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SITE INVESTIGATION REPORT

Project Site:
Oakland Truck Stop
1107 Fifth Street
Oakland, California

Prepared for:
Rinehart Distributing, Inc.
P.O. Box 725
Ukiah, California 94582

Submitted to:
Mr. Larry Seto
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502
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Job No. 3628
September 15, 2000

PROFESSIONAL CERTIFICATION

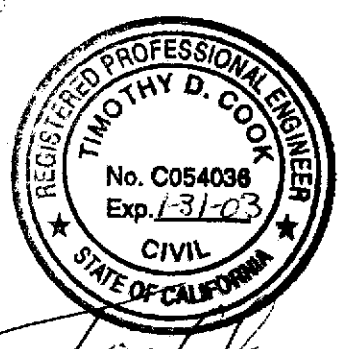
Site Investigation Report

Oakland Truck Stop
1107 Fifth Street
Oakland, California

Project No. 3628
September 15, 2000

This Site Investigation Report has been prepared by the staff of W.A. Craig, Inc., under the professional supervision of the person or persons whose seals and signatures appear hereon. No warranty, either expressed or implied, is made as to the professional opinions presented herein. The analysis, conclusions and recommendations contained in this document are based upon our present understanding of site conditions and they are subject to change.

The conclusions presented in this document are professional opinions based solely upon observations of the site and vicinity during the site investigation, and interpretation of available information as described in this report. W.A. Craig, Inc., recognizes that the limited scope of services performed in execution of this investigation may not be appropriate to satisfy the needs, or requirements of other state agencies, or of other users. Any use or reuse of this document or its findings, conclusions or recommendations presented herein is at the sole risk of said user.



Tim Cook, P.E.
Principal Engineer

1.0 INTRODUCTION

This Site Investigation Report presents the results of an environmental investigation conducted at the Oakland Truck Stop during August 2000. This work was performed in accordance with the scope of work presented in the *Site Investigation Work Plan* dated May 23, 2000. Mr. Larry Seto of the Alameda County Department of Environmental Health (ACDEH) conditionally approved the work plan during a telephone conversation with Mr. Tim Cook of W.A. Craig, Inc. in July 2000. Mr. Seto requested that several of the well locations be moved to support an evaluation of natural attenuation at the Site. The locations of the monitoring wells reflect the changes requested by the ACDEH. This report includes a description of the installation of six monitoring wells, the results of groundwater and soil and sampling and a Sensitive Receptor Survey.

1.1 Site Location and Description

The Oakland Truck Stop ("the Site") is located at 1107 Fifth Street in Oakland, California (**Figure 1**). Mr. Tony Muir owns the Site. Rino Pacific, Inc. and Rinehart Distribution, Inc. lease the property from the owner. The Site is in a commercial and industrial district of Oakland at the intersection of Adeline and 5th Streets (**Figure 1**). A service station building, two underground storage tanks, pump dispenser islands, and a weigh station currently occupy the Site.

The Site topography is flat and is bounded on the north by the Interstate 880 overpass, on the west by Adeline Street, on the south by a restaurant and parking lot and on the east by Chestnut Street. The nearest surface water is the Oakland Estuary located approximately 2,400 feet south of the Site.

1.2 Background

This is the first groundwater-monitoring event since March 21, 2000. In March 1999, Trinity Excavation & Engineering, at the direction of Rinehart Distributing, Inc. excavated 2,625 cubic yards of contaminated soil, while removing three 10,000-gallon underground storage tanks (USTs) and one 8,000-gallon UST from the site. The USTs were replaced with one 15,000 gallon diesel UST and one 15,000-gallon, partitioned UST (10,000 gallons unleaded gasoline and 5,000 gallons supreme gasoline). The contaminated soil was disposed of at Forward Landfill in Manteca, California. Additionally, 35,000 gallons of groundwater from the excavation pit was disposed of at the Seaport Environmental facility, in Redwood City, California. During the excavation activities monitoring well MW-2 was destroyed.

2.0 SCOPE OF WORK

The scope of work completed by W.A. Craig, Inc. during this site investigation included the following tasks:

- Obtained approval of the *Site Investigation Work Plan* from the Alameda County

Department of Environmental Health;

- Obtained well permits from the Water Resources Section of the Alameda County Public Works Agency;
- Obtained underground utility clearance through Underground Service Alert and a private utility locating service;
- Described soils encountered in the borings on a boring log;
- Collected and analyzed soil samples from each boring;
- Installed and developed six monitoring wells;
- Surveyed the top of casing elevations;
- Collected groundwater samples from monitoring wells;
- Analyzed soil and groundwater samples for total petroleum hydrocarbons as gasoline (TPH-g) and total petroleum hydrocarbons as diesel (TPH-d) by EPA method 8015 modified; for benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA method 8020 and MtBE by EPA method 8260;
- Conducted a survey of domestic, municipal and industrial wells, as well as receiving surface water and sensitive environmental and human receptors, within 2,000 feet of the Site; and
- Prepared this Site Investigation Report.

3.0 SITE INVESTIGATION

3.1 Monitoring Well Installation

Monitoring wells MW-4, MW-5, MW-6 and MW-8 were installed on August 16, 2000. Monitoring well MW-7 was installed on August 17 and monitoring well MW-9 was installed on August 23, 2000. Gregg Drilling and Testing, Inc. of Concord, CA installed the wells with a hollow-stem auger drill rig to a depth of 20 feet below grade (fbg). All six of the new monitoring wells were constructed of 2-inch ID, schedule 40 PVC casing and 10 feet of 0.010-inch slot size PVC well screen. The screened section of the well annulus was packed with clean #2/12 graded sand to a level approximately one foot above the screened interval. Hydrated bentonite pellets were placed above the sand as a sealing material. The well was sealed from the bentonite seal to the ground surface using a Portland cement/bentonite grout mixture. No glues or other solvents were used in the construction of the wells. The wells were not designed to provide optimum flow but are intended to provide water samples that are representative of water quality in the first water-bearing zone.

The wellheads are protected from vandalism using a locking expansion-plug cap and are housed within traffic-rated boxes to protect the wells from traffic and surface water runoff. The well sealing material (grout) was allowed to set for a period of 72 hours prior to development.

Wells MW-4, MW-5 and MW-6 were installed in the immediate vicinity of the former USTs and is regarded as the contaminant source area. MW-7 was installed near the diesel fuel dispensers in the eastern portion of the Site. MW-8 was installed near the diesel and gasoline dispensers in

the western portion of the Site. MW-9 was installed near Adeline Street in the southwest corner of the Site. All six wells were screened from 5 fbg to 20 fbg.

Groundwater was encountered at approximately 5 fbg. Soil encountered in the six borings were sand and clayey sand from the surface to a depth of 15 fbg to 20 fbg. The bay mud, a silty clay, was encountered at 15 fbg in MW-4 and MW-9. The lithology encountered in each boring as well as the soil sample intervals and well construction details are provided on boring logs included as **Attachment A**.

The wells were developed on August 23, 2000 by surging and bailing at least five well volumes to remove sediment and provide good hydraulic connection to the shallow water-bearing zone. Groundwater removed from the wells was stored onsite in 55-gallon drums.

3.2 Groundwater Elevations

Groundwater elevations in all six newly installed wells and the two previously installed wells (MW-1 and MW-3) were measured on August 30, 2000 using an electronic water-level indicator. The wells were exposed to atmospheric conditions for approximately 30 minutes to allow stable water level measurements. The elevation of the top of each monitoring well casing was determined by Langford Land Surveying, a California licensed surveyor on September 6, 2000. Vertical elevations were determined within $\pm$0.01 foot and horizontal locations were determined within $\pm$1.0 foot. Elevations were referenced to the City of Oakland datum #16NW10, which lies 15 feet west of the centerline of the intersection of 3rd Street and Linden Street. The Oakland datum was converted to the U.S. Geodetic datum (mean sea level) by adding 3.00 feet.

Groundwater elevations for this and previous monitoring events are summarized in **Table 1**. The groundwater elevations in wells MW-3 and MW-7 are anomalous when compared to other groundwater elevations. This may be caused by poor hydraulic connection with the shallow water-bearing zone or these wells could be constructed in a lower water-bearing zone. Groundwater elevations indicate the general direction of groundwater flow in the shallow water-bearing zone is northerly. The groundwater gradient between wells MW-6 and MW-4 is 0.0156 ft/ft. The groundwater elevation contours and flow direction are presented on **Figure 2**.

3.3 Groundwater Sampling

At least three well casing volumes were purged from each monitoring well prior to collecting groundwater samples on August 30, 2000. Field parameters including temperature, pH, conductivity, dissolved oxygen concentration and turbidity were intermittently monitored during purging of the wells. Groundwater samples were collected using disposable polyethylene bailers. The field groundwater sampling logs are included in **Attachment B**.

The samples were placed in a refrigerated cooler and submitted to McCampbell Analytical, Inc. (MAI), of Pacheco, California under chain-of-custody control. The purged groundwater is currently stored on-site in labeled, DOT approved, 55-gallon, steel drums.

The groundwater samples were analyzed by MAI for TPH-g using EPA Method 8015 (modified), purgeable aromatic hydrocarbons (BTEX) and MtBE using EPA Method 8020. MAI is certified by the State of California to perform the required analyses.

The highest concentrations of petroleum constituents were detected in well MW-7 located northeast of the former USTs. Wells MW-4, MW-5, MW-6 and MW-8 yielded higher concentrations of petroleum constituents than wells MW-1, MW-3 and MW-9, located south (upgradient) of the former USTs. The results of the groundwater analyses are summarized in **Table 2.** Groundwater results are depicted on **Figure 3**. The laboratory analytical report and chain-of-custody document are in **Attachment C**.

3.4 Soil Sampling

One soil sample was collected from each monitoring well boring at the groundwater interface. Soil samples were collected in a modified California sampler. The sampler was pounded into place using a 140-pound hammer dropped at least 30 inches. The blow count for each 6-inch interval is recorded on the boring logs in **Attachment A**. Soil samples were collected in 6-inch long brass tubes, capped with teflon sheets and plastic caps, labeled and placed in a refrigerated ice chest. The samples were delivered to McCampbell Analytical under chain of custody control. Soils were analyzed for TPH-g, TPH-d, BTEX, MtBE and other fuel oxygenates and lead scavengers. The results of soil analyses are summarized in **Table 3.** The laboratory analytical report and chain-of-custody document are in **Attachment C**.

4.0 SENSITIVE RECEPTOR SURVEY

The purpose of this study was to identify potential sensitive receptors within 2,000 feet of the Site. A library search of well driller's reports was conducted at the California Department of Water Resources in Sacramento for drinking water or industrial supply wells within a 2,000-foot radius of the Site. Industrial, municipal and domestic wells and surface water bodies within 2,000 feet of the Site are identified on **Figure 4**.

4.1 Beneficial Use of Groundwater

The RWQCB lists the potential and existing beneficial uses of groundwater in the San Francisco Bay groundwater basin to be municipal water supply, industrial process water supply, industrial service water supply and agricultural water supply (*San Francisco Bay Region Basin Plan*, 1995). + recreation

Unless otherwise designated by the RWQCB, all groundwaters are considered suitable for municipal or domestic water supply except for situations where the following criteria are met:

1. The total dissolved solids exceed 3,000 mg/L (5,000 μS/cm, specific conductance) and it is not reasonably expected by the RWQCB that the groundwater could supply a public

water system; or

2. There is contamination, either by natural processes or by human activity (unrelated to a specific pollution incident), that cannot be reasonably be treated for domestic use using either Best Management Practices or best economically achievable treatment practices; or
3. The water source does not provide sufficient water to supply a single well capable of producing on average, a sustained yield of 200 gallons per day; or
4. The aquifer is regulated as a geothermal energy-producing source or has been exempted administratively pursuant to 40 CFR Part 146.4 (revised April 1, 1983) for the purpose of underground injection of fluids associated with the production of hydrocarbon or geothermal energy, provided that these fluids do not constitute a hazardous waste under 40 CFR Part 216.3 (revised October 30, 1992).

The specific conductance measured in onsite monitoring wells varies between 1,000 μS/cm and 10,000 μS/cm. The specific yield of these same wells is less than 200 gal per day, however, there are water supply wells within 2,000 feet of the Site that produce or have produced water in excess of this flow rate. ~~Based on this information, the groundwater beneath the Site cannot be~~ excluded from consideration as a potential municipal, industrial or domestic water supply.

4.2 Pathway and Receptor Analysis

The Site is paved with concrete and asphalt, thus inhalation or direct contact with petroleum hydrocarbons in Site soils or groundwater is unlikely. An exception would be short-term exposure to workers in excavating through contaminated soils or in direct contact with water discharged from these excavations.

The only pathway considered for petroleum hydrocarbons to come into contact with human and ~~other environmental receptors~~ is via groundwater transport to wells or to surface water ~~bodies~~. A pathway for groundwater transport may be through utility trenches below groundwater. These utility trenches are often filled with pea-gravel or other permeable media that provides a preferential pathway for contaminant migration. An evaluation of subsurface utilities in the vicinity of the contaminant plume was performed by Underground Service Alert and Subtronics, Inc. There were no utility trenches that pass through the known contaminant plume that could cause the offsite migration of the groundwater plume.

The most likely route of exposure for human receptors is the ingestion of contaminated water and, to a lesser extent, the inhalation and dermal exposure to petroleum hydrocarbons in excavations that intercept contaminated soil and groundwater.

There is one surface water body (the Oakland Inner Harbor) within 2,000 feet of the Site. The route of exposure for environmental receptors in the Oakland Inner Harbor would be the ingestion of contaminated water.

4.3 Well Survey

An inventory of industrial, municipal, agricultural and domestic water supply wells within 2,000 feet of the site was conducted at the California Department of Water Resources, Central District (DWR) office in Sacramento, California on January 5, 2000. All recorded well logs within T. 1 S., R.4 W., Section 34 were reviewed. Groundwater monitoring wells are not included in this discussion because these wells will not provide a route of exposure to human or environmental receptors. There are ten wells recorded with the DWR within 2,000 feet of the Site. The location of these wells is presented on **Figure 4**.

The closest well to the Site, Well #9, is located on the eastern side of Filbert Street, 160 feet south of 5th Street. This well was installed by Pacific Gas & Electric Company in 1976 and is used for cathodic protection. This well is not used as a water supply well and does not provide a pathway for contamination to reach receptors. (depth ?)

Well #6 is actually three wells, located two blocks west of the site at 1384 5th Street. Red Star Yeast Company installed two wells in January 1958 and Universal Food Corporation installed one well in August 1969. All three wells provided process water to industrial activities in the building. construction ?.

Well #3 is located approximately 1,400 feet south of the Site and is actually two wells that were installed by Western Pacific Company near the intersection of Adeline and 1st Streets in December 1957. Construction details and the proposed use of the wells were not provided on the well log. These wells ranged in depth from 300 to 340 feet deep.

Golden West Brewery Company installed well #7, located at 537 Kirkham Street, and well #8, located at 3rd and Kirkham Streets, in December 1957. The well logs indicate that both the building and these wells have been abandoned.

Well #5 is located at 717 7th Street, approximately 1,700 feet northwest of the Site and was installed by the Sunrise Laundry. The date of installation was not recorded nor were any construction details. It is also unknown if this well is still in use. This well was most likely used as an industrial process water supply well for the laundry and was not used as a drinking water supply well. Driller's logs for these wells are provided in **Attachment D**.

4.4 Surface Water

The nearest surface water is the Oakland Inner Harbor located approximately 2,500 feet south of the Site. The water supply system in Oakland is operated by East Bay Municipal Utility District (EBMUD). EBMUD derives its water supply from surface water reservoirs located in the foothills of the Sierras and smaller reservoirs located in the Oakland Hills such as Briones, Lafayette and Upper San Leandro Reservoirs.

Groundwater flow from the Site on August 30, 2000 was to the north away from the Oakland Inner Harbor. The flow away from the harbor could be influenced by tidal fluctuations. There is a remote possibility that hydrocarbon contamination from the Site could reach the Oakland Inner Harbor. However, studies by the Lawrence Livermore Laboratory determined that petroleum hydrocarbon constituents such as BTEX concentrations in groundwater rarely travel farther than 500 feet downgradient from the source due to processes such as sorption, dispersion and biological degradation. This study did not study the impact of these same processes on fuel oxygenates such as MtBE.

5.0 CONCLUSIONS

Groundwater elevations on August 30, 2000 indicate groundwater flow is to the north. The groundwater gradient may be affected by tidal fluctuations. Samples collected from monitoring wells MW-1, MW-4, MW-5, MW-6, MW-7 and MW-8 yielded MtBE concentrations in excess of 1,000 ug/L. The highest MtBE concentration was present in MW-7 at 800,000 ug/L. MW-7 also yielded the highest concentration of TPH-g, TPH-d, and BTEX. MW-7 is located in the vicinity of the diesel dispenser-island in the eastern portion of the Site. Wells located northeast and northwest of the former USTs yielded higher hydrocarbon concentrations than those located south (i.e., upgradient) of the former USTs.

MW-4, MW-5 and MW-6 were located in the immediate vicinity of the former USTs. It appears the soil and groundwater removal action in March 1999 was successful in reducing petroleum hydrocarbons in the source area.

With the exception of MtBE and TPH-d, hydrocarbon constituents were not detected in MW-8 and MW-9. These well are outside the influence of the BTEX and TPH-g contaminant plume. MW-8 is located in the vicinity of the gas and diesel dispensers in the western portion of the Site. MW-9 is located in the southwest corner of the Site.

← 1877b benzene

6.0 RECOMMENDATIONS

We recommend continued quarterly groundwater monitoring to further assess groundwater quality and natural attenuation of petroleum hydrocarbons with time.

Table 1
Groundwater Elevations
Oakland Truck Stop

Well Number	Date	Top of Casing (ft)	Depth to Water	Static Water Elevation
MW-1	10/21/96	7.60	5.08	2.52
	11/04/96		3.02	4.58
	03/04/97		2.28	5.32
	06/12/97		4.80	2.80
	07/14/97		2.66	4.94
	09/09/97		2.45	5.15
	09/19/97		2.60	5.00
	02/13/98		2.76	4.84
	07/07/98		2.15	5.45
	10/01/98		3.63	3.97
	12/30/98		4.40	3.20
	03/21/00		2.62	4.98
	08/30/00		3.21	4.39
MW-2	10/21/96	4.48	4.66	-0.18
	11/04/96		4.60	-0.12
	03/04/97		3.68	0.80
	06/12/97		3.70	0.78
	07/14/97		4.16	0.32
	09/09/97		3.88	0.60
	09/19/97		4.50	-0.02
	02/13/98		3.08	1.40
	07/07/98		3.74	0.74
	10/01/98		4.63	-0.15
	12/30/98		3.90	0.58
	03/21/00		Well Destroyed	
MW-3	10/21/96	7.79	7.66	0.13
	11/04/96		5.70	2.09
	03/04/97		11.38	-3.59
	06/12/97		5.18	2.61
	07/14/97		7.96	-0.17
	09/09/97		10.16	-2.37
	09/19/97		12.80	-5.01
	02/13/98		11.42	-3.63
	07/07/98		11.76	-3.97
	10/01/98		11.34	-3.55
	12/30/98		4.56	3.23
	03/21/00		10.92	-3.13
	08/30/00		5.12	2.67
MW-4	08/30/00	7.74	3.74	4.00
MW-5	08/30/00	7.53	3.01	4.52
MW-6	08/30/00	7.89	3.40	4.49
MW-7	08/30/00	8.96	6.72	2.24
MW-8	08/30/00	7.32	3.06	4.26
MW-9	08/30/00	7.30	2.81	4.49

Notes : Monitoring wells elevations are based on City of Oakland Datum # 16NW10 which lies 15 ft west of the centerline intersection of 3rd Street and Linden Street.: Elevation = 8.108 (City of Oakland Datum = 5.108 + 3.00 = 8.108). Elevations have been converted to U.S. Geodetic Datum by adding 3.00 feet.

Table 2
Soil Sample Analytical Results
Oakland Truck Stop

			ANALYTES (mg/kg)							
Well Number	Sample Depth (ft)	Date Sampled	TPH-g	TPH-d	MtBE	MtBE 8260	benzene	toluene	ethyl-benzene	xylenes
MW-4	6.0	08/16/00	1600	13000	190	200	4.5	13	5.1	14
MW-5	13.0	08/16/00	ND	13	9.9	5.4	ND	ND	ND	ND
MW-6	8.5	08/16/00	1.8	31	1.6	1.2	ND	0.018	ND	ND
MW-7	5.5	08/17/00	7500	3400	230	320	200	700	160	870
MW-8	5.0	08/16/00	ND	ND	5.9	5.4	ND	ND	ND	ND
MW-9	5.5	08/23/00	37	440	ND	ND	ND	ND	ND	ND

Notes: ND = Not Detected
units are milligrams per kilogram (mg/kg)

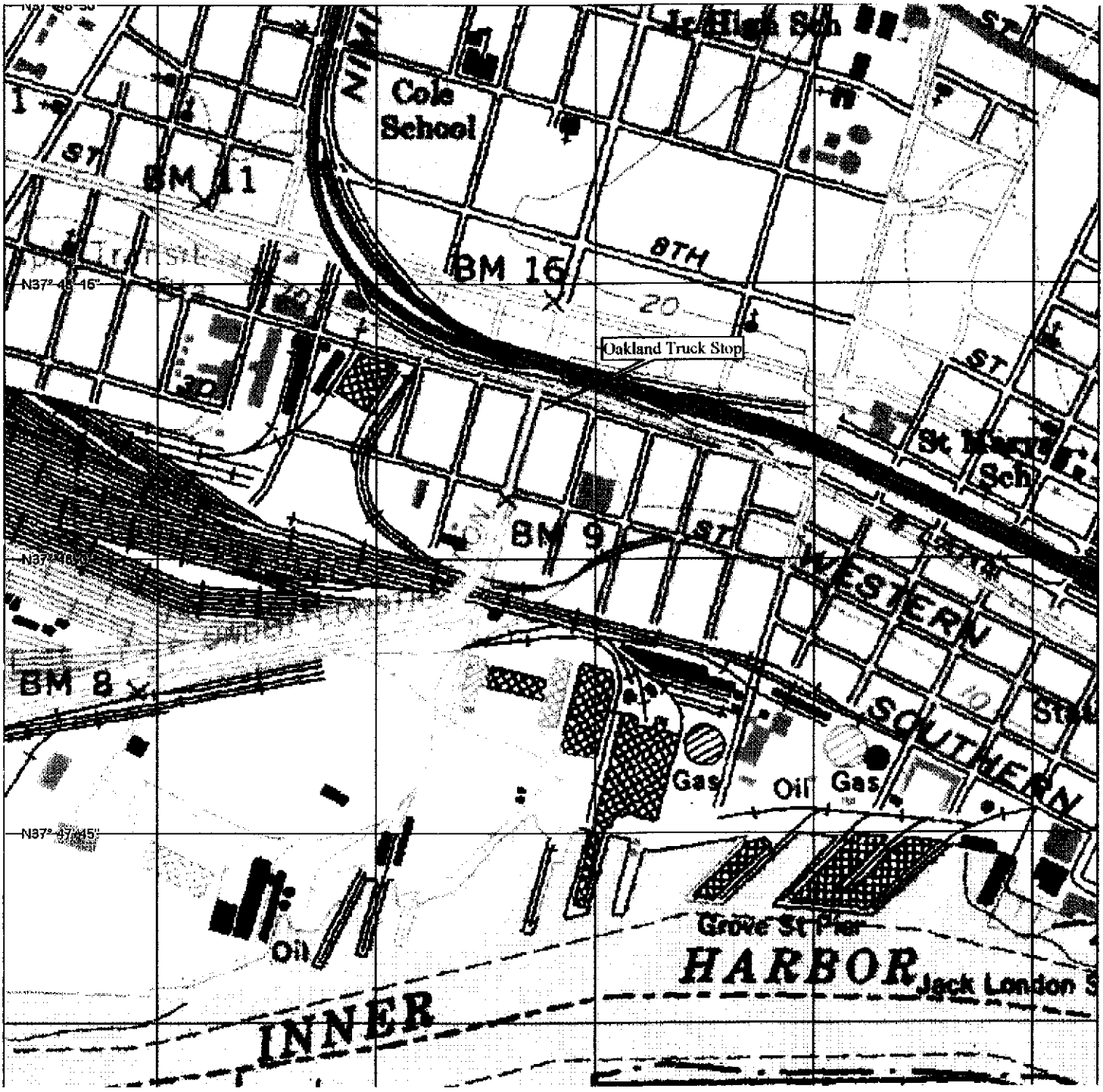
Table 3
Groundwater Sample Analytical Results
Oakland Truck Stop

	ANALYTES (ug/L)								
Well Number	Date Sampled	TPH-g	TPH-d	MtBE	MtBE 8260	benzene	toluene	ethyl-benzene	xylenes
MW-1	11/04/96	ND	220	ND	NA	ND	ND	ND	ND
	03/05/97	ND	230	ND	NA	ND	ND	ND	ND
	06/12/97	ND	290	ND	NA	ND	ND	ND	ND
	09/09/97	ND	180	ND	NA	ND	ND	ND	ND
	02/13/98	ND	590	9.4	NA	ND	ND	ND	ND
	07/07/98	ND	1,400	ND	2.7	ND	ND	ND	ND
	10/01/98	ND	1,100	ND	1.8	ND	ND	ND	ND
	12/30/98	ND	1,700	ND	2.3	ND	ND	ND	ND
	03/21/00	220	3,100	**3,800**	**4,800**	**11**	ND	ND	ND
	08/30/00	140	1,600	**2,900**	NS	**5.3**	ND	ND	ND
MW-2	11/04/96	910	2,700	**470,000**	NA	**120**	23	3.5	51
	03/05/97	4,400	2,300	**760,000**	NA	**1,500**	51	24	100
	06/12/97	3,600	2,400	**840,000**	NA	**1,200**	14	12	40
	09/09/97	3,700	970	**470,000**	NA	**570**	31	19	60
	02/13/98	6,500	2,200	**750,000**	NA	**2,400**	31	ND	ND
	07/07/98	5,200	2,700	**950,000**	**1,000,000**	**2,800**	ND	ND	ND
	10/01/98	1,200	1,200	**420,000**	**360,000**	**330**	12	8.8	11
	12/30/98	1,000	1,900	**370,000**	**360,000**	**96**	ND	ND	ND
	03/21/00	NS	NS	NS	NS	NS	NS	NS	NS
	08/30/00	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	11/04/96	ND	310	**1,000**	NA	ND	ND	ND	ND
	03/05/97	ND	210	13	NA	ND	ND	ND	ND
	06/12/97	ND	94	**17**	NA	ND	ND	ND	ND
	09/09/97	ND	2,300	12	NA	ND	ND	ND	ND
	02/13/98	ND	570	**14**	NA	ND	ND	ND	ND
	07/07/98	ND	1,100	7.8	6.6	ND	ND	ND	ND
	10/01/98	ND	390	9.2	4.8	ND	ND	ND	ND
	12/30/98	ND	64	6.9	4.5	ND	ND	ND	ND
	03/21/00	ND	2,800	6.7	4.8	ND	ND	ND	ND
	08/30/00	ND	260	12	NS	**1.3**	ND	ND	ND
MW-4	08/30/00	1,300	390	**210,000**	NS	**64**	63	9.7	110
MW-5	08/30/00	1,000	450	**52,000**	NS	ND	ND	ND	ND

Table 3
Groundwater Sample Analytical Results
Oakland Truck Stop

		ANALYTES (ug/L)							
Well Number	Date	TPH-g	TPH-d	MtBE	MtBE 8260	benzene	toluene	ethyl-benzene	xylenes
MW-6	08/30/00	1,300	1,300	**23,000**	NS	**55**	ND	16	27
MW-7	08/30/00	160,000	2,600	**800,000**	NS	**28,000**	**15,000**	**1,200**	**5,900**
MW-8	08/30/00	ND	690	**28,000**	NS	ND	ND	ND	ND
MW-9	08/30/00	ND	770	**97**	NS	ND	ND	ND	ND
MCL		NE	NE	13	13	1	150	700	1,750

units are micrograms per liter (ug/L)
ND = Not detected
NS = Not sampled
MCL= Primary Maximum Contaminant Level (California drinking water standard)
Concentrations in excess of the MCL are in bold
NE= no MCL is established
MW-2 was destroyed during excavation of contaminated soil
MW-4 through MW-9 were constructed in August 2000



Project No: 3628

September 2000

Site Location Map
Oakland Truck Stop
1107 5th Street
Oakland, California

Figure 1

N

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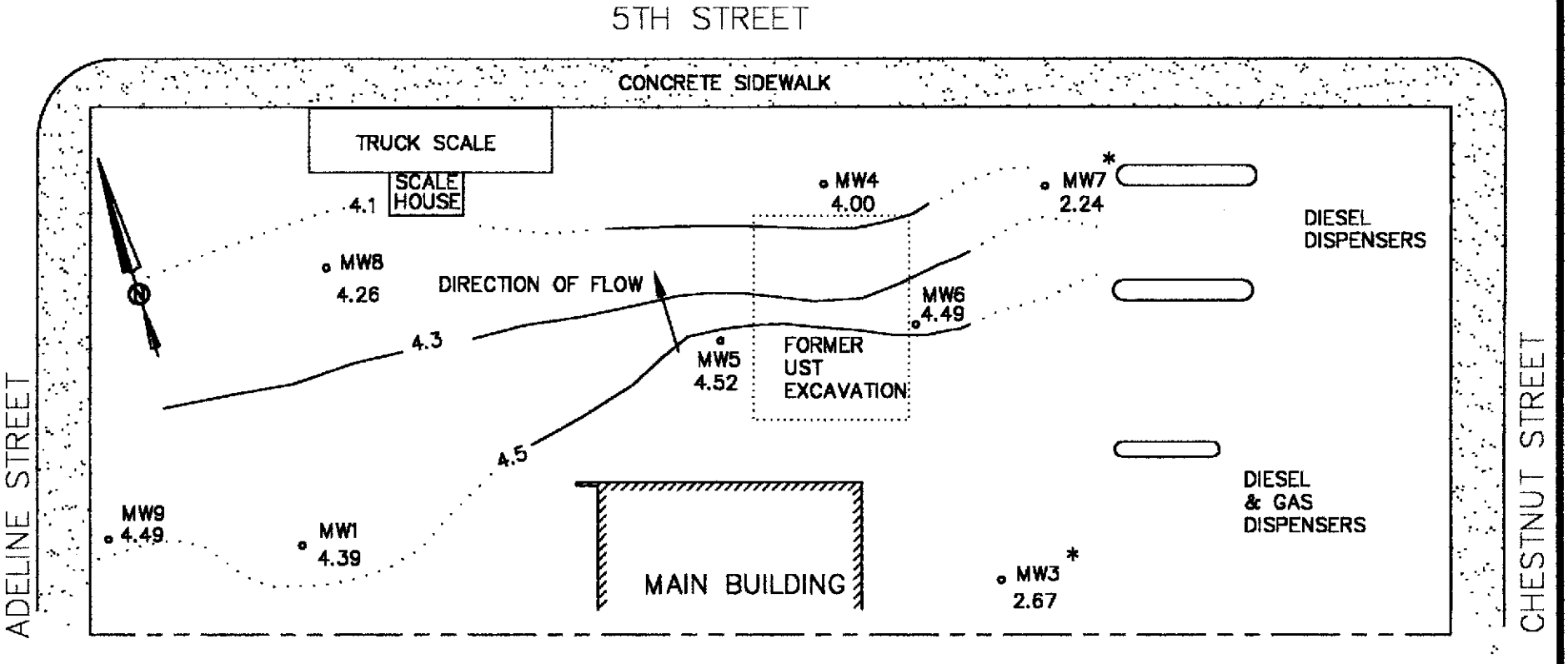

SCALE

30 0 15 30 60

(IN FEET)
1 INCH = 30 FEET

* NOTE: ELEVATION IS ANOMALOUS AND WAS NOT USED TO DEVELOP GROUNDWATER CONTOUR

GRADIENT FROM MW6 TO MW4 IS 0.0156
CONTOUR INTERVAL 0.2 FEET

MW5 MONITORING WELL DESIGNATION

4.52 FEET ABOVE SEA LEVEL, OAKLAND DATUM #16NW10 +3 FEET

W.A. Craig, Inc.
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Dixon, California 95620-9603
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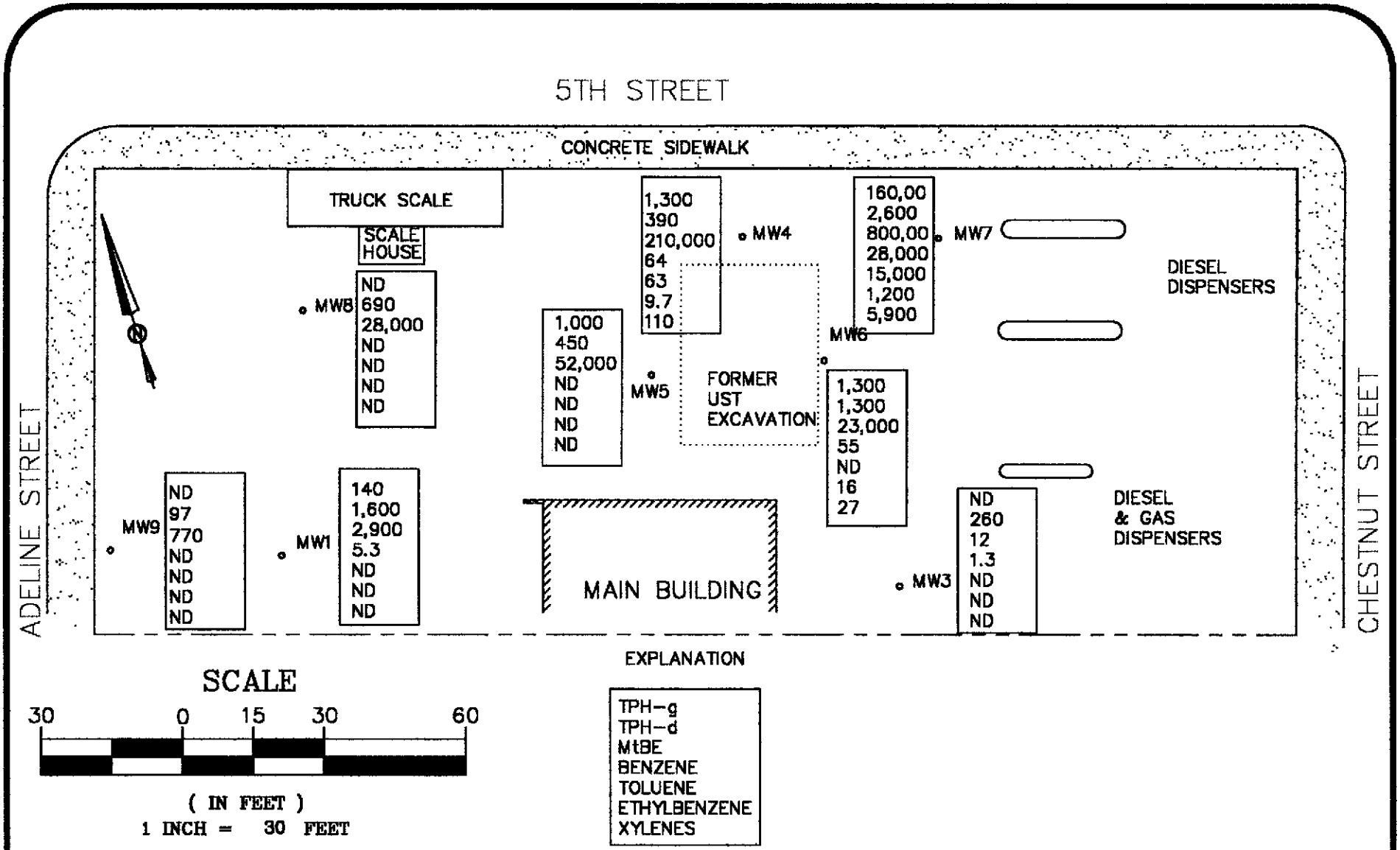
GROUNDWATER ELEVATIONS

OAKLAND TRUCK STOP
1107 FIFTH STREET
OAKLAND, CA

Project #: 3628	Figure: 2
Date: 9/15/2000	



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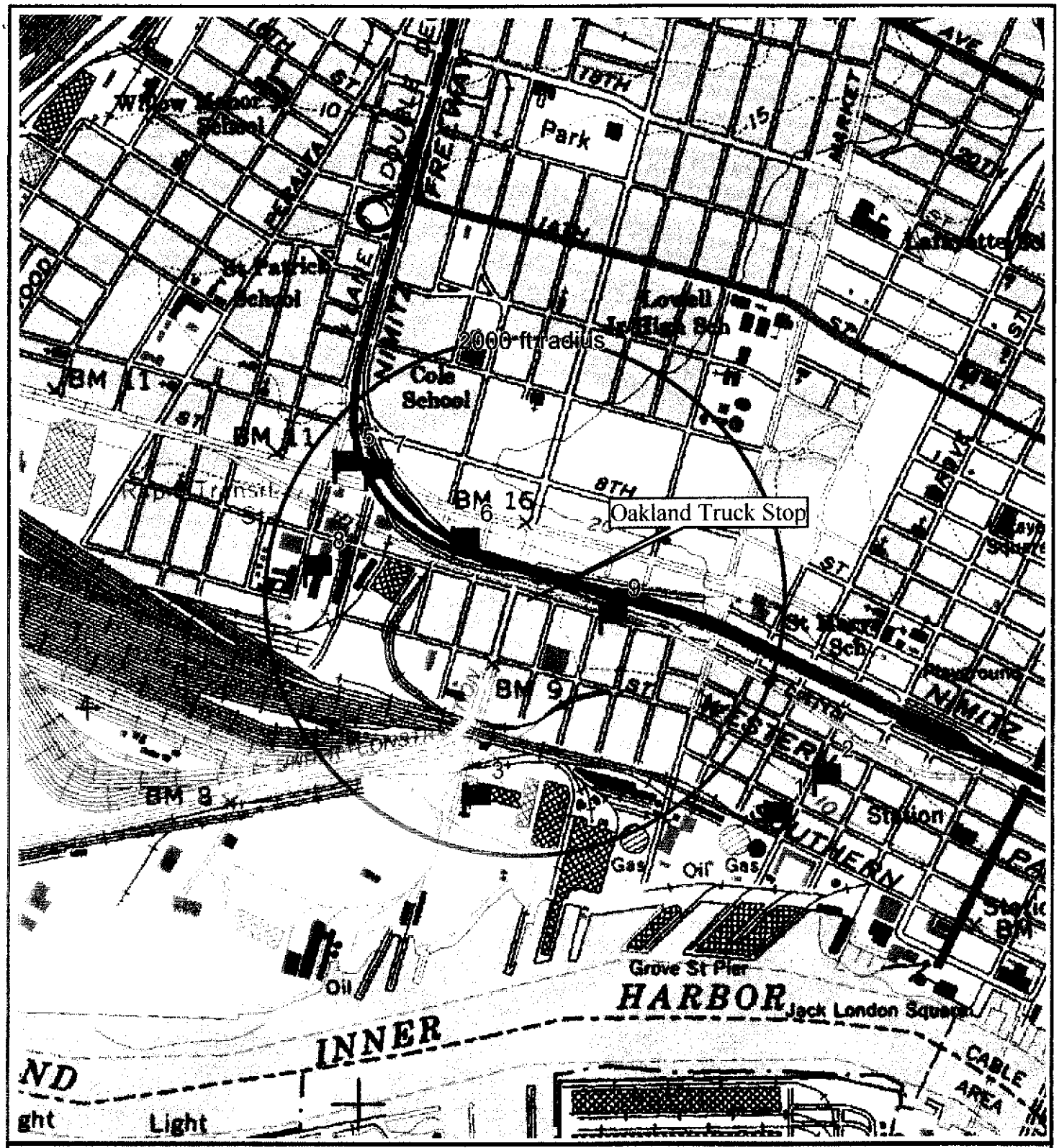
HYDROCARBON CONCENTRATIONS IN GROUNDWATER

OAKLAND TRUCK STOP
1107 FIFTH STREET
OAKLAND, CA

Project #: 3628
Date: 9/15/2000
Figure: 3



Project No: 3628

September 2000

Sensitive Receptor Map
Oakland Truck Stop
1107 5th Street
Oakland, California

Figure 4

N

Checked by:TDC

W. A. Craig, Inc.
Environmental Contracting and Consulting

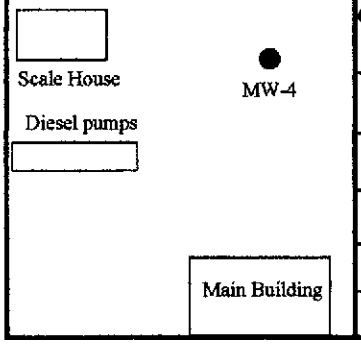
6940 Tremont Road
Dixon, California 95620
Cal License #455752

(707) 693-2929
FAX (707) 693-2922

ATTACHMENT A

BORING LOGS

BORING LOG



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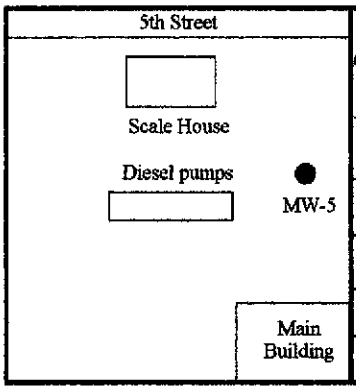
PROJECT: Rinehart Distributing	**PROJECT#** 3628	**BORING NO:** MW-4
DRILLING CONTRACTOR: Gregg Drilling& Sampling	**START TIME:** 2:32 pm **FINISH TIME:** 4:50 pm	**DATE:** 08/16/00
DRILLING METHOD: 8.5" Hollow Stem Auger	**TOTAL DEPTH:** 20.5'	**DEPTH TO WATER:** 6'
SAMPLER: California Modified Split Spoon	**SCREEN INT.:** 5'-20.5'	**CASING:** 2" PVC
HAMMER WEIGHT: 140 lbs. **DROP:** 30"	**FIELD GEOLOGIST:** O'Grady	

DEPTH	SAMPLE No	SAMPLE	BLOWS/ 6.5 ROOT	PID [ppm]	BORING/WELL CONSTRUCTION	LITHOLOGIC LOG	LITHOLOGIC DESCRIPTION Description, Color, Density, Moisture
0							AC Pavement over Class II AB
5	1		10 14 14				Sand (SW), well graded with small amounts of fines, green, increasing moisture with depth, low -no plasticity. Strong hydrocarbon odor and mottling present.
10							Clayey sand (SC) green/brown, wet, cohesive, low plasticity. Slight hydrocarbon odor. No mottling.
15							Silty clay (CH) bay mud, green/grey, moist, cohesive, high plasticity, organic. Organic smell with slight hydrocarbon odor. No mottling.
20						TD 20.5	
25							
30							Soil sampled @ 2:50 pm.
35							
40							

Checked by:TDC

BORING LOG



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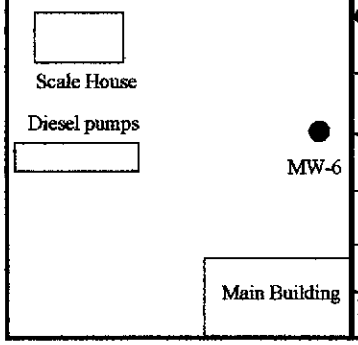
PROJECT: Rinehart Distributing	**PROJECT#** 3628	**BORING NO:** MW-5
DRILLING CONTRACTOR: Gregg Drilling & Testing	**START TIME:** 11:01 am **FINISH TIME:** 12:45 pm	**DATE:** 08/16/00
DRILLING METHOD: 8.5" Hollow Stem Auger	**TOTAL DEPTH:** 20.5'	**DEPTH TO WATER:** 5'
SAMPLER: California Modified Split Spoon	**SCREEN INT.:** 5'-20.5'	**CASING:** 2" PVC
HAMMER WEIGHT: 140 lbs. **DROP:** 30"	**FIELD GEOLOGIST:** O'Grady	

DEPTH	SAMPLE No.	SAMPLE	BLOWS/ 6.5 INCH	PID [ppm]	BORING/WELL CONSTRUCTION	LITHOLOGIC LOG	LITHOLOGIC DESCRIPTION Description, Color, Density, Moisture
0							AC Pavement over Class II AB
5							Pea-gravelbackfill
10	1		7 7 10				Clayey sand (SC) green/brown, wet, cohesive, low plasticity. Slight hydrocarbon odor. No mottling.
15							
20						TD 20.5	
25							
30							Soil sampled @ 11:23 am.
35							
40							Checked by:TDC

BORING LOG



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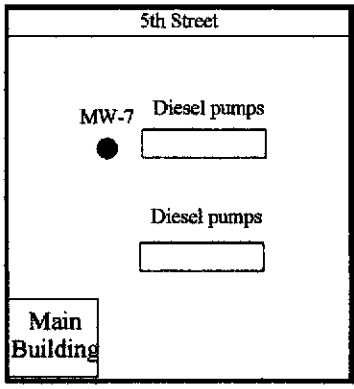
PROJECT: Rinehart Distributing	**PROJECT number** 3628	**BORING NO:** MW-6
DRILLING CONTRACTOR: Gregg Drilling & Sampling	**START TIME:** 12:46 pm **FINISH TIME:** 2:27 pm	**DATE:** 08/16/00
DRILLING METHOD: 8.5" Hollow Stem Auger	**TOTAL DEPTH:** 20.5'	**DEPTH TO WATER:** 5'
SAMPLER: California Modified Split Spoon	**SCREEN INT.:** 5'-20.5'	**CASING:** 2" PVC
HAMMER WEIGHT: 140 lbs. **DROP:** 30"	**FIELD GEOLOGIST:** O'Grady	

DEPTH	SAMPLE No	SAMPLE	BLOWS/ 0.5 FOOT	PID [ppm]	BORING/WELL CONSTRUCTION	LITHOLOGIC LOG	LITHOLOGIC DESCRIPTION Description, Color, Density, Moisture
0							AC Pavement over Class II AB
5					▽		Pea-gravelbackfill
10	1		3 3 5				Clayey sand (SC) dark brown, wet, cohesive, low plasticity. No hydrocarbon odor. No mottling.
15							
20						TD 20.5	
25							
30							Soil sampled @ 1:10 pm
35							
40							

Checked by:TDC

BORING LOG



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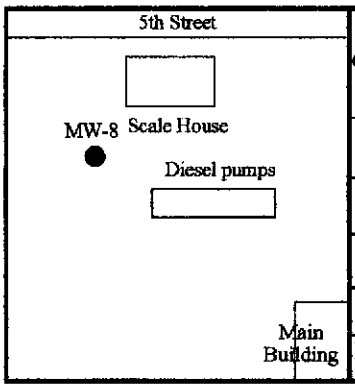
PROJECT: Rinehart Distributing	**PROJECT#** 3628	**BORING NO:** MW-7
DRILLING CONTRACTOR: Gregg Drilling & Sampling	**START TIME:** 9:06 am **FINISH TIME:** 11:26 am	**DATE:** 08/17/00
DRILLING METHOD: 8.5" Hollow Stem Auger	**TOTAL DEPTH:** 20.5'	**DEPTH TO WATER:** 5'
SAMPLER: California Modified Split Spoon	**SCREEN INT.:** 5'-20.5'	**CASING:** 2" PVC
HAMMER WEIGHT: 140 lbs. **DROP:** 30"	**FIELD GEOLOGIST:** O'Grady	

DEPTH	SAMPLE No.	SAMPLE	BLOWS/6" ROOT	PID [ppm]	BORING/WELL CONSTRUCTION	LITHOLOGIC LOG	LITHOLOGIC DESCRIPTION Description, Color, Density, Moisture
0							Concrete Paving Class II AB
5	1		4 5 5		▽		Clayey sand (SC) green, moist, cohesive, low plasticity. Strong hydrocarbon odor and mottling present. Some free product present in soil @ 4'.
10							Clayey sand (SC) green/dark grey, moist-wet, low plasticity, some cohesion. Strong hydrocarbon odor and mottling present.
15							Clayey sand (SC) green/dark grey, moist, cohesive, low plasticity. Strong hydrocarbon odor and mottling present.
20						TD 20.5	Clayey sand (SC) green/dark grey, moist, cohesive, low plasticity. Strong hydrocarbon odor and mottling present.
25							
30							Soil sampled @ 9:45 am
35							
40							

Checked by:TDC

BORING LOG



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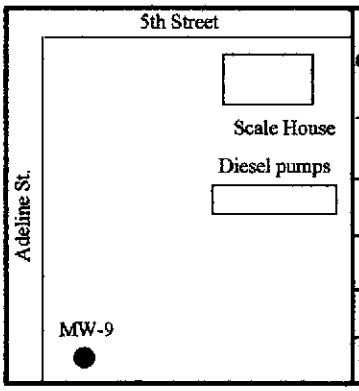
PROJECT: Rinehart Distributing	**PROJECT number** 3628	**BORING NO:** MW-8
DRILLING CONTRACTOR: Gregg Drilling & Testing	**START TIME:** 9:05 am **FINISH TIME:** 10:40 am	**DATE:** 08/16/00
DRILLING METHOD: 8.5" Hollow Stem Auger	**TOTAL DEPTH:** 20.5'	**DEPTH TO WATER:** 5'
SAMPLER: California Modified Split Spoon	**SCREEN INT.:** 5'-20.5'	**CASING:** 2" PVC
HAMMER WEIGHT: 140 lbs. **DROP:** 30"	**FIELD GEOLOGIST:** O'Grady	

DEPTH	SAMPLE No	SAMPLE	BLOWS/ 6.5 FOOT	PID [ppm]	BORING/WELL CONSTRUCTION	LITHOLOGIC LOG	LITHOLOGIC DESCRIPTION Description, Color, Density, Moisture
							AC Pavement over Class II AB
5	1		8 8 12				Clay (CL) green, damp, dense, low plasticity. Hydrocarbon odor and mottling present. Free product present @ 3'.
							Poorly graded sand with gravel (SP) green, wet, cohesive, low plasticity. Strong hydrocarbon odor and abundant mottling.
10							Clayey sand (SC) green ,wet, cohesive. Strong hydrocarbon odor and mottling present.
15							
20						TD 20.5	
25							
30							Soil sampled @ 9:31 am.
35							
40							Checked by:TDC

BORING LOG



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PROJECT: Rinehart Distributing	**PROJECT#** 3628	**BORING NO:** MW-9
DRILLING CONTRACTOR: Gregg Drilling & Testing	**START TIME:** 11:25 am **FINISH TIME:** 1:30 pm	**DATE:** 08/23/00
DRILLING METHOD: 8.5" Hollow Stem Auger	**TOTAL DEPTH:** 20.5'	**DEPTH TO WATER:** 5'
SAMPLER: California Modified Split Spoon	**SCREEN INT.:** 5'-20.5'	**CASING:** 2" PVC
HAMMER WEIGHT: 140 lbs. **DROP:** 30"	**FIELD GEOLOGIST:** O'Grady	

DEPTH	SAMPLE No.	SAMPLE	BLOWS/ 6" FOOT	PID [ppm]	BORING/WELL CONSTRUCTION	LITHOLOGIC LOG	LITHOLOGIC DESCRIPTION Description, Color, Density, Moisture
5	1	■	5 3 3		▽		AC Pavement Class II AB Concrete Pavement Clayey sand (SC) green, damp-moist, cohesive, medium plasticity. Strong hydrocarbon odor and mottling present. Clayey sand (SC) green/grey, moist-wet, low plasticity, cohesive. Strong hydrocarbon odor and mottling present.
10							Silty clay (CH) bay mud, green/dark grey, moist, organic, cohesive, high plasticity. Faint hydrocarbon odor and no mottling.
15							Silty clay (CH) bay mud, green/dark grey, moist, organic, cohesive, high plasticity. No hydrocarbon odor or mottling.
20						TD 20.5	Silty clay (CH) bay mud, green/dark grey, moist, organic, cohesive, high plasticity. No hydrocarbon odor or mottling.
25							
30							Soil sampled @ 11:55 am
35							
40							Checked by:TDC

ATTACHMENT B

WELL DEVELOPMENT AND SAMPLING LOGS

WELL DEVELOPMENT AND SAMPLING LOG

Project Name RINEHART Job No. 3628 Date 3/30/00 Weather _____
Sampler O'GRADY

Well Data **Well Number** MW 1

Total Depth of Well 20' Casing Elevation _____ Depth to Water 3.21 Groundwater Elevation _____
Method of Purging Well _____ Method of Sampling Well _____
Casing Volume 2.78 gallons Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft
Depth to Water Prior to Sampling 3X3 8.34 gallons D.O. 0.27 mg/l @ 24.2°C

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
6:26	2.5	71.0	3970	7.24	MILD	GREY/BROWN/ ODOR/SHEEN
6:31	5.0	69.4	4080	7.16	"	" "
6:54	7.5	68.2	3980	7.33	"	" "

Comments: Purged ~~8.5~~ 8.50 gallons Sampling for TPH-g, TPH-D, BTEX & MTBE

Well Data **Well Number** MW 2

Total Depth of Well 20'? Casing Elevation _____ Depth to Water 5.12' Groundwater Elevation _____
Method of Purging Well _____ Method of Sampling Well _____
Casing Volume 2.47 gallons Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft
Depth to Water Prior to Sampling 3x3 = 7.41 gallons D.O. 0.35 mg/l @ 26.4°C

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
1:34 pm	5	75.6	2480	7.88	MODERATE	GREY COLOR / ODOR / STRONG SHEEN PRESENT

Comments: Purged 5 gallons Sampling as above
Slow Recharge !!

WELL DEVELOPMENT AND SAMPLING LOG

Project Name Ringnet Job No. 3428 Date 08/30/00 Weather _____

Sampler O'Grady

3.74'

Well Data **Well Number** MW 4

Total Depth of Well 20.5' Casing Elevation _____ Depth to Water ~~3.67'~~ Groundwater Elevation _____

Method of Purging Well _____ Method of Sampling Well _____

Casing Volume 2.78 gallons Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft

Depth to Water Prior to Sampling 16.83 x 3 = 8.35 gallons D.O. 0.16 mg/l @ 27.4 °C

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well				MILD	
2:59	2.5	77.9	3170	6.96	~~MODERATE~~	TRANSLUCENT GREY/BROWN/ODOR/SLIGHT SHEEN
3:04	5.0	76.7	3190	7.00	"	" INCREASED " "
3:08	7.5	74.5	3150	6.98	"	" "

Comments: Purged 8.40 gallons Sampling for TPH-D, TPH-G, BTEX & MTBE

Well Data **Well Number** MW 5

Total Depth of Well 20.5' Casing Elevation _____ Depth to Water 3.01' Groundwater Elevation _____

Method of Purging Well _____ Method of Sampling Well _____

Casing Volume 2.90 gallons Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft

Depth to Water Prior to Sampling x 3 = 8.71 gallons D.O. 0.28 mg/l @ 27.0 °C

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					OPAQUE
3:57	2.5	76.9	2350	7.02	MODERATE	GREY/GREEN / STRONG ODOR / SHEEN
4:03	5.0	77.0	2160	7.02	"	" "
4:08	7.5	76.8	2040	6.99	"	" "

Comments: Purged 8.8 gallons Sampled as above!

WELL DEVELOPMENT AND SAMPLING LOG

Project Name RINEHART Job No. 3628 Date 08/30/00 Weather _____
Sampler O'BRADY

Well Data **Well Number** MW 6

Total Depth of Well 20.5' Casing Elevation _____ Depth to Water 3.40' Groundwater Elevation _____
Method of Purging Well _____ Method of Sampling Well _____
Casing Volume 2.84 gallons Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft
Depth to Water Prior to Sampling x 3 = 8.52 gallons D.O. 0.42 mg/l @ 27.7°C

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					OPAQUE
2:19	2.5	79.1	1450	7.31	MODERATE	GREY/BROWN / STRONG ODOR / SHEEN
2:30	5.0	78.7	1530	7.37	"	" "
2:36	7.5	77.7	1320	7.39	"	" "

Comments: Purged 8.9 gallons Sampling for TPH-D, TPH-g, BTEX & MTBE

Well Data **Well Number** MW 7

Total Depth of Well 20.5' Casing Elevation _____ Depth to Water 6.77' Groundwater Elevation _____
Method of Purging Well _____ Method of Sampling Well _____
Casing Volume 2.28 gallons Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft
Depth to Water Prior to Sampling 5 x 3 = 6.9 gallons D.O. 0.17 mg/l @ 26.8°C

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
						OPAQUE
1:50 pm	2	75.7	1720	6.92	MODERATE	GREY / GREEN STRONG ODOR / SOME SHEEN
1:55	5	74.2	1840	6.85	"	" "
2:00	7	72.3	1750	6.88	"	" STRONG SHEEN

Comments: Purged 7.0 gallons Sampling as above!

WELL DEVELOPMENT AND SAMPLING LOG

Project Name RINEHART Job No. 3625 Date 09/30/02 Weather _____
Sampler O'GRADY

Well Data **Well Number** MW 8

Total Depth of Well 20.5' Casing Elevation _____ Depth to Water 3.06' Groundwater Elevation _____
Method of Purging Well _____ Method of Sampling Well _____
Casing Volume 2.90 gallons Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft
Depth to Water Prior to Sampling x 3 = 8.70 gallons D.O. 0.18 mg/l @ 26.4°C

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
4:35	2.5	76.6	2150	7.15	MODERATE	OPAQUE GREY/GREEN ODOR/SHEEN PRESENT
4:43	5.0	75.6	2360	7.14	"	" "
4:49	7.5	74.5	2800	7.23	"	" "

Comments: Purged 8.80 gallons Sampling for TPH-D, TPH-g, BTEX & MTBE
Samples effervescent!

Well Data **Well Number** MW-9

Total Depth of Well 20.5' Casing Elevation _____ Depth to Water 2.81' Groundwater Elevation _____
Method of Purging Well _____ Method of Sampling Well _____
Casing Volume 2.93 gallons Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft
Depth to Water Prior to Sampling 1 x 3 = 8.80 gallons D.O. 0.30 mg/l @ 22.8°C

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					SLIGHTLY TURBID
5:50	2.5	71.2	3220	6.96	MODERATE	GREY/GREEN ODOR/SHEEN PRESENT
5:54	5.0	71.1	3020	6.86	MILD	" "
6:00	7.5	71.5	3090	6.70	MILD	" "

Comments: Purged 8.80 gallons Sampling as above!

ATTACHMENT C

LABORATORY ANALYTICAL REPORTS

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3628; Rinehart	Date Sampled: 08/16-08/17/00
		Date Received: 08/17/00
	Client Contact: Tim Cook	Date Extracted: 08/17/00
	Client P.O:	Date Analyzed: 08/17/00

08/24/00

Dear Tim:

Enclosed are:

1). the results of **5** samples from your **#3628; Rinehart** project,

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc.	Client Project ID: #3628; Rinehart	Date Sampled: 08/16-08/17/00
6940 Tremont Road		Date Received: 08/17/00
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 08/17/00
	Client P.O:	Date Analyzed: 08/17-08/18/00

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
45214	MW4	S	1600,g,a	190	4.5	13	5.1	14	---#
45215	MW5	S	ND	9.9	ND	ND	ND	ND	120
45216	MW6	S	1.8,g	1.6	ND	0.018	ND	ND	109
45217	MW7	S	7500,a	230	200	700	160	870	---#
45218	MW8	S	ND	5.9	ND	ND	ND	ND	101
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3628; Rinehart	Date Sampled: 08/16-08/17/00
		Date Received: 08/17/00
	Client Contact: Tim Cook	Date Extracted: 08/17/00
	Client P.O:	Date Analyzed: 08/18-08/22/00

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)+	% Recovery Surrogate
45214	MW4	S	13,000,a	102
45215	MW5	S	13,g	98
45216	MW6	S	31,a/e	101
45217	MW7	S	3400,d,b	105
45218	MW8	S	ND	101
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	
		S	1.0 mg/kg	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/L

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (fuel oil?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3628; Rinehart	Date Sampled: 08/16-08/17/00
		Date Received: 08/17/00
	Client Contact: Tim Cook	Date Extracted: 08/17/00
	Client P.O:	Date Analyzed: 08/18-08/22/00

Ethylene Dibromide (1,2-Dibromoethane) and 1,2-Dichloroethane (1,2-DCA)

EPA method 8260

Lab ID	Client ID	Matrix	EDB+	1,2-DCA+	% Recovery Surrogate
45214	MW4	S	ND<1000,j	ND<1000	102
45215	MW5	S	ND<100,j	ND<100	113
45216	MW6	S	ND<35,j	ND<35	97
45217	MW7	S	ND<6300,j	ND<6300	117
45218	MW8	S	ND<170,j	ND<170	100
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	1.0 ug/L	1.0 ug/L	
		S	5.0 ug/kg	5.0 ug/kg	

+ water and vapor samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / SPLP extracts in ug/L

h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) sample diluted due to high organic content.

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W. A. Craig, Inc.	Client Project ID: #3628; Rinehart	Date Sampled: 08/16-08/17/00
6940 Tremont Road		Date Received: 08/17/00
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 08/17/00
	Client P.O:	Date Analyzed: 08/18-08/22/00

Oxygenated Volatile Organics By GC/MS

EPA method 8260 modified

Lab ID	45214	45215	45216	45217	Reporting Limit	
Client ID	MW4	MW5	MW6	MW7		
Matrix	S	S	S	S	S	W
Compound	Concentration*				ug/kg	ug/L
Di-isopropyl Ether (DIPE)	ND<1000	ND<100	ND<35	ND<6300	5.0	1.0
Ethyl tert-Butyl Ether (ETBE)	ND<1000	ND<100	ND<35	ND<6300	5.0	1.0
Methyl-tert Butyl Ether (MTBE)	200,000	5400	1200	320,000	5.0	1.0
tert-Amyl Methyl Ether (TAME)	ND<1000	ND<100	ND<35	ND<6300	5.0	1.0
tert-Butanol	ND<5000	ND<500	ND<180	ND<32,000	25	5.0
Surrogate Recoveries (%)						
Dibromofluoromethane	102	113	97	117		
Comments:						

* water samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L

ND means not detected above the reporting limit; N/A means surrogate not applicable to this analysis

(h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content

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W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3628; Rinehart	Date Sampled: 08/16-08/17/00
		Date Received: 08/17/00
	Client Contact: Tim Cook	Date Extracted: 08/17/00
	Client P.O:	Date Analyzed: 08/18-08/22/00

Oxygenated Volatile Organics By GC/MS

EPA method 8260 modified

Lab ID	45218				Reporting Limit	
Client ID	MW8					
Matrix	S				S	W
Compound	Concentration*				ug/kg	ug/L
Di-isopropyl Ether (DIPE)	ND<170				5.0	1.0
Ethyl tert-Butyl Ether (ETBE)	ND<170				5.0	1.0
Methyl-tert Butyl Ether (MTBE)	5400				5.0	1.0
tert-Amyl Methyl Ether (TAME)	ND<170				5.0	1.0
tert-Butanol	ND<850				25	5.0
Surrogate Recoveries (%)						
Dibromofluoromethane	100					
Comments:						

* water samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L

ND means not detected above the reporting limit; N/A means surrogate not applicable to this analysis

(h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content

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QC REPORT

Date: 08/17/00 Matrix: Soil

Extraction: N/A

Compound	Concentration: mg/kg				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 38430					Instrument: GC-7		
Surrogate1	0.000	94.0	93.0	100.00	94	93	1.1
Xylenes	0.000	293.0	286.0	300.00	98	95	2.4
Ethyl Benzene	0.000	95.0	93.0	100.00	95	93	2.1
Toluene	0.000	94.0	92.0	100.00	94	92	2.2
Benzene	0.000	92.0	90.0	100.00	92	90	2.2
MTBE	0.000	110.0	106.0	100.00	110	106	3.7
GAS	0.000	1034.6	1009.3	1000.00	103	101	2.5
SampleID: 81700					Instrument: MB-1		
Oil & Grease	0.000	22.5	22.7	20.00	113	114	0.9
SampleID: 34187					Instrument: GC-6 A		
Surrogate1	0.000	96.0	105.0	100.00	96	105	9.0
TPH (diesel)	0.000	315.0	296.0	300.00	105	99	6.2

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 200$$

RPD means Relative Percent Deviation

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QC REPORT

Date: 08/18/00-08/19/00 Matrix: Soil

Extraction: N/A

Compound	Concentration: mg/kg				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 38430					Instrument: GC-7		
Surrogate1	0.000	101.0	98.0	100.00	101	98	3.0
Xylenes	0.000	304.0	292.0	300.00	101	97	4.0
Ethyl Benzene	0.000	98.0	95.0	100.00	98	95	3.1
Toluene	0.000	101.0	94.0	100.00	101	94	7.2
Benzene	0.000	97.0	92.0	100.00	97	92	5.3
MTBE	0.000	107.0	98.0	100.00	107	98	8.8
GAS	0.000	1036.6	1000.0	1000.00	104	100	3.6
SampleID: 81700					Instrument: MB-1		
Oil & Grease	0.000	19.4	19.6	20.00	97	98	1.0
SampleID: 34187					Instrument: GC-6 A		
Surrogate1	0.000	99.0	100.0	100.00	99	100	1.0
TPH (diesel)	0.000	319.0	328.0	300.00	106	109	2.8

$$\%\,\text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

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QC REPORT

VOCs (EPA 8240/8260)

Date: 08/17/00-08/18/00 Matrix: Soil

Extraction: N/A

SampleID: 81600 Instrument: GC-4

Compound	Concentration: ug/kg				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
Surrogate	0.000	101.0	98.0	100.00	101	98	3.0
tert-Amyl Methyl Ether	0.000	82.0	86.0	100.00	82	86	4.8
Methyl tert-Butyl Ether	0.000	98.0	92.0	100.00	98	92	6.3
Ethyl tert-Butyl Ether	0.000	106.0	99.0	100.00	106	99	6.8
Di-isopropyl Ether	0.000	104.0	99.0	100.00	104	99	4.9
Surrogate	0.000	120.0	120.0	100.00	120	120	0.0
Tolune	0.000	97.0	99.0	100.00	97	99	2.0
Benzene	0.000	109.0	111.0	100.00	109	111	1.8
Chlorobenzene	0.000	109.0	112.0	100.00	109	112	2.7
Trichloroethane	0.000	91.0	88.0	100.00	91	88	3.4
1,1-Dichloroethene	0.000	116.0	119.0	100.00	116	119	2.6

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{Amount Spiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 200$$

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CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

Report To: Tim Cook Bill To:
Company: W. A. Craig
6940 Tremont Road
Dixon, CA 95620-9603
Tele: (707) 693-2929 Fax: (707) 693-2922
Project #: 3L-2B Project Name: Rinehart
Project Location: Oakland
Sampler Signature: Sean O'Mealy

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	BTEX & TPH as Gas (602/8020 + 8015)/ MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / (8260) fuel oxys / lead scavengers	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Other	Other	Other	Comments
MW4		8/16/00					X				X				X	X							X											45214
MW5		|					X				X				X	X							X											45215
MW6		|					X				X				X	X							X											45216
MW7		8/17/00					X				X				X	X							X											45217
MW8		8/16/00					X				X				X	X							X											45218

Relinquished By:	Date:	Time:	Received By:
Sean O'Mealy	8/17/00	2:47 p	Tim Cook
Tim Cook	8/17	5:55 p	[illegible signature]

Remarks:

ICE/t° ✓ GOOD CONDITION ✓ HEAD SPACE ABSENT ✓ PRESERVATION ✓ APPROPRIATE CONTAINERS ✓

VOAS	O&G	METALS	OTHER
✓			

(pd r/chk #19763)

B.W.

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W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3628; Rinehart	Date Sampled: 08/23/00
		Date Received: 08/24/00
	Client Contact: Tim Cook	Date Extracted: 08/24/00
	Client P.O:	Date Analyzed: 08/24/00

08/31/00

Dear Tim:

Enclosed are:

1). the results of **1** samples from your **#3628; Rinehart** project,

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton, Lab Director

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W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3628; Rinehart	Date Sampled: 08/23/00
		Date Received: 08/24/00
	Client Contact: Tim Cook	Date Extracted: 08/25/00
	Client P.O:	Date Analyzed: 08/25-08/29/00

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)[+]	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
45822	MW-9@6.5'	S	37,g	ND	ND	ND	ND	ND	100
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

[+]The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

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		Date Received: 08/24/00
	Client Contact: Tim Cook	Date Extracted: 08/31/00
	Client P.O:	Date Analyzed: 08/31/00

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)+	% Recovery Surrogate
45822	MW-9@6.5'	S	440,a	104
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	
		S	1.0 mg/kg	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/L

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.

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		Date Received: 08/24/00
	Client Contact: Tim Cook	Date Extracted: 08/31/00
	Client P.O:	Date Analyzed: 08/31/00

Oxygenated Volatile Organics By GC/MS

EPA method 8260 modified

Lab ID	45822	Reporting Limit	
Client ID	MW-9@6.5'		
Matrix	S	S	W
Compound	Concentration*	ug/kg	ug/L
Di-isopropyl Ether (DIPE)	ND<25	5.0	1.0
Ethyl tert-Butyl Ether (ETBE)	ND<25	5.0	1.0
Methyl-tert Butyl Ether (MTBE)	ND<25	5.0	1.0
tert-Amyl Methyl Ether (TAME)	ND<25	5.0	1.0
tert-Butanol	ND<130	25	5.0
Surrogate Recoveries (%)			
Dibromofluoromethane	91		
Comments:	j		

* water samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L

ND means not detected above the reporting limit; N/A means surrogate not applicable to this analysis

(h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content

DHS Certification No. 1644

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W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3628; Rinehart	Date Sampled: 08/23/00
		Date Received: 08/24/00
	Client Contact: Tim Cook	Date Extracted: 08/31/00
	Client P.O:	Date Analyzed: 08/31/00

Ethylene Dibromide (1,2-Dibromoethane) and 1,2-Dichloroethane (1,2-DCA)

EPA method 8260

Lab ID	Client ID	Matrix	EDB+	1,2-DCA+	% Recovery Surrogate
45822	MW-9@6.5'	S	ND<25,j	ND<25	91
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	1.0 ug/L	1.0 ug/L	
		S	5.0 ug/kg	5.0 ug/kg	

+ water and vapor samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / SPLP extracts in ug/L

h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) sample diluted due to high organic content.

DHS Certification No. 1644

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QC REPORT

Date: 08/25/00-08/26/00 Matrix: Soil

Extraction: N/A

Compound	Concentration: ug/kg				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 81900				Instrument: GC-7			
Surrogate1	0.000	94.0	88.0	100.00	94	88	6.6
Xylenes	0.000	278.0	296.0	300.00	93	99	6.3
Ethyl Benzene	0.000	88.0	91.0	100.00	88	91	3.4
Toluene	0.000	88.0	92.0	100.00	88	92	4.4
Benzene	0.000	85.0	84.0	100.00	85	84	1.2
MTBE	0.000	89.0	93.0	100.00	89	93	4.4
GAS	0.000	946.1	975.4	1000.00	95	98	3.0
SampleID: 83000				Instrument: MB-1			
Oil & Grease	0.000	19.4	19.6	20.00	97	98	1.0
SampleID: 81900				Instrument: GC-11 A			
Surrogate1	0.000	108.0	116.0	100.00	108	116	7.1
TPH (diesel)	0.000	311.0	345.0	300.00	104	115	10.4

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

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QC REPORT

Date: 08/31/00 Matrix: Soil

Extraction: N/A

Compound	Concentration: mg/kg				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 83100					Instrument: GC-12		
Surrogate1	0.000	100.0	101.0	100.00	100	101	1.0
Xylenes	0.000	324.0	315.0	300.00	108	105	2.8
Ethyl Benzene	0.000	102.0	105.0	100.00	102	105	2.9
Toluene	0.000	106.0	102.0	100.00	106	102	3.8
Benzene	0.000	108.0	107.0	100.00	108	107	0.9
MTBE	0.000	103.0	96.0	100.00	103	96	7.0
GAS	0.000	981.0	959.2	1000.00	98	96	2.3
SampleID: 83000					Instrument: GC-6 A		
Surrogate1	0.000	105.0	113.0	100.00	105	113	7.3
TPH (diesel)	0.000	351.0	382.0	300.00	117	127	8.5

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

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QC REPORT

VOCs (EPA 8240/8260)

Date: 08/31/00-09/01/00 Matrix: Soil

Extraction: N/A

Compound	Concentration: ug/kg				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 82400					Instrument: GC-4		
Surrogate	0.000	95.0	96.0	100.00	95	96	1.0
tert-Amyl Methyl Ether	0.000	105.0	102.0	100.00	105	102	2.9
Methyl tert-Butyl Ether	0.000	127.0	133.0	100.00	127	133	4.6
Ethyl tert-Butyl Ether	0.000	96.0	94.0	100.00	96	94	2.1
Di-isopropyl Ether	0.000	95.0	95.0	100.00	95	95	0.0

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

21163 2WOC337.doc

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

Report To: Tim Cook Bill To:
Company: W. A. Craig
6940 Tremont Road
Dixon, CA 95620-9603
Tele: (707) 693-2929 Fax: (707) 693-2922
Project #: 3128 Project Name: Rinehart
Project Location: Oakland
Sampler Signature: Sam O'Grady

45822

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	BTEX & TPH as Gas (602/8020 + 8015)/ MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260 Fuel oxygenates/lead scavengers	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Other	Other	Other	Comments
MW-9@6.5'					1		X				X				X	X							X											

ICE/t° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT
PRESERVATION ✓ (VOAS | O&G | METALS | OTHER)
APPROPRIATE CONTAINERS

Relinquished By:	Date:	Time:	Received By:
Sam O'Grady	08/23/00	2:45p	Tim Cook
Tim Cook	8/24	600p	[illegible] (MAI)

Remarks:

TB [illegible]

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3628; Rinehart	Date Sampled: 08/30/2000
		Date Received: 08/31/2000
	Client Contact: Sean O'Grady	Date Extracted: 08/31/2000
	Client P.O:	Date Analyzed: 08/31/2000

09/08/2000

Dear Sean:

Enclosed are:

1). the results of **8** samples from your **#3628; Rinehart** project,

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3628; Rinehart	Date Sampled: 08/30/2000
		Date Received: 08/31/2000
	Client Contact: Sean O'Grady	Date Extracted: 09/02-09/06/2000
	Client P.O:	Date Analyzed: 09/02-09/06/2000

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
49569	MW1	W	140,c	2900	5.3	ND	ND	ND	96
49570	MW2	W	ND	12	1.3	ND	ND	ND	96
49571	MW4	W	1300,a	210,000	64	63	9.7	110	99
49572	MW5	W	1000,f	52,000	ND	ND	ND	ND	96
49573	MW6	W	1300,a	23,000	55	ND	16	27	97
49574	MW7	W	160,000,a	800,000	28,000	15,000	1200	5900	96
49575	MW8	W	ND<1000	28,000	18	ND<1	ND<1	ND<1	106
49576	MW9	W	ND	97	ND	ND	ND	ND	99
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3628; Rinehart	Date Sampled: 08/30/2000
		Date Received: 08/31/2000
	Client Contact: Sean O'Grady	Date Extracted: 08/31/2000
	Client P.O:	Date Analyzed: 09/01-09/07/2000

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)+	% Recovery Surrogate
49569	MW1	W	1600,c	103
49570	MW2	W	260,b,g	111
49571	MW4	W	390,b,d	116
49572	MW5	W	450,a/e	101
49573	MW6	W	1300,a,d	103
49574	MW7	W	2600,d	108
49575	MW8	W	690,a	119
49576	MW9	W	770,a	117
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	
		S	1.0 mg/kg	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/L

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (fuel oil?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

Date: 09/01/00-09/02/00 Matrix: Water

Extraction: N/A

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 9100					Instrument: GC-3		
Surrogate1	0.000	99.0	99.0	100.00	99	99	0.0
Xylenes	0.000	296.0	293.0	300.00	99	98	1.0
Ethyl Benzene	0.000	98.0	97.0	100.00	98	97	1.0
Toluene	0.000	101.0	101.0	100.00	101	101	0.0
Benzene	0.000	103.0	103.0	100.00	103	103	0.0
MTBE	0.000	106.0	108.0	100.00	106	108	1.9
GAS	0.000	871.9	894.3	1000.00	87	89	2.5
SampleID: 9300					Instrument: GC-11 B		
Surrogate1	0.000	112.0	111.0	100.00	112	111	0.9
TPH (diesel)	0.000	317.0	294.0	300.00	106	98	7.5

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

2177 Zwac 239.doc

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

Report To: Sean O'Grady Bill To:
Company: W. A. Craig
6940 Tremont Road
Dixon, CA 95620-9603
Tele: (707) 693-2929 Fax: (707) 693-2922
Project #: 3128 Project Name: Kinnart
Project Location: Oakland
Sampler Signature: Sean O'Grady

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	Soil	Air	Sludge	Other	METHOD PRESERVED Ice	HCl	HNO_3	Other	BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
MW1		8/30			1	X					X	X			X	X															49569
MW2		8/30				X					X	X			X	X															49570
MW4		8/30				X					X	X			X	X															49571
MW5		8/30				X					X	X			X	X															49572
MW6		8/30				X					X	X			X	X															49573
MW7		8/30				X					X	X			X	X															49574
MW8		8/30				X					X	X			X	X															49575
MW9		8/30				X					X	X			X	X															49576

Relinquished By:	Date:	Time:	Received By:
Sean O'Grady	8/31	10:53a	
Relinquished By:	Date:	Time:	Received By:
	8/31	4:50p	Maria Venegas
Relinquished By:	Date:	Time:	Received By:

Remarks: (pd w/chk #56095)

ICE/T ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓

	VOAS	O&G	METALS	OTHER
PRESERVATION	✓			
APPROPRIATE CONTAINERS	✓			

ATTACHMENT D

NEARBY WELL LOGS

1S/4W-3

01-799

MLK & Embarcadero

RECORD OF WELL

FOR PACIFIC GAS & ELECTRIC CO.

GROVE and 1ST ST., OAKLAND.

--oOo--

From	1 - 0	to	10 - 0	--	Fill.
	10 - 0	to	45 - 0	--	Sand.
	45 - 0	to	51 - 0	--	Quick Sand.
	51 - 0	to	64 - 0	--	Clay.
	64 - 0	to	66 - 0	--	Sand.
	66 - 0	to	70 - 0	--	Sandy Clay.
	70 - 0	to	73 - 0	--	Blue Clay.
	73 - 0	to	74 - 0	--	S. S. Clay.
	74 - 0	to	82 - 0	--	B. Sand.
	82 - 0	to	108 - 0	--	B. Clay.
	108 - 0	to	115 - 0	--	Yellow S. Clay.
	115 - 0	to	117 - 0	--	B. Sand.
	117 - 0	to	120 - 0	--	C. Gravel.
	120 - 0	to	122 - 0	--	B. Clay.
	122 - 0	to	132 - 0	--	B. Sand.
	132 - 0	to	136 - 0	--	C. Gravel.
	136 - 0	to	140 - 0	--	Y. Clay.
	140 - 0	to	147 - 0	--	Y. Sand.
	147 - 0	to	150 - 0	--	C. Gravel.
	150 - 0	to	205 - 0	--	Y. Clay.
	205 - 0	to	216 - 0	--	W. Gravel.
	216 - 0	to	218 - 0	--	Y. Cay.
	218 - 0	to	229 - 0	--	W. Gravel.
	229 - 0	to	246 - 0	--	Y. Clay.
	246 - 0	to	252 - 0	--	S. Sand.

--oOo--

15/4W-3

01-799

RECORD OF WELL

FOR PACIFIC GAS & ELECTRIC CO.

GROVE and 1ST ST., OAKLAND.

--oOo--

From	1 - 0	to	10 - 0	--	Fill.
	10 - 0	to	45 - 0	--	Sand.
	45 - 0	to	51 - 0	--	Quick Sand.
	51 - 0	to	64 - 0	--	Clay.
	64 - 0	to	66 - 0	--	Sand.
	66 - 0	to	70 - 0	--	Sandy Clay.
	70 - 0	to	73 - 0	--	Blue Clay.
	73 - 0	to	74 - 0	--	S. S. Clay.
	74 - 0	to	82 - 0	--	B. Sand.
	82 - 0	to	108 - 0	--	B. Clay.
	108 - 0	to	115 - 0	--	Yellow S. Clay.
	115 - 0	to	117 - 0	--	B. Sand.
	117 - 0	to	120 - 0	--	C. Gravel.
	120 - 0	to	122 - 0	--	B. Clay.
	122 - 0	to	132 - 0	--	B. Sand.
	132 - 0	to	136 - 0	--	C. Gravel.
	136 - 0	to	140 - 0	--	Y. Clay.
	140 - 0	to	147 - 0	--	Y. Sand.
	147 - 0	to	150 - 0	--	C. Gravel.
	150 - 0	to	205 - 0	--	Y. Clay.
	205 - 0	to	216 - 0	--	W. Gravel.
	216 - 0	to	218 - 0	--	Y. Cay.
	218 - 0	to	229 - 0	--	W. Gravel.
	229 - 0	to	246 - 0	--	Y. Clay.
	246 - 0	to	252 - 0	--	S. Sand.

--oOo--

15/4W-34R

01-800

(1)

1-12a - 34

Log of Well No. 2. P. G. & E.

Fill			10	feet
Sand	10	to	57	"
Blue clay	57	"	130	"
Blue clay, gravel	130	"	136	"
Blue clay	136	"	146	"
Yellow clay	146	"	162	"
C. Gravel	162	"	167	"
Blue clay	167	"	202	"
Sand clay	202	"	205	"
Sand & gravel	205	"	226	"
Yellow clay	226	"	228	"
Sandy clay	228	"	252	"
Water sand	252	"	256	"
Water gravel	256	"	261	"
G. Clay	261	"	262	"

28' 10" casing

20' 8"

12' 6"

60' of perforated casing

226

262

226

36

15/46-E
3492

(1)

01-798

July 10-41

Log of well at Moore dry dock

0 too 126 ft mostly blue
muck mixed with sand
and some fine gravel.

126 ft too 165 yellow clay.
165 too 180 very hard cement
sand and gravel
180 too 200 yellow clay
200 too 203 looks like
water bearing. Blue gray
sandy chalky formation.
203 too 274 yellow clay
274 too 290 water bearing
sandy fine gravel and yellow
clay

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

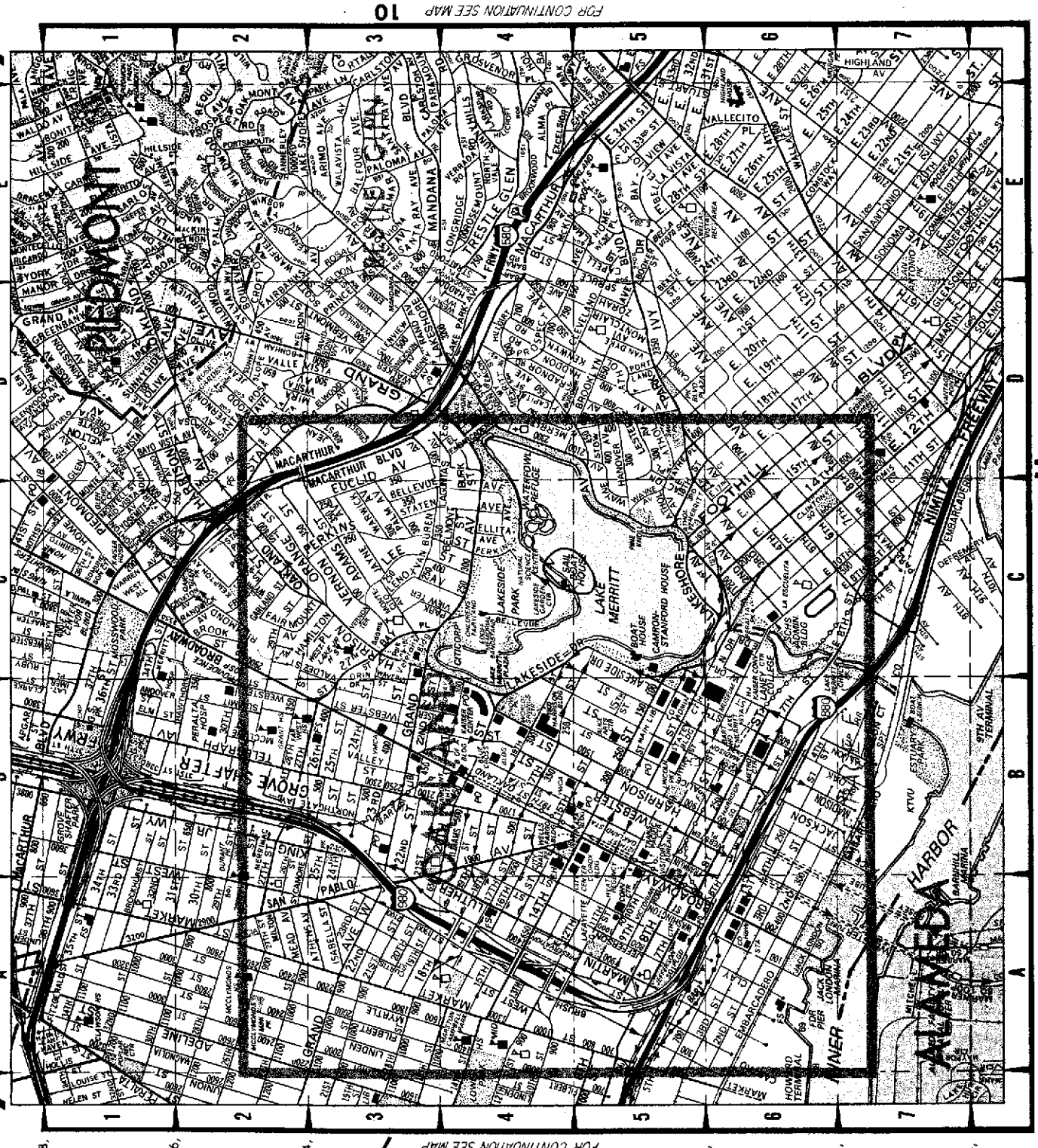
REMOVED

CONFIDENTIAL

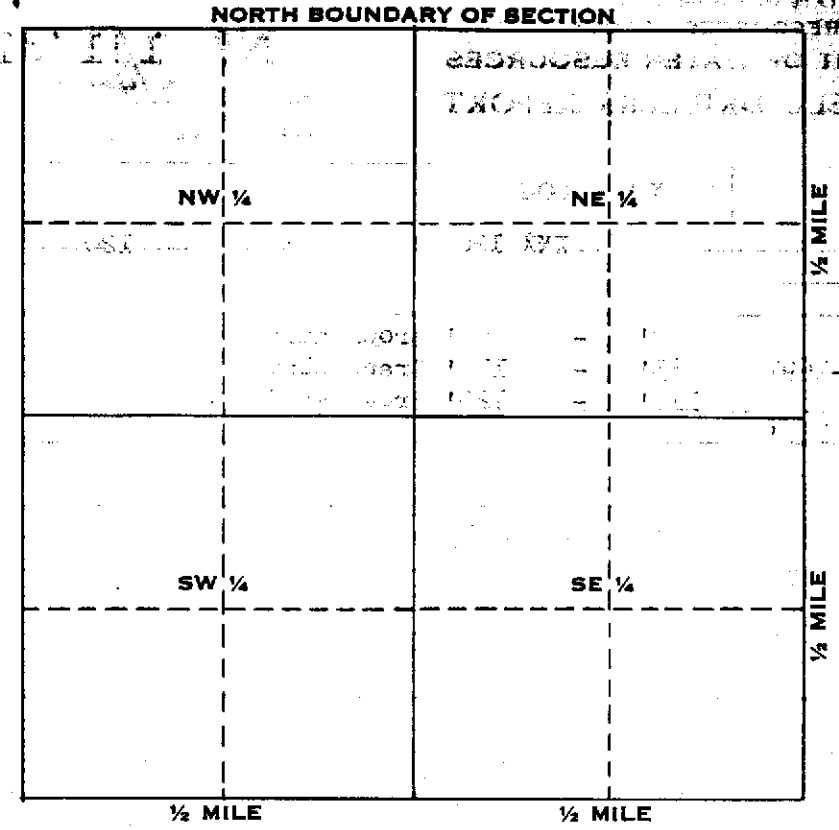
STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

DETAIL



WELL LOCATION SKETCH

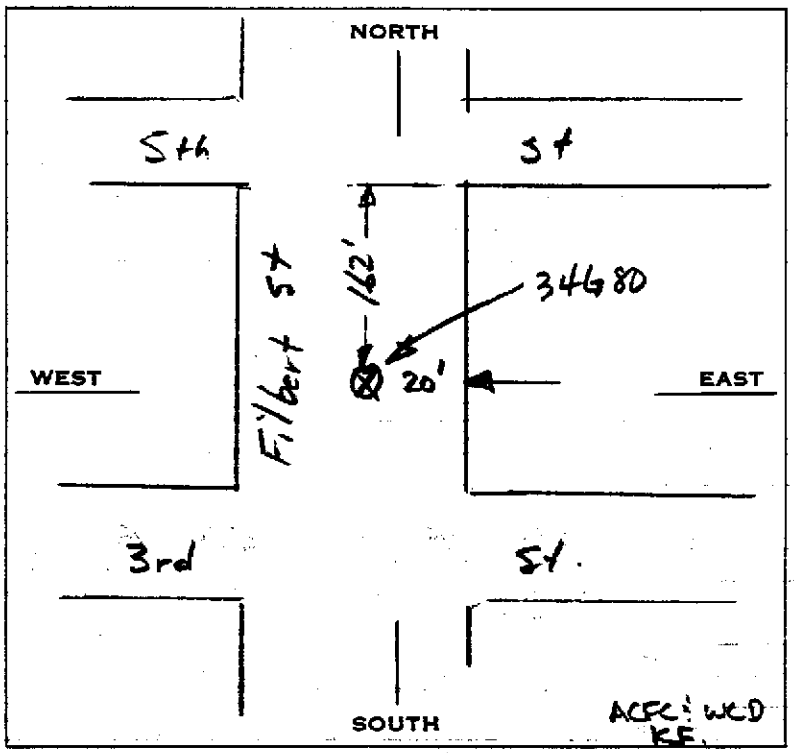


Township 1 N S

Range 4 E W

Section No. 34680

A. Location of well in sectionized areas.
Sketch roads, railroads, streams, or other features as necessary.



B. Location of well in areas not sectionized.
Sketch roads, railroads, streams, or other features as necessary.
Indicate distances.

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED