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Third Quarter 2005 Groundwater Monitoring Report

WENTE WINERY

5565 Tesla Road

Livermore, California

October 14, 2005

Project 2841

Prepared for

Mr. Aris Krimetz 5565 Tesla Road Livermore, California

Prepared by

SOMA Environmental Engineering, Inc. 6620 Owens Drive, Suite A Pleasanton, California

CERTIFICATION

This report has been prepared by SOMA Environmental Engineering, Inc. on behalf of Mr. Aris Krimetz, for Wente Winery, which is located at 5565 Tesla Road, Livermore, California to comply with the requirements of the Alameda County Environmental Health Care Services and the California Regional Water Quality Control Board for the Third Quarter 2005 groundwater monitoring event.

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



Whomedo County

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1.0 INTRODUCTION

This report has been prepared by SOMA Environmental Engineering, Inc., (SOMA) on behalf of Mr. Aris Krimetz, for Wente Winery, which is located at 5565 Tesla Road, Livermore, California. Figure 1 shows the location of the Site.

This report summarizes the results of the Third Quarter 2005 groundwater monitoring event conducted at the Site on September 13, 2005. Included in this report are the results of the laboratory analysis on the groundwater samples, which were analyzed for:

- Total petroleum hydrocarbons as gasoline (TPH-g),
- Total petroleum hydrocarbons as diesel (TPH-d),
- Total petroleum hydrocarbons as motor oil (TPH-mo),
- Benzene, toluene, ethylbenzene, and total xylenes (collectively referred to as BTEX),
- Methyl tertiary Butyl Ether (MtBE),
- Gasoline oxygenates, which included tertiary Butyl Alcohol (TBA), Diisopropyl Ether (DIPE), Ethyl tertiary Butyl Ether (ETBE), and Methyl tertiary Amyl Ether (TAME),
- Lead scavengers, which included 1,2-Dichloroethane (1,2-DCA) and 1,2-Dibromoethane (EDB),
- Volatile organic compounds (VOCs), such as tetrachloroethene (PCE), trichloroethane (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), vinyl chloride, 1,2-dichloropropane and 1,1-dichloroethene, using EPA Method 8260B, and
- Metals, which included cadmium, chromium, lead, nickel, and zinc.

These activities were performed in accordance with the general guidelines of the California Regional Water Quality Control Board (CRWQCB) and the Alameda County Environmental Health Services Department. Appendix A details the groundwater monitoring procedures implemented during the Third Quarter 2005 groundwater monitoring event.

1.1 Site Description

The developed portion of the Site consists of approximately thirty buildings constructed between the 1920s and 1980s, with an on-site septic system. West of the winery buildings is an enclosed maintenance and agricultural storage area with a former UST pit that contained one gasoline and one diesel UST.

The USTs were replaced with three aboveground storage tanks (ASTs), with a total capacity of 4,000 gallons; the ASTs are reportedly located in the same area of the former USTs. Although California Water Service Company provides potable water to the Site, an on-site potable water supply well provides backup potable

drinking water and process water for the winery facility. This water supply well is located south of and presumably upgradient from the former USTs area.

1.2 Previous Activities and Investigations

In 1987, two fuel USTs were removed from the Site without agency oversight. Without available records of the tank removal, there is no information regarding the condition of the tank or evidence of leakage.

In 1990, the ACHCS issued a notice of violation (NOV) for discharging waste sludge to an open ditch adjacent to a former steam-cleaning bay, which is at the south end of the steel storage and welding shed.

Clayton Environmental Consultants (Clayton) conducted a Phase I Environmental Site Assessment of the maintenance and storage areas. The Phase I study revealed the existence of the former USTs, former waste discharge area, and a number of agricultural storage areas.

In 2003, Clayton performed a subsurface investigation at the Site to implement the recommendations of the Phase I report. As shown in Figure 2, boreholes were advanced near the ASTs and near other RECs. Soil samples were analyzed for pesticides, herbicides, petroleum hydrocarbons, volatile organic compounds (VOCs), and heavy metals. Groundwater samples collected from beneath the former USTs and former steam cleaning areas were analyzed for petroleum hydrocarbons, VOCs, pesticides and herbicides.

Clayton concluded that a fuel release in the former UST area impacted the groundwater at concentrations that significantly exceeded Risk Based Screening Levels (RBSLs). In the former steam-cleaning bay, which is located south/southwest of, and presumably upgradient from the former UST pit, no total petroleum hydrocarbon (TPH) or VOCs were detected in the soil. However, gasoline and motor oil-range petroleum hydrocarbons were detected in the groundwater at concentrations that were slightly above RBSLs. Other borehole samples contained constituents of concern below RBSLs. Figure 2 illustrates the locations of the soil borings drilled by Clayton.

Wente then retained SOMA to review the Clayton report and provide an alternate workplan. SOMA's workplan included a vicinity well survey, a regional hydrogeologic study, and an additional site characterization. The site characterization included sampling and evaluating the water quality of the on-site water supply well, installing monitoring wells, additional lithologic characterization to better define the shallow/perched water-bearing zone.

On May 5, 2005, SOMA oversaw Woodward Drilling (Woodward) install three monitoring wells, MW-1 through MW-3, as shown in Figure 2. On May 20, 2005, Woodward developed the newly installed wells.

On June 24, 2005, SOMA oversaw Woodward drill two confirmatory boreholes (B-9 and B-10). The purpose of this investigation was to confirm the presence of petroleum hydrocarbons in the soil and groundwater next to the former USTs and to evaluate the current soil and groundwater conditions in close proximity to the former steam cleaning area. The results of this investigation are presented in SOMA's report entitled, "Phase I: Soil and Groundwater Investigation, Wente Winery, at 5565 Tesla Road, Livermore, California," dated July 25, 2005.

1.3 Regional Hydrogeologic Features

The subject site is located in the Livermore Valley Groundwater Basin (LVGB). The LVGB basin consists of a structural trough that is an important source of irrigation water for the Livermore Valley. The LVGB comprises water-bearing formations derived from alluvial fans, outwash plains and lakes that belong to the valley-fill Livermore and Tassajara Formations.

In the western part of the basin up to 40 feet of clay caps these water-bearing sediments. In the vicinity of the subject site, DWR maps the valley-fill with a thickness of approximately 20 to 30 feet and describes this water-bearing zone as a permeable unit consisting of sand and gravel in a clayey sand matrix. The DWR delineated the potentiometric surface of valley-fill groundwater near the Site at approximately 20 to 30 feet below ground surface (bgs).

Based on the regional hydrogeologic study, groundwater flow in the valley-fill and underlying Livermore Formations is to the northwest/north. The nearby water supply wells west of and presumably downgradient from the Site are potentially exposed to the on-site contaminant plume.

There is one on-site well and five wells in the properties immediately west of and presumably downgradient from the Site. North/northeast of and presumably up/cross gradient from the subject site there are seven wells within 2,000 feet of the investigation area. Approximately 1,800 feet south of the Site there is another water supply well. Available records indicate that six of the seven wells located north/northeast of and within 2,000 feet of the Site may be used as drinking water wells.

2.0 Results

The following sections provide the results of the field measurements and laboratory analyses for the September 13, 2005 groundwater monitoring event.

2.1 Field Measurements

Table 1 presents the depths to groundwater, as well as the corresponding groundwater elevations for the monitoring wells. As shown in Table 1, the depths to groundwater ranged from 9.19 feet in well MW-1 to 9.61 feet in well MW-3. The corresponding groundwater elevations ranged from 605.97 feet in well MW-1 to 607.71 feet in well MW-3.

The groundwater elevation contour map is displayed in Figure 3. As shown in Figure 3, groundwater flows north to northwesterly across the Site, at a gradient of approximately 0.009 feet/feet. This flow direction is consistent with the groundwater flow direction detected after the well development activities on May 20, 2005.

Naturally occurring biological processes can enhance the removal rate of contaminants in the subsurface. During the degradation processes, indigenous bacteria that exist in the subsurface utilize the energy released from the transfer of electrons to drive the redox reactions that remove organic mass from contaminated groundwater. The more positive the redox potential of an electron acceptor, the more energetically favorable is the reaction utilizing that electron acceptor. Based on thermodynamic considerations, the most energetically preferred electron acceptor for redox reactions is dissolved oxygen (DO), followed by nitrate, manganese, ferric iron, sulfate, and carbon dioxide, in descending order of preference. Evaluating the distribution of these electron acceptors can provide evidence of where and to what extent hydrocarbon biodegradation is occurring.

In general, all of the DO concentrations were below the solubility standard of O_2 in the groundwater. The groundwater temperature during this monitoring event ranged from 20.20°C in well MW-1 to 22.72°C in well MW-3. The solubility standard for DO in groundwater at 23°C, at an atmospheric pressure of 760 mm/Hg, is approximately 8.6 mg/L. DO concentrations ranged from 7.05 mg/L in well MW-3 to 7.30 mg/L in well MW-1.

ORP showed positive redox potentials in all of the wells. As previously noted, positive redox potentials are more energetically favorable in utilizing electron acceptors during chemical reactions. This promotes the removal of organic mass from the contaminated groundwater by indigenous bacteria in the subsurface during the release of the transfer of electrons.

The field measurements taken during the Third Quarter 2005 monitoring event are shown in Appendix B.

2.2 Laboratory Analysis

The historical TPH-g, TPH-d, TPH-mo, BTEX, and MtBE groundwater analytical results are shown in Table 1.

As shown in Table 1, all TPH-g, TPH-mo, BTEX, and MtBE constituents were below the laboratory reporting limit throughout the Site. TPH-d was below the laboratory reporting limit in wells MW-1 and MW-2 and detected at 300 ug/L in well MW-3. However, the TPH-d sample result did not resemble the standard diesel pattern. The laboratory designated this variation in the analytical testing by using a "Y" flag. The laboratory report is presented in Appendix C and provides further clarification.

Table 2 shows the analytical results for gasoline oxygenates and lead scavengers. As shown in Table 2, all gasoline oxygenates and lead scavengers were below the laboratory reporting limit in all of the groundwater samples.

Table 3 shows the historical concentrations of VOCs in the groundwater. Tetrachloroethene, 1,1,1-Trichloroethane, Cis-1,2-dichloroethene, Trans-1,2-dichloroethene, vinyl chloride, 1,2-Dichloropropane, and 1,1-Dichloroethene were all below the laboratory reporting limit in all of the samples.

Table 4 shows the historical concentrations of metals in the groundwater. Cadmium, chromium, lead, and nickel were all below the laboratory reporting limit in all of the samples collected from the wells. Zinc was below the laboratory reporting limit in well MW-3. Zinc was detected in wells MW-1 and MW-2 at 27 ug/L and 23 ug/L, respectively.

Appendix C includes the laboratory report and COC form for the Third Quarter 2005 groundwater monitoring event.

3.0 Conclusions and Recommendations

The results of the Third Quarter 2005 groundwater monitoring event can be summarized as follows:

- The groundwater flow direction appears to be north to northwesterly across the Site, at a gradient of 0.009 feet/feet. The groundwater flow direction is consistent with the measurements taken after well development on May 20, 2005. However, further monitoring events will aid in determining a more detailed groundwater flow direction and gradient.
- Based on the results of the bio-attenuation study, indigenous bacteria
 have effectively removed organic mass from any impacted groundwater
 in the subsurface during the release of the transfer of electrons. This is
 evident by the high DO levels and positive redox potentials observed
 throughout the Site.
- The only compounds detected were carbon bisulfide (0.68 ug/L in well MW-1), chloroform (0.83 ug/L in well MW-2), TPH-d (300 ug/L in well

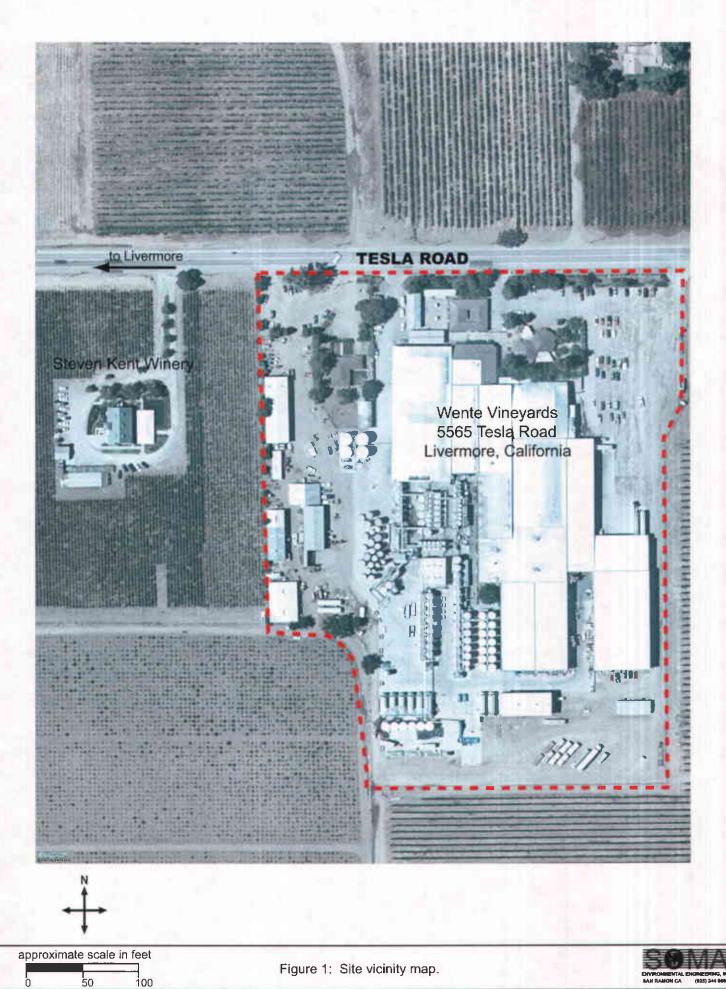
MW-3), and zinc (27 ug/L in well MW-1 and 23 ug/L in MW-2). Therefore, in general, with the exception of these mentioned compounds, non-detectable levels of all tested constituents were observed throughout the Site.

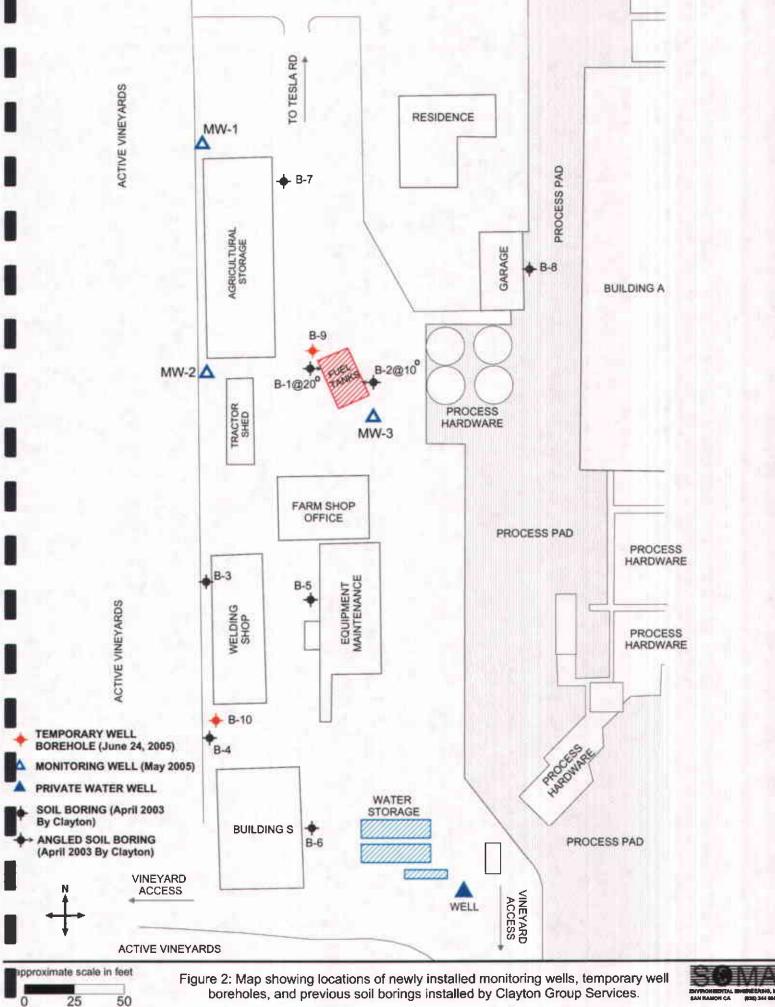
 In general, the analytical results during the Third Quarter 2005 monitoring event are similar to the low and/or non-detectable levels observed during the sampling event on May 20, 2005.

Based on the results of the Third Quarter 2005 monitoring event, SOMA recommends the following action items:

- 1. Continuing the quarterly monitoring events to further understand the seasonal variations in the groundwater quality conditions.
- A CPT/MIP investigation should be conducted around the former USTs and steam clean area to evaluate the hydrogeologic conditions and vertical extent of petroleum hydrocarbons around the former USTs.

FIGURES

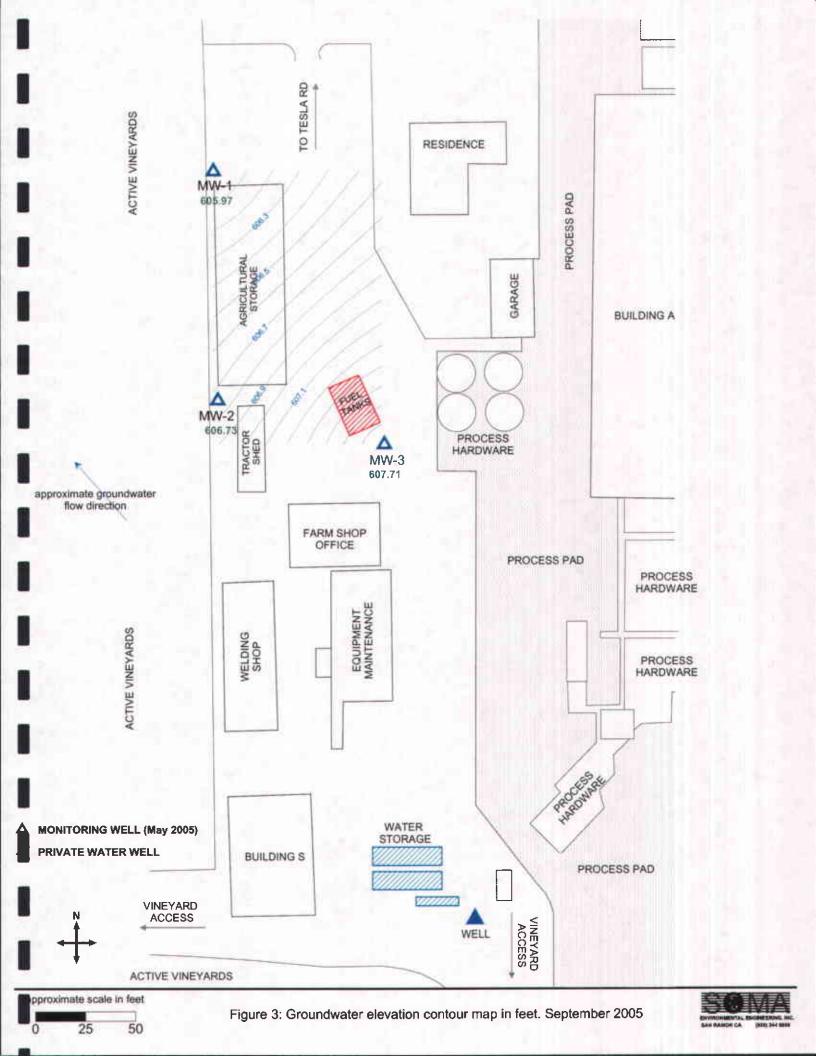




boreholes, and previous soil borings installed by Clayton Group Services.

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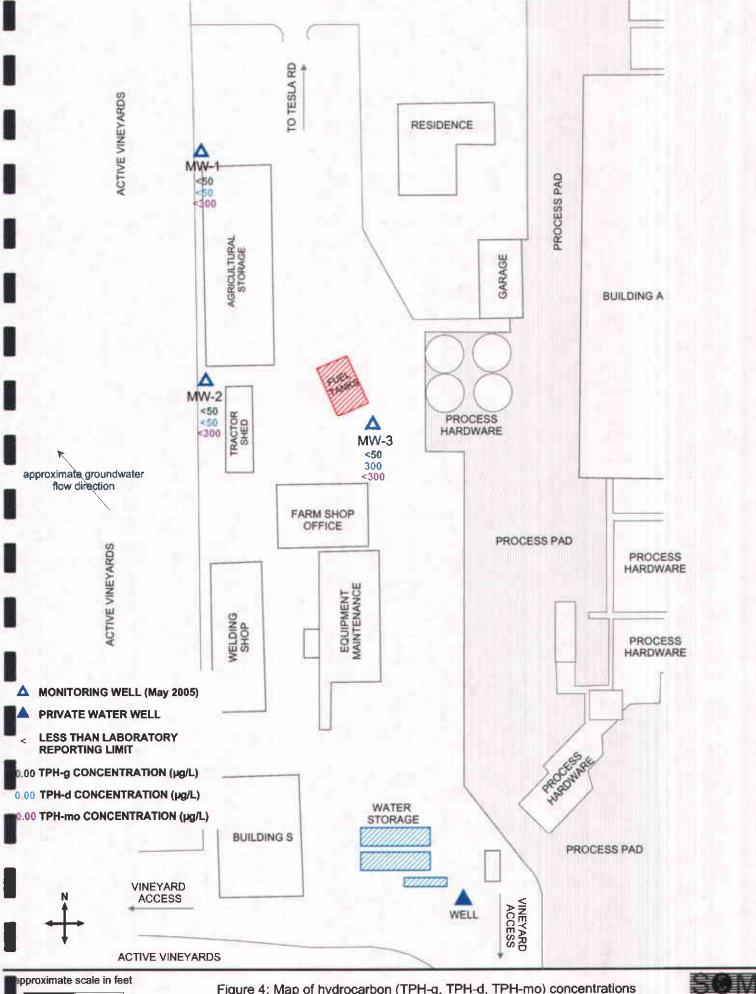
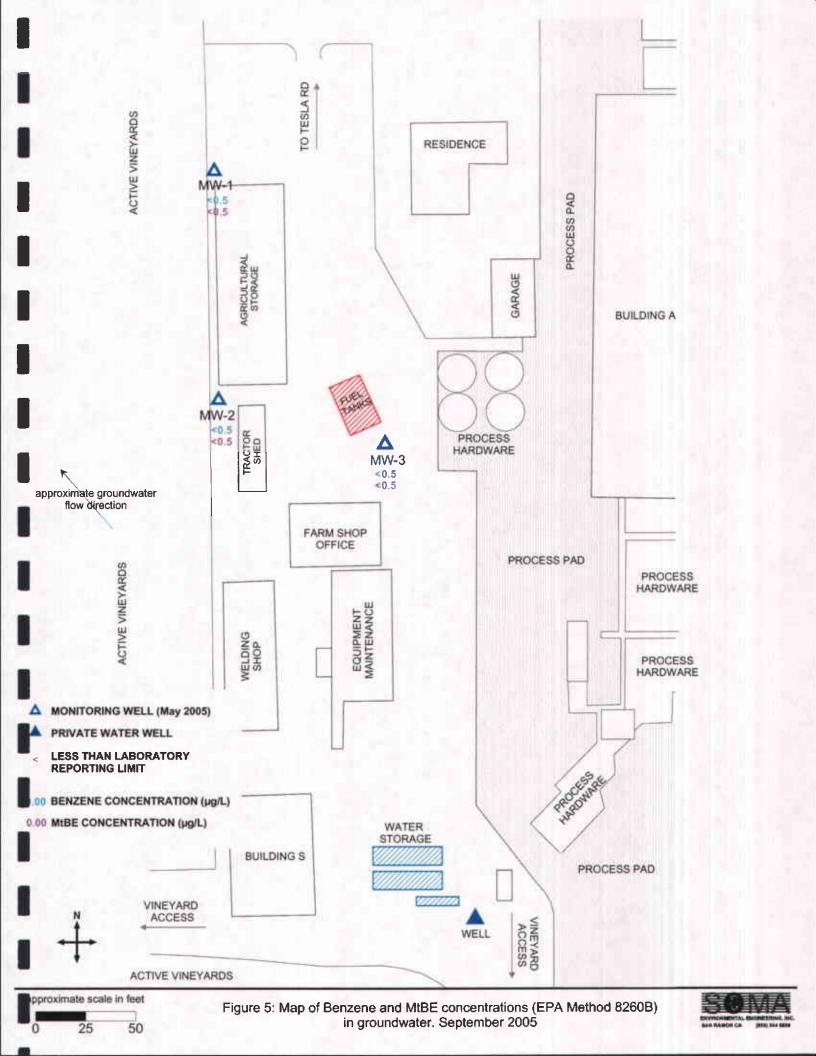


Figure 4: Map of hydrocarbon (TPH-g, TPH-d, TPH-mo) concentrations in groundwater. September 2005

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TABLES

Table 1

Historical Groundwater Elevation Data & Analytical Results Hydrocarbons, BTEX, & MtBE Wente Vineyards

5565 Tesla Road, Livermore, California

Monitoring Well	Date	Top of Casing (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (μg/L)	TPH-d (μg/L)	TPH-mo (μg/L)	Benzene (μg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (μg/L)	MtBE (μg/L)
MW-1	May-05	615.16	6.10	609.06	<200	<50	320 YZ	<0.5	<0.5	<0.5	<1.0	<0.5
	Sep-05	615.16	9.19	605.97	<50	<50	<300	< 0.5	<2.0	<0.5	<1.0	<0.5
die de die	A PERE SHOP	Carles In Section	Harry Charles	A CONTRACTOR		2.62			e ve re been a		100	
MW-2	May-05	616.03	6.69	609.34	<200	<50	<300	<0.5	<0.5	<0.5	<1.0	<0.5
	Sep-05	616.03	9.30	606.73	<50	<50	<300	<0.5	<2.0	<0.5	<1.0	<0.5
第 2000年		Turke a	是主義學和於法律		A STATE OF THE STA			Salar Va	Water Walan	ine L	i a water to sat	
MW-3	May-05	617.32	7.04	610.28	<200	680	<300	<0.5	1.58	<0.5	<1.0	<0.5
	Sep-05	617.32	9.61	607.71	<50	300 Y	<300	<0.5	<2.0	<0.5	<1.0	<0.5
		44/X - 4-34	ar Marie to the on	Contract of the second			Address of the	Market II	de la terre.	eagailtí.	war . 3	*
B-9	Jun-05	NA	NA	NA	1,850,000	540,000 LY	<24,000	3,820	114,000	40,400	177,700	<462
art Barbara	5000.00	A Charles	a Project State of	- 1848 THE ST	2 4 4 4 4 4 4		100 m	MP455.27			2 - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 1	A SERVICE
B-10	Jun-05	NA	NA	NA	<200	<50	<300	<0.5	4.23	1.10	4.03	<0.5
\$2.50 St. 75.23	A A SAMPLEA		Commence of the Commence of th		COMP.			Americal Au	and special con-			
Onsite Well	May-05	NS	NM	NC	<200	<50	<300	<0.5	0.85	<0.5	<1.0	<0.5

The wells were installed on May 5, 2005 and developed by Woodward Drilling on May 20, 2005.

A grab sample was collected after the well development on May 20, 2005.

A grab sample was also collected from the water well, southeast of the water stoarge units on May 20, 2005.

The wells were surveyed by Harrington Surveys of Walnut Creek, CA on June 5, 2005.

A grab sample was collected from the borings on June 24, 2005.

The groundwater elevation for the May 2005 sampling was based on the survey data of Harrington Surveys.

Not Applicable, B-9 and B-10 are boring locations and are not surveyed. NA:

NC: Not calculated. NM: Not Measured

NS: Not surveyed. The onsite well is a private well.

TPH-d: Total hydrocarbons as diesel TPH-g: Total hydrocarbons as gasoline TPH-mo:Total hydrocarbons as motor oil

Lighter weight hydrocarbons contributed to the quanitation

Sample exhibits chromatographic pattern which does not resemble standard Y:

Z: Sample exhibits unknown single peaks or peaks. Not Detected above the laboratory reporting limit.

Table 2 Historical Groundwater Analytical Results Gasoline Oxygenates & Lead Scavengers Wente Vineyards

5565 Tesla Road, Livermore, California

Monitor i ng Well	Date	TBA (μg/L)	DIPE (μg/L)	ETBE (μg/L)	TAME (μg/L)	1,2-DCA (μg/L)	EDB (μg/L)
MW-1	Sep-05	<2.5	<0.5	<0.5	<2.0	<0.5	<2.0
)			
MW-2	Sep-05	<2.5	<0.5	<0.5	<2.0	<0.5	<2.0
	A TOTAL STATE OF THE STATE OF T	(1) (3) (4) (4)		9 m	14 PM 1		
MW-3	Sep-05	<2.5	<0.5	<0.5	<2.0	<0.5	<2.0

Notes:

A grab sample was collected after well development on May 20, 2005. However, the first time gasoline oxygenates were analyzed was during the Third Quarter 2005 monitoring event.

<: Not Detected above the laboratory reporting limit.

Gasoline Oxygenates:

TBA: tertiary Butyl Alcohol DIPE: Di-Isopropyl Ether ETBE: Ethyl tertiary Butyl Ether TAME: Methyl tertiary Amyl Ether Lead Scavengers:

EDB: 1,2-Dibromoethane 1,2-DCA: 1,2-Dichloroethane

Table 3

Historical Analytical Results For Volatile Organic Compound **Analyses in Groundwater Samples**

Wente Vineyards

5565 Tesla Road, Livermore, California

Monitoring Well	Date	PCE (μg/L)	TCE (μg/L)	cis-1,2-DCE (μg/L)	trans-1,2-DCE (μg/L)	Vinyl Chloride (μg/L)	1,2-DCP (μg/L)	1,1-DCE (μg/L)
MW-1	Sep-05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	s said and the sai					ang again ang kanang dan sa		
MW-2	Sep-05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
						A CONTRACTOR OF THE STATE OF TH		The second se
MW-3	Sep-05	<0.5	<0.5	· <0.5	<0.5	<0.5	<0.5	<0.5

Notes:

A grab sample was collected after well development on May 20, 2005. However, the first time volatile organic compounds were analyzed was during the Third Quarter 2005 monitoring event. <: Not detected above the laboratory reporting limit.

Volatile organic compounds (VOCs)

PCE:

tetrachloroethene

TCE:

1,1,1-trichloroethane

cis-1,2-DCE: cis-1,2-dichloroethene

trans-1,2-DCE: trans-1,2-dichloroethene

vinyl chloride

1,2-DCP:

1,2-dichloropropane

1,1-DCE:

1,1-dichloroethene

Table 4 Historical Groundwater Analytical Results Metals

Wente Vineyards 5565 Tesla Road, Livermore, California

Monitoring Well	Date	Cadmium (μg/L)	Chromium (μg/L)	Lead (μg/L)	Nickel (μg/L)	Zinc (μg/L)
MW-1	Sep-05	<5.0	<10	<3.0	<20	27
a de la contrata de la	and the second	March Striket Spanish	are contribution the			
MW-2	Sep-05	<5.0	<10	<3.0	<20	23
	1	1.0		1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1	Section 1	
MW-3	Sep-05	<5.0	<10	<3.0	<20	<20
	Managana Grand		and the second second second			
B-10	Jun-05	12	930	82	3,600	800

Notes:

Metals were tested at boring B-10 on June 24, 2005.

Due to the results from B-10, the Alameda County Environmental Health Services requested that SOMA further analyze the wells for metals in a letter dated Sept. 19, 2005. SOMA collected grab samples from the wells on September 29, 2005.

<: Not Detected above the laboratory reporting limit.

Appendix A

SOMA's Groundwater Monitoring Procedures

Field Activities

On September 13, 2005, SOMA's field crew conducted a groundwater monitoring event in accordance with the procedures and guidelines of the CRWQCB and the ACEHCS. During this groundwater monitoring event a total of three wells (MW-1 to MW-3) were monitored; see Figure 2 for the locations of the wells.

The depth to groundwater in each monitoring well was measured from the top of the casing to the nearest 0.01 foot using an electric sounder. Harrington Surveys Inc., of Walnut Creek, surveyed the Site on June 3, 2005. The survey datum was based on an elevation of 566.57 NAVD 88. Top of casing elevation data and the depth to groundwater in each monitoring well was used to calculate the groundwater elevation.

The survey data is included in Appendix B for the monitoring wells. The survey was conducted to comply with EDF requests for electronic reporting of data to the State Water Resources Control Board (SWRCB) Database.

Prior to collecting samples, each well was purged using a battery operated 2-inch diameter pump (Model ES-60 DC). During the purging activities, in order to obtain accurate measurements of groundwater parameters and especially to avoid the intrusion of oxygen from ambient air into the groundwater samples, field measurements were conducted in-situ (i.e., down-hole inside each monitoring well). The groundwater parameters such as DO, pH, temperature, EC, turbidity, and the ORP were measured in-situ using a Horiba, Model U-22 multi-parameter instrument. The equipment was calibrated at the Site using standard solutions and procedures provided by the manufacturer.

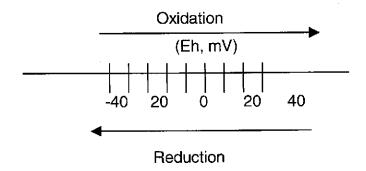
The pH of groundwater has an effect on the activity of microbial populations in the groundwater. The groundwater temperature affects the metabolic activity of bacteria. The groundwater conductivity (EC) is directly related to the concentration of ions in solution.

There is a strong correlation between the turbidity level and the biological oxygen demand of natural water bodies. The main purpose for checking the turbidity level is to provide a general overview of the extent of the suspended solids in the groundwater.

ORP (oxidation reduction potential) is the measure of the potential for an oxidation or reduction process to occur. In the oxidation process a molecule or ion loses one or several electrons. In the reduction process a molecule or ion gains one or several electrons. The unit of the redox potential is the Volt or m-Volt. The most important redox reaction in petroleum contaminated groundwater is the oxidation of petroleum hydrocarbons in the presence of bacteria and free molecular oxygen. Because the solubility of O_2 in water is low (9 mg/L at 25 °C and 11 mg/L at 5 °C), and because the rate of O_2 replenishment in subsurface environments is limited,

DO can be entirely consumed, when the oxidation of only a small amount of petroleum hydrocarbons occurs.

Oxidation of petroleum hydrocarbons can still occur, when all the dissolved O_2 in the groundwater is consumed, however, the oxidizing agents (i.e., the constituents that undergo reduction) now become NO_3 , MnO_2 , Fe $(OH)_3$, SO_4^{2-} and others (Freeze and Cherry, 1979). As these oxidizing agents are consumed, the groundwater environment becomes more and more reduced. If the process proceeds far enough, the environment may become so strongly reduced that the petroleum hydrocarbons may undergo anaerobic degradation, resulting in the production of methane and carbon dioxide. The concept of oxidation and reduction in terms of changes in oxidation states is illustrated below.



The purging of the wells continued until the parameters for DO, pH, temperature, EC, turbidity, and redox stabilized or three casing volumes were purged. A disposable polyethylene bailer was used to collect sufficient samples from each well for laboratory analyses.

The groundwater sample was transferred to four 40-mL VOA vials and preserved with hydrochloric acid. The vials were then sealed to prevent the development of air bubbles within the headspace. The groundwater sample was also transferred into a one-liter non-preserved amber glass container. All groundwater samples were placed in an ice chest along with a chain of custody (COC) form. On September 13, 2005, SOMA's field crew delivered the samples to Pacific Analytical Laboratory (PAL) in Alameda, California.

Based on the directive of the Alameda County Environmental Health Care Services in letter to SOMA on September 19, 2005, metals were to be analyzed. SOMA on September 29, 2005, collected grab samples from each well and tested the sample for metals.

Laboratory Analysis

The groundwater samples were analyzed for TPH-g, TPH-d, TPH-mo, BTEX, MtBE, gasoline oxygenates, lead scavengers, volatile organic compounds, and metals. Pacific Analytical Laboratory, a state certified laboratory, analyzed the samples for TPH-g, BTEX, MtBE, gasoline oxygenates, and lead scavengers. EPA

Method 5030B was used to prepare the samples for measurements, and all constituents were analyzed using Method 8260B.

Samples for TPH-d, TPH-mo, and metals were subcontracted through Curtis and Tompkins, Ltd in Berkeley, CA. TPH-d and TPH-mo measurements were prepared using EPA Method 3520C and analyzed using EPA Method 8015B. EPA Clean-up Method 3630C was used to further determine the accuracy of the TPH-d and TPH-mo results.

Metal measurements were prepared using EPA Method 3010A and analyzed using EPA Method 6010B.

Appendix B

Table of Elevations & Coordinates on Monitoring Wells
Measured by Harrington Surveys, Inc.,

and

Field Measurements of Physical, Chemical, & Biodegradation

Parameters of the Groundwater Samples

at Time of Sampling

Harrington Surveys Inc.

Land Surveying & Mapping

2278 Larkey Lane, Walnut Creek, Ca. 94597 Phone (925)935-7228 Fex (925)935-5118 Cell (925)788-7359 E-Mail (ben5132@pacbell.net)

SOMA ENVIRONMENTAL ENGINEERING 2680 BISHOP DR. # 203 SAN RAMON, CA. 94583 JUNE 05, 2005

ATTN: ELENA

5565 TESLA ROAD, LIVERMORE CA.

SURVEY REPORT

CONTROLING POINTS FOR SURVEY:

CALIFORNIA HPGN MONUMENT 04 FL, CALIFORNIA COORDINATE SYSTEM, ZONE 3. NAD 83. NORTH 2,085,087.52 - EAST 6,213,127.18, LAT. N37*42*56.31172" W121*42*18.00018". ELEVATION 566.57, NAVD 88.

CALIFORNIA HPGN MONUMENT 04 FK, CALIFORNIA COORDINATE SYSTEM, ZONE 3. NORTH 2,055,842,44 - EAST 6,189,298.07, LAT N37"38"02.07933", W121"47"09.51080" ELEVATION 637,80NAVD 88.

INSTRUMENTATION:

TRIMBLE GPS, MODEL 5800 AND LEICA TCA 1800, 1" HORZ. & VERT. DESERVATION: EPOCH = 180.

MELD SURVEY: JUNE 03, 2005.

BEN HARRINGTON PLS 5132



9259355118

MONITORING WELLS 6665 TESLA RO.

HARRINGTON SURVEYS INC. 2278 LARKEY LANE, WALNUT CREEK CA.

IVERI	IORE, CA.			92	5-035-7228	
	NORTH	EAST	ELEV.	LATITUDE	LONGITUDE	
1	2085287.52	6213127.18	566.57	37642'56.31176'N	121a4218.00017W	FD. 04 FL HPGN
2	2085287.52	6213127.18	566.57	37@42'56.31175'N	12104218.00016"VV	FD. 04 FL HPGN
10	2068759.37	6208469.09	615.16	37ø39'52.28484"N	121ø43'37.83506'W	MW-1 V N. PVC
11	2066759.71	8206469.01	615.52	37e39'52.28825'N	121ø43'37.83609"W	MW-1 PUNCH N RIM
12	2065753.85	6206471.51	615.55	37e39'52.23057'N	121e43'37.80414"W	BLG COR
13	2066753.67	5206512.16	815.58	37#39'52.23412'N	121043'37.29847'W	BLG COR
14	2066628.15	5208469.65	616.03	37ø39'50.98763'N	121a43'37.80672'W	MW-2 V N. PVC
15	2086628.55	6208469.61	616.38	37¢39'50.99158'N	121ø43 37.80724 W	MW-2 PUNCH N. RIM
16	2066632.94	6206516.64	616.48	37e39'51.04109'N	121s43'37.22314"W	5.0 E BLG COR
17	2066600.85	6206566,19	817.32	37a39'50.73030'N	121#43'36.80162'W	MW-3 V N. PVC
18	2068801 16	6206666.10	617,54	37¢39'50.73332'N	121ø43'36.60286'W	MW-3 PUNCH N. RIM
19	2066610.25	5208564.10	617.64	37#39 50.82300 N	121e43'36.62917"W	FC COR
20	2055604.40	6206549.81	617.66	37¢39'50.76325'N	121#43'36.80598'W	FC COR
21	2066629.00	6206539.65	617.75	37£39'51.00516'N	121@43'36.93629"W	FC COR
22	2066634.86	6206554.19	617.86	37¢39'51.06493'N	121@43'36.75645"W	FC COR
3	2080138.47	6208815.78	552.46	37e42'04.85555'N	121ø43'10.81967'W	FD. Z 927
4	2080138.48	6208815.77	552,45	37g42'04.85568"N	121ø43'10.81976'W	FD. Z 927
5	2055842.44	6189298.07	637.79	37#38'02.07930'N	121g47'09.51084"W	FD. 4 FK HPGN
6	2055842 43	6189296.07	637.82	37e38'02 07924"N	121ø47'09.51088"W	FD. 4 FK HPGN
7	2066813.56	6209642.08	615.00	37#39'52.83104"N	121e43'36.93627"W	SET RB\GATE
8	2066813.64	6203542.08	514.98	37ø3952.83084"N	121ø43'36.93516'W	SET RBIGATE
9	2066808.93	6205470.38	815.04	37ø39'52.75518''N	121e43'37.82678'W	SET 6.D NW YARD
23	2066906.93	6208470.38	615.07	37e3952.75523°N	121g43'37.82680"W	SET 6.D NW YARD
						THE RESERVE OF THE PARTY OF THE
						(897)XX
_	-	-		-		
						10000
		1				De consider
	ekneman.					

JOB#2528 6-05-05



MWI

Casing Diameter:		inch			Address:	Wente Vineyards
Depth of Well:	15.0	⊃∂ ft				5565 Tesla Rd, Livermore
Top of Casing Elevation:	615.	16.ft			Date:	9/13/05
Depth to Groundwater:	9.	19 ft			Sampler:	John Lohman
Groundwater Elevation:	605	-97tt				
Water Column Height:	5.5	<u>ಕ)</u> ft				
Purged Volume:	9	gallons				
						2
Purging Method:	Baile	er 🗆			Pump 🗵	•
Sampling Method:	Baile	er 🅦			Pump	
Color:	No	<u> </u>	Yes		Describe	
		_	.,	_		
Sheen:	No	Z	Yes		Describe	
Odor:	No	78 F	Yes		Describe	

Project No.: 2841

Field Measurements:

Well No.:

Time	Volume	D.O.	pН	Temp	E.C.	Turb.	ORP
	(gallons)	mg/L		°C	(μS/cm)	NTU	
12:05 PM	STE	RT	PUR	26E			
12:08 PM	2	8.93	8.35	20.21	1758	999	134
12:11 PM	4	8.17	7.94	20.22	1740	461	141
12:15 PM	7	7.47	7.46	20.20	1740	394	145
12:19 Pm	19	7.30	7.31	20.20	1740	389	145
12:21 PM	SAV	NPL	ES				

Notes: Silty, then clear



Well No.:	MWZ	Project No.:	2841
Casing Diameter:	Z inch	Address:	Wente Vineyards
Depth of Well:	14.90 ft		5565 Tesla Rd, Livermore
Top of Casing Elevation:	616.03 ft	Date:	9/13/05
Depth to Groundwater:	9.30 ft	Sampler:	John Lohman
Groundwater Elevation:	606.73 H	•	
Water Column Height:	5.60 ft		
Purged Volume:	gallons		
Purging Method:	Bailer □	Pump 🎏	
Sampling Method:	Bailer ☎	Pump □	
Color:	No E	Yes □ Describe	
Color.	No 🎏	Tes Describe	
Sheen:	No ⊠⊏	Yes 🗆 Describe	
Odor:	No 5k	Yes □ Describe	
Outi.	No 5	Tes L Describe	

Field Measurements:

Time	Volume	D.O.	рΗ	Temp	E.C.	Turb.	ORP
	(gallons)	mg/L		°C	(μS/cm)	NTU	
12:48 Pm	STF	PRT	PU	RGE			
12:51 PM	2	6.38	7.33	21.09	964	675	147
12:53 PM	14	5.67	7.13	20.97	1290	999	142
12:58 PM	6,	6.94	7.06	21.07	1210	999	141
1. OZ PM	8	7.19	7.03	20.93	1210	999	141
1:05 Pm	SA	nrf	ルビ	5		-	

Notes:



MW3 Well No.: Project No.: 2841 Casing Diameter: inch 13.40 ft Depth of Well: 617.32 ft Top of Casing Elevation: Depth to Groundwater: Groundwater Elevation: 07.71 ft Water Column Height: 10 Purged Volume: gallons

Bailer

Bailer 5

No

No

No

	Pump 🗷		
	Pump 🗆		
Yes	Describe		
Yes	Describe		

Address: Wente Vineyards

Date: 9/13/05

Sampler: John Lohman

5565 Tesla Rd, Livermore

Field Measurements:

Purging Method:

Sampling Method:

Color:

Sheen:

Odor:

Time	Volume	D.O.	pН	Temp	E.C.	Turb.	ORP
	(galions)	mg/L		°C	(µS/cm)	NTU	
1:38 Pm	STA	RT	PURC	E			
1:40 PM	2	9.69	7.04	22.86	1740	999	140
1:42 PM	4	8.63	6.97	22.79	1740	999	141
1:44 PM	6	7.93	6.93	27.74	1740	999	142
1:46 PM	8	7.47	6.92	22.72	1740	999	142
1:48 PM	10	7.05	6.90	22.72	1740	799	142
1:50 pm	50	my	KE5				

Yes

□ Describe

Notes:

Appendix C

Laboratory Report and Chain of Custody Form for the

Third Quarter 2005 Monitoring Event



Pacific Analytical Laboratory Suite 201

Phone (518) 864-0364

27 September 2005

Mansour Sepehr SOMA Environmental Engineering Inc. 6620 Owens Drive, Suite A Pleasanton, CA 94588

RE: 5565 Tesla Rd, Livermore

Work Order Number: 5090004

Mayod Akham

This Laboratory report has been reviewed for technical correctness and completeness. This entire report was reviewed and approved by the Laboratory Director or the Director's designee, as verified by the following signature.

Sincerely,

Maiid Akhavan

Laboratory Director

CHAIN OF CUSTODY

Page 1 of 1

DATE/TIME

		ZI INVIII	10		IIIA.	0	90101	-	•										277	-		
Pacific Analytical Laboratory 851 W Midway Ave. Suite 201B Alameda, CA 94501			PAL L	PAL LOGIN # 5010004								Analyses										
(510)864-0364 Phone (510)864-0365 Fax			Sampler: John Lohman																			
Project No: 2841			Report To: Tony Perini								1											
Project Name: 5565 Tesla Road, Livermore			Company: SOMA Environmental									80										
Turnaround Time: Standard			Telephone: 925-244-6600								85408			10			19					
			Fax:	Fax: 925-244-6601								×	om-									
			Matrix			rix	Prese			servative			BTEX	TPH-mo	157			8				
Lab No. Sample ID. Sampling		Soll Soll Water Waste		Waste	# of Containers	HCF	H ₂ SO ₄	HNO	ICE	X None	TPHg, I	TPH-4	2-6496									
	MW-1	Committee of the State of the S	IPM		X		4 VOA + 1L	X			Х	USBOARS -	X	X	x						П	
	MW-2	Annual Control of the	SPM		Х		4 VOA + 1L	X			X	X	X	X			-					
	MW-3	9/13/05 \\	SOPM		X		4 VOA + 1L	X			X	X	X	X	×							
				1																		
				ļ																		
-		1500		+	+				-	t				100				100				
-		7884	No.	1																		
Notes: EDF OUTPUT REQUIRED Silica Gel Cleanup Method			R	RELINQUISHED BY:							RECEIVED BY:											
				9/13/05 DATE/TIM							Januar Zennyu a/13/BATE/TI						N	9/13	1851 BAT	P/M E/TIM		
			10														E/TIM					
				-	/ The south manager and the south																	



SOMA Environmental Engineering Inc.

6620 Owens Drive, Suite A

Pleasanton CA, 94588

Project: 5565 Tesla Rd, Livermore

Project Number: 2841

Project Manager: Mansour Sepehr

Reported: 27-Sep-05 11:36

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received		
MW-1	5090004-01	Water	13-Sep-05 12:21	13-Sep-05 15:56		
MW-2	5090004-02	Water	13-Sep-05 13:05	13-Sep-05 15:56		
MW-3	5090004-03	Water	13-Sep-05 13:50	13-Sep-05 15:56		



SOMA Environmental Engineering Inc.

Project: 5565 Tesla Rd, Livermore

6620 Owens Drive, Suite A

Pleasanton CA, 94588

Project Number: 2841

Project Manager: Mansour Sepehr

Reported: 27-Sep-05 11:36

Volatile Organic Compounds by EPA Method 8260B

Pacific Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note				
MW-1 (5090004-01) Water Sampled: 13-Sep-05 12;21 Received: 13-Sep-05 15:56													
1,1,1,2-Tetrachloroethane	ND	2.00	ug/l	1	BI52701	13-Sep-05	26-Sep-05	EPA 8260B					
1,1,1-Trichloroethane	ND	0.500	17	I+	ħ	17	**	п					
1,1,2,2-Tetrachloorethane	ND	2.00	#	19	h	U	Þ:	H					
1,1,2-Trichloroethane	ND	2.00	"	D	h	U	l t	"					
1,1,2-Trichloroethene	ND	0.500	,,	"	n	u	"	n					
1,1-Dichloroethane	ND	0.500	n	(1	n	**	"	h					
1,1-Dichloroethene	ND	0.500	n	-11	11	ч	17	и					
ETBE	ND	0.500	u	11	n	4	u	I)					
1,2,3-Trichlorobenzene	ND	0.500	U	"	"	"	v	O					
TBA	ND	2.50	0	"	"	n	11	a					
1,2,4-Trichlorobenzene	ND	0.500	0	n	ti	n	4	4					
1,2,4-Trimethylbenzene	ND	2.00	11	n	71	h	n	11					
1,2-Dibromo-3-Chloropropane	ND	2.00	ч	11	n	n	,	н					
1,2-Dibromoethan	ND	2.00	"	ч	"	11	n	ŋ					
1,2-Dichlorobenzene	ND	0.500	н	#		n	11	4					
1,2-dichloroethane	ND	0.500	"		η	ĬŦ	**	n					
1,2-Dichloropropane	ND	0.500	11	н	11	D.		n					
1,3,5-Trimethylbenzene	ND	0.500	Ħ	**	"	u	n	Tr.					
1.3-dichlorobenzene	ND	0.500	r	ų	n	11	H	n .					
1.3-dichloropropane	ND	0.500	н	· ·		11	11	n					
1.4-Dichlorbenzene	ND	0.500	н	11	17	n	49	n					
2,2-Dichloropropane	ND	2.00		li li	tr	n	**	rr .					
2-Chlorotoluene	ND	0.500	•	4	17	41	1)	II.					
2-nitropropane	ND	2.00	11	"	11	n		11					
4-Chlorotoluene	ND	0.500	11	Ħ	ч	77	"	11					
4-Isopropyltoluene	ND	0.500	11	**	*1	"	"	п					
ACETONE	ND	5,00	"	II.	ч	e.	я	н					
Acetonitrile	ND	0.500	"	11	"		n	н					
Alylchloride	ND	2.50	-	"	"	н	n	•					
Benzene	ND	0.500	n	"	ч	н	1r	н					
Bromobenzene	ND	0.500	n	,,	п	n	Fr	41					
Bromochloromethane	ND	0.500	н	n	11	u u	h:	H*					
Bromoform	ND	5.00	**	h	н	U	h	н					
Butan-2-one(MEK)	ND	2.00	,,	11	,,	17	n	"					

Pacific Analytical Laboratory

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Project: 5565 Tesla Rd, Livermore

6620 Owens Drive, Suite A

Pleasanton CA, 94588

Project Number: 2841

Project Manager: Mansour Sepehr

Reported: 27-Sep-05 11:36

Volatile Organic Compounds by EPA Method 8260B

Pacific Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (5090004-01) Water	Sampled: 13-Sep-05 12:21 Rece	ived: 13-Sep-0	5 15:56						
Carbon bisulfide	0.680	0.500	ug/l	1	BI52701	13-Sep-05	26-Sep-05	EPA 8260B	
Chlorobenzene	ND	2,00	**	"	"	It	**	н	
Chloroform	ND	0,500	*	н	"	0	*	H	
Chloroprene	ND	0,500	h	tr	"	q	••	11	
eis-1,2 dichloroethene	ND	0.500	IT	a	*	*1		0	
cis-1,3-Dichloro-1-Propene	ND	0.500		н	IT.	n	ų	11	
CIS-1,4-Dichloro-2-butene	ND	2.50	u	"	u	**	ч	11	
Dibromochloromethane	ND	2.00	n	"	O	**	"	"	
Diethylether	ND	0.500	ч	₩	н	n	11	"	
Ethyl methacrylate	ND	0.500	n	В	п	III	#	n	
Ethylbenzene	ND	0.500	"	I†	н	D	и	н	
Freon 113	ND	0.500		v	*	a	n	t+	
Hexachloro-1,3-Butadiene	ND	2.00	n	a	"	11	tr	U	
[domethane	ND	2.00	tr.	n	P1	"	v	11	
Isopropylbenzene	ND	0,500	0	71	U	n	11	11	
m&p-Xylene	ND	1.00	n	,,	0	n	н	n	
Methylene dichloride	ND	10.0	4	70	11	"	4	#	
Naphthene	ND	0.500	4	"	н		п	H	
n-Butylbenzene	ND	0.500	11		4	.,	Pr .	H	
n-Propylbenzene	ND	0.500		n	ų	.,	h	n	
o-xylene	ND	0.500	н	a	,	11	11	ti ti	
Pentachloroethane	ND	1.00	u-	*	н	,	ų	n	
sec-Butylbenzene	ND	0,500	0	,	11	,,	я	n	
Styrene	ND	2,00	н	11	19	"	4	11	
tert-Butylbenzene	ND	0.500	41	,,	н	n	li .	11	
Tetrachlorocarbon	ND	0.500	п	n	4	17	٠		
Tetrachloroethene	ND	0.500	ht.	4	**	Ŋ	h	n	
Tetrahydrofuran	ND	5.00	,	**	"	11	n	11	
Toluenc	ND	2.00	**	11	n	п	"	9	
MTBE	ND ND	0.500	.,	ч	11	н	11	n	
trans-1,4-Dichloro-2-butene	ND ND	2.50	**	н	0	4	9	я	
Trans-Di-1,2-Chloroethylene		0.500	**	41	te.	П	н	n	
Methyl isobutyl ketone	ND ND	0.500	-	*1	11	*	н	n	
Chloromethane	ND ND	0.500	et	r		n	11	H	
Bromomethane	ND ND	2.00	le.	н	н	н	*	н	
Nitrobenzene	ND ND	10.0	1:	tr	17	v.	h	n	
Vinyl chloride	ND	0,500	h	0	**	o	11	II.	

Pacific Analytical Laboratory



Project: 5565 Tesla Rd, Livermore

6620 Owens Drive, Suite A

Pleasanton CA, 94588

Project Number: 2841

Project Manager: Mansour Sepehr

Reported: 27-Sep-05 11:36

Volatile Organic Compounds by EPA Method 8260B

Pacific Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (5090004-01) Water S	ampled: 13-Sep-05 12:21 Recei	ived: 13-Sep-0	5 15:56						
Bromodichloromethane	ND	0.500	ug/l	1	B152701	13-Sep-05	26-Sep-05	EPA 8260B	
Dibromomethane	ND	0.500	.,	0	11	1)	P	11	
Dichlorodifluoromethane	ND	2.00	"	я		4	•	11	
Vinyl acetate	ND	2.00	"	*	**	4	**	•	
Trichlorofluoromethane	ND	2.00	н	11	u	*	n	**	
Chloroethane	ND	0.500	ч	h	*1	H	17	**	
DIPE	ND	0.500	n		4	17	n	II.	
1,1-dichloropropene	ND	0.500	**	"	н	11	n	0	
trans-1,3-Dichloro-1-Propene	ND	0.500	t†	"	*	"	"	41	
1,2,3-Trichloropropane	ND	2.00	u-	**	n	н	"	я	
2-Hexanone	ND	2.00	11	n	U.	11	4	4	
TAME	ND	2.00	**	n	U	"	η	ft	
Surrogate: 4-Bromofluorobenze	ne	91.4%	76	-130	0	,,	"	n	
Surrogate: Dibromofluoromethe		109 %	70	L130	đ	"	п	и	
Surrogate: Perdeuterotoluene		96.6 %	70	-130	н	"	"	n	
Gasoline (C6-C12)	ND	50.0	n	"	h	n	u	EPA 8015M	
	Sampled: 13-Sep-05 13:05 Rece	eived: 13-Sep-0	5 15:56						
1,1,1,2-Tetrachloroethane	ND	2.00	ug/l	1	BI52701	13-Sep-05	26-Sep-05	EPA 8260B	
1.1.1-Trichloroethane	ND	0.500	"	**	tı	n	11	h	
1,1,2,2-Tetrachloorethane	ND	2.00	11	,	•	17	n	u	
1,1,2-Trichloroethane	ND	2.00			11	4		q	
1.1.2-Trichloroethene	ND	0.500	h	v	'n		v	11	
1,1-Dichlorocthane	ND	0.500	u	ч	п	n	41	n	
1.1-Dichloroethene	ND	0.500	te.	н	ŧŧ	н	-1	11	
ETBE	ND	0.500	,	h	11	n	п	11	
1,2.3-Trichlorobenzene	ND	0.500	**	11	,	н	n	n	
TBA	ND	2.50	н	η	•	u	h	"	
1,2,4-Trichlorobenzene	ND	0.500	r.	t _t	71	11	o	11	
1.2.4-Trimethylbenzene	ND	2.00		17	,,	ч	Ω	11	
1,2-Dibromo-3-Chloropropane	ND	2.00		11		4	ti	n	
1.2-Dibromoethan	ND	2.00	17	н		11	"	**	
1,2-Dichlorobenzene	ND ND	0,500	11	**	47	n	#	77	
1,2-Dichtoropenzene 1.2-dichloroethane	ND	0.500	,,	п	12	н	H	h	
'	ND	0.500	"	P.	-	11	h	lt .	
1.2-Dichloropropane	ND	0.500	**	н	11	o	n	n	
1,3,5-Trimethylbenzene 1,3-dichlorobenzene	ND	0.500		•1	#	11	11	11	
r,5-dichiotochizene	ND.	0.500							

Pacific Analytical Laboratory



Project: 5565 Tesla Rd, Livermore

6620 Owens Drive, Suite A

Pleasanton CA, 94588

Project Number: 2841

Project Manager: Mansour Sepehr

Reported: 27-Sep-05 11:36

Volatile Organic Compounds by EPA Method 8260B

Pacific Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-2 (5090004-02) Water	Sampled: 13-Sep-05 13:05 Recei	ived: 13-Sep-0	5 15:56			·			
1,3-dichloropropane	ND	0.500	ug/l	1	BI52701	13-Sep-05	26-Sep-05	EPA 8260B	
1,4-Dichlorbenzene	ND	0.500	n	n	"	0	"	n	
2,2-Dichloropropane	ND	2.00	,,	"	**	9	n	*	
2-Chlorotoluene	ND	0.500	п	11	*	и	n	lt r	
2-nitropropane	ND	2.00	Ħ	u	h	ч	17	17	
4-Chlorotoluene	ND	0.500	I†	u		a	ų	tr	
4-Isopropyltoluene	ND	0.500	0	11	n	**	9	U	
ACETONE	ND	5,00	"	н	17	7	11	11	
Acctonitrile	ND	0.500	**	н	D.	n	*1	н	
Alylchloride	ND	2.50	*1	ч	U	le .	н	ч	
Benzene	ND	0.500	**	11	u	и	4	7	
Bromobenzene	ND	0.500	"	H	п	ır	11	n	
Bromochloromethane	ND	0,500		*	11	17	11	11	
Bromoform	ND	5,00	27	n	и	u u	#	n	
Butan-2-one(MEK)	ND	2,00	η	t:	н	u	hr .	n	
Carbon bisulfide	ND	0.500	77	h	ч	n.	h:	n	
Chlorobenzene	ND	2.00		н	н	11	н	n	
Chloroform	0.830	0,500		v	"	п	"	н	
Chloroprene	ND	0.500		· ·	P	n	tr	u,	
cis-1,2 dichloroethene	ND	0.500	**	12	n	n	e	η	
cis-1,3-Dichloro-1-Propene	ND	0.500	"	n	н	η	tt	11	
CIS-1,4-Dichloro-2-butene	ND	2.50	v	"	u-	*1	*	11	
Dibromochloromethane	ND	2.00	11	•	0	,,	"	м	
Diethylether	ND	0.500	4	и	11	n	"	4	
Ethyl methacrylate	ND	0.500	n	n	н	It	11	li .	
Ethylbenzene	ND	0.500	Ħ	"	н	9	n	II.	
Freon 113	ND	0.500	4	n		•	n	11	
Hexachloro-1,3-Butadiene	ND	2.00	11	и	**	•	r	H	
Idomethane	ND	2.00	11	It	11	п	н	n	
Isopropylbenzene	ND	0.500	r	tr.	n	n	н	n	
m&p-Xylene	ND	1.00	۳	u,	17	n	at.	Tr.	
Methylene dichloride	ND	10.0	h	v	н	41	u	u ·	
Naphthene	ND	0.500	ti	11	ır	41	u	••	
n-Butylbenzene	ND	0.500	u	11		11	er er	11	
n-Propylbenzene	ND	0.500	u	ч		n	11	11	
o-xviene	ND	0.500	u	ч	v	n	п	11	
Pentachloroethane	ND	1.00	**	n	"	۳	"	м	

Pacific Analytical Laboratory



Project: 5565 Tesla Rd, Livermore

6620 Owens Drive, Suite A

Pleasanton CA, 94588

Project Number: 2841

Project Manager: Mansour Sepehr

Reported: 27-Sep-05 11:36

Volatile Organic Compounds by EPA Method 8260B

Pacific Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-2 (5090004-02) Water	Sampled: 13-Sep-05 13:05 Re	ceived: 13-Sep-0	5 15:56						
sec-Butylbenzene	ND	0,500	ug/l	1	BI52701	13-Sep-05	26-Sep-05	EPA 8260B	
Styrene	ND	2.00	,,	н	n	0	71	12	
tert-Butylbenzene	ND	0.500	17	19	п	"	n	n	
Tetrachlorocarbon	ND	0.500	n	"	*	"	U.	h	
Tetrachloroethene	ND	0.500	н	"	h	ч	u	17	
Tetrahydrofuran	ND	5.00	u	ч	e	η	11	"	
Toluene	ND	2.00	0	n	u	п	н	11	
MTBE	ND	0.500	11	17	41	n	"	ч	
trans-1,4-Dichloro-2-butene	ND	2,50	"	"	н	n	11	n	
Trans-Di-1,2-Chloroethylene	ND	0.500	*1	n	н	17	*	17	
Methyl isobutyl ketone	ND	0,500	#	tf	*	u	t:	Ħ	
Chloromethane	ND	0.500	77	u.	17	a	В	и	
Bromomethane	ND	2.00	н	u	h	#	**	17	
Nitrobenzene	ND	10.0	lt	"	PT	"	a	u	
Vinyl chloride	ND	0.500	v	ч	11	a	11	U	
Bromodichloromethane	ND	0.500	11	п	"	11	71	11	
Dibromomethane	ND	0.500	71	H	"	h	н	Я	
Dichlorodifluoromethane	ND	2.00	n	'n	"	h	"	4	
Vinyl acetate	ND	2.00	"	h	n	fr.	"	Ш	
Trichlorofluoromethane	ND	2,00		tr	11	u	n	'n	
Chloroethane	ND	0,500	H.	n	n	0	ÌT	п	
DIPE	ND	0.500	n	н	"	н	"	Tr.	
1,1-dichloropropene	ND	0.500	"	n	"	*1	"	0	
1,2,3-Trichloropropane	ND	2.00	**	11	"	11	"	и	
trans-1,3-Dichloro-1-Propene	ND	0.500	"	n	#1	Þ	Ħ	м	
2-Hexanone	ND	2.00	n	н	n	h	n	п	
TAME	ND	2.00	41	ŕr			n	H .	
Surrogate: 4-Bromofluoroben	zene	83.0 %		70-130	,,	"	"	м	
Surrogate: Dibromofluoromet		111 %		70-130	y	"	u	"	
Surrogate: Perdeuterotoluene		96.2 %		70-130	и	rr	и	W.	
Gasoline (C6-C12)	ND	50.0	41	n	(t	n	11	EPA 8015M	



Project: 5565 Tesla Rd, Livermore

6620 Owens Drive, Suite A Pleasanton CA, 94588 Project Number: 2841

Project Manager: Mansour Sepehr

Reported: 27-Sep-05 11:36

Volatile Organic Compounds by EPA Method 8260B

Pacific Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (5090004-03) Water Samp	led: 13-Sep-05 13:50 Receiv	ved: 13-Sep-0	5 15:56						
1,1,1,2-Tetrachloroethanc	ND	2.00	ug/l	1	BI52701	13-Sep-05	26-Sep-05	EPA 8260B	
1,1,1-Trichloroethane	ND	0.500	11	п	11	#	4	н	
1,1,2,2-Tetrachloorethane	ND	2.00	H	#	u u	*	41	27	
1,1,2-Trichloroethane	ND	2.00	"	*	u	h	H	17	
1,1,2-Trichloroethene	ND	0.500	h	ir.	ц	n	h	"	
1,1-Dichloroethane	ND	0.500		н	н	If	н	н	
1,1-Dichloroethene	ND	0.500	ır		4	1)		n	
ETBE	ND	0.500	"		a	U		D	
1,2,3-Trichlorobenzene	ND	0.500	v	o	17	o o	"	0	
TBA	. ND	2.50		41	n	79	v	ų	
1,2,4-Trichlorobenzene	ND	0,500	"	11	n	η	a	ij	
1,2,4-Trimethylbenzene	ND	2,00	"	**	h	4	11	ij	
1,2-Dibromo-3-Chloropropane	ND	2.00	"	**	h	"	11	11	
1,2-Dibromoethan	ND	2.00	•	71	n	4	"	н	
1,2-Dichlorobenzene	ND	0.500	4	н	tr	11	71	"	
1,2-dichloroethane	ND	0,500	н	n	D	I†	n	4	
1,2-Dichloropropane	ND	0.500	"	7	u	n	79	ш	
1.3.5-Trimethylbenzene	ND	0.500	11	"	0	H	17	н	
1,3-dichlorobenzene	ND	0.500	**	"	**	n	"	17	
1,3-dichloropropane	ND	0.500	n	n	п	и	н	n	
1,4-Dichlorbenzene	ND	0.500	п	н	*	u u	n	III	
2,2-Dichloropropane	ND	2.00	P†	11	н	q	.,	O.	
2-Chlorotoluene	ND	0.500	D	"	**	11	"	0	
2-nitropropane	ND	2.00	•	17	**	li .	"	n	
4-Chlorotoluene	ND	0.500	te	n	-	ч	11	11	
4-Isopropyltoluene	ND	0.500	n	'n	п	"	ч	n	
ACETONE	ND	5.00	11	•	н	"	•	n	
Acetonitrile	ND	0.500		*1	e.	11	4	Ħ	
Alvlchloride	ND	2.50	n	ч	0	"	п	н	
Benzene	ND	0.500	**	п	ø	,,	lt.	n	
Bromobenzene	ND	0.500	11	h	"	٠	*	**	
Bromochloromethane	ND ND	0,500	"	H	11	e	n	p	
Bromoform	ND	5.00	17	n	11		n	n	
Butan-2-one(MEK)	ND ND	2.00	,,	P.	**	n	h	н	
Carbon bisulfide	ND ND	0.500	!	η	n		ч	Ħ	
Chlorobenzene	ND ND	2.00	*	ń	n		u		
Chioroform	ND	0.500		11	71	tt.	ų		

Pacific Analytical Laboratory



Project: 5565 Tesla Rd, Livermore

6620 Owens Drive, Suite A

Project Number: 2841

Reported:

Pleasanton CA, 94588

Project Manager: Mansour Sepehr

27-Sep-05 11:36

Volatile Organic Compounds by EPA Method 8260B

Pacific Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-3 (5090004-03) Water	Sampled: 13-Sep-05 13:50 Recei	ived: 13-Sep-0:	5 15:56						
Chloroprene	ND	0.500	ug/l	1	BI52701	13-Sep-05	26-Sep-05	EPA 8260B	
cis-1,2 dichloroethene	ND	0.500	"	"	#	п	tı	ч	
cis-1,3-Dichloro-1-Propene	ND	0.500	н	tr	*	n	71	n	
CIS-1,4-Dichloro-2-butene	ND	2,50	h	u	H	4	n	н	
Dibromochloromethane	ND	2.00	D	11	IT	19	Ħ	11	
Diethylether	ND	0.500	o o	'n	11	*	17	77	
Ethyl methacrylate	ND	0.500	**	"	9	n	r	,	
Ethylbenzene	ND	0.500	71	**	ų	f+	h	**	
Freon 113	ND	0.500	n	Ħ	ч	17	11	17	
Hexachloro-1,3-Butadiene	ND	2.00	н	hr	4	e	ų	11	
Idomethane	ND	2.00	17	r!	ŋ	11	0	ij	
Isopropylbenzene	ND	0.500	#	h	4	ч	tt.	11	
m&p-Xylene	ND	1.00	"	11	IF	4	11	n	
Methylene dichloride	ND	10.0			Ħ	n	н	4	
Naphthene	ND	0.500	п	œ	H	n	"	n	
n-Butylbenzene	ND	0.500	**	9	h	η	ч	#1	
n-Propylbenzene	ND	0.500	ur.	n	н	*	11	11	
o-xylene	ND	0.500	v,	"	u	"	*	D	
Pentachloroethane	ND	1.00	19	n	e	n	"	h	
sec-Butylbenzene	ND	0.500	н	ŋ	11	н	n	ħ	
Styrene	ND	2.00	"	#	и	tr	Ħ	81	
tert-Butylbenzene	ND	0.500	n	"	n	U	u	u	
Tetrachiorocarbon	ND	0.500	11	h	•1	11	•	11	
Tetrachloroethene	ND	0.500	,,	. "	IF	ч	11	ii.	
Tetrahydrofuran	ND	5.00	n	u	"	4	n	н	
Toluene	ND	2.00	Ħ	9	,	11	n	4	
MTBE	ND	0.500	17	9		It	n	ħ	
trans-1,4-Dichloro-2-butene	ND	2.50	"	19	"	**	11	,,	
Trans-Di-1,2-Chloroethylene		0.500	17	н	**	٠	H	n	
Methyl isobutyl ketone	ND	0.500	h	•	2)	h	n	Pt .	
Chloromethane	ND	0.500	11	ŧ1	11	н	r	Ιτ	
Bromomethane	ND	2.00	,	ш	11	It.	h	lt .	
Nitrobenzene	ND	10.0	n	h	м	"	**	tr.	
Vinyl chloride	ND	0.500	"	b	"	n	11	tt	
Bromodichloromethane	ND	0.500	11	h	11	11	U	11	
Dibromomethane	ND	0.500	n	н	11	*1	ij	н	
Dichlorodifluoromethane	ND	2.00	,,	н	"	"	4	н	

Pacific Analytical Laboratory



Project: 5565 Tesla Rd, Livermore

6620 Owens Drive, Suite A

Pleasanton CA, 94588

Project Number: 2841

Project Manager: Mansour Sepehr

Reported: 27-Sep-05 11:36

Volatile Organic Compounds by EPA Method 8260B

Pacific Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (5090004-03) Water Sampled: 13-S	ep-05 13:50 Recei	ved: 13-Sep-0:	5 15:56						
Vinyl acetate	ND	2.00	ug/l	1	B(52701	13-Sep-05	26-Sep-05	EPA 8260B	
Trichlorofluoromethane	ND	2.00	D	н	ıπ	"	v	п	
Chloroethane	ND	0.500	· ·	*	ų	π	11	ч	
DIPE	ND	0,500	11	**	n	#	11	4	
1,1-dichloropropene	ND	0.500	п	**	11	R	**	41	
trans-1,3-Dichloro-1-Propene	ND	0.500	ч	**	н	n	ri	IF.	
1,2,3-Trichloropropane	ND	2.00	н	"	"	n	n	n	
2-Hexanone	ND	2.00	4	,	"	17	"	n	
TAME	ND	2.00	*1	ır	н	U	17	н	
Surrogate: 4-Bromofluorobenzene		81.6 %	70-1.	30	*	#	n	<i>y</i>	
Surrogate: Dibromofluoromethane		112 %	70-1.	30	*	"	n	"	
Surrogate: Perdeuterotoluene		96.2 %	70-1.	30	н	"	n	"	
Gasoline (C6-C12)	ND	50.0	*	u	**	**	n	EPA 8015M	



Project: 5565 Tesla Rd, Livermore

6620 Owens Drive, Suite A

Pleasanton CA, 94588

Project Number: 2841

Project Manager: Mansour Sepehr

Reported: 27-Sep-05 11:36

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Pacific Analytical Laboratory

				-						
		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Blank (BI52701-BLK1)				Prepared & Anal	yzed: 27-Sep-05	
Surrogate: 4-Bromofluorobenzene	45.8		ug/l	50.0	91.6	70-130
Surrogate: Dibromofluoromethane	54.0		"	50.0	108	70-130
Surrogate: Perdeuterotoluene	49.8		#	50.0	99.6	70-130
1,1,1,2-Tetrachloroethane	ND	2.00	0			
1,1,1-Trichloroethane	ND	0.500	11			
1,1,2,2-Tetrachloorethane	ND	2.00	11			*
I,1,2-Trichloroethane	ND	2.00	•			
1,1,2-Trichloroethene	ND	0.500	n			
1,1-Dichloroethane	ND	0.500	**			
1,1-Dichloroethene	ND	0.500	**			
ETBE	ND	0.500	n			
1.2.3-Trichlorobenzene	ND	0.500	н			
ТВА	ND	2.50	tr.			
1,2,4-Trichlorobenzene	· ND	0.500	u u			
1,2,4-Trimethylbenzene	ND	2.00	11			
1.2-Dibromo-3-Chloropropane	ND	2.00	п			
1.2-Dibromoethan	ND	2.00	н			
1,2-Dichlorobenzene	ND	0.500	n			
1,2-dichloroethane	ND	0.500	**			
1.2-Dichloropropane	ND	0.500	"			
1.3.5-Trimethylbenzene	ND	0.500	h			
1,3-dichlorobenzene	ND	0.500	0			
1,3-dichloropropane	ND	0.500	0			
1,4-Dichlorbenzene	ND	0.500	11			
2,2-Dichloropropane	ND	2.00	41			
2-Chlorotoluene	ND	0.500	4			
2-nitropropane	ND	2.00	#1			
4-Chlorotoluene	ND	0.500	41			
4-Isopropyltoluene	ND	0.500	"			
ACETONE	ND	5.00	H			
Acetonitrile	ND	0,500	n			
Alylchloride	ND	2.50	D			
Benzene	ND	0.500	0			
Bromobenzene	ND	0.500	o o			
Bromochloromethane	ND	0.500	**			

Pacific Analytical Laboratory



Project: 5565 Tesla Rd, Livermore

6620 Owens Drive, Suite A

Pleasanton CA, 94588

Project Number: 2841

Project Manager: Mansour Sepehr

Reported: 27-Sep-05 11:36

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Pacific Analytical Laboratory

- 1											
			Reporting		Spike	Source		%REC		RPD	
i	Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Bromoform ND 5.00 ug/l
Butan-2-one(MEK) ND 2.00 "
Carbon bisulfide ND 0.500 "
Chlorobenzene ND 2.00 "
Chloroform ND 0.500
Chloroprene ND 0.500 "
cis-1,2 dichloroethene ND 0.500
cis-1,3-Dichloro-1-Propene ND 0.500
CIS-1,4-Dichloro-2-butene ND 2.50
Dibromochioromethane ND 2.00
Diethylether ND 0.500 "
Ethy) methacrylate ND 0.500 "
Ethylbenzene ND 0.500 "
Freon 113 ND 0.500 "
Hexachloro-1,3-Butadiene ND 2.00 "
Idomethane ND 2.00 h
Isopropytbenzene ND 0.500 "
m&p-Xylene ND 1.00 "
Methylene dichloride ND 10.0 "
Naphthene ND 0.500 "
n-Butylbenzene ND 0.500 "
n-Propylbenzene ND 0.500 "
o-xylene ND 0.500 "
Pentachloroethane ND 1.00 "
sec-Butylbenzene ND 0.500 "
Styrene ND 2.00 "
tert-Butylbenzene ND 0.500 "
Tetrachlorocarbon ND 0.500 "
Tetrachloroethene ND 0.500 "
Tetrahydrofuran ND 5.00 "
Toluene ND 2.00 "
MTBE ND 0.500 "
trans-1,4-Dichloro-2-butenc ND 2.50 "
Trans-Di-1,2-Chloroethylene ND 0.500 "
Methyl isobutyl ketone ND 0.500 "
Chloromethane ND 0.500 "

Pacific Analytical Laboratory



Project: 5565 Tesla Rd, Livermore

Spike

Level

Source

Result

6620 Owens Drive, Suite A

Pleasanton CA, 94588

Analyte

Project Number: 2841

Reporting

Limit

Result

Project Manager: Mansour Sepehr

Reported:

RPD

Limit

Notes

%REC

Limits

%REC

RPD

27-Sep-05 11:36

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Pacific Analytical Laboratory

Units

Blank (BI52701-BLK1)				Prepared & Anal	yzed: 27-Sep-05	
romomethane	ND	2.00	ug/l			
Pitrobenzene	ND	10.0	n			
'inyl chloride	ND	0.500	"			
romodichloromethane	ND	0.500	11			
Dibromomethane	ND	0.500	**			
Dichlorodifluoromethane	ND	2.00	H			
inyl acetate	ND	2.00	lt .			
richlorofluoromethane	ND	2.00	fr			
Chloroethane	ND	0.500	u			
DIPE	ND	0.500	u			
,1-dichloropropene	ND	0.500	11			
rans-1,3-Dichloro-1-Propene	ND	0.500	11			
.2.3-Trichloropropane	ND	2.00	ч			
-Hexanone	ND	2.00	n			
AME	ND	2.00	11			
dasoline (C6-C12)	ND	50.0	н "			
CS (BI52701-BS1)				Prepared & Anal	lyzed: 27-Sep-05	
lurragate: 4-Bromofluorobenzenc	50.6		ug/l	50.0	101	70-130
httrogate: Dibromofluoromethane	48.8		n	50.0	97.6	70-130
Surrogate: Perdeuterotoluene	51.4		"	50.0	103	70-130
.1.2-Trichloroethene	119	0.500	4	100	119	70-130
,1-Dichloroethane	98.7	0.500	"	100	98.7	70-130
.1-Dichloroethene	115	0.500	"	100	115	70-130
TBA	511	2.50	**	500	102	70-130
.2-dichloroethane	117	0.500	n	100	117	70-130
3cnzene	111	0.500	•	100	111	70-130
Chlorobenzene	116	2.00		100	116	70-130
Chloroform	103	0.500	ÞŢ	100	103	70-130
Tetrachloroethene	87.4	0.500	u	100	87.4	70-130
Foluene	117	2.00	0	100	117	70-130
********		0.500	0	100	116	70-130
мтве	116	0.500		100	110	, , , , , , , , , , , , , , , , , , , ,



Project: 5565 Tesla Rd, Livermore

6620 Owens Drive, Suite A

Project Number: 2841

Reported:

Pleasanton CA, 94588

Project Manager: Mansour Sepehr

27-Sep-05 11:36

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Pacific Analytical Laboratory

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
						_				

Batch BI52701 - EPA 5030 Water MS

LCS Dup (BI52701-BSD1)		Prepared & Analyzed: 27-Sep-05									
Surrogute: 4-Bromofluorobenzene	57.0		ug/l	50.0	102	70-130					
Surrogate: Dibromofluoromethane	47.9		"	50.0	95.8	70-130					
Surrogate: Perdeuterotoluene	48.4		,11	50.0	96 .8	70-130					
1,1,2-Trichloroethene	117	0.500	U	100	117	70-130	1.69	20			
1,1-Dichlorocthane	98.8	0.500	u	100	98.8	70-130	0.101	20			
1,1-Dichloroethene	108	0.500	ti	100	108	70-130	6.28	20			
ТВА	457	2.50	*1	500	91.4	70-130	11.2	20			
1,2-dichloroethane	114	0.500	и	100	114	70-130	2.60	20			
Benzene	109	0.500	4	100	109	70-130	1.82	20			
Chlorobenzene	125	2.00	н	100	125	70-130	7.47	20			
Chloroform	100	0.500	**	100	100	70-130	2.96	20			
Tetrachloroethene	79.9	0.500	**	100	79.9	70-130	8.97	20			
Toluene	114	2.00	h	100	114	70-130	2.60	20			
мтве	108	0.500	"	100	108	70-130	7.14	20			
Gasoline (C6-C12)	1530	50.0	lt .	2000	76.5	70-130	1.30	20			



Project: 5565 Tesla Rd, Livermore

6620 Owens Drive, Suite A

Project Number: 2841

Reported:

Pleasanton CA, 94588

Project Manager: Mansour Sepehr

27-Sep-05 11:36

Notes and Definitions

DET Analyte DETECTED

ND Analyte NOT DETECTE

Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

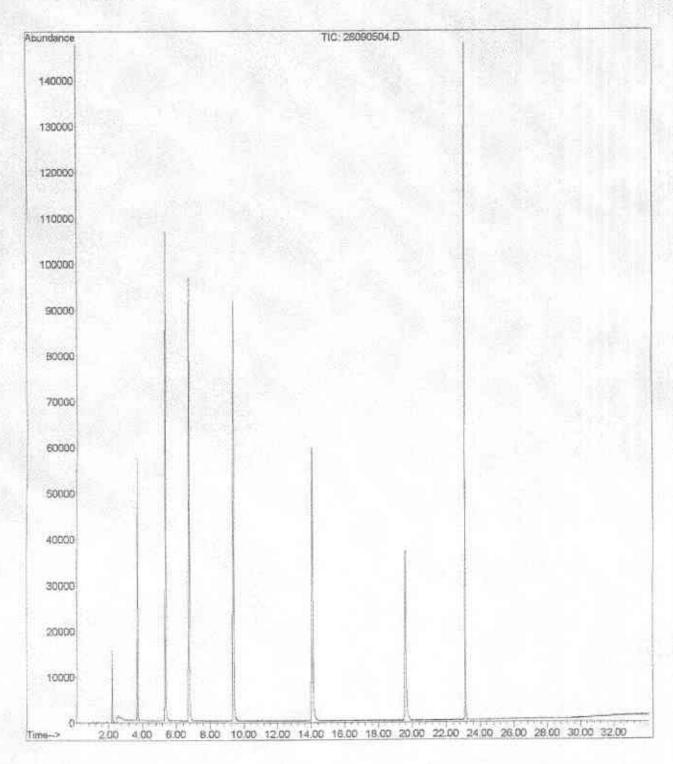
File :C:\MSDChem\1\DATA\2005-Sep-26-1016.b\26090504.D

Operator :

Acquired : 26 Sep 2005 1:42 pm using AcqMethod VOCOXY.M

Instrument : PAL GCMS Sample Name: BI52701-BLK1

Misc Info : Vial Number: 4



File :C:\MSDChem\1\DATA\2005-Sep-26-1016.b\26090502.D

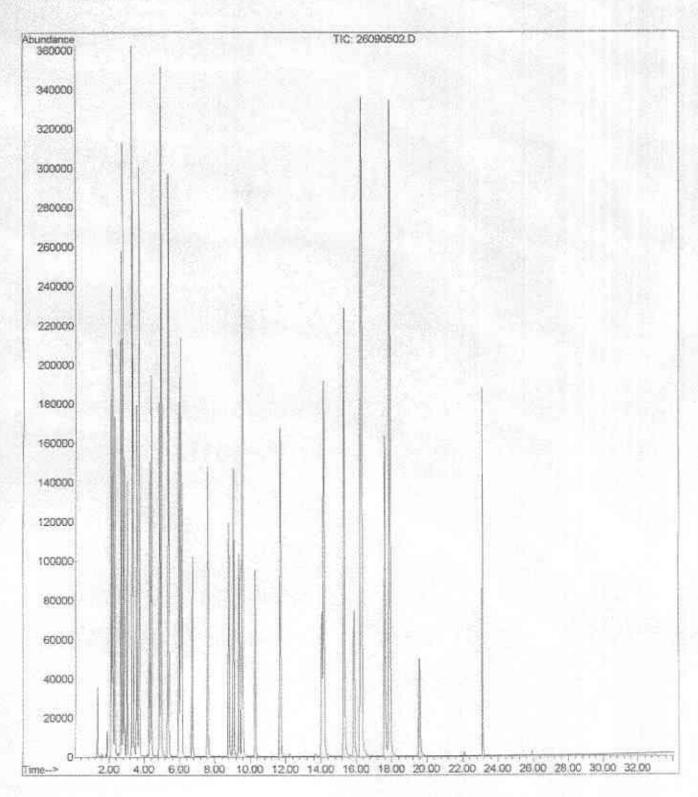
Operator :

Acquired : 26 Sep 2005 12:09 pm using AcqMethod VOCOXY.M

Instrument : PAL GCMS

Sample Name: BI52701-BS1@voc

Misc Info : Vial Number: 2



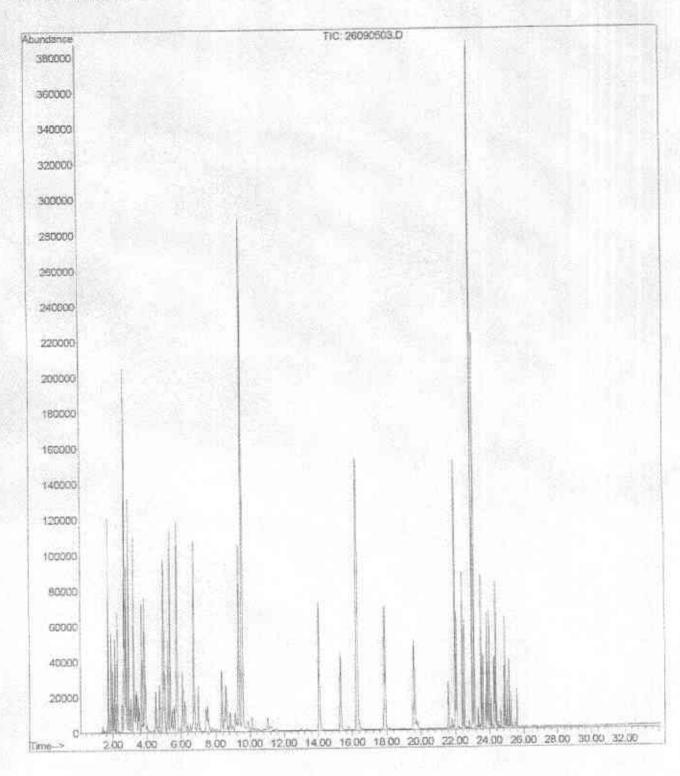
:C:\MSDChem\1\DATA\2005-Sep-26-1016.b\26090503.D File

Operator

Acquired : 26 Sep 2005 12:55 pm using AcqMethod VOCOXY.M

PAL GCMS Instrument : Sample Name: BI52701-BS1@gas

Misc Info : Vial Number: 3





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

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

ANALYTICAL REPORT

Prepared for:

Pacific Analytical Laboratory 851 West Midway Ave Suite 201B Alameda, CA 94501

Date: 28-SEP-05 Lab Job Number: 181850 Project ID: STANDARD

Location:

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:

ofect Manager

Reviewed by:

peratrions Manager

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NELAP # 01107CA

Page 1 of _____



CASE NARRATIVE

Laboratory number:

181850

Client:

Pacific Analytical Laboratory

Request Date:

09/13/05

Samples Received:

09/13/05

This hardcopy data package contains sample and QC results for three water samples, requested for the above referenced project on 09/13/05. The samples were received on ice and intact.

TPH-Extractables by GC (EPA 8015B):

No analytical problems were encountered.

181850

CHAIN OF CUSTODY

Page 1 of 1

Analyses

Pacific Analytical Laboratory

851 W Midway Ave, Suite 201B Alameda, CA 94501

> (510)864-0364 Phone (510)864-0365 Fax

Project No: 2841

Project Name: 5565 Tesla Road, Livermore

Turnaround Time: Standard

PAL LOGIN # 5090004

John Lohman Sampler:

Tony Perini Report To:

SOMA Environmental Company:

925-244-6600 Telephone:

Turnar	ound Time: Standard		Telebi	101										- 1	- 1	اہ	- 1	- 1	- [ı			1	1	1 /
			Fax:				925	-244-6601							k	TPH-mo										1
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Lab No.	Sample ID.	Sampling I Time	Date	Soil	Water	Waste	C	# of ontainers	로	H ₂ SO ₄	HNO3	SCE	None			TPH-								_	<u> </u> 	
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Notes:

EDF OUTPUT REQUIRED

Silica Gel Cleanup Method

3.20 bin 13/05 DATE/TIME

3:20 PM 9/13/05 DATE/TIME

DATE/TIME

DATE/TIME

DATE/TIME



Total Extractable Hydrocarbons Prep: Analysis: EPA 3520C 181850 Lab #: EPA 8015B Pacific Analytical Laboratory Client: STANDARD Project#: 09/13/05 Water Sampled: Matrix: ug/Ĺ Received: 09/13/05 Units: 09/19/05 09/20/05 1.000 Prepared: Diln Fac: 105932 Analyzed: Batch#:

Field ID: ype:

MW-1 SAMPLE Lab ID:

Cleanup Method:

181850-001 EPA 3630C

Analyte Result Diesel C10-C24 Motor Oil C24-C36 ND ND300

Sucrogate %REC Limits Hexacosane 60-135

Field ID: Type:

MW-2 SAMPLE Lab ID:

Cleanup Method: EPA 3630C

181850-002

Analyte Diesel C10-C24 Result RL 50 300 Motor Oil C24-C36 ND

*REC Limits Surrogate Hexacosane 85 60-135

ield ID:

MW-3

Lab ID:

181850-003

SAMPLE Cleanup Method: EPA 3630C Type:

Result Analyte Diesel C10-C24 300 Motor Oil C24-C36 300 ND

Surrogate *REC Limits 60-135 Hexacosane

Type: Lab ID:

BLANK QC309636 Cleanup Method:

EPA 3630C

Result Analyte Diesel Cl0-C24 ND 50 300 Motor Oil C24-C36 ND

Surrogate *REC Limits 60-135 Hexacosane

Y= Sample exhibits chromatographic pattern which does not resemble standard ND= Not Detected

L= Reporting Limit Page 1 of 1

Chromatogram

Sample Name : 181850-003sg,105932 FileName : G:\GC15\CHB\262B050.RAW

Method : BTEH256S.MTH

Start Time : 0.01 min Scale Factor: 0.0

End Time : 19.99 min

Plot Offset: 7 mV

Page 1 of 1

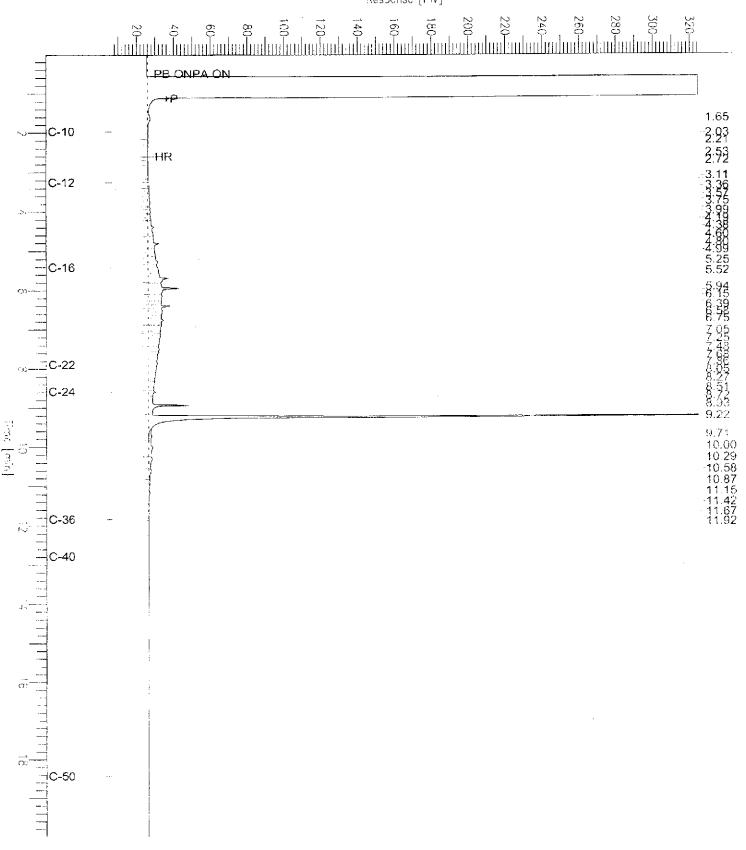
Sample #: 105932 Date : 9/21/05 08:35 AM

Time of Injection: 9/20/05 09:40 PM

High Point : 324.64 mV Low Point : 6.95 mV

Plot Scale: 317.7 mV





Chromatogram

Sample Name : ccv, S1522, dsl FileName : G:\GC15\CHB\262B003.RAW

FileName

Method Start Time : 0.01 min

: BTEH256S.MTH

End Time : 19.99 min

Plot Offset: 20 mV

Sample #: 500mg/L Date : 9/19/05 12:40 PM

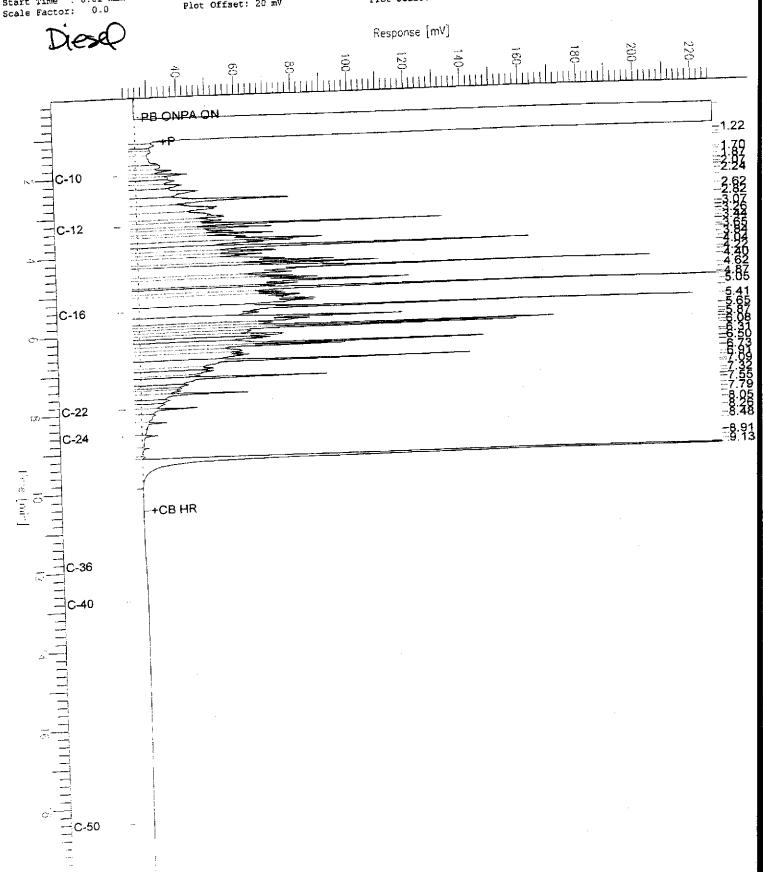
Time of Injection: 9/19/05 12:18 PM

Low Point : 20.49 mV

High Point : 227.33 mV

Page 1 of 1

Plot Scale: 206.8 mV



Chromatogram

Sample Name : ccv,S1508,mo FileName : G:\GC15\CHE\262B004.RAW

FileName Method

: BTEH256S.MTH

Start Time : 0.01 min

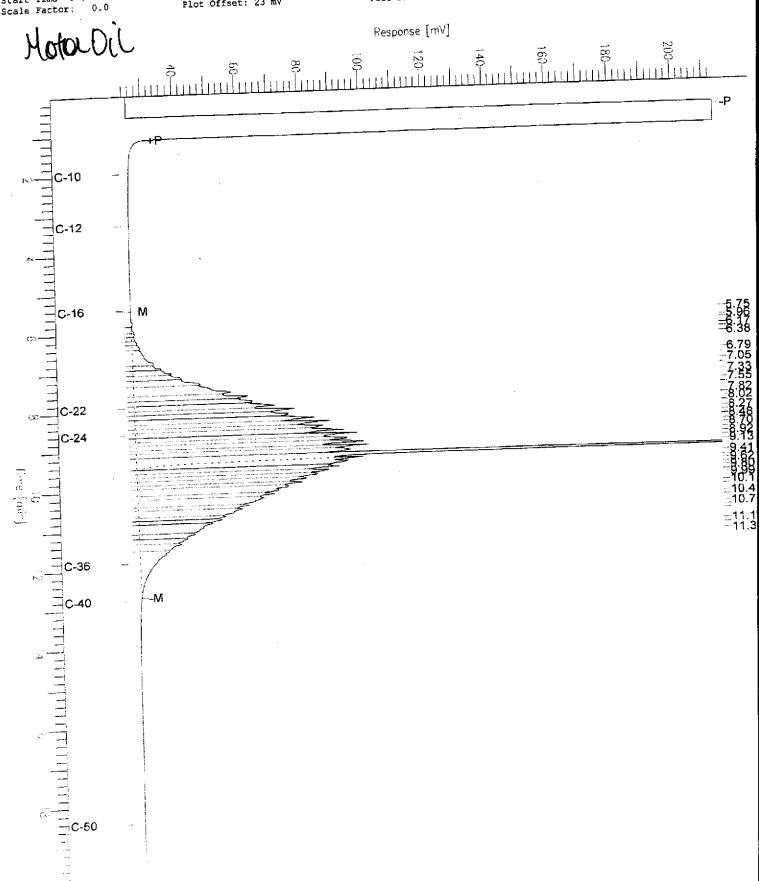
End Time : 19.95 min Plot Offset: 23 mV

Sample #: 500mg/L Date : 9/19/05 01:13 PM

Time of Injection: 9/19/05 12:47 PM
Low Point: 23.11 mV
Plot Scale: 190.2 mV

High Point : 213.30 mV

Page 1 of 1





Batch QC Report

Total Extractable Hydrocarbons

Lab #: 181850 Prep: EPA 3520C Client: Pacific Analytical Laboratory Analysis: **EPA 8015B**

Project#: STANDARD

Batch#: Matrix: Water 105932 Units: ug/L Prepared: 09/19/05 Diln Fac: 1.000 Analyzed: 09/20/05

ype:

BS

Cleanup Method: EPA 3630C

ab ID:

QC309637

Analyte	Spiked	Regult		Limits
Diesel C10-C24	2,500	2,192	88	53-138

Surrogate	REC	Limits	
Hexacosane	79	60-135	· <u> </u>

ype:

BSD

Cleanup Method: EPA 3630C

QC309638

Anal	rte Spiked	Result		Limits	RPD	Lim
Diesel C10-C24	2,500	2,641	106	53-138	19	36

Surrogate	# F 17(0		
Hexacosane	97	60-135	



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. 6620 Owens Dr. Suite A Pleasanton, CA 94588

...., va 74588

Date: 14-OCT-05 Lab Job Number: 182178 Project ID: 2841

Location: 5565 Tesla Rd, Livermore

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: ____

Reviewed by: ___

Operations Manager

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NELAP # 01107CA

Page 1 of



CASE NARRATIVE

Laboratory number:

182178

Client:

SOMA Environmental Engineering Inc.

Project:

2841

Location:

Request Date:

5565 Tesla Rd, Livermore

09/29/05

Samples Received:

09/29/05

This hardcopy data package contains sample and QC results for three water samples, requested for the above referenced project on 09/29/05. The samples were received intact at ambient temperature.

Metals (EPA 6010B):

No analytical problems were encountered.

CHAIN OF CUSTODY

Page of

DATE/TIME

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Cur	tis & Tompkins, Ltd.]																Ana	alys	ses					
Anal	ytical Laboratory Since 1878 2323 Fifth Street Berkeley, CA 94710	C	C&T L	OG	âIN i	# _	182178	, –						۲ <u>۲</u>		T		Ţ 							_
: <u>.</u>	(510)486-0900 Phone (510)486-0532 Fax	<u>_s</u>	Samp	ler:	:		John Lohma	an					۷	Chromium											
Projec	et No: 2841	<u>F</u>	tepor	t T	o:		Tony Peri	ni						्र हो		ļ									
Projec	t Name: 5565 Tesla Rd, Liv	ermore C	Comp	an	y :		SOMA Envi	ronn	nen	tal			9	Maminu	Ş										
Turna	round Time: Standard	<u>T</u>	elepi	hor	ne:		925-244-660	00					Ç	3	4										
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Lab No.	Sample ID.	Sampling Da Time	ate	Soil	Waste		# of Containers	된	H ₂ SC	SH	JCE	none	Į.	Š	Lead										
-	MW-1	9/29/2005 \Z	15		*		500 ML POLY			*	*			*											
72	MW-2	9/29/2005 12:	75		*		500 ML POLY			*	*			*											
-3	MW-3	9/29/2005	32		*		500 ML POLY			*	*			*		ļ									
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DATE/TIME



Metals Analytical Report Lab #: Client: 182178 5565 Tesla Rd, Livermore Location: Prep: Analysis: Sampled: SOMA Environmental Engineering Inc. EPA 3010A EPA 6010B 09/29/05 09/29/05 Project#: 2841 Units: ug/L 1.000 Diln Fac: Received: Batch#: 106348 Prepared: 10/03/05

Field ID:

MW-1 SAMPLE Matrix: Analyzed: Water 10/04/05

Type: Lab ID:

182178-001

Analyte	Result	124	
Cadmium	ND	5.0	
Chromium	ND	10	l
Lead	ND	-3.0	
Nickel	ND	20	
Zinc	27	20	

Field ID:

Type: Lab ID: MW-2 SAMPLE

182178-002

Matrix:

Water

10/04/05 Analyzed:

Analyte	Result	RI	
Cadmium	ND	5.0	
Chromium	ND	10	į.
Lead	ND	3.0	
Lead Nickel	ND	20	
Zinc	23	20	

Field ID:

Type: Lab ID: MW - 3

SAMPLE 182178-003 Matrix: Analyzed: Water

10/04/05

Ž.	Analyte	Result	RL
	Cadmium	ND	5.0
	Chromium	ND	10
ı	Lead	ND	3.0
1	Nickel	ND	20
L	Zinc	ND	20

ηpe: āb ID: BLANK QC311357 Matrix: Analyzed: Filtrate 10/03/05

Analyte	Result	RL	100
Cadmium	ND	5.0	·
Chromium	ND	10	1
Lead	ND	3.0	1
Nickel	ИD	20	
Zinc	ND	20	

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



Batch QC Report

	Metals Anal	ytical Repo	EL
Lab #:	182178	Location:	5565 Tesla Rd, Livermore
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3010A
Project#:	2841	Analysis:	EPA 6010B
Matrix:	Filtrate	Batch#:	106348
Units:	ug/L	Prepared:	10/03/05
Diln Fac:	1.000	Analyzed:	10/03/05

Type:

BS

Lab ID:

QC311358

Analyte	Spiked	Result	%RBC	Limits
Cadmium	50.00	52.54	105	80-120
Chromium	200.0	201.4	101	80-120
Lead	100.0	95.29	95	76-124
Nickel	500.0	514.2	103	80-120
Zinc	500.0	527.2	105	80-120

Туре:

BSD

Lab ID:

QC311359 ·

Analyte	Spiked	Result	%REC	Limits	RPI) Lim
Cadmium	50.00	53.17	106	80-120	1	20
Chromium	200.0	205.2	103	80-120	2	20
Lead	100.C	96.22	96	76-124	1	20
Nickel	500.0	522.1	104	80-120	2	20
Zinc	500.0	536.2	107	80-120	2	20



Batch QC Report

		Metals Analytical	Report
Lab #:	182178	Location	ı: 5565 Tesla Rd, Livermore
Client:	SOMA Environmental Eng	ineering Inc. Prep:	EPA 3010A
Project#:	2841	Analysis	s: EPA 6010B
Field ID:	ZZZZZZZZZ	Batch#:	106348
MSS Lab II	182211-002	$\mathtt{Sampled}:$	09/30/05
Matrix:	Filtrate	Received	l: 09/30/05
Units:	ug/L	Prepared	l: 10/03/05
Diln Fac:	1.000	Analyzed	l: 10/03/05

Type:

MS

Lab ID: QC311360

Analyte	MSS Result	Spiked	Result	%REC	Limits
Cadmium	<0.5500	50.00	50.90	102	80-120
Chromium	0.9464	200.0	. 202.6	101	80-120
Lead	<0.5698	100.0	85.41	85	61-135
Nickel	3.697	500.0	498.3	99	77-120
Zinc	<1.533	500.0	515.6	103	75-124

Type:

MSD

Lab ID:

QC311361

Analyte	Spiked	Result	%REC	Limits	RPI	Lim
Cadmium	50.00	50.10	100	80-120	2	20
Chromium	200.0	201.2	100	80-120	1	20
Lead	100.0	82.12	82	61-135	4	23
Nickel	500.0	491.6	98	77-120	1	20
Zinc	500.0	506.6	101	75-124	2	20