

TO: James L. App, City Manager
FROM: Mike Compton, Director of Administrative Services
SUBJECT: Landfill Groundwater Monitoring and Related Budget Appropriation
DATE: February 15, 2000

Needs: For the City Council to consider adoption of a resolution approving a budget appropriation for the installation of new landfill groundwater monitoring wells and authorizing Pacific Waste Services to proceed with installation..

Facts:

1. The recent installation of landfill cell IIB resulted in the abandonment of a groundwater monitoring well which was located at the same location.
2. The abandoned well must be replaced at a different site.
3. Additionally, the Regional Water Quality Control Board is requiring the installation of a second deep monitoring well; two geophysical explorations for perched water; and the redevelopment and possible repair of an existing well which is silted.
4. The cost to the City for the work to be performed by Conor Pacific/EFW, under the auspices of of the City's landfill contractor, Pacific Waste Services, is \$81,000 including the required reporting.
5. A budget appropriation does not currently exist for this work since it is a recent requirement by the Regional Water Quality Control Board.

Analysis
and

Conclusion:

The City does not have any choice in the matter. The proposed work plan was developed at the request of the Regional Water Quality Control Board with their specific input. Pacific Waste Services has worked with Conor Pacific/EFW to achieve the lowest cost possible.

Fiscal

Impact:

As noted above, the estimated cost to undertake all the required work is \$81,000. A budget appropriation is needed and is provided for in the attached resolution. There are sufficient resources in the Solid Waste Operations Fund to undertake the required improvements.

Options:

- a. That the City Council adopt Resolution No. 00 - authorizing the work plan (installation of improvements) to be implemented by Conor Pacific/EFW under the auspices of Pacific Waste Services and a budget appropriation in the amount of \$81,000; or
- b. Amend, modify, or reject the above option.

RESOLUTION NO. 00-

A RESOLUTION OF THE CITY OF EL PASO DE ROBLES
APPROVING AND AUTHORIZING THE INSTALLATION OF
LANDFILL IMPROVEMENTS AND APPROPRIATING FUNDS
FROM THE SOLID WASTE OPERATIONS FUND

WHEREAS, due to the abandonment of a groundwater monitoring well as a result of the installation of Landfill Cell II B, the City must install a replacement well; and

WHEREAS, due to additional monitoring being required by the Regional Water Quality Control Board, the City must install additional improvements; and

WHEREAS, a work plan has been developed to address these required improvements including the installation of two deep monitoring wells; two geophysical explorations for perched water; and the redevelopment and possible repair of an existing well which is silted; and

WHEREAS, Pacific Waste Services, the City's interim landfill operator and engineering consultant has made arrangements for the installation of the required improvements with Conor Pacific/EFW.

THEREFORE BE IT HEREBY RESOLVED by the City Council of the City of El Paso de Robles that Pacific Waste Services is authorized to proceed with the work plan as proposed including the installation of improvements by Conor Pacific/EFW.

BE IT FURTHER RESOLVED by the City Council of the City of El Paso de Robles that a budget appropriation is hereby approved from the Solid Waste Operations Fund in the amount of \$81,000 to budget account 610-910-5452-466.

PASSED AND ADOPTED by the City Council of the City of Paso Robles this 15^h day of February 2000 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Duane Picanco, Mayor

ATTEST:

Sharilyn M. Ryan, Deputy City Clerk

PACIFIC
WASTE
SERVICES.
INC.



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San Ramon, CA 94553

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Mike Compton, Director of Administrative Services
City of El Paso de Robles
1000 Spring Street
Paso Robles, CA. 93446

RECEIVED

JAN - 3 2000

ADMINISTRATIVE SERVICES

December 30, 1999

Re: Groundwater New Well Proposal,
Paso Robles Landfill

Dear Mr. Compton:

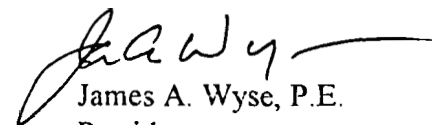
Attached you will find a draft workplan for monitoring well installations and additional hydrogeologic characterization. Your review and comment is requested before transmittal. We would like to get this workplan to the RWQCB by January 7.

In addition to the workplan, Conor Pacific/EFW has provided a cost estimate for the proposed services:

Please call or e-mail your comments or questions at your earliest convenience.

If you have any comments, please advise immediately.

Very truly yours,
Pacific Waste Services, Inc.


James A. Wyse, P.E.
President

December 3, 1999
Project No. PRL102

Mr. Frank DeMarco
California Regional Water Quality Control Board
Central Coast Region
81 Higuera Street, Suite 200
San Luis Obispo, CA 93401-5414

Re: Workplan for Monitoring Well Installations and Additional Hydrogeologic
Characterization, Paso Robles Landfill, Paso Robles, California

Dear Mr. DeMarco:

In accordance with discussions at our recent meeting, this document presents a proposed workplan for installation of additional monitoring wells and supplemental hydrogeologic characterization efforts at the Paso Robles Landfill. Specifically, this workplan proposes: (1) installation of two new deep monitoring wells along the Point of Compliance (POC), (2) geophysical exploration for the possible occurrence of perched water in several existing wells, and (3) redevelopment and possible repair of silted well MW-3. This work will allow the landfill to re-start quarterly groundwater monitoring in the 1st quarter of 2000.

Additional work tasks discussed during our meeting including decommissioning of wells MW-1 and MW-7, and exploration for the occurrence of perched water within the footprint of the proposed landfill will be completed in a later phase of work. This work will be done later because the rainy season precludes the excavation of waste and liner work required for decommissioning of well MW-1, and also prevents exploratory drilling in several low-lying areas within the landfill footprint. In addition, information developed from our first phase of work should assist in developing the supplemental phase of work.

The purpose of this workplan is to provide the Regional Water Quality Control Board (RWQCB) with a concise description of the proposed well installation and exploratory program. Specifically, this workplan provides a description of: (1) the pertinent regulatory requirements, (2) the location, depth, and proposed drilling and well construction methods for the new wells, (3) the downhole geophysics to be performed for identifying perched water, (4) the redevelopment/repair plan for well MW-3, and (5) an estimated schedule for completion of the work.

REGULATORY REQUIREMENTS

The well installations will be performed in conformance with all applicable Title 27, California Code of Regulations (CCR) requirements. These regulations address monitoring points of compliance and general water quality monitoring and system requirements.

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Regulations applicable to this well installation program address monitoring well placement, installation, and construction. As required, monitoring wells will be installed at an appropriate location and depth so that the wells yield groundwater samples that represent the quality of groundwater passing the point of compliance, and allow for detection of a release from the regulated unit. All monitoring well borings will be appropriately logged for this investigation under the supervision of a California state-registered geologist. To ensure collection of representative groundwater samples, monitoring wells will be constructed with appropriate screening and filter packs (ASTM D-5092-90-Sections 6 and 8), and the wells will be developed prior to sampling (as per ASTM D-5092-90-Section 9).

PROPOSED MONITORING WELLS

Proposed Boring/Well Locations and Depths

Two additional wells are proposed along the eastern POC of the landfill. One well is proposed at approximately the north-south midpoint of the existing landfill near existing water supply well 13N1, and the second is located near the northern extent of refuse placement about 150 feet south of exploratory well DH-6 (Figure 1). Both wells will be drilled to el. 760-770 msl depending on where saturated conditions are first encountered. Approximate drilling depths below ground surface for the two wells are 340 feet and 310 feet, respectively.

Drilling Methods

Based on previous experience with well installations in similar settings, it is our opinion that a combination of straight air rotary drilling with wireline coring of select intervals is the most cost-effective drilling method for combined groundwater exploration and well installation. Exploratory/pilot holes (5 to 6-inch diameter) will be drilled to the total target depth. If heaving conditions are encountered in the target water-bearing zone, the drilling may be modified to mud rotary to maintain borehole stability and to allow the installation of the monitoring well. Once the pilot hole is completed, geophysical logging will be performed to document the stratigraphy of the borehole. Induction and gamma-ray logging may be performed in air-filled holes, or alternatively, the borehole may be filled with drilling mud or water for standard electric logging techniques (i.e., spontaneous potential, gamma-ray, as well as short and long normal resistivity logs). Following the downhole geophysics, the borehole will be reamed to a minimum 9-inch diameter for well installation. Temporary conductor casing will be installed as necessary to ensure that the integrity of the near-surface borehole is maintained.

Sampling Procedures

Formation cuttings will be collected and logged on a continuous basis by the resident geologist. The resident geologist will specify target intervals to be cored based on the formation cuttings and specific targets. Currently, we anticipate coring from about el. 950 to

Mr. Frank DeMarco

December 3, 1999

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900 to explore for perched water, and again from el. 820 to el. 760 in the target-monitoring zone.

Well Design and Materials

The well casing will be 4-inch diameter, Schedule 80 PVC with flush threaded joints (*Aardvark Hydrophyllite*, or equivalent), which is considered an acceptable material as per ASTM F480 and ASTM-D-5092-90-Section 6.5.1. The machined slot size of the screen is anticipated to be 0.013-inch, although the slot size may be altered in the field, based on the gradation of the formation samples. The slotted casing will be capped with a threaded end plug and set from the lowest point of the target monitoring interval to a maximum thickness of 20 feet. Bottom plugs for over-drilled borings and lengths of well sumps will be determined in the field. Blank casing will be extended from the top of the screened interval to 18-inches above the ground surface. Stainless steel centralizers will be placed at 40-foot intervals.

Filter pack material is anticipated to be a No. 0/30 silica sand, although the resident geologist may alter the required filter pack gradation based on the formation samples. The filter pack shall extend a maximum of three feet above the top of the screened interval.

A five-foot bentonite seal (coated pellets or bentonite slurry) will be placed at the top of the sand pack interval and hydrated (as necessary) to prevent intrusion of the sandpack by grout. Alternatively, a grout basket or fine sand transition seal may also be used to provide a stable platform for the overlying grout seal. The annular space above the bentonite seal will be backfilled to within 2 feet of the ground surface with a typical cement base grout (Type I/II portland cement [as per ASTM-C150-92] with 3% to 5% bentonite powder [as per ASTM-D-5092-Section 6.8.3.3]) placed using a tremie pipe.

The wells will be completed at the ground surface with an 8-inch diameter steel riser set in a 3-foot by 3-foot square, 4-inch thick (minimum) concrete pad. The pad will slope a minimum of 5% away from the steel riser to all four sides. The concrete around the well casing will extend down the open annulus to the top of the cement-bentonite seal. The steel riser will be set a minimum of 18-inches into the concrete pad and extend 18-inches (max.) above the pad even with the top of the well casing). The well-head will be locked with a standard No. 3 padlock.

Survey of Completed Wells

The final well location, ground elevation and top-of-casing elevation will be surveyed by representatives of Pacific Waste Services, Inc.

Well Development

The completed well will be developed using an appropriate development method as recommended by the drilling contractor. Methods may include mechanical surging and bailing or pumping, over-pumping, air-lift pumping or jetting. The resident geologist will

approve the proposed development method. Development will be continued until the bailed water is representative of formation water and is relatively free of suspended solids. Representative formation water will be assumed when the yields water that exhibits stable indicator parameters (i.e. pH, conductivity, and temperature) as per ASTM-D-5092-Section 9. A measurement of turbidity in standard NTU units will also be obtained. Every reasonable attempt will be made to design and develop the well to minimize turbidity and maximize water clarity.

Decontamination Requirements

All components of the drilling rig (i.e. drill pipe, subs, collars, kelly, etc.) which could contaminate the formation or monitoring well will be decontaminated with a steam cleaner prior to the start of each borehole. A decon area will be provided in a central location at the site. In addition, all screens and casings to be installed will be in a contaminant-free condition when placed in the ground (i.e. either steam-cleaned or manufacturer-certified in sterile wrapping).

DOWNHOLE NEUTRON PROBE SURVEY

A neutron probe logging tool will be used to sound existing wells that penetrate the suspected perched water-bearing zone at approximate el. 920-930 msl. The neutron probe provides a relative measure of water content and should allow any saturated, perched layers to be identified. Wells to be included in the survey include wells MW-2, MW-3, and possibly well MW-7. Well MW-7 will be sounded if the logging tool can fit into the 2-inch casing. The neutron probe tool will also be run in newly installed boreholes to provide a baseline for comparison purposes.

REDEVELOPMENT/REPAIR OF MW-3

Well MW-3 will be redeveloped to clean out an accumulation of silt that has disrupted sampling of the well. If the well cannot be adequately cleaned (as determined by the quality of water produced during the development) a two-inch diameter, flush-threaded PVC well screen will be inserted into the existing five-inch well. The two-inch well will have an integral pre-pack well screen with a fine filter sand designed to reduce turbidity in the well. The two-inch well will be fitted with centralizers at 20-foot intervals to hold it in the well for sampling while still allowing it to be removed as needed for cleaning, maintenance, etc.

SCHEDULE

It is our understanding that the City of Paso Robles will authorize us to begin work on the well installation project upon RWQCB approval of this workplan. Once authorized to proceed, selection of a drilling contractor, contract negotiations and mobilization are expected to require approximately three to five weeks to complete. Once the start date of the field program is set, the agencies will be notified so that they can observe drilling activities if they so desire. Furthermore, we will maintain close contact with the agencies during the

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December 3, 1999
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course of the drilling program, and provide verbal status updates, so that field visits can be scheduled at the agencies convenience. Based on previous experience, it is estimated that each monitoring well will require two to three working days to complete.

REPORTING

A report documenting the installation of each well and the associated exploratory procedures will be prepared and submitted within 60 days of project completion. The report will contain all information necessary to document the drilling methods, well installation procedures, and geologic conditions monitored by the well.

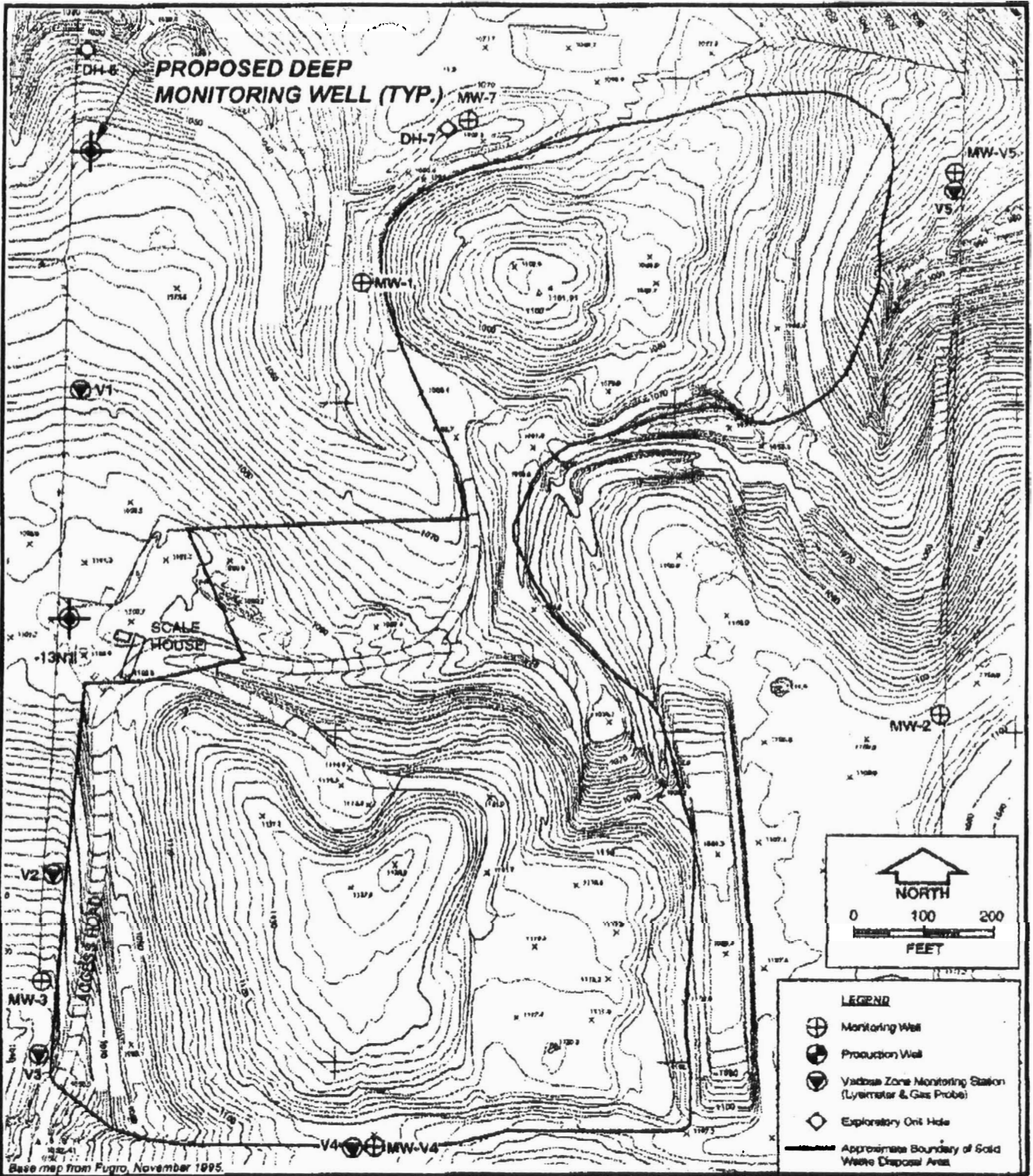
If you have any questions regarding this proposed workplan for well installation and exploratory activities please feel free to contact us.

Sincerely,
Conor Pacific/EFW

William L. Fowler, C.E.G.
Principal Engineering Geologist

Enclosures:

Figure 1 - Proposed Well Installations



Conor Pacific 	PASO ROBLES LANDFILL PASO ROBLES, CALIFORNIA	FIGURE 1
	MONITORING WELL INSTALLATION PLAN	PROJECT NO. PRL102

I:\PRL102\FIGURES\MW INSTALLATION PLAN.DSF 12/15/99

21-9

Conor Pacific



Facsimile

To: Mr. Jim Wyse, Pacific Waste Services, Inc.

Phone: Business (925) 244-0392
Fax (925) 743-9376

Re: Paso Robles Cost Estimate

From: William L. Fowler

Phone: Business (650) 843-3828
Fax (650) 843-3815

Date: December 7, 1999

Proj. No.: PRL102

Number of pages including cover sheet:

Remarks: Urgent Please review Reply ASAP Please Comment

Jim,

Attached please find a detailed cost estimate for the workplan provided previously. Let me know if you have any questions.

Bill

If you have received this transmission in error, please call the sender immediately. If you are not the intended recipient of this facsimile, you are hereby notified that the information in this facsimile may be confidential, proprietary, and/or legally privileged information, and that any copying or distribution of this information is prohibited. Thank you for your cooperation.

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**CONOR PACIFIC/EFW
COST ESTIMATE**

CLIENT: PWS/City of Paso Robles
PROJECT: Paso Robles LF
Well Installation Program

DATE December 7, 1999

PROJ/PROP NO.: PRL102

ITEM DESCRIPTION	UNIT	UNIT COST	QUAN-TITY	COST	SUB-TOTAL	TASK TOTAL
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TASK 1 -Installation of Groundwater Monitoring Wells

Includes costs for: completing addendums to workplan, site health and safety plan, coordination and scheduling activities with driller, geophysical company, and site personnel; mobilization; direction of drillers and geologic logging of borings; supervision of geophysics, supervision of well installation, well head completion, well development, demob. For installation of (2) 320 wells, one well repair (MW-3), and supplemental geophysics. Assume 3 days for each well, 1 day for repair, and 1 day for development. Estimated duration of task is 2 weeks.

Professional Services

Administrative	hour	\$37	2	\$74		
Staff Geologist II	hour	\$78	100	\$7,800		
Sr. Project Geologist	hour	\$87	10	\$870		
Principal	hour	\$120	5	\$600	\$9,344	

Direct Charges

Chargeable Field Equipment

Field telephone	day	\$15	10	\$150		
Horiba Multimeter	day	\$75	1	\$75		
Organic Vapor Analyzer	day	\$100	2	\$200		
Water Level Indicator	day	\$20	2	\$40		
Sieve Set and Scale	day	\$20	2	\$40		
Level D Safety Eq (w/respirator)	day	\$10	10	\$100		
Well Development Equipment	day	\$25	1	\$25		
Mileage	mile	\$0.43	1000	\$430		
4x4 Field Truck	day	\$50	10	\$500		
Misc. Consumable Materials	lump	\$100	1	\$300	\$1,860	

Indirect Charges

General

Per Diem	per day	\$80	10	\$800		
Postage/Express Mail/Fax	lot	\$25	1	\$25		
Miscellaneous Materials	lot	\$100	1	\$100		
Well Repair Materials	lot	\$1,000	1	\$1,000	\$1,925	

Subcontractors

Drilling Subcontractor	per ft.	\$80	640	\$51,200		
Geophysical Subcontractor	callout	\$525	2	\$1,050		
(induction, nat. gamma)	per well	\$600	2	\$1,200		
neutron probe	per well	\$400	5	\$2,000	\$55,450	

15% Subcontractor Mark-up \$8,317.50

Total

\$76,897

**CONOR PACIFIC/EFW
COST ESTIMATE**

CLIENT: PWS/City of Paso Robles
PROJECT: Paso Robles LF
Well Installation Program

DATE: December 7, 1999

PROJ/PROP NO.: PRL102

ITEM DESCRIPTION	UNIT	UNIT COST	QUAN- TITY	COST	SUB- TOTAL	TASK TOTAL
Task 2 - Preparation of Well Installation Report						
Prepare boring logs, well completion diagrams, geophysical logs, summary of drilling methods, well coordinates, well development information, and new site plan. Assume 6 copies of report.						
<i>Professional Services</i>						
Administrative	hour	\$38	2	\$76		
Drafter	hour	\$55	8	\$440		
Staff Geologist II	hour	\$78	24	\$1,872		
Project Geologist/Engineer	hour	\$87	0	\$0		
Principal	hour	\$120	4	\$480	\$2,868	
<i>Direct Charges</i>						
<u>General</u>						
Postage/Express Mail/Fax	lot	\$50	1	\$50		
reproduction, report supplies	each	\$30	6	\$180		
oversize color graphics	each	\$25	6	\$150	\$380	
			Total			\$3,248
			Total			\$80,145