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The Regional Municipality of Durham
605 Rossland Road East
Whitby, ON L1N 6A3

Laura McDowell, P. Eng.
The Regional Municipality of York
Director, Environmental Protection and Promotion
17250 Yonge Street
Newmarket, ON L3Y 6Z1

**RE: Soil Testing Results and Summary
Durham York Energy Center - 2015 Soil Sampling Plots
Environmental Compliance Approval #7306-8FDKNX (ECA)**

Dear Ms. Januszkiewicz and Ms. McDowell:

Thank you for the Durham York Energy Centre Soils Testing Report dated October 21, 2015 (Report) which was submitted to me via covering letter dated October 23, 2015. Submission of the Report is a requirement of condition 15(4) of the ECA.

Ministry staff have reviewed the Report and offer the following comments for your consideration:

The consulting firm WSP Canada Inc. (WSP) was retained by the Regional Municipality of Durham to sample two long-term soil monitoring plots established in the vicinity of the Durham York Energy Centre (facility). In 2015, WSP also established and sampled a third monitoring plot along the eastern extent of the DYEC property in a newly landscaped area. The sampling plots were established in locations agreed to by the Ministry.

In January 2014, the ministry's Terrestrial Assessment and Field Services Unit (TAFSU) reviewed the report entitled Soil Testing Plan Results and Summary: Durham York Energy Centre – 2013 Soil Sampling Plots dated November 30, 2013 and offered the following comments:

- *The actual amount of soil collected from each subplot and the location where the sample was collected from within the subplot should be stated.*
- *The monitoring plots should be better delineated using four corner posts (vs. one) or through the use of radio frequency identification (RFID) tags buried below the soil surface.*
- *It should be confirmed whether or not the accredited laboratory conducting the chemical analysis is accredited for the specific methods being used.*
- *The parameters thought to be affected by storage as noted should be stated.*
- *Soil sampling results for each of the two permanent soil sampling plots should be compared.*
- *Discreet samples should be collected from each of the sub plots and analyzed for at least one of*

the parameters of concern (e.g., metals) to determine within site variability.

The 2015 Report addresses the concerns raised by the TAFSU in January 2014 with the exception of the last point. The Report is unclear as to whether or not discreet soil samples were collected from each of the sub plots in 2015. It is understood that this was not a specified requirement in the approved Durham York Energy Centre Soil Testing Plan however this type of information will be useful in the future to help determine whether or not any observed changes in soil quality (if any) are due to site variability or are the result of some other source.

In 2015, soil sampling was conducted in accordance with the Soil Testing Plan (i.e., sampling methodology, the number of samples collected, photographic documentation, handling and storage) with the possible exception of the soil corer decontamination process. The Soil Testing Plan requires soil corers to be cleaned between sampling sites using detergent, followed by a rinse with deionised water, followed by a rinse with acetone and hexane, to minimize the potential of cross contamination. The Report acknowledges that the soil corers were cleaned with detergent and rinsed with deionised water however it is unclear whether or not this was followed by an acetone and hexane rinse. Rinsing with acetone and hexane is required to effectively eliminate cross contamination of soil corers when sampling for organic contaminants. This issue needs to be addressed and resolved prior to, and during, the next sampling event.

In 2015, all of the required analytical parameters for soil were analysed and reported in the proper units. Reported soil concentrations were below the applicable Ontario Regulation 153/04 – Record of Site Condition (O. Reg. 153/04) Table 1 (background) soil standards. The reported soil concentrations were also consistent with the 2013 baseline or pre-operational soil sampling results with minor increases or decreases in select parameters attributed to “natural variation of the soil, or other potential off site sources”. The other potential offsite source(s) should be identified and explained.

The 2015 soil sampling was consistent with the requirements established in the Soil Testing Plan and the reported soil concentrations did not exceed applicable O. Reg. 153/04 Table 1 (backgrounds) soil standards. Most of the concerns raised by the TAFSU were addressed in 2015 with the exception of the collection of discreet samples from each of the sub-plots. It is recommended that discreet samples be collected from each of the sub plots and analyzed for at least one of the parameters of concern (e.g., metals) as part of the next sampling event.

The soil corer decontamination process requirements outlined in the Soils Testing Plan, in particular, the acetone and hexane rinse, must be followed in future sampling events to effectively eliminate cross contamination of soil corers.

If you have any questions, please contact Philip Dunn at Philip.dunn@ontario.ca or 905 427 5627 or Sandra Thomas at Sandra.thomas@ontario.ca or 905 427 5623.

Regards,



Celeste Dugas
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