Attachment C

PREIN & NEWHOF RESPONSE TO FERC COMMENTS

BOYNE RIVER HYDROELECTRIC PROJECT
(FERC PROJECT NO. 3409)

APPLICATION FOR SUBSEQUENT LICENSE
FOR MINOR WATER POWER PROJECT, 1.5 MW OR LESS

Prein&Newhof
Engineers ▪ Surveyors ▪ Environmental ▪ Laboratory

May 11, 2020
2180567

Mr. Jim Tiffany, P.E.
J.E. Tiffany and Sons, LLC
1709 N. 39 Road
Manton, MI 49663

RE: FERC Deficiency Letter, March 23, 2019 (sic.)
Boyne River Hydroelectric Project
Boyne Valley Township, MI

Dear Jim:

In response to the FERC's comments regarding Appendix A, Exhibit F.2.d of the above referenced letter, we would like to point out the following:

- Based on our field investigation, the soil conditions encountered in boring SB#3 are believed to constitute an anomalous situation affecting a localized area on the upstream side of the left embankment. The lateral extent of this anomaly is characterized by subtle visual signs of embankment deformation and sloughing in the immediate vicinity of boring SB#3. The limits of the area affected by this surface deformation are also evident in the topographic survey of the left embankment.

  No visual or topographic survey evidence of surface deformation or sloughing was observed on the downstream side of the embankment in this vicinity. In addition, the none of other borings drilled for this project encountered the anomalous soil conditions detected in SB#3, and the two embankments are separated by the existing concrete core wall and may have been constructed in separate operations. For these reasons, we have no reason to believe that the anomalous layer of sand with organics occur on the downstream side of the left embankment, which is the reason we did not analyze the downstream slope at this specific location.

- Relative to the angle of internal friction for the layer of very loose sand mixed with organic material encountered in SB-#3, Section 4.1, Table 1 on page 7 of our report indicates that the layer of very loose sand with organics (Stratum 2) was modeled with an angle of internal friction of **29 degrees**, not 34 degrees. This internal friction value is also reflected in the table at the top left of the graphic output of the stability analyses of Section F-F (Appendix C, Figures C-10 and C-11). In the embankment cross-section view, Stratum 2 is the layer sandwiched between the upper embankment fill (Stratum 1) and the underlying medium dense sand (Stratum 3). In the graphic, the colors of the various soil layers appear distorted below the water table by the superimposition of blue (water) over the original color.

If you have any questions about these responses, please call me.

Sincerely,
Prein&Newhof

Fernando Souto, P.E.