



**PURCHASING ITEM
FOR
COUNCIL AGENDA
Memo No. CA08-096**

1. Agenda Item Number:
14

2. Council Meeting Date:
November 8, 2007

TO: MAYOR & COUNCIL

3. Date Prepared: October 11, 2007

THROUGH: CITY MANAGER

4. Requesting Department: Municipal Utilities

5. SUBJECT Award a project agreement to Wilson Engineers for construction management of the Tumbleweed Aquifer Storage and Recovery (ASR) Wells 9 and 10 drilling, Project No. WA0806-451, in an amount not to exceed \$86,210.

6. RECOMMENDATION: Staff recommends that Council award a project agreement to Wilson Engineers for construction management of the Tumbleweed Aquifer Storage and Recovery (ASR) Wells 9 and 10 drilling, Project No. WA0806-451, in an amount not to exceed \$86,210.

7. BACKGROUND/DISCUSSION: ASR wells are needed to support the reclaimed water distribution system. ASR wells are used to inject reclaimed water in the upper aquifer when irrigation demands are low. When irrigation water demand is high, these wells are pumped to recover the stored effluent water for use in the reclaimed water distribution system. This project agreement provides for construction management services during the drilling of two ASR wells in the Tumbleweed Recharge area. A construction contract for the drilling of the wells will be awarded separately.

8. EVALUATION: On September 6, 2007, Council approved annual contract, EN0712-101, to Wilson Engineers for permitting, study, construction management services, and design for water and wastewater facilities. Staff has reviewed the scope of work, billing rates, and total fee for this project, compared them to historical costs, and has determined that they are acceptable.

9. FINANCIAL IMPLICATIONS:

Cost: \$86,210
Savings: None
Long Term Costs: None

Fund Source:

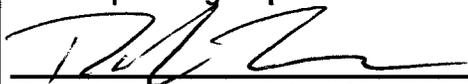
<u>Acct. No.:</u>	<u>Fund Name:</u>	<u>Program Name:</u>	<u>CIP Funded:</u>	<u>Amount:</u>
610.3910.0000.6817.7WW189	Effluent Reuse Bond	Effluent Reuse Storage/Recovery Wells	FY06/07	\$86,210

10. PROPOSED MOTION: Move that Council award a project agreement to Wilson Engineers for construction management of the Tumbleweed Aquifer Storage and Recovery (ASR) Wells 9 and 10 drilling, Project No. WA0806-451, in an amount not to exceed \$86,210, and authorize the Mayor to sign the contract documents.

ATTACHMENTS: Location Map, Project Agreement

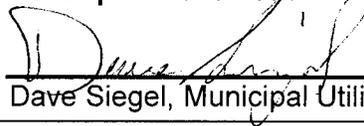
APPROVALS

11. Requesting Department



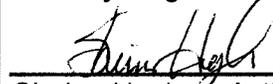
Robert Mulvey, Assistant Municipal Utilities Director

13. Department Head



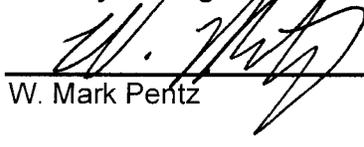
Dave Siegel, Municipal Utilities Director

12. City Engineer



Sheina Hughes, Acting Assistant Public Works Director/City Engineer

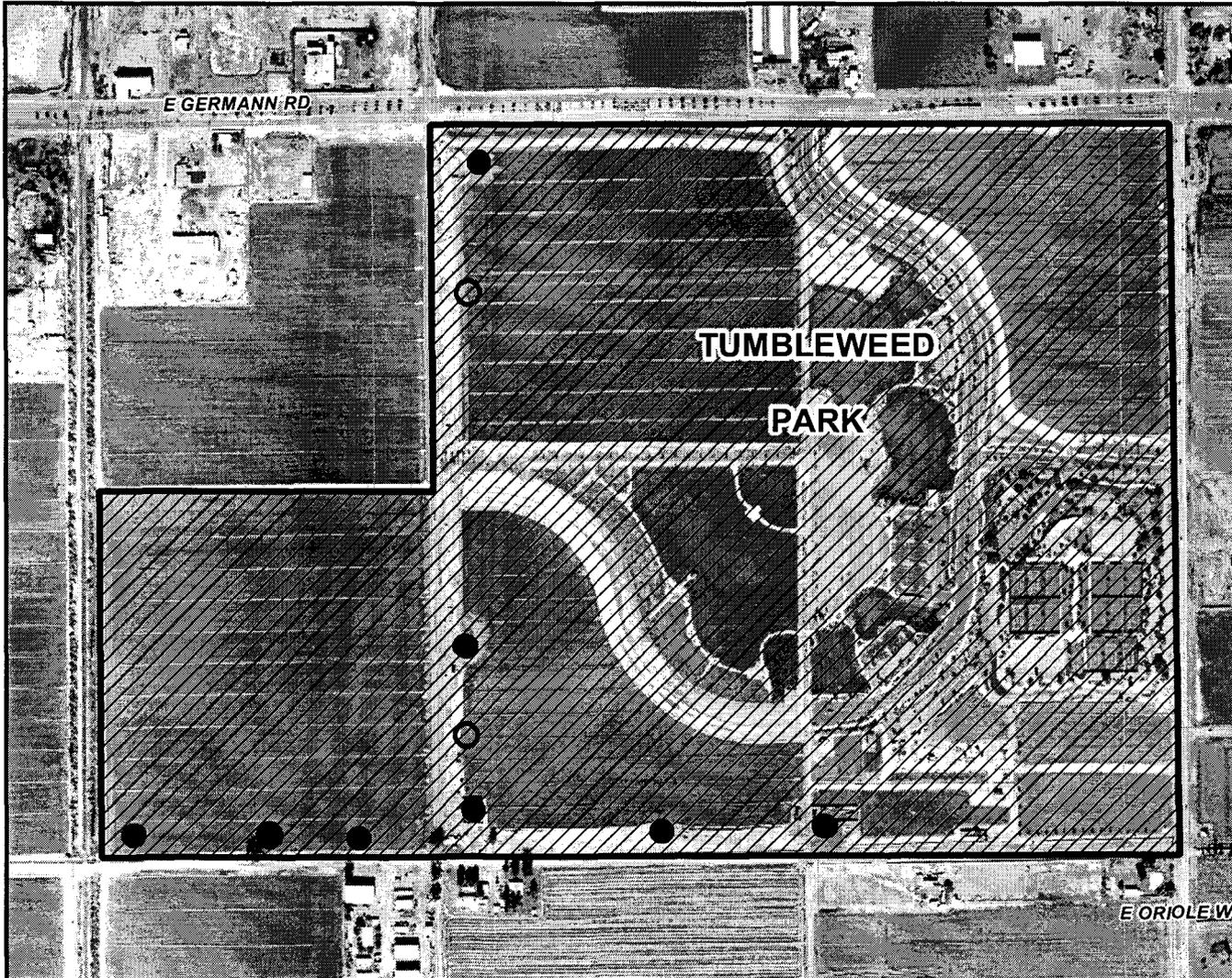
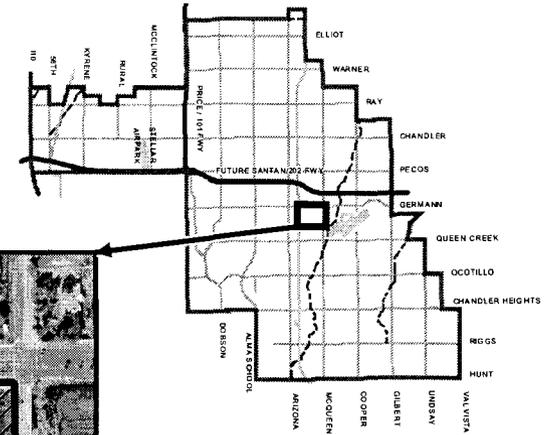
14. City Manager



W. Mark Pertz



TUMBLEWEED ASR WELLS 9 AND 10 PROJECT NO. WW0806 - 451



MEMO NO. CA08-096

LEGEND:

- Existing ASR Wells
- Future ASR Wells No.'s 9 and 10



EXHIBIT A SCOPE OF WORK

ANNUAL CONSUTLANT shall perform work for the permitting and installation of two new Aquifer Storage and Recovery (ASR) wells in Chandler, Arizona, referred to as Tumbleweed Wells 9 and 10.

ANNUAL CONSULTANT shall complete the permit applications as required by ADWR to obtain the necessary drilling permits. ANNUAL CONSULTANT shall also obtain an Arizona Pollution Discharge Elimination System (AZPDES) permit for *deminimus* discharge, if necessary, for disposal of drilling and testing fluids. This scope of work assumes that a pilot hole will be drilled initially, to evaluate the aquifer from a water quantity standpoint. ANNUAL CONSULTANT shall provide construction management for well installation and prepare a final well installation report. ANNUAL CONSUTLANT shall also obtain permits for and provide oversight and documentation of the abandonment operations for ten (10) existing vadose zone recharge wells.

Task 1.0 Well Permitting

ANNUAL CONSUTLANT shall perform all necessary permitting for the installation of the ASR wells. ANNUAL CONSUTLANT shall submit a Notice of Intent to Drill form, along with the appropriate permit fee, to the Arizona Department of Water Resources (ADWR) for each well. Task 1.0 also includes addressing any issues related to the AZPDES permit requirements for *deminimus* discharge from the wells during construction and testing activities. If needed, ANNUAL CONSUTLANT shall prepare the necessary documentation to obtain the appropriate AZPDES permit. ANNUAL CONSUTLANT shall also submit a Notice of Intent to Abandon form to ADWR for each of the recharge wells to be abandoned.

Well permitting also includes Recovery Well Permitting for the new wells. As part of the Recovery Well Permitting, ANNUAL CONSUTLANT shall complete a Well Impact/Well Spacing analysis as required by ADWR. ANNUAL CONSUTLANT shall submit the Recovery Well applications along with the Well Impact Analysis to the City for signature and then to ADWR for processing. ANNUAL CONSUTLANT shall address any deficiencies needed to finalize the permit. This task does not include permit application fees.

Task 2.0 Drilling Oversight

ANNUAL CONSUTLANT shall attend a pre-construction meeting with Wilson Engineers and the drilling contractor (Contractor) prior to commencement of field activities. ANNUAL CONSUTLANT shall provide inspection services during the pilot borehole drilling of each well on a daily basis (typically 8 hours per day, 7 days per week). ANNUAL CONSUTLANT shall analyze the drilled cuttings that have been collected at 10-foot intervals by the Contractor, and shall prepare a descriptive lithologic log of the drilled material. Lithologic logging will enable ANNUAL CONSUTLANT to identify those portions of the aquifer with the greatest potential for groundwater production. ANNUAL CONSUTLANT shall secure the drilled cuttings from each 10-foot interval in chip trays, and shall provide those to the City of Chandler for archival purposes. ANNUAL CONSUTLANT shall submit drilled cuttings from selected intervals of the borehole for sieve analysis by a geotechnical laboratory to determine the appropriate well screen slot size and filter pack grain size necessary to enhance well performance and prevent sand invasion while the wells are in use.

The Contractor will conduct geophysical logging in each borehole to provide additional hydrologic and geologic information. ANNUAL CONSUTLANT shall oversee the performance of the geophysical

logging, and will analyze and report the geophysical logging results. The recommended suite of geophysical logs includes: caliper log (in both the pilot borehole and the reamed borehole); electric log; sonic log; guard log; and natural gamma-ray log.

Task 3.0 Construction Inspection Services

ANNUAL CONSUTLANT shall provide inspection services during the well construction phase on a continual basis (24 hours per day, 7 days per week) throughout the estimated 2-day well construction period for each well. During the well construction phase of this project, continuous (24-hour per day) inspection is essential because the ultimate value of an ASR well relies greatly on the Contractor's adherence to the materials, methods, and technical standards that have been specified. ANNUAL CONSUTLANT shall document the construction materials, installation techniques, and well development techniques via pipe tallies, cement grout records, development records, etc. ANNUAL CONSUTLANT shall collect samples of the filter pack material and cement grout to determine conformance with the project specifications, and shall prepare a detailed As-Built diagram of each ASR well for inclusion in the Well Installation Report (Task 5.0).

ANNUAL CONSUTLANT shall provide inspection services on an intermittent basis (8 hours per day) during well development operations, throughout the estimated 3-day development period for each well to assure that the well development is conducted in compliance with the specified standards and in a manner consistent with local aquifer conditions. In addition, ANNUAL CONSUTLANT shall provide inspection services for the final well video survey and the plumbness and alignment survey. ANNUAL CONSUTLANT shall prepare a video survey log to document the content of the final video, and will include the log in the Well Installation Report (Task 5.0).

Task 4.0 Post-Construction Well Testing and Analysis

Prior to test pumping the new wells, ANNUAL CONSUTLANT shall coordinate with City of Chandler staff to identify a water discharge area and coordinate efforts to minimize public relations problems that may result from the discharge of large volumes of water. ANNUAL CONSUTLANT shall provide logistical coordination of the discharge of water from the well site in accordance with any discharge permit issues or limitations that were identified during Task 1.0.

ANNUAL CONSUTLANT shall coordinate and analyze a 10-hour step-rate pumping test and a 24-hour constant rate aquifer test at each new ASR well. This task also includes a 4-hour water level recovery test after the completion of the constant rate aquifer test. The Contractor will provide the test engine, motor, and ancillary equipment for both tests, and will be responsible for maintaining and operating the equipment during the tests. The step-rate pumping test will consist of five varying pumping rates (steps), each approximately 2 hours in duration. ANNUAL CONSUTLANT shall record the water-level measurements and water quality field parameters, including electrical conductivity, sand content, pH, and temperature of the discharge water.

Following the step-rate pumping test, ANNUAL CONSUTLANT shall conduct a constant rate aquifer test of approximately 24 hours at each new well. During the constant rate aquifer test, ANNUAL CONSUTLANT shall collect the initial 8 hours of water-level measurements, and shall coordinate the collection of subsequent water-level data by the Contractor. The optimum pumping rate of the well (determined during the step-rate pumping test) will be maintained throughout the constant rate aquifer test.

After the cessation of pumping, ANNUAL CONSUTLANT shall conduct a water-level recovery test for a period of 8 hours, or until 95% water-level recovery has been achieved (whichever occurs first).

This task also includes start-up support for the new ASR wells once the permanent pump equipment has been installed. ANNUAL CONSUTLANT shall monitor the initial start-up and injection test activities.

Task 5.0 Well Installation Report

ANNUAL CONSUTLANT shall prepare a well installation report summarizing all work conducted during the installation of the ASR wells. The well installation report will include all documentation collected during well drilling and installation including, but not limited to, pipe tallies, grout records, penetration rate logs, geophysical logs, the lithologic log, zonal groundwater sample results, aquifer test results, the final plumbness and alignment analysis, and the final video log. ANNUAL CONSUTLANT shall also include a detailed As-Built drawing of each ASR well in the report. Task 5.0 deliverables include five (5) draft copies to the City of Chandler for review, and ten (10) final copies of the Well Installation Report.

Task 6.0 Well Abandonment Oversight

ANNUAL CONSUTLANT shall oversee the abandonment activities of the ten existing vadose zone recharge wells. ANNUAL CONSUTLANT shall document type of material(s) used to complete the abandonment, the volumes, method of placement, and any other pertinent information. ANNUAL CONSUTLANT shall provide the information recorded during the well abandonment operations in a letter report separate from the ASR Well Installation Report. Task 6.0 deliverables include ten (10) copies of the abandonment letter report.

Task 7.0 Project Management/Meetings

ANNUAL CONSUTLANT shall provide overall technical and financial management of the project. This task includes weekly and monthly financial tracking by the project manager, preparation of monthly billing letters, and overall project coordination. In addition, ANNUAL CONSUTLANT shall facilitate a number of meetings during the course of the project, to accommodate communication with the project team. ANNUAL CONSUTLANT has budgeted for ten weekly meetings to be attended by the project manager and/or the senior hydrogeologist during the well installation/abandonment portion of the project.

**EXHIBIT B
FEE SCHEDULE**

Task	Task Description	Proposed \$ 2,760	Staff 12 \$ 1,200	Travel \$ 0	Materials \$ 0	Other \$ 550	Total \$ 2,760
Task 50	Hydrogeological Services - See Other Direct Costs		12			12	\$ 2,760
Subtotal - Wilson Labor Summary		0	12	0	0	12	\$ 2,760

II. Other Direct Costs

Task No.	Task Description	Unit	Rate/Unit	Cost/Unit	Markup	Total
50	Clearok - Hydrogeological S/b (see attached breakdown)	LS	1	\$ 79,476	5%	\$ 83,450
Subtotal - Other Direct Costs						\$ 83,450

*Markup for insurance and overhead

III. TOTAL FEE PROPOSAL

I	LABOR SUMMARY	\$ 2,760
II	OTHER DIRECT COSTS	\$ 83,450
III	TOTAL FEE	\$ 86,210