## 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)[1]. 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

[1] Pueblo Water Resources, Inc.

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 Requirement Estimate**

| 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 |

* 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 for 30 minutes before moving on to the next 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.

## QUOTE for ASR-1 WELL REHABILITATION

| Task No. | Task Description | Units | Estimated Quantity | Unit Price | Total |
|---|---|---|---|---|---|
| 1 | Mobilization | Lump 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 in Words: | | | | | |

Chemical Supplier:_____

Name of Firm: _____ Estimated Start Date: _____

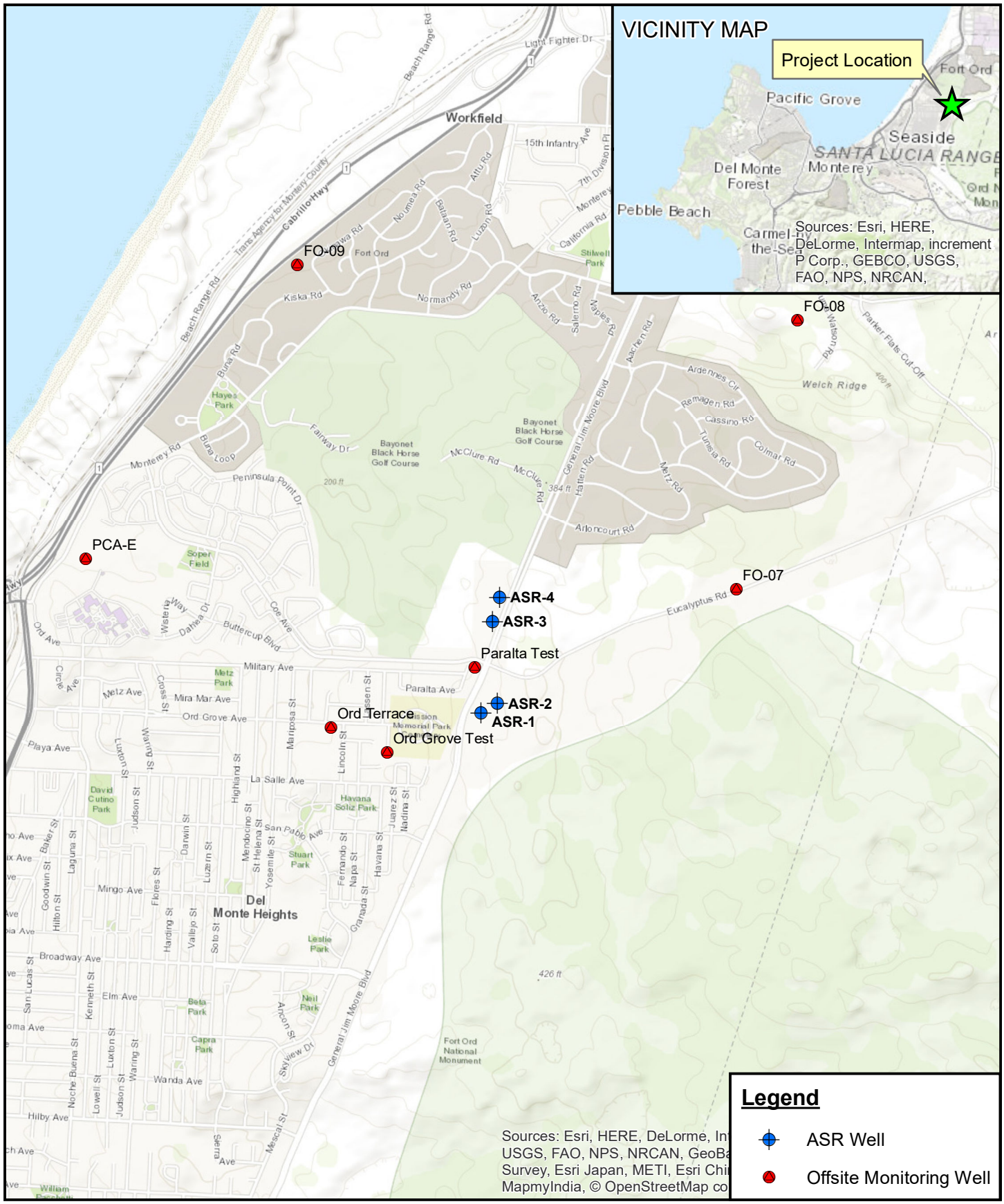
Representative:_____ Title:_____

Signature:_____ Date: _____

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

# EXHIBIT 6-A

**January 2020**
**Project No. 18-0094**




PUEBLO water resources

N
W E
S

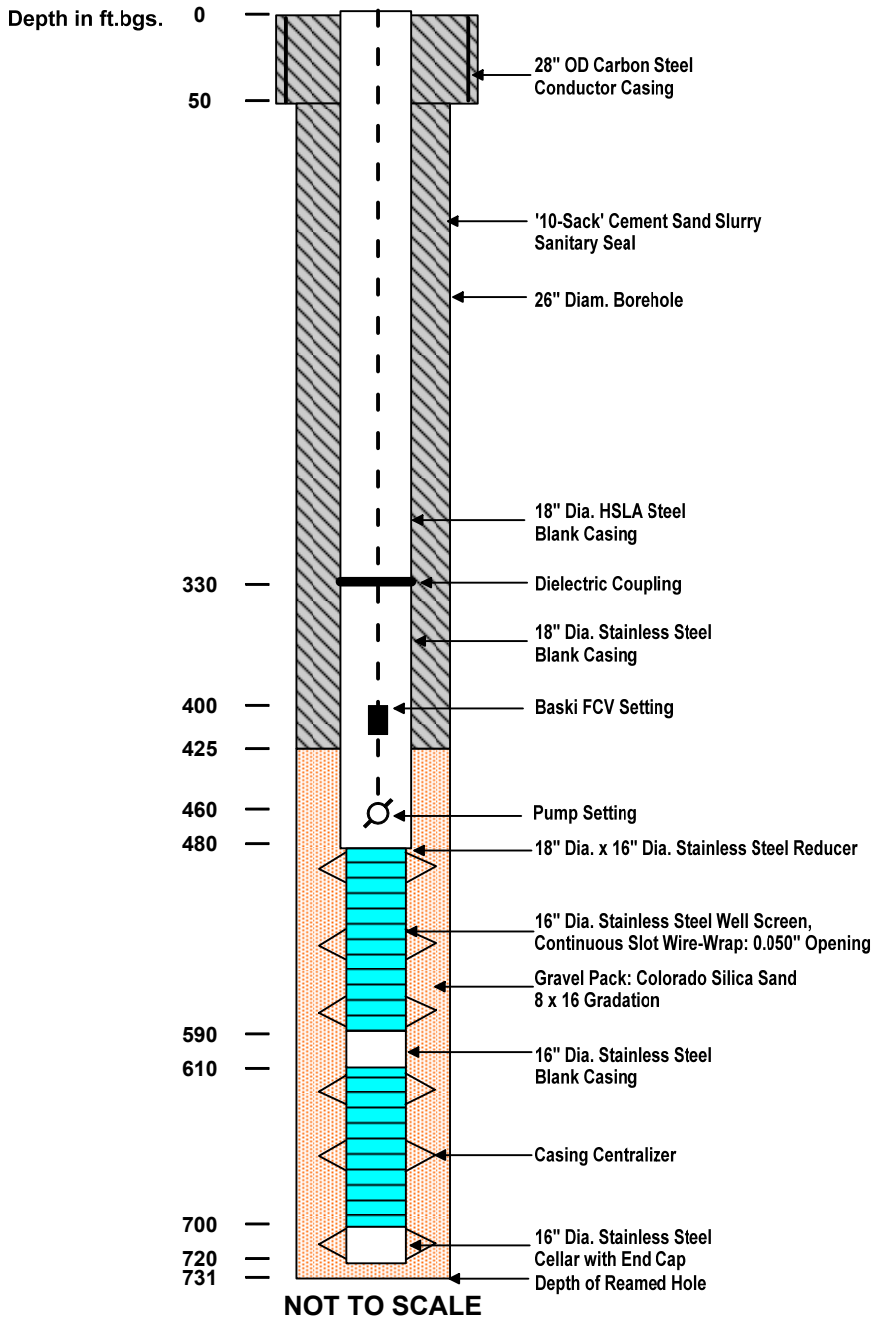
1 inch = 2,000 feet

0 1,000 2,000 Feet

**FIGURE 1. SITE LOCATION MAP**
**ASR-1 Rehabilitation Project**
**Monterey Peninsula Water Management District**

# EXHIBIT 6-A

**January 2020**
**Project No. 18-0094**




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'

PUEBLO water resources

**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)

## QUOTE for ASR-1 WELL REHABILITATION

| 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 | $ 2,700 | $ 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 Hundred and four Thousand four Hundred and sixty dollars

Chemical Supplier: Amber Chemical

Name of Firm: Zim Industries Estimated Start Date: 4/6/20

Representative: Bob Zimmerer Title: V-P/ Secretary

Signature: Robert J Zimmerer Date: 2/21/20

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

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

## QUOTE for ASR-1 WELL REHABILITATION

| Task No. | Task Description | Units | Estimated Quantity | Unit Price | Total |
|---|---|---|---|---|---|
| 1 | Mobilization | Lump Sum | 1 | $ 23,800 | $ 23,800 |
| 2 | Pump Assembly Removal | Lump Sum | 1 | $ 10,300 | $ 10,300 |
| 3 | Pre-Rehab Video Survey | Lump Sum | 1 | $ 1,133 | $ 1,133 |
| 4 | Nylon Brushing | Hourly | 5 | $ 412 | $ 2,060 |
| 5 | Bailing | Lump Sum | 1 | $ 1,854 | $ 1,854 |
| 6 | Temporary Tanks, Piping, etc. | Lump Sum | 1 | $ 2,781 | $ 2,781 |
| 7 | Pre-Chemical Simultaneous Air-Lift Pumping/Swabbing | Hourly | 10 | $ 515 | $ 5,150 |
| 8.1 | Chemicals | Lump Sum | 1 | $ 18,375 | $ 18,375 |
| 8.2 | Chemical Injection | Lump Sum | 1 | $ 5,315 | $ 5,315 |
| 9 | Dry-Swabbing | Hourly | 10 | $ 412 | $ 4,120 |
| 10 | Post-Chemical Simultaneous Air-Lift Pumping/Swabbing | Hourly | 20 | $ 515 | $ 10,300 |
| 11 | Acid Neutralization | Lump Sum | 1 | $ 2,678 | $ 2,678 |
| 12 | Bailing | Lump Sum | 1 | $ 1,545 | $ 1,545 |
| 13 | Post-Rehab Video Survey | Lump Sum | 1 | $ 1,133 | $ 1,133 |
| 14 | Well Disinfection | Lump Sum | 1 | $ 2,987 | $ 2,987 |
| 15 | Reinstallation of Pump Assembly | Lump Sum | 1 | $ 10,300 | $ 10,300 |
| 16 | Chlorine Flushing | Lump Sum | 1 | $ 2,266 | $ 2,266 |
| 17 | Demobilization | Lump Sum | 1 | $ 1,854 | $ 1,854 |
| | | | | Total Price | $ 107,951 |
| Total in Words: one Hundred and seven thousand nine Hundred and fifty-one dollars | | | | | |