

OFF-SITE GROUNDWATER MONITORING WELL INSTALLATION REPORT

FORMER TEXACO GASOLINE SERVICE STATION 15101 Freedom Avenue SAN LEANDRO, CALIFORNIA

October 25, 2004

Project 2552

Prepared for

Mr. Mohammed Pazdel 2001 Sir Francis Drake Blvd. San Leandro, California

Prepared by

SOMA Environmental Engineering, Inc. 2680 Bishop Drive, Suite 203 San Ramon, California



October 25, 2004

Mr. Robert Schultz
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: STID 4473/RO0000473

Texaco Gasoline Service Station (Formerly Freedom ARCO Station) Site Address: 15101 Freedom Avenue, San Leandro, California

Dear Mr. Schultz:

As requested in Ms. Chu's letter of February 4, 2004, enclosed for your review is SOMA's report entitled "Off-Site Groundwater Monitoring Well Installation Report" for the subject site.

Thank you for your time in reviewing this report. If you have any questions or comments, please call me at (925) 244-6600.

Sincerely,

Mansour Sepehr, Ph.D., PE Principal Hydrogeologist

Enclosure

cc: Mr. Mohammad Pazdel w/enclosure

No. CO42928
EXP. 3-31-06

CIVIL CHIEF CALIFORNIA

CERTIFICATION

This report has been prepared by SOMA Environmental Engineering, Inc. on behalf of Mr. Mohammed Pazdel, the property owner of 15101 Freedom Avenue, San Leandro, California. This report is based on SOMA's workplan dated January 20, 2004. This report has been prepared to comply with the Alameda County Health Care Services - Environmental Health Services' workplan

approval letter dated February 4, 2004.

Mansour Sepehr, Ph.D., P.E. Principal Hydrogeologist

Reger Papler, R.G. Registered Geologist

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1.0 INTRODUCTION

This report has been prepared by SOMA Environmental Engineering, Inc., (SOMA) on behalf of Mr. Mohammed Pazdel, the property owner of 15101 Freedom Avenue, San Leandro, California (the "Site"). This report is based on SOMA's workplan dated January 20, 2004. This report complies with the Alameda County Health Care Services - Environmental Health Department's (ACEHS) workplan approval letter dated February 4, 2004.

As shown in Figure 1, the Site is located at 15101 Freedom Avenue, San Leandro, California. The subject property is bordered on the west by 151st Avenue, on the north by Freedom Avenue, on the east by Fairmont Avenue, and on the south by residential properties. Currently, there are three underground storage tanks (USTs) at the Site: one 20,000-gallon and one 8,000-gallon gasoline UST and one 6,000-gallon diesel UST.

1.1 Previous Activities

Since the 1960's, the Site has been used as a gasoline service station. In 1985, Mr. Mohammad Pazdel purchased the business and in 1992 he purchased the property from Mr. Mohammad Mashhoon. From 1985 until 1997, when Mr. Pazdel sold the business, the Site operated as "Freedom ARCO Station." To comply with the UST upgrade regulations, three 10,000-gallon single-walled USTs were removed in 1999 and replaced by new double-walled fuel tanks. During the UST upgrade, petroleum hydrocarbon contaminants were detected in the subsurface soils beneath the old USTs.

On May 20, 1999, Geo-Logic oversaw the removal of three 10,000-gallon USTs, approximately 250 feet of product piping, and six dispensers from the Site. Paradiso Mechanical, Inc. removed and over-excavated the old USTs. The on-site overseeing agency was the ACEHS.

After excavation and removal, the three USTs and product piping were transported to the ECI facility in Richmond, California for proper disposal. On May 20 and May 21, 1999, Geo-Logic collected soil samples from beneath the USTs, product piping, and dispensers. On May 20, 1999, seven soil samples (T1W, T2W, T3W, T1E, T2E, T3E, and an additional soil sample at T1W) were collected from the west and east sides of the tank excavation pit ranging in depth from 12 to 14 feet below ground surface (bgs). In addition, six soil samples (P1, P2, P4, P5, P6, and P7) were collected from beneath the dispensers ranging in depth from 2.5 to 3 feet bgs. One soil sample (P3) was collected from beneath the product lines at 2.5 feet bgs. On May 21, 1999, eight additional soil samples (P8, P9, P10, P11, P12, P13, P14, and P15) were collected from beneath the product piping and in the area of the dispensers; the samples were collected from depths ranging from 3 to 3.5 feet bgs. Stockpile soil samples were also collected on May 21, 1999.

On June 2, 1999, additional soil samples were collected during over-excavation of the product piping and from the bottom of the tank excavation pit. An additional soil sample (P12) was collected from beneath the product piping at a depth of 5 feet bgs. Three additional soil samples were collected in the western portion of the tank cavity and ranged in depth from 16.5 to 24.5 feet bgs. The samples were collected to help define the vertical extent of the hydrocarbon contamination.

The soil samples collected during the removal and over-excavation activities were submitted to Calcoast Analytical in Emeryville, California. Soil samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-g) using EPA Method 8015, benzene, toluene, ethylbenzene and xylene (BTEX) and Methyl tertiary Butyl Ether (MtBE) using EPA Method 8020. The presence of MtBE was confirmed using EPA Method 8260B. Total lead was analyzed using EPA Method 6010A. The concentration of TPH-g in the soil samples ranged from 0.76 mg/Kg

(P3-2.5 ft bgs) to 4,000 mg/Kg (T1W-24.5 ft bgs). Benzene concentrations ranged from 28 mg/Kg (T1W-13.5 ft bgs) to non-detectable levels (P2 through P6, and P14) at depths ranging from 2.5 to 3 feet bgs.

On July 7, 1999, Paradiso Mechanical, Inc. installed a 20,000-gallon gasoline UST, an 8,000-gallon gasoline UST, and a 6,000-gallon diesel tank inside the tank cavity.

1.2 Previous Investigations

In July 2001, CSS Environmental Services (CSS) conducted a site investigation at the request of the ACEHS. CSS performed the investigation to further delineate the on-site petroleum hydrocarbon contamination discovered during the removal and upgrade of the USTs at the Site. During that investigation, CSS drilled five temporary well boreholes (SB-1 through SB-5) using the direct-push method. The soil borings were advanced to a maximum depth of 31 feet. Based on the groundwater stabilizing at 17 to 20 feet bgs after drilling, the on-site groundwater appeared to be semi-confined. The results of that investigation indicated that petroleum-impacted soils were generally encountered below 19 feet bgs and exist mostly the capillary fringe. Maximum concentrations of TPH-g and BTEX in the soil samples collected between 19 and 25.5 feet bgs were 470,000, 2,600, 16,000, 12,000, and 73,000 μg/Kg, respectively. MtBE was not detected in any of the soil samples above the analytical method reporting limit of 5 μg/Kg. The maximum concentrations of TPH-q and BTEX in the groundwater samples collected from the soil borings were 83,000, 19,000, 1,800, 1,500, and 73,000 µg/L, respectively. MtBE was detected in the groundwater in each of the borings except SB-4. The maximum reported MtBE concentration was 87,000 μg/L in SB-2.

Mr. Pazdel subsequently retained SOMA to conduct an on-site soil and groundwater investigation involving the installation of five groundwater monitoring

wells, as illustrated in Figure 2. Soil and groundwater analytical results indicated that elevated petroleum hydrocarbon contamination existed beneath the eastern half of the Site and that the contaminated groundwater plume had probably migrated to the south/southeast. With residential properties downgradient from the Site, SOMA recommended conducting an off-site soil and groundwater investigation. After reviewing SOMA's report, the ACEHS requested a workplan; this workplan was approved in a letter dated August 29, 2003.

SOMA conducted the off-site soil and groundwater investigation in September 2003. Based on the results of that investigation, groundwater contaminants migrated off-site at least 300 feet to the southeast with free product extending at least 100 feet south of the Site. Table 1 summarized the groundwater analytical results for this off-site soil and groundwater investigation.

The soil and groundwater investigation indicated that nearby utilities were considerably shallower than the highest historical on-site groundwater levels and did not appear to be submerged. The non-submerged utilities did not appear to be preferential flow paths for site-related contaminants migrating off-site. This investigation documented the existence of two downgradient water supply wells in close proximity of the Site. SOMA recommended testing the water supply wells for constituents of concern to evaluate if these wells have been impacted by the Site's related contaminants.

SOMA recommended installing off-site groundwater monitoring wells to evaluate and monitor the extent and stability of the groundwater contamination, groundwater flow direction, and gradient. The ACEHS reviewed the report and concurred with SOMA's recommendations and subsequently approved the workplan, dated January 20, 2004. This report presents the findings of SOMA's off-site groundwater monitoring well installation.

1.3 Nature and Extent of Groundwater Contamination

Since May 2002, SOMA has performed quarterly groundwater monitoring events at the Site. Historically, elevated levels of petroleum hydrocarbons have been detected in the groundwater with TPH-g as high as 65,000 µg/L (MW-3), benzene at 7,300 µg/L (MW-3) and MtBE at 7,800 µg/L (MW-4).

The results of SOMA's previous investigations indicated that the eastern/southeastern portion of the Site is the most contaminated and that the petroleum hydrocarbon plume has migrated off-site to the southeast/south. Free product was observed in TWB-1, located approximately 100 feet south if the Site. Of all the off-site temporary well boreholes, the second highest level of petroleum hydrocarbons was detected in TWB-2, located southeast/east of the Site, near the corner of Liberty and Fairmont avenues.

2.0 SCOPE OF WORK

Based on the ACEHS-approved workplan, the scope of work involved installing four off-site groundwater monitoring wells. The nearest off-site well was designed to eventually operate as an extraction well. During a phone conversation with Ms. Eva Chu on August 20, 2003, the ACEHS specifically requested SOMA to discretely screen the most contaminated water-bearing layers when installing monitoring wells under ACEHS oversight. To implement the approved workplan and comply with the ACEHS directive, SOMA performed the following tasks:

Task 1: Permit Acquisition, Health and Safety Plan Preparation, and

Utility Clearance

Task 2: Installation of Groundwater Monitoring Wells

Task 3: Collection and Laboratory Analysis of Soil Samples

Task 4: Residential Well Sampling

Task 5: Monitoring Well Development

Task 6: Monitoring Well Survey

The following are descriptions of the above tasks.

2.1 Permit Acquisition, Health and Safety Plan Preparation, and Utility Clearance

Prior to initiating field activities, SOMA obtained the drilling and encroachment permits from the Alameda County Public Works Agency (ACPWA). The permits are attached as Appendix A.

A site-specific health and safety plan (HASP) was prepared by SOMA. The HASP was designed to address safety provisions during field activities and protect the field crew from physical and chemical hazards resulting from drilling and sampling. The HASP established personnel responsibilities, general safe work practices, field procedures, personal protective equipment standards, decontamination procedures and emergency action plans.

SOMA contacted Underground Service Alert (USA) to clear the drilling areas of underground utilities. Following USA clearance, a private utility locator surveyed the drilling areas and located additional subsurface conduits.

2.2 Installation of Groundwater Monitoring Wells

To delineate the extent of the groundwater plume, SOMA oversaw the installation of four monitoring wells; the locations of the wells are shown in Figure 2. Two of the monitoring well locations were adjusted to accommodate traffic safety considerations. To protect the field crew during the installation of MW-7, the front of the drilling rig was oriented to face the traffic flow. SOMA originally planned to install MW-8 approximately 100 feet south of TWB-1, however, traffic safety considerations also required moving this well south by approximately 75 feet to construct a sufficiently long taper zone from the nearest traffic-upgradient corner to the work area.

On August 25 and 26 and September 2, 2004, Gregg Drilling & Testing (Gregg) used a hollow stem auger drilling rig to drill and install the four monitoring wells to approximately 21 to 33 feet below ground surface (bgs).

To determine the water-bearing zones, continuous sampling with an unlined splitspoon sampler commenced at least five feet above the anticipated depth of the water-bearing zone. The expected water-bearing zone depth was based on the findings of SOMA's previous off-site investigation.

Based on these sediment core samples, a SOMA field geologist logged the borehole and determined the screen lengths based on the observed saturated-zone thickness and photo-ionization detector (PID) readings. The field crew then plugged the well borehole up to the bottom of the selected screen interval and installed the casing with factory-slotted schedule 40 PVC screen with 0.02" slots. The drilling crew screened the wells as shown in the borehole logs included as Appendix B. A PVC cap was then attached to the bottom of the casing with stainless steel screws and the top of the casing was fitted with a locking well plug.

After the casing was set into the borehole, the sand filter pack was emplaced outside the casing by slowly pouring 2/12 kiln-dried sand into the annular space from the bottom of the borehole to approximately one-foot above the screened interval. To prevent grout from infiltrating down into the filter material, a one-foot thick bentonite plug was placed above the filter pack and hydrated. After thoroughly hydrating the bentonite seal, the well was sealed from the top of the bentonite layer to about one-foot bgs with neat cement containing approximately 3 to 5% bentonite. Near surface grade, the wells were completed by installing a traffic-rated well vault into a concrete foundation. Appendix B presents the monitoring well construction details.

2.3 Collection and Laboratory Analysis of Soil Samples

Soil samples were collected from the vadose zone of monitoring well borehole MW-6. To verify that the source of groundwater contamination was not from an off-site source above this heavily contaminated area, the samples were analyzed for the constituents of concern. The selected samples were submitted to Curtis and Tompkins, Ltd., a state-certified laboratory.

SOMA also planned to collect soil samples for fate and transport analysis from off-site wells MW-7 through MW-9. However, unexpected lateral changes in lithology required continuous sampling with an unlined sampler in order to detect thin water-bearing stringers and layers. As a result, the sampler could not be sleeved and no soil samples were collected for these physical analyses. Table 2 summarizes the results of the laboratory testing and includes a summary of fate and transport analyses from the on-site monitoring well installation report. The laboratory report of soil analytical is attached as Appendix C.

2.4 Residential Well Sampling

The sensitive receptor survey conducted by SOMA for the 2003 off-site investigation indicated that the off-site groundwater plume could impact two private wells. One of the wells was reportedly located at 1575 153rd Street and the other at an unidentified address along Oriole Avenue.

SOMA field personnel observed that there was no address of 1575 153rd Street. However, the owner of 1573 153rd Street indicated that there is a non-operational well in his backyard. The owner of this well conveyed that the water from this well was previously used only for irrigation since potable water for the house is provided through the local utilities. The well consists of an approximately six-inch diameter black plastic casing with a heavy-gauge steel lid bolted on top. From the well, two hoses connected to an aboveground dispensing device. A spigot had been mounted on front of the pump to allow for groundwater withdrawal.

The owner started the well pump and conveyed that he would leave the pump running for several hours to increase the probability of obtaining a groundwater sample from the well. Several hours later, SOMA field personnel returned to this residence to collect a groundwater sample from the well. However, opening the well spigot produced no groundwater. SOMA then attempted to unbolt the cap until field personnel noted that pre-existing cracks in the casing were exhibiting signs of stress resulting from this procedure. Removal of the cap was terminated to avoid damaging the well casing and no groundwater sample was collected from the well.

Because the well survey findings did not indicate a specific address for the private well installed along Oriole Avenue, SOMA distributed written notification to all residents on the potentially affected homes on Oriole Avenue several months ago. Besides notifying the residents of the potential exposure risk to contaminated water from private wells, the notification requested that private well owners contact SOMA in order to allow personnel to access and sample the wells at no cost to the homeowners. However, none of the contacted homeowners responded to SOMA's notification.

2.5 Well Development

On September 24, 2004, SOMA field personnel oversaw development of the monitoring wells. The wells were bailed to remove sediment and then surged to develop the sand packs. The field crew then pumped the wells until the groundwater clarified substantially and groundwater quality parameters stabilized. Appendix D presents the well development data.

2.6 Well Survey

On October 12, 2004, licensed surveyors from Harrington Surveys surveyed the casing elevations of the monitoring wells in accordance with the survey requirements set forth by the UST Fund. All well casing elevations were

vertically surveyed to NAVD 88 survey datum with latitude and longitude surveyed to NAD 83 datum. With the survey data, depths to groundwater will be converted into groundwater surface elevations to determine the groundwater flow direction beneath the off-site areas. Appendix E presents the well survey report.

3.0 RESULTS

3.1 Field Observations

Although free product was encountered in the temporary well borehole closest to the Site, no free product was observed in well borehole MW-6 that was advanced in this location. However, SOMA's field geologist noted very strong hydrocarbon odors in the wet sediments cored for this well. Borehole lithology was very similar to TWB-1 with sand/gravel sediments predominating from approximately 11 to 27 feet bgs.

As a result of moving MW-7 for traffic safety considerations, this monitoring well was installed approximately 25 feet east of TWB-2. However, unexpected substantial changes in lithology were encountered below approximately 21 feet bgs. At the same depth interval of approximately 27 to 30 feet bgs, the sandy gravel water-bearing zone of TWB-2 was absent in well borehole MW-7. At approximately 20 to 21 feet bgs, however, SOMA noted the presence of a water-bearing layer with PID readings noticeably higher than background levels. MW-7 was screened to span this layer and very moist to wet and slightly contaminated sediments above.

South of MW-6/TWB-1, at MW-8, there was no indication of the 16-foot thick sand/gravel water-bearing zone encountered in TWB-1. Borehole lithology at MW-8 consisted of predominantly silt/clay sediments with a few wet sandy stringers. PID readings indicated that the most contaminated layers and stringers

occurred at approximately 22 and 28 feet bgs. SOMA screened MW-8 to include both of these thin water-bearing units.

Southwest of MW-6/TWB-1 at MW-9, the most permeable water-bearing zone consisted of sandy gravel encountered at approximately 16 to 20 feet bgs. Below this water-bearing unit, borehole lithology consisted of predominantly silt/clay sediments with a few wet sandy stringers. However, PID readings indicated that the most contaminated water-bearing layer occurred at approximately 31 feet bgs. Based on the 30-foot depth of the First WBZ in TWB-1, SOMA concluded that this deeper water-bearing layer could represent the lower portion of the First WBZ and discretely screened this layer accordingly.

3.2 Site Conceptual Model

Based on the additional borehole lithology from the off-site monitoring wells, SOMA has modified the original site conceptual model (SCM) presented in cross sections from the off-site soil and groundwater investigation.

3.2.1 Water-Bearing Zones

As shown in Figures 3 and 4, the previously designated First and Second WBZs appear to be two sub-zones consisting of an interconnected series of water-bearing layers and stringers rather than two separate continuous water-bearing units. Based on previously limited subsurface data, aquitards between the water-bearing zones were also interpolated as continuous hydrogeologic units. Incorporating the additional lithologic and stratigraphic data, these clay layers also appear to be a series of discontinuous lenses of varying thickness.

3.2.2 Preferential Pathway

As shown in Figure 5, plotting known major gravel/sand zones at 15 to 30 feet bgs, suggests that the natural preferential pathway for the off-site plume appears to consist of an ancient meandering streambed. The natural meandering

behavior of streams and rivers accounts for the apparently sinuous course of the preferential pathway. Within the investigation area, the thickest and most contaminated portion of the water-bearing zone was encountered in TWB-1, where free product was encountered. The probable streambed appears to curve to the southeast from the Site and TWB-1 to include TWB-2. With mostly clayey fine-grained sediments in borehole MW-7, the northeast bank of this apparent watercourse could be located near this borehole. The probable ancient watercourse probably continues to the Southeast or perhaps veers to the Southwest near TWB-3.

Groundwater analytical results appear to corroborate the existence of this preferential pathway. In temporary well TWB-2 and MW-7, located southeast of the Site, TPH-g was respectively detected at 1,700 and 2,900 ug/L; this is substantially higher than other boreholes (TWB-4A, TWB-5 and TWB-6) located topographically downgradient from the Site and TWB-1. Along the apparent preferential pathway, TWB-2 is located closest to the Site and TWB-1. In temporary well TWB-3, TPH-g was detected at 150 ug/L; this concentration is higher than the three boreholes topographically downgradient from the Site and TWB-1. Temporary well borehole TWB-3 is also located further from the Site than TWB-5, where petroleum hydrocarbons were not detected. With TPH-g detected at 150 ug/L, TWB-3 is also much closer to the apparent preferential pathway than boreholes TWB-4A, TWB-5 and TWB-6, where none of the constituents of concern were detected.

3.3 Soil Analytical Results

As shown in Table 2, soil analytical results indicate that the vadose zone above the TWB-1/MW-6 area does not contain constituents of concern above minimum laboratory detection limits. The vadose zone in this area does not appear to be an off-site source.

4.0 CONCLUSIONS

Based on the additional stratigraphic and lithologic data from this off-site monitoring well installation, the originally interpreted First and Second WBZs appear to be the upper and lower sub-zones of the First WBZ. These sub-zones appear to consist of discontinuous water-bearing layers and stringers separated by discontinuous clay lenses of varying thickness.

The probable preferential pathway appears to consist of an ancient meandering streambed that includes the east half of the Site, TWB-1/MW-6 and TWB-2/MW-7. Groundwater analytical results from the off-site soil and groundwater investigation appear to corroborate the existence of this preferential pathway.

In accordance with the ACEHS directive, SOMA constructed the off-site wells to discretely screen the more contaminated water-bearing layers. As a result, the off-site wells have been screened at different depth intervals.

SOMA originally planned to access and sample the private wells at 1573 153rd Street and the unidentified address along Oriole Avenue. However, SOMA received no return notification from homeowners along Oriole Avenue. The existing private well at 1573 153rd Street was reportedly used only for irrigation and is not in operating condition. Attempting to remove the lid of this private well for sampling posed potential damage to the well casing and prevented SOMA from continuing to attempt to sample this well. Because Department of Water Resource records indicate that the total depth of the private well is 30 feet bgs and borehole logs indicate that this well is within the First WBZ, the well at 1573 153rd Street does not appear to cross-connect water-bearing zones. Because the well is a non-operational irrigation well, the impact to human health appears to be insignificant. Should the well owner rehabilitate the pump and begin using the First WBZ groundwater for irrigation, the potential for drawing the off-site MtBE plume appears to be minimal.

Soil analytical results appear to indicate that high contamination levels observed in TWB-1 and MW-6 did not originate from the vadose zone in this area. These analytical results appear to confirm that the observed contamination originated from the subject Site.

5.0 RECOMENDATIONS

Based on the results of this investigation, SOMA recommends the following:

- After incorporating the forthcoming well survey results with the current Third Quarter 2004 monitoring event results, SOMA will determine the groundwater flow direction. With continued quarterly monitoring, SOMA will more accurately determine the extent and stability of the groundwater plume and verify that the off-site wells upgradient from the private well continue to contain no detectable levels of the constituents of concern.
- SOMA will notify the private well owner that SOMA will sample and analyze the well water if the well owner rehabilitates the well pump. SOMA will inform the well owner that the analyses will be free of charge and that he is under no obligation or mandate from ACEHS to analyze his well water. If the well owner wants to decommission the presently non-operational well, SOMA will contact the UST Fund regarding potential reimbursement.

6.0 REFERENCES

Alameda County Health Care Services, August 23, 2001. A Letter in Connection with a Request for Conducting a Subsurface Investigation.

CSS Environmental Services, Inc., August 15, 2001. "Preliminary Site Assessment for the Property Located at 15101 Freedom Avenue, San Leandro, California."

Geo-logic, Geotechnical and Environmental Consulting Services, June 11, 1999. "Report of Soil Sampling During Tank Removal and Station Upgrade."

SOMA Environmental Engineering Inc., November 5, 2003. "Off-Site Soil and Groundwater Investigation at Former Texaco Station, 15101 Freedom Avenue, San Leandro, California."

SOMA Environmental Engineering Inc., September 4, 2003. "Third Quarter 2003 Groundwater Monitoring Report, Texaco Gasoline Service Station, 15101 Freedom Avenue, San Leandro, California."

SOMA Environmental Engineering Inc., June 18, 2003. "Second Quarter 2003 Groundwater Monitoring Report, Texaco Gasoline Service Station, 15101 Freedom Avenue, San Leandro, California."

SOMA Environmental Engineering Inc., March 21, 2003. "First Quarter 2003 Groundwater Monitoring Report, Texaco Gasoline Service Station, 15101 Freedom Avenue, San Leandro, California."

SOMA Environmental Engineering Inc., December 19, 2002. "Fourth Quarter 2002 Groundwater Monitoring Report, Texaco Gasoline Service Station, 15101 Freedom Avenue, San Leandro, California."

SOMA Environmental Engineering Inc., September 26, 2002. "Third Quarter 2002 Groundwater Monitoring Report, Texaco Gasoline Service Station, 15101 Freedom Avenue, San Leandro, California."

SOMA Environmental Engineering Inc., June 19, 2002. "Second Quarter 2002 Groundwater Monitoring Report, Texaco Gasoline Service Station, 15101 Freedom Avenue, San Leandro, California."

TABLES

Table 1

Groundwater Analytical Data 15101 Freedom Avenue, San Leandro, California

Sample Id.	TPH-g (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl-benzene (ug/l)	Xylenes (ug/l)	MtBE (ug/l)	1,2 DCA (ug/l)
TWB-1	410,000	2,200 ^C	1,300 ^C	9,400	25,700	<20	<20
TWB-2	1,700	<0.5	<0.5	31	51	34	5
TWB-3	150 ^{HY}	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TWB-4A	<50	<0.5	<0.5	<0.5	<0.5	2	<0.5
TWB-5	<50	<0.5	<0.5	<0.5	<0.5	<0.5	2
TWB-6	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:

Petroleum Hydrocarbons analyzed by EPA 8015 and 8021

Gas Oxygenates analyzed by EPA 3260B - all other gas oxygenates not detected above laboratory detection limits

< : not detected above laboratory reporting limits.

H: Heavier hydrocarbons contributed to the quantitation

Y: Sample exhibits chromatographic pattern that does not resembe standard.

^C: Presence confirmed but RPD between columns exceeds 40%.

TABLE 2

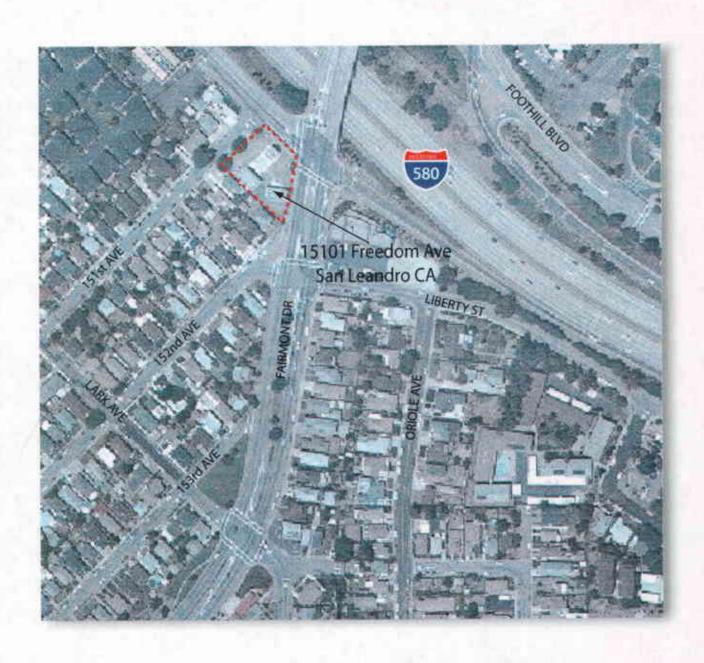
Soil Analytical Results 15101 Freedom Avenue, San Leandro, California

Borehole	Depth (feet bgs)	T PH-g (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	Bulk Density (%)	TOC (%)	Total Lead (mg/Kg)
	(leet bgs)	(119719)	September	2004 Monitoring	Well Instaliation				
- 411/ 6	556	<1,100	<5.3	<5.3	<5.3	<5.3	*	*	
MW-6	5.5-6		<5.3	<5.3	<5.3	<5.3	*	*	
MW-6	6-6.5	<1,100	<5.3	<5.3	<5.3	<5.3	*	*	*
MW-6	8.5-9	<1,100		<5.3	<5.3	<5.3	*	a ***	
MW-6	9-9.5	<1,000	<5.3	2 Monitoring W		l			
			May Zuu	Z Monitoring W	*	*	1.83	*	*
MW-5	9.5-10	*	*			*	*	0.07	0.6
MW-5	10-10.5					<u> </u>	*	0.05	0.22
MW-5	19-19.5	*	*	*		ļ	1 90	*	*
MW-5	20-20.5	a y * i. , 			*		1.89	Manager 1997	*** <u> </u>

NOTE:

^{*} Sample not tested for indicated analysis

FIGURES





approximate scale in feet

250 500









▲ MONITORING WELL

TEMPORARY WELL BOREHOLE

WATER SUPPLY WELL

200

400



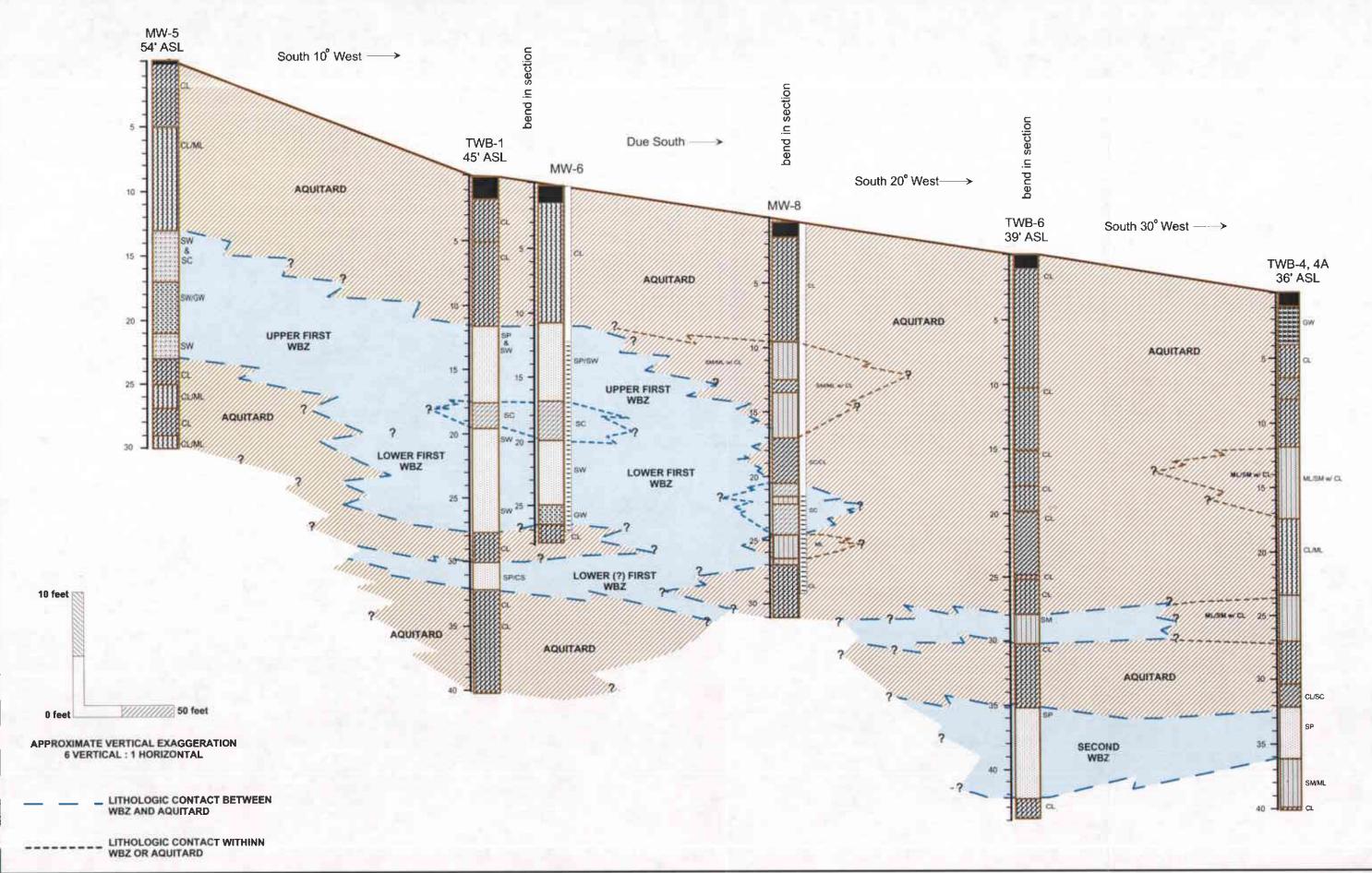
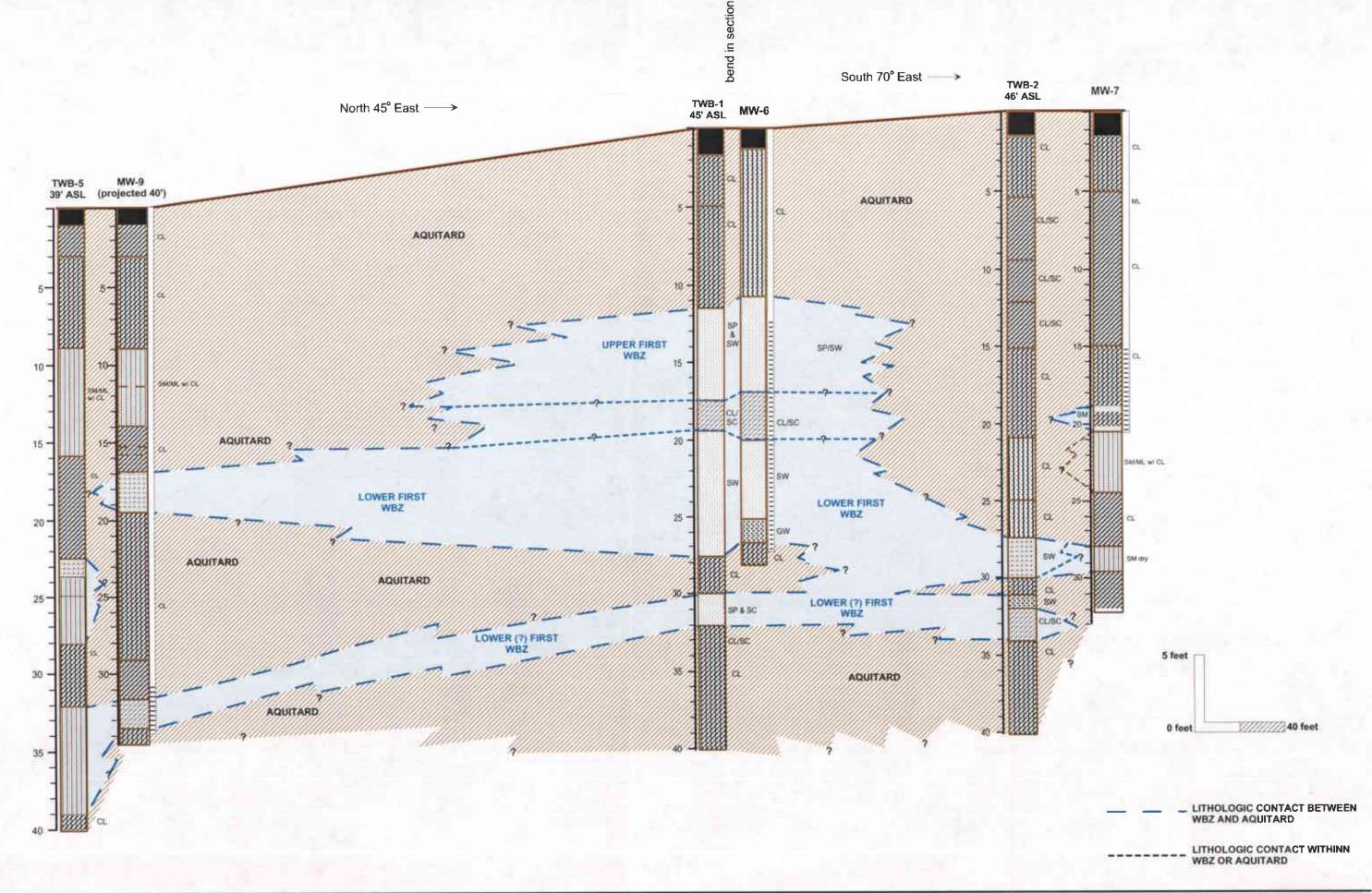


Figure 3: Geologic Fence Diagram A - A'.













APPROXIMATE BANKS OF PROBABLE BURIED WATERCOURSE

MONITORING WELL WITH TPH-G (ug/L) LEVELS (SEPTEMBER 2004)

TEMPORARY WELL BOREHOLE WITH TPH-G (ug/L) LEVELS (SEPTEMBER 2003)

WATER SUPPLY WELL

NS NOT SAMPLED

<50 LESS THAN LAB REPORTING LIMIT (ug/L)

Figure 5: Site vicinity map showing probable buried stream bed.



APPENDIX A

Drilling and Encroachment Permits

p.2



ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (\$10) 670-6633 James You

FAX (\$10) 783-1939
APPLICATION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION DESIRECTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE	FOR OFFICEANS
OCATION OF PROJECT	1410/1 1882
OCATION OF PROJECT 15101 Freedom Ave.	PERMIT NUMBER
San Leandro, CA	WELL NUMBER
	APN
-11-1	PERMIT CONDITIONS
I)ENT	Circled Permit Requirements Apply
ume Mohammed Pazdel	CENTRAL
oldress 1770 Pstacia Ct Phone 707 399 7723	1. A permit application should be submitted to as to
	strive at the ACPWA office five days prior to
PPLICANY .	proposed starting date.
SOMA FAVIronmental Engineering	2 Submit us ACPWA wishin 60 days rather completion of
ddress 2680 Rishop Dr. Phone 925 244 6600	printed original Department of Water Resources-
odress 2680 Bishop Dr. Phone 425 244 6600	Wall Completion II your 3. Permit is void if project not begun within 90 days of
San RamonZn 94583	entroval date
	n. water supply wells
ype of project	1. Minimum surface sent thickness is two inches of
Veli Construction Greatering of Intentional	country prout placed by treme
Controlled (reflection) (reflected to	2. Minimum wol depth is 50 feet for municipal and
Water Supply O Continuenting	Industrial wells or 20 feet for domestic and irrigation
Minituring / Struction & Well Desirection	CLGROUNDWATER MONITORING WELLS
CARCO CONTRACTOR OF THE CONTRA	INCLUDING PHEZOMETRES
NOPOSED WATER SUPPLY WELL USE.	L. Manianam swelling acul thickness is two socies of
Marginet Donest	cement grout placed by manie.
ingansii (j	2. Minimum soal depth for mountaing wells is the
10 Other 5	maximum depth practicable or 20 feet
RILLING METHOD:	D. GEOTECHNICAL
Mad Rotary C Air Rotary 7 Anger X	Backfill bore hole by tremie with centerit grout or conject
Cable D Other	group send morrors. Upper two three feet replaced in kind
THE COMPANY AND	or with comparted outrings. E. CATHODIC
RILLER'S NAME Gregg Drilling Co	Fill hole annie zone with penores placed by oranic
	F. WELL DESTRUCTION
ULLER'S LICENSE NO - 057 485 165	Send a map of work site A suparuse persons is required
	. For wells deeper than 45 feet.
ELLPROJECTS	9 BYKCKI CONDITIONS - MANUT
Drill Hole Diamete: 120 o Massimoro	()
Drill Hole Diamete: 12 0 Maximum Cusing Diameter 4 11 Depth 11 0 Oxnor's Well Number MW 6	NOTE: One application must be assistant and for much well or well
Surface Scal Depth 117 to Owner's Well Number MW-6	decrucion. Multiple hurings on one application are acceptable, for gentrelesied and contemporation investigations.
OTECHNICAL PROJECTS	те дання выполня выполня вкуртирового.
Number of Borone	
Number of Borings Maximum Hole Diameter Depth fi	921
VATING DATE2S_August _2004	1 6
A A A A A A A A A A A A A A A A A A A	1/1/6/1
MPLETION DATE	APPROVED DATE 8-19
F	APPROVED DATE
eby agree to countly with all requirements this period and Alienede County Ordinan	
A Description of the permit and Alimnede Coonly Ordinan	ne No 72-68
PLICANT'S SIGNATURE DATE IT ALL	
TOTAL MANAGEMENT OF THE LEAST O	7×1 / / / /
ASE PHINT NAME R.W. Papier Roy 5-18	1-02

PUBLIC

IL PASE PRINT NAME RW PAPER

WORKS

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HATWARD CA. 94544-1395
PHONE (510) 670-6633 James You
FAK (510) 782-1939

APPLICANTS: PLEASE ATTACK A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS DESTRICTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE FERMIT APPLICATION

DRILLING PERMIT APPLICATION FOR APPLICANT TO COMPLETE PERMIT NUMBER -San Leandre, -CA-WELL NUMBER APN_ PERMIT CONDITIONS CTEMA Circled Permit Requirements Apply N anye_ Mohanmed Pazdel Address 1770 Pstacia Ct Phone 707 399 7723 GENERAL Try Pairfield -1. A permit application should be subtraited so as to _ ZIP - 94533 errive at the ACPWA office five days prior to **APPLICANT** Vame SOMA Environmental Engineeringo Stobowen awaring out? Submit to ACFWA within 60 days after completion of ermined crigical Department of Water Resources-Address 2680 Bishop Dr Phone 925 244 6600 Vell Completion Report. City - San-Ramon-3. Permit is void if project and begun within 90 days of -- Zip _94583 approval date R WATER SUPPLY WELLS YPE OF PROJECT 1. Minimum purface teal thickness is two inches of Well Construction Georgeomen! Investigation coment group placed by tremin. Cathodic Protection 2. Minimum seed depth is 50 feet for maunicipal and General D Water Supply Industrial wells at 20 fest for domestic and irrigation Сопцианалици Beinglings ø wells unless a leaser depth is specially approved. X, Well Description а C. GROUNDWATER MONITORING WELLS ROPOSED WATER SUPPLY WELL USE NCLUDING PIEZOMETERS New Domestic Э Replacement Domestic I. Minimum surface and trickness as two anches of Ď Municipal contact prout placed by teame. មេរមស្រុក industrial O 2. Minimum scul depth for monitoring soulls is the Other moximum depth practicable or 20 feet. PRILLING METHOD: D. GEOTECHNICAL Mud Robby Rackfill bore hole by words with centent grout or earnest Arr Rotary Coble Auger Other groute and mixture Upper two-duce feet replaced in kind or will compacted cultings DEBILER'S NAME Gregg Drilling Co. E. CATHODIC Fill hole anode zone with concrete placed by transie. INDILER'S LICENSE NO -C57-485-165 F. WELL DESTRUCTION Send a map of work sile. A separate permit is required for wells deeper than 45 feet, VELL PROJECTS SPECIAL CONDITIONS Orifi Hole Diameter B" Махиппис Cusing Diameter 2 17 17 18 NOTE: One application must be submitted for each well or well Doroth 3 O R destruction. Multiple borings on one application the acceptable Owner's Well Number MW- 7 the generalizated and communication investigations. G RUTECIENICAL PROJECTS Number of Borings Махитипа floie Diameter _ Depth s Althor DATE 25 August 2004-O.MPLETION DATE 25 August 2004 APPROVED Thereby agree to comply with all requirement of this permit and Alemeda Covery Ordinance No. 73-64. All PLICANT'S SIGNATURE DATE TALA 09

Rev.9-18-02

PUBLIC WORKS

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST 5T. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James You

FAX (\$10) 762-1939
FAX (\$10) 762-1939
APPLICATIONS
APPLICATION OF WELLS OVER 45 FERT REQUIRES A SEPARATE FERMIT APPLICATION
DESTRUCTION OF WELLS OVER 45 FERT REQUIRES A SEPARATE FERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE LOCATION OF PROJECT 15101 Preedom Ave. San Leandre, CA	PERMIT NUMBER WO4-0834 WELL NUMBER
CLIENT	PERMIT CONDITIONS
Name Mohammed Pazdel	Circled Permit Requirements Apply
Saules 1770 Petagia Ot Bloom To	GENERAL
Ziv_Fairfield Zp_94533 7723	1. A permit application should be subtraited so as to
APPLICANT	MINE SI WE ACPWA Office Rue days series to
Nome SOMA Environmental Engineering	A Totoborod Salabine usia
Addres 2500 pt - Family Grant Gol	white acpwa within 60 days after completion of armined original Department of Water Resources.
THE PARTY OF THE PROPERTY OF THE PARTY OF TH	THE CHARGE INCOME.
San Ramon 25-244-6600	3. Perant is void if project that begin within an America
	P. WATER SUPPLY WELLS
CYPE OF PROJECT	L. WATER SUPPLY WELLS
With Construction	 Minimum nurface soal disclorers is two inches of connect group placed by tremite.
[Firente	2. M minute seal death is 50 feet for second
White Supply D. Contamination	ASSESSION THE PROPERTY OF THE PARTY OF THE P
Monitoring Well Destruction	White white a least a least to be an an an att
ROPOSED WATER SLIPPLY WILL USE	
MENA DEIBOSKIC ()	INCLUDING PIEZOMETERS
Municipal () (September Dongent	Manmuni surface scal thickerts in two toches of comess grout placed by transe.
Industrial II Other D	2. Minimum real depth for proming and to the
RILLING METHOD:	
	D. WEUTECHNICAL
Mid Rotary C Airgor C Cobie C Other () Airgor C	Awateful bare hole by tremie with comment grout or creatent
- Vinds	g: mersand manure. Opper two-three feet replaced in kind or with compacted entangs.
RICLER'S NAME _Group_Drilling_Co	2. CATHODIC
OH TENER LOPE TO THE TENER OF T	Ful hole anade tone with purposes at and t
RILLER'S LICENSE NO C5.7 485-165	" ACC DESTRUCTION
	Send a map of work site A sequence parmit is required
ELL PROJECTS	or wells deeper than 43 feet
Drill Hole Diameter 8 th Maximum	-ML
Denth and S	DOTE: One application must be submitted for each wall or well
Sustace Seal Depth 2 20 ft Owner's Well Number May 8	
TOTECHNICAL PROJECTS	for geotechnical and contamination investigations:
Number of Bonnes	
Hole Diamoter in Depth ft	
460 41 41	1 (
ARTING DAIE 25 August 2004	
MPLETION DATE -	Y11
MILETION DATE 26-August 2004	
	APPROVED
reby agree to comply with a Prophylipson of this permit and Almeeda County Ordinance	DATE_U_
LICANT'S SIGNATURE COLONS SIGNATURE	26 No. 73-68.
THE TANKE OF THE PARTY OF THE P	00 / / \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
ASE PRINT NAME E. W. Paples Rev 5-16	7** / /
Roy 5-15-	in ()



ALAMEDA COUNTY PUBLIC WORKS AGENCY WATER RESOURCES SECTION 399 ELMHURST ST. HAYWARD, CA. 94544-1395 PHONE (510) 670-6633 James Yoo FAX (510) 782-1939

PERMIT NO. W04-0832-0835

WATER RESOURCES SECTION GROUNDWATER PROTECTION ORDINANCE MW#1-GENERAL CONDITIONS: MONITIORING WELL

- 1. Prior to installation of any monitoring wells into any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.
- 2. The minimum surface scal thickness two inches of coment grout placed by tremie.
- 3. All monitoring wells shall have a minimum surface cement seal depth of five (5) feet or the maximum depth practicable or twenty (20) feet.
- Wells shall have a Christy box or similar structure with a locking cap or cover. Well(s) shall be kept locked at all times. Well(s) that become damaged by traffic or construction shall be repaired in a timely manner or destroyed immediately (through permit process). No well(s) shall be left in a manner to act as a conduit at any time.
- 5. Permitte, permittee's, contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statues regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on-or off site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.
- No changes in construction procedures or well type shall change, as described on this permit application. This permit may be voided if it contains incorrect information.
- 7. Drilling Permit(s) can be voided/ canceled only in writing. It is the applicants responsibilities to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. Permit is valid from August 25 to August 26, 2004. Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.
- 8. Compliance with the above well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Including: permit number and site map.
- 9. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

Work Order Number:* 8000\	Permit Number:					
*This WO is/ is not open for charges.	Permit Issuance Date: 7-26-2004					
	Permit Expiration Date: 7.210.2005					
COUNTY OF ALAMEDA PUBLIC WORKS AGENCY						
ROADWAY ENCROACHMENT PERMIT						
	.08 of the Alameda County General Ordinance Code					
Name & Address of Property Owner:	Job Site Address:					
moremored stadel	15101 Froodom Ave					
1770 Pistacia ct.	San leandro, CA					
Fairfield, CA 94533						
Phone Number 787 399-7723	(This statement to be completed by the Agency)					
Name & Address of Contractor	This permit is issued to the owner/ contractor/;					
2680 Bishop Drive, Suite 203	if "owner" is checked, he/she is/ is notexempt					
San Rango LA 94583	from the requirement that work in the roadway be performed by a licensed contractor.					
Phone Number: (925)244-6600	performed by a needsed confractor.					
THE THE PERSON OF THE PERSON O						
'The Applicant intends to perform the following work so	ope:					
monitoring wells						
<u></u>						
Licensed Contractor Declaration:	Worker's Compensation Insurance Declaration:					
I hereby affirm, under penalty of perjury, that I hold the following contractor's license, which is in full force and	I hereby affirm, under penalty of perjury, that I will, during the performance of any and all work authorized by this					
effect, under the applicable provisions of the State	permit, satisfy the requirements of the State Labor Code					
Business and Professions Code.	with regard to Worker's Compensation Insurance, as declared below:					
License Class and No.	I will maintain a certificate of consent to self-insure.					
Contractor's Signature:	I will maintain the following insurance policy:					
	Carrier's Name and Policy No.:					
	I will not employ any person in any manner so as to become					
	subject to the worker's compensation laws of the State.					
	Owner's/Contractor's Signature:					
All work and/or access shall be performed in accord	lance with the requirements of Chapter 12.08 and,					
unless otherwise specified below, shall be fully com	pliant with each of the terms and conditions of the					
attached General Provisions:	= Pinani					
	200 111100+					
CALL THIS NUMBER FOR IN	SPECTIONS					
THE THE TOTAL AND A TOTAL AND	510 670 5879					
Bond Information:	Insp. Fee or Deposit: 60 -					
12,800	12500					
2000-0 APRI AV 40 VI	Work Completed (Date):					
BY: MUDICI CO., Alameda County						
	Inspector:					
I certify that the information that I have entered into this permit application is correct, and I agree to comply with all of the						
terms and conditions and other requirements of the issued Permit.						
Mgnature of Applicant	Date					

INSPECTION REQUIREMENTS

- All encroachments authorized by this Permit shall be subject to monitoring, inspection, and/or
 testing by a County representative; notify the County before you start work by calling the
 number on the front of this form.
- If the face of this Permit is marked to indicate that the assigned County work order is open for charges, a job account will be opened and the assigned inspectors and other representatives will charge the actual cost of all required tests and inspections against this account. All cost overruns must be resolved prior to closeout of this Permit. Any underruns will be returned to the Permittee as soon as possible following the closeout.

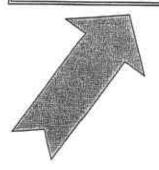
CAUTION!

Most traffic signals and some streetlights are connected to their power sources with underground wiring. Many signals are also wired to traffic detector loops buried in the roadway. None of these County-owned wiring runs are included in the Underground Service Alert (USA) review and marking processes.

If you intend to excavate within 500' of a traffic signal, or in proximity to County-owned streetlights, you <u>must</u> contact the County traffic signal maintenance office at

 \rightarrow (510) 670 - 5537 \leftarrow at least 48 hours in advance of the start of your planned work.

If you cause a signal outage, a streetlight failure, or other damage to County signal or streetlight facilities because you failed to contact the signal office to get the facilities marked, you will be billed for the full cost of our emergency response and repairs.





9-2004 THU 04-29 PM HUPWR	FAX NO. 5106/05/8/
Work Order Number:* 2000\	Permit Number:
	KO4:LD 10007
This WO is / is not open for charges.	Permit Issuance Date: 7:3(6:3004) Permit Expiration Date: 0PEN
COUNTY OF ALAMEDA	PUBLIC WORKS AGENCY
	DACHMENT PERMIT
	12.08 of the Alameda County General Ordinance Code
Name & Address of Property Owner:	Job Site Address:
moramond wantal	San legado CA
FounGold CA 94533	Section Francisco
Phone Numbers 189 399-7723	(This statement to be completed by the Agency)
Name & Address of Contractor	Thus permit is issued to the owner _/ contractor 1;
30MA Environmental Eng.	if "owner" is checked, he/she is/ it notexemp: from the requirement that work in the rondway be
San Rania L. CA 94583	performed by a licensed contractor.
Phone Number: (925)244-6600	
71 / 12 / 2 / 6 / 6 / 6	
The Applicant intends to perform the following work	CONTROL OF THE PARTY OF THE PAR
	E ON SOUTHBOUND LANE FARMONT AN
See AHACHED MAP. (2) TW	75 TE 152 40 0
Licensed Contractor Declaration:	Worker's Compensation Insurance Declaration:
I hereby offirm, under peoply of perjury, that I hold the following commeter's license, which is in full force and	I hereby affirm, under penulty of perjury, that I will, during the performance of any and all work authorized by this
effect, under the applicable provisions of the State Business and Professions Code.	permit, satisfy the requirements of the State Labor Code
	with regard to Worker's Compensation Insurance, as declared below:
License Class and No. Contractor's Signature:	I will maintain a certificate of consent to self-insure I will maintain the following insurance policy:
	Carrier's Name and Policy No.:
	will not employ any person in any manner so as to become
*	subject to the worker's compensation laws of the State.
	Owacı's/Connector's Signature:
A11	
"All work and/or access shall be performed in accor- unless otherwise specified below, shall be fully com-	dance with the requirements of Chapter 12.08 and, the table with each of the terms and conditions of the
attached General Provisions:	TOH RINGOT
CALL THIS NUMBER FOR IN	SPECTIONS: LTO SCINCI
	810 0114
Bond Information:	Insp. Feeor Deposit: [c]
12,0000	12500
	Work Completed (Date):
BY:M Ni broad Alameda County	AOY COMPLETE (TAKE)-
	Inspector:
I certify that the information that I have entered into this perm terms and conditions of the interrogation and the issued Peri	mit.
2/8/1-	07/26/04
Signature of Applicant	/ Daté

THIS PERMIT IS INCOMPLETE WITHOUT THE ATTACHED GENERAL PROVISIONS

NSPECTION REQUIREMENTS

- All encroachments authorized by this Permit shall be subject to monitoring, inspection, and/or testing by a County representative; notify the County before you start work by calling the number on the front of this form.
- If the face of this Permit is marked to indicate that the assigned County work order is open for charges, a job account will be opened and the assigned inspectors and other representatives will charge the actual cost of all required tests and inspections against this account. All cost overruns must be resolved prior to closeout of this Permit. Any underruns will be returned to the Permittee as soon as possible following

· CAUTION!

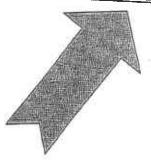
Most traffic signals and some streetlights are connected to their power sources with underground wiring. Many signals are also wired to traffic detector loops buried in the roadway. None of these Countyowned wiring runs are included in the Underground Service Alert (USA) review and marking processes.

If you intend to excavate within 500' of a traffic signal, or in proximity to County-owned streetlights, you must contact the County traffic signal maintenance office at

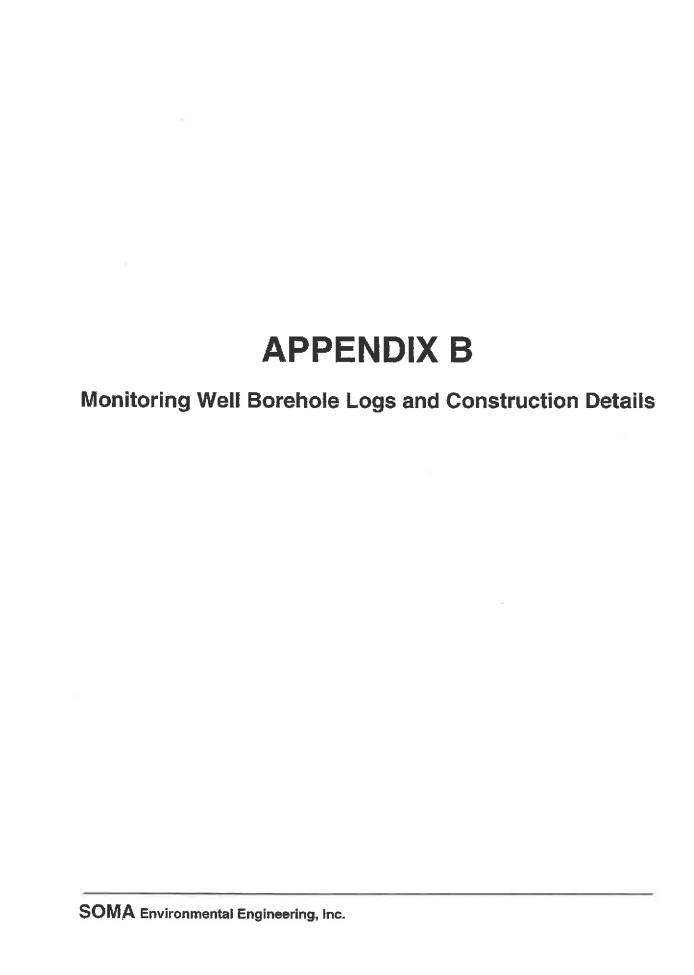
→(510) 670 - 5537←

at least 48 hours in advance of the start of your planned work.

If you cause a signal outage, a streetlight failure, or other damage to County signal or streetlight facilities because you failed to contact the signal office to get the facilities marked, you will be billed for the full cost of our emergency response and repairs.







100	NVIRONM	ENTAL ENGIN	AA (EDRING, INC.	GEOLOGIC LOG OF BOREHOLE N	/IVV-6		F	'nAG	E 1 OF 2
E		G LOCA		PROJECT: 2552 SITE LOCATION: Intersection of 152-nd and Liberty St. DRILLING METHOD: HSA DRILLER: Gregg Drilling & Testing. (Jason) LOGGED BY: E Jennings	DATE DRILLED CASING ELEVA DEPTH TO 1ST APPROVED BY	ATIOI	N: N : 16	IA Ift b	ogs
PID ppm	DEРТН	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION		split spoon	BLOWCOUNTS	GW LEVEL	WELL DIAGRAM
			CL	6-7* Asphalt over 15* Baserock SILTY CLAY: dark gray becoming medium dark brownish gray stiff to stiff, moist, high plasticity; Low estimated permeability (Legetroleum hydrocarbon (PHC) odor.	w/ depth, med. .EK). Slight	HAND AUGERED TO 5'			SCHEDULE 40 PVC WELL CASING CEMENT GROUT
0 0	5—		CL	SILTY CLAY with some Sand and Gravel: light gray brown bec below 8', stiff, damp, becoming moist below 8'; <15% very fine with some caliche; Low estimated permeability (LEK). No petro (PHC) odor.	sand and gravel	No recov.			BENTONITE SEAL
10	- - - 15—		SP/SW	SAND interbedded with GRAVELLY SAND: olive gray, med do very moist becoming wet below 16'; fine to coarse sand with < subrounded gravel to 1"; High estimated permeability (HEK). No subrounded gravel to 1"; High estimated gravel to	20% subangular to			V	0.02 SLOTTED SCREEN 2.12 SAND [
307	-		CL/SC	SANDY CLAY/ CLAYEY SAND w/ some Gravel: olive gray, me 40-60% very fine to fine sand w/ <15% subangular to subround MEK-HEK. Moderate to strong PHC odor.	ded gravel to 1 1/2";			▼	0.0 0.12 SAND
255 442	20-	-	sw	SAND w/ some Gravel: olive gray, med. dense, moist becomin coarse sand w/ < 10% subrounded gravel to 3/4*; HEK. Strong	g wet, fine to PHC odor.				

1000	NYIRONM	NTAL ENGIN	AA EZRING, ENC.	GEOLOGIC LOG OF BOREHOLE M	W-6			E 2 OF 2		
E		G LOCA		SITE LOCATION: Intersection of 152-nd and Liberty St. DRILLING METHOD: HSA DRILLER: Gregg Drilling & Testing. (Jason)	DATE DRILLED CASING ELEVA DEPTH TO 1ST APPROVED BY	AT r G	IOI W:	N: N : 16	gs	
PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION		Core SAMPI FD	split spoon	BLOWCOUNTS	GW LEVEL	WELL DIAGRAM
653				SANDY GRAVEL: gray, med. dense, wet, fine to coarse; HEK. S						0.02 SLOTTED SCREEN
			CL	SILTY CLAY: olive gray and gray brown, very stiff to hard, damp plasticity; LEK. Slight PHC odor.	to moist, high					02 SLOTTE
	35—35—40—50—50—50—50—50—50—50—50—50—50—50—50—50			Total depth: 28 ft bgs Borehole plugged to 27' Groundwater first encountered at 16 ft bgs then 20 ft bgs and late at 17.64 ft below toc (21 September 2004).	er stabilized					

	NVIRONA	BA IENTAL ENGIN	AA EERING, INC.	GEOLOGIC LOG OF BOREHOLE MW	<i>I-</i> 7			P	PAG	E 1 OF 2
E	BORIN	IG LOCA	TION	SITE LOCATION: 1760 Fairmont Ave,	ATE DRILLE					2004
	SEI	E SITE M	MAP	DRILLING METHOD: HSA DRILLER: Gregg Drilling & Testing. (Jason)		ΤG	:W	V: 20.25 ft bgs		
PID ppm	рертн	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION		split-spoon	core	BLOWCOUNTS	GW LEVEL	WELL DIAGRAM
П				5" Asphalt over 3" Concrete over 10" Baserock						
	-		CL	SILTY CLAY; dark gray, moist, high plasticity; Low estimated pern No petroleum hydrocarbon (PHC) odor.	neability (LEK)					EMENT BENTONITE GROUT
-			ML	SANDY CLAY/ CLAYEY SAND: as per TWB-2, contact the same	as TWB-2					0 PVC casing
	10- -		CL	SANDY CLAY cuttings: light brown, moist, mod. plastic; LEK-MER SANDY CLAY/ CLAYEY SAND as per TWB-2.	ς.					SEAL 2" Schedule 4
	-			Contact same as TWB-2						BENTONITE
7	-		CL	SILTY CLAY CUTTINGS: olive gray, moist becoming very moist whighly plastic; LEK. No PHC odor.	with depth,				Y	ED SCREEN ZIVZ SAND
1	20-			SILTY CLAY w/ very moist Sand stringer at 19': as per TWB-2, w stringers at 20.25-20.5' w/ slight PHC odor. As above w/ wet sand stringer at 20.25 to 20.5'						0.02 SLOTE
+-	(<u>-</u>	-	SM/ML	SANDY SILT/ SILTY SAND with some Clay: light gray brown slig olive gray, very stiff to hard, damp becoming moist below 22', mo 40-60% very fine sand w/ abandant caliche to 23'. LEK. No PHC	od. plastic;					NITE PLUG
3 0	25		CL	SANDY CLAY w/ some Sand: light brownish gray, very stiff to ha to highly plastic; <20-30% very fine sand. LEK. No PHC odor.	rd, damp, mod.					BENTO

	ENVIRONM	PATAL ENGIN	AA EERING, INC.	GEOLOGIC LOG OF BOREHOLE N	иw-7			F	PAGE	E 2 OF 2		
E	BORIN	G LOCA	TION	PROJECT: 2552 SITE LOCATION: 1760 Fairmont Ave, San Leandro, CA	DATE DRILLED CASING ELEVA					2004		
	SEE	E SITE M	MAP	DRILLING METHOD: HSA DRILLER: Gregg Drilling & Testing. LOGGED BY: R. Papler R.G.		EPTH TO 1ST GW: 20.25 ft bgs. PPROVED BY: R. Papler R.G.						
mdd Gld	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION	:	split-spoon SAMPLED	WELL DIAGRAM					
7 3	-		CL	As Above: grading, becoming light brownish gray mottled white caliche and occasional well rounded gravel at 26.5-27'	w/ abandunt					TE PLUG		
4 7	30-		0000	SILTY SAND/ SANDY SILT: light brownish gray, damp, dense 40-60% very fine sand; LEK. No PHC odor. SANDY CLAY: light gray brown, mottled white, very stiff to hamplastic; 20-30% very fine sand; LEK. No PHC odor.						BENTONITE PLUG		
8	35— - 40— - 45— - 50—			Total depth 32 ft bgs Borehole plugged to 21 ft Groundwater first encountered at 20.25 ft bgs and later stabiliz below toc (21 September 2004)	ed to 15.21 ft							

199013601	NVIRONM	ENTAL ENGIN	AA EDING, INC.	GEOLOGIC LOG OF BOREHOLE M	IW-8			2			
E		G LOCA E SITE M		PROJECT: 2552 SITE LOCATION: 1701 Fairmont Ave, San Leandro, CA DRILLING METHOD: HSA DRILLER: Gregg Drilling & Testing. LOGGED BY: R. Papler R.G.	DATE DRILLED CASING ELEV DEPTH TO 1ST APPROVED BY	AT T G	IOI W				
PID ppm	БЕРТН	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION		split-spoon	COTE	BLOWCOUNTS	GW LEVEL		ELL GRAM
				6" Asphalt over 18" Baserock					(
0	5—		CL	SILTY CLAY: dark gray brown, stiff, moist, highly plastic; Low es permeability (LEK). No petroleum hydrocarbon (PHC) odor.	stimated					919	VC casing CEMENT BENTONITE GROUT
0			CL	SILTY CLAY: light gray brown/ brownish gray, stiff, moist, high p No PHC odor.	elasticity; LEK.	ı					
o	10-		SM/ML	SANDY SILT w/ some Clay: gray brown, very stiff to hard, moist 15-20% very fine sand with moist clay stringer at 13-14"; LEK. No PHC odor.	, mod. plastic;				¥		Z. 00100
0	15— -			As above becoming very stiff to hard below 15' w/ caliche					 		
0				As above w/ wet silty sand at 17-17.5' SANDY CLAY: gray brown, stiff to hard, damp to moist, mod. pl	astic: 30% verv					SEAL.	
0	20-		SUICE	fine sand; MEK-LEK. No PHC odor.						BENTONITE SEAL	
33) }		sc	CLAYEY SAND: gray brown, stiff to hard, moist to very moist; 2 sand w/ wet stringer of silty sand at 22-22.5"; MEK (w/ HEK string No PHC odor.	0-30% very fine nger).				V	CH2 SAND	0.02 SLOTTED SCREEN
0	25-										9.02

	ENVIRONM	ENTAL ENGIN	AA FEBUNG, INC.	GEOLOGIC LOG OF BOREHOLE MW-8 PAGE 2 OF 2									
I		G LOCA		PROJECT: 2552 SITE LOCATION: 1701 Fairmont Ave, San Leandro, CA DRILLING METHOD: HSA DRILLER: Gregg Drilling & Testing. LOGGED BY: R. Papler R.G.	CASING ELEVA	PRILLED: August 26, 2004 ELEVATION: NA TO 1ST GW: 17 ft bgs VED BY: R. Papler R.G.							
PID ppm	DEРТН	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION	months of the second	spin-spoon core	BLOWCOUNTS	WELL DIAGRAM					
2 0				SANDY SILT/ SILTY SAND w/ some Clay: gray brown, very sti dense, moist; LEK. No PHC odor.					212 SAND				
0	-		CL	SILTY CLAY: dark gray brown, very stiff to hard, moist, high pla stringer sandy silt/ silty sand at 27.75; LEK. No PHC odor.	asticity; w/ wet 3*								
	30-			SILTY CLAY w/ some Sand: gray brown, very stiff, moist, high very fine grain sand; LEK. No PHC odor. Total depth 31 ft bgs	plasticity; <15%	l			SLUFF				
	35— - 40— - 45— - 50—			Caved in to 29 ft Groundwater first encountered at 17 ft bgs then 22 ft bgs and la to 12.48 feet below toc (21 September 2004).	ater stabilized								

17000		Vi	ΙΔ	GEOLOGIC LOG OF BOREHOLE M	IW-9		P	AGE	1 OF 2					
-	_	ental engin		PROJECT: 2552	DATE DRILLEI	D: Au): August 25/ Sept 2, 2004							
				SITE LOCATION: 1638 152-nd Street, San Leandro, CA	CASING ELEV	EVATION: NA								
	SEE	SITE M	IAP	DRILLING METHOD: HSA	DEPTH TO 1S	T GW	: 17	ft bo	js –					
				DRILLER: Gregg Drilling & Testing. (Jason)	APPROVED B	Y: R. I	Рар	ler R	l.G.					
_				LOGGED BY: R. Papler R.G./ E. Jennings										
PID ppm	ОЕРТН	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION		split-spoon SAMPLED core	BLOWCOUNTS	GW LEVEL	WELL DIAGRAM					
П				3-4" asphałt over 6-8" baserock		105								
	2		CL	SANDY CLAY/SILTY CLAY: dark gray brown; moist; plastic. Me estimated permeability (MEK-LEK). No petroleum hydrocarbon	edium to low (PHC) odor. (fill)	AUGERED 1								
	5-		CL	SILTY CLAY: dark gray, med. stiff, moist, high plasticity; w/ some bow estimated permeability (LEK). No petroleum hydrocarbon (ne caliche at 6.5-8'; PHC) odor.	- HAND								
0	_			SILTY CLAY CUTTINGS: dark gray, moist, plastic.					. Bujust					
П	-			As above: color grading to light gray below 7.75'					¥ 5					
0	10-			SANDY SILT with some Clay: light gray brown, stiff to hard, dar moist w/ depth, sl. plasticity; 20-40% very fine grain sand; <10- caliche at 9.5-10.5'; w/ wet sand stringer at 11.5-12'; MEK. No F	15% clav w/				2" Schedule 40					
0	-		SM/ML	SANDY SILT/ SILTY SAND w/ some Clay: light gray brown, ver moist to very moist, plastic; 40-60% very fine to fine sand; MEK	y stiff/ med. dense . No PHC odor.			¥	NT BENTONITE					
0	15-		SC/CL	SANDY CLAY/ CLAYEY SAND: light brown, med. stiff to stiff, or plastic; 40-60% very fine to fine sand w/ very moist to wet silty at 15.5-15.75; LEK. No PHC odor.	damp to moist, sand stringer				CEMENT					
			\$C/CL					∇						
0	-		SC/CL	GRAVELLY SAND: gray brown, med. dense, wet, poorly grade subangular to subrounded gravel to 3/4"; HEK. No PHC odor.	ed; 20-40%									
0	5.	occorde												
0	20-		CL	SILTY CLAY w/ some Sand: gray brown, very stiff to hard, moi high plasticity; <15% very fine grain sand w/ occasional gravel	st to very moist, to 1/2" diameter;									
0				LEK. No PHC odor.										
0														
0				A b b a a a sin a damp to a salet and band										
0	25-	333333	1	As above: becoming damp to moist and hard.			1	_	1 10000 10000					

	ENVIRONM	ENTAL ENGIN	EERING, INC.	GEOLOGIC LOG OF BOREHOLE M	1W-9			PA	GE 2 OF 2
1		G LOCA		PROJECT: 2552 SITE LOCATION: 1638 152-nd Street, San Leandro, CA DRILLING METHOD: HSA DRILLER: Gregg Drilling & Testing. (Robert) LOGGED BY: R. Papler R.G.	DATE DRILLED CASING ELEVA DEPTH TO 1ST APPROVED BY	ATIO	DN: V: 1	NA 7 ft	bgs
mdd Gld	ОЕРТН	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION		SPIN-Spoon SAMPLED	10/10 - 10/10 10/10 - 10/10	BI OWCOLINTS	WELL DIAGRAM
2 2 2	1 1		CL	SILTY CLAY w/ some Sand: gray brown, very stiff to hard, dam very fine grain sand; LEK, No PHC odor.	p to moist; <15%				
9 2 3	30-		CL/SC	SANDY CLAY: gray brown, very stiff, very moist, mod high playery fine grain sand; MEK-LEK. No PHC odor. CLAYEY SAND: gray brown, mod. to very stiff, moist to very m	noist; 50-60%		Z	z	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
9	-		SC CL	very fine sand w/ wet silty sand stringer at 31.5-32'; MEK (w/ HI No PHC odor. SILTY CLAY w/ some Sand: gray brown, med. stiff, very moist, plasticity; <10-15% very fine sand; LEK. No PHC odor.	EK stringer)				SLUFF
	35—			Total depth 34.5 ft bgs Caved to 33.5 ft bgs Groundwater first encountered at 17 ft bgs then 31.5 ft bgs and to 12.98 ft bgs.	l later stabilized				
	40								
	45								

APPENDIX C

Laboratory Report of Soil Analytical



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

SOMA Environmental Engineering Inc. 2680 Bishop Dr. Suite 203 San Ramon, CA 94583

Date: 15-SEP-04
Lab Job Number: 174306

Project ID: 2552

Location: 15101 Freedom Avenue

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by:

Project Manager

Reviewed by:

perationa Manager

This package may be reproduced only in its entirety.

NELAP # 01107CA



CASE NARRATIVE

Laboratory number:

174306

Client:

SOMA Environmental Engineering Inc.

Project:

2552

Location:

15101 Freedom Avenue

Request Date:

08/27/04

Samples Received:

08/27/04

This hardcopy data package contains sample and QC results for four soil samples, requested for the above referenced project on 08/27/04. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B and EPA 8021B):

No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):

High recovery was observed for MTBE in the MS for batch 94304; the parent sample was not a project sample, the LCS was within limits, and this analyte was not detected in the associated samples. High surrogate recovery was observed for bromofluorobenzene in the method blank for batch 94193. High surrogate recovery was observed for bromofluorobenzene in the LCS for batch 94193. High surrogate recovery was observed for dibromofluoromethane in the MS for batch 94304; the parent sample was not a project sample. No other analytical problems were encountered.

Curtis & Tompkins, Ltd.

Analytical Laboratory Since 1878 2323 Fifth Street Berkeley, CA 94710 (510) 486-0900 Phone (510) 486-0532 Fax

CHAIN OF CUSTODY

Page ____

Analysis

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	11/2010	
C & T LOGIN #:_	174306	

E JENNINUS

Report To: J 696€K Project No.: 2552 IGIP! FREEDOM AVE Company: 50M& ENV ENV Project Name: PAZDEL / SAN LEANDRO: Telephone: 925 244-6600 Project P.O.: **Turnaround Time:** Fax: 925 244-6601 STANDARD

Sampler:

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			<u> </u>	Ма	UIX	1		 	163	CIVE	2010		15	100	1445			1 1	- 1	13	
Lab No.	Sample ID.	Sampling Date Time	Soil	Water	Waste		# of Containers	로	H _S SO ₄	SONH	ICE		1							k	
-1	MV-605.5-6	25AVL 2001 800	X				i				X		X		X						
-2	MW-636-6.5	3°	×					<u> </u>	_		Х		×		X			_			\bot
.3	MW-608:5-9	8**	X	_	<u> </u>	<u> </u>	1	厂	ļ		X		X	×	X			+			
14	MW-609-9.5	305	X		<u> </u>	<u> </u>	1	<u> </u>	-		X	 	×	ㅗ	X					×	╂┷┼╸
-5	MW-9055-6	1120	X		_		! !	 	 		X	H		├─	 -	-				$-\frac{1}{x}$	
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Notes:	EDF REQUIRED	SAMPLE RECEIPT	RI	ELI	IQL	JISI	IED BY:						R	ECE	IVED	BY:					
		Intact Cold					,,			2540	'h Zoo	1/5	~	\mathcal{M}	\bigcap				7-5	Avago	WW /5
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	CH-MOH INC																, , ,	' W ('	MIA	70



Curtis & Tompkins Laboratories Analytical Report 174306 SOMA Environmental Engineering Inc. 2552 15101 Freedom Avenue EPA 5030B Location: Lab #: Prep: :lient: roject#: 08/25/04 08/27/04 08/28/04 Soil as received 1.000 Sampled: Received: Basis: Analyzed: Diln Fac: atch#: 94162

Field ID: pe:

MW-6@5.5-6 SAMPLE

Lab ID:

174306-001

Analyte	Result	RL.			malvala
Gasoline C7-C12	ND	1.1	mg/Kg	EPA 801	
≟ enzene	ND	5.3	ug/Kg	EPA 802	
Toluene	ND	5.3	ug/Kg	EPA 802	
thylbenzene	MD.	5.3	ug/Kg	EPA 802	
m,p-Xylenes	ND	5. 3	ug/Kg	EPA 802	21B
o-Xylene	ND	5.3	ug/Kg	EPA 802	21B

Surrogate	*REC	Limits	An	elysis
Trifluorotoluene (FID)	93	68-135	EPA 8015	В
Bromofluorobenzene (FID)	96	75-148	EPA 8015	B
Trifluorotoluene (PID)	93	61-124	EPA 8021	B
romofluorobenzene (PID)	94	74-127	EPA 8021	В

eld ID: me:

MW-6@6-6.5 SAMPLE

Lab ID:

174306-002

Analyte	Result	RI.	077 F.F.		Analysia
Gasoline C7-C12	ND	1.1	mg/Kg		8015B
Benzene	ND	5.3	ug/Kg		8021B
Coluene	MD	5.3	ug/Kg		
thylbenzene	ND	5.3	ug/Kg		8021B
m,p-Xylenes	ND	5.3	ug/Kg		
o-Xylene	<u> </u>	5,3	ug/Kg	EPA	8021B

Surrogate	*REC	Limits		Analysis	
Trifluorotoluene (FID)	93	6B-135	EPA	8015B	
Bromofluorobenzene (FID)	96	75-148	EPA	8015B	
Trifluorotoluene (PID)	93	61-124	EPA	8021B	
romofluorobenzene (PID)	93	74-127	EPA	8021B	

eld ID:

MW-6@8.5-9

SAMPLE

Lab ID:

174306-003

			0000	
Analyte	Result	RL .		RDALYSIS
Gasoline C7-C12	ND	1.1	mg/Kg	EPA 8015B
Benzene	ND	5.3	ug/Kg	EPA 8021B
Coluene	ND	5.3	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.3	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.3	ug/Kg	EPA 8021B
-o-Xvlene	ND	5.3	uq/Kq	EPA 8021B

Surrogate	6REC	Limits	Analy	818
Trifluorotoluene (FID)	91	68-135	EPA 8015B	
Bromofluorobenzene (FID)	94	75-148	EPA 8015B	i
rifluorotoluene (PID)	91	61-124	EPA 8021B	
romofluorobenzene (PID)	92	74-127	EPA 8021B	

ND= Not Detected = Reporting Limit age 1 of 2



	Curtis &	Tompkins Labor	atories Ana	alytical Report
Lab #: lient: roject#:	174306 SOMA Environmental 2552	Engineering Inc.	Location: Prep:	15101 Freedom Avenue EPA 5030B
Matrix:	Soil		Sampled:	08/25/04
Basis:	as received		Received: Analyzed:	08/27/04 08/28/04
Diln Fac: atch#:	1.000 94162		Anaryzea:	00/20/04

Field ID:

MW-6@9-9.5 SAMPLE

Lab ID: 174306-004

	Faculty		3177 8	ES	ATTRI VIST B
Gasoline C7-C12	ND	1.0	mg/	Kg	8015B
enzene	ND	5.0	ug/		8021B
oluene	ND	5.0	ug/	,	8021B
thylbenzene	ND	5.0	ug/		8021B 8021B
m,p-Xylenes	ND ND	5.U 5.0	ug/ ug/		8021B
o-Xylene	NB				

Surrogate	¥R#C	Limits	kije. Ver s	******
Trifluorotoluene (FID)	94	68-135	EPA 8015B	ŀ
Bromofluorobenzene (FID)	96	75-148	EPA 8015B	l l
Trifluorotoluene (PID)	93	61-124	EPA 8021B	
romofluorobenzene (PID)	95	74-127	EPA 8021B	

pe:

BLANK

Lab ID: QC262899

Analyte	Result	RL U	its		Anaily	/818
Gasoline C7-C12	NID	1.0 mg	g/Kg		8015B	
Benzene	ND	5.0 u	j/Kg		8021B	
oluene	ND	5.0 ug	j/Kg		8021B	
thylbenzene	ND	5.0 u	/Kg		8021B	
m, p-Xylenes	ND	5.0 u			8021B	
o-Xylene	ND .	5.0 u	₁/Kq	EPA	8021B	

Surrogate	*REC	Limite	Ana	ysts
rifluorotoluene (FID)	93	68-135	EPA 8015B	
Bromofluorobenzene (FID)	91	75-148	EPA 8015B	
Trifluorotoluene (PID)	91	61-124	EPA 8021B	
romofluorobenzene (PID)	90	74-127	EPA 8021B	



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 9471O, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

SOMA Environmental Engineering Inc.

2680 Bishop Dr. Suite 203

San Ramon, CA 94583

Date: 30-MAY-02

Lab Job Number: 158675 Project ID: 2552

Location: 15101 Freedom Avenue

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by:

Project Manager

Reviewed by:

Operations Manager

This package may be reproduced only in its entirety.

NELAP # 01107CA



Laboratory Number:

158675

Client:

Soma Environmental Engineering, Inc.

Project Name:

15101 Freedom Boulevard

Project #:

2550

Receipt Date:

05/24/02

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for five soil samples received from the above referenced project on April 24th, 2002. The samples were received cold and intact.

Metals (EPA 6010B):

No analytical problems were encountered.

Total Organic Carbon (Walkley-Black):

No analytical problems were encountered.

Subcontracted Analysis

Bulk Density (ASTM D2216):

This analysis was performed by PTS Laboratories, Inc. of Santa Fe Springs, California. Please see the PTS Laboratories, Inc. case narrative.

CURTIS & TOMPKINS, LTD. BERKELEY

LOGIN CHANGE FORM, REVISED

Reason for change: Client Request: By: Robble Papar Papar Previous Client Previous Previou	Duedate Signal
Suy ID	} -
158675-001 158279-033 MW-506' SOIL ADD TOCKS & PB 5 20/02	150つフレクコ
158675-002 158279-034 MIN-5@951 Sal ADD RILLE DEAGUE	5/27/02
158675-03 158279-038 MW-5@19.51 SOIL ADD TOCKB &/B 5/20/02	
158675-004 158279-039 MW-5@20' SOIL ADD BULK DEWITT	5/27/02
158675-006 158279-035 MW-5@10' SPIL ADD TOLWESSPB -	5/27/02
	· · · · · · · · · · · · · · · · · · ·
	<u></u>

CHAIN OF CUSTODY FORM

Page <u>3</u> of <u>4</u>

Analyses

Curtis & Tompkins, Ltd.

Analytical Laboratory Since 1878 2323 Fifth Street

C&T	158279
LOGIN#	10021

	Berkeley, ((510)486-09 (510)486-09	900 Phone				Sampler:		Par Ran	لـ	24	علا	~ WZ										
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Laboratory Number	Sample ID.	Sampling Date Time	Soil	Waste	2	# of Containers	FCL	H2SO	HNO3	30		Field Notes	D-MAI	BIE	MEBE	100 (Ball Day	bulk temantu					
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Notes: Più	are an	ralgre e	n	r,	1	sample a					RE	LINQUISHED BY:				RE	CEI	VEI	D B	Y:		
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BUN! MW	4cm 200	(t) / www.	50	-22	.,•	(t) (٣				TWIND DATE THE	70	7		4	==		11	MIC	11710	24
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Signature



		L	ead	
Lab #:	158675		Location:	15101 Freedom Avenue
Client:	SOMA Environmental	Engineering Inc.	Prep:	EPA 3050
Project#:	2552		Analysis:	EPA 6010B
Analyte:	Lead		Batch#:	72456
Matrix:	Soil		Sampled:	04/22/02
Units:	mg/Kg		Received:	04/24/02
Basis:	as received		Prepared:	05/21/02
Diln Fac:	1.000		Analyzed:	05/27/02

Pield ID	Туре	Lab ID	Result	RL
MW-5 @ 6'	SAMPLE 1	58675-001	1.6	0.14
MW-5 @ 19.5'	SAMPLE 1	58675-003	0.22	0.14
MW-5 @ 10'	SAMPLE 1	58675-006	0.55	0.13
	BLANK Q	C178995	ND	0.15

ND= Not Detected RL= Reporting Limit Page 1 of 1



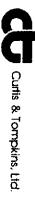
		L	ead	
Lab #:	158675		Location:	15101 Freedom Avenue
Client:	SOMA Environmental E	Ingineering Inc.	Prep:	EPA 3050
Project#:	2552		Analysis:	EPA 6010B
Analyte:	Lead		Diln Fac:	1.000
Matrix:	Soil		Batch#:	72456
Units:	mg/Kg		Prepared:	05/21/02
Basis:	as received		Analyzed:	05/22/02

BS QC178996 100.0 84.65 85 70-120 BSD QC178997 100.0 85.90 86 70-120 1 20	Туре	e Lab ID	Spiked	Result	%RE	l Limits	RPD	Liám	
BSD QC178997 100.0 85.90 86 70-120 1 20	BS	QC178996	100.0						
	BSD	QC178997	100.0	85.90	86	70-120	1	20	

Lab #:	158675	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3050
Project#:	2552	Analysis:	EPA 6010B
Analyte:	Lead	Diln Fac:	1.000
Field ID:	ZZZZZZZZZ	Batch#:	72456
MSS Lab ID:	158669-001	Sampled:	05/17/02
Matrix:	Soil	Received:	05/17/02
Units:	mg/Kg	Prepared:	05/21/02
Basis:	as received	Analyzed:	05/22/02

Type Lab	ID MSS Result	Spiked	Result	\$RE	C Limits	RPD L	im
MS QC1789	98 10.67	80.97	73.68	78	46-128		-
MSD QC178	99	96.15	90.10	· 83	46-128	5 3	9

RPD= Relative Percent Difference Page 1 of 1





	Total Organi	c Carbon (7	(OC)
Lab #:	158675	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Analysis:	WALKLEY-BLACK
Project#:	2552		
Analyte:	Total Organic Carbon	Batch#:	72411
Matrix:	Soil	Sampled:	04/22/02
Units:	*	Received:	04/24/02
Basis:	as received	Analyzed:	05/20/02

	1	ield ID	Туре	Lab ID	Result	RL	Diln Fac
MW-5	@	6'	SAMPLE	158675-001	0.13	0.03	3.000
MW-5	0	19.5'	SAMPLE	158675-003	0.05	0.01	1.000
MW-5	@	10'	SAMPLE	158675-006	0.07	0.01	1.000
			BLANK	QC178844	ND	0.01	1.000

ND= Not Detected RL= Reporting Limit Page 1 of 1

Туре	Lab ID	MSS Result	Spiked	Result	\$RE	C Limits RE	D Lim	Diln Fac	
LCS	QC178845		0.1300	0.1200	92	76-120		3.000	
MS	QC178846	0.1260	0.2200	0.2340	50	35-146		7.000	*
MSD	QC178847		0.2100	0.2670	67	35-146 13	32	6.000	

RPD= Relative Percent Difference Page 1 of 1



PTS Laboratories

Geotechnical Services

8100 Secura Way • Santa Fe Springs • CA 90670 Phone (562) 907-3607 • Fax (562) 907-3610

May 24, 2002

Mr. Paul Prendergast Curtis & Tompkins 2323 Fifth St. Berkeley, CA 94710

Re: 158675 PTS File: 32216

Dear Mr. Prendergast:

Enclosed are final data for your Project # 158675. All analyses were performed by applicable ASTM, EPA or API methodology. Samples will be retained for 30 days before disposal unless other arrangements are made.

We appreciate the opportunity to be of service and trust these data will prove beneficial in the development of this project. Please feel free to call me at (562) 907-3607 should you have any questions or require additional information.

Sincerely,

PTS Laboratories, Inc.

Larry Kunkel
District Manager

LK/vk

encl.

PHYSICAL PROPERTIES DATA

(METHODOLOGY: ASTM D2216, API RP40)

PROJECT NAME:

N/A

PROJECT NO:

158675

		SAMPLE	MOISTURE	DEN	SITY
SAMPLE ID.	DEPTH, ft.	ORIENT. (1)	CONTENT (% wt)	BULK (g/cc)	GRAIN (g/cc)
MW-5@9.5	9.50	V	19.10	1.83	2.73
MW-5@20	20.00	V	9.34	1.89	2.87

32216

Curtis & Tompkins, Ltd. Analytical Laboratories, Since 1878 2323 Fifth Street Berkeley, CA 94710 (510) 486-0900 (510) 486-0532

Project Number: 158675

Subcontract Laboratory:

PTS Laboratories, Inc

8100 Secura Way

Santa Fe Springs, CA 90670

(562) 907-3607

ATTN: Rick Young

Turnaround Time: 5)AT TAT (705 5 27)
Report Level: II

Please send report to: Paul Prendergast

*** Please report using Sample ID rather than C&T Lab #.

Sample ID	Sampled	Matrix	Analysis	C&T Lab # Comments
MW-5 @ 9.5'	04/22	Soil	DENSITY	158675-002
MW-5 @ 20'	04/22	Soil	DENSITY	158675-004

Notes:	Relinquished By:	Received By:
·.	Roy Hakonucil	Acy Hulla
	Date/Time: 2:15 p. m.	Date/Time: 2:30

Signature on this form constitutes a firm Purchase Order for the services requested above. Page 1 of 1

APPENDIX D

Well Development Data



Well No.:	WW-6	_		P	roject No.: 2552
Casing Diameter:	4	inch	•		Address: 15101 FREEDOM BLND . SAN LEANDAD
Depth of Well:	27,6	_ft			•
Top of Casing Elevation:		_ft			Date: 20 157: 20>14
Depth to Groundwater:	17.80	_ft			Sampler: EUENNINGS
Groundwater Elevation:		_ft			
Water Column Height:	9.7	_ft			
Purged Volume:	25	_gallons			
Purging Method:	Bailer ^[]	a			Pump ☑
Sampling Method:	Bailer □]			Pump □
Color:	No ⊡	,	Yes		Describe
Sheen:	No 🗹	•	Yes		Describe
Odor:	No □	/	Yes		Describe

Field Measurements: WEW DEVELOPMENT

Time	Volume (gallons)	D.O. mg/L	рН	Temp °C	E.C. (μS/cm)	Turb. NTU
:	20		6.85	22.1	1075	535
	29		6.65	22.3	1065	454
	28		0.07	23.0	1070	536
				 		

Notes: POUT DEVELOPMENT TIP: 27.6 DTW: 17.82 TOTAL PURLED VOLUME 28 WAL



	Well No.:	WW-	·7_		P	roject No.: 2552
	Casing Diameter:	2	inch			Address: 19101 FREEDOM BLVD. SAN LEUNDRO
	Depth of Well:	21	ft			
	Top of Casing Elevation:		ft			Date: 204EPT 20014
	Depth to Groundwater:	15.2	<u> </u>			Sampler: E JENNINGS
	Groundwater Elevation:		ft			
	Water Column Height:	5.6	≤ ft			
TOT!	Purged Volume:	18	gallons			
	Purging Method:	Baile	r ⊡r′			Pump 🗹
	Sampling Method:	Baile	r 🗆			Pump □
	Color:	No	⊡	Yes		Describe
	Sheen:	No	□ ∕	Yes		Describe
	Odor:	No	⊡ ∕	Yes		Describe

Field Measurements: WENV DEVELOPMENT

Time	Volume (gallons)	D.O. mg/L	рН	Temp °C	E.C. (μS/cm)	Turb. NTU
	10		6.75	19.9	1409	704
	144	-	6.80	19.7	1287	643
	18		w,83	4.8	1245	622
··			<u> </u>	ļ <u>-</u>		

Notes: POGT DEVELOPMENT TD; 21 DTW; 19,10 19,61 TOTAL PURED VOLUME 18 YOU



Well No.:	WW	-8_		P	roject No.: 2552
Casing Diameter:	Z	inch			Address: 19101 FREEDOM BLVD . JAN LEANDRO
Depth of Well:	28,	to ft			
Top of Casing Elevation:		ft			Date: 205277 2004
Depth to Groundwater:	15.	<u>vo</u> ft			Sampler: E JENNING
Groundwater Elevation:		ft			
Water Column Height:	15	ft			
の「ALPurged Volume:	18	gallons			
Purging Method:	Baile	r: 🖬			Pump ☑
Sampling Method:	Baile	r 🗆			Pump □
Color:	No	⊡∕	Yes		Describe
Sheen:	No	⊡ ∕	Yes		Describe
Odor:	No	G ∕	Yes		Describe

Field Measurements: WENDEVELOPMINT

Time	Volume (gallons)	D.O. mg/L	рН	Temp °C	E.C. (μS/cm)	Turb. NTU
	9		7.15	20.7	1465	732
	12		7.17	20,1	1396	697
	15		7.00	20.7	1388	695
	18		7.18	20.8	1314	187
			<u> </u>			
			<u> </u>			
	L		<u></u>	<u> </u>		

Notes: POGT DEVELOPMENT TD: 28.10 DTW: 13.27 TOTAL PURLED VOLUME 18 WAL



	Well No.:	MW	-9		Ρ	roject No.: 2552
	Casing Diameter:	2	inch			Address: 15101 FREEDOM SHID . SAN LEANDRO
	Depth of Well:	37.2	eo_ft			
	Top of Casing Elevation:		ft			Date: 20 4EPT 20011
	Depth to Groundwater:	13.2	≄ ft			Sampler: E JENNING S
	Groundwater Elevation:		ft			
	Water Column Height:	18.4	3 _ft			
or N	Purged Volume:	2.4	gallons			
	Purging Method:	Baile	r 🗹			Pump 🗹
	Sampling Method:	Baile	r 🗆			Pump .
	Color:	No	□ ∕	Yes		Describe
	Sheen:	No	☑′	Yes		Describe
	Odor:	No		Yes		Describe

Field Measurements: WEN DEVELOPMENT

Time	Volume (gallons)	D.O. mg/L	рН	Temp °C	E.C. (μS/cm)	Turb. NTU
	15		7,19	20,4	817	442
	18		7.10	20.2	944	422
	21		7.01	20,0	846	416
	24		7.10	20.0	839	420
				<u></u>		

Notes: POGT DEVELOPMENT TO 32.75 DTW 12.46 TOTAL PURUED VOLUME 24 HAL

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APPENDIX E

Well Survey Report

Harrington Surveys Inc.

Land Surveying & Mapping

2278 Larkey Lane, Walnut Creek, Ca. 94596 Phone (925)935-7228 Fax (925)935-511 & Cel (925)788-7359 E-Mail (ben5132@pacbell.net)

Oct. 14, 2004

Soma Environmental Engineering 2680 Bishop Dr. # 203 San Ramon, Ca. 94583

Attn: Elena Manzo Job # 2445

Ref: 15101 Freedom Ave, San Leandro, Ca.

HORZONTAL CONTROL, NAD 88:

Survey based on California Coordinate System, Zone 3, NAD 83.

CHABOT "B', NORTH 2,087,731.02 EAST 6,094,039.23 sft. LAT. N37°43'02.71762" W122°07"00.46339", NAVD 88, ELEV. 134.957.

CHABOT "A", NORTH 2,088,584.99 EAST 6,093,351.39 sft. LAT. N37°43'11.04190" W122°07'09.20691", NAVD 88, ELEV. 492.08.

VERTICAL CONTROL, NAVD 88:

NGS 1974, STATION K 1256, NAVD 88 ELEV. 58.50. PID # HT1871

GPS: TRIMBLE 5800, LEICA TCA 1800, 1" HORZ. & VERT.

EPOCH DATE 1998.5

OBSERVATION; EPOCH=180.

FIELD SURVEY: OCT. 11, 2004.

Ben Harrington

PLS 5132

SURVEY REPORT 15101 FREEDOM AVE SAN LEANDRO, CA.

HARRINGTON SURVEYS INC. 2278 LARKEY LANE WALNUT CREEK, CA. 94597 925-935-7228 FAX. 935-5118

JOB NO. 2445 DATE: OCT. 12, 2004

"	NAD 83	NAD 83	NAVD 88		11071111	WEST
ЭΤ.	NORTH (sft)	EAST(sft)	ELEV.	DESCRIPTION	LATITUDE (DMS)	LONGITUDE (DMS)
		6094039.23	442.77	FD CHABOT B	37°43'02.71762"	122°07'00.46339"
!	2088584.99	6093351.39	492.08	FD CHABOT A	37°43'11.04190"	122°07'09.20691"
_	2084348.54	6092159.32	55.44	FD. X-8		
52	2084073.17	6092141.24	46.15	MW-6 PAV		
3	2084072.72	6092140.95	46.15	MW-6 PUNCH		,
4	2084072.47	6092140.95	45.82	MW-6 NOTCH	37°42'26.22635"	122°07'23.29643
5	2083909.71	6091947.10	40.61	MW-9 PAV		<u> </u>
6	2083909.10	6091946.97	40.61	MW-9 PUNCH		
57	2083908.71	6091947.00	40.26	MW-9 NOTCH	37°42'24.57425"	122°07'25.67431"
58	2083861.20	6092118.11	41.38	MW-8 PAV		
59	2083860.43	6092118.36	41.44	MW-8 PUNCH		100007100 500001
50 T	2083860.03	6092118.52	41.14	MW-8 NOTCH	37°42'24.12245"	122°07'23.52966"
31	2084008,21	6092290.11	44.94	MW-7 PAV		
32	2084007.88	6092290.27	44.95	MW-7 PVNCH		40000104 4000011
53	2084007.68	6092290.40	44.74	MW-7 NOTCH	37°42'25,61150"	122°07'21,42290"
64	2084206.49	6092175.95	51.03	MW-5 PAV		
65	2084206.17	6092176.55	50.96	MW-5 PUNCH		1.0000000000000000000000000000000000000
36	2084206.01	6092176.79	50.53	MW-5 NOTCH	37°42'27.55260	122°07'22_87930
37	2084670.41	6092307.68	69.79	FD BM FAIR580		
68	2084443.65	6092198.88	53.70	MW-4 PAV		
69	2084444.39	6092199.72	53.74	MW-4 PUNCH		
70	2084444.59	6092199.51	53.31	MW-4 NOTCH	37°42'29.91496"	122°07'22.64809"
71	2084399.10	6092145.43	54.37	MW-3 PAV		
72	2084399.78	6092145.28	54.33	MW-3 PUNCH		1.445.65100 0.45000
73	2084400.15	6092145.27	53.91	MW-3 NOTCH	37°42'29.46636"	122°07'23.31339"
74	2084329.47	6092199.72	54.82	MW-1 PAV		
75	2084330.44	6092199.45	54.79	MW-1 PUNCH		10000000 00700U
76	2084330.75	6092199.20	54.46	MW-1 NOTCH	37°42'28.78955"	122°07'22.62738"
77	2084367.59	6092256.38	52.88	MW-2 PAV		
78	2084368.15	6092256.14	52.92	MW-2 PUNCH		100000000000000000000000000000000000000
79	2084368.53	6092256.06	52.41	MW-2 NOTCH	37°42'29.17277"	122°07'21.92804"
80	2084930.49	6091759.33	58.50	FD BM K1256	37°42'34.64279"	122°07'28.23011"
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		Gasoline Oxyg	enates by GC/M	S
b #:	174306		Location:	15101 Freedom Avenue
Client:	SOMA Environmental	Engineering Inc.	Prep:	EPA 5030B
	2552	,	Analysis:	EFA 8260B
eld ID:	ZZZZZZZZZZ		Diln Fac:	1.000
MSS Lab ID	174399-001	•	Batch#:	94304
Matrix:	Şoil		Sampled:	09/01/04
luits:	ug/Kg	'	Received:	09/02/04
sis:	as received		Analyzed:	09/02/04

Type:

MS

Lab ID:

QC263481

Analyte	MSS Result	Spiked	Result		imits.
I BE	<0.4100	50.00	60.94	122 * 7	71-120
		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			

Surrogate	%REC	Dimits
1 bromofluoromethane	121 *	79-120
7,2-Dichloroethane-d4	120	80-120
Toluene-d8	101	80-120
omofluorobenzene	112	80-121

rje:

MSD

Lab ID:

Spiked Result

QC263482

*REC Limits RPD Lim

BE		50.00	53.40	107	71-120	13	20
Surrogate	%REC	Limits					
₽ bromofluoromethane	113	79-120					
2-Dichloroethane-d4	114	80-120					
Toluene-d8	107	80-120	,				
Bromofluorobenzene	109	80-121					

^{*=} Value outside of QC limits; see narrative
RI = Relative Percent Difference
Percent of 1



	Gasoline Oxyg	enates by G	C/MB
Lab #:	174306	Location:	15101 Freedom Avenue
<u>Cl</u> ient:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
oject#:	2552	Analysis:	EPA 8260B
pe:	LCS	Basis:	as received
Lab ID:	QC263461	Diln Fac:	1.000
mtrix:	Soil	Batch#:	94304
its:	ug/Kg	Analyzed:	09/02/04

Analyte	Spiked	Result	%REC	Limits
rt-Butyl Alcohol (TBA)	125.0	124.7	100	78-135
BE	50.00	47.48	95	76-127
Isopropyl Ether (DIPE)	25.00	27.01	108	80-124
hyl tert-Butyl Ether (ETBE)	25.00	26.16	105	80-120
thyl tert-Amyl Ether (TAME)	25.00	24.84	99	80-120

Surrogate	%REC	Limita	
bromofluoromethane	96	79-120	,
2-Dichloroethane-d4	105	80-120	
Toluene-d8	107	80-120	
Fromofluorobenzene	101	80-121	



	Gasoline Oxyg	enates by	GC/MS
Lab #:	174306	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
moject#:	2552	Analysis:	EPA 8260B
Itrix:	Soil	Diln Fac:	1.000
Units:	ug/Kg	Batch#:	94193
Pasis:	as received	Analyzed:	08/30/04

r e:

BS

Lab ID:

QC263035

Analyte	Spiked		Result	%REC	Limits	
mrt-Butyl Alcohol (TBA)		NA				
BE	50.00		61.80	124	76-12 <i>7</i>	
Isopropyl Ether (DIPE)		NΑ	•			
Ethyl tert-Butyl Ether (ETBE)		NA				
ethyl tert-Amyl Ether (TAME)		NA		<u></u>		

Su	rrogate	BREC	Limita	
Pibromofluor	omethane	106	79-120	
2-Dichloro	ethane-d4	100	80-120	
roluene-d8		104	80-120	
Bromofluorob	enzene	103	80-121	

impe:

BSD

Lab ID:

QC263036

Spiked	Result	%RBC	Limits	RPI	Lim
N	<i>I</i>				
50.00	57.06	114	76-12 7	8	20
N	Ą				
N.	A				
N	A				
	NA 50.00 NA NA	AN	NA 50.00 57.06 114 NA NA	NA 50.00 57.06 114 76-127 NA NA	NA 50.00 57.06 114 76-127 8 NA NA

Surrogate	*REC	Limits	
Dibromofluoromethane	103	79-120	
2-Dichloroethane-d4	84	80-120	
bluene-d8	95	80-120	·
Bromofluorobenzene	98	80-121	

MA= Not Analyzed

D= Relative Percent Difference

Fage 1 of 1



	.Gasoline Oxyg	enates by G(C/ME
Lab #:	174306 SOMA Environmental Engineering Inc.	Location:	15101 Freedom Avenue
Client:		Prep:	EPA 5030B
coject#:		Analysis:	EPA 8260B
pe:	LCS	Basis:	as received
ab ID:	QC263037	Diln Fac:	
ab iD: atrix: hits:	Soil ug/Kg	Batch#: Analyzed:	94193 08/30/04

Analyte	Spiked	Result	THEC	Limits
ert-Butyl Alcohol (TBA)	250.0	250.3	100	78-135
CBE	50,00	54.82	110	76-127
Isopropyl Ether (DIPE)	50.00	52.99	106	80-124
Ethyl tert-Butyl Ether (ETBE)	50.00	56.18	112	80-120
ethyl tert-Amyl Ether (TAME)	50.00	53.53	107	80-120

Surrogate	%REC	Limite
bromofluoromethane	97	79-120
2-Dichloroethane-d4	87	80-120
Toluene-d8	101	80-120
Promofluorobenzene	128 *	80-121



Gasoline Oxygenates by GC/MS 15101 Freedom Avenue EPA 5030B Lab #: 174306 Location: SOMA Environmental Engineering Inc. Prep: Client: EPA 8260B 08/25/04 08/27/04 roject#: atrix: <u> Analysis:</u> 2552 Sampled: Received: Soil ug/Kg nits: as received Basis:

Type: Lab ID: Daln Fac: BLANK QC263038 1.000 Batch#: Analyzed: 94193 08/30/04

Analyte tert-Butyl Alcohol (TBA) 100 ND 5.0 MTBE ND sopropyl Ether (DIPE) thyl tert-Butyl Ether (ETBE) ethyl tert-Amyl Ether (TAME) ND. 5.0 5.0 ND 5.0 ND 1,2-Dichloroethane ND 5.0 2-Dibromoethane ND 5.0 000 ND

Surrogate	REC	Limits	
Dibromofluoromethane	98	79-120	i
₹ 2-Dichloroethane-d4	90	80-120	1
luene-d8	101	80-120	
romofluorobenzene	127 *	80-121	1

Twe: Lab ID: Diln Fac: BLANK QC263462 1.000 Batch#: Analyzed: 94304 09/02/04

Analyte	Rest	ilt RL
ert-Butyl Alcohol (TBA)	ND	100
MI'BE	ND	5.0
Isopropyl Ether (DIPE) Ethyl tert-Butyl Ether (ETBE)	ND ·	5.0
Ethyl tert-Butyl Ether (ETBE)	ND	5.0
thyl tert-Amyl Ether (TAME)	ND	5.0
2-Dichloroethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Ethanol	ND	1,000

			
Stitung operation	A SEC	200 A STIFE #: 800	
bromofluoromethane	104	79-120	
1,2-Dichloroethane-d4	107	80-120	·
Toluene-d8	100	80-120	
Promofluorobenzene	105	80-121	

Value outside of QC limits; see narrative ND= Not Detected RL= Reporting Limit Pige 3 of 3



		Gasoline Oxyg	enates by (9C/MS
<pre>Imb #: Gient: Hoject#:</pre>	174306 SOMA Environmental 2552	Engineering Inc.	Location: Prep: Analysis:	15101 Freedom Avenue EPA 5030B EPA 8260B
Matrix: Units: Hosis:	Soil ug/Kg as received		Sampled: Received:	08/25/04 08/27/04

Field ID: Type: MW-6@8.5-9 SAMPLE 174306-003 Diln Fac: Batch#: Analyzed: 0.9615 94304 09/02/04

Analyte	Res	N.F. P.G.
tert-Butyl Alcohol (TBA)	ND	96
NBE	ND	4.8
popropyl Ether (DIPE)	ND	4.8
Ethyl tert-Butyl Ether (ETBE)	ND	4.8
Methyl tert-Amyl Ether (TAME)	ND	4.8
1 2 - Dichloroethane	ND	4.8
1 2-Dibromoethane	ND	4.8
Ethanol	ND .	960

Surrogate	*REC	Limits	
I bromofluoromethane	108	79-120	·····
2-Dichloroethane-d4	113	80-120	
Toluene-d8	104	80-120	
Bromofluorobenzene	111	80-121	

Field ID: Type: Lag ID: MW-6@9-9.5 SAMPLE 174306-004 Diln Fac: Batch#: Analyzed: 0.8929 94304 09/02/04

Analyte	Pag	1] F
tert-Butyl Alcohol (TBA)	ND	89
MTBE	ND	4.5
Dopropyl Ether (DIPE)	ND	4.5
Habyl tert-Butyl Ether (ETBE)	ND	4.5
Methyl tert-Amyl Ether (TAME)	ND	4.5
1,2-Dichloroethane	ND	4.5
1 2-Dibromoethane	ND	4.5
I hanol	ND	

Surregate	erec	Lamate	
Dibromofluoromethane	107	79-120	
2 -Dichloroethane-d4	113	80-120	
Tuene-d8	104	80-120	
B-omofluorobenzene	111	80-121	

*- Value outside of QC limits; see narrative NI Not Detected RIM Reporting Limit Page 2 of 3



mient: SC	74306 DMA Environmental : 052 Soil ug/Kg	Gasoline Oxyg	Location: Prep: Analysis: Sampled: Received:	15101 Freedom EPA 5030B EPA 8260B 08/25/04 08/27/04	m Avenue
Basis: Field ID: Fyre: Law ID:	MW-6@5.5-6 SAMPLE 174306-001		Diln Fac: Batch#: Analyzed:	0.9615 94193 08/31/04	
tert-Butyl A		Result ND ND ND ND ND ND ND ND ND ND ND ND ND		96 4.8 4.8 4.8 4.8 4.8 4.8 4.8 960	
Dibromofluor 2-Dichloro luene-d8 Bromofluorob	bethane-d4	97 79-120 93 80-120 99 80-120 116 80-121			
Fuld ID: Type: Lab ID:	MW-6@6-6.5 SAMPLE 174306-002		Diln Fac: Batch#: Analyzed:	0.8929 94304 09/02/04	
MTBE Lsopropyl E	Butyl Ether (ETBE) -Amyl Ether (TAME) oethane	ND ND ND ND		89 4.5 4.5 4.5 4.5 4.5 4.5 890	
Dibromofluo 1,2-Dichlore bluene-d8 romofluoro	oethane-d4	98 79-120 110 80-120 107 80-120 108 80-121			

^{*=} Value outside of QC limits; see narrative ND= Not Detected R = Reporting Limit H ge 1 of 3



1	Curtis & To	mp kins Labor	atories An	alytical Report
Lab #: 1	74306		Location:	15101 Freedom Avenue
Client: S	OMA Environmental Eng	ineering Inc.	Prep:	EPA 5030B
roject#: 2	552		Analysis:	EPA 8015B
eld ID:	MW-6@5.5-6		Diln Fac:	1.000
MSS Lab ID:	174306-001		Batch#:	94162
Matrix:	Soil		Sampled:	08/25/04
hits:	mg/Kg	•	Received:	08/27/04
Basis:	as received	`	Analyzed:	08/28/04

MS

Lab ID: QC262902

Analyte	MSS Result	Spiked	Result	*REC	Limits
Gasoline C7-C12	0.04570	10.75	11.02	102	48-120

***	Surrogate	%REC	Limits
П	rifluorotoluene (FID)	112	68-135
1	Bromofluorobenzene (FID)	98	75-148

MSD

Lab ID:

QC262903

Analyte	Spiked		*REC	00000000000000000000000000000000000000	900 (SEE 188)	Lan
Gasoline C7-C12	10.87	11.09	102	48-120	0	24

	Surroga	te	%REC	Limits	
	orotoluene	(FID)	113	68-135	
Bromof	luorobenzen	e (FID)	98	75-148	



	Curtis & Tompkins Labor	atories Analyt	ical Report
	174306	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
roject#: 2	2552	Analysis:	EPA 8021B
roject#: 2 /pe:	LCS	Basis:	as received
Lab ID:	QC262901	Diln Fac:	1.000
	Soil	Batch#:	94162
Matrix: hits:	ug/Kg	Analyzed:	08/28/04

Spiked	Result	%REC	Limits	
100.0	98.57	99	80-120	
100.0	99.16	99	80-120	
100.0	100.9	101	80-120	
100.0	100.1	100	80-120	
100.0	100.9	101	80-120	
	100.0 100.0 100.0 100.0	100.0 98.57 100.0 99.16 100.0 100.9 100.0 100.1	100.0 98.57 99 100.0 99.16 99 100.0 100.9 101 100.0 100.1 100	100.0 98.57 99 80-120 100.0 99.16 99 80-120 100.0 100.9 101 80-120 100.0 100.1 100 80-120

	Surrogate	%REC	Limits	
П	rifluorotoluene (PID)	91	61-124	
Ш	romofluorobenzene (PID)	91	74-127	



	Curtis & Tompkins Labor	atories Ans	Nytical Report
:# db	174306	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Boject#:	2552	Analysis:	EPA 8015B
pe:	LCS	Basis:	as received
Lab ID:	00262900	Diln Fac:	1.000
Matrix:	Soil	Batch#:	94162
its:	mg/Kg	Analyzed:	08/28/04

Analyte	Spiked	Result	*REC	Limits
soline C7-C12	10.00	10.29	103	80-120

Surrogate	SRE	C Limits
Trifluorotoluene (FID)	109	68-135
comofluorobenzene (FID)	95	75-148

