

# **CONSTRUCTION AIR MONITORING SUMMARY REPORT**

**MAY 1-31, 2015**

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

**Prepared for:  
CSX Transportation**

**Prepared by:  
Conestoga-Rovers & Associates, Inc.**

**May 2015**

# **VIRGINIA AVENUE TUNNEL RECONSTRUCTION**

## **Air Monitoring Summary – May 2015**

The Project Team has 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 monthly air monitoring summary report is intended to fulfill 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 air monitoring and sampling activities, results, and observations recorded at the Virginia Avenue Tunnel reconstruction during the month of May, 2015. The purpose of the monitoring conducted during May 2015 was to measure ambient air concentrations of compounds of interest (COI) during initial construction activities. Conestoga-Rovers & Associates (CRA) performed real-time air monitoring at multiple locations during the month of May using two mobile air monitoring stations capable of detecting site COI. The two monitoring stations were placed in the immediate vicinity of construction activities at all times during which those activities were taking place. Real-time air monitoring equipment was used to determine air levels of Volatile Organic Compounds (VOCs), Sulfur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>2</sub>) and airborne particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>).

Each monitoring station was equipped with a RAE Systems MultiRAE Plus Photoionization detector (PID) capable of detecting VOCs, and equipped with electrochemical sensors specific for sulfur dioxide (SO<sub>2</sub>) and nitrogen dioxide (NO<sub>2</sub>). Additionally, each monitoring station was equipped with TSI inc. DustTRAK model DRX. The MultiRAE and DustTRAK monitors wirelessly transmitted real-time data from the station back to a secured server where data were archived and reviewed remotely. Table 1 includes a summary of the perimeter monitoring data.

The air monitoring and sampling data collected during May 2015 indicate that air levels of all COI were consistent with the levels reported in the Final Environmental Impact Statement document. All data indicated site air levels of COI were below relevant Approach Criteria.

Particles (particulate matter or “PM”) which are smaller than 2.5 microns in diameter (PM<sub>2.5</sub>) have been observed near the Approach Criterion of 0.012 mg/m<sup>3</sup> as a 30-day average. Consistent with FEIS observations, the annual average background air level of PM<sub>2.5</sub> in the DC metropolitan area is approximately 0.011 mg/m<sup>3</sup>. As such, only approximately 0.001 mg/m<sup>3</sup> additional PM<sub>2.5</sub> is necessary to alert site representatives of elevated levels. Air levels of PM<sub>2.5</sub> present on site have been due largely to this background level in the DC metro area, as well as contribution from other local sources, and not to the limited construction activities which have taken place thus far. This is evident from comparison of monitoring data between the two stations, one of which was placed upwind of construction activities, while the other was placed downwind. The background sources nearby that have been documented as having contributed to PM<sub>2.5</sub> levels observed on site include, but are not limited to: traffic, equipment, and environmental conditions. As site activity is increased, the Project Team will continue to closely monitor PM<sub>2.5</sub> levels, and will implement control measures as agreed upon in the FEIS and ROD.

**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 Detections</i>	<i>Maximum Detection (ppm)</i>	<i>Average of Detections</i>	<i>Comments</i>
<b>May 1-31, 2015</b>	<b>Mobile Monitoring Stations 2 &amp; 4 – located in immediate vicinity of construction activities each day</b>	VOC	6147	2961	0.54	0.033 ppm	All data below Approach Criterion of 1 ppm
		NO <sub>2</sub>	6147	0	0	0 ppm	All data below Approach Criterion of 54 ppb
		SO <sub>2</sub>	6147	0	0	0 ppm	All data below Approach Criterion of 147 ppb
		PM <sub>10</sub>	6707	6694	0.8 mg/m <sup>3</sup>	0.069 mg/m <sup>3</sup>	Data were below Approach Criterion of 0.15 mg/m <sup>3</sup> as a 1-hr average
		PM <sub>2.5</sub>	6704	6689	0.498 mg/m <sup>3</sup>	0.014 mg/m <sup>3</sup>	Data were below Approach Criterion of 0.018 mg/m <sup>3</sup> above background as a 1-hr average