

AGENDA ITEM MEMO

BOARD MEETING DATE: September 14, 2023

TO: Board Members

THROUGH: Jeff Walker, Executive Administrator
Ashley Harden, General Counsel
Rebecca Trevino, Chief Financial Officer
John T. Dupnik, P.G., Deputy Executive Administrator, Water Science and Conservation

FROM: Natalie Ballew, P.G., Director, Groundwater
Kristie Laughlin, P.G., Manager, Brackish Resource Aquifer Characterization System (BRACS)

SUBJECT: Technical Studies to Support Brackish Groundwater Production Zone Designations

ACTION REQUESTED

Consider authorizing the Executive Administrator to publish solicitations, award, and execute contracts, in a total amount not to exceed \$1,681,446 for technical studies to support brackish groundwater production zone designations.

BACKGROUND

In 2023, the 88th Texas Legislature appropriated \$1,681,446 for Fiscal Years 2024 and 2025 to the TWDB for conducting studies supporting brackish groundwater production zone designation in Texas aquifers, excluding the Dockum Aquifer. Each fiscal year, \$840,723 of these funds must be transferred to the Water Assistance Fund No. 480 to fulfill this purpose.

These appropriations are related to funding initially provided by the 84th Texas Legislature in 2015 to implement Texas Water Code Section 16.060, which directed the TWDB to identify and designate brackish groundwater production zones in areas of the state with moderate to high availability and productivity of brackish groundwater that met certain criteria. To date, BRACS staff (and contractors) have completed 14 aquifer studies, and have nine remaining aquifers that will need to be characterized by December 1, 2032.

KEY ISSUES

The following projects have been identified for funding after reviewing needs for studies and technical tasks for brackish aquifers eligible for brackish groundwater production zone designation. In proposing the projects listed below, we considered research needs identified internally, project ideas solicited from external stakeholders, and policy recommendations provided by regional water planning groups. BRACS received 11 stakeholder ideas, and we incorporated one of them into item 3. The TWDB will publish a request for qualifications for each project.

1. Develop a BRACS study for the Ellenburger-San Saba and Hickory aquifers (not to exceed \$550,000)

The Ellenburger-San Saba and Hickory aquifers are two of the remaining nine aquifers that must have BRACS studies completed before December 1, 2032. The contractor will characterize the hydrogeology and water quality of the aquifers, calculate salinity using geophysical logs, delineate salinity zones, calculate volumes for each salinity zone, and identify potential production areas. This will be a challenging study because these aquifers have complex geological structure and there is limited data available in some counties. Core analyses completed for a 2023 interagency study will be available to support the BRACS aquifer studies for these aquifers.

2. Develop a BRACS study for the Yegua-Jackson Aquifer (not to exceed \$400,000)

The Yegua-Jackson Aquifer is one of the remaining nine aquifers that must have BRACS studies completed before December 1, 2032. The contractor will characterize the hydrogeology and water quality of the aquifers, calculate salinity using geophysical logs, delineate salinity zones, calculate volumes for each salinity zone, and identify potential production areas. This will also be a challenging study because it will not be divided into regional portions, the upper contact of the Jackson can be difficult to identify, and there is not an abundance of previous studies available for this aquifer. Core analyses completed for a 2023 interagency study will be available to support the BRACS aquifer study for this aquifer.

3. Brackish groundwater pilot well (not to exceed \$400,000)

This study will survey and make recommendations of candidate locations for entities 1) interested in developing an existing brackish groundwater production zone, 2) with a brackish groundwater development strategy in the 2022 State Water Plan (SWP), or 3) any other public supply entity without a recommended strategy in the 2022 SWP who has a need to develop brackish groundwater before 2027. The goal will be to 1) collaborate on data collection following guidance from the previous contract report, *Drilling and Logging the Ideal Exploratory Brackish Groundwater Well*¹, to select ideal logging tools, water quality analytes, and appropriate aquifer tests; 2) develop positive stakeholder relations; and

¹ Donnelly and others, 2021. Drilling and Logging the Ideal Exploratory Brackish Groundwater Well, Contract No. 2000012441 report prepared by D.B. Stephens for the Texas Water Development Board, 181 p.

3) promote the development of brackish groundwater. A properly completed pilot well would allow for groundwater sampling and aquifer tests that could confirm salinity and potential production rates from the aquifer, help refine the projected project costs, and inform potential monitoring recommendations – information that could also be useful to other prospective brackish groundwater projects. The project funds would be split between the study and field data collection.

4. Development of a story map for a selected brackish study with brackish groundwater production zones (not to exceed \$150,000)

The goal of this project would be to showcase BRACS studies with designated brackish groundwater production zones using an effective interactive web interface, known as a story map, for stakeholders.

5. Digitization of selected porosity logs (not to exceed \$100,000)

This work will help capture data that is not widespread in the historic water well geophysical log datasets. These data are necessary to determine aquifer properties that will be used for both the salinity and volume calculations.

RECOMMENDATION

The Executive Administrator recommends approval of this item to execute contracts to support brackish groundwater production zone designation as required by Texas Water Code Section 16.060.