

January 28, 2020

Zim Industries, Inc. 4545 E. Lincoln Fresno, California 93725

Attention: Bob Zimmerer

Subject: Request for Quote: Monterey Peninsula Water Management District ASR-1 Well Rehabilitation Project

#### Dear Bob:

On behalf of the Monterey Peninsula Water Management District (MPWMD), Pueblo Water Resources, Inc. (PWR) is requesting a price quote to implement a rehabilitation program at MPWMD's ASR-1 Well. This well is a dual-purpose injection/extraction Aquifer Storage and Recovery (ASR) well. The intent of this work is to formally rehabilitate the well, which has experienced a significant decline in performance (both injection and extraction) since it was last rehabilitated in 2006. MPWMD desires to implement a formal rehabilitation program to ensure the hydraulic performance and pumping capacity of the well are as high as possible prior to placing into service for the upcoming 2020 pumping season.

The ASR-1 Well (formerly known as the Santa Margarita Test Injection Well) was drilled in 2001. The well was drilled via the reverse-rotary method with a polymeric drilling fluid. The well was completed to a total depth of approximately 720 feet with an 18- x 16-inch diameter 'telescoped' casing design reduced at a depth of approximately 480 feet. The upper blank casing section is constructed of High Strength Low Allow (HSLA) steel and the lower blank casing and screen sections are constructed of stainless steel. The well is screened between the depths of depths of 480 to 700 feet, consisting of continuous-slot wire-wrapped screen with 0.050-inch slot openings. The site location is shown on Figure 1 and an as-built schematic of the well is shown on Figure 2.

A detailed scope of work to perform the desired work is attached. MPWMD desires to implement the project during Spring 2020 (April – May) so that the well can placed back into service no later than June 1, 2020. Please provide cost estimates for the various tasks associated with the project on the included price quote sheet no later than **February 21, 2020**. Please also indicate your availability and schedule for performing the work. If selected, your firm will contract directly with MPMWD and Pueblo Water Resources, Inc. (PWR) will be serving as the Owner's Technical Representative (OTR) during the project.

#### PUEBLO WATER RESOURCES, INC

Zim Industries, Inc. January 28, 2020 (12-0094)

We appreciate your consideration to provide assistance to the District on this important community water-supply project. If you require additional information regarding this project, please contact me.

Sincerely,

PUEBLO WATER RESOURCES, INC.

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

Principal Hydrogeologist 📝

Attachments: Scope of Work Quote Form

cc: Jon Lear, MPWMD

16-0094\_ASR-1\_rehab\_quote\_solicitation\_ltr\_2020-01-28\_Zim docx

## SCOPE OF WORK

The Contractor shall provide all equipment, labor, chemicals, chemical mixing vessels, and temporary fluid storage and conditioning facilities to complete the work outlined in these specifications, and as directed by the Owner's Technical Representative (OTR)<sup>1</sup>. The site location is shown on **Figure 1** and an as-built schematic of the well is shown on **Figure 2**. The Contractor will execute an agreement for the work directly with MPWMD based on the scope of work presented herein and the Contractor's quote. Generally, the work shall consist of:

- Removal of the existing pump and appurtenances from the well
- Pre-rehabilitation video surveying
- Nylon brushing the well screen
- Bailing the well to bottom
- Simultaneous pumping/swabbing
- Chemical treatment
- Agitation by swabbing
- Simultaneous pumping/swabbing
- Post-rehabilitation acceptance video surveying
- Reinstallation of existing pump and appurtenances
- Well disinfection

# **Contractor Qualifications**

Contractor shall be familiar with all aspects of the work outlined in these specifications and shall possess a C-57 or C-61 Contractors License. Contractor shall have a minimum of 5 years of experience in well servicing and chemical/mechanical rehabilitation work.

# **Compliance with Applicable Laws and Regulations**

Contractor shall perform all work in strict accordance with all Federal, State, and local regulations, including those applying to the handling, transportation, and disposal of chemicals used or produced on the project. Contractor shall also obtain all permits required for the performance of the work outlined in these specifications.

#### Safety

Job site safety, both during and after working hours, is the sole responsibility of the Contractor. The Contractor, his employees and subcontractors shall be familiar with and

<sup>&</sup>lt;sup>1</sup> Pueblo Water Resources, Inc.

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comply with all applicable safety regulations and guidelines relating to the transportation, handling, and disposal of the chemicals to be utilized for the work as well as other aspects of the work, including electrical and mechanical safety guidelines and regulations. The Contractor shall also provide for and ensure public safety around the site both during and after work hours.

Contractor shall provide and maintain onsite the necessary equipment and materials for chemical mist and spray migration abatement, spill containment, neutralization, and cleanup of the chemicals utilized or produced during the project work. The Contractor shall be held responsible for any and all damages caused by fugitive chemical releases, including mist, spray, and spills. The Contractor shall address mitigation of chemical mist or spray which may occur during the raising and lowering of tools while the chemical solution is in the well. If the OTR determines that any of the Contractor's mitigation equipment, mitigation methods, safety measures, or safety equipment onsite are inadequate or inappropriate, he shall stop all work until the safety issue is corrected. No payment for standby time or equipment rental shall be made for such delays in the work.

## Contractor's Equipment

The Contractor shall provide all necessary equipment, tools, and appurtenances for the timely completion of the work. Contractor's equipment shall be in complete and safe operating condition and shall be appropriately maintained and operated during the project. No payment shall be made for standby time or equipment rental caused by a breakdown or failure of the Contractor's equipment. Equipment necessary for the work shall include, but not be limited to, the following items:

- Pump rig capable of lifting the line-swab tool at a minimum velocity of 3 feet/second at the bottom of the well
- Fishing (debris retrieval) tools
- 20-inch-nominal-diameter Nylon brush block (weighted)
- 10- to 12-inch-nominal-diameter bailer
- 19-inch-nominal-diameter single line swabbing tool
- 20-inch-nominal-diameter by 10-foot separation dual-swab zone-isolation air-lift assembly.
- One (minimum) 21,000-gallon (500-barrel) portable storage tank (e.g., Baker Tanks) for treatment, solids settling and temporary storage of well discharge water
- Pumps for transferring and circulating fluids in tanks (e.g., "trash" pumps)
- Temporary containment vessel for bailed fluids and solids removed from the well
- Temporary piping and valves for well pump discharge and storage tank piping
- Chemical pre-mix tank, minimum capacity 1,200 gallons

#### Materials

The following materials shall be utilized in the chemical treatment of the well. The quantities of the chemicals listed are estimated based on existing water levels and well dimensions. No substitutions of chemical type shall be allowed without the prior written approval of the OTR.

Chemical	Purpose	Quantity
70% wt. Glycolic Acid*	Chelant / Biocide	220 gallons
28% wt. Hydrochloric Acid**	Mineral Acid	1,320 gallons
12.5% Sodium Hypochlorite	Disinfectant	55 gallons
Lime or Sodium Hydroxide	Neutralizer	As needed

#### **Chemical Requirement Estimate**

\* With surfactant and dispersant additives

\* With corrosion inhibitor

Prior to mobilization, the Contractor shall provide to the OTR for approval a list of the types and quantities of chemicals to be used for the redevelopment work. The Contractor shall provide suitable mixing tanks, transfer pumps, and agitators as necessary to accurately prepare, dilute, and inject the chemicals. The Contractor shall, at the completion of the work, legally dispose of all empty chemical containers or return them to the manufacturer. The Contractor shall obtain OSHA Material Safety Data Sheets (MSDS) for all chemicals. Copies of MSDS sheets shall be provided to the OTR prior to mobilization, and the Contractor shall retain copies of MSDS sheets onsite at all times.

#### Procedures

Contractor shall, under the direction of the OTR or his representative, perform both mechanical and chemical redevelopment work on the well to remove deleterious material from the screens/gravel pack/aquifer matrices. The work shall be performed according to the following schedule, with allowances for the effectiveness of treatment as determined by the OTR.

- Task 1. Mobilize Contractor's equipment.
- Task 2. Remove existing vertical turbine pump and all downhole appurtenances, including the Baski Flow Control Valve [FCV]) from the well. Once removed from the well, the FCV shall be kept in the vertical upright position to prevent liquid leakage. Prior to reinstallation (Task 15), the OTR will perform leak testing of the FCV fittings.
- Task 3. After a period of no less than 24-hours following the removal of the pump from the well, the Contractor shall perform a video survey of the well. The video survey shall include downhole and sidescan views of the well screen and shall be performed as directed by the OTR.

- Task 4. Brush well screen using weighted Nylon brush. Each 20-foot section of well screen shall be brushed for 30 minutes.
- Task 5. Bail well to bottom to remove all material produced from the brushing operation. Bailed solids and fluids shall be placed in the temporary containment vessel.
- Task 6. Install temporary piping to route well discharge into the temporary storage tanks. The discharge piping shall contain valves, fittings, and ports to allow for acid neutralization of the discharge water, and routing of produced water from the temporary storage tanks to the disposal area (on-site backflush percolation pit at the Santa Margarita ASR Facility). The temporary storage tanks shall be connected in series, baffled or otherwise configured to allow and facilitate the settlement of solids in the produced water.
- Task 7. Using the dual-swab airlifting assembly fitted with air-line, pump while simultaneously swabbing each 10-foot screened section for 30 minutes, starting from the top of the screen and working down to the bottom. Water produced during the airlift pumping shall be routed to the fluids disposal area from the temporary storage tank.
- Task 8. Mix hydrochloric and glycolic acids proportionately in the 1,200 gallon (minimum) chemical pre-mix tank. Inject the mixture through the dual-swab assembly at each 20-foot section of screen in an amount proportional to the total screened interval. Chemicals shall be worked into the formation through vigorous swabbing for 30 minutes before proceeding to the next section. The introduction of chemicals and swabbing while chemicals are placed shall be performed in a continuous operation of not less than 12 hours. Once the chemicals are introduced, the Contractor shall allow the well to stand idle overnight.
- Task 9. Following introduction of the chemicals, removal of the dual-swab assembly from the well, and the initial overnight idle period, swab each 20-foot section of screen for 30 minutes using the line-swabbing tool. This procedure shall be repeated once. Equipment utilized during swabbing operations shall be capable of raising the swab at a velocity of 3 feet/second (minimum). The Contractor shall then allow the well to stand idle for a period no less than 12 hours following the initial swabbing of the acid solution. Following the second 12-hour idle period, line-swab each 20-foot section of screen. This procedure shall also be repeated once.
- Task 10. Using the dual-swab assembly fitted with air-line, pump and simultaneously swab each 10-foot screened section for 60 minutes, or until the OTR determines that airlift/swabbing of each section is complete, starting from the top of the screen and working down to the bottom.
- Task 11. During the flushing of the acid solution from the well, Contractor shall neutralize the cleaning solution by placing soda ash or other acceptable base neutralizer in the storage tank under the direction of the OTR. Discharge water may be routed to the fluid disposal area only when the OTR has determined that the solution has been sufficiently neutralized for discharge (pH > 6.5).

- Task 12. Bail the well to bottom to remove any additional material produced during the agitation of the chemical solution. Bailed solids and fluids shall be placed in the temporary containment vessel.
- Task 13. After a period of no less than 24-hours following Task 12 bailing, the Contractor shall perform a video inspection of the well casing. The video survey shall include downhole and sidescan views of the well screen and shall be performed as directed by the OTR. The video survey shall verify that the well is free of structural damage and clear of all debris to total depth.
- Task 14. Upon completion of the video survey, Contractor shall prepare a 1,200-gallon mixture of 5,000-ppm chlorinated water. The mixture shall be adjusted to a pH of 7.0 to 8.0 prior to introduction into the well. The mixture shall be placed into the well and surged into each screened zone with a wire line surge block or other acceptable method. Each 20-foot section of well screen shall be surged for a minimum period of 30 minutes. The solution shall be allowed to stand overnight.
- Task 15. Contractor shall reinstall the District's pump assembly and related appurtenances. This task shall include the provision and installation of a ¼-inch-diameter stainless steel air-line from the top of pump bowls through the discharge head (approximately 460 feet) and capped.
- Task 16. Following reinstallation of the pump assembly, flush the chlorinated well water into the temporary holding tanks until the produced water is fee of chlorine. Complete flushing shall be evidenced by a free chlorine residual of less than 0.02 ppm chlorine. Contractor shall neutralize the chlorine residual to below 0.1 ppm using an acceptable dechlorinating agent (e.g., sodium thiosulfate) before discharging the water to the disposal area.
- Task 17. Demobilize Contractor's equipment, remove storage tank and remove all rubbish, empty containers, and waste material from site. The residues removed from the well during the project (i.e., from bailing, settled solids in Baker Tanks, etc.,) shall be legally disposed offsite by the Contractor.

#### Payment

Payment will be made according to the unit price schedule in the contract based on the actual unit quantities expended as determined by the OTR. Payment for lump sum items shall be made only upon satisfactory completion of the entire task.

Payment for work completed as part of Tasks 4, 5, 7, 9, and 10 **will be made on an hourly basis only for time spent performing "active" development or pumping**. Active development is defined as the actual time spent pumping, swabbing, airlifting/pumping, or both, of the well. Compensation will not be made for down time or time spent installing or removing pipe or tools, or for making connections.

Task No.	Task Description	Units	Estimated Quantity	Unit Price	Total
NO.		Lump	Quantity		
1	Mobilization	Sum	1	\$	\$
2	Pump Assembly Removal	Lump Sum	1	\$	\$
3	Pre-Rehab Video Survey	Lump Sum	1	\$	\$
4	Nylon Brushing	Hourly	5	\$	\$
5	Bailing	Lump Sum	1	\$	\$
6	Temporary Tanks, Piping, etc.	Lump Sum	1	\$	\$
7	Pre-Chemical Simultaneous Air-Lift Pumping/Swabbing	Hourly	10	\$	\$
8.1	Chemicals	Lump Sum	1	\$	\$
8.2	Chemical Injection	Lump Sum	1	\$	\$
9	Dry-Swabbing	Hourly	10	\$	\$
10	Post-Chemical Simultaneous Air-Lift Pumping/Swabbing	Hourly	20	\$	\$
11	Acid Neutralization	Lump Sum	1	\$	\$
12	Bailing	Lump Sum	1	\$	\$
13	Post-Rehab Video Survey	Lump Sum	1	\$	\$
14	Well Disinfection	Lump Sum	1	\$	\$
15	Reinstallation of Pump Assembly	Lump Sum	1	\$	\$
16	Chlorine Flushing	Lump Sum	1	\$	\$
17	Demobilization	Lump Sum	1	\$	\$
Total Price					\$
Total	Total in Words:				

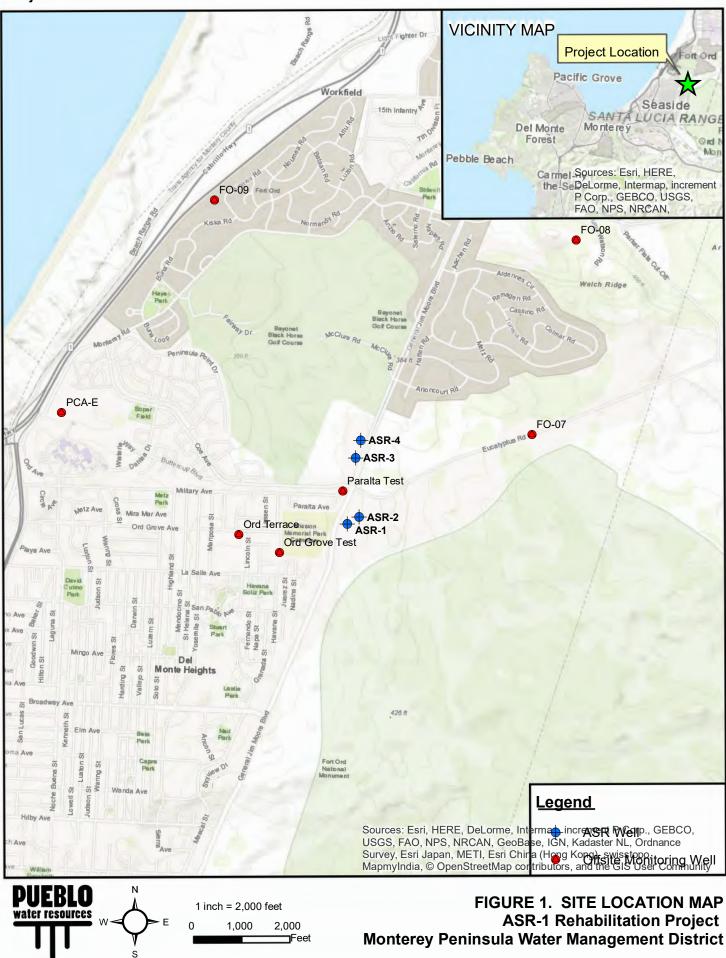
# QUOTE for ASR-1 WELL REHABILITATION

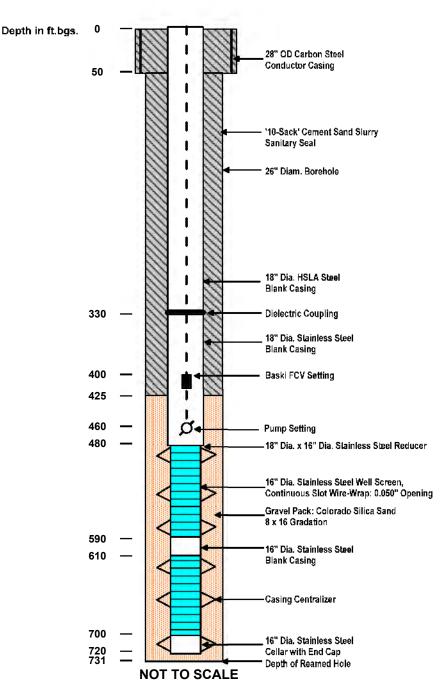
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Chemical Supplier:	
Name of Firm:	Estimated Start Date:
Representative:	Title:
Signature:	Date:

PROPOSAL IS ASSUMED TO BE VALID FOR 90 DAYS UNLESS OTHERWISE NOTED

January 2020 Project No. 18-0094 EXHIBIT 4-A





Pump Assembly Notes: Hp: 600 Bowls: 16ENL, 7 stage Col. Pipe Dia: 12" Col. Pipe Length: 20' Assy. Type: Water Lube/Open Shaft Baski FCV Setting: 400' - 410' Top of Bowls: 460' Bowl Length: 10.5' Suction Length: 10' Intake: 480.5'



FIGURE 2. AS-BUILT SCHEMATIC ASR-1 Rehabilitation Project Monterey Peninsula Water Management District

Monterey Peninsula Water Management District ASR-1 Well Rehabilitation Project January 2020 (Project No. 18-0094)

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Task No.	Task Description	Units	Estimated Quantity		Unit Price	Total
1	Mobilization	Lump Sum	1	\$	23,100	\$ 23,100
2	Pump Assembly Removal	Lump Sum	1	\$	10,000	\$ 10,000
3	Pre-Rehab Video Survey	Lump Sum	1	\$	1,100	\$ 1,100
4	Nylon Brushing	Hourly	5	\$	400	\$ 2,000
5	Bailing	Lump Sum	1	\$	1,800	\$ 1,800
6	Temporary Tanks, Piping, etc.	Lump Sum	1	\$	\$,700	\$ 2,700
7	Pre-Chemical Simultaneous Air-Lift Pumping/Swabbing	Hourly	10	\$	500	\$ 5,000
8.1	Chemicals	Lump Sum	1	\$	17,500	\$ 17,500
8.2	Chemical Injection	Lump Sum	1	\$	5,160	\$ 5,160
9	Dry-Swabbing	Hourly	10	\$	400	\$ 4,000
10	Post-Chemical Simultaneous Air-Lift Pumping/Swabbing	Hourly	20	\$	500	\$ 10,000
11	Acid Neutralization	Lump Sum	1	\$	2,600	\$ 2,600
12	Bailing	Lump Sum	1	\$	1,500	\$ 1,500
13	Post-Rehab Video Survey	Lump Sum	1	\$	1,100	\$ 1,100
14	Well Disinfection	Lump Sum	1	\$	2,900	\$ 2,900
15	Reinstallation of Pump Assembly	Lump Sum	1	\$	10,000	\$ 10,000
16	Chlorine Flushing	Lump Sum	1	\$	2,200	\$ 2,200
17	Demobilization	Lump Sum	1	\$	1,800	\$ 1,800
Total Price \$ 104, 460						
Total in Words: one Rundred and four Atousand four Rundred and						
Total in Words: one Rundred and four Atousand four hundred and sixty dollars						

## QUOTE for ASR-1 WELL REHABILITATION

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Monterey Peninsula Water Management District ASR-1 Well Rehabilitation Project January 2020 (Project No. 18-0094)

Chemical Supplier: Amber Chemical	1 1
Name of Firm: Zim Industries	Estimated Start Date: $\frac{4/6/20}{20}$
Representative: Bob Zimmeren	Title: V-P/Secretary
Signature: Nout & Jemin	Date:

PROPOSAL IS ASSUMED TO BE VALID FOR 90 DAYS UNLESS OTHERWISE NOTED

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January 28, 2020

Pacific Coast Well Drilling, Inc. PO Box 184 Templeton, CA 93465

Attention: Tyson Davis

Subject: Request for Quote: Monterey Peninsula Water Management District ASR-1 Well Rehabilitation Project

Dear Tyson:

On behalf of the Monterey Peninsula Water Management District (MPWMD), Pueblo Water Resources, Inc. (PWR) is requesting a price quote to implement a rehabilitation program at MPWMD's ASR-1 Well. This well is a dual-purpose injection/extraction Aquifer Storage and Recovery (ASR) well. The intent of this work is to formally rehabilitate the well, which has experienced a significant decline in performance (both injection and extraction) since it was last rehabilitated in 2006. MPWMD desires to implement a formal rehabilitation program to ensure the hydraulic performance and pumping capacity of the well are as high as possible prior to placing into service for the upcoming 2020 pumping season.

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A detailed scope of work to perform the desired work is attached. MPWMD desires to implement the project during Spring 2020 (April – May) so that the well can placed back into service no later than June 1, 2020. Please provide cost estimates for the various tasks associated with the project on the included price quote sheet no later than **February 21, 2020**. Please also indicate your availability and schedule for performing the work. If selected, your firm will contract directly with MPMWD and Pueblo Water Resources, Inc. (PWR) will be serving as the Owner's Technical Representative (OTR) during the project.

#### PUEBLO WATER RESOURCES, INC

4478 Market Street, Suite 705 . Ventura, CA 93003 . 805-644-0470

Pacific Coast Well Drilling January 28, 2020 (12-0094) /

We appreciate your consideration to provide assistance to the District on this important community water-supply project. If you require additional information regarding this project, please contact me.

Sincerely,

PUEBLO WATER RESOURCES, INC.

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

Attachments: Scope of Work Quote Form

cc: Jon Lear, MPWMD

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18-0094\_ASR-1\_rehab\_quote\_solicitation\_tr\_2020-01-28\_PGWD docx

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Task No.	Task Description	Units	Estimated Quantity	Unit Price	Total
1	Mobilization	Lump Sum	1	\$16,000.00	\$16,000.00
2	Pump Assembly Removal	Lump Sum	1	\$6,200.00	<sup>s</sup> 6,200.00
3	Pre-Rehab Video Survey	Lump Sum	1	§1,800.00	<sup>s</sup> 1,800.00
4	Nylon Brushing	Houriy	5	\$350.00	\$1,750.00
5	Bailing	Lump Sum	1	<sup>\$</sup> 550.00	<sup>s</sup> 550.00
6	Temporary Tanks, Piping, etc.	Lump Sum	1	<sup>s</sup> 26,000.00	<sup>\$</sup> 26,000.00
7	Pre-Chemical Simultaneous Air-Lift Pumping/Swabbing	Hourly	10	<sup>s</sup> 350.00	\$3,500.00
8.1	Chemicals	Lump Sum	1	\$67,500.00	<sup>\$</sup> 67,500.00
8.2	Chemical Injection	Lump Sum	1	\$2,800.00	<sup>\$</sup> 2,800.00
9	Dry-Swabbing	Hourly	10	\$550.00	\$5,500.00
10	Post-Chemical Simultaneous Air-Lift Pumping/Swabbing	Hourly	20	<sup>\$</sup> 450.00	٥0.000,e <sup>s</sup>
11	Acid Neutralization	Lump Sum	1	<sup>s</sup> 1,200.00	<sup>s</sup> 1,200.00
12	Bailing	Lump Sum	1	<sup>s</sup> 1,000.00	<sup>s</sup> 1,000.00
13	Post-Rehab Video Survey	Lump Sum	1	<sup>s</sup> 1,800.00	§1,800.00
14	Well Disinfection	Lump Sum	1	<sup>s</sup> 2,100.00	<sup>s</sup> 2,100.00
15	Reinstallation of Pump Assembly	Lump Sum	1	\$6,800.00	<sup>\$</sup> 6,800.00
16	Chlorine Flushing	Lump Sum	1	\$2,000.00	<sup>s</sup> 2,000.00
17	Demobilization	Lump Sum	1	\$8,000.00	\$8,000.00
Total Price \$1					\$163,500.00
Total in Words: One hundred sixty three thousand, five hundred dollars and zero cents.					

# QUOTE for ASR-1 WELL REHABILITATION

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Monterey Peninsula Water Management District ASR-1 Well Rehabilitation Project January 2020 (Project No. 18-0094)

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Chemical Supplier: Cotey Chemical	
Name of Firm: Pacific Coast Well Drilling dba Precision Hydro	Estimated Start Date: (pending award)
Representative: Will Hansen	Title: Project Manager
Signature: Willing Han	Date: 02-21-2020

PROPOSAL IS ASSUMED TO BE VALID FOR 90 DAYS UNLESS OTHERWISE NOTED