



**re: Geotechnical Review of Soil Infiltration Rates
Proposed Industrial Development
155 Iber Road - Ottawa**

to: Power-Tek Group - Mr. Joseph Pamic - joseph.pamic@power-tek.on.ca

to: D.B. Gray Engineering Inc.- Mr. Ryan Faith – r.faith@dbgrayengineering.com

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file: PG5713-MEMO.02

Further to your request and authorization, Paterson Group (Paterson) prepared the following memorandum to provide confirmation of the soil infiltration rates for the subject site. This memorandum should be read in conjunction with Paterson Geotechnical Report PG5713-1 dated April 28, 2021.

Geotechnical Review

It is understood that a soil infiltration rate of 30-75 mm/hr was used in the infiltration trench design. Of which, a conservative value of 30 mm/hr was used for the infiltration calculations. It is further understood that the infiltration rate would function adequately with an infiltration rate as low as 10 mm/hr providing a draw down time of 48 hours.

Based on Paterson's review of the soil profile and subsurface conditions, Appendix C of the *Low Impact Development Stormwater Management Planning and Design Guide*, as well as Paterson's previous experience with hydraulic conductivity and infiltration rates of glacial till soils consisting of silty sand to sandy silt, 30-75 mm/hr is considered an appropriate range for the subject site. The aforementioned Appendix C indicates that the stormwater infiltration best management practices (BMP) design must incorporate a factor of safety correction factor to compensate for reductions in soil permeability during construction (due to compaction and smearing) as well as variations in soil composition and gradual accumulations of fine sediments over the lifespan of the stormwater facility.

Based on the subsurface conditions at the subject site, a safety correction factor of 2.5 is appropriate, corresponding to a factored design infiltration rate of 12 mm/hr as a conservative value, which is greater than the minimum operable infiltration rate, as defined by D.B. Gray Engineering.





The soil infiltration rates are considered acceptable from a geotechnical perspective for the soils encountered at the test hole locations. However, the design parameters used are based on literature and theoretical values and not site-specific testing. It should be noted that the subsurface soil profile may vary throughout the subject site, thereby changing the hydraulic properties of the soil.

We trust that the current submission meets your immediate requirements.

Best Regards,

Paterson Group Inc.

Owen Canton, EIT



Faisal I. Abou-Seido, P.Eng.

