the Rundle Road Station was crosswind of the DYEC during the sampling period. It is unlikely that the measured BaP exceedance is attributable to the Energy Centre operations.

The exceedance documentation is attached in **Appendix F**. **Table 10** outlines the statistics summary for this station.

Table 10: Statistics Summary of PAH Results for Rundle Road Station

Contaminant	Units	MECP Criteria (µg/m³)	No. > Criteria	Arithmetic Mean	Minimum Q1 Concentration	Maximum Q1 Concentration	January Maximum Concentration	February Maximum Concentration	March Maximum Concentration	Number of Valid Samples	% Valid data
1-Methylnaphthalene	ng/m³	12000	0	3.00E+00	5.39E-01	5.78E+00	5.78E+00	4.83E+00	2.62E+00	6	86
2-Methylnaphthalene	ng/m³	10000	0	5.10E+00	8.39E-01	9.42E+00	9.42E+00	8.61E+00	4.79E+00	6	86
Acenaphthene	ng/m³	-	-	1.00E+00	1.16E-01	1.94E+00	1.94E+00	9.46E-01	1.76E+00	6	86
Acenaphthylene	ng/m³	3500	0	3.67E-01	1.07E-01	8.29E-01	8.29E-01	1.87E-01	1.99E-01	6	86
Anthracene	ng/m³	200	0	7.48E-02	2.12E-02	1.49E-01	1.49E-01	4.48E-02	7.68E-02	6	86
Benzo(a)Anthracene	ng/m³	-	-	3.00E-02	5.80E-03	5.55E-02	4.74E-02	5.55E-02	2.18E-02	6	86
Benzo(a)fluorene	ng/m³	-	-	5.13E-02	2.20E-02	7.77E-02	7.77E-02	5.96E-02	5.42E-02	6	86
Benzo(a)Pyrene (Historically High)	ng/m³	0.05	2	4.94E-02	2.05E-02	8.33E-02	4.34E-02	8.33E-02	7.92E-02	6	86
Benzo(b)Fluoranthene	ng/m³	-	-	1.00E-01	2.24E-02	1.69E-01	1.24E-01	1.69E-01	9.34E-02	6	86
Benzo(b)fluorene	ng/m³	-	-	1.91E-02	4.64E-03	4.50E-02	4.50E-02	1.07E-02	1.11E-02	6	86
Benzo(e)Pyrene	ng/m³	-	-	5.85E-02	3.27E-02	8.30E-02	7.14E-02	8.30E-02	5.06E-02	6	86
Benzo(g,h,i)Perylene	ng/m³	-	-	6.12E-02	1.26E-02	1.05E-01	6.91E-02	1.05E-01	6.27E-02	6	86
Benzo(k)Fluoranthene	ng/m³	-	-	7.81E-02	4.26E-02	1.41E-01	8.50E-02	1.41E-01	7.62E-02	6	86
Biphenyl	ng/m³	-	-	2.19E+00	3.48E-02	4.29E+00	4.29E+00	2.99E+00	1.58E+00	6	86
Chrysene	ng/m³	-	-	1.26E-01	2.84E-02	2.03E-01	1.67E-01	2.03E-01	1.06E-01	6	86
Dibenzo(a,h)Anthracene	ng/m³	-	-	7.09E-03	1.49E-03	1.33E-02	7.95E-03	1.33E-02	7.59E-03	6	86
Fluoranthene	ng/m³	-	-	5.97E-01	1.78E-01	1.03E+00	1.03E+00	7.38E-01	5.27E-01	6	86
Fluorene	ng/m³	-	-	1.28E+00	3.04E-01	2.48E+00	2.48E+00	1.32E+00	1.60E+00	6	86
Indeno(1,2,3-cd)Pyrene	ng/m³	-	-	5.83E-02	9.49E-03	1.02E-01	6.58E-02	1.02E-01	6.33E-02	6	86
Naphthalene	ng/m³	22500	0	1.70E+01	1.94E+00	2.91E+01	2.86E+01	2.91E+01	1.13E+01	6	86
o-Terphenyl	ng/m³	-	-	8.38E-03	3.13E-03	1.67E-02	1.67E-02	9.12E-03	5.18E-03	6	86
Perylene	ng/m³	-	-	6.04E-02	3.06E-04	3.39E-01	3.11E-04	3.39E-01	4.73E-03	6	86
Phenanthrene	ng/m³	-	-	2.10E+00	7.32E-01	3.51E+00	3.51E+00	1.87E+00	2.39E+00	6	86
Pyrene	ng/m³	-	-	3.56E-01	1.13E-01	5.47E-01	5.47E-01	3.88E-01	3.39E-01	6	86
Tetralin	ng/m³	-	-	1.51E+00	9.61E-02	3.82E+00	3.82E+00	1.74E+00	1.18E+00	6	86
Total PAH	ng/m³	-	-	35.26	6.30	57.90	57.90	53.85	27.24	6	86

Note: All non-detectable results were reported as 1/2 of the detection limit

5.8 Dioxin and Furan Results

All of the PUF Hi-Vols operated on a discrete schedule every 24 days for D&F's according to the NAPS schedule during Q1 with the sample days being: January 24, February 17, and March 13, 2023.

5.8.1 Courtice Station Results

Data recovery levels were very high for the D&F results at the Courtice Station (100% valid data). There were no exceedances of any of the AAQC's or HHRA Criteria for any of the D&F's during Q1. **Table 11** is a summary of the statistics for this station.

Table 11: Courtice Station Q1 Monitoring Results for Dioxins and Furans

Contaminant	Units	MECP Criteria	HHRA Health Based Criteria	No. > Criteria	Arithmetic Mean	Q1 Minimum Concentration	Q1 Maximum Concentration	January Maximum Concentration	February Maximum Concentration	March Maximum Concentration	Number of Valid Samples	% Valid data
2,3,7,8-TCDD	pg/m^3	-	-	-	1.61E-03	3.23E-04	2.42E-03	2.09E-03	3.23E-04	2.42E-03	3	100
1,2,3,7,8-PeCDD	pg/m^3	-	-	-	1.29E-03	3.52E-04	2.09E-03	2.09E-03	3.52E-04	1.44E-03	3	100
1,2,3,4,7,8-HxCDD	pg/m^3	-	-	-	1.11E-04	2.35E-05	1.79E-04	1.79E-04	2.35E-05	1.32E-04	3	100
1,2,3,6,7,8-HxCDD	pg/m^3	-	-	-	1.78E-04	9.82E-05	2.73E-04	1.64E-04	9.82E-05	2.73E-04	3	100
1,2,3,7,8,9-HxCDD	pg/m^3	-	-	-	5.25E-04	4.69E-05	9.33E-04	5.94E-04	4.69E-05	9.33E-04	3	100
1,2,3,4,6,7,8-HpCDD	pg/m^3	-	-	-	6.01E-04	4.11E-05	1.08E-03	6.84E-04	4.11E-05	1.08E-03	3	100
OCDD	pg/m^3	-	-	-	5.94E-05	1.03E-05	9.64E-05	7.15E-05	1.03E-05	9.64E-05	3	100
2,3,7,8-TCDF	pg/m^3	-	-	-	1.11E-04	4.55E-05	1.46E-04	1.46E-04	4.55E-05	1.41E-04	3	100
1,2,3,7,8-PeCDF	pg/m^3	-	-	-	5.47E-05	1.19E-05	1.28E-04	1.28E-04	1.19E-05	2.41E-05	3	100
2,3,4,7,8-PeCDF	pg/m^3	-	-	-	3.00E-04	1.10E-04	4.48E-04	4.48E-04	1.10E-04	3.41E-04	3	100
1,2,3,4,7,8-HxCDF	pg/m^3	-	-	-	1.95E-04	4.40E-05	2.88E-04	2.52E-04	4.40E-05	2.88E-04	3	100
1,2,3,6,7,8-HxCDF	pg/m^3	-	-	-	1.94E-04	8.56E-05	3.76E-04	3.76E-04	8.56E-05	1.21E-04	3	100
2,3,4,6,7,8-HxCDF	pg/m^3	-	-	-	7.48E-05	2.64E-05	1.22E-04	1.22E-04	2.64E-05	7.58E-05	3	100
1,2,3,7,8,9-HxCDF	pg/m^3	-	-	-	1.45E-04	1.27E-04	1.64E-04	1.64E-04	1.27E-04	1.44E-04	3	100
1,2,3,4,6,7,8-HpCDF	pg/m^3	-	-	-	3.94E-05	2.66E-05	4.93E-05	4.93E-05	2.66E-05	4.24E-05	3	100
1,2,3,4,7,8,9-HpCDF	pg/m^3	-	-	-	1.19E-05	4.70E-06	1.64E-05	1.64E-05	1.45E-05	4.70E-06	3	100
OCDF	pg/m^3	-	-	-	1.93E-06	6.16E-07	3.70E-06	1.48E-06	6.16E-07	3.70E-06	3	100
Total Toxic Equivalency	pg TEQ/m^3	0.1 1[1]	-	0	5.51E-03	1.39E-03	7.58E-03	7.58E-03	1.39E-03	7.56E-03	3	100

Notes: All non-detectable results were reported as 1/2 of the detection limit
[1] O. Reg. 419/05 Schedule Upper Risk Thresholds

5.8.2 Rundle Road Station Results

Data recovery levels were very high for the D&F results at the Rundle Road Station (100% valid data). There were no exceedances of any of the AAQC's or HHRA Criteria for any of the D&F's during Q1. **Table 12** is a summary of the statistics for this station.

Table 12: Rundle Road Station Q1 Monitoring Results for Dioxins and Furans

Contaminant	Units	*MECP Criteria*	*HHRA Health Based Criteria*	No. > Criteria	Arithmetic Mean	Q1 Minimum Concentration	Q1 Maximum Concentration	January Maximum Concentration	February Maximum Concentration	March Maximum Concentration	Number of Valid Samples	% Valid data
2,3,7,8-TCDD	pg/m^3	-	-	-	6.72E-04	2.68E-04	1.01E-03	1.01E-03	2.68E-04	7.38E-04	3	100
1,2,3,7,8-PeCDD	pg/m^3	-	-	-	8.42E-04	4.46E-04	1.07E-03	1.01E-03	4.46E-04	1.07E-03	3	100
1,2,3,4,7,8-HxCDD	pg/m^3	-	-	-	1.96E-04	3.87E-05	3.82E-04	3.82E-04	3.87E-05	1.66E-04	3	100
1,2,3,6,7,8-HxCDD	pg/m^3	-	-	-	2.94E-04	3.72E-05	4.53E-04	4.53E-04	3.72E-05	3.92E-04	3	100
1,2,3,7,8,9-HxCDD	pg/m^3	-	-	-	2.54E-04	3.72E-05	4.83E-04	4.83E-04	3.72E-05	2.41E-04	3	100
1,2,3,4,6,7,8-HpCDD	pg/m^3	-	-	-	7.58E-04	8.30E-05	1.27E-03	9.20E-04	8.30E-05	1.27E-03	3	100
OCDD	pg/m^3	-	-	-	6.38E-05	7.57E-06	1.02E-04	8.17E-05	7.57E-06	1.02E-04	3	100
2,3,7,8-TCDF	pg/m^3	-	-	-	9.07E-05	4.32E-05	1.17E-04	1.12E-04	4.32E-05	1.17E-04	3	100
1,2,3,7,8-PeCDF	pg/m^3	-	-	-	7.31E-05	1.52E-05	1.77E-04	1.77E-04	1.52E-05	2.71E-05	3	100
2,3,4,7,8-PeCDF	pg/m^3	-	-	-	3.45E-04	1.38E-04	6.42E-04	6.42E-04	1.38E-04	2.53E-04	3	100
1,2,3,4,7,8-HxCDF	pg/m^3	-	-	-	9.29E-05	4.02E-05	1.39E-04	1.39E-04	4.02E-05	9.94E-05	3	100
1,2,3,6,7,8-HxCDF	pg/m^3	-	-	-	1.31E-04	3.87E-05	2.27E-04	1.27E-04	3.87E-05	2.27E-04	3	100
2,3,4,6,7,8-HxCDF	pg/m^3	-	-	-	1.80E-04	4.02E-05	4.04E-04	4.04E-04	4.02E-05	9.64E-05	3	100
1,2,3,7,8,9-HxCDF	pg/m^3	-	-	-	2.05E-04	1.28E-04	3.18E-04	3.18E-04	1.68E-04	1.28E-04	3	100
1,2,3,4,6,7,8-HpCDF	pg/m^3	-	-	-	3.48E-05	1.01E-05	5.81E-05	5.81E-05	1.01E-05	3.61E-05	3	100
1,2,3,4,7,8,9-HpCDF	pg/m^3	-	-	-	1.42E-05	3.13E-06	2.11E-05	1.83E-05	3.13E-06	2.11E-05	3	100
OCDF	pg/m^3	-	-	-	2.74E-06	9.02E-07	4.94E-06	4.94E-06	9.02E-07	2.39E-06	3	100
Total Toxic Equivalency	pg TEQ/m^3	*0.1* *1*[1]	-	0	4.25E-03	1.42E-03	6.34E-03	6.34E-03	1.42E-03	4.99E-03	3	100

Notes: All non-detectable results were reported as 1/2 of the detection limit
[1] O. Reg. 419/05 Schedule Upper Risk Thresholds

6 DATA REQUESTS

The following sections outline any instrumentation issues encountered that have caused data loss at any of the monitors at each of the stations.

Appendix C contains monthly IZS zero trends for the NO_X and SO_2 analyzers at the Courtice and Rundle Road Stations.

Edit logs identifying missing data, maintenance times, calibrations and any other missing data have been included in **Appendix D**.

6.1 Continuous Monitoring

On February 15, 2023, the NO_X and SO_2 monitors at the Courtice station suffered from a power outage due to the backup battery failing which began at 18:50 and lasted until it was repaired on February 16, 2023, at 11:45.

An MECP audit was conducted on March 29, 2023, which resulted in the invalidation of the Courtice analyzer data from 09:35 to 10:40 and the invalidation of Rundle analyzer data from 11:00 to 11:45.

6.2 Discrete Monitoring

The March 25, 2023, Rundle Road PAH sample was invalidated due to an equipment malfunction.

7 CONCLUSIONS

This Q1 report provides a summary of the ambient air quality data collected at the Courtice and Rundle Road Stations. There were eighty-nine (89) exceedance events above the rolling 10-minute SO_2 AAQC and thirty-one (31) exceedance events above the 1-hour SO_2 AAQC at the Courtice Station There were two (2) exceedances of the Benzo(a) Pyrene AAQC at the Courtice and two (2) exceedances of the Benzo(a) Pyrene AAQC at the Rundle Road stations. The exceedances occurred at both stations on February 5 and March 13, 2023. Data recovery rates were acceptable and valid for all measured Q1 continuous and discrete parameters.

8 REFERENCES

1. Canadian Council of Ministers of the Environment (CCME), 2012. Guidance Document on Achievement Determination Canadian Ambient Air Quality Standards for Fine Particulate Matter and Ozone. PN 1483 978-1-896997-91-9 PDF
2. Canadian Council of Ministers of the Environment (CCME), 2019. Guidance Document on Air Zone Management. PN 1593978-1-77202-050-2 PDF
3. Ontario Ministry of the Environment and Climate Change, 2018. [Technical Assessment and Standards Development Branch] Ontario Air Standards for Sulphur Dioxide (SO_2). [Online]
4. Ontario Ministry of the Environment and Climate Change, 2012. [Standards Development Branch] Ontario's AmbientAir Quality Criteria (Sorted by Contaminant Name). PIBS #6570e01

9 GENERAL STATEMENT OF LIMITATIONS

This report entitled "2023 Q1 Ambient Air Quality Monitoring Report", dated May 10, 2023, was prepared by RWDI AIR Inc. ("RWDI") for The Regional Municipality of Durham ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). This report was prepared using scientific principles, published methodologies and professional judgment in assessing available information and data. The findings presented within this document are based on available data within the limits of the existing information, budgeted scope of work, and schedule. The conclusions contained in this report are based on the information available to RWDI when this report was prepared; subsequent changes made by the Client after the date of this report have not been reflected in the conclusions.

This report was prepared for the exclusive use of The Regional Municipality of Durham and the MECP. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibility of such third parties. RWDI accepts no responsibility for damages, if any, suffered by any third party as result of decisions made or actions based on this report.

APPENDIX A

Table A1: 2023 Summary Statistics for Q1

Courtice Monitoring Station Data Statistics	Maximum 10 min Rolling Mean	Maximum 1 hr Rolling Mean					Maximum 24 hr Rolling Mean					Monthly Mean					Valid Data				
Compound	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2
Units	ppb	($\mu g/m^3$)	ppb				($\mu g/m^3$)	ppb				($\mu g/m^3$)	ppb				(%)				
AAQC/CAAQS	67				200	40	27[A]			100											
January	421.7	41.7	70.3	42.1	28.9	133.9	17.0	23.6	7.8	15.7	15.2	6.2	7.5	1.6	5.9	3.6	99.9	99.7	99.7	99.7	99.6
February	213.2	84.6	79.8	40.3	39.5	123.4	49.2	31.2	10.0	21.2	22.7	8.5	7.4	1.4	6.0	3.1	99.3	97.2	97.2	97.2	96.9
March	289.4	60.7	60.0	24.2	37.8	84.3	23.3	18.4	3.4	15.1	15.7	5.3	6.8	1.1	5.8	2.4	98.9	99.5	99.5	99.5	99.5
Q1 Arithmetic Mean												6.6	7.2	1.4	5.9	3.0	99.4	98.8	98.8	98.8	98.7

Rundle Monitoring Station Data Statistics	Maximum 10 min Rolling Mean	Maximum 1 hr Rolling Mean					Maximum 24 hr Rolling Mean					Monthly Mean					Valid Data				
Compound	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2
Units	ppb	($\mu g/m^3$)	ppb				($\mu g/m^3$)	ppb				($\mu g/m^3$)	ppb				(%)				
AAQC/CAAQS	67				200	40	27[A]			100											
January	8.3	50.8	55.8	37.6	23.2	4.2	15.5	13.9	5.0	9.8	0.6	6.3	6.1	1.5	4.7	0.2	99.6	99.6	99.6	99.6	99.7
February	2.6	29.8	64.3	38.2	32.0	2.1	16.9	18.7	6.1	13.9	0.8	6.2	6.6	1.4	5.3	0.4	99.7	99.4	99.4	99.4	99.7
March	10.3	48.4	46.2	19.7	28.6	3.0	14.5	18.0	3.7	14.3	0.8	5.4	5.4	0.9	4.5	0.3	99.5	99.6	99.6	99.6	99.6
Q1 Arithmetic Mean												6.0	6.0	1.2	4.8	0.3	99.6	99.5	99.5	99.5	99.7

Event Statistics	Rolling Mean > 10 min AAQC for Courtice	Rolling Mean > 10 min AAQC for Rundle	Rolling Mean > 1 hr AAQC for Courtice			Rolling Mean > 1 hr AAQC for Rundle			Rolling Mean > 24 hr AAQC for Courtice Monitoring Station			Rolling Mean > 24 hr AAQC for Rundle Monitoring Station		
Compound	SO_2	SO_2	$PM_{2.5}$	NO_2	SO_2	$PM_{2.5}$	NO_2	SO_2	$PM_{2.5}$	NO_2	SO_2	$PM_{2.5}$	NO_2	SO_2
Units	No.	No.		No.			No.			No.			No.	
January	20	0		0	5		0	0	N/A	0		N/A	0	
February	39	0		0	18		0	0	N/A	0		N/A	0	
March	30	0		0	8		0	0	N/A	0		N/A	0	
Q1 Total	89	0		0	31		0	0	N/A	0		N/A	0	

Courtice Station MET Statistics	Maximum 1 hr Mean					Minimum 1 hr Mean					Monthly Mean					Total	Valid Data					
Parameter	WS	Temp	RH	Pres	Rain	WS	Temp	RH	Pres	Rain	WS	Temp	RH	Pres	Rain	Rain	WS	WD	Temp	RH	Pres	Rain
Units	(km/hr)	(°C)	(%)	"Hg	mm	(km/hr)	(°C)	(%)	"Hg	mm	(km/hr)	(°C)	(%)	"Hg	mm	mm	(%)					
January	41.0	4.9	100.0	30.1	11.0	0.9	-11.2	37.4	29.1	0.0	12.2	-0.8	76.5	29.7	0.1	60.4	99.7	98.0	100.0	100.0	100.0	100.0
February	45.2	10.4	100.0	30.4	4.3	1.0	-25.2	37.9	29.1	0.0	15.4	-1.6	66.5	29.7	0.1	42.2	100.0	99.3	100.0	100.0	100.0	100.0
March	45.3	10.6	100.0	30.2	4.6	0.5	-7.9	24.9	29.1	0.0	14.7	0.8	66.2	29.7	0.1	50.0	100.0	97.7	100.0	100.0	100.0	100.0
Q1 Arithmetic Mean											14.1	-0.5	69.9	29.7	0.1	152.6	99.9	98.3	100.0	100.0	100.0	100.0

Rundle Station MET Statistics	Maximum 1 hr Mean				Minimum 1 hr Mean				Monthly Mean				Total	Valid Data				
Parameter	WS	Temp	RH	Rain	WS	Temp	RH	Rain	WS	Temp	RH	Rain	Rain	WS	WD	Temp	RH	Rain
Units	(km/hr)	(°C)	(%)	mm	(km/hr)	(°C)	(%)	mm	(km/hr)	(°C)	(%)	mm	mm	(%)				
January	33.0	4.6	100.0	10.4	0.0	-12.2	39.7	0.0	9.5	-1.3	83.3	0.1	54.0	97.8	94.1	100.0	100.0	100.0
February	37.6	10.0	100.0	5.2	0.5	-27.2	39.2	0.0	12.2	-2.2	72.5	0.1	43.5	100.0	99.0	100.0	100.0	100.0
March	36.2	10.1	100.0	4.8	0.1	-8.4	26.8	0.0	11.9	0.4	71.1	0.1	59.5	100.0	96.1	100.0	100.0	100.0
Q1 Arithmetic Mean									11.1	-1.0	75.7	0.1	157.0	99.3	96.3	100.0	100.0	100.0

Table A2: 2023 Q1 Station Courtice Monitoring Results for PM2.5

Data Statistics	Rolling Mean > 24 hr AAQC	Arithmetic Mean	Maximum 1 hr Rolling Mean	Maximum 24 hr Rolling Mean	Number of Valid Hours	Valid Data
Month	$PM_{2.5}$	$PM_{2.5}$	$PM_{2.5}$	$PM_{2.5}$	$PM_{2.5}$	$PM_{2.5}$
	No.	(ug/m^3)	(ug/m^3)	(ug/m^3)	No.	%
January	N/A	6.2	41.7	17.0	743	99.9
February	N/A	8.5	84.6	49.2	667	99.3
March	N/A	5.3	60.7	23.3	736	98.9

Table A3: 2023 Q1 Station Rundle Monitoring Results for PM2.5

Data Statistics	Rolling Mean > 24 hr AAQC	Arithmetic Mean	Maximum 1 hr Rolling Mean	Maximum 24 hr Rolling Mean	Number of Valid Hours	Valid Data
Month	$PM_{2.5}$	$PM_{2.5}$	$PM_{2.5}$	$PM_{2.5}$	$PM_{2.5}$	$PM_{2.5}$
	No.	(ug/m^3)	(ug/m^3)	(ug/m^3)	No.	%
January	N/A	6.3	50.8	15.5	741	99.6
February	N/A	6.2	29.8	16.9	670	99.7
March	N/A	5.4	48.4	14.5	740	99.5

Table A4: 2023 Q1 Station Courtice Monitoring Results for NOx

Data Statistics	Events > 1 hr AAQC	Events > 24 hr AAQC	Arithmetic Mean	Maximum 1 hr Rolling Mean	Maximum 24 hr Rolling Mean	Number of Valid Hours	Valid Data
Month	NO_x	NO_x	NO_x	NO_x	NO_x	NO_x	NO_x
	No.	No.	(ppb)	(ppb)	(ppb)	No.	%
January	N/A	N/A	7.5	70.3	23.6	742	99.7
February	N/A	N/A	7.4	79.8	31.2	653	97.2
March	N/A	N/A	6.8	60.0	18.4	740	99.5

Table A5: 2023 Q1 Station Rundle Monitoring Results for NOx

Data Statistics	Events > 1 hr AAQC	Events > 24 hr AAQC	Arithmetic Mean	Maximum 1 hr Rolling Mean	Maximum 24 hr Rolling Mean	Number of Valid Hours	Valid Data
Month	NO_x	NO_x	NO_x	NO_x	NO_x	NO_x	NO_x
	No.	No.	(ppb)	(ppb)	(ppb)	No.	%
January	N/A	N/A	6.1	55.8	13.9	741	99.6
February	N/A	N/A	6.6	64.3	18.7	668	99.4
March	N/A	N/A	5.4	46.2	18.0	741	99.6

Table A6: 2023 Q1 Station Courtice Monitoring Results for NO

Data Statistics	Events > 1 hr AAQC	Events > 24 hr AAQC	Arithmetic Mean	Maximum 1 hr Rolling Mean	Maximum 24 hr Rolling Mean	Number of Valid Hours	Valid Data
Month	NO	NO	NO	NO	NO	NO	NO
	No.	No.	(ppb)	(ppb)	(ppb)	No.	%
January	N/A	N/A	1.6	42.1	7.8	742	99.7
February	N/A	N/A	1.4	40.3	10.0	653	97.2
March	N/A	N/A	1.1	24.2	3.4	740	99.5

Table A7: 2023 Q1 Station Rundle Monitoring Results for NO

Data Statistics	Events > 1 hr AAQC	Events > 24 hr AAQC	Arithmetic Mean	Maximum 1 hr Rolling Mean	Maximum 24 hr Rolling Mean	Number of Valid Hours	Valid Data
Month	NO	NO	NO	NO	NO	NO	NO
	No.	No.	(ppb)	(ppb)	(ppb)	No.	%
January	N/A	N/A	1.5	37.6	5.0	741	99.6
February	N/A	N/A	1.4	38.2	6.1	668	99.4
March	N/A	N/A	0.9	19.7	3.7	741	99.6

Table A8: 2023 Q1 Station Courtice Monitoring Results for NO2

Data Statistics	Events > 1 hr AAQC	Events > 24 hr AAQC	Arithmetic Mean	Maximum 1 hr Rolling Mean	Maximum 24 hr Rolling Mean	Number of Valid Hours	Valid Data
Month	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2
	No.	No.	(ppb)	(ppb)	(ppb)	No.	%
January	0	0	5.9	28.9	15.7	742	99.7
February	0	0	6.0	39.5	21.2	653	97.2
March	0	0	5.8	37.8	15.1	740	99.5

Table A9: 2023 Q1 Station Rundle Monitoring Results for NO2

Data Statistics	Events > 1 hr AAQC	Events > 24 hr AAQC	Arithmetic Mean	Maximum 1 hr Rolling Mean	Maximum 24 hr Rolling Mean	Number of Valid Hours	Valid Data
Month	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2
	No.	No.	(ppb)	(ppb)	(ppb)	No.	%
January	0	0	4.7	23.2	9.8	741	99.6
February	0	0	5.3	32.0	13.9	668	99.4
March	0	0	4.5	28.6	14.3	741	99.6

Table A10: 2023 Q1 Station Courtice Monitoring Results for SO2

Data Statistics	Events > 10 min AAQC	Events > 1 hr AAQC	Arithmetic Mean	Maximum 10 min Rolling Mean	Maximum 1 hr Rolling Mean	Maximum 24 hr Rolling Mean	Number of Valid Hours	Valid Data
Month	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2
	No.	No.	(ppb)	(ppb)	(ppb)	(ppb)	No.	%
January	20	5	3.6	421.7	133.9	15.2	741	99.6
February	39	18	3.1	213.2	123.4	22.7	698	96.9
March	30	8	2.4	289.4	84.3	15.7	740	99.5

Table A11: 2023 Q1 Station Rundle Monitoring Results for SO2

Data Statistics	Events > 10 min AAQC	Events > 1 hr AAQC	Arithmetic Mean	Maximum 10 min Rolling Mean	Maximum 1 hr Rolling Mean	Maximum 24 hr Rolling Mean	Number of Valid Hours	Valid Data
Month	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2
	No.	No.	(ppb)	(ppb)	(ppb)	(ppb)	No.	%
January	0	0	0.2	8.3	4.2	0.6	742	99.7
February	0	0	0.4	2.6	2.1	0.8	718	99.7
March	0	0	0.3	10.3	3.0	0.8	741	99.6

Table A12: 2023 Q1 Courtice Meterological Station Windspeed Data Summary

MET Statistics	Maximum 1 hr Mean	Minimum 1 hr	Monthly Mean	Valid Data
Month	Wind Speed	Wind Speed	Wind Speed	Wind Speed
	(km/hr)	(km/hr)	(km/hr)	(%)
January	41.0	0.9	12.2	99.7
February	45.2	1.0	15.4	100.0
March	45.3	0.5	14.7	100.0

Table A13: 2023 Q1 Rundle Meterological Station Windspeed Data Summary

MET Statistics	Maximum 1 hr Mean	Minimum 1 hr	Monthly Mean	Valid Hours
Month	Wind Speed	Wind Speed	Wind Speed	Wind Speed
	(km/hr)	(km/hr)	(km/hr)	(%)
January	33.0	0.0	9.5	97.8
February	37.6	0.5	12.2	100.0
March	36.2	0.1	11.9	100.0

Table A14: 2023 Q1 Courtice Meterological Station Wind Direction Data Summary

MET Statistics	Valid Data
Month	Wind Direction
	(%)
January	98.0
February	99.3
March	97.7

Table A15: 2023 Q1 Rundle Meterological Station Wind Direction Data Summary

MET Statistics	Valid Data
Month	Wind Direction
	(%)
January	94.1
February	99.0
March	96.1

Table A16: 2023 Q1 Courtice Meterological Station Temperature Data Summary

MET Statistics	Maximum 1 hr Mean	Minimum 1 hr	Monthly Mean	Valid Data
Month	Temperature	Temperature	Temperature	Temperature
	(°C)	(°C)	(°C)	(%)
January	4.9	-11.2	-0.8	100.0
February	10.4	-25.2	-1.6	100.0
March	10.6	-7.9	0.8	100.0

Table A17: 2023 Q1 Rundle Meterological Station Temperature Data Summary

MET Statistics	Maximum 1 hr Mean	Minimum 1 hr	Monthly Mean	Valid Data
Month	Temperature	Temperature	Temperature	Temperature
	(°C)	(°C)	(°C)	(%)
January	4.6	-12.2	-1.3	100.0
February	10.0	-27.2	-2.2	100.0
March	10.1	-8.4	0.4	100.0

Table A18: 2023 Q1 Courtice Meterological Station Relative Humidity Data Summary

MET Statistics	Maximum 1 hr Mean	Minimum 1 hr	Monthly Mean	Valid Data
Month	Relative Humidity	Relative Humidity	Relative Humidity	Relative Humidity
	(%)	(%)	(%)	(%)
January	100.0	37.4	76.5	100.0
February	100.0	37.9	66.5	100.0
March	100.0	24.9	66.2	100.0

Table A19: 2023 Q1 Rundle Meterological Station Relative Humidity Data Summary

MET Statistics	Maximum 1 hr Mean	Minimum 1 hr	Monthly Mean	Valid Data
Month	Relative Humidity	Relative Humidity	Relative Humidity	Relative Humidity
	(%)	(%)	(%)	(%)
January	100.0	39.7	83.3	100.0
February	100.0	39.2	72.5	100.0
March	100.0	26.8	71.1	100.0

Table A20: 2023 Q1 Courtice Meterological Station Precipitation Data Summary

MET Statistics	Maximum 1 hr Mean	Minimum 1 hr	Monthly Mean	Total	Valid Data
Month	Precipitation	Precipitation	Precipitation	Precipitation	Precipitation
	(mm)	(mm)	(mm)	(mm)	%
January	11.0	0.0	0.1	60.4	100.0
February	4.3	0.0	0.1	42.2	100.0
March	4.6	0.0	0.1	50.0	100.0

Table A21: 2023 Q1 Rundle Meterological Station Precipitation Data Summary

MET Statistics	Maximum 1 hr Mean	Minimum 1 hr	Monthly Mean	Total	Valid Data
Month	Precipitation	Precipitation	Precipitation	Precipitation	Precipitation
	(mm)	(mm)	(mm)	(mm)	%
January	10.4	0.0	0.1	54.0	100.0
February	5.2	0.0	0.1	43.5	100.0
March	4.8	0.0	0.1	59.5	100.0

Table A22: 2023 Q1 Courtice Meterological Station Pressure Data Summary

MET Statistics	Maximum 1 hr Mean	Minimum 1 hr	Monthly Mean	Valid Data
Month	Pressure	Pressure	Pressure	Pressure
	("Hg)	("Hg)	("Hg)	(%)
January	30.1	29.1	29.7	100.0
February	30.4	29.1	29.7	100.0
March	30.2	29.1	29.7	100.0

APPENDIX B

Table B1: Summary of Sample Flow Rate and Sample Duration for Dioxins & Furans

Sample Date	Courtice			Rundle		
	Filter ID	Sample Duration	Sample Volume	Filter ID	Sample Duration	Sample Volume
	No.	(min)	(m^3)	No.	(min)	(m^3)
January 24, 2023	L2744566-4	1439	335	L2744566-3	1439	327
February 17, 2023	L2747690-2	1440	341	L2747690-1	1439	336
March 13, 2023	L2748067-2	1440	330	L2748067-3	1440	332

Table B2: 2023 Courtice Station Q1 Monitoring Results for Dioxins & Furans

Contaminant	Units	*MECP Criteria*	*HHRA Health Based Criteria*	24 Jan 23	17 Feb 23	13 Mar 23	MECP Criteria ($\mu g/m^3$)	No. > Criteria	Arithmetic Mean	Q1 Minimum Concentration	Q1 Maximum Concentration	January Maximum Concentration	February Maximum Concentration	March Maximum Concentration	Number of Valid Samples	% Valid data
2,3,7,8-TCDD	pg TEQ/m^3	-	-	2.09E-03	3.23E-04	2.42E-03	-	-	1.61E-03	3.23E-04	2.42E-03	2.09E-03	3.23E-04	2.42E-03	3	100
1,2,3,7,8-PeCDD	pg TEQ/m^3	-	-	2.09E-03	3.52E-04	1.44E-03	-	-	1.29E-03	3.52E-04	2.09E-03	2.09E-03	3.52E-04	1.44E-03	3	100
1,2,3,4,7,8-HxCDD	pg TEQ/m^3	-	-	1.79E-04	2.35E-05	1.32E-04	-	-	1.11E-04	2.35E-05	1.79E-04	1.79E-04	2.35E-05	1.32E-04	3	100
1,2,3,6,7,8-HxCDD	pg TEQ/m^3	-	-	1.64E-04	9.82E-05	2.73E-04	-	-	1.78E-04	9.82E-05	2.73E-04	1.64E-04	9.82E-05	2.73E-04	3	100
1,2,3,7,8,9-HxCDD	pg TEQ/m^3	-	-	5.94E-04	4.69E-05	9.33E-04	-	-	5.25E-04	4.69E-05	9.33E-04	5.94E-04	4.69E-05	9.33E-04	3	100
1,2,3,4,6,7,8-HpCDD	pg TEQ/m^3	-	-	6.84E-04	4.11E-05	1.08E-03	-	-	6.01E-04	4.11E-05	1.08E-03	6.84E-04	4.11E-05	1.08E-03	3	100
OCDD	pg TEQ/m^3	-	-	7.15E-05	1.03E-05	9.64E-05	-	-	5.94E-05	1.03E-05	9.64E-05	7.15E-05	1.03E-05	9.64E-05	3	100
2,3,7,8-TCDF	pg TEQ/m^3	-	-	1.46E-04	4.55E-05	1.41E-04	-	-	1.11E-04	4.55E-05	1.46E-04	1.46E-04	4.55E-05	1.41E-04	3	100
1,2,3,7,8-PeCDF	pg TEQ/m^3	-	-	1.28E-04	1.19E-05	2.41E-05	-	-	5.47E-05	1.19E-05	1.28E-04	1.28E-04	1.19E-05	2.41E-05	3	100
2,3,4,7,8-PeCDF	pg TEQ/m^3	-	-	4.48E-04	1.10E-04	3.41E-04	-	-	3.00E-04	1.10E-04	4.48E-04	4.48E-04	1.10E-04	3.41E-04	3	100
1,2,3,4,7,8-HxCDF	pg TEQ/m^3	-	-	2.52E-04	4.40E-05	2.88E-04	-	-	1.95E-04	4.40E-05	2.88E-04	2.52E-04	4.40E-05	2.88E-04	3	100
1,2,3,6,7,8-HxCDF	pg TEQ/m^3	-	-	3.76E-04	8.56E-05	1.21E-04	-	-	1.94E-04	8.56E-05	3.76E-04	3.76E-04	8.56E-05	1.21E-04	3	100
2,3,4,6,7,8-HxCDF	pg TEQ/m^3	-	-	1.22E-04	2.64E-05	7.58E-05	-	-	7.48E-05	2.64E-05	1.22E-04	1.22E-04	2.64E-05	7.58E-05	3	100
1,2,3,7,8,9-HxCDF	pg TEQ/m^3	-	-	1.64E-04	1.27E-04	1.44E-04	-	-	1.45E-04	1.27E-04	1.64E-04	1.64E-04	1.27E-04	1.44E-04	3	100
1,2,3,4,6,7,8-HpCDF	pg TEQ/m^3	-	-	4.93E-05	2.66E-05	4.24E-05	-	-	3.94E-05	2.66E-05	4.93E-05	4.93E-05	2.66E-05	4.24E-05	3	100
1,2,3,4,7,8,9-HpCDF	pg TEQ/m^3	-	-	1.64E-05	1.45E-05	4.70E-06	-	-	1.19E-05	4.70E-06	1.64E-05	1.64E-05	1.45E-05	4.70E-06	3	100
OCDF	pg TEQ/m^3	-	-	1.48E-06	6.16E-07	3.70E-06	-	-	1.93E-06	6.16E-07	3.70E-06	1.48E-06	6.16E-07	3.70E-06	3	100
Total Toxic Equivalency	pg TEQ/m^3	*0.1* *1* [1]	-	7.58E-03	1.39E-03	7.56E-03	0.1	0	5.51E-03	1.39E-03	7.58E-03	7.58E-03	1.39E-03	7.56E-03	3	100

NOTE: All non-detectable results were reported as 1/2 of the detection limit

[1] O. Reg. 419/05 Schedule Upper Risk Thresholds

Table B3: 2023 Rundle Road Station Q1 Monitoring Results for Dioxins & Furans

Contaminant	Units	*MECP Criteria*	*HHRA Health Based Criteria*	24 Jan 23	17 Feb 23	13 Mar 23	MECP Criteria ($\mu g/m^3$)	No. > Criteria	Arithmetic Mean	Q1 Minimum Concentration	Q1 Maximum Concentration	January Maximum Concentration	February Maximum Concentration	March Maximum Concentration	Number of Valid Samples	% Valid data
2,3,7,8-TCDD	pg TEQ/m^3	-	-	1.01E-03	2.68E-04	7.38E-04	-	-	6.72E-04	2.68E-04	1.01E-03	1.01E-03	2.68E-04	7.38E-04	3	100
1,2,3,7,8-PeCDD	pg TEQ/m^3	-	-	1.01E-03	4.46E-04	1.07E-03	-	-	8.42E-04	4.46E-04	1.07E-03	1.01E-03	4.46E-04	1.07E-03	3	100
1,2,3,4,7,8-HxCDD	pg TEQ/m^3	-	-	3.82E-04	3.87E-05	1.66E-04	-	-	1.96E-04	3.87E-05	3.82E-04	3.82E-04	3.87E-05	1.66E-04	3	100
1,2,3,6,7,8-HxCDD	pg TEQ/m^3	-	-	4.53E-04	3.72E-05	3.92E-04	-	-	2.94E-04	3.72E-05	4.53E-04	4.53E-04	3.72E-05	3.92E-04	3	100
1,2,3,7,8,9-HxCDD	pg TEQ/m^3	-	-	4.83E-04	3.72E-05	2.41E-04	-	-	2.54E-04	3.72E-05	4.83E-04	4.83E-04	3.72E-05	2.41E-04	3	100
1,2,3,4,6,7,8-HpCDD	pg TEQ/m^3	-	-	9.20E-04	8.30E-05	1.27E-03	-	-	7.58E-04	8.30E-05	1.27E-03	9.20E-04	8.30E-05	1.27E-03	3	100
OCDD	pg TEQ/m^3	-	-	8.17E-05	7.57E-06	1.02E-04	-	-	6.38E-05	7.57E-06	1.02E-04	8.17E-05	7.57E-06	1.02E-04	3	100
2,3,7,8-TCDF	pg TEQ/m^3	-	-	1.12E-04	4.32E-05	1.17E-04	-	-	9.07E-05	4.32E-05	1.17E-04	1.12E-04	4.32E-05	1.17E-04	3	100
1,2,3,7,8-PeCDF	pg TEQ/m^3	-	-	1.77E-04	1.52E-05	2.71E-05	-	-	7.31E-05	1.52E-05	1.77E-04	1.77E-04	1.52E-05	2.71E-05	3	100
2,3,4,7,8-PeCDF	pg TEQ/m^3	-	-	6.42E-04	1.38E-04	2.53E-04	-	-	3.45E-04	1.38E-04	6.42E-04	6.42E-04	1.38E-04	2.53E-04	3	100
1,2,3,4,7,8-HxCDF	pg TEQ/m^3	-	-	1.39E-04	4.02E-05	9.94E-05	-	-	9.29E-05	4.02E-05	1.39E-04	1.39E-04	4.02E-05	9.94E-05	3	100
1,2,3,6,7,8-HxCDF	pg TEQ/m^3	-	-	1.27E-04	3.87E-05	2.27E-04	-	-	1.31E-04	3.87E-05	2.27E-04	1.27E-04	3.87E-05	2.27E-04	3	100
2,3,4,6,7,8-HxCDF	pg TEQ/m^3	-	-	4.04E-04	4.02E-05	9.64E-05	-	-	1.80E-04	4.02E-05	4.04E-04	4.04E-04	4.02E-05	9.64E-05	3	100
1,2,3,7,8,9-HxCDF	pg TEQ/m^3	-	-	3.18E-04	1.68E-04	1.28E-04	-	-	2.05E-04	1.28E-04	3.18E-04	3.18E-04	1.68E-04	1.28E-04	3	100
1,2,3,4,6,7,8-HpCDF	pg TEQ/m^3	-	-	5.81E-05	1.01E-05	3.61E-05	-	-	3.48E-05	1.01E-05	5.81E-05	5.81E-05	1.01E-05	3.61E-05	3	100
1,2,3,4,7,8,9-HpCDF	pg TEQ/m^3	-	-	1.83E-05	3.13E-06	2.11E-05	-	-	1.42E-05	3.13E-06	2.11E-05	1.83E-05	3.13E-06	2.11E-05	3	100
OCDF	pg TEQ/m^3	-	-	4.94E-06	9.02E-07	2.39E-06	-	-	2.74E-06	9.02E-07	4.94E-06	4.94E-06	9.02E-07	2.39E-06	3	100
Total Toxic Equivalency	pg TEQ/m^3	*0.1* *1* [1]	-	6.34E-03	1.42E-03	4.99E-03	0.1	0	4.25E-03	1.42E-03	6.34E-03	6.34E-03	1.42E-03	4.99E-03	3	100

NOTE: All non-detectable results were reported as 1/2 of the detection limit

[1] O. Reg. 419/05 Schedule Upper Risk Thresholds

Table B4: Summary of Sample Flow Rate and Sample Duration for PAHs

Sample Date	Courtice			Rundle		
	Filter ID	Sample Duration	Sample Volume	Filter ID	Sample Duration	Sample Volume
	No.	(min)	(m^3)	No.	(min)	(m^3)
January 12, 2023	L2745208-2	1440	333	L2745208-1	1440	322
January 24, 2023	L2745855-2	1439	335	L2745855-1	1439	327
February 5, 2023	L2746710-2	1440	314	L2746710-1	1440	317
February 17, 2023	L2746312-3	1440	341	L2746312-2	1439	336
March 1, 2023	L2747286-2	1440	339	L2747286-3	1439	336
March 13, 2023	L2748930-2	1440	330	L2748930-1	1440	332
March 25, 2023	L2748936-3	1440	320	Invalid		

Table B5: 2023 Courtice Station Q1 Monitoring Results for PAHs

Contaminant	Units	*MECP Criteria*	*HHRA Health Based Criteria*	12-Jan-23	24-Jan-23	5-Feb-23	17-Feb-23	1-Mar-23	13-Mar-23	25-Mar-23	No. > Criteria	Arithmetic Mean	Minimum Q1 Concentration	Maximum Q1 Concentration	January Maximum Concentration	February Maximum Concentration	March Maximum Concentration	Number of Valid Samples	% Valid data
1-Methylnaphthalene	ng/m^3	*12000*	-	4.35E+00	4.39E+00	2.80E+00	8.56E-01	1.88E+00	1.38E+00	7.47E-01	0	2.34E+00	7.47E-01	4.39E+00	4.39E+00	2.80E+00	1.38E+00	7	100
2-Methylnaphthalene	ng/m^3	*10000*	-	7.00E+00	6.21E+00	4.55E+00	1.49E+00	3.30E+00	2.55E+00	1.43E+00	0	3.79E+00	1.43E+00	7.00E+00	7.00E+00	4.55E+00	2.55E+00	7	100
Acenaphthene	ng/m^3	-	-	1.85E+00	6.21E-01	2.59E-01	5.95E-01	8.11E-01	6.94E-01	8.34E-01	-	8.09E-01	2.59E-01	1.85E+00	1.85E+00	8.11E-01	8.34E-01	7	100
Acenaphthylene	ng/m^3	*3500*	-	6.52E-01	4.30E-01	6.53E-02	7.92E-02	1.54E-01	1.14E-01	2.62E-02	0	2.17E-01	2.62E-02	6.52E-01	6.52E-01	1.54E-01	1.14E-01	7	100
Anthracene	ng/m^3	*200*	-	9.61E-02	3.49E-02	1.77E-02	2.82E-02	5.46E-02	1.42E-02	3.88E-02	0	4.06E-02	1.42E-02	9.61E-02	9.61E-02	5.46E-02	3.88E-02	7	100
Benzo(a)Anthracene	ng/m^3	-	-	2.23E-02	2.13E-02	4.90E-02	1.47E-03	8.14E-03	1.55E-02	1.36E-02	-	1.87E-02	1.47E-03	4.90E-02	2.23E-02	4.90E-02	1.55E-02	7	100
Benzo(a)fluorene	ng/m^3	-	-	5.32E-02	3.85E-02	5.10E-02	2.01E-02	2.35E-02	4.70E-02	2.02E-02	-	3.62E-02	2.01E-02	5.32E-02	5.32E-02	5.10E-02	4.70E-02	7	100
Benzo(a)Pyrene (Historically High)	ng/m^3	*0.05* [1] *5* [2] *1.1* [3]	*1*	2.09E-02	2.48E-02	7.68E-02	2.53E-02	1.29E-02	5.42E-02	2.34E-02	2	3.40E-02	1.29E-02	7.68E-02	2.48E-02	7.68E-02	5.42E-02	7	100
Benzo(b)Fluoranthene	ng/m^3	-	-	9.85E-02	6.54E-02	1.51E-01	1.69E-02	3.51E-02	7.06E-02	4.63E-02	-	6.91E-02	1.69E-02	1.51E-01	9.85E-02	1.51E-01	7.06E-02	7	100
Benzo(b)fluorene	ng/m^3	-	-	2.41E-02	1.63E-02	7.99E-03	3.64E-03	3.51E-03	9.27E-03	1.56E-03	-	9.48E-03	1.56E-03	2.41E-02	2.41E-02	7.99E-03	9.27E-03	7	100
Benzo(e)Pyrene	ng/m^3	-	-	5.32E-02	4.60E-02	7.93E-02	1.29E-02	1.97E-02	4.09E-02	2.13E-02	-	3.90E-02	1.29E-02	7.93E-02	5.32E-02	7.93E-02	4.09E-02	7	100
Benzo(g,h,i)Perylene	ng/m^3	-	-	5.20E-02	5.01E-02	9.24E-02	1.18E-02	2.14E-02	5.76E-02	2.75E-02	-	4.47E-02	1.18E-02	9.24E-02	5.20E-02	9.24E-02	5.76E-02	7	100
Benzo(k)Fluoranthene	ng/m^3	-	-	6.82E-02	3.94E-02	1.27E-01	3.81E-02	2.88E-02	7.21E-02	3.09E-02	-	5.78E-02	2.88E-02	1.27E-01	6.82E-02	1.27E-01	7.21E-02	7	100
Biphenyl	ng/m^3	-	-	3.78E+00	4.42E+00	1.94E+00	8.59E-01	2.35E-02	1.21E+00	9.81E-01	-	1.89E+00	2.35E-02	4.42E+00	4.42E+00	1.94E+00	1.21E+00	7	100
Chrysene	ng/m^3	-	-	1.47E-01	9.52E-02	1.76E-01	2.54E-02	5.01E-02	9.33E-02	5.81E-02	-	9.22E-02	2.54E-02	1.76E-01	1.47E-01	1.76E-01	9.33E-02	7	100
Dibenzo(a,h)Anthracene	ng/m^3	-	-	3.00E-04	4.24E-03	1.15E-02	7.30E-03	1.47E-03	6.88E-03	3.41E-03	-	5.02E-03	3.00E-04	1.15E-02	4.24E-03	1.15E-02	6.88E-03	7	100
Fluoranthene	ng/m^3	-	-	1.03E+00	4.57E-01	5.48E-01	2.10E-01	4.22E-01	4.30E-01	4.31E-01	-	5.04E-01	2.10E-01	1.03E+00	1.03E+00	5.48E-01	4.31E-01	7	100
Fluorene	ng/m^3	-	-	2.15E+00	8.36E-01	8.28E-01	5.13E-01	1.10E+00	8.97E-01	9.34E-01	-	1.04E+00	5.13E-01	2.15E+00	2.15E+00	1.10E+00	9.34E-01	7	100
Indeno(1,2,3-cd)Pyrene	ng/m^3	-	-	5.02E-02	4.72E-02	8.98E-02	1.42E-02	2.32E-02	5.42E-02	2.77E-02	-	4.38E-02	1.42E-02	8.98E-02	5.02E-02	8.98E-02	5.42E-02	7	100
Naphthalene	ng/m^3	*22500*	*22500*	2.44E+01	9.04E+00	2.24E+01	2.96E+00	6.73E+00	5.24E+00	3.41E+00	0	1.06E+01	2.96E+00	2.44E+01	2.44E+01	2.24E+01	5.24E+00	7	100
o-Terphenyl	ng/m^3	-	-	1.68E-02	1.05E-02	7.80E-03	1.47E-03	3.51E-03	4.97E-03	4.16E-03	-	7.04E-03	1.47E-03	1.68E-02	1.68E-02	7.80E-03	4.97E-03	7	100
Perylene	ng/m^3	-	-	3.00E-04	2.99E-04	1.25E-02	1.47E-03	1.47E-03	4.55E-03	5.06E-03	-	3.66E-03	2.99E-04	1.25E-02	3.00E-04	1.25E-02	5.06E-03	7	100
Phenanthrene	ng/m^3	-	-	3.60E+00	2.00E+00	1.09E+00	9.56E-01	1.94E+00	1.67E+00	1.61E+00	-	1.84E+00	9.56E-01	3.60E+00	3.60E+00	1.94E+00	1.67E+00	7	100
Pyrene	ng/m^3	-	-	5.14E-01	3.04E-01	2.48E-01	1.27E-01	2.52E-01	2.45E-01	1.98E-01	-	2.70E-01	1.27E-01	5.14E-01	5.14E-01	2.52E-01	2.45E-01	7	100
Tetralin	ng/m^3	-	-	2.55E+00	7.64E-01	1.35E+00	1.61E-01	3.86E-01	3.06E-01	2.32E-01	-	8.21E-01	1.61E-01	2.55E+00	2.55E+00	1.35E+00	3.06E-01	7	100
Total PAH[4]	ng/m^3	-	-	52.62	29.97	37.04	9.02	17.28	15.28	11.15	-	24.62	9.02	52.62	52.62	37.04	15.28	7	100

NOTE: All non-detectable results were reported as 1/2 of the detection limit

[1] AAQC

[2] O. Reg. 419/05 Schedule Upper Risk Thresholds

[3] O. Reg. 419/05 24 Hour Guideline

[4] Total PAH sums all PAH contaminants

Table B6: 2023 Rundle Road Station Q1 Monitoring Results for PAHs

Contaminant	Units	*MECP Criteria*	*HHRA Health Based Criteria*	12-Jan-23	24-Jan-23	5-Feb-23	17-Feb-23	1-Mar-23	13-Mar-23	25-Mar-23	No. > Criteria	Arithmetic Mean	Minimum Q1 Concentration	Maximum Q1 Concentration	January Maximum Concentration	February Maximum Concentration	March Maximum Concentration	Number of Valid Samples	% Valid data
1-Methylnaphthalene	ng/m^3	*12000*	-	2.90E+00	5.78E+00	4.83E+00	5.39E-01	2.62E+00	1.32E+00		0	3.00E+00	5.39E-01	5.78E+00	5.78E+00	4.83E+00	2.62E+00	6	86
2-Methylnaphthalene	ng/m^3	*10000*	-	4.66E+00	9.42E+00	8.61E+00	8.39E-01	4.79E+00	2.26E+00		0	5.10E+00	8.39E-01	9.42E+00	9.42E+00	8.61E+00	4.79E+00	6	86
Acenaphthene	ng/m^3	-	-	1.94E+00	7.55E-01	9.46E-01	1.16E-01	1.76E+00	5.06E-01		-	1.00E+00	1.16E-01	1.94E+00	1.94E+00	9.46E-01	1.76E+00	6	86
Acenaphthylene	ng/m^3	*3500*	-	8.29E-01	7.46E-01	1.87E-01	1.07E-01	1.99E-01	1.30E-01		0	3.67E-01	1.07E-01	8.29E-01	8.29E-01	1.87E-01	1.99E-01	6	86
Anthracene	ng/m^3	*200*	-	1.25E-01	1.49E-01	4.48E-02	2.12E-02	7.68E-02	3.22E-02		0	7.48E-02	2.12E-02	1.49E-01	1.49E-01	4.48E-02	7.68E-02	6	86
Benzo(a)Anthracene	ng/m^3	-	-	3.23E-02	4.74E-02	5.55E-02	5.80E-03	1.75E-02	2.18E-02		-	3.00E-02	5.80E-03	5.55E-02	4.74E-02	5.55E-02	2.18E-02	6	86
Benzo(a)fluorene	ng/m^3	-	-	5.96E-02	7.77E-02	5.96E-02	2.20E-02	3.48E-02	5.42E-02		-	5.13E-02	2.20E-02	7.77E-02	7.77E-02	5.96E-02	5.42E-02	6	86
Benzo(a)Pyrene (Historically High)	ng/m^3	*0.05* [1] *5* [2] *1.1* [3]	*1*	3.29E-02	4.34E-02	8.33E-02	3.69E-02	2.05E-02	7.92E-02		2	4.94E-02	2.05E-02	8.33E-02	4.34E-02	8.33E-02	7.92E-02	6	86
Benzo(b)Fluoranthene	ng/m^3	-	-	1.24E-01	9.97E-02	1.69E-01	2.24E-02	9.26E-02	9.34E-02		-	1.00E-01	2.24E-02	1.69E-01	1.24E-01	1.69E-01	9.34E-02	6	86
Benzo(b)fluorene	ng/m^3	-	-	3.82E-02	4.50E-02	1.07E-02	4.64E-03	5.09E-03	1.11E-02		-	1.91E-02	4.64E-03	4.50E-02	4.50E-02	1.07E-02	1.11E-02	6	86
Benzo(e)Pyrene	ng/m^3	-	-	7.14E-02	6.51E-02	8.30E-02	3.27E-02	4.79E-02	5.06E-02		-	5.85E-02	3.27E-02	8.30E-02	7.14E-02	8.30E-02	5.06E-02	6	86
Benzo(g,h,i)Perylene	ng/m^3	-	-	6.83E-02	6.91E-02	1.05E-01	1.26E-02	4.94E-02	6.27E-02		-	6.12E-02	1.26E-02	1.05E-01	6.91E-02	1.05E-01	6.27E-02	6	86
Benzo(k)Fluoranthene	ng/m^3	-	-	7.89E-02	8.50E-02	1.41E-01	4.46E-02	4.26E-02	7.62E-02		-	7.81E-02	4.26E-02	1.41E-01	8.50E-02	1.41E-01	7.62E-02	6	86
Biphenyl	ng/m^3	-	-	4.29E+00	3.49E+00	2.99E+00	7.50E-01	3.48E-02	1.58E+00		-	2.19E+00	3.48E-02	4.29E+00	4.29E+00	2.99E+00	1.58E+00	6	86
Chrysene	ng/m^3	-	-	1.67E-01	1.52E-01	2.03E-01	2.84E-02	1.06E-01	9.64E-02		-	1.26E-01	2.84E-02	2.03E-01	1.67E-01	2.03E-01	1.06E-01	6	86
Dibenzo(a,h)Anthracene	ng/m^3	-	-	7.36E-03	7.95E-03	1.33E-02	1.49E-03	4.82E-03	7.59E-03		-	7.09E-03	1.49E-03	1.33E-02	7.95E-03	1.33E-02	7.59E-03	6	86
Fluoranthene	ng/m^3	-	-	1.03E+00	6.42E-01	7.38E-01	1.78E-01	5.27E-01	4.67E-01		-	5.97E-01	1.78E-01	1.03E+00	1.03E+00	7.38E-01	5.27E-01	6	86
Fluorene	ng/m^3	-	-	2.48E+00	1.06E+00	1.32E+00	3.04E-01	1.60E+00	9.31E-01		-	1.28E+00	3.04E-01	2.48E+00	2.48E+00	1.32E+00	1.60E+00	6	86
Indeno(1,2,3-cd)Pyrene	ng/m^3	-	-	6.58E-02	6.36E-02	1.02E-01	9.49E-03	4.58E-02	6.33E-02		-	5.83E-02	9.49E-03	1.02E-01	6.58E-02	1.02E-01	6.33E-02	6	86
Naphthalene	ng/m^3	*22500*	*22500*	2.56E+01	2.86E+01	2.91E+01	1.94E+00	1.13E+01	5.33E+00		0	1.70E+01	1.94E+00	2.91E+01	2.86E+01	2.91E+01	1.13E+01	6	86
o-Terphenyl	ng/m^3	-	-	1.67E-02	1.10E-02	9.12E-03	3.13E-03	5.09E-03	5.18E-03		-	8.38E-03	3.13E-03	1.67E-02	1.67E-02	9.12E-03	5.18E-03	6	86
Perylene	ng/m^3	-	-	3.11E-04	3.06E-04	1.31E-02	3.39E-01	4.46E-03	4.73E-03		-	6.04E-02	3.06E-04	3.39E-01	3.11E-04	3.39E-01	4.73E-03	6	86
Phenanthrene	ng/m^3	-	-	3.51E+00	2.17E+00	1.87E+00	7.32E-01	2.39E+00	1.94E+00		-	2.10E+00	7.32E-01	3.51E+00	3.51E+00	1.87E+00	2.39E+00	6	86
Pyrene	ng/m^3	-	-	5.47E-01	4.80E-01	3.88E-01	1.13E-01	3.39E-01	2.70E-01		-	3.56E-01	1.13E-01	5.47E-01	5.47E-01	3.88E-01	3.39E-01	6	86
Tetralin	ng/m^3	-	-	1.86E+00	3.82E+00	1.74E+00	9.61E-02	1.18E+00	3.43E-01		-	1.51E+00	9.61E-02	3.82E+00	3.82E+00	1.74E+00	1.18E+00	6	86
Total PAH[4]	ng/m^3	-	-	50.54	57.90	53.85	6.30	27.24	15.73		-	35.26	6.30	57.90	57.90	53.85	27.24	6	86

Invalid

NOTE: All non-detectable results were reported as 1/2 of the detection limit
[1] AAQC
[2] O. Reg. 419/05 Schedule Upper Risk Thresholds
[3] O. Reg. 419/05 24 Hour Guideline
[4] Total PAH sums all PAH contaminants

Table B7: Summary of Sample Flow Rate and Sample Duration for TSP

Sample Date	Courtice			Rundle		
	Filter ID	Sample Duration	Sample Volume	Filter ID	Sample Duration	Sample Volume
	No.	(min)	(m^3)	No.	(min)	(m^3)
January 6, 2023	L2745207-4	1440	1602	L2745207-2	1440	1657
January 12, 2023	L2745207-3	1440	1636	L2745207-1	1440	1683
January 18, 2023	L2745856-4	1440	1645	L2745856-2	1440	1682
January 24, 2023	L2745856-3	1439	1612	L2745856-1	1439	1695
January 30, 2023	L2746711-4	1440	1643	L2746711-2	1440	1639
February 5, 2023	L2746711-3	1440	1628	L2746711-1	1440	1637
February 11, 2023	L2747691-4	1440	1647	L2747691-2	1440	1640
February 17, 2023	L2747691-3	1440	1664	L2747691-1	1439	1702
February 23, 2023	L2748433-4	1440	1690	L2748433-2	1440	1698
March 1, 2023	L2748433-3	1440	1637	L2748433-1	1439	1626
March 7, 2023	L2748932-4	1440	1650	L2748932-2	1440	1545
March 13, 2023	L2748932-3	1440	1686	L2748932-1	1440	1545
March 19, 2023	L2749753-2	1440	1641	L2749753-4	1440	1649
March 25, 2023	L2749753-1	1440	1662	L2749753-3	1440	1651
March 31, 2023	L2749971-2	1440	1667	L2749971-4	1440	1659

Table B8: 2023 Courtice Station Q1 Monitoring Results for TSP and Metals

Contaminant	Units	MECP Criteria	HHRA Health Based Criteria	6 Jan 23	12 Jan 23	18 Jan 23	24 Jan 23	30 Jan 23	5 Feb 23	11 Feb 23	17 Feb 23	23 Feb 23	1 Mar 23	7 Mar 23	13 Mar 23	19 Mar 23	25 Mar 23	31 Mar 23	MECP Criteria ($\mu g/m^3$)	No. > Criteria	Geometric Mean	Arithmetic Mean	Q1 Minimum Concentration	Q1 Maximum Concentration	January Maximum Concentration	February Maximum Concentration	March Maximum Concentration	Number of Valid Samples	% Valid data
Particulate (TSP)	$\mu g/m^3$	*120*	*120*	21.04	30.38	7.60	11.91	25.32	9.71	3.64	3.19	8.46	20.22	12.79	14.29	17.18	5.05	12.66	*120*	0	11.2	13.6	3.19	30.38	30.38	20.22	17.18	15	100
Mercury (Hg)	$\mu g/m^3$	*2*	*2*	3.12E-06	3.06E-06	3.04E-06	6.82E-06	3.04E-06	8.60E-06	3.04E-06	3.00E-06	2.96E-06	7.33E-06	3.03E-06	2.97E-06	3.05E-06	7.82E-06	7.20E-06	*2*	0	4.10E-06	4.54E-06	2.96E-06	8.60E-06	6.82E-06	8.60E-06	7.82E-06	15	100
Aluminum (Al)	$\mu g/m^3$	*4.8*	-	6.87E-02	1.49E-01	6.38E-02	7.75E-02	1.74E-01	5.75E-02	6.56E-02	9.31E-02	9.82E-02	1.94E-01	1.31E-01	5.31E-02	1.85E-01	1.09E-01	1.77E-01	*4.8*	0	1.03E-01	1.13E-01	5.31E-02	1.94E-01	1.74E-01	1.94E-01	1.85E-01	15	100
Antimony (Sb)	$\mu g/m^3$	*25*	*25*	6.62E-04	9.96E-04	6.08E-04	1.02E-03	1.07E-03	7.62E-04	2.25E-04	2.70E-04	6.45E-04	1.65E-03	3.03E-04	5.52E-04	4.27E-04	3.97E-04	6.96E-04	*25*	0	5.96E-04	6.85E-04	2.25E-04	1.65E-03	1.07E-03	1.65E-03	6.96E-04	15	100
Arsenic (As)	$\mu g/m^3$	*0.3*	*0.3*	9.36E-04	9.17E-04	9.12E-04	9.31E-04	9.13E-04	9.21E-04	9.11E-04	9.01E-04	8.88E-04	9.16E-04	9.09E-04	8.90E-04	9.14E-04	9.03E-04	9.00E-04	*0.3*	0	9.11E-04	9.11E-04	8.88E-04	9.36E-04	9.36E-04	9.21E-04	9.14E-04	15	100
Barium (Ba)	$\mu g/m^3$	*10*	*10*	7.12E-03	5.59E-03	5.91E-03	7.94E-03	8.46E-03	4.20E-03	2.11E-03	2.87E-03	2.18E-03	2.97E-03	6.12E-03	3.71E-03	4.03E-03	2.42E-03	4.91E-03	*10*	0	4.27E-03	4.70E-03	2.11E-03	8.46E-03	8.46E-03	4.20E-03	6.12E-03	15	100
Beryllium (Be)	$\mu g/m^3$	*0.01*	*0.01*	1.56E-05	1.53E-05	1.52E-05	1.55E-05	1.52E-05	1.54E-05	1.52E-05	1.50E-05	1.48E-05	1.53E-05	1.52E-05	1.48E-05	1.52E-05	1.50E-05	1.50E-05	*0.01*	0	1.52E-05	1.52E-05	1.48E-05	1.56E-05	1.56E-05	1.54E-05	1.52E-05	15	100
Bismuth (Bi)	$\mu g/m^3$	-	-	5.62E-04	5.50E-04	5.47E-04	5.58E-04	5.48E-04	5.53E-04	5.46E-04	5.41E-04	5.33E-04	5.50E-04	5.45E-04	5.34E-04	5.48E-04	5.42E-04	5.40E-04	-	-	5.46E-04	5.46E-04	5.33E-04	5.62E-04	5.62E-04	5.53E-04	5.48E-04	15	100
Boron (B)	$\mu g/m^3$	*120*	-	4.68E-03	4.58E-03	4.56E-03	4.65E-03	4.56E-03	4.61E-03	4.55E-03	4.51E-03	4.44E-03	4.58E-03	4.55E-03	4.45E-03	4.57E-03	4.51E-03	4.50E-03	*120*	0	4.55E-03	4.55E-03	4.44E-03	4.68E-03	4.68E-03	4.61E-03	4.57E-03	15	100
Cadmium (Cd)	$\mu g/m^3$	*0.025*	*0.025*	1.22E-04	4.13E-04	1.28E-04	2.44E-04	4.63E-04	1.63E-04	3.52E-05	1.84E-04	4.02E-04	2.00E-04	1.36E-04	1.19E-04	4.25E-04	2.16E-04	1.09E-04	*0.025*	0	1.85E-04	2.24E-04	3.52E-05	4.63E-04	4.63E-04	4.02E-04	4.25E-04	15	100
Chromium (Cr)	$\mu g/m^3$	*0.5*	-	1.06E-03	1.04E-03	1.03E-03	1.05E-03	1.03E-03	1.04E-03	1.03E-03	1.02E-03	1.01E-03	3.54E-03	1.03E-03	1.01E-03	2.13E-03	1.02E-03	1.02E-03	*0.5*	0	1.18E-03	1.27E-03	1.01E-03	3.54E-03	1.06E-03	3.54E-03	2.13E-03	15	100
Cobalt (Co)	$\mu g/m^3$	*0.1*	*0.1*	6.93E-05	8.37E-05	6.81E-05	6.45E-05	1.08E-04	6.70E-05	5.71E-05	7.57E-05	6.09E-05	1.36E-04	9.21E-05	4.98E-05	1.29E-04	1.06E-04	1.29E-04	*0.1*	0	8.23E-05	8.64E-05	4.98E-05	1.36E-04	1.08E-04	1.36E-04	1.29E-04	15	100
Copper (Cu)	$\mu g/m^3$	*50*	-	1.60E-02	2.23E-02	2.30E-02	2.85E-02	5.97E-02	7.74E-03	6.19E-03	1.45E-02	1.41E-02	2.78E-02	5.58E-03	2.28E-02	1.15E-02	9.27E-03	1.60E-02	*50*	0	1.56E-02	1.90E-02	5.58E-03	5.97E-02	5.97E-02	2.78E-02	2.28E-02	15	100
Iron (Fe)	$\mu g/m^3$	*4*	-	2.38E-01	2.57E-01	2.07E-01	2.48E-01	3.54E-01	1.99E-01	1.54E-01	1.65E-01	1.51E-01	3.88E-01	2.42E-01	1.28E-01	3.49E-01	2.52E-01	3.19E-01	*4*	0	2.31E-01	2.43E-01	1.28E-01	3.88E-01	3.54E-01	3.88E-01	3.49E-01	15	100
Lead (Pb)	$\mu g/m^3$	*0.5*	*0.5*	1.73E-03	3.14E-03	1.21E-03	1.63E-03	2.08E-03	2.49E-03	8.56E-04	9.74E-04	1.62E-03	7.64E-03	1.65E-03	1.36E-03	2.64E-03	1.96E-03	2.14E-03	*2*	0	1.89E-03	2.21E-03	8.56E-04	7.64E-03	3.14E-03	7.64E-03	2.64E-03	15	100
Magnesium (Mg)	$\mu g/m^3$	-	-	1.53E-01	1.40E-01	7.54E-02	1.09E-01	2.25E-01	1.27E-01	1.14E-01	1.11E-01	9.29E-02	1.13E-01	1.34E-01	5.22E-02	2.88E-01	1.79E-01	1.93E-01	-	-	1.29E-01	1.40E-01	5.22E-02	2.88E-01	2.25E-01	1.27E-01	2.88E-01	15	100
Manganese (Mn)	$\mu g/m^3$	*0.4*	-	7.12E-03	5.97E-03	4.95E-03	5.28E-03	4.30E-02	1.76E-02	4.70E-03	4.57E-03	4.26E-03	6.60E-03	6.18E-03	2.60E-03	1.21E-02	5.58E-03	7.98E-03	*0.4*	0	6.96E-03	9.23E-03	2.60E-03	4.30E-02	4.30E-02	1.76E-02	1.21E-02	15	100
Molybdenum (Mo)	$\mu g/m^3$	*120*	-	1.02E-03	1.67E-03	1.20E-03	1.54E-03	1.49E-03	6.08E-04	3.34E-04	5.95E-04	7.46E-04	9.29E-04	2.30E-04	9.02E-04	4.14E-04	2.83E-04	6.30E-04	*120*	0	7.12E-04	8.40E-04	2.30E-04	1.67E-03	1.67E-03	9.29E-04	9.02E-04	15	100
Nickel (Ni)	$\mu g/m^3$	*0.2*	-	9.61E-04	8.80E-04	1.06E-03	8.19E-04	1.60E-03	6.08E-04	7.41E-04	1.03E-03	6.57E-04	2.57E-03	6.85E-04	5.34E-04	1.48E-03	2.14E-03	1.18E-03	*0.2*	0	1.02E-03	1.13E-03	5.34E-04	2.57E-03	1.60E-03	2.57E-03	2.14E-03	15	100
Phosphorus (P)	$\mu g/m^3$	-	-	2.34E-01	2.29E-01	2.28E-01	2.33E-01	2.28E-01	2.30E-01	2.28E-01	2.25E-01	2.22E-01	2.29E-01	2.27E-01	2.22E-01	2.29E-01	2.26E-01	2.25E-01	-	-	2.28E-01	2.28E-01	2.22E-01	2.34E-01	2.34E-01	2.30E-01	2.29E-01	15	100
Selenium (Se)	$\mu g/m^3$	*10*	*10*	4.06E-04	3.97E-04	3.95E-04	4.03E-04	3.96E-04	8.60E-04	3.95E-04	3.91E-04	3.85E-04	3.97E-04	3.94E-04	3.86E-04	3.96E-04	3.91E-04	3.90E-04	*10*	0	4.15E-04	4.25E-04	3.85E-04	8.60E-04	4.06E-04	8.60E-04	3.96E-04	15	100
Silver (Ag)	$\mu g/m^3$	*1*	*1*	2.81E-05	9.60E-05	2.74E-05	2.79E-05	2.74E-05	2.76E-05	2.73E-05	2.70E-05	2.66E-05	2.75E-05	2.73E-05	2.67E-05	2.74E-05	2.71E-05	7.74E-05	*1*	0	3.19E-05	3.52E-05	2.66E-05	9.60E-05	9.60E-05	2.76E-05	7.74E-05	15	100
Strontium (Sr)	$\mu g/m^3$	*120*	-	3.31E-03	5.20E-03	2.25E-03	2.42E-03	9.01E-03	9.21E-04	2.06E-03	2.46E-03	3.49E-03	2.26E-03	4.12E-03	8.90E-04	5.06E-03	6.56E-03	6.24E-03	*120*	0	3.10E-03	3.75E-03	8.90E-04	9.01E-03	9.01E-03	3.49E-03	6.56E-03	15	100
Thallium (Tl)	$\mu g/m^3$	-	-	2.81E-05	2.75E-05	2.74E-05	2.79E-05	2.74E-05	2.76E-05	2.73E-05	2.70E-05	2.66E-05	2.75E-05	2.73E-05	2.67E-05	2.74E-05	2.71E-05	2.70E-05	-	-	2.73E-05	2.73E-05	2.66E-05	2.81E-05	2.81E-05	2.76E-05	2.74E-05	15	100
Tin (Sn)	$\mu g/m^3$	*10*	*10*	8.36E-04	9.72E-04	8.88E-04	9.68E-04	1.28E-03	9.58E-04	1.82E-04	6.55E-04	4.97E-04	1.53E-03	4.61E-04	7.71E-04	1.77E-03	7.58E-04	1.03E-03	*10*	0	8.04E-04	9.04E-04	1.82E-04	1.77E-03	1.28E-03	1.53E-03	1.77E-03	15	100
Titanium (Ti)	$\mu g/m^3$	*120*	-	3.43E-03	6.72E-03	3.34E-03	3.41E-03	8.52E-03	3.38E-03	3.34E-03	3.31E-03	3.25E-03	6.72E-03	7.88E-03	3.26E-03	8.53E-03	3.31E-03	7.80E-03	*120*	0	4.65E-03	5.08E-03	3.25E-03	8.53E-03	8.52E-03	6.72E-03	8.53E-03	15	100
Uranium (Ur)	$\mu g/m^3$	*1.5*	-	6.74E-06	1.02E-04	7.11E-06	7.01E-06	1.45E-05	9.15E-06	4.68E-06	4.33E-06	1.76E-05	3.30E-05	9.27E-06	7.77E-06	1.37E-05	1.68E-05	1.78E-05	*1.5*	0	1.20E-05	1.81E-05	4.33E-06	1.02E-04	1.02E-04	3.30E-05	1.78E-05	15	100
Vanadium (V)	$\mu g/m^3$	*2*	*1*	1.56E-03	1.53E-03	1.52E-03	1.55E-03	1.52E-03	1.54E-03	1.52E-03	1.50E-03	1.48E-03	1.53E-03	1.52E-03	1.48E-03	1.52E-03	1.50E-03	1.50E-03	*2*	0	1.52E-03	1.52E-03	1.48E-03	1.56E-03	1.56E-03	1.54E-03	1.52E-03	15	100
Zinc (Zn)	$\mu g/m^3$	*120*	-	2.63E-02	4.54E-02	3.20E-02	5.30E-02	6.09E-02	2.63E-02	1.44E-02	1.94E-02	3.49E-02	3.67E-01	2.76E-02	2.14E-02	5.95E-02	9.09E-02	4.40E-02	*120*	0	4.11E-02	6.15E-02	1.44E-02	3.67E-01	6.09E-02	3.67E-01	9.09E-02	15	100
Zirconium (Zr)	$\mu g/m^3$	*20*	-	6.24E-04	6.11E-04	6.08E-04	6.20E-04	6.09E-04	6.14E-04	6.07E-04	6.01E-04	5.92E-04	6.11E-04	6.06E-04	5.93E-04	6.09E-04	6.02E-04	6.00E-04	*20*	0	6.07E-04	6.07E-04	5.92E-04	6.24E-04	6.24E-04	6.14E-04	6.09E-04	15	100

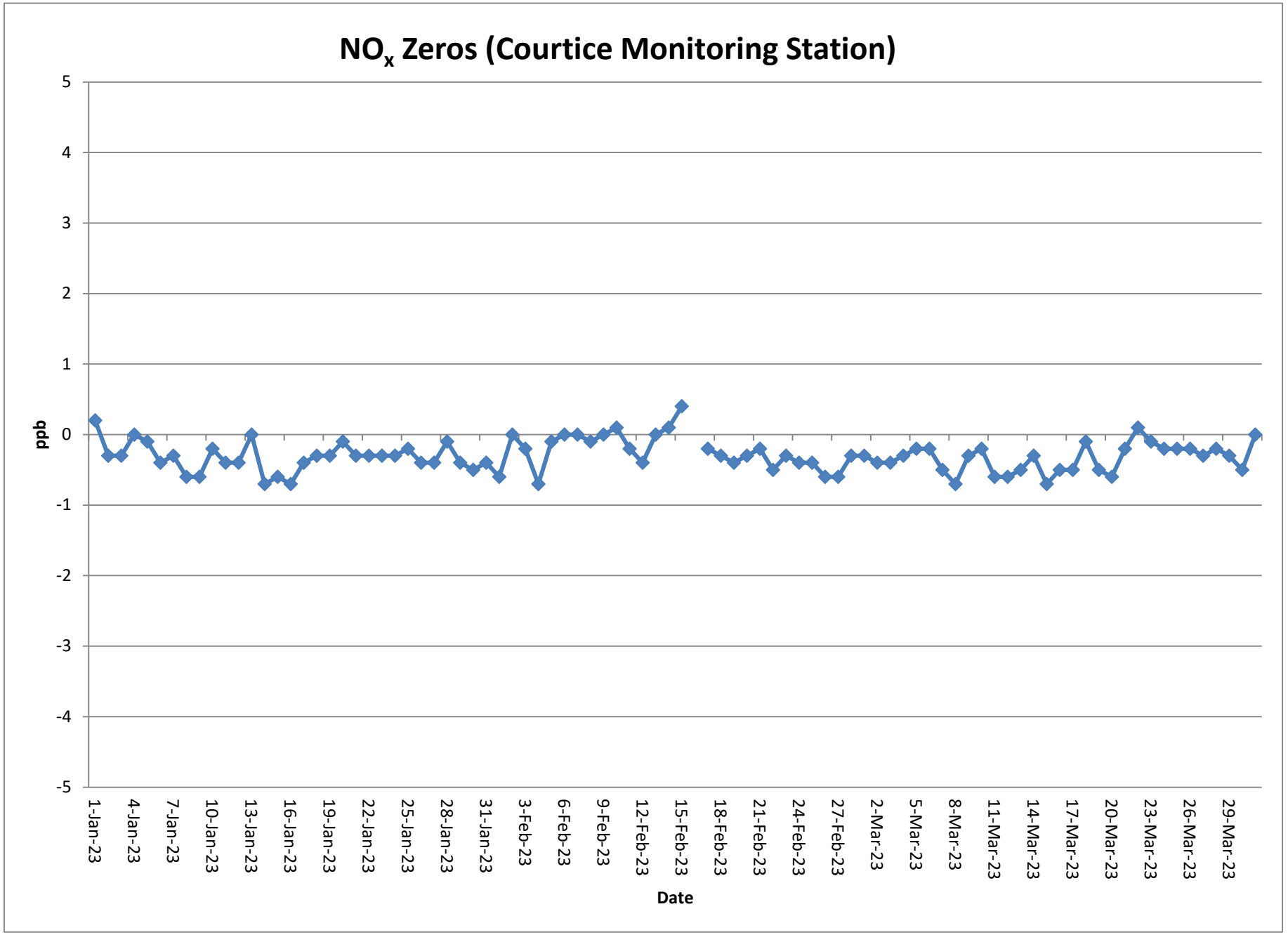
NOTE: All non-detectable results were reported as 1/2 of the detection limit

Table B9: 2023 Rundle Road Station Q1 Monitoring Results for TSP and Metals

Contaminant	Units	MECP Criteria	HHRA Health Based Criteria	6 Jan 23	12 Jan 23	18 Jan 23	24 Jan 23	30 Jan 23	5 Feb 23	11 Feb 23	17 Feb 23	23 Feb 23	1 Mar 23	7 Mar 23	13 Mar 23	19 Mar 23	25 Mar 23	31 Mar 23	MECP Criteria (µg/m^3)	No. > Criteria	Geometric Mean	Arithmetic Mean	Q1 Minimum Concentration	Q1 Maximum Concentration	January Maximum Concentration	February Maximum Concentration	March Maximum Concentration	Number of Valid Samples	% Valid data
Particulate (TSP)	µg/m^3	*120*	*120*	19.61	24.90	7.85	19.17	25.44	13.68	9.27	8.81	14.84	12.73	14.17	15.28	28.26	1.27	15.31	*120*	0	12.9	15.4	1.27	28.26	25.44	14.84	28.26	15	100
Mercury (Hg)	µg/m^3	*2*	*2*	3.02E-06	2.97E-06	2.97E-06	7.08E-06	3.05E-06	1.10E-05	3.05E-06	2.94E-06	7.07E-06	6.77E-06	3.24E-06	3.24E-06	8.49E-06	3.03E-06	8.44E-06	*2*	0	4.49E-06	5.09E-06	2.94E-06	1.10E-05	7.08E-06	1.10E-05	8.49E-06	15	100
Aluminum (Al)	µg/m^3	*4.8*	-	6.70E-02	9.57E-02	5.78E-02	1.19E-01	9.09E-02	9.29E-02	1.31E-01	2.51E-01	2.26E-01	1.50E-01	1.81E-01	7.31E-02	2.51E-01	7.69E-02	2.06E-01	*4.8*	0	1.23E-01	1.38E-01	5.78E-02	2.51E-01	1.19E-01	2.51E-01	2.51E-01	15	100
Antimony (Sb)	µg/m^3	*25*	*25*	8.03E-04	8.67E-04	5.17E-04	6.90E-04	4.51E-04	8.19E-04	2.62E-04	2.47E-04	2.06E-04	8.36E-04	8.09E-05	3.24E-04	2.97E-04	2.73E-04	6.63E-04	*25*	0	4.08E-04	4.89E-04	8.09E-05	8.67E-04	8.67E-04	8.36E-04	6.63E-04	15	100
Arsenic (As)	µg/m^3	*0.3*	*0.3*	9.05E-04	8.91E-04	8.92E-04	8.85E-04	9.15E-04	9.16E-04	9.15E-04	8.81E-04	8.83E-04	9.23E-04	9.71E-04	9.71E-04	9.10E-04	9.09E-04	9.04E-04	*0.3*	0	9.11E-04	9.11E-04	8.81E-04	9.71E-04	9.15E-04	9.23E-04	9.71E-04	15	100
Barium (Ba)	µg/m^3	*10*	*10*	8.87E-03	5.59E-03	5.92E-03	8.02E-03	5.52E-03	5.75E-03	3.02E-03	3.68E-03	3.53E-03	3.99E-03	2.89E-03	6.99E-03	4.37E-03	2.01E-03	5.59E-03	*10*	0	4.69E-03	5.05E-03	2.01E-03	8.87E-03	8.87E-03	5.75E-03	6.99E-03	15	100
Beryllium (Be)	µg/m^3	*0.01*	*0.01*	1.51E-05	1.49E-05	1.49E-05	1.47E-05	1.53E-05	1.53E-05	1.52E-05	1.47E-05	1.47E-05	1.54E-05	1.62E-05	1.62E-05	1.52E-05	1.51E-05	1.51E-05	*0.01*	0	1.52E-05	1.52E-05	1.47E-05	1.62E-05	1.53E-05	1.54E-05	1.62E-05	15	100
Bismuth (Bi)	µg/m^3	-	-	5.43E-04	5.35E-04	5.35E-04	5.31E-04	5.49E-04	5.50E-04	5.49E-04	5.29E-04	5.30E-04	5.54E-04	5.83E-04	5.83E-04	5.46E-04	5.45E-04	5.42E-04	-	-	5.47E-04	5.47E-04	5.29E-04	5.83E-04	5.49E-04	5.54E-04	5.83E-04	15	100
Boron (B)	µg/m^3	*120*	-	4.53E-03	4.46E-03	4.46E-03	4.42E-03	4.58E-03	4.58E-03	4.57E-03	4.41E-03	4.42E-03	4.61E-03	4.85E-03	4.85E-03	4.55E-03	4.54E-03	4.52E-03	*120*	0	4.56E-03	4.56E-03	4.41E-03	4.85E-03	4.58E-03	4.61E-03	4.85E-03	15	100
Cadmium (Cd)	µg/m^3	*0.025*	*0.025*	5.31E-05	1.14E-04	1.08E-04	4.46E-04	2.51E-04	4.07E-04	1.49E-04	3.86E-04	1.23E-03	2.16E-04	3.73E-04	1.14E-04	9.46E-04	1.45E-04	1.00E-04	*0.025*	0	2.30E-04	3.36E-04	5.31E-05	1.23E-03	4.46E-04	1.23E-03	9.46E-04	15	100
Chromium (Cr)	µg/m^3	*0.5*	-	1.03E-03	1.01E-03	1.01E-03	1.00E-03	1.04E-03	1.04E-03	1.04E-03	2.70E-03	1.00E-03	1.05E-03	1.10E-03	2.65E-03	2.24E-03	1.03E-03	1.02E-03	*0.5*	0	1.23E-03	1.33E-03	1.00E-03	2.70E-03	1.04E-03	2.70E-03	2.65E-03	15	100
Cobalt (Co)	µg/m^3	*0.1*	*0.1*	7.91E-05	6.18E-05	6.18E-05	1.01E-04	7.50E-05	8.19E-05	1.09E-04	2.09E-04	7.77E-05	1.14E-04	9.06E-05	6.54E-05	1.45E-04	7.57E-05	1.57E-04	*0.1*	0	9.39E-05	1.00E-04	6.18E-05	2.09E-04	1.01E-04	2.09E-04	1.57E-04	15	100
Copper (Cu)	µg/m^3	*50*	-	1.01E-02	1.44E-02	1.19E-02	5.26E-02	1.34E-02	7.51E-02	1.14E-02	1.97E-02	1.77E-02	2.38E-02	1.35E-02	2.65E-02	1.91E-02	4.24E-03	3.09E-02	*50*	0	1.82E-02	2.30E-02	4.24E-03	7.51E-02	5.26E-02	7.51E-02	3.09E-02	15	100
Iron (Fe)	µg/m^3	*4*	-	2.75E-01	1.97E-01	1.70E-01	3.19E-01	2.30E-01	2.41E-01	2.37E-01	2.67E-01	2.31E-01	3.38E-01	2.05E-01	1.15E-01	3.98E-01	1.80E-01	3.72E-01	*4*	0	2.40E-01	2.52E-01	1.15E-01	3.98E-01	3.19E-01	3.38E-01	3.98E-01	15	100
Lead (Pb)	µg/m^3	*0.5*	*0.5*	2.77E-03	3.05E-03	1.14E-03	2.02E-03	2.21E-03	3.02E-03	1.32E-03	1.72E-03	4.80E-03	7.69E-03	1.93E-03	1.35E-03	2.84E-03	1.28E-03	2.00E-03	*2*	0	2.26E-03	2.61E-03	1.14E-03	7.69E-03	3.05E-03	7.69E-03	2.84E-03	15	100
Magnesium (Mg)	µg/m^3	-	-	1.58E-01	9.45E-02	6.78E-02	1.73E-01	1.48E-01	1.30E-01	1.93E-01	2.21E-01	1.30E-01	1.35E-01	1.57E-01	6.80E-02	2.92E-01	9.99E-02	2.51E-01	-	-	1.42E-01	1.55E-01	6.78E-02	2.92E-01	1.73E-01	2.21E-01	2.92E-01	15	100
Manganese (Mn)	µg/m^3	*0.4*	-	8.09E-03	5.03E-03	5.43E-03	9.79E-03	6.22E-03	1.03E-02	1.07E-02	7.99E-03	4.69E-03	6.58E-03	6.17E-03	2.97E-03	1.32E-02	4.12E-03	9.40E-03	*0.4*	0	6.85E-03	7.38E-03	2.97E-03	1.32E-02	9.79E-03	1.07E-02	1.32E-02	15	100
Molybdenum (Mo)	µg/m^3	*120*	-	6.82E-04	8.38E-04	4.88E-04	2.05E-03	7.81E-04	2.24E-03	2.26E-04	5.11E-04	2.53E-04	9.59E-04	1.17E-04	7.57E-04	2.30E-04	2.24E-04	1.46E-03	*120*	0	5.64E-04	7.88E-04	1.17E-04	2.24E-03	2.05E-03	2.24E-03	1.46E-03	15	100
Nickel (Ni)	µg/m^3	*0.2*	-	9.90E-04	7.61E-04	8.92E-04	9.09E-04	7.69E-04	7.51E-04	1.51E-03	4.34E-03	8.24E-04	1.58E-03	6.67E-04	8.48E-04	1.19E-03	1.46E-03	8.08E-04	*0.2*	0	1.06E-03	1.22E-03	6.67E-04	4.34E-03	9.90E-04	4.34E-03	1.46E-03	15	100
Phosphorus (P)	µg/m^3	-	-	2.26E-01	2.23E-01	2.23E-01	2.21E-01	2.29E-01	2.29E-01	2.29E-01	2.20E-01	2.21E-01	2.31E-01	2.43E-01	2.43E-01	2.27E-01	2.27E-01	2.26E-01	-	-	2.28E-01	2.28E-01	2.20E-01	2.43E-01	2.29E-01	2.31E-01	2.43E-01	15	100
Selenium (Se)	µg/m^3	*10*	*10*	3.92E-04	3.86E-04	3.86E-04	3.83E-04	3.97E-04	7.94E-04	3.96E-04	3.82E-04	3.83E-04	4.00E-04	4.21E-04	4.21E-04	3.94E-04	3.94E-04	3.92E-04	*10*	0	4.13E-04	4.21E-04	3.82E-04	7.94E-04	3.97E-04	7.94E-04	4.21E-04	15	100
Silver (Ag)	µg/m^3	*1*	*1*	2.72E-05	1.00E-04	2.68E-05	2.65E-05	2.75E-05	2.75E-05	2.74E-05	2.64E-05	2.65E-05	6.27E-05	2.91E-05	2.91E-05	2.73E-05	2.73E-05	8.14E-05	*1*	0	3.39E-05	3.82E-05	2.64E-05	1.00E-04	1.00E-04	6.27E-05	8.14E-05	15	100
Strontium (Sr)	µg/m^3	*120*	-	3.56E-03	3.21E-03	2.20E-03	5.66E-03	5.92E-03	2.32E-03	4.88E-03	6.70E-03	2.53E-03	2.58E-03	5.05E-03	2.01E-03	7.22E-03	2.54E-03	6.87E-03	*120*	0	3.82E-03	4.22E-03	2.01E-03	7.22E-03	5.92E-03	6.70E-03	7.22E-03	15	100
Thallium (Tl)	µg/m^3	-	-	2.72E-05	2.67E-05	2.68E-05	2.65E-05	2.75E-05	2.75E-05	2.74E-05	2.64E-05	2.65E-05	2.77E-05	2.91E-05	2.91E-05	2.73E-05	2.73E-05	2.71E-05	-	-	2.73E-05	2.73E-05	2.64E-05	2.91E-05	2.75E-05	2.77E-05	2.91E-05	15	100
Tin (Sn)	µg/m^3	*10*	*10*	9.29E-04	9.09E-04	8.80E-04	1.22E-03	7.69E-04	1.15E-03	4.82E-04	7.17E-04	6.65E-04	1.29E-03	5.24E-04	7.90E-04	1.25E-03	1.82E-04	1.36E-03	*10*	0	7.92E-04	8.74E-04	1.82E-04	1.36E-03	1.22E-03	1.29E-03	1.36E-03	15	100
Titanium (Ti)	µg/m^3	*120*	-	3.32E-03	3.27E-03	3.27E-03	3.24E-03	3.36E-03	3.36E-03	3.35E-03	6.46E-03	3.24E-03	3.38E-03	7.77E-03	3.56E-03	9.70E-03	3.33E-03	7.23E-03	*120*	0	4.17E-03	4.52E-03	3.24E-03	9.70E-03	3.36E-03	6.46E-03	9.70E-03	15	100
Uranium (Ur)	µg/m^3	*1.5*	-	6.82E-06	8.79E-05	7.49E-06	1.01E-05	7.44E-06	9.65E-06	8.78E-06	9.81E-06	2.76E-05	1.83E-05	9.90E-06	9.90E-06	1.45E-05	9.57E-06	1.52E-05	*1.5*	0	1.25E-05	1.69E-05	6.82E-06	8.79E-05	8.79E-05	2.76E-05	1.52E-05	15	100
Vanadium (V)	µg/m^3	*2*	*1*	1.51E-03	1.49E-03	1.49E-03	1.47E-03	1.53E-03	1.53E-03	1.52E-03	1.47E-03	1.47E-03	1.54E-03	1.62E-03	1.62E-03	1.52E-03	1.51E-03	1.51E-03	*2*	0	1.52E-03	1.52E-03	1.47E-03	1.62E-03	1.53E-03	1.54E-03	1.62E-03	15	100
Zinc (Zn)	µg/m^3	*120*	-	3.72E-02	5.70E-02	2.48E-02	6.49E-02	1.37E-01	5.11E-02	3.40E-02	3.49E-02	2.47E-01	2.36E-01	4.93E-02	2.32E-02	1.04E-01	2.02E-02	3.12E-02	*120*	0	5.49E-02	7.67E-02	2.02E-02	2.47E-01	1.37E-01	2.47E-01	1.04E-01	15	100
Zirconium (Zr)	µg/m^3	*20*	-	6.04E-04	5.94E-04	5.95E-04	5.90E-04	6.10E-04	6.11E-04	6.10E-04	5.88E-04	5.89E-04	6.15E-04	6.47E-04	6.47E-04	6.06E-04	6.06E-04	6.03E-04	*20*	0	6.07E-04	6.08E-04	5.88E-04	6.47E-04	6.10E-04	6.15E-04	6.47E-04	15	100

NOTE: All non-detectable results were reported as 1/2 of the detection limit

APPENDIX C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-5
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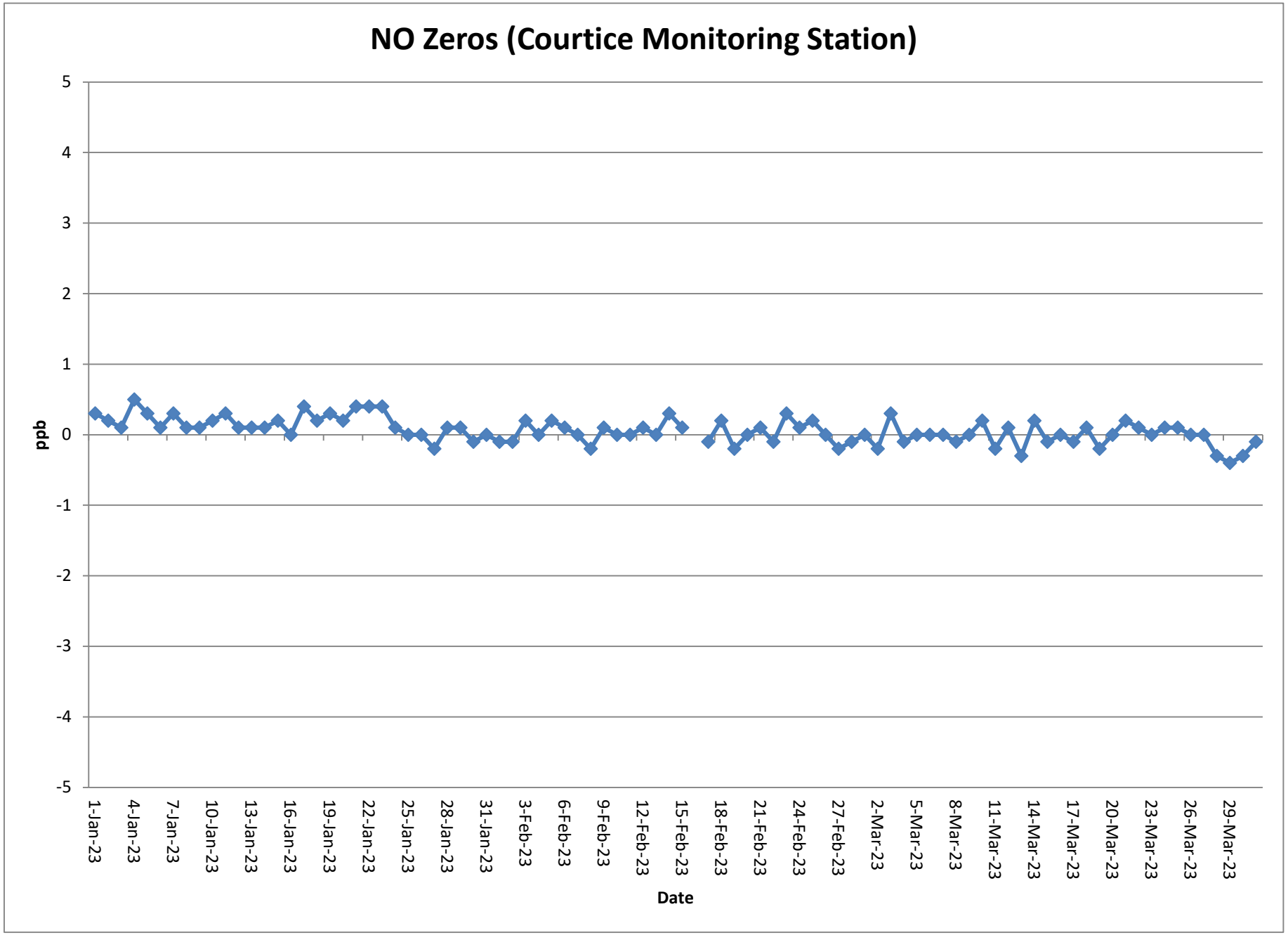
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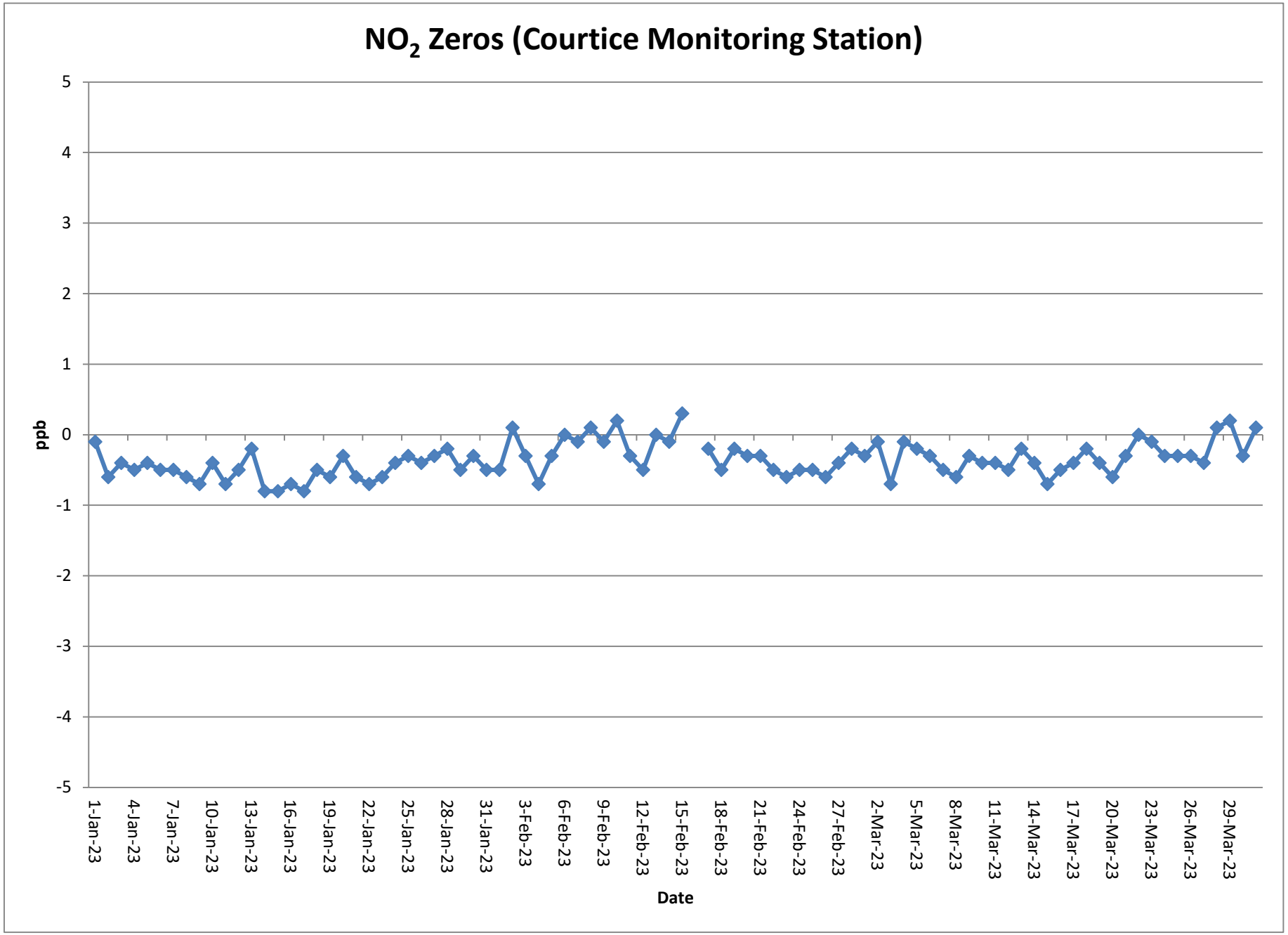
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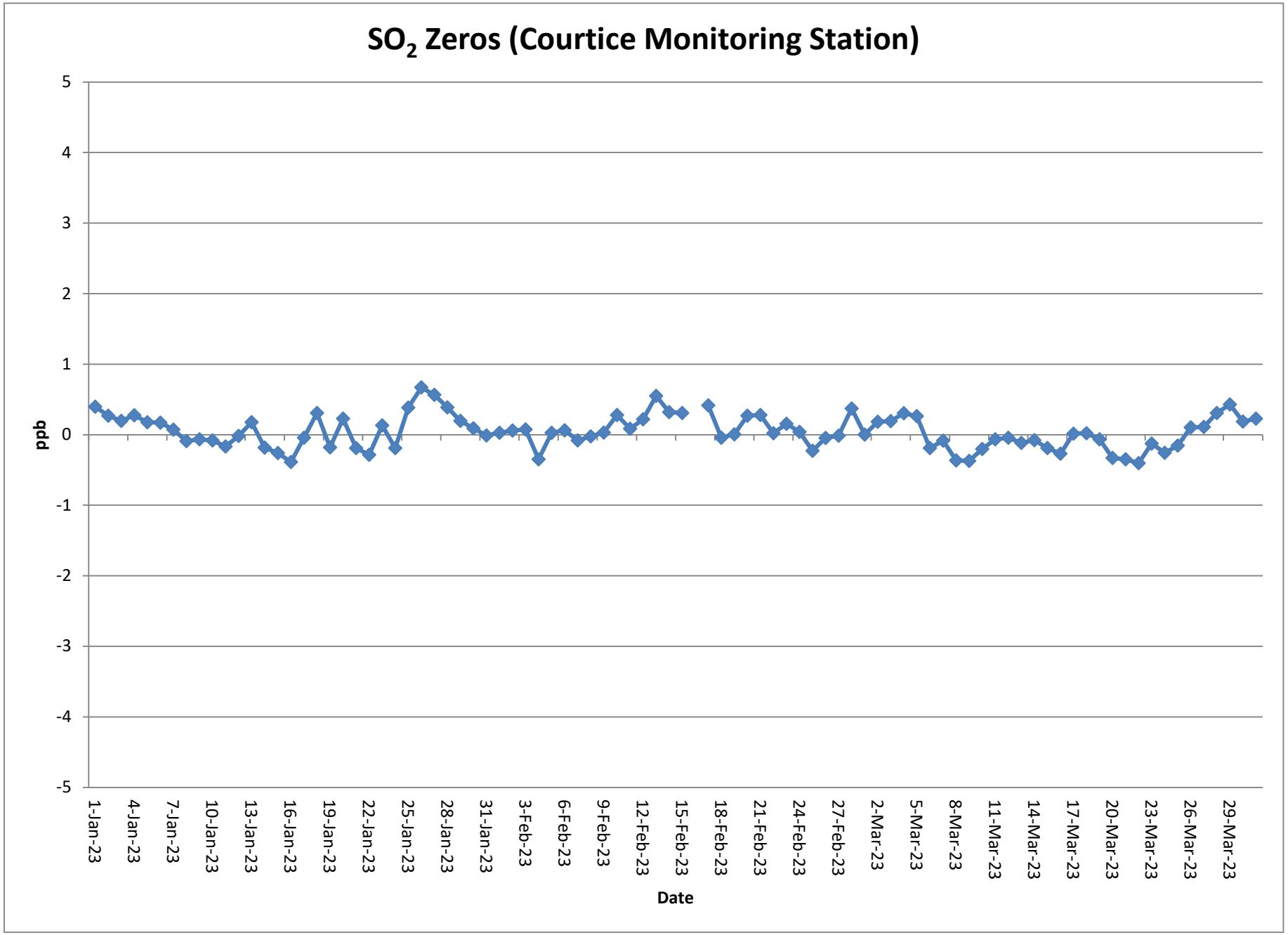
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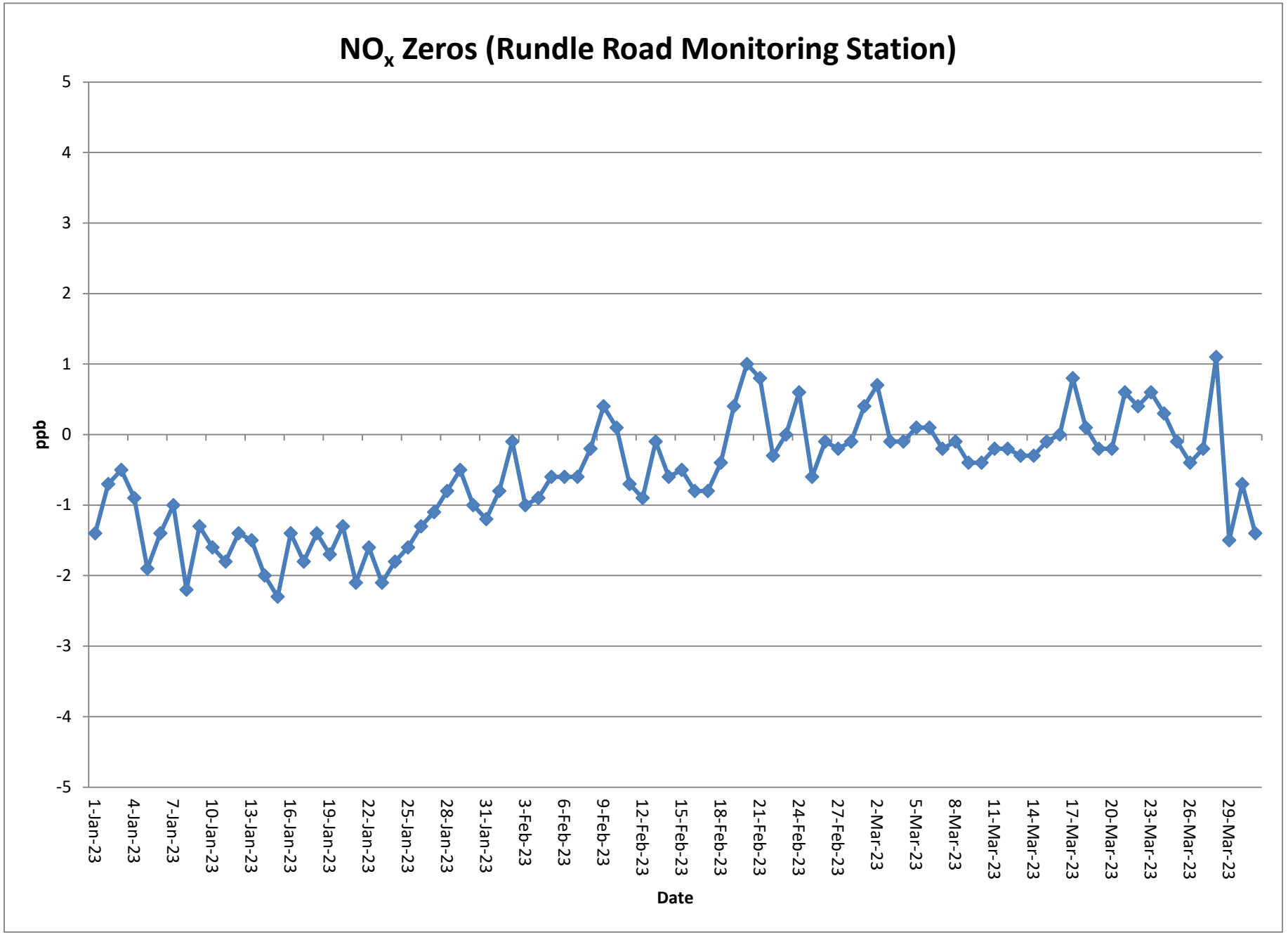
Date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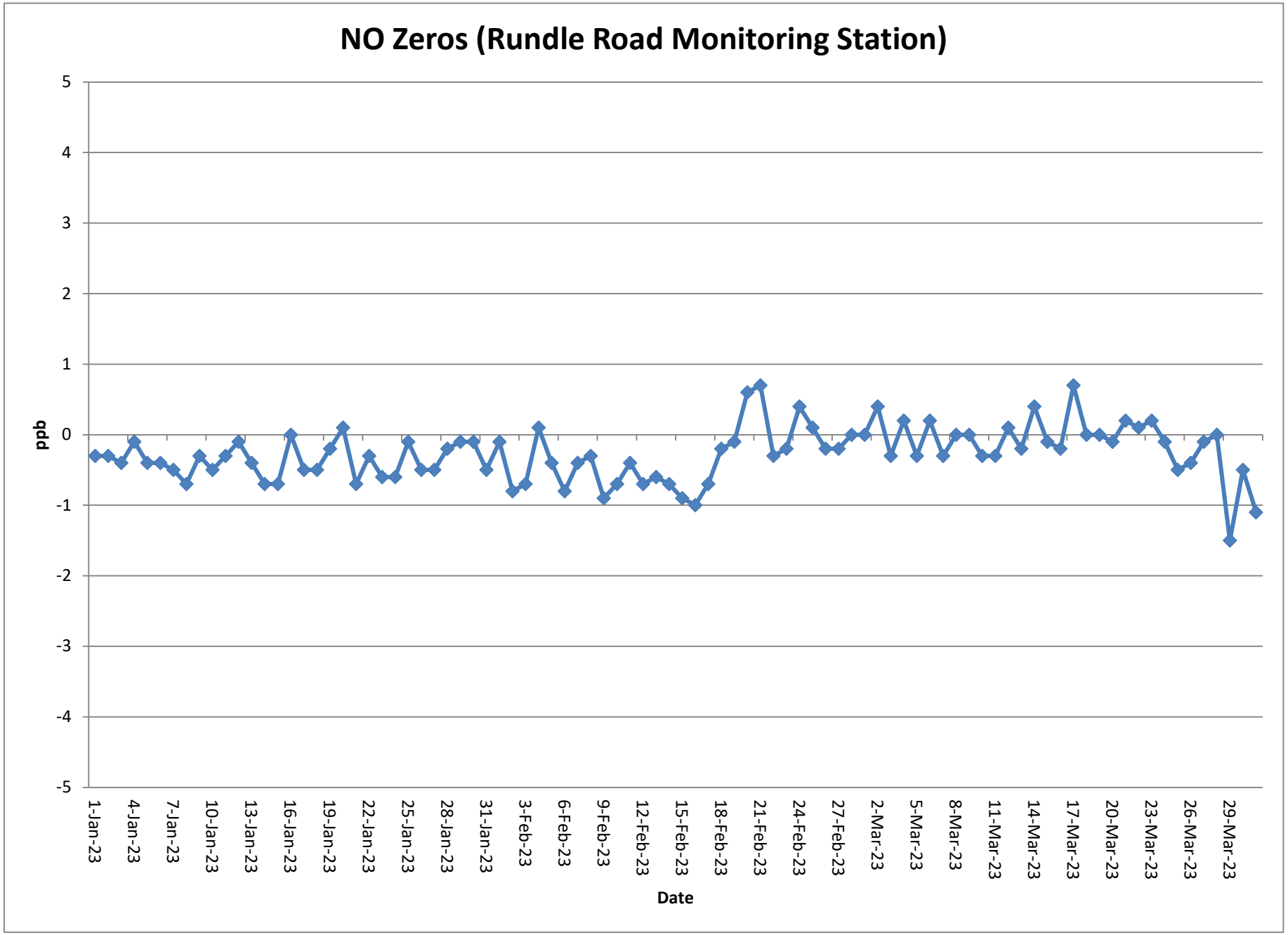
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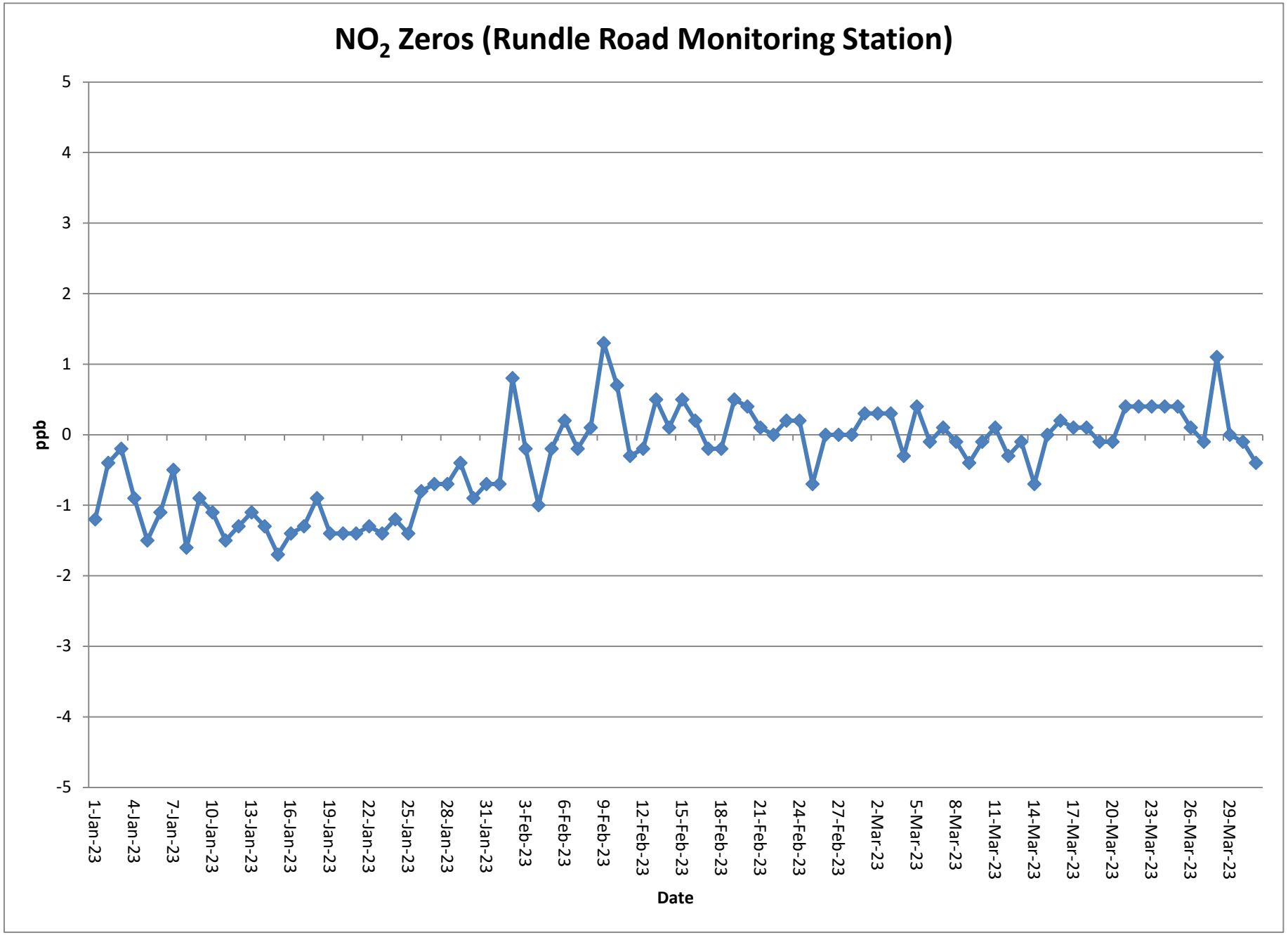
NO2 Zeros (Rundle Road Monitoring Station)
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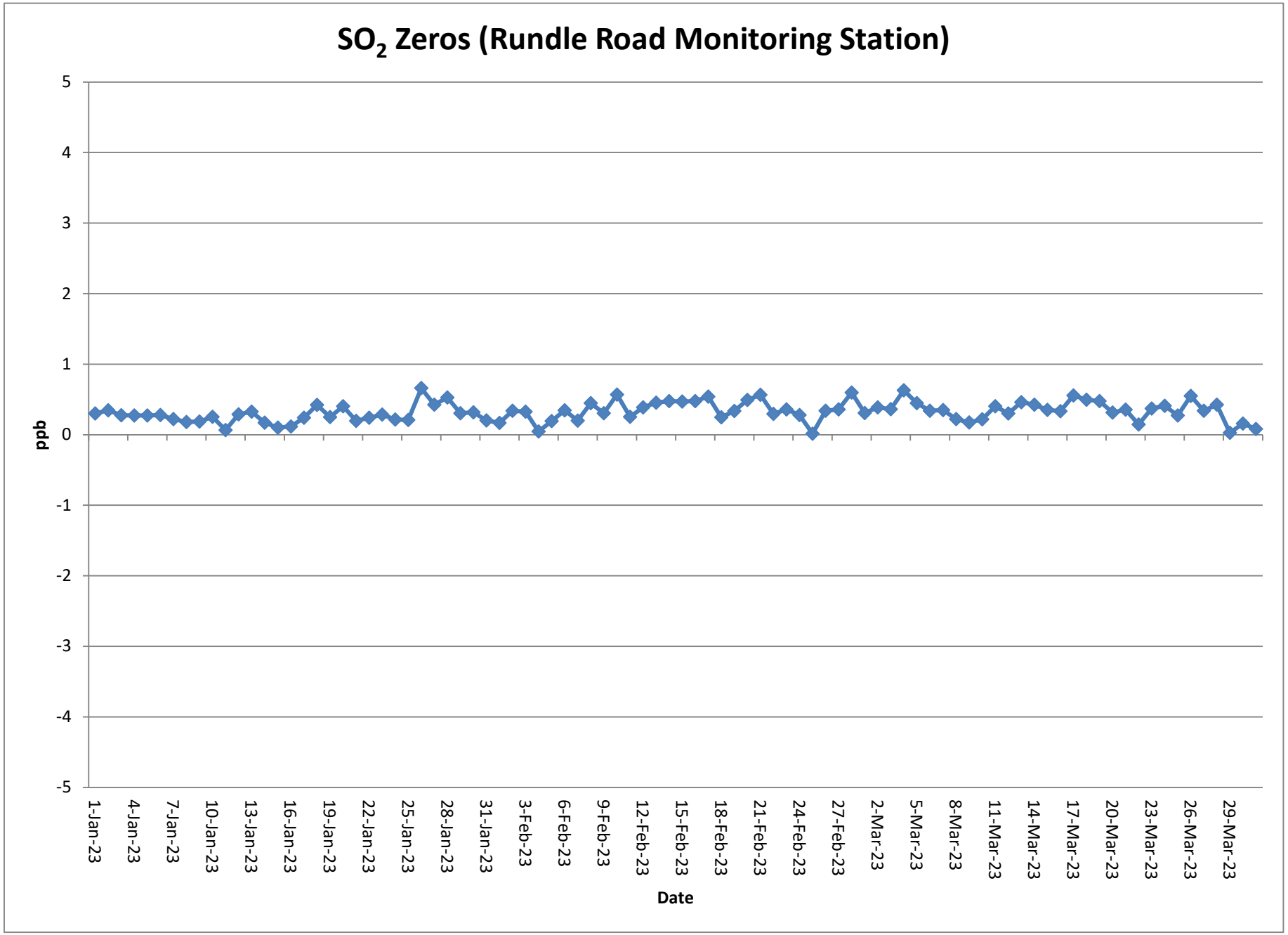
SO2 Zeros (Rundle Road Monitoring Station)
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26-Mar-23
29-Mar-23
Date

APPENDIX D

Table D1: Q1 Edit Log for $PM_{2.5}$ at Courtice Station

Emitter's Name: Durham York Energy Centre									
Contact	**Name:** Ms. Lyndsay Waller		**Phone:** (905) 404-0888 ext 4107			**Email:** Lyndsay.Waller@Durham.ca			
Station Number: 45201				**Station Name:** Courtice Station					
Station Address: 100 Osbourne Road				**Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON					
Pollutants or Parameter: $PM_{2.5}$			**Instrument Make & Model:** Thermo Scientific Model 5030 SHARP Monitor						**s/n:** E-1563
Data Edit Period		**Start Date:** January 1, 2023		**End Date:** March 31, 2023			All testing done in EST		
Edit #	**Edit date (dd/mm/yyyy)**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Duration**	**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	**Deleted Hours**	
1	24/01/2023	SRS	Deleted Hours	24/01/2023	16:00	24/01/2023	17:00	1	Monthly Calibration
2	10/02/2023	SRS	Deleted Hours	10/02/2023	11:00	10/02/2023	16:00	5	Monthly Calibration
3	27/03/2023	SRS	Deleted Hours	27/03/2023	10:00	27/03/2023	15:00	5	Annual Maintenance & Monthly Calibration
4	28/03/2023	SRS	Deleted Hours	28/03/2023	09:00	28/03/2023	11:00	2	Re-Calibration After Maintenance
5	29/03/2023	SRS	Deleted Hours	29/03/2023	09:00	29/03/2023	10:00	1	MECP Audit

Table D2: Q1 Edit Log for $PM_{2.5}$ at Rundle Road Station

Emitter's Name: Durham York Energy Centre									
Contact	**Name:** Ms. Lyndsay Waller		**Phone:** (905) 404-0888 ext 4107		**Email:** Lyndsay.Waller@Durham.ca				
Station Number: 45200				**Station Name:** Rundle Road Station					
Station Address: Rundle Road				**Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON					
Pollutants or Parameter: $PM_{2.5}$			**Instrument Make & Model:** Thermo Scientific Model 5030 SHARP Monitor						**s/n:** E-1569
Data Edit Period		**Start Date:** January 1, 2023		**End Date:** March 31, 2023			All testing done in EST		
Edit #	**Edit date (dd/mm/yyyy)**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Duration**	**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	**Deleted Hours**	
1	25/01/2023	SRS	Deleted Hours	25/01/2023	12:00	25/01/2023	14:00	2	Monthly Calibration
2	26/01/2023	SRS	Deleted Hours	26/01/2023	13:00	26/01/2023	14:00	1	Monthly Calibration
3	17/02/2023	SRS	Deleted Hours	17/02/2023	13:00	17/02/2023	15:00	2	Monthly Calibration
4	28/03/2023	SRS	Deleted Hours	28/03/2023	11:00	28/03/2023	14:00	3	Monthly Calibration
5	29/03/2023	SRS	Deleted Hours	29/03/2023	11:00	29/03/2023	12:00	1	MECP Audit

Table D3: Q1 Edit Log for NO_X at Courtice Station

Emitter's Name: Durham York Energy Centre									
Contact	**Name:** Ms. Lyndsay Waller		**Phone:** (905) 404-0888 ext 4107		**Email:** Lyndsay.Waller@Durham.ca				
Station Number: 45201				**Station Name:** Courtice Station					
Station Address: 100 Osbourne Road				**Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON					
Pollutants or Parameter: NOx			**Instrument Make & Model:** Teledyne Nitrogen Oxide Analyzer Model T200					**s/n:** 675	
Data Edit Period		**Start Date:** January 1, 2023		**End Date:** March 31, 2023			All testing done in EST		
Edit #	**Edit date (dd/mm/yyyy)**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Duration**	**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	**Deleted Hours**	
1	24/01/2023	SRS	Deleted Hours	24/01/2023	15:00	24/01/2023	17:00	2	Monthly Calibration
2	15/02/2023	DAJH	Zero Corrections	01/01/2023	00:00	01/02/2023	00:00	-	Correcting Values <0 to 0
3	10/02/2023	SRS	Deleted Hours	10/02/2023	16:00	10/02/2023	18:00	2	Monthly Calibration
4	06/03/2023	DAJH	Deleted Hours	15/02/2023	19:00	16/02/2023	12:00	17	Power Failure
5	06/03/2023	DAJH	Zero Corrections	01/02/2023	00:00	01/03/2023	00:00	-	Correcting Values <0 to 0
6	27/03/2023	SRS	Deleted Hours	27/03/2023	11:00	27/03/2023	13:00	2	Monthly Calibration
7	29/03/2023	SRS	Deleted Hours	29/03/2023	09:00	29/03/2023	11:00	2	MECP Audit
8	04/04/2023	DAJH	Zero Corrections	01/03/2023	00:00	01/04/2023	00:00	-	Correcting Values <0 to 0

Table D4: Q1 Edit Log for NO_X at Rundle Road Station

Emitter's Name: Durham York Energy Centre									
Contact	**Name:** Ms. Lyndsay Waller		**Phone:** (905) 404-0888 ext 4107			**Email:** Lyndsay.Waller@Durham.ca			
Station Number: 45200				**Station Name:** Rundle Road Station					
Station Address: Rundle Road				**Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON					
Pollutants or Parameter: NOx			**Instrument Make & Model:** Teledyne Nitrogen Oxide Analyzer Model T200						**s/n:** 676
Data Edit Period		**Start Date:** January 1, 2023		**End Date:** March 31, 2023			All testing done in EST		
Edit #	**Edit date (dd/mm/yyyy)**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Duration**	**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	**Deleted Hours**	
1	25/01/2023	SRS	Deleted Hours	25/01/2023	11:00	25/01/2023	14:00	3	Monthly Calibration
2	15/02/2023	DAJH	Zero Offset Adjustment	01/01/2023	00:00	01/02/2023	00:00	-	Zero Drift Adjustment Based on Overnight Zeros
3	15/02/2023	DAJH	Zero Corrections	01/01/2023	00:00	01/02/2023	00:00	-	Correcting Values <0 to 0
4	17/02/2023	SRS	Deleted Hours	17/02/2023	12:00	17/02/2023	16:00	4	Monthly Calibration
5	06/03/2023	DAJH	Zero Offset Adjustment	01/02/2023	00:00	17/02/2023	13:00	-	Zero Drift Adjustment Based on Overnight Zeros
6	06/03/2023	DAJH	Zero Corrections	01/02/2023	00:00	01/03/2023	00:00	-	Correcting Values <0 to 0
7	28/03/2023	SRS	Deleted Hours	28/03/2023	13:00	28/03/2023	15:00	2	Monthly Calibration
8	29/03/2023	SRS	Deleted Hours	29/03/2023	11:00	29/03/2023	12:00	1	MECP Audit
9	04/04/2023	DAJH	Zero Corrections	01/03/2023	00:00	01/04/2023	00:00	-	Correcting Values <0 to 0

Table D5: Q1 Edit Log for SO_2 at Courtice Station

Emitter's Name: Durham York Energy Centre									
Contact	**Name:** Ms. Lyndsay Waller		**Phone:** (905) 404-0888 ext 4107		**Email:** Lyndsay.Waller@Durham.ca				
Station Number: 45201				**Station Name:** Courtice Station					
Station Address: 100 Osbourne Road				**Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON					
Pollutants or Parameter: SO_2			**Instrument Make & Model:** Teledyne Sulfur Dioxide Analyzer Model T100					**s/n:** 565	
Data Edit Period		**Start Date:** January 1, 2023		**End Date:** March 31, 2023			All testing done in EST		
Edit #	**Edit Date (dd/mm/yyyy)**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Duration**	**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	**Deleted Hours**	
1	24/01/2023	SRS	Deleted Hours	24/01/2023	11:00	24/01/2023	14:00	3	Monthly Calibration
2	15/02/2023	DAJH	Zero Corrections	01/01/2023	00:00	01/02/2023	00:00	-	Correcting Values <0 to 0
3	10/02/2023	SRS	Deleted Hours	10/02/2023	11:00	10/02/2023	16:00	5	Monthly Calibration
4	06/03/2023	DAJH	Deleted Hours	15/02/2023	19:00	16/02/2023	12:00	17	Power Failure
5	06/03/2023	DAJH	Zero Corrections	01/02/2023	00:00	01/03/2023	00:00	-	Correcting Values <0 to 0
6	27/03/2023	SRS	Deleted Hours	27/03/2023	13:00	27/03/2023	15:00	2	Monthly Calibration
7	29/03/2023	SRS	Deleted Hours	29/03/2023	09:00	29/03/2023	11:00	2	MECP Audit
8	04/04/2023	DAJH	Zero Corrections	01/03/2023	00:00	01/04/2023	00:00	-	Correcting Values <0 to 0

Table D6: Q1 Edit Log for SO_2 at Rundle Road Station

Emitter's Name: Durham York Energy Centre									
Contact	**Name:** Ms. Lyndsay Waller		**Phone:** (905) 404-0888 ext 4107		**Email:** Lyndsay.Waller@Durham.ca				
Station Number: 45200				**Station Name:** Rundle Road Station					
Station Address: Rundle Road				**Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON					
Pollutants or Parameter: SO_2			**Instrument Make & Model:** Teledyne Sulfur Dioxide Analyzer Model T100					**s/n:** 566	
Data Edit Period		**Start Date:** January 1, 2023		**End Date:** March 31, 2023		All testing done in EST			
Edit #	**Edit date (dd/mm/yyyy)**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Duration**	**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	**Deleted Hours**	
1	25/01/2023	SRS	Deleted Hours	25/01/2023	10:00	25/01/2023	12:00	2	Monthly Calibration
2	15/02/2023	DAJH	Zero Corrections	01/01/2023	00:00	01/02/2023	00:00	-	Correcting Values <0 to 0
3	17/02/2023	SRS	Deleted Hours	17/02/2023	11:00	17/02/2023	13:00	2	Monthly Calibration
4	06/03/2023	DAJH	Zero Corrections	01/02/2023	00:00	01/03/2023	00:00	-	Correcting Values <0 to 0
5	28/03/2023	SRS	Deleted Hours	28/03/2023	15:00	28/03/2023	17:00	2	Monthly Calibration
6	29/03/2023	SRS	Deleted Hours	29/03/2023	11:00	29/03/2023	12:00	1	MECP Audit
7	04/04/2023	DAJH	Zero Corrections	01/03/2023	00:00	01/04/2023	00:00	-	Correcting Values <0 to 0

Table D7: Q1 Edit Log for Meteorological Parameters at Courtice Road Station

Emitter's Name: Durham York Energy Centre								
Contact	**Name:** Ms. Lyndsay Waller		**Phone:** (905) 404-0888 ext 4107		**Email:** Lyndsay.Waller@Durham.ca			
Station Number: 45201				**Station Name:** Courtice Station				
Station Address: 100 Osbourne Road				**Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON				
Pollutants or Parameter: WS, WD, Ambient T, P, RH and Rain			**Instrument Make & Model:** Miscellaneous Meterological Instrumentation				**s/n:** N/A	
Data Edit Period		**Start Date:** January 1, 2023		**End Date:** March 31, 2023		All testing done in EST		
Edit #	**Edit date (dd/mm/yyyy)**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Duration**	**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	**Deleted Hours**	
-									

Table D8: Q1 Edit Log for Meteorological Parameters at Rundle Road Station

Emitter's Name: Durham York Energy Centre									
Contact	**Name:** Ms. Lyndsay Waller		**Phone:** (905) 404-0888 ext 4107		**Email:** Lyndsay.Waller@Durham.ca				
Station Number: 45200				**Station Name:** Rundle Station					
Station Address: Rundle Road				**Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON					
Pollutants or Parameter: WS, WD, Ambient T, P, RH and Rain			**Instrument Make & Model:** Miscellaneous Meterological Instrumentation						**s/n:** N/A
Data Edit Period		**Start Date:** January 1, 2023		**End Date:** March 31, 2023			All testing done in EST		
Edit #	**Edit date (dd/mm/yyyy)**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Duration**	**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	**Deleted Hours**	
1	15/02/2023	DAJH	Deleted Hours	22/01/2023	21:00	23/01/2023	00:00	3	Wind Head Frozen
2	15/02/2023	DAJH	Deleted Hours	26/01/2023	00:00	26/01/2023	13:00	13	Wind Head Frozen

Table D9: Q1 Edit Log for Discrete Sampling at Courtice Station

Emitter's Name: Durham York Energy Centre								
Contact	**Name:** Ms. Lyndsay Waller		**Phone:** (905) 404-0888 ext 4107		**Email:** Lyndsay.Waller@Durham.ca			
Station Number: 45201				**Station Name:** Courtice Station				
Station Address: 100 Osbourne Road				**Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON				
Pollutants or Parameter: N/A			**Instrument Make & Model:** N/A					**s/n:** N/A
Data Edit Period		**Start Date:** January 1, 2023		**End Date:** March 31, 2023			All testing done in EST	
Edit #	**Edit date (dd/mm/yyyy)**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Duration**	**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	**Deleted Hours**	
-									

Table D10: Q1 Edit Log for Discrete Sampling at Rundle Station

Emitter's Name: Durham York Energy Centre									
Contact	**Name:** Ms. Lyndsay Waller		**Phone:** (905) 404-0888 ext 4107		**Email:** Lyndsay.Waller@Durham.ca				
Station Number: 45200				**Station Name:** Rundle Station					
Station Address: Rundle Road				**Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON					
Pollutants or Parameter: N/A			**Instrument Make & Model:** N/A					**s/n:** N/A	
Data Edit Period		**Start Date:** January 1, 2023		**End Date:** March 31, 2023			All testing done in EST		
Edit #	**Edit date (dd/mm/yyyy)**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Duration**	**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	**Deleted Hours**	
1	31/03/2023	DAJH	Deleted Hours	25/03/2023	00:00	26/03/2023	00:00	24	PAH - Equipment Malfunction

APPENDIX E

SO2 Exceedance Report **Table E1**

Durham York Energy Centre
Courtice, Ontario
Courtice Station
Baseline Corrected Data

Date	Time	SO_2 5-min Avg.	SO_2 10-minute Running Avg.
(mm/dd/yyyy)	(EST)	(ppb)	(ppb)
01-02-2023	20:00	6.4	8.5
01-02-2023	20:05	4.6	5.5
01-02-2023	20:10	56.0	30.3
01-02-2023	20:15	88.0	72.0
01-02-2023	20:20	26.5	57.2
01-02-2023	20:25	15.1	20.8
01-02-2023	20:30	53.2	34.1
Hidden cells with no values exceeding limit.			
01-08-2023	02:50	3.3	5.6
01-08-2023	02:55	2.2	2.7
01-08-2023	03:00	117.7	60.0
01-08-2023	03:05	50.6	84.2
01-08-2023	03:10	16.7	33.7
01-08-2023	03:15	13.8	15.3
01-08-2023	03:20	27.7	20.7
Hidden cells with no values exceeding limit.			
01-12-2023	14:20	0.4	0.5
01-12-2023	14:25	1.3	0.9
01-12-2023	14:30	19.6	10.5
01-12-2023	14:35	236.0	127.8
01-12-2023	14:40	510.0	373.0
01-12-2023	14:45	333.4	421.7
01-12-2023	14:50	196.0	264.7
01-12-2023	14:55	147.4	171.7
01-12-2023	15:00	57.3	102.4
01-12-2023	15:05	44.5	50.9
01-12-2023	15:10	24.9	34.7
01-15-2023	07:20	7.2	13.2
01-15-2023	07:25	4.4	5.8
01-15-2023	07:30	47.6	26.0
01-15-2023	07:35	92.0	69.8
01-15-2023	07:40	49.2	70.6
01-15-2023	07:45	16.4	32.8
01-15-2023	07:50	7.1	11.8
Hidden cells with no values exceeding limit.			
01-15-2023	23:35	3.4	8.9
01-15-2023	23:40	2.0	2.7
01-15-2023	23:45	52.7	27.3
01-15-2023	23:50	103.2	77.9
01-15-2023	23:55	16.3	59.7
01-16-2023	00:00	10.3	13.3
01-16-2023	00:05	7.0	8.7
Hidden cells with no values exceeding limit.			
01-18-2023	21:40	0.0	0.0
01-18-2023	21:45	23.8	11.9
01-18-2023	21:50	105.4	64.6
01-18-2023	21:55	70.7	88.1
01-18-2023	22:00	40.6	55.6
01-18-2023	22:05	54.6	47.6
01-18-2023	22:10	27.4	41.0
Hidden cells with no values exceeding limit.			
01-24-2023	22:35	2.7	1.4
01-24-2023	22:40	27.7	15.2
01-24-2023	22:45	56.0	41.9
01-24-2023	22:50	117.1	86.6
01-24-2023	22:55	81.6	99.3
01-24-2023	23:00	12.0	46.8
01-24-2023	23:05	6.1	9.1
01-24-2023	23:10	3.9	5.0
01-24-2023	23:15	106.9	55.4
01-24-2023	23:20	193.8	150.4
01-24-2023	23:25	70.5	132.1

01-24-2023	23:30	20.3	45.4
01-24-2023	23:35	39.2	29.7
01-24-2023	23:40	138.8	89.0
01-24-2023	23:45	87.3	113.1
01-24-2023	23:50	19.5	53.4
01-24-2023	23:55	9.5	14.5
Hidden cells with no values exceeding limit.			
01-25-2023	01:15	24.5	17.8
01-25-2023	01:20	19.3	21.9
01-25-2023	01:25	63.6	41.5
01-25-2023	01:30	86.0	74.8
01-25-2023	01:35	16.4	51.2
01-25-2023	01:40	10.1	13.2
01-25-2023	01:45		10.1
Hidden cells with no values exceeding limit.			
01-25-2023	02:50	56.9	62.3
01-25-2023	02:55	16.4	36.6
01-25-2023	03:00	32.1	24.2
01-25-2023	03:05	103.2	67.6
01-25-2023	03:10	30.2	66.7
01-25-2023	03:15	20.7	25.4
01-25-2023	03:20	10.5	15.6
Hidden cells with no values exceeding limit.			
01-26-2023	23:25	0.2	0.3
01-26-2023	23:30	0.3	0.3
01-26-2023	23:35	67.5	33.9
01-26-2023	23:40	73.8	70.6
01-26-2023	23:45	20.8	47.3
01-26-2023	23:50	9.5	15.2
01-26-2023	23:55	4.9	7.2
Hidden cells with no values exceeding limit.			
01-27-2023	00:30	15.5	8.8
01-27-2023	00:35	22.7	19.1
01-27-2023	00:40	77.6	50.1
01-27-2023	00:45	80.8	79.2
01-27-2023	00:50	72.4	76.6
01-27-2023	00:55	81.8	77.1
01-27-2023	01:00	47.8	64.8
01-27-2023	01:05	13.3	30.5
01-27-2023	01:10	7.9	10.6
01-27-2023	01:15	5.3	6.6
01-27-2023	01:20	4.0	4.7
01-27-2023	01:25	50.9	27.5
01-27-2023	01:30	93.1	72.0
01-27-2023	01:35	37.1	65.1
01-27-2023	01:40	17.1	27.1
01-27-2023	01:45		17.1
Hidden cells with no values exceeding limit.			
01-27-2023	03:05	3.5	3.9
01-27-2023	03:10	3.0	3.3
01-27-2023	03:15	79.9	41.5
01-27-2023	03:20	70.5	75.2
01-27-2023	03:25	19.5	45.0
01-27-2023	03:30	22.7	21.1
01-27-2023	03:35	10.5	16.6
Hidden cells with no values exceeding limit.			
01-27-2023	06:15	11.2	11.2
01-27-2023	06:20	36.1	23.7
01-27-2023	06:25	77.5	56.8
01-27-2023	06:30	57.7	67.6
01-27-2023	06:35	13.7	35.7
01-27-2023	06:40	8.8	11.2
01-27-2023	06:45	6.3	7.5
Hidden cells with no values exceeding limit.			
01-28-2023	20:05	5.0	2.5
01-28-2023	20:10	49.1	27.0
01-28-2023	20:15	64.7	56.9
01-28-2023	20:20	87.8	76.2
01-28-2023	20:25	41.9	64.9
01-28-2023	20:30	39.3	40.6
01-28-2023	20:35	9.8	24.6

Notes:

	- Date, Time & Exceedence Value Reported
	- Not used to calculate the number of reportable exceedences
	- Range of 5-minute measurements that contribute to the Exceedance Value Reported
Max	- Maximum of the Range
Min	- Minimum of the Range

Ambient Air Quality Criteria (AAQC) for SO2 = 67 ppb for 10-minute running average

Total Number of Reportable Exceedances: **20**

SO2 Exceedance Report **Table E2**

Durham York Energy Centre
Courtice, Ontario
Courtice Station
Baseline Corrected Data

Date	Time	SO_2 5-min Avg.	SO_2 10-minute Running Avg.
(mm/dd/yyyy)	(EST)	(ppb)	(ppb)
02-12-2023	07:45	33.4	31.4
02-12-2023	07:50	72.4	52.9
02-12-2023	07:55	43.3	57.8
02-12-2023	08:00	121.2	82.2
02-12-2023	08:05	38.8	80.0
02-12-2023	08:10	66.5	52.6
02-12-2023	08:15	11.7	39.1
02-12-2023	08:20	112.9	62.3
02-12-2023	08:25	97.6	105.3
02-12-2023	08:30	22.3	60.0
02-12-2023	08:35	28.7	25.5
02-12-2023	08:40	89.6	59.2
02-12-2023	08:45	66.2	77.9
02-12-2023	08:50	70.7	68.4
02-12-2023	08:55	18.9	44.8
02-12-2023	09:00	9.2	14.0
Hidden cells with no values exceeding limit.			
02-12-2023	21:10	15.7	15.1
02-12-2023	21:15	43.7	29.7
02-12-2023	21:20	67.9	55.8
02-12-2023	21:25	118.9	93.4
02-12-2023	21:30	111.0	114.9
02-12-2023	21:35	56.0	83.5
02-12-2023	21:40	39.3	47.6
02-12-2023	21:45	17.4	28.3
02-12-2023	21:50	10.7	14.1
Hidden cells with no values exceeding limit.			
02-12-2023	23:50	47.3	57.8
02-12-2023	23:55	14.4	30.9
02-13-2023	00:00	101.6	58.0
02-13-2023	00:05	95.7	98.6
02-13-2023	00:10	56.3	76.0
02-13-2023	00:15	24.8	40.6
02-13-2023	00:20	10.1	17.4
Hidden cells with no values exceeding limit.			
02-13-2023	03:50	51.3	54.3
02-13-2023	03:55	46.6	49.0
02-13-2023	04:00	62.2	54.4
02-13-2023	04:05	92.9	77.6
02-13-2023	04:10	73.9	83.4
02-13-2023	04:15	18.8	46.3
02-13-2023	04:20	13.2	16.0
02-13-2023	04:25	11.6	12.4
02-13-2023	04:30	17.3	14.4
02-13-2023	04:35	90.0	53.6
02-13-2023	04:40	61.1	75.6
02-13-2023	04:45	27.6	44.4
02-13-2023	04:50	48.6	38.1
02-13-2023	04:55	15.9	32.2
02-13-2023	05:00	14.0	14.9
02-13-2023	05:05	83.6	48.8
02-13-2023	05:10	54.3	69.0
02-13-2023	05:15	24.5	39.4
02-13-2023	05:20	43.1	33.8
02-13-2023	05:25	39.1	41.1
Hidden cells with no values exceeding limit.			
02-13-2023	06:20	28.7	24.5
02-13-2023	06:25	8.6	18.6
02-13-2023	06:30	62.4	35.5
02-13-2023	06:35	160.9	111.6
02-13-2023	06:40	128.1	144.5
02-13-2023	06:45	107.2	117.7

02-13-2023	06:50	22.9	65.0
02-13-2023	06:55	14.5	18.7
02-13-2023	07:00	10.3	12.4
Hidden cells with no values exceeding limit.			
02-13-2023	07:15	5.5	6.1
02-13-2023	07:20	14.6	10.0
02-13-2023	07:25	114.7	64.6
02-13-2023	07:30	148.7	131.7
02-13-2023	07:35	128.4	138.5
02-13-2023	07:40	128.1	128.2
02-13-2023	07:45	218.1	173.1
02-13-2023	07:50	38.3	128.2
02-13-2023	07:55	215.3	126.8
02-13-2023	08:00	211.1	213.2
02-13-2023	08:05	120.5	165.8
02-13-2023	08:10	101.6	111.0
02-13-2023	08:15	34.4	68.0
02-13-2023	08:20	21.7	28.0
02-13-2023	08:25	27.6	24.7
02-13-2023	08:30	67.0	47.3
02-13-2023	08:35	23.6	45.3
02-13-2023	08:40	96.4	60.0
02-13-2023	08:45	85.5	90.9
02-13-2023	08:50	61.4	73.4
02-13-2023	08:55	66.1	63.8
02-13-2023	09:00	28.3	47.2
Hidden cells with no values exceeding limit.			
02-14-2023	05:45	0.5	0.5
02-14-2023	05:50	0.3	0.4
02-14-2023	05:55	25.6	13.0
02-14-2023	06:00	158.3	92.0
02-14-2023	06:05	44.1	101.2
02-14-2023	06:10	9.1	26.6
02-14-2023	06:15	12.7	10.9
Hidden cells with no values exceeding limit.			
02-14-2023	06:35	5.0	6.2
02-14-2023	06:40	22.7	13.8
02-14-2023	06:45	8.1	15.4
02-14-2023	06:50	141.0	74.5
02-14-2023	06:55	21.4	81.2
02-14-2023	07:00	22.4	21.9
02-14-2023	07:05	9.8	16.1
Hidden cells with no values exceeding limit.			
02-18-2023	20:55	6.8	3.4
02-18-2023	21:00	0.8	3.8
02-18-2023	21:05	12.2	6.5
02-18-2023	21:10	149.1	80.6
02-18-2023	21:15	95.0	122.1
02-18-2023	21:20	72.5	83.8
02-18-2023	21:25	149.1	110.8
02-18-2023	21:30	31.6	90.3
02-18-2023	21:35	23.5	27.5
02-18-2023	21:40	10.7	17.1
02-18-2023	21:45	7.3	9.0
Hidden cells with no values exceeding limit.			
02-18-2023	22:00	4.9	4.7
02-18-2023	22:05	4.0	4.4
02-18-2023	22:10	39.5	21.7
02-18-2023	22:15	114.2	76.8
02-18-2023	22:20	158.7	136.4
02-18-2023	22:25	27.2	93.0
02-18-2023	22:30	88.8	58.0
02-18-2023	22:35	159.1	123.9
02-18-2023	22:40	119.3	139.2
02-18-2023	22:45	61.6	90.4
02-18-2023	22:50	15.4	38.5
02-18-2023	22:55	10.2	12.8
02-18-2023	23:00	6.9	8.6
02-18-2023	23:05	5.0	6.0
02-18-2023	23:10	3.6	4.3
02-18-2023	23:15	86.6	45.1
02-18-2023	23:20	64.4	75.5
02-18-2023	23:25	16.2	40.3

02-18-2023	23:30	7.0	11.6
02-18-2023	23:35	5.0	6.0
Hidden cells with no values exceeding limit.			
02-19-2023	02:45	2.2	2.4
02-19-2023	02:50	2.8	2.5
02-19-2023	02:55	82.1	42.4
02-19-2023	03:00	75.4	78.8
02-19-2023	03:05	89.4	82.4
02-19-2023	03:10	139.7	114.5
02-19-2023	03:15	39.1	89.4
02-19-2023	03:20	17.3	28.2
02-19-2023	03:25	9.7	13.5
Hidden cells with no values exceeding limit.			
02-20-2023	23:15	1.9	2.1
02-20-2023	23:20	18.8	10.3
02-20-2023	23:25	101.3	60.0
02-20-2023	23:30	69.6	85.5
02-20-2023	23:35	81.0	75.3
02-20-2023	23:40	91.2	86.1
02-20-2023	23:45	19.5	55.4
02-20-2023	23:50	8.6	14.1
02-20-2023	23:55	6.7	7.7
02-21-2023	00:00	94.6	50.6
02-21-2023	00:05	45.1	69.8
02-21-2023	00:10	9.8	27.5
02-21-2023	00:15	5.8	7.8
02-21-2023	00:20	4.2	5.0
Hidden cells with no values exceeding limit.			
02-24-2023	20:20	0.0	0.0
02-24-2023	20:25	0.0	0.0
02-24-2023	20:30	103.1	51.6
02-24-2023	20:35	44.8	74.0
02-24-2023	20:40	67.7	56.3
02-24-2023	20:45	91.0	79.3
02-24-2023	20:50	111.9	101.4
02-24-2023	20:55	22.5	67.2
02-24-2023	21:00	17.4	19.9
02-24-2023	21:05	15.1	16.3
02-24-2023	21:10	6.3	10.7
02-24-2023	21:15	74.0	40.2
02-24-2023	21:20	90.7	82.4
02-24-2023	21:25	102.6	96.6
02-24-2023	21:30	65.0	83.8
02-24-2023	21:35	75.2	70.1
02-24-2023	21:40	39.4	57.3
02-24-2023	21:45	59.8	49.6
Hidden cells with no values exceeding limit.			
02-25-2023	02:05		
02-25-2023	02:10		
02-25-2023	02:15	62.9	62.9
02-25-2023	02:20	80.7	71.8
02-25-2023	02:25	19.5	50.1
02-25-2023	02:30	34.1	26.8
02-25-2023	02:35	12.5	23.3
Hidden cells with no values exceeding limit.			
02-27-2023	02:35	8.6	26.6
02-27-2023	02:40	76.1	42.3
02-27-2023	02:45	29.3	52.7
02-27-2023	02:50	125.5	77.4
02-27-2023	02:55	119.0	122.3
02-27-2023	03:00	13.5	66.3
02-27-2023	03:05	8.3	10.9

Notes:

D, T & V	- Date, Time & Exceedence Value Reported
Faded Values	- Not used to calculate the number of reportable exceedences
	- Range of 5-minute measurements that contribute to the Exceedance Value Reported
Max	- Maximum of the Range
Min	- Minimum of the Range

Ambient Air Quality Criteria (AAQC) for SO2 = 67 ppb for 10-minute running average

Total Number of Reportable Exceedances: **39**

SO2 Exceedance Report **Table E3**

Durham York Energy Centre
Courtice, Ontario
Courtice Station
Baseline Corrected Data

Date	Time	SO_2 5-min Avg.	SO_2 10-minute Running Avg.
(mm/dd/yyyy)	(EST)	(ppb)	(ppb)
03-01-2023	03:30	3.2	3.9
03-01-2023	03:35	2.3	2.7
03-01-2023	03:40	119.5	60.9
03-01-2023	03:45	59.4	89.4
03-01-2023	03:50	47.3	53.4
03-01-2023	03:55	17.1	32.2
03-01-2023	04:00	23.9	20.5
03-01-2023	04:05	116.0	70.0
03-01-2023	04:10	45.8	80.9
03-01-2023	04:15	14.6	30.2
03-01-2023	04:20	7.9	11.3
Hidden cells with no values exceeding limit.			
03-03-2023	02:45	6.2	9.6
03-03-2023	02:50	7.4	6.8
03-03-2023	02:55	82.6	45.0
03-03-2023	03:00	64.9	73.7
03-03-2023	03:05	45.1	55.0
03-03-2023	03:10	81.5	63.3
03-03-2023	03:15	24.0	52.7
Hidden cells with no values exceeding limit.			
03-04-2023	18:15	0.0	0.0
03-04-2023	18:20	0.5	0.2
03-04-2023	18:25	117.7	59.1
03-04-2023	18:30	41.7	79.7
03-04-2023	18:35	4.3	23.0
03-04-2023	18:40	2.3	3.3
03-04-2023	18:45	1.5	1.9
Hidden cells with no values exceeding limit.			
03-04-2023	19:15	0.2	0.3
03-04-2023	19:20	0.2	0.2
03-04-2023	19:25	64.3	32.3
03-04-2023	19:30	71.0	67.6
03-04-2023	19:35	8.8	39.9
03-04-2023	19:40	8.2	8.5
03-04-2023	19:45	2.9	5.5
03-04-2023	19:50	1.9	2.4
03-04-2023	19:55	166.9	84.4
03-04-2023	20:00	412.0	289.4
03-04-2023	20:05	96.6	254.3
03-04-2023	20:10	72.6	84.6
03-04-2023	20:15	36.8	54.7
03-04-2023	20:20	69.6	53.2
03-04-2023	20:25	65.0	67.3
03-04-2023	20:30	13.2	39.1
03-04-2023	20:35	8.1	10.6
03-04-2023	20:40	6.4	7.2
Hidden cells with no values exceeding limit.			
03-04-2023	22:35	39.7	34.0
03-04-2023	22:40	62.0	50.8
03-04-2023	22:45	30.6	46.3
03-04-2023	22:50	104.0	67.3
03-04-2023	22:55	19.0	61.5
03-04-2023	23:00	10.1	14.6
03-04-2023	23:05	6.3	8.2
Hidden cells with no values exceeding limit.			
03-05-2023	02:20	5.6	6.9
03-05-2023	02:25	4.9	5.2
03-05-2023	02:30	7.7	6.3
03-05-2023	02:35	143.5	75.6
03-05-2023	02:40	105.7	124.6
03-05-2023	02:45	26.3	66.0
03-05-2023	02:50	19.3	22.8

Hidden cells with no values exceeding limit.			
03-05-2023	04:55	2.2	2.6
03-05-2023	05:00	75.4	38.8
03-05-2023	05:05	34.8	55.1
03-05-2023	05:10	128.3	81.5
03-05-2023	05:15	133.6	130.9
03-05-2023	05:20	53.7	93.6
03-05-2023	05:25	92.0	72.8
03-05-2023	05:30	18.6	55.3
03-05-2023	05:35	10.6	14.6
Hidden cells with no values exceeding limit.			
03-05-2023	06:00	73.5	65.3
03-05-2023	06:05	19.6	46.6
03-05-2023	06:10	74.7	47.1
03-05-2023	06:15	59.5	67.1
03-05-2023	06:20	39.6	49.5
03-05-2023	06:25	17.2	28.4
03-05-2023	06:30	7.8	12.5
Hidden cells with no values exceeding limit.			
03-05-2023	23:35	0.3	0.1
03-05-2023	23:40	2.3	1.3
03-05-2023	23:45	81.1	41.7
03-05-2023	23:50	53.4	67.2
03-05-2023	23:55	3.5	28.4
Hidden cells with no values exceeding limit.			
03-06-2023	00:00	1.7	2.6
03-06-2023	00:05	1.0	1.3
Hidden cells with no values exceeding limit.			
03-06-2023	20:15	0.7	0.8
03-06-2023	20:20	0.7	0.7
03-06-2023	20:25	46.8	23.8
03-06-2023	20:30	88.2	67.5
03-06-2023	20:35	11.0	49.6
03-06-2023	20:40	4.5	7.7
03-06-2023	20:45	2.6	3.5
Hidden cells with no values exceeding limit.			
03-06-2023	21:55	19.4	10.1
03-06-2023	22:00	18.2	18.8
03-06-2023	22:05	61.5	39.9
03-06-2023	22:10	74.3	67.9
03-06-2023	22:15	7.1	40.7
03-06-2023	22:20	4.4	5.7
03-06-2023	22:25	2.7	3.5
Hidden cells with no values exceeding limit.			
03-09-2023	19:35	1.0	1.5
03-09-2023	19:40	6.6	3.8
03-09-2023	19:45	107.3	57.0
03-09-2023	19:50	83.0	95.2
03-09-2023	19:55	31.3	57.2
03-09-2023	20:00	34.5	32.9
03-09-2023	20:05	12.3	23.4
Hidden cells with no values exceeding limit.			
03-09-2023	20:20	6.6	10.1
03-09-2023	20:25	4.4	5.5
03-09-2023	20:30	6.7	5.5
03-09-2023	20:35	190.8	98.7
03-09-2023	20:40	136.0	163.4
03-09-2023	20:45	80.6	108.3
03-09-2023	20:50	21.5	51.0
03-09-2023	20:55	66.9	44.2
03-09-2023	21:00	96.0	81.4
03-09-2023	21:05	51.7	73.8
03-09-2023	21:10	11.4	31.6
03-09-2023	21:15	6.9	9.1
Hidden cells with no values exceeding limit.			
03-09-2023	22:05	2.6	2.9
03-09-2023	22:10	2.1	2.4
03-09-2023	22:15	39.9	21.0
03-09-2023	22:20	106.6	73.2
03-09-2023	22:25	41.5	74.1
03-09-2023	22:30	9.7	25.6
03-09-2023	22:35	5.4	7.5
Hidden cells with no values exceeding limit.			

03-12-2023	06:10	3.1	3.7
03-12-2023	06:15	41.5	22.3
03-12-2023	06:20	72.7	57.1
03-12-2023	06:25	64.2	68.5
03-12-2023	06:30	49.6	56.9
03-12-2023	06:35	34.9	42.2
03-12-2023	06:40	32.6	33.8
03-27-2023	00:30	0.4	0.6
03-27-2023	00:35	0.3	0.3
03-27-2023	00:40	50.9	25.6
03-27-2023	00:45	96.8	73.8
03-27-2023	00:50	68.5	82.6
03-27-2023	00:55	54.3	61.4
03-27-2023	01:00	50.9	52.6
Hidden cells with no values exceeding limit.			
03-27-2023	01:15	3.6	4.2
03-27-2023	01:20	2.3	2.9
03-27-2023	01:25	68.1	35.2
03-27-2023	01:30	100.3	84.2
03-27-2023	01:35	19.2	59.8
03-27-2023	01:40	17.4	18.3
03-27-2023	01:45		17.4
Hidden cells with no values exceeding limit.			
03-28-2023	20:30	0.2	0.3
03-28-2023	20:35	0.4	0.3
03-28-2023	20:40	82.3	41.3
03-28-2023	20:45	118.7	100.5
03-28-2023	20:50	62.5	90.6
03-28-2023	20:55	11.0	36.8
03-28-2023	21:00	8.9	10.0
Hidden cells with no values exceeding limit.			
03-28-2023	23:30	55.4	29.0
03-28-2023	23:35	12.9	34.1
03-28-2023	23:40	90.0	51.4
03-28-2023	23:45	46.8	68.4
03-28-2023	23:50	8.7	27.7
03-28-2023	23:55	35.3	22.0
03-29-2023	00:00	12.6	24.0
Hidden cells with no values exceeding limit.			
03-29-2023	02:50	2.1	8.7
03-29-2023	02:55	1.3	1.7
03-29-2023	03:00	1.2	1.2
03-29-2023	03:05	172.5	86.8
03-29-2023	03:10	240.4	206.5
03-29-2023	03:15	61.3	150.9
03-29-2023	03:20	12.6	36.9
03-29-2023	03:25	16.0	14.3
03-29-2023	03:30	29.8	22.9
Hidden cells with no values exceeding limit.			
03-30-2023	03:50	0.0	0.0
03-30-2023	03:55	4.5	2.2
03-30-2023	04:00	92.5	48.5
03-30-2023	04:05	67.4	79.9
03-30-2023	04:10	34.2	50.8
03-30-2023	04:15	25.0	29.6
03-30-2023	04:20	22.5	23.8
Hidden cells with no values exceeding limit.			
03-30-2023	06:10	2.2	5.6
03-30-2023	06:15	1.6	1.9
03-30-2023	06:20	82.7	42.2
03-30-2023	06:25	78.0	80.3
03-30-2023	06:30	37.9	57.9
03-30-2023	06:35	10.7	24.3
03-30-2023	06:40	5.6	8.1

Notes:

	- Date, Time & Exceedence Value Reported
	- Not used to calculate the number of reportable exceedences
	- Range of 5-minute measurements that contribute to the Exceedance Value Reported
Max	- Maximum of the Range
Min	- Minimum of the Range

Ambient Air Quality Criteria (AAQC) for SO2 = 67 ppb for 10-minute running average

Total Number of Reportable Exceedances: **30**

SO2 Exceedance Report **Table E4**

Durham York Energy Centre
Courtice, Ontario
Courtice Station
Baseline Corrected Data

Date	Time	SO_2 5-min Avg.	SO_2 1-hr Running Avg.
(mm/dd/yyyy)	(EST)	(ppb)	(ppb)
01-12-2023	13:35	0.0	0.0
01-12-2023	13:40	0.0	0.0
01-12-2023	13:45	0.1	0.0
01-12-2023	13:50	0.2	0.0
01-12-2023	13:55	0.2	0.1
01-12-2023	14:00	0.1	0.1
01-12-2023	14:05	0.2	0.1
01-12-2023	14:10	0.3	0.1
01-12-2023	14:15	0.6	0.1
01-12-2023	14:20	0.4	0.2
01-12-2023	14:25	1.3	0.3
01-12-2023	14:30	19.6	1.9
01-12-2023	14:35	236.0	21.6
01-12-2023	14:40	510.0	64.1
01-12-2023	14:45	333.4	91.9
01-12-2023	14:50	196.0	108.2
01-12-2023	14:55	147.4	120.4
01-12-2023	15:00	57.3	125.2
01-12-2023	15:05	44.5	128.9
01-12-2023	15:10	24.9	131.0
01-12-2023	15:15	14.7	132.1
01-12-2023	15:20	13.5	133.2
01-12-2023	15:25	9.6	133.9
01-12-2023	15:30	8.2	133.0
01-12-2023	15:35	13.8	114.4
01-12-2023	15:40	46.0	75.8
01-12-2023	15:45	45.7	51.8
01-12-2023	15:50	38.3	38.7
01-12-2023	15:55	30.3	28.9
01-12-2023	16:00	32.6	26.8
01-12-2023	16:05	37.9	26.3
01-12-2023	16:10	26.9	26.5
01-12-2023	16:15	9.9	26.1
01-12-2023	16:20	41.3	28.4
01-12-2023	16:25	21.2	29.3
01-12-2023	16:30	25.0	30.7
01-12-2023	16:35	25.5	31.7
01-12-2023	16:40	29.1	30.3
01-12-2023	16:45	26.7	28.7
01-15-2023	06:35	4.4	4.1
01-15-2023	06:40	6.1	4.5
01-15-2023	06:45	65.9	10.0
01-15-2023	06:50	61.8	15.1
01-15-2023	06:55	24.2	17.0
01-15-2023	07:00	25.2	18.8
01-15-2023	07:05	69.1	24.4
01-15-2023	07:10	54.8	28.8
01-15-2023	07:15	19.2	30.3
01-15-2023	07:20	7.2	30.5
01-15-2023	07:25	4.4	29.3
01-15-2023	07:30	47.6	32.5
01-15-2023	07:35	92.0	39.8
01-15-2023	07:40	49.2	43.4
01-15-2023	07:45	16.4	39.2
01-15-2023	07:50	7.1	34.7
01-15-2023	07:55	4.3	33.0
01-15-2023	08:00	3.2	31.2
01-15-2023	08:05	2.4	25.6
01-15-2023	08:10	2.0	21.2
01-15-2023	08:15	1.8	19.8
01-15-2023	08:20	1.4	19.3
01-15-2023	08:25	1.6	19.1

01-15-2023	08:30	2.5	15.3
01-15-2023	08:35	29.2	10.1
01-15-2023	08:40	55.8	10.6
01-15-2023	08:45	54.4	13.8
Hidden cells with no values exceeding limit.			
01-24-2023	22:15	0.2	0.1
01-24-2023	22:20	0.2	0.1
01-24-2023	22:25	0.1	0.1
01-24-2023	22:30	0.1	0.1
01-24-2023	22:35	2.7	0.3
01-24-2023	22:40	27.7	2.6
01-24-2023	22:45	56.0	7.3
01-24-2023	22:50	117.1	17.0
01-24-2023	22:55	81.6	23.8
01-24-2023	23:00	12.0	24.8
01-24-2023	23:05	6.1	25.3
01-24-2023	23:10	3.9	25.6
01-24-2023	23:15	106.9	34.5
01-24-2023	23:20	193.8	50.7
01-24-2023	23:25	70.5	56.5
01-24-2023	23:30	20.3	58.2
01-24-2023	23:35	39.2	61.3
01-24-2023	23:40	138.8	70.5
01-24-2023	23:45	87.3	73.1
01-24-2023	23:50	19.5	65.0
01-24-2023	23:55	9.5	59.0
01-25-2023	00:00	6.7	58.5
01-25-2023	00:05	5.3	58.5
01-25-2023	00:10	27.0	60.4
01-25-2023	00:15	8.3	52.2
01-25-2023	00:20	9.5	36.8
01-25-2023	00:25	42.2	34.5
Hidden cells with no values exceeding limit.			
01-27-2023	00:25	2.1	20.1
01-27-2023	00:30	15.5	21.3
01-27-2023	00:35	22.7	17.6
01-27-2023	00:40	77.6	17.9
01-27-2023	00:45	80.8	22.9
01-27-2023	00:50	72.4	28.1
01-27-2023	00:55	81.8	34.6
01-27-2023	01:00	47.8	37.0
01-27-2023	01:05	13.3	35.5
01-27-2023	01:10	7.9	35.6
01-27-2023	01:15	5.3	35.8
01-27-2023	01:20	4.0	35.9
01-27-2023	01:25	50.9	40.0
01-27-2023	01:30	93.1	46.5
01-27-2023	01:35	37.1	47.7
01-27-2023	01:40	17.1	42.6
01-27-2023	01:45		39.2
01-27-2023	01:50		35.8
01-27-2023	01:55		30.7
01-27-2023	02:00		28.6
01-27-2023	02:05		30.8
01-27-2023	02:10		34.6
01-27-2023	02:15	4.3	34.4
01-27-2023	02:20	49.5	42.0
01-27-2023	02:25	31.6	38.8
01-27-2023	02:30	34.7	29.0
01-27-2023	02:35	13.6	25.1

Notes:

D, T & V	- Date, Time & Exceedence Value Reported
Faded Values	- Not used to calculate the number of reportable exceedences
	- Range of 5-minute measurements that contribute to the Exceedance Value Reported
Max	- Maximum of the Range
Min	- Minimum of the Range

Ambient Air Quality Criteria (AAQC) for SO2 = 40 ppb for 1-hour running average

Total Number of Reportable Exceedances: **5**

SO2 Exceedance Report **Table E5**

Durham York Energy Centre
Courtice, Ontario
Courtice Station
Baseline Corrected Data

Date	Time	SO_2 5-min Avg.	SO_2 1-hour Running Avg.
(mm/dd/yyyy)	(EST)	(ppb)	(ppb)
02-12-2023	07:15	43.9	9.6
02-12-2023	07:20	13.0	10.6
02-12-2023	07:25	3.7	10.0
02-12-2023	07:30	3.0	8.9
02-12-2023	07:35	4.3	9.1
02-12-2023	07:40	29.4	11.5
02-12-2023	07:45	33.4	14.3
02-12-2023	07:50	72.4	20.2
02-12-2023	07:55	43.3	23.4
02-12-2023	08:00	121.2	31.5
02-12-2023	08:05	38.8	34.2
02-12-2023	08:10	66.5	39.4
02-12-2023	08:15	11.7	36.7
02-12-2023	08:20	112.9	45.0
02-12-2023	08:25	97.6	52.9
02-12-2023	08:30	22.3	54.5
02-12-2023	08:35	28.7	56.5
02-12-2023	08:40	89.6	61.5
02-12-2023	08:45	66.2	64.3
02-12-2023	08:50	70.7	64.1
02-12-2023	08:55	18.9	62.1
02-12-2023	09:00	9.2	52.7
02-12-2023	09:05	6.8	50.1
02-12-2023	09:10	5.9	45.0
02-12-2023	09:15	4.6	44.4
02-12-2023	09:20	4.2	35.4
02-12-2023	09:25	3.9	27.6
Hidden cells with no values exceeding limit.			
02-12-2023	20:25	1.0	0.8
02-12-2023	20:30	1.0	0.8
02-12-2023	20:35	0.9	0.8
02-12-2023	20:40	1.4	0.9
02-12-2023	20:45	42.3	4.3
02-12-2023	20:50	53.6	8.7
02-12-2023	20:55	53.5	13.1
02-12-2023	21:00	45.6	16.8
02-12-2023	21:05	14.6	18.0
02-12-2023	21:10	15.7	19.2
02-12-2023	21:15	43.7	22.8
02-12-2023	21:20	67.9	28.4
02-12-2023	21:25	118.9	38.3
02-12-2023	21:30	111.0	47.4
02-12-2023	21:35	56.0	52.0
02-12-2023	21:40	39.3	55.2
02-12-2023	21:45	17.4	53.1
02-12-2023	21:50	10.7	49.5
02-12-2023	21:55	25.0	47.1
02-12-2023	22:00	18.7	44.9
02-12-2023	22:05	28.2	46.0
02-12-2023	22:10	13.3	45.8
02-12-2023	22:15	6.9	42.8
02-12-2023	22:20	4.9	37.5
02-12-2023	22:25	4.0	27.9
02-12-2023	22:30	3.6	19.0
02-12-2023	22:35	3.3	14.6
Hidden cells with no values exceeding limit.			
02-12-2023	23:00	2.5	6.9
02-12-2023	23:05	2.1	4.8
02-12-2023	23:10	2.0	3.8
02-12-2023	23:15	2.2	3.4
02-12-2023	23:20	24.3	5.0
02-12-2023	23:25	32.7	7.4

02-12-2023	23:30	69.7	13.0
02-12-2023	23:35	31.0	15.3
02-12-2023	23:40	48.8	19.1
02-12-2023	23:45	68.2	24.6
02-12-2023	23:50	47.3	28.1
02-12-2023	23:55	14.4	28.8
02-13-2023	00:00	101.6	37.0
02-13-2023	00:05	95.7	44.8
02-13-2023	00:10	56.3	49.3
02-13-2023	00:15	24.8	51.2
02-13-2023	00:20	10.1	50.0
02-13-2023	00:25	7.0	47.9
02-13-2023	00:30	5.2	42.5
02-13-2023	00:35	4.2	40.3
02-13-2023	00:40	3.7	36.5
02-13-2023	00:45	3.1	31.1
02-13-2023	00:50	2.8	27.4
02-13-2023	00:55	21.0	28.0
02-13-2023	01:00	28.1	21.8
02-13-2023	01:05	23.6	15.8
02-13-2023	01:10	32.5	13.8
Hidden cells with no values exceeding limit.			
02-13-2023	03:00	2.5	10.6
02-13-2023	03:05	2.4	9.9
02-13-2023	03:10	11.9	10.0
02-13-2023	03:15	57.8	12.6
02-13-2023	03:20	40.0	14.4
02-13-2023	03:25	29.4	16.2
02-13-2023	03:30	7.9	16.4
02-13-2023	03:35	51.0	20.1
02-13-2023	03:40	61.8	23.7
02-13-2023	03:45	57.4	27.4
02-13-2023	03:50	51.3	31.4
02-13-2023	03:55	46.6	35.0
02-13-2023	04:00	62.2	40.0
02-13-2023	04:05	92.9	47.5
02-13-2023	04:10	73.9	52.7
02-13-2023	04:15	18.8	49.4
02-13-2023	04:20	13.2	47.2
02-13-2023	04:25	11.6	45.7
02-13-2023	04:30	17.3	46.5
02-13-2023	04:35	90.0	49.8
02-13-2023	04:40	61.1	49.7
02-13-2023	04:45	27.6	47.2
02-13-2023	04:50	48.6	47.0
02-13-2023	04:55	15.9	44.4
02-13-2023	05:00	14.0	40.4
02-13-2023	05:05	83.6	39.6
02-13-2023	05:10	54.3	38.0
02-13-2023	05:15	24.5	38.5
02-13-2023	05:20	43.1	41.0
02-13-2023	05:25	39.1	43.3
02-13-2023	05:30	41.5	45.3
02-13-2023	05:35	43.8	41.4
02-13-2023	05:40	13.2	37.4
02-13-2023	05:45	32.2	37.8
02-13-2023	05:50	25.3	35.9
02-13-2023	05:55	66.2	40.1
02-13-2023	06:00	33.6	41.7
02-13-2023	06:05	44.5	38.5
02-13-2023	06:10	12.2	34.9
02-13-2023	06:15	20.2	34.6
02-13-2023	06:20	28.7	33.4
02-13-2023	06:25	8.6	30.8
02-13-2023	06:30	62.4	32.6
02-13-2023	06:35	160.9	42.3
02-13-2023	06:40	128.1	51.9
02-13-2023	06:45	107.2	58.2
02-13-2023	06:50	22.9	58.0
02-13-2023	06:55	14.5	53.6
02-13-2023	07:00	10.3	51.7
02-13-2023	07:05	7.8	48.6
02-13-2023	07:10	6.8	48.2

02-13-2023	07:15	5.5	47.0
02-13-2023	07:20	14.6	45.8
02-13-2023	07:25	114.7	54.6
02-13-2023	07:30	148.7	61.8
02-13-2023	07:35	128.4	59.1
02-13-2023	07:40	128.1	59.1
02-13-2023	07:45	218.1	68.4
02-13-2023	07:50	38.3	69.6
02-13-2023	07:55	215.3	86.4
02-13-2023	08:00	211.1	103.1
02-13-2023	08:05	120.5	112.5
02-13-2023	08:10	101.6	120.4
02-13-2023	08:15	34.4	122.8
02-13-2023	08:20	21.7	123.4
02-13-2023	08:25	27.6	116.1
02-13-2023	08:30	67.0	109.3
02-13-2023	08:35	23.6	100.6
02-13-2023	08:40	96.4	98.0
02-13-2023	08:45	85.5	86.9
02-13-2023	08:50	61.4	88.8
02-13-2023	08:55	66.1	76.4
02-13-2023	09:00	28.3	61.2
02-13-2023	09:05	42.5	54.7
02-13-2023	09:10	23.8	48.2
02-13-2023	09:15	15.3	46.6
02-13-2023	09:20	14.4	46.0
02-13-2023	09:25	16.7	45.1
02-13-2023	09:30	18.4	41.0
02-13-2023	09:35	12.5	40.1
02-13-2023	09:40	10.1	32.9
02-13-2023	09:45	12.2	26.8
02-13-2023	09:50	14.5	22.9
02-13-2023	09:55	10.3	18.3
02-13-2023	10:00	7.4	16.5
02-13-2023	10:05	6.5	13.5
02-13-2023	10:10	6.1	12.0
02-13-2023	10:15	5.3	11.2
02-13-2023	10:20	5.5	10.5
02-13-2023	10:25	5.8	9.6
02-13-2023	10:30	5.8	8.5
02-13-2023	10:35	5.3	7.9
02-13-2023	10:40	4.9	7.5
Hidden cells with no values exceeding limit.			
02-14-2023	05:45	0.5	1.4
02-14-2023	05:50	0.3	1.4
02-14-2023	05:55	25.6	3.5
02-14-2023	06:00	158.3	16.5
02-14-2023	06:05	44.1	20.1
02-14-2023	06:10	9.1	20.8
02-14-2023	06:15	12.7	21.6
02-14-2023	06:20	118.8	31.3
02-14-2023	06:25	12.4	32.1
02-14-2023	06:30	7.5	32.5
02-14-2023	06:35	5.0	32.9
02-14-2023	06:40	22.7	34.8
02-14-2023	06:45	8.1	35.4
02-14-2023	06:50	141.0	47.1
02-14-2023	06:55	21.4	46.8
02-14-2023	07:00	22.4	35.4
02-14-2023	07:05	9.8	32.6
02-14-2023	07:10	8.2	32.5
02-14-2023	07:15	29.3	33.9
02-14-2023	07:20	5.9	24.5
02-14-2023	07:25	4.5	23.8
02-14-2023	07:30	4.3	23.5
02-14-2023	07:35	3.5	23.4
02-14-2023	07:40	3.1	21.8
02-14-2023	07:45	2.7	21.3
02-14-2023	07:50	2.7	9.8
02-14-2023	07:55	2.8	8.3
Hidden cells with no values exceeding limit.			
02-18-2023	20:20	0.0	0.0
02-18-2023	20:25	0.0	0.0

02-18-2023	20:30	0.0	0.0
02-18-2023	20:35	0.0	0.0
02-18-2023	20:40	0.0	0.0
02-18-2023	20:45	0.0	0.0
02-18-2023	20:50	0.0	0.0
02-18-2023	20:55	6.8	0.6
02-18-2023	21:00	0.8	0.6
02-18-2023	21:05	12.2	1.7
02-18-2023	21:10	149.1	14.1
02-18-2023	21:15	95.0	22.0
02-18-2023	21:20	72.5	28.0
02-18-2023	21:25	149.1	40.5
02-18-2023	21:30	31.6	43.1
02-18-2023	21:35	23.5	45.0
02-18-2023	21:40	10.7	45.9
02-18-2023	21:45	7.3	46.6
02-18-2023	21:50	7.7	47.2
02-18-2023	21:55	4.4	47.0
02-18-2023	22:00	4.9	47.3
02-18-2023	22:05	4.0	46.6
02-18-2023	22:10	39.5	37.5
02-18-2023	22:15	114.2	39.1
02-18-2023	22:20	158.7	46.3
02-18-2023	22:25	27.2	36.1
02-18-2023	22:30	88.8	40.9
02-18-2023	22:35	159.1	52.2
02-18-2023	22:40	119.3	61.3
02-18-2023	22:45	61.6	65.8
02-18-2023	22:50	15.4	66.4
02-18-2023	22:55	10.2	66.9
02-18-2023	23:00	6.9	67.1
02-18-2023	23:05	5.0	67.2
02-18-2023	23:10	3.6	64.2
02-18-2023	23:15	86.6	61.9
02-18-2023	23:20	64.4	54.0
02-18-2023	23:25	16.2	53.1
02-18-2023	23:30	7.0	46.3
02-18-2023	23:35	5.0	33.4
02-18-2023	23:40	4.1	23.8
02-18-2023	23:45	3.4	19.0
02-18-2023	23:50	2.8	17.9
02-18-2023	23:55	2.4	17.3
02-19-2023	00:00	2.1	16.9
02-19-2023	00:05	1.9	16.6
02-19-2023	00:10	1.8	16.5
02-19-2023	00:15	1.6	9.4
02-19-2023	00:20	1.6	4.2
02-19-2023	00:25	1.7	2.9
02-19-2023	00:30	1.7	2.5
02-19-2023	00:35	1.7	2.2
Hidden cells with no values exceeding limit.			
02-19-2023	02:05		0.8
02-19-2023	02:10		0.8
02-19-2023	02:15	83.2	14.5
02-19-2023	02:20	10.5	16.1
02-19-2023	02:25	37.6	22.2
02-19-2023	02:30	6.0	23.1
02-19-2023	02:35	4.0	23.7
02-19-2023	02:40	2.7	24.0
02-19-2023	02:45	2.2	20.9
02-19-2023	02:50	2.8	18.6
02-19-2023	02:55	82.1	25.7
02-19-2023	03:00	75.4	30.7
02-19-2023	03:05	89.4	36.0
02-19-2023	03:10	139.7	44.6
02-19-2023	03:15	39.1	41.0
02-19-2023	03:20	17.3	41.5
02-19-2023	03:25	9.7	39.2
02-19-2023	03:30	6.5	39.2
02-19-2023	03:35	76.9	45.3
02-19-2023	03:40	23.0	47.0
02-19-2023	03:45	25.4	48.9
02-19-2023	03:50	46.2	52.6

02-19-2023	03:55	16.2	47.1
02-19-2023	04:00	8.1	41.5
02-19-2023	04:05	6.3	34.5
02-19-2023	04:10	5.4	23.3
02-19-2023	04:15	4.9	20.5
Hidden cells with no values exceeding limit.			
02-20-2023	22:55	7.1	13.6
02-20-2023	23:00	3.1	11.9
02-20-2023	23:05	2.2	9.9
02-20-2023	23:10	2.4	8.3
02-20-2023	23:15	1.9	8.1
02-20-2023	23:20	18.8	9.5
02-20-2023	23:25	101.3	17.8
02-20-2023	23:30	69.6	23.5
02-20-2023	23:35	81.0	29.7
02-20-2023	23:40	91.2	37.2
02-20-2023	23:45	19.5	37.4
02-20-2023	23:50	8.6	33.9
02-20-2023	23:55	6.7	33.9
02-21-2023	00:00	94.6	41.5
02-21-2023	00:05	45.1	45.1
02-21-2023	00:10	9.8	45.7
02-21-2023	00:15	5.8	46.0
02-21-2023	00:20	4.2	44.8
02-21-2023	00:25	6.7	36.9
02-21-2023	00:30	6.5	31.6
02-21-2023	00:35	3.9	25.2
02-21-2023	00:40	4.2	18.0
02-21-2023	00:45	7.6	17.0
02-21-2023	00:50	5.0	16.7
02-21-2023	00:55	2.6	16.3
02-21-2023	01:00	4.5	8.8
02-21-2023	01:05	2.5	5.3
Hidden cells with no values exceeding limit.			
02-24-2023	20:10	0.0	0.9
02-24-2023	20:15	0.0	0.9
02-24-2023	20:20	0.0	0.9
02-24-2023	20:25	0.0	0.9
02-24-2023	20:30	103.1	9.5
02-24-2023	20:35	44.8	13.2
02-24-2023	20:40	67.7	18.9
02-24-2023	20:45	91.0	26.4
02-24-2023	20:50	111.9	35.8
02-24-2023	20:55	22.5	37.4
02-24-2023	21:00	17.4	38.3
02-24-2023	21:05	15.1	39.5
02-24-2023	21:10	6.3	40.0
02-24-2023	21:15	74.0	46.2
02-24-2023	21:20	90.7	53.7
02-24-2023	21:25	102.6	62.3
02-24-2023	21:30	65.0	59.1
02-24-2023	21:35	75.2	61.6
02-24-2023	21:40	39.4	59.3
02-24-2023	21:45	59.8	56.7
02-24-2023	21:50	29.5	49.8
02-24-2023	21:55	9.0	48.7
02-24-2023	22:00	5.3	47.7
02-24-2023	22:05	16.0	47.7
02-24-2023	22:10	24.0	49.2
02-24-2023	22:15	33.2	45.8
02-24-2023	22:20	24.4	40.3
02-24-2023	22:25	6.3	32.3
02-24-2023	22:30	16.3	28.2
02-24-2023	22:35	5.1	22.4
02-24-2023	22:40	2.8	19.3
02-24-2023	22:45	1.8	14.5
02-24-2023	22:50	26.6	14.2
02-24-2023	22:55	11.0	14.4
02-24-2023	23:00	6.6	14.5
02-24-2023	23:05	14.4	14.4
02-24-2023	23:10	33.6	15.2
02-24-2023	23:15	41.7	15.9
02-24-2023	23:20	30.1	16.4

Hidden cells with no values exceeding limit.			
02-27-2023	01:50		9.4
02-27-2023	01:55		10.4
02-27-2023	02:00		11.7
02-27-2023	02:05		11.0
02-27-2023	02:10		5.3
02-27-2023	02:15	16.5	4.9
02-27-2023	02:20	7.4	4.9
02-27-2023	02:25	12.2	6.6
02-27-2023	02:30	44.7	13.9
02-27-2023	02:35	8.6	15.2
02-27-2023	02:40	76.1	27.6
02-27-2023	02:45	29.3	27.8
02-27-2023	02:50	125.5	40.0
02-27-2023	02:55	119.0	48.8
02-27-2023	03:00	13.5	45.3
02-27-2023	03:05	8.3	41.9
02-27-2023	03:10	5.5	38.9
02-27-2023	03:15	3.2	37.8
02-27-2023	03:20	2.6	37.4
02-27-2023	03:25	4.9	36.8
02-27-2023	03:30	3.4	33.3
02-27-2023	03:35	2.2	32.8
02-27-2023	03:40	3.6	26.7
02-27-2023	03:45	3.5	24.6
02-27-2023	03:50	2.5	14.3
02-27-2023	03:55	2.7	4.7
02-27-2023	04:00	2.9	3.8

Notes:

	- Date, Time & Exceedence Value Reported
	- Not used to calculate the number of reportable exceedences
	- Range of 5-minute measurements that contribute to the Exceedance Value Reported
Max	- Maximum of the Range
Min	- Minimum of the Range

Ambient Air Quality Criteria (AAQC) for SO2 = 40 ppb for 1-hour running average

Total Number of Reportable Exceedances: **18**

SO2 Exceedance Report **Table E6**

Durham York Energy Centre
Courtice, Ontario
Courtice Station
Baseline Corrected Data

Date	Time	SO_2 5-min Avg.	SO_2 1-hour Running Avg.
(mm/dd/yyyy)	(EST)	(ppb)	(ppb)
03-03-2023	02:10		24.2
03-03-2023	02:15	6.8	24.2
03-03-2023	02:20	3.8	18.8
03-03-2023	02:25	31.0	19.7
03-03-2023	02:30	75.8	28.8
03-03-2023	02:35	46.1	32.7
03-03-2023	02:40	12.9	29.4
03-03-2023	02:45	6.2	26.1
03-03-2023	02:50	7.4	23.7
03-03-2023	02:55	82.6	30.3
03-03-2023	03:00	64.9	33.7
03-03-2023	03:05	45.1	34.8
03-03-2023	03:10	81.5	38.7
03-03-2023	03:15	24.0	40.1
03-03-2023	03:20	11.9	40.8
03-03-2023	03:25	8.3	38.9
03-03-2023	03:30	6.0	33.1
03-03-2023	03:35	3.9	29.6
03-03-2023	03:40	3.1	28.7
03-03-2023	03:45	9.7	29.0
03-03-2023	03:50	72.5	34.5
03-03-2023	03:55	23.2	29.5
03-03-2023	04:00	12.7	25.2
03-03-2023	04:05	7.2	22.0
03-03-2023	04:10	4.3	15.6
03-03-2023	04:15	3.3	13.9
03-03-2023	04:20	2.5	13.1
Hidden cells with no values exceeding limit.			
03-04-2023	18:55	0.9	14.2
03-04-2023	19:00	0.7	14.2
03-04-2023	19:05	0.5	14.3
03-04-2023	19:10	0.3	14.3
03-04-2023	19:15	0.2	14.3
03-04-2023	19:20	0.2	14.3
03-04-2023	19:25	64.3	9.8
03-04-2023	19:30	71.0	12.3
03-04-2023	19:35	8.8	12.7
03-04-2023	19:40	8.2	13.2
03-04-2023	19:45	2.9	13.3
03-04-2023	19:50	1.9	13.3
03-04-2023	19:55	166.9	27.2
03-04-2023	20:00	412.0	61.4
03-04-2023	20:05	96.6	69.4
03-04-2023	20:10	72.6	75.5
03-04-2023	20:15	36.8	78.5
03-04-2023	20:20	69.6	84.3
03-04-2023	20:25	65.0	84.3
03-04-2023	20:30	13.2	79.5
03-04-2023	20:35	8.1	79.5
03-04-2023	20:40	6.4	79.3
03-04-2023	20:45	45.3	82.9
03-04-2023	20:50	16.5	84.1
03-04-2023	20:55	22.2	72.0
03-04-2023	21:00	7.9	38.3
03-04-2023	21:05	7.3	30.9
Hidden cells with no values exceeding limit.			
03-05-2023	01:35	1.7	4.7
03-05-2023	01:40	52.6	8.8
03-05-2023	01:45		9.3
03-05-2023	01:50		9.9
03-05-2023	01:55		10.4
03-05-2023	02:00		11.3

03-05-2023	02:05		11.9
03-05-2023	02:10		10.8
03-05-2023	02:15	8.2	11.5
03-05-2023	02:20	5.6	11.9
03-05-2023	02:25	4.9	12.4
03-05-2023	02:30	7.7	13.4
03-05-2023	02:35	143.5	37.1
03-05-2023	02:40	105.7	45.9
03-05-2023	02:45	26.3	43.1
03-05-2023	02:50	19.3	40.1
03-05-2023	02:55	8.6	36.6
03-05-2023	03:00	11.4	34.1
03-05-2023	03:05	10.5	32.0
03-05-2023	03:10	4.8	29.7
03-05-2023	03:15	3.1	29.3
03-05-2023	03:20	51.6	33.1
03-05-2023	03:25	44.4	36.4
03-05-2023	03:30	15.2	37.0
03-05-2023	03:35	34.4	28.0
03-05-2023	03:40	28.9	21.6
03-05-2023	03:45	9.4	20.1
Hidden cells with no values exceeding limit.			
03-05-2023	04:20	5.7	21.8
03-05-2023	04:25	18.3	19.7
03-05-2023	04:30	14.9	19.7
03-05-2023	04:35	5.5	17.2
03-05-2023	04:40	5.0	15.2
03-05-2023	04:45	5.9	15.0
03-05-2023	04:50	2.9	14.7
03-05-2023	04:55	2.2	14.4
03-05-2023	05:00	75.4	20.3
03-05-2023	05:05	34.8	23.0
03-05-2023	05:10	128.3	25.7
03-05-2023	05:15	133.6	36.0
03-05-2023	05:20	53.7	40.0
03-05-2023	05:25	92.0	46.2
03-05-2023	05:30	18.6	46.5
03-05-2023	05:35	10.6	46.9
03-05-2023	05:40	7.2	47.1
03-05-2023	05:45	5.5	47.1
03-05-2023	05:50	74.1	53.0
03-05-2023	05:55	57.1	57.6
03-05-2023	06:00	73.5	57.4
03-05-2023	06:05	19.6	56.2
03-05-2023	06:10	74.7	51.7
03-05-2023	06:15	59.5	45.5
03-05-2023	06:20	39.6	44.3
03-05-2023	06:25	17.2	38.1
03-05-2023	06:30	7.8	37.2
Hidden cells with no values exceeding limit.			
03-09-2023	19:30	2.1	13.0
03-09-2023	19:35	1.0	12.4
03-09-2023	19:40	6.6	12.5
03-09-2023	19:45	107.3	21.4
03-09-2023	19:50	83.0	28.2
03-09-2023	19:55	31.3	23.8
03-09-2023	20:00	34.5	23.0
03-09-2023	20:05	12.3	23.7
03-09-2023	20:10	14.1	24.7
03-09-2023	20:15	13.7	25.7
03-09-2023	20:20	6.6	26.2
03-09-2023	20:25	4.4	26.4
03-09-2023	20:30	6.7	26.8
03-09-2023	20:35	190.8	42.6
03-09-2023	20:40	136.0	53.4
03-09-2023	20:45	80.6	51.2
03-09-2023	20:50	21.5	46.0
03-09-2023	20:55	66.9	49.0
03-09-2023	21:00	96.0	54.1
03-09-2023	21:05	51.7	57.4
03-09-2023	21:10	11.4	57.2
03-09-2023	21:15	6.9	56.6
03-09-2023	21:20	62.2	61.3

03-09-2023	21:25	55.1	65.5
03-09-2023	21:30	36.9	68.0
03-09-2023	21:35	19.2	53.7
03-09-2023	21:40	14.1	43.5
03-09-2023	21:45	9.3	37.6
03-09-2023	21:50	6.7	36.4
03-09-2023	21:55	4.5	31.2
03-09-2023	22:00	3.1	23.4
03-09-2023	22:05	2.6	19.3
03-09-2023	22:10	2.1	18.6
03-09-2023	22:15	39.9	21.3
03-09-2023	22:20	106.6	25.0
03-09-2023	22:25	41.5	23.9
03-09-2023	22:30	9.7	21.6
03-09-2023	22:35	5.4	20.5
03-09-2023	22:40	9.4	20.1
03-27-2023	00:25	0.7	18.1
03-27-2023	00:30	0.4	18.1
03-27-2023	00:35	0.3	13.8
03-27-2023	00:40	50.9	13.9
03-27-2023	00:45	96.8	21.8
03-27-2023	00:50	68.5	21.9
03-27-2023	00:55	54.3	24.0
03-27-2023	01:00	50.9	28.0
03-27-2023	01:05	7.2	28.4
03-27-2023	01:10	4.8	28.3
03-27-2023	01:15	3.6	28.3
03-27-2023	01:20	2.3	28.4
03-27-2023	01:25	68.1	34.0
03-27-2023	01:30	100.3	42.3
03-27-2023	01:35	19.2	43.9
03-27-2023	01:40	17.4	41.1
03-27-2023	01:45		36.0
03-27-2023	01:50		32.8
03-27-2023	01:55		30.4
03-27-2023	02:00		27.8
03-27-2023	02:05		30.8
03-27-2023	02:10		35.1
03-27-2023	02:15	2.4	34.9
03-27-2023	02:20	1.9	34.9
03-27-2023	02:25	1.6	23.8
03-27-2023	02:30	1.6	7.3
03-27-2023	02:35	1.4	4.4
Hidden cells with no values exceeding limit.			
03-29-2023	02:10		9.4
03-29-2023	02:15	1.8	6.5
03-29-2023	02:20	1.5	2.0
03-29-2023	02:25	1.3	1.7
03-29-2023	02:30	1.7	1.6
03-29-2023	02:35	11.8	3.3
03-29-2023	02:40	8.6	4.5
03-29-2023	02:45	15.3	6.0
03-29-2023	02:50	2.1	5.5
03-29-2023	02:55	1.3	5.0
03-29-2023	03:00	1.2	4.7
03-29-2023	03:05	172.5	19.9
03-29-2023	03:10	240.4	38.3
03-29-2023	03:15	61.3	43.3
03-29-2023	03:20	12.6	44.2
03-29-2023	03:25	16.0	45.4
03-29-2023	03:30	29.8	47.7
03-29-2023	03:35	17.8	48.2
03-29-2023	03:40	7.9	48.2
03-29-2023	03:45	4.7	47.3
03-29-2023	03:50	4.0	47.5
03-29-2023	03:55	41.3	50.8
03-29-2023	04:00	69.4	56.5
03-29-2023	04:05	13.5	43.2
03-29-2023	04:10	10.9	24.1
03-29-2023	04:15	40.8	22.4
03-29-2023	04:20	24.0	23.3

Notes:

D, T & V	- Date, Time & Exceedence Value Reported
Faded Values	- Not used to calculate the number of reportable exceedences
	- Range of 5-minute measurements that contribute to the Exceedance Value Reported
Max	- Maximum of the Range
Min	- Minimum of the Range

Ambient Air Quality Criteria (AAQC) for SO2 = 40 ppb for 1-hour running average

Total Number of Reportable Exceedances: **8**

APPENDIX F

600 Southgate Drive
Guelph ON Canada
N1G 4P6

Tel: +1.519.823.1311
Fax: +1.519.823.1316
E-mail: solutions@rwdi.com

MEMORANDUM

DATE:	2023-03-20	**RWDI Reference No.:** 2205149
TO:	Gioseph Anello	**EMAIL:** Gioseph.Anello@Durham.ca
CC:	Andrew Evans	**EMAIL:** Andrew.Evans@Durham.ca
CC:	Lyndsay Waller	**EMAIL:** Lyndsay.Waller@Durham.ca
FROM:	Maja Bokara	**EMAIL:** Maja.Bokara@rwdi.com
RE:	**Exceedance Report – Benzo(a)Pyrene February 5, 2023 Region of Durham, DYEC**	

On March 8, 2023, the results from ALS Environmental were received regarding the PAH results from the February 5, 2023, sampling event. On March 8, 2023, the results were entered and assessed. It was noted that there were two (2) Benzo(a)Pyrene (BaP) concentrations in excess of the 24-hour AAQC on the February 5 sampling date at the Courtice and Rundle Road Stations measured by the onsite PUF PS-1 sampler. Attached is a figure depicting the wind rose (indicating the wind speed and direction during the sampling day), and the location of the sampling stations relative to the DYEC.

The following summarizes the BaP concentrations and onsite conditions during the February 5 sampling date:

1. The guideline concentration for BaP is 0.05 ng/m^3. The measured concentration at the Courtice sampler was 0.077 ng/m^3 and the Rundle Road sampler was 0.083 ng/m^3.
2. During the sampling day the wind was predominantly from the SW to WSW, as recorded at the Courtice Meteorological Tower. One-hour average wind speeds at Courtice Meteorological Tower ranged from 4.80 km/h to 25.05 km/h.
3. During the sampling day the wind was predominantly from the WSW, as recorded at the Rundle Road Meteorological Tower. One-hour average wind speeds at Rundle Road Meteorological Tower ranged from 5.70 km/h to 22.39 km/h.
4. RWDI reviewed the available CEMS data over a 72-hour period which includes the day before and after the BaP exceedance date. The data showed no unusual readings, and all parameters were within the expected values as well as below the listed Limits. Based on the data, both boiler 1 and 2 were operating normally during the time reviewed.
5. A review of the current ESDM data shows that Benzo(a)Pyrene emissions from the DYEC for a 24-hour period are estimated to be less than 1% of the MECP limit.
6. At the time of the data review, MECP monitoring station data for BaP was not available.

7. The Courtice meteorological data suggests that the Courtice Station was primarily upwind of the DYEC during the sampling period. Given the wind conditions, it is likely that the measured BaP exceedance is attributable to sources other than the Energy Centre operations.
8. The Rundle Road meteorological data suggests that the Rundle Road Station was primarily crosswind of the DYEC during the sampling period. Given the wind conditions, it is likely that the measured BaP exceedance is attributable to sources other than the Energy Centre operations.

At the Courtice Station, the NO_2 hourly values were less than 10% of the criteria for the same period. The $PM_{2.5}$ 24-hour average value was 22.4 micrograms per cubic metre at the Courtice Station.

At the Rundle Road Station, the NO_2 hourly values were less than 13% of the criteria for the same period. The $PM_{2.5}$ 24-hour average value was 5.7 micrograms per cubic metre at the Rundle Road Station.

We have attached the data files for the samples in question to aid with the review.

Respectfully submitted by:

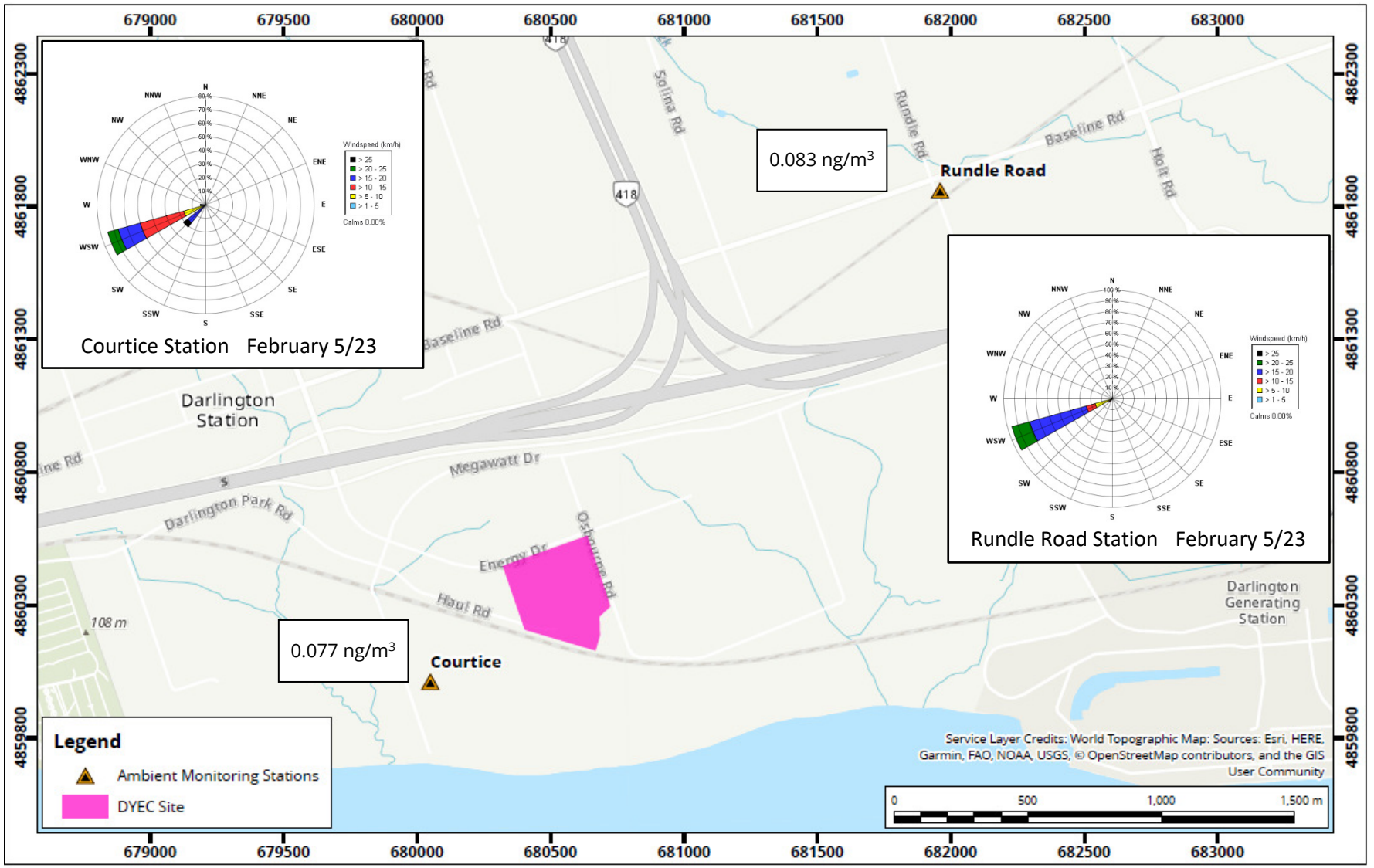
RWDI AIR Inc.

Maja Bokara, PGCert, EP
Project Manager

MB/vit

Attach.

FIGURE



DYEC Site and Ambient Monitoring Station Locations

Map Projection: NAD 1983 UTM Zone 17N

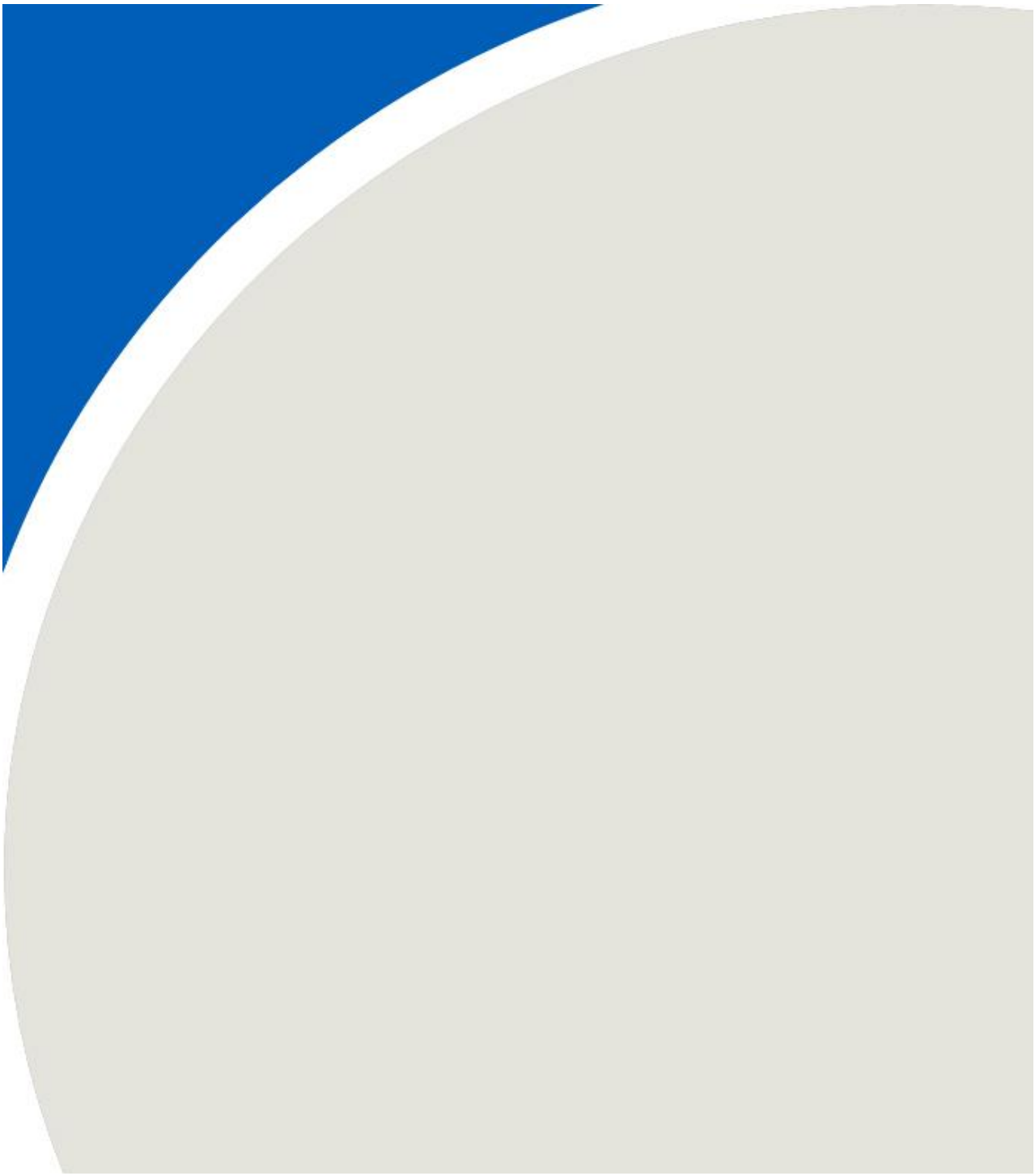
DYEC - Region of Durham, Ontario

True North

Project #: 2205149

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:20,000
Date Revised:	Mar 9, 2023

ATTACHMENT 1



1435 Norjohn Court, Unit 1, Burlington ON, L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

Certificate of Analysis

ALS Project Contact:	Claire Kocharakkal	**Client Name:**	RWDI Air Inc.
ALS Project ID:	23601	**Client Address:**	600 Southgate Drive
ALS WO#:	L2746701		Guelph, ON N1G 4P6
Date of Report	8-Mar-23		Canada
Date of Sample Receipt	9-Feb-23	**Client Contact:**	Khalid Hussein
		Client Project ID:	1803743 Phase 1000

COMMENTS: **PAH by CARB method 429 (LR option)- Isotope dilution**

Certified by:

Sabrina Jin
Technical Specialist

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	Method Blank		Reagent Blank		RUNDLE-PAH-FEB05		COURTICE-PAH-FEB05		Laboratory Control Sample
ALS Sample ID	WG3779771-1		WG3779771-4		L2746710-1		L2746710-2		WG3779771-2
Sample Size	1		1		1		1		1
Sample units	sample		sample		sample		sample		n/a
Moisture Content	n/a		n/a		n/a		n/a		n/a
Matrix	MEDIA		REAGENT		PUF		PUF		MEDIA
Sampling Date	n/a		n/a		5-Feb-23		5-Feb-23		n/a
Extraction Date	10-Feb-23		10-Feb-23		10-Feb-23		10-Feb-23		10-Feb-23
Target Analytes	**ng/sample**		**ng/sample**		**ng/sample**		**ng/sample**		**%**
Naphthalene	47.2		5.08	B	9240		7040		146.5
2-Methylnaphthalene	4.11		<1.0	U	2730		1430		97.0
1-Methylnaphthalene	2.79		<1.0	U	1530		878		98.0
Acenaphthylene	<1.0	U	<1.0	U	59.4		20.5		88.0
Acenaphthene	<1.0	U	<1.0	U	300		81.4		82.5
Fluorene	<1.0	U	<1.0	U	418		260		83.0
Phenanthrene	<1.0	U	<1.0	U	592		341		97.5
Anthracene	<1.0	U	<1.0	U	14.2		5.56		84.5
Fluoranthene	<1.0	U	<1.0	U	234		172		88.0
Pyrene	<1.0	U	<1.0	U	123		77.8		81.5
Benzo(a)Anthracene	<1.0	U	<1.0	U	17.6		15.4		94.5
Chrysene	<1.0	U	<1.0	U	64.4		55.4		93.0
Benzo(b)Fluoranthene	<1.0	U	<1.0	U	53.6	M	47.4	M	90.0
Benzo(k)Fluoranthene	<1.0	U	<1.0	U	44.7	M	39.9	M	97.0
Benzo(e)Pyrene	<1.0	U	<1.0	U	26.3		24.9		85.0
Benzo(a)Pyrene	<1.0	U	<1.0	U	26.4		24.1		93.0
Perylene	<1.0	U	n/a		4.16		3.92		90.0
Indeno(1,2,3-cd)Pyrene	<1.0	U	<1.0	U	32.2		28.2		83.5
Dibenzo(a,h)Anthracene	<1.0	U	<1.0	U	4.23	M	3.62		89.0
Benzo(g,h,i)Perylene	<1.0	U	<1.0	U	33.3		29.0		84.5
Additional Analytes									
Tetralin	12.8		<1.0	U	551	M	423	M	NS
Biphenyl	<1.0	U	<1.0	U	947		610		NS
o-Terphenyl	<1.0	U	<1.0	U	2.89		2.45		NS
Benzo(a)fluorene	<1.0	U	<1.0	U	18.9	M	16.0	M	NS
Benzo(b)fluorene	<1.0	U	<1.0	U	3.38		2.51		NS
Field Sampling Standards	**% Rec**		**% Rec**		**% Rec**		**% Rec**		**% Rec**
1-Methylnaphthalene-D10	NS		NS		71.8		82.0		NS
Fluorene D10	NS		NS		69.9		80.1		NS
Terphenyl D14(Surr.)	NS		NS		97.7		97.0		NS

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	Method Blank	Reagent Blank	RUNDLE-PAH-FEB05	COURTICE-PAH-FEB05	Laboratory Control Sample
ALS Sample ID	WG3779771-1	WG3779771-4	L2746710-1	L2746710-2	WG3779771-2
Extraction Standards	**% Rec**	**% Rec**	**% Rec**	**% Rec**	**% Rec**
Naphthalene D8	76.2	51.1	122.9	110.5	79.5
2-Methylnaphthalene-D10	78.5	56.5	118.8	58.9	79.6
Acenaphthylene D8	84.6	69.8	83.7	72.9	82.8
Phenanthrene D10	75.0	86.5	70.5	64.8	93.5
Anthracene-D10	74.5	74.7	80.4	68.3	92.7
Fluoranthene D10	94.4	90.7	103.1	94.5	100.8
Benz(a)Anthracene-D12	90.9	78.5	85.5	72.0	85.4
Chrysene D12	80.7	67.8	76.4	68.2	83.3
Benzo(b)Fluoranthene-D12	106.4	89.6	106.3	92.9	97.1
Benzo(k)Fluoranthene-D12	93.4	75.6	96.2	86.5	93.8
Benzo(a)Pyrene D12	96.0	61.8	85.8	70.9	99.3
Perylene D12	94.4	NR	79.8	48.4	89.3
Indeno(1,2,3,cd)Pyrene-D12	92.4	99.9	91.5	92.0	94.1
Dibenz(a,h)Anthracene-D14	76.0	78.4	78.8	81.0	81.0
Benzo(g,h,i)Perylene D12	85.4	92.0	85.4	89.7	87.6

U	Indicates that this compound was not detected above the LOD.
M	Indicates that a peak has been manually integrated.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
n/a	Indicates that this compound was not applicable
NS	Indicates that this compound was not spiked.
NR	Indicates that this compound was not recovered

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Method Blank**	Sampling Date	n/a
ALS Sample ID	WG3779771-1	Extraction Date	10-Feb-23
Analysis Method	PAH by CARB 429		
Analysis Type	blank		
Sample Matrix	MEDIA		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	5	Workgroup	WG3779771

Approved:
Nick Schrobilgen
--e-signature--
08-Mar-2023

Run Information	**Run 1**
Filename	23030607.D
Run Date	3/6/2023 14:45
Final Volume	0.1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US2543815H

Target Analytes	**Ret. Time**	**Concentration ng/sample**	**Flags**
Naphthalene	2.71	47.2	
2-Methylnaphthalene	3.27	4.11	
1-Methylnaphthalene	3.39	2.79	
Acenaphthylene	4.38	<1.0	U
Acenaphthene	4.67	<1.0	U
Fluorene	5.56	<1.0	U
Phenanthrene	7.73	<1.0	U
Anthracene	7.85	<1.0	U
Fluoranthene	11.10	<1.0	U
Pyrene	11.74	<1.0	U
Benzo(a)Anthracene	15.66	<1.0	U
Chrysene	15.76	<1.0	U
Benzo(b)Fluoranthene	18.98	<1.0	U
Benzo(k)Fluoranthene	19.07	<1.0	U
Benzo(e)Pyrene	19.68	<1.0	U
Benzo(a)Pyrene	NotFnd	<1.0	U
Perylene	20.08	<1.0	U
Indeno(1,2,3-cd)Pyrene	23.35	<1.0	U
Dibenzo(a,h)Anthracene	NotFnd	<1.0	U
Benzo(g,h,i)Perylene	NotFnd	<1.0	U
Additional Analytes			
Tetralin	2.59	12.8	
Biphenyl	3.79	<1.0	U
o-Terphenyl	8.99	<1.0	U
Benzo(a)fluorene	12.87	<1.0	U
Benzo(b)fluorene	13.10	<1.0	U

Field Sampling Standards	**ng spiked**	**% Rec**
1-Methylnaphthalene-D10	0	NS
Fluorene D10	0	NS
Terphenyl D14(Surr.)	0	NS

Extraction Standards			**% Rec**	**Limits**
Naphthalene D8	100	2.70	76.2	50-150
2-Methylnaphthalene-D10	100	3.24	78.5	50-150
Acenaphthylene D8	100	4.36	84.6	50-150
Phenanthrene D10	100	7.68	75.0	50-150
Anthracene-D10	100	7.80	74.5	50-150
Fluoranthene D10	100	11.05	94.4	50-150
Benz(a)Anthracene-D12	100	15.56	90.9	50-150
Chrysene D12	100	15.67	80.7	50-150
Benzo(b)Fluoranthene-D12	100	18.89	106.4	50-150
Benzo(k)Fluoranthene-D12	100	18.98	93.4	50-150
Benzo(a)Pyrene D12	100	19.77	96.0	50-150
Perylene D12	100	20.00	94.4	50-150
Indeno(1,2,3,cd)Pyrene-D12	100	23.27	92.4	50-150
Dibenz(a,h)Anthracene-D14	100	23.44	76.0	50-150
Benzo(g,h,i)Perylene D12	100	24.20	85.4	50-150

M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the MDL.
NS	Indicates that this compound was not spiked.

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Reagent Blank**	Sampling Date	n/a
ALS Sample ID	WG3779771-4	Extraction Date	10-Feb-23
Analysis Method	PAH by CARB 429		
Analysis Type	blank		
Sample Matrix	REAGENT		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	5	Workgroup	WG3779771

Approved:
Nick Schrobilgen
--e-signature--
08-Mar-2023

Run Information	**Run 1**
Filename	23030608.D
Run Date	3/6/2023 15:24
Final Volume	0.1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US2543815H

Target Analytes	**Ret. Time**	**Concentration ng/sample**	**Flags**
Naphthalene	2.71	5.08	B
2-Methylnaphthalene	3.27	<1.0	U
1-Methylnaphthalene	3.39	<1.0	U
Acenaphthylene	4.38	<1.0	U
Acenaphthene	4.67	<1.0	U
Fluorene	5.57	<1.0	U
Phenanthrene	7.73	<1.0	U
Anthracene	7.84	<1.0	U
Fluoranthene	11.09	<1.0	U
Pyrene	11.73	<1.0	U
Benzo(a)Anthracene	15.67	<1.0	U
Chrysene	15.76	<1.0	U
Benzo(b)Fluoranthene	18.96	<1.0	U
Benzo(k)Fluoranthene	NotFnd	<1.0	U
Benzo(e)Pyrene	NotFnd	<1.0	U
Benzo(a)Pyrene	NotFnd	<1.0	U
Perylene		n/a	
Indeno(1,2,3-cd)Pyrene	23.40	<1.0	U
Dibenzo(a,h)Anthracene	23.58	<1.0	U
Benzo(g,h,i)Perylene	24.26	<1.0	U
Additional Analytes			
Tetralin	2.59	<1.0	U
Biphenyl	3.79	<1.0	U
o-Terphenyl	9.00	<1.0	U
Benzo(a)fluorene	12.90	<1.0	U
Benzo(b)fluorene	13.14	<1.0	U

Field Sampling Standards	**ng spiked**	**% Rec**
1-Methylnaphthalene-D10	0	NS
Fluorene D10	0	NS
Terphenyl D14(Surr.)	0	NS

Extraction Standards			**% Rec**	**Limits**
Naphthalene D8	100	2.70	51.1	50-150
2-Methylnaphthalene-D10	100	3.25	56.5	50-150
Acenaphthylene D8	100	4.36	69.8	50-150
Phenanthrene D10	100	7.68	86.5	50-150
Anthracene-D10	100	7.80	74.7	50-150
Fluoranthene D10	100	11.05	90.7	50-150
Benz(a)Anthracene-D12	100	15.57	78.5	50-150
Chrysene D12	100	15.68	67.8	50-150
Benzo(b)Fluoranthene-D12	100	18.89	89.6	50-150
Benzo(k)Fluoranthene-D12	100	18.98	75.6	50-150
Benzo(a)Pyrene D12	100	19.77	61.8	50-150
Perylene D12	100		NR	50-150
Indeno(1,2,3,cd)Pyrene-D12	100	23.28	99.9	50-150
Dibenz(a,h)Anthracene-D14	100	23.44	78.4	50-150
Benzo(g,h,i)Perylene D12	100	24.20	92.0	50-150

M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the MDL.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
n/a	Indicates that this compound was not applicable
NS	Indicates that this compound was not spiked.
NR	Indicates that this compound was not recovered

ALS Life Sciences

Sample Analysis Report

Sample Name	**RUNDLE-PAH-FEB05**	Sampling Date	05-Feb-23 00:00
ALS Sample ID	L2746710-1	Extraction Date	10-Feb-23
Analysis Method	PAH by CARB 429		
Analysis Type	sample		
Sample Matrix	PUF		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	5	Workgroup	WG3779771

Approved:
Nick Schrobilgen
--e-signature--
08-Mar-2023

Run Information	**Run 1**	**Run 2**
Filename	23030609.D	23030642.D
Run Date	3/6/2023 16:02	3/7/2023 13:29
Final Volume	0.1 mL	0.1 mL
Dilution Factor	1	10
Analysis Units	ng/sample	ng/sample
Instrument	MSD-5	MSD-5
Column	HP-5MS US2543815H	HP-5MS US2543815H

Target Analytes	**Ret. Time**	**Concentration ng/sample**	**Flags**	**Ret. Time.**	**Concentration ng/sample**	**Flags**
Naphthalene				2.72	9240	
2-Methylnaphthalene				3.28	2730	
1-Methylnaphthalene	3.39	1530				
Acenaphthylene	4.38	59.4				
Acenaphthene	4.67	300				
Fluorene	5.57	418				
Phenanthrene	7.73	592				
Anthracene	7.85	14.2				
Fluoranthene	11.10	234				
Pyrene	11.74	123				
Benzo(a)Anthracene	15.63	17.6				
Chrysene	15.74	64.4				
Benzo(b)Fluoranthene	18.96	53.6	M			
Benzo(k)Fluoranthene	19.02	44.7	M			
Benzo(e)Pyrene	19.70	26.3				
Benzo(a)Pyrene	19.83	26.4				
Perylene	20.06	4.16				
Indeno(1,2,3-cd)Pyrene	23.36	32.2				
Dibenzo(a,h)Anthracene	23.55	4.23	M			
Benzo(g,h,i)Perylene	24.30	33.3				
Additional Analytes						
Tetralin	2.59	551	M			
Biphenyl	3.79	947				
o-Terphenyl	9.00	2.89				
Benzo(a)fluorene	12.91	18.9	M			
Benzo(b)fluorene	13.11	3.38				

Field Sampling Standards	**ng spiked**		**% Rec**
1-Methylnaphthalene-D10	200	3.35	71.8
Fluorene D10	200	5.52	69.9
Terphenyl D14(Surr.)	200	12.55	97.7

Extraction Standards			**% Rec**	**Limits**		**% Rec**
Naphthalene D8	100			50-150	2.71	122.9
2-Methylnaphthalene-D10	100			50-150	3.25	118.8
Acenaphthylene D8	100	4.36	83.7	50-150		
Phenanthrene D10	100	7.68	70.5	50-150		
Anthracene-D10	100	7.80	80.4	50-150		
Fluoranthene D10	100	11.05	103.1	50-150		
Benz(a)Anthracene-D12	100	15.56	85.5	50-150		
Chrysene D12	100	15.67	76.4	50-150		
Benzo(b)Fluoranthene-D12	100	18.89	106.3	50-150		
Benzo(k)Fluoranthene-D12	100	18.98	96.2	50-150		
Benzo(a)Pyrene D12	100	19.77	85.8	50-150		
Perylene D12	100	20.00	79.8	50-150		
Indeno(1,2,3,cd)Pyrene-D12	100	23.28	91.5	50-150		
Dibenz(a,h)Anthracene-D14	100	23.44	78.8	50-150		
Benzo(g,h,i)Perylene D12	100	24.20	85.4	50-150		

M Indicates that a peak has been manually integrated.

ALS Life Sciences

Sample Analysis Report

Sample Name	**COURTICE-PAH-FEB05**	Sampling Date	05-Feb-23 00:00
ALS Sample ID	L2746710-2	Extraction Date	10-Feb-23
Analysis Method	PAH by CARB 429		
Analysis Type	sample		
Sample Matrix	PUF		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	5	Workgroup	WG3779771

Approved:
Nick Schrobilgen
--e-signature--
08-Mar-2023

Run Information	**Run 1**	**Run 2**
Filename	23030610.D	23030643.D
Run Date	3/6/2023 16:41	3/7/2023 14:08
Final Volume	0.1 mL	0.1 mL
Dilution Factor	1	10
Analysis Units	ng/sample	ng/sample
Instrument	MSD-5	MSD-5
Column	HP-5MS US2543815H	HP-5MS US2543815H

Target Analytes	**Ret. Time**	**Concentration ng/sample**	**Flags**	**Ret. Time.**	**Concentration ng/sample**	**Flags**
Naphthalene				2.71	7040	
2-Methylnaphthalene	3.27	1430				
1-Methylnaphthalene	3.39	878				
Acenaphthylene	4.39	20.5				
Acenaphthene	4.67	81.4				
Fluorene	5.57	260				
Phenanthrene	7.73	341				
Anthracene	7.84	5.56				
Fluoranthene	11.10	172				
Pyrene	11.74	77.8				
Benzo(a)Anthracene	15.63	15.4				
Chrysene	15.74	55.4				
Benzo(b)Fluoranthene	18.96	47.4	M			
Benzo(k)Fluoranthene	19.03	39.9	M			
Benzo(e)Pyrene	19.70	24.9				
Benzo(a)Pyrene	19.83	24.1				
Perylene	20.06	3.92				
Indeno(1,2,3-cd)Pyrene	23.37	28.2				
Dibenzo(a,h)Anthracene	23.55	3.62				
Benzo(g,h,i)Perylene	24.31	29.0				
Additional Analytes						
Tetralin	2.59	423	M			
Biphenyl	3.79	610				
o-Terphenyl	9.00	2.45				
Benzo(a)fluorene	12.91	16.0	M			
Benzo(b)fluorene	13.12	2.51				

Field Sampling Standards	**ng spiked**		**% Rec**
1-Methylnaphthalene-D10	200	3.35	82
Fluorene D10	200	5.51	80.1
Terphenyl D14(Surr.)	200	12.55	97

Extraction Standards			**% Rec**	**Limits**		**% Rec**
Naphthalene D8	100			50-150	2.70	110.5
2-Methylnaphthalene-D10	100	3.25	58.9	50-150		
Acenaphthylene D8	100	4.36	72.9	50-150		
Phenanthrene D10	100	7.68	64.8	50-150		
Anthracene-D10	100	7.80	68.3	50-150		
Fluoranthene D10	100	11.05	94.5	50-150		
Benz(a)Anthracene-D12	100	15.56	72.0	50-150		
Chrysene D12	100	15.68	68.2	50-150		
Benzo(b)Fluoranthene-D12	100	18.89	92.9	50-150		
Benzo(k)Fluoranthene-D12	100	18.98	86.5	50-150		
Benzo(a)Pyrene D12	100	19.77	70.9	50-150		
Perylene D12	100	20.00	48.4	50-150		
Indeno(1,2,3,cd)Pyrene-D12	100	23.28	92.0	50-150		
Dibenz(a,h)Anthracene-D14	100	23.44	81.0	50-150		
Benzo(g,h,i)Perylene D12	100	24.21	89.7	50-150		

M Indicates that a peak has been manually integrated.

ALS Life Sciences

Laboratory Control Sample Analysis Report

Sample Name	**Laboratory Control Sample**	Sampling Date	n/a
ALS Sample ID	WG3779771-2	Extraction Date	10-Feb-23
Analysis Method	PAH by CARB 429		
Analysis Type	lcs		
Sample Matrix	MEDIA		
Sample Size	1 n/a		
Percent Moisture	n/a		
Split Ratio	5	Workgroup	WG3779771

Approved:
Nick Schrobilgen
--e-signature--
08-Mar-2023

Run Information	**Run 1**
Filename	23030605.D
Run Date	3/6/2023 13:28
Final Volume	1 mL
Dilution Factor	1
Analysis Units	%
Instrument	MSD-5
Column	HP-5MS US2543815H

Target Analytes	**ug spiked**	**Ret. Time**	**%**	**Flags**	**Limits**
Naphthalene	100	2.71	146.5		50-150
2-Methylnaphthalene	100	3.28	97.0		50-150
1-Methylnaphthalene	100	3.39	98.0		50-150
Acenaphthylene	100	4.38	88.0		50-150
Acenaphthene	100	4.67	82.5		50-150
Fluorene	100	5.57	83.0		50-150
Phenanthrene	100	7.73	97.5		50-150
Anthracene	100	7.85	84.5		50-150
Fluoranthene	100	11.10	88.0		50-150
Pyrene	100	11.74	81.5		50-150
Benzo(a)Anthracene	100	15.63	94.5		50-150
Chrysene	100	15.75	93.0		50-150
Benzo(b)Fluoranthene	100	18.95	90.0		50-150
Benzo(k)Fluoranthene	100	19.03	97.0		50-150
Benzo(e)Pyrene	100	19.70	85.0		50-150
Benzo(a)Pyrene	100	19.83	93.0		50-150
Perylene	100	20.07	90.0		50-150
Indeno(1,2,3-cd)Pyrene	100	23.36	83.5		50-150
Dibenzo(a,h)Anthracene	100	23.56	89.0		50-150
Benzo(g,h,i)Perylene	100	24.30	84.5		50-150
Additional Analytes					
Tetralin	100		NS		
Biphenyl	100		NS		
o-Terphenyl	100		NS		
Benzo(a)fluorene	100		NS		
Benzo(b)fluorene	100		NS		

Field Sampling Standards	**ng spiked**	**% Rec**
1-Methylnaphthalene-D10	0	NS
Fluorene D10	0	NS
Terphenyl D14(Surr.)	0	NS

Extraction Standards			**% Rec**	**Limits**
Naphthalene D8	100	2.70	79.5	30-150
2-Methylnaphthalene-D10	100	3.24	79.6	30-150
Acenaphthylene D8	100	4.36	82.8	30-150
Phenanthrene D10	100	7.68	93.5	50-150
Anthracene-D10	100	7.80	92.7	50-150
Fluoranthene D10	100	11.05	100.8	50-150
Benz(a)Anthracene-D12	100	15.56	85.4	50-150
Chrysene D12	100	15.68	83.3	50-150
Benzo(b)Fluoranthene-D12	100	18.89	97.1	50-150
Benzo(k)Fluoranthene-D12	100	18.98	93.8	50-150
Benzo(a)Pyrene D12	100	19.77	99.3	30-150
Perylene D12	100	20.00	89.3	50-150
Indeno(1,2,3,cd)Pyrene-D12	100	23.27	94.1	50-150
Dibenz(a,h)Anthracene-D14	100	23.44	81.0	50-150
Benzo(g,h,i)Perylene D12	100	24.20	87.6	50-150

M	Indicates that a peak has been manually integrated.
NS	Indicates that this compound was not spiked.

ATTACHMENT 2

Chain of Custody (COC) / Analytical Request Form

L2746710-COFC

COC Number: 17 -

Page / of /

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Canada Toll Free: 1 800 668 9878

Report To	Contact and company name below will appear on the final report	Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	RWDI	Select Report Format:	☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)	Standard TAT is 15 business days. DTOX analysis standard TAT is 6 business days
Contact:	Matt Lantz	Quality Control (QC) Report with Report	☐ YES ☐ NO	PRIORITY (Business Days): ☐ 15 day [R- Regular] ☐ 10 day [P-50%] ☐ 5 day [E-100%] — EMERGENCY: ☐ 6 Business day - DTOX [R - Regular] ☐ 3 Business day - DTOX [E - 100%]
Phone:	519 823 1311	☐ Compare Results to Criteria on Report - provide details below if box checked		
	Company address below will appear on the final report	Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
Street:	600 Southgate Drive	Email 1 or Fax	Matt.Lantz@rwdi.com	For tests that can not be performed according to the service level selected, you will be contacted.
City/Province:	Guelph, Ontario	Email 2		
Postal Code:	N1G 4P6	Email 3		
Invoice To	Same as Report To ☐ YES ☐ NO	Invoice Distribution		
	Copy of Invoice with Report ☐ YES ☐ NO	Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX	
Company:		Email 1 or Fax		
Contact:		Email 2		

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:	DYEC	Major/Minor Code:	Routing Code:
PO / AFE:	1803743 Phase 1000	Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler: Martin Town

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Sample Air Volume (m3)	Date (dd-mmm-yy)	Sample Period	Sample Type	NUMBER OF CONTAINERS — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below: TSP, ICP on Hi-Vol Filter	PAH	DX	SAMPLES ON HOLD
1	LZ745420-3 - Tundra	317	05-Feb-23	24hr	Air		X		
1	743716	1637	05-Feb-23	24hr	Air	X			
2	743713	1639	30-Jan-23	24hr	Air	X			
2	LZ745420-2 - Courtice	314	05-Feb-23	24hr	Air		X		
3	743715	1628	05-Feb-23	24hr	Air	X			
4	743714	1643	30-Feb-23	24hr	Air	X			
				24hr	Air				
				24hr	Air				
				24hr	Air				
				24hr	Air				
				24hr	Air				
				24hr	Air				

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	
Are samples for human consumption/ use? ☐ YES ☑ NO	Samples are 10 day TAT

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No ☐
Ice Packs	☑ Ice Cubes ☐	Custody seal intact	Yes ☑	No ☐
Cooling Initiated	☑			

INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C	
2.4°C	11.3°C		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 08-Feb-23	Time: 1300	Received by: AARON BURTON	Date: 9-FEB-2023	Time: 10:40	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

ATTACHMENT 3

Table B5: 2023 Courtice Station Q1 Monitoring Results for PAHs

Contaminant	Units	*MECP Criteria*	5-Feb-23	No. > Criteria
1-Methylnaphthalene	ng/m^3	*12000*	2.80E+00	0
2-Methylnaphthalene	ng/m^3	*10000*	4.55E+00	0
Acenaphthene	ng/m^3	-	2.59E-01	-
Acenaphthylene	ng/m^3	*3500*	6.53E-02	0
Anthracene	ng/m^3	*200*	1.77E-02	0
Benzo(a)Anthracene	ng/m^3	-	4.90E-02	-
Benzo(a)fluorene	ng/m^3	-	5.10E-02	-
Benzo(a)Pyrene (Historically High)	ng/m^3	*0.05* [1] *5* [2] *1.1* [3]	7.68E-02	1
Benzo(b)Fluoranthene	ng/m^3	-	1.51E-01	-
Benzo(b)fluorene	ng/m^3	-	7.99E-03	-
Benzo(e)Pyrene	ng/m^3	-	7.93E-02	-
Benzo(g,h,i)Perylene	ng/m^3	-	9.24E-02	-
Benzo(k)Fluoranthene	ng/m^3	-	1.27E-01	-
Biphenyl	ng/m^3	-	1.94E+00	-
Chrysene	ng/m^3	-	1.76E-01	-
Dibenzo(a,h)Anthracene	ng/m^3	-	1.15E-02	-
Fluoranthene	ng/m^3	-	5.48E-01	-
Fluorene	ng/m^3	-	8.28E-01	-
Indeno(1,2,3-cd)Pyrene	ng/m^3	-	8.98E-02	-
Naphthalene	ng/m^3	*22500*	2.24E+01	0
o-Terphenyl	ng/m^3	-	7.80E-03	-
Perylene	ng/m^3	-	1.25E-02	-
Phenanthrene	ng/m^3	-	1.09E+00	-
Pyrene	ng/m^3	-	2.48E-01	-
Tetralin	ng/m^3	-	1.35E+00	-
Total PAH[4]	ng/m^3	-	37.04	-

NOTE: All non-detectable results were reported as 1/2 of the detection limit

[1] AAQC

[2] O. Reg. 419/05 Schedule Upper Risk Thresholds

[3] O. Reg. 419/05 24 Hour Guideline

[4] Total PAH sums all PAH contaminants

ATTACHMENT 4

Table B6: 2023 Rundle Road Station Q1 Monitoring Results for PAHs

Contaminant	Units	*MECP Criteria*	5-Feb-23	No. > Criteria
1-Methylnaphthalene	ng/m^3	*12000*	4.83E+00	0
2-Methylnaphthalene	ng/m^3	*10000*	8.61E+00	0
Acenaphthene	ng/m^3	-	9.46E-01	-
Acenaphthylene	ng/m^3	*3500*	1.87E-01	0
Anthracene	ng/m^3	*200*	4.48E-02	0
Benzo(a)Anthracene	ng/m^3	-	5.55E-02	-
Benzo(a)fluorene	ng/m^3	-	5.96E-02	-
Benzo(a)Pyrene (Historically High)	ng/m^3	*0.05* [1] *5* [2] *1.1* [3]	8.33E-02	1
Benzo(b)Fluoranthene	ng/m^3	-	1.69E-01	-
Benzo(b)fluorene	ng/m^3	-	1.07E-02	-
Benzo(e)Pyrene	ng/m^3	-	8.30E-02	-
Benzo(g,h,i)Perylene	ng/m^3	-	1.05E-01	-
Benzo(k)Fluoranthene	ng/m^3	-	1.41E-01	-
Biphenyl	ng/m^3	-	2.99E+00	-
Chrysene	ng/m^3	-	2.03E-01	-
Dibenzo(a,h)Anthracene	ng/m^3	-	1.33E-02	-
Fluoranthene	ng/m^3	-	7.38E-01	-
Fluorene	ng/m^3	-	1.32E+00	-
Indeno(1,2,3-cd)Pyrene	ng/m^3	-	1.02E-01	-
Naphthalene	ng/m^3	*22500*	2.91E+01	0
o-Terphenyl	ng/m^3	-	9.12E-03	-
Perylene	ng/m^3	-	1.31E-02	-
Phenanthrene	ng/m^3	-	1.87E+00	-
Pyrene	ng/m^3	-	3.88E-01	-
Tetralin	ng/m^3	-	1.74E+00	-
Total PAH[4]	ng/m^3	-	53.85	-

NOTE: All non-detectable results were reported as 1/2 of the detection limit

[1] AAQC

[2] O. Reg. 419/05 Schedule Upper Risk Thresholds

[3] O. Reg. 419/05 24 Hour Guideline

[4] Total PAH sums all PAH contaminants

ATTACHMENT 5

Station: RofD Courtice Daily: 05/02/2023 Type: AVG 1 Hr. [5 Mins.]

Date & Time	PM2.5	NO	NO2	NOX	SO2	WS km/hr	ET	WD	Tr_Temp	RH AVG	BP	Rain total	Hi-Vol Pressure	PUF Pressure	Hivol Flow	PUF Flow
	ug/m3	ppb	ppb	ppb	ppb	km/hr	C°	Deg	C°	%	in HG	mm	in H20	in H20	cfm	cfm
05/02/2023 00:00	53.7	0	1.7	1.7	0.544	25.05	1.44	235	19.9	57.5	29.7	0	4.48	45.15	45.96	8.04
05/02/2023 01:00	53.3	0.1	1.8	1.9	0.639	23.45	1.575	237	19.9	59.7	29.67	0	4.46	45.18	45.82	8.04
05/02/2023 02:00	49.8	0	2.2	2.2	0.717	20.37	1.738	240	19.8	63.7	29.66	0	4.48	45.51	45.85	8.06
05/02/2023 03:00	44.3	0	2.3	2.3	0.676	17.61	1.986	243	19.8	66.1	29.64	0	4.5	45.65	45.94	8.07
05/02/2023 04:00	42.3	0	2.8	2.8	0.756	12.8	1.704	256	20.1	67.7	29.62	0	4.49	45.74	45.93	8.08
05/02/2023 05:00	36	0	2.4	2.4	0.396	12.85	1.694	247	19.9	70.9	29.62	0	4.52	45.75	46.1	8.08
05/02/2023 06:00	27.4	0	2.1	2.1	0.387	16.76	2.117	239	19.9	70	29.6	0	4.56	45.22	46.25	8.03
05/02/2023 07:00	22.6	0	2.5	2.4	0.69	14.61	2.307	243	20	70	29.6	0	4.55	45.1	46.17	8.02
05/02/2023 08:00	18.2	0.2	2.6	2.8	0.815	16.85	2.635	240	19.8	69.1	29.59	0	4.55	44.47	46.12	7.96
05/02/2023 09:00	15.1	0.6	2.2	2.7	0.495	13.38	2.895	246	20	69.7	29.58	0	4.52	44.21	45.95	7.93
05/02/2023 10:00	13.9	0.7	1.9	2.6	0.546	12.61	3.475	249	19.8	68.4	29.57	0	4.5	43.93	45.78	7.9
05/02/2023 11:00	10.9	0.6	1.8	2.4	0.581	13.1	3.574	239	19.8	71.4	29.56	0	4.5	43.42	45.76	7.86
05/02/2023 12:00	9.4	0.4	2.1	2.5	0.637	15.47	3.233	227	19.8	74.1	29.54	0	4.52	43.18	45.88	7.84
05/02/2023 13:00	9.7	0.3	1.8	2.1	0.563	18.63	3.348	217	20.1	74	29.52	0	4.53	43.31	45.92	7.85
05/02/2023 14:00	10.2	0.6	2.1	2.7	0.733	16.51	3.341	217	19.7	74.6	29.51	0	4.53	43.61	45.89	7.87
05/02/2023 15:00	10.8	0.3	2	2.3	0.564	19.94	3.388	233	20	70.8	29.51	0	4.54	43.1	45.96	7.83
05/02/2023 16:00	11.3	0	2.3	2.3	0.38	15.1	3.017	243	19.9	72.5	29.52	0	4.54	43.16	45.99	7.84
05/02/2023 17:00	13.5	0.1	4.7	4.8	0.408	13.7	3.369	250	20	66.5	29.54	0	4.54	42.87	45.96	7.82
05/02/2023 18:00	12.6	0	4.9	4.9	0.426	13.95	3.908	257	20	61.2	29.56	0	4.53	42.8	45.88	7.81
05/02/2023 19:00	13.4	0.1	6.3	6.4	0.372	9.91	3.639	252	20.1	64.3	29.57	0	4.51	42.66	45.81	7.8
05/02/2023 20:00	14.5	0.1	6	6.1	0.214	8.61	2.892	256	20.1	73.4	29.58	0	4.52	43.7	45.95	7.89
05/02/2023 21:00	14.1	0	5.6	5.6	0.252	7.46	2.854	249	20.1	74	29.58	0	4.51	44.19	45.91	7.93
05/02/2023 22:00	14.8	0	5.7	5.6	0.178	7.43	2.685	257	20.1	77.4	29.6	0	4.51	44.46	45.93	7.96
05/02/2023 23:00	16.7	0.2	19.7	19.8	0.284	4.8	2.948	272	20.1	70.3	29.62	0	4.51	44.11	45.89	7.93
Minimum	9.4	0	1.7	1.7	0.178	4.8	1.44	217	19.7	57.5	29.51	0	4.46	42.66	45.76	7.8
MinDate	12:00	00:00	00:00	00:00	22:00	23:00	00:00	13:00	14:00	00:00	14:00	00:00	01:00	19:00	11:00	19:00
Maximum	53.7	0.7	19.7	19.8	0.815	25.05	3.908	272	20.1	77.4	29.7	0	4.56	45.75	46.25	8.08
MaxDate	00:00	10:00	23:00	23:00	08:00	00:00	18:00	23:00	04:00	22:00	00:00	00:00	06:00	05:00	06:00	04:00
Avg	22.4	0.2	3.7	3.9	0.511	14.62	2.74	244	19.9	69.1	29.59	0	4.52	44.19	45.94	7.94
Num	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Data[%]	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
STD	14.8	0.2	3.7	3.6	0.2	4.8	0.7	12.3	0.1	4.9	0	0	0	1	0.1	0.1

ATTACHMENT 6

Station: RofD Rundle Daily: 05/02/2023 Type: AVG 1 Hr. [5 Mins.]

Date & Time	PM2.5	NO	NO2	NOX	SO2	ET	Tr_Temp	RH AVG	Rain total	WS km/hr	WD	Hi-Vol Pressure	PUF Pressure	ET	Hivol Flow	PUF Flow
	ug/m3	ppb	ppb	ppb	ppb	C°	C°	%	mm	km/hr	Deg	in H20	in H20	K	cfm	cfm
05/02/2023 00:00	4.5	0	2.5	2.4	0.556	0.9	22	60.5	0	22.39	243	4.04	50.95	274.068	42.07	7.94
05/02/2023 01:00	5.9	0.2	2.7	2.9	0.723	1	21.8	64.3	0	20.69	245	4.1	50.82	274.15	42.34	7.93
05/02/2023 02:00	6.5	0.2	2.9	3.1	0.898	1.3	22.1	65.5	0	20.73	246	4.09	51.01	274.466	42.25	7.94
05/02/2023 03:00	6.5	0.3	3.4	3.7	0.834	1.5	22	68.9	0	18.53	250	4.09	50.73	274.678	42.28	7.92
05/02/2023 04:00	7.3	0.3	3.8	4.1	0.865	1.2	22	71.7	0	14.06	253	4.12	51.01	274.33	42.44	7.94
05/02/2023 05:00	7	0.5	5.3	5.8	0.741	1.3	21.9	72.7	0	15.06	249	4.12	50.52	274.443	42.46	7.91
05/02/2023 06:00	6.1	0.4	4.3	4.7	0.667	1.6	22	74.3	0	16.13	246	4.18	50.13	274.785	42.7	7.87
05/02/2023 07:00	5.3	0.8	5.6	6.5	0.813	2	21.9	72.5	0	16.72	246	4.24	49.61	275.174	43.01	7.83
05/02/2023 08:00	4.6	1.1	4.8	5.9	0.951	2.4	21.9	71.8	0	18.35	244	4.18	48.99	275.526	42.68	7.78
05/02/2023 09:00	4	1	3.7	4.7	0.654	2.7	21.8	72.1	0	16.64	246	4.2	48.51	275.819	42.73	7.74
05/02/2023 10:00	3.7	1.7	3.4	5.1	0.734	3.1	22	72.2	0	15.46	247	4.15	48.06	276.218	42.47	7.71
05/02/2023 11:00	3	2.5	4	6.5	0.852	3.6	21.6	73	0	15.68	243	4.17	47.53	276.714	42.52	7.66
05/02/2023 12:00	3	1.3	3.2	4.5	0.914	3.5	22	73.8	0	15.08	241	4.18	47.38	276.627	42.57	7.65
05/02/2023 13:00	3.1	2.6	5	7.6	0.833	3.6	21.8	75.2	0	14.55	236	4.19	47.66	276.759	42.63	7.67
05/02/2023 14:00	3.5	1.2	3.7	4.9	0.945	3.5	21.8	75.8	0	15.42	237	4.15	47.64	276.709	42.4	7.67
05/02/2023 15:00	4	1.2	4.2	5.4	0.77	3.4	21.9	73.2	0	20.23	241	4.18	47.82	276.563	42.58	7.69
05/02/2023 16:00	4.7	0.6	4.9	5.5	0.793	3.2	21.9	71.3	0	19.09	246	4.16	47.84	276.366	42.49	7.69
05/02/2023 17:00	5.1	0.5	6.6	7.1	0.67	3.5	21.7	67	0	15.16	252	4.18	47.72	276.634	42.57	7.68
05/02/2023 18:00	5.4	0.5	5.9	6.4	0.598	3.7	21.9	65.2	0	15.53	252	4.18	48.13	276.831	42.55	7.7
05/02/2023 19:00	6.4	0.6	9.6	10.1	0.705	3.5	21.8	67.1	0	11.1	250	4.17	48.73	276.635	42.55	7.75
05/02/2023 20:00	7.5	0.6	13.3	13.9	0.626	3	22	71.6	0	7.57	246	4.19	49.82	276.113	42.65	7.84
05/02/2023 21:00	8.8	0.8	14.5	15.3	0.552	2.4	21.9	75.2	0	5.7	242	4.22	49.92	275.56	42.86	7.85
05/02/2023 22:00	9.7	0.5	11.3	11.8	0.473	2.3	21.7	81.6	0	7.42	248	4.17	50.31	275.439	42.64	7.88
05/02/2023 23:00	11.5	1.5	25.8	27.3	0.545	2.3	21.9	77.4	0	6.19	256	4.22	50.82	275.441	42.86	7.92
Minimum	3	0	2.5	2.4	0.473	0.9	21.6	60.5	0	5.7	236	4.04	47.38	274.068	42.07	7.65
MinDate	11:00	00:00	00:00	00:00	22:00	00:00	11:00	00:00	00:00	21:00	13:00	00:00	12:00	00:00	00:00	12:00
Maximum	11.5	2.6	25.8	27.3	0.951	3.7	22.1	81.6	0	22.39	256	4.24	51.01	276.831	43.01	7.94
MaxDate	23:00	13:00	23:00	23:00	08:00	18:00	02:00	22:00	00:00	00:00	23:00	07:00	02:00	18:00	07:00	00:00
Avg	5.7	0.9	6.4	7.3	0.738	2.5	21.9	71.4	0	15.15	246	4.16	49.24	275.669	42.55	7.8
Num	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Data[%]	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
STD	2.1	0.7	5.2	5.3	0.1	0.9	0.1	4.6	0	4.5	4.7	0	1.3	0.9	0.2	0.1

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MEMORANDUM

DATE:	2023-04-13	**RWDI Reference No.:** 2205149
TO:	Gioseph Anello	**EMAIL:** Gioseph.Anello@Durham.ca
CC:	Andrew Evans	**EMAIL:** Andrew.Evans@Durham.ca
CC:	Lyndsay Waller	**EMAIL:** Lyndsay.Waller@Durham.ca
FROM:	Maja Bokara	**EMAIL:** Maja.Bokara@rwdi.com
RE:	**Exceedance Report – Benzo(a)Pyrene March 13, 2023 Region of Durham, DYEC**	

On April 10, 2023, the results from ALS Environmental were received regarding the PAH results from the March 13, 2023, sampling event. On April 10, 2023, the results were entered and assessed. It was noted that on March 13, 2023, both the Courtice and Rundle Road Station Benzo(a)Pyrene (BaP) concentrations were in excess of the 24-hour AAQC as measured by the onsite PUF PS-1 samplers. Attached is a figure depicting the wind rose (indicating the wind speed and direction during the sampling day), and the location of the sampling stations relative to the DYEC.

The following summarizes the BaP concentrations and onsite conditions during the March 13 sampling date:

1. The guideline concentration for BaP is 0.05 ng/m^3. The measured concentration at the Courtice sampler was 0.054 ng/m^3 and the Rundle Road sampler was 0.079 ng/m^3.
2. During the sampling day the wind was predominantly from the NW, as recorded at the Courtice Meteorological Tower. One-hour average wind speeds at Courtice Meteorological Tower ranged from 4.85 km/h to 15.11 km/h.
3. During the sampling day the wind was predominantly from the WNW to the NNW, as recorded at the Rundle Road Meteorological Tower. One-hour average wind speeds at Rundle Road Meteorological Tower ranged from 3.86 km/h to 12.79 km/h.
4. RWDI reviewed the available CEMS data over a 72-hour period which includes the day before and after the BaP exceedance date. The data showed no unusual readings, and all parameters were within the expected values as well as below the listed Limits. Based on the data, both boilers 1 and 2 were operating normally during the time reviewed.
5. A review of the current ESDM data shows that Benzo(a)Pyrene emissions from the DYEC for a 24-hour period are estimated to be less than 1% of the MECP limit.
6. At the time of the data review, MECP monitoring station data for BaP was not available.

7. The Courtice meteorological data suggests that the Courtice Station was primarily crosswind of the DYEC during the sampling period. Given the wind conditions, it is likely that the measured BaP exceedance is attributable to sources other than the Energy Centre operations.
8. The Rundle Road meteorological data suggests that the Rundle Road Station was primarily crosswind of the DYEC during the sampling period. Given the wind conditions, it is likely that the measured BaP exceedance is attributable to sources other than the Energy Centre operations.

At the Courtice Station, the NO_2 hourly values were less than 5% of the criteria for the same period. The $PM_{2.5}$ 24-hour average value was 4.8 micrograms per cubic metre at the Courtice Station.

At the Rundle Road Station, the NO_2 hourly values were less than 8% of the criteria for the same period. The $PM_{2.5}$ 24-hour average value was 4.4 micrograms per cubic metre at the Rundle Road Station.

We have attached the data files for the samples in question to aid with the review.

Respectfully submitted by:

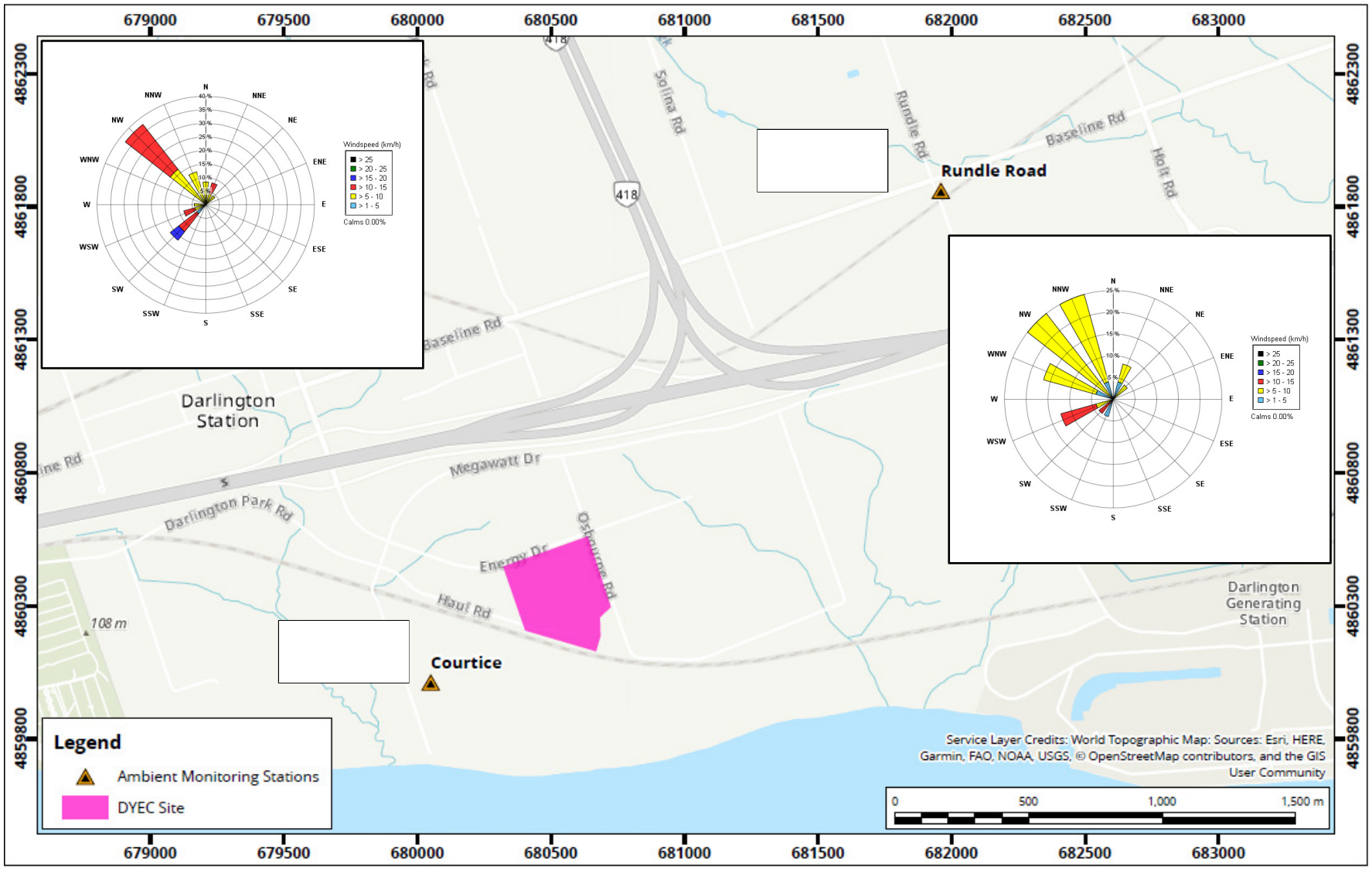
RWDI AIR Inc.

Maja Bokara, PGCert, EP
Project Manager

MB/vit

Attach.

ATTACHMENTS



DYEC Site and Ambient Monitoring Station Locations

True North

Map Projection: NAD 1983 UTM Zone 17N

DYEC - Region of Durham, Ontario

Project #:

Drawn by:	Figure: 1
Approx. Scale:	1:20,000
Date Revised:	

ALS Life Sciences
1435 Norjohn Court, Unit 1, Burlington ON, L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

Certificate of Analysis

ALS Project Contact:	Claire Kocharakkal	**Client Name:**	RWDI Air Inc.
ALS Project ID:	23601	**Client Address:**	600 Southgate Drive
ALS WO#:	L2748930		Guelph, ON N1G 4P6
Date of Report	10-Apr-23		Canada
Date of Sample Receipt	15-Mar-23	**Client Contact:**	Khalid Hussein
		Client Project ID:	1803743 Phase 1000

COMMENTS: **PAH by CARB method 429 (LR option)- Isotope dilution**

For all QC and client samples, the recoveries of some of the labelled extraction standards were below the method control limits. Native results, calculated via isotope dilutions are not expected to be biased.

Certified by:

Steve Kennedy
Technical Supervisor

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	Method Blank		Method Blank		RUNDLE-DX/PAH-MAR13		COURTICE-DX/PAH-MAR13		Laboratory Control Sample
ALS Sample ID	WG3781576-1		WG3781576-4		L2748930-1		L2748930-2		WG3781576-2
Sample Size	1		1		1		1		1
Sample units	sample		sample		sample		sample		n/a
Moisture Content	n/a		n/a		n/a		n/a		n/a
Matrix	MEDIA		REAGENT		PUF		PUF		MEDIA
Sampling Date	n/a		n/a		13-Mar-23		13-Mar-23		n/a
Extraction Date	20-Mar-23		20-Mar-23		20-Mar-23		20-Mar-23		20-Mar-23
Target Analytes	**ng/sample**		**ng/sample**		**ng/sample**		**ng/sample**		**%**
Naphthalene	70.4		5.31	B	1770		1730	M	122.6
2-Methylnaphthalene	2.98		<1.0	U	750		842	M	90.5
1-Methylnaphthalene	2.41		<1.0	U	438		455		100.0
Acenaphthylene	<1.0	U	<1.0	U	43.3		37.7	M	89.9
Acenaphthene	1.76		<1.0	U	168		229	M	76.9
Fluorene	<1.0	U	<1.0	U	309		296	M	88.3
Phenanthrene	1.58		<1.0	U	643		551	M	97.4
Anthracene	<1.0	U	<1.0	U	10.7		4.69	M	91.2
Fluoranthene	<1.0	U	<1.0	U	155		142	M	90.1
Pyrene	<1.0	U	<1.0	U	89.8		81.0	M	92.5
Benzo(a)Anthracene	<1.0	U	<1.0	U	7.23		5.10	M	82.0
Chrysene	<1.0	U	<1.0	U	32.0		30.8	M	92.3
Benzo(b)Fluoranthene	<1.0	U	<1.0	U	31.0		23.3	M	81.3
Benzo(k)Fluoranthene	<1.0	U	<1.0	U	25.3	M	23.8	M	93.2
Benzo(e)Pyrene	<1.0	U	<1.0	U	16.8		13.5	M	82.6
Benzo(a)Pyrene	<1.0	U	<1.0	U	26.3	M	17.9	M	104.4
Perylene	<1.0	U	<1.0	U	1.57		1.50	M	82.3
Indeno(1,2,3-cd)Pyrene	<1.0	U	<1.0	U	21.0		17.9	M	81.8
Dibenzo(a,h)Anthracene	<1.0	U	<1.0	U	2.52	M	2.27	M	86.2
Benzo(g,h,i)Perylene	<1.0	U	<1.0	U	20.8		19.0	M	82.1
Additional Analytes									
Tetralin	19.9		<1.0	U	114	M,B	101	B	NS
Biphenyl	2.53		<1.0	U	525		399		NS
o-Terphenyl	<1.0	U	<1.0	U	1.72		1.64		NS
Benzo(a)fluorene	<1.0	U	<1.0	U	18.0	M	15.5	M	NS
Benzo(b)fluorene	<1.0	U	<1.0	U	3.69	M	3.06		NS
Field Sampling Standards	**% Rec**		**% Rec**		**% Rec**		**% Rec**		**% Rec**
1-Methylnaphthalene-D10	NS		NS		76.9		73.2		NS
Fluorene D10	NS		NS		111		99.7		NS
Terphenyl D14(Surr.)	NS		NS		101.7		85.5		NS

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	Method Blank	Method Blank	RUNDLE-DX/PAH-MAR13		COURTICE-DX/PAH-MAR13		Laboratory Control Sample
ALS Sample ID	WG3781576-1	WG3781576-4	L2748930-1		L2748930-2		WG3781576-2
Extraction Standards	**% Rec**	**% Rec**	**% Rec**		**% Rec**		**% Rec**
Naphthalene D8	27.3	53.3	45.2		55.2	M	26.4
2-Methylnaphthalene-D10	44.2	68.7	43.6		59.0	M	33.0
Acenaphthylene D8	75.6	93.0	66.8		95.0		59.6
Phenanthrene D10	46.0	46.0	29.6		46.5		38.1
Anthracene-D10	53.0	66.4	43.5		69.6		46.0
Fluoranthene D10	66.3	65.7	45.0		71.2		55.6
Benz(a)Anthracene-D12	131.1	115.1	82.3		125.4		106.8
Chrysene D12	72.8	63.3	44.6		68.0		59.1
Benzo(b)Fluoranthene-D12	82.7	82.7	55.7		89.6		68.8
Benzo(k)Fluoranthene-D12	68.9	65.3	47.2		73.9		57.5
Benzo(a)Pyrene D12	99.4	102.1	70.8	M	106.9	M	84.5
Perylene D12	96.0	100.8	67.5		105.4		81.0
Indeno(1,2,3,cd)Pyrene-D12	82.4	101.8	66.1		109.5		74.0
Dibenz(a,h)Anthracene-D14	65.7	76.5	51.7		84.0		58.2
Benzo(g,h,i)Perylene D12	70.6	76.5	50.4		83.6		57.2

U	Indicates that this compound was not detected above the LOD.
M	Indicates that a peak has been manually integrated.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
NS	Indicates that this compound was not spiked.

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Method Blank**	Sampling Date	n/a
ALS Sample ID	WG3781576-1	Extraction Date	20-Mar-23
Analysis Method	PAH by CARB 429		
Analysis Type	blank		
Sample Matrix	MEDIA		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	10	Workgroup	WG3781576

Approved:
Nick Schrobilgen
--e-signature--
10-Apr-2023

Run Information	**Run 1**
Filename	23040419.D
Run Date	4/5/2023 4:02
Final Volume	0.05 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US2543815H

Target Analytes	**Ret. Time**	**Concentration ng/sample**	**Flags**
Naphthalene	2.73	70.4	
2-Methylnaphthalene	3.30	2.98	
1-Methylnaphthalene	3.41	2.41	
Acenaphthylene	4.43	<1.0	U
Acenaphthene	4.74	1.76	
Fluorene	5.62	<1.0	U
Phenanthrene	7.81	1.58	
Anthracene	7.92	<1.0	U
Fluoranthene	11.19	<1.0	U
Pyrene	11.82	<1.0	U
Benzo(a)Anthracene	15.75	<1.0	U
Chrysene	15.84	<1.0	U
Benzo(b)Fluoranthene	19.07	<1.0	U
Benzo(k)Fluoranthene	19.07	<1.0	U
Benzo(e)Pyrene	19.90	<1.0	U
Benzo(a)Pyrene	NotFnd	<1.0	U
Perylene	20.16	<1.0	U
Indeno(1,2,3-cd)Pyrene	23.46	<1.0	U
Dibenzo(a,h)Anthracene	23.75	<1.0	U
Benzo(g,h,i)Perylene	24.51	<1.0	U
Additional Analytes			
Tetralin	2.60	19.9	
Biphenyl	3.83	2.53	
o-Terphenyl	9.07	<1.0	U
Benzo(a)fluorene	12.99	<1.0	U
Benzo(b)fluorene	13.20	<1.0	U

Field Sampling Standards	**ng spiked**	**% Rec**
1-Methylnaphthalene-D10	0	NS
Fluorene D10	0	NS
Terphenyl D14(Surr.)	0	NS

Extraction Standards			**% Rec**	**Limits**
Naphthalene D8	100	2.72	27.3	50-150
2-Methylnaphthalene-D10	100	3.27	44.2	50-150
Acenaphthylene D8	100	4.41	75.6	50-150
Phenanthrene D10	100	7.75	46.0	50-150
Anthracene-D10	100	7.88	53.0	50-150
Fluoranthene D10	100	11.14	66.3	50-150
Benz(a)Anthracene-D12	100	15.65	131.1	50-150
Chrysene D12	100	15.76	72.8	50-150
Benzo(b)Fluoranthene-D12	100	18.98	82.7	50-150
Benzo(k)Fluoranthene-D12	100	19.06	68.9	50-150
Benzo(a)Pyrene D12	100	19.86	99.4	50-150
Perylene D12	100	20.09	96.0	50-150
Indeno(1,2,3,cd)Pyrene-D12	100	23.41	82.4	50-150
Dibenz(a,h)Anthracene-D14	100	23.57	65.7	50-150
Benzo(g,h,i)Perylene D12	100	24.35	70.6	50-150

M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the MDL.
NS	Indicates that this compound was not spiked.

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Method Blank**	Sampling Date	n/a
ALS Sample ID	WG3781576-4	Extraction Date	20-Mar-23
Analysis Method	PAH by CARB 429		
Analysis Type	blank		
Sample Matrix	REAGENT		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	10	Workgroup	WG3781576

Approved:
Nick Schrobilgen
--e-signature--
10-Apr-2023

Run Information	**Run 1**
Filename	23040420.D
Run Date	4/5/2023 4:40
Final Volume	0.05 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US2543815H

Target Analytes	**Ret. Time**	**Concentration ng/sample**	**Flags**
Naphthalene	2.75	5.31	B
2-Methylnaphthalene	3.32	<1.0	U
1-Methylnaphthalene	3.43	<1.0	U
Acenaphthylene	4.43	<1.0	U
Acenaphthene	4.72	<1.0	U
Fluorene	5.62	<1.0	U
Phenanthrene	7.80	<1.0	U
Anthracene	7.92	<1.0	U
Fluoranthene	11.18	<1.0	U
Pyrene	11.83	<1.0	U
Benzo(a)Anthracene	15.76	<1.0	U
Chrysene	NotFnd	<1.0	U
Benzo(b)Fluoranthene	19.09	<1.0	U
Benzo(k)Fluoranthene	19.09	<1.0	U
Benzo(e)Pyrene	NotFnd	<1.0	U
Benzo(a)Pyrene	NotFnd	<1.0	U
Perylene	NotFnd	<1.0	U
Indeno(1,2,3-cd)Pyrene	23.57	<1.0	U
Dibenzo(a,h)Anthracene	23.70	<1.0	U
Benzo(g,h,i)Perylene	24.36	<1.0	U
Additional Analytes			
Tetralin	NotFnd	<1.0	U
Biphenyl	3.84	<1.0	U
o-Terphenyl	9.07	<1.0	U
Benzo(a)fluorene	12.98	<1.0	U
Benzo(b)fluorene	13.15	<1.0	U

Field Sampling Standards	**ng spiked**	**% Rec**
1-Methylnaphthalene-D10	0	NS
Fluorene D10	0	NS
Terphenyl D14(Surr.)	0	NS

Extraction Standards			**% Rec**	**Limits**
Naphthalene D8	100	2.75	53.3	50-150
2-Methylnaphthalene-D10	100	3.29	68.7	50-150
Acenaphthylene D8	100	4.42	93.0	50-150
Phenanthrene D10	100	7.75	46.0	50-150
Anthracene-D10	100	7.88	66.4	50-150
Fluoranthene D10	100	11.14	65.7	50-150
Benz(a)Anthracene-D12	100	15.65	115.1	50-150
Chrysene D12	100	15.76	63.3	50-150
Benzo(b)Fluoranthene-D12	100	18.98	82.7	50-150
Benzo(k)Fluoranthene-D12	100	19.07	65.3	50-150
Benzo(a)Pyrene D12	100	19.86	102.1	50-150
Perylene D12	100	20.10	100.8	50-150
Indeno(1,2,3,cd)Pyrene-D12	100	23.42	101.8	50-150
Dibenz(a,h)Anthracene-D14	100	23.58	76.5	50-150
Benzo(g,h,i)Perylene D12	100	24.35	76.5	50-150

M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the MDL.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
NS	Indicates that this compound was not spiked.

ALS Life Sciences

Sample Analysis Report

Sample Name	**RUNDLE-DX/PAH-MAR13**	Sampling Date	13-Mar-23 00:00
ALS Sample ID	L2748930-1	Extraction Date	20-Mar-23
Analysis Method	PAH by CARB 429		
Analysis Type	sample		
Sample Matrix	PUF		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	10	Workgroup	WG3781576

Approved:
Nick Schrobilgen
--e-signature--
10-Apr-2023

Run Information	**Run 1**
Filename	23040421.D
Run Date	4/5/2023 5:19
Final Volume	0.05 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US2543815H

Target Analytes	**Ret. Time**	**Concentration ng/sample**	**Flags**	
Naphthalene	2.73	1770		
2-Methylnaphthalene	3.30	750		
1-Methylnaphthalene	3.41	438		
Acenaphthylene	4.43	43.3		
Acenaphthene	4.72	168		
Fluorene	5.62	309		
Phenanthrene	7.80	643		
Anthracene	7.92	10.7		
Fluoranthene	11.18	155		
Pyrene	11.83	89.8		
Benzo(a)Anthracene	15.72	7.23		
Chrysene	15.83	32.0		
Benzo(b)Fluoranthene	19.05	31.0		
Benzo(k)Fluoranthene	19.10	25.3	M	
Benzo(e)Pyrene	19.79	16.8		
Benzo(a)Pyrene	19.91	26.3	M	
Perylene	20.16	1.57		
Indeno(1,2,3-cd)Pyrene	23.50	21.0		
Dibenzo(a,h)Anthracene	23.68	2.52	M	
Benzo(g,h,i)Perylene	24.45	20.8		
Additional Analytes				
Tetralin	2.60	114	M	B
Biphenyl	3.82	525		
o-Terphenyl	9.07	1.72		
Benzo(a)fluorene	12.99	18.0	M	
Benzo(b)fluorene	13.21	3.69	M	

Field Sampling Standards	**ng spiked**		**% Rec**
1-Methylnaphthalene-D10	300	3.38	76.9
Fluorene D10	300	5.57	111
Terphenyl D14(Surr.)	300	12.63	101.7

Extraction Standards			**% Rec**		**Limits**
Naphthalene D8	100	2.72	45.2		50-150
2-Methylnaphthalene-D10	100	3.27	43.6		50-150
Acenaphthylene D8	100	4.41	66.8		50-150
Phenanthrene D10	100	7.75	29.6		50-150
Anthracene-D10	100	7.87	43.5		50-150
Fluoranthene D10	100	11.13	45.0		50-150
Benz(a)Anthracene-D12	100	15.65	82.3		50-150
Chrysene D12	100	15.76	44.6		50-150
Benzo(b)Fluoranthene-D12	100	18.98	55.7		50-150
Benzo(k)Fluoranthene-D12	100	19.06	47.2		50-150
Benzo(a)Pyrene D12	100	19.86	70.8	M	50-150
Perylene D12	100	20.09	67.5		50-150
Indeno(1,2,3,cd)Pyrene-D12	100	23.41	66.1		50-150
Dibenz(a,h)Anthracene-D14	100	23.57	51.7		50-150
Benzo(g,h,i)Perylene D12	100	24.35	50.4		50-150

M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the MDL.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
NS	Indicates that this compound was not spiked.

ALS Life Sciences

Sample Analysis Report

Sample Name	**COURTICE-DX/PAH-MAR13**	Sampling Date	13-Mar-23 00:00
ALS Sample ID	L2748930-2	Extraction Date	20-Mar-23
Analysis Method	PAH by CARB 429		
Analysis Type	sample		
Sample Matrix	PUF		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	10	Workgroup	WG3781576

Approved:
Nick Schrobilgen
--e-signature--
10-Apr-2023

Run Information	**Run 1**
Filename	23040422.D
Run Date	4/5/2023 5:58
Final Volume	0.05 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US2543815H

Target Analytes	**Ret. Time**	**Concentration ng/sample**	**Flags**
Naphthalene	2.76	1730	M
2-Methylnaphthalene	3.32	842	M
1-Methylnaphthalene	3.44	455	
Acenaphthylene	4.44	37.7	M
Acenaphthene	4.73	229	M
Fluorene	5.64	296	M
Phenanthrene	7.81	551	M
Anthracene	7.93	4.69	M
Fluoranthene	11.19	142	M
Pyrene	11.83	81.0	M
Benzo(a)Anthracene	15.72	5.10	M
Chrysene	15.84	30.8	M
Benzo(b)Fluoranthene	19.05	23.3	M
Benzo(k)Fluoranthene	19.11	23.8	M
Benzo(e)Pyrene	19.79	13.5	M
Benzo(a)Pyrene	19.92	17.9	M
Perylene	20.16	1.50	M
Indeno(1,2,3-cd)Pyrene	23.50	17.9	M
Dibenzo(a,h)Anthracene	23.68	2.27	M
Benzo(g,h,i)Perylene	24.46	19.0	M
Additional Analytes			
Tetralin	2.64	101	B
Biphenyl	3.84	399	
o-Terphenyl	9.08	1.64	
Benzo(a)fluorene	12.99	15.5	M
Benzo(b)fluorene	13.21	3.06	

Field Sampling Standards	**ng spiked**		**% Rec**
1-Methylnaphthalene-D10	300	3.40	73.2
Fluorene D10	300	5.59	99.7
Terphenyl D14(Surr.)	300	12.63	85.5

Extraction Standards			**% Rec**		**Limits**
Naphthalene D8	100	2.75	55.2	M	50-150
2-Methylnaphthalene-D10	100	3.29	59.0	M	50-150
Acenaphthylene D8	100	4.42	95.0		50-150
Phenanthrene D10	100	7.76	46.5		50-150
Anthracene-D10	100	7.88	69.6		50-150
Fluoranthene D10	100	11.14	71.2		50-150
Benz(a)Anthracene-D12	100	15.65	125.4		50-150
Chrysene D12	100	15.77	68.0		50-150
Benzo(b)Fluoranthene-D12	100	18.98	89.6		50-150
Benzo(k)Fluoranthene-D12	100	19.07	73.9		50-150
Benzo(a)Pyrene D12	100	19.86	106.9	M	50-150
Perylene D12	100	20.10	105.4		50-150
Indeno(1,2,3,cd)Pyrene-D12	100	23.42	109.5		50-150
Dibenz(a,h)Anthracene-D14	100	23.58	84.0		50-150
Benzo(g,h,i)Perylene D12	100	24.35	83.6		50-150

M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the MDL.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
NS	Indicates that this compound was not spiked.

ALS Life Sciences

Laboratory Control Sample Analysis Report

Sample Name	**Laboratory Control Sample**	Sampling Date	n/a
ALS Sample ID	WG3781576-2	Extraction Date	20-Mar-23
Analysis Method	PAH by CARB 429		
Analysis Type	lcs		
Sample Matrix	MEDIA		
Sample Size	1 n/a		
Percent Moisture	n/a		
Split Ratio	10	Workgroup	WG3781576

Approved:
Nick Schrobilgen
--e-signature--
10-Apr-2023

Run Information	**Run 1**
Filename	23040417.D
Run Date	4/5/2023 2:44
Final Volume	0.05 mL
Dilution Factor	1
Analysis Units	%
Instrument	MSD-5
Column	HP-5MS US2543815H

Target Analytes	**ug spiked**	**Ret. Time**	**%**	**Flags**	**Limits**
Naphthalene	100	2.73	122.6		50-150
2-Methylnaphthalene	100	3.30	90.5		50-150
1-Methylnaphthalene	100	3.41	100		50-150
Acenaphthylene	100	4.42	89.9		50-150
Acenaphthene	100	4.72	76.9		50-150
Fluorene	100	5.63	88.3		50-150
Phenanthrene	100	7.81	97.4		50-150
Anthracene	100	7.92	91.2		50-150
Fluoranthene	100	11.19	90.1		50-150
Pyrene	100	11.83	92.5		50-150
Benzo(a)Anthracene	100	15.72	82		50-150
Chrysene	100	15.84	92.3		50-150
Benzo(b)Fluoranthene	100	19.04	81.3		50-150
Benzo(k)Fluoranthene	100	19.11	93.2		50-150
Benzo(e)Pyrene	100	19.79	82.6		50-150
Benzo(a)Pyrene	100	19.92	104.4		50-150
Perylene	100	20.16	82.3		50-150
Indeno(1,2,3-cd)Pyrene	100	23.50	81.8		50-150
Dibenzo(a,h)Anthracene	100	23.69	86.2		50-150
Benzo(g,h,i)Perylene	100	24.45	82.1		50-150
Additional Analytes					
Tetralin	0		NS		
Biphenyl	0		NS		
o-Terphenyl	0		NS		
Benzo(a)fluorene	0		NS		
Benzo(b)fluorene	0		NS		
Field Sampling Standards	**ng spiked**		**% Rec**		
1-Methylnaphthalene-D10	0		NS		
Fluorene D10	0		NS		
Terphenyl D14(Surr.)	0		NS		
Extraction Standards			**% Rec**		**Limits**
Naphthalene D8	100	2.72	26.4		30-150
2-Methylnaphthalene-D10	100	3.27	33.0		30-150
Acenaphthylene D8	100	4.41	59.6		30-150
Phenanthrene D10	100	7.75	38.1		50-150
Anthracene-D10	100	7.88	46.0		50-150
Fluoranthene D10	100	11.14	55.6		50-150
Benz(a)Anthracene-D12	100	15.65	106.8		50-150
Chrysene D12	100	15.76	59.1		50-150
Benzo(b)Fluoranthene-D12	100	18.98	68.8		50-150
Benzo(k)Fluoranthene-D12	100	19.06	57.5		50-150
Benzo(a)Pyrene D12	100	19.86	84.5		30-150
Perylene D12	100	20.09	81.0		50-150
Indeno(1,2,3,cd)Pyrene-D12	100	23.42	74.0		50-150
Dibenz(a,h)Anthracene-D14	100	23.57	58.2		50-150
Benzo(g,h,i)Perylene D12	100	24.35	57.2		50-150

M	Indicates that a peak has been manually integrated.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
NS	Indicates that this compound was not spiked.

Chain of Custody (COC) / Analytical Request For

L2748930-COFC

COC Number: 17 -

Page 1 of 1

Canada Toll Free: 1 800 668 9878

Report To	Contact and company name below will appear on the final report	Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	RWDI	Select Report Format:	☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)	Standard TAT is 15 business days. DTOX analysis standard TAT is 5 business days
Contact:	Matt Lantz	Quality Control (QC) Report with Report	☐ YES ☐ NO	PRIORITY (Business Days): ☐ 15 day [R- Regular] ☐ 10 day [P-50%] ☐ 5 day [E-100%] — EMERGENCY: ☐ 5 Business day - DTOX [R - Regular] ☐ 3 Business day - DTOX [E - 100%]
Phone:	519 823 1311	☐ Compare Results to Criteria on Report - provide details below if box checked		
	Company address below will appear on the final report	Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX	
Street:	600 Southgate Drive	Email 1 or Fax	Matt.Lantz@rwdi.com	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
City/Province:	Guelph, Ontario	Email 2		For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:	N1G 4P6	Email 3		
Invoice To	Same as Report To ☐ YES ☐ NO	Invoice Distribution		Analysis Request
	Copy of Invoice with Report ☐ YES ☐ NO	Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX	
Company:		Email 1 or Fax		
Contact:		Email 2		

Project Information		Oil and Gas Required Fields (client use)		
ALS Account # / Quote #:		AFE/Cost Center:	PO#	
Job #:	DYEC	Major/Minor Code:	Routing Code	
PO / AFE:	1803743 Phase 1000	Requisitioner:		
LSD:		Location:		
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler:	Martin Town

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Sample Air Volume (m3)	Date (dd-mmm-yy)	Sample Period	Sample Type	NUMBER OF CONTAINERS: TSP, ICP on Hi-Vol Filter	PAH	DX	SAMPLES ON HOLD
1	L2748067-3- Dundas	332	13-Mar-23	24hr	Air		X	X	
1	743727	1545	13-Mar-23	24hr	Air	X			
2	743725	1545	07-Mar-23	24hr	Air	X			
2	L2748067-2 - Courtice	330	13-Mar-23	24hr	Air		X	X	
3	743728	1686	13-Mar-23	24hr	Air	X			
4	743726	1650	07-Mar-23	24hr	Air	X			
				24hr	Air				
				24hr	Air				
				24hr	Air				
				24hr	Air				
				24hr	Air				
				24hr	Air				
				24hr	Air				

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	
Are samples for human consumption/ use? ☐ YES ☑ NO	Samples are 10 day TAT

SAMPLE CONDITION AS RECEIVED (lab use only)			
Frozen ☐	SIF Observations	Yes ☐	☒
Ice Packs ☑ Ice Cubes ☐	Custody seal intact	Yes ☑	☐
Cooling Initiated ☑			
INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C	
2.8°C 11.7°C			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
	14-Mar-23	11:30	ARRow Burton	15-March-2023	9:45			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 23

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Table B5: 2023 Courtice Station Q1 Monitoring Results for PAHs

Contaminant	Units	*MECP Criteria*	13-Mar-23	No. > Criteria
1-Methylnaphthalene	ng/m^3	*12000*	1.38E+00	0
2-Methylnaphthalene	ng/m^3	*10000*	2.55E+00	0
Acenaphthene	ng/m^3		6.94E-01	-
Acenaphthylene	ng/m^3	*3500*	1.14E-01	0
Anthracene	ng/m^3	*200*	1.42E-02	0
Benzo(a)Anthracene	ng/m^3		1.55E-02	-
Benzo(a)fluorene	ng/m^3		4.70E-02	-
Benzo(a)Pyrene (Historically High)	ng/m^3	*0.05* [1] *5* [2] *1.1* [3]	5.42E-02	1
Benzo(b)Fluoranthene	ng/m^3		7.06E-02	-
Benzo(b)fluorene	ng/m^3		9.27E-03	-
Benzo(e)Pyrene	ng/m^3		4.09E-02	-
Benzo(g,h,i)Perylene	ng/m^3		5.76E-02	-
Benzo(k)Fluoranthene	ng/m^3		7.21E-02	-
Biphenyl	ng/m^3		1.21E+00	-
Chrysene	ng/m^3		9.33E-02	-
Dibenzo(a,h)Anthracene	ng/m^3		6.88E-03	-
Fluoranthene	ng/m^3		4.30E-01	-
Fluorene	ng/m^3		8.97E-01	-
Indeno(1,2,3-cd)Pyrene	ng/m^3		5.42E-02	-
Naphthalene	ng/m^3	*22500*	5.24E+00	0
o-Terphenyl	ng/m^3		4.97E-03	-
Perylene	ng/m^3		4.55E-03	-
Phenanthrene	ng/m^3		1.67E+00	-
Pyrene	ng/m^3		2.45E-01	-
Tetralin	ng/m^3		3.06E-01	-
Total PAH[4]	ng/m^3		15.28	-

NOTE: All non-detectable results were reported as 1/2 of the detection limit

[1] AAQC

[2] O. Reg. 419/05 Schedule Upper Risk Thresholds

[3] O. Reg. 419/05 24 Hour Guideline

[4] Total PAH sums all PAH contaminants

Table B6: 2023 Rundle Road Station Q1 Monitoring Results for PAHs

Contaminant	Units	*MECP Criteria*	13-Mar-23	No. > Criteria
1-Methylnaphthalene	ng/m^3	*12000*	1.32E+00	0
2-Methylnaphthalene	ng/m^3	*10000*	2.26E+00	0
Acenaphthene	ng/m^3		5.06E-01	-
Acenaphthylene	ng/m^3	*3500*	1.30E-01	0
Anthracene	ng/m^3	*200*	3.22E-02	0
Benzo(a)Anthracene	ng/m^3		2.18E-02	-
Benzo(a)fluorene	ng/m^3		5.42E-02	-
Benzo(a)Pyrene (Historically High)	ng/m^3	*0.05* [1] *5* [2] *1.1* [3]	7.92E-02	1
Benzo(b)Fluoranthene	ng/m^3		9.34E-02	-
Benzo(b)fluorene	ng/m^3		1.11E-02	-
Benzo(e)Pyrene	ng/m^3		5.06E-02	-
Benzo(g,h,i)Perylene	ng/m^3		6.27E-02	-
Benzo(k)Fluoranthene	ng/m^3		7.62E-02	-
Biphenyl	ng/m^3		1.58E+00	-
Chrysene	ng/m^3		9.64E-02	-
Dibenzo(a,h)Anthracene	ng/m^3		7.59E-03	-
Fluoranthene	ng/m^3		4.67E-01	-
Fluorene	ng/m^3		9.31E-01	-
Indeno(1,2,3-cd)Pyrene	ng/m^3		6.33E-02	-
Naphthalene	ng/m^3	*22500*	5.33E+00	0
o-Terphenyl	ng/m^3		5.18E-03	-
Perylene	ng/m^3		4.73E-03	-
Phenanthrene	ng/m^3		1.94E+00	-
Pyrene	ng/m^3		2.70E-01	-
Tetralin	ng/m^3		3.43E-01	-
Total PAH[4]	ng/m^3		15.73	-

NOTE: All non-detectable results were reported as 1/2 of the detection limit

[1] AAQC

[2] O. Reg. 419/05 Schedule Upper Risk Thresholds

[3] O. Reg. 419/05 24 Hour Guideline

[4] Total PAH sums all PAH contaminants

Station: RofD Courtice Daily: 13/03/2023 Type: AVG 1 Hr. [5 Mins.]

Date & Time	PM2.5	NO	NO2	NOX	SO2	WS km/hr	ET	WD	Tr_Temp	RH AVG	BP	Rain total	Hi-Vol Pressure	PUF Pressure	Hivol Flow	PUF Flow
	ug/m3	ppb	ppb	ppb	ppb	km/hr	C°	Deg	C°	%	in HG	mm	in H20	in H20	cfm	cfm
13/03/2023 00:00	6.6	0.3	3.9	4.1	0.601	10.92	-1.146	33	19.9	96.4	29.59	0	4.69	49.95	47.23	8.44
13/03/2023 01:00	7.1	0.7	4.3	5	1.144	7.32	-0.908	43	20	100	29.59	0	4.8	48.6	47.75	8.33
13/03/2023 02:00	5.9	0	4.1	4.2	10.69	6.8	-0.82	22	20	100	29.57	0	4.81	49.1	47.81	8.37
13/03/2023 03:00	5.6	0.6	6.3	6.9	2.203	4.85	-0.589	214	19.7	100	29.56	0	4.79	49.36	47.65	8.38
13/03/2023 04:00	7.2	1.2	5.2	6.4	0.864	7.58	-0.869	351	20.1	97.6	29.56	0	4.82	48.96	47.83	8.36
13/03/2023 05:00	9.3	0.6	4.5	5.1	0.334	8.02	-1.136	348	20	93.8	29.56	0	4.83	49.26	47.93	8.38
13/03/2023 06:00	9.1	1.5	5.7	7.2	1.503	8.05	-1.132	351	19.9	86.2	29.57	0	4.82	49.11	47.9	8.37
13/03/2023 07:00	7.4	0.6	3.9	4.5	0.29	7.44	-0.973	338	19.9	81.3	29.58	0	4.82	49	47.88	8.36
13/03/2023 08:00	4.1	3.7	7.5	11.2	0.23	5.14	-0.4	321	19.8	76.4	29.59	0	4.78	48.66	47.63	8.33
13/03/2023 09:00	1.7	1.5	2.6	4.1	0.272	7.02	0.844	306	20.1	69.1	29.59	1.5	4.72	48.04	47.18	8.26
13/03/2023 10:00	1.3	1.1	1.7	2.8	0.324	7.56	1.108	341	19.9	67.1	29.58	0	4.74	47.85	47.27	8.24
13/03/2023 11:00	1.4	0.7	1.4	2.1	0.488	5.41	1.636	241	19.5	65.5	29.58	0	4.72	47.58	47.12	8.22
13/03/2023 12:00	1.7	1.2	2	3.3	0.114	11.12	1.387	228	19.9	68.9	29.58	0.07	4.78	47.94	47.44	8.25
13/03/2023 13:00	3.3	0.5	2.2	2.7	0.073	15.11	0.798	232	19.8	74.5	29.57	0	4.83	48.16	47.75	8.27
13/03/2023 14:00	9.2	1.9	6.4	8.3	0	13.47	0.344	234	19.7	84.7	29.57	0	4.84	48.39	47.85	8.3
13/03/2023 15:00	11.1	1.8	9.4	11.2	0.002	11.48	0.47	243	20	85.6	29.57	0	4.83	48.12	47.8	8.27
13/03/2023 16:00	6.8	1.3	6.6	7.9	0.022	8.22	0.858	274	19.8	80.7	29.57	0	4.82	48.15	47.72	8.27
13/03/2023 17:00	4.2	0.4	3.9	4.3	0	8.27	0.56	319	19.9	76.9	29.58	0	4.84	48.15	47.84	8.28
13/03/2023 18:00	3.1	0.3	4.6	4.8	0	8.63	0.221	316	20	76.8	29.59	0	4.85	48.04	47.92	8.27
13/03/2023 19:00	2.4	0.2	3.1	3.3	0	11.38	-0.257	317	19.9	74	29.6	0	4.85	47.79	48	8.26
13/03/2023 20:00	2.1	0.5	2.9	3.4	0	13.81	-1.151	321	20.1	73.7	29.6	0	4.84	48.2	48.04	8.3
13/03/2023 21:00	1.8	0.6	2.9	3.5	0	13.89	-1.604	321	20	73.7	29.6	0	4.85	49.06	48.11	8.38
13/03/2023 22:00	1.5	0.3	2.1	2.4	0	12.38	-1.741	318	20	74.5	29.59	0	4.85	49.2	48.15	8.39
13/03/2023 23:00	1.6	0.3	2.1	2.3	0	13.07	-1.765	318	20	75.5	29.59	0	4.86	49.19	48.15	8.39
Minimum	1.3	0	1.4	2.1	0	4.85	-1.765	22	19.5	65.5	29.56	0	4.69	47.58	47.12	8.22
MinDate	10:00	02:00	11:00	11:00	14:00	03:00	23:00	02:00	11:00	11:00	03:00	00:00	00:00	11:00	11:00	11:00
Maximum	11.1	3.7	9.4	11.2	10.69	15.11	1.636	351	20.1	100	29.6	1.5	4.86	49.95	48.15	8.44
MaxDate	15:00	08:00	15:00	08:00	02:00	13:00	11:00	04:00	04:00	01:00	19:00	09:00	23:00	00:00	22:00	00:00
Avg	4.8	0.9	4.1	5	0.798	9.46	-0.261	265	19.9	81.4	29.58	0.07	4.81	48.58	47.75	8.32
Num	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Data[%]	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
STD	3	0.8	2	2.5	2.1	3	1	97.3	0.1	10.9	0	0.3	0	0.6	0.3	0.1

Station: RofD Rundle Daily: 13/03/2023 Type: AVG 1 Hr. [5 Mins.]

Date & Time	PM2.5	NO	NO2	NOX	SO2	Precip	ET	Tr_Temp	RH AVG	Rain total	WS km/hr	WD	Hi-Vol Pressure	PUF Pressure	Hivol Flow	PUF Flow
	ug/m3	ppb	ppb	ppb	ppb	Volts	C°	C°	%	mm	km/hr	Deg	in H20	in H20	cfm	cfm
13/03/2023 00:00	3.4	0.1	2.2	2.2	0.359	12.8	-1.5	22.4	100	0	5.8	36	3.66	55.75	40.21	8.31
13/03/2023 01:00	3.6	0.2	2	2.2	0.39	12.8	-1.3	22.4	100	0	4.35	26	3.71	55.44	40.42	8.29
13/03/2023 02:00	3.8	0.1	1.8	1.9	0.279	12.8	-1.1	22.4	100	0	5.09	21	3.67	55.43	40.21	8.28
13/03/2023 03:00	3.7	0.2	1.2	1.4	0.353	12.8	-0.9	22.3	100	0	4.25	208	3.67	55.36	40.19	8.28
13/03/2023 04:00	4.9	0.1	1.3	1.4	0.268	12.8	-1.2	22.4	100	0	5.9	343	3.67	54.49	40.22	8.22
13/03/2023 05:00	7.4	0.1	1.7	1.8	0.26	12.8	-1.5	22.3	100	0	6.83	340	3.7	54.58	40.42	8.23
13/03/2023 06:00	7.6	0.1	1.8	1.8	0.32	12.8	-1.5	22.5	98.8	0	6.85	340	3.69	54.48	40.34	8.22
13/03/2023 07:00	6	0.5	1.7	2.2	0.422	12.8	-1.3	22.3	94.2	0	5.26	345	3.72	53.91	40.49	8.18
13/03/2023 08:00	4.5	0.5	1.9	2.4	0.377	12.8	-0.6	22.4	87.1	0.48	3.96	338	3.67	53.08	40.17	8.11
13/03/2023 09:00	2.3	0.5	1.7	2.2	0.381	12.8	0.8	22.1	76.1	1.07	5.2	283	3.65	52.66	39.97	8.07
13/03/2023 10:00	1.5	0.2	0.9	1.1	0.316	12.8	1.2	21.9	71.4	0	6.37	346	3.66	52.19	39.95	8.03
13/03/2023 11:00	1.6	1.6	2.6	4.2	0.382	12.8	2	22.3	66.9	0	3.86	283	3.66	51.8	39.94	7.99
13/03/2023 12:00	2.2	2.7	6.3	9	0.408	12.8	2.1	22.7	68.3	0	5.94	247	3.68	51.8	40.02	7.99
13/03/2023 13:00	4.6	3.3	8.3	11.6	0.431	12.8	1.1	22.4	76.8	0	12.79	236	3.67	52.65	40.07	8.06
13/03/2023 14:00	9.9	3.2	11	14.2	0.39	12.8	0.4	22.3	94.4	0	12.63	242	3.74	53.21	40.49	8.11
13/03/2023 15:00	12.2	5.4	14.5	19.9	0.419	12.8	0.5	22.3	97.9	0	11.45	243	3.74	53.14	40.47	8.1
13/03/2023 16:00	7.1	2.6	9	11.5	0.42	12.8	0.8	22.2	89.7	0.02	6.22	289	3.75	52.61	40.53	8.06
13/03/2023 17:00	4.7	0.1	1.7	1.8	0.338	12.8	0.4	22.3	86.3	0	5.61	315	3.68	53.43	40.15	8.13
13/03/2023 18:00	4.3	0	1.6	1.4	0.329	12.8	-0.2	22.3	88.9	0	5.27	305	3.78	53.22	40.73	8.12
13/03/2023 19:00	3.3	0.1	1.3	1.2	0.325	12.8	-0.6	22.3	83.8	0	7.03	303	3.74	53.44	40.55	8.14
13/03/2023 20:00	2.4	0.1	1.1	0.9	0.379	12.8	-1.5	22.4	81	0	9.55	309	3.72	54.09	40.54	8.2
13/03/2023 21:00	1.9	0.1	0.8	0.7	0.336	12.8	-1.9	22.4	80.6	0	8.44	312	3.71	54.67	40.51	8.24
13/03/2023 22:00	1.7	0.1	0.6	0.6	0.297	12.8	-2	22.3	80.4	0	9.18	310	3.81	55.88	41	8.33
13/03/2023 23:00	1.9	0.1	0.6	0.6	0.216	12.8	-2	22.5	82.1	0	8.96	308	3.81	55.79	41.06	8.32
Minimum	1.5	0	0.6	0.6	0.216	12.8	-2	21.9	66.9	0	3.86	21	3.65	51.8	39.94	7.99
MinDate	10:00	18:00	22:00	22:00	23:00	00:00	22:00	10:00	11:00	00:00	11:00	02:00	09:00	11:00	11:00	11:00
Maximum	12.2	5.4	14.5	19.9	0.431	12.8	2.1	22.7	100	1.07	12.79	346	3.81	55.88	41.06	8.33
MaxDate	15:00	15:00	15:00	15:00	13:00	00:00	12:00	12:00	00:00	09:00	13:00	10:00	22:00	22:00	23:00	22:00
Avg	4.4	0.9	3.2	4.1	0.35	12.8	-0.4	22.3	87.7	0.07	6.95	264	3.71	53.88	40.36	8.17
Num	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Data[%]	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
STD	2.7	1.4	3.6	5	0.1	0	1.2	0.1	10.7	0.2	2.5	96.8	0	1.3	0.3	0.1

APPENDIX G

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May 10, 2023

Lyndsay Waller
Operations Technician
The Regional Municipality of Durham
Durham York Energy Centre
605 Rossland Road East, 1st Floor
Corporate Services-Legislative Services Division
Whitby, ON L1N 6A3
Lyndsay.Waller@durham.ca
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Re: Durham York Energy Centre (DYEC)
2023 Ambient Air Q1 Sulphur Dioxide Emissions
RWDI Reference No. 2205149

In support of the 2023, Q1 Ambient Air Quality Monitoring Report prepared by RWDI Inc., the following information is provided in relation to the performance of the DYEC during the periods of elevated sulphur dioxide (SO_2) concentrations observed at the facility's Courtice and Rundle ambient air monitoring stations.

The Emission Summary and Dispersion Modelling (ESDM) report submitted as part of the DYEC ECA Application modelled SO_2 concentrations at the maximum point of impingement (POI) for a facility operating at 110% maximum continuous rating (MCR) with in-stack SO_2 concentrations at the permit limit of 35 mg/m^3. Under this conservative assumed facility operating condition, the predicted maximum 1-hour average concentration at the POI was 8.62 µg/m^3, which represents 8.62% of the new ambient air standard of 100 µg/m^3, which was implemented in 2020.

During Q1, there were eighty-nine (89) exceedance events above the rolling 10-minute SO_2 Ambient Air Quality Criteria (AAQC) and thirty-one (31) exceedance events above the rolling 1-hour SO_2 AAQC recorded at the Courtice Station.

Each of the date and times of the SO_2 AAQC exceedances were compared against the wind direction recorded at the ambient air stations as well as the SO_2 concentrations measured at the DYEC by the continuous emissions monitoring system (CEMS).

As indicated by RWDI in the 2023 DYEC Ambient Air Q1 Report, the Courtice Station pollution rose in Figure 6 shows that the majority of elevated SO_2 events at Courtice occurred from the north-northeast to east-northeast directions. The events were possibly a result of emissions from surrounding industrial sources with potential contributions from DYEC in the east-northeast direction. The Courtice Station pollution rose in Figure 7 shows that <0.36% of the 5-min SO_2 events are elevated >67 ppb and occurred predominately from the north-northwest to north-northeast directions. The pollution rose indicates that the DYEC was not the main contributor to SO_2 levels at the station and that the levels may be related to other industrial activity nearby.

The Rundle Road Station pollution rose in Figure 6 shows that no elevated SO_2 events occurred at the Rundle Road Station during Q1 of 2023. The pollution rose indicates that the DYEC was not a contributor to SO_2 levels at the station and that the levels may be related to other industrial activity nearby. The Rundle Road Station pollution rose in Figure 7 shows that there were no SO_2 concentrations >67 ppb.

During the times the SO2 AAQC events occurred, both boilers CEMS concentrations, comprised of 24-hour rolling arithmetic average, were recorded between 0-18 mg/Rm3. The DYEC's CEMS concentrations for both boilers were below the DYEC regulatory compliance limit of 35 mg/Rm3 and the facility was operating under normal conditions.