

Officials discuss cleaning saltwater

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BAY CITY - Matagorda County officials are exploring the possibility of drinking a nice, cool, refreshing cup of saltwater.

Though drinking water isn't in short supply yet, Matagorda County officials had a conference Thursday to look to the future by discussing the possibility of taking the salt out of brackish water to use for drinking and agricultural purposes.

Brackish water is the result of saltwater and fresh water combining in the ground or on the water's surface, said Steve Young, engineering senior hydrogeologist for United Research Services. The salt can be removed through a process called desalination.

A desalination plant could be a reality for the county if research proves the project would be worth the cost. Some grants are available through the Texas Water Development Board to build a plant, but the majority of the cost would rest on the counties served by it, said Jorge Arroyo, the Texas Water Development Board's director for Seawater and Brackish Water Desalination Initiatives.

"It all comes down to the money," Young said, and right now, that money isn't available.

The Texas Water Development Board likely will bring the issue to the Legislature to try to get funding, Arroyo said, though no official timeline has been set for the project.

It is estimated 2.5 billion acre-feet of brackish groundwater exists in Texas aquifers, but further research needs to be done to determine where the water is and how much is in each area, Young said.

The process of desalination is being practiced in Australia and Florida and there is a plant set up in Brownsville to see how it would work in Texas, Arroyo said.

"As population grows and supported progress continues on, the demand for water increases," Coastal Plains Groundwater Conservation District representative Haskell Simon said. "We must enhance our conservation efforts and we must be innovative in increasing new ways to meet the ever increasing demand."

Common issues with using brackish water include that it's too costly, uses too much energy and is not needed, Arroyo said.

He said the cost for conventional water supplies has increased and the cost for desalination has declined, so the two are meeting in the middle.

The cost to construct a desalination plant is from \$2 million to \$26 million, depending on the capacity of the plant, and water would cost about \$1.30 per 1,000 gallons, he

said, which is about the same cost as fresh water.

"This is an established technology," Arroyo said. In the coastal area, "We have brackish groundwater availability, and we have access to, for practical purposes, a limitless supply of ocean water."

It is wiser to look at water desalination now before alternate water supplies are a necessity, he said.

Coastal areas have a large supply of brackish water, but, most of it lies at the bottom of the aquifers, Young said. More study needs to be done to see how digging wells to get the water out would affect the freshwater supplies.

"A couple of years ago, we knew brackish water was available and we just assumed it would be a matter of dropping the well and adding a little treatment, a little filtration and use it," Simon said. "We're finding out that it's a little more complicated than that."

The amount of brackish water available is unknown, and without that knowledge, it's not known long the water supply would last, Simon said.

Before plans to build a plant can be developed, several key issues need to be answered, Young said. Where the water would come from, what it would be used for, how long the supply would last and who would manage its progress all are questions United Research Services and the Coastal Plains Groundwater Conservation District would like to have answered.

Reverse-osmosis is the leading process for desalination and involves a pretreatment phase before the water is passed through a membrane to remove salt and other minerals, Arroyo said.

This process would make the water suitable for agriculture or industry and eventually for consumption, Arroyo said.

Though the county is looking into using brackish water, more research needs to be done before any decisions are made, Simon said.

"We don't know that much about it yet, but we're going to continue to pursue it." Simon said. "We've got a grasp of what's needed and I think the next thing we'll do is to go and take the next step as to actually see what we can do about developing it."

In 2005, a pilot plant was proposed at Dow Chemical Co. to explore the possibilities of using desalinated water for drinking, but the plans did not move beyond the discussion stage.

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