San Gabriel Basin Water Quality Authority



1720 W. Cameron Avenue, Suite 100, West Covina, CA 91790 • 626-338-5555 • Fax 626-338-5775

WQA ADMINISTRATIVE/FINANCE COMMITTEE TO BE HELD ON TUESDAY, FEBRUARY 13, 2024 AT 10:00 A.M. AT 1720 W. CAMERON AVE., SUITE 100 IN WEST COVINA, CA

Zoom Registration Link:

https://us06web.zoom.us/meeting/register/tZAtdeugrjMsGNYGFsOeFYqniOYroP-iq_Xu

AGENDA

Committee Members:

Lynda Noriega, Mark Paulson and Robert DiPrimio

Liaison Member:

Dave Michalko

- I. Call to Order
- II. Remote Participation Declaration AB 2449 [Government Code Section 54953(f)]
 - a. Notification of Just Cause
 - b. Emergency Circumstances Requests
- III. Public Comment
- IV. Discussion Regarding Public Comments on the Draft 2024 §406 Plan
- V. Discussion Regarding Task Order for Avocet Environmental for Design and Construction Management of the Whitmore Street Groundwater Remediation Expansion Implementation Project [enc]
- VI. Executive Director's Report
- VII. Adjournment



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AGENDA SUBMITTAL

Subject:	Task Order to Avocet Environmental Inc. to Provide Design and Construction Management for the Whitmore Street Groundwater Remediation Facility Expansion Implementation Project
Date:	February 13, 2024
From:	Randy Schoellerman, Executive Director
То:	WQA Administrative/Finance Committee

<u>Summary</u>

Staff is recommending issuing a Task Order to Avocet Environmental Inc. (Avocet) to provide engineering design and construction management for WQA's Proposition 1 Whitmore Street Groundwater Remediation Facility (WSGRF) Implementation Project. The funding under this grant is for the purpose of expanding the existing WSGRF to enhance the capture and remediation of a 1,4-Dioxane contaminant plume in the shallow zone of an area within the South El Monte Operable Unit as identified in WQA's previous Proposition 1 Planning Grant work.

Background & Discussion

The State Water Resources Control Board Division of Financial Assistance awarded WQA a Proposition 1 Implementation Grant for the WSGRF Implementation Project in the amount of \$4,153,452 which includes a 0% local match. The total proposed project budget for Avocet is \$682,000 and is detailed in their attached proposal. Avocet has unique experience that is important to the success of this project. They designed and constructed the existing WSGRF project and have been operating it for the past 15 years. In addition, Avocet was WQA's contractor for the Proposition 1 Planning Grant work that was used as the basis for obtaining this Proposition 1 Implementation Grant. Therefore, this work is also considered a continuation of the previous grant. Given these factors, staff believes this task order qualifies as a Class VII Sole Source and recommends committee approval of this classification along with the approval of the task order.

Recommendation/Proposed Actions

Authorize Class VII Sole Source Task Order for Avocet not to exceed \$682,000 for the engineering design and construction management of the Proposition 1 Whitmore Street Groundwater Remediation Facility Implementation Project for Board approval.

Attachments:

Avocet Proposal for Proposition 1 Whitmore Street Groundwater Remediation Facility Implementation Project dated February 6, 2024. ENVIRON

February 6, 2024

Project No. 1128.013

Mr. Randy Schoellerman, P.E. Executive Director SAN GABRIEL BASIN WATER QUALITY AUTHORITY 1720 West Cameron Avenue, Suite 100 West Covina, California 91790

Proposal for Proposition 1 Grant Implementation

Whitmore Street Groundwater Remediation Facility Expansion El Monte, California

Dear Mr. Schoellerman:

Pursuant to your request, Avocet Environmental, Inc. (Avocet) is pleased to submit this proposal to the San Gabriel Basin Water Quality Authority (WQA) for the implementation of a recently awarded Proposition 1, Round 3 grant for expansion of the Whitmore Street Groundwater Remediation Facility (WSGRF) in El Monte, California (the site).

OVERVIEW

On behalf of WQA, Avocet designed and built the WSGRF system at the former JAB Holdings, Inc. (JAB) property and has been operating it since December 2007 to hydraulically contain 1,4-dioxane in Shallow Zone aquifer groundwater. The Shallow Zone aquifer consists of three discrete or semi-discrete water-bearing zones, dubbed the Upper, Middle, and Lower Zones, although the Upper Zone is mostly dry because of a drought-related regional decline in the water table. The WSGRF includes extraction wells on the former JAB property and on the adjoining property to the west. In addition to 1,4-dioxane, the WSGRF treatment system removes volatile organic compounds (VOCs), notably tetrachloroethylene (PCE), trichloroethylene (TCE), and their degradation byproducts, from the extracted groundwater. The PCE is believed to be attributable to releases at the former JAB property; however, the source(s) of the TCE and 1,4-dioxane is (are) unclear, not least because the highest 1,4-dioxane concentrations are generally present in the Lower Zone in the WSGRF extraction wells located west of the former JAB property, and the horizontal groundwater flow direction in the Upper, Middle, and Lower Zones is not consistent and, in the Middle Zone, appears to vary with time.

Avocet conducted two phases of "offsite" investigation, in 2019 and 2021, to further delineate the lateral and vertical distribution of 1,4-dioxane and VOCs, particularly TCE, in the Shallow Zone aquifer. In brief, the offsite investigation in 2019 involved the collection of one-time groundwater grab samples from borings on the northwest-adjoining property at 9320 Telstar Avenue, which was owned and occupied in the past by Aerojet-General Corporation (Aerojet). The offsite investigation in 2021 involved the collection of one-time groundwater grab samples from borings on the northwest-adjoint property and the installation and sampling of three dual-nested monitoring wells and sampling of selected existing monitoring wells. In brief, the data from these investigations indicate that 1,4-dioxane and TCE are more widespread than previously

Proposal for Proposition 1 Grant Implementation

Whitmore Street Groundwater Remediation Facility El Monte, California

thought in the Middle and Lower Zones and, hence, an expansion of the existing WSGRF is appropriate. To that end, Avocet assisted WQA in preparing a *Proposition 1 GWGP Implementation Full Proposal* (Prop 1 grant) for WQA to acquire Proposition 1, Round 3 funding to expand the WSGRF (Avocet, July 8, 2022). WQA was recently notified by the Division of Financial Assistance (DFA) that the Prop 1 grant was approved subject to DFA's final funding requirements.

PROPOSED SCOPE OF WORK

The scope of work proposed herein is based on the Prop 1 grant and DFA-supplied scope of work (Attachment 1) and is as follows. It should be noted that DFA requires 5-years of post-construction monitoring, and at the request of WQA, costs for the post-construction monitoring will be provided under a separate proposal at a later date.

Project Management

As part of the Prop 1 grant, the DFA requires an updated project schedule that includes key project milestones. Avocet prepared a preliminary schedule for the Prop 1 grant application and will update the schedule based on the DFA-supplied scope of work. The DFA is also requiring that a project sign at least 4 feet tall and 8 feet wide, made of 0.75-inch-thick exterior grade plywood or other approved material, be placed in a prominent location on the site for the duration of the project implementation. As part of Avocet's project management, Avocet will have the sign made and installed as required by the DFA.

General Compliance Requirements and Project Effectiveness and Performance

As part of the Prop 1 grant, there are several requirements related to compliance, including data submittal. Avocet will submit and/or upload the required data to the State Water Resources Control Board's GeoTracker website in suitable Electronic Deliverable Formats. Data to be uploaded includes survey data, laboratory analytical reports, other reports and plans, figures, and maps, to name a few.

Avocet will prepare a Monitoring and Reporting Plan (MRP) that addresses pre-construction and post-construction performance monitoring for the life of the expanded WSGRF. The MRP will be submitted to the Technical Advisory Committee (TAC) for comment and approval. The MRP will include the following sections: purpose, project area, sampling plan, and field procedures. Avocet will also prepare, for TAC review and approval, a Project Assessment and Evaluation Plan (PAEP). The PAEP will describe how the performance of the expanded WSGRF will be assessed, evaluated, and reported. The PAEP will also establish baseline groundwater quality conditions and detail the WSGRF expansion goals, desired outcomes, and the methods of measuring and reporting WSGRF benefits. As a separate submittal to the MRP, Avocet will prepare a Quality Assurance Project Plan (QAPP) in accordance with the U.S. Environmental Protection Agency's (EPA's) QAPP guidance documents (EPA QA/G-5 and EPA QA/R-5).

As discussed further below, following construction and startup of the expanded WSGRF, Avocet will monitor its effectiveness in accordance with the approved MRP. Specifically, Avocet will conduct post-construction monitoring in accordance with the approved MRP and include the



Whitmore Street Groundwater Remediation Facility El Monte, California

results in quarterly and annual reports. An overall summary of the effectiveness monitoring and data analysis will be included in the final project report.

Modeling

Avocet will prepare and submit a Groundwater Capture Zone Modeling Report (modeling report) to the TAC for comment and approval. The modeling report will be utilized to assess the WSGRF performance and further justify the need for expansion in light of new information, such as updates to the influent concentration projections and planned pumping rates. Subsequent modeling updates will be performed in accordance with the PAEP. The modeling report will describe the model and input parameters used, estimated capture zones, model calibration, sensitivity analysis, and the pumping rates to achieve the objectives detailed in the PAEP. The modeling report will also evaluate whether the groundwater monitoring plan is adequate to assess the performance of the expanded groundwater extraction system.

Planning, Design, and Engineering

As part of the planning, designing, and engineering for the Prop 1 grant implementation, Avocet will prepare the 60 percent design plans and specifications and submit them to the TAC for comment. At a minimum, the expanded WSGRF will include the following:

- Installation of 12 collocated pairs of monitoring wells, with one of each pair screened in the Middle and Lower zones.
- Installation of 10 new extraction wells in collocated pairs, with one of each pair screened in the Middle and Lower zones, and two new extraction wells screened in the Lower zone.
- Equip the 12 new extraction wells with electric submersible pumps, transducers, wellhead piping, and instrumentation.
- Installation of electrical controls for the extraction well pumps.
- Installation of 6,400 linear feet of 1.5-inch-diameter subsurface piping to convey extracted groundwater to the WSGRF treatment system and 8,000 linear feet of 1-inch-diameter conduit for power and control wiring.
- Integration of the new extraction wells and controls into the existing WSGRF, including piping manifolds, electrical controls, valves, and instrumentation. The expanded WSGRF is projected to meet the minimum design flow rate of 40 gallons per minute.
- Renovate the existing TrojanUVPhoxTM Advanced Oxidation Reactor and scale up the hydrogen peroxide delivery system to accommodate the minimum design flow rate.



Whitmore Street Groundwater Remediation Facility El Monte, California

After the 60 percent plans are reviewed by the TAC, Avocet will address comments/changes to the plans and then submit 90 percent design plans and specifications, as well as a summary of changes, to the TAC for comment. Following the TAC's review of the 90 percent plans, Avocet will issue 100 percent plans and specifications. The 100 percent plans and specifications, as well as a summary of changes, will then be submitted to the TAC for final approval.

The proposed scope of work includes obtaining the necessary well, encroachment, and electrical permits from the appropriate local government agencies, such as the City of El Monte and/or the County of Los Angeles. For proposal purposes, Avocet has assumed that permits will be required for the modification to the electrical supply and distribution system. Satisfying the permit requirements will likely require detailed design drawings and/or design calculations. Preparation of detailed design drawings and calculations is included in the proposed scope of work, as is an allowance for permit fees. It is noted that it is difficult to project exactly what permit fees may be charged.

Construction and Implementation

Avocet will also assist WQA in implementing the expansion of the WSGRF. Expansion includes the installation of new extraction and monitoring wells, installation of the conveyance piping and electrical conduits from the new extraction wells back to the WSGRF compound, and upgrading the treatment system control components. The UV reactor, control shed, and granular activated carbon vessels will not be upgraded as part of the expansion; however, the inlet piping manifold, programmable logic controller, and peroxide delivery system will be upgraded to accommodate the increased volume and number of wells connected to the WSGRF. Avocet will assist WQA in soliciting competitive bids from qualified contractors, in selecting contractors in each discipline, and will provide oversight during the field implementation portion of the expansion.

Following completion of the expanded WSGRF, Avocet will submit as-built drawings and document departures, if any, from the TAC-approved design plans and specifications. In addition, Avocet will prepare an operations and maintenance (O&M) plan for operation of the expanded WSGRF. The O&M plan will include:

- A groundwater extraction pumping plan (pumping plan) that will ensure the WSGRF achieves its purpose and the objectives described in the PAEP. The pumping plan will include, at a minimum, an annual performance evaluation to assess plume capture and containment.
- A training plan that provides a description, outline, and schedule for vendor-led training for the WSGRF operator.
- A testing and startup plan including initial, functional, and performance testing.
- A commissioning plan that addresses the activities required to bring the expanded WSGRF into operation.



Final Construction Reports

After the WSGRF expansion is complete and in operation, Avocet will prepare and submit to the TAC for review a draft Final Project Report. The report will include:

- Description of the water quality problem that the WSGRF is designed to address;
- Description of the WSGRF scope, cost, and schedule, with photographic documentation;
- Discussion of the likelihood the expanded WSGRF will successfully address the water quality problem in the future, including an evaluation and summary of relevant water quality data; and
- A summary of lessons learned.

After the TAC has reviewed the draft Final Project Report, Avocet will prepare a Final Project Report that addresses, as appropriate, the TAC's comments on the draft report. One reproducible master copy and an electronic copy of the final report will be provided to the TAC.

Avocet will prepare a brief summary of the information contained in the Final Project Report, in a format provided by the TAC, to include accomplishments, recommendations, and lessons learned, as appropriate.

COST ESTIMATE AND ANTICIPATED SCHEDULE

The estimated cost to implement the scope of work outlined above is \$4,078,000, with \$682,000 for Avocet's oversight. A summary of the cost breakdown is presented in Table 1, with separate cost breakdowns for pre-construction planning and implementation provided in Tables 2 and 3, respectively. Avocet has estimated the cost on a time-and-materials basis using the schedule of rates in Table 4. Avocet will begin the implementation process once WQA receives the Prop 1 grant funds, currently expected in January 2024.

CLOSING REMARKS

Avocet Environmental, Inc. appreciates the opportunity to submit this proposal to the San Gabriel Basin Water Quality Authority. If you have any questions or require additional information, please do not hesitate to contact the undersigned at (949) 296-0977 Ext. 111 or at dsiren@avocetenv.com.

Respectfully submitted,

AVOCET ENVIRONMENTAL, INC.

Deke Siren, P.G., C.Hg. Project Manager



Proposal for Proposition 1 Grant Implementation

Whitmore Street Groundwater Remediation Facility El Monte, California

DCS:sh Attachments

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Tables



Table 1 Cost Summary for WSGRF Expansion Whitmore Street Groundwater Remediation Facility Expansion

El Monte, California

	Contractor		Avocet	<u> </u>
Budget Item	Subtotal	5	Subtotal	Cost
Pre-Construction				
Project Schedule & Signage	\$ -	\$	15,020	\$ 15,020
Prepare a Monitoring and Reporting Plan (MRP)	\$ _	\$	24,684	\$ 24,684
Prepare a Quality Assurance Project Plan (QAPP)	\$ -	\$	9,084	\$ 9,084
Submit/Upload Data	\$ -	\$	13,768	\$ 13,768
Groundwater Capture Zone Modeling	\$ _	\$	18,460	\$ 18,460
60% Design Drawings	\$ -	\$	41,100	\$ 41,100
90% Design Drawings	\$ -	\$	14,668	\$ 14,668
100% Design Drawings	\$ -	\$	9,148	\$ 9,148
Accessing Agreements and Permitting	\$ -	\$	34,079	\$ 34,079
Subtotals	\$ -	\$	181,000	\$ 181,000
Implementation				
Drilling	\$ 1,101,178	\$	189,278	\$ 1,290,457
WSGRF Modifications	\$ 2,252,532	\$	171,950	\$ 2,424,482
WSGRF Startup and Testing	\$ 41,831	\$	43,259	\$ 85,090
As-Built Drawings and Operation and Maintenance Documents	\$ -	\$	41,100	\$ 41,100
Draft Final Project Report	\$ -	\$	35,734	\$ 35,734
Final Project Report	\$ -	\$	7,928	\$ 7,928
Final Project Summary	\$ -	\$	11,406	\$ 11,406
Subtotals	\$ 3,396,000	\$	501,000	\$ 3,897,000
Totals	\$ 3,396,000	\$	682,000	\$ 4,078,000



			Project N	Aanagement		Gener Proje	al Complia ct Effective	nce Requirements ness and Perfor	nts and mance			Μ	Iodelin	g	Planning, Design and Engineering											
			Project Si	Schedule & gnage	Prepare and Rep (N	a Monitoring oorting Plan MRP)	Prepar Assurance (Q	e a Quality e Project Plan DAPP)	Submit	/Upload	l Data	Ground Zone	water (e Mode	Capture ling	60% Dr	6 Design awings		90% Dra	Design wings		100% Dra	% Design awings	Accessing Po	Agreements and ermitting]	fotals
Labor Costs	Rates	Unit	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Do	ollars	Hours	D	ollars	Hours	Dollar	s	Hours	Dollars	Ho	urs	Dollars	Hours	Dollars	Hours	Dollars
Project Director/Senior Project Manager	\$ 212	hour	12	\$ 2,544	6	\$ 1,272	4	\$ 848	4	\$	848	4	\$	848	20	\$	4,240	10	\$ 2,1	20	6	\$ 1,272	14	\$ 2,968	80	\$ 16,960
Project Manager	\$ 182	hour	24	\$ 4,368	12	\$ 2,184	4	\$ 728	40	\$	7,280	12	\$	2,184	25	\$	4,550	10	\$ 1,8	20	6	\$ 1,092	16	\$ 2,912	149	\$ 27,118
Senior Project Engineer/Geologist	\$ 176	hour	24	\$ 4,224	60	\$ 10,560	12	\$ 2,112		\$	-	40	\$	7,040	35	\$	5,160	12	\$ 2,	12	8	\$ 1,408	26	\$ 4,576	217	\$ 38,192
Project Engineer/Geologist	\$ 160	hour		\$-		\$-		\$ -		\$	-	40	\$	6,400	80	\$ 12	2,800	24	\$ 3,8	40	12	\$ 1,920		\$ -	156	\$ 24,960
Senior Staff Engineer/Geologist	\$ 141	hour		\$-	60	\$ 8,460	32	\$ 4,512	40	\$	5,640		\$	-	40	\$	5,640	12	\$ 1,0	92	12	\$ 1,692		\$ -	196	\$ 27,636
Staff Engineer/Geologist	\$ 115	hour		\$-		\$-		\$ -		\$	-		\$	-		\$	-		\$			\$ -	24	\$ 2,760	24	\$ 2,760
Designer/Senior CAD Operator	\$ 110	hour	4	\$ 440	12	\$ 1,320	4	\$ 440		\$	-	10	\$	1,100	60	\$	5,600	24	\$ 2,0	40	12	\$ 1,320	20	\$ 2,200	146	\$ 16,060
Technical Editor	\$ 111	hour	4	\$ 444	8	\$ 888	4	\$ 444		\$	-	8	\$	888	10	\$	1,110	4	\$ 4	44	4	\$ 444	8	\$ 888	50	\$ 5,550
Project Coordinator/Word Processing	\$ 90	hour		\$-		\$-		\$ -		\$	-		\$	-		\$	-		\$			\$ -		\$ -	0	\$ -
Project Support/Clerical	\$ 74	hour		\$-		\$-		\$ -		\$	-		\$	-		\$	-		\$			\$ -		\$ -	0	\$ -
		Subtotals		\$ 12,020		\$ 24,684		\$ 9,084		\$	13,768		\$	18,460		\$ 4	1,100		\$ 14,0	68		\$ 9,148		\$ 16,304		\$ 159,236
Other Direct Costs (ODCs)	Rates	Unit	Units	Dollars	Units	Dollars	Units	Dollars	Units	Do	ollars	Units	D	ollars	Units	Dollar	s	Units	Dollars	Ur	its	Dollars	Units	Dollars	Units	Dollars
Well Permit Fees	\$ 15,000	lump sum		\$ -		\$ -		\$ -		\$	-		\$	-		\$	-		\$		$ \rightarrow$	\$ -	1	\$ 15,000	1	\$ 15,000
Encroachment Permit	\$ 1,500	each		\$ -		\$ -		\$ -		\$	-		\$	-		\$	-		\$			\$ -	1	\$ 1,500	1	\$ 1,500
Truck	\$ 64	day		\$ -		\$ -		\$ -		\$	-		\$	-		\$	-		\$			\$ -		\$ -	0	\$ -
Mileage (IRS Rate)	\$ 0.67	mile		\$ -		\$ -		\$ -		\$	-		\$	-		\$	-		\$			\$ -	410	\$ 275	410	\$ 275
Expendable Materials, Reprographics, etc.		est.	1	\$ 3,000		\$ -		\$ -		\$	-		\$	-		\$	-		\$			\$ -	1	\$ 1,000	2	\$ 4,000
Subtotals				\$ 3,000		\$ -		\$-		\$	-		\$	-		\$	-		\$			\$ -		\$ 17,775		\$ 20,775
		Totals		\$ 15,020		\$ 24,684		\$ 9,084		\$	13,768		\$	18,460		\$ 4	1,100		\$ 14,0	68		\$ 9,148		\$ 34,079		\$ 181,000

Table 2 Cost Estimate for Pre-Construction Planning WSGRF Expansion El Monte, California



				Implementation													ŀ	Final Const	tructi	on Report	ts					
				Drill	ling	WSGR	F Moo	difications	WSG an	RF S d Tes	Startup sting	As-Built Ope Maint	: Dra cratio tenan	wings and on and ice Docs	Draft F R	™inal Repor	Project t	Final Pr	roject	Report	Final Pr	oject S	ummary		Tota	ls
Labor Costs	Rates	Unit	Hours		Dollars	Hours		Dollars	Hours		Dollars	Hours		Dollars	Hours	1	Dollars	Hours	I	Dollars	Hours	D	Dollars	Hours		Dollars
Project Director/Senior Project Manager	\$ 212	hour	24	\$	5,088	40	\$	8,480	16	\$	3,392	20	\$	4,240	12	\$	2,544	4	\$	848	8	\$	1,696	124	\$	26,288
Project Manager	\$ 182	hour	54	\$	9,828	80	\$	14,560	40	\$	7,280	25	\$	4,550	40	\$	7,280	6	\$	1,092	12	\$	2,184	257	\$	46,774
Senior Project Engineer/Geologist	\$ 176	hour	96	\$	16,896	94	\$	16,544	100	\$	17,600	35	\$	6,160	40	\$	7,040	12	\$	2,112	16	\$	2,816	393	\$	69,168
Project Engineer/Geologist	\$ 160	hour	228	\$	36,480	624	\$	99,840		\$	-	80	\$	12,800		\$	-		\$	-		\$	-	932	\$	149,120
Senior Staff Engineer/Geologist	\$ 141	hour		\$	-	156	\$	21,996	100	\$	14,100	40	\$	5,640	80	\$	11,280	16	\$	2,256	24	\$	3,384	416	\$	58,656
Staff Engineer/Geologist	\$ 115	hour	912	\$	104,880		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	912	\$	104,880
Designer/Senior CAD Operator	\$ 110	hour		\$	-	24	\$	2,640		\$	-	60	\$	6,600	32	\$	3,520	8	\$	880	6	\$	660	130	\$	14,300
Technical Editor	\$ 111	hour	33	\$	3,663		\$	-		\$	-	10	\$	1,110	10	\$	1,110	4	\$	444	6	\$	666	63	\$	6,993
Project Support/Clerical	\$ 74	hour		\$	-		\$	-		\$	-		\$	-	40	\$	2,960	4	\$	296		\$	-	44	\$	3,256
		Subtotals		\$	176,835		\$	164,060		\$	42,372		\$	41,100		\$	35,734		\$	7,928		\$	11,406		\$	479,435
Subcontractors/Major Equipment	Rates	Unit	Units		Dollars	Units		Dollars	Units		Dollars	Units		Dollars	Units	1	Dollars	Units	I	Dollars	Units	D	Dollars	Units		Dollars
Geophysical Survey																										
Survey	\$ 3,600	day	3	\$	10,800		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	3	\$	10,800
Drilling Services																										
Middle Zone Monitoring Well (Sonic)	\$ 25,493	each	6	\$	152,957		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	6	\$	152,957
Lower Zone Monitoring Well (Sonic)	\$ 34,490	each	6	\$	206,942		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	6	\$	206,942
Middle Zone Extraction Well (Mud Rotary)	\$ 33,139	each	5	\$	165,694		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	5	\$	165,694
Lower Zone Extraction Well (Mud Rotary)	\$ 44,835	each	7	\$	313,844		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	7	\$	313,844
Well Development	\$ 7,450	each	12	\$	89,395		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	12	\$	89,395
Survey																										
Survey New and Existing Wells	\$ 6,000	day	3	\$	18,000		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	3	\$	18,000
Traffic Control																										
Traffic Control for Wells in Neighborhood	\$ 420	day	5	\$	2,100		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	5	\$	2,100
Drilling Waste Management																										
Rolloff Bin Delivery and Rental (Fully Loaded)	\$ 2,198	bin	8	\$	17,587		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	8	\$	17,587
Soil Disposal (Fully Loaded)	\$ 242	ton	45	\$	10,908		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	45	\$	10,908
Mud Disposal (Fully Loaded)	\$ 2.10	gallon	28360	\$	59,556		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	28360	\$	59,556
Water Disposal (Fully Loaded)	\$ 1.72	gallon	16200	\$	27,799		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	16200	\$	27,799
WSGRF Modifications																										
Trenching and Pipe/Conduit Installation	\$ 388	foot		\$	-	2500	\$	969,000		\$	-		\$	-		\$	-		\$	-		\$	-	2500	\$	969,000
1.5-inch dia. Sched. 80 PVC water pipe	\$ 7	foot		\$	-	6400	\$	46,080		\$	-		\$	-		\$	-		\$	-		\$	-	6400	\$	46,080
Wiring and Electrical Upgrades	\$ 264,000	lump sum		\$	-	1	\$	264,000		\$	-		\$	-		\$	-		\$	-		\$	-	1	\$	264,000
1-inch Conduit for Control Wiring	\$ 5	foot		\$	-	8000	\$	38,400		\$	-		\$	-		\$	-		\$	-		\$	-	8000	\$	38,400
Wellhead Installation	\$ 9,210	each		\$	-	12	\$	110,520		\$	-		\$	-		\$	-		\$	-		\$	-	12	\$	110,520
Facility Modifications	\$ 90,000	lump sum		\$	-	1	\$	90,000		\$	-		\$	-		\$	-		\$	-		\$	-	1	\$	90,000

Table 3Cost Estimate for ImplementationWSGRF ExpansionEl Monte, CaliforniaPage 1 of 2



					Implementation												F	inal Const	ructio	n Report	ts						
					Drill	ling	WSGR	F Mod	difications	WSC ar	GRF S d Tes	tartup sting	As-Built Oper Maint	Drawi ration enance	ings and and Docs	Draft H H	'inal Projec Report	et	Final Pr	oject F	Report	Final Pro	ject Su	ımmary		Totals	s
Equipment Procurement		Rates	Unit	Units		Dollars	Units		Dollars	Units	1	Dollars	Units	D	ollars	Units	Dollar	s	Units	Do	ollars	Units	De	ollars	Units	I	Dollars
Trojan UVPhox TM System Upgrade	\$	300,000	lump sum		\$	-	1	\$	300,000		\$	-		\$	-		\$	-		\$	-		\$	-	1	\$	300,000
Upgrade Peroxide System	\$	90,000	lump sum		\$	-	1	\$	90,000		\$	-		\$	-		\$	-		\$	-		\$	-	1	\$	90,000
Control Panel (inc programming) Upgrade	\$	55,944	lump sum		\$	-	1	\$	55,944		\$	-		\$	-		\$	-		\$	-		\$	-	1	\$	55,944
Electrical Transformer(s)	\$	12,000	lump sum		\$	-	1	\$	12,000		\$	-		\$	-		\$	-		\$	-		\$	-	1	\$	12,000
Extraction Pumps	\$	4,354	each		\$	-	12	\$	52,243		\$	-		\$	-		\$	-		\$	-		\$	-	12	\$	52,243
LGAC Changeout	\$	10,440	lump sum		\$	-	1	\$	10,440		\$	-		\$	-		\$	-		\$	-		\$	-	1	\$	10,440
Replace Existing Flow Meters & Transmitters	\$	4,084	each		\$	-	6	\$	24,502		\$	-		\$	-		\$	-		\$	-		\$	-	6	\$	24,502
New Flow Meters and Transmitters (Badger)	\$	4,084	each		\$	-	12	\$	49,003		\$	-		\$	-		\$	-		\$	-		\$	-	12	\$	49,003
Submersible Pressure Transducers	\$	1,200	each		\$	-	16	\$	19,200		\$	-		\$	-		\$	-		\$	-		\$	-	16	\$	19,200
Well Vaults	\$	1,200	each		\$	-	12	\$	14,400		\$	-		\$	-		\$	-		\$	-		\$	-	12	\$	14,400
Electrical Pull Vaults	\$	600	each		\$	-	18	\$	10,800		\$	-		\$	-		\$	-		\$	-		\$	-	18	\$	10,800
Gauges, valves, & misc. piping	\$	96,000	lump sum		\$	-	1	\$	96,000		\$	-		\$	-		\$	-		\$	-		\$	-	1	\$	96,000
Analytical Laboratory																											
1,4-Dioxane by EPA 8270C SIM	\$	114	each	22	\$	2,508		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	22	\$	2,508
VOCs by EPA 8260B	\$	90	each	28	\$	2,520		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	28	\$	2,520
TPH-cc by EPA 8015M	\$	72	each	16	\$	1,152		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	16	\$	1,152
Title 22 Metals by EPA 6010B/7471A	\$	102	each	16	\$	1,632		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	16	\$	1,632
Full NPDES Analytical Suite	\$	1,482	lump sum	12	\$	17,784		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	12	\$	17,784
Full NPDES Analytical Suite (3 Day TAT)	\$	2,001	lump sum		\$	-		\$	-	4	\$	8,003		\$	-		\$	-		\$	-		\$	-	4	\$	8,003
Startup and Testing																											
System Startup w/ PLC Onsite	\$	9,840	lump sum		\$	-		\$	-	1	\$	9,840		\$	-		\$	-		\$	-		\$	-	1	\$	9,840
Storage and Disposal of Extracted Groundwater	\$	1.20	gallon		\$	-		\$	-	19200	\$	23,040		\$	-		\$	-		\$	-		\$	-	19200	\$	23,040
Horiba Rental	\$	474	week		\$	-		\$	-	2	\$	948		\$	-		\$	-		\$	-		\$	-	2	\$	948
			Subtotals		\$	1,101,178		\$	2,252,532		\$	41,831		\$	-		\$	-		\$	-		\$	-		\$	3,395,541
Other Direct Costs (ODCs)				Units		Dollars	Units		Dollars	Units]	Dollars	Units	D	ollars	Units	Dollars	s	Units	Do	ollars	Units	De	ollars	Units	I	Dollars
Truck	\$	175	week	14	\$	2,450	6	\$	1,050	2	\$	350		\$	-		\$	-		\$	-		\$	-	22	\$	3,850
Mileage (IRS Rate)	\$	1	mile	6020	\$	3,943	2580	\$	1,690	820	\$	537		\$	-		\$	-		\$	-		\$	-	9420	\$	6,170
Photoionization Detector	\$	350	week	5	\$	1,750		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	5	\$	1,750
Gloves (Disposable Nitrile)	\$	30	box	10	\$	300	5	\$	150		\$	-		\$	-		\$	-		\$	-		\$	-	15	\$	450
Expendable Materials, Reprographics, etc.			est.		\$	4,000		\$	5,000		\$	-		\$	-		\$	-		\$	-		\$	-		\$	9,000
Subtotal					\$	12,443		\$	7,890		\$	887		\$	-		\$	-		\$	-		\$	_		\$	21,220
То			Totals		\$	1,290,457		\$	2,424,482		\$	85,090		\$	41,100		\$ 35,	734		\$	7,928		\$	11,406		\$	3,897,000

Table 3Cost Estimate for ImplementationWSGRF ExpansionEl Monte, CaliforniaPage 2 of 2



Table 4 Schedule of Charges (Effective January 1, 2023)

Professional Services ^(1,2)	Hourly Rate (\$)
Principal	242
Project Director/Senior Project Manager	212
Project Manager	182
Senior Project Engineer/Geologist	176
Project Engineer/Geologist	160
Senior Staff Engineer/Geologist	141
Staff Engineer/Geologist	115
Senior Technician	99
Technician	85
Designer/Senior CAD Operator	110
CAD Operator	91
Technical Editor	111
Project Coordinator/Word Processing	90
Project Support/Clerical	74

Reimbursables

Per Diem (meals for necessary overnight travel)	60/day
Car Mileage	IRS rate
Pickup Truck (on site)	8/hour 64/day
Truck Mileage	IRS rate plus \$0.10
Field equipment per separate schedule	

Expenses

Vendor costs and direct expenses billed at actual cost plus 10%.

- Notes: (1) An overtime surcharge of 30 percent may be applied to hourly rates for nonsalaried employees if field work has to be performed on weekends or at night because of site access limitations or other project-specific requirements.
 - (2) Preparation for expert witness services will be invoiced at the rates above apart from actual depositions and court appearances, which will be charged at double the rates listed above, with a 4-hour minimum per appearance.



Attachment 1

DFA Scope of Work







MW-7A

MW-7C

200 MW-11A

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ENVIRON

February 6, 2024

Project No. 1128.013

Mr. Randy Schoellerman, P.E. Executive Director SAN GABRIEL BASIN WATER QUALITY AUTHORITY 1720 West Cameron Avenue, Suite 100 West Covina, California 91790

Proposal for Proposition 1 Grant Implementation

Whitmore Street Groundwater Remediation Facility Expansion El Monte, California

Dear Mr. Schoellerman:

Pursuant to your request, Avocet Environmental, Inc. (Avocet) is pleased to submit this proposal to the San Gabriel Basin Water Quality Authority (WQA) for the implementation of a recently awarded Proposition 1, Round 3 grant for expansion of the Whitmore Street Groundwater Remediation Facility (WSGRF) in El Monte, California (the site).

OVERVIEW

On behalf of WQA, Avocet designed and built the WSGRF system at the former JAB Holdings, Inc. (JAB) property and has been operating it since December 2007 to hydraulically contain 1,4-dioxane in Shallow Zone aquifer groundwater. The Shallow Zone aquifer consists of three discrete or semi-discrete water-bearing zones, dubbed the Upper, Middle, and Lower Zones, although the Upper Zone is mostly dry because of a drought-related regional decline in the water table. The WSGRF includes extraction wells on the former JAB property and on the adjoining property to the west. In addition to 1,4-dioxane, the WSGRF treatment system removes volatile organic compounds (VOCs), notably tetrachloroethylene (PCE), trichloroethylene (TCE), and their degradation byproducts, from the extracted groundwater. The PCE is believed to be attributable to releases at the former JAB property; however, the source(s) of the TCE and 1,4-dioxane is (are) unclear, not least because the highest 1,4-dioxane concentrations are generally present in the Lower Zone in the WSGRF extraction wells located west of the former JAB property, and the horizontal groundwater flow direction in the Upper, Middle, and Lower Zones is not consistent and, in the Middle Zone, appears to vary with time.

Avocet conducted two phases of "offsite" investigation, in 2019 and 2021, to further delineate the lateral and vertical distribution of 1,4-dioxane and VOCs, particularly TCE, in the Shallow Zone aquifer. In brief, the offsite investigation in 2019 involved the collection of one-time groundwater grab samples from borings on the northwest-adjoining property at 9320 Telstar Avenue, which was owned and occupied in the past by Aerojet-General Corporation (Aerojet). The offsite investigation in 2021 involved the collection of one-time groundwater grab samples from borings on the northwest-adjoint property and the installation and sampling of three dual-nested monitoring wells and sampling of selected existing monitoring wells. In brief, the data from these investigations indicate that 1,4-dioxane and TCE are more widespread than previously

Proposal for Proposition 1 Grant Implementation

Whitmore Street Groundwater Remediation Facility El Monte, California

thought in the Middle and Lower Zones and, hence, an expansion of the existing WSGRF is appropriate. To that end, Avocet assisted WQA in preparing a *Proposition 1 GWGP Implementation Full Proposal* (Prop 1 grant) for WQA to acquire Proposition 1, Round 3 funding to expand the WSGRF (Avocet, July 8, 2022). WQA was recently notified by the Division of Financial Assistance (DFA) that the Prop 1 grant was approved subject to DFA's final funding requirements.

PROPOSED SCOPE OF WORK

The scope of work proposed herein is based on the Prop 1 grant and DFA-supplied scope of work (Attachment 1) and is as follows. It should be noted that DFA requires 5-years of post-construction monitoring, and at the request of WQA, costs for the post-construction monitoring will be provided under a separate proposal at a later date.

Project Management

As part of the Prop 1 grant, the DFA requires an updated project schedule that includes key project milestones. Avocet prepared a preliminary schedule for the Prop 1 grant application and will update the schedule based on the DFA-supplied scope of work. The DFA is also requiring that a project sign at least 4 feet tall and 8 feet wide, made of 0.75-inch-thick exterior grade plywood or other approved material, be placed in a prominent location on the site for the duration of the project implementation. As part of Avocet's project management, Avocet will have the sign made and installed as required by the DFA.

General Compliance Requirements and Project Effectiveness and Performance

As part of the Prop 1 grant, there are several requirements related to compliance, including data submittal. Avocet will submit and/or upload the required data to the State Water Resources Control Board's GeoTracker website in suitable Electronic Deliverable Formats. Data to be uploaded includes survey data, laboratory analytical reports, other reports and plans, figures, and maps, to name a few.

Avocet will prepare a Monitoring and Reporting Plan (MRP) that addresses pre-construction and post-construction performance monitoring for the life of the expanded WSGRF. The MRP will be submitted to the Technical Advisory Committee (TAC) for comment and approval. The MRP will include the following sections: purpose, project area, sampling plan, and field procedures. Avocet will also prepare, for TAC review and approval, a Project Assessment and Evaluation Plan (PAEP). The PAEP will describe how the performance of the expanded WSGRF will be assessed, evaluated, and reported. The PAEP will also establish baseline groundwater quality conditions and detail the WSGRF expansion goals, desired outcomes, and the methods of measuring and reporting WSGRF benefits. As a separate submittal to the MRP, Avocet will prepare a Quality Assurance Project Plan (QAPP) in accordance with the U.S. Environmental Protection Agency's (EPA's) QAPP guidance documents (EPA QA/G-5 and EPA QA/R-5).

As discussed further below, following construction and startup of the expanded WSGRF, Avocet will monitor its effectiveness in accordance with the approved MRP. Specifically, Avocet will conduct post-construction monitoring in accordance with the approved MRP and include the



Whitmore Street Groundwater Remediation Facility El Monte, California

results in quarterly and annual reports. An overall summary of the effectiveness monitoring and data analysis will be included in the final project report.

Modeling

Avocet will prepare and submit a Groundwater Capture Zone Modeling Report (modeling report) to the TAC for comment and approval. The modeling report will be utilized to assess the WSGRF performance and further justify the need for expansion in light of new information, such as updates to the influent concentration projections and planned pumping rates. Subsequent modeling updates will be performed in accordance with the PAEP. The modeling report will describe the model and input parameters used, estimated capture zones, model calibration, sensitivity analysis, and the pumping rates to achieve the objectives detailed in the PAEP. The modeling report will also evaluate whether the groundwater monitoring plan is adequate to assess the performance of the expanded groundwater extraction system.

Planning, Design, and Engineering

As part of the planning, designing, and engineering for the Prop 1 grant implementation, Avocet will prepare the 60 percent design plans and specifications and submit them to the TAC for comment. At a minimum, the expanded WSGRF will include the following:

- Installation of 12 collocated pairs of monitoring wells, with one of each pair screened in the Middle and Lower zones.
- Installation of 10 new extraction wells in collocated pairs, with one of each pair screened in the Middle and Lower zones, and two new extraction wells screened in the Lower zone.
- Equip the 12 new extraction wells with electric submersible pumps, transducers, wellhead piping, and instrumentation.
- Installation of electrical controls for the extraction well pumps.
- Installation of 6,400 linear feet of 1.5-inch-diameter subsurface piping to convey extracted groundwater to the WSGRF treatment system and 8,000 linear feet of 1-inch-diameter conduit for power and control wiring.
- Integration of the new extraction wells and controls into the existing WSGRF, including piping manifolds, electrical controls, valves, and instrumentation. The expanded WSGRF is projected to meet the minimum design flow rate of 40 gallons per minute.
- Renovate the existing TrojanUVPhoxTM Advanced Oxidation Reactor and scale up the hydrogen peroxide delivery system to accommodate the minimum design flow rate.



Whitmore Street Groundwater Remediation Facility El Monte, California

After the 60 percent plans are reviewed by the TAC, Avocet will address comments/changes to the plans and then submit 90 percent design plans and specifications, as well as a summary of changes, to the TAC for comment. Following the TAC's review of the 90 percent plans, Avocet will issue 100 percent plans and specifications. The 100 percent plans and specifications, as well as a summary of changes, will then be submitted to the TAC for final approval.

The proposed scope of work includes obtaining the necessary well, encroachment, and electrical permits from the appropriate local government agencies, such as the City of El Monte and/or the County of Los Angeles. For proposal purposes, Avocet has assumed that permits will be required for the modification to the electrical supply and distribution system. Satisfying the permit requirements will likely require detailed design drawings and/or design calculations. Preparation of detailed design drawings and calculations is included in the proposed scope of work, as is an allowance for permit fees. It is noted that it is difficult to project exactly what permit fees may be charged.

Construction and Implementation

Avocet will also assist WQA in implementing the expansion of the WSGRF. Expansion includes the installation of new extraction and monitoring wells, installation of the conveyance piping and electrical conduits from the new extraction wells back to the WSGRF compound, and upgrading the treatment system control components. The UV reactor, control shed, and granular activated carbon vessels will not be upgraded as part of the expansion; however, the inlet piping manifold, programmable logic controller, and peroxide delivery system will be upgraded to accommodate the increased volume and number of wells connected to the WSGRF. Avocet will assist WQA in soliciting competitive bids from qualified contractors, in selecting contractors in each discipline, and will provide oversight during the field implementation portion of the expansion.

Following completion of the expanded WSGRF, Avocet will submit as-built drawings and document departures, if any, from the TAC-approved design plans and specifications. In addition, Avocet will prepare an operations and maintenance (O&M) plan for operation of the expanded WSGRF. The O&M plan will include:

- A groundwater extraction pumping plan (pumping plan) that will ensure the WSGRF achieves its purpose and the objectives described in the PAEP. The pumping plan will include, at a minimum, an annual performance evaluation to assess plume capture and containment.
- A training plan that provides a description, outline, and schedule for vendor-led training for the WSGRF operator.
- A testing and startup plan including initial, functional, and performance testing.
- A commissioning plan that addresses the activities required to bring the expanded WSGRF into operation.



Final Construction Reports

After the WSGRF expansion is complete and in operation, Avocet will prepare and submit to the TAC for review a draft Final Project Report. The report will include:

- Description of the water quality problem that the WSGRF is designed to address;
- Description of the WSGRF scope, cost, and schedule, with photographic documentation;
- Discussion of the likelihood the expanded WSGRF will successfully address the water quality problem in the future, including an evaluation and summary of relevant water quality data; and
- A summary of lessons learned.

After the TAC has reviewed the draft Final Project Report, Avocet will prepare a Final Project Report that addresses, as appropriate, the TAC's comments on the draft report. One reproducible master copy and an electronic copy of the final report will be provided to the TAC.

Avocet will prepare a brief summary of the information contained in the Final Project Report, in a format provided by the TAC, to include accomplishments, recommendations, and lessons learned, as appropriate.

COST ESTIMATE AND ANTICIPATED SCHEDULE

The estimated cost to implement the scope of work outlined above is \$4,078,000, with \$682,000 for Avocet's oversight. A summary of the cost breakdown is presented in Table 1, with separate cost breakdowns for pre-construction planning and implementation provided in Tables 2 and 3, respectively. Avocet has estimated the cost on a time-and-materials basis using the schedule of rates in Table 4. Avocet will begin the implementation process once WQA receives the Prop 1 grant funds, currently expected in January 2024.

CLOSING REMARKS

Avocet Environmental, Inc. appreciates the opportunity to submit this proposal to the San Gabriel Basin Water Quality Authority. If you have any questions or require additional information, please do not hesitate to contact the undersigned at (949) 296-0977 Ext. 111 or at dsiren@avocetenv.com.

Respectfully submitted,

AVOCET ENVIRONMENTAL, INC.

Deke Siren, P.G., C.Hg. Project Manager



Proposal for Proposition 1 Grant Implementation

Whitmore Street Groundwater Remediation Facility El Monte, California

DCS:sh Attachments

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Tables



Table 1 Cost Summary for WSGRF Expansion Whitmore Street Groundwater Remediation Facility Expansion

El Monte, California

	Contractor		Avocet	<u> </u>
Budget Item	Subtotal	5	Subtotal	Cost
Pre-Construction				
Project Schedule & Signage	\$ -	\$	15,020	\$ 15,020
Prepare a Monitoring and Reporting Plan (MRP)	\$ _	\$	24,684	\$ 24,684
Prepare a Quality Assurance Project Plan (QAPP)	\$ -	\$	9,084	\$ 9,084
Submit/Upload Data	\$ -	\$	13,768	\$ 13,768
Groundwater Capture Zone Modeling	\$ _	\$	18,460	\$ 18,460
60% Design Drawings	\$ -	\$	41,100	\$ 41,100
90% Design Drawings	\$ -	\$	14,668	\$ 14,668
100% Design Drawings	\$ -	\$	9,148	\$ 9,148
Accessing Agreements and Permitting	\$ -	\$	34,079	\$ 34,079
Subtotals	\$ -	\$	181,000	\$ 181,000
Implementation				
Drilling	\$ 1,101,178	\$	189,278	\$ 1,290,457
WSGRF Modifications	\$ 2,252,532	\$	171,950	\$ 2,424,482
WSGRF Startup and Testing	\$ 41,831	\$	43,259	\$ 85,090
As-Built Drawings and Operation and Maintenance Documents	\$ -	\$	41,100	\$ 41,100
Draft Final Project Report	\$ -	\$	35,734	\$ 35,734
Final Project Report	\$ -	\$	7,928	\$ 7,928
Final Project Summary	\$ -	\$	11,406	\$ 11,406
Subtotals	\$ 3,396,000	\$	501,000	\$ 3,897,000
Totals	\$ 3,396,000	\$	682,000	\$ 4,078,000



			Project N	Aanagement		Gener Proje	al Complia ct Effective	nce Requirements ness and Perfor	nts and mance			Μ	Iodelin	g	Planning, Design and Engineering											
			Project Si	Schedule & gnage	Prepare and Rep (N	a Monitoring oorting Plan MRP)	Prepar Assurance (Q	e a Quality e Project Plan DAPP)	Submit	/Upload	l Data	Ground Zone	water (e Mode	Capture ling	60% Dr	6 Design awings		90% Dra	Design wings		100% Dra	% Design awings	Accessing Po	Agreements and ermitting]	fotals
Labor Costs	Rates	Unit	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Do	ollars	Hours	D	ollars	Hours	Dollar	s	Hours	Dollars	Ho	urs	Dollars	Hours	Dollars	Hours	Dollars
Project Director/Senior Project Manager	\$ 212	hour	12	\$ 2,544	6	\$ 1,272	4	\$ 848	4	\$	848	4	\$	848	20	\$	4,240	10	\$ 2,1	20	6	\$ 1,272	14	\$ 2,968	80	\$ 16,960
Project Manager	\$ 182	hour	24	\$ 4,368	12	\$ 2,184	4	\$ 728	40	\$	7,280	12	\$	2,184	25	\$	4,550	10	\$ 1,8	20	6	\$ 1,092	16	\$ 2,912	149	\$ 27,118
Senior Project Engineer/Geologist	\$ 176	hour	24	\$ 4,224	60	\$ 10,560	12	\$ 2,112		\$	-	40	\$	7,040	35	\$	5,160	12	\$ 2,	12	8	\$ 1,408	26	\$ 4,576	217	\$ 38,192
Project Engineer/Geologist	\$ 160	hour		\$-		\$-		\$ -		\$	-	40	\$	6,400	80	\$ 12	2,800	24	\$ 3,8	40	12	\$ 1,920		\$ -	156	\$ 24,960
Senior Staff Engineer/Geologist	\$ 141	hour		\$-	60	\$ 8,460	32	\$ 4,512	40	\$	5,640		\$	-	40	\$	5,640	12	\$ 1,0	92	12	\$ 1,692		\$ -	196	\$ 27,636
Staff Engineer/Geologist	\$ 115	hour		\$-		\$-		\$ -		\$	-		\$	-		\$	-		\$			\$ -	24	\$ 2,760	24	\$ 2,760
Designer/Senior CAD Operator	\$ 110	hour	4	\$ 440	12	\$ 1,320	4	\$ 440		\$	-	10	\$	1,100	60	\$	5,600	24	\$ 2,0	40	12	\$ 1,320	20	\$ 2,200	146	\$ 16,060
Technical Editor	\$ 111	hour	4	\$ 444	8	\$ 888	4	\$ 444		\$	-	8	\$	888	10	\$	1,110	4	\$ 4	44	4	\$ 444	8	\$ 888	50	\$ 5,550
Project Coordinator/Word Processing	\$ 90	hour		\$-		\$-		\$ -		\$	-		\$	-		\$	-		\$			\$ -		\$ -	0	\$ -
Project Support/Clerical	\$ 74	hour		\$-		\$-		\$ -		\$	-		\$	-		\$	-		\$			\$ -		\$ -	0	\$ -
		Subtotals		\$ 12,020		\$ 24,684		\$ 9,084		\$	13,768		\$	18,460		\$ 4	1,100		\$ 14,0	68		\$ 9,148		\$ 16,304		\$ 159,236
Other Direct Costs (ODCs)	Rates	Unit	Units	Dollars	Units	Dollars	Units	Dollars	Units	Do	ollars	Units	D	ollars	Units	Dollar	s	Units	Dollars	Ur	its	Dollars	Units	Dollars	Units	Dollars
Well Permit Fees	\$ 15,000	lump sum		\$ -		\$ -		\$ -		\$	-		\$	-		\$	-		\$		$ \rightarrow$	\$ -	1	\$ 15,000	1	\$ 15,000
Encroachment Permit	\$ 1,500	each		\$ -		\$ -		\$ -		\$	-		\$	-		\$	-		\$			\$ -	1	\$ 1,500	1	\$ 1,500
Truck	\$ 64	day		\$ -		\$ -		\$ -		\$	-		\$	-		\$	-		\$			\$ -		\$ -	0	\$ -
Mileage (IRS Rate)	\$ 0.67	mile		\$ -		\$ -		\$ -		\$	-		\$	-		\$	-		\$			\$ -	410	\$ 275	410	\$ 275
Expendable Materials, Reprographics, etc.		est.	1	\$ 3,000		\$ -		\$ -		\$	-		\$	-		\$	-		\$			\$ -	1	\$ 1,000	2	\$ 4,000
Subtotals				\$ 3,000		\$ -		\$-		\$	-		\$	-		\$	-		\$			\$ -		\$ 17,775		\$ 20,775
		Totals		\$ 15,020		\$ 24,684		\$ 9,084		\$	13,768		\$	18,460		\$ 4	1,100		\$ 14,0	68		\$ 9,148		\$ 34,079		\$ 181,000

Table 2 Cost Estimate for Pre-Construction Planning WSGRF Expansion El Monte, California



				Implementation													ŀ	Final Const	tructi	on Report	ts					
				Drill	ling	WSGR	F Moo	difications	WSG an	RF S d Tes	Startup sting	As-Built Ope Maint	: Dra cratio tenan	wings and on and ice Docs	Draft F R	™inal Repor	Project t	Final Pr	roject	Report	Final Pr	oject S	ummary		Tota	ls
Labor Costs	Rates	Unit	Hours		Dollars	Hours		Dollars	Hours		Dollars	Hours		Dollars	Hours	1	Dollars	Hours	I	Dollars	Hours	D	Dollars	Hours		Dollars
Project Director/Senior Project Manager	\$ 212	hour	24	\$	5,088	40	\$	8,480	16	\$	3,392	20	\$	4,240	12	\$	2,544	4	\$	848	8	\$	1,696	124	\$	26,288
Project Manager	\$ 182	hour	54	\$	9,828	80	\$	14,560	40	\$	7,280	25	\$	4,550	40	\$	7,280	6	\$	1,092	12	\$	2,184	257	\$	46,774
Senior Project Engineer/Geologist	\$ 176	hour	96	\$	16,896	94	\$	16,544	100	\$	17,600	35	\$	6,160	40	\$	7,040	12	\$	2,112	16	\$	2,816	393	\$	69,168
Project Engineer/Geologist	\$ 160	hour	228	\$	36,480	624	\$	99,840		\$	-	80	\$	12,800		\$	-		\$	-		\$	-	932	\$	149,120
Senior Staff Engineer/Geologist	\$ 141	hour		\$	-	156	\$	21,996	100	\$	14,100	40	\$	5,640	80	\$	11,280	16	\$	2,256	24	\$	3,384	416	\$	58,656
Staff Engineer/Geologist	\$ 115	hour	912	\$	104,880		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	912	\$	104,880
Designer/Senior CAD Operator	\$ 110	hour		\$	-	24	\$	2,640		\$	-	60	\$	6,600	32	\$	3,520	8	\$	880	6	\$	660	130	\$	14,300
Technical Editor	\$ 111	hour	33	\$	3,663		\$	-		\$	-	10	\$	1,110	10	\$	1,110	4	\$	444	6	\$	666	63	\$	6,993
Project Support/Clerical	\$ 74	hour		\$	-		\$	-		\$	-		\$	-	40	\$	2,960	4	\$	296		\$	-	44	\$	3,256
		Subtotals		\$	176,835		\$	164,060		\$	42,372		\$	41,100		\$	35,734		\$	7,928		\$	11,406		\$	479,435
Subcontractors/Major Equipment	Rates	Unit	Units		Dollars	Units		Dollars	Units		Dollars	Units		Dollars	Units	1	Dollars	Units	I	Dollars	Units	D	Dollars	Units		Dollars
Geophysical Survey																										
Survey	\$ 3,600	day	3	\$	10,800		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	3	\$	10,800
Drilling Services																										
Middle Zone Monitoring Well (Sonic)	\$ 25,493	each	6	\$	152,957		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	6	\$	152,957
Lower Zone Monitoring Well (Sonic)	\$ 34,490	each	6	\$	206,942		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	6	\$	206,942
Middle Zone Extraction Well (Mud Rotary)	\$ 33,139	each	5	\$	165,694		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	5	\$	165,694
Lower Zone Extraction Well (Mud Rotary)	\$ 44,835	each	7	\$	313,844		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	7	\$	313,844
Well Development	\$ 7,450	each	12	\$	89,395		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	12	\$	89,395
Survey																										
Survey New and Existing Wells	\$ 6,000	day	3	\$	18,000		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	3	\$	18,000
Traffic Control																										
Traffic Control for Wells in Neighborhood	\$ 420	day	5	\$	2,100		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	5	\$	2,100
Drilling Waste Management																										
Rolloff Bin Delivery and Rental (Fully Loaded)	\$ 2,198	bin	8	\$	17,587		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	8	\$	17,587
Soil Disposal (Fully Loaded)	\$ 242	ton	45	\$	10,908		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	45	\$	10,908
Mud Disposal (Fully Loaded)	\$ 2.10	gallon	28360	\$	59,556		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	28360	\$	59,556
Water Disposal (Fully Loaded)	\$ 1.72	gallon	16200	\$	27,799		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	16200	\$	27,799
WSGRF Modifications																										
Trenching and Pipe/Conduit Installation	\$ 388	foot		\$	-	2500	\$	969,000		\$	-		\$	-		\$	-		\$	-		\$	-	2500	\$	969,000
1.5-inch dia. Sched. 80 PVC water pipe	\$ 7	foot		\$	-	6400	\$	46,080		\$	-		\$	-		\$	-		\$	-		\$	-	6400	\$	46,080
Wiring and Electrical Upgrades	\$ 264,000	lump sum		\$	-	1	\$	264,000		\$	-		\$	-		\$	-		\$	-		\$	-	1	\$	264,000
1-inch Conduit for Control Wiring	\$ 5	foot		\$	-	8000	\$	38,400		\$	-		\$	-		\$	-		\$	-		\$	-	8000	\$	38,400
Wellhead Installation	\$ 9,210	each		\$	-	12	\$	110,520		\$	-		\$	-		\$	-		\$	-		\$	-	12	\$	110,520
Facility Modifications	\$ 90,000	lump sum		\$	-	1	\$	90,000		\$	-		\$	-		\$	-		\$	-		\$	-	1	\$	90,000

Table 3Cost Estimate for ImplementationWSGRF ExpansionEl Monte, CaliforniaPage 1 of 2



					Implementation												F	inal Const	ructio	n Report	ts						
					Drill	ling	WSGR	F Mod	difications	WSC ar	GRF S d Tes	tartup sting	As-Built Oper Mainte	Drawi ration enance	ings and and Docs	Draft H H	'inal Projec Report	et	Final Pr	oject F	Report	Final Pro	ject Su	ımmary		Totals	s
Equipment Procurement		Rates	Unit	Units		Dollars	Units		Dollars	Units	1	Dollars	Units	D	ollars	Units	Dollar	s	Units	Do	ollars	Units	De	ollars	Units	I	Dollars
Trojan UVPhox TM System Upgrade	\$	300,000	lump sum		\$	-	1	\$	300,000		\$	-		\$	-		\$	-		\$	-		\$	-	1	\$	300,000
Upgrade Peroxide System	\$	90,000	lump sum		\$	-	1	\$	90,000		\$	-		\$	-		\$	-		\$	-		\$	-	1	\$	90,000
Control Panel (inc programming) Upgrade	\$	55,944	lump sum		\$	-	1	\$	55,944		\$	-		\$	-		\$	-		\$	-		\$	-	1	\$	55,944
Electrical Transformer(s)	\$	12,000	lump sum		\$	-	1	\$	12,000		\$	-		\$	-		\$	-		\$	-		\$	-	1	\$	12,000
Extraction Pumps	\$	4,354	each		\$	-	12	\$	52,243		\$	-		\$	-		\$	-		\$	-		\$	-	12	\$	52,243
LGAC Changeout	\$	10,440	lump sum		\$	-	1	\$	10,440		\$	-		\$	-		\$	-		\$	-		\$	-	1	\$	10,440
Replace Existing Flow Meters & Transmitters	\$	4,084	each		\$	-	6	\$	24,502		\$	-		\$	-		\$	-		\$	-		\$	-	6	\$	24,502
New Flow Meters and Transmitters (Badger)	\$	4,084	each		\$	-	12	\$	49,003		\$	-		\$	-		\$	-		\$	-		\$	-	12	\$	49,003
Submersible Pressure Transducers	\$	1,200	each		\$	-	16	\$	19,200		\$	-		\$	-		\$	-		\$	-		\$	-	16	\$	19,200
Well Vaults	\$	1,200	each		\$	-	12	\$	14,400		\$	-		\$	-		\$	-		\$	-		\$	-	12	\$	14,400
Electrical Pull Vaults	\$	600	each		\$	-	18	\$	10,800		\$	-		\$	-		\$	-		\$	-		\$	-	18	\$	10,800
Gauges, valves, & misc. piping	\$	96,000	lump sum		\$	-	1	\$	96,000		\$	-		\$	-		\$	-		\$	-		\$	-	1	\$	96,000
Analytical Laboratory																											
1,4-Dioxane by EPA 8270C SIM	\$	114	each	22	\$	2,508		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	22	\$	2,508
VOCs by EPA 8260B	\$	90	each	28	\$	2,520		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	28	\$	2,520
TPH-cc by EPA 8015M	\$	72	each	16	\$	1,152		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	16	\$	1,152
Title 22 Metals by EPA 6010B/7471A	\$	102	each	16	\$	1,632		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	16	\$	1,632
Full NPDES Analytical Suite	\$	1,482	lump sum	12	\$	17,784		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	12	\$	17,784
Full NPDES Analytical Suite (3 Day TAT)	\$	2,001	lump sum		\$	-		\$	-	4	\$	8,003		\$	-		\$	-		\$	-		\$	-	4	\$	8,003
Startup and Testing																											
System Startup w/ PLC Onsite	\$	9,840	lump sum		\$	-		\$	-	1	\$	9,840		\$	-		\$	-		\$	-		\$	-	1	\$	9,840
Storage and Disposal of Extracted Groundwater	\$	1.20	gallon		\$	-		\$	-	19200	\$	23,040		\$	-		\$	-		\$	-		\$	-	19200	\$	23,040
Horiba Rental	\$	474	week		\$	-		\$	-	2	\$	948		\$	-		\$	-		\$	-		\$	-	2	\$	948
			Subtotals		\$	1,101,178		\$	2,252,532		\$	41,831		\$	-		\$	-		\$	-		\$	-		\$	3,395,541
Other Direct Costs (ODCs)				Units		Dollars	Units		Dollars	Units]	Dollars	Units	D	ollars	Units	Dollars	s	Units	Do	ollars	Units	De	ollars	Units	I	Dollars
Truck	\$	175	week	14	\$	2,450	6	\$	1,050	2	\$	350		\$	-		\$	-		\$	-		\$	-	22	\$	3,850
Mileage (IRS Rate)	\$	1	mile	6020	\$	3,943	2580	\$	1,690	820	\$	537		\$	-		\$	-		\$	-		\$	-	9420	\$	6,170
Photoionization Detector	\$	350	week	5	\$	1,750		\$	-		\$	-		\$	-		\$	-		\$	-		\$	-	5	\$	1,750
Gloves (Disposable Nitrile)	\$	30	box	10	\$	300	5	\$	150		\$	-		\$	-		\$	-		\$	-		\$	-	15	\$	450
Expendable Materials, Reprographics, etc.			est.		\$	4,000		\$	5,000		\$	-		\$	-		\$	-		\$	-		\$	-		\$	9,000
Subtotal					\$	12,443		\$	7,890		\$	887		\$	-		\$	-		\$	-		\$	_		\$	21,220
То			Totals		\$	1,290,457		\$	2,424,482		\$	85,090		\$	41,100		\$ 35,	734		\$	7,928		\$	11,406		\$	3,897,000

Table 3Cost Estimate for ImplementationWSGRF ExpansionEl Monte, CaliforniaPage 2 of 2



Table 4 Schedule of Charges (Effective January 1, 2023)

Professional Services ^(1,2)	Hourly Rate (\$)
Principal	242
Project Director/Senior Project Manager	212
Project Manager	182
Senior Project Engineer/Geologist	176
Project Engineer/Geologist	160
Senior Staff Engineer/Geologist	141
Staff Engineer/Geologist	115
Senior Technician	99
Technician	85
Designer/Senior CAD Operator	110
CAD Operator	91
Technical Editor	111
Project Coordinator/Word Processing	90
Project Support/Clerical	74

Reimbursables

Per Diem (meals for necessary overnight travel)	60/day
Car Mileage	IRS rate
Pickup Truck (on site)	8/hour 64/day
Truck Mileage	IRS rate plus \$0.10
Field equipment per separate schedule	

Expenses

Vendor costs and direct expenses billed at actual cost plus 10%.

- Notes: (1) An overtime surcharge of 30 percent may be applied to hourly rates for nonsalaried employees if field work has to be performed on weekends or at night because of site access limitations or other project-specific requirements.
 - (2) Preparation for expert witness services will be invoiced at the rates above apart from actual depositions and court appearances, which will be charged at double the rates listed above, with a 4-hour minimum per appearance.



Attachment 1

DFA Scope of Work





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MW-7A

MW-7C

200 MW-11A See.

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FORMER AEROJET FACILITY

MILLE MAULTANE II





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MW-7A

MW-7C

200 MW-11A See.

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FORMER AEROJET FACILITY

MILLE MAULTANE II

