ConocoPhillips
76 Broadway
Sacramento, California 95818

October 11, 2007

Mr. Barney Chan
Hazardous Materials Specialist
Alameda County Health Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Re: Soil and Ground Water Investigation Work Plan Addendum
Former 76 Service Station no. 3737
1400 Powell Street
Emeryville, CA

Dear Mr. Chan,

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please contact me at (916) 558-7612.

Sincerely,

Bill Borgh

Bill Borgh
Site Manager – Risk Management and Remediation

Attachment

1590 Solano Way
#A
Concord, CA 94520

925.688.1200 PHONE
925.688.0388 FAX

www.TRCsolutions.com

October 8, 2007 TRC Project No. 125965

Mr. Barney Chan
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

SITE: FORMER 76 SERVICE STATION NO. 3737
1400 POWELL STREET
EMERYVILLE, CALIFORNIA

RE: SOIL AND GROUNDWATER INVESTIGATION WORK PLAN ADDENDUM

Dear Mr. Chan:

On behalf of ConocoPhillips Company, TRC submits this Work Plan Addendum for soil and groundwater investigation activities at the former 76 Service Station No. 3737 located at 1400 Powell Street, Emeryville, California (Figure 1). The work plan addendum was prepared in response to comments by the Alameda County Environmental Health (ACEH) to the August 30, 2005 Soil and Groundwater Investigation Work Plan. The ACEH response letter was dated November 15, 2005; however, the letter was not received until March 5, 2007 via electronic correspondence. A copy of the ACEH letter is included in Appendix A.

1.0 HISTORICAL SITE REPORTS

At the request of the ACEH, the following historical site reports are included as attachments to the work plan:

- Soil Gas Survey Report, Pacific Environmental Group (PEG) dated October 29, 1997 - identifies the location of the former oil/water separator removed in 1993 (Appendix B).
- Oil/Water Separator Abandonment Report, GeoStrategies Inc., dated August 11, 1993 - contains map showing the previous location of the oil/water separator (Appendix C).
- Historical Site-specific tables summarizing analytical results of soil samples collected at the Former 76 Service Station No. 3737 during the removal of the former oil/water separator and former waste oil tank, the replacement of underground product conveyance piping, and the results of an on-site grab groundwater samples (Appendix D).

2.0 CURRENT ONSITE UNDERGROUND STORAGE TANKS

In their November 15, 2005 letter, the ACEH requested information regarding the underground storage tanks (UST's) currently present onsite, including number, size, contents, and date of installation. There are currently three USTs onsite; all three are 10,000 gallon single-wall fiberglass USTs and were installed in January of 1981. The contents of the tanks are premium, regular, and diesel fuel.

3.0 ADDITIONAL SITE BACKGROUND

After review of the neighboring property files at ACEH, TRC discovered that between 1917 and 1964 Union Oil Company of California operated a Distribution Plant that was bounded by Powell Street to the south, 59th Street to the north, Peladeau Street to the west, and Hollis Street to the east. This distribution facility contained numerous above ground and underground storage tanks (ASTs and USTs), a garage along Hollis Street and an auto repair shop along Peladeau Street (Treadwell & Rollo, 2007 - Appendix E). The entire gasoline service station was constructed on what was Union Oil Company of California Distribution Plant property. On the portion of the former Distribution Plant that the Site currently occupies, there were a total of eight ASTs containing oil and gasoline on the west side, and an oil warehouse, oil pump, and asphalt staging area on the east side. Figure 2 illustrates the approximate locations of these structures, based on a review of the Sanborn maps included as part of the Response to Letter Dated 28 October 2005 and Work Plan for Post-Excavation Soil and Groundwater Sampling (Treadwell & Rollo, 2005 – Appendix F).

The eight former ASTs located on the western portion of the Site had a combined storage capacity of 624,000 gallons, and were installed within the former berm as presented on Figure 2. The lateral extent of this former bermed area includes the location of the three existing USTs as well as a majority of the existing underground piping and dispensers currently at the site.

According to Treadwell & Rollo's Site Management Completion report for 5885 Hollis Street, Emeryville, dated January 5, 2007 (Appendix E), elevated levels of hydrocarbons were observed in soils of the Emeryville Industrial Court (EIC), the property located north of the Site. Soil samples collected from soil borings TR-25 and TR-28, located approximately 5 feet north of the Site's northern property line, contained maximum concentrations of 2,100 milligrams per kilogram (mg/kg) of total petroleum hydrocarbons as gasoline (TPH-g) and 280 mg/kg of total petroleum hydrocarbons as motor oil (TPH-mo), respectively, at 6 feet below grade (fbg). A grab groundwater sample collected from TR-25 contained 150,000 micrograms per liter (µg/L) TPH-g and 2,500 µg/L benzene.

The entire property of the EIC was excavated to a total depth of approximately 12 to 15 fbg for the foundation of the new building that is currently being constructed on the property. Confirmation soil samples collected in the area just to the north of the Site on the EIC property indicated that TPH-g and TPH-mo were detected at maximum concentrations of 10 mg/kg and 6.0 mg/kg, respectively. Based on these results, it would appear that the majority of soil contamination in the vadose zone that could contribute significant contaminants to groundwater in the vicinity immediately north of the Site has been removed. Applicable portions of the Treadwell & Rollo Site Management Completion Report dated January 5, 2007, are included as Appendix E.

During the excavation of the foundation for the new building on the EIC property, three dewatering wells were installed and sampled on a weekly basis. Dewatering well DW-14, located in the southwestern corner of the property, had high levels of TPH-g, total petroleum hydrocarbons as diesel (TPH-d), and benzene, toluene, ethyl benzene, and total xylenes (BTEX) throughout the course of the excavation work. The maximum concentrations of TPH-g and TPH-d detected in extracted groundwater were 1,800 µg/L and 370 µg/L, respectively (Treadwell & Rollo, 2007 - Appendix E). In the vicinity of the Site, the groundwater flow direction is to the west. The presence of petroleum hydrocarbons in extracted groundwater may be due to the service station operations or the former Union Oil of California Distribution Plant operations (Treadwell & Rollo, 2005 – Appendix F).

4.0 SCOPE OF WORK CHANGES

Due to the discovery of the former ASTs and USTs operated by the former Union Oil Distribution Plant at the Site, the ACEH has requested additional boring locations and analysis of additional constituents.

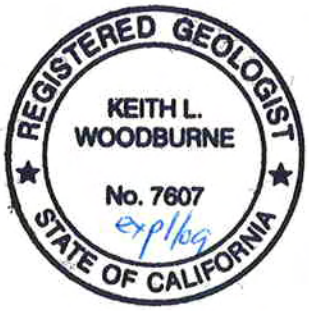
TRC concurs with the ACEH request to additionally analyzing samples for total petroleum hydrocarbons as motor oil (TPH-mo) to "investigate potential the potential releases from former Union Oil USTs and ASTs". In fact, evaluation of the chromatograms from the soil and grab groundwater samples will be crucial in determining if impacts, should they be identified, are related to recent or historical Site operations. Therefore, all soil and groundwater samples will be submitted to a state certified laboratory and analyzed for TPH-d and TPH-mo by EPA Method 8015, and for TPH-g, BTEX, and fuel oxygenates, including methyl tertiary butyl ether (MTBE) and ethanol by EPA Method 8260.

TRC does not concur with the ACEH request to add additional borings on the eastern portion of the Site. The two proposed locations on the eastern portion of the Site should provide the information needed to assess the past operational practices of ConocoPhillips (Figure 2). ConocoPhillips should not be directed to investigate the "Gas and Oil" phrase, which was noted on the eastern portion of the site on a 1967 Sanborn map. The existing USTs which ConocoPhillips operated were not installed until 1981. While it is important to be aware of previous site use and conditions, ConocoPhillips is not responsible for investigating past operational practices of Union Oil Company of California.

TRC does not concur with the ACEHS request for installation of additional borings to the north of the current station building, vacant building, and dry cleaners. ConocoPhillips should not be directed to investigate potential releases from other offsite sources and would not be responsible for chlorinated solvent impacts to soil and groundwater related to the historical dry cleaning operations. The results of the pre-excavation and post-excavation investigation of the property to the north of the Site are summarized in Treadwell & Rollo's Site Management Completion report for 5885 Hollis Street, Emeryville, dated January 5, 2007 (Appendix E).

If you have any questions regarding this work plan addendum, please call Keith Woodburne at (925) 688-2488.

Sincerely,



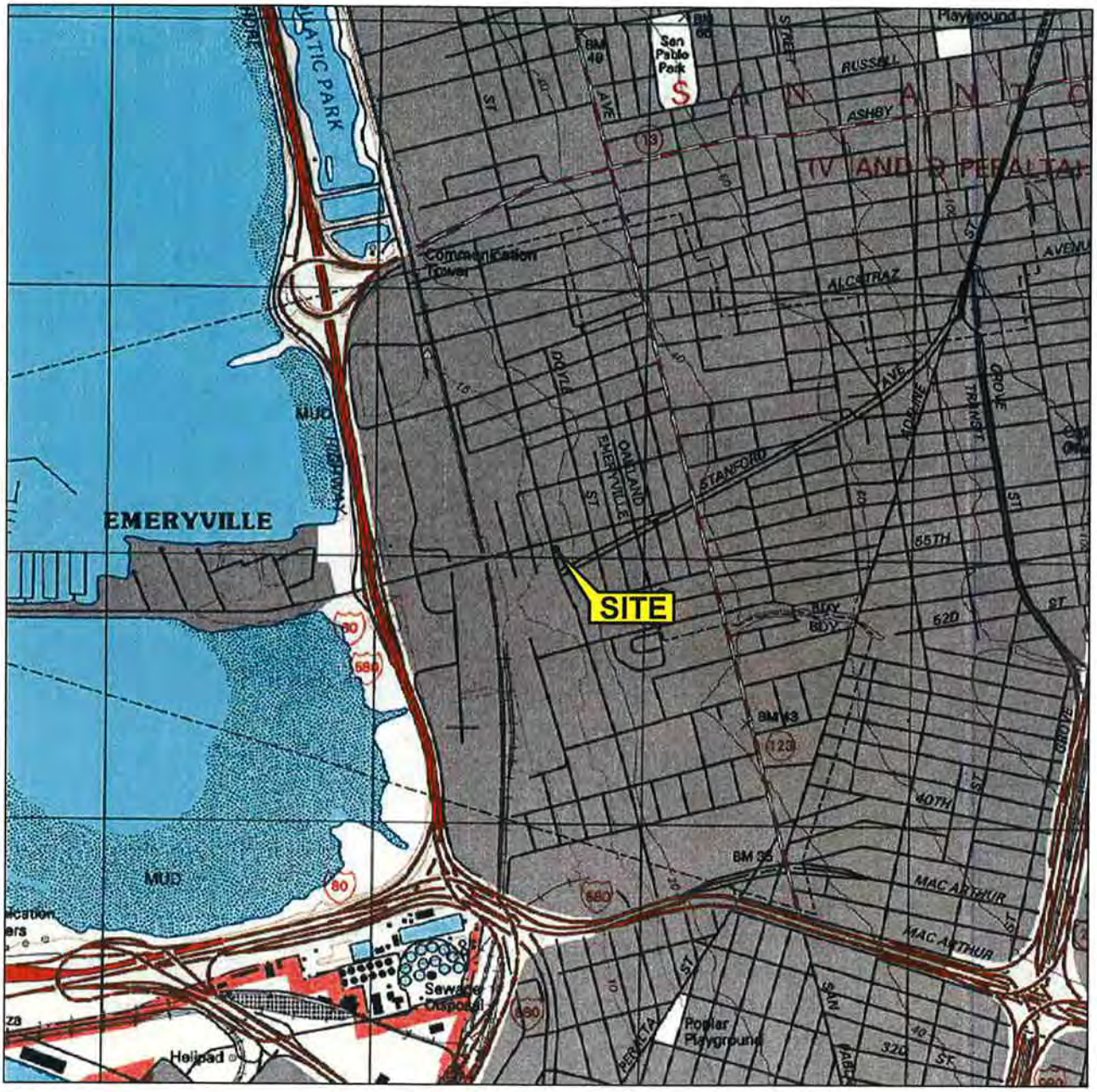
Keith Woodburne, P.G.
Senior Project Manager

Attachments:

Figure 1:	Vicinity Map
Figure 2:	Site Plan Showing Proposed Boring Locations
Appendix A:	ACEH Response Letter dated November 15, 2005 (Received March 5, 2007)
Appendix B:	Soil Gas Survey Report (PEG, October 29, 1997)
Appendix C:	Oil/Water Separator Abandonment Report (GeoStrategies Inc., August 11, 1993)
Appendix D:	Tables summarizing Historical Soil and Grab Groundwater Analytical Results (Former 76 Service Station No. 3737)
Appendix E:	Portions of Site Management Completion Report, 5885 Hollis Street, Emeryville (Treadwell & Rollo, January 5, 2007)
Appendix F:	Response to October 28, 2005 ACEH Letter and Work Plan for Post-Excavation Soil and Groundwater Sampling, 5885 Hollis Street, Emeryville (Treadwell & Rollo, November 30, 2005)

cc: Bill Borgh, ConocoPhillips Company (electronic upload)
Mr. Najmeddin Revan, Emeryville Chevron, 1400 Powell Street, Emeryville, CA 94608

FIGURES



SOURCE:

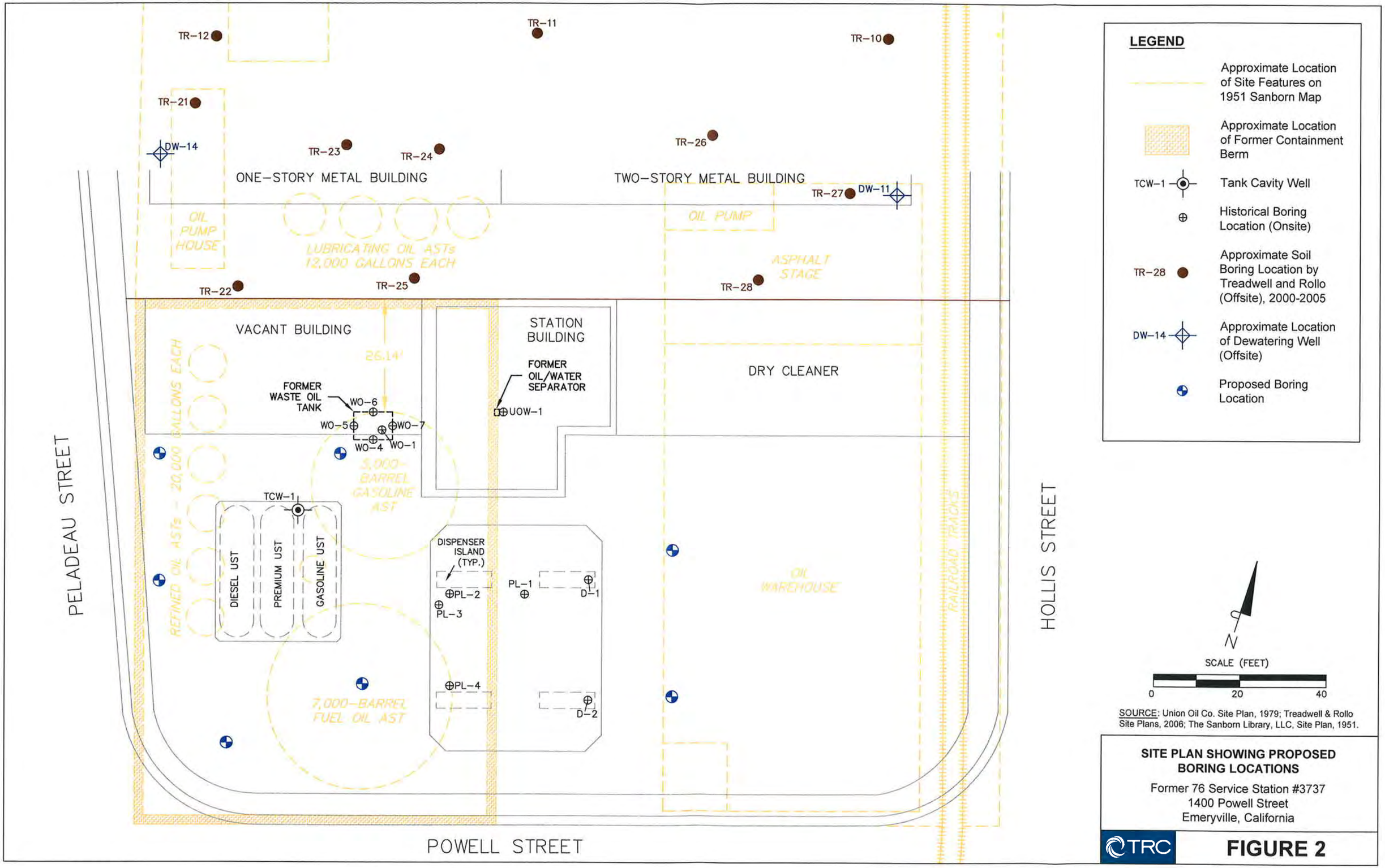
United States Geological Survey
7.5 Minute Topographic Maps:
Oakland West Quadrangle,
California

VICINITY MAP

76 Service Station #3737
1400 Powell Street
Emeryville, California

TRC

FIGURE 1



SOURCE: Union Oil Co. Site Plan, 1979; Treadwell & Rollo Site Plans, 2006; The Sanborn Library, LLC, Site Plan, 1951.

SITE PLAN SHOWING PROPOSED BORING LOCATIONS

Former 76 Service Station #3737
1400 Powell Street
Emeryville, California

TRC

FIGURE 2

APPENDIX A

ACEH RESPONSE LETTER DATED NOVEMBER 15, 2005 (RECEIVED MARCH 5, 2007)

November 15, 2005

Ms. Shelby Lathrop
Shaw Environmental, Inc.
4005 Port Chicago Highway
Concord, CA 94520-1120

Dear Ms. Lathrop:

Subject: Fuel Leak Case RO0000067, 76 Station # 3737, 1400 Powell St., Emeryville, CA, 94608

Alameda County Environmental Health (ACEH) staff has recently reviewed the case file for the subject and adjacent sites including the August 30, 2005 *Soil and Groundwater Investigation Workplan* prepared by TRC. We have the following technical comments, we request you address when performing the proposed work. In addition, please submit the technical reports requested below.

TECHNICAL COMMENTS

1. Historical Site Use- Little to no information was given regarding the historical site usage. Our office obtained additional information by reviewing the files for the neighboring property, aka 5885 Hollis St., where a new development is being considered. The entire block, borderd by Hollis, Powell, Peladeau and 59th Streets, was at one time, occupied by Union Oil of California. Union Oil used the property as a distribution facility, which contained above ground and underground storage tanks, a garage along Hollis St. and an auto repair shop along Peladeau St. These facilities are noted in historical Sanborn maps for the entire block. On the western portion of your site, it appears that 4000 and 2000 gallon fuel tanks and oil ASTs were located in the 1950s. In 1967, gas and oil (tanks) were noted on the eastern half of the site. No information is given regarding the removal of any of these underground tanks. In 1990 a 10,000 gallon gasoline tank was removed from 5805 Hollis St., just north of your site from the S. B. Thomas property. Though contamination was observed no other details of the removal have been found. Because the neighboring property is proposing development, additional soil and groundwater sampling was done on the site. Of particular interest to your site are samples taken north of your site, which reflect releases of uncertain origin. Groundwater samples taken by Treadwell and Rollo in 2005 have detected up to 150,000 ppb TPHg, 9900 ppb TRPH, 700 ppb TPHd and 2500, 3600, 1100 ppb, benzene, ethyl benzene and xylenes, respectively, in groundwater samples.

   The Site Background in the TRC report begins by stating an oil/water separator was removed on August 11, 1993. A soil gas survey was performed in 1997, product piping was removed and over-excavated in May 1999 as was the removal of a 550 gallon waste oil tank. A grab groundwater sample from the tank cavity of the existing fuel tanks was also taken at this time, which detected a release of TPHg, TPHd, BTEX and MTBE. Because of the additional information known about your site and the adjacent site, we recommend a more comprehensive investigation be performed.

2. Additional areas of concern- We believe that in addition to the nine borings proposed in the TRC work plan these additional areas/concerns warrant investigation:
   - Please provide a copy or description of the PEG 9/97 Soil Gas Survey as requested below.
   - Please indicate the location of the former oil/water separator removed in 1993.
   - Please provide specific information on the USTs at the site. What are their size, and contents and when were they installed?
   - In order to investigate the potential releases from former Union Oil USTs and ASTs, we request that you add TPHmo to your analysis. In addition, your analytical laboratory should look at the chromatograms from the samples to see if there are differences, which could indicate releases from different sources.
   - In order to investigate the "gas and oil" noted on the eastern portion of the site on Sanborn maps, several additional borings should be added between the four proposed easterly borings.
   - To clarify the source of elevated TPH constituents detected in the borings just north of your site, we recommend additional samples north of the existing vacant building, station building and dry cleaner. If the dry cleaner uses/used chlorinated solvents, we recommend that HVOCs be added to the analysis of samples collected near this business. Sampling along sanitary sewer lines would be reasonable locations. Please provide a work plan addendum as requested below.

TECHNICAL REPORT REQUEST

- December 30, 2005- Soil Gas Survey information, oil/water separator information, current UST information.
- December 30, 2005- Work plan addendum indicating additional sampling locations and analyses to investigate the "gas and oil" and the area adjacent to the vacant building, station building and dry cleaner.
- January 30, 2006- Soil and Groundwater Investigation Report

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) now request submission of reports in electronic form. The electronic copy is intended to replace the need for a paper copy and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, electronic submittal of a complete copy of all reports is required in Geotracker (in PDF format). Please visit the State Water

Resources Control Board for more information on these requirements (http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this case meet this requirement.

If you have any questions, please call me at (510) 567-6765.

Sincerely,

Barney M. Chan
Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: files, D. Drogos
Mr. Najmeddin Revan, Emeryville Chevron, 1400 Powell St., Emeryville, CA 94608
Mr. Keith Woodburne, TRC, 1590 Solano Way, Suite A, Concord, CA 94520
Mr. Fillmore Marks, Marks Management Company, 505 Sansome St., Ste 1400 San Francisco, CA 94111-3118
Mr. Geoff Sears, Wareham Development, 1120 Nye St., Ste 400, San Rafael, CA 94901
Mr. Ignacio Dayrit, City of Emeryville, 1333 Park Ave., Emeryville, CA 94608
Mr. Glenn Leong, Treadwell & Rollo, 501 14th ST., 3rd Floor, Oakland, CA 94612

APPENDIX B

SOIL GAS SURVEY REPORT
(PEG, OCTOBER 29, 1997)

Soil Gas Survey Results

UNOCAL Service Station 3737
1400 Powell St
Emeryville, California

Prepared for

Tosco Marketing Company

October 29, 1997

Prepared by

Pacific Environmental Group, Inc.
2025 Gateway Place, Suite 440
San Jose, California 95110

Project 311-163.1A

PACIFIC
ENVIRONMENTAL
GROUP INC.

SOIL GAS SURVEY RESULTS
FOR
UNOCAL SERVICE STATION 3737
EMERYVILLE, CALIFORNIA

INTRODUCTION

This report presents the results of a soil gas survey completed at UNOCAL Service Station 3737. The soil gas survey was performed by Pacific Environmental Group, Inc. (PACIFIC) on September 10, 1997. The work was performed in accordance with a scope of work prepared by Tosco Marketing Company (Tosco), dated August 25, 1997.

The purpose of the soil gas survey is to provide baseline data regarding the occurrence of petroleum hydrocarbon vapors in soil near potential source areas at the site referenced above. This report presents a discussion of field data collection methods and analytical procedures, and the survey results. The following information is attached to this report; a Field Data Sheet, a Site Plan, a Soil Gas Sampling Analysis Report, and chain-of-custody documentation for the soil gas samples.

FIELD AND LABORATORY PROCEDURES

The scope of work included the following procedures: (1) perform a presurvey site visit to mark soil gas probe locations for utility clearance, (2) collect organic vapor measurements from beneath product dispensers and within manways for the underground storage tank (UST) turbines, (3) collect soil vapor samples from near USTs, product islands, and product lines, and (4) submit soil gas samples to Sequoia Analytical Laboratories for chemical analyses. These procedures are described below in further detail.

Prefield Preparation

Prior to initiating the soil gas survey, PACIFIC personnel performed a site visit to mark proposed probe locations, check accessibility, and to notify the UNOCAL station manager of the proposed survey schedule. Probe locations were selected based on PACIFIC's understanding of underground facilities as shown on the attached Site Plan which was provided by Tosco. In some cases probe locations were adjusted in the field to avoid overhead or under-

ground obstructions that were not noted on the site plan. Underground Service Alert was notified to clear each probe location for underground utilities.

Field Data Collection

The level of volatile organic vapors were measured from beneath product dispensers and within turbine manways using a HNU PI-101 photo-ionization detector (PID). A PACIFIC field technician opened each product dispenser and turbine manway and collected a PID measurement from soil immediately below each dispenser or turbine at a height of approximately 1/2-inch above the exposed soil. If native soil was not exposed, then this observation was recorded on the Field Data Sheet and PID measurements were not collected.

PID measurements and field observations are recorded on the attached Field Data Sheet. The location of each PID reading is shown on the attached site plan.

Soil Gas Survey

On September 10, 1997, a PACIFIC staff technician directed the installation of 6 soil gas probes in the vicinity of USTs, product islands, and product lines at the site referenced above. The approximate location and designation of each soil gas probe is shown on the attached Site Plan. Sample collection depths are noted on the attached Field Data Sheet.

Two samples were collected from the area of the UST complex at depths ranging from 3 feet to 15 feet. Because shallow groundwater was encountered at the deeper UST probe location, its occurrence was noted and the sample was collected from as close as possible to the depth of the capillary zone overlying the water table.

Four soil gas samples were collected adjacent to the product dispenser islands at depths of approximately 3 feet. Soil gas samples were not collected along the product lines because either line locations could not be field verified, or less than 20 linear feet of product exists between the UST complex and product island.

The soil gas survey consisted of driving a 1/2-inch diameter hollow steel probe into unsaturated soils at each sampling location. The end of the driven probe was fitted with a small screened interval with protective cover. The probes were driven into the soil with pneumatic equipment. Upon reaching the desired depth the outer protective casing was retracted to allow the screened interval to be exposed to the soils. Soil gas samples were drawn from the probe by means of a vacuum pump through a probe head fitting and a silastic tubing sample line. The soil gas probe was purged of vapors for approximately 3 minutes prior to sample collection. A soil gas sample was then collected into a clean 1-liter Tedlar bag. Each Tedlar bag was labeled with the appropriate sample designation, date of sample, and UNOCAL station number and stored in a cool dark box. The samples were submitted to Sequoia Analytical Laboratories within 24 hours of sample collection.

Upon completion of the sampling procedures the probes were removed and the probe holes were backfilled to the surface with a neat cement seal.

Laboratory Procedures

Soil gas samples were submitted under appropriate chain-of-custody documentation to Sequoia Analytical Laboratories, a Tosco-approved state-certified analytical laboratory. The samples were analyzed for total purgeable petroleum hydrocarbons calculated as gasoline in accordance with EPA Method 8015 (modified), and benzene, toluene, ethylbenzene, xylenes, and methyl-tert butyl ether (MtBE) in accordance with EPA Method 8020. Additionally, if MtBE was detected, the soil gas sample indicating the highest MtBE concentration by EPA Method 8020, was analyzed in accordance with EPA Method 8260, to confirm the presence of MtBE.

FINDINGS

The soil gas survey findings are presented on the attached Field Data Sheet and Soil Gas Sample Analysis Report.

CLOSING

This report and all field activities described within were performed by the staff of PACIFIC under the professional supervision of the project geologist whose signature appears hereon.

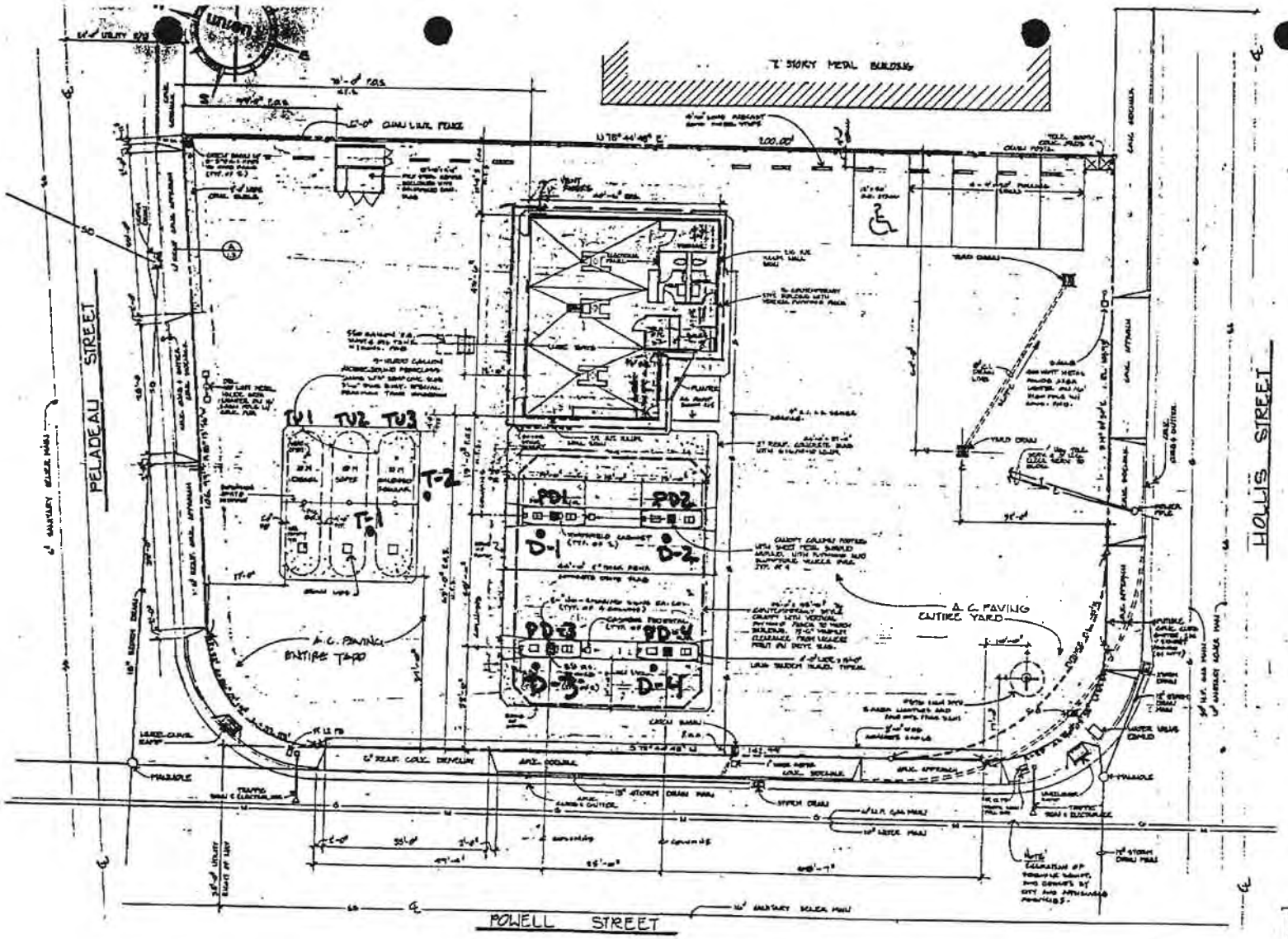
Should you have any questions concerning the contents of this report, please call.

Sincerely,

Pacific Environmental Group, Inc.

Joseph Muzzio
Project Geologist
CEG 1672

Attachments: Field Data Sheet
Soil Gas Sample Analysis Report
Chain-of-Custody Documentation
Site Plan



SS#3737

GENERAL ARRANGEMENT
SERVICE STATION #3737
1400 POWELL STREET & HOLLIS STREET
EMERYVILLE, CALIFORNIA

UNION

1"=10'

7-23-79

Tosco Marketing Company
Field Data Sheet

Baseline Augmentation
Unocal Service Station Sites

Facility No.: #3737
Location: Powell / Hollis
Date Sampled: 9.10.97

Sampler: Paul Weinhardt
Time On Site: 14:00
Weather: Sunny

UST Samples (Sample Designation: T-1, T-2,....)/**Former UST Samples** (Sample Designation: (FT-1, FT-2,...)

Sample ID	PID Reading (ppm)	Air Sample Collected (Yes/No)	Sample Depth (feet)	Comments (NPO, FPO, MPO, SPO)
T-2	690	Yes	3'	WATER AT 3' STRONG ODOR ON SAMPLING PROBE
T-1	410	Yes	3	" "

Dispenser Island Samples (Sample Designation: D-1, D-2,....)

Sample ID	PID Reading (ppm)	Air Sample Collected (Yes/No)	Sample Depth (feet)	Comments (NPO, FPO, MPO, SPO)
D-1	—	Yes	3'	—
D-2	—	Yes	3'	—
D-3	—	Yes	3'	—
D-4	—	Yes	3'	—

Product Lines (Sample Designation: P-1, P-2,....)

Sample ID	PID Reading (ppm)	Air Sample Collected (Yes/No)	Sample Depth (feet)	Comments (NPO, FPO, MPO, SPO)
		NONE		

Product Dispensers (Sample Designation: PD-1, PD-2,....) /**UST Turbines** (Sample Desiganation TU-1, TU-2

Sample ID	PID Reading (ppm)	Air Sample Collected (Yes/No)	Exposed Soil (Yes/No)	Comments (NPO, FPO, MPO, SPO)
TU-1	410	NO	Yes	STRONG ODOR
TU-2	240	NO	Yes	MODERATE ODOR
TU-3	—	NO	Yes	Pump Not Visible
PD-1	0	NO	Yes	gravel in Box
PD-2	8	NO	Yes	↓
PD-3	4	NO	Yes	
PD-4	2	NO	Yes	

Sequoia Analytical
680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

SOIL GAS SAMPLE ANALYSIS REPORT

TOSCO BASELINE SOIL GAS SURVEY

Site Number: 3737 Date Sampled: 9/10/97 Date(s) Analyzed: 9/10/97

City / State: Emeryville / CA

Analytical Results From Sequoia Analytical									
Reporting Units: µg/L									% RECOVERY
#	Sample ID	TPH - Gas	Benzene	Toluene	Ethyl Benzene	Total Xylenes	GC MTBE	GC/MS MTBE	GC Surrogate
1	T - 1	16000	110	160	83	230	<2.5	--	196
2	T - 2	40000	1100	410	83	130	<2.5	--	175
3	D - 1	1800	8.1	16	11	32	49	--	180
4	D - 2	3100	17	26	16	46	<2.5	--	255
5	D - 3	5900	43	65	36	100	1000	<20	179
6	D - 4	3400	19	32	21	63	<2.5	--	142
	Method Blank	<10	<0.50	<0.50	<0.50	<0.50	<2.5	<2.5	107

SEQUOIA ANALYTICAL, #1271

Alan B. Kemp
Laboratory Director

UNOCAL 76

❑ 680 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600
❑ 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600
❑ 404 N. Wiget Lane • Walnut Creek, CA 94598 • (510) 988-9600
❑ East 11115 Montgomery, Suite B • Spokane, WA 99206 • (509) 924-9200
❑ 15055 S.W. Sequoia Pkwy, Suite 110 • Portland, OR 97222 • (503) 624-9800

Consultant Company: Pacific Environmental	Project Name: Powell / Hollis
Address: 2025 Gateway Pl #440	UNOCAL Project Manager: Tina Berry / Baseline Augmentation
City: San Jose State: CA Zip Code: 95110	AFE #: 3737
Telephone: 408 441 7500 FAX #: 408 441 7539	Site #, City, State: 3737 Emeryville CA
Report To: Joe Muzzio Sampler: Paul Weinhardt	QC Data: ☒ Level D (Standard) ❑ Level C ❑ Level B ❑ Level A

Turnaround Time: ☒ 10 Work Days ❑ 5 Work Days ❑ 3 Work Days ❑ 2 Work Days ❑ 1 Work Day ❑ 2-8 Hours

CODE: ☒ Misc. ❑ Detect. ❑ Eval. ❑ Remed. ❑ Demol. ❑ Closure

❑ Drinking Water ❑ Waste Water ☒ Other

Analyses Requested

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Laboratory Sample #	BTEX 8020	MTBE 8020	MTBE Confirmation	Comments
1. T-1	9.10.97	A	1	BAG	7090681	X	X		Confirm Highest MTBE by 8260
2. T-2					7090682				
3. D-1					7090683				
4. D-2					7090684				
5. D-3					7090685				
6. D-4					7090686				
7.									
8.									
9.									
10.									

Relinquished By: Paul Weinhardt	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By Lab:	Date: 9/10/97	Time: 1615

Were Samples Received in Good Condition? ❑ Yes ❑ No Samples on Ice? ❑ Yes ❑ No Method of Shipment _____ Page __ of __

To be completed upon receipt of report:
1) Were the analyses requested on the Chain of Custody reported? ❑ Yes ❑ No If no, what analyses are still needed? _____
2) Was the report issued within the requested turnaround time? ❑ Yes ❑ No If no, what was the turnaround time? _____

Approved by: _____ Signature: _____ Company: _____ Date: _____

Pink - Client
Yellow - Laboratory
White - Laboratory

ORT

TRC

closed station

GeoStrategies Inc.

August 31, 1993

Alameda County
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

Attention: Mr. Brian Oliva

Reference: **UNOCAL Service Station No. 3737**
1400 Powell Street
Emeryville, California

Mr. Oliva:

In accordance with the LUFT guidelines for soil analysis, the reporting limit for Oil and Grease according to method 5520EF is 50 mg/kg. Please replace the following page in your copy of the Oil/Water Separator Abandonment report dated August 11, 1993:

- Page 3 of the Anametrix analytical report for Oil and Grease located in Appendix A.

If you have questions or comments, please call.

GeoStrategies Inc. by,

Cliff M. Garratt
Project Manager

Enclosure

cc: Mr. Syed N. Rizvi, UNOCAL Corporation
Mr. George Warren, Emeryville Fire Department
Mr. Robert Boust, UNOCAL Corporation

:4126rpc.ltr

GeoStrategies Inc.

August 11, 1993

Alameda County
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

Attention: Mr. Brian Oliva

Reference: **UNOCAL Service Station No. 3737**
1400 Powell Street
Emeryville, California

Mr. Oliva:

As requested by Mr. Syed N. Rizvi of UNOCAL Corporation, we are forwarding a copy of the Oil/Water Separator Abandonment report dated August 11, 1993. This report presents the results of soil sampling and field activities conducted at the above referenced location.

If you have questions or comments, please call.

GeoStrategies Inc. by,

Cliff M. Garratt
Project Manager

Enclosure

cc: Mr. Syed N. Rizvi, UNOCAL Corporation
Mr. George Warren, Emeryville Fire Department
Mr. Robert Boust, UNOCAL Corporation

:elienu\4126final.wp

GeoStrategies Inc.

OIL/WATER SEPARATOR ABANDONMENT

UNOCAL Service Station No. 3737
1400 Powell Street
Emeryville, California

412602-1

August 11, 1993

ONMENT
7

mmarizes the field
uring the oil/water

AL Service Station.
ter separator were
x was then steam
s, and the emptied
crete bottom to the
ner. A hand auger
elow the bottom of
A hand-driven soil
m approximately 1

(510) 352-4800
)5825 • (916) 568-7500

If you have questions or comments, please call.

GeoStrategies Inc. by,

Ellen C. Fostersmith
Geologist

Stephen J. Carter
Project Manager
R.G. 5577

REGISTERED GEOLOGIST
STEPHEN J. CARTER
No. 5577
STATE OF CALIFORNIA

ECF/SJC:rt

Plate 1. Vicinity Map
Plate 2. Site Plan

Appendix A. Laboratory Analytical Report and Chain-of-Custody Form

QC:

412602-1

TABLE

SOIL SAMPLING

Soil sample UOW-1 was collected from beneath the oil/water separator box at a depth of approximately 1 foot below the bottom of the box, or approximately 4 feet below grade (Plate 2). The sample was collected by driving the sampling device fitted with a clean stainless steel sample tube, into the soil with a hand operated drive hammer. Upon removal of the sample tube from the sampling device, both ends were covered with teflon tape and sealed with plastic end caps. The sample was then labeled, placed in a cooler with blue ice, entered on a Chain-of-Custody form, and transported to Anametrix Inc., a California State-certified laboratory located in San Jose, California.

The sample was analyzed for Total Petroleum Hydrocarbons calculated as Gasoline and as Diesel according to EPA Method 8015 (Modified), for Benzene, Toluene, Ethylbenzene, and Xylenes according to EPA Method 8020, for Oil and Grease according to Standard Methods 5520 E&F, Halogenated Volatile Organics according to EPA Method 8240, and ICAP Metals (Cr, Cd, Pb, Zn, Ni) by atomic absorption. These data are summarized in Table 1, and are included in Appendix A.

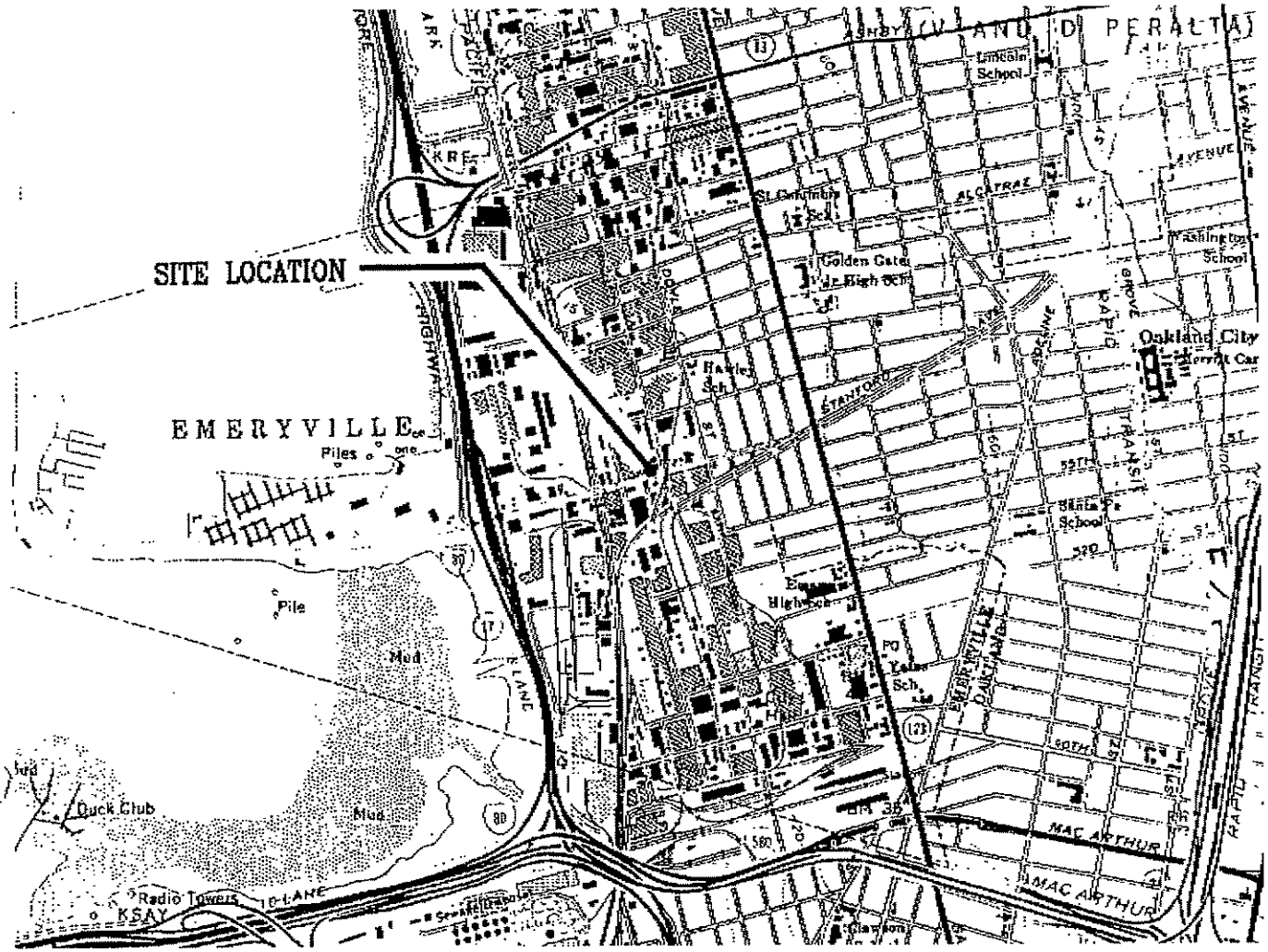
TABLE 1

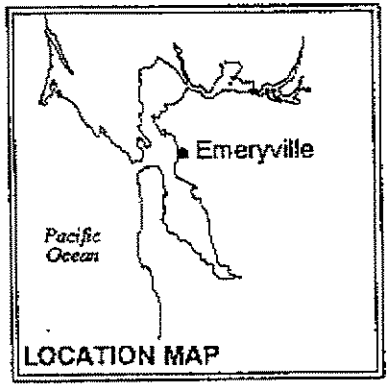
SOIL ANALYTICAL DATA

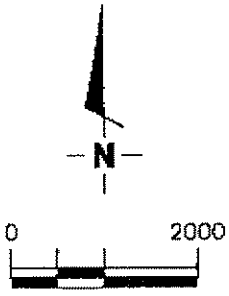
SAMPLE NO.	DEPTH (FT)	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)	TPH-D (PPM)	O&G (PPM)	TOTAL LEAD (PPM)
UOW-1	1	16-Jul-93	20-Jul-93	<0.5	<0.005	<0.005	<0.005	<0.005	<10	67	8.0

PPM = Parts Per Million.
TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline.
TPH-D = Total Petroleum Hydrocarbons calculated as Diesel.
O&G = Oil and Grease.
UOW = Oil/Water Separator Sample.

ILLUSTRATIONS







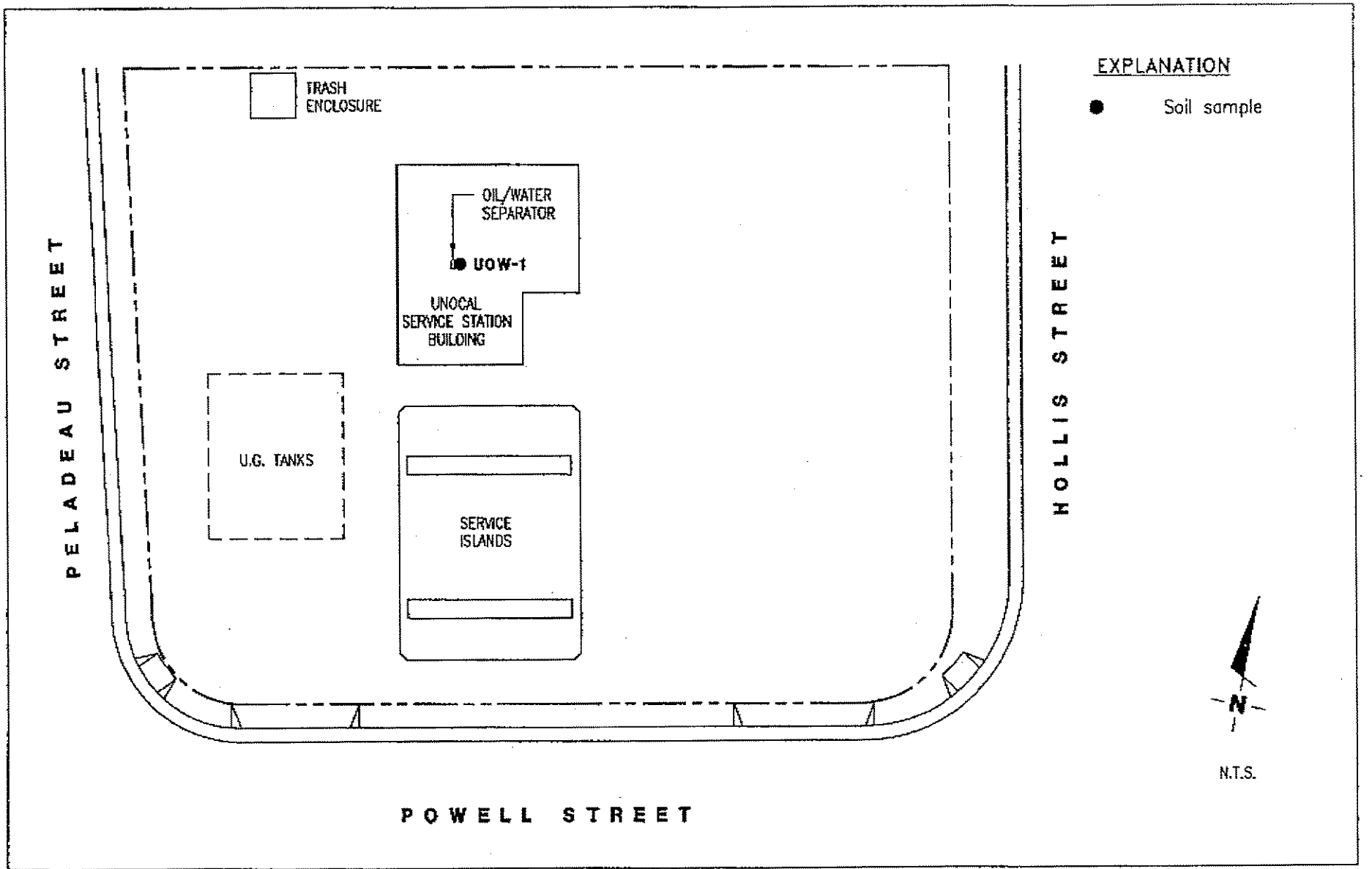
Base Map: USGS Topographic Map

GeoStrategies Inc.

VICINITY MAP
UNOCAL Service Station #3737
1400 Powell Street
Emeryville, California

PLATE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
4126		8/93	



GeoStrategies Inc.

SITE PLAN
UNOCAL Service Station #3737
1400 Powell Street
Emeryville, California

PLATE
2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
412602		8/93	

APPENDIX A
LABORATORY ANALYTICAL REPORT
AND
CHAIN-OF-CUSTODY FORM

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
San Jose, CA 95131
Tel: 408-432-8192
Fax: 408-432-8198

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9307155- 1	UOW-1

This report consists of 23 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Sarah Schoen, Ph.D.
Laboratory Director

7-23-93
Date

ANAMETRIX REPORT DESCRIPTION
GCMS

Organic Analysis Data Sheets (OADS)

OADS forms contain tabulated results for target compounds. The OADS are grouped by method and, within each method, organized sequentially in order of increasing Anametrix ID number.

Tentatively Identified Compounds (TICs)

TIC forms contain tabulated results for non-target compounds detected in GC/MS analyses. TICs must be requested at the time samples are submitted at Anametrix. TIC forms immediately follow the OADS form for each sample. If TICs are requested but not found, then TIC forms will not be included with the report.

Surrogate Recovery Summary (SRS)

SRS forms contain quality assurance data. An SRS form will be printed for each method, if the method requires surrogate compounds. They will list surrogate percent recoveries for all samples and any method blanks. Any surrogate recovery outside the established limits will be flagged with an "*", and the total number of surrogates outside the limits will be listed in the column labelled "Total Out".

Matrix Spike Recovery Form (MSR)

MSR forms contain quality assurance data. They summarize percent recovery and relative percent difference information for matrix spikes and matrix spike duplicates. This information is a statement of both accuracy and precision. Any percent recovery or relative percent difference outside established limits will be flagged with an "*", and the total number outside the limits will be listed at the bottom of the page. Not all reports will contain an MSR form.

Qualifiers

Anametrix uses several data qualifiers (Q) in it's report forms. These qualifiers give additional information on the compounds reported. They should help a data reviewer to verify the integrity of the analytical results. The following is a list of qualifiers and their meanings:

- U - Indicates that the compound was analyzed for, but was not detected at or above the specified reporting limit.
- B - Indicates that the compound was detected in the associated method blank.
- J - Indicates that the compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value. Tentatively identified compounds will always have a "J" qualifier because they are not included in the instrument calibration.
- E - Indicates that the amount reported exceeded the linear range of the instrument calibration.
- D - Indicates that the compound was detected in an analysis performed at a secondary dilution.
- A - Indicates that the tentatively identified compound is a suspected aldol condensation product. This is common in EPA Method 8270 soil analyses.

Absence of a qualifier indicates that the compound was detected at a concentration at or above the specified reporting limit.

REPORTING CONVENTIONS

- Due to a size limitation in our data processing step, only the first eight (8) characters of your project ID and sample ID will be printed on the report forms. However, the report cover letter and report summary pages display up to twenty (20) characters of your project and sample IDs.
- Amounts reported are gross values, i.e., not corrected for method blank contamination.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602
Department : GCMS
Sub-Department: GCMS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9307155- 1	UOW-1	SOIL	07/16/93	8240

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602
Department : GCMS
Sub-Department: GCMS

QA/QC SUMMARY :

- No QA/QC problems encountered.

Laura Mason 7-20-93
Department Supervisor Date

Denise Powell 7-20-93
Chemist Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : 412602
Sample ID : UOW-1
Matrix : SOIL
Date Sampled : 7/16/93
Date Analyzed : 7/20/93
Instrument ID : MSD2

Anametrix ID : 9307155-01
Analyst : [illegible]
Supervisor : [illegible]

Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	77.	
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID :
Sample ID : VBLK2Z
Matrix : SOIL
Date Sampled : 0/ 0/ 0
Date Analyzed : 7/20/93
Instrument ID : MSD2

Anametrix ID : BL2002A1
Analyst : PF
Supervisor : VH

Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

SURROGATE RECOVERY SUMMARY -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : 412602
Matrix : SOLID

Anametrix ID : 9307155
Analyst : PF
Supervisor : [illegible]

	SAMPLE ID	SU1	SU2	SU3
1	VBLK22	104	100	104
2	UOW-1	103	99	101
3	LCS2A	103	100	104
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

	QC LIMITS
SU1 = 1,2-Dichloroethane-d4	(85-121)
SU2 = Toluene-d8	(83-117)
SU3 = 1,4-Bromofluorobenzene	(82-116)

* Values outside of Anametrix QC limits

LABORATORY CONTROL SPIKE RECOVERY FORM ---- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project/Case :
Matrix : SOIL
Date Sampled : 0/ 0/00
Date Analyzed : 07/20/93
Instrument ID : MSD2

Anametrix ID : ML2002A1
Analyst : PF
Supervisor : MJ
SDG/Batch :

LCS2A

COMPOUND	SPIKE ADDED (ug/Kg	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC	%REC LIMITS
1,1-Dichloroethene	50	0	50	100	78-150
Benzene	50	0	50	100	85-120
Trichloroethene	50	0	45	90	64-135
Toluene	50	0	48	96	88-119
Chlorobenzene	50	0	47	94	86-116

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9307155- 1	UOW-1	SOIL	07/16/93	TPHd
9307155- 1	UOW-1	SOIL	07/16/93	TPHgBTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Bedmar 7/21/93
Department Supervisor Date

Anna Shor 7/22/93
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9307155
Matrix : SOIL
Date Sampled : 07/16/93

Project Number : 412602
Date Released : 07/21/93

COMPOUNDS	Reporting Limit (mg/Kg)	Sample I.D.# UOW-1 -01	Sample I.D.# BL1901E2 BLANK
Benzene	0.005	ND	ND
Toluene	0.005	ND	ND
Ethylbenzene	0.005	ND	ND
Total Xylenes	0.005	ND	ND
TPH as Gasoline	0.5	ND	ND
% Surrogate Recovery		98%	101%
Instrument I.D.		HP8	HP8
Date Analyzed		07/19/93	07/19/93
RLMF		1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 7/22/93 Date

Supervisor 7/21/93 Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9307155
Matrix : SOIL
Date Sampled : 07/16/93
Date Extracted: 07/22/93

Project Number : 412602
Date Released : 07/23/93
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)
9307155-01	UOW-1	07/22/93	10	ND
BL22H1F1	METHOD BLANK	07/22/93	10	ND

Note: Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3550.
All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Peggie Davison 7/23/93
Analyst Date

Cheryl Balmer 7/23/93
Supervisor Date

TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 5030 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
Matrix : SOIL
Date Sampled : N/A
Date Analyzed : 07/19/93

Anametrix I.D. : ML1901E1
Analyst : IS
Supervisor : CA
Date Released : 07/21/93
Instrument ID : HP8

COMPOUND	SPIKE AMT (mg/Kg)	LCS (mg/Kg)	%REC LCS	%REC LIMITS
BENZENE	0.020	0.020	100%	52-133
TOLUENE	0.020	0.021	105%	57-136
ETHYLBENZENE	0.020	0.020	100%	56-139
TOTAL-XYLENES	0.020	0.019	95%	56-141
P-BFB			105%	53-147

* Quality control limit established by Anametrix, Inc.

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 3550 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
Matrix : SOIL
Date Sampled : N/A
Date Extracted: 07/22/93
Date Analyzed : 07/22/93

Anametrix I.D. : ML22H1F1
Analyst : [illegible]
Supervisor : [illegible]
Date Released : 07/21/93
Instrument I.D.: HP23

COMPOUND	SPIKE AMT (mg/Kg)	REC LCS (mg/Kg)	% REC LCS	% REC LIMITS
Diesel	125	84	67%	48-113

*Limits established by Anametrix, Inc.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9307155- 1	UOW-1	SOIL	07/16/93	5520EF

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for this sample.

Department Supervisor 7/19/93 Date

Chemist 7/19/93 Date

ANALYSIS DATA SHEET - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
ANAMETRIX LABORATORIES (408) 432-8192

Project # : 412602
Matrix : SOIL
Date sampled : 07/16/93
Date extracted: 07/16/93
Date analyzed : 07/19/93

Anametrix I.D. : 9307155
Analyst : [illegible]
Supervisor : [illegible]
Date released : 08/27/93

Workorder #	Sample I.D.	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)
9307155-01	UOW-1	50	67
BL16H1W9	METHOD BLANK	50	ND

ND - Not detected above the reporting limit for the method.
TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF, 18th edition.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

LAB CONTROL SAMPLE REPORT - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
ANAMETRIX LABORATORIES (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: ML16H1W9
Matrix	: SOIL	Analyst	:
Date sampled	: N/A	Supervisor	:
Date extracted	: 07/16/93	Date Released	: 07/19/93
Date analyzed	: 07/19/93		

COMPOUND	SPIKE AMT. (mg/Kg)	LCS (mg/Kg)	%REC LCS	%REC LIMITS
Motor Oil	300	270	90%	68-113%

* Quality control established by Anametrix Laboratories.

TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF.

ANAMETRIX REPORT DESCRIPTION
INORGANICS

Analytical Data Report (ADR)

The ADR contains tabulated results for inorganic analytes. All field samples, QC samples and blanks were prepared and analyzed according to procedures in the following references:

- EPA Method 6010/7000/9000 series - "Test Methods for Evaluating Solid Waste," SW-846, EPA, 3rd Edition, November 1986.
- EPA Method 100, 200, 300 series - "Methods for Chemical Analysis of Water and Wastes," EPA, 3rd Edition, 1983.
- Toxicity Characteristic Leaching Procedure (EPA Method 1311) - 40 CFR, Part 268, Appendix I, June 1990.
- Waste Extraction Test - Results are reported in mg/L of extract according to procedures of CCR Title 22, Section 66261, Appendix II.
- Organic Lead - CCR Title 22, Section 66261, Appendix XI.
- Standard Method 3340B - "Standard Methods for the Examination of Water and Wastewater," APHA, AWWA, WEF, 18th Edition, 1992.

Matrix Spike Report (MSR)

The MSR summarizes percent recovery and relative percent difference information for matrix spikes and matrix spike duplicates. This information is a statement of both accuracy and precision. MSRs may not be provided with all analytical reports. Anametrix control limit for MSR is 75-125% with 25% for RPD limits.

Laboratory Control Sample Report (LCSR)

The LCSR summarizes percent recovery information for laboratory control spikes on reagent water or soil. This information is a statement of performance for the method, i.e., the samples are properly prepared and analyzed according to the applicable methods. Anametrix control limit for LCSR is 80-120%.

Method Blank Report (MBR)

The MBR summarizes quality control information for reagents used in preparing samples. The absolute value of each analyte measured in the method blank should be below the method reporting limit for that analyte.

Post Digestion Spike Report (PDSR)

The PDSR summarizes percent recovery information for post digestion spikes. A post digestion spike is performed for a particular analyte if the matrix spike recovery is outside of established control limits. Any percent recovery for a post digestion spike outside of established limits for an analyte indicates probable matrix effects and interferences for that analyte. Anametrix control limit for PDSR is 85-115%.

Qualifiers (Q)

Anametrix uses several data qualifiers in inorganic reports. These qualifiers give additional information on the analytes reported. The following is a list of qualifiers and their meanings:

- I - Sample was analyzed at the stated dilution due to spectral interferences.
- U - Analyte concentration was below the method reporting limit. For matrix and post digestion spike reports, a value of "0.0" is entered for calculation of the percent recovery.
- B - Sample concentration was below the reporting limit but above the instrument detection limit. Result is entered for calculation of the percent recovery only.
- H - Spike percent recovery was outside of Anametrix control limits due to interferences from relatively high concentration level of the analyte in the unspiked sample.

Comment Codes

In addition to qualifiers, the following codes are used in the comment section of all reports to give additional information about sample preparation methods:

- A - Sample was prepared for silver based on the silver digestion method developed by the Southern California Laboratory, Department of Health Services, "Acid Digestion for Sediments, Sludges, Soils and Solid Wastes. A Proposed Alternative to EPA SW846, Method 3050." Environmental Science and Technology, 1989, 23, 898-900.
- T - Spikes were prepared after extraction by the Toxicity Characteristic Leaching Procedure (TCLP).
- C - Spikes were prepared after extraction by the California Waste Extraction Test (CWET) method.
- D - Reported results are dissolved, not total, metals.

Reporting Conventions

Analytical values reported are gross values, i.e., not corrected for method blank contamination. Solid matrices are reported on a wet weight basis, unless specifically requested otherwise.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602
Department : METALS
Sub-Department: METALS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9307155- 1	UOW-1	SOIL	07/16/93	6010

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602
Department : METALS
Sub-Department: METALS

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

Department Supervisor 7/23/93 Date

Mona Kamel 7/23/93
Chemist Date

INORGANIC ANALYSIS DATA SHEET
ANAMETRIX, INC. (408) 432-8192

Anametrix I.D.: 9307155-01
Client I.D. : UOW-1
Project I.D. : 412602
Reporting Unit: mg/Kg
Matrix : SOIL

Date Sampled : 07/16/93
Analyst : MK
Supervisor : MW
Date Released : 07/20/93
Instrument I.D. : ICP1

ANALYTE-METHOD	DATE PREPARED	DATE ANALYZED	REPORT LIMIT	DIL. FACTOR	RESULT	Q
Cadmium-6010	07/19/93	07/20/93	0.25	1	ND	
Chromium-6010	07/16/93	07/19/93	0.50	1	23.7	
Nickel-6010	07/16/93	07/19/93	2.0	1	29.0	
Lead-6010	07/19/93	07/20/93	2.0	1	8.0	
Zinc-6010	07/16/93	07/19/93	1.0	1	33.2	

COMMENT:

METHOD BLANK REPORT
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.# : 9307155
Method Blank I.D.: MB0716S, MB0719S
Project I.D. : 412502
Matrix : SOIL
Reporting Unit : mg/Kg

Analyst : MK
Supervisor : MW
Date Released : 07/20/93
Instrument I.D. : ICP1

ANALYTE-METHOD	DATE PREPARED	DATE ANALYZED	REPORTING LIMIT	RESULT	Q
Cadmium-6010	07/19/93	07/20/93	0.25	ND	
Chromium-6010	07/16/93	07/19/93	0.50	ND	
Nickel-6010	07/16/93	07/19/93	2.0	ND	
Lead-6010	07/19/93	07/20/93	2.0	ND	
Zinc-6010	07/16/93	07/19/93	1.0	ND	

COMMENT:

LABORATORY CONTROL SAMPLE REPORT
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.# : 9307155
Spike I.D. : LCS0719S, LCS0716S
Project I.D. : 412502
Matrix : SOIL
Reporting Unit : mg/Kg

Analyst :
Supervisor : MW
Date Released : 07/20/93
Instrument I.D : ICP1

ANALYTE-METHOD	DATE PREPARED	DATE ANALYZED	SPIKE AMT.	METHOD SPIKE	% REC.	Q
Cadmium-6010	07/19/93	07/20/93	2.5	2.2	88.0	
Chromium-6010	07/16/93	07/19/93	10.0	8.6	86.0	
Nickel-6010	07/16/93	07/19/93	25.0	21.5	86.0	
Lead-6010	07/19/93	07/20/93	25.0	21.3	85.2	
Zinc-6010	07/16/93	07/19/93	25.0	20.4	81.6	

COMMENT:

Gettler - Ryan Inc. 9307155 (15) 13:56 2072 Chain of Custody

ENVIRONMENTAL DIVISION

COMPANY UNOCAL #3737 JOB NO. 412602

JOB LOCATION 1400 Powell / Hollis

CITY Emeryville PHONE NO.

AUTHORIZED Huntley DATE 7/16/93 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
1DW-1	1	Soil	7/16/93 9:20	TPH-G, BTEX, TPH-D O&G; 8240; 10 CAM metals	(1)

RELINQUISHED BY: [illegible] 13:30 RECEIVED BY:

[illegible] 7/16/93

RELINQUISHED BY: RECEIVED BY:

RELINQUISHED BY: RECEIVED BY LAB: 7/16/93 13:30

DESIGNATED LABORATORY: Anametrix DHS #:

REMARKS: 24 hr TAT for TPHg/BTEX, O&G, & TPHd

2 day Rush for 8240 & 6010

DATE COMPLETED FOREMAN

APPENDIX D

TABLES SUMMARIZING HISTORICAL SOIL ANDS GRAB GROUNDWATER ANALYTICAL RESULTS
(Former 76 Service Station No. 3737)

TABLE 1

SOIL ANALYTICAL DATA

SAMPLE NO.	DEPTH (FT)	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)	TPH-D (PPM)	O&G (PPM)	TOTAL LEAD (PPM)
UOW-1	1	16-Jul-93	20-Jul-93	<0.5	<0.005	<0.005	<0.005	<0.005	<10	67	8.0

PPM = Parts Per Million.
TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline.
TPH-D = Total Petroleum Hydrocarbons calculated as Diesel.
O&G = Oil and Grease.
UOW = Oil/Water Separator Sample.

Table 3

Summary of Groundwater Chemical Analysis

Former Tosco 76 Service Station 3737

Sample ID	Date	TPHg (ppb)	TPHd (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MtBE 8020 (ppb)	MtBE 8260 (ppb)
TCW-1*	05/07/99	4,400	2,600	520	12	72	24	1,300	540

NOTES:
ppb = parts per billion
TPHg = total petroleum hydrocarbons as gasoline
TPHd = total petroleum hydrocarbons as diesel
MtBE = methyl tert butyl ether
ND = not detected at or above method detection limit
* = "grab" type groundwater sample.

Table 2

Waste Oil Tank Removal Soil Sampling Analytical Results

Former Tosco 76 Service Station 3737

Sample ID	Date	Depth (feet)	TPHg (ppm)	TPHd (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	MtBE 8020 (ppm)	TPH-MO (ppm)
WO-1	05/24/99	10.0	1.4	51	ND<0.0050	ND<0.0050	0.0072	0.039	ND<0.050	121
WO-4	05/24/99	7.5	220	1,100	ND<0.0050	1.1	0.61	0.82	ND<0.050	970
WO-5	05/24/99	7.5	470	1,000	ND<0.0050	0.91	0.81	1.8	ND<0.050	840
WO-6	05/24/99	7.5	370	1,100	ND<0.0050	0.51	0.36	1.9	ND<0.050	1100
WO-7	05/24/99	7.5	86	130	0.30	0.40	1.3	6.0	ND<0.050	220

NOTES:
ppm = parts per million
TPHg = total petroleum hydrocarbons as gasoline
TPHd = total petroleum hydrocarbons as diesel
MtBE = methyl tert butyl ether
ND = not detected at or above method detection limit

Table 1

Product Piping Removal Soil Sampling Analytical Results

Former Tosco 76 Service Station 3737

Sample ID	Date	Depth (feet)	TPHg (ppm)	TPHd (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	MtBE 8020 (ppm)	MtBE 8260 (ppm)
PL-2	05/11/99	4.0	40	530	0.48	0.23	0.27	0.33	0.91	—
D-1	05/07/99	1.5	ND<1.0	ND<1.0	ND<0.0050	0.0062	ND<0.0050	ND<0.0050	0.011	—
D-2	05/07/99	1.5	61	36	0.50	0.26	0.13	0.37	0.74	—
PL-1	05/07/99	2.0	460	260	0.37	0.41	0.27	1.40	ND<0.050	—
PL-2	05/07/99	2.0	1,200	710	2.4	23	6.8	46	ND<0.050	—
PL-3	05/07/99	4.0	310	120	ND<0.0050	1.6	1.1	4.1	ND<0.050	—
PL-4	05/07/99	2.0	39	ND<1.0	2.1	1.6	1.6	4.1	1.1	0.27

NOTES:

ppm = parts per million
TPHg = total petroleum hydrocarbons as gasoline
TPHd = total petroleum hydrocarbons as diesel
MtBE = methyl tert butyl ether
ND = not detected at or above method detection limit
— = not analyzed

APPENDIX E

Portions of
SITE MANAGEMENT COMPLETTION REPORT
5885 HOLIS STREET, EMERYVILLE, CA
(Treadwell & Rollo, January 5, 2007)

SITE MANAGEMENT COMPLETION REPORT
5885 HOLLIS STREET
Emeryville, California

E S East Associates, LLC
Emeryville, California

5 January 2007
Project No. 4069.01

Treadwell&Rollo
Environmental and Geotechnical Consultants

5 January 2007
Project 4069.01

Mr. Geoffrey Sears
E S East Associates, LLC, an affiliate of Wareham Development
1120 Nye Street, Suite 400
San Rafael, CA 94901

Subject: Site Management Completion Report
5885 Hollis Street
Emeryville, California

Dear Mr. Sears:

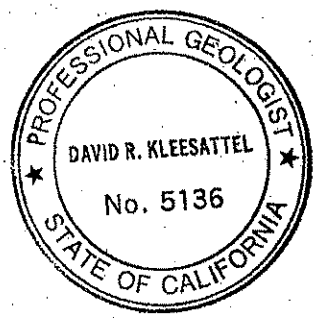
We have completed the Site Management Completion Report for the Site located at 5885 Hollis Street in Emeryville, California. We declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report are true and correct to the best of our knowledge.

Please call us at (510) 874-4500 if you have any questions.

Sincerely yours,
TREADWELL & ROLLO, INC.

Glenn M. Leong, R.E.A.
Senior Associate Scientist

David R. Kleesattel, P.G.
Senior Geologist



Eric T. Morita
Senior Staff Geologist

40690105.OAK

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

PHOTOGRAPHS

APPENDICES

SITE MANAGEMENT COMPLETION REPORT
5885 HOLLIS STREET
Emeryville, California

1.0 INTRODUCTION

This Site Management Completion Report has been prepared by Treadwell & Rollo, Inc. (Treadwell & Rollo) for the property located at 5885 Hollis Street in Emeryville, California (Site) (Figures 1 and 2). This Site Management Completion Report was prepared on behalf of E S East Associates, LLC (Client) to fulfill soil and groundwater removal requirements documented in the *Site Management Plan, 5885 Hollis Street, Emeryville, California* prepared by Treadwell & Rollo on 14 July 2005 (SMP) and the approval letter from the Alameda County Health Care Services Agency (ACHCSA) dated 8 December 2005.

2.0 PURPOSE

The purposes of this Site Management Completion Report are to:

- summarize soil and groundwater removal activities performed at the Site and to document that they were performed in accordance with the SMP and ACHCSA requirements
- summarize concentrations of residual contaminants that remain in soil and groundwater at the Site after redevelopment activities have been completed.

3.0 BACKGROUND

3.1 Site Description and History

The Site has a footprint of approximately 220 feet by 550 feet and is bounded by Hollis Street to the east, 59th Street to the north, Peladeau Street to the west, and a Chevron Service Station and Powell Street to the south (Figure 2).

The Site redevelopment consists of a multi-level commercial laboratory building with an underground parking garage that extends across the Site footprint. The building foundation has been completed with active vertical construction activities currently being performed. With the exception of raised beds for landscaping, no exposed soil is anticipated once construction is completed.

Union Oil Company of California occupied the Site and the property to the south of the Site and used it as a distribution facility from 1917 to 1964. During this period, the Site contained numerous above- and underground petroleum storage tanks, a garage along Hollis Street, and an auto repair shop along Peladeau Street. Along the southeastern portion of the Site, a total of 40,000-gallons of lubricating oil were reportedly stored in aboveground tanks that extended onto the property to the south (currently the Chevron Service Station).

During the remodeling of one of the buildings in 1985 and during the widening of 59th Street and replacement of an underground utility in 1999, petroleum hydrocarbons were discovered in the soil with total petroleum hydrocarbons (TPH) as diesel (TPH-d) detected at a maximum concentration of 13,000 milligrams per kilogram (mg/kg) and total petroleum hydrocarbons as motor oil (TPH-mo) at 15,000 mg/kg. The excavated soil was reportedly transported and disposed of at a regulated landfill.

In 1990, an unknown 10,000-gallon underground gasoline storage tank was reportedly located and removed from the Site by a tenant (S. B. Thomas). No records were found in regards to the removal of the underground storage tank. However, according to Marks Management, the previous property owners, soil contamination was noted during the tank removal and the affected soil was disposed at a regulated landfill.

3.1.1 Investigation performed in 2000

In April 2000, Treadwell & Rollo performed a subsurface investigation for Marks Management Company that included the collection of soil and grab groundwater samples. The investigation was conducted to provide additional soil and groundwater data to assist the redevelopment of the Site. Results of the soil sample analyses indicated the presence of:

- Total recoverable petroleum hydrocarbons (TRPH) at a maximum concentration of 9,900 mg/kg
- Total petroleum hydrocarbons as gasoline (TPH-g) at a maximum concentration of 160 mg/kg
- TPH-d at a maximum concentration of 360 mg/kg
- TPH-mo at a maximum concentration of 6,600 mg/kg
- Benzo(a)pyrene at a maximum concentration of 660 micrograms per kilogram (µg/kg)
- Carbon disulfide at a maximum concentration of 17 µg/kg
- Total chromium at a maximum concentration of 97 mg/kg
- Lead at a maximum concentration of 150 mg/kg
- Nickel at a maximum concentration of 110 mg/kg
- Zinc at a maximum concentration of 110 mg/kg.

The maximum concentration of TRPH and TPH-mo were each detected in sample TR-1 at 4 feet below ground surface (bgs) (TR-1-4.0), located near the northeast corner of the Site near 59th Street (Figure 3). The maximum detected concentration of TPH-g was detected in sample TR-12 at 10 feet bgs (TR-12-10), which is located near the former oil pump area near the southwest corner of the Site. When encountered elsewhere, TRPH, TPH-g, and TPH-mo were generally at concentrations one order of magnitude lower. The only volatile organic compound (VOC) detected at or above the laboratory reporting limits in the soil samples analyzed was carbon disulfide in sample TR-18 at 15 feet bgs (TR-18-15) at a concentration of 17 µg/kg. Benzo(a)pyrene, the only semi-volatile organic compounds (SVOC) detected, was found in 5 of the 9 soil samples analyzed in concentrations ranging from 540 to 600 µg/kg. Figure 4 presents the TPH-g and TPH-mo concentrations in soil.

In April 2000, grab groundwater samples were collected from four of the soil borings (TR-1, TR-6, TR-9, TR-12). These grab groundwater samples indicated the presence of:

- TRPH at a maximum concentration of 9,900 µg/L
- TPH-g at a maximum concentration of 3,300 µg/L
- TPH-d at a maximum concentration of 700 µg/L
- TPH-mo at a maximum concentration of 1,400 µg/L.

Grab groundwater samples were not analyzed for benzene, toluene, ethylbenzene or xylenes (BTEX) in the 2000 investigation.

3.1.2 Additional Information Requested from the ACHCSA

The results of the 2000 investigation (along with the 1995 Weiss Associates Environmental Site Assessment), were submitted by Marks Management Company to the ACHCSA for review related to their proposed development of the Site. In a letter dated 23 June 2000, ACHCSA indicated several issues would need to be addressed prior to development of the Site. Treadwell & Rollo submitted a letter dated 8 August 2000 that addressed the identified issues.

In January 2001, a meeting was held between ACHCSA, Marks Management, their architect, the City of Emeryville, and Treadwell & Rollo to discuss changes in the development plan documented in a letter prepared by Treadwell & Rollo dated 8 December 2000. The revision to the plan included excavation of the entire Site to a depth of approximately 10 feet bgs. The following issues were identified by ACHCSA to be addressed prior to development of the Site:

- potential future groundwater intrusion into the basement of the building
- evaluate and demonstrate that the proposed construction activities will not create migration of on-Site and off-Site contamination during construction and after completion of the development

- evaluate vapor seepage into the basement/building and identify human health risks to the occupants of the proposed building
- provide to ACHCSA Site development specifics, including proposed Site configuration and excavation depths
- development of a human and environmental risk assessment for the proposed use of the Site, including development of a Site conceptual model identifying sources of releases, chemicals of potential concern, routes of exposure (including vapor seepage), and sensitive receptors
- development of a short-term and long-term risk management plan to address construction health and safety, soil and groundwater management, dust control, stormwater prevention, institutional controls, and other protocols for handling soil and groundwater
- collect confirmation samples for chemicals in soil and groundwater.

3.1.3 Investigations Performed in 2005

In January and June 2005, Treadwell & Rollo performed additional subsurface investigations for E S East Associates, LLC that included the collection of soil and grab groundwater samples. E S East Associates, LLC is the current owner who purchased the Site from Marks Management in 2004. Results of the 2005 investigations are provided in the Site Management Plan (Appendix A).

January 2005 Investigation

The objective of the January 2005 investigation was to further assess whether hazardous substances or petroleum products that affected soil and/or groundwater were present beneath the Site. The information developed in the ESA prepared by Weiss Associates (1995) and the 2000 investigation suggested that activities from the Union Oil Company distribution facility, the Intermountain Terminal Company truck storage area and parts warehouse and a Chevron Service

Station located immediately adjacent to the Site to the south have likely affected soil and groundwater at the Site.

Soil samples were collected from nine environmental soil borings (TR-19 through TR-22, TR-25, and TR-28 through TR-31 (Figure 3) and four grab groundwater samples were collected from temporary wells placed in select borings (TR-25, TR-29 through TR-31). Soil and groundwater samples were selectively analyzed for TPH-d, TPH-mo, TPH-g, BTEX, volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), and total lead. Five additional sampling locations were proposed based on previous Site operations, but were inaccessible in January 2005 due to lack of Site access. These soil samples were collected later in June 2005 and are discussed in the following section.

Analytical results for soil samples collected in January 2005 indicated that TPH-d was detected in 17 of the 18 soil samples analyzed with concentrations that ranged from less than 1.0 mg/kg in TR-19 at 6.0 feet bgs to a maximum concentration of 1,100 mg/kg in TR-31 at 2.5 feet bgs. All detected concentrations of TPH-d were reported with one or more laboratory analytical qualifiers including "individual samples may exhibit a chromatographic pattern which does not resemble the laboratory standard for diesel fuel," "lighter hydrocarbons may have contributed to the analytical concentration," and "heavier hydrocarbons may have contributed to the analytical concentration." TPH-mo was detected in 14 of the 18 soil samples analyzed with concentrations ranging from less than 5.0 mg/kg in several samples to a maximum of 2,700 mg/kg in TR-31 at 2.5 feet bgs (Figure 4). Several detections of TPH-mo were reported with one or more laboratory qualifiers that indicate that "lighter or heavier hydrocarbons may have contributed to the analytical concentration."

TPH-g was detected in seven of the 18 soil samples analyzed with concentrations ranging from less than 1.0 mg/kg in several samples to a maximum concentration of 2,100 mg/kg in TR-25 at 6.0 feet bgs. Several detections of TPH-g were reported with a laboratory qualifier indicating the sample exhibited a chromatographic pattern that did not resemble the laboratory standard. Figure 4 present the TPH-g and TPH-mo concentrations in soil.

Total lead was detected in all four of the soil samples analyzed. Total lead concentrations in the samples ranged from 5.6 mg/kg in TR-28 at 2.0 feet bgs to a maximum concentration of 14 mg/kg in TR-25 at 2.0 feet bgs. No total lead concentrations were greater than ten times the STLC for lead; therefore no soluble lead tests were performed.

PCBs were detected in one soil sample analyzed. Aroclor-1260 was detected in soil sample TR-25 at 2.0 feet bgs at a concentration of 11 µg/kg. This concentration was below the residential surface soil ESL for PCBs of 220 µg/kg (RWQCB, 2005).

Groundwater was measured in one boring (TR-31) at 9.88 feet bgs, although this was not a stabilized water level measurement. TPH-d was detected in three of four groundwater samples analyzed and ranged from 270 µg/L in TR-31 to 640 µg/L in TR-30. All TPH-d detections had laboratory qualifiers indicating that both lighter and heavier hydrocarbons contributed to the total analytical concentration. TPH-mo was also detected in three of four groundwater samples analyzed and ranged from 340 µg/L in TR-29 to a maximum of 1,500 µg/L in TR-31. The TPH-mo detection in the groundwater sample from TR-29 had a laboratory qualifier indicating that lighter hydrocarbons contributed to the total analytical concentration.

TPH-g was only detected in groundwater from TR-25 with a concentration of 150,000 µg/L. This groundwater concentration is in excess of the residential groundwater ESL of 500 µg/L (RWQCB, 2005), and suggested the possible presence of free-phase hydrocarbons in the subsurface. Benzene was detected in groundwater from TR-25 at a concentration of 2,500 µg/L. Toluene was detected in groundwater from three of four samples analyzed with concentrations that ranged from 0.56 µg/L in TR-29 to a maximum of 0.85 µg/L in TR-30. Ethylbenzene was detected in groundwater from TR-25 at a concentration of 3,600 µg/L. Xylenes were detected in all four groundwater samples analyzed. In sample TR-25, total xylenes (the sum of the meta, para, and ortho isomers) were detected at a concentration of 1,720 µg/L. In the remaining three groundwater samples, m,p-xylenes were detected at concentrations ranging from 0.57 µg/L in TR-31 (GW) to 0.85 µg/L in TR-30 (GW).

June 2005 Investigation

Site access was granted in June 2005 at sampling at locations along the south end of the Site. Each location was within buildings that previously existed at the Site. Due to the elevated concentrations of TPH-g and benzene in groundwater detected at TR-25 during the January 2005 investigation, additional sampling in the area was considered necessary to evaluate the extent of benzene and TPH-g in groundwater. The June 2005 investigation included soil and groundwater sampling at the TR-23, TR-24, TR-26, and TR-27 (Figure 3).

The investigation plan included the collection of groundwater samples and soil samples near the groundwater interface from four locations by advancing a borehole to at least two feet below the groundwater surface. Because the sample locations are within existing buildings, the borings were advanced using hand auger equipment. At boring locations TR-26 and TR-27, an obstruction was encountered approximately 4 feet below ground surface. The obstruction was concrete from a second building slab or foundation. Therefore, no groundwater samples and only shallow soil samples were collected at TR-26 and TR-27.

TPH-d was detected in the 5 soil samples analyzed and concentrations ranged from 46 mg/kg in TR-24 at 4.0 feet bgs to a maximum concentration of 2,100 mg/kg in TR-26 at 4.0 feet bgs. All detections of TPH-d were reported with one or more laboratory analytical qualifiers including "individual samples may exhibit a chromatographic pattern which does not resemble the laboratory standard for diesel fuel," "lighter hydrocarbons may have contributed to the analytical concentration," and "heavier hydrocarbons may have contributed to the analytical concentration."

TPH-g was detected in three of the five soil samples analyzed and concentrations ranged from 2.3 mg/kg in TR-23 at 4.0 feet bgs to a maximum concentration of 390 mg/kg in TR-23 at 9.0 feet bgs. Several detections of TPH-g were reported with a laboratory qualifier indicating that the sample exhibited chromatographic pattern that did not resemble the laboratory standard. Figure 4 includes the TPH-g concentrations in soil.

Benzene was detected in soil only in TR-23 at 4 feet bgs with a concentration of 97 µg/kg and at 9 feet bgs with a concentration of 200 µg/kg. Other petroleum-related chemicals detected in the soil samples from TR-23 and TR-26 included the following compounds:

- Ethylbenzene at a maximum concentration of 600 µg/kg
- m,p-Xylenes at a maximum concentration of 190 µg/kg
- o-Xylenes at a maximum concentration of 22 µg/kg
- Isopropylbenzene at a maximum concentration of 180 µg/kg
- Propylbenzene at a maximum concentration of 480 µg/kg
- 1,3,5-Trimethylbenzene at a maximum concentration of 69 µg/kg
- 1,2,4-Trimethylbenzene at a maximum concentration of 250 µg/kg
- Sec-Butylbenzene at a maximum concentration of 42 µg/kg
- N-Butylbenzene at a maximum concentration of 290 µg/kg
- Naphthalene at a maximum concentration of 310 µg/kg.

The mix of petroleum related chemicals were also detected in the groundwater samples collected from TR-23 and TR-24.

The groundwater samples collected from borings TR-23 and TR-24 indicated the presence of TPH-d at 8,400 µg/L and 6,800 µg/L, respectively. The TPH-d results had laboratory qualifiers indicating that both lighter and heavier hydrocarbons contributed to the total analytical concentration. TPH-g was detected in groundwater at 28,000 µg/L from TR-23 and 91,000 µg/L from TR-24. These concentrations are in excess of the residential groundwater ESL of 500 µg/L (RWQCB, 2005), and suggested the presence of free-phase hydrocarbons in the subsurface. Benzene was also detected in groundwater at 4,300 µg/L from TR-23 and 2,500 µg/L from TR-

24. Other petroleum-related chemicals detected in groundwater from TR-23 and TR-24 included the following:

- Toluene up to 21 µg/L
- Ethylbenzene up to 990 µg/L
- m,p-Xylenes up to 380 µg/L
- o-Xylenes up to 380 µg/L
- Isopropylbenzene up to 210 µg/L
- Propylbenzene up to 240 µg/L
- 1,3,5-Trimethylbenzene up to 290 µg/L
- 1,2,4-Trimethylbenzene up to 160 µg/L
- Sec-Butylbenzene up to 70 µg/L
- Naphthalene up to 710 µg/L
- Acetone up to 35 µg/L.

3.2 Site Management Requirements

Since 2000, ACHCSA has provided regulatory oversight for the Site. Based on E S East Associates, LLC's intention to redevelop the Site, ACHCSA required that redevelopment activities include measures to mitigate worker and Site user and neighbor risks associated with the presence of petroleum hydrocarbons and benzene in subsurface soil and groundwater at the Site. Treadwell & Rollo prepared a Site Management Plan dated 14 July 2005 that included:

- Historical Site Use and Environmental Investigations
- Tier 1 Environmental Risk Assessment
- Short-Term and Long-Term Risk Management Measures including:
  - Construction Worker Health and Safety Recommendations
  - Soil Management Measures
  - Post-Excavation Confirmation Soil and Groundwater Sampling
  - Storm Water Pollution Controls
  - Groundwater Management for Construction-Phase Dewatering and Groundwater Intrusion Management
  - Site Encapsulation
  - Mechanical Ventilation of the Parking Garage
  - Maintenance Requirements
  - Contingency Plan
  - Restrictions on Future Groundwater Use.

The Tier 1 Environmental Risk Assessment was developed to identify potential risks to human health and environmental resources associated with chemicals in soil and groundwater under the proposed land use. An exposure assessment was previously conducted to evaluate potential exposure to chemicals in soil by the following pathways:

- incidental ingestion of soil
- direct dermal contact with soil

- inhalation of airborne particles as dust
- inhalation of VOCs in indoor air from subsurface emissions (VOCs only) from soil
- inhalation of VOCs in indoor air from subsurface emissions (VOCs only) from groundwater.

These five exposure pathways were evaluated for the risk evaluation, but the Site development design resulted in preclusion of direct contact with soil for future residents. For future residents, the only potentially complete exposure pathway evaluated for groundwater was inhalation of VOCs in indoor air from subsurface emissions.

The chemicals of potential concern identified during the risk assessment were TPH-g, TPH-d, TPH-mo, benzene, and lead present at the Site.

The risk evaluation included a comparison between the maximum soil and groundwater concentrations and residential land use ESLs (RWQCB, 2005). Based upon the results of the exposure assessment, detected concentrations were compared to the following ESLs to determine if Site encapsulation required for the redevelopment:

- Direct Exposure Screening Levels, Residential and Commercial Exposure Scenario (Table K-1 and K-2 of the RWQCB 2005 ESLs)
- Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion Concerns (Table E-1a of the RWQCB 2005 ESLs)
- Soil Screening Levels for Evaluation of Potential Vapor Intrusion Concerns (E-1b of the RWQCB 2005 ESLs)
- Environmental Screening Levels for Shallow Soils, Groundwater is Not a Current or Potential Source of Drinking Water (Table B of the RWQCB 2005 ESLs).

Comparison of the chemical concentrations in soil to the ESLs indicated that TPH-g, TPH-d, TPH-mo and TRPH in soil exceeded the residential and commercial direct contact ESLs. Benzo(a)pyrene in soil also exceeded the residential and commercial direct contact ESLs. No metals exceeded the residential or commercial ESLs. Consequently, potential residential and commercial risks would only exist if the TPH-g, TPH-d, TPH-mo, TRPH, and benzo(a)pyrene-affected soil remained uncovered and available for exposure.

Comparison of the chemical concentrations of volatile organic compounds in soil to the ESLs indicated that benzene exceeded the residential ESLs for potential vapor intrusion concerns. Consequently, potential residential risks exist if the benzene in soil remained and the potential inhalation exposures are not mitigated.

Comparison of the groundwater data to the ESLs indicates that TPH-g, TPH-d, TPH-mo and TRPH in groundwater exceeded the general water quality ESLs. Benzene in groundwater exceeded the groundwater ESL for protection of indoor air quality at TR-23, TR-24 and TR-25, which are were all located near the southwest corner of the Site. Consequently, potential residential and commercial indoor risks exist if the benzene in groundwater remained and if the potential inhalation exposures are not mitigated.

An additional hypothetical risk for the property was potential exposure through groundwater intrusion. Although typical residential or commercial direct contact with groundwater was not expected under future land use following redevelopment, potential groundwater intrusion into the redeveloped building could result in standing groundwater in the parking level (the lowest levels of the building). If the standing groundwater contained benzene, then the parking garage users may be subject to potential inhalation exposures.

Due to lack of habitat in a highly urbanized environment, no ecological risks were considered applicable. Because there is no surface water at the Site and drinking water at the Site is and will be supplied from off-site sources, the only potential exposure pathway for groundwater is inhalation of VOCs from indoor air vapor intrusion from volatilization of chemicals.

The previously mentioned measures included procedures and protocols for the identification, handling, management, and disposal of hazardous materials encountered in Site soil and groundwater during redevelopment. The procedures and protocols were designed to be in compliance with applicable federal, state, and local laws and regulations regarding hazardous and industrial waste management and are described in the SMP (T&R, 2005).

ACHCSA provided technical comments to the SMP on 28 October 2005 (ACHCSA, 2005a). A response letter with the requested information was sent to the ACHCSA on 30 November 2005 (Wareham, 2005). The SMP and redevelopment activities received final approval from the ACHCSA on 8 December 2005 (ACHCSA, 2005b) provided that additional soil and groundwater testing is performed as follows:

- Methyl tert-butyl ether (MTBE) to be analyzed by EPA Method 8260B to avoid false positives
- where total petroleum hydrocarbons (TPH) quantified as gas (TPH-g) is a contaminant of concern in soil and groundwater samples, also analyze for:
  - Isopropyl ether (DIPE), Ethyl tert-butyl ether (ETBE), methyl tert-amyl ether (TAME), and tert-butyl alcohol (TBA) (Fuel Oxygenates)
  - Ethanol
  - 1,2 dibromoethane (EDB) and 1,2 dichloroethane (EDC) (Lead Scavengers).
- collect additional post-excavation sampling at the loading rack, the southern border of the Site, and the current Chevron gasoline station in areas of potential and known contaminant releases and where commingle plumes may exist
- collect water samples from discrete locations from the dewatering system in the southeast, southwest, and northern portion of the Site.

The SMP and subsequent communications including the approval letter from the ACHCSA dated 8 December 2005 are provided in Appendix A.

4.0 PERFORMANCE OF SITE MANAGEMENT FIELD ACTIVITES

Site management activities were performed during the redevelopment. These activities included:

- Construction Worker Health and Safety Management
- Soil Excavation and Off-Site Disposal
- Post-Excavation Confirmation Soil Sampling
- Groundwater Intrusion Management
- Evaluation of Import Soil
- Site Encapsulation
- Monitoring Plan.

4.1 Construction Worker Health and Safety Management

During redevelopment, construction worker health and safety management included adherence to a Site-specific health and safety plan, notifications regarding the presence of hazardous materials on-Site, and controlling dust during excavation and grading. These activities were performed as follows:

- Under contract to DPR Construction Inc. (the general contractor) (DPR), Brighton Environmental Consulting prepared a Site-specific Health and Safety Plan, Demolition, Shoring Installation, Dewatering, and Soil Excavation, Emery Station, 5885 Hollis Street, Emeryville, California, dated February 2006 (HSP). During Treadwell and Rollo's periodic observations, DPR enforced the requirements stated in the HSP for Site activities performed by workers and visitors to the Site.

- Notifications regarding the presence of hazardous materials on site were posted, per California Proposition 65 requirements.
- During Treadwell and Rollo's periodic observations, dust from active excavations and during grading operations was controlled by wetting the soil.

4.2 Soil Excavation and Off-Site Disposal

Soil excavation activities began at the Site on 23 March 2006 and occurred over a period of 10 weeks through 15 June 2006. Due to inclement weather, there were delays in soil excavation from April 3-5, 2006 and April 12-17, 2006. During soil excavation, support lagging for sub-grade construction was being installed. Lagging and vehicle off-hauling routes were progressively installed with increasing depth by alternating soil removal between the northern and southern halves of the Site (Photograph 1).

Per the requirements of the SMP, soil was only excavated to the final construction depth (approximately 12 to 15 vertical feet below original grade). Soil excavation and removal activities were subcontracted to Pacific States Environmental Contractors (PSEC). PSEC relied on chemical information provided in the SMP to determine that the excavated soil was non-hazardous. Excavated soil was directly loaded and transported to Keller Canyon Landfill located in Pittsburg, California (as non-hazardous waste). Because soil was directly hauled off-Site, stockpiling was not necessary. Soil was transported by Double D Transportation based out of Hayward, California. According to bills of lading signed by PSEC for the Client, a total of 91,640 tons of soil were excavated and hauled from the Site. All bills of lading are provided on CD-ROM in Appendix B.

4.3 Post-Excavation Confirmation Soil Sampling

Post-excavation confirmation soil samples were collected at the completed excavation depth to develop residual concentrations of chemicals that may remain in soil beneath the building foundation after completion of the redevelopment project.

In accordance with ACHCSA requirements, eighteen soil samples (TR-39 through TR-56) were collected on May 4-12, 2006 as the final building construction depths were progressively attained (Figure 5). The completed depth ranged between 12 to 15 feet below original grade.

Rationale For Soil Sample Locations

- Rationale for the soil sample locations were based on previous knowledge of the Site, guidance from the SMP (T&R, 2005), and the approval letter from ACHCSA (ACHCSA, 2005b). Based upon the Site characterization information, chemicals of potential concern in soil vary based upon location and past use of the Site. The locations are shown on Figure 5 and described below.

- BMP Seismic Retrofitting – Soil sample TR-39 was collected from this the area to evaluate the potential presence of paint thinners in soil.

- Graphic Traffic – Soil sample TR-40 was collected from this area to evaluate the potential presence of solvents.

- Canova Marble – Soil sample TR-41 was collected from this area to evaluate the potential presence of solvents associated with paints and adhesives.

- S.B. Thomas – Soil samples TR-42 and TR-43 were collected from this area near the former 10,000 gallon gasoline UST.

- Correris Cabinets – Soil sample TR-44 was collected from the yard area near the former paint storage cabinets.

- Fleetcare Repair – Soil sample TR-45 was collected from the yard area near the former waste oil AST and soil sample TR-46A was collected near the two former 3,000 gallon waste oil ASTs.

- Ellerson Weaver – Soil sample TR-46 was collected from the yard area near the former drum locations.

- Subsurface contamination detected as part of the 59th Street Widening – Soil samples TR-47 and TR-48 were collected near the former area where diesel and motor oil were detected in subsurface soil.

- Southwest corner of the Site near TR-23, TR-24 and TR-25 – Soil samples TR-49 through TR-54 were collected from areas near TR-23, TR-24 and TR-25, which are near the former 5,000-barrel (210,000 gallon) gasoline AST and the former lubrication oil tanks. The locations may have also been impacted by the gasoline service station.

- Former Loading Rack – Soil samples TR-55 and TR-56 were collected from the area where a loading rack associated with the former Union Oil of California operations was located.

Soil samples were collected at the base of the excavation with a drive sampler in 2" x 6" stainless steel tubes, capped with Teflon™ sheeting and plastic caps, labeled, and placed in an ice-chilled cooler. Samples were submitted to a California-certified analytical laboratory (Curtis & Tompkins, Ltd., Berkeley, CA) under Chain-of-Custody protocol and documentation.

Depending on the previous use of the Site at the particular sample locations, soil samples were analyzed for specific analytes. The analytes included the following:

- TPH-g by EPA Method 8015M

- TPH-d and TPH-mo by EPA Method 8015M with silica gel cleanup by EPA Method 3630C

- Volatile organic compounds (VOCs) by EPA Method 8260B. Some soil samples were only analyzed for specific VOCs which included some or all of the following:

  - Isopropyl ether (DIPE), Ethyl tert-butyl ether (ETBE), methyl tert-amyl ether (TAME), and tert-butyl alcohol (TBA) (Fuel Oxygenates)

  - Ethanol

- 1,2 dibromoethane (EDB) and 1,2 dichloroethane (EDC) (Lead Scavengers)
- Benzene, toluene, ethylbenzene, and xylenes (BTEX)
- Methyl tert-butyl ether (MTBE).

Table 1 summarizes the analytical procedures performed for each post-excavation soil sample.

Laboratory analytical results from all post excavation soil samples are summarized on Tables 2 and 3. Total petroleum hydrocarbons detected in the post excavation soil samples are summarized on Figure 6. Laboratory analytical reports are provided in Appendix C.

All detected laboratory analytical results in soil were compared to Table D of the RWQCB 2005 ESLs for deep soil (greater than 3 meters) where groundwater is not a current source of drinking water for commercial use. All detected concentrations (TPH-g, TPH-d, TPH-mo, and VOCs) in the post excavation soil samples from the Site were below ESLs.

TPH-g was only detected in soil at TR-52 in the southwestern corner of the Site at a concentration of 10 mg/kg. TPH-d was detected in numerous soil samples at concentrations ranging from less than 0.93 mg/kg to 7.9 mg/kg. TPH-mo was detected in numerous soil samples ranging from ranging from less than 5.0 mg/kg to 33 mg/kg.

The only VOCs detected in soil were TBA, benzene, ethylbenzene, total xylenes, and methylene chloride. Methylene chloride is a laboratory contaminant commonly introduced during decontamination of laboratory equipment. Because methylene chloride has not been a historic contaminant of concern at the Site, it was likely a laboratory induced contaminant and therefore not representative of Site soil conditions. Therefore, excluding methylene chloride, the only VOCs detected in soil were identified in the southwestern corner of the Site in soil samples TR-51 and TR-52. TBA was detected only in soil sample TR-51 at 400 micrograms per kilogram (µg/kg), benzene was detected only in soil sample TR-51 at 8.2 µg/kg, ethylbenzene detected only in soil sample TR-52 at 7.6 µg/kg, and total xylenes detected only in soil sample TR-52 at 7.1 µg/kg. All other compounds in soil were not detected above laboratory detection limits.

4.4 Groundwater Intrusion Management

The base of the planned building foundation depth was expected to be near the historical water table elevation. To mitigate groundwater from flowing into the excavation area, a total of 27 temporary wells were installed along the perimeter of the Site (mid-March 2006). The 27 temporary wells included 25 dewatering and two monitoring wells (geotechnical purposes). All wells were installed to approximately 30 feet bgs with a 7 inch diameter PVC pipe (Photograph 2). Dewatering wells began pumping on 28 March 2006 and ended during the week of 31 July 2006. The rate of groundwater extraction could not be determined because each pump operated on a self-activating system.

Self-activating pumps were placed near the bottom of each dewatering well. When water levels rose above the sensor, the pump was automatically activated and water was pumped through a manifold, treated through carbon vessels, and stored in two-10,000 gallon Baker Tanks located along the southern edge of the Site. PSEC managed the treatment of all water that was discharged off-Site under an approved permit.

To meet the requirements of the SMP and ACHCSA approval letters, weekly water samples were collected from dewatering wells (DW) at locations determined by the ACHCSA. The ACHCSA requested that water from these locations be analyzed to further investigate whether off-Site releases have impacted the Site and if future groundwater monitoring would be necessary. These locations included the southeastern corner (DW-11), southwestern corner (DW-14), and the northern part of the Site (DW-24) (Figure 5). Water samples were collected on a weekly basis from these locations from 13 April 2006 through 27 July 2006. The following chemicals were analyzed in groundwater:

- TPH-g by EPA Method 8015M (analyzed in DW-11 and DW-14)
- TPH-d and TPH-mo by EPA Method 8015M with silica gel cleanup by EPA Method 3630C (analyzed in DW-11, DW-14, and DW-24)

- Specific volatile organic compounds (VOCs) by EPA Method 8260B (analyzed in DW-11 and DW-14):
  - Isopropyl ether (DIPE), Ethyl tert-butyl ether (ETBE), methyl tert-amyl ether (TAME), and tert-butyl alcohol (TBA) (a.k.a. Fuel Oxygenates)
  - Ethanol
  - Benzene, toluene, ethylbenzene, and xylenes (BTEX)
  - Methyl tert-butyl ether (MTBE)
  - 1,2 dibromoethane (EDB) and 1,2 dichloroethane (EDC) (Lead Scavengers).

Laboratory analytical results from all dewatering well samples are summarized on Table 3. All detected laboratory analytical results for groundwater were compared to Table B of the RWQCB 2005 ESLs where groundwater is not a current source of drinking water. The ESL for TPH-g (500 µg/L) was exceeded in numerous groundwater samples from dewatering well DW-14. The ESL for benzene (46 µg/L) was exceeded in one groundwater sample from dewatering well DW-14 at a concentration of 55 µg/L on 1 June 2006. All other detected concentrations in groundwater were below ESLs.

In the southeast corner of the Site (DW-11), the only detected compounds in groundwater were TPH-d ranging from less than 50 µg/L to 130 µg/L, and toluene ranging from less than 0.5 µg/L to 9.8 µg/L. In the northern part of the Site (DW-24), the only detected compound in groundwater was TPH-d at 63 µg/L on 3 May 2006.

In the southwestern corner of the Site (DW-14), numerous compounds were detected in groundwater including those with the following concentration ranges:

- TPH-g from 77 to 1,800 µg/L, TPH-d from less than 50 µg/L to 440 µg/L
- TBA from 24 to 83 µg/L

- Benzene from 10 to 55 µg/L, Toluene from less than 0.5 µg/L to 4.9 µg/L, Ethylbenzene from less than 0.5 µg/L to 41 µg/L, Xylenes from 0.6 to 28 µg/L
- EDC from 14 to 19 µg/L.

All other compounds in water were not detected above laboratory detection limits.

4.5 Evaluation of Import Soil

Although not a requirement of the SMP or the ACHCSA, Treadwell & Rollo assisted DPR in the evaluation of import soil to be used at the Site. According to PSEC, the import soil originated from a property located at 20th and Telegraph in Oakland, California (a.k.a., The Uptown Development) and was then transported to the Port of Oakland. Extra soil brought from the Uptown Development to the Port of Oakland was then transported to the Site as import fill. To determine if the extra soil brought from the Port of Oakland was environmentally appropriate for use at the Site, PSEC collected a combination of discrete samples and four point composite samples from the stockpiled material and analyzed the soil samples for the following:

- Volatile Organic Compounds (VOCs) by EPA 8260B
- TPH-g by EPA Method 8015M
- TPH-d and TPH-mo by EPA Method 8015M with Silica Gel Cleanup
- Semivolatile VOCs by EPA Method 8270B
- Organochlorine Pesticides by EPA Method 8081A
- Polychlorinated Biphenyls (PCBs) by EPA Method 8082
- California Title 26 Metals by EPA Method 6020.

PSEC certified that the sampling methods and locations were appropriately collected and representative of the import material. The laboratory analytical results for the import fill is provided in Appendix D.

Based on the chemical analytical results, PSEC determined that the import material was environmentally appropriate for use at the Site. Per the request of DPR, Treadwell and Rollo compared the chemical analytical results against Table B of the RWQCB 2005 ESLs for shallow soil (less than 3 meters) where groundwater is not a current source of drinking water for commercial land-use. Because PSEC certified that the analytical data was representative of the import soil and because all detected concentrations were below ESLs, Treadwell and Rollo found no conflicts with PSEC's determination that the import material was environmentally appropriate for use at the Site.

4.6 Site Encapsulation

Based on the analytical results of the post-excavation soil samples (Table 3) and dewatering well samples (Table 4), residual concentrations of chemicals will remain beneath the Site after construction is complete. As a result of the redevelopment activities, the residual chemicals remaining beneath the Site have been encapsulated by a water-proofing membrane, concrete foundation, and engineered planter areas with clean imported fill (cap). The cap eliminates exposures to soil vapor, inhalation of dusts, incidental ingestion of soil, and dermal contact with soil by providing a physical barrier between the contaminants in the subsurface and future Site users.

4.7 Cap Monitoring Plan

All contaminated soil at the Site is currently capped with asphalt/concrete pavement. This cap is to be inspected on an annual basis, repaired and sealed (if necessary) to prohibit incidental contact with the underlying soil or groundwater.

The annual Site inspection will consist of visual observation of all areas covered with pavement. The pavement will be inspected for cracks, breaks, erosion, groundwater infiltration into the

basement areas, or other conditions that may warrant repair or replacement to prohibit the soil or groundwater from being exposed. All cap disturbances during the cap inspection will be documented in the field, their locations identified on a figure of the Site, and photographs will be taken. An annual inspection report will include these observations and will also include a review of the previous annual inspection report to evaluate whether Site conditions have changed between inspections. Recommendations for additional maintenance or repair will be noted within the report which will be prepared as a summary letter. If future activities require that the cap be disturbed (i.e., drilling, demolishing), prior approval must be submitted to and approved by the ACHCSA before commencing.

5.0 CONCLUSION

Based on Treadwell and Rollo's observations and information provided to us by DPR and the Client, all substantive requirements of the SMP and ACHCSA approval letters have been fulfilled.

Residual petroleum compounds and volatile organic compounds remain in soil and groundwater at the Site. No chemical concentrations detected in soil exceeded Table D in the RWQCB 2005 ESLs for deep soil (greater than 3 meters) where groundwater is not a current source of drinking water for commercial land-use. All detected laboratory analytical results for groundwater were compared to Table B of the RWQCB 2005 ESLs where groundwater is not a current source of drinking water. The ESL for TPH-g (500 µg/L) was exceeded in numerous groundwater samples from dewatering well DW-14 located in the southwestern corner of the Site. The ESL for benzene (46 µg/L) was exceeded in one groundwater sample from dewatering well DW-14 at a concentration of 55 µg/L on 1 June 2006. Exposure to these groundwater concentrations have been mitigated by the installation of a cap at the Site (activities approved by the ACHCSA). All other detected concentrations in groundwater from the sampled dewatering wells were below ESLs.

REFERENCES

Alameda County Health Care Services Agency (ACHCSA, 2005a). *Technical Comments, SLIC Site RO0002621, Emeryville Industrial Court, 5885 Hollis St., Emeryville, CA 94608.* Letter to Wareham Development. 28 October 2005.

Alameda County Health Care Services Agency (ACHCSA, 2005b). *SLIC Site RO0002621, Emeryville Industrial Court, 5885 Hollis St., Emeryville, CA 94608.* Letter to Marks Management Company. 8 December 2005.

Brighton Environmental Consulting (Brighton, 2006). *Health and Safety Plan, Demolition, Shoring Installation, Dewatering, and Soil Excavation, Emery Station, 5885 Hollis Street, Emeryville, California.* Prepared on behalf of DPR Construction, Inc. dated February 2006.

Johnson, P.C., and R.A. Ettinger, 1991, *Heuristic Model for Predicting the Vapor Intrusion of Contaminant Vapors into Buildings.* Environmental Science and Technology, V. 25, N. 8, p. 1445-1252.

Lawrence Berkeley National Laboratory (LBNL, 2002). *Analysis of Background Distributions of Metals in the Soil at Lawrence Berkeley Laboratory for the Lawrence Berkeley National Laboratory Environmental Restoration Program.* June 2000.

Regional Water Quality Control Board, San Francisco Region (RWQCB, 2005). *Environmental Screening Levels, California Regional Water Quality Control Board, San Francisco Bay Region, February 2005.*

Treadwell & Rollo, Inc., (T&R, 2005). *Soil Management Plan, 5885 Hollis Street, Emeryville, California.* 14 July 2005.

Wareham Development, (Wareham, 2005). *Certification Letter, Written Response to Letter Dated 28 October 2005 and Work Plan for Post-Excavation Soil and Groundwater Sampling, 5885 Hollis Street, Emeryville, California.* Letter to Alameda County Health Care Services Agency. 30 November 2005.

TABLES

Table 1
TABLE OF ANALYTICAL METHODS
5885 Hollis Street
Emeryville, California

	SAMPLE ID	TPH-g	TPH-d	TPH-mo	BTEX/ MTBE	VOCs	TAME	ETBE	DIPE	TBA	Ethanol	EDB	EDC
POST EXCAVATION SOIL SAMPLES	TR-39	X	--	--	--	X	X	X	X	X	X	X	X
	TR-40	X	--	--	--	X	X	X	X	X	X	X	X
	TR-41	X	--	--	--	X	X	X	X	X	X	X	X
	TR-42	X	--	--	X	--	X	X	X	X	X	X	X
	TR-43	X	--	--	X	--	X	X	X	X	X	X	X
	TR-44	X	--	--	--	X	X	X	X	X	X	X	X
	TR-45	--	X	X	--	--	--	--	--	--	--	--	--
	TR-46	--	X	X	--	--	--	--	--	--	--	--	--
	TR-47	--	X	X	--	--	--	--	--	--	--	--	--
	TR-48	--	X	X	--	--	--	--	--	--	--	--	--
	TR-49	X	X	X	X	--	X	X	X	X	X	X	X
	TR-50	X	X	X	X	--	X	X	X	X	X	X	X
	TR-51	X	X	X	X	--	X	X	X	X	X	X	X
	TR-52	X	X	X	X	--	X	X	X	X	X	X	X
	TR-53	X	X	X	X	--	X	X	X	X	X	X	X
	TR-54	X	X	X	X	--	X	X	X	X	X	X	X
	TR-55	X	X	X	X	--	X	X	X	X	X	X	X
	TR-56	X	X	X	X	--	X	X	X	X	X	X	X
DEWATERING WELLS	DW-11	X	X	X	X	--	X	X	X	X	X	X	X
	DW-14	X	X	X	X	--	X	X	X	X	X	X	X
	DW-24	--	X	X	--	--	--	--	--	--	--	--	--

Notes

Total Petroleum Hydrocarbons (TPH) quantified as gasoline (TPH-g), diesel fuel (TPH-d), and motor oil (TPH-mo) analyzed by EPA Method 8015M. TPH-d and TPH-mo anayzed with silica gel cleanup.

Volatile organic compounds (VOCs) analyzed by EPA Method 8260B.

BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes.

Fuel oxygenates include tert-Butyl Alcohol (TBA), Methyl tert-Butyl ether (MTBE), Isopropyl Ether (DIPE), Ethyl tert-Butyl Ether (ETBE), and Methyl tert-Amyl Ether (TAME). Fuel Oxygenates analyzed by EPA Method 8260B.

Lead scavengers include 1,2 dibromoethane (EDB) and 1,2 dichloroethane (EDC). Lead Scavengers analyzed by EPA Method 8260B.

X = Anaysis Performed

-- = Not Analyzed

Table 2
SOIL ANALYTICAL RESULTS
Total Petroleum Hydrocarbons in Soil
5885 Hollis Street
Emeryville, California

Sample ID	Date	TPH-g	TPH-d	TPH-mo
TR-39	5/4/2006	<1.0	--	--
TR-40	5/4/2006	<0.96	--	--
TR-41	5/4/2006	<1.0	--	--
TR-42	5/4/2006	<1.1	--	--
TR-43	5/4/2006	<0.98	--	--
TR-44	5/10/2006	<0.99	--	--
TR-45	5/10/2006	--	<1.0	<5.0
TR-46	5/12/2006	--	<1.0	<5.0
TR-46A	5/10/2006	--	<1.0	<5.0
TR-47	5/12/2006	--	<0.99	<5.0
TR-48	5/12/2006	--	**7.9 H Y**	**33 L**
TR-49	5/4/2006	<0.97	<1.0	<5.0
TR-50	5/4/2006	<0.93	**2.0 H Y**	**6.0**
TR-51	5/4/2006	<1.1	<0.99	<5.0
TR-52	5/4/2006	**10 H Y**	**1.9 H Y**	<5.0
TR-53	5/4/2006	<0.99	<1.0	<5.0
TR-54	5/4/2006	<1.1	**2.0 H Y**	**5.8**
TR-55	5/4/2006	<1.1	<1.0	<5.0
TR-56	5/4/2006	<0.94	**1.4 H Y**	<5.0
ESLs		400	500	1,000

Notes
All soil samples were collected from the completed grade, approximately 15 feet below sidewalk grade.
All results reported in milligrams per kilogram (mg/kg). Results shown in bold are detected concentrations.
Total Petroleum Hydrocarbons (TPH) quantified as gasoline (TPH-g), diesel fuel (TPH-d), and motor oil (TPH-mo) analyzed by EPA Method 8015. TPH-d and TPH-mo anayzed with silica gel cleanup.
<1.0 = Compound not detected above laboratory reporting limit.
H = Heavier hydrocarbons contributed to the quantitation
Y = Sample exhibits chromatographic pattern which does not resemble standard.
-- = Not Analyzed
ESLs = Environmental Screening Levels, California Regional Water Quality Control Board, San Francisco Bay Region, February 2005. ESL criteria based on deep soil (> 3 meters below ground surface) where water is not a current or potential source of drinking water for commercial land-use (Table D)

Table 3
SOIL ANALYTICAL RESULTS
Volatile Organic Compounds in Soil
5885 Hollis Street
Emeryville, California

		Fuel Oxygenates						BTEX				Lead Scavengers			
Sample ID	Sample Date	TBA	MTBE	DIPE	ETBE	TAME	Ethanol	Benzene	Toluene	Ethyl-benzene	Total Xylenes	EDB	EDC	Methylene Chloride	Other VOCs
TR-39	5/4/2006	<98	<4.9	<4.9	<4.9	<4.9	<980	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	**180**	All ND
TR-40	5/4/2006	<96	<4.8	<4.8	<4.8	<4.8	<960	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	**220**	All ND
TR-41	5/4/2006	<94	<4.7	<4.7	<4.7	<4.7	<940	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	**170**	All ND
TR-42	5/4/2006	<100	<5.0	<5.0	<5.0	<5.0	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--
TR-43	5/4/2006	<91	<4.5	<4.5	<4.5	<4.5	<910	<4.5	<4.5	<4.5	<4.5	<4.5	<4.5	--	--
TR-44	5/10/2006	<94	<4.7	<4.7	<4.7	<4.7	<940	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	**94**	All ND
TR-45	5/10/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-46	5/12/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-46A	5/10/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-47	5/12/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-48	5/12/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-49	5/4/2006	<96	<4.8	<4.8	<4.8	<4.8	960	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	--	--
TR-50	5/4/2006	<96	<4.8	<4.8	<4.8	<4.8	<960	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	--	--
TR-51	5/4/2006	**400**	<5.0	<5.0	<5.0	<5.0	<1,000	**8.2**	<5.0	<5.0	<5.0	<5.0	<5.0	--	--
TR-52	5/4/2006	<100	<5.0	<5.0	<5.0	<5.0	<1,000	<5.0	<5.0	**7.6**	**7.1**	<5.0	<5.0	--	--
TR-53	5/4/2006	<89	<4.5	<4.5	<4.5	<4.5	<890	<4.5	<4.5	<4.5	<4.5	<4.5	<4.5	--	--
TR-54	5/4/2006	<93	<4.6	<4.6	<4.6	<4.6	<930	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	--	--
TR-55	5/4/2006	<98	<4.9	<4.9	<4.9	<4.9	<980	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	--	--
TR-56	5/4/2006	<93	<4.6	<4.6	<4.6	<4.6	<930	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	--	--
ESLs		110,000	5,600	NE	NE	NE	45,000	510	9,300	32,000	11,000	20	70	1,500	NE

Notes
All soil samples were collected from the completed grade, approximately 15 feet below sidewalk grade.
All results reported in micrograms per kilogram (µg/kg). Results shown in **bold** are detected concentrations
Volatile organic compounds (VOCs) analyzed by EPA Method 8260B.
Fuel oxygenates include tert-Butyl Alcohol (TBA), Methyl tert-Butyl ether (MTBE), Isopropyl Ether (DIPE), Ethyl tert-Butyl Ether (ETBE), and Methyl tert-Amyl Ether (TAME)
Lead scavengers include 1,2 dibromoethane (EDB) and 1,2 dichloroethane (EDC)
Other VOCs = Other volatile organic compounds described in the laboratory analytical report
-- = Not Analyzed
NE = Not Established
<5.0 = Compound not detected above laboratory reporting limit.
ND = Not detected above laboratory detection limits. Detection limits vary for each constituent.
ESLs = Environmental Screening Levels, California Regional Water Quality Control Board, San Francisco Bay Region, February 2005. ESL criteria based on deep soil (> 3 meters below ground surface) where water is not a current or potential source of drinking water for commercial land-use (Table D)

Table 4
GROUNDWATER ANALYTICAL RESULTS
Dewatering Wells
5885 Hollis Street
Emeryville, California

Sample ID	Sample Date	TPH			VOCs													
		Gasoline	Diesel fuel	Motor Oil	TBA	MTBE	DIPE	ETBE	TAME	Ethanol	B	T	E	X	EDB	EDC	Other VOCs
DW-1[1]	4/13/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	--	--	--
	4/18/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	All ND
	4/26/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	9.8	<0.5	<0.5	<5.0	<5.0	--
	5/3/2006	<50	130 Y	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	2.3	<0.5	<0.5	<5.0	<5.0	--
	5/10/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	0.9	<0.5	<0.5	<5.0	<5.0	--
	5/17/2006	<50	100 Y	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	0.6	<0.5	<0.5	<5.0	<5.0	--
	5/23/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	0.5	<0.5	<0.5	<5.0	<5.0	--
	6/1/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	6/8/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	6/16/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	6/22/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	6/30/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	7/5/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	7/12/2006	<50	78 Y	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	7/18/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	7/27/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	ESLs	500	640	640	18,000	1,800	NE	NE	NE	50,000	46	130	290	100	NE	200	Varies

Table 4
GROUNDWATER ANALYTICAL RESULTS
Dewatering Wells
5885 Hollis Street
Emeryville, California

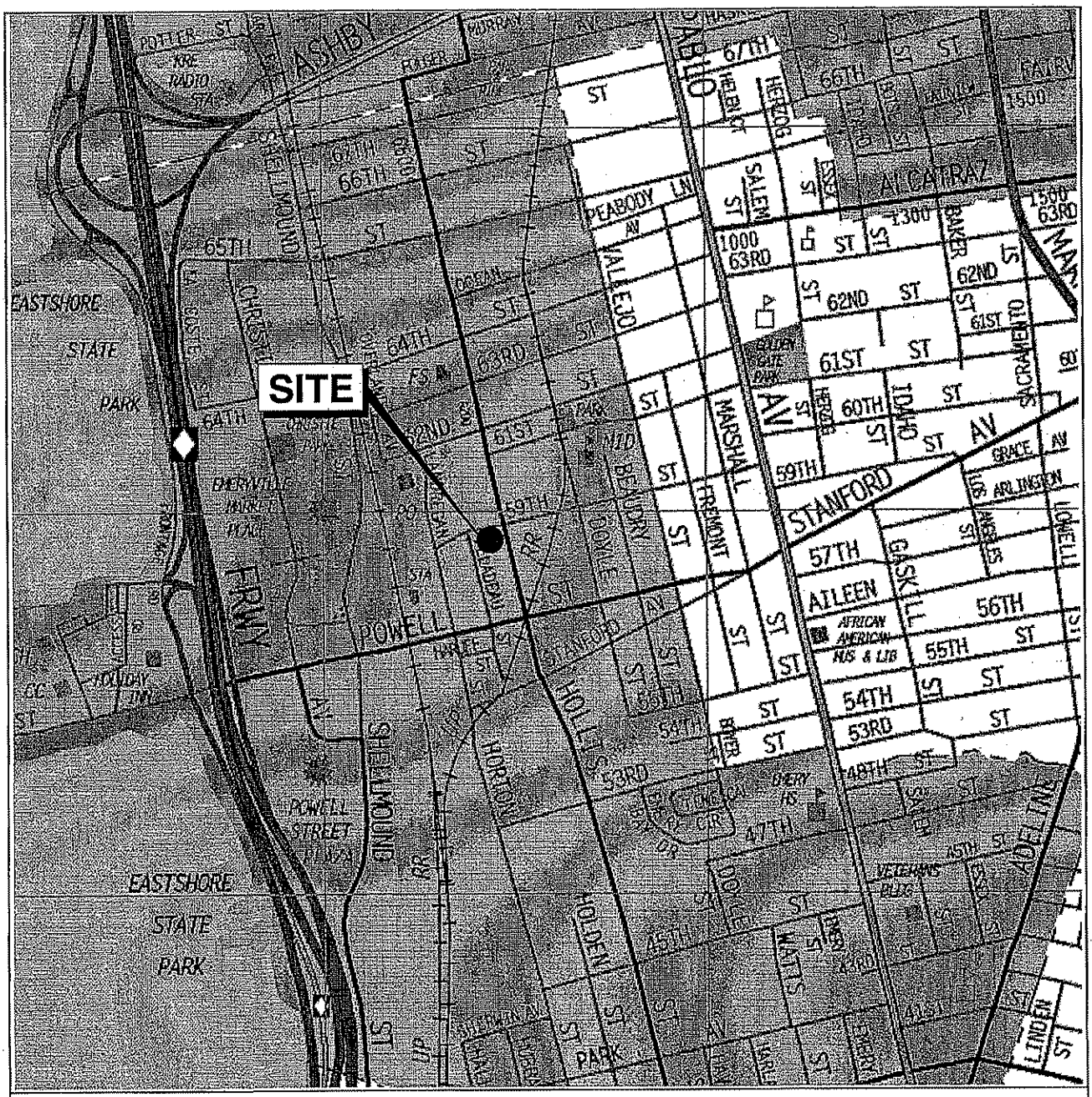
Sample ID	Sample Date	TPH			VOCs											
		Gasoline	Diesel fuel	Motor Oil	TBA	MTBE	DIPE	ETBE	TAME	Ethanol	B	T	E	X	EDB	EDC	Other VOCs
DW-14	4/13/2006	77 L Y	<50	<300	72	<0.5	<0.5	<0.5	<0.5	<1,000	10	0.8	<0.5	0.6	--	--	--
	4/18/2006	250	110Y	<300	72	<0.5	<0.5	<0.5	<0.5	<1,000	22	1.3	6.4	5.7	<0.5	19	Isopropyl Benzene = 1.9 Propyl Benzene = 1.7 1,3,5 Trimethylbenzene = 1.9 1,2,4 Trimethylbenzene = 0.8 para-Isopropyl Toluene = 1.3 n-Butylbenzene = 0.6 All Others ND
	4/26/2006	630	440 L	<300	76	<0.5	<0.5	<0.5	<0.5	<1,000	42	4.9	14	6.8	<5.0	16	--
	5/3/2006	620	370 L Y	<300	64	<0.5	<0.5	<0.5	<0.5	<1,000	39	1.8	21	10	<5.0	18	--
	5/10/2006	450	250 L Y	<300	83	<0.5	<0.5	<0.5	<0.5	<1,000	11	2.4	8.6	4.9	<5.0	15	--
	5/17/2006	450	340 Y	<300	44	<0.5	<0.5	<0.5	<0.5	<1,000	37	0.6	9.1	6.2	<5.0	16	--
	5/23/2006	390	110 L Y	<300	30	<0.5	<0.5	<0.5	<0.5	<1,000	28	<0.5	4.9	3.3	<5.0	15	--
	6/1/2006	1,800	360 L Y	<300	58	<0.5	<0.5	<0.5	<0.5	<1,000	55	1.2	41	28	<5.0	16	--
	6/8/2006	520	130 L Y	<300	40	<0.5	<0.5	<0.5	<0.5	<1,000	37	<0.5	6.0	4.7	<5.0	16	--
	6/16/2006	580	150 L Y	<300	34	<0.5	<0.5	<0.5	<0.5	<1,000	35	<0.5	6.4	5.4	<5.0	15	--
	6/22/2006	1,200	320 L Y	<300	47	<0.5	<0.5	<0.5	<0.5	<1,000	34	0.5	7.6	9.7	<5.0	14	--
	6/30/2006	970	270 L Y	<300	35	<0.5	<0.5	<0.5	<0.5	<1,000	30	<0.5	6.7	5.6	<5.0	15	--
	7/5/2006	950	230 L Y	<300	37	<0.5	<0.5	<0.5	<0.5	<1,000	38	<0.5	6.1	5.2	<5.0	16	--
	7/12/2006	859 Y	<50	<300	24	<0.5	<0.5	<0.5	<0.5	<1,000	26	<0.5	6.9	4.6	<5.0	14	--
	7/18/2006	980	220 L Y	<300	57	<0.5	<0.5	<0.5	<0.5	<1,000	39	<0.5	6.5	4.8	<5.0	14	--
	7/27/2006	670	170 L Y	<300	51	<0.5	<0.5	<0.5	<0.5	<1,000	38	0.5	3.2	5.3	<5.0	15	--
	ESLs	500	640	640	18,000	1,800	NE	NE	NE	50,000	46	130	290	100	NE	200	Varies

Table 4
GROUNDWATER ANALYTICAL RESULTS
Dewatering Wells
5885 Hollis Street
Emeryville, California

Sample ID	Sample Date	TPH			VOCs													
		Gasoline	Diesel Fuel	Motor Oil	TBA	MTBE	DIPE	ETBE	TAME	Ethanol	B	T	E	X	EDB	EDC	Other VOCs
DW-24	4/13/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/18/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/26/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/3/2006	--	**63 Y**	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/10/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/17/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/23/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/1/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/8/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/16/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/22/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/30/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/5/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/12/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/18/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/27/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	ESLs	500	640	640	18,000	1,800	NE	NE	NE	50,000	46	130	290	100	--	200	Varies

Notes
All water results reported in micrograms per liter (µg/L). Detected concentrations shown in **bold**.
L = Lighter hydrocarbons contributed to the quantitation
Y = Sample exhibits chromatographic pattern which does not resemble standard.
Total petroleum hydrocarbons analyzed by EPA Method 8015M. Volatile organic compounds (VOCs) analyzed by EPA Method 8260B.
Fuel oxygenates include tert-Butyl Alcohol (TBA), Methyl tert-Butyl ether (MTBE), Isopropyl Ether (DIPE), Ethyl tert-Butyl Ether (ETBE), and Methyl tert-Amyl Ether (TAME)
B = Benzene, T = Toluene, E = Ethylbenzene, X = Total Xylenes
Lead scavengers include 1,2 dibromoethane (EDB) and 1,2 dichloroethane (EDC)
Other VOCs = Other volatile organic compounds described in the laboratory analytical report
<0.5 = Compound not detected above laboratory reporting limit.
-- = Not Analyzed
NE = Not Established
ND = Not detected above laboratory detection limits. Detection limits vary for each constituent.
ESLs = Environmental Screening Levels, California Regional Water Quality Control Board, San Francisco Bay Region, February 2005. Based on criteria where water is not a current or potential source of drinking water (Table B)
Shaded cells exceeded ESL criteria for their respective constituent.

FIGURES



Base map: The Thomas Guide
Alameda County
1999

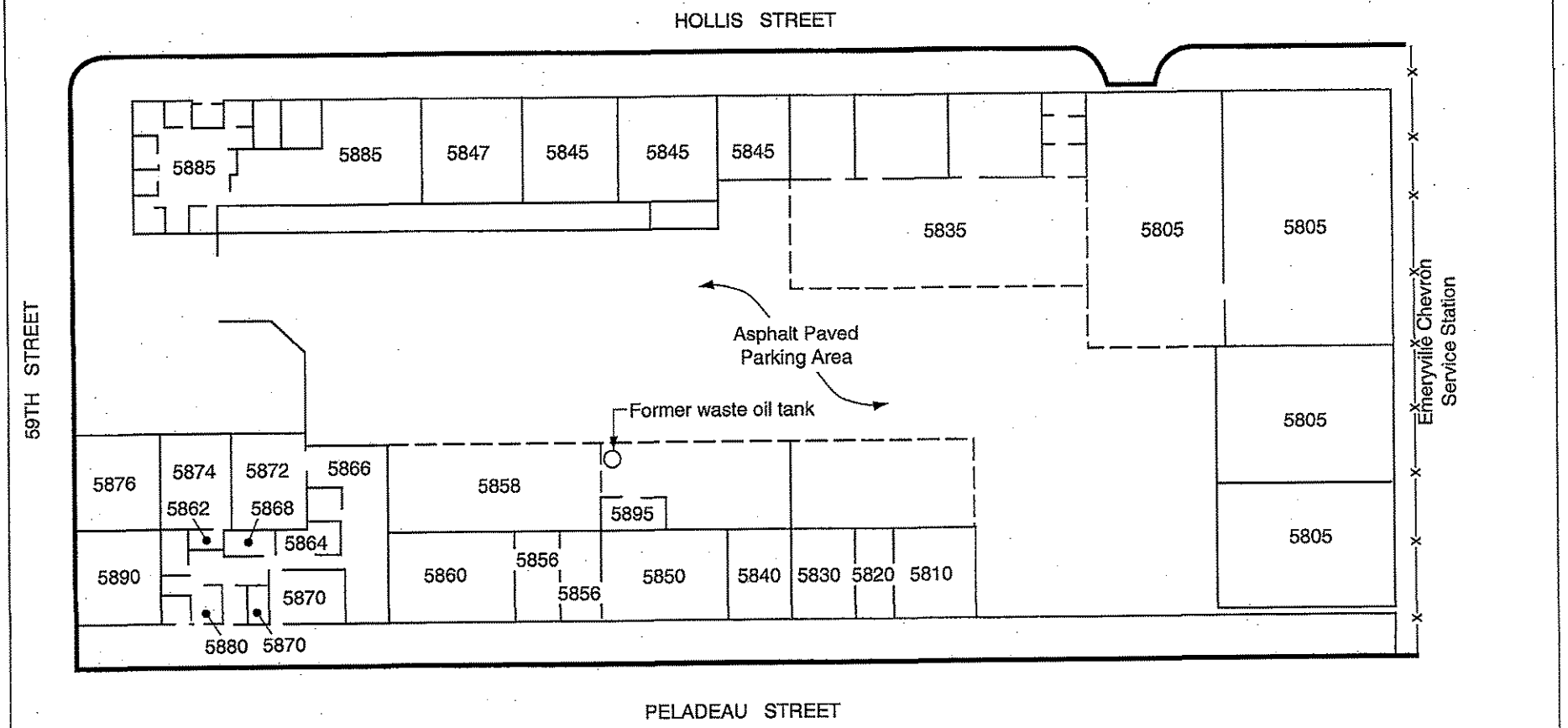
No scale

5885 HOLLIS STREET
Emeryville, California

SITE LOCATION MAP

Treadwell&Rollo

Date 05/13/05	Project No. 4069.01	Figure 1



0 60 Feet

Approximate scale

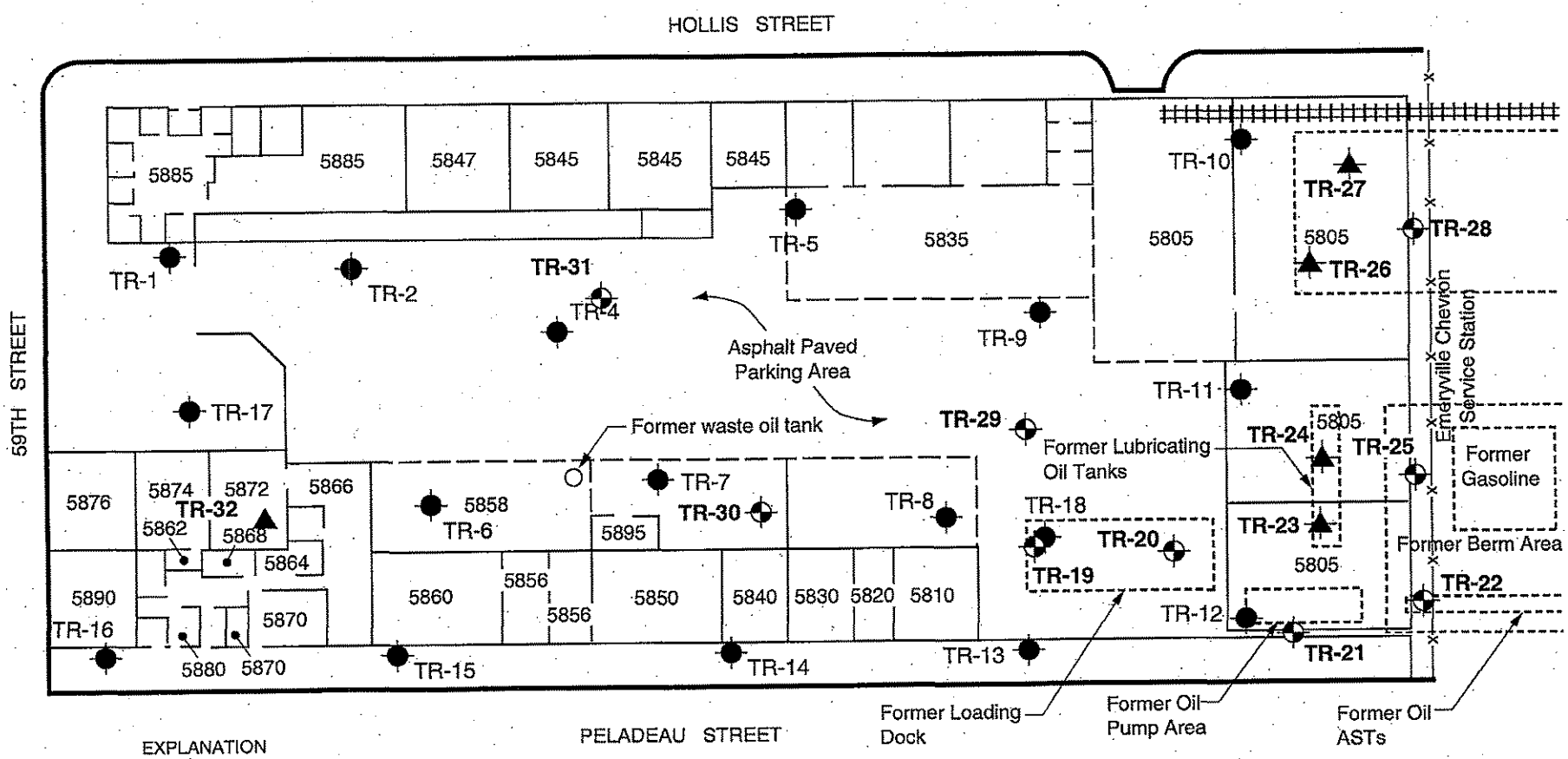
5885 HOLLIS STREET
Emeryville, California

SITE PLAN

Date 05/23/05	Project No. 4069.01	Figure 2

Treadwell&Rollo

Revised



EXPLANATION

TR-31 Approximate location of current exploratory boring by Treadwell & Rollo, Inc., (January 2005)

TR-1 Approximate location of previous exploratory boring by Treadwell & Rollo, Inc. (April 2000)

TR-27 Approximate location of exploratory boring by Treadwell & Rollo, Inc., (June 2005)

TR-32 Proposed sampling locations that could not be accessed because of current buildings

Approximate location of Union Oil of California Operations

0 60 Feet

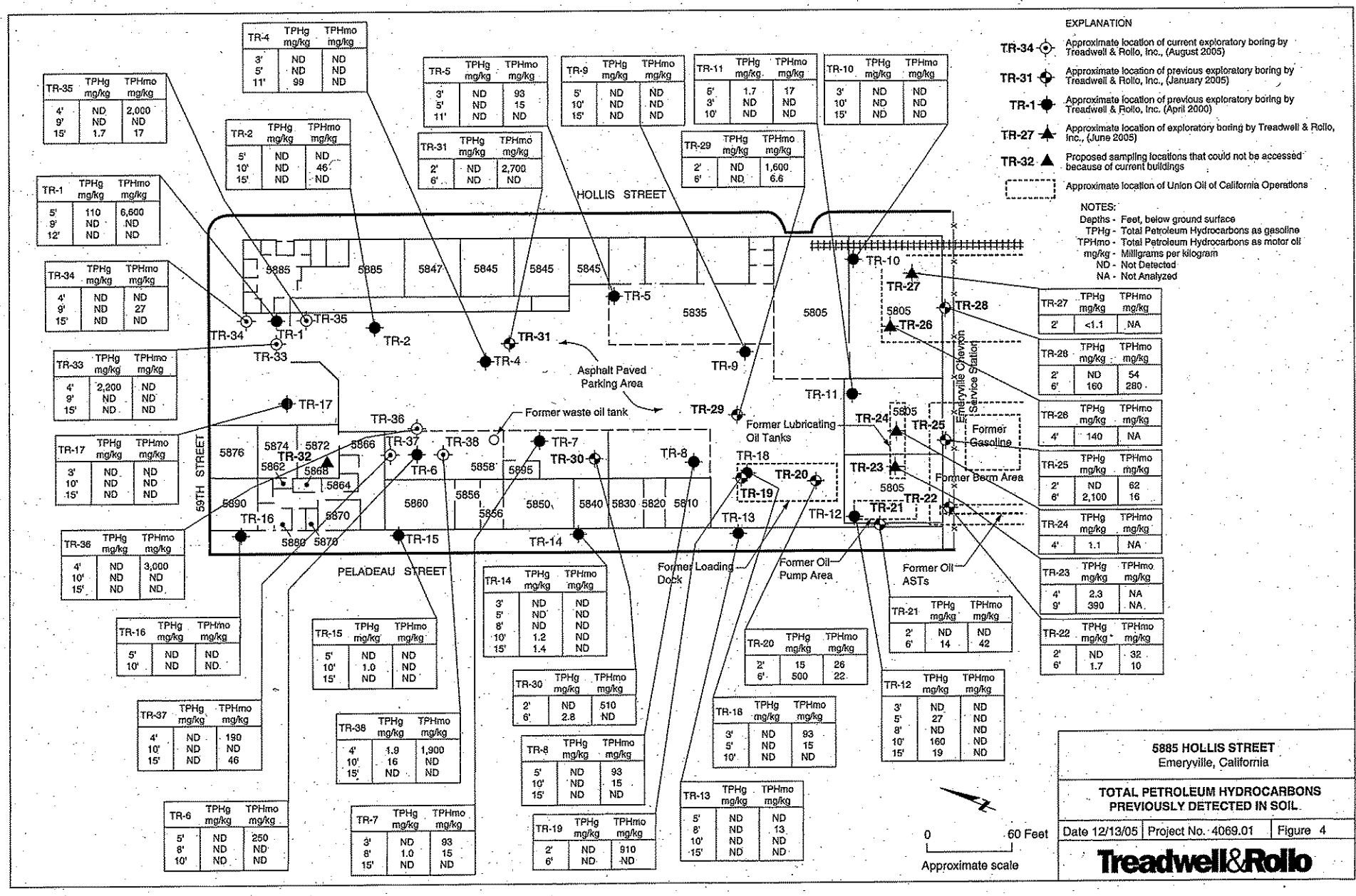
Approximate scale

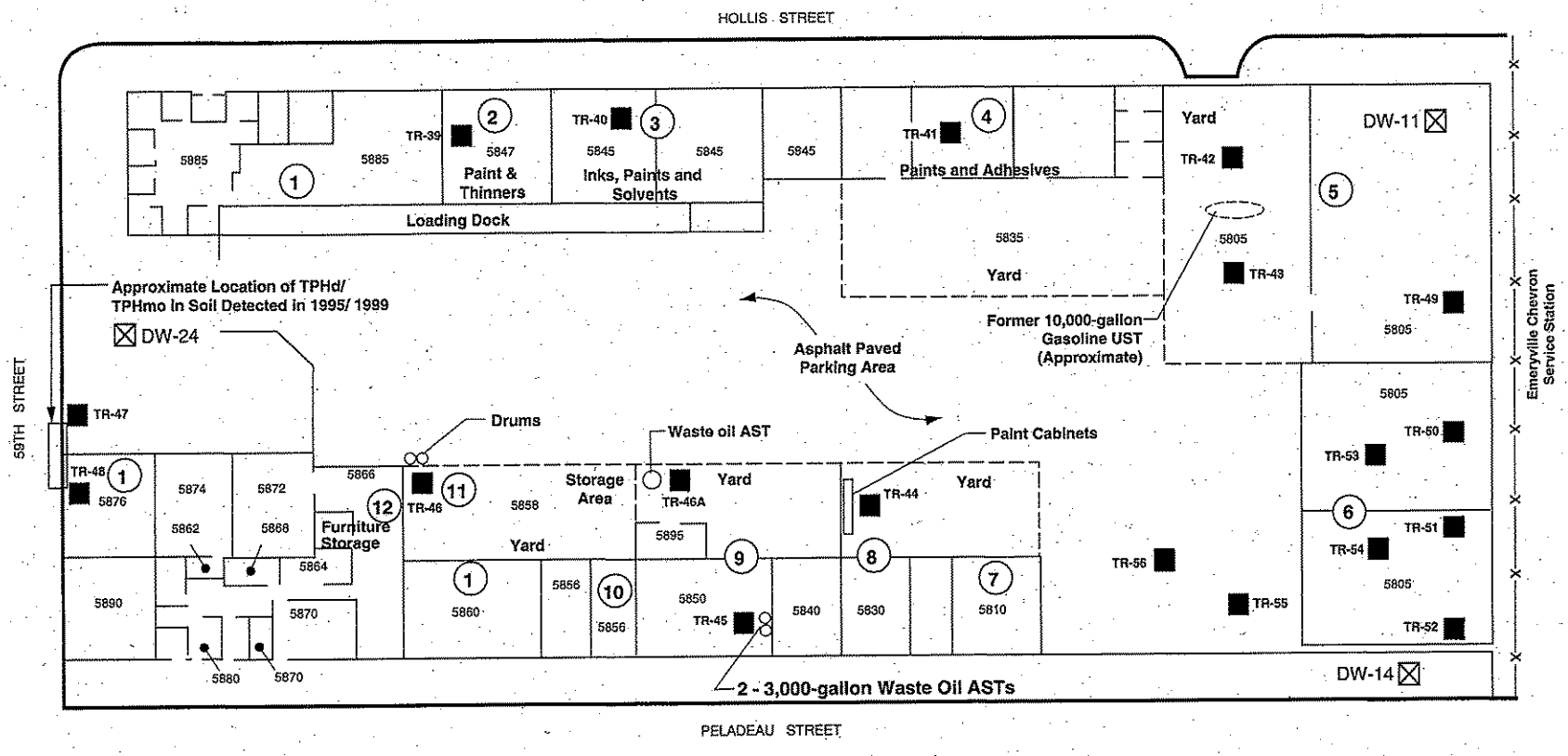
5885 HOLLIS STREET
Emeryville, California

PREVIOUS SOIL SAMPLE LOCATIONS

Date 12/13/05 | Project No. 4069.01 | Figure 3

Treadwell&Rollo


EXPLANATION
TR-34 Approximate location of current exploratory boring by Treadwell & Rollo, Inc., (August 2005)
TR-31 Approximate location of previous exploratory boring by Treadwell & Rollo, Inc., (January 2005)
TR-1 Approximate location of previous exploratory boring by Treadwell & Rollo, Inc. (April 2000)
TR-27 Approximate location of exploratory boring by Treadwell & Rollo, Inc., (June 2005)
TR-32 Proposed sampling locations that could not be accessed because of current buildings
Approximate location of Union Oil of California Operations
NOTES:
Depths - Feet, below ground surface
TPHg - Total Petroleum Hydrocarbons as gasoline
TPHmo - Total Petroleum Hydrocarbons as motor oil
mg/kg - Milligrams per kilogram
ND - Not Detected
NA - Not Analyzed
HOLLIS STREET
59TH STREET
PELADEAU STREET
Asphalt Paved Parking Area
Former waste oil tank
Former Lubricating Oil Tanks
Former Loading Dock
Former Oil Pump Area
Former Oil ASTs
Former Gasoline
Former Berm Area
Emeryville Chevron Service Station
0
60 Feet
Approximate scale
5885 HOLLIS STREET
Emeryville, California
TOTAL PETROLEUM HYDROCARBONS PREVIOUSLY DETECTED IN SOIL
Date 12/13/05 | Project No. 4069.01 | Figure 4
Treadwell&Rollo



HISTORICAL TENANTS

1. McLaughlin Coffee
2. BMP Seismic Retrofitting
3. Graphic Traffic
4. Canova Marble
5. S.B. Thomas
6. Pro-Formance Lighting
7. Edy's Candy Kitchen
8. Correris Cabinets
9. Fleetcare Repair
10. TLC Windshield
11. Ellerson Weaver
12. Alpha Furniture Restoration

■ Location of Post Excavation Soil Sample

☒ Location of Dewatering Wells Sampled

Note: Site features from Environmental Site Assessment, March 19, 1995 (Weiss Associates). All locations are approximate.

0 40 Feet

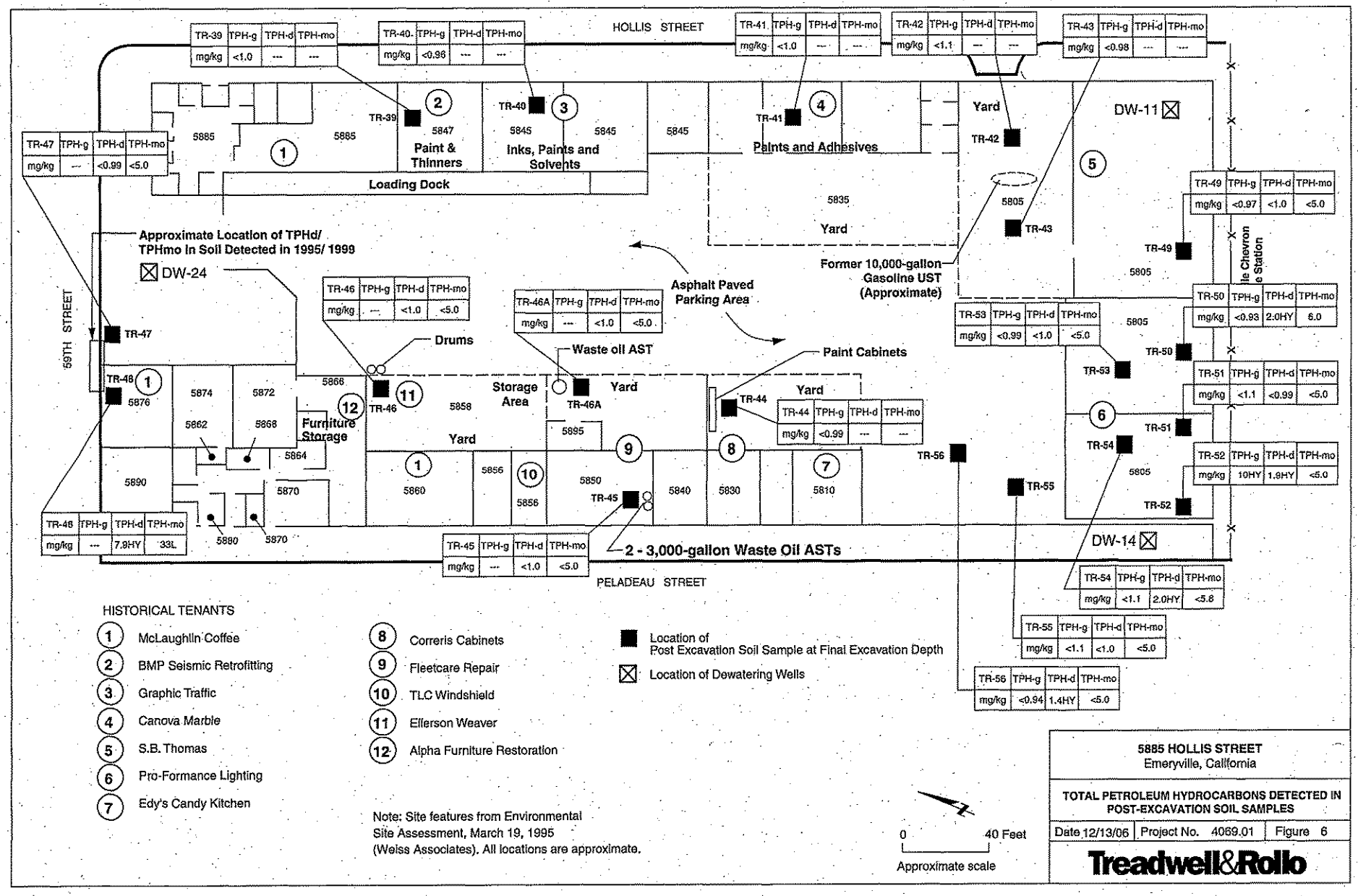
Approximate scale

5885 HOLLIS STREET
Emeryville, California

DEWATERING WELLS AND POST-EXCAVATION SOIL SAMPLE LOCATIONS

Date 12/13/06 | Project No. 4069.01 | Figure 5

Treadwell&Rollo


HOLLIS STREET
59TH STREET
PELADEAU STREET
Approximate Location of TPHd/ TPHmo In Soil Detected in 1995/ 1999
DW-24
DW-11
DW-14
DW-13
Loading Dock
Paint & Thinners
Inks, Paints and Solvents
Paints and Adhesives
Yard
Drums
Waste oil AST
Paint Cabinets
Asphalt Paved Parking Area
Former 10,000-gallon Gasoline UST (Approximate)
Storage Area
Furniture Storage
2 - 3,000-gallon Waste Oil ASTs
TR-39 TPH-g TPH-d TPH-mo mg/kg <1.0 --- ---
TR-40 TPH-g TPH-d TPH-mo mg/kg <0.96 --- ---
TR-41 TPH-g TPH-d TPH-mo mg/kg <1.0 --- ---
TR-42 TPH-g TPH-d TPH-mo mg/kg <1.1 --- ---
TR-43 TPH-g TPH-d TPH-mo mg/kg <0.98 --- ---
TR-47 TPH-g TPH-d TPH-mo mg/kg --- <0.99 <5.0
TR-46 TPH-g TPH-d TPH-mo mg/kg --- <1.0 <5.0
TR-46A TPH-g TPH-d TPH-mo mg/kg --- <1.0 <5.0
TR-44 TPH-g TPH-d TPH-mo mg/kg <0.99 --- ---
TR-53 TPH-g TPH-d TPH-mo mg/kg <0.99 <1.0 <5.0
TR-49 TPH-g TPH-d TPH-mo mg/kg <0.97 <1.0 <5.0
TR-50 TPH-g TPH-d TPH-mo mg/kg <0.93 2.0HY 6.0
TR-51 TPH-g TPH-d TPH-mo mg/kg <1.1 <0.99 <5.0
TR-52 TPH-g TPH-d TPH-mo mg/kg 10HY 1.9HY <5.0
TR-54 TPH-g TPH-d TPH-mo mg/kg <1.1 2.0HY <5.8
TR-55 TPH-g TPH-d TPH-mo mg/kg <1.1 <1.0 <5.0
TR-56 TPH-g TPH-d TPH-mo mg/kg <0.94 1.4HY <5.0
TR-48 TPH-g TPH-d TPH-mo mg/kg --- 7.9HY 33L
TR-45 TPH-g TPH-d TPH-mo mg/kg --- <1.0 <5.0
HISTORICAL TENANTS
1 McLaughlin Coffee
2 BMP Seismic Retrofitting
3 Graphic Traffic
4 Canova Marble
5 S.B. Thomas
6 Pro-Formance Lighting
7 Edy's Candy Kitchen
8 Correris Cabinets
9 Fleetcare Repair
10 TLC Windshield
11 Elferson Weaver
12 Alpha Furniture Restoration
Location of Post Excavation Soil Sample at Final Excavation Depth
Location of Dewatering Wells
Note: Site features from Environmental Site Assessment, March 19, 1995 (Weiss Associates). All locations are approximate.
0 40 Feet
Approximate scale
5885 HOLLIS STREET
Emeryville, California
TOTAL PETROLEUM HYDROCARBONS DETECTED IN POST-EXCAVATION SOIL SAMPLES
Date 12/13/06 Project No. 4069.01 Figure 6
Treadwell&Rollo

APPENDIX F

RESPONSE TO THE OCTOBER 28, 2005 ACEH LETTER
and
WORK PLAN FOR POST –EXCAVATION SOIL AND GROUNDWATER SAMPLING
5885 Hollis Street, EMERYVILLE
(Treadwell & Rollo, November 30, 2005)

WAREHAM DEVELOPMENT

30 November 2005

Barney Chan
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Subject: Certification Letter
Written Response to Letter Dated 28 October 2005 and Work Plan for
Post-Excavation Soil and Groundwater Sampling
5885 Hollis Street
Emeryville, California

Dear Mr. Chan:

Per your request, the attached letter from Treadwell & Rollo provides the written response to the Alameda County Environmental Health (ACEH) technical comments dated 28 October 2005 to the *Site Management Plan* (SMP) dated 14 July 2005 prepared by Treadwell & Rollo. The SMP and the attached written response letter have been prepared on behalf of the current property owner E S East Associates, LLC, an affiliate of Wareham Development, the developer of the proposed project.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

If you have any questions, please call me at (415) 457-4964.

Sincerely yours,

Geoffrey B. Sears
Wareham Development
For: E S East Associates, LLC

1120 Nye Street • Suite 400 • San Rafael, California 94901 • 415 457-4964 • FAX 415 459-4605

Treadwell&Rollo

30 November 2005
Project 4069.01

Barney Chan
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Subject: Response to Letter Dated 28 October 2005 and Work Plan
for Post-Excavation Soil and Groundwater Sampling
5885 Hollis Street
Emeryville, California

Dear Mr. Chan:

Per your request, this letter is the written response to the Alameda County Environmental Health (ACEH) technical comments dated 28 October 2005 to the *Site Management Plan* (SMP) dated 14 July 2005 prepared by Treadwell & Rollo on behalf of E S East Associates, LLC, an affiliate of Wareham Development, the developer of the property, as well as the *Clarification of Site Management* Plan dated 21 October 2005. Although the ACEH letter was addressed to Marks Management, future correspondence should be addressed to:

Geoffrey Sears
E S East Associates, LLC, an affiliate of Wareham Development
1120 Nye Street, Suite 400
San Rafael, CA 94901

The subject property (Figure 1, included in Attachment 1) has been referred to as the Emeryville Industrial Court, the 5885 Hollis Street property and the Emerystation East development. For this letter, the property and development are referred to as the Site. Figure 2 (included in Attachment 1) presents the Site Plan, which outlines the current building configurations.

This letter and associated attachments addresses the ACEH technical comments and includes information related to the historical activities at the Site and nearby off-site sources of contamination. Because the historical Site activities and nearby off-site sources form the basis for soil and groundwater sampling, this letter also presents the proposed post-excavation soil sampling and conceptual sampling for groundwater. Attachment 1 includes the figures referenced in this letter. Attachment 2 includes historical aerial photos and Sanborn historical maps requested in the 28 October 2005 ACEH letter.

COMMENT 1 - DEVELOPMENT CLARIFICATION

We consulted with DPR, the general contractor for the proposed construction, for specifics regarding development assumptions. Our letter of 21 October 2005 was correct, indicating that the excavation depth for the foundation will be to approximately 14 feet below ground surface (bgs), although the final excavation depth will vary slightly because the property is not perfectly flat and there are construction features that require slightly deeper excavations, such as elevator

Treadwell & Rollo, Inc. *Environmental & Geotechnical Consultants*
501 14th Street, Third Floor, Oakland, CA 94612
Telephone (510) 874-4500 Facsimile (510) 874-4507

pits (up to 5 feet deeper), thickened sections of the slab for the parking level (up to 1 foot deeper) and installation of drain rock (up to about 1 foot deeper).

The foundation design will be a mat, which will preclude the use of piles. Since shallow groundwater has been encountered between 9 and 14 feet bgs, the entire foundation will be below the shallow groundwater, requiring the installation of the membrane-based waterproofing proposed in Section 5.2.2 of the SMP. The deepest planned excavation for the elevators will be no deeper than approximately 19 feet bgs. This final depth is within the depths of the reported shallow groundwater in the near vicinity of the Site. As noted in Section 5.5.1 of the SMP, construction-phase dewatering will be required during the soil excavation and foundation construction. Therefore, the foundation excavation and construction, including the construction-phase dewatering and the associated membrane-based waterproofing should not provide a pathway for vertical migration of contamination.

COMMENT 2 – IDENTIFICATION OF OFF-SITE SOURCES

Comment 2 of the 28 October 2005 ACEH letter indicates that in addition to potential sources of residual chemicals in soil and groundwater at the Site, there are several known nearby off-site sources of chemicals in soil and groundwater which include the following.

- The Former Westinghouse Site, located directly west of the Site across Peladeau Street
- The Former Tosco/Unocal Gasoline Service Station located directly south of the Site
- Subsurface contamination detected as part of the 59th Street Widening.

These three primary off-site sources are discussed below along with an evaluation of the potential for contamination to spread through the proposed on-site soil excavation and dewatering activities.

The Former Westinghouse Site

The Former Westinghouse Site was a former electrical transformer servicing facility that has since been redeveloped and is currently occupied by the Emerystation office building. Primary chemicals at the Westinghouse Site included polychlorinated biphenyls (PCBs) in soil. During the construction of the Emerystation office building, excavation of PCB-affected soil and other mitigation activities were conducted under the oversight of ACEH. PCBs are relatively insoluble and not very mobile.

The Site development activities are not expected to have an impact on any residual PCB contamination at Emerystation office building. Soil excavation for the Site foundation

construction will not have an impact. Due to the low mobility of PCBs, construction-phase dewatering and treatment should not have an impact on residual PCBs in soil at the Emerystation office building.

The Former Tosco/Unocal Gasoline Service Station

The gasoline service station located directly south of the Site at 1400 Powell Street, has been referred to in various documents as the former TOSCO 76 Service Station, the Unocal Service Station and the Chevron Service. In 1999, a waste oil underground storage tank (UST) was removed from the property under the oversight of the ACEH (TRC Alton Geoscience, 1999). Soil samples collected during the waste oil tank removal indicated total petroleum hydrocarbons as gasoline (TPHg) up to 470 milligrams per kilogram (mg/kg), total petroleum hydrocarbons as diesel (TPHd) up to 1,100 mg/kg, total petroleum hydrocarbons as motor oil (TPHmo) up to 1,100 mg/kg, and benzene up to 300 micrograms per kilogram (µg/kg).

Three 10,000-gallon USTs (containing gasoline and diesel and located near the center of the service station, but southwest of the waste oil UST), were present in 1999 and are reportedly currently used at the service station. A grab groundwater sample collected near the northern end of the three active USTs indicated TPHg at 4,400 micrograms per liter (µg/L), TPHd at 2,600 µg/L, benzene at 520 µg/L, and methyl-tert-butyl ether at 1,300 µg/L.

In addition to residual chemical contamination from service station operations, the gasoline service station was also part of the Union Oil of California distribution facility. According to the 1952 Sanborn Map of the area (Attachment 2), the service station property included multiple aboveground storage tanks at the western edge of the property along Peladeau Street, including a 5,000-barrel (210,000 gallon) gasoline tank, a 7,000-barrel (294,000 gallon) fuel oil tank, and six 20,000 gallon oil tanks. The gasoline tank and some of the oil tanks were located along the border between the Site and the gasoline service station. The berm surrounding the multiple tanks previously extended over to the Site area. An oil warehouse was located along the west side of the property along Hollis Street.

No information is currently available regarding the potential impacts to soil and groundwater of the former Union Oil of California operations to the service station. As noted in the SMP, residual TPHg up to 150,000 µg/L and benzene up to 4,300 µg/L have detected in grab groundwater samples collected from the southern edge of the Site. The presence of TPHg and benzene may be due to the service station operations and/or due to the former Union Oil of California operations.

The Site development activities may have an impact on the residual contamination at the service station. Soil excavation for the foundation construction will not have an impact alone. Construction-phase dewatering and treatment will be conducted, as required in Section 5.5.1 of the SMP. Although the general groundwater gradient in the area has been reported to be to the

west, the construction-phase dewatering will draw groundwater from the service station toward the Site, possibly causing more of the TPHg, benzene, and other associated chemicals in groundwater to move towards the Site. However, the extracted water will be treated prior to discharge. Thus, the dewatering and treatment will reduce the overall mass of TPHg, benzene and other associated chemicals in the subsurface at both the Site and the service station.

Subsurface Contamination Detected as Part of the 59th Street Widening

In 1999, the City of Emeryville widened a portion of 59th Street, as well as acquired a portion of the Site, both areas located along the northern edge of the Site. Soil samples collected in 1999 indicated soils at a depth of approximately 2 to 4 feet bgs had TPHd detected up to 13,000 mg/kg and TPH as motor oil (TPHmo) detected up to 15,000 mg/kg. No benzene or TPH as gasoline were detected in soil samples. Approximately 18 tons of petroleum-affected soil was removed and disposed off-site as part of the street widening. Additional documentation of residual concentrations of petroleum-affected soils in the subsurface is not available, although soil samples collected by Treadwell & Rollo in April 2000 (Section 3.1.1 of the SMP) approximately 100 feet from the street widening area indicated TPHmo detected at 6,600 mg/kg at location TR-1 at a depth of 5 feet below ground surface, with no detection at a depth of 9 feet below ground surface. Grab groundwater collected at TR-1 indicated no detection TPHmo. No apparent source of the TPHmo has been identified, although the area near TR-1 and the area around the 59th Street widening were in the general vicinity of the former Union Oil of California Auto Repair Shop.

Other than potential excavation of the TPH-affected soils, the Site development activities are not likely to have an impact on the residual contamination in the area of the 59th Street widening. Soil excavation for the foundation construction will result in removal of the TPH-affected soils in the area. Construction-phase dewatering and treatment, as required in Section 5.5.1 of the SMP, will likely change the local shallow groundwater gradient temporarily, but the TPHmo in soil has been reported at depths above the shallow groundwater table.

COMMENT 3, 4 AND 5 – HISTORICAL AERIAL PHOTOS, FIGURE OVERLAYS, AND SITE CHACTERIZATION

Historical Aerial Photos and Sanborn Maps

Historical aerial photos (Comment 3) and Sanborn maps (Comment 4) are included in Attachment 2 to this letter. Aerial photos provided by Environmental Data Resources (EDR) included those for 1939, 1946, 1958, 1965, 1982, 1993 and 1998. Sanborn maps provided by EDR included those for 1911, 1951, 1952, 1967 and 1969. In addition to the aerial photos and Sanborn maps, the Site configuration from the 1995 Environmental Site Assessment (ESA) prepared by Weiss Associates is presented in Figure 3 (Comment 5). The current site

configuration is not significantly different than that depicted in Figure 3 (included in Attachment 1).

The aerial photos, Sanborn maps, and available site historical information indicate that significant changes in Site land use occurred before 1917 and after 1964. Prior to 1917, the Site was apparently vacant, as confirmed by the 1911 Sanborn Map.

Union Oil of California occupied the Site and the gasoline service station to the south of the Site between 1917 and 1964. Sanborn Maps from 1951 and 1952, as well as aerial photos from 1939 and 1946 confirm the presence of multiple potential sources of petroleum contamination at the Site and gasoline service station, including aboveground storage tanks along Peladeau Street, including a 5,000-barrel (210,000 gallon) gasoline tank, a 7,000-barrel (294,000 gallon) fuel oil tank, and six 20,000 gallon oil tanks. The gasoline tank and some of the oil tanks were located along the border between the Site and the gasoline service station. The berm surrounding the multiple tanks previously extended over to the Site area. An oil warehouse was located along the west side of the property along Hollis Street. A loading rack was present Peladeau Street. An auto repair shop was located along Peladeau Street and a garage was present along Hollis Street. Figure 4 (included in Attachment 1) presents an overly of the 1995 site features and the 1951 Sanborn Map (Comment 4).

The 1965 and 1967 Sanborn map and the 1965 aerial photo indicate that the tanks and other oil handling operations by Union Oil were not present at the Site, but that the long buildings constructed parallel to Hollis and Peladeau Street remained. Aerial photos from 1982 and 1993 indicate the additional presence of the Site building along southern border of the Site, as well as the gasoline service station at 1400 Powell Street.

Additional Site Characterization Information

In addition to the potential impacts to the Site from the Union Oil of California operations, several on-site chemicals were identified during a site visit in 1995, as documented in the 1995 Phase II ESA (Weiss Associates). The locations and site features that included chemical use are presented on Figure 3 and also discussed below:

- BMP Seismic Retrofitting – located at 5847 Hollis Street and identified as Tenant 2 on Figure 3. Paints and thinners were observed at this location.

- Graphic Traffic – located at 5845 Hollis Street and identified as Tenant 3 on Figure 3. Inks, paints and solvents used in the sign production activities were observed at this location.

- Canova Marble – located at 5835 Hollis Street and identified as Tenant 4 on Figure 4. Paints and adhesives used in the marble installation activities were observed at this location

- S.B. Thomas – located at 5805 Hollis Street and identified as Tenant 5 on Figure 3. A former 10,000 gallon gasoline UST, used to fuel vehicles for the distribution facility, was located approximately in the middle of the yard. This UST was reportedly removed in 1990.

- Correris Cabinets – located at 5830 Peladeau Street and identified as Tenant 8 on Figure 3. Paints and associated finishing materials were stored in paint storage cabinets located in the yard area.

- Fleetcare Repair – located at 5850 Peladeau Street and identified as Tenant 9 on Figure 3. Two 3,000 gallon waste oil aboveground storage tanks (ASTs) were used to store oil from the vehicle maintenance activities. The waste oil was eventually transferred to the waste oil AST located in the yard behind the 5850 Peladeau space.

- Ellerson Weaver – located in the yard area of 5858 Peladeau Street and identified as Tenant 11 on Figure 3. Several 55-gallon drums were observed outside of the fenced salvage storage area.

- Subsurface contamination detected as part of the 59th Street Widening – the approximate location of the TPHd and TPHmo detected in subsurface soil was located along 59th Street.

As noted in the SMP, soil and groundwater investigations conducted by Treadwell & Rollo indicated TPHg was detected in soil and groundwater near the southwest corner of the Site at TR-23, TR-24 and TR-25 (Figure 5). At TR-25, TPHg was detected at 2,100 mg/kg at 6 feet bgs. The grab groundwater samples collected from TR-25 had TPHg at 150,000 µg/L and benzene at 2,500 µg/L. The grab groundwater samples collected from borings TR-23 and TR-24 indicated the presence of TPHd at 8,400 µg/L and 6,800 µg/L, respectively. TPHg was detected at 28,000 µg/L at TR-23 and 91,000 µg/L at TR-24. Benzene was also detected at 4,300 µg/L in TR-23 and 2,500 µg/L in TR-24. These three locations are near the former 5,000-barrel (210,000 gallon) gasoline AST associated with the former Union Oil of California operations. At this time, it is unclear whether the presence of TPHg and benzene at this area of the Site is due to the current and/or previous gasoline service station activities at 1400 Powell Street or due to the Union Oil of California operations across both the Site and the gasoline service station property.

COMMENT 5 – POST-EXCAVATION SOIL AND GROUNDWATER WORK PLAN

Soil Sampling

As noted in the response to Comment 1 above, the excavation depth for the foundation will be to approximately 14 feet bgs, although the final excavation depth will vary slightly because the property is not perfectly flat and there are construction features that require slightly deeper excavations, such as elevator pits (up to 5 feet deeper), thickened sections of the slab for the parking level (up to 1 foot deeper) and installation of drain rock (up to about 1 foot deeper).

Based upon the Site characterization information, chemicals of potential concern in soil vary based upon location and include solvents/volatile organic compounds (VOCs), TPHg, TPHd/mo and benzene, toluene, ethylbenzene, xylenes (BTEX), and methyl-tert-butyl ether (MTBE). Soil samples will be collected and submitted under Chain-of-Custody documentation to a California-certified laboratory for laboratory analyses. The analyses will include one or more of the following:

- TPHg by EPA Modified Method 8015
- BTEX and MTBE by EPA Modified Method 8020
- TPHd/TPHmo by EPA Modified Method 8015
- Volatile Organic Compounds (VOCs) by EPA Method 8260.

Figure 6 present proposed locations for the collection of soil samples. Based upon the Site characterization information presented above, soil samples will be collected from the base of the excavation in the following areas (Figure 6) during soil excavation activities:

- BMP Seismic Retrofitting – one sample will be collected from this the area to evaluate the potential presence of paint thinners in soil. The sample will be analyzed for TPHg and VOCs.
- Graphic Traffic – one sample will be collected from this area to evaluate the potential presence of solvents. The sample will be analyzed for TPHg and VOCs.
- Canova Marble – one sample will be collected from this area to evaluate the potential presence of solvents associated with paints and adhesives. The sample will be analyzed for TPHg and VOCs.
- S.B. Thomas – two samples will be collected from this area near the former 10,000 gallon gasoline UST. The samples will be analyzed for TPHg and BTEX/MTBE.

- Correris Cabinets – one sample will be collected from the yard area near the former paint storage cabinets. The sample will be analyzed for TPHg and VOCs.

- Fleetcare Repair – one sample will be collected from the yard area near the former waste oil AST and another sample will be collected from the two former 3,000 gallon waste oil ASTs. The samples will be analyzed for TPHd/mo.

- Ellerson Weaver – one sample will be collected from the yard area near the former drum locations. The sample will be analyzed for TPHd/mo.

- Subsurface contamination detected as part of the 59th Street Widening – Two soil samples will be collected near the former area where TPHd and TPHmo were detected in subsurface soil. Samples will be analyzed for TPHd/mo.

- Southwest corner of the Site near TR-23, TR-24 and TR-25 - two soil samples will be collected from areas near TR-23, TR-24 and TR-25, which are near the former 5,000-barrel (210,000 gallon) gasoline AST and the former lubrication oil tanks. The locations may also be impacted by the gasoline service station. Samples will be analyzed for TPHg, TPHd/mo, BTEX and MTBE.

- Former Loading Rack – one sample will be collected from the area where a loading rack associated with the former Union Oil of California operations was located. The sample will be analyzed for TPHg, TPHd/mo, BTEX and MTBE.

In accordance with Section 5.10 of the SMP, the results of the soil sampling and associated documentation will be submitted to ACEH as part of the excavation completion report required by Section 5.10 of the SMP. The report will be submitted to ACEH within 90 days of completion of the excavation activities.

Groundwater Sampling

As noted in Section 5.5.1 of the SMP, construction-phase dewatering will be required during the soil excavation and foundation construction. Based upon the grab groundwater samples collected to date, TPHg and BTEX are present in groundwater along the southern perimeter of the Site.

In addition to the discharge permit-required discharge sampling, the extracted water will be sampled on a weekly basis and analyzed using the following methods:

- TPHg by EPA Modified Method 8015

- BTEX and MTBE by EPA Modified Method 8020.

Water samples will be collected in laboratory-supplied containers and submitted under Chain-of-Custody documentation to a California-certified laboratory for analysis. The results of the extracted water sampling and associated documentation will be submitted to ACEH as part of the excavation completion report required by Section 5.10 of the SMP. The report will be submitted to ACEH within 90 days of completion of the excavation activities.

A post-development groundwater monitoring plan, identifying proposed locations for groundwater monitoring wells will be submitted along with the excavation completion report. Pending post-development access limitations, it is likely that the proposed well locations will be along the southern border of the Site, adjacent to the gasoline service station.

If you have any questions, please call Glenn Leong at (510) 874-4500 at extension 554.

Sincerely yours,
TREADWELL & ROLLO, INC.

Glenn M. Leong, REA
Senior Scientist

Dorinda C. Shipman, PG, CHG
Principal

PROFESSIONAL GEOLOGIST
DORINDA SHIPMAN
NO. 215
CERTIFIED HYDROGEOLOGIST
STATE OF CALIFORNIA

40690104.OAK

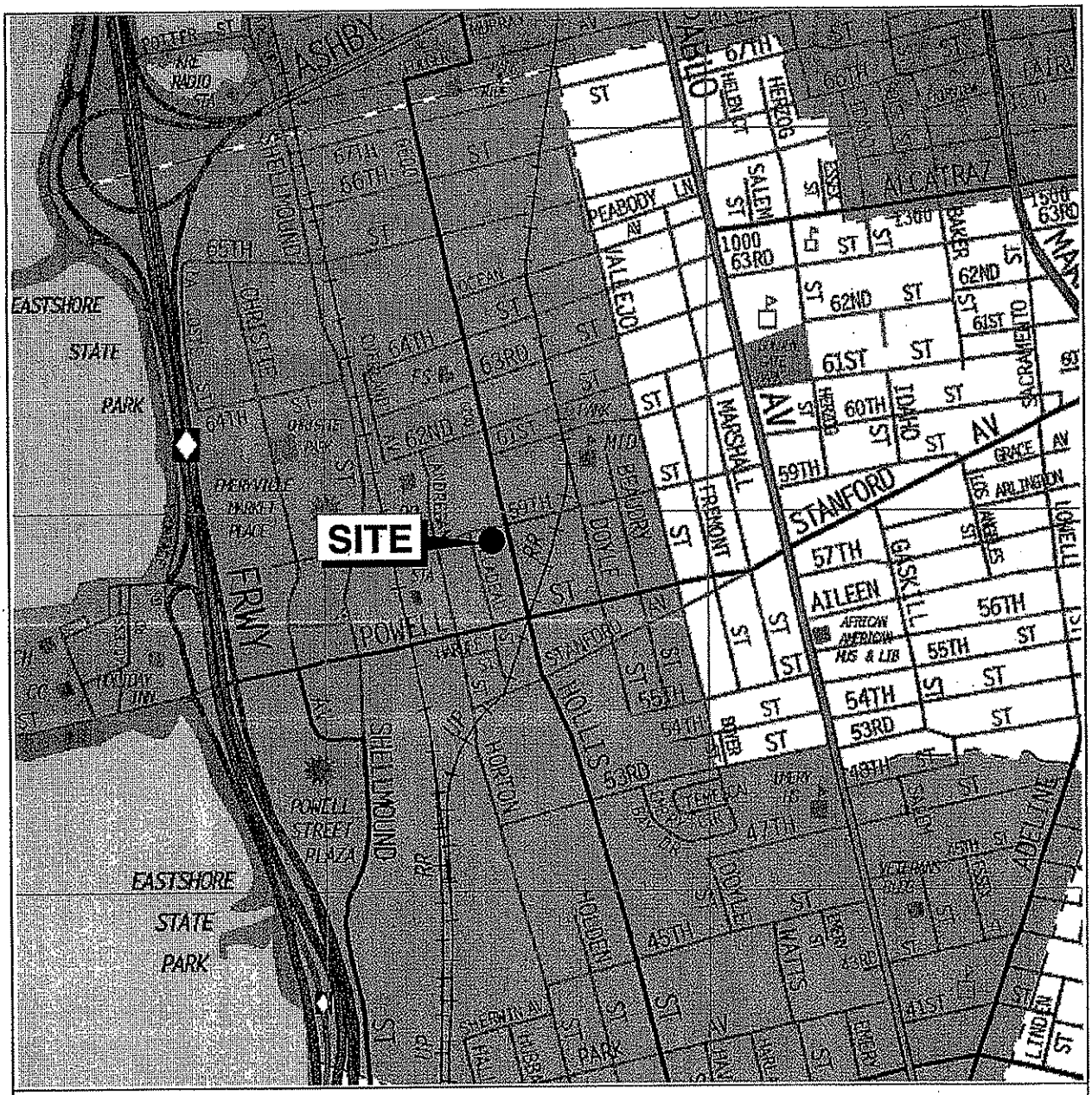
Attachment 1 – Figures 1-6
Attachment 2 – Aerial Photos and Sanborn Maps

cc: Geoff Sears, E S East Associates, LLC, an affiliate of Wareham Development
Ignacio Dayrit, City of Emeryville

Treadwell&Rollo

ATTACHMENT 1

FIGURES 1-6



Base map: The Thomas Guide
Alameda County
1999

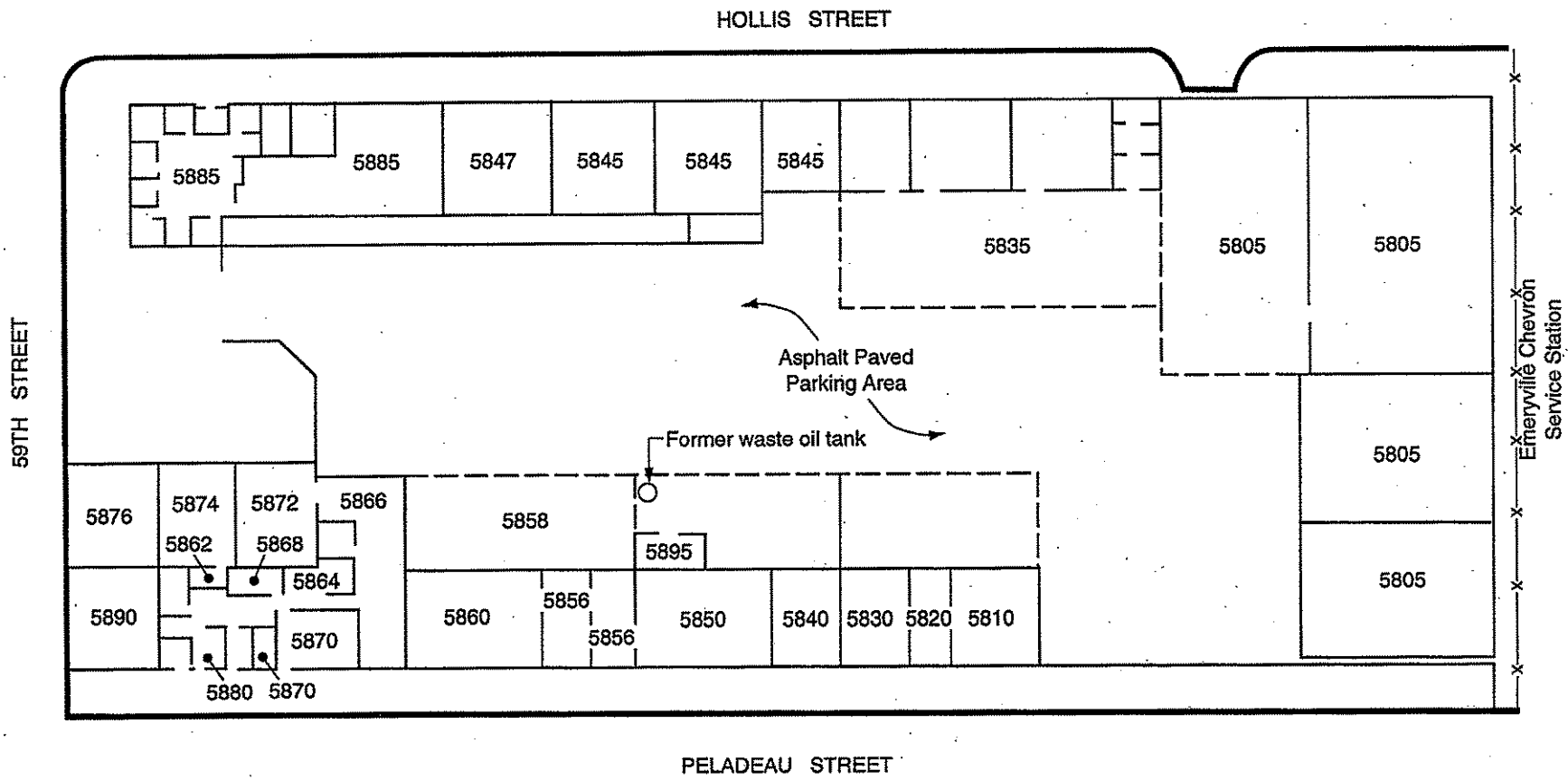
No scale

5885 HOLLIS STREET
Emeryville, California

SITE LOCATION MAP

Treadwell&Rollo

Date 05/13/05	Project No. 4069.01	Figure 1

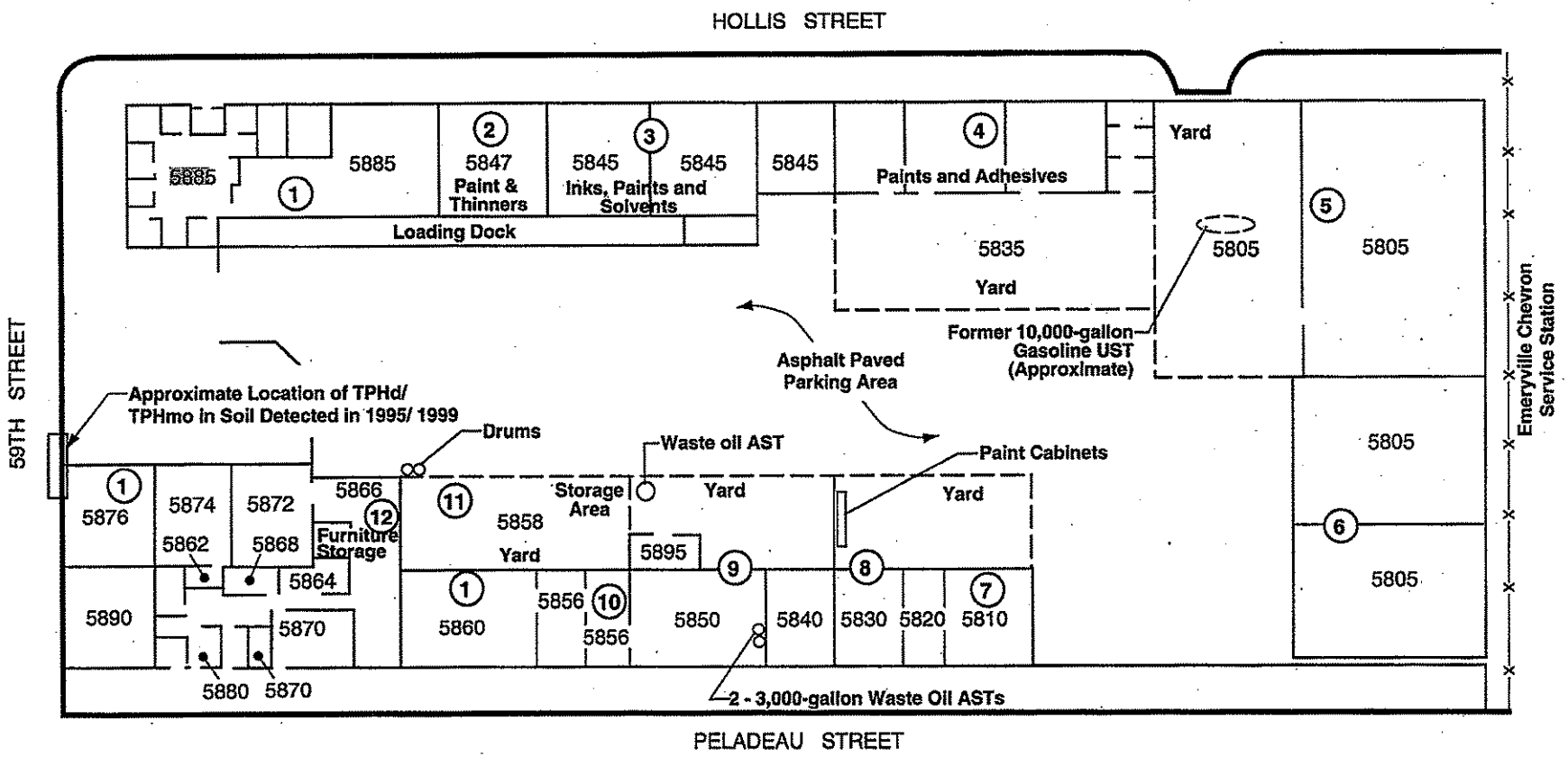


5885 HOLLIS STREET
Emeryville, California

SITE PLAN

Date 05/23/05	Project No. 4069.01	Figure 2

Treadwell&Rollo



TENANTS

1. McLaughlin Coffee
2. BMP Seismic Retrofitting
3. Graphic Traffic
4. Canova Marble
5. S.B. Thomas
6. Pro-Formance Lighting
7. Edy's Candy Kitchen
8. Correris Cabinets
9. Fleetcare Repair
10. TLC Windshield
11. Ellerson Weaver
12. Alpha Furniture Restoration

Note: Site features from Environmental Site Assessment, March 19, 1995 (Weiss Associates)

0 60 Feet

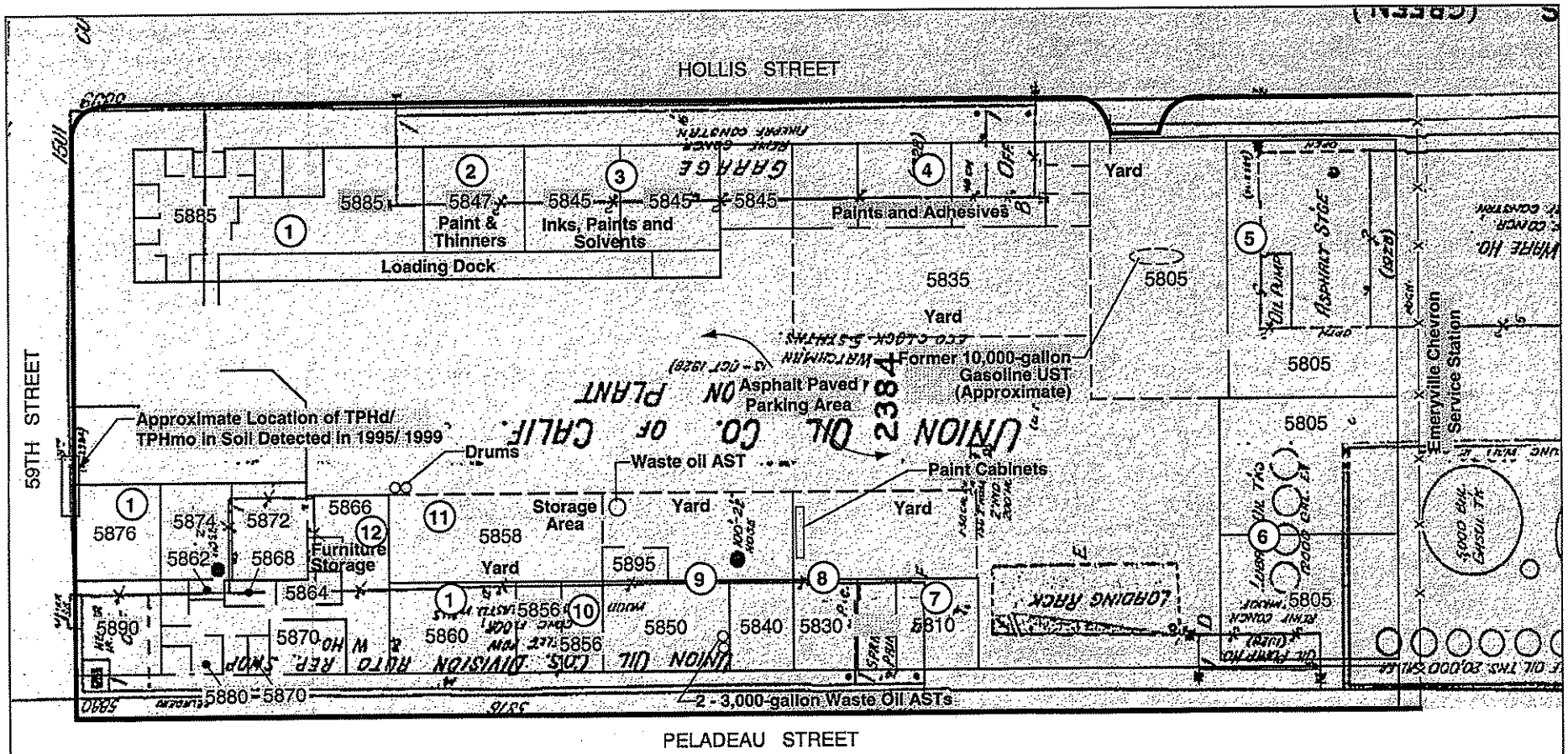
Approximate scale

5885 HOLLIS STREET
Emeryville, California

1995 SITE USE

Date 11/23/05	Project No. 4069.01	Figure 3

Treadwell&Rollo



TENANTS

1. McLaughlin Coffee
2. BMP Seismic Retrofitting
3. Graphic Traffic
4. Canova Marble
5. S.B. Thomas
6. Pro-Formance Lighting
7. Edy's Candy Kitchen
8. Correris Cabinets
9. Fleetcare Repair
10. TLC Windshield
11. Ellerson Weaver
12. Alpha Furniture Restoration

Note: Site features from Environmental Site Asessment, March 19, 1995 (Weiss Associates)

0 60 Feet

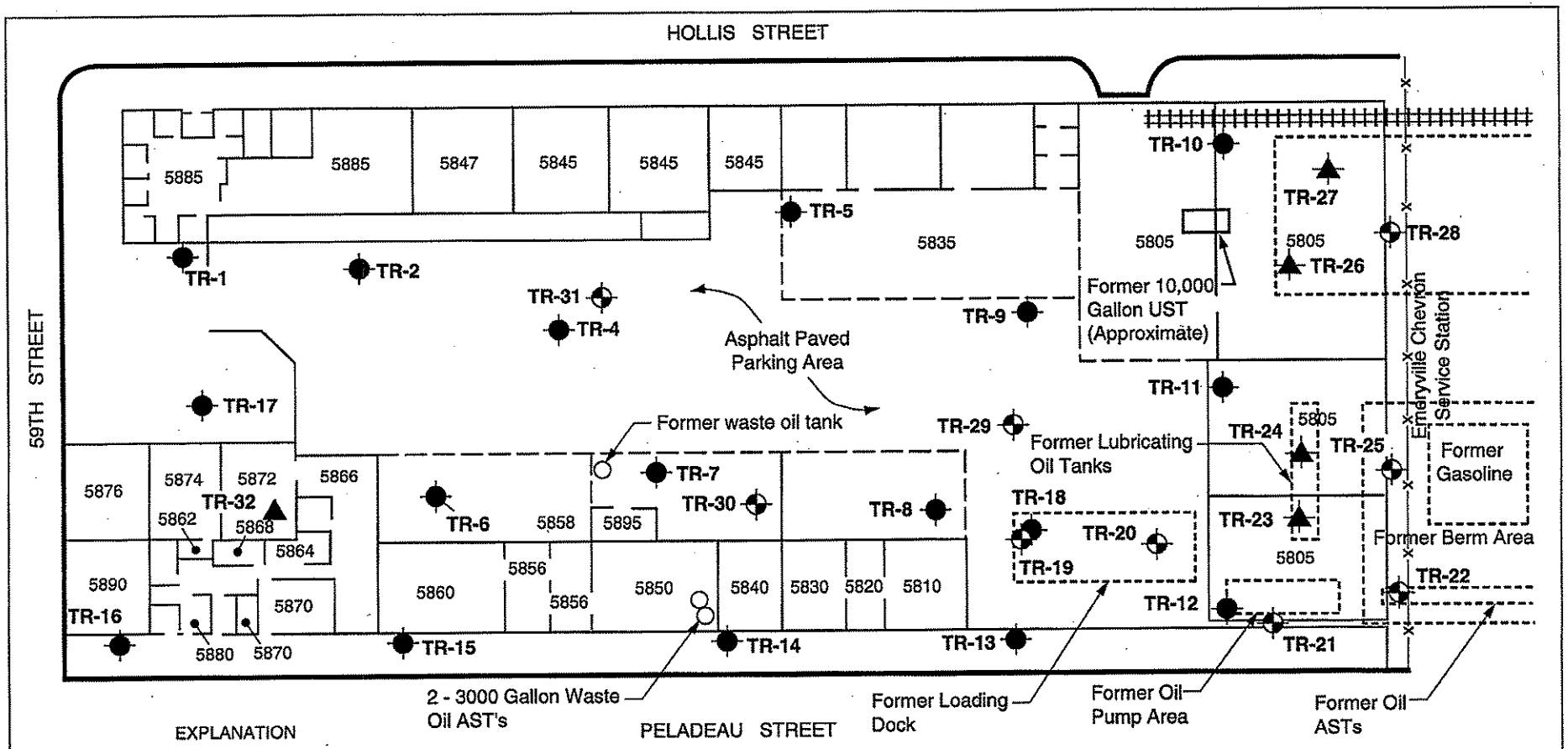
Approximate scale

5885 HOLLIS STREET
Emeryville, California

1951 AND 1995 SITE USES

Date 11/23/05 | Project No. 4069.01 | Figure 4

Treadwell&Rollo



EXPLANATION

TR-34 Approximate location of current exploratory boring by Treadwell & Rollo, Inc., (August 2005)

TR-31 Approximate location of previous exploratory boring by Treadwell & Rollo, Inc., (January 2005)

TR-1 Approximate location of previous exploratory boring by Treadwell & Rollo, Inc. (April 2000)

TR-27 Approximate location of exploratory boring by Treadwell & Rollo, Inc., (June 2005)

TR-32 Proposed sampling locations that could not be accessed or completed due to existing buildings

Approximate location of Union Oil of California Operations

0 60 Feet

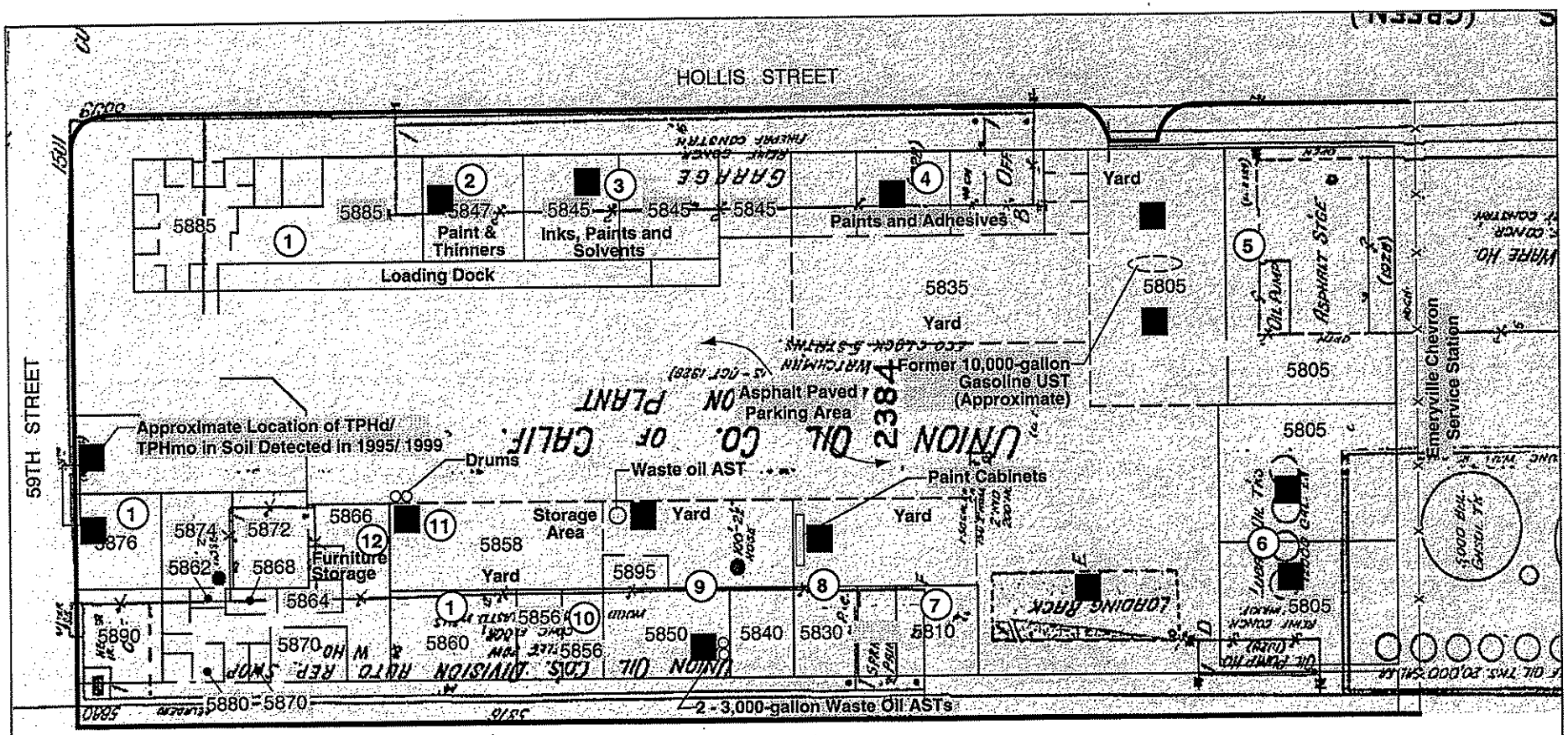
Approximate scale

5885 HOLLIS STREET
Emeryville, California

SAMPLE LOCATIONS

Date 08/26/05 | Project No. 4069.01 | Figure 5

Treadwell&Rollo



TENANTS

1. McLaughlin Coffee
2. BMP Seismic Retrofitting
3. Graphic Traffic
4. Canova Marble
5. S.B. Thomas
6. Pro-Formance Lighting
7. Edy's Candy Kitchen
8. Correris Cabinets
9. Fleetcare Repair
10. TLC Windshield
11. Ellerson Weaver
12. Alpha Furniture Restoration

■ Approximate location of Post Excavation Soil Sample

Note: Site features from Environmental Site Asessment, March 19, 1995 (Weiss Associates)

0 60 Feet

Approximate scale

5885 HOLLIS STREET
Emeryville, California

PROPOSED POST EXCAVATION SOIL SAMPLE LOCATIONS

Date 11/29/05	Project No. 4069.01	Figure 6

Treadwell&Rollo

Treadwell&Rollo

ATTACHMENT 2

AERIAL PHOTOS AND SANBORN MAPS

EDR® Environmental Data Resources Inc

"Linking Technology with Tradition"®

Sanborn® Map Report

Ship To: Glenn Leong
Treadwell & Rollo Inc.
501 14th Street
Oakland, CA 94612

Customer Project: 4069.01
1047659VLA 510-874-4500

Order Date: 11/21/2005 **Completion Date:** 11/21/2005
Inquiry #: 1559763.3s
P.O. #: 4069.01.1400
Site Name: Emerystation East
Address: 5885 Hollis Street
City/State: Emeryville, CA 94608
Cross Streets:

Based on client-supplied information, fire insurance maps for the following years were identified

1911 - 1 Map
1951 - 1 Map
1952 - 1 Map
1967 - 1 Map
1969 - 1 Map

Limited Permission to Photocopy Total Maps: 5

Treadwell & Rollo Inc. (the client) is permitted to make up to THREE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

USER'S GUIDE

This User's Guide provides guidelines for accessing Sanborn Map® images and for transferring them to your Word Processor.

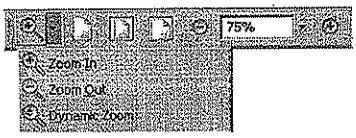
Reading Sanborn Maps

- Sanborn Maps document historical property use by displaying property information through words, abbreviations, and map symbols. The Sanborn Map Key provides information to help interpret the symbols and abbreviations used on Sanborn Maps. The Key is available from EDR's Web Site at: http://www.edrnet.com/reports/samples/key.pdf

Organization of Electronic Sanborn Image File

- Sanborn Map Report, listing years of coverage
- User's Guide
- Oldest Sanborn Map Image
- Most recent Sanborn Map Image

Navigating the Electronic Sanborn Image File



1. Open file on screen.
2. Identify TP (Target Property) on the most recent map.
3. Find TP on older printed images.
4. Using Acrobat® Reader®, zoom to 250% in order to view more clearly. (200-250% is the approximate equivalent scale of hardcopy Sanborn Maps.)
   A. On the menu bar, click "View" and then "Zoom to..."
   B. Or, use the magnifying tool and drag a box around the TP

Printing a Sanborn Map From the Electonic File

- EDR recommends printing images at 300 dpi (300 dpi prints faster than 600 dpi)
- To print only the TP area, cut and paste from Acrobat to your word processor application.

<u>Acrobat Versions 6 and 7</u>

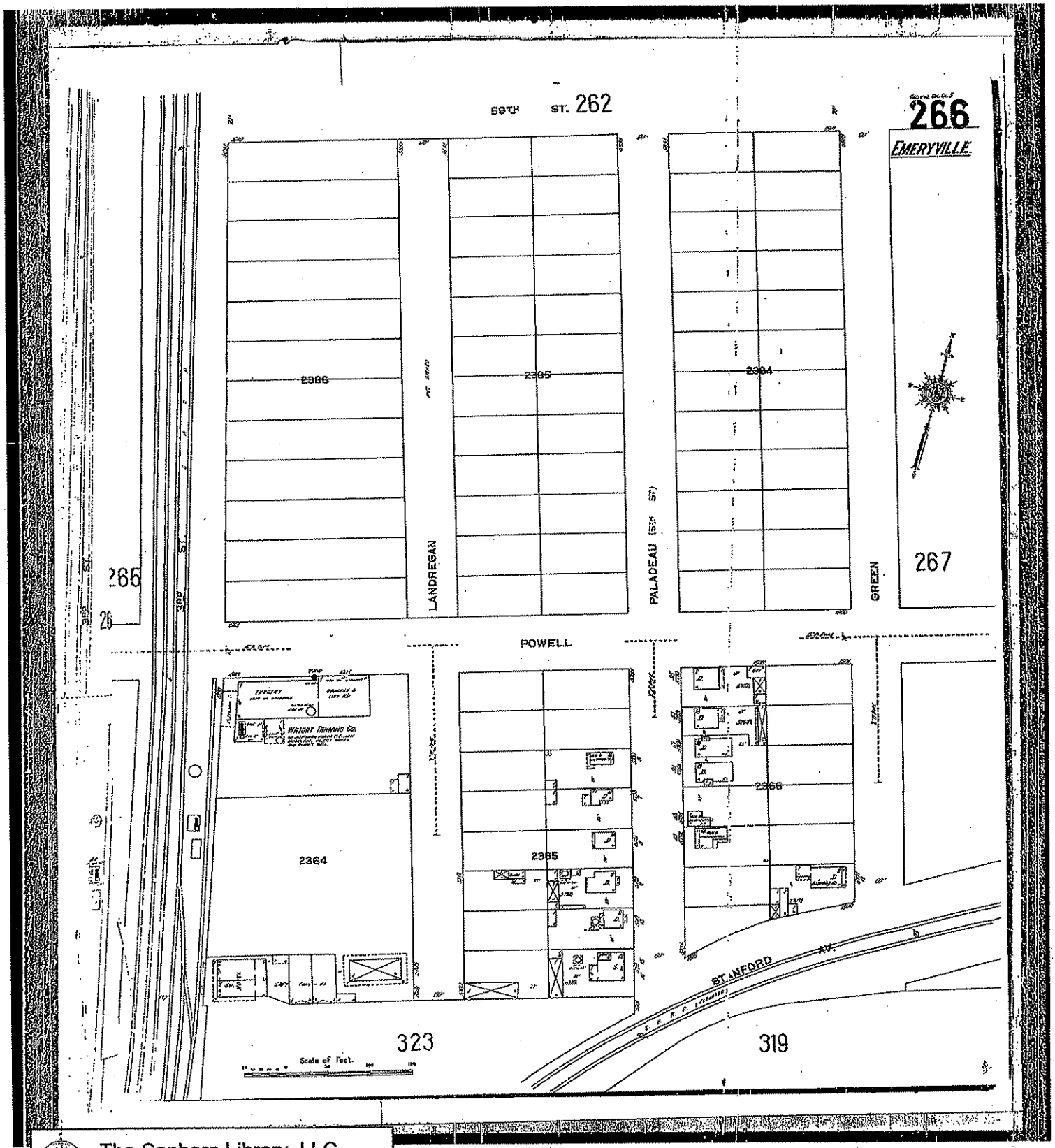
1. Go to the menu bar
2. Click the "Select Tool"
3. Draw a box around the area selected
4. "Right click" on your mouse
5. Select "Copy Image to Clipboard"
6. Go to Word Processor such as Microsoft Word, paste and print.

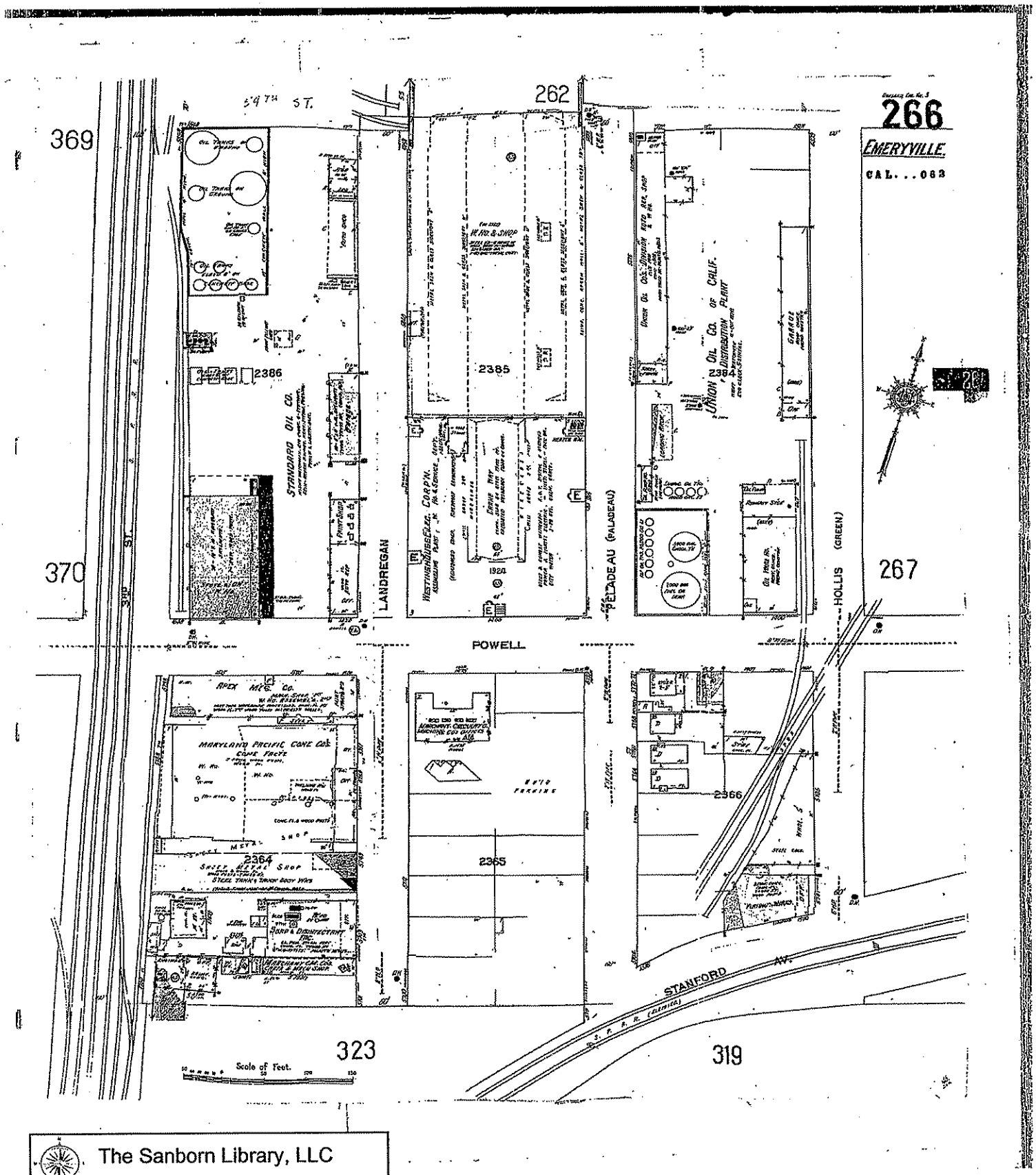
<u>Acrobat Version 5</u>

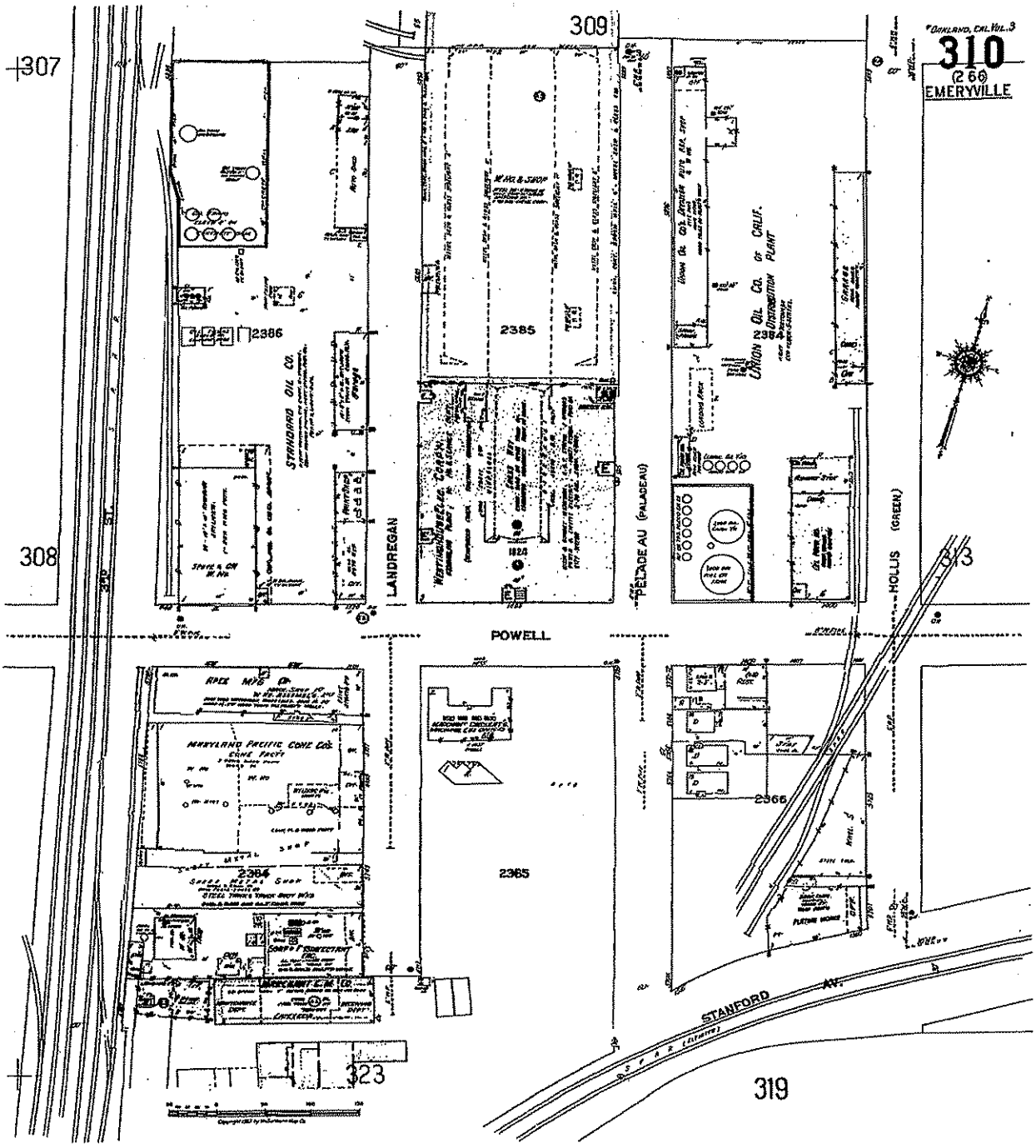
1. Go to the menu bar
2. Click the "Graphics Select Tool"
3. Draw a box around the area selected
4. Go to "Menu"
5. Highlight "Edit"
6. Highlight "Copy"
7. Go to Word Processor such as Microsoft Word, paste and print.

Important Information about Email Delivery of Electronic Sanborn Map Images

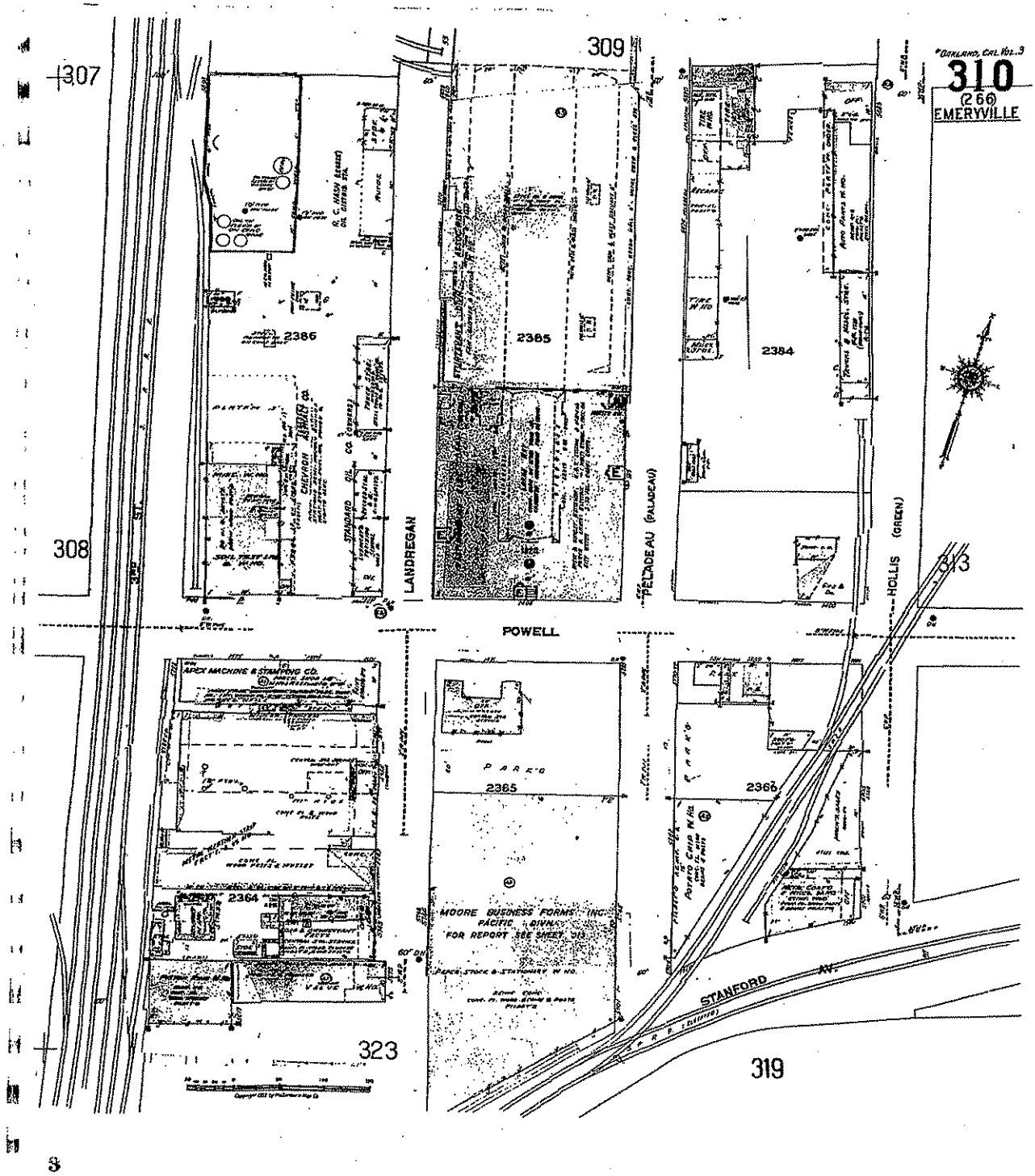
- Images are grouped intro one file, up to 2MB.
- In cases where in excess of 6-7 map years are available, the file size typically exceeds 2MB. In these cases, you will receive multiple files, labeled as "1 of 3", "2 of 3", etc. including all available map years.
- Due to file size limitations, certain ISPs, including AOL, may occasionally delay or decline to deliver files. Please contact your ISP to identify their specific file size limitations.

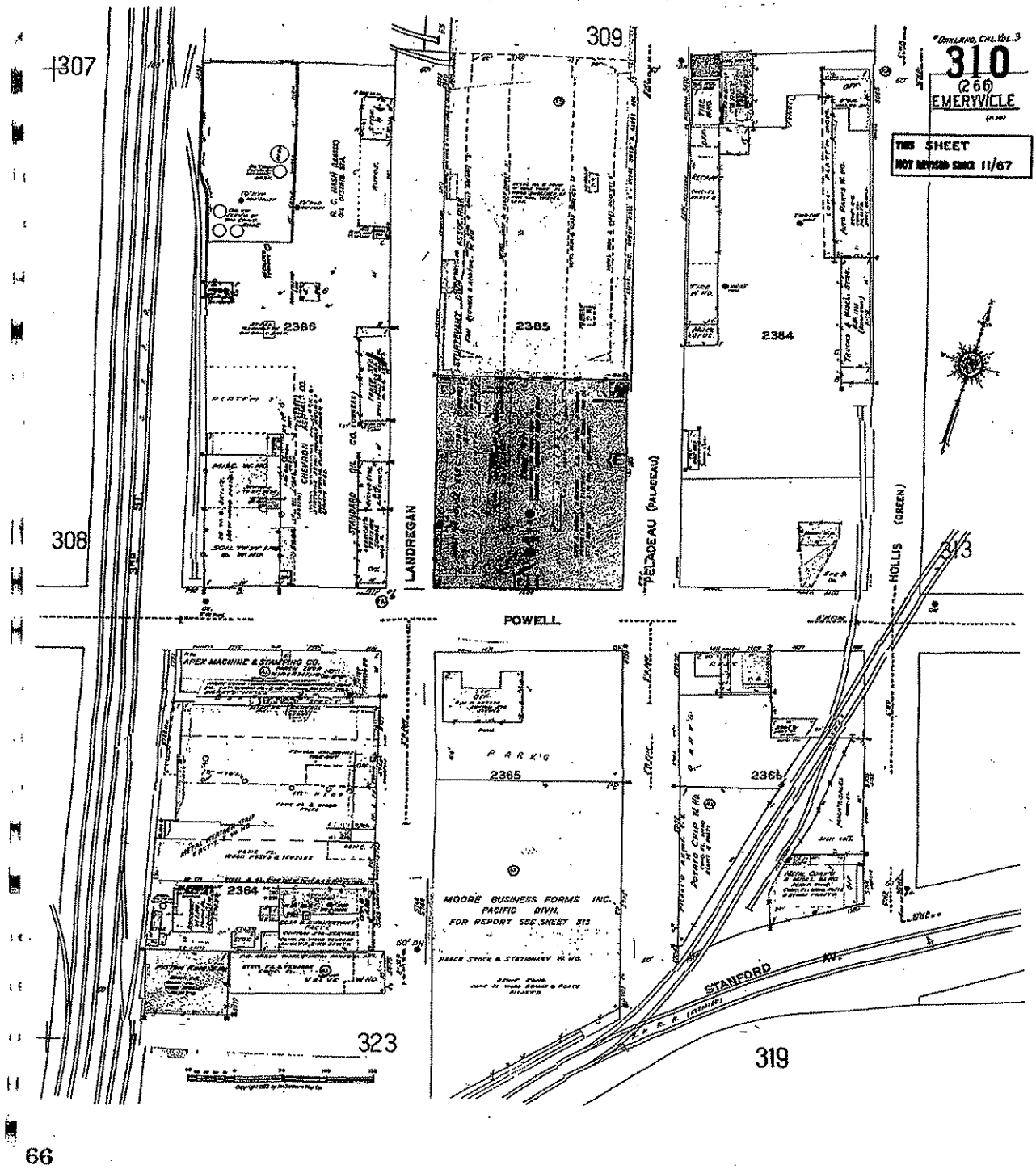






69





66

The EDR Aerial Photo Decade Package

Emerystation East
5885 Hollis Street
Emeryville, CA 94608

Inquiry Number: 1559763.6

November 22, 2005

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

Environmental Data Resources, Inc.
Aerial Photography Print Service

Environmental Data Resources, Inc.s (EDR) Aerial Photography Print Service is a screening tool designed to assist professionals in evaluating potential liability on a target property resulting from past activities. ASTM E 1527-00, Section 7.3 on Historical Use Information, identifies the prior use requirements for a Phase I environmental site assessment. The ASTM standard requires a review of *reasonably ascertainable standard historical sources. Reasonably ascertainable means information that is publicly available, obtainable from a source with reasonable time and cost constraints, and practically reviewable.*

To meet the prior use requirements of ASTM E 1527-00, Section 7.3.4, the following *standard historical sources* may be used: aerial photographs, fire insurance maps, property tax files, land title records (although these cannot be the sole historical source consulted), topographic maps, city directories, building department records, or zoning/land use records. ASTM E 1527-00 requires *"All obvious uses of the property shall be identified from the present, back to the property's obvious first developed use, or back to 1940, whichever is earlier. This task requires reviewing only as many of the standard historical sources as are necessary, and that are reasonably ascertainable and likely to be useful."* (ASTM E 1527-00, Section 7.3.2, page 12.)

Aerial Photographs

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account executive.

Aerial photographs are a valuable historical resource for documenting past land use and can be particularly helpful when other historical sources (such as city directories or fire insurance maps) are not reasonably ascertainable. The EDR Aerial Photograph Print Service includes a search of local aerial photograph collections flown by public and private agencies. EDRs professional field-based researchers provide digitally reproduced historical aerial photographs at ten year intervals.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Date EDR Searched Historical Sources:

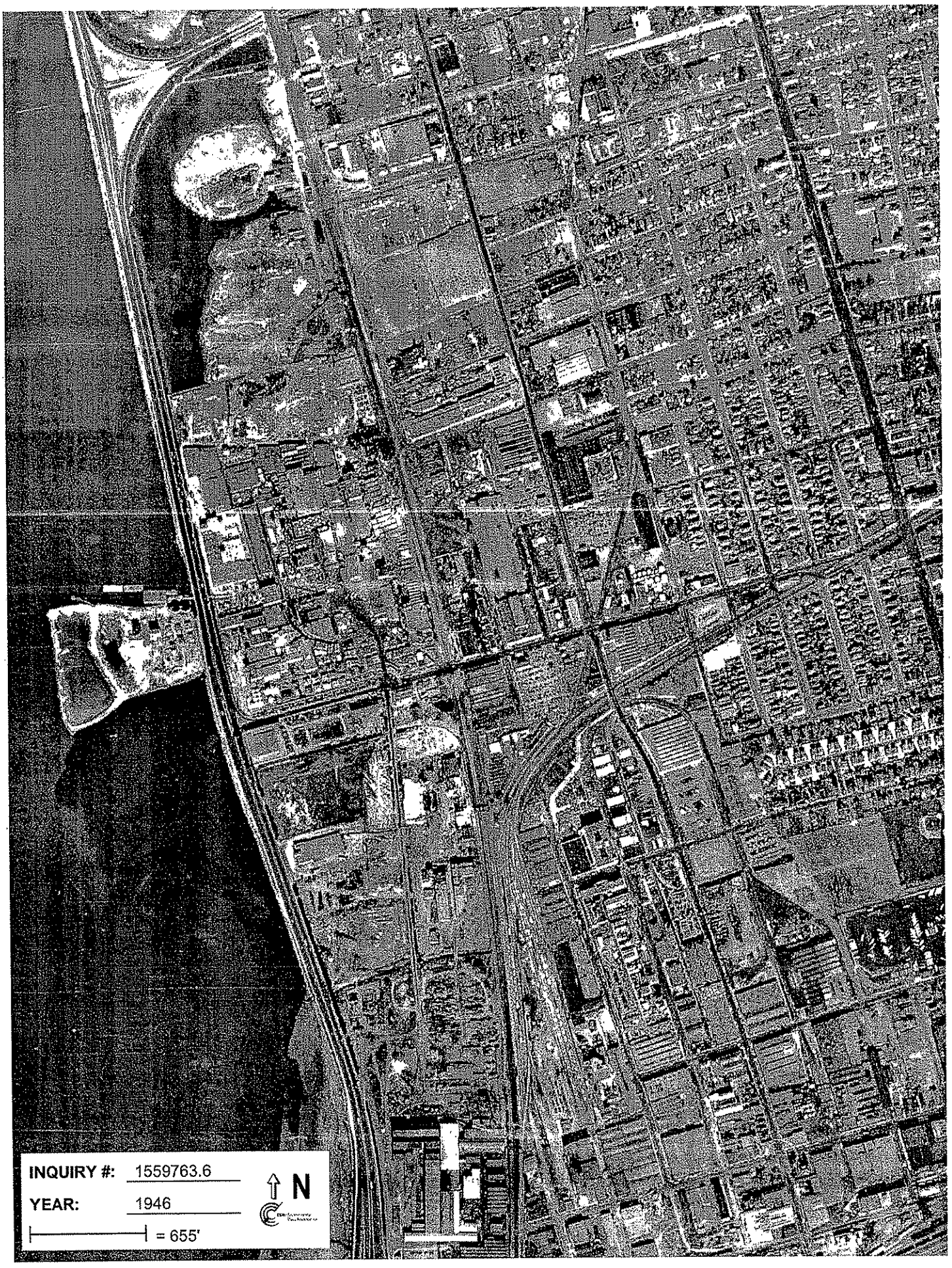
Aerial Photography November 22, 2005

Target Property:

5885 Hollis Street
Emeryville, CA 94608

Year	*Scale*	*Details*	*Source*
1939	Aerial Photograph. Scale: 1"=555'	Flight Year: 1939	Fairchild
1946	Aerial Photograph. Scale: 1"=655'	Flight Year: 1946	Jack Ammann
1958	Aerial Photograph. Scale: 1"=555'	Flight Year: 1958	Cartwright
1965	Aerial Photograph. Scale: 1"=333'	Flight Year: 1965	Cartwright
1982	Aerial Photograph. Scale: 1"=690'	Flight Year: 1982	WSA
1993	Aerial Photograph. Scale: 1"=666'	Flight Year: 1993	USGS
1998	Aerial Photograph. Scale: 1"=666'	Flight Year: 1998	USGS


INQUIRY #: 1559763.6
YEAR: 1939
= 555'
N


INQUIRY #: 1559763.6
YEAR: 1946
= 655'
N


INQUIRY #: 1559763.6
YEAR: 1958
= 555'
N


INQUIRY #: 1559763.6
YEAR: 1965
= 333'
N


INQUIRY #: 1559763.6
YEAR: 1982
= 690'
N


INQUIRY #: 1559763.6
YEAR: 1993
= 666'
N


INQUIRY #: 1559763.6
YEAR: 1998
= 666'
N