

August 9, 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 and Sampling at CSST Site 5, Stanley Park – July 30 to August 5, 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 July 30 and August 5, 2017.

1 EQUIPMENT AND SETUP

1.1 Particulate Monitoring

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 matter (PM) concentrations. Dedicated stations have been established to most effectively capture particulate generated from on-site activities. Station 1 is located east of the shaft excavation area to capture particulate matter originating from the excavation and soil stockpile location. This station is downwind of the prevailing west wind direction. The second monitoring location, Station 2 is located in the northwest portion of the site, near the entrance from Queen Victoria Street.

1.2 Climate Data

An on-site climate monitoring station is installed near Station 1, and collects real-time, site-specific climate data. Average daily wind direction, wind speed and temperature from the site is presented in Table 1.

2 APPLICABLE CRITERIA

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

- **PM_{2.5} – 30 (25) µg/m³ (24 hour)**
- **PM₁₀ – 50 µg/m³ (24 hour)**

The value of 25 µg/m³ for PM_{2.5} is not an official AAQC but is included in the AAQC standards for decision making purposes. This value is also the incremental input target to not exceed for any single facility in an effort to keep the ambient levels below a value of 30 µg/m³.

3 RESULTS

Table 1 presents the results of the average (mean) particulate concentration recorded at each monitoring station over a 24 hour period.

**Table 1 - Average Daily (24 hour) Climate Data and Particulate Concentration
 (July 30 to August 5, 2017)**

Date	Climate Data			Station 1 (µg/m ³)		Station 2 (µg/m ³)	
	Primary Wind Direction	Wind Speed (km/hr)	Temp. (°C)	PM _{2.5}	PM ₁₀	PM _{2.5}	PM ₁₀
Sunday, July 30, 2017	NW	8	21	10	11	--	--
Monday, July 31, 2017	NW	9	--	--	--	--	--
Tuesday, August 1, 2017	SW	7	27*	18	22	19	20
Wednesday, August 2, 2017	SW	11	24	28	31	28	29
Thursday, August 3, 2017	NE	7	22	20	21	23	23
Friday, August 4, 2017	NE	15	23	22	22	25	26
Saturday, August 5, 2017	SW	21	20	5	5	7	8

Notes:

* On-site temperature reported from 1030 to 2359.

1) Wind speed determined from historical Environment Canada data.

Elevated fine particulate matter (PM_{2.5}) concentrations were measured at both stations between August 1st and 4th, with the value on August 2nd above the incremental 24-hour average single source target criteria of 25 µg/m. These values are considered representative of regional air quality during that time period and not due to site activities. This is based on several factors, including the following:

- similar concentrations are measured at both upwind and downwind stations
- elevated concentrations are observed during non-working hours; and,
- PM_{2.5} concentration recorded at the Ontario Ministry of the Environment and Climate Change (MOECC) approximately 1 km, east-southeast of the site is elevated during the same time period relative to background concentrations.

All reported ambient air particulate matter concentrations, as presented in Table 1, are below guidelines established in Ontario's AAQC.

4 COLLECTION OF LABORATORY SAMPLES

No air quality samples were collected for laboratory analysis during the reporting period.

Should you have any questions or require additional information, please do not hesitate to contact the undersigned.

Respectfully submitted,
Geofirma Engineering Ltd.



Steve Gaines, M.A.Sc., P.Eng., P.Geo
Geo-Environmental Engineer

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