



WATER POLLUTION CONTROL

MEMORANDUM

To: Gregg Mandsager, City Administrator

CC: Nancy Lueck, Finance Director
Fran Donelson, Secretary

From: Jon Koch, WPCP Director

Date: February 17, 2015

Re: Thickened Waste Activate Sludge (TWAS) Pump Replacements

INTRODUCTION: The current Penn Valley pumps used to transfer thickened waste activated sludge (TWAS) to the digesters do not function properly and need to be replaced. Two new pumps from Lobeline have been found that will better accommodate the thickened material. These new pumps cost \$35,970 each including shipping and factory represented start-up for a total of \$71,940. This was an unbudgeted item and will be included in the May budget amendments. It was not included in recent budget discussions due to lack of information from engineers and vendors on pump sizing, placement, electrical requirements and efficacy in this application. Engineers and vendors have approved of placement and electrical designs in the past two weeks allowing this replacement to move forward. The pumps have an 8-10 week delivery projection with a 2-4 week install period. It is recommended that these pumps are installed as soon as possible to avoid complete loss of pumping ability.

BACKGROUND: During the last plant upgrade, new pumps and piping were installed to replace aging TWAS pumps. These pumps transfer thickened material from one side of the plant to the other. The new pumps from Penn Valley were designed to pump over 60 gallons per minute but have historically pumped less than 20 gallons per minute. This is due to the discs used for pumping quickly deteriorating due to product make-up and high pressures in the discharge pipe. Once pumping is reduced to less than 15 gallons per minute the discs need to be replaced. Repair and replacement of these discs costs nearly \$2500 per pump with nearly quarterly replacement being necessary. Total costs for maintenance to these pumps can reach \$20,000 annually. The Penn Valley pumps located in other areas of the plant require disc replacement about every 3 years.

Penn Valley and Symbiont Engineering have both stepped up and admitted that these pumps are not performing as specified and have been working with plant staff since their installation in

2011 to make them work properly. Both vendors agree that replacing the pumps with a different style of pump is the only workable alternative. Symbiont has provided free engineering for the replacement of new pumps and Penn Valley has agreed to refund \$20,000 of the \$50,000 original cost for the pumps.

New more robust pumps have been located to better handle this thickened material. Four pump manufacturers were contacted to price rotary lobe pumps. The Lobeline pump from Swaby Manufacturing is designed to handle high pressures for this thickened material where the other manufacturers cannot. Other comparable pumps were \$5,000 less than the Lobeline pump but were not rated for the higher pressures produced by this material.

Additional electrical and plumbing will be performed by plant staff with equipment estimates ranging from \$13,000 to \$16,000.

RECOMMENDATION/RATIONALE: Plant staff recommends the purchase of two (2) Swaby Lobeline MR 110 Inline Right Angle Gear Reducer Pump Packages for \$35,970.00 per pump package (\$71,940.00 total) to replace the failing Penn Valley double disc TWAS pumps.

BACKUP INFORMATION: Lobeline Quote # US-14044.Rev 1