WAREHAM
PROPERTY GROUP

9 March 2009
Project No. 3494.01

Ms. Barbara Jakub
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject: Work Plan: Supplemental Soil and Groundwater Investigation
Fuel Leak Case No. RO0000052
Former Peterson Manufacturing Company Facility
1600 63rd Street
Emeryville, California

Dear Ms. Jakub:

As a legally authorized representative of Wareham Property Group, and on behalf of Wareham Property Group, I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document titled *Work Plan: Supplemental Soil and Groundwater Investigation, Fuel Leak Case No. RO0000052, Former Peterson Manufacturing Company Facility, 1600 63rd Street, Emeryville, California,* are true and correct to the best of my knowledge.

Sincerely yours,

Geoffrey B. Sears

Geoffrey B. Sears
WAREHAM PROPERTY GROUP

Treadwell&Rollo

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Hazardous Materials Specialist
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1131 Harbor Bay Parkway, Suite 250
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Subject: Work Plan: Supplemental Soil and Groundwater Investigation
Fuel Leak Case No. RO0000052
Former Peterson Manufacturing Company Facility
1600 63rd Street
Emeryville, California

Dear Ms. Jakub:

This Work Plan has been prepared by Treadwell & Rollo, Inc. (T&R) for supplemental soil and groundwater investigation activities proposed for the former Peterson Manufacturing Company Facility located at 1600 63rd Street in Emeryville, California (Site). The Work Plan was prepared on behalf of Wareham Property Group and 1600 63rd Street Associates (Client) for submittal to the Alameda County Environmental Health Department (ACEH). ACEH requested this work as part of Comment 1 in its 11 September 2008 letter (attached) and during a meeting with ACEH, the Client, and T&R on 6 November 2008.

The objective of this Work Plan is to characterize the lateral extent of the free phase and dissolved phase petroleum hydrocarbons along Overland Avenue that may be associated with a former Peterson underground storage tank (UST). The additional work will provide downgradient monitoring locations to collect temporal data for free-phase product and dissolved petroleum hydrocarbons along Overland Avenue. The ultimate purpose of the work is to demonstrate natural attenuation for closure of the Site as a low-risk petroleum hydrocarbon site.

INTRODUCTION

The Site is currently occupied by Federal Express and is intensively used for truck loading and unloading operations. Groundwater at the Site occurs approximately five to seven feet below ground surface (bgs) and flows to the west (T&R, 2008a). Immediately downgradient of the Site are Overland Avenue and the Southern Pacific railroad property, which spans five tracks. The land use in the Site vicinity has been industrial.

In January 2007, Treadwell & Rollo, Inc. collected grab soil and groundwater samples from four borings (SB-1 through SB-4) in Overland Avenue. Due to the presence of the railroad tracks, the four borings locations were the farthest, immediately downgradient and accessible locations from the Site. A free-phase product sheen was observed in each of these borings. This product was a thick, viscous material, similar to the free-product recovered at the Site and associated with the former Peterson UST at the northwest portion of the Site. Based on the data collected in borings SB-1 through SB-4, contamination appears to be limited to the upper 20-feet (T&R, 2007).

As part of the development of the Site Conceptual Model, T&R conducted a sensitive receptor and preferential pathway study (T&R, 2008b). No sensitive receptors were identified within a radius of approximately ½ mile; one potential preferential pathway was identified. This is the sanitary sewer along Overland Avenue, which extends to a depth of 8.5 feet bgs and flows to the north.

SCOPE OF WORK

The investigation activities will include:

- Task 1. Collect soil and grab groundwater samples at three to five off-site borings (SB-5, SB-6, SB-7, SB-8*, and SB-9*). The number of borings will be determined based on the evidence of petroleum hydrocarbons in soil and groundwater.

- Task 2. Convert a minimum of three soil borings into monitoring wells. Two additional soil borings may be converted to monitoring wells depending on field conditions.

- Task 3. Develop and collect groundwater samples from the new monitoring wells.

- Task 4. Prepare a report summarizing the field activities and data.

Task 1. Off Site Soil and Grab Groundwater Sampling

Prior to drilling, a drilling permit will be obtained from the Alameda County Public Works Agency. It will also be necessary to obtain an encroachment permit from the City of Emeryville for work in the city right of way. Underground Services Alert (USA) will be notified, and the drilling locations will be cleared for underground utilities using a private underground utility locating subcontractor. ACEH will be notified at least 72 hours prior to commencement of drilling activities.

As shown on Figure 2, Treadwell & Rollo will conduct sampling at three to five locations along Overland Avenue. The locations are contingent upon access limitations (e.g. road access and utilities), and final locations may be moved to the closest accessible location. The borings will be advanced to approximately 5 to 10 feet below the groundwater surface using direct push technology. Borings SB-6 and SB-7 will be advanced first. If field evidence of free-phase petroleum hydrocarbons is detected in SB-6 or SB-7, additional borings (SB-8* and/or SB-9*) will be completed further to the north and/or south, as shown on Figure 2. Additionally, if rush turnaround laboratory results detect concentrations exceeding the Environmental Screening Levels for groundwater, then the additional borings will be advanced to further delineate the dissolved plume. Boring SB-5 will be advanced last, and located to monitor free-phase product in the estimated axis of the plume.

The soil samples will be monitored for evidence of field contamination by:

- Observing the sample for visible staining and odor by a field geologist;

- Screening samples using a photo-ionizing detector (PID);

- Employing a hydrophobic dye shake test. The sample will be placed in a mason jar with water and shaken and observed for a separate LNAPL layer.

During drilling, soil samples will be collected continuously. Samples will be retained from intervals showing visible staining, odor, or elevated PID readings; these samples will be submitted for laboratory analysis to define the top, bottom, and “hottest” samples from any contaminated horizon. If no staining, odor, or elevated PID readings are observed, one sample will be retained for laboratory analysis from the groundwater interface and another sample from the bottom of the boring. Soil samples will be collected in acetate liners, labeled, placed in an ice-chilled cooler, and delivered to a California state-certified laboratory under chain-of-custody protocol. All soil samples will be analyzed for total petroleum hydrocarbons as motor oil (TPHmo) by EPA Method 8015M using silica gel cleanup, which was identified by the laboratory as the standard most representative of the existing contamination.

Grab groundwater samples will be collected from the same borings as the soil samples. A temporary well screen will be installed into each boring, and groundwater levels will be allowed to equilibrate for a minimum of one hour. The temporary well screen will be monitored for water level and the presence of free phase product using an oil/water interface meter. Grab groundwater samples will be collected from the temporary wells using a Teflon or stainless steel bailer. The grab groundwater samples will be placed in appropriate containers, labeled, placed in an ice-chilled cooler, and delivered to a California state-certified laboratory under chain-of-custody protocol. All groundwater samples will be analyzed for TPHmo by EPA Method 8015M using silica gel cleanup. All drilling and sampling equipment will be decontaminated prior to each use. The soil cuttings and decontamination rinsate will be contained in either 5-gallon pails or 55-gallon drums on site and disposed off-site, after soil analytical results are received. The borings will be backfilled with neat cement bentonite slurry, and the ground surface restored using appropriate replacement materials (i.e. concrete or asphalt patch).

Task 2. Installation of New Monitoring Wells

A minimum of three soil borings will be converted to monitoring wells. Soil boring SB-5/TR-6 (Figure 2) will be converted into a monitoring well, and will be located such as to monitor the symmetrical axis of the plume. Two to four additional (SB-6, SB-7, SB-8*, and SB-9*) soil borings in Overland Avenue may also be converted to monitoring wells based on field evidence of free-phase or dissolved contamination and evaluation of analytical results. If field evidence and/or analytical data suggest the presence of free-phase petroleum hydrocarbons or dissolved concentrations exceeding the ESLs in borings SB-6 and SB-7, then soil borings SB-8* and/or SB-9* will be installed further downgradient to monitor dissolved phase hydrocarbons. If soil borings SB-6 and SB-7 do not have evidence of free-phase product and the dissolved concentrations do not exceed the ESLs, then soil borings SB-8* and/or SB-9* will not be converted to monitoring wells, and SB-6 and SB-7 will be used to monitor the dissolved phase hydrocarbons in the plume.

Based on previous data collected at the Site, we anticipate that the depth to groundwater will be approximately 5 to 7 ft bgs, and we anticipate that the total depth of the shallow wells will be approximately 15 to 20 ft bgs. The total depth and screened interval of the wells will be determined using the conditions found during drilling, and will be designed to accommodate potential fluctuations in the shallow groundwater table and to allow free-phase product, if present, to flow into the wells.

The well borings will be drilled using a licensed drilling contractor. Soils will be logged during drilling, and the soil types will be described using USCS terminology. Monitoring wells will be constructed using flush-threaded, 2-inch diameter polyvinyl chloride (PVC) casing with factory-slotted well screens. All down-hole drilling and sampling equipment will be cleaned prior to use at each drilling location to prevent potential cross-contamination between locations. The elevation of the top-of-casing for each well will be established by a licensed surveyor. Following completion of the monitoring wells, a DWR-188 well completion report for each well will be filed with the State of California's Department of Water Resources.

Task 3. Development and Sampling of New Monitoring Wells

At least 24 hours after the wells installation is complete, the monitoring wells will be developed by pumping, bailing and/or surging to remove sediment from around the screened interval and to enhance the hydraulic connection with the surrounding formation.

The groundwater at the new monitoring wells will then be sampled using a bailer, and the sample containers will be labeled, placed in an ice-chilled cooler, and delivered to a California-certified analytical laboratory and analyzed for TPHmo by EPA Method 8015 using a silica gel cleanup.

The soil cuttings and decontamination rinsate will be contained in labeled 55-gallon drums and stored on site. Purge water from development and sampling activities will be contained in labeled 55-gallon drums and stored on site. Disposal of the drums will be evaluated after soil and groundwater analytical results are received.

Task 4. Report Preparation

Treadwell & Rollo will prepare a report of the investigation activities and results. The report will summarize the methodologies used to collect and evaluate the data and will include copies of the field documentation, boring logs, and laboratory data sheets. Analytical data and electronic copies of the report will be submitted to Geotracker and to the Alameda County Environmental Cleanup Oversight Program ftp site after completion.

SCHEDULE

Field work will begin within a month of ACEH approval. The field work is estimated to take one week to complete. Laboratory results will be available two weeks after submittal, and the report will be submitted six weeks after completion of field activities.

If you have any questions, please call Matt Hall or Louis Arighi at (510) 874-4500.

Sincerely yours,
TREADWELL & ROLLO, INC.

PROFESSIONAL GEOLOGIST
LOUIS M. ARIGHI
NO. 8501
STATE OF CALIFORNIA

Louis Arighi, PG
Senior Staff Geologist

Matthew B. Hall, PE
Senior Project Engineer

Patrick B. Hubbard, PG, CEG
Principal Geologist

34940115.OAK

Attachments: Figures
ACEH Letter Dated 11 September 2008

cc: Geoff Sears, Wareham Property Group
Richard Robbins, Wareham Property Group
Joan Cannelli, Wareham Property Group

FIGURES

Base map: The Thomas Guide
Alameda County
1999

0 1/4 1/2 Mile

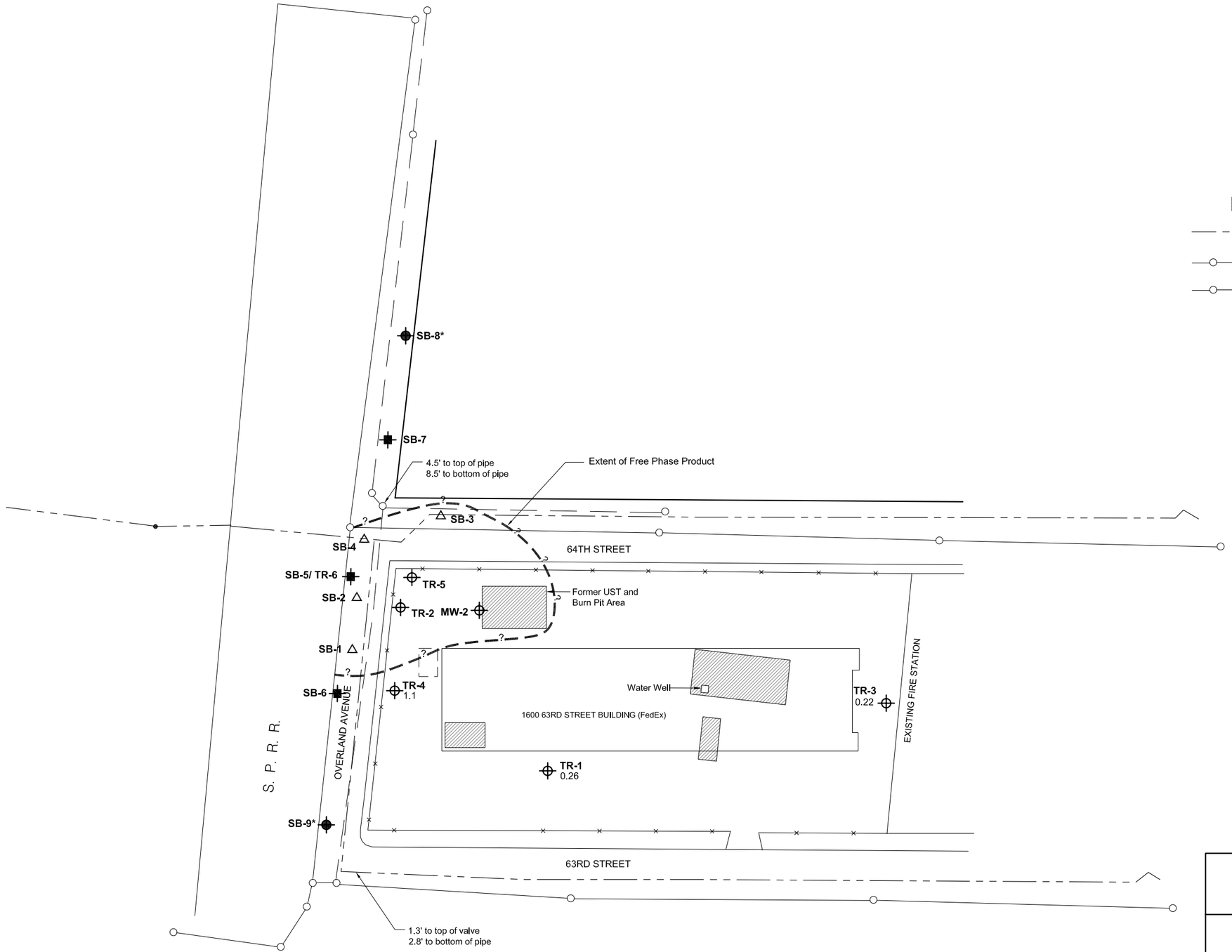
Approximate scale

1600 63RD STREET
Emeryville, California

SITE LOCATION MAP

Treadwell&Rollo

Date 02/17/09	Project No. 3494.01	Figure 1



EXPLANATION

- Proposed soil boring and monitoring well location
- Proposed soil boring location
  * indicates the location would only be used if field data indicates it would yield additional information
- Location of monitoring well
  1.1 TPH concentration in mg/L (December 2008)
- Location of 2007 soil and groundwater grab sample
- Soil and tank excavation areas
- EBMUD water line
- Storm sewer
- Sanitary sewer

N

0 100 Feet

Approximate scale

Basemap Reference: Harding Lawson Associates, 5/91, and SOMA, 2000.
Utility Reference: EBMUD and Emeryville Public Works Department, January, 2007.

1600 63RD STREET
Emeryville, California

PROPOSED BORINGS AND WELLS

Date 03/02/09	Project No. 3494.01	Figure 2

Treadwell&Rollo

S:\Trgraphics-Oak\3400's\3494.01\3494.01 PROPOSED WELLS.dwg 3/02/09

ATTACHMENT
ACEH Letter Dated 11 September 2008

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

September 11, 2008

Mr. Richard Robbins
Wareham Property Group
1120 NYE Street, Suite 400
San Rafael, CA 94901

Subject: Fuel Leak Case No. RO0000052 and Geotracker Global ID T0600101068, Peterson Manufacturing Company, Inc., 1600 63rd St., Emeryville, CA

Dear Mr. Robbins:

Alameda County Environmental Health (ACEH) staff has reviewed the fuel leak case file for the above-referenced site including Treadwell and Rollo's Letter Reports entitled, *Supplemental Soil and Groundwater Investigation* dated March 21, 2007 and *Groundwater Monitoring Conducted 30 January 2008* dated March 6, 2008. The 2007 *Supplemental Soil and Groundwater Investigation* report discusses installing replacement wells that properly intersect the groundwater table. The newly installed wells have reported free-phase product and soil borings SB-1 through SB-4 had reported sheen. Results from the investigation indicate that petroleum hydrocarbons are present at elevated concentrations in soil and groundwater on-site and off-site, that free-phase hydrocarbons are present on-site and that the lateral and vertical extent of petroleum hydrocarbons has not been determined. The report also presents free-phase product removal results.

We request that you address the following technical comments, perform the proposed work, and send us the reports described below.

TECHNICAL COMMENTS

1. **Contaminant Plume Definition.** The lateral extent of the petroleum hydrocarbon contamination in the westerly direction is undefined. All borings installed in 2007 have TPHd and TPHg above the ESL in groundwater. Soil samples collected from soil borings SB-1 through SB-4 during the 2007 investigation have elevated concentrations of TPHd at a maximum concentration of 3,800 milligrams per kilogram (mg/Kg). Groundwater from these borings contained TPHd concentrations between 33,000 micrograms per liter (µg/L) and 150,000 µg/L. ACEH requests that you submit a work plan to install monitoring wells in the downgradient direction to define the lateral extent of petroleum hydrocarbons off-site.

2. **Site Conceptual Model.** The site conceptual model that was submitted in May 26, 2006 by Treadwell & Rollo did not include an evaluation of exposure pathways nor a regional and

local geology and hydrogeology discussion. Please include these in the Additional Information Report/ Work Plan requested below.

3. **Preferential Pathway Study.** A preferential pathway study has not been submitted as requested by ACEH in our September 28, 2006 letter. This study should include a utility survey and well survey as specified below. The purpose of the preferential pathway study is to locate potential migration pathways and conduits and determine the probability of the NAPL and/or plume encountering preferential pathways and conduits that could spread contamination. We request that you perform a preferential pathway study that details the potential migration pathways and potential conduits (wells, utilities, pipelines, etc.) for vertical and lateral migration that may be present in the vicinity of the site.

   Discuss your analysis and interpretation of the results of the preferential pathway study (including the well survey and utility survey requested below) and present your results in the Additional Information Report / Work Plan requested below. The results of your study shall contain all information required by California Code of Regulations, Title 23, Division 3, Chapter 16, §2654(b).

   a. Utility Survey

   An evaluation of all utility lines and trenches (including sewers, storm drains, pipelines, trench backfill, etc.) within and near the site and plume area(s) is required as part of your study. Please include maps and cross-sections illustrating the location and depth of all utility lines and trenches within and near the site and plume areas(s) as part of your study.

   b. Well Survey

   The preferential pathway study shall include a well survey of all wells (monitoring and production wells: active, inactive, standby, decommissioned (sealed with concrete), abandoned (improperly decommissioned or lost); and dewatering, drainage, and cathodic protection wells) within a ¼ mile radius of the subject site.

4. **Mass Removal Estimates.** A review of the groundwater monitoring and interim remediation reports indicates that field notes for product removal are not included in these reports. Therefore we are unable to confirm your mass calculations. Please include remediation data sheets that indicate the volume or weight of each bailing event along with the remediation reports so we can confirm your measurements. Submit this data in the Additional Information Report / Work Plan by the date specified below.

5. **Groundwater Monitoring and Product Bailing Frequency.** In our letter dated September 28, 2006, ACEH requested quarterly groundwater monitoring. ACEH does not have all of the quarterly monitoring reports from the time the wells were installed to present. Please submit all quarterly monitoring reports to both the ACEH ftp site and Geotracker by **October 13, 2008**. Please submit your next quarterly monitoring results by the date requested below. You may reduce the product bailing frequency to quarterly while you are preparing the FS/CAP. Please include a rose diagram and include all historical groundwater flow direction data on the rose diagram and update it quarterly in each monitoring report. Please upload these reports by the dates requested below.

6. **Feasibility Study Corrective Action Plan.** Interim remediation has been conducted for one year. Please prepare a feasibility study/ corrective action plan which assesses at least three active remediation measures besides a no action and monitored natural attenuation alternatives. Please submit the FS/CAP by the date requested below.

7. **GeoTracker Compliance.** A review of the case file on the State Water Resource Control Board's Geotracker website indicates that electronic copies of analytical data have still not been submitted for your site for any of the groundwater monitoring reports. Please upload all groundwater monitoring reports, and other required data into Geotracker. More Geotracker requirements are listed below in the section entitled electronic submission of reports.

8. **Perjury Letter.** As described below, 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. Future reports will not be accepted until this letter accompanies the reports, including groundwater monitoring reports, investigation reports.

REQUEST FOR INFORMATION

ACEH's case file for the subject site contains only the electronic files listed on our website at http://www.acgov.org/aceh/index.htm. You are requested to submit copies of all other reports and correspondence related to environmental investigations for this property (including Phase I reports) by **October 13, 2008**.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Barbara Jakub), according to the following schedule:

- **October 13, 2008** – Historical groundwater monitoring reports, Phase I, missing reports and Geotracker uploads.
- **October 20, 2008** – Third Quarter 2008 Groundwater Monitoring Report
- **December 11, 2008** – Additional Information Report / Work Plan
- **December 22, 2008** – Fourth Quarter 2008 Groundwater Monitoring Report
- **March 20, 2009** – First Quarter 2009 Groundwater Monitoring Report
- **June 11, 2009** – FS/CAP
- **June 22, 2009** – Second Quarter 2009 Groundwater Monitoring Report

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies 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 all 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, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/electronic_submittal/report_rqmts.shtml.

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 fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

If you have any questions, please call me at (510) 639-1287 or send me an electronic mail message at barbara.jakub@acgov.org.

Sincerely,

Barbara Jakub

Barbara Jakub, P.G.
Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Mr. Glenn Leong, Treadwell & Rollo, 501 14th St., 3rd Floor, Oakland, CA 94612
Donna Drogos, ACEH
Barbara Jakub, ACEH
File