

Our ref: 8618024

18 June 2021

Tim Schutzman, PE
Waterworks Coordinator, Cranberry Township
2525 Rochester Road
Cranberry Township, PA 16066

Brush Creek WPCF Solids Handling Technical Memorandum (TM-8) Update

Dear Tim,

GHD is pleased to submit this proposal to update the Solids Handling Technical Memorandum (TM-8) developed during the basis of design phase of the Brush Creek WPCF upgrade and expansion project. The purpose of this update will be to re-evaluate both the Autothermal Thermophilic Aerobic Digestion (ATAD) and Anaerobic Digestion alternatives based on current flows and loads resulting from the membrane bioreactor (MBR) process, as well as revised build-out conditions based on current plant conditions.

1. Scope of Services

GHD will with update TM-8 focusing on the following:

- a. Basis of design updates: review of current flow and loads resulting from the MBR process, update design flow projections, update design organic load projections, confirmation of assumptions made during the initial evaluation, confirm volumetric capacity of sludge holding tanks.
- b. Update conditions assessment of critical infrastructure specifically:
 - Primary clarifiers – flights, chains, drive units and sludge pumps
 - Pre digestion sludge holding tanks, concrete condition and mixer condition
 - Primary sludge grinders
 - Post digestion storage tank (condition of steel panels and seams)
 - Load out conveyor and dumpster chute equipment (dried sludge conveyance system)

New equipment added in the MBR upgrade will modify the initial scope presented for both alternatives.

- c. Process alternatives updates: Review of both ATAD and Anaerobic Digestion process alternatives, Temperature Phased Anaerobic Digestion (TPAD) or third process alternative as directed. Information from the revised flow and load projections may impact previous planning-level tank and equipment sizes. Significant changes from the prior technical memo will be identified.
- d. Revise the Anaerobic Digestion alternative to exclude combined heat and power equipment (No added benefit versus existing generators).
- e. Confirm previous dewatering alternatives, to include equipment sizing and overall conveyance of WWTP sludges.

- f. Solicit updated quotes from process equipment and materials vendors for updated equipment pricing based on revised scope.
- g. Prepare updated DRAFT TM-8 (revised) and planning level cost estimates.
- h. Review updated DRAFT TM-8 (revised) in workshop with staff.
- i. Finalize and deliver TM-8 (revised).

2. Schedule

We are prepared to commence work within 3 weeks of notice to proceed by Cranberry Township. We expect the work for the draft TM to be complete and workshop scheduled within 8 weeks from notice to proceed. Comments from the workshop will be completed within 3 weeks.

3. Proposed Engineering Fees

Our services will be rendered on a time plus expenses basis in accordance with GHD's Fee Schedule at the time of service. Rates are all inclusive, including overhead and profit, and apply to all hours expended with no premium charged for overtime hours. Our fee for the scope of services noted above is **\$25,500** and will not be exceeded without prior authorization.

4. Agreement for Professional Engineering Services

Services outlined in this proposal will be completed under the current Agreement between GHD and Cranberry Township for the Brush Creek Design and Construction project. If our proposal is satisfactory with you, please sign below and return to us. The accepted proposal will constitute authorization to proceed. Alternatively, another mutually agreeable agreement may be used.

We appreciate the opportunity to be of continued service to Cranberry Township and look forward to working with you on this assignment. If you have any questions or require additional information, please don't hesitate to contact us.

Regards,



Howard G. Butler, PE
Project Manager



Joel Kostelac, PE BCEE
Project Director

Encl.

cc: Mike Sedon, Cranberry Township

ACCEPTANCE AND AUTHORIZATION TO PROCEED

Cranberry Township

By: _____
(Authorized Representative)

Title: _____

Date: _____