

# GLOUCESTER-MATHEWS GAZETTE-JOURNAL

## HRSD pilot program may hold answer to future water shortages

by Sherry Hamilton - Posted on Nov 16, 2016 - 11:51 AM



Drinking wastewater might not seem like the smart thing to do, but if properly treated, it quenches the thirst as readily as rain. Recently, this reporter visited the Hampton Roads Sanitation District facility in Seaford and quaffed a glass of recycled wastewater. It was clear and clean. It had no unpleasant odor or taste. And it just might be the answer to future water shortages.

Hampton Roads Sanitation District is in the pilot phase of a project aimed at eventually producing purified water from wastewater at nine of its 13 sewage treatment facilities. Once treated, the water would be pumped back into the underground aquifer that supplies most of Eastern Virginia and used for drinking and other purposes.

One small corner of one building at the Yorktown sewage treatment plant currently houses the pilot project, known as SWIFT (Sustainable Water Initiative for Tomorrow), but if fully implemented, the process will require a facility 2,000 times larger, said HRSD general manager Ted Henifin. The ultimate cost of the project is expected to be in the range of \$1 billion.

The pilot project is using two different methods for purifying the water—one carbon-based and the other membrane-based, said Charles Bott, HRSD's Director of Water Technology and Research. Early results show that the carbon-based method is the more promising, he said, since it is both more compatible with the aquifer and is less expensive to institute.



The purification process for the water begins where HRSD's current process ends. The carbon-based system cleans the already-treated water still further by adding larger particles back in to help sweep out much smaller particles that can't be seen. It continues with ozonation to destroy dissolved contaminants, followed by a filtering process to remove particles and pathogens such as pharmaceuticals and hormones. The final step in treatment is ultraviolet light to destroy any remaining bacteria and microorganisms. Before putting water back into the aquifer, said Bott, it would be treated to match the chemistry that already exists in the aquifer.

Bott said that all the technologies have been used before, including reinserting the treated water into an aquifer. However, he said, none of the current systems are being used for the same primary purpose as HRSD—nutrient reduction.

Henifin said that the driving force behind the project is HRSD's requirement to reduce nutrient discharge into the Chesapeake Bay, but it will have the added benefits of conserving water and reducing land subsidence caused by the extraction by all users combined of millions of gallons of water per day from the Potomac Aquifer.

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