

**TO:** John P. Castro / Utilities Director

**COPIES:** John Bartelmo, PM / CH2MHill / OMI, Inc.

**FROM:** Ricky Collins, CH2MHill / OMI, Inc.

**DATE:** August 8, 2017

**SUBJECT: Effluent control / check valve for effluent pump # 1**

**Action statement:**

Replace Apco automatic control check valve on plant effluent pump # 1.

**Background:**

The effluent pumps at the wastewater plant discharged treated waste water into two deep injection wells located at the plant site located on Fleming Key.

These valves combine the functions of flow control, check valve, shut off valve and reverse flow for priming in a single unit. Valves were installed in 1992 along with the effluent pumps, piping and upgraded generator. At time of install the system discharged plant effluent to the ocean outfall. Since 2001 system discharges effluent to two (2) deep injection wells located on plant site.

**Purpose and Justification:**

The Valves and pumps are in need of overhaul, parts for pumps have been purchased and currently being rebuilt in house. The check valves need to be replaced, these units are a combination unit serving as a check valve, priming valve and shut off valve operated by an electric actuator. After years of exposure to effluent water with a high chloride and high salinity contents the valves have corroded and worn to a point of replacement, parts that are required to rebuild to a reliable condition would require removal, sent to a certified vendor to repair, along with parts and vendor cost would exceed cost of a new up to date unit. The valve is a large and complicated piece of machinery its 16" size and weight at 2775 lbs. is a challenge to remove and install but staff is well equipped with tools and staff to perform this task.

**Options:**

The first option is to go forward with the replacement of the valve and give the City a system that is a reliable state of the art system that will last far into the future on a critical effluent pumping system.

The second option is to remove and ship to a certified vendor shop for repair / upgrade, this option will exceed cost of a brand new up to date unit that will last far into the next 20 years. Estimates for rebuild machine and repair have been verbally quoted in excess of \$ 100,000.00

To do nothing would most certainly result in total failure of the pumping system critical to the operation of the waste water treatment process.

**Financial Impact:**

Cost for one new valve \$ 79,412.50

**Recommendation:**

Staff recommends the valve to be upgraded to a more reliable upgraded valve to a vital part of the waste water plant and budget for one new valve next PY.