In-Depth
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August 23, 2022
via email
NGhbn@brantford.ca

Dear Mr. Ghbn:

Tutela Heights Rd. Slope Monitoring Project

Brantford, Ontario

We have now evaluated the monitoring data corresponding to end of August 2022 period. The monitoring data is captured via an array of survey points (SIB's, installed by J.C. Cohoon Engineering Ltd., and surveyed by Survey Department – City of Brantford), as well as by three inclinometer casings installed and monitored by us (In-Depth Geotechnical Inc.).

Based on our re-assessment of reported new monitoring data, it appears that most survey points and the three inclinometers are all operative/functional, and providing monitoring data as it was intended. At variance with this statement, Survey Point Nos. MP-01-14, MP-04-14, and MP-06-14, were noted by the Surveyors to be bent (or could not be read), and therefore no longer representing displacements on the surface soils.

Based on the data base containing updated displacements from inclinometers, it clearly appears that the observed ground movements are still very small, and are found to be compatible with stable slope conditions. That is to say some small displacements (less than 5 mm accumulated) are noted at specific places, indicating a generally stable slope condition.

In terms of displacements of SIB elements, a new update table (Table No.2) of cumulative settlements and cumulative horizontal displacements has been included in the Report. Significant cumulative movements, in excess of 120 mm, are noted, as listed in the Report.

This concept of ***stable slope condition*** is strictly applicable for the period of time covered by this monitoring program, i.e., from April 2015 up to date. There are no assurances nor guarantees that this stable slope condition is or could be permanent. Different actions from Mother Nature can suddenly, unexpectedly activate greater rates of displacement. Such natural forces can be related to river flooding (Grand River) or flash flooding (heavy rain over farming lands south of the slope). Long term slope and toe erosion, freeze-thaw annual cycles could also result in unexpected loss of stability. As such, the monitoring plan will be useful in identifying potential actions leading to instability.

It must also be noted that survey points and inclinometers are somewhat limited/restricted to the areas they covered. Visual inspections by local people, neighbors, should be heeded as a very valuable source of information for those areas not covered by this present monitoring array.

Shall you have any queries, please feel free to contact the undersigned.

Sincerely,

Gabriel Sedran, Ph.D., P.Eng.
Senior Geotechnical Engineer
In-Depth Geotechnical Inc.