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**From:** Todd Thornburg <tthornburg@anchorqea.com>

**Sent:** Wednesday, April 26, 2023 12:41 PM

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**Subject:** PGM: SDU-averaged bathymetric difference measurements

Good afternoon folks,

In preparation for our meeting this Friday, and as requested in your recent comment letter, attached is a table showing bathymetric difference measurements averaged over each SDU for the first two years of monitoring at the PGM site. The table is color-coded to show areas of measurable deposition and measurable erosion that exceed the bathymetric survey uncertainty of +/- 0.5 feet. This table also presents the estimated thickness of remaining cap and cover material in each SDU (or infill sediment in MNR/No Action areas), as calculated from Figure 9 of the Year 2 Monitoring Report. Note that there is a systematic offset of about -0.3 feet in the baseline survey elevation between the 2021 and 2022 surveys that uniformly affects not just the study area but also the outlying "baseline" elevations in the adjacent river. This offset is attributed to survey variance/uncertainty, and is evident in the attached comparison of bathymetric difference maps (note that the off-site, baseline elevation change uniformly flips an entire color band, from dark gray to light gray). There are a couple factors that could have contributed to the observed survey variance, including: (1) there was a change in surveyors from 2021 (Meyer Hydrographic) to 2022 (eTrac), and (2) the 2022 survey was performed during a period of unusually high river stage (+16 feet USGS) and flow velocity, as shown on Figure 3 of the Year 2 Monitoring Report. In any case, the systematic offset between the 2021 and 2022 surveys (approx. -0.3 feet) is within and consistent with a bathymetric survey uncertainty of +/-0.5 feet.

We look forward to discussing your comments further on Friday.

Hope you're all enjoying the wonderful spring weather, finally.

**Todd**

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**Hours: Monday – Thursday, off Friday**

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