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Monroe Township officials weighing changes to water purification system

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MONROE TWP. A three-month water treatment test project could have Monroe Township's municipal water sodium-free at a lower cost, if results are cleared by the state.

Hungerford and Terry, a Clayton-based water treatment technology company, is in its second month of testing the ion exchange method of removing sodium from water in municipal well 13.

The Jackson Road well that ties into Piney Point Aquifer, has shown signs of elevated sodium levels that creep just above the state's 50 milligrams per liter recommended upper limit. The saltier water made the well a perfect candidate for the Hungerford and Terry test that wraps up near early June, according to a company spokesman.

"We went to Monroe and offered it to them knowing they had one of those wells that could use this type of treatment," said Thomas Huck, Hungerford and Terry sales engineer.

Most municipality's with public water including Monroe Township have elevated sodium level issues in municipal wells, and use reverse osmosis systems to strip the sodium and everything else out of the water. The method blasts water at about 600 pounds per square inch through a semi-permeable membrane. The clean water goes to the other side of the membrane, but the sodium and even the good minerals like calcium and magnesium, are left in the rejected water.

The clean water must be retreated with the calcium and magnesium it lost during the process, otherwise the water will become aggressive and strip water pipes.

"The reason it's not as desirable as what we're doing in Monroe is the cost," Huck said.

The test method, ion exchange, is less costly than reverse osmosis, according to the Hungerford and Terry spokesman.

Instead of powering up pumps to blast the water, disposing of waste water, and retreating it to add in good minerals, the water is run through a tank with beads that have charged ions. The ions in the sand-like beads attract particles like sodium and trade it for hydrogen. Instead of stripping the water, it removes only the undesirable bits.

"Waste water has enough of the good constituents that it doesn't require much in chemical additives to restore the water," Huck said.

Once the testing is complete, the state Department of Environmental Protection will look over the results, and could permit Monroe Township to hook up the treatment method to the township's water distribution system.

So far, the Clayton company has data indicating the water coming out of the pilot unit is very clean, meets

DEP's recommended upper limit and reduces the operational costs.

"We're already running all of the analysis to make sure it's performing, and it is," Huck said. "Analysis shows it works short term, but (the DEP) wants us to show it works long term for a period of time so it's effective all the way."

Although the DEP will review the test results, state agency spokesman Larry Hajna said the department does not have plans to begin recommending ion exchange to other municipalities or requiring the system as a standard.

"I don't know that we're looking at this having a broader application for other municipalities," Hajna said. "Other municipalities may decide to look at this project and its success and circumstances particular to Monroe."

Ion exchange is not unusual, Hajna said.

In fact, Hungerford and Terry modified the process from its original use in power generation industry for boiler feeds, and transformed it to a drinking water purification method.