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Whitby ON L1N 6A3

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Director, Environmental Promotion and Protection
The Regional Municipality of York
17250 Yonge Street
Newmarket ON L3Y 6Z1

**Re: Durham/York Energy from Waste Project
Ambient Air Monitoring 2016, Second & Third Quarterly Report
Notice of Approval, Condition 11**

Dear Ms. Januszkiewicz and Ms. McDowell,

A data validation review was conducted for the 2016 Second and Third Quarter Report prepared by Stantec on behalf of Durham and York Regions for the continuous and periodic parameters measured at Stations 45201 (Courtice) and 45200 (Rundle).

Overall, during the second quarter of 2016, one daily PM_{2.5} concentration at Courtice station was elevated above the PM_{2.5} daily Canadian Ambient Air Quality Standard (CAAQS). During the third quarter, there were 2 daily PM_{2.5} elevated concentrations observed at Rundle Station above the PM_{2.5} daily CAAQS.

The CAAQS for PM_{2.5} is based on a 98th percentile level over 3 years. Since, the operational monitoring commenced February 13, 2015, there is insufficient data collected to determine with any certainty if the elevated concentrations are in fact above the CAAQS. In addition, on days of elevated concentrations at Courtice, high concentrations of PM_{2.5} originated from the north, northeast, and east quadrants, indicating that local sources of particulates contributed to these elevated concentrations. Elevated PM_{2.5} readings were observed at Rundle Station as well particularly when the winds were blowing from the west, east and south quadrants.

The elevated PM_{2.5} readings recorded at Rundle Station during the third quarter were likely due to the ongoing 407 East construction north and west of Rundle station and also due to the re-alignment of South Service Road from Courtice Road to Crago Road south of the station as well as other local sources from the east quadrant.

In the second quarter, there were six benzo(a)pyrene exceedances, three at Rundle and three at Courtice station, and during the third quarter there were 2 benzo(a) pyrene exceedances at Rundle station. These reported concentrations were above the Ontario Ambient Air Quality Criteria (AAQC) of

0.05 ng/m³ which are typically measured throughout Ontario as benzo(a)pyrene is a combustion byproduct from many natural and man-made processes including motor vehicles. Therefore, it is likely that background concentrations of benzo(a)pyrene and nearby construction activities contributed to these exceedances.

Below are our comments for your consideration.

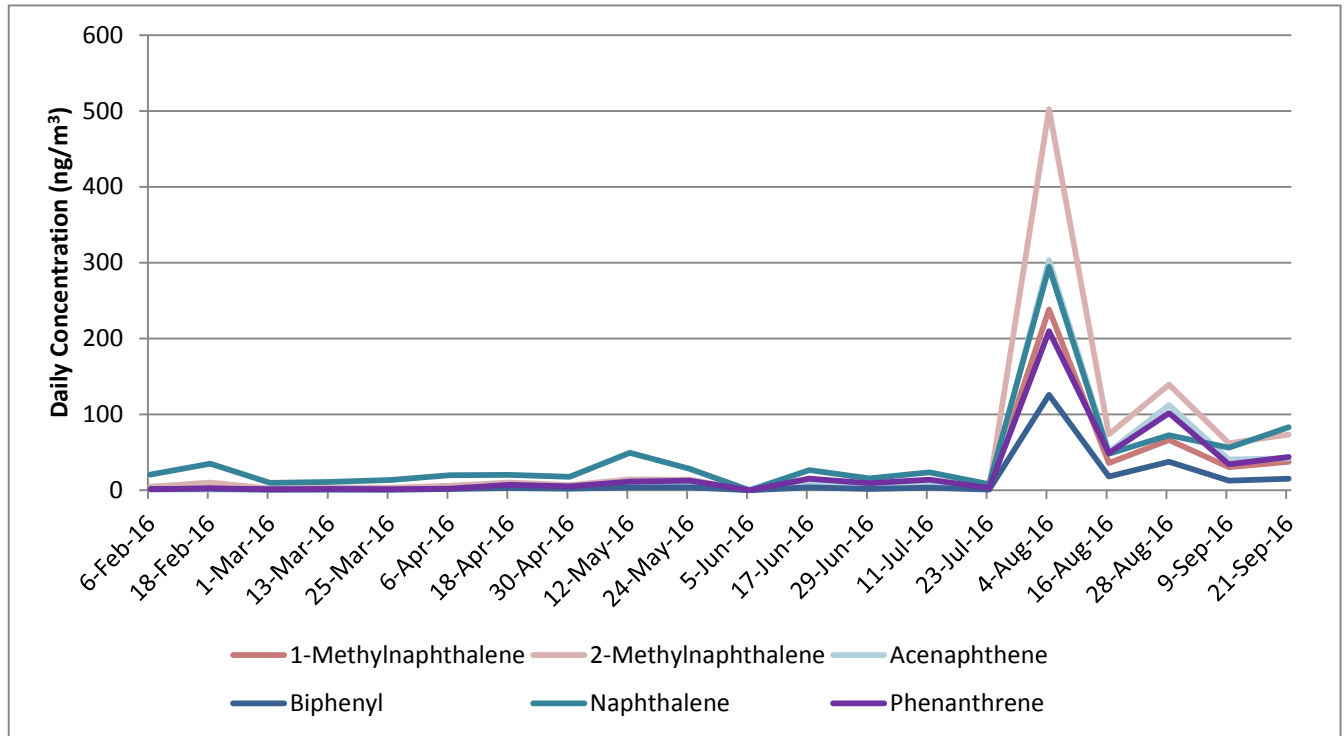
Continuous Parameters

1. On April 26/2016, a string of zeroes from 0 to 9 am were reported for PM_{2.5} at Rundle Station (45200). A similar trend is noted at different times of the day on April 27 through April 30, 2016. The explanation in the log that these were due to low air pollution events and occasionally the drift of the nephelometer was provided. Although a drift occurs, these should not be occurring for long periods such as April 26 to April 30, and May 18/2016, etc. Monthly calibrations have been performed at this station, however it is recommended to perform a zero check on a weekly basis to correct this issue. This has been previously discussed during the July 28, 2016 meeting among MOECC and Stantec staff.
2. Zero drift corrections should be applied to the PM_{2.5} data as noted above, so that the annual report has the revised concentrations.
3. Overall, the strings of zeroes were less frequent during the third quarter compared to the second quarter.
4. During the third quarter, as reported in section 3.4 of the quarterly report, there were zero drifts beyond 5 ppb for NO₂ and SO₂ concentrations. Please note as per the *Operations Manual for Air Quality Monitoring in Ontario*, NO₂ and SO₂ concentrations should be corrected if a zero drift exceeds 5 ppb. Please revisit the data and if any corrections are applicable they should be reflected in the annual report.

Non Continuous Parameters

1. The field sheets provided for TSP/Metals are incomplete for the following sampling dates; May 30th 2016, and June 11th 2016. Please ensure that the final elapsed time and pressure are documented.
2. The TSP and metals data at Courtice were invalid on May 6 and May 12 based on the HiVol flow being below the 40 CFM ministry's requirement. However, on May 6 and May 12, Rundle and fenceline HiVol flows were 10% above the ministry's flow requirement and the data was still reported. Please provide a rationale in the annual report as to why the data were not invalidated.
3. For the third quarter at Rundle Station, it was noticed that selected PAHs were significantly greater by a factor of 10 and in a few cases a factor of 100 compared to the first and second quarter concentrations. As illustrated in Figure 1, the individual PAHs that had elevated readings were 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, biphenyl, naphthalene and phenanthrene. Based on a spot check of the Lab Certificate Analysis, the concentrations which were reported appear to be in the correct units (ng/m³). However, a rationale in the annual report as to why these readings were significantly greater during the third quarter compared to the first and second quarter of 2016 must be discussed in the annual report

Figure 1 Selected 24-hour PAHs Measurements at Rundle Station during 2016



Thank you for the opportunity to comment. If there are any technical questions or concerns regarding these comments, please contact Marinha Antunes, Air Quality Analyst, MOECC Central Region, at (416) 326-3526.

Sincerely,

Marinha Antunes
Air Quality Analyst
Technical Support Section

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