

Council Meeting Staff Report

September 19, 2018

Agenda No.:	7.B
Indexes (Council Goals):	BCC - N/A
Presenters:	James Alarid
Legislative File:	11150-18

Title

Consideration of Change Order No. 5 to Services Agreement AGR17-30 and Budget Revision 2019-16 for the Otowi Well #2 Design, Drilling and Development Project

Recommended Action

I move the Board of Public Utilities approve Change Order No. 5 to AGR 17-30 for the Otowi Well #2 Design, Drilling and Development Project in the amount of \$446,490.16 and forward to County Council for approval. I further move the Board of Public Utilities approve Budget Revision 2019-16 as summarized on Attachment D, and forward to County Council for approval. I further move the budget revision be included in the minutes.

Utilities Manager's Recommendation

The Utilities Manager recommends that Council approve Change Order No. 5 and Budget Revision 2019-16 as requested.

Body

The drilling of Otowi Well #2 began on January 16, 2018. The drilling operation was originally schedule to take 60 days to complete the drilling and install the screen and casing. We have provide as Attachment A, a copy of the construction schedule issued on January 9, 2018. The driller was using the reverse rotary mud drilling method and encountered a fissured basalt geological formation at about 50 feet below ground level. The fissures in the basalt caused the drilling mud to be lost into the formation and drilling was stopped since the cuttings could not be removed from the bore hole due to the loss of circulation. Through February and March the contractor and the DPU negotiated the project's first change order that modified the drilling equipment to change the drilling technique to a dual pipe rotary air drilling methodology. This was a high cost change due to the need to custom fabricate some equipment, re-tool the drilling rig and increase the number of air compressors to drive the air circulation process. Beginning on April 1, 2018 work continued using a combination of the dual pipe rotary air and reverse rotary mud methodologies. Drilling fluid and recirculated air continued to be lost to the formation. The contractor proceeded to use a number of additives to the drilling fluids to attempt to re-establish circulation, but the only effective solution was to install cement in to the bore hole to attempt to seal up the fractures in the formation, then drill through the cement. Several iterations of cementing the bore hole and re-drilling through the cement were performed between April and August. The cost for applying the cement, re-drilling through the cement and the time to perform this work through this 300 foot layer of fissured basalt were the subject of Change Orders 2 and 3. On August 9, 2018 a 28" steel surface casing was successfully installed to a depth of 700 feet below ground surface. This stabilized the bore hole through this problematic basalt layer. Another fractured basalt layer was encountered from 740 feet to 880 feet below ground level. This 140 foot layer of fissured basalt caused similar difficulties but the hole was stabilized with cement. The costs associated with stabilizing this second 140 foot layer of basalt is the subject of Change Order No. 4. As of August 23, 2018 the drilling has progressed well through sand, clay and gravel geological formations. The current project schedule has the drilling operation ending on November 10, 2018, approximately 8 months later than originally scheduled. Attachment Bis the current project schedule.

The contractor has made a claim for the cost associated with the additional time it has taken to drill due to the complications from the unforeseen condition presented by the fissured basalt geological formation. The contractor has presented their actual costs of labor, fuel, per diem and equipment from April 1, 2018 to August 2, 2018 which period represents the timeframe where drilling occurred in the fractured basalt. The contractor has provided a worksheet that compares these actual cost to base contract billable amounts, and deducted any time/materials paid for by other change orders or when equipment was down for repair. DPU staff has verified the supporting information, invoices and labor costs presented by the contractor in support of their claim and they are a accurate representation of their actual costs. This claim is in the amount of \$446,490.16. Change Order #5 is presented as Attachment 3, for the payment of the claimed amount and includes the supporting information which backs up the costs. Staff is in agreement that the fissured basalt geological formations encountered in drilling of the well is an unforeseen condition and the contractor is justified additional payment. Upon review of the supporting information provided by the contractor the cost requested are appropriate. A summary of all change orders is provided below, including proposed Change Order No. 5.

Original Contract	\$2,583,694.07
Change Order #1	\$345,660.70
Change Order #2	\$87,000.00
Change Order #3	\$252,632.79
Change Order #4	\$61,351.44
Change Order #5	\$446,490.16
Total Project	\$3,776,829.16

DPU has continuously evaluated the viability of continuing to drill the well as each change order and associated extra work is considered. DPU staff supports the additional compensation to the contractor included in Change Order No. 5 and continuing to drill and develop the well. The following are considerations supporting staff's recommendation to continue drilling:

1. Based on nearby well drilling logs, the professional opinion of the project hydrogeologist, and DPU staff experience in drilling wells in Los Alamos, we believe have drilled through the vast majority of the basalt expected to be encountered. The drilling is now taking place below the ground water table which reduces the risk of losing fluids to the formation. The remaining 1,400 feet of drilling is expected to be in sand/gravel/clay geologic formations that do not pose the high risk associated with drilling through basalt.
2. The remaining drilling and development work is in the scope of the base contract.
3. The total project cost, if Change Order No. 5 is approved, will be approximately \$3.8 million. We received three bids to drill and develop the well and the highest bid was \$4.05 million. The increased cost of this project is still within the range of competitive pricing for this project.
4. If this well is abandoned, DPU will be faced with permitting and bidding a new well at a new location. It will be a two to three year process to secure environmental clearance and get right-of-way for a new well site. Then another year to two years to drill a new well and place it in service. This creates the risk of losing one of the older well(s) in the system in the interim and possible supply shortages.

In addition to approval of Change Order No. 5, we are seeking approval for the budget revision that will fund Change Order No. 5 and approve an additional \$100,000 contingency that may or may not be needed for the remainder of the project. This contingency would be used if any other unforeseen

conditions are encountered that are justified additional payment. A summary of the budget revision and specific details relating to the item are in Attachment D.

Alternatives

If the board does not approve Change Order No. 5 and Budget Revision 2019-16 the contractor will likely stop working.

Fiscal and Staff Impact/Planned Item

The project was awarded on May 3, 2017 to Wilson and Company, Inc. in the amount of \$2,583,694.07 and a total project budget of \$3,000,000. In May 2018 a budget adjustment for an additional \$350,000 of contingency was approved by the Utility Board and County Council, increasing the total project budget to \$3,350,000. Total costs of change orders to date is \$746,644.93. If Change Order No. 5 is approved the cost of total change orders will be \$1,193,135.09. The additional monies to fund Budget Revision 2019-16 will come from water production fund reserves.

Attachments

- A - Original Construction Schedule January 9, 2018
- B - Construction Schedule Revision September 4, 2018
- C - Change Order No. 5
- D - Budget Revision 2019-16