REPORT

DURHAM YORK ENERGY CENTRE

COURTICE, ONTARIO

2022 Q2 AMBIENT AIR QUALITY MONITORING REPORT

RWDI #2200697

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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.

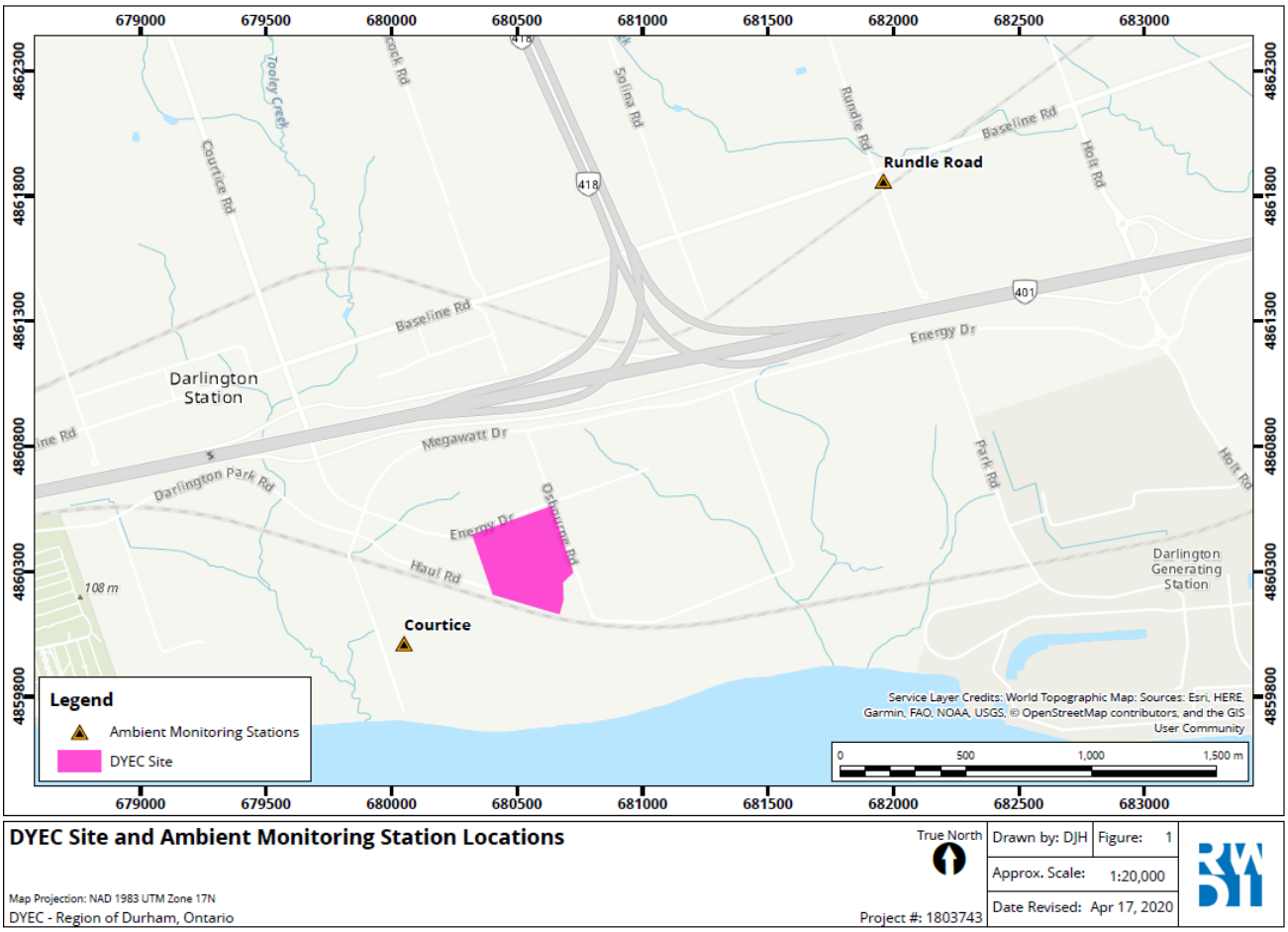
The facility has two 2) monitoring stations which collect continuous and discrete ambient measurements, known as the Courtice Station and Rundle Road Station. The station locations are shown in Figure 1. The Courtice and Rundle Road Stations were operational in May of 2013 and have been operated on behalf 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 forty-nine 49) exceedance events of the rolling 10-minute SO_2 AAQC and twenty-two 22) exceedance events of the rolling 1-hour SO_2 AAQC at the Courtice station. Throughout this monitoring period there were sixteen 16) exceedance events of the rolling 10-minute SO_2 AAQC and six 6 exceedance events of the rolling 1-hour SO_2 AAQC at the Rundle Road station. There was one 1 exceedance of the Benzo a Pyrene AAQC, which occurred on April 11th at the Rundle Road Station. Data recovery rates were acceptable and valid for all measured Q2 continuous and discrete parameters except for TSP and Metals at the Courtice Station.

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 1:45 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

An MECP audit took place on June 17th, 2022. While all instruments met their respective audit criteria, three issues were identified. The first being that the sample flow rate for the Rundle SO_2 was noted as low but within acceptable limits. This was resolved on the same day by performing a pump rebuild. The second was that the multipoint gas audit of the Courtice NOx analyzer revealed inconsistencies in the gas response. This was partially rectified via recalibration; however additional maintenance may be required to achieve optimal performance. It should be noted that the instrument still responded within acceptable limits. The third issue was that the Rundle station TSP Hi-Vol sampler required a restart to meet ministry criteria. An additional visit was completed on June 20th, 2022, where the motor was replaced, and the unit was recalibrated. The issue encountered during the audit has not reoccurred since.

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 2022 are presented in a summary format below and in a more detailed matrix format in **Appendix A** for continuous measurements and **Appendix B** for discrete measurements.

5.1 Meteorological Station Results

5.1.1 Courtice Station Results

The Courtice Station collected the following meteorological parameters: wind speed, wind direction, relative humidity, ambient temperature, ambient pressure and precipitation. The meteorological tower at the station is at a height of approximately 10 meters tall. The Courtice Station maintained a minimum 95.5% 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**.

Figure 4. Wind Roses of Hourly Wind Speed and Wind Direction – April to June 2022

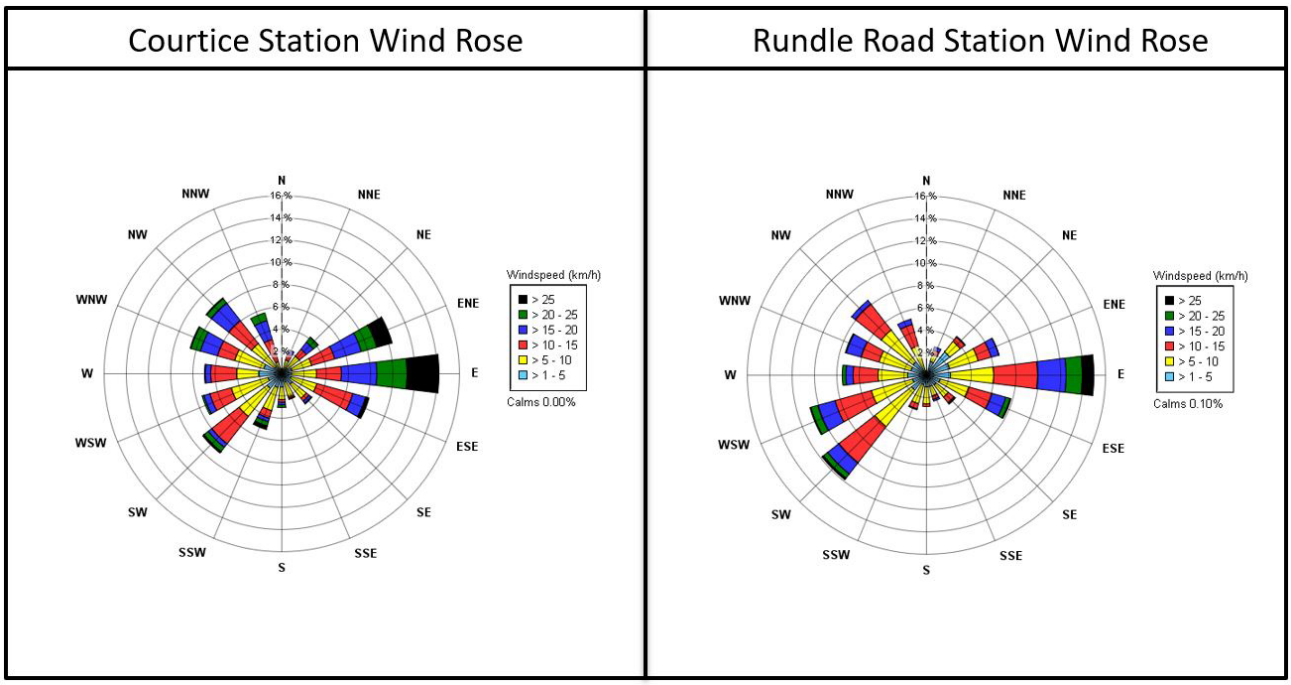


Table 2. Hourly Statistics from the Courtice Meteorological Station

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	47.3	15.8	100.0	30.2	6.4	0.1	-1.9	18.9	29.2	0.0	14.8	5.8	61.4	29.7	0.1	47.1	100.0	98.2	100.0	100.0	100.0	100.0
May	32.9	24.4	100.0	30.1	4.3	0.3	5.4	16.6	29.3	0.0	10.9	13.8	62.4	29.7	0.1	45.4	100.0	95.4	100.0	100.0	100.0	100.0
June	28.1	30.2	100.0	29.9	4.7	0.1	8.0	26.9	29.4	0.0	8.9	17.1	64.9	29.6	0.0	31.8	100.0	92.9	100.0	100.0	100.0	100.0
Q2 Arithmetic Mean											11.5	12.2	62.9	29.7	0.1	124.3	100.0	95.5	100.0	100.0	100.0	100.0

5.1.2 Rundle Road Station Results

The Rundle Road Station collected the following meteorological parameters: wind speed, wind direction, relative humidity, ambient temperature and precipitation. The meteorological tower at the station is at a height of approximately 10 meters tall. The Rundle Road Station maintained a minimum 95.9% 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**.

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	38.8	18.9	100.0	6.1	0.4	-2.6	22.4	0.0	11.7	5.6	66.6	0.1	53.2	100.0	98.3	100.0	100.0	100.0
May	26.0	27.6	100.0	7.2	0.5	3.7	22.8	0.0	8.7	14.1	66.0	0.1	50.8	100.0	95.6	100.0	100.0	100.0
June	22.6	29.9	100.0	7.9	0.0	6.5	30.9	0.0	7.7	17.5	68.3	0.1	44.3	100.0	93.9	100.0	100.0	100.0
Q2 Arithmetic Mean									9.3	12.4	66.9	0.1	148.3	100.0	95.9	100.0	100.0	100.0

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

Table 4 provides a summary of Maximum 1-hour Rolling Means, Maximum 24-hour Rolling Means, Monthly Means, Quarterly Means and Percent valid data for the Courtice Station. **Table 5** provides a summary of Maximum 1-hour Means, Maximum 24-hour Means, Monthly Means, Quarterly Means and Percent valid data for the Rundle Road Station. **Table 6** provides a summary of exceedance statistics for both Courtice and Rundle Road Stations. At the Courtice Station, there were forty-nine 49 exceedance events of the rolling 10-minute SO_2 AAQC and twenty-two 22) exceedance events of the 1-hour SO_2 AAQC in Q2. At the Rundle Road Station, there were sixteen 16 exceedance events of the rolling 10-minute SO_2 AAQC and six 6 exceedance events of the 1-hour SO_2 AAQC in Q2.

Table 4. Summary of Courtice Station Continuous Data Statistics

Courtice Monitoring Station ata Statistics	Maximum Rolling 10 min Mean	Maximum Rolling 1 hr Mean					Maximum 24 hr Rolling Mean					Monthly Mean					% Valid Hours				
Compound	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2
Units	ppb	µg/m³	ppb				µg/m³	ppb				µg/m³	ppb				%				
AAQC/CAAQS	67				200	40	27[A]			100											
April	179.1	28.7	43.2	15.7	31.6	91.2	9.8	20.3	5.6	14.7	23.8	4.4	4.2	1.1	3.2	2.8	99.7	99.4	99.4	99.4	99.7
May	316.1	32.0	55.2	36.7	33.8	95.0	15.2	14.0	4.6	11.3	15.4	6.0	5.3	1.0	4.4	2.9	99.9	99.7	99.7	99.7	99.7
June	250.3	24.7	50.2	19.7	33.6	92.4	15.0	15.1	4.5	12.3	9.6	6.0	5.1	0.8	4.5	2.1	99.6	98.9	98.9	98.9	99.3
Q2 Arithmetic Mean												5.5	4.9	1.0	4.0	2.6	99.7	99.4	99.4	99.4	99.6

[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 ata Statistics	Maximum Rolling 10 min Mean	Maximum Rolling 1 hr Mean					Maximum 24 hr Rolling Mean					Monthly Mean					% Valid Hours				
Compound	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	$PM_{2.5}$	NO_x	NO	NO_2	SO_2
Units	ppb	µg/m³	ppb				µg/m³	ppb				µg/m³	ppb				%				
AAQC/CAAQS	67				200	40	27[A]			100											
April	19.1	56.6	27.5	14.5	19.4	6.4	10.9	8.7	2.7	6.4	1.3	4.3	3.5	1.0	2.6	0.2	99.7	99.4	99.4	99.4	99.7
May	221.0	25.8	66.0	41.2	28.5	112.6	10.6	13.3	4.4	9.9	9.9	4.8	5.8	1.2	4.7	1.4	99.7	99.7	99.7	99.7	96.6
June	23.2	35.0	37.7	16.9	20.8	18.0	14.0	10.7	3.4	8.3	1.9	5.2	4.6	1.2	3.5	0.3	99.7	99.3	99.3	99.3	99.0
Q2 Arithmetic Mean												4.8	4.6	1.1	3.6	0.6	99.7	99.5	99.5	99.5	98.4

[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	17	0		0	9		0	0	N/A	0		N/A	0	
May	19	16		0	8		0	6	N/A	0		N/A	0	
June	13	0		0	5		0	0	N/A	0		N/A	0	
Q2 Total	49	16		0	22		0	6	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 33.8 ppb, which is 16.9% of the AAQC. The highest NO_2 value seen among the rolling 24-hour averages was 14.7 ppb, which is 14.7% 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 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 southwest to northwest which indicates reception from surrounding industry or the highway and railway corridors.

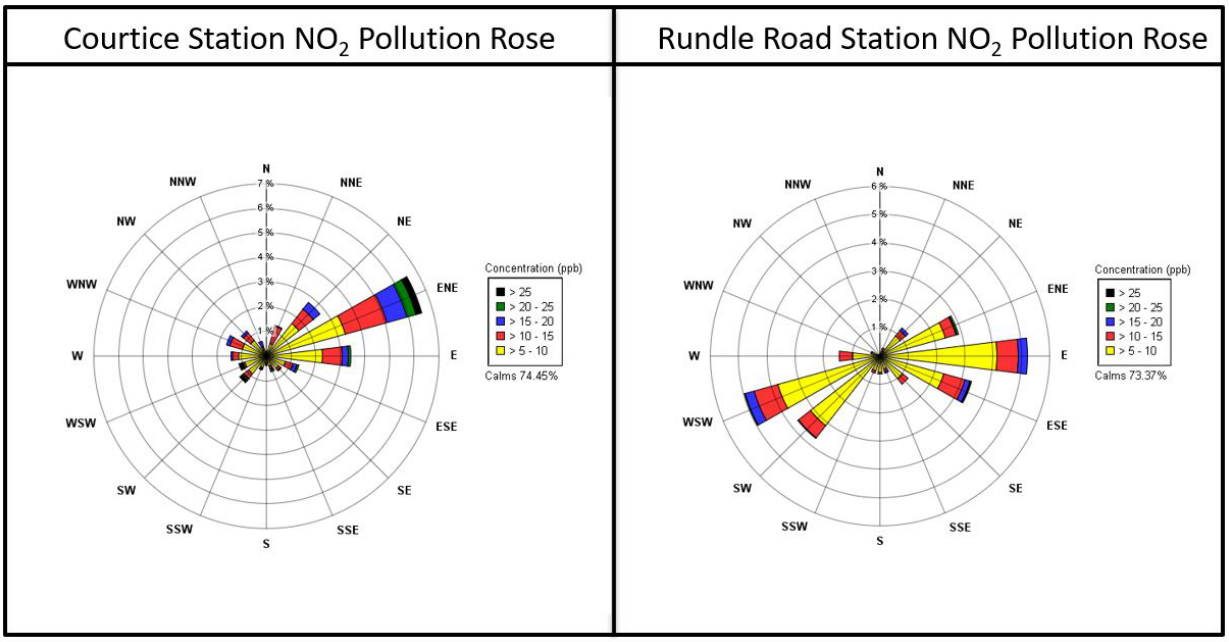
5.3.2 Rundle Road Station Results

Data recovery levels were high for oxides of nitrogen 99.5% valid data . There were no exceedances above the AAQC values for the entirety of the sampling period for rolling 1-hour and 24-hour averaged data. The highest NO_2 value seen among the 1-hour rolling averages was 28.5 ppb, which is 14.3% of the AAQC. The highest NO_2 value seen among the rolling 24-hour averages was 9.9 ppb, which is 9.9% 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 from the east-northeast to east-southeast and southwest to west-southwest. The Station is downwind of the DYEC when winds are from the southwest and south-southwest directions, which happened occasionally during the monitoring period, therefore it is likely that the DYEC partially contributed to the observed concentrations. There are additional impacts from the northeast to 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 2022



5.4 Sulphur Dioxide Results

5.4.1 Courtice Station Results

Data recovery levels were high for sulphur dioxide 99.6% valid data). Monitoring results were compared to the AAQC for 10-minute and 1-hour rolling average periods. In 2022, there have been more frequent SO_2 concentrations elevated above the AAQC's than in previous years due to the new limits imposed at the start of 2020. The highest SO_2 value seen among the 10-min rolling averages was 316.1 ppb, which is 471.8% of the AAQC. The highest SO_2 value seen among the 1-hour rolling averages was 95.0 ppb, which is 237.5% of the AAQC. There were forty-nine 49) exceedance events of the rolling 10-minute AAQC and twenty-two 22 exceedance events of 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-northeast to east directions. The events were possibly a result of emissions from surrounding industrial sources with contributions from the DYEC in the east-northeast direction. The Courtice Station pollution rose in Figure 7 shows that <0.32% of the 5-min SO_2 events are elevated >67 ppb and occurred from the north to east-northeast directions. It is possible that the DYEC contributed to SO_2 concentrations >67 ppb only from the east-northeast direction.

Durham Region staff have provided 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, which is included in **Appendix G**. The Memorandum indicates that based on the in-stack concentration levels measured by the CEMS, that there were no unusual levels in 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 98.4% 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 221.0 ppb, which is 329.9% of the AAQC. The highest SO_2 value seen among the 1-hour rolling averages was 112.6 ppb, which is 281.5% of the AAQC.

The SO_2 statistical results are summarized in Table 5 above. A pollution rose is presented in Figure 6 for the Rundle Road Station during 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 the majority of elevated SO_2 events at the Rundle Road Station occurred when winds were from the east to east-southeast. The pollution rose indicates that the DYEC was not a contributor to SO_2 levels at the station and that the levels may be related to other industrial activity nearby. The Rundle Road Station pollution rose in Figure 7 shows that there were only SO_2 concentrations >67 ppb from the east to southeast directions.

Figure 6. Pollution Roses of Hourly Average SO_2 Concentrations – April to June 2022

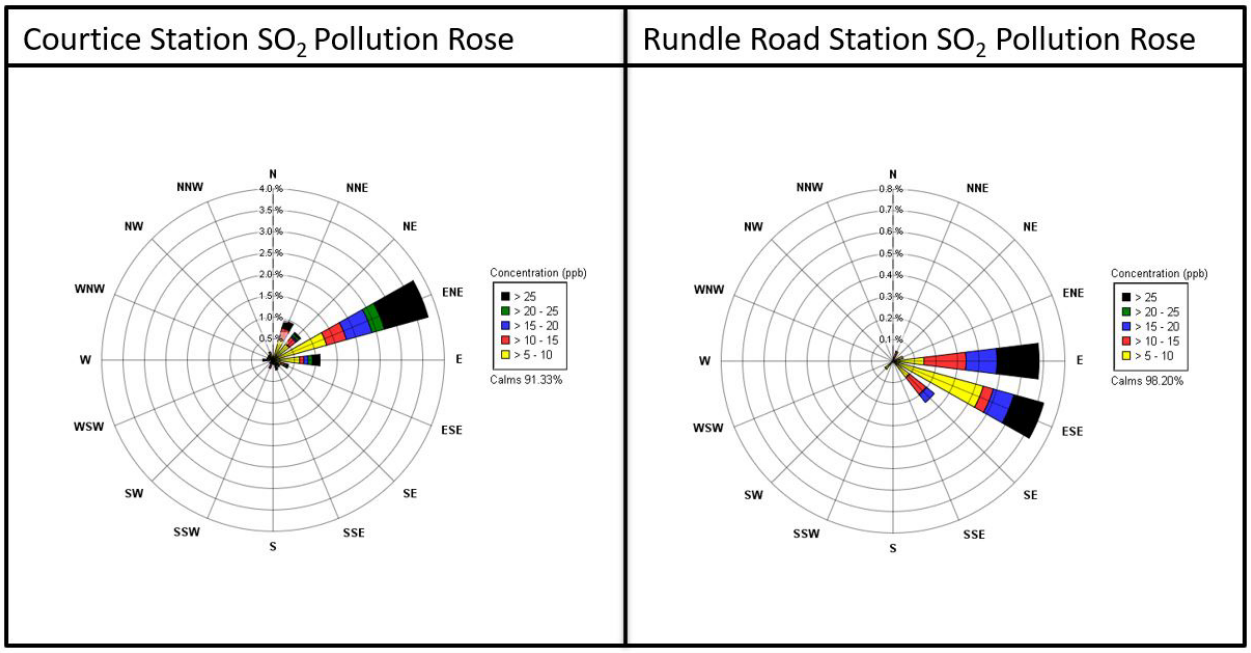
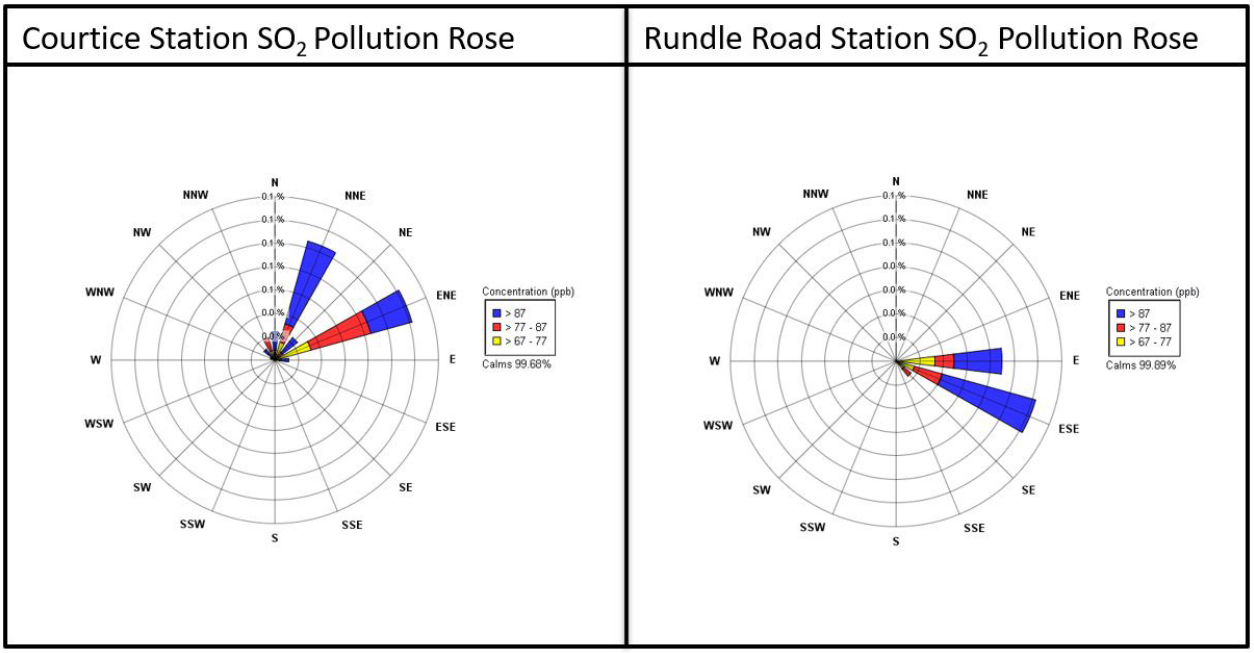


Figure 7. Pollution Roses of 5-minute Average SO_2 Concentrations >67 ppb – April to June 2022



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 32.0 µg/m^3 and the highest value seen among the 24-hour rolling averages was 15.2 µg/m^3. The results are summarized in **Table 4** above. A pollution rose is presented in **Figure 8** for the Courtice Station during 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.

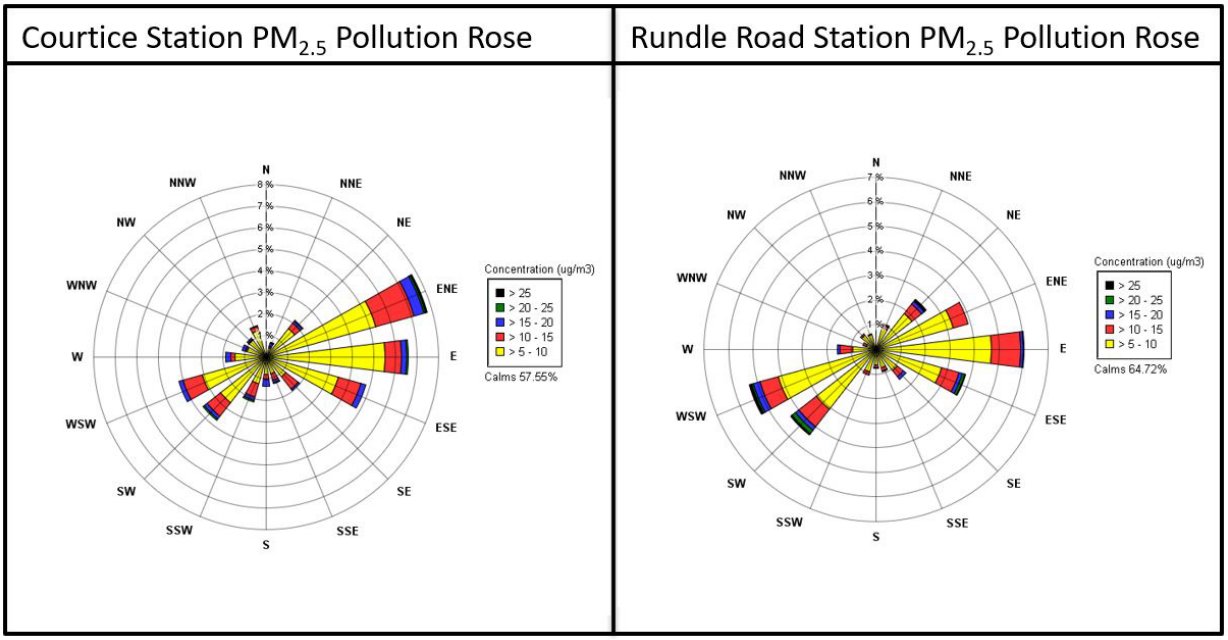
The Courtice Station pollution rose in **Figure 8** shows that the majority of elevated $PM_{2.5}$ events at Courtice occurred when winds were from the east-northeast to east-southeast and the southwest to west-southwest, which places the station downwind of the DYEC only part of the time. Other contributions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

5.5.2 Rundle Road Station Results

Data recovery levels were high for particulate matter less than 2.5 microns 99.7% valid data . The highest $PM_{2.5}$ value seen among the 1-hour rolling averages was 56.6 µg/m^3 and the highest value seen among the 24-hour rolling averages was 14.0 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 southwest to west-southwest and northeast to east-southeast, which places the station downwind of the DYEC only part of the time. Other possible contributions include nearby high traffic areas and urban background.

Figure 8. Pollution Roses of Hourly Average $PM_{2.5}$ Concentrations – April to June 2022



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 5th, 11th, 17th, 23rd, 29th, May 5th, 11th, 17th, 23rd, 29th and June 4th, 10th, 16th, 22nd, and 28th, 2022.

5.6.1 Courtice Station Results

Data recovery levels were low for the TSP sampler at the Courtice Station 73% valid data). There were no exceedances of any of the AAQC's or HHRA 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	HHRA Health Based Criteria	No. > Criteria	Geometric Mean[1]	Arithmetic Mean[1]	Q2 Minimum Concentration	Q2 Maximum Concentration	April Maximum Concentration	May Maximum Concentration	une Maximum Concentration	Number of Valid Samples	% Valid data
Particulate TSP	µg/m³	*120*	*120*	0	N/A	N/A	15.49	53.91	40.67	26.02	53.91	11	73
Total Mercury (Hg	µg/m³	*2*	*2*	0	N/A	N/A	2.90E-06	1.21E-05	1.21E-05	1.13E-05	9.77E-06	11	73
Aluminum Al)	µg/m³	*4.8*	-	0	N/A	N/A	9.78E-02	6.72E-01	5.78E-01	1.79E-01	6.72E-01	11	73
Antimony Sb	µg/m³	*25*	*25*	0	N/A	N/A	3.48E-04	1.07E-03	8.38E-04	1.07E-03	7.08E-04	11	73
Arsenic As	µg/m³	*0.3*	*0.3*	0	N/A	N/A	8.66E-04	2.76E-03	9.12E-04	2.76E-03	9.16E-04	11	73
Barium Ba	µg/m³	*10*	*10*	0	N/A	N/A	4.70E-03	1.33E-02	7.82E-03	8.19E-03	1.33E-02	11	73
Beryllium Be	µg/m³	*0.01*	*0.01*	0	N/A	N/A	1.44E-05	3.91E-05	1.52E-05	1.57E-05	3.91E-05	11	73
Bismuth Bi	µg/m³	-	-	-	N/A	N/A	5.19E-04	5.65E-04	5.47E-04	5.65E-04	5.49E-04	11	73
Boron B)	µg/m³	*120*	-	0	N/A	N/A	4.33E-03	4.71E-03	4.56E-03	4.71E-03	4.58E-03	11	73
Cadmium Cd	µg/m³	*0.025*	*0.025*	0	N/A	N/A	6.33E-05	5.78E-04	5.78E-04	2.13E-04	1.46E-04	11	73
Chromium Cr	µg/m³	*0.5*	-	0	N/A	N/A	9.81E-04	6.16E-03	3.03E-03	6.16E-03	3.05E-03	11	73
Cobalt Co)	µg/m³	*0.1*	*0.1*	0	N/A	N/A	8.89E-05	3.88E-04	2.15E-04	1.07E-04	3.88E-04	11	73
Copper (Cu	µg/m³	*50*	-	0	N/A	N/A	1.15E-02	4.73E-02	4.73E-02	3.25E-02	4.60E-02	11	73
Iron Fe	µg/m³	*4*	-	0	N/A	N/A	2.41E-01	1.05E+00	8.05E-01	3.99E-01	1.05E+00	11	73
Lead (Pb)	µg/m³	*0.5*	*0.5*	0	N/A	N/A	6.56E-04	4.10E-03	3.94E-03	4.10E-03	2.49E-03	11	73
Magnesium Mg)	µg/m³	-	-	-	N/A	N/A	1.79E-01	5.79E-01	5.79E-01	2.16E-01	5.66E-01	11	73
Manganese Mn	µg/m³	*0.4*	-	0	N/A	N/A	8.28E-03	2.74E-02	1.64E-02	1.14E-02	2.74E-02	11	73
Molybdenum (Mo	µg/m³	*120*	-	0	N/A	N/A	5.91E-04	2.84E-03	2.84E-03	1.57E-03	1.37E-03	11	73
Nickel Ni)	µg/m³	*0.2*	-	0	N/A	N/A	8.60E-04	2.06E-03	2.06E-03	1.28E-03	1.50E-03	11	73
Phosphorus (P	µg/m³	-	-	-	N/A	N/A	2.16E-01	5.13E-01	5.13E-01	4.47E-01	2.29E-01	11	73
Selenium Se)	µg/m³	*10*	*10*	0	N/A	N/A	3.75E-04	1.34E-03	3.95E-04	4.08E-04	1.34E-03	11	73
Silver Ag	µg/m³	*1*	*1*	0	N/A	N/A	2.60E-05	1.08E-04	1.08E-04	9.05E-05	2.75E-05	11	73
Strontium (Sr)	µg/m³	*120*	-	0	N/A	N/A	3.77E-03	2.88E-02	2.88E-02	7.91E-03	9.34E-03	11	73
Thallium Tl	µg/m³	-	-	-	N/A	N/A	2.60E-05	6.59E-05	6.59E-05	2.83E-05	2.75E-05	11	73
Tin Sn)	µg/m³	*10*	*10*	0	N/A	N/A	4.18E-04	2.01E-03	2.01E-03	7.41E-04	8.92E-04	11	73
Titanium Ti)	µg/m³	*120*	-	0	N/A	N/A	3.26E-03	2.28E-02	2.28E-02	8.79E-03	1.71E-02	11	73
Uranium (Ur)	µg/m³	*1.5*	-	0	N/A	N/A	7.35E-06	6.13E-05	6.13E-05	1.51E-05	5.55E-05	11	73
Vanadium V	µg/m³	*2*	*1*	0	N/A	N/A	1.44E-03	1.57E-03	1.52E-03	1.57E-03	1.53E-03	11	73
Zinc Zn	µg/m³	*120*	-	0	N/A	N/A	1.01E-02	4.62E-02	4.07E-02	3.90E-02	4.62E-02	11	73
Zirconium Zr	µg/m³	*20*	-	0	N/A	N/A	5.77E-04	6.28E-04	6.08E-04	6.28E-04	6.11E-04	11	73

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

[1] No averages can be presented for Q2 due to insufficient data validity

5.6.2 Rundle Road Station Results

Data recovery levels were very high for the TSP sampler at the Rundle Road Station 100% valid data . There were no exceedances of any of the AAQC's or HHRA Criteria for TSP, mercury or metals during Q2. **Table 8** is a summary of the Station statistics.

Table 8. Summary of TSP Sampler Rundle Road Station

Contaminant	Units	MECP Criteria	HHRA Health Based Criteria	No. > Criteria	Geometric Mean	Arithmetic Mean	Q2 Minimum Concentration	Q2 Maximum Concentration	April Maximum Concentration	May Maximum Concentration	une Maximum Concentration	Number of Valid Samples	% Valid data
Particulate TSP	µg/m³	*120*	*120*	0	28.7	34.3	12.7	113.5	30.7	113.5	65.4	15	100
Total Mercury (Hg	µg/m³	*2*	*2*	0	7.47E-06	8.90E-06	2.82E-06	1.94E-05	1.45E-05	1.46E-05	1.94E-05	15	100
Aluminum Al)	µg/m³	*4.8*	-	0	2.78E-01	3.86E-01	1.48E-01	1.62E+00	3.28E-01	1.62E+00	1.14E+00	15	100
Antimony Sb	µg/m³	*25*	*25*	0	5.23E-04	5.97E-04	2.11E-04	1.26E-03	7.64E-04	1.16E-03	1.26E-03	15	100
Arsenic As	µg/m³	*0.3*	*0.3*	0	9.64E-04	9.91E-04	8.47E-04	2.08E-03	9.48E-04	2.08E-03	9.35E-04	15	100
Barium Ba	µg/m³	*10*	*10*	0	8.01E-03	9.39E-03	3.15E-03	2.28E-02	9.57E-03	2.14E-02	2.28E-02	15	100
Beryllium Be	µg/m³	*0.01*	*0.01*	0	1.88E-05	2.11E-05	1.41E-05	4.91E-05	1.58E-05	3.93E-05	4.91E-05	15	100
Bismuth Bi	µg/m³	-	-	-	5.47E-04	5.47E-04	5.08E-04	5.71E-04	5.69E-04	5.71E-04	5.61E-04	15	100
Boron B)	µg/m³	*120*	-	0	4.79E-03	4.92E-03	4.23E-03	1.01E-02	4.74E-03	1.01E-02	4.67E-03	15	100
Cadmium Cd	µg/m³	*0.025*	*0.025*	0	8.51E-05	9.01E-05	4.35E-05	1.66E-04	9.57E-05	1.41E-04	1.66E-04	15	100
Chromium Cr	µg/m³	*0.5*	-	0	2.62E-03	3.49E-03	9.59E-04	1.25E-02	2.69E-03	1.25E-02	7.27E-03	15	100
Cobalt Co)	µg/m³	*0.1*	*0.1*	0	1.75E-04	2.15E-04	9.14E-05	6.53E-04	1.95E-04	6.53E-04	5.78E-04	15	100
Copper (Cu	µg/m³	*50*	-	0	1.81E-02	2.31E-02	3.94E-03	5.44E-02	2.92E-02	3.03E-02	5.44E-02	15	100
Iron Fe	µg/m³	*4*	-	0	4.90E-01	6.39E-01	2.20E-01	2.41E+00	5.02E-01	2.41E+00	1.67E+00	15	100
Lead (Pb)	µg/m³	*0.5*	*0.5*	0	2.13E-03	2.36E-03	8.58E-04	4.28E-03	2.36E-03	4.28E-03	4.18E-03	15	100
Magnesium Mg)	µg/m³	-	-	-	3.17E-01	3.85E-01	1.79E-01	1.19E+00	3.72E-01	1.19E+00	9.15E-01	15	100
Manganese Mn	µg/m³	*0.4*	-	0	1.43E-02	1.81E-02	5.69E-03	5.26E-02	1.42E-02	4.37E-02	5.26E-02	15	100
Molybdenum (Mo	µg/m³	*120*	-	0	8.03E-04	1.09E-03	1.13E-04	3.37E-03	1.19E-03	3.37E-03	2.11E-03	15	100
Nickel Ni)	µg/m³	*0.2*	-	0	1.41E-03	1.51E-03	7.26E-04	3.46E-03	1.71E-03	3.46E-03	2.27E-03	15	100
Phosphorus (P	µg/m³	-	-	-	3.00E-01	3.28E-01	2.19E-01	6.91E-01	4.86E-01	6.91E-01	2.34E-01	15	100
Selenium Se)	µg/m³	*10*	*10*	0	4.72E-04	5.47E-04	3.67E-04	1.62E-03	4.11E-04	4.12E-04	1.62E-03	15	100
Silver Ag	µg/m³	*1*	*1*	0	3.52E-05	4.25E-05	2.54E-05	1.25E-04	1.25E-04	6.12E-05	1.24E-04	15	100
Strontium (Sr)	µg/m³	*120*	-	0	7.48E-03	9.78E-03	3.75E-03	4.48E-02	1.05E-02	4.48E-02	1.83E-02	15	100
Thallium Tl	µg/m³	-	-	-	2.92E-05	3.06E-05	2.54E-05	7.80E-05	2.84E-05	7.80E-05	2.80E-05	15	100
Tin Sn)	µg/m³	*10*	*10*	0	7.50E-04	8.23E-04	4.06E-04	1.55E-03	1.26E-03	1.45E-03	1.55E-03	15	100
Titanium Ti)	µg/m³	*120*	-	0	1.09E-02	1.45E-02	3.44E-03	5.45E-02	1.22E-02	5.45E-02	3.76E-02	15	100
Uranium (Ur)	µg/m³	*1.5*	-	0	2.44E-05	4.00E-05	8.41E-06	1.52E-04	3.61E-05	1.52E-04	1.47E-04	15	100
Vanadium V	µg/m³	*2*	*1*	0	1.69E-03	1.78E-03	1.41E-03	3.57E-03	1.58E-03	3.42E-03	3.57E-03	15	100
Zinc Zn	µg/m³	*120*	-	0	3.95E-02	7.43E-02	1.76E-02	6.24E-01	4.57E-02	4.17E-02	6.24E-01	15	100
Zirconium Zr	µg/m³	*20*	-	0	6.07E-04	6.08E-04	5.64E-04	6.34E-04	6.32E-04	6.34E-04	6.23E-04	15	100

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

5.7 PAH Results

All of the PUF Hi-Vols operated on a discrete schedule every 12 days for PAH's according to the NAPS schedule during Q2 with the sample days being: April 11th, 23rd, May 5th, 17th, 29th, June 10th and 22nd, 2022.

5.7.1 Courtice Station Results

Data recovery levels were very high for the PAH results at the Courtice Station 100% valid data . There were no exceedances of any of the AAQC's or HHRA Criteria during Q2 of 2022.

The exceedance documentation is attached in **Appendix F**. **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	une Maximum Concentration	Number of Valid Samples	% Valid data
1-Methylnaphthalene	ng/m³	12000	0	7.22E+00	2.34E+00	1.14E+01	1.05E+01	1.14E+01	9.52E+00	7	100
2-Methylnaphthalene	ng/m³	10000	0	1.46E+01	5.06E+00	2.35E+01	1.72E+01	2.35E+01	2.14E+01	7	100
Acenaphthene	ng/m³	-	-	4.85E+00	1.67E+00	8.41E+00	4.50E+00	8.41E+00	7.36E+00	7	100
Acenaphthylene	ng/m³	3500	0	2.74E-01	1.25E-01	5.60E-01	1.78E-01	3.22E-01	5.60E-01	7	100
Anthracene	ng/m³	200	0	1.61E-01	9.07E-02	3.14E-01	9.40E-02	1.66E-01	3.14E-01	7	100
Benzo a Anthracene	ng/m³	-	-	1.83E-02	6.52E-03	2.96E-02	2.01E-02	2.07E-02	2.96E-02	7	100
Benzo(a)fluorene	ng/m³	-	-	5.30E-02	2.59E-02	1.00E-01	4.75E-02	5.87E-02	1.00E-01	7	100
Benzo(a)Pyrene Historically High	ng/m³	0.05	0	3.13E-02	1.53E-02	4.38E-02	4.32E-02	4.38E-02	3.52E-02	7	100
Benzo b Fluoranthene	ng/m³	-	-	6.48E-02	2.10E-02	8.84E-02	8.84E-02	8.45E-02	8.07E-02	7	100
Benzo b fluorene	ng/m³	-	-	2.67E-02	9.72E-03	4.63E-02	2.25E-02	4.16E-02	4.63E-02	7	100
Benzo e Pyrene	ng/m³	-	-	3.93E-02	1.33E-02	5.17E-02	4.75E-02	5.17E-02	4.92E-02	7	100
Benzo(g,h,i)Perylene	ng/m³	-	-	3.59E-02	1.48E-02	4.86E-02	4.86E-02	4.54E-02	3.85E-02	7	100
Benzo k Fluoranthene	ng/m³	-	-	3.76E-02	1.66E-02	5.43E-02	4.13E-02	5.43E-02	4.80E-02	7	100
Biphenyl	ng/m³	-	-	3.55E+00	2.03E+00	5.77E+00	3.86E+00	5.77E+00	4.63E+00	7	100
Chrysene	ng/m³	-	-	8.57E-02	3.26E-02	1.15E-01	9.97E-02	1.15E-01	1.13E-01	7	100
Dibenzo a,h)Anthracene	ng/m³	-	-	8.82E-03	4.47E-03	2.53E-02	2.53E-02	6.39E-03	8.04E-03	7	100
Fluoranthene	ng/m³	-	-	1.13E+00	6.96E-01	2.50E+00	9.41E-01	1.26E+00	2.50E+00	7	100
Fluorene	ng/m³	-	-	4.13E+00	2.54E+00	7.85E+00	3.45E+00	5.09E+00	7.85E+00	7	100
Indeno 1,2,3-cd)Pyrene	ng/m³	-	-	3.89E-02	1.56E-02	5.61E-02	5.61E-02	5.55E-02	4.43E-02	7	100
Naphthalene	ng/m³	22500	0	1.49E+01	4.40E+00	2.71E+01	2.04E+01	2.71E+01	1.86E+01	7	100
o-Terphenyl	ng/m³	-	-	1.11E-02	5.28E-03	2.24E-02	9.97E-03	1.71E-02	2.24E-02	7	100
Perylene	ng/m³	-	-	3.13E-03	3.13E-04	7.97E-03	4.41E-03	7.97E-03	3.54E-03	7	100
Phenanthrene	ng/m³	-	-	6.33E+00	3.89E+00	1.16E+01	5.99E+00	6.66E+00	1.16E+01	7	100
Pyrene	ng/m³	-	-	4.56E-01	2.32E-01	9.55E-01	4.01E-01	5.21E-01	9.55E-01	7	100
Tetralin	ng/m³	-	-	1.04E+00	5.92E-01	1.71E+00	1.71E+00	1.33E+00	8.35E-01	7	100
Total PAH	ng/m³	-	-	59.13	23.95	88.99	66.72	88.99	86.16	7	100

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

5.7.2 Rundle Road Station Results

Data recovery levels were very high for the PAH results at the Rundle Road Station 100% valid data . There was one 1 exceedances of the Benzo a Pyrene AAQC during Q2 of 2022. There were no other exceedances of any of the AAQC's or HHRA Criteria.

The exceedance occurred on April 11th, 2022. Since the winds were predominantly coming from the E and the ESE, the Rundle Road Station was upwind of the DYEC during the sampling period. It is unlikely that the measured BaP exceedance is attributable to the Energy Centre operations.

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

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

Contaminant	Units	MECP Criteria µg/m³	No. > Criteria	Arithmetic Mean	Minimum Q2 Concentration	Maximum Q2 Concentration	April Maximum Concentration	May Maximum Concentration	une Maximum Concentration	Number of Valid Samples	% Valid data
1-Methylnaphthalene	ng/m³	12000	0	4.82E+00	4.91E-01	8.71E+00	5.08E+00	8.71E+00	5.03E+00	7	100
2-Methylnaphthalene	ng/m³	10000	0	9.07E+00	8.98E-01	1.62E+01	8.74E+00	1.62E+01	9.64E+00	7	100
Acenaphthene	ng/m³	-	-	3.45E+00	1.32E-01	6.09E+00	3.51E+00	6.09E+00	3.79E+00	7	100
Acenaphthylene	ng/m³	3500	0	2.30E-01	6.72E-02	5.24E-01	1.93E-01	2.53E-01	5.24E-01	7	100
Anthracene	ng/m³	200	0	3.37E-01	4.33E-02	9.19E-01	1.19E-01	9.19E-01	7.24E-01	7	100
Benzo a Anthracene	ng/m³	-	-	2.08E-02	7.12E-03	3.36E-02	3.36E-02	1.97E-02	2.69E-02	7	100
Benzo(a)fluorene	ng/m³	-	-	7.13E-02	2.87E-02	1.38E-01	7.01E-02	9.41E-02	1.38E-01	7	100
Benzo(a)Pyrene Historically High	ng/m³	0.05	1	2.97E-02	1.47E-02	5.26E-02	5.26E-02	3.34E-02	2.49E-02	7	100
Benzo b Fluoranthene	ng/m³	-	-	7.98E-02	4.33E-02	1.55E-01	1.55E-01	6.14E-02	6.12E-02	7	100
Benzo b fluorene	ng/m³	-	-	3.30E-02	1.49E-02	5.53E-02	3.60E-02	5.53E-02	4.90E-02	7	100
Benzo e Pyrene	ng/m³	-	-	4.45E-02	1.88E-02	8.91E-02	8.91E-02	4.70E-02	4.11E-02	7	100
Benzo(g,h,i)Perylene	ng/m³	-	-	4.15E-02	1.66E-02	8.32E-02	8.32E-02	3.41E-02	3.88E-02	7	100
Benzo k Fluoranthene	ng/m³	-	-	5.34E-02	3.26E-02	1.03E-01	1.03E-01	5.52E-02	3.96E-02	7	100
Biphenyl	ng/m³	-	-	2.78E+00	5.06E-01	6.19E+00	2.06E+00	6.19E+00	4.08E+00	7	100
Chrysene	ng/m³	-	-	1.08E-01	4.04E-02	1.75E-01	1.75E-01	1.34E-01	1.33E-01	7	100
Dibenzo a,h)Anthracene	ng/m³	-	-	1.18E-02	4.08E-03	2.64E-02	2.64E-02	5.38E-03	2.40E-02	7	100
Fluoranthene	ng/m³	-	-	1.51E+00	1.97E-01	4.44E+00	8.86E-01	4.44E+00	1.57E+00	7	100
Fluorene	ng/m³	-	-	3.30E+00	2.76E-01	8.47E+00	2.63E+00	8.47E+00	2.88E+00	7	100
Indeno 1,2,3-cd)Pyrene	ng/m³	-	-	4.62E-02	1.74E-02	1.02E-01	1.02E-01	4.28E-02	3.93E-02	7	100
Naphthalene	ng/m³	22500	0	1.03E+01	8.87E-01	1.55E+01	1.55E+01	1.45E+01	1.11E+01	7	100
o-Terphenyl	ng/m³	-	-	9.32E-03	3.46E-03	1.95E-02	1.07E-02	1.15E-02	1.95E-02	7	100
Perylene	ng/m³	-	-	1.55E-02	3.13E-04	7.86E-02	1.43E-02	5.99E-03	7.86E-02	7	100
Phenanthrene	ng/m³	-	-	6.08E+00	6.13E-01	1.78E+01	4.15E+00	1.78E+01	5.80E+00	7	100
Pyrene	ng/m³	-	-	7.51E-01	1.01E-01	1.63E+00	4.06E-01	1.63E+00	1.61E+00	7	100
Tetralin	ng/m³	-	-	9.75E-01	2.14E-01	1.66E+00	1.43E+00	1.16E+00	1.66E+00	7	100
Total PAH	ng/m³	-	-	44.22	4.69	78.05	60.84	78.05	45.55	7	100

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 11th, May 5th, 29th and June 22nd, 2022.

5.8.1 Courtice Station Results

Data recovery levels were very high for the D F results at the Courtice Station 100% valid data . There were no exceedances of any of the AAQC's or HHRA Criteria for any of the D F's during 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	HHRA Health Based Criteria	No. > Criteria	Arithmetic Mean	Q2 Minimum Concentration	Q2 Maximum Concentration	April Maximum Concentration	May Maximum Concentration	une Maximum Concentration	Number of Valid Samples	% Valid data
2,3,7,8-TCDD	pg/m^3	-	-	-	1.05E-03	3.57E-04	2.09E-03	3.57E-04	1.00E-03	2.09E-03	4	100
1,2,3,7,8-PeCDD	pg/m^3	-	-	-	9.47E-04	2.95E-04	1.61E-03	2.95E-04	1.23E-03	1.61E-03	4	100
1,2,3,4,7,8-HxCDD	pg/m^3	-	-	-	1.64E-04	6.25E-05	3.94E-04	1.04E-04	3.94E-04	9.49E-05	4	100
1,2,3,6,7,8-HxCDD	pg/m^3	-	-	-	2.64E-04	7.97E-05	5.66E-04	9.63E-05	3.15E-04	5.66E-04	4	100
1,2,3,7,8,9-HxCDD	pg/m^3	-	-	-	1.88E-04	7.61E-05	3.63E-04	7.61E-05	3.63E-04	1.59E-04	4	100
1,2,3,4,6,7,8-HpCDD	pg/m^3	-	-	-	5.94E-04	1.09E-04	1.41E-03	2.62E-04	1.41E-03	5.95E-04	4	100
OCDD	pg/m^3	-	-	-	6.61E-05	1.74E-05	1.50E-04	3.20E-05	1.50E-04	6.43E-05	4	100
2,3,7,8-TCDF	pg/m^3	-	-	-	1.16E-04	5.59E-05	2.25E-04	5.59E-05	9.38E-05	2.25E-04	4	100
1,2,3,7,8-PeCDF	pg/m^3	-	-	-	3.29E-05	1.73E-05	5.79E-05	2.05E-05	3.60E-05	5.79E-05	4	100
2,3,4,7,8-PeCDF	pg/m^3	-	-	-	4.44E-04	1.45E-04	9.46E-04	1.54E-04	9.46E-04	5.31E-04	4	100
1,2,3,4,7,8-HxCDF	pg/m^3	-	-	-	2.79E-04	6.41E-05	8.04E-04	1.36E-04	8.04E-04	1.13E-04	4	100
1,2,3,6,7,8-HxCDF	pg/m^3	-	-	-	1.74E-04	5.12E-05	3.79E-04	5.12E-05	3.79E-04	1.11E-04	4	100
2,3,4,6,7,8-HxCDF	pg/m^3	-	-	-	6.20E-04	5.94E-05	2.13E-03	1.76E-04	2.13E-03	1.13E-04	4	100
1,2,3,7,8,9-HxCDF	pg/m^3	-	-	-	1.02E-04	3.00E-05	1.72E-04	1.72E-04	7.50E-05	1.30E-04	4	100
1,2,3,4,6,7,8-HpCDF	pg/m^3	-	-	-	3.97E-04	1.88E-05	1.48E-03	2.48E-05	1.48E-03	6.11E-05	4	100
1,2,3,4,7,8,9-HpCDF	pg/m^3	-	-	-	5.26E-05	3.88E-06	1.86E-04	3.88E-06	1.86E-04	1.51E-05	4	100
OCDF	pg/m^3	-	-	-	2.23E-05	1.64E-06	8.34E-05	1.86E-06	8.34E-05	2.12E-06	4	100
Total Toxic Equivalency	pg TEQ/m^3	0.1 1[1]	-	0	5.51E-03	2.02E-03	1.08E-02	2.02E-03	1.08E-02	6.53E-03	4	100

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

5.8.2 Rundle Road Station Results

Data recovery levels were very high for the D F results at the Rundle Road Station 100% valid data . There were no exceedances of any of the AAQC's or HHRA Criteria for any of the D F's during 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*	*HHRA Health Based Criteria*	No. > Criteria	Arithmetic Mean	Q2 Minimum Concentration	Q2 Maximum Concentration	April Maximum Concentration	May Maximum Concentration	une Maximum Concentration	Number of Valid Samples	% Valid data
2,3,7,8-TCDD	pg/m^3	-	-	-	1.14E-03	4.00E-04	1.97E-03	4.00E-04	1.49E-03	1.97E-03	4	100
1,2,3,7,8-PeCDD	pg/m^3	-	-	-	3.84E-03	6.15E-04	1.17E-02	6.15E-04	1.98E-03	1.17E-02	4	100
1,2,3,4,7,8-HxCDD	pg/m^3	-	-	-	1.47E-03	8.31E-05	5.39E-03	2.46E-04	1.50E-04	5.39E-03	4	100
1,2,3,6,7,8-HxCDD	pg/m^3	-	-	-	2.81E-03	7.84E-05	1.08E-02	1.49E-04	1.88E-04	1.08E-02	4	100
1,2,3,7,8,9-HxCDD	pg/m^3	-	-	-	2.85E-03	8.15E-05	1.06E-02	4.68E-04	2.34E-04	1.06E-02	4	100
1,2,3,4,6,7,8-HpCDD	pg/m^3	-	-	-	5.21E-03	7.37E-05	1.92E-02	5.17E-04	1.02E-03	1.92E-02	4	100
OCDD	pg/m^3	-	-	-	2.95E-04	1.44E-05	1.04E-03	4.42E-05	8.64E-05	1.04E-03	4	100
2,3,7,8-TCDF	pg/m^3	-	-	-	1.41E-04	4.31E-05	3.45E-04	4.31E-05	1.14E-04	3.45E-04	4	100
1,2,3,7,8-PeCDF	pg/m^3	-	-	-	4.81E-05	1.62E-05	1.23E-04	1.62E-05	3.15E-05	1.23E-04	4	100
2,3,4,7,8-PeCDF	pg/m^3	-	-	-	8.32E-04	2.45E-04	2.12E-03	2.45E-04	6.67E-04	2.12E-03	4	100
1,2,3,4,7,8-HxCDF	pg/m^3	-	-	-	2.03E-04	7.50E-05	4.28E-04	1.62E-04	1.49E-04	4.28E-04	4	100
1,2,3,6,7,8-HxCDF	pg/m^3	-	-	-	3.73E-04	6.41E-05	1.17E-03	1.84E-04	6.90E-05	1.17E-03	4	100
2,3,4,6,7,8-HxCDF	pg/m^3	-	-	-	3.12E-04	1.05E-04	7.07E-04	2.17E-04	2.20E-04	7.07E-04	4	100
1,2,3,7,8,9-HxCDF	pg/m^3	-	-	-	1.34E-04	3.54E-05	2.47E-04	3.54E-05	1.43E-04	2.47E-04	4	100
1,2,3,4,6,7,8-HpCDF	pg/m^3	-	-	-	2.03E-04	2.51E-05	6.25E-04	3.85E-05	1.25E-04	6.25E-04	4	100
1,2,3,4,7,8,9-HpCDF	pg/m^3	-	-	-	1.34E-05	6.92E-06	2.04E-05	6.92E-06	2.04E-05	1.81E-05	4	100
OCDF	pg/m^3	-	-	-	6.57E-06	2.18E-06	1.62E-05	2.30E-06	5.63E-06	1.62E-05	4	100
Total Toxic Equivalency	pg TEQ/m^3	*0.1* *1*[1]	-	0	1.99E-02	3.39E-03	6.66E-02	3.39E-03	5.58E-03	6.66E-02	4	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 May 13th, 2022, the pressure sensor board in the SO_2 analyzer at the Rundle Road station malfunctioned causing the loss of five hours of data. This malfunction also occurred again on May 17th and May 20th, resulting in the loss of two and eleven hours of data, respectively. On May 25th, the analyzer was removed and sent out to be repaired. A replacement analyzer was installed and calibrated on this date, resulting in the loss of five hours of data.

6.2 Discrete Monitoring

The May 5th, May 11th, June 22nd, and June 28th, 2022 Courtice TSP and metals sample was invalidated because of insufficient sample volumes due to a tripped breaker which stopped power to the sampler mid run. This breaker was replaced during the July calibration visit.

7 CONCLUSIONS

This Q2 report provides a summary of the ambient air quality data collected at the Courtice and Rundle Road Stations. There were forty-nine 49) exceedance events of the rolling 10-minute SO_2 AAQC and twenty-two 22 exceedance events of the 1-hour SO_2 AAQC at the Courtice Station. There were sixteen 16) exceedance events of the rolling 10-minute SO_2 AAQC and six 6) exceedance events of the 1-hour SO_2 AAQC at the Rundle Road Station. There was one 1 exceedance of the Benzo a Pyrene AAQC, which occurred on April 11th at the Rundle Road Station. Data recovery rates were acceptable and valid for all measured Q2 continuous and discrete parameters except for TSP and Metals at the Courtice Station.

8 REFERENCES

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

9 GENERAL STATEMENT OF LIMITATIONS

This report entitled 2022 Q2 Ambient Air Quality Monitoring Report dated July 29, 2022 was prepared by RWDI AIR Inc. ("RWDI") for Durham Region and York Region ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein Project . The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared. Because the contents of this report may not reflect the final design of the Project or subsequent changes made after the date of this report, RWDI recommends that it be retained by Client during the final stages of the project to verify that the results and recommendations provided in this report have been correctly interpreted in the final design of the Project.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.

APPENDIX A

Table A1: 2022 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	179.1	28.7	43.2	15.7	31.6	91.2	9.8	20.3	5.6	14.7	23.8	4.4	4.2	1.1	3.2	2.8	99.7	99.4	99.4	99.4	99.7
May	316.1	32.0	55.2	36.7	33.8	95.0	15.2	14.0	4.6	11.3	15.4	6.0	5.3	1.0	4.4	2.9	99.9	99.7	99.7	99.7	99.7
June	250.3	24.7	50.2	19.7	33.6	92.4	15.0	15.1	4.5	12.3	9.6	6.0	5.1	0.8	4.5	2.1	99.6	98.9	98.9	98.9	99.3
Q2 Arithmetic Mean												5.5	4.9	1.0	4.0	2.6	99.7	99.4	99.4	99.4	99.6

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	19.1	56.6	27.5	14.5	19.4	6.4	10.9	8.7	2.7	6.4	1.3	4.3	3.5	1.0	2.6	0.2	99.7	99.4	99.4	99.4	99.7
May	221.0	25.8	66.0	41.2	28.5	112.6	10.6	13.3	4.4	9.9	9.9	4.8	5.8	1.2	4.7	1.4	99.7	99.7	99.7	99.7	96.6
June	23.2	35.0	37.7	16.9	20.8	18.0	14.0	10.7	3.4	8.3	1.9	5.2	4.6	1.2	3.5	0.3	99.7	99.3	99.3	99.3	99.0
Q2 Arithmetic Mean												4.8	4.6	1.1	3.6	0.6	99.7	99.5	99.5	99.5	98.4

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	17	0		0	9		0	0	N/A	0		N/A	0	
May	19	16		0	8		0	6	N/A	0		N/A	0	
June	13	0		0	5		0	0	N/A	0		N/A	0	
Q2 Total	49	16		0	22		0	6	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	47.3	15.8	100.0	30.2	6.4	0.1	-1.9	18.9	29.2	0.0	14.8	5.8	61.4	29.7	0.1	47.1	100.0	98.2	100.0	100.0	100.0	100.0
May	32.9	24.4	100.0	30.1	4.3	0.3	5.4	16.6	29.3	0.0	10.9	13.8	62.4	29.7	0.1	45.4	100.0	95.4	100.0	100.0	100.0	100.0
June	28.1	30.2	100.0	29.9	4.7	0.1	8.0	26.9	29.4	0.0	8.9	17.1	64.9	29.6	0.0	31.8	100.0	92.9	100.0	100.0	100.0	100.0
Q2 Arithmetic Mean											11.5	12.2	62.9	29.7	0.1	124.3	100.0	95.5	100.0	100.0	100.0	100.0

Rundle Station MET Statistics	Maximum 1 hr Mean				Minimum 1 hr Mean				Monthly Mean				Total	Valid Data				
Parameter	WS	Temp	RH	Rain	WS	Temp	RH	Rain	WS	Temp	RH	Rain	Rain	WS	WD	Temp	RH	Rain
Units	(km/hr)	(°C)	(%)	mm	(km/hr)	(°C)	(%)	mm	(km/hr)	(°C)	(%)	mm	mm	(%)				
April	38.8	18.9	100.0	6.1	0.4	-2.6	22.4	0.0	11.7	5.6	66.6	0.1	53.2	100.0	98.3	100.0	100.0	100.0
May	26.0	27.6	100.0	7.2	0.5	3.7	22.8	0.0	8.7	14.1	66.0	0.1	50.8	100.0	95.6	100.0	100.0	100.0
June	22.6	29.9	100.0	7.9	0.0	6.5	30.9	0.0	7.7	17.5	68.3	0.1	44.3	100.0	93.9	100.0	100.0	100.0
Q2 Arithmetic Mean									9.3	12.4	66.9	0.1	148.3	100.0	95.9	100.0	100.0	100.0

Table A2: 2022 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	4.4	28.7	9.8	718	99.7
May	N/A	6.0	32.0	15.2	743	99.9
June	N/A	6.0	24.7	15.0	717	99.6

Table A3: 2022 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	4.3	56.6	10.9	718	99.7
May	N/A	4.8	25.8	10.6	742	99.7
June	N/A	5.2	35.0	14.0	718	99.7

Table A4: 2022 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	4.2	43.2	20.3	716	99.4
May	N/A	N/A	5.3	55.2	14.0	742	99.7
June	N/A	N/A	5.1	50.2	15.1	712	98.9

Table A5: 2022 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	3.5	27.5	8.7	716	99.4
May	N/A	N/A	5.8	66.0	13.3	742	99.7
June	N/A	N/A	4.6	37.7	10.7	715	99.3

Table A6: 2022 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	1.1	15.7	5.6	716	99.4
May	N/A	N/A	1.0	36.7	4.6	742	99.7
June	N/A	N/A	0.8	19.7	4.5	712	98.9

Table A7: 2022 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	1.0	14.5	2.7	716	99.4
May	N/A	N/A	1.2	41.2	4.4	742	99.7
June	N/A	N/A	1.2	16.9	3.4	715	99.3

Table A8: 2022 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	3.2	31.6	14.7	716	99.4
May	0	0	4.4	33.8	11.3	742	99.7
June	0	0	4.5	33.6	12.3	712	98.9

Table A9: 2022 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	2.6	19.4	6.4	716	99.4
May	0	0	4.7	28.5	9.9	742	99.7
June	0	0	3.5	20.8	8.3	715	99.3

Table A10: 2022 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	17	9	2.8	179.1	91.2	23.8	718	99.7
May	19	8	2.9	316.1	95.0	15.4	742	99.7
June	13	5	2.1	250.3	92.4	9.6	715	99.3

Table A11: 2022 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	0.2	19.1	6.4	1.3	718	99.7
May	16	6	1.4	221.0	112.6	9.9	719	96.6
June	0	0	0.3	23.2	18.0	1.9	713	99.0

Table A12: 2022 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	47.3	0.1	14.8	100.0
May	32.9	0.3	10.9	100.0
June	28.1	0.1	8.9	100.0

Table A13: 2022 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	38.8	0.4	11.7	100.0
May	26.0	0.5	8.7	100.0
June	22.6	0.0	7.7	100.0

Table A14: 2022 Q2 Courtice Meterological Station Wind Direction Data Summary

MET Statistics	Valid Data
Month	Wind Direction
	(%)
April	98.2
May	95.4
June	92.9

Table A15: 2022 Q2 Rundle Meterological Station Wind Direction Data Summary

MET Statistics	Valid Data
Month	Wind Direction
	(%)
April	98.3
May	95.6
June	93.9

Table A16: 2022 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	15.8	-1.9	5.8	100.0
May	24.4	5.4	13.8	100.0
June	30.2	8.0	17.1	100.0

Table A17: 2022 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	18.9	-2.6	5.6	100.0
May	27.6	3.7	14.1	100.0
June	29.9	6.5	17.5	100.0

Table A18: 2022 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	18.9	61.4	100.0
May	100.0	16.6	62.4	100.0
June	100.0	26.9	64.9	100.0

Table A19: 2022 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	22.4	66.6	100.0
May	100.0	22.8	66.0	100.0
June	100.0	30.9	68.3	100.0

Table A20: 2022 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	6.4	0.0	0.1	47.1	100.0
May	4.3	0.0	0.1	45.4	100.0
June	4.7	0.0	0.0	31.8	100.0

Table A21: 2022 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	6.1	0.0	0.1	53.2	100.0
May	7.2	0.0	0.1	50.8	100.0
June	7.9	0.0	0.1	44.3	100.0

Table A22: 2022 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	29.2	29.7	100.0
May	30.1	29.3	29.7	100.0
June	29.9	29.4	29.6	100.0

APPENDIX B

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

Sample Date	Courtice			Rundle		
	Filter ID	Sample Duration	Sample Volume	Filter ID	Sample Duration	Sample Volume
	No.	(min)	(m^3)	No.	(min)	(m^3)
April 11, 2022	L2699199-2	1440	322	L2699199-1	1440	325
May 5, 2022	L2705143-1	1440	320	L2705143-2	1440	319
May 29, 2022	L2711700-1	1440	317	L2711700-2	1440	320
June 22, 2022	L2718407-2	1440	311	L2718407-1	1440	304

Table B2: 2022 Courtice Station Q2 Monitoring Results for Dioxins & Furans

Contaminant	Units	*MECP Criteria*	*HHRA Health Based Criteria*	11-Apr-22	5-May-22	29-May-22	22-Jun-22	MECP Criteria ($\mu g/m^3$)	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	-	-	3.57E-04	1.00E-03	7.41E-04	2.09E-03	-	-	1.05E-03	3.57E-04	2.09E-03	3.57E-04	1.00E-03	2.09E-03	4	100
1,2,3,7,8-PeCDD	pg/m^3	-	-	2.95E-04	6.56E-04	1.23E-03	1.61E-03	-	-	9.47E-04	2.95E-04	1.61E-03	2.95E-04	1.23E-03	1.61E-03	4	100
1,2,3,4,7,8-HxCDD	pg/m^3	-	-	1.04E-04	6.25E-05	3.94E-04	9.49E-05	-	-	1.64E-04	6.25E-05	3.94E-04	1.04E-04	3.94E-04	9.49E-05	4	100
1,2,3,6,7,8-HxCDD	pg/m^3	-	-	9.63E-05	7.97E-05	3.15E-04	5.66E-04	-	-	2.64E-04	7.97E-05	5.66E-04	9.63E-05	3.15E-04	5.66E-04	4	100
1,2,3,7,8,9-HxCDD	pg/m^3	-	-	7.61E-05	1.53E-04	3.63E-04	1.59E-04	-	-	1.88E-04	7.61E-05	3.63E-04	7.61E-05	3.63E-04	1.59E-04	4	100
1,2,3,4,6,7,8-HpCDD	pg/m^3	-	-	2.62E-04	1.09E-04	1.41E-03	5.95E-04	-	-	5.94E-04	1.09E-04	1.41E-03	2.62E-04	1.41E-03	5.95E-04	4	100
OCDD	pg/m^3	-	-	3.20E-05	1.74E-05	1.50E-04	6.43E-05	-	-	6.61E-05	1.74E-05	1.50E-04	3.20E-05	1.50E-04	6.43E-05	4	100
2,3,7,8-TCDF	pg/m^3	-	-	5.59E-05	9.38E-05	8.83E-05	2.25E-04	-	-	1.16E-04	5.59E-05	2.25E-04	5.59E-05	9.38E-05	2.25E-04	4	100
1,2,3,7,8-PeCDF	pg/m^3	-	-	2.05E-05	1.73E-05	3.60E-05	5.79E-05	-	-	3.29E-05	1.73E-05	5.79E-05	2.05E-05	3.60E-05	5.79E-05	4	100
2,3,4,7,8-PeCDF	pg/m^3	-	-	1.54E-04	1.45E-04	9.46E-04	5.31E-04	-	-	4.44E-04	1.45E-04	9.46E-04	1.54E-04	9.46E-04	5.31E-04	4	100
1,2,3,4,7,8-HxCDF	pg/m^3	-	-	1.36E-04	6.41E-05	8.04E-04	1.13E-04	-	-	2.79E-04	6.41E-05	8.04E-04	1.36E-04	8.04E-04	1.13E-04	4	100
1,2,3,6,7,8-HxCDF	pg/m^3	-	-	5.12E-05	1.56E-04	3.79E-04	1.11E-04	-	-	1.74E-04	5.12E-05	3.79E-04	5.12E-05	3.79E-04	1.11E-04	4	100
2,3,4,6,7,8-HxCDF	pg/m^3	-	-	1.76E-04	5.94E-05	2.13E-03	1.13E-04	-	-	6.20E-04	5.94E-05	2.13E-03	1.76E-04	2.13E-03	1.13E-04	4	100
1,2,3,7,8,9-HxCDF	pg/m^3	-	-	1.72E-04	7.50E-05	3.00E-05	1.30E-04	-	-	1.02E-04	3.00E-05	1.72E-04	1.72E-04	7.50E-05	1.30E-04	4	100
1,2,3,4,6,7,8-HpCDF	pg/m^3	-	-	2.48E-05	1.88E-05	1.48E-03	6.11E-05	-	-	3.97E-04	1.88E-05	1.48E-03	2.48E-05	1.48E-03	6.11E-05	4	100
1,2,3,4,7,8,9-HpCDF	pg/m^3	-	-	3.88E-06	5.16E-06	1.86E-04	1.51E-05	-	-	5.26E-05	3.88E-06	1.86E-04	3.88E-06	1.86E-04	1.51E-05	4	100
OCDF	pg/m^3	-	-	1.86E-06	1.64E-06	8.34E-05	2.12E-06	-	-	2.23E-05	1.64E-06	8.34E-05	1.86E-06	8.34E-05	2.12E-06	4	100
Total Toxic Equivalency	pg TEQ/m^3	*0.1 1* [1]	-	2.02E-03	2.71E-03	1.08E-02	6.53E-03	0.1	0	5.51E-03	2.02E-03	1.08E-02	2.02E-03	1.08E-02	6.53E-03	4	100

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

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

Table B3: 2022 Rundle Road Station Q2 Monitoring Results for Dioxins & Furans

Contaminant	Units	*MECP Criteria*	*HHRA Health Based Criteria*	11-Apr-22	5-May-22	29-May-22	22-Jun-22	MECP Criteria (µg/m^3)	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	-	-	4.00E-04	1.49E-03	6.88E-04	1.97E-03	-	-	1.14E-03	4.00E-04	1.97E-03	4.00E-04	1.49E-03	1.97E-03	4	100
1,2,3,7,8-PeCDD	pg/m^3	-	-	6.15E-04	1.08E-03	1.98E-03	1.17E-02	-	-	3.84E-03	6.15E-04	1.17E-02	6.15E-04	1.98E-03	1.17E-02	4	100
1,2,3,4,7,8-HxCDD	pg/m^3	-	-	2.46E-04	8.31E-05	1.50E-04	5.39E-03	-	-	1.47E-03	8.31E-05	5.39E-03	2.46E-04	1.50E-04	5.39E-03	4	100
1,2,3,6,7,8-HxCDD	pg/m^3	-	-	1.49E-04	7.84E-05	1.88E-04	1.08E-02	-	-	2.81E-03	7.84E-05	1.08E-02	1.49E-04	1.88E-04	1.08E-02	4	100
1,2,3,7,8,9-HxCDD	pg/m^3	-	-	4.68E-04	8.15E-05	2.34E-04	1.06E-02	-	-	2.85E-03	8.15E-05	1.06E-02	4.68E-04	2.34E-04	1.06E-02	4	100
1,2,3,4,6,7,8-HpCDD	pg/m^3	-	-	5.17E-04	7.37E-05	1.02E-03	1.92E-02	-	-	5.21E-03	7.37E-05	1.92E-02	5.17E-04	1.02E-03	1.92E-02	4	100
OCDD	pg/m^3	-	-	4.42E-05	1.44E-05	8.64E-05	1.04E-03	-	-	2.95E-04	1.44E-05	1.04E-03	4.42E-05	8.64E-05	1.04E-03	4	100
2,3,7,8-TCDF	pg/m^3	-	-	4.31E-05	1.14E-04	6.25E-05	3.45E-04	-	-	1.41E-04	4.31E-05	3.45E-04	4.31E-05	1.14E-04	3.45E-04	4	100
1,2,3,7,8-PeCDF	pg/m^3	-	-	1.62E-05	3.15E-05	2.16E-05	1.23E-04	-	-	4.81E-05	1.62E-05	1.23E-04	1.62E-05	3.15E-05	1.23E-04	4	100
2,3,4,7,8-PeCDF	pg/m^3	-	-	2.45E-04	2.96E-04	6.67E-04	2.12E-03	-	-	8.32E-04	2.45E-04	2.12E-03	2.45E-04	6.67E-04	2.12E-03	4	100
1,2,3,4,7,8-HxCDF	pg/m^3	-	-	1.62E-04	1.49E-04	7.50E-05	4.28E-04	-	-	2.03E-04	7.50E-05	4.28E-04	1.62E-04	1.49E-04	4.28E-04	4	100
1,2,3,6,7,8-HxCDF	pg/m^3	-	-	1.84E-04	6.90E-05	6.41E-05	1.17E-03	-	-	3.73E-04	6.41E-05	1.17E-03	1.84E-04	6.90E-05	1.17E-03	4	100
2,3,4,6,7,8-HxCDF	pg/m^3	-	-	2.17E-04	2.20E-04	1.05E-04	7.07E-04	-	-	3.12E-04	1.05E-04	7.07E-04	2.17E-04	2.20E-04	7.07E-04	4	100
1,2,3,7,8,9-HxCDF	pg/m^3	-	-	3.54E-05	1.43E-04	1.09E-04	2.47E-04	-	-	1.34E-04	3.54E-05	2.47E-04	3.54E-05	1.43E-04	2.47E-04	4	100
1,2,3,4,6,7,8-HpCDF	pg/m^3	-	-	3.85E-05	2.51E-05	1.25E-04	6.25E-04	-	-	2.03E-04	2.51E-05	6.25E-04	3.85E-05	1.25E-04	6.25E-04	4	100
1,2,3,4,7,8,9-HpCDF	pg/m^3	-	-	6.92E-06	2.04E-05	8.28E-06	1.81E-05	-	-	1.34E-05	6.92E-06	2.04E-05	6.92E-06	2.04E-05	1.81E-05	4	100
OCDF	pg/m^3	-	-	2.30E-06	2.18E-06	5.63E-06	1.62E-05	-	-	6.57E-06	2.18E-06	1.62E-05	2.30E-06	5.63E-06	1.62E-05	4	100
Total Toxic Equivalency	pg TEQ/m^3	*0.1 1* [1]	-	3.39E-03	3.97E-03	5.58E-03	6.66E-02	0.1	0	1.99E-02	3.39E-03	6.66E-02	3.39E-03	5.58E-03	6.66E-02	4	100

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

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

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

Sample Date	Courtice			Rundle		
	Filter ID	Sample Duration	Sample Volume	Filter ID	Sample Duration	Sample Volume
	No.	(min)	(m^3)	No.	(min)	(m^3)
April 11, 2022	L2699199-2	1440	322	L2699199-1	1440	325
April 23, 2022	L2701924-2	1440	319	L2701924-1	1440	321
May 5, 2022	L2705143-1	1440	320	L2705143-2	1440	319
May 17, 2022	L2704368-3	1440	316	L2704368-2	1440	344
May 29, 2022	L2711700-1	1440	317	L2711700-2	1440	320
June 10, 2022	L2715020-2	1440	327	L2715020-1	1440	338
June 22, 2022	L2718407-2	1440	311	L2718407-1	1440	304

Table B5: 2022 Courtice Station Q2 Monitoring Results for PAHs

Contaminant	Units	*MECP Criteria*	*HHRA Health Based Criteria*	11-Apr-22	23-Apr-22	5-May-22	17-May-22	29-May-22	10-Jun-22	22-Jun-22	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	*12000*	-	4.38E+00	1.05E+01	1.14E+01	2.34E+00	7.38E+00	4.95E+00	9.52E+00	0	7.22E+00	2.34E+00	1.14E+01	1.05E+01	1.14E+01	9.52E+00	7	100
2-Methylnaphthalene	ng/m^3	*10000*	-	8.94E+00	1.72E+01	2.35E+01	5.06E+00	1.53E+01	1.07E+01	2.14E+01	0	1.46E+01	5.06E+00	2.35E+01	1.72E+01	2.35E+01	2.14E+01	7	100
Acenaphthene	ng/m^3	-	-	4.50E+00	2.95E+00	8.41E+00	1.67E+00	3.15E+00	5.90E+00	7.36E+00	-	4.85E+00	1.67E+00	8.41E+00	4.50E+00	8.41E+00	7.36E+00	7	100
Acenaphthylene	ng/m^3	*3500*	-	1.25E-01	1.78E-01	3.22E-01	1.52E-01	3.09E-01	5.60E-01	2.72E-01	0	2.74E-01	1.25E-01	5.60E-01	1.78E-01	3.22E-01	5.60E-01	7	100
Anthracene	ng/m^3	*200*	-	9.07E-02	9.40E-02	9.78E-02	1.45E-01	1.66E-01	2.20E-01	3.14E-01	0	1.61E-01	9.07E-02	3.14E-01	9.40E-02	1.66E-01	3.14E-01	7	100
Benzo(a)Anthracene	ng/m^3	-	-	2.01E-02	1.35E-02	1.46E-02	6.52E-03	2.07E-02	2.96E-02	2.31E-02	-	1.83E-02	6.52E-03	2.96E-02	2.01E-02	2.07E-02	2.96E-02	7	100
Benzo(a)fluorene	ng/m^3	-	-	4.75E-02	4.17E-02	2.64E-02	2.59E-02	5.87E-02	7.06E-02	1.00E-01	-	5.30E-02	2.59E-02	1.00E-01	4.75E-02	5.87E-02	1.00E-01	7	100
Benzo(a)Pyrene (Historically High)	ng/m^3	*0.05 [1] 5 [2] 1.1 [3]*	*1*	4.32E-02	3.42E-02	1.92E-02	1.53E-02	4.38E-02	3.52E-02	2.82E-02	0	3.13E-02	1.53E-02	4.38E-02	4.32E-02	4.38E-02	3.52E-02	7	100
Benzo(b)Fluoranthene	ng/m^3	-	-	8.17E-02	8.84E-02	4.00E-02	2.10E-02	8.45E-02	8.07E-02	5.72E-02	-	6.48E-02	2.10E-02	8.84E-02	8.84E-02	8.45E-02	8.07E-02	7	100
Benzo(b)fluorene	ng/m^3	-	-	2.25E-02	1.56E-02	9.72E-03	1.21E-02	4.16E-02	3.91E-02	4.63E-02	-	2.67E-02	9.72E-03	4.63E-02	2.25E-02	4.16E-02	4.63E-02	7	100
Benzo(e)Pyrene	ng/m^3	-	-	4.75E-02	3.82E-02	3.59E-02	1.33E-02	5.17E-02	4.92E-02	3.89E-02	-	3.93E-02	1.33E-02	5.17E-02	4.75E-02	5.17E-02	4.92E-02	7	100
Benzo(g,h,i)Perylene	ng/m^3	-	-	4.44E-02	4.86E-02	2.78E-02	1.48E-02	4.54E-02	3.85E-02	3.17E-02	-	3.59E-02	1.48E-02	4.86E-02	4.86E-02	4.54E-02	3.85E-02	7	100
Benzo(k)Fluoranthene	ng/m^3	-	-	4.13E-02	3.54E-02	4.09E-02	1.66E-02	5.43E-02	4.80E-02	2.68E-02	-	3.76E-02	1.66E-02	5.43E-02	4.13E-02	5.43E-02	4.80E-02	7	100
Biphenyl	ng/m^3	-	-	2.08E+00	3.86E+00	3.72E+00	2.03E+00	5.77E+00	2.77E+00	4.63E+00	-	3.55E+00	2.03E+00	5.77E+00	3.86E+00	5.77E+00	4.63E+00	7	100
Chrysene	ng/m^3	-	-	8.14E-02	9.97E-02	5.69E-02	3.26E-02	1.15E-01	1.02E-01	1.13E-01	-	8.57E-02	3.26E-02	1.15E-01	9.97E-02	1.15E-01	1.13E-01	7	100
Dibenzo(a,h)Anthracene	ng/m^3	-	-	2.53E-02	5.58E-03	4.47E-03	6.39E-03	5.65E-03	6.33E-03	8.04E-03	-	8.82E-03	4.47E-03	2.53E-02	2.53E-02	6.39E-03	8.04E-03	7	100
Fluoranthene	ng/m^3	-	-	9.41E-01	7.37E-01	7.69E-01	6.96E-01	1.26E+00	9.97E-01	2.50E+00	-	1.13E+00	6.96E-01	2.50E+00	9.41E-01	1.26E+00	2.50E+00	7	100
Fluorene	ng/m^3	-	-	3.45E+00	2.87E+00	5.09E+00	2.54E+00	3.25E+00	3.85E+00	7.85E+00	-	4.13E+00	2.54E+00	7.85E+00	3.45E+00	5.09E+00	7.85E+00	7	100
Indeno(1,2,3-cd)Pyrene	ng/m^3	-	-	4.57E-02	5.61E-02	2.59E-02	1.56E-02	5.55E-02	4.43E-02	2.92E-02	-	3.89E-02	1.56E-02	5.61E-02	5.61E-02	5.55E-02	4.43E-02	7	100
Naphthalene	ng/m^3	*22500*	*22500*	1.36E+01	2.04E+01	2.71E+01	4.40E+00	1.15E+01	9.05E+00	1.86E+01	0	1.49E+01	4.40E+00	2.71E+01	2.04E+01	2.71E+01	1.86E+01	7	100
o-Terphenyl	ng/m^3	-	-	9.97E-03	9.81E-03	5.50E-03	5.28E-03	1.71E-02	7.92E-03	2.24E-02	-	1.11E-02	5.28E-03	2.24E-02	9.97E-03	1.71E-02	2.24E-02	7	100
Perylene	ng/m^3	-	-	4.41E-03	3.13E-04	3.03E-03	7.97E-03	3.15E-04	2.32E-03	3.54E-03	-	3.13E-03	3.13E-04	7.97E-03	4.41E-03	7.97E-03	3.54E-03	7	100
Phenanthrene	ng/m^3	-	-	5.99E+00	5.36E+00	6.66E+00	3.89E+00	4.83E+00	5.99E+00	1.16E+01	-	6.33E+00	3.89E+00	1.16E+01	5.99E+00	6.66E+00	1.16E+01	7	100
Pyrene	ng/m^3	-	-	4.01E-01	2.89E-01	3.19E-01	2.32E-01	5.21E-01	4.77E-01	9.55E-01	-	4.56E-01	2.32E-01	9.55E-01	4.01E-01	5.21E-01	9.55E-01	7	100
Tetralin	ng/m^3	-	-	1.34E+00	1.71E+00	1.33E+00	5.92E-01	7.95E-01	8.35E-01	6.56E-01	-	1.04E+00	5.92E-01	1.71E+00	1.71E+00	1.33E+00	8.35E-01	7	100
Total PAH[4]	ng/m^3	-	-	46.34	66.72	88.99	23.95	54.85	46.91	86.16	-	59.13	23.95	88.99	66.72	88.99	86.16	7	100

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

[1] AAQC

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

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

[4] Total PAH sums all PAH contaminants

Table B6: 2022 Rundle Station Q2 Monitoring Results for PAHs

Contaminant	Units	*MECP Criteria*	*HHRA Health Based Criteria*	11-Apr-22	23-Apr-22	5-May-22	17-May-22	29-May-22	10-Jun-22	22-Jun-22	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	*12000*	-	4.55E+00	5.08E+00	8.71E+00	4.91E-01	6.84E+00	5.03E+00	3.05E+00	0	4.82E+00	4.91E-01	8.71E+00	5.08E+00	8.71E+00	5.03E+00	7	100
2-Methylnaphthalene	ng/m^3	*10000*	-	8.74E+00	8.35E+00	1.62E+01	8.98E-01	1.41E+01	9.64E+00	5.56E+00	0	9.07E+00	8.98E-01	1.62E+01	8.74E+00	1.62E+01	9.64E+00	7	100
Acenaphthene	ng/m^3	-	-	3.51E+00	2.99E+00	4.89E+00	1.32E-01	6.09E+00	3.79E+00	2.75E+00	-	3.45E+00	1.32E-01	6.09E+00	3.51E+00	6.09E+00	3.79E+00	7	100
Acenaphthylene	ng/m^3	*3500*	-	1.93E-01	1.34E-01	1.89E-01	6.72E-02	2.53E-01	5.24E-01	2.49E-01	0	2.30E-01	6.72E-02	5.24E-01	1.93E-01	2.53E-01	5.24E-01	7	100
Anthracene	ng/m^3	*200*	-	1.14E-01	1.19E-01	1.41E-01	4.33E-02	9.19E-01	2.99E-01	7.24E-01	0	3.37E-01	4.33E-02	9.19E-01	1.19E-01	9.19E-01	7.24E-01	7	100
Benzo(a)Anthracene	ng/m^3	-	-	2.75E-02	3.36E-02	1.97E-02	7.12E-03	1.62E-02	1.49E-02	2.69E-02	-	2.08E-02	7.12E-03	3.36E-02	3.36E-02	1.97E-02	2.69E-02	7	100
Benzo(a)fluorene	ng/m^3	-	-	6.43E-02	7.01E-02	4.36E-02	2.87E-02	9.41E-02	6.09E-02	1.38E-01	-	7.13E-02	2.87E-02	1.38E-01	7.01E-02	9.41E-02	1.38E-01	7	100
Benzo(a)Pyrene (Historically High)	ng/m^3	*0.05* [1] *5* [2] *1.1* [3]	*1*	5.26E-02	2.83E-02	3.26E-02	1.47E-02	3.34E-02	2.49E-02	2.13E-02	1	2.97E-02	1.47E-02	5.26E-02	5.26E-02	3.34E-02	2.49E-02	7	100
Benzo(b)Fluoranthene	ng/m^3	-	-	1.27E-01	1.55E-01	6.14E-02	4.33E-02	6.06E-02	5.03E-02	6.12E-02	-	7.98E-02	4.33E-02	1.55E-01	1.55E-01	6.14E-02	6.12E-02	7	100
Benzo(b)fluorene	ng/m^3	-	-	3.60E-02	3.27E-02	1.79E-02	1.49E-02	5.53E-02	2.54E-02	4.90E-02	-	3.30E-02	1.49E-02	5.53E-02	3.60E-02	5.53E-02	4.90E-02	7	100
Benzo(e)Pyrene	ng/m^3	-	-	4.00E-02	8.91E-02	4.70E-02	1.88E-02	3.81E-02	4.11E-02	3.72E-02	-	4.45E-02	1.88E-02	8.91E-02	8.91E-02	4.70E-02	4.11E-02	7	100
Benzo(g,h,i)Perylene	ng/m^3	-	-	5.69E-02	8.32E-02	2.82E-02	1.66E-02	3.41E-02	3.88E-02	3.29E-02	-	4.15E-02	1.66E-02	8.32E-02	8.32E-02	3.41E-02	3.88E-02	7	100
Benzo(k)Fluoranthene	ng/m^3	-	-	5.05E-02	1.03E-01	5.52E-02	4.97E-02	4.28E-02	3.96E-02	3.26E-02	-	5.34E-02	3.26E-02	1.03E-01	1.03E-01	5.52E-02	3.96E-02	7	100
Biphenyl	ng/m^3	-	-	1.83E+00	2.06E+00	2.63E+00	5.06E-01	6.19E+00	2.13E+00	4.08E+00	-	2.78E+00	5.06E-01	6.19E+00	2.06E+00	6.19E+00	4.08E+00	7	100
Chrysene	ng/m^3	-	-	1.06E-01	1.75E-01	9.06E-02	4.04E-02	1.34E-01	7.60E-02	1.33E-01	-	1.08E-01	4.04E-02	1.75E-01	1.75E-01	1.34E-01	1.33E-01	7	100
Dibenzo(a,h)Anthracene	ng/m^3	-	-	2.64E-02	1.26E-02	5.20E-03	5.38E-03	4.81E-03	4.08E-03	2.40E-02	-	1.18E-02	4.08E-03	2.64E-02	2.64E-02	5.38E-03	2.40E-02	7	100
Fluoranthene	ng/m^3	-	-	8.86E-01	6.79E-01	1.29E+00	1.97E-01	4.44E+00	1.57E+00	1.52E+00	-	1.51E+00	1.97E-01	4.44E+00	8.86E-01	4.44E+00	1.57E+00	7	100
Fluorene	ng/m^3	-	-	2.63E+00	2.30E+00	3.70E+00	2.76E-01	8.47E+00	2.88E+00	2.85E+00	-	3.30E+00	2.76E-01	8.47E+00	2.63E+00	8.47E+00	2.88E+00	7	100
Indeno(1,2,3-cd)Pyrene	ng/m^3	-	-	5.85E-02	1.02E-01	3.02E-02	1.74E-02	4.28E-02	3.93E-02	3.36E-02	-	4.62E-02	1.74E-02	1.02E-01	1.02E-01	4.28E-02	3.93E-02	7	100
Naphthalene	ng/m^3	*22500*	*22500*	1.53E+01	1.55E+01	1.45E+01	8.87E-01	1.01E+01	1.11E+01	5.03E+00	0	1.03E+01	8.87E-01	1.55E+01	1.55E+01	1.45E+01	1.11E+01	7	100
o-Terphenyl	ng/m^3	-	-	8.18E-03	1.07E-02	5.39E-03	3.46E-03	1.15E-02	6.45E-03	1.95E-02	-	9.32E-03	3.46E-03	1.95E-02	1.07E-02	1.15E-02	1.95E-02	7	100
Perylene	ng/m^3	-	-	1.43E-02	3.61E-03	3.48E-03	5.99E-03	3.13E-04	2.04E-03	7.86E-02	-	1.55E-02	3.13E-04	7.86E-02	1.43E-02	5.99E-03	7.86E-02	7	100
Phenanthrene	ng/m^3	-	-	4.15E+00	3.30E+00	6.52E+00	6.13E-01	1.78E+01	5.80E+00	4.44E+00	-	6.08E+00	6.13E-01	1.78E+01	4.15E+00	1.78E+01	5.80E+00	7	100
Pyrene	ng/m^3	-	-	4.06E-01	3.49E-01	4.80E-01	1.01E-01	1.63E+00	6.83E-01	1.61E+00	-	7.51E-01	1.01E-01	1.63E+00	4.06E-01	1.63E+00	1.61E+00	7	100
Tetralin	ng/m^3	-	-	1.43E+00	9.25E-01	1.16E+00	2.14E-01	6.78E-01	1.66E+00	7.66E-01	-	9.75E-01	2.14E-01	1.66E+00	1.43E+00	1.16E+00	1.66E+00	7	100
Total PAH[4]	ng/m^3	-	-	44.40	42.70	60.84	4.69	78.05	45.55	33.30	-	44.22	4.69	78.05	60.84	78.05	45.55	7	100

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

[1] AAQC

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

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

[4] Total PAH sums all PAH contaminants

Table B8: 2022 Courtice Station Q2 Monitoring Results for TSP and Metals

Contaminant	Units	*MECP Criteria*	*HHRA Health Based Criteria*	5-Apr-22	11-Apr-22	17-Apr-22	23-Apr-22	29-Apr-22	5-May-22	11-May-22	17-May-22	23-May-22	29-May-22	4-Jun-22	10-Jun-22	16-Jun-22	22-Jun-22	28-Jun-22	MECP Criteria (µg/m³)	No. > Criteria	Geometric Mean [1]	Arithmetic Mean [1]	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*	*120*	29.06	30.27	15.49	40.67	27.55			16.90	26.02	25.13	24.76	23.95	53.91			*120*	0	N/A	N/A	15.49	53.91	40.67	26.02	53.91	11	73
Mercury (Hg)	µg/m³	*2*	*2*	8.51E-06	1.21E-05	3.00E-06	8.75E-06	6.49E-06			2.90E-06	1.10E-05	1.13E-05	2.96E-06	8.30E-06	9.77E-06			*2*	0	N/A	N/A	2.90E-06	1.21E-05	1.21E-05	1.13E-05	9.77E-06	11	73
Aluminum (Al)	µg/m³	*4.8*	-	2.98E-01	3.15E-01	1.32E-01	5.78E-01	2.21E-01			1.37E-01	1.72E-01	1.79E-01	1.74E-01	9.78E-02	6.72E-01			*4.8*	0	N/A	N/A	9.78E-02	6.72E-01	5.78E-01	1.79E-01	6.72E-01	11	73
Antimony (Sb)	µg/m³	*25*	*25*	6.75E-04	4.89E-04	4.86E-04	7.99E-04	8.38E-04			3.48E-04	4.73E-04	1.07E-03	6.91E-04	5.33E-04	7.08E-04			*25*	0	N/A	N/A	3.48E-04	1.07E-03	8.38E-04	1.07E-03	7.08E-04	11	73
Arsenic (As)	µg/m³	*0.3*	*0.3*	9.12E-04	9.06E-04	9.00E-04	8.75E-04	8.85E-04			8.71E-04	8.66E-04	2.76E-03	8.87E-04	8.89E-04	9.16E-04			*0.3*	0	N/A	N/A	8.66E-04	2.76E-03	9.12E-04	2.76E-03	9.16E-04	11	73
Barium (Ba)	µg/m³	*10*	*10*	6.02E-03	6.40E-03	4.70E-03	7.82E-03	6.25E-03			4.91E-03	8.19E-03	7.91E-03	6.86E-03	7.17E-03	1.33E-02			*10*	0	N/A	N/A	4.70E-03	1.33E-02	7.82E-03	8.19E-03	1.33E-02	11	73
Beryllium (Be)	µg/m³	*0.01*	*0.01*	1.52E-05	1.51E-05	1.50E-05	1.46E-05	1.47E-05			1.45E-05	1.44E-05	1.57E-05	1.48E-05	1.48E-05	3.91E-05			*0.01*	0	N/A	N/A	1.44E-05	3.91E-05	1.52E-05	1.57E-05	3.91E-05	11	73
Bismuth (Bi)	µg/m³	-	-	5.47E-04	5.44E-04	5.40E-04	5.25E-04	5.31E-04			5.23E-04	5.19E-04	5.65E-04	5.32E-04	5.33E-04	5.49E-04			-	-	N/A	N/A	5.19E-04	5.65E-04	5.47E-04	5.65E-04	5.49E-04	11	73
Boron (B)	µg/m³	*120*	-	4.56E-03	4.53E-03	4.50E-03	4.38E-03	4.42E-03			4.36E-03	4.33E-03	4.71E-03	4.43E-03	4.45E-03	4.58E-03			*120*	0	N/A	N/A	4.33E-03	4.71E-03	4.56E-03	4.71E-03	4.58E-03	11	73
Cadmium (Cd)	µg/m³	*0.025*	*0.025*	1.47E-04	9.49E-05	8.82E-05	5.78E-04	9.14E-05			6.33E-05	2.13E-04	2.01E-04	1.01E-04	8.30E-05	1.46E-04			*0.025*	0	N/A	N/A	6.33E-05	5.78E-04	5.78E-04	2.13E-04	1.46E-04	11	73
Chromium (Cr)	µg/m³	*0.5*	-	2.55E-03	2.66E-03	1.02E-03	3.03E-03	2.30E-03			9.87E-04	9.81E-04	6.16E-03	2.25E-03	2.02E-03	3.05E-03			*0.5*	0	N/A	N/A	9.81E-04	6.16E-03	3.03E-03	6.16E-03	3.05E-03	11	73
Cobalt (Co)	µg/m³	*0.1*	*0.1*	1.60E-04	1.79E-04	1.26E-04	2.15E-04	1.61E-04			1.07E-04	9.29E-05	1.06E-04	1.21E-04	8.89E-05	3.88E-04			*0.1*	0	N/A	N/A	8.89E-05	3.88E-04	2.15E-04	1.07E-04	3.88E-04	11	73
Copper (Cu)	µg/m³	*50*	-	1.50E-02	4.73E-02	1.15E-02	1.94E-02	3.19E-02			1.36E-02	2.55E-02	3.25E-02	4.60E-02	3.82E-02	2.55E-02			*50*	0	N/A	N/A	1.15E-02	4.73E-02	4.73E-02	3.25E-02	4.60E-02	11	73
Iron (Fe)	µg/m³	*4*	-	5.58E-01	6.71E-01	2.41E-01	8.05E-01	4.01E-01			2.69E-01	3.40E-01	3.99E-01	4.50E-01	3.12E-01	1.05E+00			*4*	0	N/A	N/A	2.41E-01	1.05E+00	8.05E-01	3.99E-01	1.05E+00	11	73
Lead (Pb)	µg/m³	*0.5*	*0.5*	2.64E-03	1.60E-03	9.66E-04	3.94E-03	2.74E-03	Invalid	Invalid	6.56E-04	3.74E-03	4.10E-03	1.79E-03	1.29E-03	2.49E-03	Invalid	Invalid	*2*	0	N/A	N/A	6.56E-04	4.10E-03	3.94E-03	4.10E-03	2.49E-03	11	73
Magnesium (Mg)	µg/m³	-	-	3.31E-01	5.79E-01	1.98E-01	5.25E-01	2.79E-01			1.79E-01	2.16E-01	2.01E-01	2.69E-01	2.05E-01	5.66E-01			-	-	N/A	N/A	1.79E-01	5.79E-01	5.79E-01	2.16E-01	5.66E-01	11	73
Manganese (Mn)	µg/m³	*0.4*	-	1.23E-02	1.35E-02	8.28E-03	1.64E-02	1.20E-02			8.77E-03	1.14E-02	1.11E-02	1.26E-02	1.04E-02	2.74E-02			*0.4*	0	N/A	N/A	8.28E-03	2.74E-02	1.64E-02	1.14E-02	2.74E-02	11	73
Molybdenum (Mo)	µg/m³	*120*	-	7.66E-04	1.70E-03	7.62E-04	1.04E-03	2.84E-03			5.98E-04	9.87E-04	1.57E-03	5.91E-04	1.37E-03	1.23E-03			*120*	0	N/A	N/A	5.91E-04	2.84E-03	2.84E-03	1.57E-03	1.37E-03	11	73
Nickel (Ni)	µg/m³	*0.2*	-	1.29E-03	1.25E-03	1.43E-03	2.06E-03	1.72E-03			1.27E-03	1.28E-03	1.13E-03	9.04E-04	8.60E-04	1.50E-03			*0.2*	0	N/A	N/A	8.60E-04	2.06E-03	2.06E-03	1.28E-03	1.50E-03	11	73
Phosphorus (P)	µg/m³	-	-	2.28E-01	2.27E-01	4.74E-01	5.13E-01	2.21E-01			4.47E-01	2.16E-01	2.36E-01	2.22E-01	2.22E-01	2.29E-01			-	-	N/A	N/A	2.16E-01	5.13E-01	5.13E-01	4.47E-01	2.29E-01	11	73
Selenium (Se)	µg/m³	*10*	*10*	3.95E-04	3.93E-04	3.90E-04	3.79E-04	3.83E-04			3.77E-04	3.75E-04	4.08E-04	3.84E-04	3.85E-04	1.34E-03			*10*	0	N/A	N/A	3.75E-04	1.34E-03	3.95E-04	4.08E-04	1.34E-03	11	73
Silver (Ag)	µg/m³	*1*	*1*	2.74E-05	1.08E-04	2.70E-05	2.63E-05	2.65E-05			2.61E-05	2.60E-05	9.05E-05	2.66E-05	2.67E-05	2.75E-05			*1*	0	N/A	N/A	2.60E-05	1.08E-04	1.08E-04	9.05E-05	2.75E-05	11	73
Strontium (Sr)	µg/m³	*120*	-	1.20E-02	2.88E-02	5.52E-03	1.93E-02	7.91E-03			3.77E-03	7.91E-03	5.28E-03	5.08E-03	4.09E-03	9.34E-03			*120*	0	N/A	N/A	3.77E-03	2.88E-02	2.88E-02	7.91E-03	9.34E-03	11	73
Thallium (Tl)	µg/m³	-	-	2.74E-05	2.72E-05	2.70E-05	6.59E-05	2.65E-05			2.61E-05	2.60E-05	2.83E-05	2.66E-05	2.67E-05	2.75E-05			-	-	N/A	N/A	2.60E-05	6.59E-05	6.59E-05	2.83E-05	2.75E-05	11	73
Tin (Sn)	µg/m³	*10*	*10*	1.03E-03	7.31E-04	5.16E-04	2.01E-03	6.14E-04			4.18E-04	4.85E-04	7.41E-04	8.92E-04	7.65E-04	7.45E-04			*10*	0	N/A	N/A	4.18E-04	2.01E-03	2.01E-03	7.41E-04	8.92E-04	11	73
Titanium (Ti)	µg/m³	*120*	-	1.40E-02	1.81E-02	3.30E-03	2.28E-02	1.00E-02			7.55E-03	8.66E-03	8.79E-03	7.68E-03	3.26E-03	1.71E-02			*120*	0	N/A	N/A	3.26E-03	2.28E-02	2.28E-02	8.79E-03	1.71E-02	11	73
Uranium (Ur)	µg/m³	*1.5*	-	3.99E-05	2.63E-05	9.66E-06	6.13E-05	1.32E-05			7.84E-06	1.26E-05	1.51E-05	1.33E-05	7.35E-06	5.55E-05			*1.5*	0	N/A	N/A	7.35E-06	6.13E-05	6.13E-05	1.51E-05	5.55E-05	11	73
Vanadium (V)	µg/m³	*2*	*1*	1.52E-03	1.51E-03	1.50E-03	1.46E-03	1.47E-03			1.45E-03	1.44E-03	1.57E-03	1.48E-03	1.48E-03	1.53E-03			*2*	0	N/A	N/A	1.44E-03	1.57E-03	1.52E-03	1.57E-03	1.53E-03	11	73
Zinc (Zn)	µg/m³	*120*	-	2.58E-02	2.71E-02	2.97E-02	4.07E-02	3.69E-02			1.01E-02	3.56E-02	3.90E-02	3.70E-02	2.20E-02	4.62E-02			*120*	0	N/A	N/A	1.01E-02	4.62E-02	4.07E-02	3.90E-02	4.62E-02	11	73
Zirconium (Zr)	µg/m³	*20*	-	6.08E-04	6.04E-04	6.00E-04	5.83E-04	5.90E-04			5.81E-04	5.77E-04	6.28E-04	5.91E-04	5.93E-04	6.11E-04			*20*	0	N/A	N/A	5.77E-04	6.28E-04	6.08E-04	6.28E-04	6.11E-04	11	73

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

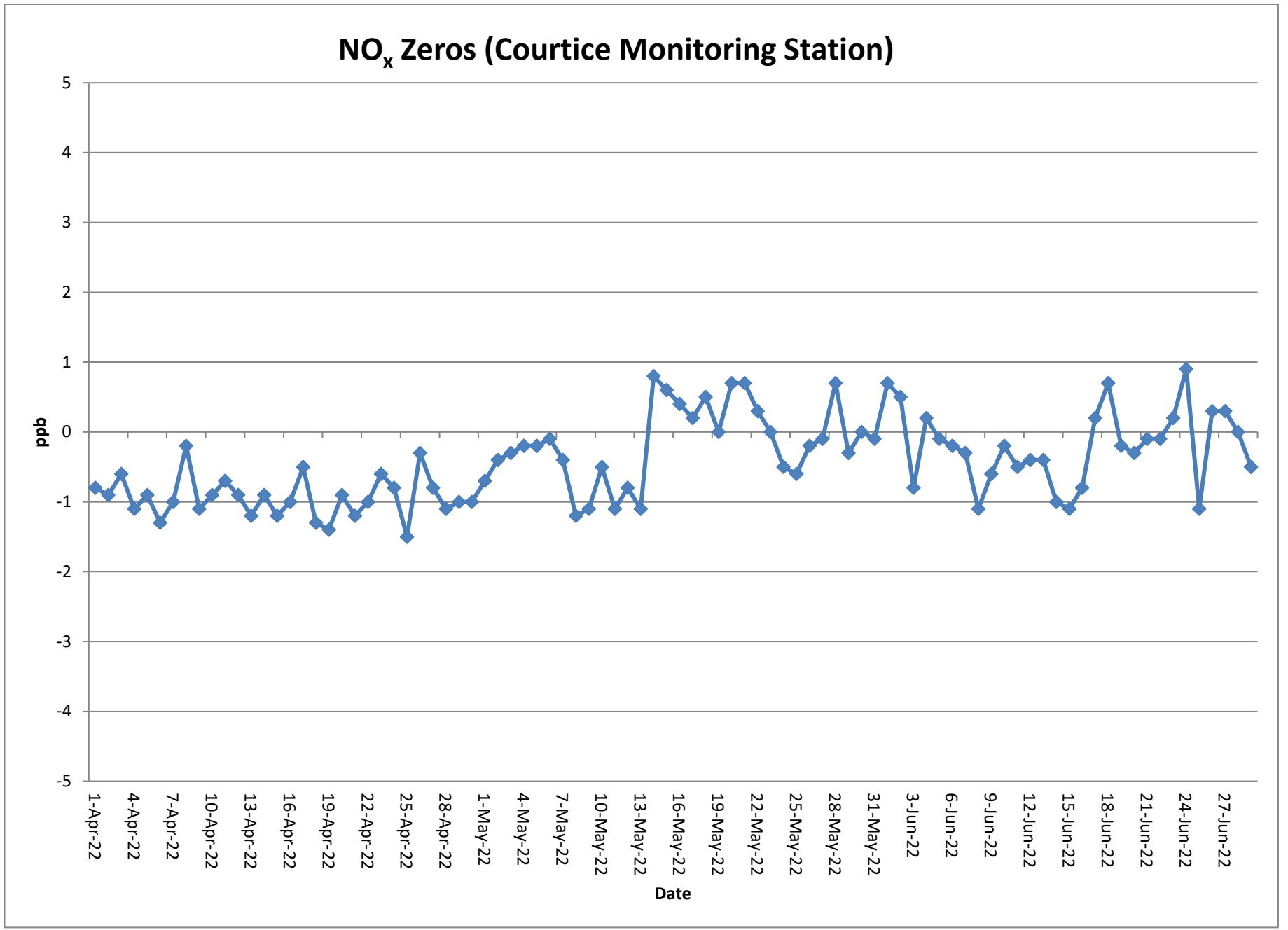
[1] - Averages for the quarter are not presented due to insufficient sample validity

Table B9: 2022 Rundle Station Q2 Monitoring Results for TSP and Metals

Contaminant	Units	*MECP Criteria*	*HHRA Health Based Criteria*	5-Apr-22	11-Apr-22	17-Apr-22	23-Apr-22	29-Apr-22	5-May-22	11-May-22	17-May-22	23-May-22	29-May-22	4-Jun-22	10-Jun-22	16-Jun-22	22-Jun-22	28-Jun-22	MECP Criteria ($\mu g/m^3$)	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)	$\mu g/m^3$	*120*	*120*	17.09	22.73	12.70	18.64	30.74	19.53	113.51	22.69	23.01	23.31	26.11	28.98	65.41	50.97	38.75	*120*	0	28.7	34.3	12.7	113.5	30.7	113.5	65.4	15	100
Mercury (Hg)	$\mu g/m^3$	*2*	*2*	8.79E-06	1.45E-05	3.13E-06	8.84E-06	6.74E-06	7.39E-06	1.46E-05	2.82E-06	2.92E-06	1.07E-05	2.93E-06	8.28E-06	1.94E-05	1.43E-05	8.24E-06	*2*	0	7.47E-06	8.90E-06	2.82E-06	1.94E-05	1.45E-05	1.46E-05	1.94E-05	15	100
Aluminum (Al)	$\mu g/m^3$	*4.8*	-	1.71E-01	2.64E-01	1.48E-01	2.41E-01	3.28E-01	1.80E-01	1.62E+00	1.79E-01	1.73E-01	1.53E-01	1.79E-01	1.95E-01	1.14E+00	4.93E-01	3.20E-01	*4.8*	0	2.78E-01	3.86E-01	1.48E-01	1.62E+00	3.28E-01	1.62E+00	1.14E+00	15	100
Antimony (Sb)	$\mu g/m^3$	*25*	*25*	5.03E-04	5.79E-04	3.69E-04	7.64E-04	3.92E-04	4.62E-04	1.16E-03	2.37E-04	3.15E-04	6.96E-04	2.11E-04	5.85E-04	9.63E-04	1.26E-03	4.48E-04	*25*	0	5.23E-04	5.97E-04	2.11E-04	1.26E-03	7.64E-04	1.16E-03	1.26E-03	15	100
Arsenic (As)	$\mu g/m^3$	*0.3*	*0.3*	9.42E-04	9.45E-04	9.39E-04	9.48E-04	9.19E-04	9.24E-04	9.51E-04	8.47E-04	8.76E-04	2.08E-03	8.78E-04	8.87E-04	9.09E-04	9.35E-04	8.83E-04	*0.3*	0	9.64E-04	9.91E-04	8.47E-04	2.08E-03	9.48E-04	2.08E-03	9.35E-04	15	100
Barium (Ba)	$\mu g/m^3$	*10*	*10*	6.85E-03	9.57E-03	3.15E-03	7.52E-03	6.43E-03	6.84E-03	2.14E-02	3.96E-03	6.60E-03	7.19E-03	4.06E-03	9.99E-03	2.28E-02	1.52E-02	9.25E-03	*10*	0	8.01E-03	9.39E-03	3.15E-03	2.28E-02	9.57E-03	2.14E-02	2.28E-02	15	100
Beryllium (Be)	$\mu g/m^3$	*0.01*	*0.01*	1.57E-05	1.57E-05	1.56E-05	1.58E-05	1.53E-05	1.54E-05	3.93E-05	1.41E-05	1.46E-05	1.49E-05	1.46E-05	4.55E-05	4.91E-05	1.56E-05	1.47E-05	*0.01*	0	1.88E-05	2.11E-05	1.41E-05	4.91E-05	1.58E-05	3.93E-05	4.91E-05	15	100
Bismuth (Bi)	$\mu g/m^3$	-	-	5.65E-04	5.67E-04	5.63E-04	5.69E-04	5.51E-04	5.55E-04	5.71E-04	5.08E-04	5.26E-04	5.35E-04	5.27E-04	5.32E-04	5.45E-04	5.61E-04	5.30E-04	-	-	5.47E-04	5.47E-04	5.08E-04	5.71E-04	5.69E-04	5.71E-04	5.61E-04	15	100
Boron (B)	$\mu g/m^3$	*120*	-	4.71E-03	4.72E-03	4.69E-03	4.74E-03	4.59E-03	4.62E-03	1.01E-02	4.23E-03	4.38E-03	4.46E-03	4.39E-03	4.44E-03	4.54E-03	4.67E-03	4.42E-03	*120*	0	4.79E-03	4.92E-03	4.23E-03	1.01E-02	4.74E-03	1.01E-02	4.67E-03	15	100
Cadmium (Cd)	$\mu g/m^3$	*0.025*	*0.025*	8.67E-05	9.51E-05	9.57E-05	8.46E-05	6.25E-05	7.46E-05	1.25E-04	4.35E-05	6.60E-05	1.41E-04	7.32E-05	1.02E-04	7.57E-05	1.66E-04	6.07E-05	*0.025*	0	8.51E-05	9.01E-05	4.35E-05	1.66E-04	9.57E-05	1.41E-04	1.66E-04	15	100
Chromium (Cr)	$\mu g/m^3$	*0.5*	-	1.07E-03	2.52E-03	1.06E-03	2.21E-03	2.69E-03	2.16E-03	5.71E-03	9.59E-04	9.93E-04	1.25E-02	2.58E-03	2.31E-03	7.27E-03	4.11E-03	4.30E-03	*0.5*	0	2.62E-03	3.49E-03	9.59E-04	1.25E-02	2.69E-03	1.25E-02	7.27E-03	15	100
Cobalt (Co)	$\mu g/m^3$	*0.1*	*0.1*	1.22E-04	1.56E-04	9.14E-05	1.45E-04	1.95E-04	1.31E-04	6.53E-04	1.17E-04	1.05E-04	1.05E-04	1.16E-04	1.64E-04	5.78E-04	3.12E-04	2.31E-04	*0.1*	0	1.75E-04	2.15E-04	9.14E-05	6.53E-04	1.95E-04	6.53E-04	5.78E-04	15	100
Copper (Cu)	$\mu g/m^3$	*50*	-	1.31E-02	2.92E-02	3.94E-03	7.26E-03	6.12E-03	2.91E-02	2.58E-02	1.46E-02	1.26E-02	3.03E-02	1.79E-02	4.58E-02	4.14E-02	5.44E-02	1.47E-02	*50*	0	1.81E-02	2.31E-02	3.94E-03	5.44E-02	2.92E-02	3.03E-02	5.44E-02	15	100
Iron (Fe)	$\mu g/m^3$	*4*	-	3.37E-01	5.02E-01	2.20E-01	4.15E-01	4.52E-01	3.80E-01	2.41E+00	2.90E-01	2.79E-01	3.53E-01	2.77E-01	4.74E-01	1.67E+00	8.47E-01	6.77E-01	*4*	0	4.90E-01	6.39E-01	2.20E-01	2.41E+00	5.02E-01	2.41E+00	1.67E+00	15	100
Lead (Pb)	$\mu g/m^3$	*0.5*	*0.5*	1.78E-03	2.15E-03	1.11E-03	2.36E-03	2.28E-03	2.56E-03	3.57E-03	8.58E-04	1.71E-03	4.28E-03	1.42E-03	1.60E-03	3.63E-03	4.18E-03	1.86E-03	*2*	0	2.13E-03	2.36E-03	8.58E-04	4.28E-03	2.36E-03	4.28E-03	4.18E-03	15	100
Magnesium (Mg)	$\mu g/m^3$	-	-	2.09E-01	2.67E-01	1.95E-01	2.38E-01	3.72E-01	1.97E-01	1.19E+00	2.47E-01	1.79E-01	1.84E-01	2.42E-01	3.06E-01	9.15E-01	5.98E-01	4.39E-01	-	-	3.17E-01	3.85E-01	1.79E-01	1.19E+00	3.72E-01	1.19E+00	9.15E-01	15	100
Manganese (Mn)	$\mu g/m^3$	*0.4*	-	8.48E-03	1.07E-02	5.69E-03	9.67E-03	1.42E-02	1.06E-02	4.37E-02	1.07E-02	7.83E-03	9.27E-03	1.14E-02	1.39E-02	5.26E-02	3.31E-02	3.04E-02	*0.4*	0	1.43E-02	1.81E-02	5.69E-03	5.26E-02	1.42E-02	4.37E-02	5.26E-02	15	100
Molybdenum (Mo)	$\mu g/m^3$	*120*	-	4.52E-04	1.19E-03	1.13E-04	3.92E-04	2.88E-04	8.56E-04	1.12E-03	6.66E-04	6.95E-04	3.37E-03	1.08E-03	2.11E-03	1.59E-03	1.86E-03	5.42E-04	*120*	0	8.03E-04	1.09E-03	1.13E-04	3.37E-03	1.19E-03	3.37E-03	2.11E-03	15	100
Nickel (Ni)	$\mu g/m^3$	*0.2*	-	1.04E-03	1.30E-03	1.43E-03	1.71E-03	1.68E-03	1.53E-03	3.46E-03	1.32E-03	1.13E-03	1.06E-03	7.26E-04	9.40E-04	2.27E-03	1.45E-03	1.58E-03	*0.2*	0	1.41E-03	1.51E-03	7.26E-04	3.46E-03	1.71E-03	3.46E-03	2.27E-03	15	100
Phosphorus (P)	$\mu g/m^3$	-	-	2.36E-01	2.36E-01	4.82E-01	4.86E-01	2.30E-01	4.99E-01	6.91E-01	4.97E-01	2.19E-01	2.23E-01	2.20E-01	2.22E-01	2.27E-01	2.34E-01	2.21E-01	-	-	3.00E-01	3.28E-01	2.19E-01	6.91E-01	4.86E-01	6.91E-01	2.34E-01	15	100
Selenium (Se)	$\mu g/m^3$	*10*	*10*	4.08E-04	4.09E-04	4.07E-04	4.11E-04	3.98E-04	4.00E-04	4.12E-04	3.67E-04	3.80E-04	3.86E-04	3.81E-04	3.84E-04	1.45E-03	1.62E-03	3.83E-04	*10*	0	4.72E-04	5.47E-04	3.67E-04	1.62E-03	4.11E-04	4.12E-04	1.62E-03	15	100
Silver (Ag)	$\mu g/m^3$	*1*	*1*	2.83E-05	1.25E-04	2.82E-05	2.84E-05	2.76E-05	2.77E-05	2.85E-05	2.54E-05	2.63E-05	6.12E-05	2.63E-05	2.66E-05	2.73E-05	1.24E-04	2.65E-05	*1*	0	3.52E-05	4.25E-05	2.54E-05	1.25E-04	1.25E-04	6.12E-05	1.24E-04	15	100
Strontium (Sr)	$\mu g/m^3$	*120*	-	5.21E-03	8.82E-03	4.26E-03	5.24E-03	1.05E-02	5.85E-03	4.48E-02	5.25E-03	5.37E-03	4.10E-03	3.75E-03	6.68E-03	1.83E-02	9.97E-03	8.60E-03	*120*	0	7.48E-03	9.78E-03	3.75E-03	4.48E-02	1.05E-02	4.48E-02	1.83E-02	15	100
Thallium (Tl)	$\mu g/m^3$	-	-	2.83E-05	2.83E-05	2.82E-05	2.84E-05	2.76E-05	2.77E-05	7.80E-05	2.54E-05	2.63E-05	2.68E-05	2.63E-05	2.66E-05	2.73E-05	2.80E-05	2.65E-05	-	-	2.92E-05	3.06E-05	2.54E-05	7.80E-05	2.84E-05	7.80E-05	2.80E-05	15	100
Tin (Sn)	$\mu g/m^3$	*10*	*10*	9.74E-04	9.89E-04	5.38E-04	1.26E-03	4.59E-04	6.65E-04	1.45E-03	4.06E-04	7.07E-04	6.18E-04	4.45E-04	6.62E-04	1.11E-03	1.55E-03	5.06E-04	*10*	0	7.50E-04	8.23E-04	4.06E-04	1.55E-03	1.26E-03	1.45E-03	1.55E-03	15	100
Titanium (Ti)	$\mu g/m^3$	*120*	-	3.45E-03	1.07E-02	3.44E-03	1.01E-02	1.22E-02	8.63E-03	5.45E-02	9.03E-03	8.18E-03	7.13E-03	7.03E-03	1.30E-02	3.76E-02	1.74E-02	1.47E-02	*120*	0	1.09E-02	1.45E-02	3.44E-03	5.45E-02	1.22E-02	5.45E-02	3.76E-02	15	100
Uranium (Ur)	$\mu g/m^3$	*1.5*	-	3.00E-05	1.89E-05	1.06E-05	3.61E-05	1.61E-05	1.11E-05	1.52E-04	8.41E-06	1.10E-05	1.21E-05	1.21E-05	3.44E-05	8.06E-05	1.47E-04	1.96E-05	*1.5*	0	2.44E-05	4.00E-05	8.41E-06	1.52E-04	3.61E-05	1.52E-04	1.47E-04	15	100
Vanadium (V)	$\mu g/m^3$	*2*	*1*	1.57E-03	1.57E-03	1.56E-03	1.58E-03	1.53E-03	1.54E-03	3.42E-03	1.41E-03	1.46E-03	1.49E-03	1.46E-03	1.48E-03	3.57E-03	1.56E-03	1.47E-03	*2*	0	1.69E-03	1.78E-03	1.41E-03	3.57E-03	1.58E-03	3.42E-03	3.57E-03	15	100
Zinc (Zn)	$\mu g/m^3$	*120*	-	2.88E-02	4.57E-02	3.44E-02	2.68E-02	1.76E-02	3.77E-02	4.17E-02	2.21E-02	2.54E-02	3.08E-02	3.14E-02	2.82E-02	6.24E-01	8.97E-02	3.08E-02	*120*	0	3.95E-02	7.43E-02	1.76E-02	6.24E-01	4.57E-02	4.17E-02	6.24E-01	15	100
Zirconium (Zr)	$\mu g/m^3$	*20*	-	6.28E-04	6.30E-04	6.26E-04	6.32E-04	6.12E-04	6.16E-04	6.34E-04	5.64E-04	5.84E-04	5.95E-04	5.85E-04	5.91E-04	6.06E-04	6.23E-04	5.89E-04	*20*	0	6.07E-04	6.08E-04	5.64E-04	6.34E-04	6.32E-04	6.34E-04	6.23E-04	15	100

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

APPENDIX C


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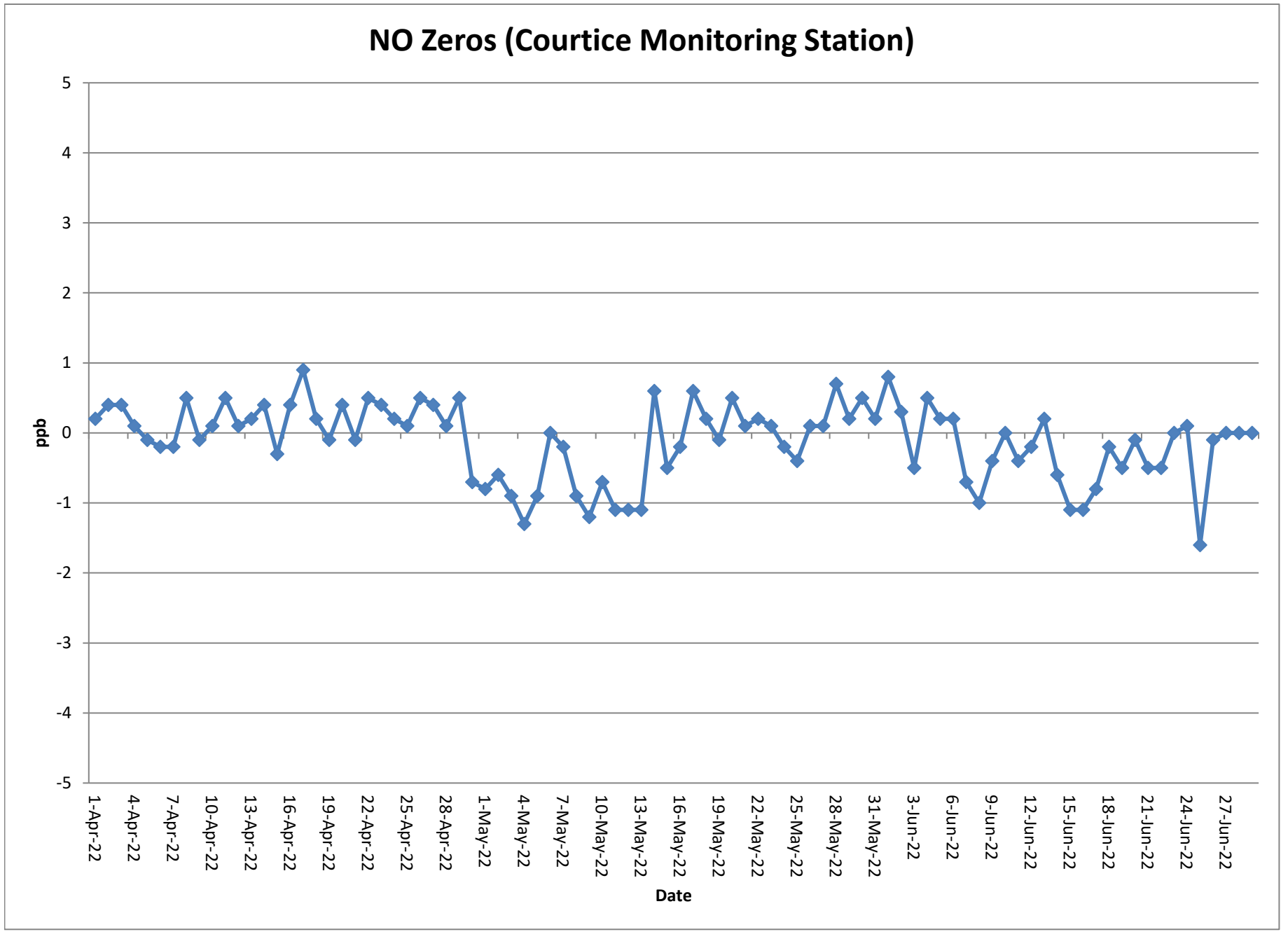
21-Jun-22
24-Jun-22
27-Jun-22
Date


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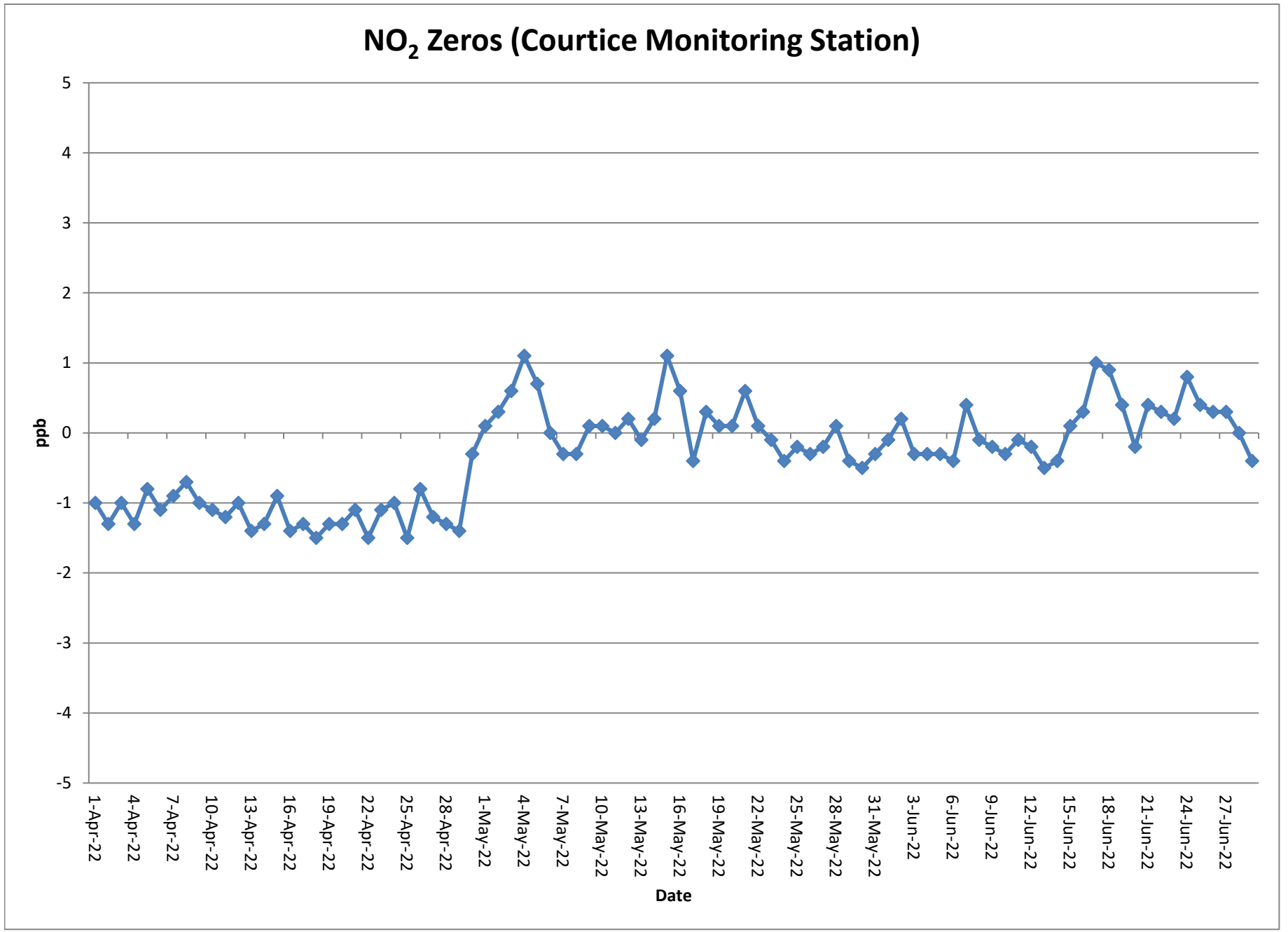
12-Jun-22
15-Jun-22
18-Jun-22
21-Jun-22
24-Jun-22
27-Jun-22
Date


NO2 Zeros (Courtice Monitoring Station)
ppb
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-2
-3
-4
-5
1-Apr-22
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16-Apr-22
19-Apr-22
22-Apr-22
25-Apr-22
28-Apr-22
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7-May-22
10-May-22
13-May-22
16-May-22
19-May-22
22-May-22
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3-Jun-22
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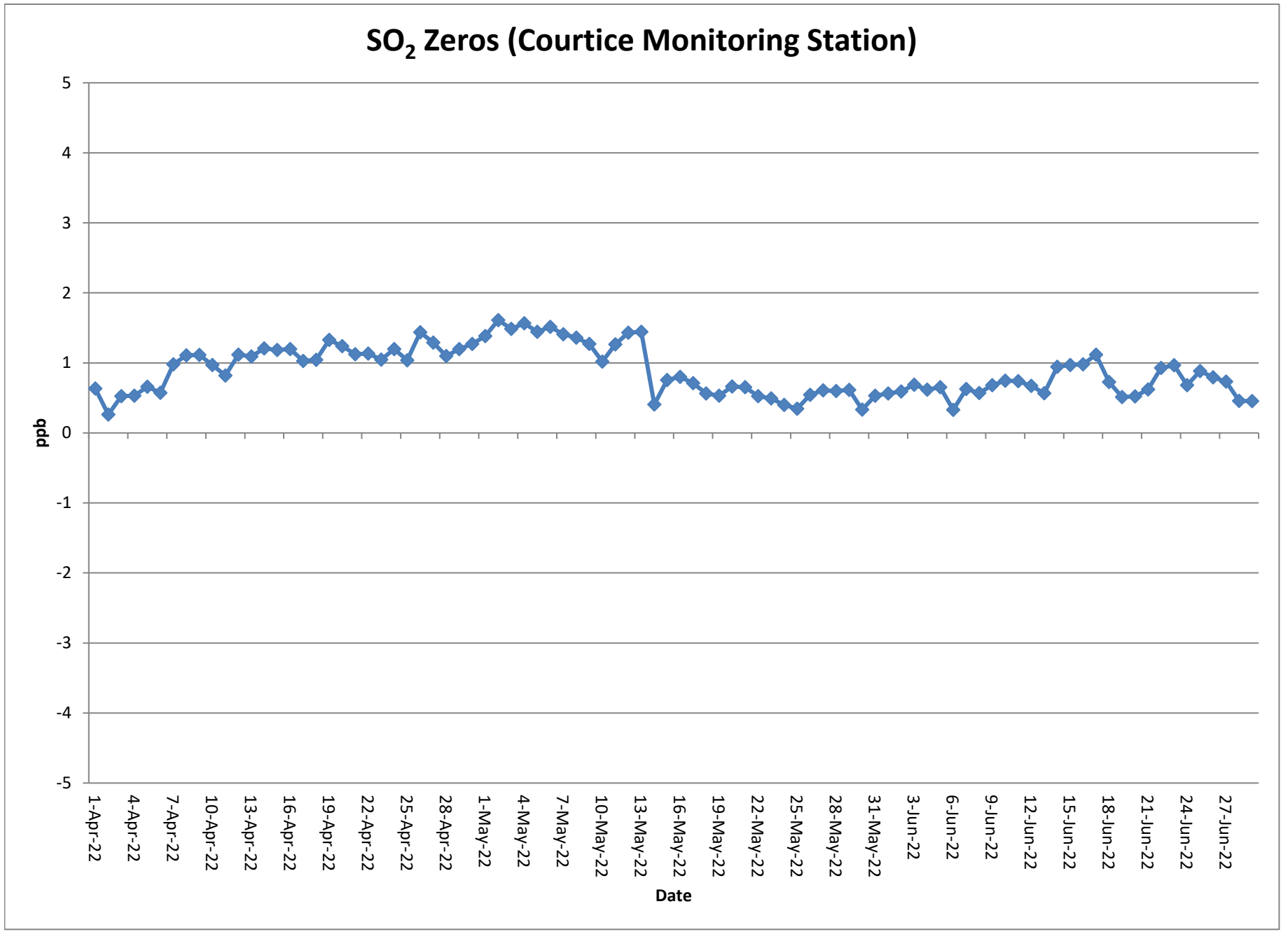
27-Jun-22
Date


SO2 Zeros (Courtice Monitoring Station)
ppb
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2
1
0
-1
-2
-3
-4
-5
1-Apr-22
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3-Jun-22
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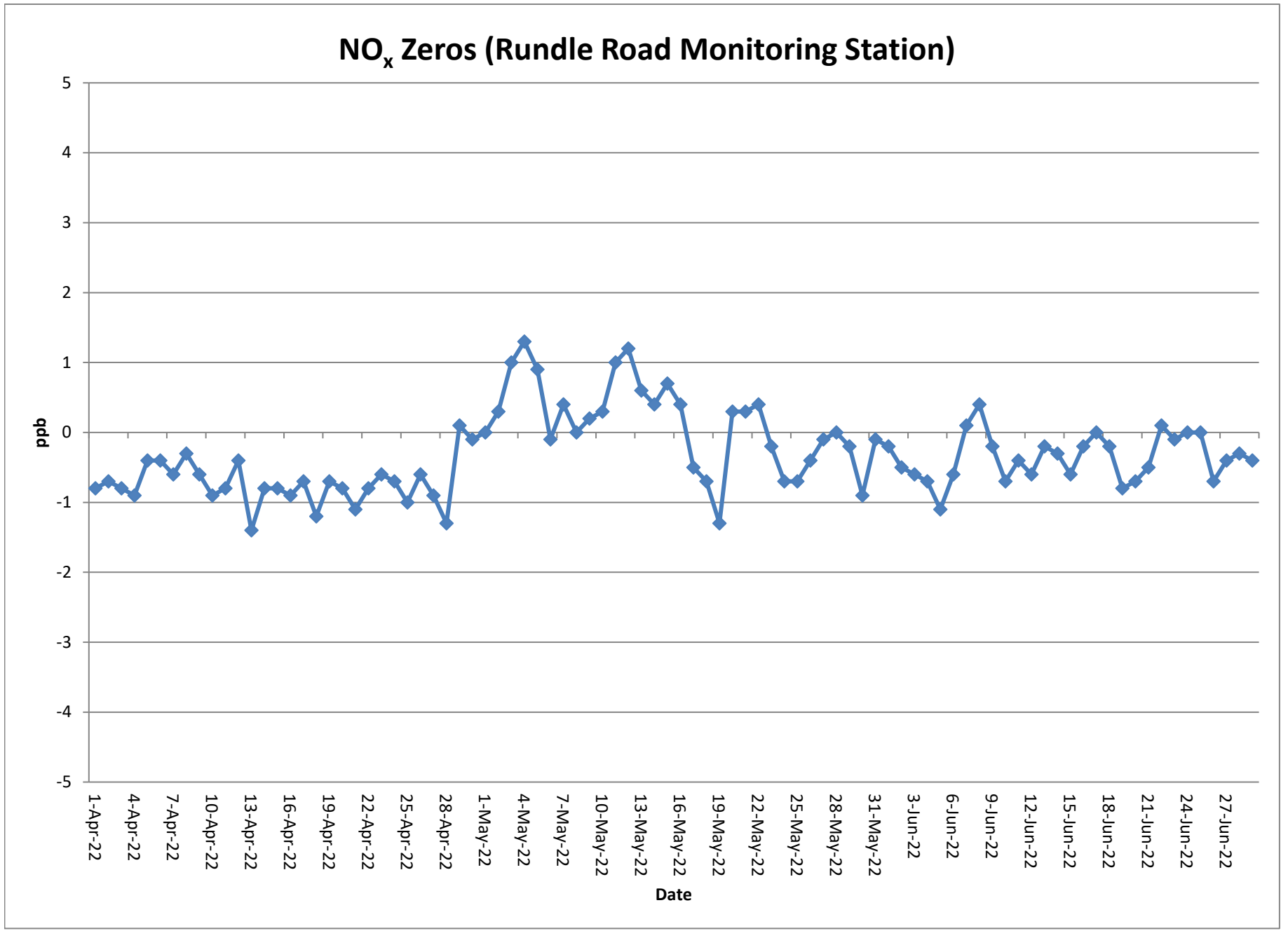
24-Jun-22
27-Jun-22
Date


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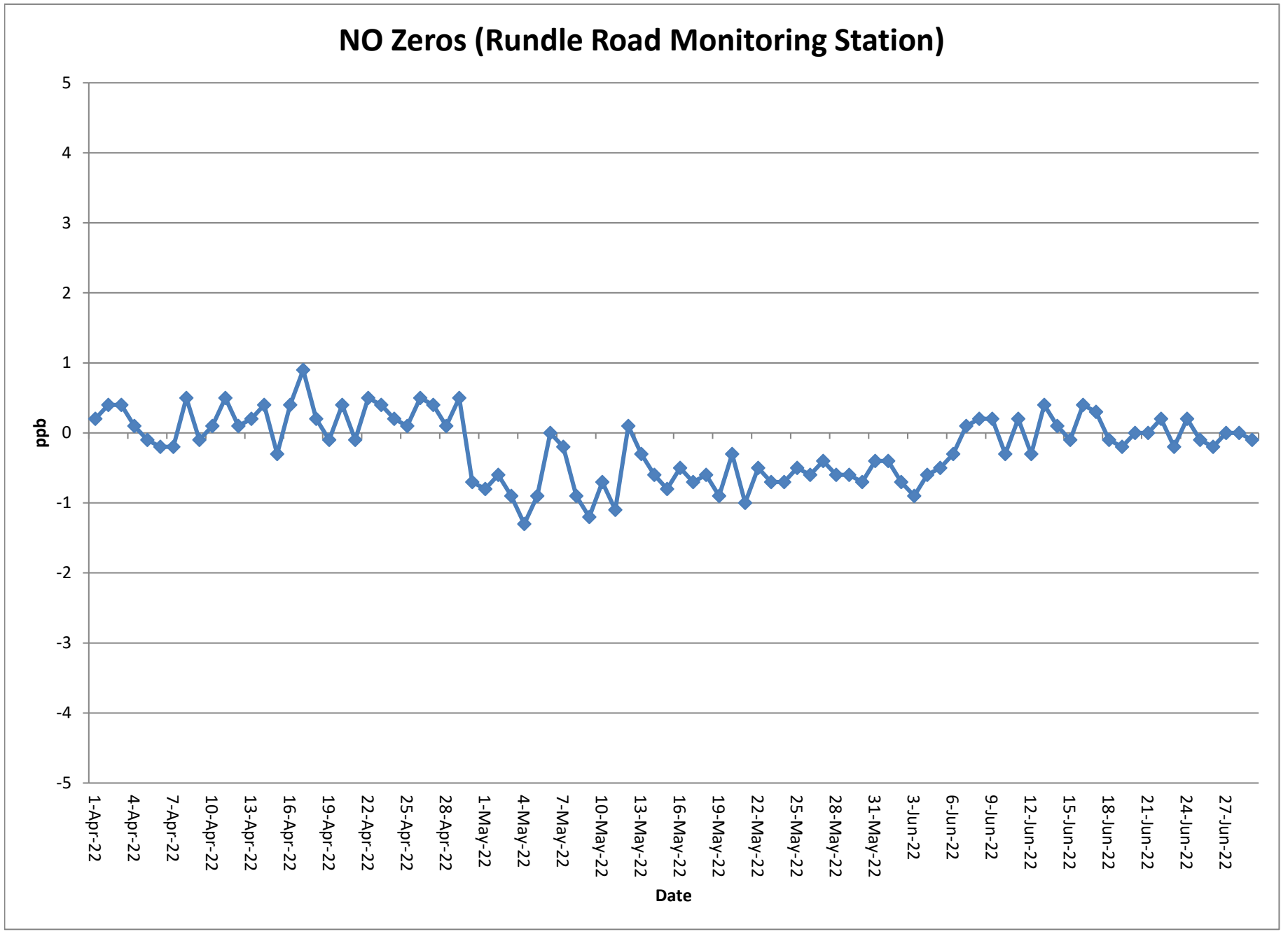
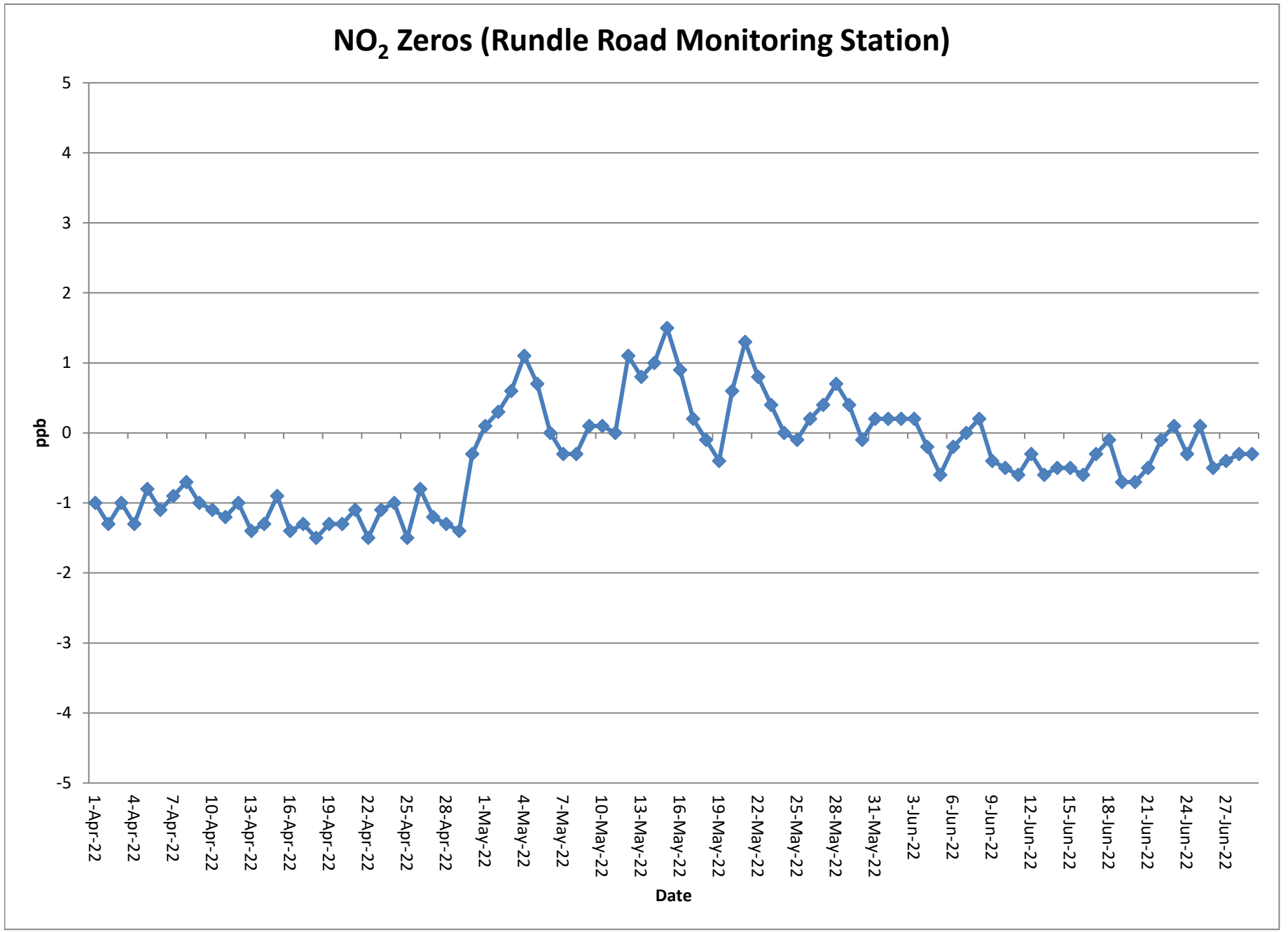
15-Jun-22
18-Jun-22
21-Jun-22
24-Jun-22
27-Jun-22
Date


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


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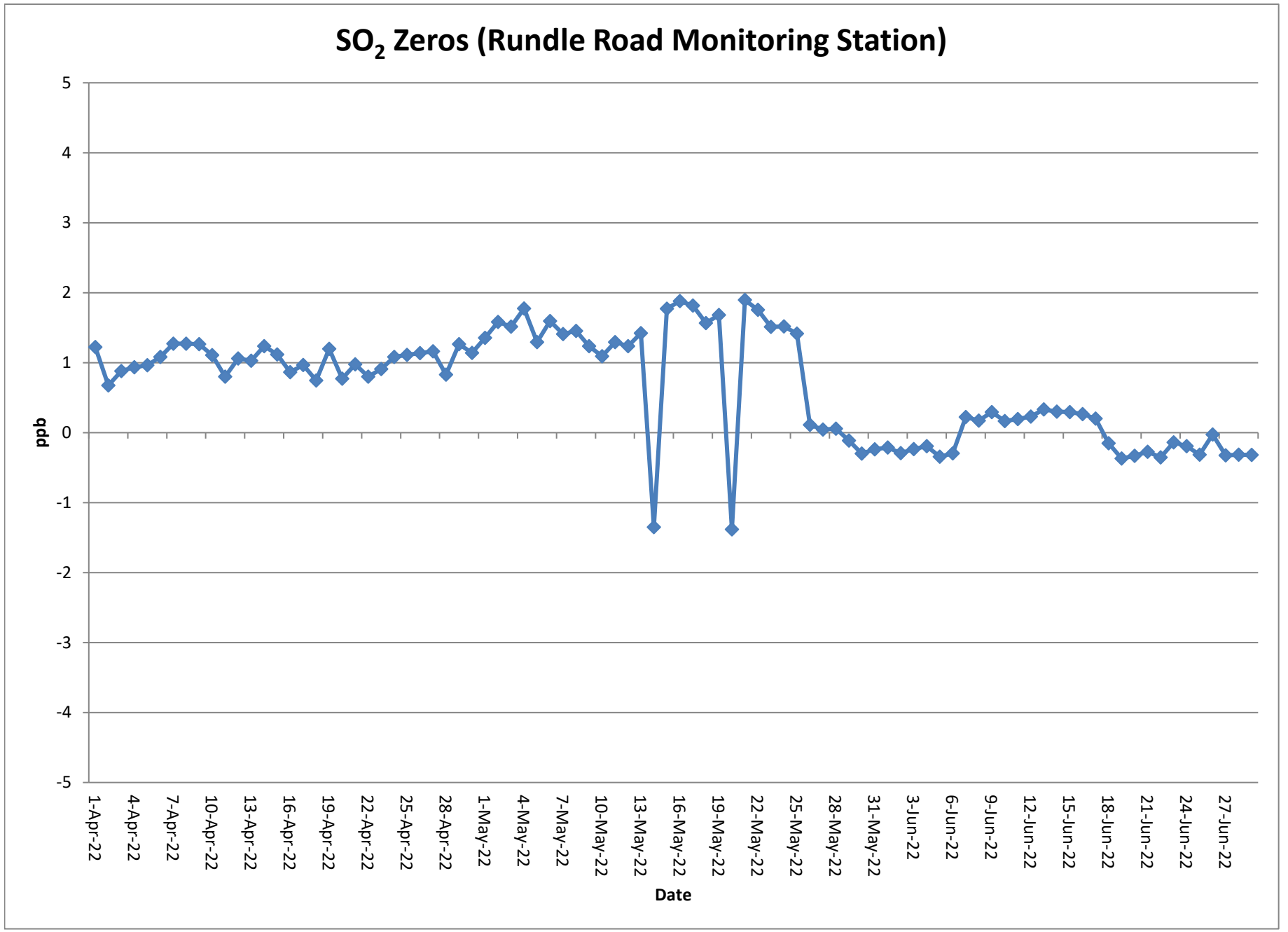
18-Jun-22
21-Jun-22
24-Jun-22
27-Jun-22
Date


SO2 Zeros (Rundle Road Monitoring Station)
ppb
5
4
3
2
1
0
-1
-2
-3
-4
-5
1-Apr-22
4-Apr-22
7-Apr-22
10-Apr-22
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16-Apr-22
19-Apr-22
22-Apr-22
25-Apr-22
28-Apr-22
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4-May-22
7-May-22
10-May-22
13-May-22
16-May-22
19-May-22
22-May-22
25-May-22
28-May-22
31-May-22
3-Jun-22
6-Jun-22
9-Jun-22
12-Jun-22
15-Jun-22
18-Jun-22
21-Jun-22
24-Jun-22
27-Jun-22
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, 2022		End Date: June 30, 2022			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	29/04/2022	SRS	Deleted Hours	29/04/2022	13:00	29/04/2022	15:00	2	Monthly Calibration
2	13/05/2022	SRS	Deleted Hours	13/05/2022	17:00	13/05/2022	18:00	1	Monthly Calibration
3	06/06/2022	MPA	Zero correction	01/05/2022	00:00	01/06/2022	00:00	-	Correcting values <0 to 0
4	06/06/2022	SRS	Deleted Hours	06/06/2022	12:00	06/06/2022	14:00	2	Monthly Calibration
5	17/06/2022	SRS	Deleted Hours	17/06/2022	09:00	17/06/2022	11:00	2	MECP Audit
6	07/11/2022	SRS	Zero correction	01/06/2022	00:00	01/07/2022	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, 2022		End Date: June 30, 2022			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	28/04/2022	SRS	Deleted Hours	28/04/2022	13:00	28/04/2022	15:00	2	Monthly Calibration
2	12/05/2022	MPA	Zero correction	01/04/2022	00:00	01/05/2022	00:00	-	Correcting values <0 to 0
3	13/05/2022	SRS	Deleted Hours	13/05/2022	12:00	13/05/2022	14:00	2	Monthly Calibration
4	06/06/2022	MPA	Zero correction	01/05/2022	00:00	01/06/2022	00:00	-	Correcting values <0 to 0
5	06/06/2022	SRS	Deleted Hours	06/06/2022	17:00	06/06/2022	18:00	1	Monthly Calibration
6	17/06/2022	SRS	Deleted Hours	17/06/2022	11:00	17/06/2022	12:00	1	MECP Audit
7	07/11/2022	SRS	Zero correction	01/06/2022	00:00	01/07/2022	00:00	-	Correcting values <0 to 0

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, 2022		End Date: June 30, 2022		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	29/04/2022	SRS	Deleted Hours	29/04/2022	10:00	29/04/2022	14:00	4	Monthly Calibration
2	12/05/2022	MPA	Zero correction	01/04/2022	00:00	01/05/2022	00:00	-	Correcting values <0 to 0
3	13/05/2022	SRS	Deleted Hours	13/05/2022	14:00	13/05/2022	16:00	2	Monthly Calibration
4	06/06/2022	MPA	Zero correction	01/05/2022	00:00	01/06/2022	00:00	-	Correcting values <0 to 0
5	06/06/2022	SRS	Deleted Hours	06/06/2022	09:00	06/06/2022	12:00	3	Monthly Calibration
6	17/06/2022	SRS	Deleted Hours	17/06/2022	09:00	17/06/2022	11:00	2	MECP Audit
7	07/11/2022	SRS	Deleted Hours	25/06/2022	04:00	25/06/2022	07:00	3	Invalid Data - NO < -2
8	07/11/2022	SRS	Zero correction	01/06/2022	00:00	01/07/2022	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, 2022		End Date: June 30, 2022			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	28/04/2022	SRS	Deleted Hours	28/04/2022	10:00	28/04/2022	14:00	4	Monthly Calibration
2	12/05/2022	MPA	Zero correction	01/04/2022	00:00	01/05/2022	00:00	-	Correcting values <0 to 0
3	13/05/2022	MPA	Deleted Hours	13/05/2022	10:00	13/05/2022	12:00	2	Monthly Calibration
4	07/06/2022	MPA	Zero correction	01/05/2022	00:00	01/06/2022	00:00	-	Correcting values <0 to 0
5	06/06/2022	SRS	Deleted Hours	06/06/2022	14:00	06/06/2022	17:00	3	Monthly Calibration
6	17/06/2022	SRS	Deleted Hours	17/06/2022	11:00	17/06/2022	13:00	2	MECP Audit
7	07/11/2022	SRS	Zero correction	01/06/2022	00:00	01/07/2022	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, 2022		End Date: June 30, 2022			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	29/04/2022	SRS	Deleted Hours	29/04/2022	13:00	29/04/2022	15:00	2	Monthly Calibration
2	12/05/2022	MPA	Zero correction	01/04/2022	00:00	01/05/2022	00:00	-	Correcting values <0 to 0
3	13/05/2022	SRS	Deleted Hours	13/05/2022	15:00	13/05/2022	17:00	2	Monthly Calibration
4	06/06/2022	MPA	Zero correction	01/05/2022	00:00	01/06/2022	00:00	-	Correcting values <0 to 0
5	06/06/2022	SRS	Deleted Hours	06/06/2022	11:00	06/06/2022	14:00	3	Monthly Calibration
6	17/06/2022	SRS	Deleted Hours	17/06/2022	09:00	17/06/2022	11:00	2	MECP Audit
7	07/11/2022	SRS	Zero correction	01/06/2022	00:00	01/07/2022	00:00	-	Correcting values <0 to 0

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, 2022		End Date: June 30, 2022			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	28/04/2022	SRS	Deleted Hours	28/04/2022	14:00	28/04/2022	16:00	2	Monthly Calibration
2	12/05/2022	MPA	Zero correction	01/04/2022	00:00	01/05/2022	00:00	-	Correcting values <0 to 0
3	13/05/2022	SRS	Deleted Hours	13/05/2022	11:00	13/05/2022	13:00	2	Monthly Calibration
4	07/06/2022	MPA	Deleted Hours	13/05/2022	22:00	14/05/2022	03:00	5	Invalid - Sample Pressure Board Malfunction
5	07/06/2022	MPA	Deleted Hours	17/05/2022	06:00	17/05/2022	08:00	2	Invalid - Sample Pressure Board Malfunction
6	07/06/2022	MPA	Deleted Hours	20/05/2022	00:00	20/05/2022	09:00	9	Invalid - Sample Pressure Board Malfunction
7	07/06/2022	MPA	Deleted Hours	20/05/2022	18:00	20/05/2022	20:00	2	Invalid - Sample Pressure Board Malfunction
8	25/05/2022	SRS	Deleted Hours	25/05/2022	11:00	25/05/2022	16:00	5	Replacement Analyzer Installed
9	07/06/2022	MPA	Zero correction	01/05/2022	00:00	01/06/2022	00:00	-	Correcting values <0 to 0
10	06/06/2022	SRS	Deleted Hours	06/06/2022	16:00	06/06/2022	19:00	3	Monthly Calibration
11	17/06/2022	SRS	Deleted Hours	17/06/2022	11:00	17/06/2022	15:00	4	MECP Audit
12	07/11/2022	SRS	Zero correction	01/06/2022	00:00	01/07/2022	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, 2022		End Date: June 30, 2022			All testing done in EST		
Edit #	**Edit date (dd/mm/yyyy)**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Duration**	**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	**Deleted Hours**	
-	-	-	-	-	-	-	-	-	

Table D8: 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, 2022		End Date: June 30, 2022			All testing done in EST		
Edit #	**Edit date (dd/mm/yyyy)**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Duration**	**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	**Deleted Hours**	
-	-	-	-	-	-	-	-	-	

Table 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, 2022	End Date: June 30, 2022				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	11/07/2022	SRS	Deleted Hours	05/05/2022	00:00	06/05/2022	00:00	24	TSP Hivol - Malfunction
2	11/07/2022	SRS	Deleted Hours	11/05/2022	00:00	12/05/2022	00:00	24	TSP Hivol - Malfunction
3	11/07/2022	SRS	Deleted Hours	22/06/2022	00:00	23/06/2022	00:00	24	TSP Hivol - Malfunction
4	11/07/2022	SRS	Deleted Hours	28/06/2022	00:00	29/06/2022	00:00	24	TSP Hivol - Malfunction

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, 2022		End Date: June 30, 2022			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**	
-	-	-	-	-	-	-	-	-	-

APPENDIX E

Table E1. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on April 11, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
04/11/2022	03:50	2.2	2.1	
04/11/2022	03:55	1.7	1.9	
04/11/2022	04:00	1.4	1.5	
04/11/2022	04:05	7.6	4.5	
04/11/2022	04:10	5.9	6.8	
04/11/2022	04:15	57.0	31.4	
04/11/2022	04:20	160.1	**108.6**	1
04/11/2022	04:25	11.6	85.9	
04/11/2022	04:30	7.2	9.4	
04/11/2022	04:35	4.6	5.9	
04/11/2022	04:40	3.5	4.1	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E2. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on April 12, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
04/12/2022	18:35	0.5	0.5	
04/12/2022	18:40	0.4	0.4	
04/12/2022	18:45	0.4	0.4	
04/12/2022	18:50	0.5	0.5	
04/12/2022	18:55	0.7	0.6	
04/12/2022	19:00	1.4	1.1	
04/12/2022	19:05	201.7	101.6	2
04/12/2022	19:10	94.0	**147.8**	
04/12/2022	19:15	264.2	**179.1**	3
04/12/2022	19:20	88.6	176.4	
04/12/2022	19:25	66.2	77.4	4
04/12/2022	19:30	129.1	**97.6**	
04/12/2022	19:35	100.9	**115**	5
04/12/2022	19:40	55.4	78.1	
04/12/2022	19:45	23.9	39.6	
04/12/2022	19:50	48.8	36.3	
04/12/2022	19:55	16.5	32.6	
04/12/2022	20:00	5.7	11.1	
04/12/2022	20:05	10.2	7.9	
04/12/2022	20:10	2.5	6.4	
04/12/2022	20:15	19.0	10.8	
04/12/2022	20:20	39.0	29.0	
04/12/2022	20:25	111.8	75.4	6
04/12/2022	20:30	148.3	**130.1**	
04/12/2022	20:35	89.1	**118.7**	7
04/12/2022	20:40	100.2	94.6	
04/12/2022	20:45	85.5	**92.9**	8
04/12/2022	20:50	37.3	61.4	
04/12/2022	20:55	32.8	35.0	
04/12/2022	21:00	159.4	96.1	9
04/12/2022	21:05	69.7	**114.6**	
04/12/2022	21:10	5.3	37.5	
04/12/2022	21:15	3.9	4.6	
04/12/2022	21:20	3.1	3.5	
04/12/2022	21:25	2.4	2.7	
04/12/2022	21:30	82.6	42.5	
04/12/2022	21:35	51.9	**67.3**	10
04/12/2022	21:40	4.3	28.1	
04/12/2022	21:45	4.1	4.2	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E3. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on April 13, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
04/13/2022	08:05	4.6	6.1	
04/13/2022	08:10	4.8	4.7	
04/13/2022	08:15	5.7	5.3	
04/13/2022	08:20	24.7	15.2	
04/13/2022	08:25	51.7	38.2	
04/13/2022	08:30	60.0	55.8	
04/13/2022	08:35	80.2	70.1	11
04/13/2022	08:40	85.6	**82.9**	
04/13/2022	08:45	88.7	87.2	12
04/13/2022	08:50	90.5	**89.6**	
04/13/2022	08:55	62.6	**76.5**	13
04/13/2022	09:00	41.6	52.1	
04/13/2022	09:05	36.8	39.2	
04/13/2022	09:10	21.7	29.2	
04/13/2022	09:15	23.0	22.4	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E4. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on April 23, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
04/23/2022	13:25	1.9	1.9	
04/23/2022	13:30	27.7	14.8	
04/23/2022	13:35	33.1	30.4	
04/23/2022	13:40	29.3	31.2	
04/23/2022	13:45	28.9	29.1	
04/23/2022	13:50	86.1	57.5	
04/23/2022	13:55	85.1	85.6	14
04/23/2022	14:00	80.3	**82.7**	
04/23/2022	14:05	70.9	75.6	15
04/23/2022	14:10	80.4	**75.7**	
04/23/2022	14:15	59.1	**69.8**	16
04/23/2022	14:20	45.9	52.5	
04/23/2022	14:25	54.7	50.3	
04/23/2022	14:30	14.5	34.6	
04/23/2022	14:35	16.9	15.7	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
	Range of running average values during exceedance period
#	Exceedance number

Table E5. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on April 23, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
04/23/2022	21:50	12.5	14.6	
04/23/2022	21:55	15.3	13.9	
04/23/2022	22:00	26.7	21.0	
04/23/2022	22:05	29.9	28.3	
04/23/2022	22:10	52.7	41.3	
04/23/2022	22:15	73.5	63.1	
04/23/2022	22:20	77.1	**75.3**	17
04/23/2022	22:25	48.4	62.8	
04/23/2022	22:30	50.4	49.4	
04/23/2022	22:35	41.8	46.1	
04/23/2022	22:40	41.7	41.8	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
	Range of running average values during exceedance period
#	Exceedance number

Table E6. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on May 5, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
5/5/2022	4:50	2.3	2.7	
5/5/2022	4:55	49.3	25.8	
5/5/2022	5:00	54.4	51.8	
5/5/2022	5:05	53.8	54.1	
5/5/2022	5:10	81.6	67.7	18
5/5/2022	5:15	91.9	**86.7**	
5/5/2022	5:20	24.5	58.2	
5/5/2022	5:25	83.5	54.0	
5/5/2022	5:30	50.7	**67.1**	19
5/5/2022	5:35	66.9	58.8	
5/5/2022	5:40	11.3	39.1	
5/5/2022	5:45	7.4	9.4	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E7. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on May 5 and 6, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
5/5/2022	22:50	2.9	5.0	
5/5/2022	22:55	2.2	2.6	
5/5/2022	23:00	1.9	2.1	
5/5/2022	23:05	335.3	168.6	20
5/5/2022	23:10	296.9	**316.1**	
5/5/2022	23:15	103.4	**200.2**	21
5/5/2022	23:20	94.2	98.8	
5/5/2022	23:25	47.3	**70.7**	22
5/5/2022	23:30	44.9	46.1	
5/5/2022	23:35	46.3	45.6	
5/5/2022	23:40	19.4	32.8	
5/5/2022	23:45	31.2	25.3	
5/5/2022	23:50	56.4	43.8	
5/5/2022	23:55	24.1	40.2	
5/6/2022	0:00	40.9	32.5	
5/6/2022	0:05	46.6	43.8	
5/6/2022	0:10	23.8	35.2	
5/6/2022	0:15	101.9	62.8	
5/6/2022	0:20	84.8	**93.3**	23
5/6/2022	0:25	31.6	58.2	
5/6/2022	0:30	7.6	19.6	
5/6/2022	0:35	6.0	6.8	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E8. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on May 6, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
5/6/2022	2:20	53.8	59.1	
5/6/2022	2:25	66.5	60.2	
5/6/2022	2:30	63.3	64.9	
5/6/2022	2:35	77.6	70.4	24
5/6/2022	2:40	71.9	**74.8**	
5/6/2022	2:45	59.1	65.5	
5/6/2022	2:50	95.9	**77.5**	25
5/6/2022	2:55	44.5	70.2	
5/6/2022	3:00	22.6	33.6	
5/6/2022	3:05	23.1	22.9	
5/6/2022	3:10	9.0	16.1	
5/6/2022	3:15	5.7	7.4	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
	Range of running average values during exceedance period
#	Exceedance number

Table E9. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on May 7, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
5/7/2022	19:05	1.1	1.2	
5/7/2022	19:10	1.2	1.2	
5/7/2022	19:15	59.7	30.4	
5/7/2022	19:20	122.1	90.9	26
5/7/2022	19:25	67.5	**94.8**	
5/7/2022	19:30	33.9	50.7	
5/7/2022	19:35	2.8	18.3	
5/7/2022	19:40	2.1	2.4	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E10. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on May 20, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
5/20/2022	3:00	29.6	26.4	
5/20/2022	3:05	25.9	27.7	
5/20/2022	3:10	39.5	32.7	
5/20/2022	3:15	58.8	49.1	
5/20/2022	3:20	86.1	72.5	27
5/20/2022	3:25	60.0	**73.1**	
5/20/2022	3:30	34.0	47.0	
5/20/2022	3:35	14.0	24.0	
5/20/2022	3:40	7.5	10.7	
5/20/2022	3:45	5.8	6.6	
5/20/2022	3:50	4.7	5.3	
5/20/2022	3:55	5.3	5.0	
5/20/2022	4:00	5.8	5.5	
5/20/2022	4:05	7.0	6.4	
5/20/2022	4:10	56.6	31.8	
5/20/2022	4:15	73.6	65.1	
5/20/2022	4:20	98.3	86.0	28
5/20/2022	4:25	112.6	**105.5**	
5/20/2022	4:30	83.1	**97.9**	29
5/20/2022	4:35	69.6	76.3	
5/20/2022	4:40	87.0	78.3	30
5/20/2022	4:45	81.9	**84.5**	
5/20/2022	4:50	64.5	**73.2**	31
5/20/2022	4:55	53.2	58.9	
5/20/2022	5:00	61.9	57.6	
5/20/2022	5:05	73.9	**67.9**	32
5/20/2022	5:10	39.7	56.8	
5/20/2022	5:15	42.9	41.3	
5/20/2022	5:20	33.9	38.4	
5/20/2022	5:25	39.7	36.8	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E11. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on May 20, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
5/20/2022	6:15	12.7	11.8	
5/20/2022	6:20	31.3	22.0	
5/20/2022	6:25	91.0	61.2	
5/20/2022	6:30	144.8	117.9	33
5/20/2022	6:35	108.2	**126.5**	
5/20/2022	6:40	62.1	**85.2**	34
5/20/2022	6:45	72.7	67.4	
5/20/2022	6:50	50.5	61.6	
5/20/2022	6:55	29.9	40.2	
5/20/2022	7:00	60.2	45.0	
5/20/2022	7:05	74.5	**67.4**	35
5/20/2022	7:10	35.1	54.8	
5/20/2022	7:15	15.6	25.3	
5/20/2022	7:20	12.5	14.1	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E12. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on May 25, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
5/25/2022	17:55	35.5	34.0	
5/25/2022	18:00	44.8	40.2	
5/25/2022	18:05	85.2	65.0	
5/25/2022	18:10	73.5	**79.4**	36
5/25/2022	18:15	59.1	66.3	
5/25/2022	18:20	49.2	54.2	
5/25/2022	18:25	55.6	52.4	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
	Range of running average values during exceedance period
#	Exceedance number

Table E13. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on June 15, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
6/15/2022	21:40	32.5	32.6	
6/15/2022	21:45	39.8	36.1	
6/15/2022	21:50	50.3	45.0	
6/15/2022	21:55	38.3	44.3	
6/15/2022	22:00	43.3	40.8	
6/15/2022	22:05	90.8	67.1	37
6/15/2022	22:10	97.8	**94.3**	
6/15/2022	22:15	83.0	**90.4**	38
6/15/2022	22:20	53.2	68.1	
6/15/2022	22:25	54.9	54.1	
6/15/2022	22:30	58.6	56.7	
6/15/2022	22:35	50.3	54.5	
6/15/2022	22:40	40.4	45.4	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E14. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on June 24, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
6/24/2022	4:15	9.2	8.5	
6/24/2022	4:20	7.3	8.3	
6/24/2022	4:25	98.8	53.0	
6/24/2022	4:30	401.7	**250.3**	39
6/24/2022	4:35	63.3	232.5	
6/24/2022	4:40	17.2	40.3	
6/24/2022	4:45	10.7	14.0	
6/24/2022	4:50	9.2	9.9	
6/24/2022	4:55	59.2	34.2	
6/24/2022	5:00	102.7	80.9	40
6/24/2022	5:05	211.2	**156.9**	
6/24/2022	5:10	92.9	**152.0**	41
6/24/2022	5:15	25.8	59.4	
6/24/2022	5:20	16.4	21.1	
6/24/2022	5:25	10.8	13.6	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E15. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on June 24, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
6/24/2022	20:55	1.3	1.5	
6/24/2022	21:00	21.3	11.3	
6/24/2022	21:05	40.2	30.8	
6/24/2022	21:10	86.3	63.3	
6/24/2022	21:15	53.3	**69.8**	42
6/24/2022	21:20	13.9	33.6	
6/24/2022	21:25	37.0	25.4	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
	Range of running average values during exceedance period
#	Exceedance number

Table E16. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on June 25, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
6/25/2022	0:45	2.3	2.5	
6/25/2022	0:50	2.1	2.2	
6/25/2022	0:55	2.0	2.1	
6/25/2022	1:00	37.9	20.0	
6/25/2022	1:05	100.6	**69.3**	43
6/25/2022	1:10	21.6	61.1	
6/25/2022	1:15	12.2	16.9	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E17. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on June 29, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
6/29/2022	2:50	13.2	8.4	
6/29/2022	2:55	67.9	40.6	
6/29/2022	3:00	17.0	42.5	
6/29/2022	3:05	113.1	65.1	
6/29/2022	3:10	22.8	**68.0**	44
6/29/2022	3:15	12.4	17.6	
6/29/2022	3:20	20.7	16.6	
6/29/2022	3:25	12.0	16.3	
6/29/2022	3:30	7.9	9.9	
6/29/2022	3:35	6.6	7.2	
6/29/2022	3:40	96.8	51.7	
6/29/2022	3:45	43.5	**70.2**	45
6/29/2022	3:50	25.6	34.6	
6/29/2022	3:55	55.2	40.4	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E18. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on June 29, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
6/29/2022	5:00	10.3	16.6	
6/29/2022	5:05	79.0	44.6	
6/29/2022	5:10	59.8	**69.4**	46
6/29/2022	5:15	56.1	57.9	
6/29/2022	5:20	22.4	39.3	
6/29/2022	5:25	15.1	18.8	
6/29/2022	5:30	54.4	34.7	
6/29/2022	5:35	21.2	37.8	
6/29/2022	5:40	15.0	18.1	
6/29/2022	5:45	10.5	12.7	
6/29/2022	5:50	7.3	8.9	
6/29/2022	5:55	57.0	32.2	
6/29/2022	6:00	133.6	**95.3**	47
6/29/2022	6:05	31.8	82.7	
6/29/2022	6:10	19.3	25.5	
6/29/2022	6:15	12.8	16	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E19. SO_2 Courtice Monitoring Station 10-min Running Average Exceedance Periods on June 30, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
6/29/2022	23:55	10.5	6.8	
6/30/2022	0:00	122.8	66.7	
6/30/2022	0:05	36.8	**79.8**	48
6/30/2022	0:10	29.1	32.9	
6/30/2022	0:15	26.4	27.7	
6/30/2022	0:20	15.2	20.8	
6/30/2022	0:25	7.8	11.5	
6/30/2022	0:30	5.9	6.8	
6/30/2022	0:35	4.7	5.3	
6/30/2022	0:40	98.1	51.4	
6/30/2022	0:45	61.8	**80.0**	49
6/30/2022	0:50	23.8	42.8	
6/30/2022	0:55	11.8	17.8	
6/30/2022	1:00	7.6	9.7	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E20. SO_2 Rundle Road Monitoring Station 10-min Running Average Exceedance Periods on May 11, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
5/11/2022	10:15	1.5	1.1	
5/11/2022	10:20	25.8	13.7	
5/11/2022	10:25	72.1	49.0	
5/11/2022	10:30	63.5	**67.8**	1
5/11/2022	10:35	11.9	37.7	
5/11/2022	10:40	2.9	7.4	
5/11/2022	10:45	1.9	2.4	
5/11/2022	10:50	2.5	2.2	
5/11/2022	10:55	21.4	12.0	
5/11/2022	11:00	137.2	79.3	2
5/11/2022	11:05	116.7	**126.9**	
5/11/2022	11:10	119.5	118.1	3
5/11/2022	11:15	228.9	**174.2**	
5/11/2022	11:20	111.7	**170.3**	4
5/11/2022	11:25	11.1	61.4	
5/11/2022	11:30	29.7	20.4	
5/11/2022	11:35	90.6	60.1	
5/11/2022	11:40	139.1	114.9	5
5/11/2022	11:45	303.0	**221.0**	
5/11/2022	11:50	43.0	**173.0**	6
5/11/2022	11:55	7.5	25.2	
5/11/2022	12:00	5.2	6.4	
5/11/2022	12:05	6.5	5.9	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E21. SO_2 Rundle Road Monitoring Station 10-min Running Average Exceedance Periods on May 11, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
5/11/2022	10:15	1.5	6.7	
5/11/2022	10:20	25.8	12.4	
5/11/2022	10:25	72.1	14.8	
5/11/2022	10:30	63.5	29.4	
5/11/2022	10:35	11.9	73.5	7
5/11/2022	10:40	2.9	**93.5**	
5/11/2022	10:45	1.9	**68.5**	8
5/11/2022	10:50	2.5	38.3	
5/11/2022	10:55	21.4	24.5	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E22. SO_2 Rundle Road Monitoring Station 10-min Running Average Exceedance Periods on May 11, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
5/11/2022	10:15	1.5	0.4	
5/11/2022	10:20	25.8	2.3	
5/11/2022	10:25	72.1	28.4	
5/11/2022	10:30	63.5	99.7	9
5/11/2022	10:35	11.9	**107.7**	
5/11/2022	10:40	2.9	47.3	
5/11/2022	10:45	1.9	28.4	
5/11/2022	10:50	2.5	38.3	
5/11/2022	10:55	21.4	24.5	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E23. SO_2 Rundle Road Monitoring Station 10-min Running Average Exceedance Periods on May 12, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
5/12/2022	12:00	2.6	2.5	
5/12/2022	12:05	35.6	19.1	
5/12/2022	12:10	71.3	53.5	
5/12/2022	12:15	26.3	48.8	
5/12/2022	12:20	15.3	20.8	
5/12/2022	12:25	161.9	88.6	10
5/12/2022	12:30	94.7	**128.3**	
5/12/2022	12:35	27.9	61.3	
5/12/2022	12:40	60.9	44.4	
5/12/2022	12:45	78.6	69.7	11
5/12/2022	12:50	65.6	**72.1**	
5/12/2022	12:55	46.5	56.1	
5/12/2022	13:00	41.2	43.9	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E24. SO_2 Rundle Road Monitoring Station 10-min Running Average Exceedance Periods on May 24, 2022

Date	Time	SO_2 5-min Avg.	SO_2 10-min Running Avg.	
	EST	ppb	ppb	
5/24/2022	15:20	7.3	4.6	
5/24/2022	15:25	52.3	29.8	
5/24/2022	15:30	56.2	54.3	
5/24/2022	15:35	56.8	56.5	
5/24/2022	15:40	84.0	70.4	12
5/24/2022	15:45	176.1	**130.1**	
5/24/2022	15:50	157.3	**166.7**	13
5/24/2022	15:55	48.8	103.0	
5/24/2022	16:00	78.2	63.5	
5/24/2022	16:05	62.5	**70.4**	14
5/24/2022	16:10	62.6	62.6	
5/24/2022	16:15	67.5	65.1	
5/24/2022	16:20	75.3	71.4	15
5/24/2022	16:25	87.6	**81.5**	
5/24/2022	16:30	69.7	**78.7**	16
5/24/2022	16:35	34.8	52.2	
5/24/2022	16:40	23.5	29.1	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E25. SO_2 Courtice Monitoring Station 1-Hour Running Average Exceedance Periods on April 12, 2022

Date	Time	SO_2 5-min Avg.	SO_2 1-hr Running Avg.	
	EST	ppb	ppb	
04/12/2022	18:05	0.5	0.5	
04/12/2022	18:10	0.6	0.5	
04/12/2022	18:15	0.5	0.5	
04/12/2022	18:20	0.4	0.5	
04/12/2022	18:25	0.4	0.5	
04/12/2022	18:30	0.5	0.5	
04/12/2022	18:35	0.5	0.5	
04/12/2022	18:40	0.4	0.5	
04/12/2022	18:45	0.4	0.5	
04/12/2022	18:50	0.5	0.5	
04/12/2022	18:55	0.7	0.5	
04/12/2022	19:00	1.4	0.6	
04/12/2022	19:05	201.7	17.3	
04/12/2022	19:10	94.0	25.1	
04/12/2022	19:15	264.2	47.1	1
04/12/2022	19:20	88.6	54.4	
04/12/2022	19:25	66.2	59.9	
04/12/2022	19:30	129.1	70.6	
04/12/2022	19:35	100.9	79.0	
04/12/2022	19:40	55.4	83.6	
04/12/2022	19:45	23.9	85.5	
04/12/2022	19:50	48.8	89.6	
04/12/2022	19:55	16.5	90.9	
04/12/2022	20:00	5.7	**91.2**	
04/12/2022	20:05	10.2	75.3	
04/12/2022	20:10	2.5	67.7	
04/12/2022	20:15	19.0	47.2	2
04/12/2022	20:20	39.0	43.1	
04/12/2022	20:25	111.8	46.9	
04/12/2022	20:30	148.3	48.5	
04/12/2022	20:35	89.1	47.5	
04/12/2022	20:40	100.2	51.3	
04/12/2022	20:45	85.5	56.4	
04/12/2022	20:50	37.3	55.4	
04/12/2022	20:55	32.8	56.8	
04/12/2022	21:00	159.4	69.6	
04/12/2022	21:05	69.7	74.6	
04/12/2022	21:10	5.3	**74.8**	
04/12/2022	21:15	3.9	**73.5**	3
04/12/2022	21:20	3.1	70.5	
04/12/2022	21:25	2.4	61.4	
04/12/2022	21:30	82.6	55.9	
04/12/2022	21:35	51.9	52.8	
04/12/2022	21:40	4.3	44.9	
04/12/2022	21:45	4.1	38.1	
04/12/2022	21:50	12.6	36.0	
04/12/2022	21:55	38.2	36.5	
04/12/2022	22:00	41.4	26.6	
04/12/2022	22:05	34.9	23.7	
04/12/2022	22:10	5.2	23.7	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E26. SO_2 Courtice Monitoring Station 1-Hour Running Average Exceedance Periods on April 13, 2022

Date	Time	SO_2 5-min Avg.	SO_2 1-hr Running Avg.	
	EST	ppb	ppb	
04/13/2022	07:30	34.6	27.1	
04/13/2022	07:35	52.1	30.1	
04/13/2022	07:40	52.0	30.6	
04/13/2022	07:45	36.2	30.0	
04/13/2022	07:50	61.7	31.6	
04/13/2022	07:55	23.2	32.6	
04/13/2022	08:00	7.7	32.8	
04/13/2022	08:05	4.6	32.7	
04/13/2022	08:10	4.8	30.5	
04/13/2022	08:15	5.7	28.1	
04/13/2022	08:20	24.7	27.6	
04/13/2022	08:25	51.7	29.9	
04/13/2022	08:30	60.0	32.0	
04/13/2022	08:35	80.2	34.4	
04/13/2022	08:40	85.6	37.2	
04/13/2022	08:45	88.7	41.6	
04/13/2022	08:50	90.5	43.9	
04/13/2022	08:55	62.6	47.2	
04/13/2022	09:00	41.6	50.1	
04/13/2022	09:05	36.8	52.7	
04/13/2022	09:10	21.7	54.1	
04/13/2022	09:15	23.0	55.6	
04/13/2022	09:20	40.0	**56.9**	
04/13/2022	09:25	38.5	55.8	
04/13/2022	09:30	36.5	53.8	
04/13/2022	09:35	64.9	52.5	
04/13/2022	09:40	63.0	50.6	4
04/13/2022	09:45	61.9	**48.4**	
04/13/2022	09:50	21.4	42.7	
04/13/2022	09:55	10.8	38.3	
04/13/2022	10:00	6.6	35.4	
04/13/2022	10:05	6.7	32.9	
04/13/2022	10:10	10.9	32.0	
04/13/2022	10:15	9.6	30.9	
04/13/2022	10:20	20.6	29.3	
04/13/2022	10:25	37.6	29.2	
04/13/2022	10:30	45.5	30.0	
04/13/2022	10:35	30.2	27.1	
04/13/2022	10:40	78.7	28.4	5
04/13/2022	10:45	54.9	27.8	
04/13/2022	10:50	17.9	27.5	
04/13/2022	10:55	9.2	27.4	
04/13/2022	11:00	5.9	27.3	
04/13/2022	11:05	4.5	27.1	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E27. SO_2 Courtice Monitoring Station 1-Hour Running Average Exceedance Periods on April 23, 2022

Date	Time	SO_2 5-min Avg.	SO_2 1-hr Running Avg.
	EST	ppb	ppb
04/23/2022	07:25	8.7	25.5
04/23/2022	07:30	8.7	25.1
04/23/2022	07:35	14.4	24.4
04/23/2022	07:40	46.7	26.4
04/23/2022	07:45	45.2	28.0
04/23/2022	07:50	33.7	28.7
04/23/2022	07:55	51.0	30.7
04/23/2022	08:00	62.5	33.0
04/23/2022	08:05	60.9	34.3
04/23/2022	08:10	47.3	34.9
04/23/2022	08:15	43.3	36.3
04/23/2022	08:20	44.6	38.9
04/23/2022	08:25	66.7	43.8
04/23/2022	08:30	55.4	47.6
04/23/2022	08:35	57.4	51.2
04/23/2022	08:40	46.6	51.2
04/23/2022	08:45	44.1	51.1
04/23/2022	08:50	36.6	**51.4**
04/23/2022	08:55	45.6	50.9
04/23/2022	09:00	51.2	50.0
04/23/2022	09:05	21.0	46.6
04/23/2022	09:10	19.8	44.4
04/23/2022	09:15	11.3	41.7
04/23/2022	09:20	5.8	38.4
04/23/2022	09:25	4.2	33.2
04/23/2022	09:30	3.7	28.9

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D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E28. SO_2 Courtice Monitoring Station 1-Hour Running Average Exceedance Periods on April 23, 2022

Date	Time	SO_2 5-min Avg.	SO_2 1-hr Running Avg.
	EST	ppb	ppb
04/23/2022	13:10	1.9	6.7
04/23/2022	13:15	1.9	4.3
04/23/2022	13:20	1.8	3.7
04/23/2022	13:25	1.9	3.5
04/23/2022	13:30	27.7	5.5
04/23/2022	13:35	33.1	8.1
04/23/2022	13:40	29.3	9.9
04/23/2022	13:45	28.9	11.3
04/23/2022	13:50	86.1	18.2
04/23/2022	13:55	85.1	25.1
04/23/2022	14:00	80.3	31.7
04/23/2022	14:05	70.9	37.4
04/23/2022	14:10	80.4	44.0
04/23/2022	14:15	59.1	48.7
04/23/2022	14:20	45.9	52.4
04/23/2022	14:25	54.7	**56.8**
04/23/2022	14:30	14.5	55.7
04/23/2022	14:35	16.9	54.3
04/23/2022	14:40	16.8	53.3
04/23/2022	14:45	40.6	54.3
04/23/2022	14:50	15.0	48.3
04/23/2022	14:55	9.6	42.1
04/23/2022	15:00	5.7	35.8
04/23/2022	15:05	3.4	30.2
04/23/2022	15:10	2.9	23.8

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D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
	Range of running average values during exceedance period
#	Exceedance number

Table E29. SO_2 Courtice Monitoring Station 1-Hour Running Average Exceedance Periods on April 23, 2022

Date	Time	SO_2 5-min Avg.	SO_2 1-hr Running Avg.	
	EST	ppb	ppb	
04/23/2022	17:35	4.2	5.7	
04/23/2022	17:40	16.5	5.7	
04/23/2022	17:45	31.0	6.6	
04/23/2022	17:50	32.9	8.9	
04/23/2022	17:55	20.7	10.4	
04/23/2022	18:00	55.3	14.8	
04/23/2022	18:05	28.4	17.0	
04/23/2022	18:10	34.5	19.6	
04/23/2022	18:15	43.4	22.8	
04/23/2022	18:20	45.6	26.4	
04/23/2022	18:25	50.3	30.4	
04/23/2022	18:30	56.9	35.0	
04/23/2022	18:35	52.7	39.0	
04/23/2022	18:40	44.0	41.3	
04/23/2022	18:45	37.9	**41.9**	
04/23/2022	18:50	18.9	40.7	
04/23/2022	18:55	19.2	40.6	
04/23/2022	19:00	17.5	37.5	
04/23/2022	19:05	18.6	36.6	
04/23/2022	19:10	25.8	35.9	8
04/23/2022	19:15	41.5	35.8	
04/23/2022	19:20	42.2	35.5	
04/23/2022	19:25	23.0	33.2	
04/23/2022	19:30	19.2	30.0	
04/23/2022	19:35	8.6	26.4	
04/23/2022	19:40	9.2	23.5	
04/23/2022	19:45	15.9	21.6	
04/23/2022	19:50	15.9	21.4	
04/23/2022	19:55	11.4	20.7	
04/23/2022	20:00	15.5	20.6	
04/23/2022	20:05	15.2	20.3	
04/23/2022	20:10	30.6	20.7	
04/23/2022	20:15	39.6	20.5	
04/23/2022	20:20	31.0	19.6	
04/23/2022	20:25	40.2	21.0	
04/23/2022	20:30	40.7	22.8	
04/23/2022	20:35	27.7	24.4	
04/23/2022	20:40	35.4	26.6	
04/23/2022	20:45	41.2	28.7	
04/23/2022	20:50	39.2	30.6	
04/23/2022	20:55	37.2	32.8	
04/23/2022	21:00	36.5	34.6	
04/23/2022	21:05	24.9	35.4	
04/23/2022	21:10	16.6	34.2	
04/23/2022	21:15	13.3	32.0	
04/23/2022	21:20	11.3	30.4	
04/23/2022	21:25	10.3	27.9	
04/23/2022	21:30	8.4	25.2	
04/23/2022	21:35	11.4	23.8	
04/23/2022	21:40	18.4	22.4	
04/23/2022	21:45	16.6	20.3	
04/23/2022	21:50	12.5	18.1	
04/23/2022	21:55	15.3	16.3	
04/23/2022	22:00	26.7	15.5	
04/23/2022	22:05	29.9	15.9	
04/23/2022	22:10	52.7	18.9	
04/23/2022	22:15	73.5	23.9	
04/23/2022	22:20	77.1	29.4	
04/23/2022	22:25	48.4	32.6	
04/23/2022	22:30	50.4	36.1	
04/23/2022	22:35	41.8	38.6	
04/23/2022	22:40	41.7	40.5	
04/23/2022	22:45	43.3	42.8	
04/23/2022	22:50	37.8	44.9	
04/23/2022	22:55	32.9	46.3	
04/23/2022	23:00	34.9	47.0	
04/23/2022	23:05	38.2	**47.7**	9
04/23/2022	23:10	31.6	46.0	
04/23/2022	23:15	39.4	43.1	
04/23/2022	23:20	41.8	40.2	
04/23/2022	23:25	45.6	39.9	
04/23/2022	23:30	39.9	39.1	
04/23/2022	23:35	33.7	38.4	
04/23/2022	23:40	29.5	37.4	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E30. SO_2 Courtice Monitoring Station 1-Hour Running Average Exceedance Periods on May 5, 2022

Date	Time	SO_2 5-min Avg.	SO_2 1-hr Running Avg.
	EST	ppb	ppb
05/05/2022	04:30	2.5	15.9
05/05/2022	04:35	11.3	14.5
05/05/2022	04:40	7.1	12.8
05/05/2022	04:45	3.1	8.2
05/05/2022	04:50	2.3	5.1
05/05/2022	04:55	49.3	8.6
05/05/2022	05:00	54.4	12.6
05/05/2022	05:05	53.8	16.5
05/05/2022	05:10	81.6	23.0
05/05/2022	05:15	91.9	30.4
05/05/2022	05:20	24.5	32.1
05/05/2022	05:25	83.5	38.8
05/05/2022	05:30	50.7	42.8
05/05/2022	05:35	66.9	47.4
05/05/2022	05:40	11.3	47.8
05/05/2022	05:45	7.4	48.1
05/05/2022	05:50	5.9	**48.4**
05/05/2022	05:55	7.8	45.0
05/05/2022	06:00	10.9	41.4
05/05/2022	06:05	5.6	37.3
05/05/2022	06:10	4.9	30.9
05/05/2022	06:15	54.0	27.8
05/05/2022	06:20	56.9	30.5
05/05/2022	06:25	18.7	25.1

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D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
	Range of running average values during exceedance period
#	Exceedance number

Table E31. SO_2 Courtice Monitoring Station 1-Hour Running Average Exceedance Periods on May 5 and May 6, 2022

Date	Time	SO_2 5-min Avg.	SO_2 1-hr Running Avg.
	EST	ppb	ppb
05/05/2022	22:00	3.0	2.9
05/05/2022	22:05	3.2	3.0
05/05/2022	22:10	5.2	3.2
05/05/2022	22:15	4.1	3.4
05/05/2022	22:20	2.5	3.3
05/05/2022	22:25	2.0	3.3
05/05/2022	22:30	1.9	3.2
05/05/2022	22:35	4.6	3.2
05/05/2022	22:40	9.1	3.6
05/05/2022	22:45	7.0	3.9
05/05/2022	22:50	2.9	4.0
05/05/2022	22:55	2.2	4.0
05/05/2022	23:00	1.9	3.9
05/05/2022	23:05	335.3	31.6
05/05/2022	23:10	296.9	55.9
05/05/2022	23:15	103.4	64.2
05/05/2022	23:20	94.2	71.8
05/05/2022	23:25	47.3	75.6
05/05/2022	23:30	44.9	79.2
05/05/2022	23:35	46.3	82.6
05/05/2022	23:40	19.4	83.5
05/05/2022	23:45	31.2	85.5
05/05/2022	23:50	56.4	90.0
05/05/2022	23:55	24.1	91.8
05/06/2022	00:00	40.9	**95.0**
05/06/2022	00:05	46.6	71.0
05/06/2022	00:10	23.8	48.2
05/06/2022	00:15	101.9	48.1
05/06/2022	00:20	84.8	47.3
05/06/2022	00:25	31.6	46.0
05/06/2022	00:30	7.6	42.9
05/06/2022	00:35	6.0	39.5
05/06/2022	00:40	4.7	38.3
05/06/2022	00:45	4.1	36.0
05/06/2022	00:50	16.3	32.7
05/06/2022	00:55	20.7	32.4
05/06/2022	01:00	6.6	29.5
05/06/2022	01:05	9.4	26.4

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D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E32. SO_2 Courtice Monitoring Station 1-Hour Running Average Exceedance Periods on May 6, 2022

Date	Time	SO_2 5-min Avg.	SO_2 1-hr Running Avg.
	EST	ppb	ppb
05/06/2022	01:45	Zero	30.9
05/06/2022	01:50	Zero	32.4
05/06/2022	01:55	Span	33.7
05/06/2022	02:00	Span	
05/06/2022	02:05	Purge	
05/06/2022	02:10	Purge	
05/06/2022	02:15	64.4	
05/06/2022	02:20	53.8	
05/06/2022	02:25	66.5	
05/06/2022	02:30	63.3	
05/06/2022	02:35	77.6	
05/06/2022	02:40	71.9	
05/06/2022	02:45	59.1	
05/06/2022	02:50	95.9	
05/06/2022	02:55	44.5	**66.3**
05/06/2022	03:00	22.6	62.0
05/06/2022	03:05	23.1	58.4
05/06/2022	03:10	9.0	54.3
05/06/2022	03:15	5.7	49.4
05/06/2022	03:20	4.8	45.3
05/06/2022	03:25	4.2	40.2
05/06/2022	03:30	3.8	35.2
05/06/2022	03:35	3.6	29.0
05/06/2022	03:40	4.1	23.4
05/06/2022	03:45	9.7	19.3
05/06/2022	03:50	8.0	11.9
05/06/2022	03:55	4.6	8.6
05/06/2022	04:00	3.2	7.0
05/06/2022	04:05	3.0	5.3

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D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E33. SO_2 Courtice Monitoring Station 1-Hour Running Average Exceedance Periods on May 20, 2022

Date	Time	SO_2 5-min Avg.	SO_2 1-hr Running Avg.	
	EST	ppb	ppb	
05/20/2022	03:20	86.1	31.8	
05/20/2022	03:25	60.0	36.4	
05/20/2022	03:30	34.0	38.4	
05/20/2022	03:35	14.0	38.1	
05/20/2022	03:40	7.5	36.7	
05/20/2022	03:45	5.8	34.5	
05/20/2022	03:50	4.7	32.4	
05/20/2022	03:55	5.3	30.9	
05/20/2022	04:00	5.8	28.9	
05/20/2022	04:05	7.0	27.4	
05/20/2022	04:10	56.6	28.8	
05/20/2022	04:15	73.6	30.0	
05/20/2022	04:20	98.3	31.1	
05/20/2022	04:25	112.6	35.4	
05/20/2022	04:30	83.1	39.5	
05/20/2022	04:35	69.6	44.2	
05/20/2022	04:40	87.0	50.8	
05/20/2022	04:45	81.9	57.1	
05/20/2022	04:50	64.5	62.1	
05/20/2022	04:55	53.2	66.1	
05/20/2022	05:00	61.9	70.8	
05/20/2022	05:05	73.9	**76.4**	14
05/20/2022	05:10	39.7	75.0	
05/20/2022	05:15	42.9	72.4	
05/20/2022	05:20	33.9	67.0	
05/20/2022	05:25	39.7	61.0	
05/20/2022	05:30	51.5	58.3	
05/20/2022	05:35	72.8	**58.6**	
05/20/2022	05:40	49.3	55.4	
05/20/2022	05:45	39.6	51.9	
05/20/2022	05:50	38.9	49.8	
05/20/2022	05:55	61.5	50.5	
05/20/2022	06:00	55.4	49.9	
05/20/2022	06:05	16.9	45.2	15
05/20/2022	06:10	11.0	42.8	
05/20/2022	06:15	12.7	40.3	
05/20/2022	06:20	31.3	40.0	
05/20/2022	06:25	91.0	44.3	
05/20/2022	06:30	144.8	52.1	
05/20/2022	06:35	108.2	55.0	
05/20/2022	06:40	62.1	56.1	
05/20/2022	06:45	72.7	58.9	
05/20/2022	06:50	50.5	59.8	
05/20/2022	06:55	29.9	57.2	
05/20/2022	07:00	60.2	57.6	16
05/20/2022	07:05	74.5	62.4	
05/20/2022	07:10	35.1	64.4	
05/20/2022	07:15	15.6	**64.7**	
05/20/2022	07:20	12.5	63.1	
05/20/2022	07:25	12.6	56.6	
05/20/2022	07:30	6.9	45.1	
05/20/2022	07:35	5.3	36.5	
05/20/2022	07:40	4.4	31.7	
05/20/2022	07:45	4.1	26.0	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E34. SO_2 Courtice Monitoring Station 1-Hour Running Average Exceedance Periods on May 25, 2022

Date	Time	SO_2 5-min Avg.	SO_2 1-hr Running Avg.
	EST	ppb	ppb
05/25/2022	17:05	39.6	14.0
05/25/2022	17:10	42.3	17.4
05/25/2022	17:15	55.6	22.0
05/25/2022	17:20	48.3	25.9
05/25/2022	17:25	44.2	29.6
05/25/2022	17:30	19.8	31.2
05/25/2022	17:35	14.9	32.3
05/25/2022	17:40	18.2	32.9
05/25/2022	17:45	24.4	32.6
05/25/2022	17:50	32.5	33.6
05/25/2022	17:55	35.5	33.6
05/25/2022	18:00	44.8	35.0
05/25/2022	18:05	85.2	38.8
05/25/2022	18:10	73.5	41.4
05/25/2022	18:15	59.1	41.7
05/25/2022	18:20	49.2	41.8
05/25/2022	18:25	55.6	42.7
05/25/2022	18:30	50.5	45.3
05/25/2022	18:35	31.0	**46.6**
05/25/2022	18:40	16.8	46.5
05/25/2022	18:45	8.5	45.2
05/25/2022	18:50	7.1	43.1
05/25/2022	18:55	5.1	40.5
05/25/2022	19:00	3.6	37.1
05/25/2022	19:05	3.5	30.3
05/25/2022	19:10	7.1	24.8

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D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E35. SO_2 Courtice Monitoring Station 1-Hour Running Average Exceedance Periods on June 15, 2022

Date	Time	SO_2 5-min Avg.	SO_2 1-hr Running Avg.
	EST	ppb	ppb
06/15/2022	21:00	18.5	6.7
06/15/2022	21:05	17.1	8.0
06/15/2022	21:10	22.3	9.7
06/15/2022	21:15	26.1	11.6
06/15/2022	21:20	38.0	14.2
06/15/2022	21:25	39.4	16.8
06/15/2022	21:30	33.5	19.1
06/15/2022	21:35	32.8	21.4
06/15/2022	21:40	32.5	23.7
06/15/2022	21:45	39.8	26.5
06/15/2022	21:50	50.3	30.2
06/15/2022	21:55	38.3	32.4
06/15/2022	22:00	43.3	34.4
06/15/2022	22:05	90.8	40.6
06/15/2022	22:10	97.8	46.9
06/15/2022	22:15	83.0	51.6
06/15/2022	22:20	53.2	52.9
06/15/2022	22:25	54.9	54.2
06/15/2022	22:30	58.6	56.3
06/15/2022	22:35	50.3	57.7
06/15/2022	22:40	40.4	58.4
06/15/2022	22:45	38.5	58.3
06/15/2022	22:50	61.5	59.2
06/15/2022	22:55	44.6	**59.8**
06/15/2022	23:00	21.3	57.9
06/15/2022	23:05	11.4	**51.3**
06/15/2022	23:10	12.5	44.2
06/15/2022	23:15	21.5	39.1
06/15/2022	23:20	26.8	36.9
06/15/2022	23:25	25.3	34.4
06/15/2022	23:30	20.3	31.2
06/15/2022	23:35	20.3	28.7
06/15/2022	23:40	17.0	26.7
06/15/2022	23:45	14.2	24.7
06/15/2022	23:50	11.2	20.5
06/15/2022	23:55	7.0	17.4
06/16/2022	00:00	7.9	16.3
06/16/2022	00:05	7.9	16.0
06/16/2022	00:10	7.7	15.6

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19

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E36. SO_2 Courtice Monitoring Station 1-Hour Running Average Exceedance Periods on June 24, 2022

Date	Time	SO_2 5-min Avg.	SO_2 1-hr Running Avg.
	EST	ppb	ppb
06/24/2022	03:25	0.5	0.6
06/24/2022	03:30	0.5	0.6
06/24/2022	03:35	0.8	0.6
06/24/2022	03:40	0.9	0.6
06/24/2022	03:45	0.5	0.6
06/24/2022	03:50	0.5	0.6
06/24/2022	03:55	0.5	0.6
06/24/2022	04:00	0.6	0.6
06/24/2022	04:05	41.4	4.0
06/24/2022	04:10	7.8	4.6
06/24/2022	04:15	9.2	5.3
06/24/2022	04:20	7.3	5.9
06/24/2022	04:25	98.8	14.1
06/24/2022	04:30	401.7	47.5
06/24/2022	04:35	63.3	52.7
06/24/2022	04:40	17.2	54.1
06/24/2022	04:45	10.7	54.9
06/24/2022	04:50	9.2	55.6
06/24/2022	04:55	59.2	60.5
06/24/2022	05:00	102.7	69.0
06/24/2022	05:05	211.2	83.2
06/24/2022	05:10	92.9	90.3
06/24/2022	05:15	25.8	91.7
06/24/2022	05:20	16.4	**92.4**
06/24/2022	05:25	10.8	85.1
06/24/2022	05:30	8.7	**52.4**
06/24/2022	05:35	7.5	47.7
06/24/2022	05:40	7.0	46.8
06/24/2022	05:45	6.5	46.5
06/24/2022	05:50	5.4	46.2
06/24/2022	05:55	4.9	41.7
06/24/2022	06:00	4.5	33.5
06/24/2022	06:05	4.4	16.2
06/24/2022	06:10	4.0	8.8
06/24/2022	06:15	3.7	7.0
06/24/2022	06:20	3.5	5.9
06/24/2022	06:25	3.5	5.3

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21

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
	Range of running average values during exceedance period
#	Exceedance number

Table E37. SO_2 Courtice Monitoring Station 1-Hour Running Average Exceedance Periods on June 29, 2022

Date	Time	SO_2 5-min Avg.	SO_2 1-hr Running Avg.
	EST	ppb	ppb
06/29/2022	04:55	22.9	22.5
06/29/2022	05:00	10.3	22.1
06/29/2022	05:05	79.0	26.7
06/29/2022	05:10	59.8	29.9
06/29/2022	05:15	56.1	31.8
06/29/2022	05:20	22.4	30.9
06/29/2022	05:25	15.1	30.8
06/29/2022	05:30	54.4	34.4
06/29/2022	05:35	21.2	33.4
06/29/2022	05:40	15.0	33.2
06/29/2022	05:45	10.5	33.4
06/29/2022	05:50	7.3	31.1
06/29/2022	05:55	57.0	34.0
06/29/2022	06:00	133.6	**44.3**
06/29/2022	06:05	31.8	40.3
06/29/2022	06:10	19.3	37.0
06/29/2022	06:15	12.8	33.4
06/29/2022	06:20	9.8	32.3
06/29/2022	06:25	7.0	31.6
06/29/2022	06:30	6.8	27.7
06/29/2022	06:35	6.8	26.5
06/29/2022	06:40	6.9	25.8
06/29/2022	06:45	6.7	25.5
06/29/2022	06:50	6.8	25.4
06/29/2022	06:55	5.4	21.1
06/29/2022	07:00	5.3	10.4

22

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E38. SO_2 Rundle Road Monitoring Station 1-Hour Running Average Exceedance Periods on May 11, 2022

Date	Time	SO_2 5-min Avg.	SO_2 1-hr Running Avg.
	EST	ppb	ppb
05/11/2022	10:10	0.6	2.9
05/11/2022	10:15	1.5	3.0
05/11/2022	10:20	25.8	4.4
05/11/2022	10:25	72.1	10.0
05/11/2022	10:30	63.5	14.4
05/11/2022	10:35	11.9	15.1
05/11/2022	10:40	2.9	15.2
05/11/2022	10:45	1.9	15.3
05/11/2022	10:50	2.5	15.4
05/11/2022	10:55	21.4	17.2
05/11/2022	11:00	137.2	28.5
05/11/2022	11:05	116.7	38.2
05/11/2022	11:10	119.5	48.1
05/11/2022	11:15	228.9	67.0
05/11/2022	11:20	111.7	74.2
05/11/2022	11:25	11.1	69.1
05/11/2022	11:30	29.7	66.3
05/11/2022	11:35	90.6	72.8
05/11/2022	11:40	139.1	84.2
05/11/2022	11:45	303.0	109.3
05/11/2022	11:50	43.0	**112.6**
05/11/2022	11:55	7.5	111.5
05/11/2022	12:00	5.2	100.5
05/11/2022	12:05	6.5	91.3
05/11/2022	12:10	26.5	**83.6**
05/11/2022	12:15	18.1	66.0
05/11/2022	12:20	8.4	57.4
05/11/2022	12:25	3.4	56.7
05/11/2022	12:30	2.7	54.5
05/11/2022	12:35	3.0	47.2
05/11/2022	12:40	3.3	35.9
05/11/2022	12:45	4.2	11.0
05/11/2022	12:50	2.3	7.6
05/11/2022	12:55	2.2	7.2
05/11/2022	13:00	5.0	7.1
05/11/2022	13:05	5.0	7.0
05/11/2022	13:10	2.4	5.0

1

2

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
	Range of running average values during exceedance period
#	Exceedance number

Table E39. SO_2 Rundle Road Monitoring Station 1-Hour Running Average Exceedance Periods on May 12, 2022

Date	Time	SO_2 5-min Avg.	SO_2 1-hr Running Avg.	
	EST	ppb	ppb	
05/12/2022	08:50	0.5	0.4	
05/12/2022	08:55	1.0	0.5	
05/12/2022	09:00	1.3	0.6	
05/12/2022	09:05	0.9	0.6	
05/12/2022	09:10	0.4	0.6	
05/12/2022	09:15	0.4	0.6	
05/12/2022	09:20	4.1	0.9	
05/12/2022	09:25	52.7	5.3	
05/12/2022	09:30	146.8	17.5	
05/12/2022	09:35	68.7	23.1	
05/12/2022	09:40	26.0	25.3	
05/12/2022	09:45	30.8	27.8	
05/12/2022	09:50	39.3	31.0	
05/12/2022	09:55	30.0	33.5	
05/12/2022	10:00	79.5	40.0	
05/12/2022	10:05	46.1	43.7	
05/12/2022	10:10	18.1	45.2	
05/12/2022	10:15	24.3	47.2	
05/12/2022	10:20	46.9	**50.8**	
05/12/2022	10:25	40.7	49.8	
05/12/2022	10:30	45.4	41.3	
05/12/2022	10:35	47.9	39.6	3
05/12/2022	10:40	8.7	38.1	
05/12/2022	10:45	2.9	35.8	
05/12/2022	10:50	2.6	32.7	
05/12/2022	10:55	2.2	30.4	
05/12/2022	11:00	1.5	23.9	
05/12/2022	11:05	1.5	20.2	
05/12/2022	11:10	1.2	18.8	
05/12/2022	11:15	2.0	16.9	
05/12/2022	11:20	4.9	13.4	
05/12/2022	11:25	1.9	10.2	
05/12/2022	11:30	1.2	6.5	
05/12/2022	11:35	0.9	2.6	
05/12/2022	11:40	0.9	2.0	
05/12/2022	11:45	1.2	1.8	
05/12/2022	11:50	2.7	1.8	
05/12/2022	11:55	2.4	1.9	
05/12/2022	12:00	2.6	1.9	
05/12/2022	12:05	35.6	4.8	
05/12/2022	12:10	71.3	10.6	
05/12/2022	12:15	26.3	12.7	
05/12/2022	12:20	15.3	13.5	
05/12/2022	12:25	161.9	26.9	
05/12/2022	12:30	94.7	34.6	
05/12/2022	12:35	27.9	36.9	
05/12/2022	12:40	60.9	41.9	
05/12/2022	12:45	78.6	48.3	
05/12/2022	12:50	65.6	53.6	
05/12/2022	12:55	46.5	57.3	
05/12/2022	13:00	41.2	60.5	
05/12/2022	13:05	53.2	**62.0**	4
05/12/2022	13:10	12.7	57.1	
05/12/2022	13:15	4.4	55.2	
05/12/2022	13:20	2.1	54.1	
05/12/2022	13:25	1.7	40.8	
05/12/2022	13:30	1.5	33.0	
05/12/2022	13:35	1.3	30.8	
05/12/2022	13:40	1.1	25.8	
05/12/2022	13:45	1.1	19.4	
05/12/2022	13:50	1.1	14.0	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
}	Range of running average values during exceedance period
#	Exceedance number

Table E40. SO_2 Rundle Road Monitoring Station 1-Hour Running Average Exceedance Periods on May 24, 2022

Date	Time	SO_2 5-min Avg.	SO_2 1-hr Running Avg.	
	EST	ppb	ppb	
05/24/2022	14:40	5.8	14.9	
05/24/2022	14:45	2.7	13.6	
05/24/2022	14:50	2.1	12.4	
05/24/2022	14:55	1.8	11.8	
05/24/2022	15:00	1.7	11.3	
05/24/2022	15:05	1.6	10.5	
05/24/2022	15:10	1.5	8.9	
05/24/2022	15:15	1.8	7.6	
05/24/2022	15:20	7.3	6.9	
05/24/2022	15:25	52.3	9.9	
05/24/2022	15:30	56.2	12.8	
05/24/2022	15:35	56.8	16.0	
05/24/2022	15:40	84.0	22.5	
05/24/2022	15:45	176.1	37.0	
05/24/2022	15:50	157.3	49.9	
05/24/2022	15:55	48.8	53.8	
05/24/2022	16:00	78.2	60.2	
05/24/2022	16:05	62.5	65.2	
05/24/2022	16:10	62.6	70.3	
05/24/2022	16:15	67.5	75.8	
05/24/2022	16:20	75.3	81.5	5
05/24/2022	16:25	87.6	84.4	
05/24/2022	16:30	69.7	**85.5**	
05/24/2022	16:35	34.8	83.7	
05/24/2022	16:40	23.5	78.7	
05/24/2022	16:45	11.7	65.0	
05/24/2022	16:50	10.1	**52.7**	
05/24/2022	16:55	5.1	49.1	
05/24/2022	17:00	4.2	42.9	
05/24/2022	17:05	3.7	38.0	
05/24/2022	17:10	3.2	33.0	
05/24/2022	17:15	2.8	27.6	
05/24/2022	17:20	2.6	21.6	6
05/24/2022	17:25	2.5	14.5	
05/24/2022	17:30	2.3	8.9	
05/24/2022	17:35	2.2	6.1	
05/24/2022	17:40	2.0	4.4	
05/24/2022	17:45	1.9	3.5	
05/24/2022	17:50	2.0	2.9	
05/24/2022	17:55	1.9	2.6	
05/24/2022	18:00	1.7	2.4	
05/24/2022	18:05	1.6	2.2	
05/24/2022	18:10	1.6	2.1	

D, T & V	Date, Time & Exceedance Value Reported (Reported exceedance is the first running avg. value highlighted)
Max	Maximum of the Range
Min	Minimum of the Range
Faded Values	These values are not used to calculate the number of reportable exceedances
	Range of 5-minute measurements that contribute to the exceedance value reported
	Range of running average values during exceedance period
#	Exceedance number

APPENDIX F

600 Southgate Drive
Guelph ON Canada
N1G 4P6

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

MEMORANDUM

DATE:	2022-05-31	**RWDI Reference No.:** 2200697
TO:	Gioseph Anello	**EMAIL:** Gioseph.Anello@Durham.ca
CC:	Andrew Evans	**EMAIL:** Andrew.Evans@Durham.ca
CC:	Lyndsay Waller	**EMAIL:** Lyndsay.Waller@Durham.ca
FROM:	Khalid Hussein	**EMAIL:** Khalid.Hussein@rwdi.com
RE:	**Exceedance Report – Benzo(a)Pyrene April 11, 2022** **Region of Durham, DYEC**	

On May 25th, 2022, the results from ALS Environmental were received regarding the PAH results from the April 11th, 2022 sampling event. On May 26th, 2022, the results were entered and assessed, and it was found that there was one (1) measured Benzo(a)Pyrene (BaP) concentration in excess of the 24-hour AAQC on the April 11th sampling date.

April 11, 2022

On Monday, April 11th, 2022, there was one (1) exceedance of the BaP 24-hour AAQC, which occurred at the Rundle Road Station, measured at the onsite PUF PS-1 sampler. Attached is a figure depicting a wind rose (indicating the wind speed and direction distribution during the sampling day), and the location of the sampling stations relative to the DYEC.

The following summarizes the BaP concentrations and onsite conditions during the April 11th sampling date:

1. The guideline concentration for BaP is 0.05 ng/m^3. The measured concentration at the Rundle Road sampler was 0.053 ng/m^3.
2. During the sampling day the wind was predominantly from the E and ESE with a less significant contribution from the SSW, as recorded at the Rundle Road Meteorological Tower. One-hour average wind speeds at Rundle Road Meteorological Tower ranged from 1.16 km/h to 25.36 km/h.
3. The Rundle Road meteorological data suggests that the Rundle Road Station was upwind of the DYEC during the sampling period. Given the wind conditions, it is likely that the measured BaP exceedance is attributable to sources other than the Energy Centre operations.

At the Rundle Road Station, the NO_2 hourly values were less than 9% of the criteria for the same period. The $PM_{2.5}$ 24-hour average value was 5.7 micrograms per cubic metre at the Rundle Road Station.

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

Respectfully submitted by:

RWDI AIR Inc.

Khalid Hussein, P.Eng.
Project Manager

KAMH/kta

Attach.

ATTACHMENTS

Table B6: 2022 Rundle Station Q2 Monitoring Results for PAHs

Contaminant	Units	*MECP Criteria*	11 Apr 22	No. > Criteria
1-Methylnaphthalene	ng/m^3	*12000*	4.55E+00	0
2-Methylnaphthalene	ng/m^3	*10000*	8.74E+00	0
Acenaphthene	ng/m^3	-	3.51E+00	-
Acenaphthylene	ng/m^3	*3500*	1.93E-01	0
Anthracene	ng/m^3	*200*	1.14E-01	0
Benzo(a)Anthracene	ng/m^3	-	2.75E-02	-
Benzo(a)fluorene	ng/m^3	-	6.43E-02	-
Benzo(a)Pyrene (Historically High)	ng/m^3	*0.05*[1] *5*[2] *1.1*[3]	5.26E-02	1
Benzo(b)Fluoranthene	ng/m^3	-	1.27E-01	-
Benzo(b)fluorene	ng/m^3	-	3.60E-02	-
Benzo(e)Pyrene	ng/m^3	-	4.00E-02	-
Benzo(g,h,i)Perylene	ng/m^3	-	5.69E-02	-
Benzo(k)Fluoranthene	ng/m^3	-	5.05E-02	-
Biphenyl	ng/m^3	-	1.83E+00	-
Chrysene	ng/m^3	-	1.06E-01	-
Dibenzo(a,h)Anthracene	ng/m^3	-	2.64E-02	-
Fluoranthene	ng/m^3	-	8.86E-01	-
Fluorene	ng/m^3	-	2.63E+00	-
Indeno(1,2,3-cd)Pyrene	ng/m^3	-	5.85E-02	-
Naphthalene	ng/m^3	*22500*	1.53E+01	0
o-Terphenyl	ng/m^3	-	8.18E-03	-
Perylene	ng/m^3	-	1.43E-02	-
Phenanthrene	ng/m^3	-	4.15E+00	-
Pyrene	ng/m^3	-	4.06E-01	-
Tetralin	ng/m^3	-	1.43E+00	-
Total PAH[4]	ng/m^3	-	44.40	-

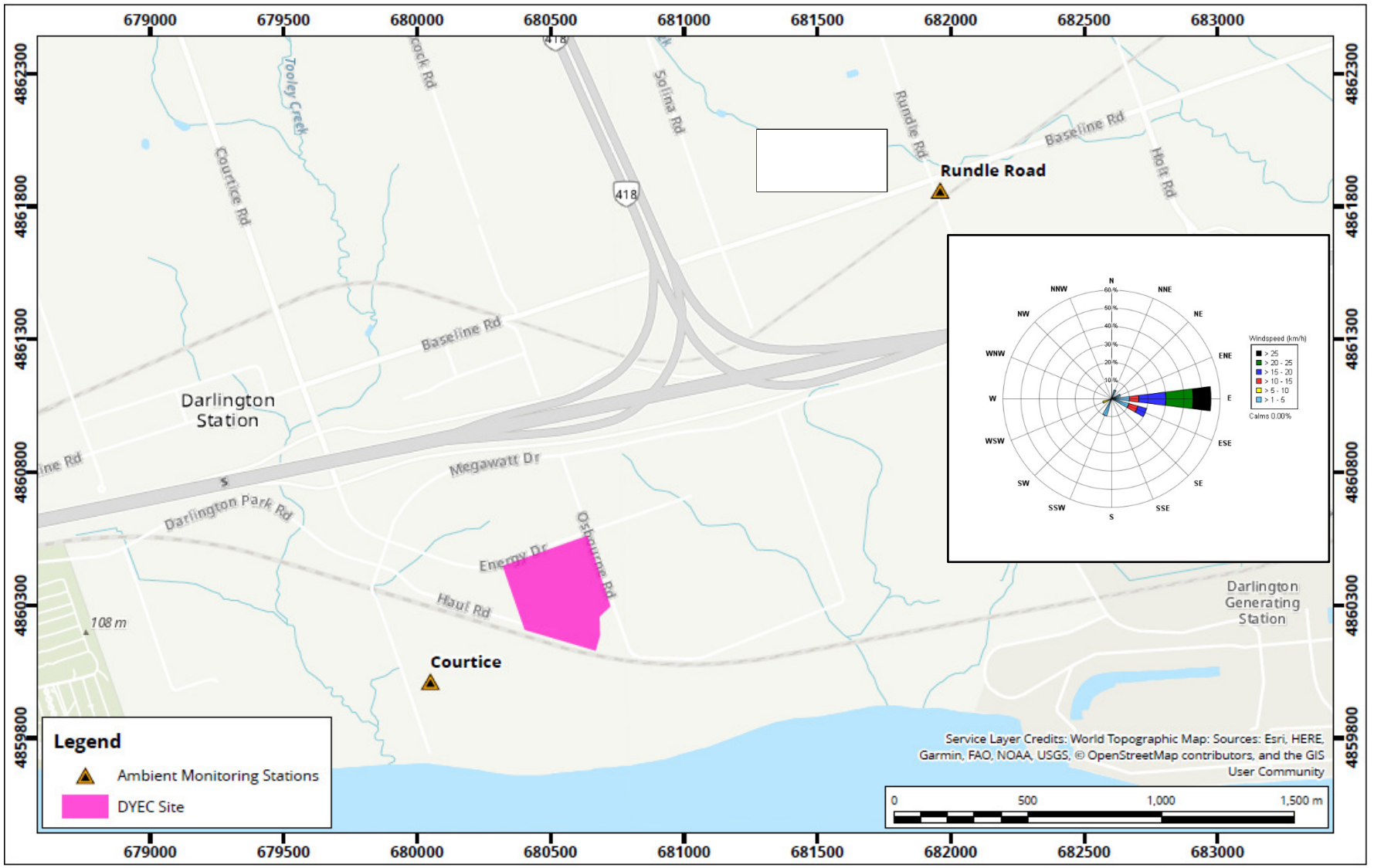
NOTE: All non-detectable results were reported as 1/2 of the detection limit

[1] AAQC

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

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

[4] Total PAH sums all PAH contaminants



DYEC Site and Ambient Monitoring Station Locations

True North

Map Projection: NAD 1983 UTM Zone 17N

DYEC - Region of Durham, Ontario

Project #:

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

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

Certificate of Analysis

ALS Project Contact:	Claire Kocharakkal	**Client Name:**	RWDI Air Inc.
ALS Project ID:	23601	**Client Address:**	600 Southgate Dr.
ALS WO#:	L2699199		Guelph, ON N1G 4P6
Date of Report	25-May-22		Canada
Date of Sample Receipt	14-Apr-22	**Client Contact:**	Khalid Hussein
		Client Project ID:	DYEC

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

Certified by:

Bradley Reimer
GC/MS Laboratory Senior Technical Specialist

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	Method Blank	Reagent Blank	RUNDLE-DX/PAH-APR11	COURTICE-DX/PAH-APR11	BLANK-DX/PAH-APR11	Laboratory Control Sample
ALS Sample ID	WG3717327-1	WG3717327-4	L2699199-1	L2699199-2	L2699199-3	WG3717327-2
Sample Size	1	1	1	1	1	1
Sample units	sample	sample	sample	sample	sample	n/a
Moisture Content	n/a	n/a	n/a	n/a	n/a	n/a
Matrix	QC	QC	Puf	Puf	Puf	QC
Sampling Date	n/a	n/a	11-Apr-22	11-Apr-22	11-Apr-22	n/a
Extraction Date	18-Apr-22	18-Apr-22	18-Apr-22	18-Apr-22	18-Apr-22	18-Apr-22
Target Analytes	ng/sample	ng/sample	ng/sample	ng/sample	ng/sample	%
Naphthalene	65.9 R	7.00 M,R,B	4970	4370	84.1 RB	151.1 RB
2-Methylnaphthalene	4.97 M	1.57 M,B	2840	2880	9.08 M,B	114
1-Methylnaphthalene	3.98 R	1.08 M,B	1480	1410	5.58 M,R,B	112.4
Acenaphthylene	<0.20 U	0.790 R	62.7 R	40.1 M,R	1.14 R	111.7
Acenaphthene	<0.20 U	<0.20 U	1140	1450	<0.20 U	110.7
Fluorene	1.67	0.420 B	854	1110	1.27 B	110
Phenanthrene	3.32	1.75 B	1350	1930	4.15 B	112.8
Anthracene	0.910 M	<0.20 U	37.2	29.2	3.54 RB	114.2
Fluoranthene	<0.20 U	<0.20 U	288	303	1.29 R	110
Pyrene	<0.20 U	<0.20 U	132	129	1.37 R	109.6 M
Benzo(a)Anthracene	<0.20 U	<0.20 U	8.93 R	6.48 M	0.200 R	100.9 M
Chrysene	<0.20 U	<0.20 U	34.6 R	26.2 M	0.270 R	109.2 M
Benzo(b)Fluoranthene	<0.20 U	<0.20 U	41.2 M,R	26.3 M,R	<0.20 U	126.5 M,R
Benzo(k)Fluoranthene	<0.20 U	<0.20 U	16.4 M,R	13.3 M,R	<0.20 U	99.9 M,R
Benzo(e)Pyrene	4.07 M,R	3.09 M,R,B	13.0 M,R,B	15.3 RB	<0.20 U	101.8 M
Benzo(a)Pyrene	8.81 R	<0.20 U	17.1 M,B	13.9 M,B	7.13 RB	107.9 M
Perylene	<0.20 U	<0.20 U	4.64 R	1.42 M	<0.20 U	103.8
Indeno(1,2,3-cd)Pyrene	1.08 R	<0.20 U	19.0	14.7	1.15 RB	101.9
Dibenzo(a,h)Anthracene	2.64 R	<0.20 U	8.57 M,R,B	8.14 M,B	<0.20 U	101.6
Benzo(g,h,i)Perylene	<0.20 U	<0.20 U	18.5	14.3	<0.20 U	108.3
Additional Analytes						
Tetralin	28.9	0.720 M,B	464	433	23.8 B	NS
Biphenyl	1.11 M,R	0.510 M,B	596	671	1.65 M,R,B	NS
o-Terphenyl	0.310 R	0.380 B	2.66 M,B	3.21 M	0.220 RB	NS
Benzo(a)fluorene	<0.20 U	<0.20 U	20.9	15.3	0.410 R	NS
Benzo(b)fluorene	<0.20 U	<0.20 U	11.7	7.26	0.880 R	NS
Field Sampling Standards	% Rec	% Rec	% Rec	% Rec	% Rec	% Rec
1-Methylnaphthalene-D10	NS	NS	83.2	72.7	91.7	NS
Fluorene D10	NS	NS	90.7	105.5	78.8	NS
Terphenyl D14(Surr.)	NS	NS	103.1	108.7	111.6 R	NS
Extraction Standards	% Rec	% Rec	% Rec	% Rec	% Rec	% Rec
Naphthalene D8	47.9	43.7	52.6 R	37.6 R	48.9	61.9
2-Methylnaphthalene-D10	55.2	45.3	55.5	41.5	56.2	71.4
Acenaphthylene D8	57.4	48.6	60.6	40.9	66.4	76.6
Phenanthrene D10	52.9	43.5	58.1 R	37.6	49.2	75.8
Anthracene-D10	51.3	43.2	53.3	37.1	51.2	70.1
Fluoranthene D10	64.1	51.1	65.9	47	66.4	84.8
Benz(a)Anthracene-D12	106.1	80.3	97.3	70.5	109.1	136.7
Chrysene D12	97.7	69.8	88.2	63.7	94.5	121.8
Benzo(b)Fluoranthene-D12	69.6	57.4	76.7	52.3	89.8	86
Benzo(k)Fluoranthene-D12	70.2 R	57.8 R	76 R	49.5 M	83 R	92.2 M
Benzo(a)Pyrene D12	73.3 R	55.6 R	71 R	45.5 M	80.7 R	90.8 M
Perylene D12	69.3	57.3	72.1	47	79.8	89.9
Indeno(1,2,3,cd)Pyrene-D12	72.8	66.2	87.3	67.6	86.1	92.2
Dibenz(a,h)Anthracene-D14	70.9	63.8	86.1	66.5	85.8	100.6 M
Benzo(g,h,i)Perylene D12	61.9	52.4	70.2	51.4	61.4	78.9 M

U	Indicates that this compound was not detected above the LOD.
M	Indicates that a peak has been manually integrated.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
NS	Indicates that the compound was not added to the sample

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	Method Blank	Sampling Date	n/a
ALS Sample ID	WG3717327-1	Extraction Date	18-Apr-22
Analysis Method	PAH by CARB 429		
Analysis Type	blank		
Sample Matrix	QC		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	1	Workgroup	WG3717327

Approved:
Peter Nguyen
--e-signature--
02-May-2022

Run Information	Run 1
Filename	PAH220428-041.D
Run Date	4/29/2022 10:19
Final Volume	0.1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US1509936H

Target Analytes	Ret. Time	Concentration ng/sample	Flags
Naphthalene	2.84	65.9	R
2-Methylnaphthalene	3.43	4.97 M	
1-Methylnaphthalene	3.54	3.98	R
Acenaphthylene	NotFnd	<0.20	U
Acenaphthene	NotFnd	<0.20	U
Fluorene	5.82	1.67	
Phenanthrene	8.03	3.32	
Anthracene	8.15	0.910 M	
Fluoranthene	NotFnd	<0.20	U
Pyrene	NotFnd	<0.20	U
Benzo(a)Anthracene	NotFnd	<0.20	U
Chrysene	NotFnd	<0.20	U
Benzo(b)Fluoranthene	NotFnd	<0.20	U
Benzo(k)Fluoranthene	NotFnd	<0.20	U
Benzo(e)Pyrene	20.01	4.07 M	R
Benzo(a)Pyrene	20.18	8.81	R
Perylene	NotFnd	<0.20	U
Indeno(1,2,3-cd)Pyrene	23.97	1.08	R
Dibenzo(a,h)Anthracene	24.26	2.64	R
Benzo(g,h,i)Perylene	NotFnd	<0.20	U
Additional Analytes			
Tetralin	2.72	28.9	
Biphenyl	3.97	1.11 M	R
o-Terphenyl	9.31	0.310	R
Benzo(a)fluorene	NotFnd	<0.20	U
Benzo(b)fluorene	NotFnd	<0.20	U

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

Extraction Standards			% Rec		Limits
Naphthalene D8	100	2.83	47.9		50-150
2-Methylnaphthalene-D10	100	3.40	55.2		50-150
Acenaphthylene D8	100	4.57	57.4		50-150
Phenanthrene D10	100	7.98	52.9		50-150
Anthracene-D10	100	8.10	51.3		50-150
Fluoranthene D10	100	11.39	64.1		50-150
Benz(a)Anthracene-D12	100	15.94	106.1		50-150
Chrysene D12	100	16.04	97.7		50-150
Benzo(b)Fluoranthene-D12	100	19.27	69.6		50-150
Benzo(k)Fluoranthene-D12	100	19.36	70.2	R	50-150
Benzo(a)Pyrene D12	100	20.16	73.3	R	50-150
Perylene D12	100	20.39	69.3		50-150
Indeno(1,2,3,cd)Pyrene-D12	100	23.91	72.8		50-150
Dibenz(a,h)Anthracene-D14	100	24.07	70.9		50-150
Benzo(g,h,i)Perylene D12	100	24.90	61.9		50-150

M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the MDL.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
NS	Indicates that the compound was not added to the sample

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	Reagent Blank	Sampling Date	n/a
ALS Sample ID	WG3717327-4	Extraction Date	18-Apr-22
Analysis Method	PAH by CARB 429		
Analysis Type	blank		
Sample Matrix	QC		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	1	Workgroup	WG3717327

Approved:
Peter Nguyen
--e-signature--
02-May-2022

Run Information	Run 1
Filename	PAH220428-042.D
Run Date	4/29/2022 10:57
Final Volume	0.1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US1509936H

Target Analytes	Ret. Time	Concentration ng/sample	Flags
Naphthalene	2.84	7.00	M R B
2-Methylnaphthalene	3.43	1.57	M B
1-Methylnaphthalene	3.54	1.08	M B
Acenaphthylene	4.61	0.790	R
Acenaphthene	NotFnd	<0.20	U
Fluorene	5.82	0.420	B
Phenanthrene	8.03	1.75	B
Anthracene	NotFnd	<0.20	U
Fluoranthene	NotFnd	<0.20	U
Pyrene	NotFnd	<0.20	U
Benzo(a)Anthracene	NotFnd	<0.20	U
Chrysene	NotFnd	<0.20	U
Benzo(b)Fluoranthene	NotFnd	<0.20	U
Benzo(k)Fluoranthene	NotFnd	<0.20	U
Benzo(e)Pyrene	20.01	3.09	M R B
Benzo(a)Pyrene	NotFnd	<0.20	U
Perylene	NotFnd	<0.20	U
Indeno(1,2,3-cd)Pyrene	NotFnd	<0.20	U
Dibenzo(a,h)Anthracene	NotFnd	<0.20	U
Benzo(g,h,i)Perylene	NotFnd	<0.20	U
Additional Analytes			
Tetralin	2.72	0.720	M B
Biphenyl	3.97	0.510	M B
o-Terphenyl	9.31	0.380	B
Benzo(a)fluorene	NotFnd	<0.20	U
Benzo(b)fluorene	NotFnd	<0.20	U

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

Extraction Standards			% Rec		Limits
Naphthalene D8	100	2.82	43.7		50-150
2-Methylnaphthalene-D10	100	3.40	45.3		50-150
Acenaphthylene D8	100	4.57	48.6		50-150
Phenanthrene D10	100	7.98	43.5		50-150
Anthracene-D10	100	8.10	43.2		50-150
Fluoranthene D10	100	11.39	51.1		50-150
Benz(a)Anthracene-D12	100	15.94	80.3		50-150
Chrysene D12	100	16.04	69.8		50-150
Benzo(b)Fluoranthene-D12	100	19.27	57.4		50-150
Benzo(k)Fluoranthene-D12	100	19.36	57.8	R	50-150
Benzo(a)Pyrene D12	100	20.16	55.6	R	50-150
Perylene D12	100	20.39	57.3		50-150
Indeno(1,2,3,cd)Pyrene-D12	100	23.91	66.2		50-150
Dibenz(a,h)Anthracene-D14	100	24.07	63.8		50-150
Benzo(g,h,i)Perylene D12	100	24.90	52.4		50-150

M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the MDL.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
NS	Indicates that the compound was not added to the sample

ALS Life Sciences

Sample Analysis Report

Sample Name	RUNDLE-DX/PAH-APR11	Sampling Date	11-Apr-22 00:00
ALS Sample ID	L2699199-1	Extraction Date	18-Apr-22
Analysis Method	PAH by CARB 429		
Analysis Type	sample		
Sample Matrix	Puf		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	1	Workgroup	WG3717327

Approved:
Peter Nguyen
--e-signature--
02-May-2022

Run Information	Run 1	Run 2
Filename	PAH220428-046.D	PAH220428-044.D
Run Date	4/29/2022 13:29	4/29/2022 12:13
Final Volume	0.1 mL	0.1 mL
Dilution Factor	1	10
Analysis Units	ng/sample	ng/sample
Instrument	MSD-5	MSD-5
Column	HP-5MS US1509936H	HP-5MS US1509936H

Target Analytes	Ret. Time	Concentration ng/sample	Flags	Ret. Time.	Concentration ng/sample	Flags
Naphthalene				2.84	4970	
2-Methylnaphthalene				3.43	2840	
1-Methylnaphthalene				3.54	1480	
Acenaphthylene	4.59	62.7	R			
Acenaphthene				4.88	1140	
Fluorene				5.82	854	
Phenanthrene				8.03	1350	
Anthracene	8.15	37.2				
Fluoranthene				11.45	288	
Pyrene	12.09	132				
Benzo(a)Anthracene	16.00	8.93	R			
Chrysene	16.12	34.6	R			
Benzo(b)Fluoranthene	19.34	41.2 M	R			
Benzo(k)Fluoranthene	19.38	16.4 M	R			
Benzo(e)Pyrene	20.09	13.0 M	R B			
Benzo(a)Pyrene	20.21	17.1 M	B			
Perylene	20.51	4.64	R			
Indeno(1,2,3-cd)Pyrene	23.99	19.0				
Dibenzo(a,h)Anthracene	24.26	8.57 M	R B			
Benzo(g,h,i)Perylene	25.01	18.5				
Additional Analytes						
Tetralin				2.72	464	
Biphenyl				3.97	596	
o-Terphenyl	9.31	2.66 M	B			
Benzo(a)fluorene	13.26	20.9				
Benzo(b)fluorene	13.47	11.7				

Field Sampling Standards	ng spiked		% Rec			% Rec	
1-Methylnaphthalene-D10	300	3.51	83.2				
Fluorene D10	300	5.76	90.7				
Terphenyl D14(Surr.)	300	12.90	103.1				

Extraction Standards			% Rec	Limits		% Rec	
Naphthalene D8	100			50-150	2.83	52.6	R
2-Methylnaphthalene-D10	100			50-150	3.40	55.5	
Acenaphthylene D8	100			50-150	4.57	60.6	
Phenanthrene D10	100			50-150	7.98	58.1	R
Anthracene-D10	100	8.10	53.3	50-150			
Fluoranthene D10	100			50-150	11.39	65.9	
Benz(a)Anthracene-D12	100	15.94	97.3	50-150			
Chrysene D12	100	16.04	88.2	50-150			
Benzo(b)Fluoranthene-D12	100	19.28	76.7	50-150			
Benzo(k)Fluoranthene-D12	100	19.36	76.0 R	50-150			
Benzo(a)Pyrene D12	100	20.16	71.0 R	50-150			
Perylene D12	100	20.39	72.1	50-150			
Indeno(1,2,3,cd)Pyrene-D12	100	23.91	87.3	50-150			
Dibenz(a,h)Anthracene-D14	100	24.07	86.1	50-150			
Benzo(g,h,i)Perylene D12	100	24.90	70.2	50-150			

M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the MDL.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.

ALS Life Sciences

Sample Analysis Report

Sample Name	COURTICE-DX/PAH-APR11	Sampling Date	11-Apr-22 00:00
ALS Sample ID	L2699199-2	Extraction Date	18-Apr-22
Analysis Method	PAH by CARB 429		
Analysis Type	sample		
Sample Matrix	Puf		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	1	Workgroup	WG3717327

Approved:
Peter Nguyen
--e-signature--
02-May-2022

Run Information	Run 1	Run 2
Filename	PAH220428-047.D	PAH220428-045.D
Run Date	4/29/2022 14:07	4/29/2022 12:51
Final Volume	0.1 mL	0.1 mL
Dilution Factor	1	10
Analysis Units	ng/sample	ng/sample
Instrument	MSD-5	MSD-5
Column	HP-5MS US1509936H	HP-5MS US1509936H

Target Analytes	Ret. Time	Concentration ng/sample	Flags	Ret. Time.	Concentration ng/sample	Flags
Naphthalene				2.84	4370	
2-Methylnaphthalene				3.43	2880	
1-Methylnaphthalene				3.55	1410	
Acenaphthylene	4.59	40.1	M R			
Acenaphthene				4.88	1450	
Fluorene				5.82	1110	
Phenanthrene				8.03	1930	
Anthracene	8.15	29.2				
Fluoranthene				11.45	303	
Pyrene	12.09	129				
Benzo(a)Anthracene	16.00	6.48	M			
Chrysene	16.12	26.2	M			
Benzo(b)Fluoranthene	19.35	26.3	M R			
Benzo(k)Fluoranthene	19.37	13.3	M R			
Benzo(e)Pyrene	20.09	15.3	R B			
Benzo(a)Pyrene	20.22	13.9	M B			
Perylene	20.46	1.42	M			
Indeno(1,2,3-cd)Pyrene	23.98	14.7				
Dibenzo(a,h)Anthracene	24.25	8.14	M B			
Benzo(g,h,i)Perylene	25.01	14.3				
Additional Analytes						
Tetralin				2.72	433	
Biphenyl				3.97	671	
o-Terphenyl	9.31	3.21	M			
Benzo(a)fluorene	13.26	15.3				
Benzo(b)fluorene	13.47	7.26				

Field Sampling Standards	ng spiked		% Rec		% Rec	
1-Methylnaphthalene-D10	300	3.51	72.7			
Fluorene D10	300	5.77	105.5			
Terphenyl D14(Surr.)	300	12.90	108.7			

Extraction Standards			% Rec	Limits			
Naphthalene D8	100			50-150	2.83	37.6	R
2-Methylnaphthalene-D10	100			50-150	3.40	41.5	
Acenaphthylene D8	100			50-150	4.57	40.9	
Phenanthrene D10	100			50-150	7.98	37.6	
Anthracene-D10	100	8.10	37.1	50-150			
Fluoranthene D10	100			50-150	11.39	47	
Benz(a)Anthracene-D12	100	15.93	70.5	50-150			
Chrysene D12	100	16.05	63.7	50-150			
Benzo(b)Fluoranthene-D12	100	19.27	52.3	50-150			
Benzo(k)Fluoranthene-D12	100	19.36	49.5 M	50-150			
Benzo(a)Pyrene D12	100	20.16	45.5 M	50-150			
Perylene D12	100	20.39	47.0	50-150			
Indeno(1,2,3,cd)Pyrene-D12	100	23.90	67.6	50-150			
Dibenz(a,h)Anthracene-D14	100	24.07	66.5	50-150			
Benzo(g,h,i)Perylene D12	100	24.89	51.4	50-150			

M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the MDL.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.

ALS Life Sciences

Sample Analysis Report

Sample Name	BLANK-DX/PAH-APR11	Sampling Date	11-Apr-22 00:00
ALS Sample ID	L2699199-3	Extraction Date	18-Apr-22
Analysis Method	PAH by CARB 429		
Analysis Type	sample		
Sample Matrix	Puf		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	1	Workgroup	WG3717327

Approved:
Peter Nguyen
--e-signature--
02-May-2022

Run Information	Run 1
Filename	PAH220428-043.D
Run Date	4/29/2022 11:35
Final Volume	0.1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US1509936H

Target Analytes	Ret. Time	Concentration ng/sample	Flags
Naphthalene	2.84	84.1	R B
2-Methylnaphthalene	3.43	9.08 M	B
1-Methylnaphthalene	3.54	5.58 M	R B
Acenaphthylene	4.58	1.14	R
Acenaphthene	NotFnd	<0.20	U
Fluorene	5.82	1.27	B
Phenanthrene	8.03	4.15	B
Anthracene	8.11	3.54	R B
Fluoranthene	11.45	1.29	R
Pyrene	12.09	1.37	R
Benzo(a)Anthracene	16.04	0.200	R
Chrysene	16.12	0.270	R
Benzo(b)Fluoranthene	NotFnd	<0.20	U
Benzo(k)Fluoranthene	NotFnd	<0.20	U
Benzo(e)Pyrene	NotFnd	<0.20	U
Benzo(a)Pyrene	20.18	7.13	R B
Perylene	NotFnd	<0.20	U
Indeno(1,2,3-cd)Pyrene	23.97	1.15	R B
Dibenzo(a,h)Anthracene	NotFnd	<0.20	U
Benzo(g,h,i)Perylene	NotFnd	<0.20	U
Additional Analytes			
Tetralin	2.72	23.8	B
Biphenyl	3.97	1.65 M	R B
o-Terphenyl	9.31	0.220	R B
Benzo(a)fluorene	13.22	0.410	R
Benzo(b)fluorene	13.42	0.880	R

Field Sampling Standards	ng spiked		% Rec	
1-Methylnaphthalene-D10	300	3.51	91.7	
Fluorene D10	300	5.76	78.8	
Terphenyl D14(Surr.)	300	12.90	111.6	R

Extraction Standards			% Rec		Limits
Naphthalene D8	100	2.82	48.9		50-150
2-Methylnaphthalene-D10	100	3.40	56.2		50-150
Acenaphthylene D8	100	4.57	66.4		50-150
Phenanthrene D10	100	7.98	49.2		50-150
Anthracene-D10	100	8.10	51.2		50-150
Fluoranthene D10	100	11.40	66.4		50-150
Benz(a)Anthracene-D12	100	15.94	109.1		50-150
Chrysene D12	100	16.05	94.5		50-150
Benzo(b)Fluoranthene-D12	100	19.28	89.8		50-150
Benzo(k)Fluoranthene-D12	100	19.36	83.0	R	50-150
Benzo(a)Pyrene D12	100	20.16	80.7	R	50-150
Perylene D12	100	20.40	79.8		50-150
Indeno(1,2,3,cd)Pyrene-D12	100	23.91	86.1		50-150
Dibenz(a,h)Anthracene-D14	100	24.07	85.8		50-150
Benzo(g,h,i)Perylene D12	100	24.91	61.4		50-150

M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the MDL.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.

ALS Life Sciences

Continuing Calibration Report

Sample Name	Laboratory Control Sample	Sampling Date	n/a
ALS Sample ID	WG3717327-2	Extraction Date	18-Apr-22
Analysis Method	PAH by CARB 429		
Analysis Type	CCV		
Sample Matrix	QC		
Sample Size	1 n/a		
Percent Moisture	n/a		
Split Ratio	1	Workgroup	WG3717327

Approved:
Peter Nguyen
--e-signature--
02-May-2022

Run Information	Run 1
Filename	PAH220428-039.D
Run Date	4/29/2022 9:03
Final Volume	0.1 mL
Dilution Factor	1
Analysis Units	%
Instrument	MSD-5
Column	HP-5MS US1509936H

Target Analytes	ug/mL	Ret. Time	%	Flags	Limits
Naphthalene	100	2.84	151.1	R B	70-130
2-Methylnaphthalene	100	3.43	114		70-130
1-Methylnaphthalene	100	3.54	112.4		70-130
Acenaphthylene	100	4.59	111.7		70-130
Acenaphthene	100	4.88	110.7		70-130
Fluorene	100	5.82	110		70-130
Phenanthrene	100	8.03	112.8		70-130
Anthracene	100	8.15	114.2		70-130
Fluoranthene	100	11.45	110		70-130
Pyrene	100	12.09	109.6 M		70-130
Benzo(a)Anthracene	100	16.00	100.9 M		70-130
Chrysene	100	16.12	109.2 M		70-130
Benzo(b)Fluoranthene	100	19.35	126.5 M	R	70-130
Benzo(k)Fluoranthene	100	19.41	99.9 M	R	70-130
Benzo(e)Pyrene	100	20.09	101.8 M		70-130
Benzo(a)Pyrene	100	20.22	107.9 M		70-130
Perylene	100	20.46	103.8		70-130
Indeno(1,2,3-cd)Pyrene	100	23.99	101.9		70-130
Dibenzo(a,h)Anthracene	100	24.20	101.6		70-130
Benzo(g,h,i)Perylene	100	25.01	108.3		70-130

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

Extraction Standards			% Rec		Limits
Naphthalene D8	100	2.83	61.9		70-130
2-Methylnaphthalene-D10	100	3.40	71.4		70-130
Acenaphthylene D8	100	4.57	76.6		70-130
Phenanthrene D10	100	7.98	75.8		70-130
Anthracene-D10	100	8.10	70.1		70-130
Fluoranthene D10	100	11.39	84.8		70-130
Benz(a)Anthracene-D12	100	15.94	136.7		70-130
Chrysene D12	100	16.05	121.8		70-130
Benzo(b)Fluoranthene-D12	100	19.27	86.0		70-130
Benzo(k)Fluoranthene-D12	100	19.36	92.2 M		70-130
Benzo(a)Pyrene D12	100	20.16	90.8 M		70-130
Perylene D12	100	20.39	89.9		70-130
Indeno(1,2,3,cd)Pyrene-D12	100	23.91	92.2		70-130
Dibenz(a,h)Anthracene-D14	100	24.07	100.6 M		70-130
Benzo(g,h,i)Perylene D12	100	24.90	78.9 M		70-130

M	Indicates that a peak has been manually integrated.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
NS	Indicates that the compound was not added to the sample

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2699199-COFC

COC Number: 17 -

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	RWDI
Contact:	Matt Lantz
Phone:	519 823 1311
	Company address below will appear on the final report
Street:	600 Southgate Drive
City/Province:	Guelph, Ontario
Postal Code:	N1G 4P6
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☐ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Matt.Lantz@rwdi.com

Email 2:

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Standard TAT is 15 business days. DTOX analysis standard TAT is 5 business days

PRIORITY (Business Days): ☐ 15 day [R- Regular] ☐ 10 day [P-50%] ☐ 5 day [E-100%]

EMERGENCY: 5 Business day - DTOX [R - Regular] / 3 Business day - DTOX [E - 100%]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

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

Analysis Request

NUMBER OF CONTAINERS — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Sample Air Volume (m3)	Date (dd-mmm-yy)	Sample Period	Sample Type	TSP, ICP on Hi-Vol Filter	PAH	DX	SAMPLES ON HOLD
1	L2696549-3 - Rundle	325	11-Apr-22	24hr	Air		X	X	
1	742363	1588	11-Apr-22	24hr	Air	X			
2	742362	1592	05-Apr-22	24hr	Air	X			
2	L2696549-2 - Courtice	322	11-Apr-22	24hr	Air		X	X	
3	742364	1655	11-Apr-22	24hr	Air	X			
4	742301	1645	05-Apr-22	24hr	Air	X			
3	L2696549-4 - Blank		11-Apr-22	24hr	Air		X	X	
5	742562		11-Apr-22	24hr	Air	X	X		
				24hr	Air				
				24hr	Air				
				24hr	Air				
				24hr	Air				

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Samples are 10 day TAT

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☒

Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☒

Cooling Initiated ☑

INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C	
12.1°C	17.3°C		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 13-Apr-22	Time: 1100	Received by: AARON BURTON	Date: 14-Apr-2022	Time: 12:00	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 20

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

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

Station: RofD Rundle Daily: 04/11/2022 Type: AVG 1 Hr. [5 Mins.]

Date	Time	PM2.5	NO	NO2	NOX	SO2	ET	Tr_Temp	RH AVG	Rain total	WS km/hr	WD	Hi-Vol Pressure	PUF Pressure	ET	Hivol Flow	PUF Flow
		ug/m3	ppb	ppb	ppb	ppb	C°	C°	%	mm	km/hr	Deg	in H20	in H20	K	cfm	cfm
04/11/2022	00:00	4.5	0.2	0	0	0	0	22.1	71.5	0	3.13	103	3.6	53.18	273.168	39.73	8.11
04/11/2022	01:00	6.7	0.2	0	0	0	-1.4	22.1	81.1	0	1.16	<Samp	3.6	53.89	271.72	39.87	8.18
04/11/2022	02:00	8.8	0.4	0	0.1	0	-2.1	22.1	85.8	0	1.81	<Samp	3.61	54.17	271.058	39.98	8.21
04/11/2022	03:00	6.7	0.3	0.5	0.7	0	-2.4	22.1	87.9	0	2.61	22	3.63	53.23	270.74	40.09	8.15
04/11/2022	04:00	5.9	3.8	4.5	8.3	0	-2.6	22.2	88.5	0	1.27	<Samp	3.63	52.82	270.525	40.12	8.12
04/11/2022	05:00	5.6	2.1	6.9	9	0.003	-2.4	22.1	91.2	0	4.08	64	3.62	52.13	270.79	40.05	8.07
04/11/2022	06:00	5.4	5.2	12.5	17.7	0.005	0.3	22.3	85.9	0	4.78	80	3.61	51.04	273.47	39.8	7.96
04/11/2022	07:00	4.1	2.1	4.5	6.6	1.196	3.4	21.9	77.4	0	11.4	99	3.58	50.14	276.526	39.38	7.85
04/11/2022	08:00	3.6	1.6	3.5	5	1.53	3.8	21.7	73.1	0	15.54	99	3.58	50.29	276.972	39.34	7.86
04/11/2022	09:00	5.2	0.8	1.3	2.1	0.717	4.3	21.9	72	0	18.46	97	3.58	50.47	277.391	39.35	7.87
04/11/2022	10:00	4.3	0.7	1.3	2	0.205	4.9	21.5	66.2	0	20.89	99	3.59	49.86	278.059	39.35	7.81
04/11/2022	11:00	4.4	0.8	1.4	2.1	0.132	4.6	21.5	68.1	0	25.36	97	3.61	50.01	277.752	39.49	7.83
04/11/2022	12:00	4.5	0.6	0.9	1.5	0.174	5.3	21.7	68.4	0	24.45	99	3.61	49.94	278.448	39.43	7.81
04/11/2022	13:00	3.5	0.6	0.4	1	0.192	6.6	21.7	63.3	0	25.36	100	3.6	49.76	279.744	39.25	7.79
04/11/2022	14:00	2.1	0.5	0.3	0.8	0.138	8	22.1	57.6	0	22.38	97	3.58	49.91	281.138	39.05	7.78
04/11/2022	15:00	1.9	0.5	1.2	1.6	0.085	9.5	22.8	52.5	0	18.9	98	3.58	49.37	282.662	38.95	7.72
04/11/2022	16:00	2.2	0.5	2.6	3.1	0.035	9.1	22.7	53.3	0	15.91	104	3.6	49.69	282.219	39.07	7.75
04/11/2022	17:00	6.4	0.2	5.7	5.9	2.558	8.2	22.2	58.1	0	10.55	105	3.6	50.2	281.328	39.14	7.8
04/11/2022	18:00	8.9	0.5	10.2	10.7	0.206	7.2	21.5	73	0.48	4.13	109	3.59	49.62	280.312	39.17	7.77
04/11/2022	19:00	10	0.4	13.5	13.8	0.179	7.2	22.3	82.2	0	2.23	210	3.57	49.45	280.349	39.05	7.76
04/11/2022	20:00	6.9	0.6	10.3	10.9	0.055	7.4	21.8	85	0.33	3.87	201	3.55	50.18	280.52	38.94	7.8
04/11/2022	21:00	7.6	0.6	10.6	11.2	0.046	7	21.5	100	0.1	1.76	<Samp	3.57	50.85	280.134	39.09	7.86
04/11/2022	22:00	6.4	2.9	17.1	20	0.147	6.6	21.9	100	0	4.08	85	3.57	51.44	279.755	39.13	7.9
04/11/2022	23:00	11.8	2.1	14.5	16.6	0.205	8.1	22	100	0	5.62	252	3.55	52.05	281.207	38.92	7.93
Minimum		1.9	0.2	0	0	0	-2.6	21.5	52.5	0	1.16	22	3.55	49.37	270.525	38.92	7.72
MinDate		15:00	00:00	00:00	00:00	00:00	04:00	10:00	15:00	00:00	01:00	03:00	20:00	15:00	04:00	23:00	15:00
Maximum		11.8	5.2	17.1	20	2.558	9.5	22.8	100	0.48	25.36	252	3.63	54.17	282.662	40.12	8.21
MaxDate		23:00	06:00	22:00	22:00	17:00	15:00	15:00	21:00	18:00	11:00	23:00	03:00	02:00	15:00	04:00	02:00
Avg		5.7	1.2	5.2	6.3	0.325	4.2	22	76.8	0.04	10.41	111	3.59	50.99	277.333	39.41	7.9
Num		24	24	24	24	24	24	24	24	24	24	20	24	24	24	24	24
Data[%]		100	100	100	100	100	100	100	100	100	100	83.33	100	100	100	100	100
STD		2.4	1.2	5.3	6	0.6	4	0.3	14.1	0.1	8.7	50.6	0	1.5	4	0.4	0.1

APPENDIX G

Technical Memorandum

Date: August 8, 2022

To: Khalid Hussein, Project Manager, RWDI

From: Gioseph Anello, Director, Waste Management Services, Durham Region

Copy: L. McDowell, General Manager, (Interim) Environmental, Public Works, York Region

Subject: Durham York Energy Centre (DYEC)
2022 Ambient Air Q2 Sulphur Dioxide Emissions

In support of the 2022, 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.

As indicated by RWDI in the 2022 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-northeast to east directions. The events were possibly a result of emissions from surrounding industrial sources with contributions from the DYEC in the east-northeast direction. The Courtice Station pollution rose in Figure 7 shows that <0.32% of the 5-min SO_2 events are

elevated greater than 67 parts per billion (ppb) and occurred from the north to east-northeast directions with DYEC contributions to SO_2 from the east-northeast directions only.

The Rundle Road Station pollution rose in Figure 6 of the 2022 DYEC Q2 Ambient Air Report shows that the majority of elevated SO_2 events at the Rundle Road Station occurred when winds were from the east to east-southeast which indicates that the DYEC was not a contributor to SO_2 levels at the station.

Each of the date and times of the SO_2 exceedances were compared against the wind direction recorded at the ambient air stations as well as the SO_2 concentrations measured at the DYEC. According to the DYEC's continuous emissions monitoring system (CEMS), when ambient SO_2 standards were exceeded in each of the 49 and 16, recorded ten-minute events and 22 and 6 recorded hourly events at the Courtice Road and Rundle Road Ambient Air monitoring stations respectively, SO_2 CEMS concentrations for both boilers were well below the regulatory compliance limit of 35 mg/Rm^3. During the time the events occurred, both boilers CEMS concentrations, comprised of 24-hour rolling arithmetic average, were recorded between 0-10 mg/Rm^3.

Due to the wind direction when the elevated SO_2 events were recorded, it is possible that there was some contribution from the DYEC, however, DYEC SO_2 CEMS concentration limits were not exceeded at any point in time during Q2.

Table B6: 2022 Rundle Station Q2 Monitoring Results for PAHs

Contaminant	Units	*MECP Criteria*	11 Apr 22	No. > Criteria
1-Methylnaphthalene	ng/m^3	*12000*	4.55E+00	0
2-Methylnaphthalene	ng/m^3	*10000*	8.74E+00	0
Acenaphthene	ng/m^3	-	3.51E+00	-
Acenaphthylene	ng/m^3	*3500*	1.93E-01	0
Anthracene	ng/m^3	*200*	1.14E-01	0
Benzo(a)Anthracene	ng/m^3	-	2.75E-02	-
Benzo(a)fluorene	ng/m^3	-	6.43E-02	-
Benzo(a)Pyrene (Historically High)	ng/m^3	*0.05*[1] *5*[2] *1.1*[3]	5.26E-02	1
Benzo(b)Fluoranthene	ng/m^3	-	1.27E-01	-
Benzo(b)fluorene	ng/m^3	-	3.60E-02	-
Benzo(e)Pyrene	ng/m^3	-	4.00E-02	-
Benzo(g,h,i)Perylene	ng/m^3	-	5.69E-02	-
Benzo(k)Fluoranthene	ng/m^3	-	5.05E-02	-
Biphenyl	ng/m^3	-	1.83E+00	-
Chrysene	ng/m^3	-	1.06E-01	-
Dibenzo(a,h)Anthracene	ng/m^3	-	2.64E-02	-
Fluoranthene	ng/m^3	-	8.86E-01	-
Fluorene	ng/m^3	-	2.63E+00	-
Indeno(1,2,3-cd)Pyrene	ng/m^3	-	5.85E-02	-
Naphthalene	ng/m^3	*22500*	1.53E+01	0
o-Terphenyl	ng/m^3	-	8.18E-03	-
Perylene	ng/m^3	-	1.43E-02	-
Phenanthrene	ng/m^3	-	4.15E+00	-
Pyrene	ng/m^3	-	4.06E-01	-
Tetralin	ng/m^3	-	1.43E+00	-
Total PAH[4]	ng/m^3	-	44.40	-

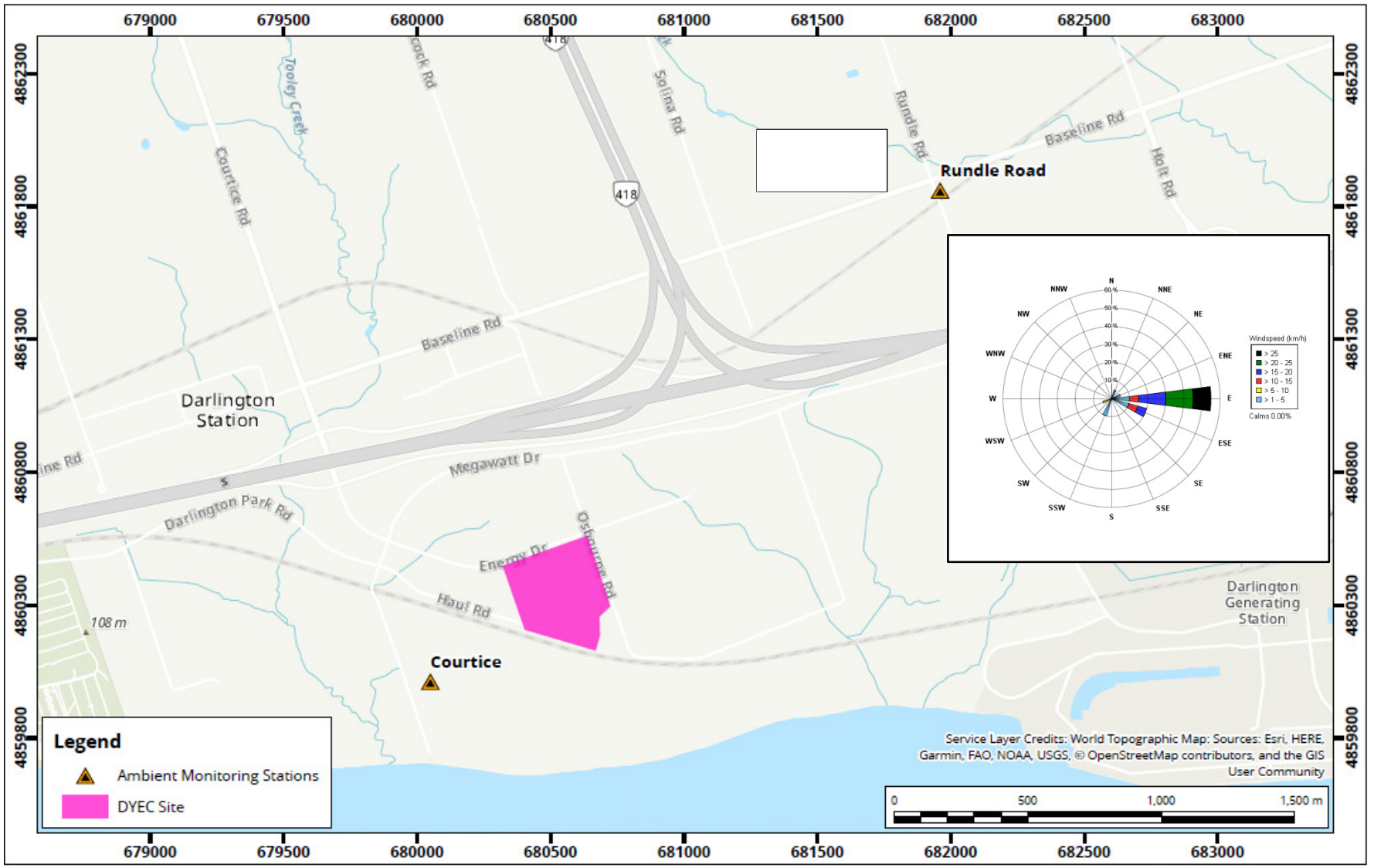
NOTE: All non-detectable results were reported as 1/2 of the detection limit

[1] AAQC

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

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

[4] Total PAH sums all PAH contaminants



DYEC Site and Ambient Monitoring Station Locations

True North

Map Projection: NAD 1983 UTM Zone 17N

DYEC - Region of Durham, Ontario

Project #:

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

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

Certificate of Analysis

ALS Project Contact:	Claire Kocharakkal	**Client Name:**	RWDI Air Inc.
ALS Project ID:	23601	**Client Address:**	600 Southgate Dr.
ALS WO#:	L2699199		Guelph, ON N1G 4P6
Date of Report	25-May-22		Canada
Date of Sample Receipt	14-Apr-22	**Client Contact:**	Khalid Hussein
		Client Project ID:	DYEC

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

Certified by:

Bradley Reimer
GC/MS Laboratory Senior Technical Specialist

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	Method Blank	Reagent Blank	RUNDLE-DX/PAH-APR11	COURTICE-DX/PAH-APR11	BLANK-DX/PAH-APR11	Laboratory Control Sample
ALS Sample ID	WG3717327-1	WG3717327-4	L2699199-1	L2699199-2	L2699199-3	WG3717327-2
Sample Size	1	1	1	1	1	1
Sample units	sample	sample	sample	sample	sample	n/a
Moisture Content	n/a	n/a	n/a	n/a	n/a	n/a
Matrix	QC	QC	Puf	Puf	Puf	QC
Sampling Date	n/a	n/a	11-Apr-22	11-Apr-22	11-Apr-22	n/a
Extraction Date	18-Apr-22	18-Apr-22	18-Apr-22	18-Apr-22	18-Apr-22	18-Apr-22
Target Analytes	ng/sample	ng/sample	ng/sample	ng/sample	ng/sample	%
Naphthalene	65.9 R	7.00 M,R,B	4970	4370	84.1 RB	151.1 RB
2-Methylnaphthalene	4.97 M	1.57 M,B	2840	2880	9.08 M,B	114
1-Methylnaphthalene	3.98 R	1.08 M,B	1480	1410	5.58 M,R,B	112.4
Acenaphthylene	<0.20 U	0.790 R	62.7 R	40.1 M,R	1.14 R	111.7
Acenaphthene	<0.20 U	<0.20 U	1140	1450	<0.20 U	110.7
Fluorene	1.67	0.420 B	854	1110	1.27 B	110
Phenanthrene	3.32	1.75 B	1350	1930	4.15 B	112.8
Anthracene	0.910 M	<0.20 U	37.2	29.2	3.54 RB	114.2
Fluoranthene	<0.20 U	<0.20 U	288	303	1.29 R	110
Pyrene	<0.20 U	<0.20 U	132	129	1.37 R	109.6 M
Benzo(a)Anthracene	<0.20 U	<0.20 U	8.93 R	6.48 M	0.200 R	100.9 M
Chrysene	<0.20 U	<0.20 U	34.6 R	26.2 M	0.270 R	109.2 M
Benzo(b)Fluoranthene	<0.20 U	<0.20 U	41.2 M,R	26.3 M,R	<0.20 U	126.5 M,R
Benzo(k)Fluoranthene	<0.20 U	<0.20 U	16.4 M,R	13.3 M,R	<0.20 U	99.9 M,R
Benzo(e)Pyrene	4.07 M,R	3.09 M,R,B	13.0 M,R,B	15.3 RB	<0.20 U	101.8 M
Benzo(a)Pyrene	8.81 R	<0.20 U	17.1 M,B	13.9 M,B	7.13 RB	107.9 M
Perylene	<0.20 U	<0.20 U	4.64 R	1.42 M	<0.20 U	103.8
Indeno(1,2,3-cd)Pyrene	1.08 R	<0.20 U	19.0	14.7	1.15 RB	101.9
Dibenzo(a,h)Anthracene	2.64 R	<0.20 U	8.57 M,R,B	8.14 M,B	<0.20 U	101.6
Benzo(g,h,i)Perylene	<0.20 U	<0.20 U	18.5	14.3	<0.20 U	108.3
Additional Analytes						
Tetralin	28.9	0.720 M,B	464	433	23.8 B	NS
Biphenyl	1.11 M,R	0.510 M,B	596	671	1.65 M,R,B	NS
o-Terphenyl	0.310 R	0.380 B	2.66 M,B	3.21 M	0.220 RB	NS
Benzo(a)fluorene	<0.20 U	<0.20 U	20.9	15.3	0.410 R	NS
Benzo(b)fluorene	<0.20 U	<0.20 U	11.7	7.26	0.880 R	NS
Field Sampling Standards	% Rec	% Rec	% Rec	% Rec	% Rec	% Rec
1-Methylnaphthalene-D10	NS	NS	83.2	72.7	91.7	NS
Fluorene D10	NS	NS	90.7	105.5	78.8	NS
Terphenyl D14(Surr.)	NS	NS	103.1	108.7	111.6 R	NS
Extraction Standards	% Rec	% Rec	% Rec	% Rec	% Rec	% Rec
Naphthalene D8	47.9	43.7	52.6 R	37.6 R	48.9	61.9
2-Methylnaphthalene-D10	55.2	45.3	55.5	41.5	56.2	71.4
Acenaphthylene D8	57.4	48.6	60.6	40.9	66.4	76.6
Phenanthrene D10	52.9	43.5	58.1 R	37.6	49.2	75.8
Anthracene-D10	51.3	43.2	53.3	37.1	51.2	70.1
Fluoranthene D10	64.1	51.1	65.9	47	66.4	84.8
Benz(a)Anthracene-D12	106.1	80.3	97.3	70.5	109.1	136.7
Chrysene D12	97.7	69.8	88.2	63.7	94.5	121.8
Benzo(b)Fluoranthene-D12	69.6	57.4	76.7	52.3	89.8	86
Benzo(k)Fluoranthene-D12	70.2 R	57.8 R	76 R	49.5 M	83 R	92.2 M
Benzo(a)Pyrene D12	73.3 R	55.6 R	71 R	45.5 M	80.7 R	90.8 M
Perylene D12	69.3	57.3	72.1	47	79.8	89.9
Indeno(1,2,3,cd)Pyrene-D12	72.8	66.2	87.3	67.6	86.1	92.2
Dibenz(a,h)Anthracene-D14	70.9	63.8	86.1	66.5	85.8	100.6 M
Benzo(g,h,i)Perylene D12	61.9	52.4	70.2	51.4	61.4	78.9 M

U	Indicates that this compound was not detected above the LOD.
M	Indicates that a peak has been manually integrated.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
NS	Indicates that the compound was not added to the sample

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	Method Blank	Sampling Date	n/a
ALS Sample ID	WG3717327-1	Extraction Date	18-Apr-22
Analysis Method	PAH by CARB 429		
Analysis Type	blank		
Sample Matrix	QC		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	1	Workgroup	WG3717327

Approved:
Peter Nguyen
--e-signature--
02-May-2022

Run Information	Run 1
Filename	PAH220428-041.D
Run Date	4/29/2022 10:19
Final Volume	0.1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US1509936H

Target Analytes	Ret. Time	Concentration ng/sample	Flags
Naphthalene	2.84	65.9	R
2-Methylnaphthalene	3.43	4.97 M	
1-Methylnaphthalene	3.54	3.98	R
Acenaphthylene	NotFnd	<0.20	U
Acenaphthene	NotFnd	<0.20	U
Fluorene	5.82	1.67	
Phenanthrene	8.03	3.32	
Anthracene	8.15	0.910 M	
Fluoranthene	NotFnd	<0.20	U
Pyrene	NotFnd	<0.20	U
Benzo(a)Anthracene	NotFnd	<0.20	U
Chrysene	NotFnd	<0.20	U
Benzo(b)Fluoranthene	NotFnd	<0.20	U
Benzo(k)Fluoranthene	NotFnd	<0.20	U
Benzo(e)Pyrene	20.01	4.07 M	R
Benzo(a)Pyrene	20.18	8.81	R
Perylene	NotFnd	<0.20	U
Indeno(1,2,3-cd)Pyrene	23.97	1.08	R
Dibenzo(a,h)Anthracene	24.26	2.64	R
Benzo(g,h,i)Perylene	NotFnd	<0.20	U
Additional Analytes			
Tetralin	2.72	28.9	
Biphenyl	3.97	1.11 M	R
o-Terphenyl	9.31	0.310	R
Benzo(a)fluorene	NotFnd	<0.20	U
Benzo(b)fluorene	NotFnd	<0.20	U

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

Extraction Standards			% Rec		Limits
Naphthalene D8	100	2.83	47.9		50-150
2-Methylnaphthalene-D10	100	3.40	55.2		50-150
Acenaphthylene D8	100	4.57	57.4		50-150
Phenanthrene D10	100	7.98	52.9		50-150
Anthracene-D10	100	8.10	51.3		50-150
Fluoranthene D10	100	11.39	64.1		50-150
Benz(a)Anthracene-D12	100	15.94	106.1		50-150
Chrysene D12	100	16.04	97.7		50-150
Benzo(b)Fluoranthene-D12	100	19.27	69.6		50-150
Benzo(k)Fluoranthene-D12	100	19.36	70.2	R	50-150
Benzo(a)Pyrene D12	100	20.16	73.3	R	50-150
Perylene D12	100	20.39	69.3		50-150
Indeno(1,2,3,cd)Pyrene-D12	100	23.91	72.8		50-150
Dibenz(a,h)Anthracene-D14	100	24.07	70.9		50-150
Benzo(g,h,i)Perylene D12	100	24.90	61.9		50-150

M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the MDL.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
NS	Indicates that the compound was not added to the sample

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	Reagent Blank	Sampling Date	n/a
ALS Sample ID	WG3717327-4	Extraction Date	18-Apr-22
Analysis Method	PAH by CARB 429		
Analysis Type	blank		
Sample Matrix	QC		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	1	Workgroup	WG3717327

Approved:
Peter Nguyen
--e-signature--
02-May-2022

Run Information	Run 1
Filename	PAH220428-042.D
Run Date	4/29/2022 10:57
Final Volume	0.1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US1509936H

Target Analytes	Ret. Time	Concentration ng/sample	Flags
Naphthalene	2.84	7.00	M R B
2-Methylnaphthalene	3.43	1.57	M B
1-Methylnaphthalene	3.54	1.08	M B
Acenaphthylene	4.61	0.790	R
Acenaphthene	NotFnd	<0.20	U
Fluorene	5.82	0.420	B
Phenanthrene	8.03	1.75	B
Anthracene	NotFnd	<0.20	U
Fluoranthene	NotFnd	<0.20	U
Pyrene	NotFnd	<0.20	U
Benzo(a)Anthracene	NotFnd	<0.20	U
Chrysene	NotFnd	<0.20	U
Benzo(b)Fluoranthene	NotFnd	<0.20	U
Benzo(k)Fluoranthene	NotFnd	<0.20	U
Benzo(e)Pyrene	20.01	3.09	M R B
Benzo(a)Pyrene	NotFnd	<0.20	U
Perylene	NotFnd	<0.20	U
Indeno(1,2,3-cd)Pyrene	NotFnd	<0.20	U
Dibenzo(a,h)Anthracene	NotFnd	<0.20	U
Benzo(g,h,i)Perylene	NotFnd	<0.20	U
Additional Analytes			
Tetralin	2.72	0.720	M B
Biphenyl	3.97	0.510	M B
o-Terphenyl	9.31	0.380	B
Benzo(a)fluorene	NotFnd	<0.20	U
Benzo(b)fluorene	NotFnd	<0.20	U

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

Extraction Standards			% Rec		Limits
Naphthalene D8	100	2.82	43.7		50-150
2-Methylnaphthalene-D10	100	3.40	45.3		50-150
Acenaphthylene D8	100	4.57	48.6		50-150
Phenanthrene D10	100	7.98	43.5		50-150
Anthracene-D10	100	8.10	43.2		50-150
Fluoranthene D10	100	11.39	51.1		50-150
Benz(a)Anthracene-D12	100	15.94	80.3		50-150
Chrysene D12	100	16.04	69.8		50-150
Benzo(b)Fluoranthene-D12	100	19.27	57.4		50-150
Benzo(k)Fluoranthene-D12	100	19.36	57.8	R	50-150
Benzo(a)Pyrene D12	100	20.16	55.6	R	50-150
Perylene D12	100	20.39	57.3		50-150
Indeno(1,2,3,cd)Pyrene-D12	100	23.91	66.2		50-150
Dibenz(a,h)Anthracene-D14	100	24.07	63.8		50-150
Benzo(g,h,i)Perylene D12	100	24.90	52.4		50-150

M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the MDL.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
NS	Indicates that the compound was not added to the sample

ALS Life Sciences

Sample Analysis Report

Sample Name	RUNDLE-DX/PAH-APR11	Sampling Date	11-Apr-22 00:00
ALS Sample ID	L2699199-1	Extraction Date	18-Apr-22
Analysis Method	PAH by CARB 429		
Analysis Type	sample		
Sample Matrix	Puf		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	1	Workgroup	WG3717327

Approved:
Peter Nguyen
--e-signature--
02-May-2022

Run Information	Run 1	Run 2
Filename	PAH220428-046.D	PAH220428-044.D
Run Date	4/29/2022 13:29	4/29/2022 12:13
Final Volume	0.1 mL	0.1 mL
Dilution Factor	1	10
Analysis Units	ng/sample	ng/sample
Instrument	MSD-5	MSD-5
Column	HP-5MS US1509936H	HP-5MS US1509936H

Target Analytes	Ret. Time	Concentration ng/sample	Flags	Ret. Time.	Concentration ng/sample	Flags
Naphthalene				2.84	4970	
2-Methylnaphthalene				3.43	2840	
1-Methylnaphthalene				3.54	1480	
Acenaphthylene	4.59	62.7	R			
Acenaphthene				4.88	1140	
Fluorene				5.82	854	
Phenanthrene				8.03	1350	
Anthracene	8.15	37.2				
Fluoranthene				11.45	288	
Pyrene	12.09	132				
Benzo(a)Anthracene	16.00	8.93	R			
Chrysene	16.12	34.6	R			
Benzo(b)Fluoranthene	19.34	41.2 M	R			
Benzo(k)Fluoranthene	19.38	16.4 M	R			
Benzo(e)Pyrene	20.09	13.0 M	R B			
Benzo(a)Pyrene	20.21	17.1 M	B			
Perylene	20.51	4.64	R			
Indeno(1,2,3-cd)Pyrene	23.99	19.0				
Dibenzo(a,h)Anthracene	24.26	8.57 M	R B			
Benzo(g,h,i)Perylene	25.01	18.5				
Additional Analytes						
Tetralin				2.72	464	
Biphenyl				3.97	596	
o-Terphenyl	9.31	2.66 M	B			
Benzo(a)fluorene	13.26	20.9				
Benzo(b)fluorene	13.47	11.7				

Field Sampling Standards	ng spiked		% Rec			% Rec	
1-Methylnaphthalene-D10	300	3.51	83.2				
Fluorene D10	300	5.76	90.7				
Terphenyl D14(Surr.)	300	12.90	103.1				

Extraction Standards			% Rec	Limits		% Rec	
Naphthalene D8	100			50-150	2.83	52.6	R
2-Methylnaphthalene-D10	100			50-150	3.40	55.5	
Acenaphthylene D8	100			50-150	4.57	60.6	
Phenanthrene D10	100			50-150	7.98	58.1	R
Anthracene-D10	100	8.10	53.3	50-150			
Fluoranthene D10	100			50-150	11.39	65.9	
Benz(a)Anthracene-D12	100	15.94	97.3	50-150			
Chrysene D12	100	16.04	88.2	50-150			
Benzo(b)Fluoranthene-D12	100	19.28	76.7	50-150			
Benzo(k)Fluoranthene-D12	100	19.36	76.0 R	50-150			
Benzo(a)Pyrene D12	100	20.16	71.0 R	50-150			
Perylene D12	100	20.39	72.1	50-150			
Indeno(1,2,3,cd)Pyrene-D12	100	23.91	87.3	50-150			
Dibenz(a,h)Anthracene-D14	100	24.07	86.1	50-150			
Benzo(g,h,i)Perylene D12	100	24.90	70.2	50-150			

M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the MDL.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.

ALS Life Sciences

Sample Analysis Report

Sample Name	COURTICE-DX/PAH-APR11	Sampling Date	11-Apr-22 00:00
ALS Sample ID	L2699199-2	Extraction Date	18-Apr-22
Analysis Method	PAH by CARB 429		
Analysis Type	sample		
Sample Matrix	Puf		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	1	Workgroup	WG3717327

Approved:
Peter Nguyen
--e-signature--
02-May-2022

Run Information	Run 1	Run 2
Filename	PAH220428-047.D	PAH220428-045.D
Run Date	4/29/2022 14:07	4/29/2022 12:51
Final Volume	0.1 mL	0.1 mL
Dilution Factor	1	10
Analysis Units	ng/sample	ng/sample
Instrument	MSD-5	MSD-5
Column	HP-5MS US1509936H	HP-5MS US1509936H

Target Analytes	Ret. Time	Concentration ng/sample	Flags	Ret. Time.	Concentration ng/sample	Flags
Naphthalene				2.84	4370	
2-Methylnaphthalene				3.43	2880	
1-Methylnaphthalene				3.55	1410	
Acenaphthylene	4.59	40.1	M R			
Acenaphthene				4.88	1450	
Fluorene				5.82	1110	
Phenanthrene				8.03	1930	
Anthracene	8.15	29.2				
Fluoranthene				11.45	303	
Pyrene	12.09	129				
Benzo(a)Anthracene	16.00	6.48	M			
Chrysene	16.12	26.2	M			
Benzo(b)Fluoranthene	19.35	26.3	M R			
Benzo(k)Fluoranthene	19.37	13.3	M R			
Benzo(e)Pyrene	20.09	15.3	R B			
Benzo(a)Pyrene	20.22	13.9	M B			
Perylene	20.46	1.42	M			
Indeno(1,2,3-cd)Pyrene	23.98	14.7				
Dibenzo(a,h)Anthracene	24.25	8.14	M B			
Benzo(g,h,i)Perylene	25.01	14.3				
Additional Analytes						
Tetralin				2.72	433	
Biphenyl				3.97	671	
o-Terphenyl	9.31	3.21	M			
Benzo(a)fluorene	13.26	15.3				
Benzo(b)fluorene	13.47	7.26				

Field Sampling Standards	ng spiked		% Rec		% Rec	
1-Methylnaphthalene-D10	300	3.51	72.7			
Fluorene D10	300	5.77	105.5			
Terphenyl D14(Surr.)	300	12.90	108.7			

Extraction Standards			% Rec	Limits			
Naphthalene D8	100			50-150	2.83	37.6	R
2-Methylnaphthalene-D10	100			50-150	3.40	41.5	
Acenaphthylene D8	100			50-150	4.57	40.9	
Phenanthrene D10	100			50-150	7.98	37.6	
Anthracene-D10	100	8.10	37.1	50-150			
Fluoranthene D10	100			50-150	11.39	47	
Benz(a)Anthracene-D12	100	15.93	70.5	50-150			
Chrysene D12	100	16.05	63.7	50-150			
Benzo(b)Fluoranthene-D12	100	19.27	52.3	50-150			
Benzo(k)Fluoranthene-D12	100	19.36	49.5 M	50-150			
Benzo(a)Pyrene D12	100	20.16	45.5 M	50-150			
Perylene D12	100	20.39	47.0	50-150			
Indeno(1,2,3,cd)Pyrene-D12	100	23.90	67.6	50-150			
Dibenz(a,h)Anthracene-D14	100	24.07	66.5	50-150			
Benzo(g,h,i)Perylene D12	100	24.89	51.4	50-150			

M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the MDL.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.

ALS Life Sciences

Sample Analysis Report

Sample Name	BLANK-DX/PAH-APR11	Sampling Date	11-Apr-22 00:00
ALS Sample ID	L2699199-3	Extraction Date	18-Apr-22
Analysis Method	PAH by CARB 429		
Analysis Type	sample		
Sample Matrix	Puf		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	1	Workgroup	WG3717327

Approved:
Peter Nguyen
--e-signature--
02-May-2022

Run Information	Run 1
Filename	PAH220428-043.D
Run Date	4/29/2022 11:35
Final Volume	0.1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US1509936H

Target Analytes	Ret. Time	Concentration ng/sample	Flags
Naphthalene	2.84	84.1	R B
2-Methylnaphthalene	3.43	9.08 M	B
1-Methylnaphthalene	3.54	5.58 M	R B
Acenaphthylene	4.58	1.14	R
Acenaphthene	NotFnd	<0.20	U
Fluorene	5.82	1.27	B
Phenanthrene	8.03	4.15	B
Anthracene	8.11	3.54	R B
Fluoranthene	11.45	1.29	R
Pyrene	12.09	1.37	R
Benzo(a)Anthracene	16.04	0.200	R
Chrysene	16.12	0.270	R
Benzo(b)Fluoranthene	NotFnd	<0.20	U
Benzo(k)Fluoranthene	NotFnd	<0.20	U
Benzo(e)Pyrene	NotFnd	<0.20	U
Benzo(a)Pyrene	20.18	7.13	R B
Perylene	NotFnd	<0.20	U
Indeno(1,2,3-cd)Pyrene	23.97	1.15	R B
Dibenzo(a,h)Anthracene	NotFnd	<0.20	U
Benzo(g,h,i)Perylene	NotFnd	<0.20	U
Additional Analytes			
Tetralin	2.72	23.8	B
Biphenyl	3.97	1.65 M	R B
o-Terphenyl	9.31	0.220	R B
Benzo(a)fluorene	13.22	0.410	R
Benzo(b)fluorene	13.42	0.880	R

Field Sampling Standards	ng spiked		% Rec	
1-Methylnaphthalene-D10	300	3.51	91.7	
Fluorene D10	300	5.76	78.8	
Terphenyl D14(Surr.)	300	12.90	111.6	R

Extraction Standards			% Rec		Limits
Naphthalene D8	100	2.82	48.9		50-150
2-Methylnaphthalene-D10	100	3.40	56.2		50-150
Acenaphthylene D8	100	4.57	66.4		50-150
Phenanthrene D10	100	7.98	49.2		50-150
Anthracene-D10	100	8.10	51.2		50-150
Fluoranthene D10	100	11.40	66.4		50-150
Benz(a)Anthracene-D12	100	15.94	109.1		50-150
Chrysene D12	100	16.05	94.5		50-150
Benzo(b)Fluoranthene-D12	100	19.28	89.8		50-150
Benzo(k)Fluoranthene-D12	100	19.36	83.0	R	50-150
Benzo(a)Pyrene D12	100	20.16	80.7	R	50-150
Perylene D12	100	20.40	79.8		50-150
Indeno(1,2,3,cd)Pyrene-D12	100	23.91	86.1		50-150
Dibenz(a,h)Anthracene-D14	100	24.07	85.8		50-150
Benzo(g,h,i)Perylene D12	100	24.91	61.4		50-150

M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the MDL.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.

ALS Life Sciences

Continuing Calibration Report

Sample Name	Laboratory Control Sample	Sampling Date	n/a
ALS Sample ID	WG3717327-2	Extraction Date	18-Apr-22
Analysis Method	PAH by CARB 429		
Analysis Type	CCV		
Sample Matrix	QC		
Sample Size	1 n/a		
Percent Moisture	n/a		
Split Ratio	1	Workgroup	WG3717327

Approved:
Peter Nguyen
--e-signature--
02-May-2022

Run Information	Run 1
Filename	PAH220428-039.D
Run Date	4/29/2022 9:03
Final Volume	0.1 mL
Dilution Factor	1
Analysis Units	%
Instrument	MSD-5
Column	HP-5MS US1509936H

Target Analytes	ug/mL	Ret. Time	%	Flags	Limits
Naphthalene	100	2.84	151.1	R B	70-130
2-Methylnaphthalene	100	3.43	114		70-130
1-Methylnaphthalene	100	3.54	112.4		70-130
Acenaphthylene	100	4.59	111.7		70-130
Acenaphthene	100	4.88	110.7		70-130
Fluorene	100	5.82	110		70-130
Phenanthrene	100	8.03	112.8		70-130
Anthracene	100	8.15	114.2		70-130
Fluoranthene	100	11.45	110		70-130
Pyrene	100	12.09	109.6 M		70-130
Benzo(a)Anthracene	100	16.00	100.9 M		70-130
Chrysene	100	16.12	109.2 M		70-130
Benzo(b)Fluoranthene	100	19.35	126.5 M	R	70-130
Benzo(k)Fluoranthene	100	19.41	99.9 M	R	70-130
Benzo(e)Pyrene	100	20.09	101.8 M		70-130
Benzo(a)Pyrene	100	20.22	107.9 M		70-130
Perylene	100	20.46	103.8		70-130
Indeno(1,2,3-cd)Pyrene	100	23.99	101.9		70-130
Dibenzo(a,h)Anthracene	100	24.20	101.6		70-130
Benzo(g,h,i)Perylene	100	25.01	108.3		70-130

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

Extraction Standards			% Rec		Limits
Naphthalene D8	100	2.83	61.9		70-130
2-Methylnaphthalene-D10	100	3.40	71.4		70-130
Acenaphthylene D8	100	4.57	76.6		70-130
Phenanthrene D10	100	7.98	75.8		70-130
Anthracene-D10	100	8.10	70.1		70-130
Fluoranthene D10	100	11.39	84.8		70-130
Benz(a)Anthracene-D12	100	15.94	136.7		70-130
Chrysene D12	100	16.05	121.8		70-130
Benzo(b)Fluoranthene-D12	100	19.27	86.0		70-130
Benzo(k)Fluoranthene-D12	100	19.36	92.2 M		70-130
Benzo(a)Pyrene D12	100	20.16	90.8 M		70-130
Perylene D12	100	20.39	89.9		70-130
Indeno(1,2,3,cd)Pyrene-D12	100	23.91	92.2		70-130
Dibenz(a,h)Anthracene-D14	100	24.07	100.6 M		70-130
Benzo(g,h,i)Perylene D12	100	24.90	78.9 M		70-130

M	Indicates that a peak has been manually integrated.
B	Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
NS	Indicates that the compound was not added to the sample

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2699199-COFC

COC Number: 17 -

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	RWDI
Contact:	Matt Lantz
Phone:	519 823 1311
	Company address below will appear on the final report
Street:	600 Southgate Drive
City/Province:	Guelph, Ontario
Postal Code:	N1G 4P6
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)

Quality Control (QC) Report with Report ☐ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Matt.Lantz@rwdi.com

Email 2:

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Standard TAT is 15 business days. DTOX analysis standard TAT is 5 business days

PRIORITY (Business Days): ☐ 15 day [R- Regular] ☐ 10 day [P-50%] ☐ 5 day [E-100%]

EMERGENCY: 5 Business day - DTOX [R - Regular] / 3 Business day - DTOX [E - 100%]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

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

Analysis Request

NUMBER OF CONTAINERS — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Sample Air Volume (m3)	Date (dd-mmm-yy)	Sample Period	Sample Type	TSP, ICP on Hi-Vol Filter	PAH	DX	SAMPLES ON HOLD
1	L2696549-3 - Rundle	325	11-Apr-22	24hr	Air		X	X	
1	742363	1588	11-Apr-22	24hr	Air	X			
2	742362	1592	05-Apr-22	24hr	Air	X			
2	L2696549-2 - Courtice	322	11-Apr-22	24hr	Air		X	X	
3	742364	1655	11-Apr-22	24hr	Air	X			
4	742301	1645	05-Apr-22	24hr	Air	X			
3	L2696549-4 - Blank		11-Apr-22	24hr	Air		X	X	
5	742562		11-Apr-22	24hr	Air	X	X		
				24hr	Air				
				24hr	Air				
				24hr	Air				
				24hr	Air				

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Samples are 10 day TAT

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☒

Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☒

Cooling Initiated ☑

INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C	
12.1°C	17.3°C		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 13-Apr-22	Time: 1100	Received by: AARON BURTON	Date: 14-Apr-2022	Time: 12:00	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 20

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

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

Station: RofD Rundle Daily: 04/11/2022 Type: AVG 1 Hr. [5 Mins.]

Date	Time	PM2.5	NO	NO2	NOX	SO2	ET	Tr_Temp	RH AVG	Rain total	WS km/hr	WD	Hi-Vol Pressure	PUF Pressure	ET	Hivol Flow	PUF Flow
		ug/m3	ppb	ppb	ppb	ppb	C°	C°	%	mm	km/hr	Deg	in H20	in H20	K	cfm	cfm
04/11/2022	00:00	4.5	0.2	0	0	0	0	22.1	71.5	0	3.13	103	3.6	53.18	273.168	39.73	8.11
04/11/2022	01:00	6.7	0.2	0	0	0	-1.4	22.1	81.1	0	1.16	<Samp	3.6	53.89	271.72	39.87	8.18
04/11/2022	02:00	8.8	0.4	0	0.1	0	-2.1	22.1	85.8	0	1.81	<Samp	3.61	54.17	271.058	39.98	8.21
04/11/2022	03:00	6.7	0.3	0.5	0.7	0	-2.4	22.1	87.9	0	2.61	22	3.63	53.23	270.74	40.09	8.15
04/11/2022	04:00	5.9	3.8	4.5	8.3	0	-2.6	22.2	88.5	0	1.27	<Samp	3.63	52.82	270.525	40.12	8.12
04/11/2022	05:00	5.6	2.1	6.9	9	0.003	-2.4	22.1	91.2	0	4.08	64	3.62	52.13	270.79	40.05	8.07
04/11/2022	06:00	5.4	5.2	12.5	17.7	0.005	0.3	22.3	85.9	0	4.78	80	3.61	51.04	273.47	39.8	7.96
04/11/2022	07:00	4.1	2.1	4.5	6.6	1.196	3.4	21.9	77.4	0	11.4	99	3.58	50.14	276.526	39.38	7.85
04/11/2022	08:00	3.6	1.6	3.5	5	1.53	3.8	21.7	73.1	0	15.54	99	3.58	50.29	276.972	39.34	7.86
04/11/2022	09:00	5.2	0.8	1.3	2.1	0.717	4.3	21.9	72	0	18.46	97	3.58	50.47	277.391	39.35	7.87
04/11/2022	10:00	4.3	0.7	1.3	2	0.205	4.9	21.5	66.2	0	20.89	99	3.59	49.86	278.059	39.35	7.81
04/11/2022	11:00	4.4	0.8	1.4	2.1	0.132	4.6	21.5	68.1	0	25.36	97	3.61	50.01	277.752	39.49	7.83
04/11/2022	12:00	4.5	0.6	0.9	1.5	0.174	5.3	21.7	68.4	0	24.45	99	3.61	49.94	278.448	39.43	7.81
04/11/2022	13:00	3.5	0.6	0.4	1	0.192	6.6	21.7	63.3	0	25.36	100	3.6	49.76	279.744	39.25	7.79
04/11/2022	14:00	2.1	0.5	0.3	0.8	0.138	8	22.1	57.6	0	22.38	97	3.58	49.91	281.138	39.05	7.78
04/11/2022	15:00	1.9	0.5	1.2	1.6	0.085	9.5	22.8	52.5	0	18.9	98	3.58	49.37	282.662	38.95	7.72
04/11/2022	16:00	2.2	0.5	2.6	3.1	0.035	9.1	22.7	53.3	0	15.91	104	3.6	49.69	282.219	39.07	7.75
04/11/2022	17:00	6.4	0.2	5.7	5.9	2.558	8.2	22.2	58.1	0	10.55	105	3.6	50.2	281.328	39.14	7.8
04/11/2022	18:00	8.9	0.5	10.2	10.7	0.206	7.2	21.5	73	0.48	4.13	109	3.59	49.62	280.312	39.17	7.77
04/11/2022	19:00	10	0.4	13.5	13.8	0.179	7.2	22.3	82.2	0	2.23	210	3.57	49.45	280.349	39.05	7.76
04/11/2022	20:00	6.9	0.6	10.3	10.9	0.055	7.4	21.8	85	0.33	3.87	201	3.55	50.18	280.52	38.94	7.8
04/11/2022	21:00	7.6	0.6	10.6	11.2	0.046	7	21.5	100	0.1	1.76	<Samp	3.57	50.85	280.134	39.09	7.86
04/11/2022	22:00	6.4	2.9	17.1	20	0.147	6.6	21.9	100	0	4.08	85	3.57	51.44	279.755	39.13	7.9
04/11/2022	23:00	11.8	2.1	14.5	16.6	0.205	8.1	22	100	0	5.62	252	3.55	52.05	281.207	38.92	7.93
Minimum		1.9	0.2	0	0	0	-2.6	21.5	52.5	0	1.16	22	3.55	49.37	270.525	38.92	7.72
MinDate		15:00	00:00	00:00	00:00	00:00	04:00	10:00	15:00	00:00	01:00	03:00	20:00	15:00	04:00	23:00	15:00
Maximum		11.8	5.2	17.1	20	2.558	9.5	22.8	100	0.48	25.36	252	3.63	54.17	282.662	40.12	8.21
MaxDate		23:00	06:00	22:00	22:00	17:00	15:00	15:00	21:00	18:00	11:00	23:00	03:00	02:00	15:00	04:00	02:00
Avg		5.7	1.2	5.2	6.3	0.325	4.2	22	76.8	0.04	10.41	111	3.59	50.99	277.333	39.41	7.9
Num		24	24	24	24	24	24	24	24	24	24	20	24	24	24	24	24
Data[%]		100	100	100	100	100	100	100	100	100	100	83.33	100	100	100	100	100
STD		2.4	1.2	5.3	6	0.6	4	0.3	14.1	0.1	8.7	50.6	0	1.5	4	0.4	0.1