



MEETING AGENDA
for
PLANNING, RESOURCES AND OPERATIONS
COMMITTEE

February 22, 2022 @ 3 pm
by Virtual/Online or Teleconference

Feb PROC Meeting

Tue, Feb 22, 2022 3:00 PM - 4:00 PM (PST)

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▪ **Call to Order**

1. Recognitions and Presentations:

2. Additions-Deletions to the Agenda:

3. Public Comments

This is the time for any shareholder or member of the public to address the committee members on any topic under the jurisdiction of the Company, which is on or not on the agenda. Please note, pursuant to the Brown Act the Committee is prohibited from taking actions on items not listed on the agenda. For any testimony, speakers are requested to keep their comments to no more than four (4) minutes, including the use of any visual aids, and to do so in a focused and orderly manner. Anyone wishing to speak is requested to voluntarily fill out and submit a speaker's form to the manager prior to speaking.

4. Approval of Committee Meeting Minutes

A. Regular Committee Minutes of August 24, 2021

5. Planning and Operational Issues:

6. Planning and Operational Updates:

A. Project Status Report/Project List

Report on on-going projects

B. Discussion and Possible Action Regarding the Paloma Curve Hydraulic Break

Proposal to conduct Engineering Assessment

C. Discussion and Possible Action Regarding Holly Drive Reservoir Phase III

Proposal to provide professional services

D. Discussion and Possible Action Regarding Holly Drive Booster Station Screening

Proposal to provide professional services

E. Discussion and Possible Action Regarding Proposed Well 19

Proposal to provide professional services

7. Basin Issues and Updates:

○ San Antonio Canyon Watershed – Verbal report

○ Chino Basin - Verbal report

○ Six Basins - Verbal report

○ Cucamonga Basin – Verbal report

8. Closed Session: None.

9. Committee's Comments and Future Agenda Items:

Agenda – Planning, Resource & Operations Committee
February 22, 2022
Sheet 2

This is the time for the Committee to comment and consider future agenda items relative to planning, water resources and operations of the company and its shareholders.

Adjournment:

The next regular PROC Meeting will be held on April 26, 2022 at 3:00 p.m.

NOTE: All agenda report items and back-up materials are available for review and/or acquisition at the Company Office (139 N. Euclid Avenue, Upland, CA.) during regular office hours, Monday through Thursday [8:00 – 11:30 & 12:30 – 4:00] and alternating Fridays [8:00 – 11:30 & 12:30 – 3:00]. The agenda is also available for review and copying at the Upland Public Library located at 450 N. Euclid Avenue.

POSTING STATEMENT: On February 17, 2022 a true and correct copy of this agenda was posted at the entry of the Company Office (139 No. Euclid Avenue), and on the public bulletin board at 450 N. Euclid Avenue (Upland Public Library), and on the Company website.

MINUTES OF THE SAN ANTONIO WATER COMPANY
 PLANNING, RESOURCES, and OPERATIONS COMMITTEE
 August 24, 2021

An open meeting of the Planning, Resources, and Operations Committee (PROC) of the San Antonio Water Company (SAWCo) was called to order virtually at 3:01 p.m. on the above date. Committee members present were Will Elliott and Tom Thomas. Also in attendance were SAWCo's General Manager Brian Lee, Assistant General Manager Teri Layton, and Senior Administrative Specialist Kelly Mitchell. Director Elliott presided.

1. Recognitions and Presentations – None.
2. Additions-Deletions to the Agenda – None.
3. Public Comments – None.
4. Approval of Committee Meeting Minutes:
 - A. ***Regular Committee Minutes of June 22, 2021*** – Director Thomas moved, and Director Elliott seconded to approve the meeting minutes of June 22, 2021 as presented. Motion carried unanimously with Directors Rudy Zuniga and Kati Parker absent.
5. Planning and Operational Issues:
6. Planning and Operational Updates -
 - A. ***Project Status Report/Project List***
 - o Holly Drive Reservoir – The new 120,000-gallon reservoir is now in service. The old 60,000-gallon reservoir has been taken offline. Staff is working with the engineer to determine when the second 120,000-gallon reservoir can be built. At that time, the 60,000-gallon reservoir will be demolished.

Director Thomas mentioned San Bernardino County, utilizing one of SAWCo's contractors, cleared out debris from behind the 23rd Street Dam.

- B. **Paloma Cure Hydraulic Break** – Mr. Lee informed the Committee that he met with the homeowner a couple of weeks ago in the on-going attempt to find the best resolution to the low frequency noise. He entered the hydraulic break to better see how it works. Pictures and a drawing of the flow of water through the hydraulic break were provided to the Committee.

An engineering team is reviewing three options to reduce the noise at the site. One option is to remove the chamber and replace it with a pipeline. A second option is to replace the metal structure with a concrete roof and line the interior with low frequency sound vibration dampener. The third option would be to abandon the site and put a new pipeline in the right-of-way in the street. Mr. Lee advised there is also a low frequency noise occurring north of the hydraulic break as well. He is unsure what is causing the noise.

As far as the hydroelectric building on the property, the homeowner has advised he is okay with the building being abandoned but remaining on the property.

Director Thomas felt it better to take the time to investigate all options to make the best decision rather than to just act quickly.

C. Company Treatment Plant – Mr. Lee advised he issued a short form request for proposals on what it would take to build a treatment plant for SAWCo. Currently, the City of Upland treatment plant can only accept flows of one million gallons per day or more. When flows drop below this the treatment plant is shut down. SAWCo loses the potential to sell up to one million gallons of surface flow from the canyon when the treatment plant is shut down. Staff is proposing building its own treatment plant so these canyon flows can be delivered to shareholders rather than spread.

The Committee was provided the proposals sans the fee estimate. Mr. Lee requested feedback on the proposals from the Committee.

Director Thomas commented that all three firms appear well qualified. He appreciated WSC's long term approach to the project and felt they are the best firm for the job. Director Elliott agreed that all three firms were qualified and did not have a preference as to whom SAWCo utilized. Ms. Layton stated she felt TKE was the front runner as they have experience with the City of Upland and felt WSC may have too many projects going on. Mr. Lee also placed TKE at the top of his preferred list with IEC second due in part to their lack of familiarity with SAWCo facilities.

Mr. Lee then revealed the fees estimate for each proposal. TKE's proposal was least expensive at \$24,000, with IEC coming in at \$32,100, and WSC at \$32,795.

Director Thomas moved and Director Elliott seconded to recommend the Board approve TKE as the consultant for the Company treatment plant. Motion carried with Director Zuniga and Director Parker absent.

Director Thomas questioned where staff is considering locating the treatment plant. Mr. Lee advised there are two proposed sites. One is at the Forebay facility because that is where SAWCo irrigation and potable waterlines converge. The other possible location is at Benson Avenue as all municipal shareholders can receive water near this location.

Director Thomas also inquired whether it might be more beneficial and less costly to have modifications done to the City of Upland's treatment plant. Mr. Lee stated that in talks with the Public Works Director for the City of Upland, upgrades to their treatment plant isn't something they would consider at this time.

7. Basin Issues and Updates

- **San Antonio Canyon Watershed** – Ms. Layton reported that every five years a Watershed Sanitary Survey is required. City of Pomona, City of Upland, and SAWCo cost shared in getting this survey completed by a consultant and

August 24, 2021

submitted to the Department of Drinking Water (DDW). A letter of review is expected shortly. October 2nd from 9 a.m. to 11 a.m. will be the Water Shed Clean Up Day. The next meeting is scheduled for September 15th to discuss and coordinate the clean-up day.

- **Chino Basin** – Mr. Lee reported on the discussions between the Agricultural Pool and Appropriative Pool over the payment of the Agricultural Pool’s legal fees. The Agricultural Pool is to provide lightly redacted legal invoices to the Appropriative Pool for consideration, but they have yet to agree on what amount of redacting is acceptable.
- **Six Basins** – Ms. Layton advised there is nothing new to report. The next meeting is scheduled for the following day where they will be going through the new attorney’s contract.
Director Thomas advised Six Basins will have their outgoing attorney present at tomorrow’s meeting and possibly some upcoming meetings for continuity.
- **Cucamonga Basin** – Ms. Layton stated there is no update on this item since the recent Board meeting. The next meeting is scheduled for September 7th where they will discuss a possible development near the Sycamore Inn as it relates to monitoring water as part of the Judgment.

8. Closed session: None.

9. Committee’s Comments and Future Agenda Items: None.

Adjournment: –The meeting adjourned at 3:29 p.m.

Assistant Secretary
Brian Lee

Item Title: Paloma Curve Hydraulic Break

Purpose:

To discuss a proposal from WSC for modernizing the Paloma Curve Hydraulic Break.

Issues:

Should the PROC forward a proposal from WSC to the full Board with a recommendation to approve?

Manager's Recommendation:

Recommend forwarding proposal with approval of PROC.

Background:

The Paloma Curve Hydraulic Break consists of a hydrogenator plant owned by the City of Upland and a concrete Hydraulic Break owned by the Company. The facility is designed to convert hydraulic energy into electrical energy and remove any remaining hydraulic energy prior to discharge at the Company's Reservoir Number Four.

During periods of high-water flow (sustained average-or-higher rainfall events) the amount of water flowing through the facility can create significant low frequency vibrations. These events occur only periodically (once every couple of years). The current property owner has requested that the Company eliminate the noise and/or abandon the facility.

Last year staff started reviewing the Paloma Hydraulic Break, including discussions with the current homeowner. The following solutions are currently being considered:

- Replace metal roof with concrete and install low frequency dampening devices within chamber. Unfortunately, low frequency noise is the hardest to dampen and significant (expensive) sound proofing would not be completely effective.
- Replace hydraulic break with a connector pipeline on current site. Probably the least expensive option but requires maintaining facilities on private property w/ easement.
- Replace entire facility with a pipeline within Paloma Drive. Probably the most expensive option but removes all Company facilities from private property. Would need to coordinate with City to see if they would be willing to abandon their building.

The concrete roof solution requires structural and sound engineering. The two solutions that involve eliminating the Paloma hydraulic break need detailed engineering analysis to ensure continued functioning of the pipeline and reservoir.

Staff requested a proposal from WSC Engineering, who is currently working on the Company's hydraulic model for our Master Plan Update. Staff is proposing to hire WSC using funds remaining on the 2020 UWMP and 2021 AWIA contracts (about \$23k remaining between both budgets). The remainder would come from Capital Reserves.

Previous Action:

None

Impact on Budget:

\$40,000 study

Full project cost is being developed



January 13, 2022
Brian Lee
San Antonio Water Company
139 N. Euclid Ave.
Upland, CA 91786

SUBJECT: PALOMA CURVE HYDRAULIC BREAK

Dear Mr. Lee,

Water Systems Consulting, Inc. (WSC) is pleased to present this proposal to evaluate the existing Paloma Curve Hydraulic Break and identify solutions for the deep vibrations and sound generated, while optimizing system efficiency when possible. We are excited for the opportunity to work alongside the San Antonio Water Company (SAWCo) as you continue to deliver long-term solutions, value, and leadership to the community that you serve. Our hope is that our proposal demonstrates the commitment to quality that we will bring to your team.

Through close coordination with SAWCo, WSC will evaluate alternatives to reduce deep vibrations and sound generated at the Paloma Curve Hydraulic Break facility, develop planning level cost estimates, and document the existing conditions and analyses performed in this project. WSC will use a proven quality assurance/quality control (QA/QC) program to make sure deliverables meet our high standards and your expectations.

We hope this proposal demonstrates our interest and commitment to SAWCo. If you have any questions on any aspect of this proposal, please feel free to contact WSC's proposed Project Manager and Principal in Charge, Kirsten Plonka, at (619) 961-0929, or kplonka@wsc-inc.com. Kirsten is authorized to represent WSC in negotiations, and sign contracts and agreements.

Thank you again for your consideration, and we look forward to your response.

Sincerely,

Water Systems Consulting, Inc.

A handwritten signature in black ink that reads "Kirsten Plonka". The signature is written in a cursive, flowing style.

Kirsten Plonka, PE
Project Manager/Principal in Charge

Paloma Curve Hydraulic Break

TASK 0.0 PROJECT MANAGEMENT

0.1 Project Management and Administration

- Prepare monthly invoices and monthly progress reports describing the work performed during the previous month.

0.2 Project Meetings

- Kickoff Meeting: conduct a one-hour kickoff meeting via Microsoft Teams to introduce the project team members, discuss project goals and objectives to foster project understanding, review proposed scope and schedule and its ability to meet project objectives, and review available data.
- As-needed coordination meetings to engage with SAWCo staff, update on progress, and gain input and further understanding.
- Draft TM Review Meeting: Plan, organize, and conduct a one-hour Draft TM review meeting via Microsoft Teams to discuss any comments. It is anticipated that the meeting will be held two weeks after submitting the Draft TM.

0.3 QA/QC

- Provide comprehensive quality control reviews of deliverables by WSC senior technical staff prior to submittal to SAWCo for review.

Deliverables: Monthly invoice and progress reports.

TASK 1.0 SYSTEM EVALUATION

1.1 Evaluate the existing pipeline

- Primary Focus
 - (1) Consider up to three alternatives to eliminate deep vibration and sound at Paloma Curve and E. Park Blvd during high flows.
- Secondary Focus
 - (1) Evaluate the existing pipeline that conveys irrigation water from the Forebay south to the Paloma Curve Hydraulic Break and into Reservoir 4.
 - (a) Consider additional alignments to provide SAWCo better access to infrastructure.
 - (2) Determine appropriate sizing based on evaluation criteria established in SAWCo's Comprehensive System Master Plan.
 - (3) Consider screening mechanisms at the Forebay or other areas of SAWCo's system to clear debris from distribution. Screening may be necessary if valves are added to the mainline to better assist operations.

TASK 2.0 COST ESTIMATE

2.1 Develop Cost Estimate

- Develop a preliminary cost estimate for sound reduction measures and proposed pipeline alignment and sizing, and existing pipeline abandonment. Include estimated costs for other recommended improvements (screening, reservoir inlet modifications, etc.)

Paloma Curve Hydraulic Break

Deliverables: Cost estimate for the proposed improvements.

TASK 3.0 TECHNICAL MEMORANDUM (TM)

3.1 Develop Draft TM

- Develop a draft TM documenting the following:
 - (1) Introduction and Background
 - (a) SAWCo's goals (i.e. reduce noise and vibration, improve access to SAWCo infrastructure, and mitigate hydraulic break issues).
 - (2) Existing conditions.
 - (a) Include summary of data available.
 - (3) Proposed improvements and planning level costs.
 - (4) Conclusions

3.2 Develop Final TM.

- Incorporate comments and feedback from SAWCo into a Final TM.

Deliverables: Draft and Final TM.



Task No.	Task Description	WSC								ALL FIRMS	
		Project Manager	QA/QC	Project Engineer	Engineering Support	Administration	WSC Labor Hours	WSC Labor Fee	Expenses	WSC Fee	Total Fee
		Kirsten Plonka	Jeroen Olthof	Heather Freed	Patricia Olivas	Kay Merrill					
	<i>Billing rates, \$/hr</i>	\$280	\$320	\$185	\$155	\$160					
0	Project Management										
0.1	Project Management and	6				7	13	\$ 2,800	\$ -	\$ 2,800	\$ 2,800
0.2	Project Kickoff	1		1	2		4	\$ 775	\$ -	\$ 775	\$ 775
0.3	Internal Coordination Meetings	6		6	6		18	\$ 3,720	\$ -	\$ 3,720	\$ 3,720
0.4	Client Coordination Meetings	6		6	6		18	\$ 3,720	\$ -	\$ 3,720	\$ 3,720
0.5	QA/QC		8				8	\$ 2,560	\$ -	\$ 2,560	\$ 2,560
	SUBTOTAL	19	8	13	14	7	61	\$ 13,575	\$ -	\$ 13,575	\$ 13,575
1	System Evaluation										
1.1	Hydraulic Noise Evaluation	3		20	20		43	\$ 7,640	\$ -	\$ 7,640	\$ 7,640
1.2	Evaluate Existing Mainline	3		4	8		15	\$ 2,820	\$ -	\$ 2,820	\$ 2,820
1.3	Consider System Efficiency	3		16	16		35	\$ 6,280	\$ -	\$ 6,280	\$ 6,280
	SUBTOTAL	9	0	40	44	0	93	\$ 16,740	\$ -	\$ 16,740	\$ 16,740
2	Cost Estimate										
2.1	Cost Estimate	1		2	16		19	\$ 3,130	\$ -	\$ 3,130	\$ 3,130
	SUBTOTAL	1	0	2	16	0	19	\$ 3,130	\$ -	\$ 3,130	\$ 3,130
3	Technical Memorandum										
3.1	Draft TM	4		4	8		16	\$ 3,100	\$ -	\$ 3,100	\$ 3,100
3.2	Draft TM Review Meeting	1		1	1		3	\$ 620	\$ -	\$ 620	\$ 620
3.3	Final TM	2		4	8		14	\$ 2,540	\$ -	\$ 2,540	\$ 2,540
	SUBTOTAL	7	0	9	17	0	33	\$ 6,260	\$ -	\$ 6,260	\$ 6,260
	COLUMN TOTALS	36	8	64	91	7	206	\$ 39,705	\$ -	\$ 39,705	\$ 39,705

10% mark-up on direct expenses; 15% mark-up for sub-contracted services
Standard mileage rate \$0.57 per mile (or current Federal Mileage Reimbursement Rate)
Rates are subject to revision as of January 1 each year.

ID	Task	Task Name	Duration	Start	Finish	1st Quarter	2nd Quarter
1		Task 0. Project Management	84 days	Mon 2/7/22	Thu 6/2/22		
2		Project Management and Administration	84 days	Mon 2/7/22	Thu 6/2/22		
3		Project Kickoff	1 day	Mon 2/7/22	Mon 2/7/22		
4		Project Meetings	84 days	Mon 2/7/22	Thu 6/2/22		
5		QA/QC	84 days	Mon 2/7/22	Thu 6/2/22		
6		Task 1. System Evaluation	40 days	Tue 2/8/22	Mon 4/4/22		
7		Hydraulic Noise Evaluation	30 days	Tue 2/8/22	Mon 3/21/22		
8		Evaluate Existing Mainline	15 days	Tue 3/1/22	Mon 3/21/22		
9		Consider System Efficiency	15 days	Tue 3/15/22	Mon 4/4/22		
10		Task 2. Cost Estimate	15 days	Tue 3/22/22	Mon 4/11/22		
11		Cost Estimate	15 days	Tue 3/22/22	Mon 4/11/22		
12		Task 3. Technical Memorandum	83 days	Tue 2/8/22	Thu 6/2/22		
13		Draft TM	60 days	Tue 2/8/22	Mon 5/2/22		
14		Draft TM Submission	1 day	Tue 5/3/22	Tue 5/3/22		
15		Draft TM Review	10 days	Wed 5/4/22	Tue 5/17/22		
16		Draft TM Review Meeting	1 day	Wed 5/18/22	Wed 5/18/22		
17		Final TM	10 days	Thu 5/19/22	Wed 6/1/22		
18		Final TM Submission	1 day	Thu 6/2/22	Thu 6/2/22		

Project: SAWCo_Hydraulic Brea
Date: Thu 1/13/22

Task		Project Summary		Manual Task		Start-only		Deadline		Progress
Split		Inactive Task		Duration-only		Finish-only		Manual Progress		
Milestone		Inactive Milestone		Manual Summary Rollup		External Tasks				
Summary		Inactive Summary		Manual Summary		External Milestone				

Item Title: Holly Drive Reservoir, Phase III Design Services

Purpose:

To discuss a proposal from TKE Engineering for the Holly Drive Reservoir Phase III project.

Issues:

Should the PROC forward a proposal from TKE Engineering to the full Board with a recommendation to approve?

Manager's Recommendation:

Recommend forwarding proposal with approval of PROC.

Background:

The Holly Drive reservoir site has been in design since 2016, undergoing various changes to accommodate increased understanding of the site and water demands in the service area. Originally conceived as the replacement of a single 60,000-gallon tank, the project morphed into the installation of a 120,000-gallon tank and replacement of the existing tank to an additional 120,000-gallon tank. These changes were necessary to meet system fire flow, as researched for the Water Master Plan developed after initiation of the Holly Drive Tank design.

The project is currently split into three phases; Phase I - geotechnical work has been completed. Phase II - construct new reservoir has been completed.

Staff requested a proposal (attached) from the design engineer, TKE Engineering, for the final Phase III - replacing the abandoned 60,000-gallon bolted tank with a new 120,000-gallon tank.

TKE currently has an outstanding contract balance for Phase II of \$31k. Staff is proposing those funds be shifted to the Phase III project. The remaining funds would come from Capital Reserves.

Previous Action:

None

Impact on Budget:

\$105,000 design and management contract

Full project cost to be developed



T K E E N G I N E E R I N G , I N C .

February 2, 2022

Brian Lee
SAN ANTONIO WATER COMPANY
 139 North Euclid Avenue
 Upland, CA 91786

Subject: Proposal to Provide Professional Engineering Services for Holly Drive Reservoir Phase III

Dear Mr. Lee:

Thank you for the opportunity to submit a proposal to provide professional engineering services for the subject project. The proposed scope of services is described in more detail below:

DESIGN SCOPE OF SERVICES

TKE's scope of services is presented in the following paragraphs:

Task 1. 90% Design

90% Design will include drawings, specifications and estimates.

For the drawings, we will prepare a title sheet, construction notes sheet, grading plan sheet, site piping sheet, drainage system plan, pipeline plan/profile sheets, and detail sheet.

The specifications shall be prepared in accordance with SAWCO standards and will be prepared in Microsoft Word format. They will include technical specifications for the SCADA system, structural requirements, lining and painting requirements, and landscape and irrigation.

In addition, we will update the project construction cost estimates. We will use the bidding schedules to prepare the estimates. The bidding schedules will include all material and construction requirements as shown on the drawings and specifications.

Task 2. 90% Design Review Meeting

After the 90% design documents are complete, we will forward the documents together with the updated construction cost estimates to SAWCO staff for review and comment. We will meet with SAWCO staff after their reviews are completed to obtain comments.

Task 3. Final Design

We will incorporate SAWCO's 90% comments and provide SAWCO with hard (Mylar drawings and specifications) and digital copies of the drawings, and specifications for final approval. In addition, we will prepare a final construction cost estimate for the project.

DESIGN FEE

Our budget to provide the design services described is as follows:

	Description	Amount
1.	90% Design	\$ 22,300
2.	90% Design Review Meeting	\$ 1,000
3.	Final Design	\$ 9,500
		Total: \$32,800

CONSTRUCTION MANAGEMENT SCOPE OF SERVICES

Construction contract management will include Pre-Construction, Construction, and Post-Construction Services described as follows:

1. Pre-Construction Services

Pre-construction services include contract document advertisement, bidding, award, and contract execution; material submittal review; and pre-construction conference coordination. Pre-construction services, each are discussed in the following paragraphs:

1.1 Bidding, Award, and Contract Execution

TKE will assist SAWCo with a number of activities including advertising, distributing contract documents to perspective bidders, conducting a pre-bid "job walk," responding to bidder RFI's, preparing and distributing addenda, and coordinating the bid opening.

After the bids are received, TKE will review all bids to verify that they have been submitted in accordance with project requirements, verify that the lowest responsive bidder's contractor license is in good standing, and verify that the bidder is qualified to complete the work by discussions with listed experience.

After the lowest responsive bidder is identified, TKE will prepare a board recommendation letter for award.

Once the board approves award, TKE will conform the contracts and deliver them for execution by the lowest responsive bidder. After they execute the contract, TKE will assist SAWCo with execution.

1.2 Team Coordination

TKE will coordinate the project team, including SAWCo staff, Contractor, inspector, geotechnical engineers, materials testing, and other agency staff by advising of the project schedule and specific project requirements. All conferences will be documented.

1.3 Pre-Construction Conference

A preconstruction conference will be held. The conference will be attended by SAWCo staff, TKE's Construction Manager, Construction Inspector and the Contractor. Prior to the conference, we will prepare a conference agenda. At the meeting, we will discuss communication protocol requirements, and procedures for contract submittals, contract administration, job-site access and delivery, and coordination with others. We will document the meeting and distribute meeting minutes to all appropriate parties.

1.4 Material Submittal Review

TKE will prepare a list and review all project submittals. Submittals would include, but are not limited to:

- a. Construction Schedule;
- b. Emergency Contact List;

- c. SWPPP;
- d. Valves
- e. Air Valves
- f. Expansion Joints
- g. Catch Basins
- h. Steel Reinforcement
- i. Rip Rap
- j. Reservoir and Appurtenances
- k. SCADA Equipment
- l. Asphalt Concrete Pavement;
- m. Aggregate Base;
- n. Portland Cement Concrete; and
- o. Equipment and Related Materials

We will maintain a project log for the project and it will include descriptions of submittals, date received, and date returned. Once the submittals have been reviewed and accepted, they will be signed, dated, and sent to the Contractor. Submittals will be returned within the time frame specified by the contract documents. The construction schedule will be a critical document. It will be reviewed to verify compliance with the contract documents and will be reviewed biweekly to ensure construction is proceeding efficiently.

TKE's Construction Manager will meet with the Contractor and Project Inspector on a biweekly basis to review progress, changed conditions, issues and progress payments to ensure the project remains on schedule and that SAWCo staff is fully aware of all project proceedings.

2. Construction Services

Construction Services include the following:

2.1 Construction Administration

Prior to beginning construction and throughout the course of construction, we will meet SAWCo Staff. We will prepare agendas and minutes for each meeting and will respond to questions as required. During construction, the Construction Manager will coordinate all construction activities with the construction inspector, the quality assurance professionals, other agencies and utility companies and project surveyors. In addition, the Construction Manager will visit the job site often to observe construction activities. He will document any observed deviations from the plans and he will advise the Contractor, as appropriate, for resolution of observed deficiencies. In addition, our Construction Manager will conduct biweekly meetings with the Contractor to ensure construction is progressing efficiently. We will prepare agendas and minutes for each, and refer to uncompleted business at each meeting. Also, should incidents or issues arise, Contractor will be required to submit reports regarding each.

Throughout the course of construction, our Construction Manager will respond to complaints from the public. In addition, he will review the construction progress and compare it to the approved project schedule and the contractor of deficiencies.

RFI's and RFC's (including written clarification requests and change-in-plan drawings) will be reviewed and responded to regarding the contract documents in order to ensure that the improvements are constructed in compliance with same;

we will provide said responses as required to minimize delays in construction. All RFI's and RFC's will be logged, including content of inquiry and date relayed and date of response.

Our contract administration activities will include progress reviews to ensure that the project is proceeding according to requirements and schedule, biweekly progress review meetings with the contractor, review of contract change order requests, and payment requests and related services. Payment requests and record keeping will include all correspondence, transmittals, drawings, technical manuals, reports, etc. (both hard copy and electronic formats) related to pre-construction, construction and post-construction phases of each construction contract. The documents will be kept at our office.

Project progress and any changes during construction will be noted on a set of the project's contract documents maintained in our office. If a problem occurs requiring a SAWCo decision, we will consult with staff. The Construction Manager will attempt to resolve complaints, concerns, and questions from residents and other affected agencies without staff assistance.

Through e-mail, telephone conferences, and regular meetings, the Construction Manager will keep staff informed of project progress, problems that have occurred during construction, and any changes in work. Whenever possible, we will review required changes with staff prior to making same.

Each month, we will review the construction payment requests submitted by the contractor for work completed and the construction schedule. In addition, we will verify that certified payroll has been submitted. We will review the work completed and payment requests to ensure that the quantities and amounts requested reflect the actual work completed. After each request has been reviewed (and revised if necessary), we will approve it for payment. We will also submit a monthly status report with each payment request verifying compliance with the project schedule. If the Contractor begins to fall behind the schedule, we will request corrective action.

If change conditions occur, we will negotiate with the Contractor to establish the impact of change conditions and we will attempt to complete negotiations prior to beginning work. SAWCo will be included in all negotiation requiring a contract amount increase. If we fail to reach an agreement and the work must continue, we will direct the Contractor to complete the work. The Construction Inspector document the labor, materials and equipment used for the extra work for use in future negotiations.

We will review any change order request received to determine if said request is warranted. If the change order request is not warranted, we will reject it in writing; prior to sending rejection letters to the Contractor, we will review it with SAWCo staff. If the change order request appears justified, we will review it with the Construction Inspector and compare it with field reports for confirmation of materials, equipment and/or labor involved; we will review same with staff and receive staff's approval prior to preparing and processing the contract change order. Change orders will be prepared on standard forms. Change Orders will be summarized in a log for review at our weekly meetings.

We will ensure that telephone numbers for normal working hours, evenings, and weekends for our staff, contractor, utilities, and emergency services are provided to all concerned parties.

In addition, we will maintain documents and records. We will ensure that the contractor is submitting proper labor reports, time and material reports, material invoices and/or tickets, certifications, warranties and all other such documents as necessary for a complete and successful project.

2.2 Construction Staking

TKE will provide construction staking services required to complete construction. We will prepare grade sheets and we will provide stakes for construction at required locations as established by the Contractor.

2.3 Construction Inspection

TKE will provide part time construction inspection. Our construction inspector will provide daily construction inspection to verify that the project is progressing in compliance with the contract documents. He will regularly discuss anticipated construction activities to ensure quality compliance and surveying is scheduled as needed to ensure the project is proceeding efficiently. We will require strict compliance with requirements for all construction activities. All materials will be reviewed against approved material submittals as they arrive on-site. Batch tickets or weigh certificates will be collected upon material arrival.

Our Construction Inspector will verify SWPPP and safety provisions have been implemented at the start of each work day, at the construction site. Any deviations will be documented. All system service interruptions, connections and abandonments will be coordinated with staff. In addition, TKE will verify all quality testing for the project.

We will digitally photograph the activities and maintain copies in the project files and our Construction Inspector will prepare daily field reports, which will document all observed project activity, including location of the activity, number of workers present, construction equipment used, inspector present, weather conditions, and construction progress. All project documentation will be completed on standard forms. All documents will be submitted in hard copy and electronic copy formats. TKE will provide all inspection equipment needed.

2.4 Coatings Inspection

TKE is proposing to use Harper and Associates for tank lining and coating inspection. Coating and painting quality control inspection will include, coating surface preparation inspection, prime coat inspection, finish coat inspection, final inspection, dry film thickness, and holiday detection.

2.5 Materials Testing

LOR Geotechnical will provide quality testing services for the project including material testing and compaction testing. TKE will review all test reports completed by LOR to verify contract compliance. Materials testing costs are budgeted amounts only and will be billed based on the actual time expended for testing purposes.

3. Post Construction

Post construction services include the following:

3.1 Construction Close-Out

TKE will establish punch-lists for project completion, deliver maintenance bonds and/or manufacturer warranties, operations and maintenance manuals are provided, and all other construction requirements have been completed.

Through the course of construction, TKE will document changes on a set of record drawings. Once the project has been completed, TKE will prepare record drawings and provide them. They will be signed and stamped by the construction manager and will reflect the improvements as constructed. Said record drawings will be based on data furnished by the Contractor, and our weekly field reports.

We will forward copies of all records in digital format and we will prepare a summary of construction changes, final cost, and schedule revisions. In addition, TKE will provide a final narrative summary report documenting construction activities.

CONSTRUCTION FEES

Based on the construction documents, we estimate a period of two and a half months for construction. Using this duration and knowledge of the contract documents, TKE has budgeted the following:

	Description	Amount
1.	Pre-Construction Services	
1.1	Bidding, Award and Execution	\$ 4,300
1.2	Team Coordination	\$ 2,070
1.3	Pre-Construction Conference	\$ 2,180
1.4	Material Submittal Review	\$ 5,200
2.	Construction Services	
2.1	Construction Administration	\$ 12,540
2.2	Construction Staking	\$ 3,680
2.3	Construction Inspection	\$ 17,600
2.4	Painting and Coating Inspection	\$ 15,000
2.5	Materials Testing	\$ 4,000
3.	Post Construction Services	
3.1	Construction Close-Out	\$ 3,490
	Subtotal:	\$70,060
	Reimbursables:	\$ 1,200
	Total:	\$71,260

The total amount for both design and construction services is \$104,060. Based on our current PO with SAWCO we show an available balance from Phases 1 and 2 of \$31,400. Therefore, TKE requests SAWCO adjust our current PO amount by \$72,660. We will invoice SAWCO monthly in accordance with our rate schedule. Our invoice will not exceed the amount presented above without prior approval.

Again, thank you for the opportunity to submit our proposal to provide professional engineering services for the San Antonio Water Company. If you have any questions, please contact me at (951) 680-0440.

Sincerely,



Terry Renner, P.E., Q.S.D.
Senior Vice President
TKE Engineering, Inc.

Item Title: Holly Drive Booster Station Screening

Purpose:

To discuss a proposal from Soltis and Company, Inc for the Holly Drive Booster Station Screening.

Issues:

Should the PROC forward a proposal from Soltis and Company to the full Board with a recommendation to approve?

Manager's Recommendation:

Recommend forwarding proposal with approval of PROC.

Background:

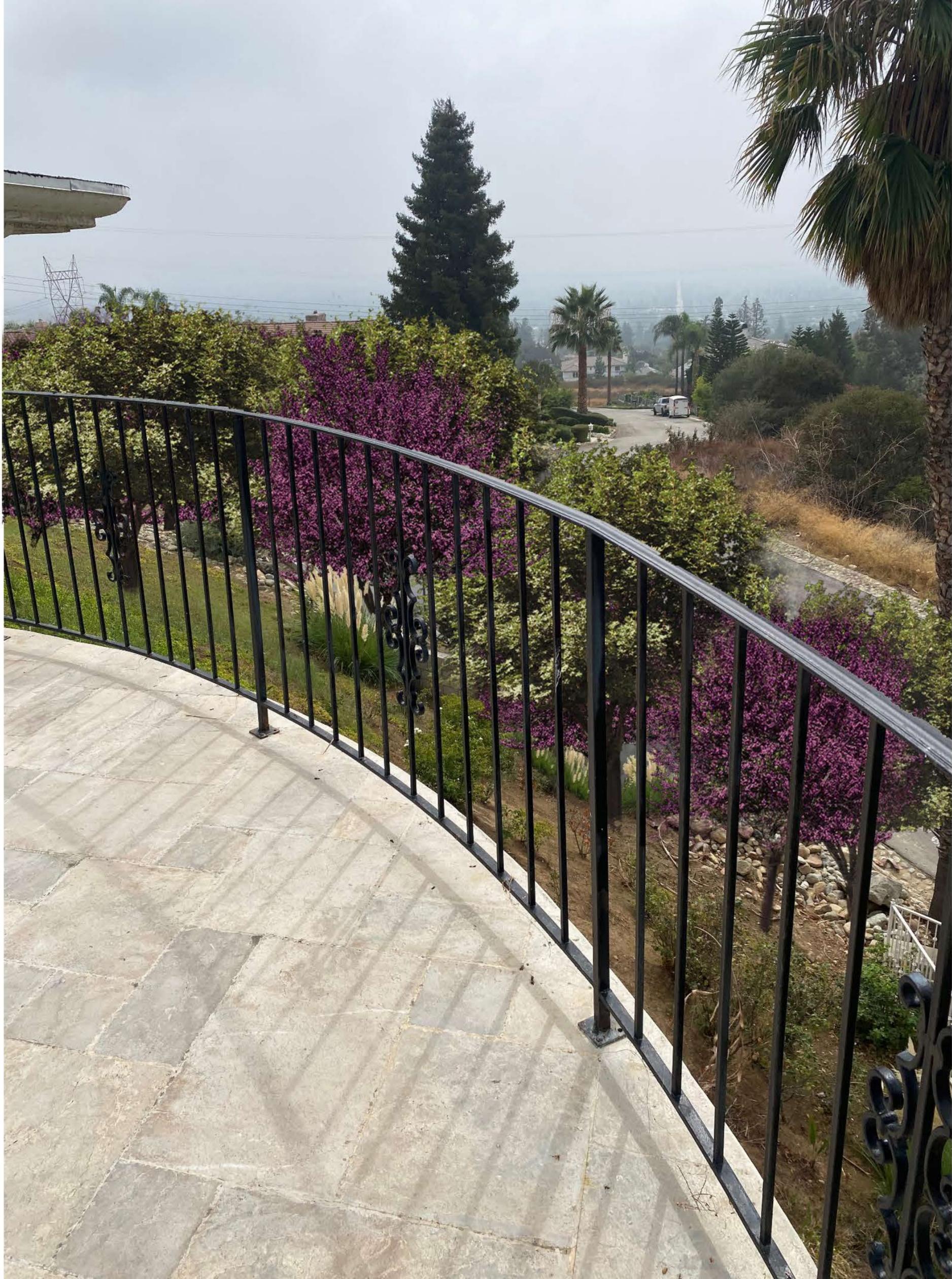
The Holly Drive Booster Station has undergone significant upgrades in the last few years, from an underground vault-style booster station to an above ground building and finally, the installation of a back-up generator. The neighboring homeowner has expressed concern regarding the visual changes that have occurred. Staff has worked with the homeowner and hired Soltis Landscaping to prepare a plan for visually softening and shielding the new station.

Previous Action:

None

Impact on Budget:

\$15k total project budget to come from Capital Reserves.





EXISTING
HOUSE

Holly Dr

GENERATOR AREA

W 26th St

PLANTING LEGEND

SYM.	BOTANICAL NAME	COMMON NAME	SIZE	QTY.	WUCOLS
	PRUNUS ILICIFOLIA_SSP_ILICIFOLIA	HOLLY LEAVED CHERRY	24"/36" BOX MULT	4	LOW
	CERCIS OCCIDENTALIS	WESTERN REDBUD	24"/36" BOX MULT	5	LOW
	NASSELLA TENUISSIMA	MEXICAN FEATHERGRASS	1 G	10	LOW
	ARCTOSTAPHYLOS 'PACIFIC MIST'	PACIFIC MIST MANZANITA	1 G	10	LOW

PROJECT TITLE:
**GENERATOR SCREENING
2620 HOLLY DR.
UPLAND, CA 91784**

NO.	REVISIONS
1	

SHEET TITLE:
CONCEPTUAL SITE PLAN

DRAWN BY: C.M.S.

CHECKED BY: D.B.

DATE: 01/28/2022

JOB NO: B205

SHEET:

L-1

SHEETS 1 OF 1

SCALE 1" : 6'



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January 26, 2021

Mr. Brian Lee
 San Antonio Water Company
 139 N. Euclid Avenue
 Upland, California 91784

Re: Water Generator Screening

Dear Brian:

Our proposal is per the following summary:

Generator Screening

Demolition (1800 SQ)	\$	594.00
Mulch (4 CY)	\$	260.00
Landscape - Trees (6-36", 3-24")	\$	8,730.00
Landscape - 1 Gal Shrubs (20 ea)	\$	420.00
Existing Rock Remodeling (1800 SQ)	\$	2,250.00
Irrigation System (1800 SQ w/ Bubbler Valves)	\$	1,620.00
90 Day Maintenance Period	\$	<u>500.00</u>
Total	\$	13,520.00

Important Job Concerns

Specific Job Qualifications and Exclusions:

1. Saturday work is not included in this proposal.
2. Water Restrictions in Affect – There is no warranty for dead or dying plant material because of the current mandated water restrictions.
3. Soltis and Company General Conditions of Proposal apply to this bid. Please see attached form.
4. This bid is based on the contract being awarded within 45 days from the date of this document.
5. Finish grade to be received within 1/10th of a foot.
6. We have estimated this project to be installed per our breakdown with one move on per phase. Additional move one will be an extra to this agreement at the cost of \$850.00 per occurrence.
7. All perimeter walls and fencing to be installed prior to move-on.
8. Any extraordinary rock excavation is not included in this proposal. Export of rock debris by others.
9. This bid excludes surveying and staking.

Soltis and Company, Inc. has your best interests in mind. As we perform this work for you we will ensure you to ease your mind with our quality, safety standards, and professionalism. I assure that you will look forward to continuing a long lasting relationship with our company.

CSLB #653837 C27 DIR#1000010808

NEW LOCATION – 869 W. 9TH STREET, UPLAND, CA 91786 ... PHONE: (909) 346-1111 FAX: (909) 610-6767
 MAILING – P.O. BOX 1309, UPLAND, CA 91785



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Sincerely,

Chloe Soltis
Project Manager
Soltis and Company, Inc.

General Conditions of Proposal:

- Permanent POWER and WATER shall be provided prior to planting operations. Excludes all power and water costs.
- ALL Permits by others. Including but not limited to: Electrical, Landscape, Overhead Structures and Encroachment.
- Proposal based on **STANDARD** wages.
- **Price is valid for 45 days.**
- Pricing is based on TWO move-ins. One for sleeving and one for construction. Additional mobilizations will be charged at \$850.00 each. Move ins are considered to be situations where we are called out to work and the areas are not ready or we have to pull off because the areas are not ready. Most common situations are walls not being ready, grade not being ready and sidewalks not ready.
- Hazardous waste removal and disposal shall be by others.
- Backfill to be Native Soil @ 90% Compaction. Testing by others.
- All spoils shall be lost on site.
- All rocks larger than a 310 John Deere Backhoe can take out will be removed on a T&M basis.
- No demolition, removals, rock removal, clearing, grubbing or trenching of bedrock or hardpan.
- Traffic control, survey, hot tap, coring, disposal, site ripping, boring, jacking, and hydraulic drilling are excluded.
- All pipe shall be installed prior to paving.
- Water meter and all work upstream of water meter including installation fees, permits or inspections, shall be by others.
- Site to be received clean and in a weed free condition. All areas not requiring import material such as sand, decomposed granite, or rock shall be received @ +/- 0.10' of finish grade. Any areas requiring any of the above import materials by Soltis and Company, Inc. shall be received @ +/- 0.10' of sub grade elevations.
- Design, implementation, and maintenance of the Storm Water Pollution Prevention Plan shall be by others.
- **No import or export of soil.**
- Soltis and Company is a NON-UNION company. This bid proposal is completely void if any Union affiliation is stated or unstated. No contract or master contract will be valid if Union affiliation is part of the agreement.
- Bond not included in bid price.
- Price is based on a Phased working day schedule.
- Retention shall be billed and paid progressively.
- All payments are due and payable upon receipt of invoice. Any payments not received when due shall bear interest at the rate of 1 ½ percent per month on the amount which is past due. Should it become necessary to institute suit to collect moneys pursuant to this contract, Soltis shall be entitled to collection of its actual costs so incurred including its actual attorney's fees.
- These conditions must be made part of any contract or agreement. Deletions or modifications to these conditions will void this proposal or result in modified pricing, at the discretion of Soltis and Company, Inc.
- Pricing excludes overtime, weekend work, and accelerated schedules.
- Pricing is based on free and clear job-site with no interfering debris, rubble, trash, scaffolding, etc.
- Pricing is based on free and clear crane and equipment access.
- Maintenance will be **90 days** from substantial completion. Substantial completion will be based on a phase by phase basis or once the landscaping is complete. The start of maintenance will not be delayed for punchlist items or plant establishment.
- Landscape and Irrigation shall be maintained by a licensed landscape contractor for the period after the **90 day** maintenance if extended maintenance is not accepted. Warranty does not cover neglect by the licensed contractor that takes over the maintenance.
- Mobilization will be billed at the start of the project.
- Retention will be reduced to 80% withheld 30 days after completion of project.
- Concrete Work and Pavers Notes: all paver work is excluded unless specifically stated as a cost line item. Pavers in driveways walk ways, landscape areas and all other areas are specifically excluded unless specifically asked to bid this item. We assume that this work would be handled by the Masonry or Concrete Contractors.
- Frost Damage: Frost can kill plant material. There is no perfect protection from frost damage. Using larger more established plant material can help as well as using plant material that can handle the severe weather. There are sprays available that are supposed to help with the frost, but nothing is guaranteed to work 100% of the time. The onetime cost to spray shrubs up to an 8,000 sf area would be \$350.00.
- Gopher/Rodent Control: Gopher control will be charged as an additional cost and is not part of the standard maintenance cost. The onetime application cost to provide gopher control for areas up to 10,000 sf would be \$350.00. Additional applications will be charged on an as needed basis. Gophers are usually an existing condition that tends to be more active when the installation of new landscape and irrigation is performed. Gophers/Rodents can also come into projects from the surrounding areas.
- Maintenance: Our maintenance is for the establishment of the plant materials and general upkeep of the planting areas. Our maintenance crews will address jobs on an individual basis and schedule their time at each site as needed. We are not responsible for water costs associated with mainline or lateral breaks. These repairs will be made in a timely manner when we are alerted of, or discover ourselves, such an incident.

CSLB #653837 C27 DIR#1000010808

NEW LOCATION – 869 W. 9TH STREET, UPLAND, CA 91786 ... PHONE: (909) 346-1111 FAX: (909) 610-6767
MAILING – P.O. BOX 1309, UPLAND, CA 91785

Item Title: Well 19 Construction

Purpose:

To discuss a proposal from BEEST to construct a new Well 19.

Issues:

Should the Company consider construction of an expanded test well?

Manager's Recommendation:

None.

Background:

Staff has been working with BEEST on development of specifications for a new production Well 19 within the Cucamonga Basin. Staff originally proposed to construct a test well/pilot hole in 2022. As plans continue to progress the concept of constructing a permanent outer well wall during testing along with striated testing levels within the well has risen as a potential concept. The upfront cost to construct a more permanent casing along with the test well is significantly higher than constructing a simple test well. Staff originally budgeted \$175k in 2022 for the test well. A modified test well that would transition into a permanent well would cost an estimated \$1,000,000. Staff is still exploring the benefits and negatives of moving in this direction and is not yet ready to make a recommendation. Staff wanted to have a full discussion with the Committee regarding the direction this project is heading before committing additional time.

BEEST is working on additional information for presentation at the Committee Meeting.

Previous Action:

None

Impact on Budget:

To be determined

Project Title: **Well Site 19**

Total Budget: **\$2,500,000**

Engineering: \$500,000 (\$330k reserved in 2021) (\$25,000 in 2022)

Construction: \$2,000,000 (\$150,000 in 2022)

Schedule:

Engineering: ~~June 2021~~ January 2022 – ~~March~~ November 2022

Bidding: ~~June~~ July early 2023

Construction: ~~October 2022 – February 2023~~ mid to late 2023

Location:



Justification: The 2008 Master Plan recommended a new well to meet supply requirements. Construct a new well at Site 19 was identified in the 2017 Master Plan as a high priority project.

Staff is proposing the design and construction of a pilot hole and full well design in 2022. The pilot hole is intended to provide hydrogeologic information regarding material and estimated yield of proposed production well.

12/22/2021
TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS FOR DRILLING, CONSTRUCTION,
DEVELOPMENT AND TESTING OF TEST HOLE [SITE NAME]

SAN ANTONIO WATER CO.
BRIAN LEE
139 N. EUCLID AVENUE
UPLAND, CA 91786

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I. SCOPE OF WORK

In accordance with a request from [OWNER], Layne Christensen has prepared these Technical Specifications for the drilling, construction, development, and testing of one (1) [WELL NAME] test well to be located at [LOCATION DESCRIPTION] location map as shown on [Figure 1 – attach GPS picture of site]. The purpose of the test well is to profile water quality for a production well to be completed at this site.

The following definitions apply to these Technical Specifications:

OWNER: **SAN ANTONIO WATER CO.**
Attention: BRIAN LEE
139 N. EUCLID AVENUE
UPLAND, CA 91786
EMAIL: Blee@sawaterco.com

CONTRACTOR: **Drilling company whose authorized representative has signed the proposal.**

SUBCONTRACTOR: **Any company hired by and managed by CONTRACTOR to perform specific duties and/or provide materials or equipment.**

The well specified herein shall be drilled using direct or reverse-circulation mud rotary drilling method to a depth of 1,200 feet below land surface. Actual drilled depths for the well may be modified by hydrogeologist during drilling, based on subsurface conditions encountered. The test well will be developed by swabbing and air-lift pumping

CONTRACTOR shall obtain necessary drilling permits prior to commencement of drilling and testing. **OWNER** shall be responsible for obtaining the necessary NPDES permits or have a location for the development water to be disposed of which complies with all state and federal regulations. Final completion of all drilling and testing operations is required by [DATE]. Notice for awarding contract is anticipated to be [DATE]; written authorization to proceed is anticipated to be complete by [DATE].

The work to be conducted by **CONTRACTOR** includes the furnishing of all labor, materials, tools,

supplies, equipment, transportation, appurtenances, and services, unless specifically excepted in these Technical Specifications, necessary for the complete and satisfactory drilling, construction, and testing of one [WELL NAME]. Any part of the work which is not mentioned in the Technical Specifications, but which is necessary or normally required as a part of such work, or is necessary or required to make the well satisfactorily complete and operable, shall be performed by **CONTRACTOR** as incidental work without extra cost to the **OWNER**, as if fully described in the Technical Specifications, and the expense thereof shall be included in the mobilization/demobilization line item.

A. LOCATION OF WORK

The proposed well site is located on **OWNER's** property, [DESCRIPTION OF LOCATION]. Approximate location for the proposed well is shown on **Figure 1**.

B. BOUNDARIES OF WORK

OWNER shall make suitable provisions for access to the well site. **CONTRACTOR** shall not enter onto or occupy with personnel, tools, equipment, or materials, any ground outside the specified work or storage area without the consent of the **OWNER**. Other contractors and employees or agents of the **OWNER** may, for all reasonable and necessary purposes enter upon the work and premises used by **CONTRACTOR**. **CONTRACTOR** shall conduct activities so as not to unnecessarily impede any work being done by others on or adjacent to the site.

Limited storage area for **CONTRACTOR's** drilling equipment, casing, etc., may be made available by **OWNER** at the well site and/or at other property controlled by **OWNER**.

C. EXAMINATION OF SITE BY CONTRACTOR

Prior to submittal of the Proposal, **CONTRACTOR** will be required to visit the site.

OWNER shall not be liable for any loss sustained by **CONTRACTOR** as a result of **CONTRACTOR's** failure to thoroughly examine the site and to thoroughly review existing data, reports, and these Technical Specifications.

In the event subsurface or latent physical conditions are found to be materially different from those indicated in these Technical Specifications, and differ materially from those ordinarily encountered and generally recognized as

inherent to the character of work covered in these Technical Specifications, **CONTRACTOR** shall promptly, and before such conditions are disturbed, notify **OWNER** in writing of such conditions. **OWNER** shall investigate such conditions promptly and, following this investigation, **CONTRACTOR** shall proceed with the work, unless otherwise instructed by **OWNER**. If **OWNER** finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performing the work, **OWNER** shall make the adjustments in cost and time considered reasonable and shall issue a Change Order to **CONTRACTOR**. **OWNER** shall make the final decision on all Change Orders to the Technical Specifications regarding adjustment in cost or time for completion.

D. HYDROGEOLOGIC CONDITIONS

Drilling conditions anticipated at the proposed location will likely consist of gravels and small cobbles to a depth of 200 Ft. BGS, then transitioning into alternating sequences of coarse sands with interbedded silts and clays. Sand beds will likely become finer grained and thinner with depth. The target depth for the pilot hole is 1,200 feet to ensure that enough coarser-grained deposits are encountered to satisfy production demand.

E. HOURS OF OPERATION

The hours of **CONTRACTOR**'s work will not be restricted and operations to drill, construct, develop, and test the test well may be conducted on a continuous basis, 24 hours per day, 7 days per week, until the work is completed or **OWNER** instructs **CONTRACTOR** otherwise. **CONTRACTOR** personnel and all **SUB-CONTRACTOR** personnel shall be available when needed for required tasks.

F. ACCESS TO SITE AND SITE PREPARATION

OWNER shall provide legal access to the well site, utility clearance, and shall prepare a level drill pad suitable for construction of the well. **CONTRACTOR** shall be responsible for all other required site modifications.

G. SOUND CONTROL

CONTRACTOR will be responsible in taking all necessary precautions to protect the safety and well-being of the residents in the well site vicinity. Engines and all other equipment shall be equipped with approved exhaust systems and/or noise reduction equipment as directed by **OWNER**. There may be residential areas near the drill site which will require sound reduction walls to be appropriately erected and additional sound reduction

controls to be placed on engines and machinery. The required height (estimate 16 feet high) and composition of the sound reduction walls and additional sound reduction controls shall be approved by **OWNER**. The sound reduction walls shall be clean, free from graffiti, and appear competent and aesthetically pleasing as originally constructed to provide for proper sound control, site protection, and a professional appearance. The sound reduction walls shall be erected with sufficient support that they are not at risk of falling during wind events. The sound reduction walls shall remain in place during all drilling, installation, development, and testing operations.

H. CONSTRUCTION WATER

Water required for drilling and construction of the proposed interceptor well will be made available by **OWNER** from [LOCATION], which meets all state and federal drinking water rules and regulations. It is the responsibility of the **CONTRACTOR** to provide Baker tanks, tank truck, hose fittings, pumps, and other items necessary to store the water and transport water to the well site if there is not a suitable water source on site. This cost should be included in the mobilize/demobilize line item.

I. DRILLING FLUIDS AND DRILL CUTTINGS

The well shall be drilled using direct or reverse-circulation mud rotary drilling method.

Drilling fluids and drill cuttings removed from the well during drilling and development shall be contained at the drilling site in a minimum of 7,500 gallon above-ground portable bins and/or tanks provided by **CONTRACTOR**. Land surface inside and outside the work area at the site shall be kept clean of these materials at all times. **CONTRACTOR** shall be responsible for removal of all drilling fluids and disposal at a certified disposal site. **CONTRACTOR** will be required to submit proof of disposal of all drilling fluids including analytical results to **OWNER** prior to payment.

If water removed from the well during development and pumping test operations is substantially free of drilling fluids and suspended material, **CONTRACTOR** may discharge the water to land surface at locations identified by **OWNER**. **OWNER** shall apply for and obtain all permits required for discharge of water or any other substances on or off site, and shall implement any compliance monitoring required for the discharge, if applicable. **CONTRACTOR** shall ensure, at its expense, that the discharged water does not create a nuisance or safety hazard, and that the discharge is in accordance with National Pollutant Discharge Elimination System (NPDES) permits and

any other permits required for discharge of water on or off site. **CONTRACTOR** shall be responsible for all costs associated with unauthorized and unapproved discharges.

A list of potential drilling fluid additives that may be required during drilling operations, together with Material Safety Data Sheets, shall be submitted to **OWNER** by **CONTRACTOR** prior to commencement of drilling operations.

CONTRACTOR shall, at all times, maintain the drilling fluid characteristics to minimize formation damage while providing sufficient stabilization, as necessary, of the borehole wall. When proper drilling fluid characteristics can not be maintained by **CONTRACTOR**, **CONTRACTOR** shall employ, at its expense, an experienced qualified mud engineer at the site during operations to supervise and, at all times, maintain proper drilling fluid characteristics.

J. CONTRACTOR SOUNDING DEVICES

CONTRACTOR shall use appropriate sounding devices to obtain and record periodic measurements of depths during well construction and development operations, including depth to top of annular materials, such as gravel pack and cement, borehole depth, and depth to water. Depth to water shall be measured using an electrical water level sounder, re-calibrated for this project to the nearest foot, and in good operating condition. Other depths shall be measured using a device consisting of a manufactured steel cable wrapped on a reel equipped with an accurate counting device calibrated in feet, a hand crank, and a dual- or triple-pulley system to properly feed the cable through the counting device. References throughout these Technical Specifications to measurements using "**CONTRACTOR** sounding device" shall be interpreted to mean the devices described in this section. All sounding devices shall be made of environmentally-safe materials.

K. DRILL CUTTINGS SAMPLES

During drilling of the borehole, **CONTRACTOR** shall properly collect, label, and preserve for the **OWNER** samples of drill cuttings at 10-foot intervals. **CONTRACTOR** shall provide a sampling procedure acceptable to the **OWNER** that obtains representative samples of the subsurface materials being drilled. **CONTRACTOR** shall: 1) provide unwashed and quart-sized samples of drill cuttings; 2) place the samples in suitable, tightly sealed, waterproof containers (such as sealable plastic bags); 3) clearly label the containers with the well identifier and the accurate depth

interval sampled; and 4) store the samples at the site in a secure location that prevents damage or loss of the samples and that is convenient and safe for **OWNER** to conduct sample inspections.

L. DRILL TEST BOREHOLE

CONTRACTOR shall drill a borehole using direct or reverse-circulation mud rotary drilling method, at approximately 14 inches in diameter to a depth of 1,200 feet below land surface. Actual drilled depths for the well may be modified by hydrogeologist during drilling, based on subsurface conditions encountered.

M. BOREHOLE GEOPHYSICAL LOGGING

After drilling of the approximately 14 inch borehole is completed to total depth as directed by **OWNER**, drilling, borehole geophysical logging operations will be conducted by the logging **SUBCONTRACTOR**. Borehole geophysical logs shall include: caliper, natural gamma ray, spontaneous potential, single-point resistance and normal 16 and 64-inch resistivity logs. Depending on borehole conditions and lithology, other logs may be specified by **OWNER**.

N. CONSTRUCT AND TEST LONG-SCREENED TEST WELL (LSTW)

After drilling of the approximately 14-inch borehole is completed to total depth as directed by **OWNER**, **CONTRACTOR** shall install 6-inch fiberglass casing to a depth of 1,200 Ft. BGS. Sand and bentonite seals shall be installed in the annulus, between the outside diameter of the LSTW casing and the formation wall of the borehole. The type of sand pack and bentonite and their corresponding depth intervals for installation shall be determined by the chief hydrogeologist. The sand pack, with or without a bentonite seal shall be installed to surface; no sanitary seal is required since the well be drilled out at a later date to be determined by the chief hydrogeologist. The purpose of such reaming will be for the installation of a large diameter potable supply well.

The length of the screened intervals for the LSTW shall be 500 feet, the remaining 700 feet will be blank fiberglass casing. The well screen will be constructed in sections as determined by the chief hydrogeologist and include bentonite seals surrounding the blank casing sections. Following the installation of the LSTW, it will be developed using a combination of air lifting, swabbing and surging and pumping, if necessary, until the water is deemed to be satisfactory by the chief hydrogeologist. Although an NTU level of 10 is an ideal target, that target may

be higher based on practicality with respect to time. The development process shall take place over 24/7 period until the water confirmed with an NTU meter.

CONTRACTOR shall utilize a dye tracer and depth dependent groundwater sampling system to profile the LSTW and provide the electric submersible pump and single attached packer system to perform the testing. A 4-inch electric submersible pump shall be used with an inflatable packer conjoined to the bottom of the pump assembly. The **CONTRACTOR** shall supply a discharge line, flow meter, and ¾" hose bib sample tap attached to the discharge line for measuring flow and for collecting depth dependent groundwater samples. The hose bib shall also be used for monitoring tracer return following each depth dependent injection. A pumping rate of 60 to 120 GPM is anticipated for performing the dynamic flow and chemistry survey. Discharge of the well water during the test will be directly into a waste system covered by **OWNER** pre-existing NPDES permits

Tooling used to perform the tracer flow and depth dependent groundwater sampling shall be small enough to transit within the annulus between the pump drop pipe and casing ID. The profiling tooling shall be no larger in diameter than 1-inch. The tracer injection shall inject the tracer sideways to facilitate injection of rhodamine dye solution at varying depths in a well while the well is operating at a steady state. The return rate of the injected dye shall provide data that will be analyzed by **CONTRACTOR** team to determine flow dynamics throughout the well. The method must utilize the conjoined version of the USGS technology in conjunction where the injection and groundwater sample tubing is conjoined to eliminate the potential from a double counter error when using two independent profiling devices: that being one for velocity and zonal flow and the other being for downhole water sampling. This means that the tracer and groundwater sampling system is deployed into the well simultaneously and as a single tubing assembly.

TASK 1 – DYNAMIC FLOW PROFILING

The **CONTRACTOR** will perform a dynamic (pumping) velocity and zonal flow profiling of the well using the conjoined version of the USGS well-bore flow method. The tracer used for the survey must be NSF 60 approved and specifically be Rhodamine Red FWT 50 at a concentration of 10 ml dye/1 gallon water. The purpose of the profiling is to determine the velocity of groundwater entering the well across the perforated zones under steady state pumping conditions. Discharge of the well water during the dynamic test will be directly into a waste system covered by pre-existing NPDES permits, and no additional permits will be required.

The **CONTRACTOR** shall prepare an injection and sampling plan (ISP) based on the results from the cuttings and geophysical logging, the ISP showing all the tracer injection and co-located sampling depths. The injection system shall employ sideways injection to ensure that the tracer covers the entire cross-sectional plane of the well at each

injection depth such that the fluorometer return curve represents all the pipe flow conditions inside the well. Otherwise, if the tracer injector is pointing downward or an impeller used as an alternative, the resulting flow error may be large enough such that carryover to the mass balance calculation produces erroneous zonal chemistry results – misguiding the data analysis and interpretation. The financial consequences from these errors are large, so care must be taken by the Team that the sideways injector fitting is always attached to the bottom of the injection nozzle and that the fitting holes are not clogged.

The **CONTRACTOR** shall perform at least three injections at each depth location to ensure reproducibility of the tracer return times to the up hole fluorometer. Once the flow survey is complete, the data will be processed to generate the raw velocity profile. The data will then be converted into cumulative and zonal flow (zonal GPM and zonal percent of total GPM) and presented to **OWNER**. A final decision will then be made to determine if any changes are needed for the groundwater sampling plan.

TASK 2 – DEPTH DEPENDENT SAMPLING

Following the completion of each injection depth, a groundwater sample shall be collected from the same depth, before the conjoined tubing strand is relocated to the next depth indicated on the ISP. The Team will perform sampling using USGS depth dependent sampling technology, preferably in the form of a miniaturized down hole pump. The purpose of the sampling is to identify the groundwater quality at various depths in the well during normal pumping conditions. Up to 20 depths zones will be sampled during the dynamic sampling. **OWNER** will provide sample bottles and will submit the samples to its contract laboratory for analyses. Costs for the laboratory analyses will not be included in contractor’s price. **OWNER** will provide the data to the contractor for water quality mass balance analysis and report preparation. Mass balance will be performed for parameters including General Minerals, Metals, PFOS/PFOAs, VOCs and Perchlorate although the actual number of analytes will be determined in consultation with **OWNER**. **CONTRACTOR** will demobilize from the site by removing all materials brought to the location and leaving the area in the same or better condition than upon arrival.

TASK 4 – REPORTING

In addition to the Video Survey Reports, delivered as part of Tasks 1 within three weeks of receiving the laboratory results from **OWNER**, **CONTRACTOR** will submit a comprehensive report on the results of Tasks 1 and

2. At a minimum, the report will include the following:

- a description of all the work,
- a graphic of the well with perforations,

lithology and pump setting, and pumping water levels,
a plot and interpretation of the geophysical logs
discharge rate,
calculated specific capacity,
dynamic profiling results - corrected data for flow velocity (ft/min), discharge (gpm and ft³/min), and percent
of total flow in both tabular and graphical format.
water quality results,
mass balance results,
recommendations on well screen design if requested by **OWNER**.

CONTRACTOR will provide two hard copies of the report and an Adobe Acrobat (pdf) copy to **OWNER**

Mass Balance Results – Contractor will use the standard flow and chemistry mass balance equations. The continuity equation will be used as the basis for calculating cumulative and zonal flow and the mass balance equation used for calculating zonal chemistry from the cumulative flow and measured chemistry results. In addition to the items specifically mentioned above, well profiling report will include:

- Dynamic and/or ambient zonal water quality graphs (plotted against zonal flow).
- A separate graph for each specified analyte.
- Tables for zonal flow results and laboratory measured chemistry.
- Mass balanced zonal chemistry for each analyte.
- A comparison of the actual well head chemistry to the theoretical well head chemistry based on the mass balanced results.

Proper Training:

Contractor and Subcontractor Personnel involved in the Dynamic Flow and Chemistry Well Profiling shall demonstrate proper knowledge of the work required, shall have performed at least 100 profiles and mass balance reports. Contractor shall provide proof with bid of experience requirements.

II. SITE HEALTH AND SAFETY

It shall be the responsibility of **CONTRACTOR** to obtain a copy of **OWNER's** health and safety documentation, and to conduct all work in accordance with **OWNER's** health and safety requirements. **CONTRACTOR** shall employ only sober and competent workmen for the execution of this work. **CONTRACTOR** will be responsible for submitting with proposal a detailed description of the company's drug screening program for workmen. If this program is not acceptable to the **OWNER**, the proposal will be considered incomplete and will be thrown out.

CONTRACTOR shall provide **CONTRACTOR** personnel with the following minimum personal safety equipment: safety glasses, steel-toed boots, gloves, hearing protection, hard hats, and dust respirators. In addition, safety railings, safety harnesses, limitations on work hours, first aid kits, training, etc. and all other equipment and procedures necessary for safe conduct of work shall be provided by and implemented by **CONTRACTOR** without additional cost to **OWNER**. **CONTRACTOR** shall halt work at no additional cost to **OWNER** if for any reason site conditions are not adequate to ensure the safety of on-site personnel.

III. GENERAL TERMS OF AGREEMENT

The Proposal and Quotation Schedule (when completed and accepted by **OWNER**), Technical Specifications, and all addenda do not constitute the complete and final Agreement with respect to the services requested; the **CONTRACTOR** will also execute a General Services Agreement with **OWNER**. This Agreement supersedes all prior communications, representations, undertakings, or understandings of the parties whether oral or written, relating to the services. *However, where terms and/or conditions given in **OWNER's** General Services Agreement, conflict with the terms and/or conditions included in this Proposal, Quotation Schedule, and/or Technical Specifications, the General Services Agreement will be binding on all parties.*

This Agreement shall not be modified except in writing signed by an authorized representative of both parties. **CONTRACTOR** shall not assign its duties and responsibilities under this Agreement to another party without prior written consent of **OWNER**. This Agreement shall be governed by the laws of the State of California that apply to contracts executed and wholly performable within California. The terms of this Agreement are severable, and the invalidity or enforceability of any of them shall in no matter affect or impair the validity or enforceability of the remaining terms.

This Agreement will terminate when the services are satisfactorily completed, provided, however, that **OWNER** may terminate this Agreement with 30 days written notice to **CONTRACTOR**. However, upon material breach of the terms of this Agreement by **CONTRACTOR** or **OWNER** may immediately terminate this Agreement, if **CONTRACTOR** fails to cure such breach within 48 hours after receipt of notice of breach. In the event of termination prior to satisfactory completion of Services, **CONTRACTOR** will be paid for work satisfactorily performed to the date of termination. Confidentiality, Indemnification, and Retention of Records sections of this Agreement shall survive termination.

A. CONFLICT OF INTEREST

During the term of this Agreement, **CONTRACTOR** shall not accept employment or otherwise engage in any work or render any services that are in conflict with the services rendered to **OWNER** under this Agreement. **CONTRACTOR** will promptly notify **OWNER** in writing of any such conflict at the time such conflict arises or is discovered.

B. CONFIDENTIALITY

CONTRACTOR shall not disclose any information relating to **OWNER** or the site to any party other than the **OWNER** its members and agents, without the prior written consent of **OWNER**, except as may be required by law. At all times during the performance of **CONTRACTOR**'s services and thereafter, **CONTRACTOR** and its employees and agents shall: 1) so treat the work performed by **CONTRACTOR** and its **SUBCONTRACTORS** (if applicable) and the results thereof as confidential and proprietary to **OWNER**; 2) instruct its employees, agents, and **SUBCONTRACTORS** (if applicable) concerning this obligation of confidentiality; 3) consult with **OWNER** immediately in the event that **CONTRACTOR** or any of its employees, agents, or **SUBCONTRACTORS** receive an administrative request for information, subpoena, or other legal process pertaining to the services (and results thereof) performed by **CONTRACTOR**; and 4) resist such information request, subpoena, or other legal process if **OWNER** asks **CONTRACTOR** to do so, except where such resistance would be a violation of law. If **OWNER** asks that **CONTRACTOR** so resist such a request, **OWNER** shall reimburse **CONTRACTOR** for **CONTRACTOR**'s reasonable costs.

Any questions regarding the purpose or scope of work, which are directed to **CONTRACTOR** from individuals other than representatives of the **OWNER** while work is being conducted for the proposed work, should be directed by **CONTRACTOR** to **OWNER**.

C. PERMITS, CERTIFICATES, LAWS, AND ORDINANCES

CONTRACTOR shall, at its expense, obtain all permits, certificates, licenses, and insurance required by law for the execution of its work, unless specifically excepted in this Agreement. **CONTRACTOR** shall inform **CONTRACTOR** of any and all such requirements for this project.

CONTRACTOR shall perform its services in conformance with all federal, state, and local laws, ordinances, rules, and regulations applicable to its services. **OWNER** shall have the right to inspect and obtain copies of all applicable written licenses, permits, or approvals issued by any governmental entity or agency to **CONTRACTOR** for its performance of services under this Agreement.

D. CONTRACTOR INSURANCE REQUIREMENTS

CONTRACTOR agrees to purchase and maintain, at its own expense, insurance coverage as follows:

<u>Coverage</u>	<u>Minimum Limits</u>
Workers' Compensation/Employers Liability	\$1,000,000
Commercial General Liability	\$2,000,000
Business Automobile Liability Including owned, non-owned, and hired vehicles	\$2,000,000
Pollution Liability	\$1,000,000

Project specific minimum insurance requirements, if different from these amounts, are included in the Scope of Work included herein and/or the General Services Agreement to be executed between **OWNER and CONTRACTOR**. **CONTRACTOR** agrees to maintain such insurance coverage during the term of this Agreement. **CONTRACTOR** shall name **OWNER** and **OWNER's** shareholders, officers, employees, and agents as additional insured on its commercial general liability

and automobile insurance policies. Insurance must include coverage for explosion and collapse hazards and underground hazards. In addition, for the duration of this contract, **CONTRACTOR** shall satisfy, and shall ensure that its agents and **SUBCONTRACTORS** satisfy all applicable laws and regulations regarding the provision of workers' compensation insurance for all persons performing the work required under this Agreement. **CONTRACTOR** shall provide **OWNER** certificates of such insurance and, on request, a copy of each insurance policy. **CONTRACTOR** shall provide **OWNER** with 30 days advance written notice of change or cancellation in such insurance coverage and, in the event of cancellation, shall obtain comparable insurance coverage immediately. **CONTRACTOR** agrees to name additional parties as additional insured as may be required by **OWNER**.

E. BONDS

CONTRACTOR may be required to obtain a bid, performance, and/or completion bond in an amount to be specified by **OWNER**. If required, **CONTRACTOR** shall provide proof of bond(s) to **OWNER** prior to commencement of work. If bonds are required, types and amounts are included in the Scope of Work included herein and/or the General Services Agreement to be executed between **OWNER** and **CONTRACTOR**.

F. INDEPENDENT CONTRACTORS

Nothing in this Agreement shall be construed to imply that **CONTRACTOR** or any of its employees, agents, or **SUBCONTRACTORS** are the employees, agents, representatives, or **SUBCONTRACTORS** of **OWNER**. **CONTRACTOR** shall be an independent contractor licensed to operate in the State of California, and shall have responsibility for and control over the details of the means of performing its services.

G. SUBCONTRACTORS

CONTRACTOR shall not assign its duties to another party or **SUBCONTRACTOR** without prior written consent of **OWNER**.

1. Conditions for Approval. **CONTRACTOR** acknowledges and agrees that no **SUBCONTRACTOR** can be selected who fails to agree to the following conditions, unless **OWNER** agrees otherwise:
 - a. **SUBCONTRACTOR** agrees to maintain and provide evidence of sufficient insurance (as determined by **OWNER**) for any portion of the services to be performed by the **SUBCONTRACTOR** and, if requested by **CONTRACTOR**, to name **OWNER** and their members as additional insured on such policies.
 - b. **SUBCONTRACTOR** agrees at all times to comply with the standards and conditions for **CONTRACTORS** contained in this Agreement.
2. Management of SUBCONTRACTORS. **CONTRACTOR** shall be responsible for and have control over the means of providing the services, including the direction, management and inspection of any **SUBCONTRACTORS** hired to provide any portion of the services. The hiring of a **SUBCONTRACTOR** shall not relieve **CONTRACTOR** of its duties and responsibilities under this Agreement.

H. NOTICES

Notices required by this Agreement shall be in writing. Notice is deemed given when received by the person specified below or, if mailed, when deposited in the United States Certified Mail, return receipt requested, postage prepaid, and addressed to **OWNER** or **CONTRACTOR**, as indicated in the Scope of Work.

I. RIGHTS AND REMEDIES

The rights and remedies of **OWNER** and **CONTRACTOR** under this Agreement are in addition to and not in limitation of any other rights and remedies provided by law, except as the rights and remedies otherwise provided by law are limited or modified by the express provisions of this Agreement.

J. INDEMNIFICATION

1. **CONTRACTOR Indemnification.** **CONTRACTOR** agrees to defend, indemnify, and hold harmless **OWNER** (including its shareholders, officers, directors, employees, and agents) from and against any and all losses, claims, penalties, judgements, damages, liabilities, expenses, or costs of any kind (including, but not limited to, reasonable legal fees and costs of investigation) resulting from or arising out of: 1) the breach by **CONTRACTOR** of its duties under this Agreement; or 2) the negligence or willful misconduct on the part of **CONTRACTOR**, its employees or agents or **SUBCONTRACTORS** in the performance of services under this Agreement; provided, however, that this indemnification shall not apply to the extent that any such losses, etc., solely result from or arise out of the negligence or willful misconduct of **OWNER** and its officers, directors, employees, or agents (which shall not include **CONTRACTOR** or any **SUBCONTRACTORS**) or any breach by **OWNER** of its duties under this Agreement.
2. **OWNER Indemnification.** **OWNER** agrees to defend, indemnify, and hold harmless **CONTRACTOR** (including its officers, directors, employees, and agents) from and against any and all losses, claims, penalties, judgements, damages, liabilities, expenses, or costs of any kind (including but not limited to reasonable legal fees or costs of investigation) resulting from or arising out of 1) the breach by **OWNER** of its duties under this Agreement, or 2) the negligence or willful misconduct on the part of **OWNER** its officers, directors, employees, or agents; provided, however, that such indemnification shall not apply to the extent that any such losses, etc., solely result from or arise out of the negligence or willful misconduct of **CONTRACTOR** or its officers, directors, employees, agents, or **SUBCONTRACTORS**, or any breach by **CONTRACTOR** of its duties under this Agreement.
3. **Indemnification Procedures.** A party shall give the other party (the "Indemnifying Party") prompt written notice of any claim that has given or could give rise to a right of indemnification hereunder for itself (the "Indemnified Party"), including without limitation any inquiry or investiga-

tion by a governmental authority or agency that may lead to such a claim. Failure to give such prompt notice shall relieve Indemnifying Party of its indemnification obligation to the extent that any prejudice results from such failure. Upon receipt of such notice, Indemnifying Party shall notify Indemnified Party within 60 days whether Indemnifying Party will assume defense for the matter, at Indemnifying Party's expense, with counsel selected solely by Indemnifying Party. If Indemnifying Party so assumes defense, Indemnified Party may participate in the matter, but at Indemnified Party's sole expense. Indemnified Party shall cooperate fully in the defense. If Indemnifying Party does not elect to defend the claim or fails to defend the claim (after having so elected), Indemnified Party may assume the defense of such a claim and Indemnifying Party shall reimburse Indemnified Party for the expenses of such defense. Indemnifying Party shall not be required to indemnify Indemnified Party for any settlement of any action or any claim entered into without the prior consent of Indemnifying Party, which consent shall not be unreasonably withheld.

K. OWNERSHIP OF DOCUMENTS

All plans, drawings, specifications, designs, construction data, and documents prepared by **CONTRACTOR** or its **SUBCONTRACTORS** in the performance of the services authorized under this Agreement shall be the property of **OWNER**. **CONTRACTOR** shall be entitled to a copy of all such documents, and each **SUBCONTRACTOR** shall be entitled to a copy of each such document prepared by the **SUBCONTRACTOR**.

L. RETENTION OF RECORDS

CONTRACTOR shall keep full and detailed records of the services performed under this Agreement. Upon completion of the services, **OWNER** and **CONTRACTOR** shall determine which records shall be retained by **CONTRACTOR** for a period to be determined by the parties and which shall be delivered to **OWNER**. **OWNER** shall have full access to **CONTRACTOR's** records related to this agreement.

M. MATERIAL AND WORKMANSHIP

All materials that shall become part of the completed work shall be new, unless otherwise specified. All defective work or material shall be removed from the premises by **CONTRACTOR**, whether in place or not, and shall be replaced or renewed in such manner as **OWNER** may direct, at **CONTRACTOR's** expense.

CONTRACTOR shall perform its services in a thorough, efficient, and workmanlike manner, promptly, with the due diligence, care, and skill ordinarily exercised by contractors providing similar services under similar circumstances. **CONTRACTOR** shall employ only competent personnel for the execution of its work. **CONTRACTOR** shall use qualified personnel to conduct work and to keep the same personnel on the project from start to finish. **OWNER** may request that specific personnel be assigned to the project or removed from the project.

Before start of drilling operations, **OWNER** may require written verification that all key **CONTRACTOR** personnel assigned to the project have read and understand these Technical Specifications. **CONTRACTOR** should consult with **OWNER** prior to commencement of services to verify that all key **CONTRACTOR** personnel have read, and understand the Technical Specifications. Key personnel include, at a minimum, the project engineer or manager, all tool pushers, all drillers, and all pump crew foremen.

N. ACCEPTABILITY OF WORK

On all questions concerning the acceptability of materials, machinery, classification of material, and execution of the work, the decision of **OWNER** shall be final and binding upon all parties. After **CONTRACTOR** operations are complete and **CONTRACTOR** has been released by **OWNER**, **CONTRACTOR** shall demobilize its equipment.

O. INABILITY TO COMPLETE

If, in the opinion of **OWNER**, inability to complete services specified in this Agreement was due to faulty materials, workmanship, or operations of **CONTRACTOR**, services shall be completed to the stage at which work on the original well was suspended, without cost to **OWNER**. If, however, inability to complete services was not due to any fault of **CONTRACTOR** whatsoever, the cost of services shall be paid for by the **OWNER** at the contract unit price, and the time for completion may be extended.

In the event of the inability of **CONTRACTOR** to complete construction of a well, if applicable, in accordance with terms and conditions set forth in these Technical Specifications, **CONTRACTOR** shall abandon the well to comply with ADWR rules using a method acceptable to **OWNER**, and shall immediately commence with drilling a new equivalent well, at a location designated by **OWNER** near the abandoned well, to be completed in strict accordance with all the terms and conditions in this Agreement.

P. DELAYS AND PENALTIES FOR LATE START OR LATE COMPLETION

CONTRACTOR's invoices may be reduced for each day **CONTRACTOR** is late, either starting drilling operations, or demobilizing and completing final cleanup operations, beyond the periods or dates specified herein or subsequently amended. Amounts of liquidated damages will be \$500 per day.

CONTRACTOR will not be responsible for delays attributable to acts of God, acts of third parties, weather which is not reasonably anticipated, intervention of public authorities, inability (without fault of **CONTRACTOR**) to obtain permits necessary to perform work, work stoppages, changes in applicable laws or regulations after the date of commencement of performance hereunder, and any other conditions or events which are beyond the reasonable control of **CONTRACTOR**. **CONTRACTOR** shall be entitled to additional time to perform the services of this Agreement equal to the time of such delay.

Q. RIGHT OF ENTRY

CONTRACTOR shall ensure that its employees, agents, and **SUBCONTRACTORS** comply with all conditions contained in any rights-of-entry for land on which **CONTRACTOR's** services are performed or through which **CONTRACTOR** must travel to access the area where **CONTRACTOR's** services are performed.

R. PROTECTION OF GROUNDWATER AND ENVIRONMENTAL QUALITY

All **CONTRACTOR** equipment shall be thoroughly cleaned offsite before mobilization to the work site. **CONTRACTOR** shall not use any contaminated equipment for this project. **CONTRACTOR** shall take all necessary and appropriate precautions to ensure that substances or materials, other than those approved by **OWNER** for completion of the proposed work, that could affect the chemical quality of groundwater withdrawn from any well, are not introduced into the soil, groundwater system, or any well.

If introduction of non-approved substances or materials by **CONTRACTOR** into a well permanently impairs its usefulness, **CONTRACTOR** shall immediately, at its own expense: 1) abandon the well in a manner acceptable to **OWNER** and in accordance with state and county procedures; and 2) construct a new equivalent well at a location designated by **OWNER** near the abandoned well, to be completed in strict accordance with the terms and conditions of this Agreement and in accordance with instructions from **OWNER**.

In addition, **CONTRACTOR** shall not cause the release of any hazardous or nuisance substances to the environment and, if such release occurs, **CONTRACTOR** shall be responsible for all costs associated with remedial or corrective actions to mitigate the release. For example, **CONTRACTOR** shall maintain equipment to prevent leaks of fuel, lubricants, or hydraulic fluid and, if such leaks occur, shall remove and properly dispose affected soil and shall place and maintain appropriate containment to prevent further impacts. **CONTRACTOR** shall begin the project with appropriate containment in place for any equipment suspected or reasonably anticipated to cause such

leaks. Thread lubricant used on drill pipe couplings used for any drilling shall not contain volatile organic compounds.

S. PROTECTION OF THE SITE AND EQUIPMENT

CONTRACTOR shall provide necessary security for **CONTRACTOR's** equipment. **CONTRACTOR**, at its expense, shall protect all structures, roads, pipelines, etc., from damage by **CONTRACTOR** during the progress of its work.

CONTRACTOR shall adequately identify and guard hazardous areas, conditions, equipment, and chemicals by appropriate visual warning devices and, where necessary, physical barricades in accordance with applicable OSHA regulations. **CONTRACTOR** shall make adequate provisions for protection of the work area against fire, theft, and vandalism, and for protection of the public against exposure to injury. **CONTRACTOR** shall be responsible for securing, properly marking, and preventing injury to the public and to workers in and around all trenches, excavations, and other potentially hazardous conditions in accordance with OSHA recommendations and regulations. All necessary precautions shall be taken by **CONTRACTOR** to protect the public from injury due to operations in any public right-of-way.

Where **CONTRACTOR** operations could cause damage or inconvenience to telephone, television, power, oil, gas, water, sewer, or irrigation systems, **CONTRACTOR**, with the cooperation of **OWNER**, shall make all arrangements necessary for the protection of these utilities and services. **CONTRACTOR** shall be responsible for protection of utilities and services, and shall be solely responsible for any damages to utilities and services, if those damages result from actions of **CONTRACTOR**. **OWNER** shall not be responsible to **CONTRACTOR** for damages as a result of **CONTRACTOR's** failure to protect the well upon which the work is being performed and the utilities encountered in the work. In the event of interruption to domestic water, sewer, storm drain, or other utility services as a result of accidental damage due to operations, **CONTRACTOR** shall immediately notify the proper authority and **OWNER**. **CONTRACTOR** shall cooperate with said

authority in restoration of service as promptly as possible. Any facility that has been damaged beyond restoration by **CONTRACTOR** shall be replaced at **CONTRACTOR's** expense.

CONTRACTOR shall use plastic sheeting to protect the site from spills of hydraulic oil, fuel, lubricants, or coolants from the drilling and support equipment. Oil absorbent mats must be placed under and around all leaking engines; oil or other fluid spills must be cleaned to the satisfaction of the **OWNER**. In the event of a large leak or spill from equipment operated by **CONTRACTOR**, the **CONTRACTOR** shall be responsible for the excavation and proper disposal of any contaminated soil, and the restoration of the site to original grade with clean topsoil, if applicable.

CONTRACTOR shall maintain a clean, safe, accessible site. **CONTRACTOR** shall remove from the well site and storage area all debris and unused materials. Trash shall be picked up daily and properly stored in garbage cans or dedicated roll-off garbage bins. Burning or burying of unused materials or trash on site will not be allowed. **CONTRACTOR** shall provide a portable toilet at the site during all drilling, construction, development, and/or testing operations. **CONTRACTOR** shall take precautions to minimize damage to the site during **CONTRACTOR** operations. Upon completion of the work, **CONTRACTOR** shall restore the site as nearly as possible to its original grade and condition.

Drums and packages of any chemicals or other substances used by **CONTRACTOR** in the course of work shall be stored properly and shall not create a nuisance; any releases or nuisances and their impacts shall be mitigated by **CONTRACTOR** at its expense.

T. PAYMENT

If invoices do not require adjustment, invoices shall be paid within thirty (30) days from the time invoices are received. In the event that charges contained in an invoice are disputed, **CONTRACTOR** shall be notified in writing within fifteen (15) days of receipt of the invoice. If the parties are unable to resolve the dispute within thirty (30) days after **CONTRACTOR** is notified of

the dispute, the parties may elect to attempt to resolve the dispute through a three-person mediation committee, which shall consist of one representative from each party and one person acceptable to both parties. Interest shall not accrue on any disputed amount. **OWNER** and **CONTRACTOR** shall each pay their respective costs of mediation or dispute resolution under this Agreement.

U. CHANGE ORDERS

OWNER shall, after consultation with **CONTRACTOR**, have the right, for any reason and at any time, to: 1) change the services of the Technical Specifications; 2) request **CONTRACTOR** to perform additional tasks; and/or 3) change the scope or the time of completion of the additional services (if any); provided that, if **OWNER** and **CONTRACTOR** are unable to agree on changes in the time of completion of, and/or cost for additional services, this Agreement may be terminated. All changes in services (all herein referred to as "Change Order") shall be in writing and signed by **OWNER** and **CONTRACTOR**, provided, however, that in the event of an emergency, such changes may be made by verbal communication and subsequently set forth in a written Change Order.

V. WAIVER

Any failure of **OWNER** to insist on the strict performance of any provision of this Agreement by **CONTRACTOR**, or failure to enforce or take action with regard to any breach by **CONTRACTOR** shall not be deemed to be a waiver of such provision or breach, or any other provision or breach of this Agreement. No waiver of any provision of this Agreement shall be held to be a waiver of any other provision hereof, nor constitute a continuing waiver.

IV. STATEMENT OF QUALIFICATIONS

The **CONTRACTOR** will be responsible for submitting a statement of qualifications along with their proposal. The qualification package will include a list of a minimum of ten (10) municipal wells drilled in the past two (2) years. Each well must include the agency, contact person, phone number, start date, completion date and dollar amount.

The LSTW process shall be conducted by a **CONTRACTOR** licensed in the State of California to perform this process. **CONTRACTOR** shall provide proof with bid of how they intend to perform the Dynamic Flow and Chemistry Well Profiling portion of the work utilizing a dye tracer system as described in Section 1.1. **CONTRACTOR** shall provide a list of in house and subcontractor technical support personnel.

Personnel involved in the Dynamic Flow and Chemistry Well shall demonstrate proper knowledge of the work required, shall have performed at least 100 profiles and mass balance reports in the equipment utilized. **CONTRACTOR** shall provide proof with bid of experience requirements.