FINAL REPORT

TRANS MOUNTAIN PIPELINE BURNABY TERMINAL

BURNABY, BRITISH COLUMBIA

2025 ANNUAL AIR QUALITY AND METEOROLOGICAL MONITORING REPORT

RWDI #2602729

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TABLE OF CONTENTS

1 SUMMARY

This report summarizes ambient air quality measurements made at the Trans Mountain Burnaby Terminal (BT) Air Quality Monitoring (AQM) station during the operational period from January 1, 2025, through December 31, 2025. This monitoring program addresses the requirements of the Canada Energy Regulator (CER) Condition 79 for the Trans Mountain Expansion Project.

The objective of the BT AQM program during this operational period was to monitor the ambient air quality in the vicinity of the BT and compare it to the applicable Ambient Air Quality Objectives (AAQOs). The BT AQM station is located in the municipality of Burnaby, so the ambient measurements were compared to the Metro Vancouver Regional District (MVRD) AAQOs and supplemented with values from Alberta where none exist in BC. The monitoring methods follow the Air Emissions Management Plan for Sumas and Burnaby Terminals (Trans Mountain 2017, CER Condition 79, Filing ID A84102, Approval 85838) and the Ambient Air Quality Monitoring Plan (AQMP) for the Westridge Marine Terminal, Burnaby Terminal, and Sumas Terminal (Trans Mountain 2020).

The BT AQM station continuously monitors the following air quality parameters: particulate matter less than 2.5 microns ($PM_{2.5}$), nitrogen oxides (NO_x, NO, NO_2), sulphur dioxide (SO_2), total reduced sulphurs (TRS), ozone (O_3), black carbon (BC), visibility, and benzene, toluene, ethylbenzene and xylenes (BTEX). The BT AQM station also continuously monitors the following meteorological parameters: wind speed, wind direction, temperature, relative humidity, barometric pressure, and precipitation. Data validity for all parameters, except BTEX, was in the statistically significant acceptable range of greater than 75% for the monitoring period.

Throughout the monitoring period from January 1 to December 31, 2025, there were 51 exceedances of the 1-hour benzene Alberta AAQO, and three (3) exceedances of the 24-hour $PM_{2.5}$ MVRD AAQO. The highest benzene value was 30.3 ppb on April 1, 2025. The bulk of the benzene exceedances were between March 31 to April 2, 2025, and were attributable to oil-based painting being done in the AQM building. There were 4 benzene exceedances between April 10 to May 4, 2025 which were likely the result of tank cleaning being done on Tank 88, immediately adjacent to the AQM Station. The 24-hour $PM_{2.5}$ exceedances occurred in September 2025 and were likely the result of wildfire smoke events.

There were no exceedances of the annual AAQOs for $PM_{2.5}$, NO_2 or SO_2. Comparisons with the annual AAQOs cannot be made for BTEX readings as the data availability was <75%.

Overall, monitoring indicates BT operations are not having an adverse impact on local or regional ambient air quality. Benzene exceedances were from irregular events in very close proximity to the AQM station, and levels returned to typical, low levels immediately following the events.

2 BACKGROUND

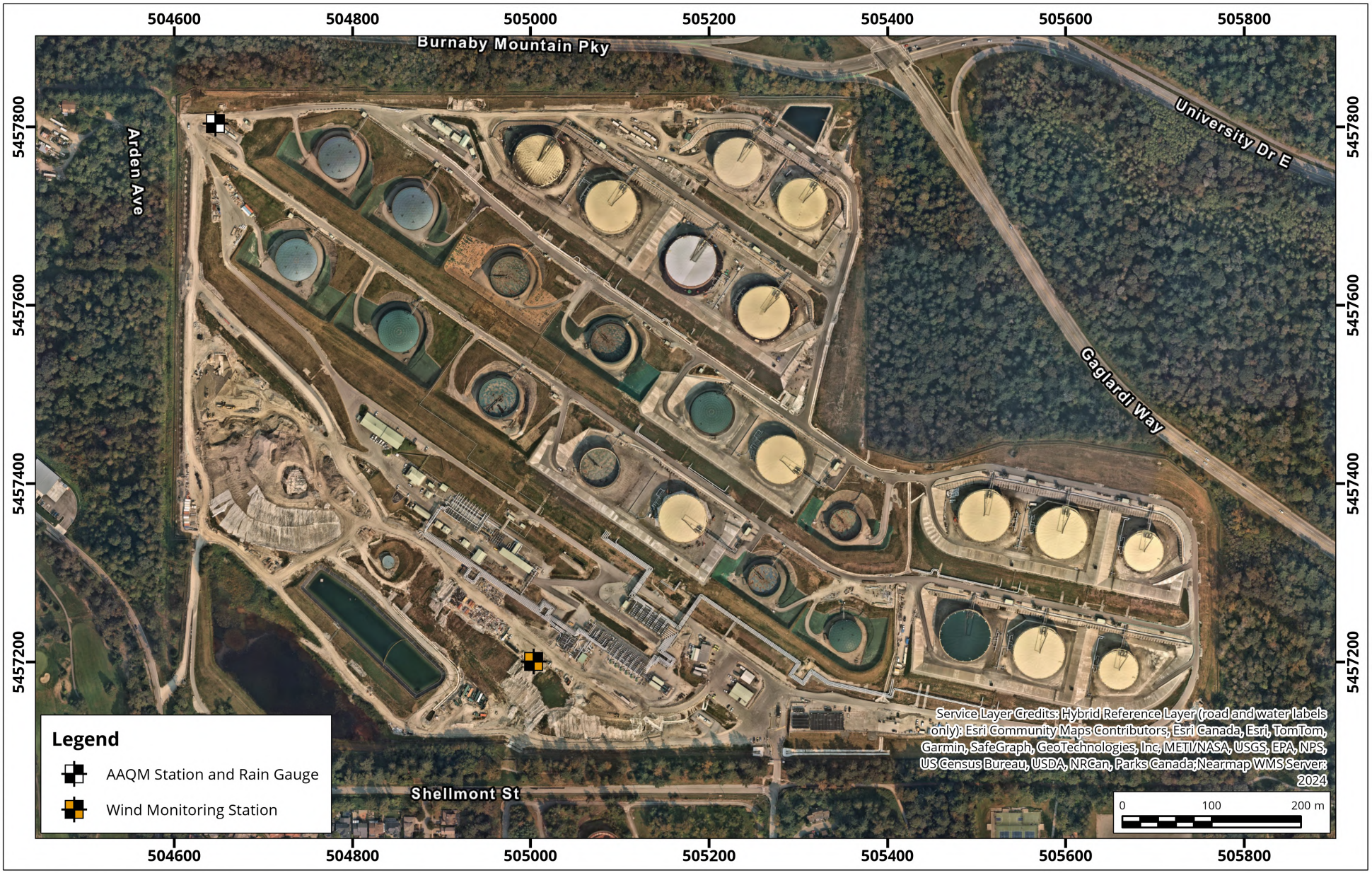
2.1 Geographical Area

The location of the BT AQM station is shown in **Figure 1**. The BT AQM station is located in the northwest corner of the storage terminal at 8099 Shellmont St, Burnaby, BC. Land use around the site is a mixture of parks, residential and light industrial areas. Specifically, there are neighborhoods to the west, residential and light industry to the south, park space to the east and rising to the north is the Simon Fraser University Burnaby Mountain campus.

2.2 Air Emission Sources

At the end of the Trans Mountain Pipeline System, Burnaby Terminal serves as a local distribution point to nearby terminals, including Parkland refinery and Westridge Marine Terminal of the Trans Mountain Pipeline System. The existing emission sources, prior to the expansion project, included 13 tanks holding heavy crude, light sweet or light sour crude, and refined products. For the expansion project, one tank was removed and 14 more were built resulting in a total of 26 storage tanks. All new storage tanks include odour abatement equipment (i.e., TVAU or Tank Vapor Adsorption Unit).

There are two tanker truck loading facilities due south of the BT site, not operated by Trans Mountain. Sources of emissions in the area are along the Burrard inlet on the other side of Burnaby Mountain including the Westridge Marine Terminal, Suncor's Terminal, and the Parkland refinery.



Air Quality Monitoring Station Location
Burnaby Terminal

Map Projection: NAD 1983 UTM Zone 10N
Trans Mountain Pipeline - Burnaby, B.C.

True North

Project #: 2105728

Drawn by: PIP	Figure: 1
Approx. Scale:	1:6,000
Date Revised: Feb 26, 2025	

Map Document: C:\Working Folder\Jobs_America\P2105728\P2105728_TMEP.aprx

3 MONITORING INSTRUMENTS

The BT AQM station is equipped with air quality and meteorological monitoring instruments shown in Table 1. The ambient air quality and meteorological parameters being monitored are recorded at 1-minute and 60-minute intervals, on a Campbell Scientific CR1000x datalogger. The raw data is stored on the datalogger and is also pushed to a central database for processing and backup. Data is automatically checked using an automated diagnostic observation tool called HORNET and by a technician daily to ensure maximum uptime and data quality of the monitoring parameters. As required by CER Condition 79, the raw data is also publicly available on the Envision data platform and accessible through the Trans Mountain website.

Table 1. Air Quality and Meteorological Monitoring Instrumentation

Instrument	Parameters measured	Units
Thermo Sharp 5030i	Particulate Matter$_{2.5}$ ($PM_{2.5}$)	µg/m^3
Thermo 42iQTL	Nitric Oxide/Nitrogen Dioxide/Total Nitrogen Oxides ($NO/NO_2/NO_x$)	ppb
Thermo 43iQTL	Sulphur Dioxide (SO_2)	ppb
Thermo 49iQ	Ozone (O_3)	ppb
Thermo 43iQTL with CDN101	Total Reduced Sulphur (TRS)	ppb
AMA GC 5000	Benzene, Toluene, Ethylbenzene, Xylene (BTEX)	ppb
Magee AE-33 Aethalometer	Black Carbon (BC)	ng/m^3
Nikira OEA	Visibility	km
CSCC Field Camera	Visibility	N/A
RM Young 5305-10-L	Wind Speed and Direction	m/s and Degrees
Vaisala HC2-S3-L	Relative humidity and air temperature	% and ^oC
CSCC CS 106	Barometric pressure	mb
Ott Pluvio	Precipitation	mm

The gas analyzers (Thermo 42iQ, 43iQ, 49iQ, and 43iQTL with CDN101) are zero and span checked daily using the internal zero (charcoal and/or Purafil cartridge) and span (permeation wafer in an internal permeation oven) system, referred to as the IZS system. The AMA GC 5000 is zero and span checked daily, but with certified standard span gas and a dilution system. Automatic IZS checks are performed daily, and the checks consist of a zero and span check followed by a purge over a 30-minute period for the Thermo analyzers and 75-minute time-period for the AMA GC 5000. These checks provide a way to monitor daily performance of the analyzer. The IZS checks are not for calibration purposes but are merely a diagnostic tool to identify instrument drift. Monthly calibration visits are undertaken to perform full range linear calibrations and maintenance for all the analyzers.

3.1 $PM_{2.5}$

The SHARP 5030i is a hybrid nephelometric/radiometric particulate mass monitor capable of providing precise, real-time measurements with a superior detection limit. The SHARP monitor 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 unit also incorporates a dynamic inlet heating system designed to maintain the relative humidity of the air passing through the filter tape.

The SHARP 5030i monitor is calibrated once a month to ensure accuracy and validity of its data. The $PM_{2.5}$ inlet head and sharp cut cyclone are located on the roof of the AQM building. The inlet and cyclone are cleaned routinely to ensure performance. The monthly calibration process consists of the following: zeroing the nephelometer if necessary, calibration of ambient temperature, calibration of barometric pressure, and flow calibration. Instrument mass foil checks are performed quarterly or if diagnostics indicate a requirement to do so in accordance with the BC FSM (Section 10 of SOP-05b).

3.2 NITROGEN OXIDES

The Thermo 42iQTL trace level Nitrogen Oxide (NO_X) analyzer uses 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.

3.3 SULPHUR DIOXIDE

The Thermo 43iQTL trace level Sulphur Dioxide (SO_2) Analyzer is a microprocessor-controlled analyzer that determines the concentration of SO_2 in a sample gas drawn through the instrument. In the sample chamber, sample gas is excited by ultraviolet light causing the SO_2 to absorb energy from the light and move to an active state (SO_2*). These active SO_2* molecules must decay into a stable state back to SO_2, and when this happens a photon of light is released which is recognized by the instrument as fluorescence. The instrument measures the amount of florescence to determine the amount of SO_2 present in the sample gas.

3.4 TOTAL REDUCED SULPHUR

Total Reduced Sulphur (TRS) monitoring was conducted using a Thermo 43iQTL trace level SO_2 continuous analyzer in conjunction with an CDN-101 thermal oxidizer convertor (oxidizer). This instrument is a two-fold device. Sample air first passes through sulphur dioxide (SO_2) scrubber beads to eliminate any SO_2 molecules that might be in the sample air stream. Sample air is then passed through a glass tube surrounded by an oven inside of the oxidizer which is continuously heated to 800°C. It is here where any reduced sulphur compounds are converted into SO_2 molecules. The sample air is then directed to the SO_2 analyzer.

The 43iQTL 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 exposed to pulsating ultraviolet light which causes the SO_2 molecules to become excited and enter into a higher energy state.

When the light is shut off during one of the pulse cycles, these excited SO_2 molecules decay into a lower energy state where fluoresced light is emitted proportionally to the SO_2 concentration in the gas stream. This fluorescence is read by a photo-multiplier tube, and the instrument reports the concentration of SO_2 in a ratio of 1:1 for TRS.

3.5 OZONE

Ozone (O_3) monitoring is conducted using a Thermo 49iQ to provide sensitivity and stability for ambient air quality applications. The instrument determines real-time concentration of O_3 in a sample gas drawn through the instrument. The sample is split into two gas streams using solenoids, one stream is stripped of O_3 by a scrubber to become a reference gas. Each stream is then intermittently stored in two different cells within which the UV light intensities are measured, and the instrument calculates the O_3 concentrations.

3.6 VISIBILITY

Visibility monitoring is conducted using a Nikira Optical Extinction Analyzer (Model NIK-OEA-52001-C01OP). The instrument combines open-path cavity ringdown measurements with a patented self-referencing system to rapidly measure the optical extinction coefficient of ambient aerosols. Ambient air is drawn into the cavity at ~1 m/s where direct optical extinction coefficient measurement is made. The cavity is closed off to ambient air and purged with filtered air to provide a background measurement to use in a comparison calculation for aerosol optical extinction. A Campbell Scientific CFCC field camera takes photographs of the horizon each hour of the day so the OEA visibility readings can be confirmed by visual records.

3.7 BTEX

Sampling of benzene, toluene, ethylbenzene, m, p-xylenes and o-xylene (BTEX) is completed using an AMA Gas Chromatograph (GC) 5000 BTX monitor fitted with a flame ionization detector (FID). An ambient air sample is drawn into the instrument every 15 min and the gaseous eluent is ignited to produce gas-phase ions of the analytes of interested. These ions are detected by an electrode and the integration of the electrical signal produced is calibrated and used to quantify the concentration of each analyte in the sample. An AMA HG 500

ultra-high purity generator uses deionized water and compressor to generate ultra-high purity Hydrogen (H_2) as a supply gas for the FID flame and act as a carrier gas for the GC.

3.8 BLACK CARBON

Black carbon (BC) is measured continuously using a Magee Model AE33 Aethalometer. This unit collects aerosol particles continuously by drawing the aerosol laden air stream through a spot on a filter tape. The aerosols are analyzed by the transmission of light through one portion of the filter tape containing the sample compared to an unloaded portion of the filter tape. This analysis relies on 7 wavelengths spanning near infra-red to near ultraviolet. The aethalometer calculates the concentrations of optically absorbing aerosols from the rate of attenuation of light transmitted through the filter. The results of the two sample spots are combined to determine the BC mass concentration. Each month, the validity of the readings are checked via verification of flow rates through the unit and the use of neutral density optical filters measuring the attenuation of each of the wavelengths.

3.9 METEOROLOGY

The Burnaby AQM station continuously monitors the wind speed (WS) and wind direction (WD) using a tower mounted R.M. Young 5305-10-L Wind Speed/Wind Direction sensor. Relative humidity and temperature are measured using a Vaisala HC2-S3-L. Air Pressure is measured using Campbell Scientific CS 106. Precipitation is measured using an Ott Pluvio, a highly sensitive weight-based measurement system that maximizes capture and quantification of snow and rain, with the attachment of a wind shield and antifreeze inside the collection bucket. Meteorological equipment is physically inspected ranging from 3-months to annually, or if data QA/QC indicates the need more frequently. Calibrations are recertified following manufacturer recommendations (1 to 2 years).

3.10 Performance Audits

The Burnaby AQM station was inspected by Trans Mountain personnel on August 12, 2025.

A third-party performance audit, conducted by WSP Engineering Consultants, took place on December 9 through 13, 2024. There was no major impact to data coverage resulting from the audit.

4 SUMMARY OF AMBIENT MEASUREMENTS

Data validity is the percentage of hourly values available over the given period of time that remain after final data quality assurance and control checks (QA/QC). For measured values to be compared to hourly, 8-hour, 24-hour and annual average values there needs to be >75% of the data available for each relevant time period in accordance with the Alberta (AB), Metro Vancouver Regional District (MVRD) and BC AAQO as informed by the Canadian Council of Ministers of the Environment (CCME 2019). Similar requirements exist in Alberta and BC in their respective ambient air monitoring guideline documents.

4.1 $PM_{2.5}$

During the period of January 1, 2025, through December 31, 2025, the hourly $PM_{2.5}$ validity was 99.2%. Summary statistics are presented in Appendix Tables A1, A2 and A6. There were three days during September (3rd, 4th and 6th) that were over the 24-hour MVRD AAQO (25 µg/m^3, compared to 24-h running average) in 2025. The 3 days were during hazy conditions, and these exceedances were likely the result of wildfire smoke, with Air Quality Warnings active for the region. Exceedances of the AAQO are summarized in Table A10.

The annual mean was 4.7 µg/m^3, less than the annual AAQO (8 µg/m^3).

4.2 NITROGEN OXIDES

During the period of January 1, 2025, through December 31, 2025, the hourly NO_x data validity was 88.2%. The largest loss of data was between September 11, to October 14, 2025, due to photo multiplier tube voltage issues that needed repair. Summary statistics are presented in Appendix Tables A1, A2 and A6.

Achievement of the MVRD AAQO for NO_2 is not based on direct comparison of the 1-hour concentration to the AAQO level, rather, it is based on the annual 98th percentile of the daily maximum 1-hour concentration averaged over three consecutive years. Presently there are less than three consecutive years of data accumulated, so direct comparison to the AAQO is not applicable. However, the 98th percentile of the daily maximum 1-hour concentrations for 2024 and 2025 were 30.7 ppb and 37.6 ppb, respectively, both less than the 1-hour AAQO of 42 ppb.

Individual instances of the 1-hour NO_2 measurement above 42 ppb are classified as excursions, rather than exceedances. There were three (3) instances where the measured 1-hour NO_2 concentration was above 42 ppb during 2025. These excursions are potentially attributable to a temperature inversion and stagnant air in the region of the facility. The maximum 1-hour mean was 47.4 ppb. Excursions are summarized in Table A11.

NO_x concentrations were greatest during the winter months (November to February) due to higher emissions from home heating and vehicular traffic, exacerbated by thermal inversions. The annual mean NO_x concentration was 9.3 ppb. The measured annual NO_2 mean value was 7.9 ppb, less than the annual NO_2 AAQO of 12 ppb.

4.3 SULPHUR DIOXIDE

During the period of January 1, 2025, through December 31, 2025, the hourly SO_2 data validity was 90.1%. The largest loss of data was due to the failure of a mirror in the measurement cell that needed to be replaced. Summary statistics are presented in Appendix Tables A1, A2 and A6. There were no recorded events that were over the 1-hour SO_2 AAQO during the 2025 period. The highest 1-hour mean was 36.1 ppb, which is less than the 1-hour AAQO of 70 ppb. The annual mean was 0.2 ppb, less than the annual AAQO (4 ppb).

4.4 TOTAL REDUCED SULPHUR

During the period of January 1, 2025, through December 31, 2025, the hourly TRS data validity was 84.8%. The largest loss of data was due to the unit being removed while repairs to the internal span system were performed off-site in November. Summary statistics are presented in Appendix Tables A1, A2 and A6.

The maximum 1-hour mean value was 1.5 ppb, less than the MVRD 1-hour AAQO of 10 ppb (acceptable).

4.5 OZONE

During the period of January 1, 2025, through December 31, 2025, the hourly O_3 data validity was 92.6%. The largest loss of data was due to leak in the sampling system between August 5 and 26. Summary statistics are presented in Appendix Tables A1, A2 and A6.

The maximum 1-hour mean was 63.4 ppb, less than MVRD 1-hour AAQO of 82 ppb or 8-hour AAQO of 60 ppb. The annual mean was 25.4 ppb, less than the AAQO of 60 ppb.

4.6 VISIBILITY

During the period of January 1, 2025, through December 31, 2025, the hourly visibility data validity was 94.3%. The largest loss of data was due to the system operating software freezing and needing to be restarted manually. Summary statistics are presented in Appendix Table A5. The minimum 1-hour mean value was measured in September 2025 (4.2 km). The annual mean distance was 1085.2 km.

Images were captured by a camera every hour onsite and can be made available for future reference. There are no AAQO or criteria in BC for visibility. Based on a theoretical distance provided by the manufacturer, RWDI invalidates readings over 15 000 km to eliminate extreme values.

4.7 BTEX

During the period of January 1, 2025, through December 31, 2025, the hourly BTEX data validity was 72.7%. Summary statistics are presented in Appendix Tables A3, A4 and A6. The GC uptime was maximized across the Trans Mountain network by rotating GC instrumentation between stations, when possible, to try and maximize uptime at all stations. A GC5000 system was provided on loan from CD NOVA and installed at Burnaby on December 31, 2024. The largest loss of data occurred when the CD NOVA unit was removed for repair in July.

Prior to July, the unit had several software issues that resulted in the unit freezing up and requiring manual intervention.

Trans Mountain compares measured benzene, toluene, ethylbenzene and xylenes values to the Alberta AAQOs, as BC does not have objectives for these pollutants.

There were 51 exceedances of the 1-hour benzene Alberta AAQO and no exceedances of the 1-hour AAQOs for toluene, ethylbenzene, or xylenes. From March 31, 2025, to April 4, 2025, the 1-hour average benzene reached 30.4 ppb which is above the Alberta AAQO of 9 ppb. Benzene is a common ingredient in commercial oil-based paints like those used by Trans Mountain. The inside of the AQM station was painted during that time and off gassing of this paint was the likely cause of these exceedances.

Exceedances recorded between April 10 to May 4, 2025 were likely related to Tank 88 undergoing cleaning and repair work. Tank 88 is the closest tank to the AQM building. Appendix Table A9 provides a summary of the exceedance events.

The annual mean values of benzene, toluene, ethylbenzene and xylenes were 0.4 ppb, 0.3 ppb, 0.3 ppb, and 0.8 ppb, respectively, all less than their respective annual AAQOs.

4.8 BLACK CARBON

During the period of January 1, 2025, through December 31, 2025, the hourly black carbon data validity was 87.7%. Summary statistics are presented in Appendix Table A5. The largest loss of data was due to failed flow calibrations in June and October. The annual mean concentration was 415.8 ng/m^3. There are no AAQO or criteria in BC or Alberta for Black Carbon.

4.9 METEOROLOGY

During the period of January 1, 2025, through December 31, 2025, the hourly meteorological data validity was between 99.6 and 97.9%. Summary statistics are presented in Appendix Tables A7 and A8. In November 2025, the solar panel failed to maintain the charge on the battery for the meteorological tower. A replacement battery was swapped in on November 24, 2025.

A wind rose, which visually plots the joint frequencies of wind speed and wind direction, is shown in **Figure 2** for the operational monitoring period in 2025.

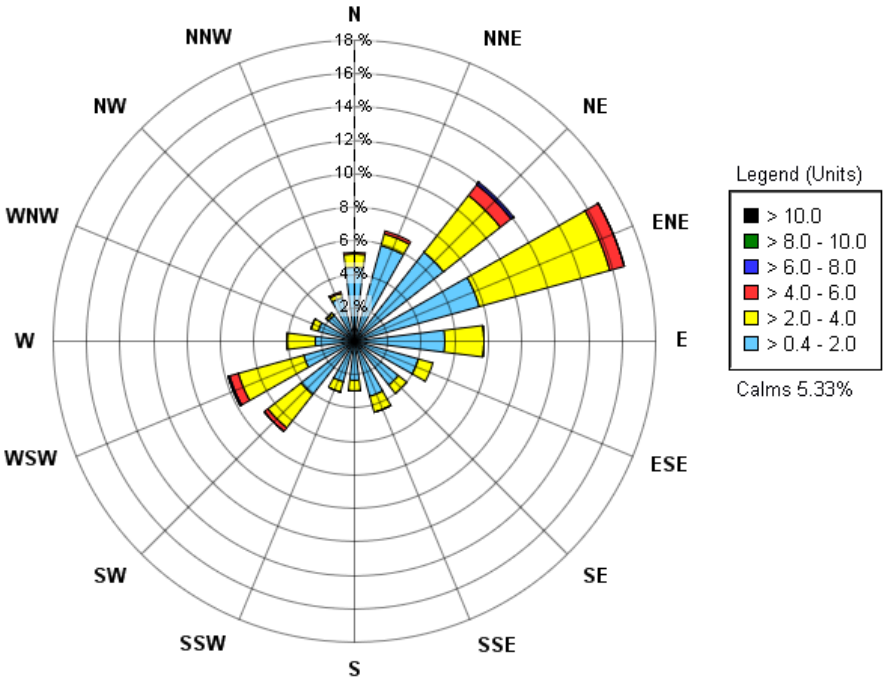


Figure 2 Burnaby Terminal Wind Rose – January 1, 2025 to December 31, 2025

5 DISCUSSION

Data validity for most parameters meets the minimum data completeness criteria acceptable range of >75% over the year, with the exception of BTEX. Months with reduced validity for specific instruments were caused by unscheduled maintenance on units within the TM network. Strategies have been implemented to prevent data loss and will continue to be improved upon into the future. Wherever possible, BT AQM station data comparisons were made with the nearby Burnaby Mountain, Burnaby Kensington Park WT AQM and ST AQM stations. All comparable data over this operational monitoring period showed a close agreement in measurement, suggesting that a reliable data set was achieved.

Throughout the monitoring period from January 1 to December 31, 2025, there were three exceedances of the 24-hour $PM_{2.5}$ MVRD AAQO and 51 exceedances of the 1-hour benzene Alberta AAQO. There were three excursions, where measured NO_2 concentration exceeded the 1-hour AAQO. The bulk of the benzene exceedances were between March 31 to April 2, 2025, and were attributed to painting being done in the AQM

building with oil-based paint which used benzene as a solvent. There were exceedances between April 10 and May 4, 2025 which were likely attributed to work being done on Tank 88. The NO_2 excursions were on December 29, 2025, and likely related to a temperature inversion and stagnant air around Burnaby. The 24-hour $PM_{2.5}$ exceedances happened in September 2025 and were likely the result of wildfire smoke events recorded in regional wildfire smoke alerts at that time.

There were no exceedances of the annual AAQOs for $PM_{2.5}$, NO_2 or SO_2. Comparisons made to the annual AAQOs cannot be made for BTEX readings as the data availability was <75%.

6 REFERENCES

Trans Mountain Pipeline, 2017. Air Emissions Management Plan for Sumas and Burnaby Terminals. Trans Mountain Expansion Project. CER Condition 79.

Trans Mountain Pipeline, 2020. Ambient Air Quality Monitoring Plan for the Westridge Marine Terminal, Burnaby Terminal and Sumas Terminal. Trans Mountain Expansion Project.

7 GENERAL STATEMENT OF LIMITATIONS

This report entitled Burnaby Terminal 2025 Annual Air Quality and Meteorological Monitoring Report was prepared by RWDI AIR Inc. ("RWDI") for Trans Mountain ("Client"). The findings and conclusions presented in this report have been prepared for Trans Mountain 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 Trans Mountain. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibility of such third parties. RWDI accepts no responsibility for damages, if any, suffered by any third party as result of decisions made or actions based on this report.

APPENDIX A

Table A1. Trans Mountain Burnaby Maximum 1-hour and Maximum 24-hour Summary Statistics

Burnaby Terminal 2025 Statistics	Maximum 1-Hour Mean							Maximum 24-Hour Mean						
Compound	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	TRS	O_3	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	TRS	O_3
Units	µg/m³	ppb						µg/m³	ppb					
AAQO	**—**	**—**	**—**	**42[1]**	**70[1]**	**10[1]**	**82[1]**	**25[2]**	**—**					
January	18.7	85.4	62.0	37.9	2.3	0.9	40.3	9.9	38.1	16.9	24.5	1.4	0.4	28.2
February	15.8	83.0	65.3	35.5	1.0	0.6	41.3	8.7	25.5	4.9	20.6	0.5	0.4	35.8
March	11.9	61.7	38.8	24.9	29.7	0.8	42.9	5.8	18.6	7.9	11.3	0.4	0.5	37.7
April	15.7	43.5	13.5	30.0	36.1	0.4	48.7	8.9	13.2	2.3	10.8	3.0	0.1	38.3
May	11.4	40.4	16.1	24.3	3.1	0.5	54.0	6.3	12.4	1.8	11.4	0.5	0.2	35.2
June	15.0	25.4	10.1	16.6	4.3	0.5	41.6	11.2	10.3	1.8	8.7	0.5	0.3	29.7
July	15.2	35.8	9.5	35.4	2.5	0.7	63.4	9.6	11.6	2.3	9.9	0.5	0.4	30.2
August	27.2	37.1	13.5	33.2	N/A	1.2	N/A	16.7	15.8	2.8	15.3	N/A	0.6	N/A
September	105.3	N/A	N/A	N/A	2.4	1.5	55.0	**38.6**	N/A	N/A	N/A	0.5	0.6	28.7
October	26.5	N/A	N/A	N/A	1.9	N/A	58.3	9.5	N/A	N/A	N/A	0.2	N/A	43.5
November	18.2	75.3	45.7	41.4	0.6	N/A	61.0	6.9	23.4	8.1	17.7	0.1	N/A	43.6
December	17.1	83.7	36.0	47.7	0.4	N/A	59.8	6.7	32.3	9.0	23.3	0.2	N/A	45.3
Annual	105.3	85.4	65.3	47.7	36.1	1.5	63.4	38.6	38.1	16.9	24.5	3.0	0.6	45.3

Notes:

[1] Metro Vancouver 1-hour acceptable AAQO.

[2] Metro Vancouver 24-hour acceptable AAQO. Note that this is a 24-hour rolling average and tabulated values here are results from the 24-hour daily average.

Bold text indicates an exceedance of the AAQO.

N/A – Not available: Data validity is below 75%.

$PM_{2.5}$ (particulate matter less than 2.5 microns); NO_x, NO, NO_2 (nitrogen oxides); SO_2 (sulphur dioxide); TRS (total reduced sulphurs); O_3 (ozone)

Table A2. Trans Mountain Burnaby Monthly Mean and Valid Data Summary Statistics

Burnaby Terminal 2025 Statistics	Monthly Mean							Valid Data						
Compound	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	TRS	O_3	$PM_{2.5}$	NO_x	NO	NO_2	SO_2	TRS	O_3
Units	µg/m³	ppb						Percentage of time (hourly)						
AAQO	**8[1,3]**	**—**	**—**	**12[1]**	**4[1]**	**—**	**60[2]**	**—**						
January	4.3	16.6	4.7	11.9	0.5	0.1	13.8	96.9	96.0	96.0	96.0	96.9	96.5	96.1
February	3.2	10.1	1.3	8.8	0.3	0.3	24.5	98.1	97.5	97.5	97.5	97.2	97.8	96.9
March	2.8	6.6	1.0	5.7	0.1	0.4	27.4	99.2	98.9	98.9	98.9	99.2	98.9	98.1
April	4.4	7.0	0.8	6.2	0.4	0.0	29.6	99.4	99.6	99.6	99.6	99.6	99.4	99.0
May	3.9	6.5	0.7	5.8	0.2	0.1	30.4	99.5	99.6	99.6	99.6	99.6	99.1	98.7
June	5.1	6.7	0.7	6.0	0.2	0.1	23.5	99.7	99.6	99.6	99.6	99.6	99.6	98.8
July	5.8	7.9	0.9	7.0	0.2	0.1	25.1	99.5	89.0	89.0	89.0	81.5	98.3	98.5
August	7.6	7.2	0.5	6.7	N/A	0.2	N/A	99.7	92.2	92.2	92.2	14.0	99.7	30.8
September	8.8	N/A	N/A	N/A	0.1	0.4	18.0	99.4	33.8	33.8	33.8	99.3	98.3	98.1
October	4.5	N/A	N/A	N/A	0.0	N/A	23.5	99.5	53.5	53.5	53.5	98.4	72.6	98.7
November	3.6	12.3	1.5	9.4	0.0	N/A	31.9	99.4	99.2	99.2	99.2	99.7	57.9	98.5
December	2.1	12.6	1.3	11.3	0.0	N/A	33.3	99.9	99.6	99.6	99.6	99.6	0.0	99.1
Annual	4.7	9.3	1.3	7.9	0.2	0.2	25.4	99.2	88.2	88.2	90.1	90.1	84.8	92.6

Notes:

[1] Metro Vancouver AAQO based on annual average

[2] Metro Vancouver AAQO based on 8-hour average

[3] Metro Vancouver's annual $PM_{2.5}$ planning goal of 6 µg/m³ is a longer term aspirational target to support continuous improvement.

N/A – Not available: Data validity is below 75%.

$PM_{2.5}$ (particulate matter less than 2.5 microns); NO_x, NO, NO_2 (nitrogen oxides); SO_2 (sulphur dioxide); TRS (total reduced sulphurs); O_3 (ozone)

Table A3. Trans Mountain Burnaby Maximum 1-hour and Maximum 24-hour BTEX Summary Statistics

Burnaby Terminal 2025 Statistics	Maximum 1-Hour Mean				Maximum 24-Hour Mean			
Compound	Benzene	Toluene	Ethylbenzene	Xylenes	Benzene	Toluene	Ethylbenzene	Xylenes
Units	ppb				ppb			
AAQO [1]	**9[1]**	**499[1]**	**460[1]**	**530[1]**	**—**	**106[2]**	**—**	**161[2]**
January	2.3	2.4	1.0	1.7	0.3	0.8	0.2	0.7
February	0.8	0.9	0.3	0.9	0.3	0.2	0.1	0.5
March	**29.8**	1.3	32.8	51.7	14.9	0.3	12.3	23.9
April	**30.4**	21.9	33.5	45.8	16.4	9.1	14.7	27.3
May	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
June	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
July	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
August	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
September	0.3	1.0	0.2	0.5	0.1	0.2	0.1	0.3
October	1.2	2.3	0.3	0.8	0.2	0.5	0.1	0.4
November	0.4	1.6	0.4	1.4	0.2	0.6	0.2	0.6
December	0.4	3.2	0.8	4.2	0.2	0.5	0.2	1.0
Annual	30.4	21.9	33.5	51.7	16.4	9.1	14.7	27.3

Notes:

[1] Alberta AAQO. Metro Vancouver Regional District does not include air quality objectives for this.

[2] Alberta AAQO 24-hour average. Metro Vancouver Regional District does not include air quality objectives for this.

N/A – Not available: Data validity is below 75%.

Bold text indicates an exceedance of AAQO

Table A4. Trans Mountain Burnaby Monthly Mean and Valid Data BTEX Summary Statistics

Burnaby Terminal 2025 Statistics	Monthly Mean				Valid Data			
Compound	Benzene	Toluene	Ethylbenzene	Xylenes	Benzene	Toluene	Ethylbenzene	Xylenes
Units	ppb				Percentage of Time (hourly)			
AAQO	**0.9**[1]	—	—	—	—			
January	0.2	0.2	0.1	0.3	91.7	91.7	91.7	91.7
February	0.2	0.2	0.1	0.3	89.4	89.4	89.4	89.4
March	0.7	0.2	0.5	0.8	82.4	82.4	82.4	82.4
April	2.0	1.1	1.8	4.7	87.9	87.9	87.9	87.9
May	N/A	N/A	N/A	N/A	69.9	69.9	69.9	69.9
June	N/A	N/A	N/A	N/A	71.0	71.0	71.0	71.0
July	N/A	N/A	N/A	N/A	24.6	24.6	24.6	24.6
August	N/A	N/A	N/A	N/A	0.0	0.0	0.0	0.0
September	0.1	0.1	0.1	0.2	75.0	75.0	75.0	75.0
October	0.1	0.2	0.1	0.3	95.6	95.6	95.6	95.6
November	0.1	0.3	0.1	0.4	93.1	93.1	93.1	93.1
December	0.1	0.2	0.1	0.4	94.6	94.6	94.6	94.6
Annual	0.4	0.3	0.3	0.9	72.7	72.7	72.7	72.7

Notes:

[1] Alberta AAQO Annual 1-hour average. Metro Vancouver do not list AAQO for this.

N/A – Not available: Data validity is below 75%.

Table A5. Trans Mountain Burnaby Maximum 1-hour, Maximum 24-hour, Monthly Mean and Valid Data Visibility and Black Carbon Summary Statistics

Burnaby Terminal 2025 Statistics	Maximum 1-Hour Mean		Maximum 24-Hour Mean		Minimum 1-Hour Mean	Monthly Mean		Valid Data	
Compound	BC	Visibility[1]	BC	Visibility	Visibility	BC	Visibility	BC	Visibility
Units	ng/m^3	km	ng/m^3	km	km	ng/m^3	km	Percentage of time (hourly)	
January	2269.1	13719.3	1061.3	5056.9	168.6	480.7	1352.7	96.9	93.5
February	2313.3	14682.2	835.0	6149.1	200.4	297.9	3024.6	97.6	94.2
March	2409.9	14974.5	731.4	5999.8	301.3	237.1	2552.1	98.9	92.1
April	2433.4	14544.8	550.4	3653.9	160.7	321.9	895.0	99.6	97.6
May	1491.6	14241.9	652.4	3696.2	230.4	283.9	790.3	99.6	99.5
June	1299.2	N/A	702.6	N/A	N/A	311.1	N/A	99.6	73.1
July	N/A	7039.5	N/A	1127.9	129.5	N/A	297.5	52.2	100.0
August	2645.6	14795.1	1170.1	3441.1	55.1	443.3	366.9	99.3	99.7
September	3924.6	3606.0	1736.1	785.8	22.6	648.0	212.5	99.4	99.9
October	N/A	14949.7	N/A	6972.8	157.7	N/A	1150.1	68.5	95.4
November	N/A	13438.0	N/A	4854.1	256.6	N/A	1448.7	41.4	98.5
December	6718.2	14088.2	1129.8	1680.1	267.2	463.9	657.9	99.6	90.2
Annual	6718.2	14974.5	1736.1	6972.8	22.6	415.8	1085.2	87.7	94.3

Notes:

N/A- Not available: Data validity is below 75%.

[1] RWDI uses 15,000 km as a maximum theoretical distance for visibility.

Table A6. Trans Mountain Burnaby 1-hour and 24-hour Average AAQO Exceedances

Burnaby Terminal 2025 Event Statistics	1-Hour average > AAQO								24-Hour average > AAQO		
Compound	NO_2 [1]	SO_2	TRS	O_3	B[2]	T[2]	E[2]	X[2]	$PM_{2.5}$	T[2]	X[2]
AAQO	**42**	**70**	**10**	**82**	**9**	**499**	**460**	**530**	**25**[3]	**106**	**161**
Units	ppb								$\mu g/m^3$	ppb	
	Number > AAQO								Number > AAQO		
January	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	**13**	0	0	0	0	0	0
April	0	0	0	0	**37**	0	0	0	0	0	0
May	0	0	0	0	**1**	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	**3**	0	0
October	0	0	0	0	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0	0	0	0	0
December	**3**	0	0	0	0	0	0	0	0	0	0
Annual	**3**	0	0	0	**51**	0	0	0	**3**	0	0

Notes:

[1] 1-hour NO_2 AAQO achievement is based on the annual 98th percentile of the daily maximum 1-hour concentration averaged over three consecutive years. Table depicts excursions, not AAQO exceedances.

[2] B-Benzene, T-Toluene, E-Ethylbenzene, X-Xylenes, AAQO adopted from Alberta

[3] 24-hour rolling average.

Bold text indicates events that exceed the AAQO.

N/A- Not available: Data validity is below 75%.

$PM_{2.5}$ (particulate matter less than 2.5 microns); NO_2 (nitrogen oxides); SO_2 (sulphur dioxide); TRS (total reduced sulphurs); O_3 (ozone)

Table A7. Trans Mountain Burnaby Maximum 1-hour and Maximum 24-hour Meteorological Summary Statistics

2025 Meteorological Statistics	Maximum 1-Hour Mean					Minimum 1-Hour Mean				
Parameter	WS	Temp	RH	Pres	Rain	WS	Temp	RH	Pres	Rain
Units	m/s	°C	%	mb	mm	m/s	°C	%	mb	mm
January	6.1	9.8	100.0	1039.0	4.9	0.1	-1.0	31.1	997.2	0.0
February	7.7	15.5	100.0	1031.0	10.0	0.1	-7.3	28.8	994.0	0.0
March	6.0	18.2	100.0	1025.0	7.8	0.2	0.7	39.9	992.0	0.0
April	5.4	22.7	100.0	1028.0	5.9	0.2	3.0	18.2	1004.0	0.0
May	5.3	28.2	100.0	1025.0	4.0	0.2	5.2	22.5	1005.0	0.0
June	5.9	30.6	100.0	1025.0	3.9	0.2	8.1	30.0	1007.8	0.0
July	4.7	31.0	100.0	1023.0	3.3	0.2	11.9	20.8	1007.0	0.0
August	4.3	33.2	100.0	1023.0	7.9	0.2	12.8	24.3	1006.0	0.0
September	6.0	29.4	98.4	1021.0	11.6	0.1	11.0	37.4	1002.2	0.0
October	6.3	20.2	98.6	1030.0	7.5	0.1	4.7	22.3	992.0	0.0
November	6.8	16.5	100.0	1027.0	6.4	0.1	1.1	44.5	995.6	0.0
December	9.2	14.1	100.0	1035.0	9.5	0.1	-0.8	44.0	986.0	0.0
Annual	9.2	33.2	100.0	1039.0	11.6	0.1	-7.3	18.2	986.0	0.0

Notes:

N/A- Not available: Data validity is below 75%.

Table A8. Trans Mountain Burnaby Monthly Mean and Valid Data Meteorological Summary Statistics

2025 Meteorological Statistics	Monthly Mean					Total	Valid Data					
Parameter	WS	Temp	RH	Pres	Rain	Rain	WS	WD	Temp	RH	Pres	Rain
Units	m/s	°C	%	mb	mm	mm	Percentage of time					
January	1.2	3.6	85.2	1024.4	0.1	96.1	100.0	100.0	97.3	97.3	97.3	97.3
February	1.9	3.1	85.1	1014.5	0.3	173.7	100.0	100.0	98.2	98.2	98.2	98.2
March	2.0	7.1	88.0	1009.4	0.4	333.0	99.7	99.7	100.0	100.0	100.0	100.0
April	1.8	10.4	70.9	1017.3	0.1	103.8	100.0	100.0	100.0	100.0	100.0	100.0
May	1.9	13.1	70.4	1015.6	0.1	97.2	100.0	100.0	100.0	100.0	100.0	100.0
June	1.7	16.3	72.8	1015.7	0.0	23.0	100.0	100.0	100.0	100.0	100.0	100.0
July	1.7	19.5	67.4	1015.0	0.0	27.2	96.5	96.5	100.0	100.0	100.0	100.0
August	1.6	20.0	70.7	1015.4	0.1	101.3	100.0	100.0	100.0	100.0	100.0	100.0
September	1.6	17.3	76.9	1013.2	0.1	63.0	100.0	100.0	100.0	100.0	100.0	100.0
October	1.9	10.6	72.9	1014.0	0.2	174.8	99.6	99.6	100.0	100.0	100.0	99.9
November	1.5	7.8	81.2	1014.3	0.3	199.2	79.2	79.2	100.0	100.0	100.0	97.9
December	1.7	5.8	81.8	1012.0	0.5	337.8	100.0	100.0	100.0	100.0	100.0	87.0
Annual	1.7	11.2	76.9	1015.0	0.2	1730.1	97.9	99.6	99.6	99.6	99.6	98.4

Notes:

N/A- Not available: Data validity is below 75%.

Table A9. Trans Mountain Burnaby 1-Hour Benzene Exceedance Summary

Date	1-hour Average (ppb)	Wind Speed (m/s)	Wind Direction (deg)	Discussion
March 31, 2025, 12:00-13:00	19.16	2.9	59.8	On March 31st, 2025, at 10:26 the Benzene and Xylene levels started to rise, with Benzene exceeding the 1-hr AAQO at 12:00. Painters were accessing the inside of the building to do touch up painting on the floor from 09:00 onwards. The Xylenes and Benzene common in commercial paints are the likely source of this increase and the Benzene exceedance.
March 31, 2025, 13:00-14:00	14.38	2.3	72.4	On March 31st, 2025, at 10:26 the Benzene and Xylene levels started to rise, with Benzene exceeding the 1-hr AAQO at 12:00. Painters were accessing the inside of the building to do touch up painting on the floor from 09:00 onwards. The Xylenes and Benzene common in commercial paints are the likely source of this increase and the Benzene exceedance.
March 31, 2025, 13:00-14:00	19.9	1.4	70.5	On March 31st, 2025, at 10:26 the Benzene and Xylene levels started to rise, with Benzene exceeding the 1-hr AAQO at 12:00. Painters were accessing the inside of the building to do touch up painting on the floor from 09:00 onwards. The Xylenes and Benzene common in commercial paints are the likely source of this increase and the Benzene exceedance.
March 31, 2025, 14:00-April 1, 2025, 14:00	19.8	1.4	48 to 72	On March 31st, 2025, at 10:26 the Benzene and Xylene levels started to rise, with Benzene exceeding the 1-hr AAQO at 12:00 and remaining high. The 24-hour average (1 standard deviation) from 14:00 March 31st through 14:00 April 1st was 19.8 (5.4) while all hourly values remained over 9 ppb. Painters were accessing the inside of the building to do touch up painting on the floor from 09:00 March 31st and returned on the morning of April 1st, to continue work. The Xylenes and Benzene common in commercial paints are the likely source of this increase and this Benzene exceedance
April 1, 2025, 14:00-April 2, 2025, 14:00.	12.8	1.4	45	On March 31st, 2025, at 10:26 the Benzene and Xylene levels started to rise, with Benzene exceeding the 1-hr AAQO at 12:00 and remaining high. The average (1 standard deviation) of all exceedance values from 14:00 April 1st through 14:00 April 2nd was 12.8 (3.9). Concentrations are showing a decreasing trend over time. The readings dropped below 9 ppb at 15:00 April 1st, 5:00, 07:00, and 11:00 April 2nd. The dominant wind direction was NE with smaller contributions E through SW. Painters were accessing the inside of the building to do touch up painting on the floor from 09:00 March 31st and returned on the morning of April 1st, to continue work. The Xylenes and Benzene common in commercial paints are the likely source of this increase and this Benzene exceedance.

Date	1-hour Average (ppb)	Wind Speed (m/s)	Wind Direction (deg)	Discussion
April 2, 2025, 14:00-April 2, 2025, 16:00.	9.52	1.5	155	On March 31st, 2025, at 10:26 the Benzene and Xylene levels started to rise, with Benzene exceeding the 1-hr AAQO at 12:00 and remaining high. Concentrations are showing a decreasing trend over time. The readings dropped below 9 ppb at 17:00 April 2nd, 2025. The Benzene levels are still above the previous weeks average reading of 0.15 ppb. The dominant wind direction was SSE/SE with smaller contributions WSW. Painters were accessing the inside of the building to do touch up painting on the floor from 09:00 March 31st and returned on the morning of April 1st, to continue work. The Xylenes and Benzene common in commercial paints are the likely source of this increase and this Benzene exceedance.
April 10, 2025, 14:00-April 10, 2025, 15:00.	11.48	2.6	162.4	The air quality monitoring station (AQM) was repainted between March 31 to April 2, 2025, the solvent in the paint has temporarily raised the baseline BTEX values, in particular Benzene. Tank 88, the closest tank to the AQM building, started to be decommissioned on April 7, 2025. According to Trans Mountain (TM) Operations, a waxy substance was found in the tank and is being removed using a vacuum truck. Since April 7, there have been daily spikes seen in the BTEX values. Similar spikes were seen at Sumas when similar activities were carried out.
April 28, 2025, 10:00-April 28, 2025, 11:00.	11.66	1.9	86.2	The BTEX value started to rise around 1:00 on April 28, 2025. There was a large increase starting around 8:30 and passed AAQO limit just after 9:00. The concentration started dropping below the AAQO limit around 11:00. During exceedance, the winds were coming out of the East. Tank 88, the closest tank east of the AQM building, started to be decommissioned on April 7, 2025. According to Trans Mountain (TM) Operations, a waxy substance was found in the tank and is being removed using a vacuum truck. Since April 7, there have been daily spikes seen in the BTEX values. Similar spikes were seen at Sumas when similar activities were carried out.
May 4, 2025, 10:00 – May 4, 2025,11:00.	9.32	1.9	117.6	The BTEX values started to rise around 8:30 on May 4, 2025. The AAQO Benzene limit was exceeded at 08:56. The levels dropped below the AAQO limit around 9:56. During exceedance, the winds were coming out of the east southeast. Tank 88, the closest tank east of the air quality monitoring building, started to be decommissioned on April 7, 2025. According to Trans Mountain Operations, the roof of Tank 88 had been unsealed on April 28th and tank cleaning activities were being done on Sunday May 4, 2025. While the tank is being vented, and all the vent streams go through scrubbers. The exceedance is likely related to the tank cleaning activities.

Table A10. Trans Mountain Burnaby 24-Hour $PM_{2.5}$ Exceedance Summary

Date	24-hour Rolling Average (µg/m3)	Wind Speed (m/s)	Wind Direction (deg)	Discussion
September 3, 2025 13:00 – September 4, 2025, 12:00	36.1	1.3	173.2	There was one 24-hr $PM_{2.5}$ running average non-conformance that occurred on September 3 at 13:00., with a concentration of 26.6 µg/m^3. During the non-conformance period, daily running averages ranged from a minimum of 26.6 µg/m^3 to a maximum of 38.9 µg/m^3. At 10:00 September 3, 2025, Metro Vancouver issued an air quality update stating that Metro Vancouver and the Fraser Valley were experiencing hazy conditions due to wildfire smoke and humid conditions. Wildfires contributing to the region include those just east of Hope, near Whistler, and a large complex of fires in Cariboo area, in addition to fires in the US.
September 4, 2025 13:00 – September 5, 2025, 12:00	17.8	1.0	151	There was one 24-hr $PM_{2.5}$ running average non-conformance that occurred on September 4 at 13:00, with a concentration of 28.3 µg/m^3. During the non-conformance period, daily running averages ranged from a minimum of 15.2 µg/m^3 to a maximum of 28.3 µg/m^3. At 10:00 September 3, 2025, Metro Vancouver issued an air quality update stating that Metro Vancouver and the Fraser Valley were experiencing hazy conditions due to wildfire smoke and humid conditions. Wildfires contributing to the region include those just east of Hope, near Whistler, and a large complex of fires in Cariboo area, in addition to fires in the US
September 6, 2025 5:00 – September 7, 2025 4:00	23.1	1.6	120.7	There was one 24-hr $PM_{2.5}$ running average non-conformance that occurred on September 6 at 05:00, with a concentration of 25.3 µg/m^3. During the non-conformance period, daily running averages ranged from a minimum of 18.4 µg/m^3 to a maximum of 26.6 µg/m^3. At 10:00 September 5, 2025, Metro Vancouver issued an air quality update stating that Metro Vancouver and the Fraser Valley were experiencing hazy conditions due to wildfire smoke and humid conditions, since September 3, 2025. Wildfires within the region contributing to the smoke in the region include those just east of Hope, near Whistler, and a large complex of fires in Cariboo area, in addition to fires in the US.

Table A11. Trans Mountain Burnaby 1-Hour NO_2 Excursion Summary

Date	1-hour Average (ppb)	Wind Speed (m/s)	Wind Direction (deg)	Discussion
December 29, 2025 15:00 – December 29, 2025, 17:00	44.7	0.5	181.8	At 10:00, the ambient NO_2 concentration around TM Burnaby began to rise. At 15:00 the concentration rose above the 1-hr AAQO level of 42 ppb. The NO_2 concentration remained above the 1-hr AAQO for three hours, dropping below 42 ppb after 17:00. Winds were close to calm and higher concentrations of NO_2 were predominantly from the southeast. Less extreme increases in NO_2 concentrations were also seen at the TM Westridge (19.8 ppb), TM Sumas (9.2 ppb), and the two Metro Vancouver stations Burnaby Kensington Park (22.9 ppb), and Burnaby Mountain (25.6 ppb), during this event. Considering the light winds, CCFC images (stacks plumes rising vertically) and the trends of other analyzers in the stations ($PM_{2.5}$ and BC), it suggests a possible inversion, trapping and concentrating emissions within the region during this event.