MEMORANDUM

TO: David Hamilton, County Administrator

FROM: Joseph L. Stapf, Utilities Director

DATE: June 7, 2010

SUBJECT: Odors at the Spring Hill Wastewater Plant on Osowaw Blvd.

The day after the Coastal Hernando Intiatives Program (CHIP) meeting at the end of April, I met with the Operations and Maintenance staff of the Utilities Department, and conveyed concerns regarding odors at the Spring Hill WWTP expressed by residents at the CHIP meeting. Just to remind everyone, this facility was originally designed and constructed by the private utility known most recently as Florida Water, which the County acquired in late 2003. Since that time, we have been continuing to review and revise operating and maintenance strategies originally developed by Florida Water. As a result of this most recent review, we are focusing on changes/corrective measures in two areas---

1. We have found several of the basins at the WWTP to have accumulated a large amount of grit and sand—perhaps 1000 cubic yards, or more. This material, which is settled on the bottom of those basins, undoubtedly contains some amount of putrescible organic material, and takes up volume that is necessary for the optimum function of the plant. It is likely the organic material contained therein is broken down anaerobically, and as this occurs there is a release to the atmosphere of some amount of hydrogen sulfide gas. It is virtually impossible to know for certain how much this contributes to the odor problem, but at the very least it cannot help. There is no doubt these basins should be cleaned out, if for no other reason than to restore their original volume.

2. Sewage from the Seven Hills/Wellington Area near Mariner Blvd and County Line Road in the amount of about 450,000 to 500,000 gallons per day (or 25% of the total Spring Hill plant flow) is pumped to the Spring Hill WWTP from a pumping station on Quality Drive. The forcemain through which the sewage is conveyed runs from the pump station westerly to Mariner Blvd., south to County Line Road, west to Route 19, north to Osowaw Blvd., and west to the treatment plant. The total length of pipe is about 8½ miles, and it takes about 14 hours, more or less (depending on the rate of flow), to make the trip. During that long residence time, the wastewater is subjected to anaerobic degradation, and this produces a considerable amount of hydrogen sulfide gas. Samples at the Quality Drive lift station show soluble H_2S levels in the range of 0.8-0.9 mg/l. At the treatment plant, this level has risen ten times that level to 8.0-9.0 mg/l. As soon as this sewage hits the open atmosphere at the plant, it begins to release this hydrogen sulfide gas.

To clean the basins, we have contacted Pasco County Utilities, and it turns out they already have a contract in place with an outside vendor to perform this very kind of work. We can “piggyback” on this contract. We have therefore submitted the required documentation to the Purchasing Department, and are awaiting approval to proceed. We anticipate the total cost of cleaning should be on the order of $300,000.

For the hydrogen sulfide gas problem emanating from the County Line Road forcemain, we have been in touch with US Filter, a company that specializes in manufacturing and marketing equipment and chemicals of all types used in water and wastewater treatment. US Filter sells a system which can be used to feed a chemical called Bioxide®, or calcium nitrate. The chemical and feed system are proprietary products upon which the patents recently expired. More generic forms are just now finding their way onto the market, but have yet to prove themselves. We have therefore obtained pricing for the purchase and installation of a Bioxide® feed system at the

Quality Drive Lift Station, with the purchase to be considered a sole-source procurement. We would rather not take a chance on something that is not proven at this point. The proprietary system marketed by US Filter is known to work, and we are told if the results are not acceptable, we will not have to pay. If it does work, we anticipate it will cost about $25,000-$30,000 per quarter, or about $100,000 per year.

As soon as these two items can be processed through purchasing, we expect they will be presented to the Board of County Commissioners' for approval shortly thereafter.

However, before anyone starts celebrating that we have (finally) found the source of odors, it is also necessary to advise caution. There is no way of predicting the ultimate effectiveness of these two proposed actions, and I can in no way guarantee odors will be gone once these measures are implemented. Odors at wastewater plants are pervasive, and have many sources. As an old boss and mentor of mine would often say, "We ain't makin' cookies at wastewater plants." That isn't to say we can *never* solve odor problems—just that it is difficult at best. All we can do is continue to monitor, and as necessary, keep trying things.

/jma

cc: Jesse A. Goodwin, Assistant Director/Water & Sewer Operations
Landis G. Legg, Wastewater Plants Supervisor