REPORT

DURHAM YORK ENERGY CENTRE

DURHAM, ONTARIO

2025 ANNUAL AMBIENT AIR QUALITY MONITORING REPORT: CONTINUOUS & PERIODIC MONITORING PROGRAM

RWDI #2600650

May 15, 2026

SUBMITTED TO

The Director of Waste Management Services

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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 ambient air quality 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 1st, 2016. The DYEC facility location is shown in **Figure 1**.

The facility has two monitoring stations which collected 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 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 meteorological tower at the Rundle Road Station, is approximately 10 meters tall. The Courtice Station collects the following meteorological parameters: ambient temperature, ambient pressure, precipitation and relative humidity. For purposes of this report, wind speed and wind direction data presented for the Courtice Station have been obtained from the adjacent Courtice Water Pollution Control Plant (WPCP) meteorological tower, which is approximately 20 meters tall.

All 2025 quarterly reports were issued to the MECP by the Region of Durham. This report presents the annual results from January 1 to December 31, 2025.

Throughout 2025, there were a total of seven (7) exceedances of the AAQC for Benzo(a) Pyrene. There were three (3) exceedances at the Courtice station on the following dates: March 14, November 21, and December 3. There were four (4) exceedances at the Rundle station on the following dates: March 14, October 4, November 21 and December 3. Due to a sample backlog at the analytical laboratory, the March 14 exceedances were not captured in the Q1 report issued on May 15, 2025, and were instead noted in the Q2 report issued on August 13, 2025. There were no exceedances for TSP at either station throughout 2025. Data recovery rates were acceptable and valid for all measured parameters at the Courtice and Rundle Road Monitoring Stations except for the D&F parameter at the Courtice station.

In years prior to 2020, the DYEC site had no recorded SO_2 exceedances. At the beginning of the 2020 year, the 1-hour AAQC limit was reduced from 250 ppb to 40 ppb and a 10-minute AAQC limit was introduced at 67 ppb. The ambient air monitoring program at the DYEC had ninety-one (91) rolling 1-hour average SO_2 concentrations above the AAQC and one-hundred and seventy-one (171) rolling 10-minute average SO_2 concentrations above the AAQC at the Courtice and Rundle Road monitoring stations throughout 2025. There was only one (1) CAAQS' 1-hour exceedance which occurred at the Courtice station and no annual exceedance for SO2 in 2025 for either station.

2 BACKGROUND

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. The monitoring plan established the Courtice and Rundle Road monitoring stations to monitor ambient air quality and quantify the background ambient air quality levels and DYEC contributed emissions to ambient air quality levels. The monitoring plan also initially included the Fence Line Station, which commenced on February 6, 2016, and ceased on December 4, 2018. Since no exceedances had been reported for TSP or Metals, a request to remove the station was approved by the Ministry of the Environment, Conservation and Parks (MECP).

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

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

3 MONITORING 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 DYEC Site and Ambient Monitoring Station Locations are presented in **Figure 1**, in addition to an annual windrose for each Station. A windrose is a visual representation of the wind speed and wind direction over a specified time period.

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, northeast of the DYEC. Pictures of the two (2) Stations are presented as **Figure 2** and **3**.

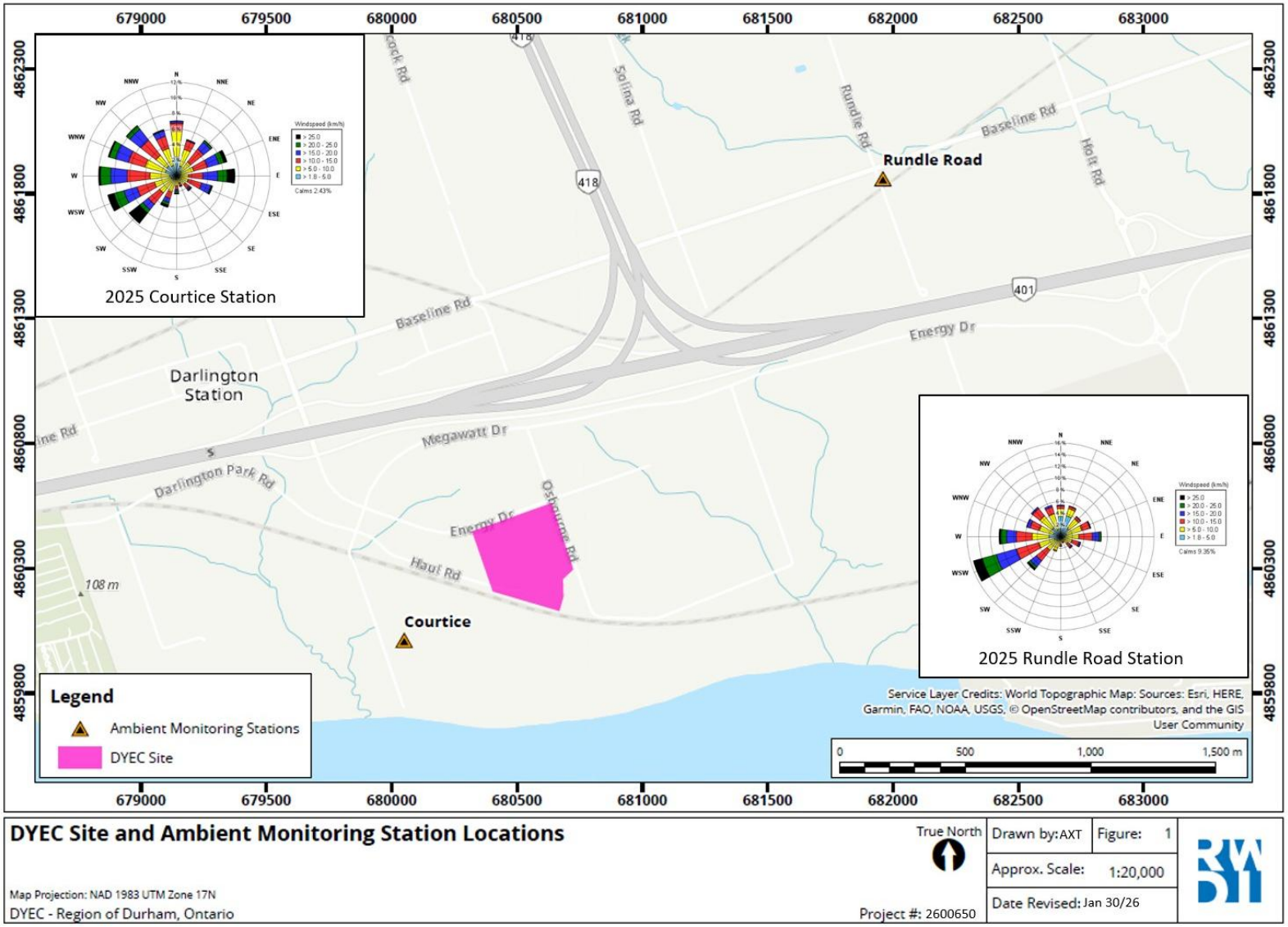


Figure 1: Site and Ambient Monitoring Station Locations

Figure 2: Courtice Station

Figure 3: Rundle Road Station

4 SAMPLING PROGRAM

4.1 Field Operations

RWDI representatives were responsible for completing the following:

- Day-to-day changing of the filters where applicable;
- Field notes and recording observations;
- Monthly calibrations;
- Attending quarterly audits;
- General and preventative maintenance of the units (e.g., flow calibrations, motor replacements etc.);
- Troubleshooting, maintenance and repairs when problems were encountered;
- Routine cleaning (e.g., PUF housing, SHARP $PM_{2.5}$ heads, sample lines etc.);
- Preparation and recovery of PUF media;
- Completion of chain of custody forms for submission to ALS Laboratories in Burlington, ON; and,
- Preparation of the media for shipment to ALS Laboratories using MECP accepted methods.

The samplers were operated according to the Operations Manual for Air Quality Monitoring in Ontario published by the MECP (January 2018) and the Ambient Air Quality Monitoring Plan. RWDI adhered to the manual for any operational changes conducted during the contract period.

4.2 Sample Schedules

All discrete sampling at the Courtice and Rundle Road Stations adhered to the National Air Pollution Surveillance (NAPS) sampling schedule, sampling for 24 hours (midnight to midnight). Sampling was as follows:

- TSP/Metals hi-vol samplers operated on the six-day schedule; and,
- PUF samplers operated on the twelve-day schedule. The samples were analyzed for PAH's every twelve days, and D&F's every twenty-four days.

4.3 Instrumentation

Courtice and Rundle Road Monitoring Stations are both equipped with the following continuous monitors: Teledyne T200 Nitrogen Oxide Analyzer Model (NO_X analyzer), Teledyne T100 Sulfur Dioxide Analyzer and Thermo Scientific Model 5030 SHARP Monitor (SHARP) with a $PM_{2.5}$ inlet head. Courtice and Rundle Road Stations also have the following periodic monitors: High Volume (Hi-Vol) Air Sampler outfitted with a total suspended particulate (TSP) inlet capable of collecting particulate of all aerodynamic diameters and a Tisch TE-1000 sampler used to collect D&F's and PAH's using a polyurethane foam plug.

The Courtice and Rundle Road Stations also collect continuous meteorological parameters. The Courtice Station is equipped with the following continuous monitors: Campbell Scientific Model HMP60 (temperature/relative humidity), Campbell Scientific Model CS106 (atmospheric pressure), Texas Electronic TE525M (precipitation). The Courtice Monitoring Station uses the Courtice WPCP wind speed and direction data. The wind speed and direction data are provided to RWDI by Courtice WPCP staff upon request. The Rundle Road Station is equipped with the following continuous monitors: Campbell Scientific Model HMP60 (temperature/relative humidity), Texas Electronic TE525M (precipitation) and RM Young Model 05103-10 wind head (wind speed and direction).

4.4 Analytical Methods

4.4.1 Synchronized Hybrid Ambient Real-time Particulate (SHARP) Monitor

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 which is attached to an Envidas Ultimate computer. The computer 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.

4.4.2 Nitrogen Oxide Analyzer

The Teledyne T200 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 EPA protocol span gases and a dilution system. Automatic IZS checks were performed on a daily basis commencing at approximately 1:45 and ending at 02:15 the same day. 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 which is attached to an Envidas Ultimate computer. The computer 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.

4.4.3 Sulphur Dioxide Analyzer

The Teledyne T100 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 EPA protocol span gases and a dilution system. Automatic IZS checks were performed on a daily basis commencing at approximately 1:45 and ending at 02:15 the same day. 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 which is attached to an Envidas computer. The computer 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.

4.4.4 High Volume Air Sampler (Hi-Vol)

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 datalogger 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 are pre and post weighed by ALS Laboratories in Burlington, Ontario. The filters are then analyzed for total particulate weight, metals analysis and mercury. The specific list of metals analyzed can be found in **Table 5** and the list and rationale is also provided in the Ambient Air Quality Monitoring Plan (Stantec, 2012).

4.4.5 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. The specific list of PAHs and D&F analyzed can be found in **Tables 6** and **7**, the list and rationale for target compounds are also provided in the Ambient Air Quality Monitoring Plan (Stantec, 2012).

4.5 Equipment Replacement / Failures

4.5.1 Courtice Monitoring Station

4.5.1.1 Continuous Samplers

On January 9, 2025 at 13:00 till 14:00, the Courtice Meteorological station incurred 1 hour of data loss due to a communication error.

On February 11, 2025 at 13:00 till 14:00, the Courtice station incurred 1 hour of data loss due to a power outage.

On February 28, 2025 at 08:00 till March 5, 2025 at 14:00, the Courtice SO2 analyzer incurred 126 hours of data loss due to an analyzer failure.

On March 30, 2025 at 00:00 till 08:00, the Courtice wind speed and direction sensor incurred 8 hours of data loss due to a frozen propeller.

On May 20, 2025 at 10:00 to 11:00, the Courtice NO_x and SO_2 experienced 1 hour of data loss due to a power outage affecting only the NO_x and SO_2 monitors.

On May 29, 2025, the Courtice station experienced communication issues affecting the $PM_{2.5}$, NO_x and SO_2 analyzers from 12:00 to 15:00 while the meteorological equipment was affected from 11:00 to 15:00.

On September 16, 2025 from 15:00 to 16:00, the Courtice station experienced a communication outage affecting all monitors.

On December 20, 2025, from 02:00 to 10:00, the Courtice station experienced a power outage affecting all monitors.

On December 29, 2025, from 10:00 to 14:00, the Courtice station experienced intermittent power issues affecting all monitors.

4.5.1.2 Discrete Samplers

The January 25, 2025 Courtice TSP sample was invalidated due to the volume being outside sampling criteria.

The March 2, 2025 Courtice TSP sample was invalidated due to the volume being outside sampling criteria.

The March 26, 2025 Courtice PUF sample was invalidated as the sampling day was missed due to a shipping error from the Laboratory, which prevented the sample media from being setup on time.

The June 24, 2025 Courtice TSP sample was invalidated due to the volume being outside sampling criteria.

The June 30, 2025 Courtice PUF sample was invalidated due to the volume being outside sampling criteria.

The July 12, 2025 Courtice PUF sample was invalidated due to the volume being outside sampling criteria.

The July 18, 2025 Courtice TSP sample was invalidated due to equipment failure.

The July 24, 2025 Courtice TSP sample was invalidated due to equipment failure.

The July 24, 2025 Courtice PUF samples was invalidated due to the volume being outside sampling criteria.

The September 10, 2025 PUF sample at Courtice was invalidated due to damaged equipment.

The September 22, 2025 PUF sample at Courtice was invalidated due to the sample volume being outside of sampling criteria.

4.5.2 Rundle Road Monitoring Station

4.5.2.1 Continuous Samplers

Throughout February and March 2025, the Rundle wind speed and direction sensor incurred a total of 206 hours of data loss due to a frozen propeller.

On March 29, 2025 at 18:00 till March 30, 2025 at 09:00, the Rundle wind speed and direction sensor incurred 15 hours of data loss due to data logger malfunction.

On April 11, 2025 at 09:00 to May 28, 2025 at 12:00, the Rundle wind direction sensor experienced 1132 hours of data loss due to sensor malfunction.

On April 22, 2025 at 06:00 to 08:00, the Rundle station experienced 2 hours of data loss due to a power outage affecting all monitors.

On May 21, 2025 at 23:00 to 03:00 on May 22, 2025, the Rundle station experienced 4 hours of data loss due to a power outage affecting all monitors.

On August 25, 2025 from 16:00 to 19:00, the Rundle station experienced a power outage affecting all monitors.

On September 22, 2025 from 18:00 to September 23, 2025 at 17:00, the Rundle station experienced a power outage affecting all monitors.

4.5.2.2 Discrete Samplers

The January 25, 2025 Rundle TSP sample was invalidated due to the volume being outside sampling criteria.

The March 2, 2025 Rundle TSP sample was invalidated due to the sample volume being outside sampling criteria.

The March 26, 2025 Rundle PUF sample was invalidated as the sampling day was missed to a shipping error from the Laboratory, which prevented the sample media from being setup on time.

The June 18, 2025 Rundle PUF sample was invalidated due to the volume being outside sampling criteria.

The July 12, 2025 Rundle PUF sample was invalidated due to the volume being outside sampling criteria.

The August 17, 2025 Rundle PUF sample were invalidated due to the volume being outside sampling criteria.

The September 10, 2025 Rundle TSP sample was invalidated due to the volume being outside sampling criteria.

The September 22, 2025 Rundle TSP and PUF samples were invalidated due to the volumes being outside sampling criteria.

4.6 Final Data Editing

No edits were made to the 2025 continuous or discrete monitoring dataset after a final review.

4.7 MECP Audits

An MECP audit was conducted on March 12, 2025, where all instruments met their respective audit criteria.

A second MECP audit was conducted on June 13, 2025. All instruments met their respective audit criteria.

A third MECP audit was conducted on August 25, 2025. All instruments met their respective audit criteria.

A fourth MECP audit was conducted on December 16, 2025. All instruments met their respective audit criteria.

5 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). New AAQC's for SO_2 were implemented in 2020, including a 10-minute rolling average AAQC of 67 ppb, a 1-hour rolling average AAQC of 40 ppb and an annual AAQC of 4 ppb. There is no longer a 24-hour rolling average AAQC for SO_2.

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). In 2025 , there are new CAAQS' being implemented which are listed in **Table 1**.

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

Parameter	Averaging Time	Year Applied			Statistical Form
		2015	2020	2025	
Fine Particulate Matter ($PM_{2.5}$)	24-hour	28 µg/m³	27 µg/m³	-	The 3-year average of the annual 98th percentile of the daily 24-hour average concentrations
	Annual	10 µg/m³	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 daily maximum 1-hour average concentrations
	Annual	-	5 ppb	4 ppb	The average over a single calendar year of all 1-hour average 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

(https://www.ccme.ca/en/air-quality-report)

All applicable criteria and standards are presented in the following section of this report.

6 SUMMARY OF AMBIENT MEASUREMENTS

Ambient air quality monitoring results of all parameters sampled for the Courtice and Rundle Road Monitoring Stations are discussed herein. Detailed results of all continuous and discrete sampling throughout the year are included in **Appendix B** and **C**, respectively.

Table 2 below presents the number and percentage of valid samples collected at each sampling site for each parameter sampled. Data recovery above 75% is considered acceptable. Data recovery was 80.0% or higher at each station for all continuous and discrete parameters except for the D&F parameter at the Courtice station.

Table 2: 2025 Summary of Data Recovery by Sampling Site and Sampled Parameter

Station	Parameter	Total Possible # of Hours or Samples	# of Valid Hours or Samples Collected	Percentage of Valid Samples (%)	Overall Percentage of Valid Samples for the Station (%)
Courtice Monitoring Station	$PM_{2.5}$	8760	8721	99.6	**92.3**
	NO_X	8760	8708	99.4	
	NO	8760	8708	99.4	
	NO_2	8760	8708	99.4	
	SO_2	8760	8574	97.9	
	TSP & Metals	61	56	91.8	
	PAHs	31	25	80.6	
	D&F	15	11	73.3	
Rundle Road Monitoring Station	$PM_{2.5}$	8760	8705	99.4	**94.0**
	NO_X	8760	8681	99.1	
	NO	8760	8681	99.1	
	NO_2	8760	8681	99.1	
	SO_2	8760	8692	99.2	
	TSP & Metals	61	58	95.1	
	PAHs	31	25	80.6	
	D&F	15	12	80.0	

Table 3 presents a summary of the continuous sampling statistics at each station for 2025 compared to Ontario AAQC, Ontario Regulation 419/05 and HHRA values. **Table 4** presents a summary of the continuous sampling statistics at each station for 2025 compared to applicable CAAQS'. **Table 5** presents a summary of the 2025 TSP/metals discrete sampling statistics at Courtice and Rundle Road Stations. All results were compared to the applicable twenty-four (24) hour criteria/standards. **Table 6** presents a summary of the 2025 PAH discrete sampling statistics at Courtice and Rundle Road Stations. All results were compared to the applicable twenty-four (24) hour criteria/standards. **Table 7** presents a summary of the 2025 D&F discrete sampling statistics at Courtice and Rundle Road Stations. All results were compared to the applicable twenty-four (24) hour criteria/standards.

Table 3: 2025 Summary of Statistics for Continuous Sampling Parameter Levels at Courtice and Rundle Road Stations Compared to AAQC

Station	Parameter	Max 10-min Running Mean	10-min AAQC	Events > 10-min AAQC	Max Running 1-hr Mean	1-hr AAQC	Events > 1-hr AAQC	Max 24-hr Running Mean	24-hr AAQC	Events > 24-hr AAQC	Annual Arith. Mean	Annual AAQC	Events > Annual AAQC
Courtice Monitoring Station	$PM_{2.5}$ (µg/m^3)	-	-	-	92.4	-	-	62.0	-	-	6.3	-	-
	NO_X (ppb)	-	-	-	85.4	-	-	28.0	-	-	6.1	-	-
	NO (ppb)	-	-	-	64.0	-	-	10.6	-	-	1.1	-	-
	NO_2 (ppb)	-	-	-	39.3	200	0	19.7	100	0	5.0	-	-
	SO_2 (ppb)	334.7	67	171	121.1	40	91	26.5	-	-	2.9	4	0
Rundle Road Monitoring Station	$PM_{2.5}$ (µg/m^3)	-	-	-	89.3	-	-	59.2	-	-	6.1	-	-
	NO_X (ppb)	-	-	-	96.9	-	-	23.4	-	-	4.9	-	-
	NO (ppb)	-	-	-	73.7	-	-	10.9	-	-	1.1	-	-
	NO_2 (ppb)	-	-	-	33.4	200	0	19.1	100	0	3.9	-	-
	SO_2 (ppb)	9.3	67	0	7.1	40	0	1.6	-	-	0.4	4	0

Table 4: 2023-2025 Summary of Statistics for Continuous Sampling Parameter Levels at Courtice and Rundle Road Stations Compared to CAAQS'

Station	Parameter	2023-2025 1-Hour Mean	1-Hour CAAQS	Events > 1-Hour CAAQS	2023-2025 24-Hour Mean	24-Hour CAAQS	Events > 24-Hour CAAQS	2023-2025 Annual Mean	Annual CAAQS	Events > Annual CAAQS
Courtice Monitoring Station	$PM_{2.5}$ (µg/m^3)	-	-	-	24.0 [3]	27	0	6.3 [4]	8.8	0
	Sulphur Dioxide (SO_2)	112.1 [1]	65	1	-	-	-	2.9 [5]	4	0
	Nitrogen Dioxide (NO_2)	33.2 [2]	42	0	-	-	-	5.0 [5]	12	0
Rundle Road Monitoring Station	$PM_{2.5}$ (µg/m^3)	-	-	-	19.4 [3]	27	0	6.0 [4]	8.8	0
	Sulphur Dioxide (SO_2)	8.3 [1]	65	0	-	-	-	0.4 [5]	4	0
	Nitrogen Dioxide (NO_2)	26.6 [2]	42	0	-	-	-	3.9 [5]	12	0

Notes:
[1] The 3-year average of the annual 99th percentile of the daily maximum 1-hour average concentrations
[2] The 3-year average of the annual 98th percentile of the daily maximum 1-hour average concentrations
[3] The 3-year average of the annual 98th percentile of the daily 24-hour average concentrations
[4] The 3-year average of the annual average of the daily 24-hour concentrations
[5] The average over a single calendar year of all 1-hour average concentration

Table 5: 2025 Summary of Statistics for Discrete Sampling of TSP and Metal Parameter Levels at Courtice and Rundle Road Stations

Parameter	Units	AAQC	Courtice Monitoring Station			Rundle Road Monitoring Station		
			Arithmetic Mean	Maximum 24-hour	No. of Elevated Readings	Arithmetic Mean	Maximum 24-hour	No. of Elevated Readings
Particulate (TSP)	µg/m³	120	24.0	98.7	0	24.8	98.7	0
Total Mercury (Hg)	µg/m³	2	8.62E-06	4.21E-05	0	8.44E-06	3.43E-05	0
Aluminum (Al)	µg/m³	-	1.91E-01	1.23E+00	-	1.90E-01	1.09E+00	-
Antimony (Sb)	µg/m³	25	1.08E-03	4.00E-03	0	7.69E-04	2.13E-03	0
Arsenic (As)	µg/m³	0.3	9.97E-04	3.04E-03	0	9.64E-04	2.78E-03	0
Barium (Ba)	µg/m³	10	8.70E-03	3.06E-02	0	8.01E-03	3.09E-02	0
Beryllium (Be)	µg/m³	0.01	1.62E-05	5.18E-05	0	1.57E-05	4.39E-05	0
Bismuth (Bi)	µg/m³	-	6.21E-04	5.12E-03	-	6.30E-04	5.44E-03	-
Boron (B)	µg/m³	120	4.77E-03	1.33E-02	0	4.84E-03	1.33E-02	0
Cadmium (Cd)	µg/m³	0.025	1.57E-04	5.40E-04	0	1.29E-04	5.26E-04	0
Chromium (Cr)	µg/m³	0.5	2.46E-03	6.07E-03	0	2.31E-03	5.92E-03	0
Cobalt (Co)	µg/m³	0.1	1.37E-04	6.07E-04	0	1.44E-04	5.23E-04	0
Copper (Cu)	µg/m³	50	5.19E-02	2.08E-01	0	9.03E-02	3.72E-01	0
Iron (Fe)	µg/m³	4	4.72E-01	3.39E+00	0	4.69E-01	3.39E+00	0
Lead (Pb)	µg/m³	0.5	2.56E-03	5.77E-03	0	2.75E-03	1.26E-02	0
Magnesium (Mg)	µg/m³	-	2.50E-01	1.23E+00	-	2.83E-01	1.23E+00	-
Manganese (Mn)	µg/m³	0.4	1.28E-02	5.76E-02	0	1.29E-02	5.76E-02	0
Molybdenum (Mo)	µg/m³	120	2.19E-03	1.34E-02	0	3.49E-03	1.34E-02	0
Nickel (Ni)	µg/m³	0.2	1.39E-03	3.43E-03	0	1.33E-03	2.81E-03	0
Phosphorus (P)	µg/m³	-	2.45E-01	5.70E-01	-	2.67E-01	6.34E-01	-
Selenium (Se)	µg/m³	10	6.05E-04	2.84E-03	0	5.79E-04	2.38E-03	0
Silver (Ag)	µg/m³	1	5.56E-05	2.96E-04	0	6.06E-05	2.36E-04	0
Strontium (Sr)	µg/m³	120	6.51E-03	3.61E-02	0	6.84E-03	3.61E-02	0
Thallium (Tl)	µg/m³	-	2.88E-05	9.66E-05	-	3.09E-05	1.39E-04	-
Tin (Sn)	µg/m³	10	1.13E-03	9.08E-03	0	9.31E-04	2.33E-03	0
Titanium (Ti)	µg/m³	120	8.67E-03	4.89E-02	0	8.47E-03	4.45E-02	0
Uranium (Ur)	µg/m³	0.3	1.91E-05	1.32E-04	0	1.97E-05	1.32E-04	0
Vanadium (V)	µg/m³	2	1.56E-03	3.13E-03	0	1.59E-03	4.11E-03	0
Zinc (Zn)	µg/m³	120	4.62E-02	1.23E-01	0	5.56E-02	2.19E-01	0
Zirconium (Zr)	µg/m³	-	6.43E-04	1.46E-03	-	6.30E-04	1.27E-03	-

Table 6: 2025 Summary of Statistics for Discrete Sampling of PAH Parameter Levels at Courtice and Rundle Road Stations

Parameter	Units	AAQC	Courtice Monitoring Station			Rundle Road Monitoring Station		
			Arithmetic Mean	Maximum 24-hour	No. of Elevated Readings	Arithmetic Mean	Maximum 24-hour	No. of Elevated Readings
1-Methylnaphthalene	ng/m^3	-	5.29E+00	2.42E+01	-	5.34E+00	2.48E+01	-
2-Methylnaphthalene	ng/m^3	-	1.04E+01	7.65E+01	-	9.02E+00	3.95E+01	-
Acenaphthene	ng/m^3	-	3.74E+00	1.61E+01	-	4.42E+00	1.75E+01	-
Acenaphthylene	ng/m^3	-	4.15E-01	1.68E+00	-	3.51E-01	2.28E+00	-
Anthracene	ng/m^3	-	2.00E-01	1.01E+00	-	3.07E-01	1.34E+00	-
Benzo(a)Anthracene	ng/m^3	-	3.07E-02	2.77E-01	-	6.00E-02	9.64E-01	-
Benzo(a)fluorene	ng/m^3	-	3.18E-02	2.09E-01	-	5.13E-02	5.96E-01	-
Benzo(a)Pyrene	ng/m^3	0.05 [1]	2.94E-02	1.72E-01	3	5.95E-02	8.89E-01	4
Benzo(b)Fluoranthene	ng/m^3	-	8.18E-02	6.24E-01	-	1.07E-01	1.24E+00	-
Benzo(b)fluorene	ng/m^3	-	1.49E-02	1.24E-01	-	2.01E-02	2.29E-01	-
Benzo(e)Pyrene	ng/m^3	-	6.24E-02	4.29E-01	-	8.57E-02	1.01E+00	-
Benzo(g,h,i)Perylene	ng/m^3	-	5.87E-02	3.54E-01	-	8.96E-02	1.09E+00	-
Benzo(k)Fluoranthene	ng/m^3	-	5.17E-02	2.27E-01	-	6.69E-02	5.99E-01	-
Biphenyl	ng/m^3	-	3.39E+00	1.35E+01	-	3.51E+00	1.31E+01	-
Chrysene	ng/m^3	-	1.02E-01	6.80E-01	-	1.45E-01	1.55E+00	-
Dibenzo(a,h)Anthracene	ng/m^3	-	1.05E-02	4.04E-02	-	1.28E-02	1.28E-01	-
Fluoranthene	ng/m^3	-	8.89E-01	3.23E+00	-	1.41E+00	5.67E+00	-
Fluorene	ng/m^3	-	2.44E+00	8.92E+00	-	3.20E+00	1.22E+01	-
Indeno(1,2,3-cd)Pyrene	ng/m^3	-	5.35E-02	3.17E-01	-	8.08E-02	9.61E-01	-
Naphthalene	ng/m^3	22500	3.28E+01	2.92E+02	0	2.75E+01	1.68E+02	0
o-Terphenyl	ng/m^3	-	1.31E-02	5.89E-02	-	1.42E-02	5.34E-02	-
Perylene	ng/m^3	-	5.76E-03	3.42E-02	-	1.12E-02	1.66E-01	-
Phenanthrene	ng/m^3	-	3.56E+00	1.15E+01	-	5.29E+00	1.98E+01	-
Pyrene	ng/m^3	-	4.21E-01	2.11E+00	-	6.48E-01	3.20E+00	-
Tetralin	ng/m^3	-	6.20E+00	5.75E+01	-	4.91E+00	4.29E+01	-
Total PAH [2]	ng/m^3	-	7.03E+01	4.58E+02	-	6.68E+01	3.05E+02	-

Notes: [1] Ontario Ambient Air Quality Criteria. The Standard for benzo(a)Pyrene (B(a)P) is for B(a)P as a surrogate for PAHs,
[2] The reported total PAH is the sum of all analysed PAH species

Table 7: 2025 Summary of Statistics for Discrete Sampling of D&F Parameter Levels at Courtice and Rundle Road Stations

Parameter	Units	AAQC	Courtice Monitoring Station			Rundle Road Monitoring Station		
			Arithmetic Mean	Maximum 24-hour	Number of Elevated Readings	Arithmetic Mean	Maximum 24-hour	Number of Elevated Readings
2,3,7,8-TCDD	pg/m^3	-	1.35E-03	4.69E-03	-	9.88E-04	1.95E-03	-
1,2,3,7,8-PeCDD	pg/m^3	-	1.53E-03	3.68E-03	-	1.73E-03	6.74E-03	-
1,2,3,4,7,8-HxCDD	pg/m^3	-	2.24E-04	4.04E-04	-	2.42E-04	7.43E-04	-
1,2,3,6,7,8-HxCDD	pg/m^3	-	3.30E-04	7.87E-04	-	4.12E-04	1.82E-03	-
1,2,3,7,8,9-HxCDD	pg/m^3	-	2.41E-04	4.57E-04	-	4.02E-04	1.50E-03	-
1,2,3,4,6,7,8-HpCDD	pg/m^3	-	4.11E-04	8.03E-04	-	7.31E-04	2.63E-03	-
OCDD	pg/m^3	-	6.59E-05	1.61E-04	-	7.57E-05	2.84E-04	-
2,3,7,8-TCDF	pg/m^3	-	1.88E-04	3.79E-04	-	1.95E-04	7.93E-04	-
1,2,3,7,8-PeCDF	pg/m^3	-	8.30E-05	2.08E-04	-	6.95E-05	1.94E-04	-
2,3,4,7,8-PeCDF	pg/m^3	-	1.05E-03	3.80E-03	-	1.18E-03	8.19E-03	-
1,2,3,4,7,8-HxCDF	pg/m^3	-	2.61E-04	5.73E-04	-	2.85E-04	1.18E-03	-
1,2,3,6,7,8-HxCDF	pg/m^3	-	2.37E-04	3.94E-04	-	2.11E-04	9.96E-04	-
2,3,4,6,7,8-HxCDF	pg/m^3	-	2.98E-04	1.30E-03	-	5.44E-04	4.78E-03	-
1,2,3,7,8,9-HxCDF	pg/m^3	-	1.29E-04	2.93E-04	-	1.99E-04	1.11E-03	-
1,2,3,4,6,7,8-HpCDF	pg/m^3	-	1.83E-04	9.09E-04	-	2.21E-04	1.44E-03	-
1,2,3,4,7,8,9-HpCDF	pg/m^3	-	3.65E-05	1.53E-04	-	3.32E-05	1.58E-04	-
OCDF	pg/m^3	-	7.28E-06	3.79E-05	-	3.66E-06	7.79E-06	-
Total Toxic Equivalency	pg/m^3	0.1 [1] 1 [2]	6.62E-03	1.18E-02	0	7.52E-03	3.18E-02	0

Notes: [1] O.Reg. 419/05 Schedule 3 Standard phased in after July 1st, 2016
[2] O.Reg. 419/05 Schedule 6 Upper Risk Thresholds

6.1 Exceedances

6.1.1 Courtice Monitoring Station

The Courtice Monitoring Station observed no exceedances of metals, D&F's, $PM_{2.5}$, TSP or NO_2 over their applicable AAQC or CAAQS during 2025.

The Courtice Monitoring Station exceeded the SO2 1-hr CAAQS 3-year average of the annual 99th percentile of the daily maximum 1-hour average concentrations. The 3-year average was from 2023-2025.

The Courtice Monitoring Station observed three (3) exceedances over the daily AAQC for Benzo(a)pyrene (0.05 ng/m^3) during 2025. The exceedances occurred on March 14, November 21, and December 3 with 24-hour average concentrations of 0.068, 0.052, and 0.172 ng/m^3, respectively. The exceedance details are provided in **Table 8**. The Courtice Monitoring Station had no other PAH exceedances (with the exception of Benzo(a)pyrene) during 2025. The March 14 exceedance was included in the second quarter report as the results were not available in time for the first quarter report submission.

Table 8: 2025 Courtice Monitoring Station BaP Exceedance Details

Date	Percentage of BaP Criteria	Wind Direction	Potential Source Contributions
March 14, 2025	136%	ENE to E	The Courtice meteorological data suggests that the Courtice Station was downwind of the DYEC during the sampling period. Given the wind conditions, it is probable that the Energy Centre operations contributed to the measured BaP exceedance with potential contributions from off-site sources.
November 21, 2025	104%	WSW, WNW, NW	The Courtice meteorological data suggests that the Courtice Station was upwind or crosswind of the DYEC during the sampling period. Given the wind conditions, the DYEC operations did not contribute to the measured BaP exceedance, and it is likely contributions are from surrounding off-site sources.
December 3, 2025	344%	SW, SWS, N	The Courtice meteorological data suggests that the Courtice Station was upwind or crosswind of the DYEC during the sampling period. Given the wind conditions, the DYEC operations did not contribute to the measured BaP exceedance and it is likely contributions are from surrounding off-site sources.

The Courtice Monitoring Station observed ninety-one (91) exceedances over the maximum hourly mean AAQC for SO_2 (40 ppb) during 2025. The exceedance details are provided in **Table 9**. There were also one-hundred and seventy-one (171) exceedances of the rolling 10-minute average AAQC (67 ppb) at the Courtice Station in 2025. The exceedance details are provided in **Table 10**.

Table 9: 2025 Courtice Monitoring Station SO_2 1-Hour Exceedance Details

Date	Number of Exceedances	Maximum Percentage of Criteria
5-Feb-25	2	109%
8-Feb-25	1	103%
15-Feb-25	2	129%
22-Feb-25	2	152%
26-Feb-25	1	104%
11-Mar-25	1	139%
12-Mar-25	3	204%
14-Mar-25	4	274%
23-Mar-25	3	291%
28-Mar-25	3	119%
7-Apr-25	4	173%
13-Apr-25	3	151%
14-Apr-25	1	247%
17-Apr-25	4	175%
20-Apr-25	1	108%
3-May-25	1	111%
4-May-25	2	124%
12-May-25	1	112%
13-May-25	1	103%
26-May-25	1	101%
6-Jun-25	1	107%
4-Jul-25	1	109%
5-Jul-25	1	104%
22-Jul-25	2	124%
23-Jul-25	2	107%
28-Jul-25	1	103%
31-Aug-25	3	103%
1-Sep-25	1	123%
2-Sep-25	1	102%
6-Sep-25	1	114%
17-Sep-25	2	128%
19-Sep-25	1	104%
30-Sep-25	1	102%

Date	Number of Exceedances	Maximum Percentage of Criteria
16-Oct-25	2	201%
17-Oct-25	8	159%
21-Oct-25	5	177%
22-Oct-25	1	101%
26-Oct-25	3	107%
27-Oct-25	2	139%
5-Nov-25	2	103%
7-Nov-25	2	110%
14-Nov-25	1	102%
21-Nov-25	1	102%
22-Nov-25	3	155%
23-Nov-25	1	109%
24-Nov-25	1	108%

Table 10: 2025 Courtice Monitoring Station SO_2 10-Minute Exceedance Details

Date (DD-MMM-YY)	Number of Exceedances	Maximum Percentage of Criteria
5-Feb-25	2	124%
15-Feb-25	3	115%
22-Feb-25	4	125%
26-Feb-25	1	117%
11-Mar-25	2	210%
12-Mar-25	7	252%
14-Mar-25	11	230%
23-Mar-25	9	267%
28-Mar-25	6	140%
4-Apr-25	1	107%
7-Apr-25	11	193%
9-Apr-25	2	127%
13-Apr-25	7	218%
14-Apr-25	2	500%
17-Apr-25	13	207%
20-Apr-25	1	134%
25-Apr-25	1	129%
29-Apr-25	1	108%
3-May-25	3	136%
11-May-25	2	144%
12-May-25	2	139%
26-May-25	2	127%
2-Jun-25	2	240%
4-Jul-25	3	125%
5-Jul-25	1	153%
22-Jul-25	4	123%
31-Jul-25	5	105%
1-Sep-25	3	123%
6-Sep-25	3	154%
17-Sep-25	3	405%
19-Sep-25	1	101%
29-Sep-25	1	106%
6-Oct-25	1	102%

Date (DD-MMM-YY)	Number of Exceedances	Maximum Percentage of Criteria
16-Oct-25	6	325%
17-Oct-25	11	152%
21-Oct-25	11	164%
22-Oct-25	1	179%
26-Oct-25	4	135%
5-Nov-25	2	120%
21-Nov-25	1	105%
22-Nov-25	10	184%
23-Nov-25	2	157%
24-Nov-25	2	113%

The elevated 1-hour running average SO_2 events at the Courtice Station typically originated from the northwest to the northeast directions. This indicates that the Station was downwind of the DYEC during some of the exceedance events which indicates that contributions from the DYEC are possible.

Durham Region staff provided RWDI with the DYEC SO_2 continuous emissions monitoring system (CEMS) data during the exceedance events recorded at the Courtice and Rundle Road Stations for each quarter. The data indicated that the in-stack concentration levels measured by the CEMS held no unusual levels in SO_2 emissions during the Station exceedance events and that the facility's contribution to ambient air quality would be expected to be quite low.

It is noted that when winds are from the north-northwest to northeast directions, the Courtice station is considered downwind of the Courtice Water Pollution Plant's chemical handling building. During a study of SO_2 in 2023 for emissions at the Courtice station, the chemical handling building was marked as a source of SO_2. In relation to the 2023 SO_2 study, staff from the Regions met with the Ministry to discuss potential mitigation measures. As a result, carbon cartridge sweet pods were installed on the vents of the chemical handling building to absorb escaping SO_2 emissions and reduce exceedances recorded at the Courtice monitoring station. The sweet pods were installed on April 30, 2025.

A comparison of SO_2 AAQC exceedances at the Courtice station shows substantial reductions in 2025 relative to 2024. In 2025, there were one-hundred and seventy-two (172) 10-minute exceedances recorded, down from four-hundred and thirty-four (434) in 2024, representing a 60% reduction. Similarly, ninety-one (91) 1-hour exceedances were recorded in 2025 compared to one-hundred and eighty-four (184) in 2024, which is a 51% reduction. The Courtice station was downwind of the Courtice WPCP chemical building 20% of the time in 2024 and 18% of the time in 2025, based on wind directions from north-northwest to northeast.

6.1.2 Rundle Road Monitoring Station

The Rundle Road Monitoring Station observed no exceedances of metals, D&F's, $PM_{2.5}$, TSP, SO2 or NO_2 over their applicable AAQC or CAAQS during 2025.

The Rundle Road Monitoring Station observed four (4) exceedances over the daily AAQC for Benzo(a)pyrene (0.05 ng/m^3) during 2025. The exceedances occurred on March 14, October 4, November 21 and December 3, 2025 with 24-hour average concentrations of 0.092, 0.068, 0.068 and 0.889 ng/m^3 respectively. The exceedance details are provided in **Table 11**. The Rundle Road Monitoring Station had no other PAH exceedances (with the exception of Benzo(a)pyrene) during 2025. The March 14 exceedance was included in the second quarter report as the results were not available in time for the first quarter report submission.

Table 11: 2025 Rundle Road Monitoring Station BaP Exceedance Details

Date			
March 14, 2025	184%	ENE to E	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 unlikely that the Energy Centre operations contributed to the measured BaP exceedance with contributions from off-site sources.
October 4, 2025	136%	SW	The Rundle Road meteorological data suggests that the Rundle Road Station was downwind of the DYEC during the sampling period when winds were from the SW and WSW directions. Given the wind conditions, it is likely that the DYEC operations contributed to the measured BaP exceedance with potential contributions from surrounding off-site sources.
November 21, 2025	136%	WSW	The Rundle Road meteorological data suggests that the Rundle Road Station was partially downwind of the DYEC during the sampling period when winds were from the WSW directions. Given the wind conditions, it is likely that the DYEC operations contributed to the measured BaP exceedance with potential contributions from surrounding off-site sources.
December 3, 2025	1778%	WSW	The Rundle Road meteorological data suggests that the Rundle Road Station was crosswind of the DYEC during the sampling period when winds were from the WSW directions. Given the wind conditions, it is not likely that the DYEC operations contributed to the measured BaP exceedance with potential contributions from surrounding off-site sources.

7 AMBIENT AIR QUALITY TRENDS

Ambient air quality measurements from the Courtice and Rundle Road Monitoring Stations from 2018 to 2025 are compared in this section of the report. Stantec collected and reported the data from 2013 until the end of Quarter 2 of 2018. RWDI has been responsible for collecting and reporting data from Quarter 3 of 2018 to present. The data for Q1 and Q2 of 2018 was obtained from Stantec's 2018 Q1 (Stantec, 2018a) and Q2 Reports (Stantec, 2018b).

Beginning in 2020, there was the reduction of the SO_2 1-hour AAQC limit from 250 to 40 ppb. Prior to 2020, the DYEC had never recorded an SO_2 exceedance over any of the applicable AAQC's. Subsequently in 2025, there have been ninety-one (91) and zero (0) exceedances of the new 1-hour AAQC at the Courtice and Rundle Road Stations, respectively.

7.1 Criteria Air Contaminant Comparisons

A summary of the criteria air contaminant (CAC) concentration statistics for Courtice and Rundle Road Stations from 2018-2025 are presented in following sections, as well as plotted graphs and observations made from comparing the annual Nitrogen Dioxide (NO_2), Sulfur Dioxide (SO_2) and Particulate Matter less than 2.5 microns ($PM_{2.5}$) data statistics. Annual data statistics including a comparison to statistics from previous years can be found in **Tables 12 – 19**.

7.1.1 NO_2 Comparison

All continuously monitored NO_2 levels were below the applicable hourly, 24-hour and annual average criteria from 2018 to 2025 for both the Courtice and Rundle Road Monitoring Stations. A summary of annual NO_X, NO and NO_2 data for both stations is presented in **Table 12** for 2018-2025. It should be noted that NOX and NO do not have any applicable AAQC's/CAAQS'. As of 2025 there were two updated CAAQS' for NO2 which define limits on the annual average concentration and on the 3-year average of the annual 98th percentile of the daily maximum 1-hour means concentrations.

Table 12: 2018-2025 Comparison of Measured NO_X, NO and NO_2 Statistics for Courtice and Rundle Road Monitoring Stations

Contaminant	Statistic	Courtice Station								Rundle Road Station							
		2018 [1]	2019	2020	2021	2022	2023	2024	2025	2018 [1]	2019	2020	2021	2022	2023	2024	2025
NOX (ppb)	Annual Arithmetic Mean	8.0	7.1	5.6	6.2	5.9	6.1	6.5	6.1	6.7	5.1	4.6	4.4	5.1	5.3	5.0	4.9
	Maximum 1-hour Running Mean	86.8	98.7	95.1	92.5	87.9	176.2	68.7	85.4	73.6	275.7	66.3	107.4	85.1	94.8	135.7	96.9
	Maximum 24-hour Running Mean	35.6	38.6	38.3	46.3	35.9	31.9	26.0	28.0	32.3	27.9	22.1	23.1	26.0	21.9	23.7	23.4
NO (ppb)	Annual Arithmetic Mean	2.1	1.5	1.1	1.4	1.3	1.1	1.4	1.1	1.9	1	0.8	0.9	1.3	1.2	1.1	1.1
	Maximum 1-hour Running Mean	68.5	62.6	57.3	67.7	54.9	175.8	46.0	64.0	54.3	218.6	31.7	66.5	62.5	60.4	91.3	73.7
	Maximum 24-hour Running Mean	17.2	19.5	15.6	23.0	16.1	15.7	12.3	10.6	11.9	14.7	5	8.0	8.8	8.2	13.2	10.9
NO2 (ppb)	Annual Arithmetic Mean	6.1	5.8	4.6	5.0	4.7	5.1	5.2	5.0	4.9	4.3	3.9	3.7	3.8	4.2	4.0	3.9
	Annual CAAQS	N/A	N/A	17	17	17	17	17	12	N/A	N/A	17	17	17	17	17	12
	Events > Annual CAAQS	N/A	N/A	0	0	0	0	0	0	N/A	N/A	0	0	0	0	0	0
	Maximum 1-hour Running Mean	70.6	41.3	39	37.6	41.7	45.3	39.1	39.3	38.3	57.2	35.2	41.0	38.6	40.0	44.4	33.4
	1-hour AAQC	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
	Events > 1-hour AAQC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	98th Percentile (Daily Maximum 1-hr Mean)	37.4	36.6	35.1	33.2	33.9	35.3	30.8	33.6	30.2	26.9	23.5	25.7	26.0	27.0	25.3	27.4
	3-Year Average of the Annual 98th Percentile of the Daily Maximum 1-hour Mean Concentrations	N/A	N/A	36.4	35.0	34.1	34.1	33.3	33.2	N/A	N/A	26.9	25.4	25.1	26.2	26.1	26.6
	1-Hour CAAQS	N/A	N/A	60	60	60	60	60	42	N/A	N/A	60	60	60	60	60	42
	Events > 1-Hour CAAQS	N/A	N/A	0	0	0	0	0	0	N/A	N/A	0	0	0	0	0	0
	Maximum Running 24-hour Mean	21.0	23.2	25.6	23.3	26.1	21.2	17.4	19.7	20.5	19.8	17.2	16.7	18.1	16.5	16.9	19.1
	24-hour AAQC	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Events > 24-hour AAQC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes: [1] 2018 Q1 & Q2 data taken from Stantec's 2018 Q1 (Stantec, 2018a) and Q2 Reports (Stantec, 2018b).

Annual variations in measured NO_2 data for maximum 1-hour, 24-hour and annual means and their applicable AAQC limits are presented in **Figures 4**, **5** and **6** respectively. The following observations were made from the data plots:

- The maximum measured hourly average NO_2 concentrations at the two stations have been comparable from 2020 and on, between the two stations. The Courtice Station has higher maximums than the Rundle Road Station apart from 2019, 2021 and 2024 (as seen in **Figure 4**).
- The two CAAQS standards for NO_2 were updated in 2025 which defined the 3-year average of the annual 98th percentile of the daily maximum 1-hour average concentration limit as 42 ppb and the average over a single calendar year of all 1-hour average concentration limit as 12 ppb.
- The maximum measured 24-hour average NO_2 concentrations at the two stations have remained relatively constant and have generally shown similar levels between both stations year to year (as seen in **Figure 5**).
- Measured annual average NO_2 concentrations at the Courtice Station have been slightly higher than the Rundle Road Station (as seen in **Figure 6**). Measured annual average NO_2 concentrations at both stations were relatively constant for all years presented.
- Measured maximum 1-hour and 24-hour average NO_2 concentrations have not come close to exceeding the applicable AAQC's over the timeseries.

Figure 4: Maximum Measured 1-hour Mean NO_2 Concentrations by Year

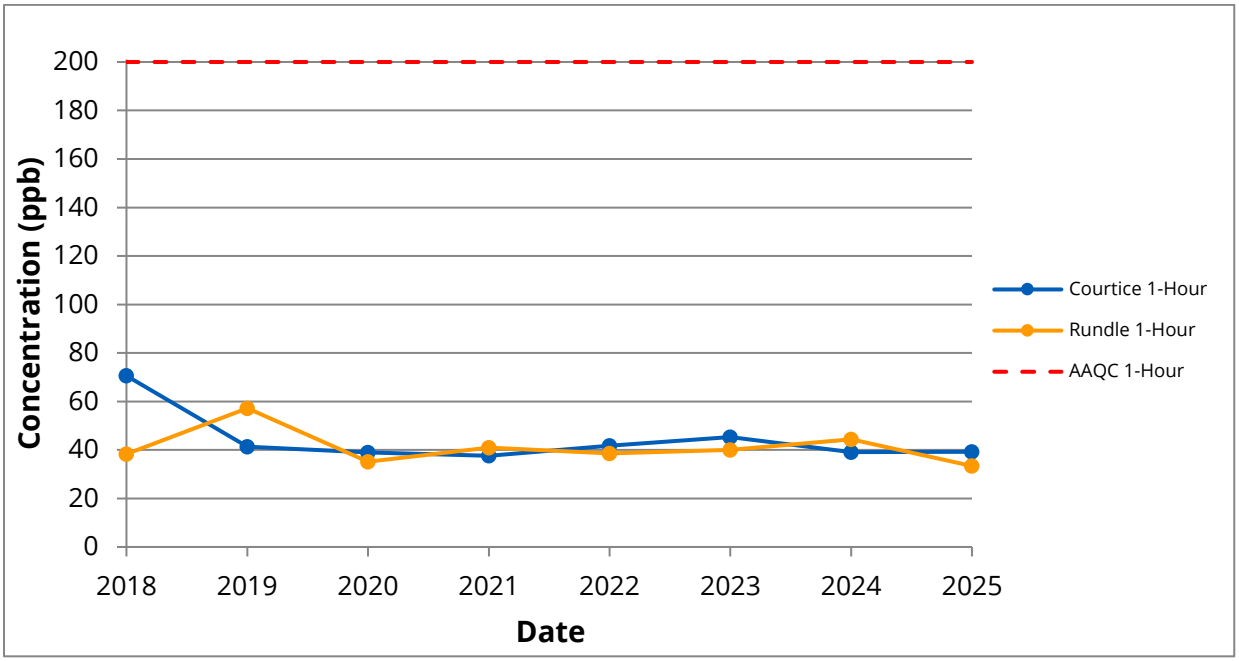


Figure 5: Maximum Measured 24-hour Running Mean NO_2 Concentrations by Year

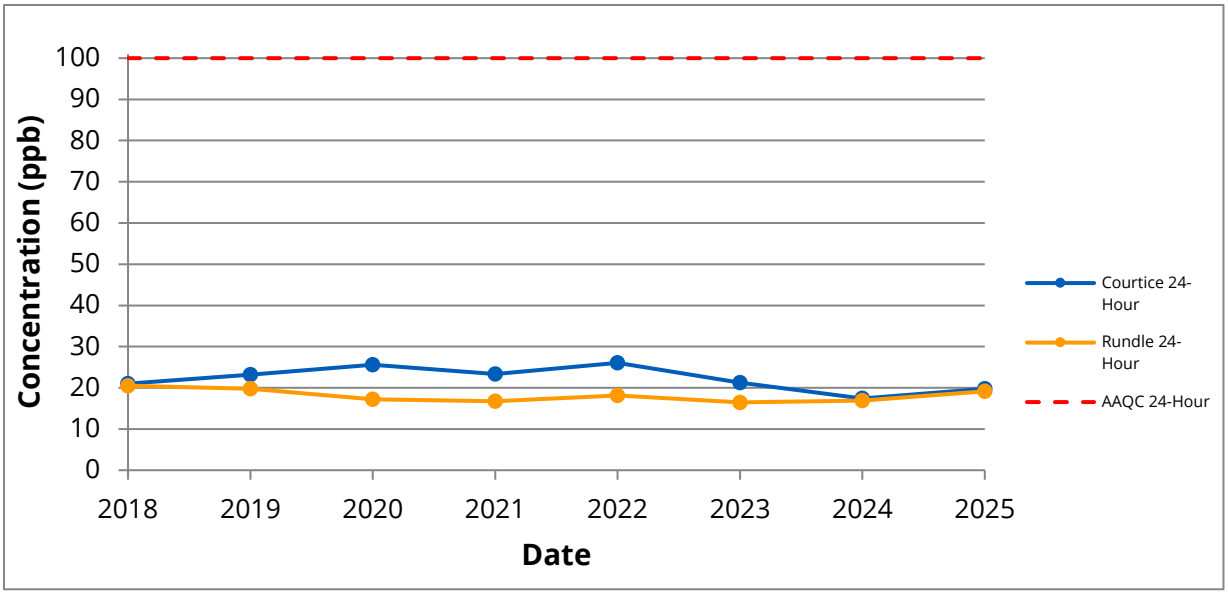
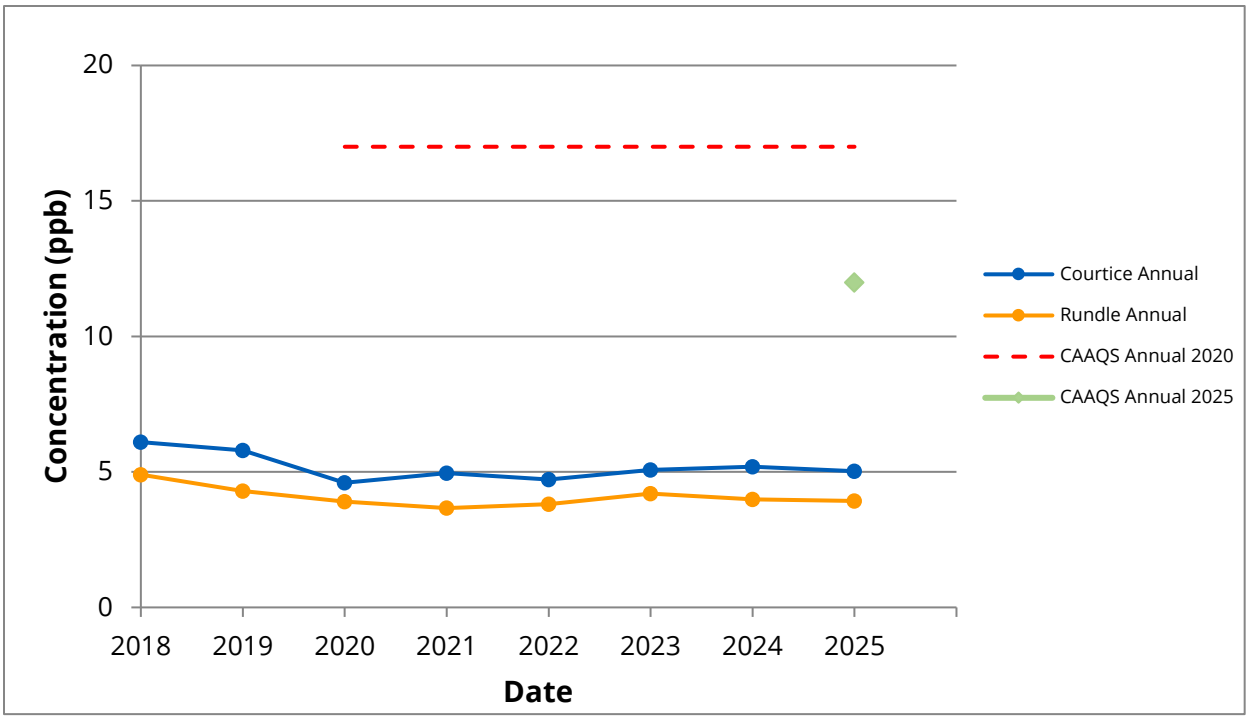


Figure 6: Maximum Measured Annual Mean NO_2 Concentrations by Year



Notes: Annual NO_2 CAAQS in effect as of 2020 and updated in 2025

7.1.2 SO_2 Comparison

In 2025, there have been more frequent SO_2 concentrations elevated above the AAQC's than in years prior to 2020 as new limits were imposed at the end of 2020. A summary of annual SO_2 data for both stations is presented in **Table 13** for 2018-2025.

Table 13: 2018-2025 Comparison of Measured SO_2 Statistics for Courtice and Rundle Road Monitoring Stations

Contaminant	Statistic	Courtice Station								Rundle Road Station							
		2018 [1]	2019	2020	2021	2022	2023	2024	2025	2018 [1]	2019	2020	2021	2022	2023	2024	2025
SO_2 (ppb)	Annual Arithmetic Mean	2.7	1.9	1.4	1.7	2.3	3.9	3.7	2.9	0.7	0.5	0.4	0.4	0.5	0.5	0.3	0.4
	Annual AAQC / CAAQS' [2]	20	4[3]	4 / 5	4 / 5	4 / 5	4	4	4	20	4[3]	4	4	4	4	4	4
	Events > Annual AAQC / CAAQS' [2]	0	0	0 / 0	0 / 0	0 / 0	0	0	0	0	0	0	0	0	0	0	0
	Maximum Running 10-min Mean	N/A	N/A	M	275.9	316.1	467.5	590.1	334.7	N/A	N/A	M	96.7	221.0	362.5	5.0	9.3
	10-min AAQC	N/A	N/A	M	67	67	67	67	67	N/A	N/A	M	67	67	67	67	67
	Events > 10-min AAQC	N/A	N/A	M	85	186	567	434	171	N/A	N/A	M	7	16	14	0	0
	Maximum 1-hour Running Mean	96.2	58.2	67.2	134.1	138.1	143.3	187.8	121.2	66.0	34.8	59.7	70.5	112.6	142.8	4.8	7.1
	1-hour AAQC	250	250	40	40	40	40	40	40	250	250	40	40	40	40	40	40
	Events > 1-hour AAQC	0	0	19	38	83	212	184	91	0	0	5	3	7	5	0	0
	99th Percentile (Daily Maximum 1-hr Mean)	73.0	50.8	51.6	65.5	104.4	122.0	112.6	101.6	33.4	25.7	35.8	16.2	47.6	19.2	2.4	3.2
	3-Year Average of the Annual 99th Percentile of the Daily Maximum 1-hour Mean Concentrations	N/A	N/A	58.5	56.0	73.8	97.3	113.0	112.1	N/A	N/A	31.6	25.9	33.2	27.7	23.1	8.3
	1-Hour CAAQS	N/A	N/A	70	70	70	70	70	65	N/A	N/A	70	70	70	70	70	65
	Events > 1-Hour CAAQS	N/A	N/A	0	0	1	1	1	1	N/A	N/A	0	0	0	0	0	0
	Maximum Running 24-hour Mean	17.0	18.6	21.4	12.0	23.8	39.0	38.2	26.5	8.1	5.6	6.7	7.8	9.9	18.3	1.1	1.6

Notes: [1] 2018 Q1 & Q2 data taken from Stantec's 2018 Q1 (Stantec, 2018a) and Q2 Reports (Stantec, 2018b).
[2] CAAQS' Annual SO_2 Standard came into effect as of 2020 and updated in 2025.
[3] MECP comments on the 2019 Q4 report called for comparison to the 2020 annual SO_2 AAQC of 4 ppb in the 2019 Annual Report.
N/A – Not available
M - Missing Values

Annual variations in measured SO_2 data for maximum 1-hour running, 24-hour running and annual means and their applicable AAQC limits are presented in **Figures 7**, **8, 9** and **10** respectively. The following observations were made from the data plots:

- In previous years the measured maximum 1-hour, 24-hour average and annual average SO_2 concentrations did not come close to exceeding their applicable AAQC's.
- In 2020, the maximum 1-hour mean AAQC was changed from 250 to 40 ppb (an 84% reduction). In 2025 there were ninety-one (91) exceedances of the new criteria at the Courtice station and zero (0) exceedances at the Rundle Road station.
- In 2020, a new 10-minute AAQC was introduced (67 ppb). In 2025, there were one-hundred and seventy-one (171) and zero (0) exceedances of the rolling 10-minute running average AAQC at the Courtice and Rundle Road stations respectively.
- The maximum measured hourly average SO_2 concentrations at the two stations have generally shown the Courtice Station consistently having higher maximums than Rundle Road. The Courtice station continues trending the same over the entire timeseries while the Rundle Road station has decreased significantly in 2024 and 2025 (as seen in **Figure 7**).
- The maximum measured 24-hour average SO_2 concentrations at the two stations have generally shown the Courtice Station consistently having higher maximums than Rundle Road (as seen in **Figure 8**). Measured 24-hour average SO_2 concentrations at both stations were relatively constant for all of the years presented.
- Measured annual average SO_2 concentrations at the Courtice Station have been slightly higher than the Rundle Road Station (as seen in **Figure 9**). Measured annual average SO_2 concentrations at both stations were relatively constant for all of the years presented.
- The new CAAQS' introduced for SO_2 in 2020 were updated in 2025, which defined the 3-year average of the annual 99^{th} percentile of the daily maximum 1-hour average concentration limit as 65 ppb and the average over a single calendar year of all 1-hour average concentration limit as 4 ppb. In 2025, the Courtice Station exceeded the 1-hour CAAQS SO_2 limit (as seen in **Figure 10**).

Figure 7: Maximum Measured 1-hour Mean SO_2 Concentrations by Year

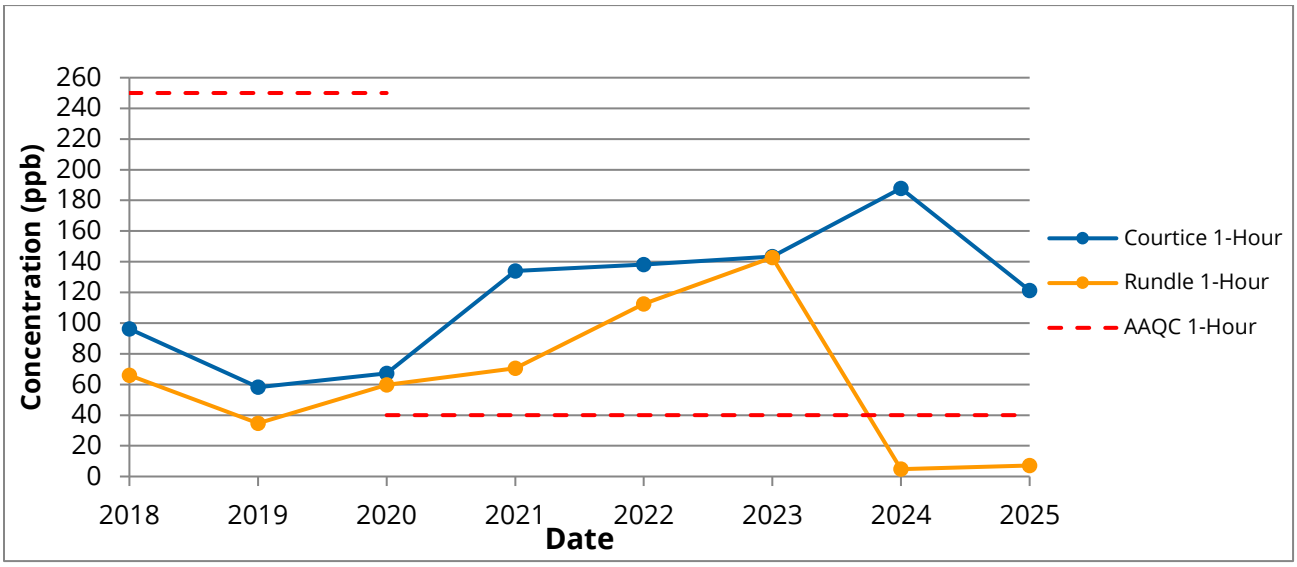
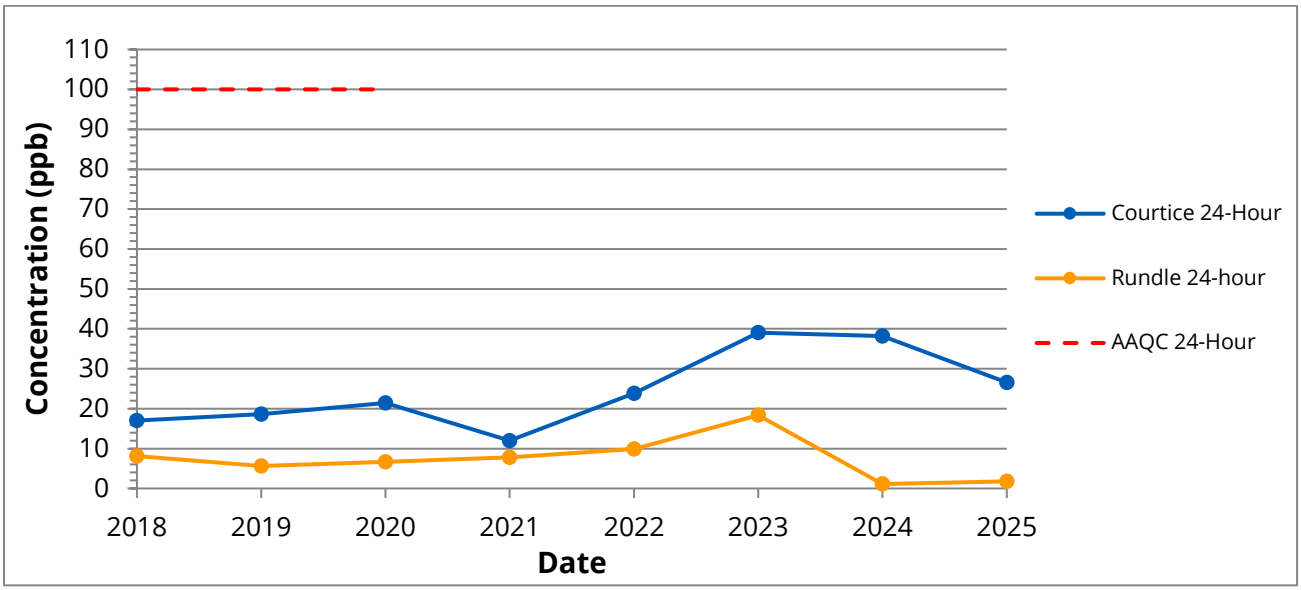


Figure 8: Maximum Measured 24-Hour Running Mean SO_2 Concentrations by Year



Notes: 24-Hour SO_2 AAQC removed as of 2020

Figure 9: Maximum Measured Annual Mean SO_2 Concentrations by Year

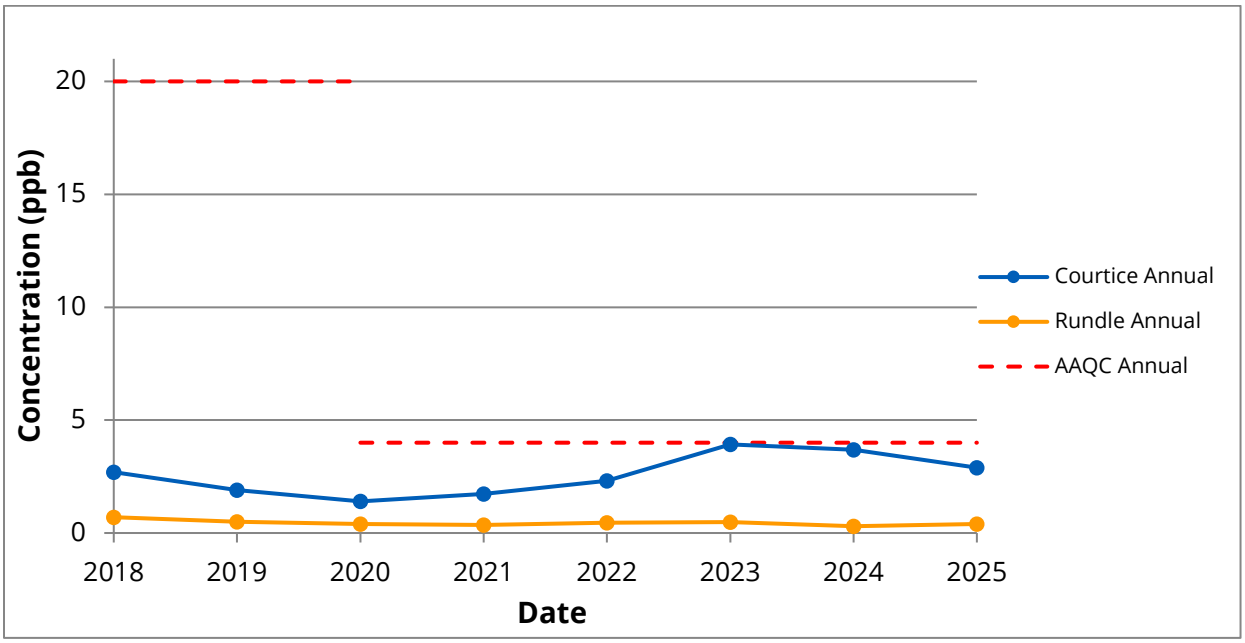
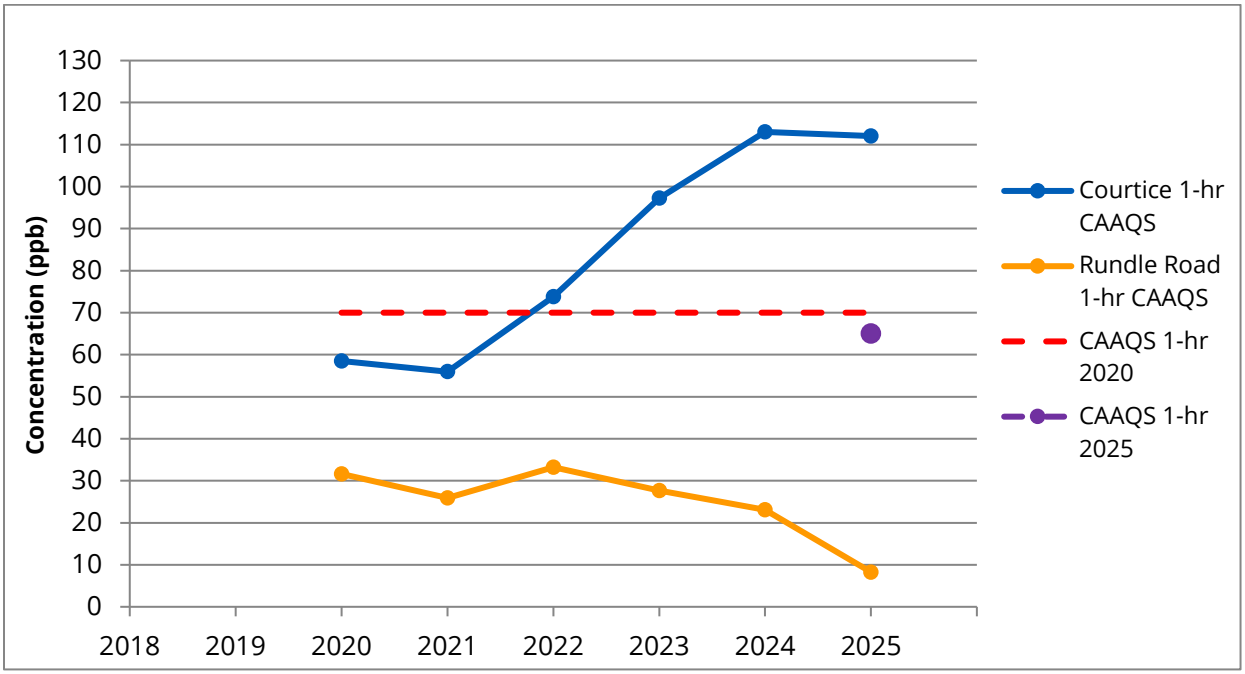


Figure 10: 3-Year Average of the Annual 99th Percentile of the Daily Maximum 1-hour Mean SO_2 Concentrations



7.1.3 $PM_{2.5}$ Comparison

All continuously monitored $PM_{2.5}$ levels were below the applicable CAAQS' from 2018 to 2025 for both the Courtice and Rundle Road Monitoring Stations. A summary of annual $PM_{2.5}$ data for both stations is presented in **Table 14** for 2018-2025. In 2020 CAAQS' were lowered for the 24-hour and annual limits as described in Section 5 Air Quality Criteria and Standards.

Table 14: 2018-2025 Comparison of Measured $PM_{2.5}$ Statistics for Courtice and Rundle Road Monitoring Stations

Contaminant	Statistic	Courtice Station								Rundle Road Station							
		2018[1]	2019	2020	2021	2022	2023	2024	2025	2018[1]	2019	2020	2021	2022	2023	2024	2025
$PM_{2.5}$ (µg/m³)	Annual Arithmetic Mean	6.3	6.4	5.9	6.3	5.6	7.5	5.2	6.3	6.1	5.7	5.2	5.9	5.5	7.0	5.0	6.1
	3-Year Average of the Annual Arithmetic Mean of all 1-hour Concentrations	6.5	6.4	6.2	6.2	6.0	6.5	6.1	6.3	7.3	6.0	5.7	5.6	5.5	6.1	5.8	6.0
	Annual CAAQS	10	10	8.8	8.8	8.8	8.8	8.8	8.8	10	10	8.8	8.8	8.8	8.8	8.8	8.8
	Events > Annual CAAQS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Maximum 1-hour Running Mean	64.8	68.6	45.1	68.3	84.4	120.8	328.5	92.4	68.3	49.0	45.2	62.1	56.6	118.2	49.5	89.3
	Maximum Running 24-hour Mean	-	-	-	-	24.6	64.7	19.8	62.0	31.4	33.6	23.1	39.6	26.6	63.3	20.6	59.2
	98th Percentile (24-hour Mean)	18.7	18.5	17	21.3	14.0	30.5	14.7	26.7	18.6	17.4	16.1	18.8	14.1	21.2	12.6	24.5
	3-Year Average of the Annual 98th Percentile of the Daily 24-hour Mean Concentrations	20.0	19.0	18.1	18.9	17.4	22.0	19.7	24.0	23.9	18.8	17.4	17.4	16.4	18.0	16.0	19.4
	24-hour CAAQS	28	28	27	27	27	27	27	27	28	28	27	27	27	27	27	27
	Events > 24-hour CAAQS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes: [1] 2018 Q1 & Q2 data taken from Stantec's 2018 Q1 (Stantec, 2018a) and Q2 Reports (Stantec, 2018b).

One-hour mean $PM_{2.5}$ concentrations were averaged over 3-year consecutive periods and compared to the annual CAAQS, which is presented visually in **Figure 11**. The annual 98th percentiles of the daily 24-Hour mean $PM_{2.5}$ concentrations were averaged over 3-year consecutive periods and compared to the 24-Hour CAAQS, which is presented visually in **Figure 12**. The following observations were made from the data plots:

- Two CAAQS standards for $PM_{2.5}$ were reduced in 2020. The 3-year average of the annual 98th percentile of the daily 24-hour average concentrations was changed from 28 to 27 ppb and the 3-year average of the annual averages of all 1-hour concentrations was changed from 10 to 8.8 ppb.
- The 3-year averaged annual $PM_{2.5}$ concentrations measured at the Courtice station have surpassed Rundle Road averages from 2017 to 2025 (as seen in **Figure 11**).
- The 3-Year averages of annual 98th percentile 24-Hour $PM_{2.5}$ mean concentrations measured at the two stations have generally shown a declining trend in overall averages from 2017-2019 to 2020-2022. From 2021-2023 there was a noticeable increase of the Courtice concentration before decreasing from 2022-2024 and then increasing from 2023- 2025, while the Rundle concentration experienced a slight increase from 2021-2023 before declining in 2022-2024 and then increasing in 2023-2025 (as seen in **Figure 12**).
- The measured 3-year averaged annual $PM_{2.5}$ concentrations measured at both the Courtice, and Rundle Road Stations were fairly close to the CAAQS limits with the highest concentration being 74% (Courtice 2021-2023) of the CAAQS. The measured 3-year averaged annual $PM_{2.5}$ concentrations have maintained fairly consistent with previous years as seen in **Figure 11.**
- The measured 3-year averaged 98th percentile 24-hour average values measured at both the Courtice, and Rundle Road Stations were fairly close to the CAAQS limits with the highest being 89% (Courtice 2023-2025) of the CAAQS which is an increase from the previous 2022-2024 grouping (73%) as seen in **Figure 12**.

Figure 11: 3-Year Averages of Annual $PM_{2.5}$ Arithmetic Means (of 1-Hour Average Concentrations) by 3-Year Grouping

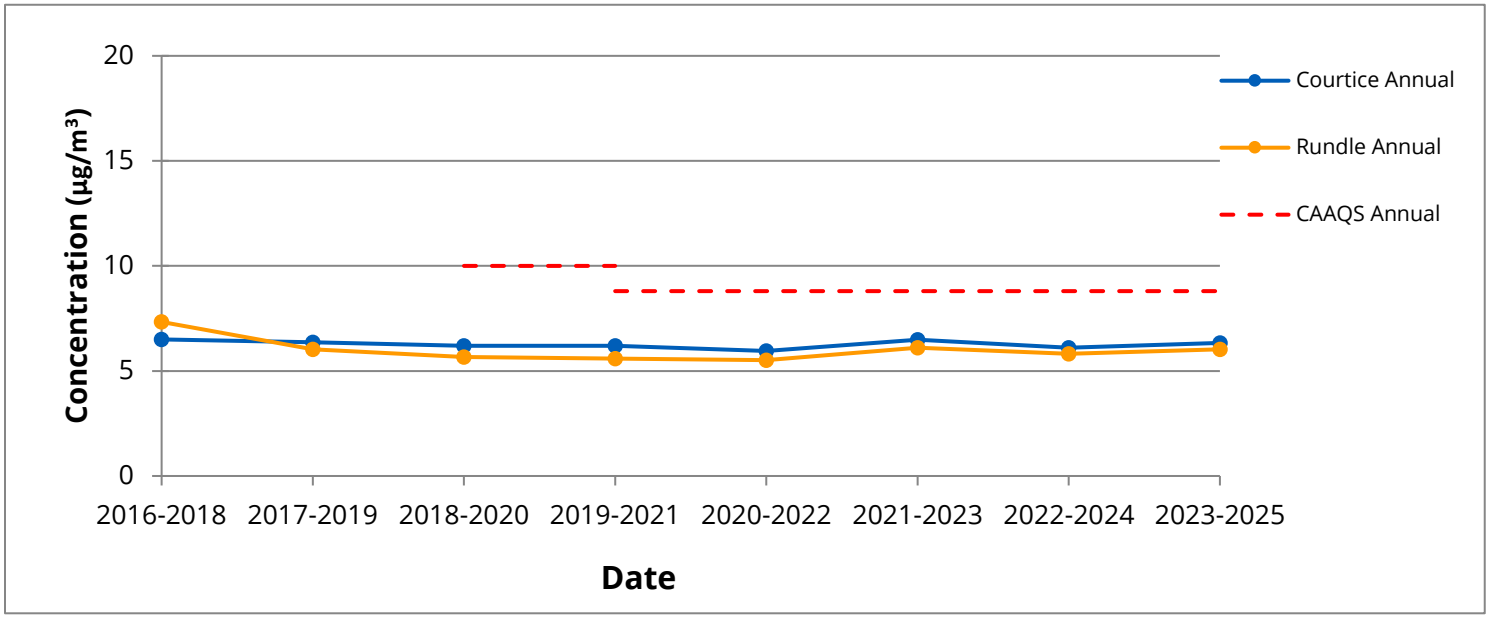
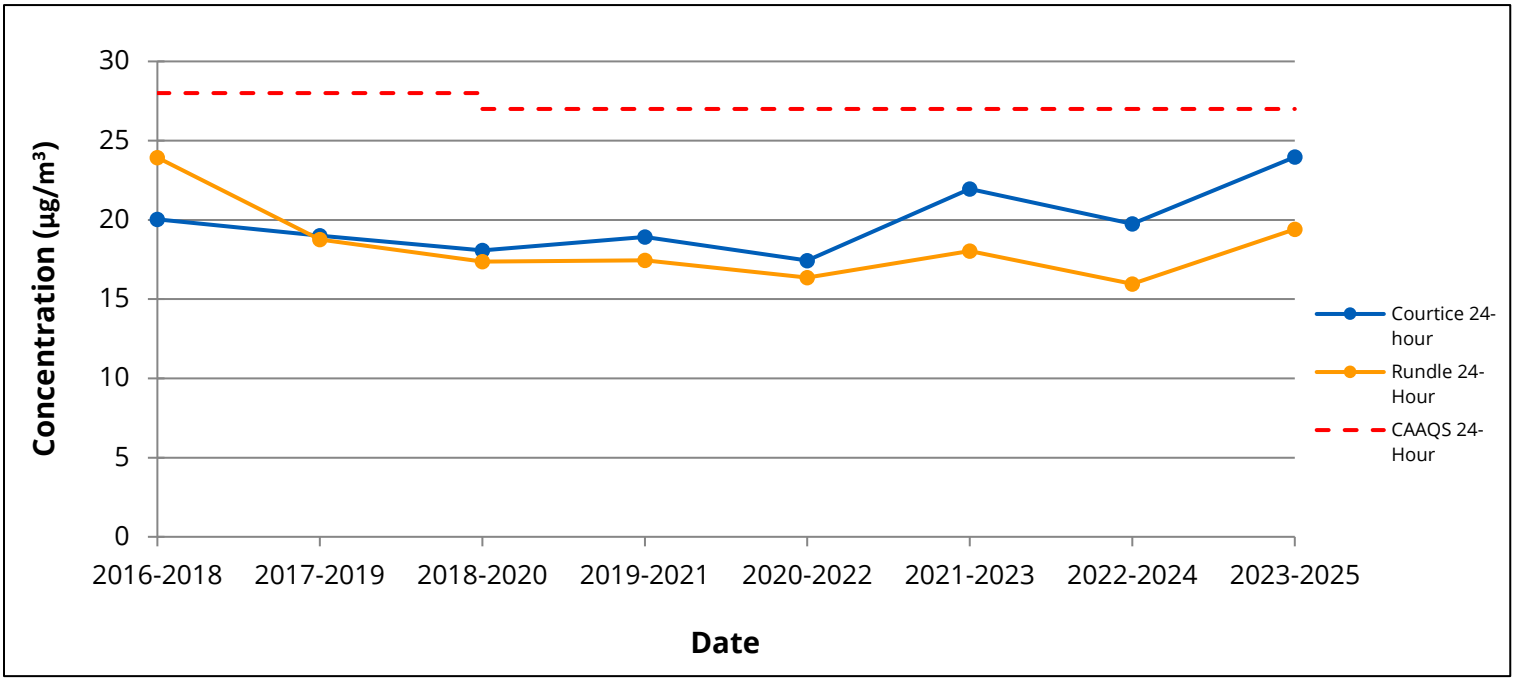


Figure 12: 3-Year Averages of Annual 98th Percentile 24-Hour $PM_{2.5}$ Mean Concentrations by 3-Year Grouping



7.2 TSP and Metals Comparisons

A summary of the maximum measured daily average Total Suspended Particulates (TSP) and Metal concentrations and percentage of the applicable AAQC's/HHRC's from 2018 to 2025 at the Courtice and Rundle Road Monitoring Stations is presented in **Table 15** and **16,** respectively.

There were four (4) exceedances in 2018, one (1) exceedance in 2019, one (1) exceedance in 2022, two (2) exceedances in 2023, no exceedances in 2024 and 2025. No other exceedances of TSP or Metals have occurred at the Courtice or Rundle Road Monitoring Stations from 2018 to 2025.

Table 15: 2018-2025 Comparison of Measured TSP and Metals Concentrations at the Courtice Station

Contaminant	Units	AAQC 2024	Maximum Concentration								Percentage of Criteria							
			2018 [1]	2019	2020	2021	2022	2023	2024	2025	2018 [1]	2019	2020	2021	2022	2023	2024	2025
Particulate (TSP)	µg/m³	*120*	84.7	146.4	69.7	101.0	53.9	141.8	63.9	98.7	70.6%	122.0%	58.1%	84.2%	44.9%	118.1%	53.2%	82.2%
Total Mercury (Hg)	µg/m³	*2*	4.19E-05	7.75E-05	4.00E-05	8.80E-05	3.48E-05	2.55E-05	2.55E-05	4.21E-05	0.002%	0.004%	0.002%	0.004%	0.002%	0.001%	0.001%	0.002%
Aluminum (Al)	µg/m³	-	8.95E-01	1.00E+00	5.00E-01	1.07E+00	6.72E-01	7.65E-01	5.34E-01	1.23E+00	18.6%	20.8%	10.4%	22.3%	14.0%	15.9%	-	-
Antimony (Sb)	µg/m³	*25*	7.14E-03	2.55E-03	4.06E-03	3.16E-03	6.20E-03	1.95E-03	3.23E-03	4.00E-03	0.03%	0.01%	0.02%	0.01%	0.02%	0.01%	0.01%	0.02%
Arsenic (As)	µg/m³	*0.3*	4.29E-03	2.76E-03	3.28E-03	1.35E-02	3.83E-03	2.00E-03	6.25E-03	3.04E-03	1.4%	0.9%	1.1%	4.5%	1.3%	0.7%	2.1%	1.0%
Barium (Ba)	µg/m³	*10*	1.89E-02	2.23E-02	1.55E-02	2.10E-02	2.02E-02	2.96E-02	1.71E-02	3.06E-02	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.2%	0.3%
Beryllium (Be)	µg/m³	*0.01*	1.56E-03	7.19E-05	3.26E-05	4.55E-05	3.91E-05	4.79E-05	1.56E-05	5.18E-05	15.6%	0.7%	0.3%	0.5%	0.4%	0.5%	0.2%	0.5%
Bismuth (Bi)	µg/m³	-	4.29E-03	1.42E-03	5.86E-04	1.57E-03	5.77E-04	5.79E-04	5.62E-04	5.12E-03	-	-	-	-	-	-	-	-
Boron (B)	µg/m³	*120*	1.31E-02	1.39E-02	1.30E-02	1.64E-02	9.02E-03	1.06E-02	1.04E-02	1.33E-02	0.011%	0.012%	0.011%	0.014%	0.008%	0.009%	0.009%	0.011%
Cadmium (Cd)	µg/m³	*0.025*	1.90E-03	6.95E-04	5.45E-03	5.96E-04	1.10E-03	4.63E-04	4.10E-04	5.40E-04	7.6%	2.8%	21.8%	2.4%	4.4%	1.9%	1.6%	2.2%
Chromium (Cr)	µg/m³	*0.5*	9.50E-03	2.25E-02	4.64E-03	5.69E-03	6.16E-03	4.53E-03	3.40E-03	6.07E-03	1.9%	4.5%	0.9%	1.1%	1.2%	0.9%	0.7%	1.2%
Cobalt (Co)	µg/m³	*0.1*	1.43E-03	6.95E-04	6.51E-04	9.77E-04	3.88E-04	5.06E-04	8.39E-04	6.07E-04	1.4%	0.7%	0.7%	1.0%	0.4%	0.5%	0.8%	0.6%
Copper (Cu)	µg/m³	*50*	4.55E-02	6.10E-02	4.70E-02	7.73E-02	1.33E-01	7.90E-02	6.99E-02	2.08E-01	0.1%	0.1%	0.1%	0.2%	0.3%	0.2%	0.1%	0.4%
Iron (Fe)	µg/m³	*4*	2.53E+00	3.31E+00	1.26E+00	1.68E+00	1.05E+00	1.32E+00	9.49E-01	3.39E+00	63.3%	82.8%	31.6%	42.1%	26.3%	33.1%	23.7%	84.7%
Lead (Pb)	µg/m³	*0.5*	1.43E-02	1.39E-02	7.81E-03	7.97E-03	6.98E-03	7.64E-03	8.73E-03	5.77E-03	0.7%	0.7%	0.4%	0.4%	0.3%	0.4%	1.7%	1.2%
Magnesium (Mg)	µg/m³	-	1.21E+00	1.25E+00	8.98E-01	9.57E-01	5.79E-01	9.12E-01	8.65E-01	1.23E+00	-	-	-	-	-	-	-	-
Manganese (Mn)	µg/m³	*0.4*	7.25E-02	1.20E-01	3.69E-02	4.97E-02	2.74E-02	6.12E-02	3.45E-02	5.76E-02	18.1%	30.1%	9.2%	12.4%	6.9%	15.3%	8.6%	14.4%
Molybdenum (Mo)	µg/m³	*120*	7.69E-03	2.20E-03	3.01E-03	3.03E-03	4.07E-03	3.24E-03	2.03E-03	1.34E-02	0.006%	0.002%	0.003%	0.003%	0.003%	0.003%	0.002%	0.011%
Nickel (Ni)	µg/m³	*0.2*	3.85E-03	5.35E-03	2.95E-03	3.51E-03	3.79E-03	2.57E-03	6.11E-03	3.43E-03	1.9%	2.7%	1.5%	1.8%	1.9%	1.3%	3.1%	1.7%
Phosphorus (P)	µg/m³	-	1.08E+00	2.02E+00	1.36E+00	5.06E-01	5.13E-01	2.41E-01	5.21E-01	5.70E-01	-	-	-	-	-	-	-	-
Selenium (Se)	µg/m³	*10*	7.14E-03	3.48E-03	3.26E-03	2.98E-03	1.52E-03	1.49E-03	2.35E-03	2.84E-03	0.07%	0.03%	0.03%	0.03%	0.02%	0.01%	0.02%	0.03%
Silver (Ag)	µg/m³	*1*	3.57E-03	3.48E-04	3.26E-04	4.71E-04	6.70E-04	6.68E-04	1.05E-04	2.96E-04	0.4%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%
Strontium (Sr)	µg/m³	*120*	1.73E-02	4.35E-02	2.08E-02	2.34E-02	2.88E-02	2.86E-02	2.32E-02	3.61E-02	0.01%	0.04%	0.02%	0.02%	0.02%	0.02%	0.02%	0.03%
Thallium (Tl)	µg/m³	-	7.14E-03	9.81E-05	2.93E-05	1.08E-04	6.59E-05	5.82E-05	2.81E-05	9.66E-05	-	-	-	-	-	-	-	-
Tin (Sn)	µg/m³	*10*	7.14E-03	2.52E-03	2.47E-03	3.46E-03	2.22E-03	2.72E-03	2.47E-03	9.08E-03	0.07%	0.03%	0.02%	0.03%	0.02%	0.03%	0.02%	0.09%
Titanium (Ti)	µg/m³	*120*	3.19E-02	4.31E-02	3.10E-02	4.25E-02	2.28E-02	3.71E-02	2.11E-02	4.89E-02	0.03%	0.04%	0.03%	0.04%	0.02%	0.03%	0.02%	0.04%
Uranium (Ur)	µg/m³	*0.3*	3.57E-03	1.11E-04	6.97E-05	9.63E-05	6.13E-05	1.02E-04	1.34E-04	1.32E-04	1.19%	0.04%	0.02%	0.03%	0.02%	0.03%	0.04%	0.04%
Vanadium (V)	µg/m³	*2*	3.57E-03	2.02E-02	1.63E-03	2.95E-03	1.60E-03	1.61E-03	3.46E-03	3.13E-03	0.2%	1.0%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%
Zinc (Zn)	µg/m³	*120*	1.86E-01	1.66E-01	9.38E-02	1.49E-01	1.49E-01	3.67E-01	1.48E-01	1.23E-01	0.155%	0.138%	0.078%	0.124%	0.124%	0.305%	0.124%	0.102%
Zirconium (Zr)	µg/m³	-	1.64E-03	2.35E-03	3.33E-03	6.17E-04	6.41E-04	6.43E-04	6.25E-04	1.46E-03	0.008%	0.012%	0.017%	0.003%	0.003%	0.003%	-	-

Notes: [1] 2018 Q1 & Q2 data taken from Stantec's 2018 Q1 (Stantec, 2018a) and Q2 Reports (Stantec, 2018b).

Table 16: 2018-2025 Comparison of Measured TSP and Metals Concentrations at the Rundle Road Station

Contaminant	Units	AAQC 2024	Maximum Concentration								Percentage of Criteria							
			2018[1]	2019	2020	2021	2022	2023	2024	2025	2018[1]	2019	2020	2021	2022	2023	2024	2025
Particulate (TSP)	µg/m³	*120*	203.6	81.7	102.3	75.6	120.9	148.3	87.1	98.7	169.7%	68.1%	85.2%	63.0%	100.8%	123.6%	72.6%	82.2%
Total Mercury (Hg)	µg/m³	*2*	9.83E-05	6.10E-05	4.40E-05	1.87E-04	2.95E-05	4.24E-05	3.74E-05	3.43E-05	0.005%	0.003%	0.002%	0.009%	0.001%	0.002%	0.002%	0.002%
Aluminum (Al)	µg/m³	-	1.42E+00	6.64E-01	1.19E+00	9.25E-01	1.62E+00	1.28E+00	8.15E-01	1.09E+00	29.6%	13.8%	24.8%	19.3%	33.8%	26.7%	-	-
Antimony (Sb)	µg/m³	*25*	2.64E-02	4.81E-03	1.53E-03	3.06E-03	2.70E-03	2.11E-03	4.65E-03	2.13E-03	0.11%	0.019%	0.006%	0.012%	0.011%	0.008%	0.019%	0.009%
Arsenic (As)	µg/m³	*0.3*	2.06E-02	4.79E-03	1.11E-02	1.29E-01	4.92E-03	5.36E-03	2.40E-03	2.78E-03	6.9%	1.6%	3.7%	43.1%	1.6%	1.8%	0.8%	0.9%
Barium (Ba)	µg/m³	*10*	2.58E-02	2.67E-02	1.97E-02	2.14E-02	2.53E-02	2.53E-02	1.82E-02	3.09E-02	0.3%	0.3%	0.2%	0.2%	0.3%	0.3%	0.2%	0.3%
Beryllium (Be)	µg/m³	*0.01*	1.81E-03	3.27E-05	3.37E-05	4.15E-05	6.83E-05	7.79E-05	3.95E-05	4.39E-05	18.1%	0.3%	0.3%	0.4%	0.7%	0.8%	0.4%	0.4%
Bismuth (Bi)	µg/m³	-	2.63E-03	1.46E-03	6.07E-04	1.65E-03	5.71E-04	5.83E-04	1.85E-03	5.44E-03	-	-	-	-	-	-	-	-
Boron (B)	µg/m³	*120*	1.33E-02	1.31E-02	1.35E-02	1.87E-02	1.57E-02	1.60E-02	1.09E-02	1.33E-02	0.011%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%
Cadmium (Cd)	µg/m³	*0.025*	4.73E-03	6.54E-04	3.55E-03	6.10E-04	6.57E-04	1.23E-03	6.83E-04	5.26E-04	18.9%	2.6%	14.2%	2.4%	2.6%	4.9%	2.7%	2.1%
Chromium (Cr)	µg/m³	*0.5*	8.20E-03	8.54E-03	5.08E-03	4.87E-03	1.25E-02	6.29E-03	1.12E-02	5.92E-03	1.6%	1.7%	1.0%	1.0%	2.5%	1.3%	2.2%	1.2%
Cobalt (Co)	µg/m³	*0.1*	8.77E-04	6.54E-04	1.27E-03	7.16E-04	8.27E-04	8.97E-04	4.60E-04	5.23E-04	0.9%	0.7%	1.3%	0.7%	0.8%	0.9%	0.5%	0.5%
Copper (Cu)	µg/m³	*50*	6.15E-02	8.54E-02	7.30E-02	2.55E-01	6.79E-02	1.48E-01	1.18E-01	3.72E-01	0.1%	0.2%	0.1%	0.5%	0.1%	0.3%	0.2%	0.7%
Iron (Fe)	µg/m³	*4*	2.97E+00	1.25E+00	2.00E+00	1.73E+00	2.41E+00	2.19E+00	1.17E+00	3.39E+00	74.1%	31.2%	50.1%	43.2%	60.2%	54.8%	29.3%	84.7%
Lead (Pb)	µg/m³	*0.5*	3.96E-01	5.81E-03	5.93E-03	7.56E-03	2.85E-02	7.69E-03	1.56E-02	1.26E-02	19.8%	0.3%	0.3%	0.4%	1.4%	0.4%	3.1%	2.5%
Magnesium (Mg)	µg/m³	-	2.10E+00	9.90E-01	9.86E-01	9.01E-01	1.19E+00	2.51E+00	1.72E+00	1.23E+00	-	-	-	-	-	-	-	-
Manganese (Mn)	µg/m³	*0.4*	1.13E-01	5.56E-02	3.68E-02	4.35E-02	6.52E-02	7.29E-02	4.37E-02	5.76E-02	28.1%	13.9%	9.2%	10.9%	16.3%	18.2%	10.9%	14.4%
Molybdenum (Mo)	µg/m³	*120*	6.26E-03	2.20E-03	2.90E-03	2.65E-02	3.37E-03	9.28E-03	5.79E-03	1.34E-02	0.005%	0.002%	0.002%	0.022%	0.003%	0.008%	0.005%	0.011%
Nickel (Ni)	µg/m³	*0.2*	3.26E-03	2.42E-03	3.02E-03	2.84E-03	3.57E-03	4.34E-03	4.61E-03	2.81E-03	1.6%	1.2%	1.5%	1.4%	1.8%	2.2%	2.3%	1.4%
Phosphorus (P)	µg/m³	-	1.75E+00	2.15E+00	6.77E-01	2.33E-01	6.91E-01	2.43E-01	5.20E-01	6.34E-01	-	-	-	-	-	-	-	-
Selenium (Se)	µg/m³	*10*	4.39E-03	3.27E-03	3.37E-03	3.05E-03	1.72E-03	2.98E-03	5.42E-03	2.38E-03	0.04%	0.03%	0.03%	0.03%	0.02%	0.03%	0.05%	0.02%
Silver (Ag)	µg/m³	*1*	1.06E-02	3.27E-04	3.37E-04	5.29E-04	5.66E-04	2.96E-04	2.31E-04	2.36E-04	1.1%	0.03%	0.03%	0.05%	0.06%	0.03%	0.02%	0.02%
Strontium (Sr)	µg/m³	*120*	5.82E-02	3.13E-02	4.07E-02	1.87E-02	4.48E-02	5.21E-02	3.26E-02	3.61E-02	0.05%	0.03%	0.03%	0.02%	0.04%	0.04%	0.03%	0.03%
Thallium (Tl)	µg/m³	-	4.39E-03	6.36E-05	3.03E-05	7.40E-05	1.27E-04	9.81E-05	1.62E-04	1.39E-04	-	-	-	-	-	-	-	-
Tin (Sn)	µg/m³	*10*	3.09E-02	4.30E-03	2.97E-03	1.11E-02	1.71E-03	2.52E-03	5.20E-03	2.33E-03	0.31%	0.04%	0.03%	0.11%	0.02%	0.03%	0.05%	0.02%
Titanium (Ti)	µg/m³	*120*	5.57E-02	2.52E-02	7.13E-02	3.51E-02	8.27E-02	4.20E-02	3.53E-02	4.45E-02	0.05%	0.02%	0.06%	0.03%	0.07%	0.04%	0.03%	0.04%
Uranium (Ur)	µg/m³	*0.3*	1.97E-04	3.27E-05	1.43E-04	7.80E-05	1.52E-04	1.02E-04	1.29E-04	1.32E-04	0.07%	0.01%	0.05%	0.03%	0.05%	0.03%	0.04%	0.04%
Vanadium (V)	µg/m³	*2*	1.88E-02	3.46E-02	1.69E-03	1.55E-03	3.95E-03	3.36E-03	4.56E-03	4.11E-03	0.9%	1.7%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%
Zinc (Zn)	µg/m³	*120*	1.12E-01	5.87E-02	1.05E-01	1.27E-01	6.24E-01	2.47E-01	1.97E-01	2.19E-01	0.093%	0.049%	0.087%	0.105%	0.520%	0.206%	0.164%	0.183%
Zirconium (Zr)	µg/m³	-	2.19E-03	6.54E-04	1.43E-03	6.21E-04	1.23E-03	1.24E-03	6.48E-04	1.27E-03	0.011%	0.003%	0.01%	0.00%	0.006%	0.006%	-	-

Notes: [1] 2018 Q1 & Q2 data taken from Stantec's 2018 Q1 (Stantec, 2018a) and Q2 Reports (Stantec, 2018b).

7.3 PAH Comparisons

A summary of the maximum measured daily average Polycyclic Aromatic Hydrocarbons (PAH) concentrations and percentage of the applicable AAQC's from 2018 to 2025 for both the Courtice and Rundle Road Monitoring Stations is presented in **Table 17** and **18,** respectively.

The maximum measured PAH concentrations, with the exception of Benzo(a)Pyrene, were all well below applicable AAQC's from 2018-2025. There have been twenty-six (26) exceedances of Benzo(a)Pyrene above the applicable AAQC from 2018-2025 at the Courtice Monitoring Station and forty (40) exceedances of Benzo(a)Pyrene above the applicable AAQC from 2018-2025 at the Rundle Road Monitoring Station.

Table 17: 2018-2025 Comparison of Measured PAH Concentrations at the Courtice Station

Contaminant	Units	*MECP Criteria 2025*	Maximum Concentration								Percentage of Criteria							
			2018[1]	2019	2020	2021	2022	2023	2024	2025	2018[1]	2019	2020	2021	2022	2023	2024	2025
1-Methylnaphthalene	ng/m³	-	21.8	14.6	16.9	34.1	15.6	49.7	6.4	24.2	0.2%	0.1%	0.1%	0.3%	0.1%	0.4%	-	-
2-Methylnaphthalene	ng/m³	-	39.9	23.5	28.8	77.0	32.3	98.4	12.4	76.5	0.4%	0.2%	0.3%	0.8%	0.3%	1.0%	-	-
Acenaphthene	ng/m³	-	20.2	10.1	14.3	37.9	18.6	112.4	12.8	16.1	-	-	-	-	-	-	-	-
Acenaphthylene	ng/m³	-	0.6	0.5	1.6	1.3	1.1	3.3	0.8	1.7	0.02%	0.01%	0.05%	0.04%	0.03%	0.09%	-	-
Anthracene	ng/m³	-	0.8	0.4	0.5	1.4	0.6	20.1	0.3	1.0	0.4%	0.2%	0.3%	0.7%	0.3%	10.0%	-	-
Benzo(a)Anthracene	ng/m³	-	0.1	0.1	0.1	0.1	0.1	1.9	0.1	0.3	-	-	-	-	-	-	-	-
Benzo(a)fluorene	ng/m³	-	0.2	0.1	0.1	0.1	0.1	3.0	0.2	0.2	-	-	-	-	-	-	-	-
Benzo(a)Pyrene	ng/m³	*0.05*[2]	0.2	0.1	0.1	0.2	0.1	0.6	0.1	0.2	361%	197%	185%	397%	137%	1118%	230%	344%
Benzo(b)Fluoranthene	ng/m³	-	0.3	0.1	0.3	0.2	0.4	0.9	0.2	0.6	-	-	-	-	-	-	-	-
Benzo(b)fluorene	ng/m³	-	0.2	0.1	0.1	0.1	0.1	0.8	0.0	0.1	-	-	-	-	-	-	-	-
Benzo(e)Pyrene	ng/m³	-	0.2	0.1	0.2	0.2	0.1	0.6	0.1	0.4	-	-	-	-	-	-	-	-
Benzo(g,h,i)Perylene	ng/m³	-	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.4	-	-	-	-	-	-	-	-
Benzo(k)Fluoranthene	ng/m³	-	0.1	0.1	0.2	0.2	0.3	0.8	0.1	0.2	-	-	-	-	-	-	-	-
Biphenyl	ng/m³	-	10.1	5.0	8.6	19.7	8.6	71.7	4.3	13.5	-	-	-	-	-	-	-	-
Chrysene	ng/m³	-	0.3	0.2	0.4	0.3	0.2	2.7	0.2	0.7	-	-	-	-	-	-	-	-
Dibenzo(a,h)Anthracene	ng/m³	-	0.1	0.03	0.0	0.0	0.03	0.07	0.02	0.04	-	-	-	-	-	-	-	-
Fluoranthene	ng/m³	-	3.3	1.2	2.1	2.3	3.1	28.7	2.0	3.2	-	-	-	-	-	-	-	-
Fluorene	ng/m³	-	-	2.9	9.8	21.3	16.6	55.9	6.7	8.9	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)Pyrene	ng/m³	-	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.3	-	-	-	-	-	-	-	-
Naphthalene	ng/m³	*22500*	77.8	48.1	67.1	119.2	47.3	70.5	27.5	292.0	0.3%	0.2%	0.3%	0.5%	0.2%	0.3%	0.1%	1.298%
o-Terphenyl	ng/m³	-	0.2	0.02	0.0	0.0	0.03	0.04	0.05	0.06	-	-	-	-	-	-	-	-
Perylene	ng/m³	-	0.2	0.02	0.0	0.0	0.05	0.15	0.02	0.03	-	-	-	-	-	-	-	-
Phenanthrene	ng/m³	-	21.6	8.7	15.8	22.0	24.2	75.2	9.9	11.5	-	-	-	-	-	-	-	-
Pyrene	ng/m³	-	1.4	0.6	1.0	1.0	1.1	16.2	0.9	2.1	-	-	-	-	-	-	-	-
Tetralin	ng/m³	-	4.6	7.8	12.7	80.0	6.2	3.5	7.8	57.5	-	-	-	-	-	-	-	-
Total PAH[3]	ng/m³	-	203.6	117.9	170.2	333.0	135.4	616.6	69.3	458.1	-	-	-	-	-	-	-	-

Notes: [1] 2018 Q1 & Q2 data taken from Stantec's 2018 Q1 (Stantec, 2018a) and Q2 Reports (Stantec, 2018b).
[2] Ontario AAQC. The Standard for benzo(a)Pyrene (B(a)P) is for B(a)P as a surrogate for PAHs.
[3] The reported total PAH is the sum of all analysed PAH species.

Table 18: 2018-2025 Comparison of Measured PAH Concentrations at the Rundle Road Station

Contaminant	Units	*MECP Criteria 2025*	Maximum Concentration								Percentage of Criteria							
			2018[1]	2019	2020	2021	2022	2023	2024	2025	2018[1]	2019	2020	2021	2022	2023	2024	2025
1-Methylnaphthalene	ng/m^3	-	26.6	16.1	27.0	22.1	9.9	9.6	6.8	24.8	0.2%	0.1%	0.2%	0.2%	0.1%	0.1%	-	-
2-Methylnaphthalene	ng/m^3	-	54.1	29.4	48.5	43.0	20.3	16.1	12.9	39.5	0.5%	0.3%	0.5%	0.4%	0.2%	0.2%	-	-
Acenaphthene	ng/m^3	-	40.4	18.0	26.9	17.5	15.3	11.2	7.9	17.5	-	-	-	-	-	-	-	-
Acenaphthylene	ng/m^3	-	0.6	0.6	0.9	0.7	5.3	0.8	1.1	2.3	0.02%	0.02%	0.02%	0.02%	0.15%	0.02%	-	-
Anthracene	ng/m^3	-	2.6	1.9	2.1	1.2	2.4	1.3	1.8	1.3	1.3%	0.9%	1.1%	0.6%	1.2%	0.6%	-	-
Benzo(a)Anthracene	ng/m^3	-	0.1	0.1	0.2	0.1	0.6	0.1	0.1	1.0	-	-	-	-	-	-	-	-
Benzo(a)fluorene	ng/m^3	-	0.3	0.1	0.2	0.1	0.7	0.2	0.3	0.6	-	-	-	-	-	-	-	-
Benzo(a)Pyrene	ng/m^3	*0.05*[2]	0.1	0.1	0.2	0.3	1.2	0.1	0.1	0.9	278%	221%	364%	653.7%	2320%	290%	250%	1778%
Benzo(b)Fluoranthene	ng/m^3	-	0.1	0.2	0.2	0.2	1.3	0.2	0.2	1.2	-	-	-	-	-	-	-	-
Benzo(b)fluorene	ng/m^3	-	0.3	0.1	0.1	0.1	0.6	0.1	0.1	0.2	-	-	-	-	-	-	-	-
Benzo(e)Pyrene	ng/m^3	-	0.3	0.1	0.2	0.2	1.0	0.1	0.1	1.0	-	-	-	-	-	-	-	-
Benzo(g,h,i)Perylene	ng/m^3	-	0.1	0.1	0.2	0.2	1.3	0.2	0.1	1.1	-	-	-	-	-	-	-	-
Benzo(k)Fluoranthene	ng/m^3	-	0.1	0.1	0.2	0.2	1.1	0.3	0.2	0.6	-	-	-	-	-	-	-	-
Biphenyl	ng/m^3	-	13.2	5.5	19.3	9.9	8.1	8.1	9.2	13.1	-	-	-	-	-	-	-	-
Chrysene	ng/m^3	-	0.2	0.2	0.3	0.3	1.4	0.4	0.4	1.6	-	-	-	-	-	-	-	-
Dibenzo(a,h)Anthracene	ng/m^3	-	0.1	0.03	0.1	0.0	0.1	0.0	0.0	0.1	-	-	-	-	-	-	-	-
Fluoranthene	ng/m^3	-	13.5	4.7	6.2	3.3	8.5	5.9	5.9	5.7	-	-	-	-	-	-	-	-
Fluorene	ng/m^3	-	-	6.9	16.5	12.2	15.5	10.2	8.3	12.2	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)Pyrene	ng/m^3	-	0.1	0.1	0.2	0.2	1.1	0.2	0.1	1.0	-	-	-	-	-	-	-	-
Naphthalene	ng/m^3	*22500*	74.2	53.7	104.7	81.1	49.5	29.1	33.7	168.0	0.3%	0.2%	0.5%	0.4%	0.2%	0.1%	0.2%	0.747%
o-Terphenyl	ng/m^3	-	0.3	0.02	0.0	0.0	0.0	0.0	0.0	0.1	-	-	-	-	-	-	-	-
Perylene	ng/m^3	-	0.3	0.02	0.0	0.0	0.2	0.3	0.0	0.2	-	-	-	-	-	-	-	-
Phenanthrene	ng/m^3	-	58.1	24.0	30.6	16.2	36.7	23.6	20.4	19.8	-	-	-	-	-	-	-	-
Pyrene	ng/m^3	-	5.4	2.0	3.6	1.4	4.3	2.5	2.6	3.2	-	-	-	-	-	-	-	-
Tetralin	ng/m^3	-	7.7	36.0	16.8	94.5	5.4	3.8	6.7	42.9	-	-	-	-	-	-	-	-
Total PAH[3]	ng/m^3	-	292.1	160.3	274.2	216.3	138.1	90.7	83.7	305.4	-	-	-	-	-	-	-	-

Notes:
[1] 2018 Q1 & Q2 data taken from Stantec's 2018 Q1 (Stantec, 2018a) and Q2 Reports (Stantec, 2018b).
[2] Ontario AAQC. The Standard for benzo(a)Pyrene (B(a)P) is for B(a)P as a surrogate for PAHs.
[3] The reported total PAH is the sum of all analysed PAH species.

7.4 Dioxins and Furans Comparisons

The maximum measured ambient toxic equivalent Dioxins and Furans (D&F) concentrations from 2018 – 2025 and their specific measurement period for both Courtice and Rundle Road Monitoring Stations is presented in **Table 19**.

There was one (1) exceedance of the maximum measured toxic equivalent D&F concentration AAQC at the Courtice Monitoring Station in 2018, but none from 2019 to 2025. The maximum measured toxic equivalent D&F concentrations at the Rundle Road Station were all below the applicable AAQC from 2018-2025.

Table 19: 2018-2025 Comparison of Maximum Measured D&F Concentrations at the Courtice and Rundle Road Stations

Year	Courtice Station		Rundle Road Station	
	Maximum Concentration (pg TEQ/m^3)	No. of Exceedances	Maximum Concentration (pg TEQ/m^3)	No. of Exceedances
2018 [1]	0.109	1	0.091	0
2019	0.012	0	0.025	0
2020	0.025	0	0.030	0
2021	0.015	0	0.046	0
2022	0.024	0	0.067	0
2023	0.023	0	0.010	0
2024	0.009	0	0.009	0
2025	0.012[2]	0	0.032	0

Notes: [1] 2018 Q1 & Q2 data taken from Stantec's 2018 Q1 (Stantec, 2018a) and Q2 Reports (Stantec, 2018b).
[2] 2025 Percent Valid data <75% acceptable threshold

8 SUMMARY

The ambient air monitoring program at the DYEC for 2025 had a total of seven (7) Benzo(a)pyrene daily average concentrations above the applicable AAQC between the Courtice and Rundle Road Monitoring Stations. Out of the seven (7) exceedances, two (2) exceedances were recorded each on the following sampling days: March 14, November 21 and December 3. Across these sampling dates, BaP exceedances at both monitoring stations match the prevailing wind directions, indicating that concentrations are influenced by upwind sources. This pattern shows that elevated levels are not driven by a single local source, but by multiple regional contributors that vary with changing wind conditions. As wind direction shifts, different source regions—including industrial areas, transportation corridors, and urban centers—become potential contributors.

The ambient air monitoring program at the DYEC for 2025 had ninety-one (91) SO_2 1-hour average concentrations above the AAQC at the Courtice and Rundle Road Monitoring Stations. There were one-hundred and seventy-one (171) exceedances of the rolling 10-minute average AAQC for SO_2 throughout 2025. There was one (1) exceedance of the 1-hour CAAQS SO2 for 2025.

Throughout the 2025 year, there were a few minor issues with equipment failures and malfunctions. These were addressed as soon as they were identified, and preventive actions were put in place to prevent reoccurrences.

Data recovery was 81% or higher at each station for all contaminants, which exceeds the MECP's requirement of 75% of collected readings to be considered valid, except for the D&F at the Courtice station (73%). The overall data recovery average was 92% for the Courtice Monitoring Station and was 94% for the Rundle Road Monitoring Station.

9 REFERENCES

1. Jacques Whitford, (2009). Final Environmental Assessment, December 4, 2009.

2. Stantec Consulting Ltd., (2012). Ambient Air Quality Monitoring Plan, Durham York Residual Waste Study, May 8, 2012.

3. Stantec Consulting Ltd., (2018a). Quarterly Ambient Air Quality Monitoring Report for the Durham York Energy Centre – January to March 2018.

4. Stantec Consulting Ltd., (2018b). Quarterly Ambient Air Quality Monitoring Report for the Durham York Energy Centre – April to June 2018.

10 GENERAL STATEMENT OF LIMITATIONS

This report entitled "2025 Annual Ambient Air Quality Monitoring Report: Continuous & Periodic Monitoring Program", dated May 15, 2026, was prepared by RWDI AIR Inc. ("RWDI") for The Regional Municipality of Durham ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). This report was prepared using scientific principles, published methodologies and professional judgment in assessing available information and data. The findings presented within this document are based on available data within the limits of the existing information, budgeted scope of work, and schedule. The conclusions contained in this report are based on the information available to RWDI when this report was prepared; subsequent changes made by the Client after the date of this report have not been reflected in the conclusions.

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

APPENDIX A

National Air Pollution Surveillance (NAPS) Program //

Programme de surveillance national de la pollution atmosphérique (SNPA)

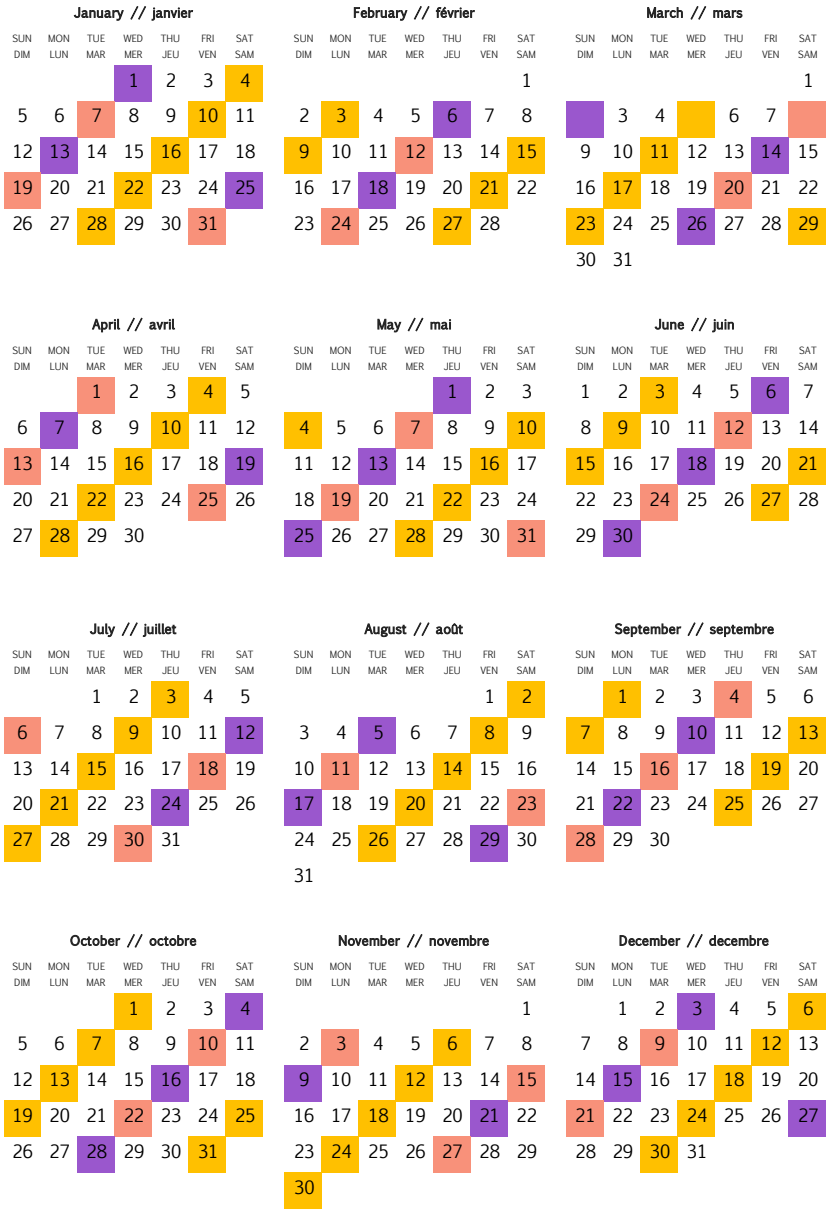
2025 Sampling Schedule // Horaire Échantillonnage **2025**

Notes // Notes:

3-Day schedule in orange, pink and purple // Échantillonneurs 3-jours en orange, rose et violet

6-Day schedule in pink and purple // Échantillonneurs 6-jours en rose et violet

12-Day schedule in purple // Échantillonneurs 12-jours en violet



Contact the NAPS inquiry centre for additional information // Contactez le centre d'information SNPA pour plus d'informations

RNSPA-NAPSINFO@ec.gc.ca

APPENDIX B

Table B1: 2025 Monitoring Summary Results for PM2.5 at Courtice Station

Data Statistics	Annual Arithmetic Mean	Maximum Running 1 hr Mean	Maximum Running 24 hr Mean	98th Percentile (24 hr Mean) [1]	Number of valid Hours	% valid data
Compound	$PM_{2.5}$	$PM_{2.5}$	$PM_{2.5}$	$PM_{2.5}$	$PM_{2.5}$	$PM_{2.5}$
	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	No.	%
2025	6.3	92.4	62.0	26.7	8721	99.6

[1] - This value is the 98th percentile of daily average levels for the 2025 year.

Table B2: 2025 Monitoring Summary Results for $PM_{2.5}$ at Rundle Station

Data Statistics	Annual Arithmetic Mean	Maximum Running 1 hr Mean	Maximum Running 24 hr Mean	98th Percentile (24 hr Mean) [1]	Number of valid Hours	% valid data
Compound	$PM_{2.5}$	$PM_{2.5}$	$PM_{2.5}$	$PM_{2.5}$	$PM_{2.5}$	$PM_{2.5}$
	(ug/m^3)	(ug/m^3)	(ug/m^3)	(ug/m^3)	No.	%
2025	6.1	89.3	59.2	24.5	8705	99.4

[1] - This value is the 98th percentile of daily average levels for the 2025 year.

Table B3: 2025 Monitoring Summary Results for NOx at Courtice Station

Data Statistics	Events > 1 hr AAQC	Events > 24 hr AAQC	Annual Arithmetic Mean	Maximum Running 1 hr Mean	Maximum Running 24 hr Mean	Number of valid Hours	% valid data
Compound	NO_x	NO_x	NO_x	NO_x	NO_x	NO_x	NO_x
	No.	No.	(ppb)	(ppb)	(ppb)	No.	%
2025	N/A	N/A	6.1	85.4	28.0	8708	99.4

Table B4: 2025 Monitoring Summary Results for NOx at Rundle Station

Data Statistics	Events > 1 hr AAQC	Events > 24 hr AAQC	Annual Arithmetic Mean	Maximum Running 1 hr Mean	Maximum Running 24 hr Mean	Number of Valid Hours	% Valid Data
Compound	NO_x	NO_x	NO_x	NO_x	NO_x	NO_x	NO_x
	No.	No.	(ppb)	(ppb)	(ppb)	No.	%
2025	N/A	N/A	4.9	96.9	23.4	8681	99.1

Table B5: 2025 Monitoring Summary Results for NO at Courtice Station

Data Statistics	Events > 1 hr AAQC	Events > 24 hr AAQC	Annual Arithmetic Mean	Maximum Running 1 hr Mean	Maximum Running 24 hr Mean	Number of valid Hours	% valid data
Compound	NO	NO	NO	NO	NO	NO	NO
	No.	No.	(ppb)	(ppb)	(ppb)	No.	%
2025	N/A	N/A	1.1	64.0	10.6	8708	99.4

Table B6: 2025 Monitoring Summary Results for NO at Rundle Station

Data Statistics	Events > 1 hr AAQC	Events > 24 hr AAQC	Annual Arithmetic Mean	Maximum Running 1 hr Mean	Maximum Running 24 hr Mean	Number of valid Hours	% valid data
Compound	NO	NO	NO	NO	NO	NO	NO
	No.	No.	(ppb)	(ppb)	(ppb)	No.	%
2025	N/A	N/A	1.1	73.7	10.9	8681	99.1

Table B7: 2025 Monitoring Summary Results for NO_2 at Courtice Station

Data Statistics	Events > 1 hr AAQC	Events > 24 hr AAQC	Events > Annual AAQC	Annual Arithmetic Mean	Maximum Running 1 hr Mean	98th Percentile (Daily Max 1 hr Mean) [1]	Maximum Running 24 hr Mean	Number of valid Hours	% valid data
Compound	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2
	No.	No.	No.	(ppb)	(ppb)	(ppb)	(ppb)	No.	%
2025	0	0	0	5.0	39.3	33.6	19.7	8708	99.4

[1] - This value is the 98th percentile of daily maximum 1-hour average concentrations for the 2025 year.

Table B8: 2025 Monitoring Summary Results for NO_2 at Rundle Station

Data Statistics	Events > 1 hr AAQC	Events > 24 hr AAQC	Events > Annual AAQC	Annual Arithmetic Mean	Maximum Running 1 hr Mean	98th Percentile (Daily Max 1 hr Mean) [1]	Maximum Running 24 hr Mean	Number of valid Hours	% valid data
Compound	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2	NO_2
	No.	No.	No.	(ppb)	(ppb)	(ppb)	(ppb)	No.	%
2025	0	0	0	3.9	33.4	27.4	19.1	8681	99.1

[1] - This value is the 98th percentile of daily maximum 1-hour average concentrations for the 2025 year.

Table B9: 2025 Monitoring Summary Results for SO_2 at Courtice Station

Data Statistics	Events > 10 min AAQC	Events > 1 hr AAQC	Events > Annual AAQC	Events > Annual CAAQS	Annual Arithmetic Mean	Maximum Running 10 min Mean	Maximum Running 1 hr Mean	99th Percentile (Daily Max 1 hr Mean) [1]	Maximum Running 24 hr Mean	Number of Valid Hours	% Valid Data
Compound	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2
	No.	No.	No.	No.	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	No.	%
2025	171	91	0	0	2.9	334.7	121.2	101.6	26.5	8574	97.9

[1] - This value is the 99th percentile of daily maximum 1-hour average concentrations for the 2025 year.

Table B10: 2025 Monitoring Summary Results for SO_2 at Rundle Station

Data Statistics	Events > 10 min AAQC	Events > 1 hr AAQC	Events > Annual AAQC	Events > Annual CAAQS	Annual Arithmetic Mean	Maximum Running 10 min Mean	Maximum Running 1 hr Mean	99th Percentile (Daily Max 1 hr Mean) [1]	Maximum Running 24 hr Mean	Number of Valid Hours	% Valid Data
Compound	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2	SO_2
	No.	No.	No.	No.	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	No.	%
2025	0	0	0	0	0.4	9.3	7.1	3.2	1.6	8692	99.2

[1] - This value is the 99th percentile of daily maximum 1-hour average concentrations for the 2025 year.

APPENDIX C

Table C1: 2025 Courtice Station Monitoring Results for TSP and Metals

DYEC AAQM Courtice Station Monitoring Results for Total Suspended Particulate and Metals									
Contaminant	**Units**	**AAQC**	**No. > AAQC**	**Geometric Mean**	**Arithmetic Mean**	**Maximum Concentration**	**Minimum Concentration**	**Number of Valid Samples**	**% Valid data**
Particulate (TSP)	µg/m^3	*120*	0	18.7	24.0	98.7	2.66	56	91.8
Total Mercury (Hg)	µg/m^3	*2*	0	6.34E-06	8.62E-06	4.21E-05	2.84E-06	56	91.8
Aluminum (Al)	µg/m^3	-	-	1.35E-01	1.91E-01	1.23E+00	2.34E-02	56	91.8
Antimony (Sb)	µg/m^3	*25*	0	9.11E-04	1.08E-03	4.00E-03	2.68E-04	56	91.8
Arsenic (As)	µg/m^3	*0.3*	0	9.53E-04	9.97E-04	3.04E-03	8.46E-04	56	91.8
Barium (Ba)	µg/m^3	*10*	0	7.29E-03	8.70E-03	3.06E-02	2.49E-03	56	91.8
Beryllium (Be)	µg/m^3	*0.01*	0	1.56E-05	1.62E-05	5.18E-05	1.41E-05	56	91.8
Bismuth (Bi)	µg/m^3	-	-	5.61E-04	6.21E-04	5.12E-03	5.07E-04	56	91.8
Boron (B)	µg/m^3	*120*	0	4.66E-03	4.77E-03	1.33E-02	4.23E-03	56	91.8
Cadmium (Cd)	µg/m^3	*0.025*	0	1.32E-04	1.57E-04	5.40E-04	4.25E-05	56	91.8
Chromium (Cr)	µg/m^3	*0.5*	0	2.20E-03	2.46E-03	6.07E-03	9.85E-04	56	91.8
Cobalt (Co)	µg/m^3	*0.1*	0	1.11E-04	1.37E-04	6.07E-04	2.68E-05	56	91.8
Copper (Cu)	µg/m^3	*50*	0	3.66E-02	5.19E-02	2.08E-01	5.83E-03	56	91.8
Iron (Fe)	µg/m^3	*4*	0	3.51E-01	4.72E-01	3.39E+00	9.48E-02	56	91.8
Lead (Pb)	µg/m^3	*0.5*	0	2.30E-03	2.56E-03	5.77E-03	8.28E-04	56	91.8
Magnesium (Mg)	µg/m^3	-	-	2.01E-01	2.50E-01	1.23E+00	5.65E-02	56	91.8
Manganese (Mn)	µg/m^3	*0.4*	0	1.02E-02	1.28E-02	5.76E-02	2.16E-03	56	91.8
Molybdenum (Mo)	µg/m^3	*120*	0	1.58E-03	2.19E-03	1.34E-02	2.64E-04	56	91.8
Nickel (Ni)	µg/m^3	*0.2*	0	1.27E-03	1.39E-03	3.43E-03	5.17E-04	56	91.8
Phosphorus (P)	µg/m^3	-	-	2.38E-01	2.45E-01	5.70E-01	2.11E-01	56	91.8
Selenium (Se)	µg/m^3	*10*	0	5.05E-04	6.05E-04	2.84E-03	3.70E-04	56	91.8
Silver (Ag)	µg/m^3	*1*	0	4.07E-05	5.56E-05	2.96E-04	2.57E-05	56	91.8
Strontium (Sr)	µg/m^3	*120*	0	4.90E-03	6.51E-03	3.61E-02	8.55E-04	56	91.8
Thallium (Tl)	µg/m^3	-	-	2.80E-05	2.88E-05	9.66E-05	2.54E-05	56	91.8
Tin (Sn)	µg/m^3	*10*	0	9.12E-04	1.13E-03	9.08E-03	1.75E-04	56	91.8
Titanium (Ti)	µg/m^3	*120*	0	6.41E-03	8.67E-03	4.89E-02	3.13E-03	56	91.8
Uranium (Ur)	µg/m^3	*0.3*	0	1.25E-05	1.91E-05	1.32E-04	1.71E-06	56	91.8
Vanadium (V)	µg/m^3	*2*	0	1.54E-03	1.56E-03	3.13E-03	1.41E-03	56	91.8
Zinc (Zn)	µg/m^3	*120*	0	4.05E-02	4.62E-02	1.23E-01	1.24E-02	56	91.8
Zirconium (Zr)	µg/m^3	-	-	6.28E-04	6.43E-04	1.46E-03	5.64E-04	56	91.8

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

Table C2: 2025 Rundle Road Station Monitoring Results for TSP and Metals

DYEC AAQM
Rundle Road Station Monitoring Results for Total Suspended Particulate and Metals

Contaminant	Units	AAQC Criteria ($\mu g/m^3$)	No. > AAQC	Geometric Mean	Arithmetic Mean	Maximum Concentration	Minimum Concentration	Number of Valid Samples	% Valid data
Particulate (TSP)	$\mu g/m^3$	*120*	0	20.5	24.9	91.9	2.61	59	96.7
Total Mercury (Hg)	$\mu g/m^3$	*2*	0	6.14E-06	8.26E-06	3.43E-05	2.89E-06	59	96.7
Aluminum (Al)	$\mu g/m^3$	-	-	1.54E-01	2.11E-01	1.07E+00	3.64E-02	59	96.7
Antimony (Sb)	$\mu g/m^3$	*25*	0	6.34E-04	7.39E-04	2.13E-03	2.11E-04	59	96.7
Arsenic (As)	$\mu g/m^3$	*0.3*	0	9.31E-04	9.46E-04	2.78E-03	8.68E-04	59	96.7
Barium (Ba)	$\mu g/m^3$	*10*	0	7.07E-03	8.33E-03	3.09E-02	2.22E-03	59	96.7
Beryllium (Be)	$\mu g/m^3$	*0.01*	0	1.59E-05	1.64E-05	4.11E-05	1.45E-05	59	96.7
Bismuth (Bi)	$\mu g/m^3$	-	-	5.70E-04	6.31E-04	5.44E-03	5.21E-04	59	96.7
Boron (B)	$\mu g/m^3$	*120*	0	4.74E-03	4.89E-03	1.53E-02	4.34E-03	59	96.7
Cadmium (Cd)	$\mu g/m^3$	*0.025*	0	1.04E-04	1.21E-04	4.78E-04	3.58E-05	59	96.7
Chromium (Cr)	$\mu g/m^3$	*0.5*	0	2.00E-03	2.30E-03	5.43E-03	9.84E-04	59	96.7
Cobalt (Co)	$\mu g/m^3$	*0.1*	0	1.23E-04	1.49E-04	4.93E-04	3.26E-05	59	96.7
Copper (Cu)	$\mu g/m^3$	*50*	0	7.60E-02	9.62E-02	3.72E-01	2.28E-02	59	96.7
Iron (Fe)	$\mu g/m^3$	*4*	0	3.40E-01	4.38E-01	1.69E+00	7.25E-02	59	96.7
Lead (Pb)	$\mu g/m^3$	*0.5*	0	2.30E-03	2.67E-03	1.26E-02	8.19E-04	59	96.7
Magnesium (Mg)	$\mu g/m^3$	-	-	2.36E-01	2.89E-01	8.53E-01	5.05E-02	59	96.7
Manganese (Mn)	$\mu g/m^3$	*0.4*	0	1.02E-02	1.27E-02	4.28E-02	1.56E-03	59	96.7
Molybdenum (Mo)	$\mu g/m^3$	*120*	0	3.06E-03	3.65E-03	1.11E-02	9.78E-04	59	96.7
Nickel (Ni)	$\mu g/m^3$	*0.2*	0	1.21E-03	1.32E-03	2.77E-03	5.01E-04	59	96.7
Phosphorus (P)	$\mu g/m^3$	-	-	2.60E-01	2.77E-01	6.34E-01	2.17E-01	59	96.7
Selenium (Se)	$\mu g/m^3$	*10*	0	5.08E-04	5.98E-04	2.38E-03	3.76E-04	59	96.7
Silver (Ag)	$\mu g/m^3$	*1*	0	4.58E-05	6.03E-05	2.36E-04	2.61E-05	59	96.7
Strontium (Sr)	$\mu g/m^3$	*120*	0	5.46E-03	6.77E-03	2.54E-02	9.02E-04	59	96.7
Thallium (Tl)	$\mu g/m^3$	-	-	2.91E-05	3.09E-05	1.39E-04	2.61E-05	59	96.7
Tin (Sn)	$\mu g/m^3$	*10*	0	8.01E-04	9.28E-04	2.33E-03	1.80E-04	59	96.7
Titanium (Ti)	$\mu g/m^3$	*120*	0	6.69E-03	8.93E-03	3.44E-02	3.18E-03	59	96.7
Uranium (Ur)	$\mu g/m^3$	*0.3*	0	1.38E-05	2.09E-05	1.23E-04	1.81E-06	59	96.7
Vanadium (V)	$\mu g/m^3$	*2*	0	1.55E-03	1.57E-03	4.11E-03	1.45E-03	59	96.7
Zinc (Zn)	$\mu g/m^3$	*120*	0	4.58E-02	5.56E-02	2.19E-01	1.26E-02	59	96.7
Zirconium (Zr)	$\mu g/m^3$	-	-	6.25E-04	6.32E-04	1.27E-03	5.79E-04	59	96.7

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

Table C3: 2025 Courtice Station Monitoring Results for PAHs

DYEC AAQM Courtice Station Monitoring Results for Polycyclic Aromatic Hydrocarbons									
Contaminant	**Units**	**MECP Criteria ($\mu g/m^3$)**	**No. > AAQC**	**Geometric Mean**	**Arithmetic Mean**	**Maximum Concentration**	**Minimum Concentration**	**Number of Valid Samples**	**% Valid data**
1-Methylnaphthalene	ng/m^3	-	-	4.11E+00	5.29E+00	2.42E+01	1.38E+00	25	80.6
2-Methylnaphthalene	ng/m^3	-	-	6.95E+00	1.04E+01	7.65E+01	1.88E+00	25	80.6
Acenaphthene	ng/m^3	-	-	1.62E+00	3.74E+00	1.61E+01	2.11E-01	25	80.6
Acenaphthylene	ng/m^3	-	-	2.83E-01	4.15E-01	1.68E+00	5.35E-02	25	80.6
Anthracene	ng/m^3	-	-	1.18E-01	2.00E-01	1.01E+00	2.08E-02	25	80.6
Benzo(a)Anthracene	ng/m^3	-	-	1.92E-02	3.07E-02	2.77E-01	6.02E-03	25	80.6
Benzo(a)fluorene	ng/m^3	-	-	2.42E-02	3.18E-02	2.09E-01	1.00E-02	25	80.6
Benzo(a)Pyrene	ng/m^3	0.05	3	2.14E-02	2.94E-02	1.72E-01	5.78E-03	25	80.6
Benzo(b)Fluoranthene	ng/m^3	-	-	5.17E-02	8.18E-02	6.24E-01	1.02E-02	25	80.6
Benzo(b)fluorene	ng/m^3	-	-	9.05E-03	1.49E-02	1.24E-01	1.61E-03	25	80.6
Benzo(e)Pyrene	ng/m^3	-	-	4.07E-02	6.24E-02	4.29E-01	1.28E-02	25	80.6
Benzo(g,h,i)Perylene	ng/m^3	-	-	4.16E-02	5.87E-02	3.54E-01	1.00E-02	25	80.6
Benzo(k)Fluoranthene	ng/m^3	-	-	3.25E-02	5.17E-02	2.27E-01	1.84E-03	25	80.6
Biphenyl	ng/m^3	-	-	2.62E+00	3.39E+00	1.35E+01	9.87E-01	25	80.6
Chrysene	ng/m^3	-	-	7.41E-02	1.02E-01	6.80E-01	2.82E-02	25	80.6
Dibenzo(a,h)Anthracene	ng/m^3	-	-	7.60E-03	1.05E-02	4.04E-02	1.53E-03	25	80.6
Fluoranthene	ng/m^3	-	-	6.77E-01	8.89E-01	3.23E+00	1.95E-01	25	80.6
Fluorene	ng/m^3	-	-	1.63E+00	2.44E+00	8.92E+00	4.19E-01	25	80.6
Indeno(1,2,3-cd)Pyrene	ng/m^3	-	-	3.73E-02	5.35E-02	3.17E-01	7.17E-03	25	80.6
Naphthalene	ng/m^3	22500	0	2.07E+01	3.28E+01	2.92E+02	7.24E+00	25	80.6
o-Terphenyl	ng/m^3	-	-	8.85E-03	1.31E-02	5.89E-02	1.53E-03	25	80.6
Perylene	ng/m^3	-	-	3.87E-03	5.76E-03	3.42E-02	1.57E-03	25	80.6
Phenanthrene	ng/m^3	-	-	2.61E+00	3.56E+00	1.15E+01	7.93E-01	25	80.6
Pyrene	ng/m^3	-	-	3.33E-01	4.21E-01	2.11E+00	1.02E-01	25	80.6
Tetralin	ng/m^3	-	-	2.08E+00	6.20E+00	5.75E+01	4.24E-01	25	80.6
Total PAH[2]	ng/m^3	-	-	4.87E+01	7.03E+01	4.58E+02	1.89E+01	25	80.6

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

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

[2] Total PAH sums all PAH contaminants

Table C4: 2025 Rundle Road Station Monitoring Results for PAHs

DYEC AAQM Rundle Road Station Monitoring Results for Polycyclic Aromatic Hydrocarbons									
Contaminant	**Units**	**MECP Criteria ($\mu g/m^3$)**	**No. > AAQC**	**Geometric Mean**	**Arithmetic Mean**	**Maximum Concentration**	**Minimum Concentration**	**Number of Valid Samples**	**% Valid data**
1-Methylnaphthalene	ng/m^3	-	-	4.14E+00	5.34E+00	2.48E+01	1.11E+00	25	80.6
2-Methylnaphthalene	ng/m^3	-	-	6.88E+00	9.02E+00	3.95E+01	1.40E+00	25	80.6
Acenaphthene	ng/m^3	-	-	1.91E+00	4.42E+00	1.75E+01	2.34E-01	25	80.6
Acenaphthylene	ng/m^3	-	-	2.71E-01	3.51E-01	2.28E+00	7.06E-02	25	80.6
Anthracene	ng/m^3	-	-	1.59E-01	3.07E-01	1.34E+00	4.20E-02	25	80.6
Benzo(a)Anthracene	ng/m^3	-	-	2.09E-02	6.00E-02	9.64E-01	4.92E-03	25	80.6
Benzo(a)fluorene	ng/m^3	-	-	2.85E-02	5.13E-02	5.96E-01	9.54E-03	25	80.6
Benzo(a)Pyrene	ng/m^3	*0.05*	4	2.11E-02	5.95E-02	8.89E-01	3.80E-03	25	80.6
Benzo(b)Fluoranthene	ng/m^3	-	-	5.19E-02	1.07E-01	1.24E+00	1.21E-02	25	80.6
Benzo(b)fluorene	ng/m^3	-	-	1.06E-02	2.01E-02	2.29E-01	1.66E-03	25	80.6
Benzo(e)Pyrene	ng/m^3	-	-	3.59E-02	8.57E-02	1.01E+00	1.88E-03	25	80.6
Benzo(g,h,i)Perylene	ng/m^3	-	-	4.21E-02	8.96E-02	1.09E+00	8.89E-03	25	80.6
Benzo(k)Fluoranthene	ng/m^3	-	-	3.46E-02	6.69E-02	5.99E-01	5.41E-03	25	80.6
Biphenyl	ng/m^3	-	-	2.66E+00	3.51E+00	1.31E+01	8.01E-01	25	80.6
Chrysene	ng/m^3	-	-	8.46E-02	1.45E-01	1.55E+00	2.24E-02	25	80.6
Dibenzo(a,h)Anthracene	ng/m^3	-	-	6.72E-03	1.28E-02	1.28E-01	1.46E-03	25	80.6
Fluoranthene	ng/m^3	-	-	8.88E-01	1.41E+00	5.67E+00	2.53E-01	25	80.6
Fluorene	ng/m^3	-	-	1.93E+00	3.20E+00	1.22E+01	3.91E-01	25	80.6
Indeno(1,2,3-cd)Pyrene	ng/m^3	-	-	3.80E-02	8.08E-02	9.61E-01	1.07E-02	25	80.6
Naphthalene	ng/m^3	*22500*	0	2.11E+01	2.75E+01	1.68E+02	7.26E+00	25	80.6
o-Terphenyl	ng/m^3	-	-	9.20E-03	1.42E-02	5.34E-02	1.53E-03	25	80.6
Perylene	ng/m^3	-	-	3.97E-03	1.12E-02	1.66E-01	1.53E-03	25	80.6
Phenanthrene	ng/m^3	-	-	3.31E+00	5.29E+00	1.98E+01	9.05E-01	25	80.6
Pyrene	ng/m^3	-	-	4.32E-01	6.48E-01	3.20E+00	1.55E-01	25	80.6
Tetralin	ng/m^3	-	-	1.88E+00	4.91E+00	4.29E+01	1.49E-01	25	80.6
Total PAH[2]	ng/m^3	-	-	5.14E+01	6.68E+01	3.05E+02	1.59E+01	25	80.6

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

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

[2] Total PAH sums all PAH contaminants

Table C5: 2025 Courtice Station Monitoring Results for Dioxins & Furans

DYEC AAQM Courtice Station Monitoring Results for Dioxins & Furans									
Contaminant	**Units**	**AAQC**	**No. > AAQC**	**Geometric Mean**	**Arithmetic Mean**	**Maximum Concentration**	**Minimum Concentration**	**Number of Valid Samples**	**% Valid data**
2,3,7,8-TCDD	pg TEQ/m^3	-	-	1.03E-03	1.35E-03	4.69E-03	4.24E-04	11	73.3
1,2,3,7,8-PeCDD	pg TEQ/m^3	-	-	1.21E-03	1.53E-03	3.68E-03	4.56E-04	11	73.3
1,2,3,4,7,8-HxCDD	pg TEQ/m^3	-	-	1.81E-04	2.24E-04	4.04E-04	2.99E-05	11	73.3
1,2,3,6,7,8-HxCDD	pg TEQ/m^3	-	-	2.61E-04	3.30E-04	7.87E-04	4.72E-05	11	73.3
1,2,3,7,8,9-HxCDD	pg TEQ/m^3	-	-	2.08E-04	2.41E-04	4.57E-04	6.77E-05	11	73.3
1,2,3,4,6,7,8-HpCDD	pg TEQ/m^3	-	-	3.60E-04	4.11E-04	8.03E-04	1.22E-04	11	73.3
OCDD	pg TEQ/m^3	-	-	5.43E-05	6.59E-05	1.61E-04	8.12E-06	11	73.3
2,3,7,8-TCDF	pg TEQ/m^3	-	-	1.65E-04	1.88E-04	3.79E-04	4.87E-05	11	73.3
1,2,3,7,8-PeCDF	pg TEQ/m^3	-	-	7.01E-05	8.30E-05	2.08E-04	2.59E-05	11	73.3
2,3,4,7,8-PeCDF	pg TEQ/m^3	-	-	7.81E-04	1.05E-03	3.80E-03	2.92E-04	11	73.3
1,2,3,4,7,8-HxCDF	pg TEQ/m^3	-	-	2.16E-04	2.61E-04	5.73E-04	7.86E-05	11	73.3
1,2,3,6,7,8-HxCDF	pg TEQ/m^3	-	-	2.13E-04	2.37E-04	3.94E-04	8.83E-05	11	73.3
2,3,4,6,7,8-HxCDF	pg TEQ/m^3	-	-	2.11E-04	2.98E-04	1.30E-03	6.42E-05	11	73.3
1,2,3,7,8,9-HxCDF	pg TEQ/m^3	-	-	1.02E-04	1.29E-04	2.93E-04	3.77E-05	11	73.3
1,2,3,4,6,7,8-HpCDF	pg TEQ/m^3	-	-	1.20E-04	1.83E-04	9.09E-04	3.43E-05	11	73.3
1,2,3,4,7,8,9-HpCDF	pg TEQ/m^3	-	-	2.26E-05	3.65E-05	1.53E-04	5.19E-06	11	73.3
OCDF	pg TEQ/m^3	-	-	4.12E-06	7.28E-06	3.79E-05	1.61E-06	11	73.3
Total Toxic Equivalency	pg TEQ/m^3	0.1 1[1]	0	6.08E-03	6.62E-03	1.18E-02	2.35E-03	11	73.3

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

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

Table C6: 2025 Rundle Road Station Monitoring Results for Dioxins & Furans

DYEC AAQM Rundle Road Station Monitoring Results for Dioxins & Furans									
Contaminant	**Units**	**AAQC**	**No. > AAQC**	**Geometric Mean**	**Arithmetic Mean**	**Maximum Concentration**	**Minimum Concentration**	**Number of Valid Samples**	**% Valid data**
2,3,7,8-TCDD	pg TEQ/m^3	-	-	8.80E-04	9.88E-04	1.95E-03	3.38E-04	12	80.0
1,2,3,7,8-PeCDD	pg TEQ/m^3	-	-	1.38E-03	1.73E-03	6.74E-03	3.84E-04	12	80.0
1,2,3,4,7,8-HxCDD	pg TEQ/m^3	-	-	1.96E-04	2.42E-04	7.43E-04	4.77E-05	12	80.0
1,2,3,6,7,8-HxCDD	pg TEQ/m^3	-	-	2.81E-04	4.12E-04	1.82E-03	6.76E-05	12	80.0
1,2,3,7,8,9-HxCDD	pg TEQ/m^3	-	-	2.47E-04	4.02E-04	1.50E-03	3.69E-05	12	80.0
1,2,3,4,6,7,8-HpCDD	pg TEQ/m^3	-	-	4.75E-04	7.31E-04	2.63E-03	1.03E-04	12	80.0
OCDD	pg TEQ/m^3	-	-	5.67E-05	7.57E-05	2.84E-04	1.93E-05	12	80.0
2,3,7,8-TCDF	pg TEQ/m^3	-	-	1.52E-04	1.95E-04	7.93E-04	5.53E-05	12	80.0
1,2,3,7,8-PeCDF	pg TEQ/m^3	-	-	5.57E-05	6.95E-05	1.94E-04	2.35E-05	12	80.0
2,3,4,7,8-PeCDF	pg TEQ/m^3	-	-	5.35E-04	1.18E-03	8.19E-03	1.87E-04	12	80.0
1,2,3,4,7,8-HxCDF	pg TEQ/m^3	-	-	1.83E-04	2.85E-04	1.18E-03	5.38E-05	12	80.0
1,2,3,6,7,8-HxCDF	pg TEQ/m^3	-	-	1.44E-04	2.11E-04	9.96E-04	6.61E-05	12	80.0
2,3,4,6,7,8-HxCDF	pg TEQ/m^3	-	-	1.62E-04	5.44E-04	4.78E-03	4.00E-05	12	80.0
1,2,3,7,8,9-HxCDF	pg TEQ/m^3	-	-	1.21E-04	1.99E-04	1.11E-03	2.61E-05	12	80.0
1,2,3,4,6,7,8-HpCDF	pg TEQ/m^3	-	-	9.56E-05	2.21E-04	1.44E-03	2.47E-05	12	80.0
1,2,3,4,7,8,9-HpCDF	pg TEQ/m^3	-	-	2.06E-05	3.32E-05	1.58E-04	5.53E-06	12	80.0
OCDF	pg TEQ/m^3	-	-	2.87E-06	3.66E-06	7.79E-06	9.22E-07	12	80.0
Total Toxic Equivalency	pg TEQ/m^3	0.1 1[1]	0	5.73E-03	7.52E-03	3.18E-02	2.12E-03	12	80.0

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

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