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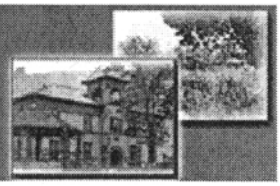

First Well Is Flawed For Carbon Dioxide Storage

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By Tammy Gray-Searles

"Two out of three ain't bad" may be fine for singer Meat Loaf and his fans, but for a carbon dioxide injection experiment near Cholla Power Plant it's just not good enough.

"We were hoping to be able to proceed, but we're not," explained Westcarb Outreach Coordinator Richard Myhre. "There's natural variability in the rock, and we happened to hit a spot that is not suitable."

Westcarb, along with several partners, including Arizona Public Service Co., spent several years planning the test and obtaining the necessary permits. The group spent nearly a month, from July 31 to August 28, drilling a 3,853-foot well. Plans called for carbon dioxide to be injected into the well as part of a test to see if carbon dioxide can be safely stored underground.

Myhre explained that the well needed to meet three main criteria in order for the experiment to proceed. Unfortunately, it only met two of those requirements, but Myhre and other researchers suspect that other sites in the area would likely meet all three.

The requirements included the presence of water that it is not usable for any other purpose, a ceiling formation that would contain the carbon dioxide and permeable stone at the site. Tests at the bottom of the well found that the water was indeed unusable, and had a salinity of three to four times that of sea water; and that an appropriate ceiling existed within the formation. The tests also found, however, that the stone at the bottom of the well was not permeable as expected, meaning it would not accept or contain the carbon dioxide.

"We found that it did not have the necessary permeability for carbon dioxide. We will not be proceeding with this well," Myhre said.

According to Myhre, while the news was disappointing, it does not mean that the effort was in vain or that the researchers will not try again.

"It's already proven useful in terms of geographical data," he noted. "And there is an additional test we can do."

Myhre explained that while carbon dioxide injection is becoming common practice in some other countries, it is new to the United States, and researchers gained valuable experience in drilling the well for the test site and in collecting data from the well. He noted that most of the theories about what would be found in the various geological formations were confirmed, with the exception of the permeable rock.

Researchers still believe, however, that most of the rock at the 3,800-foot level

is permeable, and that what was found at the bottom of the well was an unfortunate variance.

"That same formation has shown good permeability," Myhre remarked. "Broader northeastern Arizona remains a prime candidate for carbon dioxide storage"

The next steps, such as where and when to try again have not yet been determined. Myhre explained that the majority of funding for the project comes from the U.S. Department of Energy, and the agency will ultimately have to approve any future testing attempts. According to Myhre, the project partners are meeting to determine another suitable site, but even if one is chosen and funding is approved, it will be some time before another well could be drilled.

"Any new well site is at least several months off, " he said.

The existing well, which required the use of large oil drilling equipment, could be used for one more experiment involving injection of water and then it will be closed.

In addition to the geological data gathered from the well, myrrh noted that a wealth of educational data has also been made available as a result of the drilling and testing.

Several online pages of information, including details of each geological formation, such as the Moenkopi and Supai formations, have been created and are available for educators, students, and the public. The Web pages also detail the drilling process and provide a detailed explanation of the experiment that was planned. The pages can be viewed at http://www.westcarb.org/AZ_pilot_cholla.html