

## EXHIBIT 6-B



January 15, 2014  
Project No. 12-0044

Monterey Peninsula Water Management District  
5 Harris Court, Building G  
Monterey, California 93942

Attention: Mr. Joe Oliver, Water Resources Manager

Subject: Proposal for Hydrogeologic and Engineering Services for Phase 2 ASR Project;  
Fiscal Year 2013-2014 Program

Dear Mr. Oliver:

In accordance with your request, Pueblo Water Resources, Inc. (PWR) is pleased to submit this proposal for the extension of ongoing hydrogeologic and engineering services for the Monterey Peninsula Water Management District (MPWMD or District) Phase 2 Aquifer Storage and Recovery (ASR) Project (a.k.a. Water Project 2). Presented in this proposal is a detailed scope of work, estimated costs, and schedule to assist the District with various Phase 2 ASR-related tasks during the remaining period of Fiscal Year 2013-2014 (FY 2013-2014).

### BACKGROUND

The Phase 2 ASR Project is part of the District and California American Water (CAW or Cal-Am) cooperative implementation of Aquifer Storage and Recovery (ASR) at the Seaside Middle School (SMS) ASR Facility site, which generally consists of two full-scale ASR wells (ASR-3 and ASR-4) and appurtenant facilities. ASR-3 was constructed in 2010 and underwent initial injection testing during Water Year (WY) 2012. ASR-4 was constructed in 2012 and was equipped and intertied into the CAW distribution system during 2013 in order to be operational for the WY 2014 injection season. When fully implemented, the Phase 2 ASR Project is estimated to yield an average of 1,000 acre feet per year (afy) and has a combined dual-well injection/recharge rate permitted with the State Water Resources Control Board of 8 cubic feet per second, equivalent to approximately 3,590 gallons per minute (gpm).

Although the two SMS ASR wells are now fully operational, portions of the ancillary SMS site facilities remain to be completed during FY 2013-2014, including the following:

- Design / construction of a permanent water service from the Marina Coast Water District (MCWD) for the site
- Completion of the access driveway from General Jim Moore (GJM) Blvd to the site
- Development of a Facility Operations & Maintenance (O&M) manual for the site

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**PUEBLO WATER RESOURCES, INC**

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As you may also recall, we documented in the WY 2012 Summary of Operations Report that the ASR-3 well experienced a significant decline in performance as a result of residual plugging from initial injection testing performed during WY 2012. This well plugging has reduced the current injection and extraction capacity of ASR-3, and if not mitigated, could also reduce the well's useful service. Based on discussions with your staff, it is planned to implement a clean-in-place (CIP) rehabilitation program at ASR-3 during FY 2013-2014 as a means to potentially restore lost performance. In addition, startup testing of ASR-4 is planned during WY 2014 (depending on availability of water) to establish the baseline injection well hydraulics and optimum performance parameters for this new ASR well.

## **PURPOSE AND SCOPE**

The purpose of the proposed work is to provide the following hydrogeologic and engineering services related to the Phase 2 ASR Project during the remainder of FY 2013-2014:

- Assist the District with completing the remaining Seaside Middle School site facilities;
- Implement clean-in-place (CIP) rehabilitation of the ASR-3 well;
- Provide startup assistance and baseline injection testing of the ASR-4 well, and;
- Coordinate with CAW regarding incorporation of Monterey Peninsula Water Supply Project (and other CAW ASR projects) into the site facilities and ASR program.

### **Scope of Services**

#### **Task 1 – Seaside Middle School Site Engineering and Construction Management**

This task includes engineering and construction management services for the completion of the SMS ASR site facilities. Specific work items in this task include the following:

Task 1.1 – Completion of site civil work. This task includes the completion of the SMS site grading / paving / drainage work which was partially implemented in 2013 with the ASR-4 intertie project. The completion of the full site grading and access driveway paving will be facilitated as a contract change order to MPE of Marina, California, who was contracted to perform the initial grading / roadwork up to the Electrical Utility Building. MPE has agreed to the same unit price quantities for this additional work, and is prepared to complete the job within 2 weeks of authorization. Services in this task also include materials testing, construction observation, and as-built plan documentation for the work.

Task 1.2 – Implementation of Permanent Water Service for site. This task includes the design and construction of a permanent metered water service connection to the MCWD to replace the temporary service connection that has been used since 2011. Both the MCWD and the Seaside Fire Department are anxious to remove the temporary hydrant meter located on the school property and install an underground metered service for utility and landscape use on the property.



Task 1.3 – Final Instrumentation Equipment for site. The process of facility construction identified several minor instrument devices that were incorrectly identified at ASR-3 and ASR-4, and were noted as ‘provided by District’. This subtask includes the purchase of the missing instruments and coordination with the controls subconsultant to install / calibrate these devices.

Task 1.4 – SMS Facility O&M Manual. With the completion of the SMS facility, an Operations and Maintenance manual will be developed to document the facility design and construction, facility operations and routine and special maintenance measures and triggers to initiate such activities. The O&M manual will include as-built documentation of the site and facilities, manufacturers’ literature for major equipment, and PLC program documentation for the system instrumentation and controls.

## **Task 2 – ASR-3 CIP Rehabilitation**

This task consists of a near-term effort to improve ASR-3 well performance utilizing a mechanical “clean-in-place” (CIP) redevelopment technique that does not require removal of the existing pump from the well and can be implemented relatively quickly and inexpensively. The proposed mechanical approach consists of a modified version of “juttering” (Huisman and Olsthoorn, 1983) combined with backflush pumping. Juttering is a technique that typically combines airlift pumping with injection of compressed air into the well casing to produce multiple rapid flow reversals. The creation of repeated flow reversals causes a washing action through the screen that can loosen and dislodge solids that tenaciously cling to grains of sand that straight backflush pumping alone cannot remove. As modified for the proposed CIP effort, the existing vertical turbine pump would be utilized instead of airlift pumping to reverse flow in the well screen and pump to waste. The air injection/release would occur through the existing 3-inch-diameter casing vent tube, which enters the casing near the base of the pump foundation and would be connected to a high capacity (750 cfm) air compressor to allow either air injection or release.

It is noted that formal rigorous mechanical and chemical rehabilitation of the well (e.g., similar to that successfully performed at ASR-1 in 2007 and ASR-2 in 2011) would likely be effective in restoring lost performance at the well; however, such formal rehabilitation requires removal of the existing vertical-turbine pump and utilization of various downhole tools and techniques (e.g., zone isolation dual-swab airlifting, acid injection, etc.) by a licensed well contractor, and is relatively expensive to implement (contractor costs of approximately \$75K - \$100K, not including oversight). The proposed CIP is an effort to determine if alternative, less costly, methods can be implemented to restore ASR well performance; however, if the CIP results in limited benefits, a recommendation for formal rehabilitation of ASR-3 during FY 2014-2015 may be made.

## **Task 3 – ASR-4 Startup Assistance and Baseline Injection Testing**

Task 3.1 – Startup Assistance and Injection Conditioning. Prior to formal baseline injection testing, startup testing of injection piping hydraulics, instrumentation, metering, valving, etc., will be performed. In addition, we recommend that ASR-4 undergo injection “conditioning” in an effort to limit the amount of residual plugging that has historically been observed at all



three existing ASR wells following their initial injection operations. This conditioning is envisioned to consist of initial injection at relatively low rates and durations, being incrementally increased following thorough backflushing and upon confirmation that well performance is being maintained. It is envisioned that this conditioning will occur over the course of several days until the design injection rate is achieved.

Task 3.2 – Baseline Injection Testing. This task consists of performing baseline injection testing of ASR-4 following the initial conditioning effort. The primary purpose of the testing is to establish the baseline injection well hydraulics and performance of the new well. Primary issues to be investigated include:

- Determination of injection well efficiency and specific capacity;
- Evaluation of injection well plugging rates (both active and residual);
- Determination of optimal rates, frequency, and duration of backflushing in order to maintain long-term injection capacity, and;
- Determination of long-term sustainable injection rates.

The baseline testing program is planned to include the following steps:

1. 8-hr variable rate injection testing (combined with downhole velocity surveys);
2. 24-hr constant rate injection test;
3. 7-day constant rate injection test;
4. Backflushing between each injection test, and;
5. Post-injection production performance testing.

At the conclusion of the baseline testing program, recommendations for the long-term injection operations during the remainder of the WY 2014 recharge season and beyond will be provided.

#### **Task 4 – Project Management and Meetings**

PWR will review existing conditions at the site and meet with District and CAW staff to discuss FY 2013-2014 program goals and scheduling for the Phase 2 ASR Project. In addition, it is anticipated that on-going “ASR Coordination” meetings between the District and CAW will be required during the FY 2013-2014 period. Consistent with past practice, it is assumed that meetings will be held on an approximate monthly basis and will be attended by a PWR Principal Engineer and/or Hydrogeologist, depending on meeting agenda and project needs at the time. To the extent feasible, PWR attendance at meetings will be coordinated with other project tasks to minimize overall project costs.

#### **Services Not Included**

Services which are (or may be) necessary for the completion of this project, which are not included in our proposal include the following:



- Water-quality sampling and analyses (assumed District and/or CAW provided);
- Construction of site facilities (except as noted);
- Permit fees;
- Cost of water, electricity, or other utilities;
- Any others items not specifically included in PWR's scope of services.

### **Estimated Fees and Schedule**

Based on the scope of services presented herein, we estimate the fees for our services will be approximately \$223,645, which will be billed on a time-plus-expenses basis in accordance with our current Fee Schedule (attached). An estimated fee summary worksheet is attached summarizing the estimated man-hours and costs per task/work item. A 10 percent contingency has been noted in the attached budget summary (total with contingency is \$246,010) in the event that unforeseen project complications or constraints arise. We recommend the contingency be held for authorization by District staff upon written justification by PWR.

We understand that in order to authorize this work, your Board must first approve a formal contract amendment. We also understand implementation of individual tasks described herein are subject to advance approval from District staff as certain tasks may be contingent upon the District's reimbursement funding approval process. Based on our current workload, we believe that we can commence work within two weeks of your authorization and that the work will be completed by the end of the fiscal year (June 30, 2014).

We appreciate the opportunity to provide assistance to the District on this important water supply project. If you require additional information regarding this or other matters, please call us.



Sincerely,

PUEBLO WATER RESOURCES, INC.

Robert C. Marks, P.G., C.Hg  
Principal Hydrogeologist

Stephen P. Tanner, P.E.  
Principal Engineer

RCM:SPT

Attachments: 2014 Fee Schedule  
Cost Estimation Spreadsheet

**MONTEREY PENINSULA WATER MANAGEMENT DISTRICT**

**Professional Services for Phase 2 ASR Project**

Fiscal Year 2013-2014

PWR Project No.: 12-0044



**ESTIMATED FEE SUMMARY**

LABOR		Principal Professional	Senior Professional	Project Professional	Staff Professional	Technician	Drafting	WP	Hours by Task	Estimated Task Cost
Task No.	Task Description	Hourly Fee								
		\$185	\$170	\$155	\$125	\$115	\$100	\$80		
1.1	Site Civil Engineering and Construction Mgmt	35			20				55	\$8,975
1.2	Permanent Utility Water Service Engr	30			6		12		48	\$7,500
1.3	Misc Instrumentaion	4			1			2	7	\$1,025
1.4	SMS Facility O&M Manual	75	55				24	10	164	\$26,425
2	ASR-3 CIP Rehabilitation	20	40	-	-	-	-	-	60	\$10,500
3	ASR-4 Start Up Assistance	30	120	-	-	-	-	-	152	\$26,110
4	Project Management and Meetings	40	30	-	-	-	-	-	72	\$12,660
		-	-	-	-	-	-	-		
<b>Hours by Labor Category:</b>		234	245	0	27	0	36	16		
<b>Costs by Labor Category:</b>		\$43,290	\$41,650	\$0	\$3,375	\$0	\$3,600	\$1,280		
									<b>Total Labor Hours:</b>	<b>558</b>
									<b>Total Labor Costs:</b>	<b>\$93,195</b>

OTHER DIRECT COSTS (ODC's)				
Task No.	Item	Units	Unit Price	Fee
1	Vehicle	Daily	\$75	\$0
1	Travel Per Diem	Daily	\$150	\$0
2	Vehicle	Daily	\$75	\$375
2	Travel Per Diem	Daily	\$150	\$750
3	Vehicle	Daily	\$75	\$750
3	Travel Per Diem	Daily	\$150	\$1,500
4	Vehicle	Daily	\$75	\$375
4	Travel Per Diem	Daily	\$150	\$750
<b>Subtotal ODCs:</b>				<b>\$4,500</b>

OUTSIDE SERVICES				
Task No.	Item	Units	Unit Price	Fee
1.1	Special Inspection / materials testing	1	\$8,700	\$8,700
1.1	IMPE construction fees	1	\$96,500	\$96,500
1.2	Misc Instrumentation	1	\$1,800	\$1,800
2	Air Compressor Rental	Daily	\$500	\$2,500
3	Downhole Velocity Surveys	Lump Sum	\$5,000	\$5,000
<b>Subtotal Outside Services:</b>				<b>\$114,500</b>
<b>Subtotal Outside Services w/ Markup (10%):</b>				<b>\$125,950</b>

COST SUMMARY	
Labor	\$93,195
Other Direct Costs	\$4,500
Outside Services	\$125,950
<b>Subtotal:</b>	<b>\$223,645</b>
<b>10 % Contingency</b>	<b>\$22,365</b>
<b>TOTAL ESTIMATED PROJECT COST:</b>	<b>\$246,010</b>