

**Metropolitan Domestic Water Improvement District
Board of Directors Meeting**

September 9, 2019

**Approval of the Professional Hydrogeological Services
for E&T 22 Replacement Well Drilling**

Synopsis

The Board of Directors is requested to authorize Clear Creek Associates, LLC (Clear Creek) to perform professional hydrogeological services for E&T 22 Replacement Well Drilling and Testing Oversight under the Professional Services Agreement for Miscellaneous Water Resources Consulting Services.

Background

A well video survey in early 2013 showed significant build-up on the inside of the well casing and that most of the well's perforations were at least half plugged. After brushing and bailing, most of the perforations remained plugged and numerous holes were revealed. This well was only 24 years old at the time and it was clear that the well was aging more quickly than what staff had previously experienced with District wells in other well fields. As such, staff began planning to replace E&T Well 22 with a well-constructed of more robust materials.

The District uses the Miscellaneous Water Resources Consulting Services contract to assist staff in solving water resources supply, planning or management problems in a timely manner. On June 10, 2019, the Board of Directors approved Amendment No. 2 to the Miscellaneous Water Resources Consulting Services contract that anticipated the need for assistance with the replacement of E&T Well 22.

The 5-Year CIP contained in the current budget lists the following activity for E&T 22 Well Replacement:

Activity	Year 1 – 2020	Year 2 – 2021
Planning/Design	\$120,000	\$40,000
Construction	\$300,000	\$603,200

Issues

Several factors associated with the E&T 22 well site make the drilling of this replacement well more challenging than usual including the following:

- The lack of well-defined storm drainage will result in more work required to determine an adequate disposal location for well development and test water.
- The existing well has a very short screen length. The replacement well should have a longer screened interval to help extend the life cycle of the new well, thus requiring drilling to depths not tapped by the current well.
- With the entire surrounding neighborhood on septic systems, the District should be very careful about tapping the uppermost aquifer.
- Nearby wells owned by the City of Tucson penetrate an aquifer composed of high clay content, and some of those wells show elevated arsenic concentrations – both undesirable for a new production well. Thus it would be prudent for the District to conduct zonal sampling and testing in the new well’s pilot boring to rule out any fatal flaws before the well is completed.
- Because of limited room at the site, the drilling contractor may have to install well casing in shorter lengths of pipe. This could double welding time.
- The well site is surrounded by houses in a mostly-residential neighborhood. This will require more public involvement and the use of noise abatement techniques.

These challenges will require time and effort to be resolved or mitigated. Additionally, because concurrent Northwest Recharge, Recovery, and Delivery System (NWRDRS) recovery well drilling will require the attention of District water resources management staff, staff will not be able to dedicate as much field time to replacing E&T 22 as they would normally, necessitating more consultant assistance.

Staff requested a scope and fee estimate from Clear Creek for assistance with design, construction inspection, and testing of the replacement well. Clear Creek, the District’s on-call water resources consultant, provided the attached scope and fee estimate. Clear Creek’s scope assumes District staff will provide 30% of field oversight and inspection activities. Clear Creek’s fee estimate of \$90,900 includes a 5% contingency.

Funding for this project is contained in the Fiscal Years 2020 and 2021 budget within the Capital Improvement Program.

Staff Recommendation

Staff recommends the Board of Directors approve using Clear Creek Associates, under the Professional Services Agreement for Miscellaneous Water Resources Consulting Services, to perform hydrogeological program support for E&T 22 replacement well drilling and testing for the not-to-exceed amount of \$90,900.

Suggested Motion

I move that the Board of Directors approve using Clear Creek Associates, under the Professional

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Services Agreement for Miscellaneous Water Resources Consulting Services, to perform hydrogeological program support for E&T 22 replacement well drilling and testing for the not-to-exceed amount of \$90,900.

Respectfully submitted,

Wally Wilson
Water Resources Manager

I concur with the above recommendation.

Respectfully submitted,

Joseph Olsen, P.E.
General Manager