

 SNC-LAVALIN Engineers & Constructors	Vaughan CEC Phase I ESA		Revision		
	331518-0000-4EER-0002		No. 00	Date 2006-10-02	Page 4 of 30

EXECUTIVE SUMMARY

SNC-Lavalin Engineers & Constructors Inc. (SLE&C) was retained by the Regional Municipality of York to conduct a Phase I Environmental Site Assessment (ESA) on land located near Highway 7 and Creditstone Road, Vaughan, Ontario. The assessment and report have been prepared in accordance with the Canadian Standards Association (CSA) Standard Z768-94 and the standards of the Canadian Mortgage and Housing Corporation (CHMC). The assessment included a site inspection, historical review and contact with regulatory agencies. The site inspection was undertaken on September 6, 2006.

The site inspection and records review noted no evidence of confirmed environmental concerns with respect to the subject properties; however, the following potential environmental concerns were identified:

Historical Use – Both the City of Vaughan property and the CN property were likely used for agricultural purposes in the past, therefore, there is a potential for past use of herbicides and/or pesticides at the subject property. Given the time that has elapsed since agricultural use, this is unlikely to be a significant concern as any residual pesticides have likely broken-down through natural processes to a large extent.

The City of Vaughan property has been used as a snow dump in the past. Such use is known to have the potential to elevate concentrations of chloride in the groundwater underlying these properties. It is unlikely, however, that such impacts, if present, would constrain the property development and use.

Adjacent Property – The adjacent properties in the area have been used for various commercial and industrial activities. The HTI facility, located at 100 McCleary Court, is currently the site of machine production, whereas Maticair, located at 99 McCleary Court specializes in the manufacture of HVAC equipment. Land use at 391 Creditstone appears to have primarily involved activities related to transportation of freight, and offices of construction companies. Despite the lack of recorded spills and visual evidence of environment impacts from these sites, it is possible that there may have been some run-off of chemicals (e.g. fuels, lubes, etc.) onto the City of Vaughan and CN Railway sites. If geological testing is performed for site development, some examination of the boundaries toward these adjacent developed properties should be considered. If any evidence of environmental contamination is identified, laboratory testing of environmental samples is recommended.

 SNC-LAVALIN Engineers & Constructors	Vaughan CEC Phase I ESA		Revision	
			No.	Date
	331518-0000-4EER-0002		00	2006-10-02
				5 of 30

Highway 7 runs along the south boundary of both sites. During rainfall, it is likely that road-run off will collect along the southern boundary, particularly of the City of Vaughan site.

The application of herbicides in the Telus Mobility communication tower was confirmed by signage and this activity may well also have occurred at the CN transformer compound. Herbicide residuals may have migrated from these compounds to the subject property (CN). Both CN and Telus Mobility should be requested to provide full disclosure regarding the use of herbicides or pesticides at their facilities and if no information is available, then some soil testing should be considered. As it is likely that Telus leases the location from CN, the request for information should be made through CN. Telus' disclosure of this information through CN could be made part of the land acquisition agreement in order to expedite CN's submission of relevant information.

The transformer owned by CN Railways has the potential to contain PCBs. CN should be requested to provide full disclosure regarding the contents and history of this transformer and if no information is available, the transformer should be subjected to an assessment including the analysis of the transformer's dielectric fluid and surrounding soil for the presence of PCBs. This disclosure could be made part of the land acquisition agreement in order to expedite CN's submission of relevant information.

An abandoned well found on the CN property should be decommissioned in accordance with Ontario Regulation 903 as amended to Ontario Regulation 128.

Although there have been several spills related to CN's Macmillan Yard, it is unlikely that there would have been an environmental impact to either the City of Vaughan or CN property, due to the distance from the spills, the anticipated direction of groundwater flow and the drainage ditch and buffer land at the east end of the CN property which separates the subject site area from the CN rail tracks. However, some assurance on the part of CN regarding the potential impact of these historical spills on the subject properties should be obtained.

It is understood that a Geotechnical Environmental Assessment is proposed for the future development at the subject properties. We recommend that a representative set of environmental samples be taken during this activity and that the samples be tested for general environmental parameters (heavy metals, petroleum products and PCBs). It is recommended that 2 to 5 samples be assessed at each of the properties, the exact number to be determined in the field based on the diversity or homogeneity of soil types (surface and near surface).

 SNC-LAVALIN Engineers & Constructors	Vaughan CEC Phase I ESA		Revision		
			No.	Date	Page
	331518-0000-4EER-0002		00	2006-10-02	6 of 30

A summary of the recommendations of this report are as follows:

- A representative set of environmental samples should be taken during the scheduled geo-environmental testing for the site. Analyses should include general environmental parameters (heavy metals, petroleum products and PCBs).
- Approximately 2 to 5 samples should be submitted for analyses from each property, depending on the soil characteristics encountered and visual evidence of contamination.
- CN should be requested to provide full disclosure of use of pesticides and herbicides at their facilities including their electrical transformer and the Telus Mobility communication tower compound.
- CN should be requested to provide full disclosure regarding the contents and history of their transformer adjacent to the subject property. If no information is available, the dielectric fluid and surrounding soil should be tested for PCBs.
- The abandoned well found on the CN property should be decommissioned by a licensed well driller in accordance with pertinent provincial regulations.
- Some assurance should be sought from CN regarding the potential impact of the historic spills that occurred in the vicinity of the subject properties.

USE OF REPORT

This report has been prepared for the exclusive use of the Regional Municipality of York (Client) and persons or organizations to which the Client wishes to make this report available, including any lenders the Client has named or shall name in connection with that transaction or any prospective purchaser of the Client's business operation. This report and the findings and conclusions contained herein shall not, in whole or in part, be relied upon by any other party, without the prior written consent of SLE&C.

 SNC-LAVALIN Engineers & Constructors	Regional Municipality Of York Geo-Environmental Assessment	Revision		
		No.	Date	Page
	331518-0000-4GRA-0001	01	2006-12-07	4 of 25

EXECUTIVE SUMMARY

SNC-Lavalin Engineers & Constructors Inc. (SLE&C) was retained by the Regional Municipality of York (the Region) to conduct a Geo-Environmental Assessment on land situated north of Highway 7 between McCleary Court and CN's MacMillan Yard in the City of Vaughan. The approximate 12.8 ha site comprises two separately owned properties, held by the City of Vaughan and the Canadian National Railway Company.

Environmental Assessment:

The scope of work for this assessment was based on findings from the Phase I Environmental Site Assessment (ESA) reported in October 2006 and discussions with the Region. The Phase I report did not confirm evidence of contamination, but identified a number of potential environmental concerns.

Information received after submission of the Phase I ESA indicated that the site is flood prone during significant storm events (i.e., 100 year storm or greater). It is recommended that additional assessment be conducted and consultation with the approving authorities to assess the approvability of site development and any mitigation measures that would be required for development to proceed.

Activities for the Geo-Environmental Assessment consisted of advancing six boreholes, with two completed as groundwater monitoring wells, plus soil and groundwater sampling and analysis, for the purpose of identifying potential impacts on the surface and subsurface soil and groundwater quality, and to determine the geotechnical properties of the soil on site.

The boreholes revealed consistent soil units across the site consisting of a clayey silt till underlying topsoil for the eastern portion of the site and fill in the western portion of the site. The till in turn is underlain by a sandy silt till layer.

Surface and subsurface soil and groundwater were analyzed for various organic and inorganic parameters and the results were compared to applicable Ministry of Environment Guidelines. The parameters included metals, general inorganic parameters, petroleum hydrocarbons (PHCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and volatile organic compounds (e.g., benzene, toluene, xylenes and ethylbenzene).

A total of eight (8) individual soil samples were submitted for various combinations of environmental analysis. Analyzed parameters included metals and general inorganic compounds (5 samples), PHCs (2 samples), PAHs (2 samples) and PCBs (2 samples). In all cases, the soil

 SNC-LAVALIN Engineers & Constructors	Regional Municipality Of York Geo-Environmental Assessment	Revision		
	331518-0000-4GRA-0001	No.	Date	Page
		01	2006-12-07	5 of 25

quality complied with the applicable MOE Table 3 of "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*" of Ontario Regulation 153. For all parameters tested for, the sample concentrations were below the maximum allowable limits. Table 3 of the regulation applies to "*Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition*".

A total of two (2) groundwater samples were submitted from the monitoring wells for analysis. Analyzed parameters included metals and petroleum hydrocarbons in accordance with the Ontario Regulation 153, as well as pH and sulphate for foundation concrete requirements. Additionally, groundwater from monitoring well MW-4, located near the electrical transformer, was also analyzed for the presence of polychlorinated biphenyls (PCBs). For all analyzed groundwater samples, the parameters tested for were below the maximum allowable limits prescribed by the MOE in Table 3.

Based on the results of our investigation, no further environmental sampling or analysis is required.

Geotechnical Assessment:

The site is generally suitable for the construction of the intended structures. Further investigation may be required to verify the geotechnical conditions of specific locations of the structures if their preliminary locations shift as a result of advancement of the site design process. The following summarizes the preliminary engineering recommendations for key structures planned for the development of the site.

An allowable bearing capacity of 200 kPa is permissible for shallow footings founded in compact to dense till. In the case of engineered fill using approved native soils and granular fill, a bearing capacity of 150 kPa is allowable, if well compacted. A Coefficient of Active Earth Pressure (K_a) of 0.4 is recommended for the design of retaining walls along with a unit weight for the backfill of 21 kN/m³, if the native fill is to be used. Groundwater pH and sulphate test results indicate that there would be no acid attack on concrete and a negligible sulphate attack on concrete.

The proposed stormwater pond should be designed with an excavation slope not steeper than 3H:1V. Groundwater is relatively high compared to the anticipated work depths. Groundwater control during excavation for the pond, foundations, utility trenches etc will be required. Dewatering by pumping from constructed sumps may be adequate. Recommendations for the site grading, engineering fill, groundwater control and excavation, utility trenches, trench backfill, and roads and parking are provided in the report.