REPORT

DURHAM YORK ENERGY CENTRE

COURTICE, ONTARIO

2024 Q2 AMBIENT AIR QUALITY MONITORING REPORT

RWDI #2400035

July 31, 2024

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.

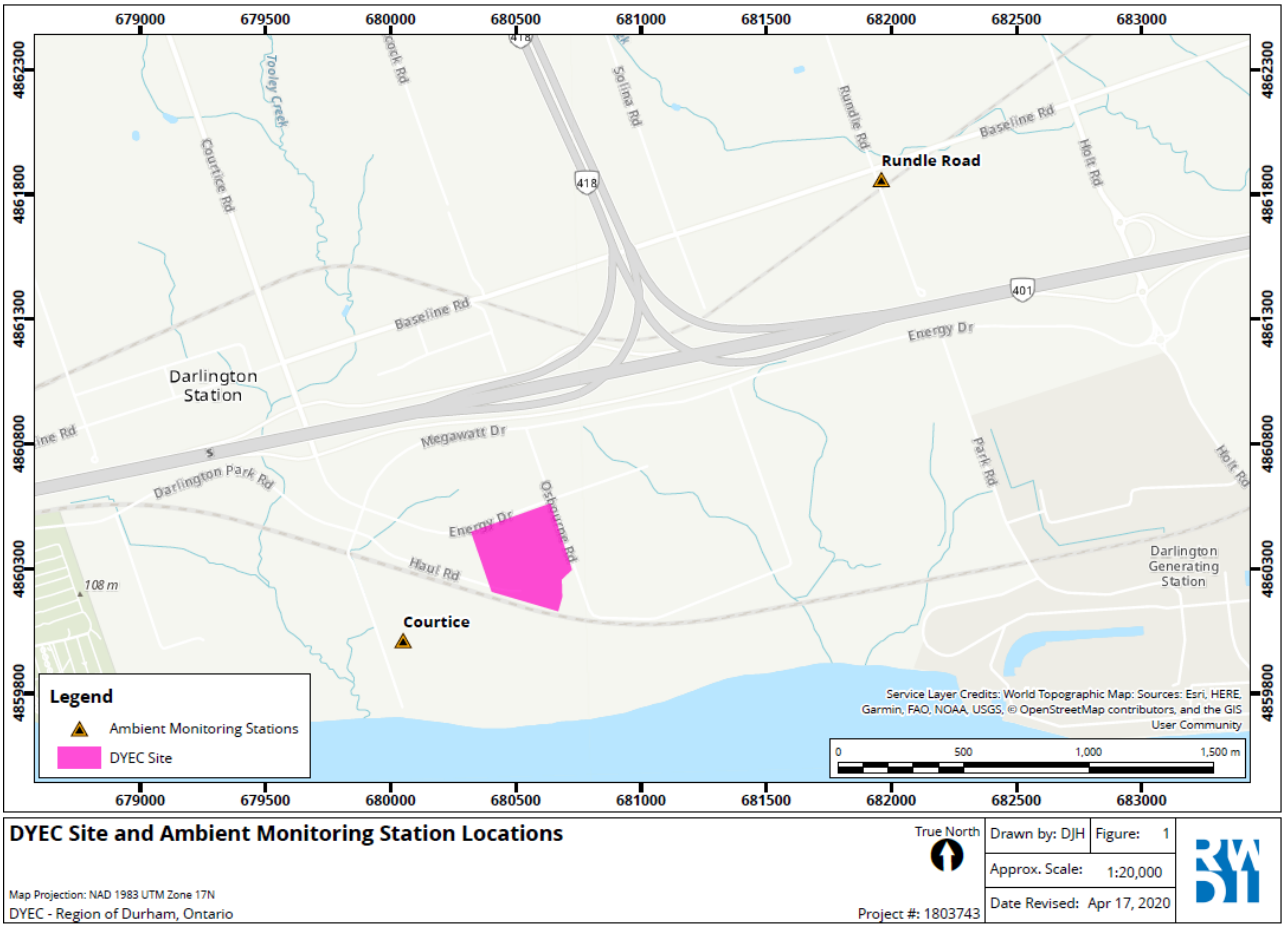
The facility has two (2) monitoring stations which collect continuous and discrete ambient measurements, known as the Courtice station and Rundle Road station. The station locations are shown in Figure 1. The Courtice and Rundle Road stations were operational in May of 2013 and have been operated on 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 thirty–one (31) exceedance events of the rolling 10-minute SO_2 AAQC and fifteen (15) exceedance events of the rolling 1-hour SO_2 AAQC at the Courtice station. There were no exceedances of the Benzo(a) Pyrene AAQC at either the Courtice station or Rundle Road station. Data recovery rates were acceptable and valid for all measured Q2 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

In Q2, there was a MECP audit conducted on June 18, 2024. 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 April to June 2024 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 an average of 99.8% of data collection for all of the parameters measured during Q2.

Hourly statistics from the meteorological station are presented in **Table 2**. A wind rose showing trends in wind speed and wind direction during Q2 is provided in **Figure 4**. A wind direction cut-off was applied for wind speeds less than or equal to 1.8 kph for the wind rose.

Figure 4: Wind Roses of Hourly Wind Speed and Wind Direction – April to June 2024

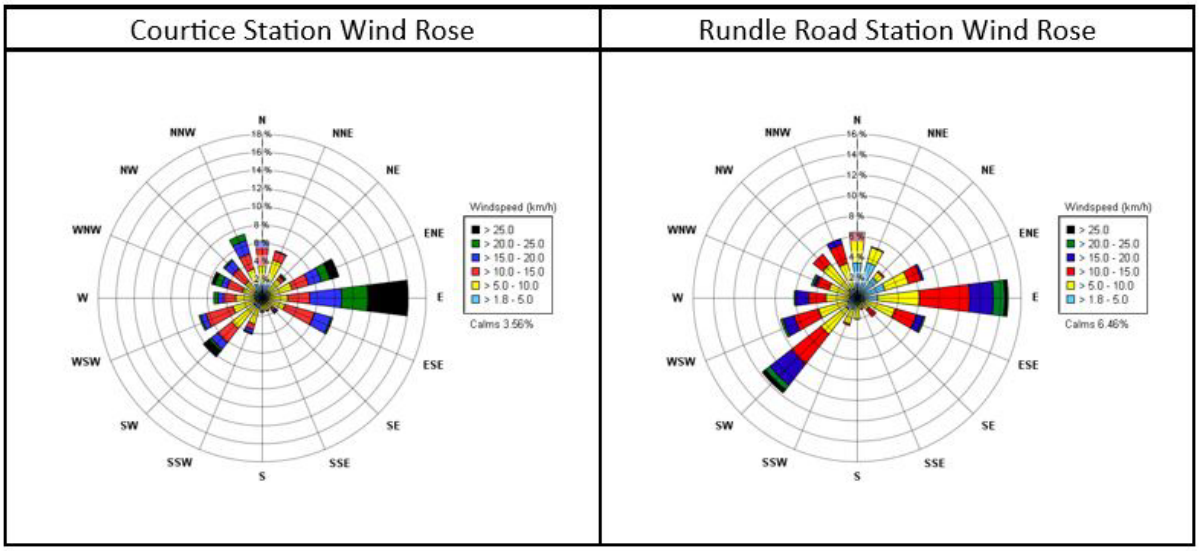


Table 2: Hourly Statistics from the Courtice Meteorological Station

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	(%)					
April	47.1	17.0	100.0	30.2	5.0	0.2	-0.7	22.4	28.8	0.0	15.1	7.8	69.2	29.6	0.1	103.2	100.0	97.6	100.0	100.0	100.0	100.0
May	34.6	24.7	100.0	30.0	4.9	0.0	7.7	26.9	29.2	0.0	10.3	15.0	73.6	29.6	0.1	37.5	100.0	99.9	100.0	100.0	100.0	100.0
June	29.0	28.3	100.0	30.0	10.9	0.3	8.6	30.4	29.2	0.0	9.8	18.6	75.2	29.6	0.1	87.9	99.7	99.7	99.7	99.7	99.7	100.0
Q2 Arithmetic Mean											11.7	13.8	72.7	29.6	0.1	228.6	99.9	99.1	99.9	99.9	99.9	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 96.6% data collection for all of the meteorological parameters measured during Q2. Hourly statistics from the meteorological station is presented in **Table 3**. A wind rose showing trends in wind speed and wind direction during Q2 is provided in **Figure 4**. A wind direction cut-off was applied for wind speeds less than or equal to 1.8 kph for the wind rose.

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	(%)				
April	30.1	16.2	100.0	7.2	0.1	-2.4	23.3	0.0	10.2	7.7	71.6	0.1	86.4	89.7	88.9	89.7	89.7	89.7
May	24.2	26.6	100.0	5.1	0.1	6.2	28.1	0.0	7.7	14.8	77.0	0.1	45.0	100.0	100.0	100.0	100.0	100.0
June	26.9	28.6	100.0	10.3	0.2	6.4	30.9	0.0	7.8	18.4	78.5	0.1	105.4	100.0	100.0	100.0	100.0	100.0
Q2 Arithmetic Mean									8.5	13.6	75.9	0.1	236.8	96.6	96.3	96.6	96.6	96.6

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 thirty-one (31) exceedance events of the rolling 10-minute SO_2 AAQC and fifteen (15) exceedance events of the 1-hour SO_2 AAQC in Q2. At the Rundle Road station, there were no exceedance events of the rolling 10-minute SO_2 AAQC or the 1-hour SO_2 AAQC in Q2.

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	($\mu g/m^3$)	ppb				($\mu g/m^3$)	ppb				($\mu g/m^3$)	ppb				(%)				
AAQC/CAAQS	67				200	40	27[A]			100											
April	174.3	45.3	58.9	33.3	35.7	76.5	13.4	20.8	5.8	15.0	14.2	4.1	6.8	1.3	5.5	2.8	99.9	99.6	99.6	99.6	99.7
May	160.3	23.9	42.1	20.6	30.1	75.5	13.2	14.2	3.9	11.2	7.3	5.1	6.1	1.3	4.8	2.4	99.9	99.2	99.2	99.2	99.5
June	423.7	23.3	37.1	17.5	26.8	125.4	12.6	10.1	3.5	8.3	11.3	6.0	4.4	0.8	3.6	1.9	99.3	99.4	99.4	99.4	99.4
Q2 Arithmetic Mean												5.1	5.8	1.1	4.6	2.4	99.7	99.4	99.4	99.4	99.5

[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	($\mu g/m^3$)	ppb				($\mu g/m^3$)	ppb				($\mu g/m^3$)	ppb				(%)				
AAQC/CAAQS	67				200	40	27[A]			100											
April	3.1	49.5	46.6	24.5	23.1	1.6	7.6	12.4	3.2	9.2	0.7	3.5	4.7	1.2	3.5	0.4	89.7	88.9	88.9	88.9	89.6
May	2.5	28.9	63.5	36.4	27.2	1.9	13.7	12.5	4.7	7.7	0.9	4.6	4.8	1.2	3.8	0.4	99.7	99.6	99.6	99.6	99.6
June	5.0	21.9	48.0	22.7	25.3	4.8	13.0	9.3	3.2	7.0	0.6	5.6	4.3	0.8	3.6	0.2	99.7	99.6	99.6	99.6	99.6
Q2 Arithmetic Mean												4.5	4.6	1.1	3.6	0.3	96.4	96.1	96.1	96.1	96.3

[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.		
April	15	0		0	9		0	0	N/A	0		N/A	0	
May	6	0		0	3		0	0	N/A	0		N/A	0	
June	10	0		0	3		0	0	N/A	0		N/A	0	
Q2 Total	31	0		0	15		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 (99.4% 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 35.7 ppb, which is 17.9% of the AAQC. The highest NO_2 value seen among the rolling 24-hour averages was 15.0 ppb, which is 15.0% of the AAQC. The measurements are summarized in **Table 4** above. A pollution rose is presented in **Figure 5** for the Courtice station during Q2 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 north-northeast to east. 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 east, west-northwest to north, which indicates reception from surrounding industry or the highway and railway corridors.

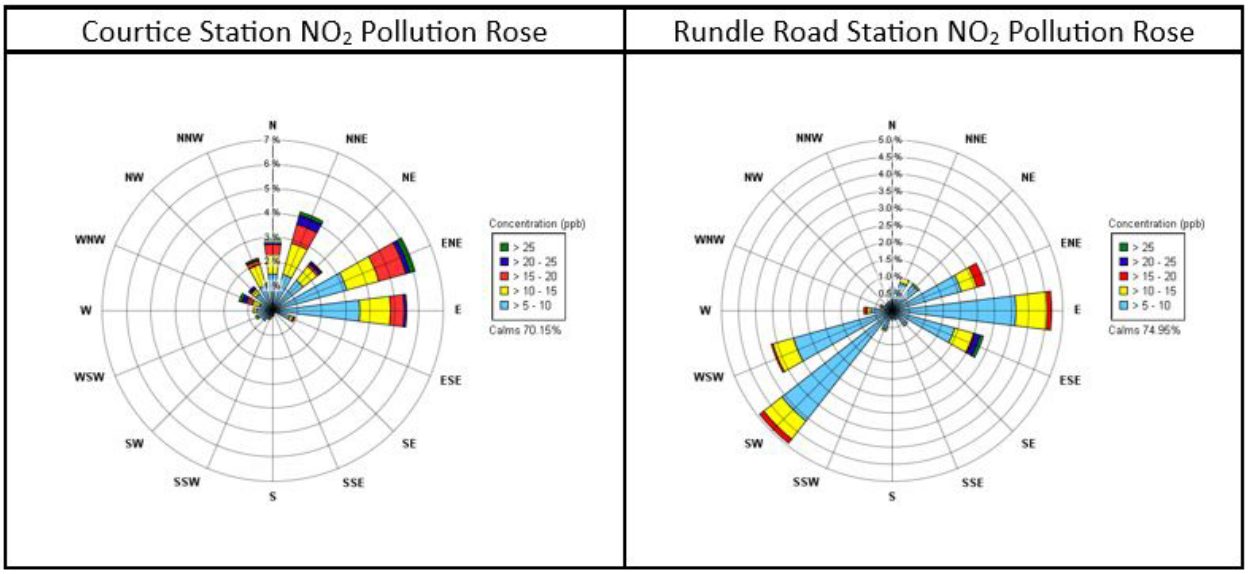
5.3.2 Rundle Road Station Results

Data recovery levels were high for oxides of nitrogen (96.1% 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 27.2 ppb, which is 13.6% of the AAQC. The highest NO_2 value seen among the rolling 24-hour averages was 9.2 ppb, which is 9.2% 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 Q2 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 primarily from the southwest to west-southwest and east to east-southeast. The station is downwind of the DYEC when winds are from the south-southwest and southwest directions. Elevated concentrations occurred occasionally from the southwest during the monitoring period, therefore it is likely that the DYEC partially contributed to the observed concentrations. There are additional impacts from the east-northeast to east-southeast which indicates reception from surrounding industry or the highway and railway corridors.

Figure 5: Pollution Roses of Hourly Average NO_2 Concentrations – April to June 2024



5.4 Sulphur Dioxide Results

5.4.1 Courtice Station Results

Data recovery levels were high for sulphur dioxide (99.5% 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. In Q2, the highest SO_2 value seen among the 10-min rolling averages was 423.7 ppb, which is 632.4% of the AAQC. The highest SO_2 value seen among the 1-hour rolling averages was 125.4 ppb, which is 313.5% of the AAQC. There were thirty-one (31) exceedance events above the rolling 10-minute AAQC and fifteen (15) 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 Q2 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 Q2 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 to northeast directions. The events were likely a result of emissions from surrounding industrial sources with contributions from the DYEC in the northeast direction.

The Courtice station pollution rose in **Figure 7** shows that <1.00% of the 5-min SO_2 events are elevated >67 ppb and the majority occurred from the 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 Q2, is included in **Appendix F**. The Memorandum indicates that based on the in-stack concentration levels measured by the CEMS, that there were no unusual levels of SO_2 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 (96.3% 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 5.0 ppb, which is 7.5% of the AAQC. The highest SO_2 value seen among the 1-hour rolling averages was 4.8 ppb, which is 12.0% 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 Q2 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 Q2 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 there were no events of elevated SO_2 at the Rundle Road during Q2 of 2024.

The Rundle Road station pollution rose in **Figure 7** shows that there were no 5-min SO_2 events that are elevated >67 ppb.

Figure 6: Pollution Roses of Hourly Average SO_2 Concentrations – April to June 2024

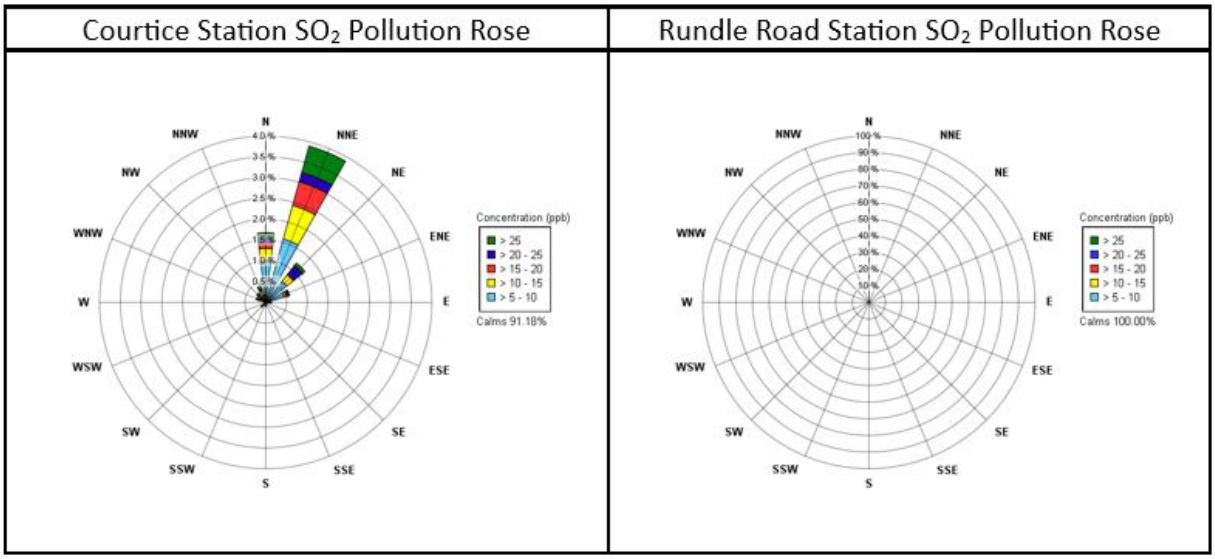
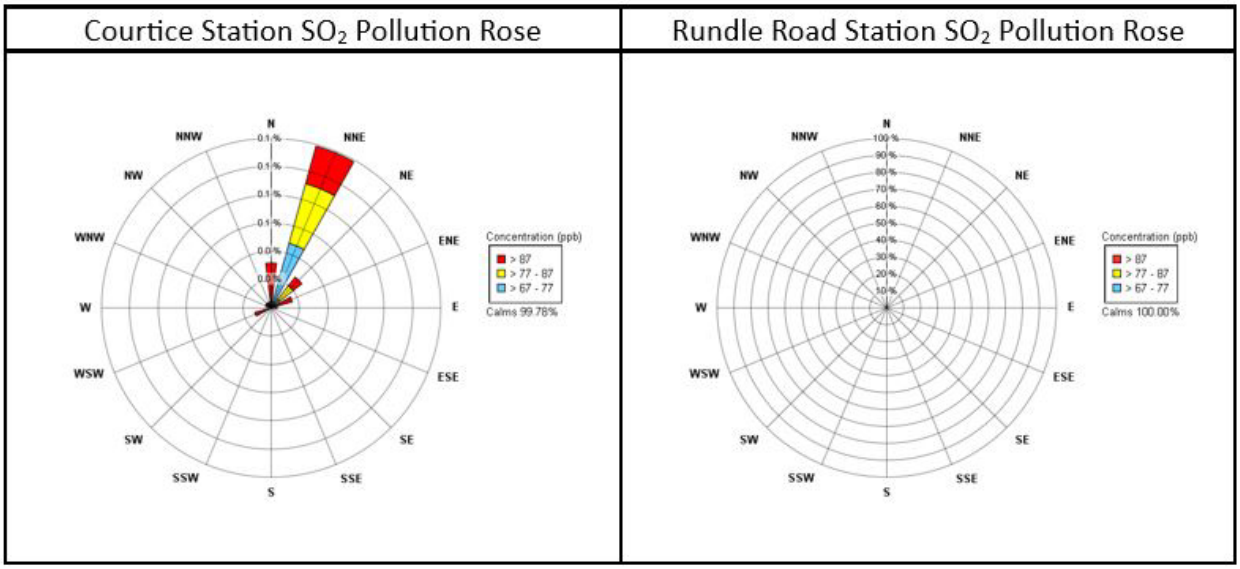


Figure 7: Pollution Roses of 5-minute Average SO_2 Concentrations >67 ppb – April to June 2024



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 (99.7% 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 45.3 µg/m^3 and the highest value seen among the 24-hour rolling averages was 13.4 µg/m^3. The results are summarized in **Table 4** above. A pollution rose is presented in **Figure 8** for the Courtice station during Q2 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.

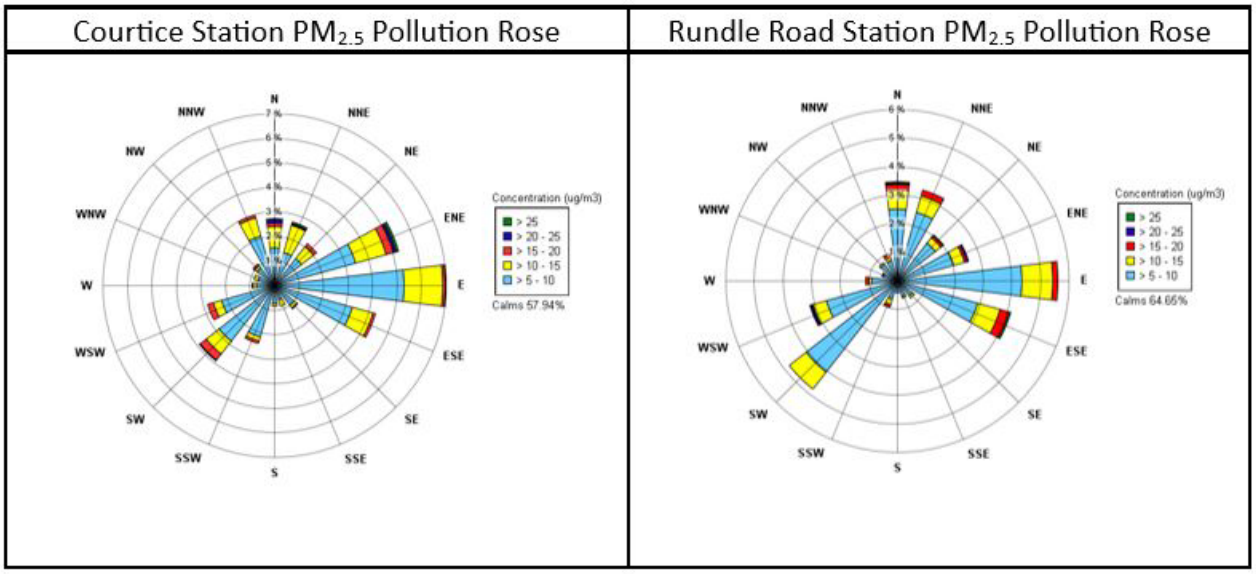
The Courtice station pollution rose in **Figure 8** shows that the majority of elevated $PM_{2.5}$ events at Courtice occurred when winds were from the east-northeast to east, which places the station downwind of the DYEC occasionally. Other contributions are in line with nearby industrial activity.

5.5.2 Rundle Road Station Results

Data recovery levels were high for particulate matter less than 2.5 microns (96.4% valid data). The highest $PM_{2.5}$ value seen among the 1-hour rolling averages was 49.5 µg/m^3 and the highest value seen among the 24-hour rolling averages was 13.7 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 Q2 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 north to east-southeast and southwest to west-southwest. Elevated concentrations were frequent from the east to east-southeast and southwest during the monitoring period. Therefore, it is likely that the DYEC partially contributed to the observed concentrations from the southwest. Other possible contributions include surrounding industry, nearby high traffic areas and urban background.

Figure 8: Pollution Roses of Hourly Average $PM_{2.5}$ Concentrations – April to June 2024



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 Q2 with the sample days being: April 6, 12, 18, 24, 30, May 6, 12, 18, 24, 30, June 5, 11, 17, 23, and 29.

5.6.1 Courtice Station Results

Data recovery levels were high for the TSP sampler at the Courtice station (87% valid data). There were no exceedances of any of the AAQC's Criteria for TSP, mercury, or metals during Q2. **Table 7** is a summary of the statistics for this station.

Table 7: Summary of TSP Sampler Courtice Station

Contaminant	Units	MECP Criteria	No. > Criteria	Geometric Mean	Arithmetic Mean	Q2 Minimum Concentration	Q2 Maximum Concentration	April Maximum Concentration	May Maximum Concentration	June Maximum Concentration	Number of Valid Samples	% Valid data
Particulate (TSP)	µg/m³	*120*	0	22.3	25.1	6.50	55.72	35.98	55.72	31.18	13	87
Total Mercury (Hg)	µg/m³	*2*	0	6.06E-06	6.97E-06	2.99E-06	1.40E-05	1.40E-05	9.80E-06	9.17E-06	13	87
Aluminum (Al)	µg/m³	-	0	1.81E-01	2.03E-01	6.38E-02	3.81E-01	3.66E-01	3.81E-01	2.55E-01	13	87
Antimony (Sb)	µg/m³	*25*	0	6.21E-04	6.66E-04	2.04E-04	1.07E-03	8.29E-04	1.07E-03	6.91E-04	13	87
Arsenic (As)	µg/m³	*0.3*	0	1.06E-03	1.32E-03	8.89E-04	6.25E-03	9.31E-04	6.25E-03	9.17E-04	13	87
Barium (Ba)	µg/m³	*10*	0	5.57E-03	6.07E-03	2.02E-03	1.09E-02	7.63E-03	1.09E-02	4.97E-03	13	87
Beryllium (Be)	µg/m³	*0.01*	0	1.52E-05	1.52E-05	1.48E-05	1.56E-05	1.55E-05	1.56E-05	1.53E-05	13	87
Bismuth (Bi)	µg/m³	-	-	5.49E-04	5.49E-04	5.33E-04	5.62E-04	5.58E-04	5.62E-04	5.50E-04	13	87
Boron (B)	µg/m³	*120*	0	4.57E-03	4.57E-03	4.45E-03	4.69E-03	4.65E-03	4.69E-03	4.58E-03	13	87
Cadmium (Cd)	µg/m³	*0.025*	0	1.06E-04	1.35E-04	1.73E-05	4.10E-04	4.10E-04	1.64E-04	2.78E-04	13	87
Chromium (Cr)	µg/m³	*0.5*	0	1.48E-03	1.59E-03	1.01E-03	2.45E-03	2.18E-03	2.45E-03	2.17E-03	13	87
Cobalt (Co)	µg/m³	*0.1*	0	1.15E-04	1.29E-04	3.34E-05	2.48E-04	1.83E-04	2.48E-04	1.09E-04	13	87
Copper (Cu)	µg/m³	*50*	0	1.57E-02	1.97E-02	2.66E-03	5.48E-02	2.02E-02	3.51E-02	5.48E-02	13	87
Iron (Fe)	µg/m³	*4*	0	3.58E-01	3.91E-01	1.23E-01	6.92E-01	4.95E-01	6.92E-01	3.95E-01	13	87
Lead (Pb)	µg/m³	*0.5*	0	2.03E-03	2.21E-03	6.13E-04	4.31E-03	4.31E-03	2.70E-03	2.70E-03	13	87
Magnesium (Mg)	µg/m³	-	-	2.38E-01	2.60E-01	1.08E-01	5.53E-01	4.37E-01	5.53E-01	2.48E-01	13	87
Manganese (Mn)	µg/m³	*0.4*	0	9.70E-03	1.08E-02	3.43E-03	2.50E-02	1.51E-02	2.50E-02	1.03E-02	13	87
Molybdenum (Mo)	µg/m³	*120*	0	6.40E-04	7.17E-04	2.60E-04	1.65E-03	7.75E-04	1.12E-03	1.65E-03	13	87
Nickel (Ni)	µg/m³	*0.2*	0	9.04E-04	9.33E-04	5.57E-04	1.45E-03	1.07E-03	1.45E-03	1.10E-03	13	87
Phosphorus (P)	µg/m³	-	-	2.29E-01	2.29E-01	2.22E-01	2.34E-01	2.33E-01	2.34E-01	2.29E-01	13	87
Selenium (Se)	µg/m³	*10*	0	4.61E-04	4.98E-04	3.86E-04	1.21E-03	4.03E-04	4.06E-04	1.21E-03	13	87
Silver (Ag)	µg/m³	*1*	0	3.04E-05	3.34E-05	2.67E-05	1.05E-04	2.79E-05	1.05E-04	2.75E-05	13	87
Strontium (Sr)	µg/m³	*120*	0	6.36E-03	7.56E-03	1.98E-03	1.98E-02	1.18E-02	1.98E-02	8.75E-03	13	87
Thallium (Tl)	µg/m³	-	-	2.74E-05	2.74E-05	2.67E-05	2.81E-05	2.79E-05	2.81E-05	2.75E-05	13	87
Tin (Sn)	µg/m³	*10*	0	6.99E-04	8.03E-04	1.86E-04	2.28E-03	9.24E-04	9.21E-04	2.28E-03	13	87
Titanium (Ti)	µg/m³	*120*	0	7.79E-03	9.09E-03	3.29E-03	1.64E-02	1.64E-02	1.54E-02	1.24E-02	13	87
Uranium (Ur)	µg/m³	*1.5*	0	1.79E-05	2.06E-05	5.57E-06	3.65E-05	3.28E-05	3.65E-05	3.26E-05	13	87
Vanadium (V)	µg/m³	*2*	0	1.52E-03	1.52E-03	1.48E-03	1.56E-03	1.55E-03	1.56E-03	1.53E-03	13	87
Zinc (Zn)	µg/m³	*120*	0	3.04E-02	3.24E-02	1.68E-02	5.17E-02	5.02E-02	3.56E-02	5.17E-02	13	87
Zirconium (Zr)	µg/m³	-	0	6.10E-04	6.10E-04	5.93E-04	6.25E-04	6.20E-04	6.25E-04	6.11E-04	13	87

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

1 - Quarterly averages not presented due to not meeting data validity criteria of >75%

5.6.1 Rundle Road Station Results

Data recovery levels were high for the TSP sampler at the Rundle Road station (87% valid data). There were no exceedances of any of the AAQC's for TSP, mercury, or metals during Q2. **Table 8** is a summary of the station statistics.

Table 8: Summary of TSP Sampler Rundle Road Station

Contaminant	Units	MECP Criteria	No. > Criteria	Geometric Mean	Arithmetic Mean	Q2 Minimum Concentration	Q2 Maximum Concentration	April Maximum Concentration	May Maximum Concentration	June Maximum Concentration	Number of Valid Samples	% Valid data
Particulate (TSP)	µg/m³	*120*	0	30.7	33.9	13.20	67.93	38.66	51.51	67.93	13	87
Total Mercury (Hg)	µg/m³	*2*	0	8.22E-06	9.30E-06	3.09E-06	2.15E-05	2.15E-05	9.55E-06	1.33E-05	13	87
Aluminum (Al)	µg/m³	-	0	2.05E-01	2.51E-01	9.55E-02	6.98E-01	3.68E-01	3.30E-01	6.98E-01	13	87
Antimony (Sb)	µg/m³	*25*	0	6.03E-04	6.55E-04	2.28E-04	1.02E-03	9.87E-04	9.61E-04	1.02E-03	13	87
Arsenic (As)	µg/m³	*0.3*	0	9.21E-04	9.21E-04	8.87E-04	9.55E-04	9.31E-04	9.55E-04	9.28E-04	13	87
Barium (Ba)	µg/m³	*10*	0	6.35E-03	7.35E-03	2.50E-03	1.60E-02	1.25E-02	1.60E-02	1.16E-02	13	87
Beryllium (Be)	µg/m³	*0.01*	0	1.65E-05	1.71E-05	1.48E-05	3.61E-05	1.55E-05	1.59E-05	3.61E-05	13	87
Bismuth (Bi)	µg/m³	-	-	6.09E-04	6.59E-04	5.32E-04	1.85E-03	5.59E-04	1.85E-03	5.57E-04	13	87
Boron (B)	µg/m³	*120*	0	4.60E-03	4.60E-03	4.43E-03	4.77E-03	4.66E-03	4.77E-03	4.64E-03	13	87
Cadmium (Cd)	µg/m³	*0.025*	0	7.98E-05	1.23E-04	4.08E-05	6.83E-04	5.47E-05	6.83E-04	1.10E-04	13	87
Chromium (Cr)	µg/m³	*0.5*	0	1.63E-03	1.81E-03	1.01E-03	2.93E-03	2.77E-03	2.93E-03	2.88E-03	13	87
Cobalt (Co)	µg/m³	*0.1*	0	1.65E-04	1.82E-04	7.82E-05	3.47E-04	2.19E-04	2.75E-04	3.47E-04	13	87
Copper (Cu)	µg/m³	*50*	0	5.69E-02	6.07E-02	2.83E-02	1.01E-01	6.82E-02	8.47E-02	1.01E-01	13	87
Iron (Fe)	µg/m³	*4*	0	4.38E-01	4.95E-01	1.62E-01	1.16E+00	6.45E-01	6.56E-01	1.16E+00	13	87
Lead (Pb)	µg/m³	*0.5*	0	2.29E-03	2.54E-03	1.17E-03	5.12E-03	2.85E-03	5.12E-03	4.24E-03	13	87
Magnesium (Mg)	µg/m³	-	-	2.75E-01	3.07E-01	1.30E-01	6.03E-01	4.86E-01	4.23E-01	6.03E-01	13	87
Manganese (Mn)	µg/m³	*0.4*	0	1.08E-02	1.20E-02	4.82E-03	2.20E-02	1.51E-02	1.67E-02	2.20E-02	13	87
Molybdenum (Mo)	µg/m³	*120*	0	2.02E-03	2.10E-03	1.05E-03	2.78E-03	2.51E-03	2.53E-03	2.78E-03	13	87
Nickel (Ni)	µg/m³	*0.2*	0	9.76E-04	1.04E-03	5.42E-04	1.85E-03	1.36E-03	1.21E-03	1.85E-03	13	87
Phosphorus (P)	µg/m³	-	-	2.30E-01	2.30E-01	2.22E-01	2.39E-01	2.33E-01	2.39E-01	2.32E-01	13	87
Selenium (Se)	µg/m³	*10*	0	5.10E-04	5.66E-04	3.93E-04	1.21E-03	4.04E-04	4.14E-04	1.21E-03	13	87
Silver (Ag)	µg/m³	*1*	0	3.77E-05	5.03E-05	2.66E-05	2.31E-04	6.89E-05	2.86E-05	2.31E-04	13	87
Strontium (Sr)	µg/m³	*120*	0	6.82E-03	8.41E-03	2.50E-03	1.89E-02	1.33E-02	1.78E-02	1.89E-02	13	87
Thallium (Tl)	µg/m³	-	-	3.19E-05	3.88E-05	2.66E-05	1.62E-04	2.79E-05	1.62E-04	2.78E-05	13	87
Tin (Sn)	µg/m³	*10*	0	8.43E-04	9.13E-04	4.18E-04	1.56E-03	1.33E-03	1.56E-03	1.25E-03	13	87
Titanium (Ti)	µg/m³	*120*	0	8.45E-03	1.08E-02	3.38E-03	2.63E-02	1.78E-02	1.57E-02	2.63E-02	13	87
Uranium (Ur)	µg/m³	*1.5*	0	2.08E-05	2.67E-05	8.43E-06	6.18E-05	3.82E-05	4.64E-05	6.18E-05	13	87
Vanadium (V)	µg/m³	*2*	0	1.53E-03	1.53E-03	1.48E-03	1.59E-03	1.55E-03	1.59E-03	1.55E-03	13	87
Zinc (Zn)	µg/m³	*120*	0	2.98E-02	4.10E-02	1.18E-02	1.97E-01	3.74E-02	1.97E-01	4.16E-02	13	87
Zirconium (Zr)	µg/m³	-	0	6.14E-04	6.14E-04	5.91E-04	6.37E-04	6.21E-04	6.37E-04	6.18E-04	13	87

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 Q2 with the sample days being: April 12, 24, May 6, 18, 30, June 11, and 23.

5.7.1 Courtice Station Results

Data recovery levels were high for the PAH results at the Courtice station (100% valid data). There were no exceedances of any of the AAQC's during Q2 of 2024. **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 Q2 Concentration	Maximum Q2 Concentration	April Maximum Concentration	May Maximum Concentration	June Maximum Concentration	Number of Valid Samples	% Valid data
1-Methylnaphthalene	ng/m³	-	-	1.03E+00	4.21E-01	2.83E+00	9.01E-01	1.32E+00	2.83E+00	7	100
2-Methylnaphthalene	ng/m³	-	-	2.27E+00	7.78E-01	6.63E+00	1.67E+00	2.58E+00	6.63E+00	7	100
Acenaphthene	ng/m³	-	-	1.73E+00	6.03E-01	3.42E+00	8.68E-01	3.42E+00	2.81E+00	7	100
Acenaphthylene	ng/m³	-	-	1.49E-01	3.66E-02	4.92E-01	8.26E-02	2.12E-01	4.92E-01	7	100
Anthracene	ng/m³	-	-	1.27E-01	4.05E-02	2.40E-01	5.53E-02	2.40E-01	1.86E-01	7	100
Benzo(a)Anthracene	ng/m³	-	-	9.42E-03	1.66E-03	2.01E-02	2.01E-02	8.70E-03	1.88E-02	7	100
Benzo(a)fluorene	ng/m³	-	-	2.58E-02	1.45E-02	4.08E-02	3.02E-02	2.00E-02	4.08E-02	7	100
Benzo(a)Pyrene (Historically High)	ng/m³	0.05	0	6.30E-03	1.66E-03	2.15E-02	2.15E-02	6.16E-03	4.15E-03	7	100
Benzo(b)Fluoranthene	ng/m³	-	-	1.69E-02	6.98E-03	2.97E-02	2.97E-02	2.16E-02	2.09E-02	7	100
Benzo(b)fluorene	ng/m³	-	-	4.88E-03	1.66E-03	8.26E-03	5.03E-03	6.15E-03	8.26E-03	7	100
Benzo(e)Pyrene	ng/m³	-	-	1.12E-02	4.82E-03	2.35E-02	2.35E-02	1.09E-02	1.39E-02	7	100
Benzo(g,h,i)Perylene	ng/m³	-	-	1.31E-02	6.31E-03	2.49E-02	2.49E-02	2.00E-02	1.38E-02	7	100
Benzo(k)Fluoranthene	ng/m³	-	-	1.74E-02	9.30E-03	3.55E-02	3.55E-02	2.09E-02	1.89E-02	7	100
Biphenyl	ng/m³	-	-	8.74E-01	4.47E-01	1.78E+00	5.92E-01	1.25E+00	1.78E+00	7	100
Chrysene	ng/m³	-	-	4.19E-02	2.54E-02	5.86E-02	5.86E-02	4.42E-02	5.40E-02	7	100
Dibenzo(a,h)Anthracene	ng/m³	-	-	2.13E-03	1.62E-03	4.84E-03	4.84E-03	1.72E-03	1.74E-03	7	100
Fluoranthene	ng/m³	-	-	8.58E-01	3.55E-01	1.76E+00	5.53E-01	1.20E+00	1.76E+00	7	100
Fluorene	ng/m³	-	-	1.58E+00	8.72E-01	2.32E+00	1.04E+00	2.32E+00	1.81E+00	7	100
Indeno(1,2,3-cd)Pyrene	ng/m³	-	-	1.20E-02	3.65E-03	2.75E-02	2.75E-02	1.39E-02	1.38E-02	7	100
Naphthalene	ng/m³	22500	0	3.89E+00	1.27E+00	1.05E+01	2.93E+00	5.51E+00	1.05E+01	7	100
o-Terphenyl	ng/m³	-	-	6.57E-03	3.82E-03	1.13E-02	6.66E-03	1.13E-02	9.58E-03	7	100
Perylene	ng/m³	-	-	2.34E-03	1.62E-03	4.38E-03	4.38E-03	3.60E-03	1.74E-03	7	100
Phenanthrene	ng/m³	-	-	3.51E+00	1.62E+00	5.18E+00	1.88E+00	5.18E+00	4.74E+00	7	100
Pyrene	ng/m³	-	-	3.47E-01	1.53E-01	7.28E-01	2.40E-01	4.22E-01	7.28E-01	7	100
Tetralin	ng/m³	-	-	1.39E+00	1.00E-01	7.77E+00	2.59E-01	7.77E+00	1.02E+00	7	100
Total PAH	ng/m³	-	-	1.79E+01	8.16E+00	3.30E+01	1.16E+01	2.74E+01	3.30E+01	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 no exceedances of any of the AAQC's during Q2 of 2024. **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 Q2 Concentration	Maximum Q2 Concentration	April Maximum Concentration	May Maximum Concentration	June Maximum Concentration	Number of Valid Samples	% Valid data
1-Methylnaphthalene	ng/m³	-	-	9.68E-01	2.36E-01	2.41E+00	8.18E-01	1.03E+00	2.41E+00	6	86
2-Methylnaphthalene	ng/m³	-	-	2.06E+00	5.12E-01	5.57E+00	1.50E+00	1.97E+00	5.57E+00	6	86
Acenaphthene	ng/m³	-	-	1.43E+00	4.92E-01	2.71E+00	8.78E-01	1.39E+00	2.71E+00	6	86
Acenaphthylene	ng/m³	-	-	1.08E-01	2.24E-02	2.13E-01	8.59E-02	2.13E-01	2.06E-01	6	86
Anthracene	ng/m³	-	-	2.42E-01	4.39E-02	5.99E-01	4.39E-02	2.68E-01	5.99E-01	6	86
Benzo(a)Anthracene	ng/m³	-	-	1.15E-02	2.64E-03	2.44E-02	2.44E-02	9.25E-03	1.40E-02	6	86
Benzo(a)fluorene	ng/m³	-	-	3.72E-02	7.26E-03	9.61E-02	3.35E-02	4.06E-02	9.61E-02	6	86
Benzo(a)Pyrene (Historically High)	ng/m³	0.05	0	6.41E-03	1.65E-03	1.82E-02	1.82E-02	7.17E-03	4.89E-03	6	86
Benzo(b)Fluoranthene	ng/m³	-	-	1.82E-02	6.77E-03	3.57E-02	3.57E-02	1.96E-02	1.87E-02	6	86
Benzo(b)fluorene	ng/m³	-	-	5.38E-03	3.80E-03	1.15E-02	5.02E-03	4.29E-03	1.15E-02	6	86
Benzo(e)Pyrene	ng/m³	-	-	1.18E-02	5.28E-03	2.35E-02	2.35E-02	1.15E-02	1.23E-02	6	86
Benzo(g,h,i)Perylene	ng/m³	-	-	1.51E-02	7.76E-03	2.86E-02	2.86E-02	2.14E-02	1.12E-02	6	86
Benzo(k)Fluoranthene	ng/m³	-	-	1.53E-02	8.91E-03	3.39E-02	3.39E-02	1.26E-02	1.52E-02	6	86
Biphenyl	ng/m³	-	-	7.96E-01	2.02E-01	1.65E+00	5.11E-01	9.77E-01	1.65E+00	6	86
Chrysene	ng/m³	-	-	5.59E-02	1.50E-02	9.12E-02	6.71E-02	7.00E-02	9.12E-02	6	86
Dibenzo(a,h)Anthracene	ng/m³	-	-	1.95E-03	1.57E-03	3.43E-03	1.57E-03	3.43E-03	1.76E-03	6	86
Fluoranthene	ng/m³	-	-	1.31E+00	3.60E-01	3.16E+00	3.82E-01	1.76E+00	3.16E+00	6	86
Fluorene	ng/m³	-	-	1.82E+00	7.23E-01	2.52E+00	9.44E-01	2.30E+00	2.52E+00	6	86
Indeno(1,2,3-cd)Pyrene	ng/m³	-	-	1.18E-02	4.79E-03	2.51E-02	2.51E-02	1.32E-02	9.55E-03	6	86
Naphthalene	ng/m³	22500	0	3.05E+00	1.31E+00	6.08E+00	2.71E+00	4.39E+00	6.08E+00	6	86
o-Terphenyl	ng/m³	-	-	6.40E-03	1.65E-03	1.47E-02	4.61E-03	1.47E-02	8.73E-03	6	86
Perylene	ng/m³	-	-	2.49E-03	1.62E-03	4.64E-03	4.64E-03	3.65E-03	1.76E-03	6	86
Phenanthrene	ng/m³	-	-	4.05E+00	1.66E+00	6.50E+00	1.79E+00	6.50E+00	5.21E+00	6	86
Pyrene	ng/m³	-	-	5.57E-01	1.44E-01	1.42E+00	1.90E-01	6.86E-01	1.42E+00	6	86
Tetralin	ng/m³	-	-	1.35E+00	1.64E-01	6.70E+00	2.47E-01	6.70E+00	5.31E-01	6	86
Total PAH	ng/m³	-	-	1.79E+01	1.04E+01	2.87E+01	1.41E+01	1.96E+01	2.87E+01	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 Q2 with the sample days being: April 24, May 18 and June 11.

5.8.1 Courtice Station Results

Data recovery levels were high for the D&F results at the Courtice station (100% valid data). There were no exceedances of any of the AAQC's for any of the D&F's during Q2. **Table 11** is a summary of the statistics for this station.

Table 11: Courtice Station Q2 Monitoring Results for Dioxins and Furans

Contaminant	Units	MECP Criteria	No. > Criteria	Arithmetic Mean	Q2 Minimum Concentration	Q2 Maximum Concentration	April Maximum Concentration	May Maximum Concentration	June Maximum Concentration	Number of Valid Samples	% Valid data
2,3,7,8-TCDD	pg/m^3	-	-	7.56E-04	6.30E-04	9.86E-04	9.86E-04	6.53E-04	6.30E-04	3	100
1,2,3,7,8-PeCDD	pg/m^3	-	-	9.53E-04	6.47E-04	1.37E-03	8.38E-04	1.37E-03	6.47E-04	3	100
1,2,3,4,7,8-HxCDD	pg/m^3	-	-	1.09E-04	5.50E-05	1.67E-04	1.05E-04	1.67E-04	5.50E-05	3	100
1,2,3,6,7,8-HxCDD	pg/m^3	-	-	1.86E-04	6.47E-05	3.71E-04	1.23E-04	3.71E-04	6.47E-05	3	100
1,2,3,7,8,9-HxCDD	pg/m^3	-	-	1.02E-04	5.33E-05	1.89E-04	6.25E-05	1.89E-04	5.33E-05	3	100
1,2,3,4,6,7,8-HpCDD	pg/m^3	-	-	3.07E-04	1.33E-04	5.67E-04	2.21E-04	5.67E-04	1.33E-04	3	100
OCDD	pg/m^3	-	-	3.25E-05	1.19E-05	6.68E-05	1.86E-05	6.68E-05	1.19E-05	3	100
2,3,7,8-TCDF	pg/m^3	-	-	1.30E-04	7.76E-05	1.89E-04	1.25E-04	1.89E-04	7.76E-05	3	100
1,2,3,7,8-PeCDF	pg/m^3	-	-	4.52E-05	1.55E-05	7.73E-05	4.29E-05	7.73E-05	1.55E-05	3	100
2,3,4,7,8-PeCDF	pg/m^3	-	-	2.15E-04	1.45E-04	2.68E-04	2.32E-04	2.68E-04	1.45E-04	3	100
1,2,3,4,7,8-HxCDF	pg/m^3	-	-	1.76E-04	2.91E-05	4.19E-04	7.89E-05	4.19E-04	2.91E-05	3	100
1,2,3,6,7,8-HxCDF	pg/m^3	-	-	1.22E-04	2.91E-05	2.07E-04	2.07E-04	1.29E-04	2.91E-05	3	100
2,3,4,6,7,8-HxCDF	pg/m^3	-	-	6.69E-05	2.91E-05	9.45E-05	7.72E-05	9.45E-05	2.91E-05	3	100
1,2,3,7,8,9-HxCDF	pg/m^3	-	-	6.95E-05	3.39E-05	9.37E-05	9.37E-05	8.07E-05	3.39E-05	3	100
1,2,3,4,6,7,8-HpCDF	pg/m^3	-	-	8.80E-05	8.89E-06	2.06E-04	4.90E-05	2.06E-04	8.89E-06	3	100
1,2,3,4,7,8,9-HpCDF	pg/m^3	-	-	8.63E-06	4.36E-06	1.15E-05	1.00E-05	1.15E-05	4.36E-06	3	100
OCDF	pg/m^3	-	-	3.11E-06	4.07E-07	8.18E-06	7.40E-07	8.18E-06	4.07E-07	3	100
Total Toxic Equivalency	pg TEQ/m^3	0.1 1[1]	0	3.37E-03	1.97E-03	4.87E-03	3.27E-03	4.87E-03	1.97E-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 acceptable for the D&F results at the Rundle Road station (100% valid data). There were no exceedances of any of the AAQC's Criteria for any of the D&F's during Q2. **Table 12** is a summary of the statistics for this station.

Table 12: Rundle Road Station Q2 Monitoring Results for Dioxins and Furans

Contaminant	Units	*MECP Criteria*	No. > Criteria	Arithmetic Mean	Q2 Minimum Concentration	Q2 Maximum Concentration	April Maximum Concentration	May Maximum Concentration	June Maximum Concentration	Number of Valid Samples	% Valid data
2,3,7,8-TCDD	pg/m^3	-	-	8.97E-04	6.58E-04	1.34E-03	6.58E-04	1.34E-03	6.96E-04	3	100
1,2,3,7,8-PeCDD	pg/m^3	-	-	1.49E-03	9.87E-04	2.15E-03	1.35E-03	2.15E-03	9.87E-04	3	100
1,2,3,4,7,8-HxCDD	pg/m^3	-	-	1.14E-04	8.90E-05	1.57E-04	1.57E-04	9.74E-05	8.90E-05	3	100
1,2,3,6,7,8-HxCDD	pg/m^3	-	-	1.25E-04	8.58E-05	1.57E-04	1.57E-04	1.32E-04	8.58E-05	3	100
1,2,3,7,8,9-HxCDD	pg/m^3	-	-	1.07E-04	8.42E-05	1.50E-04	1.50E-04	8.42E-05	8.58E-05	3	100
1,2,3,4,6,7,8-HpCDD	pg/m^3	-	-	2.12E-04	6.99E-05	3.96E-04	1.70E-04	3.96E-04	6.99E-05	3	100
OCDD	pg/m^3	-	-	2.83E-05	9.69E-06	5.30E-05	2.23E-05	5.30E-05	9.69E-06	3	100
2,3,7,8-TCDF	pg/m^3	-	-	1.21E-04	8.31E-05	1.82E-04	8.31E-05	1.82E-04	9.71E-05	3	100
1,2,3,7,8-PeCDF	pg/m^3	-	-	5.71E-05	2.48E-05	1.15E-04	3.15E-05	1.15E-04	2.48E-05	3	100
2,3,4,7,8-PeCDF	pg/m^3	-	-	5.32E-04	2.28E-04	1.08E-03	2.87E-04	1.08E-03	2.28E-04	3	100
1,2,3,4,7,8-HxCDF	pg/m^3	-	-	1.34E-04	3.88E-05	2.73E-04	8.93E-05	2.73E-04	3.88E-05	3	100
1,2,3,6,7,8-HxCDF	pg/m^3	-	-	1.78E-04	8.62E-05	3.29E-04	8.62E-05	3.29E-04	1.20E-04	3	100
2,3,4,6,7,8-HxCDF	pg/m^3	-	-	6.81E-05	3.88E-05	8.78E-05	8.78E-05	7.76E-05	3.88E-05	3	100
1,2,3,7,8,9-HxCDF	pg/m^3	-	-	8.09E-05	4.53E-05	1.05E-04	1.05E-04	9.24E-05	4.53E-05	3	100
1,2,3,4,6,7,8-HpCDF	pg/m^3	-	-	8.47E-05	1.44E-05	1.85E-04	5.45E-05	1.85E-04	1.44E-05	3	100
1,2,3,4,7,8,9-HpCDF	pg/m^3	-	-	2.07E-05	5.66E-06	4.89E-05	7.52E-06	4.89E-05	5.66E-06	3	100
OCDF	pg/m^3	-	-	2.11E-06	4.70E-07	4.90E-06	4.70E-07	4.90E-06	9.71E-07	3	100
Total Toxic Equivalency	pg TEQ/m^3	*0.1* *1*[1]	0	4.25E-03	2.64E-03	6.63E-03	3.49E-03	6.63E-03	2.64E-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 April 2, 2024 at 08:00 till April 5, 2024 at 10:00, the Rundle Road station incurred 74 hours of data loss due to the combination of a power outage & data logger malfunction.

6.2 Discrete Monitoring

The June 5, 2024 and June 17, 2024 Courtice TSP samples were invalidated due to equipment malfunctions.

The April 6, 2024 Rundle TSP sample and the April 12, 2024 Rundle TSP and PAH samples were invalidated due to equipment malfunctions which resulted on the sampler running on the incorrect dates.

7 CONCLUSIONS

This Q2 report provides a summary of the ambient air quality data collected at the Courtice and Rundle Road stations. There were thirty-one (31) exceedance events above the rolling 10-minute SO_2 AAQC and fifteen (15) exceedance events above the rolling 1-hour SO_2 AAQC at the Courtice station. There were no exceedance of the Benzo(a) Pyrene AAQC at the Courtice or the Rundle Road stations. Data recovery rates were acceptable and valid for all measured Q2 continuous and discrete parameters, except for the TSP, Metals and Rain at the Courtice station.

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 (SO2). [Online]
4. Human Toxicology and Air Standards Section, Technical Assessment and Standards Development Branch, Ontario Ministry of the Environment, Conservation and Parks (MECP). 2020. Ontario's Ambient Air Quality Criteria. MECP, Toronto, ON, Canada.

9 GENERAL STATEMENT OF LIMITATIONS

This report entitled "2024 Q2 Ambient Air Quality Monitoring Report", dated July 31, 2024, 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: 2024 Summary Statistics for Q2

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											
April	174.3	45.3	58.9	33.3	35.7	76.5	13.4	20.8	5.8	15.0	14.2	4.1	6.8	1.3	5.5	2.8	99.9	99.6	99.6	99.6	99.7
May	160.3	23.9	42.1	20.6	30.1	75.5	13.2	14.2	3.9	11.2	7.3	5.1	6.1	1.3	4.8	2.4	99.9	99.2	99.2	99.2	99.5
June	423.7	23.3	37.1	17.5	26.8	125.4	12.6	10.1	3.5	8.3	11.3	6.0	4.4	0.8	3.6	1.9	99.3	99.4	99.4	99.4	99.4
Q2 Arithmetic Mean												5.1	5.8	1.1	4.6	2.4	99.7	99.4	99.4	99.4	99.5

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											
April	3.1	49.5	46.6	24.5	23.1	1.6	7.6	12.4	3.2	9.2	0.7	3.5	4.7	1.2	3.5	0.4	89.7	88.9	88.9	88.9	89.6
May	2.5	28.9	63.5	36.4	27.2	1.9	13.7	12.5	4.7	7.7	0.9	4.6	4.8	1.2	3.8	0.4	99.7	99.6	99.6	99.6	99.6
June	5.0	21.9	48.0	22.7	25.3	4.8	13.0	9.3	3.2	7.0	0.6	5.6	4.3	0.8	3.6	0.2	99.7	99.6	99.6	99.6	99.6
Q2 Arithmetic Mean												4.5	4.6	1.1	3.6	0.3	96.4	96.1	96.1	96.1	96.3

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.		
April	15	0		0	9		0	0	N/A	0		N/A	0	
May	6	0		0	3		0	0	N/A	0		N/A	0	
June	10	0		0	3		0	0	N/A	0		N/A	0	
Q2 Total	31	0		0	15		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	(%)					
April	47.1	17.0	100.0	30.2	5.0	0.2	-0.7	22.4	28.8	0.0	15.1	7.8	69.2	29.6	0.1	103.2	100.0	97.6	100.0	100.0	100.0	100.0
May	34.6	24.7	100.0	30.0	4.9	0.0	7.7	26.9	29.2	0.0	10.3	15.0	73.6	29.6	0.1	37.5	100.0	99.9	100.0	100.0	100.0	100.0
June	29.0	28.3	100.0	30.0	10.9	0.3	8.6	30.4	29.2	0.0	9.8	18.6	75.2	29.6	0.1	87.9	99.7	99.7	99.7	99.7	99.7	100.0
Q2 Arithmetic Mean											11.7	13.8	72.7	29.6	0.1	228.6	99.9	99.1	99.9	99.9	99.9	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	(%)				
April	30.1	16.2	100.0	7.2	0.1	-2.4	23.3	0.0	10.2	7.7	71.6	0.1	86.4	89.7	88.9	89.7	89.7	89.7
May	24.2	26.6	100.0	5.1	0.1	6.2	28.1	0.0	7.7	14.8	77.0	0.1	45.0	100.0	100.0	100.0	100.0	100.0
June	26.9	28.6	100.0	10.3	0.2	6.4	30.9	0.0	7.8	18.4	78.5	0.1	105.4	100.0	100.0	100.0	100.0	100.0
Q2 Arithmetic Mean									8.5	13.6	75.9	0.1	236.8	96.6	96.3	96.6	96.6	96.6

Table A2: 2024 Q2 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.	%
April	N/A	4.1	45.3	13.4	719	99.9
May	N/A	5.1	23.9	13.2	743	99.9
June	N/A	6.0	23.3	12.6	715	99.3

Table A3: 2024 Q2 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.	%
April	N/A	3.5	49.5	7.6	646	89.7
May	N/A	4.6	28.9	13.7	742	99.7
June	N/A	5.6	21.9	13.0	718	99.7

Table A4: 2024 Q2 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.	%
April	N/A	N/A	6.8	58.9	20.8	717	99.6
May	N/A	N/A	6.1	42.1	14.2	738	99.2
June	N/A	N/A	4.4	37.1	10.1	716	99.4

Table A5: 2024 Q2 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.	%
April	N/A	N/A	4.7	46.6	12.4	640	88.9
May	N/A	N/A	4.8	63.5	12.5	693	99.6
June	N/A	N/A	4.3	48.0	9.3	717	99.6

Table A6: 2024 Q2 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.	%
April	N/A	N/A	1.3	33.3	5.8	717	99.6
May	N/A	N/A	1.3	20.6	3.9	738	99.2
June	N/A	N/A	0.8	17.5	3.5	716	99.4

Table A7: 2024 Q2 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.	%
April	N/A	N/A	1.2	24.5	3.2	640	88.9
May	N/A	N/A	1.2	36.4	4.7	741	99.6
June	N/A	N/A	0.8	22.7	3.2	717	99.6

Table A8: 2024 Q2 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.	%
April	0	0	5.5	35.7	15.0	717	99.6
May	0	0	4.8	30.1	11.2	738	99.2
June	0	0	3.6	26.8	8.3	716	99.4

Table A9: 2024 Q2 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.	%
April	0	0	3.5	23.1	9.2	640	88.9
May	0	0	3.8	27.2	7.7	741	99.6
June	0	0	3.6	25.3	7.0	717	99.6

Table A10: 2024 Q2 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.	%
April	15	9	2.8	174.3	76.5	14.2	718	99.7
May	6	3	2.4	160.3	75.5	7.3	740	99.5
June	10	3	1.9	423.7	125.4	11.3	716	99.4

Table A11: 2024 Q2 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.	%
April	0	0	0.4	3.1	1.6	0.7	645	89.6
May	0	0	0.4	2.5	1.9	0.9	741	99.6
June	0	0	0.2	5.0	4.8	0.6	717	99.6

Table A12: 2024 Q2 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)	(%)
April	47.1	0.2	15.1	100.0
May	34.6	0.0	10.3	100.0
June	29.0	0.3	9.8	99.7

Table A13: 2024 Q2 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)	(%)
April	30.1	0.1	10.2	89.7
May	24.2	0.1	7.7	100.0
June	26.9	0.2	7.8	100.0

Table A14: 2024 Q2 Courtice Meterological Station Wind Direction Data Summary

MET Statistics	Valid Data
Month	Wind Direction
	(%)
April	97.6
May	99.9
June	99.7

Table A15: 2024 Q2 Rundle Meterological Station Wind Direction Data Summary

MET Statistics	Valid Data
Month	Wind Direction
	(%)
April	88.9
May	100.0
June	100.0

Table A16: 2024 Q2 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)	(%)
April	17.0	-0.7	7.8	100.0
May	24.7	7.7	15.0	100.0
June	28.3	8.6	18.6	99.7

Table A17: 2024 Q2 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)	(%)
April	16.2	-2.4	7.7	89.7
May	26.6	6.2	14.8	100.0
June	28.6	6.4	18.4	100.0

Table A18: 2024 Q2 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
	(%)	(%)	(%)	(%)
April	100.0	22.4	69.2	100.0
May	100.0	26.9	73.6	100.0
June	100.0	30.4	75.2	99.7

Table A19: 2024 Q2 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
	(%)	(%)	(%)	(%)
April	100.0	23.3	71.6	89.7
May	100.0	28.1	77.0	100.0
June	100.0	30.9	78.5	100.0

Table A20: 2024 Q2 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)	%
April	5.0	0.0	0.1	103.2	100.0
May	4.9	0.0	0.1	37.5	100.0
June	10.9	0.0	0.1	87.9	100.0

Table A21: 2024 Q2 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)	%
April	7.2	0.0	0.1	86.4	89.7
May	5.1	0.0	0.1	45.0	100.0
June	10.3	0.0	0.1	105.4	100.0

Table A22: 2024 Q2 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)	(%)
April	30.2	28.8	29.6	100.0
May	30.0	29.2	29.6	100.0
June	30.0	29.2	29.6	99.7

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)	(m3)	No.	(min)	(m3)
April 24, 2024	L2754625-2	1440	304	L2755528-2	1440	319
May 18, 2024	L2755904-1	1440	291	L2755904-2	1440	303
June 11, 2024	L2756234-2	1440	309	L2756234-1	1440	309

Table B2: 2024 Courtice Station Q2 Monitoring Results for Dioxins & Furans

Contaminant	Units	*MECP Criteria*	*HHRA Health Based Criteria*	24-Apr-24	18-May-24	11-Jun-24	MECP Criteria (µg/m3)	No. > Criteria	Arithmetic Mean	Q2 Minimum Concentration	Q2 Maximum Concentration	April Maximum Concentration	May Maximum Concentration	June Maximum Concentration	Number of Valid Samples	% Valid data
2,3,7,8-TCDD	pg TEQ/m3	-	-	9.86E-04	6.53E-04	6.30E-04	-	-	7.56E-04	6.30E-04	9.86E-04	9.86E-04	6.53E-04	6.30E-04	3	100
1,2,3,7,8-PeCDD	pg TEQ/m3	-	-	8.38E-04	1.37E-03	6.47E-04	-	-	9.53E-04	6.47E-04	1.37E-03	8.38E-04	1.37E-03	6.47E-04	3	100
1,2,3,4,7,8-HxCDD	pg TEQ/m3	-	-	1.05E-04	1.67E-04	5.50E-05	-	-	1.09E-04	5.50E-05	1.67E-04	1.05E-04	1.67E-04	5.50E-05	3	100
1,2,3,6,7,8-HxCDD	pg TEQ/m3	-	-	1.23E-04	3.71E-04	6.47E-05	-	-	1.86E-04	6.47E-05	3.71E-04	1.23E-04	3.71E-04	6.47E-05	3	100
1,2,3,7,8,9-HxCDD	pg TEQ/m3	-	-	6.25E-05	1.89E-04	5.33E-05	-	-	1.02E-04	5.33E-05	1.89E-04	6.25E-05	1.89E-04	5.33E-05	3	100
1,2,3,4,6,7,8-HpCDD	pg TEQ/m3	-	-	2.21E-04	5.67E-04	1.33E-04	-	-	3.07E-04	1.33E-04	5.67E-04	2.21E-04	5.67E-04	1.33E-04	3	100
OCDD	pg TEQ/m3	-	-	1.86E-05	6.68E-05	1.19E-05	-	-	3.25E-05	1.19E-05	6.68E-05	1.86E-05	6.68E-05	1.19E-05	3	100
2,3,7,8-TCDF	pg TEQ/m3	-	-	1.25E-04	1.89E-04	7.76E-05	-	-	1.30E-04	7.76E-05	1.89E-04	1.25E-04	1.89E-04	7.76E-05	3	100
1,2,3,7,8-PeCDF	pg TEQ/m3	-	-	4.29E-05	7.73E-05	1.55E-05	-	-	4.52E-05	1.55E-05	7.73E-05	4.29E-05	7.73E-05	1.55E-05	3	100
2,3,4,7,8-PeCDF	pg TEQ/m3	-	-	2.32E-04	2.68E-04	1.45E-04	-	-	2.15E-04	1.45E-04	2.68E-04	2.32E-04	2.68E-04	1.45E-04	3	100
1,2,3,4,7,8-HxCDF	pg TEQ/m3	-	-	7.89E-05	4.19E-04	2.91E-05	-	-	1.76E-04	2.91E-05	4.19E-04	7.89E-05	4.19E-04	2.91E-05	3	100
1,2,3,6,7,8-HxCDF	pg TEQ/m3	-	-	2.07E-04	1.29E-04	2.91E-05	-	-	1.22E-04	2.91E-05	2.07E-04	2.07E-04	1.29E-04	2.91E-05	3	100
2,3,4,6,7,8-HxCDF	pg TEQ/m3	-	-	7.72E-05	9.45E-05	2.91E-05	-	-	6.69E-05	2.91E-05	9.45E-05	7.72E-05	9.45E-05	2.91E-05	3	100
1,2,3,7,8,9-HxCDF	pg TEQ/m3	-	-	9.37E-05	8.07E-05	3.39E-05	-	-	6.95E-05	3.39E-05	9.37E-05	9.37E-05	8.07E-05	3.39E-05	3	100
1,2,3,4,6,7,8-HpCDF	pg TEQ/m3	-	-	4.90E-05	2.06E-04	8.89E-06	-	-	8.80E-05	8.89E-06	2.06E-04	4.90E-05	2.06E-04	8.89E-06	3	100
1,2,3,4,7,8,9-HpCDF	pg TEQ/m3	-	-	1.00E-05	1.15E-05	4.36E-06	-	-	8.63E-06	4.36E-06	1.15E-05	1.00E-05	1.15E-05	4.36E-06	3	100
OCDF	pg TEQ/m3	-	-	7.40E-07	8.18E-06	4.07E-07	-	-	3.11E-06	4.07E-07	8.18E-06	7.40E-07	8.18E-06	4.07E-07	3	100
Total Toxic Equivalency	pg TEQ/m3	*0.1 1[1]*	-	3.27E-03	4.87E-03	1.97E-03	0.1	0	3.37E-03	1.97E-03	4.87E-03	3.27E-03	4.87E-03	1.97E-03	3	100

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

[1] O. Reg. 419/05 Schedule 6, Upper Risk Thresholds

Table B3: 2024 Rundle Road Station Q2 Monitoring Results for Dioxins & Furans

Contaminant	Units	*MECP Criteria*	*HHRA Health Based Criteria*	24-Apr-24	18-May-24	11-Jun-24	MECP Criteria (µg/m3)	No. > Criteria	Arithmetic Mean	Q2 Minimum Concentration	Q2 Maximum Concentration	April Maximum Concentration	May Maximum Concentration	June Maximum Concentration	Number of Valid Samples	% Valid data
2,3,7,8-TCDD	pg TEQ/m3	-	-	6.58E-04	1.34E-03	6.96E-04	-	-	8.97E-04	6.58E-04	1.34E-03	6.58E-04	1.34E-03	6.96E-04	3	100
1,2,3,7,8-PeCDD	pg TEQ/m3	-	-	1.35E-03	2.15E-03	9.87E-04	-	-	1.49E-03	9.87E-04	2.15E-03	1.35E-03	2.15E-03	9.87E-04	3	100
1,2,3,4,7,8-HxCDD	pg TEQ/m3	-	-	1.57E-04	9.74E-05	8.90E-05	-	-	1.14E-04	8.90E-05	1.57E-04	1.57E-04	9.74E-05	8.90E-05	3	100
1,2,3,6,7,8-HxCDD	pg TEQ/m3	-	-	1.57E-04	1.32E-04	8.58E-05	-	-	1.25E-04	8.58E-05	1.57E-04	1.57E-04	1.32E-04	8.58E-05	3	100
1,2,3,7,8,9-HxCDD	pg TEQ/m3	-	-	1.50E-04	8.42E-05	8.58E-05	-	-	1.07E-04	8.42E-05	1.50E-04	1.50E-04	8.42E-05	8.58E-05	3	100
1,2,3,4,6,7,8-HpCDD	pg TEQ/m3	-	-	1.70E-04	3.96E-04	6.99E-05	-	-	2.12E-04	6.99E-05	3.96E-04	1.70E-04	3.96E-04	6.99E-05	3	100
OCDD	pg TEQ/m3	-	-	2.23E-05	5.30E-05	9.69E-06	-	-	2.83E-05	9.69E-06	5.30E-05	2.23E-05	5.30E-05	9.69E-06	3	100
2,3,7,8-TCDF	pg TEQ/m3	-	-	8.31E-05	1.82E-04	9.71E-05	-	-	1.21E-04	8.31E-05	1.82E-04	8.31E-05	1.82E-04	9.71E-05	3	100
1,2,3,7,8-PeCDF	pg TEQ/m3	-	-	3.15E-05	1.15E-04	2.48E-05	-	-	5.71E-05	2.48E-05	1.15E-04	3.15E-05	1.15E-04	2.48E-05	3	100
2,3,4,7,8-PeCDF	pg TEQ/m3	-	-	2.87E-04	1.08E-03	2.28E-04	-	-	5.32E-04	2.28E-04	1.08E-03	2.87E-04	1.08E-03	2.28E-04	3	100
1,2,3,4,7,8-HxCDF	pg TEQ/m3	-	-	8.93E-05	2.73E-04	3.88E-05	-	-	1.34E-04	3.88E-05	2.73E-04	8.93E-05	2.73E-04	3.88E-05	3	100
1,2,3,6,7,8-HxCDF	pg TEQ/m3	-	-	8.62E-05	3.29E-04	1.20E-04	-	-	1.78E-04	8.62E-05	3.29E-04	8.62E-05	3.29E-04	1.20E-04	3	100
2,3,4,6,7,8-HxCDF	pg TEQ/m3	-	-	8.78E-05	7.76E-05	3.88E-05	-	-	6.81E-05	3.88E-05	8.78E-05	8.78E-05	7.76E-05	3.88E-05	3	100
1,2,3,7,8,9-HxCDF	pg TEQ/m3	-	-	1.05E-04	9.24E-05	4.53E-05	-	-	8.09E-05	4.53E-05	1.05E-04	1.05E-04	9.24E-05	4.53E-05	3	100
1,2,3,4,6,7,8-HpCDF	pg TEQ/m3	-	-	5.45E-05	1.85E-04	1.44E-05	-	-	8.47E-05	1.44E-05	1.85E-04	5.45E-05	1.85E-04	1.44E-05	3	100
1,2,3,4,7,8,9-HpCDF	pg TEQ/m3	-	-	7.52E-06	4.89E-05	5.66E-06	-	-	2.07E-05	5.66E-06	4.89E-05	7.52E-06	4.89E-05	5.66E-06	3	100
OCDF	pg TEQ/m3	-	-	4.70E-07	4.90E-06	9.71E-07	-	-	2.11E-06	4.70E-07	4.90E-06	4.70E-07	4.90E-06	9.71E-07	3	100
Total Toxic Equivalency	pg TEQ/m3	*0.1 1[1]*	-	3.49E-03	6.63E-03	2.64E-03	0.1	0	4.25E-03	2.64E-03	6.63E-03	3.49E-03	6.63E-03	2.64E-03	3	100

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

[1] O. Reg. 419/05 Schedule 6, 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)
April 12, 2024	L2755386-2	1436	302	Invalid		
April 24, 2024	L2755528-1	1440	304	L2755528-2	1437	319
May 6, 2024	L2755654-2	1440	292	L2755654-1	1440	318
May 18, 2024	L2755904-1	1440	291	L2755904-2	1440	303
May 30, 2024	L2756089-2	1440	301	L2756089-1	1440	303
June 11, 2024	L2756234-2	1440	309	L2756234-1	1440	309
June 23, 2024	L2756447-2	1440	287	L2756447-1	1440	284

Table B5: 2024 Courtice Station Q2 Monitoring Results for PAHs

Contaminant	Units	*MECP Criteria*	12 Apr-24	24 Apr-24	6-May-24	18 May-24	30 May-24	11-Jun-24	23-Jun-24	No. > Criteria	Arithmetic Mean	Minimum Q2 Concentration	Maximum Q2 Concentration	April Maximum Concentration	May Maximum Concentration	June Maximum Concentration	Number of Valid Samples	% Valid data
1-Methylnaphthalene	ng/m^3	-	4.21E-01	9.01E-01	6.37E-01	1.32E+00	6.81E-01	2.83E+00	4.46E-01	-	1.03E+00	4.21E-01	2.83E+00	9.01E-01	1.32E+00	2.83E+00	7	100
2-Methylnaphthalene	ng/m^3	-	7.78E-01	1.67E+00	1.52E+00	2.58E+00	1.70E+00	6.63E+00	1.02E+00	-	2.27E+00	7.78E-01	6.63E+00	1.67E+00	2.58E+00	6.63E+00	7	100
Acenaphthene	ng/m^3	-	6.03E-01	8.68E-01	1.55E+00	3.42E+00	1.71E+00	2.81E+00	1.17E+00	-	1.73E+00	6.03E-01	3.42E+00	8.68E-01	3.42E+00	2.81E+00	7	100
Acenaphthylene	ng/m^3	-	5.50E-02	8.26E-02	1.02E-01	2.12E-01	6.41E-02	4.92E-01	3.66E-02	-	1.49E-01	3.66E-02	4.92E-01	8.26E-02	2.12E-01	4.92E-01	7	100
Anthracene	ng/m^3	-	5.53E-02	4.05E-02	8.49E-02	1.13E-01	2.40E-01	1.68E-01	1.86E-01	-	1.27E-01	4.05E-02	2.40E-01	5.53E-02	2.40E-01	1.86E-01	7	100
Benzo(a)Anthracene	ng/m^3	-	5.26E-03	2.01E-02	8.70E-03	3.78E-03	1.66E-03	1.88E-02	7.67E-03	-	9.42E-03	1.66E-03	2.01E-02	2.01E-02	8.70E-03	1.88E-02	7	100
Benzo(a)fluorene	ng/m^3	-	1.53E-02	3.02E-02	1.45E-02	2.00E-02	1.91E-02	4.05E-02	4.08E-02	-	2.58E-02	1.45E-02	4.08E-02	3.02E-02	2.00E-02	4.08E-02	7	100
Benzo(a)Pyrene (Historically High)	ng/m^3	*0.05* [1] *5* [2]	4.87E-03	2.15E-02	6.16E-03	1.72E-03	1.66E-03	4.05E-03	4.15E-03	0	6.30E-03	1.66E-03	2.15E-02	2.15E-02	6.16E-03	4.15E-03	7	100
Benzo(b)Fluoranthene	ng/m^3	-	1.43E-02	2.97E-02	2.16E-02	9.31E-03	6.98E-03	2.09E-02	1.55E-02	-	1.69E-02	6.98E-03	2.97E-02	2.97E-02	2.16E-02	2.09E-02	7	100
Benzo(b)fluorene	ng/m^3	-	1.66E-03	5.03E-03	4.69E-03	1.72E-03	6.15E-03	6.63E-03	8.26E-03	-	4.88E-03	1.66E-03	8.26E-03	5.03E-03	6.15E-03	8.26E-03	7	100
Benzo(e)Pyrene	ng/m^3	-	7.42E-03	2.35E-02	1.09E-02	5.67E-03	4.82E-03	1.25E-02	1.39E-02	-	1.12E-02	4.82E-03	2.35E-02	2.35E-02	1.09E-02	1.39E-02	7	100
Benzo(g,h,i)Perylene	ng/m^3	-	1.07E-02	2.49E-02	2.00E-02	7.18E-03	6.31E-03	1.38E-02	8.64E-03	-	1.31E-02	6.31E-03	2.49E-02	2.49E-02	2.00E-02	1.38E-02	7	100
Benzo(k)Fluoranthene	ng/m^3	-	1.28E-02	3.55E-02	2.09E-02	1.14E-02	9.30E-03	1.89E-02	1.28E-02	-	1.74E-02	9.30E-03	3.55E-02	3.55E-02	2.09E-02	1.89E-02	7	100
Biphenyl	ng/m^3	-	4.47E-01	5.92E-01	6.92E-01	1.25E+00	7.01E-01	1.78E+00	6.52E-01	-	8.74E-01	4.47E-01	1.78E+00	5.92E-01	1.25E+00	1.78E+00	7	100
Chrysene	ng/m^3	-	2.83E-02	5.86E-02	4.42E-02	3.61E-02	2.54E-02	4.69E-02	5.40E-02	-	4.19E-02	2.54E-02	5.86E-02	5.86E-02	4.42E-02	5.40E-02	7	100
Dibenzo(a,h)Anthracene	ng/m^3	-	1.66E-03	4.84E-03	1.71E-03	1.72E-03	1.66E-03	1.62E-03	1.74E-03	-	2.13E-03	1.62E-03	4.84E-03	4.84E-03	1.72E-03	1.74E-03	7	100
Fluoranthene	ng/m^3	-	5.53E-01	3.55E-01	4.97E-01	1.03E+00	1.20E+00	6.15E-01	1.76E+00	-	8.58E-01	3.55E-01	1.76E+00	5.53E-01	1.20E+00	1.76E+00	7	100
Fluorene	ng/m^3	-	1.04E+00	8.72E-01	1.46E+00	2.32E+00	2.11E+00	1.81E+00	1.47E+00	-	1.58E+00	8.72E-01	2.32E+00	1.04E+00	2.32E+00	1.81E+00	7	100
Indeno(1,2,3-cd)Pyrene	ng/m^3	-	1.05E-02	2.75E-02	1.39E-02	7.53E-03	3.65E-03	1.38E-02	7.35E-03	-	1.20E-02	3.65E-03	2.75E-02	2.75E-02	1.39E-02	1.38E-02	7	100
Naphthalene	ng/m^3	*22500*	1.77E+00	2.93E+00	2.02E+00	3.20E+00	5.51E+00	1.05E+01	1.27E+00	0	3.89E+00	1.27E+00	1.05E+01	2.93E+00	5.51E+00	1.05E+01	7	100
o-Terphenyl	ng/m^3	-	6.66E-03	3.95E-03	5.14E-03	1.13E-02	3.82E-03	5.50E-03	9.58E-03	-	6.57E-03	3.82E-03	1.13E-02	6.66E-03	1.13E-02	9.58E-03	7	100
Perylene	ng/m^3	-	1.66E-03	4.38E-03	3.60E-03	1.72E-03	1.66E-03	1.62E-03	1.74E-03	-	2.34E-03	1.62E-03	4.38E-03	4.38E-03	3.60E-03	1.74E-03	7	100
Phenanthrene	ng/m^3	-	1.88E+00	1.62E+00	2.47E+00	4.91E+00	5.18E+00	3.79E+00	4.74E+00	-	3.51E+00	1.62E+00	5.18E+00	1.88E+00	5.18E+00	4.74E+00	7	100
Pyrene	ng/m^3	-	2.40E-01	1.53E-01	2.15E-01	3.75E-01	4.22E-01	2.98E-01	7.28E-01	-	3.47E-01	1.53E-01	7.28E-01	2.40E-01	4.22E-01	7.28E-01	7	100
Tetralin	ng/m^3	-	1.89E-01	2.59E-01	2.15E-01	1.48E-01	7.77E+00	1.02E+00	1.00E-01	-	1.39E+00	1.00E-01	7.77E+00	2.59E-01	7.77E+00	1.02E+00	7	100
Total PAH[3]	ng/m^3	-	8.16E+00	1.06E+01	1.16E+01	2.10E+01	2.74E+01	3.30E+01	1.38E+01	-	1.79E+01	8.16E+00	3.30E+01	1.16E+01	2.74E+01	3.30E+01	7	100

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

[1] O. Reg. 419/05 Schedule 6, Upper Risk Thresholds

Table B6: 2024 Rundle Road Station Q2 Monitoring Results for PAHs

Contaminant	Units	*MECP Criteria*	12 Apr-24	24 Apr-24	6-May-24	18 May-24	30 May-24	11-Jun-24	23-Jun-24	No. > Criteria	Arithmetic Mean	Minimum Q2 Concentration	Maximum Q2 Concentration	April Maximum Concentration	May Maximum Concentration	June Maximum Concentration	Number of Valid Samples	% Valid data
1-Methylnaphthalene	ng/m^3	-	Invalid	8.18E-01	6.23E-01	1.03E+00	2.36E-01	2.41E+00	6.90E-01	-	9.68E-01	2.36E-01	2.41E+00	8.18E-01	1.03E+00	2.41E+00	6	86
2-Methylnaphthalene	ng/m^3	-		1.50E+00	1.41E+00	1.97E+00	5.12E-01	5.57E+00	1.43E+00	-	2.06E+00	5.12E-01	5.57E+00	1.50E+00	1.97E+00	5.57E+00	6	86
Acenaphthene	ng/m^3	-		8.78E-01	1.26E+00	1.39E+00	4.92E-01	2.71E+00	1.83E+00	-	1.43E+00	4.92E-01	2.71E+00	8.78E-01	1.39E+00	2.71E+00	6	86
Acenaphthylene	ng/m^3	-		8.59E-02	6.64E-02	2.13E-01	2.24E-02	2.06E-01	5.35E-02	-	1.08E-01	2.24E-02	2.13E-01	8.59E-02	2.13E-01	2.06E-01	6	86
Anthracene	ng/m^3	-		4.39E-02	1.77E-01	2.68E-01	9.83E-02	2.68E-01	5.99E-01	-	2.42E-01	4.39E-02	5.99E-01	4.39E-02	2.68E-01	5.99E-01	6	86
Benzo(a)Anthracene	ng/m^3	-		2.44E-02	9.25E-03	8.78E-03	2.64E-03	9.71E-03	1.40E-02	-	1.15E-02	2.64E-03	2.44E-02	2.44E-02	9.25E-03	1.40E-02	6	86
Benzo(a)fluorene	ng/m^3	-		3.35E-02	1.42E-02	4.06E-02	7.26E-03	3.12E-02	9.61E-02	-	3.72E-02	7.26E-03	9.61E-02	3.35E-02	4.06E-02	9.61E-02	6	86
Benzo(a)Pyrene (Historically High)	ng/m^3	*0.05* [1] *5* [2]		1.82E-02	7.17E-03	1.65E-03	1.65E-03	4.85E-03	4.89E-03	0	6.41E-03	1.65E-03	1.82E-02	1.82E-02	7.17E-03	4.89E-03	6	86
Benzo(b)Fluoranthene	ng/m^3	-		3.57E-02	1.96E-02	1.30E-02	6.77E-03	1.57E-02	1.87E-02	-	1.82E-02	6.77E-03	3.57E-02	3.57E-02	1.96E-02	1.87E-02	6	86
Benzo(b)fluorene	ng/m^3	-		5.02E-03	3.84E-03	4.29E-03	3.80E-03	3.88E-03	1.15E-02	-	5.38E-03	3.80E-03	1.15E-02	5.02E-03	4.29E-03	1.15E-02	6	86
Benzo(e)Pyrene	ng/m^3	-		2.35E-02	1.15E-02	9.17E-03	5.28E-03	9.06E-03	1.23E-02	-	1.18E-02	5.28E-03	2.35E-02	2.35E-02	1.15E-02	1.23E-02	6	86
Benzo(g,h,i)Perylene	ng/m^3	-		2.86E-02	2.14E-02	1.14E-02	7.76E-03	1.12E-02	1.03E-02	-	1.51E-02	7.76E-03	2.86E-02	2.86E-02	2.14E-02	1.12E-02	6	86
Benzo(k)Fluoranthene	ng/m^3	-		3.39E-02	1.26E-02	1.04E-02	8.91E-03	1.07E-02	1.52E-02	-	1.53E-02	8.91E-03	3.39E-02	3.39E-02	1.26E-02	1.52E-02	6	86
Biphenyl	ng/m^3	-		5.11E-01	5.85E-01	9.77E-01	2.02E-01	1.65E+00	8.52E-01	-	7.96E-01	2.02E-01	1.65E+00	5.11E-01	9.77E-01	1.65E+00	6	86
Chrysene	ng/m^3	-		6.71E-02	4.87E-02	7.00E-02	1.50E-02	4.37E-02	9.12E-02	-	5.59E-02	1.50E-02	9.12E-02	6.71E-02	7.00E-02	9.12E-02	6	86
Dibenzo(a,h)Anthracene	ng/m^3	-		1.57E-03	3.43E-03	1.65E-03	1.65E-03	1.62E-03	1.76E-03	-	1.95E-03	1.57E-03	3.43E-03	1.57E-03	3.43E-03	1.76E-03	6	86
Fluoranthene	ng/m^3	-		3.82E-01	9.94E-01	1.76E+00	3.60E-01	1.23E+00	3.16E+00	-	1.31E+00	3.60E-01	3.16E+00	3.82E-01	1.76E+00	3.16E+00	6	86
Fluorene	ng/m^3	-		9.44E-01	2.23E+00	2.30E+00	7.23E-01	2.19E+00	2.52E+00	-	1.82E+00	7.23E-01	2.52E+00	9.44E-01	2.30E+00	2.52E+00	6	86
Indeno(1,2,3-cd)Pyrene	ng/m^3	-		2.51E-02	1.32E-02	9.77E-03	4.79E-03	9.55E-03	8.31E-03	-	1.18E-02	4.79E-03	2.51E-02	2.51E-02	1.32E-02	9.55E-03	6	86
Naphthalene	ng/m^3	*22500*		2.71E+00	1.31E+00	2.13E+00	4.39E+00	6.08E+00	1.65E+00	0	3.05E+00	1.31E+00	6.08E+00	2.71E+00	4.39E+00	6.08E+00	6	86
o-Terphenyl	ng/m^3	-		4.61E-03	5.16E-03	1.47E-02	1.65E-03	3.56E-03	8.73E-03	-	6.40E-03	1.65E-03	1.47E-02	4.61E-03	1.47E-02	8.73E-03	6	86
Perylene	ng/m^3	-		4.64E-03	3.65E-03	1.65E-03	1.65E-03	1.62E-03	1.76E-03	-	2.49E-03	1.62E-03	4.64E-03	4.64E-03	3.65E-03	1.76E-03	6	86
Phenanthrene	ng/m^3	-		1.79E+00	4.62E+00	6.50E+00	1.66E+00	5.21E+00	4.51E+00	-	4.05E+00	1.66E+00	6.50E+00	1.79E+00	6.50E+00	5.21E+00	6	86
Pyrene	ng/m^3	-		1.90E-01	4.06E-01	6.86E-01	1.44E-01	4.98E-01	1.42E+00	-	5.57E-01	1.44E-01	1.42E+00	1.90E-01	6.86E-01	1.42E+00	6	86
Tetralin	ng/m^3	-		2.47E-01	1.92E-01	1.64E-01	6.70E+00	5.31E-01	2.54E-01	-	1.35E+00	1.64E-01	6.70E+00	2.47E-01	6.70E+00	5.31E-01	6	86
Total PAH[3]	ng/m^3	-		1.04E+01	1.41E+01	1.96E+01	1.56E+01	2.87E+01	1.93E+01	-	1.79E+01	1.04E+01	2.87E+01	1.41E+01	1.96E+01	2.87E+01	6	86

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

[1] O. Reg. 419/05 Schedule 6, Upper Risk Thresholds

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

Sample Date	Courtice			Rundle		
	Filter ID	Sample Duration	Sample Volume	Filter ID	Sample Duration	Sample Volume
	No.	(min)	(m3)	No.	(min)	(m3)
April 6, 2024	L2755387-4	1440	1628	Invalid		
April 12, 2024	L2755387-3	1436	1615	Invalid		
April 18, 2024	L2755529-2	1440	1612	L2755529-4	1440	1610
April 24, 2024	L2755529-1	1440	1673	L2755529-3	1440	1621
April 30, 2024	L2755655-4	1440	1648	L2755655-2	1440	1627
May 6, 2024	L2755655-3	1440	1683	L2755655-1	1440	1652
May 12, 2024	L2755913-2	1440	1638	L2755913-4	1440	1602
May 18, 2024	L2755913-1	1440	1601	L2755913-3	1440	1571
May 24, 2024	L2756090-4	1440	1619	L2756090-2	1440	1581
May 30, 2024	L2756090-3	1440	1633	L2756090-1	1440	1625
June 5, 2024	Invalid			L2756235-2	1440	1634
June 11, 2024	L2756235-3	1440	1636	L2756235-1	1440	1617
June 17, 2024	Invalid			L2756448-2	1440	1680
June 23, 2024	L2756448-3	1440	1687	L2756448-1	1440	1691
June 29, 2024	L2756618-2	1440	1658	L2756618-4	1440	1654

Table B8: 2024 Courtice Station Q2 Monitoring Results for TSP and Metals

Contaminant	Units	6-Apr-24	12-Apr-24	18-Apr-24	24-Apr-24	30-Apr-24	6-May-24	12-May-24	18-May-24	24-May-24	30-May-24	5-Jun-24	11-Jun-24	17-Jun-24	23-Jun-24	29-Jun-24	MECP Criteria (µg/m3)	No. > Criteria	Geometric Mean	Arithmetic Mean	Q2 Minimum Concentration	Q2 Maximum Concentration	April Maximum Concentration	May Maximum Concentration	June Maximum Concentration	Number of Valid Samples	% Valid data
Total particulate	µg/m3	16.71	6.50	18.49	12.91	35.98	22.28	18.93	27.17	55.72	29.27		20.17		30.82	31.18	*120*	0	22.3	25.1	6.50	55.72	35.98	55.72	31.18	13	87
Mercury (Hg)	µg/m3	3.07E-06	3.10E-06	3.10E-06	2.99E-06	1.40E-05	8.91E-06	3.05E-06	8.75E-06	8.03E-06	9.80E-06		9.17E-06		8.30E-06	8.44E-06	*2*	0	6.06E-06	6.97E-06	2.99E-06	1.40E-05	1.40E-05	9.80E-06	9.17E-06	13	87
Aluminum (Al)	µg/m3	1.92E-01	6.38E-02	2.13E-01	1.27E-01	3.66E-01	1.56E-01	8.67E-02	1.90E-01	3.81E-01	2.50E-01		1.28E-01		2.55E-01	2.31E-01	*4.8*	0	1.81E-01	2.03E-01	6.38E-02	3.81E-01	3.66E-01	3.81E-01	2.55E-01	13	87
Antimony (Sb)	µg/m3	8.29E-04	2.04E-04	7.63E-04	5.50E-04	5.76E-04	1.05E-03	5.01E-04	1.07E-03	7.66E-04	4.90E-04		6.91E-04		5.22E-04	6.51E-04	*25*	0	6.21E-04	6.66E-04	2.04E-04	1.07E-03	8.29E-04	1.07E-03	6.91E-04	13	87
Arsenic (As)	µg/m3	9.21E-04	9.29E-04	9.31E-04	8.97E-04	9.10E-04	8.91E-04	9.16E-04	9.37E-04	9.27E-04	6.25E-03		9.17E-04		8.89E-04	9.05E-04	*0.3*	0	1.06E-03	1.32E-03	8.89E-04	6.25E-03	9.31E-04	6.25E-03	9.17E-04	13	87
Barium (Ba)	µg/m3	4.26E-03	2.02E-03	7.63E-03	4.50E-03	5.22E-03	1.09E-02	4.95E-03	8.31E-03	1.03E-02	6.92E-03		4.57E-03		4.46E-03	4.97E-03	*10*	0	5.57E-03	6.07E-03	2.02E-03	1.09E-02	7.63E-03	1.09E-02	4.97E-03	13	87
Beryllium (Be)	µg/m3	1.54E-05	1.55E-05	1.55E-05	1.49E-05	1.52E-05	1.49E-05	1.53E-05	1.56E-05	1.54E-05	1.53E-05		1.53E-05		1.48E-05	1.51E-05	*0.01*	0	1.52E-05	1.52E-05	1.48E-05	1.56E-05	1.55E-05	1.56E-05	1.53E-05	13	87
Bismuth (Bi)	µg/m3	5.53E-04	5.57E-04	5.58E-04	5.38E-04	5.46E-04	5.35E-04	5.50E-04	5.62E-04	5.56E-04	5.51E-04		5.50E-04		5.33E-04	5.43E-04		-	5.49E-04	5.49E-04	5.33E-04	5.62E-04	5.58E-04	5.62E-04	5.50E-04	13	87
Boron (B)	µg/m3	4.61E-03	4.64E-03	4.65E-03	4.48E-03	4.55E-03	4.46E-03	4.58E-03	4.69E-03	4.63E-03	4.59E-03		4.58E-03		4.45E-03	4.52E-03	*120*	0	4.57E-03	4.57E-03	4.45E-03	4.69E-03	4.65E-03	4.69E-03	4.58E-03	13	87
Cadmium (Cd)	µg/m3	7.98E-05	1.73E-05	9.24E-05	1.51E-04	4.10E-04	1.06E-04	7.82E-05	1.64E-04	5.99E-05	1.27E-04		2.78E-04		7.11E-05	1.25E-04	*0.025*	0	1.06E-04	1.35E-04	1.73E-05	4.10E-04	4.10E-04	1.64E-04	2.78E-04	13	87
Chromium (Cr)	µg/m3	1.04E-03	1.05E-03	2.11E-03	1.02E-03	2.18E-03	2.38E-03	1.04E-03	2.19E-03	1.05E-03	2.45E-03		1.04E-03		1.01E-03	2.17E-03	*0.5*	0	1.48E-03	1.59E-03	1.01E-03	2.45E-03	2.18E-03	2.45E-03	2.17E-03	13	87
Cobalt (Co)	µg/m3	1.01E-04	3.34E-05	1.04E-04	8.43E-05	1.83E-04	2.03E-04	9.04E-05	1.74E-04	2.48E-04	1.75E-04		8.19E-05		9.60E-05	1.09E-04	*0.1*	0	1.15E-04	1.29E-04	3.34E-05	2.48E-04	1.83E-04	2.48E-04	1.09E-04	13	87
Copper (Cu)	µg/m3	6.08E-03	2.66E-03	1.47E-02	2.02E-02	1.77E-02	3.51E-02	1.54E-02	2.60E-02	1.03E-02	2.30E-02		5.48E-02		1.35E-02	1.73E-02	*50*	0	1.57E-02	1.97E-02	2.66E-03	5.48E-02	2.02E-02	3.51E-02	5.48E-02	13	87
Iron (Fe)	µg/m3	3.40E-01	1.23E-01	4.13E-01	2.49E-01	4.95E-01	5.40E-01	2.09E-01	4.72E-01	6.92E-01	5.35E-01		2.78E-01		3.95E-01	3.45E-01	*4*	0	3.58E-01	3.91E-01	1.23E-01	6.92E-01	4.95E-01	6.92E-01	3.95E-01	13	87
Lead (Pb)	µg/m3	1.63E-03	6.13E-04	2.82E-03	1.67E-03	4.31E-03	2.44E-03	1.49E-03	2.70E-03	2.25E-03	2.29E-03	Invalid	2.07E-03	Invalid	1.71E-03	2.70E-03	*0.5*	0	2.03E-03	2.21E-03	6.13E-04	4.31E-03	4.31E-03	2.70E-03	2.70E-03	13	87
Magnesium (Mg)	µg/m3	1.98E-01	1.08E-01	2.71E-01	1.72E-01	4.37E-01	2.94E-01	1.49E-01	2.12E-01	5.53E-01	3.03E-01		1.94E-01		2.48E-01	2.36E-01		-	2.38E-01	2.60E-01	1.08E-01	5.53E-01	4.37E-01	5.53E-01	2.48E-01	13	87
Manganese (Mn)	µg/m3	7.80E-03	3.43E-03	9.06E-03	8.07E-03	1.51E-02	1.28E-02	7.14E-03	9.62E-03	2.50E-02	1.52E-02		7.46E-03		1.03E-02	8.99E-03	*0.4*	0	9.70E-03	1.08E-02	3.43E-03	2.50E-02	1.51E-02	2.50E-02	1.03E-02	13	87
Molybdenum (Mo)	µg/m3	2.89E-04	2.60E-04	7.75E-04	5.98E-04	6.55E-04	1.12E-03	5.50E-04	9.31E-04	5.31E-04	5.45E-04		1.65E-03		5.99E-04	8.14E-04	*120*	0	6.40E-04	7.17E-04	2.60E-04	1.65E-03	7.75E-04	1.12E-03	1.65E-03	13	87
Nickel (Ni)	µg/m3	8.23E-04	5.57E-04	9.43E-04	7.83E-04	1.07E-03	1.45E-03	5.86E-04	9.50E-04	1.11E-03	1.00E-03		7.33E-04		1.02E-03	1.10E-03	*0.2*	0	9.04E-04	9.33E-04	5.57E-04	1.45E-03	1.07E-03	1.45E-03	1.10E-03	13	87
Phosphorus (P)	µg/m3	2.30E-01	2.32E-01	2.33E-01	2.24E-01	2.28E-01	2.23E-01	2.29E-01	2.34E-01	2.32E-01	2.30E-01		2.29E-01		2.22E-01	2.26E-01		-	2.29E-01	2.29E-01	2.22E-01	2.34E-01	2.33E-01	2.34E-01	2.29E-01	13	87
Selenium (Se)	µg/m3	3.99E-04	4.02E-04	4.03E-04	3.89E-04	3.94E-04	3.86E-04	3.97E-04	4.06E-04	4.02E-04	3.98E-04		3.97E-04		8.89E-04	1.21E-03	*10*	0	4.61E-04	4.98E-04	3.86E-04	1.21E-03	4.03E-04	4.06E-04	1.21E-03	13	87
Silver (Ag)	µg/m3	2.76E-05	2.79E-05	2.79E-05	2.69E-05	2.73E-05	2.67E-05	2.75E-05	2.81E-05	2.78E-05	1.05E-04		2.75E-05		2.67E-05	2.71E-05	*1*	0	3.04E-05	3.34E-05	2.67E-05	1.05E-04	2.79E-05	1.05E-04	2.75E-05	13	87
Strontium (Sr)	µg/m3	4.97E-03	1.98E-03	5.77E-03	3.83E-03	1.18E-02	6.24E-03	2.81E-03	9.50E-03	1.98E-02	1.01E-02		4.58E-03		8.18E-03	8.75E-03	*120*	0	6.36E-03	7.56E-03	1.98E-03	1.98E-02	1.18E-02	1.98E-02	8.75E-03	13	87
Thallium (Tl)	µg/m3	2.76E-05	2.79E-05	2.79E-05	2.69E-05	2.73E-05	2.67E-05	2.75E-05	2.81E-05	2.78E-05	2.76E-05		2.75E-05		2.67E-05	2.71E-05		-	2.74E-05	2.74E-05	2.67E-05	2.81E-05	2.79E-05	2.81E-05	2.75E-05	13	87
Tin (Sn)	µg/m3	4.67E-04	1.86E-04	9.24E-04	5.92E-04	8.01E-04	9.21E-04	8.85E-04	8.00E-04	6.86E-04	5.82E-04		2.28E-03		5.99E-04	7.12E-04	*10*	0	6.99E-04	8.03E-04	1.86E-04	2.28E-03	9.24E-04	9.21E-04	2.28E-03	13	87
Titanium (Ti)	µg/m3	8.60E-03	3.41E-03	1.05E-02	3.29E-03	1.64E-02	8.91E-03	3.36E-03	8.12E-03	1.54E-02	1.22E-02		3.36E-03		1.24E-02	1.21E-02	*120*	0	7.79E-03	9.09E-03	3.29E-03	1.64E-02	1.64E-02	1.54E-02	1.24E-02	13	87
Uranium (U)	µg/m3	1.41E-05	5.57E-06	1.65E-05	1.05E-05	3.28E-05	1.60E-05	9.34E-06	3.65E-05	3.64E-05	1.90E-05		1.49E-05		2.38E-05	3.26E-05	*1.5*	0	1.79E-05	2.06E-05	5.57E-06	3.65E-05	3.28E-05	3.65E-05	3.26E-05	13	87
Vanadium (V)	µg/m3	1.54E-03	1.55E-03	1.55E-03	1.49E-03	1.52E-03	1.49E-03	1.53E-03	1.56E-03	1.54E-03	1.53E-03		1.53E-03		1.48E-03	1.51E-03	*2*	0	1.52E-03	1.52E-03	1.48E-03	1.56E-03	1.55E-03	1.56E-03	1.53E-03	13	87
Zinc (Zn)	µg/m3	1.98E-02	4.57E-02	4.02E-02	3.44E-02	5.02E-02	3.56E-02	1.77E-02	1.68E-02	2.52E-02	2.90E-02		5.17E-02		2.41E-02	3.09E-02	*120*	0	3.04E-02	3.24E-02	1.68E-02	5.17E-02	5.02E-02	3.56E-02	5.17E-02	13	87
Zirconium (Zr)	µg/m3	6.14E-04	6.19E-04	6.20E-04	5.98E-04	6.07E-04	5.94E-04	6.11E-04	6.25E-04	6.18E-04	6.12E-04		6.11E-04		5.93E-04	6.03E-04	*20*	0	6.10E-04	6.10E-04	5.93E-04	6.25E-04	6.20E-04	6.25E-04	6.11E-04	13	87

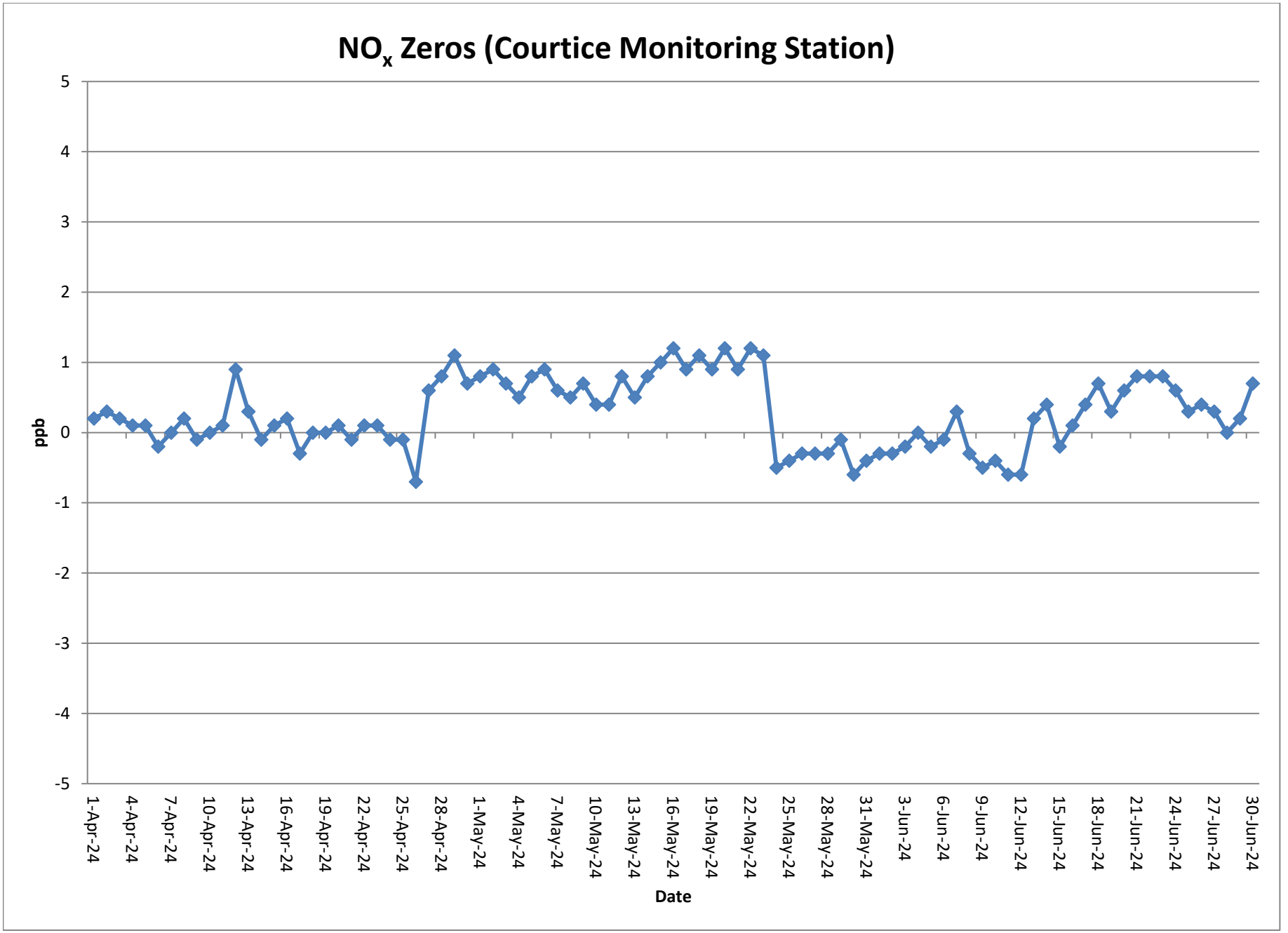
NOTE: All non-detectable results were reported as 1/2 of the detection limit

Table B9: 2024 Rundle Road Station Q2 Monitoring Results for TSP and Metals

Contaminant	Units	6-Apr-24	12-Apr-24	18-Apr-24	24-Apr-24	30-Apr-24	6-May-24	12-May-24	18-May-24	24-May-24	30-May-24	5-Jun-24	11-Jun-24	17-Jun-24	23-Jun-24	29-Jun-24	MECP Criteria (µg/m3)	No. > Criteria	Geometric Mean	Arithmetic Mean	Q2 Minimum Concentration	Q2 Maximum Concentration	April Maximum Concentration	May Maximum Concentration	June Maximum Concentration	Number of Valid Samples	% Valid data
Total particulate	µg/m3	Invalid	Invalid	28.50	13.20	38.66	29.30	16.17	40.23	44.34	51.51	67.93	18.74	42.99	26.79	22.91	*120*	0	30.7	33.9	13.20	67.93	38.66	51.51	67.93	13	87
Mercury (Hg)	µg/m3			8.07E-06	3.09E-06	2.15E-05	9.08E-06	3.12E-06	9.55E-06	8.86E-06	8.62E-06	9.79E-06	8.66E-06	9.53E-06	6.50E-06	1.33E-05	*2*	0	8.22E-06	9.30E-06	3.09E-06	2.15E-05	2.15E-05	9.55E-06	1.33E-05	13	87
Aluminum (Al)	µg/m3			2.83E-01	9.81E-02	3.68E-01	2.37E-01	9.55E-02	3.30E-01	2.52E-01	1.27E-01	6.98E-01	1.04E-01	4.07E-01	1.65E-01	1.34E-01	*4.8*	0	2.05E-01	2.51E-01	9.55E-02	6.98E-01	3.68E-01	3.30E-01	6.98E-01	13	87
Antimony (Sb)	µg/m3			9.87E-04	3.76E-04	7.38E-04	7.38E-04	5.24E-04	9.61E-04	5.12E-04	2.28E-04	9.49E-04	4.45E-04	1.02E-03	5.20E-04	8.52E-04	*25*	0	6.03E-04	6.55E-04	2.28E-04	1.02E-03	9.87E-04	9.61E-04	1.02E-03	13	87
Arsenic (As)	µg/m3			9.31E-04	9.26E-04	9.22E-04	9.08E-04	9.36E-04	9.55E-04	9.49E-04	9.23E-04	9.18E-04	9.28E-04	8.93E-04	8.87E-04	9.07E-04	*0.3*	0	9.21E-04	9.21E-04	8.87E-04	9.55E-04	9.31E-04	9.55E-04	9.28E-04	13	87
Barium (Ba)	µg/m3			1.25E-02	3.55E-03	8.36E-03	1.10E-02	3.93E-03	1.60E-02	5.90E-03	2.50E-03	1.16E-02	4.43E-03	1.02E-02	4.04E-03	6.77E-03	*10*	0	6.35E-03	7.35E-03	2.50E-03	1.60E-02	1.25E-02	1.60E-02	1.16E-02	13	87
Beryllium (Be)	µg/m3			1.55E-05	1.54E-05	1.54E-05	1.51E-05	1.56E-05	1.59E-05	1.58E-05	1.54E-05	3.61E-05	1.55E-05	1.49E-05	1.48E-05	1.51E-05	*0.01*	0	1.65E-05	1.71E-05	1.48E-05	3.61E-05	1.55E-05	1.59E-05	3.61E-05	13	87
Bismuth (Bi)	µg/m3			5.59E-04	5.55E-04	5.53E-04	5.45E-04	5.62E-04	1.85E-03	5.69E-04	5.54E-04	5.51E-04	5.57E-04	5.36E-04	5.32E-04	5.44E-04		-	6.09E-04	6.59E-04	5.32E-04	1.85E-03	5.59E-04	1.85E-03	5.57E-04	13	87
Boron (B)	µg/m3			4.66E-03	4.63E-03	4.61E-03	4.54E-03	4.68E-03	4.77E-03	4.74E-03	4.62E-03	4.59E-03	4.64E-03	4.47E-03	4.43E-03	4.53E-03	*120*	0	4.60E-03	4.60E-03	4.43E-03	4.77E-03	4.66E-03	4.77E-03	4.64E-03	13	87
Cadmium (Cd)	µg/m3			5.34E-05	4.44E-05	5.47E-05	5.81E-05	5.93E-05	1.55E-04	6.83E-04	4.18E-05	8.75E-05	4.08E-05	1.10E-04	5.32E-05	8.64E-05	*0.025*	0	7.98E-05	1.23E-04	4.08E-05	6.83E-04	5.47E-05	6.83E-04	1.10E-04	13	87
Chromium (Cr)	µg/m3			2.30E-03	1.05E-03	2.77E-03	2.36E-03	1.06E-03	2.93E-03	2.21E-03	1.05E-03	2.88E-03	1.05E-03	2.32E-03	1.01E-03	1.03E-03	*0.5*	0	1.63E-03	1.81E-03	1.01E-03	2.93E-03	2.77E-03	2.93E-03	2.88E-03	13	87
Cobalt (Co)	µg/m3			1.89E-04	1.58E-04	2.19E-04	2.47E-04	1.47E-04	2.75E-04	1.68E-04	7.82E-05	3.47E-04	1.14E-04	2.18E-04	8.34E-05	1.28E-04	*0.1*	0	1.65E-04	1.82E-04	7.82E-05	3.47E-04	2.19E-04	2.75E-04	3.47E-04	13	87
Copper (Cu)	µg/m3			5.09E-02	5.03E-02	6.82E-02	8.47E-02	4.86E-02	6.49E-02	2.83E-02	2.99E-02	7.16E-02	1.01E-01	7.80E-02	4.95E-02	5.33E-02	*50*	0	5.69E-02	6.07E-02	2.83E-02	1.01E-01	6.82E-02	8.47E-02	1.01E-01	13	87
Iron (Fe)	µg/m3			5.70E-01	3.47E-01	6.45E-01	5.56E-01	2.76E-01	6.56E-01	4.70E-01	1.62E-01	1.16E+00	3.51E-01	6.61E-01	3.12E-01	3.51E-01	*4*	0	4.38E-01	4.95E-01	1.62E-01	1.16E+00	6.45E-01	6.56E-01	1.16E+00	13	87
Lead (Pb)	µg/m3			2.13E-03	1.32E-03	2.85E-03	1.34E-03	1.17E-03	3.24E-03	5.12E-03	2.22E-03	4.24E-03	1.89E-03	3.08E-03	1.61E-03	2.39E-03	*0.5*	0	2.29E-03	2.54E-03	1.17E-03	5.12E-03	2.85E-03	5.12E-03	4.24E-03	13	87
Magnesium (Mg)	µg/m3			4.86E-01	1.73E-01	3.98E-01	4.23E-01	1.30E-01	3.72E-01	4.13E-01	1.80E-01	6.03E-01	1.79E-01	4.21E-01	2.08E-01	1.86E-01		-	2.75E-01	3.07E-01	1.30E-01	6.03E-01	4.86E-01	4.23E-01	6.03E-01	13	87
Manganese (Mn)	µg/m3			1.51E-02	7.53E-03	1.48E-02	1.55E-02	6.49E-03	1.37E-02	1.67E-02	4.82E-03	2.20E-02	7.30E-03	1.86E-02	8.28E-03	8.70E-03	*0.4*	0	1.08E-02	1.20E-02	4.82E-03	2.20E-02	1.51E-02	1.67E-02	2.20E-02	13	87
Molybdenum (Mo)	µg/m3			2.33E-03	1.65E-03	2.51E-03	2.34E-03	2.02E-03	2.53E-03	1.05E-03	2.30E-03	2.55E-03	2.78E-03	2.48E-03	1.40E-03	1.60E-03	*120*	0	2.02E-03	2.10E-03	1.05E-03	2.78E-03	2.51E-03	2.53E-03	2.78E-03	13	87
Nickel (Ni)	µg/m3			1.08E-03	8.51E-04	1.36E-03	1.05E-03	6.80E-04	1.21E-03	1.08E-03	5.42E-04	1.85E-03	6.87E-04	1.39E-03	7.16E-04	1.02E-03	*0.2*	0	9.76E-04	1.04E-03	5.42E-04	1.85E-03	1.36E-03	1.21E-03	1.85E-03	13	87
Phosphorus (P)	µg/m3			2.33E-01	2.31E-01	2.31E-01	2.27E-01	2.34E-01	2.39E-01	2.37E-01	2.31E-01	2.29E-01	2.32E-01	2.23E-01	2.22E-01	2.27E-01		-	2.30E-01	2.30E-01	2.22E-01	2.39E-01	2.33E-01	2.39E-01	2.32E-01	13	87
Selenium (Se)	µg/m3			4.04E-04	4.01E-04	4.00E-04	3.93E-04	4.06E-04	4.14E-04	4.11E-04	4.00E-04	3.98E-04	4.02E-04	1.19E-03	7.69E-04	1.21E-03	*10*	0	5.10E-04	5.66E-04	3.93E-04	1.21E-03	4.04E-04	4.14E-04	1.21E-03	13	87
Silver (Ag)	µg/m3			6.89E-05	2.78E-05	2.77E-05	2.72E-05	2.81E-05	2.86E-05	2.85E-05	2.77E-05	2.31E-04	6.18E-05	6.07E-05	2.66E-05	2.72E-05	*1*	0	3.77E-05	5.03E-05	2.66E-05	2.31E-04	6.89E-05	2.86E-05	2.31E-04	13	87
Strontium (Sr)	µg/m3			1.11E-02	3.09E-03	1.33E-02	7.45E-03	2.50E-03	1.78E-02	7.78E-03	4.06E-03	1.89E-02	3.83E-03	1.16E-02	5.56E-03	5.08E-03	*120*	0	6.82E-03	8.41E-03	2.50E-03	1.89E-02	1.33E-02	1.78E-02	1.89E-02	13	87
Thallium (Tl)	µg/m3			2.79E-05	2.78E-05	2.77E-05	2.72E-05	2.81E-05	1.62E-04	2.85E-05	2.77E-05	2.75E-05	2.78E-05	2.68E-05	2.66E-05	2.72E-05		-	3.19E-05	3.88E-05	2.66E-05	1.62E-04	2.79E-05	1.62E-04	2.78E-05	13	87
Tin (Sn)	µg/m3			1.33E-03	4.44E-04	6.64E-04	9.50E-04	9.30E-04	1.56E-03	1.31E-03	4.18E-04	1.25E-03	5.07E-04	1.02E-03	1.06E-03	8.40E-04	*10*	0	8.43E-04	9.13E-04	4.18E-04	1.56E-03	1.33E-03	1.56E-03	1.25E-03	13	87
Titanium (Ti)	µg/m3			1.49E-02	3.39E-03	1.78E-02	1.57E-02	3.43E-03	1.40E-02	9.49E-03	3.38E-03	2.63E-02	3.40E-03	1.67E-02	8.28E-03	7.25E-03	*120*	0	8.45E-03	1.08E-02	3.38E-03	2.63E-02	1.78E-02	1.57E-02	2.63E-02	13	87
Uranium (U)	µg/m3			2.32E-05	1.06E-05	3.82E-05	1.85E-05	8.43E-06	4.64E-05	2.42E-05	1.03E-05	6.18E-05	9.22E-06	5.95E-05	1.52E-05	1.77E-05	*1.5*	0	2.08E-05	2.67E-05	8.43E-06	6.18E-05	3.82E-05	4.64E-05	6.18E-05	13	87
Vanadium (V)	µg/m3			1.55E-03	1.54E-03	1.54E-03	1.51E-03	1.56E-03	1.59E-03	1.58E-03	1.54E-03	1.53E-03	1.55E-03	1.49E-03	1.48E-03	1.51E-03	*2*	0	1.53E-03	1.53E-03	1.48E-03	1.59E-03	1.55E-03	1.59E-03	1.55E-03	13	87
Zinc (Zn)	µg/m3			3.74E-02	3.61E-02	3.29E-02	2.38E-02	1.46E-02	2.69E-02	1.97E-01	1.18E-02	2.97E-02	1.69E-02	4.16E-02	3.35E-02	2.66E-02	*120*	0	2.98E-02	4.10E-02	1.18E-02	1.97E-01	3.74E-02	1.97E-01	4.16E-02	13	87
Zirconium (Zr)	µg/m3			6.21E-04	6.17E-04	6.15E-04	6.05E-04	6.24E-04	6.37E-04	6.33E-04	6.15E-04	6.12E-04	6.18E-04	5.95E-04	5.91E-04	6.04E-04	*20*	0	6.14E-04	6.14E-04	5.91E-04	6.37E-04	6.21E-04	6.37E-04	6.18E-04	13	87

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

APPENDIX C


NOx Zeros (Courtice Monitoring Station)
ppb
5
4
3
2
1
0
-1
-2
-3
-4
-5
1-Apr-24
4-Apr-24
7-Apr-24
10-Apr-24
13-Apr-24
16-Apr-24
19-Apr-24
22-Apr-24
25-Apr-24
28-Apr-24
1-May-24
4-May-24
7-May-24
10-May-24
13-May-24
16-May-24
19-May-24
22-May-24
25-May-24
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31-May-24
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6-Jun-24
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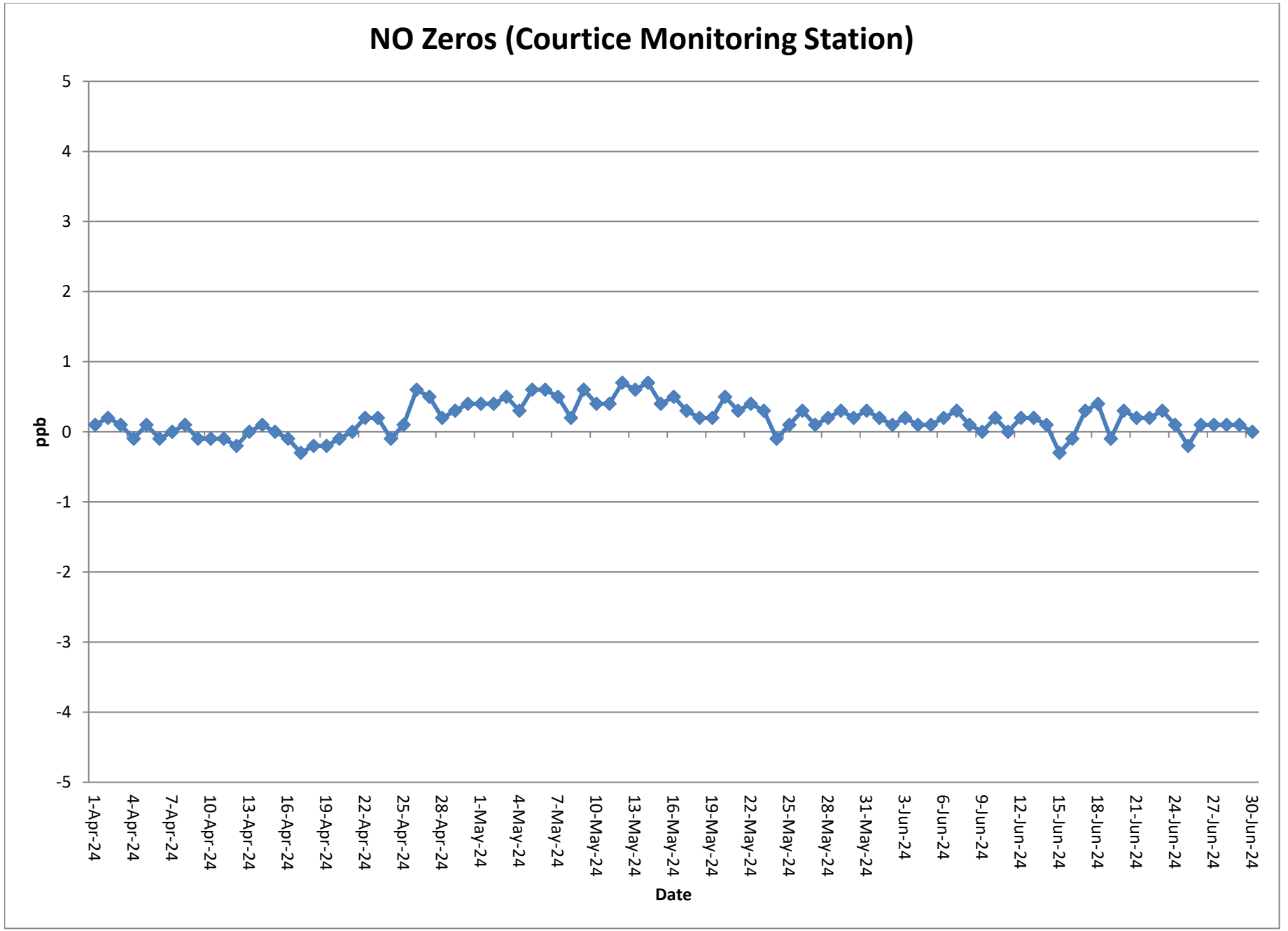
24-Jun-24
27-Jun-24
30-Jun-24
Date


NO Zeros (Courtice Monitoring Station)
ppb
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3
2
1
0
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-2
-3
-4
-5
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7-Apr-24
10-Apr-24
13-Apr-24
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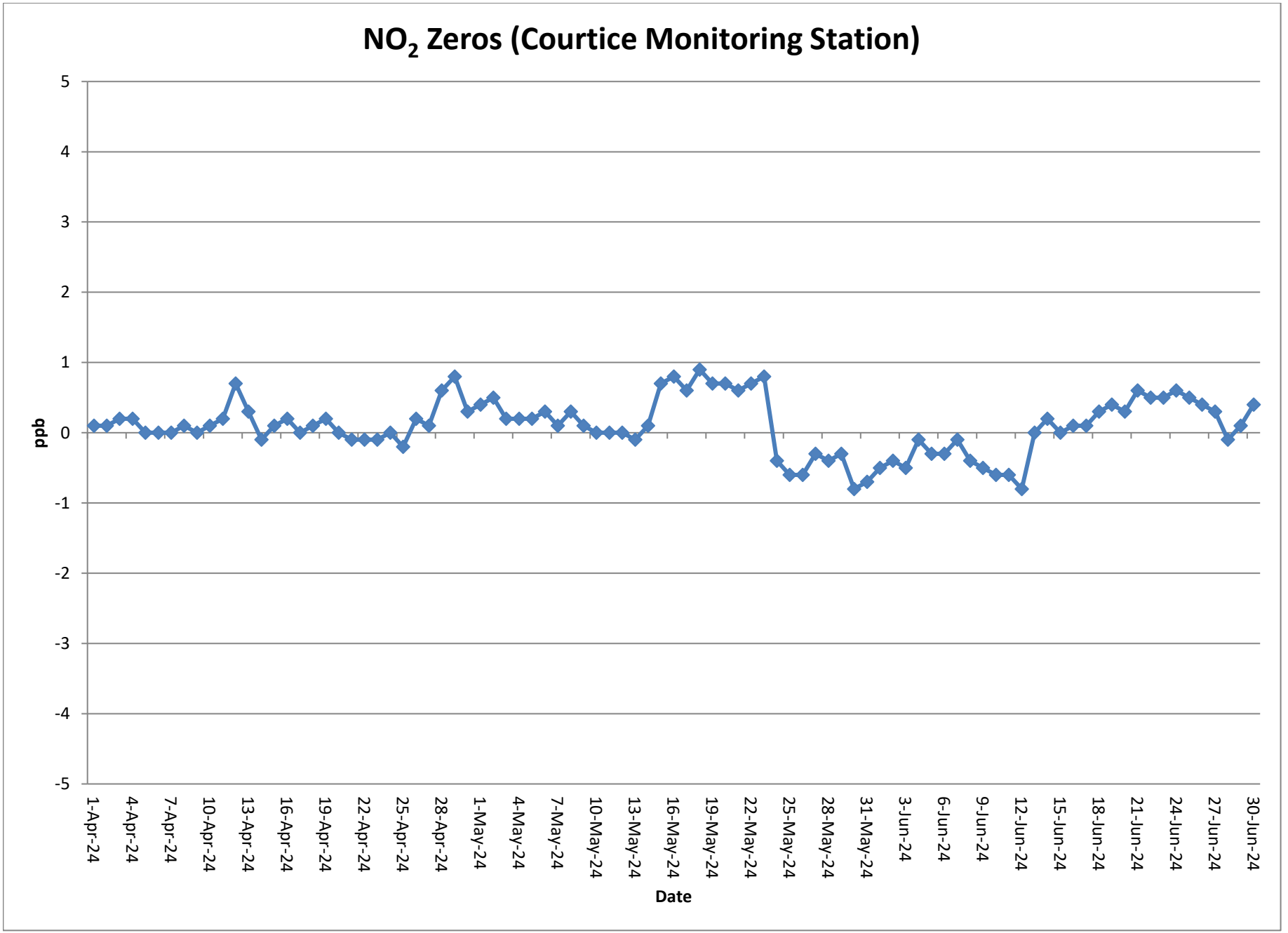
19-Apr-24
22-Apr-24
25-Apr-24
28-Apr-24
1-May-24
4-May-24
7-May-24
10-May-24
13-May-24
16-May-24
19-May-24
22-May-24
25-May-24
28-May-24
31-May-24
3-Jun-24
6-Jun-24
9-Jun-24
12-Jun-24
15-Jun-24
18-Jun-24
21-Jun-24
24-Jun-24
27-Jun-24
30-Jun-24
Date


NO2 Zeros (Courtice Monitoring Station)
ppb
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0
-1
-2
-3
-4
-5
1-Apr-24
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22-Apr-24
25-Apr-24
28-Apr-24
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4-May-24
7-May-24
10-May-24
13-May-24
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28-May-24
31-May-24
3-Jun-24
6-Jun-24
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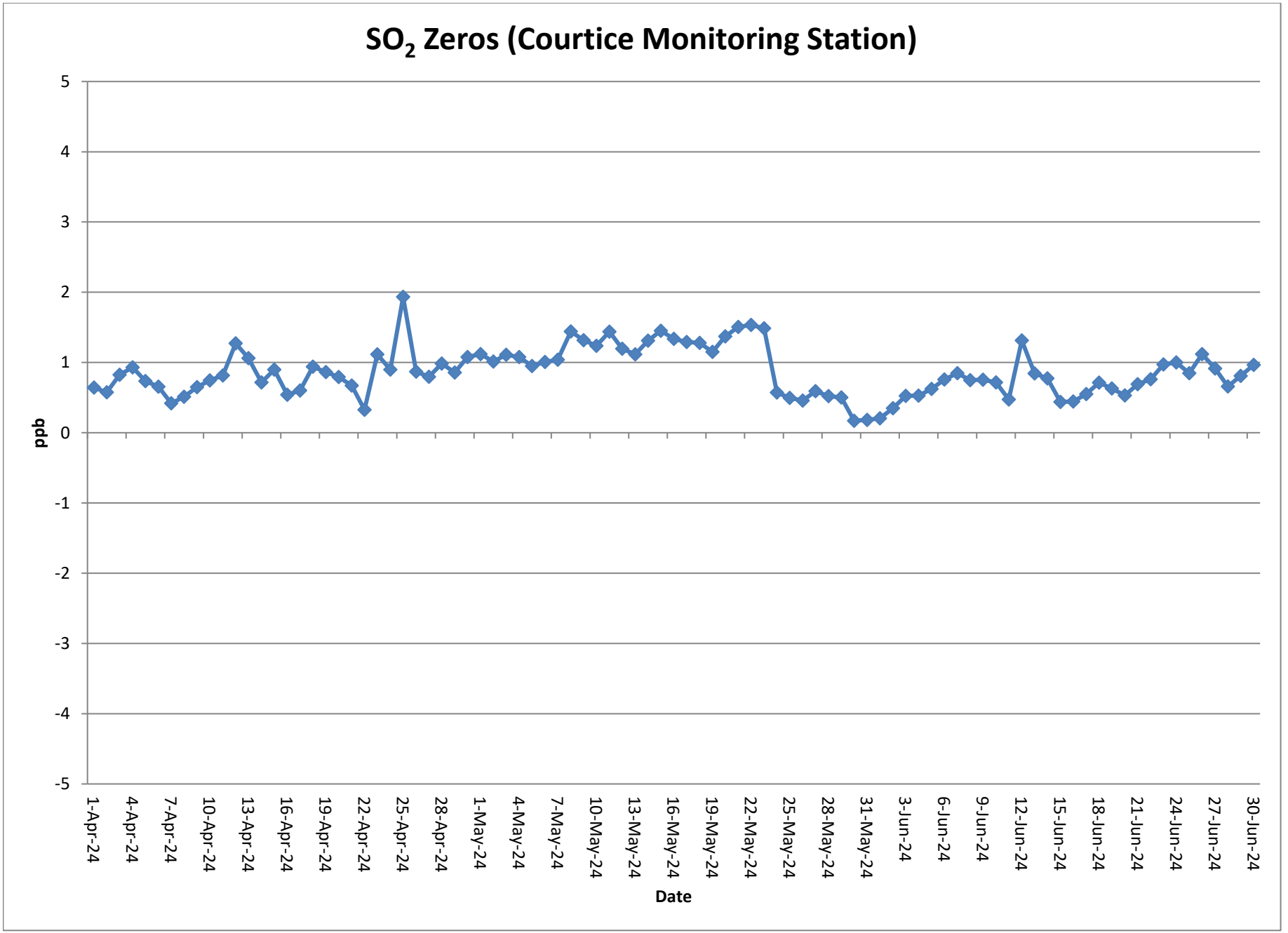
30-Jun-24
Date


SO2 Zeros (Courtice Monitoring Station)
ppb
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4
3
2
1
0
-1
-2
-3
-4
-5
1-Apr-24
4-Apr-24
7-Apr-24
10-Apr-24
13-Apr-24
16-Apr-24
19-Apr-24
22-Apr-24
25-Apr-24
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1-May-24
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7-May-24
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13-May-24
16-May-24
19-May-24
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6-Jun-24
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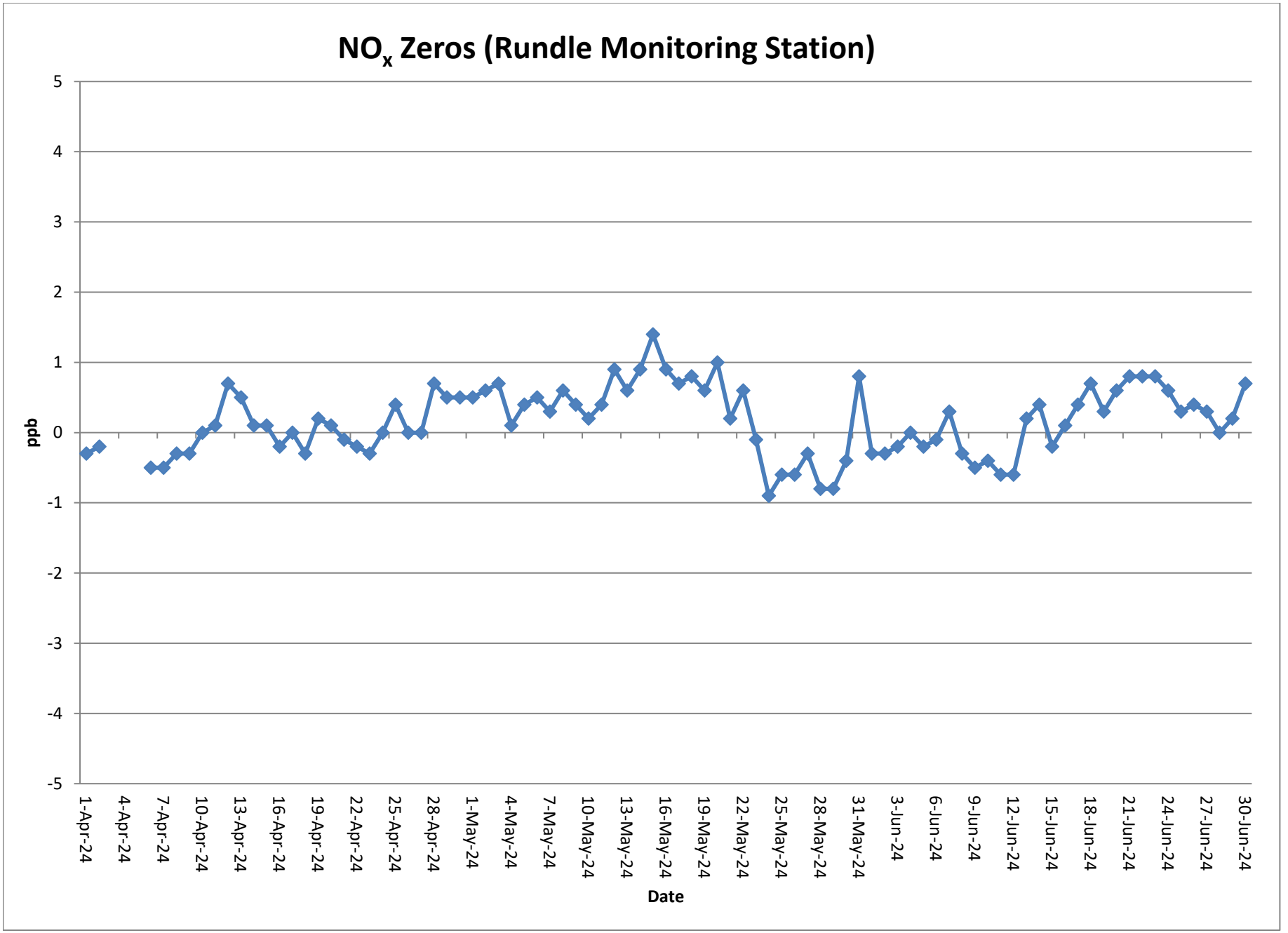
Date


NOx Zeros (Rundle Monitoring Station)
ppb
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3
2
1
0
-1
-2
-3
-4
-5
1-Apr-24
4-Apr-24
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16-May-24
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28-May-24
31-May-24
3-Jun-24
6-Jun-24
9-Jun-24
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15-Jun-24
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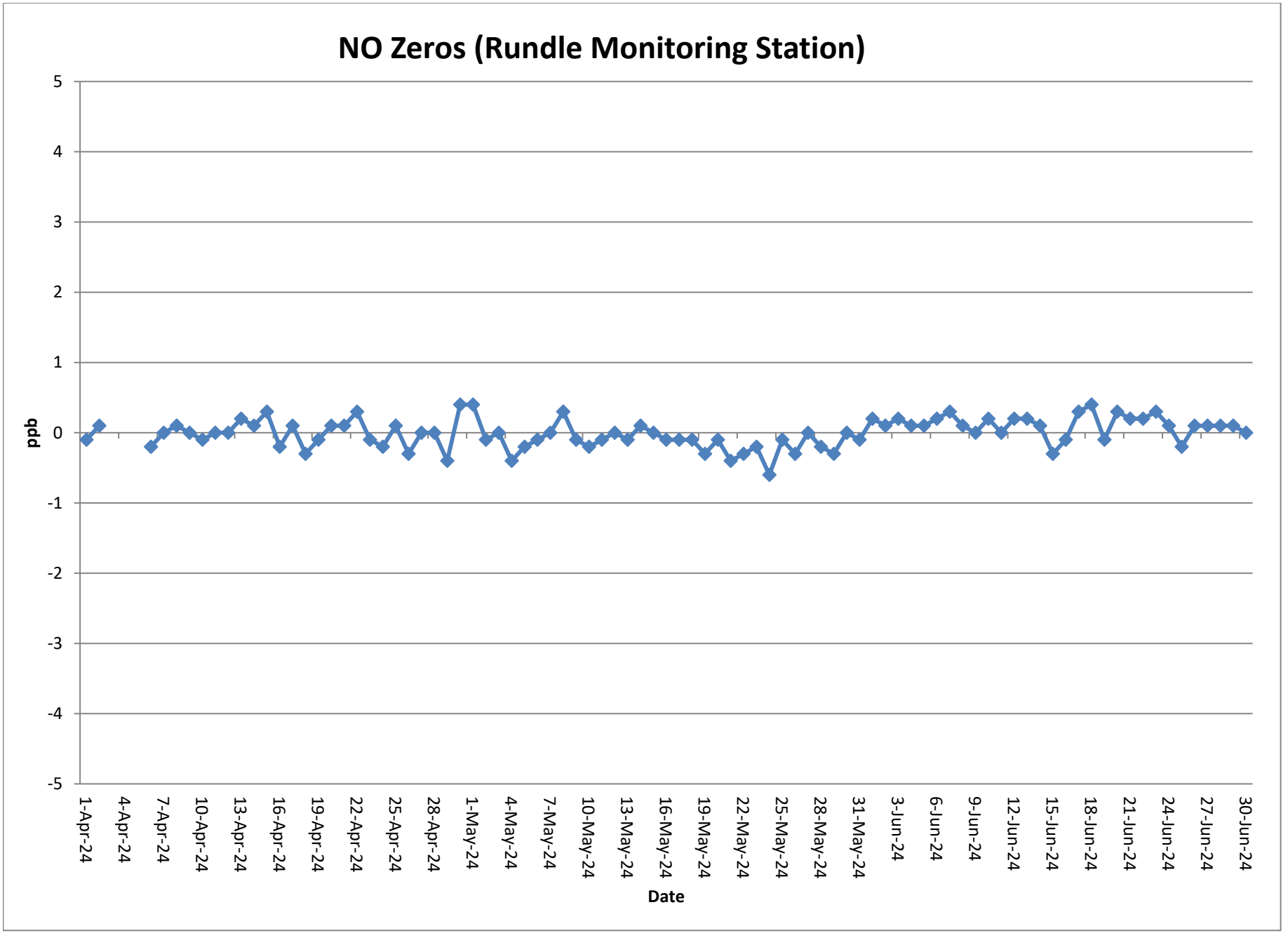
21-Jun-24
24-Jun-24
27-Jun-24
30-Jun-24
Date


NO Zeros (Rundle Monitoring Station)
ppb
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4
3
2
1
0
-1
-2
-3
-4
-5
1-Apr-24
4-Apr-24
7-Apr-24
10-Apr-24
13-Apr-24
16-Apr-24
19-Apr-24
22-Apr-24
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13-May-24
16-May-24
19-May-24
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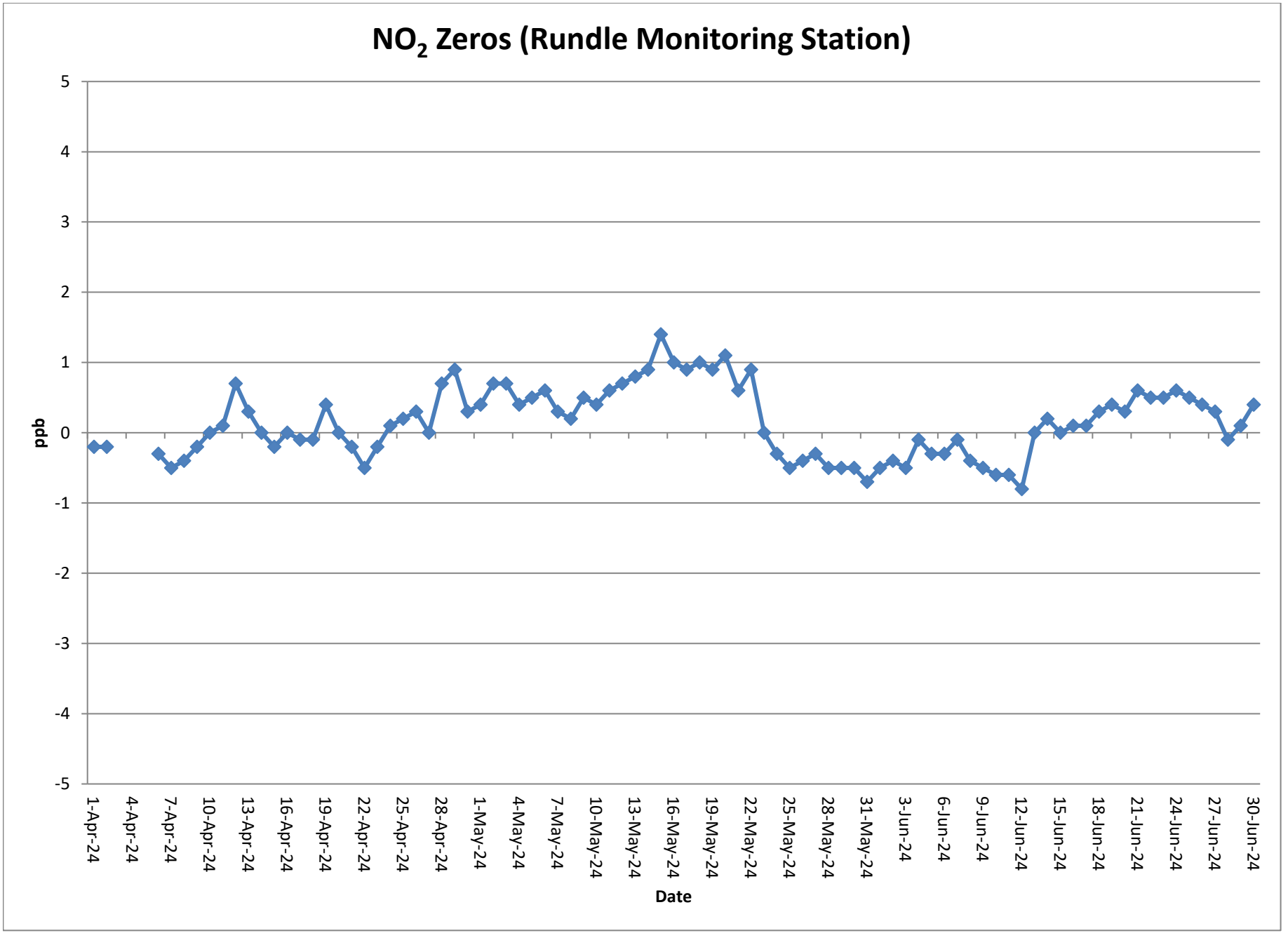
25-May-24
28-May-24
31-May-24
3-Jun-24
6-Jun-24
9-Jun-24
12-Jun-24
15-Jun-24
18-Jun-24
21-Jun-24
24-Jun-24
27-Jun-24
30-Jun-24
Date


NO2 Zeros (Rundle Monitoring Station)
ppb
5
4
3
2
1
0
-1
-2
-3
-4
-5
1-Apr-24
4-Apr-24
7-Apr-24
10-Apr-24
13-Apr-24
16-Apr-24
19-Apr-24
22-Apr-24
25-Apr-24
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1-May-24
4-May-24
7-May-24
10-May-24
13-May-24
16-May-24
19-May-24
22-May-24
25-May-24
28-May-24
31-May-24
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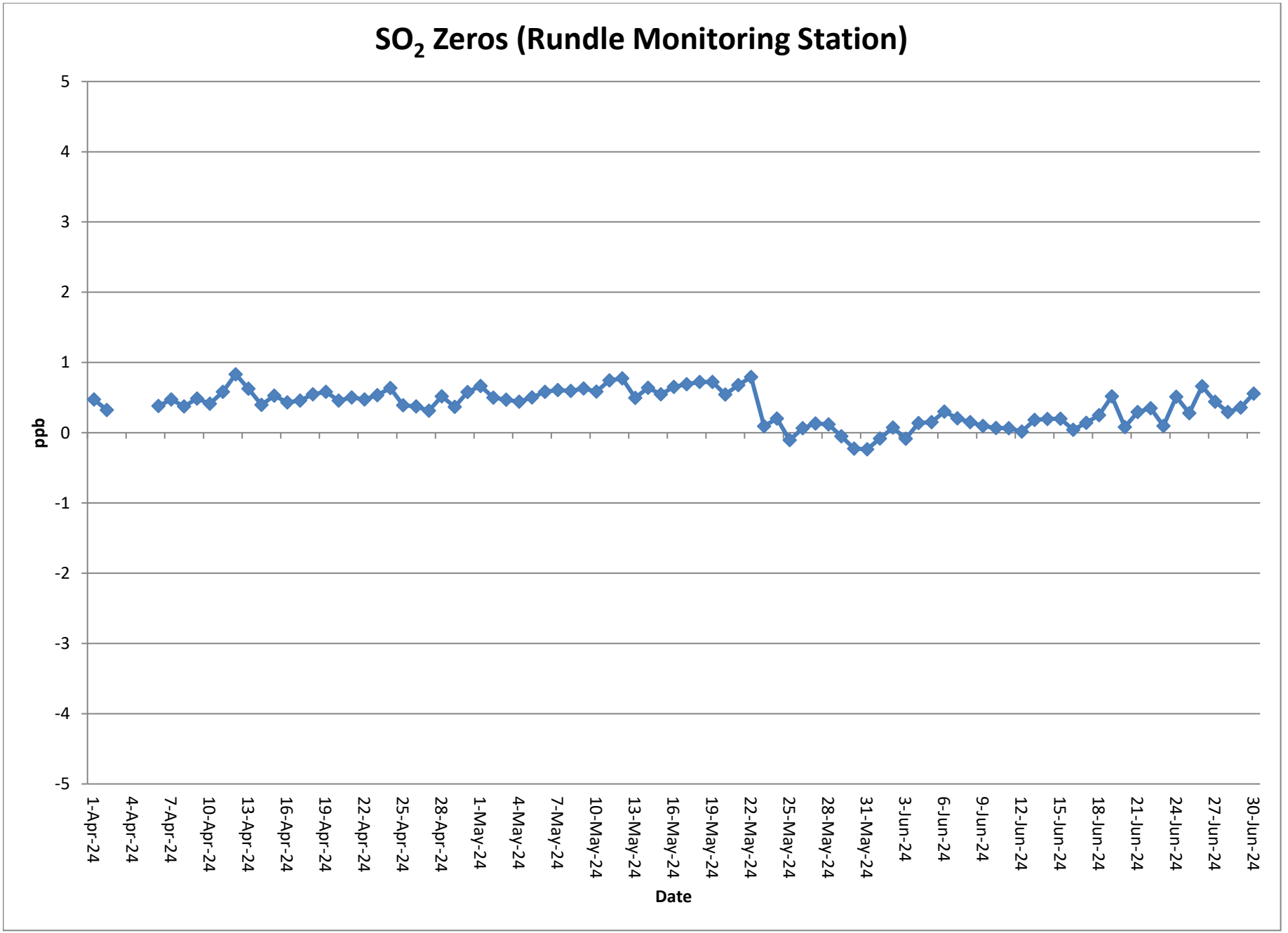
21-Jun-24
24-Jun-24
27-Jun-24
30-Jun-24
Date


SO2 Zeros (Rundle Monitoring Station)
ppb
5
4
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2
1
0
-1
-2
-3
-4
-5
1-Apr-24
4-Apr-24
7-Apr-24
10-Apr-24
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4-May-24
7-May-24
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16-May-24
19-May-24
22-May-24
25-May-24
28-May-24
31-May-24
3-Jun-24
6-Jun-24
9-Jun-24
12-Jun-24
15-Jun-24
18-Jun-24
21-Jun-24
24-Jun-24
27-Jun-24
30-Jun-24
Date

APPENDIX D

Table D1: Q2 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:** April 1, 2024		**End Date:** June 30, 2024			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	25/04/2024	SRS	Hours Deleted	25/04/2024	12:00	25/04/2024	13:00	1	Monthly calibration
2	15/05/2024	AXT	Zero Correction	01/04/2024	00:00	01/05/2024	00:00	-	Correcting Values <0 to 0
3	23/05/2024	SRS	Hours Deleted	23/05/2024	10:00	23/05/2024	11:00	1	Monthly calibration
4	10/06/2024	AXT	Zero Correction	01/05/2024	00:00	01/06/2024	00:00	-	Correcting Values <0 to 0
5	12/06/2024	SRS	Hours Deleted	12/06/2024	14:00	12/06/2024	15:00	1	Monthly calibration
6	18/06/2024	SRS	Hours Deleted	18/06/2024	09:00	18/06/2024	11:00	2	Quarterly Audit
7	18/06/2024	SRS	Hours Deleted	18/06/2024	12:00	18/06/2024	14:00	2	Calibration
8	10/07/2024	AXT	Zero Correction	01/06/2024	00:00	01/07/2024	00:00	-	Correcting Values <0 to 0

Table D2: Q2 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:** April 1, 2024		**End Date:** June 30, 2024			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	13/05/2024	AXT	Hours Deleted	02/04/2024	09:00	05/04/2024	10:00	73	Power outage / data logger malfunction- no data collected
2	24/04/2024	SRS	Hours Deleted	24/04/2024	13:00	24/04/2024	14:00	1	Monthly calibration
3	15/05/2024	AXT	Zero Correction	01/04/2024	00:00	01/05/2024	00:00	-	Correcting Values <0 to 0
4	22/05/2024	SRS	Hours Deleted	22/05/2024	14:00	22/05/2024	16:00	2	Monthly calibration
5	10/06/2024	AXT	Zero Correction	01/05/2024	00:00	01/06/2024	00:00	-	Correcting Values <0 to 0
6	13/06/2024	SRS	Hours Deleted	13/06/2024	14:00	13/06/2024	15:00	1	Monthly calibration
7	18/06/2024	SRS	Hours Deleted	18/06/2024	11:00	18/06/2024	12:00	1	Quarterly Audit

Table D3: Q2 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:** April 1, 2024		**End Date:** June 30, 2024			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	25/04/2024	SRS	Hours Deleted	25/04/2024	11:00	25/04/2024	14:00	3	Monthly calibration
2	15/05/2024	AXT	Zero Correction	01/04/2024	00:00	01/05/2024	00:00	-	Correcting Values <0 to 0
3	13/05/2024	SRS	Hours Deleted	13/05/2024	12:00	13/05/2024	15:00	3	Maintenance visit
4	23/05/2024	SRS	Hours Deleted	23/05/2024	12:00	23/05/2024	15:00	3	Monthly calibration & maintenance
5	10/06/2024	AXT	Zero Correction	01/05/2024	00:00	01/06/2024	00:00	-	Correcting Values <0 to 0
6	12/06/2024	SRS	Hours Deleted	12/06/2024	13:00	12/06/2024	15:00	2	Monthly calibration
7	18/06/2024	SRS	Hours Deleted	18/06/2024	09:00	18/06/2024	11:00	2	Quarterly Audit
8	10/07/2024	AXT	Zero Correction	01/06/2024	00:00	01/07/2024	00:00	-	Correcting Values <0 to 0

Table D4: Q2 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:** April 1, 2024		**End Date:** June 30, 2024			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	13/05/2024	AXT	Hours deleted	02/04/2024	08:00	05/04/2024	10:00	74	Power outage / data logger malfunction- no data collected
2	24/04/2024	SRS	Hours deleted	24/04/2024	11:00	24/04/2024	15:00	4	Monthly calibration & maintenance
3	25/04/2024	SRS	Hours deleted	25/04/2024	09:00	25/04/2024	11:00	2	Monthly calibration - verification
4	15/05/2024	AXT	Zero Correction	01/04/2024	00:00	01/05/2024	00:00	-	Correcting Values <0 to 0
5	22/05/2024	SRS	Hours Deleted	22/05/2024	11:00	22/05/2024	14:00	3	Monthly calibration & maintenance
6	10/06/2024	AXT	Zero Correction	01/05/2024	00:00	01/06/2024	00:00	-	Correcting Values <0 to 0
7	13/06/2024	SRS	Hours Deleted	13/06/2024	12:00	13/06/2024	14:00	2	Monthly calibration
8	18/06/2024	SRS	Hours Deleted	18/06/2024	11:00	18/06/2024	12:00	1	Quarterly Audit
9	10/07/2024	AXT	Zero Correction	01/06/2024	00:00	01/07/2024	00:00	-	Correcting Values <0 to 0

Table D5: Q2 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:** April 1, 2024		**End Date:** June 30, 2024			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	25/04/2024	SRS	Hours Deleted	25/04/2024	13:00	25/04/2024	15:00	2	Monthly calibration
2	23/05/2024	SRS	Hours Deleted	23/05/2024	09:00	23/05/2024	13:00	4	Monthly calibration & maintenance
3	12/06/2024	SRS	Hours Deleted	12/06/2024	11:00	12/06/2024	13:00	2	Monthly calibration & maintenance
4	18/06/2024	SRS	Hours Deleted	18/06/2024	09:00	18/06/2024	11:00	2	Quarterly Audit

Table D6: Q2 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:** April 1, 2024		**End Date:** June 30, 2024			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	13/05/2024	AXT	Hours deleted	02/04/2024	09:00	05/04/2024	10:00	73	Power outage / data logger malfunction- no data collected
2	24/04/2024	SRS	Hours deleted	24/04/2024	11:00	24/04/2024	15:00	4	Monthly calibration
3	15/05/2024	AXT	Zero Correction	01/04/2024	00:00	01/05/2024	00:00	-	Correcting Values <0 to 0
4	22/05/2024	SRS	Hours Deleted	22/05/2024	13:00	22/05/2024	16:00	3	Monthly calibration & maintenance
5	10/06/2024	AXT	Zero Correction	01/05/2024	00:00	01/06/2024	00:00	-	Correcting Values <0 to 0
6	13/06/2024	SRS	Hours Deleted	13/06/2024	10:00	13/06/2024	12:00	2	Monthly calibration
7	18/06/2024	SRS	Hours Deleted	18/06/2024	11:00	18/06/2024	12:00	1	Quarterly Audit
8	10/07/2024	AXT	Zero Correction	01/06/2024	00:00	01/07/2024	00:00	-	Correcting Values <0 to 0

Table D7: Q2 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:** April 1, 2024		**End Date:** June 30, 2024			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	10/06/2024	AXT	Hours deleted	01/05/2024	03:00	01/05/2024	04:00	1	WD - Calm
2	10/07/2024	AXT	Hours Deleted	18/06/2024	12:00	18/06/2024	14:00	2	No data available

Table D8: Q2 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:** April 1, 2024		**End Date:** June 30, 2024			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	13/05/2024	AXT	Hours Deleted	02/04/2024	08:00	05/04/2024	10:00	74	Power outage / data logger malfunction- no data collected

Table D9: Q2 Edit Log for Discrete Sampling at Courtice Station

Emitter s Name: Durham York Energy Center									
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:**
Data Edit Period		**Start Date:** April 1, 2024		**End Date:** June 30, 2024		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	14/06/2024	AXT	Hours deleted	05/06/2024	00:00	06/06/2024	00:00	24	TSP - Invalid - equipment failure
2	18/06/2024	AXT	Hours deleted	17/06/2024	00:00	18/06/2024	00:00	24	TSP - Invalid - equipment failure

Table D10: Q2 Edit Log for Discrete Sampling at Rundle Station

Emitter's Name: Durham York Energy Center									
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 Rd				**Emitter Address:** The Region of Durham, 605 Rossland Road, Whitby, ON					
Pollutants or Parameter: N/A			**Instrument Make & Model:** N/A					**s/n:**	
Data Edit Period		**Start Date:** April 1, 2024		**End Date:** June 30, 2024			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	13/05/2024	AXT	Hours deleted	06/04/2024	00:00	07/04/2024	00:00	24	TSP - Incorrect sample date
2	13/05/2024	AXT	Hours deleted	12/04/2024	00:00	13/04/2024	00:00	24	TSP & PAH - Incorrect sample date

APPENDIX E

SO2 Exceedance Report **Table E1**

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

Date	Time	SO_2	SO_2
		5-min Avg.	10-minute Running Avg.
(dd/mm/yyyy)	(EST)	(ppb)	(ppb)
18/4/2024	21:50	3	5
18/4/2024	21:55	2	3
18/4/2024	22:00	29	16
18/4/2024	22:05	106	68
18/4/2024	22:10	83	94
18/4/2024	22:15	19	51
18/4/2024	22:20	18	19
Hidden cells with no values exceeding limit.			
22/4/2024	23:25	27	33
22/4/2024	23:30	37	32
22/4/2024	23:35	46	42
22/4/2024	23:40	101	74
22/4/2024	23:45	88	95
22/4/2024	23:50	41	65
22/4/2024	23:55	19	30
Hidden cells with no values exceeding limit.			
23/4/2024	3:20	14	18
23/4/2024	3:25	18	16
23/4/2024	3:30	74	46
23/4/2024	3:35	74	74
23/4/2024	3:40	50	62
23/4/2024	3:45	32	41
23/4/2024	3:50	31	32
Hidden cells with no values exceeding limit.			
23/4/2024	4:55	52	67
23/4/2024	5:00	30	41
23/4/2024	5:05	53	41
23/4/2024	5:10	87	70
23/4/2024	5:15	57	72
23/4/2024	5:20	28	43
23/4/2024	5:25	29	29
Hidden cells with no values exceeding limit.			
25/4/2024	1:10	53	61
25/4/2024	1:15	19	36

25/4/2024	1:20	70	45
25/4/2024	1:25	115	93
25/4/2024	1:30	98	107
25/4/2024	1:35	67	83
25/4/2024	1:40	64	65
25/4/2024	1:45		64
25/4/2024	1:50		
Hidden cells with no values exceeding limit.			
25/4/2024	3:10	39	24
25/4/2024	3:15	60	50
25/4/2024	3:20	70	65
25/4/2024	3:25	83	77
25/4/2024	3:30	81	82
25/4/2024	3:35	24	52
25/4/2024	3:40	25	25
Hidden cells with no values exceeding limit.			
25/4/2024	20:00	2	9
25/4/2024	20:05	11	7
25/4/2024	20:10	57	34
25/4/2024	20:15	99	78
25/4/2024	20:20	250	174
25/4/2024	20:25	46	148
25/4/2024	20:30	18	32
25/4/2024	20:35	90	54
25/4/2024	20:40	53	72
25/4/2024	20:45	56	54
25/4/2024	20:50	54	55
25/4/2024	20:55	81	68
25/4/2024	21:00	62	72
25/4/2024	21:05	52	57
25/4/2024	21:10	16	34
Hidden cells with no values exceeding limit.			
26/4/2024	2:30	47	30
26/4/2024	2:35	42	45
26/4/2024	2:40	72	57
26/4/2024	2:45	66	69
26/4/2024	2:50	16	41
26/4/2024	2:55	9	13
26/4/2024	3:00	8	9
Hidden cells with no values exceeding limit.			
26/4/2024	3:25	40	29
26/4/2024	3:30	52	46
26/4/2024	3:35	82	67
26/4/2024	3:40	79	80

26/4/2024	3:45	24	51
26/4/2024	3:50	19	22
26/4/2024	3:55	11	15
26/4/2024	4:00	8	9
26/4/2024	4:05	57	32
26/4/2024	4:10	97	77
26/4/2024	4:15	87	92
26/4/2024	4:20	42	65
26/4/2024	4:25	17	30
Hidden cells with no values exceeding limit.			
26/4/2024	4:40	19	41
26/4/2024	4:45	14	16
26/4/2024	4:50	51	32
26/4/2024	4:55	101	76
26/4/2024	5:00	43	72
26/4/2024	5:05	24	34
26/4/2024	5:10	13	19

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 Repo
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: **15**

SO2 Exceedance Report **Table E2**

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

Date	Time	SO_2	SO_2
		5-min Avg.	10-minute Running Avg.
(dd/mm/yyyy)	(EST)	(ppb)	(ppb)
13/5/2024	23:10	2	2
13/5/2024	23:15	18	10
13/5/2024	23:20	76	47
13/5/2024	23:25	60	68
13/5/2024	23:30	36	48
13/5/2024	23:35	27	32
13/5/2024	23:40	19	23
Hidden cells with no values exceeding limit.			
23/5/2024	22:55	49	50
23/5/2024	23:00	72	61
23/5/2024	23:05	26	49
23/5/2024	23:10	171	99
23/5/2024	23:15	150	160
23/5/2024	23:20	32	91
23/5/2024	23:25	108	70
23/5/2024	23:30	171	140
23/5/2024	23:35	36	104
23/5/2024	23:40	24	30
23/5/2024	23:45	16	20
Hidden cells with no values exceeding limit.			
26/5/2024	0:20	3	2
26/5/2024	0:25	7	5
26/5/2024	0:30	10	8
26/5/2024	0:35	144	77
26/5/2024	0:40	88	116
26/5/2024	0:45	66	77
26/5/2024	0:50	74	70
26/5/2024	0:55	24	49
26/5/2024	1:00	15	20

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 Repo
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: **6**

SO2 Exceedance Report **Table E3**

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

Date	Time	SO_2	SO_2
		5-min Avg.	10-minute Running Avg.
(dd/mm/yyyy)	(EST)	(ppb)	(ppb)
1/6/2024	3:40	4	6
1/6/2024	3:45	28	16
1/6/2024	3:50	105	67
1/6/2024	3:55	95	100
1/6/2024	4:00	31	63
1/6/2024	4:05	22	27
1/6/2024	4:10	82	52
Hidden cells with no values exceeding limit.			
11/6/2024	21:15	1	1
11/6/2024	21:20	1	1
11/6/2024	21:25	9	5
11/6/2024	21:30	578	294
11/6/2024	21:35	269	424
11/6/2024	21:40	54	162
11/6/2024	21:45	150	102
11/6/2024	21:50	193	171
11/6/2024	21:55	132	163
11/6/2024	22:00	41	86
11/6/2024	22:05	25	33
11/6/2024	22:10	18	22
11/6/2024	22:15	15	16
Hidden cells with no values exceeding limit.			
12/6/2024	1:25	2	2
12/6/2024	1:30	3	3
12/6/2024	1:35	5	4
12/6/2024	1:40	143	74
12/6/2024	1:45		143
12/6/2024	1:50		
12/6/2024	1:55		
Hidden cells with no values exceeding limit.			
12/6/2024	3:35	5	6
12/6/2024	3:40	4	5
12/6/2024	3:45	87	46
12/6/2024	3:50	78	82

12/6/2024	3:55	23	50
12/6/2024	4:00	16	19
12/6/2024	4:05	10	13
Hidden cells with no values exceeding limit.			
13/6/2024	1:05	6	6
13/6/2024	1:10	5	6
13/6/2024	1:15	64	35
13/6/2024	1:20	74	69
13/6/2024	1:25	26	50
13/6/2024	1:30	52	39
13/6/2024	1:35	44	48
Hidden cells with no values exceeding limit.			
13/6/2024	3:30	3	3
13/6/2024	3:35	12	8
13/6/2024	3:40	115	64
13/6/2024	3:45	45	80
13/6/2024	3:50	20	32
13/6/2024	3:55	13	16
13/6/2024	4:00	10	11
Hidden cells with no values exceeding limit.			
16/6/2024	3:50	8	9
16/6/2024	3:55	6	7
16/6/2024	4:00	68	37
16/6/2024	4:05	83	75
16/6/2024	4:10	76	80
16/6/2024	4:15	29	53
16/6/2024	4:20	20	25

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 Repo
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: **10**

SO2 Exceedance Report **Table E4**

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

Date	Time	SO_2	SO_2
		5-min Avg.	1-hr Running Avg.
(dd/mm/yyyy)	(EST)	(ppb)	(ppb)
22/4/2024	22:45	23	18
22/4/2024	22:50	30	18
22/4/2024	22:55	16	18
22/4/2024	23:00	9	15
22/4/2024	23:05	30	16
22/4/2024	23:10	38	18
22/4/2024	23:15	13	18
22/4/2024	23:20	40	21
22/4/2024	23:25	27	23
22/4/2024	23:30	37	25
22/4/2024	23:35	46	26
22/4/2024	23:40	101	34
22/4/2024	23:45	88	40
22/4/2024	23:50	41	41
22/4/2024	23:55	19	41
23/4/2024	0:00	33	43
23/4/2024	0:05	14	42
23/4/2024	0:10	44	42
23/4/2024	0:15	19	43
23/4/2024	0:20	15	40
23/4/2024	0:25	38	41
23/4/2024	0:30	21	40
23/4/2024	0:35	11	37
23/4/2024	0:40	32	31
23/4/2024	0:45	77	31
23/4/2024	0:50	27	29
23/4/2024	0:55	12	29
Hidden cells with no values exceeding limit.			
23/4/2024	3:15	23	30
23/4/2024	3:20	14	30
23/4/2024	3:25	18	30
23/4/2024	3:30	74	32
23/4/2024	3:35	74	35
23/4/2024	3:40	50	38

23/4/2024	3:45	32	38
23/4/2024	3:50	31	36
23/4/2024	3:55	30	37
23/4/2024	4:00	33	37
23/4/2024	4:05	23	35
23/4/2024	4:10	39	37
23/4/2024	4:15	55	40
23/4/2024	4:20	64	44
23/4/2024	4:25	28	45
23/4/2024	4:30	38	42
23/4/2024	4:35	32	38
23/4/2024	4:40	33	37
23/4/2024	4:45	21	36
23/4/2024	4:50	82	40
23/4/2024	4:55	52	42
23/4/2024	5:00	30	41
23/4/2024	5:05	53	44
23/4/2024	5:10	87	48
23/4/2024	5:15	57	48
23/4/2024	5:20	28	45
23/4/2024	5:25	29	45
23/4/2024	5:30	23	44
23/4/2024	5:35	43	45
23/4/2024	5:40	21	44
23/4/2024	5:45	23	44
23/4/2024	5:50	18	39
23/4/2024	5:55	14	36
23/4/2024	6:00	11	34
23/4/2024	6:05	10	30
23/4/2024	6:10	9	24
23/4/2024	6:15	8	20
23/4/2024	6:20	8	18
23/4/2024	6:25	8	16
Hidden cells with no values exceeding limit.			
25/4/2024	0:20	3	8
25/4/2024	0:25	3	8
25/4/2024	0:30	25	10
25/4/2024	0:35	51	14
25/4/2024	0:40	21	15
25/4/2024	0:45	18	16
25/4/2024	0:50	26	18
25/4/2024	0:55	19	19
25/4/2024	1:00	56	22
25/4/2024	1:05	69	27

25/4/2024	1:10	53	30
25/4/2024	1:15	19	30
25/4/2024	1:20	70	36
25/4/2024	1:25	115	45
25/4/2024	1:30	98	51
25/4/2024	1:35	67	53
25/4/2024	1:40	64	56
25/4/2024	1:45		60
25/4/2024	1:50		63
25/4/2024	1:55		68
25/4/2024	2:00		70
25/4/2024	2:05		70
25/4/2024	2:10		72
25/4/2024	2:15	28	74
25/4/2024	2:20	49	70
Hidden cells with no values exceeding limit.			
25/4/2024	2:50	14	25
25/4/2024	2:55	13	23
25/4/2024	3:00	15	22
25/4/2024	3:05	10	21
25/4/2024	3:10	39	23
25/4/2024	3:15	60	25
25/4/2024	3:20	70	27
25/4/2024	3:25	83	32
25/4/2024	3:30	81	36
25/4/2024	3:35	24	37
25/4/2024	3:40	25	38
25/4/2024	3:45	21	38
25/4/2024	3:50	37	40
25/4/2024	3:55	19	40
25/4/2024	4:00	18	41
25/4/2024	4:05	16	41
25/4/2024	4:10	12	39
25/4/2024	4:15	12	35
25/4/2024	4:20	8	30
25/4/2024	4:25	8	23
25/4/2024	4:30	35	20
25/4/2024	4:35	44	21
25/4/2024	4:40	42	23
25/4/2024	4:45	38	24
25/4/2024	4:50	22	23
25/4/2024	4:55	18	23
25/4/2024	5:00	12	22
Hidden cells with no values exceeding limit.			

25/4/2024	19:20	1	1
25/4/2024	19:25	1	1
25/4/2024	19:30	1	1
25/4/2024	19:35	1	1
25/4/2024	19:40	1	1
25/4/2024	19:45	1	1
25/4/2024	19:50	1	1
25/4/2024	19:55	16	2
25/4/2024	20:00	2	2
25/4/2024	20:05	11	3
25/4/2024	20:10	57	8
25/4/2024	20:15	99	16
25/4/2024	20:20	250	37
25/4/2024	20:25	46	40
25/4/2024	20:30	18	42
25/4/2024	20:35	90	49
25/4/2024	20:40	53	54
25/4/2024	20:45	56	58
25/4/2024	20:50	54	63
25/4/2024	20:55	81	68
25/4/2024	21:00	62	73
25/4/2024	21:05	52	77
25/4/2024	21:10	16	73
25/4/2024	21:15	18	66
25/4/2024	21:20	9	46
25/4/2024	21:25	6	43
25/4/2024	21:30	5	42
25/4/2024	21:35	9	35
25/4/2024	21:40	14	32
25/4/2024	21:45	8	28
25/4/2024	21:50	5	24
25/4/2024	21:55	13	18
25/4/2024	22:00	6	13
25/4/2024	22:05	4	9
25/4/2024	22:10	3	8
25/4/2024	22:15	5	7
25/4/2024	22:20	26	9
25/4/2024	22:25	22	10
25/4/2024	22:30	25	12
Hidden cells with no values exceeding limit.			
26/4/2024	3:05	16	30
26/4/2024	3:10	66	33
26/4/2024	3:15	15	33
26/4/2024	3:20	18	33

26/4/2024	3:25	40	35
26/4/2024	3:30	52	35
26/4/2024	3:35	82	38
26/4/2024	3:40	79	39
26/4/2024	3:45	24	36
26/4/2024	3:50	19	36
26/4/2024	3:55	11	36
26/4/2024	4:00	8	36
26/4/2024	4:05	57	39
26/4/2024	4:10	97	42
26/4/2024	4:15	87	48
26/4/2024	4:20	42	50
26/4/2024	4:25	17	48
26/4/2024	4:30	22	45
26/4/2024	4:35	62	44
26/4/2024	4:40	19	39
26/4/2024	4:45	14	38
26/4/2024	4:50	51	41
26/4/2024	4:55	101	48
26/4/2024	5:00	43	51
26/4/2024	5:05	24	48
26/4/2024	5:10	13	41
26/4/2024	5:15	10	35
26/4/2024	5:20	8	32
26/4/2024	5:25	21	33
26/4/2024	5:30	23	33
26/4/2024	5:35	17	29
26/4/2024	5:40	30	30
26/4/2024	5:45	66	34
26/4/2024	5:50	20	31
26/4/2024	5:55	15	24
26/4/2024	6:00	12	22
26/4/2024	6:05	10	21
26/4/2024	6:10	9	20
26/4/2024	6:15	8	20

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 Valu
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:	**9**

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-hr Running Avg.
(dd/mm/yyyy)	(EST)	(ppb)	(ppb)
23/5/2024	22:10	53	26
23/5/2024	22:15	32	28
23/5/2024	22:20	13	28
23/5/2024	22:25	8	27
23/5/2024	22:30	7	25
23/5/2024	22:35	7	24
23/5/2024	22:40	6	23
23/5/2024	22:45	5	22
23/5/2024	22:50	51	23
23/5/2024	22:55	49	26
23/5/2024	23:00	72	29
23/5/2024	23:05	26	27
23/5/2024	23:10	171	37
23/5/2024	23:15	150	47
23/5/2024	23:20	32	49
23/5/2024	23:25	108	57
23/5/2024	23:30	171	71
23/5/2024	23:35	36	73
23/5/2024	23:40	24	75
23/5/2024	23:45	16	76
23/5/2024	23:50	13	72
23/5/2024	23:55	13	69
24/5/2024	0:00	10	64
24/5/2024	0:05	8	63
24/5/2024	0:10	7	49
24/5/2024	0:15	6	37
24/5/2024	0:20	6	35
Hidden cells with no values exceeding limit.			
25/5/2024	0:00	34	13
25/5/2024	0:05	13	14
25/5/2024	0:10	38	17
25/5/2024	0:15	23	19
25/5/2024	0:20	65	24
25/5/2024	0:25	45	28

25/5/2024	0:30	40	30
25/5/2024	0:35	40	33
25/5/2024	0:40	14	32
25/5/2024	0:45	56	36
25/5/2024	0:50	28	36
25/5/2024	0:55	21	35
25/5/2024	1:00	37	35
25/5/2024	1:05	77	40
25/5/2024	1:10	22	39
25/5/2024	1:15	14	38
25/5/2024	1:20	10	34
25/5/2024	1:25	7	31
25/5/2024	1:30	6	28
25/5/2024	1:35	5	25
25/5/2024	1:40	5	24
25/5/2024	1:45		21
25/5/2024	1:50		20
25/5/2024	1:55		20
25/5/2024	2:00		18
25/5/2024	2:05		10
25/5/2024	2:10		8
Hidden cells with no values exceeding limit.			
29/5/2024	0:45	2	3
29/5/2024	0:50	2	2
29/5/2024	0:55	2	2
29/5/2024	1:00	15	3
29/5/2024	1:05	64	8
29/5/2024	1:10	63	13
29/5/2024	1:15	41	17
29/5/2024	1:20	52	21
29/5/2024	1:25	43	24
29/5/2024	1:30	29	26
29/5/2024	1:35	67	32
29/5/2024	1:40	28	34
29/5/2024	1:45		37
29/5/2024	1:50		40
29/5/2024	1:55		45
29/5/2024	2:00		48
29/5/2024	2:05		46
29/5/2024	2:10		43
29/5/2024	2:15	16	39
29/5/2024	2:20	12	32
29/5/2024	2:25	9	27
29/5/2024	2:30	6	23

29/5/2024	2:35	4	13
29/5/2024	2:40	4	8
29/5/2024	2:45	3	8
29/5/2024	2:50	3	7
29/5/2024	2:55	12	8

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 Valu
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: **3**

SO2 Exceedance Report **Table E6**

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

Date	Time	SO_2	SO_2
		5-min Avg.	1-hr Running Avg.
(dd/mm/yyyy)	(EST)	(ppb)	(ppb)
11/6/2024	20:25	50	4
11/6/2024	20:30	12	5
11/6/2024	20:35	5	6
11/6/2024	20:40	3	6
11/6/2024	20:45	2	6
11/6/2024	20:50	2	6
11/6/2024	20:55	1	6
11/6/2024	21:00	1	6
11/6/2024	21:05	1	7
11/6/2024	21:10	1	7
11/6/2024	21:15	1	7
11/6/2024	21:20	1	7
11/6/2024	21:25	9	3
11/6/2024	21:30	578	51
11/6/2024	21:35	269	73
11/6/2024	21:40	54	77
11/6/2024	21:45	150	89
11/6/2024	21:50	193	105
11/6/2024	21:55	132	116
11/6/2024	22:00	41	119
11/6/2024	22:05	25	121
11/6/2024	22:10	18	123
11/6/2024	22:15	15	124
11/6/2024	22:20	16	125
11/6/2024	22:25	13	125
11/6/2024	22:30	10	78
11/6/2024	22:35	8	56
11/6/2024	22:40	13	53
11/6/2024	22:45	15	42
11/6/2024	22:50	38	29
11/6/2024	22:55	48	22
11/6/2024	23:00	40	22
11/6/2024	23:05	18	21
11/6/2024	23:10	10	20

11/6/2024	23:15	8	20
11/6/2024	23:20	6	19
11/6/2024	23:25	4	18
11/6/2024	23:30	6	18
11/6/2024	23:35	5	18
Hidden cells with no values exceeding limit.			
16/6/2024	1:30	41	21
16/6/2024	1:35	32	23
16/6/2024	1:40	34	25
16/6/2024	1:45		26
16/6/2024	1:50		28
16/6/2024	1:55		30
16/6/2024	2:00		33
16/6/2024	2:05		37
16/6/2024	2:10		42
16/6/2024	2:15	86	43
16/6/2024	2:20	26	41
16/6/2024	2:25	42	43
16/6/2024	2:30	48	45
16/6/2024	2:35	52	48
16/6/2024	2:40	67	54
16/6/2024	2:45	19	49
16/6/2024	2:50	13	44
16/6/2024	2:55	9	40
16/6/2024	3:00	7	37
16/6/2024	3:05	9	34
16/6/2024	3:10	31	34
16/6/2024	3:15	29	29
16/6/2024	3:20	37	30
16/6/2024	3:25	46	31
16/6/2024	3:30	35	29
16/6/2024	3:35	34	28
16/6/2024	3:40	18	24
16/6/2024	3:45	10	23
16/6/2024	3:50	8	23
16/6/2024	3:55	6	22
16/6/2024	4:00	68	27

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 Valu
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: **3**

APPENDIX F

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Re: Durham York Energy Centre (DYEC)
2024 Ambient Air Q2 Sulphur Dioxide Emissions
RWDI Reference No. 2400035

In support of the 2024, Q2 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 Q2, there were thirty–one (31) exceedance events above the rolling 10-minute SO_2 Ambient Air Quality Criteria (AAQC) and fifteen (15) exceedance events above the rolling 1-hour SO_2 AAQC recorded at the Courtice station. There were no exceedance events above the rolling 10-minute SO_2 Ambient Air Quality Criteria (AAQC) or rolling 1-hour SO_2 AAQC recorded at the Rundle Road 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 2024 DYEC Ambient Air Q2 Report, the Courtice Station pollution rose in **Figure 6** shows that the majority of elevated SO_2 events at Courtice occurred from the north to north-northeast directions. The events were likely a result of emissions from surrounding industrial sources with contributions from the DYEC in the northeast direction. The Courtice station pollution rose in **Figure 7** shows that <1.00% of the 5-min SO_2 events are elevated >67 ppb and the majority occurred from north-northeast direction. The pollution rose indicates that emissions were likely from surrounding industrial sources.

The Rundle Road Station pollution rose in **Figure 6** shows that there were no elevated SO_2 events at Rundle Road. The Rundle Road station pollution rose in **Figure 7** shows that there were no 5-min SO_2 events elevated >67 ppb.

During the times the SO_2 AAQC events occurred, both boilers CEMS concentrations, comprised of 24-hour rolling arithmetic average, were recorded between 0-13 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.