

**PRECONSTRUCTION BACKGROUND AIR MONITORING
SUMMARY REPORT**

**VIRGINIA AVENUE TUNNEL RECONSTRUCTION PROJECT
WASHINGTON, DC**

**Prepared for:
CSX Transportation**

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VIRGINIA AVENUE TUNNEL RECONSTRUCTION

Pre-Construction Background Air Monitoring Summary

Consestoga-Rovers & Associates (CRA) have prepared this monitoring summary in order to meet the commitments introduced in the Virginia Avenue Tunnel Reconstruction Final Environmental Impact Statement (FEIS) and Section 4(f) Evaluation (May, 2014) and further detailed in the Record of Decision (ROD), October, 2014. The project sponsor has agreed to a number of environmental commitments as mitigation for environmental impacts that will result from the Virginia Avenue Tunnel Reconstruction Project. The commitments are divided between those related to construction of the Project and those related to the restoration of affected areas upon project completion of the Selected Alternative. These environmental commitment measures are mitigations which avoid the impact altogether by not taking a certain action or parts of an action; minimize impacts by limiting the degree or magnitude of the action and its implementation; rectify the impact by repairing, rehabilitating, or restoring the affected environment; reduce or eliminating the impact over time by preservation and maintenance operations during the life of the action; or compensate for the impact by replacing or providing substitute resources or environments. This background air monitoring summary report is intended to fulfill initial aspects of the air quality commitments contained in the ROD for the Virginia Avenue Tunnel reconstruction.

The purpose of this report is to provide a summary of the background air monitoring and sampling activities, results, and observations recorded along the Virginia Avenue Tunnel project corridor on February 10, 2015, through February 12, 2015. The purpose of the sampling event was to measure ambient background concentrations prior to reconstruction activities. CRA performed real-time air monitoring and environmental air sampling at four fixed locations around the proposed reconstruction site. Real-time air monitoring equipment was used to determine air concentrations of Volatile Organic Compounds (VOC), Carbon Monoxide (CO), Sulfur Dioxide (SO₂), Nitrogen Dioxide (NO₂) and airborne particulate matter (PM₁₀). Environmental air samples were co-located with the real-time air monitoring stations and were sent to an American Industrial Hygiene Association (AIHA) accredited laboratory for subsequent analysis. The sampling analysis provided a quantifiable background concentration for comparison to the applicable ambient air quality standards.

CRA established four real-time monitoring stations to actively collect perimeter air-monitoring data around the proposed tunnel reconstruction site. These stations were deployed for approximately 8 hours each day. Figure 1 on the next page illustrates the locations of each monitoring station.

Figure 1. Background Perimeter Monitoring and Sampling Locations



Each monitoring station was equipped with a RAE Systems MultiRAE Plus Photoionization detector (PID) equipped with electrochemical sensors specific for carbon monoxide (CO), sulfur dioxide (SO₂) and nitrogen dioxide (NO₂). Additionally, each monitoring station was equipped with TSI inc. DustTRAK model DRX. The MultiRAE and DustTRAK monitors wirelessly transmitted real-time concentration data from the station back to a secured server where data was archived and reviewed remotely. Table 1 includes a summary of the perimeter monitoring data.

Environmental air sampling was performed at each of the real-time monitoring stations. The environmental sampling consisted of both passive and active sampling methods to identify the COI. Specifically, CRA sampled for Hexavalent Chromium (CRVI), Nitrogen Dioxide (NO₂), Poly Aromatic Hydrocarbons (PAH), Coal Tar Pitch Volatiles, Metals, Total Dust and VOC's.

The air monitoring and sampling data collected during the February 10-12, 2015 period indicates that airborne concentrations of all samples compounds of interest were consistent with the concentrations reported in the Final Environmental Impact Statement. A summary of the laboratory sampling results is provided in Table 2.

Table 1. Perimeter Monitoring Data Summary

<i>Monitoring Period</i>	<i>Monitoring Station</i>	<i>Analyte</i>	<i>Number of Readings</i>	<i>Number of Detects</i>	<i>Maximum Concentration (ppm)</i>	<i>Average of Detects</i>	<i>Comments</i>
February 10-12, 2015	Stations 1-4	VOC	2296	0	0	0	None
		CO	2296	0	0	0	None
		NO ₂	2296	1	0.01	0.01	None
		SO ₂	2296	0	0	0	None
		PM ₁₀	1038	1038	0.082 mg/m ³	0.037 mg/m ³	Maximum concentration reported at Capitol Quarters; Approach Criteria (0.150 mg/m ³ as a 1-hour average) was not exceeded

Table 2. Perimeter Sampling Data Summary

<i>Monitoring Period</i>	<i>Sampling Station</i>	<i>Analyte</i>	<i>Number of Samples</i>	<i>Number of Detects</i>	<i>Maximum Concentration</i>	<i>Average of Detects</i>	<i>Comments</i>
February 10-12, 2015	Stations 1-4	VOC	124	20	0.0016 ppm	<0.001 ppm	Low-level VOCs typical of urban environments were detected. Approach Criteria (1 ppm as a 1-hour average) was not exceeded
		Arsenic	12	0	n/a	n/a	None
		Hexavalent Chromium	12	0	n/a	n/a	None
		NO ₂	4	4	0.019 ppm	0.019 ppm	Approach Criterion (0.054 ppm as a 1-hour average) was not exceeded
		PAHs	72	0	n/a	n/a	None