

QUARTERLY PROGRESS REPORT NO. 6 (CY 2018)
NBU ASR Demonstration Project

To:
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From:
Fred M. Blumberg

Date:
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ARCADIS Project No.:
40256004.0000

Subject:
Quarterly Progress Report for the NBU ASR Demonstration Project (**Contract No. 1600011957**) for **April 1, 2018 through June 30, 2018**.

Introduction:

The New Braunfels Utilities (NBU) 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: coordination with TCEQ; design for wireline coring in the brackish Edwards Aquifer; wireline coring; design of a monitor well in the brackish Edwards Aquifer; construction of the monitor well and collection of data; preparation of draft and final reports; and presentations on the Project.

The Project Contractor is the Edwards Aquifer Authority (EAA) and the primary Project Participant is NBU. 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.

Work Completed:

Task 1: Project Management. During this reporting period project management activities included communication with EAA and NBU, and among the Arcadis team. NBU and the Arcadis Team meet monthly to review progress on the project, and the Arcadis Team has internal conference calls at least once each month.

On April 11, 2018 NBU, EAA and the Arcadis Team held the fourth Work Group meeting required under the EAA-NBU Interlocal Agreement. The next Work Group meeting is scheduled for July 25, 2018.

Task 2: Coordination with TCEQ. No work on this task has been completed in this reporting period. A meeting with TCEQ will be set after the coring and monitor well have been completed and preliminary data are available.

Task 3: Coring Design. ASR Systems completed work on the specifications, and those technical requirements were incorporated into the NBU Request for Bid (RFB) documents for the coring. Work during this period involves answering questions from the selected contractors.

Task 4: Wireline Coring. Coring was completed by Cascade Drilling on April 5, 2018 to a total depth of 1,096.8 feet bgs. Initial logging of the core to a depth of 536.5 feet bgs was completed by GeoCam on March 26, 2018. A second log to total depth was completed on April 9, 2018.

Task 5: Monitor Well Design. INTERA completed the specifications, and those technical requirements were incorporated into the NBU RFB documents for the monitor well construction. Work during this period involves answering questions from the selected contractors.

Task 6: Monitor Well Construction and Data Collection. Notice to Proceed was issued to Kutscher Drilling for the monitor well on April 16, 2018. Drilling commenced during the week of April 23, 2018. The monitor well was completed on May 29, 2018. The packer between the upper and lower intervals of the Edwards Aquifer was installed by Kutscher at approximately 720 feet bgs. Water quality samples were collected by EAA and INTERA, and sent to a private laboratory for analysis. GeoCam performed geophysical, neutron and sonic porosity, and spinner test (hydraulic) logging of the well. Photos of the monitor well construction are shown below.



Kutscher Drilling Rig



SDR 17 Casing Pipe

Task 7: Draft and Final Reports. During this period the Arcadis Team began working on the early drafts of the required reports.

Task 8: 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, 2018. 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:

NBU's land acquisition activities at the Regional Airport have taken longer than anticipated. On January 25, 2017 NBU and the City of New Braunfels submitted an application to the Texas Department of Transportation (TXDOT) Aviation Division. After the TXDOT review, the application was forwarded to the Federal Aviation Administration (FAA) for final approval.

On January 18, 2018 representatives of NBU and the city of New Braunfels met with FAA officials in Fort Worth to discuss the use of the airport for the ASR program. The meeting was very positive, and a process for lease of Airport property was agreed upon. NBU and the City began working on the lease agreement immediately after the meeting with FAA.

The lease agreement has been negotiated by NBU and the City and is undergoing final review by the NBU attorney. After the lease has been executed by both parties, it will be forwarded to TXDOT Aviation and the FAA.