

June 5, 2017

Ref. No.: 15-201-11

City of Ottawa
Planning, Infrastructure and Economic Development Department
100 Constellation Crescent, 6th Floor West
Ottawa, Ontario K2G 6J8

Attn: Mr. Ziad Ghadban, Manager CSST

RE: Air Quality Monitoring at CSST Site 5, Stanley Park – May 30 to June 2, 2017

Dear Mr. Ghadban:

The following letter memo summarizes the results of the air quality monitoring completed at the Stanley Park construction site (CSST Site 5) between May 30 and June 2, 2017.

1 DATA COLLECTION

Continuous monitoring of airborne particulates was completed using a DustTRAK DRK Aerosol Monitor 8533, equipped with telemetry to provide real-time, continuous records of particulate levels. The DustTRAK records Total Mass Concentration, as well as particulate matter (PM) with diameters of less than 1, 2.5, 4 and 10 micrometres (μm). For example, $\text{PM}_{2.5}$ refers to the concentration of particulate matter with a diameter less than 2.5 μm expressed in units of $\mu\text{g}/\text{m}^3$.

Two monitoring stations were established at the site, one at a location upwind of the excavation area and one at a location downwind of the same excavation area. Both units were re-positioned daily based on observed and forecasted wind direction. Data was collected for approximately 8 hours per day during construction activities at the site.

2 APPLICABLE CRITERIA

The results of the air quality monitoring are compared to Ontario's Ambient Air Quality Criteria (MOECC, 2012). Relevant health related criteria include the following:

- **$\text{PM}_{2.5}$ – 25 $\mu\text{g}/\text{m}^3$ (24 hour)**
- **PM_{10} – 50 $\mu\text{g}/\text{m}^3$ (24 hour)**

3 RESULTS

The data collected during construction was used to determine a 24 hour average particulate concentration. The 24 hour average concentration was calculated assuming the average reported daily particulate concentration occurred during the entire 10 hour working shift (7:00 am to 5:00 pm), with an estimate of 10 $\mu\text{g}/\text{m}^3$ for background $\text{PM}_{2.5}$ and PM_{10} concentrations. This value is a conservative and reasonable background value for this site during the monitoring period as shown by

the upwind concentrations. Table 1 presents the calculated results of the average particulate concentration for off-site receptors over a 24 hour period.

Table 1 - Calculated Average Daily (24-hr) Particulate Concentration (May 30 to June 2, 2017)

Date	Average Particulate Concentration ($\mu\text{g}/\text{m}^3$)	
	<i>PM_{2.5} (Fine Fraction)</i>	<i>PM₁₀</i>
May 30, 2017	10	10
May 31, 2017	6	6
June 1, 2017	6	6
June 2, 2017	6	6

The upwind particulate concentration is relatively consistent throughout the day, but varies slightly from day to day with average concentrations around 1 to 10 $\mu\text{g}/\text{m}^3$. Short term increases in the particulate concentration occur throughout the day and are associated with wind gusts and/or equipment activities such as trucks passing adjacent to the monitoring locations.

The calculated particulate matter concentrations were reported well below Ontario's AAQC.

4 COLLECTION OF LABORATORY SAMPLES

There were no air samples collected for laboratory analyses during the reporting period.

Should you have any questions or require additional information, please contact the undersigned.

Respectfully submitted,

Geofirma Engineering Ltd.



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Attach.

Doc. ID:	15-201-11_Air Monitoring Memo_Week1_R0.docx	
Revision Number:	0	Date: June 5, 2017
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