

QUARTERLY PROGRESS REPORT NO. 7 Victoria ASR Demonstration Project

To:
Matthew L. Webb
Hydrologist
Texas Water Development Board

Copies:
Tim Andruss, VCGCD
Fred Blumberg, Arcadis
Ashley Evans, PE, Arcadis
Debbie Arizpe, Arcadis
Arcadis Team

ARCADIS U.S., Inc.
TX Engineering License # F-533

From:
Lynn Short (LSPS Solutions)—Project Manager
Donald Reese (City of Victoria)—Director of PW

Date:
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ARCADIS Project No.:
25963002.0000

Subject:
Quarterly Progress Report for the Victoria ASR Demonstration Project (**Contract No. 1600011958**) for **April 1, 2018 through June 30, 2018**.

Introduction:

The Victoria Aquifer Storage and Recovery (ASR) Demonstration Project is being partially funded by the Texas Water Development Board (TWDB) under Rider 25 to HB 1 (General Appropriations Act) of the 84th Legislature. The “Project” generally consists of: permitting, designing, and constructing an ASR retrofit to an existing City of Victoria groundwater production well (Well No. 19); constructing a potable water pipeline for recharge and recovery purposes; conducting training and preparing an operation and maintenance (O&M) manual; cycle testing and assessment of the operational ASR well; and making presentations summarizing results. The Project Contractor is the Victoria County Groundwater Conservation District (the “Victoria County GCD”) and the primary Project Participant is the City of Victoria, Texas (the “City”). The Project consulting and engineering team consists of Arcadis U.S., Inc.; ASR Systems, LLC; and INTERA, Inc. (the “Arcadis Team”).

The purposes of this Quarterly Progress Report are to explain what work has been accomplished during the reporting period, and to describe any potential or anticipated challenges.



Figure 1: Existing Well 19 Pumphouse and Piping

Work Completed:

Task 1: Project Management. During this reporting period the Arcadis Team continued with project management activities. Arcadis began work on the next quarterly invoice and progress report which will be reviewed and commented upon by the City of Victoria and the Victoria County GCD.

In July the Arcadis Team decided that the scheduled internal calls could be held monthly, with special calls as needed to address specific topics. The Project participants also continued to hold monthly progress conference calls. The latest group call was held on July 19, 2018.

Task 2: Permitting. On April 28, 2017, the City received its authorization for a Class V Injection Well (Authorization No. 5X2500127). On July 17, 2017 the Arcadis Team received the letter of conditional approval for construction of the facilities from the TCEQ Plan Review Team.

Task 3: ASR Facilities Design. This task has been completed, with the exception of finalizing the as-built drawings.

Task 4: Retrofit of Well No. 19. Weisinger completed all “downhole” work and installation of the motor on March 27, 2018. Testing of the pump and motor was completed on April 4, 2018. The pump tests showed production in excess of the 1,500 gpm specification. See photos below.

Mercer Construction completed work on the above-ground ASR facilities (piping, valves, meter, chemical feed equipment, and discharge structure) on April 2 and 3, 2018. See photos below.

Task 5: Potable Water Line Construction. The City has completed construction of the 12-inch potable water pipeline and the 2-inch trickle feed pipeline.

Task 6: Training and Preparation of O&M Manual. The training program for the City was conducted by Tom Morris of ASR Systems on May 8, 2018. The training was conducted at the Victoria Surface Water Treatment Plant (SWTP). The training consisted of four hours of classroom instruction at the SWTP training room, followed by approximately three hours of field instruction at Well 19.

Task 7: Cycle Testing and Assessment. The City began recharging with potable water from the distribution system on April 9, 2018. On April 9, 2018 the City began collecting water level and water quality data using the guidance provided in the *Start Up and Cycle Testing Operations Manual*.

On May 8, 2018 as part of the field instruction and start-up assistance by Arcadis and ASR Systems, the City attempted to begin recovering stored water. During this process, however, the pump locked up, and the recovery effort was stopped. A representative of the pump manufacturer was on site the following day, and corrections were made.

On May 9, 2018 the City again began recovering water. The City pumped stored water to waste for about 45 minutes. During that period of time, the well produced about 2 cubic yards of sand, and the City decided to stop recovery pending investigation of the problem with the well. Subsequently, the City Council approved a proposal from Weisinger Drilling to remove the pump and investigate the reason for the production of sand.

On May 24, 2018, the City of Victoria and Arcadis representatives held a conference call with Kevin Kluge and Matt Webb of the TWDB. The purposes of the call were to inform the TWDB of the situation and to make the TWDB aware of the steps the City is taking to determine the cause of the sand production.

Task 8: Draft and Final Reports. The Arcadis team began preparing the draft report.

Task 9: Presentations. In September 2017 Fred Blumberg submitted an abstract for a presentation on the ASR demonstration projects to *Texas Water 2018*. The presentation was given by members of the project team on April 26, 2018.

In early April 2018 Fred Blumberg provided draft PowerPoint slides to Matt Webb with the TWDB. Mr. Webb gave a presentation on the Texas ASR demonstration projects at the Collier Consulting conference in Austin, Texas.

Mr. Webb also facilitated an ASR panel discussion at the American Ground Water Trust Seminar on June 6, 2017. Members of the project team participated on the panel.

On June 15, 2018 Fred Blumberg gave a second presentation on the ASR demonstration projects to the Capital Area Chapter of the Texas Section of the American Water Works Association. The group had asked for an updated presentation on the projects.

Challenges Identified:

Task 7: Cycle Testing and Assessment. Based on the review of the video and the results of the modified rehabilitation approach, and the higher static water levels (ranging from 30 feet to 22 feet bgs), the Arcadis team expected the ASR recharge rate to be lower than anticipated. The recharge rate was expected to range from approximately 350 gpm to 550 gpm. However, while the City was recharging (see Task 7 above), the recharge rate was in excess of 500 gpm.

As discussed above, the City began recovering stored water on May 9, 2018 but stopped recovery because the well was producing sand. The City is working with Weisinger Drilling to determine if the sand damaged the pump and to investigate the cause of the sand problem.



ASR Training Program for Victoria Staff



New ASR Wellhead Facilities at Well 19



Field Training and Startup Support



Chemical Feed Systems with Eyewash Station



PRV Valve System with Labeling



Bi-Directional Magmeter