

ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY  
DAVID J. KEARS, Agency Director



Sent 12/13/99  
Including cc's

ENVIRONMENTAL HEALTH SERVICES  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway  
Alameda, CA 94502-6577  
(510) 567-6700  
(510) 337-9432

**REMEDIAL ACTION COMPLETION CERTIFICATION**

**StID 4048 - 2850 Poplar Street, Oakland, CA  
(1-10K gallon gasoline and 1-5K gallon diesel tanks removed on  
July 23, 1992)**

December 8, 1999

Mr. Robert Linford  
Linford Air and Refrigeration  
2850 Poplar Street  
Oakland, CA 94608

Dear Mr. Linford:

This letter confirms the completion of site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tanks are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, no further action related to the underground tank release is required.

This notice is issued pursuant to a regulation contained in Title 23, Section 2721(e) of the California Code of Regulations.

Please contact our office if you have any questions regarding this matter.

Sincerely,

Mee Ling Tung, Director

cc: Ariu Levi, Chief of Division of Environmental Protection  
Chuck Headlee, RWQCB  
Dave Deaner, SWRCB  
Leroy Griffin, OFD  
files (linford-3)

ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY  
DAVID J. KEARS, Agency Director



Sent 12/13/99  
Including cc's

20902

ENVIRONMENTAL HEALTH SERVICES  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway  
Alameda, CA 94502-6577  
(510) 567-6700  
(510) 337-9432

StID 4048

December 8, 1999

Mr. Robert Linford  
Linford Air and Refrigeration  
2850 Poplar Street  
Oakland, CA 94608

**Re: Fuel Leak Site Case Closure for 2850 Poplar Street, Oakland, CA**

Dear Mr. Linford:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Protection Division is required to use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site. The subject fuel leak case is closed.

**SITE INVESTIGATION AND CLEANUP SUMMARY**

Please be advised that the following conditions exist at the site:

- up to 2,000ppm TPH as gasoline and 2.6ppm benzene exist in soil beneath the site;
- up to 6,000ppb TPHg, 1,800ppb TPHd, and 1,100ppb benzene exist in groundwater beneath the site; and,
- a site safety plan must be prepared for construction workers in the event of excavation/trenching is proposed in the vicinity of residual soil and groundwater contamination.

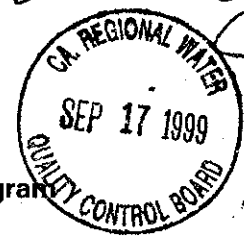
If you have any questions, please contact me at (510) 567-6762.

eva chu  
Hazardous Materials Specialist

enclosures: 1. Case Closure Letter 2. Case Closure Summary

c: Joan Curtis, City of Oakland, CEDA, 250 Frank H Ogawa Plaza, 2<sup>nd</sup> Floor, Oakland, CA  
94612  
files (linford-4)

RB# 01-0913



CTH

**CASE CLOSURE SUMMARY**  
Leaking Underground Fuel Storage Tank Program

**I. AGENCY INFORMATION**

Date: August 24, 1999

Agency name: Alameda County-HazMat  
City/State/Zip: Alameda, CA 94502  
Responsible staff person: Eva Chu

Address: 1131 Harbor Bay Pkwy  
Phone: (510) 567-6700  
Title: Hazardous Materials Spec.

**II. CASE INFORMATION**

Site facility name: Linford Air and Refrigeration  
Site facility address: 2850 Poplar Street, Oakland, CA 94608  
RB LUSTIS Case No: N/A Local Case No./LOP Case No.: 4048  
URF filing date: 7/28/92 SWEEPS No: N/A

<u>Responsible Parties:</u>	<u>Addresses:</u>	<u>Phone Numbers:</u>
Robert Linford Linford Air and Refrigeration	2850 Poplar Street Oakland, CA 94608	510/834-2430

<u>Tank No:</u>	<u>Size in gal.:</u>	<u>Contents:</u>	<u>Closed in-place or removed?:</u>	<u>Date:</u>
1	5,000	Diesel	Removed	7/23/92
2	10,000	Gasoline	"	"

**III. RELEASE AND SITE CHARACTERIZATION INFORMATION**

Cause and type of release: Leaking UST  
 Site characterization complete? YES  
 Date approved by oversight agency: 5/6/99  
 Monitoring Wells installed? Yes Number: 5  
 Proper screened interval? Yes, 10' to 20' bgs in MW-2 and 12' to 22' bgs in MW-1. Groundwater appears to be under semi-confined conditions.  
 Highest GW depth below ground surface: 4.01' Lowest depth: 7.70' in MW-2  
 Flow direction: Predominantly to south and southwest  
 Most sensitive current use: Commercial/Residential  
 Are drinking water wells affected? No Aquifer name: Unknown  
 Is surface water affected? No Nearest affected SW name: NA  
 Off-site beneficial use impacts (addresses/locations): None  
 Report(s) filed? YES Where is report(s) filed? Alameda County  
 Oakland Fire Dept  
 1131 Harbor Bay Pkwy and 505 14<sup>th</sup> St, Ste 510  
 Alameda, CA 94502 Oakland, CA 94612

ENVIRONMENTAL PROTECTION  
99 SEP 31 PM 2:00

**Treatment and Disposal of Affected Material:**

<u>Material</u>	<u>Amount (include units)</u>	<u>Action (Treatment or Disposal w/destination)</u>	<u>Date</u>
Tank	2 USTs	Disposed by Erickson, in Richmond, CA	7/23/92
Soil	100 tons	Recycled at Reed & Graham in San Jose, CA	9/4/92
Groundwater/ Free Product	1450 gallons	Recycled at Demenno Kerdoon in Compton, CA	7/1992

**Maximum Documented Contaminant Concentrations - - Before and After Cleanup**

<u>Contaminant</u>	<u>Soil (ppm)</u>		<u>Water (ppb)</u>	
	<u>Before<sup>1</sup></u>	<u>After<sup>2</sup></u>	<u>Before<sup>3</sup></u>	<u>After<sup>4</sup></u>
TPH (Gas)		2,000	60,000	6,000
TPH (Diesel)		88	3,900	1,800
Benzene		2.6	8,000	1,100
Toluene		5.8	18,000	1,000
Ethylbenzene		3.4	2,000	140
Xylenes		18	13,000	1,300
MTBE		NA	NA	<5
Other	HVOCs	NA	NA	SEE NOTE 5

- NOTE: 1 soil samples were not collected on the day USTs were removed, 7/92  
 2 soil samples collected from the gasoline pit and from the diesel pit after limited overexcavation, 8/92  
 3 maximum historical groundwater concentrations detected in well MW-2 (free product was initially observed on groundwater in the excavations).  
 4 most recent groundwater sampling event in well MW-2, 12/98  
 5 HVOCs, likely from an offsite source, were detected in MW-3 at 1,100ppb TCE, 18ppb cis-1,2-DCE, and 5.6ppb 1,1,2-TCA, 8/98

**IV. CLOSURE**

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? \_\_\_\_\_

Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? \_\_\_\_\_

Does corrective action protect public health for current land use? **YES**

Site management requirements: **A site safety plan must be prepared for construction workers in the event excavation/trenching is proposed in the vicinity of residual soil and groundwater contamination. Shallow groundwater may not be used at the site.**

Should corrective action be reviewed if land use changes? **YES**

Monitoring wells Decommissioned: **None, pending site closure**

Number Decommissioned: **0** Number Retained: **5 monitoring wells and 2 extraction wells**

List enforcement actions taken: **NA** List enforcement actions rescinded: **NA**

**V. LOCAL AGENCY REPRESENTATIVE DATA**

Name: **Eva Chu**

Title: **Haz Mat Specialist**

Signature: 

Date: **9/13/99**

**Reviewed by**

Name: **Barney Chan**

Title: **Haz Mat Specialist**

Signature: 

Date: **8/24/99**

Name: **Thomas Peacock**

Title: **Supervisor**

Signature: 

Date: **9-13-99**

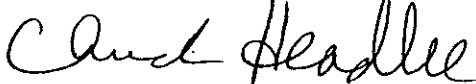
**VI. RWQCB NOTIFICATION**

Date Submitted to RB: **9/14/99**

RB Response:

RWQCB Staff Name: **Chuck Headlee**

Title: **EG**

Signature: 

Date: **9/24/99**

**VII. ADDITIONAL COMMENTS, DATA, ETC.**

The Linford Company operates an air conditioning and heating ventilation duct manufacturing operation at the site. Structures on the site include a manufacturing building and offices, a metal shed, several mobile trailers, and a vacant residential house. (See Figs 1 and 2)

In July 1992 two USTs (1-5K diesel and 1-10K gasoline) in separate pits were removed (see Fig 3). Groundwater was encountered at approximately 11' bgs in each pit. Soil excavated from the diesel tank pit was heavily stained and had a strong petroleum odor. Floating product was present on the groundwater. Free product was pumped from the diesel tank pit

The gasoline UST was constructed of fiberglass. The backfill material was pea-gravel that also emitted hydrocarbon odors. A pinhole was found in the rib of the tank sidewall. Up to 2" of product was floating on the water. Free product was also pumped from the gasoline tank excavation.

In August 1992 the diesel pit was overexcavated, removing ~40cy of contaminated soil. Overexcavation also included the removal of the dispenser island. Soil samples were collected at this time from both excavations. Samples DSW-SW and DSW-NW were collected at 8' bgs from the diesel pit. And GWS-S and GSW-NE were collected at 9' bgs from the gasoline pit (no soil samples below the former dispenser island since the dispenser area was excavated). Up to 2,000ppm TPHg, 88ppm TPHd, and 2.6, 5.8, 3.4, and 18ppm BTEX, respectively, were identified in the soil samples (see Table 1). Groundwater samples were not collected.

A total of approximately 100 tons of soil and pea gravel were removed. Prior to backfilling the excavations, a 4", 0.02 slotted PVC casing was installed horizontally at the bottom of each tank pit. The horizontal piping was connected to a solid 4" PVC casing riser. The piping was placed in case of the need for groundwater remediation. (See Fig 4)

In April 1993 three groundwater monitoring wells (MW-1 through MW-3) were installed at the site to a depth of 20' to 22'bgs. Groundwater was encountered at 11' to 15'bgs. Native soils encountered were predominantly brown/green organic clay. Hydrocarbon constituents were noted in soil and groundwater from wells MW-1 and MW-2. (See Fig 5, Table 2)

In June 1994 three soil borings (BH-S, BH-N, BH-E) and two additional monitoring wells (MW-4 and MW-5) were installed at the site to better delineate the extent of soil and groundwater contamination. Hydrocarbon constituents were not identified in the soil and water samples from these recent borings. (See Table 3)

Groundwater flow direction has ranged from north to southwest to southeast. It predominately flows to the south or southwest. Depth to water in well MW-1 has ranged from 4.15 to 7.71'bgs. Groundwater has been sampled quarterly since the wells were installed until the frequency was reduced to a semi-annual basis in 1997. Hydrocarbon contamination is only noted in wells MW-1 and MW-2, suggesting groundwater may flow to the west, northwest. Up to 6,000ppb TPHg, 1,800ppb TPHd, 1,100ppb benzene is currently in well MW-2 (see Table 4). Residual BTEX in soil and groundwater were compared with Oakland's RBCA Tier 2 Look Up Table for clayey silt sediments. Chemicals of concern in soil and ground water did not exceed the Tier 2 SSTL numbers. (See Table 6)

In August 1998 an offsite investigation was conducted by a site located downgradient (south, southwest of the Linford property at 2711 Union Street. This investigation included the sampling of wells MW-3 and MW-4 at the Linford property for chlorinated solvents (HVOCs). Up to 1,100ppb TCE, 18ppb cis 1,2-DCE and 5.6ppb 1,1,2-TCA were identified in well MW-3. Well MW-4 contained 23ppb TCE (see Fig 6, Table 5). Residual HVOCs in groundwater did not exceed the Oakland's RBCA, Tier 2 SSTLs.

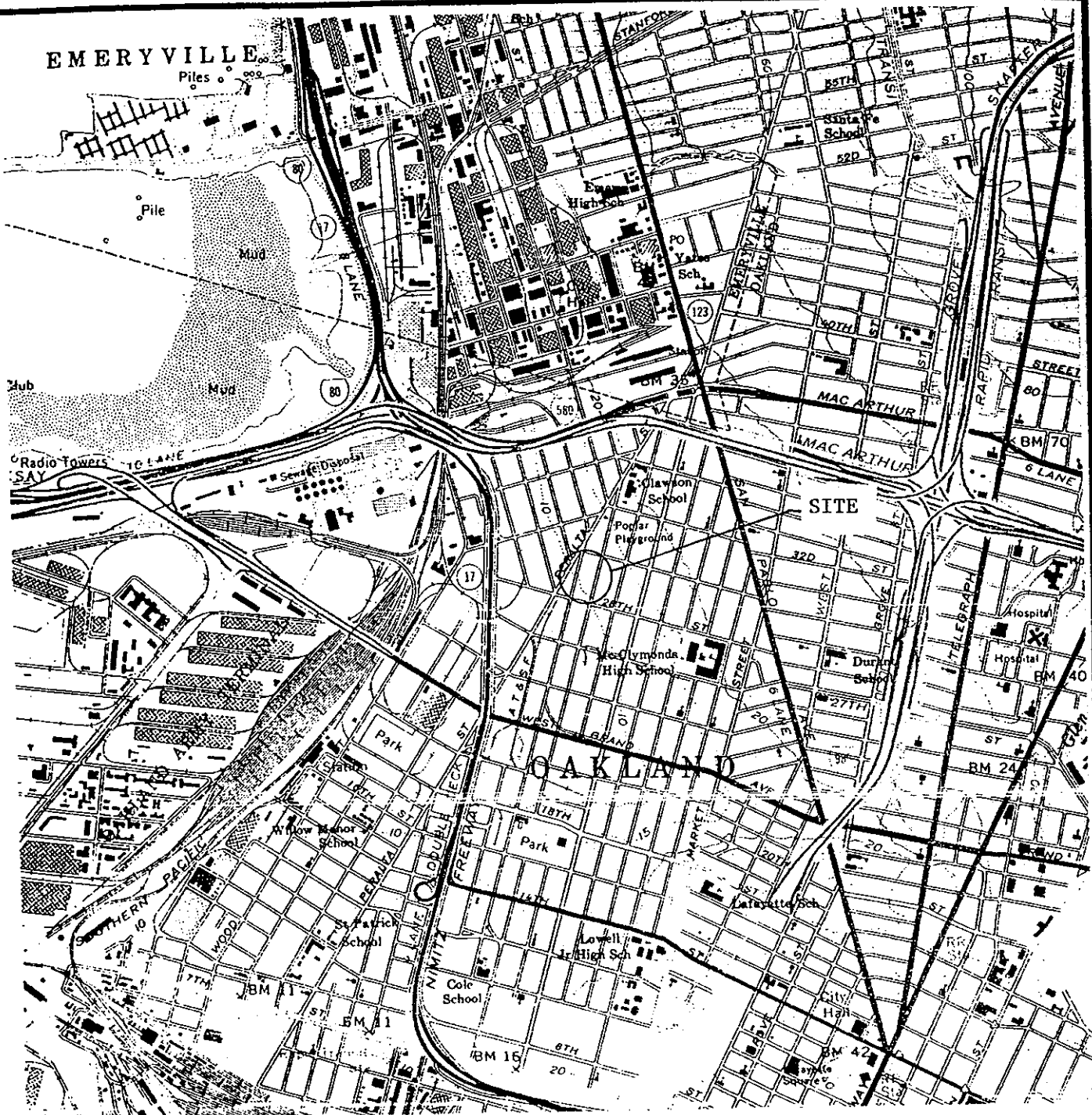
In summary, case closure is recommended because:

- the leak and ongoing sources have been removed;
- groundwater is less than 50 ft deep;
- the site has been adequately characterized;
- the dissolved hydrocarbon plume is not migrating;
- no water wells, surface water, or other sensitive receptors are likely to be impacted; and,
- the site presents no significant risk to human health (less than 1 in 100,000 chance in excess cancer risk) or to the environment.

# EMERYVILLE

Piles

N



## SITE LOCATION MAP

Linford Property  
2850 Poplar Street  
Oakland, California

BASE: Oakland West 7.5 minute quadrangle topographic map, dated 1980, scale 1:24,000.

Aqua Science Engineers

Figure 1

30TH STREET

N

Approximate Scale  
1 inch = 30 feet

FENCE

PARKING  
LOT

HOUSE

OFFICES

TRAILER

MW-2

MW-3

MW-1

LINFORD  
MANUFACTURING  
BUILDING



FORMER TANKS

SHED

FENCE

POPLAR STREET

UNION STREET

28TH STREET

### SITE PLAN

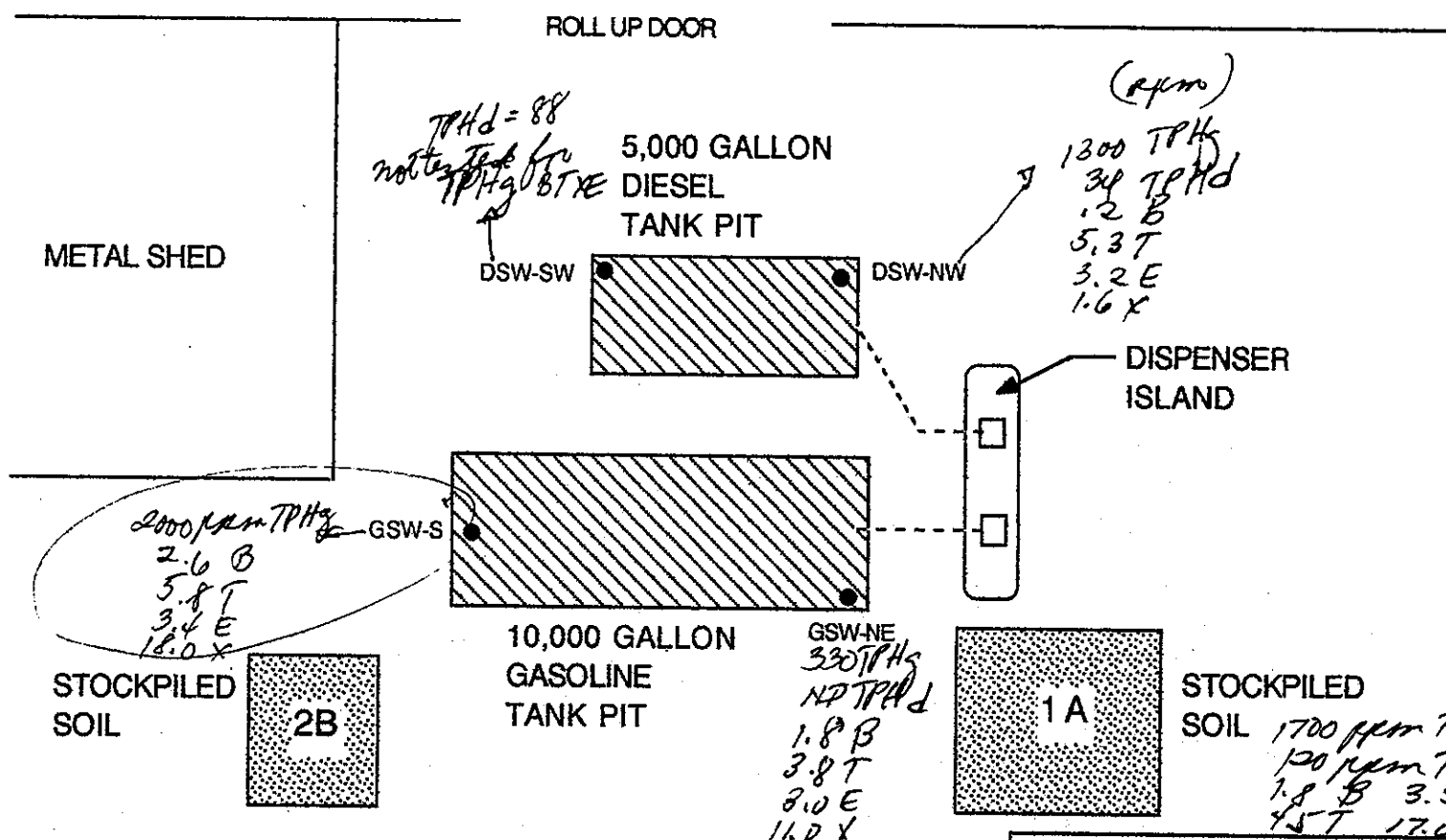
The Linford Company  
2850 Poplar Street  
Oakland, California

Aqua Science Engineers

Figure 2



# LINFORD AIR & REFRIGERATION WAREHOUSE



**LEGEND**

- GSW-NE ● Soil Sample Location
- Tank Pit
- Stockpiled Soil

**AQUA SCIENCE ENGINEERS**

Site Plan  
Linford Air & Refrigeration  
Oakland, CA

Figure 3

TABLE ONE: SOIL SAMPLE RESULTS

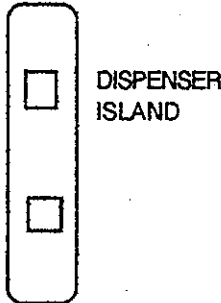
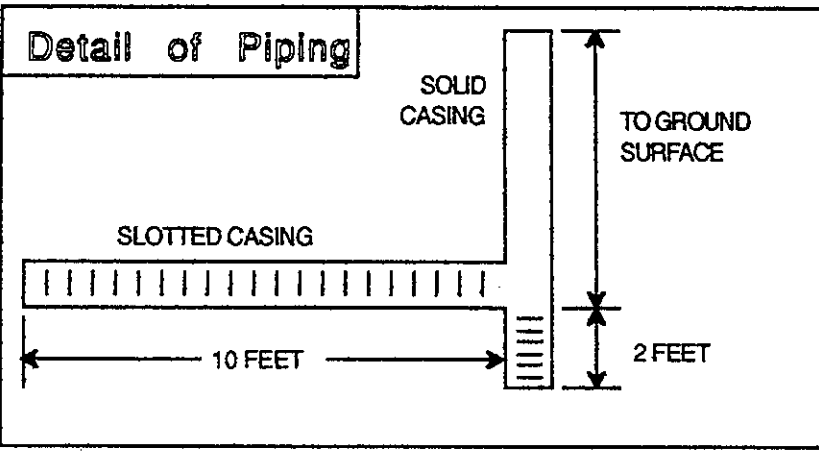
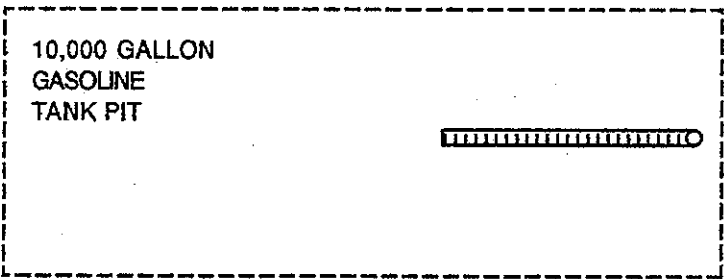
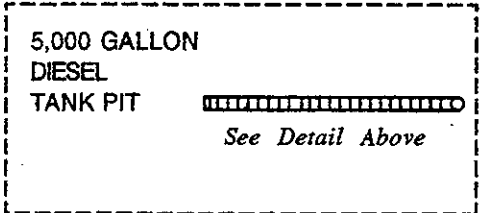
Sample No.	TPH Gasoline (ppm)	TPH Diesel (ppm)	Benzene (ppb)	Toluene (ppb)	Ethyl Benzene (ppb)	Total Xylenes (ppb)
DSW-NW	1300	34	200	5300	3200	1600
DSW-SW	---	88	---	---	---	---
GSW-NE	330	ND	1800	3800	3000	11000
GSW-S	2000	---	2600	5800	3400	18000
STKP-1-A*	1700	120	1800	4500	3300	17000

\* - Composited sample

ND - Non Detectable at analytical method limits

ppm - parts per million

ppb - parts per billion



NOT TO SCALE

<b>AQUA SCIENCE ENGINEERS</b>
Groundwater Extraction Well Location Map
Linford Air & Refrigeration Oakland, CA
Figure 4

POPLAR STREET

NORTH

SCALE  
1" = 40'

GATE

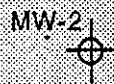


MW-4



MW-5

MANUFACTURING

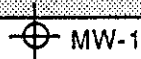


MW-2

OFFICES

28TH STREET

MANUFACTURING



MW-1

FENCE

BH-N

FORMER USTs  
AND PUMP  
ISLAND

BH-S

BH-E

**EXPLANATION**

BH-N ● SOIL BORING

MW-1 ⊕ MONITORING WELL



MW-3

FENCE

SIDEWALK

**SITE PLAN**

The Linford Company  
2850 Poplar Street  
Oakland, California

UNION STREET

AQUA SCIENCE ENGINEERS, INC.

Figure 5

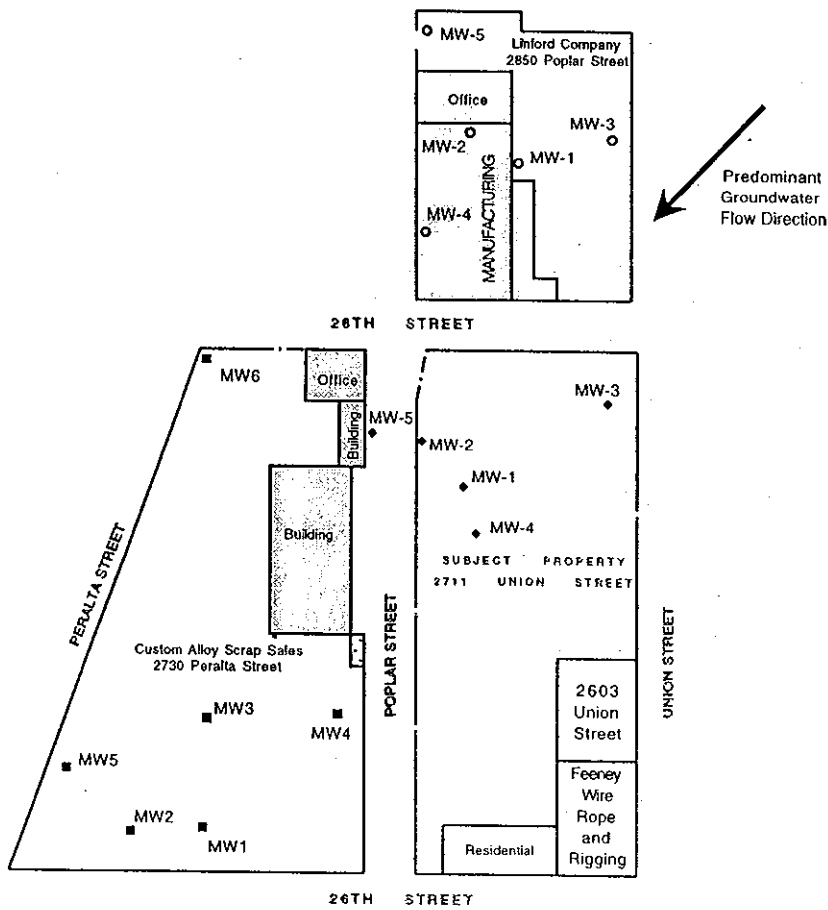
**TABLE ONE 2**  
 Summary of Chemical Analysis of SOIL Samples  
 TPH Gasoline and Diesel, and BTEX

Sample I.D.	TPH Gasoline (ppm)	TPH Diesel (ppm)	Benzene (ppb)	Toluene (ppb)	Ethyl Benzene (ppb)	Total Xylenes (ppb)
MW1-5'	2.4	N.D.	5.4	14	26	40
MW1-10'	14	N.D.	42	46	62	120
MW1-15'	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
MW2-5'	2.3	N.D.	5.1	6.3	17	38
MW2-10'	1.0	N.D.	2.7	4.3	5.1	18
MW3-5'	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
MW3-11'	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
EPA METHOD	5030/ 8015	3550/ 8015	8020	8020	8020	8020

ND Non Detectable  
 ppb parts per billion  
 ppm parts per million  
 --- not analyzed

**TABLE ~~ONE~~ 3**  
**Summary of Chemical Analysis of SOIL Samples**  
**Results are in parts per million**

Sample	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes
MW-4 6.0'	<0.2	<10	<0.005	<0.005	<0.005	<0.005
MW-5 6.0'	<0.2	<10	<0.005	<0.005	<0.005	<0.005
BH-S 6.0'	<0.2	<10	<0.005	<0.005	<0.005	<0.005
BH-E 9.5'	<0.2	<10	<0.005	<0.005	<0.005	<0.005
BH-N 6.0'	<0.2	<10	<0.005	<0.005	<0.005	<0.005
EPA METHOD	5030/ 8015	3550/ 8015	8020	8020	8020	8020



NORTH  
SCALE  
1" = 200'

LEGEND	
•	Monitoring well for 2711 Union Street
○	Monitoring well for 2850 Poplar Street
■	Monitoring well for 2730 Peralta Street

MONITORING WELL LOCATION MAP	
CUSTOM ALLOY SCRAP SALES 2711 UNION STREET OAKLAND, CALIFORNIA	
AQUA SCIENCE ENGINEERS, INC.	FIGURE 06

**TABLE 4**  
**Summary of Analytical Results of WATER Samples**  
 All results are in parts per billion

Well ID & Dates Sampled	TPH-G	TPH-D	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	Total Lead
<u>MW-1</u>								
05-05-93	24,000	< 50	46	50	52	270	---	< 0.0005
08-20-93	2,400	< 50	3.3	4.2	5.7	29	---	< 0.0005
11-18-93	8,200	< 50	201.3	129.3	22.42	65.27	---	---
02-11-94	1,500	1,100*	220	220	75	170	---	---
05-25-94	2,900	300	500	270	270	250	---	---
08-18-94	1,100	930	240	35	130	28	---	---
11-14-94	520	380	76	87	24	96	---	---
02-03-95	21,000	850	4,100	4,500	790	3,300	---	---
04-28-95	15,000	940	5,700	890	630	1,700	---	---
08-08-95	5,500	1,900	1,300	720	300	690	---	---
11-10-95	1,300	500	170	20	78	100	---	---
02-16-96	4,500	710*	1,200	90	400	700	< 10	---
05-17-96	17,000	120*	7,900	770	1,100	3,000	< 120	---
08-16-96	4,400	410	990	180	280	760	< 50	---
11-12-96	3,400	1,100*	680	56	210	710	28	---
02-06-97	20,000	3,300*	4,500	2,800	840	2,800	< 1,000	---
05-28-97	11,000	2,900*	2,700	320	620	1,800	110	---
12-10-97	9,600	920	1,600	1,900	310	1,200	35	---
06-12-98**	13,000	3,900	2,800	57	1,300	2,800	< 50	---
12-18-98	430	500*	42	6.5	4.1	8.8	< 5	---
<u>MW-2</u>								
05-05-93	5,100	< 50	9.5	17	22	51	---	< 0.0005
08-20-93	1,400	< 50	1.2	1.7	2.3	7.9	---	< 0.0005
11-18-93	16,000	< 50	4,093	5,647	798.2	3,078	---	---
02-11-94	20,000	3,500*	2,000	2,800	470	3,200	---	---
05-25-94	7,000	< 50	1,400	1,100	220	1,200	---	---
08-18-94	60,000	< 50	8,000	18,000	2,100	13,000	---	---
11-14-94	36,000	< 50	3,700	7,700	1,400	8,400	---	---
02-03-95	18,000	100	2,100	2,700	480	3,000	---	---
04-28-95	17,000	< 50	2,300	2,500	580	3,700	---	---
08-08-95	17,000	< 50	2,500	3,200	550	1,900	---	---
11-10-95	7,400	< 50	1,200	370	260	1,400	---	---
02-16-96	6,600	750*	1,500	760	150	1,370	< 40	---
05-17-96	8,000	340	1,200	600	320	1,600	< 120	---
08-16-96	5,600	< 50	740	280	240	740	< 50	---
11-12-96	7,400	2,700*	1,200	760	300	1,400	< 50	---
02-06-97	17,000	< 50	2,300	2,800	530	2,800	< 1,000	---
05-28-97	6,700	2,500*	960	440	300	1,100	< 100	---
12-10-97	12,000	< 50	1,600	1,800	370	1,800	< 25	---
06-12-98	1,400	1,600	300	99	49	240	< 5	---
12-18-98	6,000	1,800*	1,100	1,000	140	1,300	< 250	---
DTSC MCLs	NA	NA	1	150	700	1,750	35	50



**TABLE MW4 (Continued)**  
**Summary of Analytical Results of WATER Samples**  
 All results are in parts per billion

Well ID & Dates Sampled	TPH-G	TPH-D	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	Total Lead
<b>MW-3</b>								
05-05-93	<50	<50	<0.5	<0.5	<0.5	<0.5	---	< 0.0005
08-20-93	70	<50	<0.5	0.9	1.1	4.6	---	< 0.0005
11-18-93	<50	<50	<0.5	<0.5	<0.5	<0.5	---	---
02-11-94	<50	<50	<0.5	<0.5	<0.5	<0.5	---	---
05-25-94	<50	<50	<0.5	<0.5	<0.5	<2	---	---
08-18-94	Sampled second quarter only							
11-14-94	Sampled second quarter only							
02-03-95	Sampled second quarter only							
04-28-95	<50	<50	<0.5	<0.5	<0.5	<2	---	---
08-09-95	Sampled second quarter only							
11-10-95	Sampled second quarter only							
02-16-96	Sampled second quarter only							
05-17-96	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
08-16-96	Sampled second quarter only							
11-12-96	Sampled second quarter only							
02-06-97	Sampled second quarter only							
05-28-97	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
12-10-97	Sampled second quarter only							
06-12-98	Sampled second quarter only							
12-18-98	Sampled second quarter only							
<b>MW-4</b>								
06-13-94	<50	<50	<0.5	<0.5	<0.5	<0.5	---	---
08-18-94	<50	<50	<0.5	0.6	<0.5	<2	---	---
11-14-94	<50	<50	<0.5	<0.5	<0.5	<2	---	---
02-03-95	<50	<50	<0.5	<0.5	<0.5	<2	---	---
04-28-95	<50	<50	<0.5	0.6	<0.5	<2	---	---
08-08-95	<50	<50	<0.5	0.8	<0.5	<2	---	---
11-10-95	<50	<50	0.5	0.8	<0.5	<2	---	---
02-16-96	<50	<50	<0.5	<0.5	<0.5	<1	<2	---
05-17-96	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
08-16-96	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
11-12-96	Not Sampled - Inaccessible Well							
02-06-97	Not Sampled - Inaccessible Well							
05-28-97	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
12-10-97	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
06-12-98	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
12-18-98	<50	<50	<0.5	1.9	0.64	3.2	<5.0	---
<b>DISCO MCLs</b>	NA	NA	1	150	700	1,750	35%	50

**TABLE DW04(Continued)**  
**Summary of Analytical Results of WATER Samples**  
 All results are in parts per billion

Well ID & Dates Sampled	TPH-G	TPH-D	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	Total Lead
<b>MW-5</b>								
06-13-94	<50	<50	<0.5	<0.5	<0.5	<0.5	---	---
08-18-94	<50	<50	<0.5	<0.5	<0.5	<2	---	---
11-14-94	<50	<50	<0.5	0.9	<0.5	<2	---	---
02-03-95	<50	<50	<0.5	<0.5	<0.5	<2	---	---
04-28-95	<50	<50	<0.5	<0.5	<0.5	<2	---	---
08-08-95	<50	<50	<0.5	<0.5	<0.5	<2	---	---
11-10-95	<50	<50	<0.5	<0.5	<0.5	<2	---	---
02-16-96	Sampled second quarter only			<0.5	<0.5	<2	---	---
05-17-96	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---
08-16-96	Sampled second quarter only							
11-12-96	Sampled second quarter only							
02-06-97	Sampled second quarter only							
05-28-97	<50	<62	<0.5	<0.5	<0.5	<0.5	<5.0	---
12-10-97	Sampled second quarter only							
06-12-98	Sampled second quarter only							
12-18-98	Sampled second quarter only							
<b>DTSC MCLs</b>	<b>NA</b>	<b>NA</b>	<b>1</b>	<b>150</b>	<b>700</b>	<b>1,750</b>	<b>35</b> ‡	<b>50</b>
EPA METHOD	5030/ 8015M	3510/ 8015M	602 or 8020	602 or 8020	602 or 8020	602 or 8020	602 or 8020	7420

Notes:  
 \* = atypical diesel pattern  
 \*\* = Sample analyzed outside of holding time.  
 ‡ DTSC interim action level; MCL not established

**TABLE ~~8013~~ 5**  
**Summary of Chemical Analysis of WATER Samples**  
**Linford Property, 2850 Poplar Street, Oakland, California**  
**Volatile Organic Compounds (VOC's)**  
**EPA Method 8010**

(All Results are in parts per billion)

Sample I.D.	VC	1,1-DCE	trans-1,2-DCE	cis-1,2-DCE	1,1-DCA	1,1,2-TCA	TCE	PCE	CB	1,3-DCB	1,4-DCB	1,2-DCB
<u>MW-3</u>												
08/24/98	<0.5	<0.5	<0.5	18	<0.5	5.6	1,100	<0.5	<0.5	<0.5	<0.5	<0.5
<u>MW-4</u>												
08/24/98	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	23	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:

NE = DTSC MCL not established

VC = vinyl chloride

1,1-DCE = 1,1-dichloroethene

trans 1,2-DCE = trans-1,2-dichloroethene

cis 1,2-DCE = cis-1,2-dichloroethene

1,1-DCA = 1,1-dichloroethane

1,1,1-TCA = 1,1,1-trichloroethane

TCE = trichloroethene

PCE = tetrachloroethene

CB = chlorobenzene

1,3-DCB = 1,3-dichlorobenzene

1,4-DCB = 1,4-dichlorobenzene

1,2-DCB = 1,2-dichlorobenzene

Oakland Tier 2 SSTLs for Clayey Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Acenaph-thene	Acenaph-thylene	Acetone	Anthra-cene	Arsenic	Barium	Benz(a)-anthracene	Benzene	
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic					2.6E+00		1.7E+00	1.9E+01	
			Hazard	2.3E+03	2.3E+03	3.7E+03	1.2E+04	1.8E+01	5.0E+03		6.3E+01	
		Commercial/ Industrial	Carcinogenic					9.5E+00		4.3E+00	4.9E+01	
			Hazard	1.1E+04	1.1E+04	1.8E+04	5.6E+04	1.5E+02	7.1E+04		3.0E+02	
Subsurface Soil [mg/kg]	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic							SAT	1.6E+02	
			Hazard	SAT	SAT	1.2E+05	SAT				6.5E+02	
		Commercial/ Industrial	Carcinogenic							SAT	6.2E+02	
			Hazard	SAT	SAT	SAT	SAT				SAT	
	Inhalation of Indoor Air Vapors	Residential	Carcinogenic							SAT	3.3E+00	
			Hazard	SAT	SAT	1.2E+04	SAT				1.1E+01	
		Commercial/ Industrial	Carcinogenic							SAT	5.2E+01	
			Hazard	SAT	SAT	SAT	SAT				3.2E+02	
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic						4.4E+00	1.3E+02	1.4E+01	4.5E-03
			Hazard	4.0E+02	2.7E+02	1.5E+00	SAT	4.4E+00	1.3E+02		4.5E-03	
		Commercial/ Industrial	Carcinogenic					4.4E+00	1.3E+02	5.8E+01	4.5E-03	
			Hazard	SAT	SAT	9.7E+00	SAT	4.4E+00	1.3E+02		4.5E-03	
Groundwater [mg/l]	Ingestion of Groundwater	Residential	Carcinogenic					5.0E-02	1.0E+00	5.6E-04	1.0E-03	
			Hazard	9.4E-01	9.4E-01	1.6E+00	>Sol	5.0E-02	1.0E+00		1.0E-03	
		Commercial/ Industrial	Carcinogenic					5.0E-02	1.0E+00	2.4E-03	1.0E-03	
			Hazard	>Sol	>Sol	1.0E+01	>Sol	5.0E-02	1.0E+00		1.0E-03	
	Inhalation of Indoor Air Vapors	Residential	Carcinogenic							>Sol	6.3E+00	
			Hazard	>Sol	>Sol	4.0E+04	>Sol				2.1E+01	
		Commercial/ Industrial	Carcinogenic							>Sol	1.0E+02	
			Hazard	>Sol	>Sol	>Sol	>Sol				6.1E+02	
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic							>Sol	>Sol	
			Hazard	>Sol	>Sol	4.8E+05	>Sol				>Sol	
		Commercial/ Industrial	Carcinogenic							>Sol	>Sol	
			Hazard	>Sol	>Sol	>Sol	>Sol				>Sol	
Water for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic					2.0E-02		1.6E-04	6.3E-02	
			Hazard	1.1E+00	1.7E+00	4.2E+01	>Sol	1.2E-01	2.8E+01		1.8E-01	

\*Italicized concentrations based on California MCLs

SAT = SSTL exceeds saturated soil concentration of chemical

>SOL = SSTL exceeds solubility of chemical in water

w/ GW @ ~~10~~ 6 ft. (183 cm)  
M.A.

Table 6

Oakland Tier 2 SSTLs for Clayey Silts

Medium	Exposure Pathway	Land Use	Type of Risk	Trichloroethylene (TCE)
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	Carcinogenic	1.3E+02
			Hazard	2.2E+02
		Commercial/ Industrial	Carcinogenic	3.3E+02
			Hazard	1.1E+03
Subsurface Soil [mg/kg]	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	2.5E+03
			Hazard	3.4E+03
		Commercial/ Industrial	Carcinogenic	SAT
			Hazard	SAT
	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	4.8E+01
			Hazard	5.7E+01
		Commercial/ Industrial	Carcinogenic	7.7E+02
			Hazard	1.6E+03
	Ingestion of Groundwater Impacted by Leachate	Residential	Carcinogenic	5.5E-02
			Hazard	5.5E-02
		Commercial/ Industrial	Carcinogenic	5.5E-02
			Hazard	5.5E-02
Groundwater [mg/l]	Ingestion of Groundwater	Residential	Carcinogenic	5.0E-03
			Hazard	5.0E-03
		Commercial/ Industrial	Carcinogenic	5.0E-03
			Hazard	5.0E-03
	Inhalation of Indoor Air Vapors	Residential	Carcinogenic	5.8E+01
			Hazard	6.8E+01
		Commercial/ Industrial	Carcinogenic	9.2E+02
			Hazard	>Sol
	Inhalation of Outdoor Air Vapors	Residential	Carcinogenic	>Sol
			Hazard	>Sol
		Commercial/ Industrial	Carcinogenic	>Sol
			Hazard	>Sol
Water for Recreation [mg/l]	Ingestion/ Dermal	Residential	Carcinogenic	4.6E-02
			Hazard	7.2E-02

\*Italicized concentrations based on California MCLs

SAT = SSTL exceeds saturated soil concentration of chemical

>SOL = SSTL exceeds solubility of chemical in water

w/GW @ 6 ft. (183 cm)

AMH.

cont. Table 6

Project Name: Linford Construction

Project Location: 2850 Poplar Street, Oakland, CA

Page 1 of 1

Driller: Gregg Drilling

Type of Rig: Mobil B - 53

Type and Size of Auger: 8-3/4" O.D., H.S.

Logged By: WCL

Date Drilled: 04/30/93

Checked By: M. Marelo, R.G.

**WATER AND WELL DATA**

Depth of Water First Encountered: ~ 15.5'

Total Depth of Well Completed: 22.0'

Static Depth of Water in Well: 5.43' Below T.O.C.

Well Screen Type and Diameter: 2" Diameter Schedule 40 PVC

Well Screen Slot Size: 0.020"


Total Depth of Boring: 22'

Type and Size of Soil Sampler: 2" I.D., Calif. Split-Spoon

Depth in Feet	WELL/BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA				Depth in Feet	DESCRIPTION OF LITHOLOGY						
			Interval	Blow Ct.	Field VOC (ppmv)	Graphic Log		standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.						
							And (40-50%)	With (40-25%)	Some (25-10%)	Trace (10-0%)				
0	Cap	Street Box										Concrete (~ 12")		
0-5	2" ID Blank PVC Casing	Class "H" Portland Cement		3/8	< 10							Green Clay (CL), moist, no odor, highly plastic		
5-10	2" ID Blank PVC Casing	Bentonite Seal		5/8	25							Light Brown Clay (CL), with green mottling, slight old gasoline odor, moist		
10-15	2" ID Blank PVC Casing	No. 3 Washed Sand		6/8	< 10							SAME AS ABOVE, No Odor, Very moist		
15-22	2" ID 0.020" Slotted PVC Casing Female Bottom Plug			6/8								Saturated Sediments @ ~ 15.5'		

Project Name: Linford Construction      Project Location: 2850 Poplar Street, Oakland, CA      Page 1 of 1  
 Driller: Gregg Drilling      Type of Rig: Simco 2400 SK1      Type and Size of Auger: 6-1/2" O.D., H.S.  
 Logged By: WCL      Date Drilled: 04/30/93      Checked By: M. Marelo, R.G.

**WATER AND WELL DATA**  
 Depth of Water First Encountered: ~ 13.5'      Total Depth of Well Completed: 20.0'  
 Static Depth of Water in Well: 6.10' Below T.O.C.      Well Screen Type and Diameter: 2" Diameter Schedule 40 PVC  
 Total Depth of Boring: 20'      Well Screen Slot Size: 0.020"  
 Type and Size of Soil Sampler: 2" I.D., Calif. Split-Spoon

Depth in Feet	WELLBORING DETAIL	Description	SOIL/ROCK SAMPLE DATA				Depth in Feet	DESCRIPTION OF LITHOLOGY				
			Interval	Blow Ct.	Field VOC (ppmv)	Graphic Log		standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.				
								And (40-50%)	With (40-25%)	Some (25-10%)	Trace (10-0%)	
0	Cap	Street Box										Concrete (~ Two 5" Foundations)
0-5	2" ID Blank PVC Casing	Bentonite Seal		11 17 28	22							Light Brown Clay (CL), green mottling, old gasoline odor, moist
5-10	2" ID 0.020" Slotted PVC Casing	Class "H" Portland Cement		17 25 38	< 10							Light Brown Clay (CL), with green mottling, slight old gasoline odor, moist
10-20	2" ID 0.020" Slotted PVC Casing	No. 3 Washed Sand										 Saturated Sediments @ ~ 13.5'
20	E.O.H. 20'	Female Bottom Plug										

**SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DETAILS**

**WELL NO. MW-3**

Project Name: Linford Construction

Project Location: 2850 Poplar Street, Oakland, CA

Page 1 of 1

Driller: Gregg Drilling

Type of Rig: Mobil B - 53

Type and Size of Auger: 8-3/4" O.D., H.S.

Logged By: WCL

Date Drilled: 04/30/93

Checked By: M. Marelo, R.G.

**WATER AND WELL DATA**

Total Depth of Well Completed: 20.0'

Depth of Water First Encountered: ~ 11.5'

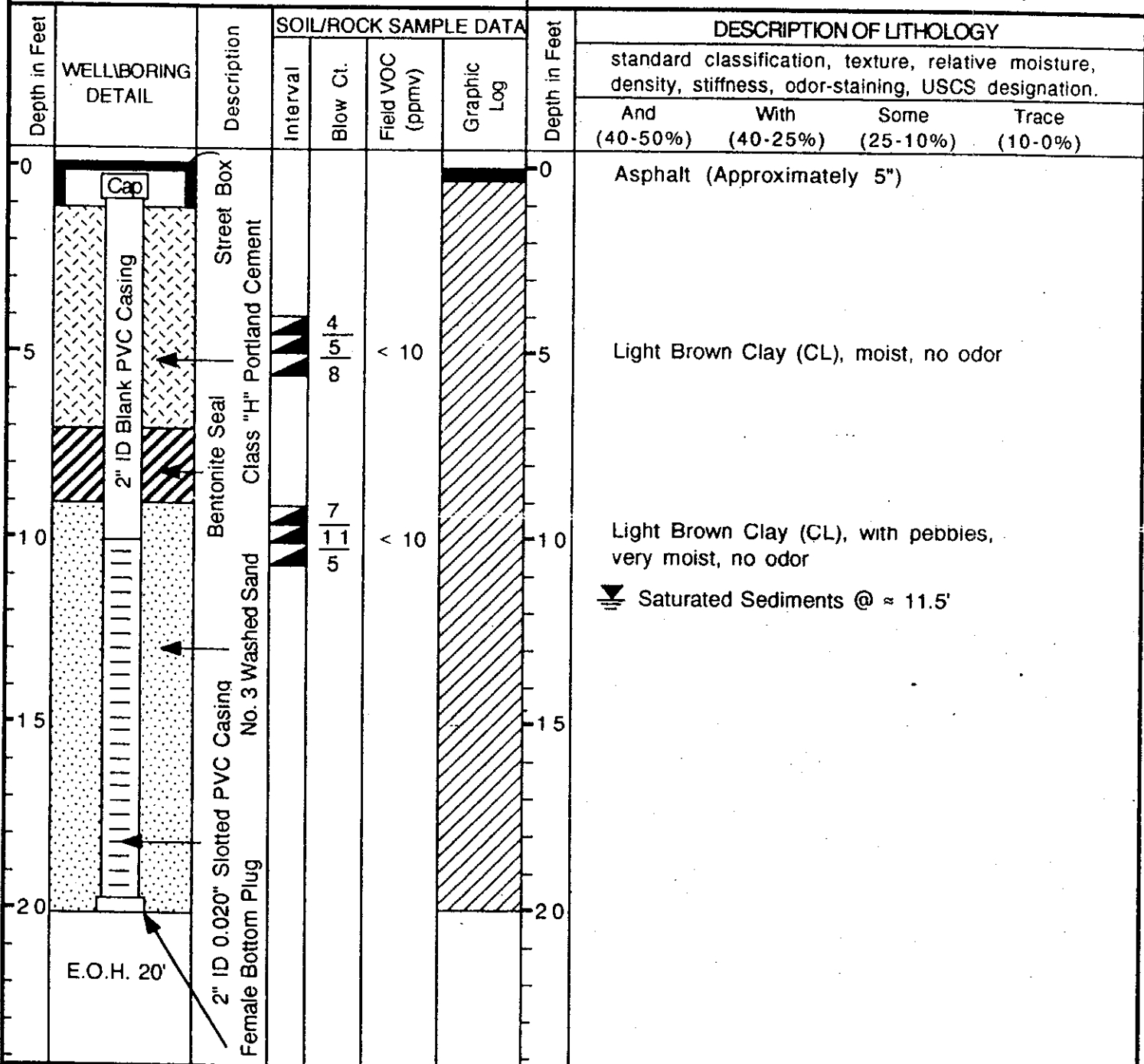
Well Screen Type and Diameter: 2" Diameter Schedule 40 PVC

Static Depth of Water in Well: 6.48' Below T.O.C.

Well Screen Slot Size: 0.020"

Total Depth of Boring: 20'

Type and Size of Soil Sampler: 2" I.D., Calif. Split-Spoon





**SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DETAILS**

Monitoring Well MW-4

Project Name: The Linford Company

Project Location: 2850 Poplar Street, Oakland, CA

Page 1 of 1

Driller: Gregg Drilling

Type of Rig: Simco

Type and Size of Auger: 8-inch O.D. Follow-stem.

Logged By: Robert E. Kitay

Date Drilled: June 10, 1994

Checked By: David M. Schultz, P.E.

**WATER AND WELL DATA**

Depth of Water First Encountered: ~ 6.4'

Total Depth of Well Completed: 20.0'

Well Screen Type and Diameter: 2" Diameter Schedule 40 PVC

Static Depth of Water in Well: 7.4'

Well Screen Slot Size: 0.020"

Total Depth of Boring: 20.0'

Type and Size of Soil Sampler: 1.5" I.D. Split-barrel

Depth in Feet	WELLBORING DETAIL	Description	SOIL/ROCK SAMPLE DATA				Depth in Feet	DESCRIPTION OF LITHOLOGY
			Interval	Blow Ct.	Time	Graphic Log		standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0		Street Box Locking Well Cap					0	Concrete
0-5		2" ID Blank Sch 40 PVC					0-5	Silty CLAY (CH); black; medium stiff; damp; 65% clay; 35% silt; high plasticity; very low estimated K; no odor
5-10		Class "H" Portland Cement	X		11:45		5-10	Sandy CLAY (CH); olive; medium stiff; wet; 60% clay; 25% fine sand; 15% silt; high plasticity; very low estimated K; no odor
10-15		Bentonite Seal	X				10-15	CLAY (CH); light brown; stiff; moist; 95% clay; 5% silt; high plasticity; very low estimated K; no odor
15-20		2" ID 0.020" Slotted Sch 40 PVC	X				15-20	Clayey SILT (ML); yellow brown; medium stiff; wet; 90% silt; 10% clay; medium plasticity; low estimated K; no odor
20		No. 3 Washed Monterey Sand					20	

# SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well MW-5

Project Name: The Linford Company      Project Location: 2850 Poplar Street, Oakland, CA      Page 1 of 1

Driller: Gregg Drilling      Type of Rig: Mobile B-61      Type and Size of Auger: 8-inch O.D. Hollow-stem.

Logged By: Robert E. Kitay      Date Drilled: June 10, 1994      Checked By: David M. Schultz, P.E.

## WATER AND WELL DATA

Depth of Water First Encountered: 13'

Static Depth of Water in Well: 6.6'

Total Depth of Boring: 20.0'

Total Depth of Well Completed: 20.0'

Well Screen Type and Diameter: 2" Diameter Schedule 40 PVC

Well Screen Slot Size: 0.020"

Type and Size of Soil Sampler: 2.0" I.D. Split-barrel

Depth in Feet	WELLBORING DETAIL	Description	SOIL/ROCK SAMPLE DATA				Depth in Feet	DESCRIPTION OF LITHOLOGY
			Interval	Blow Ct.	Time	Graphic Log		
0		Street Box Locking Well Cap					Ashaltic concrete	
0-5		2" ID Blank Sch 40 PVC					Silty SAND (SM); yellow brown; loose; damp; 75% fine sand; 25% silt; medium estimated K; no odor	
5-10		Bentonite Seal			8:30		Sandy CLAY (CH); olive; medium stiff; damp; 50% clay; 30% very fine to fine sand; 15% silt; 5% coarse angular to subangular sand; high plasticity; very low estimated K; no odor	
10-15		2" ID 0.020" Slotted Sch 40 PVC	6-7, 10-14, 15-21				CLAY (CH); light brown; stiff; moist; 95% clay; 5% silt; high plasticity; very low estimated K; no odor	
15-20		No. 3 Washed Monterey Sand	10-11, 14				Clayey SILT (ML); yellow brown mottled olive grey; medium stiff; wet; 90% silt; 10% clay; medium plasticity; low estimated K; no odor	
20		2" ID 0.020" Slotted Sch 40 PVC	4-5, 6					