patersongroup memorandum

consulting engineers

re:	**Geotechnical Response to City Comments** **Proposed Sort Facility** **1400 Upper Canada Street, Kanata, ON**
to:	Taggart Realty Management - **Ms. Emily McGirr** - emily.mcgirr@taggart.ca
cc:	Purolator Inc. - **Mr. Jonathan Sandiford** - jonathan.sandiford@purolator.com
date:	December 15, 2020
file:	PG4783-MEMO.03

Paterson Group (Paterson) prepared the following memo to provide our responses to the geotechnical-related comments issued on December 1, 2020 and prepared by Ms. Kathy Rygus at the City of Ottawa.

Geotechnical Investigation - Comment 1

Comment: *Please provide a memo that grading plans have been reviewed and meets grade raise restrictions.*

Response: See Paterson Group Memo PG4783-MEMO.04 dated December 15, 2020 which provides our grading plan review for the subject site. In summary, the proposed grading at the subject site has been reviewed and is considered acceptable, from a geotechnical perspective.

Geotechnical Investigation - Comment 2

Comment: *Please confirm that the hydraulic conductivity and infiltration rate is specific for this site and can be used for design.*

Response: The hydraulic conductivity and infiltration rate provided for the subject site is based on testing performed at a nearby site with similar subsurface conditions. Therefore, this hydraulic conductivity and infiltration rate is considered suitable for design at this site.

Geotechnical Investigation - Comments 3 & 4

Comment: *The Design Brief states the following: ""Based on the geotechnical report the current groundwater in the area is approximately 102.64m; however, upon completion of the paving of the site it is expected that the ground water elevation will be lowered by at least 1m".*

Please provide confirmation of the seasonal high groundwater elevation (the data provided in Table 2 of the Geotech report declares groundwater levels in January which may be lower than the seasonal high and the it is not clear where the Geotech report declares an expectation that the groundwater elevation will lower by at least 1 m). Please demonstrate in the next design submission how the base of the storage media is a minimum 1 m from the seasonally high groundwater table, as per Ministry requirements.

Response: Based on the groundwater levels measured at the standpipe piezometers which were installed in the completed boreholes, groundwater was generally encountered at geodetic elevations ranging from 102.5 to 103.5 m.

However, the Geotechnical Investigation Report also notes that "groundwater readings at the piezometers can be influenced by water perched within the borehole backfill material." This is considered to be the case with these elevated groundwater level readings.

The Geotechnical Investigation Report further indicates that the "long-term groundwater level can also be estimated based on the observed colour and consistency of the recovered soil samples. Therefore, it is estimated that the long-term groundwater table can be expected between 2 to 3 m depth."

Given that the existing ground surface at the location of the proposed infiltration system is at approximate geodetic elevation 103.7 m, the groundwater depths of 2 to 3 m correspond to approximate geodetic elevations of 101.7 to 100.7 m. The seasonal high groundwater level is considered to correspond to the groundwater elevation of 101.7 m, which is 1 m below the bottom of the infiltration system at geodetic elevation 102.7 m and in accordance with Ministry requirements.

Geotechnical Investigation - Comment 5

Comment: *The depth from the bottom of the infiltration practice to the bedrock should be greater than or equal to 1 meter, per Ministry requirements. Please provide confirmation that this will be achieved.*

Response: Based on the boreholes conducted at the subject site, bedrock was encountered at geodetic elevation 99 to 99.5 m. Further, in reviewing the above-noted civil drawings, the bottom of the infiltration system will be located at geodetic elevation 102.7 m. Therefore, the depth from the bottom of the infiltration system to the bedrock will be greater than 1 m, as per Ministry requirements.

We trust that this information satisfies your immediate requirements.

Paterson Group Inc.

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