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

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-93

July 8, 2009

Mr. Anye Spivey
A.F. Evans
1000 Broadway, #300
Oakland, CA 94607

Subject: SLIC Case RO0002924 and Geotracker Global ID T06019776161, 901 Jefferson Housing LLC, 901 Jefferson Street, Oakland, CA 94607 –Case Closure

Dear Mr. Spivey:

This letter confirms the completion of site investigation and remedial actions for the soil and groundwater investigation at the above referenced site. We are also transmitting the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported releases at the subject site with the provision that the information provided to this agency was accurate and representative of existing conditions. The subject Spills, Leaks, Investigation, and Cleanup (SLIC) case is closed. This case closure letter and the case closure summary can also be viewed on the State Water Resources Control Board's Geotracker website (http://geotracker.swrcb.ca.gov) and the Alameda County Environmental Health website (http://www.acgov.org/aceh/index.htm).

SITE INVESTIGATION AND CLEANUP SUMMARY

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

- Soils in the area of a former underground storage tank (UST) at the site contain residual total petroleum hydrocarbons (TPH) as gasoline at reported concentrations up to 1,500 parts per million (ppm).
- Groundwater beneath the site contains residual TPH as gasoline at concentrations up to 3,400 parts per billion (ppb).

If you have any questions, please call Jerry Wickham at (510) 567-6791. Thank you.

Sincerely,

Dan Firth
Chief, LOP and Toxics Program

Jerry Wickham, California PG 3766, CEG 1177, and CHG 297
Senior Hazardous Materials Specialist

Enclosure: Case Closure Summary

cc: Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341
Oakland, CA 94612-2032

Grover Buhr, Treadwell & Rollo, 501 14th Street, 3rd Floor, Oakland, CA 94612

Donna Drogos, ACEH
Jerry Wickham, ACEH
File

CASE CLOSURE SUMMARY
SPILLS, LEAKS, INVESTIGATION, AND CLEANUP PROGRAM

I. AGENCY INFORMATION

Date: June 25, 2009

Agency Name: Alameda County Environmental Health	Address: 1131 Harbor Bay Parkway
City/State/Zip: Alameda, CA 94502-6577	Phone: (510) 567-6791
Responsible Staff Person: Jerry Wickham	Title: Senior Hazardous Materials Specialist

II. CASE INFORMATION

Site Facility Name: 901 Jefferson Housing LLC		
Site Facility Address: 901 Jefferson Street, Oakland, CA 94607		
RB Case No.: ---	Local Case No.: ---	SLIC Case No.: RO0002924
URF Filing Date: ---	Geotracker ID: T06019776161	APN: 2-25-18

Responsible Parties	Addresses	Phone Numbers
Mr. Anye Spivey A.F. Evans	1000 Broadway, #300 Oakland, CA 94607	510-267-4696

Tank I.D. No	Size in Gallons	Contents	Closed In Place/Removed?	Date
T-1	550 gallons	Gasoline	Presumed removed	Unknown (suspected circa 1953)
T-2	550 gallons	Unknown	Presumed removed	Unknown (suspected circa 1953)
T-3	550 gallons	Gasoline	Presumed removed	Unknown (suspected circa 1953)
T-4	550 gallons	Fuel Oil	Presumed removed	Unknown (suspected circa 1953)
Piping			Presumed removed	Unknown (suspected circa 1953)

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: Unknown.		
Site characterization complete? Yes	Date Approved By Oversight Agency: -----	
Monitoring wells installed? Yes	Number: 4	Proper screened interval? Yes
Highest GW Depth Below Ground Surface: approximately 21 feet bgs	Lowest Depth: 25.11 feet bgs	Flow Direction: Variable but generally to west
Most Sensitive Current Use: Potential Drinking Water Source		

Summary of Production Wells in Vicinity: Based on well surveys conducted for other sites in the area, the nearest water supply well appears to be an irrigation well located approximately 1,200 feet east of the site. Based on the crossgradient location and distance from the site, the well is not expected to be a receptor for the site. No wells are located within 1/2 mile downgradient from the site.	
Are drinking water wells affected? No	Aquifer Name: East Bay Plain
Is surface water affected? No	Nearest SW Name: San Francisco Bay is approximately 2,600 feet southwest of the site.
Off-Site Beneficial Use Impacts (Addresses/Locations): None	
Reports on file? Yes	Where are reports filed? Alameda County Environmental Health and City of Oakland Fire Department

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (Include Units)	Action (Treatment or Disposal w/ Destination)	Date
Tanks	Not reported	Not reported	Circa 1953
Piping	Not reported	Not reported	Circa 1953
Free Product	---	---	---
Soil	507 tons 303 tons 3,038 cubic yards	507 tons of soil was disposed as Class I non-RCRA waste at Clean Harbor Class I Landill in Buttonwillow, CA 303 tons of soil was disposed at Forward Landifll in Manteca, CA 3,038 cubic yards of soil was transported off-site used for fill material at the Vidrio Development in Pittsburg, CA	July 6, 2006 July 21, 2006
Groundwater	--	---	---

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS BEFORE AND AFTER CLEANUP
(Please see Attachments 1 through 6 for additional information on contaminant locations and concentrations)

Contaminant	Soil (ppm)		Water (ppb)	
	Before	After	Before	After
TPH (Gas)	9,300	9,300	46,000	3,400
TPH (Diesel)	5,800	5,800	NA	NA
TPH (Motor Oil)	2,200	2,200	NA	NA
Benzene	0.68	0.68	10,000	150
Toluene	6.0	6.0	1,100	7
Ethylbenzene	37	37	1,700	9
Xylenes	99	99	4,500	10
Lead	4,200	140	NA	NA
Other Metals	83(1)	83(1)	NA	NA
MTBE and Other Oxygenates	Not detected at various reporting limits (2)	Not detected at various reporting limits (2)	NA	NA
Other VOCs (8260)	Not detected at various reporting limits	Not detected at various reporting limits	Not detected at various reporting limits	Not detected at various reporting limits

1) Zinc = 83 ppm; chromium = 32 ppm; nickel = 18 ppm; and cadmium < 1 ppm.
2) MTBE, TBA, TAME, DIPE, ETBE, EDB, and EDC not detected at reporting limits of 5 to 50 ppb.

Site History and Description of Corrective Actions:

A five-story building currently covers the entire site, which is within a mixed residential and commercial area of downtown Oakland. The ground floor of the building consists of parking, commercial spaces, and live/work lofts with residential units on the upper four floors. The building has a concrete slab-on-grade floor with a final elevation that is near the existing sidewalk grade. The site was historically used as a gasoline service station from 1930 until 1953. Underground storage tanks were reportedly removed from the site in 1953. Prior to construction of the existing 5-story building, the site was as a parking lot from 1957 to 2006.

Environmental investigations were conducted at the site from 1989 to 1993 including a Phase I environmental site assessment, soil and groundwater investigations, and groundwater monitoring. From 1989 to 1993, Woodward-Clyde advanced 26 exploratory soil borings and installed 3 groundwater monitoring wells. Total petroleum hydrocarbons as gasoline (TPHg) were detected in soil, primarily within the northern portion of the site at concentrations up to 1,500 ppm. Groundwater samples collected from 1989 to 1993 contained TPHg and benzene at concentrations up to 24,000 and 7,500 ppb, respectively. Streamborn installed an additional monitoring well and performed in-situ bioremediation from October 1994 to August 1995. TPHg concentrations decreased in wells MW-5, MW-19, and PTW-1. Groundwater samples collected during the last sampling round in 1995 from the monitoring wells contained TPHg at 18,000 ppb and benzene at 320 ppb. The four monitoring wells at the site were decommissioned in October 1996. The case was closed and a Remedial Action Completion Certificate was issued by ACEH on December 26, 1996.

In late 1997 and early 1998, Streamborn advanced 15 borings to depths of 5 feet bgs or less to evaluate soil quality for potential off-site soil disposal during excavations for site development. Lead was detected in soil at concentrations between 5 and 490 ppm. Soluble lead analyses by the California Waste Extraction Test (WET) method indicated that some soil had soluble lead in excess of the Soluble Threshold Limit Concentrations for hazardous waste.

Additional soil sampling was conducted in 19 soil borings by Treadwell & Rollo in 2004 to evaluate the extent of lead and petroleum hydrocarbons in soil. Total lead was detected in soil at concentration ranging from 5.6 to 620 ppm. The highest lead concentrations were generally found in the northern portion of the site in the upper 3 feet of soil. TPHg, TPH as diesel, and TPH as motor oil were detected at elevated concentration in the central portion of the site.

A geotechnical investigation conducted in 2005 found fill material containing varying amount of brick and concrete debris from the surface to depths of 5 to 7 feet bgs. Because the fill material was considered unsuitable for foundation support, the fill was removed to a depth of 7 feet bgs across the site. In 2006, two phases of excavation were conducted to remove soil with elevated concentrations of lead. In June 2006, lead-impacted soils were excavated to depths of 2.5 to 6 feet bgs in two areas of the site. Approximately 507 tons of soil was profiled and disposed of as Clean 1 non-RCRA landfill waste and approximately 303 tons were profiled and disposed of as Class II landfill waste.

Approximately 7,020 tons of soil was excavated from the upper 7 feet of the site for geotechnical purposes and transported to the Vidrio Development in Pittsburg, CA (a residential and commercial development) on August 7 and 8, 2006 for use as fill material. The remaining soil from the upper 7 feet at the site, was excavated, moisture-treated and re-used at the site. Additional soil was imported from a site at 900 Minnesota Street in San Francisco, CA for use as fill material in the upper 7 feet at 901 Jefferson Street. Export and reuse of site soil at the Vidrio Development, import of soil from 900 Minnesota Street in San Francisco, and construction of the multi-story building at the site was conducted prior to ACEH's regulatory oversight.

Three 55-gallon drums containing waste oil were encountered during excavation in the east central portion of the site on July 14, 2006. This location was adjacent to soil boring B-9 where petroleum hydrocarbons were previously detected in soil. Stained soil was observed in the area of the drums and was excavated and stockpiled for disposal. After excavation of the drums and soil, a confirmation soil sample from the base of the

excavation was collected and did not contain TPH, VOCs, or fuel oxygenates at concentrations above reporting limits. Metals concentrations in the confirmation soil sample were within background ranges.

To evaluate potential vapor intrusion for the existing building, soil vapor samples were collected at five locations below the sidewalk outside the northern and eastern perimeters of the building in January 2009. Benzene was detected in 6 of 10 soil vapor samples collected at concentrations ranging from 5.8 to 92 micrograms per cubic meter (µg/m3). The concentrations of benzene in soil vapor exceeded the Environmental Screening Level (San Francisco Bay Regional Water Quality Control Board (2007, revised 2008) for residential land use of 84 µg/m3 in 3 of the 10 soil vapor samples collected.

Subslab soil vapor samples were collected within the three residential units in the northeastern corner of the building. Benzene was detected in each of the three sub-slab soil vapor samples at concentrations ranging from 11 to 16 µg/m3.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes		
Does corrective action protect public health for current land use? Alameda County Environmental Health staff does not make specific determinations concerning public health risk. However, based upon the information available in our files to date, it does not appear that the release would present a risk to human health based upon current land use and conditions.		
Site Management Requirements: None.		
Should corrective action be reviewed if land use changes? No		
Was a deed restriction or deed notification filed? No		Date Recorded: --
Monitoring Wells Decommissioned: Yes	Number Decommissioned: 4	Number Retained: 0
List Enforcement Actions Taken: None		
List Enforcement Actions Rescinded: ---		

V. ADDITIONAL COMMENTS, DATA, ETC.

Considerations and/or Variances:

Approximately 810 tons of lead-impacted soil was excavated and disposed off-site in Class I or Class II landfills in 2006. Confirmation sampling following the soil removal was limited in scope and did not appear to be sufficient to confirm that soils containing greater than 150 ppm of lead were removed and disposed off-site. For geotechnical purposes, approximately 3,038 cubic yards of soil was excavated from the upper 7 feet bgs and transported off-site for use as fill material at the Vidrio Development in Pittsburg, CA. The exported fill from 901 Jefferson in Oakland, which possibly may have included soil with greater than 150 ppm of lead, was reportedly placed beneath Building B, a commercial and residential building, in the Vidrio Development Project, Pittsburg, CA..

Export and reuse of site soil at the Vidrio Development, import of soil from 900 Minnesota Street in San Francisco, and construction of the multi-story building at the site was conducted prior to ACEH's regulatory oversight.

Off-site residual petroleum hydrocarbon contamination from the subject site remains in place beneath Jefferson Street and 10th Street. The residual petroleum hydrocarbon contamination is from a former fuel leak that was addressed in a case closure for fuel leak case RO0001152, which was closed on December 26, 1996.

Conclusion:

Alameda County Environmental Health staff believe that the levels of residual contamination do not pose a significant threat to water resources, public health and safety, and the environment for the multi-story residential and commercial development based upon the information available in our files to date. No further investigation or cleanup is necessary. ACEH staff recommend case closure for this site.

VI. LOCAL AGENCY REPRESENTATIVE DATA

Prepared by: Jerry Wickham	Title: Senior Hazardous Materials Specialist
Signature: Jerry Wickham	Date: 07/07/09
Approved by: Donna L. Drogos, P.E.	Title: Supervising Hazardous Materials Specialist
Signature:	Date: 07/07/09

This closure approval is based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions.

VII. REGIONAL BOARD NOTIFICATION

Regional Board Staff Name: Cherie McCaulou	Title: Engineering Geologist
RB Response: Concur, based solely upon information contained in this case closure summary.	Date Submitted to RB: 7/7/09
Signature: Cherie McCaulou	Date: 7/8/09

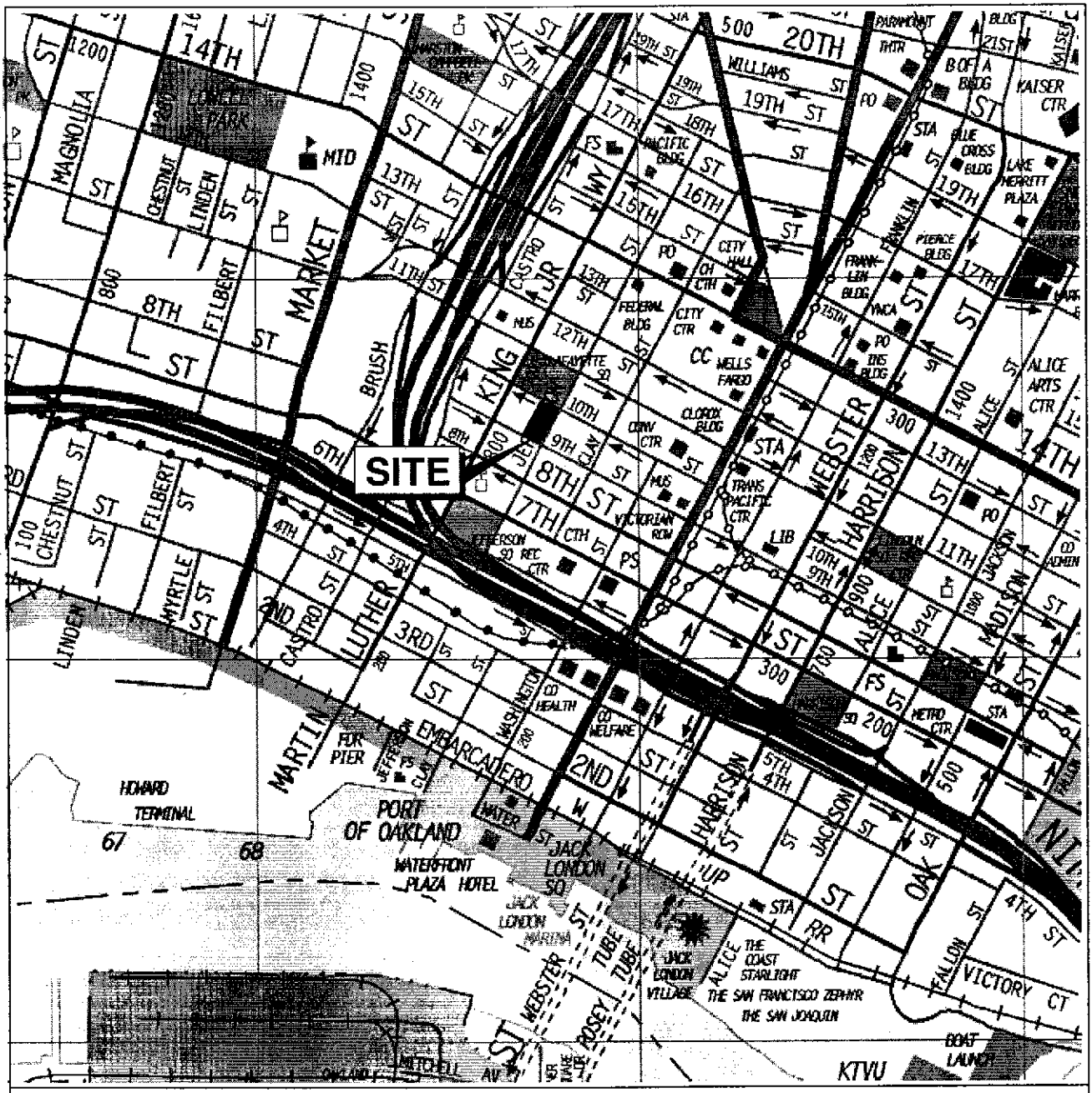
VIII. MONITORING WELL DECOMMISSIONING

Date Requested by ACEH: NA	Date of Well Decommissioning Report: NA	
All Monitoring Wells Decommissioned: NA	Number Decommissioned: 0	Number Retained: 0
Reason Wells Retained: NA		
Additional requirements for submittal of groundwater data from retained wells: NA		
ACEH Concurrence - Signature: Jerry Wickham		Date: 07/07/09

Attachments:

1. Site Location Map (1 page)
2. Hydrocarbons in Soil and Groundwater Concentration Maps (5 pages)
3. Lead in Soil Concentration and Excavation Area Maps (7 pages)
4. Soil Vapor Sampling Location Maps and Soil Vapor Data (4 pages)
5. Soil and Soil Vapor Analytical Data (8 pages)
6. Groundwater Analytical Data (2 pages)
7. Boring Logs (37 pages)

This document and the related CASE CLOSURE LETTER & REMEDIAL ACTION COMPLETION CERTIFICATE shall be retained by the lead agency as part of the official site file.



Base map: The Thomas Guide
Alameda County
1999

No scale

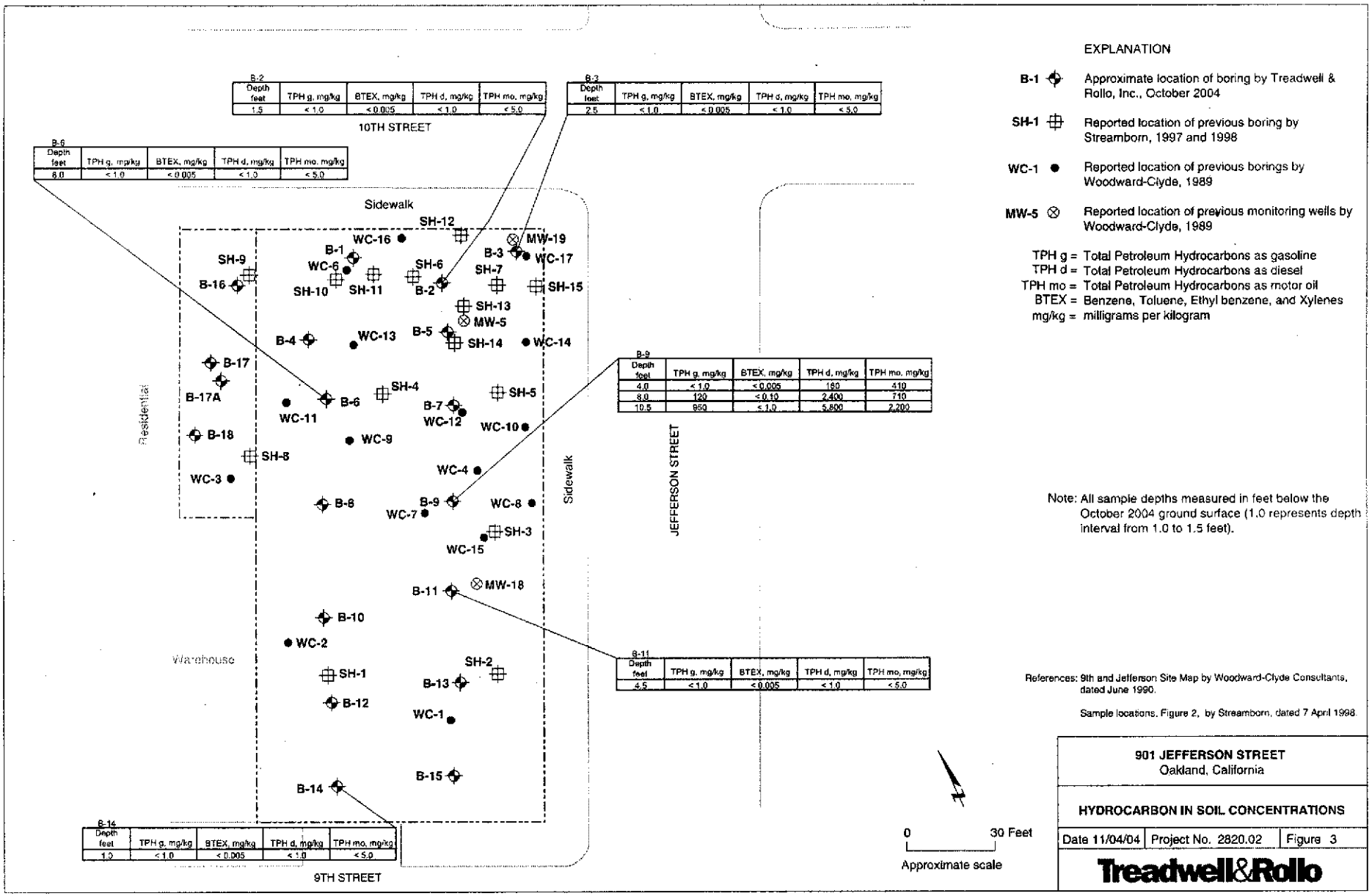
901 JEFFERSON STREET
Oakland, California

SITE LOCATION MAP

Treadwell&Rollo

Date 11/02/04

ATTACHMENT 1



ATTACHMENT 2

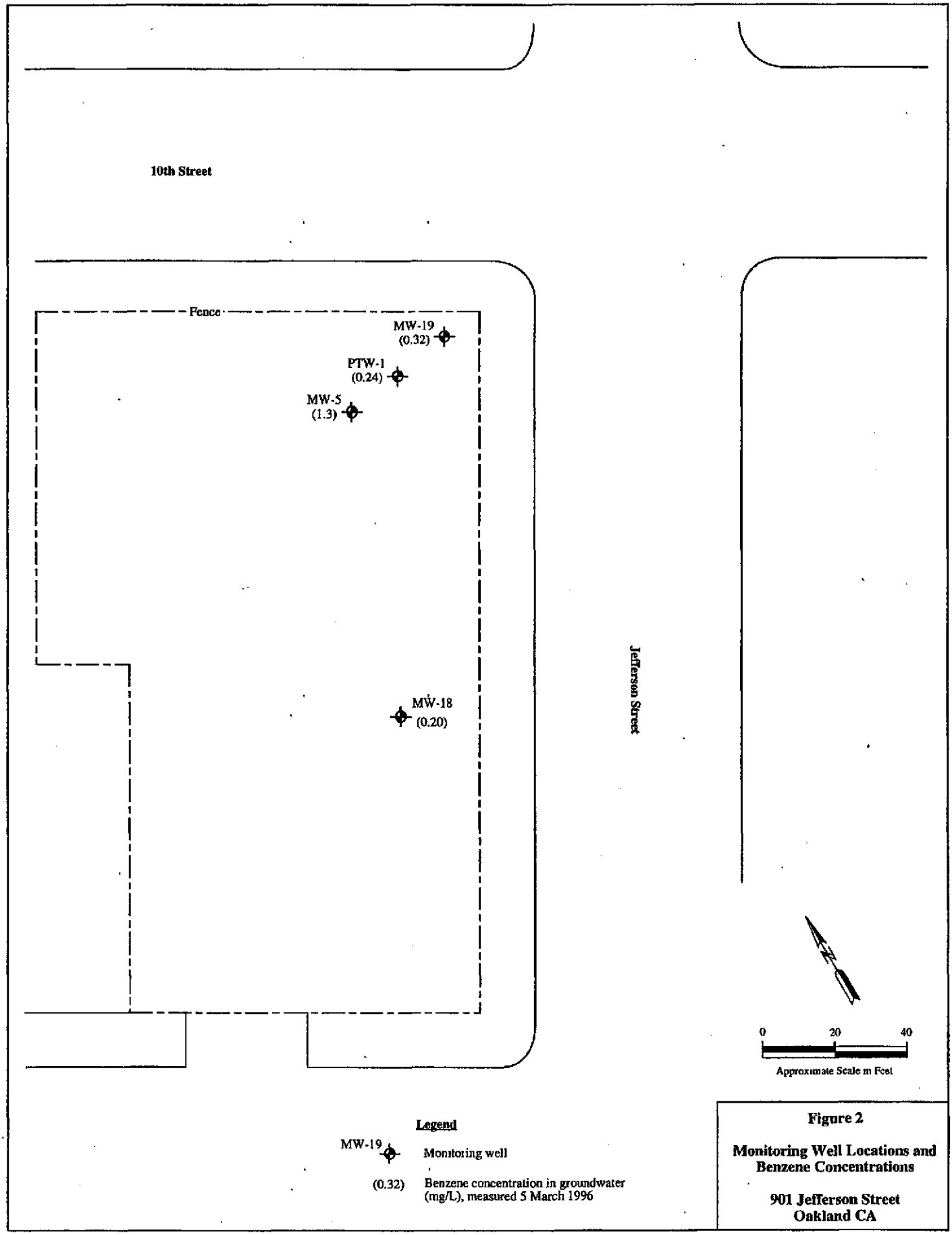
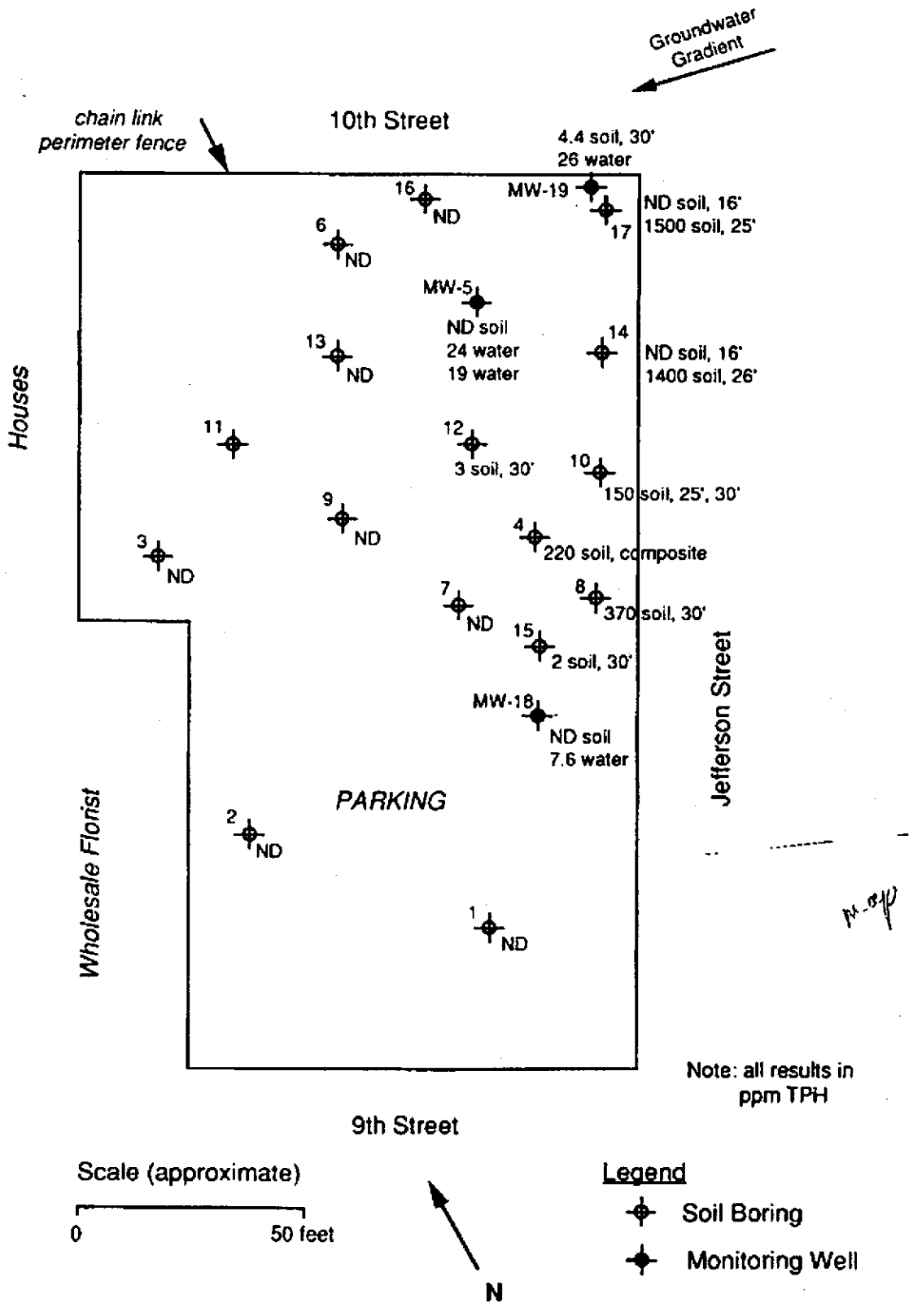


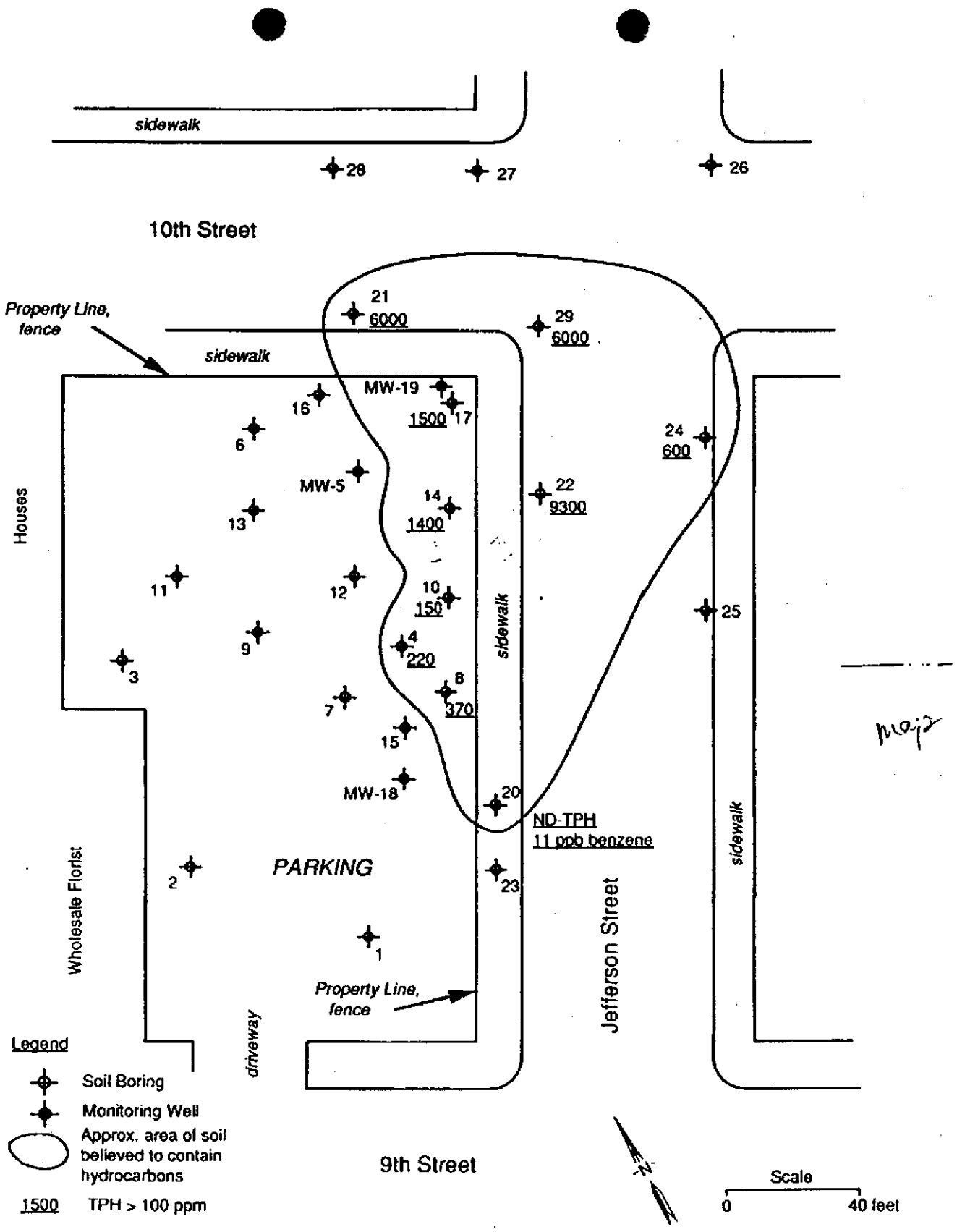
Figure 2

Monitoring Well Locations and Benzene Concentrations

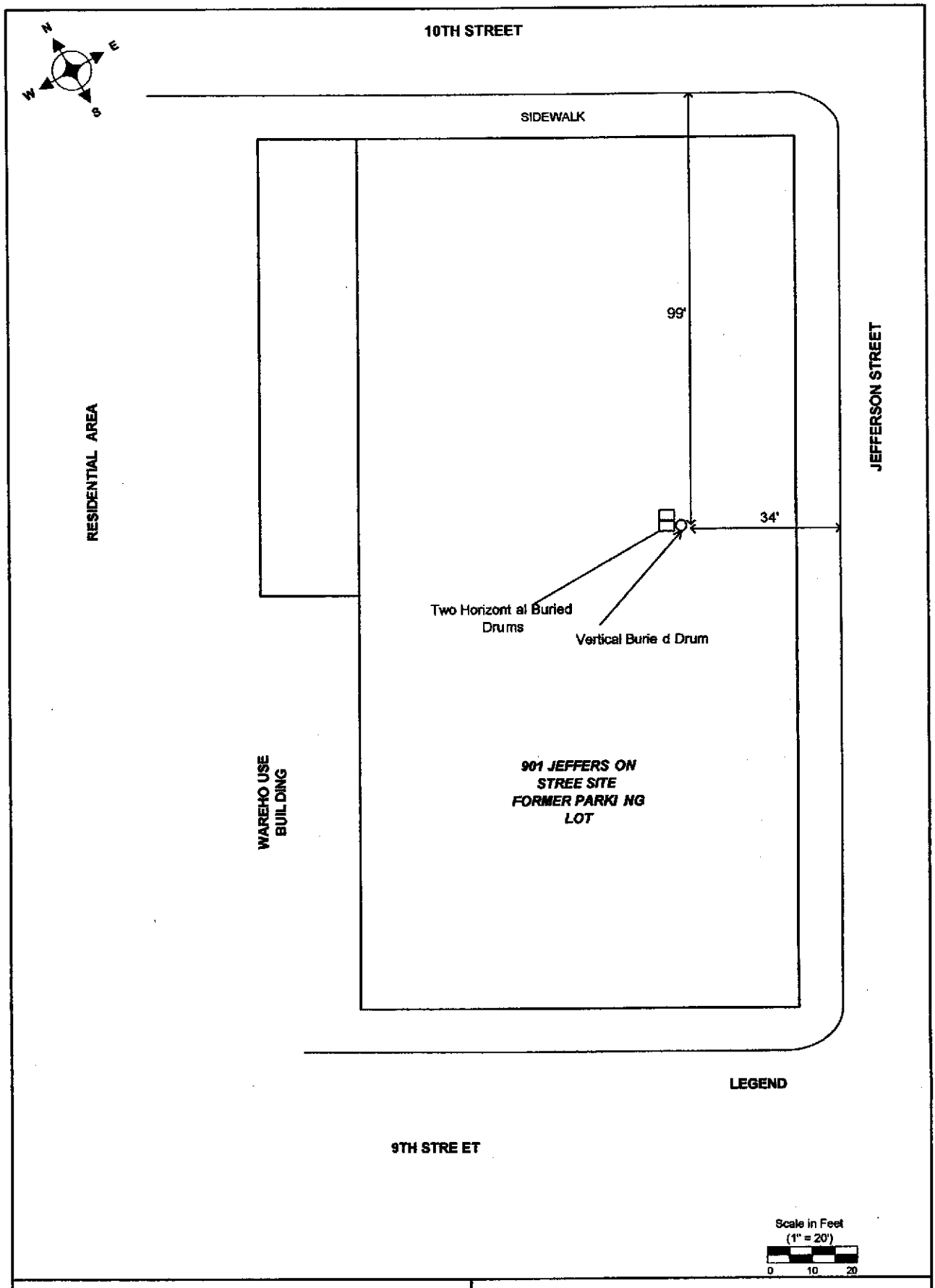
901 Jefferson Street
Oakland CA



Project No. 8910084A	9th and Jefferson EA	9th and Jefferson Site Map	Figure 1
Woodward-Clyde Consultants			

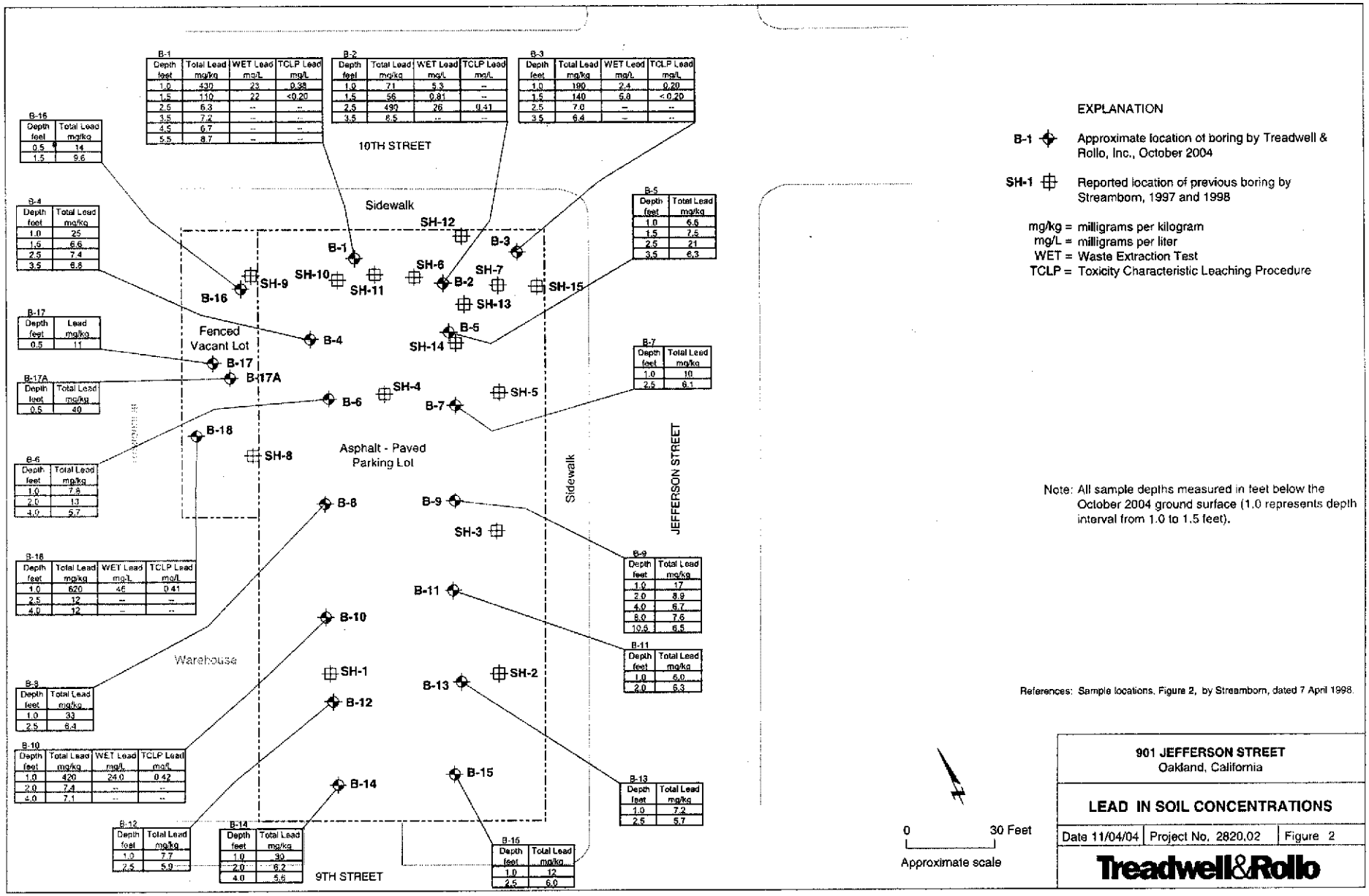


Project No. 8910084A	9th and Jefferson EA	9th and Jefferson Site Map	Attachment 1
Woodward-Clyde Consultants			

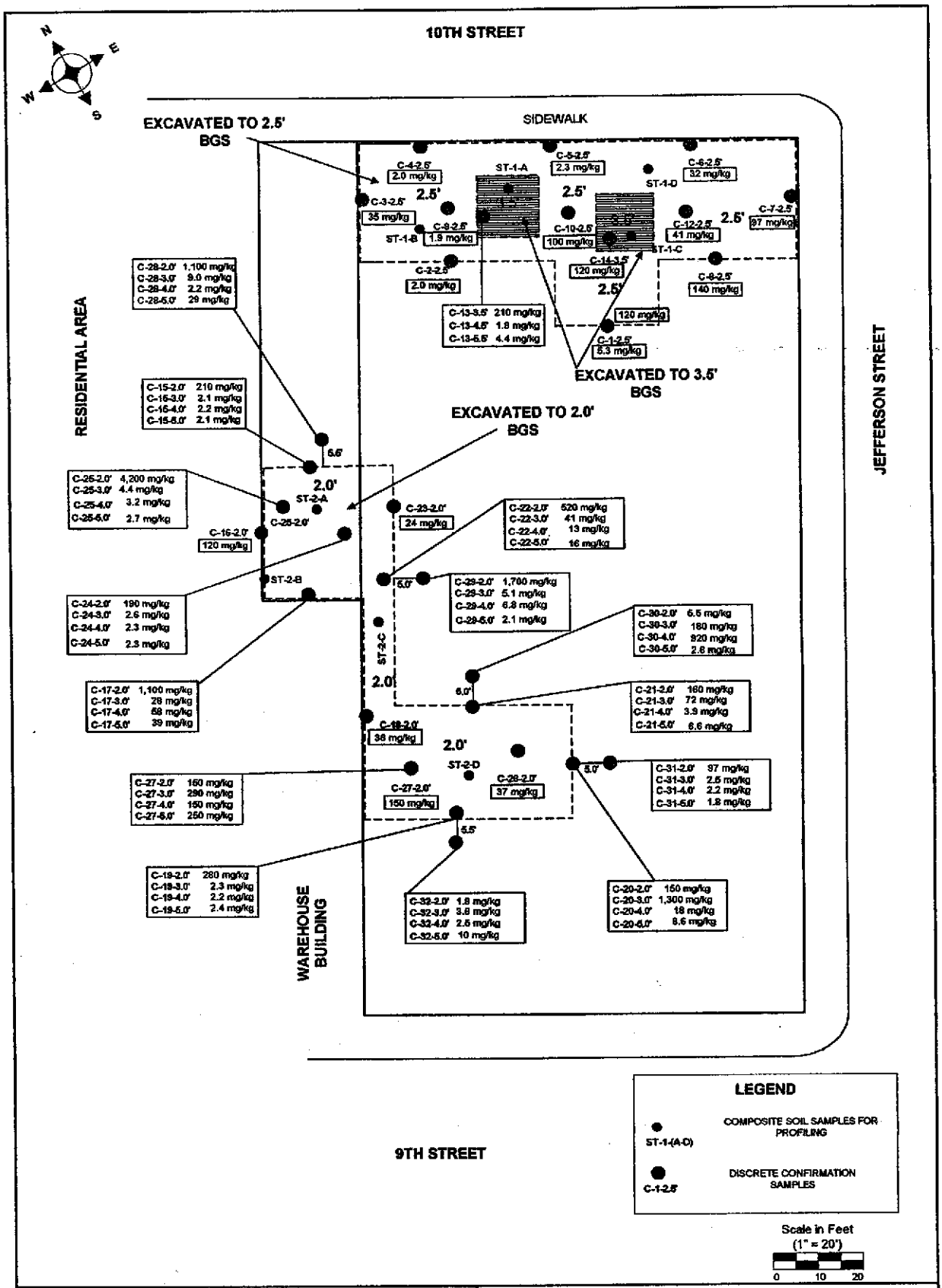


GOLDEN GATE TANK REMOVAL, IN C. 255 Shipley Street, San Francisc o, CA 94107 Ph (415) 512-1555 Fx (415) 5 12-0964	**SITE PLAN** 901 JEFFERSON ST REET Oakland, C alifornia

GGTR Project No. 87 88	*07/14/06*	*Figure By: SM*	***Figure***



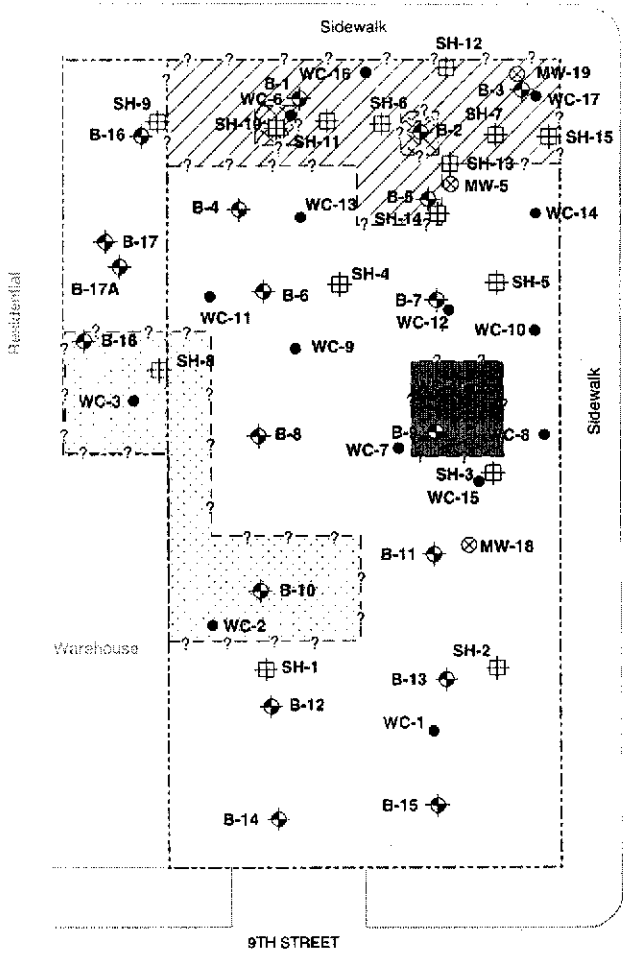
ATTACHMENT 3



GOLDEN GATE TANK REMOVAL, INC.
255 Shipley Street, San Francisco, CA 94107
Ph (415) 512-1555 Fx (415) 512-0964

EXCAVATED AREAS AND LEAD RESULTS
901 JEFFERSON STREET
Oakland, California

GGTR Project No. 8788	08/08/06	Figure By: SM	Figure 2



EXPLANATION

B-1	Approximate location of boring by Treadwell & Rollo, Inc., October 2004
SH-1	Reported location of previous boring by Streamborn, 1997 and 1998
WC-1	Reported location of previous borings by Woodward-Clyde, 1989
MW-5	Reported location of previous monitoring wells by Woodward-Clyde, 1989

Estimated Hazardous Waste Areas

- Estimated area where lead in soil concentrations exceed hazardous waste criteria between 0.5 and 2.0 feet bgs (1.5 feet thick)
- Estimated area where lead in soil concentrations exceed hazardous waste criteria between 0.5 and 2.5 feet bgs (2 feet thick)
- Estimated area where lead in soil concentrations exceed hazardous waste criteria between 0.5 and 3.5 feet bgs (3 feet thick)
- Estimated area where total petroleum hydrocarbons in soil exceed designated waste criteria between 6 and 13 feet bgs (7 feet thick)

References: 9th and Jefferson Site Map by Woodward-Clyde Consultants, dated June 1990.

Sample locations, Figure 2, by Streamborn, dated 7 April 1998.

0 30 Feet

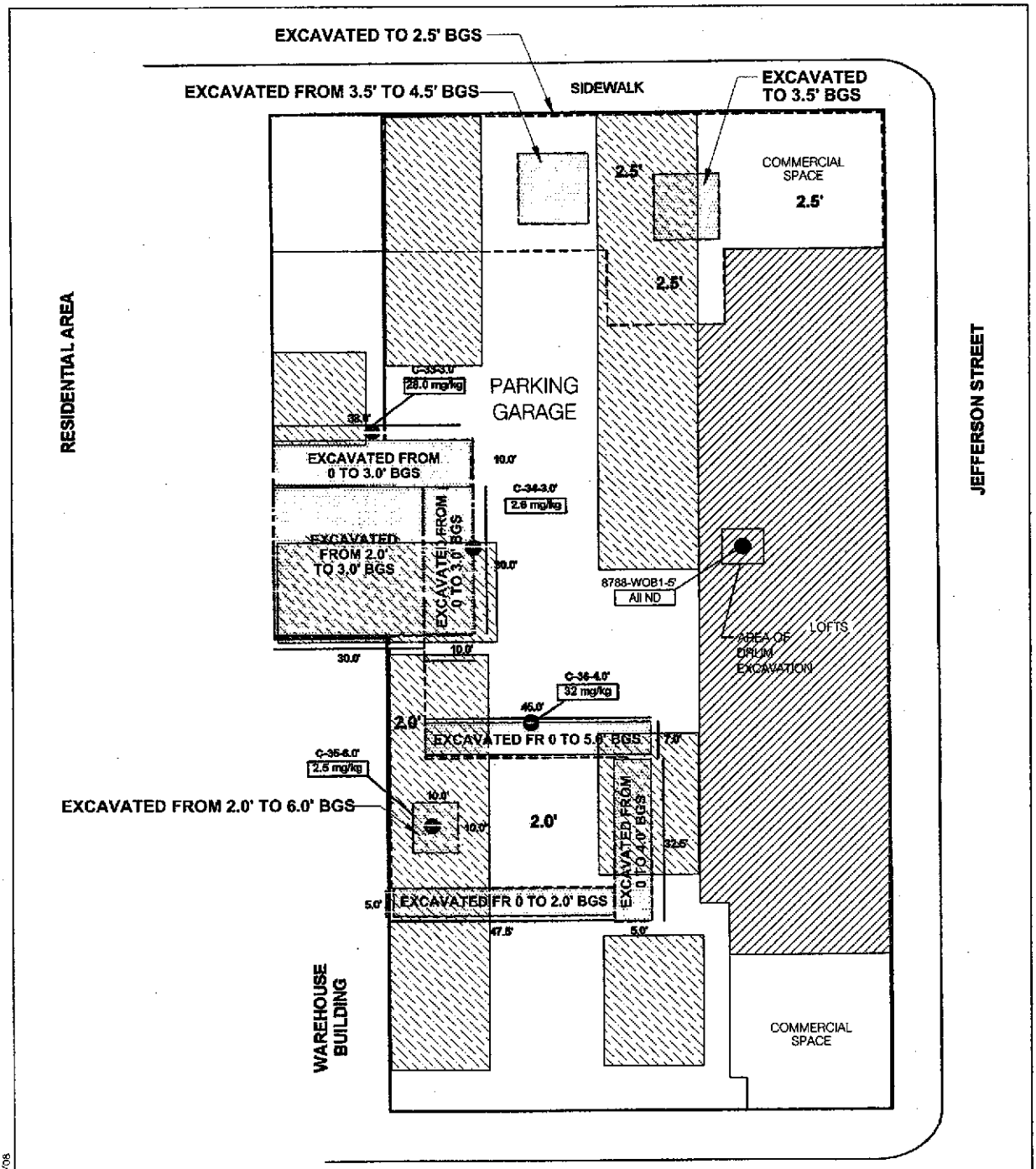
Approximate scale

901 JEFFERSON STREETS
Oakland, California

AREAS THAT EXCEED HAZARDOUS OR DESIGNATED WASTE DISPOSAL CRITERIA

Date 11/02/04 | Project No. 2820.02 | Figure 4

Treadwell&Rollo



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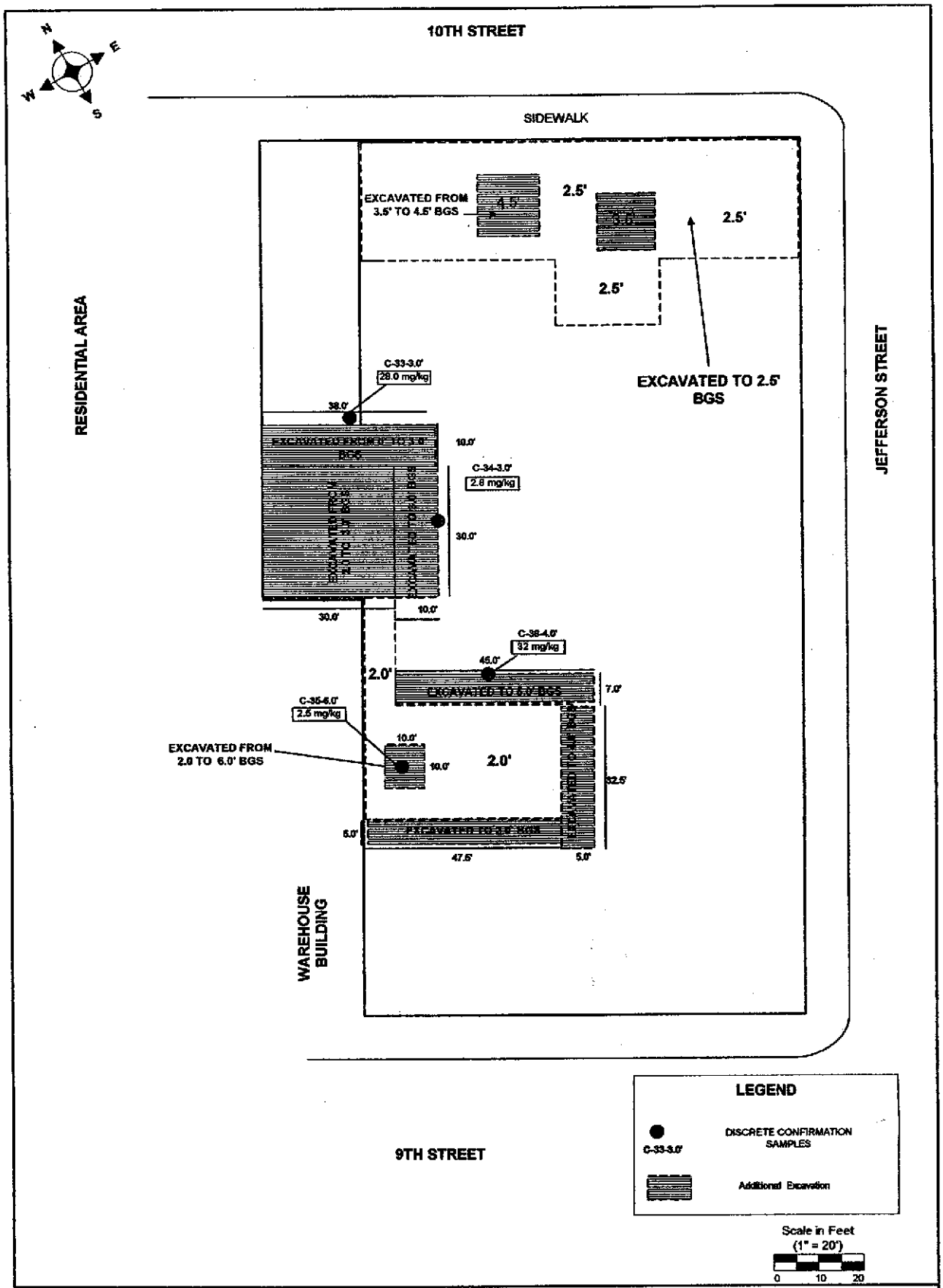
901 JEFFERSON
San Francisco, California

ADDITIONAL EXCAVATED AREAS AND CONFIRMATION SAMPLES

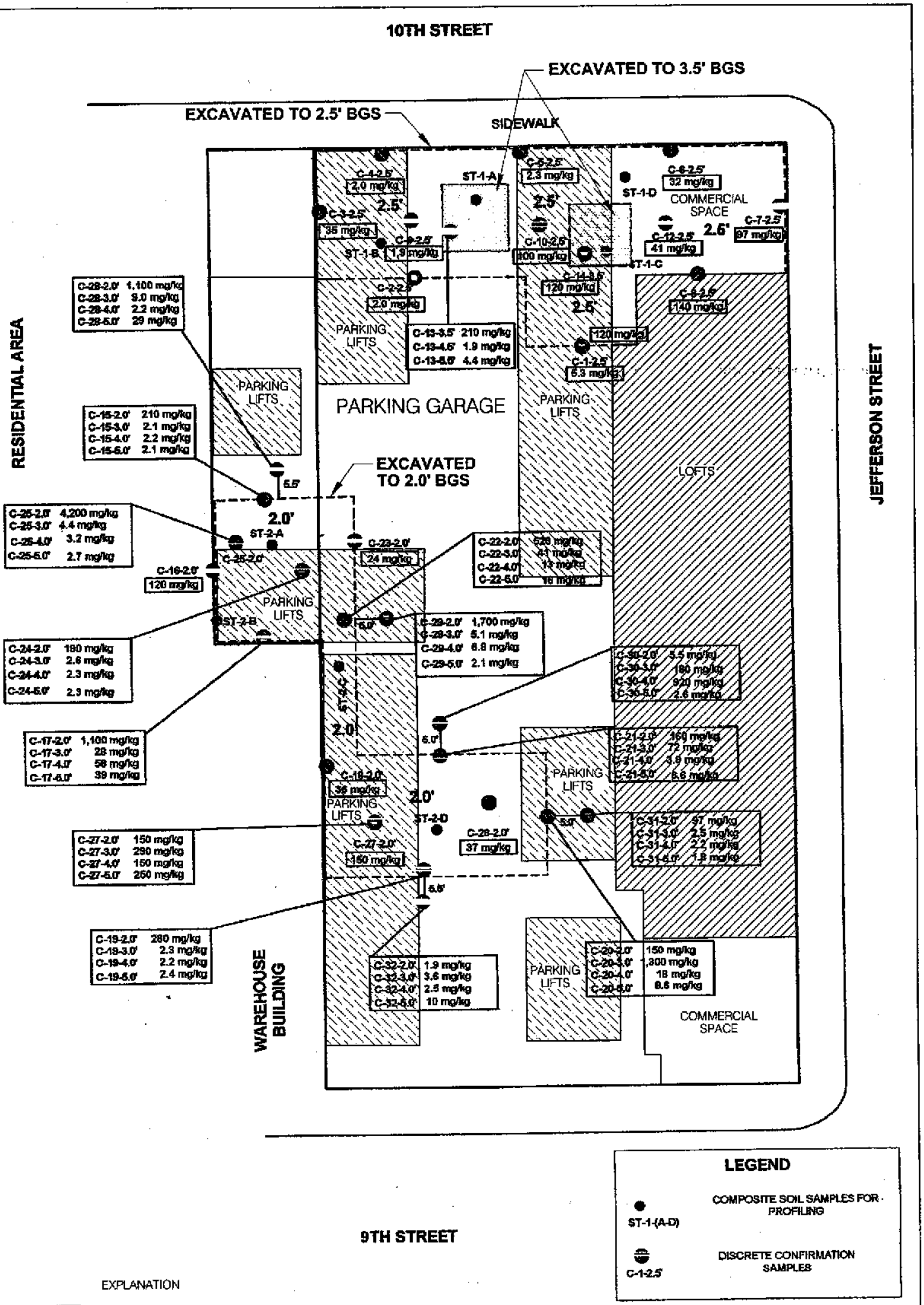
Date 05/17/07	Project No. 2820.04	Figure 5

Treadwell & Rollo



GOLDEN GATE TANK REMOVAL, INC. 255 Shipley Street, San Francisco, CA 94107 Ph (415) 512-1555 Fx (415) 512-0964	**ADDITIONAL EXCAVATION AREAS** 901 JEFFERSON STREET Oakland, California

GGTR Project No. 8788	*08/08/06*	*Figure By: SM*	***Figure 3***



EXPLANATION

PARKING LIFTS

LOFTS

0 20 Feet

Approximate scale

901 JEFFERSON
San Francisco, California

INITIAL EXCAVATED AREAS AND LEAD SAMPLING RESULTS

Date 03/17/08	Project No. 2820.04	Figure 4

Treadwell&Rollo

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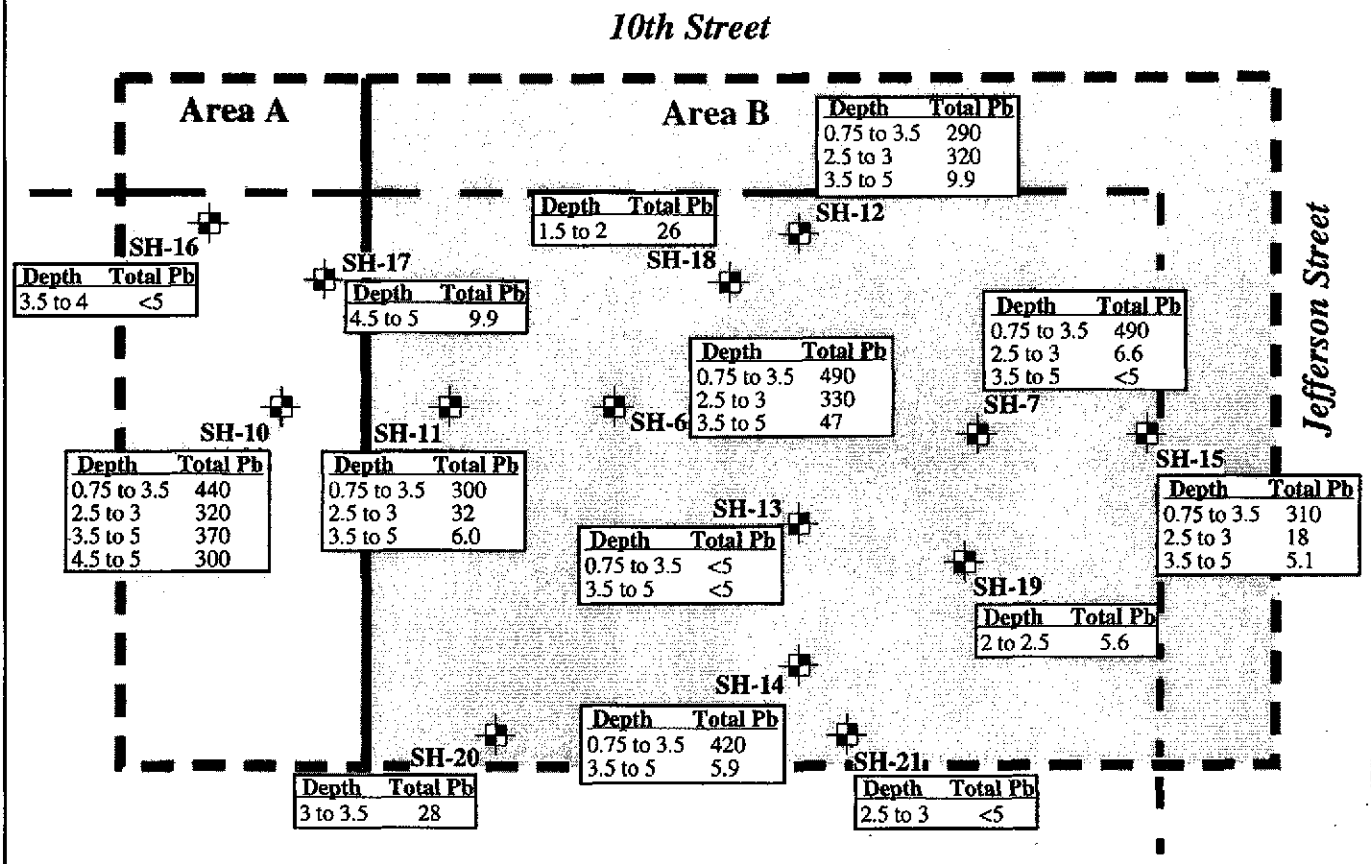
Area A (lead-contaminated soil assumed to be present between depths of 0.75- and 5-feet): 56-feet long by 20-feet wide by 4.25-feet deep = 4,760 bank cubic feet

Area B (lead-contaminated soil assumed to be present between depths of 0.75- and 3.5-feet): 74-feet long by 56-feet wide by 2.75-feet deep = 11,400 bank cubic feet



Legend

Boring

Property Line

Notes

(1) Total Pb = Total lead. Units are mg/kg.

(2) Depth measured in feet below ground surface.

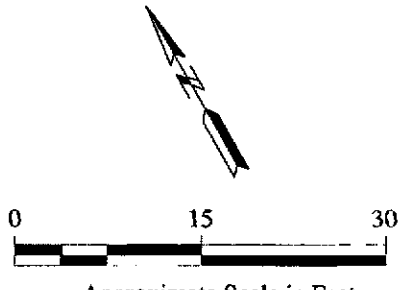
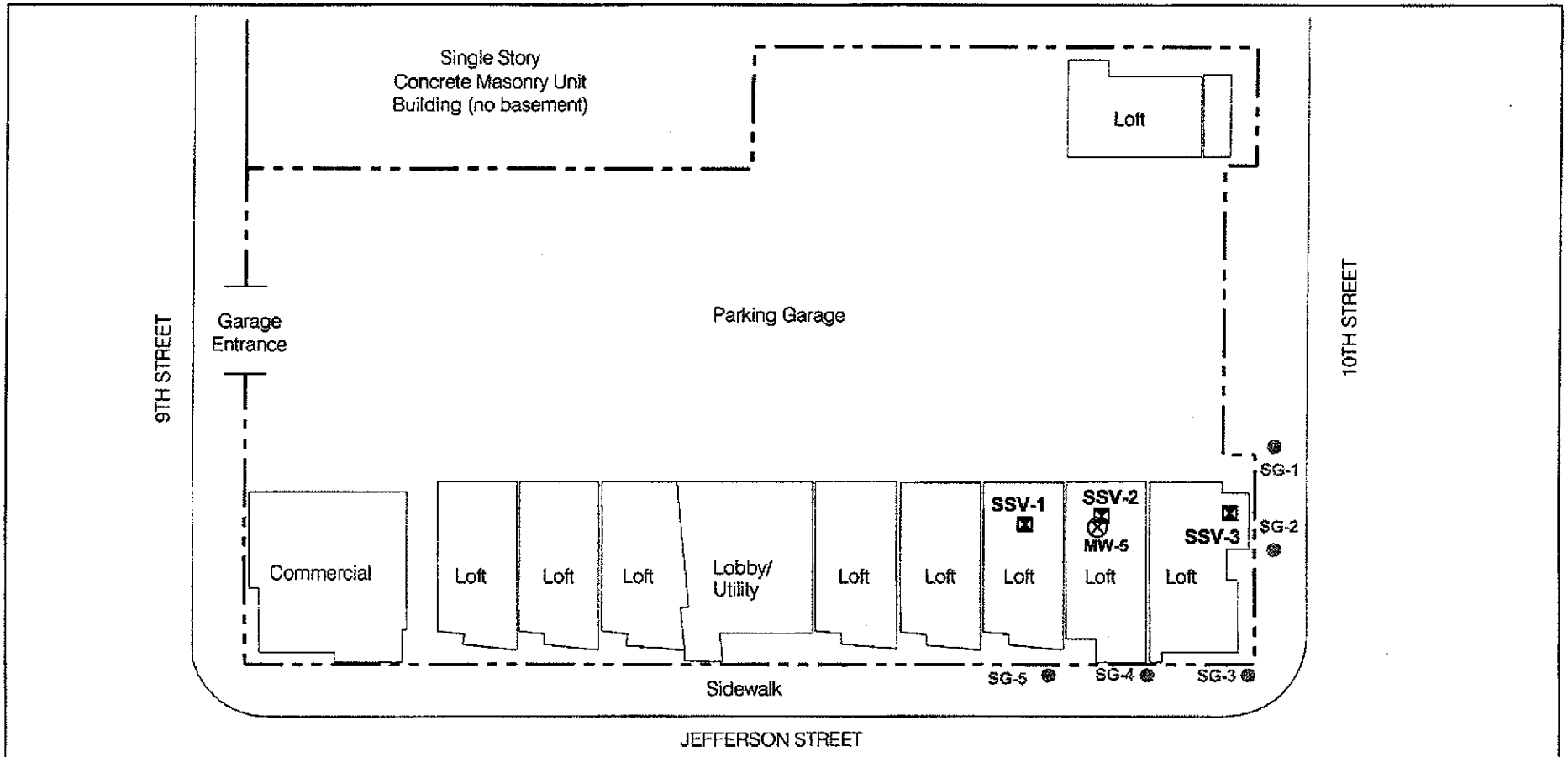


Figure 2b

Boring Locations and Estimated Area of Lead-Contaminated Soil (inset)

901 Jefferson Street Oakland CA

STREAMBORN



EXPLANATION

- Proposed sub-slab vapor sampling location
- Approximate location of former groundwater monitoring well
- Soil vapor sample by Treadwell & Rollo, Inc., January 2009
- Site boundary

0 30 Feet

Approximate scale

901 JEFFERSON STREET
Oakland, California

PROPOSED SUB-SLAB VAPOR SAMPLING LOCATIONS

Date 04/09/09	Project No. 2820.04	Figure 1

ATTACHMENT 4

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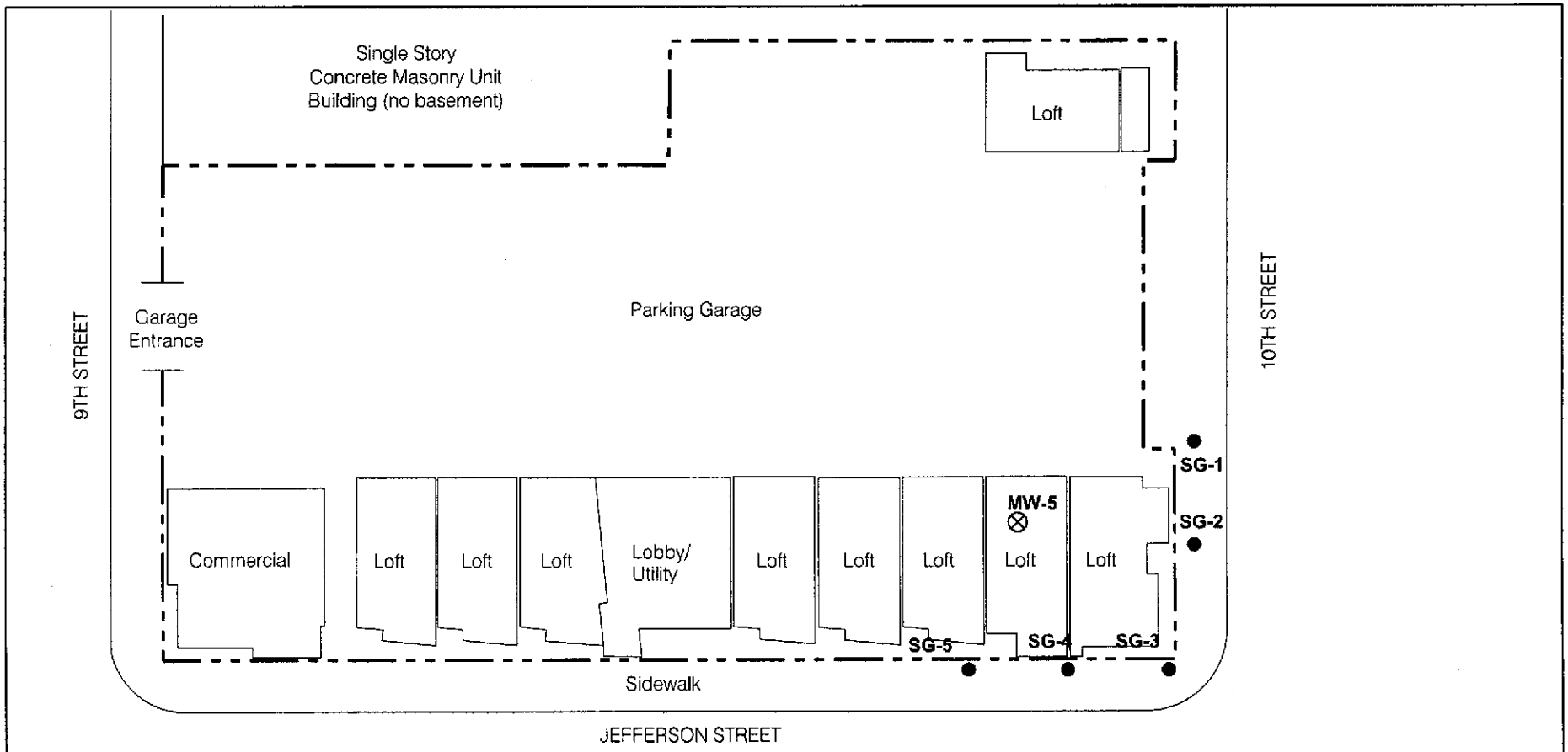

EXPLANATION

- Site boundary
- ⊗ Previous location of groundwater monitoring well
- ● Soil vapor sample by Treadwell & Rollo, Inc., January 2009

0 30 Feet

Approximate scale

901 JEFFERSON STREET
Oakland, California

SOIL VAPOR SAMPLING

Date 02/19/09	Project No. 2820.04	Figure 2

Treadwell&Rollo

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Table 1.
SOIL VAPOR ANALYTICAL RESULTS
901 JEFFERSON STREET
Oakland, California

Sample ID	Purge Volumes	Sample Depth (feet bgs)	VOCs							
			Chloroform (ug/m^3)	Benzene (ug/m^3)	Toluene (ug/m^3)	Ethyl Benzene (ug/m^3)	m,p-xylenes (ug/m^3)	o-Xylene (ug/m^3)	All Other VOCs (ug/m^3)	TPHg (ug/m^3)
SG-1 (TEG)	7	5	< 100	< 80	< 200	< 100	< 200	< 100	ND	ND
SG-1 (Air Toxics)	7	5	**11**	**5.8**	**34**	**8**	**38**	**12**	ND	**1300**
SG-2 (TEG)	7	5	< 100	**92**	< 200	< 100	< 200	< 100	ND	ND
SG-3 (TEG)	1	6	**170**	< 80	< 200	< 100	< 200	< 100	ND	ND
SG-3 (TEG)	3	6	**180**	**85**	< 200	< 100	< 200	< 100	ND	ND
SG-3 (TEG)	7	6	**230**	< 80	< 200	< 100	**240**	< 100	ND	ND
SG-4 (TEG)	7	5	**120**	**83**	< 200	< 100	< 200	< 100	ND	ND
SG-4-DUP (TEG)	7	5	**110**	**88**	< 200	< 100	< 200	< 100	ND	ND
SG-5 (TEG)	7	5	< 100	< 80	< 200	< 100	< 200	< 100	ND	ND
SG-5 (Air Toxics)	7	5	**73**	**10**	**110**	**17**	**61**	**19**	ND	**3700**
ESL-R			460	84	63,000	980	21,000	21,000		10,000

Notes:
VOCs - Volatile organic compounds
TPHg - Total petroleum hydrocarbons as gasoline
ug/m^3 - micrograms per cubic meter
(TEG) - Analysis performed by TEG Northern California, Inc. using EPA Method 8260
(Air Toxics) - Analysis performed by Air Toxics, Ltd using Modified EPA Method TO-15
11 = Bold value indicates detected chemical
< 100 - Not detected at or above the laboratory reporting limit of 100 ug/m^3
ND - Not detected above laboratory reporting limits (limits vary)
ESL-R - Environmental Screening Level for soil vapor, residential land use

ESL values cited from *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* by the San Francisco Bay Regional Water Quality Control Board (2007, revised May 2008) Table E-2, *Shallow Soil Gas Screening Levels*

Treadwell&Rollo

Table 1.
SUB-SLAB SOIL VAPOR ANALYTICAL RESULTS
901 JEFFERSON STREET
Oakland, California

Sample ID	Purge Volumes	Sample Depth (feet below slab base)	VOCs						Tracer gas
			Benzene (ug/m^3)	Toluene (ug/m^3)	Ethyl Benzene (ug/m^3)	m,p-xylenes (ug/m^3)	o-Xylene (ug/m^3)	TPHg (ug/m^3)	Helium (%)
SSV-1	3	0.3	12	410	110	590	190	2700	< 0.12
SSV-2	3	0.3	11	420	120	670	220	3100	< 0.11
SSV-3	3	0.3	16	480	140	730	230	3600	< 0.11
ESL-R			84	63,000	980	21,000	21,000	10,000	

Notes:
VOCs - Volatile organic compounds
TPHg - Total petroleum hydrocarbons as gasoline
ug/m^3 - micrograms per cubic meter
< 0.12 - Not detected at or above the laboratory reporting limit of 0.12%
ESL-R - Environmental Screening Level for soil vapor, residential land use

ESL values cited from *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* by the San Francisco Bay Regional Water Quality Control Board (2007, revised May 2008) Table E-2, *Shallow Soil Gas Screening Levels*

Treadwell&Rollo

Table 1
Lead in Profiling and Confirmation Samples
901 Jefferson Street
Oakland, California

Sample ID	Sample Date	Sampling Firm	Depth (feet bgs)	Total Lead [1]	WET (STLC) Soluble Lead [2]	TCLP Soluble Lead [2]
B-1-1-1	10/21/2004	T&R	1.0	**430**	**23**	**0.38**
B-1-2-1.5	10/21/2004	T&R	1.5	**110**	**22**	< 0.2
B-1-3-2.5	10/21/2004	T&R	2.5	**6.3**	--	--
B-1-4-3.5	10/21/2004	T&R	3.5	**7.2**	--	--
B-1-5-4.5	10/21/2004	T&R	4.5	**6.7**	--	--
B-1-5-5.5	10/21/2004	T&R	5.5	**8.7**	--	--
B-2-1-1	10/21/2004	T&R	1.0	**71**	**5.3**	--
B-2-2-1.5	10/21/2004	T&R	1.5	**56**	**0.81**	--
B-2-3-2.5	10/21/2004	T&R	2.5	**490**	**26**	**0.41**
B-2-4-3.5	10/21/2004	T&R	3.5	**8.5**	--	--
B-3-1-1	10/21/2004	T&R	1.0	**190**	**2.4**	**0.20**
B-3-2-1.5	10/21/2004	T&R	1.5	**140**	**5.8**	< 0.2
B-3-3-2.5	10/21/2004	T&R	2.5	**7.0**	--	--
B-3-4-3.5	10/21/2004	T&R	3.5	**6.4**	--	--
B-4-1-1	10/21/2004	T&R	1.0	**25**	--	--
B-4-2-1.5	10/21/2004	T&R	1.5	**6.6**	--	--
B-4-3-2.5	10/21/2004	T&R	2.5	**7.4**	--	--
B-4-4-3.5	10/21/2004	T&R	3.5	**6.8**	--	--
B-5-1-1	10/21/2004	T&R	1.0	**6.6**	--	--
B-5-2-1.5	10/21/2004	T&R	1.5	**7.5**	--	--
B-5-3-2.5	10/21/2004	T&R	2.5	**21**	--	--
B-5-4-3.5	10/21/2004	T&R	3.5	**6.3**	--	--
B-6-1-1	10/21/2004	T&R	1.0	**7.8**	--	--
B-6-2-2	10/21/2004	T&R	2.0	**13**	--	--
B-6-3-4	10/21/2004	T&R	4.0	**5.7**	--	--
B-7-1-1	10/21/2004	T&R	1.0	**10**	--	--
B-7-2-2.5	10/21/2004	T&R	2.5	**6.1**	--	--
B-8-1-1	10/21/2004	T&R	1.0	**33**	--	--
B-8-2-2.5	10/21/2004	T&R	2.5	**6.4**	--	--
B-9-1-1	10/21/2004	T&R	1.0	**17**	--	--
B-9-2-2	10/21/2004	T&R	2.0	**8.9**	--	--
B-9-3-4	10/21/2004	T&R	4.0	**6.7**	--	--
B-9-4-8	10/21/2004	T&R	8.0	**7.6**	--	--
B-9-5-10.5	10/21/2004	T&R	10.5	**6.5**	--	--
B-10-1-1	10/21/2004	T&R	1.0	**420**	**24**	**0.42**

ATTACHMENT 5

Table 1
Lead in Profiling and Confirmation Samples
901 Jefferson Street
Oakland, California

Sample ID	Sample Date	Sampling Firm	Depth (feet bgs)	Total Lead [1]	WET (STLC) Soluble Lead [2]	TCLP Soluble Lead [2]
B-10-2-2	10/21/2004	T&R	2.0	**7.4**	--	--
B-10-3-4	10/21/2004	T&R	4.0	**7.1**	--	--
B-11-1-1	10/21/2004	T&R	1.0	**6.0**	--	--
B-11-2-2.5	10/21/2004	T&R	2.5	**6.3**	--	--
B-12-1-1	10/21/2004	T&R	1.0	**7.7**	--	--
B-12-2-2.5	10/21/2004	T&R	2.5	**5.9**	--	--
B-13-1-1	10/21/2004	T&R	1.0	**7.2**	--	--
B-13-2-2.5	10/21/2004	T&R	2.5	**5.7**	--	--
B-14-1-1	10/21/2004	T&R	1.0	**30**	--	--
B-14-2-2	10/21/2004	T&R	2.0	**6.2**	--	--
B-14-3-4	10/21/2004	T&R	4.0	**5.6**	--	--
B-15-1-1	10/21/2004	T&R	1.0	**12**	--	--
B-15-2-2.5	10/21/2004	T&R	2.5	**6.0**	--	--
B-16-1-0.5	10/22/2004	T&R	0.5	**14**	--	--
B-16-2-1.5	10/22/2004	T&R	1.5	**9.6**	--	--
B-17-1-0.5	10/22/2004	T&R	0.5	**11**	--	--
B-17A-1-0.5	10/22/2004	T&R	0.5	**40**	--	--
B-18-1-1	10/22/2004	T&R	1.0	**620**	**46**	**0.41**
B-18-2-2.5	10/22/2004	T&R	2.5	**12**	--	--
B018-3-4.0	10/22/2004	T&R	4.0	**12**	--	--
ST-1-A-D	6/23/2006	GGTR	NA	**55**	**4.8**	--
ST-2-A-D	6/23/2006	GGTR	NA	**200**	**24.0**	<0.25
C-1-2.5	6/23/2006	GGTR	2.5	**5.3**	--	--
C-2-2.5	6/23/2006	GGTR	2.5	**2.0**	--	--
C-3-2.5	6/23/2006	GGTR	2.5	**35.0**	--	--
C-4-2.5	6/23/2006	GGTR	2.5	**2.0**	--	--
C-5-2.5	6/23/2006	GGTR	2.5	**2.3**	--	--
C-6-2.5	6/23/2006	GGTR	2.5	**32.0**	--	--
C-7-2.5	6/23/2006	GGTR	2.5	**97.0**	--	--
C-8-2.5	6/23/2006	GGTR	2.5	**140.0**	--	--
C-9-2.5	6/23/2006	GGTR	2.5	**1.9**	--	--
C-10-2.5	6/23/2006	GGTR	2.5	**100.0**	--	--
C-12-2.5	6/23/2006	GGTR	2.5	**41.0**	--	--
C-13-3.5	6/23/2006	GGTR	3.5	**210.0**	--	--
C-13-4.5	6/30/2006	GGTR	4.5	**1.9**	--	--
C-13-5.5	6/30/2006	GGTR	5.5	**4.4**	--	--
C-14-3.5	6/23/2006	GGTR	3.5	**120.0**	--	--
C-15-2.0	6/23/2006	GGTR	2.0	**210.0**	--	--
C-15-3.0	6/30/2006	GGTR	3.0	**2.1**	--	--
C-15-4.0	6/30/2006	GGTR	4.0	**2.2**	--	--

Table 1
Lead in Profiling and Confirmation Samples
901 Jefferson Street
Oakland, California

Sample ID	Sample Date	Sampling Firm	Depth (feet bgs)	Total Lead [1]	WET (STLC) Soluble Lead [2]	TCLP Soluble Lead [2]
C-15-5.0	6/30/2006	GGTR	5.0	**2.1**	--	--
C-16-2.0	6/23/2006	GGTR	2.0	**120.0**	--	--
C-17-2.0	6/23/2006	GGTR	2.0	**1,100.0**	--	--
C-17-3.0	6/30/2006	GGTR	3.0	**28.0**	--	--
C-17-4.0	6/30/2006	GGTR	4.0	**58.0**	--	--
C-17-5.0	6/30/2006	GGTR	5.0	**39.0**	--	--
C-18-2.0	6/23/2006	GGTR	2.0	**36.0**	--	--
C-19-2.0	6/23/2006	GGTR	2.0	**280.0**	--	--
C-19-3.0	6/30/2006	GGTR	3.0	**2.3**	--	--
C-19-4.0	6/30/2006	GGTR	4.0	**2.2**	--	--
C-19-5.0	6/30/2006	GGTR	5.0	**2.4**	--	--
C-20-2.0	6/23/2006	GGTR	2.0	**150.0**	--	--
C-20-3.0	6/30/2006	GGTR	3.0	**1,300.0**	--	--
C-20-4.0	6/30/2006	GGTR	4.0	**18.0**	--	--
C-20-5.0	6/30/2006	GGTR	5.0	**8.6**	--	--
C-21-2.0	6/23/2006	GGTR	2.0	**160.0**	--	--
C-21-3.0	6/30/2006	GGTR	3.0	**72.0**	--	--
C-21-4.0	6/30/2006	GGTR	4.0	**3.9**	--	--
C-21-5.0	6/30/2006	GGTR	5.0	**6.6**	--	--
C-22-2.0	6/23/2006	GGTR	2.0	**520.0**	--	--
C-22-3.0	6/30/2006	GGTR	3.0	**41.0**	--	--
C-22-4.0	6/30/2006	GGTR	4.0	**13.0**	--	--
C-22-5.0	6/30/2006	GGTR	5.0	**16.0**	--	--
C-23-2.0	6/23/2006	GGTR	2.0	**24.0**	--	--
C-24-2.0	6/23/2006	GGTR	2.0	**190.0**	--	--
C-24-3.0	6/30/2006	GGTR	3.0	**2.6**	--	--
C-24-4.0	6/30/2006	GGTR	4.0	**2.3**	--	--
C-24-5.0	6/30/2006	GGTR	5.0	**2.3**	--	--
C-25-2.0	6/23/2006	GGTR	2.0	**4,200.0**	--	--
C-25-3.0	6/30/2006	GGTR	3.0	**4.4**	--	--
C-25-4.0	6/30/2006	GGTR	4.0	**3.2**	--	--
C-25-5.0	6/30/2006	GGTR	5.0	**2.7**	--	--
C-26-2.0	6/23/2006	GGTR	2.0	**37.0**	--	--
C-27-2.0	6/23/2006	GGTR	2.0	**150.0**	--	--
C-27-3.0	6/30/2006	GGTR	3.0	**290.0**	--	--
C-27-4.0	6/30/2006	GGTR	4.0	**150.0**	--	--
C-27-5.0	6/30/2006	GGTR	5.0	**250.0**	--	--
C-28-2.0	6/23/2006	GGTR	2.0	**1,100.0**	--	--
C-28-3.0	6/30/2006	GGTR	3.0	**9.0**	--	--

Treadwell&Rollo

Table 1
Lead in Profiling and Confirmation Samples
901 Jefferson Street
Oakland, California

Sample ID	Sample Date	Sampling Firm	Depth (feet bgs)	Total Lead [1]	WET (STLC) Soluble Lead [2]	TCLP Soluble Lead [2]
C-28-4.0	6/30/2006	GGTR	4.0	**2.2**	--	--
C-28-5.0	6/30/2006	GGTR	5.0	**29.0**	--	--
C-29-2.0	6/23/2006	GGTR	2.0	**1,700.0**	--	--
C-29-3.0	6/30/2006	GGTR	3.0	**5.1**	--	--
C-29-4.0	6/30/2006	GGTR	4.0	**6.8**	--	--
C-29-5.0	6/30/2006	GGTR	5.0	**2.1**	--	--
C-30-2.0	6/30/2006	GGTR	2.0	**5.5**	--	--
C-30-3.0	6/30/2006	GGTR	3.0	**180.0**	--	--
C-30-4.0	6/30/2006	GGTR	4.0	**920.0**	--	--
C-30-5.0	6/30/2006	GGTR	5.0	**2.6**	--	--
C-31-2.0	6/23/2006	GGTR	2.0	**97.0**	--	--
C-31-3.0	6/30/2006	GGTR	3.0	**2.5**	--	--
C-31-4.0	6/30/2006	GGTR	4.0	**2.2**	--	--
C-31-5.0	6/30/2006	GGTR	5.0	**1.8**	--	--
C-32-2.0	6/30/2006	GGTR	2.0	**1.9**	--	--
C-32-3.0	6/30/2006	GGTR	3.0	**3.6**	--	--
C-32-4.0	6/30/2006	GGTR	4.0	**2.5**	--	--
C-32-5.0	6/30/2006	GGTR	5.0	**10.0**	--	--
C-33-3.0	7/07/2006	GGTR	3.0	**28.0**	--	--
C-34-3.0	7/07/2006	GGTR	3.0	**2.6**	--	--
C-35-6.0	7/07/2006	GGTR	6.0	**2.5**	--	--
C-36-4.0	7/07/2006	GGTR	4.0	**32.0**	--	--
Regulatory Concentrations				1,000 (TTLC)	5.0 (STLC)	5.0 (TCLP)
ESL				150	N/A	N/A

Notes:

T&R = Treadwell & Rollo GGTR = Golden Gate Tank Removal

[1] Results presented in milligrams per kilogram (mg/kg), equivalent to parts per million

[2] Results presented in milligrams per liter (mg/L), equivalent to parts per million

bgs = Below ground surface -- = Not analyzed

< 1.0 = not detected above the laboratory reporting limit

Bold indicates detection above laboratory reporting limit

ESL = Residential Environmental Screening Level (SFRWQCB, 2005)

WET = California Waste Extraction Test, TCLP = Toxicity Characteristic Leaching Procedure

STLC = Soluble Threshold Limit Concentration; TTLC = Total Threshold Limit Concentration

Treadwell&Rollo

Table 2
Organic Compounds in Soil
901 Jefferson Street
Oakland, California

Sample ID	Sample Date	Depth (feet bgs)	TOTAL PETROLEUM HYDROCARBONS			
			TPH-diesel	TPH-motor oil	TPH-gas	BTEX
B-2-2-1.5	10/21/2004	1.5	< 1.0	< 5.0	< 1.0	< 0.005
B-3-3-2.5	10/21/2004	2.5	< 1.0	< 5.0	< 1.0	< 0.005
B-6-4-8	10/21/2004	8.0	< 1.0	< 5.0	< 1.0	< 0.005
B-9-3-4	10/21/2004	4.0	**160 g_2,b**	**410**	< 1.0	< 0.005
B-9-4-8	10/21/2004	8.0	**2,400 a,g_2**	**710**	**120 g_1**	< 0.10
B-9-5-10.5	10/21/2004	10.5	**5,800 a,g_2**	**2,200**	**950 g_1**	< 1.0
B-11-3-4.5	10/21/2004	4.5	< 1.0	< 5.0	< 1.0	< 0.005
B-14-1-1	10/21/2004	1.0	< 1.0	< 5.0	< 1.0	< 0.005
ESL			100.0	500.0	100.0	0.18 (benzene)

Notes:
Results presented in milligrams per kilogram (mg/kg)
< 1.0 = not detected above the laboratory reporting limit
bgs = Below ground surface
Bold indicates above laboratory reporting limit
g_1 = Laboratory indicates strongly aged gasoline or diesel compounds are significant
g_2 = Laboratory indicates oil range compounds are significant
b = Laboratory indicates diesel range compounds are significant; no recognizable pattern
a = Laboratory indicates unmodified or weakly modified diesel is significant
TPH = total petroleum hydrocarbons
BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes
ESL = Residential Environmental Screening Level (SFRWQCB, 2005)

HYDROCARBON INVESTIGATION
9TH & JEFFERSON STREETS

Table 1a. ANALYTICAL RESULTS FOR SOIL[1]

Boring	Sample #	Date	TPH[2]	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Lead	Volatile Organics
1	1-1, 1-2, 1-3, 1-4	4-19-89	ND	ND	ND	ND	ND	3.1	ND
2	2-1, 2-2, 2-3, 2-4	4-19-89	ND	ND	ND	ND	ND	2.6	ND
3	3-1, 3-2, 3-3, 3-4	4-19-89	ND	ND	ND	ND	ND	2.9	ND
4	4-1, 4-2, 4-3, 4-4	4-19-89	220	<0.25	<0.5	<0.5	<0.5	2.5	ND
5	5-1, 5-2, 5-3, 5-4	4-19-89	ND	ND	ND	ND	ND	2.2	ND
6	6-1, 6-2, 6-3	4-19-89	ND	ND	ND	ND	ND	2.7	ND
8	8-3	8-4-89	370	ND	1.1	6.5	12		
10	10-2	8-4-89	150	ND	0.20	1.9	6.4		
	10-3	8-4-89	150	ND	0.40	2.8	5.4		
12	12-3	8-4-89	3.0	0.32	ND	ND	ND		
14	14-1	8-4-89	ND	ND	ND	ND	ND		
	14-2	8-4-89	1400	ND	5.0	37	64		
15	15-2	8-7-89	2.0	ND	ND	ND	ND		
17	17-1	8-4-89	ND	ND	ND	ND	ND		
	17-2	8-4-89	1500	ND	6.0	32	99		
MW19	MW19-1	8-7-89	4.4	0.68	ND	0.36	0.53		
Detection Limits		1.0	0.05	0.1	0.1	0.1			

[1] All results reported as parts per million (ppm)
[2] Low/medium boiling point hydrocarbons - Total Petroleum Hydrocarbons (TPH)

Table 1

Shallow Soil Analytical Results
901 Jefferson Street, Oakland CA

Location	Depth (feet)	Sample Date	Sample Identification	Sample Type	Organic Vapor Meter Screening (ppm v/v)	Odor and Staining	TPH-Kerosene (mg/kg)	TPH-Diesel (mg/kg)	TPH-Motor Oil (mg/kg)	TPH-Gasoline (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Other Volatile Organic Compounds (mg/kg)	Total Lead (mg/kg)	Soluble Lead (mg/L)
SH-1 and SH-2	0.75 to 3.5	16 Nov 97	SH1/SH2(0.75-3.5)	Composite		none		4.9		NM	NM	NM	NM	NM	NM	66	NM
SH-3	0.75 to 3.5	16 Nov 97	SH3(0.75-3.5)	Composite		none		2.8		NM	NM	NM	NM	NM	NM		NM
	1.25 to 1.75	16 Nov 97	SH3(1.25-1.75)	Grab (liner)		none	NM	NM	NM							NM	NM
SH-4	1.25 to 1.75	16 Nov 97	SH4(1.25-1.75)	Grab (liner)		none	NM	NM	NM							NM	NM
SH-4 and SH-5	0.75 to 3.5	16 Nov 97	SH4/SH5(0.75-3.5)	Composite		none				NM	NM	NM	NM	NM	NM		NM
SH-5	1.25 to 1.75	16 Nov 97	SH5(1.25-1.75)	Grab (liner)		none	NM	NM	NM							NM	NM
SH-6	1.25 to 1.75	16 Nov 97	SH6(1.25-1.75)	Grab (liner)		none	NM	NM	NM							NM	NM
	3.5 to 5	10 Dec 97	SH6(3.5-5)	Composite		none	NM	NM	NM	NM	NM	NM	NM	NM	NM	47	NM
SH-6 and SH-7	0.75 to 3.5	16 Nov 97	SH6/SH7(0.75-3.5)	Composite		none		23	250	NM	NM	NM	NM	NM	NM	490	WET = 10 TCLP < 1.0
SH-7	1.25 to 1.75	16 Nov 97	SH7(1.25-1.75)	Grab (liner)		none	NM	NM	NM							NM	NM
	3.5 to 5	10 Dec 97	SH7(3.5-5)	Composite		none	NM	NM	NM	NM	NM	NM	NM	NM	NM		NM
SH-8 and SH-9	0.75 to 3.5	16 Nov 97	SH8/SH9(0.75-3.5)	Composite		none		2.3		NM	NM	NM	NM	NM	NM	9.6	NM
SH-10	0.75 to 3.5	10 Dec 97	SH10(0.75-3.5)	Composite		none	NM	NM	NM	NM	NM	NM	NM	NM	NM	440	NM
	3.5 to 5	10 Dec 97	SH10(3.5-5)	Composite		none	NM	NM	NM	NM	NM	NM	NM	NM	NM	370	NM
SH-11	0.75 to 3.5	10 Dec 97	SH11(0.75-3.5)	Composite		none	NM	NM	NM	NM	NM	NM	NM	NM	NM	300	NM
	3.5 to 5	10 Dec 97	SH11(3.5-5)	Composite		none	NM	NM	NM	NM	NM	NM	NM	NM	NM	6.0	NM
SH-12	0.75 to 3.5	10 Dec 97	SH12(0.75-3.5)	Composite		none	NM	NM	NM	NM	NM	NM	NM	NM	NM	290	WET = 18 TCLP < 0.5
	3.5 to 5	10 Dec 97	SH12(3.5-5)	Composite		none	NM	NM	NM	NM	NM	NM	NM	NM	NM	9.9	NM
SH-13	0.75 to 3.5	10 Dec 97	SH13(0.75-3.5)	Composite		none	NM	NM	NM	NM	NM	NM	NM	NM	NM		NM
	3.5 to 5	10 Dec 97	SH13(3.5-5)	Composite		none	NM	NM	NM	NM	NM	NM	NM	NM	NM		NM
SH-14	0.75 to 3.5	10 Dec 97	SH14(0.75-3.5)	Composite		none	NM	NM	NM	NM	NM	NM	NM	NM	NM	420	NM
	3.5 to 5	10 Dec 97	SH14(3.5-5)	Composite		none	NM	NM	NM	NM	NM	NM	NM	NM	NM	5.9	NM
SH-15	0.75 to 3.5	10 Dec 97	SH15(0.75-3.5)	Composite		none	NM	NM	NM	NM	NM	NM	NM	NM	NM	130	WET = 20 TCLP = 0.66
	0.75 to 3.5	10 Dec 97	SH15(0.75-3.5)	Reanalysis		none	NM	NM	NM	NM	NM	NM	NM	NM	NM	310	WET = 22
	3.5 to 5	10 Dec 97	SH15(3.5-5)	Composite		none	NM	NM	NM	NM	NM	NM	NM	NM	NM	5.1	NM

General Notes

(a) < indicates concentration below laboratory method reporting limit (shaded cells).

(b) Soil samples collected by Streamborn (Berkeley CA). Samples analyzed by Chromalab (Pleasanton CA).

(c) TPH = total petroleum hydrocarbons. Other Volatile Organic Compounds = compounds of interest by EPA Method 8240. NM = Not measured.

(d) Organic Vapor Meter = Thermo Environmental Instruments, Model 580B, equipped with 10.2 eV photoionization detector, calibrated to 100 ppm v/v isobutylene.

(e) WET = California Waste Extraction test by modified EPA Method 3005A. TCLP = Toxicity Characteristic Leaching Procedure test by EPA Method 1311.

STREAMBORN

Table 2

Selected Analytical Results for Lead-Contaminated Soil

901 Jefferson Street, Oakland CA

Location	Depth (feet)	Sample Date	Sample Identification	Sample Type	Total Lead (mg/kg)	WET-Soluble Lead (mg/L)	TCLP-Soluble Lead (mg/L)	Fresh Water EP Toxicity-Soluble Lead (mg/L)		Sea Water EP Toxicity-Soluble Lead (mg/L)	
								Extraction 1	Extraction 2	Extraction 1	Extraction 2
SH-6 and SH-7	0.75 to 3.5	16 Nov 97	SH6/SH7(0.75-3.5)	Composite	490	10	<1.0				
SH-6, SH-7, SH-10, and SH-14	0.75 to 3.5	18 Mar 98	SH6, 7, 10, 14 (0.75-3.5)	Composite			[illegible]	0.065	<0.05	<0.05	<0.05
				Replicate			0.62				
				Replicate			[illegible]				
				Replicate			[illegible]				
SH-10	0.75 to 3.5	10 Dec 97	SH10(0.75-3.5)	Composite	440						
	3.5 to 5	10 Dec 97	SH10(3.5-5)	Composite	370						
SH-11	0.75 to 3.5	10 Dec 97	SH11(0.75-3.5)	Composite	300						
SH-12	0.75 to 3.5	10 Dec 97	SH12(0.75-3.5)	Composite	290	18	<0.5				
SH-13	0.75 to 3.5	10 Dec 97	SH13(0.75-3.5)	Composite	<5						
SH-14	0.75 to 3.5	10 Dec 97	SH14(0.75-3.5)	Composite	420						
SH-15	0.75 to 3.5	10 Dec 97	SH15(0.75-3.5)	Composite	130	20	0.66				
				Reanalysis	310	22					
Maximum					490	22	0.66	0.065		[illegible]	
Minimum					<5	10	[illegible]	[illegible]		[illegible]	
Mean					310	18	[illegible]				
Standard Deviation					160	5.3	0.19				
90% Upper Confidence Limit					520	26	0.67				

General Notes

(a) < indicates concentration below laboratory method reporting limit (shaded cells).

(b) Soil samples collected by Streamborn (Berkeley CA). Samples analyzed by Chromalab (Pleasanton CA).

(c) WET = California Waste Extraction. TCLP = Toxicity Characteristic Leaching Procedure test.

(d) For statistical analysis, nondetectable measurements assumed equal to one-half the detection limit.

(e) 90% upper confidence limit (10% probability of exceeding the limit) was calculated using the Student's t statistic (which assumes normally-distributed data).

8910084-T1 COT-2

HYDROCARBON INVESTIGATION
9TH & JEFFERSON STREETS

Table 1b. ANALYTICAL RESULTS FOR WATER[1]

Well	Date	TPH[2]	Benzene	Toluene	Ethyl Benzene	Xylene	Volatile Organics[3]
MW-5	4-24-89	24.0	7.5	0.22	0.99	0.73	acetone-2.1
MW-5	8-14-89	19.0	5.4	0.21	0.77	0.44	ND
MW-18	8-14-89	7.6	0.16	0.021	0.21	0.014	
MW-19	8-14-89	26.0	4.3	0.69	0.98	2.6	
Detection Limits	0.030	0.0003	0.0003	0.0003	0.0003		

1 All results reported as parts per million (ppm)
2 Low/medium boiling point hydrocarbons - Total Petroleum Hydrocarbons (TPH)
3 Other than benzene, toluene, ethyl benzene, and xylene

data

ATTACHMENT 6

Table 3

Groundwater Analytical Results

Sample Location	Sample Date	Sampled By	Analyzed By	Sample Iden-tification	Sample Type	TPH-Gasoline (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Xylenes (mg/L)	Volatile Organic Compounds (ug/L)	Ammonia -as nitrogen (mg/L)	Nitrate -as nitrogen (mg/L)	Phosphate -as PO_4 (mg/L)	Bacteria Analyses (cfu/ml)	Comments
MW-5	24 Apr 89	WCC	Sequoia		Grab (bailer)	24	7.5	0.22	0.99	0.73	Acetone = 2.1 Others - ND	NM	NM	NM	NM	
	14 Aug 89	WCC	Sequoia		Grab (bailer)	19	7.4	0.21	0.77	0.44	Others - ND	NM	NM	NM	NM	
	15 Feb 91	WCC	Sequoia		Grab (bailer)	13	7.5	0.25	1.0	0.34	NM	NM	NM	NM	NM	
	2 Mar 93	WCC	Sequoia		Grab (bailer)	32	4.4	0.17	0.62	0.26	NM	NM	NM	NM	NM	
	15 Dec 93	Sborn	Chroma	MW-5 (15Dec93)	Grab (bailer)	20	4.4	0.18	0.76	0.29	NM	NM	NM	NM	NM	
	26 Oct 94	Sborn	AEN	MW-5 (26Oct94)	Grab (bailer)	22	4.2	0.16	0.63	0.24	NM	NM	NM	NM	NM	Sampling conducted immediately prior to start of pilot study
	23 Dec 94	Sborn	AEN	MW-5 (23Dec94)	Grab (bailer)	20	3.2	0.15	0.62	0.24	NM	<2.5 (field)	<0.1 (field)	<2.5 (field)	NM	Sampling conducted during pilot study. Prior to sampling, 8 dosing events completed at PTW-1
	17 Feb 95	Sborn	AEN	MW-5 (17Feb95)	Grab (bailer)	22	2.6	0.13	0.41	0.25	NM	<2.5 (field)	<0.1 (field)	<2.5 (field)	NM	Sampling conducted during pilot study. Prior to sampling, 16 dosing events completed at PTW-1.
	18 Apr 95	Sborn	AEN, C&T, Medina	MW-5 (18Apr95)	Grab (bailer)	3.4	0.15	0.007	0.009	0.007	NM	<2.5 (field)	<0.1 (field)	<2.5 (field)	Heterotrophic - 2×10^6 Gas/BTEX Degrading - 2×10^4 TPH Degrading - 3×10^4	Sampling conducted during pilot study. Prior to sampling, 24 dosing events completed at PTW-1
MW-18	14 Aug 89	WCC	Sequoia		Grab (bailer)	7.6	0.16	0.021	0.21	0.014	NM	NM	NM	NM	NM	
	15 Feb 91	WCC	Sequoia		Grab (bailer)	2.7	0.056	0.022	0.094	0.02	NM	NM	NM	NM	NM	
	2 Mar 93	WCC	Sequoia		Grab (bailer)	3.2	0.011	0.026	0.017	0.019	NM	NM	NM	NM	NM	
	15 Dec 93	Sborn	Chroma	MW-18 (15Dec94)	Grab (bailer)	5.9	0.0079	0.039	0.019	0.028	NM	NM	NM	NM	NM	
PTW-1	26 Oct 94	Sborn	AEN	PTW-1 (26Oct94)	Grab (bailer)	23	1.7	0.44	0.88	2.1	NM	<0.1 (lab)	<1 (lab)	<0.5 (lab)	NM	Sampling conducted immediately prior to start of pilot study.
	23 Dec 94	Sborn	-	PTW-1 (23Dec94)	Grab (bailer)	NM	NM	NM	NM	NM	NM	3 (field)	<0.1 (field)	<2.5 (field)	NM	Sampling conducted during pilot study. Prior to sampling, 16 dosing events completed at PTW-1
	17 Feb 95	Sborn	AEN	PTW-1 (17Feb95)	Grab (bailer)	7.8	0.11	0.012	0.023	0.04	NM	3 (field)	<0.1 (field)	<2.5 (field)	NM	Sampling conducted during pilot study. Prior to sampling 24 dosing events completed at PTW-1.
	18 Apr 95	Sborn	AEN, C&T, Medina	PTW-1 (18Apr95)	Grab (bailer)	2.7 (1)	0.035	0.003	0.005	0.01	NM	5 (field)	<0.1 (field)	<2.5 (field)	Heterotrophic - 7×10^6 Gas/BTEX Degrading - 9×10^5 TPH Degrading - 1×10^6	Sampling conducted during pilot study. Prior to sampling 24 dosing events completed at PTW-1.
MW-19	14 Aug 89	WCC	Sequoia		Grab (bailer)	26	4.3	0.69	0.98	2.6	NM	NM	NM	NM	NM	
	15 Feb 91	WCC	Sequoia		Grab (bailer)	13	1.8	0.64	0.51	2.6	NM	NM	NM	NM	NM	
	2 Mar 93	WCC	Sequoia		Grab (bailer)	46	10	1.1	1.7	4.5	NM	NM	NM	NM	NM	1/4-inch floating product observed during sampling; sample results may not be representative of dissolved concentrations
	15 Dec 93	Sborn	Not Analyzed	Not Analyzed	Grab (bailer)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	Approximately 1/3-inch floating product observed in well. Accordingly, well not sampled

General Notes

(a) ND - Not detected. Detection limit varied according to compound, as is normal.
(b) cfu/ml = colony forming units per milliliter
(c) B - benzene, E - ethylbenzene; T = toluene, X = xylenes.
(d) Volatile Organic Compounds = Compounds per EPA Method 8240 (GC/MS)
(e) NM - Not measured
(f) Sborn = Streamborn; WWC - Woodward-Clyde Consultants (Oakland CA)
(g) AEN = American Environmental Network (Pleasant Hill CA), Sequoia - Sequoia Analytical (Redwood City CA), Chroma - Chromalab (San Ramon CA); C&T = Curtis & Thompkins (Berkeley CA), Medina = Medina Bioremediation Division (Hondo TX).
(h) Bacteria count analyses performed by Medina Bioremediation Division. Ammonia, nitrate, and phosphate analyses performed by Curtis & Thompkins
(i) Ammonia, nitrate, and phosphate concentrations measured in the laboratory (lab), as well as using field test kits (field).

Footnote

(1)* Laboratory reports that the chromatogram for this sample was not characteristic of gasoline. The uncharacteristic chromatogram may reflect the benefits of bioremediation.

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 1		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Don	DATE STARTED / DATE FINISHED 4-20-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 30.5 feet	SAMPLER Modified Ca.
DRILLING METHOD 8" Hollow Stem Auger	DRILL BIT	NO. OF SAMPLES DIST. 6	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST 25 feet ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASPHALT CONCRETE PAVEMENT + FILL			
			SILTY SAND (SM) very dark brown, medium dense, dry, fine grain			
		8	becomes reddish brown			
5	1	13 21	HNU = 0 ppm			
		12				
10	2	28 28	becomes mottled reddish-brown and brown, moist, dense HNU = 0 ppm			
		9	becomes medium dense, less silt			
15	3	16 18	HNU = 0 ppm			
		16	CLAYEY SAND (SC) HNU = 0.5 ppm			
20	4	23 37	mottled reddish-brown and gray, some silt, dense, moist			
			decreasing clay			
		16	▼ ATD			
25	5	31 40	HNU = 0.5 ppm			
		21				
30	6	32 43	HNU = 1 ppm			
			Bottom of Boring - 30.5 feet			
35			Backfilled borehole with sand / cement grout, 4-21-89			

LOG OF BORING NO. 1 SHEET 1 OF 1

ATTACHMENT 7

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 2		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Don	DATE STARTED / DATE FINISHED 4-20-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 30 feet	SAMPLER Modified Ca.
DRILLING METHOD 8" Hollow Stem Auger	DRILL BIT	NO. OF SAMPLES / DIST. 4	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL / FIRST 25 feet ▼	COMPL. / 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL			
			SILTY SAND (SM) very dark brown, medium dense, dry, fine grain			
		2				
		7	becomes reddish-brown, less silt			
5	1	14	HNU = 0 ppm			
		16				
		28	becomes light brown, moist, dense, some clay			
10	2	31	HNU = 0 ppm			
		6				
		7	becomes damp, medium dense			
15	3	13	HNU = 0 ppm			
			CLAYEY SAND (SC) mottled reddish-brown and light brown, some silt, dense, moist			
		14				
		23				
20	4	33	HNU = 0 ppm			
			decreasing clay			
		18				
25	5	19	▼ ATD			
		23	HNU = 0 ppm			
		21	becomes very dense			
30	6	50/5"	HNU = 0 ppm			
			Bottom of Boring - 30 feet			
35			Backfilled borehole with sand / cement grout, 4-21-89			

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 3		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Scott / Bob	DATE STARTED / DATE FINISHED 4-19-89	
DRILLING EQUIPMENT Mobile B-61		COMPLETION DEPTH 30.5 feet	SAMPLER Modified Ca.
DRILLING METHOD 8" Hollow Stem Auger	DRILL BIT	NO. OF SAMPLES DIST. 6	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST 25 feet ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			FILL			
			SILTY SAND (SM) very dark brown, dense, dry, fine grain			
		11	becomes reddish brown			
5	1	18 37	HNU = 1 ppm			
			becomes mottled reddish-brown and gray, moist			
		17				
10	2	21 30	HNU = 0.5 ppm			
		6	becomes damp, loose			
15	3	6 7	HNU = 1 ppm			
			CLAYEY SAND (SC) light brown, some silt, dense, moist			
		20				
20	4	25 34	HNU = 1 ppm			
			decreasing clay			
		12				
25	5	17 22	▼ ATD HNU = 0 ppm			
			used split spoon to recover samples			
		19	becomes dark brown			
30	6	25 34	HNU = 0 ppm			
			Bottom of Boring - 30.5 feet			
35			Backfilled borehole with sand / cement grout, 4-21-89			

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 4		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Don	DATE STARTED / DATE FINISHED 4-20-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 30.5 feet	SAMPLER Modified Ca.
DRILLING METHOD 8" Hollow Stem Auger	DRILL BIT	NO. OF SAMPLES DIST. 6	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST 25 feet ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL			
			SILTY SAND (SM) very dark brown, medium dense, dry, fine grain			
		7	becomes reddish brown			
5	1	13 18	HNU = 2 ppm			
			becomes mottled blue-green and brown, dense, moist, gasoline odor detected			
		23				
10	2	31 38	HNU = 5 ppm			
			HNU = 11 ppm			
		7				
		12	becomes medium dense			
15	3	19				
			CLAYEY SAND (SC) mottled reddish-brown and light brown, some silt, dense, moist			
		17				
20	4	23 31	HNU = 0 ppm			
			decreasing clay			
		16				
25	5	24 33	▼ ATD HNU = 2 ppm			
		16				
		24	HNU = 1 ppm			
30	6	38				
			Bottom of Boring - 30.5 feet			
35			Backfilled borehole with sand / cement grout, 4-21-89			

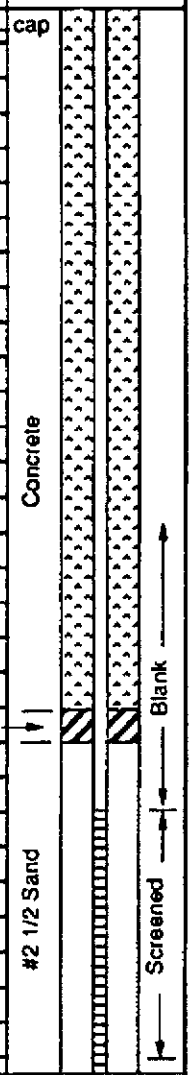
Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - MW-5		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Don	DATE STARTED / DATE FINISHED 4-21-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 30.5 feet	SAMPLER Modified Ca.
DRILLING METHOD 8" Hollow Stem Auger	DRILL BIT	NO. OF SAMPLES DIST. 6	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST 25 feet ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION
			ASPHALT CONCRETE PAVEMENT + FILL
			SILTY SAND (SM)
			very dark brown, medium dense, dry, fine grain
			becomes reddish brown
5	1	9, 17, 19	HNU = 0 ppm
			becomes dense, moist, some clay
10	2	16, 25, 31	HNU = 0 ppm
			becomes loose
15	3	7, 8, 8	HNU = 0 ppm
			CLAYEY SAND (SC)
			mottled reddish-brown and light brown, some silt, dense, moist
20	4	13, 22, 28	becomes blue-green, little clay, gasoline odor detected HNU = 1 ppm
			very strong gasoline odor detected
25	5	13, 28, 30	▼ ATD HNU = 60 ppm
30	6	20, 34, 43	HNU = 100 ppm
			Bottom of Boring - 30.5 feet
35			Installed monitoring well as shown 4-21-89

Monitoring Well Schematic



Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 6		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Scott / Bob	DATE STARTED / DATE FINISHED 4-19-89	
DRILLING EQUIPMENT Mobile B-61		COMPLETION DEPTH 30.5 feet	SAMPLER Modified Ca.
DRILLING METHOD 8" Hollow Stem Auger	DRILL BIT	NO. OF SAMPLES DIST. 4	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST 25 feet ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT			
			FILL			
			SILTY SAND (SM)			
5	1	3 11 30	very dark brown, medium dense, dry, fine grain			
			HNU = 0 ppm			
			becomes medium brown			
		20				
10	2	22 32	becomes light brown, moist, some clay, dense			
			HNU = 0 ppm			
		10	becomes medium dense			
15	3	14 18				
			HNU = 0.5 ppm			
			CLAYEY SAND (SC)			
		26	light brown, some silt, dense, moist			
20	4	30 35	no recovery			
			HNU = 0.5 ppm			
			becomes very dense, decreasing clay			
		26				
25	5	30 50/3"	▼ ATD no recovery			
			HNU = 1 ppm			
		18				
30	6	42 50/1"	used split spoon to recover sample			
			HNU = 5 ppm			
			Bottom of Boring - 30.5 feet			
35			Backfilled borehole with sand / cement grout, 4-21-89			

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 7		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Rich	DATE STARTED / DATE FINISHED 8-7-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 31 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Solid Auger	DRILL BIT	NO. OF SAMPLES DIST. 3	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST 26 feet ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT - FILL			
			SILTY SAND (SM) dark brown, dry, fine grain			
			becomes medium brown, damp			
5			no odor			
10			little clay			
			increasing clay no odor			
			some clay			
15		8	medium dense HNU = 0 ppm			
	1	8				
		14				
			CLAYEY SAND (SC) brown, some silt, damp			
20			decreasing clay			
			SILTY SAND (SM) brown, some clay, dense, moist HNU = 0.5 ppm			
25		13	▼ ATD			
	2	21 40	becomes grayish brown, wet			
			slight gasoline odor			
			HNU = 12.6 ppm			
30		21				
	3	28				
			Bottom of Hole - 31 feet			
35			Backfilled borehole with sand / cement grout, 4-21-89			

LOG OF BORING NO. 7 SHEET 1 OF 1

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 8		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Rich	DATE STARTED / DATE FINISHED 8-4-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 31 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Solid Auger	DRILL BIT	NO. OF SAMPLES DIST. 3	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST 26 feet ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASPHALT CONCRETE PAVEMENT + FILL			
			- Hit concrete, moved 10' north			
			SILTY SAND (SM) very dark brown, dry, fine grain			
5			no odor becomes light brown, damp			
10			no odor			
15	1	7 12 15	mottled reddish brown and gray, medium dense, some clay OVM = 0.3 ppm			
			CLAYEY SAND (SC) medium brown, some silt, moist			
20			decreasing clay			
25	2	18 30 38	SILTY SAND (SM) gray, moist, some clay, dense ▼ ATD becomes wet OVM = 0.9 ppm slight gasoline odor			
30	3	35 37	OVM = 339 ppm moderate gasoline odor			
			Bottom of Boring - 31 feet			
35			Backfilled borehole with sand / cement grout, 8-9-89			

LOG OF BORING NO. 8 SHEET 1 OF 1

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 9		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Rich	DATE STARTED / DATE FINISHED 8-7-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 25 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Solid Auger	DRILL BIT	NO. OF SAMPLES DIST. 1	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASPHALT CONCRETE PAVEMENT + FILL			
			SILTY SAND (SM) dark brown, dry, fine grain			
5			becomes medium brown — no odor			
10			increasing clay — no odor			
			becomes dark brown — no odor			
15	1	7 10 12	mottled reddish brown and gray, some clay, medium dense — OVM = 0 ppm			
			CLAYEY SAND (SC) brown, moist, fine grain			
20			no odor			
			decreasing clay			
			SILTY SAND (SM) brown, fine grain, moist			
25			Bottom of Boring - 25 feet			
30						
35			Backfilled borehole with sand / cement grout, 8-9-89			

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PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 10		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Rich	DATE STARTED / DATE FINISHED 8-4-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 31 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Solid Auger	DRILL BIT	NO. OF SAMPLES DIST. 3	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST 26 feet ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT - FILL			
			SILTY SAND (SM) dark brown, dry, fine grain			
5			becomes medium brown — no odor			
10			little clay — no odor			
			some clay — no odor			
15		7				
	1	9 15	mottled reddish brown and gray, medium dense — OVM = 2.6 ppm			
			CLAYEY SAND (SC) brown, some silt, damp			
20			OVM = 49 ppm slight gasoline odor			
			decreasing clay			
25		15	SILTY SAND (SM)			
	2	28	gray, moist, little clay, dense — OVM = 456 ppm			
			▼ ATD becomes wet			
			OVM = 490 ppm strong gasoline odor			
30		24				
	3	50/5"	OVM = 392 ppm			
			Bottom of Boring - 31 feet			
35			Backfilled borehole with sand / cement grout, 8-9-89			

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PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER · 11		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Rich	DATE STARTED / DATE FINISHED 8-4-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 0.5 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Solid Auger	DRILL BIT	NO. OF SAMPLES DIST. 0	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL			
			Encountered concrete at 6", moved 10' south, hit concrete again Abandoned boring			
5						
10						
15						
20						
25						
30						
35						

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PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 12		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Rich	DATE STARTED / DATE FINISHED 8-4-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 31 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Solid Auger	DRILL BIT	NO. OF SAMPLES DIST. 3	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST 26 feet ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL			
			SILTY SAND (SM) dark brown, dry, fine grain			
5			becomes medium brown — no odor			
10			little clay — no odor			
			some clay — no odor			
15		6				
	1	9 14	mottled reddish brown, brown, and gray, medium dense — OVM = 9 ppm			
			little clay			
20						
			becomes gray, dense, wet			
25		24				
	2	34	▼ ATD — OVM = 10 ppm			
			OVM = 200 ppm strong gasoline odor			
30		21				
	3	32	OVM = 101 ppm			
			Bottom of Boring - 31 feet			
35			Backfilled borehole with sand / cement grout, 8-9-89			

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PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 13		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Rich	DATE STARTED / DATE FINISHED 8-4-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 26.5 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Solid Auger	DRILL BIT	NO. OF SAMPLES DIST. 2	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST 25.4 feet	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT - FILL			
			SILTY SAND (SM) dark brown, dry, fine grain			
5			no odor			
			becomes reddish brown			
10			no odor			
			increasing clay			
			no odor			
15		8				
	1	12				
		17	mottled reddish brown and gray, some clay, medium dense			
			OVM = 0 ppm			
			CLAYEY SAND (SC) brown, some silt, damp			
20			no odor			
			decreasing clay			
			SILTY SAND (SM) brown, some clay, moist			
25		18	ATD			
	2	22				
		45	OVM = 0 ppm			
			Bottom of Boring - 26.5 feet			
30						
35			Backfilled borehole with sand / cement grout, 8-9-89			

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PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 14		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Rich	DATE STARTED / DATE FINISHED 8-4-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 26.5 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Solid Auger	DRILL BIT	NO. OF SAMPLES / DIST. 2	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL / FIRST 25.4 feet ▼	COMPL. / 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT - FILL			
			SILTY SAND (SM) dark brown, dry, fine grain			
5			no odor			
			becomes reddish brown			
10			no odor			
			increasing clay			
			no odor			
15		7				
	1	9				
		13	mottled reddish brown and gray, some clay, medium dense			
			OVM = 24 ppm			
			CLAYEY SAND (SC) brown, some silt, damp			
20			strong gasoline odor			
			decreasing clay			
			SILTY SAND (SM) brown, some clay, moist			
25		15	▼			
		22	ATD			
	2	40	OVM = 252 ppm			
			Bottom of Boring - 26.5 feet			
30						
			Backfilled borehole with sand / cement grout, 8-9-89			
35						

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PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 15		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Rich	DATE STARTED / DATE FINISHED 8-7-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 31 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Solid Auger	DRILL BIT	NO. OF SAMPLES DIST. 2	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST 26.5 feet	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL			
			SILTY SAND (SM) very dark brown, dry, fine grain			
5			becomes medium brown — no odor			
10			increasing clay — no odor			
			some clay — no odor			
15			OVM = 0 ppm			
			CLAYEY SAND (SC) brown, moist			
20			decreasing clay			
			SILTY SAND (SM) brown, moist, fine grain			
25	1	15 28	ATD becomes gray — OVM = 0 ppm; slight gasoline odor			
30	2	25 50/5"	OVM = 31 ppm			
			Bottom of Boring - 31 feet			
35			Backfilled borehole with sand / cement grout, 8-9-89			

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PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 16		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Rich	DATE STARTED / DATE FINISHED 8-4-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 26 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Solid Auger	DRILL BIT	NO. OF SAMPLES DIST. 2	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL			
			SILTY SAND (SM) dark brown, dry, fine grain			
5			becomes medium brown — no odor			
10			no odor			
			no odor			
15		9				
	1	9				
		18	mottled reddish brown and gray, little clay, medium dense — OVM = 0 ppm			
20			no odor			
25		21	OVM = 4 ppm			
	2	35				
			Bottom of Boring - 26 feet			
30						
35			Backfilled borehole with sand / cement grout, 8-9-89			

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PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 17		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Rich	DATE STARTED / DATE FINISHED 8-7-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 30 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Solid Auger	DRILL BIT	NO. OF SAMPLES DIST. 2	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL			
			SILTY SAND (SM) dark brown, dry, fine grain			
			hit pipe, moved 4 feet west			
5			becomes medium brown — no odor			
10			becomes gray — very slight odor			
15	1	98 12 15	becomes medium dense — OVM = 29 ppm			
			CLAYEY SAND (SC) mottled gray and brown, some silt, damp — moderate gasoline odor OVM = 34 ppm			
20			decreasing clay			
			SILTY SAND (SM) gray, moist, some clay			
25	2	12 33	OVM = 320 ppm strong gasoline odor			
30			OVM = 455 ppm			
			Bottom of Boring - 30 feet			
35			Backfilled borehole with sand / cement grout, 8-9-89			

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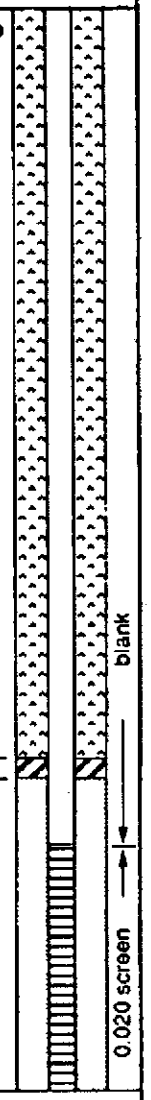
PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - MW-18		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Rich	DATE STARTED / DATE FINISHED 8-7-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 31 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Solid Auger	DRILL BIT	NO. OF SAMPLES DIST. 1	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST 27 feet ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION
			ASAPHALT CONCRETE PAVEMENT + FILL
			SILTY SAND (SM) dark brown, dry, fine grain
			becomes medium brown
5			no odor
			increasing clay
10			no odor
			some clay
15			
			CLAYEY SAND (SC) brown, some silt, damp
20			no odor
			decreasing clay
			SILTY SAND (SM) brown, fine grain, moist
25			▼ ATD
			becomes wet
			slight gasoline odor
			OVM = 9.5 ppm
30	1	33 43	
			Bottom of Hole - 31 feet
35			Backfilled borehole with sand / cement grout, 4-21-89

Monitoring Well Schematic



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PROJECT NAME Sill & Jefferson EA NO. 8910084A

BORING NUMBER - 20		ELEVATION AND DATUM	
DRILLING AGENCY Exeltech	DRILLER Don / Dan	DATE STARTED / DATE FINISHED 4-10-90	
DRILLING EQUIPMENT Trailer-mounted drill rig		COMPLETION DEPTH 31 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Hollow-stem Auger	DRILL BIT	NO. OF SAMPLES / DIST. 2	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST ▼	COMPL. / 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			CONCRETE			
			SILTY SAND (SM) dark brown, dry, fine grain			
5			no odor becomes medium brown			
			some clay			
10			no odor			
			CLAYEY SAND (SC) brown, some silt, damp			
15			no odor			
20			SILTY SAND (SM) greenish brown, damp, some clay, fine grain			
25			slight odor 20-1			
			▽ ATD becomes green, wet, little clay			
30			20-2 no odor			
			Bottom of Boring - 31 feet			
35			Backfilled borehole with sand / cement grout, 4-12-90			

LOG OF BORING NO. 20 SHEET 1 OF 1

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PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 21		ELEVATION AND DATUM	
DRILLING AGENCY Exeltech	DRILLER Don / Dan	DATE STARTED / DATE FINISHED 4-10-90	
DRILLING EQUIPMENT Trailer-mounted drill rig		COMPLETION DEPTH 26 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Hollow-stem Auger	DRILL BIT	NO. OF SAMPLES DIST. 1	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			CONCRETE			
			SILTY SAND (SM) brown, dry, some gravel up to 1.5" diameter no gravel			
5			becomes medium brown — no odor			
			some clay, becomes damp			
10			no odor			
15			no odor			
20			CLAYEY SAND (SC) brown, some silt, damp			
			becomes green			
25			strong odor HNU = 375 ppm			
			21-1			
			Bottom of Boring - 26 feet			
30						
35			Backfilled borehole with sand / cement grout, 4-12-90			

LOG OF BORING NO. 21 SHEET 1 OF 1

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 22		ELEVATION AND DATUM	
DRILLING AGENCY Exeltech	DRILLER Don / Dan	DATE STARTED / DATE FINISHED 4-10-90	
DRILLING EQUIPMENT Trailer-mounted drill rig		COMPLETION DEPTH 26 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Hollow-stem Auger	DRILL BIT	NO. OF SAMPLES / DIST. 1	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST ▼	COMPL. / 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			CONCRETE			
			SILTY SAND (SM) medium brown, dry, fine grain			
5			becomes olive brown, saturated — no odor			
			increasing clay			
10			no odor			
15			no odor			
			decreasing clay			
20						
25			strong odor HNU = >500 ppm			
			22-1			
			Bottom of Boring - 26 feet			
30						
35			Backfilled borehole with sand / cement grout, 4-12-90			

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PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 23		ELEVATION AND DATUM	
DRILLING AGENCY Exeltech	DRILLER Don / Dan	DATE STARTED / DATE FINISHED 4-10-90	
DRILLING EQUIPMENT Trailer-mounted drill rig		COMPLETION DEPTH 30 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Hollow-stem Auger	DRILL BIT	NO. OF SAMPLES / DIST. 0	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST ▼	COMPL. / 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			CONCRETE			
			SILTY SAND (SM) reddish brown, damp, fine grain			
5			no odor			
10			no odor			
			CLAYEY SAND (SC) brown, some silt, damp			
15			no odor			
			decreasing clay			
20			SILTY SAND (SM) brown, damp, fine grain			
			no odor			
25						
			no odor			
30			Bottom of Boring - 30 feet			
			Backfilled borehole with sand / cement grout, 4-12-90			
35						

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PROJECT NAME 3rd & Jefferson EA NO. 8910084A

BORING NUMBER - 24		ELEVATION AND DATUM	
DRILLING AGENCY Exeltech	DRILLER Don / Dan	DATE STARTED / DATE FINISHED 4-10-90	
DRILLING EQUIPMENT Trailer-mounted drill rig		COMPLETION DEPTH 26 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Hollow-stem Auger	DRILL BIT	NO. OF SAMPLES / DIST. 1	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL / FIRST ▼	COMPL. / 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			CONCRETE			
			SILTY SAND (SM) brown, moist, some clay, fine grain			
5			no odor			
10			no odor			
			CLAYEY SAND (SC) brown, some silt, damp			
15			no odor			
			decreasing clay			
20			SILTY SAND (SM) brown, damp, some clay, fine grain			
			strong odor HNU = 140 ppm			
			becomes gray			
25			24-1			
			Bottom of Boring - 26 feet			
30						
35			Backfilled borehole with sand / cement grout, 4-12-90			

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PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 25		ELEVATION AND DATUM	
DRILLING AGENCY Exeltech	DRILLER Don / Dan	DATE STARTED / DATE FINISHED 4-10-90	
DRILLING EQUIPMENT Trailer-mounted drill rig		COMPLETION DEPTH 30 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Hollow-stem Auger	DRILL BIT	NO. OF SAMPLES / DIST. 0	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL / FIRST	COMPL. / 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			CONCRETE			
			SILTY SAND (SM) reddish brown, damp, some clay, fine grain			
5			no odor			
10			no odor			
			CLAYEY SAND (SC) brown, some silt, damp			
15			no odor			
			decreasing clay			
			SILTY SAND (SM) brown, damp, some clay, fine grain			
20			no odor			
25			becomes gray			
			becomes wet			
			no odor			
30			Bottom of Boring - 30 feet			
35			Backfilled borehole with sand / cement grout, 4-12-90			

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PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 26		ELEVATION AND DATUM	
DRILLING AGENCY Exeltech	DRILLER Don / Dan	DATE STARTED / DATE FINISHED 4-11-90	
DRILLING EQUIPMENT Trailer-mounted drill rig		COMPLETION DEPTH 30 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Hollow-stem Auger	DRILL BIT	NO. OF SAMPLES / DIST. 0	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL / FIRST ▼	COMPL. / 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			CONCRETE			
			SILTY SAND (SM) dark brown, moist, some clay, fine grain			
5			becomes medium brown — no odor			
10			no odor			
			CLAYEY SAND (SC) brown, some silt, moist			
15			no odor			
			SILTY SAND (SM) dark brown, moist, some clay, fine grain			
20						
25			▽ A10 becomes wet — no odor			
30			Bottom of Boring - 30 feet			
			Backfilled borehole with sand / cement grout, 4-12-90			
35						

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PROJECT NAME 5th & Jefferson EA NO. 8910084A

BORING NUMBER - 27		ELEVATION AND DATUM	
DRILLING AGENCY Exeltech	DRILLER Don / Dan	DATE STARTED / DATE FINISHED 4-11-90	
DRILLING EQUIPMENT Trailer-mounted drill rig		COMPLETION DEPTH 30 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Hollow-stem Auger	DRILL BIT	NO. OF SAMPLES / DIST. 0	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST ▼	COMPL. / 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			CONCRETE			
			SILTY SAND (SM) dark brown, damp, some clay, fine grain			
5			becomes medium brown — no odor			
10			becomes gray — no odor			
			CLAYEY SAND (SC) brown, some silt, moist — no odor			
20						
25			becomes wet — no odor			
30			Bottom of Boring - 30 feet			
35			Backfilled borehole with sand / cement grout, 4-12-90			

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PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - 28		ELEVATION AND DATUM	
DRILLING AGENCY Exeltech	DRILLER Don / Dan	DATE STARTED / DATE FINISHED 4-11-90	
DRILLING EQUIPMENT Trailer-mounted drill rig		COMPLETION DEPTH 30 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Hollow Stem Auger	DRILL BIT	NO. OF SAMPLES DIST. 0	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			CONCRETE			
5			SILTY SAND (SM) dark brown, damp, some clay, fine grain — no odor			
10			becomes medium brown — no odor			
15			no odor			
20						
25			no odor			
30			Bottom of Boring - 30 feet			
35			Backfilled borehole with sand / cement grout, 4-12-90			

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PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - MW-5		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Don	DATE STARTED / DATE FINISHED 4-21-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 30.5 feet	SAMPLER Modified Ca.
DRILLING METHOD 8" Hollow Stem Auger	DRILL BIT	NO. OF SAMPLES / DIST. 6	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST 25 feet ▼	COMPL. / 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION
			ASPHALT CONCRETE PAVEMENT + FILL
			SILTY SAND (SM)
			very dark brown, medium dense, dry, fine grain
		6	
		17	becomes reddish brown
5	1	19	HNU = 0 ppm
			becomes dense, moist, some clay
		18	
		25	
10	2	31	HNU = 0 ppm
			becomes loose
		7	
		8	HNU = 0 ppm
15	3	6	
			CLAYEY SAND (SC)
			mottled reddish-brown and light brown, some silt, dense, moist
		15	
		22	becomes blue-green, little clay, gasoline odor detected HNU = 1 ppm
20	4	28	
			very strong gasoline odor detected
		13	
		28	▼ ATD
25	5	30	HNU = 60 ppm
		20	
		34	
30	6	43	HNU = 100 ppm
			Bottom of Boring - 30.5 feet
35			Installed monitoring well as shown 4-21-89

Monitoring Well Schematic: cap; Concrete; Bentonite; #2 1/2 Sand; Blank; Screened

LOG OF BORING NO. 5 SHEET 1 OF 1

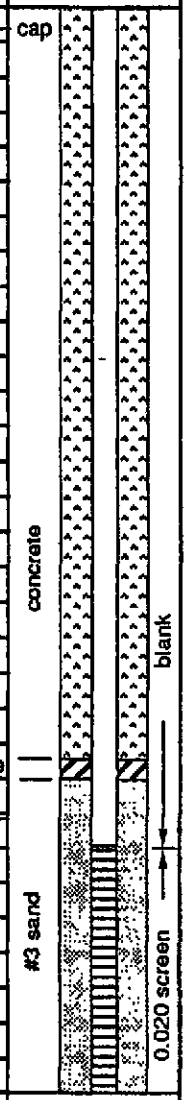
Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - MW-18		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Rich	DATE STARTED / DATE FINISHED 8-7-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 31 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Solid Auger	DRILL BIT	NO. OF SAMPLES DIST. 1	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST 27 feet ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION
			ASAPHALT CONCRETE PAVEMENT + FILL
			SILTY SAND (SM) dark brown, dry, fine grain
			becomes medium brown
5			no odor
			increasing clay
10			no odor
			some clay
15			
			CLAYEY SAND (SC) brown, some silt, damp
20			no odor
			decreasing clay
			SILTY SAND (SM) brown, fine grain, moist
25			▼ ATD
			becomes wet
			slight gasoline odor
			OVM = 9.5 ppm
30	1	23 43	
			Bottom of Hole - 31 feet
35			Backfilled borehole with sand / cement grout, 4-21-89

Monitoring Well Schematic



Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA NO. 8910084A

BORING NUMBER - MW-19		ELEVATION AND DATUM	
DRILLING AGENCY Ensco Exploration	DRILLER Tim / Rich	DATE STARTED / DATE FINISHED 8-7-89	
DRILLING EQUIPMENT Mobile B-53		COMPLETION DEPTH 31 feet	SAMPLER Modified Ca.
DRILLING METHOD 6" Solid Auger	DRILL BIT	NO. OF SAMPLES DIST. 1	UNDIST.
LOGGED BY: W. Copeland		WATER LEVEL FIRST 28 feet ▼	COMPL. 24 HRS.
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	Monitoring Well Schematic
			ASAPHALT CONCRETE PAVEMENT + FILL	cap
			SILTY SAND (SM) very dark brown, dry, fine grain	
			becomes medium brown	
5			no odor	
			increasing clay	
10			no odor	
			some clay	
15			less clay	concrete
20			bentonite	blank
			becomes gray, little clay	
			slight gasoline odor	
25			strong gasoline odor OVM = 663 ppm	#3 sand
			▼ ATD becomes wet	0.020 screen
30	1	28 34	OVM = 118 ppm	
			Bottom of Hole - 31 feet	
35			Backfilled borehole with sand / cement grout, 4-21-89	

Boring No. PTW-1 (page 1 of 3)

Project	Soil and Groundwater Remediation 901 Jefferson Street Oakland CA	Address	901 Jefferson Street Oakland CA
Location	Near northeast corner of property.	Logged By	Mark Buscheck, STREAMBORN, Berkeley CA
Elevation	Top of casing, north side = 999.89-feet (assumed datum)	Project No.	P135
Start	2:15 PM, 14 October 1994	Finish	3:30 PM, 14 October 1994
Drill Method	±4-inch ID by ±8-inch OD hollow-stem auger	Driller	Bayland Drilling, Menlo Park CA
Drill Rig	CME 75	Drilled Depth	±31-feet
Completion	2-inch PVC well with traffic box	Groundwater (During Drilling)	±24.5-feet
Sampling	±2-inch ID by ±2-1/2-inch OD driven split-spoon fitted with 2-inch diameter by 6-inch long brass liners. Samples collected by driving spoon ahead of auger bit.	Groundwater (Stabilized)	±24.7-feet (measurement on 26 October 1994, after well installed)

Depth (feet)	Graphic Log	USCS	Sample Interval	Blows per 6 inches	Recovery (inches)	Soil Description, Observations, Comments	OVM (ppmv)
0.0						Asphalt pavement (top ±4-inches).	
						Gravel (GW), fill (aggregate base).	
1.0		GW					
2.0							
3.0							
4.0							
				2	0	Poorly-graded sand (SP), fine, moist, light brown. No odor or staining.	
5.0		SP		3	3		<5
				6	6		
6.0							
7.0							
8.0							
9.0							
				6	6	Poorly-graded sand (SP), as above. No odor or staining.	
10.0							

Boring No. PTW-1 (page 2 of 3)

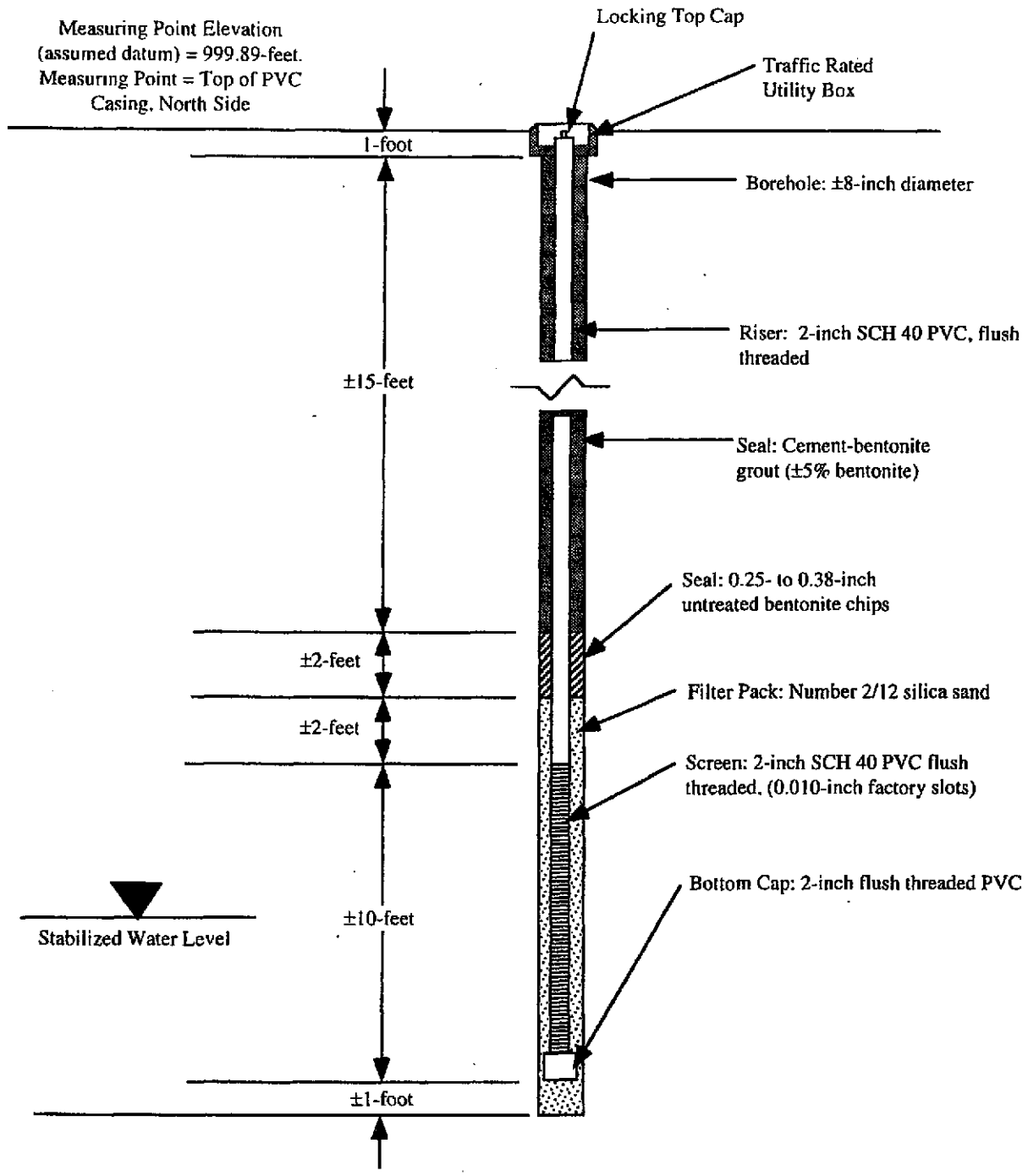
Depth (feet)	Graphic Log	USCS	Sample Interval	Blows per 6 inches	Recovery (inches)	Soil Description. Observations, Comments	OVM (ppmv)
10.0				16	6		<5
				24	6		
11.0							
12.0							
13.0							
14.0							
				7	6	Poorly-graded sand (SP), as above except grey-green color. Slight gasoline odor. No staining.	
15.0							
				9	6		<5
				10	6		
16.0							
17.0							
		SP					
18.0							
19.0							
				9	6	Poorly-graded sand (SP), as above. Strong gasoline odor. Grey-green staining.	16
20.0				12	6		23
				20	6		29
21.0							
22.0							
23.0				12	6	Poorly-graded sand (SP), as above. Strong gasoline odor. Grey-green staining.	112
				16	0		343
24.0				20	6		226
				9	6	Water first observed at ±24.5-feet	460
25.0							

STREAMBORN

Boring No. PTW-1 (page 3 of 3)

Depth (feet)	Graphic Log	USCS	Sample Interval	Blows per 6 inches	Recovery (inches)	Soil Description, Observations, Comments	OVM (ppmv)
25.0				12	6		360
				20	6		322
26.0							
27.0							
		SP					
28.0							
29.0							
				12	2	Poorly-graded sand (SP), as above. Strong gasoline odor. Grey-green staining.	211
30.0				16	6		279
				24	6		286
31.0						Total depth = ±31-feet.	
						Boring completed as a well. See completion schematic.	
						On 26 October 1994, after well completion, stabilized water depth measured at ±24.7-feet.	
32.0							
33.0							
34.0							
35.0							
36.0							
37.0							
38.0							
39.0							
40.0							

STREAMBORN



PTW-1 Monitoring Well Completion Schematic

901 Jefferson Street
Oakland CA

PROJECT:	901 JEFFERSON Oakland, California	**Log of Boring SG-3B**	PAGE 1 OF 1

Boring location: See Site Plan, Figure 2		Logged by: L. Arighi Drilled By: TEG
Date started: 1/12/09	Date finished: 1/12/09	
Drilling method: Direct Push		
Hammer weight/drop: --	Hammer type: --	
Sampler: Microcore		

DEPTH (feet)	SAMPLES: Sample Number	SAMPLES: Sample	SAMPLES: Blow Count	SAMPLES: Recovery (inches)	OVM (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
							Surface Conditions:
1–5						SC	CLAYEY SAND (SC) red-brown, medium dense, moist, slightly plastic, no odor[FILL]
6	Sol Vapor Sample						
7	SG-3B-6.5					SC	CLAYEY SAND (SC) blue-gray, medium dense, wet, plastic, moderate petroleum odor wet at 6.5 feet
8							
9	SG-3B-8 5						
10–30							

Boring terminated at a depth of 9 feet
Boring backfilled with cement grout.
Groundwater encountered at a depth of 6 5 feet.

Treadwell&Rollo

Project No.	Figure
2820.06	B-1

TEST ENVIRONMENTAL 2820 06 BORINGS GPJ TR GDT 2/12/09

PROJECT:	901 JEFFERSON Oakland, California	**Log of Boring SG-4B**
		PAGE 1 OF 1

Boring location: See Site Plan, Figure 2	Logged by: L. Arighi Drilled By: TEG
Date started: 1/12/09	Date finished: 1/12/09
Drilling method: Direct Push	
Hammer weight/drop: --	Hammer type: --
Sampler: Microcore	

DEPTH (feet)	SAMPLES: Sample Number	SAMPLES: Sample	SAMPLES: Blow Count	SAMPLES: Recovery (inches)	OVM (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
							Surface Conditions:
1–4						SC	CLAYEY SAND (SC) red-brown, medium dense, moist, slightly plastic, no odor
5	Soi Vapor Sample						
6	SG-4B-6 5						▽
7–8						SC	CLAYEY SAND (SC) blue-gray, medium dense, wet, plastic, moderate petroleum odor wet at 6.5 feet
8	SG-4B-8 5						
9–30							

Boring terminated at a depth of 9 feet
Boring backfilled with cement grout
Groundwater encountered at a depth of 6 5 feet

Treadwell&Rollo

Project No :	Figure
2820.06	B-2

TEST ENVIRONMENTAL 2820 06 BORINGS GPJ TR GDT 2/12/09