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Department of Utilities
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TO: Chairperson Joe Martin and Members of the Utilities Committee

CC: Chris Shaw, Utilities Director
Jeff Fait, Finance Purchasing Manager

FROM: Chris Stempa, Utilities Deputy Director

DATE: March 7, 2014

RE: ***Award sole source Phosphorus Effluent Analyzer to Hach Company in the amount of $15,522.50***

BACKGROUND:

Since mid-2013 the Appleton Wastewater Treatment Plant (AWWTP) has worked with the contracted engineer CH2MHILL to critically evaluate current wastewater treatment operations and potential future upgrades necessary to meet new low-level phosphorus limits established by the EPA and WDNR. This analysis continues but immediate needs have already been determined which includes the ability for the AWWTP to demonstrate the ability to react and effectively treat phosphorus to low levels. The purchase of an on-line phosphorus analyzer has been determined necessary in order to move forward with a full-scale demonstration from which other options or alternatives will be assembled as part a series of project deliverables. The outcomes to be derived will successfully position the Utility to achieve low level phosphorus concentrations that have been set forth in the EPA's Total Maximum Daily Load for the Fox River and Wisconsin Administrative Code NR 217.

JUSTIFICATION:

Currently, the AWWTP does not have the ability to detect real-time phosphorus concentrations within the "treatment train". Historically, this has not been a limitation to compliance for two main reasons. First, the AWWTP has maintained effective treatment of phosphorous relative to its effluent permit limit (currently 1 mg/L phosphorus). Second, the phosphorus limits previously mentioned have allowed operational flexibility when reacting to laboratory test result taken once per shift without jeopardizing permit. The AWWTP future phosphorus limit, as part of future Wisconsin Pollution Discharge Elimination System (WPDES) permit, will ultimately be 0.2 mg/L or the TMDL phosphorus criteria. This low level limit makes it critical that operations react to

deviations in phosphorous concentrations real-time in order to consistently achieve future permit compliance limits.

During the AWWTPP Phosphorus TMDL project workshops with CH2M HILL, the need for an on-line ortho-phosphorus analyzer was identified. The two manufacturers identified based on feedback from CH2MHILL were Applied Spectrometry Associates, Inc (ASA Chemscan) and Hach Company. Each manufacturer offers robust equipment with low-level phosphorus detection capabilities. The criteria developed to rate equipment vendors internally were as follows:

1. Appropriate sensitivity to future proposed permit discharge limits
2. Robust reliability for sample points monitored
3. Expandable system for future flow-paced chemical control

Hach was selected as a result of the evaluation process. Although priced $1,552 more than Chemscan, the Hach equipment offers more capability in a single package that is expandable allowing for the ability to cost effectively feed phosphorus treatment chemicals using control based logic. The majority of the on-line instrumentation purchased by the Utilities Department in recent years has been from the Hach Company. Therefore, Utility staff responsible for servicing various Hach installations at both the Water Treatment Facility and AWWTP are familiar with the equipment manufacturer and their capabilities. Furthermore, the Hach Company has the edge for the analyzer components. The units are easily upgradable by the purchase of components that may be needed in the future to gather data from different sampling points within the plant.

RECOMMENDATION:

It is recommended that the Utilities Committee award a sole source to Hach Company for the phosphorus analyzer in the amount of $15,522.50. The funding for this purchase had been included as part of the 2014 Utility O&M budget. If you have any questions regarding this project please contact Chris Stempa ph: 832-5945