James P. Bowers, PE
R. William Rudolph, Jr., PE

ALCO
HAZMAT

94 FEB -9 PM 3:08

February 7, 1994
SCI 895.001

Mr. Thomas Peacock
Alameda County Health Care Services Agency
80 Swan Way, Room 200
Oakland, California 94621

Work Plan
Soil and Groundwater Investigation
1911 Telegraph Avenue
Oakland, California

Dear Mr. Peacock:

Presented herein is a proposed work plan prepared by Subsurface Consultants, Inc. (SCI) to preliminarily define the extent of groundwater contamination resulting from release(s) from a former waste oil tank and three former gasoline tanks at the referenced site.

Background

In 1988, one underground waste oil tank and three underground gasoline tanks were removed. Reportedly, contaminated soil was removed and disposed of, and a monitoring well was installed and sampled. No "significant contamination" was detected, therefore the Alameda County Health Care Services Agency (ACHCSA) recommended to the Regional Water Quality Control Board (RWQCB) that the site be closed.

In October 1992, the RWQCB, requested an additional investigation of groundwater quality. Dames and Moore responded in June 1993 by installing and sampling three monitoring wells (MW-2, MW-3 and MW-4) as shown on the Site Plan, Plate 1. After two monitoring events, it appears that MW-2 and MW-4 contain elevated levels of gasoline, benzene and TCE. Additionally, groundwater flow direction appears to fluctuate in the area. During a recent site visit SCI located the 3 monitoring wells installed by Dames and Moore and an additional well, assumed to be the well installed in 1988. Well locations are shown on the Site Plan. The wells were surveyed and groundwater level measurements were obtained. The

Subsurface Consultants, Inc.

1 1 1 Pth Street • Suite 201 • Oakland, California 94607 • Telephone 510-268-0461 • FAX 510-268-0137

current and previous groundwater flow directions are presented on the Site Plan.

In a letter dated December 21, 1993, the ACHCSA requested additional groundwater studies to determine the extent of the groundwater contamination. In response to the ACHCSA request, SCI proposes to install three additional monitoring wells, as outlined below.

Field Investigation - Test Borings and Monitoring Wells

The monitoring wells will be installed in test borings drilled using truck-mounted, 8-inch-diameter, hollow-stem auger equipment. Proposed test boring locations are presented on the Site Plan. Our engineer will observe drilling operations and prepare detailed logs of the borings. Soil samples will be obtained from the borings using a California Drive Sampler having an outside diameter of 2.5 inches and an inside diameter of 2.0 inches. Soil samples will be obtained at frequent intervals and at major lithologic changes. An organic vapor meter (OVM) will be used to screen all samples obtained from the test borings.

Soil samples will be retained in brass sample liners. Teflon sheeting will be placed on the ends of the liners prior to capping and sealing with tape. Upon sealing and labeling, the samples will be promptly refrigerated on-site in an ice chest. Samples will remain under refrigeration until delivery to the laboratory.

All augers, drill rods, sampling equipment, well casings, etc., that will be placed in the test borings will be cleaned prior to their initial use and prior to each subsequent use to reduce the likelihood of cross-contamination between borings and/or samples. Upon completion of drilling, the borings will be converted to monitoring wells.

The groundwater monitoring wells will be constructed of 2-inch-diameter, Schedule 40 PVC pipe having flush threaded joints. The lower 15 feet of the wells will consist of machine slotted well screen having 0.020 inch slots. The annular space around the screened section will be backfilled with Lonestar #3 sand. A bentonite seal, approximately 12 inches thick, will be placed above the sand. The annular space above the bentonite seal will be backfilled with cement/bentonite grout. The wells will be finished below grade in a traffic rated utility box and will be secured by a locking cap.

Groundwater levels will be measured in each well prior to development/purging. The new wells will be developed by bailing or pumping, until the water becomes relatively free of turbidity. The existing wells will be purged of approximately 3 well volumes, or until temperature, conductivity and pH have stabilized. When the wells have recharged to at least 80 percent of their original volume, groundwater samples from all 7 wells will be obtained using disposable, pre-cleaned samplers. Water samples will be placed in pre-cleaned containers and refrigerated until delivery to the analytical laboratory. The soil and water samples will be accompanied by Chain-of-Custody records.

Soil cuttings and water generated during drilling and well development will be placed in steel drums and left on-site for later disposal. A level survey will be performed to determine the elevation of the top of well casings (TOC) in relation to the existing on-site wells. The TOC elevations and groundwater depths will be used to evaluate groundwater flow direction and gradient.

Analytical Testing

Soil and groundwater samples will be analyzed by a California Department of Health Services (DHS) certified analytical laboratory. Selected soil and groundwater samples will be analyzed for:

1. Total volatile hydrocarbons, as gasoline - EPA 5030/8015,
2. Benzene, toluene, ethylbenzene and xylenes, (BTEX) - EPA 5030/8020,
3. Halogenated volatile organics - EPA 5030/8010, and
4. Oil and grease SMWW 17:5520 BF.

Report

Based upon the results of the investigation, SCI will prepare a report recording our conclusions/recommendations regarding:

1. Soil and groundwater conditions;
2. The extent of soil and groundwater contamination;
3. The significance of contaminant levels with respect to local and state criteria;

Subsurface Consultants, Inc.

Mr. Thomas Peacock
Alameda County Health Care Services Agency
February 7, 1994
SCI 895.001
Page 4

4. Remediation alternatives; and

5. The scope of subsequent phases of investigation, if required.

The report will include boring logs, analytical test reports and Chain-of-Custody records.

We look forward to your favorable review of our work plan. If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.

James P. Bowers
Geotechnical Engineer 157 (expires 3/31/96)

MFW:JPB:sld

4 copies: Mr. George Caesar
EnviroGroup

Attachments: Plate 1 - Site Plan

The Former Chevron Station. The former Chevron station consists of one metal building. The station is currently not in operation and contains one underground hydraulic lift. The following items were observed in the interior of the building: two 55-gallon drums of purged groundwater, one 15-gallon container of gear oil, one 15-gallon container of grease, and one oil-water separator partially filled with water. Surface staining was observed on the concrete floor of the station adjacent to the containers of gear oil and grease. A fill port to a former underground storage waste oil tank was also observed inside the Chevron station building.

Approximately 10 feet west of the Chevron building is a pavement patch outlining the border of a former gasoline tank excavation. Adjacent to and east of the building is a pavement patch outlining the border of a former waste oil tank excavation.

ESE observed seven groundwater monitoring wells located around the former Chevron station (Figure 2). Analytical results of groundwater monitoring from the on-site monitoring wells is discussed in Section 2.3. — February 28, 1996 monitoring report.

Painted surfaces on the interior and exterior of the building have the potential to contain lead-based paint. ESE observed several areas where painted surfaces were observed to be in exceptionally poor condition.

The Emporium Capwell Parking Garage. This area of the Property consists of a three-story parking garage constructed of concrete. Small amounts of surface staining were observed in parking spaces apparently derived from parked vehicles. The ground surface of the parking garage was observed to be concrete. No other items of environmental significance were observed in this area of the Property.

Painted surfaces on the interior and exterior of the parking garage have the potential to contain lead-based paint. Painted surfaces were observed to be in fair condition.

2.2 Vicinity Reconnaissance

The site is located in a commercial area of downtown Oakland, California. Adjacent land use is as follows:

- **NORTH** - Williams Street, a parking lot, and commercial businesses
- **EAST** - Telegraph Avenue and the Emporium Capwell Shopping Center
- **SOUTH** - 19th Avenue, a parking lot, and commercial businesses

From Sears Phase I 1996

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. . . . . Manifest Document No. 92292

2. Page 1 of 1

3. Generator's Name and Mailing Address
BROADWAY STORES
1911 TELEGRAPH AVE
OAKLAND, CA

4. Generator's Phone (310) 548-6003

5. Transporter 1 Company Name
NG CHEMICAL, INC

6. US EPA ID Number
CAD980675896

7. Transporter 2 Company Name

8. US EPA ID Number

9. Designated Facility Name and Site Address
FILTER RECYCLING
180 W. MONTE
RIALTO, CA 92316

10. US EPA ID Number
CAD982444481

A. Transporter's Phone (408)288-5616
B. Transporter's Phone
C. Facility's Phone (909)421-2012

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. NON HAZARDOUS WATER FROM SITE INVESTIGATION	003	DM	009.00	G
b.				
c.				
d.				

THIS WAS[illegible]REAM HAS BEEN QUALIFIED FOR RECYCLING/TREATMENT AT THE FILTER RECYCLING FACILITY IN RIAL[illegible] CALIFORNIA. THIS FACILITY HAS [illegible]ECESSARY PERMITS TO RECEIVE YOUR STREAM. [illegible]UALIFIED. OUR EPA [illegible] 982444[illegible]

D. Additional Descriptions for Materials Listed Above
11A) GROUNDWATER

E. Handling Codes for Wastes Listed Above
a 14/01

15. Special Handling Instructions and Additional Information
WEAR APPROPRIATE SAFETY GEAR WHEN HANDLING.

24 HR EMERGENCY NO: (408) 288-5616

NGJ# N195279

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
Nick Martinez Broadway Stores	Nick Martinez Broadway Stores	02	07	96

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
DOUGLAS C TESTER		02	07	96

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
Michael J Kelly	Michael J Kelly	02	19	96

GENERATOR

TRANSPORTER

FACILITY

ORIGINAL – RETURN TO GENERATOR

LABORATORY RESULTS FOR GROUNDWATER SAMPLES COLLECTED OCTOBER 1995

Results expressed in ug/L which equals PPB (parts per billion)

Monitoring Well Number	TVH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylene	TCE	1,2-DCA	Carbon DiSulfide	PCE
MW-1	<50	ND	ND	ND	ND	ND	ND	ND	9.9
MW-2	2900	1200	5.4	41	5.9	40	280	ND	ND
MW-3	<50	ND	ND	ND	ND	ND	ND	4.8	3.1
MW-4	<50	4.1	ND	ND	ND	ND	ND	3.1	ND
MW-5	260	86	ND	ND	ND	ND	ND	ND	ND
MW-6	<50	ND	ND	ND	ND	11	33	110	6.2
MW-7	<50	ND	ND	ND	ND	3.5	8.3	ND	5.3

Notes: TVH - Total Volatile Hydrocarbons
TCE - Trichloroethene
1,2 DCA - 1,2 Dichloroethane
PCE - Tetrachloroethene
ND - Not Detected Above Reporting Limit

Carter Hawley Hale

December 3 ,1992

Mr. Richard C. Hiett
Water Resources Control Engineer
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

Re: Former Capwells Chevron Site
1911 Telegraph Street
Oakland, California 94612
File No. 2198.17 (UST)

Dear Mr. Hiett:

By your letter dated October 13, 1992 (Appendix E of the attached report), you have informed Carter Hawley Hale that you do not concur with the Alameda County Department of Environmental Health ("ALDEH") recommendation for the closure of the subject site. Our consultant Dames & Moore respectfully disagrees with the view expressed in you letter.

I am hopeful that your review of the enclosed Dames & Moore report will lead you to concur with the ALDEH recommendation for closure. Dames & Moore's report is somewhat voluminous because Dames & Moore has done its usual thorough job of collecting all the relevant correspondence and reports. The essence of Dames & Moore's analysis, however, is reflected in the following paragraph from pages 4 and 5 of its report.

> "From the review of the RWQCB's October 13, 1992 letter, it appears that the reason they are hesitant to formally close this site is due to the reported TPH concentration of 3,500 ppb (or 3.5 ppm) in one of 3 previously analyzed groundwater samples (Attachment VI of Appendix A). However, it seems that the RWQCB staff overlooked the fact that this TPH concentration may be a false positive because the other two samples from the same well did not show any TPH concentration. Also, none of the samples showed detectable benzene or xylene concentration, despite the fact that these two compounds are two of the most mobile gasoline components in the subsurface and were present in soil. If gasoline contamination has reached the groundwater, these two compounds should have been detected. Although very low concentrations (0.9 and 2.1 ppb) of toluene, another mobile gasoline component were reportedly detected in two of

444 South Flower Street
P.O. Box 17902
Los Angeles, California 90017

the three groundwater samples, these concentrations were significantly below the concentration of 100 ppb, which is normally considered the action level for toluene in groundwater. Therefore, these toluene concentrations should not have caused the reopening of a case, long considered closed."

In other words, there is no "confirmed release" of "3,500 ppb TPH" as assumed in your letter. In light of Dames & Moore's analysis with regard to this point and its review of the investigations completed, we respectfully request that you review the site documentation (attached) and reconsider your decision regarding site closure.

Thank you for your attention to this matter, and please do not hesitate to contact me at 213/239-6748 if I can be of further assistance to its resolution.

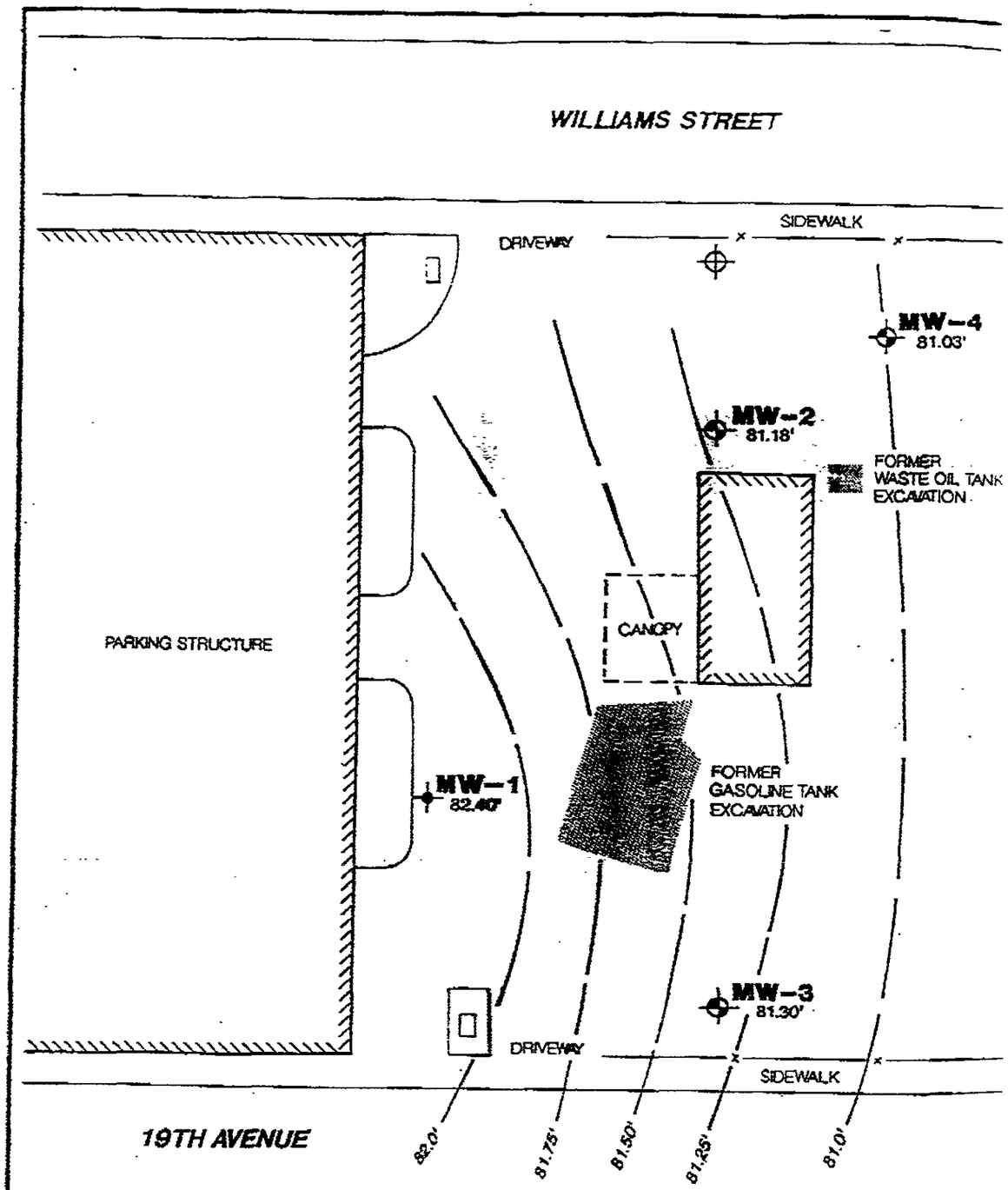
Sincerely,

CARTER HAWLEY HALE STORES, INC.

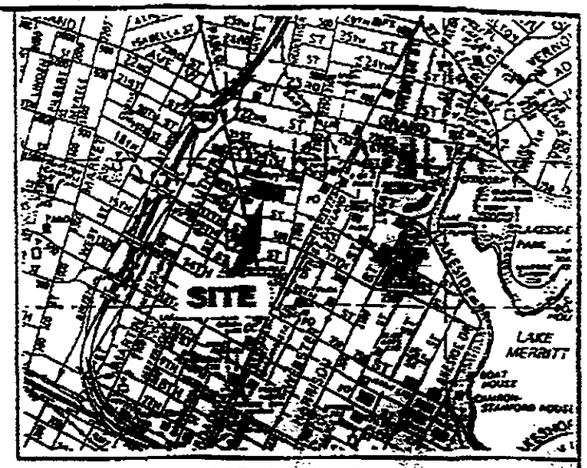
Ed Haylett
Manager - Construction/Environmental

ED:smb
Attachment

L_CRWQCB.EH



APPROXIMATE DIRECTION OF GROUNDWATER FLOW



VICINITY MAP

- 4" DIAMETER MONITORING WELL
- 2" DIAMETER MONITORING WELL
- FORMER TANK EXCAVATIONS
- EXISTING STRUCTURE
- — x — FENCE
- PROPOSED WELL LOCATION
- GROUNDWATER ELEVATION CONTOURS (FEET) 2/7/94
- 81.03' GROUNDWATER ELEVATIONS (FEET) 2/7/94

APPROXIMATE SCALE (feet)

0 30 60

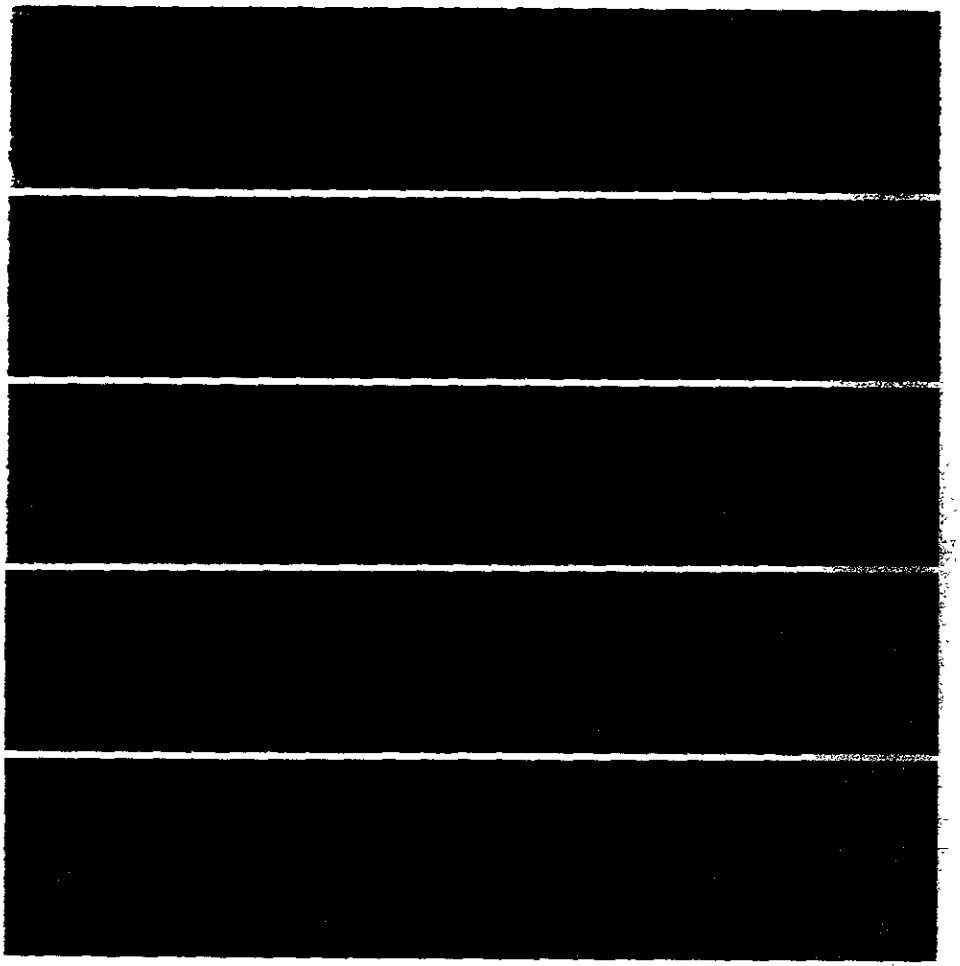
SITE PLAN

Subsurface Consultants

1911 TELEGRAPH AVENUE – OAKLAND, CA

JOB NUMBER	DATE	APPROVED
SC6.001	2/7/94	

PLATE 1



DAMES & MOORE

UNDERGROUND STORAGE TANK CLOSURE CASE
EMPORIUM CAPWELL DEPARTMENT STORE
20TH AND BROADWAY
OAKLAND, CALIFORNIA
FOR CARTER HAWLEY HALE

November 9, 1992

DAMES & MOORE

DAMES & MOORE
6 HUTTON CENTRE DRIVE, SUITE 700, SANTA ANA, CALIFORNIA 92707
(714) 433-2000 FAX: (714) 433-2364 (714) 433-2365

November 9, 1992

Carter Hawley Hale
444 South Flower Street
Los Angeles, California 90071-2900

Attention: Mr. Howard Wallach
Vice President, Construction

Mr. Nick Carpenter, F.I.S.P.
Director, Construction Management

Subject: Underground Storage Tank Closure Case
Emporium Capwell Department Store
20th and Broadway
Oakland, California

Dear Howard and Nick:

This letter and its attached appendices (A through D) provide an overview and chronology of events regarding the subject site. This letter is prepared at your request, in response to a letter you received from the Regional Water Quality Control Board (RWQCB), San Francisco Region, dated October 13, 1992. In their letter, RWQCB has requested additional investigations at the subject site.

It is Dames & Moore's opinion that further investigation is not required for the underground tank issue at the subject site. The activities associated with the tank removal and closure is presented below, which explains the data and why further study is not required.

In 1987, under a contract with Carter Hawley Hale (CHH), Dames & Moore identified two 2,000-gallon diesel Underground Storage Tanks (USTs) in vaults in a sub-basement of the Emporium Capwell Department Store in Oakland. These tanks had been washed, and filled with cement slurry in May 1987 under permission of the Oakland Fire Department for abandonment-in-place. This abandonment had been conducted by another consultant who was not connected

with Dames & Moore. The location and disposition of these tanks had offered no other practical alternative, and abandonment-in-place by these methods is the standard procedure in such instances.

Some contamination of the sand bed around the tanks inside the vaults had been found; however, it was not judged to be a threat to groundwater, owing to containment inside the vaults, and its relatively small volume (approximately 16 cubic yards - cy). On December 18, 1987, Dames & Moore submitted a proposal to Alameda County, Department of Environmental Health (ACDEH), requesting permission to cap the vault enclosures with concrete, and abandon the sands in place. Permission to cap the vault was received on February 22, 1988, from the ACDEH (see Attachment I of Dames & Moore's report dated March 21, 1988, attached hereto as Appendix A). That work has been accomplished.

In January 1988, Dames & Moore removed four USTs from a Chevron Station at 1911 Telegraph Avenue in Oakland, across the street from the Emporium Capwell Department Store. The Chevron station was apparently operated by CHH. CHH decided to close down operation of this station and remove the four USTs. The removal of the USTs is described in Dames & Moore's 1988 report (Appendix A).

The USTs were removed under supervision of both the Oakland Fire Department (OFD) and the ACDEH (see Attachments II and III of Dames & Moore's 1988 report, Appendix A). Although the USTs were in excellent condition, laboratory analyses of soil samples collected from one area in the southern end of the excavation showed gasoline contamination (see Attachment IV of Appendix A, Analytical Results of the 1st set of samples beneath Tanks B and C, collected 12 feet below surface). Further excavation was undertaken in this area and the contaminated soil was removed. Subsequent to this additional excavation, a second set of soil samples was obtained within the area previously found to be contaminated. Analysis of these samples indicated trace to minor levels of gasoline (30 ppm or less), and trace amounts of benzene, toluene, xylene (BTX) (see Attachment IV of Appendix A, analytical results of the 2nd set of samples beneath Tanks B and C, collected 16 feet below surface). Based on these results, Dames & Moore's judgment was that the contaminated soil had been removed and that further

remediation was not required. The excavation was backfilled with crushed rock, the clean excavated material was compacted in place, and the site was repaved.

Notwithstanding that residual levels of hydrocarbon and BTX in the confirmatory soil samples following excavation were below action levels (reportedly 100 ppm for hydrocarbon and 0.7 ppm for benzene), ACDEH felt that it was prudent to require groundwater monitoring. On March 4, 1988, Dames & Moore installed a groundwater monitoring well on the east side of the property (near 20th Street) at a location recommended by Mr. Storm Goranson of ACDEH as likely being downgradient. Soil samples were collected from the boring of the monitoring well and analyzed for Volatile Organic Compounds (VOCs) (see Attachment VI of Appendix A, results of four soil samples collected on March 4, 1988). The results showed that VOCs were not present above laboratory detection limits, except for a very low concentration (0.4 mg/kg) of toluene in only one sample.

The monitoring well was sampled on three consecutive days (March 4, 5, and 6, 1988) with approval of Mr. Goranson, and groundwater samples were submitted for chemical analysis (see the analytical results of groundwater samples, Attachment VI of Appendix A). Benzene or xylene (which are good indicators of gasoline) were not found in any of the three groundwater samples, and only low levels of toluene (0.9 and 2.1 μg/l, or parts per billion - ppb) in two samples were reported. In California, 100 ppb is often reported as the action level for toluene in groundwater. Two of the three groundwater samples were non-detect for total fuel hydrocarbons or Total Petroleum Hydrocarbons (TPH). Only one sample of the three groundwater samples showed a TPH concentration, which was 3.5 mg/l (parts per million - ppm) (or 3,500 ppb). These results were reported by Mr. Paul Neff of Dames & Moore to Mr. Goranson verbally (see 1988 report - Appendix A), and Mr. Goranson expressed satisfaction that groundwater contamination was not present at the site.

In December 1990, CHH received a letter from ACDEH dated December 13, 1990 (Appendix B to this letter). The letter stated that some data gaps appeared to exist in their files regarding the subject site. Dames & Moore prepared a letter, dated January 11, 1991 (see Appendix B), and suggested that CHH submit a copy of the Dames & Moore March 21, 1988 report to ACDEH. CHH submitted the Dames & Moore letter of January 11, 1991 and report of March

21, 1988, along with a cover letter, dated February 8, 1991 (included in Appendix B) to ACDEH.

In March 1992, CHH received another letter from ACDEH dated March 13, 1992 (see Appendix C attached hereto). This letter, which later turned out to be a form letter, notified CHH that they must reimburse the State Water Resources Control Board not more than 150 percent of the total amount of site-specific costs actually incurred while overseeing the cleanup of the site. To clarify the meaning of this letter, Mr. Nick Carpenter of CHH and the undersigned of Dames & Moore made a telephone call to Mr. Tom Peacock of the ACDEH and explained the site and the activities conducted by Dames & Moore at the site. During the telephone call, Mr. Carpenter requested that the ACDEH review the files and close the site.

In September 1992, CHH received a letter from the RWQCB (dated September 1992 - see Appendix D). This letter informed CHH that RWQCB had received a recommendation from the ACDEH for "closure in place" of the two 2,000-gallon diesel tanks and that the RWQCB concurred with the recommendation. These were the two tanks that had previously been abandoned in place in May 1987.

In October 1992, CHH received a second letter from RWQCB (dated October 13, 1992 - see Appendix E). This letter informed CHH that the RWQCB received a recommendation from the ACDEH regarding formal closure of the former Emporium Capwell Chevron site, involving the removal of the four USTs. However, after review of the file, the RWQCB staff do not concur with this recommendation.

From the review of the RWQCB's October 13, 1992 letter, it appears that the reason they are hesitant to formally close this site is due to the reported TPH concentration of 3,500 ppb (or 3.5 ppm) in one of 3 previously analyzed groundwater samples (Attachment VI of Appendix A). However, it seems that the RWQCB staff overlooked the fact that this TPH concentration may be a false positive because the other two samples from the same well did not show any TPH concentration. Also, none of the samples showed detectable benzene or xylene concentration, despite the fact that these two compounds are two of the most mobile gasoline components in the subsurface and were present in soil. If gasoline contamination had reached the groundwater,

these two compounds should have been detected. Although very low concentrations (0.9 and 2.1 ppb) of toluene, another mobile gasoline component were reportedly detected in two of the three groundwater samples, these concentrations were significantly below the concentration of 100 ppb, which is normally considered the action level for toluene in groundwater. Therefore, these toluene concentrations should not have caused the reopening of a case, long considered closed.

Based on the above information, it seems that the RWQCB may have misinterpreted the above information, and as a result decided to reopen this case. In Dames & Moore's opinion, the ACDEH is right in recommending the closure of this site and there is not a compelling reason to reopen this case.

Please do not hesitate to call me if you have any questions and/or require any other information regarding this case.

Sincerely,

DAMES & MOORE

E. Essi Esmaili, Ph.D.
Associate

A:128\chh.ust

CARTER HAWLEY HALE
TRANCHE I - Toxics and Underground Tank Removals
Post Construction Report
Emporium Capwell
Oakland, California

Job Number 12606-016-038
March 21, 1988

Dames & Moore

DAMES & MOORE A PROFESSIONAL LIMITED PARTNERSHIP
8145 BYRON ROAD, WHITTIER, CALIFORNIA 90606 (213) 698-7765

March 21, 1988

Mr. Howard Wallach
Carter Hawley Hale
550 S. Flower Street
Los Angeles, CA 90071

Subject: TRANCHE - I Toxics and Underground Tank Removal
Post-Construction Report:

Emporium Capwell, Oakland, California
Job No. 12606-016-38

Dear Mr. Wallach:

This report describes the underground tank removals, final closures, and site remediation that has been completed at the subject properties. Dames & Moore's scope of work corresponded with Appendix B of our contract with Carter Hawley Hale, dated October 23, 1987.

During our Phase I investigation, two underground tanks were identified in vaults in a sub-basement of the Emporium Capwell Department Store in Oakland. Following that investigation, the tanks were washed, and filled with cement slurry under permission of the Oakland Fire Department for abandonment-in-place. This abandonment was conducted by another consultant who was not connected with Dames & Moore. The location and disposition of these tanks offered no other practical alternative, and abandonment-in-place by these methods is the standard procedure in such instances.

Some contamination of the sand bed around the tanks inside the vaults had been found; however, it was not judged to be a threat to groundwater, owing to containment inside the vaults, and its relatively small volume (approximately 16 cy). On December 18, 1987, we submitted a proposal to Alameda County, Division of Environmental Health, requesting permission to cap the vault enclosures with concrete, and abandon the sands in place. Permission to do so was received on February 22, 1988, from Alameda County, Environmental Health (Attachment I). That work has been accomplished.

During our Phase I investigation, four underground storage tanks were identified at the Chevron Station at 1911 Telegraph Avenue in Oakland, across the street from the Emporium Capwell Department Store. Carter Hawley Hale decided to close down operation of this station, and remove the four tanks. On January 29, the four tanks were excavated, washed and removed under the supervision of both the Oakland Fire Department, and Alameda County, Environmental Health Division (Attachment II and III). As the tanks were removed, they were observed to be in excellent condition; however, laboratory analysis of soil samples taken within the excavation indicated one area to be contaminated with hydrocarbons, and benzene, toluene, and xylene (BTX), in concentrations sufficient to identify it as a Hazardous Waste (Attachment III). Following receipt of laboratory analysis, further excavation was undertaken and approximately 20 to 30 cubic yards of contaminated soil were excavated and stockpiled on visqueen, and covered with visqueen, pending removal to a Class I Hazardous Waste landfill. Subsequent to further excavation, a second set of soil samples was obtained within the area found to be contaminated. Analysis of these samples indicated trace to minor levels of gasoline (30 ppm or less), and trace amounts of BTX and lead (Attachment IV). Since contamination was confined to the south area of two of the tanks, and the adjacent wall of the excavation, it was judged that the source of contamination had been occasional spillage, and perhaps occasional overfill of the tanks during operation. Following excavation of the contaminated zone, and confirmatory soil sampling and analyses, it was our judgment that the contaminated soil had been removed and that no further remediation was required. The excavation was backfilled with crushed rock, the clean excavated material was compacted in place, and the site was repaved. On February 27, the soil was removed from the site by Trace Environmental Services, a registered Hazardous Waste hauler, and transported for disposal at the PWI Class I landfill in Buttonwillow, California (manifests attached, Attachment IV).

Notwithstanding that residual levels of hydrocarbon and BTX in the soil following excavation were below action levels (100 ppm for hydrocarbon and 0.7 ppm for benzene), Alameda County, Division of Environmental Health felt it prudent to require groundwater monitoring. On March 4, 1988, Dames & Moore installed a monitor well on the west side of the property (near 20th Street) at a location recommended by Mr. Storm Goranson of Alameda County Environmental Health as likely being down gradient. Dames & Moore proposed three consecutive days of groundwater monitoring as suitable for determining the presence or absence of contamination, which was approved by Mr. Goranson. Samples were obtained on March 4, 5, and 6, 1988, and submitted

ATTACHMENT I

Alameda County
Division of Environmental Health

Permission to Abandon Soil in Place

to Brown and Caldwell Laboratories in Emeryville for analysis of petroleum hydrocarbons, BTX, and lead. The analyses indicated no significant level of petroleum hydrocarbon in the groundwater (Attachment VI). Moreover, no benzene or xylene were detected, and only a trace of toluene was detected. The results were reported to Mr. Goranson verbally by me on March 21, 1988, and he expressed satisfaction that groundwater contamination was not present at the site.

Sincerely,

DAMES & MOORE

Paul W. Neff, Associate
Project Manager

PWN/lm

Attachments

cc: Anne Toepker, Dames & Moore

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

	DKE	JAS	TWH
FEB 22 1988			
		BAH	BEW

470-27th Street, Third Floor
Oakland, California 94612
(415) 874-7237

February 17, 1988

Mr. Paul Neff
Dames & Moore
8145 Byron Rd.
Whittier, CA. 90606

RE: TANK ABANDONMENT AT EMPORIUM CAPWELL STORE - 20TH & BROADWAY
OAKLAND, CALIFORNIA

Dear Mr. Neff:

We have reviewed your proposal concerning the subject work, dated December 18, 1987. We are in concurrence with your proposal. Essentially, there are two 2,000-gallon former fuel steel tanks situated in concrete vaults lined with sand in the Capwell Basement. There is some contamination of the sand bed in the vault itself. None of the soils adjacent to the vaults are contaminated nor is the adjacent groundwater. The two tanks were abandoned by an approved filling with a concrete slurry on May 1987.

It appears that the vaults are waterproof, and that there is minimal interchange with adjacent groundwater. Removal of the vaulted sand would be very difficult and dangerous considering its role in structurally supporting the tanks. On the basis that there has been no contamination of the adjacent soils and groundwater, and the degree of danger and difficulty in removing the sand exceeds a reasonable cost benefit, we concur with your proposal to effectively seal the openings to the vault with concrete. However, we recommend that you give consideration to venting the area to be sealed to provide a passage way for any vapors.

Please note that this Department is the lead agency in resolving underground tank issues. However, the Regional Water Quality Control Board (RWQCB) has the authority to oversee these decisions.

Should you have any questions concerning this matter, please contact Storm Goranson, Hazardous Materials Specialist at (415) 874-7237, and give us 48-hour notice prior to commencement of work.

Sincerely,

R.A. Shahid

Rafat A. Shahid, Chief
Hazardous Materials Division

RAS:SG:mam

cc: Greg Zentner, RWQCB
File

ATTACHMENT II

Tank Removal Permit
and
Site Plan Showing
Groundwater Monitor Well

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
470 - 27TH ST. RM. 322
OAKLAND, CA 94612
PHONE NO. 415/874-7237

DRAFT

ACCEPTED
DEPARTMENT OF ENVIRONMENTAL HEALTH
470 27th Street, Third Floor
Oakland, CA 94612
Telephone: (415) 874-7237

These plans have been reviewed and found to be acceptable and essentially meet the requirements of State and local health laws. Changes to your plans indicated by this Department are to ensure compliance with State and local laws. The project proposed herein is now released for issuance of any required building permits for construction.

One copy of these accepted plans must be on the job and available to all contractors and craftsmen involved with the construction and installation.

Any change or alteration of these plans and specifications must be submitted to this Department and to the local Building Inspection Department to determine if such changes meet the requirements of State and local laws.

Notify this Department at least 48 hours prior to the following required inspections:

____ Pre-Covering of ____

____ Final Inspection

Issuance of a permit to operate is dependent on compliance with accepted plans and all applicable laws and regulations.

THERE IS A FINANCIAL PENALTY FOR NOT OBTAINING THESE INSPECTIONS.

UNDERGROUND TANK CLOSURE/MODIFICATION PLANS

1. Business Name [illegible]
   Business Owner [illegible]
2. Site Address [illegible]
   City Oakland CA Zip [illegible] Phone ____
3. Mailing Address 40 Hillsdale Mall
   City San Mateo CA Zip 94403 Phone (415) 572-5666
4. Land Owner Carter Hawley Hale
   Address 40 Hillsdale Mall City, State CA Zip 94403
5. EPA I.D. No. CAC 000059613
6. Contractor Trace Environmental Services Inc.
   Address 3084 Sunrise Blvd, Suite 9
   City Rancho Cordova, CA Phone 916 638-8045
   License Type A
7. Other (Specify) Dames & Moore (consultant)
   Address 221 Main St Suite 600
   City San Francisco Phone 415 896-5858

DRAFT

8. Contact Person for Investigation

Name Jim Curtis Title Staff Engineer

Phone 415 896 5858

9. Total No. of Tanks at facility 4

10. Have permit applications for all tanks been submitted to this office? Yes [X] No [ ]

11. State Registered Hazardous Waste Transporters/Facilities

a) Product/Waste Tranporter

Name Trans Environmental Services Inc EPA I.D. No. CAD982357170

Address [illegible] Blvd Suite 9

City [illegible] State CA Zip [illegible]

b) Rinsate Transporter

Name Trans Environmental Services Inc EPA I.D. No. CAD982357170

Address same

City – State – Zip –

c) Tank Transporter

Name Trans Env Services Inc. EPA I.D. No. CAD982357170

Address same

City – State – Zip –

d) Contaminated Soil Transporter

Name Trans Env Services, Inc. EPA I.D. No. CAD982357170

Address same

City – State – Zip –

Tanks to C&C Scrap metal (SSF) - cut 2' holes in sides & trailers & physically examine

12. Sample Collector

Name Jim Curtis

Company Dames & Moore

Address 221 Main street

City S.F. State CA Zip 94105-1917 Phone 415 896 5858

DRAFT

13. Sampling Information for each tank or area

Tank or Area		Material sampled	Location & Depth
Capacity	Historic Contents (past 5 years)		
7000 gal.	Reg. leaded gas	Soil beneath Tank	2' below bottom of exca[illegible] tank - 1 sample at each [illegible] of tank. Report [illegible] for each individual tank
5000 gal.	unleaded	"	
3000 gal.	super unleaded	"	
500 gal	waste oil	"	

14. Have tanks or pipes leaked in the past? Yes [ ] No [X] [illegible]

If yes, describe. n/a

15. NFPA methods used for rendering tank inert? Yes [X] No [ ]

If yes, describe. Triple rinse with high [illegible] [illegible] and [illegible] [illegible] with detergent to break film and rinse tank wall. Place 100 lbs of dry ice per 1000 gallon capacity upon completion of rinse. Measure Tank with sniffer for L.E.L. concentrations

16. Laboratories

Name Acurex Soil Testing

Address 405 Clyde Ave

City Mountain View State CA Zip 94039

State Certification No. 125

(415) 961-5700

17. Chemical Methods to be used for Analyzing Samples

DRAFT

Contaminant Sought	EPA, DHS, or Other Sample Preparation Method Number	EPA, DHS, or Other Analysis Number
TFPH TPH gas, diesel, Benzene Toluene Xylene, Ethylbenzene Volatile Organics 10. — Aromatic Volatile Organics PCB's, TOG Total Organic Lead	8015m, 8020, 8080, 4101?, 7421	8020 BTX 8080 PCB's n/A 7421 organic lead

sample @ 5ft, & @ 20' mix.

18. Site Safety Plan submitted? Yes [ ] No [x]

19. Workman's Compensation: Yes [x] No [ ]

Copy of Certificate enclosed? Yes [ ] No [x]

Name of Insurer Argonaut Ins Policy # [illegible]6533321

20. Plot Plan submitted? Yes [x] No [ ]

21. Deposit enclosed? Yes [x] No [ ]

22. Please forward to this office the following information within 60 days after receipt of sample results.

a) Chain of Custody Sheets

b) Original Signed Laboratory Reports

c) TSD to Generator copies of wastes shipped and received

d) Attachment A summarizing laboratory results

DRAFT

I declare that to the best of my knowledge and belief the statements and information provided above are correct and true. I understand that information in addition to that provided above may be needed in order to obtain an approval from the Department of Environmental Health and that no work is to begin on this project until this plan is approved.

I understand that any changes in design, materials or equipment will void this plan if prior approval is not obtained.

I will notify the Department of Environmental Health at least two (2) working days (48 hours) in advance to schedule any required inspections. I understand that site and worker safety are soley the responsibility of the property owner or his agent and that this responsibility is not shared nor assumed by the County of Alameda.

Signature of Contractor

Name (please type) _____

Signature _____

Date 11-19

Signature of Site Owner or Operator

Name (please type) Jim Curtis agent for Carter-Hawley-Ha

Signature _____

Date 11/19/88

NOTES:

1. Any changes in this document must be approved by this Department.
2. Any leaks discovered must be submitted to this office on an underground storage tank unauthorized leak/contamination site report form within 5 days of its discovery.
3. Three (3) copies of this plan must be submitted to this Department. One copy must be at the construction site at all times.
4. A copy of your approved plan must be sent to the landowner.

INSTRUCTIONS

2. SITE ADDRESS
Address at which closure or modification is taking place.

5. EPA I.D. NO.
This number may be obtained from the State Department of Health Services, 916/324-1781.

6. CONTRACTOR
Prime contractor for the project.

7. OTHER
List professional consultants here.

12. SAMPLE COLLECTOR
Persons who are collecting samples.

13. SAMPLING INFORMATION
Historic contents - the principal product(s) used in the last 5 years.

Material sampled - i.e., water, oil, sludge, soil, etc.

16. LABORATORIES
Laboratories used for chemical and geotechnical analyses.

17. CHEMICAL METHODS:
All sample collection methods and analyses should conform to EPA or DHS methods.

Contaminant - Specify the chemical to be analyzed.

Sample Preparation Method Number - The means used to prepare the sample prior to analysas - i.e., digestion techniques, solvent extraction, etc. Specify number of method and reference if not an EPA or DHS method.

Analysis Method Number - The means used to analyze the sample - i.e., GC, GC-MS, AA, etc. Specify number of method and reference if not a DHS or EPA method.

NOTE:
Method Numbers are available from certified laboratories.

18. SITE SAFETY PLAN
A plan outlining protective equipment and additional specialized personnel in the event that significant amount of hazardous materials are found. The plan should consider the availability of respirators, respirator cartridges, self-contained breathing apparatus (SCBA) and industrial hygienists.

DRAFT

19. ATTACH COPY OF WORKMAN'S COMPENSATION

20. PLOT PLAN

The plan should consists of a scaled view of the facility at which the tank(s) are located and should include the following information:

a) Scale

b) North Arrow

c) Property Line

d) Location of all Structures

e) Location of all relevant existing equipment including tanks and piping to be removed

f) Streets

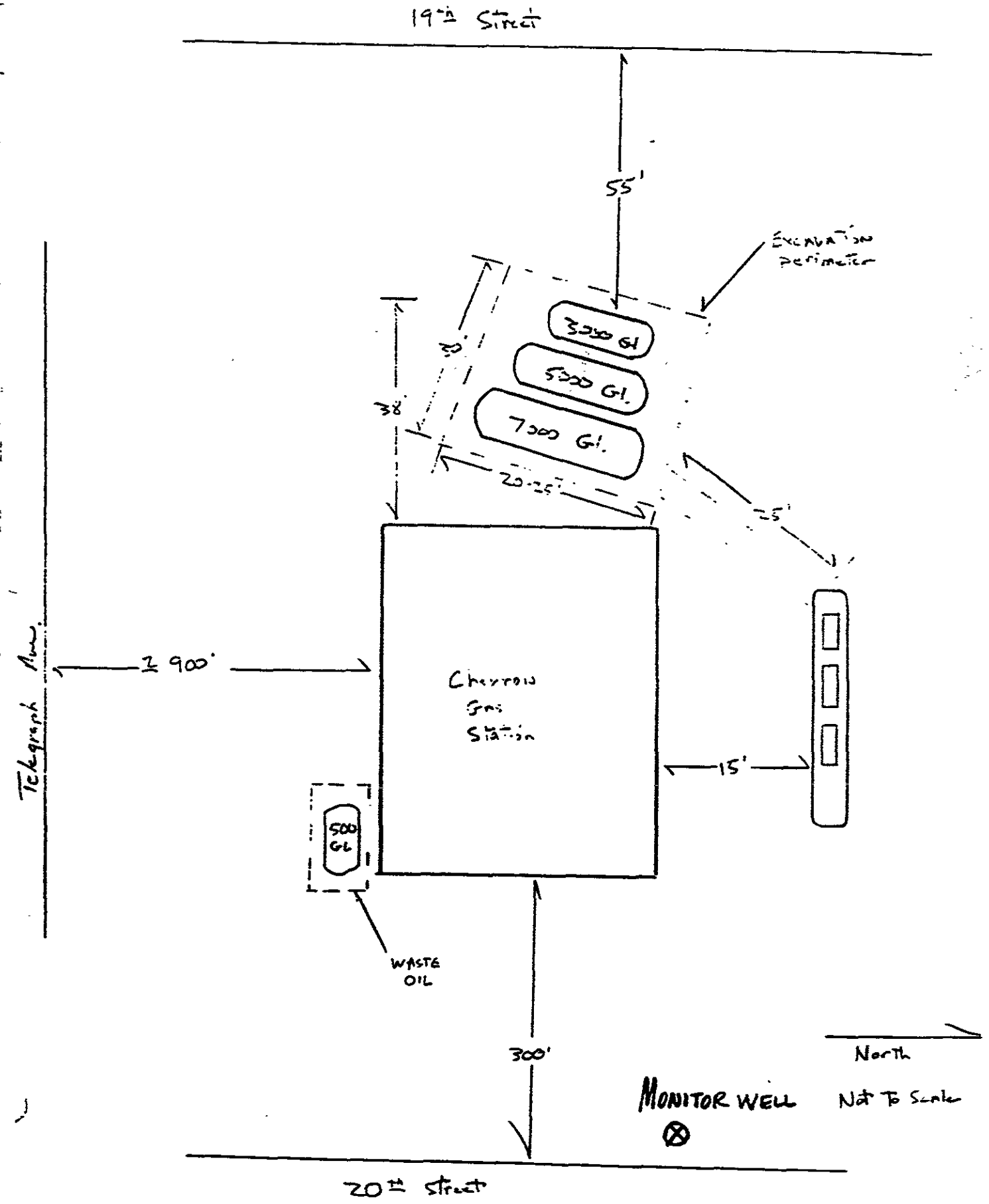
g) Underground conduits, sewers, water lines, utilities

h) Existing wells (drinking, monitoring, etc.)

i) Depth to ground water

j) All existing tanks in addition to the ones being pulled

1/88


19th Street
55'
Excavation perimeter
3000 Gl
5000 Gl.
7000 Gl.
30'
38'
20-25'
25'
Telegraph Ave.
± 900'
Chevron Gas Station
15'
500 Gl.
WASTE OIL
300'
North
MONITOR WELL
Not To Scale
20th Street

ATTACHMENT III

Chain of Custody Documents
and
Lab Analyses on Soil Samples

Manifests for Tank Rinsate

SEQUOIA ANALYTICAL LABORATORY

CHAIN OF CUSTODY REPORT

Client: Dames & Moore
Attention: Jim Curtis
Mailing Address: Suite 600
221 Main St
San Francisco, CA 94105
Phone Number: (415) 896-5858

Project Name: Emporium Capwell
Project Address: Chevron Station
1911 Telegraph Ave
Oakland, CA
Job # 12606-016-038

Date/Time Sample Collection: _____ am/pm
Collected By: Jim Curtis
Date/Time Delivered to Laboratory: 1/29 19:00 am/pm
Delivered By: Jim Curtis
Received in Laboratory By: Janet Schwarz

Sample Description	Number and Type of Containers	Analysis Requested
#1		8015, 3550, 8020
#2		8015, 8020, 7421
#3A		8015, 8020, 7421
#4A		8015, 8020, 7421
#5		3550, 8015, 8080, 8020
#6A		3550, 8015, 8080, 8020
#7A		8015, 8020, 7421
#8A		8015, 8020, 7421
#9		3550, 8015, 8080, 8020
#10A		8015, 8020, 7421
#11A		8015, 8020, 7421
#12		8015, 8020, 7421

Turnaround Status:

~~24 Hour~~ X 24 Hour ___48 Hour ___5 Work Days ___10 Work Days ___15 Work Days

SEQUOIA ANALYTICAL LABORATORY

CHAIN OF CUSTODY REPORT

Client: Dames & Moore
Attention: Jim Curtis
Mailing Address: Suite 600
221 Main St
SF CA 94105
Phone Number: (415) 896-5858

Project Name: Emporium Carpwell
Project Address: Chevron Station
1911 Telegraph Ave
Oakland CA
Job # 12000-016-038

Date/Time Sample Collection: _____ am/pm
Collected By: Jim Curtis
Date/Time Delivered to Laboratory: 2/1/88 12:30 am/pm
Delivered By: Jim Curtis
Received in Laboratory By: B. Uy

Sample Description	Number and Type of Containers	Analysis Requested
#13		8015, 8020, 7121, flash point
#14		
#15		
#16		
#17		
#18		

Turnaround Status:

___8 Hour X 24 Hour ___48 Hour ___5 Work Days ___10 Work Days ___15 Work Days

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Reported: 02/03/88

Project: #12606-016-038,
Emporium Capwell/Chevron Station,
1911 Telegraph Ave., Oakland, CA

Sample Number	Sample Description Soil Samples	Total Lead mg/kg-wet wt.
8012049	#2	5.9
8012050	#3A	8.8
8012051	#4A	5.5
8012054	#7A	5.5
8012055	#8A	1.9
8012057	#10A	1.5
8012058	#11A	1.3
8012059	#12	45

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
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Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Reported: 02/03/88

Project: #12606-016-038, Emporium Capwell/Chevron Station, 1911 Telegraph Ave., Oakland, CA

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8012049	Soil, #2

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	80
Benzene	0.1	1.4
Toluene	0.1	5.4
Xylenes	0.1	18

Method of Analysis: EPA 5020/8015/8020

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Redwood City, CA 94063 • (415) 364-9222

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San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Reported: 02/03/88

Project: #12606-016-038, Emporium Capwell/Chevron Station, 1911 Telegraph Ave., Oakland, CA

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8012050	Soil, #3A

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	140
Benzene	0.1	3.4
Toluene	0.1	2.7
Xylenes	0.1	22

Method of Analysis: EPA 5020/8015/8020

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Laboratory Director

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Redwood City, CA 94063 • (415) 364-9222

Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Reported: 02/03/88

Project: #12606-016-038, Emporium
Capwell/Chevron Station, 1911
Telegraph Ave., Oakland, CA

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8012051	Soil, #4A

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	66
Benzene	0.1	7.7
Toluene	0.1	9.9
Xylenes	0.1	11

Method of Analysis: EPA 5020/8015/8020

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Arthur G. Burton
Laboratory Director

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Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Reported: 02/03/88

Project: #12606-016-038, Emporium Capwell/Chevron Station, 1911 Telegraph Ave., Oakland, CA

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8012054	Soil, #7A

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	1,400
Benzene	0.1	230
Toluene	0.1	140
Xylenes	0.1	80

Method of Analysis: EPA 5020/8015/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Reported: 02/03/88

Project: #12606-016-038, Emporium Capwell/Chevron Station, 1911 Telegraph Ave., Oakland, CA

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8012055	Soil, #8A

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	13
Benzene	0.1	< 0.1
Toluene	0.1	< 0.1
Xylenes	0.1	< 0.1

Method of Analysis: EPA 5020/8015/8020

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Laboratory Director

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221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Reported: 02/03/88

Project: #12606-016-038, Emporium Capwell/Chevron Station, 1911 Telegraph Ave., Oakland, CA

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8012056	Soil, #9

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	< 1.0
Benzene	0.1	< 0.1
Toluene	0.1	< 0.1
Xylenes	0.1	< 0.1

Method of Analysis: EPA 5020/8015/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Extracted: 02/01/88
Date Reported: 02/03/88

Project: #12606-016-038, Emporium Capwell/Chevron Station, 1911 Telegraph Ave., Oakland, CA

Sample Number

8012056

Sample Description

Soil, #9

PRIORITY POLLUTANTS

PESTICIDE AND PCB COMPOUNDS
results in ppb

Aldrin	< 5	Endrin	< 5
α-BHC	< 10	Endrin Aldehyde	< 10
β-BHC	< 10	Heptachlor	< 2
δ-BHC	< 10	Heptachlor Epoxide	< 10
γ-BHC	< 5	Toxaphene	< 10
Chlordane	< 5	PCB-1016	< 10
4,4'-DDD	< 10	PCB-1221	< 10
4,4'-DDE	< 5	PCB-1232	< 10
4,4'-DDT	< 10	PCB-1242	< 10
Dieldrin	< 5	PCB-1248	< 10
Endosulfan I	< 10	PCB-1254	< 10
Endosulfan II	< 10	PCB-1260	< 10
Endosulfan Sulfate	< 10		

Method of Analysis: EPA 8080

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

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San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Reported: 02/03/88

Project: #12606-016-038, Emporium Capwell/Chevron Station, 1911 Telegraph Ave., Oakland, CA

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8012057	Soil, #10A

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	2.5
Benzene	0.1	< 0.1
Toluene	0.1	< 0.1
Xylenes	0.1	< 0.1

Method of Analysis: EPA 5020/8015/8020

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Arthur G. Burton
Laboratory Director

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San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Reported: 02/03/88

Project: #12606-016-038, Emporium Capwell/Chevron Station, 1911 Telegraph Ave., Oakland, CA

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8012058	Soil, #11A

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	2.6
Benzene	0.1	< 0.1
Toluene	0.1	< 0.1
Xylenes	0.1	< 0.1

Method of Analysis: EPA 5020/8015/8020

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Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
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221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Reported: 02/03/88

Project: #12606-016-038, Emporium Capwell/Chevron Station, 1911 Telegraph Ave., Oakland, CA

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8012059	Soil, #12

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	1.6
Benzene	0.1	< 0.1
Toluene	0.1	< 0.1
Xylenes	0.1	< 0.1

Method of Analysis: EPA 5020/8015/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis ,

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Reported: 02/03/88

Project: #12606-016-038, Emporium Capwell/Chevron Station, 1911 Telegraph Ave., Oakland, CA

TOTAL PETROLEUM HYDROCARBONS

Sample Number	Sample Description Soil,	Detection Limit ppm	High Boiling Point Hydrocarbons ppm
8012048	#1	1	110
8012052	#5	1	7.1
8012053	#6A	1	18
8012056	#9	1	21

Method of Analysis: EPA 3550/8015

SEQUOIA ANALYTICAL LABORATORY

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Laboratory Director

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Attn: Jim Curtis

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Reported: 02/03/88

Project: #12606-016-038, Emporium Capwell/Chevron Station, 1911 Telegraph Ave., Oakland, CA

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8012048	Soil, #1

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	4.9
Benzene	0.1	0.53
Toluene	0.1	< 0.1
Xylenes	0.1	< 0.1

Method of Analysis: EPA 5020/8015/8020

SEQUOIA ANALYTICAL LABORATORY

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Laboratory Director

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San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Reported: 02/03/88

Project: #12606-016-038, Emporium Capwell/Chevron Station, 1911 Telegraph Ave., Oakland, CA

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8012052	Soil, #5

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	5.8
Benzene	0.1	< 0.1
Toluene	0.1	< 0.1
Xylenes	0.1	< 0.1

Method of Analysis: EPA 5020/8015/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

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Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Extracted: 02/01/88
Date Reported: 02/03/88

Project: #12606-016-038, Emporium Capwell/Chevron Station, 1911 Telegraph Ave., Oakland, CA

Sample Number	Sample Description
8012052	Soil, #5

PRIORITY POLLUTANTS

PESTICIDE AND PCB COMPOUNDS

results in ppb

Aldrin	< 5	Endrin	< 5
α-BHC	< 10	Endrin Aldehyde	< 10
β-BHC	< 10	Heptachlor	< 2
δ-BHC	< 10	Heptachlor Epoxide	< 10
γ-BHC	< 5	Toxaphene	< 10
Chlordane	< 5	PCB-1016	< 10
4,4'-DDD	< 10	PCB-1221	< 10
4,4'-DDE	< 5	PCB-1232	< 10
4,4'-DDT	< 10	PCB-1242	< 10
Dieldrin	< 5	PCB-1248	< 10
Endosulfan I	< 10	PCB-1254	< 10
Endosulfan II	< 10	PCB-1260	< 10
Endosulfan Sulfate	< 10		

Method of Analysis: EPA 8080

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

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Redwood City, CA 94063 • (415) 364-9222

Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Reported: 02/03/88

Project: #12606-016-038, Emporium Capwell/Chevron Station, 1911 Telegraph Ave., Oakland, CA

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8012053	Soil, #6A

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	2.6
Benzene	0.1	< 0.1
Toluene	0.1	< 0.1
Xylenes	0.1	< 0.1

Method of Analysis: EPA 5020/8015/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Extracted: 02/01/88
Date Reported: 02/03/88

Project: #12606-016-038, Emporium Capwell/Chevron Station, 1911 Telegraph Ave., Oakland, CA

Sample Number: 8012053

Sample Description: Soil, #6A

PRIORITY POLLUTANTS

PESTICIDE AND PCB COMPOUNDS

results in ppb

Aldrin	< 5	Endrin	< 5
α-BHC	< 10	Endrin Aldehyde	< 10
β-BHC	< 10	Heptachlor	< 2
δ-BHC	< 10	Heptachlor Epoxide	< 10
γ-BHC	< 5	Toxaphene	< 10
Chlordane	< 5	PCB-1016	< 10
4,4'-DDD	< 10	PCB-1221	< 10
4,4'-DDE	< 5	PCB-1232	< 10
4,4'-DDT	< 10	PCB-1242	< 10
Dieldrin	< 5	PCB-1248	< 10
Endosulfan I	< 10	PCB-1254	< 10
Endosulfan II	< 10	PCB-1260	< 10
Endosulfan Sulfate	< 10		

Method of Analysis: EPA 8080

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105-1917
Attn: Jim Curtis

Date Sampled: 01/29/8[illegible]
Date Received: 01/29/8[illegible]
Date Reported: 02/09/8[illegible]
Date Relogged: 02/02/8[illegible]

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8020130	Soil, 7B

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	3,300
Benzene	0.1	42
Toluene	0.1	340
Xylenes	0.1	770

Method of Analysis: EPA 5020/8015/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105-1917
Attn: Jim Curtis

Date Sampled: 01/29/88
Date Received: 01/29/88
Date Reported: 02/09/88
Date Relogged: 02/02/88

Sample Number	Sample Description
8020130	Soil, 7B

ANALYSIS

Total Lead, mg/kg-wet wt.	4.6

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
aboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 02/04/88
Date Received: 02/04/88
Date Reported: 02/09/88

Project: Emporium Capwell/Chevron Station, 1911 Telegraph Avenue, Oakland, CA - Job #12606-016-038

Sample Number	Sample Description	Lead	Flashpoint
	Soil	mg/kg-wet wt.	°C
8020351	#13	1.7	> 110
8020352	#14	1.6	> 110
8020353	#15	3.0	> 110
8020354	#16	1.9	> 110
8020355	#17	3.4	> 110
8020356	#18	1.9	> 110

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 02/04/88
Date Received: 02/04/88
Date Reported: 02/09/88

Project: Emporium Capwell/Chevron Station, 1911 Telegraph Avenue, Oakland, CA - Job #12606-016-038

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number: 8020351

Sample Description: Soil, #13

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	< 1.0
Benzene	0.1	< 0.1
Toluene	0.1	< 0.1
Xylenes	0.1	< 0.1

Method of Analysis: EPA 5020/8015/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 02/04/88
Date Received: 02/04/88
Date Reported: 02/09/88

Project: Emporium Capwell/Chevron Station, 1911 Telegraph Avenue, Oakland, CA - Job #12606-016-038

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8020352	Soil, #14

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	1.2
Benzene	0.1	< 0.1
Toluene	0.1	< 0.1
Xylenes	0.1	< 0.1

Method of Analysis: EPA 5020/8015/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 02/04/88
Date Received: 02/04/88
Date Reported: 02/09/88

Project: Emporium Capwell/Chevron Station, 1911 Telegraph Avenue, Oakland, CA - Job #12606-016-038

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8020353	Soil, #15

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	30
Benzene	0.1	0.51
Toluene	0.1	0.90
Xylenes	0.1	1.7

Method of Analysis: EPA 5020/8015/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 02/04/88
Date Received: 02/04/88
Date Reported: 02/09/88

Project: Emporium Capwell/Chevron Station, 1911 Telegraph Avenue, Oakland, CA - Job #12606-016-038

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8020354	Soil, #16

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	< 1.0
Benzene	0.1	< 0.1
Toluene	0.1	< 0.1
Xylenes	0.1	< 0.1

Method of Analysis: EPA 5020/8015/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 02/04/88
Date Received: 02/04/88
Date Reported: 02/09/88

Project: Emporium Capwell/Chevron Station, 1911 Telegraph Avenue, Oakland, CA - Job #12606-016-038

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8020355	Soil, #17

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	< 1.0
Benzene	0.1	< 0.1
Toluene	0.1	< 0.1
Xylenes	0.1	< 0.1

Method of Analysis: EPA 5020/8015/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Dames & Moore
221 Main St., Suite 600
San Francisco, CA 94105
Attn: Jim Curtis

Date Sampled: 02/04/88
Date Received: 02/04/88
Date Reported: 02/09/88

Project: Emporium Capwell/Chevron Station, 1911 Telegraph Avenue, Oakland, CA - Job #12606-016-038

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTX DISTINCTION

Sample Number	Sample Description
8020356	Soil, #18

	Detection Limit ppm	Sample Results ppm
Low to Medium Boiling Point Hydrocarbons	1	< 1.0
Benzene	0.1	< 0.1
Toluene	0.1	< 0.1
Xylenes	0.1	< 0.1

Method of Analysis: EPA 5020/8015/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

State of California—Health and Welfare Agency
Form Approved OMB No 2050—0039 (Expires 9-30-88)
Please print or type (Form designed for use on elite (12-pitch typewriter).

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. GACI000059661 Manifest Document No. 3214623V

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
EMPORIUM CAPWELL DEPT STORES
3051 STEVENS CREEK BLVD.
SANTA CLARA, CA 95050

4. Generator's Phone (415) 572-5666

A. State Manifest Document Number 87454826

B. State Generator's ID

5. Transporter 1 Company Name H + H SHIP SERVICE
6. US EPA ID Number CAD004771168
C. State Transporter's ID 300846
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
H + H SHIP SERVICE
220 CHINA BASIN ST
SAN FRANCISCO CA 94107

10. US EPA ID Number CAD004771168

G. State Facility's ID 38-001-1781
H. Facility's Phone (415) 543-4835

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. WASTE FLAMMABLE LIQUID N.O.S. UN 1993	001	TT	1400	G	State 241 EPA/Other D001
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
GASOLINE 50%
OIL 50%

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
GLOVES, GOGGLES

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: WOODROW JOHNSON Signature: [signature] Month Day Year: 10 13 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JEROME R. VOSS Signature: [signature] Month Day Year: 10 13 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name Signature Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name Signature Month Day Year

GENERATOR / TRANSPORTER / FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/87)
EPA 8700—22
(Rev. 9-86) Previous editions are obsolete.

Blue: GENERATOR SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To: P.O. Box 400, Sacramento, CA 95802

INSTRUCTIONS ON THE BACK

87423110

RECYCLETRON OIL, INC.
DBA Refineries Service

P.O. Box 1171
Patterson, CA 95363
(209) 892-6742
(800) 874-4444

STATE MANIFEST # ______
USED OIL HAULER # 86-050
EPA # CAD083166728
HAZARDOUS WASTE HAULER # #1500
REGISTRATION # 801931
INV. # 9179

DATE 2-1-88

CUSTOMER
NAME: Trace Envuormentel — Capwell - Parkway
ADDRESS: Sunrise Suite #A 1911 Telegraph (BILLING ADDRESS IF DIFFERENT)
CITY STATE ZIP: Coldoud, CA — Rancho Cordova
PHONE: 916-638-8045

TERMS
DRIVER 00 — TRUCK # 5883
CASH -
NET 10 DAY -
PO #

- PLEASE PAY FROM THIS INVOICE -

PRODUCT	GALLONS	HOURS	RATE	AMOUNT
Oily H2O Waste	500		.85	425.00

I certify amount shown above to be correct.

(Customer Signature) [signature]

(Driver Signature) [signature]

also: Verbal Trace Environmental

Total Charges 425.00

WHITE: CUSTOMER CANARY: ALPHABETICAL PINK: NUMERIC

DAMES & MOORE A PROFESSIONAL LIMITED PARTNERSHIP
221 MAIN STREET, SUITE 600 SAN FRANCISCO, CALIFORNIA 94105-1917 (415) 896-5533

February 23, 1988
Job No. 12606-016-038

Alameda County Health Agency
Division of Hazardous Materials
Department of Environmental Health
470 - 27th Street, Room 322
Oakland, California 94612

Attention: Mr. Storm Goranson

Gentlemen:

As required per the Alameda County Health Care Services Agency, Underground Tank Closure Plan, we are submitting the following copies pertaining to the tank removal at 1911 Telegraph Avenue, Oakland, California:

(a) Chain of Custody Sheets;

(b) Signed Laboratory Reports;

(c) Generator copies of the Uniform Hazardous Waste Manifest for all wastes leaving the site; and

(d) Attachment A summarizing the laboratory results.

JC/1707a

The work was begun on January 25, 1988. The four storage tanks were removed from the site under both Oakland Fire Department and Alameda County Health Care Services Agency, Hazardous Materials Division supervision of January 29, 1988. Laboratory analysis of the collected soil samples showed contamination of the fill material along the southern ends of the gasoline storage tanks. This material was removed from the excavation. The second set of laboratory analysis defines the limits of the contamination. The removed soils are currently awaiting authority to transport to final disposal.

If you should have any questions about this project, please feel free to contact me.

Very truly yours,

DAMES & MOORE,

Jim Curtis
Construction Manager

JC:ed
Attachments

JC/1707a

UNDERGROUND TANK CLOSURE/MODIFICATION PLANS

ATTACHMENT A

SAMPLING RESULTS

Tank or Area	Contaminant	Location & Depth	Results (specify units)
Tank A 3000 gallons		12 ft below surface South end of tank under fill pipe	
	TPHC as Gasoline		2.5 ppm
	Benzene		<0.1 ppm
	Toluene		<0.1 ppm
	Xylene		<0.1 ppm
	Lead		1.5 mg/kg
		North end of tank	
	TPHC as Gasoline		2.6 ppm
	Benzene		<0.1 ppm
	Toluene		<0.1 ppm
	Xylene		<0.1 ppm
	Lead		1.3 mg/kg
Tank B 5000 gallons 1st set of samples		12 ft below surface South end of tank under fill pipe	
	TPHC as Gasoline		1400 ppm
	Benzene		230 ppm
	Toluene		140 ppm
	Xylene		80 ppm
	Lead		5.5 mg/kg
		North end of tank	
	TPHC as Gasoline		13 ppm
	Benzene		<0.1 ppm
	Toluene		<0.1 ppm
	Xylene		<0.1 ppm
	Lead		1.9 mg/kg

UNDERGROUND TANK CLOSURE/MODIFICATION PLANS

ATTACHMENT A

SAMPLING RESULTS

Tank or Area	Contaminant	Location & Depth	Results (specify units)
Tank B 5000 gallons 2nd set of samples		16 ft below surface South end of tank under fill pipe	
	TPHC as Gasoline		<1.0 ppm
	Benzene		<0.1 ppm
	Toluene		<0.1 ppm
	Xylene		<0.1 ppm
	Lead		1.7 mg/kg
	Flash Point		>110°C
		North end of tank	
	TPHC as Gasoline		1.2 ppm
	Benzene		<0.1 ppm
	Toluene		<0.1 ppm
	Xylene		<0.1 ppm
	Lead		1.6 mg/kg
	Flash Point		>110°C
Tank C 7000 gallons 1st set of samples		12 ft below surface South end of tank under fill pipe	
	TPHC as Gasoline		140 ppm
	Benzene		3.4 ppm
	Toluene		2.7 ppm
	Xylene		18 ppm
	Lead		8.8 mg/kg
		North end of tank	
	TPHC as Gasoline		66 ppm
	Benzene		7.7 ppm
	Toluene		9.9 ppm
	Xylene		11 ppm
	Lead		5.5 mg/kg

UNDERGROUND TANK CLOSURE/MODIFICATION PLANS

ATTACHMENT A

SAMPLING RESULTS

Tank or Area	Contaminant	Location & Depth	Results (specify units)
Tank C 7000 gallons 2nd set of samples		16 ft below surface North end of tank under fill pipe	
	TPHC as Gasoline		30 ppm
	Benzene		0.51 ppm
	Toluene		0.90 ppm
	Xylene		1.7 ppm
	Lead		3.0 mg/kg
	Flash Point		>110°C
		South end of tank	
	TPHC as Gasoline		<1 ppm
	Benzene		<0.1 ppm
	Toluene		<0.1 ppm
	Xylene		<0.1 ppm
	Lead		1.9 mg/kg
	Flash Point		>110°C
Tank D waste oil 500 gallons		7 ft below surface South end of tank	
	TPHC as Gasoline		5.8 ppm
	Diesel		110 ppm
	Benzene		<0.1 ppm
	Toluene		<0.1 ppm
	Xylene		<0.1 ppm
	PCB's		<10 ppb
		North end of tank under fill pipe	
	TPHC as Gasoline		2.6 ppm
	Diesel		7.1 ppm
	Benzene		<0.1 ppm
	Toluene		<0.1 ppm
	Xylene		<0.1 ppm
	PCB's		<10 ppb

UNDERGROUND TANK CLOSURE/MODIFICATION PLANS

ATTACHMENT A

SAMPLING RESULTS

Tank or Area	Contaminant	Location & Depth	Results (specify units)
Joint in product line from gas tanks to service island		6 ft below surface East wall of excavation	
	TPHC as Gasoline		1.6 ppm
	Benzene		<0.1 ppm
	Toluene		<0.1 ppm
	Xylene		<0.1 ppm
South sidewall of excavation in region of fill pipes - area of dark grey soil 1st samples		8 ft below surface	
	TPHC as Gasoline		80 ppm
	Benzene		1.4 ppm
	Toluene		5.4 ppm
	Xylene		18 ppm
	Lead		5.9 mg/kg
South wall of excavation in region of fill pipes - area of dark grey soil 2nd samples		8 ft below surface	
	TPHC as Gasoline		<1.0 ppm
	Diesel		<0.1 ppm
	Benzene		<0.1 ppm
	Toluene		<0.1 ppm
	Xylene		<1.0 ppm
	Lead		1.9 mg/kg
	Flash point		>110°C

JC/1703a

UNDERGROUND TANK CLOSURE/MODIFICATION PLANS

ATTACHMENT A

SAMPLING RESULTS

Tank or Area	Contaminant	Location & Depth	Results (specify units)
Sump inside Garage		12 ft below concrete slab	
	TPHC as Gasoline		4.9 ppm
	Diesel		110 ppm
	Benzene		0.53 ppm
	Toluene		<0.1 ppm
	Xylene		<0.1 ppm
Joint in pipe leading to waste oil tank		2 ft below surface	
	TPHC as Gasoline		<1.0 ppm
	Diesel		21 ppm
	Benzene		<0.1 ppm
	Toluene		<0.1 ppm
	Xylene		<0.1 ppm
	PCB's		<10 ppb

ATTACHMENT IV

Report to Alameda County

Division of Environmental Health

ATTACHMENT V

Manifest for Contaminated Soil Disposal

Form Approved OMB No 2050—0039 (Expires 9-30-88)

Please print or type (Form designed for use on elite (12-pitch typewriter)

Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. C A C 0 0 0 0 5 8 4 0 5 — Manifest Document No. 2 4 8 0 0

2. Page 1 of — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
EMPORIUM - CAPWELL DEPARTMENT STORES
3051 Stevens Creek Boulevard
Santa Clara, CA 95050
4. Generator's Phone (415) 572-5666

A. State Manifest Document Number: 87824800

B. State Generator's ID: H A H 0 3 6 0 2 2 5 5 4

5. Transporter 1 Company Name: Trace Environmental Services, Inc — 6. US EPA ID Number: C A D 9 8 2 5 7 1 7 0

C. State Transporter's ID: 80059

D. Transporter's Phone: (916) 638-8045

7. Transporter 2 Company Name — 8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
PETROLEUM WASTE, INCORPORATED
Lokern Road
Buttonwillow, CA 93206 — 10. US EPA ID Number: C A D 9 8 0 6 7 5 2 7 6

G. State Facility's ID: C A H D 9 8 1 0 6 2 5 D 2 7 6

H. Facility's Phone: (805) 762-7341

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Gasoline Contaminated Soil California Regulated Waste Only	0 0 2	D T	0 0 0 7	Y	State 611 EPA/Other
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
Soil 99.9%
Gasoline 0.1%

K. Handling Codes for Wastes Listed Above
a. 06 — b. — c. — d.

15. Special Handling Instructions and Additional Information
Wear gloves and goggles when handling material.
PWI Approval Number G311

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: ~~Woodrow Johnsen~~ CHARLES G. HARRIS — Signature: Charles G. Harris — Month Day Year: 10 28 88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: STACY King — Signature: Stacy T King — Month Day Year: 10 27 88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space: Gen ad sec 3 should be Chevron Station Emporium Capwell. AL Moreno

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name: Hector L Moreno — Signature: Hector L Moreno — Month Day Year: 10 27 88

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/87)
EPA 8700—22
(Rev. 9-86) Previous editions are obsolete.

White: TSDF SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To: P.O. Box 3000, Sacramento, CA 95812

INSTRUCTIONS ON THE BACK

State of California—Health and Welfare Agency
Form Approved OMB No 2050—0039 (Expires 9 30 88)
Please print or type (Form designed for use on elite (12-pitch typewriter)

Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAC000058405 | Manifest Document No 09778 | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
EMPORIUM - CAPWELL DEPARTMENT STORES
3051 Stevens Creek Boulevard
Santa Clara, CA 95050
4. Generator's Phone (415) 572-5666

A. State Manifest Document Number: 87609778
B. State Generator's ID: HAHQ360225.4
C. State Transporter's ID: 80059
D. Transporter's Phone: (916) 638-8045
E. State Transporter's ID:
F. Transporter's Phone:

5. Transporter 1 Company Name: Ttace Environmental Services, Inc
6. US EPA ID Number: CAD982135710

7. Transporter 2 Company Name:
8. US EPA ID Number:

9. Designated Facility Name and Site Address
PETROLEUM WASTE, INCORPORATED
Lokern Road
Buttonwillow, CA 93206
10. US EPA ID Number: CAD982067526

G. State Facility's ID: CAD982067526
H. Facility's Phone: (805) 762-7341

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Gasoline Contaminated Soil California Regulated Waste Only	002	DT	0013	Y	State 611 EPA/Other
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
Soil 99.9%
Gasoline 0.1%

K. Handling Codes for Wastes Listed Above
a. 06 b.
c. d.

15. Special Handling Instructions and Additional Information
Wear gloves and goggles when handling material.
PWI Approval Number G311

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name: ~~Woodrow Johnsen~~ CHARLES S. MARTIN | Signature: Charles S. Martin | Month 02 Day 22 Year 88

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: William L Whitesell | Signature: William L. Whitesell | Month 10 Day 20 Year 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: | Signature: | Month Day Year

FACILITY

19. Discrepancy Indication Space: Gen on Sec 3 should be Chevron STATION Emporium Capwell. HL Moreno

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Hector L Moreno | Signature: Hector L Moreno | Month 10 Day 27 Year 88

DHS 8022 A (1/87)
EPA 8700—22
(Rev. 9-86) Previous editions are obsolete.

White: TSDF SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To: P.O. Box 3000, Sacramento, CA 95812

INSTRUCTIONS ON THE BACK

IN CASE OF AN EMERGENCY OR SPILL CALL THE NATIONAL RESPONSE CENTER 1-800/424-8802; WITHIN CALIFORNIA CALL 1-800/852-7550

ATTACHMENT VI

Copy of Laboratory Report
Received by Fax
From

Brown and Caldwell Laboratories
1255 Pwell Street
Emeryville, California 94608

LOG NO: E88-03-200

Received: 08 MAR 88
Reported: 15 MAR 88

Mr. Jim Curtis
Dames and Moore
221 Main Street, Suite 600
San Francisco, CA 94105

Project: 12606-016-038

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
03-200-1	B-1 1A	04 MAR 88
03-200-2	B-1 2A	04 MAR 88
03-200-3	B-1 3A	04 MAR 88
03-200-4	B-1 4A	04 MAR 88

PARAMETER	03-200-1	03-200-2	03-200-3	03-200-4
Lead, mg/kg	4.3	4.3	4.3	6.0
Nitric Acid Digestion, Date	03.09.88	03.09.88	03.09.88	03.09.88
Total Fuel Hydrocarbons, mg/kg	<10	<10	<10	<10

LOG NO: E88-03-200

Received: 08 MAR 88
Reported: 15 MAR 88

Mr. Jim Curtis
Dames and Moore
221 Main Street, Suite 600
San Francisco, CA 94105

Project: 12606-016-038

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
03-200-1	B-1 1A	04 MAR 88
03-200-2	B-1 2A	04 MAR 88
03-200-3	B-1 3A	04 MAR 88
03-200-4	B-1 4A	04 MAR 88

PARAMETER	03-200-1	03-200-2	03-200-3	03-200-4
Purgeable Priority Pollutants				
Extraction	03.08.88	03.08.88	03.08.88	03.08.88
1,1,1-Trichloroethane, mg/kg	<0.2	<0.2	<0.2	<0.2
1,1,2,2-Tetrachloroethane, mg/kg	<0.2	<0.2	<0.2	<0.2
1,1,2-Trichloroethane, mg/kg	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethane, mg/kg	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethylene, mg/kg	<0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane, mg/kg	<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane, mg/kg	<0.2	<0.2	<0.2	<0.2
1,3-Dichloropropene, mg/kg	<0.2	<0.2	<0.2	<0.2
2-Chloroethylvinylether, mg/kg	<0.2	<0.2	<0.2	<0.2
Acrolein, mg/kg	<2	<2	<2	<2
Acrylonitrile, mg/kg	<2	<2	<2	<2
Bromodichloromethane, mg/kg	<0.2	<0.2	<0.2	<0.2
Bromomethane, mg/kg	<0.2	<0.2	<0.2	<0.2
Benzene, mg/kg	<0.2	0.4	<0.2	<0.2
Chlorobenzene, mg/kg	<0.2	<0.2	<0.2	<0.2
Carbon Tetrachloride, mg/kg	<0.2	<0.2	<0.2	<0.2
Chloroethane, mg/kg	<0.2	<0.2	<0.2	<0.2
Bromoform, mg/kg	<0.2	<0.2	<0.2	<0.2
Chloroform, mg/kg	<0.2	<0.2	<0.2	<0.2
Chloromethane, mg/kg	<0.2	<0.2	<0.2	<0.2
Dibromochloromethane, mg/kg	<0.2	<0.2	<0.2	<0.2
Ethylbenzene, mg/kg	<0.2	<0.2	<0.2	<0.2

LOG NO: E88-03-200

Received: 08 MAR 88
Reported: 15 MAR 88

Mr. Jim Curtis
Dames and Moore
221 Main Street, Suite 600
San Francisco, CA 94105

Project: 12606-016-038

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
03-200-1	B-1 1A	04 MAR 88
03-200-2	B-1 2A	04 MAR 88
03-200-3	B-1 3A	04 MAR 88
03-200-4	B-1 4A	04 MAR 88

PARAMETER	03-200-1	03-200-2	03-200-3	03-200-4
Methylene chloride, mg/kg	<0.2	<0.2	<0.2	<0.2
Tetrachloroethylene, mg/kg	<0.2	<0.2	<0.2	<0.2
Trichloroethylene, mg/kg	<0.2	<0.2	<0.2	<0.2
Trichlorofluoromethane, mg/kg	<0.2	<0.2	<0.2	<0.2
Toluene, mg/kg	<0.2	<0.2	0.4	<0.2
Vinyl chloride, mg/kg	<0.2	<0.2	<0.2	<0.2
trans-1,2-Dichloroethylene, mg/kg	<0.2	<0.2	<0.2	<0.2
trans-1,3-Dichloropropene, mg/kg	<0.2	<0.2	<0.2	<0.2

LOG NO: E88-03-200

Received: 08 MAR 88
Reported: 15 MAR 88

Mr. Jim Curtis
Dames and Moore
221 Main Street, Suite 600
San Francisco, CA 94105

Project: 12606-016-038

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
03-200-5	Well 1-1	04 MAR 88
03-200-6	Well 1-2	05 MAR 88
03-200-7	Well 1-3	06 MAR 88

PARAMETER	03-200-5	03-200-6	03-200-7
Lead, mg/L	2.1	0.037	0.035
Nitric Acid Digestion, Date	03.09.88	03.09.88	03.09.88
Total Fuel Hydrocarbons, mg/L	<1.0	3.5	<1.0
EPA Method 602			
Date Extracted	03.10.88	03.10.88	03.10.88
1,2-Dichlorobenzene, ug/L	<0.5	<0.5	<0.5
1,3-Dichlorobenzene, ug/L	<0.5	<0.5	<0.5
1,4-Dichlorobenzene, ug/L	<0.5	<0.5	<0.5
Benzene, ug/L	<0.5	<0.5	<0.5
Chlorobenzene, ug/L	<0.5	<0.5	<0.5
Ethylbenzene, ug/L	<0.5	<0.5	<0.5
Toluene, ug/L	0.9	2.1	<0.5
Total Xylene Isomers, ug/L	<0.5	<0.5	<0.5

Steve Fisher, Laboratory Director

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

DEPARTMENT OF ENVIRONMENTAL HEALTH
Hazardous Materials Program
80 Swan Way, Rm. 200
Oakland, CA 94621
(415)

Certified Mailer # P 062 128 235

December 13, 1990

DEC 20 1990

John M. Healy
Carter-Hawley-Hale Stores Inc.
550 South Flower St.
Los Angeles, CA 90071

RE: Former Capwells Chevron, 1911 Telegraph Ave., Oakland CA 94612

Dear Mr. Healy:

This letter is with regard to the site remediation at the above location. In examining documentation of this site currently available in this office it appears that some data gaps exist of information on the specifics of what remedial measures have been taken.

Initial soil results taken beneath the tank excavations indicated Total Petroleum Hydrocarbon (TPH) contamination of 110, 140 and 1400 ppm.

Correspondence to this office from Dames and Moore dated March 23, 1988 provided groundwater analytical results reported from a "Waste Monitoring Well". However, no workplan for the installation of the groundwater monitoring wells, proposed methodology for establishing hydraulic gradient, or proposed methods for delineating the lateral or vertical extent of soil or groundwater contamination are available.

The only information available with regard to the monitoring well installed at this site is a Department of Water Resources Well Drillers Report and a rough sketch of the position of the well relative to the site.

You are requested provide to this office copies of any information such as workplans, tank closure reports or quarterly groundwater monitoring reports which would describe the efforts taken regarding the remediation of the soil or groundwater at the above site. **You are requested to respond to this request for information within 14 days of the receipt of this letter.**

If you have any questions please direct them to me at (415) 271-4320.

Sincerely,

Paul M. Smith

Paul M. Smith
Hazardous Materials Specialist

cc:
Nancy Vukelich, Chevron USA Inc.
Gil Jensen, Alameda County District Attorney's Office of Consumer and Environmental Affairs
Lester Feldman, SFRWQCB
Howard Hatayama, DHS
Rafat A. Shahid, Assistant Agency Director, Alameda County Environmental Health Dept.
Files

DAMES & MOORE
6 HUTTON CENTRE DRIVE, SUITE 700, SANTA ANA, CALIFORNIA 92707 (714) 433-2000
FAX (714) 433-2364 FAX (714) 433-2365

January 11, 1991

Carter Hawley Hale
444 South Flower Street
Los Angeles, CA 90017-2900

Attention: Mr. Howard Wallach, Vice President
Construction Management

Subject: Former Emporium Capwells Chevron
1911 Telegraph Avenue
Oakland, California 94612

Dear Howard:

We received and reviewed a letter from Alameda County Health Care Services Agency (ACHCSA), dated December 13, 1990, regarding former Capwells Chevron, 1911 Telegraph Avenue, in Oakland, California (site). The letter states that there are some data gaps in ACHCSA files on the specifics of what remedial measures had been implemented at the site.

We reviewed a Dames & Moore report entitled "Toxics and Underground Tank Removals, Post Construction Report, Emporium Capwell, Oakland, California" dated March 21, 1988, a copy of which is attached. Review of the Dames & Moore report indicates that the site was remediated in concurrence and with approval of the ACHCSA. The attached report summarizes the investigations and remedial activities.

We suggest that you submit a copy of this report to the ACHCSA so that they can have all the pertinent facts.

Please do not hesitate to call use if there are any questions regarding this letter.

Sincerely,

DAMES & MOORE

E. Essi Esmaili, Ph.D.

EEE:mdm

A:128\1-11.L

Carter Hawley Hale

February 8, 1991

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621
ATTN: Paul M. Smith

Re: Former Capwells Chevron
1911 Telegraph Ave.
Oakland, CA 94612

Dear Mr. Smith:

In reference to your letter dated December 13, 1990, and Mr. Howard Wallach's (CHH) letter dated December 28, 1990, we have had Dames & Moore check their files on referenced project.

Attached is Dames & Moore (Essi Esmaili) letter dated January 11, 1991, with their Site Remediation Report dated March 21, 1988. I hope this will answer any questions you had on this project.

If you have further questions, please do not hesitate to contact me.

Thank you.

Sincerely,

CARTER HAWLEY HALE STORES, INC.

Nick Carpenter, FISP
Director Construction Management

NC:slp

cc: Howard Wallach
John Healy
Essi Esmaili

444 South Flower Street
P.O. Box 17902
Los Angeles, California 90017
213/620-0150 Telex 67-264

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

State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
RAFAT A. SHAHID, Assistant Agency Director

Certified Mail # P 867 687 172

RECEIVED
MAR 20 1992

DEPARTMENT OF ENVIRONMENTAL HEALTH
Hazardous Materials Division
80 Swan Way, Rm. 200
Oakland, CA 94621
(510) 271-4320

03/13/92
STID# 1630

Notice of Requirement to Reimburse

Howard Wallach
Emporium Capwell Co.
444 S. Flower St.
Los Angeles, C A 90071

Responsible Party
Property Owner

Capwell's Chevron
1911 Telegraph Ave.
Oakland , CA 94612

SITE

Date First Reported 02/23/88
Substance: Waste Oil
Petroleum: (X)Yes

The federal Petroleum Leaking Underground Storage Tank Trust Fund (Federal Trust Fund) provides funding to pay the local and state agency administrative and oversight costs associated with the cleanup of releases from underground storage tanks. The legislature has authorized funds to pay the local and state agency administrative and oversight costs associated with the cleanup of releases from underground storage tanks. The direct and indirect costs of overseeing removal or remedial action at the above site are funded, in whole or in part, from the Federal Trust Fund. The above individual(s) or entity(ies) have been identified as the party or parties responsible for investigation and cleanup of the above site. **YOU ARE HEREBY NOTIFIED** that pursuant to Title 42 of the United States Code, Section 6991b(h)(6) and Sections 25297.1 and 25360 of the California Health and Safety Code, the above Responsible Party or Parties must reimburse the State Water Resources Control Board not more than 150 percent of the total amount of site specific oversight costs actually incurred while overseeing the cleanup of the above underground storage tank site, and the above Responsible Party or Parties must make full payment of such costs within 30 days of receipt of a detailed invoice from the State Water Resources Control Board.

Please contact Tom PEACOCK, Supervising Hazardous Materials Specialist at this office if you have any questions concerning this matter.

Edgar B. Howell, III, Chief
Contract Project Director

cc: Sandra Malos, SWRCB

SWRCB Use: Add: X Reason: New Case

STATE OF CALIFORNIA PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
2101 WEBSTER STREET, SUITE 500
OAKLAND, CA 94612

Phone: (510) 286-1255
Fax: (510) 286-1380

Carter Hawley Hale
444 South Flower Street
P.O. Box 17902
Los Angeles, CA 90017
Attn: Mr Nick Carpenter

RECEIVED
OCT 1992

September 25, 1992
File: 2198.17 (UST)

RE: Case closure for the underground storage tanks at Emporium Capwell, 20th & Broadway, Oakland, Alameda County

RECEIVED
OCT 1992

Dear Mr. Carpenter,

The Alameda County Department of Environmental Health has submitted a letter which recommends closure for your site involving the "closure in place" of two 2000 gallon diesel tanks. Regional Board staff have reviewed the file for your site and concurred with this recommendation. Therefore based on the available information for the above site, it appears that further work is not warranted at this time. Further work could be required if conditions change or a water quality threat is discovered at the site.

Please contact Richard Hiett from my staff at (510) 286-4359 if you have any questions regarding the contents of this letter.

Sincerely,

Steven R. Ritchie
Executive Officer

cc: Thomas Peascock, ACHD, 80 Swan Way, Suite 200, Oakland CA 94612

STATE OF CALIFORNIA

PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
2101 WEBSTER STREET, SUITE 500
OAKLAND, CA 94612

Phone: (510) 286-1255
Fax: (510) 286-1380

Carter Hawley Hale
444 South Flower Street
P.O. Box 17902
Los Angeles, CA 90017
Attn: Mr Nick Carpenter

October 13, 1992
File: 2198.17 (UST)

RE: Former Capwells Chevron site at 1911 Telegraph Street, Oakland 94612

Dear Mr. Carpenter,

The Alameda County Department of Environmental Health has submitted letters on July 17, 1992 and August 5, 1992, recommending closure for your site involving the removal and subsequent investigation of four underground storage tanks.

Regional Board staff have reviewed the file for your site and do not concur with this recommendation. The following information is needed to consider the county's recommendation for closure:

1) Determine the lateral and vertical extent of contamination in soil.
2) Determine the hydraulic gradient.
3) Determine the extent of contamination in groundwater. 3500 ppb TPH is a confirmed release that appears to have resulted from the former UST's on your property.

I have included a copy of both the Tri-Regional Guidelines Board staff recommendations for the preliminary evaluation and investigation of underground storage tanks and our office's recommended format for case closure. All items in the case closure recommendations need to be met for a groundwater contamination case to be considered for closure.

Please contact me if you have any questions regarding the contents of this letter at (510) 286-4359.

Sincerely,

Richard C. Hiett
Water Resource
Control Engineer

cc: Thomas Peacock, ACHD, 80 Swan Way, Suite 200, Oakland CA 94612

TRI - REGIONAL BOARD STAFF RECOMMENDATIONS FOR PRELIMINARY EVALUATION AND INVESTIGATION OF UNDERGROUND TANK SITES

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

10 AUGUST 1990

Prepared by Staff of

North Coast Regional Water Quality Control Board

San Francisco Bay Regional Water Quality Control Board

Central Valley Regional Water Quality Control Board

TABLE OF CONTENTS

REGIONAL BOARD STAFF RECOMMENDATIONS FOR INITIAL EVALUATION AND INVESTIGATION OF UNDERGROUND TANKS 10 AUGUST 1990

INTRODUCTION

Chapter 6.7, Division 20 of the Health and Safety Code and the California Underground Storage Tank Regulations (Subchapter 16 of Title 23 of the California Code of Regulations), established a program for regulation of underground storage tanks which requires local implementing agencies to permit, inspect and oversee monitoring programs to detect leakage of hazardous materials from underground storage tanks. Cleanup of contaminated soil and ground water resulting from a leak or unauthorized discharge from an underground storage tank or appurtenant piping may be directed by the local implementing agency -- with or without a contract with the State Water Resources Control Board (SWRCB) -- or by the Regional Water Quality Control Board (Regional Board). In either case, the various agencies will coordinate to ensure that requirements from each agency are consistent.

This document contains recommendations for investigating underground tanks developed by staff from three Regional Boards which share common boundaries (North Coast, Region 1; San Francisco Bay Area, Region 2; and Central Valley, Region 5). Several technical documents have been prepared independently by local implementing agencies, Regional Boards, and SWRCB for evaluating and investigating underground tank leaks. The Leaking Underground Fuel Tank (LUFT) manual was recently developed as a state and local interagency guidance document limited primarily to motor vehicle fuel contamination of soils. This present staff recommendation document is intended to expand on and clarify, and, in some cases, present alternatives to several areas addressed in LUFT.

These recommendations are for the initial investigation of underground tank leak incidents and routine tank removals. They describe a systematic approach for determining which actions are required, including soil cleanup only or a more comprehensive soil/ground water investigation. Staff of Regions 1, 2, and 5 may consider other approaches which have demonstrated validity, but strongly encourage the use of the following guidelines during the preliminary site investigation in these Regions. The primary objective of this document is to provide uniform procedures for performing the investigation.

LEAD AGENCY

In cases where the results indicate that only the soil has been impacted, the appropriate local implementing agency may be the lead agency with the Regional Board in an advisory capacity as needed. If the ground water has been impacted then the lead agency will be either the Regional Board or local implementing agency. If non-fuel constituents are detected in the soil or ground water, the Regional Board will be the lead agency unless special arrangements are made. In all cases the local implementing agency and the Regional Board will coordinate as necessary to provide consistency and concurrence in the appropriate investigative and remedial actions proposed. [SUPPLEMENTS SECTION I.D OF LUFT]

REPORT REQUIREMENTS

ALL WORK AND REPORTS WHICH REQUIRE GEOLOGIC OR ENGINEERING EVALUATIONS AND/OR JUDGEMENTS MUST BE PERFORMED UNDER THE DIRECTION OF AN APPROPRIATELY REGISTERED OR CERTIFIED PROFESSIONAL. (See sections 6735, 7835, and 7835.1 of the Business and Professions Code). Also Rule 415 of the Professional and Vocational Regulations is to be followed which states:

> "A professional engineer...registered or licensed under this Code shall practice and perform engineering ...work only in the field or fields in which he is by education and/or experience fully competent and proficient."

A statement of qualifications for each lead professional should be included in all reports. Initial tank removal and soil sampling does not require such expertise; however, borehole and monitoring well installation and logging, and impact assessments do require such a professional. [SUPPLEMENTS SECTION II D.4.a.1 OF LUFT]

UNDERGROUND TANK INVESTIGATION PROCESS

Figure #1 titled "Underground Tank Investigation Process" shows the procedures to be followed to detect underground tank leaks and to conduct subsequent soil/ground water investigations. The following sections of this document explain these procedures and the rationale upon which they are based. The sections are organized to follow the progression of Figure #1. [SUPPLEMENTS SECTION II B.2.a OF LUFT]

For soil and ground water sampling procedures see Section II titled, "Routine Tank Removal Investigation", and Table #1 titled, "Sampling for Routine Tank Removals". For monitoring well construction details consult the LUFT manual or other appropriate references.

Underground tank leaks generally are detected by one of the following conditions:

1. Nuisance conditions,
2. Inventory reconciliation,
3. Confirmed failed tank system tests, or
4. During routine tank removal.

I. Fuel Leak Indicators

I.1. Nuisance Conditions

The Porter-Cologne Water Quality Control Act defines "nuisance" as anything which:

> "(1) is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property, and (2) affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal, and (3) occurs during or as a result of the treatment or disposal of wastes".

In the context of fuel leaks the term "nuisance conditions" refers to the discovery of fuel or fuel vapors which may be related to nearby spills or leaking underground storage tanks. Nuisance conditions can exist with either known or unknown sources. This document provides guidance for investigating the source of nuisance conditions. [SUPPLEMENTS SECTION II B.4.a OF LUFT]

When the source is not known, the initial step in the investigation is to identify the responsible party (or parties). Examples of nuisance conditions include discovery of vapors or free product in utility vaults, buildings, storm drains or sewers. A preliminary survey of the sites in the immediate vicinity may result in the identification of adjacent facilities that appear likely to have contributed to the observed nuisance condition. In such instances it may be appropriate to limit the radius of search for other potential sources until the local

facilities have been eliminated by more thorough investigation. [ADDS TO LUFT]

Note: The search procedures contained in Chapter III of the National Fire Prevention Association Manual 329, 1987 edition, are to be followed in attempting to locate the source(s).

Where no local source is immediately located, the next response by the local implementing agency should be to locate all fuel tanks within a 2000 foot radius. As the fuel tanks are located, the responsible party for each tank, or tank cluster, is to be notified to review inventory records for the previous six months for each tank, as well as the history of tank/piping repairs or previous fuel leak cleanups. The results of the inventory review are to be summarized and submitted to the local implementing agency along with the history of leaks or repairs. Those facilities whose inventories reveal losses, and those with inadequate inventory records, will be required to perform Precision Tests of tanks and piping (See NFPA 329, Chapter 4). [ADDS TO LUFT]

If the inventory review does not locate potential sources of the nuisance conditions, then all facilities will be required to conduct a Precision Test unless this test was performed within six months prior to leak discovery. (To simplify this investigation phase, it is suggested that the local implementing agency work in concentric radii from the source point by having those nearest the nuisance area conduct the work.) [ADDS TO LUFT]

Based on the results of the inventory reconciliation, repair leak history and precision tests, two basic responses by the local implementing agency are possible:

A. Some facilities will show no inventory loss, pass the precision test and will have an acceptable history of repairs or leaks. For these facilities additional investigation is not necessary unless all facilities within 2000 feet meet these conditions. In this case those facilities closest to the nuisance conditions will be required to conduct an initial soil/ground water investigation. [ADDS TO LUFT]

B. All facilities which have a confirmed inventory loss or tank system test failure per Subchapter 16, Section 2644 will be required to conduct an initial soil/ground water investigation. Those facilities with a history of repair(s) and/or leak(s) may also be required to perform an initial soil/ground water investigation. At those sites where an initial investigation is necessary, the responsible party is

to follow the procedures outlined in Section III below. [ADDS TO LUFT]

I.2. Inventory Losses

Subchapter 16 designates inventory reconciliation as a component of several monitoring alternatives. Section 2644 of Subchapter 16 describes inventory reconciliation procedures and tank system failure criteria. If an inventory loss is confirmed per Section 2644 then the responsible party must immediately abate the leak. At this point the responsible party has two options:

A. In some circumstances Subchapter 16 and local fire regulations may allow the tank system to be repaired and operation to continue. However, a soil/ground water investigation must be conducted (See Section III). [ADDS TO LUFT]

B. The tank can be removed per local agency or Subchapter 16 requirements and the routine tank removal investigation procedures outlined in Section II are to be followed. [ADDS TO LUFT]

I.3. Confirmed failed tank system test

Subchapter 16 delineates monitoring alternatives for underground storage tanks. Underground storage tank precision testing is included in several of these alternatives. Section 2643 of Subchapter 16 outlines the specific criteria for evaluating failure of underground storage tank systems. If a leak has been confirmed per Section 2643, then the responsible party must immediately abate the leak (All tank test results are to be reported to the local agency). At this point the responsible party has two options:

A. In some circumstances Subchapter 16 and local fire regulations may allow the tank system to be repaired and operation to continue. However, a soil/ground water investigation must be conducted (See Section III). [ADDS TO LUFT]

B. The tank can be removed per local agency or Subchapter 16 requirements and the routine tank removal investigation procedures outlined in Section II are to be followed. [ADDS TO LUFT]

II. Routine Tank Removal Investigation

When any underground storage tank is removed, whether for permanent site closure or tank replacement, the responsible party is to demonstrate that no unauthorized release from the tank has occurred. At a minimum a visual inspection of the tank system, and soil samples (and ground water samples when appropriate) are required. Laboratory analyses of samples are necessary to comply with the provisions of Subchapter 16. Field vapor detection methods are neither reproducible nor quantifiable. Laboratory analyses are required for closure decisions. However, the field vapor methods can provide some additional confidence for tank pit closure. [SUPPLEMENTS SECTION II C.1 OF LUFT]

A visual inspection of the tank and excavation must be conducted upon tank removal. All external tank surfaces and fittings are to be inspected for evidence of holes or leakage. The results of such inspection are to be documented in writing, with photographs where appropriate.

II.1. Obvious Tank System Failure

If a tank system failure is evident, a soil/ground water investigation is necessary. Holes in tanks or piping and stained soil beneath loose fittings are examples of evidence for tank system failures. (See Section III).

II.2. No Obvious Tank System Failure

Soil and/or ground water verification samples from the tank excavation are to be analyzed IN A STATE CERTIFIED LABORATORY. The number of soil samples and required Minimum Verification Analyses, are delineated in Tables 1 & 2 respectively.

These results are used in conjunction with other factors such as permeability of the soil, and residual soil contamination, to determine whether further action is required. Each case will fall into 1 of 3 groupings:

CASE #1: soil/ground water investigation required;
CASE #2: no further action required;
CASE #3: site specific analysis required.

[CASES 1 & 2 ARE DIFFERENT FROM LUFT REQUIREMENTS IN SECTION II D.1.a OF LUFT, WHILE CASE 3 IS NOT ADDRESSED BY LUFT]

CASE #1
Soil/Ground water Investigation Required

A soil/ground water investigation, as described in Section II.2, is required if ANY of the following conditions are found:

A. The concentration of either total petroleum hydrocarbon and/or total oil and grease is greater than 100 ppm in soil samples within the first two feet of native soil beneath the tank.

Local Implementing Agency and Regional Board experience has shown generally that large discharges are likely to have occurred when levels of contamination exceed 100 ppm in the soil.

NOTE: THE 100 PPM LEVEL IS NOT A CLEAN-UP LEVEL. THE ORIGIN OF THE 100 PPM LEVEL WAS TO DEVELOP A METHOD TO PRIORITIZE THE CASE LOAD AND INDICATE WHETHER A SIGNIFICANT VOLUME OF FUEL HAD BEEN RELEASED OR DISCHARGED. THE LEVEL OF CLEAN-UP IS TO BE DETERMINED BY ASSESSING THE POTENTIAL IMPACT OF RESIDUAL SOIL CONTAMINATION ON THE GROUND WATER. IN MANY INSTANCES IT MAY NOT BE APPROPRIATE TO LEAVE SOIL IN-PLACE WHICH IS CONTAMINATED WITH TOTAL PETROLEUM HYDROCARBONS OR OTHER COMPOUNDS AT ANY CONCENTRATION.

B. Detectable concentrations of any petroleum hydrocarbons are verified in the soil at or below the seasonal high ground water level. Sidewall samples, in addition to samples from the base of the excavation may be taken to verify that no lateral migration of the pollutants has occurred. If detectable petroleum hydrocarbons are found in these sidewall samples, then a soil/ground water investigation is required.

Ground water levels may fluctuate significantly from the wet to the dry season. The presence of contaminated soil at or below the seasonal high ground water level indicates the possibility that the ground water has or will have come into contact with this soil and thus become contaminated. Therefore, a soil/ground water investigation is appropriate.

Note: In the event the seasonal high ground water level is located in the backfill, this condition may not be applicable if the soil samples from two feet below the backfill and from the side walls show no contamination. (i.e. the contamination was restricted to backfill material only).

The following may be acceptable sources of the depth to ground water data:

- Borehole logs or monitoring well data from the site.
- Existing reports on adjacent sites which provide representative data.
- Site specific data on depth to ground water from local departments of public works, or county water studies (not California Department of Water Resources regional water table data or general U.S. Geological Survey data, etc.).

Note: Data must include information concerning the depth to first ground water during the wet season. Regional maps and other non-site specific materials may not be appropriate.

C. Detectable levels of any petroleum hydrocarbons are found in the soil sample(s) beneath the tank, within the first two feet of native soil and the soil contains layers of sand, gravel, and/or other high permeability material.

Pollutants are known to migrate rapidly through soil containing layers of sand, gravel and/or other highly permeable material (such as fractured bedrock). Therefore, Regional Board staff concur that any detectable level of petroleum hydrocarbons in soil containing high permeability layers may indicate a ground water problem and, further investigation is warranted (Section III).

D. The ground water has potentially been impacted as evidenced by detectable levels of petroleum hydrocarbons in the water sample(s) from the tank excavation.

Water samples and analyses are required when there is ground water in the tank excavation (Section III). Detectable levels of petroleum hydrocarbons in the water in the excavation are an indication that the ground water has been impacted. Therefore, a soil/ground water investigation is required.

Inconsistant Results: Interpretation of the soil samples taken at the time of tank removal are to be consistent with field observations and Tables 1 and 2. If soil samples are all nondetectable, were taken in full accordance with Tables 1 and 2, and are consistent with site observations, then no further action is required. However, if the data are in conflict, such as nondetectable results when obvious contamination was present in the backfill, an assessment of the site in accordance with the factors in Table 3 must be completed and submitted to the Regulatory Agencies for evaluation.

CASE #2
No Further Action Required

A ground water investigation is not required when all of the following conditions are met:

A. The total petroleum hydrocarbon and/or total oil and grease levels are less than 100 ppm in the soil samples beneath the tank, within the first two feet of native soil.

NOTE AGAIN THAT THE 100 PPM LEVEL IS NOT A CLEAN-UP LEVEL. THE ORIGIN OF THE 100 PPM LEVEL WAS TO DEVELOP A METHOD TO PRIORITIZE THE CASE LOAD AND INDICATE WHETHER A SIGNIFICANT VOLUME OF FUEL HAD BEEN RELEASED OR DISCHARGED. THE LEVEL OF CLEAN-UP IS TO BE DETERMINED BY ASSESSING THE POTENTIAL IMPACT OF RESIDUAL SOIL CONTAMINATION ON THE GROUND WATER. IN MANY INSTANCES IT MAY NOT BE APPROPRIATE TO LEAVE SOIL IN-PLACE WHICH IS CONTAMINATED WITH TOTAL PETROLEUM HYDROCARBONS OR OTHER COMPOUNDS AT ANY CONCENTRATION.

B. No detectable residues for petroleum hydrocarbons are found in the soil at/below the seasonal high ground water level.

NOTE: At the discretion of the local agency, in addition to the samples from the base of the excavation, sidewall samples from the excavation may be taken to verify that no lateral migration of pollutants has occurred.

C. The soil has low permeability; predominantly silt and clay with no sand and/or gravel layers.

D. The ground water has not been impacted as evidenced by non-detectable levels of petroleum hydrocarbons in the water sample(s) from the tank excavation.

Regional Board staff concur that if the above conditions are satisfied the site should not pose a significant water quality threat. However, conditions may exist, i.e. an extremely sensitive site, where additional investigation is appropriate.

Site Closure Requirements: All factors in Table 3 must be considered when evaluating a Case #2 closure. Although all factors may not be applicable or obtainable, the Local Implementing Agency and Regional Board expect the Responsible Party to present as much information as possible; and, where the information is not applicable or available, explain why it is not. Submittal of a complete closure request addressing A, B, C, and D above, and Table 3 will allow the Regulatory Agencies to evaluate the closure request expeditiously.

CASE #3
Site Specific Analysis Required

Whenever solvents or non-fuel contaminants are detected in the soil or ground water, further work will be required on a site specific basis. Generally, a soil/ground water investigation will be required.

III. Soil/Ground Water Investigation

As indicated in Figure #1, a soil or ground water investigation is required in any of the following instances:

- Source identified through nuisance conditions
- Inventory loss confirmed per Subchapter 16 (without tank removal)
- Confirmed failed tank system test (without tank removal)
- Leak confirmed during routine tank removal inspection procedures.

These investigations are divided into the following two categories, based on the general depth to ground water from ground surface:

Category #1: **Seasonal high ground water less than 50 feet (Shallow Ground Water).**

Category #2: **Seasonal high ground water greater than 50 feet (Deep Ground Water).**

[CATEGORY #1 AND CATEGORY #2 CLASSIFICATIONS ARE DIFFERENT FROM THE LUFT LEACHING POTENTIAL ANALYSIS]

The intent of these divisions is to insure the protection of the shallow ground water zones while allowing flexibility in situations where the ground water zone is deep and less likely to be impacted by leaks from underground storage tanks. The bottoms of large underground storage tanks are usually located 10-15 feet below the surface. Therefore "deep" ground water has a minimum 35-40 foot buffer zone from the tank bottom to the ground water. Regional Board staff believe that this zone may, in specific instances, adequately prevent pollutant migration into the ground water. Therefore, in cases where the depth to ground water is greater than 50 feet, a site specific approach is warranted. [LUFT REQUIRES REGIONAL BOARD CONCURRENCE]

III.1. Seasonal High ground water less than 50 feet

In cases where a soil/ground water investigation has been required and the depth to the seasonal high ground water is less than 50 feet, the responsible party must complete the following work (See Section III, and the LUFT manual for details concerning soil sampling and monitoring well construction):

III.1.a. Soil samples to determine the extent of the soil contamination

Soil samples are to be taken to determine the extent of soil contamination. During the construction of all monitoring wells and boreholes, soil samples are to be taken at a minimum of every five feet in the unsaturated zone and at any changes in lithology. For construction of the monitoring well (See III.1.b) within 10 feet of the contaminant source, all samples collected are to be analyzed in the laboratory for the appropriate constituents (Table #2). For soil samples from additional monitoring wells, field meters may be used as a screening device only. Confirming laboratory analyses must be performed.

Soil samples taken during monitoring well construction may not be adequate to define the extent of soil contamination. Additional boreholes, soil sampling, and analyses may be necessary.

III.1.b. Install one monitoring well within 10 feet of the tank in the verified downgradient direction.

If the verified downgradient direction has been previously determined at this site or at adjacent sites which provide representative data, then for this initial investigation, only one monitoring well within 10 feet of the tank, in the verified downgradient direction, will be required. The verified downgradient direction in these previous investigations must have been determined using data from a minimum of three monitoring wells, piezometers or other appropriate techniques. Monitoring wells and piezometers should be completed in the same water-bearing zone and constructed in the same manner. If verified downgradient direction data is not available, then a minimum of three monitoring wells will be required to determine the verified downgradient direction. [SUPPLEMENTS SECTION II D.6.a OF LUFT]

III.2. Seasonal high ground water greater than 50 feet

In cases where a soil/ground water investigation has been required and the depth to the seasonal high ground water is greater than 50 feet, the responsible party must complete the following work:

III.2.a. Determine the extent of the soil contamination.

Field meters are acceptable screening tools, but laboratory analysis of soil samples are required for verification of the extent of soil contamination. [SUPPLEMENTS LUFT SECTION II C.2]

III.2.b. Install monitoring well(s) per Regional Board guidance.

The Regional Board will assess the necessity of monitoring wells on a site-specific basis.

GROUND WATER MONITORING REQUIREMENTS

If ground water contamination is not discovered, some minimum ground water monitoring may still be required depending on the depth of the soil contamination. Ground water monitoring frequency and analyses will be established by the local agency with Regional Board concurrence.

If ground water contamination is discovered and/or floating product is found, a monitoring well sampling frequency must be established with Regional Board staff concurrence. Monitoring well sampling is to occur on a frequency based on the site and vicinity characteristics. It may be appropriate to begin with weekly sampling of the water level, free product and dissolved constituents, with the frequency reduced to a monthly or quarterly interval as sufficient information is collected. Quarterly monitoring is the maximum sampling interval typically allowed when ground water contamination is present unless other arrangements are made with Regional Board staff. [ADDS TO LUFT]

SOIL AND GROUND WATER SAMPLING AND ANALYSIS FOR ROUTINE TANK REMOVALS

Table #1, titled "Sampling For Routine Tank Removals", specifies the minimum number and location of soil and ground water samples to be taken upon routine tank removal. The number of samples and the location of the samples varies depending on the tank size.

The number of samples required was calculated in accordance with Subchapter 16, Section 2672d.1 specifications. The chart presents two cases: Case A (no water in excavation), only soil samples are required; and Case B (ground water in excavation), both soil and ground water samples are required. The following sections explain soil and ground water sampling procedures. [ADDITIONAL TO LUFT]

CASE A

Water is Not Present in the Tank Pit - Soil Samples Required

Soil samples are to be collected from beneath the tank pit a maximum of two feet into the native soil. The location and number of samples is specified in Table #1. If obviously stained or contaminated areas are detected in locations other than the specified locations, then additional soil samples are to be taken from the stained or contaminated areas.

Samples are to be taken using a driven-tube type sampler, capped and sealed with inert materials (see below), and extruded in the lab in order to reduce the loss of volatile materials. Formal signed chain-of-custody records are to be maintained for each sample and submitted with the analytical results to the regulating agency. [SUPPLEMENTS SECTION II D.1.a & b OF LUFT]

The following alternative sampling method may be used if samples cannot be safely collected from the excavation by the above method:

- Immediately upon removal of the tank, a backhoe bucket of native soil from each sample location is to be taken from the native soil/backfill interface. This soil is to be rapidly brought to the surface.

- Approximately three inches of soil is to be rapidly scraped away from the surface, then a clean brass tube (at least three inches long) is to be driven into the soil with a suitable instrument (e.g. a wood mallet or hammer). The ends of the tube are covered with aluminum foil, then plastic end caps, and finally wrapped with a suitable tape such as duct tape. Once properly capped, the samples are to be immediately placed on ice, or dry ice, for transport to a laboratory. Formal chain-of custody records must be maintained and submitted for each sample.

All piping must be removed and soil samples taken every 20 lineal feet. Soil samples from piping trenches are to be collected in tubes, capped, stored, and transported as described above.

Soil samples are to be analyzed for the appropriate Minimum Verification Analyses specified in Table #2.

CASE B

Water Present in the Tank Pit - Soil and Water Samples Required

If water is present in the tank pit, both soil AND water samples are required. The soil samples are to be taken by the methods outlined in Case A above, from the wall of the tank pit at the soil/ground water interface at the tank ends.

Water samples are to be taken as follows:

Prior to sampling the water from the tank pit for analysis, a visual observation is to be made for evidence of floating product. All observations are to be recorded.

The tank pit may be purged and allowed to refill before sampling. (The purged water may be stored in drums for disposal or discharged to the sanitary sewer if permission is granted. HOWEVER, IT IS NOT TO BE DISCHARGED TO A STORM DRAIN WITHOUT PRIOR PERMISSION OF THE REGIONAL BOARD.)

Water samples are to be taken which are representative of water in the tank pit. Generally, one water sample is adequate; however, more may be necessary to adequately characterize the water in the tank pit. Samples may be taken manually at the edge of the tank pit, both surface and about 12 to 13 inches below the water surface. However, the sample is to be taken with a device designed to reduce the loss of volatile components. A bailer with a sampling port is a suitable sampling device.

The water is to be transferred into a volatile organic analysis (VOA) vial with as little agitation as possible. A teflon (Registered trademark) septum is to be used to seal the vial. [ADDS TO LUFT]

Soil and water samples are to be analyzed for the appropriate Minimum Verification Analyses specified in Table #2.

FIGURE #1 — UNDERGROUND TANK INVESTIGATION PROCESS

10 AUGUST 1990

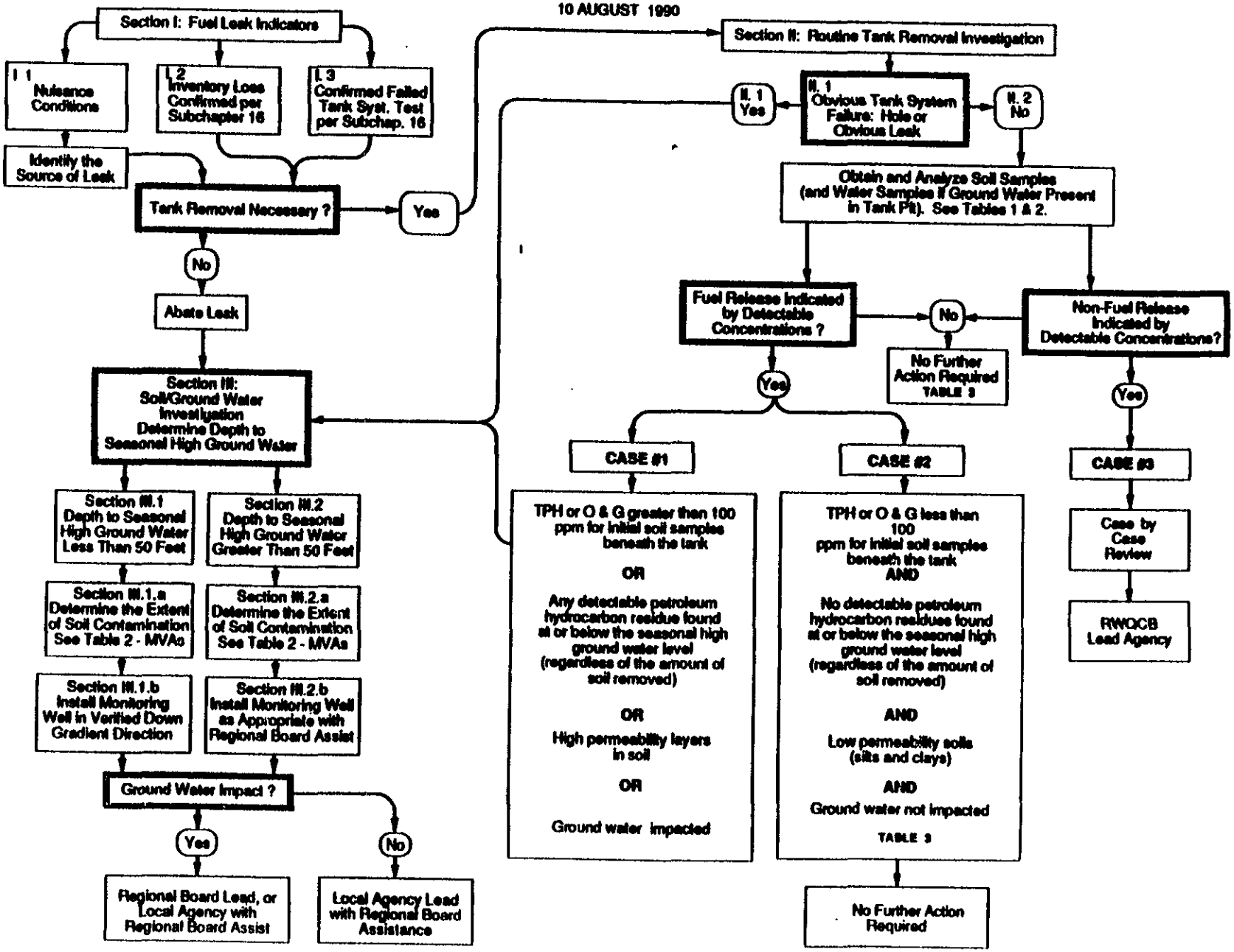


TABLE #1

SAMPLING FOR ROUTINE TANK REMOVALS
10 August 1990

CASE A: Water not present in tank pit

1) Remove a maximum of two feet of native soil before sampling.

2) If areas of obvious contamination are observed, they are to be sampled.

TANK SIZE	MINIMUM NUMBER OF SOIL SAMPLES	LOCATION OF SOIL SAMPLES
Less than 1000 gal.	ONE per tank	Fill or pump end of tank
1000-10,000 gal.	TWO per tank	One at each end of tank
Greater than 10,000 gal.	THREE or more per tank	Ends and middle or generally spaced along the length of the tank
Piping	ONE	Every 20 lineal feet

CASE B: Water present in tank pit

1) The tank pit may be purged and allowed to refill before sampling. The purged water is to be handled correctly.

2) The water sample is to be representative of water in the tank pit.

TANK SIZE	MINIMUM NUMBER OF SOIL SAMPLES	LOCATION OF SOIL SAMPLES	MINIMUM NUMBER OF WATER SAMPLES
10,000 gal. or less (single tank)	TWO	From wall next to tank ends at soil/ground water interface	ONE
Greater than 10,000 gal. or tank cluster	FOUR	From wall next to tank ends at soil/ground water interface	ONE

TABLE #2
REVISED 10 AUGUST 1990

RECOMMENDED MINIMUM VERIFICATION ANALYSES FOR UNDERGROUND TANK LEAKS

HYDROCARBON LEAK	SOIL ANALYSIS	WATER ANALYSIS
Unknown Fuel	TPH G GCFID(5030) TPH D GCFID(3550) BTX&E 8020 or 8240 or TPH AND BTX&E by 8260 CRYOGENIC FOCUSING	TPH G GCFID(5030) TPH D GCFID(3510) BTX&E 602, 624 or 8260
Leaded Gas	TPH G GCFID(5030) BTX&E 8020 or 8240 or TPH AND BTX&E by 8260 CRYOGENIC FOCUSING TOTAL LEAD AA ---Optional--- TEL DHS-LUFT EDB DHS-AB1803	TPH G GCFID(5030) BTX&E 602, 624 or 8260 TOTAL LEAD AA TEL DHS-LUFT EDB DHS-AB1803
Unleaded Gas	TPH G GCFID(5030) BTX&E 8020 or 8240 or TPH AND BTX&E by 8260 CRYOGENIC FOCUSING	TPH G GCFID(5030) BTX&E 602, 624 or 8260
Diesel	TPH D GCFID(3550) BTX&E 8020 or 8240 or TPH AND BTX&E by 8260 CRYOGENIC FOCUSING	TPH D GCFID(3510) BTX&E 602, 624 or 8260
Jet Fuel	TPH D GCFID(3550) BTX&E 8020 or 8240 or TPH AND BTX&E by 8260 CRYOGENIC FOCUSING	TPH D GCFID(3510) BTX&E 602, 624 or 8260
Kerosene	TPH D GCFID(3550) BTX&E 8020 or 8240 or TPH AND BTX&E by 8260 CRYOGENIC FOCUSING	TPH D GCFID(3510) BTX&E 602, 624 or 8260
Fuel/Heating Oil	TPH D GCFID(3550) BTX&E 8020 or 8240 or TPH AND BTX&E by 8260 CRYOGENIC FOCUSING	TPH D GCFID(3510) BTX&E 602, 624 or 8260
Chlorinated Solvents	CL HC 8010 or 8240 BTX&E 8020 or 8240 or CL HC AND BTX&E 8260	CL HC 601 or 624 BTX&E 602 or 624 or CL HC AND BTX&E 8260
Non Chlorinated Solvents	TPH D GCFID(3550) BTX&E 8020 or 8240 or TPH AND BTX&E 8260	TPH D GCFID(3510) BTX&E 602 or 624 or TPH AND BTX&E 8260
Waste and Used Oil or Unknown (All analyses must be completed and submitted)	TPH G GCFID(5030) TPH D GCFID(3550) or TPH AND BTX&E by 8260 CRYOGENIC FOCUSING O & G 5520 D&F BTX&E 8020 or 8240 CL HC 8010 or 8240 ICAP or AA TO DETECT METALS: Cd, Cr, Pb, Zn, Ni METHOD 8270 FOR SOIL OR WATER TO DETECT: PCB* PCP* PNA CREOSOTE	TPH G GCFID(5030) TPH D GCFID(3510) O & G 5520 C&F BTX&E 602, 624 or 8260 CL HC 601 or 624 PCB* PCP* PNA CREOSOTE

*If found, analyze for dibenzofurans (PCBs) or dioxins (PCP)

EXPLANATION FOR TABLE #2: MINIMUM VERIFICATION ANALYSIS

1. OTHER METHODOLOGIES are continually being developed, and as methods are accepted by EPA or DHS, they also can be used.

2. For DRINKING WATER SOURCES, EPA recommends that the 500 series for volatile organics be used in preference to the 600 series because the detection limits are lower and the QA/QC is better.

3. APPROPRIATE STANDARDS for the material stored in the tank are to be used for all analyses on Table #2. For instance, seasonally, there may be five different jet fuel mixtures to be considered.

4. TO AVOID FALSE POSITIVE detection of benzene, benzene-free solvents are to be used.

5. TOTAL PETROLEUM HYDROCARBONS (TPH) as gasoline (G) and diesel (D) ranges (volatile and extractible, respectively) are to be analyzed and characterized by GCFID with a fused capillary column and prepared by EPA method 5030 (purge and trap) for volatile hydrocarbons, or extracted by sonication using 3550 methodology for extractible hydrocarbons. Fused capillary columns are preferred to packed columns; a packed column may be used as a "first cut" with "dirty" samples or once the hydrocarbons have been characterized and proper QA/QC is followed.

6. TETRAETHYLLEAD (TEL) analysis may be required if total lead is detected unless the determination is made that the total lead concentration is geogenic (naturally occurring).

7. CHLORINATED HYDROCARBONS (CL HC) and BENZENE, TOLUENE, XYLENE AND ETHYLBENZENE (BTX&E) are analyzed in soil by EPA methods 8010 and 8020, respectively, (or 8240) and for water 601 and 602, respectively, (or 624).

8. OIL AND GREASE (O & G) may be used when heavy, straight chain hydrocarbons may be present. Infrared analysis by method 418.1 may also be acceptable for O & G if proper standards are used. "Standard Methods" 17th Edition, 1989, has changed the 503 series to 5520.

9. PRACTICAL QUANTITATION REPORTING LIMITS are influenced by matrix problems and laboratory QA/QC procedures. Following are the Practical Quantitation Reporting Limits:

	SOIL PPM	WATER PPB
TPH G	1.0	50.0
TPH D	1.0	50.0
BTX&E	0.005	0.5
O & G	50.0	5,000.0

Based upon a Regional Board survey of Department of Health Services Certified Laboratories, the Practical Quantitation Reporting Limits are attainable by a majority of laboratories with the exception of diesel fuel in soils. The Diesel Practica. Quantitation Reporting Limits, shown by the survey, are:

Routine	Modified Protocol
≤ 10 ppm (42%)	≤ 10 ppm (10%)
≤ 5 ppm (19%)	≤ 5 ppm (21%)
≤ 1 ppm (35%)	≤ 1 ppm (60%)

When the Practical Quantitation Reporting Limits are not achievable, an explanation of the problem is to be submitted on the laboratory data sheets

10. LABORATORY DATA SHEETS are to be signed and submitted which include the laboratory's assessment of the condition of the samples on receipt including temperature, suitable container type, air bubbles present/absent in VOA bottles, proper preservation, etc. The sheets are to include the dates sampled, submitted, prepared for analysis, and analyzed.

11. IF PEAKS ARE FOUND, when running samples, that do not conform to the standard, laboratories are to report the peaks, including any unknown complex mixtures that elute at times varying from the standards. Recognizing that these mixtures may be contrary to the standard, they may not be readily identified; however, they are to be reported. At the discretion of the LIA or Regional Board the following information is to be contained in the laboratory report:

    - The relative retention time for the unknown peak(s) relative to the reference peak in the standard,
    - copies of the chromatogram(s),
    - the type of column used,
    - initial temperature,
    - temperature program in °C/minute, and
    - the final temperature.

12. REPORTING LIMITS FOR TPH are: gasoline standard ≤ 20 carbons, diesel and jet fuel (kerosene) standard ≤ 50 carbons. It is not necessary to continue the chromatography beyond the limit, standard, or EPA/DHS method protocol (whichever time is greater).

EPILOGUE

ADDITIVES: Major oil companies are being encouraged or required by the federal government to reformulate gasoline as cleaner burning fuels to reduce air emissions. MTBE (Methyl-tertiary-butyl ether), ETHANOL (ethyl alcohol), and other chemicals may be added to reformulated gasolines to increase the oxygen content in

the fuel and thereby decrease undesirable emissions (about four percent with MTBE). MTBE and ethanol are, for practical purposes, soluble in water. The removal from the water column will be difficult. Other compounds are being added by the oil companies for various purposes. The refinements for detection and analysis for all of these additives are still being worked out. If you have questions about the methodology, please call your Regional Board representative.

TABLE #3

Case 2 Closures

In addition, the following information and appropriate data for Appendix A shall be submitted when evaluating Case 2 Closures. All conditions listed in Case #2 (page 9) must be met.

SITE HISTORY

1. Describe the size, age, condition, use, and type of tank removed, and submit a map showing the former tank system and existing buildings on site.
2. Submit an evaluation of the inventory records reviewed for the three months prior to removal in order to estimate the quantity of product released.
3. Submit a summary of past site information, such as precision test results, tank repairs or construction activities.
4. What types of businesses operated at this site previously?
5. What was the product volume pumped per month for each tank?
6. Submit a survey of nearby wells.
7. List other sources of site specific information checked (e.g. Utility Company, Public Works Department, US and State Geologic Surveys, State and County Health Department, County and Regional Planning, local fire departments, etc.).

SITE CHARACTERISTICS

1. Describe evidence of leakage present (e.g. stained soil, free product, odors, etc.).
2. Describe visible preferential pathways (sand lens, root holes, etc.) in the excavation pits.
3. Submit site map of surface waterbodies (ponds, creeks, stream, etc.) or possible subsurface conduits (sewers, septic tanks, utility lines, etc.) in the vicinity of the site.

SAMPLING AND ANALYSIS

(If the answer to any of the following is NO, full explanations are required)

1. Were additional samples (other than the minimum required) taken where obviously contaminated soil was present?
2. Did sampling and analytical protocols conform to standards described in LUFT and this document?
3. Were the appropriate laboratory analyses used (see Table 2)?
4. Were the laboratory analysis and QA/QC results submitted?
5. In cases of high water table, a) were samples taken from the sidewalls and b) was water present in the excavation pit?
6. Were soil samples taken for every 20 lineal feet of underground piping?
7. Were depth and location of soil samples submitted?

Recommended Format for
Case Closure Referrals to RWQCB for
Site Cleanup Certification

(Draft 6/19/89 DCW)

I. Background History of the Case

An Assessment should be made as to the throughness of the investigation relative to the entire tank system including all tanks and associated piping. At a minimum, this should include a discussion of:

a) Cause and location of the leak, how it was discovered, estimate of the volume the release, duration of the leak, and effectiveness of the leak detection monitoring program

b) Pollutants involved

II. Investigative Methods

An overall evaluation should be made of the investigative methods used, and the validity of the data generated. At a minimum the following methods and procedures should be reviewed for appropriateness:

a) Soil sampling methodology

b) Groundwater monitoring well design, installation, development

c) Groundwater sampling methodology

d) Certified laboratory, chain of custody procedures, sample preservation, holding times, sample preparation methods, and detection limits

e) Soil and/or groundwater analysis performed in accordance to Table 2 of Regional Board Staff Recommendations

f) Method used to measure free product thickness

g) Method used to measure groundwater elevations

III. Extent of Soil and Groundwater Pollution

The vertical and lateral extent of soil and groundwater contamination should be defined to non-detectable levels. All graphic presentations of this data should be reviewed. An assessment should be made as to whether the location and number of monitoring wells and soil samples are adaquate in order to define:

a) Vertical and lateral defination of soil contamination

b) Vertical and lateral definition of free-product and dissolved constituents

IV. Local and Regional Hydrogeology

Reference should be made to the groundwater sensitivity, site specific geology, and hydrogeologic setting of the area. All nearby surface water bodies, municiple, and domestic wells of concern should be noted. An evaluation should be made of all potential pollutant pathways and hydraulic connections. The following information should also be reviewed:

a) Local gradient evaluation and seasonal flucations

b) Graphic presentations such as cross-sections and gradient maps

c) Aquifer characteristics

d) Soil permeability

V. Beneficial Uses

An evaluation should be made of all the existing and potential impacts on benefical uses of surface and ground water. The following information should be summarized:

a) Existing beneficial uses as contained in the Regional Board's Basin Plan, and all potential future benefical uses

b) Well surveys (municiple, agricultural, domestic)

c) Summary of factors affecting long-term fate of contaminants

VI. Remediation Activities

An evaluation should be made as to the effectiveness of all remediation activities undertaken including:

a) Rationale for selected remedial option

b) Soil-remediation method and effectiveness

c) Groundwater remediation method(s) (free-product and dissolved constituents)

d) Interim remediation actions undertaken

e) Impact (potential and/or existing) of remedial actions on beneficial uses

VII. Remediation Effectiveness

An evaluation should be made of the effectiveness of all remediation activities undertaken at the site. At a minimum, the following information should be addressed:

a) Are final cleanup levels consistent with State Water Resources Control Board Resolution 68-16 "Statement of Policy with Respect to Maintaining High Quality of Waters in California"?

b) Verification monitoring program and criteria, rationale, sampling number, frequency, and duration

c) Impact (potential and/or existing) of residual pollutants on benefical uses

VIII. Sign-off

Cases which will be considered for sign-off by the Regional Board or Executive Officer are those in which 1) the release has not impacted groundwater, and does not appear to pose a potential threat to ground and/or surface water, or 2) groundwater has been impacted and the site has been sufficently remediated. This section should include:

a) A summary of findings and rationale for sign-off recommendation

WILLIAMS STREET

SIDEWALK

DRIVEWAY

MW-4
81.03'

MW-2
81.18'

FORMER
WASTE OIL TANK
EXCAVATION

APPROXIMATE DIRECTION OF
GROUNDWATER FLOW

9/24/93

2/7/94

CANOPY

PARKING STRUCTURE

FORMER
GASOLINE TANK
EXCAVATION

MW-1
82.40'

MW-3
81.30'

DRIVEWAY

SIDEWALK

19TH AVENUE

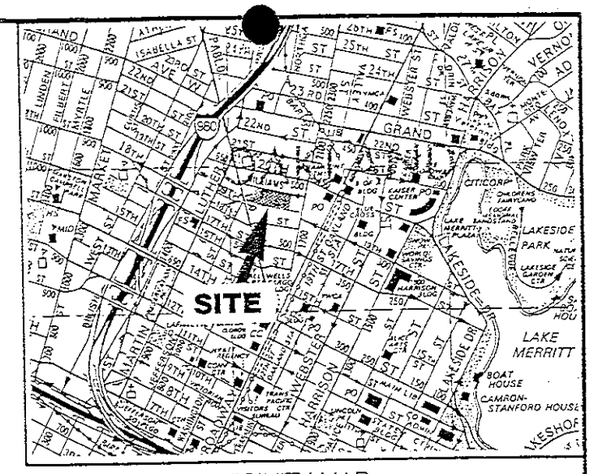
82.0'

81.75'

81.50'

81.25'

81.0'



VICINITY MAP

- 4" DIAMETER MONITORING WELL
- 2" DIAMETER MONITORING WELL
- FORMER TANK EXCAVATIONS
- EXISTING STRUCTURE
- — x — FENCE
- PROPOSED WELL LOCATION
- GROUNDWATER ELEVATION CONTOURS (FEET) 2/7/94
- 81.03' GROUNDWATER ELEVATIONS (FEET) 2/7/94

APPROXIMATE SCALE (feet)

0 30 60

REFERENCE ELEVATION: TOP OF CASING OF MW-3 ASSUMED TO BE 100.00 FEET.

SITE PLAN

Subsurface Consultants

1911 TELEGRAPH AVENUE – OAKLAND, CA

JOB NUMBER	DATE	APPROVED
865.001	2/7/94	

PLATE 1