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8:49 am, Apr 16, 2010

Alameda County
Environmental Health

Ian Robb
Project Manager
Marketing Business Unit

Chevron Environmental Management Company
6111 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 543-2375
Fax (925) 543-2324
irobb@chevron.com

Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Former Texaco Service Station No. 21-1283
3810 Broadway
Oakland, CA

I have reviewed the attached report dated June 29, 2009.

I agree with the conclusions and recommendations presented in the referenced report. This information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by Conestoga Rovers Associates, upon who assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Sincerely,

Ian Robb
Project Manager

Attachment: Report

CONESTOGA-ROVERS
& ASSOCIATES

5900 Hollis Street, Suite A, Emeryville, Calfornia 94608
Telephone: 510-420-0700 Facsimile: 510-420-9170
www.CRAworld.com

June 29, 2009

Reference No. 311955

Mr. Steven Plunkett
Alameda County Environmental Health Services (ACEH)
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: Site Conceptual Model
Former Texaco Service Station 21-1283
3810 Broadway
Oakland, California
Fuel Leak Case No. RO0056

Dear Mr. Plunkett:

Conestoga-Rovers & Associates is submitting the attached *Site Conceptual Model* (SCM) for the site referenced above on behalf of Chevron Environmental Management Company (Chevron). The SCM is in the format requested by ACEH. A work plan for a soil vapor survey will be submitted under separate cover by June 29, 2009.

Please contact Charlotte Evans at (510) 420-3351 if you have any questions or require additional information.

Sincerely,

CONESTOGA-ROVERS & ASSOCIATES

Charlotte Evans

PROFESSIONAL GEOLOGIST
BRANDON S. WILKEN
No. 7564
STATE OF CALIFORNIA

Brandon S. Wilken, P.G. #7564

CE/doh/3
Enc.

cc: Mr. Ian Robb, Chevron Environmental Management Company

Equal
Employment
Opportunity Employer

Worldwide Engineering, Environmental, Construction, and IT Services

Former Texaco Service Station 21-1283 – 3810 Broadway, Oakland, California
Fuel Leak Case No. RO0000056

	Description	Cited Data Sources	Data Tables	Graphics	Data Gaps	Work Necessary to fill data gap	Comments
Site Setting	**Site Geology/Hydrology** The site is located on a broad alluvial plain that slopes regionally toward the west-southwest in the general direction of San Francisco Bay. The site is underlain by Pleistocene alluvial fan and fluvial deposits (Graymer, 2000). These sediments are generally described as dense, gravelly and clayey sand or clayey gravel that fines upward to sandy clay. Typically, these deposits have low permeability according to the California Regional Water Quality Control Board (RWQCB) (RWQCB, 1999). The site is located in the East Bay Plain Groundwater Basin, which consists of unconsolidated sediments of Pleistocene and Holocene age overlying consolidated bedrock of Jurassic, Cretaceous, and Tertiary age. The East Bay Plain overlies a flank of a broad Franciscan bedrock depression. Unconsolidated sediments in the basin vary in thickness up to 1,000 feet. These unconsolidated sediments are commonly referred to, from oldest to youngest, Santa Clara Formation, the Alameda Formation, Temescal and artificial fill (RWQCB, 1999). The thickness of the Pleistocene alluvial fan and fluvial deposits found at the site is unknown. The site is underlain primarily by unconsolidated fill material overlying sandy silts and clays, interbedded with well sorted sands and silty sands. According to the 1996 McLaren/Hart report, clays are typically encountered above the water-bearing zones. Sand stringers are present especially between 16 and 20 feet below grade.	Geologic Map and Map Database of the Oakland Metropolitan Area, Alameda, Contra Costa, and San Francisco Counties, California, 2000, by R.W. Graymer, U.S. Geological Survey Misc. Field Studies MF-2342. (http://pubs.er.usgs.gov/public_search) East Bay Plain Groundwater Basin Beneficial Use Evaluation Report, June 1999 by the California Regional Water Quality Control Board California's Groundwater, Bulletin 118, Updated 2003 by the Department of Water Resources Supplemental Site Investigation, January 1996 by McLaren/Hart		Vicinity Map Site Plan Boring Logs Cross-Section A-A' Cross-Section B-B'			
	Groundwater Conditions The site is located in the Oakland Sub Basin of the East Bay Plain Groundwater Basin. Groundwater in this basin is designated as beneficial for municipal and domestic water supply. However, current beneficial groundwater use in the basin is minimal due to readily available, high-quality imported water. (RWQCB, 1999) The site is roughly 85 feet above mean sea level. Groundwater elevation beneath the site has ranged historically from approximately 56 to 68 feet above mean sea level. Groundwater elevation beneath the site is apparently influenced by seasonal precipitation but has been significantly influenced recently due to local dewatering associated with Kaiser Permanente (Kaiser) construction across Broadway. Regional groundwater gradient in the vicinity of the site, based on topography and the pre-development slope of the alluvial fans is toward the southwest. Local groundwater flow varies considerable from north to west to south. Groundwater mounding and depressions have been observed onsite. The nearest surface water relative to the site are Glen Echo Creek, located approximately 1,500 feet south of the site, Lake Merritt, located approximately 1.3 miles to the south, and San Francisco Bay, located approximately 2.2 miles to the west of the site.	East Bay Plain Ground Water Basin Beneficial Use Evaluation Report, June 1999 by the California RWQCB, San Francisco Bay Region First Quarter 2009 Groundwater Monitoring and Sampling Report, April 2009 by Gettler-Ryan, Inc. Corrective Action Plan, November 1998 by Toxichem					
	Soil Conditions The majority of petroleum hydrocarbons in soil were removed by the excavation in March 2000. Additional soil was removed when the new property owner excavated a tank pit in the northern portion of the site in March and April 2000. Sidewall and bottom of excavation samples show residual hydrocarbons predominately in the former underground storage tank (UST) pit. Residual elevated petroleum hydrocarbon		Cumulative Soil Analytical Data Table	Soil Isoconcentration Figures			

	Description	Cited Data Sources	Data Tables	Graphics	Data Gaps	Work Necessary to fill data gap	Comments
	concentrations are located near well MW-6 and on the south end of the former UST pit in excavation sample EX-1 and boring B-4. Elevated weathered TPHd and TPHg concentrations were detected in sidewall sample S-4, which was collected from the eastern edge of the new UST pit near well MW-1 and the former used oil UST by the site owner. Well MW-12 was installed primarily in pea gravel and no soil analytical data is available. No hydrocarbons were detected in soil in offsite wells MW-7, MW-9 and MW-10.			Cross-Section A-A' Cross-Section B-B'			
	Source Area Based on subsurface soil and groundwater investigations, the primary sources of hydrocarbons was the former gasoline and used oil USTs and the former product piping. The gasoline USTs were removed in February 1980 and the used oil UST was removed in May 1991. During excavation in 2000, most of the hydrocarbon impacted shallow soil was removed to approximately 20-22 fbg. No documentation of any known releases have been located. Low levels of methyl tert-butyl ether (MTBE) have been detected in groundwater samples indicating there may have been an additional hydrocarbon leak once Texaco ceased operations.		Cumulative Soil Analytical Data Table	Site Plan Soil Isoconcentration Figures Boring Logs Cross-Section A-A' Cross-Section B-B'			
	Dissolved Plume/Groundwater Depth to groundwater beneath the site ranges from approximately 14 to 26 feet below grade (fbg). The groundwater flow direction varies and has been measured toward the north, west, and south. Groundwater mounding and depressions have been observed onsite. A total of 13 groundwater monitoring wells have been installed at the site. Currently 9 groundwater monitoring wells are sampled on a quarterly or semi-annual basis. The First Quarter 2009 monitoring and sampling event occurred on March 23, 2009. In 2007, Kaiser Permanente began construction across Broadway on a new medical office building. From May 2007 to approximately June 2008, the Kaiser construction site was dewatered and groundwater levels onsite decreased by approximately 7 to 9 feet. The groundwater elevation onsite has now returned to its historical range. The TPHd plume is centered on wells MW-1, MW-6, and MW-12 and low concentrations are located offsite to the west in the intersection of Broadway and 38th Street. The TPHg and benzene plumes are centered on wells MW-6 and MW-12 and low concentrations are located offsite to the west in the intersection of Broadway and 38th Street. Low concentrations of MTBE have been detected in groundwater onsite indicating an additional hydrocarbon leak after Texaco ceased operations in 1985. Prior to Kaiser dewatering their construction site, petroleum hydrocarbon concentrations were decreasing from their historical maximum concentrations. During the period of time when Kaiser was dewatering their construction site; several wells had temporary increasing concentration trends. Since the dewatering ceased petroleum hydrocarbon concentrations have begun to decrease again. Decreasing petroleum hydrocarbon concentration trends are indicative of a plume that has reached its maximum extent, is no longer migrating, and is naturally attenuating back towards the source area.	First Quarter 2009 Groundwater Monitoring and Sampling Report by Gettler-Ryan	Cumulative Grab-Groundwater Analytical Table Monitoring Well Construction Detail Table	Site Plan Groundwater Isoconcentration Figures 1st Quarter 2009 Hydrocarbon Concentration Map Trend Graphs			

	Description	Cited Data Sources	Data Tables	Graphics	Data Gaps	Work Necessary to fill data gap	Comments
	Vapor ***July 1998 Subsurface Investigation***: Soil vapor samples were collected from borings SB-1, SB-3, and SB-6 from 5 fbg. TPHg and benzene were only detected in boring SB-1 at 22,000 micrograms per meter cubed ($\mu g/m^3$) and 100 $\mu g/m^3$, respectively. No information is given about sampling procedures.				Current soil vapor data for potential vapor migration pathway into onsite buildings.	A work plan will be submitted concurrently with this SCM.	
	Remediation ***1980 and 1991 Tank Removal:*** A total of five USTs) were installed in 1963 including four 6,000 gallon fuel USTs and one 550-gallon used oil UST. The four 6,000-gallon USTs were removed from the site in February 1980. The 550-gallon used-oil UST was removed in May 1991 by SEMCO. No report by SEMCO is available, but the information was reported in Kaldveer Associates' November 15, 1991 *Limited Soil and Ground Water Quality Investigation Report.* ***February and March 2000 Well Destructions and Remedial Excavation:*** Wells MW-3 and MW-8 were destroyed prior to onsite remedial excavation. The final excavation depth was approximately 22 fbg and approximately 1,400 cubic yards of petroleum hydrocarbon impacted soil were properly disposed of offsite. During the remedial excavation, well MW-2 was damaged and later destroyed.	Limited Soil and Groundwater Quality Investigation Report – November 15, 1991 by Kaldveer Associates Soil Excavation Report – June 5, 2000 by Toxichem					
	Subsurface Investigations ***1963 Tank Installation:*** A total of five USTs were installed in 1963 including four 6,000-gallon fuel USTs and one 550-gallon used oil UST. The four 6,000-gallon USTs were removed from the site in February 1980. The 550-gallon used-oil UST was removed in May 1991 by SEMCO. During the removal of the used oil UST, an unknown volume of soil impacted with petroleum hydrocarbons was excavated and removed. Analytical data is available from May 17, 1991 and June 18, 1991 transmittals from SEMCO. ***October 1991 Well Install:*** Groundwater monitoring well MW-1 was installed following the removal of the used-oil UST. Petroleum hydrocarbons were not detected in soil samples analyzed from MW-1. ***January 1992 Well Install:*** Groundwater monitoring well MW-2 was installed to further assess groundwater quality in the vicinity of the former used-oil UST. Petroleum hydrocarbons were not detected in soil samples analyzed from MW-2. ***September 1995 Subsurface Investigation and Well Installation:*** Soil borings B-1 through B-6 were advanced onsite. Encountered soil consisted of clay to silty sands. TPHg and benzene concentrations were detected in soil samples from B-1, B-2, B-4 and B-5. In October 1995, wells MW-3 and MW-4 were installed in response to hydrocarbon impacts observed in borings B-1 through B-6. A soil sample from MW-3 contained concentrations of TPHg and benzene. Wells MW-1 and MW-2 were redeveloped as part of a monitoring and sampling program and upon redevelopment of MW-2, light non-aqueous phase liquids (LNAPL) were observed in the well. ***September 1996 Well Installation:*** Groundwater monitoring wells MW-5 through MW-10 were installed to evaluate the later extent of dissolved petroleum hydrocarbons in groundwater. Well MW-6 was installed directly east of the former UST pit. TPHg and benzene were reported in soil samples collected from MW-8, located near the northern	Corrective Action Plan – November 15, 1998 by Toxichem Transmittals – May 17 and June 18, 1991 from SEMCO Limited Soil and Groundwater Quality Investigation Report – November 15, 1991 by Kaldveer Associates Soil and Groundwater Quality Investigation Report – February 26, 1992 by Kaldveer Associates Supplemental Site Investigation – January 26, 1996 by McLaren Hart Soil and Groundwater Assessment Report – November 25, 1996 by Fluor Daniel GTI	Cumulative Soil Analytical Data Table Cumulative Grab-Groundwater Analytical Table	Site Plan			

	Description	Cited Data Sources	Data Tables	Graphics	Data Gaps	Work Necessary to fill data gap	Comments
	end of the dispenser islands. Soil samples collected from offsite wells MW-7 and MW-10 did not contain concentrations of petroleum hydrocarbons. ***July 1998 Subsurface Investigation***: Soil borings SB-1 through SB-6 were advanced onsite for additional soil characterization for the Corrective Action Plan. TPHg and benzene were detected in borings SB-1 and SB-2. No hydrocarbons were detected in borings SB-3 through SB-6. Soil vapor samples were collected from borings SB-1, SB-3, and SB-6 from 5 fbg. TPHg and benzene were only detected in boring SB-1. ***February 2000 Well Destructions:*** Wells MW-3 and MW-8 were due to their location within the proposed limits of a large scale overexcavation. In March 2000, soil within the former UST pit was overexcavated to a depth of 22 fbg and removed from the site. Approximately 1,400 cubic yards of impacted soil were disposed of at an appropriate treatment, storage and disposal facility. During this overexcavation, well MW-2 was damaged and later destroyed. ***August 2000 Offsite Well Install:*** Offsite groundwater monitoring well MW-11was installed. Concentrations of petroleum hydrocarbons were not detected in soil samples from MW-11. No additional information available. ***May 2002 Well Replacement and Installation:*** Damaged groundwater monitoring well MW-5 was replaced and well MW-12 was installed within the former excavation. No soil or grab-groundwater samples were collected.	Corrective Action Plan – November 15, 1998 by Toxichem Soil Excavation Report – June 5, 2000 by Toxichem Monitoring Well Installation Report – September 25, 2002 by Delta					
	Preferential Pathways CRA contacted underground service alert (USA) and hired a private utility locator to locate underground utilities near the site. Utility locations are indicated on the site plan. Based on average utility depth and the average depth of groundwater at the site, no utilities are preferential pathways. CRA contacted Alameda County Public Works Agency to compile well data from well permits in June 2009. There are 2 irrigation wells and 9 cathodic well within a 0.5-mile radius from the site. No municipal wells are within a 0.5-mile radius. Given the likely size of the dissolved plume related to the site, no wells in ACPWA records appear to be potential receptors.		Well Survey Table	Site Plan			
	Nearby Release Sites There are four open and active environmental cases within 800 feet of the site listed on the Geotracker website: ***Glovatorium, 3815 Broadway, RO0000458*** The Glovatorium, a dry-cleaning and leather and suede cleaning facility contained six USTs ranging in reported volume from 800 to 5,000 gallons. These USTs reportedly contained Stoddard solvent, fuel oil and possibly waste oil. In August 1997 the six USTs were abandoned in place by backfilling with either cement-sand slurry or pea gravel. Quarterly groundwater monitoring has occurred since roughly 1997. LNAPL has been detected in several wells at this site since 2004. LNAPL pumping has occurred since February 2004. Total petroleum hydrocarbons as stoddard solvents, TPHg, benzene, toluene, ethylbenzene, xylenes, MTBE, PCE, TCE and other volatile organic compounds are currently detected in groundwater beneath this site.	For more information, see: (http://geotracker.swrcb.ca.gov) Glovatorium Second Semi-Annual 2008 Groundwater Monitoring Report – October 21, 2008	Well Survey Table	Nearby Release Site Plan			

	Description	Cited Data Sources	Data Tables	Graphics	Data Gaps	Work Necessary to fill data gap	Comments
	Earl Thompson Property, 316 38th Street, RO0005026 Three USTs ranging in approximate volume from 200 to 4,000 gallons were associated with this site and located beneath the sidewalk adjacent to the site. According to a 2009 UST removal report, the USTs previously contained petroleum hydrocarbons. In 2009 all three USTs were filled in place with cement-sand slurry. Borings around the USTs indicated hydrocarbon impacts to soil from 6 to 14 fbg. Hydrocarbons, oxygenates, and volatile organic compound concentrations exceed applicable groundwater Environmental Screening Levels (ESLs) established by the California Regional Water Quality Control Board. ***Kaiser Development/Val Strough Honda, 3735 – 3799 Broadway, RO0000205*** Historically, this site previously consisted of several commercial properties, including three automotive repair facilities, a car wash and several offices. The entire site contained fuel USTs, an above ground sump for automotive rinsate water, a waste oil UST and hydraulic hoists. Soil was excavated during April and September 2007 prior to construction of a Kaiser Permanente medical office building. No recent groundwater investigation has occurred at this site. ***Unocal Station #0746, 3943 Broadway, RO0000203*** The site is an active 76 fuel station with automotive repair services. The original fuel UST leak occurred in 1988. Elevated total petroleum hydrocarbons, benzene, toluene, ethylbenzene and xylenes were detected in soil and groundwater beneath the site. Groundwater monitoring has occurred since 1988. Currently, additional downgradient plume definition and monitoring is underway.	Earl Thompson Property Underground Storage Tank Closure Report - January 27, 2009 Kaiser Development Soil Management Implementation Report – June 11, 2008 UNOCAL Station #0746 Work Plan Monitoring Well MW-4 – June 26, 2008					
	Drivers The main driver is the potential vapor migration pathway into onsite buildings. There is minimal offsite migration of hydrocarbons in groundwater.				Work plan for soil vapor survey will be submitted to ACEH under separate cover.		
	Proposed Work Plan CRA is currently creating a work plan for soil vapor investigation as requested by ACEH. The work plan will be submitted under separate cover concurrently with this SCM.						

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-1
D- 17352
Page 1 of 2
Geologist: C. Warwick

C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/11/95 TOTAL DEPTH 31.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ▽ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' ASPHALT and ROADBASE	RB		
			0.0	1 - 6' SILTY SAND: (0,80,20,0); dark reddish gray (5YR4/2); loose; fine grained sand; poorly graded; dry.	SM		
2.5							
			0.0				
5.0							2" Borehole
				6 - 7' SANDY SILT: (10,30,40,20); brown (10YR5/3); slight plasticity; slightly stiff; fine grained sand; moist.	ML		
			0.0	7 - 8.5' SILTY SAND: (0,80,20,0); dark reddish gray (5YR4/2); loose; fine grained sand; poorly graded; dry.	SM		
7.5							
				8.5 - 19.5' SILTY CLAY with SAND: (0,20,50,30): grayish brown (10YR5/2); low to medium plasticity; slightly stiff to stiff; fine grained sand; moist.	CL		
10.0			425				Portland Cement
12.5		52401	210				
15.0				See Following Page...			

FRIED,1/16/96 AUGNBPS

Brad Wright
SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 9/96 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-1
D- 17352
Page 2 of 2
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
15.0							
			214				
				SILTY CLAY with SAND continued.			
17.5							
		52402					
			127	19.5 - 20.5' SILTY SAND: (0,70,20,10); grayish brown (10YR5/2); fine grained sand; poorly graded; saturated.	SM		
20.0							2" Borehole
				20.5 - 29' SILTY CLAY with SAND: (0,20,50,30); light olive brown (2.5Y5/4); medium plasticity; stiff to hard; fine grained sand; slightly moist.	CL		
			107				
22.5							
25.0			68				Portland Cement
		52405					
27.5							
				29 - 31'SILTY SAND: (0,70,20,10); brown (10YR5/3); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		
30.0							
							31.0

FRIED,116N6 AUGNBPS

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 9/96 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-2
D- 23500
Page 1 of 2
Geologist: C. Warwick

C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/11/95 TOTAL DEPTH 32.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ▽ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' CONCRETE	CC		
			0.0	1 - 10' SANDY CLAY: (5,35,30,30); grayish brown (2.5Y5/2); medium plasticity; stiff; fine to coarse grained sand; fine to coarse gravel; well graded; slightly moist.	CL		
2.5				3 - 3.5' SILTY SAND (SM)lens.			
			0.0				
5.0							2" Borehole
			0.0				
7.5							
				@ 9 - 10' Increase in coarse sand and fine gravel.			
10.0			420	10 - 13' SANDY CLAY: (0,30,30,40); light yellowish brown (2.5YR6/4); medium to high plasticity; stiff; fine grained sand; slightly moist.	CL CH		Portland Cement
12.5		51496					
			395	13 - 28.2' SANDY CLAY: (0,30,40,30); light yellowish brown (2.5YR6/4); low plasticity; stiff to hard: fine grained sand; slightly moist.	CL		
				@ 14.5 - 15' SANDY SILT: fine to medium sand; slightly			
15.0				See Following Page...			

FRIED,11696,AUGNBPS

Brad Wright
SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 9/96 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-2
D- 23500
Page 2 of 2
Geologist: C. Warwick

C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
15.0				moist.			
		51497					
			153	@ 16.5 - 17' SAND (SP) lens; slightly moist.			
17.5							
			76				
20.0							2" Borehole
			0.0				
22.5							
25.0			0.0				Portland Cement
		51498					
27.5							
				28.2 - 32' SILTY SAND: (0,70,20,10); brown (10YR5/3); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		
30.0							
							32.0

FIELD TECH LOGIN #627G

STATE OF CALIFORNIA REGISTERED GEOLOGIST #627G Exp. 9/96 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist

TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-3
D- 17355
Page 1 of 3
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/12/95 TOTAL DEPTH 34.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ▽ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' ASPHALT and ROADBASE	RB		
			0.0	1 - 4' SANDY SILT; (0,40,40,20); yellowish brown (10YR5/4); low plasticity; slightly stiff to stiff; fine to coarse grained sand; moist.	ML CL		
2.5							
			0.0	4 - 11' SANDY CLAY: (0,30,30,40); yellowish brown (10YR5/4); medium to high plasticity; stiff to hard; fine grained sand; slightly moist.	CL CH		
5.0							2" Borehole
			0.0				
7.5							
10.0			2.3				Portland Cement
				11 - 29' SILTY CLAY with SAND; (0,20,50,30); brown (10YR5/3); low to medium plasticity; stiff to hard; fine grained sand; slightly moist.	CL		
12.5		52409	0.0				
15.0							

See Following Page...

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

FRIED,1R/96 AUG/95

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-3
D- 17355
Page 2 of 3
Geologist: C. Warwick

C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
15.0			2.3	SILTY CLAY with SAND continued.			
17.5							
20.0							2" Borehole
22.5							
25.0							
27.5		52410-11	3.9				
▽				29 - 31.5' SILTY SAND: (0,80,20,0); brown (10YR5/3); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		
30.0							Portland Cement
32				See Following Page...			

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

Bradley D. Wright
SIGNATURE OF FIELD SUPERVISOR AND REVIEWER
Senior Geoscientist
TITLE

SOIL DRILLING LOG

SB/MW #: B-3
D- 17355
Page 3 of 3
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

McLaren Hart

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
32.5							34.0

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6270 BRADLEY D. WRIGHT

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Consulting Geologist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-4
D- 23499
Page 1 of 2
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/12/95 TOTAL DEPTH 27.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ∇ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' ASPHALT and ROADBASE	RB		
			0.0	1 - 5.5' SILTY SAND; (0,80,20,0); dark reddish gray (5YR4/2); loose; fine grained sand; poorly graded; dry.	SM		
2.5							
			0.0				
5.0							2" Borehole
				5.5 - 8' SANDY SILT: (0,25,60,15); low plasticity; slightly stiff; fine grained sand; moist.	ML		
			0.0				
7.5							
				8 - 13' SILTY SAND: (0,55,30,15); yellowish brown (10YR5/4); medium dense; fine to coarse grained sand; well graded; slightly moist.	SM		
10.0			282				Portland Cement
12.5		51494					
			484	13 - 18' SILTY CLAY with SAND: (0,20,50,30); grayish brown (10YR5/2); low to medium plasticity; slightly stiff; fine grained sand; moist.	CL		

See Following Page...

STATE OF CALIFORNIA REGISTERED GEOLOGIST #8370 Exp. 9/96 CHARLES A. WRIGHT REGISTERED GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist

TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-4
D- 23499
Page 2 of 2
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
15.0			68	SILTY CLAY with SAND continued.			
17.5		51495		18 - 19' SILTY SAND: (0,70,20,10); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		
				19 - 20.5' SILTY CLAY with SAND: (0,20,50,30); grayish brown (10YR5/2); low to medium plasticity; slightly stiff; fine grained sand; moist.	CL		
20.0				20.5 - 21.5' SILTY SAND: (0,55,30,15); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		2" Borehole
22.5			0.0	21.5 - 27' SILTY CLAY with SAND : (0,20,50,30); brown (10YR5/3); low to medium plasticity; stiff to hard; fine grained sand; slightly moist.	CL		Portland Cement
25.0		52403-04	0.0	@ 27' Refusal			27.0

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 9/96 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

FRIED/1616AU.WPS

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist

TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-5
D- 17354
Page 1 of 2
Geologist: C. Warwick

C Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/12/95 TOTAL DEPTH 33.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ∇ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' CONCRETE	CC		
			580	1 - 7' SANDY CLAY: (5,40,35,20); medium plasticity; slightly stiff to stiff; fine to coarse grained sand; fine grained gravel; slightly moist.	CL		
2.5							
			488				
5.0							2" Borehole
			388	7 - 10' SILTY CLAY with SAND: (0,25,35,40); reddish yellow (7.5YR6/6); medium to high plasticity; slightly stiff to stiff; fine grained sand; moist.	CL CH		
7.5							
10.0			840	10 - 18.5' SILTY CLAY with SAND: (0,20,50,30); light yellowish brown (10YR6/4); low to medium plasticity; stiff; fine grained sand; slightly moist.	CL		Portland Cement
12.5		52406					
			355				
15.0							

See Following Page...

FRIED, 9/94 AUG BPS

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 9/96 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

Brad Wright
SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-5
D- 17354
Page 2 of 2
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
16.0			90	@ 16 - 17' Increase in sand.			
17.5				SILTY CLAY with SAND continued.			
				18.5 - 19.5' SILTY SAND : (0,70,20,10); brown (10YR5/3); medium dense to dense; fine to medium sand: moderately graded; slightly moist.	SM		
20.0				19.5 - 32' SILTY CLAY with SAND: (0,20,50,30); light yellowish brown (10YR6/4); low to medium plasticity; stiff; fine grained sand; moist.	CL		2" Borehole
22.5							
			16				
25.0							Portland Cement
			0.0				
27.5							
30.0		52407-08					
32.5				32 - 33' SILTY SAND: (0,80,20,0); brown (10YR5/3); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		33.0

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 9/96 BRADLEY W. WRIGHT REGISTERED GEOLOGIST

FRIED,1/6/96 AWG/BRD

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist

TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-6
D- 17356
Page 1 of 2
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/12/95 TOTAL DEPTH 29.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ∇ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' ASPHALT and ROADBASE	RB		
			0.0	1 - 3' SILTY SAND: (5,50,30,15); yellowish brown (10YR5/6); dense; moderately graded; fine to coarse grained sand; fine grained gravel; slightly moist.	SM		
2.5							
				3 - 5' CLAYEY SILT with SAND: (0,20,50,30); light yellowish brown (10YR6/4); low plasticity; slightly stiff to stiff; slightly moist.	ML		
			0.0				
5.0				5 - 27' SANDY CLAY: (0,35,30,35); yellowish brown (10YR5/6); medium plasticity; stiff to hard; fine to coarse grained sand; moderately graded; slightly moist.	CL		2" Borehole
			0.0				
7.5							
10.0			3.4				Portland Cement
12.5		52412	3.4				
15.0							

See Following Page...

FRIED.1/6/96 LOGMPS

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 9/96 BRADLEY D. WARWICK REGISTERED GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-6
D- 17356
Page 2 of 2
Geologist: C. Warwick

C C Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
15.0							
			0.0	SANDY CLAY continued.			
17.5							
20.0							2" Borehole
22.5			0.0				
25.0							Portland Cement
		52413-14	0.0				
27.5				27 - 29' SILTY SAND: (0,80,20,0); brown (10YR5/3); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		
							29.0

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 1/9/96 BRAD D. WRIGHT REGISTERED GEOLOGIST

FRIED,1[illegible] AUGNBPS

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

DRILL RIG	CME 55 HSA	SURFACE ELEVATION	At Grade	LOGGED BY	MJ
DEPTH TO GROUNDWATER	31 ft.	BORING DIAMETER	2-inch	DATE DRILLED	10/17/91

DESCRIPTION AND CLASSIFICATION		DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
DESCRIPTION AND REMARKS	SOIL TYPE						
GRAVEL (GW), red-gray, dry, loose, sandy,						Well Construction Details	
FILL						Cement grout surface seal with steel, traffic rated cover	
GRAVEL (GP), tan, dry, loose, pea-size subround gravel, not crushed, no odor							
		5				2-inch PVC, Schedule 40 solid casing	
Gravel and sampler becoming wet with depth, perched water at the bottom of tank excavation							
FILL		10					
CLAY (CL), tan, with red mottling, damp, very stiff, silty, moderate to high plasticity, no odor				20			
		15					
Same as above with black oxidation mottling, grading to sandy Clay, fine-grained sand				31			

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A California Corporation

EXPLORATORY BORING LOG

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	BORING NO	MW-1
KE1355-1-1009	November 1991		

DRILL RIG	CME 55 HSA	SURFACE ELEVATION	At Grade	LOGGED BY	MJ
DEPTH TO GROUNDWATER	31 ft.	BORING DIAMETER	2-inch	DATE DRILLED	10/17/91

DESCRIPTION AND CLASSIFICATION: DESCRIPTION AND REMARKS	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
Same as above, with fine-grained sand stringers, very stiff, damp			■	29			
						Bentonite pellet plug	
CLAY (CL),brown, moist, silty, very stiff		25					
			■	21		2/12 washed sand filter pack	
		30				2-inch PVC, Schedule 40 slotted (0.020-inch) casing	
Clay with silty sand lenses (to 2" thick) with fine-grained sand, free water in lenses			■	27			
		35				Sand backfill in bottom of boring	
Clay grading to sand (fine-grained), moist, very stiff			■	30			

Notes:
1. The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.
2. Ground water was measured at 31 feet at time of drilling. After 5 hours, ground water was measured at 11.8 feet.
3. N.S. = Not Surveyed

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EXPLORATORY BORING LOG

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	BORING NO
KE1355-1-1009	November 1991	MW-1

DRILL RIG	CME 55 HSA	SURFACE ELEVATION	98.18 FT	LOGGED BY	MJ
DEPTH TO GROUNDWATER	22.5 FEET	BORING DIAMETER	2-inch	DATE DRILLED	1/28/92

DESCRIPTION AND CLASSIFICATION: DESCRIPTION AND REMARKS	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
Tan-red Silty clay turning tan-brown, slight smell						Bentonite pellet plug	
		25		30	0		
						2/12 washed sand filter pack	
Same as above, grading sandy (fine-grained), red mottling, moist, black oxidation specks, no odor							
		30		22	5		
						2-inch PVC, Schedule 40 slotted (0.010-inch) casing	
SAND (SM/SC), tan-brown, fine-grained, with clay and silt, wet							
		35		N.C.	0		

Bottom of Boring = 35 feet. Notes:
1. The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.
2. For an explanation of penetration resistance values marked with an asterisk (*), see first page Appendix A.
3. Ground water level was measured at 31 feet at time of drilling. After 24 hours, ground water level was measured at 22.5 feet.

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EXPLORATORY BORING LOG

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	BORING NO
KE1355-1A-1140	February 1992	MW-2

DRILL RIG	CME 55 HSA	SURFACE ELEVATION	98.18 FT	LOGGED BY	MJ
DEPTH TO GROUNDWATER	22.5 FEET	BORING DIAMETER	2-inch	DATE DRILLED	1/28/92

DESCRIPTION AND CLASSIFICATION: DESCRIPTION AND REMARKS	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
3" Asphalt 3" **GRAVEL (GW)**, gray, sandy, fill material						Well Construction Details	
CLAY (CL), tan-red, damp, very stiff, silty, with some sand (fine-grained), light gray silt mottling, moderate to high plasticity, no odor						Cement grout surface seal with steel, traffic rated cover	
		5		18	0		
						2-inch PVC, Schedule 40 solid casing	
Same as above, with black rootlets, red flecks, very stiff							
		10		26	0		
Silty Clay turning gray with tan-red mottling, black oxidation flecks							
		15		26	0		
Same as above, becoming moist, with sand (fine-grained)							
				20	0		

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EXPLORATORY BORING LOG

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	BORING NO
KE1355-1A-1140	February 1992	MW-2

SOIL DRILLING LOG

McLaren Hart

SB/MW #: MW-3
D- 17357
Page 1 of 2
Geologist: C. Warwick

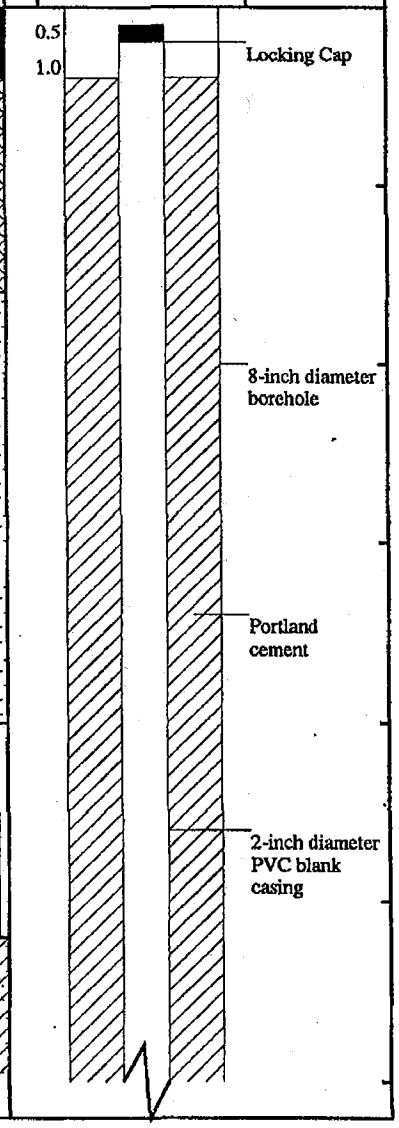
C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION 86.43 (MSL) DATE(S) 10/26/95 TOTAL DEPTH 27.5'
MONITORING DEVICE OVM SCREENED INTERVAL 20' - 25'
SAMPLING METHOD Cal. Mod. Split Spoon SUBCONTRACTOR & EQPT Gregg/M-11
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ▽ =First Water ▼ =Static Water (10/30/95)
MEMO Hand augered to 2.5'.

Depth Below Surface (ft.)	Penetration Results Blows 6"-6"-6"	BPF	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log
						0 - 1' ASPHALT and ROADBASE	RB	
						1 - 4' SANDY FILL	FL	
2.5	7-12-16	28			10.2			
	7-14-14	28			15.0	4 - 10' SILTY SAND: (0,50,30,20); brown (7.5Y5/4); loose to medium dense; fine grained sand; poorly graded; slightly moist.	SM	
5.0	10-12-17	29			32.0			
	8-17-20	37			64.0			
7.5	11-15-20	35		52416	498			
10.0	15-27-24	51			102	10 - 13' SANDY SILT: (0,30,50,20); reddish yellow (7.5Y6/6); low plasticity; slightly stiff to stiff; fine grained sand; slightly moist.	ML	
	7-14-19	33			33			
12.5	7-11-20	31			34	13 - 18' SILTY SAND: (0,60,20,20); brown (7.5Y5/4); medium dense; fine to medium grained sand; moderately graded; moist.	SC	

See Following Page...

Borehole Abandonment/ Well Construction Details



STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 12/94 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist

TITLE

SOIL DRILLING LOG

McLaren Hart

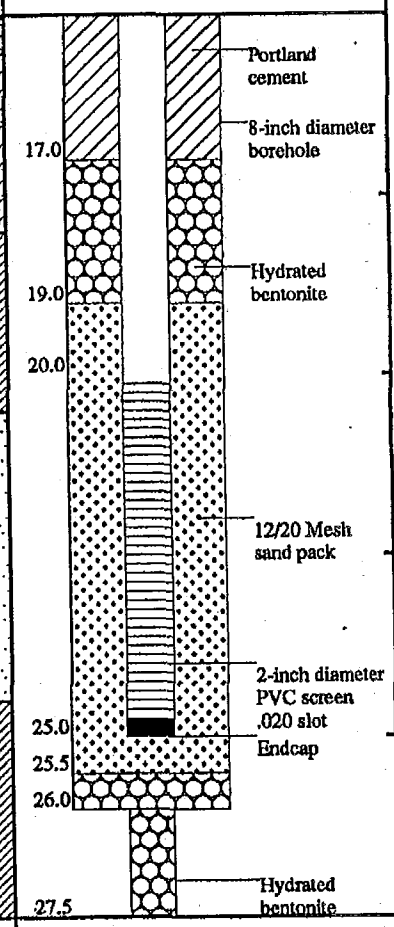
SB/MW #: MW-3
D- 17357
Page 2 of 2
Geologist: C. Warwick

C. C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Penetration Results: Blows 6"-6"-6"	Penetration Results: BPF	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log
15.0	6-10-14	24		52417	412	SILTY SAND continued.		
	11-10-12	22			105			
17.5								
	10-17-18	35		52418	60	18 - 20' SANDY CLAY: (0,30,40,30); light yellowish brown (10YR6/4); low to medium plasticity; stiff; fine grained sand; moist.	CL	
20.0	4-6-10	16			40	@ 20' Sand (SP) lens, saturated.		
	6-10-15	25			54	20.5 - 24.5' SILTY SAND: (0,50,30,20); medium dense; fine to medium grained sand; moderately graded; very moist to saturated. @ 20.5' Increasing fine, well-rounded gravel from 20.5' to 21'.	SM	
22.5								
	12-12-16	28			27			
	11-6-16	22			21	24.5 - 27.5' SANDY CLAY: (0,30,30,40); brown (7.5YR5/4); medium plasticity; stiff to hard; fine grained sand; slightly moist.	CL	
25.0								
	6-12-6	18			0.0			
27.5								

Borehole Abandonment/ Well Construction Details



STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

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SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist

TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: MW-4
D- 17359
Page 1 of 3
Geologist: C. Warwick

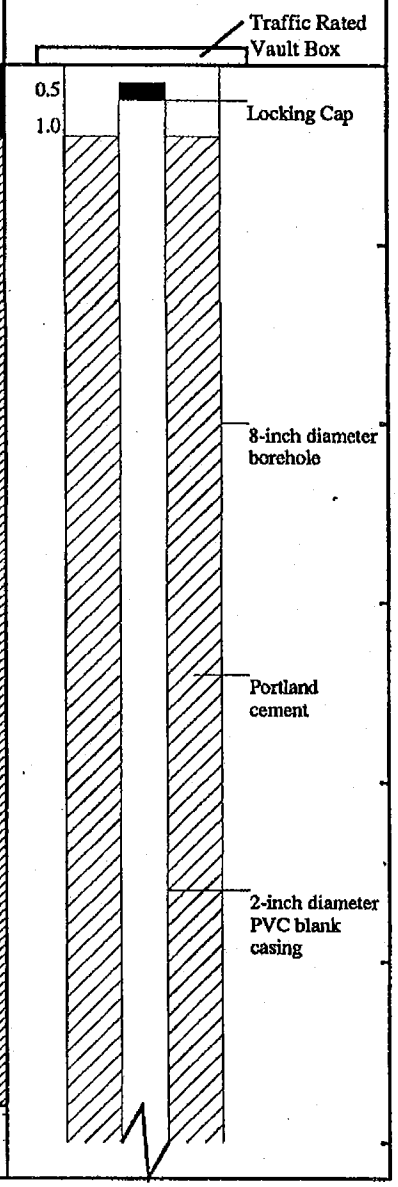
C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION 86.62 (MSL) DATE(S) 10/26/95 TOTAL DEPTH 37.0'
MONITORING DEVICE OVM SCREENED INTERVAL 25.5-35.5
SAMPLING METHOD Cal. Mod. split spoon SUBCONTRACTOR & EQPT Gregg/M-11
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ▽ =First Water ▼ =Static Water (10/30/95)
MEMO Hand augered to 2'.

Depth Below Surface (ft.)	Penetration Results: Blows 6"-6"-6"	Penetration Results: BPF	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log
						0 - 1' ASPHALT and ROADBASE	RB	
						1 - 14.5' SANDY CLAY: (0,40,35,25); brown (7.5Y5/4); medium plasticity; slightly stiff; fine grained sand; slightly moist.	CL	
2.5	8-10-14	24			0.0			
	4-16-15	31			0.0			
5.0	9-12-18	30			0.0			
	6-10-15	25			0.0			
7.5						@ 7.5 - 9.5' Decreasing sand content.		
	7-14-16	30			0.0			
10.0	6-10-13	23			0.0	@ 9.5 - 10' Increasing medium grained sand.		
	7-12-14	26			0.0			
12.5	5-8-11	19			0.0			
15.0						14.5 - 16.5' SILTY SAND: (0,55,30,15);	SM	

See Following Page...

Borehole Abandonment/ Well Construction Details



STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. BRADLEY D. WHIGHT REGISTERED GEOLOGIST

FRIE 12/6/95 AUG

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geologist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: MW-4
D- 17359
Page 2 of 3
Geologist: C. Warwick

C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Penetration Results: Blows 6"-6"-6"	Penetration Results: BPF	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
15.0	6-10-11	21			0.0	reddish yellow (5YR6/6); loose to medium dense; fine to medium grained sand; moderately graded; moist to very moist.			Portland cement
	7-8-11	19			0.0	16.5 - 20' SANDY SILT with CLAY: (0,40,35,25); brown (7.5YR5/4); low plasticity; slightly stiff; fine grained sand; moist. @ 17.5 - 18' Sand (SC) lens; saturated.	ML		8-inch diameter borehole
17.5	5-7-12	19			0.0				
	8-8-14	22			0.0				
20.0	5-8-12	20			0.0	20 - 28' SANDY CLAY: (0,30,40,30); yellowish red (5YR5/6); medium plasticity; stiff to hard; fine grained sand; slightly moist.	CL		2-inch diameter PVC blank casing
22.5	6-6-11	18			0.0				22.5 Hydrated bentonite
	7-10-14	24			0.0				24.5
25.0	6-12-15	27			0.0				25.5 12/20 Mesh sand pack
27.5	10-9-13	22			0.0				2-inch diameter PVC screen .020 slot
	7-10-12	22		52415	0.0	28 - 31.5' SANDY SILT: (0,45,35,20); yellowish red (5YR5/6); low plasticity; slightly stiff; fine grained sand; moist.	ML CL		
30.0	10-12-16	28			0.0				
32.5					0.0	31.5 - 35' SILTY SAND: (0,70,20,10); yellowish red (5YR5/6); loose to medium dense; fine to medium grained sand;	SM		

See Following Page...

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STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geologist
TITLE

SOIL DRILLING LOG

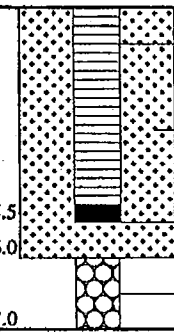
McLaren Hart

SB/MW #: MW-4
D- 17359
Page 3 of 3
Geologist: C. Warwick

C C Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Penetration Results: Blows 6"-6"-6"	Penetration Results: BPF	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
32.5						moderately graded; very moist.			
	8-9-10	19			0.0				
	7-10-16	26			0.0	@ 34.5 - 35' Decreasing silt and clay content; saturated.			
35.0						35 - 37' SANDY CLAY: (0,30,40,30); yellowish red (5YR5/6); medium plasticity; stiff; fine grained sand; moist.	CL		35.5
		29			0.0				36.0
									37.0



STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

FRIED... AUGH...

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

Drilling Log

FLUOR DANIEL GTI

Monitoring Well MW-5

See Site Map For Boring Location

Project: Former Texaco Facility — Owner: Frieoxin
Location: 3810 Broadway Avenue, Oakland, CA — Proj. No. 020700324
Surface Elev. ____ — Total Hole Depth: 35 ft. — Diameter: 8.5 in.
Top of Casing ____ — Water Level Initial: 18 ft. — Static ____
Screen: Dia 2 in. — Length 25 ft. — Type/Size 0.020 in.
Casing: Dia 2 in. — Length 10 ft. — Type PVC Riser
Fill Material: Lonestar 2/12 — Rig/Core: Mobile B-61
Drill Co.: Westex — Method: Hollow Stem Auger
Driller: Mike Noble — Log By: Bob Fehr — Date: 09/19/96 — Permit #: X9600747
Checked By: Ed Simonis — License No.: RG #4422

COMMENTS:

Soil cuttings stored on-site on top of and covered with plastic pending proper disposal.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Asph	Asphalt
4		0	MW-5 (5)	15, 40, 40			Sandy Silty CLAY, brown, stiff, moist, no odor
8				15, 30, 45		CL	
10		0					Grades to Silty CLAY, light greenish gray, hard, damp
14		7	MW-5 (15)	20, 20, 45			Grades with trace dark brown spots and medium brown mottling
18						SP	Groundwater encountered at 1515 Grades to a fine, well sorted SAND with some Clay, brown, dense, saturated, no odor
20		0	MW-5 (20)	12, 15, 20			CLAY with some Silt, hard, damp
22						CL	Grades to trace Silt, brown with trace dark brown spots, medium stiff, plastic, no odor
24				19, 20			

FLUOR DANIEL GTI

Drilling Log

Monitoring Well MW-5

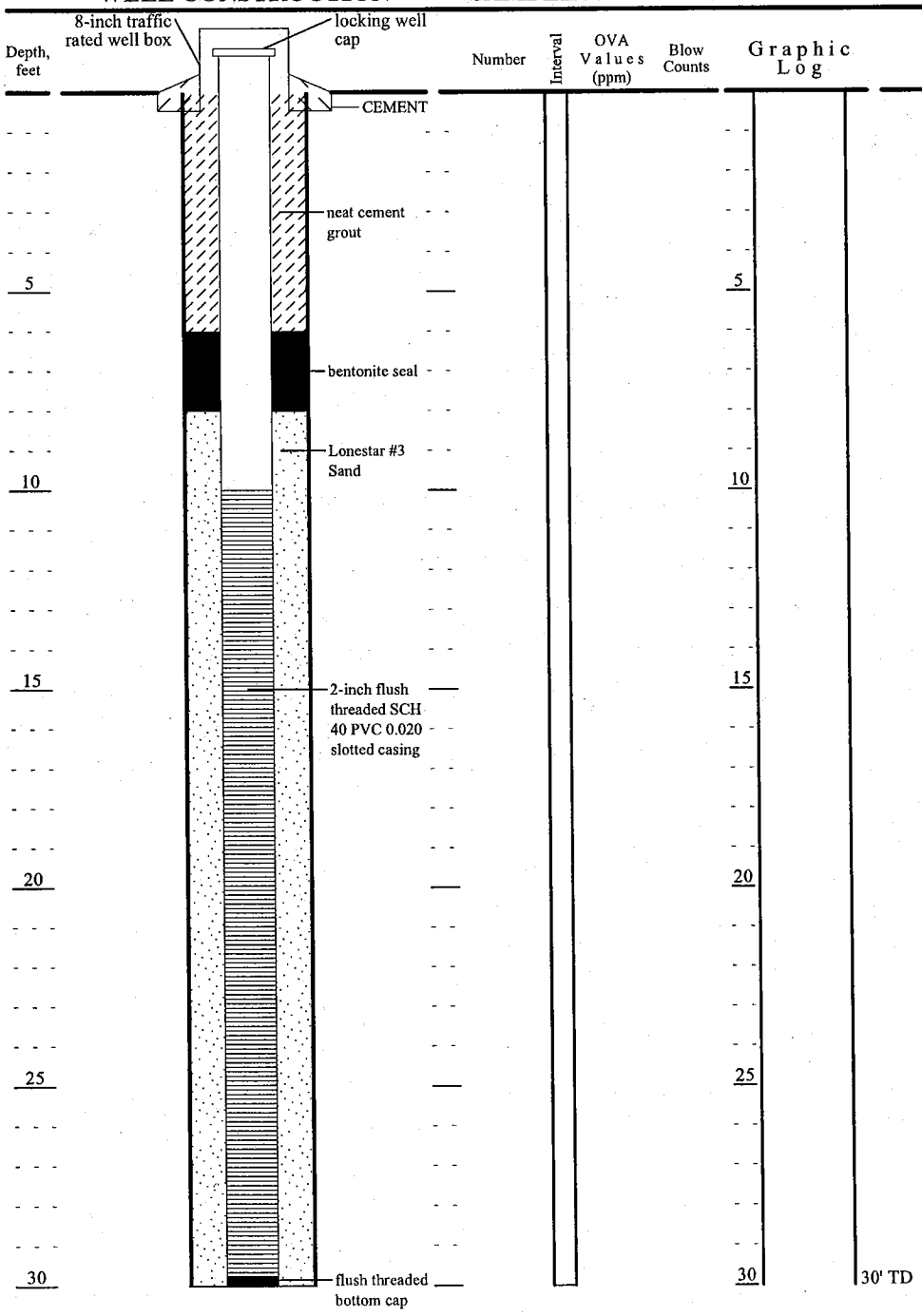
Project Former Texaco Facility Owner Friedkin

Location 3810 Broadway Avenue, Oakland, CA Proj. No. 020700324

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24		0	MW-5 (25)	20 35			Brown CLAY (Continued)
26							
28				20 20 45		CL	
30		0					
32						SC	Grades to Clayey SAND, brown, loose, saturated
				12 25		CL	Silty CLAY, brown, stiff, plastic
34		0	MW-5 (35)	44			End of boring. Installed monitoring well.
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

Delta Environmental Consultants, Inc.	Street Address: **3810 Broadway**	Project ID: **Former Texaco #211283**	
	City & State: **Oakland, California**	Surface Elev.	Well / Boring ID: **MW-5 (B)**
	Delta Project #: **D211-283**	Casing Elev.	Total Depth: **30'**

WELL CONSTRUCTION / SAMPLING DATA / SOIL PROFILE/LITHOLOGY



Dates and Times	Logger: **Will Slowik**	Sampling Method & Diameter: **2-Inch Split Spoon**	Permitting Agency: **Alameda County Public Works Agency**
Start: **5/30/02 1130**	Drilling Company & Driller: **Cascade Drilling, Inc., Jaydean**	Bore Hole Diameter: **8-inches**	Permit #: **W02-0509**
Total Depth: **5/30/02 1225**	Drillers C-57#: **717510**	Diameter, Type & Slot Size of Casing: **2-inch SCH 40 PVC/0.020 slot**	
Completion or backfill: **5/30/02 1320**	Drilling Equipment and method: **LAR HSA, Hollow Stem Auger**		

WELL 211-283.GPJ 8/14/02

Drilling Log

FLUOR DANIEL GTI

Monitoring Well MW-6

See Site Map
For Boring Location

COMMENTS

Soil cuttings stored on-site on top of and covered with plastic pending proper disposal

Project Former Texaco Facility — Owner Fredric
Location 3511 Broadway Avenue, Oakland, CA — Proj. No. 020700324
Surface Elev. — Total Hole Depth 35 ft. — Diameter 8.5 in
Top of Casing — Water Level Initial 23 ft — Static
Screen: Dia 2 in — Length 25 ft. — Type/Size 0.020 in
Casing: Dia 2 in — Length 10 ft. — Type PVC Riser
Fill Material Lonestar 2/12 — Rig/Core Mobile B-61
Drill Co. Westex — Method Hollow Stem Auger
Driller Mike Noble — Log By Bob Fehr — Date 09/20/96 — Permit # X9600747
Checked By Ed Simonis — License No. RG #4422

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2							
0						Asph	Asphalt
2							
4		8	MW-6 (5)	10 20 40			Silty CLAY, greenish gray, medium stiff, plastic, damp, no odor
6							
8				10 30 35			Grades to CLAY with Silt, brown with trace dark greenish gray, mottling, hard, plastic, damp, slight odor
10		11				CL	
12							
14		5		17 30			Grades greenish gray/greenish brown, stiff, no odor
16							
18							Grades moist
20		35	MW-6 (20)				
22						SC	Grades to Clayey fine SAND, medium brown, loose, saturated
24						CL	*Groundwater encountered at 1050*

Drilling Log

FLUOR DANIEL GTI

Monitoring Well MW-6

Project Former Texaco Facility Owner Friedkin

Location 3810 Broadway Avenue Oakland, CA Proj. No. 020700324

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24		27	Nk-6 (25)	25 40			CLAY, brown, hard, plastic, moist, no odor
26							
28				12 30		CL	Grades to CLAY with Silt, light brown with greenish gray mottling, medium stiff, plastic, wet, no odor
30		50	Nk-6 (30)	50=4'			
32						SC	Grades to a Clayey fine SAND, brown, loose, saturated, no odor
34		0	NW-6 (35)	10 30 50=5"		CL	Silty CLAY, brown with trace dark brown spots, plastic, wet, no odor
							End of boring. Installed monitoring well.
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

Drilling Log

Monitoring Well MW-7

FLUOR DANIEL GTI

See Site Map For Boring Location

Project: Former Texaco Facility — Owner: Friedkin
Location: 3810 Broadway Avenue, Oakland, CA — Proj. No.: 020700324
Surface Elev.: — Total Hole Depth: 35 ft. — Diameter: 8.5 in.
Top of Casing: — Water Level Initial: 33 ft. — Static:
Screen: Dia 2 in. — Length: 25 ft. — Type/Size: 0.020 in
Casing: Dia 2 in. — Length: 10 ft. — Type: PVC Riser
Fill Material: Lonestar 2/12 — Rig/Core: Mobile B-61
Drill Co.: Westex — Method: Hollow Stem Auger
Driller: Mike Noble — Log By: Bob Fehr — Date: 09/20/96 — Permit #: X9800747
Checked By: Ed Simonis — License No.: RG #4422

COMMENTS:

Soil cuttings stored on-site on top of and covered with plastic pending proper disposal

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ x Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2							
0						Asph	Asphalt
2							Fine SAND, well sorted, light brown with gray mottling, medium dense, damp, no odor
4		0	MW-7 (5)	10 20 25		SP	
6							CLAY with trace Silt, brown with trace dark brown spots and trace gray mottling, medium stiff, plastic, damp, no odor
8				10 30 35			
10		0					
12							
14		0		13 38 50-5"		CL	Grades to Silty CLAY with trace Sand, light brown with some light gray mottling, medium stiff, plastic, damp, no odor
16							
18				8 20 25			Grades to less Silt, no sand, moist
20		0					
22							
24				20 35			

Drilling Log

Monitoring Well MW-7

FLUOR DANIEL GTI

Project Former Texaco Facility Owner Friedkin

Location 3810 Broadway Avenue, Oakland, CA Proj. No. 020700324

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24		0		38 50=4"			Silty CLAY, brown with trace dark brown spots, no mottling, hard.
26						CL	
28				20 50			
30		0	MW-1	50=4" (30)			
32						SC	▽ Groundwater encountered at 0830
							Grades to Clayey fine SAND, brown, loose, saturated
34		0	MW-7	10 20 50 (35)		CL	CLAY, greenish gray, stiff, plastic, moist, no odor
							End of boring. Installed monitoring well.
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

Drilling Log

FLUOR DANIEL GTI

Monitoring Well MW-8

Project *Former Texaco Facility* Owner *Friedkin*
Location *3810 Broadway Avenue, Oakland CA* Proj. No. *020700324*
Surface Elev. _____ Total Hole Depth *35 ft* Diameter *8.5 in*
Top of Casing _____ Water Level Initial *33 ft* Static _____
Screen: Dia *2 in* Length *25 ft* Type/Size *0.020 in*
Casing: Dia *2 in* Length *10 ft* Type *PVC Riser*
Fill Material *Lonestar 2/12* Rig/Core *Mobile B-61*
Drill Co. *Wester* Method *Hollow Stem Auger*
Driller *Chris Miner* Log By *Bob Fehr* Date *09/23/96* Permit # *X9600747*
Checked By *Ed Simonis* License No. *RG #4422*

See Site Map For Boring Location

COMMENTS:

Soil cuttings stored on-site on top of and covered with plastic pending proper disposal

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2							
0						Asph	Concrete
2							
4		729		13 28 30			Silty CLAY, brown with trace dark brown spots, stiff, plastic, damp, moderate odor
6							
8		698		8 20 28			Grades with greenish gray mottling, strong hydrocarbon odor
10							
12						CL	
14		341		14 24 34			
16							
18		167		10 24 35			Grades to less silt, greenish gray with olive green mottling, plastic, stiff, moist, no hydrocarbon odor
20							
22							
24				17 30			CLAY, brown, hard, plastic, no odor

FLUOR DANIEL GTI

Drilling Log

Monitoring Well MW-8

Project Former Texaco Facility Owner Friedkin

Location 3810 Broadway Avenue, Oakland CA Proj. No. 020700324

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24		244		30, 38			Brown CLAY (Continued)
26							
28				15, 20, 36		CL	Grades with trace silt, light to medium brown, stiff, plastic, moist, no odor
30		14					
32						SC	*Groundwater encountered at 1205* Grades to Clayey Sandy GRAVEL, medium brown, loose, saturated
34				15		CL	Silty CLAY, medium brown, hard, wet, no odor
		14		50-5"			End of boring. Installed monitoring well.
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

Drilling Log

FLUOR DANIEL GTI

Monitoring Well MW-9

See Site Map For Boring Location

Project: Former Texaco Facility — Owner: Friedwin
Location: 3810 Broadway Avenue, Oakland, CA — Proj. No. 020700324
Surface Elev. ____ — Total Hole Depth: 35 ft — Diameter: 8.5 in
Top of Casing ____ — Water Level Initial: 33 ft — Static ____
Screen: Dia 2 in. — Length 25 ft — Type/Size 0.020 in
Casing: Dia 2 in. — Length 10 ft. — Type PVC Riser
Fill Material: Lonestar 2/12 — Rig/Core: Mobile B-61
Drill Co.: Westex — Method: Hollow Stem Auger
Driller: Mike Noble — Log By: Bob Fehr — Date: 09/19/96 — Permit #: X9600747
Checked By: Ed Simonis — License No.: RG #4422

COMMENTS.

Soil cuttings stored on-site on top of and covered with plastic pending proper disposal

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Conc	Concrete
4		23	MW-9 (5)	12, 16, 25			Silty CLAY, brown with greenish gray mottling, stiff, plastic, damp, no odor
8		2	MW-9 (10)	18, 33, 40			Grades to Sandy CLAY, light to medium brown with greenish mottling, hard, damp, no odor
12						CL	
14		0	MW-9 (15)	27, 29, 33			Grades to Silty CLAY, brown with very dark brown and light greenish gray mottling, stiff, plastic, damp, no odor
18							Grades to light brown with very light gray mottling, medium stiff, moist
20		0	MW-9 (20)	19, 20, 50-6			
22							Silty CLAY, brown with no mottling, hard, moist, plastic, no odor
24				13, 33			

Drilling Log

FLUOR DANIEL GTI

Monitoring Well MW-9

Project Former Texaco Facility Owner Friedkin

Location 3810 Broadway Avenue, Oakland CA Proj. No. 020700324

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24		0		33, 50=6"			Brown Silty CLAY (Continued)
26							
28				15, 33, 40		CL	
30		0					
32							Grades to Sandy, Gravelly CLAY, soft, plastic, saturated
						SC/CL	*Groundwater encountered at 0955*
				30, 40			CLAY with Silt, hard, moist, plastic
34		0	MW-9 1359	50=6"		CL	
							End of boring. Installed monitoring well.
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

Drilling Log

Monitoring Well MW-10

FLUOR DANIEL GTI

Project: Former Texaco Facility — Owner: Friedkin
Location: 3810 Broadway Avenue, Oakland, CA — Proj. No. 020700324
Surface Elev. — Total Hole Depth: 35 ft — Diameter: 8.5 in
Top of Casing — Water Level Initial: 28 ft — Static
Screen: Dia 2 in — Length: 25 ft — Type/Size: 0.020 in.
Casing: Dia 2 in — Length: 10 ft — Type: PVC Riser
Fill Material: Lonestar 2/12 — Rig/Core: Mobile B-61
Drill Co.: Wester — Method: Hollow Stem Auger
Driller: Mike Noble — Log By: Bob Fehr — Date: 09/19/96 — Permit #: X9600747
Checked By: Ed Simonis — License No.: RG #4422

See Site Map For Boring Location

COMMENTS:

Soil cuttings stored on-site on top of and covered with plastic pending proper disposal

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0				ASPH		Concrete
2						
4		0	10 / 30 / 50=6"			Sandy CLAY, light grayish brown, stiff, damp, no odor
6					CL	
8			10 / 25 / 35			Grades to CLAY with Silt, brown with trace dark brown mottling, hard, plastic, no odor
10		0				
12						
14		0	10 / 30 / 50=6"			Clayey SILT, greenish gray, stiff, plastic, damp, no odor
16					ML	
18			10 / 15 / 30			Grades to Silty CLAY, trace greenish gray mottling, hard, plastic, moist, no odor
20		0			CL	
22						
24			15 / 35			

Drilling Log

FLUOR DANIEL GTI

Monitoring Well MW-10

Project *Former Texaco Facility* Owner *Friedkin*

Location *3810 Broadway Avenue, Oakland, CA* Proj. No. *020700324*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24		0	HW-10 (25)	38, 50=6"		CL	Mottled greenish gray CLAY
26							
						GC	Grades to Clayey Sandy Gravel, loose, saturated; *Groundwater encountered at 1305*
28				10, 30		CL	Silty CLAY, brown, stiff, plastic, wet, no odor
		0	HW-10 (30)	50=4"		SC	Clayey, Gravelly, SAND, dense
30							
32						CL	Grades to CLAY with Silt, hard, plastic, wet
34		0	HW-10 (35)	13, 30, 50=5"			End of boring. Installed monitoring well.
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

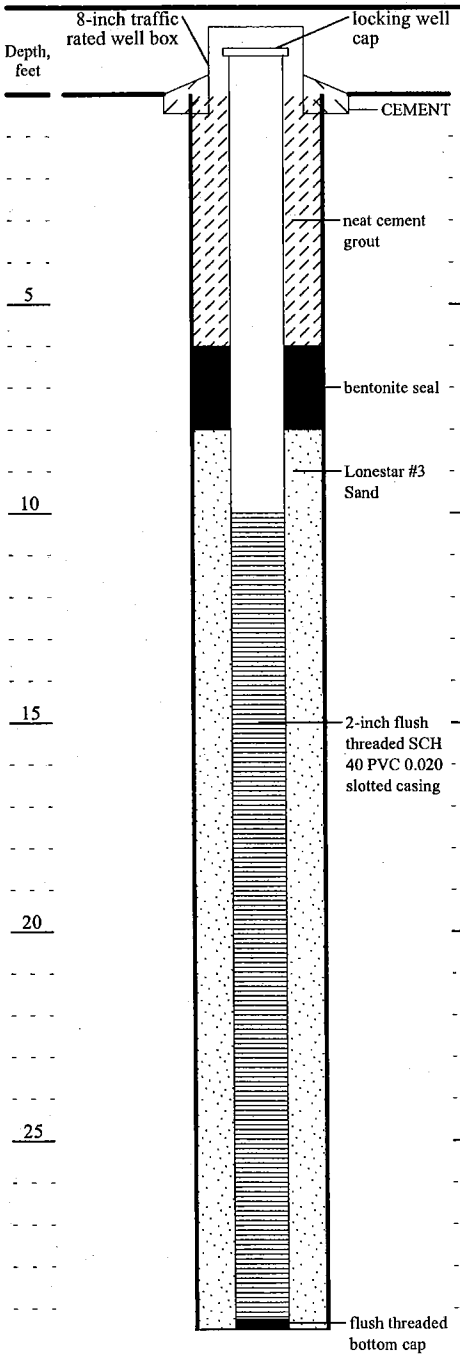
CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

Delta Environmental Consultants, Inc.	Street Address: **3810 Broadway**	Project ID: **Former Texaco #211283**	
	City & State: **Oakland, California**	Surface Elev.	Well / Boring ID: **MW-12**
	Delta Project #: **D211-283**	Casing Elev.	Total Depth: **29.5'**

WELL CONSTRUCTION / SAMPLING DATA / SOIL PROFILE/LITHOLOGY



Number	Interval	OVA Values (ppm)	Blow Counts	Graphic Log	Visual Description
					Asphalt Compacted Engineered Fill Material-Clayey or Silty Sand; brown, low plasticity, dry (SM/SC)
					Pea Gravel
					Note: pea-gravel was encountered during an attempt to collect a soil sample @ 20 feet bsg.
MW-12-26		19	14 50		LEAN CLAY; olive green to gray, very stiff to hard, medium plasticity (CL) POORLY GRADED SAND; medium to coarse grained sand; olive brown to gray (SP)
					29.5' TD

Dates and Times	Logger: **Will Slowik**	Sampling Method & Diameter: **2-Inch Split Spoon**	Permitting Agency: **Alameda County Public Works Agency**
Start: **5/30/02 1430**	Drilling Company & Driller: **Cascade Drilling, Inc., Jaydean**	Bore Hole Diameter: **8-inches**	Permit #: **W02-0510**
Total Depth: **5/30/02 1600**	Drillers C-57#: **717510**	Diameter, Type & Slot Size of Casing: **2-inch SCH 40 PVC/0.020 slot**	
Completion or backfill: **5/30/02 1730**	Drilling Equipment and method: **LAR HSA, Hollow Stem Auger**		**Page 1 of 1**

WELL 211-283.GPJ 8/14/02

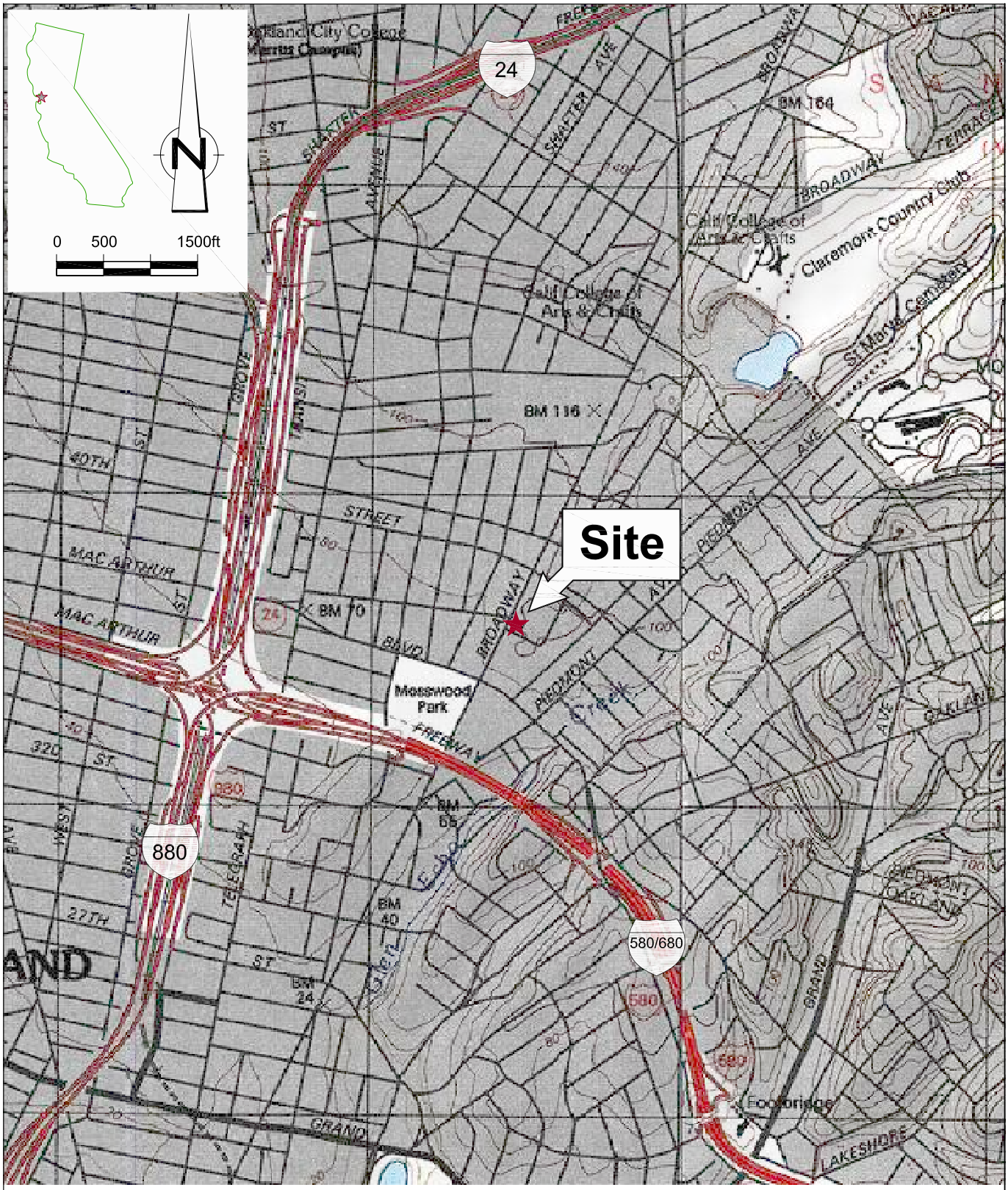


Figure 1

SITE VICINITY MAP
FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY
Oakland, California

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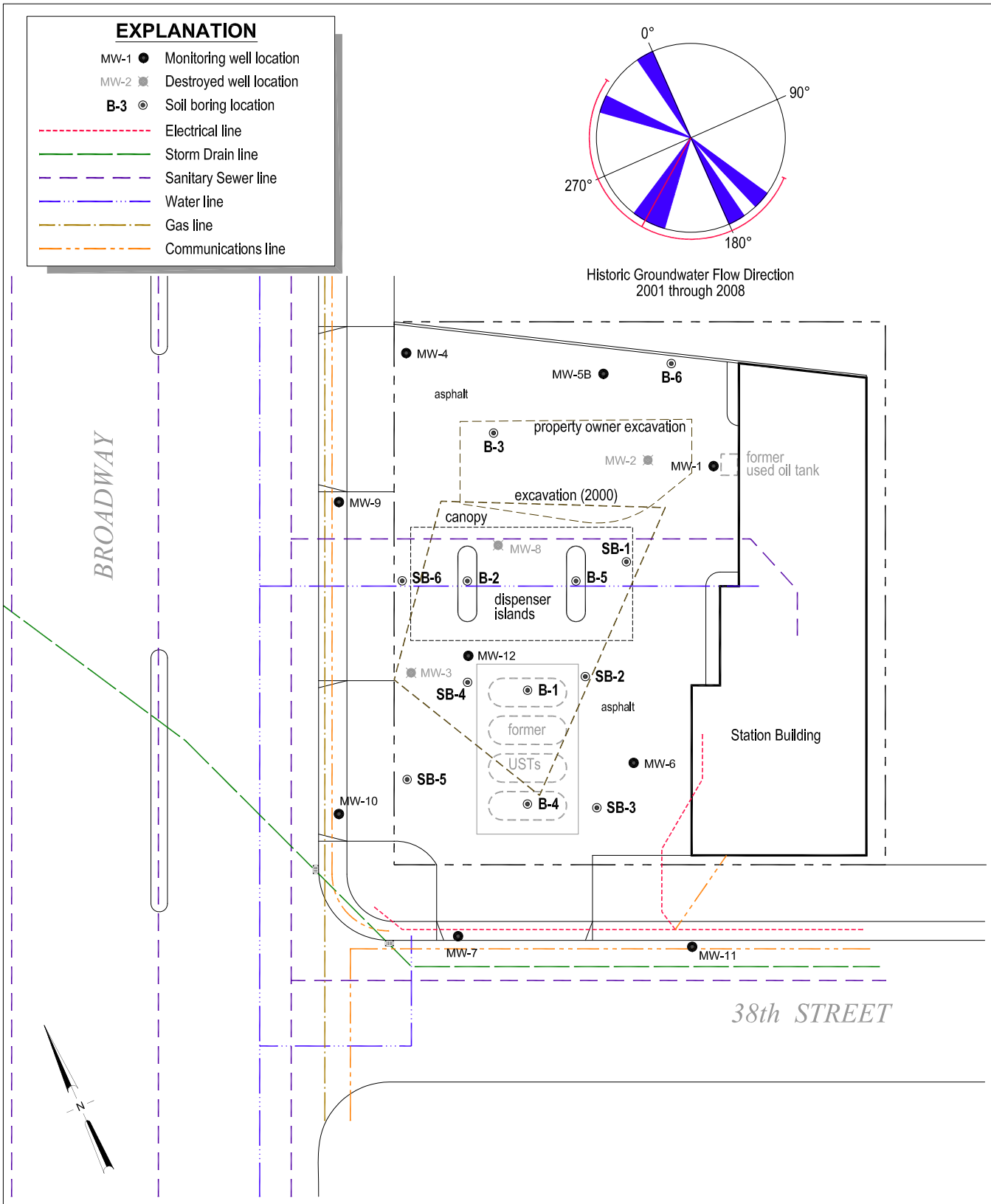

0 15 30

Scale (ft)

Figure 3

SITE PLAN
FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY
Oakland, California

Siteplan modified from map provided by Gettler-Ryan Inc.

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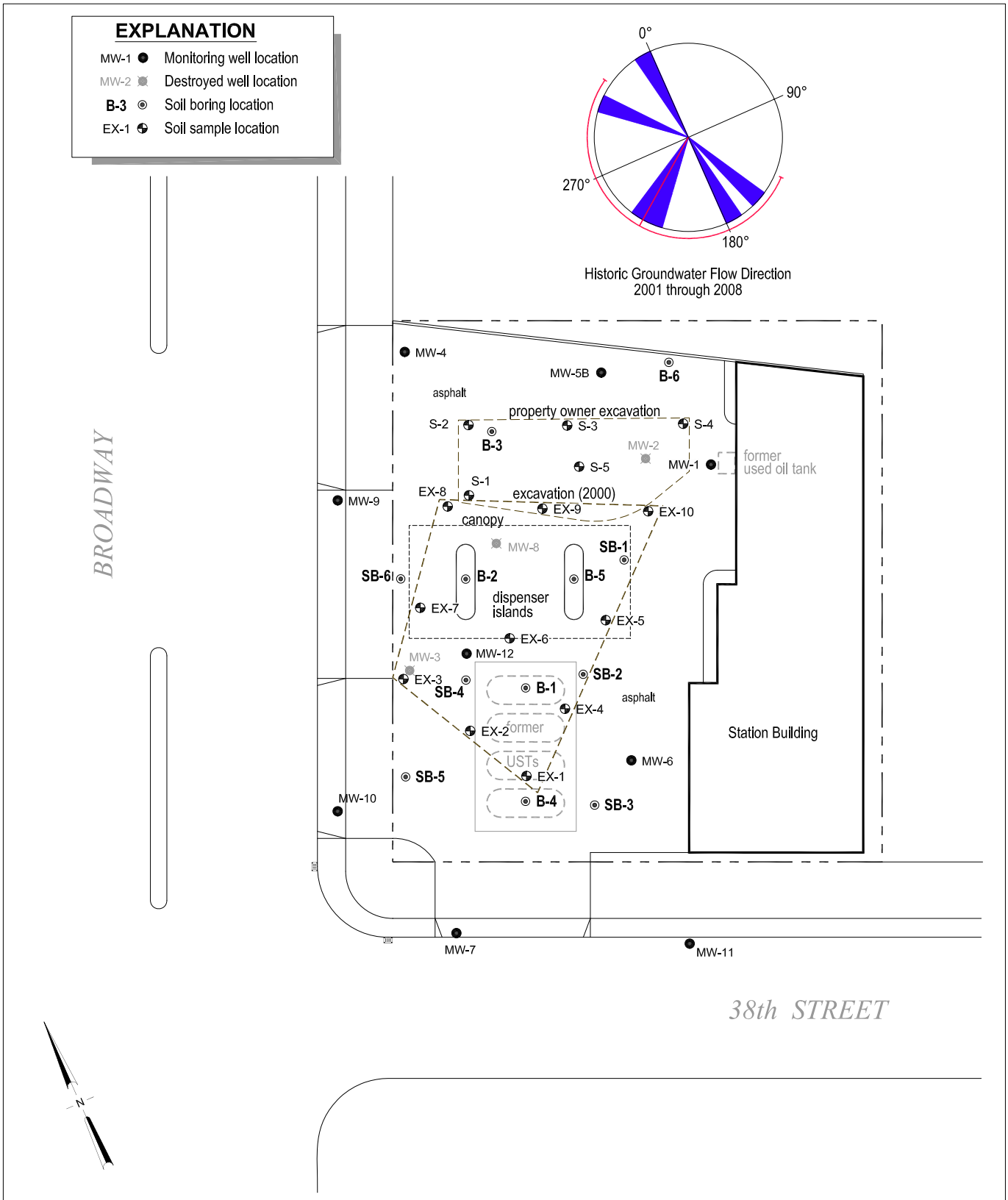

Figure 3

EXCAVATION SAMPLE LOCATIONS
FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY
Oakland, California

Siteplan modified from map provided by Gettler-Ryan Inc.

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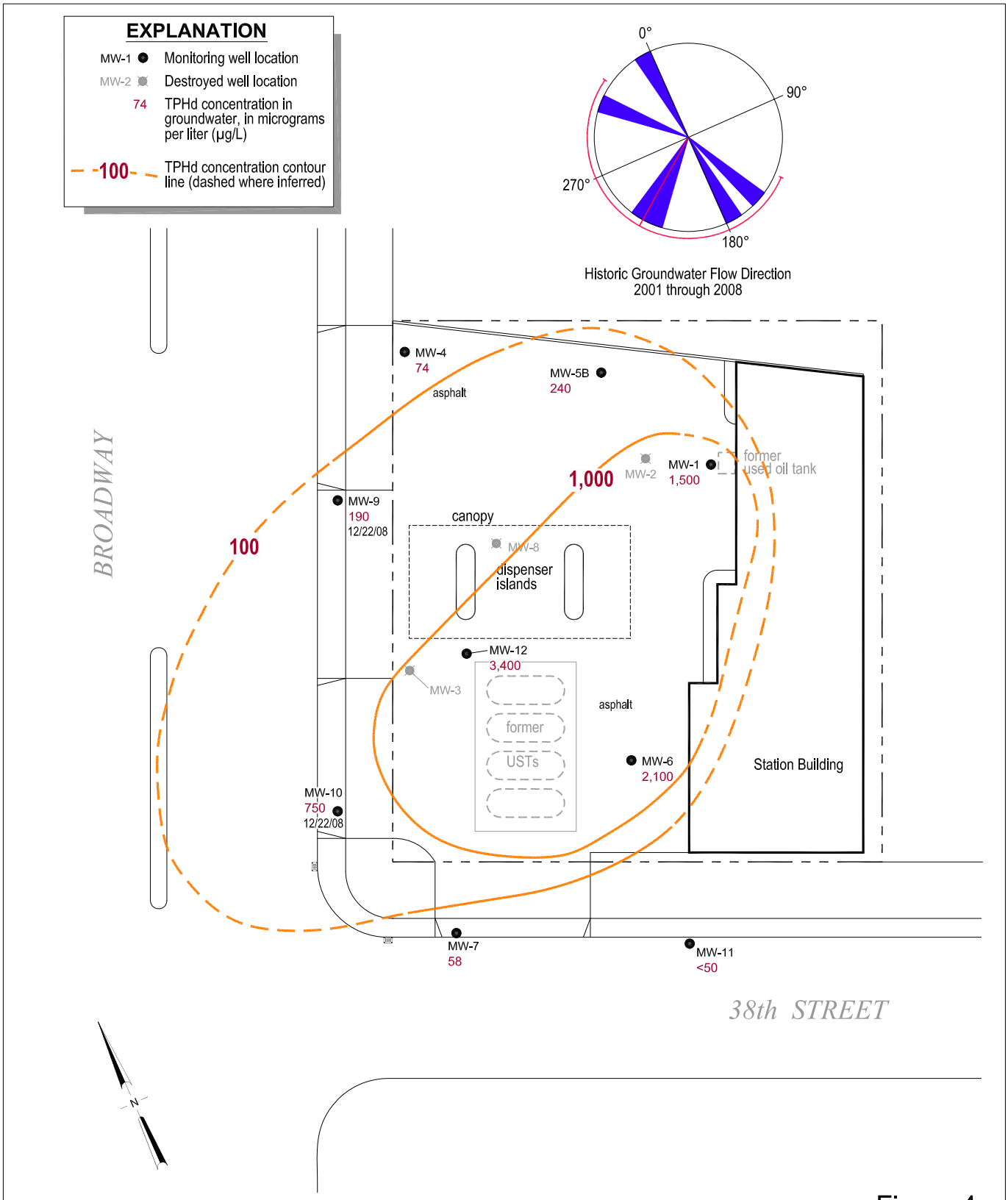

Figure 4

TPHd ISOCONCENTRATIONS IN GROUNDWATER
FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY
Oakland, California
March 23, 2009

Siteplan modified from map provided by Gettler-Ryan Inc.

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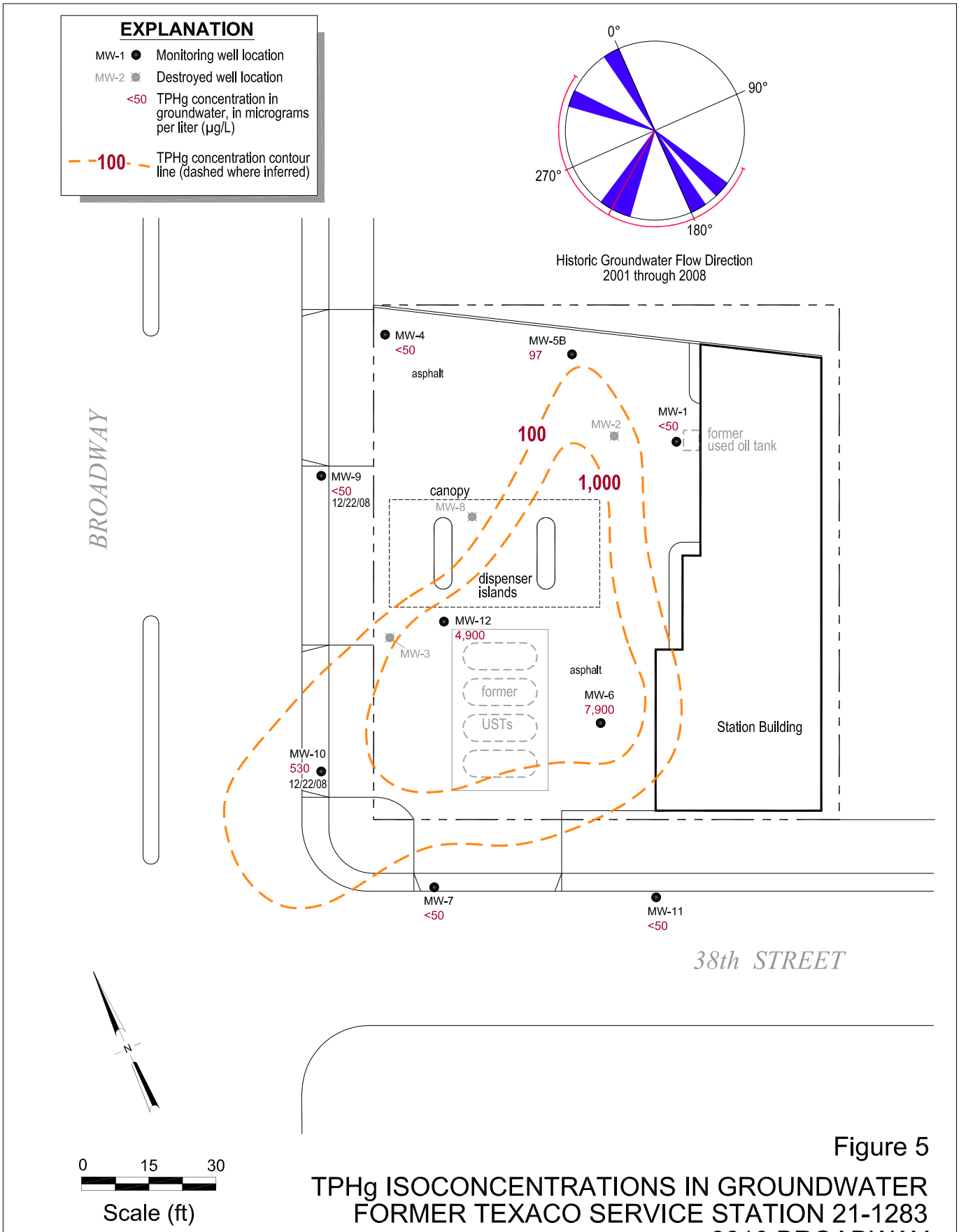

Figure 5

TPHg ISOCONCENTRATIONS IN GROUNDWATER
FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY
Oakland, California
March 23, 2009

Siteplan modified from map provided by Gettler-Ryan Inc.

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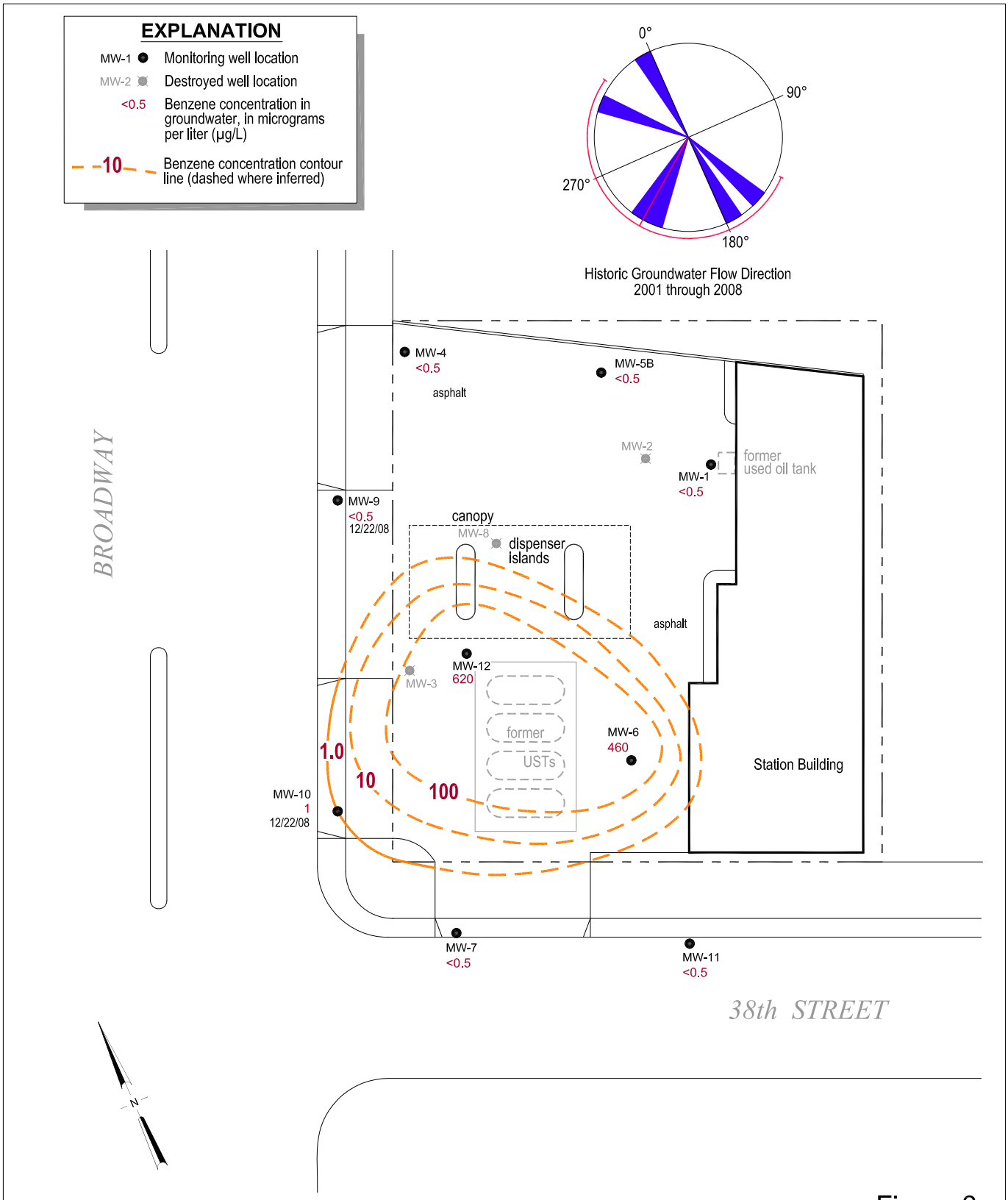

Figure 6

BENZENE ISOCONCENTRATIONS IN GROUNDWATER
FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY
Oakland, California
March 23, 2009

Siteplan modified from map provided by Gettler-Ryan Inc.

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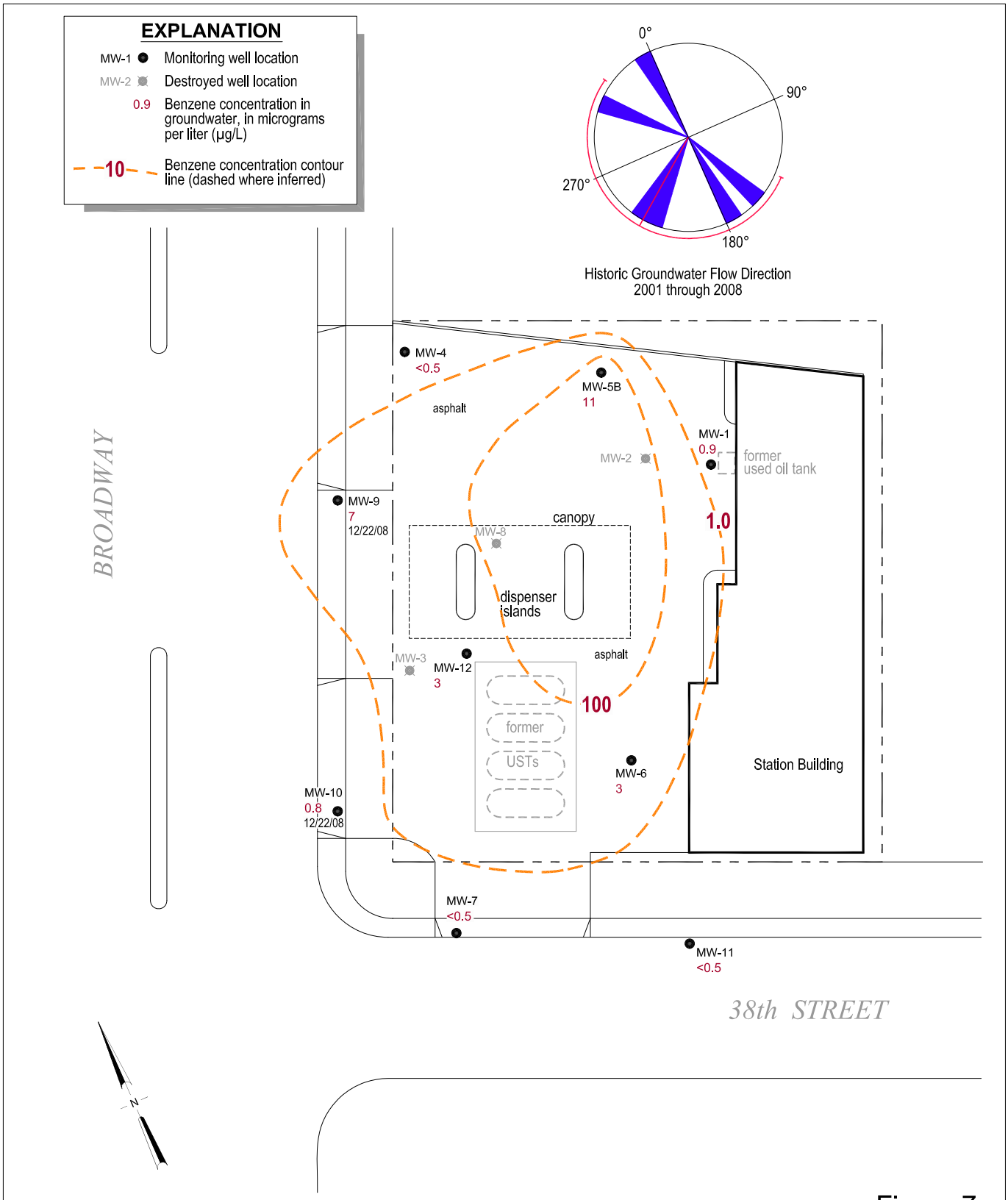

Figure 7

MTBE ISOCONCENTRATIONS IN GROUNDWATER
FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY
Oakland, California
March 23, 2009

Siteplan modified from map provided by Gettler-Ryan Inc.

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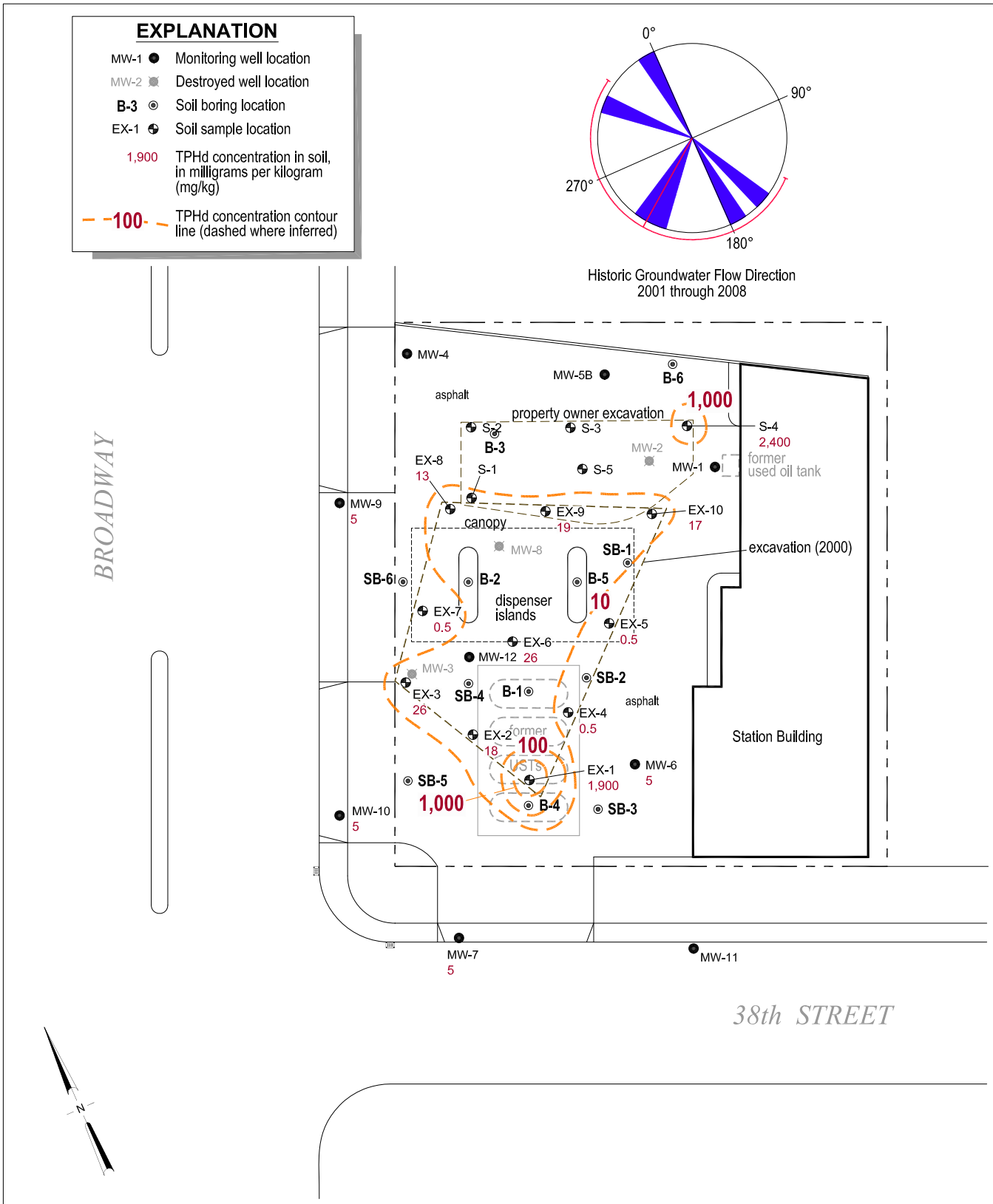


Figure 8

TPHD IN SOIL, 18-23 fbg.
FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY
Oakland, California

Siteplan modified from map provided by Gettler-Ryan Inc.

I:\Chevron\3119--\311955 21-1283 Oakland\311955-FIGURES\311955-TPHD-SOIL.DWG

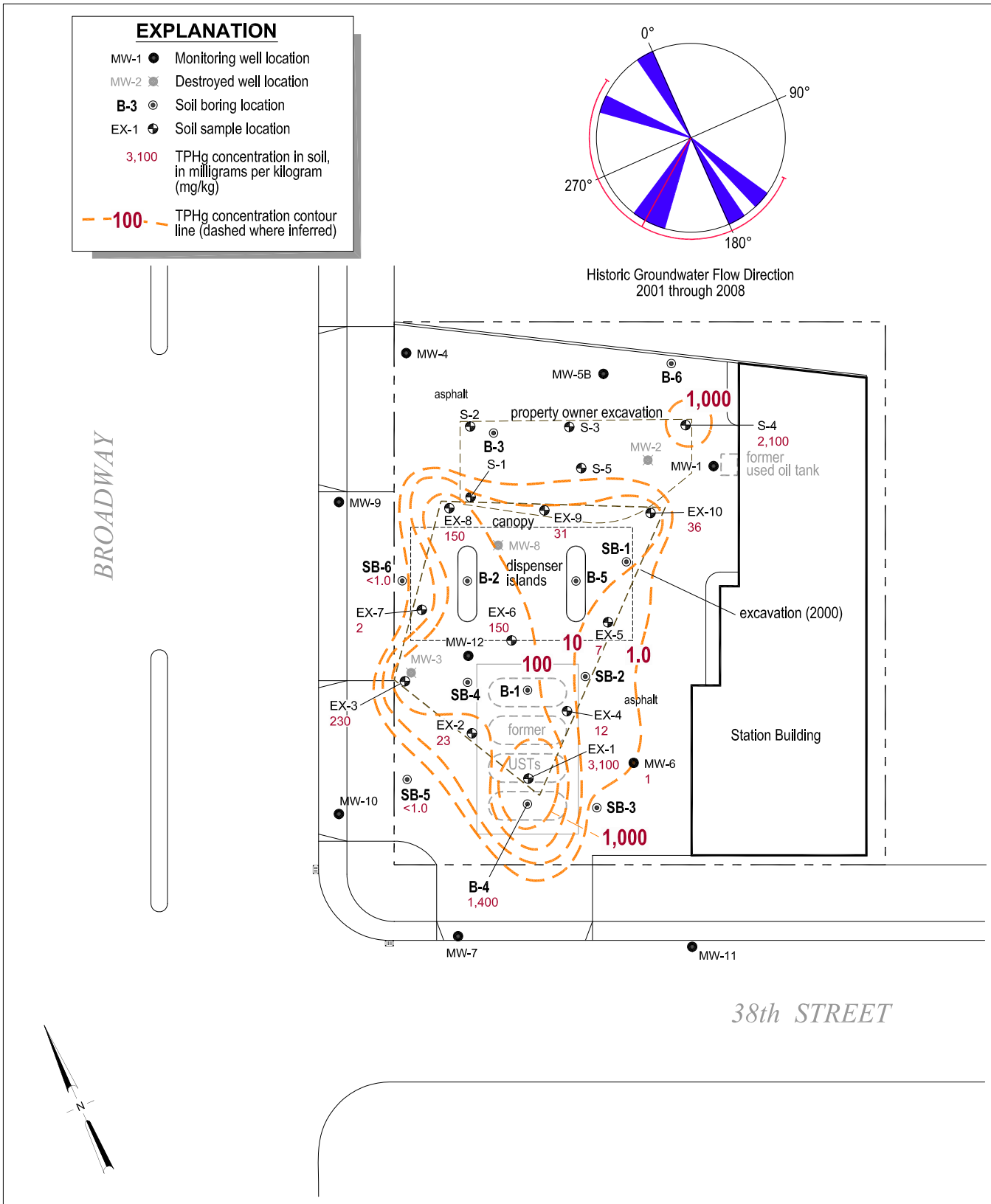


Figure 9

TPHG IN SOIL, 18-23 fbg.
FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY
Oakland, California

Siteplan modified from map provided by Gettler-Ryan Inc.

I:\Chevron\3119--\311955 21-1283 Oakland\311955-FIGURES\311955-TPHG-SOIL.DWG

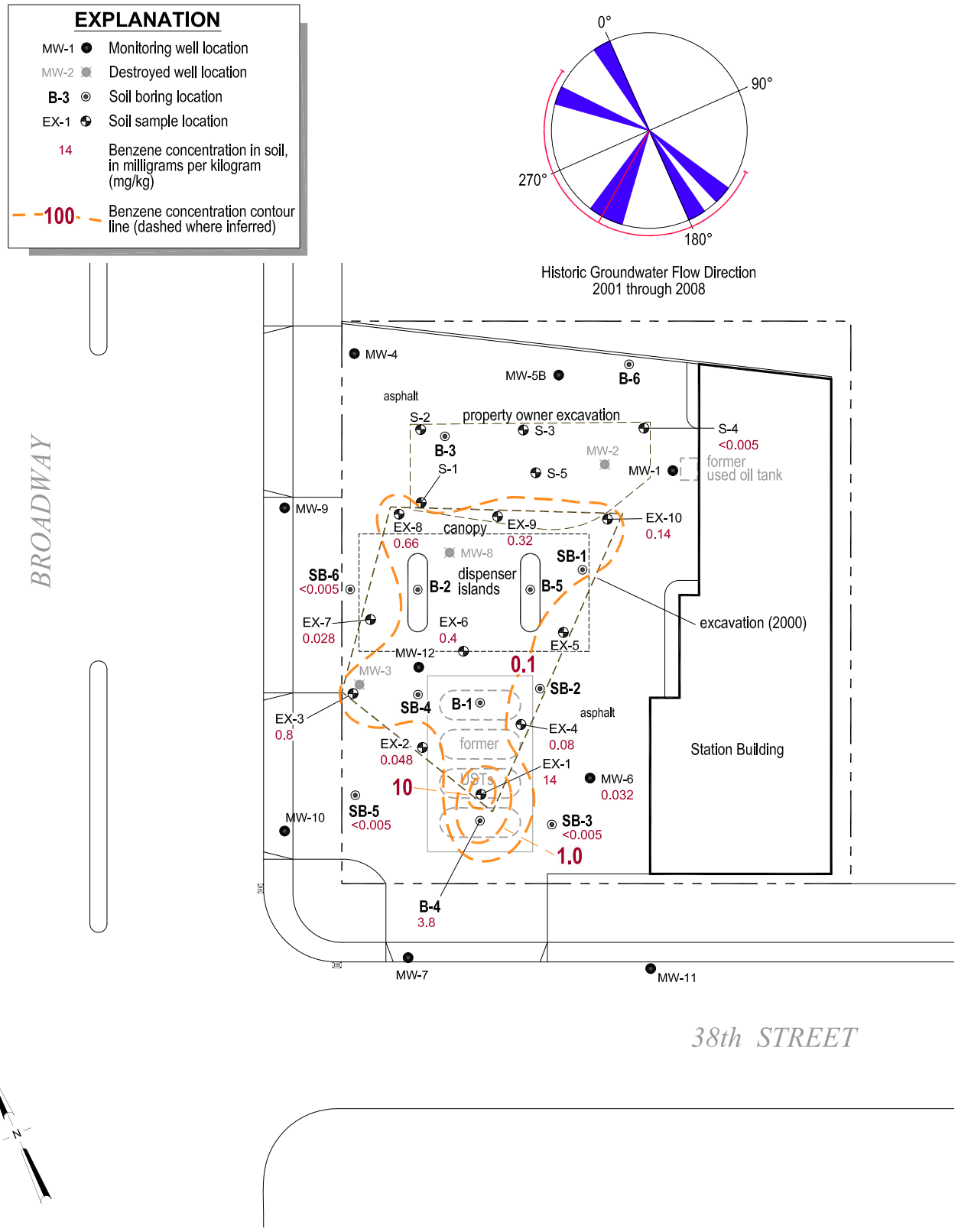


Figure 10

BENZENE IN SOIL, 18-23 fbg.
FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY
Oakland, California

Siteplan modified from map provided by Gettler-Ryan Inc.

I:\Chevron\3119--\311955 21-1283 Oakland\311955-FIGURES\311955-BENZ-SOIL.DWG

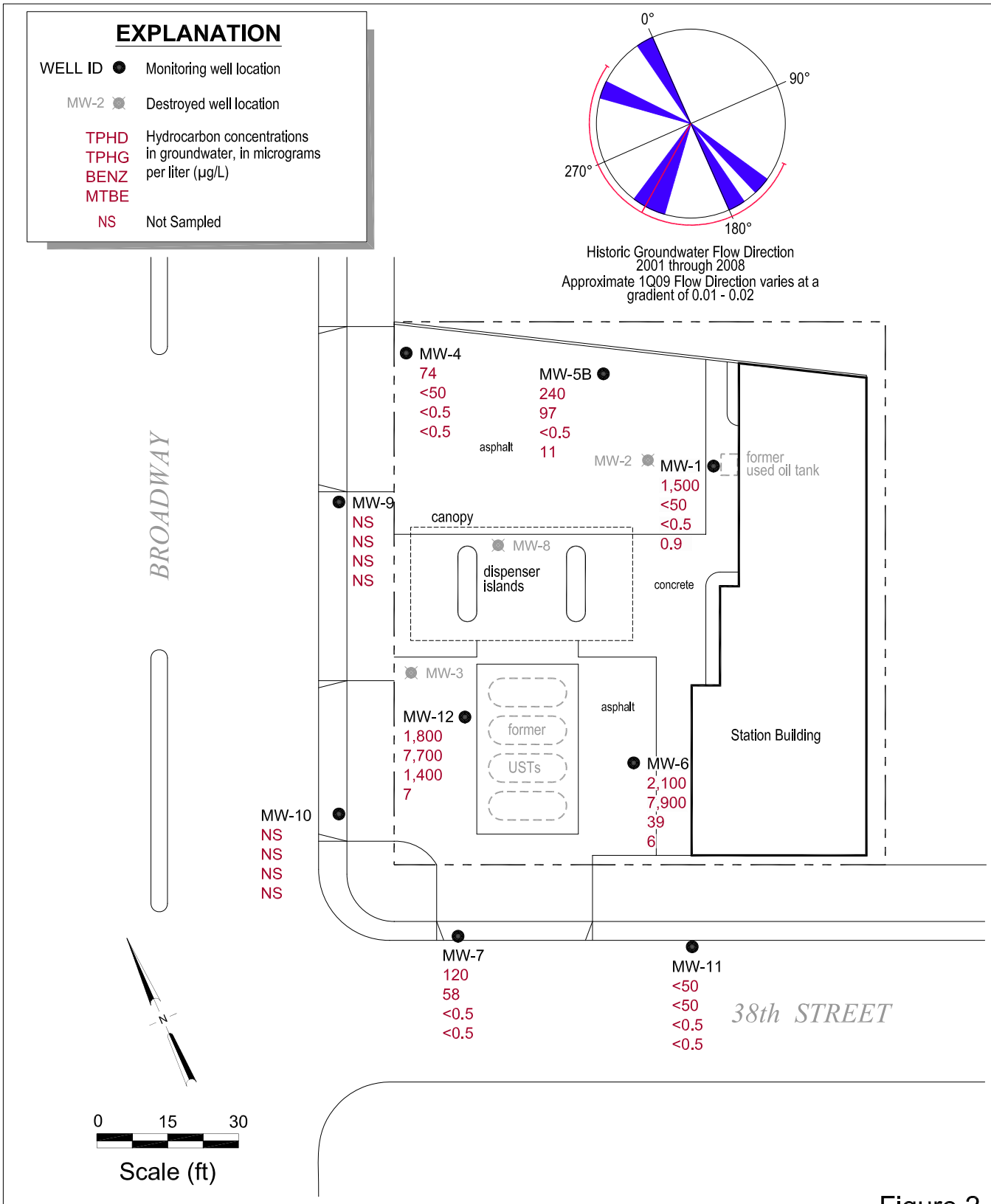
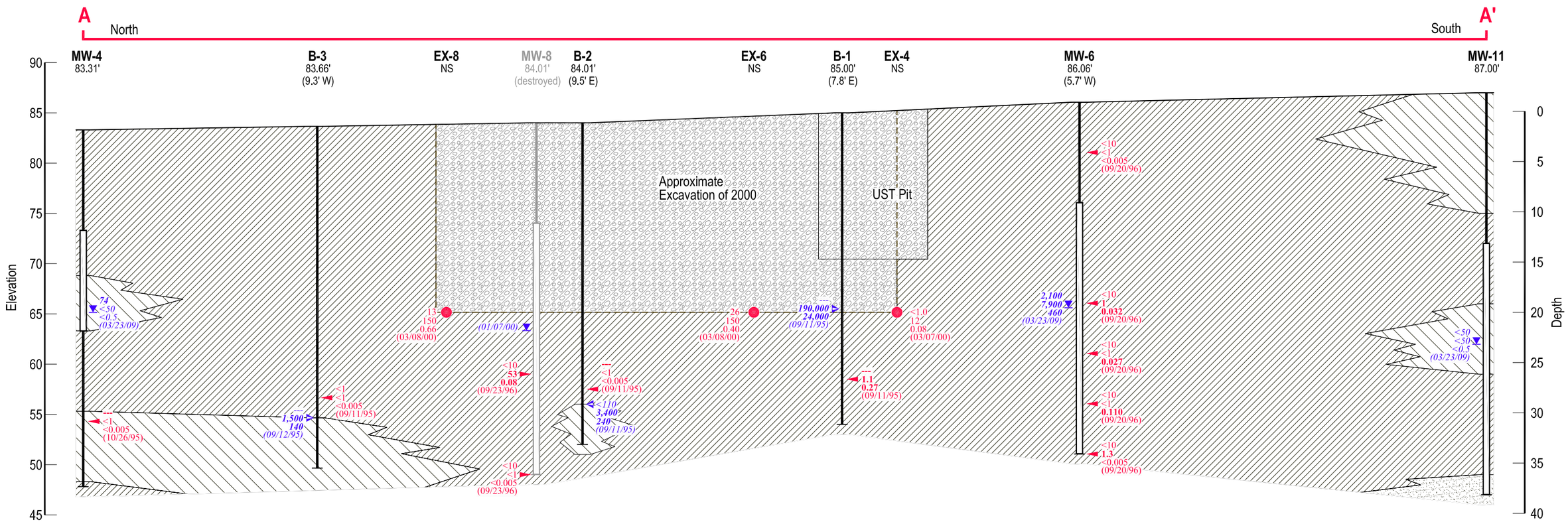


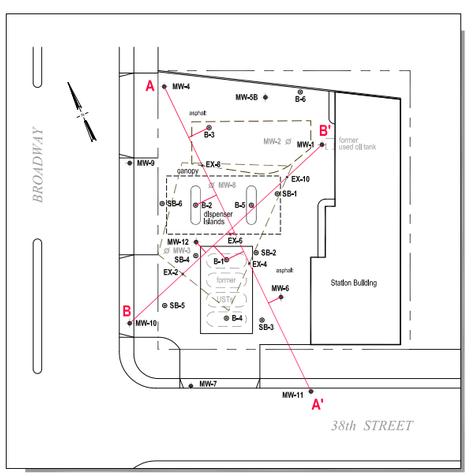
Figure 2

HYDROCARBON CONCENTRATIONS IN GROUNDWATER
FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY
Oakland, California
March 23, 2009

Siteplan modified from map provided by Gettler-Ryan Inc.

I:\CHEVRON\311955\FIGURES\311955_1Q09-HCGW.DWG





EXPLANATION

= Low Permeability Soils
- CL - Clay
- SC - Clayey Sand

= Moderate Permeability Soils
- ML - Clayey Silt
- SM - Silty Sand

= High Permeability Soils
- SP - Poorly Graded Sand

= Fill (Tank Pit)

Approximate over-excavation sample location

Approximate sample location

TPHd
TPHg
Benzene
(Date)
Hydrocarbon concentrations in Soil, in parts per million

Well ID — Well Designation
Elev. (offset) — Top of Casing Elevation (NS = Not surveyed)
Groundwater Monitoring Well
Well Screen Interval
Bottom of boring

Depth of groundwater

Grab groundwater location

TPHd
TPHg
Benzene
(Date)
Hydrocarbon concentrations in groundwater, in parts per billion

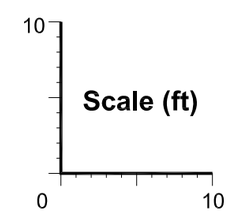
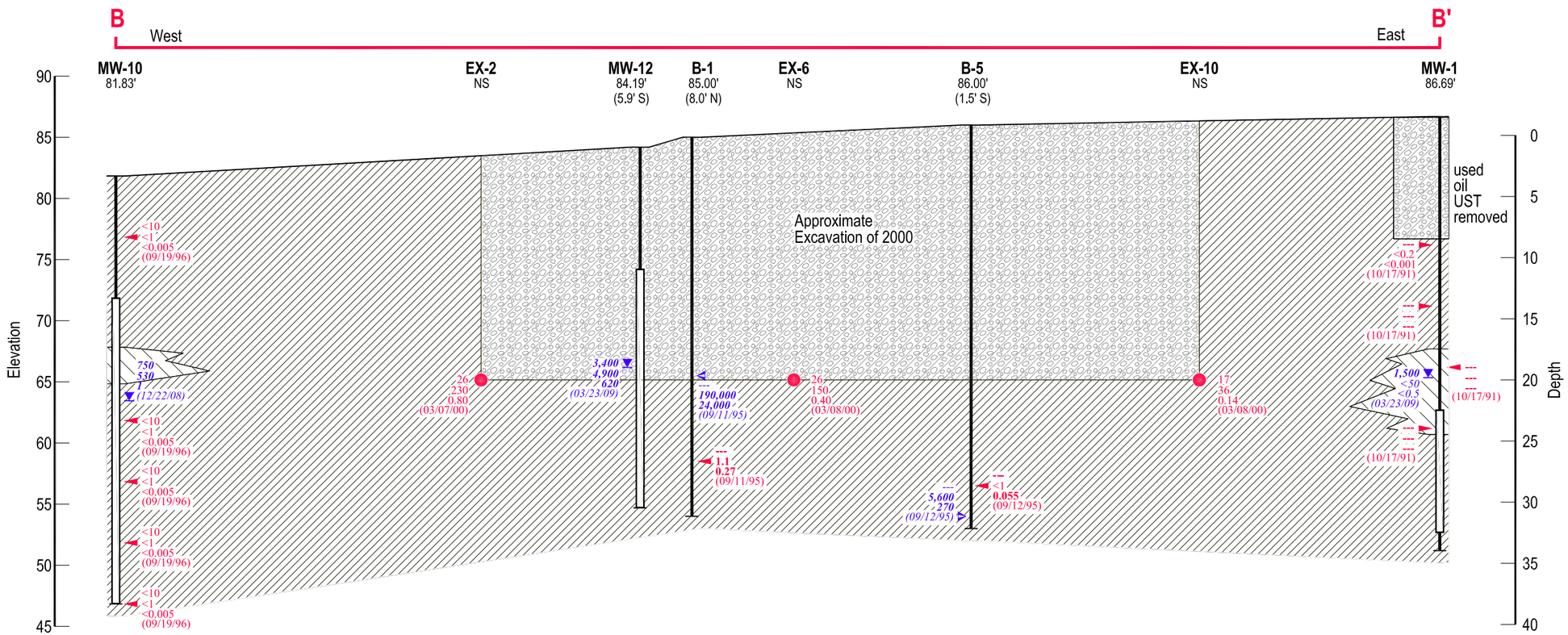
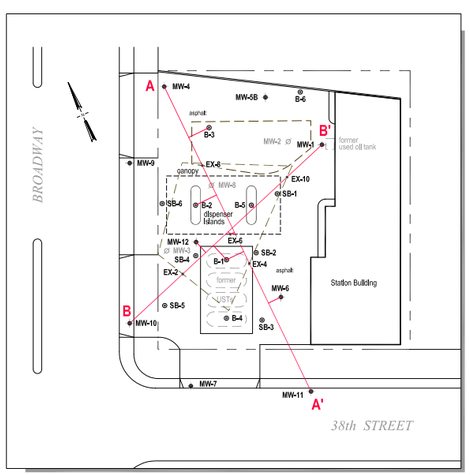


Figure 8

GEOLOGIC CROSS SECTION A-A'
FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY
Oakland, California

I:\Chevron\3119--\311955 21-1283 Oakland\311955-FIGURES\311955_X-SECTIONS.DWG





EXPLANATION

= Low Permeability Soils
- CL - Clay
- SC - Clayey Sand

= Moderate Permeability Soils
- ML - Clayey Silt
- SM - Silty Sand

= Fill (Tank Pit)

Well ID — Well Designation
Elev. (offset) — Top of Casing Elevation (NS = Not surveyed)
— Groundwater Monitoring Well
— Well Screen Interval
— Bottom of boring

Approximate over-excavation sample location

Approximate sample location

TPHd
TPHg
Benzene
(Date)
Hydrocarbon concentrations in Soil, in parts per million

Depth of groundwater

Grab groundwater location

TPHd
TPHg
Benzene
(Date)
Hydrocarbon concentrations in groundwater, in parts per billion

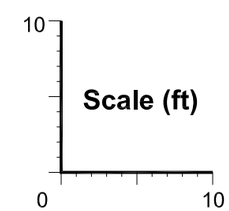


Figure 9

GEOLOGIC CROSS SECTION B-B'
FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY
Oakland, California

I:\Chevron\3119--\311955 21-1283 Oakland\311955-FIGURES\311955_X-SECTIONS.DWG

CUMULATIVE SOIL ANALYTICAL DATA
FORMER TEXACO SERVICE STATION #21-1283
3810 BROADWAY, OAKLAND, CALIFORNIA

Sample ID	*Date*	*Depth (fbg)*	*TOG*	*TPHmo*	*TPHd*	*TPHg*	*Benzene*	*Toluene*	*Ethyl-benzene*	*Total Xylenes*	*MTBE*	*1,2-DCA*	*HVOCs*	
			Reported in milligrams per kilogram (mg/kg)											
ESL's - Shallow Soil		***---***	***NE***	***370***	***83***	***83***	***0.044***	***2.9***	***2.3***	***2.3***	***0.023***	***0.0045***	***0.077a***	
ESL's - Deep Soil		***---***	***NE***	***5,000***	***83***	***83***	***0.044***	***2.9***	***3.3***	***2.3***	***0.023***	***0.0045***	***0.077a***	
Toxichem 2000 Soil Excavation Report														
EX-1	03/07/00	20	---	---	**1,900***	**3,100****	**14**	**92**	**34**	**200**	**4.2**	---	---	Edge of excavation shoring
EX-2	03/07/00	22	---	---	18*	23**	**0.048**	0.40	0.17	1.1	<0.12	---	---	Edge of excavation shoring
EX-3	03/07/00	22	---	---	26*	**230****	**0.80**	**3.2**	2.1	**10**	**0.3**	---	---	Edge of excavation shoring
EX-4	03/07/00	20	---	---	<1*	12**	**0.08**	0.11	0.49	0.13	<0.05	---	---	Edge of excavation shoring
EX-5	03/08/00	20	---	---	<1*	7**	0.019	0.074	0.041	0.22	<0.05	---	---	Edge of excavation shoring
EX-6	03/08/00	20	---	---	26*	**150****	**0.40**	1.4	2.0	**7.9**	<0.25	---	---	Middle of excavation
EX-7	03/08/00	22	---	---	<1*	2**	0.028	0.027	0.018	0.04	<0.05	---	---	Edge of excavation shoring
EX-8	03/08/00	22	---	---	13*	**150****	**0.66**	**4.6**	2.1	**9.5**	<0.25	---	---	Edge of excavation shoring
EX-9	03/08/00	22	---	---	19*	31**	**0.32**	0.18	0.41	1.6	<0.12	---	---	Edge of excavation shoring
EX-10	03/08/00	23	---	---	17*	36**	**0.14**	0.082	0.69	**3.2**	<0.05	---	---	Edge of excavation shoring
S-1	04/27/00	16	---	---	<1	<1	<0.005	<0.005	<0.005	<0.010	<0.05	---	---	Edge of owner's excavation for new UST p
S-2	04/27/00	16	---	---	<1	<1	<0.005	<0.005	<0.005	<0.010	<0.05	---	---	Edge of owner's excavation for new UST p
S-3	04/27/00	16	---	---	<1	<1	<0.005	<0.005	<0.005	<0.010	<0.05	---	---	Edge of owner's excavation for new UST p
S-4	04/27/00	16	---	---	**2,400**	**2,100**	<0.005	<0.005	**7.4**	**40**	<0.05	---	---	Edge of owner's excavation for new UST p
S-5	04/27/00	16	---	---	<1	<1	0.035	<0.005	<0.005	<0.010	<0.05	---	---	Edge of owner's excavation for new UST p
Toxichem 1998 Additional Site Characterization														
SB-3	07/03/98	14	---	---	---	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	
SB-5	07/03/98	8	---	---	---	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	
SB-6	07/03/98	10	---	---	---	<1.0	<0.0050	<0.0050	<0.0050	0.0087	---	---	---	

CUMULATIVE SOIL ANALYTICAL DATA
FORMER TEXACO SERVICE STATION #21-1283
3810 BROADWAY, OAKLAND, CALIFORNIA

Sample ID	*Date*	*Depth (fbg)*	*TOG*	*TPHmo*	*TPHd*	*TPHg*	*Benzene*	*Toluene*	*Ethyl-benzene*	*Total Xylenes*	*MTBE*	*1,2-DCA*	*HVOCs*	
			Reported in milligrams per kilogram (mg/kg)											
ESL's - Shallow Soil		***---***	***NE***	***370***	***83***	***83***	***0.044***	***2.9***	***2.3***	***2.3***	***0.023***	***0.0045***	***0.077a***	
ESL's - Deep Soil		***---***	***NE***	***5,000***	***83***	***83***	***0.044***	***2.9***	***3.3***	***2.3***	***0.023***	***0.0045***	***0.077a***	
Toxichem 1998 Additional Site Characterization - Overexcavated in 2000														
SB-1	07/03/98	8	---	---	---	**430**	**28**	**5.0**	**4.8**	**23**	---	---	---	Overexcavated
SB-2	07/03/98	14	---	---	---	**2,900**	**16**	**19**	**54**	**250**	---	---	---	Overexcavated
SB-4	07/03/98	15	---	---	---	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	Overexcavated
Fluor Daniel 1996 Soil and Groundwater Assessment Report														
MW-5	09/19/96	5	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-5	09/19/96	15	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-5	09/19/96	20	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-5	09/19/96	25	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-5	09/19/96	35	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-6	09/20/96	5	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-6	09/20/96	20	---	---	<10	1	0.032	<0.005	<0.005	0.0075	---	---	---	
MW-6	09/20/96	25	---	---	<10	<1	0.027	<0.005	<0.005	<0.005	---	---	---	
MW-6	09/20/96	30	---	---	<10	<1	**0.110**	0.0053	0.0058	0.0094	---	---	---	
MW-6	09/20/96	35	---	---	<10	1.3	<0.005	0.010	0.014	0.120	---	---	---	
MW-7	09/20/96	5	---	---	<10	<1	<0.005	<0.005	<0.005	0.0089	---	---	---	
MW-7	09/20/96	15	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-7	09/20/96	20	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-7	09/20/96	30	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-7	09/20/96	35	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-8	09/23/96	25	---	---	<10	53	**0.08**	0.63	0.20	1.1	---	---	---	
MW-8	09/23/96	35	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	

CUMULATIVE SOIL ANALYTICAL DATA
FORMER TEXACO SERVICE STATION #21-1283
3810 BROADWAY, OAKLAND, CALIFORNIA

Sample ID	*Date*	*Depth (fbg)*	*TOG*	*TPHmo*	*TPHd*	*TPHg*	*Benzene*	*Toluene*	*Ethyl-benzene*	*Total Xylenes*	*MTBE*	*1,2-DCA*	*HVOCs*	
			Reported in milligrams per kilogram (mg/kg)											
ESL's - Shallow Soil		***---***	***NE***	***370***	***83***	***83***	***0.044***	***2.9***	***2.3***	***2.3***	***0.023***	***0.0045***	***0.077a***	
ESL's - Deep Soil		***---***	***NE***	***5,000***	***83***	***83***	***0.044***	***2.9***	***3.3***	***2.3***	***0.023***	***0.0045***	***0.077a***	
MW-9	09/19/96	5	---	---	62	11	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-9	09/19/96	10	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-9	09/19/96	15	---	---	69	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-9	09/19/96	20	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-9	09/19/96	35	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-10	09/19/96	5	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-10	09/19/96	20	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-10	09/19/96	25	---	---	<10	<1	<0.005	<0.005	<0.005	0.025	---	---	---	
MW-10	09/19/96	30	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
MW-10	09/19/96	35	---	---	<10	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
Fluor Daniel 1996 Soil and Groundwater Assessment Report - Overexcavated in 2000														
MW-8	09/23/96	5	---	---	<10	**120**	**0.77**	**3.5**	1.2	**7.3**	---	---	---	Overexcavated
MW-8	09/23/96	10	---	---	<10	**520**	**2.6**	0.66	**5.6**	**10**	---	---	---	Overexcavated
MW-8	09/23/96	15	---	---	53	**14,000**	**25**	**7.1**	**160**	**840**	---	---	---	Overexcavated
McLaren 1996 Supplemental Site Investigation														
B-1	09/11/95	26.5	---	---	---	1.1	**0.27**	0.06	0.018	0.023	---	---	---	
B-2	09/11/95	26.5	---	---	---	<1	<0.005	0.011	<0.005	<0.005	---	---	---	
B-3	09/11/95	27	---	1.3	<1	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	
B-4	09/11/95	12.5	---	---	---	83	0.06	<0.005	1.2	**7.2**	---	---	---	In former UST pit
B-4	09/11/95	18	---	---	---	**1,400**	**3.8**	**44**	**18**	**101**	---	---	---	In former UST pit
B-4	09/11/95	26.5	---	<20	<20	1.9	**0.52**	0.078	0.039	0.07	---	---	---	In former UST pit
B-5	09/12/95	29.5	---	---	---	<1	**0.055**	0.009	<0.005	<0.005	---	---	---	
B-6	09/12/95	12.5	---	---	---	<1	<0.005	0.009	<0.005	<0.005	---	---	---	
MW-4	10/26/95	29	---	---	---	<1	<0.005	<0.005	<0.005	<0.005	---	---	---	

CUMULATIVE SOIL ANALYTICAL DATA
FORMER TEXACO SERVICE STATION #21-1283
3810 BROADWAY, OAKLAND, CALIFORNIA

Sample ID	*Date*	*Depth (fbg)*	*TOG*	*TPHmo*	*TPHd*	*TPHg*	*Benzene*	*Toluene*	*Ethyl-benzene*	*Total Xylenes*	*MTBE*	*1,2-DCA*	*HVOCs*	
			Reported in milligrams per kilogram (mg/kg)											
ESL's - Shallow Soil		***---***	***NE***	***370***	***83***	***83***	***0.044***	***2.9***	***2.3***	***2.3***	***0.023***	***0.0045***	***0.077a***	
ESL's - Deep Soil		***---***	***NE***	***5,000***	***83***	***83***	***0.044***	***2.9***	***3.3***	***2.3***	***0.023***	***0.0045***	***0.077a***	
McLaren 1996 Supplemental Site Investigation - Overexcavated in 2000														
B-1	09/11/95	12.5	---	---	---	**310**	**0.15**	0.29	**6.2**	**31.2**	---	---	---	In former UST pit, overexcavated
B-1	09/11/95	19	---	---	---	**3600**	**33**	**310**	**67**	**361**	---	---	---	In former UST pit, overexcavated
B-2	09/11/95	12.5	---	---	---	3.1	**0.69**	0.11	0.69	0.103	---	---	---	Overexcavated
B-2	09/11/95	16.5	---	---	---	**2,200**	**15**	**120**	**37**	**445**	---	---	---	Overexcavated
B-5	09/12/95	12.5	---	---	---	**4,800**	**48**	**390**	**93**	**466**	---	---	---	Overexcavated
MW-3	10/26/95	8.5	---	---	---	**65,000**	**88**	**550**	**140**	**690**	---	---	---	Overexcavated
MW-3	10/26/95	15.5	---	---	---	1.4	<0.005	0.027	0.0064	0.0265	---	---	---	Overexcavated
MW-3	10/26/95	19.5	---	---	---	6.2	**1.3**	1.5	0.11	0.43	---	---	---	Overexcavated
Kaldveer 1992 Soil and Groundwater Quality Investigation														
MW-2	01/28/92	30	<10	---	---	<0.2***	<1	<1	<1	<3	---	---	---	
MW-1	10/17/91	10.5	<10	---	---	<0.2***	<0.001	<0.001	<0.001	<0.003	---	---	---	
MW-1	10/17/91	15.5	<10	---	---	---	---	---	---	---	---	---	---	
MW-1	10/17/91	20.5	<10	---	---	---	---	---	---	---	---	---	---	
MW-1	10/17/91	25.5	<10	---	---	---	---	---	---	---	---	---	---	
SEMCO 1991 Tank Removal Report														
#1	05/15/91	8	630	---	66	<1	**3**	<3	<3	**13**	---	<0.005	ND (b)	
#2	05/15/91	8	83	---	<10	<1	<3	<3	<3	<3	---	<0.005	ND	
#3	05/15/91	10.5	69	---	<10	<1	<3	<3	<3	<3	---	<0.005	ND	
#4	05/15/91	10.5	<50	---	<10	<1	<3	<3	<3	<3	---	<0.005	ND	

CUMULATIVE SOIL ANALYTICAL DATA
FORMER TEXACO SERVICE STATION #21-1283
3810 BROADWAY, OAKLAND, CALIFORNIA

Sample ID	*Date*	*Depth (fbg)*	*TOG*	*TPHmo*	*TPHd*	*TPHg*	*Benzene*	*Toluene*	*Ethyl-benzene*	*Total Xylenes*	*MTBE*	*1,2-DCA*	*HVOCs*
			Reported in milligrams per kilogram (mg/kg)										
ESL's - Shallow Soil		***---***	***NE***	***370***	***83***	***83***	***0.044***	***2.9***	***2.3***	***2.3***	***0.023***	***0.0045***	***0.077a***
ESL's - Deep Soil		***---***	***NE***	***5,000***	***83***	***83***	***0.044***	***2.9***	***3.3***	***2.3***	***0.023***	***0.0045***	***0.077a***

Notes:

Total oil and grease (TOG) analyzed by EPA Method 5520E and 5520F unless otherwise noted
Total petroleum hydrocarbons as motor oil (TPHmo) analyzed by EPA Method 8015 Modified unless otherwise noted
Total petroluem hydrocarbons as diesel (TPHd) analyzed by EPA Method 8015 unless otherwise noted
Total petroluem hydrocarbons as gasoline (TPHg) analyzed by EPA Method 8015 unless otherwise noted
Benzene, toluene, ethylbenzene and total zylenes analyzed by EPA Method 8020 unless otherwise noted
Methyl tertiary butyl ether (MTBE) analyzed by EPA Method 8020 unless otherwise noted
Halogenated valotile organic compounds (HVOCs) by EPA Method 8015 unless otherwise noted
Environmental Screening Levels (ESL's) for residential land use, groundwater is a current or potential drinking water source from *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* prepared by the California Regional Water Quality Control Board - San Francisco Bay Region Interim Final November 2007, revised May 2008 (Tables A-1, C-1)
NE = not established
ND = nto detected above various laboratory method detection limits
--- = not analyzed or applicable
<x = not detected above laboratory method detection limit

a = lowest ESL listed for detected compounds
b= 0.039 mg/kg methylene chloride and 0.008 mg/kg 1,2-Dichlorobenzene
* = Concentrations originally quantified as total extractable petroleum hydrocarbons by EPA Method 8015 Modified
** = Concentrations originally quantified as total purgeable petroleum hydrocarbons by EPA Method 8015 Modified
*** = Samples analyzed for TPHg by EPA Method 5030

CUMULATIVE GRAB-GROUNDWATER ANALYTICAL DATA
FORMER TEXACO SERVICE STATION #21-1283
3810 BROADWAY, OAKLAND, CALIFORNIA

Sample ID	*Date*	*Depth (fbg)*	*TPHmo*	*TPHd*	*TPHg*	*Benzene*	*Toluene*	*Ethyl-benzene*	*Total Xylenes*
			Reported in micrograms per liter (µg/L)						
ESLs	***---***	***---***	***100***	***100***	***100***	***1.0***	***40***	***30***	***20***
McLaren 1996 Supplemental Site Investigation									
B-1	09/11/95	19.5	---	---	**190,000**	**24,000**	**47,000**	**2,900**	**15,300**
B-2	09/11/95	28	**340**	<110	**3,400**	**240**	**540**	**120**	**540**
B-3	09/12/95	29	---	---	**1,500**	**140**	**66**	**130**	**670**
B-5	09/12/95	32	---	---	**5,600**	**270**	**540**	**110**	**420**
B-6	09/12/95	27	---	---	**360**	**24**	26	16	**44**

Notes:

Total petroleum hydrocarbons as motor oil (TPHmo) analyzed by EPA Method 8015 Modified unless otherwise noted
Total petroleum hydrocarbons as diesel (TPHd) analyzed by EPA Method 8015 Modified unless otherwise noted
Total petroleum hydrocarbons as gasoline (TPHg) analyzed by EPA Method 8015 Modified unless otherwise noted
Benzene, toluene, ethylbenzene and total xylenes analyzed by EPA Method 8020 unless otherwise noted
Environmental Screening Levels (ESLs) for residential land use, groundwater is a current or potential drinking water source from Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater prepared by the California Regional Water Quality Control Board - San Francisco Bay Region Interim Final November 2007, revised May 2008 (Table A)

TABLE 1

WELL CONSTRUCTION DATA
FORMER TEXACO STATION
3810 BROADWAY, OAKLAND, CALIFORNIA

Well ID	*Date Installed*	*Date Destroyed*	*Well Modifications*	*Well Casing Diameter (inches)*	*Screen Interval (fbg)*	*TOC (ft-msl)*	*Current Condition/ Condition Prior to Destruction*	*Notes*
MW-1	10/17/91	---	SSI	2	10 - 35	86.69	Good	No log, install report states well constructed similarly to MW-5
MW-2	10/17/91	March 2000	SSI	2	10 - 35	85.83	Good	No log, install report states well constructed similarly to MW-5
MW-3	10/17/91	March 2000	SSI	2	10 - 35	86.69	Good	No log, install report states well constructed similarly to MW-5
MW-4	10/26/95	---	None	2	25.5 - 35.5	83.31	Submerged	None
MW-5B	09/19/96	---	Modified 05/30/02: Screen shortened	2	10 - 30	85.36	Good	???? Why shortened?
MW-6	09/20/96	---	None	2	10 - 35	86.06	Good	Occassionally dry
MW-7	09/20/96	---	None	2	10 - 35	84.11	Good	None
MW-8	09/23/96	March 2000	None	2	10 - 35	84.01	Good	None
MW-9	09/19/96	---	None	2	10 - 35	82.17	Good	Occassionally inaccessible
MW-10	09/19/96	---	None	2	10 - 35	81.83	Good	None
MW-11	08/04/00	---	None	2	15 - 40	---	Good	No TOC: Well inaccessible during resurvey
MW-12	05/30/02	---	None	2	10 - 29.5	84.19	Good	None

Notes:

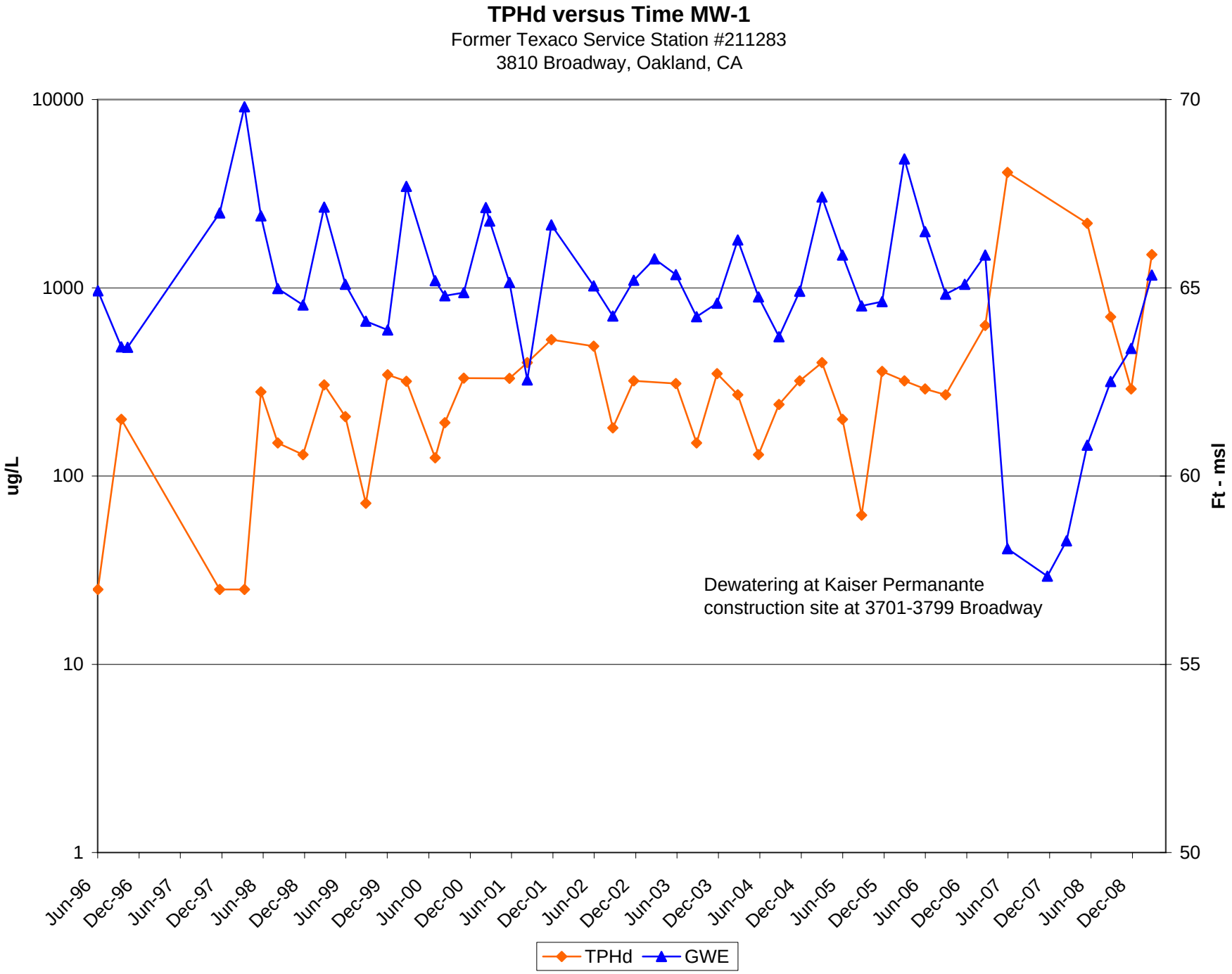
TOC = Top of casing
Fbg = Feet below grade
Ft-msl = Feet above mean sea level
-- = Not applicable
NA = Not available

Tr	Section	Address	Longcity	Owner	City	Drilldate	Use
1S/4W	23H 1	500 40TH ST	Oakland	SHELL OIL	OAK	Feb-89	MON
1S/4W	23H 2	500 40TH ST	Oakland	SHELL OIL	OAK	May-89	MON
1S/4W	23H 3	500 40TH ST	Oakland	SHELL OIL	OAK	May-89	MON
1S/4W	23H 8	500 40th St	Oakland	Shell Oil Co OMW12	OAK	Nov-91	MON
1S/4W	23H 7	500 40th St	Oakland	Shell Oil Co OMW-11	OAK	Nov-91	MON
1S/4W	23H 9	500 40th St	Oakland	Shell Oil Co OMW-13	OAK	Nov-91	MON
1S/4W	23H 4	500 40th Street	Oakland	Shell Oil Company	OAK	Sep-89	MON
1S/4W	23H 5	500 40th Street	Oakland	Shell Oil Company	OAK	Jun-90	MON
1S/4W	23H 6	500 40th Street	Oakland	Shell Oil Company	OAK	Jun-90	MON
1S/4W	23R 1	HAWTHORNE AV	Oakland	MERRITT HOSPITAL	OAK	Mar-75	GEO*
1S/4W	23R 2	HAWTHORNE AV	Oakland	MERRITT HOSPITAL	OAK	Apr-74	GEO
1S/4W	23R 5	3300 WEBSTER ST	Oakland	PAUL FABERMAN & CO	OAK	Mar-89	MON
1S/4W	23R	3300 WEBSTER ST	Oakland	PAUL FABERMAN & CO	OAK	May-89	BOR
1S/4W	23R 3	3300 WEBSTER ST	Oakland	PAUL FABERMAN & CO.	OAK	Mar-89	MON
1S/4W	23R 4	3300 WEBSTER ST	Oakland	PAUL FABERMAN & CO.	OAK	Mar-89	MON
1S/4W	23R 7	350 Hawthorne Ave	Oakland	Summit Medical Center MW1	OAK	Apr-92	MON
1S/4W	23R 6					May-89	MON
1S/4W	24D 4	49th St & Webster St	Oakland	EBMUD	OAK	Dec-97	CAT
1S/4W	24D 1	WEBSTER ST & 45TH ST	Oakland	EBMUD	OAK	May-75	CAT
1S/4W	24D 2	WEBSTER ST & 49TH ST	Oakland	EBMUD	OAK	May-75	CAT
1S/4W	24D 3	49TH & WEBSTER ST	Oakland	PG&E	OAK	Feb-76	CAT
1S/4W	24E 6	4045 Broadway	Oakland	Accu-Tune	OAK	Sep-96	MON
1S/4W	24E 7	4045 Broadway	Oakland	Accu-Tune	OAK	Sep-96	MON
1S/4W	24E 8	4045 Broadway	Oakland	Accu-Tune	OAK	Sep-96	MON
1S/4W	2.40E+12	4045 Broadway	Oakland	Accu-Tune	OAK	Sep-97	MON
1S/4W	24E 9	42nd St && Manila Av	Oakland	EBMUD	OAK	Jan-98	CAT
1S/4W	2.40E+11	42nd St && Webster St	Oakland	EBMUD	OAK	Dec-97	CAT
1S/4W	24E 2	MANILA & 42ND ST	Oakland	EBMUD	OAK	May-75	CAT
1S/4W	24E 3	42ND & WEBSTER STS.	Oakland	EBMUD	OAK	May-75	CAT
1S/4W	24E 1	360 42 ST	Oakland	LADIES RELIEF SOCIETY	OAK	?	IRR
1S/4W	24E 5	368 42nd St	Oakland	Park Day School	OAK	Feb-94	MON
1S/4W	24E 4	462 43 ST	Oakland	ROBERT WESTWOOD	OAK	Sep-77	DOM
1S/4W	24F 1	4100 Broadway	Oakland	Southland Corporation	OAK	Dec-93	MON
1S/4W	24F 2	4100 Broadway	Oakland	Southland Corporation	OAK	Dec-93	MON
1S/4W	24F 3	4100 Broadway	Oakland	Southland Corporation	OAK	Dec-93	MON

Tr	Section	Address	Longcity	Owner	City	Drilldate	Use
1S/4W	24F 4	4100 Broadway	Oakland	Southland Corporation	OAK	Dec-93	MON
1S/4W	24L24	3900 Piedmont Ave	Oakland	Chevron Products Co	OAK	Jul-98	MON
1S/4W	24L25	3900 Piedmont Ave	Oakland	Chevron Products Co	OAK	Jul-98	MON
1S/4W	24L26	3900 Piedmont Ave	Oakland	Chevron Products Co	OAK	Jul-98	MON
1S/4W	24L27	3900 Piedmont Ave	Oakland	Chevron Products Co	OAK	Jul-98	MON
1S/4W	24L23	14 Glen Ave.	Oakland	Erma Delluchi MW-3C	OAK	Jul-92	MON
1S/4W	24L13	3810 Broadway	Oakland	Friedkin - Becker MW-2	OAK	Jan-97	MON
1S/4W	24L11	3810 Broadway	Oakland	Friedkin-Becker	OAK	Oct-91	MON
1S/4W	24L 1	4082 PIEDMONT AV	Oakland	JOHN BOND	OAK	1979	IRR
1S/4W	24L16	175 41 Street	Oakland	Piedmont Plaza MW1	OAK	Jan-93	MON
1S/4W	24L17	175 41 Street	Oakland	Piedmont Plaza MW-2	OAK	Jan-93	MON
1S/4W	24L18	175 41 Street	Oakland	Piedmont Plaza MW-3	OAK	Jan-93	MON
1S/4W	24L14	3943 Broadway	Oakland	Unocal Corp MW10	OAK	Jan-92	MON
1S/4W	24L15	3943 Broadway	Oakland	Unocal Corp MW11	OAK	Jan-92	MON
1S/4W	24L19	3943 Broadway	Oakland	Unocal Corp MW12	OAK	Jun-92	MON
1S/4W	24L 2	3943 Broadway	Oakland	Unocal Corp.	OAK	Jan-90	MON
1S/4W	24L 3	3943 Broadway	Oakland	Unocal Corp.	OAK	Jan-90	MON
1S/4W	24L 4	3943 Broadway	Oakland	Unocal Corporation	OAK	Oct-89	MON
1S/4W	24L 5	3943 Broadway	Oakland	Unocal Corporation	OAK	Oct-89	MON
1S/4W	24L 6	3943 Broadway	Oakland	Unocal Corporation	OAK	Oct-89	MON
1S/4W	24L 7	3943 Broadway	Oakland	Unocal Corporation	OAK	Oct-90	TES
1S/4W	24L 8	3943 Broadway	Oakland	Unocal Corporation	OAK	Oct-90	MON
1S/4W	24L 9	3943 Broadway	Oakland	Unocal Corporation	OAK	Oct-90	MON
1S/4W	24L10	3943 Broadway	Oakland	Unocal Corporation	OAK	Oct-90	MON
1S/4W	24M 5	3785 Broadway	Oakland	Firestone Tire & Rubber	OAK	Feb-91	MON
1S/4W	24M 8	3810 Broadway	Oakland	Friedkin	OAK	Sep-96	MON
1S/4W	24M 9	3810 Broadway	Oakland	Friedkin	OAK	Sep-96	MON
1S/4W	24M10	3810 Broadway	Oakland	Friedkin	OAK	Sep-96	MON
1S/4W	24M11	3810 Broadway	Oakland	Friedkin	OAK	Sep-96	MON
1S/4W	24M12	3810 Broadway	Oakland	Friedkin	OAK	Sep-96	MON
1S/4W	24M13	3810 Broadway	Oakland	Friedkin	OAK	Sep-96	MON
1S/4W	24M14	3810 Broadway	Oakland	Friedkin/Becker	OAK	Oct-95	MON
1S/4W	24M15	3810 Broadway	Oakland	Friedkin/Becker	OAK	Oct-95	MON
1S/4W	24M 1	411 W. MacArthur Blvd.	Oakland	Unocal Corporation	OAK	Sep-89	MON
1S/4W	24M 2	411 W. MacArthur Blvd.	Oakland	Unocal Corporation	OAK	Sep-89	MON

Tr	Section	Address	Longcity	Owner	City	Drilldate	Use
1S/4W	24M 3	411 W. MacArthur Blvd.	Oakland	Unocal Corporation	OAK	Sep-89	MON
1S/4W	24M 4	411 W. MacArthur Blvd.	Oakland	Unocal Corporation	OAK	Sep-89	MON
1S/4W	24M 6	411 W. MacArthur Blvd.	Oakland	Unocal Corporation MW-5	OAK	Nov-92	MON
1S/4W	24M 7	411 W. MacArthur Blvd.	Oakland	Unocal Corporation MW-6	OAK	Nov-92	MON
1S/4W	24N14	3701 Broadway	Oakland	Chevron USA	OAK	Mar-91	MON
1S/4W	24N 1	3701 MACARTHUR BLVD	Oakland	CHEVRON USA	OAK	Apr-88	MON
1S/4W	24N 2	3701 MACARTHUR BLVD	Oakland	CHEVRON USA	OAK	Apr-88	MON
1S/4W	24N17	3701 Broadway	Oakland	Chevron USA B-1	OAK	Oct-92	MON
1S/4W	24N18	3701 Broadway	Oakland	Chevron USA MW-E	OAK	Oct-92	MON
1S/4W	24N19	3701 Broadway	Oakland	Chevron USA MW-F	OAK	Oct-92	MON
1S/4W	24N 1	3701 Broadway	Oakland	Chevron, USA	OAK	Apr-91	MON
1S/4W	24N 3	3505 Broadway	Oakland	Kaiser Foundation	OAK	Oct-89	MON
1S/4W	24N 4	3505 Broadway	Oakland	Kaiser Foundation	OAK	Nov-89	MON
1S/4W	24N 5	3505 Broadway	Oakland	Kaiser Foundation	OAK	Nov-89	MON
1S/4W	24N 6	3505 Broadway	Oakland	Kaiser Foundation	OAK	Apr-90	MON
1S/4W	24N20	3505 Broadway	Oakland	Kaiser Foundation MW5R	OAK	Aug-92	MON
1S/4W	24N 9	280 W. MacArthur Blvd.	Oakland	Kaiser Hospital	OAK	Mar-91	MON
1S/4W	24N 8	280 W. MacArthur Blvd.	Oakland	Kaiser Hospital	OAK	Mar-91	MON
1S/4W	24N11	280 W. MacArthur	Oakland	Kaiser Hospital	OAK	Mar-91	MON
1S/4W	24N10	280 W. MacArthur	Oakland	Kaiser Hospital	OAK	Mar-91	MON
1S/4W	24N13	280 W. MacArthur	Oakland	Kaiser Hospital	OAK	Feb-91	PIE
1S/4W	24N21	327 34th St	Oakland	Val Strough Chevrolet	OAK	Jul-93	MON
1S/4W	24N22	327 34th St	Oakland	Val Strough Chevrolet	OAK	Jul-93	MON
1S/4W	24N23	327 34th St	Oakland	Val Strough Chevrolet	OAK	Jul-93	MON
1S/4W	24N24	240 W. MacArthur Blvd	Oakland		OAK	Aug-97	MON
1S/4W	24N25	240 W. MacArthur Blvd	Oakland		OAK	Aug-97	MON
1S/4W	24N26	240 W. MacArthur Blvd	Oakland		OAK	Aug-97	MON
1S/4W	24N27	240 W. MacArthur Blvd	Oakland		OAK	Aug-97	MON
1S/4W	24P 4	230 MACARTHUR BVLD	Oakland	SHELL OIL CO	OAK	Jul-88	MON
1S/4W	24P 5	230 MACARTHUR BVLD	Oakland	SHELL OIL CO	OAK	Jul-88	MON
1S/4W	24P 6	230 MACARTHUR BVLD	Oakland	SHELL OIL CO	OAK	Jul-88	MON
1S/4W	24P 7	230 MacArthur Blvd.	Oakland	Shell Oil Company	OAK	Jan-90	MON
1S/4W	24P 2	230 MACARTHUR BOULEVARD	Oakland	SHELL SERVICE STATION	OAK	Apr-89	MON
1S/4W	24P 3	230 MACARTHUR BOULEVARD	Oakland	SHELL SERVICE STATION	OAK	Apr-86	MON
1S/4W	24Q 1	MOUTELL ST	Oakland	PG&E	OAK	Jun-74	CAT

Tr	Section	Address	Longcity	Owner		City	Drilldate	Use
1S/4W	25B 1	172 SANTA CLARA ST	Oakland	EAGAN & CO.		OAK	Jun-89	MON
1S/4W	24B 4	5175 Broadway	Oakland	M. Mehdizadeh	STMW1	OAK	Jun-91	MON
1S/4W	24B 5	5175 Broadway	Oakland	M. Mehdizadeh	STMW2	OAK	Jun-91	MON
1S/4W	25B 5	5175 Broadway	Oakland	Mohammad M. Mehdizadeh		OAK	Jun-91	DOM
1S/4W	25B 4	5175 Broadway	Oakland	Mohammad M. Mehdizadeh		OAK	Jun-91	DOM
1S/4W	25C 3	CRN OF CLAY & 14TH ST	Oakland	FIVE CITY CENTER		OAK		
1S/4W	25D 3	3093 Broadway	Oakland	Connell Oldsmobile	B-10	OAK	Oct-92	MON
1S/4W	25D 1	3093 Broadway	Oakland	Connell Oldsmobile	B-8	OAK	Oct-92	MON
1S/4W	25D 2	3093 Broadway	Oakland	Connell Oldsmobile	B-9	OAK	Oct-92	MON
1S/4W	25D 6	3080 Broadway	Oakland	Gereld Shirar		OAK	Jul-94	MON
1S/4W	26A 2	3093 Broadway	Oakland	Connel Oldsmobile		OAK	Oct-90	MON
1S/4W	26A	3093 Broadway	Oakland	Connel Oldsmobile		OAK	Oct-90	MON
1S/4W	26A 3	3093 Broadway	Oakland	Connell Oldsmobile		OAK	Nov-90	MON
1S/4W	26A 4	3093 Broadway	Oakland	Connell Oldsmobile		OAK	Feb-91	MON
1S/4W	26A 5	3093 Broadway	Oakland	Connell Oldsmobile		OAK	Feb-91	MON
1S/4W	26A 6	3093 Broadway	Oakland	Connell Oldsmobile		OAK	Feb-91	MON
1S/4W	26A 7	3093 Broadway	Oakland	Connell Oldsmobile		OAK	Feb-91	MON
1S/4W	26A 8	3093 Broadway	Oakland	Connell Oldsmobile		OAK	Mar-91	MON
1S/4W	26A 1	450 30TH	Oakland	PERALTA HOSPITAL		OAK	?	GEO*


TPHd versus Time MW-1
Former Texaco Service Station #211283
3810 Broadway, Oakland, CA
10000
1000
100
10
1
ug/L
70
65
60
55
50
Ft - msl
Dewatering at Kaiser Permanante
construction site at 3701-3799 Broadway
Jun-96
Dec-96
Jun-97
Dec-97
Jun-98
Dec-98
Jun-99
Dec-99
Jun-00
Dec-00
Jun-01
Dec-01
Jun-02
Dec-02
Jun-03
Dec-03
Jun-04
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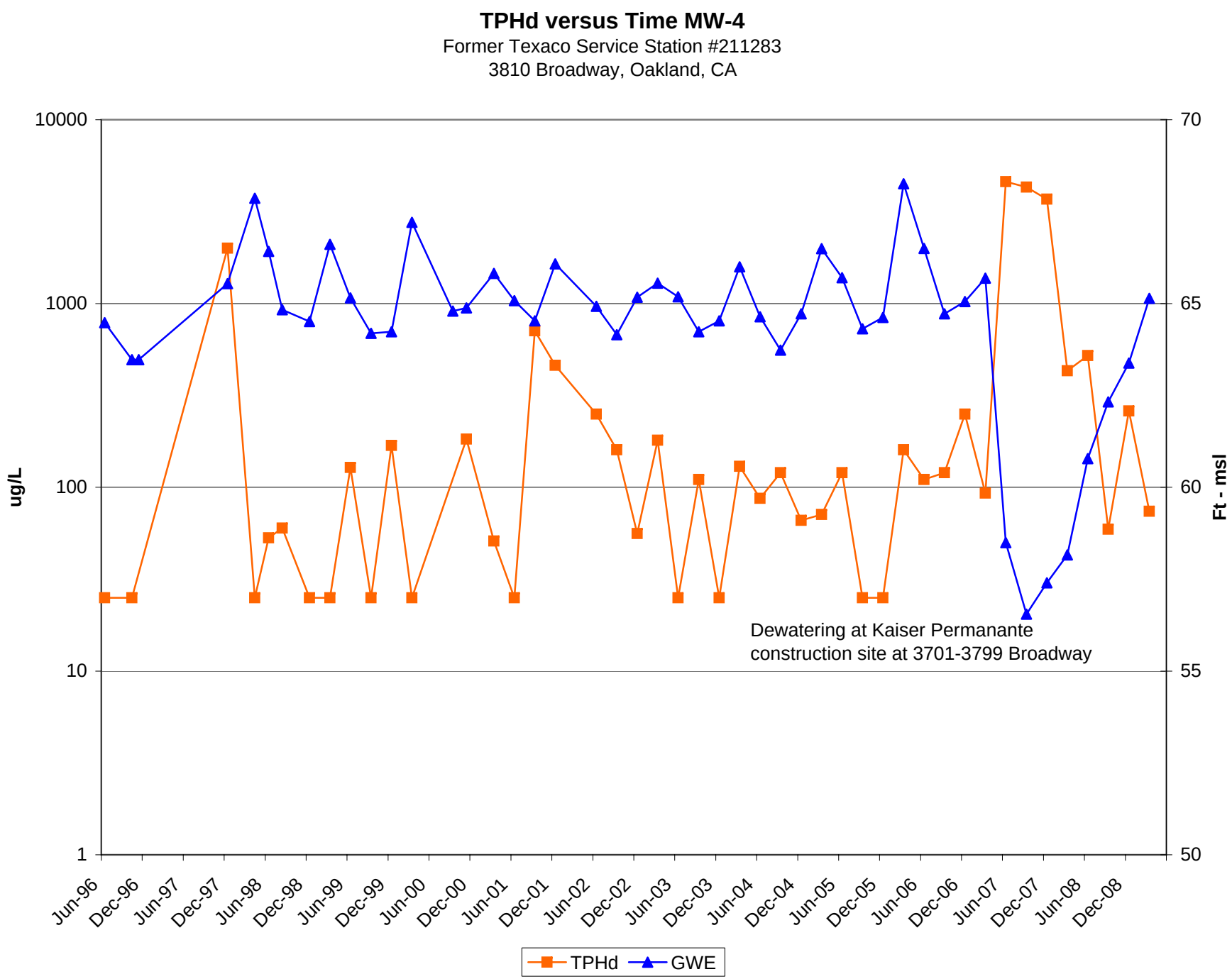
Jun-06
Dec-06
Jun-07
Dec-07
Jun-08
Dec-08
TPHd
GWE


TPHd versus Time MW-4
Former Texaco Service Station #211283
3810 Broadway, Oakland, CA
10000
1000
100
10
1
ug/L
70
65
60
55
50
Ft - msl
Dewatering at Kaiser Permanante
construction site at 3701-3799 Broadway
Jun-96
Dec-96
Jun-97
Dec-97
Jun-98
Dec-98
Jun-99
Dec-99
Jun-00
Dec-00
Jun-01
Dec-01
Jun-02
Dec-02
Jun-03
Dec-03
Jun-04
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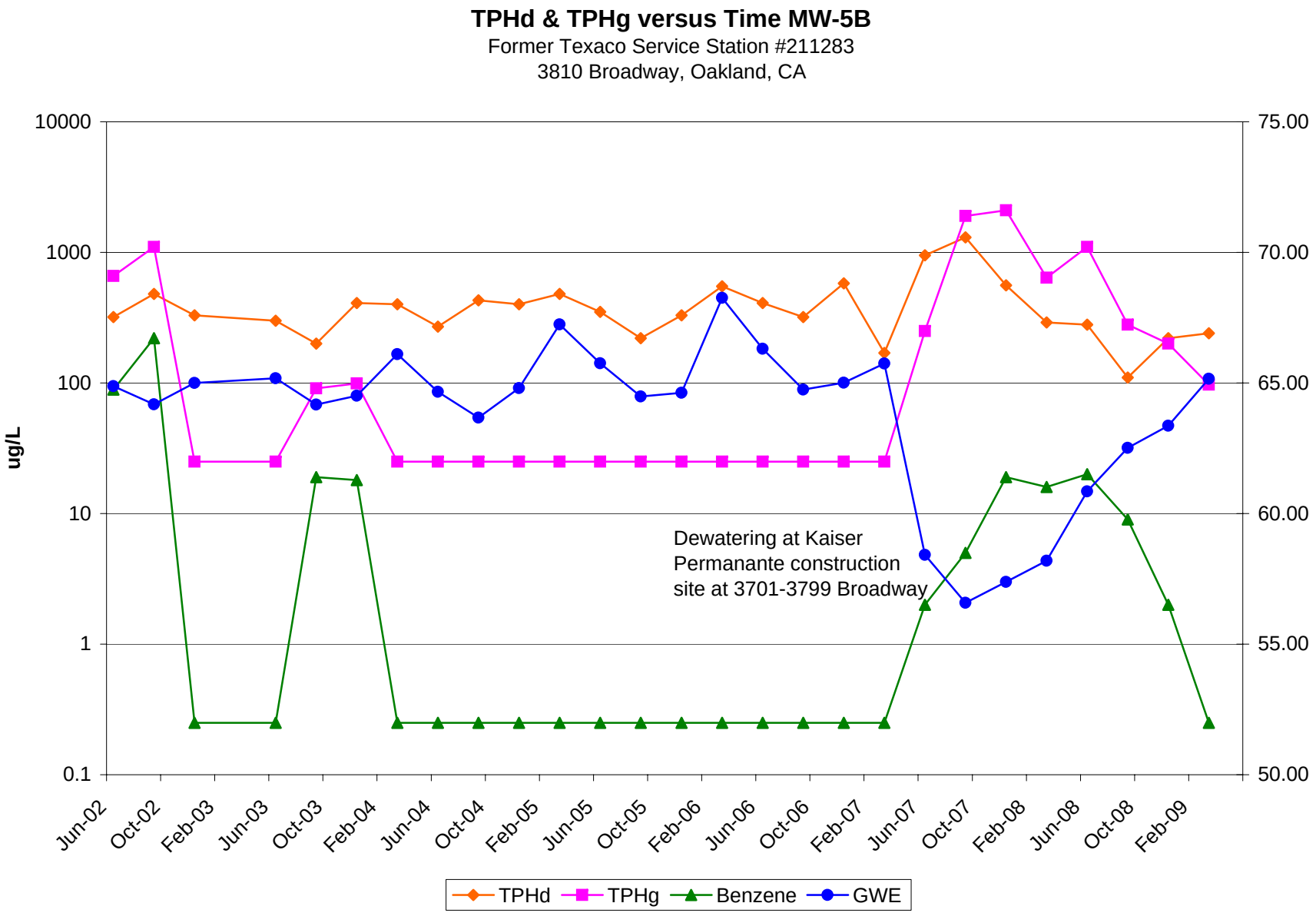
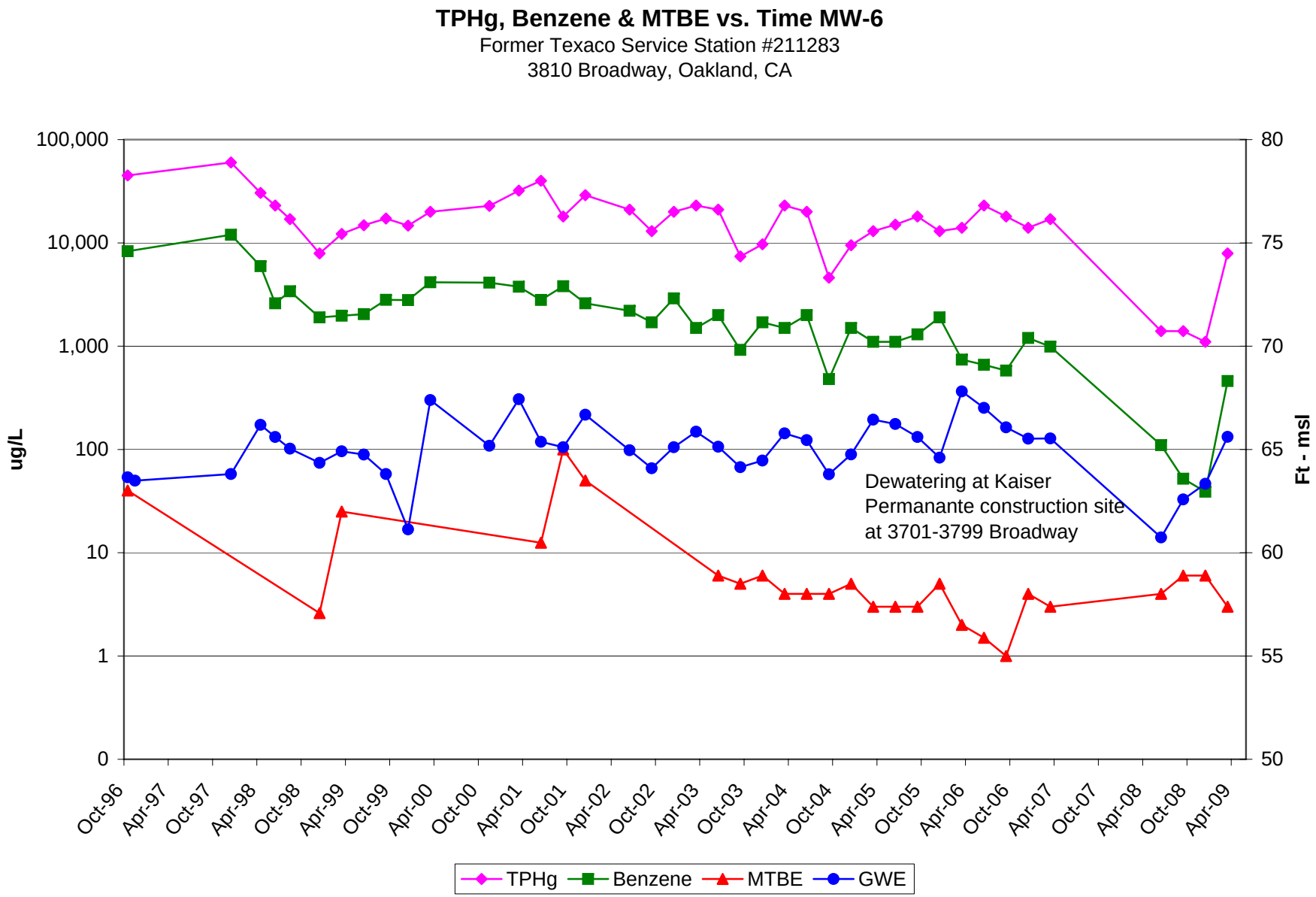
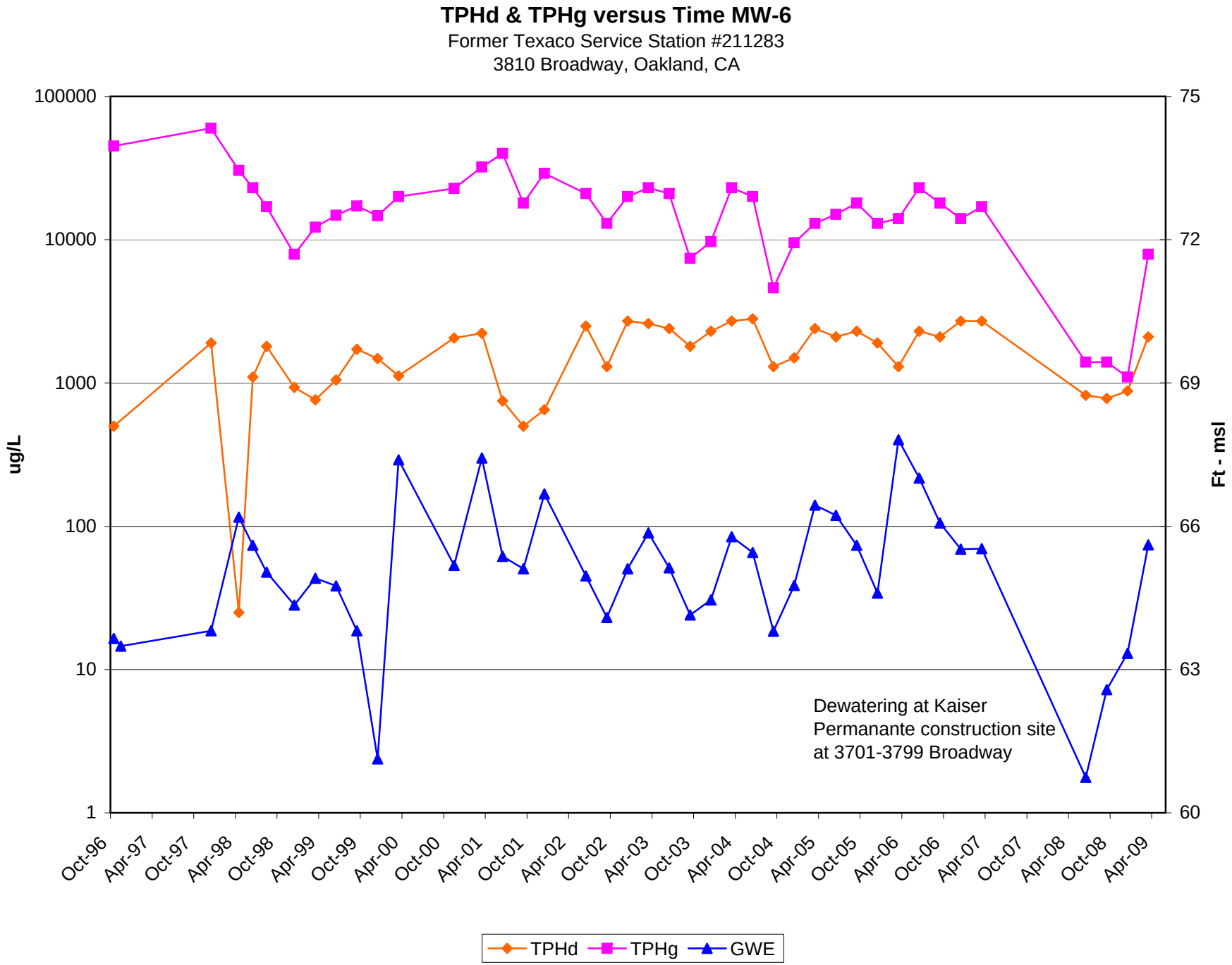
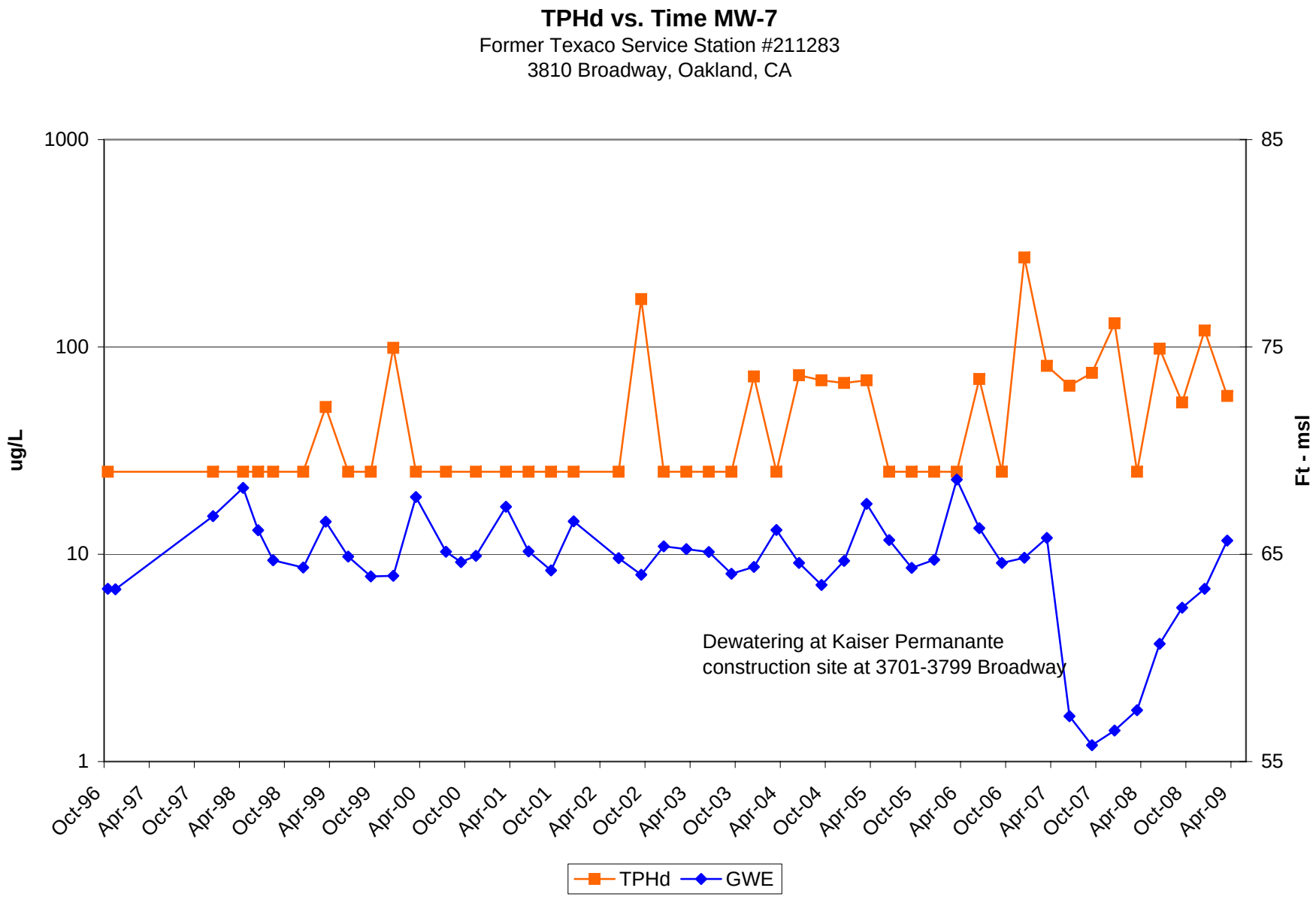
Jun-06
Dec-06
Jun-07
Dec-07
Jun-08
Dec-08
TPHd
GWE


TPHd & TPHg versus Time MW-5B
Former Texaco Service Station #211283
3810 Broadway, Oakland, CA
ug/L
10000
1000
100
10
1
0.1
75.00
70.00
65.00
60.00
55.00
50.00
Dewatering at Kaiser
Permanante construction
site at 3701-3799 Broadway
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Feb-04
Jun-04
Oct-04
Feb-05
Jun-05
Oct-05
Feb-06
Jun-06
Oct-06
Feb-07
Jun-07
Oct-07
Feb-08
Jun-08
Oct-08
Feb-09
TPHd
TPHg
Benzene
GWE


TPHg, Benzene & MTBE vs. Time MW-6
Former Texaco Service Station #211283
3810 Broadway, Oakland, CA
ug/L
Ft - msl
100,000
10,000
1,000
100
10
1
0
80
75
70
65
60
55
50
Dewatering at Kaiser
Permanante construction site
at 3701-3799 Broadway
Oct-96
Apr-97
Oct-97
Apr-98
Oct-98
Apr-99
Oct-99
Apr-00
Oct-00
Apr-01
Oct-01
Apr-02
Oct-02
Apr-03
Oct-03
Apr-04
Oct-04
Apr-05
Oct-05
Apr-06
Oct-06
Apr-07
Oct-07
Apr-08
Oct-08
Apr-09
TPHg
Benzene
MTBE
GWE


TPHd & TPHg versus Time MW-6
Former Texaco Service Station #211283
3810 Broadway, Oakland, CA
ug/L
Ft - msl
100000
10000
1000
100
10
1
75
72
69
66
63
60
Oct-96
Apr-97
Oct-97
Apr-98
Oct-98
Apr-99
Oct-99
Apr-00
Oct-00
Apr-01
Oct-01
Apr-02
Oct-02
Apr-03
Oct-03
Apr-04
Oct-04
Apr-05
Oct-05
Apr-06
Oct-06
Apr-07
Oct-07
Apr-08
Oct-08
Apr-09
Dewatering at Kaiser
Permanante construction site
at 3701-3799 Broadway
TPHd
TPHg
GWE


TPHd vs. Time MW-7
Former Texaco Service Station #211283
3810 Broadway, Oakland, CA
1000
100
10
1
ug/L
85
75
65
55
Ft - msl
Dewatering at Kaiser Permanante
construction site at 3701-3799 Broadway
Oct-96
Apr-97
Oct-97
Apr-98
Oct-98
Apr-99
Oct-99
Apr-00
Oct-00
Apr-01
Oct-01
Apr-02
Oct-02
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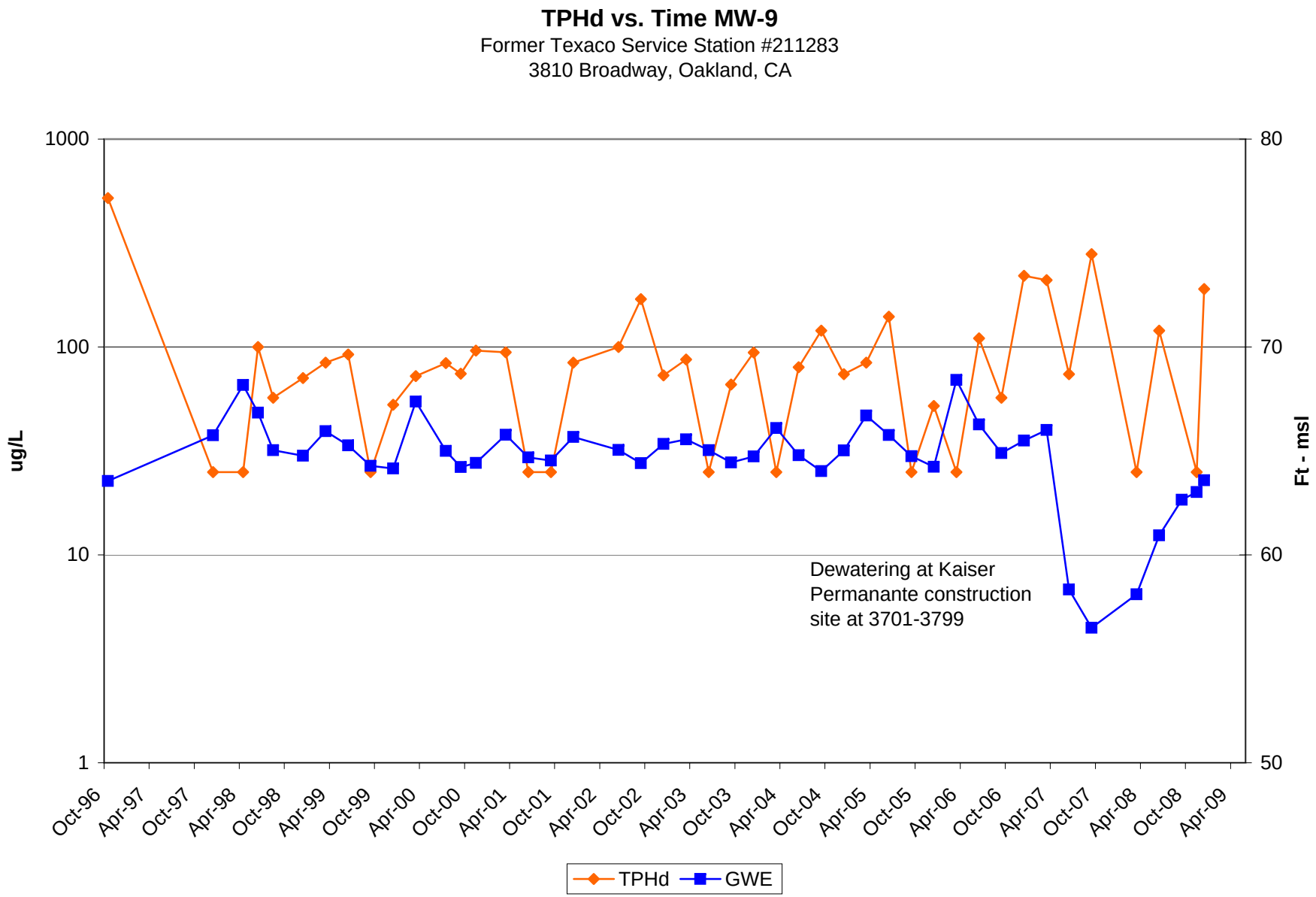
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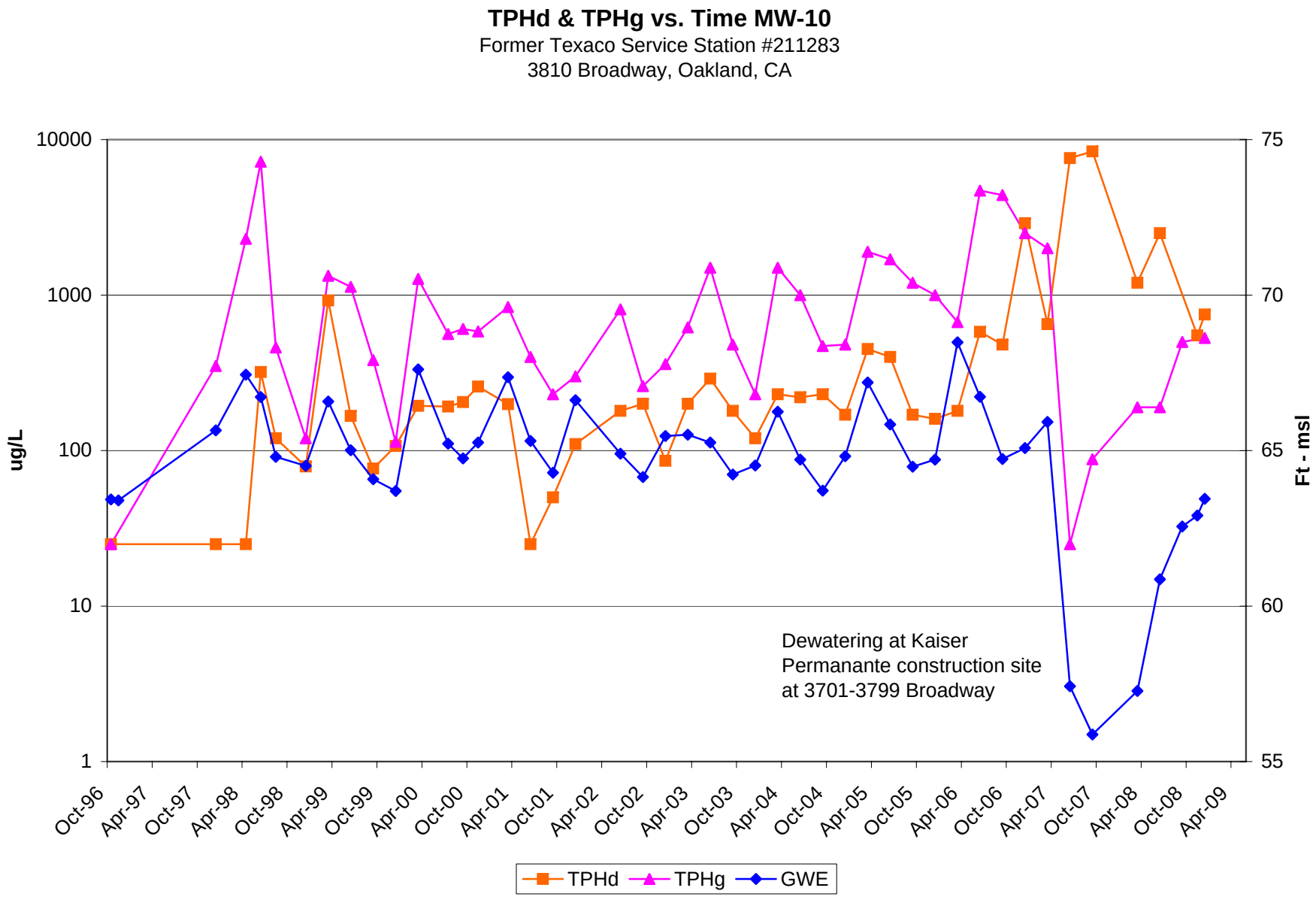
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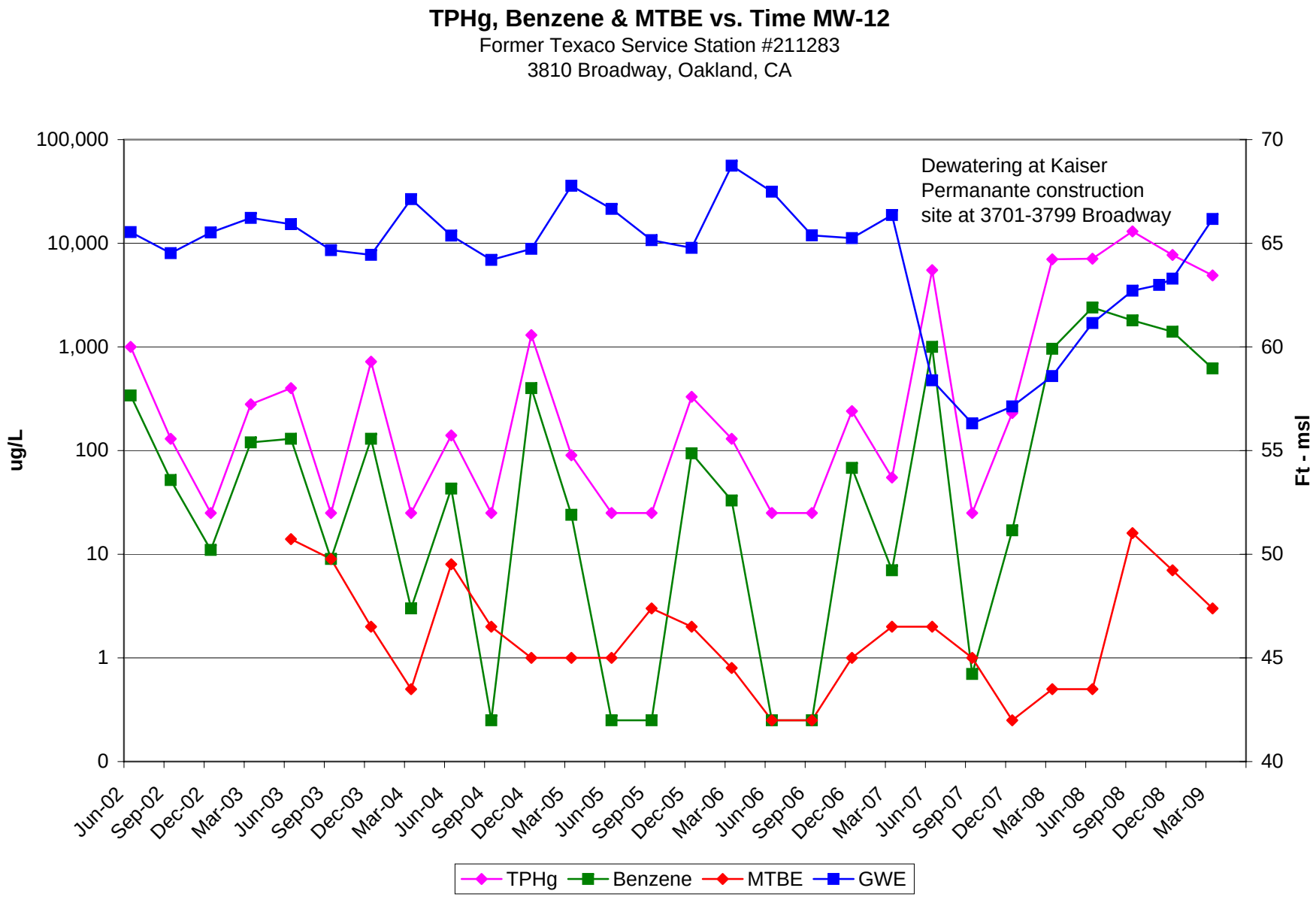
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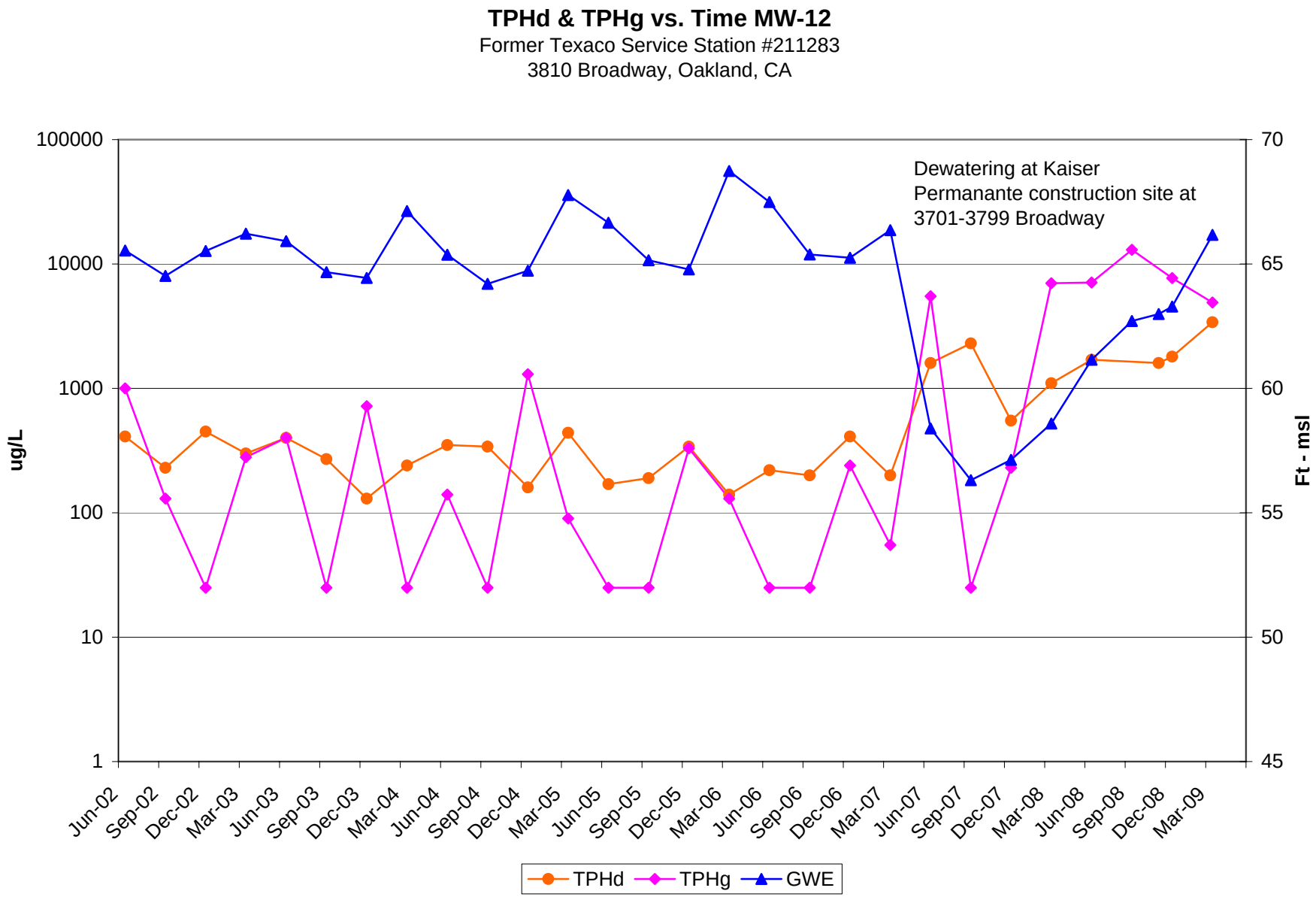
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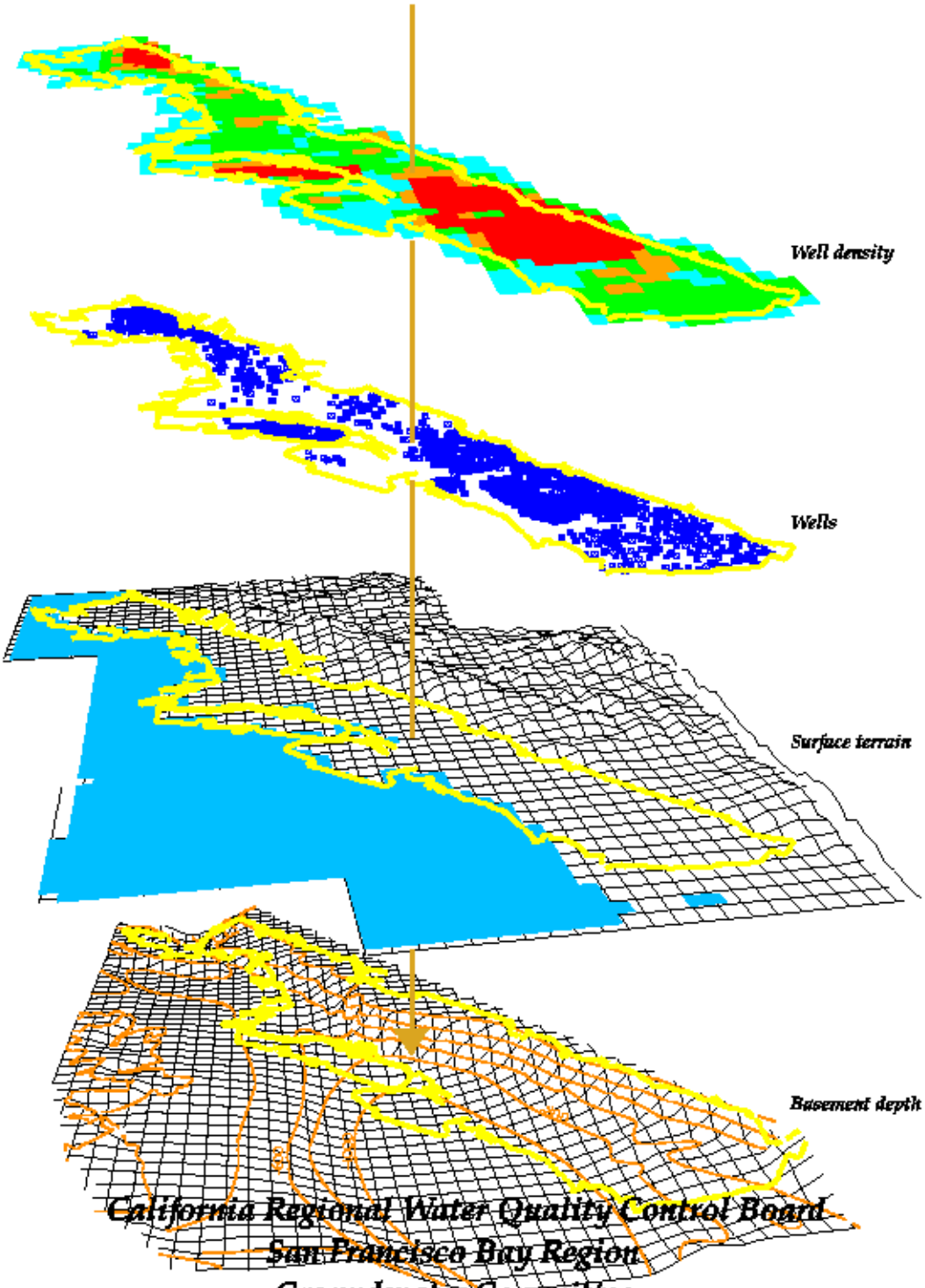
East Bay Plain Groundwater Basin Beneficial Use Evaluation Report

Alameda and Contra Costa Counties, CA



California Regional Water Quality Control Board
San Francisco Bay Region
Groundwater Committee

June 1999

Contributors

San Francisco Bay Regional Water Quality Control Board
Greg Bartow (Committee Chair)
Wil Bruhns
Chuck Headlee
Stephen Hill
John Kaiser
Shin-Roei Lee
David Leland
Stephen Morse
James Nusrala
John Robertson
Mark Ruderman
Eddy So
Linda Spencer (Past Chair)
Carol Thornton
Susan Whichard (U.S. EPA staff)
Bruce Wolfe

Alameda County Flood Control and Water Conservation District
Andreas Godfrey

East Bay Municipal Utility District
Jenn Hyman
Mike Tognolini

Port of Oakland
John Prall

U. S. Navy
Patricia McFadden
Matt Udell

California Department of Toxic Substances Control
Karen Toth
Al Wanger

City of Oakland
Mark Gomez

City of San Leandro
Michael Bakaldin

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Steve Wolmer from the East Bay Municipal Utility District and Jeff Kapellas, Nancy Katyl and Susannah Belding of the San Francisco Bay Regional Water Quality Control Board provided valuable assistance on the geographic information system portion of this project. Sands Figuers, of Norfleet Consultants, supplied key technical information for our beneficial use evaluation. Alameda County consultant Kenneth Muir provided valuable comments on early drafts of the report. The Committee sought out and incorporated comments from the following peer reviewers: David Abbott, John Fio, Seena Hoose, Richard Makdisi, and Bill Rudolph.

EXECUTIVE SUMMARY

All regulatory agencies rely on the groundwater beneficial use designations for establishing soil and groundwater cleanup levels at individual contaminated sites. The San Francisco Bay Basin Water Quality Control Plan (Basin Plan), adopted through a public hearing process in 1992, includes alternatives for improving beneficial use designations. Since 1992, The San Francisco Bay Regional Water Quality Control Board's (Regional Board) Groundwater Committee (Committee) has undertaken regional groundwater basin projects to better understand and improve beneficial use designations. This report presents a comprehensive evaluation of the beneficial uses of groundwater in the East Bay Plain Groundwater Basin (East Bay Plain). The purpose of this project is to better define current and future East Bay Plain beneficial uses. This project, when combined with a California Environmental Quality Act (CEQA) analysis, will be the technical basis for a future amendment to the Basin Plan. For agencies, consultants, businesses, and the public, the project provides a broader context in which to evaluate site-specific cleanup issues within the East Bay Plain.

STUDY AREA and PROJECT DESIGN

Located on the eastern shore of San Francisco Bay, the Basin is long (25 miles), narrow (2 to 7 miles) and includes all or portions of the cities of Richmond, San Pablo, El Cerrito, Albany, Berkeley, Emeryville, Piedmont, Alameda, Oakland, San Leandro, San Lorenzo and Hayward. Over 900,000 people live in the East Bay Plain. There are approximately 1300 leaking underground fuel sites and 130 non-fuel sites with identified pollution. While most of this pollution is limited in extent, there are 13 groundwater pollution plumes over 1,000 feet long.

The East Bay Plain project was conducted by the Committee, which was originally established by the Board's Executive Officer in 1990. For this project, its membership was expanded to include staff from the Alameda County Flood Control and Water Conservation District (ACFCWCD), East Bay Municipal Utility District (EBMUD), the Port of Oakland, the U.S. Navy and the cities of Oakland and San Leandro. The Committee initiated the study in 1996 to answer the following six key questions:

1. What are the current and planned future groundwater beneficial uses of the East Bay Plain?
2. Can the East Bay Plain be subdivided into Sub-Areas based on hydrogeology?
3. Where is the use of the East Bay Plain limited?
4. Can the shallow and deeper zones have different designations?
5. Should any current beneficial use designations change?
6. Are there areas requiring special protection programs?

Current, published reports were not detailed enough to answer the key questions. This is due, in part, to the population's reliance on surface water. However, pre-1930's data was available. At that time, groundwater supplied a significant portion of the water demand. In recognition of this, the Committee sought out a comprehensive review of historical groundwater use. The Friends of the San Francisco Estuary, in cooperation with the Regional Board, retained a consultant to complete a report on the historic groundwater use and current hydrogeologic framework of the East

Bay Plain (Figuers, 1998). Building upon this report, Committee members have compiled the best available information on beneficial uses, analyzed the information, developed a conceptual groundwater framework, and recommended revisions for beneficial use designations.

FINDINGS

Based on the key questions posed, the following findings were made:

1. Approximately 3,400 acre-feet of groundwater is extracted annually, based on 1995 estimates. Although safe yield estimates are somewhat crude, this volume is about 40% of the available yield. With a current demand of over 162,000 acre-feet/year, groundwater supplies about 2% of the total water used within the East Bay Plain.

2. There are approximately 4,700 existing wells in the East Bay Plain used for agricultural, industrial and municipal use, based on the records of ACFCWCD and EBMUD. Many of these wells are inactive. Well permit applications for Alameda County indicate that nearly all of the wells are used for "backyard" or commercial irrigation (91%) with less utilization for industrial process water (8.6%) and municipal drinking water supply (0.4%). Current uses of groundwater, by beneficial use designation category are:

   - Municipal and Domestic Water Supply: There are 6 permitted small water system wells that serve, collectively, over 200 individual users, primarily for backyard irrigation. Hayward also has 5 stand-by wells planned in the event of an emergency. Individual domestic drinking water wells are more difficult to account for due to gaps in databases in the permitting agencies. However, it is believed that there are very few wells used for domestic drinking water. Of the 1422 wells permitted since July 17, 1973 by ACFCWCD, 1417 (99.6%) are for non-drinking water purposes, primarily backyard irrigation. While these backyard irrigation wells are primarily intended for landscape and garden irrigation, incidental ingestion can occur. Therefore, backyard wells are considered a Municipal and Domestic Supply Beneficial Use.
   - Industrial/Process Water Supply: There are 10 active permitted industrial wells that service food processing and product manufacturing operations.
   - Agricultural Water Supply: Groundwater is used at two golf courses, three cemeteries and by several high schools, colleges, parks, and nurseries.

3. In addition to these designated categories, there are over 60 groundwater extraction systems at contaminated sites that collectively are pumping about 800 acre-feet per year.

4. Water service in the East Bay Plain is provided by the City of Hayward and EBMUD in the remaining area (San Lorenzo north to Richmond). Future potential beneficial uses include the use of the Basin's aquifers for storage of imported surface water by EBMUD. This storage is intended for use during a drought or an earthquake. Additional potential uses by EBMUD include municipal extraction wells and non-potable irrigation wells. Based on the Committee's review of general plans for the cities and at a workshop attended by most cities, no groundwater wells are planned for future emergency use other than by Hayward and EBMUD.

5. The East Bay Plain can be subdivided into seven Sub-Areas based on previously defined boundaries and geologic factors. Distinct characteristics are the potential for vertical contaminant migration and the potential for water supply development.

6. Groundwater use is limited in the East Bay Plain by several factors, including a) readily available high quality imported surface water, b) existing high salts in shallow bay margin groundwater, c) the potential for saltwater intrusion, and d) contamination in shallow aquifers. In particular, shallow groundwater use is limited in artificial fill and shallow bay-margin deposits in Richmond and Oakland because these units are largely saturated by brackish Bay water. In San Leandro, shallow groundwater use is limited by extensive shallow groundwater pollution by industrial solvents.

7. At this time, it does not appear prudent to change designations for most of the shallow water bearing units. The geologic relationships between deeper, potentially productive aquifers and shallow water bearing units are not defined well enough to change subregional designations. Furthermore, there were over 15,000 historical groundwater wells that were never appropriately decommissioned. These wells are potential pathways of shallow pollution to deeper aquifers. It is estimated that 8% of these wells are deeper than 200 feet. However, localized changes in some designations are feasible.

RECOMMENDATIONS

As a result of the findings of the regional analysis, the Committee has made specific recommendations to direct better decision-making at polluted sites. Also, the need for groundwater protection and monitoring measures to prevent further pollution is recommended. Some of the recommendations call for specific actions by the Regional Board or its staff, while others require the cooperation of other agencies.

Recommendations requiring action by the Regional Board or its staff:

- The Regional Board should amend the Basin Plan to include the East Bay Plain Basin Sub-Areas.

- The East Bay Plain should be subdivided into three management zones to prioritize groundwater remediation and dedesignate beneficial uses (see Figure 19). Subdivisions were developed by utilizing information on water quality, historic, existing and probable-future beneficial uses, and hydrogeology. The subdivisions are:

  Zone A - Significant drinking water resource. - Groundwater in these areas is an existing or probable drinking water resource. The basin is deep, with depths ranging from 500 to over 1000 feet. Well yields are generally sufficient for municipal supply. Cleanup strategies should be focused on actively maintaining or restoring groundwater quality to drinking water standards. Cleanup, spill prevention and education efforts within the source water protection zones of existing municipal wells should be the top priority of local and state programs.

Also areas with a high density of potential conduit wells and/or shallow backyard wells may need to receive higher priority and be subject to more detailed investigations than other areas.

Zone B - Groundwater that is unlikely to be used as a drinking water resource. In this area the basin is shallow, with depths generally less than 300 feet. Well yields are generally not sufficient for municipal supply. There are no current or planned uses of groundwater as a drinking water source. However, groundwater in these areas is used for backyard irrigation, industrial supply and commercial irrigation. Therefore, dedesignating beneficial uses in this area is not recommended. Remedial strategies should reflect the low probability that groundwater in this zone will be used as a public water supply in the foreseeable future. However, other beneficial uses/exposure pathways exist and should be actively protected. These include domestic irrigation, industrial process supply, human health, and ecological receptors. The potential for exposure via incidental ingestion from back yard wells should be evaluated.

Zone C - Shallow, nonpotable groundwater proposed for dedesignation of the Municipal Supply Beneficial Use. The Regional Board should locally dedesignate the municipal beneficial use for brackish, shallow groundwater in Bay-front artificial fill, young bay mud and the San Antonio Formation/Merritt Sand. This groundwater meets the exemption criteria of the State Water Resources Control Board's (SWRCB's) Sources of Drinking Water Policy because the groundwater could not reasonably be expected to serve a public water supply and exceeds the 3000 mg/L total dissolved solids criteria. Cleanup should be protective of ecological receptors and human health. Pursuant to SWRCB Resolution 92-49, pollution sites will continue to be required to demonstrate 1) that reasonably adequate source removal has occurred, 2) the plume has been reasonably defined both laterally and vertically and 3) a long-term monitoring program is established to verify that the plume is stable and will not impact ecological receptors or human health

- Within the East Bay Plain, there are groundwater pollution plumes that may warrant less aggressive remediation on a case-by-case basis. In certain cases, aggressive cleanup may not be warranted when the plume is shallow, concentrations are declining and no beneficial uses are threatened. The requirement for aggressive cleanup can pose a serious obstacle to redevelopment of blighted urban areas in the East Bay. This report outlines “basin specific” situations where less aggressive remediation may be warranted. Ultimately, the remedial options that would be part of a less aggressive strategy depend on site specific conditions. However, likely options would include restricting groundwater remediation to the source area only, allowing monitored natural attenuation, or implementing pump-and-treat solely to limit plume migration.

- Regional Board staff should encourage the use of aquifers in the East Bay Plain for groundwater storage. If groundwater from existing sources or surface water is stored in these aquifers (either from surface water sources in wet years or from treated wastewater), demand on limited surface water resources can be reduced.
- The methods required for conducting a Vertical Conduit Study and Well Search in the East Bay Plain should be formalized by Regional Board staff.
- Regional Board staff should encourage the establishment of a basin-wide groundwater management program.
- The GIS coverages displayed in this report should be updated regularly and placed on the Internet.

Recommendations requiring follow-up in cooperation with other agencies:

- The five agencies that maintain well databases within the East Bay Plain should make the data accessible to the public at a single agency.
- The existing ACFCWCD regional groundwater monitoring network should be expanded to include more wells, sampled more frequently, and monitored for a larger list of chemicals of concern. A similar network is also needed in the Contra Costa County portion of the East Bay Plain.
- Regulatory agencies should request that both ACFCWCD and EBMUD well databases are searched for current well locations as part of groundwater pollution site investigations.
- Well abandonment programs should be undertaken by appropriate Alameda and Contra Costa agencies in areas where groundwater resources are at risk.
- Together with ACFCWCD and EBMUD, the Regional Board staff should encourage the establishment of a basin-wide groundwater management program.

EAST BAY PLAIN GROUNDWATER BASIN
BENEFICIAL USE EVALUATION REPORT

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1.0 INTRODUCTION

The in-house Groundwater Committee (Committee) for the San Francisco Bay Regional Water Quality Control Board (Regional Board), and other State and local agencies completed the *San Francisco and Northern San Mateo County Pilot Beneficial Use Designation Project* in April 1996. The 1996 project evaluated alternatives to the current framework of groundwater beneficial use designation. As a result of this project, the Regional Board staff recommended that the preferred alternative, the Hydrogeologic Framework, should be tested in other groundwater basins. The East Bay Plain Groundwater Basin (East Bay Plain) was highlighted as a good test candidate. The goal of this project is to better define groundwater beneficial uses in the East Bay Plain. Located between San Francisco Bay and the East Bay Hills, the East Bay Plain is a highly urbanized groundwater basin (Figure 1).

1.1 About This Report

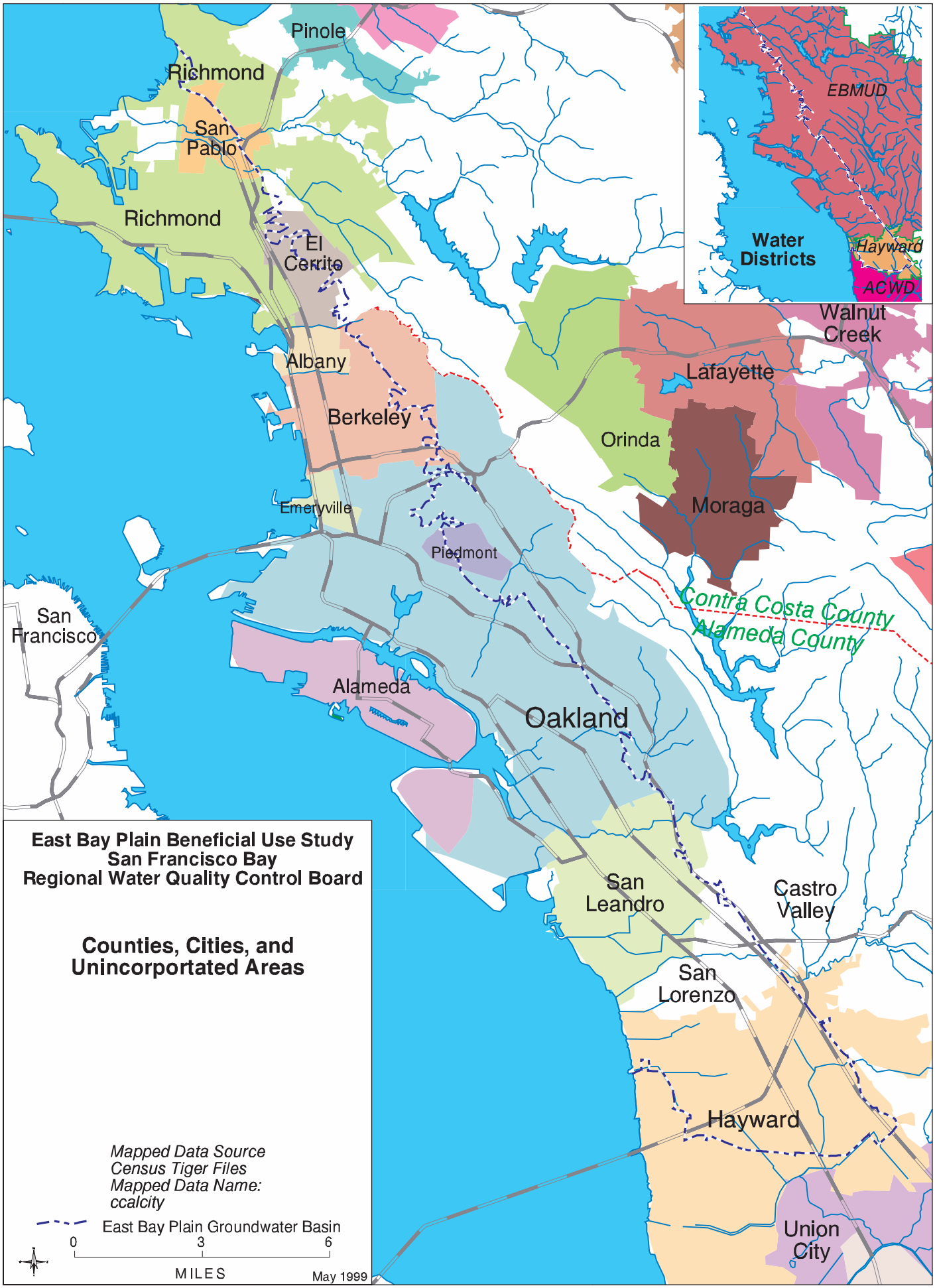
This report leads the reader through the steps that were followed to complete the beneficial use project. Sections 1-5 provide the background and context of the project. Sections 6-13 cover the physical and chemical characteristics of the East Bay Plain. Historic and current groundwater beneficial uses are analyzed in sections 12-13. Section 14 highlights local redevelopment and regulatory initiatives in Oakland, Berkeley, Emeryville and Richmond. The key findings and recommendations are presented in Sections 15-17. The proposed revisions and an accompanying CEQA analysis will be brought before the Regional Board for consideration of a Water Quality Control Plan (Basin Plan) Amendment.

1.2 Background

The urbanized East Bay Plain includes 12 cities, the five largest being Oakland, Berkeley, Hayward, Richmond and San Leandro. The total population within the Plain is over 900,000. From the 1860's to the 1930's, all water supplies to the East Bay Plain area were provided by groundwater, springs, and local reservoirs (Figures 2 and 3). As a result of the development of various Sierra Nevada water supplies in the 1920's and 1930's, all local East Bay Plain municipal water supplies were abandoned. Since then, the East Bay Plain has not been a regional source of water. However, the East Bay Plain is used locally for irrigation, industrial and emergency water supply purposes and as a limited drinking water supply.

There are areas of the East Bay Plain where beneficial use is limited due to brackish water quality, low sustainable yields, or the presence of pollution. This project seeks to balance the need to protect existing and potential future groundwater resources with the need to develop realistic cleanup goals for polluted groundwater in areas of limited beneficial use. To achieve this balance we framed the following key questions:

- What are the current and planned future groundwater beneficial uses of the East Bay Plain?
- Can the East Bay Plain be subdivided into Sub-Areas based on hydrogeology?
- Where is the use of the East Bay Plain limited?
- Can the shallow and deeper zones have different designations?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Contra Costa County
Alameda County
San Leandro
Castro Valley
San Lorenzo
Hayward
Union City
EBMUD
Water Districts
Hayward
ACWD
East Bay Plain Beneficial Use Study
San Francisco Bay
Regional Water Quality Control Board
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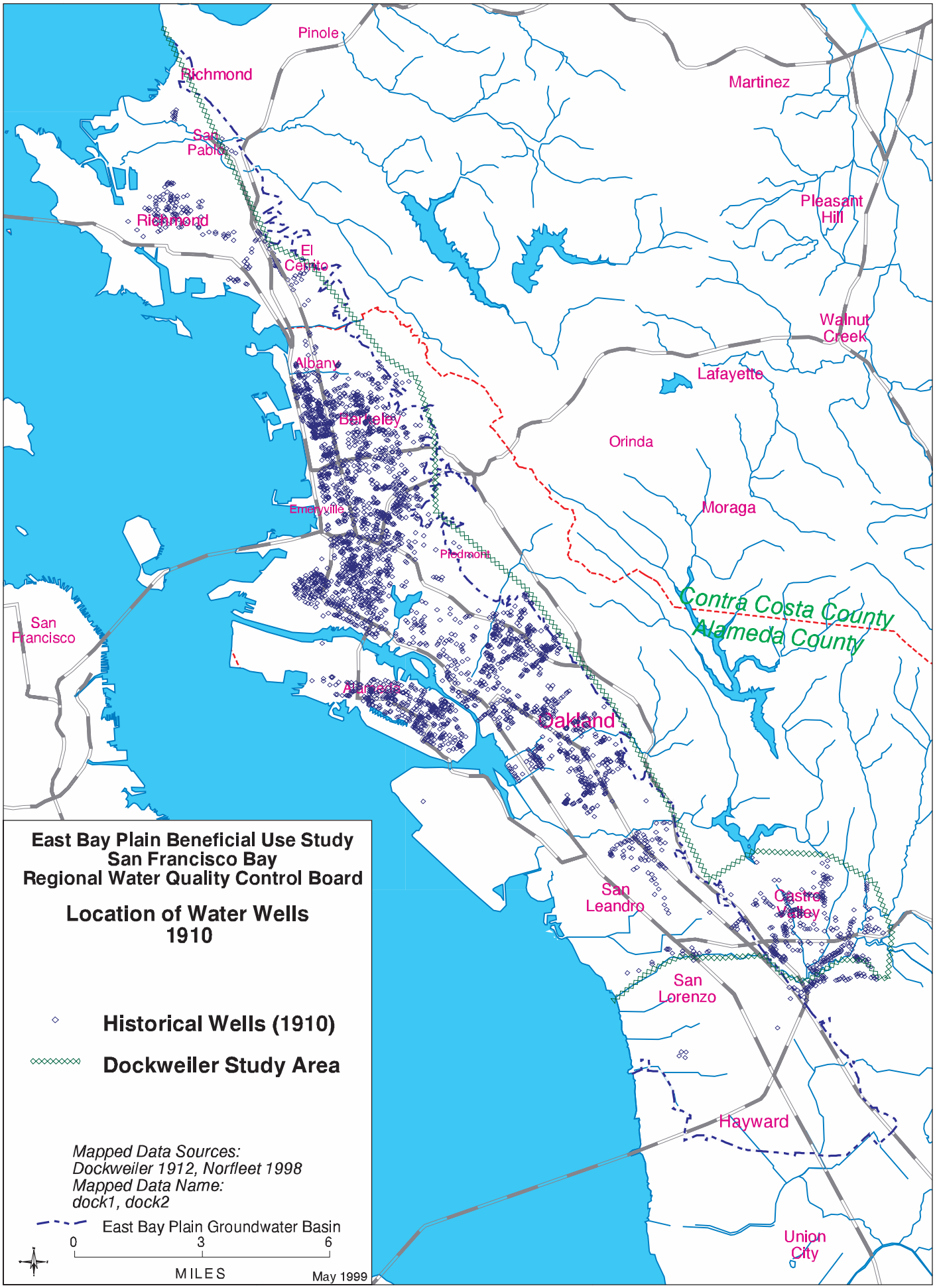
Figure 1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San Leandro
Castro Valley
San Lorenzo
Hayward
Union City
East Bay Plain Beneficial Use Study
San Francisco Bay
Regional Water Quality Control Board
Location of Water Wells
1910
Historical Wells (1910)
Dockweiler Study Area
Mapped Data Sources:
Dockweiler 1912, Norfleet 1998
Mapped Data Name:
dock1, dock2
East Bay Plain Groundwater Basin
0
3
6
MILES
May 1999

Figure 2

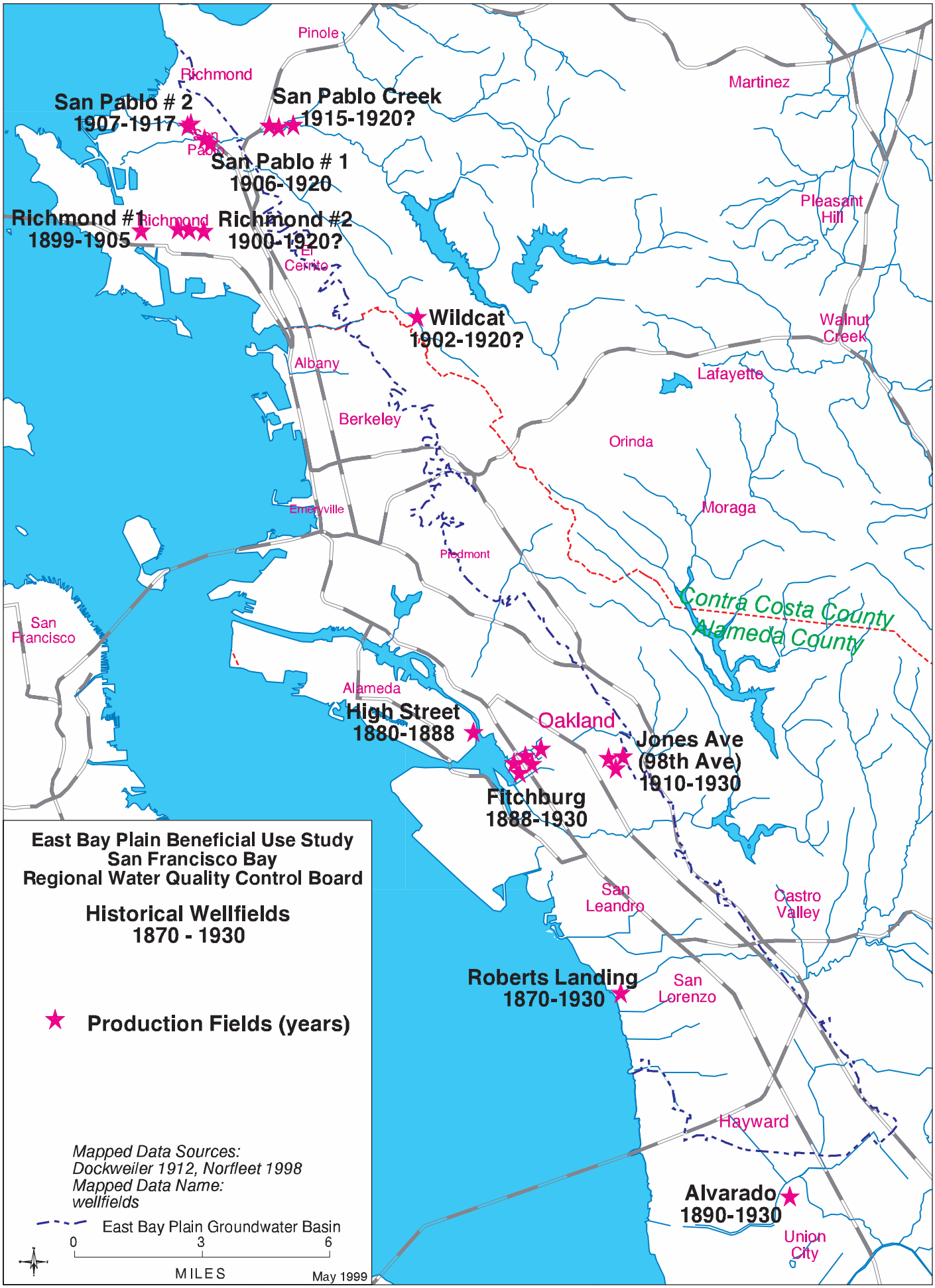

East Bay Plain Beneficial Use Study
San Francisco Bay
Regional Water Quality Control Board
Historical Wellfields
1870 - 1930
Production Fields (years)
Mapped Data Sources:
Dockweiler 1912, Norfleet 1998
Mapped Data Name:
wellfields
East Bay Plain Groundwater Basin
0
3
6
MILES
May 1999
Pinole
Richmond
Martinez
San Pablo # 2
1907-1917
San Pablo Creek
1915-1920?
San Pablo
San Pablo # 1
1906-1920
Richmond #1
1899-1905
Richmond
Richmond #2
1900-1920?
El Cerrito
Pleasant Hill
Wildcat
1902-1920?
Walnut Creek
Albany
Lafayette
Berkeley
Orinda
Emeryville
Moraga
Piedmont
Contra Costa County
Alameda County
San Francisco
Alameda
High Street
1880-1888
Oakland
Jones Ave
(98th Ave)
1910-1930
Fitchburg
1888-1930
San Leandro
Castro Valley
Roberts Landing
1870-1930
San Lorenzo
Hayward
Alvarado
1890-1930
Union City

Figure 3

- Should any current beneficial use designations change?
- Are there areas requiring special protection programs?

1.3 Selection of East Bay Plain as Study Area

The Plain offers an excellent opportunity to conduct a groundwater beneficial use evaluation as a follow up to the Regional Board's San Francisco/ Northern San Mateo County Project (Regional Board, 1996). Information is available on current beneficial uses of groundwater, and largely forgotten historical information has been brought to light. The East Bay Plain includes areas that currently provide drinking water and areas that are unlikely to. U.S. EPA's Brownfields Programs are being studied for Emeryville, Oakland and Richmond, which could potentially benefit from this project. Simultaneously, the East Bay Municipal Utility District (EBMUD) is studying the feasibility of using the East Bay Plain for conjunctive use. EBMUD's study of using Aquifer Storage Recovery technology to inject imported surface water into the East Bay Plain raises important questions about its future beneficial uses (see Section 13.5).

Lastly, given the large number of groundwater pollution sites, a better definition of beneficial uses could focus expenditure of public and private resources on groundwater remediation on areas that are either existing or probable future drinking water sources. Correspondingly, in areas where no groundwater use exists and its future use is unlikely, remediation could be driven by human health and environmental risks associated with non-potable users.

1.4 Groundwater Committee

The Committee recommends policy on groundwater issues, conveys and shares new information and events related to groundwater pollution cleanup, and fosters internal consistency on groundwater policy implementation. The Committee normally consists of Regional Board line staff, supervisors, and managers from all five staff divisions.

The Committee's first major project was the groundwater Basin Plan Amendment adopted by the Board in 1992. Significant portions of this amendment have been used by the State and other regional boards in their Basin Plan updates. It highlights the Board's experience with groundwater cleanup since the early 1980's and includes a recommendation to evaluate the Board's existing approach to managing site cleanups. This includes a review of the beneficial use designations for each of the Region's groundwater basins.

In 1994, the Committee conducted a survey among its members and other interested Board staff to identify the primary unresolved issues in dealing with groundwater pollution cleanup within the Region. The results of the survey identified inconsistencies in applying the State Board's "Sources of Drinking Water" Policy (Sources Policy) to groundwater pollution cleanup and the corresponding need for refinement of beneficial use designations. This was similar to the Basin Plan's recommendation to streamline Board programs by developing "cleanup levels and policies for individual groundwater basins or Sub-Areas based on designated beneficial uses."

The Committee then embarked on its first pilot beneficial use project, which was San

Francisco and Northern San Mateo County. Between 1994 and 1996, the Committee designed and completed a comprehensive evaluation of hydrogeology, future groundwater uses, and alternatives for revised beneficial use designations. At the April 16, 1996, Regional Board meeting, staff presented the project summary report titled, "The San Francisco and Northern San Mateo County Pilot Beneficial Use Designation Project." The draft staff report provided the following recommendations:

- Three different methods for defining beneficial uses were evaluated. For groundwater basins in the study area, the Hydrogeologic Framework is the preferred alternative.
- Portions of the seven groundwater basins within the study area should retain their existing designations.
- Beneficial uses should be changed for the Downtown San Francisco Basin and portions of other basins composed of Franciscan Bedrock, artificial fill or bay mud.
- Corrective action strategies should match revised beneficial use designations. These strategies include aggressive cleanup to drinking water standards, passive cleanup with drinking water standards achieved as a long-term goal, and cleanup and management to goals defined by risk analysis.

After this pilot project was completed, the Committee decided to test the Hydrogeologic Framework in other basins. In late 1996, a second pilot project was initiated in the East Bay Plain.

2.0 STAKEHOLDER PARTICIPATION

On January 29, 1997, the Committee held a workshop for all potential agency stakeholders in the East Bay Plain Region. Included were municipal and county elected officials, water agencies, flood control districts, planning agencies, health and regulatory agencies, and city managers, as well as the East Bay Regional Park District, the Port of Oakland, U.S. Geological Survey, U.S. EPA, U.S. Navy; dischargers, and state agencies: Department of Water Resources, CALTRANS, Department of Toxic Substances Control, State Water Resources Control Board, and Department of Health Services. Stakeholders were invited to participate in the pilot project to update the beneficial use designation of groundwater in the East Bay Plain. Fifty-six individuals representing thirty-one agencies attended this workshop. The attendees are listed in Appendix C.

Participants were asked to give their input in the initial planning phases of the project and to share any information regarding their current or planned use of groundwater in the project area. The Committee also asked to review any evaluations of groundwater supplies that stakeholders might have. Input was also requested about how best to clean up and manage polluted groundwater.

The Committee felt that it was very important to include all of the agency stakeholders in the preliminary stage of this pilot project. After the initial workshops, agency representatives from EBMUD, Port of Oakland, DTSC, US Navy, the Alameda County Flood Control and Water Conservation District, the City of Oakland, and the City of San Leandro became active participants with Regional Board staff on the Committee.

3.0 METHODS

The methods used for this Pilot Project (Figure 4) were similar to those used in the San Francisco/San Mateo Beneficial Use Study (Regional Board, 1996). First, the best information available was compiled on beneficial uses and existing water quality. This information was compiled and analyzed on an ArcView GIS database. Second, a conceptual groundwater framework was developed that identified major aquifers and aquicludes, recharge areas, discharge areas, storage, potential for vertical migration, groundwater flow direction, etc. Third, findings were made regarding the overall condition of the East Bay Plain and its ability to meet all of the beneficial uses documented in the Basin Plan (RWQCB, 1995).

3.1 Investigation by Norfleet Consultants

One of the key resources that the Committee used for the beneficial use analysis was a comprehensive study on the area prepared by Sandy Figuers, Ph.D. (1998). This study provides a geologic, hydrologic and historical framework of the East Bay Plain.

The report, titled "Groundwater Study and Water Supply History of the East Bay Plain, Alameda and Contra Costa Counties, CA.," built upon the previous work by Dr. Figuers (Rogers and Figuers, 1991). Figuers' work included an in-depth search for and review of documents held in 12 libraries that yielded over 250 contemporary and historical references. In addition, he evaluated the subsurface geology, created the first basin-wide subsurface bedrock map, delineated areas of historical groundwater use, and proposed subdividing the basin into Sub-Areas.

Figuers' work expands on the efforts by previous workers including notably Muir (1993, 1996, 1997), Maslonkowski (1988) and the California Department of Water Resources (1963, 1994) to create the principal reference on East Bay Plain geology, hydrogeology and groundwater history.

3.2 Geographic Information System (GIS) Analysis

The GIS analysis in this report was performed by the staff of EBMUD and the Regional Board using Arc/INFO 7.2.1 and ArcView 3.0a software. Coverages were collected and compiled from a variety of sources and agencies, including the Regional Board, EBMUD, U.S. Geological Survey, U.S. Navy, Association of Bay Area Governments, Division of Toxic Substances Control, Norfleet Consultants and the County of Alameda. Where necessary, coverages were modified in consultation with one-meter resolution digital orthophotographs to enable proper overlay and display. SLIC and LUST data were geocoded by the Regional Board based on 1993 TIGER street data. The minimum coverage scale is 1:100000.

The proximity analysis of the well and toxic site data was performed at distances of 660 feet (approximately 1/8 mile), 1000 feet and 2000 feet. The lowest number was assumed to be the minimum possible distance for which accurate results could be obtained as the wells in the Alameda County Well Database are referenced by Township-Range quartersection coordinate, whose diagonal distance is 660 feet. Since the 660-foot distance is also approximately the same length as the average city block, it is assumed that the distance also provides sufficient flexibility to account

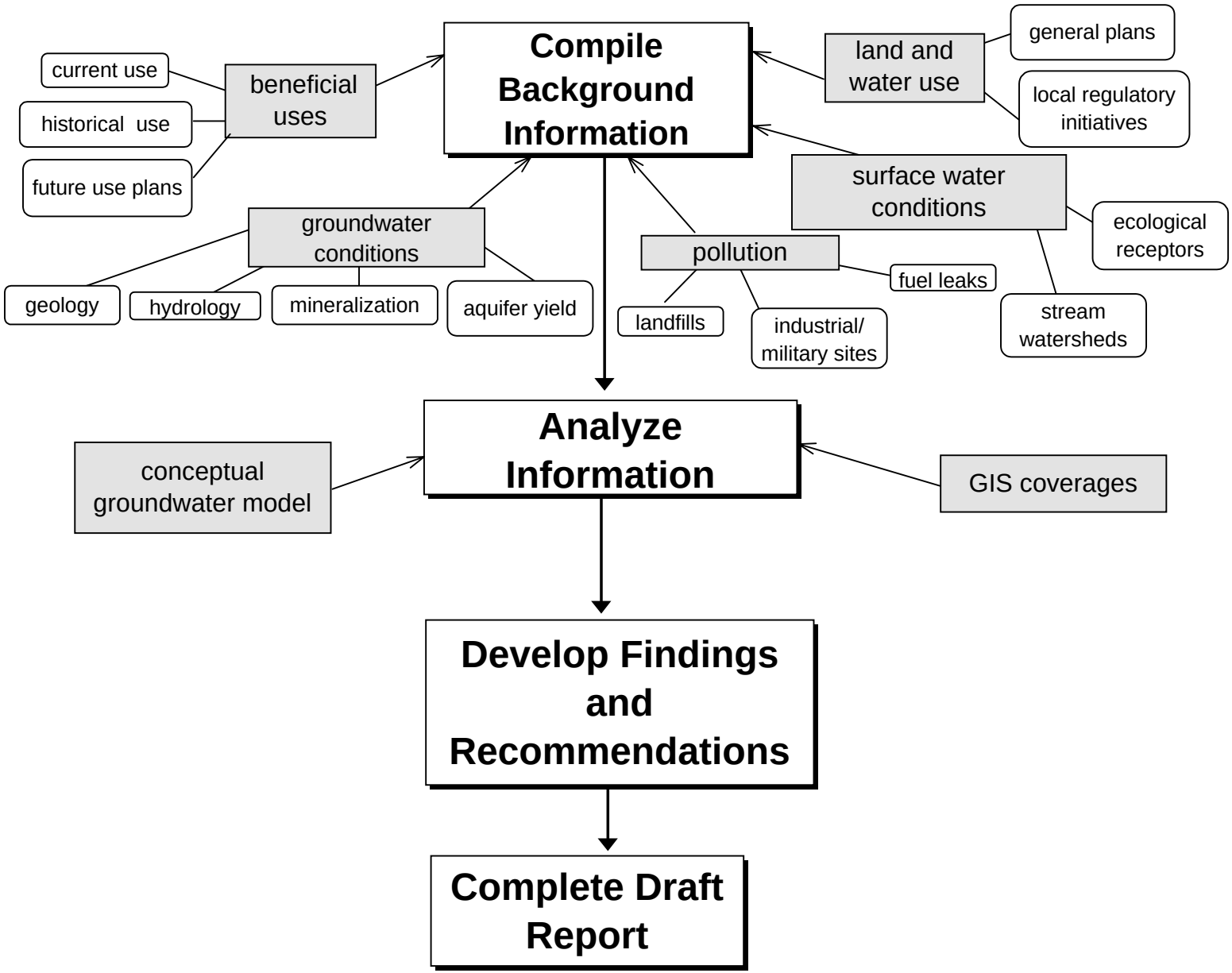


Figure 4. Methods for the East Bay Plain Groundwater Beneficial Use Evaluation

for most variation in accuracy.

4.0 CURRENT STATE WATER RESOURCES CONTROL BOARD POLICIES FOR GROUNDWATER

4.1 Resolution 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California"

Adopted in 1968, the Policy requires that where water quality objectives are set by Basin Plans or the Porter Cologne Act, existing water quality must be maintained. The resolution says:

> "1. Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.
>
> 2. Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the state will be maintained.
>
> 3. In implementing this policy, the Secretary of the Interior will be kept advised and will be provided with such information as he will need to discharge his responsibilities under the Federal Water Pollution Control Act."

This implies cleanup must be made to non-detect or background levels. Background is the lowest concentration limit required for groundwater protection. Chemical specific objectives for bacteria, organic and inorganic constituents, radioactivity, and taste and odor define the upper limit that is protective of beneficial uses. These objectives are based on Federal and State published standards and guidelines. Other site-specific limits are risk-based. The Policy does provide conditions under which a change in water quality is allowable. A change must:

- Be consistent with maximum benefit to the people of the state;
- Not unreasonably affect present and anticipated beneficial uses of water; and
- Not result in water quality less than that prescribed in the water quality policies.

4.2 Resolution 88-63, Sources of Drinking Water Policy (Sources Policy)

The Sources Policy was adopted by the State Board in 1988, following the passage of Proposition 65, which required public notification when specific cancer-causing chemicals were discharged into "sources of drinking water." The Sources Policy was incorporated into the Basin Plan in 1989 (Regional Board Order No. 89-39). The Sources Policy assigns municipal and domestic supply designations to all waters of the state with certain exceptions. The Sources Policy specifies that "any body of water that is not currently designated as MUN (municipal and domestic supply) but, in the opinion of the Regional Board, is presently or potentially suitable for MUN and domestic water, the Regional Board shall include MUN in the beneficial use designation." The Sources Policy allows for exceptions if the Regional Board has previously assigned specific designations or if specific exemption criteria are met. These exemption criteria are as follows:

- The total dissolved solids (TDS) exceed 3,000 mg/l (5,000 uS/cm, electrical conductivity) and it is not reasonably expected by the Regional Board that the groundwater could supply a public water system; *or*,

- There is contamination, either by natural processes or by human activity (unrelated to a specific pollution incident), that cannot reasonably be treated for domestic use using either Best Management Practices or best economically achievable treatment practices; *or*,

- The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day; *or*,

- The aquifer is regulated as a geothermal energy producing source or has been exempted administratively pursuant to 40 CFR Section 146.4 for the purpose of underground injection of fluids associated with the production of hydrocarbon or geothermal energy, provided that these fluids do not constitute a hazardous waste under 40 CFR Section 261.3.

Basin Plan Table 2-9 (Appendix A), applies the beneficial use designations to groundwaters. In this table, each of the Region's groundwater basins is identified, and their existing and potential beneficial uses are designated. Identification of the groundwater basins is based on the Department of Water Resources (DWR) Bulletin 118-80. In addition to these designations, the Basin Plan further states that all subsurface waters are considered suitable, or potentially suitable, for municipal or domestic supply. Therefore, groundwater that falls outside of the identified basins was included within this designation.

4.3 Resolution 92-49, Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code, Section 13304.

This Resolution was enacted in June 1992, amended in April 1994 and again in October 1996. Resolution 92-49 establishes policies and procedures for the oversight of investigations and cleanup and abatement activities resulting from discharges of hazardous substances. It requires regional boards to meet the highest levels reasonably attainable where, at a minimum, water quality objectives, established in the Basin Plans, must be met. If it is not reasonable to restore water quality to background levels, case by case cleanup levels may be specified, depending on the water quality provisions of a regional board's Basin Plan, beneficial uses of the waters, and maximum benefit to the people of the state.

4.4 Resolution 96-79, Adoption of Containment Zone Policy

Adopted October 2, 1996, Resolution 96-79 amends Resolution No. 92-49 to include the Containment Zone Policy. In recent years, the State Board and the regional boards have found that, in some circumstances, compliance with water quality objectives for groundwater as part of cleanup actions cannot be reasonably achieved. Since there were no procedures to address the inability of meeting Basin Plan objectives, Resolution 92-49 was further amended to include the Containment Zone Policy. This Policy establishes conditions under which a regional board may establish containment zones. That is, specific portions of groundwater-bearing units where water quality objectives cannot be reasonably achieved. The amendment therefore recognizes that some pollutants will remain within the containment zone for a period of time.

Since there is a potential for the migration of polluted water into uncontaminated waters, the amendment requires the discharger to contain pollutants within the area of the containment zone. The containment zone designation will be revoked if chemicals migrate outside of that area.

The amendment also includes an environmental document, the Functional Equivalent Document (FED). The FED is intended to be "functionally equivalent" to the CEQA process, therefore fulfilling the requirement for preparing Environmental Impact Reports, Negative Declarations, and Initial Studies.

5.0 GROUNDWATER REGULATORY AGENCIES

5.1 Federal

5.1.1 U.S. Environmental Protection Agency (EPA)

EPA has the regulatory lead for the National Priorities List (NPL) Superfund sites. They also provide grant funding for other regulatory programs.

5.1.2 U.S. EPA's Groundwater Classification Guidelines

Under State Water Board Resolution 88-63 (see Section 4.2), all state waters are considered to be potential drinking water unless either the total dissolved solids (TDS) exceeds 3000 mg/l and the Regional Water Board makes a determination that the water is not reasonably expected to supply a public water system, or the yield is less than 200 gal/day. However, EPA's Groundwater Classification Guidelines use a stricter standard of 10,000 mg/l TDS or less and a yield of 150 gal/day to define a potential drinking water source. The National Contingency Plan (NCP) Preamble directs EPA to use the Guidelines when determining the appropriate remediation for contaminated groundwater at CERCLA (Superfund) sites and EPA's OSWER Directive #9283.1-09 directs EPA to defer to the NCP Preamble and the Guidelines when a state does not have an EPA endorsed Comprehensive State Groundwater Protection Program (CSGWPP). EPA's definition is based on the importance of maintaining broad protections of potential drinking water sources in light of the growing demands on drinking water supplies. Since California does not have a CSGWPP, the federal definition of potential drinking water (10,000 ppm TDS or less and a yield of 150 gal/day) has recently been required by USEPA at CERCLA sites. Of the 1430 groundwater contamination sites in the East Bay Plain, CERCLA sites accounted for 3% by number and roughly 10% by area. These CERCLA sites consist primarily of closing Navy bases that are undergoing investigation and remediation as part of base reuse.

5.2 State of California

The major California laws regulating cleanup of pollution sites are contained in the Health and Safety Code and the Water Code. The nature of these chemicals and their effects on human health and the environment has long involved multi-agency oversight for the cleanup of these sites. In addition to the state agencies, several county and city agencies participate in regulatory activities. The state agencies usually have the lead in overseeing the cleanup of these sites.

5.2.1 Regional Water Quality Control Board (Regional Board)

The mission of the Regional Board is to protect the beneficial uses of the Region's surface and groundwater. Beneficial uses are the resources, services, and qualities of aquatic ecosystems that are the ultimate goals of protecting and achieving water quality. The Board works with local public entities and industry to ensure that they comply with the policies and objectives of the Water Quality Control Plan (Basin Plan) which is intended to guide local officials. The Regional Board will consider any proposed alternative actions that are consistent with the Basin Plan. The Regional Board oversees many programs with and without local program participation.

5.2.1.1 The "Spills, Leaks, Investigation and Cleanup" (SLIC) Program

SLIC is the program term used by the State Water Resources Control Board and Regional Boards to define those sites with groundwater polluted by chemicals other than total petroleum hydrocarbon (TPHs) that are used as fuels. These chemicals include, but are not limited to, polyaromatic hydrocarbons (PAHs), volatile organic chemicals (VOCs), PCBs, metals and

pesticides. Most of the 32 SLIC sites in the study area are located on the western side in old industrial areas.

Because of the nature of these chemicals and their effects on human health and the environment, a group of agencies has long been involved in overseeing the cleanup of these sites. In addition to state agencies, several county and city agencies have had a significant role in the process. Usually, a state agency has the lead for overseeing the cleanup of SLIC and other toxic sites, but because of local agencies participating actively in determining cleanup levels and time frames, the role of the lead agency becomes less distinct. One reason is that SLIC sites do not have a Local Oversight Program like the leaking underground storage tank sites (LUSTs) program (see below).

5.2.1.2 Non-SLIC Regional Board-lead groundwater cleanup sites

This class of sites includes the Unocal Oil Terminal in Richmond and the PG&E facility in Oakland that use aboveground tanks for storing petroleum hydrocarbons; and the groundwater cleanup under the Chevron refinery in Richmond (the only refinery located on the Plain). Although the Regional Board is the lead agency for these sites, the corresponding County Health Departments are consulted on soil cleanup issues.

Although the Regional Board has the authority to protect groundwater quality, the non-distinguishable relationships between human health, the environment, land-use, and economic considerations have complicated the regulatory roles of all agencies involved in site cleanup. Occasional inconsistencies in cleanup requirements, and the lack of coordination and information sharing between these agencies, have resulted in regulatory oversight that is not as efficient as it could be. Table 1 provides a breakdown of the number and types of cases each agency regulates. This “multi-agency” approach to regulating groundwater pollution presents both advantages and disadvantages. The advantage is that it allows each agency to use the unique skills and legal tools that it possesses and it makes the best use of limited resources to provide oversight of the thousands of sites in the East Bay Plain. The main disadvantage is the lack of a coordinated “watershed” approach to prioritizing sites, compiling data, and sharing information. For example, in San Leandro four agencies need to be contacted to get information on groundwater pollution sites. The East Bay Plain is essentially a large unmanaged basin with pollution sites regulated by any of eight different environmental agencies.

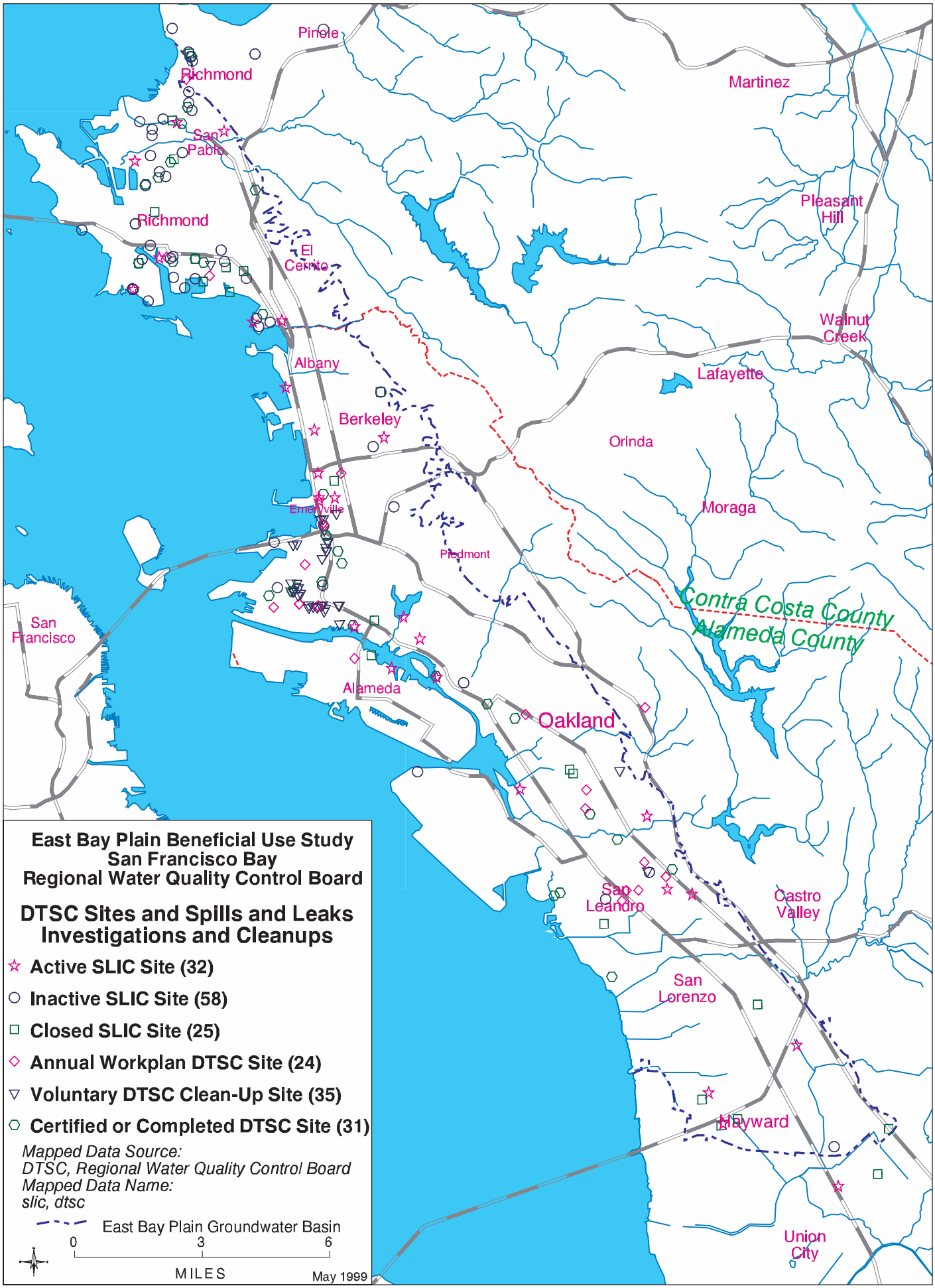
Table 1. Summary of Groundwater Cleanup Regulatory Agencies in the East Bay Plain

Agency	Types of Groundwater Pollution Cases Regulated	Number of active cases in East Bay Plain except where noted otherwise [1]	Comments
U.S. EPA	Superfund Sites, DoD Sites/Emergency Response	52 Fuel Sites 19 VOC Sites	Oversight of cleanup at closing military bases and DC Metals
CA Department of Toxic Substances Control	VOCs, metals, RCRA, state lead for DoD Sites	90	From Calsites Database
CA Regional Water Quality Control Board	VOCs, Metals, coordinates LUFT Program, Landfills, Refineries, consults on DoD Sites	Active LUFT: 1310 [2] Nonfuel/SLIC: 32 Landfills: (1 active and 10 closed)	
Alameda County Environmental Health Services	Local Oversight Program for Fuels, also active in SLIC Sites	1235	
Contra Costa County Department of Environ. Health	Non-Local Oversight Program for Fuels	686 within entire county	RWQCB is lead for all sites.
City of Berkeley, Planning and Development Department, Toxics Management Division	Non-Local Oversight Program for Fuels	194	
San Leandro Fire Department	Non-Local Oversight Program for Fuels	121	
Hayward Fire Department	Non-Local Oversight Program for Fuels	256	

1Total number of sites as of January 1998.
2 LUFT total includes fuel sites regulated by other agencies.

5.2.2 Department of Toxic Substances Control (DTSC) protects public health and the environment from the effects of hazardous substances as required by Chapter 6.8 of the California Health and Safety Code. They are required to ensure that contaminated sites are cleaned up in accordance with state and federal laws and they regulate the generation, storage, treatment, transportation, handling, and disposal of hazardous wastes. DTSC is organized into two separate programs, Site Mitigation and Hazardous Waste Management Program (Figure 5).

5.2.2.1 Site Mitigation Program oversees the investigation and remediation of hazardous substance release sites, including military facilities as well as private party sites. According to the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Lafayette
Berkeley
Orinda
Emeryville
Moraga
Piedmont
Contra Costa County
Alameda County
San Francisco
Alameda
Oakland
San Leandro
Castro Valley
San Lorenzo
Hayward
Union City
East Bay Plain Beneficial Use Study
San Francisco Bay
Regional Water Quality Control Board
DTSC Sites and Spills and Leaks Investigations and Cleanups
Active SLIC Site (32)
Inactive SLIC Site (58)
Closed SLIC Site (25)
Annual Workplan DTSC Site (24)
Voluntary DTSC Clean-Up Site (35)
Certified or Completed DTSC Site (31)
Mapped Data Source:
DTSC, Regional Water Quality Control Board
Mapped Data Name:
slic, dtsc
East Bay Plain Groundwater Basin
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MILES
May 1999

Figure 5

"CALSITES LIST" database, DTSC currently oversees the investigation and cleanup of 90 sites in the East Bay Plain. Responsibility includes the oversight of remediation of both soil and groundwater contamination. Larger projects include the DWA Plume (San Leandro), Barbary Coast (Emeryville), Cypress Freeway Reconstruction Projects (Oakland), and the Liquid Gold Site (Richmond).

5.2.2.2 Hazardous Waste Management Program is responsible for permitting corrective action, and enforcement for sites that handle hazardous wastes. This includes generators, transporters, as well as those who accept offsite waste for treatment or disposal.

5.2.3 Landfills

Landfills are regulated by the Regional Board in coordination with the California Integrated Waste Management Board and the Local Oversight Agency (Alameda County and Contra Costa County Health Departments). Of the eleven regulated landfills in the East Bay Plain, only one (West Contra Costa Landfill) is still open and accepting waste. See Section 9.4 and Table 3B for more information on landfills.

5.2.4 Department of Health Services

The Drinking Water Source Assessment and Protection (DWSAP) Program was prepared in response to 1996 amendments to the federal Safe Drinking Water Act (SDWA). These amendments included requirements for states to develop a program to assess sources of drinking water and encourage states to establish drinking water protection programs. The Department of Health Services (DHS) Division of Drinking Water and Environmental Management is the lead agency for development and implementation of the DWSAP Program.

The drinking water source assessment is the first step in developing a complete drinking water source protection program. The assessments enable determinations to be made as to whether a drinking water source may be vulnerable to contamination. Assessments are to be completed between November 1999 and May 2003.

California's DWSAP Program addresses both groundwater and surface water sources, and draws upon EPA guidance, DHS' experience from related programs and advice from advisory committees and the public. The groundwater portion of the DWSAP will serve as the State's wellhead protection program. The surface water components of the DWSAP will be developed using DHS' experience with other activities such as watershed sanitary surveys.

Although DHS is responsible for performing the assessments, some public water systems may wish to perform their own. In such cases, the assessments must be conducted in conformance with DHS procedures.

A copy of the DWSAP can be found on the internet at http://www.dhs.cahwnet.gov.

5.3 Local Agencies (Counties, Cities and Special Districts)

Local oversight differs from county to county and city to city:

(a) Contra Costa County and Cities - sites within the Study Area are overseen by the Regional Board or DTSC, with some assistance from the County Health Services Department.

(b) Alameda County and Cities - involvement varies from city to city.

San Leandro - DTSC, the Alameda County Health Services Department (ACHSD), the Regional Board and the City of San Leandro all assume lead roles for various sites in San Leandro.

Hayward - the Regional Board is usually the lead agency with ACHSD taking the lead on some pesticide-polluted sites. The City of Hayward is the lead agency for most fuel sites in Hayward.

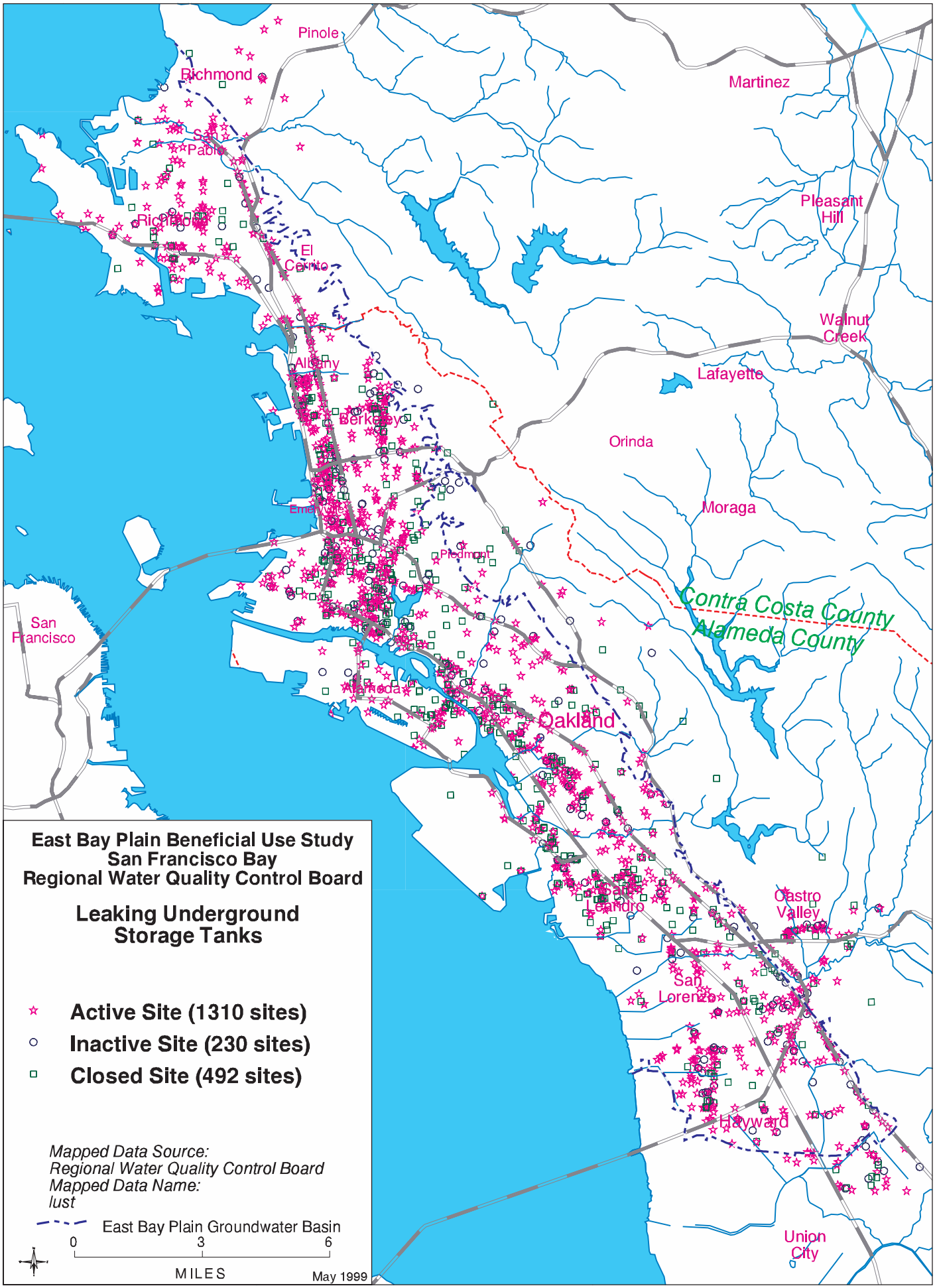
Emeryville and Oakland - the lead is usually a joint effort between the Regional Board and ACHSD, with DTSC taking the lead in several large pollution sites, such as the Cypress Freeway Project.

Berkeley - the City of Berkeley, Planning and Development Department, Toxics Management Division (TMD), oversees the cleanup of pollution sites; the Regional Board provides technical and regulatory support for the agency.

5.3.1 Local Oversight Program (LOP) for Leaking Underground Fuel Tank Sites

The Local Oversight Program (LOP) and the Local Implementing Agencies (LIAs, see below) were formed to oversee the closing of Leaking Underground Fuel Tanks (LUFTs) in the State. As of January 1998, the Regional Board had 1310 sites (see Table 1 and Figure 6). Developed in the late 1980's as a pilot program the LOP was codified in 1990 in Section 25297.1 of Chapter 6.7 of the Health and Safety Code. Under Section 25283 of this Code ("Underground Storage of Hazardous Substances"), counties or local agencies are required to implement the conditions of the chapter as they relate to permitting, inspection, and monitoring of Underground Storage Tanks (USTs). Under the LOP program, the State Water Resources Control Board (SWRCB) contracted with local agencies, including Alameda County, that agreed to oversee the remediation of unauthorized releases of fuels from USTs. The agreement focuses only on fuel USTs, specifically exempting solvent cases, because of Federal and State funding restrictions. The primary source of funding for the program comes from the Federal LUST Grant and the State's UST Cleanup Fund (USTCF). Most costs to a responsible party are reimbursable by the UST Cleanup Fund if the responsible party remains in compliance. USTCF is funded by a 1.2-cent tax per gallon of gasoline sold.

The LOP provides a framework to implement the cleanup of LUFTs and requires that work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Walnut Creek
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Berkeley
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Moraga
Emeryville
Piedmont
Contra Costa County
Alameda County
San Francisco
Alameda
Oakland
San Leandro
Castro Valley
San Lorenzo
Hayward
Union City
East Bay Plain Beneficial Use Study
San Francisco Bay
Regional Water Quality Control Board
Leaking Underground Storage Tanks
Active Site (1310 sites)
Inactive Site (230 sites)
Closed Site (492 sites)
Mapped Data Source:
Regional Water Quality Control Board
Mapped Data Name:
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East Bay Plain Groundwater Basin
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MILES
May 1999

Figure 6

performed under the agreement be consistent with cleanup standards specified by the State and Regional Boards. The Local Agency is encouraged to do its own enforcement. Appeals arising from disputes between the LOP agency and the responsible party are heard by petition at the SWRCB, although some technical disputes may be handled informally by Regional Board staff. Unless a case has been assigned to the Regional Board, the LOP agencies oversee day to day cleanup activities and prepare final closure packages for Regional Board review and concurrence.

Alameda County Environmental Health Services is the only LOP within the East Bay Plain and has jurisdiction over all of Alameda County, except for the areas covered by the three non-LOP agencies described below. In January 1998, the County had 1235 sites.

5.3.2 LIA Programs – Cities of San Leandro, Berkeley, Hayward, and Contra Costa County

Some local agencies chose not to participate in the LOP program and elected instead to implement cleanup oversight authority themselves. These agencies are known as Local Implementing Agencies (LIAs). There are four LIAs in the East Bay Plain: the Cities of Berkeley, Hayward and San Leandro, and Contra Costa County. These agencies do not have enforcement authority, rather the agency or County District Attorney refers cases to the Regional Board. The agency submits its recommendation for closure to the Regional Board (the only agency that can officially close a case) along with a summary checklist. Regional Board staff provides technical guidance, general support, and enforcement, as required. Staff maintains case files, reviews closure recommendations and prepares the final closure letter and transmittal packages.

Berkeley (Toxics Division) currently has 194 cases. Funding sources include hourly fee schedules, permit fees, and work plan review fees.

Hayward (Hayward Fire Department) covers the incorporated part of Hayward and has 256 cases. Alameda County handles cases located in unincorporated areas. Funding sources are the annual permit fees for hazardous materials storage and cost recovery.

San Leandro (Hazardous Materials Division) has 121 cases and is the lead agency for all but one. The Regional Board is the lead agency for the other case. The funding source is reimbursement for direct oversight.

Contra Costa County (Department of Health Services) has 686 LUST cases, which are under the lead of the Regional Board. The funding source is UST Permit Fees and cost recovery in special cases.

5.3.3 Alameda County Flood Control and Water Conservation District (ACFCWCD) was formed in 1949 to address the flood control and water supply problems of the rapidly developing southern and eastern portions of the County. Within its boundaries, ACFCWCD has monitored and protected groundwater since 1955. This includes a continuous program of well measurements and water quality sampling. These boundaries are exclusive of the Alameda County Water District, which is a separate agency.

ACFCWCD collects information on water levels and water quality from 50 private wells in the Alameda County portion of the East Bay Plain (30 for water levels, 20 for quality). Water levels are measured semi-annually, quality biannually, and half of the wells are sampled every other year. The Department of Water Resources (DWR) analyzes the samples for inorganic compounds. The monitoring program does not analyze for synthetic organic chemicals such as solvents or fuel compounds.

The present network (Figure 7) was established by DWR in the 1950's and 1960's to study saltwater intrusion. The data is kept on file with ACFCWCD in both hard copy and computerized form.

On July 17,1973, Alameda County enacted a groundwater protection ordinance, No. 73-68, to regulate the construction of water wells. Permits for well construction or destruction are obtained from the county at no cost. The purpose of the ordinance was to protect the quality of the groundwater from contamination either from surface pollutants or from groundwater sources of lesser quality. The ordinance is administered and enforced by ACFCWCD in the unincorporated areas of the County and in the Cities of Alameda, Albany, Hayward, Oakland, Piedmont, Emeryville, and San Leandro. ACFCWCD has information on over 10,000 wells. These "driller logs" are filed by State well numbers, which are stored on a computer data base (dBASE) linked to a mapping software (MapInfo).

6.0 GEOLOGIC SETTING

The study area has a Mediterranean climate. Most rainfall occurs between November and March. The average annual rainfall across the entire area is 23 inches. The upland watershed area for the East Bay Plain is over 100 square miles along the western slope of the Coast Ranges. The major drainages in the watershed are San Pablo Creek, Wildcat Creek, San Leandro Creek, and San Lorenzo Creek (see Figure 8). In addition, there are thirteen minor creeks within the watershed. This study does not include groundwater in the upland watersheds.

This section describes the geologic setting including structural features and stratigraphic units within the East Bay Plain.

6.1 Previous Investigations

Several reports and investigations exist detailing the stratigraphy and structure of the East Bay Plain. They are the product of extensive field investigations, including geotechnical borings, well borings, and field mapping. Recently other authors have compiled, summarized, and synthesized previous investigations. Muir (1993, 1997) and Figuers (1998) were the primary reports used in the compilation of this section.

6.2 Structural Geology

The East Bay Plain overlies a flank of a broad Franciscan bedrock depression, the core of which is roughly centered under San Francisco Bay (Figuers, 1998). The Hayward Fault and the

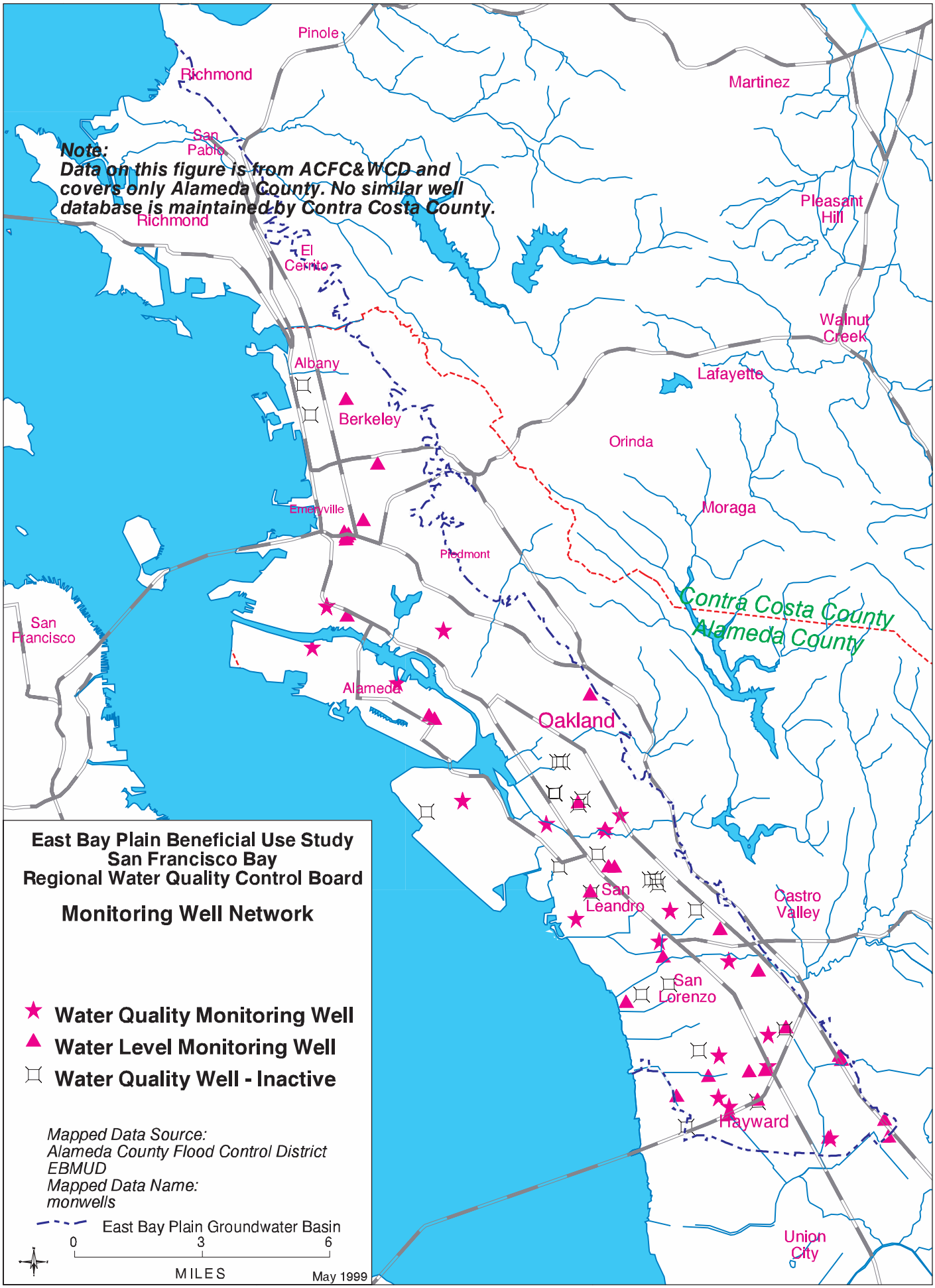

Note:
Data on this figure is from ACFC&WCD and covers only Alameda County. No similar well database is maintained by Contra Costa County.
Pinole
Richmond
Martinez
San Pablo
Richmond
Pleasant Hill
El Cerrito
Walnut Creek
Albany
Lafayette
Berkeley
Orinda
Emeryville
Moraga
Piedmont
Contra Costa County
Alameda County
San Francisco
Alameda
Oakland
San Leandro
Castro Valley
San Lorenzo
Hayward
Union City
East Bay Plain Beneficial Use Study
San Francisco Bay
Regional Water Quality Control Board
Monitoring Well Network
Water Quality Monitoring Well
Water Level Monitoring Well
Water Quality Well - Inactive
Mapped Data Source:
Alameda County Flood Control District
EBMUD
Mapped Data Name:
monwells
East Bay Plain Groundwater Basin
0
3
6
MILES
May 1999

Figure 7

East Bay Plain Beneficial Use Study
San Francisco Bay
Regional Water Quality Control Board
Significant Hydrology
Sub-Watersheds
Significant Waters
Mapped Data Sources
USGS & RWQCB
Mapped Data Name:
sigwats, subwats
East Bay Plain Groundwater Basin
0
3
6
MILES
May 1999
Pinole
Rodeo Creek
Richmond
Pinole Creek
Pinole Creek
Martinez
San Pablo
Wildcat Creek
San Pablo Creek
Wildcat Creek
Richmond
Wildcat Creek
El Cerrito
Briones Reservoir
Pleasant Hill
Suisun Bay
Walnut Creek
Walnut Creek
San Pablo Reservoir
Lake Anza
Albany
Lafayette
Lafayette Lake
Las Trampas Creek
Tice Creek
Berkeley
Orinda
Moraga Valley Creek
Moraga Valley Creek
Moraga
Emeryville
San Leandro Creek
Piedmont
Redwood Creek
San Leandro Reservoir
Kaiser Creek
San Francisco
Alameda
Oakland
Cull Canyon Reservoir
San Leandro Creek
Lake Chabot
San Leandro Creek
San Leandro Creek
Crow Creek
Crow Creek
San Leandro
Castro Valley
San Lorenzo Creek
San Lorenzo Creek
San Lorenzo
Alameda Creek
Hayward
Alameda Creek
Union City

Figure 8

San Andreas Fault form the eastern and western boundaries of the depression. The Hayward Fault is the dominant structural feature in the Plain, trending parallel to the long axis of the East Bay Plain in a northwest direction.

Within the East Bay Plain, Figuers (1998) finds that there are two, separate basins based on the presence of two structural depressions (Figure 10). The San Francisco Basin extends north from the Dumbarton Bridge to the shoreline south of Richmond. There is a well-defined bedrock ridge separating the San Francisco Basin from the San Pablo Basin. The San Pablo Basin extends from Richmond north to the Petaluma area. The Hayward-Rogers Creek fault system crosses the basin, but it is unknown how this fault system has affected the sediments or groundwater flow patterns within the Basin. Figure 11 illustrates the structural contours for the bedrock, and clearly indicates the two basins.

6.3 Major Stratigraphic Units

The geologic units can be divided into two groups: 1) consolidated bedrock of Jurassic, Cretaceous, and Tertiary age and 2) unconsolidated sediments of Pleistocene and Holocene age (Muir, 1993). Recently, the U.S. Geological Survey compiled a surficial geological map of Alameda and Contra Costa Counties (USGS, 1999) (See Figure 9).

Bedrock forms the bottom and eastern boundary of the Basin. The bedrock is structurally complex and includes the Franciscan Complex (melanges, serpentines, and ultramafic rocks) and the Great Valley Sequence (shale, sandstone, and conglomerate). The unconsolidated sediments have a variable thickness, but are up to 1000 feet thick in their deepest areas. The nomenclature applied to the unconsolidated sediments has varied over time. For the purposes of this report, we use the nomenclature from Figuers (1998). From oldest to youngest, the unconsolidated sediments are 1) Santa Clara Formation 2) the Alameda Formation (including Yerba Buena Mud, San Antonio, Merritt, and Young Bay Mud Members 3) Temescal and 4) Artificial Fill (Figure 12).

For discussion purposes, shallow groundwater-bearing units are defined as the units above the Yerba Buena Mud (Artificial Fill, San Antonio/Merritt/Posey Member, and Temescal Formation). Deeper groundwater-bearing units are defined as the units below the Yerba Buena Mud (Unnamed member of the Alameda Formation and Santa Clara Formation).

6.3.1 Santa Clara Formation

This formation name has not been consistently applied to the deep units north of the Santa Clara Valley. This early Pleistocene formation is continental in origin and includes alluvial fans deposits interfingered with lake, swamp, river channel, and flood plain deposits. The formation is between 300 to 600 feet thick. Overall, this formation is very poorly understood. Figuers (1998) reports that this section has only been sampled within the past year or so by Caltrans borings along the San Mateo and Bay Bridges. Historically, municipal well fields were completed in this formation. Its thickness is up to 600 feet. This formation is of interest to EBMUD for their aquifer storage program, so additional stratigraphic information may be forthcoming.

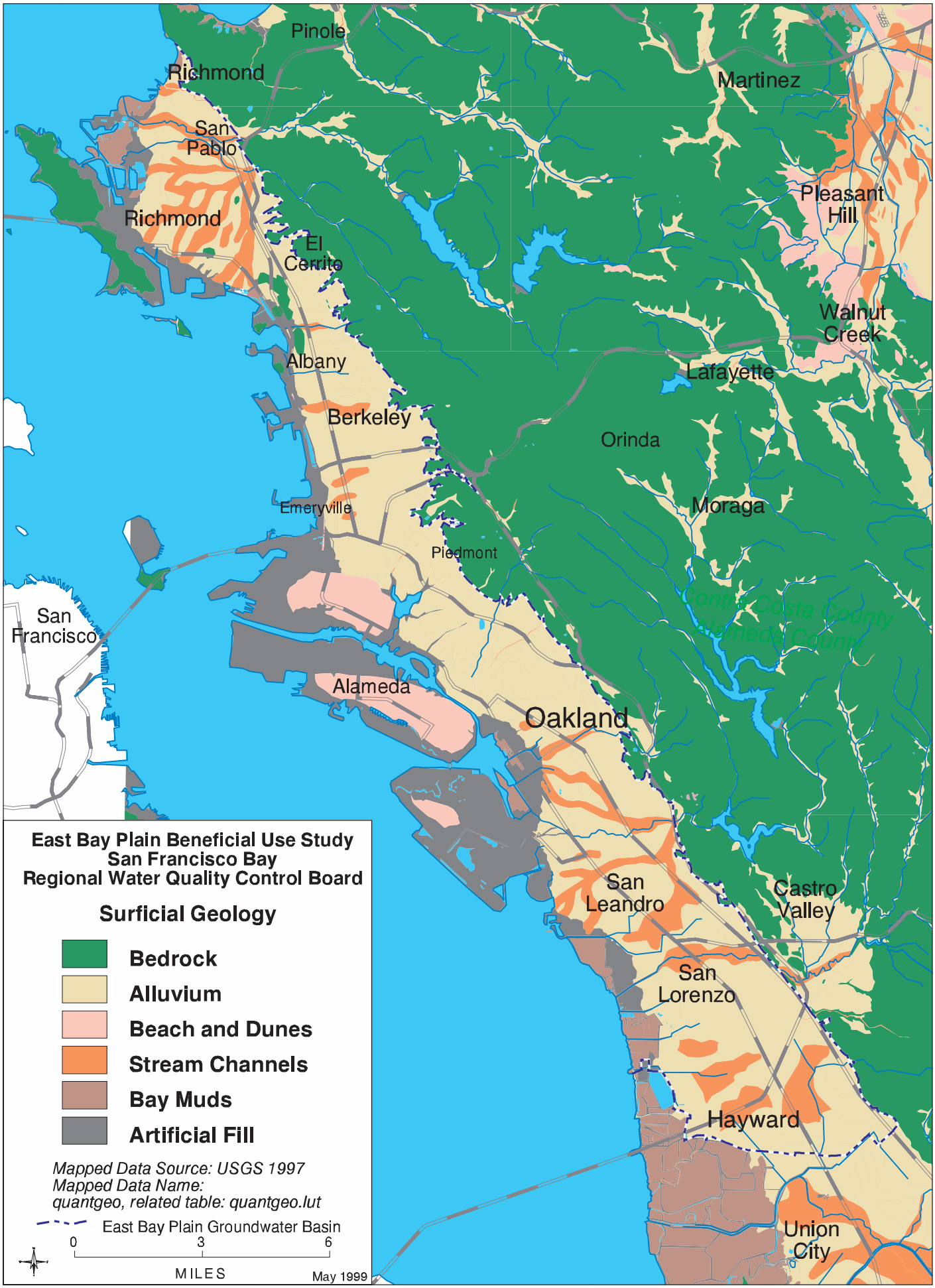
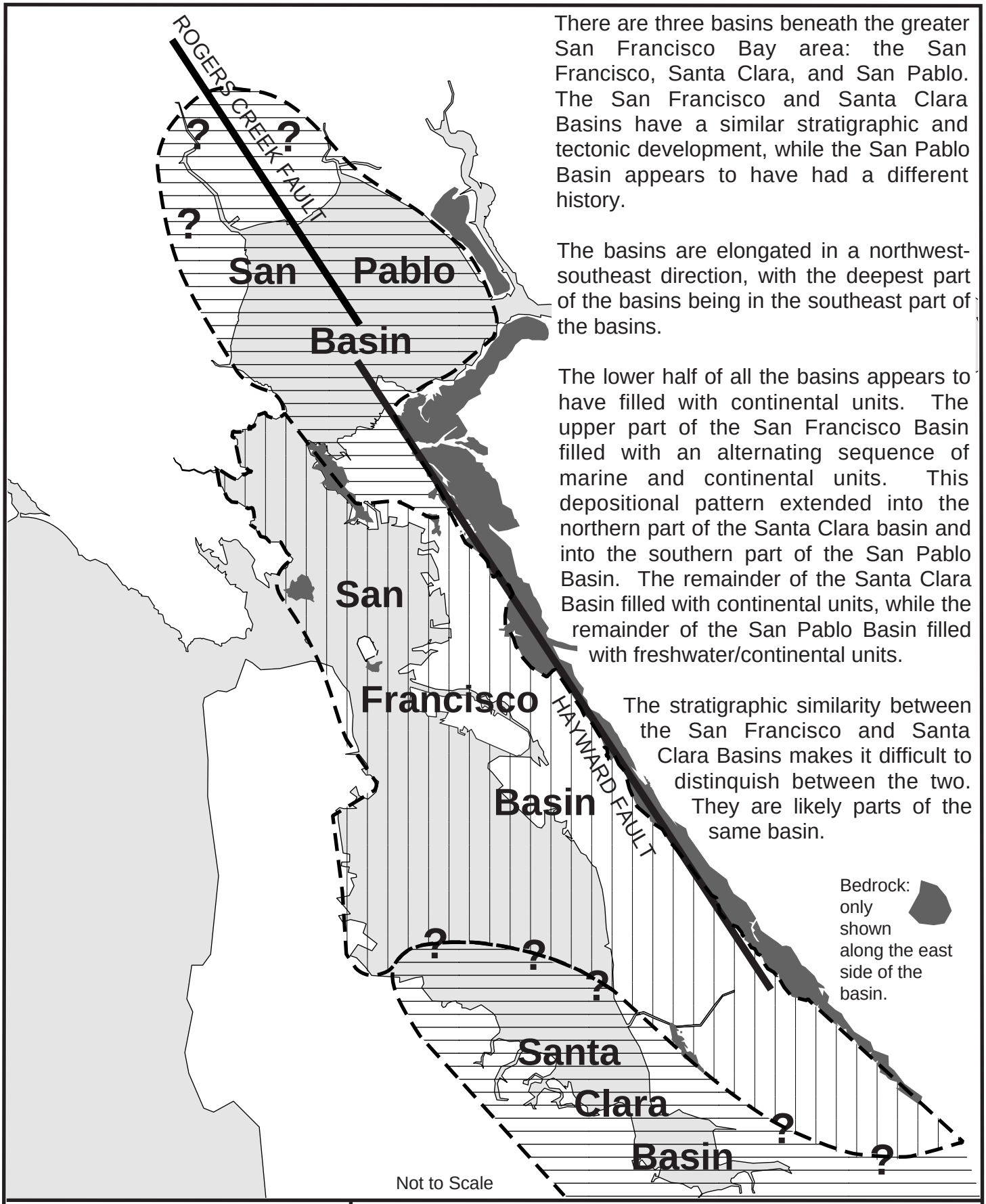

Pinole
Richmond
Martinez
San Pablo
Pleasant Hill
Richmond
El Cerrito
Walnut Creek
Albany
Lafayette
Berkeley
Orinda
Emeryville
Moraga
Piedmont
Contra Costa County
Alameda County
San Francisco
Alameda
Oakland
San Leandro
Castro Valley
San Lorenzo
Hayward
Union City
East Bay Plain Beneficial Use Study
San Francisco Bay
Regional Water Quality Control Board
Surficial Geology
Bedrock
Alluvium
Beach and Dunes
Stream Channels
Bay Muds
Artificial Fill
Mapped Data Source: USGS 1997
Mapped Data Name:
quantgeo, related table: quantgeo.lut
East Bay Plain Groundwater Basin
0
3
6
MILES
May 1999

Figure 9



There are three basins beneath the greater San Francisco Bay area: the San Francisco, Santa Clara, and San Pablo. The San Francisco and Santa Clara Basins have a similar stratigraphic and tectonic development, while the San Pablo Basin appears to have had a different history.

The basins are elongated in a northwest-southeast direction, with the deepest part of the basins being in the southeast part of the basins.

The lower half of all the basins appears to have filled with continental units. The upper part of the San Francisco Basin filled with an alternating sequence of marine and continental units. This depositional pattern extended into the northern part of the Santa Clara basin and into the southern part of the San Pablo Basin. The remainder of the Santa Clara Basin filled with continental units, while the remainder of the San Pablo Basin filled with freshwater/continental units.

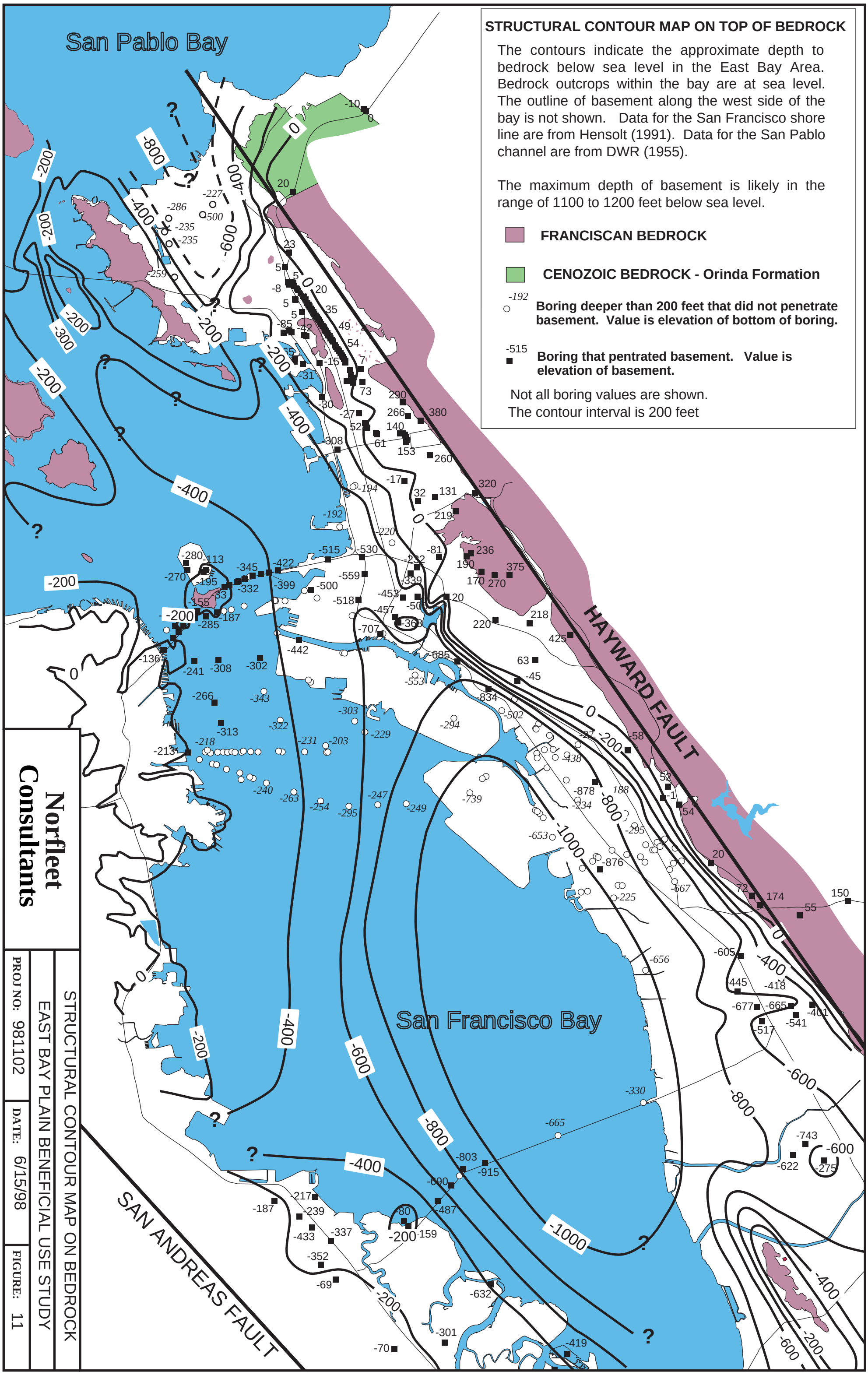
The stratigraphic similarity between the San Francisco and Santa Clara Basins makes it difficult to distinquish between the two. They are likely parts of the same basin.

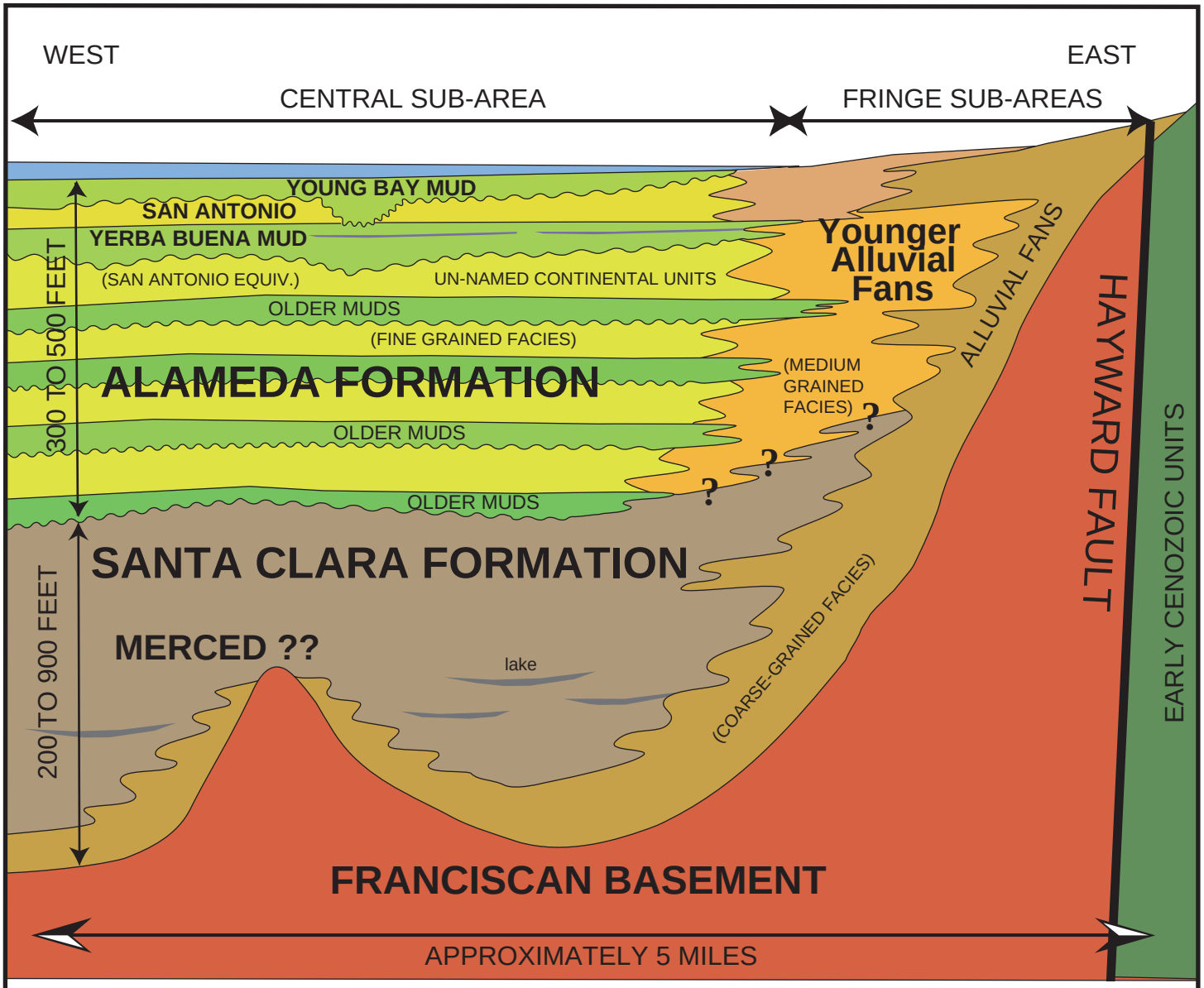
Norfleet Consultants

OUTLINE OF MAIN BASINS

EAST BAY PLAIN BENEFICIAL USE STUDY

PROJ NO: 981102	DATE: 6/15/98	FIGURE: 10


San Pablo Bay
San Francisco Bay
HAYWARD FAULT
SAN ANDREAS FAULT
STRUCTURAL CONTOUR MAP ON TOP OF BEDROCK
The contours indicate the approximate depth to bedrock below sea level in the East Bay Area. Bedrock outcrops within the bay are at sea level. The outline of basement along the west side of the bay is not shown. Data for the San Francisco shore line are from Hensolt (1991). Data for the San Pablo channel are from DWR (1955).
The maximum depth of basement is likely in the range of 1100 to 1200 feet below sea level.
FRANCISCAN BEDROCK
CENOZOIC BEDROCK - Orinda Formation
-192
Boring deeper than 200 feet that did not penetrate basement. Value is elevation of bottom of boring.
-515
Boring that pentrated basement. Value is elevation of basement.
Not all boring values are shown.
The contour interval is 200 feet
Norfleet Consultants
STRUCTURAL CONTOUR MAP ON BEDROCK
EAST BAY PLAIN BENEFICIAL USE STUDY
PROJ NO: 981102
DATE: 6/15/98
FIGURE: 11



Schematic cross-section of stratigraphic relationships along the east side of the San Francisco Basin (15-20:1 vertical exaggeration). The Alameda Formation is restricted to the marine transgression(s) (including the current transgression), and local names (San Antonio, Yerba Buena Mud, etc.) are members within the Alameda Formation. There were six to eight transgressions of the late Pleistocene seas within the Alameda Formation. The upper two are well defined, but little is known about the earlier transgressions.

The units below the Alameda are likely Santa Clara and possibly Merced formation. The units on the side of the basin are Holocene and late Pleistocene alluvial fans and related deposits. The location of the boundary between the Santa Clara and the Younger fans is unknown.

Basement knobs (hills) are scattered throughout the Basin. Some are exposed (e.g. Yerba Buena Island), but the majority are buried. All basement knobs affected sedimentation patterns laterally and vertically. Basement topography is self replicating through time. The current shape of the bay and the location of the major streams and embayments mimic basement topography.

Norfleet Consultants	SCHEMATIC STRATIGRAPHIC SECTION		
	EAST BAY PLAIN BENEFICIAL USE STUDY		
	PROJ NO: 981102	DATE: 6/15/98	FIGURE: 12

6.3.2 Alameda Formation

This formation is differentiated from the underlying Santa Clara Formation by nature of its estuarine origins. The members of this formation include:

Yerba Buena Mud Member: This member, originally named Old Bay Mud, has subsequently been renamed. The black, organic clay averages 25 to 50 feet thick with a gravel/sand/shell layer commonly in the middle of the unit.

San Antonio/Merritt/Posey Member: This 0 to 120 foot thick member contains a sequence of alluvial fan deposits between the Young Bay Mud and the Yerba Buena Mud. Given a discontinuous nature and the wide array of materials found in this member (sands, gravels, and silts) the units are difficult to correlate. A distinctive facies within this member is the Merritt Sand. Found on Alameda Island and western Oakland, this facies is fine grained, well sorted, aeolian sand. It ranges between 0 to 60 feet thick. Figuers (1998) reports that it was deposited at the same time as the upper San Antonio/Posey.

Young Bay Mud: Ranging in thickness from less than 1 foot to 75 feet, this member is a black, organic-rich clay being deposited today in the San Francisco Bay. It contains occasional gravel and sand layer, shell fragments/layers, peat, and organic debris.

6.3.3 Temescal Formation

The Temescal is an early Holocene alluvial deposit that varies from 1 to 50 feet thick, thinning toward the bay. It consists primarily of silts and clays, but near Alameda, the base of the unit is a layer of gravel with cobbles up to 8 inches thick.

6.3.4 Artificial Fill

The fill varies from 1 to 50 feet in thickness and generally thickens toward the Bay. Most of the fill was placed in the bay front and wetland areas. Much of the Oakland and Alameda fill is derived from sediment dredged during the completion of Oakland Inner Harbor. Other common sources of artificial fill include rock from the Leona Heights Quarry, construction and demolition debris, and municipal waste.

7.0 HYDROGEOLOGY

This section describes what is known about the East Bay Plain's hydrogeology including the storage, recharge, and yield amounts.

7.1 East Bay Plain Boundaries

The East Bay Plain is an elongated, northwest trending flat alluvial plain encompassing about 115 square miles (Figure 9). The East Bay Plain, as defined by DWR (1980), is bounded on the west by San Francisco Bay, by San Pablo Bay to the north, and by the Hayward Fault to the east.

The southern boundary is defined as the northern boundary of the Alameda County Water District. Figuers (1998) suggests that the eastern boundary is better defined by the contact with the Franciscan bedrock. He also suggests that the basin extends under San Francisco Bay (Figure 10).

7.2 East Bay Plain Depth

The base of the East Bay Plain is defined at the contact between unconsolidated materials and bedrock. As illustrated on Figure 11 (Depth to Bedrock), this surface is variable across the study area. As described above, Figuers (1998) identifies two main basins, the San Pablo and the San Francisco (Figure 10). There is not as much geologic information to define the depth of San Pablo Basin. Water well depths suggest that the basin is 600 feet or more below ground surface. Moving southerly from Richmond into the San Francisco Basin, the unconsolidated materials thicken to greater than 1,000 feet. The deepest sections of the East Bay Plain are underneath San Francisco Bay. To the east, the East Bay Plain thins out rapidly.

7.3 Sub-Area Hydrogeology

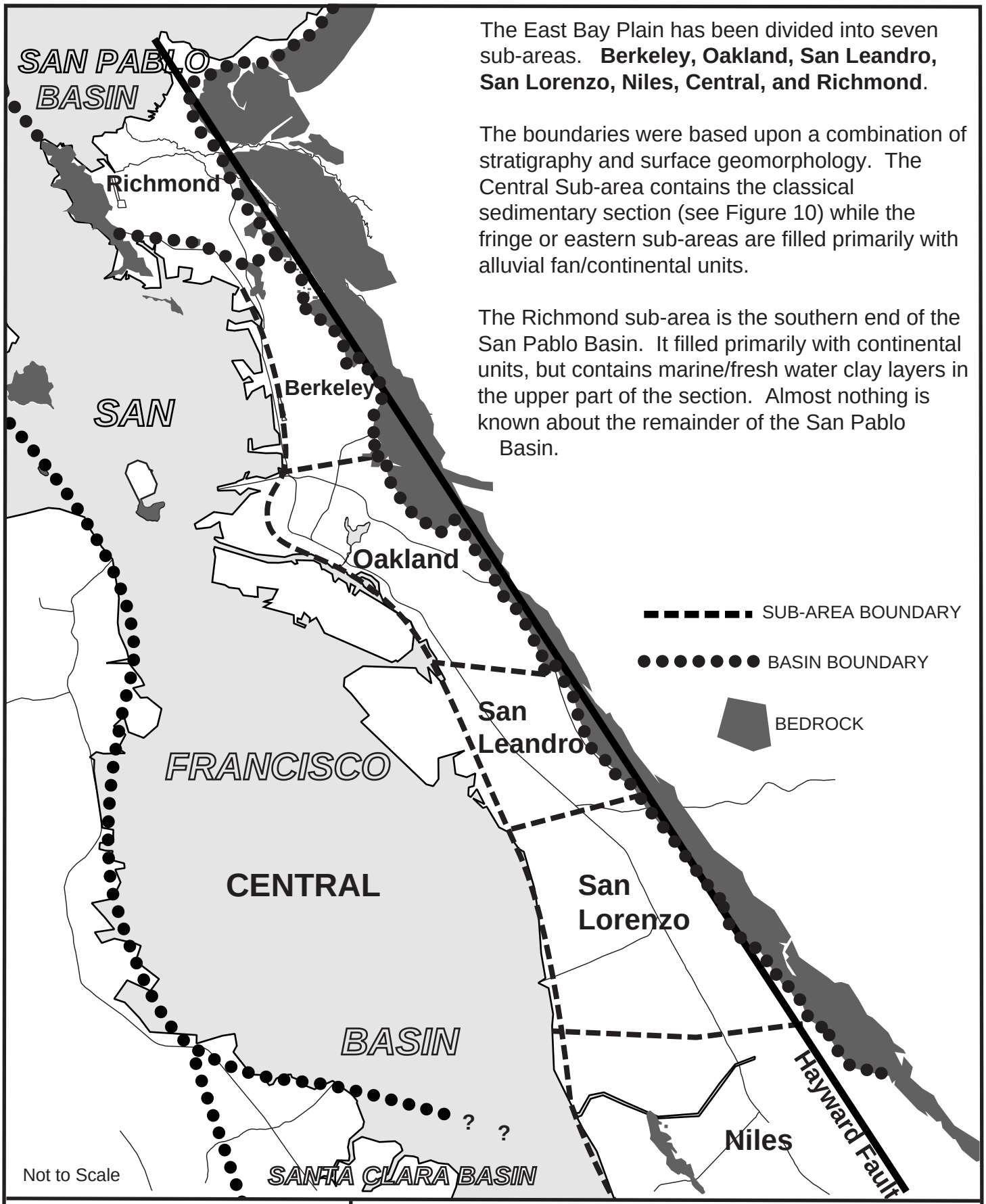
The East Bay Plain is regionally subdivided into two major basins, the San Pablo and the San Francisco Basins. Further subdivisions have been previously reported by Muir (1993). Refinements were recently made by Figuers (1998). Figure 13 illustrates the seven Sub-Areas. Because of the East Bay's reliance of surface water supplies, little data is available to characterize the hydrogeologic characteristics of the Sub-Areas. In recognition of this, the Committee commissioned a comprehensive review of historical groundwater use. The results of this review are reported in Figuers (1998). Sub-Areas have been defined based on geologic, geomorphic and geographic factors. The hydrogeologic characteristics of each Sub-Area can be summarized below.

7.3.1 Richmond Sub-Area is located at the southern end of the San Pablo Basin. It is estimated to contain at least 600 feet of unconsolidated deposits. The deposits are primarily alluvial materials, but there is evidence of estuarine clays between 60 to 125 feet below sea level. These clays and the younger bay muds may be limited in extent. Given what appears to be a lack of widespread clay layers, regionally the shallow and deep water bearing layers can be considered to be interconnected. Historically, there were well fields in this Sub-Area that likely tapped significant gravel deposits that occur 100 to 150 feet below ground surface. The historical wells were only operated for 12 to 16 years before they were shut down due to saltwater intrusion.

7.3.2 Berkeley Sub-Area contains a series of alluvial fans deposited on a west sloping bedrock surface. The alluvial deposits range from 10 to 300 feet deep, averaging 100 to 200 feet deep. There is no historical evidence that groundwater supplies are sufficient for municipal use, primarily due to low recharge rates.

There are no reported clay units that function as major aquitards. However, in the Berkeley Sub-Area the first encountered groundwater is frequently semi-confined, particularly in West Berkeley.

7.3.3 Oakland Sub-Area is similar to the Berkeley Sub-Area in that it contains a sequence of alluvial fans. However, the basement is deeper and the alluvial fill is thicker (300 to



The East Bay Plain has been divided into seven sub-areas. **Berkeley, Oakland, San Leandro, San Lorenzo, Niles, Central, and Richmond**.

The boundaries were based upon a combination of stratigraphy and surface geomorphology. The Central Sub-area contains the classical sedimentary section (see Figure 10) while the fringe or eastern sub-areas are filled primarily with alluvial fan/continental units.

The Richmond sub-area is the southern end of the San Pablo Basin. It filled primarily with continental units, but contains marine/fresh water clay layers in the upper part of the section. Almost nothing is known about the remainder of the San Pablo Basin.

Norfleet Consultants	SUB-AREAS		
	EAST BAY PLAIN BENEFICIAL USE STUDY		
	PROJ NO: 981102	DATE: 6/15/98	FIGURE: 13

700 feet). There are no well-defined aquitards such as the estuarine muds. The largest and deepest wells in this Sub-Area historically pumped 1 to 2 million gallons per day at a depth greater than 200 feet. Upland areas historically had shown little groundwater potential beyond single family use. Overall, sustainable yields are low due to low recharge potential. The Merritt Sand outcrop in west Oakland was an important part of the early water supply for Oakland. It is shallow (up to 60 feet) and before the turn of the century, septic systems contaminated the water supply wells. Other high production wells were located from the southwestern side of Alameda to the Oakland Coliseum. The wells tapped gravels below the Yerba Buena Mud. EBMUD has drilled a test well near San Leandro Bay in the Oakland Sub-Area to explore the potential for aquifer storage of injected surface water.

7.3.4 San Lorenzo and San Leandro Sub-Areas are very similar in hydrogeologic characteristics, but can be separated based the surface trace of the junction between the San Leandro and San Lorenzo alluvial fans. The Sub-Areas are primarily filled with alluvial fans, but unlike the Sub-Areas to the north, the Yerba Buena Mud extends west into the San Lorenzo and San Leandro Sub-Areas. It has been proposed that a clay layer forms an extensive east-west aquitard across this basin. Historically there were municipal supply wells in these Sub-Areas that produced from upper Alameda gravels. These Sub-Areas were distinct from the Niles Cone basin to the south, in that the alluvial fans are finer-grained and produce less groundwater. The City of Hayward has emergency supply wells in the San Lorenzo Sub-Area. Also, EBMUD has drilled test wells in the San Lorenzo Sub-Area to explore the potential for aquifer storage of injected surface water.

7.3.5 Central Sub-Area extends beneath San Francisco Bay. The boundaries of the Sub-Area are based on the Young Bay Mud. The Young Bay Mud has a sharp “edge” in some areas, and in other areas, the boundary is less well-defined. Alameda and Bay Farm Islands are located along the northeastern edge of the Sub-Area. Historically there were artesian wells in the Sub-Area that produced from gravels below the Yerba Buena Mud, but saltwater intrusion shut down these wells. Single family residences historically relied on the Merritt Sand for water supply. However, contamination from septic systems and some saltwater intrusion resulted in localized contamination. More recently, deep wells (700 to 1000 feet deep) were drilled at the Alameda City Golf Course. Production rates were lower than expected but this is believed due to drilling problems. Water quality was satisfactory for irrigation.

7.4 Groundwater Flow Direction

Throughout most of the Alameda County portion of the East Bay Plain, Hayward north to Albany, water level contours show that the direction of groundwater flow is east to west, or from the Hayward Fault to San Francisco Bay. Groundwater flow direction generally correlates to topography. Flow direction and velocity are also influenced by buried stream channels that typically are oriented in an east-west direction. In the very southern end of the study area, in the San Lorenzo Sub-Area, the direction of flow may not be this simple. The small set of water level measurements available seem to show that the groundwater in the upper aquifers may be flowing south, with the deeper aquifers, the Alameda Formation, moving north (Muir, 1996).

In the northern portion of the Richmond Sub-Area, investigations showed flow in the San Antonio Aquifer to be toward San Pablo Bay. In the southern portion of the Richmond Basin, groundwater flows south between both the Hayward and San Pablo Faults to San Francisco Bay (EBMUD, 1986). In the Richmond Sub-Area, the EBMUD report used an average field measured transmissivity value at Richmond UC Field Station wells of about 4000 gallons per day per foot, and a hydraulic gradient of 0.003 to calculate a volume flow rate south to San Francisco Bay on the order of 135 acre-feet per year.

7.5 Groundwater Storage

DWR (1994) examined over 350 wells in Alameda County to evaluate the storage capacity in the Alameda County portion of the East Bay Plain. The study area consisted of the area north of Hayward, (about 114 square miles). DWR estimates: 1) total groundwater storage capacity of the East Bay Plain, 2) amount of storage in the East Bay Plain, and 3) usable storage in the East Bay Plain. Potential storage beneath San Francisco Bay was not considered.

DWR examined the thickness and equivalent specific yield of the various sediment types within 50-foot horizontal sections of the study area to approximate the three above properties. The estimated storage capacity of the study area is approximately 2,670,000 acre-feet. Of this amount, roughly 2,560,000 acre-feet of groundwater is currently stored. This is the total current storage in the Plain, as not all of the aquifers are 100 % saturated.

The storage for the Richmond sub-basin has not been quantitatively evaluated, but is assumed to be much lower than the storage for Alameda County, given the much smaller area and thinner section of unconsolidated sediments (EBMUD, 1986).

7.6 Recharge and Discharge Estimates

Muir (1993) summarized the different types and overall amounts of recharge for the Alameda County portion of the East Bay Plain. The study area comprised approximately 114 square miles between Albany and Hayward, and the Bay and the Hayward Fault. Sources of recharge were: rainfall infiltration, stream seepage, pipe leakage, agriculture return water, and subsurface inflow. Rainfall infiltration was defined as the rainfall left over after surface runoff and evapotranspiration that percolates through the soil strata and recharges the groundwater reservoir. The report evaluated the recharge potential of various sub-basins, rainfall data, and evapotranspiration data to determine the amount of rainfall that recharges groundwater. It looked at the unlined length of streams, the streambed recharge potential, stream gradients, and stream area to determine the potential seepage rates for each stream in cubic feet per day. These rates were multiplied by the average time per year in which there would be flow and summed to total the amount of stream seepage. Muir then analyzed EBMUD's water meter readings to determine the annual water loss from water supply lines in the area. For loss from sewer pipes, he used discharge records of four sewer treatment plants that serve the East Bay, and the records of potable water usage for the same study area. Agricultural return runoff and subsurface inflow were assumed to be small.

Based on the above considerations, Muir broke down recharge accordingly:

Table 2. Groundwater Recharge in the East Bay Plain (Alameda County Portion Only)

Recharge Sources	Recharge (Acre-feet per Year)
Rainfall Infiltration	3,700
Stream Seepage	6,200
Sewer Pipe Leakage	4,500
Water Pipe Leakage	5,400
Agriculture Return Water	200
Subsurface Inflow	200
Total	20,200

The Richmond Sub-Area recharge was assumed to be much lower than the above figure, due to dense urbanization in Richmond and San Pablo (EBMUD, 1986).

In another Muir study, "Groundwater Discharge in the East Bay Plain Area, Alameda County" (July, 1996), he approximated the outflow, or discharge, in the study area. This was the same area used to calculate recharge. Muir identified evapotranspiration and subsurface discharge as the two natural forms of discharge and pumpage as the means of artificial discharge. The report determined evapotranspiration by using long term climatic data from the East Bay Plain and correlating this data with evapotranspiration studies made in comparable areas of California and calculated a total of 25,780 acre-feet for 1995. This is equivalent to about 8 inches a year, or about 38 percent of the annual rainfall of the area. Evapotranspiration, although an important discharge element in the overall hydrologic budget, does not remove groundwater from aquifer storage. In other words, this is rainfall that evapotranspires before it enters the subsurface aquifer. The report next assumed that most of the subsurface discharge occurred at the Bay margins. To determine subsurface discharge, Muir examined the thickness of unconsolidated deposits at the Bay margins for various sub basins, the width of the sub basins, and the amount of saturation. Muir concluded a subsurface discharge of 13,500 acre-feet for 1995. Finally, the report determined groundwater pumpage for agricultural, domestic and industrial uses. The total for 1995 was approximately 3,350 acre-feet per year.

7.7 Groundwater Basin Yield

The yield of the East Bay Plain is the rate at which water can be withdrawn annually, without decreasing groundwater in storage to the point where the intrusion of saltwater from San Francisco Bay would occur. It is related to the groundwater storage of the East Bay Plain. Storage can be depleted by pumping until water levels near the Bay are drawn down to near sea level. When this occurs, the average annual pumpage should not exceed a quantity equal to the long-term average inflow to the reservoir minus the quantity of subsurface discharge that must flow to the Bay annually to maintain a barrier against saltwater intrusion. This would be the groundwater yield of the East Bay Plain Area (Muir, 1993). Muir (1996) estimated that the groundwater safe yield for the Alameda County portion of the East Bay Plain at 10,000 acre-feet/year based on 1965 to 1995 data

for rainfall from Niles and Berkeley, hydrographs of selected wells, and the historical water use..

8.0 GROUNDWATER QUALITY

This Section summarizes the findings presented in the Alameda County Flood Control and Water Conservation District report titled "Groundwater Quality of the East Bay Plain, Alameda County California" authored by Kenneth Muir in December 1997, and presents a survey of Total Dissolved Solids (TDS) concentration data collected from 15 sites along the East Bay Plain shoreline.

The Committee recognizes that a complete groundwater quality assessment of the East Bay Plain would identify and evaluate the past and present groundwater chemistry facies specific to each groundwater aquifer. From a regulatory perspective, the single most important groundwater quality parameter directly influencing a beneficial use determination is the TDS concentration. Resolution 89-39, Sources of Drinking Water, exempts the Municipal and Domestic Supply Beneficial Use designation for groundwaters with TDS concentrations greater than 3,000 mg/l and are not reasonably expected by the Regional Board to supply a public water system (note that USEPA uses the 10,000 mg/l TDS value in determining potential drinking water sources). This section includes a review of the available inorganic data and an evaluation of TDS groundwater values along the East Bay shoreline.

8.1 East Bay Plain Inorganic Groundwater Quality

Muir (1997) prepared a study of inorganic groundwater quality of the East Bay Plain. His study area extents from Albany in the north to Hayward in the south and is bounded by the Hayward Fault in the east and the bay shoreline in the west. He identified seven Sub-Areas within the East Bay Plain but limited his study to five Sub-Areas: the Berkeley Alluvial Plain, the Merritt Sand Outcrop, the Oakland Upland and alluvial Plain, the San Leandro Cone, and the San Lorenzo Cone. He divided the aquifer system into two depth zones: Shallow Zone aquifers (0 to 200 feet) and Deep Zone aquifers (200 to 1,000 feet). The inorganic water quality data was collected from 16 shallow zone wells and 13 deep zone wells.

The Shallow Zone groundwater is generally a calcium-bicarbonate type of water. TDS concentrations in the 16 wells assessed by Muir ranged from 364 to 1,020 mg/l. Along the Oakland Inner Harbor and adjacent to the Bay, Shallow Zone deposits appear to be in contact with saltwater, as indicated by the magnesium-sodium-chloride type waters found in these areas.

The Deep Zone groundwater is generally a sodium-bicarbonate type water. TDS concentrations in 13 Deep Zone wells ranged from 313 to 1,420 mg/l. Water from two Deep Zone wells in the Oakland alluvial plain were classified as sodium-chloride type water. Water in the northern part of the San Leandro Cone was the only water in those areas studied with a calcium-chloride type water. Water from this area also had the highest TDS, with values exceeding 1,300 mg/l in the three wells studied. TDS concentrations exceeded the secondary Maximum Contaminant Level (MCL) of 500 mg/l in 15 of the 29 wells.

Based on historic data (1940-1970), nitrate concentrations have exceeded the MCL of 45 mg/l in many Shallow Zone wells, though few currently exceed the standard. Nitrate concentrations in deep wells historically have been low.

Historically, saltwater intrusion has occurred in portions of deeper aquifers as a result of large scale historic pumping prior to 1930 (Figuers, 1998). Saltwater intrusion occurred at the High Street Well Field in Alameda, San Pablo Well Fields No. 1 and No. 2 in Richmond and the Fitchburg Well Field in Oakland.

8.2 East Bay Plain Shoreline Total Dissolved Solids Concentrations

The Committee surveyed 15 facilities along the East Bay Plain shoreline for shallow groundwater chemistry data. Appendix E provides a groundwater chemistry data summary table for each site surveyed. A total of 399 data points are reported, where the concentrations of TDS ranged from 24 to 55,333 mg/l. TDS values were both measured analytically and calculated from conductivity measurements. All groundwater data was collected from groundwater monitoring wells screened in the shallow units, primarily from 10 to 60 feet below ground surface.

Several other studies have been performed to determine tidal influence. Work at Oakland Army Base (Draft Base-wide Hydrogeologic Study, 1998) showed that the effects of San Francisco Bay on facility groundwater were seen up to 600 feet from the Bay margins. The study focused on the artificial fill and Merritt Sand aquifers. Hydrogeologic studies at Alameda Point indicate that tidal influence is up to 1500 feet inland and that saltwater intrusion has occurred up to 250 feet inland within the artificial fill and 1500 feet inland within the unconfined Merritt Sand. In their groundwater storage feasibility study in the Roberts Landing area of Hayward, EBMUD observed a pressure variation in their wells due to tidal influence. This included wells screened in the deeper Alameda Formation.

The landward extent of saltwater intrusion in shallow aquifers along the East Bay Plain appears related to the anthropogenic deposition of the overlying sediment, the connectivity of an aquifer to the San Francisco Bay, the amount of fresh water recharge, the hydraulic isolation of the aquifer, and any active landward pumping of groundwater. Existing saltwater intrusion is limited and correlates with shallow aquifers contained in artificial fill and hydraulically isolated aquifers (e.g., Merritt Sand) in direct contact with the Bay. In the north, the deeper fresh water aquifer systems (e.g., Alameda Formation) appear to be hydraulically isolated from the shallow aquifer systems along the East Bay Plain margin by the Yerba Buena Mud. However, in the southern portion, the water quality values in the San Leandro and San Lorenzo Sub-Areas indicate probable vertical migration from the Shallow Zone to the Deep Zone aquifer (Muir, 1997).

9.0 GROUNDWATER CONTAMINATION

9.1 Fuels and Solvents

Some shallow groundwater has been impacted by historical and current releases of fuels and solvents. A review of case files from the Regional Board, Department of Toxic Substances Control, Alameda County, City of Berkeley, and City of San Leandro reveal that, as of January 1998, there were a total of 1310 active leaking underground fuel tanks and 130 non-fuel cases (typically solvents) in the East Bay Plain. These totals do not include the numerous groundwater pollution sites at former DoD facilities in the East Bay Plain.

A map showing the location of groundwater plumes longer than 1000 feet is shown on Figure 14 and the following table summarizes information about each plume.

Table 3A. Major Areas of Existing Groundwater Pollution in the East Bay Plain

Site Name	Location	Chemicals	Boundary	Date	Lead Agency
Thermofustion	Hayward	VOCs	10 ppb	6/6/97	RWQCB
CHEMCentral	Hayward	VOCs	100 ppb	12/19/96	RWQCB
DWA Plume	San Leandro	VOCs	Above MCL's	Dec-95	DTSC
Caterpillar Facility	San Leandro	PCE/TCE	5 ppb	Feb-97	DTSC
Kaiser Aerotech	San Leandro	1,2-DCE	100 ppb	Nov-96	San Leandro
1964 Williams St.	San Leandro	TCE	10 ppb	11/7/96	RWQCB
Site 4, Alameda Point Navy Base	City of Alameda	TCE	1 ppb	1998	DTSC
Site 5, Alameda Point Navy Base	City of Alameda	TCE	1 ppb	1998	DTSC
Lawrence Berkeley	Berkeley	Diesel, Tritium	Detection Limit	1997	DTSC
WRE/ColorTech	Berkeley	Chromium	Detection Limit	1998	TMD
GE site	Oakland	TCE	10 ppb	1998	DTSC
Santa Fe Railway	Richmond	Petroleum Hydrocarbons	Detection Limit	1993	RWQCB
Chevron Refinery	Richmond	Petroleum Hydrocarbons	Detection Limit	1997	RWQCB

Ambient monitoring data on common organic pollutants within the deeper groundwater (i.e., deeper than about 100 feet) is very limited. Based on this limited data, the overall water quality of the deeper in the East Bay Plain is good. Much more data is available on the water quality of shallow groundwater (i.e., less than about 100 feet). Some shallow groundwater has been impacted by historical and current releases of fuels and solvents.

Groundwater pollution in the East Bay Plain appears to generally be restricted to portions of the shallow aquifers. Typically, site investigations require that groundwater plumes be defined in both the lateral and vertical dimension. In almost all cases, groundwater pollution appears limited to less than 50 feet below the ground surface.

However, recently one of EBMUD's aquifer storage test wells detected contamination at a depth of over 200 feet below ground surface. Volatile organic compounds were detected in a test well located west of Interstate 880 about one mile north of the Oakland Coliseum. TCE was

detected in the test well at 50-70 ppb that was screened between 260 and 350 feet below ground surface. Prior to this detection, no pollution had ever been detected above trace levels at depths greater than 140 feet. The source and migration pathway for the TCE contamination is currently under investigation by DTSC.

Although the source of the deep groundwater contamination has not been defined, it may illustrate the potential for connection between the shallow deposits and deeper aquifers. Moreover, given that there are very few existing wells pumping from the deeper aquifer, and the numerous historical wells in the East Bay Plain that could be vertical conduits, if the number of wells pumping from the deeper aquifer increases, there is a potential that shallow pollution could be drawn down into the deeper aquifers.

Water quality testing data for common organic pollutants in the East Bay Plain is very limited. In October 1997, eight water supply wells were sampled and tested for volatile organic compounds, metals and inorganic parameters in a joint project between ACFCWCD, EBMUD and the Regional Board. Two of the wells showed trace levels of carbon tetrachloride, chloroform, methylene chloride, naphthalene, and trichloroethene. However, the results are considered suspect because these two wells were not fully functional when the water samples were taken. Confirmation sampling is recommended when these wells are repaired. The contaminants may be related to residual chemicals used to lubricate the pumps in the wells. No volatile organic compounds were detected in the other six wells (see Appendix E).

Nearly all of the 32 active Regional Board SLIC Sites have volatile organic compounds (VOCs) in groundwater. Generally, VOC groundwater pollution has been regulated less aggressively in the East Bay Plain because the basin is not used as a current municipal source of drinking water. At a minimum, source control, plume delineation and long-term monitoring is typically required. A number of sites have also implemented soil vapor extraction and groundwater pump-and-treat systems.

9.2 Fuel Pipelines

Potential impacts to groundwater resources from leaking or ruptured fuel pipelines are recognized as significant areas of concern, especially in the seismically active East Bay Plain. Development of a GIS pipeline database is being performed by the State Fire Marshal's Office. This information, when completed, should be made available to stakeholders in the East Bay Plain.

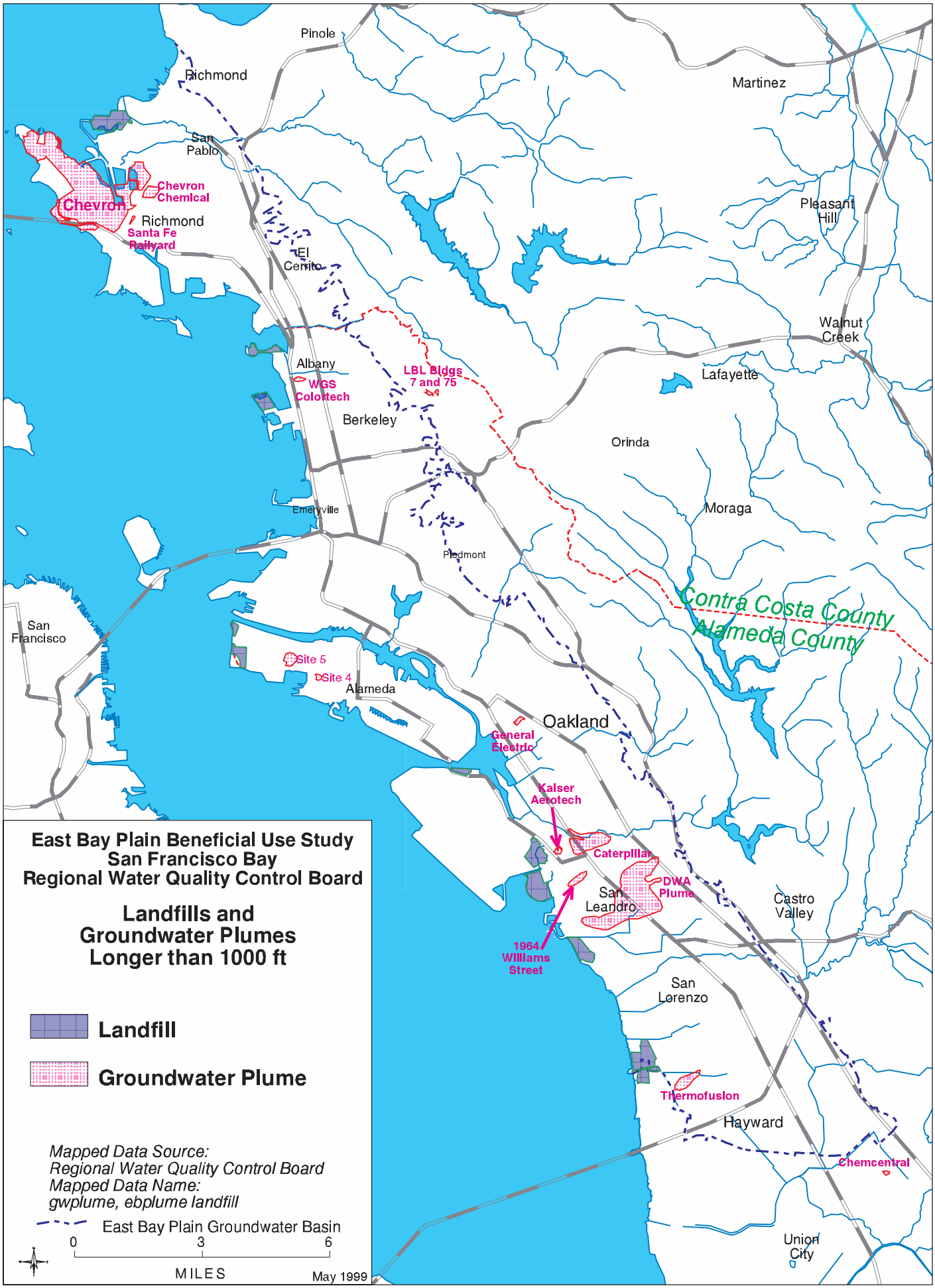

East Bay Plain Beneficial Use Study
San Francisco Bay
Regional Water Quality Control Board
Landfills and
Groundwater Plumes
Longer than 1000 ft
Landfill
Groundwater Plume
Mapped Data Source:
Regional Water Quality Control Board
Mapped Data Name:
gwplume, ebplume landfill
East Bay Plain Groundwater Basin
0
3
6
MILES
May 1999
Pinole
Richmond
Martinez
San Pablo
Chevron
Chevron Chemical
Richmond Santa Fe Railyard
El Cerrito
Pleasant Hill
Walnut Creek
Albany
WGS Colortech
LBL Bldgs 7 and 75
Lafayette
Berkeley
Orinda
Emeryville
Moraga
Piedmont
Contra Costa County
Alameda County
San Francisco
Site 5
Site 4
Alameda
Oakland
General Electric
Kaiser Aerotech
Caterpillar
DWA Plume
San Leandro
Castro Valley
1964 Williams Street
San Lorenzo
Thermofusion
Hayward
Chemcentral
Union City

Figure 14

9.3 Vertical Conduits

Improperly abandoned wells (vertical conduits) are included in this section on Groundwater Pollution Sources. While vertical conduits are not "pollution sources" in the conventional sense, they can provide a potential pathway for contamination to migrate from shallow to deeper aquifers.

In the East Bay Plain, it is likely that numerous historical wells drilled prior to the importing of Sierra water are potential vertical conduits. J.H. Dockweiler (1912) provided a detailed snapshot of water supply and usage in the East Bay area in the fall of 1911 and identified a total of 3,573 wells. Of these wells, only 1,930 had data on well depth. In the study area overall, about 8% of the wells with depth data had a total depth of 200 feet or deeper. About 30% of the wells with depth data were 100 feet deep or more (see Section 12.1 for additional discussion)

The Yerba Buena Mud forms a major aquitard between the shallow and deep aquifers throughout much of the southwest portion of the East Bay Plain. However, the integrity of the aquitard may be locally compromised due to the drilling of wells in the 1890-1930 time frame. In Oakland, it is estimated that there are over 200 wells that penetrated the Yerba Buena Mud. It is surmised that virtually none of these wells was properly destroyed. In the remaining portions of the East Bay Plain, the Yerba Buena Mud is not present and no other major aquitards separate the shallow and deep aquifers.

One exception is the area along the extreme western East Bay Plain shoreline, south of the Bay Bridge, where artificial fill was placed after 1930. In this area, the Yerba Buena Mud is considered continuous and should form a natural barrier to minimize the downward spread of pollution.

9.4 Landfills

A total of about 1150 acres of bay-front wetlands were used for municipal waste disposal (see Figure 14). The landfills were constructed using earthen levees and filling the interiors with waste. Fill elevations range from approximately 20 to 150 feet above sea level. Most of the landfills are unlined and were built directly over Young Bay Mud. Typically, groundwater gradients are upward into the waste fill due to the weight of the overlying waste pile. The most significant water quality issue at these landfills is seepage of leachate from the base of the fill directly into San Francisco Bay. Minor low level VOC groundwater pollution is present at most of the landfills. Nearly all of the landfills are closed and capped and several have leachate extraction systems in place. The following table summarizes landfill data in the East Bay Plain.

Table 3B. Summary of Regulated Landfills in the East Bay Plain Groundwater Basin

Landfill Name and Regional Board Order No.	City	Years Operated	Acres	Water Quality Issues
Alameda Naval Air Station Landfill No. 93-129	Alameda	30-40 years until 4/93	Two landfills (12 and 110 acres respectively)	Primarily surface water issues.
Alameda City Doolittle Landfill No. 95-189	Alameda	1953-1985	40	No leachate detected below or off-site.
Albany Landfill	Albany	1963-83	75	Primarily surface water issue.
Berkeley Landfill No. 86-041	Berkeley	Approx. 1900-1985	90	Low levels of metals in groundwater and leachate within landfill footprint.
Oyster Bay/Davis Street Landfill	San Leandro	1942-1980	247	Shallow groundwater pollution. Leachate extraction planned to contain seeps.
Galbraith Landfill No. 94-187	Oakland	1930's-1960's	110	Fuels in shallow groundwater. Perimeter slurry wall installed. Currently used for dredged sediment disposal by Port of Oakland.
Oakland Scavenger Construction Debris Landfill, North Field, Oakland Airport	Oakland	1957-1960	21	
Tony Lema No. 95-129	San Leandro	1958-1977		Landfill gas found in groundwater wells in 1993.
West Contra Costa Landfill No. 96-079	Richmond	1953 – 1999	188	Fuels and VOCs in shallow groundwater. Slurry wall and leachate extraction system in place.
Winton Avenue Landfill	Hayward		approx. 200	Primarily surface water issues.
West Winton Landfill No. 95-088	Hayward	1938-1974	57	Seepage to surface water controlled by leachate extraction.

In addition to the regulated landfills discussed above, about 17,000 acres (26 sq. mi.) of bay-front wetlands and mudflats along the western edge of the East Bay Plain were filled with dredged material, construction debris, rock from various quarries, and other unknown sources. These fills were not previously regulated, but are now becoming an issue for regulatory review as the land use changes (e.g., Alameda Naval Air Station, the East Bay Shoreline State Park, and the Port of Oakland).

9.5 Department of Defense Sites

This subsection provides a summary of activities and releases to groundwater at four DoD facilities in the East Bay Plain: Naval Fuel Depot Point Molate, Fleet Industrial Supply Center Oakland (FISCO), Alameda Annex, and Alameda Point.

9.5.1 Naval Fuel Depot Point Molate

Naval Fuel Depot (NFD) Point Molate is located in the Potrero Hills along the northeastern shore of San Francisco Bay on the San Pablo Peninsula. Bulk fuel storage was provided at NFD Point Molate from 1943 until fuel transfer and storage ceased in May 1995. Several different fuels and wastewater have been stored in the 24 fuel tanks at the facility including Navy special fuel oil, marine diesel fuel, jet propellant (JP)-5, motor gasoline, mixed fuels, oil reclamation, lube and turbine oil, JP-8, ballast, wastewater, and sludge. Currently, four active Investigation Remediation (IR) sites are located at NFD Point Molate with three sites releasing contaminants to groundwater. Releases to groundwater include (1) oil, fuel, and sludge from leaking tanks, pipelines, and valve boxes, and (2) contaminated fuels, tank bottom sludges, and Bunker fuel from a former sump pond. Total petroleum hydrocarbons (primarily JP-5), PAHs, BTEX, and VOCs were the most commonly detected contaminants in groundwater. Five fuel-related and three chlorinated VOC-related plumes exist at NFD Point Molate. The fuel-related plumes range from approximately 50 feet in width by 75 feet in length up to 440 feet in width by 1750 feet in length and extend to the bottom of the artificial fill, approximately 22 feet below ground surface. The chlorinated VOC-related plumes range from approximately 50 feet by 50 feet up to 50 feet in width by 125 feet in length and also extend to the bottom of the artificial fill.

The Navy will be investigating the soil and groundwater around the large Underground Storage Tanks (USTs) and underground fuel pipelines in future investigations. There is the potential that other fuel plumes occur in the hillsides or near the shoreline due to previous spills from the USTs and fuel pipelines. The Navy is investigating approximately 20 two-million gallon USTs and approximately 20 miles of underground fuel pipeline, analyzing the soil and groundwater for TPH, VOCs, and SVOCs. Groundwater flow in the vicinity of NFD Point Molate is west to southwest, generally toward San Francisco Bay. The majority of the shallow groundwater at NFD Point Molate contains concentrations of total dissolved solids (TDS) below 3,000 mg/l. (Draft Final Evaluation of Beneficial Uses for Groundwater for NFD Point Molate, June 26, 1998, Table 1) The only portion of the facility that has shallow groundwater with a high TDS (up to 27,000 mg/l) is a portion of the shoreline. While the shallow aquifers are generally capable of maintaining a sustained yield of 200 gallons per day near the bay margin, pumping induced intrusion of saltwater would further degrade water quality. An extraction trench has been installed along the shoreline to capture floating fuel and remove contaminated groundwater for treatment.

9.5.2 Fleet Industrial Supply Center Oakland

Fleet Industrial Supply Center Oakland (FISCO) is located in Oakland just south of the San Francisco-Oakland Bay Bridge, and within the Port of Oakland. FISCO was commissioned in 1941 as the principal supply facility supporting DoD activities in the Pacific Basin and was the Navy's largest west coast supply point. Currently, ten active Investigation Remediation sites are located at FISCO with eight sites releasing contaminants to groundwater. Releases to groundwater include (1) leaking fluids from a scrapyard and storage area, (2) disposal of waste materials (lubricants, solvents, paints), (3) leaking sumps and waste oil USTs, (4) spills from redrumming and overpacking operations, (5) discharges from a wash rack, and (6) spills due to poor drum handling and slow leaks from older drums. Chlorinated VOCs, BTEX, SVOCs, and TPH were the most

commonly detected contaminants in groundwater. No fuel-related plumes exist at FISCO. One chlorinated VOC-related plume exists at FISCO and is approximately 350 feet long and 260 feet wide and extends to 12 feet bgs. The VOC contaminant plume is located within the artificial fill hydrostratigraphic unit. Groundwater flow in the vicinity of FISCO is west to southwest, generally toward San Francisco Bay. The groundwater typically contains moderate to high concentrations of total dissolved solids (405 to 36,000 mg/l) as a result of saltwater intrusion from San Francisco Bay. Lenses of fresh water exist near the ground surface as a result of leaking water supply distribution pipes and rainwater infiltration. While the shallow aquifers are generally capable of maintaining a sustained yield of 200 gallons per day near the bay margin, pumping induced intrusion of saltwater would further degrade water quality.

Regional Board staff have recently reviewed and commented on the Navy's groundwater beneficial use evaluation at FISCO (see Appendix G). As part of the review, staff found that the brackish quality of the shallow groundwater beneath FISCO is such that the water is not a potential source of drinking water pursuant to SWRCB Resolution 88-63 (Sources of Drinking Water Policy).

9.5.3 Alameda Annex

The Fleet and Industrial Supply Center, Oakland, Alameda Facility/Alameda Annex (hereafter referred to as the Annex) is located along the southern shore of the Oakland Inner Harbor in Alameda, California. It is situated about 1 mile southeast of the FISCO main base and less than ½ mile east of Alameda Point. Currently, seven active Investigation Remediation sites are located at the Annex with four sites releasing contaminants to groundwater. Releases to groundwater include (1) leaking fluids from a screening lot and scrapyard, (2) a diesel fuel spill, and (3) paint and solvent spills at a paint spray booth. Chlorinated VOCs, SVOCs, and TPH were the most commonly detected contaminants in groundwater. Five fuel-related plumes also exist at the Annex. The fuel-related plumes range from approximately 400 feet to 2000 feet long by 300 to 1000 feet wide and extend to the bottom of the artificial fill, approximately 10 to 12 feet bgs. All contaminant plumes are located within the artificial fill hydrostratigraphic units. Groundwater flow in the vicinity of the Annex is north to northwest toward the Oakland Inner Harbor. The groundwater typically contains moderate to high concentrations of total dissolved solids (500 to 36,000 mg/l) as a result of saltwater intrusion from the San Francisco Bay. Small lenses of fresh water exist near the ground surface as a result of leaking water supply distribution pipes and rainwater infiltration. While the shallow aquifers are generally capable of maintaining a sustained yield of 200 gallons per day near the bay margin, pumping induced intrusion of saltwater would further degrade water quality.

9.5.4 Alameda Point

Alameda Point (formerly Naval Air Station Alameda) is located on the western end of Alameda Island. Alameda Point was a major active naval base between 1936 and 1997. The installation and its tenants supported several activities that generated wastes including, but not limited to, industrial solvents, acids, paint strippers, degreasers, caustic cleaners, metal plating wastes, used oil, fuel, and asbestos. Other installation activities that generated hazardous wastes in the past include (1) repair of aircraft components for transient and tenant aircraft which may have

produced contamination from fuel products and cleaning solvents; (2) air operations related fuel spills and fuel dumps; (3) waste oils stored in underground tanks from automotive service stations; (4) wastes related to receiving, issuing, storing, and shipping ammunition, ammunition components, and explosives; and (5) fueling support service activities.

Currently, twenty-five active Investigation Remediation sites are located at Alameda Point with seventeen sites releasing contaminants to groundwater. Releases to groundwater include (1) leachate from a 12 acre and a 110 acre landfill, (2) jet fuel from a former fuel storage area, solvents and heavy metals from paint stripping and plating operations, (3) solvents from parts cleaning, operations and equipment washing, (4) spills or leaks associated with underground storage tanks, fuel pipelines, and fuel pump islands, (5) spills and releases of petroleum products related to the former refinery, and (6) spills or leaks from hazardous waste container storage area. Chlorinated VOCs, BTEX, SVOCs, TPH, PAH, and heavy metals were the most commonly detected contaminants in groundwater. At least seventeen fuel-related and fourteen chlorinated VOC-related plumes exist at Alameda Point. The fuel-related plumes range from approximately 125 to 1,100 feet long by 125 to 600 feet wide and extend up to at least 27 feet bgs. The chlorinated VOC-related plumes range from approximately 125 to 1,800 feet long by 190 to 1,800 feet wide and extend up to at least 27 feet bgs. All contaminant plumes are located within the artificial fill and Merritt Sand hydrostratigraphic units, which comprise the first and second water bearing zones at Alameda Point. Generally, groundwater flow in the vicinity of Alameda Point is radial from the center of the facility toward the San Francisco Bay, Oakland Inner Harbor, and the Seaplane Lagoon. The first water bearing zone (fill aquifer) along the shoreline contains concentrations of total dissolved solids greater than 3000 mg/l, as a result of saltwater intrusion. However, the first water bearing zone in the central and southeastern portions of Alameda Point is primarily fresh water (<3000 mg/l TDS) and is recharged by rainwater infiltration and leaking water supply distribution pipes. The second water bearing zone (Merritt Sand) contains total dissolved solids greater than 3000 mg/l, except in the southeastern portion of Alameda Point. The southeastern portion of Alameda Point is distinctive due to the absence of a bay mud aquitard. The single water bearing zone (fill + Merritt Sand) contains mainly fresh (<3000 mg/l TDS) that is recharged by rainwater infiltration and groundwater flowing from eastern, upgradient portions of the Merritt Sand aquifer.

The size of fresh groundwater lenses may change during future property development at Alameda Point. On the one hand, the size of the fresh groundwater lenses may increase when the paved surfaces are removed. On the other hand, the size of the fresh groundwater lenses may decrease because redevelopment will include replacement of the leaking water supply and sanitary sewer pipelines, which currently are believed to provide the majority of fresh water recharge. The current safe yields for aquifer development exceed 200 gallons per day in the western, central and southeastern areas of Alameda Point. In the southeastern portion of Alameda Point, the current safe yield exceeds 8,000 gallons per day.

9.5.5 Oakland Army Base

Oakland Army Base (OARB) is a former active U.S. Army installation located in an industrialized area of Oakland. The installation was constructed on fill in a shallow tideland water area on the eastern shore of San Francisco Bay. OARB sits adjacent to the toll plaza of the San Francisco-Oakland Bay Bridge, and is surrounded by the Fleet Industrial Supply Center Oakland, the Port of Oakland, and the Southern Pacific Rail Terminal. It was constructed and began performing its duties as a military transportation port and distribution terminal in the early 1940s. Most of the site is approximately 10 feet above sea level. Seven operable units for investigation and remediation have been identified at OARB. They are all currently being investigated. These operable units include a railroad roundhouse site, a chlorinated solvent release site, and a housing area containing some petroleum tank sites. Chlorinated VOCs, SVOCs, and TPH were the most commonly detected contaminants in groundwater. The contamination has affected the artificial aquifer, and additional work is being conducted to investigate the potential that shallow contamination has migrated into the deeper Merritt Sand aquifer.

The natural groundwater gradient for the artificial fill is west toward San Francisco Bay. The total dissolved solids (TDS) of the artificial fill groundwater is high (up to 25,000 mg/l) in background borings that are in paved areas. The TDS of the shallow aquifer is below 3,000 mg/l in much of the unpaved, grassy areas of OARB. However, geochemical studies conducted by the Army have pointed to the source of the relatively fresh water as lawn watering, and leaking pipes at the base. The shallow artificial fill aquifer generally can sustain pumping rates of at least 200 gallons per day. Deeper groundwater studies and the potential for shallow groundwater contamination to migrate vertically to the Merritt Sand are being investigated, on a site-by-site basis, in the seven designated operable units.

9.6 Davis-Washington-Alvarado (DWA) Plume

The largest groundwater plume in the East Bay Plain is the Davis-Washington-Alvarado (DWA) Plume in San Leandro (Figure 14). The VOC plume (primarily TCE and PCE) is 2 miles long and over 1 mile wide. Since 1993, DTSC has been conducting soil and groundwater investigations to determine the extent of the plume and possible sources. DTSC has determined that the groundwater pollution could not be attributable to any one site but is coming from multiple sources. The extent of the groundwater plume has been defined and soil remediation has been conducted at several sites.

Many San Leandro residents use private wells in the vicinity of the plume for landscape and garden irrigation. DTSC has conducted a risk assessment and determined that shallow groundwater in the plume can be safely used for irrigation and other outside uses, but should not be used in the home for domestic purposes such as drinking, cooking, showering or bathing. An intensive public education campaign was conducted in the early 1990's to warn residents of the risks associated with drinking the shallow groundwater and to encourage and facilitate residents that were using shallow wells for domestic purposes to connect to the EBMUD water system. Currently, DTSC is investigating eight potential sources of pollution within the DWA plume and developing a coordinated plan for long-term management of the plume.

9.7 Chevron Richmond Refinery

The Chevron Richmond Refinery is located on the peninsula of the Potrero-San Pablo Ridge in northwestern Richmond. It consists of a large refining complex and appurtenant tank fields and manufactures and stores approximately 12 primary refined petroleum products including propane, gasoline, jet fuel, fuel oils, diesel, lube oil, solvents and other byproducts.

The refinery was built at the turn of the century. There are four geologic zones: Alluvial, Flats (marsh covered by fill), Ridge (deformed Franciscan Complex), and Transition Zone (between Flats and Ridge) on more than 2,900 acres. The City of Richmond lies south and east of the facility, where there are industrial, residential, commercial and agricultural land use operations. It is classified as an integrated refinery as defined by the U.S. Environmental Protection Agency in 40 CFR 419.50. Remediation of the site is regulated by the Regional Board under Order No. 93-109. Groundwater pollution at the refinery is prevented from migrating off site by a four-mile long slurry wall/groundwater interceptor trench. Within the refinery property, groundwater and soil contaminated sites are being remediated. However, restoration of groundwater beneath the entire refinery is not a requirement due to the infeasibility of remediating significant pollution related to nearly 100 years of operation and the absence of any historical, existing or planned municipal beneficial use.

9.8 Port of Oakland

The Port of Oakland is a semi-autonomous department of the City of Oakland that is responsible for the management of the Marine Terminals, Oakland International Airport, and commercial real estate. The Port has jurisdiction over the Port Area, defined as extending immediately south of the Bay Bridge to the City of San Leandro northern boundary and including approximately 23 miles of shoreline. Geographically the Port is situated at the boundary between the East Bay Plain and San Francisco Bay.

Prior to the arrival, in the mid-1800's, of the transcontinental railroad, the Oakland shoreline was relatively unaltered. Subsequently, deep water shipping channels were dredged and the intertidal and shallow near-shore Bay waters were filled with dredged materials, some refuse materials, and imported soils. The new land was mostly utilized for both marine and heavy industrial activities. Typical industrial usages included railyards, shipbuilding, gas and electric generation, lumber yards, grain milling and storage, petroleum tank farms, and a number of smaller industries. With the arrival of World War II, the US military filled additional Port Baylands to create large installations to support the war effort. Beginning in the 1960's, the conversion of the ocean-going shipping industry from break-bulk to containerization resulted in wholesale changes in the Marine Terminals landscape. Timber wharves and finger piers, transit sheds, and near shore industries were replaced by marginal concrete wharves, container cranes, and large paved container storage yards.

The industrial legacy has left a mark upon the soils and shallow groundwater under the Port Area. Past industrial releases have typically and locally impacted some sites with petroleum hydrocarbons, i.e. gasoline and diesel fuels derived from underground and above ground storage

tanks, and atypically, polynuclear aromatic hydrocarbons associated with residues from gas and power generation plants. The most significant sites at the Port include a former wood treatment plant at Embarcadero Cove (State Superfund Site), fuel pollution at Berth 24, and a former Coal Gasification Plant. There are 12 leaking underground storage tank sites at the Port; six have been remediated and are closed, five are on quarterly monitoring and one site is undergoing active remediation.

The Port recently conducted a hydrogeologic investigation of the Marine Terminals area. The purpose of the study was to assess the potential for saltwater intrusion from San Francisco Bay as a result of a proposed deepening of the shipping channels. The study concluded that the proposed deepening would have minimal impact on the Alameda Formation aquifer. However, the study demonstrated that shallower water-bearing units, the Merritt Sand and saturated fill soils, have already been invaded by salty Bay water.

9.9 Oakland Central District Redevelopment Area

The Oakland Central District Redevelopment Area, often referred to as the Uptown Theater District, encompasses Oakland's historic downtown. This area, which is anchored by the historic Fox Theater, was almost completely abandoned by business over the last three decades. Significant groundwater contamination has been identified in large portions of the area and must be addressed prior to redevelopment.

9.10 Bacteriological Contamination

Leaking sewer pipes are estimated to account for 20% of the groundwater recharge in the East Bay Plain. Shallow groundwater frequently contains elevated levels of fecal coliform. Both of these findings are typical for highly urbanized areas. California State Well Standards require a minimum 50-foot deep well seal for drinking water wells to guard against exposure to such contamination.

10.0 ECOLOGICAL IMPACTS

In the East Bay Plain, groundwater may discharge directly to the Bay or to freshwater features such as lakes, creeks, or manmade culverts or channels, which in turn discharge to the Bay. Over the last hundred or more years, a great deal of industrial activity has occurred along the Bay margin, and has resulted in many instances of groundwater contamination. This section looks at sites where groundwater contamination exists near a surface water body where there is the potential for impacts to aquatic receptors. To summarize the findings of the section, there are a number of sites where concentrations of chemicals in groundwater exceed numerical water quality objectives for individual constituents or levels of mixtures shown to have impacts in aquatic receptor tests. At the present time, while the potential for impact exists, studies to establish a link between these sites and impacts to aquatic receptors have not been completed or performed.

10.1 Ecological Impacts from Petroleum Hydrocarbons

In the East Bay Plain, most documented releases of contaminants to the subsurface that have resulted or could result in degradation of groundwater quality are associated with underground fuel storage tanks. A preliminary assessment of the potential for such sites to reach surface water was conducted using the information presented in Figure 6. To make this assessment, the number of sites located within about 250 feet of a surface water body was estimated. Surface water bodies included the Bay, surface water drainages shown on Figure 6, and wetlands (the latter primarily in the most southerly and northerly portions of the East Bay Plain). The distance of 250 feet was selected for fuel sites based on the Lawrence Livermore National Laboratory (LLNL) finding that 90% of groundwater plumes at fuel sites stabilize within about 250 feet of the source of the release. Thus, the class of sites more than 250 feet from surface water bodies are judged to have a small potential for impacts to ecological receptors via a groundwater pathway. About 40 sites were identified within 250 feet of the Bay or wetlands adjacent to the Bay. About 60 sites were identified within 250 feet of surface water drainages.

An example of a site where discharge of petroleum hydrocarbons to surface water has been documented is located at 1138 Glascock Street on the Oakland side of the Oakland-Alameda estuary. A 20,000-gallon diesel tank and a 4,000-gallon diesel tank were removed from the property in 1993. Samples collected in the last 12 months from a well located adjacent to the estuary have shown concentrations of TPH-diesel and TPH-motor oil ranging from 1 to 10 mg/l and 1 to 8 mg/l, respectively.

The Chevron refinery in Richmond is another facility in the East Bay Plain where petroleum hydrocarbons in groundwater have discharged to the surface waters of San Francisco Bay. An assessment of ecological impacts associated with releases from the refinery and associated activities to surface water and sediment of the Bay is in the planning stages.

At sites where groundwater containing petroleum hydrocarbons is discharging to surface water, the potential for impacts to aquatic receptors exists. While the nature and degree of any such impacts is not well characterized at this time, studies conducted at other Bay margin sites indicate that water with TPH concentrations in the range of 100-1,000 ug/L can result in significant effects on test organisms.

10.2 Ecological Impacts from Chlorinated Solvent Plumes

There are an estimated 90 sites in the East Bay Plain where chlorinated solvents have been identified in groundwater. Of these sites, about 19 are located within 1000 feet of the Bay or a surface water feature. Major plumes in the East Bay Plain are shown on Figure 14. In general, the major solvent plumes do not extend to the Bay or discharge to surface water. The potential for impacts to ecological receptors from chlorinated solvents would appear to be limited.

10.3 Ecological Impacts from Pesticides

There appears to be little evidence of discharge of pesticides to surface water via a groundwater pathway. As an example, at the United Heckathorn site on the Lauritzen Canal, Richmond, crystalline DDT (100% DDT) was observed in shallow soils while concentrations in sediments ranged to 633 mg/kg. Groundwater investigations revealed little in the way of dissolved pesticides. This observation is consistent with the generally strong sorption characteristics of many pesticides. Direct discharge or transport of pesticides with suspended sediment in surface water appears to be much more significant migration pathways to aquatic ecological receptors than migration as a dissolved phase in groundwater.

10.4 Ecological Impacts from Metals

This section illustrates the potential impact to aquatic receptors via elevated metals concentrations in groundwater through brief discussions of two sites: the Volvo-GM site in Oakland and the Zeneca Ag Products site in Richmond.

The Volvo-GM site is located at 5050, 5051, and 5200 Coliseum Way, Oakland. The site was formerly a paint manufacturing facility. Several metals including arsenic, cadmium, cobalt, copper, lead, nickel, and zinc are contaminants of concern. The site is bordered on the west by subsurface culverts and a stormwater drainage channel. Groundwater elevation contours and contaminant distribution maps indicate groundwater discharges to the culverts or channel. The channel discharges to San Leandro Bay. Groundwater contaminant concentrations of zinc have exceeded Basin Plan water quality objectives by factors of up to 20,000. Concentrations of cadmium, copper, and nickel have exceeded objectives by factors of 100 to 1,000. Storm sewer samples have shown elevated nickel and zinc concentrations. An ecological risk assessment is planned at this site.

The Stege Marsh site (owned by Zeneca Ag Products) is located at 1415 South 47th Street, Richmond. The site occupies about 75 acres and is bordered to the south by a tidal basin connected to San Francisco Bay. A variety of chemicals has been manufactured at the facility. Chemicals associated with plant activities have been identified in Quaternary Alluvium to depths up to 20 feet below Mean Sea Level, and include arsenic, cadmium, copper, lead, zinc, and several chlorinated volatile organics. Maximum measured metals concentrations in wells adjacent to the tidal basin exceed Basin Plan water quality objectives by factors of up to about 500. An ecological risk assessment is planned for this site, although groundwater discharge is not considered to be the most important route of exposure to aquatic receptors.

11.0 REGULATORY ISSUES

11.1 Lawrence Livermore National Laboratory LUFT Report

In October 1995, Lawrence Livermore National Laboratory (LLNL), under contract to and at the request of the State Board, submitted written recommendations to the State Board for improving the cleanup process for California's leaking underground fuel storage tanks (LUFTs) for fuels without MTBE or other oxygenates. The recommendations were the result of an 18-month review of the regulatory framework and cleanup procedures currently applied to LUFTs. Under current regulation, the minimum cleanup standards for cases affecting groundwater are the maximum contaminant levels (MCLs) for drinking water. Numeric cleanup standards are not established for residual fuel hydrocarbons (FHC) in soil.

The main findings of the LLNL study were: 1) if an FHC source is removed, passive bioremediation processes act to naturally reduce the mass of dissolved constituents in groundwater, and to eventually complete the FHC cleanup, 2) dissolved benzene plumes in groundwater tend to stabilize at relatively short distances from the FHC release site, 3) in 90% of the cases, benzene concentrations greater than 10 ppb extended no more than about 250 feet from release sites, and 4) a review of the state's database of over 28,000 cases showed that 136 sites (0.5%) reportedly have affected drinking water wells.

The LLNL study also found that remediation alternatives that use pump and treat technologies were ineffective at reaching MCL groundwater cleanup standards for FHC constituents in many geologic settings. Although contaminated groundwater can be removed, contaminants sorbed to soil particles act as a continuing source to groundwater, making it difficult to reach MCLs. The LUFT historical case study conducted by LLNL, as well as other historical case studies, found that once an FHC source is removed, the time for passive bioremediation to reduce a dissolved FHC plume by a factor of 10 is about 1 to 3 years. LLNL recommended that passive bioremediation be used as a remediation alternative for LUFTs whenever possible; pump and treat remediation should not be used unless its effectiveness can be demonstrated.

From a regulatory perspective, the LLNL study concluded that the current LUFT decision-making process does not result in cost-effective site closures. As an alternative, a Risk-Based Corrective Action (RBCA) approach to LUFT cleanups was recommended to provide guidance to reasonably manage risks to human health, ecosystems, and groundwater beneficial uses, while considering technical and economic feasibility.

The RBCA approach is tiered. Lower tiers use conservative assumptions and historical or screening level data to make decisions. Tier 1 evaluations rely on a generic approach and are applicable to most LUFT cases and sites. Higher tier evaluations require more intensive, site-specific data as a trade-off for the conservative Tier 1 assumptions. By using a modified American Society of Testing and Materials (ASTM) RBCA approach, LUFT cases can be evaluated on the basis of exposure pathways, (e.g., proximity of drinking water wells and depth to groundwater). A modified Tier 1 approach could encompass a majority of California's LUFT cases, and encourage the use of passive remediation. LLNL recommends that a modified ASTM RBCA framework be

applied to cases where FHCs have affected soil but do not threaten groundwater, and that SWRCB policies be modified to allow the consideration of risk-based cleanup goals higher than MCLs. The Regional Board concurs with the submitted recommendations, and implements them for LUFT cases on a case-by-case basis.

11.2 Methyl-tert-butyl-ether (MTBE)

Methyl-tert-butyl-ether (MTBE) is an oxygenate additive to gasoline intended to reduce combustion emissions. MTBE is more soluble, less volatile, less well adsorbed, and apparently significantly less biodegradable than gasoline mixtures or benzene. As a consequence, releases of gasoline to the subsurface have resulted in MTBE migration in groundwater that is much more extensive than the migration of the gasoline or other constituents of concern in gasoline. In addition, MTBE imparts an unpleasant taste and odor to water at very low concentrations. Given its migration characteristics and its low taste and odor threshold, the potential for impacts to water supply wells is higher for MTBE than for gasoline or BTEX constituents. The concern would be greatest for wells completed in shallow aquifers, as is the case for some domestic wells included in the ACFCWCD or EBMUD well database.

The Department of Health Services has proposed a taste and odor secondary MCL of 5 ppb for MTBE. The Office of Environmental Health Hazards Assessment proposed a Public Health Goal of 14 ppb in August 1998. The primary MCL for MTBE must be adopted by DHS by July 1, 1999, and could be as low as 14 ppb.

The use of MTBE in reformulated gasoline to satisfy the federal Clean Air Act has sparked considerable controversy in California and elsewhere. On November 12, in conformance with SB 521, the University of California (UC) issued a report to the Governor, “Health and Environmental Assessment of Methyl Tertiary-Butyl Ether (MTBE)”, which found that the air quality benefits of reformulated gasoline containing MTBE were not significant on exhaust emissions from advanced technology vehicles. However UC did find that there are significant risks and costs associated with water contamination due to the use of MTBE. The UC report recommends a gradual phase out of MTBE over several years as well as other strategies to minimize the risks associated with MTBE. On March 25, 1999, after peer review and public hearings, in accordance with SB 521, the Governor issued Executive Order D-5-99 that mandated the California Air Resources Board develop a timetable by July 1, 1999 for the removal of MTBE from reformulated gasoline at the earliest possible date, but no later than December 31, 2002.

12.0 HISTORICAL GROUNDWATER BENEFICIAL USES

Groundwater was a major part of the water supply for the East Bay during the period from 1860 to 1930, before Sierra water was imported to the area. Groundwater may have supplied up to 15,000,000 gallons of water per day for short periods, and was the sole supply for months on end during times of drought. Approximately half of the groundwater was pumped from the study area (Figuers, 1998). Most of this was produced from a band of well fields stretching from the southeastern end of Alameda Island to 98th Street in Oakland. Groundwater was used widely for municipal supply. It is estimated that 15,000 wells were drilled in the Basin between 1860 and 1950 (Figuers, 1998). Most of these wells were less than 50 feet deep, but many were 200 to 500 feet

deep, with some extending as deep as 1000 feet below ground surface (see Figures 2 and 3).

While the development of local groundwater supplies was instrumental in the early development of the East Bay Plain, by the late 1920's the supply was too small to meet the growing population. In addition, wells often became contaminated by seepage or saltwater intrusion. Thus faced with an increasingly degraded and insufficient water supply, East Bay civic leaders turned to imported supplies to meet the growing demand for water. Early alternatives for such a supply included a joint effort in developing the Hetch Hetchy Reservoir with the City of San Francisco, pumping surface water from the Sacramento Delta and developing its own Sierran supply. Ultimately the decision was made to develop a Sierran supply by building Pardee Reservoir. For a detailed and colorful account of the East Bay Plain water supply history, see Figuers (1998).

In addition to using the East Bay Plain for a source of drinking water, it was used for agricultural and industrial supply. An estimated 15,000 acres of land were in agricultural production in 1963 (Muir, 1994). If all of this acreage was irrigated with an average of 3 acre-feet/year, agricultural usage would have been an estimated 45,000 acre-feet in 1963. It is not known what portion of historical agricultural usage may have been supplied by groundwater. Groundwater has also been used for industrial processes, though no estimates of historical usage were obtained for this report.

12.1 Dockweiler Report

J.H. Dockweiler (1912) provided a detailed snapshot of water supply and usage in the East Bay area in the fall of 1911. During the period August to October 1911, Dockweiler hired a corps of canvassers to identify all wells in the territory between Richmond and Hayward. Canvassers went house to house and recorded the address, use and number of people served, depth to water and depth of water in the well. Dockweiler estimates that 80% of the wells were recorded, the remainder being small wells with hand pumps.

Excluding those in Castro Valley, a total of 3,573 wells were identified (see Figures 2 and 3). Of these wells, only 1,930 had data on depth to water or height of water in well. It is assumed that the depth to water in the well plus the height of water in the well would be equal to the total depth of the well. The data was put into a spreadsheet to examine statistics on the number of deep wells in each city area. Table 4 summarizes the results of this analysis. In the study area overall, about 8% of the wells with depth data had a total depth of 200 feet or deeper. About 30% of the wells with depth data were 100 feet deep or more.

Looking at each city area individually and estimating the area of the city canvassed, an approximate deep well density for 1911 can be calculated. This calculation shows the highest density of wells 200 feet deep or more to be in the areas of Alameda and Oakland, with densities of 6 to 10 deep wells per square mile. These cities were fairly densely developed, so these numbers may accurately reflect the density of the time. In Alameda, there are reports of saltwater intrusion of the shallow groundwater, so the density of deeper wells may be due to pursuit of clean, deeper aquifers. Other developed areas were Berkeley and Emeryville, where the deep well density was fairly low, around 1 deep well per square mile. This low density reflects the shallow bedrock in this

area. Any deep wells were likely installed close to the Bay shore.

Richmond was partially developed and the San Leandro/San Lorenzo and Hayward areas were rural (undeveloped) in 1911. These areas had low deep well densities (zero deep wells in the hamlet of Hayward and about 1 deep well per 2 square miles in Richmond and San Leandro/San Lorenzo). The low deep well density in Richmond even with the partial development at the time may reflect the successful service of the water companies there and their wellfields in Richmond and San Pablo. The deep well densities in all those areas are likely to have increased due to development between 1911 and the early 1930s when EBMUD began supplying imported surface water to the region.

Table 4. Summary of Well Data Recorded in the Dockweiler Report

Area	Total Wells Reported	Wells deeper than 199 ft	Wells deeper than 99 ft	Approximate Area Canvassed (sq. mi.)	Ratio Wells > 199 ft Deep wells per Sq. Mile
Alameda	362	16%	55%	6	10.2
Berkeley	642	1%	9%	12	0.6
Emeryville	77	3%	5%	2	1.2
Hayward	55	0%	2%	1	0.0
Oakland	1762	12%	36%	35	6.0
Richmond	238	5%	51%	26	0.5
San Leandro/ San Lorenzo	437	2%	13%	16	0.5
Overall	3573	8%	30%		

Note: Well canvassing took place in 1911. Canvassers recorded depth to water and height of water in well for 1,930 of the 3,573 wells recorded (percentage of wells are based on these 1,930 records). "Depth to water" and "feet of water in well" were added to calculate the well depth and this data was analyzed for wells depth statistics. The approximate area canvassed was measured roughly off the map on page 141 from the Dockweiler report.

13.0 CURRENT GROUNDWATER BENEFICIAL USES

13.1 Industrial Use

Using a variety of sources, Muir (1996) compiled information on groundwater use in the Alameda County portions of the basin, including the amount of groundwater pumped by industrial concerns and remediation projects. EBMUD, DTSC, the Environmental Compliance Department of the San Leandro Water Pollution Control District, and the Hayward Sewage Treatment Plant supplied data that were critical to determine this pumpage. He also used a county list of industrial wells and contacted individual industrial concerns to determine if they used groundwater.

Muir found that only ten industrial concerns used groundwater. They pumped a total of 1015 acre-feet in 1995, which came from wells deeper than 200 feet. This was used mainly in food processing and product manufacturing. He estimated that there were about 60 remediation projects in operation in the East Bay Plain in any one year, pumping about 800 acre-feet, generally from wells less than 100 feet deep. Thus, estimated total industrial use in 1995 was 1815 acre-feet.

13.2 Agricultural Use

Muir (1996) compiled information on agricultural groundwater use in the Alameda County portion of the East Bay Plain as follows:

In 1995, five elements were considered: golf courses, cemeteries, schools and colleges, parks, and crops. Data from DWR Bulletins No. 113-3 (DWR, 1975) and No. 113-4 (DWR, 1986) and Sunset (1961) were used to estimate agricultural pumpage.

Golf Courses – Only two golf courses used wells for irrigation; all others used either reclaimed sewage water or water stored in lakes from captured rainfall runoff. It was estimated that the two golf courses pumped 390 acre-feet of groundwater.

Cemeteries – Three cemeteries used approximately 450 acre-feet of well water for irrigation.

Schools and Colleges – Several high schools and colleges use well water to irrigate athletic fields. Their total pumpage for 1995 was estimated to be only 20 acre-feet.

Parks – A number of parks in the East Bay Plain have wells for irrigation purposes, but a total of only 25 acre-feet were used.

Crops – There were only 14 acres of row crops and several hot houses in the area; their estimated pumpage totaled 25 acre-feet.

Table 5. Groundwater Pumpage for Agricultural Use in the East Bay Plain, 1995

Use	Acre-Feet
Golf Courses	390
Cemeteries	450
Schools and Colleges	20
Parks	25
Crops	25
Total Agricultural Usage	910

13.3 Domestic Use

13.3.1 EBMUD Survey

EBMUD staff conducted an agency survey to identify small drinking water systems (2 or more connections) in the East Bay Plain (excluding Castro Valley):

- Alameda County Department of Environmental Health oversees water systems of 2 to 14 connections (Personal communication, Ron Torres).
- California DHS Division of Drinking Water and Environmental Management oversees water systems of 15 and higher connections in Alameda County (John Andrew at 510-540-3227).

- Contra Costa County DEH oversees water systems of 2 to 199 connections (William Alejandro at 925-646-5225 x212).

Although other systems may exist, agency files only indicate several small drinking water systems in Alameda County that rely on groundwater. There are no known small water systems in Contra Costa County. The water systems are grouped below by oversight agency.

Alameda County DEH records indicate two small water systems that rely on groundwater for drinking water:

- The Venice Court Housing Group, located on Venice Court off Dutton in the northern part of San Leandro. One well serves 7 houses. Well depth is unknown.

- 24180 Saklan, off Winton Avenue on the outskirts of Hayward. One well serves 4 or 5 units. The well was deepened in 1989, although well construction details are not known.

DHS ODW records indicate several groundwater-based water systems with 15 or more connections (see Figure 15):

- 2399 East 14th Street, San Leandro. The Trailer Haven trailer park has a 290-foot deep well. Although the site is located near the source of the DWA Plume, solvents have not been detected in water from the well (per Karen Toth, DTSC).

- 28111 Harvey Street in Hayward. One well serves 6 units. Well construction details are not known.

- 6901 Sobrante Road, Oakland, off Skyline. One well serves 4 homes and is pumped at 40 gpm. The well is 275 feet deep. This system is not in the East Bay Plain.

- The Mohrland Mutual Water Company in Mt. Eden, an unincorporated area near Hayward. It serves about 180 connections with one well that is approximately 800 feet deep.

The City of Hayward has installed 4 emergency supply water wells with one more planned. The 5 wells are expected to supply 10,000 gpm for use over 7 days should an earthquake damage the San Francisco Water Department's Hetch Hetchy aqueduct, which is the main drinking water source for the city. The wells range in depth from 464 to 600 feet.

In addition, there may be households with a single well connection using groundwater for drinking water. The following agencies were contacted to identify single connection domestic-use wells:

- Alameda County Flood Control and Water Conservation District (ACFCWCD) issues well permits for much of Alameda County except Berkeley and the areas covered by Zone 7 and the

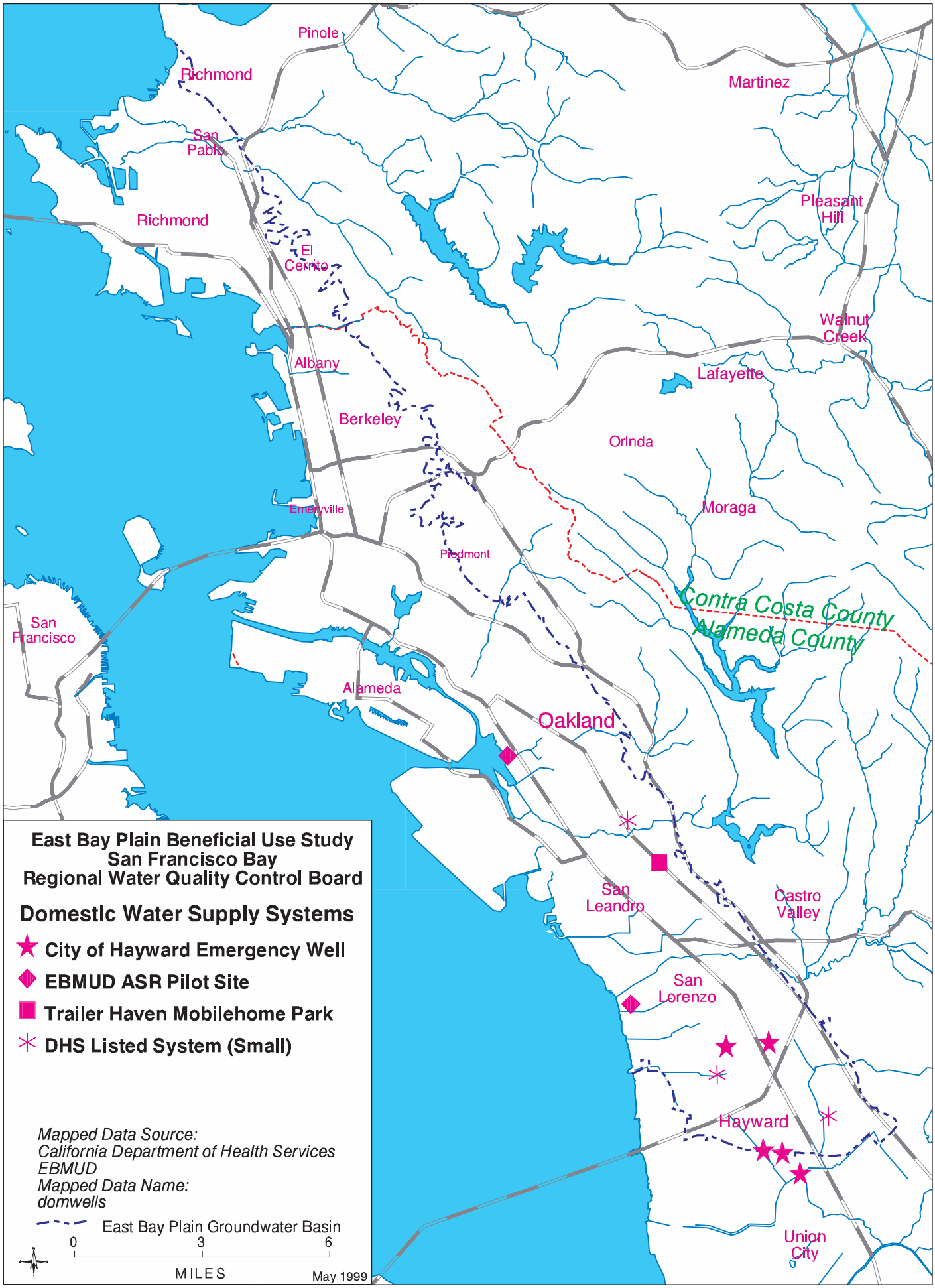

Pinole
Richmond
Martinez
San Pablo
Richmond
Pleasant Hill
El Cerrito
Walnut Creek
Albany
Lafayette
Berkeley
Orinda
Emeryville
Moraga
Piedmont
Contra Costa County
Alameda County
San Francisco
Alameda
Oakland
San Leandro
Castro Valley
San Lorenzo
Hayward
Union City
East Bay Plain Beneficial Use Study
San Francisco Bay
Regional Water Quality Control Board
Domestic Water Supply Systems
City of Hayward Emergency Well
EBMUD ASR Pilot Site
Trailer Haven Mobilehome Park
DHS Listed System (Small)
Mapped Data Source:
California Department of Health Services
EBMUD
Mapped Data Name:
domwells
East Bay Plain Groundwater Basin
0
3
6
MILES
May 1999

Figure 15

Alameda County Water District (contact: Andreas Godfrey at 510-670-5575).

- City of Berkeley Department of Public Works Permit Service Center 510-883-6555 and City of Berkeley Planning Department Toxics Division (contact: Nabil Al-Hadithy at 510-705-8155).

- Contra Costa County DEH issues well permits for Contra Costa County (contact: William Alejandro at 925-646-5225 x212).

- EBMUD maintains a database of well owners for their Backflow Prevention Program.

EBMUD obtained a copy of ACFCWCD's well database as of January 1, 1997. This compilation of wells is incomplete and may include wells abandoned or destroyed. The well database includes wells permitted by the agency and installed in the Alameda County portion of the Plain (excluding Berkeley) starting in July 17, 1973, with sporadic records of wells installed prior to that. For wells destroyed or abandoned, it is difficult to cross-check installation with destruction records.

As part of the evaluation of beneficial uses in the East Bay Plain, the ACFCWCD data for all wells coded as Domestic, Municipal, Irrigation, and Industrial was analyzed (see Figures 16 and 17). ACFCWCD codes wells as Domestic, Irrigation, Municipal, and Industrial. Of the 1421 wells permitted since July 17, 1973 by ACFCWCD, 1417 (99.6%) are for non-drinking water purposes. A summary of the number of wells in each category is shown below:

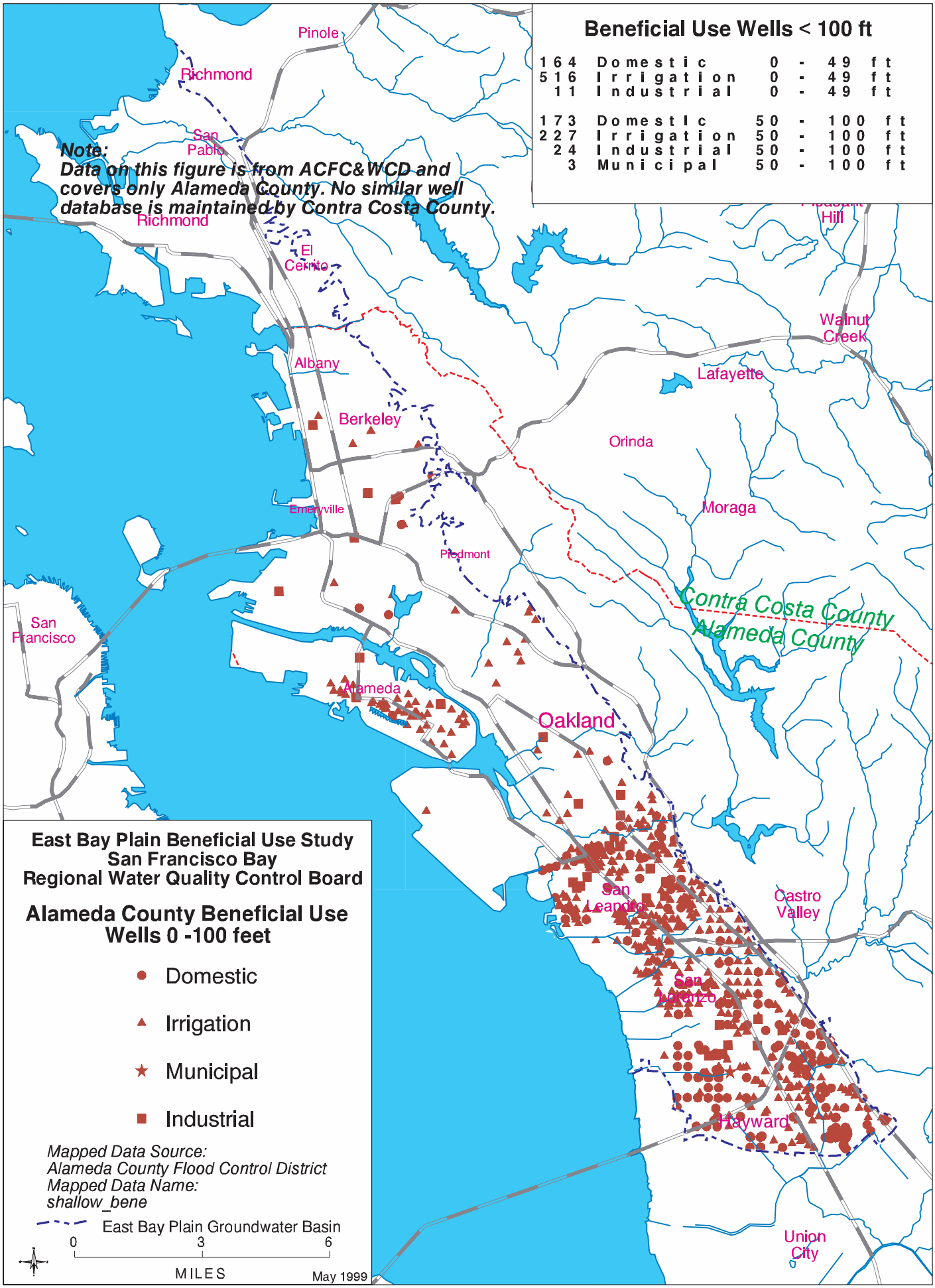
Table 6. Number of Permitted ACFCWCD Wells Classified as Domestic, Irrigation, Municipal or Industrial

Use Code and Description	Total Number of wells <100 ft. deep	Total Number of wells >100 ft. deep	Sub Total
Domestic – Small scale irrigation well (e.g. private backyard irrigation well)	331	61	392
[1] Municipal – Large scale drinking water well	2	11	13
Irrigation – Large scale irrigation well	730	169	899
Industrial – Industrial process supply well	38	79	117
TOTAL	1101	320	1421

[1] Of these 13 wells, only 7 are known to be for drinking water supply. These 7 wells consist of 3 owned by the Mohrland Mutual Water Company in Hayward (one of which is active), 2 owned by EBMUD, and 2 owned by the City of Hayward. The remaining 6 wells are not believed to be used for drinking water purposes.

For the following cities, the number of wells indicated as "domestic use" (defined as small scale irrigation wells, e.g. private backyard irrigation wells) or "municipal use" (defined as large scale drinking water wells) are as follows:

- Alameda: 2 wells, 60 and 325 feet deep
- Albany: 0 wells
- Berkeley (although ACFCWCD does not issue permits for Berkeley): 2 wells, 180 and 204 feet deep
- Emeryville: 0 wells


Beneficial Use Wells < 100 ft
164 Domestic 0 - 49 ft
516 Irrigation 0 - 49 ft
11 Industrial 0 - 49 ft
173 Domestic 50 - 100 ft
227 Irrigation 50 - 100 ft
24 Industrial 50 - 100 ft
3 Municipal 50 - 100 ft
Note:
Data on this figure is from ACFC&WCD and covers only Alameda County. No similar well database is maintained by Contra Costa County.
Pinole
Richmond
San Pablo
Richmond
El Cerrito
Albany
Berkeley
Emeryville
Piedmont
San Francisco
Alameda
Oakland
Hill
Walnut Creek
Lafayette
Orinda
Moraga
Contra Costa County
Alameda County
San Leandro
Castro Valley
San Lorenzo
Hayward
Union City
East Bay Plain Beneficial Use Study
San Francisco Bay
Regional Water Quality Control Board
Alameda County Beneficial Use Wells 0 -100 feet
Domestic
Irrigation
Municipal
Industrial
Mapped Data Source:
Alameda County Flood Control District
Mapped Data Name:
shallow_bene
East Bay Plain Groundwater Basin
0
3
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MILES
May 1999

Figure 16

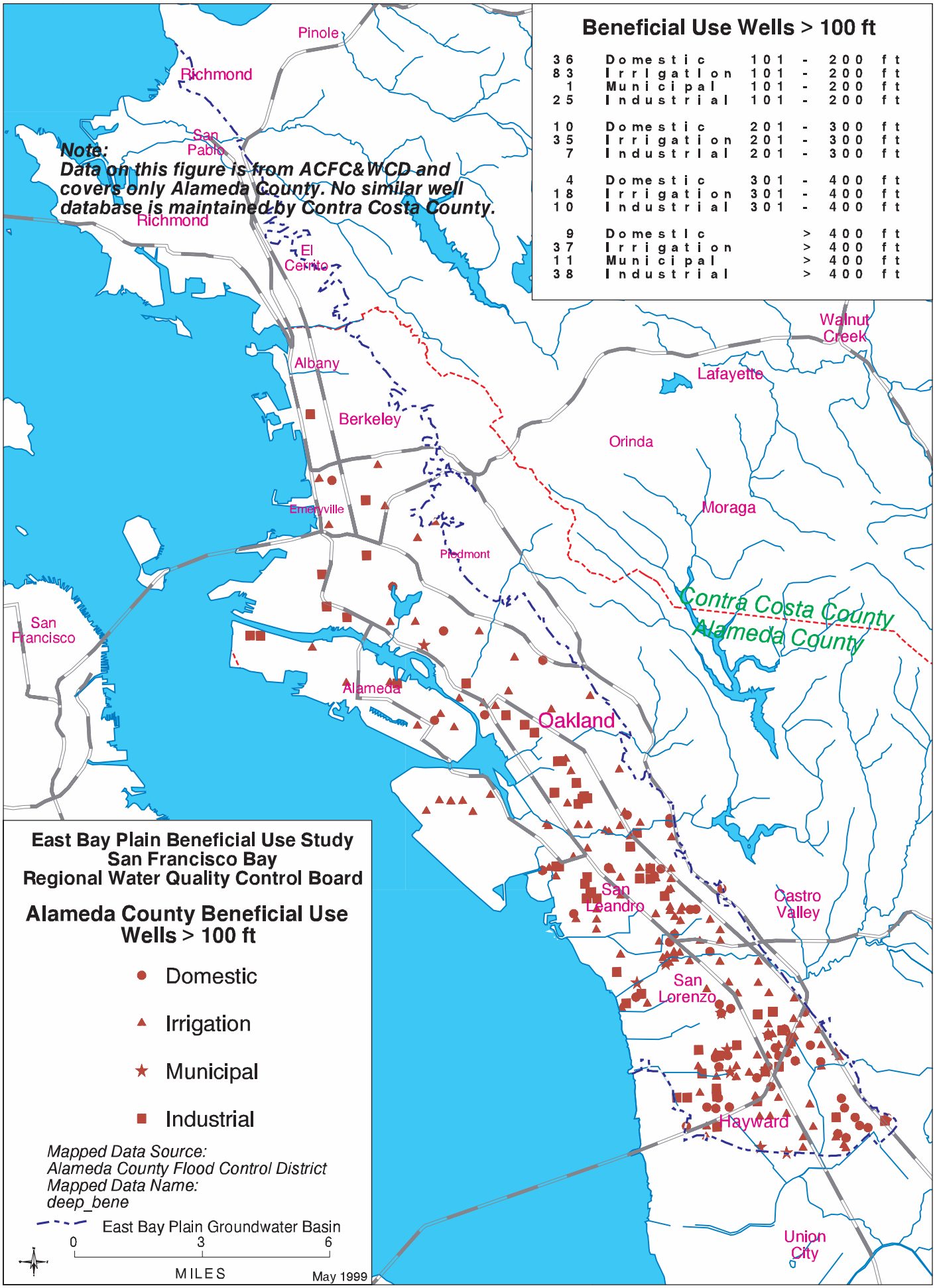

Beneficial Use Wells > 100 ft
36 Domestic 101 - 200 ft
83 Irrigation 101 - 200 ft
1 Municipal 101 - 200 ft
25 Industrial 101 - 200 ft
10 Domestic 201 - 300 ft
35 Irrigation 201 - 300 ft
7 Industrial 201 - 300 ft
4 Domestic 301 - 400 ft
18 Irrigation 301 - 400 ft
10 Industrial 301 - 400 ft
9 Domestic > 400 ft
37 Irrigation > 400 ft
11 Municipal > 400 ft
38 Industrial > 400 ft
Note:
Data on this figure is from ACFC&WCD and covers only Alameda County. No similar well database is maintained by Contra Costa County.
Pinole
Richmond
San Pablo
Richmond
El Cerrito
Albany
Berkeley
Emeryville
Piedmont
San Francisco
Alameda
Oakland
Walnut Creek
Lafayette
Orinda
Moraga
Contra Costa County
Alameda County
San Leandro
Castro Valley
San Lorenzo
Hayward
Union City
East Bay Plain Beneficial Use Study
San Francisco Bay
Regional Water Quality Control Board
Alameda County Beneficial Use Wells > 100 ft
Domestic
Irrigation
Municipal
Industrial
Mapped Data Source:
Alameda County Flood Control District
Mapped Data Name:
deep_bene
East Bay Plain Groundwater Basin
0
3
6
MILES
May 1999

Figure 17

- Hayward: 357 wells, depths range from 18 to 763 feet
- Oakland: 32 wells, depths range from 33 to 533 feet
- Piedmont: 24 wells, depths range from 83 to 300 feet
- San Leandro: 76 wells, depths range from 12 to 596 feet
- San Lorenzo: 14 wells, depths range from 30 to 834 feet.

Note that the total wells listed above are greater than shown in Table 6. This is because some wells located in the above cities are outside (i.e., east) of the East Bay Plain basin boundary.

The City of Berkeley issues permits for monitoring wells through its Toxics Division but does not maintain a publicly accessible well database. It is possible that several units near San Pablo Ave. in Berkeley use groundwater for drinking water (per Nabil Al-Hadithy, City of Berkeley). Before approximately 1993, the City of Emeryville issued well permits; now they are issued by ACFCWCD.

Contra Costa County DEH has recorded permitted wells in their database since 1992. However, at the time that this report was prepared, Contra Costa County DEH was not able to provide information from their well database.

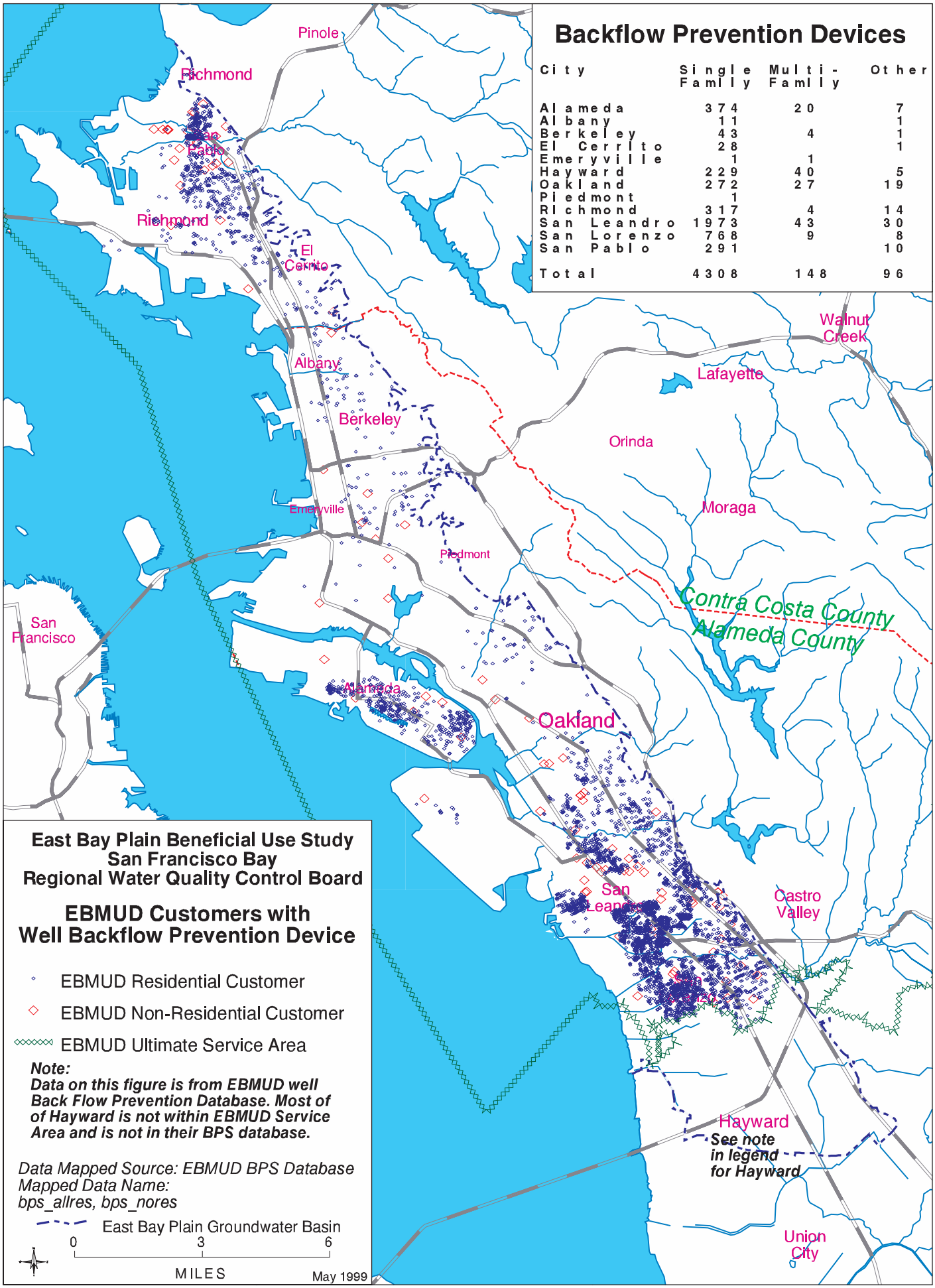
EBMUD has a database of well owners in its area for their Backflow Prevention Program. In about 1990, EBMUD used mailings with utility bills to ask customers with wells to contact EBMUD. Backflow devices are installed at houses with a well, regardless of whether the well is in use or tied into the customer's water system. Although no data are collected on the well, customer type is known. The table below shows numbers of wells in the backflow database for each city for several customer classifications.

A map of the location of well owners with backflow prevention devices is shown on Figure 18.

Table 7. EBMUD Customers with Backflow Prevention Devices

City	Single Family	Multi-Family	Other
Alameda	374	20	7
Albany	11	0	1
Berkeley	43	4	1
El Cerrito	28	0	1
Emeryville	1	1	0
Hayward	229	40	5
Oakland	272	27	19
Piedmont	1	0	0
Richmond	317	4	14
San Leandro	1973	43	30
San Lorenzo	768	9	8
San Pablo	291	0	10
Total	4308	148	96

Note: Data in this table is from EBMUD well Backflow Prevention Database. Most of Hayward is not within EBMUD Service Area and is not in EBMUD's BPS database.



Backflow Prevention Devices

City	Single Family	Multi-Family	Other
Alameda	374	20	7
Albany	11		1
Berkeley	43	4	1
El Cerrito	28		1
Emeryville	1	1	
Hayward	229	40	5
Oakland	272	27	19
Piedmont	1		
Richmond	317	4	14
San Leandro	1973	43	30
San Lorenzo	768	9	8
San Pablo	291		10
Total	4308	148	96

Figure 18

13.3.2 City of San Leandro

In 1994, the City set out to determine if any properties in San Leandro were being serviced by domestic wells. First, the City used existing sources, such as DTSC, to identify all known domestic wells. The City also asked EBMUD to identify all lots in San Leandro that were not being billed. Each of these lots was checked to verify that it was being supplied by EBMUD. Most of the lots were industrial double lots or were an entry error.

After several weeks of investigation, the City was satisfied that all existing residences with no domestic water service other than groundwater had been identified. A total of ten residences were identified. All were offered City assistance to obtain an EBMUD hookup, including homes outside of the known plume areas. By 1995, all but four of the homes were hooked up to EBMUD or had been demolished. In 1998, one of the four homes was additionally connected to EBMUD using private party funds.

The only three potential remaining domestic wells in San Leandro are all outside of the known plume areas.

13.3.3 City of Hayward

ACFCWCD records show there are several “islands” of unincorporated land within the City of Hayward. Over the years, the size and quantity of these “islands” has decreased. As land is incorporated into the City of Hayward, infrastructure is added, including imported water supplied by Hayward. These remaining “islands” represent areas where groundwater is currently being used (i.e. Mohrland Mutual Water Company) or areas with a high probability of use.

13.4 Municipal Use

13.4.1 Hayward emergency wells

The City of Hayward depends on the San Francisco Water Department’s Hetch Hetchy aqueduct for its municipal water supply. Since a major earthquake could disrupt this supply for periods of days, Hayward has installed an emergency water supply well system. To date, 4 wells have been installed of a planned 5-well, 10,000-gpm system. In the event of an earthquake, the wells are expected to be in use for no more than 7 days.

Hayward overlies the San Lorenzo Cone, which contains an upper and a lower aquifer. The emergency water supply well screens are generally perforated across several intervals in the Lower Hayward Aquifer, between 350 and 550 feet below grade. The wells are 18 inches in diameter and were installed using reverse rotary drilling equipment. Although manganese concentrations are above the secondary maximum concentration level (MCL), DHS has given the City approval to use the wells in an emergency. Well water is chlorinated at each wellhead with sodium hypochlorite.

Hayward selected well sites that were generally on City property and adjacent to water transmission pipelines of 12-inch diameter or larger. The City historically operated a wellfield near

Hesperian and Industrial Boulevards; it was phased out of service starting in 1962, when Hetch Hetchy water became available. Only Well No. 9 remains operable (but inactive). Two of the four emergency wells installed to date (Wells B and C) are located near this former wellfield. The fifth well will replace Well No. 9.

13.4.2 East Bay Municipal Utility District (EBMUD)

Background: EBMUD was created in 1923 to provide a public water supply to East Bay communities. By 1929, EBMUD was providing imported water to the East Bay from Pardee Reservoir on the Mokelumne River in the Sierra Nevada Mountains. The reservoir provided a high-quality, reliable supply that soon eliminated the need for local groundwater wells. The District has expanded its boundaries as development has occurred, with demands increasing as agricultural areas with wells were converted into residential communities relying upon EBMUD for water.

EBMUD currently provides water to approximately 1.2 million customers in Alameda and Contra Costa Counties, including all of the East Bay Plain, except for portions of the City of Hayward, which receive water from the City of San Francisco's Hetch Hetchy Project. Average District-wide water consumption is approximately 200 million gallons per day (MGD). Of this, approximately 70-75% is delivered to customers in areas tributary to the East Bay Plain.

Pardee Reservoir provides 95% of EBMUD's water supply, with a small amount of water also contributed by local runoff collected in Briones, San Pablo, and Upper San Leandro Reservoirs in the East Bay hills. Lafayette and Chabot Reservoirs are available for emergency use only.

Normalized current EBMUD demand is expected to rebound to 220 MGD. Gross demand of 277 MGD is projected for the year 2020, much of which will be offset by aggressive conservation and reclamation programs. Supply from Pardee Reservoir is projected as 228 MGD in 2020.

Previous Investigations: For nearly seventy years, EBMUD has benefited from a reliable, high-quality water supply. Therefore, the District did not actively pursue local groundwater as a supplemental supply. In recent years, however, as more demands have been placed on Pardee Reservoir by senior water rights holders and environmental needs, it has become apparent that EBMUD must develop storage to meet customer demands during drought periods. The East Bay Plain Groundwater Basin is currently being considered by EBMUD as a water storage alternative.

In 1986 and again in 1993, the District performed reconnaissance level studies of groundwater resources within its East Bay service area. The study results indicated that at the time, other, higher quality resources might be available. The 1986 study compiled existing water quality information and aquifer characteristics and concluded that the southern part of the East Bay Plain and the San Ramon Valley were most promising for municipal use. In 1993, the District developed a Water Supply Management Program, which included a brief evaluation of local groundwater resources. The study concluded that total yield from local groundwater resources was not likely to meet the District's need for drought water supplies.

In 1997, based on improvements in dual purpose injection/extraction well technology, the District decided to evaluate whether the East Bay Plain could serve as storage for at least a part of the District's dry year supply.

Aquifer Storage and Recovery Pilot Project/Potential Future Beneficial Use: In 1997, EBMUD started a pilot project to evaluate the use of dual-purpose injection/extraction wells in the East Bay Plain. The technology, also known as aquifer storage recovery (ASR), may enable the District to store excess high-quality Sierra water supply underground for future use during a drought or earthquake. By using the same well for both injection and extraction, the District plans to extract virtually the same high quality water supply as was injected.

Exploratory borings were installed at the first project site in western San Lorenzo in the Fall of 1997. The borings indicated the presence of a significant aquifer zone at a depth of 550 to 660 feet below the ground surface. The borings were converted into monitoring wells, which were used to perform preliminary aquifer tests and water quality analyses. The results of these tests indicate that the aquifer appears to be suitable for ASR. Therefore, a more detailed pilot project is being undertaken with a larger well. The well will be tested by alternating cycles of injection and extraction to determine whether ASR may be feasible for EBMUD. In addition, a second pilot test is being initiated at EBMUD's Oakport property across Highway 880 from the Oakland Coliseum. The pilot project reports will be complete in the Spring of 1999 and will present an assessment of the feasibility of using ASR wells in the Plain for emergency water supply purposes.

The results of the pilot projects, along with an assessment of local groundwater resources, will be used to determine EBMUD's future plans for beneficial use of the Plain. Potential beneficial uses by EBMUD include ASR wells, municipal extraction wells, and non-potable irrigation wells. The actual locations of these facilities are not known, but may include any part of the East Bay Plain within the EBMUD service area where high potential for extraction or storage is available.

13.5 East Bay Plain City General Plans for Groundwater Use

In 1996, Regional Board Staff reviewed the General Plans for the East Bay Plain Cities of Alameda, Albany, El Cerrito, Berkeley, Emeryville, Hayward, Oakland, Piedmont, Richmond, and San Leandro, along with the Alameda County Resource Conservation District, the ACFCWCD, the North Richmond Shoreline, and Alameda County (see Appendix F). None of these cities had any plans to develop local groundwater resources for drinking water purposes, because of existing or potential saltwater intrusion, contamination, or poor or limited quantity. Only the City of Hayward is currently developing groundwater as an emergency drinking water supply. General plans for Richmond and El Cerrito acknowledge the potential for groundwater use in an emergency. However, both plans lack any specific details on such use.

However, the lack of interest by East Bay cities to install emergency groundwater wells may actually reflect confidence in EBMUD's role as water supplier rather than general disinterest.

13.6 Freshwater Replenishment

The ultimate points of discharge of groundwater in the East Bay Plain are surface water bodies including streams, lakes and San Francisco Bay. Freshwater bodies and the Bay support a range of aquatic life. Groundwater in the East Bay Plain retains the beneficial use of freshwater replenishment because groundwater discharge helps maintain surface water quantity and quality.

14.0 LOCAL REGULATORY INITIATIVES

14.1 City of Oakland Urban Land Redevelopment (ULR) Program

The ULR is a program designed to facilitate the cleanup and redevelopment of contaminated properties by clarifying investigation requirements, standardizing the regulatory process and establishing pre-approved cleanup standards for qualifying sites based on physical and chemical characteristics, land and water use, and potential for contaminant migration. The program is based on the premise that contaminated properties in Oakland pose not only a public health threat, but also affect the social and economic health of communities. Frequently, contaminated sites remain vacant, unremediated, and undeveloped because remediation and redevelopment efforts are stunted by liability issues, a confusing regulatory framework, and uncertainty surrounding cleanup costs.

Members of the ULR Oversight Committee include representatives from: EPA Region 9, State Board, Regional Board, DTSC, Alameda County EHD, and the City of Oakland. In addition, volunteers from consulting firms participate as non-voting members.

The ULR Program employs a tiered decision-making approach for evaluating sites that contain, or are suspected to contain, soil or groundwater contamination. The first tier consists of comparing site concentrations of chemicals of concern with a Tier 1 look-up table containing cleanup levels applicable at all Oakland sites. The second tier involves characterizing site geology and consists of comparing site concentrations of chemicals of concern with one of three Tier 2 look-up tables that contain cleanup levels based on geological setting. The Tier 2 process takes into account potential for contaminant retardation and migration in three different Oakland soil types: Merritt Sands, sandy silts and clayey silts. The Tier 3 process involves an extensive, site-specific analysis.

In Tiers 1 and 2, the property owner/developer has three options:

1. Clean up to the concentrations in the applicable look-up table.
2. Implement engineering controls that eliminate or sufficiently reduce exposure via pathways of concern
3. Undertake more site-specific analysis in a higher tier.

Cleanup levels for contaminated groundwater are partially dependent on the potential beneficial uses of the groundwater basin. Most groundwater in Oakland is currently designated as a potential source of drinking water, requiring the highest levels of protection. This has a direct impact on the determination of groundwater cleanup levels and, therefore, on development costs and the prospects

for economic revitalization in the Downtown and other commercial/industrial areas of the city.

In developing the ULR Program, a Community Review Panel was formed consisting of individuals who constituted a representative cross-section of the Oakland community. The ULR Program Community Review Panel Report indicates that Oakland's shallow groundwater is not currently, nor is it expected to be, utilized as a source of drinking water in Oakland. Further, it acknowledges that, due to historic contamination and alternative sources, groundwater in much of Oakland is neither a healthy nor a cost-effective source of drinking water. With this in mind, the Community Review Panel supports the Regional Board's study and a possible redesignation of the beneficial uses of some portions of Oakland's groundwater on the condition that the following recommendations are implemented:

- Ensure that the redesignation is based on sound hydrogeologic data;
- Show that it will have a positive impact;
- Demonstrate that it will have an equitable impact on the various socio-economic and ethnic groups within Oakland;
- Ensure that a viable plan exists for providing drinking water to Oakland residents in the case of any foreseeable emergency;
- Demonstrate an openness to innovative technologies for providing clean, fresh water;
- Undertake a public education campaign to inform Oakland residents of the potential health hazards associated with the use of groundwater from private wells;
- Increase the minimum well sanitary seal depth required to obtain a well construction permit;
- Ensure that standards for future polluting activities will not be relaxed based on the redesignation of the beneficial uses.

Contacts:
Mark Gomez, City of Oakland, Environmental Services Division, (510) 238-7314
mmgomez@oaklandnet.com
Matt Small, U.S. EPA-Region 9, Underground Storage Tank Program, (415) 744-2078
small.matthew@epamail.epa.gov

14.2 Berkeley City Council Actions

In March, 1996, the Berkeley City Council responded to what they perceived as a weakening of the State Board Resolution 92-49 in State Board's Executive Officer Walt Pettit's proposed amendment to the resolution and in the recommendations found in the LLNL Report. Berkeley took the position that Resolution 92-49 gave Regional Boards authority to suspend remediation requirements on a case-by-case basis and suggested that any further loosening of these requirements not be adopted. Berkeley felt that "the initial intent of a containment zone policy was to provide a process for the closure of sites that had undergone remediation but for technological and financial considerations were unable to achieve drinking water standards but would still protect human health and the environment. The containment zone policy as currently proposed does not reflect this goal. Therefore, the City of Berkeley will not adopt these policies, as currently proposed."

Existing Toxics Management Division (TMD) policy is to preserve the water resource, where technologically and financially feasible, and this is consistent with existing State policy and with Berkeley policy set by Council in 1996. In the City's position (discussed in Council in 1996), the resource is identified first and if found to not be of quality, then a lower level of clean up is required. Berkeley's policy has several significant benefits, it reduces dependence on EBMUD water, less water is diverted from Sierra and Delta regions and provides an emergency resource if needed in the future. TMD proposes taking it further by actually correctly identifying and encouraging the use of groundwater for irrigation or industry, where possible. This indicates a commitment of maintaining high environmental and health standards.

14.3 U.S. EPA Brownfields Projects

A "brownfield" is a property, or portion thereof, that has actual or perceived contamination and an active potential for redevelopment or reuse. EPA's Brownfields Economic Redevelopment Initiative is designed to allow states, communities and other stakeholders in economic redevelopment to work together in a timely manner to prevent, assess, safely clean up, and sustainably reuse brownfields. Between 1995 and 1996, EPA funded 76 National and Regional Brownfields Assessment Pilots, at up to $200,000 each, to support creative two-year explorations and demonstrations of brownfields solutions. The pilots are intended to provide EPA, States, Tribes, municipalities, and communities with useful information and strategies as they continue to seek new methods to promote a unified approach to site assessment, environmental cleanup, and redevelopment. EPA has designated three municipalities within the Plain (Emeryville, Oakland and Richmond) as pilot project cities.

14.3.1 Emeryville

Background

Historically, heavy industry was the predominant land use in Emeryville, but the majority of these companies left the area in the 1970s. Currently, 234 acres are vacant or under-used, and 213 acres are known to have soil and groundwater contamination. Nearly half of the City's citizens are low-income, and more than half are minorities. Most of the City's poor live in neighborhoods bordered by brownfields. Although there is demand for residential and commercial development, the cost and risk associated with brownfields have impeded their redevelopment. The result for the City over the past five years has been a loss of $13.3 million in tax revenues and about 450 jobs.

Objectives

The aim of Emeryville's Brownfields effort is to encourage residential and commercial development by building stakeholder confidence in a risk management-based model for brownfields redevelopment. The model will incorporate an emerging State of California regulatory policy based on using an area-wide rather than a parcel-by-parcel approach to environmental cleanups.

Accomplishments and Activities

The Emeryville Pilot has:

- Selected ten brownfields sites for potential redevelopment. Collectively, these sites cover approximately 180 acres;
- Compiled hydrogeologic, soil, and groundwater information from available sources to develop geographical information system (GIS) and developed a Conceptual Groundwater Model (Geomatrix, 1998);
- Achieved a 50% completion milestone in development of a GIS model that incorporates environmental, economic, land use, and zoning information
- Convened a broad-based Community Task Force to serve as a forum for community participation in decision making related to brownfields redevelopment;
- Drafted a regulatory framework for a Mitigation and Risk Management Plan to incorporate a City-wide approach to groundwater cleanup.

Experience with the Emeryville Pilot has been a catalyst for related activities including the following:

- The Chiron Corporation, the second largest biotechnology firm in the country, will redevelop an unused research facility. Chiron will construct 12 new buildings over the span of 20 years to house their biotech firm, creating more than 3,000 jobs during this time.
- Catellus Development Corporation will construct 200 units of mixed income housing on a four-acre Brownfields site, considerably decreasing the City's housing shortage.

Contacts:
Ignacio Dayrit, Emeryville Redevelopment Agency, (510) 596-4350 rda@ci.emeryville.ca.us
Jim Hanson, U.S. EPA – Region 9, (415) 744-2237

14.3.2 Oakland

Background

Oakland selected two catalyst sites for redevelopment projects in its commercial and industrial centers: the 2-acre Central District Redevelopment Area and a 17-acre portion of the Coliseum Redevelopment Area of East Oakland.

The Central District Redevelopment Area, often referred to as the Uptown Theater District, encompasses Oakland's historic downtown. This area, which is anchored by the historic Fox Theater, was almost completely abandoned by business over the last three decades. Significant groundwater contamination has been identified in large portions of the area and must be addressed prior to redevelopment.

During the past two decades over 20,000 manufacturing jobs have been lost in the Coliseum Area due to plant closure and relocation. Over 600 acres in the Coliseum Area were vacated or are

under-used, and over 700 sites were identified as having known or suspected hazardous or toxic contamination. Most of the Coliseum Area is within a federally-designated Enhanced Enterprise Community.

In April 1997, an additional $100,000 was added to the Pilot grant, and is being used to encourage Brownfields redevelopment of the Fruitvale Bay Area Rapid Transit (BART) area's Transit Village project. This large-scale redevelopment project is designed to revitalize the neighborhood with shops, offices, and housing in a pedestrian-oriented setting. This is a local, community-driven project for which EPA is working in partnership with the Department of Housing and Urban Development (HUD), the Department of Health and Human Services (HHS), and the Department of Transportation (DOT) and private entities.

Objectives

The Oakland Pilot is seeking to revitalize the contaminated properties in the Central District and Coliseum Redevelopment Areas as well as the Fruitvale BART Station area. The major focus of the Pilot will be on completing Phase II site assessments and remediation planning. This information will assist Oakland's Redevelopment Agency in developing a strategy for redevelopment of the sites.

Accomplishments and Activities

The Oakland Pilot is:

- Reviewing existing data on two sites and completing site assessments;
- Completing health and safety plans, site surveys, and risk assessments, and preparing summary reports of the findings and recommendations; and
- Developing remedial plans and cost estimates.

Contacts:
Jeffrey Chew, Oakland Office of Economic Development and Employment, (510) 238-3629
Wally Woo, U.S. EPA – Region 9, (415) 744-1207

14.3.3 Richmond

Background

The project area is the 900-acre North Richmond Shoreline, which contains a variety of brownfields in a relatively compact area. Aging heavy industry, low-income housing, idle and vacant properties, and waste disposal facilities are concentrated in an area that borders a distressed neighborhood and an estuarine ecosystem known to support two endangered species. At least 36 properties (90 percent of the City's developable area) are contaminated with volatile organic compounds, polychlorinated biphenyls, and metals. The sector has a mix of thriving large businesses and struggling smaller ones. The presence of hazardous materials on the latter's property, combined with their shaky financial condition, has stymied growth in that sector.

Objectives

The focus of Richmond's brownfields effort is to stimulate economic growth and improve public health and the environmental quality of the Bay. To do this, the project is building on the intensive planning and cooperative partnerships that have evolved over the last five years. Richmond included a green component in its planning that will provide public recreation, open the shoreline for public use, and establish zoning standards to limit industrial activities that may endanger human health and the environment. Richmond is working to increase public awareness of contaminated sites and involve the community in remedial planning and redevelopment activities.

Accomplishments and Activities

Completed Activities:

- Created a computerized inventory of all properties within the project area. The listing includes assessor parcel number, site names, jurisdiction, address, property owner, and other site related information. A site inventory was distributed to interested parties;
- Developed site selection criteria and identified potential sites for matching funds from among the inventoried sites; and
- Held meetings with the North Richmond Industrial and Agricultural Association, the Municipal Advisory Committee, neighborhood councils, the League of Women Voters, and West County Toxics.

Current Activities:

- Completing preliminary site assessments of two to five sites within the North Richmond Shoreline;
- Developing financing mechanisms specifically to promote the City's brownfields process;
- Working to clarify jurisdictional authorities to promote coordination among the City, County, and State;
- Streamlining the regulatory process through cooperative partnerships with State and Federal authorities; and implementing community education and outreach programs to promote full stakeholder participation.

Related Activities:

- Several property owners, representing a number of large properties in the Pilot Project Area, are working together to explore issues of mutual concern such as regulatory cleanup processes and site assessments.
- The Pilot is working with Contra Costa College's Center for Science Excellence to develop information on the environmental status of each property in the inventory.

Contacts:
Nancy Kaufman, Planning Department, City of Richmond, (510) 620-6706
Wally Woo, U.S. EPA – Region 9, (415) 744-1207

14.3.4 Base Reuse Authority

There are a number of closing military facilities in the East Bay Plain. These include the Oakland Army Base, Alameda Naval Air Station, Fleet Industrial Supply Center Oakland, Oak Knoll Naval Hospital, and the Navy's Point Molate Fuel Depot. The facilities will be or have been taken out of military service and are intended for beneficial reuse. As part of the process leading to reuse, the facilities are being investigated and remediated to reduce impacts to human health and the environment to acceptable levels.

15.0 FINDINGS

This section summarizes the six key findings of the report.

15.1 Portions of the East Bay Plain currently support all of the groundwater beneficial uses listed in the Basin Plan.

Until the 1930s, the East Bay Plain Groundwater Basin historically was extensively used for drinking water, industrial, and agricultural supply. However, because of the lack of an adequate and dependable supply for a growing population, the East Bay now relies on imported surface water to satisfy nearly all drinking water and industrial demands. By far the most frequent current use of groundwater is for irrigation from "backyard" private shallow wells. It is estimated that East Bay Plain groundwater is used by over 4000 homeowners for irrigation. Groundwater is also still used by 10 businesses for industrial purposes and by several users to irrigate a few parks, golf courses, cemeteries and schools.

Groundwater is still used as source of drinking water by several small systems in the cities of Hayward, San Leandro and Oakland. A total of five permitted water systems (three in Hayward and two in San Leandro) are known to serve between 4 and 180 households each. The only known permitted system in Oakland is located in the Oakland Hills above the East Bay Plain Groundwater Basin. There are no permitted water supply systems north of Oakland.

In addition, according to Alameda County Flood Control & Water Conservation District's (ACFCWCD's) records, there are 507 wells that are classified as municipal or domestic wells. Nearly all of these wells are believed to be used for residential irrigation. However, there are still some individual private wells being used for drinking water.

The following table shows the existing and potential beneficial uses as determined by this evaluation for the Sub-Areas proposed by Figuers (1998).

Table 8. Existing and Potential Beneficial Uses in Sub-Areas of the East Bay Plain

Sub-Area	MUN – Municipal And Domestic Water Supply	AGR – Agricultural Water Supply	IND –Industrial Service Water Supply and PROC Industrial Process Supply
Richmond	E[1]	E	E
Berkeley	E[1]	E	E
Oakland	E[1]	E	E
San Leandro	E	E	E
San Lorenzo	E	E	E
Central	E[1,2]	E	E

P-Potential E-Existing

[1] No known existing drinking water wells, existing MUN designation based on backyard irrigation use.

[2] EBMUD has installed a pilot aquifer storage well in the Central Sub-Area, which, if successful, would result in an existing beneficial use.

15.2 A review of historical groundwater beneficial uses provides insight into future probable uses.

All water supplies in the East Bay were derived from wells and local runoff until the import of Sierra water into the area in 1930. Figuers (1998) searched for historical private and municipal wells as part of a comprehensive evaluation of groundwater conditions in the East Bay Plain for the Regional Board. In addition to municipal well fields, thousands of private wells supplied water to homes and businesses. In 1911, there was an extensive survey of all private and public wells in the East Bay area, locating and mapping more than 3400 active wells serving a population of about 232,150 (1910 census). Norfleet estimates that in the range of 15,000 wells were drilled in the East Bay Plain between 1860 and 1950. The majority of the wells were less than 50 feet deep, but many were 200 to 500 feet deep, with the deepest reaching 1000 feet below the ground surface. A few are still in use today, but most were abandoned and forgotten. Virtually none of these wells was properly destroyed.

Table 9. Summary of East Bay Plain Groundwater Basin Sub-Areas

Sub-Area	Approximate Basin Depth	Historic Municipal Groundwater Well Fields (circa 1890-1930)	Are Significant Aquitards Present?
Richmond	>600 ft.	Yes, San Pablo and Richmond Well Fields	No
Central	>1000 ft	Yes, High Street Well Field	Yes
Berkeley	< 300 ft.	No, but suitable for limited single family/industrial users. No historical evidence that groundwater supplies are sufficient for municipal use	No
Oakland	< 700 ft.	Yes, Fitchburg Well Field	Yes, along western portion
San Leandro	700-1100 ft.	No, however, area was primarily rural prior to 1930.	Yes, along western portion
San Lorenzo	700-1100 ft.	Yes, Roberts Well Field	Yes, along western portion

15.3 Shallow groundwater has been degraded locally in much of the East Bay Plain and regionally in the Cities of Emeryville and San Leandro. Deeper groundwater supplies are at risk given the number of abandoned wells.

Ambient monitoring data on common organic pollutants within the deeper groundwater (i.e., deeper than about 100 feet) is very limited. Based on this limited data, the overall water quality of deep groundwater in the East Bay Plain is good. Much more data is available on the water quality of shallow groundwater (i.e., less than about 100 feet). Some shallow groundwater has been impacted by historical and current releases of fuels and solvents. See Section 8.0 and 9.0 for a more detailed discussion on water quality.

Groundwater pollution in the East Bay Plain appears to generally be restricted to portions of the shallow aquifers. Typically, site investigations require that groundwater plumes be defined in both the lateral and vertical dimension. In almost all cases, groundwater pollution appears limited to less than 50 feet below the ground surface.

However, recently one of EBMUD's aquifer storage test wells detected contamination at a depth of over 200 feet below ground surface. Volatile organic compounds were detected in a test well located west of Interstate 880 about one mile north of the Oakland Coliseum. TCE was detected in the test well at 50-70 ppb that was screened between 260 and 350 feet below ground surface. Prior to this detection, no pollution had ever been detected above trace levels at depths greater than 140 feet. The source and migration pathway for the TCE contamination is currently under investigation by DTSC.

Although the source of the above deep groundwater contamination has not been defined, it may illustrate the potential for connection between the shallow deposits and deeper aquifers. Moreover, given that there are very few existing wells pumping from the deeper aquifer, and the numerous historical wells in the East Bay Plain that could be vertical conduits, if the number of wells pumping from the deeper aquifer increases, there is a potential that shallow pollution could be drawn down into the deeper aquifers.

15.4 Innovative remedial approaches are being developed to manage East Bay land that often contains soil and groundwater pollution.

Several significant land development and redevelopment initiatives may be affected by the regulatory recommendations resulting from this beneficial use evaluation. The initiatives are as follows:

- Closing Military Bases and Conversion to Civilian Uses;
- City of Oakland Urban Land Redevelopment Program; and

- US EPA's Brownfields Economic Redevelopment Initiative for Emeryville, Oakland, and Richmond.

These initiatives have a common interest in remediating and redeveloping East Bay land that often contains soil and groundwater pollution.

A legacy of intense urban and industrial development has contaminated some soil and portions of the shallow East Bay Plain aquifers. In general, addressing soil contamination issues is relatively straightforward compared to groundwater. For soil cleanup, most projects utilize a risk-based approach to establish cleanup levels. Then, based upon redevelopment, technical, and economic factors, the soil is either excavated to remove chemicals above a prescribed level or remediated in-situ. Groundwater cleanup, on the other hand, poses a much more difficult dilemma. First, groundwater contamination is usually much larger in areal extent than soil contamination and may underlie many other properties besides the source property. Second, since all groundwater is essentially currently designated with a municipal beneficial use, the groundwater cleanup objectives are set no greater than drinking water standards. Given the technical difficulty of restoring contaminated aquifers, most groundwater cleanup involves significant expenditures in the range of $100,000 - $1,000,000+, and time frames measured in decades (for VOCs). Compared to soil cleanups, costs for groundwater cleanups are much more difficult to forecast. The staggering costs and potential liability associated with cleaning up this contamination severely impacts local redevelopment efforts.

The uncertainty in projecting cost and cleanup time has resulted in financial institutions being unwilling or very risk-adverse when considering whether to invest in groundwater contaminated areas of the East Bay Plain. In addition, the uncertainty breeds delays in converting closing military bases to civilian uses including expanding the Port of Oakland's maritime facilities. Moreover, most groundwater contamination is located in shallow groundwater zones that are unlikely to ever be used as a source of drinking water and are often isolated from deeper or regional aquifers. The viewpoint of many of the parties involved in groundwater remediation is that society is essentially spending enormous amounts of money to remediate contaminated shallow groundwater even though it will take decades to restore, is unlikely to be used, is usually isolated from deeper and regional aquifers, and if used, will likely still need treatment to meet use requirements.

Additionally, several other essentially local programs and initiatives may have an impact upon groundwater cleanup: US EPA's Underground Injection Control program, wellhead protection programs, and source water protection programs under the amended Safe Drinking Water Act. At this time, none of these programs have been developed enough to indicate their impacts on redesignating beneficial uses.

15.5 East Bay Municipal Utilities District is considering using portions of the East Bay Plain for conjunctive use.

In 1997, EBMUD started a pilot project to evaluate the use of dual-purpose injection/extraction wells in the East Bay Plain. The technology, also known as aquifer storage

recovery (ASR) may enable the District to store excess high-quality Sierra water supply underground for future use during a drought or earthquake. By using the same well for both injection and extraction, the District plans to extract virtually the same high quality water supply as was injected. The results of the pilot projects, along with an assessment of local groundwater resources, will be used to determine EBMUD's future plans for beneficial use of the Plain. Potential beneficial uses by EBMUD include ASR wells, municipal extraction wells, and non-potable irrigation wells. The potential locations of these facilities are not known, but may include nearly any part of the East Bay Plain within the EBMUD service area. Aquifers likely to be used would be below the Yerba Buena Mud.

15.6 EBMUD's Backflow Prevention Database can be used to supplement ACFCWCD well searches.

Two public databases that contain information on existing wells in the East Bay Plain yield notably different estimates. The ACFCWCD database covers the Alameda County portion of the East Bay Plain. EBMUD maintains a database of addresses where they have installed backflow prevention devices at residential or commercial properties that have volunteered that they have wells. EBMUD's database covers the entire East Bay Plain with the exception of Hayward, which is outside their service area. Comparisons between the two databases yield notably different estimates regarding the number of wells in different communities. The following table provides an example of the differences between the databases in the number of wells in selected cities.

Table 10. Comparison of EBMUD and ACFCWCD Well Databases

City	[1]EBMUD Backflow Prevention Database	[2]ACFCWCD Well Permit Database
Alameda	400	2
Oakland	400	32
San Leandro	1958	76
San Lorenzo	756	14

Note:
[1] EBMUD database only includes wells owned by property owners that voluntarily agreed to participate in its backflow prevention program.
[2] ACFCWCD database only includes wells drilled after 7/17/73 and wells documented by DWR for the groundwater investigation in Alameda County in the 1960's.
Above statistics are for all domestic, municipal, industrial and agricultural wells.

Currently, environmental consultants use the ACFCWCD database to search for active wells in the vicinity of groundwater pollution sites. Since the EBMUD backflow database has a greater number of wells, consultants should also search this database although there may be privacy issues to be resolved.

16.0 ANSWERS TO KEY QUESTIONS

At the outset of this beneficial use evaluation, the committee posed six key questions:

Question No. 1. What are the current and planned future groundwater beneficial uses of the East Bay Plain?

Answer: All groundwater beneficial uses currently exist in the East Bay Plain. However, the existing uses are relatively limited in certain Sub-Areas. The only firm plans for future use are by the City of Hayward for Emergency Supply (see Section 13.4.1). In addition, EBMUD is evaluating the potential for use of the East Bay Plain for storage of imported surface water and/or use of native groundwater (see Section 13.4.2).

Background: Groundwater was the major source of drinking water in the East Bay prior to the development and import of a Sierra water supply in the 1930s to serve a growing population and to solve water supply reliability problems. Since that time, groundwater has served only a minor role in water supply, primarily for industrial or irrigation purposes. However, following 60 years of near obscurity, there has been a recent resurgence in interest in using groundwater as a supplemental water supply (e.g., Hayward's emergency groundwater municipal supply system) and some others are being seriously considered (EBMUD's groundwater storage and retrieval project). A new test well was drilled by EBMUD in the San Lorenzo area during 1998. The 660-feet deep well was constructed to evaluate the potential for using the East Bay Plain aquifer to store imported surface water. The water would be used in the event of a drought or after a major earthquake. EBMUD is evaluating another well site near the Oakland Coliseum and may consider other sites within the East Bay Plain. Such storage is attractive because it would provide a reliable, although limited, emergency supply west of the Hayward Fault. The City of Hayward has in the past few years installed four wells as part of a five well project to provide a 7-day emergency municipal water supply in the event of an emergency (e.g., earthquake).

Question No. 2. Can the East Bay Plain be subdivided into Sub-Areas based on hydrogeology?

Answer: Yes, and it should be. The East Bay Plain has been subdivided by several previous investigators (Todd, 1986; Muir, 1988; Maslonkowski, 1988; Figuers 1998). Figuers' subdivision is a refinement and expansion of Muir and Maslonkowski's work. For this beneficial use evaluation, it is recommended that the Basin Plan be revised to incorporate the groundwater basin subdivisions of Figuers (1998).

Background:
The East Bay Plain can be subdivided into six Sub-Areas (Figuers, 1998), (Figure 13). The Sub-Areas laterally merge into one another, and there are few distinct subdivisions based upon depositional source. No distinct flow boundaries/barriers, topographic, or geologic features provide easily recognizable boundaries. The Sub-Areas were based on a combination of previously defined boundaries and a specific analysis requested by the Regional Board of Figuers of geologic, hydrogeologic, and geomorphic factors available from historical and contemporary data.

Question No. 3. Where is the use of the East Bay Plain limited?

Answer: Groundwater uses in portions of the East Bay Plain Sub-Areas are limited by several factors: 1) existing high TDS levels in shallow Bay Front aquifers, 2) the existing high TDS levels in artificial fills, 3) the potential for saltwater intrusion, 4) volatile organic compound groundwater contamination in portions of the shallow aquifers, 5) lack of significant water quantities and/or storage, and 6) shallow non-point source groundwater contamination from leaking sewer lines, septic systems and applied fertilizers.

Background:
Based upon an analysis of the available data, some limitations on the use of the Sub-Areas are as follows:

Table 11. Municipal Beneficial Use Limiting Factors in the East Bay Plain

Sub-Areas	Extensive Shallow VOC Groundwater Pollution	Existing High TDS Levels in Artificial Fill	Existing High TDS Level in Shallow Bay Front Aquifers
Richmond		√	√
Berkeley			
Oakland		√	√
San Leandro	√		
San Lorenzo			
Central		√	√

Question No. 4. Can the shallow and deep zones have different designations?

Answer: The question is applicable because most groundwater pollution in the Bay Area is shallow (i.e., less than 50 feet below the ground surface) and most use, other than for backyard irrigation, is from deeper aquifers, typically greater than 200 feet below ground surface. Based primarily upon available data, at this time it appears that the shallow and deep aquifers cannot have different designations in most of the East Bay Plain. However, there are localized situations where such differentiation can be made.

Background:
The Yerba Buena Mud forms a major aquitard between the shallow and deep aquifers throughout much of the southwest portion of the East Bay Plain. However, the integrity of the aquitard probably is compromised due to the drilling of wells in the 1890-1930 time frame. In Oakland, it is estimated that there are over 200 wells that penetrated the Yerba Buena Mud. Virtually none of these wells were properly destroyed. In the remaining portions of the East Bay Plain, the Yerba Buena Mud is not present and thus no natural aquitard separates the shallow and deep aquifers.

One exception is the area along the extreme western East Bay Plain Shoreline where artificial fill was placed after 1930. In this area the Yerba Buena Mud is continuous and should form a natural barrier to minimize the downward spread of pollution.

From a hydrogeologic standpoint, no aquitard is impermeable. However, for significant downward

migration to occur several factors need to be present. First, a pollution source must be present with high enough residual concentrations to be detectable if it migrates from the shallow to the deeper aquifers. Second, there must be a pathway for the pollutants to migrate from the shallow to the deep aquifers. This pathway may be a man-made conduit such as an improperly installed or abandoned well, or natural discontinuities in the aquitard itself. Lastly, a gradient must be present that drives the contaminants downward. This can be due to hydraulic gradient downward caused by pumping from the lower aquifer, or a density gradient caused by the presence of dense non-aqueous phase liquids such as free phase solvents or PCBs.

In the Santa Clara Valley, shallow groundwater contamination has rarely migrated through the regional aquitard and effected the deeper aquifers. However, of the several sites with pollution below the regional aquitard, nearly all are believed to be due to vertical migration along abandoned or poorly destroyed wells.

Question No. 5. Should any current beneficial use designations change?

Answer: Groundwater beneficial uses should be changed in the vicinity of the Port of Oakland Alameda Point and the Chevron Refinery in Richmond for artificial fill. Such changes are described in Section 17.9.

Background:
The current Basin Plan designates all groundwater beneficial uses as "existing." While this designation is appropriate for the East Bay Plain as a whole, the designations do not apply when the basin is appropriately divided into Sub-Areas.

As outlined in the discussion of Question 3, municipal and domestic supply beneficial use is limited in several areas of the East Bay Plain. Most notably, the shallow artificial fill along the Bay-front is unlikely to be used as a source of drinking water due to the existing high TDS, potential for saltwater intrusion, and relatively low yield.

Question No. 6. Are there any areas requiring special protection programs?

Answer: Several areas should receive additional focus. First, the deeper portions of the basin in the San Lorenzo, San Leandro, Southern Oakland and Richmond Sub-Areas appear to be the most likely areas for future potential MUN beneficial use. Monitoring the deeper aquifers for organic pollutants is necessary. Second, a well destruction program should be initiated to locate and seal abandoned wells in the East Bay Plain. Former wells located near emergency water supply wells, and aquifer storage and recovery wells would be primary candidates for determining their location and destruction. Third, the existing water supply systems listed in Section 13.3 should be subject to a source water protection program.

17.0 RECOMMENDATIONS

Based on the analysis and findings of this report, the following recommendations are made:

17.1 The Regional Board should amend the Basin Plan to recognize the East Bay Plain Basin Sub-Areas. (As shown on Figure 13).

17.2 The existing ACFCWCD regional groundwater monitoring network should be expanded to include more wells, monitored more frequently, and for a larger list of chemicals of concern. A similar network is also needed in the Contra Costa County portion of the East Bay Plain.

Such a network could be modeled after the proposed monitoring program developed as part of a USEPA grant application (City of Emeryville, 1998). The grant was not funded, but the cooperating agencies are interested in the network. The grant sought to create the "East Bay Groundwater Awareness and Information Network" (GAIN). The objective of GAIN are (1) to design a community based, time relevant groundwater monitoring program network, (2) cultivate public interest in obtaining and using information, (3) complete a time relevant groundwater monitoring network, and (4) manage, process, and deliver groundwater monitoring data to the public. GAIN is designed to provide East Bay residents with the ability to gauge for themselves the overall "health" of their deep groundwater resources. GAIN also targets localized areas where groundwater is contaminated and residents have requested monitoring data to guide decisions affecting economic revitalization.

17.3 Agencies within the East Bay Plain should make their well databases more accessible to the public.

A well search is typically required as a part of a groundwater contamination investigation that involves a plume that has migrated offsite and beneath adjacent properties. The purpose is to determine if any groundwater wells could be impacted by the plume, and to notify the well owner if necessary. A well search may include a database review, door-to-door surveys and/or targeted mailings.

Five agencies maintain well databases in the East Bay Plain. ACFCWCD is the primary well permitting agency in the Alameda County Portion of the basin, and well searches can be requested by contacting Andreas Godfrey at 510-670-5575. EBMUD has a database of well owners in its area for their Backflow Prevention Program (see Figure 18). The Regional Board has a database of historic wells that are shown in Figure 2 of this report. Contra Costa County and the City of Berkeley both permit well installations in their respective jurisdictions, but, well searches are not currently publicly available. Both Contra Costa County and the City of Berkeley have plans to make their well databases more accessible in the future.

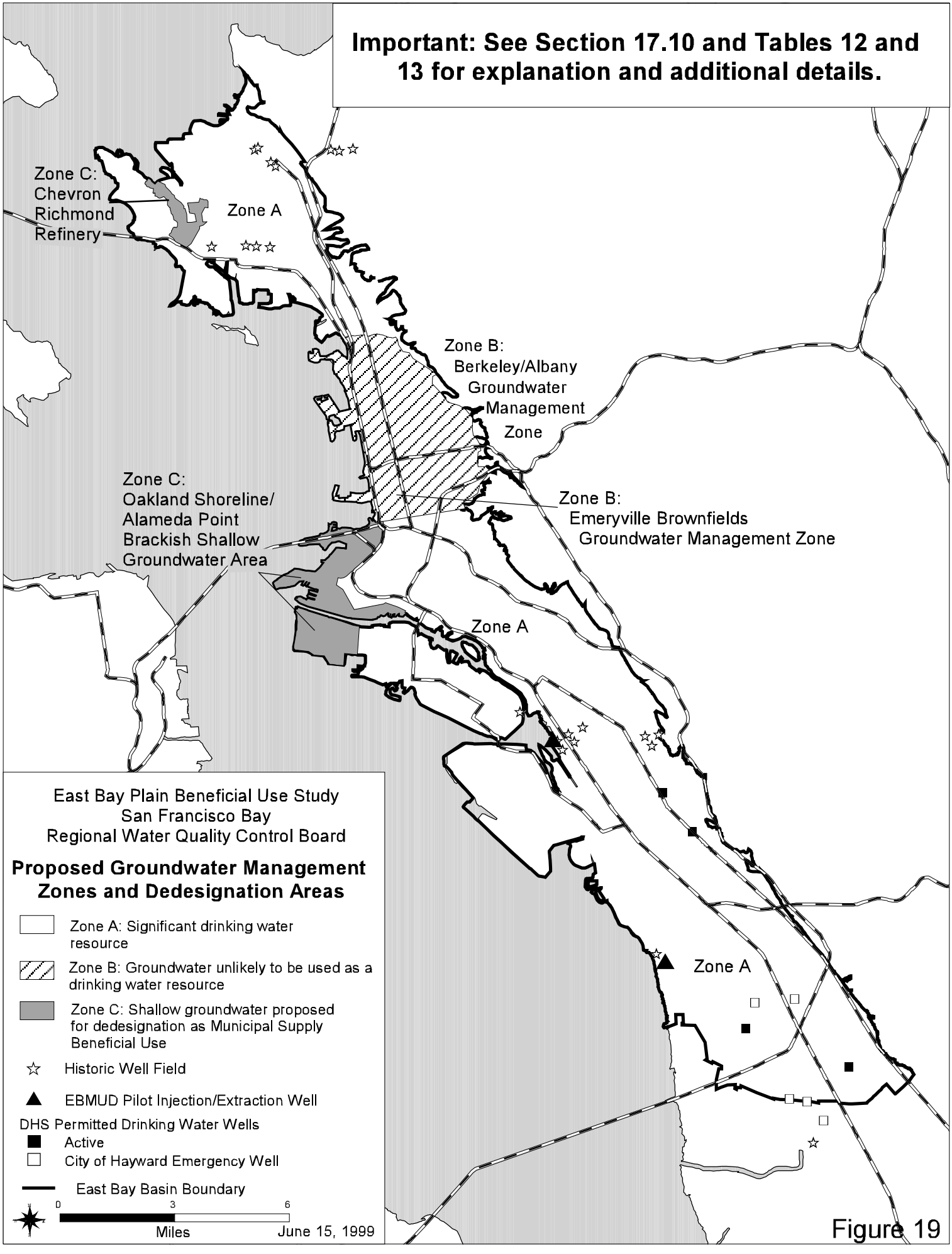

Important: See Section 17.10 and Tables 12 and 13 for explanation and additional details.
Zone C: Chevron Richmond Refinery
Zone A
Zone B: Berkeley/Albany Groundwater Management Zone
Zone C: Oakland Shoreline/ Alameda Point Brackish Shallow Groundwater Area
Zone B: Emeryville Brownfields Groundwater Management Zone
Zone A
Zone A
East Bay Plain Beneficial Use Study
San Francisco Bay
Regional Water Quality Control Board
Proposed Groundwater Management Zones and Dedesignation Areas
Zone A: Significant drinking water resource
Zone B: Groundwater unlikely to be used as a drinking water resource
Zone C: Shallow groundwater proposed for dedesignation as Municipal Supply Beneficial Use
Historic Well Field
EBMUD Pilot Injection/Extraction Well
DHS Permitted Drinking Water Wells
Active
City of Hayward Emergency Well
East Bay Basin Boundary
0
3
6
Miles
June 15, 1999

Figure 19

Plans are under way to coordinate EBMUD's backflow database and the historic well locations contained in Figuers (1998) with ACFCWCD's database and make all three databases available at one agency.

17.4 The Regional Board Staff should encourage the use of aquifers in the East Bay Plain for groundwater storage.

An increase in local storage capacity would be a small but significant step towards implementing the recommendations of the Comprehensive Conservation and Management Plan (CCMP) prepared by the San Francisco Estuary Project. The CCMP encourages the use of groundwater basins with the capacity to store additional water to be used as "water banks." Freshwater inflow is a major factor that determines environmental conditions in the Estuary. The volume and timing of freshwater inflow affects the Estuary's circulation and water quality, conditions for wildlife and the survival of aquatic species. If groundwater from existing sources or surface water is stored in these aquifers (either from surface water sources in wet years or from treated wastewater), demand on limited surface water resources can be reduced.

17.5 The Regional Board staff should encourage the establishment of a basin-wide groundwater management program.

This could take the form of a formal AB 3030 Groundwater Management Plan with a Wellhead Protection Plan included, a stand-alone Wellhead Protection Plan, or a regional plan that addresses issues specific to the East Bay Plain.

Currently, much historical and geological information is available on the past use of groundwater, water availability and quality, as well as problems encountered by past use. EBMUD is currently evaluating the potential of using the East Bay Plain for conjunctive use and has drilled two deep wells in the study area. At a minimum, it would be useful for both planning purposes and water quality protection to develop some type of plan that would address the specific issues within the potential capture zones of the new wells.

Elements of the management plan could address: saltwater intrusion, overdraft, delineation of the aquifer and its recharge areas, location of potential sources of contamination (e.g., a source water protection plan), a plan to decommission old wells, conjunctive use, proper well construction, coordination with local, state and federal agencies, and review of land use planning activities that might create a risk to groundwater.

If EBMUD's pilot groundwater storage project is successful, then they would be the obvious local agency to assume a management role in the East Bay Plain. In addition, the ACFCWCD charter provides the county with some groundwater management authority. By monitoring both groundwater levels and quality, ACFCWCD is practicing the first level of groundwater management.

17.6 The methods required for conducting a Vertical Conduit Study and Well Search in the East Bay Plain should be formalized by the Regional Board.

There is no formal guidance that describes the necessary tasks for conducting Vertical Conduit Studies or Well Searches in the East Bay Plain. Given the importance of such studies as part of groundwater contamination investigations, it is recommended that the information collected in this report as well as other references on the subject be compiled into a single document.

Cities within the East Bay Plain and Alameda and Contra Costa Counties should consider implementing a well abandonment program similar to the one developed by the Alameda County Water District. Such a program would require developers to destroy any abandoned wells prior to redevelopment.

17.7 The Regional Board should encourage the establishment of a vertical conduit location and abandonment program.

It is estimated that there are 15,000 historical wells in the East Bay Plain that were drilled between 1860 and 1950. Most of these wells have been abandoned but not properly destroyed. Some of these wells may pose a current threat to the East Bay Plain because they provide a potential vertical pathway for shallow contamination to migrate into the deeper zones. The program could be implemented by Contra Costa and Alameda counties.

17.8 The GIS coverages that were developed as part of this Beneficial Use Evaluation should be updated regularly and made accessible to the public on the Internet.

The databases include location information on groundwater pollution sites and historical and modern well locations. A dedicated funding source for maintaining these coverages will need to be located. The GIS analysis conducted for this project identifies areas where their efforts can be targeted.

17.9 Proposed Groundwater Management Zones and Dedesignation Areas

The East Bay Plain can be subdivided into three management zones for purposes of prioritizing groundwater remediation and dedesignating beneficial uses. Subdivisions were developed by utilizing the information presented in this report on water quality, historic, existing and probable-future beneficial uses, and hydrogeology.

The following subdivisions are proposed for preserving and restoring groundwater beneficial uses in the East Bay Plain. A description of each subdivision is included below, summarized on Tables 12 and 13 and shown graphically on Figure 19.

Zone A - Significant drinking water resource. Remedial strategies should be focused on actively maintaining or restoring groundwater quality to drinking water quality objectives. These areas historically supported a municipal beneficial use prior to the 1930's and likely

could, with proper management, be used as a limited municipal source of drinking water in the future. In Hayward and San Leandro, there are five permitted small water system wells that serve, collectively, over 200 individual users. However, relatively low recharge rates limit the sustained yields. Cleanup, spill prevention and education efforts within the source water protection zones of existing municipal wells should be the top priority of local and state programs.

Portions of Zone A may warrant higher concern. For example, areas within Zone A with a high density of potential conduit wells and/or shallow backyard wells may need to receive higher priority and be subject to more detailed investigations than other areas. An example of delineating such areas is shown on Figure B-3 in Appendix B.

From a beneficial use perspective, these areas are of higher concern because 1) historic wells may act as vertical conduits and allow shallow contamination to migrate into deeper aquifers, 2) current backyard irrigation wells may represent an incidental drinking water exposure pathway to groundwater contamination as well as a non-drinking water pathway (e.g., volatilization or irrigation of fruits and vegetables), and 3) contamination sites within source water protection zones may impact existing or planned drinking water wells.

Investigation and remediation of groundwater contamination sites within areas of higher concern should be tailored to address the potential for beneficial uses to be impaired due to any of the three above issues. Depending on the site-specific circumstances, this may include a more in-depth investigation (to identify the location of historic or current wells) or more aggressive remediation (to protect current or planned drinking water wells). Groundwater contamination sites within source water protection zones should be the top priority of local and state programs.

Within Zone A, there are also areas that may warrant less aggressive remediation on a case-by-case basis. As a mechanism to both recognize that the shallow groundwater is unlikely to be used for drinking water, but still safe guard the deeper aquifers for future drinking water supply uses, a less aggressive remediation strategy is recommended. Criteria for allowing less aggressive remediation in Zone A areas is discussed in Recommendation 17.10.

Zone B - Groundwater that is unlikely to be used as a drinking water resource. While these areas meet the broad "sources of drinking water" criteria, limiting factors related to yield and water quality restrict practical uses. Remedial strategies should reflect the low probability that groundwater in this zone will be used as a source of drinking water in the foreseeable future. However, other beneficial uses/exposure pathways exist and should be protected. These include domestic irrigation, industrial process supply, human health, and ecological receptors. The potential for exposure via incidental ingestion from back yard wells should be evaluated. Appendix B highlights areas within Zone B that have the highest density of backyard wells. Zone B areas should utilize risk based corrective action in establishing groundwater cleanup standards. Passive remediation to restore MUN beneficial uses as a long-term goal is recommended.

Important Note - This report is not recommending beneficial use dedesignation for Zone B areas. Furthermore, these recommendations should not be considered as advocating a "No Action" approach to groundwater pollution. Rather, Zone B is an area where other, non-drinking water, exposure pathways are more likely to "drive" remediation.

Within the Easy Bay Plain, areas proposed for Zone B management are:

Berkeley Sub-Area Groundwater Management Zone: Groundwater extraction for municipal drinking water supply is unlikely in the Berkeley Sub-Area due to the relatively thin aquifer (ranging from 10 to 300 feet thick, and averaging 100-200 feet thick) and limited groundwater recharge (Figuers, 1998). Accordingly, remedial strategies should be focused on actively protecting existing domestic irrigation and industrial uses and potential aquatic receptors rather than as a municipal drinking water supply. Achievement of drinking water objectives within a reasonable time period is an appropriate long-term goal. At a minimum, groundwater pollutant sites would be regulated pursuant to SWRCB Resolution 92-49, and need to demonstrate 1) that reasonably adequate source removal has occurred, 2) the plume has been reasonably defined both laterally and vertically and 3) a long-term monitoring program is established to verify that the plume is stable and will not impact ecological receptors or human health (e.g., from volatilization into trenches and buildings).

Emeryville Brownfields Groundwater Management Zone: Groundwater is not currently used for any municipal, domestic, industrial, or agricultural purpose in Emeryville. No extractive beneficial uses are planned in the future. Remedial strategies should focus on protecting potential aquatic receptors and potential future irrigation or industrial uses. Achievement of drinking water objectives within a reasonable time period is an appropriate long term goal. Emeryville has developed a sub-regional groundwater monitoring plan that will provide information on both the shallow and deeper aquifer water quality. In addition, Emeryville has developed a detailed GIS system for tracking contaminated properties that will help to prevent inappropriate land uses. Lastly, Emeryville may consider assuming some of the liability for the groundwater pollution as well as overseeing smaller cleanups under an agreement with DTSC and the Regional Board.

Zone C - Shallow, nonpotable groundwater proposed for dedesignation of the Municipal Supply Beneficial Use. The Regional Board should locally dedesignate the municipal beneficial use for brackish, shallow groundwater in Bay-front artificial fill, young bay mud and the San Antonio Formation/Merritt Sand. This groundwater meets the exemption criteria of the State Water Resources Control Board's (SWRCB's) Sources of Drinking Water Policy because the groundwater could not reasonably be expected to serve as a public water supply and exceeds the 3000 mg/L total dissolved solids criteria. Cleanup should be protective of ecological receptors and human health. In addition, pollution sites will continue to be required to demonstrate 1) that reasonably adequate source removal has

occurred, 2) the plume has been reasonably defined both laterally and vertically and 3) a long-term monitoring program is established to verify that the plume is stable and will not impact ecological receptors or human health (Pursuant to SWRCB Resolution 92-49. Remedial strategies should focus on other exposure pathways such as human health and ecological receptors.

In addition, for Zone C areas overlying more productive, although currently unused deeper aquifers, potential vertical conduits should be located and properly destroyed. Contamination in deep zones underlying Zone C would be subject to the requirements of Zone A.

Two shallow groundwater areas in the East Bay Plain are recommended for dedesignation. Any deep aquifers in these areas would continue to be designated as MUN.

Oakland Shoreline/Alameda Point Brackish Shallow Groundwater Zone: In this zone, shallow bay-front groundwater in the artificial fill, Young Bay Mud and San Antonio/Merritt Formations generally exceeds the 3000 mg/l TDS criteria (SWRCB Resolution No. 88-63). Dedesignation of the municipal beneficial use in this area is therefore warranted. While some artificial fill has TDS below 3000 mg/l (due to recharge from rainfall, landscape irrigation and leaking water pipes), most groundwater to a depth of 100 feet below ground surface is not a Resolution No. 89-39 source of drinking water. An evaluation of TDS data in the vicinity of the FISCO Navy Base, Port of Oakland and Alameda Point is included in Appendix G. A review of groundwater TDS data from other portions of the Port of Oakland High TDS Zone (i.e., Port of Oakland, Alameda Point, Oakland Army Base) shows similar results.

Chevron Richmond Refinery: This is a large refining complex and tankfield. Over 300 different refined petroleum products are manufactured and stored at the refinery. The refinery was built at the turn of the century. The 2900-acre refinery lies along the southern shore of San Pablo Bay in Contra Costa County. Portions of the property were created from bay fill.

Groundwater pollution at the refinery is prevented from migrating off site by a four-mile long slurry wall/ groundwater interceptor trench, known as the Groundwater Protection System (GPS). Groundwater extraction through the trenches and/or wells establishes and maintains a contiguous capture zone, which prevents migration of potentially contaminated shallow groundwater past the GPS alignment. A low permeability Bay Mud “floor” inhibits vertical transport of shallow contaminants to the underlying deeper aquifers (see Appendix D for more detail). Since 1988, Chevron has spent approximately $100 million on groundwater remediation at the Richmond Refinery.

Dedesignation of the municipal beneficial use of the shallow groundwater (to approximately 100 feet) is proposed beneath the “Flats Zone” which comprises the

flatland marsh area bounded by San Pablo Bay to the north and extending south along the northeast side of Potrero-San Pablo Ridge. The Regional Board has previously found that the GPS is a satisfactory corrective action measure and protects beneficial uses of San Francisco Bay and underlying deeper aquifers.

17.10 Less Aggressive Remediation Approach

Within the East Bay Plain, there are groundwater pollution plumes that may warrant less aggressive remediation on a case-by-case basis. In general aggressive cleanup may not be warranted when the plume is shallow, concentrations are declining and no beneficial uses are threatened. The requirement for aggressive cleanup can possess a serious obstacle to redevelopment of blighted brownfields. The goal of the proposed Less Aggressive Remediation Approach is to outline "basin specific" situations where less aggressive remediation may be acceptable.

One example is pollution in shallow deposits above the Yerba Buena Mud. Groundwater in these shallow deposits is unlikely to be used as a source of drinking water (due to low yield, elevated levels of coliform from leaking sewer pipes, and requirement for a 50-foot well seal for new municipal wells). However, deeper aquifers beneath the Yerba Buena Mud do have a high potential for municipal development. Therefore, it is important that existing pollution in the shallow deposits is prevented from migrating into the deeper aquifers below the Yerba Buena Mud. As a mechanism to both recognize that the shallow groundwater is unlikely to be used for drinking water, and to safe guard the deeper aquifers for future drinking water supply uses, the following approach is recommended.

Ultimately, the remedial options that would be part of less aggressive strategy are dependent on site specific conditions. However, likely options could include restricting groundwater remediation to the source area only, allowing monitored natural attenuation, or implementing pump-and-treat solely to limit plume migration.

Less Aggressive Remediation Approach Criteria: The Regional Board should consider allowing less aggressive remediation within Zone A, on a case-by-case basis, provided that the responsible party demonstrates to the satisfaction of the Board, at a public meeting, that the following criteria are addressed:

1) the pollution is pre-existing and has not occurred subsequent to this policy;
2) pollutants are reasonably characterized both laterally and vertically;
3) the source is reasonably removed or remediated;
4) pollutant concentrations are stable or declining, and the requisite concentration levels will be attained within a reasonably defined time period;
5) the shallow aquifer is separated from the deeper aquifer by a continuous confining layer (the Yerba Buena Mud or its lateral equivalent aquitard);
6) potential vertical conduits are properly destroyed;
7) existing groundwater and surface water beneficial uses are not impacted by the pollutants;
8) the proposal is consistent with any local groundwater management plans and well head

protection areas (current or future).

The Regional Board should provide a 30-day public notice to all known, interested parties when considering taking such an action.

Comparison of "Less Aggressive Remediation Approach" to "Containment Zone Policy": Both the Containment Zone Policy and the proposed Less Aggressive Remediation Approach specify criteria to address existing pollution plumes. The following discussion provides a brief summary of the Containment Zone Policy and then contrasts key differences.

The Containment Zone Policy (SWRCB Order No. 92-49) provides a mechanism for regulating groundwater pollution where "attainment of applicable water quality objectives cannot reasonably be achieved," and is defined as a specific portion of a water bearing unit where the Regional Board finds that it is unreasonable to remediate to the levels that achieve water quality objectives.

The Containment Zone Policy establishes a number of conditions that must be satisfied before a containment zone may be adopted by a Regional Board. For instance, a containment zone applicant must "take all actions necessary to prevent the migration of pollutants beyond the boundaries of the containment zone in concentrations which exceed water quality objectives." Additionally, the applicant "must verify containment with an approved monitoring program and must provide reasonable mitigation measures to compensate for any significant adverse environmental impacts attributable to the discharge." Most significantly perhaps, the applicant "must propose and agree to implement a management plan to assess, cleanup, abate, manage, monitor, and mitigate the remaining significant human health, water quality, and environmental impacts to the satisfaction of the Regional Water Board."

There are two key differences between the Less Aggressive Remediation Approach and the Containment Zone Policy. The Less Aggressive Remediation Approach is a "basin-specific" approach that allows for management of plumes where requisite concentration levels will be attained within a reasonably defined time period. In contrast, the Containment Zone Policy is a statewide policy and addresses groundwater pollution where attainment of applicable water quality objectives cannot reasonably be achieved. Thus the Less Aggressive Remediation Approach differs because it based on local conditions and aimed at sites that will eventually meet applicable water quality objectives.

Table 12. Summary of Proposed East Bay Plain Groundwater Management Zones

Zone		Historical Public Water Supply	Historical Domestic Water Supply	Existing, Probable or Potential Drinking Water Source	Remediation Strategy	Location
A – Areas of Basin that have moderate to significant deep drinking watert resource	Shallow	Yes, but limited	Yes	Potential	For shallow pollution, goal is to maintain and restore drinking water quailty and actively prevent migration into deeper zones. Target areas of Special Concern shown on Table 13.	All of San Leandro and San Lorenzo Subareas; Bulk of Cen Oakland and Richmond Sub A
	Deep	Yes	Yes	Existing or Probable	For deeper aquifers require active remediation and hydraulic control to maintain and restore drinking water quality.	
B – Areas of basin that are unlikely to be used as a drinking water resource		No	Yes	Potential	Passive Remediation to restore drinking water quality as a long-term strategy while actively protecting private irrigation wells, human health and ecological receptors. Utilize risk based corrective action in establishing groundwater cleanup standards.	Berkeley Sub Area and Emery
C - Not a drinking water resource		No	No	Neither Existing, Probable or Potential	Protect human health and ecological receptors. Dedesignate MUN in Zone C. Utilize risk based corrective action in establishing groundwater cleanup standards. Locate and seal vertical conduits that extend into deeper portions of Zone B.	Shallow high TDS aquifers alo Oakland and Alameda Shorelin and at Chevron Refinery.

MUN - Municipal and Domestic Supply Beneficial Use
Shallow Zone - Groundwater within shallow deposits above the Yerba Buena Mud or its lateral equivalent.
Deep Zone - Groundwater below the Yerba Buena Mud or its lateral equivalent within the Alameda Formation or Santa Clara Formation as defined by Figuers (1998) .

Table 13. Proposed Strategy by Sub-Area for Addressing Groundwater Contamination in the East Bay Plain

Sub-Area	Vertical Subdivisions	Areas of special concern	Areas proposed for less aggressive or passive remediation.	Areas proposed for dedesignation
RICHMOND	*None*	Areas with a have high density of back yard irrigation wells in east central Richmond and western San Pablo (See Figure 17). North-central portion is deepest and potentially most productive (See Figure 10).	None defined, however, portions of Richmond Inner Harbor / South Shore Area may qualify. Bedrock is less than 200 feet deep in this area (See Figure 10).	Chevron Richmond Refinery
CENTRAL	*Shallow*	Area on Alameda Island with a high density of existing back yard irrigation wells pumping from Merritt Formation (See Figure 17). Bay front groundwater with potential to impact San Francisco Bay.	Shallow brackish artificial fill areas on a case-by-case basis (See Figure 17).	Portion of Alameda Point and Oakland Shorline
	Deep	Area south of the Bay Bridge where basin is deepest and potentially most productive (See Figure 10). High density of deep historic wells in City of Alameda (See Fig. 2 and Table 4).	None	None
BERKELEY	*None*	Areas with moderate density of back yard irrigation wells (see Figure 17).	Berkeley/ Albany Groundwater Management Zone. Emeryville Brownfields Groundwater Management Zone (see Figure 19).	None
OAKLAND	*Shallow*	Areas with moderate density of back yard irrigation wells (See Figure 17).	Regional Board will consider applicability of City of Oakland's Urban Land Redevelopment Protocol once it is finalized (see Section 14.1).	None
	Deep	Area south of Lake Merritt is deepest and historically most productive portion of the Oakland Sub-Area (See Figure 3). SWPZ for EBMUD aquifer storage and recovery test well near Oakland Coliseum (See Figure 14). High density of deep historic wells in City of Oakland (See Fig. 2 and Table 4).	None	None
SAN LEANDRO	*Shallow*	Areas with a high density of back yard irrigation wells (See Figure 17).	Shallow groundwater pollution sites that meet remediation and investigation criteria on a case-by-case basis (See Section 17.11).	None
	Deep	SWPZ for 2 small DHS Permitted Drinking Water Systems (See Figure 14).	None	None
SAN LORENZO	*Shallow*	Areas with a high density of back yard irrigation wells (Figure 17).	Shallow groundwater pollution sites that meet remediation and investigation criteria on a case-by-case basis (See Section 17.11).	None
	Deep	SWPZ for 2 small DHS Permitted Drinking Water Systems, 5 City of Hayward Emergency Supply Wells, and EBMUD aquifer storage and recovery test well near Ora Loma Waste Water Treatment Plant.	None	None

SWPZ – Source Water Protection Zone

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Appendix A: Basin Plan -- Table 2-9

GROUNDWATER BASIN	COUNTY	DWR BASIN NO.	MUN[1]	PROC[2]	IND[3]	AGR[4]	FRESH[5]
Alameda Creek (Niles Cone)	Alameda	2 - 9.01	E[6]	E	E	E	
Castro Valley	Alameda	2 - 8	P[7]	P	P	P	
East Bay Plain	Alameda	2 - 9.01	E	E	E	E	
Livermore Valley	Alameda	2 - 10	E	E	E	E	
Sunol Valley	Alameda	2 - 11	E	E	E	E	
Arroyo Del Hambre Valley	Contra Costa	2 - 31	P	P	P	P	
Clayton Valley	Contra Costa	2 - 5	E	P	P	P	
Pittsburg Plain	Contra Costa	2 - 4	P	P	P	P	
San Ramon Valley	Contra Costa	2 - 7	E	P	P	E	
Ygnacio Valley	Contra Costa	2 - 6	P	P	P	P	
Novato Valley	Marin	2 - 30	P	P	P	P	
Sand Point Area	Marin	2 - 27	E	P	P	P	
San Rafael	Marin	2 - 29	P	P	P	P	
Ross Valley	Marin	2 - 28	E	P	P	E	
Napa Valley	Napa	2.2 & 2 - 2.01	E	E	E	E	
Islais Valley	San Francisco	2 - 33	P	E	E	P	
Merced Valley (North)	San Francisco	2 - 35	P	P	P	E	
San Francisco Sands	San Francisco	2 - 34	E	P	P	E	
Visitation Valley	San Francisco	2 - 32	P	E	E	P	
Half Moon Bay Terrace	San Mateo	2 - 22	E	P	P	E	
Merced Valley (South)	San Mateo	2 - 35A	E	P	P	E	
Pescadero Valley	San Mateo	2 - 26	E	P	P	E	
San Gregorio Valley	San Mateo	2 - 24	E	P	P	E	
San Mateo Plain	San Mateo	2 - 9A	E	E	E	P	
San Pedro Valley	San Mateo	2 - 36	P	P	P	P	
Santa Clara Valley (& Coyote)	Santa Clara	2 - 9B	E	E	E	E	
Suisun/Fairfield Valley	Solano	2 - 3	E	E	E	E	
Kenwood Valley	Sonoma	2 - 19	E	P	P	E	
Petaluma Valley	Sonoma	2 - 1	E	P	P	E	
Sebastopol-Merced Fm. Highlands	Sonoma	2 - 25	E	P	P	E	
Sonoma Valley	Sonoma	2 - 2.022	E	P	P	E	

NOTES:
(1) MUN = Municipal and domestic water supply.
(2) PROC = Industrial process water supply.
(3) IND = Industrial service water supply.
(4) AGR = Agricultural water supply.
(5) FRESH = Freshwater replenishment to surface water. (Designation will be determined at a later date; for the interim, a site-by-site determination will be made).
(6) E = Existing beneficial use; based on available information (see references listed in Table 2-8).
(7) P = Potential beneficial use; based on available information. There is no known use of the basin for this category; however, the basin could be used for this purpose (see references listed in Table 2-8).

Appendix B

Well Density Maps

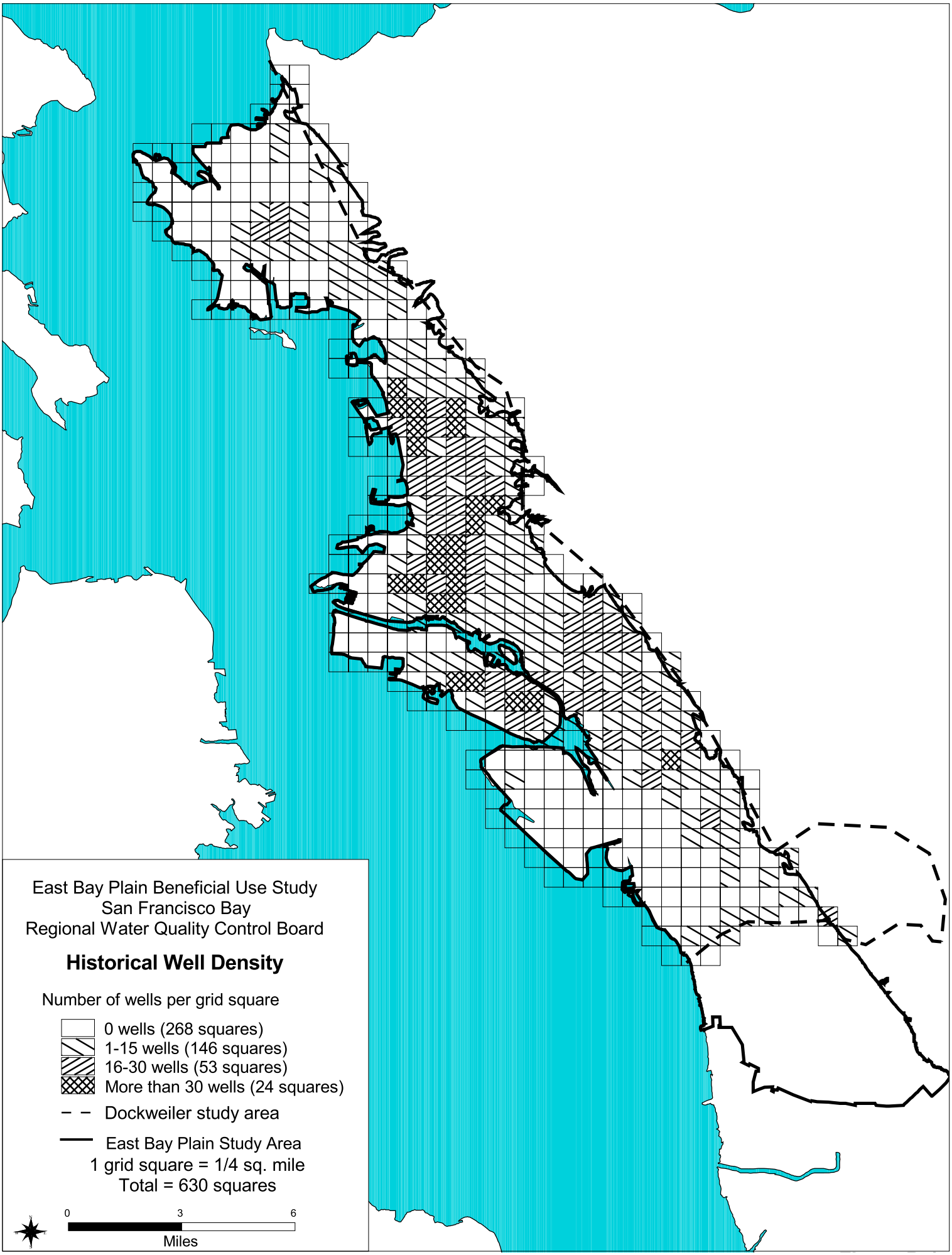
This section provides background on the GIS analysis of the density of historic and current wells in the East Bay Plain. Point locations for the historic and current wells used in the analysis are as shown on Figures 2, 15, 16 and 17 of this report. The density of the data points was computed on a ¼ square mile grid. The results are shown on Figures B-1 and B-2.

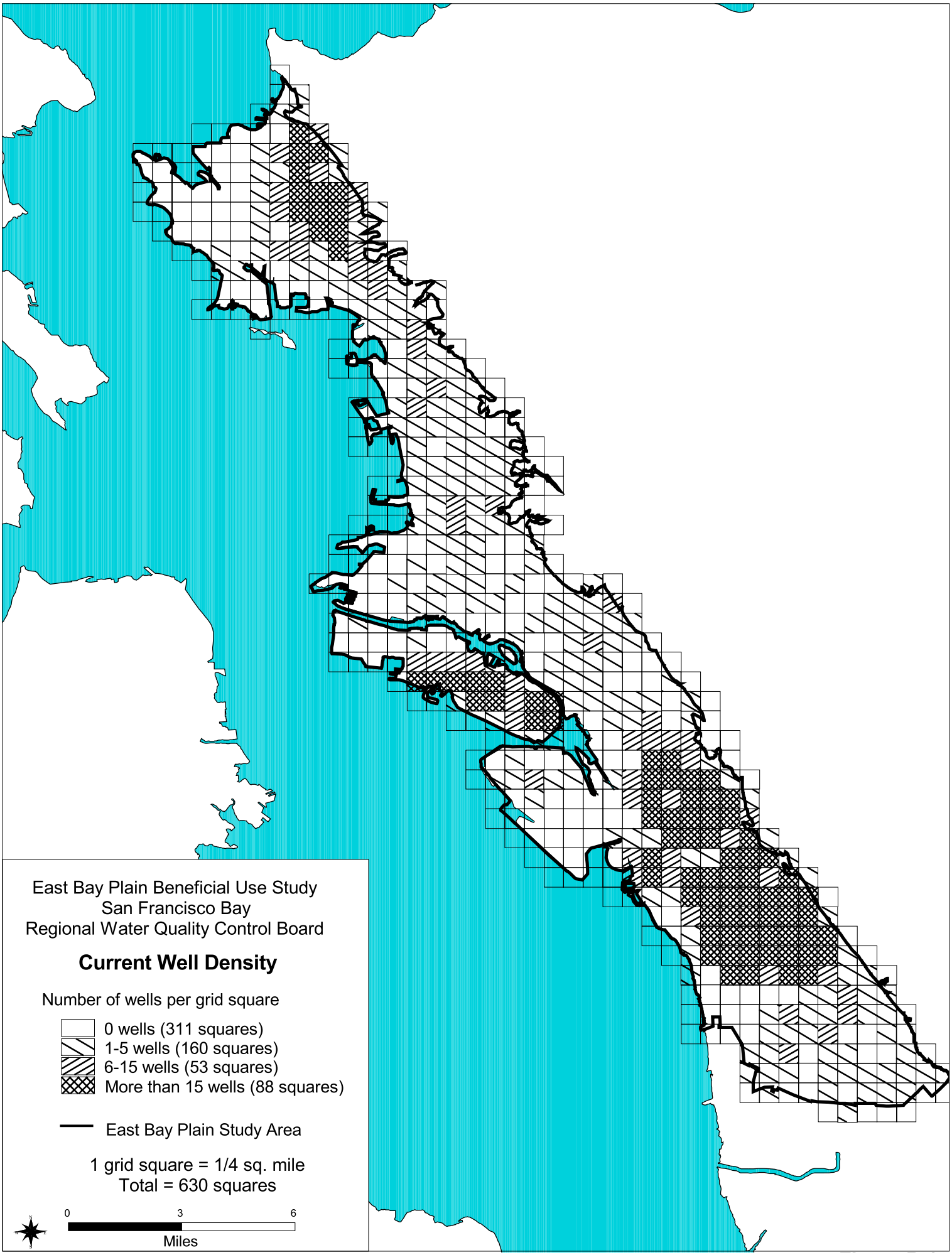
Historic Well Density: Wells used in this analysis are from the Dockweiler (1912) study discussed in Section 12.1 of the report. A total of 3,573 wells were identified (See Figure 2). In the study area overall, about 8% of the wells with depth data had a total depth of 200 feet or deeper. About 30% of the wells with depth data were 100 feet deep or more. The highest density of wells are in the cities of Oakland, Berkeley and Alameda (Figure B-1).

Current Well Density: Within the East Bay Plain, most current wells are used for residential irrigation. A smaller number of wells are used for commercial irrigation and industrial use. Only four wells are permitted for drinking water use (See Figures 14-17). Wells used in this analysis are a combination of coverages from the databases of ACFCWCD and EBMUD. EBMUD's database was used for the area between Richmond and San Leandro because it has a larger number of wells (See Section 13.3). ACFCWCD's was used for the area south of San Leandro, primarily within the City of Hayward, since EBMUD's jurisdiction does not cover this area. The highest density of current wells are in Richmond, Alameda, San Lorenzo, San Leandro, and Hayward (Figure B-2).

As an example of the utility of the well density maps discussed above, a composite map was generated that shows areas that have densities above the 80th percentile for each data set. For current wells, the 80th percentile equates to a density of 5 or greater wells per ¼ square mile. For historic wells, the 80th percentile equates to a density of 15 or greater wells per ¼ square mile. Figure B-3 delineates both of these areas. In addition, conceptual well head protection zones are shown.

From a beneficial use perspective, these areas are of higher concern because 1) historic wells may act as vertical conduits and allow shallow contamination to migrate into deeper aquifers, 2) current backyard irrigation wells may represent a non-drinking water exposure pathway to groundwater contamination (e.g., volatilization or irrigation of fruits and vegetables), and 3) contamination sites within well head protection zones may impact existing or planned drinking water wells.


East Bay Plain Beneficial Use Study
San Francisco Bay
Regional Water Quality Control Board
Historical Well Density
Number of wells per grid square
0 wells (268 squares)
1-15 wells (146 squares)
16-30 wells (53 squares)
More than 30 wells (24 squares)
Dockweiler study area
East Bay Plain Study Area
1 grid square = 1/4 sq. mile
Total = 630 squares
0
3
6
Miles


East Bay Plain Beneficial Use Study
San Francisco Bay
Regional Water Quality Control Board
Current Well Density
Number of wells per grid square
0 wells (311 squares)
1-5 wells (160 squares)
6-15 wells (53 squares)
More than 15 wells (88 squares)
East Bay Plain Study Area
1 grid square = 1/4 sq. mile
Total = 630 squares
0
3
6
Miles

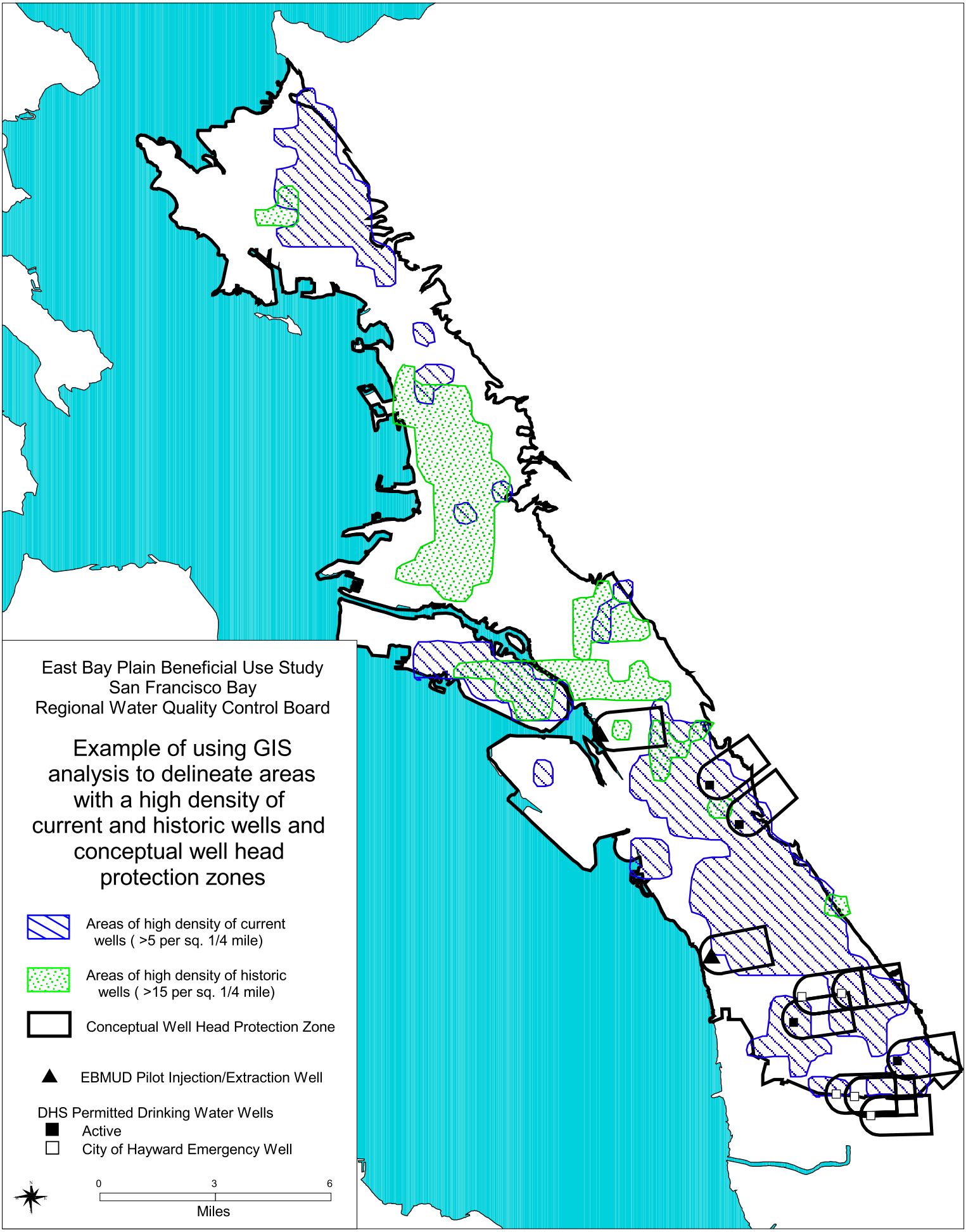

East Bay Plain Beneficial Use Study
San Francisco Bay
Regional Water Quality Control Board
Example of using GIS analysis to delineate areas with a high density of current and historic wells and conceptual well head protection zones
Areas of high density of current wells (>5 per sq. 1/4 mile)
Areas of high density of historic wells (>15 per sq. 1/4 mile)
Conceptual Well Head Protection Zone
EBMUD Pilot Injection/Extraction Well
DHS Permitted Drinking Water Wells
Active
City of Hayward Emergency Well
0
3
6
Miles

Figure B-3

GETTLER-RYAN INC.

TRANSMITTAL

April 22, 2009
G-R #386956

TO: Ms. Charlotte Evans
Conestoga-Rovers & Associates
5900 Hollis Street, Suite A
Emeryville, California 94608
(VIA PDF)

CC: Mr. Ian Robb
Chevron EMC
6111 Bollinger Canyon Road
Room 3612
San Ramon, California 94583
(NO COPY)

FROM: Deanna L. Harding
Project Coordinator
Gettler-Ryan Inc.
6747 Sierra Court, Suite J
Dublin, California 94568

RE: Former Texaco Service Station
3810 Broadway
Oakland, California
(Site #211283)
RO 0000056

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	April 17, 2009	Groundwater Monitoring and Sampling Report **First Quarter Event of March 23, 2009**

COMMENTS:

Pursuant to your request, we are providing you with copies of the above referenced items for **your use and distribution (including PDF submittal of the entire report to GeoTracker):**

Mr. Steven Plunkett, Alameda County Health Care Services, Dept. of Environmental Health, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502-6577 **(Distributed by CRA via PDF)**
Mr. Joe Zadik, 8255 San Leandro Street, Oakland, CA 94621

Enclosures

Trans/211283-IR

Chevron

Ian Robb
Project Manager
Marketing Business Unit

Chevron Environmental Management Company
6001 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 842-9496
Fax (925) 842-8370
ianrobb@chevron.com

April 22, 2009

Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

RE: Chevron Service Station # 211283

Address 3810 Broadway, Oakland, California

I have reviewed the attached routine groundwater monitoring report dated April 22, 2009.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by Gettler-Ryan Inc., upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code section 13267(b) (1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,

Ian Robb

Attachment: Report

WELL CONDITION STATUS SHEET

Client/Facility #: Chevron #211283
Site Address: 3810 Broadway
City: Oakland, CA

Job # 386956
Event Date: 3-23-9
Sampler: AC

WELL ID	Vault Frame Condition	Gasket/ O-Ring (M)missing	BOLTS (M) Missing (R) Replaced	Bolt Flanges B= Broken S= Stripped R=Retap	APRON Condition C=Cracked B=Broken G=Gone	Grout Seal (Deficient) inches from TOC	Casing (Condition prevents tight cap seal)	REPLACE LOCK Y / N	REPLACE CAP Y / N	WELL VAULT Manufacture/Size/ # of Bolts	Pictures Taken Yes / No
MW-1	OK	→	1-M	1-S	OK	→		✓	✓	8" ◇ Plate-2	
MW-4	OK	→					→	✓	✓	12" Emco-2	
MW-5B	OK	→					→	✓	✓	8" Brant Longyear-3	
MW-6	OK	→					→	✓	✓	12" Pemco-2	
MW-7	OK	→					→	✓	✓	8" ◇ Plate-2	
MW-9	?	→					→	—	—	UTA - construction	
MW-10	?	→					→	—	—	UTA - construction	
MW-11	OK	→	1-M	1-B/1-S	OK	→		✓	✓	12" Pemco-2	
MW-12	OK	→					→	✓	✓	8" Brant Longyear-3	

Comments

GETTLER-RYAN INC.

April 17, 2009
G-R Job #386956

Mr. Ian Robb
Chevron Environmental Management Company
6111 Bollinger Canyon Road, Room 3612
San Ramon, CA 94583

RE: First Quarter Event of March 23, 2009
Groundwater Monitoring & Sampling Report
Former Texaco Service Station
3810 Broadway
Oakland, California
(Site #211283)

Dear Mr. Robb:

This report documents the most recent groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R) at the referenced site. All field work was conducted in accordance with G-R Standard Operating Procedure - Groundwater Sampling (attached).

Static groundwater levels were measured and the wells were checked for the presence of separate-phase hydrocarbons. Static water level data, groundwater elevations, and separate-phase hydrocarbon thickness (if any) are presented in the attached Table 1. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring wells and submitted to a state certified laboratory for analyses. The field data sheets for this event are attached. Analytical results are presented in the table(s) listed below. The chain of custody document and laboratory analytical report are also attached. All groundwater and decontamination water generated during sampling activities was removed from the site, per the Standard Operating Procedure.

Please call if you have any questions or comments regarding this report. Thank you.

Sincerely,

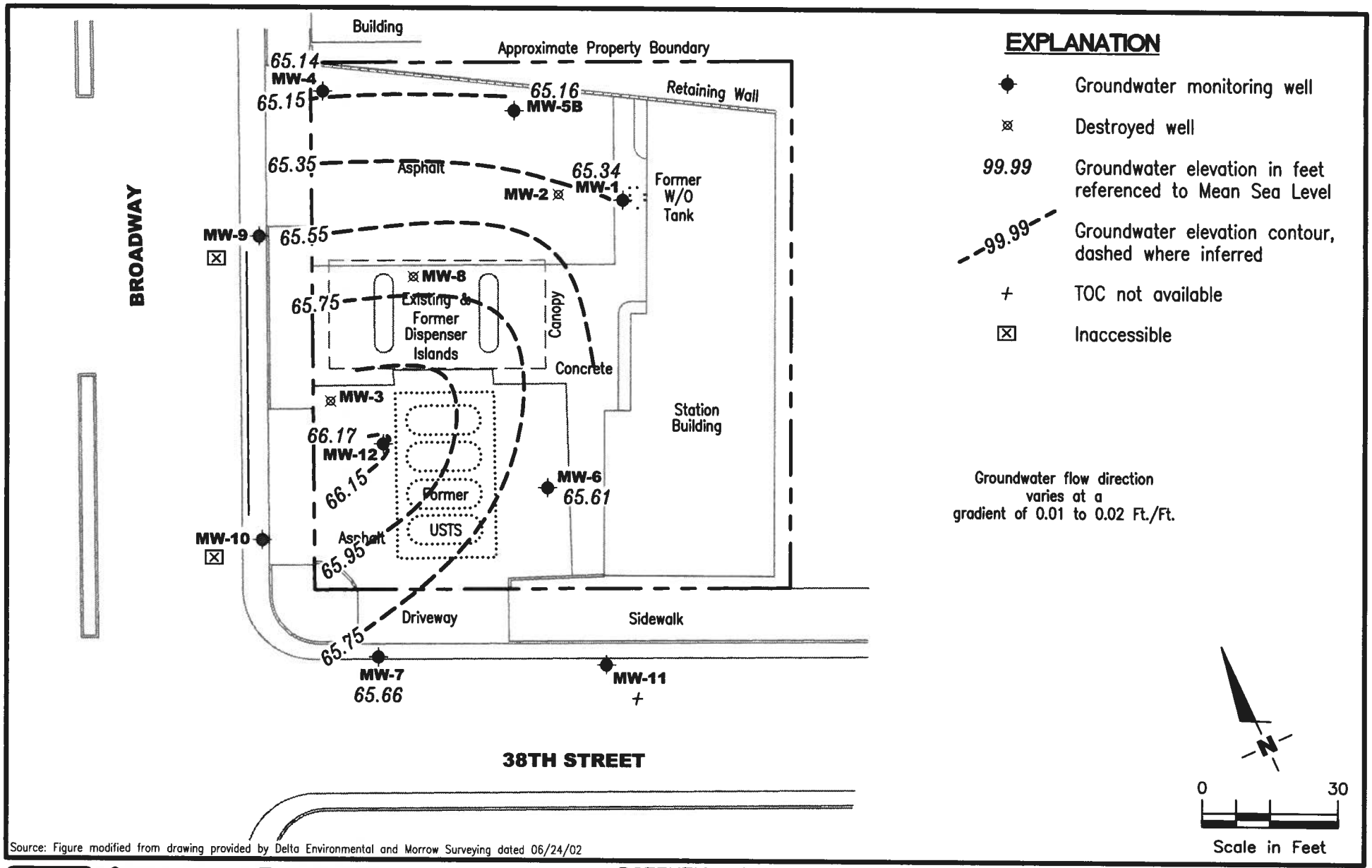
Deanna L. Harding
Project Coordinator

PROFESSIONAL GEOLOGIST
DOUGLAS J. LEE
No. 6882
STATE OF CALIFORNIA

Douglas J. Lee
Senior Geologist, P.G. No. 6882

Figure 1: Potentiometric Map
Table 1: Groundwater Monitoring Data and Analytical Results
Table 2: Field Measurements
Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports

6747 Sierra Court, Suite J • **Dublin**, CA 94568 • (925) 551-7555 • Fax (925) 551-7888
3140 Gold Camp Drive, Suite 170 • **Rancho Cordova**, CA 95670 • (916) 631-1300 • Fax (916) 631-1317
1364 N. McDowell Blvd., Suite B2 • **Petaluma**, CA 94954 • (707) 789-3255 • Fax (707) 789-3218



Source: Figure modified from drawing provided by Delta Environmental and Morrow Surveying dated 06/24/02

GETTLER - RYAN INC.
6747 Sierra Court, Suite J
Dublin, CA 94568 (925) 551-7555

POTENTIOMETRIC MAP
Former Texaco Service Station
3810 Broadway
Oakland, California (Site #211283)

FIGURE
1

PROJECT NUMBER	REVIEWED BY	DATE	REVISED DATE
386956		March 23, 2009	

FILE NAME: P:\Enviro\Texaco\211283\Q09-211283.DWG | Layout Tab: Pot1

Table 1

Groundwater Monitoring Data and Analytical Results

Former Texaco Service Station (Site #211283)
3810 Broadway
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-1													
06/28/96	86.69	21.77	64.92	--	<50	<100	<0.5	<1.0	<1.0	<2.0	--	--	--
10/10/96	86.69	23.26	63.43	--	<400	520	9.2	53	17	70	22	16[1]	--
11/07/96	86.69	23.27	63.42	--	--	--	--	--	--	--	--	--	--
12/18/97	86.69	19.70	66.99	--	<50	2,200	<3.0	<3.0	<3.0	<3.0	<200	--	--
04/06/98	86.69	16.88	69.81	--	<50	1,600	16.4	0.8	<0.5	<0.5	38.3	--	--
06/18/98	86.69	19.78	66.91	--	280	330	7.8	<0.5	<0.5	<0.5	<0.5	--	--
08/31/98	86.69	21.71	64.98	--	150	<50	1.5	<0.5	<0.5	<0.5	<2.5	--	--
12/21/98	86.69	22.15	64.54	--	130	130	2.3	0.90	<0.5	<0.5	110	13	--
03/24/99	86.69	19.55	67.14	--	305	1,520	11.7	<2.50	<2.50	<2.50	21.6	<25.0	--
06/25/99	86.69	21.60	65.09	--	207	231	5.29	<0.500	<0.500	<0.500	3.94	1.01	--
09/24/99	86.69	22.58	64.11	--	71.7	58.6	6.03	<0.500	<0.500	<0.500	3.70	--	--
12/29/99	86.69	22.81	63.88	--	345	117	4.26	<0.500	<0.500	1.97	26.2	<0.500	--
03/21/00	86.69	19.00	67.69	--	319	834	<0.500	<0.500	<0.500	<0.500	21.5	--	--
07/26/00	86.69	21.50	65.19	--	125	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--
09/06/00	86.69	21.90	64.79	--	192	88.1	15.60	<0.500	<0.500	<0.500	--	--	--
11/29/00	86.92	22.05	64.87	--	331	<50.0	3.52	<0.500	<0.500	<0.500	--	--	--
03/06/01	86.92	19.79	67.13	--	--	--	--	--	--	--	--	--	--
03/23/01	86.92	20.15	66.77	--	--[5]	204	10.7	<0.500	<0.500	<0.500	--	--	--
06/19/01[6]	86.92	21.78	65.14	--	330	<50	<0.50	<0.50	<0.50	<0.50	--	0.87	--
09/05/01[6]	86.92	24.37	62.55	--	400	74	<0.50	0.63	<0.50	2.7	--	<5.0	--
12/20/01[6]	86.92	20.25	66.67	--	530	59	1.7	<0.50	<0.50	<0.50	--	<5.0	--
06/25/02	86.69	21.64	65.05	0.00	490[9]	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
09/18/02	86.69	22.44	64.25	0.00	180	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
12/19/02	86.69	21.49	65.20	0.00	320	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
03/20/03	86.69	20.92	65.77	0.00	UNABLE TO SAMPLE - BEND IN WELL				--	--	--	--	--
06/23/03[10]	86.69	21.34	65.35	0.00	310	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
09/22/03[10]	86.69	22.46	64.23	0.00	150	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/22/03[10]	86.69	22.10	64.59	0.00	350	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/22/04[10]	86.69	20.42	66.27	0.00	270	<50	<0.5	<0.5	<0.5	<0.5	--	2	<50
06/21/04[10]	86.69	21.93	64.76	0.00	130	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/20/04[10]	86.69	22.99	63.70	0.00	240	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/20/04[10]	86.69	21.78	64.91	0.00	320[9]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50

Table 1

Groundwater Monitoring Data and Analytical Results

Former Texaco Service Station (Site #211283)

3810 Broadway

Oakland, California

WELL ID/ DATE		TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-1 (cont)														
03/28/05[10]		86.69	19.28	67.41	0.00	400[9]	<50	<0.5	<0.5	<0.5	<0.5	--	0.6	<50
06/27/05[10]		86.69	20.82	65.87	0.00	200[12]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/19/05[10]		86.69	22.17	64.52	0.00	62	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/19/05[10]		86.69	22.06	64.63	0.00	360[16]	<50	<0.5	0.8	<0.5	<0.5	--	<0.5	<50
03/27/06[10]		86.69	18.27	68.42	0.00	320	77	<0.5	0.5	2	4	--	0.7	<50
06/26/06[10]		86.69	20.20	66.49	0.00	290	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/25/06[10]		86.69	21.86	64.83	0.00	270	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/18/06		86.69	21.60	65.09	UNABLE TO SAMPLE - DUE TO BENT WELL CASING					--	--	--	--	--
03/19/07[10]	NP[18]	86.69	20.82	65.87	0.00	630	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/25/07[10]	NP[18]	86.69	28.62	58.07	0.00	4,100[19]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/24/07		86.69	DRY	--	--	--	--	--	--	--	--	--	--	--
12/18/07		86.69	29.35	57.34	UNABLE TO SAMPLE - DUE TO INSUFFICIENT WATER					--	--	--	--	--
03/11/08		86.69	28.41	58.28	UNABLE TO SAMPLE - DUE TO BENT WELL CASING					--	--	--	--	--
06/11/08[10]	NP[18]	86.69	25.87	60.82	0.00	2,200	760	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/22/08[10]	NP[18]	86.69	24.18	62.51	0.00	700	190	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/22/08[10]		86.69	23.30	63.39	0.00	290	65	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/23/09[10]	**NP[18]**	**86.69**	**21.35**	**65.34**	**0.00**	**1,500**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**--**	**0.9**	**<50**
MW-4														
06/28/96		83.31	18.83	64.48	--	<50	<100	<0.5	<1.0	<1.0	<2.0	--	--	--
10/10/96		83.31	19.84	63.47	--	<50	650	3.9	65	22	120	<5.0	--	--
11/07/96		83.31	19.84	63.47	--	--	--	--	--	--	--	--	--	--
12/18/97		83.31	17.77	65.54	--	2,000	<50	<0.5	<0.5	<0.5	<0.5	<30	--	--
04/06/98		83.31	15.45	67.86	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<30	--	--
06/18/98		83.31	16.89	66.42	--	53	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
08/31/98		83.31	18.48	64.83	--	60	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/21/98		83.31	18.80	64.51	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
03/24/99		83.31	16.70	66.61	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	--	--
06/25/99		83.31	18.16	65.15	--	128	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	--	--
09/24/99		83.31	19.12	64.19	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--
12/29/99		83.31	19.08	64.23	--	169	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	--	--
03/21/00		83.31	16.10	67.21	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--

Table 1

Groundwater Monitoring Data and Analytical Results

Former Texaco Service Station (Site #211283)

3810 Broadway

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-4 (cont)													
07/26/00	83.31	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--
09/06/00	83.31	18.52	64.79	--	--[5]	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
11/29/00	83.63	18.75	64.88	--	183	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
03/06/01	83.63	17.81	65.82	--	50.9	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
06/19/01[6]	83.63	18.55	65.08	--	<50	<50	<0.50	<0.50	<0.50	<0.50	--	<0.50	--
09/05/01[6]	83.63	19.10	64.53	--	710	<50	<0.50	<0.50	<0.50	<0.50	--	<5.0	--
12/20/01[6]	83.63	17.55	66.08	--	460	<50	<0.50	<0.50	<0.50	<0.50	--	<5.0	--
06/25/02	83.31	18.39	64.92	0.00	250	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
09/18/02	83.31	19.16	64.15	0.00	160	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
12/19/02	83.31	18.14	65.17	0.00	56	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
03/20/03	83.31	17.76	65.55	0.00	180	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
06/23/03[10]	83.31	18.13	65.18	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
09/22/03[10]	83.31	19.08	64.23	0.00	110	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/22/03[10]	83.31	18.78	64.53	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/22/04[10]	83.31	17.31	66.00	0.00	130	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/21/04[10]	83.31	18.67	64.64	0.00	87	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/20/04[10]	83.31	19.58	63.73	0.00	120	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/20/04[10]	83.31	18.59	64.72	0.00	66[9]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/28/05[10]	83.31	16.82	66.49	0.00	71[9]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/27/05[10]	83.31	17.61	65.70	0.00	120[12]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/19/05[10]	83.31	19.00	64.31	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/19/05[10]	83.31	18.69	64.62	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/27/06[10]	83.31	15.05	68.26	0.00	160	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/26/06[10]	83.31	16.81	66.50	0.00	110	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/25/06[10]	83.31	18.59	64.72	0.00	120	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/18/06[10]	83.31	18.26	65.05	0.00	250	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/19/07[10]	83.31	17.62	65.69	0.00	93	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/25/07[10]	83.31	24.82	58.49	0.00	4,600[19]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/24/07[10]	83.31	26.76	56.55	0.00	4,300	94	<0.5	<0.5	<0.5	<0.5	--	0.6	<50
12/18/07[10]	83.31	25.91	57.40	0.00	3,700	<50	<0.5	<0.5	<0.5	<0.5	--	0.6	<50
03/11/08[10]	83.31	25.15	58.16	0.00	430	54	<0.5	<0.5	<0.5	<0.5	--	0.6	<50
06/11/08[10]	83.31	22.53	60.78	0.00	520	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50

Table 1

Groundwater Monitoring Data and Analytical Results

Former Texaco Service Station (Site #211283)

3810 Broadway

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-4 (cont)													
09/22/08[10]	83.31	20.99	62.32	0.00	59	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/22/08[10]	83.31	19.93	63.38	0.00	260	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/23/09[10]	**83.31**	**18.17**	**65.14**	**0.00**	**74**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**--**	**<0.5**	**<50**
MW-5B													
06/25/02[7]	85.36	20.48	64.88	0.00	320	660	89	1.9	39	11	130	--	--
09/18/02	85.36	21.18	64.18	0.00	480	1,100	220	1.2	19	<1.5	35	--	--
12/19/02	85.36	20.36	65.00	0.00	330	<50	<0.50	<0.50	<0.50	<1.5	190	--	--
03/20/03	85.36	INACCESSIBLE - VEHICLE OVER WELL				--	--	--	--	--	--	--	--
06/23/03[10]	85.36	20.18	65.18	0.00	300	<50	<0.5	<0.5	<0.5	<0.5	--	290	--
09/22/03[10]	85.36	21.19	64.17	0.00	200	91	19	<0.5	3	<0.5	--	260	<50
12/22/03[10]	85.36	20.85	64.51	0.00	410	99	18	<0.5	<0.5	<0.5	--	52	<50
03/22/04[10]	85.36	19.26	66.10	0.00	400	<50	<0.5	<0.5	<0.5	<0.5	--	210	<50
06/21/04[10]	85.36	20.70	64.66	0.00	270	<50	<0.5	<0.5	<0.5	<0.5	--	100	<50
09/20/04[10]	85.36	21.69	63.67	0.00	430	<50	<0.5	<0.5	<0.5	<0.5	--	9	<50
12/20/04[10]	85.36	20.56	64.80	0.00	400[9]	<50	<0.5	<0.5	<0.5	<0.5	--	48	<50
03/28/05[10]	85.36	18.12	67.24	0.00	480[9]	<50	<0.5	<0.5	<0.5	<0.5	--	67	<50
06/27/05[10]	85.36	19.61	65.75	0.00	350[13]	<50	<0.5	<0.5	<0.5	<0.5	--	57	<50
09/19/05[10]	85.36	20.88	64.48	0.00	220	<50	<0.5	<0.5	<0.5	<0.5	--	32	<50
12/19/05[10]	85.36	20.74	64.62	0.00	330[16]	<50	<0.5	<0.5	<0.5	<0.5	--	21	<50
03/27/06[10]	85.36	17.10	68.26	0.00	550	<50	<0.5	<0.5	<0.5	<0.5	--	31	<50
06/26/06[10]	85.36	19.05	66.31	0.00	410	<50	<0.5	<0.5	<0.5	<0.5	--	30	<50
09/25/06[10]	85.36	20.61	64.75	0.00	320	<50	<0.5	<0.5	<0.5	<0.5	--	25	<50
12/18/06[10]	85.36	20.35	65.01	0.00	580	<50	<0.5	<0.5	<0.5	<0.5	--	14	<50
03/19/07[10]	85.36	19.62	65.74	0.00	170	<50	<0.5	<0.5	<0.5	<0.5	--	24	<50
06/25/07[10]	85.36	26.94	58.42	0.00	950[19]	250[19]	2	<0.5	0.6	1	--	15	<50
09/24/07[10]	85.36	28.78	56.58	0.00	1,300	1,900	5	0.6	3	5	--	25	<50
12/18/07[10]	85.36	27.98	57.38	0.00	560	2,100	19	<0.5	2	4	--	28	<50
03/11/08[10]	85.36	27.17	58.19	0.00	290	640	16	<0.5	4	0.5	--	38	<50

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3810 Broadway

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-5B (cont)													
06/11/08[10]	85.36	24.51	60.85	0.00	280	1,100	20	<0.5	6	1	--	21	<50
09/22/08[10]	85.36	22.85	62.51	0.00	110	280	9	<0.5	<0.5	<0.5	--	22	<50
12/22/08[10]	85.36	22.00	63.36	0.00	220	200	2	<0.5	<0.5	<0.5	--	25	<50
03/23/09[10]	**85.36**	**20.20**	**65.16**	**0.00**	**240**	**97**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**--**	**11**	**<50**
MW-6													
10/10/96	86.09	22.44	63.65	--	500	45,000	8,300	2,900	810	3,100	190	40[1]	--
11/07/96	86.09	22.60	63.49	--	--	--	--	--	--	--	--	--	--
12/18/97	86.09	22.28	63.81	--	1,900	60,000	12,000	9,800	1,800	8,600	<2,000	--	--
04/06/98	86.09	19.90	66.19	--	<50	30,500	5,950	3,720	952	3,750	<1,000	--	--
06/18/98	86.09	20.49	65.60	--	1,100	23,000	2,600	540	410	1,300	<250	--	--
08/31/98	86.09	21.05	65.04	--	1,800	17,000	3,400	460	530	1,800	<250	--	--
12/21/98	86.09	21.74	64.35	--	930	7,900	1,900	510	280	730	150	2.6	--
03/24/99	86.09	21.18	64.91	--	763	12,200	1,970	327	338	794	<40.0	<50.0	--
06/25/99	86.09	21.34	64.75	--	1,050	14,800	2,040	1,080	406	1,430	<40.0	--	--
09/24/99	86.09	22.28	63.81	--	1,720	17,200	2,810	1,330	489	2,340	<50.0	--	--
12/29/99	86.09	24.96	61.13	--	1,480	14,700	2,790	974	469	1,720	<500	--	--
03/21/00	86.09	18.70	67.39	--	1,120	20,000	4,160	962	719	2,330	<250	--	--
07/26/00	86.09	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
09/06/00	86.09	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
11/29/00	86.48	21.30	65.18	--	2,060	22,800	4,120	2,010	872	3,180	--	--	--
03/06/01	86.48	19.05	67.43	--	2,220	32,100	3,760	4,590	1,160	5,360	--	--	--
06/19/01[6]	86.48	21.11	65.37	--	<1,500	40,000	2,800	6,000	1,200	5,300	--	<25	--
09/05/01[6]	86.48	21.37	65.11	--	<1,000	18,000	3,800	800	730	1,400	--	<200	--
12/20/01[6]	86.48	19.80	66.68	--	<1,300	29,000	2,600	3,700	1,100	4,100	--	<100	--
06/25/02	86.09	21.13	64.96	0.00	2,500	21,000	2,200	1,800	850	2,100	<100	--	--
09/18/02	86.09	22.00	64.09	0.00	1,300	13,000	1,700	480	610	970	110	--	--
12/19/02	86.09	20.98	65.11	0.00	2,700	20,000	2,900	620	770	2,100	<20	--	--
03/20/03	86.09	20.23	65.86	0.00	2,600	23,000	1,500	2,200	920	3,400	<100	--	--
06/23/03[10]	86.09	20.96	65.13	0.00	2,400	21,000	2,000	1,400	890	2,500	--	6	--
09/22/03[10]	86.09	21.95	64.14	0.00	1,800	7,400	920	220	360	580	--	5	<50
12/22/03[10]	86.09	21.63	64.46	0.00	2,300	9,700	1,700	240	450	1,000	--	6	<100[11]

Table 1

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Former Texaco Service Station (Site #211283)

3810 Broadway

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-6 (cont)													
03/22/04[10]	86.09	20.31	65.78	0.00	2,700	23,000	1,500	1,400	830	2,800	--	4	<250
06/21/04[10]	86.09	20.64	65.45	0.00	2,800	20,000	2,000	2,300	1,100	3,800	--	4	<130
09/20/04[10]	86.09	22.29	63.80	0.00	1,300	4,600	480	65	200	260	--	4	<100
12/20/04[10]	86.09	21.33	64.76	0.00	1,500	9,500	1,500	220	450	840	--	5	<250
03/28/05[10]	86.09	19.65	66.44	0.00	2,400[9]	13,000	1,100	550	600	1,600	--	3	<250
06/27/05[10]	86.09	19.86	66.23	0.00	2,100[14]	15,000	1,100	1,300	790	2,600	--	3	<100
09/19/05[10]	86.09	20.49	65.60	0.00	2,300	18,000	1,300	1,200	800	2,500	--	3	<100
12/19/05[10]	86.09	21.49	64.60	0.00	1,900[14]	13,000	1,900	190	620	890	--	5	110
03/27/06[10]	86.09	18.28	67.81	0.00	1,300	14,000	740	420	600	1,400	--	2	<50
06/26/06[10]	86.09	19.08	67.01	0.00	2,300	23,000	660	1,700	870	3,000	--	<3	<250
09/25/06[10]	86.09	20.02	66.07	0.00	2,100	18,000	580	1,200	760	2,600	--	1	<100
12/18/06[10]	86.09	20.57	65.52	0.00	2,700	14,000	1,200	370	680	1,300	--	4	<50
03/19/07[10]	86.09	20.56	65.53	0.00	2,700	17,000	990	560	840	2,100	--	3	<100
06/25/07	86.09	DRY	--	--	--	--	--	--	--	--	--	--	--
09/24/07	86.09	DRY	--	--	--	--	--	--	--	--	--	--	--
12/18/07	86.09	DRY	--	--	--	--	--	--	--	--	--	--	--
03/11/08	86.09	DRY	--	--	--	--	--	--	--	--	--	--	--
06/11/08[10]	86.09	25.35	60.74	0.00	820	1,400	110	<0.5	6	0.8	--	4	<50
09/22/08[10]	86.09	23.51	62.58	0.00	780	1,400	52	<0.5	6	1	--	6	<50
12/22/08[10]	86.09	22.75	63.34	0.00	880	1,100	39	<0.5	1	<0.5	--	6	<50
03/23/09[10]	**86.09**	**20.48**	**65.61**	**0.00**	**2,100**	**7,900**	**460**	**140**	**470**	**1,200**	**--**	**3**	**<50**
MW-7													
10/10/96	84.11	20.78	63.33	--	<50	<50	0.6	<0.5	<0.5	<0.5	<5.0	--	--
11/07/96	84.11	20.80	63.31	--	--	--	--	--	--	--	--	--	--
12/18/97	84.11	17.27	66.84	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<30	--	--
04/06/98	84.11	15.91	68.20	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<30	--	--
06/18/98	84.11	17.95	66.16	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
08/31/98	84.11	19.40	64.71	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/21/98	84.11	19.75	64.36	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
03/24/99	84.11	17.54	66.57	--	51.3	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	--	--
06/25/99	84.11	19.22	64.89	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	--	--

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3810 Broadway

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-7 (cont)													
09/24/99	84.11	20.18	63.93	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--
12/29/99	84.11	20.15	63.96	--	99.0	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	--	--
03/21/00	84.11	16.35	67.76	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--
07/26/00	84.11	18.99	65.12	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--
09/06/00	84.11	19.49	64.62	--	--[5]	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
11/29/00	84.44	19.52	64.92	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
03/06/01	84.44	17.15	67.29	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
06/19/01[6]	84.44	19.30	65.14	--	<50	<50	<0.50	<0.50	<0.50	<0.50	--	<0.50	--
09/05/01[6]	84.44	20.22	64.22	--	<50	<50	0.64	0.84	0.94	5.2	--	<5.0	--
12/20/01[6]	84.44	17.85	66.59	--	<50	<50	<0.50	<0.50	<0.50	<0.50	--	<5.0	--
06/25/02	84.11	19.30	64.81	0.00	<50	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
09/18/02	84.11	20.10	64.01	0.00	170	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
12/19/02	84.11	18.73	65.38	0.00	<50	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
03/20/03	84.11	18.86	65.25	0.00	<50	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
06/23/03[10]	84.11	19.00	65.11	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
09/22/03[10]	84.11	20.05	64.06	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/22/03[10]	84.11	19.72	64.39	0.00	72	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/22/04[10]	84.11	17.94	66.17	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/21/04[10]	84.11	19.53	64.58	0.00	73	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/20/04[10]	84.11	20.59	63.52	0.00	69	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/20/04[10]	84.11	19.43	64.68	0.00	67[9]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/28/05[10]	84.11	16.68	67.43	0.00	69[9]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/27/05[10]	84.11	18.43	65.68	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/19/05[10]	84.11	19.77	64.34	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/19/05[10]	84.11	19.38	64.73	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/27/06[10]	84.11	15.51	68.60	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/26/06[10]	84.11	17.85	66.26	0.00	70	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/25/06[10]	84.11	19.53	64.58	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/18/06[10]	84.11	19.28	64.83	0.00	270	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/19/07[10]	84.11	18.32	65.79	0.00	81	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/25/07[10]	84.11	26.92	57.19	0.00	65	<50	<0.5	<0.5	<0.5	<0.5	--	1	<50
09/24/07[10]	84.11	28.32	55.79	0.00	<150	<50	<0.5	<0.5	<0.5	<0.5	--	0.7	<50
12/18/07[10]	84.11	27.61	56.50	0.00	130	<50	<0.5	<0.5	<0.5	<0.5	--	1	<50

Table 1

Groundwater Monitoring Data and Analytical Results

Former Texaco Service Station (Site #211283)

3810 Broadway

Oakland, California

WELL ID/ DATE		TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-7 (cont)														
03/11/08[10]		84.11	26.63	57.48	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/11/08[10]		84.11	23.43	60.68	0.00	98	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/22/08[10]		84.11	21.69	62.42	0.00	54	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/22/08[10]		84.11	20.78	63.33	0.00	120	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/23/09[10]	**NP[22]**	**84.11**	**18.45**	**65.66**	**0.00**	**58**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**--**	**<0.5**	**<50**
MW-9														
10/10/96		82.17	18.62	63.55	--	520	80	2.5	13	2.2	13	<5.0	--	--
11/07/96		82.17	63.53	18.64	--	--	--	--	--	--	--	--	--	--
12/18/97		82.17	16.42	65.75	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<30	--	--
04/06/98		82.17	14.00	68.17	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<30	--	--
06/18/98		82.17	15.33	66.84	--	100	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
08/31/98		82.17	17.14	65.03	--	57	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/21/98		82.17	17.40	64.77	--	71	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
03/24/99		82.17	16.22	65.95	--	84.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	--	--
06/25/99		82.17	16.90	65.27	--	92.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	--	--
09/24/99		82.17	17.89	64.28	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--
12/29/99		82.17	18.01	64.16	--	52.8	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	--	--
03/21/00		82.17	14.80	67.37	--	72.4	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--
07/26/00		82.17	17.17	65.00	--	83.6	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--
09/06/00		82.17	17.95	64.22	--	74.3	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
11/29/00		82.52	18.10	64.42	--	96.2	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
03/06/01		82.52	16.75	65.77	--	94.2	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
06/19/01[6]		82.52	17.83	64.69	--	<50	<50	<0.50	<0.50	<0.50	<0.50	--	<0.50	--
09/05/01[6]		82.52	17.98	64.54	--	<50	<50	<0.50	<0.50	<0.50	1.6	--	<5.0	--
12/20/01[6]		82.52	16.85	65.67	--	84	<50	<0.50	<0.50	<0.50	<0.50	--	<5.0	--
06/25/02		82.17	17.12	65.05	0.00	100	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
09/18/02		82.17	17.76	64.41	0.00	170	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
12/19/02		82.17	16.83	65.34	0.00	73	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
03/20/03		82.17	16.61	65.56	0.00	87	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
06/23/03[10]		82.17	17.14	65.03	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	0.7	--
09/22/03[10]		82.17	17.72	64.45	0.00	66	<50	<0.5	<0.5	<0.5	<0.5	--	0.7	<50

Table 1

Groundwater Monitoring Data and Analytical Results

Former Texaco Service Station (Site #211283)

3810 Broadway

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-9 (cont)													
12/22/03[10]	82.17	17.44	64.73	0.00	94	<50	<0.5	<0.5	<0.5	<0.5	--	0.7	<50
03/22/04[10]	82.17	16.07	66.10	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	0.7	<50
06/21/04[10]	82.17	17.38	64.79	0.00	80	<50	<0.5	<0.5	<0.5	<0.5	--	1	<50
09/20/04[10]	82.17	18.14	64.03	0.00	120	<50	<0.5	<0.5	<0.5	<0.5	--	1	<50
12/20/04[10]	82.17	17.15	65.02	0.00	74[9]	<50	<0.5	<0.5	<0.5	<0.5	--	2	<50
03/28/05[10]	82.17	15.47	66.70	0.00	84[9]	<50	<0.5	<0.5	<0.5	<0.5	--	3	<50
06/27/05[10]	82.17	16.41	65.76	0.00	140[12]	<50	<0.5	<0.5	<0.5	<0.5	--	3	<50
09/19/05[10]	82.17	17.42	64.75	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	5	<50
12/19/05[10]	82.17	17.93	64.24	0.00	52[17]	<50	<0.5	<0.5	<0.5	<0.5	--	5	<50
03/27/06[10]	82.17	13.75	68.42	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	7	<50
06/26/06[10]	82.17	15.90	66.27	0.00	110	<50	<0.5	<0.5	<0.5	<0.5	--	9	<50
09/25/06[10]	82.17	17.27	64.90	0.00	57	<50	<0.5	<0.5	<0.5	<0.5	--	8	<50
12/18/06[10]	82.17	16.67	65.50	0.00	220	<50	<0.5	<0.5	<0.5	<0.5	--	7	<50
03/19/07[10]	82.17	16.16	66.01	0.00	210	<50	<0.5	<0.5	<0.5	<0.5	--	9	<50
06/25/07[10]	82.17	23.84	58.33	0.00	74	<50	<0.5	<0.5	<0.5	<0.5	--	6	<50
09/24/07[10]	82.17	25.68	56.49	0.00	280	<50	<0.5	<0.5	<0.5	<0.5	--	2	<50
12/18/07	82.17	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
03/11/08[10]	82.17	24.07	58.10	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/11/08[10]	82.17	21.23	60.94	0.00	120	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/22/08[10]	82.17	19.52	62.65	0.00	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
11/06/08[10]	82.17	19.15	63.02	0.00	<50[21]	--	--	--	--	--	--	--	--
12/22/08[10]	82.17	18.58	63.59	0.00	190	<50	<0.5	<0.5	<0.5	<0.5	--	7	<50
03/23/09	**82.17**	**INACCESSIBLE**		--	--	--	--	--	--	--	--	--	--
MW-10													
10/10/96	81.83	18.40	63.43	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--
11/07/96	81.83	18.43	63.40	--	--	--	--	--	--	--	--	--	--
12/18/97	81.83	16.18	65.65	--	<50	350	6.9	0.87	0.88	0.77	<30	--	--
04/06/98	81.83	14.39	67.44	--	<50	2,300	224	168	81.4	253	<30	--	--
06/18/98	81.83	15.11	66.72	--	320	7,200	310	210	83	280	<0.5	--	--
08/31/98	81.83	17.03	64.80	--	120	460	51	8.2	5.1	10	<5.0	--	--
12/21/98	81.83	17.32	64.51	--	79	120	5.5	<1.0	<1.0	<1.0	8.7	<2.0	--

Table 1

Groundwater Monitoring Data and Analytical Results

Former Texaco Service Station (Site #211283)

3810 Broadway

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-10 (cont)													
03/24/99	81.83	15.25	66.58	--	923	1,330	85.9	42.9	29.7	95.2	20.4	<25.0	--
06/25/99	81.83	16.82	65.01	--	167	1,130	115	32.6	17.2	36.3	<4.00	--	--
09/24/99	81.83	17.75	64.08	--	76.7	382	20.0	<1.00	2.21	1.37	8.83	--	--
12/29/99	81.83	18.13	63.70	--	107	114	9.03	<0.500	0.531	<0.500	<5.00	--	--
03/21/00	81.83	14.22	67.61	--	194	1,270	86.3	52.3	38.1	102	19.5	--	--
07/26/00	81.83	16.61	65.22	--	192	562	74.8	7.51	24.3	14.8	13.3	<1.00[4]	--
09/06/00	81.83	17.08	64.75	--	205	606	93.4	5.36	16.7	38.9	--	--	--
11/29/00	82.16	16.90	65.26	--	258	583	40.0	1.46	4.69	15.8	--	--	--
03/06/01	82.16	14.80	67.36	--	199	837	34.2	26.4	20.8	27.5	--	--	--
06/19/01[6]	82.16	16.85	65.31	--	<50	400	47	2.6	8.8	17	--	0.60	--
09/05/01[6]	82.16	17.87	64.29	--	<100	230	20	<0.50	1.2	5.3	--	<5.0	--
12/20/01[6]	82.16	15.54	66.62	--	110	300	13	2.5	1.7	4.6	--	<5.0	--
06/25/02	81.83	16.93	64.90	0.00	180	810	180	3.2	17	8.0	<2.5	--	--
09/18/02	81.83	17.68	64.15	0.00	200	260	24	<2.0	2.5	5.0	2.9	--	--
12/19/02	81.83	16.36	65.47	0.00	86	360	25	0.60	<0.50	1.5	<5.0	--	--
03/20/03	81.83	16.32	65.51	0.00	200	620	21	5.3	6.0	13	<10	--	--
06/23/03[10]	81.83	16.57	65.26	0.00	290	1,500	170	23	40	93	--	0.7	--
09/22/03[10]	81.83	17.60	64.23	0.00	180	480	48	3	7	17	--	0.8	<50
12/22/03[10]	81.83	17.31	64.52	0.00	120	230	7	<0.5	<0.5	1	--	0.9	<50
03/22/04[10]	81.83	15.58	66.25	0.00	230	1,500	72	26	30	82	--	0.7	<50
06/21/04[10]	81.83	17.12	64.71	0.00	220	1,000	120	29	47	73	--	2	<50
09/20/04[10]	81.83	18.12	63.71	0.00	230	470	36	5	6	20	--	2	<50
12/20/04[10]	81.83	17.01	64.82	0.00	170[9]	480	13	2	1	7	--	2	<50
03/28/05[10]	81.83	14.64	67.19	0.00	450[9]	1,900	64	46	55	140	--	1	<50
06/27/05[10]	81.83	15.99	65.84	0.00	400[15]	1,700	140	61	33	180	--	3	<50
09/19/05[10]	81.83	17.35	64.48	0.00	170	1,200	98	35	58	110	--	5	<50
12/19/05[10]	81.83	17.12	64.71	0.00	160[14]	1,000	61	23	20	47	--	5	<50
03/27/06[10]	81.83	13.35	68.48	0.00	180	670	6	4	8	11	--	5	<50
06/26/06[10]	81.83	15.10	66.73	0.00	580	4,700	220	110	150	390	--	0.8	<50
09/25/06[10]	81.83	17.10	64.73	0.00	480	4,400	290	180	200	350	--	4	<50
12/18/06[10]	81.83	16.75	65.08	0.00	2,900	2,500	270	97	97	170	--	1	<50
03/19/07[10]	81.83	15.91	65.92	0.00	650	2,000	150	43	52	88	--	1	<50
06/25/07[10]	81.83	24.41	57.42	0.00	7,600[19]	<50[19]	<0.5	<0.5	<0.5	<0.5	--	4	<50

Table 1

Groundwater Monitoring Data and Analytical Results

Former Texaco Service Station (Site #211283)

3810 Broadway

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-10 (cont)													
09/24/07[10]	81.83	25.96	55.87	0.00	8,400	88	<0.5	<0.5	<0.5	<0.5	--	2	<50
12/18/07	81.83	INACCESSIBLE - WELL UNDER WATER				--	--	--	--	--	--	--	--
03/11/08[10]	81.83	24.56	57.27	0.00	1,200	190	1	<0.5	<0.5	<0.5	--	2	<50
06/11/08[10]	81.83	20.97	60.86	0.00	2,500	190	2	<0.5	<0.5	<0.5	--	2	<50
09/22/08[10]	81.83	19.27	62.56	0.00	--	500	2	<0.5	<0.5	<0.5	--	0.7	<50
11/06/08[10]	81.83	18.92	62.91	0.00	550[21]	--	--	--	--	--	--	--	--
12/22/08[10]	81.83	18.38	63.45	0.00	750	530	1	<0.5	<0.5	<0.5	--	0.8	<50
03/23/09	**81.83**	**INACCESSIBLE**		--	--	--	--	--	--	--	--	--	--
MW-11													
08/08/00	--	25.61	--	--	--	--	--	--	--	--	--	--	--
08/16/00	--	25.50	--	--	56.80	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
09/06/00	--	25.90	--	--	--[5]	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
11/29/00	90.63	25.80	64.83	--	63.8	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
03/06/01	90.63	23.32	67.31	--	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	--	--	--
06/19/01[6]	90.63	25.57	65.06	--	<50	<50	<0.50	<0.50	<0.50	<0.50	--	<0.50	--
09/05/01[6]	90.63	26.42	64.21	--	<50	<50	<0.50	<0.50	<0.50	0.68	--	<5.0	--
12/20/01[6]	90.63	24.27	66.36	--	<50	<50	<0.50	<0.50	<0.50	<0.50	--	<5.0	--
06/25/02	--[8]	25.51	--[8]	0.00	<50	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
09/18/02	--[8]	26.31	--[8]	0.00	80	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
12/19/02	--[8]	25.08	--[8]	0.00	<50	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
03/20/03	--[8]	24.87	--[8]	0.00	<50	<50	<0.50	0.51	<0.50	<1.5	<2.5	--	--
06/23/03[10]	--[8]	25.21	--[8]	0.00	140	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
09/22/03[10]	--[8]	26.26	--[8]	0.00	52	<50	<0.5	<0.5	<0.5	<0.5	--	1	<50
12/22/03[10]	--[8]	25.97	--[8]	0.00	69	<50	<0.5	<0.5	<0.5	<0.5	--	2	<50
03/22/04[10]	--[8]	24.13	--[8]	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/21/04[10]	--[8]	25.74	--[8]	0.00	79	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/20/04[10]	--[8]	26.83	--[8]	0.00	140	<50	<0.5	<0.5	<0.5	<0.5	--	4	<50
12/20/04[10]	--[8]	25.67	--[8]	0.00	54[9]	<50	<0.5	<0.5	<0.5	<0.5	--	3	<50
03/28/05[10]	--[8]	23.03	--[8]	0.00	58[9]	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/27/05[10]	--[8]	24.61	--[8]	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/19/05[10]	--[8]	25.98	--[8]	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	0.6	<50

Table 1

Groundwater Monitoring Data and Analytical Results

Former Texaco Service Station (Site #211283)

3810 Broadway

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-11 (cont)													
12/19/05[10]	--[8]	25.93	--[8]	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	2	<50
03/27/06[10]	--[8]	21.81	--[8]	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/26/06[10]	--[8]	24.00	--[8]	0.00	64	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/25/06[10]	--[8]	25.75	--[8]	0.00	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/18/06[10]	--[8]	25.55	--[8]	0.00	140	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
03/19/07[10]	--[8]	24.58	--[8]	0.00	63	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/25/07[10]	--[8]	32.81	--[8]	0.00	130	<50	<0.5	<0.5	<0.5	<0.5	--	1	<50
09/24/07[10]	--[8]	34.24	--[8]	0.00	110	<50	<0.5	<0.5	<0.5	<0.5	--	2	<50
12/18/07[10]	--[8]	33.52	--[8]	0.00	90	<50	<0.5	<0.5	<0.5	<0.5	--	2	<50
03/11/08[10]	--[8]	32.55	--[8]	0.00	52	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
06/11/08[10]	--[8]	29.77	--[8]	0.00	96	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/22/08[10]	--[8]	27.91	--[8]	0.00	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
11/06/08[10]	--[8]	27.65	--[8]	0.00	<50[21]	--	--	--	--	--	--	--	--
12/22/08[10]	--[8]	27.03	--[8]	0.00	61	<50	<0.5	<0.5	<0.5	<0.5	--	0.6	<50
03/23/09[10]	**--[8]**	**25.03**	**--[8]**	**0.00**	**<50**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**--**	**<0.5**	**<50**
MW-12													
06/25/02[7]	84.19	18.65	65.54	0.00	410	1,000	340	8.2	16	8.3	11	--	--
09/18/02	84.19	19.67	64.52	0.00	230	130	52	<0.50	<0.50	<1.5	9.8	--	--
12/19/02	84.19	18.67	65.52	0.00	450	<50	11	<0.50	<0.50	<1.5	<2.5	--	--
03/20/03	84.19	17.97	66.22	0.00	300	280	120	1.9	11	<1.5	2.6	--	--
06/23/03[10]	84.19	18.27	65.92	0.00	400	400	130	4	1	0.7	--	14	--
09/22/03[10]	84.19	19.52	64.67	0.00	270	<50	9	<0.5	<0.5	<0.5	--	9	<50
12/22/03[10]	84.19	19.75	64.44	0.00	130	720	130	29	10	46	--	2	<50
03/22/04[10]	84.19	17.06	67.13	0.00	240	<50	3	<0.5	<0.5	1	--	0.5	<50
06/21/04[10]	84.19	18.82	65.37	0.00	350	140	43	<0.5	<0.5	<0.5	--	8	<50
09/20/04[10]	84.19	19.99	64.20	0.00	340	<50	<0.5	<0.5	<0.5	<0.5	--	2	<50
12/20/04[10]	84.19	19.46	64.73	0.00	160[9]	1,300	400	28	31	31	--	1	<50
03/28/05[10]	84.19	16.42	67.77	0.00	440[9]	90	24	<0.5	<0.5	<0.5	--	1	<50
06/27/05[10]	84.19	17.53	66.66	0.00	170[13]	<50	<0.5	<0.5	<0.5	<0.5	--	1	<50
09/19/05[10]	84.19	19.04	65.15	0.00	190	<50	<0.5	<0.5	<0.5	<0.5	--	3	<50
12/19/05[10]	84.19	19.41	64.78	0.00	340[13]	330	94	5	1	3	--	2	<50

Table 1

Groundwater Monitoring Data and Analytical Results

Former Texaco Service Station (Site #211283)

3810 Broadway

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-12 (cont)													
03/27/06[10]	84.19	15.45	68.74	0.00	140	130	33	0.7	1	4	--	0.8	<50
06/26/06[10]	84.19	16.70	67.49	0.00	220	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
09/25/06[10]	84.19	18.81	65.38	0.00	200	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<50
12/18/06[10]	84.19	18.94	65.25	0.00	410	240	68	5	1	1	--	1	<50
03/19/07[10]	84.19	17.83	66.36	0.00	200	55	7	<0.5	<0.5	<0.5	--	2	<50
06/25/07[10]	84.19	25.80	58.39	0.00	1,600[19]	5,500[19]	1,000[19]	190[19]	170[19]	320[19]	--	2	<100
09/24/07[10]	84.19	27.88	56.31	0.00	2,300	<50	0.7	<0.5	<0.5	<0.5	--	1	<50
12/18/07[10]	84.19	27.06	57.13	0.00	550	230	17	<0.5	<0.5	<0.5	--	<0.5	<50
03/11/08[10]	84.19	25.60	58.59	0.00	1,100	7,000	960	330	410	860	--	<1	<100
06/11/08[10]	84.19	23.04	61.15	0.00	1,700	7,100	2,400	170	210	270	--	<1	<130
09/22/08[10]	84.19	21.48	62.71	0.00	--	13,000	1,800	93	480	1,200	--	16	<100
11/06/08[10]	84.19	21.20	62.99	0.00	1,600[21]	--	--	--	--	--	--	--	--
12/22/08[10]	84.19	20.90	63.29	0.00	1,800	7,700	1,400	220	310	560	--	7	<100
03/23/09[10]	**84.19**	**18.02**	**66.17**	**0.00**	**3,400**	**4,900**	**620**	**170**	**170**	**320**	**--**	**3**	**<50**
MW-2													
06/28/96	85.83	22.10	63.73	1.35	--	--	--	--	--	--	--	--	--
10/10/96	85.83	22.36	63.47	--	1,800	99,000	4,100	9,400	2,300	9,900	390	<25[1]	--
11/07/96	85.83	22.39	63.45**	0.01	--	--	--	--	--	--	--	--	--
12/18/97	85.83	20.19	65.64	--	4,700	24,000	600	1,800	750	2,400	<2,000	--	--
04/06/98	85.83	18.00	67.83	--	9.5	20,100	252	448	430	1,410	<200	--	--
06/18/98	85.83	19.63	66.20	--	5,200	20,000	240	370	270	790	<50	--	--
08/31/98	85.83	21.01	64.82	--	19,000	72,000	270	990	630	1,700	<125	--	--
12/21/98	85.83	21.31	64.52	--	13,000	290	8.7	18	9.7	38	10	29	--
03/24/99	85.83	19.18	66.65	--	5,590	80,400	651	1,860	1,120	3,730	<40.0	<100	--
06/25/99	85.83	20.78	65.05	--	12,100	34,700	504	1,300	716	2,160	<40.0	--	--
09/24/99	85.83	21.82	64.01	--	108	6,510	1,030	350	183	680	<50.0	--	--
12/29/99	85.83	22.17	63.90**	0.30	--	--	--	--	--	--	--	--	--
01/07/00	85.83	22.84	63.30**	0.39	--	--	--	--	--	--	--	--	--
03/21/00	--[3]	18.19	--	--	41,100	54,100	1,260	3,320	2,180	8,200	<1,250	--	--
DESTROYED													

Table 1

Groundwater Monitoring Data and Analytical Results

Former Texaco Service Station (Site #211283)

3810 Broadway

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-3													
06/28/96	83.18	19.04	64.14	--	--	--	--	--	--	--	--	--	--
10/10/96	83.18	19.51	63.67	--	1,200	110,000	6,600	16,000	2,200	12,000	<250	--	--
11/07/96	83.18	19.40	63.78	--	--	--	--	--	--	--	--	--	--
12/18/97	83.18	18.79	64.39	--	6,100,000	180,000	1,500	16,000	4,600	23,000	<3,000	--	--
04/06/98	83.18	16.58	66.64	0.05	--	--	--	--	--	--	--	--	--
06/18/98	83.18	--	--	>2.0[2]	--	--	--	--	--	--	--	--	--
08/31/98	83.18	19.56	63.68	0.07	--	--	--	--	--	--	--	--	--
12/21/98	83.18	20.23	65.13	2.73	--	--	--	--	--	--	--	--	--
03/24/99	83.18	16.76	67.11	0.86	--	--	--	--	--	--	--	--	--
06/25/99	83.18	18.47	64.95	0.30	--	--	--	--	--	--	--	--	--
09/24/99	83.18	19.43	63.81	0.08	--	--	--	--	--	--	--	--	--
12/29/99	83.18	19.25	63.96	0.04	--	--	--	--	--	--	--	--	--
01/07/00	83.18	19.87	63.37	0.07	--	--	--	--	--	--	--	--	--
DESTROYED													
MW-5													
10/10/96	85.41	21.93	63.48	--	<50	1,800	34	4.7	11	44	21	5.0[1]	--
11/07/96	85.41	21.96	63.45	--	--	--	--	--	--	--	--	--	--
12/18/97	85.41	19.81	65.60	--	<50	1,200	15	<1.0	15	<1.0	72	--	--
04/06/98	85.41	17.43	67.98	--	<50	1,000	126	0.5	0.8	1.5	<30	--	--
06/18/98	85.41	19.15	66.26	--	100	110	6.9	<0.5	<0.5	<0.5	<0.5	--	--
08/31/98	85.41	20.46	64.95	--	120	480	5.3	<2.5	<2.5	<2.5	<12	--	--
12/21/98	85.41	20.91	64.50	--	100	270	16	2.9	1.3	<1.0	34	<2.0	--
03/24/99	85.41	18.74	66.67	--	93.3	143	2.80	<0.500	0.749	<0.500	<2.00	<5.00	--
06/25/99	85.41	20.31	65.10	--	125	847	6.61	<0.500	0.611	<0.500	2.69	<2.00	--
09/24/99	85.41	21.36	64.05	--	94.0	563	6.00	<2.50	<2.50	<2.50	25.1	--	--
12/29/99	85.41	21.41	64.00	--	173	896	16.6	1.48	8.92	2.67	61.1	<0.500	--
03/21/00	85.41	18.13	67.28	--	158	858	53.7	<1.00	21.4	8.00	11.6	--	--
07/26/00	85.41	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--
09/06/00	85.41	20.33	65.08	--	231	670	153	<2.50	7.87	<2.50	--	--	--
11/29/00	85.13	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--
03/06/01	85.13	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--

Table 1

Groundwater Monitoring Data and Analytical Results

Former Texaco Service Station (Site #211283)

3810 Broadway

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
MW-5 (cont)													
06/19/01	85.13	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--
09/05/01	85.13	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--
12/02/01	85.13	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--
DESTROYED													
MW-8													
10/10/96	84.01	20.82	63.19	--	110	17,000	1,300	1,200	64	1,300	110	<5.0[1]	--
11/07/96	84.01	20.44	63.57	--	--	--	--	--	--	--	--	--	--
12/18/97	84.01	19.36	64.65	--	630	15,000	3,600	1,800	410	930	<600	--	--
04/06/98	84.01	16.19	67.82	--	<50	32,300	8,230	5,900	718	2,120	<1,000	--	--
06/18/98	84.01	17.75	66.26	--	<50	74,000	5,400	4,500	700	2,200	2,400	--	--
08/31/98	84.01	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--
12/21/98	84.01	19.48	64.53	--	1,200	9,600	2,600	410	220	300	700	<2.0	--
03/24/99	84.01	17.44	66.57	--	2,890	86,100	9,890	11,700	1,650	7,130	<200	<250	--
06/25/99	84.01	20.69	63.40**	0.10	--	--	--	--	--	--	--	--	--
07/01/99	84.01	20.45	65.07**	1.89	--	--	--	--	--	--	--	--	--
09/24/99	84.01	20.98	64.25**	1.53	--	--	--	--	--	--	--	--	--
12/29/99	84.01	20.25	63.97**	0.26	--	--	--	--	--	--	--	--	--
01/07/00	84.01	21.00	63.33**	0.40	--	--	--	--	--	--	--	--	--
DESTROYED													
TRIP BLANK													
QA													
06/25/02	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
09/18/02	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
12/19/02	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
03/20/03	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--	--
06/23/03[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
09/22/03[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
12/22/03[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
03/22/04[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
06/21/04[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--

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Groundwater Monitoring Data and Analytical Results

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3810 Broadway

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	GWE (msl)	SPHT (ft.)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE by 8021♦ (µg/L)	MTBE by 8260 (µg/L)	ETHANOL (µg/L)
QA (cont)													
09/20/04[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
12/20/04[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
03/28/05[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
06/27/05[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
09/19/05[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
12/19/05[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
03/27/06[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
06/26/06[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
09/25/06[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
12/18/06[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
03/19/07[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
06/25/07[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
09/24/07[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
12/18/07[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
03/11/08[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
06/11/08[20]	--	--	--	--	--	--	--	--	--	--	--	--	--
09/22/08[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
12/22/08[10]	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	--
03/23/09[10]	--	--	--	--	--	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	--	**<0.5**	--

Table 1
Groundwater Monitoring Data and Analytical Results
Former Texaco Service Station (Site #211283)
3810 Broadway
Oakland, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to June 25, 2002, were compiled from reports prepared by Toxichem Management Systems, Inc.

TOC = Top of Casing
(ft.) = Feet
DTW = Depth to Water
GWE = Groundwater Elevation
(msl) = Mean Sea Level
SPH = Separate-phase hydrocarbons
SPHT = Separate-phase hydrocarbon thickness

TPH = Total Petroleum Hydrocarbons
DRO = Diesel Range Organics
GRO = Gasoline Range Organics
B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes

MTBE = Methyl Tertiary Butyl Ether
(ppb) = Parts per billion
(µg/L) = Micrograms per liter
-- = Not Measured/Not Analyzed
QA = Quality Assurance/Trip Blank
NP= No Purge

* TOC elevations were surveyed June 24, 2002, by Morrow Surveying, and are based on City of Oakland Benchmark.
** GWE corrected for the presence of SPH; correction factor = [(TOC - DTW)+(0.80 x SPHT)].
♦ Prior to June 25, 2002, MTBE was analyzed by EPA Method 8020.

1 MTBE confirmed by EPA Method 8240.
2 Free product could not be accurately measured.
3 TOC altered.
4 Analyzed outside EPA recommended hold time.
5 Sample containers broken during transport to laboratory.
6 TPH-GRO and BTEX analyzed by EPA Method 8260.
7 Well development performed.
8 MW-11 was inaccessible during the re-surveying. TOC was not measured.
9 Laboratory report indicates the observed sample pattern is not typical of diesel/#2 fuel oil.
10 BTEX analyzed by EPA Method 8260.
11 Ethanol was previously reported as <50 ppb.
12 Laboratory report indicates the observed sample pattern is not typical of #2 fuel/diesel. It elutes in the DRO range later than #2 fuel.
13 Laboratory report indicates the observed sample pattern includes #2 fuel/diesel and an additional pattern which elutes later in the DRO range.
14 Laboratory report indicates the observed sample pattern is not typical of #2 fuel/diesel. It elutes in the DRO range earlier than #2 fuel.
15 Laboratory report indicates the observed sample patterns are not typical of #2 fuel/diesel. They elute in the DRO range earlier and later than #2 fuel.
16 Laboratory report indicates the observed sample pattern is not typical of #2 fuel/diesel. It elutes in the DRO range later than #2 fuel and contains individual peaks eluting in the DRO range.
17 Laboratory report indicates the observed sample pattern is not typical of #2 fuel/diesel. The reported result is due to an individual peak (s) eluting in the DRO range.
18 No purge due to bent casing.
19 Laboratory confirmed analytical result.
20 Sample containers not received at laboratory.
21 Laboratory report indicates the DRO analysis was performed on a resample due to a laboratory error during the extraction / analysis of the first submission.
22 No purge due to wells location in active construction zone.

Table 2
Field Measurements
Former Texaco Service Station (Site #211283)
3810 Broadway
Oakland, California

WELL ID	DATE	D.O. Pre Purging (mg/L)	ORP Pre Purging (mV)	D.O. Mid-Purging (mg/L)	ORP Mid-Purging (mV)	TPH-DRO (mg/L)	TPH-GRO (mV)
MW-6	09/24/99	1.00	--	--	--	1.20	--
	12/29/99	1.30	--	--	--	1.50	--
	03/21/00	3.00	--	--	--	4.30	--
	11/29/00	2.00	--	--	--	1.80	--
	03/06/01	3.70	--	--	--	4.00	--
	06/19/01	3.00	--	--	--	3.40	--
	09/05/01	10.40	--	--	--	10.80	--
	12/20/01	1.30	--	--	--	1.50	--
	06/25/02	1.00	--	0.60	--	0.40	--
	09/18/02	0.60	58	0.90	69	1.00	72
	12/19/02	1.20	71	--	--	1.10	79
	03/20/03	0.40	-93	--	--	1.60	-87
	06/23/03	0.90	64	--	--	1.20	78
	09/22/03	1.10	70	--	--	1.30	76
	12/22/03	0.90	68	--	--	1.00	70
	03/22/04	1.00	74	--	--	1.20	82
	06/21/04	1.10	72	--	--	1.10	86
	09/20/04	1.20	68	--	--	1.30	76
	12/20/04	1.00	71	--	--	1.10	80
	03/28/05	1.10	75	--	--	1.10	86
	06/27/05	1.10	78	--	--	1.20	90
	09/19/05	2.90	--[1]	--	--	1.20	--[1]
	12/19/05	1.00	69	--	--	1.00	74
	03/27/06	1.60	89	--	--	1.20	75
	06/26/06	1.40	105	--	--	1.20	82
	09/25/06	1.20	103	--	--	1.30	91
	12/18/06	1.20	87	--	--	--[2]	--[2]
	03/19/07	1.9	-57	--	--	1.6	-63
	06/25/07	DRY	--	--	--	--	--
	09/24/07	DRY	--	--	--	--	--
	12/18/07	DRY	--	--	--	--	--
	03/11/08	DRY	--	--	--	--	--
	06/11/08	0.9	53	--	--	1.1	67
	09/22/08	1.3	-27	--	--	1.6	-17
	12/22/08	1.2	-65	--	--	0.9	-54
	03/23/09	**0.4**	**-81**	**--**	**--**	**0.9**	**-150**
MW-7	09/24/99	1.40	--	--	--	1.60	--
	12/29/99	2.30	--	--	--	1.80	--
	03/21/00	5.80	--	--	--	9.00	--
	07/26/00	6.00	--	--	--	6.60	--
	09/06/00	4.30	--	--	--	5.00	--
	11/29/00	4.00	--	--	--	3.70	--
	03/06/01	4.70	--	--	--	5.10	--
	06/19/01	3.80	--	--	--	4.20	--
	09/05/01	6.70	--	--	--	7.10	--
	12/20/01	4.90	--	--	--	5.00	--

Table 2
Field Measurements
Former Texaco Service Station (Site #211283)
3810 Broadway
Oakland, California

WELL ID	DATE	D.O. Pre Purging (mg/L)	ORP Pre Purging (mV)	D.O. Mid-Purging (mg/L)	ORP Mid-Purging (mV)	TPH-DRO (mg/L)	TPH-GRO (mV)
MW-7 (cont)	06/25/02	1.00	--	1.40	--	1.30	--
	09/18/02	1.80	112	1.90	98	2.10	102
	12/19/02	1.30	121	--	--	1.60	110
	03/20/03	2.60	129	--	--	2.70	152
	06/23/03	1.70	122	--	--	1.90	140
	09/22/03	1.40	92	--	--	1.70	124
	12/22/03	1.50	98	--	--	1.60	114
	03/22/04	1.30	90	--	--	1.50	96
	06/21/04	1.50	106	--	--	1.70	126
	09/20/04	1.40	115	--	--	0.96	110
	12/20/04	1.30	88	--	--	1.40	95
	03/28/05	1.40	92	--	--	1.40	88
	06/27/05	1.50	106	--	--	1.40	94
	09/19/05	3.70	17	--	--	3.10	29
	12/19/05	1.40	85	--	--	1.30	90
	03/27/06	1.80	126	--	--	2.10	132
	06/26/06	1.60	119	--	--	1.80	121
	09/25/06	1.70	125	--	--	1.60	124
	12/18/06	1.40	130	--	--	--[2]	--[2]
	03/19/07	2.8	-10	--	--	2.3	-13
	06/25/07	1.8	119	--	--	1.5	98
	09/24/07	1.7	1.3	--	--	94	76
	12/18/07	2.1	68	--	--	1.8	73
	03/11/08	1.8	93	--	--	1.7	104
	06/11/08	1.5	-32	--	--	1.3	-46
	09/22/08	1.2	27	--	--	1.5	39
	12/22/08	1.8	85	--	--	1.7	80
	03/23/09	**1.4**	**185**	--	--	--	--
MW-9	09/24/99	1.00	--	--	--	1.20	--
	12/29/99	3.30	--	--	--	2.70	--
	03/21/00	3.20	--	--	--	7.30	--
	07/26/00	3.60	--	--	--	1.80	--
	09/06/00	3.80	--	--	--	4.00	--
	11/29/00	2.00	--	--	--	2.00	--
	03/06/01	4.00	--	--	--	4.90	--
	06/19/01	3.40	--	--	--	4.00	--
	09/05/01	2.70	--	--	--	2.00	--
	12/20/01	2.20	--	--	--	2.20	--
	06/25/02	0.90	--	1.00	--	1.20	--
	09/18/02	1.40	138	1.00	110	0.90	95
	12/19/02	1.80	126	--	--	1.10	98
	03/20/03	0.10	206	--	--	1.10	193
	06/23/03	1.20	146	--	--	1.00	138
	09/22/03	1.10	126	--	--	1.00	130
	12/22/03	1.30	134	--	--	1.20	142
	03/22/04	3.70	120	--	--	1.40	126

Table 2
Field Measurements
Former Texaco Service Station (Site #211283)
3810 Broadway
Oakland, California

WELL ID	DATE	D.O. Pre Purging (mg/L)	ORP Pre Purging (mV)	D.O. Mid-Purging (mg/L)	ORP Mid-Purging (mV)	TPH-DRO (mg/L)	TPH-GRO (mV)
MW-9 (cont)	06/21/04	3.50	108	--	--	1.20	116
	09/20/04	2.70	54	--	--	1.10	62
	12/20/04	2.50	72	--	--	1.40	80
	03/28/05	2.80	92	--	--	1.70	68
	06/27/05	2.60	82	--	--	1.50	62
	09/19/05	1.00	-38	--	--	0.60	-30
	12/19/05	2.10	76	--	--	2.20	68
	03/27/06	2.20	136	--	--	1.90	125
	06/26/06	2.40	122	--	--	2.00	115
	09/25/06	2.10	116	--	--	1.90	120
	12/18/06	1.80	131	--	--	--[2]	--[2]
	03/19/07	1.7	-03	--	--	2.1	-11
	06/25/07	2.2	11	--	--	2.0	73
	09/24/07	2.4	2.2	--	--	93	75
	12/18/07	INACCESSIBLE - WELL UNDER WATER			--	--	--
	03/11/08	2.2	76	--	--	1.9	63
	06/11/08	1.9	103			1.9	117
	09/22/08	14	32	--	--	21	51
	12/22/08	2.3	115	--	--	2.1	109
	03/23/09	**INACCESSIBLE**	--	--	--	--	--
MW-10	09/19/05	1.40	-97	--	--	0.80	-98
	03/23/09	**INACCESSIBLE**	--	--	--	--	--
MW-2	09/24/99	1.00	--	--	--	0.80	--
	12/29/99	2.60	--	--	--	--	--
	03/21/00	3.30	--	--	--	3.60	--
	DESTROYED						

Table 2
Field Measurements
Former Texaco Service Station (Site #211283)
3810 Broadway
Oakland, California

EXPLANATIONS:

Dissolved oxygen concentrations prior to June 25, 2002, were compiled from reports prepared by Toxichem Management Systems, Inc.

D.O. = Dissolved Oxygen
mg/L = milligrams per liter
ORP = Oxidation Reduction Potential
(mV) = Millivolts
-- = Not Measured

[1] ORP reading under range.
[2] Field technician inadvertently missed readings.

STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

Gettler-Ryan Inc. field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. Prior to sample collection, the type of analysis to be performed is determined. Loss prevention of volatile compounds is controlled and sample preservation for subsequent analysis is maintained.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using an interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, all depth to water level measurements are collected with a static water level indicator and are also recorded in the field notes, prior to purging and sampling any wells.

After water levels are collected and prior to sampling, if purging is to occur, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or disposable bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging. Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used when possible. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

A laboratory supplied trip blank accompanies each sampling set. For sampling sets greater than 20 samples, 5% trip blanks are included. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

As requested by Chevron Environmental Management Company, the purge water and decontamination water generated during sampling activities is transported by IWM to Chemical Waste Management located in Kettleman Hills, California.

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #211283
Site Address: 3810 Broadway
City: Oakland, CA

Job Number: 386956
Event Date: 3-23-9 (inclusive)
Sampler: AC

Well ID: MW-1
Well Diameter: 2 in.
Total Depth: 29.96 ft.
Depth to Water: 21.35 ft.

Date Monitored: 3-23-9

Volume Factor (VF)				
	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

8.61 xVF — = — x3 case volume = Estimated Purge Volume: — gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: —

Purge Equipment:
- Disposable Bailer
- Stainless Steel Bailer
- Stack Pump
- Suction Pump
- Grundfos
- Peristaltic Pump
- QED Bladder Pump
- Other:

Sampling Equipment:
- Disposable Bailer
- Pressure Bailer
- Discrete Bailer ✓
- Peristaltic Pump
- QED Bladder Pump
- Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: gal
Water Removed:
Product Transferred to:

Start Time (purge): —
Sample Time/Date: 1050 / 3-23-9
Approx. Flow Rate: — gpm.
Did well de-water? — If yes, Time: — Volume: — gal. DTW @ Sampling: 21.35

Weather Conditions: Sunny
Water Color: Cloudy Odor: Y / (N)
Sediment Description: —

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
					PRE:	PRE:
					POST:	POST:

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-1	6 x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)/ ETHANOL (8260)
	2 x 500ml ambers	YES	NP	LANCASTER	TPH-DRO (8015)

COMMENTS: Casing bent - unable to purge - Grab sample taken with pin bailer

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Add/Replaced Bolt: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #211283
Site Address: 3810 Broadway
City: Oakland, CA

Job Number: 386956
Event Date: 3-23-9 (inclusive)
Sampler: AC

Well ID: MW-4
Well Diameter: 2 in.
Total Depth: 28.70 ft.
Depth to Water: 18.17 ft.

Date Monitored: 3-23-9

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

10.53 xVF .17 = 1.7 x3 case volume = Estimated Purge Volume: 5.1 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 20.27

Purge Equipment:
- Disposable Bailer ✓
- Stainless Steel Bailer
- Stack Pump
- Suction Pump
- Grundfos
- Peristaltic Pump
- QED Bladder Pump
- Other:

Sampling Equipment:
- Disposable Bailer ✓
- Pressure Bailer
- Discrete Bailer
- Peristaltic Pump
- QED Bladder Pump
- Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: gal
Water Removed:
Product Transferred to:

Start Time (purge): 1202
Sample Time/Date: 1240 / 3-23-9
Approx. Flow Rate: — gpm.
Did well de-water? No If yes, Time: — Volume: — gal. DTW @ Sampling: 19.61

Weather Conditions: Sunny
Water Color: Cloudy Odor: Y / (N)
Sediment Description: light

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1210	2	7.43	242	20.1	PRE:	PRE:
1217	4	7.34	246	19.4		
1224	5.1	7.27	238	20.5	POST:	POST:

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-4	6 x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)/ ETHANOL (8260)
	2 x 500ml ambers	YES	NP	LANCASTER	TPH-DRO (8015)

COMMENTS:

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Add/Replaced Bolt: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #211283
Site Address: 3810 Broadway
City: Oakland, CA

Job Number: 386956
Event Date: 3-23-9 (inclusive)
Sampler: AC

Well ID: MW-5B
Well Diameter: 2 in.
Total Depth: 30.19 ft.
Depth to Water: 20.20 ft.

Date Monitored: 3-23-9

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

9.99 xVF .17 = 1.6 x3 case volume = Estimated Purge Volume: 4.8 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 22.19

Purge Equipment:
- Disposable Bailer: ✓
- Stainless Steel Bailer
- Stack Pump
- Suction Pump
- Grundfos
- Peristaltic Pump
- QED Bladder Pump
- Other:

Sampling Equipment:
- Disposable Bailer: ✓
- Pressure Bailer
- Discrete Bailer
- Peristaltic Pump
- QED Bladder Pump
- Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:

Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: gal
Water Removed:
Product Transferred to:

Start Time (purge): 1112
Sample Time/Date: 1150 / 3-23-9
Approx. Flow Rate: — gpm.
Did well de-water? No If yes, Time: — Volume: — gal. DTW @ Sampling: 21.48

Weather Conditions: Sunny
Water Color: Clear Odor: Y / (N)
Sediment Description:

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1120	2	7.58	586	20.4	PRE:	PRE:
1128	4	6.86	574	19.3		
1132	5	6.84	571	19.4		
					POST:	POST:

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-5B	6 x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)/ ETHANOL (8260)
	2 x 500ml ambers	YES	NP	LANCASTER	TPH-DRO (8015)

COMMENTS:

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Add/Replaced Bolt: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #211283
Site Address: 3810 Broadway
City: Oakland, CA

Job Number: 386956
Event Date: 3-23-9 (inclusive)
Sampler: AC

Well ID: MW-6
Well Diameter: 2 in.
Total Depth: 27.89 ft.
Depth to Water: 20.48 ft.

Date Monitored: 3-23-9

Volume Factor (VF)				
	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

7.41 xVF .17 = 1.2 x3 case volume = Estimated Purge Volume: 3.6 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 21.96

Purge Equipment:
- Disposable Bailer ✓
- Stainless Steel Bailer
- Stack Pump
- Suction Pump
- Grundfos
- Peristaltic Pump
- QED Bladder Pump
- Other:

Sampling Equipment:
- Disposable Bailer ✓
- Pressure Bailer
- Discrete Bailer
- Peristaltic Pump
- QED Bladder Pump
- Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:

Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: gal
Water Removed:
Product Transferred to:

Start Time (purge): 1250
Sample Time/Date: 1350 / 3-23-9
Approx. Flow Rate: — gpm.
Did well de-water? No If yes, Time: — Volume: — gal. DTW @ Sampling: 21.96

Weather Conditions: Sunny
Water Color: Cloudy Odor: (Y) / N Strong
Sediment Description:

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm (µS))	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1255	1	6.96	804	20.5	PRE: 0.4	PRE: -81
1259	2	6.71	761	19.4		
1306	4	6.68	757	19.5		
					POST: 0.9	POST: -150

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-6	6 x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)/ ETHANOL (8260)
	2 x 500ml ambers	YES	NP	LANCASTER	TPH-DRO (8015)

COMMENTS: Well started to dewater during last case volume

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Add/Replaced Bolt: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #211283
Site Address: 3810 Broadway
City: Oakland, CA

Job Number: 386956
Event Date: 3-23-9 (inclusive)
Sampler: AC

Well ID: MW-7
Well Diameter: 2 in.
Total Depth: 33.34 ft.
Depth to Water: 18.45 ft.

Date Monitored: 3-23-9

Volume Factor (VF)				
	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

14.89 xVF 1.7 = 2.5 x3 case volume = Estimated Purge Volume: 7.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 21.42

Purge Equipment:
- Disposable Bailer
- Stainless Steel Bailer
- Stack Pump
- Suction Pump
- Grundfos
- Peristaltic Pump
- QED Bladder Pump
- Other:

Sampling Equipment:
- Disposable Bailer ✓
- Pressure Bailer
- Discrete Bailer
- Peristaltic Pump
- QED Bladder Pump
- Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: gal
Water Removed:
Product Transferred to:

Start Time (purge): —
Sample Time/Date: 1025 / 3-23-9
Approx. Flow Rate: — gpm.
Did well de-water? — If yes, Time: — Volume: — gal.

Weather Conditions: Sunny
Water Color: Clear Odor: Y / (N)
Sediment Description: —
DTW @ Sampling: 18.45

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
					PRE: 1.4	PRE: 185
					POST: —	POST: —

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-7	6 x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)/ ETHANOL (8260)
	2 x 500ml ambers	YES	NP	LANCASTER	TPH-DRO (8015)

COMMENTS: Well location in active construction zone - Coordinated with Freeman a window to go in and grab sample well.

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Add/Replaced Bolt: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #211283
Site Address: 3810 Broadway
City: Oakland, CA

Job Number: 386956
Event Date: 3-23-9 (inclusive)
Sampler: AC

Well ID: MW-9
Well Diameter: 2 in.
Total Depth: ft.
Depth to Water: ft.

Date Monitored: —

Volume Factor (VF)				
	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

xVF = x3 case volume = Estimated Purge Volume: gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]:

Purge Equipment:
Disposable Bailer
Stainless Steel Bailer
Stack Pump
Suction Pump
Grundfos
Peristaltic Pump
QED Bladder Pump
Other:

Sampling Equipment:
Disposable Bailer
Pressure Bailer
Discrete Bailer
Peristaltic Pump
QED Bladder Pump
Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: gal
Water Removed:
Product Transferred to:

Start Time (purge):
Sample Time/Date:
Approx. Flow Rate: gpm.
Did well de-water? If yes, Time: Volume: gal. DTW @ Sampling:

Weather Conditions:
Water Color: Odor: Y / N
Sediment Description:

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
					PRE:	PRE:
					POST:	POST:

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-	x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)/ ETHANOL (8260)
	x 500ml ambers	YES	NP	LANCASTER	TPH-DRO (8015)

COMMENTS: UTA — well location in street inside construction active exclusion zone.

Add/Replaced Lock: Add/Replaced Plug: Add/Replaced Bolt:

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #211283
Site Address: 3810 Broadway
City: Oakland, CA

Job Number: 386956
Event Date: 3-23-9 (inclusive)
Sampler: AC

Well ID: MW-10
Well Diameter: 2 in.
Total Depth: ft.
Depth to Water: ft.

Date Monitored: —

Volume Factor (VF)				
	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

xVF = x3 case volume = Estimated Purge Volume: gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]:

Purge Equipment:
Disposable Bailer
Stainless Steel Bailer
Stack Pump
Suction Pump
Grundfos
Peristaltic Pump
QED Bladder Pump
Other:

Sampling Equipment:
Disposable Bailer
Pressure Bailer
Discrete Bailer
Peristaltic Pump
QED Bladder Pump
Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: gal
Water Removed:
Product Transferred to:

Start Time (purge):
Sample Time/Date: /
Approx. Flow Rate: gpm.
Did well de-water? If yes, Time: Volume: gal. DTW @ Sampling:

Weather Conditions:
Water Color: Odor: Y / N
Sediment Description:

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
					PRE:	PRE:
					POST:	POST:

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-	x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)/ ETHANOL (8260)
	x 500ml ambers	YES	NP	LANCASTER	TPH-DRO (8015)

COMMENTS: ~~WTA~~ - well in active construction exclusion zone

Add/Replaced Lock: Add/Replaced Plug: Add/Replaced Bolt:

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #211283
Site Address: 3810 Broadway
City: Oakland, CA

Job Number: 386956
Event Date: 3-23-9 (inclusive)
Sampler: AC

Well ID: MW-11
Well Diameter: 2 in.
Total Depth: 39.23 ft.
Depth to Water: 25.03 ft.

Date Monitored: 3-23-9

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

14.20 xVF .17 = 2.4 x3 case volume = Estimated Purge Volume: 7.2 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 27.87

Purge Equipment:
- Disposable Bailer ✓
- Stainless Steel Bailer
- Stack Pump
- Suction Pump
- Grundfos
- Peristaltic Pump
- QED Bladder Pump
- Other:

Sampling Equipment:
- Disposable Bailer ✓
- Pressure Bailer
- Discrete Bailer
- Peristaltic Pump
- QED Bladder Pump
- Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:

Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: gal
Water Removed:
Product Transferred to:

Start Time (purge): 0934
Sample Time/Date: 1000 3-23-9
Approx. Flow Rate: — gpm.
Did well de-water? No If yes, Time: — Volume: — gal. DTW @ Sampling: 28.81

Weather Conditions: Sunny
Water Color: Cloudy Odor: Y (N)
Sediment Description: light

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - mS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0940	2.5	6.94	464	16.0	PRE:	PRE:
0944	5.0	6.89	471	15.8		
0949	7.5	6.87	473	15.7		
					POST:	POST:

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-11	6 x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)/ ETHANOL (8260)
	2 x 500ml ambers	YES	NP	LANCASTER	TPH-DRO (8015)

COMMENTS:

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Add/Replaced Bolt: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #211283
Site Address: 3810 Broadway
City: Oakland, CA

Job Number: 386956
Event Date: 3-23-9 (inclusive)
Sampler: AC

Well ID: MW-12
Well Diameter: 2 in.
Total Depth: 29.48 ft.
Depth to Water: 18.02 ft.

Date Monitored: 3-23-9

Volume Factor (VF)				
	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

11.46 xVF 1.7 = 1.9 x3 case volume = Estimated Purge Volume: 5.7 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 20.31

Purge Equipment:
- Disposable Bailer ✓
- Stainless Steel Bailer
- Stack Pump
- Suction Pump
- Grundfos
- Peristaltic Pump
- QED Bladder Pump
- Other:

Sampling Equipment:
- Disposable Bailer ✓
- Pressure Bailer
- Discrete Bailer
- Peristaltic Pump
- QED Bladder Pump
- Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: gal
Water Removed:
Product Transferred to:

Start Time (purge): 1316
Sample Time/Date: 1355 / 3-23-9
Approx. Flow Rate: — gpm.
Did well de-water? No If yes, Time: — Volume: — gal. DTW @ Sampling: 19.20

Weather Conditions: Sunny
Water Color: Cloudy Odor: (Y) / N moderate
Sediment Description: light

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - (µS))	Temperature ((C) / F)	D.O. (mg/L)	ORP (mV)
1322	2	7.49	894	20.4	PRE:	PRE:
1350	4	6.83	858	19.8		
1391	6	6.94	839	18.3	POST:	POST:

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-12	6 x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)/ ETHANOL (8260)
	2 x 500ml ambers	YES	NP	LANCASTER	TPH-DRO (8015)

COMMENTS:

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Add/Replaced Bolt: _____

Chevron California Region Analysis Request/Chain of Custody

Lancaster Laboratories

Ø32509-05

~~Ø3 MAAS~~

For Lancaster Laboratories use only

Acct. #: 10904 Sample #: 5632054-61 Group #: 016690

Group# 1137712

Facility #: SS#211283-OML G-R#386956 Global ID#T0600101108

Site Address: 3810 BROADWAY, OAKLAND, CA

Chevron PM: IR Lead Consultant: CRACE

Consultant/Office: G-R, Inc., 6747 Sierra Court, Suite J, Dublin, CA 94568

Consultant Prj. Mgr.: Deanna L. Harding (deanna@grinc.com)

Consultant Phone #925-551-7555 Fax #925-551-7899

Sampler: Aaron Chandler

Matrix: Soil / Water (☐ Potable ☐ NPDES) / Oil ☐ Air

Analyses Requested — Preservation Codes

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Oil ☐ Air	Total Number of Containers	BTEX + MTBE 8260 ☒ 8021 ☐ (H)	TPH 8015 MOD GRO (H)	TPH 8015 MOD DRO ☐ Silica Gel Cleanup	8260 full scan	Oxygenates	Total Lead Method	Dissolved Lead Method	Ethanol (8260) (H)
QA	3-23-9	—	X			X		2	X	X						
MW-1	↓	1050	↓			↓		8	X	X	X					X
MW-4		1240						8	X	X	X					X
MW-5B		1150						8	X	X	X					X
MW-6		1350						8	X	X	X					X
MW-7		1025						8	X	X	X					X
MW-11		1000						8	X	X	X					X
MW-12		1355						8	X	X	X					X

Preservative Codes

H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 O = Other

☐ J value reporting needed
☒ Must meet lowest detection limits possible for 8260 compounds

8021 MTBE Confirmation
☐ Confirm highest hit by 8260
☐ Confirm all hits by 8260
☐ Run ____ oxy's on highest hit
☐ Run ____ oxy's on all hits

Comments / Remarks

Turnaround Time Requested (TAT) (please circle)
STD. TAT 72 hour 48 hour
24 hour 4 day 5 day

Data Package Options (please circle if required)
QC Summary Type I - Full
Type VI (Raw Data) ☐ Coelt Deliverable not nee EDF/EDD
WIP (RWQCB)
Disk

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	3/23/9	1500	[signature]	03-25-09	1200
[signature]	03-25-09	1200	A. Salazar	25MAR09	1320
A. Salazar	25MAR09	1630	FED EX		
Relinquished by Commercial Carrier: UPS FedEx Other			Received by: [signature]	3/26/09	055

Temperature Upon Receipt 1.4-2.8 C°

Custody Seals Intact? Yes No

Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

4804.01 (north) Rev. 10/12/06

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared for:

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

925-842-8582

RECEIVED
APR 07 2009
GETTLER-RYAN INC.
GENERAL CONTRACTORS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

April 06, 2009

SAMPLE GROUP

The sample group for this submittal is 1137712. Samples arrived at the laboratory on Thursday, March 26, 2009. The PO# for this group is 0015039978 and the release number is ROBB.

Client Description	Lancaster Labs Number
QA-T-090323 NA Water	5632054
MW-1-W-090323 Grab Water	5632055
MW-4-W-090323 Grab Water	5632056
MW-5B-W-090323 Grab Water	5632057
MW-6-W-090323 Grab Water	5632058
MW-7-W-090323 Grab Water	5632059
MW-11-W-090323 Grab Water	5632060
MW-12-W-090323 Grab Water	5632061

ELECTRONIC COPY TO CRA c/o Gettler-Ryan Attn: Cheryl Hansen

Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Questions? Contact your Client Services Representative
Jill M Parker at (717) 656-2300

Respectfully Submitted,

Sarah Snyder
Specialist

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. WW 5632054

Group No. 1137712
CA

QA-T-090323 NA Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T0600101108 QA

Collected: 03/23/2009

Account Number: 10904

Submitted: 03/26/2009 09:50
Reported: 04/06/2009 at 19:18
Discard: 05/07/2009

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

3810Q

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
SW-846 8260B	**GC/MS Volatiles**		**ug/l**	**ug/l**	
06054	Benzene	71-43-2	N.D.	0.5	1
06054	Ethylbenzene	100-41-4	N.D.	0.5	1
06054	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
06054	Toluene	108-88-3	N.D.	0.5	1
06054	Xylene (Total)	1330-20-7	N.D.	0.5	1
SW-846 8015B	**GC Volatiles**		**ug/l**	**ug/l**	
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	1

General Sample Comments

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06054	BTEX+MTBE by 8260B	SW-846 8260B	1	D090873AA	03/28/2009 14:49	Michael A Ziegler	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	D090873AA	03/28/2009 14:49	Michael A Ziegler	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	09085D20A	03/26/2009 23:50	Carrie E Youtzy	1
01146	GC VOA Water Prep	SW-846 5030B	1	09085D20A	03/26/2009 23:50	Carrie E Youtzy	1

Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Lancaster Laboratories Sample No. WW 5632055

Group No. 1137712
CA

MW-1-W-090323 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T0600101108 MW-1

Collected: 03/23/2009 10:50 by AC

Account Number: 10904

Submitted: 03/26/2009 09:50
Reported: 04/06/2009 at 19:18
Discard: 05/07/2009

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

38101

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
SW-846 8260B	**GC/MS Volatiles**		ug/l	ug/l	
06067	Benzene	71-43-2	N.D.	0.5	1
06067	Ethanol	64-17-5	N.D.	50	1
06067	Ethylbenzene	100-41-4	N.D.	0.5	1
06067	Methyl Tertiary Butyl Ether	1634-04-4	0.9	0.5	1
06067	Toluene	108-88-3	N.D.	0.5	1
06067	Xylene (Total)	1330-20-7	N.D.	0.5	1
SW-846 8015B	**GC Volatiles**		ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	1
SW-846 8015B	**GC Extractable TPH**		ug/l	ug/l	
06609	TPH-DRO CA C10-C28	n.a.	1,500	50	1

General Sample Comments

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06067	BTEX, MTBE, ETOH	SW-846 8260B	1	Z090914AB	04/02/2009 01:50	Michael A Ziegler	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z090914AB	04/02/2009 01:50	Michael A Ziegler	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	09085D20A	03/27/2009 05:39	Carrie E Youtzy	1
01146	GC VOA Water Prep	SW-846 5030B	1	09085D20A	03/27/2009 05:39	Carrie E Youtzy	1
06609	TPH-DRO CA C10-C28	SW-846 8015B	1	090850017A	03/30/2009 10:12	Diane V Do	1
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	1	090850017A	03/27/2009 10:23	Jessica Agosto	1

Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Lancaster Laboratories Sample No. WW 5632056

Group No. 1137712
CA

MW-4-W-090323 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T0600101108 MW-4

Collected: 03/23/2009 12:40 by AC

Account Number: 10904

Submitted: 03/26/2009 09:50
Reported: 04/06/2009 at 19:18
Discard: 05/07/2009

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

38104

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
SW-846 8260B	**GC/MS Volatiles**		**ug/l**	**ug/l**	
06067	Benzene	71-43-2	N.D.	0.5	1
06067	Ethanol	64-17-5	N.D.	50	1
06067	Ethylbenzene	100-41-4	N.D.	0.5	1
06067	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
06067	Toluene	108-88-3	N.D.	0.5	1
06067	Xylene (Total)	1330-20-7	N.D.	0.5	1
SW-846 8015B	**GC Volatiles**		**ug/l**	**ug/l**	
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	1
SW-846 8015B	**GC Extractable TPH**		**ug/l**	**ug/l**	
06609	TPH-DRO CA C10-C28	n.a.	74	50	1

General Sample Comments

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06067	BTEX, MTBE, ETOH	SW-846 8260B	1	Z090914AB	04/02/2009 02:15	Michael A Ziegler	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z090914AB	04/02/2009 02:15	Michael A Ziegler	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	09085D20A	03/27/2009 06:01	Carrie E Youtzy	1
01146	GC VOA Water Prep	SW-846 5030B	1	09085D20A	03/27/2009 06:01	Carrie E Youtzy	1
06609	TPH-DRO CA C10-C28	SW-846 8015B	1	090850017A	03/30/2009 09:51	Diane V Do	1
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	1	090850017A	03/27/2009 10:23	Jessica Agosto	1

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Analysis Report

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Lancaster Laboratories Sample No. WW 5632057

Group No. 1137712
CA

MW-5B-W-090323 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T0600101108 MW-5B

Collected: 03/23/2009 11:50 by AC

Account Number: 10904

Submitted: 03/26/2009 09:50
Reported: 04/06/2009 at 19:18
Discard: 05/07/2009

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

38105

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
SW-846 8260B	**GC/MS Volatiles**		ug/l	ug/l	
06067	Benzene	71-43-2	N.D.	0.5	1
06067	Ethanol	64-17-5	N.D.	50	1
06067	Ethylbenzene	100-41-4	N.D.	0.5	1
06067	Methyl Tertiary Butyl Ether	1634-04-4	11	0.5	1
06067	Toluene	108-88-3	N.D.	0.5	1
06067	Xylene (Total)	1330-20-7	N.D.	0.5	1
SW-846 8015B	**GC Volatiles**		ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	97	50	1
SW-846 8015B	**GC Extractable TPH**		ug/l	ug/l	
06609	TPH-DRO CA C10-C28	n.a.	240	50	1

General Sample Comments

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06067	BTEX, MTBE, ETOH	SW-846 8260B	1	Z090914AB	04/02/2009 02:40	Michael A Ziegler	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z090914AB	04/02/2009 02:40	Michael A Ziegler	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	2	09085D20A	03/27/2009 06:23	Jennifer B Werner	1
01146	GC VOA Water Prep	SW-846 5030B	1	09085D20A	03/27/2009 06:23	Carrie E Youtzy	1
06609	TPH-DRO CA C10-C28	SW-846 8015B	1	090850017A	03/30/2009 10:32	Diane V Do	1
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	1	090850017A	03/27/2009 10:23	Jessica Agosto	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5632058

Group No. 1137712
CA

MW-6-W-090323 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T0600101108 MW-6

Collected: 03/23/2009 13:50 by AC

Account Number: 10904

Submitted: 03/26/2009 09:50
Reported: 04/06/2009 at 19:18
Discard: 05/07/2009

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

38106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
SW-846 8260B	**GC/MS Volatiles**		ug/l	ug/l	
06067	Benzene	71-43-2	460	5	10
06067	Ethanol	64-17-5	N.D.	50	1
06067	Ethylbenzene	100-41-4	470	5	10
06067	Methyl Tertiary Butyl Ether	1634-04-4	3	0.5	1
06067	Toluene	108-88-3	140	0.5	1
06067	Xylene (Total)	1330-20-7	1,200	5	10
SW-846 8015B	**GC Volatiles**		ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	7,900	250	5
SW-846 8015B	**GC Extractable TPH**		ug/l	ug/l	
06609	TPH-DRO CA C10-C28	n.a.	2,100	50	1

General Sample Comments

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
06067	BTEX, MTBE, ETOH	SW-846 8260B	1	Z090914AB	04/02/2009	03:05	Michael A Ziegler	1
06067	BTEX, MTBE, ETOH	SW-846 8260B	1	Z090914AB	04/02/2009	03:30	Michael A Ziegler	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z090914AB	04/02/2009	03:05	Michael A Ziegler	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Z090914AB	04/02/2009	03:30	Michael A Ziegler	10
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	09086A20A	03/27/2009	15:51	Jennifer B Werner	5
01146	GC VOA Water Prep	SW-846 5030B	1	09086A20A	03/27/2009	15:51	Jennifer B Werner	5
06609	TPH-DRO CA C10-C28	SW-846 8015B	1	090850017A	03/30/2009	08:48	Diane V Do	1
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	1	090850017A	03/27/2009	10:23	Jessica Agosto	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5632059

Group No. 1137712
CA

MW-7-W-090323 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T0600101108 MW-7

Collected: 03/23/2009 10:25 by AC

Account Number: 10904

Submitted: 03/26/2009 09:50
Reported: 04/06/2009 at 19:18
Discard: 05/07/2009

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

38107

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
SW-846 8260B	**GC/MS Volatiles**		ug/l	ug/l	
06067	Benzene	71-43-2	N.D.	0.5	1
06067	Ethanol	64-17-5	N.D.	50	1
06067	Ethylbenzene	100-41-4	N.D.	0.5	1
06067	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
06067	Toluene	108-88-3	N.D.	0.5	1
06067	Xylene (Total)	1330-20-7	N.D.	0.5	1
SW-846 8015B	**GC Volatiles**		ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	1
SW-846 8015B	**GC Extractable TPH**		ug/l	ug/l	
06609	TPH-DRO CA C10-C28	n.a.	58	50	1

General Sample Comments

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06067	BTEX, MTBE, ETOH	SW-846 8260B	1	Z090914AB	04/02/2009 03:55	Michael A Ziegler	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z090914AB	04/02/2009 03:55	Michael A Ziegler	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	09086A20A	03/27/2009 16:13	Jennifer B Werner	1
01146	GC VOA Water Prep	SW-846 5030B	1	09086A20A	03/27/2009 16:13	Jennifer B Werner	1
06609	TPH-DRO CA C10-C28	SW-846 8015B	1	090850017A	03/30/2009 09:10	Diane V Do	1
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	1	090850017A	03/27/2009 10:23	Jessica Agosto	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5632060

Group No. 1137712
CA

MW-11-W-090323 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T0600101108 MW-11

Collected: 03/23/2009 10:00 by AC

Account Number: 10904

Submitted: 03/26/2009 09:50
Reported: 04/06/2009 at 19:18
Discard: 05/07/2009

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

38111

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
SW-846 8260B	**GC/MS Volatiles**		ug/l	ug/l	
06067	Benzene	71-43-2	N.D.	0.5	1
06067	Ethanol	64-17-5	N.D.	50	1
06067	Ethylbenzene	100-41-4	N.D.	0.5	1
06067	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
06067	Toluene	108-88-3	N.D.	0.5	1
06067	Xylene (Total)	1330-20-7	N.D.	0.5	1
SW-846 8015B	**GC Volatiles**		ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	1
SW-846 8015B	**GC Extractable TPH**		ug/l	ug/l	
06609	TPH-DRO CA C10-C28	n.a.	N.D.	50	1

General Sample Comments

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06067	BTEX, MTBE, ETOH	SW-846 8260B	1	Z090914AB	04/02/2009 04:19	Michael A Ziegler	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z090914AB	04/02/2009 04:19	Michael A Ziegler	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	09086A20A	03/27/2009 16:35	Jennifer B Werner	1
01146	GC VOA Water Prep	SW-846 5030B	1	09086A20A	03/27/2009 16:35	Jennifer B Werner	1
06609	TPH-DRO CA C10-C28	SW-846 8015B	1	090850017A	03/30/2009 09:30	Diane V Do	1
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	1	090850017A	03/27/2009 10:23	Jessica Agosto	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5632061

Group No. 1137712
CA

MW-12-W-090323 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T0600101108 MW-12

Collected: 03/23/2009 13:55 by AC

Account Number: 10904

Submitted: 03/26/2009 09:50
Reported: 04/06/2009 at 19:18
Discard: 05/07/2009

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

38112

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
SW-846 8260B	**GC/MS Volatiles**		ug/l	ug/l	
06067	Benzene	71-43-2	620	5	10
06067	Ethanol	64-17-5	N.D.	50	1
06067	Ethylbenzene	100-41-4	170	5	10
06067	Methyl Tertiary Butyl Ether	1634-04-4	3	0.5	1
06067	Toluene	108-88-3	170	0.5	1
06067	Xylene (Total)	1330-20-7	320	5	10
SW-846 8015B	**GC Volatiles**		ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	4,900	250	5
SW-846 8015B	**GC Extractable TPH**		ug/l	ug/l	
06609	TPH-DRO CA C10-C28	n.a.	3,400	65	2

General Sample Comments

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
06067	BTEX, MTBE, ETOH	SW-846 8260B	1	Z090914AB	04/02/2009	04:44	Michael A Ziegler	1
06067	BTEX, MTBE, ETOH	SW-846 8260B	1	Z090914AB	04/02/2009	05:09	Michael A Ziegler	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z090914AB	04/02/2009	04:44	Michael A Ziegler	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Z090914AB	04/02/2009	05:09	Michael A Ziegler	10
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	09086A20A	03/27/2009	16:57	Jennifer B Werner	5
01146	GC VOA Water Prep	SW-846 5030B	1	09086A20A	03/27/2009	16:57	Jennifer B Werner	5
06609	TPH-DRO CA C10-C28	SW-846 8015B	1	090850017A	03/30/2009	12:35	Diane V Do	2
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	1	090850017A	03/27/2009	10:23	Jessica Agosto	1

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Analysis Report

Quality Control Summary

Client Name: Chevron
Reported: 04/06/09 at 07:18 PM

Group Number: 1137712

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: D090873AA								
Sample number(s): 5632054								
Benzene	N.D.	0.5	ug/l	91		80-116		
Ethylbenzene	N.D.	0.5	ug/l	95		80-113		
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	94		78-117		
Toluene	N.D.	0.5	ug/l	99		80-115		
Xylene (Total)	N.D.	0.5	ug/l	103		81-114		
Batch number: Z090914AB								
Sample number(s): 5632055-5632061								
Benzene	N.D.	0.5	ug/l	94		80-116		
Ethanol	N.D.	50.	ug/l	124		40-158		
Ethylbenzene	N.D.	0.5	ug/l	96		80-113		
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	88		78-117		
Toluene	N.D.	0.5	ug/l	93		80-115		
Xylene (Total)	N.D.	0.5	ug/l	94		81-114		
Batch number: 09085D20A								
Sample number(s): 5632054-5632057								
TPH-GRO N. CA water C6-C12	N.D.	50.	ug/l	109	109	75-135	0	30
Batch number: 09086A20A								
Sample number(s): 5632058-5632061								
TPH-GRO N. CA water C6-C12	N.D.	50.	ug/l	109	100	75-135	9	30
Batch number: 090850017A								
Sample number(s): 5632055-5632061								
TPH-DRO CA C10-C28	N.D.	32.	ug/l	108	109	56-122	1	20

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: D090873AA									
Sample number(s): 5632054 UNSPK: P632064									
Benzene	90	93	80-126	4	30				
Ethylbenzene	95	98	77-125	4	30				
Methyl Tertiary Butyl Ether	98	101	72-126	3	30				
Toluene	96	101	80-125	5	30				
Xylene (Total)	101	107	79-125	5	30				
Batch number: Z090914AB									
Sample number(s): 5632055-5632061 UNSPK: P632096									
Benzene	97	97	80-126	0	30				
Ethanol	95	96	37-164	1	30				
Ethylbenzene	99	99	77-125	0	30				
Methyl Tertiary Butyl Ether	92	92	72-126	1	30				

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

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Analysis Report

Quality Control Summary

Client Name: Chevron
Reported: 04/06/09 at 07:18 PM

Group Number: 1137712

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Toluene	95	96	80-125	1	30				
Xylene (Total)	96	95	79-125	2	30				

Batch number: 09085D20A
TPH-GRO N. CA water C6-C12 — Sample number(s): 5632054-5632057 UNSPK: P631178
100 — 63-154

Batch number: 09086A20A
TPH-GRO N. CA water C6-C12 — Sample number(s): 5632058-5632061 UNSPK: P632170
136 — 63-154

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TPH-DRO CA C10-C28
Batch number: 090850017A

	Orthoterphenyl
5632055	95
5632056	93
5632057	93
5632058	96
5632059	78
5632060	86
5632061	90
Blank	81
LCS	107
LCSD	107
Limits:	59-131

Analysis Name: TPH-GRO N. CA water C6-C12
Batch number: 09085D20A

	Trifluorotoluene-F
5632054	97
5632055	99
5632056	97
5632057	100
Blank	97
LCS	124
LCSD	126
MS	122
Limits:	63-135

Analysis Name: TPH-GRO N. CA water C6-C12
Batch number: 09086A20A

	Trifluorotoluene-F

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

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Analysis Report

Quality Control Summary

Client Name: Chevron
Reported: 04/06/09 at 07:18 PM

Group Number: 1137712

Surrogate Quality Control

5632058	101
5632059	82
5632060	80
5632061	87
Blank	78
LCS	122
LCSD	123
MS	135
Limits:	63-135

Analysis Name: BTEX+MTBE by 8260B
Batch number: D090873AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5632054	88	85	84	89
Blank	89	87	86	91
LCS	87	85	85	101
MS	83	83	80	98
MSD	85	87	83	101
Limits:	80-116	77-113	80-113	78-113

Analysis Name: BTEX, MTBE, ETOH
Batch number: Z090914AB

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5632055	93	86	91	86
5632056	93	87	93	86
5632057	93	87	91	85
5632058	92	85	92	95
5632059	94	88	92	86
5632060	93	88	91	87
5632061	92	85	93	91
Blank	93	88	92	86
LCS	93	88	92	88
MS	94	88	91	89
MSD	92	88	92	88
Limits:	80-116	77-113	80-113	78-113

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Lancaster Laboratories
Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< less than – The number following the sign is the <u>limit of quantitation</u>, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY – In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client.

"SEMCO"

James C. Bateman Petroleum Services
Environmental Contractors

Ross Ut*wood
6547803

01-1205

**** JUST THE FAX ****

DATE: 5/29/91

TIME:

FAX TO:

FAX #: 834-4130

ATTENTION: Jerry Friedkin

COMMENTS: Results for Precision Tune

TOTAL NUMBER OF PAGES INCLUDING COVER PAGE: 11

SENDER: Rhonda Kipper

FAX #: (415) 572-9734

TEL. #: (415) 572-8033

SEMCO

1741 LESLIE STREET
SAN MATEO, CA. 94403

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081 DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639
CLIENT: SEMCO
CLIENT JOB NO.: PRECISON TUNE

DATE RECEIVED: 05/17/91
DATE REPORTED: 05/28/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/kg) Diesel Range
1	#1-550	66*
2	#2-550	ND<10
3	#3-550	ND<10
4	#4-550	ND<10
5	#5-550	**

where are these samples collected?

highest oil + grease sample as shown on Page 2 & highest gasoline sample & (page 3)

* - Does not match typical Diesel pattern.
** - Result not available at reporting time.
mg/kg - parts per million (ppm)

Minimum Detection Limit for Gasoline and Diesel in Soil: 10mg/kg

QAQC Summary:

Daily Standard run at 200mg/L: %DIFF Diesel = <15%
MS/MSD Average Recovery = 76%: Duplicate RPD = 3.0%

Richard Stna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081 DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639
CLIENT: SENCO
CLIENT JOB NO.: PRECISONTUNE

DATE RECEIVED: 05/17/91
DATE REPORTED: 05/28/91

ANALYSIS FOR TOTAL PETROLEUM OIL AND GREASE
by Method 5520F (formerly 503E)

LAB #	Sample Identification	Concentration (mg/kg) Total oil & grease
1	#1-550	630
2	#2-550	83
3	#3-550	69
4	#4-550	ND<50
5	#5-550	3000

mg/kg - parts per million (ppm)

Minimum Detection Limit for oil & grease in Soil: 50mg/kg

QAQC Summary:
MS/MSD average recovery = 93%
Duplicate RPD = 1.1%

Richard Srnek, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639
CLIENT: SEMCO
CLIENT JOB NO.: PRECISONTUNE

DATE RECEIVED: 05/17/91
DATE REPORTED: 05/28/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/kg) Gasoline Range
1	#1-550	ND<1
2	#2-550	ND<1
3	#3-550	ND<1
4	#4-550	ND<1
5	#5-550	400

mg/kg - parts per million (ppm)
Minimum Detection Limit for Gasoline in Soil: 1mg/kg

QAQC Summary:
Daily Standard run at 2mg/L: %DIFF Gasoline = <15%
MS/MSD Average Recovery = 83%: Duplicate RPD = 3.7%

Richard Srna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I · SAN FRANCISCO, CA 94124 · PHONE (415) 647-2081

DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639
CLIENT: SEMCO
CLIENT JOB NO.: PRECISONTUNE

DATE RECEIVED: 05/17/91
DATE REPORTED: 05/28/91

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/kg) Benzene	Toluene	Ethyl Benzene	Xylenes
1	#1-550	3	ND<3	ND<3	13
2	#2-550	ND<3	ND<3	ND<3	ND<3
3	#3-550	ND<3	ND<3	ND<3	ND<3
4	#4-550	ND<3	ND<3	ND<3	ND<3
5	#5-550	ND<150	3200	2900	23000

g/kg - parts per billion (ppb)

Minimum Detection Limit in Soil: 3.0ug/kg

QAQC Summary:
Daily Standard run at 20ug/L: %DIFF = <16%
MS/MSD Average Recovery = 90% : Duplicate RPD = 6.8%

Richard Srna, Ph.D.
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081 DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639-1
CLIENT: SEMCO
JOB NO.: Precision Tune

DATE SAMPLED: 05/15/91
DATE RECEIVED: 05/17/91
DATE ANALYZED: 05/23/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: #1-550

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	39
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	8
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dicloroethene	5	ND

MDL = Method Detection Limit
ug/kg = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15%
MS/MSD average recovery = 105 % :MS/MSD RPD =< 2 %

Richard Spna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081 DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639-2
CLIENT: SEMCO
JOB NO.: Precision Tune

DATE SAMPLED: 05/15/91
DATE RECEIVED: 05/17/91
DATE ANALYZED: 05/23/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: #2-550

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dicloroethene	5	ND

MDL = Method Detection Limit
ug/kg = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15%
MS/MSD average recovery = 105 % :MS/MSD RPD =< 2 %

Richard Srna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081 DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639-3
CLIENT: SEMCO
JOB NO.: Precision Tune

DATE SAMPLED: 05/15/91
DATE RECEIVED: 05/17/91
DATE ANALYZED: 05/23/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: #3-550

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dicloroethene	5	ND

MDL = Method Detection Limit
ug/kg = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15%
MS/MSD average recovery = 105 % :MS/MSD RPD =< 2 %

Richard Srna, Ph.D.
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I · SAN FRANCISCO, CA 94124 · PHONE (415) 647-2081 DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639-5
CLIENT: SEMCO
JOB NO.: Precision Tune

DATE SAMPLED: 05/15/91
DATE RECEIVED: 05/17/91
DATE ANALYZED: 05/23/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: #5-550

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	100	ND
Bromomethane/Chloroethane	100	ND
Trichlorofluoromethane	50	ND
1,1-Dichloroethene	50	ND
Methylene Chloride	50	ND
trans-1,2-Dichloroethene	50	ND
1,1-Dichloroethane	50	ND
Chloroform	50	ND
1,1,1-Trichloroethane	50	ND
Carbon tetrachloride	50	ND
1,2-Dichloroethane	50	ND
Trichloroethylene	50	ND
1,2-Dichloropropane	50	ND
Bromodichloromethane	50	ND
Cis-1,3-Dichloropropene	50	ND
trans-1,3-Dichloropropene	50	ND
1,1,2-Trichloroethane	50	ND
Tetrachloroethene	50	ND
Dibromochloromethane	50	ND
Chlorobenzene	50	ND
Bromoform	50	ND
1,1,2,2-Tetrachloroethane	50	ND
1,3-Dichlorobenzene	50	ND
1,2-Dichlorobenzene	50	ND
1,4-Dichlorobenzene	50	ND
Cis-1,2-Dicloroethene	50	540
		120
		ND

MDL = Method Detection Limit
ug/kg = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15%
MS/MSD average recovery = 105 % :MS/MSD RPD =< 2 %

Richard Srna, Ph.D.
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

SEMCO
JAMES C. BATEMAN PETROLEUM SERVICES, INC.
431 W. Hatch Rd Modesto, Calif. 95351
General & Engineering Contractors
(209) 533-9293
FAX (209) 524-0503

SEMCO
JAMES C. BATEMAN PETROLEUM SERVICES, INC.
1741 Leslie St. San Mateo, Calif. 94402
General & Engineering Contractors
(415) 572-8933
FAX (415) 572-9754

CHAIN OF CUSTODY RECORD

PROJECT NAME: Precision Tune

SAMPLERS (signature): Chuck Kim Semco

	Station Number	Date	Time	Comp.	Grab	Station Location	Number of Containers	TPH-G-D	BTEX	TDS	CL HC				REMARKS
Ea. + Ex.	#1-SSD	5/15/91	2:00		✓	#1-SSD-WO-E-8'	1	✓	✓	✓	✓				
	#2-SSD	5/15/91	2:20		✓	#2-SSD-W-O-W-8'	1	✓	✓	✓	✓				
	#3-SSD	5/15/91	2:25		✓	#3-SSD-WO-E-10'6"	1	✓	✓	✓	✓				
	#4-SSD	5/15/91	2:40		✓	#4-SSD-WO-W-10'6"	1	✓	✓	✓	✓				
Spoils	#5-SSD	5/15/91	3:00	✓		#5-SSD-WO-Comp Spoils	4	✓	✓	✓	✓				

Relinquished by (signature):	Date / Time	Received by (signature):	Relinquished by (signature):	Date / Time	Received by (signature):
Chuck Kim Company or Agency: Semco	5/17/91 9:00 AM	Greg Thompson Company or Agency: Express-SF	Company or Agency:		Company or Agency:
Relinquished by (signature):	Date / Time	Received by (signature):	Relinquished by:	Date / Time	Received by (signature):
Company or Agency:		Company or Agency:	Company or Agency:		Company or Agency:
Relinquished by (signature):	Date / Time	Received for Laboratory by: (signature)	Date / Time	Remarks/Shipping Information: Normal Turn	
Company or Agency:					

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081 DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639-4
CLIENT: SEMCO
JOB NO.: Precision Tune

DATE SAMPLED: 05/15/91
DATE RECEIVED: 05/17/91
DATE ANALYZED: 05/23/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: #4-550

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dicloroethene	5	ND

MDL = Method Detection Limit
ug/kg = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15%
MS/MSD average recovery = 105 % :MS/MSD RPD =< 2 %

Richard Srna, Ph.D.
Laboratory Director

431 West Hatch Road
Modesto, California 95351
(209) 524-9653
FAX (209) 524-0503

1741 Leslie Street
San Mateo, California 94402
(415) 572-8033
FAX (415) 572-9734

SEMCO
James C. Bateman Petroleum Services Inc.
General Engineering and Environmental Contractor
License NO. 449864 A, B, C-61, D-40
(800) 533-9293

Date: June 18, 1991

To: Gary Malyn
734 Limmerick Land
Alameda, CA 94501

REGARDING:

Job Name: Precision Tune

Job Location: 3810 Broadway
Oakland, CA

91 JUN 19 AM 11:48

WE ARE SENDING YOU THE FOLLOWING ITEMS:

X Laboratory Analysis — X Chain of Custody

___ Hazardous Waste Manifest — ___ Tank Disposition Record

Remarks:

Copy: County of Alameda
80 Swan Way, Room 200
Oakland, CA 94621

Signed: Karen Pederson

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081 DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639
CLIENT: SEMCO
CLIENT JOB NO.: PRECISON TUNE

DATE RECEIVED: 05/17/91
DATE REPORTED: 05/28/91
REPORT REVISED: 05/30/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/kg) Diesel Range
1	#1-550	66*
2	#2-550	ND<10
3	#3-550	ND<10 } composite by sample
4	#4-550	ND<10 }
5	#5-550	960 Comp. sample.

* - Does not match typical Diesel pattern.
mg/kg - parts per million (ppm)

Minimum Detection Limit for Diesel in Soil: 10mg/kg

QAQC Summary:

Daily Standard run at 200mg/L: %DIFF Diesel = <15%
MS/MSD Average Recovery = 76%: Duplicate RPD = 3.0%

Richard Srna, Ph.D.

Cecilia G. Joaquin (for)
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081 DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639
CLIENT: SEMCO
CLIENT JOB NO.: PRECISONTUNE

DATE RECEIVED: 05/17/91
DATE REPORTED: 05/28/91

ANALYSIS FOR TOTAL PETROLEUM OIL AND GREASE
by Method 5520F (formerly 503E)

LAB #	Sample Identification	Concentration (mg/kg) Total oil & grease
1	#1-550	630 East side
2	#2-550	83
3	#3-550	69 } composite sample
4	#4-550	ND<50 }
5	#5-550	3000 comp. sample.

mg/kg - parts per million (ppm)

Minimum Detection Limit for oil & grease in Soil: 50mg/kg

QAQC Summary:
MS/MSD average recovery = 93%
Duplicate RPD = 1.1%

Richard Srna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081 DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639
CLIENT: SEMCO
CLIENT JOB NO.: PRECISONTUNE

DATE RECEIVED: 05/17/91
DATE REPORTED: 05/28/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/kg) Gasoline Range
1	#1-550	ND<1
2	#2-550	ND<1
3	#3-550	ND<1 carryover
4	#4-550	ND<1
5	#5-550	400

mg/kg - parts per million (ppm)
Minimum Detection Limit for Gasoline in Soil: 1mg/kg

QAQC Summary:
Daily Standard run at 2mg/L: %DIFF Gasoline = <15%
MS/MSD Average Recovery = 83%: Duplicate RPD = 3.7%

Richard Zrna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081 DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639
CLIENT: SEMCO
CLIENT JOB NO.: PRECISONTUNE

DATE RECEIVED: 05/17/91
DATE REPORTED: 05/28/91

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/kg) Benzene	Toluene	Ethyl Benzene	Xylenes
1	#1-550	3	ND<3	ND<3	13
2	#2-550	ND<3	ND<3	ND<3	ND<3
3	#3-550	ND<3	ND<3	ND<3	ND<3 } congenitus
4	#4-550	ND<3	ND<3	ND<3	ND<3 }
5	#5-550	ND<150	3200	2900	23000

ug/kg - parts per billion (ppb)

Minimum Detection Limit in Soil: 3.0ug/kg

QAQC Summary:
Daily Standard run at 20ug/L: %DIFF = <15%
MS/MSD Average Recovery = 90% : Duplicate RPD = 6.8%

Richard Srna, Ph.D.

Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081 DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639-1
CLIENT: SEMCO
JOB NO.: Precision Tune

DATE SAMPLED: 05/15/91
DATE RECEIVED: 05/17/91
DATE ANALYZED: 05/23/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: #1-550

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	39
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	8
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dicloroethene	5	ND

MDL = Method Detection Limit
ug/kg = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15%
MS/MSD average recovery = 105 % :MS/MSD RPD =< 2 %

Richard Srna, Ph.D.
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081 DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639-2
CLIENT: SEMCO
JOB NO.: Precision Tune

DATE SAMPLED: 05/15/91
DATE RECEIVED: 05/17/91
DATE ANALYZED: 05/23/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: #2-550

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dicloroethene	5	ND

MDL = Method Detection Limit
ug/kg = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15%
MS/MSD average recovery = 105 % :MS/MSD RPD =< 2 %

Richard Srna, Ph.D.
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081 DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639-3
CLIENT: SEMCO
JOB NO.: Precision Tune

DATE SAMPLED: 05/15/91
DATE RECEIVED: 05/17/91
DATE ANALYZED: 05/23/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: #3-550

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dicloroethene	5	ND

MDL = Method Detection Limit
ug/kg = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15%
MS/MSD average recovery = 105 % :MS/MSD RPD =< 2 %

Richard Srna, Ph.D.

Laboratory Director

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081 DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639-4
CLIENT: SEMCO
JOB NO.: Precision Tune

DATE SAMPLED: 05/15/91
DATE RECEIVED: 05/17/91
DATE ANALYZED: 05/23/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: #4-550

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dicloroethene	5	ND

MDL = Method Detection Limit
ug/kg = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15%
MS/MSD average recovery = 105 % :MS/MSD RPD =< 2 %

Richard Srna, Ph.D.
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081 DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53639-5
CLIENT: SEMCO
JOB NO.: Precision Tune

DATE SAMPLED: 05/15/91
DATE RECEIVED: 05/17/91
DATE ANALYZED: 05/23/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: #5-550

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	100	ND
Bromomethane/Chloroethane	100	ND
Trichlorofluoromethane	50	ND
1,1-Dichloroethene	50	ND
Methylene Chloride	50	ND
trans-1,2-Dichloroethene	50	ND
1,1-Dichloroethane	50	ND
Chloroform	50	ND
1,1,1-Trichloroethane	50	ND
Carbon tetrachloride	50	ND
1,2-Dichloroethane	50	ND
Trichloroethylene	50	ND
1,2-Dichloropropane	50	ND
Bromodichloromethane	50	ND
Cis-1,3-Dichloropropene	50	ND
trans-1,3-Dichloropropene	50	ND
1,1,2-Trichloroethane	50	ND
Tetrachloroethene	50	ND
Dibromochloromethane	50	ND
Chlorobenzene	50	ND
Bromoform	50	ND
1,1,2,2-Tetrachloroethane	50	ND
1,3-Dichlorobenzene	50	ND
1,2-Dichlorobenzene	50	540
1,4-Dichlorobenzene	50	120
Cis-1,2-Dicloroethene	50	ND

MDL = Method Detection Limit
ug/kg = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15%
MS/MSD average recovery = 105 % :MS/MSD RPD =< 2 %

Richard Srna, Ph.D.

Laboratory Director

OUTSTANDING QUALITY AND SERVICE

SEMCO
JAMES C. BATEMAN PETROLEUM SERVICES, INC.
431 W. Hatch Rd. Modesto, Calif 95351
General & Engineering Contractors
(800) 533-9293
FAX (209) 524-0503

53639

SEMCO
JAMES C. BATEMAN PETROLEUM SERVICES, INC.
1741 Leslie St. San Mateo, Calif. 94402
General & Engineering Contractors
(415) 572-8033
FAX (415) 572-9734

CHAIN OF CUSTODY RECORD

PROJECT NAME: PRECISION TUNE

SAMPLERS (signature): Chuck Kipp Semco

Station Number	Date	Time	Comp.	Grab	Station Location	Number of Containers	TPH-G-D	BTEX	TDG	CLHC				REMARKS
#1-550	5/15/91	2:00		✓	#1-550-WO-E-8'	1	✓	✓	✓	✓				
#2-550	5/15/91	2:20		✓	#2-550-WO-W-8'	1	✓	✓	✓	✓				
#3-550	5/15/91	2:25		✓	#3-550-WO-E-10'6"	1	✓	✓	✓	✓				
#4-550	5/15/91	2:40		✓	#4-550-WO-W-10'6"	1	✓	✓	✓	✓				
#5-550	5/15/91	3:00	✓		#5-550-WO-Comp Spl.	4	✓	✓	✓	✓				

Please initial: CJG
Samples Stored in ice. Yes
Appropriate containers. Yes
Samples preserved. NA
VOA's without head space. NA
Comments:

Relinquished by (signature):	Date / Time	Received by (signature):	Relinquished by (signature):	Date / Time	Received by (signature):
Chuck Kipp Company or Agency: Semco	5/17/91 9:00 AM	Greg Cunningham Company or Agency: Express-It	Company or Agency:		Company or Agency:
Relinquished by (signature): Greg Cunningham Company or Agency: Express-It	Date / Time 5/17/91 0915	Received by (signature): Company or Agency:	Relinquished by: Company or Agency:	Date / Time	Received by (signature): Company or Agency:
Relinquished by (signature): Company or Agency: [signature]	Date / Time —	Received for Laboratory by: (signature) Omy A Nugu	Date / Time 5/17/91	Remarks/Shipping Information Normal Time	

11:10 AM

LIMITED SOIL AND GROUND WATER QUALITY INVESTIGATION REPORT FOR 3810 BROADWAY OAKLAND, CALIFORNIA

11/91

Kaldveer Associates

Kaldveer Associates
Geoscience Consultants
Geotechnical and Environmental Engineering
Oakland, CA • San Jose, CA • Bellevue, WA • Tacoma, WA

PRINCIPALS
Peter Kaldveer, PE, GE
President
Richard Short, PE, GE
Executive Vice President
Ronald L. Bajuniemi, PE, GE
Vice President
ASSOCIATES
Patrick Stevens, PE, GE
Lawrence P. Goldfarb, PE.
John Sutton, PE., GE
Richard J. Bielefeld, CEG
PROFESSIONALS
Dawn Rinaldi, PE
Guy Petraborg, PE
Dennis Laduzinsky, CEG
Randy Rowley, RG, REA.
Michael Leaverton, PE
Kenneth C. Ferrone, PE.

November 15, 1991
KE1355-1-1009, 19774

Friedkin-Becker
300 Grand Avenue
Oakland, California, 94610

Attention: Mr. Gerald S. Friedkin

RE: LIMITED SOIL AND GROUND WATER QUALITY INVESTIGATION REPORT
3810 BROADWAY
OAKLAND, CALIFORNIA

Dear Mr. Friedkin:

Kaldveer Associates, Inc. is pleased to submit our limited soil and ground water quality investigation report for the Precision Tune facility, 3810 Broadway, in Oakland, California. The purpose of this investigation was to test for the presence of waste oil related contaminants in both soil and ground water beneath the former waste oil tank site. The enclosed report contains a description of our investigation, results of soil and ground water sample analyses, and our conclusions and recommendations regarding site environmental quality.

We appreciate the opportunity to provide services to you on this project and trust this report meets your needs at this time. If you have any questions or require additional information, please don't hesitate to call.

Very truly yours,

KALDVEER ASSOCIATES, INC.

John R. Sutton, P.E./G.E.
Manager, Environmental/Hazardous
Waste Services
Associate

JRS:pv
Copies: Addressee (5)

425 Roland Way, Oakland, CA 94621 (510) 568-4001 FAX: (510) 568-2205
1737 North First Street, Suite 300, San Jose, CA 95112 (408) 436-5703 FAX: (408) 436-5735
Incorporated

LIMITED SOIL AND GROUND WATER
QUALITY INVESTIGATION REPORT

For
3810 BROADWAY
OAKLAND, CALIFORNIA

To
Friedkin-Becker
300 Grand Avenue
Oakland, California 94610

November, 1991

REGISTERED PROFESSIONAL ENGINEER
JOHN R. SUTTON
LIC. No. 40324
EXP. 12/31/94
CIVIL
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
JOHN R. SUTTON
LIC No. GE 812
EXP. 12/31/94
GEOTECHNICAL
STATE OF CALIFORNIA

Kaldveer Associates

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LIMITED SOIL AND GROUND WATER
QUALITY INVESTIGATION REPORT
FOR
3810 BROADWAY
OAKLAND, CALIFORNIA

I. INTRODUCTION

This report presents the results of a limited soil and ground water quality investigation performed at the Precision Tune facility located at 3810 Broadway in Oakland, California. The location of the site is shown on the Site Vicinity Map, Figure 1.

The purpose of this investigation has been to assess the potential impact to the ground water in the area of the former waste oil tank. The investigation included the installation of a ground water monitoring well at the site, and submitting soil and water samples to Med-Tox Associates, Inc., a California Environmental Protection Agency - certified analytical laboratory. The field work was performed in accordance with Kaldveer Associates' "Proposal for Limited Soil and Ground Water Quality Investigation, 3810 Broadway, Oakland, California", dated October 9, 1991, and approved on October 9, 1991 by Mr. Gerald Friedkin.

II. BACKGROUND

The Precision Tune facility was formerly a Texaco Station. At some time in the past, Texaco removed all of the fuel tanks but left the waste oil tank in place. In May of 1991, the waste oil tank was removed and soil samples were collected by SEMCO, the tank removal, petroleum services contractor. Their work identified hydrocarbon contaminated soils to a depth of about ten feet which they removed and disposed of offsite. The excavation was then backfilled with clean imported aggregate. No groundwater was reported to have been encountered during the tank removal.

The Alameda County Department of Environmental Health (ACDEH) has required soil and water samples to evaluate if ground water has been impacted by any spillage from the former tank.

III. SCOPE OF SERVICES

The scope of work performed during this investigation is based on our site reconnaissance, a review of laboratory test information by Superior Analytical Laboratory, for SEMCO, and limited research conducted by our firm.

The scope of services included:

1. Review copies of available engineering reports on file at San Francisco Bay Regional Water Quality Control Board to obtain information concerning local ground water depth and flow direction.

2. A soil sampling program consisting of drilling a continuous flight hollow stem auger boring to a depth of 36 feet. Soil samples were collected at depths of approximately 5 feet commencing in natural soil beneath the tank cavity, and as otherwise indicated by specific field conditions.

   The soil samples were appropriately packed, refrigerated and transported to the chemical laboratory for testing. The augers, samplers and equipment were steam-cleaned prior to the field investigation.

3. A ground water testing program consisting of converting the boring into a monitoring well to a depth of approximately 34 feet and then developing the well and sampling the water. Applicable local regulations were followed in permitting and installing the well.

4. A chemical testing program consisting of analyzing selected soil and ground water samples for various of the following waste oil indicators: 1) total petroleum hydrocarbons as gasoline (TPH-G), 2) TPH as diesel, 3) total oil and grease, 4) benzene, toluene, ethyl benzene and xylene, 5) chlorinated hydrocarbons, 6) cadmium, chromium, lead, zinc and nickel, 7) PCB, PCP, PNA and creosote, all in accordance with the Tri-Regional Water Quality Control Boards' Guidelines for analysis for waste oil at fuel leak sites. A California Environmental Protection Agency certified analytical laboratory was utilized.

6. Submittal of this report presenting a description of our investigation, results of the laboratory analyses, and our conclusions and recommendations regarding site environmental quality.

IV. FIELD INVESTIGATION

A. Site Description

The site is located at 3810 Broadway, on the southeast corner of Broadway and 38th Street, in Oakland, California. The location of the site is shown on the Site Vicinity Map, Figure 1. The site is currently utilized by Precision Tune, an auto mechanic garage, located in a concrete block office and garage-bay building. The

remaining half of the site is paved asphalt parking and driveway. The site has been excavated into a hillside. There are retaining walls along the northeast and southeast property lines.

Our investigation has been performed in the specific area of the former waste oil tank at the front of the existing auto mechanic garage. As shown on our Site Plan, Figure 2, the former tank area is located just in front of the existing structure. On the day of our investigation we found the tank area to be covered by a sheet of plywood and backfilled with pea gravel. The topography of the site controls the drainage away from the structure towards Broadway in a southwesterly direction. No areas of unusual surface conditions or spills were noted during our field investigation.

B. Drilling and Soil Sampling

The field investigation was conducted on October 17, 1991, and consisted of drilling an exploratory boring and converting it to a ground water monitoring well. A Drilling Permit Application was obtained in advance from Alameda County Flood Control and Water Conservation District, Zone 7. A copy of permit No. 91601 is included in Appendix A. State of California Well Completion Report No. 427903 was prepared and issued to the California Department of Water Resources. A copy is included in Appendix A.

The boring was drilled at the approximate location shown on the Site Map, Figure 2. The soil boring was drilled with a truck-mounted drill rig equipped with 8-inch diameter hollow stem augers. Soils encountered during drilling were classified in the field by Marcela Jimenez, Assistant Environmental Specialist, by visual examination in accordance with the Unified Soil Classification System (Figure A-1). The boring log for Monitoring Well 1 (MW-1) is presented in Appendix A.

Soil samples were collected from the boring at intervals of every five feet to 36-1/2 feet using 2-inch I.D. Modified California sampler containing thin brass liners. The sampler was driven with a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler the last 12 inches of an 18-inch drive are recorded as the penetration resistance (blows/foot) on the boring logs. The augers were steam-cleaned by high pressure cleaner prior to the drilling, and before the use of the sampler and brass liners they were thoroughly cleaned with Liquinox, a clinical detergent to reduce the potential for cross-contamination.

Soil samples from MW-1 were collected for chemical analysis. All samples were collected in 2-inch diameter, 6-inch long, brass liners. The samples were first examined for logging purposes, then sealed with teflon-lined lids, labeled and immediately placed in refrigerated storage. A chain-of-custody form was initiated in the field and accompanied the samples to Med-Tox Associates, Inc. of

Pleasant Hill, California, a California Environmental Protection Agency certified laboratory. All soil cuttings were cleaned from the area of the borings and placed into labeled drums for temporary storage onsite, and later disposal.

C. Subsurface Conditions

The pit backfill material encountered during drilling for MW-1 consisted of pea gravel fill to an approximate depth of 10 feet. Underlying the backfill is native tan to brown, moderately plastic silty clay which extends to an approximate depth of thirty feet. In the 20 foot sample, intermittent, fine-grained, dry sand stringers were noted. Ground water was encountered in fine-grained sandy lenses at 31 feet depth. These lenses were abundant below 30 feet in the clay to the total depth explored of 35-1/2 feet. After a period of about five hours, the ground water level was found to be at a depth of about 12 feet below the existing ground surface.

During drilling and sample logging, the soil samples were observed for obvious signs of hydrocarbon contamination. No samples from MW-1 exhibited any signs of contamination (hydrocarbon odors). The attached boring logs and related information (Appendix A) depict location-specific subsurface conditions encountered during our field investigation. The approximate location of the boring was determined by pacing and should be considered accurate only to the degree implied by the method used. The passage of time could result in changes in the surface or subsurface conditions due to natural occurrences or human intervention.

D. Monitoring Well Construction

A ground water monitoring well was installed at the site on October 17, 1991. Details of the monitoring well installation are included with the boring logs in Appendix A. Monitoring Well MW-1 was completed to a depth of approximately 34 feet, below ground surface using Schedule 40, 2-inch nominal, flush threaded, PVC well casing. The well was completed with one 10-foot section of 0.010-inch (10 slot) slotted well screen. The sand filter pack extended to one foot above the slotted casing. The well seal was completed by adding 1.0 foot of 3/8-inch, bentonite pellets to the top of the filter pack then filling the remaining annular space with neat Portland cement grout mixture. The well was completed at the surface with an expansion plug with lock and a bolted locking steel vault cover. Specific well construction details are presented along with the respective boring logs in Appendix A.

E. Well Development and Sampling

The well was sampled on October 19, 1991, using a teflon bailer. Prior to sampling, the well was developed using a suction pump to

remove about twelve gallons of water and then a teflon bailer to remove about thirty gallons of water when the pH, conductivity and temperature became constant. Water samples from each well were collected, labeled and placed in refrigerated storage, and delivered to the laboratory under chain-of-custody control. The bailer was thoroughly washed with laboratory grade detergent and rinsed with distilled water to reduce the potential for cross-contamination. Well development and sampling logs are attached to this report as Appendix B. All development water and cleaning fluids were contained in 55 gallon drums which are stored on site for later disposal.

F. Ground Water

Based on the U.S.G.S. 7.5' Quadrangle topographic map series, Oakland West and East Streets, the approximate elevation at the project site is 90 feet above Mean Sea Level, making the measured water surface elevation approximately 78 feet, Mean Sea Level.

As shown on the Site Vicinity Map (Figure 1), the Kaiser Permanente Medical Center is located approximately 500 feet southwest of the project site. Our review of contamination reports at the Regional Water Quality Control Board resulted in the finding of an on-going ground water investigation by Geomatrix Consultations at the Kaiser site. The report reviewed stated that ground water in the area was anomalous due to stratigraphic irregularities, but generally the direction of flow was west-southwest toward the San Francisco Bay.

V. ANALYTICAL RESULTS

A. Laboratory Procedures

Soil and ground water samples were analyzed by Med-Tox Associates, Inc. of Pleasant Hill, California. Med-Tox Associates, Inc. is certified by the California Environmental Protection Agency for the analyses performed. The soil samples were analyzed for oil and grease, petroleum hydrocarbons, petroleum hydrocarbons as gasoline, and purgeable aromatic compounds using EPA Methods 5520E, 5520F, 5030 GCFID and 8020, respectively. The water samples were analyzed for oil and grease and hydrocarbons using EPA Method 5520C and F, petroleum hydrocarbons as diesel and oil using EPA Method 3550 GCFID, petroleum hydrocarbons as gasoline using EPA Method 5030 GCFID, purgeable aromatic compounds using EPA Method 8020, metals using EPA Method 6010, halogenated volatile organics using EPA Method 8010 and semi volatile organics including PCB, PCP, PNA and creosote using EPA Method 8270.

B. Analytical Results - Soil

Soil samples from depths of 10-1/2, 15-1/2, 20-1/2, or 25-1/2 feet were tested for oil and grease, petroleum hydrocarbons, gasoline and purgeable aromatics. None of these petroleum hydrocarbons were

detected. Soil sample test results are presented in Table 1 and the laboratory reports are attached to this report as Appendix C.

C. Analytical Results - Water

The water sample from MW-1 detected generally low levels of petroleum hydrocarbons. The analytical results identified 1.0 parts-per-million (ppm) of oil and grease, 0.4 ppm of oil, 1.7 ppm of total petroleum hydrocarbons as diesel, 0.3 ppm of total petroleum hydrocarbons as gasoline, 0.0041 ppm of benzene and 0.02 ppm of xylene. Low levels of nickel and lead were identified at 0.02 ppm and 0.091 ppm, respectively. Analytical results also detected low levels of halogenated volatile organics, 0.0007 ppm of 1,2-dichlorobenzene, 0.0007 ppm of 1,1-dichloroethane and 0.002 ppm methylene chloride.

VI. CONCLUSIONS

A. Soil Quality

Shallow soil samples taken during the tank removal (by SEMCO) identified concentrations of oil and grease. However, the identified contaminated soils were excavated and removed from the site and a final soil sample taken at a depth of about 10-1/2 feet had no detectable soil contamination. Soil samples taken during our investigation were from depths of 10-1/2, 15-1/2, 20-1/2 and 25-1/2 feet. All of these samples were tested for various petroleum hydrocarbon constituents and none of the samples had any detectable concentrations of contaminants.

The information collected to-date indicates that soil quality from below the former waste oil tank, located at 3810 Broadway, was slightly impacted by waste oil. However, all of the contaminated soil discovered at the site has been removed.

B. Water Quality

Information collected from the monitoring well installed in the location of the former waste oil tank shows that a ground water aquitard (about 25 feet of moderately plastic clay) separates the ground water from the former tank location. Ground water was found to be contaminated with low levels of various hydrocarbon compounds, but no evidence was discovered that indicated the contaminants originated from the former waste oil storage tank. There are no known shallow zone production water wells downgradient of this site.

VII. RECOMMENDATIONS

Our investigations identify no soil contamination by hydrocarbons from below the former tank excavation. In our opinion, the discovered ground water contamination is the result of an unknown

and probably off-site source or sources. Therefore, based on our findings we recommend:

1. The monitoring well constructed for this investigation should be abandoned according to the Alameda County destruction requirements and the drummed soil and ground water be appropriately disposed of.

2. The Alameda County Department of Environmental Health (ACDEH) should close the case file for this UST removal.

3. ACDEH should notify the San Francisco Bay Regional Water Quality Control Board (RWQCB) of the findings and recommend that the RWQCB close their case file.

* * * * * * * * * * * * * * * * *

TABLE 1

SOIL SAMPLE ANALYTICAL RESULTS
PETROLEUM HYDROCARBONS
(reported in parts-per-million, ppm)

Chemical Constituent	Sample Depth in Feet 10-1/2	15-1/2	20-1/2	25-1/2	Detection Limit
Oil and Grease (5520 E)	ND	ND	ND	ND	10
Hydrocarbons (5520 F)	ND	ND	ND	ND	10
TPH Gasoline	ND	--	--	--	0.2
Benzene	ND	--	--	--	0.001
Toluene	ND	--	--	--	0.001
Xylene	ND	--	--	--	0.003
Ethylbenzene	ND	--	--	--	0.001

Note:

ND = Not Detected
-- = Not tested

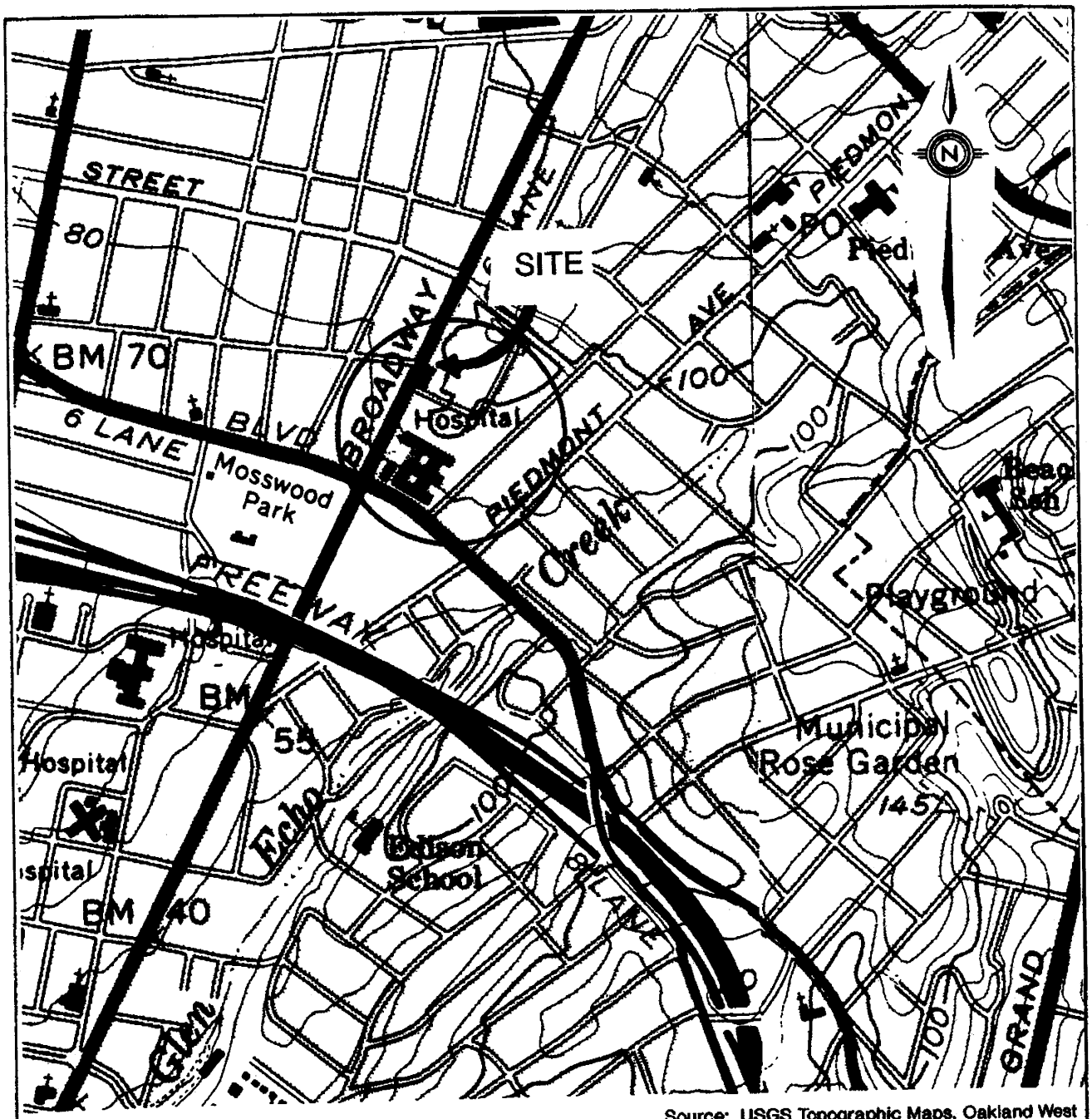
TABLE 2

WATER SAMPLE ANALYTICAL RESULTS

Chemical Constituent	Detection Limits	Detected Concentration
Petroleum Hydrocarbons		
Oil and Grease(ppm)	0.5	1.0 ppm
Hydrocarbons(ppm)	0.5	ND
Oil(ppm)	0.1	0.4 ppm
TPH Gasoline(ppm)	0.05	0.3 ppm
TPH Diesel(ppm)	0.05	1.7 ppm
Benzene(ppb)	0.3	4.1 ppb
Toluene(ppb)	0.3	ND
Xylene(ppb)	1	20 ppb
Ethylbenzene(ppb)	0.3	ND
Metals		
Cadmium(ppb)	5	ND
Chromium(ppb)	10	ND
Nickel(ppb)	20	20 ←
Lead(ppb)	20	ND
Zinc(ppb)	50	91
Halogenated Volatile Organics (EPA 8010)		
1,2-dichlorobenzene(ppb)	0.5	0.7
1,2-dichloroethane(ppb)	0.5	0.7
Methylene Chloride(ppb)	0.5	2
Semi-Volatile Organics (EPA 8270) (including PCB, PCP, PNA and creosote)	*	ND

Notes:

- = No MCL
* = Detection limits variable, see laboratory report for specific limits
ND = Not detected



Source: USGS Topographic Maps, Oakland West and Oakland East sheets, 1980.

Approximate Scale in Feet

0 500 1000 2000

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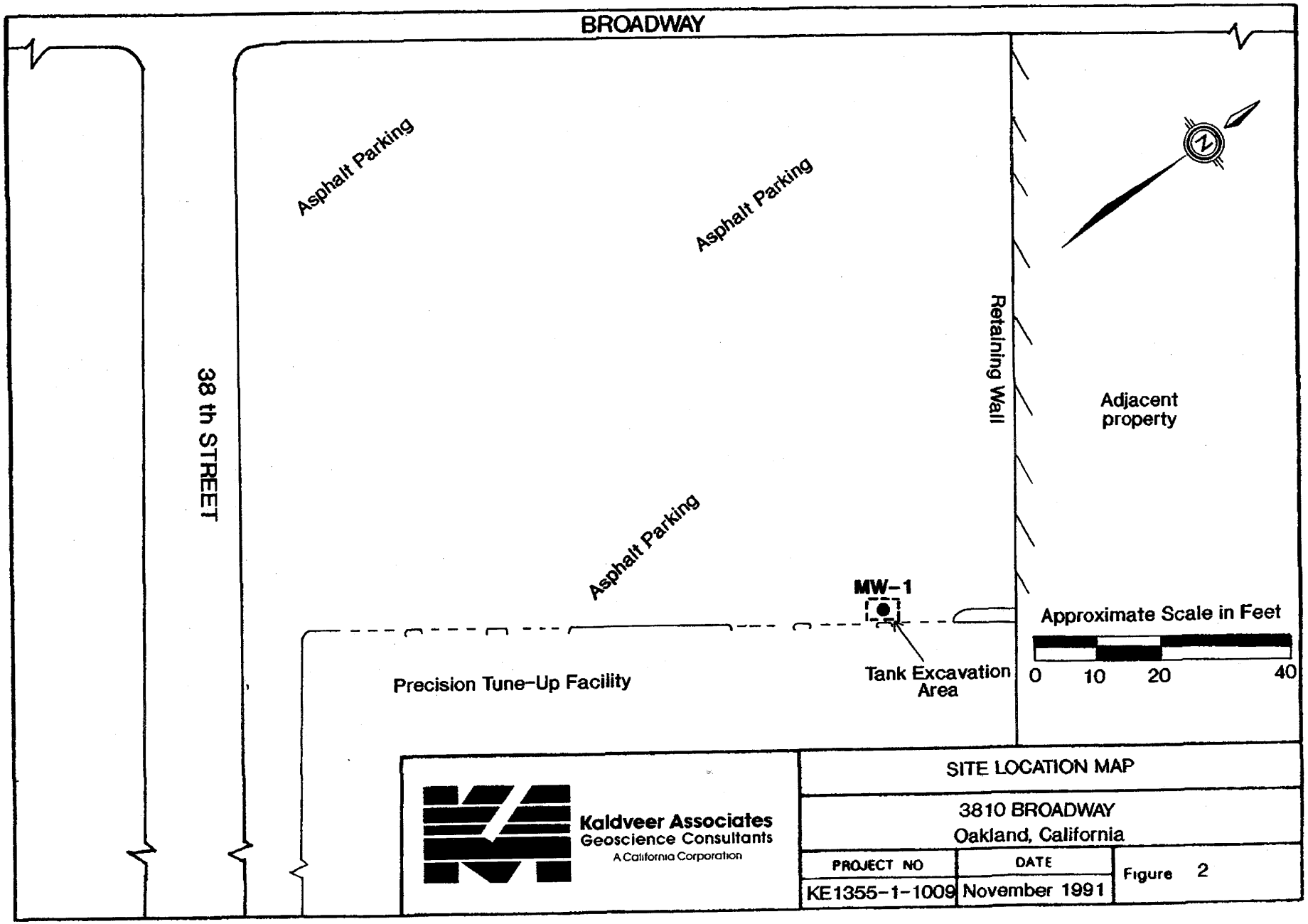
SITE VICINITY MAP

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	
KE1355-1-1009	November 1991	Figure 1



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SITE LOCATION MAP

3810 BROADWAY
Oakland, California

PROJECT NO	DATE	Figure 2
KE1355-1-1009	November 1991	

APPENDIX A

BORING LOG AND WELL CONSTRUCTION DETAILS

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		grf	ltr	Description
Coarse Grained Soils	Gravel And Gravely Soils		gw	Well-graded gravels or gravel sand mixtures, little or no fines
			gp	Poorly-graded gravels or gravel sand mixture, little or no fines
			gm	Silty gravels, gravel-sand-silt mixtures
			gc	Clayey gravels, gravel-sand-clay mixtures
	Sand And Sandy Soils		sw	Well-graded sands or gravelly sands, little or no fines
			sp	Poorly-graded sands or gravelly sands, little or no fines
			sm	Silty sands, sand-silt mixtures
			sc	Clayey sands, and-clay mixtures

Major Divisions		grf	ltr	Description
Fine Grained Soils	Silts And Clays LL < 50		ml	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			cl	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			ol	Organic silts and organic silt-clays of low plasticity
			mh	Inorganic silts, micaceous or diatomaceous fine or silty soils, elastic silts
	Silts And Clays LL > 50		ch	Inorganic clays of high plasticity, fat clays
			oh	Organic clays of medium to high plasticity
			pt	Peat and other highly organic soils
Highly Organic Soils				

SYMBOLS

- Standard penetration split spoon sample
- Modified California (Porter) sample
- Shelby tube sample
- Water level observed in boring
- Stable Water level in monitoring well
- Blank casing
- Screened Casing
- Cement grout
- Bentonite
- Filter Pack

Visual Relative Moisture Content
Increasing Moisture Content

Dry
Damp
Moist
Wet
Saturated

Note(1): Penetration resistance values are recorded as the number of blows of a 140-pound hammer falling 30-inches required to drive a sampler through the last 12 inches of an 18-inch drive. Blow count for samples obtained using a Modified California sampler (indicated by an asterisk) should be multiplied by a factor of 0.8 to obtain equivalent standard penetration resistance values.

Note(2): The lines separating strata on the logs represent approximate boundaries only. No warranty is provided as to the continuity of soil strata between borings. Logs represent the soil section observed at the boring location on the date of drilling only.

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BORING LOG LEGEND

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	FIGURE NO
KE1355-1-1009	November 1991	A-1

DRILL RIG	CME 55 HSA	SURFACE ELEVATION	At Grade	LOGGED BY	MJ
DEPTH TO GROUNDWATER	31 ft.	BORING DIAMETER	2-inch	DATE DRILLED	10/17/91

DESCRIPTION AND CLASSIFICATION		DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
DESCRIPTION AND REMARKS	SOIL TYPE						
GRAVEL (GW), red-gray, dry, loose, sandy,						Well Construction Details	
FILL						Cement grout surface seal with steel, traffic rated cover	
GRAVEL (GP), tan, dry, loose, pea-size subround gravel, not crushed, no odor							
		5				2-inch PVC, Schedule 40 solid casing	
Gravel and sampler becoming wet with depth, perched water at the bottom of tank excavation							
FILL		10					
CLAY (CL), tan, with red mottling, damp, very stiff, silty, moderate to high plasticity, no odor				20			
		15					
Same as above with black oxidation mottling, grading to sandy Clay, fine-grained sand				31			

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EXPLORATORY BORING LOG

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	BORING NO	MW-1
KE1355-1-1009	November 1991		

DRILL RIG	CME 55 HSA	SURFACE ELEVATION	At Grade	LOGGED BY	MJ
DEPTH TO GROUNDWATER	31 ft.	BORING DIAMETER	2-inch	DATE DRILLED	10/17/91

DESCRIPTION AND CLASSIFICATION: DESCRIPTION AND REMARKS	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
Same as above, with fine-grained sand stringers, very stiff, damp			■	29			
						Bentonite pellet plug	
		25					
CLAY (CL), brown, moist, silty, very stiff			■	21			
						2/12 washed sand filter pack	
		30				2-inch PVC, Schedule 40 slotted (0.020-inch) casing	
Clay with silty sand lenses (to 2" thick) with fine-grained sand, free water in lenses			■	27			
		35				Sand backfill in bottom of boring	
Clay grading to sand (fine-grained), moist, very stiff			■	30			

Notes:
1. The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.
2. Ground water was measured at 31 feet at time of drilling. After 5 hours, ground water was measured at 11.8 feet.
3. N.S. = Not Surveyed

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EXPLORATORY BORING LOG

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	BORING NO
KE1355-1-1009	November 1991	MW-1

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE • PLEASANTON, CALIFORNIA 94588 • (415) 484-2600

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 3810 Broadway
Oakland California

CLIENT
Name Friedkin - Becker
Address 300 Grand Ave Phone 510-465-7500
City Oakland Zip 94610

APPLICANT
Name Kaldveen Associates
Manuela Jimenez
Address 425 Roland Way Phone 510-568-4001
City Oakland Zip 94621

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	X	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other X
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. 582696

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 35 ft.
Surface Seal Depth 20 ft. Number 1

GEOTECHNICAL PROJECTS
Number of Borings ___ Maximum
Hole Diameter ___ in. Depth ___ ft.

ESTIMATED STARTING DATE 10-17-91
ESTIMATED COMPLETION DATE 10-17-91

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Manuela Jimenez Date 10/11/91

FOR OFFICE USE

PERMIT NUMBER 91601
LOCATION NUMBER ___

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 11 Oct 91
Wyman Hong

51991

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

APPENDIX B

MONITORING WELL DEVELOPMENT AND SAMPLING LOG

WATER SAMPLE LOG

Project Name: 3810 Broadway Date: 10/18/91
Project Number: KE1355-1-1009 Sampler: MJ
Well Number: MW-1 Weather: Sunny
Well Location: In front of garage service area

Well Construction:

Date Completed: 10/17/91
Total Depth of Well: 34 Feet
Diameter: 2 Inch
Well Elevation & Reference:
Top of PVC - North side

Groundwater Levels:

Initial: 14.25 Feet
Final: 26.15 Feet
Reference Point:
Well Volume of Water: 3.4 Gallons

Sampling Equipment & Cleaning

Sampler Type: Teflon Bailer
Method of Cleaning: Liquinox Rinse
Pump or Bailer Type: Teflon Bailer
Method of Cleaning: Liquinox Rinse
pH Meter: Orion 230A
Conductivity Meter: Orion 120
Comments: Water has a white foam, very thick at the beginning of development.

SAMPLING MEASUREMENTS

Time	Discharge (gal.) Per Time Period	Discharge (gal.) Cumulative	pH	Temp (°C)	Spec. Conductance (umhos/cm) Field	Spec. Conductance (umhos/cm) @ 25°C	Color/ Turbidity	Odor
11:10	Began Pumping	0						
11:20		2	7.11	25.7		1702	Brown/Heavy V. Silty	None
11:50		5	7.18	25.6		1945	"	"
12:05		12	6.97	28.2		2210	Brown/Heavy Mod. Silt	"
12:15	Stopped Pumping							
13:10	Resumed Bailing							
14:15		25	6.81	21.5		2020	Lt. Brown/ Moderate	None
14:40		30	6.84	21.2		2090	"	"
15:10		35	6.86	21.1		2070	"	"
15:40		40	6.96	21.1		1870	"	"

Total Discharge: 43 Gallons
Casing Volumes Removed: 12.5 Volumes
Method of Disposal: To 55 gallon drum.

Comments: RPR told to stop pumping at 12:15 and resume when he arrived.

Kaldveer Associates
Geoscience Consultants
A California Corporation

WATER SAMPLE LOG

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	Figure
KE1355-1-1009	October 1991	MW-1

WATER SAMPLE LOG

Project Name: 3810 Broadway Date: 10/18/91
Project Number: KE1355-1-1009 Sampler: MJ
Well Number: MW-1 Weather: Sunny
Well Location: In front of garage service area

Well Construction:

Date Completed: 10/17/91
Total Depth of Well: 34 Feet
Diameter: 2 Inch
Well Elevation & Reference:
Top of PVC - North side

Groundwater Levels:

Initial: 14.25 Feet
Final: 26.15 Feet
Reference Point:
Well Volume of Water: 3.4 Gallons

Sampling Equipment & Cleaning

Sampler Type: Teflon Bailer
Method of Cleaning: Liquinox Rinse
Pump or Bailer Type: Teflon Bailer
Method of Cleaning: Liquinox Rinse
pH Meter: Orion 230A
Conductivity Meter: Orion 120
Comments: Water has a white foam, very thick.

SAMPLING MEASUREMENTS

Time	Discharge (gal.) Per Time Period	Discharge (gal.) Cumulative	pH	Temp (°C)	Spec. Conductance (umhos/cm) Field	Spec. Conductance (umhos/cm) @ 25°C	Color/ Turbidity	Odor
16:23	Sampled	43						

Total Discharge: 43 Gallons
Casing Volumes Removed: 12.5 Volumes
Method of Disposal: To 55 gallon drum.

Comments: RPR told to stop pumping at 12:15 and resume when he arrived.

Kaldveer Associates
Geoscience Consultants
A California Corporation

WATER SAMPLE LOG

3810 BROADWAY
Oakland, California

PROJECT NO	DATE	Figure
KE1355-1-1009	October 1991	MW-1

APPENDIX C

CHAIN-OF-CUSTODY RECORD
LABORATORY ANALYTICAL RESULTS

R-[illegible]

R-5, S-D
R-1, S-E C-1, S-1

Page 1 of 1

Lab Job # 9110159

CHAIN-OF-CUSTODY RECORD

Project Number: KE1355-1-1009

Project Name: 3810 BROADWAY

Location: OAKLAND

Sampler's Name (printed): M JIMENEZ

Analytical Tests: BTEX; Method 8015 - TPH as Gasoline; Method 8015 - TPH as Diesel; Method ~~8240~~ - Volatile Organics 8010; Method 8270 - Semi-Volatile Organics; Method 8010 - Halogenated Volatile Organics; Method 8080 - Organochlorine Pesticides & PCB's; Waste Oil - 5520 ~~C~~ F; Metals - Cd, Cr, Zn, Ni, Pb; TPN gas w/ BTEX

Extract only

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container	Method 8015 - TPH as Gasoline	Method 8015 - TPH as Diesel	Method ~~8240~~ - Volatile Organics	Method 8270 - Semi-Volatile Organics	Method 8010 - Halogenated Volatile Organics	Method 8080 - Organochlorine Pesticides & PCB's	Waste Oil - 5520 ~~C~~ F	Metals - Cd, Cr, Zn, Ni, Pb	TPN gas w/ BTEX				Remarks
MW-1@ 10½	01A	10/17	X		2"X6 BRASS				X			X		X				
MW-1@ 15½	02A		X									X						
MW-1@ 20½	03A		X									X						~~HOLD~~ off hold 10/30/91
MW-1@ 25½	04A		X									X						~~HOLD~~ per Marcella CM
MW-1@ 30½	05A		X															HOLD
MW-1@ 35½	06A		X															HOLD
W-1	07AB	10/18	\	X	2-AMBER		X											
W-1	CD			X	2-L AMBER							X						
W-1	EF			X	2- PLASTIC								X					Run Pb by Method AA
W-1	GH			X	2 L AMBER				X									
W-1	IJK			X	3-40 ML VOAS			X										metals filtered & preserved
W-1	LMN			X	3-40ML VOAS	X												in lab

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
M Jimenez	10/18/91 18:35	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
	10/18/91 1835	Denise Harrington

Ship To: MED-TOX

Attention:

Phone No:

Requested Turnaround Time: NORMAL

Kaldveer Assoc. Contact: RANDY ROWLEY

Remarks:

Please address correspondence and return cooler # _____ to:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation

ANALYTICAL SERVICES

DOHS CERTIFICATION NO: E772

MED-TOX ASSOCIATES INC

CERTIFICATE OF ANALYSIS

NOV

KALDVEER ASSOCIATES, INC.
425 ROLAND WAY
OAKLAND, CA 94621

ATTN: RANDY ROWLEY

CLIENT PROJ. ID: KE1355-1-1009

REPORT DATE: 11/05/91

DATE SAMPLED: 10/17-18/91
DATE RECEIVED: 10/18/91

ADDITIONAL ANALYSIS REQUESTED: 10/22,30/91

MED-TOX JOB NO: 9110159

ANALYSIS OF: WATER & SOIL SAMPLES

Sample Identification Client Id.	Lab No.	Oil & Grease (mg/kg)	Hydrocarbons (mg/kg)	Extractable Hydrocarbons as Diesel (mg/L)	Extractable Hydrocarbons as Oil (mg/L)	Oil & Grease (mg/L)	Hydrocarbons (mg/L)
MW-1 @ 10.5	01A	ND	ND	---	---	---	---
MW-1 @ 15.5	02A	ND	ND	---	---	---	---
MW-1 @ 20.5	03A	ND	ND	---	---	---	---
MW-1 @ 25.5	04A	ND	ND	---	---	---	---
W-1	07A	---	---	1.7	0.4	---	---
W-1	07C	---	---	---	---	1	ND
Detection Limit		10	10	0.05	0.1	0.5	0.5
Method:		5520E	5520F	3510 GCFID	3510 GCFID	5520C	5520F
Instrument:		IR	IR	E	E	IR	IR
Date Extracted		10/22,31/91	10/22,31/91	10/24/91	10/24/91	10/25/91	10/25/91
Date Analyzed:		10/23-31/91	10/23-31/91	10/28/91	10/28/91	10/25/91	10/25/91

ND = Not Detected

Andrew Bradeen, Manager
Organic Laboratory

Dave Sandusky, Manager
Inorganic Laboratory

Results FAXed 10/29-31/91

MED-TOX ASSOCIATES INC

KALDVEER ASSOCIATES, INC.

DATE SAMPLED: 10/18/91
DATE RECEIVED: 10/18/91
CLIENT PROJ. ID: KE1355-1-1009

REPORT DATE: 11/05/91

MED-TOX JOB NO: 9110159

Sample Identification Client Id.	Lab No.	Cadmium (mg/L)	Chromium (mg/L)	Nickel (mg/L)	Lead (mg/L)	Zinc (mg/L)
W-1	07E	ND	ND	0.02	ND	0.091
Detection Limit		0.005	0.01	0.01	0.02	0.005

Method: 6010

Instrument: ICP

Date Analyzed: 10/28/91

ND = Not Detected

Note: Sample was filtered through a 0.45 um filter and preserved with HNO_3 on 10/18/91.

MED-TOX ASSOCIATES INC

KALDVEER ASSOCIATES, INC.

CLIENT ID: W-1
CLIENT PROJ. ID: KE1355-1-1009
DATE SAMPLED: 10/18/91
DATE RECEIVED: 10/18/91
REPORT DATE: 11/05/91

MED-TOX LAB NO: 9110159-07I
MED-TOX JOB NO: 9110159
DATE ANALYZED: 10/25/91
INSTRUMENT: G

EPA METHOD 8010 (WATER MATRIX)
HALOGENATED VOLATILE ORGANICS

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Bromodichloromethane	75-27-4	ND	0.5
Bromoform	75-25-2	ND	0.5
Bromomethane	74-83-9	ND	0.5
Carbon Tetrachloride	56-23-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.5
Chloroethane	75-00-3	ND	0.5
2-Chloroethyl Vinyl Ether	110-75-8	ND	0.5
Chloroform	67-66-3	ND	0.5
Chloromethane	74-87-3	ND	0.5
Dibromochloromethane	124-48-1	ND	0.5
1,2-Dichlorobenzene	**95-50-1**	**0.7**	**0.5**
1,3-Dichlorobenzene	541-73-1	ND	0.5
1,4-Dichlorobenzene	106-46-7	ND	0.5
Dichlorodifluoromethane	75-71-8	ND	0.5
1,1-Dichloroethane	**75-34-3**	**0.7**	**0.5**
1,2-Dichloroethane	107-06-2	ND	0.5
1,1-Dichloroethene	75-35-4	ND	0.5
cis-1,2-Dichloroethene	156-69-4	ND	0.5
trans-1,2-Dichloroethene	156-60-5	ND	0.5
1,2-Dichloropropane	78-87-5	ND	0.5
cis-1,3-Dichloropropene	10061-01-5	ND	0.5
trans-1,3-Dichloropropene	10061-02-6	ND	0.5
Methylene Chloride	**75-09-2**	**2**	**0.5**
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Tetrachloroethene	127-18-4	ND	0.5
1,1,1-Trichloroethane	71-55-6	ND	0.5
1,1,2-Trichloroethane	79-00-5	ND	0.5
Trichloroethene	79-01-6	ND	0.5
Trichlorofluoromethane	75-69-4	ND	0.5
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	0.5
Vinyl Chloride	75-01-4	ND	0.5

ND = Not Detected

KALDVEER ASSOCIATES, INC.

CLIENT ID: W-1
CLIENT PROJ. ID: KE1355-1-1009
DATE SAMPLED: 10/18/91
DATE RECEIVED: 10/18/91
REPORT DATE: 11/05/91

MED-TOX LAB NO: 9110159-07L
MED-TOX JOB NO: 9110159
DATE ANALYZED: 10/21/91
INSTRUMENT: F

BTEX AND HYDROCARBONS (WATER MATRIX)

METHOD: EPA 8020, 5030 GCFID

	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Benzene	71-43-2	4.1	0.3
Toluene	108-88-2	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes, Total	1330-20-7	20	1
PURGEABLE HYDROCARBONS AS:			
Gasoline		0.3 mg/L	0.05 mg/L

ND = Not Detected

KALDVEER ASSOCIATES, INC.

CLIENT ID: MW-1 @ 10.5
CLIENT PROJ. ID: KE1355-1-1009
DATE SAMPLED: 10/17/91
DATE RECEIVED: 10/18/91
REPORT DATE: 11/05/91

MED-TOX LAB NO: 9110159-01A
MED-TOX JOB NO: 9110159
DATE ANALYZED: 10/22/91
INSTRUMENT: H

BTEX AND HYDROCARBONS (SOIL MATRIX)

METHOD: EPA 8020, 5030 GCFID

	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Benzene	71-43-2	ND	1
Toluene	108-88-3	ND	1
Ethylbenzene	100-41-4	ND	1
Xylenes, Total	1330-20-7	ND	3

PURGEABLE HYDROCARBONS AS:

Gasoline	ND mg/kg	0.2 mg/kg

ND = Not Detected

KALDVEER ASSOCIATES, INC.

CLIENT ID: W-1
CLIENT PROJ. ID: KE1355-1-1009
DATE SAMPLED: 10/18/91
DATE RECEIVED: 10/18/91
REPORT DATE: 11/05/91

MED-TOX LAB NO: 9110159-07G
MED-TOX JOB NO: 9110159
DATE EXTRACTED: 10/23/91
DATE ANALYZED: 10/27/91
INSTRUMENT: 11

EPA METHOD 8270 (WATER MATRIX)
GC/MS SEMI-VOLATILE ORGANIC COMPOUNDS
BASE/NEUTRAL EXTRACTABLES

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Acenaphthene	83-32-9	ND	10
Acenaphthylene	208-96-8	ND	10
Anthracene	120-12-7	ND	10
Benzidine	92-87-5	ND	50
Benzoic Acid	65-85-0	ND	50
Benzo(a)anthracene	56-55-3	ND	10
Benzo(b)fluoranthene	205-99-2	ND	10
Benzo(k)fluoranthene	207-08-9	ND	10
Benzo(g,h,i)perylene	191-24-2	ND	10
Benzo(a)pyrene	50-32-8	ND	10
Benzyl Alcohol	100-51-6	ND	20
Bis(2-chloroethoxy) methane	111-91-1	ND	10
Bis(2-chloroethyl)ether	111-44-4	ND	10
Bis(2-chloroisopropyl) ether	108-60-1	ND	10
Bis(2-ethylhexyl) phthalate	117-81-7	ND	10
4-Bromophenyl phenyl ether	101-55-3	ND	10
Butylbenzyl phthalate	85-68-7	ND	10
4-Chloroaniline	106-47-8	ND	20
2-Chloronaphthalene	91-58-7	ND	10
4-Chlorophenyl phenyl ether	7005-72-3	ND	10
Chrysene	218-01-9	ND	10
Dibenzo(a,h)anthracene	53-70-3	ND	10
Dibenzofuran	132-64-9	ND	10
Di-n-butylphthalate	84-74-2	ND	10
1,2-Dichlorobenzene	95-50-1	ND	10

ND = Not Detected

KALDVEER ASSOCIATES, INC.

CLIENT ID: W-1
CLIENT PROJ. ID: KE1355-1-1009
DATE SAMPLED: 10/18/91
DATE RECEIVED: 10/18/91
REPORT DATE: 11/05/91

MED-TOX LAB NO: 9110159-07G
MED-TOX JOB NO: 9110159
DATE EXTRACTED: 10/23/91
DATE ANALYZED: 10/27/91
INSTRUMENT: 11

EPA METHOD 8270
BASE/NEUTRAL EXTRACTABLES (cont.)

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
1,3-Dichlorobenzene	541-73-1	ND	10
1,4-Dichlorobenzene	106-46-7	ND	10
3,3'-Dichlorobenzidine	91-94-1	ND	20
Diethylphthalate	84-66-2	ND	10
Dimethylphthalate	131-11-3	ND	10
2,4-Dinitrotoluene	121-14-2	ND	10
2,6-Dinitrotoluene	606-20-2	ND	10
Di-n-octylphthalate	117-84-0	ND	10
1,2-Diphenylhydrazine	122-66-7	ND	10
Fluoranthene	206-44-0	ND	10
Fluorene	86-73-7	ND	10
Hexachlorobenzene	118-74-1	ND	10
Hexachlorobutadiene	87-68-3	ND	10
Hexachlorocyclopentadiene	77-47-4	ND	10
Hexachloroethane	67-72-1	ND	10
Indeno(1,2,3-cd)pyrene	193-39-5	ND	10
Isophorone	78-59-1	ND	10
2-Methylnaphthalene	91-57-6	ND	10
Naphthalene	91-20-3	ND	10
2-Nitroaniline	88-74-4	ND	50
3-Nitroaniline	99-09-2	ND	50
4-Nitroaniline	100-01-6	ND	50
Nitrobenzene	98-95-3	ND	10
N-Nitrosodimethylamine	62-75-9	ND	10
N-Nitrosodiphenylamine	86-30-6	ND	10
N-Nitroso-di-n-propylamine	621-64-7	ND	10
Phenanthrene	85-01-8	ND	10
Pyrene	129-00-0	ND	10
1,2,4-Trichlorobenzene	120-82-1	ND	10

ND = Not Detected

KALDVEER ASSOCIATES, INC.

CLIENT ID: W-1
CLIENT PROJ. ID: KE1355-1-1009
DATE SAMPLED: 10/18/91
DATE RECEIVED: 10/18/91
REPORT DATE: 11/05/91

MED-TOX LAB NO: 9110159-07G
MED-TOX JOB NO: 9110159
DATE EXTRACTED: 10/23/91
DATE ANALYZED: 10/27/91
INSTRUMENT: 11

EPA METHOD 8270
ACID EXTRACTABLES

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
4-Chloro-3-methylphenol	59-50-7	ND	10
2-Chlorophenol	95-57-8	ND	10
2,4-Dichlorophenol	120-83-2	ND	10
2,4-Dimethylphenol	105-67-9	ND	10
4,6-Dinitro-2-methylphenol	534-52-1	ND	50
2,4-Dinitrophenol	51-28-5	ND	50
2-Methylphenol	95-48-7	ND	10
4-Methylphenol	106-44-5	ND	10
2-Nitrophenol	88-75-5	ND	10
4-Nitrophenol	100-02-7	ND	50
Pentachlorophenol	87-86-5	ND	50
Phenol	108-95-2	ND	10
2,4,5-Trichlorophenol	95-95-4	ND	10
2,4,6-Trichlorophenol	88-06-2	ND	10

ND = Not Detected

MED-TOX ASSOCIATES INC

QUALITY CONTROL DATA

KALDVEER ASSOCIATES, INC.

CLIENT PROJECT ID: KE1355-1-1009

MED-TOX JOB NO: 9110159

MED-TOX ASSOCIATES INC

DATE EXTRACTED: 10/25/91
DATE ANALYZED: 10/25/91
SAMPLE SPIKED: D.I. WATER

MED-TOX JOB NO: 9110159
CLIENT PROJ. ID: KE1355-1-1009
INSTRUMENT: IR

IR DETERMINATION FOR OIL & GREASE/HYDROCARBONS
METHOD SPIKE RECOVERY SUMMARY
WATER MATRIX

ANALYTE	MS Conc. (mg/L)	Sample Result (mg/L)	MS Result (mg/L)	MSD Result (mg/L)	Average Percent Recovery	RPD
Oil	7.12	ND	7.12	7.12	100.0	0.0

CURRENT QC LIMITS (Revised 08/14/91)

Analyte	Percent Recovery	RPD
Oil	(87-116)	6.5

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

MED-TOX ASSOCIATES INC

DATE EXTRACTED: 10/22/91
DATE ANALYZED: 10/23/91
SAMPLE SPIKED: 9110159-01A

MED-TOX JOB NO: 9110159
CLIENT PROJ. ID: KE1355-1-1009
INSTRUMENT: IR

IR DETERMINATION FOR OIL & GREASE/HYDROCARBONS
METHOD SPIKE RECOVERY SUMMARY
SOIL MATRIX

ANALYTE	MS Conc. (mg/kg)	Sample Result (mg/kg)	MS Result (mg/kg)	MSD Result (mg/kg)	Average Percent Recovery	RPD
Oil	238	ND	249	254	105.6	2.0

CURRENT QC LIMITS (Revised 08/14/91)

Analyte	Percent Recovery	RPD
Oil	(66-130)	10

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

MED-TOX ASSOCIATES, INC

DATE EXTRACTED: 10/31/91
DATE ANALYZED: 10/31/91
SAMPLE SPIKED: 9110159-03A

MED-TOX JOB NO: 9110159
CLIENT PROJ. ID: KE1355-1-1009
INSTRUMENT: IR

IR DETERMINATION FOR OIL & GREASE/HYDROCARBONS
METHOD SPIKE RECOVERY SUMMARY
SOIL MATRIX

ANALYTE	MS Conc. (mg/kg)	Sample Result (mg/kg)	MS Result (mg/kg)	MSD Result (mg/kg)	Average Percent Recovery	RPD
Oil	221	ND	221	221	100.0	0.0

CURRENT QC LIMITS (Revised 08/14/91)

Analyte	Percent Recovery	RPD
Oil	(66-130)	10

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

MED-TOX ASSOCIATES INC

DATE EXTRACTED: 10/24/91
DATE ANALYZED: 10/28/91
SAMPLE SPIKED: D.I. WATER

MED-TOX JOB NO: 9110159

INSTRUMENT: E

MATRIX SPIKE RECOVERY SUMMARY
TPH EXTRACTABLE WATERS
METHOD 3520
(WATER MATRIX; EXTRACTION METHOD)

ANALYTE	Spike Conc. (mg/L)	Sample Result (mg/L)	MS Result (mg/L)	MSD Result (mg/L)	Average Percent Recovery	RPD
Diesel	0.636	ND	0.359	0.351	55.8	2.2

CURRENT QC LIMITS (Revised 08/15/91)

Analyte	Percent Recovery	RPD
Diesel	(49.3-101.4)	29.0

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

MED-TOX ASSOCIATES, INC

DATE ANALYZED: 10/21/91
SAMPLE SPIKED: 9110167-01B
CLIENT PROJ. ID: KE1355-1-1009

MED-TOX JOB NO: 9110159

INSTRUMENT: F

METHOD SPIKE RECOVERY SUMMARY
METHOD 5030 w/GCFID/8020
(WATER MATRIX)

ANALYTE	Spike Conc. (ug/L)	Sample Result (ug/L)	MS Result (ug/L)	MSD Result (ug/L)	Average Percent Recovery	RPD
Benzene	15.6	ND	16.0	15.8	101.9	1.3
Toluene	65.0	ND	66.7	66.3	102.3	0.6
Hydrocarbons as Gasoline	519	ND	526	510	99.8	3.1

CURRENT QC LIMITS (Revised 08/15/91)

Analyte	Percent Recovery	RPD
Benzene	(77.7-118.0)	10.3
Toluene	(80.7-116.2)	10.1
Gasoline	(72.5-110.7)	13.6

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

MED-TOX ASSOCIATES INC

DATE ANALYZED: 10/22/91
SAMPLE SPIKED: 9110165-01A
CLIENT PROJ. ID: KE1355-1-1009

MED-TOX JOB NO: 9110159

INSTRUMENT: H

MATRIX SPIKE RECOVERY SUMMARY
METHOD 5030 w/GCFID/8020
(SOIL MATRIX)

ANALYTE	Spike Conc. (ug/kg)	Sample Result (ug/kg)	MS Result (ug/kg)	MSD Result (ug/kg)	Average Percent Recovery	RPD
Benzene	24.3	ND	24.9	26.0	104.7	4.3
Toluene	107	ND	107	111	101.9	3.7
Hydrocarbons as Gasoline	1040	920	1550	1620	63.9	4.4

CURRENT QC LIMITS (Revised 08/15/91)

Analyte	Percent Recovery	RPD
Benzene	(80.8-125.2)	9.6
Toluene	(82.7-119.1)	10.2
Gasoline	(54.0-120.1)	14.8

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

MED-TOX ASSOCIATES, INC

INSTRUMEMT: G

MED-TOX JOB NO: 9110159

CLIENT PROJ. ID: KE1355-1-1009

SURROGATE STANDARD RECOVERY SUMMARY

METHOD 8010/8020
(WATER MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)	
Date Analyzed	Client Id.	Lab No.	Bromochloro-methane	1,4-Dichloro-butane
10/25/91	MW-1	07I	91.7	101.3

CURRENT QC LIMITS

ANALYTE	PERCENT RECOVERY
Bromochloromethane	(79.5-115.3)
1,4-Dichlorobutane	(82.3-110.3)

MED-TOX ASSOCIATES, INC

DATE ANALYZED: 10/25/91

MED-TOX JOB NO: 9110159

CLIENT PROJ. ID: KE1355-1-1009

MATRIX SPIKE RECOVERY SUMMARY

METHOD 8010/8020
(WATER MATRIX)

ANALYTE	Spike Conc. (ug/L)	Sample Result (ug/L)	MS Result (ug/L)	MSD Result (ug/L)	Average Percent Recovery	RPD
1,1-Dichloroethene	50.0	ND	47.9	47.5	95.4	0.8
Trichloroethene	50.0	ND	60.9	61.9	122.8	0.2
Benzene	50.0	ND	53.8	53.9	107.7	0.2
Toluene	50.0	ND	53.2	53.1	106.3	1.9
Chlorobenzene	50.0	ND	46.7	45.9	92.6	1.7

CURRENT QC LIMITS (Revised 07/11/91)

Analyte	Percent Recovery	RPD
1,1-Dichloroethene	(66-130)	17
Trichloroethene	(83-128)	15
Benzene	(81-121)	10
Toluene	(81-119)	10
Chlorobenzene	(74-118)	10

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

MED-TOX ASSOCIATES INC

DATE ANALYZED: 10/27/91

MED-TOX JOB NO: 9110159

CLIENT PROJ. ID: KE1355-1-1009

INSTRUMENT: 11

SURROGATE STANDARD RECOVERY SUMMARY

METHOD 8270
(WATER MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)					
Date Extracted	Client Id.	Lab No.	Nitro-benzene-d_5	2-Fluoro-biphenyl	Terphenyl-d_{14}	Phenol-d_5	2-Fluoro-phenol	2,4,6-Tribromo-phenol
10/23/91	W-1	07G	80.8	79.6	81.2	83.6	72.8	105.5

CURRENT QC LIMITS (Revised 10/15/91)

ANALYTE	PERCENT RECOVERY
Nitrobenzene-d_5	(41-105)
2-Fluorobiphenyl	(45-110)
Terphenyl-d_{14}	(31-139)
Phenol-d_5	(37-107)
2-Fluorophenol	(34- 95)
2,4,6-Tribromophenol	(33-145)

MED-TOX ASSOCIATES, INC

DATE EXTRACTED: 10/21/91
DATE ANALYZED: 10/24/91
CLIENT PROJ. ID: KE1355-1-1009

MED-TOX JOB NO: 9110159
SAMPLE SPIKED: D.I. WATER
INSTRUMENT: 11

MATRIX SPIKE RECOVERY SUMMARY
METHOD 8270
(WATER MATRIX)

ANALYTE	Spike Conc. (ug/L)	Sample Result (ug/L)	MS Result (ug/L)	MSD Result (ug/L)	Average Percent Recovery	RPD
Phenol	234	ND	176	164	72.6	7.1
2-Chlorophenol	203	ND	145	128	67.2	12.5
1,4-Dichlorobenzene	201	ND	115	108	55.5	6.3
N-Nitroso-di-n-propylamine	201	ND	163	170	82.8	4.2
1,2,4-Trichlorobenzene	209	ND	121	122	58.1	0.8
4-Chloro-3-methylphenol	204	ND	152	163	77.2	7.0
Acenaphthene	205	ND	128	135	64.1	5.3
4-Nitrophenol	201	ND	139	162	74.9	15.2
2,4-Dinitrotoluene	404	ND	307	316	77.1	2.9
Pentachlorophenol	408	ND	161	196	43.8	19.6
Pyrene	202	ND	144	140	70.3	2.8

CURRENT QC LIMITS (Revised 10/15/91)

Analyte	Percent Recovery	RPD
Phenol	(46- 92)	19
2-Chlorophenol	(51- 85)	26
1,4-Dichlorobenzene	(32- 85)	26
N-Nitroso-di-n-propylamine	(36-107)	17
1,2,4-Trichlorobenzene	(34- 87)	20
4-Chloro-3-methylphenol	(48-103)	14
Acenaphthene	(49-117)	15
4-Nitrophenol	(23-104)	16
2,4-Dinitrotoluene	(48-102)	16
Pentachlorophenol	(20-125)	22
Pyrene	(34-138)	10

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

MED-TOX ASSOCIATES INC

MATRIX: WATER

MED-TOX JOB NO: 9110159

CLIENT PROJ. ID: KE1355-1-1009

SAMPLE SPIKED: 9110159-07F

MATRIX SPIKE RECOVERY SUMMARY

COMPOUND	INST./ METHOD	SAMPLE RESULT	SPIKE ADDED	OBSERVED RECOVERIES (mg/L) MS	MSD	% REC.	RPD	QC CONTROL LIMITS REC. % LIMIT	RPD LIMIT
Cd, Cadmium	ICP/6010	ND	0.10	0.0901	0.0948	92.5	5.13	60.3-114.4	8.0
Cr, Chromium	ICP/6010	ND	0.50	0.470	0.477	94.7	1.50	72.9-109.7	5.0
Ni, Nickel	ICP/6010	0.018	0.50	0.491	0.498	95.2	1.55	74.6-108.7	5.0
Pb, Lead	ICP/6010	ND	0.50	0.483	0.488	97.1	1.01	74.8-110.9	5.0
Zn, Zinc	ICP/6010	0.091	0.50	0.555	0.560	93.3	0.93	67.4-109.8	5.0

ND = Not Detected

McLaren Hart™

ENVIRONMENTAL PROTECTION

95 SEP 15 PM 2:31

September 13, 1995

Ms. Susan Hugo
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6755

RE: REQUESTED INFORMATION 3810 BROADWAY, OAKLAND, CALIFORNIA

Dear Ms. Hugo:

As requested enclosed please find a copy of the February 26, 1992 Kaldveer Associates well installation report and Underground Storage Tank Unauthorized Release/Contamination Site Report.

If you have any questions regarding these materials please do not hesitate to contact me at (510) 748-5628.

Sincerely,

Saul Germanas, R.G.
Senior Associate Geoscientist

Attachments

1135 Atlantic Avenue, Alameda, CA 94501 (510) 521-5200 FAX (510) 521-1547

recycled paper

ENVIRONMENTAL
PROTECTION
95 SEP 15 PM 2:31

SOIL AND GROUND WATER QUALITY INVESTIGATION REPORT FOR 3810 BROADWAY OAKLAND, CALIFORNIA

Kaldveer Associates

Kaldveer Associates
Geoscience Consultants
Geotechnical and Environmental Engineering
Oakland, CA • San Jose, CA • Bellevue, WA • Tacoma, WA

PRINCIPALS
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President
Richard Short PE, GE
Executive Vice President
Ronald L Bajuniemi PE GE
Vice President
ASSOCIATES
Patrick Stevens, PE GE
Lawrence P Goldfarb, PE
John Sutton, PE, GE
Richard J Bielefeld CEG
PROFESSIONALS
Dawn Rinaldi, PE
Guy Petraborg, PE
Dennis Laduzinsky, CEG
Randy Rowley, RG, REA
Michael Leaverton, PE
Kenneth C. Ferrone, PE

February 26, 1992
KE1355-1A-1140, 20354

Friedkin-Becker
300 Grand Avenue
Oakland, California, 94610

Attention: Mr. Gerald S. Friedkin

RE: SOIL AND GROUND WATER
QUALITY INVESTIGATION REPORT
3810 BROADWAY
OAKLAND, CALIFORNIA

Dear Mr. Friedkin:

Kaldveer Associates, Inc. is pleased to submit our soil and ground water quality investigation report for the property at 3810 Broadway, in Oakland, California. The purpose of this investigation was to install an additional monitoring well and to test for the presence of waste oil related contaminants in both soil and ground water in the vicinty of the former waste oil tank site. The enclosed report contains a description of our investigation, results of soil and ground water sample analyses, and our conclusions and recommendations regarding site environmental quality.

We appreciate the opportunity to provide continued services to you on this project and trust this report meets your needs at this time. If you have any questions or require additional information, please don't hesitate to call.

Very truly yours,

KALDVEER ASSOCIATES, INC.

John R. Sutton, P.E./G.E.
Manager, Environmental/Hazardous
Waste Services
Associate

JRS:ms
Copies: Addressee (5)

☐ 425 Roland Way, Oakland, CA 94621 (510) 568-4001 FAX: (510) 568-2205
☐ 1737 North First Street, Suite 300, San Jose, CA 95112 (408) 436-5703 FAX: (408) 436-5735
Incorporated

SOIL AND GROUND WATER QUALITY
INVESTIGATION REPORT

For
3810 BROADWAY
OAKLAND, CALIFORNIA

To
Friedkin-Becker
300 Grand Avenue
Oakland, California 94610

February, 1992

Kaldveer Associates

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Page No.

Letter of Transmittal

TITLE PAGE

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APPENDIX B - MONITORING WELL DEVELOPMENT AND SAMPLING LOGS
APPENDIX C - CHAIN OF CUSTODY RECORD LABORATORY ANALYTICAL RESULTS

LIMITED SOIL AND GROUND WATER
QUALITY INVESTIGATION REPORT
FOR
3810 BROADWAY
OAKLAND, CALIFORNIA

I. INTRODUCTION

This report presents the results of the additional soil and ground water quality investigation performed at the property located at 3810 Broadway in Oakland, California. The property is presently occupied by the Precision Tune facility. The location of the site is shown on the Site Vicinity Map, Figure 1.

Kaldveer Associates previously constructed a monitoring well in the former waste oil tank location. The purpose of the present investigation has been to additionally assess the potential of contaminants from the waste oil tank impacting the ground water in the area of the former waste oil tank. The investigation included the installation of one additional ground water monitoring well at the site, and collecting soil and water samples from both wells for chemical analysis at a California Environmental Protection Agency - certified analytical laboratory. The field work was performed in accordance with Kaldveer Associates' "Work Plan for Monitoring Well Construction and Sampling - 3810 Broadway in Oakland, California", dated January, 1992, and accepted by Mr. Larry Seto of the Alameda County Department of Environmental Health (ACDEH).

II. BACKGROUND

Prior to the present occupancy by Precision Tune, the site was the location of a Texaco Service Station. At some time in the past, Texaco removed all of the fuel tanks but left the waste oil tank in place. In May of 1991, the waste oil tank was removed and soil samples were collected by SEMCO, the tank removal contractor. Their work identified hydrocarbon contaminated soils to a depth of about ten feet which they reportedly removed and disposed of offsite. The excavation was then backfilled with clean imported aggregate. No groundwater was reported to have been encountered during the tank removal.

In response to the discovery of hydrocarbon contaminated soils the ACDEH required that an investigation be performed to assess the possible impact of hydrocarbons to the ground water. In October 1991, Kaldveer Associates installed a monitoring well (MW-1) at

the location of the former UST. Ground water was encountered at 29 feet below the ground surface during drilling of MW-1. Soil samples from depths of 10½, 15½, 20½ and 25½ feet were tested for petroleum hydrocarbons, and purgeable aromatics of which none were detected. The water sample from MW-1 detected generally low levels of petroleum hydrocarbons, halogenated volatile organics, nickel and lead. In response to the detection of contaminants in the ground water the ACDEH required additional investigation of the soil and ground water to determine if ground water had been impacted by contaminants from the former waste oil tank. At a meeting at the offices of a ACDEH on December 20, 1991 among Mr. Seto, Mr. Eddie So of the Regional Water Quality Control Board, Mr. Friedkin and Mr. John Sutton of Kaldveer Associates, a scope of work for additional investigation, including a schedule of analysis was agreed upon.

III SCOPE OF SERVICES

The scope of services for the present investigation included three tasks to assess the possible impact of contaminants from the waste oil tank to the ground water. The work was performed according to the Tri-Regional Water Quality Control Boards' guidelines for addressing fuel leak sites, Permits were obtained as required by local agencies. Possible soil contamination was evaluated by collecting a soil sample from just above ground water and ground water quality was investigated by the installation and the sampling of both wells. The soil sample was analyzed for total petroleum hydrocarbons and gasoline. Ground water samples from the new well and existing well were analyzed for selected petroleum hydrocarbon and metal contaminants. The documentation of the investigation procedures, our evaluation of the accumulated field and analytical data and findings, conclusions and recommendations are presented in this report.

The specific tasks included:

Task A - Investigate Contamination Levels

1. Prior to the start of the field work Kaldveer Associates prepared a work plan, including a site Health and Safety Plan, which was reviewed and approved on January 21, 1992 by ACDEH. Specifically, ACDEH agreed to the proposed well location.

2. The field investigation began on January 28, 1992 and included a soil sampling program consisting of drilling one hollow stem auger exploratory boring to a depth of approximately 35 feet. Soil samples were collected at depth intervals of approximately every 5 feet or as

otherwise indicated by specific field conditions. Selected soil samples were appropriately packed, refrigerated and transported to the chemical laboratory for possible testing. The augers, samplers and equipments was steam-cleaned prior to the field investigation.

3. The ground water testing program consisted of converting the exploratory boring into a monitoring well with a depth of approximately 35 feet. Both the new well (MW-2) and the existing well (MW-1) were purged and then sampled. Applicable local regulations were followed in permitting and installing the well. Following well installation, the relative casing top elevations of MW-1 and MW-2 were surveyed.

Task B - Analytical Testing

1. As requested by ACEHD, the chemical testing program for soil consisting of analyzing a soil sample from about three feet above the first encountered ground water for the following: 1) total petroleum hydrocarbons as gasoline (TPHG), 2) benzene, toluene, ethylbenzene and xylene (BTEX) 3) total oil and grease and (4) petroleum hydrocarbons.

2. As requested by ACEHD, the chemical testing program for analyzing ground water samples from MW-1, and MW-2 consisted of 1) TPHG, 2) TPH as diesel (TPHD) , 3) total oil and grease, 4) BTEX, 5) halogenated volatile organics, and 6) total and soluble nickel.

Task C - Report Preparation

Submittal of this report presenting a description of our investigation, results of laboratory analyses and our conclusions and recommendations regarding site environmental quality.

IV. FIELD INVESTIGATION

A. Site Description

The site is located at 3810 Broadway, on the southeast corner of Broadway and 38th Street, in Oakland, California. The location of the site is shown on the Site Vicinity Map, Figure 1. The site is currently utilized by Precision Tune, an auto mechanic garage, located in a concrete block office and garage-bay building which occupies the west half of the property. The remaining half of the site is paved asphalt parking and driveway. The site has been

excavated into a hillside. There are retaining walls along the northeast and southeast property lines.

Our investigation has been performed in the area of the former waste oil tank at the front of the existing auto mechanic garage. As shown on our Site Location Map, Figure 2, the previously constructed MW-1, was located in the former tank area just in front, northwest of the existing structure. Monitoring well MW-2 is located approximately 12 feet northwest of MW-1. The topography of the site directs the drainage away from the structure towards Broadway in a northwesterly direction. Site grades are relatively steep. No areas of unusual surface conditions or spills were noted during our field investigation.

B. Drilling and Soil Sampling

The field investigation was conducted on January 28, 1992, and consisted of drilling an exploratory boring and converting it to a ground water monitoring well. Drilling Permit Application No. 92014 was obtained in advance from Alameda County Flood Control and Water Conservation District, Zone 7. A State of California Well Completion Report No. 427919 was prepared and issued to the California Department of Water Resources. Copies of both documents are included in Appendix A.

The boring was drilled at the approximate location shown on the Site Location Map, Figure 2. The soil boring was drilled with a truck-mounted drill rig equipped with 8-inch diameter hollow stem augers. Under the direction of Mr. Randy Rowley, R.G., the soils encountered during drilling were classified and logged in the field by Ms. Marcela Jimenez, Assistant Environmental Specialist, by visual examination in accordance with the Unified Soil Classification System (Figure A-1). The boring log for MW-2 is presented in Appendix A.

Soil samples were collected from the boring at intervals of every five feet to 35 feet using a 2-inch I.D. Modified California sampler containing thin brass liners. The sampler was driven with a simulated 140-pound hammer falling 30 inches. The number of blows required to drive the sampler the last 12 inches of an 18-inch drive are recorded as the penetration resistance (blows/foot) on the boring logs. The augers were steam-cleaned by high pressure cleaner prior to the drilling, and before the use of the sampler and brass liners they were thoroughly cleaned with Liquinox, a clinical detergent to reduce the potential for cross-contamination.

Select soil samples from MW-2 were collected for possible chemical analysis. All samples were collected in 2-inch diameter, 6-inch long, brass liners. The samples were first examined for logging

purposes, then sealed with teflon-lined lids, labeled and immediately placed in refrigerated storage. A chain-of-custody form was initiated in the field and accompanied the samples to (QuanteQ Laboratories formerly Med-Tox Associates, Inc). of Pleasant Hill, California, a California Environmental Protection Agency certified laboratory.

C. Subsurface Conditions

The material encountered during drilling for MW-2 consisted of native tan to brown, moderately plastic, silty clay which extends to an approximate depth of thirty feet. Beginning at the depth of approximately 20 feet intermittent fine-grained, dry sand stringers were noted. Ground water was encountered at 31 feet depth in fine-grained sandy lenses in the clay. The clay with sandy lenses graded to a fine grained sand at a depth of approximately 33 feet. After a period of about five hours, the ground water level was found to be at a depth of approximately 23.5 feet below the existing ground surface.

During drilling and sample logging, the soil samples were observed for obvious signs of hydrocarbon contamination (ie, odor or discoloration). No samples from MW-2 exhibited any signs of contamination. The attached boring logs and related information (Appendix A) depict location-specific subsurface conditions encountered during our field investigation. The approximate location of the boring was determined measuring from nearby structures and should be considered accurate only to the degree implied by the method used. The passage of time could result in changes in the surface or subsurface conditions due to natural occurrences or human intervention.

D. Monitoring Well Construction

Monitoring Well 2 was installed at the site on January 28, 1992. The monitoring well was completed to a depth of approximately 35 feet, below ground surface using Schedule 40, 2-inch nominal, flush threaded, PVC well casing. The well was completed with one 10-foot section of 0.010-inch (10 slot) slotted well screen at the bottom. The sand filter pack extended to one foot above the slotted casing. The well seal was completed by adding 1.0 foot of 3/8-inch, bentonite pellets to the top of the filter pack then filling the remaining annular space with neat Portland cement grout mixture. The well was completed at the surface with an expansion plug with lock and a bolted, locking steel vault cover. Specific well construction details are presented along with the respective boring logs in Appendix A.

E. Well Development and Sampling

Both wells were sampled on January 30, 1992, using a teflon bailer. Prior to sampling, each well was developed using the Well Wizard pump to remove water until the pH, conductivity and temperature became constant entailing removal of about fifty gallons. Water samples from each well were then collected, labeled and placed in refrigerated storage, and delivered to the laboratory under chain-of-custody control. The bailer was thoroughly washed with laboratory grade detergent and rinsed with distilled water to reduce the potential for cross-contamination. Well development and sampling logs are attached to this report as Appendix B.

F. Ground Water

Based on the U.S.G.S. 7.5' Quadrangle topographic map series, Oakland West and East Sheets, the approximate elevation at the project site is 90 feet above Mean Sea Level, making the measured water depths and gradient surface elevation approximately 67 feet, Mean Sea Level.

As shown on the Site Vicinity Map (Figure 1), the Kaiser Permanente Medical Center (KPMC) is located approximately 500 feet southwest of the project site. As part of our investigation we have reviewed the file for the KPMC at the Regional Water Quality Control Board and found that there is an ongoing investigation of ground water at that site. The consultant, Geomatrix, has reported that ground water depths and gradient in the area was anomalous due to stratigraphic irregularities, but generally the direction of flow was west-southwest toward the San Francisco Bay.

V. ANALYTICAL RESULTS

A. Laboratory Procedures

Soil and ground water samples were analyzed by QuanteQ Laboratories, of Pleasant Hill, California. QuanteQ is certified by the California Environmental Protection Agency for the analyses performed. Both the soil sample and water samples were tested for oil and grease by EPA Method 5520E and hydrocarbons by 5520F, total petroleum hydrocarbons as gasoline (TPHG) by 5030 GCFID and purgeable aromatic compounds; benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 8020. The ground water samples were additionally tested for total petroleum hydrocarbons as diesel (TPHD) by 3510 GCFID, halogenated volatile organics by EPA Method 8010, and total and dissolved nickel by ICAP.

B. Analytical Results - Soil

As previously found in the samples from MW-1, the soil sample from MW-2 had no detectable concentrations of the contaminants for which we tested. The soil sample test results from the previous and present investigation are summarized in Table 1 and the laboratory reports for the present test results are attached to this report as Appendix C.

C. Analytical Results - Water

Similar to the previous water sample collected from MW-1 on October 19, 1991, the sample from MW-1 collected on January 30, 1992 detected low levels of petroleum hydrocarbons. The present testing in MW-1 identified 0.67 parts-per-million (ppm) of TPHD, 0.08 ppm of TPHG, and BTEX Components at 0.0007 ppm, 0.0005 ppm, ND, and 0.002 ppm respectively. Hydrocarbons and oil and grease were not detected in MW-1 this round, however, were detected in MW-2 water. Total and soluble nickel were detected at 0.25 ppm and 0.02 ppm respectively. Unlike the previous soil sample, no halogenated volatile organics were detected in this round of sampling.

The analytical results for MW-2 collected on January 30, 1992 detected various petroleum hydrocarbons. The analytical results identified 1.0 ppm of oil and grease, 0.9 ppm of hydrocarbons, 4.0 ppm of TPHG, 0.470 ppm of benzene, 0.560 ppm of toluene, 0.160 ppm of ethylbenzene and 0.540 ppm of xylene. Total and soluble nickel were detected at 0.43 ppm and 0.04 ppm respectively. The halogenated volatile organic compound 1,2 dichloroethane a gasoline additive was detected at a level of 0.002 ppm.

CONCLUSIONS AND RECOMMENDATIONS

A. Soil Quality

During the tank removal process, oil and grease contaminants were identified in the soil directly below the former waste oil tank. These contaminated soils were reported by SEMCO to have been excavated and removed. Soil samples that we collected during the construction of MW-1 had detected no hydrocarbon contaminants in the soils directly below the former tank excavation (10½ feet deep) to a depth of 25½ feet. The present soil sampling analysis of soil from MW-2 at the depth of 30 feet also had no detectable hydrocarbon contamination.

Moderate to high plasticity clays overly ground water, first encountered over 30 feet below ground. The soil quality directly below the former waste oil tank and just downslope of the former tank have been evaluated by our soil sampling and chemical testing

program and we have identified no hydrocarbon contamination in the soils. All of the contaminated soils which have been discovered at the site have been removed.

B. Water Quality

Ground water below the site has been found to be contaminated with low levels of gasoline, diesel, oil and grease and (1,2-Dichloroethane). Our subsurface investigation has identified that the clayey soils which extend to a depth of 25 to 30 feet form a confining aquitard. The ground water is first noted at a depth of about 30 feet and rises during drilling, stabilizing, at a depth of about 25 feet.

Samples from MW-1 show similar contaminant fingerprints in both rounds of sampling, though contaminant levels were lower by about an order of magnitude. The trace levels of halogenated organics noted in the first sampling round were not detected in the second.

The contaminant fingerprint in MW-2 is generally similar to that of BTEX, which for MW-2 are two to three orders of magnitude greater in MW-2. The presence of 1, 2-DCA and the high levels of BTEX in MW-2 as compared to MW-1 are suggestive of gasoline. However, the gasoline may be a component of waste oil.

RECOMMENDATIONS

The two monitoring wells should be resampled in the second quarter of 1992, and the results evaluated. At that time a consistent test results in MW-1 may be considered grounds for well closure. Further sampling of MW-2 should be made.

LIMITATIONS

Our services have been performed in accordance with our agreed scope of work and with generally accepted engineering and environmental principles and practices within the area at the time of our investigation. No other warranty, either expressed or implied as to the professional advice provided is made. The analysis and conclusions contained in this report are based on the site conditions as they existed at the time of our reconnaissance, discussions with governmental agents, owners or others familiar with the site or vicinity, review of documents and aerial photographs. Changes in the information or the data gained from these sources or in the proposed land use could result in changes in our conclusions. If such changes do occur, we should be advised so that we can review our report in light of those changes.

TABLES

TABLE 1

SOIL SAMPLE ANALYTICAL RESULTS
PETROLEUM HYDROCARBONS
(reported in parts-per-million, ppm)

Chemical Constituent	MW-1 (October, 1991) Sample Depth in Feet 10-1/2	15-1/2	20-1/2	25-1/2	MW-2 (February, 1992) Depth in feet 1/30
Oil and Grease (5520 E)	ND	ND	ND	ND	ND
Hydrocarbons (5520 F)	ND	ND	ND	ND	ND
TPH Gasoline	ND	--	--	--	ND
Benzene	ND	--	--	--	ND
Toluene	ND	--	--	--	ND
Xylene	ND	--	--	--	ND
Ethylbenzene	ND	--	--	--	ND

Note:

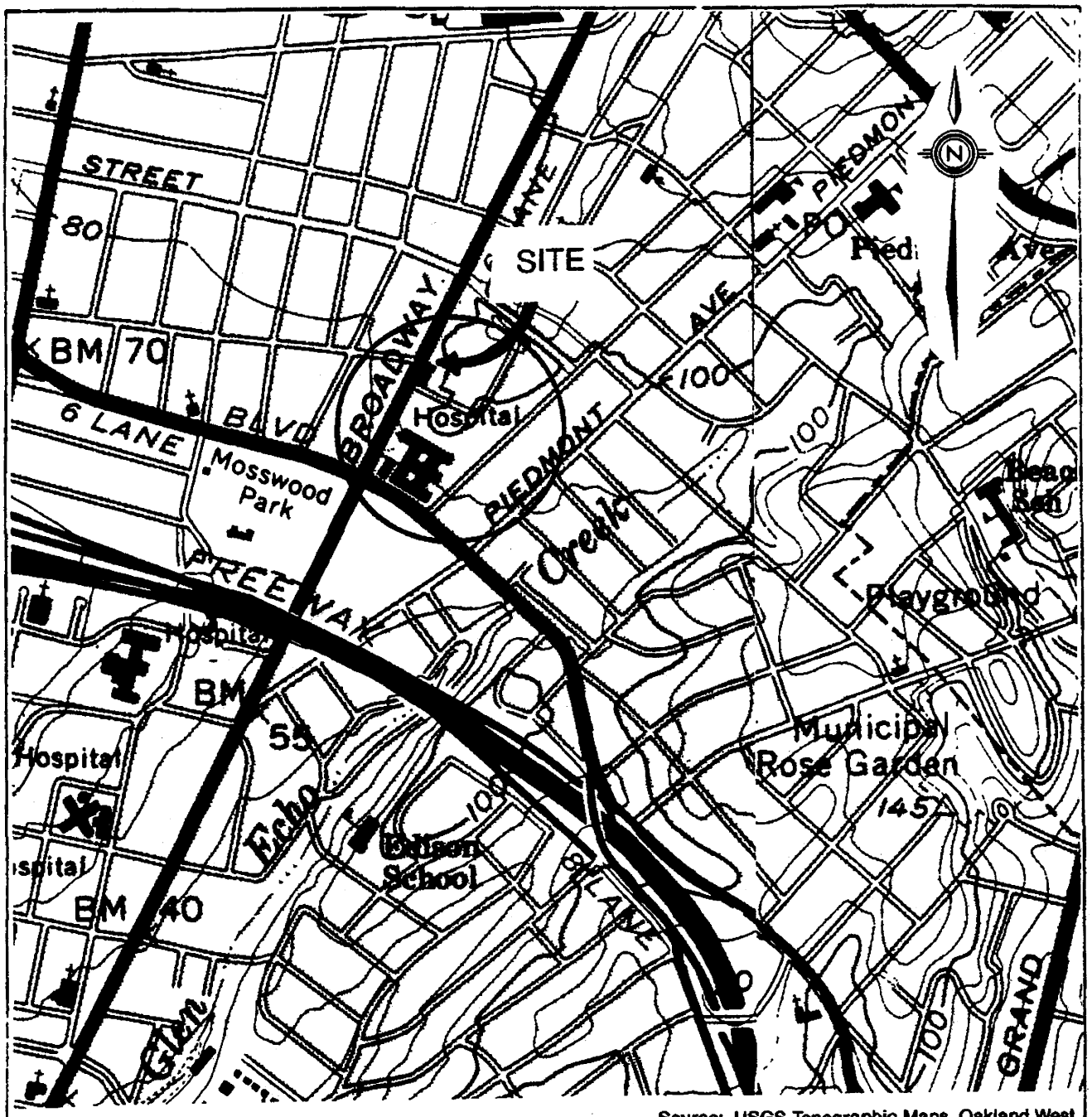
ND = Not Detected
-- = Not tested

TABLE 2

WATER SAMPLE ANALYTICAL RESULTS

Petroleum Hydrocarbons (ppm)	MW-1 (October, 1991)	MW-1 (February, 1992)	MW-2 (February, 1992)
Oil and Grease (ppm)	1.0	ND	1.0
Hydrocarbons (ppm)	ND	ND	0.9
Extractable hydrocarbons as oil (ppm)	0.4	- -	- -
TPH Gasoline (ppm)	0.3	0.08	4.0
TPH Diesel (ppm)	1.7	0.67	ND
Benzene (ppb)	4.1	0.7	470
Toluene (ppb)	ND	0.5	560
Xylene (ppb)	20	2	540
Ethylbenzene (ppb)	ND	ND	160
Halogenated Volatile Organics			
1,2-dichlorobenzene (ppb)	0.7	ND	ND
1,1-dichloroethane (ppb)	0.7	ND	ND
1,2-dichloroethane (ppb)	ND	ND	2
Methylene Chloride (ppb)	2.0	ND	ND
Semi-Volatile Organics (ppb)			
including PCB, PCP, PNA and creosote	ND	- -	- -
Metals			
Nickel - Total (ppm)	20	0.25	0.43
- Soluble (ppm)	- -	0.02	0.04
Zinc ppm	91	- -	- -

FIGURES



Source: USGS Topographic Maps, Oakland West and Oakland East sheets, 1980.

Approximate Scale in Feet

0 500 1000 2000

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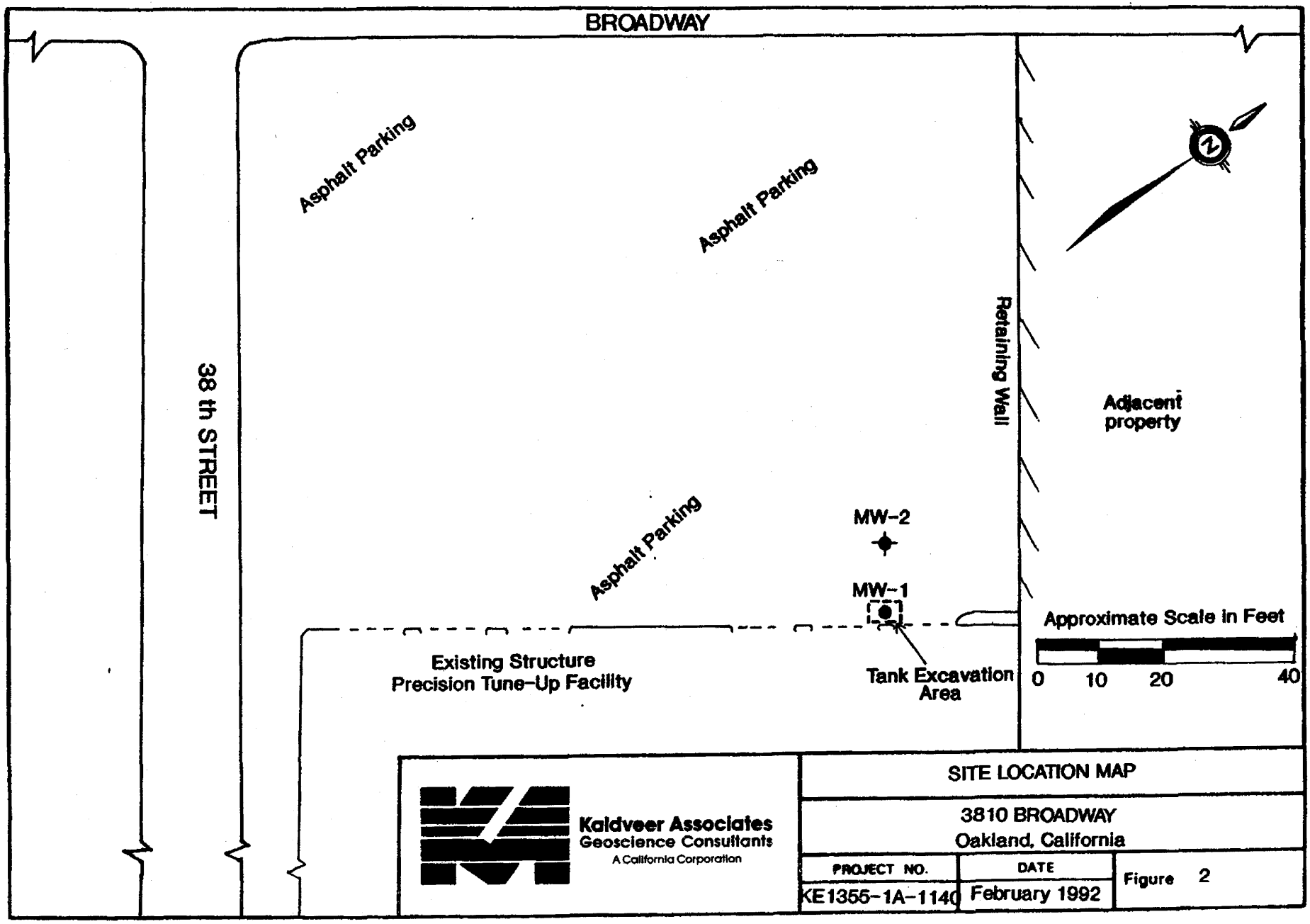
Geoscience Consultants
A California Corporation

SITE VICINITY MAP

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	
KE1355-1A-1140	February 1992	Figure 1



SITE LOCATION MAP

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	Figure 2
KE1355-1A-1140	February 1992	

APPENDIX A

BORING LOG AND WELL CONSTRUCTION DETAILS
WELL CONSTRUCTION PERMITS

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		grf	ltr	Description	Major Divisions		grf	ltr	Description
Coarse Grained Soils	Gravel And Gravely Soils		gw	Well-graded gravels or gravel sand mixtures, little or no fines	Fine Grained Soils	Silts And Clays LL < 50		ml	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			gp	Poorly-graded gravels or gravel sand mixture, little or no fines				cl	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			gm	Silty gravels, gravel-sand-silt mixtures				ol	Organic silts and organic silt-clays of low plasticity
			gc	Clayey gravels, gravel-sand-clay mixtures				mh	Inorganic silts, micaceous or diatomaceous fine or silty soils, elastic silts
	Sand And Sandy Soils		sw	Well-graded sands or gravelly sands, little or no fines		Silts And Clays LL > 50		ch	Inorganic clays of high plasticity, fat clays
			sp	Poorly-graded sands or gravelly sands, little or no fines				oh	Organic clays of medium to high plasticity
			sm	Silty sands, sand-silt mixtures				pt	Peat and other highly organic soils
			sc	Clayey sands, and-clay mixtures	Highly Organic Soils				

SYMBOLS

- Standard penetration split spoon sample
- Modified California (Porter) sample
- Shelby tube sample
- Water level observed in boring
- Stable Water level in monitoring well
- Blank casing
- Screened Casing
- Cement grout
- Bentonite
- Filter Pack

Visual Relative Moisture Content
Increasing Moisture Content

Dry
Damp
Moist
Wet
Saturated

Note(1): Penetration resistance values are recorded as the number of blows of a 140-pound hammer falling 30-inches required to drive a sampler through the last 12 inches of an 18-inch drive. Blow count for samples obtained using a Modified California sampler (indicated by an asterisk) should be multiplied by a factor of 0.8 to obtain equivalent standard penetration resistance values.

Note(2): The lines separating strata on the logs represent approximate boundaries only. No warranty is provided as to the continuity of soil strata between borings. Logs represent the soil section observed at the boring location on the date of drilling only.

Kaldveer Associates
Geoscience Consultants
A California Corporation

BORING LOG LEGEND

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	FIGURE NO
KE1355-1A-1140	February 1992	A-1

DRILL RIG	CME 55 HSA	SURFACE ELEVATION	98.18 FT	LOGGED BY	MJ
DEPTH TO GROUNDWATER	22.5 FEET	BORING DIAMETER	2-inch	DATE DRILLED	1/28/92

DESCRIPTION AND CLASSIFICATION: DESCRIPTION AND REMARKS	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
						Bentonite pellet plug	
Tan-red Silty clay turning tan-brown, slight smell							
		25	■	30	0		
						2/12 washed sand filter pack	
Same as above, grading sandy (fine-grained), red mottling, moist, black oxidation specks, no odor							
		30	■	22	5		
	▼					2-inch PVC, Schedule 40 slotted (0.010-inch) casing	
SAND (SM/SC), tan-brown, fine-grained, with clay and silt, wet							
		35	■	N.C.	0		

Bottom of Boring = 35 feet. Notes:
1. The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.
2. For an explanation of penetration resistance values marked with an asterisk (*), see first page Appendix A.
3. Ground water level was measured at 31 feet at time of drilling. After 24 hours, ground water level was measured at 22.5 feet.

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A California Corporation

EXPLORATORY BORING LOG

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	BORING NO
KE1355-1A-1140	February 1992	MW-2

DRILL RIG	CME 55 HSA	SURFACE ELEVATION	98.18 FT	LOGGED BY	MJ
DEPTH TO GROUNDWATER	22.5 FEET	BORING DIAMETER	2-inch	DATE DRILLED	1/28/92

DESCRIPTION AND CLASSIFICATION: DESCRIPTION AND REMARKS	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
3" Asphalt 3" GRAVEL (GW), gray, sandy, fill material						Well Construction Details	
CLAY (CL), tan-red, damp, very stiff, silty, with some sand (fine-grained), light gray silt mottling, moderate to high plasticity, no odor						Cement grout surface seal with steel, traffic rated cover	
		5		18	0		
						2-inch PVC, Schedule 40 solid casing	
Same as above, with black rootlets, red flecks, very stiff							
		10		26	0		
Silty Clay turning gray with tan-red mottling, black oxidation flecks							
		15		26	0		
Same as above, becoming moist, with sand (fine-grained)							
				20	0		

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EXPLORATORY BORING LOG

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	BORING NO	MW-2
KE1355-1A-1140	February 1992		

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE ♦ PLEASANTON, CALIFORNIA 94588 ♦ (510) 484-2600

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 3810 Broadway
Oakland

CLIENT
Name Friedkin-Becker
Address 300 Grand Ave Phone
City Oakland Zip 94610

APPLICANT
Name Marcela Jimenez
Kaldveer Associates
Address 425 Roland Way Phone 568-4001
City Oakland Zip 94621

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	X	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other X
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. 582696

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 35 ft.
Surface Seal Depth 20 ft. Number 1

GEOTECHNICAL PROJECTS
Number of Borings ___ Maximum
Hole Diameter ___ in. Depth ___ ft.

ESTIMATED STARTING DATE 1-13-92
ESTIMATED COMPLETION DATE 1-13-92

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] Date 1/8/92

FOR OFFICE USE

PERMIT NUMBER 92014
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved [signature] Wyman Hong Date 9 Jan 92

51991

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

APPENDIX B

MONITORING WELL DEVELOPMENT AND SAMPLING LOG

WATER SAMPLE LOG

Project Name: 3810 Broadway Date: 1/30/92
Project Number: KE1355-1A-1140 Sampler: MJ/JAF
Well Number: MW-1 Weather:
Well Location:

Well Construction:

Date Completed: 10/17/91
Total Depth of Well: 35 Feet
Diameter: 2 Inch
Well Elevation & Reference: 98.94 Feet
Based on arbitrary datum of 100.00 feet.

Groundwater Levels:

Initial: 23.48 Feet
Final: 25.14 Feet
Reference Point: Top of PVC casing
Well Volume of Water: 1.96 Gallons

Sampling Equipment & Cleaning

Sampler Type: Teflon Bailer
Method of Cleaning: Liquinox Rinse
Pump or Bailer Type: Well Wizard
Method of Cleaning: Liquinox Rinse
pH Meter: Orion
Conductivity Meter: Orion
Comments:

SAMPLING MEASUREMENTS

Time	Discharge (gal.) Per Time Period	Discharge (gal.) Cumulative	pH	Temp (°C)	Spec. Conductance (umhos/cm) Field	Spec. Conductance (umhos/cm) @ 25°C	Color/ Turbidity	Odor
13:35	Began Pumping							
13:45		5	7.19	18.4		2.28	Tan Brown/ Silty-High	None
13:57		8	7.13	18.6		2.31	Tan Brown/ Silty-Mod.	"
14:09		15	7.47	18.3		2.26	"	"
14:36		25	6.98	18.3		2.23	Cloudy/Mod.	"
15:05		30	7.49	18.3		2.17	"	"
15:35	Sampled	40	7.06	18.1		2.27	"	"

Total Discharge: 40 Gallons
Casing Volumes Removed: 20.4 Volumes
Method of Disposal: To ground.

Comments: Sm amount of white foam appears when pumped out & then disapates.

Kaldveer Associates
Geoscience Consultants
A California Corporation

WATER SAMPLE LOG

3810 BROADWAY
Oakland, California

PROJECT NO	DATE	Figure
KE1355-1A-1140	February 1992	MW-1

WATER SAMPLE LOG

Project Name: 3810 Broadway Date: 1/30/92
Project Number: KE1355-1A-1140 Sampler: MJ/JAF
Well Number: MW-2 Weather:
Well Location:

Well Construction:

Date Completed: 1/28/92
Total Depth of Well: 35 Feet
Diameter: 2 Inch
Well Elevation & Reference: 98.18 Feet
Based on arbitrary datum of 100.00 feet.

Groundwater Levels:

Initial: 22.78 Feet
Final: 24.51 Feet
Reference Point: Top of PVC casing
Well Volume of Water: 2.08 Gallons

Sampling Equipment & Cleaning

Sampler Type: Teflon Bailer
Method of Cleaning: Liquinox Rinse
Pump or Bailer Type: Well Wizard
Method of Cleaning: Liquinox Rinse
pH Meter: Orion
Conductivity Meter: Orion
Comments:

SAMPLING MEASUREMENTS

Time	Discharge (gal.) Per Time Period	Discharge (gal.) Cumulative	pH	Temp (°C)	Spec. Conductance (umhos/cm) Field	Spec. Conductance (umhos/cm) @ 25°C	Color/ Turbidity	Odor
10:14	Begin Pumping	0						
10:17		2	7.08	18.0		2.83	Tan Brown/Very Silty-High	None
10:30		8	7.47	18.6		2.90	Tan Brn/Silty-Mod-High	"
10:40		11	7.33	18.6		2.89	Tan/Silty Mod.	"
10:55		17	7.28	18.5		2.96	Tan/Mod. Silty	"
11:05		20	7.45	17.8		2.82	"	"
11:15		25	7.31	17.8		2.79	"	"
11:25		28	7.26	17.6		2.82	"	"
11:39		31	7.24	18.2		2.82	Tan/Cloudy/Mod	"
11:46		35	7.14	18.2		2.79	Cloudy/Sl. Mod	"

Total Discharge: 46 Gallons
Casing Volumes Removed: 22.1 Volumes
Method of Disposal: To ground.

Comments: Fine silt & sand in H_2O.

Kaldveer Associates
Geoscience Consultants
A California Corporation

WATER SAMPLE LOG

3810 BROADWAY
Oakland, California

PROJECT NO.	DATE	Figure
KE1355-1A-1140	February 1992	MW-2

WATER SAMPLE LOG

Project Name: 3810 Broadway Date: 1/30/92
Project Number: KE1355-1A-1140 Sampler: MJ/JAF
Well Number: MW-2 Weather:
Well Location:

Well Construction:

Date Completed: 1/28/92
Total Depth of Well: 35 Feet
Diameter: 2 inch
Well Elevation & Reference: 98.18 Feet
Based on arbitrary datum of 100.00 feet.

Groundwater Levels:

Initial: 22.78 Feet
Final: 24.51 Feet
Reference Point: Top of PVC casing
Well Volume of Water: 2.08 gallons

Sampling Equipment & Cleaning

Sampler Type: Teflon Bailer
Method of Cleaning: Liquinox Rinse
Pump or Bailer Type: Well Wizard
Method of Cleaning: Liquinox Rinse
pH Meter: Orion
Conductivity Meter: Orion
Comments:

SAMPLING MEASUREMENTS

Time	Discharge (gal.) Per Time Period	Discharge (gal.) Cumulative	pH	Temp (°C)	Spec. Conductance (umhos/cm) Field	Spec. Conductance (umhos/cm) @ 25°C	Color/ Turbidity	Odor
11:57		40	7.01	18.5		2.81	Tan/Slight	None
12:08		44	7.03	18.6		2.80	Cloudy/Slight	"
12:10	Sampled	46						

Total Discharge: 46 Gallons
Casing Volumes Removed: 22.1 Volumes
Method of Disposal: To ground.

Comments:

Kaldveer Associates
Geoscience Consultants
A California Corporation

WATER SAMPLE LOG

3810 BROADWAY
Oakland, California

PROJECT NO	DATE	Figure
KE1355-1A-1140	February 1992	MW-2

APPENDIX C

CHAIN OF CUSTODY RECORD
LABORATORY ANALYTICAL RESULTS

QuanteQ Laboratories

An Ecologics Company

Certificate of Analysis

DOHS CERTIFICATION NO. E772

AIHA ACCREDITATION NO 332

KALDVEER ASSOCIATES, INC.
425 ROLAND WAY
OAKLAND, CA 94621

ATTN: MARCELLA JIMENEZ

CLIENT PROJ. ID: KE1355-1A-1149

REPORT DATE: 02/07/92

DATE SAMPLED: 01/28/92

DATE RECEIVED: 01/28/92

QUANTEQ JOB NO: 9201210

ANALYSIS OF: SOIL SAMPLE

Sample Identification Client Id.	Lab No.	Oil & Grease (mg/kg)	Hydrocarbons (mg/kg)
MW2 @ 30	01A	ND	ND
Detection Limit		10	10
Method:		5520E	5520F

Instrument: IR

Date Extracted: 01/30/92
Date Analyzed: 01/31/92

ND = Not Detected

Andrew Bradeen, Manager
Organic Laboratory

Results FAXed 02/06/92

RECEIVED
FEB 10 1992
KALDVEER ASSOC

3440 Vincent Road • Pleasant Hill, CA 94523 • (510) 930-9090 • FAX (510) 930-0256

KALDVEER ASSOCIATES, INC.

CLIENT ID: MW2 @ 30
CLIENT PROJ. ID: KE1355-1A-1149
DATE SAMPLED: 01/28/92
DATE RECEIVED: 01/28/92
REPORT DATE: 02/07/92

QUANTEQ LAB NO: 9201210-01A
QUANTEQ JOB NO: 9201210
DATE ANALYZED: 01/31/92
INSTRUMENT: H

BTEX AND HYDROCARBONS (SOIL MATRIX)

METHOD: EPA 8020, 5030 GCFID

	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Benzene	71-43-2	ND	1
Toluene	108-88-3	ND	1
Ethylbenzene	100-41-4	ND	1
Xylenes, Total	1330-20-7	ND	3

PURGEABLE HYDROCARBONS AS:

Gasoline	ND mg/kg	0.2 mg/kg

ND = Not Detected

Quanteq Laboratories
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QUALITY CONTROL DATA

DATE EXTRACTED: 01/30/92
DATE ANALYZED: 01/31/92
CLIENT PROJ. ID: KE1355-1A-1149

QUANTEQ JOB NO: 9201210
SAMPLE SPIKED: 9201210-01A
INSTRUMENT: IR

IR DETERMINATION FOR OIL & GREASE/HYDROCARBONS
METHOD SPIKE RECOVERY SUMMARY
(SOIL MATRIX)

ANALYTE	MS Conc. (mg/kg)	Sample Result (mg/kg)	MS Result (mg/kg)	MSD Result (mg/kg)	Average Percent Recovery	RPD
Oil	218	ND	218	218	100.0	0.0

CURRENT QC LIMITS (Revised 01/09/92)

Analyte	Percent Recovery	RPD
Oil	(84-113)	8.1

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

Quanteq Laboratories
An Ecologics Company

QUALITY CONTROL DATA

DATE ANALYZED: 01/31/92
SAMPLE SPIKED: 9201210-01A
CLIENT PROJ. ID: KE1355-1A-1149

QUANTEQ JOB NO: 9201210

INSTRUMENT: H

MATRIX SPIKE RECOVERY SUMMARY
METHOD 5030 w/GCFID/8020
(SOIL MATRIX)

ANALYTE	Spike Conc. (ug/kg)	Sample Result (ug/kg)	MS Result (ug/kg)	MSD Result (ug/kg)	Average Percent Recovery	RPD
Benzene	25.1	ND	25.5	27.0	104.6	5.7
Toluene	104	ND	105	109	102.9	3.7
Hydrocarbons as Gasoline	1040	ND	986	1040	97.4	5.3

CURRENT QC LIMITS (Revised 08/15/91)

Analyte	Percent Recovery	RPD
Benzene	(80.8-125.2)	9.6
Toluene	(82.7-119.1)	10.2
Gasoline	(54.0-120.1)	14.8

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

R-5, 5-C

Page ____ of ____

Lab Job # 9201210

CHAIN-OF-CUSTODY RECORD

Project Number: KE1355-1A-1149

Project Name: 3810 Broadway

Location: Oakland

Sampler's Name (printed): M. Jiménez

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container	Analytical Tests: Method 8015 - TPH as Gasoline + BTEX	Method 8015 - TPH as Diesel	Method 8240 - Volatile Organics	Method 8270 - Semi-Volatile Organics	Method 8010 - Halogenated Volatile Organics	Method 8080 - Organochlorine Pesticides & PCB's	Waste Oil - O/C + GREASE	Metals - 5520 C + F					Remarks
MW-1-3C	01A	1/28	X		2X6 BRASS	X	X					X						

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	1/28/92 4:45	Kim Flores	1/28/92 4:45
Kim Flores	1/28/92 5:25		
	1-28-92 1725	Received for Laboratory by: (Signature) Gina Gillespie	

Ship To: MLD-TOX

Attention:

Phone No:

Requested Turnaround Time: NORMAL

Remarks:

Kaldveer Assoc. Contact: M. Jiménez, Randy Rickey

Please address correspondence and return cooler # ____ to:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation

Quanteq Laboratories

An Ecologics Company

FEB 19 1992
FORMERLY MED-TOX

Certificate of Analysis

DOHS CERTIFICATION NO. E772

AIHA ACCREDITATION NO. 332

KALDVEER ASSOCIATES, INC.
425 ROLAND WAY
OAKLAND, CA 94621

ATTN: RANDY ROWLEY

CLIENT PROJ. ID: KEI355-1A-1140

REPORT DATE: 02/12/92

DATE SAMPLED: 01/30/92

DATE RECEIVED: 01/30/92

QUANTEQ JOB NO: 9201233

ANALYSIS OF: WATER SAMPLES

Sample Identification Client Id.	Lab No.	Extractable Hydrocarbons as Diesel (mg/L)	Oil & Grease (mg/L)	Hydrocarbons (mg/L)	Total Nickel (mg/L)	Dissolved Nickel (mg/L)
MW-1	01D	0.67	---	---	---	---
MW-1	01I	---	ND	ND	---	---
MW-1	01K	---	---	---	0.25	---
MW-1 *	01L	---	---	---	---	0.02
MW-2	02D	ND	---	---	---	---
MW-2	02I	---	1	0.9	---	---
MW-2	02K	---	---	---	0.43	---
MW-2 *	02L	---	---	---	---	0.04
Detection Limit		0.05	0.5	0.5	0.01	0.01
Method:		3510 GCFID	5520C	5520F	6010	6010
Instrument:		C	IR	IR	ICP	ICP
Date Extracted:		01/31/92	02/04/92	02/04/92	---	---
Date Analyzed:		02/03/92	02/05/92	02/05/92	02/07/92	02/07/92

ND = Not Detected

* Samples were filtered through a 0.45 um filter and preserved with HNO_3 on 01/30/92.

Andrew Bradeen, Manager
Organic Laboratory

Sherri Moore, Manager
Inorganic Laboratory

Results FAXed 02/10/92

3440 Vincent Road • Pleasant Hill, CA 94523 • (510) 930-9090 • FAX (510) 930-0256

KALDVEER ASSOCIATES, INC.

CLIENT ID: MW-1
CLIENT PROJ. ID: KE1355-1A-1140
DATE SAMPLED: 01/30/92
DATE RECEIVED: 01/30/92
REPORT DATE: 02/12/92

QUANTEQ LAB NO: 9201233-01F
QUANTEQ JOB NO: 9201233
DATE ANALYZED: 02/04/92
INSTRUMENT: G

EPA METHOD 8010 (WATER MATRIX)
HALOGENATED VOLATILE ORGANICS

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Bromodichloromethane	75-27-4	ND	0.5
Bromoform	75-25-2	ND	0.5
Bromomethane	74-83-9	ND	0.5
Carbon Tetrachloride	56-23-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.5
Chloroethane	75-00-3	ND	0.5
2-Chloroethyl Vinyl Ether	110-75-8	ND	0.5
Chloroform	67-66-3	ND	0.5
Chloromethane	74-87-3	ND	0.5
Dibromochloromethane	124-48-1	ND	0.5
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-1	ND	0.5
1,4-Dichlorobenzene	106-46-7	ND	0.5
Dichlorodifluoromethane	75-71-8	ND	0.5
1,1-Dichloroethane	75-34-3	ND	0.5
1,2-Dichloroethane	107-06-2	ND	0.5
1,1-Dichloroethene	75-35-4	ND	0.5
cis-1,2-Dichloroethene	156-69-4	ND	0.5
trans-1,2-Dichloroethene	156-60-5	ND	0.5
1,2-Dichloropropane	78-87-5	ND	0.5
cis-1,3-Dichloropropene	10061-01-5	ND	0.5
trans-1,3-Dichloropropene	10061-02-6	ND	0.5
Methylene Chloride	75-09-2	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Tetrachloroethene	127-18-4	ND	0.5
1,1,1-Trichloroethane	71-55-6	ND	0.5
1,1,2-Trichloroethane	79-00-5	ND	0.5
Trichloroethene	79-01-6	ND	0.5
Trichlorofluoromethane	75-69-4	ND	0.5
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	0.5
Vinyl Chloride	75-01-4	ND	0.5

ND = Not Detected

KALDVEER ASSOCIATES, INC.

CLIENT ID: MW-2
CLIENT PROJ. ID: KE1355-1A-1140
DATE SAMPLED: 01/30/92
DATE RECEIVED: 01/30/92
REPORT DATE: 02/12/92

QUANTEQ LAB NO: 9201233-02F
QUANTEQ JOB NO: 9201233
DATE ANALYZED: 02/04/92
INSTRUMENT: G

EPA METHOD 8010 (WATER MATRIX)
HALOGENATED VOLATILE ORGANICS

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Bromodichloromethane	75-27-4	ND	0.5
Bromoform	75-25-2	ND	0.5
Bromomethane	74-83-9	ND	0.5
Carbon Tetrachloride	56-23-5	ND	0.5
Chlorobenzene	108-90-7	ND	0.5
Chloroethane	75-00-3	ND	0.5
2-Chloroethyl Vinyl Ether	110-75-8	ND	0.5
Chloroform	67-66-3	ND	0.5
Chloromethane	74-87-3	ND	0.5
Dibromochloromethane	124-48-1	ND	0.5
1,2-Dichlorobenzene	95-50-1	ND	0.5
1,3-Dichlorobenzene	541-73-1	ND	0.5
1,4-Dichlorobenzene	106-46-7	ND	0.5
Dichlorodifluoromethane	75-71-8	ND	0.5
1,1-Dichloroethane	75-34-3	ND	0.5
1,2-Dichloroethane	**107-06-2**	**2**	**0.5**
1,1-Dichloroethene	75-35-4	ND	0.5
cis-1,2-Dichloroethene	156-69-4	ND	0.5
trans-1,2-Dichloroethene	156-60-5	ND	0.5
1,2-Dichloropropane	78-87-5	ND	0.5
cis-1,3-Dichloropropene	10061-01-5	ND	0.5
trans-1,3-Dichloropropene	10061-02-6	ND	0.5
Methylene Chloride	75-09-2	ND	0.5
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5
Tetrachloroethene	127-18-4	ND	0.5
1,1,1-Trichloroethane	71-55-6	ND	0.5
1,1,2-Trichloroethane	79-00-5	ND	0.5
Trichloroethene	79-01-6	ND	0.5
Trichlorofluoromethane	75-69-4	ND	0.5
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ND	0.5
Vinyl Chloride	75-01-4	ND	0.5

ND = Not Detected

KALDVEER ASSOCIATES, INC.

CLIENT ID MW-1
CLIENT PROJ. ID KE1355-1A-1140
DATE SAMPLED: 01/30/92
DATE RECEIVED: 01/30/92
REPORT DATE: 02/12/92

QUANTEQ LAB NO: 9201233-01A
QUANTEQ JOB NO: 9201233
DATE ANALYZED: 02/07/92
INSTRUMENT: F

BTEX AND HYDROCARBONS (WATER MATRIX)

METHOD: EPA 8020, 5030 GCFID

	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Benzene	71-43-2	0.7	0.3
Toluene	108-88-2	0.5	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes, Total	1330-20-7	2	1
PURGEABLE HYDROCARBONS AS:			
Gasoline		0.08 mg/L	0.05 mg/L

ND = Not Detected

KALDVEER ASSOCIATES, INC.

CLIENT ID MW-2
CLIENT PROJ. ID KE1355-1A-1140
DATE SAMPLED: 01/30/92
DATE RECEIVED: 01/30/92
REPORT DATE: 02/12/92

QUANTEQ LAB NO: 9201233-02A
QUANTEQ JOB NO: 9201233
DATE ANALYZED: 02/07-10/92
INSTRUMENT: F

BTEX AND HYDROCARBONS (WATER MATRIX)

METHOD: EPA 8020, 5030 GCFID

	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Benzene	71-43-2	470	0.3
Toluene	108-88-2	560	0.3
Ethylbenzene	100-41-4	160	0.3
Xylenes, Total	1330-20-7	540	1
PURGEABLE HYDROCARBONS AS:			
Gasoline		4.0 mg/L	0.05 mg/L

ND = Not Detected

QUALITY CONTROL DATA

DATE EXTRACTED: 02/04/92
DATE ANALYZED: 02/05/92
CLIENT PROJ. ID: KE1355-1A-1140

QUANTEQ JOB NO: 9201233
SAMPLE SPIKED: D.I. WATER
INSTRUMENT: IR

IR DETERMINATION FOR OIL & GREASE/HYDROCARBONS
METHOD SPIKE RECOVERY SUMMARY
(WATER MATRIX)

ANALYTE	MS Conc. (mg/L)	Sample Result (mg/L)	MS Result (mg/L)	MSD Result (mg/L)	Average Percent Recovery	RPD
Oil	6.49	ND	6.04	6.19	94.2	2.5

CURRENT QC LIMITS (Revised 01/09/92)

Analyte	Percent Recovery	RPD
Oil	(87-112)	5.4

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

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QUALITY CONTROL DATA

DATE EXTRACTED: 01/29/92
DATE ANALYZED: 01/30/92
CLIENT PROJ. ID: KE1355-1A-1140

QUANTEQ JOB NO: 9201233
SAMPLE SPIKED: D.I. WATER
INSTRUMENT: C

METHOD SPIKE RECOVERY SUMMARY
TPH EXTRACTABLE WATERS
METHOD 3510 GCFID
(WATER MATRIX; EXTRACTION METHOD)

ANALYTE	Spike Conc. (mg/L)	Sample Result (mg/L)	MS Result (mg/L)	MSD Result (mg/L)	Average Percent Recovery	RPD
Diesel	2.52	ND	1.44	1.52	58.7	5.4

CURRENT QC LIMITS (Revised 08/15/91)

Analyte	Percent Recovery	RPD
Diesel	(49.3-101.4)	29.0

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

QUALITY CONTROL DATA

DATE ANALYZED: 02/07/92
SAMPLE SPIKED: 9201233-01A
CLIENT PROJ. ID: KE1355-1A-1140

QUANTEQ JOB NO: 9201233

INSTRUMENT: F

MATRIX SPIKE RECOVERY SUMMARY
METHOD 5030 w/GCFID/8020
(WATER MATRIX)

ANALYTE	Spike Conc. (ug/L)	Sample Result (ug/L)	MS Result (ug/L)	MSD Result (ug/L)	Average Percent Recovery	RPD
Benzene	13.6	0.7	14.4	14.5	101.0	0.7
Toluene	56.1	0.5	56.0	57.1	99.9	1.9
Hydrocarbons as Gasoline	519	80.0	516	549	87.2	6.2

CURRENT QC LIMITS (Revised 08/15/91)

Analyte	Percent Recovery	RPD
Benzene	(77.7-118.0)	10.3
Toluene	(80.7-116.2)	10.1
Gasoline	(72.5-110.7)	13.6

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

QUALITY CONTROL DATA

INSTRUMEMT: G

QUANTEQ JOB NO: 9201233

CLIENT PROJ. ID: KE1355-1A-1140

SURROGATE STANDARD RECOVERY SUMMARY

METHOD 8010/8020
(WATER MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)		
Date Analyzed	Client Id.	Lab No.	Bromochloro-methane	1-Bromo-2-chloro-propane	1-Chloro-2-fluoro-benzene
02/04/92	MW-1	01F	99.6	106.7	96.8
02/04/92	MW-2	02F	101.2	126.1	90.6

CURRENT QC LIMITS (Revised 01/06/92)

ANALYTE	PERCENT RECOVERY
Bromochloromethane	(70-127)
1-Bromo-2-chloropropane	(71-128)
1-Chloro-2-fluorobenzene	(76-124)

QUALITY CONTROL DATA

DATE ANALYZED: 02/04/92
INSTRUMENT: G
CLIENT PROJ. ID: KE1355-1A-1140

QUANTEQ JOB NO: 9201233
SAMPLE SPIKED: D.I. WATER

METHOD SPIKE RECOVERY SUMMARY

METHOD 8010/8020
WATER

ANALYTE	Spike Conc. (ug/L)	Sample Result (ug/L)	MS Result (ug/L)	MSD Result (ug/L)	Average Percent Recovery	RPD
1,1-Dichloroethene	50.0	ND	39.9	40.1	80.0	0.5
Trichloroethene	50.0	ND	47.0	47.4	94.4	0.8
Benzene	50.0	ND	50.1	51.0	101.1	1.8
Toluene	50.0	ND	50.2	51.3	101.5	2.2
Chlorobenzene	50.0	ND	42.6	42.5	85.1	0.2

CURRENT QC LIMITS (Revised 01/06/92)

Analyte	Percent Recovery	RPD
1,1-Dichloroethene	(58-116)	8.2
Trichloroethene	(76-130)	5.0
Benzene	(84-114)	5.0
Toluene	(81-114)	5.0
Chlorobenzene	(64-116)	5.0

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

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QUALITY CONTROL DATA

MATRIX: WATER

QUANTEQ JOB NO: 9201233

CLIENT PROJ. ID: KE1355-1A-1140

SAMPLE SPIKED: 9202010-01E

MATRIX SPIKE RECOVERY SUMMARY

COMPOUND	INST./ METHOD	SAMPLE RESULT	SPIKE ADDED	OBSERVED RECOVERIES (mg/L) MS	MSD	% REC.	RPD	QC CONTROL LIMITS REC. % LIMIT	RPD LIMIT
Ni, Nickel	ICP/6010	0.013	0.50	0.489	0.496	95.8	1.51	74.6-108.7	5.0

Page ____ of ____

Lab Job # 9201233

R4, S-E
R-3, S-3

CHAIN-OF-CUSTODY RECORD

Project Number: KE1355-1A-1140

Project Name: 3810 BROADWAY

Location: OAKLAND

Sampler's Name (printed): M JIMENEZ, J FIELLER

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container	Analytical Tests: BTEX	Method 8015 - TPH as Gasoline	Method 8015 - TPH as Diesel	Method 8240 - Volatile Organics	Method 8270 - Semi-Volatile Organics	Method 8010 - Halogenated Volatile Organics	Method 8080 - Organochlorine Pesticides & PCB's	Waste Oil - 5520E + F	Metals - 6010 NICKEL TOTAL + SOLUBLE					Remarks
MW-1	01A-C			X	3 VOAS	X													
	DE			X	2 LAMBER		X												
	F-H			X	3 VOAS					X									
	IJ			X	2 LAMBER							X							
	KL			X	1 PLASTIC								X						
MW-2	01A-C			X	3 VOAS	X													
	DE			X	2 LAMBER		X												
	F-H			X	3 VOAS					X									
	IJ			X	2 LAMBER							X							
	KL			X	1 PLASTIC								X						

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
M Jimenez	1/30/92 5:00	Kim Flores	1/30/92 5:00
Kim Flores	1/30/92 5:45		

Received for Laboratory by: (Signature) Anna Gillespie

Ship To: ____

Attention: ____

Phone No: ____

Requested Turnaround Time: ____

Remarks:

Kaldveer Assoc. Contact: Marcia Jimenez, Randy Rowley

Please address correspondence and return cooler # ____ to:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation

SUPPLEMENTAL SITE INVESTIGATION

3810 BROADWAY
OAKLAND, CALIFORNIA
JANUARY 11, 1996

JAN 12 1996

Prepared for:
Gerald Friedkin
Friedkin-Becker
300 Grand Avenue
Oakland, California 94610

Prepared by:
McLaren/Hart Environmental Engineering
1135 Atlantic Avenue
Alameda, California 94501

Project No: 04.0601879.001

McLaren Hart®
ENVIRONMENTAL ENGINEERING CORPORATION

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1.0 INTRODUCTION

This report presents the findings of a supplemental investigation at the site ("Site") located at 3810 Broadway in Oakland, California (Figure 1). The data presented herein was collected in accordance with: 1) McLaren/Hart's August 16, 1995 "Workplan for Supplemental Site Investigation" (Workplan); 2) Workplan acceptance letter from the Alameda County Department of Environmental Health (ACDEH) dated September 14, 1995; and 3) the meeting between ACDEH and McLaren/Hart on October 12, 1995 regarding proposed monitoring well locations.

1.1 Purpose of Investigation

The purpose of the soil and ground water sampling and analysis was to verify ground water flow direction and to further define the potential extent of petroleum hydrocarbons in soil and ground water on-site.

1.2 Report Organization

This report is organized in the following format: Section 2 presents Site background information; Section 3 includes the Scope of Work performed during this investigation; Section 4 presents a detailed discussion of data collection methodology during this investigation; Section 5 identifies results of the subsurface investigation, including lithology, potentiometric surface elevation, and soil and ground water analytical results; and Section 6 presents investigation conclusions.

2.0 BACKGROUND

Site background information including Site history, adjacent Site description, regional geology and a discussion of previous investigation results is presented in this section.

2.1 Site History

The Site was owned by Texaco from 1963 to 1985. Throughout this time period, the Site was leased to various parties who utilized the facility as a retail gasoline station. Texaco sold the Site in 1985 to buyers unknown to McLaren/Hart. Mr. Gerald Friedkin, current owner of the Site, purchased the Site from the Estate of Melvin Finn in 1987.

A total of five underground storage tanks (USTs) were installed in 1963 including four 6,000-gallon USTs, and one 550-gallon UST for waste oil storage (Figure 2). It is assumed that the four larger UST's were utilized for storage of gasoline as part of the Site retail operations. These four 6,000-gallon UST's were removed from the Site in February 1980. The 550-gallon waste oil tank was removed in May 1991. Results of the soil and ground water sampling conducted at the Site by other consultants following the waste oil UST removal are discussed in greater detail in Section 2.4.

2.2 Site Vicinity

The Site is located in the northwestern section of the City of Oakland, within Alameda County, California (Figure 1). The surrounding area consists primarily of residential and light commercial/retail properties. A portion of the Kaiser-Permanente Hospital Complex is located at the top of a hill that borders the Site on the east. The Site is bordered to the north by residential apartments and Broadway and 38th Street to the west and south, respectively. Across Broadway are small retail shops and a retail tire center, while across 38th Street is the main portion of the Kaiser-Permanente Hospital Complex.

2.3 Regional Geology

The City of Oakland is located along the eastern margin of the San Francisco Bay and is within the East Bay Plain. The East Bay Plain lies within the Coast Range Geomorphic Province and is characterized by broad alluvial fan margins sloping westward towards the San Francisco Bay. The eastern side of the plain in the Oakland area is marked by the active Hayward Fault, which runs along the base of the Diablo Range escarpment.

Geologically, the Site consists primarily of artificial fill overlying unconsolidated alluvium. The alluvium generally contains fine grained sediments such as sandy silts and clays, interbedded with more transmissive well-sorted sands and silty sands. The slope of the pre-development surface was generally to the southwest. The hills bordering the Site to the east are upheld by the Franciscan Complex Cretaceous and Jurassic sandstone, shale, chert and conglomerate.

2.4 Previous Investigations

During removal of the 550-gallon waste-oil tank on May 17, 1991, soils containing hydrocarbons were detected and subsequently excavated and removed. Analysis of soil samples collected by Semco, the tank removal subcontractor, indicated that concentrations of total petroleum hydrocarbons as diesel (TPH/D) were present in a sidewall soil sample at 66 parts per million (ppm); concentrations of Oil and Grease (O&G) were also recorded in sidewall soil samples at a maximum concentration of 630 ppm. Additional compounds detected in the sidewall soil samples included: benzene (3 parts per billion (ppb)), xylenes (13 ppb), 1,2-dichlorobenzene (8 ppb), and methylene chloride (39 ppb). Concentrations of total petroleum hydrocarbons as gasoline (TPH/G) were not present in the sidewall soil samples above the laboratory detection limit of 1 ppm. According to Kaldveer Associates, the impacted soil was excavated and disposed of off-site.

Following receipt and review of sidewall soil sample analytical results, the ACDEH requested that one ground water monitoring well be installed in the immediate vicinity of the former waste oil tank excavation. Soil samples collected by Kaldveer Associates during the installation of well MW-1 at

10.5, 15.5, 20.5 and 25.5 feet below grade were analyzed for the presence of O&G, total recoverable petroleum hydrocarbons (TRPH), TPH/G, and benzene, toluene, ethylbenzene and xylenes (BTEX). These analytes were not present above the respective reporting limits in the samples collected from MW-1.

Ground water samples were also collected from MW-1 and analyzed for O&G, TRPH, TPH/D, total petroleum hydrocarbons as oil (TPH/O), TPH/G, BTEX, volatile organic compounds (VOCs), semi-volatile organic compounds (semi-VOCs), polychlorinated biphenyls (PCBs), pentachlorophenol (PCP), polynuclear aromatics (PNAs), creosote, and the metals cadmium, chromium, lead, nickel and zinc. Results indicated the presence of O&G (1 ppm), TPH/O (0.4 ppm), TPH/G (0.3 ppm), TPH/D (1.7 ppm), benzene (4.1 ppb), xylenes (20 ppb), 1,2-dichlorobenzene (0.7 ppb), 1,2-dichloroethane (0.7 ppb), methylene chloride (2 ppb), and low concentrations of the metals nickel and zinc.

The ACDEH required that an additional monitoring well be constructed to better define the lateral extent of contaminants in soil and ground water. Monitoring well MW-2 was installed by Kaldveer Associates in February 1992, and soil and ground water samples were collected. Only one soil sample, collected at 30 feet below grade (immediately above first encountered ground water), was submitted for analysis of O&G, TRPH, TPH/G, and BTEX. These analytes were not present above their respective reporting limits.

Ground water samples collected from wells MW-1 and newly installed well MW-2 were analyzed in February 1992 for O&G, TRPH, TPH/D, TPH/G, BTEX, VOCs, and soluble and total nickel. Analysis of ground water samples from well MW-1 indicated the presence of TPH/G (0.08 ppm), TPH/D (0.67 ppm), benzene (0.7 ppb), toluene (0.5 ppb), and xylenes (2 ppb). Ground water samples from well MW-2 contained O&G (1.0 ppm), TRPH (0.9 ppm), TPH/G (4.0 ppm), benzene (470 ppb), toluene (560 ppb), ethylbenzene (160 ppb), xylenes (540 ppb), 1,2-dichloroethane (2 ppb) and low concentrations of total and soluble nickel.

3.0 SCOPE OF WORK

As part of the supplemental Site investigation, soil and/or ground water samples were collected from six soil borings (B-1 through B-6) on September 11 and September 12, 1995. The objective of the work was to provide sufficient data to evaluate the extent of hydrocarbon-impacted soil and ground water on-site. Based on the information provided by the soil borings, two ground water monitoring wells (MW-3 and MW-4) were installed, and soil samples collected on October 26, 1995. The two new monitoring wells and the two existing monitoring wells (MW-1 and MW-2) were developed on October 30, 1995 and three of the four wells were sampled on November 3, 1995. Free product was observed in the fourth well, and a sample of the free product was obtained and sent to a special laboratory for fingerprinting analysis.

4.0 METHODOLOGY

The methodologies used for data collection during the supplemental Site investigation performed by McLaren/Hart are discussed below.

4.1 Depth to Ground Water Measurements

Depth to ground water measurements were collected using an electronic water level indicator with measurements documented to the nearest one hundredth of a foot. Observations for floating product were performed using a transparent Polyvinyl Chloride (PVC) bailer.

4.2 Soil and Grab Ground Water Sampling

Soil and grab ground water sampling (B-1 through B-6) was performed using a direct push drill rig. The direct push rig uses an enviro-core sampling system that consists of sampling rods that are hydraulically driven to the desired sampling depth. The sampling rods are lined with 1.5-inch diameter by 6-inch long stainless steel or polyethylene sampling tubes advanced in 1.0 to 3.0 foot increments. The sampling rod is then extracted and the sampling tubes are used to either identify soil lithology or to secure a soil sample for analysis.

All soil samples were logged continuously from the surface to the termination depth using the Unified Soil Classification System. Results of the soil lithologic evaluation are included on the soil drilling logs presented in Appendix A.

After the targeted water-bearing zone had been penetrated, the drive casing was removed from the borehole and replaced with slotted PVC pipe. Ground water samples were then collected with a 3/4-inch-diameter stainless steel bailer from inside the temporary casing. The bailer was steam cleaned between each sampling location to avoid cross-contamination. All ground water samples were decanted into 40-milliliter glass vials with Teflon septum, labeled, and placed into a cooler containing ice.

A portion of soil recovered from the soil sample interval was placed into a plastic bag where headspace readings were collected using a photo-ionization detector (PID). The headspace readings are documented on the soil drilling logs included in Appendix A. The PID was calibrated daily using isobutylene gas. Sample selection for analysis was determined by visual observation, significant lithologic changes, and PID readings. If the sample was selected for analysis, the tube containing the sample was capped with Teflon tape and polyethylene end caps, and sealed with duct tape. All soil samples were labeled and placed into a cooler containing ice. After completion of soil and grab ground water sampling, the temporary PVC casing was removed and all borings were backfilled with portland cement to the original surface level.

4.3 Monitoring Well Installation

Monitoring wells MW-3 and MW-4 were installed using hollow stem auger drilling equipment on a truck-mounted rig. Each borehole was drilled utilizing an 8-inch outside diameter auger to approximately 5 to 10 feet into the water bearing zone. Continuous soil sampling of the well borings were conducted using a California-Modified Split Spoon. The split spoon was driven into the soil by a 140-pound weight dropped from a height of 30-inches, with the number of blows-per-foot recorded. Sampling methodology and rationale was followed as explained in Section 4.1. Specific well design was determined in the field based on the lithology encountered during drilling. Well construction was performed in accordance with industry standards and under supervision of a California-certified engineering geologist. Copies of the Alameda County well installation permits issued prior to initial field work are included in Appendix A. Well construction details for all Site monitoring wells are presented in Table 1.

4.4 Monitoring Well Development

Monitoring wells MW-3 and MW-4 were developed at least 24 hours after well installation was completed. Monitoring wells MW-1 and MW-2, installed prior to McLaren/Hart's investigation, had been inactive for some period of time and were re-developed along with MW-3 and MW-4. The

wells were developed by a combination of surging, bailing and pumping. Surging with a sealed plunger was performed over the entire screen length to increase the hydraulic communication between the monitoring well, filter pack and surrounding soils. After surging, the water was bailed to remove fine-grained sediments and pumped until at least 10 casing-volumes of water were recovered or turbidity was measured at less than 100 Nephelometric Turbidity Units (NTU). During well development, physical parameters including temperature, electrical conductivity (EC), pH and turbidity were monitored after removal of each casing volume. Data collected during well development are compiled on the Well Development Data Sheets included in Appendix B.

4.5 Monitoring Well Sampling

Ground water samples were collected with a 2-inch diameter disposable bailer with bottom-emptying low flow disposable port. Ground water was purged from each monitoring well prior to sample collection using a peristaltic pump. The quantity of water within a casing volume for a given well was calculated in the field prior to sampling. For each casing volume purged, EC, pH, temperature and turbidity were monitored and recorded on the Sampling Event Data Sheets included in Appendix B. Purging of each monitoring well continued until:

- a minimum of four casing volumes had been purged from each well; and
- turbidity was below 100 NTUs and pH, temperature and EC values had stabilized to within 0.15 pH units, 1.0 F, and 5% EC, respectively, between two consecutive purge volumes.

A free product sample was collected using a disposable polyethylene bailer. The sample was decanted into two unpreserved 20-milliliter glass vials with Teflon septum. The free product sample was labeled, placed in a cooler containing ice, and shipped to Friedman & Bruya, Inc. in Seattle, Washington, under proper chain of custody procedures, for fingerprinting analysis.

4.6 Decontamination Procedures

All drilling equipment was steam cleaned prior to entering the Site to remove any residual materials. This cleaning process was repeated between borings to eliminate the possibility of cross-contamination between sampling events. Disposable sampling equipment was used to collect ground water samples from monitoring wells and, therefore, no decontamination was required for monitoring well sampling.

4.7 Sample Analysis

All soil and ground water samples were labeled and shipped to MBT Environmental Laboratories in Rancho Cordova, California for analysis following chain-of-custody and EPA-recommended sample preservation techniques. MBT Environmental Laboratories is a division of McLaren/Hart, and is licensed by the State of California as a hazardous waste and drinking water laboratory.

Analyses for BTEX analyses were performed by USEPA Method 8020 while TPH/G analyses were performed in accordance with USEPA Leaking Underground Fuel Tank (LUFT) protocols. TPH/D and total petroleum hydrocarbons as motor oil (TPH/MO) analyses were performed by USEPA Method 8015 Modified. A fuel fingerprint analysis was performed on the free product sample collected from monitoring well MW-2. In addition, the product sample was analyzed for organic lead by USEPA Method 6010.

4.8 Soil and Ground Water Disposal

All soil and ground water generated during drilling well development, well sampling and equipment decontamination was placed into 55-gallon drums and stored on-site. Soil and ground water disposal will occur following completion of the Site assessment.

5.0 SOIL INVESTIGATION RESULTS

Findings of the supplemental Site investigation, including lithology encountered and soil and grab ground water analytical results are presented in this section. Soil and grab ground water sample locations are shown on Figure 2. Geologic cross-sections A-A' and B-B', presented as Figures 7 and 8, respectively, depict subsurface materials encountered during drilling and the inferred subsurface structure between the borings. The cross-section traces are shown on Figure 6.

5.1 Lithology

As discussed previously, borings installed during this investigation were continuously sampled for lithologic description. Detailed lithology encountered during drilling varied dependent on location, but generally consisted of unconsolidated fill material overlying fine grained sediments such as sandy silts and clays, interbedded with more transmissive well-sorted sands and silty sands.

The unsaturated soils above the water-bearing zones are generally clay rich. However, sandier stringers appear to be present, particularly in the 16-20 ft below ground surface range. Vadose soils at MW-3 are much sandier than elsewhere on the Site, indicating a transition in the depositional environment, perhaps to stream channel/levee from overbank/flood plain.

Water-bearing zones were encountered at two different depths during the investigation. Given the limited hydrogeologic information available, it is unknown whether the saturated materials encountered at these different depths represent two separate zones or the same zone (i.e., hydraulically connected). In order to simplify discussions, the interval in which MW-3 is screened and the interval in which MW-1, MW-2, and MW-4 are screened will be referred to as the first and second zones, respectively. The first zone was encountered at approximate depths ranging between 19 and 24.5 bgs, as illustrated in Figure 7 and 8. This laterally discontinuous zone was generally less than one foot thick and in most cases, did not yield a sufficient amount of ground water to collect samples. However, due to the thickness of this saturated zone encountered in MW-3 (4.5 feet) and PID readings at this depth indicating the presence of VOCs, (see Appendix A) MW-3 was screened in this upper zone. The thickening of this first zone appeared to be limited to the portion of the site adjacent to MW-3.

The second zone was encountered at approximate depths ranging between 28 feet and 35.5 feet bgs with an approximate thickness of 4 feet. As shown in the cross-sections A-A' and B-B', data suggests that this zone is laterally continuous throughout the Site. MW-1, MW-2 and MW-4 are screened within this zone. As indicated above, there is insufficient data available at this time to determine whether the two zones encountered are hydraulically connected.

5.2 Ground Water Surface Elevations

Depth to ground water measurements were collected from MW-1 through MW-4 on November 3, 1995. Potentiometric surface elevations calculated from the depth to water measurements are presented in Table 2. Potentiometric surface elevation contours generated from the data in Table 2 are shown on Figure 3, and indicate a north-easterly ground water flow direction. As discussed previously, MW-3 was installed in a water-bearing zone shallower than that encountered in MW-1, MW-2 and MW-4 (Table 1). The hydraulic connection of this shallower zone to the deeper zone is not known. The direction of ground water flow indicated on Figure 3 would provide justification for the presence of free product observed in MW-2, downgradient from the calculated flow direction (see Section 5.4). However, the flow direction expected due to topography and pre-development slope of the alluvial fans is opposite the calculated flow direction. Therefore, the calculated flow direction is suspect.

5.3 Soil Analytical Results

Soil analytical results from the supplemental Site investigation are presented in Table 3. Soil samples were collected from six on-site soil borings and two monitoring wells and analyzed for TPH/G and BTEX compounds. Soil samples from B-3 and the 26.5 foot soil sample from B-4 were also analyzed for TPH/D and TPH/MO.

As presented in Table 3, TPH/D was not detected at or above laboratory reporting limits in the soil sample collected from either B-3 or B-4. TPH/MO was not detected in B-4 but was present in B-3 at a concentration of 1.3 ppm.

TPH/G was detected in twelve of the seventeen soil samples collected on-site. The highest level of TPH/G was detected in monitoring well MW-3, located in the vicinity of the former pump islands; 65,000 ppm was detected at a depth of 8.5 feet. TPH/G concentrations in soil in monitoring well MW-3, however, dropped to only 1.4 ppm at a depth of 15.5 feet. The next highest observed levels of TPH/G were observed in boring SB-5 at a concentration of 4,800 ppm.

BTEX compounds were generally detected in soil samples with elevated TPH/G concentrations. In general, monitoring well MW-3 contained the highest concentrations of petroleum-related hydrocarbons detected on-site. Benzene was detected at concentrations ranging from 88 ppm in MW-3 to below laboratory reporting limits in boring B-3. Samples with significant levels of TPH/G contained BTEX concentrations where the relative amounts of xylenes and toluene were greater than those of the more volatile benzene and ethylbenzene compounds. Since the more volatile components evaporate faster during the weathering process leaving relatively higher concentrations of the less volatile compounds behind, this suggests that some time has elapsed since release occurred.

5.4 Ground Water Analytical Results

As described in Section 4.2, ground water samples were collected from six soil borings using a temporary slotted PVC well casing installed after the targeted water bearing zone had been reached. Additionally, ground water samples from three on-site monitoring wells were collected. Grab and monitoring well ground water samples collected were submitted for analysis of TPH/G and BTEX compounds. The grab ground water sample collected from B-2, located downgradient from MW-3, was also analyzed for TPH/D and TPH/MO. Table 4 presents ground water analytical results from this investigation.

TPH/D was not detected at or above the laboratory reporting limit in ground water collected from boring B-2 while TPH/MO was present at a concentration of 340 ppb. TPH/G concentrations in ground water ranged from below laboratory reporting limits in monitoring wells MW-1 and MW-4 to 190,000 ppb in boring B-1. Elevated concentrations of BTEX compounds were generally detected at the same locations containing elevated TPH/G concentrations. Benzene was present at

concentrations ranging from below the laboratory reporting limit in MW-1 and MW-4 to 24,000 ppb in boring B-1.

During re-development of monitoring well MW-2, free product was observed and as a result, a ground water sample was not collected. A sample of the free product, however, was collected for fingerprint characterization and analysis of organic lead. Results of the analyses indicate that the product contains leaded gasoline and is most likely ten or more years old (Appendix D). Results of the organic lead analysis indicate a concentration of 270 ppm which is typical for regular leaded gasolines manufactured between 1975 and 1982. The lead concentration, however, might have been altered during the weathering process. Since lead is relatively persistent in the environment, it may concentrate over time resulting in higher lead levels at the time sampling. This opens up the possibility that the sample may have been released after 1982. However, it is not expected that the product age is much younger than ten years old, because lead levels dropped sharply around 1985 in expectation of an EPA mandated phaseout. Friedman & Bruya also noted trace levels of a middle distillate such as diesel or heating oil; identification was tentative due to its very low concentration relative to the gasoline.

6.0 CONCLUSIONS

Six soil borings are installed on-site on September 11 and September 12, 1995 to define the extent of soil contamination in the vadose zone. Soil and/or grab ground water samples were collected from each of these borings and analyzed for petroleum-related compounds. Two monitoring wells, MW-3 and MW-4, are installed on October 26, 1995 to further define the extent of impacted ground water as well as to determine the direction of ground water flow at the Site. MW-3 is installed in a transmissive zone shallower than the zone in which MW-1, MW-2 and MW-4 are screened and the hydraulic connection between the zones is unknown.

Soil samples collected from the six soil borings and two monitoring wells indicate the presence of TPH/G in the vicinity of the former pump islands and northeast side of the former tank farm at concentrations as high as 65,000 ppm (MW-3, 8.5 feet bgs). Benzene is also present in soil at concentrations as high as 88 ppm (MW-3, 8.5 feet bgs).

Ground water samples collected from five soil borings and three monitoring wells indicate the presence of elevated levels of TPH/G at concentrations as high as 190,000 ppb, and benzene at concentrations as high as 24,000 ppb (B-1). In addition, free product is noted in monitoring well MW-2. Fingerprint analysis of the product submitted to Friedman & Bruya, Inc. determined the product to be primarily leaded gasoline, dated the product most likely to be ten years old or older, and placed the release between 1975 and 1985.

FIGURES

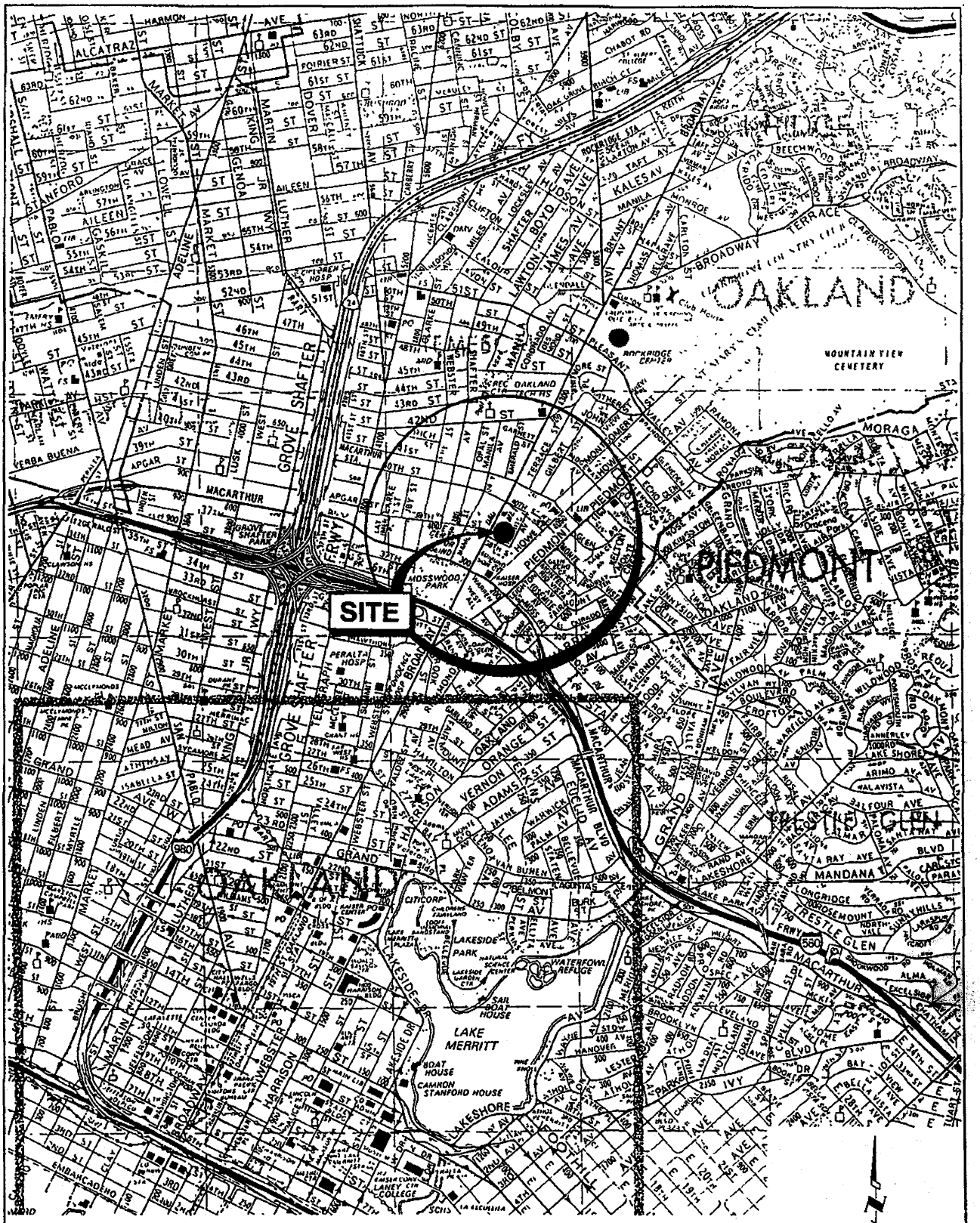

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FIGURE 1

SITE LOCATION MAP
3810 BROADWAY, OAKLAND, CALIFORNIA

04.0601879.001.004\friedkin.cdr\7-19-95

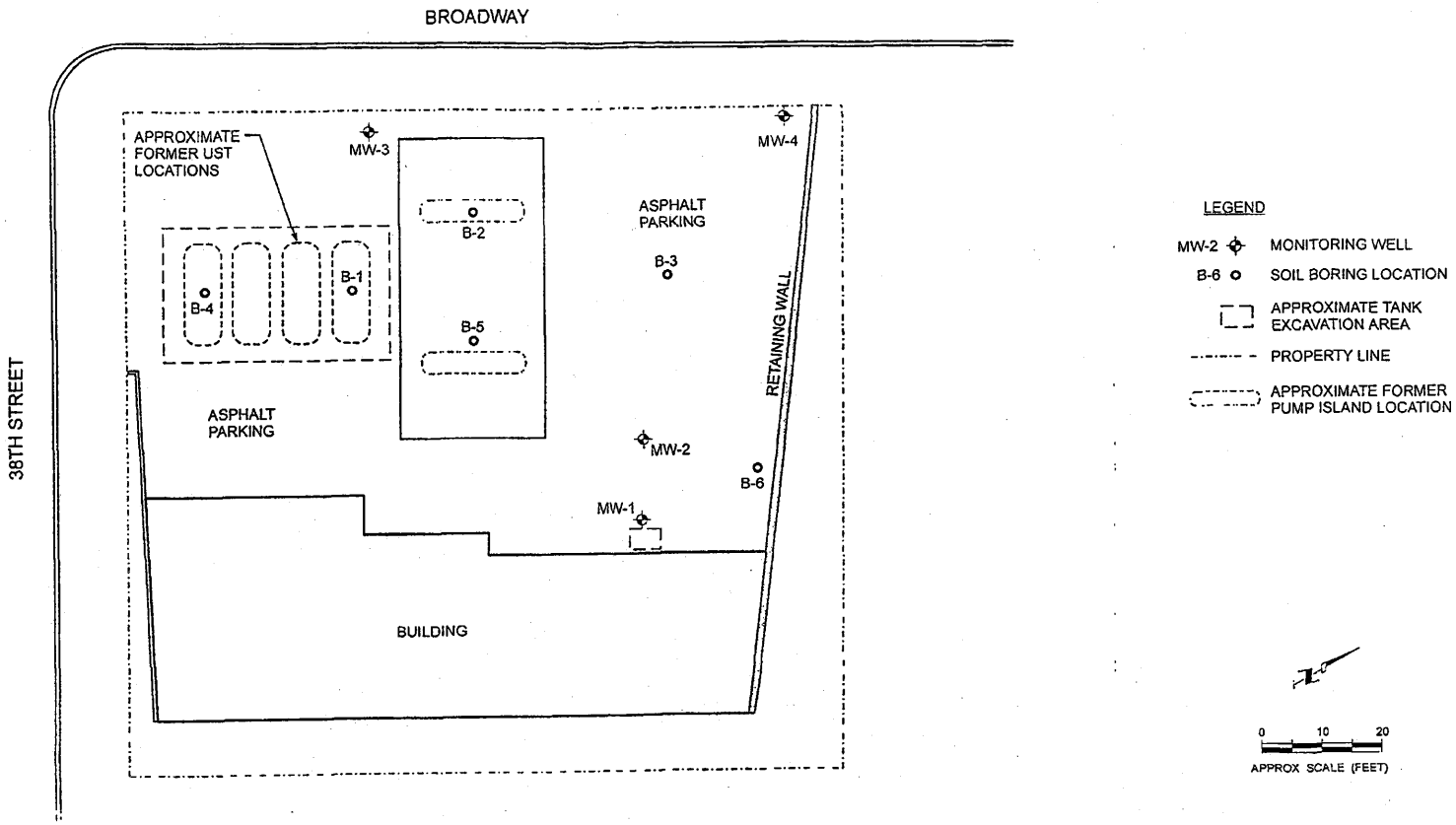

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FIGURE 2

SITE PLAN MAP
3810 BROADWAY, OAKLAND, CALIFORNIA

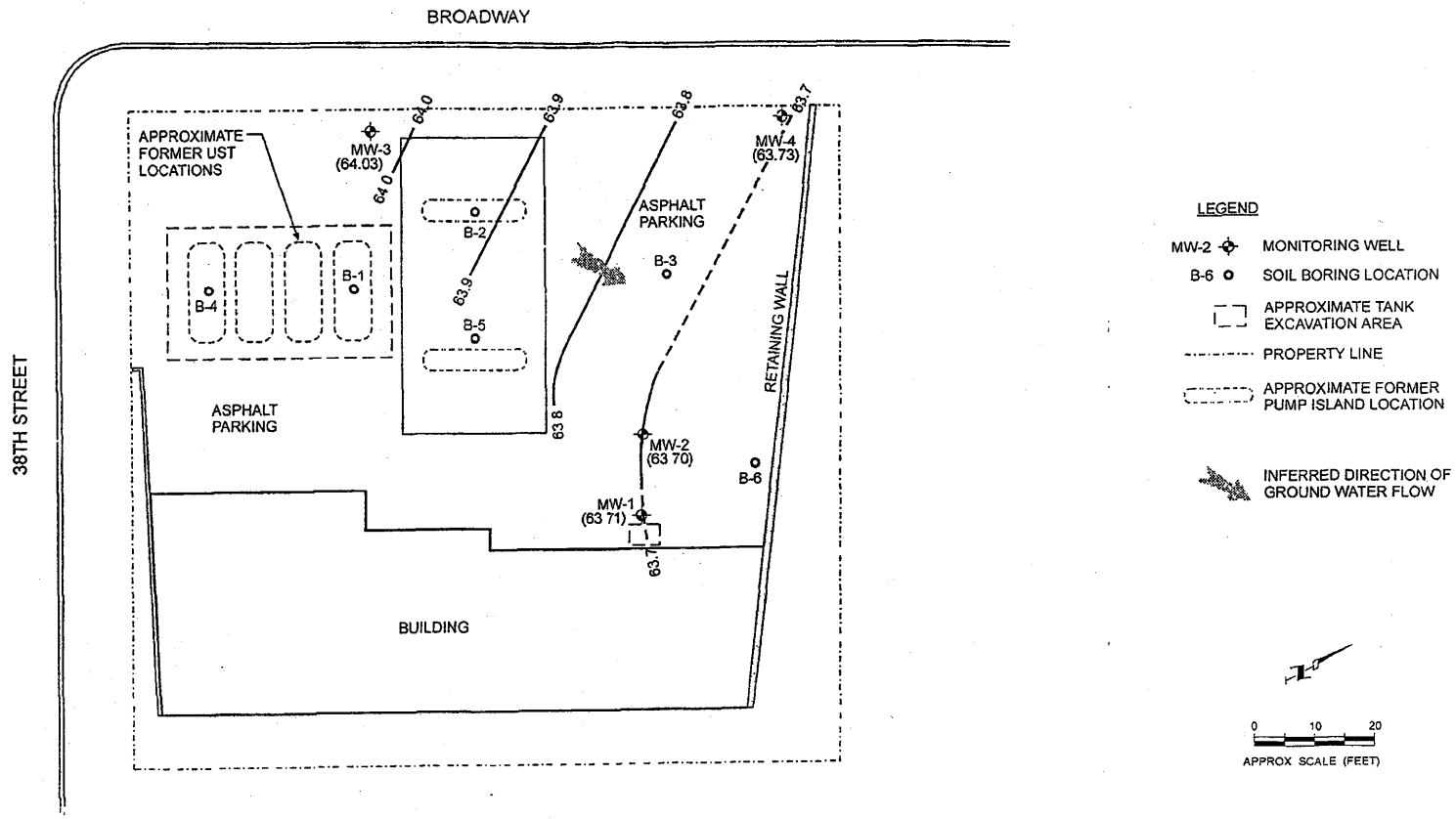

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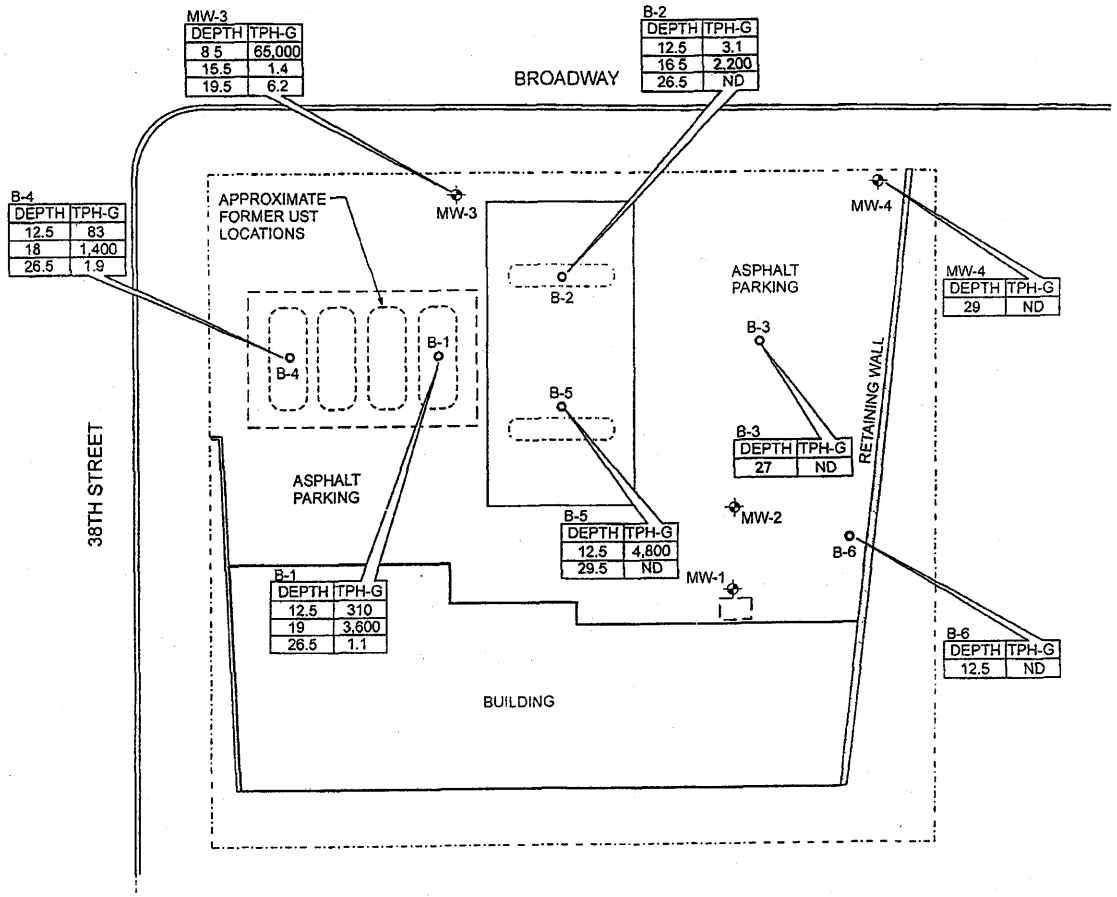
FIGURE 3
POTENTIOMETRIC SURFACE ELEVATION CONTOURS
NOVEMBER 3 1995
3810 BROADWAY, OAKLAND, CALIFORNIA



LEGEND

MW-2	MONITORING WELL
B-6	SOIL BORING LOCATION
	APPROXIMATE TANK EXCAVATION AREA
	PROPERTY LINE
	APPROXIMATE FORMER PUMP ISLAND LOCATION
(ND)	NOT DETECTED

NOTE: COMPLETE SOIL ANALYTICAL RESULTS PRESENTED IN TABLE 3.

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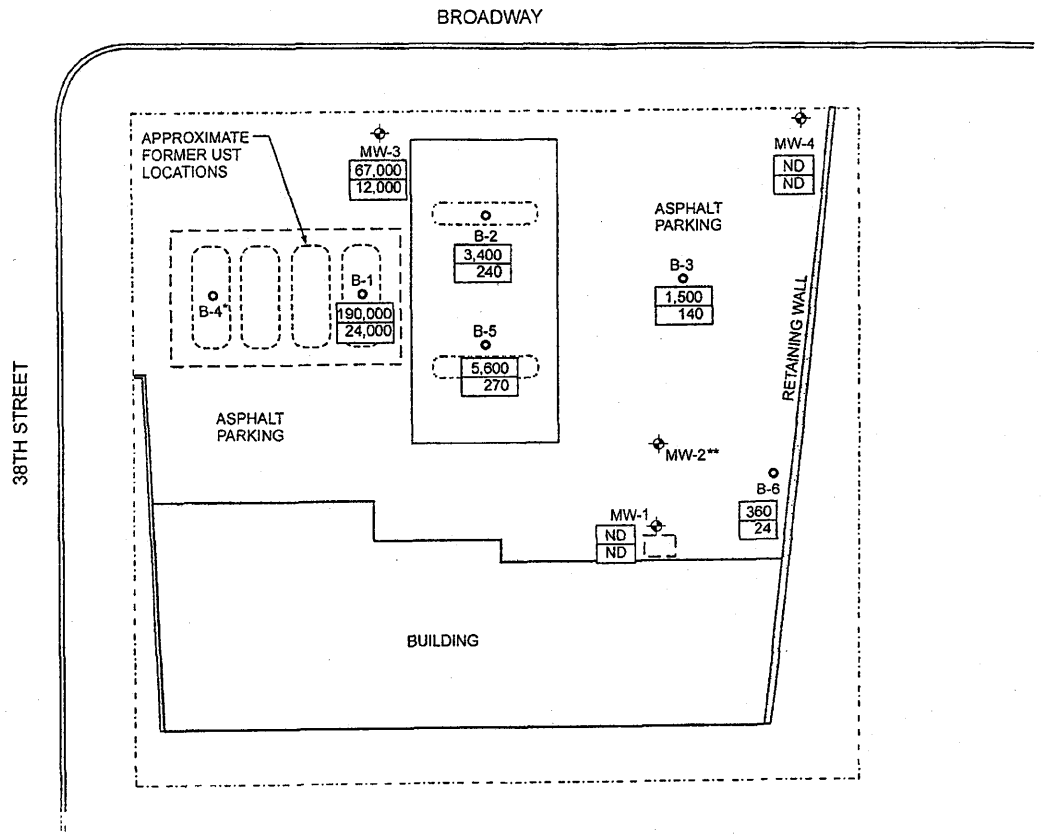
FIGURE 4

TPH-G CONCENTRATIONS IN SOIL (PPM)
SEPTEMBER 11,12 AND OCTOBER 26, 1995
3810 BROADWAY OAKLAND, CALIFORNIA



LEGEND

MW-2	MONITORING WELL
B-6	SOIL BORING LOCATION
	APPROXIMATE TANK EXCAVATION AREA
	PROPERTY LINE
	APPROXIMATE FORMER PUMP ISLAND LOCATION
5,600 / 270	TPH-G CONCENTRATION (PPB) BENZENE CONCENTRATION (PPB)
*	NO GROUND WATER SAMPLE WAS OBTAINED FROM B-4
(ND)	NOT DETECTED
**	NOT SAMPLED DUE TO PRESENCE OF FREE PRODUCT

NOTE: COMPLETE GROUND WATER ANALYTICAL RESULTS PRESENTED IN TABLE 4.

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FIGURE 5
TPH-G CONCENTRATIONS IN GROUND WATER (PPB)
SEPTEMBER 11,12, OCTOBER 26, AND NOVEMBER 3, 1995
3810 BROADWAY, OAKLAND, CALIFORNIA

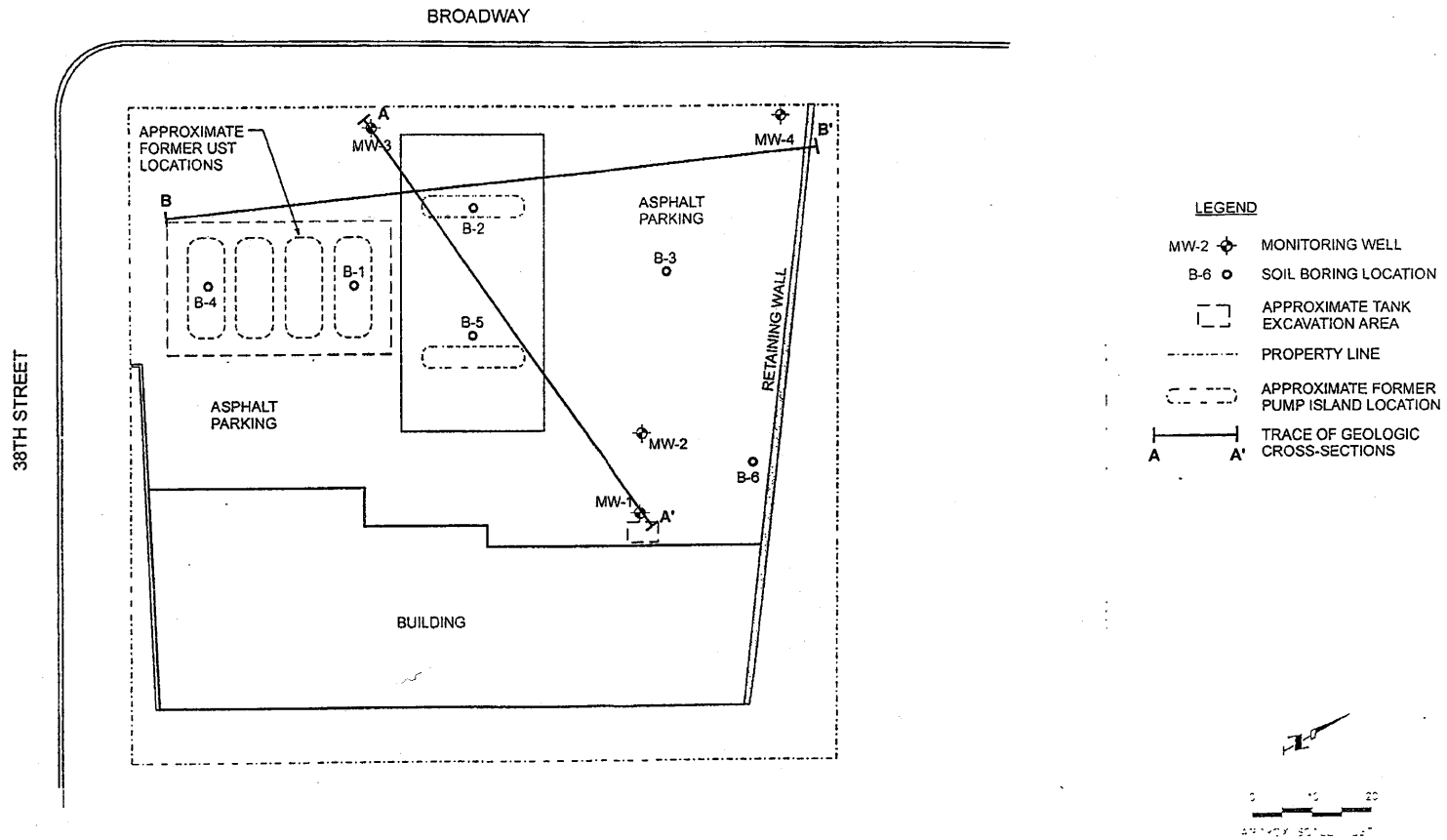

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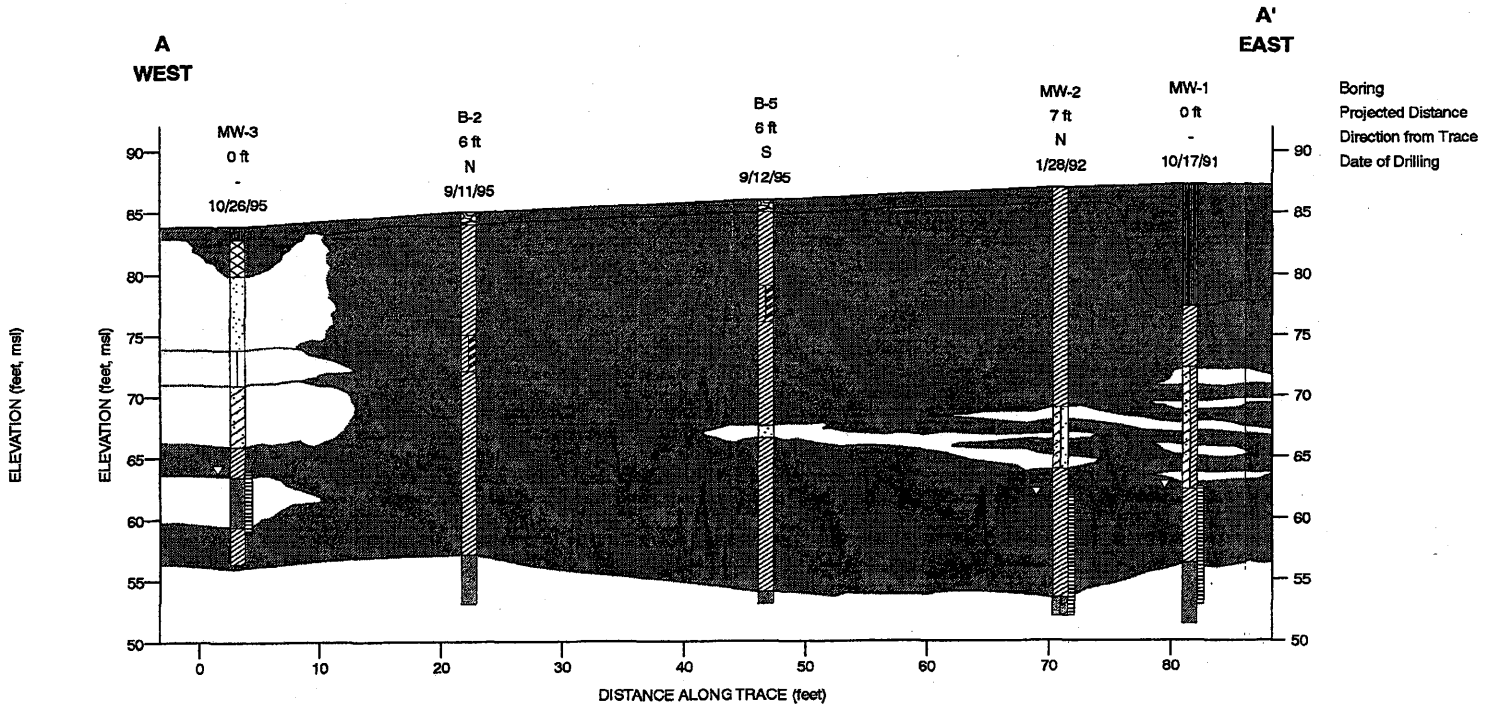
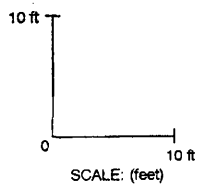
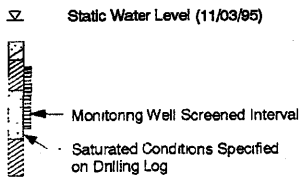
FIGURE 6
SITE PLAN MAP SHOWING GEOLOGIC CROSS-SECTION TRACES
3810 BROADWAY, OAKLAND, CALIFORNIA





LEGEND

- ROADBASE/FILL
- SAND
- SILT
- CLAY



UNIFIED SOIL CLASSIFICATION SYSTEM

GW	SW	ML
GP	SP	CL
GM	SM	CH
GC	SC	RB

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FIGURE 7

CROSS-SECTION A-A'
3810 BROADWAY, OAKLAND

04 0601879.001 003\xsects cdr 01-11-96

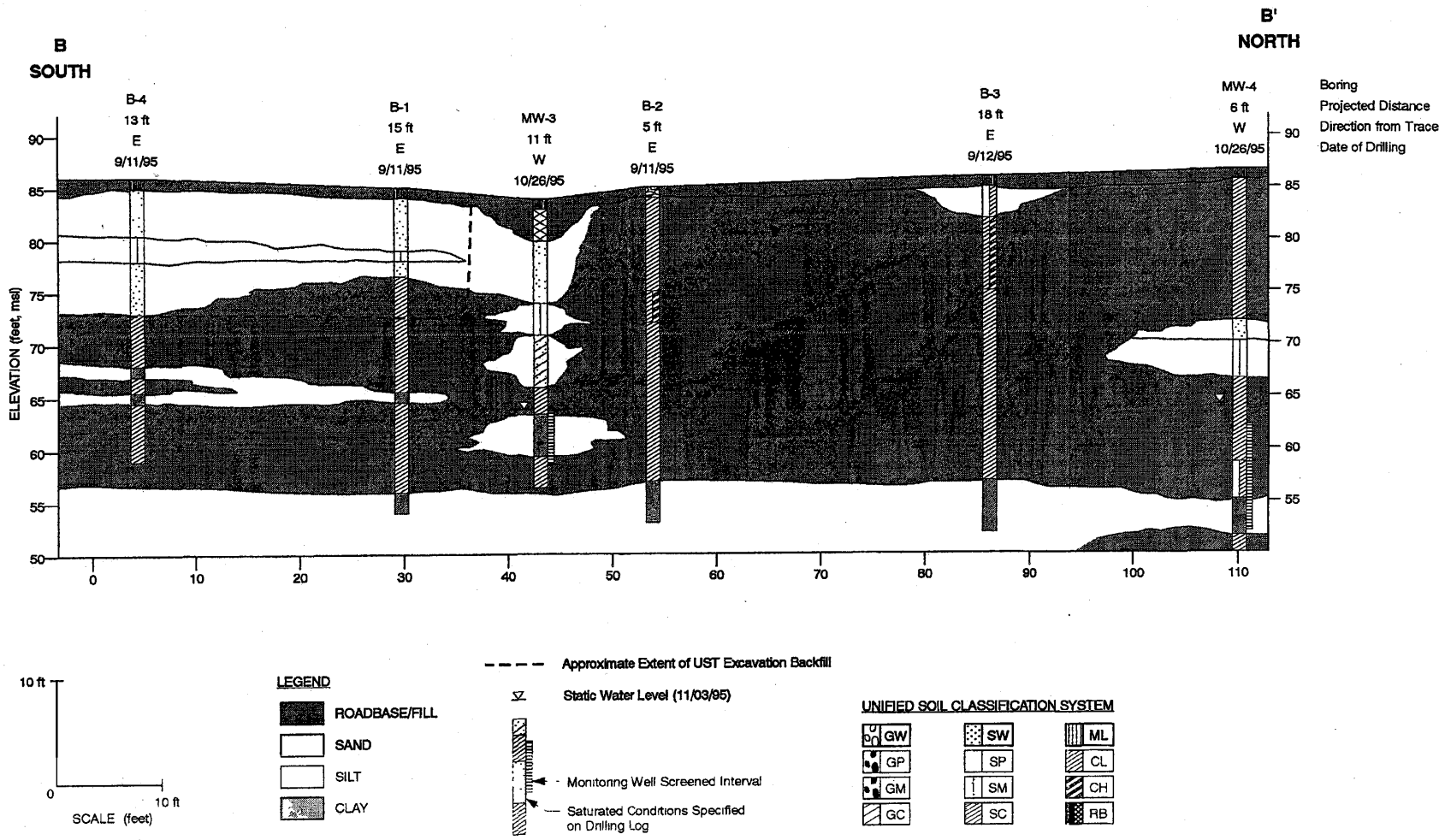

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FIGURE 8

CROSS-SECTION B-B'
3810 BROADWAY, OAKLAND

04 0601879 001 003\xsects cdr 01-11-96

TABLES

TABLE 1
MONITORING WELL CONSTRUCTION DETAILS
FRIEDKIN PROPERTY - 3810 BROADWAY
OAKLAND CALIFORNIA

Location	Elevation Top of Casing (ft., msl)	Well Diameter (inches)	Screened Interval from Surface (ft)
MW-1	86.69	2	24.0-34.0*
MW-2	85.96	2	25.0-35.0*
MW-3	83.43	2	20.0-25.0
MW-4	83.62	2	25.5-35.5

ft., msl = feet mean sea level
* = screened interval information obtained from Kaldveer reports (Kaldveer, 1991 and Kaldveer, 1992)

TABLE 2
POTENTIOMETRIC SURFACE ELEVATIONS
NOVEMBER 3, 1995
3810 BROADWAY, OAKLAND, CALIFORNIA

Well No.	Top of Casing (ft., msl)	Depth to Water	Potentiometric Surface Elevation (ft., msl) Nov-95
MW-1	86.69	22.98	63.71
MW-2	85.96	22.26	63.70
MW-3	83.43	19.40	64.03
MW-4	83.62	19.89	63.73

ft., msl- Feet mean sea level.

TABLE 3
SOIL ANALYTICAL RESULTS
3810 Broadway, Oakland, California

Sample Location	Sample Date	Depth	TPH-G (ppm)	TPH-D (ppm)	TPH-MO (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)
B-1	9/11/95	12.5	310	---	---	0.15	0.29	6.2	31.2
		19	3,600	---	---	33	310	67	361
		26.5	1.1	---	---	0.27	0.06	0.018	0.023
B-2	9/11/95	12.5	3.1	---	---	0.69	0.11	0.69	0.103
		16.5	2,200	---	---	15	120	37	445
		26.5	<1	---	---	<0.005	0.011	<0.005	<0.005
B-3	9/12/95	27	<1	<1	1.3	<0.005	<0.005	<0.005	<0.005
B-4	9/11/95	12.5	83	---	---	0.06	<0.050	1.2	7.2
		18	1,400	---	---	3.8	44	18	101
		26.5	1.9	<20	<20	0.52	0.078	0.039	0.07
B-5	9/12/95	12.5	4,800	---	---	48	390	93	466
		29.5	<1	---	---	0.055	0.009	<0.005	<0.005
B-6	9/12/95	12.5	<1	---	---	<0.005	0.009	<0.005	<0.005
MW-3	10/26/95	8.5	65,000	---	---	88	550	140	690
		15.5	1.4	---	---	<0.005	0.027	0.0064	0.0265
		19.5	6.2	---	---	1.3	1.5	0.11	0.43
MW-4	10/26/95	29	<1	---	---	<0.005	<0.005	<0.005	<0.005

TPH-G = Total petroleum hydrocarbons quantitated against gasoline by DHS/LUFT method.
TPH-D = Total petroleum hydrocarbons quantitated against diesel by EPA Method 8015 Modified.
TPH-MO = Total petroleum hydrocarbons quantitated against motor oil by EPA Method 8015 Modified.
ppm = Parts per million.
--- = Not analyzed.
< = Compound not detected at or above the specified laboratory reporting limit.

TABLE 4
GROUNDWATER ANALYTICAL RESULTS
3810 Broadway, Oakland, California

Sample Location	Sample Date	TPH-G (ppb)	TPH-D (ppb)	TPH-MO (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
B-1	9/11/95	190,000	---	---	24,000	47,000	2,900	15,300
B-2	9/11/95	3,400	<110	340	240	540	120	540
B-3	9/12/95	1,500	---	---	140	66	130	670
B-5	9/12/95	5,600	---	---	270	540	110	420
B-6	9/12/95	360	---	---	24	26	16	44
MW-1	11/3/95	<50	---	---	<0.3	<0.3	0.36	<0.3
MW-2	*	---	---	---	---	---	---	---
MW-3	11/3/95	67,000	---	---	12,000	15,000	980	4,700
MW-4	11/3/95	<50	---	---	<0.3	<0.3	<0.3	<0.3

TPH-G = Total petroleum hydrocarbons quantified against gasoline by DHS/LUFT method.
TPH-D = Total petroleum hydrocarbons quantified against diesel by EPA Method 8015 Modified.
TPH-MO = Total petroleum hydrocarbons quantified against motor oil by EPA Method 8015 Modified.
ppb = Parts per billion.
--- = Not analyzed.
< = Compound not detected at or above the specified laboratory reporting limit.
*= Not sampled due to the pressence of free product in well.

APPENDIX A

WELL INSTALLATION PERMITS
AND
SOIL BORING & MONITORING WELL DRILLING LOGS

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
5997 PARKSIDE DRIVE • PLEASANTON, CALIFORNIA 94588 • (510) 484-2600

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT FRIEDKIN PROPERTY
3810 BROADWAY
OAKLAND, CA

CLIENT
Name MR. GERALD FRIEDKIN
Address 300 GRAND AVE Phone (510) 465-7500
City OAKLAND, CA Zip

APPLICANT
Name McLAREN/HART ENVIRONMENTAL ENGINEERING
Address 1135 ATLANTIC AVE Phone 510. 521-5200
City ALAMEDA, CA Zip 94501

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	✓
Monitoring	✓	Well Destruction	

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger ✓
Cable ___ Other DIRECT PUSH

DRILLER'S LICENSE NO. GREGG DRILLING C-57: 485165
PRECISION SAMPLING C-57: 636387

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 35 ft.
Surface Seal Depth 18 ft. Number 2

GEOTECHNICAL PROJECTS
Number of Borings 6 Maximum
Hole Diameter 2 in. Depth 30 ft.

ESTIMATED STARTING DATE 09-06-95
ESTIMATED COMPLETION DATE 09-21-95

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] Date 8-23-95

FOR OFFICE USE

PERMIT NUMBER 95581
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

(C.) GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 12 Sep 95
Wyman Hong

51991

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-1
D- 17352
Page 1 of 2
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/11/95 TOTAL DEPTH 31.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ▽ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' ASPHALT and ROADBASE	RB		
			0.0	1 - 6' SILTY SAND: (0,80,20,0); dark reddish gray (5YR4/2); loose; fine grained sand; poorly graded; dry.	SM		
2.5							
			0.0				
5.0							2" Borehole
				6 - 7' SANDY SILT: (10,30,40,20); brown (10YR5/3); slight plasticity; slightly stiff; fine grained sand; moist.	ML		
7.5			0.0	7 - 8.5' SILTY SAND: (0,80,20,0); dark reddish gray (5YR4/2); loose; fine grained sand; poorly graded; dry.	SM		
				8.5 - 19.5' SILTY CLAY with SAND: (0,20,50,30): grayish brown (10YR5/2); low to medium plasticity; slightly stiff to stiff; fine grained sand; moist.	CL		
10.0			425				Portland Cement
12.5		52401	210				
15.0							

See Following Page...

FRIED.1/16/96.AUGNBPS

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 9/96 BRADLEY D. WRIGHT

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-1
D- 17352
Page 2 of 2
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
15.0							
			214				
				SILTY CLAY with SAND continued.			
17.5							
		52402					
			127	19.5 - 20.5' SILTY SAND: (0,70,20,10); grayish brown (10YR5/2); fine grained sand; poorly graded; saturated.	SM		
20.0							2" Borehole
				20.5 - 29' SILTY CLAY with SAND: (0,20,50,30); light olive brown (2.5Y5/4); medium plasticity; stiff to hard; fine grained sand; slightly moist.	CL		
			107				
22.5							
25.0			68				Portland Cement
		52405					
27.5							
				29 - 31'SILTY SAND: (0,70,20,10); brown (10YR5/3); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		
30.0							
							31.0

FRIED.1/6/96 AUGNBPS

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 9/96 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-2
D- 23500
Page 1 of 2
Geologist: C. Warwick

C Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/11/95 TOTAL DEPTH 32.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ∇ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' CONCRETE	CC		
			0.0	1 - 10' SANDY CLAY: (5,35,30,30); grayish brown (2.5Y5/2); medium plasticity; stiff; fine to coarse grained sand; fine to coarse gravel; well graded; slightly moist.	CL		
2.5				3 - 3.5' SILTY SAND (SM)lens.			
			0.0				
5.0							2" Borehole
			0.0				
7.5							
				@ 9 - 10' Increase in coarse sand and fine gravel.			
10.0			420	10 - 13' SANDY CLAY: (0,30,30,40); light yellowish brown (2.5YR6/4); medium to high plasticity; stiff; fine grained sand; slightly moist.	CL CH		Portland Cement
12.5		51496					
			395	13 - 28.2' SANDY CLAY: (0,30,40,30); light yellowish brown (2.5YR6/4); low plasticity; stiff to hard: fine grained sand; slightly moist.	CL		
				@ 14.5 - 15' SAND (SP) lens; fine to medium sand; slightly			
15.0				See Following Page...			

FRIED,1/6/96,AUGNBPS

Brad Wright
SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 9/96 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-2
D- 23500
Page 2 of 2
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
15.0				moist.			
		51497					
			153	@ 16.5 - 17' SAND (SP) lens; slightly moist.			
17.5							
			76				
20.0							2" Borehole
			0.0				
22.5							
25.0			0.0				Portland Cement
		51498					
27.5							
				28.2 - 32' SILTY SAND: (0,70,20,10); brown (10YR5/3); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		
30.0							
							32.0

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 9/9 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

FIELD LIGHT LOGGING

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist

TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-3
D- 17355
Page 1 of 3
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/12/95 TOTAL DEPTH 34.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ▽ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' ASPHALT and ROADBASE	RB		
			0.0	1 - 4' SANDY SILT; (0,40,40,20); yellowish brown (10YR5/4); low plasticity; slightly stiff to stiff; fine to coarse grained sand; moist.	ML CL		
2.5							
			0.0	4 - 11' SANDY CLAY: (0,30,30,40); yellowish brown (10YR5/4); medium to high plasticity; stiff to hard; fine grained sand; slightly moist.	CL CH		
5.0							2" Borehole
			0.0				
7.5							
10.0			2.3				Portland Cement
				11 - 29' SILTY CLAY with SAND; (0,20,50,30); brown (10YR5/3); low to medium plasticity; stiff to hard; fine grained sand; slightly moist.	CL		
12.5		52409	0.0				
15.0							

See Following Page...

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 BRADLEY D. WHITE REGISTERED GEOLOGIST

FRED 1686 AUG 95

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-3
D- 17355
Page 2 of 3
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
15.0							
			2.3				
				SILTY CLAY with SAND continued.			
17.5							
20.0							2" Borehole
22.5							
25.0							
		52410-11	3.9				
27.5							
				29 - 31.5' SILTY SAND: (0,80,20,0); brown (10YR5/3); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		
30.0							Portland Cement
32.5							

See Following Page...

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist

TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-3
D- 17355
Page 3 of 3
Geologist: C. Warwick

C Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
32.5							34.0

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6270 9/96 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

FILED, 11/96 AUGUST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-4
D- 23499
Page 1 of 2
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/12/95 TOTAL DEPTH 27.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ∇ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' ASPHALT and ROADBASE	RB		
			0.0	1 - 5.5' SILTY SAND; (0,80,20,0); dark reddish gray (5YR4/2); loose; fine grained sand; poorly graded; dry.	SM		
2.5							
			0.0				
5.0							2" Borehole
				5.5 - 8' SANDY SILT: (0,25,60,15); low plasticity; slightly stiff; fine grained sand; moist.	ML		
			0.0				
7.5							
				8 - 13' SILTY SAND: (0,55,30,15); yellowish brown (10YR5/4); medium dense; fine to coarse grained sand; well graded; slightly moist.	SM		
10.0			282				Portland Cement
12.5		51494					
			484	13 - 18' SILTY CLAY with SAND: (0,20,50,30); grayish brown (10YR5/2); low to medium plasticity; slightly stiff; fine grained sand; moist.	CL		

See Following Page...

STATE OF CALIFORNIA REGISTERED GEOLOGIST #3370 Exp. 9/96 GRADE OF CONFIDENCE REGISTERED GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER
Senior Geoscientist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-4
D- 23499
Page 2 of 2
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
15.0			68	SILTY CLAY with SAND continued.			
17.5		51495		18 - 19' SILTY SAND: (0,70,20,10); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		
				19 - 20.5' SILTY CLAY with SAND: (0,20,50,30); grayish brown (10YR5/2); low to medium plasticity; slightly stiff; fine grained sand; moist.	CL		2" Borehole
20.0				20.5 - 21.5' SILTY SAND: (0,55,30,15); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		
			0.0	21.5 - 27' SILTY CLAY with SAND : (0,20,50,30); brown (10YR5/3); low to medium plasticity; stiff to hard; fine grained sand; slightly moist.	CL		
22.5							Portland Cement
25.0		52403-04	0.0				
				@ 27' Refusal			27.0

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 9/92 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

FRIED;1/8/96 AUG/NDS

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist

TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-5
D- 17354
Page 1 of 2
Geologist: C. Warwick

C Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/12/95 TOTAL DEPTH 33.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ▽ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' CONCRETE	CC		
			580	1 - 7' SANDY CLAY: (5,40,35,20); medium plasticity; slightly stiff to stiff; fine to coarse grained sand; fine grained gravel; slightly moist.	CL		
2.5							
			488				
5.0							2" Borehole
			388	7 - 10' SILTY CLAY with SAND: (0,25,35,40); reddish yellow (7.5YR6/6); medium to high plasticity; slightly stiff to stiff; fine grained sand; moist.	CL CH		
7.5							
10.0			840	10 - 18.5' SILTY CLAY with SAND: (0,20,50,30); light yellowish brown (10YR6/4); low to medium plasticity; stiff; fine grained sand; slightly moist.	CL		Portland Cement
12.5		52406	355				
15.0							

See Following Page...

FRIED, 1996 AUG BPS #6276 Exp. 9/96

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 9/96 GRADLEY D. WRIGHT REGISTERED GEOLOGIST

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-5
D- 17354
Page 2 of 2
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
16.0			90	@ 16 - 17' Increase in sand.			
17.5				SILTY CLAY with SAND continued.			
				18.5 - 19.5' SILTY SAND : (0,70,20,10); brown (10YR5/3); medium dense to dense; fine to medium sand: moderately graded; slightly moist.	SM		
20.0				19.5 - 32' SILTY CLAY with SAND: (0,20,50,30); light yellowish brown (10YR6/4); low to medium plasticity; stiff; fine grained sand; moist.	CL		2" Borehole
22.5							
			16				
25.0							Portland Cement
			0.0				
27.5							
30.0		52407-08					
32.5				32 - 33' SILTY SAND: (0,80,20,0); brown (10YR5/3); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		33.0

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 9/96 GRADE OF DEWRIGHT REGISTERED GEOLOGIST

FRIED.1/6/96 AMG/DRS

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist

TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-6
D- 17356
Page 1 of 2
Geologist: C. Warwick

SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION NA (MSL) DATE(S) 9/12/95 TOTAL DEPTH 29.0'
MONITORING DEVICE PID SCREENED INTERVAL NA
SAMPLING METHOD Direct Push SUBCONTRACTOR & EQPT Precision/XD
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ∇ =First Water
MEMO

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' ASPHALT and ROADBASE	RB		
			0.0	1 - 3' SILTY SAND: (5,50,30,15); yellowish brown (10YR5/6); dense; moderately graded; fine to coarse grained sand; fine grained gravel; slightly moist.	SM		
2.5							
				3 - 5' CLAYEY SILT with SAND: (0,20,50,30); light yellowish brown (10YR6/4); low plasticity; slightly stiff to stiff; slightly moist.	ML		
			0.0				
5.0				5 - 27' SANDY CLAY: (0,35,30,35); yellowish brown (10YR5/6); medium plasticity; stiff to hard; fine to coarse grained sand; moderately graded; slightly moist.	CL		2" Borehole
			0.0				
7.5							
10.0			3.4				Portland Cement
12.5		52412					
			3.4				
15.0							

See Following Page...

FRIED,1/6/95 DOH3PS

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 9/96 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: B-6
D- 17356
Page 2 of 2
Geologist: C. Warwick

C Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
15.0			0.0	SANDY CLAY continued.			
17.5							
20.0							2" Borehole
22.5			0.0				
25.0							Portland Cement
		52413-14	0.0				
27.5				27 - 29' SILTY SAND: (0,80,20,0); brown (10YR5/3); loose to medium dense; fine grained sand; poorly graded; saturated.	SM		29.0

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp 1/9/96 BRAD D. WRIGHT REGISTERED GEOLOGIST

FRIED.JK96 AUGNBRS

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geologist

TITLE

SOIL DRILLING LOG

McLaren Hart

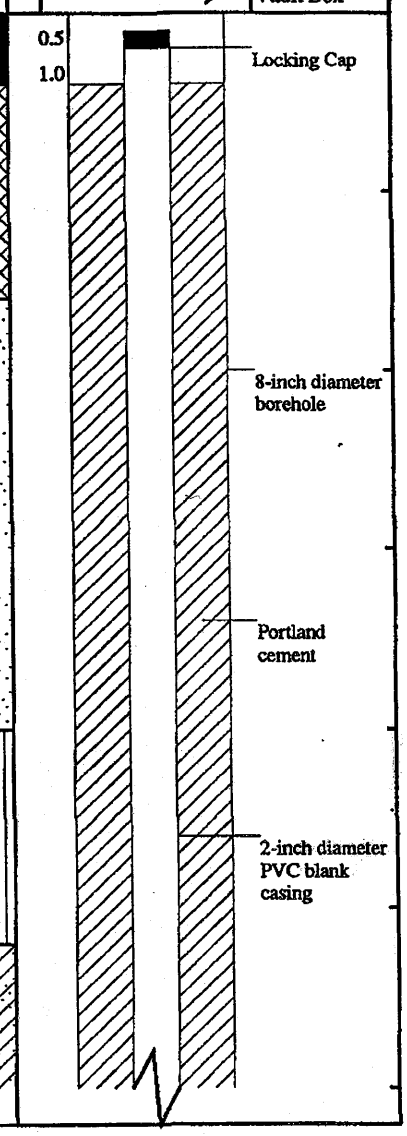
SB/MW #: MW-3
D- 17357
Page 1 of 2
Geologist: C. Warwick

C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION 86.43 (MSL) DATE(S) 10/26/95 TOTAL DEPTH 27.5'
MONITORING DEVICE OVM SCREENED INTERVAL 20' - 25'
SAMPLING METHOD Cal. Mod. Split Spoon SUBCONTRACTOR & EQPT Gregg/M-11
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ▽ =First Water ▼ =Static Water (10/30/95)
MEMO Hand augered to 2.5'.

Depth Below Surface (ft)	Penetration Results: Blows 6"-6"-6"	Penetration Results: BPF	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log
						0 - 1' ASPHALT and ROADBASE	RB	
						1 - 4' SANDY FILL	FL	
2.5	7-12-16	28			10.2			
	7-14-14	28			15.0	4 - 10' SILTY SAND: (0,50,30,20); brown (7.5Y5/4); loose to medium dense; fine grained sand; poorly graded; slightly moist.	SM	
5.0	10-12-17	29			32.0			
	8-17-20	37			64.0			
7.5	11-15-20	35		52416	498			
10.0	15-27-24	51			102	10 - 13' SANDY SILT: (0,30,50,20); reddish yellow (7.5Y6/6); low plasticity; slightly stiff to stiff; fine grained sand; slightly moist.	ML	
	7-14-19	33			33			
12.5	7-11-20	31			34	13 - 18' SILTY SAND: (0,60,20,20); brown (7.5Y5/4); medium dense; fine to medium grained sand; moderately graded; moist.	SC	

See Following Page...



STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. 12/96 BRADLEY D. WRIGHT

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

SIGNATURE CONTINUED

TITLE

SOIL DRILLING LOG

McLaren Hart

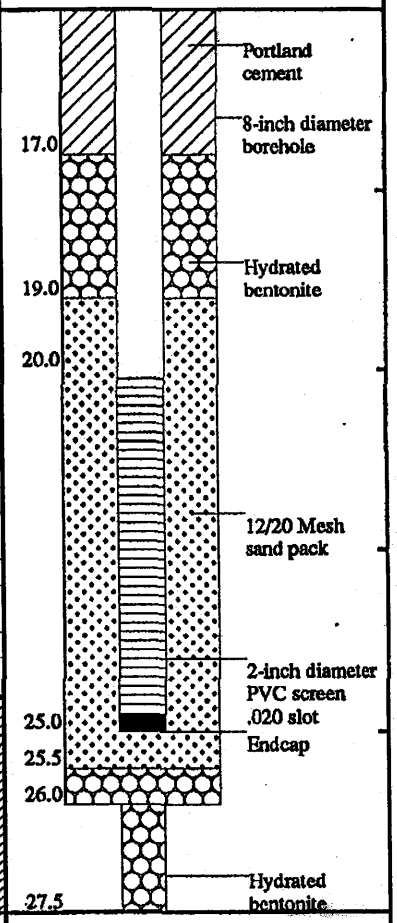
SB/MW #: MW-3
D- 17357
Page 2 of 2
Geologist: C. Warwick

C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Penetration Results: Blows 6"-6"-6"	Penetration Results: BPF	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log
15.0	6-10-14	24		52417	412	SILTY SAND continued.		
	11-10-12	22			105			
17.5								
	10-17-18	35		52418	60	18 - 20' SANDY CLAY: (0,30,40,30); light yellowish brown (10YR6/4); low to medium plasticity; stiff; fine grained sand; moist.	CL	
20.0	4-6-10	16			40	@ 20' Sand (SP) lens, saturated.		
						20.5 - 24.5' SILTY SAND: (0,50,30,20); medium dense; fine to medium grained sand; moderately graded; very moist to saturated. @ 20.5' Increasing fine, well-rounded gravel from 20.5' to 21'.	SM	
	6-10-15	25			54			
22.5								
	12-12-16	28			27			
	11-6-16	22			21	24.5 - 27.5' SANDY CLAY: (0,30,30,40); brown (7.5YR5/4); medium plasticity; stiff to hard; fine grained sand; slightly moist.	CL	
25.0								
	6-12-6	18			0.0			
27.5								

Borehole Abandonment/ Well Construction Details



STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 BRADLEY D. WRIGHT

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geologist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: MW-4
D- 17359
Page 1 of 3
Geologist: C. Warwick

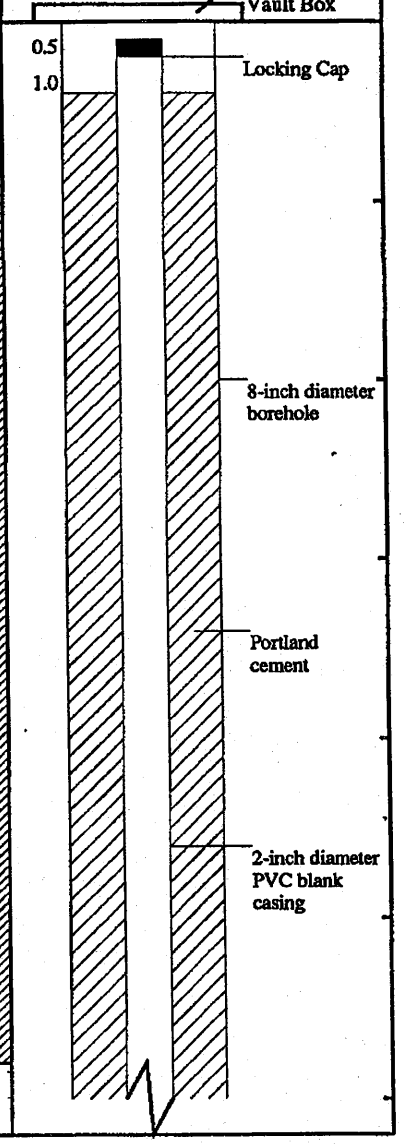
C. C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.
TOC ELEVATION 86.62 (MSL) DATE(S) 10/26/95 TOTAL DEPTH 37.0'
MONITORING DEVICE OVM SCREENED INTERVAL 25.5-35.5
SAMPLING METHOD Cal. Mod. split spoon SUBCONTRACTOR & EQPT Gregg/M-11
PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ▽ =First Water ▼ =Static Water (10/30/95)
MEMO Hand augered to 2'.

Depth Below Surface (ft.)	Penetration Results: Blows 6"-6"-6"	Penetration Results: BPF	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log
						0 - 1' ASPHALT and ROADBASE	RB	
						1 - 14.5' SANDY CLAY: (0,40,35,25); brown (7.5Y5/4); medium plasticity; slightly stiff; fine grained sand; slightly moist.	CL	
2.5	8-10-14	24			0.0			
	4-16-15	31			0.0			
5.0	9-12-18	30			0.0			
	6-10-15	25			0.0			
7.5						@ 7.5 - 9.5' Decreasing sand content.		
	7-14-16	30			0.0			
						@ 9.5 - 10' Increasing medium grained sand.		
10.0	6-10-13	23			0.0			
	7-12-14	26			0.0			
12.5								
	5-8-11	19			0.0			
15.0						14.5 - 16.5' SILTY SAND: (0,55,30,15);	SM	

See Following Page...

Borehole Abandonment/ Well Construction Details



STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 Exp. BRADLEY D. WRIGHT REGISTERED GEOLOGIST

FRIED 12/6/95 AUG

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geologist
TITLE

SOIL DRILLING LOG

McLaren Hart

SB/MW #: MW-4
D- 17359
Page 2 of 3
Geologist: C. Warwick

C. Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Penetration Results: Blows 6"-6"-6"	Penetration Results: BPF	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
15.0	6-10-11	21			0.0	reddish yellow (5YR6/6); loose to medium dense; fine to medium grained sand; moderately graded; moist to very moist.			Portland cement
	7-8-11	19			0.0	16.5 - 20' SANDY SILT with CLAY: (0,40,35,25); brown (7.5YR5/4); low plasticity; slightly stiff; fine grained sand; moist. @ 17.5 - 18' Sand (SC) lens; saturated.	ML		8-inch diameter borehole
17.5	5-7-12	19			0.0				
	8-8-14	22			0.0				
20.0	5-8-12	20			0.0	20 - 28' SANDY CLAY: (0,30,40,30); yellowish red (5YR5/6); medium plasticity; stiff to hard; fine grained sand; slightly moist.	CL		2-inch diameter PVC blank casing
22.5	6-6-11	18			0.0				Hydrated bentonite
	7-10-14	24			0.0				
25.0	6-12-15	27			0.0				12/20 Mesh sand pack
	10-9-13	22			0.0				2-inch diameter PVC screen .020 slot
27.5	7-10-12	22		52415	0.0	28 - 31.5' SANDY SILT: (0,45,35,20); yellowish red (5YR5/6); low plasticity; slightly stiff; fine grained sand; moist.	ML CL		
30.0	10-12-16	28			0.0				
32.5					0.0	31.5 - 35' SILTY SAND: (0,70,20,10); yellowish red (5YR5/6); loose to medium dense; fine to medium grained sand;	SM		

22.5
24.5
25.5

See Following Page...

FRIED.1.GPJ.MSS.NGP.GPJ

STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 BRADLEY D. WEST

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geologist
TITLE

SOIL DRILLING LOG

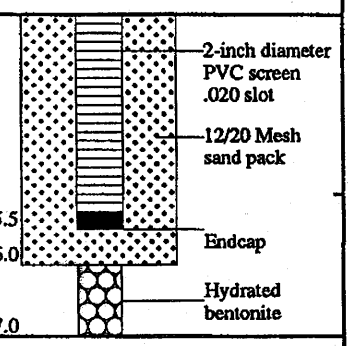
McLaren Hart

SB/MW #: MW-4
D- 17359
Page 3 of 3
Geologist: C. Warwick

C C Warwick
SIGNATURE OF GEOLOGIST

PROJECT Friedkin/Becker LOCATION 3810 Broadway, Oakland, Ca.

Depth Below Surface (ft.)	Penetration Results: Blows 6"-6"-6"	Penetration Results: BPF	Sampler Interval/ Recovery	Sample ID #	PID reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
32.5						moderately graded; very moist.			
	8-9-10	19			0.0				
	7-10-16	26			0.0	@ 34.5 - 35' Decreasing silt and clay content; saturated.			
35.0						35 - 37' SANDY CLAY: (0,30,40,30); yellowish red (5YR5/6); medium plasticity; stiff; fine grained sand; moist.	CL		35.5
		29			0.0				36.0
									37.0



STATE OF CALIFORNIA REGISTERED GEOLOGIST #6276 BRADLEY D. WRIGHT REGISTERED GEOLOGIST

FRIEDKIN/BECKER

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

Senior Geoscientist
TITLE

APPENDIX B

WELL DEVELOPMENT AND SAMPLING EVENT DATA SHEETS

McLaren Hart

HYDRODATA

DATE. 11/03/95

PROJECT: Friedkin Becker EVENT: _____ SAMPLER: Steve

NO.	WELL OR LOCATION	DATE MO	DATE DA	DATE YR	TIME HR	TIME MIN	MEASUREMENT	CODE	COMMENTS
1	MW-4	11	03	95	09	15	19.89		
2	MW-1	↓	↓	↓	09	18	22.98		
3	MW-3	↓	↓	↓	09	20	19.40		
4	MW-2	↓	↓	↓	09	24	22.26		
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

CODES:

- *SWL - Static Water Level (Feet)
- *IWL - Instant Water Level; Non-Static (Feet)
- *OIL - Oil Level (Feet)
- *OWI - Oil/Water Interface (Feet)
- *MTD - Measured Total Depth (Feet)
- FLO - Flow Rate (Gallons/Minute)
- CUM - Cumulative (Gallons)
- HRS - Total (Hours)
- PSI - Pressure (psi)²
- pH - 1 to 14
- Ec - Conductivity (µm HOS)
- TMP - Temperature (°C)
- TRB - Turbidity (NTU)
- ___ - _____ (Additional Code)

*All levels are depth from inner casing - describe any other reference points in comments column; when in doubt, describe reference point.

Note in comments column if well is not: properly labeled, locked, or able to be locked. Describe corrective action.

Note flooding of vault box, odor, access problems.

McLaren Hart

HYDRODATA

DATE: 10/30/9[illegible]

PROJECT: Friedkin / Becker EVENT: INITIAL SAMPLER: Stone

NO.	WELL OR LOCATION	DATE MO	DATE DA	DATE YR	TIME HR	TIME MIN	MEASUREMENT	CODE	COMMENTS
1	MW-3	10	30	95	09	45	19.19	SWL	OVM - well 891 ppm OVM - head space 0.0 ppm
2	MW-4	↓	↓	↓	09	54	19.84	↓	OVM - well 0.0 ppm OVM - head 0.0 "
3	MW-1	↓	↓	↓	09	57	22.93	↓	OVM - well 0.0 ppm OVM - head 0.0 "
4	MW-2	↓	↓	↓	10	01	22.22	↓	OVM - well 767 ppm OVM - head 0.0 ppm
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

CODES:

- *SWL - Static Water Level (Feet)
- *IWL - Instant Water Level; Non-Static (Feet)
- *OIL - Oil Level (Feet)
- *OWI - Oil/Water Interface (Feet)
- *MTD - Measured Total Depth (Feet)
- FLO - Flow Rate (Gallons/Minute)
- CUM - Cumulative (Gallons)
- HRS - Total (Hours)
- PSI - Pressure (psi)[2]
- pH - 1 to 14
- Ec - Conductivity (µm HOS)
- TMP - Temperature (°C)
- TRB - Turbidity (NTU)
- ___ - _____ (Additional Code)

*All levels are depth from inner casing - describe any other reference points in comments column; when in doubt, describe reference point.

Note in comments column if well is not: properly labeled, locked, or able to be locked. Describe corrective action.

Note flooding of vault box, odor, access problems.

[2]Negative pressure (Vacuum) psi = approx. -(1/2 x mmHg)

McLaren Hart

WELL DEVELOPMENT DATA SHEET

(fill out completely)

WELL OR LOCATION MW-1

PROJECT FRIEDKIN BECKER SAMPLER STEVE DATE 10/30/95

Well / Hydrologic statistics

Well type MW (MW, EW, etc.)

diameter 2"

equals 0.16 gal/ft. casing

SWL 22.93 (if above screen)

packer / intake / bailer depth 33 ft. (circle one)

SWL (if in screen)

measured T.D. 34.09

24 TOP

35 BOP

35 T.D. (as built)

Action	Time	Pump rate	IWL (low yield)
Start pump / Begin	1456	1.5 GPM	
		↓	
	1506	0.5 GPM	32.82
	1528		32.5
Stop	1544		
Sampled			
(Final IWL)	1549		26.50

Purge calculation

0.16 gal/ft. * 12.07 ft. = 1.93 gals x 10 = 20 gals.

SWL to BOP or packer to BOP — one volume — purge volume-10 casings

Head purge calculation (Airlift only)

____ gal/ft. * ____ ft. = ____ gals.

packer to SWL

Actual gallons purged 34

Actual volumes purged 16.17

Well yield ⊕ (see below) MY

Equipment Used / Sampling Method / Description of Event/Comments:
SURGED WELL: 10 REPS / 3' INC.
BAILED:
2" SUBMERSIBLE PUMP TO PURGE

Gallons purged *	TEMP °C / (F) (circle one)	EC (µs / cm)	Ph	TURBIDITY (NTU)		
1. 2	61.9	1670	6.58	> 200.0		
2. 4	61.0	1690	6.60	> 200.0		
3. 6						
4. 8						
5. 10	61.5	1730	6.62	> 200.0		
6. 12						
7. 14	62.9	1760	6.68	> 200.0		
8. 16						
9. 18	62.0	1750	6.69	> 200.0		
10. 20						
11. 22						
12. 24	62.2	1750	6.69	> 200.0		

* Take measurement at approximately each casing volume purged.

⊕ HY - Minimal W.L drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

WELL DEVELOPMENT DATA SHEET

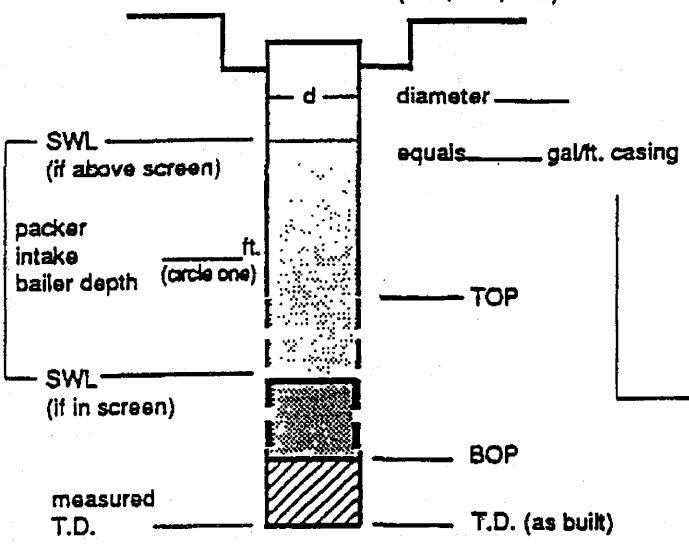
(fill out completely)

McLaren Hart

WELL OR LOCATION MW-1 (CONT)

PROJECT FRIEDKIN BECKER SAMPLER STEVE DATE 10/30/95

Well / Hydrologic statistics



Action	Time	Pump rate	IWL (low yield)
Start pump / Begin			
Stop			
Sampled			
(Final IWL)			

Purge calculation

_____ gal/ft. * _____ ft. = _____ gals x 10 = _____ gals.

SWL to BOP or packer to BOP — one volume — purge volume-10 casings

Head purge calculation (Airlift only)

_____ gal/ft. * _____ ft. = _____ gals.

packer to SWL

Actual gallons purged _____

Actual volumes purged _____

Well yield ⊕ _____
(see below)

Equipment Used / Sampling Method / Description of Event/Comments:

Gallons purged *	TEMP °C / °F (circle one)	EC (µs / cm)	Ph	TURBIDITY (NTU)		
1. 26	62.6	1770	6.72	7200.0		
2. 28						
3. 30	62.0	1770	6.76	149.8		
4. 32	62.0	1770	6.82	88.9		
5. 34	62.2	1720	6.68	16.27		
6.						
7.						
8.						
9.						
10.						
11.						
12.						

* Take measurement at approximately each casing volume purged.

⊕ HY- Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

McLaren Hart

WELL DEVELOPMENT DATA SHEET

(fill out completely)

WELL OR LOCATION MW-2

PROJECT FRIEDKIN-BECKER SAMPLER STEVE DATE 10/30/95

Well / Hydrologic statistics

Well type MW (MW, EW, etc.)

diameter 2

equals 0.16 gal/ft. casing

SWL 22.22 (if above screen)

packer / intake / bailer depth 24/32 ft. (circle one)

SWL (if in screen)

measured T.D. 33.9

25 TOP

35 BOP

35 T.D. (as built)

Action	Time	Pump rate	IWL (low yield)
Start pump / Begin	1641	0.5 GPM	
Stop	1659		
Sampled			
(Final IWL)			

Purge calculation

0.16 gal/ft. * 12.78 ft. = 2.5 gals x 10 = 25 gals.

(SWL to BOP or packer to BOP) (one volume) (purge volume-10 casings)

Head purge calculation (Airlift only)

____ gal/ft. * ____ ft. = ____ gals.

packer to SWL

Actual gallons purged 6

Actual volumes purged 2.4

Well yield ⊕ (see below) –

Equipment Used / Sampling Method / Description of Event/Comments:
SURGED WELL: 10 REPS / 5' INC.
2" SUBMERSIBLE PUMP TO PURGE.
FREE PRODUCT PUMPED AFTER 6 GALLONS / STOPPED PURGING.

Gallons purged *	TEMP °C (°F) (circle one)	EC (µs / cm)	Ph	TURBIDITY (NTU)		
1. 2	61.2	1170	6.80	>200.0		
2. 4	61.8	1150	6.68	>200.0		
3. 6	60.9	1110	6.72	>200.0		
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						

* Take measurement at approximately each casing volume purged.

⊕ HY- Minimal W.L drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

WELL DEVELOPMENT DATA SHEET

(fill out completely)

McLaren Hart

WELL OR LOCATION MW-3

PROJECT FRIEDKIN-BECKER SAMPLER STEVE DATE 10/30/95

Well / Hydrologic statistics

Well type MW (MW, EW, etc.)

diameter 2 equals 0.16 gal/ft. casing

SWL 19.19 (if above screen)

packer / intake / bailer depth 23 ft. (circle one)

SWL (if in screen)

measured T.D. 23.38

20 TOP

25 BOP

25 T.D. (as built)

Action	Time	Pump rate	IWL (low yield)
Start pump / Begin	1048	0.4 GPM	
	1051		22.18
	1053		22.45
	1058		22.30
	1108		22.29
	1127		22.65
Stop	1129		22.65
Sampled			
(Final IWL)			

Purge calculation

0.16 gal/ft. * 5.81 ft. = 1 gals x 10 = 10 gals.

SWL to BOP or packer to BOP — one volume — purge volume-10 casings

Head purge calculation (Airlift only)

____ gal/ft. * ____ ft. = ____ gals.

packer to SWL

Actual gallons purged 21

Actual volumes purged 21

Well yield ⊕ (see below) MY

Equipment Used / Sampling Method / Description of Event/Comments:
SURGED WELL: 10 REPS OVERSCREEN
BAILED ~5 GALLONS: HEAVY SILT/CLAY
CENTRIFUGAL PUMP TO PURGE

Gallons purged *	TEMP °C / °F (circle one)	EC (µs / cm)	Ph	TURBIDITY (NTU)		
1. 1	81.1	1290	6.75	99.7		
2. 2	83.1	1240	6.73	>200.0		
3. 3	82.2	1150	6.58	>200.0		
4. 4	85.3	1130	6.68	>200.0		
5. 5	88.7	1110	6.62	>200.0		
6. 6	87.2	1110	6.64	>200.0		
7. 7	87.7	1060	6.62	>200.0		
8. 8	90.5	790	6.62	115.2		
9. 9	89.9	770	6.50	70.1		
10. 10	88.3	830	6.48	>200.0		
11. 11	85.9	780	6.51	>200.0		
12. 12	88.3	820	6.56	>200.0		

* Take measurement at approximately each casing volume purged.

⊕ HY - Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

McLaren Hart

WELL DEVELOPMENT DATA SHEET

(fill out completely)

WELL OR LOCATION MW-3 (cont)

PROJECT FRIEDKIN-BECKER SAMPLER STEVE DATE 10/30/95

Well / Hydrologic statistics

Well type MW (MW, EW, etc.)

diameter 2

equals 0.16 gal/ft. casing

SWL 19.19 (if above screen)

packer / intake / bailer depth 23 ft. (circle one)

SWL (if in screen)

measured T.D. 23.38

d

20 TOP

25 BOP

25 T.D. (as built)

Action	Time	Pump rate	IWL (low yield)
Start pump / Begin			
Stop			
Sampled			
(Final IWL)			

Purge calculation

____ gal/ft. * ____ ft. = ____ gals x 10 = ____ gals.

SWL to BOP or packer to BOP — one volume — purge volume-10 casings

Head purge calculation (Airlift only)

____ gal/ft. * ____ ft. = ____ gals.

packer to SWL

Actual gallons purged ____

Actual volumes purged ____

Well yield ⊕ ____ (see below)

Equipment Used / Sampling Method / Description of Event/Comments:

Gallons purged *	TEMP °C / °F (circle one)	EC (µs / cm)	Ph	TURBIDITY (NTU)		
1. 13	85.9	780	6.56	>200.0		
2. 14	86.2	770	6.58	>200.0		
3. 15	86.7	780	6.62	53.7		
4. 16	86.8	770	6.56	34.9		
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						

* Take measurement at approximately each casing volume purged.

⊕ HY- Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

WELL DEVELOPMENT DATA SHEET

(fill out completely)

McLaren Hart

WELL OR LOCATION MW-4

PROJECT FRIEDKIN-BECKER SAMPLER STEVE DATE 10/30/95

Well / Hydrologic statistics

Well type MW (MW, EW, etc.)

diameter 2

equals 0.16 gal/ft. casing

SWL 19.84 (if above screen)

packer / intake / bailer depth 34 ft. (circle one)

24 TOP

SWL (if in screen)

35.5 BOP

measured T.D. 35.2

35.5 T.D. (as built)

Action	Time	Pump rate	IWL (low yield)
Start pump / Begin	1215	4 GPM	
	1218	2 GPM	25.72
	1222		28.90
	1225		30.88
(STOP)	1227		
(START)	1335	1 GPM	20.34
Stop	1350		27.79
Sampled			
(Final IWL)			

Purge calculation

0.16 gal/ft. * 15.66 ft. = 2.5 gals x 10 = 25 gals.

SWL to BOP or packer to BOP — one volume — purge volume-10 casings

Head purge calculation (Airlift only)

____ gal/ft. * ____ ft. = ____ gals.

packer to SWL

Actual gallons purged 45

Actual volumes purged 18

Well yield ⊕ (see below) MY

Equipment Used / Sampling Method / Description of Event/Comments:
SURGED WELL: 10 REPS @ 5'/INC
2" SUBMERSIBLE PUMP TO PURGE. SWITCHED TO CENTRIFUGAL PUMP TO PURGE @ 1227 (30 GAL)

Gallons purged *	TEMP °C (°F) (circle one)	EC (µs / cm)	Ph	TURBIDITY (NTU)		
1. 2	64.2	800	7.70	>200.0		
2. 5	64.8	760	7.41	>200.0		
3. 7						
4. 10	64.8	670	7.24	>200.0		
5. 12						
6. 15	64.8	710	7.15	>200.0		
7. 17	64.6	640	7.14	>200.0		
8. 20	67.1	630	7.14	>200.0		
9. 22	72.3	410	7.12	>200.0		
10. 25	75.8	410	7.11	>200.0		
11. 27	77.0	410	7.11	172.5		
12. 30	77.8	400	7.10	141.0		

* Take measurement at approximately each casing volume purged.

⊕ HY - Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

McLaren Hart

WELL DEVELOPMENT DATA SHEET

(fill out completely)

WELL OR LOCATION MW-4 (CONT)

PROJECT FRIEDKIN-BECKER SAMPLER STEVE DATE 10/30/95

Well / Hydrologic statistics

Well type MW (MW, EW, etc.)

diameter 2

equals 0.16 gal/ft. casing

SWL 19.84 (if above screen)

packer / intake / bailer depth 34 ft. (circle one)

24 TOP

SWL (if in screen)

35.5 BOP

measured T.D. 35.2

35.5 T.D. (as built)

Action	Time	Pump rate	IWL (low yield)
Start pump / Begin			
Stop			
Sampled			
(Final IWL)			

Purge calculation

0.16 gal/ft. * 15.66 ft. = 2.5 gals x 10 = 25 gals.

(SWL to BOP or packer to BOP) (one volume) (purge volume- 10 casings)

Head purge calculation (Airlift only)

____ gal/ft. * ____ ft. = ____ gals.

packer to SWL

Actual gallons purged _____

Actual volumes purged _____

Well yield ⊕ _____ (see below)

Equipment Used / Sampling Method / Description of Event/Comments:

Gallons purged *	TEMP °C / °F (circle one)	EC (µs / cm)	Ph	TURBIDITY (NTU)		
1. 32						
2. 35	78.9	370	7.32	125.2		
3. 37	79.2	380	7.25	88.9		
4. 40	80.3	390	7.17	101.9		
5. 42	82.4	390	7.17	102.5		
6. 45	79.4	410	7.11	48.5		
7.						
8.						
9.						
10.						
11.						
12.						

* Take measurement at approximately each casing volume purged.

⊕ HY- Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

McLaren Hart — SAMPLING EVENT DATA SHEET

(fill out completely)

WELL OR LOCATION MW-1

PROJECT Friedkin Becker EVENT _____ SAMPLER Steve DATE 11/03/95

Well / Hydrologic statistics

Well type (MW, EW, etc.) MW

diameter 2"

equals .16 gal/ft. casing

SWL 22.98 (if above screen)

packer / intake / bailer depth _____ ft. (circle one)

SWL _____ (if in screen)

d

24 TOP

34' BOP

measured T.D. 34.09

34' T.D. (as built)

Action	Time	Pump rate	IWL (low yield)
Start pump / Begin	1030		
Stop	1146		23.93
Sampled	1150		—
(Final IWL)	1200		23.28

Purge calculation

.16 gal/ft. * 11.02 ft. = 1.76 gals x 3/4 = 7.05 gals.

SWL to BOP or packer to BOP — one volume — purge volume- 3 casings

Head purge calculation (Airlift only)

gal/ft. ____ ft. ____ gals.

packer to SWL

Equipment Used / Sampling Method / Description of Event:

peristaltic pump w/ disposable bailer

Actual gallons purged 7.5

Actual volumes purged _____

Well yield (see below) ⊕ _____

COC # 16396

Sample I.D.	Analysis	Lab
S00901-4	BTEX	MBT
	TPH-G	↓

Additional comments:

Gallons purged *	TEMP °C / °F (circle one)	EC (µs / cm)	PH	TURBIDITY (NTU)		
1. 1.5	60.2	1631	6.910	6.73		
2. 3.0	60.1	1695	6.98	4.82		
3. 4.5	60.1	1690	6.93	3.21		
4. 6.0	59.7	1687	6.91	1.98		
5. Sample				2.46		

* Take measurement at approximately each casing volume purged.

⊕ HY- Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

McLaren Hart

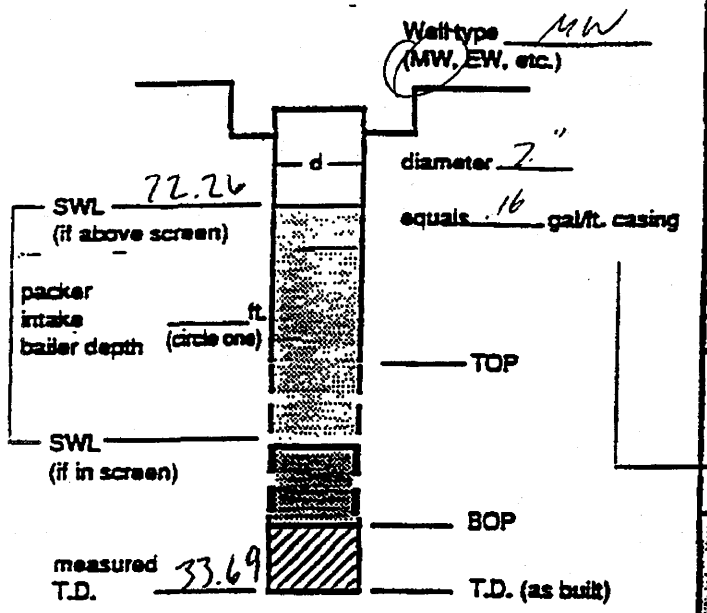
SAMPLING EVENT DATA SHEET

(fill out completely)

WELL OR LOCATION MW-2

PROJECT Friedkin Becker EVENT _____ SAMPLER Steve DATE 11/03/95

Well / Hydrologic statistics



Action	Time	Pump rate	IWL (low yield)
Start pump / Begin	1100		
Stop			
Sampled			
(Final IWL)			

Purge calculation

_____ gal/ft. * _____ ft. = _____ gals x 3 = _____ gals.

SWL to BOP or packer to BOP — one volume — purge volume- 3 casings

Head purge calculation (Airlift only)

_____ gal/ft. * _____ ft. = _____ gals.

packer to SWL

Equipment Used / Sampling Method / Description of Event:

2 centrifugal - purged 1.0 gal

1 peristaltic - purged 1.5 gal

3 bailer - ~~B~~ bailed 3.0 gal

Actual gallons purged 5.5

Actual volumes purged _____

Well yield (see below) ⊕ _____

COC # _____

Sample I.D.	Analysis	Lab

Additional comments:

Gallons purged *	TEMP °C / °F (circle one)	EC (µs / cm)	PH	TURBIDITY (NTU)		
1.						
2.						
3.						
4.						
5.						

* Take measurement at approximately each casing volume purged.

⊕ HY- Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

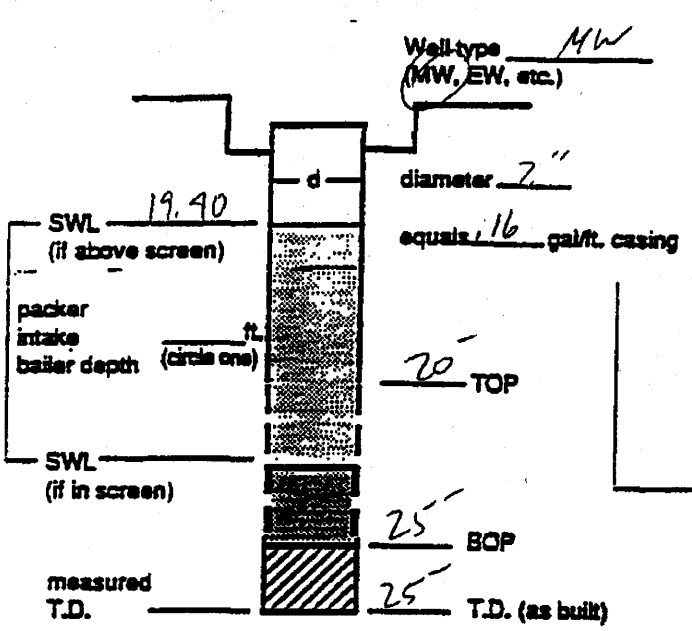
McLaren Hart — SAMPLING EVENT DATA SHEET

(fill out completely)

WELL OR LOCATION MW-3

PROJECT Friedkin/Becker EVENT _____ SAMPLER Steve DATE 11/03/95

Well / Hydrologic statistics



Action	Time	Pump rate	IWL (low yield)
Start pump / Begin	0934		
Stop	1003		19.77
Sampled	1009		—
(Final IWL)	1014		19.54

Purge calculation

.16 gal/ft. • 5.6 ft. = .90 gals x 4 = 3.58 gals.

SWL to BOP or packer to BOP — one volume — purge volume-3 casings

Head purge calculation (Airlift only)

gal/ft. • ft. = gals.

packer to SWL

Equipment Used / Sampling Method / Description of Event:

Peristaltic pump w/ disposable bailer

Actual gallons purged 4.0

Actual volumes purged _____

Well yield (see below) ⊕ _____

COC # 16396

Sample I.D.	Analysis	Lab
500591-4	TPH-G	MBT
	BTEX	↓

Additional comments:

Gallons purged *	TEMP °C / °F (circle one)	EC (µs / cm)	PH	TURBIDITY (NTU)		
1. .50	60.3	2530	6.85	12.32		
2. 1.50	60.3	2200	6.88	6.39		
3. 2.50	59.5	2050	6.93	3.21		
4. 3.50	59.7	2010	6.89	1.81		
5. Sample				1.70		

* Take measurement at approximately each casing volume purged.

⊕ HY- Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

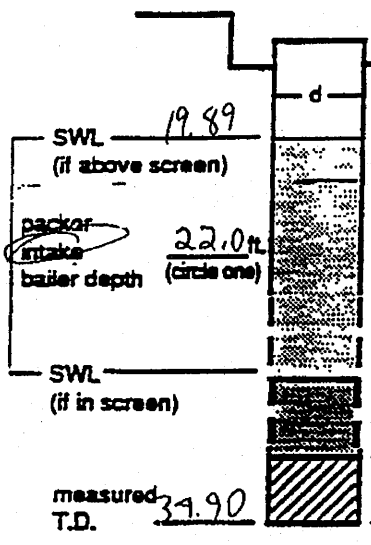
McLaren Hart — SAMPLING EVENT DATA SHEET

(fill out completely)

WELL OR LOCATION MW-4

PROJECT Friedkin Becker EVENT _____ SAMPLER Steve DATE 11/03/95

Well / Hydrologic statistics



Well type MW (MW, EW, etc.)

diameter 2"

equals .16 gal/ft. casing

25.5 TOP

35.5 BOP

35.5 T.D. (as built)

Action	Time	Pump rate	IWL (low yield)
Start pump / Begin	0944	0.58 gpm	
Stop	1102		21.23
Sampled	1105		—
(Final IWL)	1110		20.14

Purge calculation

.16 gal/ft. * 15.61 ft. = 2.50 gals x 3/4 = 10.00 gals.

SWL to BOP or packer to BOP — one volume — purge volume-3 casings

Head purge calculation (Airlift only)

gal/ft. * ____ ft. = ____ gals.

packer to SWL

Equipment Used / Sampling Method / Description of Event:

Peristaltic pump w/ disposable bailer

Actual gallons purged 10.5

Actual volumes purged 4.2

Well yield (see below) ⊕ HY-MY

COC # 16396

Sample I.D.	Analysis	Lab
500595-8	TPH-G	MBS
	BTEX	

Additional comments:

Gallons purged *	TEMP °C/°F (circle one)	EC (µs / cm)	PH	TURBIDITY (NTU)		
1. 2	58.9	892	7.34	6.87		
2. 4.5	60.5	842	7.38	3.11		
3. 7.0	60.3	785	7.29	1.74		
4. 9.5	60.4	799	7.23	2.03		
5. Sample				1.93		

* Take measurement at approximately each casing volume purged.

⊕ HY- Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

APPENDIX C

LABORATORY ANALYTICAL DATA SHEETS;
AND
CHAIN-OF-CUSTODY RECORDS - GROUNDWATER AND SOIL SAMPLES

MBT Environmental
Laboratories

3083 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

Date: September 25, 1995
LP #: 12580

Saul Germanas
McLaren/Hart Environmental Engineering
1135 Atlantic Avenue
Alameda, CA 94501

Dear Mr. Germanas:

Enclosed are the laboratory results for the three samples submitted to MBT Environmental Laboratories on September 16, 1995, for the project *3810 Broadway*.

The report consists of the following sections:

1. Cover Page
2. Copy of Chain-of-Custody
3. General Narrative
4. Analytical and Quality Control Results

Unless otherwise instructed by you, samples will be disposed of two weeks from the date of this letter.

Thank you for choosing MBT Environmental Laboratories. We are looking forward to serving you in the future. Should you have any questions concerning this analytical report or the analytical methods employed, please do not hesitate to call.

Sincerely,

for

Kevin Hanlon
Project Coordinator

ANALYTICAL REPORT

LABORATORY PROJECT (LP) NUMBER 12580

3810 BROADWAY

The analyses performed by MBT Environmental Laboratories in this report comply with the requirements under the following certification/approval:

	ARIZONA:	Hazardous Waste, #AZ0468 Waste Water, # AZ0468 Drinking Water, #AZ0468
✓	CALIFORNIA:	Hazardous Waste, #1417 Waste Water, # 1417 Drinking Water, #1417
	CONNECTICUT:	Waste Water, #PH0799
	FLORIDA:	Environmental Water, #E87298 CQAPP #930105
	KANSAS:	Hazardous Waste, #E-1167 Waste Water, #E-192 Drinking Water, #E-192
	NEW HAMPSHIRE:	Waste Water, #253195-B Drinking Water, #253195-A
	NEW JERSEY:	Waste Water, #44818
	NEW YORK:	Hazardous Waste, #11241 Waste Water, #11241 CLP, #11241
	OKLAHOMA:	Hazardous Waste, #9318 Waste Water, #9318
	SOUTH CAROLINA:	Hazardous Waste, #87013 Waste Water, #87013
	TENNESSEE:	Underground Storage Tank
	UTAH:	Hazardous Waste, #E-165 Waste Water, #E-165 Drinking Water, #E-165
	WASHINGTON:	Hazardous Waste, #C048
	WISCONSIN:	Hazardous Waste, #999940920 Waste Water, #999940920
	USACOE:	Hazardous Waste Waste Water
	AFCEE	

(CN12580)

MBT Environmental Laboratories

MBT Environmental Laboratories
3083 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

CHAIN OF CUSTODY RECORD 12994

SEE SIDE 2 FOR COMPLETE INSTRUCTIONS

Project Name: 3810 Broadway
Project Number: 04.0601879.001.002
Project Location: (State) OAKLAND, CA

FOR LABORATORY USE ONLY
Laboratory Project #: 12580 Storage ID: 12-B
Sample Condition Upon Receipt: Temp: 3 °C Geiger:
Custody Seals Present? Yes/No Intact? Yes/No Samples Intact? Yes/No

Sample Disposal (check one): [x] Laboratory Standard [ ] Other

Level of QC (see Side 2): [x] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6A [ ] 6B [ ] 6C [ ] 6D [ ] 6E [ ] 6F [ ] 7 [ ] 8 [ ] A

Write in Analysis Method →

SAMPLE INFORMATION / ANALYSES REQUESTED

FOR LABORATORY USE ONLY Lab ID	Sample ID Number	Date	Time	Description: Locator	Description: Depth	Container(s): #	Container(s): Type	Matrix Type	Pres. Type	TAT	BTEX/TPH-G
1 12580-001	52402	9-11-95	1630	B-1	19	1	B	SOIL	—	3	X
2 -002	51497	9-11-95	1250	B-2	16.5	↓	↓	↓	↓	↓	X
3 -003	51495	9-11-95	1038	B-4	18	↓	↓	↓	↓	↓	X
4											
5											
6											
7											
8											
9											
10											

SEND REPORT TO:
Company Name: SAUL GERMANIS
Client Name: ALAMEDA
Address: W/H
Phone: Fax:

BILL TO (if different):
Company Name:
Address:
PO #:
Phone: Fax:

Special Instructions/Comments

Sampler Name: CHRIS WARWICK
Signature: C Warwick
PPE Worn in Field: D

Relinquished By: C Warwick — Date/Time: 09-15-95/1700
Received By or Method of Shipment/Shipment I.D.: COURIER — Date/Time: 09-15-95/1700

Relinquished By: FEDEX IT — Date/Time:
Received By or Method of Shipment/Shipment I.D.: [illegible] — Date/Time: 9/16/95 1010

Relinquished By: — Date/Time:
Received By or Method of Shipment/Shipment I.D.: — Date/Time:

Common Analytical Methods
413.1
413.2 Long Method
413.2 Short Method
418.1 Long Method
418.1 Short Method
420.1
502.2
503E
503.1
524.2
601
602
604
608
610
624
625
8010
8015
8015 Mod.
8020
8021
8040
8080
8100
8150
8240
8270
8310
Acidity
Alkalinity
BTEX
Chloride
CLP (see Side 2)
COD
Color
Conductivity
Corrosivity
Cyanide
Flashpoint
Fluoride
General Mineral
Hex. Chromium
Ion Balance
Metals (write specific metal & method #)*
Metals 6010*
Metals PP*
Metals Title 22:
TTLC Level
STLC Level
(see Side 2)
Nitrate
Nitrite
Odor
Org. Lead
Org. Mercury
Percent Moisture
Percent Solid
Perchlorate
pH
Phosphates
Phosphorus
Sulfate
Sulfides
TCLP:
VOA
Semivos
Metals
Pesticide
TDS
Total Hardness
Total Solids
TPH/D
TPH/G
TSS
Turbidity

* Specify Total or Dissolved

GENERAL NARRATIVE

Comments:

Test methods may include minor modifications of published EPA methods (e.g., reporting limits or parameter lists). Reporting limits are adjusted to reflect dilution of the sample when appropriate. Solids and waste are analyzed with no correction made for moisture content.

Percent recoveries for laboratory control samples and matrix spikes have been calculated using unrounded concentration values. Therefore, percent recoveries reported may differ slightly from those obtained from the rounded concentration values which appear on the report.

The surrogate recoveries for the analytes flagged on the data sheet were diluted out for the following samples: 12580-1, 12580-2, and 12580-3.

The following samples were analyzed at a dilution to bring target analytes within linear working range: 12580-1, 12580-2, and 12580-3.

Abbreviations and Definitions:

MB	*Method Blank* - An aliquot of a blank matrix carried throughout the entire analytical process
LCS	*Laboratory Control Sample* - A blank to which known quantities of specific analytes are added prior to sample preparation and analysis to assess the accuracy of the method
MS/MSD	*Matrix Spike/Matrix Spike Duplicate* - Duplicate samples to which known quantities of specific analytes are added prior to sample preparation and analysis to assess the extent of matrix bias or interference on analyte recovery
RPD	*Relative Percent Difference* - The measurement of precision between duplicate analyses
BRL	*Below Reporting Limit*
NS	*Not Specified*
NA	*Not Applicable*

Flags:

<u>Organics -</u>

J	Estimated value below the reporting limit and at or above the method detection limit.
B	Analyte found in the associated blank, as well as in the sample.

(CN12580)

Inorganics -

B Estimated value below the reporting limit and at or above the method detection limit.

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-1 19
Sample Number: 52402
Date/Time Received: 09/16/95 10:10
Date Prepared: 09/18/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12580
Project Number: 040601879001002
Lab ID: 12580-1/23682-8298
Date/Time Sampled: 09/11/95 16:30
Matrix: Soil (S)
Batch Number: 3275-950918
% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Benzene	33000	5000	1000	09/19/95
Toluene	310000	5000	1000	09/19/95
Ethyl benzene	67000	5000	1000	09/19/95
1,2-Xylene	89000	5000	1000	09/19/95
1,3-Xylene	200000	5000	1000	09/19/95
1,4-Xylene	72000	5000	1000	09/19/95
TPH - Gasoline	3600000	1000000	1000	09/19/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	0 *	51 - 102
Bromofluorobenzene(FID)	0 *	51 - 102

Qualifier Legend:
* - Values outside QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-25-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-2 16.5
Sample Number: 51497
Date/Time Received: 09/16/95 10:10
Date Prepared: 09/18/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12580
Project Number: 040601879001002
Lab ID: 12580-2/23683-8298
Date/Time Sampled: 09/11/95 12:50
Matrix: Soil (S)
Batch Number: 3275-950918
% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Benzene	15000	5000	1000	09/19/95
Toluene	120000	5000	1000	09/19/95
Ethyl benzene	37000	5000	1000	09/19/95
1,2-Xylene	45000	5000	1000	09/19/95
1,3-Xylene	9900	5000	1000	09/19/95
1,4-Xylene	39000	5000	1000	09/19/95
TPH - Gasoline	2200000	1000000	1000	09/19/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	0 *	51 - 102
Bromofluorobenzene(FID)	0 *	51 - 102

Qualifier Legend:
* - Values outside QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-25-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-4 18
Sample Number: 51495
Date/Time Received: 09/16/95 10:10
Date Prepared: 09/18/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12580
Project Number: 040601879001002
Lab ID: 12580-3/23684-8298
Date/Time Sampled: 09/11/95 10:38
Matrix: Soil (S)
Batch Number: 3275-950918
% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Benzene	3800	500	100	09/19/95
Toluene	44000	5000	1000	09/19/95
Ethyl benzene	18000	5000	1000	09/19/95
1,2-Xylene	27000	5000	1000	09/19/95
1,3-Xylene	49000	5000	1000	09/19/95
1,4-Xylene	25000	5000	1000	09/19/95
TPH - Gasoline	1400000	100000	100	09/19/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	0 *	51 - 102
Bromofluorobenzene(FID)	0 *	51 - 102

Qualifier Legend:
* - Values outside QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-25-95

MBT Environmental Laboratories

Master Builders Technologies

METHOD BLANK

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: 09/18/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

Lab ID: 24336-MB /8298
Matrix: Soil
Batch Number: 3275-950918

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Date Analyzed
Benzene	BRL	5.0	09/18/95
Toluene	BRL	5.0	09/18/95
Ethyl benzene	BRL	5.0	09/18/95
1,2-Xylene	BRL	5.0	09/18/95
1,3-Xylene	BRL	5.0	09/18/95
1,4-Xylene	BRL	5.0	09/18/95
TPH - Gasoline	BRL	1000	09/18/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	92	51 - 102
Bromofluorobenzene(FID)	98	51 - 102

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-25 95

MBT Environmental Laboratories

Master Builders Technologies

LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: 09/18/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL
LCS Date Analyzed: 09/18/95

Lab ID: 24337-LCS /8298
Matrix: Soil Units: ug/Kg (ppb)
Batch Number: 3275-950918
LCSD Date Analyzed: NA

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	Acceptance Limits RPD
Benzene	0	250	280	114	NA	NA	NA	70-124	≤25
Ethyl benzene	0	250	280	110	NA	NA	NA	67-128	≤25
TPH - Gasoline	0	2500	2900	110	NA	NA	NA	75-125	≤25

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

Surrogate	(h) Surr. Spike Conc.	(i) Sample + Surr. Spike Conc.	(j) Surr. Spike Rec %	(k) Sample Dup. + Surr. Spike Conc.	(l) Surr. Spike Dup. Rec %	Acceptance Limits
Bromofluorobenzene(PID)	200	180	92	NA	NA	51-102
Bromofluorobenzene(FID)	200	194	97	NA	NA	51-102

Surrogate % Recovery = j = (i-h) x 100
Surrogate Duplicate Recovery = l = (k/h) x 100

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-25-95

MBT Environmental Laboratories

Master Builders Technologies

MBT Environmental
Laboratories

3083 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

Date: November 13, 1995
LP #: 12880

Chris Warwick
McLaren/Hart Environmental Engineering
1135 Atlantic Avenue
Alameda, CA 94501

Dear Mr. Warwick:

Enclosed are the laboratory results for the samples submitted to MBT Environmental Laboratories on October 27, 1995, for the project *MBT*.

The report consists of the following sections:

1. Cover Page
2. Copy of Chain-of-Custody
3. General Narrative
4. Analytical and Quality Control Results

Unless otherwise instructed by you, samples will be disposed of two weeks from the date of this letter.

Thank you for choosing MBT Environmental Laboratories. We are looking forward to serving you in the future. Should you have any questions concerning this analytical report or the analytical methods employed, please do not hesitate to call.

Sincerely,

Kevin Hanlon
Project Coordinator

ANALYTICAL REPORT

LABORATORY PROJECT (LP) NUMBER 12880

MBT

The analyses performed by MBT Environmental Laboratories in this report comply with the requirements under the following certification/approval:

	ARIZONA:	Hazardous Waste, #AZ0468 Waste Water, # AZ0468 Drinking Water, #AZ0468	OKLAHOMA:	Hazardous Waste, #9318 Waste Water, #9318
✓	CALIFORNIA:	Hazardous Waste, #1417 Waste Water, # 1417 Drinking Water, #1417 Mobile Lab, #2070	SOUTH CAROLINA:	Hazardous Waste, #87013 Waste Water, #87013
	CONNECTICUT:	Waste Water, #PH0799	TENNESSEE:	Underground Storage Tank
	FLORIDA:	Environmental Water, #E87298 CQAPP #930105	UTAH:	Hazardous Waste, #E-165 Waste Water, #E-165 Drinking Water, #E-165
	KANSAS:	Hazardous Waste, #E-1167 Waste Water, #E-192 Drinking Water, #E-192	WASHINGTON:	Hazardous Waste, #C048
	NEW HAMPSHIRE:	Waste Water, #253195-B Drinking Water, #253195-A	WISCONSIN:	Hazardous Waste, #999940920 Waste Water, #999940920
	NEW JERSEY:	Waste Water, #44818	USACOE:	Hazardous Waste Waste Water
	NEW YORK:	Hazardous Waste, #11241 Waste Water, #11241 CLP, #11241	AFCEE	

(CN12880)

MBT Environmental Laboratories

GENERAL NARRATIVE

Comments:

Test methods may include minor modifications of published EPA methods (e.g., reporting limits or parameter lists). Reporting limits are adjusted to reflect dilution of the sample when appropriate. Solids and waste are analyzed with no correction made for moisture content.

Percent recoveries for laboratory control samples and matrix spikes have been calculated using unrounded concentration values. Therefore, percent recoveries reported may differ slightly from those obtained from the rounded concentration values which appear on the report.

EPA 8020 BTEX - TPH/G BY LUFT:

The surrogate recoveries for the analytes flagged on the data sheet were diluted out for the following sample: 12880-2

The surrogate recoveries for the analytes flagged on the data sheet were beyond acceptance limits for the following sample: 12880-1, 12880-MB, 12880-LCS

The surrogate recoveries for the analytes flagged on the data sheet were beyond acceptance limits due to the presence of a suspect interferant for the following sample: 12880-4

Abbreviations and Definitions:

MB	*Method Blank* - An aliquot of a blank matrix carried throughout the entire analytical process
LCS	*Laboratory Control Sample* - A blank to which known quantities of specific analytes are added prior to sample preparation and analysis to assess the accuracy of the method
MS/MSD	*Matrix Spike/Matrix Spike Duplicate* - Duplicate samples to which known quantities of specific analytes are added prior to sample preparation and analysis to assess the extent of matrix bias or interference on analyte recovery
RPD	*Relative Percent Difference* - The measurement of precision between duplicate analyses
BRL	*Below Reporting Limit*
NS	*Not Specified*
NA	*Not Applicable*

(CN12880)

Flags:

Organics -

J Estimated value below the reporting limit and at or above the method detection limit.

B Analyte found in the associated blank, as well as in the sample.

Inorganics -

B Estimated value below the reporting limit and at or above the method detection limit.

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: Mclaren/Hart
Project Name: MBT
Sample Description: MW-3 8.5'
Sample Number: 52416
Date/Time Received: 10/27/95 09:00
Date Prepared: 11/03/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL
Analyst: TL

SDG #: 12880
Project Number: 040601879001002
Lab ID: 12880-2/28958-7531
Date/Time Sampled: 10/26/95 08:31
Matrix: Soil (SO)
Batch Number: 4124-951103
% Moisture: NA
Instrument/Column: vgc03/DB-WAX
Data File: 95305c17-0

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Benzene	88000	5000	1000	11/01/95
Toluene	550000	5000	1000	11/01/95
Ethyl benzene	140000	5000	1000	11/01/95
1,2-Xylene	180000	5000	1000	11/01/95
1,3-Xylene	360000	5000	1000	11/01/95
1,4-Xylene	150000	5000	1000	11/01/95
TPH - Gasoline	65000000	1000000	1000	11/01/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	0 *	51 - 102
Bromofluorobenzene(FID)	0 *	51 - 102

Qualifier Legend:
* - Values outside QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 11-10-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: Mclaren/Hart
Project Name: MBT
Sample Description: MW-3 15.5'
Sample Number: 52417
Date/Time Received: 10/27/95 09:00
Date Prepared: 11/03/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL
Analyst: TL

SDG #: 12880
Project Number: 040601879001002
Lab ID: 12880-3/28959-7531
Date/Time Sampled: 10/26/95 08:57
Matrix: Soil (SO)
Batch Number: 4124-951103
% Moisture: NA
Instrument/Column: vgc04/DB-WAX
Data File: 95307d20-0

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Benzene	BRL	5.0	1	11/03/95
Toluene	27	5.0	1	11/03/95
Ethyl benzene	6.4	5.0	1	11/03/95
1,2-Xylene	18	5.0	1	11/03/95
1,3-Xylene	8.5	5.0	1	11/03/95
1,4-Xylene	BRL	5.0	1	11/03/95
TPH - Gasoline	1400	1000	1	11/03/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	82	51 - 102
Bromofluorobenzene(FID)	85	51 - 102

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 11-10-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: Mclaren/Hart
Project Name: MBT
Sample Description: MW-3 19.5'
Sample Number: 52418
Date/Time Received: 10/27/95 09:00
Date Prepared: 11/03/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL
Analyst: TL

SDG #: 12880
Project Number: 040601879001002
Lab ID: 12880-4/28960-7531
Date/Time Sampled: 10/26/95 09:48
Matrix: Soil (SO)
Batch Number: 4124-951103
% Moisture: NA
Instrument/Column: vgc04/DB-WAX
Data File: 95307d22-0

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Benzene	1300	10	2	11/03/95
Toluene	1500	10	2	11/03/95
Ethyl benzene	110	10	2	11/03/95
1,2-Xylene	170	10	2	11/03/95
1,3-Xylene	180	10	2	11/03/95
1,4-Xylene	80	10	2	11/03/95
TPH - Gasoline	6200	2000	2	11/03/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	34 *	51 - 102
Bromofluorobenzene(FID)	37 *	51 - 102

Qualifier Legend:
* - Values outside QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 11-10-95

MBT Environmental Laboratories

Master Builders Technologies

METHOD BLANK

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: 11/03/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

Analyst: TL

Lab ID: 30464-MB /7531
Matrix: Soil
Batch Number: 4124-951103
Instrument/Column: vgc04/DB-WAX
Data File: 95305c28-0

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Date Analyzed
Benzene	BRL	5.0	11/01/95
Toluene	BRL	5.0	11/01/95
Ethyl benzene	BRL	5.0	11/01/95
1,2-Xylene	BRL	5.0	11/01/95
1,3-Xylene	BRL	5.0	11/01/95
1,4-Xylene	BRL	5.0	11/01/95
TPH - Gasoline	BRL	1000	11/01/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	54	51 - 102
Bromofluorobenzene(FID)	105 *	51 - 102

Qualifier Legend:
* - Values beyond QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 11-10-95

MBT Environmental Laboratories

Master Builders Technologies

LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: 11/03/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL
LCS Date Analyzed: 11/01/95

Analyst: TL

Lab ID: 30465-LCS /7531
Matrix: Soil Units: ug/Kg (ppb)
Batch Number: 4124-951103
LCSD Date Analyzed: NA
Instrument/Column: vgc04/DB-WAX
Data File: 95305c27-0

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	Acceptance Limits RPD
Benzene	0	250	230	92	NA	NA	NA	70-124	≤25
Ethyl benzene	0	250	240	98	NA	NA	NA	67-128	≤25
TPH - Gasoline	0	2500	2500	99	NA	NA	NA	75-125	≤25

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

Surrogate	(h) Surr. Spike Conc.	(i) Sample + Surr. Spike Conc.	(j) Surr. Spike Rec %	(k) Sample Dup. + Surr. Spike Conc.	(l) Surr. Spike Dup. Rec %	Acceptance Limits
Bromofluorobenzene(PID)	200	100	52	NA	NA	51-102
Bromofluorobenzene(FID)	200	200	101	NA	NA	51-102

Surrogate % Recovery = j = (i-h) x 100
Surrogate Duplicate Recovery = l = (k/h) x 100

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 11-10-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: Mclaren/Hart
Project Name: MBT
Sample Description: MW-4 29'
Sample Number: 52415
Date/Time Received: 10/27/95 09:00
Date Prepared: 10/31/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL
Analyst: TL

SDG #: 12880
Project Number: 040601879001002
Lab ID: 12880-1/28957-7531
Date/Time Sampled: 10/26/95 15:18
Matrix: Soil (S)
Batch Number: 4027-951031
% Moisture: NA
Instrument/Column: vgc03/DB-WAX
Data File: 95305c16-0

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Benzene	BRL	5.0	1	11/01/95
Toluene	BRL	5.0	1	11/01/95
Ethyl benzene	BRL	5.0	1	11/01/95
1,2-Xylene	BRL	5.0	1	11/01/95
1,3-Xylene	BRL	5.0	1	11/01/95
1,4-Xylene	BRL	5.0	1	11/01/95
TPH - Gasoline	BRL	1000	1	11/01/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	54 *	60 - 111
Bromofluorobenzene(FID)	81	60 - 111

Qualifier Legend:
* - Values outside QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 11-7-95

MBT Environmental Laboratories

Master Builders Technologies

METHOD BLANK

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: 10/31/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

Analyst: TL

Lab ID: 29673-MB /7531
Matrix: Soil
Batch Number: 4027-951031
Instrument/Column: vgc03/DB-WAX
Data File: 95305c28-0

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Date Analyzed
Benzene	BRL	5.0	11/01/95
Toluene	BRL	5.0	11/01/95
Ethyl benzene	BRL	5.0	11/01/95
1,2-Xylene	BRL	5.0	11/01/95
1,3-Xylene	BRL	5.0	11/01/95
1,4-Xylene	BRL	5.0	11/01/95
TPH - Gasoline	BRL	1000	11/01/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	54 *	60 - 111
Bromofluorobenzene(FID)	105	60 - 111

Qualifier Legend:
* - Values beyond QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 11-7-95

MBT Environmental Laboratories

Master Builders Technologies

LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: 10/31/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL
LCS Date Analyzed: 11/01/95

Analyst: TL

Lab ID: 29672-LCS /7531
Matrix: Soil Units: ug/Kg (ppb)
Batch Number: 4027-951031
LCSD Date Analyzed: NA
Instrument/Column: vgc03/DB-WAX
Data File: 95305c27-0

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	Acceptance Limits RPD
Benzene	0	250	230	92	NA	NA	NA	70-124	≤25
Ethyl benzene	0	250	240	98	NA	NA	NA	67-128	≤25
TPH - Gasoline	0	2500	2500	99	NA	NA	NA	75-125	≤25

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

Surrogate	(h) Surr. Spike Conc.	(i) Sample + Surr. Spike Conc.	(j) Surr. Spike Rec %	(k) Sample Dup. + Surr. Spike Conc.	(l) Surr. Spike Dup. Rec %	Acceptance Limits
Bromofluorobenzene(PID)	200	100	52*	NA	NA	60-111
Bromofluorobenzene(FID)	200	200	101	NA	NA	60-111

Surrogate % Recovery = j = (i-h) x 100
Surrogate Duplicate Recovery = l = (k/h) x 100

Qualifier Legend:
* - Value beyond QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 11-7-95

MBT Environmental Laboratories

Master Builders Technologies

MBT Environmental
Laboratories

3083 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

Date: November 14, 1995
LP #: 12938

Chris Warwick
McLaren/Hart Environmental Engineering
1135 Atlantic Avenue
Alameda, CA 94501

Dear Mr. Warwick:

Enclosed are the laboratory results for the samples submitted to MBT Environmental Laboratories on November 4, 1995, for the project *Friedkin Becker*.

The report consists of the following sections:

1. Cover Page
2. Copy of Chain-of-Custody
3. General Narrative
4. Analytical and Quality Control Results

Unless otherwise instructed by you, samples will be disposed of two weeks from the date of this letter.

Thank you for choosing MBT Environmental Laboratories. We are looking forward to serving you in the future. Should you have any questions concerning this analytical report or the analytical methods employed, please do not hesitate to call.

Sincerely,

Kevin Hanlon
Project Coordinator

ANALYTICAL REPORT

LABORATORY PROJECT (LP) NUMBER 12938

FRIEDKIN BECKER

The analyses performed by MBT Environmental Laboratories in this report comply with the requirements under the following certification/approval:

	ARIZONA:	Hazardous Waste, #AZ0468 Waste Water, # AZ0468 Drinking Water, #AZ0468	OKLAHOMA:	Hazardous Waste, #9318 Waste Water, #9318
✓	CALIFORNIA:	Hazardous Waste, #1417 Waste Water, # 1417 Drinking Water, #1417 Mobile Lab, #2070	SOUTH CAROLINA:	Hazardous Waste, #87013 Waste Water, #87013
	CONNECTICUT:	Waste Water, #PH0799	TENNESSEE:	Underground Storage Tank
	FLORIDA:	Environmental Water, #E87298 CQAPP #930105	UTAH:	Hazardous Waste, #E-165 Waste Water, #E-165 Drinking Water, #E-165
	KANSAS:	Hazardous Waste, #E-1167 Waste Water, #E-192 Drinking Water, #E-192	WASHINGTON:	Hazardous Waste, #C048
	NEW HAMPSHIRE:	Waste Water, #253195-B Drinking Water, #253195-A	WISCONSIN:	Hazardous Waste, #999940920 Waste Water, #999940920
	NEW JERSEY:	Waste Water, #44818	USACOE:	Hazardous Waste Waste Water
	NEW YORK:	Hazardous Waste, #11241 Waste Water, #11241 CLP, #11241	AFCEE	

(CN/////)

MBT Environmental Laboratories

GENERAL NARRATIVE

Comments:

Test methods may include minor modifications of published EPA methods (e.g., reporting limits or parameter lists). Reporting limits are adjusted to reflect dilution of the sample when appropriate. Solids and waste are analyzed with no correction made for moisture content.

Percent recoveries for laboratory control samples and matrix spikes have been calculated using unrounded concentration values. Therefore, percent recoveries reported may differ slightly from those obtained from the rounded concentration values which appear on the report.

The following sample was analyzed at a dilution to bring target analytes within linear working range: 12938-1.

The surrogate recoveries for the analytes flagged on the data sheet were beyond acceptance limits for the following sample: LCSW-Gas.

Abbreviations and Definitions:

MB	*Method Blank* - An aliquot of a blank matrix carried throughout the entire analytical process
LCS	*Laboratory Control Sample* - A blank to which known quantities of specific analytes are added prior to sample preparation and analysis to assess the accuracy of the method
MS/MSD	*Matrix Spike/Matrix Spike Duplicate* - Duplicate samples to which known quantities of specific analytes are added prior to sample preparation and analysis to assess the extent of matrix bias or interference on analyte recovery
RPD	*Relative Percent Difference* - The measurement of precision between duplicate analyses
BRL	*Below Reporting Limit*
NS	*Not Specified*
NA	*Not Applicable*

(CN/////)

Flags:

Organics -

J Estimated value below the reporting limit and at or above the method detection limit.

B Analyte found in the associated blank, as well as in the sample.

Inorganics -

B Estimated value below the reporting limit and at or above the method detection limit.

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: Mclaren/Hart
Project Name: Friedkin Becker
Sample Description: MW-3
Sample Number: 500591-4
Date/Time Received: 11/04/95 10:00
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 12938
Project Number: 0406018790010002
Lab ID: 12938-1/30098-7531
Date/Time Sampled: 11/03/95 10:09
Matrix: Water (W)
Batch Number: 4136

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Benzene	12000	300	1000	11/08/95
Toluene	15000	300	1000	11/08/95
Ethyl benzene	980	300	1000	11/08/95
1,2-Xylene	2100	300	1000	11/08/95
1,3-Xylene	1800	300	1000	11/08/95
1,4-Xylene	800	300	1000	11/08/95
TPH - Gasoline	67000	50000	1000	11/08/95

Surrogates	% Recovery	Limits
Orthochlorotoluene (PID)	90	80 - 120
Orthochlorotoluene (FID)	114	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 11-13-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: Mclaren/Hart
Project Name: Friedkin Becker
Sample Description: MW-4
Sample Number: 500595-8
Date/Time Received: 11/04/95 10:00
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 12938
Project Number: 0406018790010002
Lab ID: 12938-2/30099-7531
Date/Time Sampled: 11/03/95 11:05
Matrix: Water (W)
Batch Number: 4136

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Benzene	BRL	0.30	1	11/08/95
Toluene	BRL	0.30	1	11/08/95
Ethyl benzene	BRL	0.30	1	11/08/95
1,2-Xylene	BRL	0.30	1	11/08/95
1,3-Xylene	BRL	0.30	1	11/08/95
1,4-Xylene	BRL	0.30	1	11/08/95
TPH - Gasoline	BRL	50	1	11/08/95

Surrogates	% Recovery	Limits
Orthochlorotoluene (PID)	90	80 - 120
Orthochlorotoluene (FID)	97	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 11-13-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: Mclaren/Hart
Project Name: Friedkin Becker
Sample Description: MW-1
Sample Number: 500901-4
Date/Time Received: 11/04/95 10:00
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 12938
Project Number: 0406018790010002
Lab ID: 12938-3/30100-7531
Date/Time Sampled: 11/03/95 11:50
Matrix: Water (W)
Batch Number: 4136

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Benzene	BRL	0.30	1	11/08/95
Toluene	BRL	0.30	1	11/08/95
Ethyl benzene	0.36	0.30	1	11/08/95
1,2-Xylene	BRL	0.30	1	11/08/95
1,3-Xylene	BRL	0.30	1	11/08/95
1,4-Xylene	BRL	0.30	1	11/08/95
TPH - Gasoline	BRL	50	1	11/08/95

Surrogates	% Recovery	Limits
Orthochlorotoluene (PID)	95	80 - 120
Orthochlorotoluene (FID)	108	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 11-13-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: Mclaren/Hart
Project Name: Friedkin Becker
Sample Description: Trip Blank
Sample Number: 500905-8
Date/Time Received: 11/04/95 10:00
Date Prepared: NA
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 12938
Project Number: 0406018790010002
Lab ID: 12938-4/30101-7531
Date/Time Sampled: 11/03/95 07:00
Matrix: Water (W)
Batch Number: 4136

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Benzene	BRL	0.30	1	11/07/95
Toluene	BRL	0.30	1	11/07/95
Ethyl benzene	BRL	0.30	1	11/07/95
1,2-Xylene	BRL	0.30	1	11/07/95
1,3-Xylene	BRL	0.30	1	11/07/95
1,4-Xylene	BRL	0.30	1	11/07/95
TPH - Gasoline	BRL	50	1	11/07/95

Surrogates	% Recovery	Limits
Orthochlorotoluene (PID)	90	80 - 120
Orthochlorotoluene (FID)	106	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 11-13-95

MBT Environmental Laboratories

Master Builders Technologies

METHOD BLANK

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: NA

Lab ID: 30566-MB /7531
Matrix: Water
Batch Number: 4136-

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Date Analyzed
Benzene	BRL	0.30	11/17/95
Toluene	BRL	0.30	11/17/95
Ethyl benzene	BRL	0.30	11/17/95
1,2-Xylene	BRL	0.30	11/17/95
1,3-Xylene	BRL	0.30	11/17/95
1,4-Xylene	BRL	0.30	11/17/95
TPH - Gasoline	BRL	50	11/17/95

Surrogates	% Recovery	Limits
Orthochlorotoluene (PID)	88	80 - 120
Orthochlorotoluene (FID)	104	80 - 120

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Approved by: _____ Date: 11-13-95

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METHOD BLANK

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: NA

Lab ID: 30567-MB /7531
Matrix: Water
Batch Number: 4136-

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Date Analyzed
Benzene	BRL	0.30	11/08/95
Toluene	BRL	0.30	11/08/95
Ethyl benzene	BRL	0.30	11/08/95
1,2-Xylene	BRL	0.30	11/08/95
1,3-Xylene	BRL	0.30	11/08/95
1,4-Xylene	BRL	0.30	11/08/95
TPH - Gasoline	BRL	50	11/08/95

Surrogates	% Recovery	Limits
Orthochlorotoluene (PID)	95	80 - 120
Orthochlorotoluene (FID)	96	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 11-13-95

MBT Environmental Laboratories

Master Builders Technologies

LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: NA

Lab ID: 30563-LCS /7531
Matrix: Water
Units: ug/L (ppb)
Batch Number: 4136

LCS Date Analyzed: 11/08/95

LCSD Date Analyzed: NA

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	Acceptance Limits RPD
Benzene	0	10	12	122	NA	NA	NA	72-134	≤20
Ethyl benzene	0	10	11	110	NA	NA	NA	72-128	≤20
TPH - Gasoline	0	100	99	99*	NA	NA	NA	100-127	≤20

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

Surrogate	(h) Surr. Spike Conc.	(i) Sample + Surr. Spike Conc.	(j) Surr. Spike Rec %	(k) Sample Dup. + Surr. Spike Conc.	(l) Surr. Spike Dup. Rec %	Acceptance Limits
Orthochlorotoluene (PID)	4.0	3.8	94	NA	NA	80-120
Orthochlorotoluene (FID)	4.0	6.6	166*	NA	NA	80-120

Surrogate % Recovery = j = (i-h) x 100
Surrogate Duplicate Recovery = l = (k/h) x 100

Qualifier Legend:
* - Value beyond QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 11-13-95

MBT Environmental Laboratories

Master Builders Technologies

LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICAT

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: NA

Lab ID: 30564-LCS /7531
Matrix: Water Units: ug/L (ppb)
Batch Number: 4136

LCS Date Analyzed: 11/08/95

LCSD Date Analyzed: NA

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	RPD
Benzene	0	10	12	122	NA	NA	NA	72-134	≤20
Ethyl benzene	0	10	11	107	NA	NA	NA	72-128	≤20
TPH - Gasoline	0	100	100	103	NA	NA	NA	100-127	≤20

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

Surrogate	(h) Surr. Spike Conc.	(i) Sample + Surr. Spike Conc.	(j) Surr. Spike Rec %	(k) Sample Dup. + Surr. Spike Conc.	(l) Surr. Spike Dup. Rec %	Acceptance Limits
Orthochlorotoluene (PID)	4.0	3.7	93	NA	NA	80-120
Orthochlorotoluene (FID)	4.0	6.5	162*	NA	NA	80-120

Surrogate % Recovery = j = (i-h) x 100
Surrogate Duplicate Recovery = l = (k/h) x 100

Qualifier Legend:
* - Value beyond QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 11-13-95

MBT Environmental Laboratories

Master Builders Technologies

[redacted]BT E[redacted]hmer[redacted] 3083[redacted] Car[redacted]ve
Laboratories
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

CHAIN OF CUSTODY RECORD 16396

SEE SIDE 2 FOR COMPLETE INSTRUCTIONS

Project Name: Friedkin Becker
Project Number: 04.0601879001.002
Project Location: (State) Oakland, CA

FOR LABORATORY USE ONLY
Laboratory Project #: 12938 *Storage ID:* 8
Sample Condition Upon Receipt: Temp: 2 °C *Geiger:*
Custody Seals Present? Yes/No Intact? Yes/No Samples Intact? Yes/No
Air bubbos: 4-004

Sample Disposal (check one): ☑ Laboratory Standard ☐ Other

Level of QC (see Side 2): ☑ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6A ☐ 6B ☐ 6C ☐ 6D ☐ 6E ☐ 6F ☐ 7 ☐ 8 ☐ A

Write in Analysis Method →

SAMPLE INFORMATION

FOR LABORATORY USE ONLY Lab ID	Sample ID Number	Date	Time	Description: Locator	Description: Depth	Container(s): #	Container(s): Type	Matrix Type	Pres. Type	TAT	9020 (BTEX)	TPH-G by DHS LUFT
1 12938-1	500591-4	11/03/95	1009	MW-3	—	4	V	H2O	HCl	Stan	X	X
2 -2	500595-8	↓	1105	MW-4	—	↓	↓	↓	↓	↓	↓	↓
3 -3	500901-4	↓	1150	MW-1	—	↓	↓	↓	↓	↓	↓	↓
4 -4	500905-8	↓	0700	Trip Blan	—	↓	↓	↓	↓	↓	↓	↓
5												
6												
7												
8												
9												
10												

SEND REPORT TO:
Company Name McLaren / Hart
Client Name Chris Warwick
Address 1635 Atlantic Ave. Alameda, CA 94501
Phone (510) 748-5634 Fax —

BILL TO (if different):
Company Name
Address
PO #
Phone Fax

Special Instructions/Comments
Standard TAT - ~~3~~ 1 weeks
KH 11/4

Sampler Name: Steven Carson
Signature: [signature]
PPE Worn in Field: [signature]

Relinquished By:	Date/Time	Received By or Method of Shipment/Shipment I.D.	Date/Time
[signature]	11/03/95 1240	X [signature]	11/3/95 1240
X [signature]	11/3/95 1600	X EXPRESS-IT	11/3/95 1600
		[signature]	11/4/95 1000

Common Analytical Methods
413.1
413.2 Long Method
413.2 Short Method
418.1 Long Method
418.1 Short Method
420.1
502.2
503E
503.1
524.2
601
602
604
608
610
624
625
8010
8015
8015 Mod.
8020
8021
8040
8060
8100
8150
8240
8270
8310
Acidity
Alkalinity
BTEX
Chloride
CLP (see Side 2)
COD
Color
Conductivity
Corrosivity
Cyanide
Flashpoint
Fluoride
General Mineral
Hex. Chromium
Ion Balance
Metals (write specific metal & method #)*
Metals 6010*
Metals PP*
Metals Title 22:
TTLC Level
STLC Level
(see Side 2)
Nitrate
Nitrite
Odor
Org. Lead
Org. Mercury
Percent Moisture
Percent Solid
Perchlorate
pH
Phosphates
Phosphorus
Sulfate
Sulfides
TCLP:
VOA
Semivoa
Metals
Pesticide
TDS
Total Hardness
Total Solids
TPH/D
TPH/G
TSS
Turbidity

* Specify Total or Dissolved

MBT Environmental
Laboratories

3083 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

Date: September 28, 1995
LP #: 12586

Saul Germanas
McLaren/Hart Environmental Engineering
1135 Atlantic Avenue
Alameda, CA 94501

Dear Mr. Germanas:

Enclosed is the revised laboratory report for the samples submitted to MBT Environmental Laboratories on September 13, 1995, for the project *3810 Broadway*.

The revision includes acomplete set of revised 8020 BTEX and TPH/G by LUFT results. The previously reported units of mg/Kg (ppm) have been corrected to ug/Kg (ppb).

Thank you for choosing MBT Environmental Laboratories. We are looking forward to serving you in the future. Should you have any questions concerning this analytical report or the analytical methods employed, please do not hesitate to call.

Sincerely,

Kevin Hanlon
Project Coordinator

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-4 12.5
Sample Number: 51494
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-1/23850-8298
Date/Time Sampled: 09/11/95 10:30
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Benzene	60	50	10	09/20/95
Toluene	BRL	50	10	09/20/95
Ethyl benzene	1200	50	10	09/20/95
1,2-Xylene	1600	50	10	09/20/95
1,3-Xylene	3700	50	10	09/20/95
1,4-Xylene	1900	50	10	09/20/95
TPH - Gasoline	83000	10000	10	09/20/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	0 *	51 - 102
Bromofluorobenzene(FID)	0 *	51 - 102

Qualifier Legend:
* - Values outside QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-27-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-4 26.5
Sample Number: 52403
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-2/23858-8298
Date/Time Sampled: 09/12/95 09:15
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Benzene	520	5.0	1	09/19/95
Toluene	78	5.0	1	09/19/95
Ethyl benzene	39	5.0	1	09/19/95
1,2-Xylene	24	5.0	1	09/19/95
1,3-Xylene	26	5.0	1	09/19/95
1,4-Xylene	20	5.0	1	09/19/95
TPH - Gasoline	1900	1000	1	09/19/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	78	51 - 102
Bromofluorobenzene(FID)	81	51 - 102

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Approved by: _____ Date: 9-27-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-2 12.5
Sample Number: 51496
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-3/23851-8298
Date/Time Sampled: 09/11/95 12:14
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Benzene	690	5.0	1	09/19/95
Toluene	110	5.0	1	09/19/95
Ethyl benzene	69	5.0	1	09/19/95
1,2-Xylene	7.8	5.0	1	09/19/95
1,3-Xylene	9.1	5.0	1	09/19/95
1,4-Xylene	86	5.0	1	09/19/95
TPH - Gasoline	3100	1000	1	09/19/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	78	51 - 102
Bromofluorobenzene(FID)	78	51 - 102

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-27-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-2 26.5
Sample Number: 51498
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-4/23852-8298
Date/Time Sampled: 09/11/95 15:00
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Benzene	BRL	5.0	1	09/20/95
Toluene	11	5.0	1	09/20/95
Ethyl benzene	BRL	5.0	1	09/20/95
1,2-Xylene	BRL	5.0	1	09/20/95
1,3-Xylene	BRL	5.0	1	09/20/95
1,4-Xylene	BRL	5.0	1	09/20/95
TPH - Gasoline	BRL	1000	1	09/20/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	79	51 - 102
Bromofluorobenzene(FID)	85	51 - 102

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-27-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-1 12.5
Sample Number: 52401
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-5/23853-8298
Date/Time Sampled: 09/11/95 16:18
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Benzene	150	50	10	09/20/95
Toluene	290	50	10	09/20/95
Ethyl benzene	6200	50	10	09/20/95
1,2-Xylene	7300	50	10	09/20/95
1,3-Xylene	16000	500	100	09/20/95
1,4-Xylene	7900	500	100	09/20/95
TPH - Gasoline	310000	100000	100	09/20/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	0 *	51 - 102
Bromofluorobenzene(FID)	0 *	51 - 102

Qualifier Legend:
* - Values outside QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-27-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-1 26.5
Sample Number: 52405
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-6/23854-8298
Date/Time Sampled: 09/11/95 17:10
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Benzene	270	5.0	1	09/20/95
Toluene	60	5.0	1	09/20/95
Ethyl benzene	18	5.0	1	09/20/95
1,2-Xylene	6.8	5.0	1	09/20/95
1,3-Xylene	7.1	5.0	1	09/20/95
1,4-Xylene	8.9	5.0	1	09/20/95
TPH - Gasoline	1100	1000	1	09/20/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	76	51 - 102
Bromofluorobenzene(FID)	82	51 - 102

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-27-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-5 12.5
Sample Number: 52406
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-7/23855-8298
Date/Time Sampled: 09/12/95 11:00
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Benzene	48000	5000	1000	09/20/95
Toluene	390000	5000	1000	09/20/95
Ethyl benzene	93000	5000	1000	09/20/95
1,2-Xylene	110000	5000	1000	09/20/95
1,3-Xylene	260000	5000	1000	09/20/95
1,4-Xylene	96000	5000	1000	09/20/95
TPH - Gasoline	4800000	1000000	1000	09/20/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	0 *	51 - 102
Bromofluorobenzene(FID)	0 *	51 - 102

Qualifier Legend:
* - Values outside QC limits

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Approved by: _____ Date: 9-27-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-5 29.5
Sample Number: 52407
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-8/23856-8298
Date/Time Sampled: 09/12/95 13:00
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Benzene	55	5.0	1	09/20/95
Toluene	9.1	5.0	1	09/20/95
Ethyl benzene	BRL	5.0	1	09/20/95
1,2-Xylene	BRL	5.0	1	09/20/95
1,3-Xylene	BRL	5.0	1	09/20/95
1,4-Xylene	BRL	5.0	1	09/20/95
TPH - Gasoline	BRL	1000	1	09/20/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	80	51 - 102
Bromofluorobenzene(FID)	86	51 - 102

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-27-95

MBT Environmental Laboratories

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VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-3 27
Sample Number: 52410
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-9/23859-8298
Date/Time Sampled: 09/12/95 15:55
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Benzene	BRL	5.0	1	09/20/95
Toluene	BRL	5.0	1	09/20/95
Ethyl benzene	BRL	5.0	1	09/20/95
1,2-Xylene	BRL	5.0	1	09/20/95
1,3-Xylene	BRL	5.0	1	09/20/95
1,4-Xylene	BRL	5.0	1	09/20/95
TPH - Gasoline	BRL	1000	1	09/20/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	74	51 - 102
Bromofluorobenzene(FID)	79	51 - 102

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-27-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-6 12.5
Sample Number: 52412
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-10/23857-8298
Date/Time Sampled: 09/12/95 16:40
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Dilution Factor	Date Analyzed
Benzene	BRL	5.0	1	09/20/95
Toluene	9.4	5.0	1	09/20/95
Ethyl benzene	BRL	5.0	1	09/20/95
1,2-Xylene	BRL	5.0	1	09/20/95
1,3-Xylene	BRL	5.0	1	09/20/95
1,4-Xylene	BRL	5.0	1	09/20/95
TPH - Gasoline	BRL	1000	1	09/20/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	76	51 - 102
Bromofluorobenzene(FID)	83	51 - 102

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-27-95

MBT Environmental Laboratories

Master Builders Technologies

METHOD BLANK

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

Lab ID: 24339-MB /8298
Matrix: Soil
Batch Number: 3276-950919

Analyte	Result ug/Kg (ppb)	Reporting Limit ug/Kg (ppb)	Date Analyzed
Benzene	BRL	5.0	09/19/95
Toluene	BRL	5.0	09/19/95
Ethyl benzene	BRL	5.0	09/19/95
1,2-Xylene	BRL	5.0	09/19/95
1,3-Xylene	BRL	5.0	09/19/95
1,4-Xylene	BRL	5.0	09/19/95
TPH - Gasoline	BRL	1000	09/19/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	92	51 - 102
Bromofluorobenzene(FID)	97	51 - 102

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: _____

MBT Environmental Laboratories

Master Builders Technologies

LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL
LCS Date Analyzed: 09/19/95

Lab ID: 24343-LCS /8298
Matrix: Soil Units: ug/Kg (ppb)
Batch Number: 3276-950919
LCSD Date Analyzed: NA

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	Acceptance Limits RPD
Benzene	0	250	280	111	NA	NA	NA	70-124	≤25
Ethyl benzene	0	250	270	108	NA	NA	NA	67-128	≤25
TPH - Gasoline	0	2500	2880	115	NA	NA	NA	75-125	≤25

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

Surrogate	(h) Surr. Spike Conc.	(i) Sample + Surr. Spike Conc.	(j) Surr. Spike Rec %	(k) Sample Dup. + Surr. Spike Conc.	(l) Surr. Spike Dup. Rec %	Acceptance Limits
Bromofluorobenzene(PID)	200	190	93	NA	NA	51-102
Bromofluorobenzene(FID)	200	194	97	NA	NA	51-102

Surrogate % Recovery = j = (i-h) x 100
Surrogate Duplicate Recovery = l = (k/h) x 100

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: _____

MBT Environmental Laboratories

Master Builders Technologies

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-2 12.5
Sample Number: 51496
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL
MS Date Analyzed: 09/21/95

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-3/24345,24346-8298
Date/Time Sampled: 09/11/95 12:14
Matrix: Soil (S) Units: ug/Kg (ppb)
Batch Number: 3276-950919
% Moisture: NA

MSD Date Analyzed: 09/21/95

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	Acceptance Limits RPD
Benzene	690	250	990	120	1200	204*	19	70-124	≤25
Ethyl benzene	69	250	340	108	360	116	6	67-128	≤25

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

Surrogate	(h) Surr. Spike Conc.	(i) Sample + Surr. Spike Conc.	(j) Surr. Spike Rec %	(k) Sample Dup. + Surr. Spike Conc.	(l) Surr. Spike Dup. Rec %	Acceptance Limits
Bromofluorobenzene(PID)	200	160	83	160	79	51-102

Surrogate % Recovery = j = (i-h) x 100
Surrogate Duplicate Recovery = l = (k/h) x 100

Qualifier Legend:
* - Values outside QC

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: _____

MBT Environmental Laboratories

Master Builders Technologies

MBT Environmental
Laboratories

3083 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

Date: September 25, 1995
LP #: 12552

Saul Germanas
McLaren/Hart Environmental Engineering
1135 Atlantic Avenue
Alameda, CA 94501

Dear Mr. Germanas:

Enclosed are the laboratory results for the 15 samples submitted to MBT Environmental Laboratories on September 13, 1995, for the project *3810 Broadway*.

The report consists of the following sections:

1. Cover Page
2. Copy of Chain-of-Custody
3. General Narrative
4. Analytical and Quality Control Results

Unless otherwise instructed by you, samples will be disposed of two weeks from the date of this letter.

Thank you for choosing MBT Environmental Laboratories. We are looking forward to serving you in the future. Should you have any questions concerning this analytical report or the analytical methods employed, please do not hesitate to call.

Sincerely,

Kevin Hanlon
Project Coordinator

MBT Environmental Laboratories
3083 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

CHAIN OF CUSTODY RECORD 03475

SEE SIDE 2 FOR COMPLETE INSTRUCTIONS

Ship To: MBT
Address:

Project Name: 3810 BROADWAY
Project Number: 04.0601879.001.001
Project Location: (State) OAKLAND, CA

FOR LABORATORY USE ONLY
Laboratory Project #: 12552
Storage Refrigerator ID: 4-2, 1, 12-C
Storage Freezer ID:

Sampler Name: C. WARWICK
Signature: C. Warwick
PPE Worn in Field: D

Relinquished By: C. Warwick — Date/Time: 09-12-95/1900 — Received By or Method of Shipment/Shipment I.D.: COURIER — Date/Time: 09-12-95/1900
Relinquished By: Express Net — Date/Time: — Received By or Method of Shipment/Shipment I.D.: [illegible] — Date/Time: 9/13/95 0900
Relinquished By: — Date/Time: — Received By or Method of Shipment/Shipment I.D.: — Date/Time:

Sample Disposal (check one): [X] Laboratory Standard [ ] Other

Level of QC (see Side 2): [X] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6A [ ] 6B [ ] 6C [ ] 6D [ ] 6E [ ] 7

Write in Analysis Method →

SAMPLE INFORMATION

FOR LABORATORY USE ONLY Lab ID	Sample ID Number	Date	Time	Description: Locator	Description: Depth	Container(s): #	Container(s): Type	Matrix Type	Pres. Type	TAT	TPH-G/8020 BTEX		
1 12552-001	51494	9-11-95	1030	B-4	12.5	1	B	SOIL	—	3	X	(HOLD)	
2 -002	52403-04	9-12-95	0915	↓	26.5	2	B				X	(Hold)	[illegible] 9/14
3 -003	51496	9-11-95	1214	B-2	12.5	1					X	(HOLD)	
4 -004	51498	↓	1500	↓	26.5	1					X	(Hold)	
5 -005	52401		1618	B-1	12.5	1					X	(HOLD)	
6 -006	52405	↓	1710	↓	26.5	1					X	(Hold)	
7 -007	52406	9-12-95	1100	B-5	12.5	1					X	(HOLD)	
8. -008	52407-08		1300	↓	29.5	2					X	(Hold)	
9 -009	52409		1430	B-3	12.5	1					X	(HOLD)	
10 -010	52410-11	↓	1555	↓	27	2	↓	↓	↓	↓	X	(Hold)	

Special Instructions/Comments: PLEASE ANALYZE SAMPLES FOR TPH-G AND 8020 BTEX

Container Types: B=Brass Tube, G=Glass Jar, O=Other ____; A=1 Liter Amber, C=Cassette, P=Polyethylene, V=Voa Vial

TAT (Analytical Turn Around Time): 1 = 24 hours, 2 = 48 hours, 3 = 1 week, 4 = 2 weeks, 0 = Other ____

FOR LABORATORY USE ONLY — Sample Condition Upon Receipt: Temp 3°C, Samples Intact (1st)

SEND DOCUMENTATION AND RESULTS TO (Check one):
[X] Project Manager/Office: SAUL GERMANAS / ALAMEDA
[ ] Client Name:
Company:
Address:
Phone: FAX:

Common Analytical Methods
413.1
413.2 Long Method
413.2 Short Method
418.1 Long Method
418.1 Short Method
420.1
502.2
503E
503.1
524.2
601
602
604
608
610
624
625
8010
8015
8015 Mod.
8020
8021
8040
8080
8100
8150
8240
8270
8310
Acidity
Alkalinity
BTEX
Chloride
CLP (see Side 2)
COD
Color
Conductivity
Corrosivity
Cyanide
Flashpoint
Fluoride
General Mineral
Hex. Chromium
Ion Balance
Metals (write specific metal & method #)*
Metals 6010*
Metals PP*
Metals Title 22:
TTLC Level
STLC Level
(see Side 2)
Nitrate
Nitrite
Odor
Org. Lead
Org. Mercury
Percent Moisture
Percent Solid
Perchlorate
pH
Phosphates
Phosphorus
Sulfate
Sulfides
TCLP:
VOA
Semivoa
Metals
Pesticide
TDS
Total Hardness
Total Solids
TPH/D
TPH/G
TSS
Turbidity

* Specify Total or Dissolved

MBT Environmental Laboratories
3083 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

CHAIN OF CUSTODY RECORD

6904

SEE SIDE 2 FOR COMPLETE INSTRUCTIONS

Ship To: MBT
Address:

Project Name: 3810 BROADWAY
Project Number: 04.0601879.001.001
Project Location: (State) OAKLAND, CA

FOR LABORATORY USE ONLY
Laboratory Project #: 12552
Storage Refrigerator ID: 4-7, 1, 12-C
Storage Freezer ID:

Sampler Name	Signature	PPE Worn in Field
C. WARWICK	C. Warwick	D

Relinquished By:	Date/Time	Received By or Method of Shipment/Shipment I.D.	Date/Time
C. Warwick	09-12-95 / 1900	COURIER	09-12-95 / 1900
Expressnet		[illegible]	9/13/95 0900

Sample Disposal (check one)
- [X] Laboratory Standard
- [ ] Other

Level of QC (see Side 2): [X] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6A [ ] 6B [ ] 6C [ ] 6D [ ] 6E [ ] 6F [ ] 7 [ ] 8

Write in Analysis Method →

SAMPLE INFORMATION

FOR LABORATORY USE ONLY Lab ID	Sample ID Number	Date	Time	Description: Locator	Description: Depth	Container(s): #	Container(s): Type	Matrix Type	Pres. Type	TAT	TPH-G/BTEX 8020	8015M FF								
1 12552-011	52412	9-12-95	1640	B-6 (CCW)	12.5	1	B	SOIL	—	3	X		(H2O)							
2 -012	52413 TH 18:30	↓ (CCW)	~~26.5~~ 1870	~~B-2W~~ B-6	26.5	2	↓	↓	↓		X		(H2O)							
3 -013	211473-76	9-11-95	1717	B-2W	—	4	V	H2O	HCl		X									
4 S	211477-78	↓	↓	↓	—	2	A		—			X								
5 -014	211479-82	↓	1900	B-1W	—	4	V		HCl		X									
6 -015	211483-86	9-12-95	1355	B-5W	—	4	V		HCl		X									
7																				
8																				
9																				
10																				

Special Instructions/Comments: PLEASE ANALYZE SAMPLE FOR TPH-G AND 8020 BTEX SOIL.
PLEASE ANALYZE WATER SAMPLES FOR BTEX/TPH-G BY DHS-LUFT 8015M FF - DIESEL, MOTOR OIL ONLY

Container Types: B=Brass Tube, G=Glass Jar, O=Other ____; A=1 Liter Amber, C=Cassette, P=Polyethylene, V=Voa Vial

TAT (Analytical Turn Around Time): 1 = 24 hours, 2 = 48 hours, 3 = 1 week, 4 = 2 weeks, 0 = Other ____

FOR LABORATORY USE ONLY Sample Condition Upon Receipt: Temp 3°C, SAMPLES INTACT (PT)

SEND DOCUMENTATION AND RESULTS TO (Check one):
- [X] Project Manager/Office: SAUL GERMANAS / ALAMEDA
- [ ] Client Name:
- Company:
- Address:
- Phone: FAX:

Common Analytical Methods
413.1
413.2 Long Method
413.2 Short Method
418.1 Long Method
418.1 Short Method
420.1
502.2
503E
503.1
524.2
601
602
604
608
610
624
625
8010
8015
8015 Mod.
8020
8021
8040
8080
8100
8150
8240
8270
8310
Acidity
Alkalinity
BTEX
Chloride
CLP (see Side 2)
COD
Color
Conductivity
Corrosivity
Cyanide
Flashpoint
Fluoride
General Mineral
Hex. Chromium
Ion Balance
Metals (write specific metal & method #)*
Metals 6010*
Metals PP*
Metals Title 22:
TTLC Level
STLC Level
(see Side 2)
Nitrate
Nitrite
Odor
Org. Lead
Org. Mercury
Percent Moisture
Percent Solid
Perchlorate
pH
Phosphates
Phosphorus
Sulfate
Sulfides
TCLP:
VOA
Semivoa
Metals
Pesticide
TDS
Total Hardness
Total Solids
TPH/D
TPH/G
TSS
Turbidity

* Specify Total or Dissolved

ANALYTICAL REPORT

LABORATORY PROJECT (LP) NUMBER 12552

3810 BROADWAY

The analyses performed by MBT Environmental Laboratories in this report comply with the requirements under the following certification/approval:

	ARIZONA:	Hazardous Waste, #AZ0468 Waste Water, # AZ0468 Drinking Water, #AZ0468
✓	CALIFORNIA:	Hazardous Waste, #1417 Waste Water, # 1417 Drinking Water, #1417
	CONNECTICUT:	Waste Water, #PH0799
	FLORIDA:	Environmental Water, #E87298 CQAPP #930105
	KANSAS:	Hazardous Waste, #E-1167 Waste Water, #E-192 Drinking Water, #E-192
	NEW HAMPSHIRE:	Waste Water, #253195-B Drinking Water, #253195-A
	NEW JERSEY:	Waste Water, #44818
	NEW YORK:	Hazardous Waste, #11241 Waste Water, #11241 CLP, #11241
	OKLAHOMA:	Hazardous Waste, #9318 Waste Water, #9318
	SOUTH CAROLINA:	Hazardous Waste, #87013 Waste Water, #87013
	TENNESSEE:	Underground Storage Tank
	UTAH:	Hazardous Waste, #E-165 Waste Water, #E-165 Drinking Water, #E-165
	WASHINGTON:	Hazardous Waste, #C048
	WISCONSIN:	Hazardous Waste, #999940920 Waste Water, #999940920
	USACOE:	Hazardous Waste Waste Water
	AFCEE	

(CN12552)

MBT Environmental Laboratories

GENERAL NARRATIVE

Comments:

Test methods may include minor modifications of published EPA methods (e.g., reporting limits or parameter lists). Reporting limits are adjusted to reflect dilution of the sample when appropriate. Solids and waste are analyzed with no correction made for moisture content.

Percent recoveries for laboratory control samples and matrix spikes have been calculated using unrounded concentration values. Therefore, percent recoveries reported may differ slightly from those obtained from the rounded concentration values which appear on the report.

EPA 8020 BTEX and TPH/G:

The surrogate recoveries for the analytes flagged on the data sheet were beyond acceptance limits for the following samples: 12552-13, 12552-14, LCS-Gas.

The following samples were analyzed at a dilution to bring target analytes within linear working range: 12552-13, 12552-14, 12552-15.

EPA 8015 Modified Fuel Fingerprinting:

For EPA 8015 Modified - Fuel Fingerprinting (GC), all peaks within the C7-C32 carbon range are compared to the standard which the peaks most closely resemble. Values reported are calculated based on the total area of the peaks in the carbon range of that standard.

The chromatographic pattern of the reported results for the following sample does not resemble that of the diesel standard: 12552-13.

The reported result for Motor Oil for the following sample is calculated based on the Motor Oil standard; however, the chromatographic pattern in the sample does not exactly resemble that of the Motor Oil standard: 12552-13.

Gasoline is present in sample 12552-13 at a concentration of 1.4 ppm.

(CN12552)

Abbreviations and Definitions:

MB	*Method Blank* - An aliquot of a blank matrix carried throughout the entire analytical process
LCS	*Laboratory Control Sample* - A blank to which known quantities of specific analytes are added prior to sample preparation and analysis to assess the accuracy of the method
MS/MSD	*Matrix Spike/Matrix Spike Duplicate* -- Duplicate samples to which known quantities of specific analytes are added prior to sample preparation and analysis to assess the extent of matrix bias or interference on analyte recovery
RPD	*Relative Percent Difference* - The measurement of precision between duplicate analyses
BRL	*Below Reporting Limit*
NS	*Not Specified*
NA	*Not Applicable*

Flags:

Organics -

J	Estimated value below the reporting limit and at or above the method detection limit.
B	Analyte found in the associated blank, as well as in the sample.

Inorganics -

B	Estimated value below the reporting limit and at or above the method detection limit.

(CN12552)

METHOD BLANK

EPA 8015 MODIFIED
FUEL FINGERPRINTING (GC)

Preparation Method: EPA 3520

Date Prepared: 09/14/95 11:45:
Initial Wt./Volume: 1000 mL
Final Volume: 1 mL

Lab ID: 23539-MB /7950
Matrix: Water
Batch Number: 3145-950914

Analyte	Result mg/L (ppm)	Reporting Limit mg/L (ppm)	Date Analyzed
Diesel (C12-C22)	BRL	0.050	09/15/95
Motor Oil (C22-C32)	BRL	0.050	09/15/95

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-18-95

MBT Environmental Laboratories

Master Builders Technologies

LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE

EPA 8015 MODIFIED
FUEL FINGERPRINTING (GC)

Preparation Method: EPA 3520

Date Prepared: 09/14/95 11:45:
Initial Wt./Volume: 1000 mL
Final Volume: 1 mL
LCS Date Analyzed: 09/15/95

Lab ID: 23540-LCS /7950
Matrix: Water Units: mg/L (ppm)
Batch Number: 3145-950914
LCSD Date Analyzed: NA

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	Acceptance Limits RPD
Diesel (C12-C22)	0	2.50	1.88	75	NA	NA	NA	52-125	≤25

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-18-95

MBT Environmental Laboratories

Master Builders Technologies

EPA 8015 MODIFIED
FUEL FINGERPRINTING (GC)

Preparation Method: EPA 3520

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-2W
Sample Number: 211477
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/14/95 11:45:
Initial Wt./Volume: 1000 mL
Final Volume: 1 mL

SDG #: 12552
Project Number: 040601879001001
Lab ID: 12552-13/23385-8311
Date/Time Sampled: 09/11/95 17:17
Matrix: Water (W)
Batch Number: 3145-950914

Analyte	Result mg/L (ppm)	Reporting Limit mg/L (ppm)	Dilution Factor	Date Analyzed
Diesel (C12-C22)	BRL	0.11	2.2	09/18/95
Motor Oil (C22-C32)	0.34	0.11	2.2	09/18/95

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-18-95

MBT Environmental Laboratories

Master Builders Technologies

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

EPA 8015 MODIFIED
FUEL FINGERPRINTING (GC)

Preparation Method: EPA 3520

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-2W
Sample Number: 211478
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/14/95 11:45:
Initial Wt./Volume: 500 mL
Final Volume: 1 mL
MS Date Analyzed: 09/15/95

SDG #: 12552
Project Number: 040601879001001
Lab ID: 12552-13/23546,23547-8311
Date/Time Sampled: 09/11/95 17:17
Matrix: Water (W) Units: mg/L (ppm)
Batch Number: 3145-950914
% Moisture: NA
MSD Date Analyzed: 09/15/95

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	Acceptance Limits RPD
Diesel (C12-C22)	0	5.00	3.60	72	3.14	63	14	-	≤

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-18-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-2W
Sample Number: 211473
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/13/95
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 12552
Project Number: 040601879001001
Lab ID: 12552-13/23382-7531
Date/Time Sampled: 09/11/95 17:17
Matrix: Water (W)
Batch Number: 3252-950913

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Benzene	240	30	100	09/14/95
Toluene	540	30	100	09/14/95
Ethyl benzene	120	3.0	10	09/14/95
1,2-Xylene	160	30	10	09/14/95
1,3-Xylene	260	30	10	09/14/95
1,4-Xylene	120	30	10	09/14/95
TPH - Gasoline	3400	500	10	09/14/95

Surrogates	% Recovery	Limits
Orthochlorotoluene (PID)	128 *	80 - 120
Orthochlorotoluene (FID)	126 *	80 - 120

Qualifier Legend:
* - Values outside QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-22-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-1W
Sample Number: 211479
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/13/95
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 12552
Project Number: 040601879001001
Lab ID: 12552-14/23383-7531
Date/Time Sampled: 09/11/95 18:00
Matrix: Water (W)
Batch Number: 3252-950913

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Benzene	24000	600	2000	09/14/95
Toluene	47000	600	2000	09/14/95
Ethyl benzene	2900	600	2000	09/14/95
1,2-Xylene	4500	600	2000	09/14/95
1,3-Xylene	7800	600	2000	09/14/95
1,4-Xylene	3000	600	2000	09/14/95
TPH - Gasoline	190000	100000	2000	09/14/95

Surrogates	% Recovery	Limits
Orthochlorotoluene (PID)	98	80 - 120
Orthochlorotoluene (FID)	136 *	80 - 120

Qualifier Legend:
* - Values outside QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-22-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-5W
Sample Number: 211483
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/13/95
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 12552
Project Number: 040601879001001
Lab ID: 12552-15/23384-7531
Date/Time Sampled: 09/12/95 13:55
Matrix: Water (W)
Batch Number: 3252-950913

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Benzene	270	30	100	09/14/95
Toluene	540	30	100	09/14/95
Ethyl benzene	110	30	100	09/14/95
1,2-Xylene	140	30	100	09/14/95
1,3-Xylene	280	30	100	09/14/95
1,4-Xylene	BRL	30	100	09/14/95
TPH - Gasoline	5600	5000	100	09/14/95

Surrogates	% Recovery	Limits
Orthochlorotoluene (PID)	103	80 - 120
Orthochlorotoluene (FID)	154 *	80 - 120

Qualifier Legend:
* - Values outside QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-22-95

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Report Generated: 09/22/95

METHOD BLANK

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: 09/13/95

Lab ID: 24249-MB /7531
Matrix: Water
Batch Number: 3252-950913

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Date Analyzed
Benzene	BRL	0.30	09/14/95
Toluene	BRL	0.30	09/14/95
Ethyl benzene	BRL	0.30	09/14/95
1,2-Xylene	BRL	0.30	09/14/95
1,3-Xylene	BRL	0.30	09/14/95
1,4-Xylene	BRL	0.30	09/14/95
TPH - Gasoline	BRL	50	09/14/95

Surrogates	% Recovery	Limits
Orthochlorotoluene (PID)	98	80 - 120
Orthochlorotoluene (FID)	109	80 - 120

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Approved by: _____ Date: 9-22-95

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LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: 09/13/95
Initial Wt./Volume: NA
Final Volume: NA
LCS Date Analyzed: 09/14/95

Lab ID: 24246-LCS /7531
Matrix: Water Units: ug/L (ppb)
Batch Number: 3252-950913
LCSD Date Analyzed: NA

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	Acceptance Limits RPD
Benzene	0	10	12	120	NA	NA	NA	72-134	≤20
Ethyl benzene	0	10	12	120	NA	NA	NA	72-128	≤20
TPH - Gasoline	0	100	107	107	NA	NA	NA	100-127	≤20

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

Surrogate	(h) Surr. Spike Conc.	(i) Sample + Surr. Spike Conc.	(j) Surr. Spike Rec %	(k) Sample Dup. + Surr. Spike Conc.	(l) Surr. Spike Dup. Rec %	Acceptance Limits
Orthochlorotoluene (PID)	4.0	4.0	100	NA	NA	80-120
Orthochlorotoluene (FID)	4.0	7.7	190*	NA	NA	80-120

Surrogate % Recovery = j = (i-h) x 100
Surrogate Duplicate Recovery = l = (k/h) x 100

Qualifier Legend:
* - Value beyond QC limits

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Approved by: _____ Date: 9-22-95

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Report Generated: 09/22/95

MBT Environmental
Laboratories

3083 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

Date: September 25, 1995
LP #: 12558

Saul Germanas
McLaren/Hart Environmental Engineering
1135 Atlantic Avenue
Alameda, CA 94501

Dear Mr. Germanas:

Enclosed are the laboratory results for the two samples submitted to MBT Environmental Laboratories on September 14, 1995, for the project *3810 Broadway*.

The report consists of the following sections:

1. Cover Page
2. Copy of Chain-of-Custody
3. General Narrative
4. Analytical and Quality Control Results

Unless otherwise instructed by you, samples will be disposed of two weeks from the date of this letter.

Thank you for choosing MBT Environmental Laboratories. We are looking forward to serving you in the future. Should you have any questions concerning this analytical report or the analytical methods employed, please do not hesitate to call.

Sincerely,

FOR

Kevin Hanlon
Project Coordinator

MBT Environmental Laboratories
3063 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

CHAIN OF CUSTODY RECORD 12986

SEE SIDE 2 FOR COMPLETE INSTRUCTIONS

Project Name: 3810 BROADWAY
Project Number: 040601 379 000 000
Project Location: (State) OAK. CA.

FOR LABORATORY USE ONLY
Laboratory Project #: 12558 Storage ID: 8
Sample Condition Upon Receipt: Temp: 2 °C Geiger:
Custody Seals Present? Yes/No Intact? Yes/No Samples Intact? Yes/No

Sample Disposal (check one): [x] Laboratory Standard [ ] Other

Level of QC (see Side 2): [x] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6A [ ] 6B [ ] 6C [ ] 6D [ ] 6E [ ] 6F [ ] 7 [ ] 8 [ ] A

Write in Analysis Method

SAMPLE INFORMATION

FOR LABORATORY USE ONLY Lab ID	Sample ID Number	Date	Time	Description: Locator	Description: Depth	Container(s): #	Container(s): Type	Matrix Type	Pres. Type	TAT	ANALYSES REQUESTED: BTEX/TPH-G
1 12558-001	500151-52	9/13/95	1115	B-6	—	2	V	H_2O	(HCl)	(Inorg)	X
2 ↓ 002	500153-55	↓	1130	B-3	↓	3	↓	↓	↓	↓	X
3											
4											
5											
6											
7											
8											
9											
10											

SEND REPORT TO:
Company Name SAUL GERMANAS / ALAMEDA
Client Name
Address
Phone Fax

BILL TO (if different):
Company Name
Address
PO #
Phone Fax

Special Instructions/Comments ONLY 2 VOAS ~~CAN~~ COULD BE COLLECTED FROM B-6

Sampler Name	Signature	PPE Worn in Field	
NATHAN KING	Nathan King	D	
Relinquished By: Nathan King	Date/Time 9/13/95 1700	Received By or Method of Shipment/Shipment I.D. EXPRESS NT	Date/Time 9/13/95 1700
Relinquished By: EXPRESS NT	Date/Time 9/14/95 0730	Received By or Method of Shipment/Shipment I.D. [signature]	Date/Time 9/14/95 0730
Relinquished By:	Date/Time	Received By or Method of Shipment/Shipment I.D.	Date/Time

Common Analytical Methods
413.1
413.2 Long Method
413.2 Short Method
418.1 Long Method
418.1 Short Method
420.1
502.2
503E
503.1
524.2
601
602
604
608
610
624
625
8010
8015
8015 Mod.
8020
8021
8040
8080
8100
8150
8240
8270
8310
Acidity
Alkalinity
BTEX
Chloride
CLP (see Side 2)
COD
Color
Conductivity
Corrosivity
Cyanide
Flashpoint
Fluoride
General Mineral
Hex. Chromium
Ion Balance
Metals (write specific metal & method #)*
Metals 6010*
Metals PP*
Metals Title 22:
TTLC Level
STLC Level
(see Side 2)
Nitrate
Nitrite
Odor
Org. Lead
Org. Mercury
Percent Moisture
Percent Solid
Perchlorate
pH
Phosphates
Phosphorus
Sulfate
Sulfides
TCLP:
VOA
Semivoa
Metals
Pesticide
TDS
Total Hardness
Total Solids
TPH/D
TPH/G
TSS
Turbidity
Speci[redacted]r Disc[redacted]

ANALYTICAL REPORT

LABORATORY PROJECT (LP) NUMBER 12558

3810 BROADWAY

The analyses performed by MBT Environmental Laboratories in this report comply with the requirements under the following certification/approval:

	ARIZONA:	Hazardous Waste, #AZ0468 Waste Water, # AZ0468 Drinking Water, #AZ0468
✓	CALIFORNIA:	Hazardous Waste, #1417 Waste Water, # 1417 Drinking Water, #1417
	CONNECTICUT:	Waste Water, #PH0799
	FLORIDA:	Environmental Water, #E87298 CQAPP #930105
	KANSAS:	Hazardous Waste, #E-1167 Waste Water, #E-192 Drinking Water, #E-192
	NEW HAMPSHIRE:	Waste Water, #253195-B Drinking Water, #253195-A
	NEW JERSEY:	Waste Water, #44818
	NEW YORK:	Hazardous Waste, #11241 Waste Water, #11241 CLP, #11241
	OKLAHOMA:	Hazardous Waste, #9318 Waste Water, #9318
	SOUTH CAROLINA:	Hazardous Waste, #87013 Waste Water, #87013
	TENNESSEE:	Underground Storage Tank
	UTAH:	Hazardous Waste, #E-165 Waste Water, #E-165 Drinking Water, #E-165
	WASHINGTON:	Hazardous Waste, #C048
	WISCONSIN:	Hazardous Waste, #999940920 Waste Water, #999940920
	USACOE:	Hazardous Waste Waste Water
	AFCEE	

(CN12558)

MBT Environmental Laboratories

GENERAL NARRATIVE

Comments:

Test methods may include minor modifications of published EPA methods (e.g., reporting limits or parameter lists). Reporting limits are adjusted to reflect dilution of the sample when appropriate. Solids and waste are analyzed with no correction made for moisture content.

Percent recoveries for laboratory control samples and matrix spikes have been calculated using unrounded concentration values. Therefore, percent recoveries reported may differ slightly from those obtained from the rounded concentration values which appear on the report.

The following samples were analyzed at a dilution to bring target analytes within linear working range: 12558-2.

The surrogate recoveries for the analytes flagged on the data sheet were beyond acceptance limits for the following samples: 12558-1, 12558-2, LCS - Gas.

Percent recovery of LCS - Gas is 94%, and QC limits are 100 - 127%.

Abbreviations and Definitions:

MB	*Method Blank* - An aliquot of a blank matrix carried throughout the entire analytical process
LCS	*Laboratory Control Sample* - A blank to which known quantities of specific analytes are added prior to sample preparation and analysis to assess the accuracy of the method
MS/MSD	*Matrix Spike/Matrix Spike Duplicate* - Duplicate samples to which known quantities of specific analytes are added prior to sample preparation and analysis to assess the extent of matrix bias or interference on analyte recovery
RPD	*Relative Percent Difference* - The measurement of precision between duplicate analyses
BRL	*Below Reporting Limit*
NS	*Not Specified*
NA	*Not Applicable*

(CN12558)

Flags:

Organics -

J	Estimated value below the reporting limit and at or above the method detection limit.
B	Analyte found in the associated blank, as well as in the sample.

Inorganics -

B	Estimated value below the reporting limit and at or above the method detection limit.

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-6
Sample Number: 500151
Date/Time Received: 09/14/95 07:30
Date Prepared: 09/15/95
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 12558
Project Number: 040601879000000
Lab ID: 12558-1/23411-8298
Date/Time Sampled: 09/13/95 11:15
Matrix: Water (W)
Batch Number: 3251-950915

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Benzene	24	0.50	1	09/15/95
Toluene	26	1.0	2	09/15/95
Ethyl benzene	16	0.50	1	09/15/95
1,2-Xylene	15	0.50	1	09/15/95
1,3-Xylene	14	0.50	1	09/15/95
1,4-Xylene	15	0.50	1	09/15/95
TPH - Gasoline	360	50	1	09/15/95

Surrogates	% Recovery	Limits
Orthochlorotoluene (PID)	138 *	80 - 120
Orthochlorotoluene (FID)	111	80 - 120

Qualifier Legend:
* - Values outside QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-22-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-3
Sample Number: 500153
Date/Time Received: 09/14/95 07:30
Date Prepared: 09/15/95
Initial Wt./Volume: NA
Final Volume: NA

SDG #: 12558
Project Number: 040601879000000
Lab ID: 12558-2/23412-8298
Date/Time Sampled: 09/13/95 11:30
Matrix: Water (W)
Batch Number: 3251-950915

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Dilution Factor	Date Analyzed
Benzene	140	5.0	10	09/18/95
Toluene	66	5.0	10	09/18/95
Ethyl benzene	130	5.0	10	09/18/95
1,2-Xylene	52	5.0	10	09/18/95
1,3-Xylene	98	5.0	10	09/18/95
1,4-Xylene	100	5.0	10	09/18/95
TPH - Gasoline	1500	500	10	09/18/95

Surrogates	% Recovery	Limits
Orthochlorotoluene (PID)	112	80 - 120
Orthochlorotoluene (FID)	135 *	80 - 120

Qualifier Legend:
* - Values outside QC limits

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Approved by: _____ Date: 9-22-95

MBT Environmental Laboratories

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Report Generated: 09/22/95

METHOD BLANK

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: 09/15/95

Lab ID: 24244-MB /8298
Matrix: Water
Batch Number: 3251-950915

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Date Analyzed
Benzene	BRL	0.50	09/15/95
Toluene	BRL	0.50	09/15/95
Ethyl benzene	BRL	0.50	09/15/95
1,2-Xylene	BRL	0.50	09/15/95
1,3-Xylene	BRL	0.50	09/15/95
1,4-Xylene	BRL	0.50	09/15/95
TPH - Gasoline	BRL	50	09/15/95

Surrogates	% Recovery	Limits
Orthochlorotoluene (PID)	92	80 - 120
Orthochlorotoluene (FID)	101	80 - 120

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VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-2 12.5
Sample Number: 51496
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-3/23851-8298
Date/Time Sampled: 09/11/95 12:14
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	Dilution Factor	Date Analyzed
Benzene	690	5.0	1	09/19/95
Toluene	110	5.0	1	09/19/95
Ethyl benzene	69	5.0	1	09/19/95
1,2-Xylene	7.8	5.0	1	09/19/95
1,3-Xylene	9.1	5.0	1	09/19/95
1,4-Xylene	86	5.0	1	09/19/95
TPH - Gasoline	3100	1000	1	09/19/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	78	51 - 102
Bromofluorobenzene(FID)	78	51 - 102

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VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-2 26.5
Sample Number: 51498
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-4/23852-8298
Date/Time Sampled: 09/11/95 15:00
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	Dilution Factor	Date Analyzed
Benzene	BRL	5.0	1	09/20/95
Toluene	11	5.0	1	09/20/95
Ethyl benzene	BRL	5.0	1	09/20/95
1,2-Xylene	BRL	5.0	1	09/20/95
1,3-Xylene	BRL	5.0	1	09/20/95
1,4-Xylene	BRL	5.0	1	09/20/95
TPH - Gasoline	BRL	1000	1	09/20/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	79	51 - 102
Bromofluorobenzene(FID)	85	51 - 102

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VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-1 12.5
Sample Number: 52401
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-5/23853-8298
Date/Time Sampled: 09/11/95 16:18
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	Dilution Factor	Date Analyzed
Benzene	150	50	10	09/20/95
Toluene	290	50	10	09/20/95
Ethyl benzene	6200	50	10	09/20/95
1,2-Xylene	7300	50	10	09/20/95
1,3-Xylene	16000	500	100	09/20/95
1,4-Xylene	7900	500	100	09/20/95
TPH - Gasoline	310000	100000	100	09/20/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	0 *	51 - 102
Bromofluorobenzene(FID)	0 *	51 - 102

Qualifier Legend:
* - Values outside QC limits

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VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-1 26.5
Sample Number: 52405
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-6/23854-8298
Date/Time Sampled: 09/11/95 17:10
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	Dilution Factor	Date Analyzed
Benzene	270	5.0	1	09/20/95
Toluene	60	5.0	1	09/20/95
Ethyl benzene	18	5.0	1	09/20/95
1,2-Xylene	6.8	5.0	1	09/20/95
1,3-Xylene	7.1	5.0	1	09/20/95
1,4-Xylene	8.9	5.0	1	09/20/95
TPH - Gasoline	1100	1000	1	09/20/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	76	51 - 102
Bromofluorobenzene(FID)	82	51 - 102

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Approved by: _____ Date: 9-25-95

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VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-5 12.5
Sample Number: 52406
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-7/23855-8298
Date/Time Sampled: 09/12/95 11:00
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	Dilution Factor	Date Analyzed
Benzene	48000	5000	1000	09/20/95
Toluene	390000	5000	1000	09/20/95
Ethyl benzene	93000	5000	1000	09/20/95
1,2-Xylene	110000	5000	1000	09/20/95
1,3-Xylene	260000	5000	1000	09/20/95
1,4-Xylene	96000	5000	1000	09/20/95
TPH - Gasoline	4800000	1000000	1000	09/20/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	0 *	51 - 102
Bromofluorobenzene(FID)	0 *	51 - 102

Qualifier Legend:
* - Values outside QC limits

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Approved by: _____ Date: 9-25-95

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Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-5 29.5
Sample Number: 52407
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-8/23856-8298
Date/Time Sampled: 09/12/95 13:00
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	Dilution Factor	Date Analyzed
Benzene	55	5.0	1	09/20/95
Toluene	9.1	5.0	1	09/20/95
Ethyl benzene	BRL	5.0	1	09/20/95
1,2-Xylene	BRL	5.0	1	09/20/95
1,3-Xylene	BRL	5.0	1	09/20/95
1,4-Xylene	BRL	5.0	1	09/20/95
TPH - Gasoline	BRL	1000	1	09/20/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	80	51 - 102
Bromofluorobenzene(FID)	86	51 - 102

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Approved by: _____ Date: 9-25-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-3 27
Sample Number: 52410
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-9/23859-8298
Date/Time Sampled: 09/12/95 15:55
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	Dilution Factor	Date Analyzed
Benzene	BRL	5.0	1	09/20/95
Toluene	BRL	5.0	1	09/20/95
Ethyl benzene	BRL	5.0	1	09/20/95
1,2-Xylene	BRL	5.0	1	09/20/95
1,3-Xylene	BRL	5.0	1	09/20/95
1,4-Xylene	BRL	5.0	1	09/20/95
TPH - Gasoline	BRL	1000	1	09/20/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	74	51 - 102
Bromofluorobenzene(FID)	79	51 - 102

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-25-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-6 12.5
Sample Number: 52412
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-10/23857-8298
Date/Time Sampled: 09/12/95 16:40
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	Dilution Factor	Date Analyzed
Benzene	BRL	5.0	1	09/20/95
Toluene	9.4	5.0	1	09/20/95
Ethyl benzene	BRL	5.0	1	09/20/95
1,2-Xylene	BRL	5.0	1	09/20/95
1,3-Xylene	BRL	5.0	1	09/20/95
1,4-Xylene	BRL	5.0	1	09/20/95
TPH - Gasoline	BRL	1000	1	09/20/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	76	51 - 102
Bromofluorobenzene(FID)	83	51 - 102

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-25-95

MBT Environmental Laboratories

Master Builders Technologies

METHOD BLANK

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

Lab ID: 24339-MB /8298
Matrix: Soil
Batch Number: 3276-950919

Analyte	Result mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	Date Analyzed
Benzene	BRL	5.0	09/19/95
Toluene	BRL	5.0	09/19/95
Ethyl benzene	BRL	5.0	09/19/95
1,2-Xylene	BRL	5.0	09/19/95
1,3-Xylene	BRL	5.0	09/19/95
1,4-Xylene	BRL	5.0	09/19/95
TPH - Gasoline	BRL	1000	09/19/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	92	51 - 102
Bromofluorobenzene(FID)	97	51 - 102

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-25-95

MBT Environmental Laboratories

Master Builders Technologies

LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL
LCS Date Analyzed: 09/19/95

Lab ID: 24343-LCS /8298
Matrix: Soil Units: mg/Kg (ppm)
Batch Number: 3276-950919
LCSD Date Analyzed: NA

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	Acceptance Limits RPD
Benzene	0	250	280	111	NA	NA	NA	70-124	≤25
Ethyl benzene	0	250	270	108	NA	NA	NA	67-128	≤25
TPH - Gasoline	0	2500	2880	115	NA	NA	NA	75-125	≤25

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

Surrogate	(h) Surr. Spike Conc.	(i) Sample + Surr. Spike Conc.	(j) Surr. Spike Rec %	(k) Sample Dup. + Surr. Spike Conc.	(l) Surr. Spike Dup. Rec %	Acceptance Limits
Bromofluorobenzene(PID)	200	190	93	NA	NA	51-102
Bromofluorobenzene(FID)	200	194	97	NA	NA	51-102

Surrogate % Recovery = j = (i-h) x 100
Surrogate Duplicate Recovery = l = (k/h) x 100

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-25-95

MBT Environmental Laboratories

Master Builders Technologies

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-2 12.5
Sample Number: 51496
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL
MS Date Analyzed: 09/21/95

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-3/24345,24346-8298
Date/Time Sampled: 09/11/95 12:14
Matrix: Soil (S) Units: mg/Kg (ppm)
Batch Number: 3276-950919
% Moisture: NA

MSD Date Analyzed: 09/21/95

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	Acceptance Limits RPD
Benzene	690	250	990	120	1200	204*	19	70-124	≤25
Ethyl benzene	69	250	340	108	360	116	6	67-128	≤25

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

Surrogate	(h) Surr. Spike Conc.	(i) Sample + Surr. Spike Conc.	(j) Surr. Spike Rec %	(k) Sample Dup. + Surr. Spike Conc.	(l) Surr. Spike Dup. Rec %	Acceptance Limits
Bromofluorobenzene(PID)	200	160	83	160	79	51-102

Surrogate % Recovery = j = (i-h) x 100
Surrogate Duplicate Recovery = l = (k/h) x 100

Qualifier Legend:
* - Values outside QC

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-25-95

MBT Environmental Laboratories

Master Builders Technologies

METHOD BLANK

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: 09/15/95

Lab ID: 24245-MB /8298
Matrix: Water
Batch Number: 3251-950915

Analyte	Result ug/L (ppb)	Reporting Limit ug/L (ppb)	Date Analyzed
Benzene	BRL	0.50	09/18/95
Toluene	BRL	0.50	09/18/95
Ethyl benzene	BRL	0.50	09/18/95
1,2-Xylene	BRL	0.50	09/18/95
1,3-Xylene	BRL	0.50	09/18/95
1,4-Xylene	BRL	0.50	09/18/95
TPH - Gasoline	BRL	50	09/18/95

Surrogates	% Recovery	Limits
Orthochlorotoluene (PID)	95	80 - 120
Orthochlorotoluene (FID)	102	80 - 120

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-22-95

MBT Environmental Laboratories

Master Builders Technologies

LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: 09/15/95
Initial Wt./Volume: NA
Final Volume: NA
LCS Date Analyzed: 09/15/95

Lab ID: 24242-LCS /8298
Matrix: Water Units: ug/L (ppb)
Batch Number: 3251-950915
LCSD Date Analyzed: NA

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	Acceptance Limits RPD
Benzene	0	10	9.7	97	NA	NA	NA	72-134	≤20
Ethyl benzene	0	10	8.8	88	NA	NA	NA	72-128	≤20
TPH - Gasoline	0	100	93.9	94*	NA	NA	NA	100-127	≤20

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

Surrogate	(h) Surr. Spike Conc.	(i) Sample + Surr. Spike Conc.	(j) Surr. Spike Rec %	(k) Sample Dup. + Surr. Spike Conc.	(l) Surr. Spike Dup. Rec %	Acceptance Limits
Orthochlorotoluene (PID)	4.0	3.7	94	NA	NA	80-120
Orthochlorotoluene (FID)	4.0	7.0	176*	NA	NA	80-120

Surrogate % Recovery = j = (i-h) x 100
Surrogate Duplicate Recovery = l = (k/h) x 100

Qualifier Legend:
* - Value beyond QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-22-95

MBT Environmental Laboratories

Master Builders Technologies

LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Date Prepared: 09/15/95
Initial Wt./Volume: NA
Final Volume: NA
LCS Date Analyzed: 09/15/95

Lab ID: 24243-LCS /8298
Matrix: Water Units: ug/L (ppb)
Batch Number: 3251-950915
LCSD Date Analyzed: NA

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	Acceptance Limits RPD
Benzene	0	10	12	117	NA	NA	NA	72-134	≤20
Ethyl benzene	0	10	10	104	NA	NA	NA	72-128	≤20
TPH - Gasoline	0	100	112	112	NA	NA	NA	100-127	≤20

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

Surrogate	(h) Surr. Spike Conc.	(i) Sample + Surr. Spike Conc.	(j) Surr. Spike Rec %	(k) Sample Dup. + Surr. Spike Conc.	(l) Surr. Spike Dup. Rec %	Acceptance Limits
Orthochlorotoluene (PID)	4.0	3.8	94	NA	NA	80-120
Orthochlorotoluene (FID)	4.0	7.1	177*	NA	NA	80-120

Surrogate % Recovery = j = (i-h) x 100
Surrogate Duplicate Recovery = l = (k/h) x 100

Qualifier Legend:
* - Value beyond QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-22-95

MBT Environmental Laboratories

Master Builders Technologies

MBT Environmental
Laboratories

3083 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

Date: September 26, 1995
LP #: 12586

Saul Germanas
McLaren/Hart Environmental Engineering
1135 Atlantic Avenue
Alameda, CA 94501

Dear Mr. Germanas:

Enclosed are the additional laboratory results requested on September 18, 1995, for the samples submitted to MBT Environmental Laboratories on September 13, 1995, for the project *3810 Broadway*.

The report consists of the following sections:

1. Cover Page
2. Copy of Chain-of-Custody
3. General Narrative
4. Analytical and Quality Control Results

Unless otherwise instructed by you, samples will be disposed of according to the instructions provided for the original samples (LP # 12552).

Thank you for choosing MBT Environmental Laboratories. We are looking forward to serving you in the future. Should you have any questions concerning this analytical report or the analytical methods employed, please do not hesitate to call.

Sincerely,

Kevin Hanlon
Project Coordinator

ANALYTICAL REPORT

LABORATORY PROJECT (LP) NUMBER 12586

3810 BROADWAY

The analyses performed by MBT Environmental Laboratories in this report comply with the requirements under the following certification/approval:

	ARIZONA:	Hazardous Waste, #AZ0468 Waste Water, # AZ0468 Drinking Water, #AZ0468
✓	CALIFORNIA:	Hazardous Waste, #1417 Waste Water, # 1417 Drinking Water, #1417
	CONNECTICUT:	Waste Water, #PH0799
	FLORIDA:	Environmental Water, #E87298 CQAPP #930105
	KANSAS:	Hazardous Waste, #E-1167 Waste Water, #E-192 Drinking Water, #E-192
	NEW HAMPSHIRE:	Waste Water, #253195-B Drinking Water, #253195-A
	NEW JERSEY:	Waste Water, #44818
	NEW YORK:	Hazardous Waste, #11241 Waste Water, #11241 CLP, #11241
	OKLAHOMA:	Hazardous Waste, #9318 Waste Water, #9318
	SOUTH CAROLINA:	Hazardous Waste, #87013 Waste Water, #87013
	TENNESSEE:	Underground Storage Tank
	UTAH:	Hazardous Waste, #E-165 Waste Water, #E-165 Drinking Water, #E-165
	WASHINGTON:	Hazardous Waste, #C048
	WISCONSIN:	Hazardous Waste, #999940920 Waste Water, #999940920
	USACOE:	Hazardous Waste Waste Water
	AFCEE	

(CN12586)

MBT Environmental Laboratories

MBT Environmental Laboratories
3083 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

CHAIN OF CUSTODY RECORD 15706

SEE SIDE 2 FOR COMPLETE INSTRUCTIONS

Project Name: 3810 Broadway
Project Number: 04.060/879.001.001
Project Location: (State) Oakland, CA

FOR LABORATORY USE ONLY
Laboratory Project #: 125816 Storage ID: 4-7,1,12-C
Sample Condition Upon Receipt: Temp: 3 °C Geiger:
Custody Seals Present? Yes/No Intact? Yes/No Samples Intact? Yes/No

Sample Disposal (check one): ☒ ~~Laboratory Standard~~ ☑ Other See LP 12552

Level of QC (see Side 2): ☒ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6A ☐ 6B ☐ 6C ☐ 6D ☐ 6E ☐ 6F ☐ 7 ☐ 8 ☐ A

Write in Analysis Method →

SAMPLE INFORMATION / ANALYSES REQUESTED

FOR LABORATORY USE ONLY Lab ID NEW	Lab ID OLD	Sample ID Number	Date (95)	Time	Description: Locator	Description: Depth	Container(s) #	Container(s) Type	Matrix Type	Pres. Type	TAT	TPH Gas + 8020/BTEX	Boiler/TPH-F.F. D.H.O.	Boiler/TPH-F.F. D.H.O.							
125816-1	12552.001	51494	9/11	1030	B-4	12.5	1	B	Soil	—	1L, 4oz	X		X							
2-2	.002	52403-04	9/12	0915	↓	26.5	2	B				X		X							
3-3	.003	51496	9/11	1214	B-2	12.5	1	B				X									
4-4	.004	51498		1540	↓	26.5	1	B				X									
5-5	.005	52401		1618	B-1	12.5	1	B				X									
6-6	.006	52405	↓	1710	↓	26.5	1	B				X									
7-7	.007	52406	9/12	1100	B-5	12.5	1	B				X									
8-8	.008	52407-08		1300	↓	29.5	1	B				X									
9-9	.010	52410-11	↓	1555	B-3	27	2	B		↓		X		X							
10-10	.011	52412	9/12	1640	B-6	12.5	1	B				X									

SEND REPORT TO:
Company Name McLaren/Hart
Client Name Saul Germanos
Address Alameda
Phone ____ Fax ____

BILL TO (if different):
Company Name ____
Address ____
PO # ____
Phone ____ Fax ____

Special Instructions/Comments ____

Sampler Name ____ Signature ____ PPE Worn in Field ____

Relinquished By:	Date/Time	Received By or Method of Shipment/Shipment I.D.	Date/Time
Samples			9/13/95 0900
Relinquished By:	Date/Time	Received By or Method of Shipment/Shipment I.D.	Date/Time
Request			9/18/95 1600
Relinquished By:	Date/Time	Received By or Method of Shipment/Shipment I.D.	Date/Time

Common Analytical Methods
413.1
413.2 Long Method
413.2 Short Method
418.1 Long Method
418.1 Short Method
420.1
502.2
503E
503.1
524.2
601
602
604
608
610
624
625
8010
8015
8015 Mod.
8020
8021
8040
8080
8100
8150
8240
8270
8310
Acidity
Alkalinity
BTEX
Chloride
CLP (see Side 2)
COD
Color
Conductivity
Corrosivity
Cyanide
Flashpoint
Fluoride
General Mineral
Hex. Chromium
Ion Balance
Metals (write specific metal & method #)*
Metals 6010*
Metals PP*
Metals Title 22:
TTLC Level
STLC Level
(see Side 2)
Nitrate
Nitrite
Odor
Org. Lead
Org. Mercury
Percent Moisture
Percent Solid
Perchlorate
pH
Phosphates
Phosphorus
Sulfate
Sulfides
TCLP:
VOA
Semivoa
Metals
Pesticide
TDS
Total Hardness
Total Solids
TPH/D
TPH/G
TSS
Turbidity
* Specify Total or Dissolved

GENERAL NARRATIVE

Comments:

Test methods may include minor modifications of published EPA methods (e.g., reporting limits or parameter lists). Reporting limits are adjusted to reflect dilution of the sample when appropriate. Solids and waste are analyzed with no correction made for moisture content.

Percent recoveries for laboratory control samples and matrix spikes have been calculated using unrounded concentration values. Therefore, percent recoveries reported may differ slightly from those obtained from the rounded concentration values which appear on the report.

Modified EPA 8015:

The reported result for Motor Oil for the following sample is calculated based on the Motor Oil standard; however, the chromatographic pattern in the sample does not exactly resemble that of the Motor Oil standard: 12586-9.

The following sample was analyzed at a dilution due to the presence of non-target analyte interferences: 12586-2.

EPA 8020 (BTEX) and TPH-G:

The surrogate recoveries for the analytes flagged on the data sheet were diluted out for the following samples: 12586-1, 12586-5, and 12586-7.

The following samples were analyzed at a dilution to bring target analytes within linear working range: 12586-1, 12586-5, and 12586-7.

Matrix spike recovery for 12586-3MS/MSD is outside of advisory quality control limits due to the high concentration of that analyte in the sample.

Abbreviations and Definitions:

MB	*Method Blank* - An aliquot of a blank matrix carried throughout the entire analytical process
LCS	*Laboratory Control Sample* - A blank to which known quantities of specific analytes are added prior to sample preparation and analysis to assess the accuracy of the method
MS/MSD	*Matrix Spike/Matrix Spike Duplicate* - Duplicate samples to which known quantities of specific analytes are added prior to sample preparation and analysis to assess the extent of matrix bias or interference on analyte recovery

(CN12586)

RPD	*Relative Percent Difference* - The measurement of precision between duplicate analyses
BRL	*Below Reporting Limit*
NS	*Not Specified*
NA	*Not Applicable*

Flags:

Organics -

J	Estimated value below the reporting limit and at or above the method detection limit.
B	Analyte found in the associated blank, as well as in the sample.

Inorganics -

B	Estimated value below the reporting limit and at or above the method detection limit.

(CN12586)

TOTAL PETROLEUM HYDROCARBONS

Analytical Method: Modified EPA 8015
Preparation Method: EPA 3550S

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-4 26.5
Sample Number; 52403
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95 07:50:
Initial Wt./Volume: 60 grams
Final Volume: 1 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-2/23858-7931
Date/Time Sampled: 09/12/95 09:15
Matrix: Soil (S)
Batch Number: 3219-950919
% Moisture: NA

Analyte	Result mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	Dilution Factor	Date Analyzed
Diesel Range (C12 - C22)	BRL	20	20	09/22/95
Motor Oil Range (C22 - C32)	16 J	20	20	09/22/95

Qualifier Legend:
J - estimated value

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-22-95

MBT Environmental Laboratories

Master Builders Technologies

TOTAL PETROLEUM HYDROCARBONS

Analytical Method: Modified EPA 8015
Preparation Method: EPA 3550S

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-3 27
Sample Number: 52410
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95 07:50:
Initial Wt./Volume: 60 grams
Final Volume: 1 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-9/23859-7931
Date/Time Sampled: 09/12/95 15:55
Matrix: Soil (S)
Batch Number: 3219-950919
% Moisture: NA

Analyte	Result mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	Dilution Factor	Date Analyzed
Diesel Range (C12 - C22)	BRL	1.0	1	09/19/95
Motor Oil Range (C22 - C32)	1.3	1.0	1	09/19/95

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-22-95

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 09/22/95

METHOD BLANK

TOTAL PETROLEUM HYDROCARBONS

Analytical Method: Modified EPA 8015
Preparation Method: EPA 3550S

Date Prepared: 09/19/95 07:50:
Initial Wt./Volume: 60 grams
Final Volume: 1 mL

Lab ID: 23992-MB /25
Matrix: Soil
Batch Number: 3219-950919

Analyte	Result mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	Date Analyzed
Diesel Range (C12-C22)	BRL	1.0	09/20/95
Motor Oil Range (C22-C32)	BRL	1.0	09/20/95

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-22-95

MBT Environmental Laboratories

Master Builders Technologies

LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE

TOTAL PETROLEUM HYDROCARBONS

Analytical Method: Modified EPA 8015
Preparation Method: EPA 3550S

Date Prepared: 09/19/95 07:50:
Initial Wt./Volume: 60 grams
Final Volume: 1 mL
LCS Date Analyzed: 09/19/95

Lab ID: 23993-LCS /25
Matrix: Soil Units: mg/Kg (ppm)
Batch Number: 3219-950919
LCSD Date Analyzed: NA

Analyte	(a) Sample Conc.	(b) Spike Conc.	(c) Sample + Spike Conc.	(d) Spike Rec %	(e) Sample Dup. + Spike Conc.	(f) Spike Dup. Rec %	(g) RPD %	Acceptance Limits % Rec.	RPD
Diesel Range (C12-C22)	0	41.7	30.1	72	NA	NA	NA	52-125	≤25

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-22-95

MBT Environmental Laboratories

Master Builders Technologies

Report Generated: 09/22/95

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-4 12.5
Sample Number: 51494
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-1/23850-8298
Date/Time Sampled: 09/11/95 10:30
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	Dilution Factor	Date Analyzed
Benzene	60	50	10	09/20/95
Toluene	BRL	50	10	09/20/95
Ethyl benzene	1200	50	10	09/20/95
1,2-Xylene	1600	50	10	09/20/95
1,3-Xylene	3700	50	10	09/20/95
1,4-Xylene	1900	50	10	09/20/95
TPH - Gasoline	83000	10000	10	09/20/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	0 *	51 - 102
Bromofluorobenzene(FID)	0 *	51 - 102

Qualifier Legend:
* - Values outside QC limits

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-25-95

MBT Environmental Laboratories

Master Builders Technologies

VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and TPH/G by LUFT
Preparation Method: EPA 5030

Company: McLaren/Hart
Project Name: 3810 Broadway
Sample Description: B-4 26.5
Sample Number: 52403
Date/Time Received: 09/13/95 09:00
Date Prepared: 09/19/95
Initial Wt./Volume: 20 grams
Final Volume: 10 mL

SDG #: 12586
Project Number: 040601879001001
Lab ID: 12586-2/23858-8298
Date/Time Sampled: 09/12/95 09:15
Matrix: Soil (S)
Batch Number: 3276-950919
% Moisture: NA

Analyte	Result mg/Kg (ppm)	Reporting Limit mg/Kg (ppm)	Dilution Factor	Date Analyzed
Benzene	520	5.0	1	09/19/95
Toluene	78	5.0	1	09/19/95
Ethyl benzene	39	5.0	1	09/19/95
1,2-Xylene	24	5.0	1	09/19/95
1,3-Xylene	26	5.0	1	09/19/95
1,4-Xylene	20	5.0	1	09/19/95
TPH - Gasoline	1900	1000	1	09/19/95

Surrogates	% Recovery	Limits
Bromofluorobenzene(PID)	78	51 - 102
Bromofluorobenzene(FID)	81	51 - 102

The cover letter and enclosures are integral parts of this report.

Approved by: _____ Date: 9-25-95

MBT Environmental Laboratories

Master Builders Technologies

APPENDIX D

LABORATORY WRITE-UP, LABORATORY ANALYTICAL DATA SHEETS AND CHAIN-OF-CUSTODY RECORDS - FREE PRODUCT SAMPLE

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Andrew John Friedman
James E. Bruya, Ph.D.
(206) 285-8282

3012 16th Avenue West
Seattle, WA 98119-2029
FAX: (206) 283-5044

December 5, 1995

Chris Warwick, Project Leader
McLaren Hart
1135 Atlantic Avenue
Alameda, CA 94501

Dear Mr. Warwick:

Enclosed are the results from the testing of material submitted on November 22, 1995 from your 04.0601879.001.002, 3810 Broadway project.

Sample 259951-2 contained leaded automotive gasoline and trace amounts of a middle distillate such as diesel or heating oil. The gasoline appeared evaporatively weathered, as evidenced by the enrichment of xylenes and C_3-benzenes (4-7 minutes on the GC/FID trace) relative to the more volatile constituents (before 4 minutes on the GC/FID trace). The presence of broad peaks between 9 and 12 minutes is also indicative of chemical/biological degradation. The GC/ECD trace showed the possible presence of organic lead, which was confirmed by inductively coupled plasma automic emission spectroscopy (ICP/AES). The peak at nine minutes on the GC/ECD trace is characteristic of tetraethyl lead, while the peak at 7 minutes could be a different lead alkyl associated with a lead package in common use from 1960 to the mid 1970's. We tested for tetramethyl lead, another compound used in this package, but did not detect any analyte. Tetramethyl lead is the most highly volatile component of the lead package, however, and it may have evaporated, leaving the other lead species behind.

Your December 1, 1995 fax stated that sample 259951-2 was collected from a confined zone. The sample was found as a 6" product layer floating on the water table in a 22' deep well. The surrounding soil was a sandy clay topped with asphalt. Annual rainfall varies from 12" to 24", and the water table fluctuates approximately 1.5'. The site conditions would restrict air flow to the sample, slowing degradation processes. The extent of weathering in

259951-2 leads us to believe the product is at least five years old, and more likely, ten or more years old.

The organic lead level in 259951-2 is relatively high at 270 ppm, or 1.2 g/gallon. This concentration is typical for regular leaded gasolines manufactured between 1975 and 1982. The measured lead level, however, might have been altered during weathering processes. Lead is relatively persistent in the environment, and may concentrate over time. The original lead levels in 259951-2 may have been lower, opening the possibility that the sample was released earlier. We do not, however, expect 259951-2 to be much younger than 10 years old, because lead levels dropped sharply around 1985 in expectation of the EPA mandated lead phaseout.

The site information, weathering patterns, high organic lead levels, and possible presence of other lead alkyls leads us to believe the majority of 259951-2 was released sometime between 1975 and 1985. We are unable to tell you if the contamination came from a single spill or slow leak over time, but we do feel it was released in the stated time frame.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Beth Albertson

Beth Albertson
Chemist

keh
Enclosures
FAX: (510) 521-1547
MH11205R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: December 5, 1995
Date Received: November 22, 1995
Project: 04.0601879.001.002, 3810 Broadway
Date Samples Extracted: November 27, 1995

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR FINGERPRINT CHARACTERIZATION BY CAPILLARY GAS CHROMATOGRAPHY USING A FLAME IONIZATION DETECTOR (FID) AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID	GC Characterization
259951-2	The GC trace using the flame ionization detector (FID) showed the presence of low and medium boiling compounds. The low boiling compounds appeared as a ragged pattern of peaks eluting from n-C_6 to n-C_{14} showing a maximum near n-C_8. The GC/FID trace showed the presence of peaks that appeared to be indicative of augmented levels of toluene, ethylbenzene, the xylenes and C_3-benzenes. These compounds are characteristic of the constituents commonly found in gasoline. The GC/ECD trace showed the possible presence of tetraethyl lead, a common additive to leaded gasolines and a suite of lead alkyl compounds characteristic of old leaded gasolines. The low boiling product appears to have undergone degradation by evaporative processes due to the loss of the low boiling constituents and chemical or biological degradation due to the presence of broad peaks. The medium boiling compounds appeared as a regular pattern of peaks eluting from n-C_{15} to n-C_{21}. A regular pattern of the n-alkanes is seen for the medium boiling product. The patterns displayed by these peaks are indicative of a middle distillate such as diesel fuel or heating oil. The medium boiling material was seen in very low concentration relative to the gasoline, making product identification tentative. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second internal standard peak seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: December 5, 1995
Date Received: November 22, 1995
Project: 04.0601879.001.002, 3810 Broadway
Date Samples Extracted: December 4, 1995
Date Extracts Analyzed: December 4, 1995

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR ORGANIC LEAD BY ICP (METHOD 6010)

Results Reported as µg/g (ppm)

Sample ID	Organic Lead
259951-2	270
Method Blank	<0.4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: December 5, 1995
Date Received: November 22, 1995
Project: 04.0601879.001.002, 3810 Broadway

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR ORGANIC LEAD BY ICP (METHOD 6010)

Laboratory Code: 64364 (Duplicate)

Analyte:	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Organic Lead	ug/g (ppm)	42	37	13	0-20

Laboratory Code: 64364 (Matrix Spike)

Analyte:	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Organic Lead	ug/g (ppm)	59	42	81	80	80-120	1

Laboratory Code: Spike Blank

Analyte:	Reporting Units	Spike Level	% Recovery MS	Acceptance Criteria
Organic Lead	ug/g (ppm)	59	80	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: December 5, 1995
Date Received: November 22, 1995
Project: 04.0601879.001.002, 3810 Broadway
Date Samples Extracted: December 4, 1995

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR TETRAMETHYL LEAD BY GAS CHROMATOGRAPHY WITH ELECTRON CAPTURE DETECTION (GC/ECD)

Results Reported as µg/g (ppm)

Sample ID	Tetramethyl Lead
259951-2	<1
Method Blank	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: December 5, 1995
Date Received: November 22, 1995
Project: 04.0601879.001.002, 3810 Broadway

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR TETRAMETHYL LEAD BY GAS CHROMATOGRAPHY WITH ELECTRON CAPTURE DETECTION (GC/ECD)

Laboratory Code: 64084 (Duplicate)

Analyte:	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Tetramethyl Lead	µg/g (ppm)	<1	<1	nm	0-20

Laboratory Code: Spike Blank

Analyte:	Reporting Units	Spike Level	% Recovery MS	Acceptance Criteria
Tetramethyl Lead	µg/g (ppm)	50	115	65-135

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

MBT Environmental Laboratories

3083 Gold Canal Drive
Rancho Cordova
CA 95670
Phone 916/852-6600
Fax 916/852-7292

BD BTB HO 11.22.95 9:50

CHAIN OF CUSTODY RECORD 16402

SEE SIDE 2 FOR COMPLETE INSTRUCTIONS

FOR LABORATORY USE ONLY
Laboratory Project #: _____ Storage ID: _____
Sample Condition Upon Receipt: Temp: _____ °C _____ Geiger: _____
Custody Seals Present? Yes/No Intact? Yes/No Samples Intact? Yes/No

oject Name: 3810 BROADWAY
oject Number: 04.0601879.001.002
oject Location: (State) OAKLAND, CA

Sample Disposal (check one)
☑ Laboratory Standard
☐ Other _____

Level of QC (see Side 2): ☑ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6A ☐ 6B ☐ 6C ☐ 6D ☐ 6E ☐ 6F ☐ 7 ☐ 8 ☐ A

Write in Analysis Method →

SAMPLE INFORMATION

R LABORATORY USE ONLY Lab ID	Sample ID Number	Date	Time	Description: Locator	Description: Depth	Container(s): #	Container(s): Type	Matrix Type	Pres. Type	TAT	HFS	ADDITIVES 64/MS
64084-85	259951-2	11-03-95	11:00	MW-2	—	2	V	PROD.	—	SEE BELOW	X	X
	client okd	lead		12/1/95								

ANALYSES REQUESTED

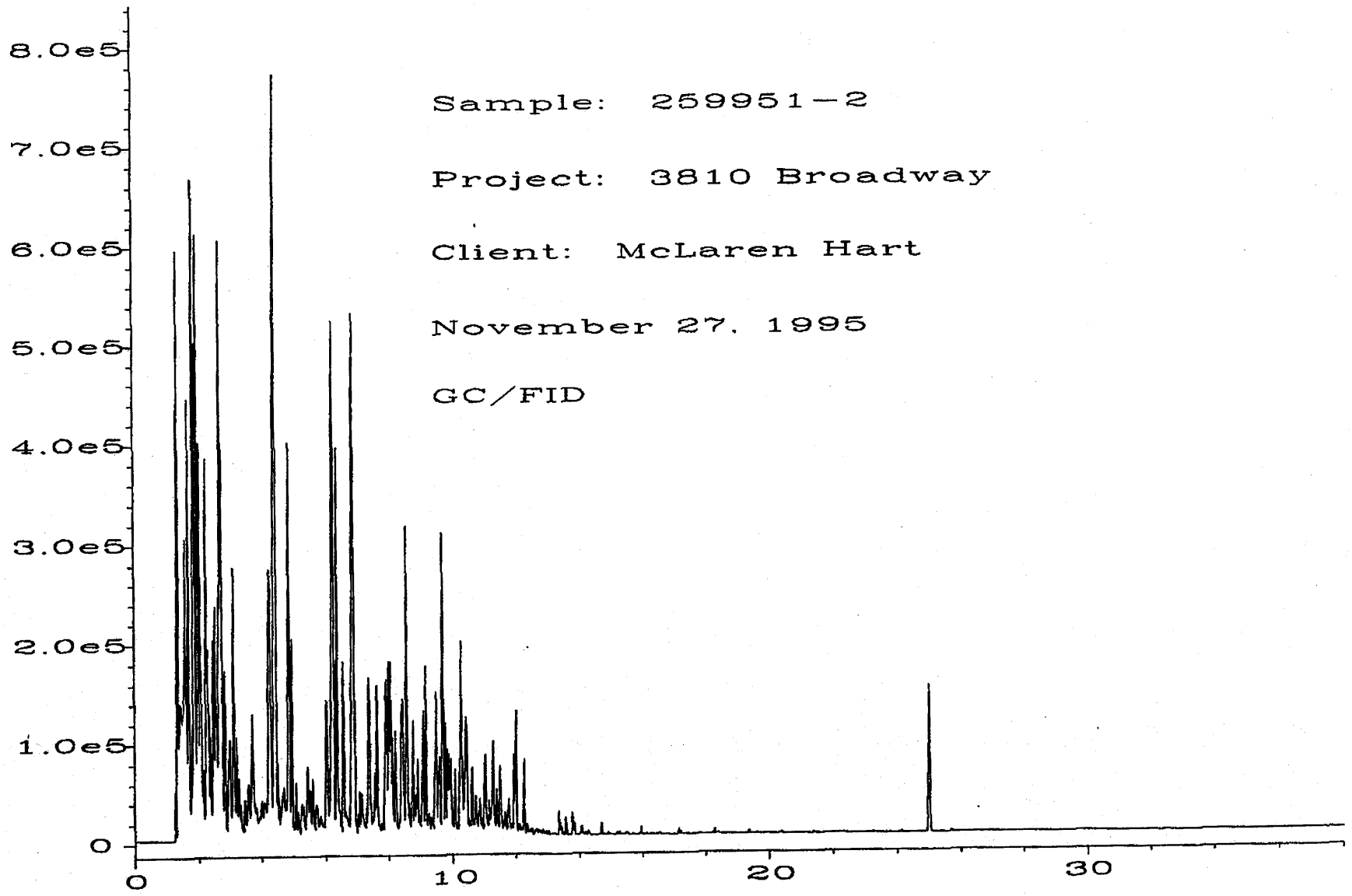
END REPORT TO:
ompany Name CHRIS WARWICK
lient Name McLAREN/HART
ddress 1135 ATLANTIC AVE
ALAMEDA, CA 94501
hone 570 521-5700 Fax 570 521-1547

BILL TO (if different):
Company Name _____
Address _____
PO # _____
Phone _____ Fax _____

Special Instructions/Comments PLEASE CALL CHRIS WARWICK @ (570)748-5634 TO CONFIRM ABOVE ANALYSES

ampler Name CHRIS WARWICK
Signature C Warwick
PPE Worn in Field D
elinquished By: C Warwick Date/Time 11-21-95/1900
Received By or Method of Shipment/Shipment I.D. FED APRESS Date/Time 11-21-95/1900
elinquished By: Date/Time
Received By or Method of Shipment/Shipment I.D. [illegible] Date/Time 11.22.95 [illegible]
elinquished By: Date/Time

Common Analytical Methods
413.1
413.2 Long Method
413.2 Short Method
418.1 Long Method
418.1 Short Method
420.1
502.2
503E
503.1
524.2
601
602
604
608
610
624
625
8010
8015
8015 Mod.
8020
8021
8040
8080
8100
8150
8240
8270
8310
Acidity
Alkalinity
BTEX
Chloride
CLP (see Side 2)
COD
Color
Conductivity
Corrosivity
Cyanide
Flashpoint
Fluoride
General Mineral
Hex. Chromium
Ion Balance
Metals (write specific metal & method #)*
Metals 6010*
Metals PP*
Metals Title 22:
TTLC Level
STLC Level
(see Side 2)
Nitrate
Nitrite
Odor
Org. Lead
Org. Mercury
Percent Moisture
Percent Solid
Perchlorate
pH
Phosphates
Phosphorus
Sulfate
Sulfides
TCLP:
VOA
Semivoa
Metals
Pesticide
TDS
Total Hardness
Total [illegible]
TPH[illegible]
TPH[illegible]
TS
[illegible]



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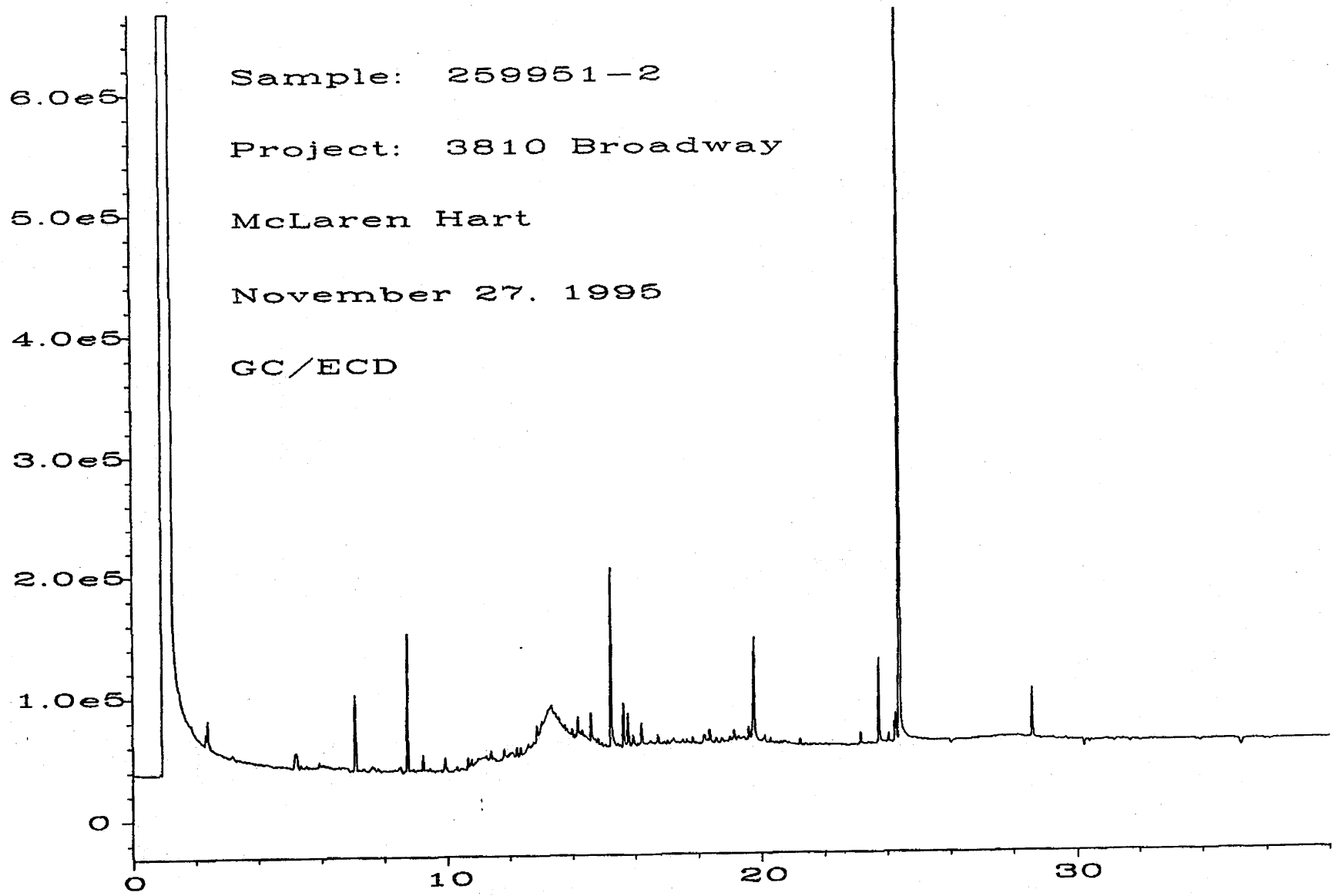

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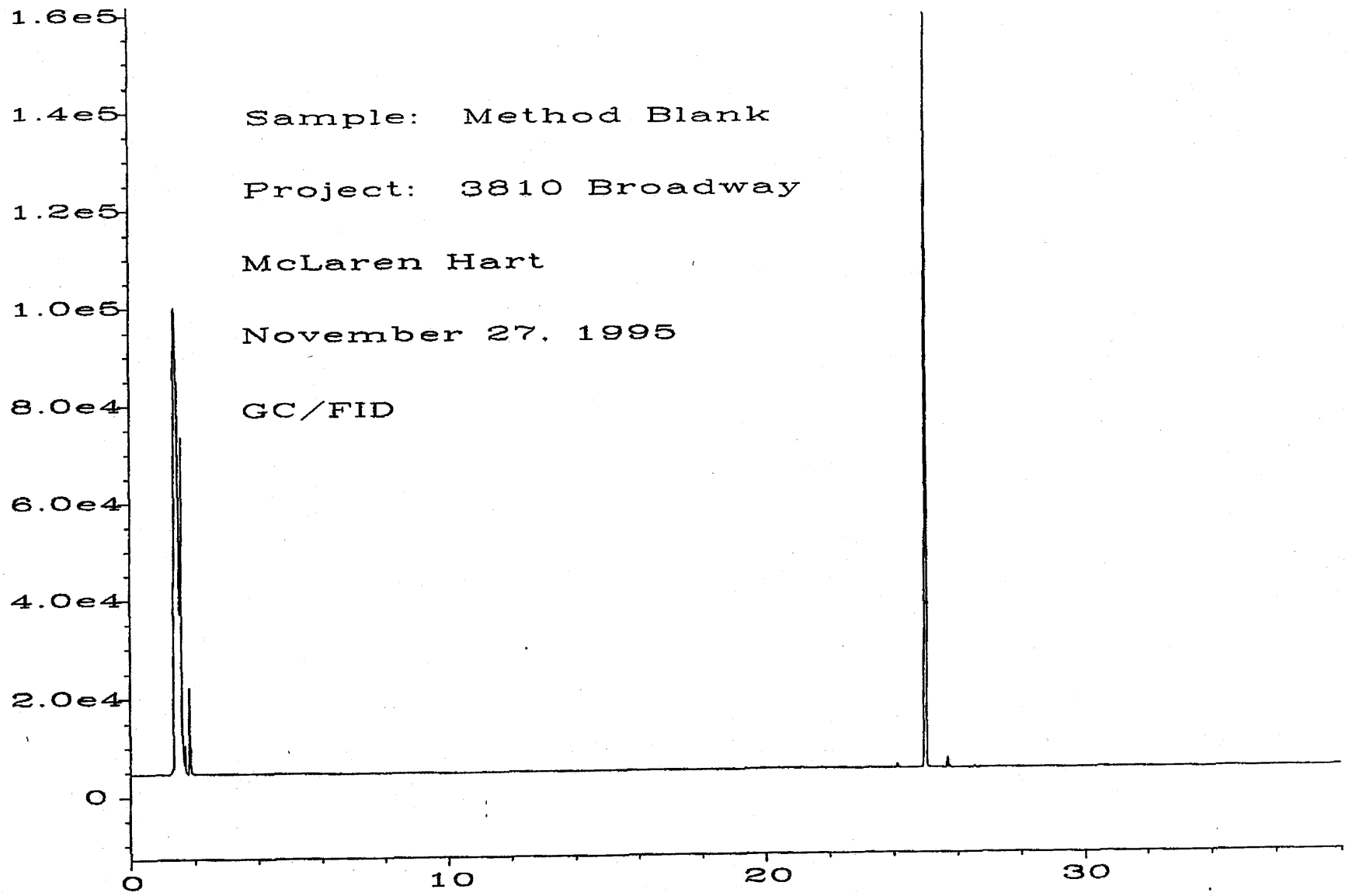

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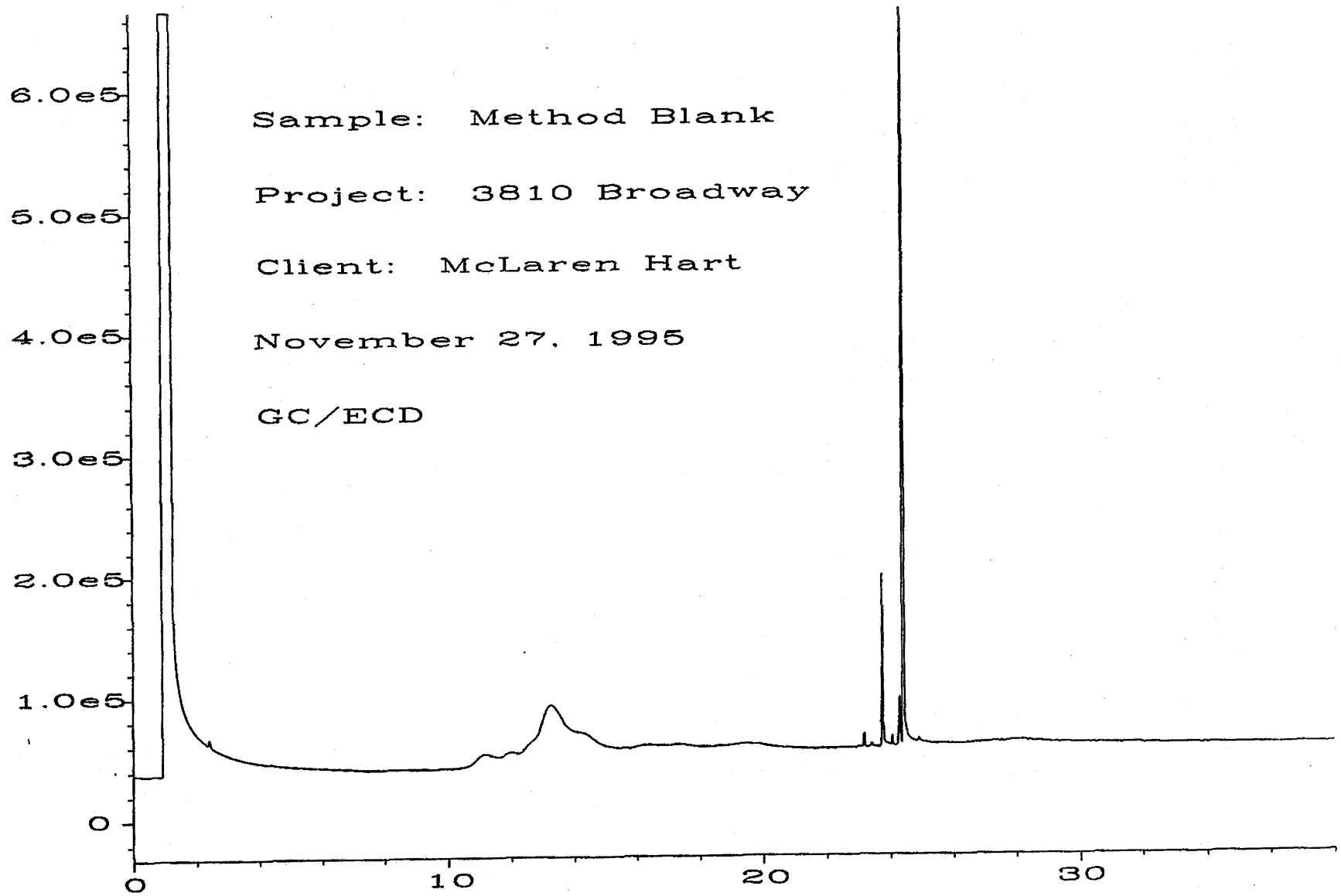

Sig. 2 in A:\1\11-27-95\003R0501.D

Friedman & Bruya, Inc.

(206) 285-8282

Analysis For Ethylene Dichloride, Ethylene Dibromide and MTBE By EPA Method 8240

Client Sample Name:	Method Blank	**Matrix:**	Product
FBI Sample Name:	EK 1129 MB1 P	**Run Date:**	11/29/95
Client:	McLaren/Hart	**Instrument:**	GCMS1
Extraction Date:	11/29/95	**Operator:**	BA
Data File:	112837.D	**Units:**	mg/kg(ppm)
Project:	3810 Broadway		

Surrogates	**% Recovery**
1,2-Dichloroethane-d4	117
Toluene-d8	93
4-Bromofluorobenzene	98

Compounds	**Concentration mg/kg(ppm)**
1,2-Dibromoethane (EDB)	<10
1,2-Dichlororethane (EDC)	<10
MTBE	<10

Friedman & Bruya, Inc.

(206) 285-8282

Analysis For Ethylene Dichloride, Ethylene Dibromide and MTBE By EPA Method 8240

Client Sample Name:	259951 - 2	**Matrix:**	Product
FBI Sample Name:	64084	**Run Date:**	11/30/95
Client:	McLaren/Hart	**Instrument:**	GCMS1
Extraction Date:	11/29/95	**Operator:**	BA
Data File:	112852.D	**Units:**	mg/kg(ppm)
Project:	3810 Broadway		

Surrogates	% Recovery
1,2-Dichloroethane-d4	123
Toluene-d8	95
4-Bromofluorobenzene	100

Compounds	**Concentration mg/kg(ppm)**
Ethylene dibromide (EDB)	<10
Ethylene dichloride (EDC)	<10
MTBE	<10

FLUOR DANIEL GTI

TO: Ms. Mary Haber
Attorney-at-Law
353 Sacramento Street, Suite 600
San Francisco, CA 94111

DATE: 11/25/96 JOB NO. 02070-0324
FROM: Brian Garber
RE: Former Texaco Service Station
3810 Broadway
Oakland, California

We are sending via: [ ] AIRBORNE [X] MAIL [ ] FAX

ORIGINALS	COPIES	DATE	DESCRIPTION
1	3	11/25/96	FINAL Soil and Groundwater Assessment Report

Transmitted as checked:

[ ] For Approval [X] For Your Use [ ] As You Requested

[ ] For Comment [X] For Resubmittal [X] For Your Records

Remarks: Dear Ms. Haber:

The enclosed report is for your records. Also included are copies for forwarding to the appropriate parties. Please call our West Sacramento office with questions or comments.

Thank you.

Brian Garber

Copies to:

Copy forwarded by Fluor Daniel GTI: Mr. Marvin Katz
Texaco Refining and Marketing, Inc.
108 Cutting Boulevard
Richmond, California 94804

0324tran wk4

1401 Halyard Drive, Suite 140 / West Sacramento, CA 95691 USA (916) 372-4700 FAX (916) 372-8781

FLUOR DANIEL GTI

November 25, 1996

Ms. Mary Haber
353 Sacramento Street, Suite 600
San Francisco, California 94111

Subject: Soil and Groundwater Assessment Report
Former Texaco Service Station
3810 Broadway, Oakland, California
Fluor Daniel GTI Project 02070 0324

Dear Ms. Haber:

Fluor Daniel GTI, Inc. is pleased to present this Soil and Groundwater Assessment Report for drilling and sampling of soil borings, groundwater monitoring well installation, and groundwater sampling activities at the subject site (Figures 1 and 2, Attachment 1) between September 17 and October 10, 1996. Prior to conducting these activities, Fluor Daniel GTI conducted Second Quarter 1996 groundwater monitoring and sampling of the four original on-site wells on June 28, 1996; the findings of this monitoring and sampling event are also included in this report.

Scope of Work

The scope of work conducted during this phase of the investigation included:

- Obtaining a Minor Encroachment Permit, and an Excavation Permit, from the City of Oakland, Office of Planning and Building, for placing two monitoring wells within the public right-of-way, and a Drilling Permit from the Alameda County Zone 7 Water Agency
- Completing a Health and Safety Plan pertaining to the site activities conducted during the assessment
- Conducting Second Quarter 1996 groundwater monitoring and sampling of the four original groundwater monitoring wells on the site (MW-1 through MW-4)
- Contacting Underground Service Alert (USA) to mark utilities located on the right-of-way on Broadway and 38th Street
- Commissioning of an underground locating service to survey the subsurface to locate and identify underground utilities and structures on the subject property
- Drilling of six soil borings and installation of six new groundwater monitoring wells in the borings
- Collection of five soil samples from each boring for laboratory analysis (Table 1, Attachment 2)
- Redrilling wells MW-1, MW-2, and MW-3 , and reinstalling new monitoring wells with screen intervals intercepting the groundwater/vadose zone interface.

1401 Halyard Drive, Suite 140 / West Sacramento, CA 95691 USA (916) 372-4700 FAX (916) 372-8781

- Development of the newly installed groundwater monitoring wells
- Having the top-of-casing elevation surveyed to a local benchmark by a licenced surveyor
- Measuring depth-to-water (DTW) in the 10 site-related monitoring wells (Table 2)
- Collection of groundwater samples from each monitoring well that did not contain separate phase liquid hydrocarbons (SPH) for laboratory analysis
- Preparation and submittal of this Soil and Groundwater Investigation Report

METHODOLOGY

Permitting/Site Specific Health and Safety Plan

A Minor Encroachment Permit, and an Excavation Permit were obtained from the City of Oakland, Office of Planning and Building, for placing two monitoring wells within the public right-of-way prior to conducting the field work. Also obtained was a Drilling Permit from the Zone 7 Water Agency. Copies of these permits are included in Attachment 3.

Following a review of site conditions, Fluor Daniel prepared a site-specific *Health and Safety Plan* as required by the Occupational Safety and Health Administration (OSHA) Standard "Hazardous Waste Operations and Emergency Response" guidelines (29 CFR 1910.120). The document was reviewed and signed by Fluor Daniel GTI personnel and subcontractors prior to beginning work at the site.

Utilities Survey

An underground locating service was retained to conduct a subsurface survey of underground utilities on the subject site prior to commencement of the subsurface activities. In addition, Underground Service Alert was contacted on August 29, 1996, to have member utilities notified of the pending monitoring well installation activities on the right-of-ways of Broadway and 38th Street.

Soil Boring Drilling and Sampling

Between September 19 and 23, 1996, six soil borings were drilled at the subject site for the purpose of collecting soil samples and to install groundwater monitoring wells. The monitoring well borings were drilled using a B-61 mobile drilling rig using 8-inch outside-diameter hollow-stem augers. The soil boring and monitoring well locations are presented in Figure 2. Soil samples were collected at 5-foot intervals starting from approximately 5 feet below grade (BG) to the total depth of the boring. A modified California split-spoon sampler was used for soil sample collection. Prior to the subsurface exploration, all down-hole equipment was cleaned using high-pressure steam to prevent cross contamination between borings. The sampler was lined with four 2-inch-diameter, 6-inch-long brass liners to allow for collecting an intact soil

sample. The sampler was washed with Alconox® detergent and water, and double rinsed with water prior to each sample collection.

The drilling was supervised by a Fluor Daniel GTI geologist who logged the materials encountered according to the Unified Soil Classification System. Soil samples were collected for headspace analysis at 5 foot intervals from approximately 5 feet below grade to the total depth of the boring. Headspace analysis was conducted on the soil samples using a photo-ionization detector (PID).

Soil samples were also collected from each boring for laboratory analysis. A total of five soil samples were collected for laboratory analysis from each of the soil borings prior to converting them to monitoring wells. The soil samples were sealed with Teflon™ sheets, plastic caps, and duct tape. The soil samples were stored on ice in an insulated chest and transported to NEI/GTEL Environmental Laboratories Inc. (NEI/GTEL), a California-certified laboratory in Wichita, Kansas, for analysis, accompanied by a chain-of-custody record. Selected soil samples were analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA methods 5030/8020, total petroleum hydrocarbons as diesel (TPH-D) by EPA methods 3550/8015, and as gasoline (TPH-G) by EPA methods 5030/8015. Also, two composite soil samples were collected from the soil cutting pile generated during drilling for waste characterization by the laboratory.

Monitoring Well Construction

Following the drilling of the soil borings to a total depth of 35 feet, six groundwater monitoring wells (MW-5, MW-6, MW-7, MW-8, MW-9, and MW-10) were constructed (Figure 2). The monitoring wells were completed with 25 feet of 2-inch-diameter polyvinylchloride (PVC), 0.020-inch-slot screen. The wells were finished to the surface with 10 feet of 2-inch-diameter PVC casing. The annular space between the borehole and casing was backfilled with Lonestar 2/12 sand from the well completion depth to approximately 8 feet below grade. A sanitary seal consisting of hydrated bentonite chips was installed above the sand to approximately 7 feet below grade, followed by cement grout to the surface. The wells were finished with a water-tight locking cap inside a traffic-rated street box. Well construction diagrams are shown on drilling logs presented in Attachment 4.

Soil cuttings generated during the drilling were placed on top of and covered with plastic, and stored on site pending laboratory analysis and proper disposal.

Reinstallation of Monitoring Wells

Three previously installed monitoring wells (MW-1, MW-2, and MW-3) were redrilled for the purpose of adjusting the screen interval to intercept the groundwater/vadose zone interface. This will allow collection of representative groundwater samples and accurate measurement of separate-phase hydrocarbons, if present.

Need new construction logs.

when?

The wells were redrilled to their total depth using 8-inch outside-diameter hollow-stem augers. New monitoring wells were then installed in the redrilled borings. Monitoring wells MW-1, MW-2, and MW-3 were constructed the same way as wells MW-5 through MW-10

Monitoring Well Development

The four original monitoring wells were developed on June 28, 1996, during the Second Quarter 1996 groundwater monitoring and sampling task. On October 10, 1996, all of the wells, including those that were redrilled and installed in the current assessment, were developed prior to sampling. The purpose of the well development is to improve the hydraulic communication with the surrounding aquifer. Suspended sediment was removed from the wells using a surge and bail technique until the extracted groundwater was free of fine particles Development water was placed in 55-gallon steel drums, labeled, and stored on site pending laboratory analysis to determine a proper disposal method.

Groundwater Monitoring

On June 28, October 10, and November 7, 1996, the depth to groundwater was measured in the monitoring wells using an INTERFACE PROBE™ Well Monitoring System, which can detect both water and SPH levels. On June 28, 1996, SPH was detected in well MW-2 at a thickness of 1.35 feet and in MW-3 at a thickness of 1.43 feet. On October 10, 1996 no SPH was detected. On November 7, 1996, SPH was found in wells MW-1 and MW-2 at a thickness of 0.01 foot.

Groundwater Sampling

On June 28 and October 10, 1996, groundwater samples were collected from the groundwater monitoring wells. Before sampling, the wells were purged of approximately 4 well-casing volumes. The temperature, conductivity, and pH of the purge water were measured during purging.

Groundwater samples were collected using well-dedicated, polyurethane, disposable bailers and placed in sample containers supplied by the laboratory performing the analyses. The sample containers were labeled and placed in an ice-chilled, insulated container for transport under chain-of-custody protocol to NEI/GTEL, a California-certified laboratory in Wichita, Kansas for the analyses. The groundwater samples from both sampling dates were analyzed for BTEX and TPH-G using EPA methods 8020/8015, respectively. The groundwater sample from well MW-1 collected on June 18, 1996, and all 10 groundwater samples collected on October 10, 1996, were also analyzed for TPH-D using EPA method 3510/8015. The groundwater sample collected from well MW-1 on June 18, 1996, was screened for total petroleum hydrocarbons-as-lubricating oil (TPH-L), and analyzed for TPH-L by EPA method 8015 on October 10, 1996. Additionally, all 10 groundwater samples collected on October 10, 1996, were analyzed for methyl-tert-butyl-ether (MTBE) using EPA method 8020. The presence of MTBE was then confirmed, in samples with positive MTBE results, using EPA method 8240.

RESULTS

Lithology

Soil borings for monitoring wells MW-5, MW-6, MW-7, MW-8, MW-9, and MW-10 were advanced to 35 feet BG. The subsurface material encountered consisted mainly of clay with some thin interbedded sands and minor gravels. A 2- to 3-foot-thick sand was logged in all new borings at 30-35 feet BG. The soil boring logs are enclosed in Attachment 4.

Headspace Analysis of Soil Samples

Soil samples were collected at 5-foot intervals starting at 5-feet BG from the monitoring well borings for headspace analysis using a PID. Headspace analysis detected volatile organic compounds (VOCs) at concentrations ranging from non-detectable to 7 parts per million (ppm) in the soil samples collected from the soil boring for well MW-5; 1.1 to 50 ppm in the boring for well MW-6; 14 to 729 ppm in the boring for well MW-8; and non-detectable to 23 ppm in the boring for well MW-9. No VOC concentrations were detected in the samples collected from the soil borings drilled for wells MW-7 and MW-10. Results of the headspace analysis are recorded on the drilling logs in Attachment 4.

Laboratory Analysis of Soil Samples

Laboratory analysis of the soil samples collected from the six soil borings that were converted to monitoring wells were analyzed by NEI/GTEL, a California-certified laboratory. No detectable concentrations of TPH-G, TPH-D, and benzene were present in the soil samples analyzed from borings MW-5, MW-7 and MW-10. TPH-G was detected in some of the analyzed soil samples from borings MW-6, MW-8, and MW-9 at concentrations ranging from 1 milligram per kilogram (mg/kg) in the soil sample from boring MW-6 at 20 feet BG, to 14,000 mg/kg in the soil sample from boring MW-8 at 15 feet BG. TPH-D was detected only in two soil samples collected from boring MW-9 (62 mg/kg and 69 mg/kg from the 5- and 15-foot soil samples, respectively), and one soil sample from MW-8 (53 mg/kg at 15 feet BG). Benzene was detected only in borings MW-6 and MW-8. The highest concentration of benzene at 25 mg/kg was detected in the soil sample from boring MW-8 at 15 feet BG.

Figure 5 presents a summary of TPH-G and benzene in soil. Copies of the certified laboratory reports for the soil analysis are presented in Attachment 5. A summary table of the laboratory results for soil samples is presented as Table 1 in Attachment 2.

Groundwater Monitoring

Groundwater monitoring data were used to construct potentiometric surface map (Figure 3). A thickness of 0.01 foot of SPH was detected in two of the ten monitoring wells during the November 7, 1996 monitoring event. The local groundwater gradient ranged from 0.001 to 0.004 foot per foot (ft/ft) directed radially toward the north, south, and east. Groundwater monitoring data are presented in (Table 2).

FLUOR DANIEL GTI

Laboratory Analysis of Groundwater Samples

Groundwater samples were collected from the wells MW-1 and MW-4 during the Second Quarter 1996 monitoring and sampling task conducted on June 28, 1996. Groundwater samples from wells MW-2 and MW-3 were not collected during this sampling event due to the presence of SPH in these wells. No detectable concentrations of TPH-G and BTEX were found in either groundwater sample. Additionally, the groundwater sample from well MW-1 was screened for TPH-D and for TPH-L (lubricating oil); neither TPH-D nor TPH-L was detected in the groundwater sample.

i.e. MW1 + MW4

Groundwater samples were also collected from all 10 monitoring wells on October 10, 1996, and were analyzed by NEI/GTEL, a California-certified laboratory. TPH-G was detected in all of the groundwater samples, except the groundwater sample collected from well MW-10, at concentrations ranging from 80 micrograms per liter (ug/l) in well MW-9 to 110,000 ug/l in well MW-3. TPH-D was detected only in the groundwater samples from wells MW-2, MW-3, MW-6, MW-8, and MW-9, at concentrations ranging from 110 ug/l to 1,800 ug/l. In the sample collected from well MW-1, 1,500 ug/l of TPH-L was also detected.

Benzene was detected in all of the groundwater samples, except well MW-10, at concentrations ranging from 0.6 ug/l in well MW-7 to 8,300 ug/l in well MW-6.

MTBE was detected in five of the ten groundwater samples using EPA method 8020, but the presence of MTBE was confirmed in only the groundwater sample from well MW-1, which contained a concentration of 16 ug/l.

A summary table of the laboratory results for groundwater samples is presented as Table 2, and copies of the laboratory reports for the groundwater analysis are presented in Attachment 5. A dissolved benzene concentration map (Figure 4) was constructed using data collected on October 10, 1996

CONCLUSIONS

The findings of this assessment confirmed the presence of fuel-related hydrocarbons beneath the site. The highest concentrations of hydrocarbons in soil were found in the soil samples collected from borings MW-6, MW-8, and MW-9; the highest concentrations of dissolved hydrocarbons in groundwater were found in the samples from wells MW-2 and MW-3. & MW-6 (?)

On June 28, 1996, 1.35 and 1.45 feet of SPH was measured in wells MW-2 and MW-3, respectively. SPH was not detected in any of the wells on October 10, 1996. Because SPH was not detected on October 10, 1996, and because of the history of SPH in the wells, monitoring was rescheduled to confirm groundwater conditions. On November 7, 1996, 0.01 foot of SPH was measured in wells MW-1 and MW-2

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The extent of petroleum hydrocarbons in soil is defined. The soil contamination does not extend past off-site wells to the south and west, the site property to the north, and can be inferred not to extend beyond the site boundary to the east. The extent of dissolved petroleum hydrocarbons in the groundwater has also been defined. Why? This should be confirmed!

If you have any questions or comments concerning this report, please call Brian Garber at our West Sacramento office at (916) 372-4700.

Sincerely,

Fluor Daniel GTI, Inc.
Prepared/Submitted by:

Brian H. Garber
Project Manager

Fluor Daniel GTI, Inc.
Reviewed/Approved by:

Ed K. Simonis
Senior Geologist

REGISTERED GEOLOGIST
EDWARD KEDI K. SIMONIS
No. 4422
STATE OF CALIFORNIA

c: Ms. Susan Hugo - Alameda County Department of Environmental Health
Mr. Marvin Katz - Texaco Refining and Marketing, Inc.

Attachments
1. Figures
2. Tables
3. Permits
4. Drilling Logs
5. Laboratory Analytical Reports and Chain-of-Custody Manifests

0324ases rpt

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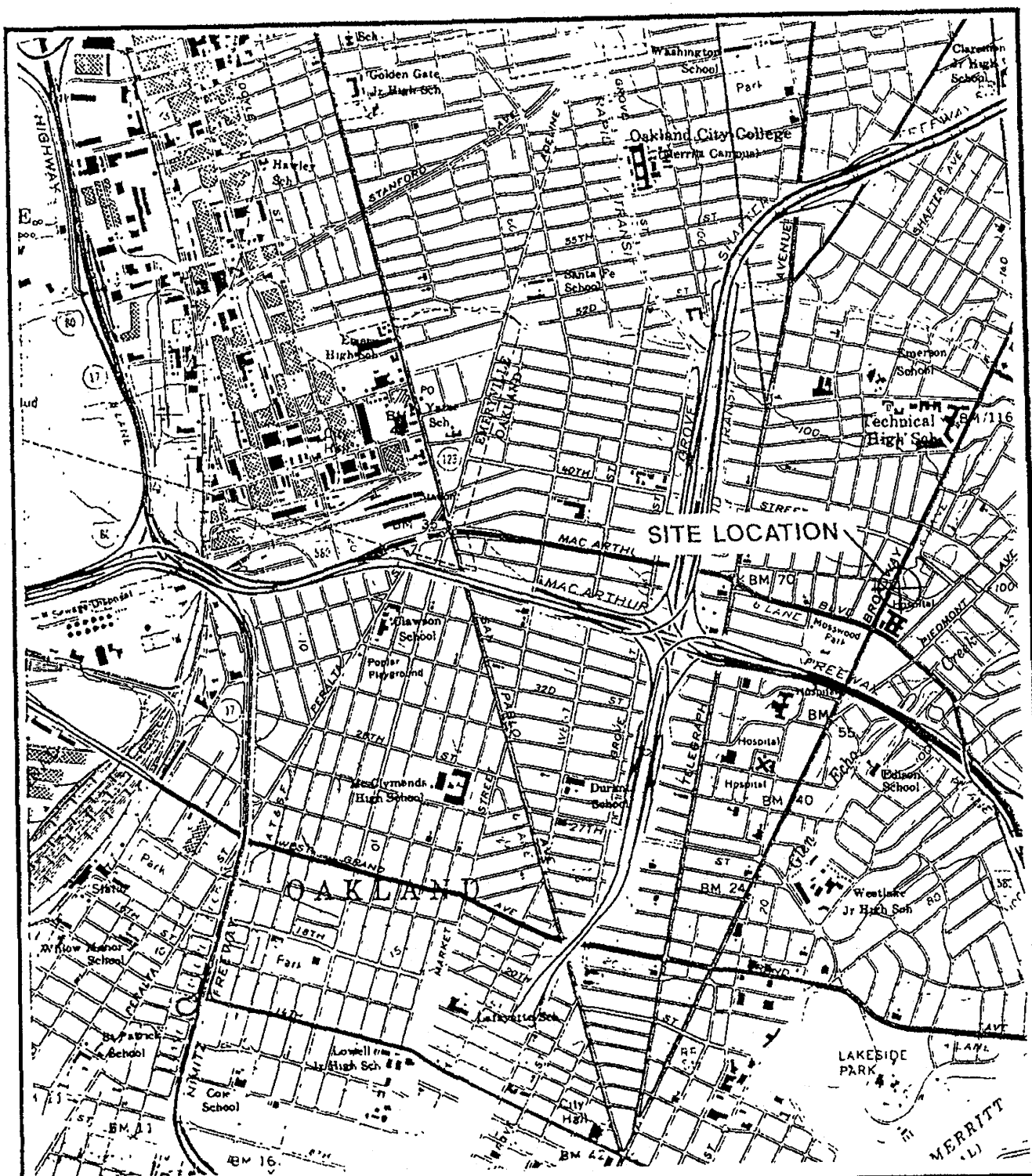
Attachment 1

Figures

1. Site Location Map
2. Site Plan Showing Monitoring Well Locations
3. Potentiometric Surface Map
4. Dissolved Benzene Concentration Map
5. Concentration of TPH-G and Benzene in Soil (mg/kg)



FLUOR DANIEL GTI

SOURCE: U.S.G.S. 7.5' QUAD SHEET
OAKLAND WEST, CALIFORNIA
PHOTOREVISED 1980

N

SCALE: 0 FEET 2000

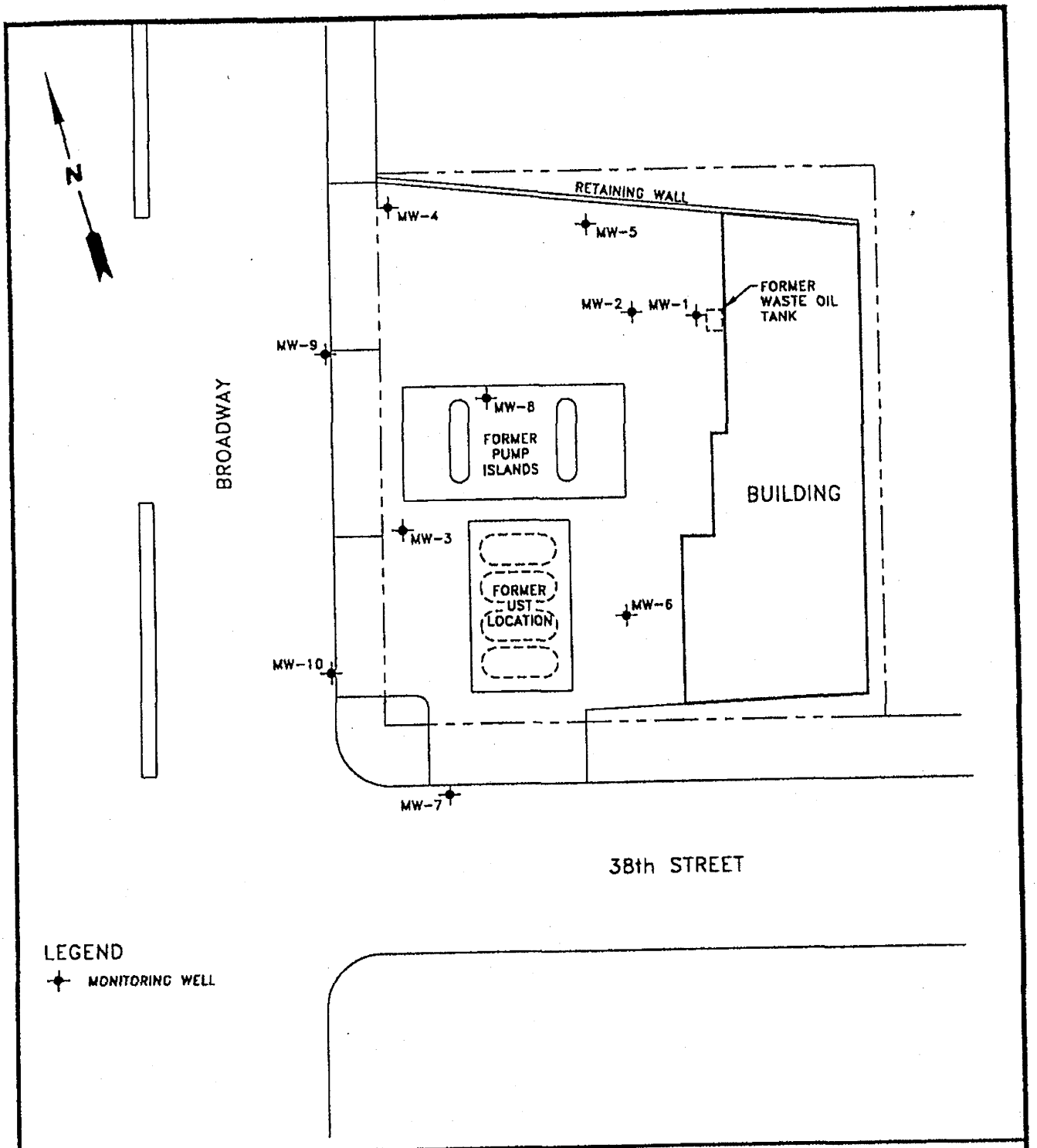
SITE LOCATION MAP

CLIENT: MARY HABER

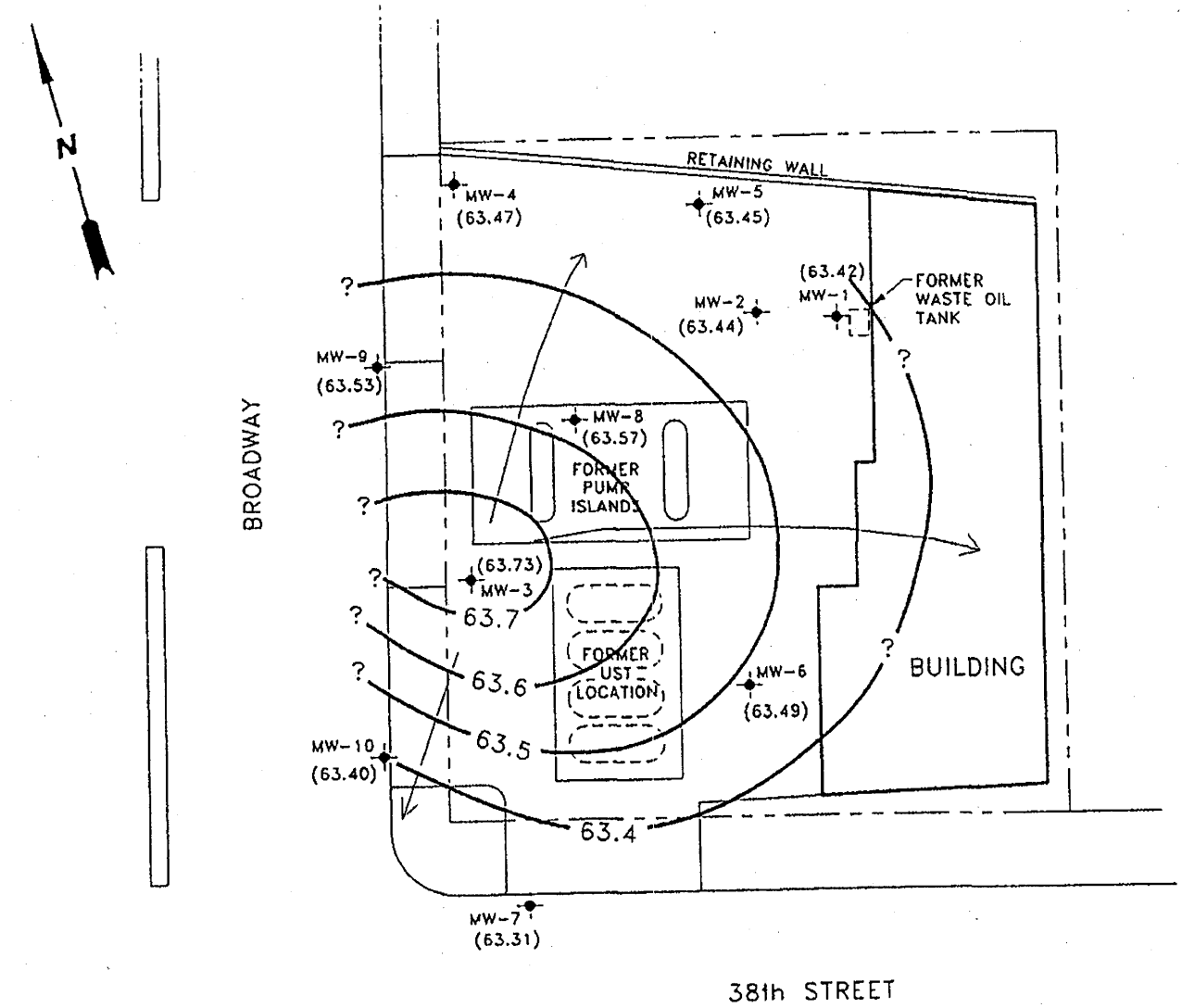
DATE: 11/7/96

LOCATION: 3810 BROADWAY
OAKLAND, CALIFORNIA

FIGURE: 1



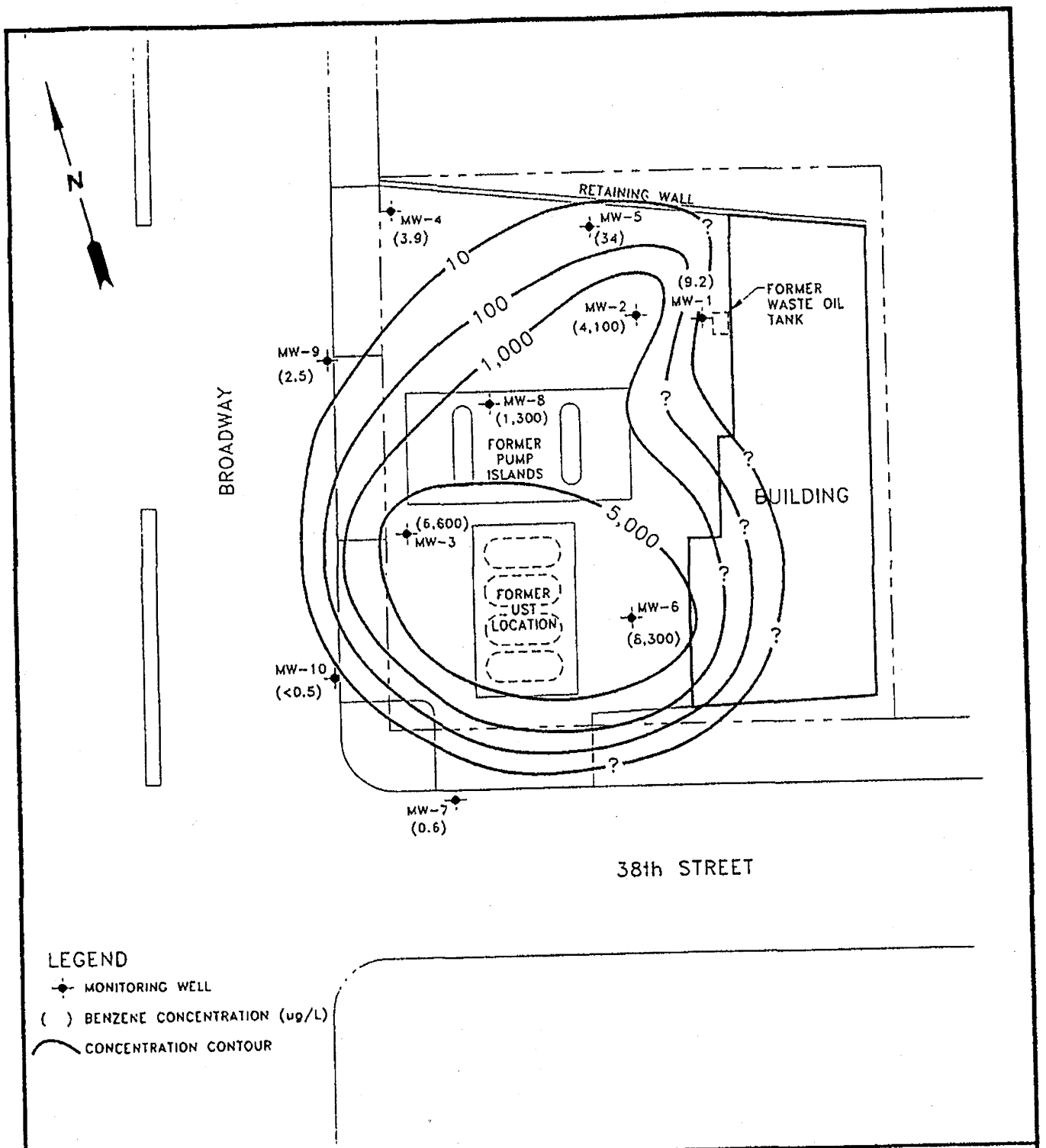
FLUOR DANIEL GTI	0 FEET 30 SCALE	SITE PLAN SHOWING MONITORING WELL LOCATIONS			
CLIENT: MARY HABER	FILE: SP1196		PROJECT NO: 020700324	PM BC	RG/PE EOS
LOCATION: 3810 BROADWAY OAKLAND, CALIFORNIA	REV: 1			FIGURE: 2	
	DES: BG	DET: ML	DATE: 11/7/96		



LEGEND

- MONITORING WELL
- ( ) POTENTIOMETRIC SURFACE ELEVATION (MSL)
- POTENTIOMETRIC SURFACE CONTOUR
- GROUNDWATER FLOW DIRECTION

FLUOR DANIEL GTI	0 FEET 30 SCALE	POTENTIOMETRIC SURFACE MAP (11/7/96)			
CLIENT: MARY HABER	FILE PSMN796/SP1196	PROJECT NO. 020700324	PM	RG/PE	
LOCATION: 3810 BROADWAY OAKLAND, CALIFORNIA	REV: 1	DES: BG	DET ML	DATE 11/7/96	FIGURE: 3

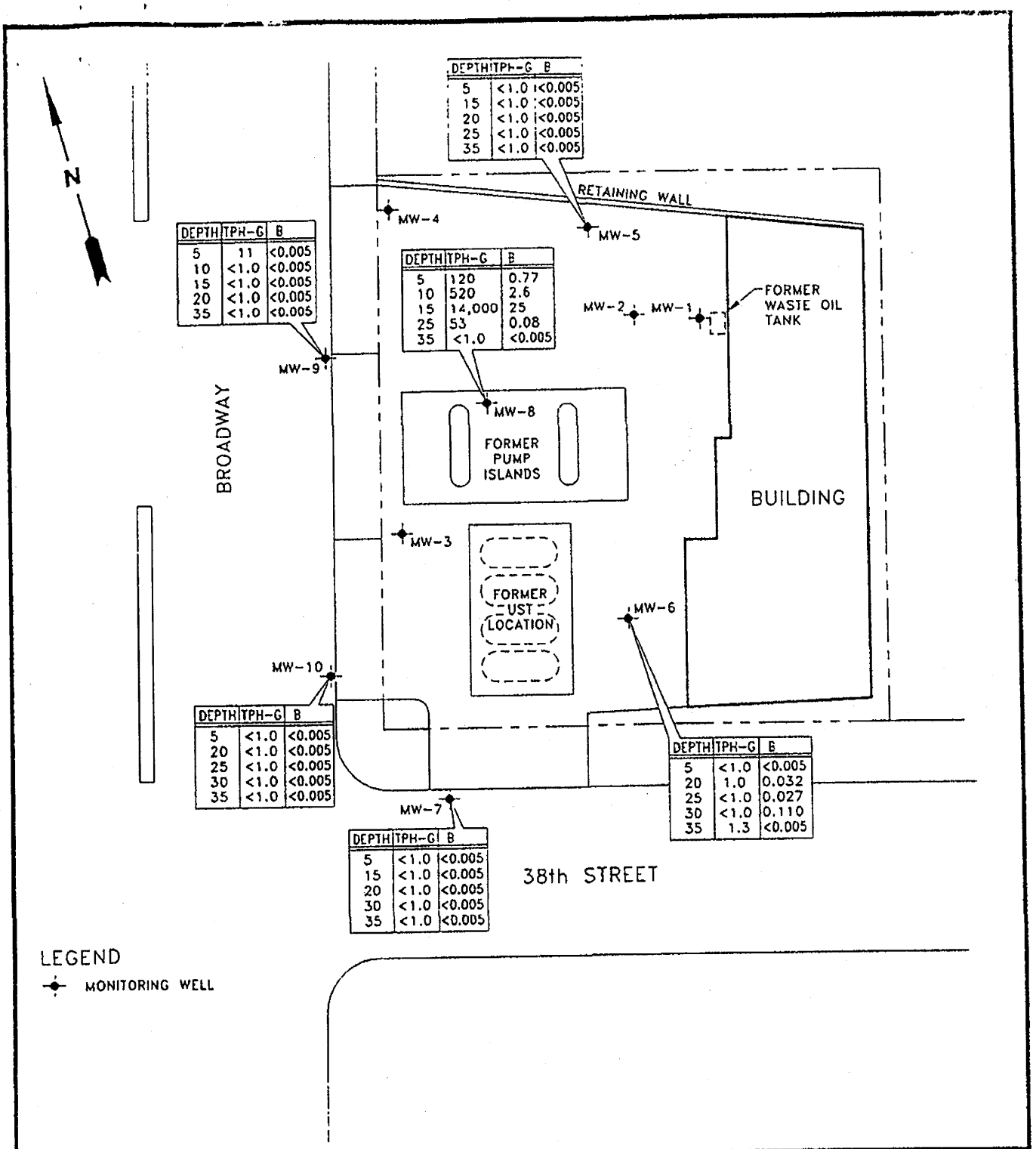


FLUOR DANIEL GTI

FEET 30
SCALE

DISSOLVED BENZENE CONCENTRATION MAP

CLIENT: MARY HABER	FILE: BNZGW/SP1196	PROJECT NO: 020700324	PM: RG/PE: EJS
	REV: 1		FIGURE: 4
LOCATION: 3810 BROADWAY OAKLAND, CALIFORNIA	DES.: BG	DET.: ML	DATE: 11/7/96



DEPTH	TPH-G	B
5	<1.0	<0.005
15	<1.0	<0.005
20	<1.0	<0.005
25	<1.0	<0.005
35	<1.0	<0.005

DEPTH	TPH-G	B
5	11	<0.005
10	<1.0	<0.005
15	<1.0	<0.005
20	<1.0	<0.005
35	<1.0	<0.005

DEPTH	TPH-G	B
5	120	0.77
10	520	2.6
15	14,000	25
25	53	0.08
35	<1.0	<0.005

DEPTH	TPH-G	B
5	<1.0	<0.005
20	<1.0	<0.005
25	<1.0	<0.005
30	<1.0	<0.005
35	<1.0	<0.005

DEPTH	TPH-G	B
5	<1.0	<0.005
20	1.0	0.032
25	<1.0	0.027
30	<1.0	0.110
35	1.3	<0.005

DEPTH	TPH-G	B
5	<1.0	<0.005
15	<1.0	<0.005
20	<1.0	<0.005
30	<1.0	<0.005
35	<1.0	<0.005

FLUOR DANIEL GTI

0 FEET 30
SCALE

CONCENTRATION OF TPH-G AND BENZENE IN SOIL (mg/kg)

CLIENT: MARY HABER	FILE: TPHSOIL/SP1196	PROJECT NO: 020700324	PM / RG/PE: ZCS
	REV: 1		FIGURE: 5
LOCATION: 3810 BROADWAY OAKLAND, CALIFORNIA	DES. BG / DET. ML	DATE: 11/7/96	

FLUOR DANIEL GTI

Attachment 2

Tables

FLUOR DANIEL GTI

Table 1
SOIL SAMPLE ANALYSES RESULTS

Former Texaco Facility
3810 Broadway
Oakland, California

SAMPLE I.D.	DEPTH (feet)	DATE	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES (mg/kg)	TPH-G (mg/kg)	TPH-D (mg/kg)
MW-5								
	5	09/19/96	<0 005	<0 005	<0 005	<0.005	<1	<10
	15		<0 005	<0.005	<0.005	<0.005	<1	<10
	20		<0 005	<0.005	<0.005	<0.005	<1	<10
	25		<0 005	<0.005	<0.005	<0.005	<1	<10
	35		<0.005	<0.005	<0.005	<0.005	<1	<10
MW-6								
	5	09/20/96	<0.005	<0.005	<0.005	<0.005	<1	<10
	20		0.032	<0.005	<0.005	0.0075	1	<10
	25		0.027	<0.005	<0.005	<0.005	<1	<10
	30		0.110	0.0053	0.0058	0.0094	<1	<10
	35		<0.005	0.010	0.014	0.120	1.3	<10
MW-7								
	5	09/20/96	<0.005	<0 005	<0 005	0.0089	<1	<10
	15		<0.005	<0.005	<0.005	<0.005	<1	<10
	20		<0 005	<0.005	<0 005	<0.005	<1	<10
	30		<0.005	<0.005	<0 005	<0 005	<1	<10
	35		<0.005	<0.005	<0.005	<0.005	<1	<10
MW-8*								
	5	09/23/96	0.77	3.5	1.2	7.3	120	<10
	10		2.6	0.66	5.6	10	520	<10
	15		25	7.1	160	840	14,000	53a
	25		0.08	0.63	0.20	1.1	53	<10
	35		<0 005	<0 005	<0 005	<0 005	<1	<10
MW-9								
	5	09/19/96	<0 005	<0 005	<0 005	<0.005	11	62
	10		<0 005	<0 005	<0 005	<0 005	<1	<10
	15		<0 005	<0 005	<0.005	<0 005	<1	69
	20		<0 005	<0 005	<0 005	<0.005	<1	<10
	35		<0 005	<0 005	<0 005	<0.005	<1	<10
MW-10								
	5	09/19/96	<0.005	<0.005	<0 005	<0.005	<1	<10
	20		<0 005	<0.005	<0 005	<0 005	<1	<10
	25		<0 005	<0 005	<0.005	0.025	<1	<10
	30		<0 005	<0 005	<0 005	<0.005	<1	<10
	35		<0.005	<0 005	<0 005	<0 005	<1	<10
SP1-2								
		09/23/96	0.47	7.3	3.7	20	340	<10

NOTES:
TPH-G = Total petroleum hydrocarbons-as-gasoline
TPH-D = Total petroleum hydrocarbons-as-diesel
mg/kg = Milligrams per kilogram
- - = Not analyzed
a = Quantitation of diesel is uncertain due to matrix interferences from gasoline hydrocarbons
* = Methanol extraction necessary due to high levels of target or non-target analytes

0324soil wk4 (Mary Haber)

FLUOR DANIEL GTI

Table 2
GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA

Former Texaco Facility
3810 Broadway
Oakland, California

SAMPLE I.D.	DATE	BENZENE (µg/l)	TOLUENE (µg/l)	ETHYL-BENZENE (µg/l)	XYLENES (µg/l)	TPH-G (µg/l)	TPH-D (µg/l)	MTBE 8020 (µg/l)	MTBE 8240 (µg/l)	DTW (feet)	SPT (feet)	WTE (feet)
MW-1	06/28/96	<0.5	<1.0	<1.0	<2.0	<100	<50	--	--	21.77	0.00	64.92
	10/10/96	9.2	53	17	70	520	<400c	22	16	23.26	0.00	63.43
	11/07/96	--	--	--	--	--	--	--	--	23.27	0.01	63.42
MW-2	06/28/96	--	--	--	--	--	--	--	--	22.10	1.35	63.73
	10/10/96	4,100	9,400	2,300	9,900	99,000	1,800d	390	<25a	22.36	0.00	63.47
	11/07/96	--	--	--	--	--	--	--	--	22.39	0.01	63.44
MW-3	06/28/96	--	--	--	--	--	--	--	--	19.04	1.43	64.14
	10/10/96	6,600	16,000	2,200	12,000	110,000	1,200d	<250	--	19.51	0.00	63.67
	11/07/96	--	--	--	--	--	--	--	--	19.40	0.00	19.84
MW-4	06/28/96	<0.5	<1.0	<1.0	<2.0	<100	<50	--	--	18.83	0.00	64.48
	10/10/96	3.9	65	22	120	650	<50	<5.0	--	19.84	0.00	63.47
	11/07/96	--	--	--	--	--	--	--	--	19.84	0.00	63.47
MW-5	10/10/96	34	4.7	11	44	1,800	<50e	21	<5.0b	21.93	0.00	63.48
	11/07/96	--	--	--	--	--	--	--	--	21.96	0.00	63.45
MW-6	10/10/96	8,300	2,900	810	3,100	45,000	500d	190	<10ab	22.44	0.00	63.65
	11/07/96	--	--	--	--	--	--	--	--	22.60	0.00	63.49
MW-7	10/10/96	0.6	<0.5	<0.5	<0.5	<50	<50	<5.0	--	20.78	0.00	63.33
	11/07/96	--	--	--	--	--	--	--	--	20.80	0.00	63.31
MW-8	10/10/96	1,300	1,200	64	1,300	17,000	110	110	<5.0	20.82	0.00	63.19
	11/07/96	--	--	--	--	--	--	--	--	20.44	0.00	63.57

FLUOR DANIEL GTI

Table 2
GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA

Former Texaco Facility
3810 Broadway
Oakland, California

SAMPLE I.D.	DATE	BENZENE (µg/l)	TOLUENE (µg/l)	ETHYL-BENZENE (µg/l)	XYLENES (µg/l)	TPH-G (µg/l)	TPH-D (µg/l)	MTBE 8020 (µg/l)	MTBE 8240 (µg/l)	DTW (feet)	SPT (feet)	WTE (feet)
MW-9	10/10/96	2.5	13	2.2	13	80	520de	<5.0	--	18.62	0.00	63.55
	11/07/96	--	--	--	--	--	--	--	--	63.53	0.00	63.53
MW-10	10/10/96	<0.5	<0.5	<0.5	<0.5	<50	<50	<5.0	--	18.40	0.00	63.43
	11/07/96	--	--	--	--	--	--	--	--	18.43	0.00	63.40

NOTES:

TPH-G = Total petroleum hydrocarbons-as-gasoline
TPH-D = Total petroleum hydrocarbons-as-diesel
MTBE = Methyl-tert-butyl-ether
DTW = Depth to water
SPT = Separate-phase product thickness
WTE = Water table elevation
µg/l = Micrograms per liter
-- = Not analyzed
a = The sample was diluted due to high concentration of non-target compounds
b = GC/MS data indicate the presence of non-target hydrocarbons
c = *The reporting limit for diesel fuel was elevated because of matrix interferences from other hydrocarbons.*
Lubricating oil cannot be qualitatively identified by type of oil because of chromatographic likeness of different oil types
Due to non-volatility of certain oils, much of the oil present may not be quantified by this method Quantitation obtained for lubricating oil by this method should, therefore, be treated as an estimate This method quantifies lubricating oil against 10-W-30 standards
d = Qualitative identification of diesel fuel is uncertain because the material present does not match laboratory standards
Quantitation of diesel fuel is uncertain due to matrix interferences
e = Chromatographic data indicate the presence of material which is heavier than diesel fuel in this sample

0324wtr wk4 (Mary Haber)

FLUOR DANIEL GTI

Attachment 3

Permits

Oakland
All-America City
1991

CITY OF OAKLAND

OFFICE OF PLANNING & BUILDING • 1330 BROADWAY • OAKLAND, CALIFORNIA 94612

Administration	238-7200	Building Services	238-3587	Planning	238-3941
Engineering Services	238-2110	Operations	238-3443	Zoning	238-7206

Gerald S. and Miriam M. Friedkin
C/O Mr. Brian Garber
Flour Daniel GTI, Inc.
1401 Halyard Drive, Suite 140
West Sacramento, CA 95691

September 6, 1996

Dear Mr. and Mrs. Friedkin:

RE: **MINOR ENCROACHMENT PERMIT FOR MONITORING WELLS IN BROADWAY, OAKLAND**

Enclosed are the Minor Encroachment Permit and Agreement and the Conditions For Granting a Minor Encroachment Permit allowing you to place two monitoring wells within the public right-of-way area of Broadway and one monitoring well in the public right-of-way of 38th Street.

Before the permit will become effective, however, it must be signed by the person(s) having the legal authority to do so, properly notarized with notary acknowledgement slip(s) attached, and returned to this office to the attention of Albert Hall for recordation.

You must also obtain a street excavation permit from the Engineering Information Counter, 2nd Floor, 1330 Broadway, prior to the start of the proposed work in the City right of way. For questions regarding the street excavation permit, call the Engineering Information Counter at (510) 238-4777 between 8 a.m. and 4 p.m., Monday through Friday.

If you have any other questions regarding this minor encroachment permit, please call Albert Hall at (510) 238-3238.

Very truly yours,

CALVIN N. WONG
Chief of Building Services

By Philip A. Grubstick
PHILIP A. GRUBSTICK
Engineering Services Manager

Enclosures

:ah

RECEIVED
SEP 09 1996

Recording requested by:
City of Oakland

When Recorded Mail to:
City of Oakland
Community & Econ. Develop. Agency
Building Services, Eng. info.
1330 Broadway, 2nd Floor
Oakland, CA 94612

TAX ROLL PARCEL NUMBER
(ASSESSOR'S REFERENCE NUMBER)

012	983	14	1
MAP	BLOCK	PARCEL	SUB

SPACE ABOVE FOR RECORDER'S USE ONLY

Address: 3810 Broadway, Oakland

MINOR ENCROACHMENT PERMIT AND AGREEMENT

Gerald S. Friedkin and Miriam M. Friedkin, owners of that certain property described in the Grant Deed recorded November 19, 1987, Series No. 87-312353, in the Office of the Recorder, Alameda County, California and commonly known as 3810 Broadway are hereby granted a Conditional Revocable Permit to encroach into the public right-of-way areas of Broadway and 38th Street, Oakland with three monitoring wells. The location of said encroachments shall be as delineated in Exhibit 'A' attached hereto and made a part hereof.

The permittees agree to comply with and be bound by the conditions for granting an Encroachment Permit attached hereto and made a part hereof.

This agreement shall be binding upon the permitees described above, and their successors in interest thereof.

In witness whereof, we have set our signature this day of , 1996.

Gerald S. Friedkin

Miriam M. Friedkin

-- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --

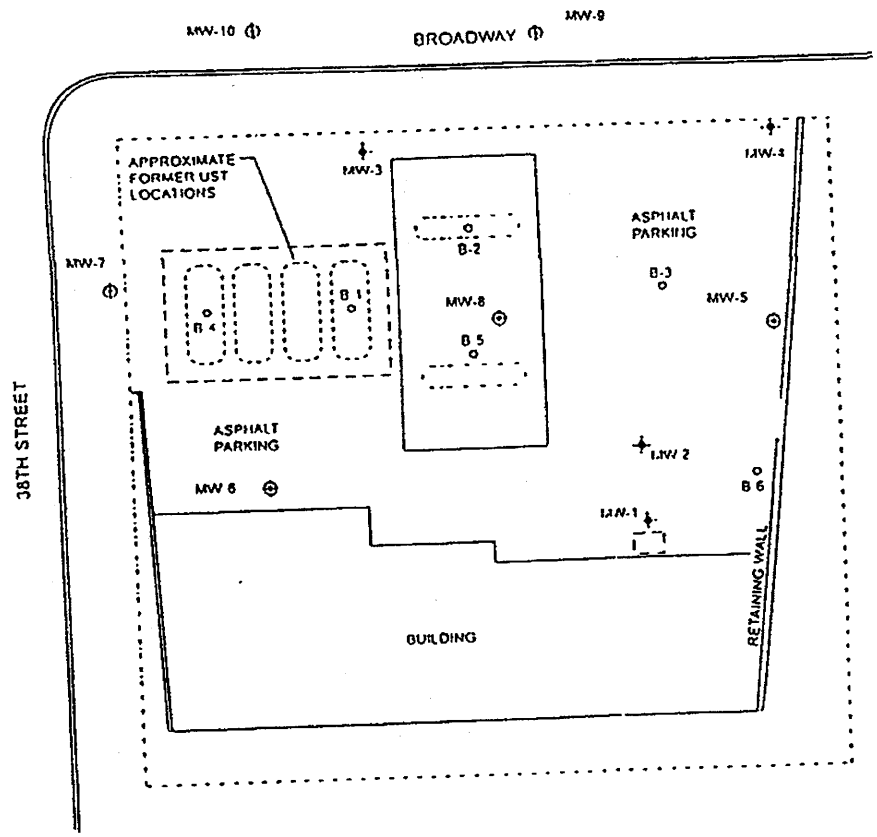
BELOW FOR OFFICIAL USE ONLY

CITY OF OAKLAND

Dated_____

By:_____
CALVIN N. WONG
Chief of Building Services
For
KOFI BONNER
Director, Community &
Economic Development Agency

file: minenc.2)



FLUOR DANIEL GTI

EXPLANATION

- PROPOSED MONITORING WELL LOCATION
- MW 2 — MONITORING WELL
- B 6 — SOIL BORING LOCATION
- APPROXIMATE TANK EXCAVATION AREA
- PROPERTY LINE
- APPROXIMATE FORMER PUMP ISLAND LOCATION

N

0 20 40

APPROX. SCALE IN FEET

CLIENT: MARY HABER

3810 BROADWAY
OAKLAND, CALIFORNIA
02070 0324

SITE PLAN SHOWING PROPOSED MONITORING WELL LOCATIONS

FIGURE 2

EXHIBIT "A"

TO: Gerald and Miriam Friedkin
(APN: 12-983-14-1)

Address: 3810 Broadway

RE: Minor Encroachment Permit for Monitoring Wells in Broadway, Oakland

CONDITIONS FOR GRANTING A MINOR ENCROACHMENT PERMIT

1. That this permit shall be revocable at the pleasure of the Chief of Building Services.

2. That the permittee, by the acceptance, either expressed or implied, of the minor encroachment permit hereby disclaims any right, title, or interest in or to any portion of the public sidewalk or street area, and agrees that said temporary use of said area does not constitute an abandonment on the part of the City of Oakland of any of its rights for street purposes and otherwise.

3. The permittee shall maintain in force and effect at all times that said encroachment occupies said public sidewalk or street area, good and sufficient public liability insurance in the amount of $300,000 for each occurrence, and property damage insurance in the amount of $50,000 for each occurrence, both including contractual liability insuring the City of Oakland against any and all claims arising out of the existence of said encroachment in said public sidewalk or street area, and that a certificate of such insurance and subsequent notices of the renewal thereof, shall be filed with the Chief of Building Services of the City of Oakland, and that such certificate shall state that said insurance coverage shall not be canceled or be permitted to lapse without thirty (30) days written notice to said Chief of Building Services. The Permittee also agrees that the City may review the type and amount of insurance required of the Permittee every five (5) years and may require the permittee to increase the amount of and/or change the type of insurance coverage required.

4. That the permittee, by the acceptance, either expressed or implied, of this revocable permit shall be solely and fully responsible for the repair or replacement of any portion or all of said improvements in the event that said improvements shall have failed or have been damaged to the extent of creating a menace or of becoming a hazard to the safety of the general public; and that the permittee shall be liable for the expenses connected therewith.

5. That upon the termination of the permission herein granted, permittee shall immediately remove said encroachment from the sidewalk and street area, and any damage resulting therefrom shall be repaired to the satisfaction of the Chief of Building Services.

6. That the permittee shall file with the City of Oakland for recordation a Minor Encroachment Permit and Agreement, and shall be bound by and comply with all the terms and conditions of said permit.

7. That said permittee shall obtain an excavation permit prior to the construction and a separate excavation permit prior to the removal of the ground water monitoring wells.

8. That said permittee shall provide to the City of Oakland an AS BUILT plan showing the actual location of the ground water monitoring wells and the results of all data collected from the monitoring wells.

9. That said permittee shall remove the monitoring wells and repair any damage to the sidewalk or street area in accordance with City standards two (2) years after construction or as soon as monitoring is complete.

10. That said permittee shall notify the Office of Planning & Building after the monitoring well(s) is/are removed and the sidewalk or street area restored to initiate the procedure to rescind the minor encroachment permit.

11. That monitoring well covers installed within the sidewalk area shall have a skidproof surface. A precast concrete utility box may be used in conjunction with the bolted cast iron cover with City approval.

12. That the ground water monitoring well casting and cover shall be cast iron and shall meet H-20 load rating. The cover shall be secured with a minimum of two stainless steel bolts. Bolts and cover shall be mounted flush with the surrounding surface.

13. That the permittee acknowledges that the City makes no representations or warranties as to the conditions beneath said encroachment. By accepting this revocable permit, permittee agrees that it will use the encroachment area at its own risk, is responsible for the proper coordination of its activities with all other permittees, underground utilities, contractors, or workmen operating within the encroachment area and for the safety of itself and any of its personnel in connection with its entry under this revocable permit.

14. That the permittee acknowledges that the City is unaware of the existence of any hazardous substances beneath the

encroachment area, and hereby waives and fully releases and forever discharges the City and its officers, director, chiefs, employees, agents, servants, representatives, assigns and successors from any and all claims, demands, liabilities, damages, actions, causes of action, penalties, fines, liens, judgments, costs, or expenses whatsoever (including, without limitation, attorneys' fees and costs), whether direct or indirect, known or unknown, foreseen or unforeseen, that may arise out of or in any way connected with the physical condition, or required remediation of the excavation area or any law or regulation applicable thereto, including, without limitation, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. Sections 9601 et seq.), the Resource Conservation and Recovery Act of 1976 (42 U.S.C. Section 6901 et seq.), the Clean Water Act (33 U.S.C. Section 466 et Seq.), the Safe Drinking Water Act (14 U.S.C. Sections 1401-1450), the Hazardous Materials Transportation Act (49 U.S.C. Section 1801 et seq.), the Toxic Substance Control Act (15 U.S.C. Sections 2601-2629), the California Hazardous Waste Control Law (California Health and Safety Code Sections 25100 et seq.), the Porter-Cologne Water Quality Control Act (California Health and Safety Code Section 13000 et seq.), the Hazardous Substance Account Act (California Health and Safety Code Section 25300 et seq.), and the Safe Drinking Water and Toxic Enforcement Act (California Health and Safety Code Section 25249.5 et seq.).

15. Permittee further acknowledges that it understands and agrees that it hereby expressly waives all rights and benefits which it now has or in the future may have, under and by virtue of the terms of California Civil Code Section 1542, which reads as follows: "A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM MUST HAVE MATERIALLY AFFECTED HIS SETTLEMENT WITH THE DEBTOR."

16. Permittee recognizes that by waiving the provisions of this section, permittee will not be able to make any claims for damages that may exist, and to which, if known, would materially affect his/her decision to execute this encroachment agreement, regardless of whether permittee's lack of knowledge is the result of ignorance, oversight, error, negligence, or any other cause.

17. (a) That the permittee, by the acceptance of this revocable permit, agrees and promises to indemnify, defend, and hold harmless the City of Oakland, its officers, agents, and employees, to the maximum extent permitted by law, from any and all claims, demands, liabilities, damages, actions, causes of action, penalties, fines, liens, judgments, costs, or expenses whatsoever (including, without limitation, attorneys' fees and costs;

collectively referred to as "claims"), whether direct or indirect, known or unknown, foreseen or unforeseen, to the extent that such claims were caused by the permittee, its agents, employees, contractors or representatives.

(b) That, if any contamination is discovered below or in the immediate vicinity of the encroachment, and the contaminants found are of the type used, housed, stored, processed or sold on or from the Broadway, Oakland, California site, such shall amount to a rebuttable presumption that the contamination below, or in the immediate vicinity of, the encroachment was caused by the permittee, its agents, employees, contractors or representatives.

(c) That the permittee shall comply with all applicable federal, state, county and local laws, rules, and regulations governing the installation, maintenance, operation and abatement of the encroachment.

(d) That the permittee hereby does remise, release, and forever discharge, and agree to defend, indemnify and save harmless, the City, its officers, agents and employees and each of them, from any and all actions, claims, and demands of whatsoever kind or nature, and any damage, loss or injury which may be sustained directly or by the undersigned and any other person or persons, and arising out of, or by reason of, the occupation of said public property, and the future removal of the above-mentioned encroachment.

18. That the hereinabove conditions shall be binding upon the permittee and the successive owners and assigns thereof.

19. That said Minor Encroachment Permit and Agreement shall take effect when all the conditions hereinabove set forth shall have been complied with to the satisfaction of the Chief of Building Services, and shall become null and void upon the failure of the permittee to comply with all conditions hereinabove set forth.

CITY OF OAKLAND
Office of Planning and Building

EXCAVATION PERMIT

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

CIVIL ENGINEERING

PERMIT NUMBER X9600748	SITE ADDRESS/LOCATION 300 38th St
APPROX. START DATE / APPROX. END DATE	24-HOUR EMERGENCY PHONE NUMBER (Permit not valid without 24-Hour number)
CONTRACTOR'S LICENSE # AND CLASS 434343	CITY BUSINESS TAX #

ATTENTION:

1) State law requires that the contractor/owner call *Underground Service Alert (USA)* two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1 (800) 642-2444. UNDERGROUND SERVICE ALERT (USA) #: _____

2) 48 hours prior to starting work, YOU MUST CALL (510) 238-3651 TO SCHEDULE AN INSPECTION.

OWNER/BUILDER

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than $500):

☐ I, as an owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).

☐ I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption on this subdivision on more than two structures more than once during any three-year period. (Sec. 7044 Business and Professions Code).

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project, (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License law).

☐ I am exempt under Sec. _____, B&PC for this reason _____

WORKER'S COMPENSATION

☐ I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).

Policy # _____ Company Name _____

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws of California (not required for work valued at one hundred dollars ($100) or less).

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Chapter 6, Article 2 of the Oakland Municipal Code. It is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read this permit and agree to its requirements, and that the above information is true and correct under penalty of law.

X _____ Date 9-16-96

Signature of Permittee ☐ Agent for ☐ Contractor ☐ Owner

DATE STREET LAST RESURFACED	SPECIAL PAVING DETAIL REQUIRED? ☐ YES ☐ NO	HOLIDAY RESTRICTION? (NOV 1 - JAN 1) ☐ YES ☐ NO	LIMITED OPERATION AREA? (7AM-9AM & 4PM-6PM) ☐ YES ☐ NO
ISSUED BY Thomas La		DATE ISSUED 9-16-96	

CITY OF OAKLAND
Office of Planning and Building

EXCAVATION PERMIT

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

CIVIL ENGINEERING

PERMIT NUMBER X9600747	SITE ADDRESS/LOCATION 3810 Broadway
APPROX. START DATE / APPROX. END DATE	24-HOUR EMERGENCY PHONE NUMBER (Permit not valid without 24-Hour number)
CONTRACTOR'S LICENSE # AND CLASS 434343	CITY BUSINESS TAX #

ATTENTION:

1) State law requires that the contractor/owner call *Underground Service Alert (USA)* two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1 (800) 642-2444. UNDERGROUND SERVICE ALERT (USA) #: _____

2) **48 hours prior to starting work, YOU MUST CALL (510) 238-3651 TO SCHEDULE AN INSPECTION.**

OWNER/BUILDER

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than $500):

☐ I, as an owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).

☐ I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption on this subdivision on more than two structures more than once during any three-year period. (Sec. 7044 Business and Professions Code).

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project. (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License law).

☐ I am exempt under Sec. _____, B&PC for this reason _____.

WORKER'S COMPENSATION

☐ I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).

Policy # _____ Company Name _____

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NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Chapter 6, Article 2 of the Oakland Municipal Code. It is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read this permit and agree to its requirements, and that the above information is true and correct under penalty of law.

X _____ Date 9-16-96

Signature of Permittee ☐ Agent for ☒ Contractor ☐ Owner

DATE STREET LAST RESURFACED	SPECIAL PAVING DETAIL REQUIRED? ☐ YES ☐ NO	HOLIDAY RESTRICTION? (NOV 1 - JAN 1) ☐ YES ☐ NO	LIMITED OPERATION AREA? (7AM-9AM & 4PM-6PM) ☐ YES ☐ NO
ISSUED BY _____		DATE ISSUED 9-16-96	

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 454-2600 FAX (510) 452-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 3810 Broadway Oakland California

CLIENT
Name Haber, Mary
Address 353 Sacramento Suite 600 Voice 415-987-7107
City San Francisco Ca Zip 94111

APPLICANT
Name Brian Garber
Fluor Daniel GTI Fax (916) 372-8781
Address 1401 Halyard Drive Voice 916-372-4700
City West Sacramento Zip 95691

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	X	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. C57 - #552198

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum Depth 35 ft.
Casing Diameter 2 in. Number 9
Surface Seal Depth ~12 ft.

GEOTECHNICAL PROJECTS
Number of Borings ___ Maximum Depth ___ ft.
Hole Diameter ___ in.

ESTIMATED STARTING DATE 9/17/96
ESTIMATED COMPLETION DATE 9/20/96

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

FOR OFFICE USE

PERMIT NUMBER 96662
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 17 Sep 96
Wyman Hong

FLUOR DANIEL GTI

Attachment 4

Drilling Logs

Drilling Log

Monitoring Well MW-5

FLUOR DANIEL GTI

Project: Former Texaco Facility — Owner: Fineokin
Location: 3810 Broadway Avenue, Oakland, CA — Proj. No. 020700324
Surface Elev. ____ — Total Hole Depth: 35 ft. — Diameter: 8.5 in
Top of Casing ____ — Water Level Initial: 18 ft — Static ____
Screen: Dia 2 in — Length: 25 ft. — Type/Size: 0.020 in.
Casing: Dia 2 in — Length: 10 ft — Type: PVC Riser
Fill Material: Lonestar 2/12 — Rig/Core: Mobile B-61
Drill Co.: Westex — Method: Hollow Stem Auger
Driller: Mike Noble — Log By: Bob Fehr — Date: 09/19/96 — Permit #: X9600747
Checked By: Ed Simonis — License No.: RG #4422

See Site Map For Boring Location

COMMENTS:

Soil cuttings stored on-site on top of and covered with plastic pending proper disposal.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2							
0						Asph	Asphalt
2							
4		0	MW-5 (5)	15, 40, 40			Sandy Silty CLAY, brown, stiff, moist, no odor
6							
8				15, 30, 45		CL	
10		0					Grades to Silty CLAY, light greenish gray, hard, damp
12							
14		7		20, 20, 45			Grades with trace dark brown spots and medium brown mottling
16							
18						SP	Groundwater encountered at 15.5 Grades to a fine, well sorted SAND with some Clay, brown, dense, saturated, no odor
20		0		20			CLAY with some Silt, hard, damp
22						CL	
24				19, 20			Grades to trace Silt, brown with trace dark brown spots, medium stiff, plastic, no odor

Drilling Log

FLUOR DANIEL GTI

Monitoring Well MW-5

Project Former Texaco Facility Owner Friedkin

Location 3810 Broadway Avenue, Oakland, CA Proj. No. 020700324

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24		0	HK-5 (25)	20 35			Brown CLAY (Continued)
26							
28				20 20 45		CL	
30		0					
32						SC	Grades to Clayey SAND, brown, loose, saturated
				12			Silty CLAY, brown, stiff, plastic
34		0	HK-5 (35)	25 44		CL	
							End of boring. Installed monitoring well.
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

Drilling Log

FLUOR DANIEL GTI

Monitoring Well MW-6

Project: Former Texaco Facility — Owner: Friedman
Location: 3511 Broadway Avenue, Oakland, CA — Proj. No. 020700324
Surface Elev. ____ — Total Hole Depth: 35 ft. — Diameter: 8.5 in
Top of Casing ____ — Water Level Initial: 23 ft — Static ____
Screen: Dia 2 in — Length: 25 ft. — Type/Size: 0.020 in
Casing: Dia 2 in — Length: 10 ft. — Type: PVC Riser
Fill Material: Lonestar 2/12 — Rig/Core: Mobile B-61
Drill Co.: Westex — Method: Hollow Stem Auger
Driller: Mike Noble — Log By: Bob Fehr — Date: 09/20/96 — Permit #: X9600747
Checked By: Ed Simonis — License No.: RG #4422

See Site Map For Boring Location

COMMENTS

Soil cuttings stored on-site on top of and covered with plastic pending proper disposal

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2							
0						ASPH	Asphalt
2							
4		8	MW-6 (5)	10 20 40			Silty CLAY, greenish gray, medium stiff, plastic, damp, no odor
6							
8				10 30 35			Grades to CLAY with Silt, brown with trace dark greenish gray, mottling, hard, plastic, damp, slight odor
10		11				CL	
12							
14		5		17 25 30			Grades greenish gray/greenish brown, stiff, no odor
16							
18							Grades moist
20		35	MW-6 (20)				
22						SC	Grades to Clayey fine SAND, medium brown, loose, saturated
24				25		CL	*Groundwater encountered at 1050*

Drilling Log

FLUOR DANIEL GTI

Monitoring Well **MW-6**

Project *Former Texaco Facility* Owner *Friedkin*

Location *3810 Broadway Avenue Oakland, CA* Proj. No. *020700324*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ x Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24		27	MW-6 (25)	25 40			CLAY, brown, hard, plastic, moist, no odor
26							
28				12 30		CL	Grades to CLAY with Silt, light brown with greenish gray mottling, medium stiff, plastic, wet, no odor
30		50	MW-6 (30)	50=4"			
32						SC	Grades to a Clayey fine SAND, brown, loose, saturated, no odor
34		0	MW-6 (35)	10 30 50=5"		CL	Silty CLAY, brown with trace dark brown spots, plastic, wet, no odor
36							End of boring. Installed monitoring well.
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

Drilling Log

Monitoring Well MW-7

FLUOR DANIEL GTI

Project: Former Texaco Facility — Owner: Friedkin
Location: 3810 Broadway Avenue, Oakland, CA — Proj. No. 020700324
Surface Elev. ____ — Total Hole Depth: 35 ft. — Diameter: 8.5 in.
Top of Casing ____ — Water Level Initial: 33 ft. — Static ____
Screen: Dia 2 in. — Length: 25 ft. — Type/Size: 0.020 in
Casing: Dia 2 in. — Length: 10 ft — Type: PVC Riser
Fill Material: Lonestar 2/12 — Rig/Core: Mobile B-61
Drill Co.: Westex — Method: Hollow Stem Auger
Driller: Mike Noble — Log By: Bob Fehr — Date: 09/20/96 — Permit #: X9600747
Checked By: Ed Simonis — License No.: RG #4422

See Site Map For Boring Location

COMMENTS:

Soil cuttings stored on-site on top of and covered with plastic pending proper disposal

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2							
0						Asph	Asphalt
2						SP	Fine SAND, well sorted, light brown with gray mottling, medium dense, damp, no odor
4		0	MW-7 (5)	10 20 25			
6							CLAY with trace Silt, brown with trace dark brown spots and trace gray mottling, medium stiff, plactic, damp, no odor
8				10 30 35			
10		0					
12							
14		0		13 38 50-5"		CL	Grades to Silty CLAY with trace Sand, light brown with some light gray mottling, medium stiff, plastic, damp, no odor
16							
18				8 20 25			Grades to less Silt, no sand, moist
20		0					
22							
24				20 38			

Drilling Log

FLUOR DANIEL GTI

Monitoring Well MW-7

Project Former Texaco Facility Owner Friedkin

Location 3810 Broadway Avenue, Oakland, CA Proj. No. 020700324

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ x Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24		0		38, 50=4"			Silty CLAY, brown with trace dark brown spots, no mottling, hard.
26						CL	
28				20, 50			
30		0	MW-7 (30)	50=4"			
32						SC	Groundwater encountered at 0830; Grades to Clayey fine SAND, brown, loose, saturated
34		0	MW-7 (35)	10, 20, 50		CL	CLAY, greenish gray, stiff, plastic, moist, no odor; End of boring. Installed monitoring well.
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

Drilling Log

FLUOR DANIEL GTI

Monitoring Well MW-8

Project: Former Texaco Facility — Owner: Friedkin
Location: 3810 Broadway Avenue, Oakland, CA — Proj. No. 020700324
Surface Elev. ____ — Total Hole Depth: 35 ft — Diameter: 8.5 in
Top of Casing ____ — Water Level Initial: 33 ft — Static ____
Screen: Dia 2 in — Length: 25 ft — Type/Size: 0.020 in
Casing: Dia 2 in. — Length: 10 ft. — Type: PVC Riser
Fill Material: Lonestar 2/12 — Rig/Core: Mobile B-61
Drill Co.: Wester — Method: Hollow Stem Auger
Driller: Chris Miner — Log By: Bob Fehr — Date: 09/23/96 — Permit #: X9600747
Checked By: Ed Simonis — License No.: RG #4422

See Site Map For Boring Location

COMMENTS:
Soil cuttings stored on-site on top of and covered with plastic pending proper disposal

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2							
0						(Asph)	Concrete
2							
4		729		13, 28, 30			Silty CLAY, brown with trace dark brown spots, stiff, plastic, damp, moderate odor
6							
8				8, 20, 28			Grades with greenish gray mottling, strong hydrocarbon odor
10		698					
12						CL	
14		341		14, 24, 34			
16							
18				10, 22, 35			Grades to less silt, greenish gray with olive green mottling, plastic, stiff, moist, no hydrocarbon odor
20		157					
22							
24				17, 30			CLAY, brown, hard, plastic, no odor

Drilling Log

FLUOR DANIEL GTI

Monitoring Well **MW-8**

Project *Former Texaco Facility* Owner *Friedkin*

Location *3810 Broadway Avenue, Oakland CA* Proj. No. *020700324*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24		244		30, 38			Brown CLAY (Continued)
26							
28				15, 20, 36		CL	Grades with trace silt, light to medium brown, stiff, plastic, moist, no odor
30		14					
32						SC	*Groundwater encountered at 1205* ▽ Grades to Clayey Sandy GRAVEL, medium brown, loose, saturated
34				15		CL	Silty CLAY, medium brown, hard, wet, no odor
		14		50-5"			End of boring. Installed monitoring well.
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

Drilling Log

FLUOR DANIEL GTI

Monitoring Well MW-9

See Site Map
For Boring Location

Project Former Texaco Facility Owner Friedkin
Location 3810 Broadway Avenue, Oakland CA Proj. No. 020700324
Surface Elev. ____ Total Hole Depth 35 ft Diameter 8.5 in
Top of Casing ____ Water Level Initial 33 ft Static ____
Screen: Dia 2 in. Length 25 ft Type/Size 0.020 in
Casing: Dia 2 in. Length 10 ft. Type PVC Riser
Fill Material Lonestar 2/12 Rig/Core Mobile B-61
Drill Co. Wester Method Hollow Stem Auger
Driller Mike Noble Log By Bob Fehr Date 09/19/96 Permit # X9600747
Checked By Ed Simonis License No. RG #4422

COMMENTS.

Soil cuttings stored on-site on top of and covered with plastic pending proper disposal

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2							
0						Conc	Concrete
2							
4		23	MW-9 (5)	12 16 25			Silty CLAY, brown with greenish gray mottling, stiff, plastic, damp, no odor
6							
8				18 33 40			Grades to Sandy CLAY, light to medium brown with greenish mottling, hard, damp, no odor
10		2	MW-9 (10)				
12						CL	
14		0	MW-9 (15)	27 29 33			Grades to Silty CLAY, brown with very dark brown and light greenish gray mottling, stiff, plastic, damp, no odor
16							
18				19 20			Grades to light brown with very light gray mottling, medium stiff, moist
20		0	MW-9 (20)	50/6"			
22							Silty CLAY, brown with no mottling, hard, moist, plastic, no odor
24				13 33			

Drilling Log

FLUOR DANIEL GTI

Monitoring Well MW-9

Project Former Texaco Facility Owner Friedkin
Location 3810 Broadway Avenue, Oakland CA Proj. No. 020700324

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24		0		33, 50=6"			Brown Silty CLAY (Continued)
26							
28				15, 33, 40		CL	
30		0					
32						SC/CL	Grades to Sandy, Gravelly CLAY, soft, plastic, saturated; *Groundwater encountered at 0955*
34		0	MW-9 (35)	30, 40, 50=6"		CL	CLAY with Silt, hard, moist, plastic; End of boring. Installed monitoring well.
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

Drilling Log

FLUOR DANIEL GTI

Monitoring Well MW-10

See Site Map
For Boring Location

Project Former Texaco Facility Owner Friedkin
Location 3810 Broadway Avenue Oakland CA Proj. No. 020700324
Surface Elev. ____ Total Hole Depth 35 ft Diameter 8.5 in
Top of Casing ____ Water Level Initial 28 ft Static ____
Screen: Dia 2 in Length 25 ft Type/Size 0.020 in.
Casing: Dia 2 in Length 10 ft Type PVC Riser
Fill Material Lonestar 2/12 Rig/Core Mobile B-61
Drill Co. Wester Method Hollow Stem Auger
Driller Mike Noble Log By Bob Fehr Date 09/19/96 Permit # X9600747
Checked By Ed Simonis License No. RG #4422

COMMENTS:

Soil cuttings stored on-site on top of and covered with plastic pending proper disposal

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2							
0						Asph	Concrete
2							
4		0	MW-10 (5)	10 30 50=6"			Sandy CLAY, light grayish brown, stiff, damp, no odor
6						CL	
8				10 25 35			Grades to CLAY with Silt, brown with trace dark brown mottling, hard, plastic, no odor
10		0					
12							
14		0		30 50=6"		ML	Clayey SILT, greenish gray, stiff, plastic, damp, no odor
16							
18							Grades to Silty CLAY, trace greenish gray mottling, hard, plastic, moist, no odor
20		0				CL	
22							
24							

Drilling Log

FLUOR DANIEL GTI

Monitoring Well MW-10

Project Former Texaco Facility Owner Friedkin

Location 3810 Broadway Avenue, Oakland CA Proj. No. 020700324

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24		0	MW-10 (25)	38, 50=6"		CL	Mottled greenish gray CLAY
26							
28						GC	Grades to Clayey Sandy Gravel, loose, saturated *Groundwater encountered at 1305*
				10, 30		CL	Silty CLAY, brown, stiff, plastic, wet, no odor
30		0	MW-10 (30)	50=4"		SC	Clayey, Gravelly, SAND, dense
32						CL	Grades to CLAY with Silt, hard, plastic, wet
34		0	MW-10 (35)	13, 30, 50=5"			End of boring. Installed monitoring well.
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

FLUOR DANIEL GTI

Attachment 5

Laboratory Analytical Reports
and
Chain-of-Custody Manifests

NEI/GTEL
ENVIRONMENTAL LABORATORIES, INC

Midwest Region
4211 May Avenue
Wichita, KS 67209
(316) 945-2624
(800) 633-7936
(316) 945-0506 (FAX)

July 17, 1996

Brian Garber
FLUOR DANIEL GTI
757 Arnold Dr
Martinez, CA 94553

RE: GTEL Client ID: 020700324
Login Number: W6070107
Project ID (number): 020700324
Project ID (name): 3810 BROADWAY/OAKLAND/CA

Dear Brian Garber:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 07/08/96 under Chain-of-Custody Number(s) 35126.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes. This report is to be reproduced only in full.

NEI/GTEL is certified by the California Department of Health Service under Certification Number 1845.

If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Customer Service Manager

Terry R. Loucks
Laboratory Director

RECEIVED
JUL 23 1996

Project Number: 020700324
Project Name: (030504)
3810 Broadway
Oakland, CA
Work Order Number: W6-07-0107
Date Reported: 07-17-96

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons as Diesel Fuel In Water
GC/FID[a]

Sample Identification		Date Sampled	Date Extracted	Date Analyzed	Concentration, ug/L	Reporting Limit, ug/L
GTEL No.	Client ID					
02	MW-4	06-28-96	07-09-96	07-10-96	<50	50

a ASTM Method D3328(modified) is used for qualitative identification of fuel patterns. The method has been modified to include quantitation by applying calibration and quality assurance guidelines outlined in EPA's publication, Test Methods For Evaluating Solid Waste, SW846, Third Edition, Revision 0, November 1986. Extraction by EPA Method 3510. This method is equivalent to the California LUFT manual DHS method for diesel fuel.

Project ID (Number): 020700324
Project ID (Name): (030504)
3810 Broadway
Oakland, CA
Work Order Number: W6-07-0107
Date Reported: 07-17-96

ANALYTICAL RESULTS

Hydrocarbon Screen in Water
GC/FID[a]

GTEL Sample Number		01			
Client Identification		MW-1			
Date Sampled		06-28-96			
Date Extracted		07-09-96			
Date Analyzed		07-10-96			
Analyte	Reporting Limit ug/L	Concentration, ug/L			
TPH as Diesel Fuel	50	<50			
TPH as Lubricating Oil[c]	200	<200			
Dilution Multiplier		1			

a ASTM Method D3328 (modified) is used for qualitative identification of fuel patterns. The method has been modified to include quantitation by applying calibration and quality assurance guidelines outlined in EPA's publication, Test Methods for Evaluating Solid Waste, SW846, Third Edition, Revision 0, November 1986. Extraction per EPA 3510.This method is equivalent to the California LUFT manual DHS method for diesel fuel.

b Due to potential loss of volatile components during sample extraction and concentration, quantitation of gasoline by this method should be treated as an estimate. For the most accurate gasoline analysis, a purge-and-trap procedure is recommended.

c Lubricating oil can not be qualitatively identified by type of oil because of chromatogrpahic likeness of different oil types. Due to non-volatility of certain oils, much of the oil present may never be quantified by this gas chromatographic method. Quantitation obtained for lubricating oil by this method should, therefore, be treated as an estimate. This method quantifies lubricating oil against 10-W-40 standards. For the most accurate analysis of lubricating oil, an infrared method is recommended.

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: 020700324
Login Number: W6070107
Project ID (number): 020700324
Project ID (name): 3810 BROADWAY/OAKLAND/CA

Method: EPA 8020A
Matrix: Aqueous

GTEL Sample Number			W6070107-01	W6070107-02	--	--
Client ID			MW-1	MW-4	--	--
Date Sampled			06/28/96	06/28/96	--	--
Date Analyzed			07/09/96	07/09/96	--	--
Dilution Factor			1.00	1.00	--	--
Analyte	Reporting Limit	Units	Concentration:			
Benzene	0.5	ug/L	< 0.5	< 0.5	--	--
Toluene	1.0	ug/L	< 1.0	< 1.0	--	--
Ethylbenzene	1.0	ug/L	< 1.0	< 1.0	--	--
Xylenes (total)	2.0	ug/L	< 2.0	< 2.0	--	--
TPH as Gas	100	ug/L	< 100	< 100	--	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution

EPA 8020A:

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods". SW-846. Third Edition including promulgated Update II.

GTEL ENVIRONMENTAL LABORATORIES INC

CONCORD, CA 94520
(510) 685-7852
(800) 423-7143

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

35126

Company Name: Flour Daniel / GTI

Phone #: (510) 370-3970

Company Address: 757 Arnold Dr. Martinez

FAX #: (510) 370-3991

Site Location: 3810 Broadway Oakland

Project Manager: Brian Cooper

Client Project ID (#): 03-207-03-01

(NAME)

I attest that the proper field sampling procedures were used during the collection of these samples

Sampler Name (Print): Richard

Field Sample ID	GTEL Lab # (Lab Use only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	PRODUCT	OTHER	Method Preserved: HCl	HNO_3	H_2SO_4	ICE	UNPRESERVED	OTHER (Specify)	Sampling: DATE	TIME	BTEX 602 ☐ 8020 ☐ with MTBE ☐	BTEX/Gas Hydrocarbons PID/FID ☐ with MTBE ☐	Hydrocarbons GC/FID Gas ☐ Diesel ☒ Screen ☐	Hydrocarbon Profile (SIMDIS) ☐	Oil and Grease 413 1 ☐ 413.2 ☐ SM-503 ☐	TPH/IR 418 1 ☐ SM 503 ☐	EDB by 504 ☐ DBCP by 504	EPA 503 1 ☐ EPA 502 2	EPA 601 ☐ EPA 8010 ☐	EPA 602 ☐ EPA 8020 ☐	EPA 608 ☐ 8080 ☐ PCB only ☐	EPA 624/PPL ☐ 8240/TAL ☐ NBS (+15) ☐	EPA 625/PPL ☐ 8270/TAL ☐ NBS (+25) ☐	EPA 610 ☐ 8310 ☐	EP TOX Metals ☐ Pesticides ☐ Herbicides ☐	TCLP Metals ☐ VOA ☐ Semi-VOA ☐ Pest ☐ Herb ☐	EPA Metals - Priority Pollutant ☐ TAL ☐ RCRA ☐	CAM Metals TTLC ☐ STLC ☐	Lead 239.2 ☐ 200.7 ☐ 7420 ☐ 7421 ☐ 6010 ☐	Organic Lead	Corrosivity	Flash Point	Reactivity
MW-1	01-10	3	X						X			X			6/	12:00	X	X																			
MW-4	02	3	X						X			X			1/28/96	12:15	X	X																			

TAT
ly (24 hr)
hited (48 hr)
iness Days
ess Days

Special Handling
GTEL Contact
Quote/Contract #
Confirmation #
P O #

QA/QC Level
CLP Other

SPECIAL DETECTION LIMITS

SPECIAL REPORTING REQUIREMENTS

FAX ☐

REMARKS:

Lab Use Only Lot #: No Seals 16°C

Storage Location

Work Order #:

CUSTODY RECORD

	Date	Time	
Relinquished by Sampler: [signature]	1/3/96	16:10	Received by: [signature]
Relinquished by: Bruce Thomp GTI	2/5/96	12:30P	Received by:
Relinquished by:	7.8.96	07:12	Received by Laboratory: [signature]

Waybill # 7026507176

NEI/GTEL
ENVIRONMENTAL LABORATORIES, INC

Midwest Region
4211 May Avenue
Wichita, KS 67209
(316) 945-2624
(800) 633-7936
(316) 945-0506 (FAX)

October 25, 1996

Brian Garber
Fluor Daniel GTI
1401 Halyard Drive
Suite 140
Sacramento, CA 95691

RE: GTEL Client ID: 020700324
Login Number: W6100264
Project ID (number): 020700324
Project ID (name): MARY HABER: FORMER TEXACO/3810 BROADWAY/OAKLAND/CA

Dear Brian Garber:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 10/12/96 under Chain-of-Custody Number(s) 41997.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes. This report is to be reproduced only in full.

NEI/GTEL is certified by the California Department of Health Service under Certification Number 1845.

If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Justin Wood, Project Coordinator for
Terry R. Loucks
Laboratory Director

RECEIVED
OCT 2 [illegible]

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: 020700324
Login Number: W6100264
Project ID (number): 020700324
Project ID (name): MARY HABER: FORMER TEXACO/3810 BROADWAY/OAKLAND/CA

Method: EPA 8240B
Matrix: Aqueous

GTEL Sample Number	W6100264-01	W6100264-02	W6100264-05	W6100264-06
Client ID	MW-1	MW-2	MW-5	MW-6
Date Sampled	10/10/96	10/10/96	10/10/96	10/10/96
Date Analyzed	10/18/96	10/18/96	10/18/96	10/18/96
Dilution Factor	1.00	5.00	1.00	2.00

Analyte	Reporting Limit	Units	Concentration:			
MTBE	5.0	ug/L	16.	< 25.	< 5.0	< 10.

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8240B:

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods". SW-846, Third Edition including promulgated Update II.

W6100264-02:

The sample was diluted due to high concentration of non-target compounds.

W6100264-05:

GC/MS data indicates the presence of non-target hydrocarbons.

W6100264-06:

The sample was diluted due to high concentration of non-target compounds. GC/MS data indicates the presence of non-target hydrocarbons.

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: 020700324
Login Number: W6100264
Project ID (number): 020700324
Project ID (name): MARY HABER: FORMER TEXACO/3810 BROADWAY/OAKLAND/CA

Method: EPA 8240B
Matrix: Aqueous

GTEL Sample Number	W6100264-08	--	--	--
Client ID	MW-8	--	--	--
Date Sampled	10/10/96	--	--	--
Date Analyzed	10/18/96	--	--	--
Dilution Factor	1.00	--	--	--

Analyte	Reporting Limit	Units	Concentration:			
MTBE	5.0	ug/L	< 5.0	--	--	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution

EPA 8240B:

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update II

ANALYTICAL RESULTS
Total Petroleum Hydrocarbons By GC

GTEL Client ID: 020700324
Login Number: W6100264
Project ID (number): 020700324
Project ID (name): MARY HABER: FORMER TEXACO/3810 BROADWAY/OAKLAND/CA

Method: GC
Matrix: Aqueous

GTEL Sample Number	W6100264-01	W6100264-02	W6100264-03	W6100264-04
Client ID	MW-1	MW-2	MW-3	MW-4
Date Sampled	10/10/96	10/10/96	10/10/96	10/10/96
Date Prepared	10/14/96	10/14/96	10/14/96	10/14/96
Date Analyzed	10/22/96	10/23/96	10/23/96	10/23/96
Dilution Factor	1.00	20.0	10.0	1.00

Analyte	Reporting Limit	Units	Concentration:			
TPH as Lubricating Oil	200	ug/L	1500	--	--	--
TPH as Diesel	50.	ug/L	< 400	1800	1200	< 50.

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

GC:

Extraction by EPA Method 3510 (liquid/liquid). ASTM Method D3328(modified) is used for qualitative identification of fuel patterns. The method has been modified to include quantitation by applying calibration and quality assurance guidelines outlined in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update 1. This method is equivalent to California State Water Resources Board LUFT Manual protocols, May 1988 revision.

W6100264-01:

The reporting limit for diesel fuel was elevated because of matrix interferences from other hydrocarbons Lubricating oil can not be qualitatively identified by type of oil because of chromatographic likeness of different oil types. Due to non-volatility of certain oils, much of the oil present may not be quantified by this method. Quantitation obtained for lubricating oil by this method should, therefore, be treated as an estimate. This method quantifies lubricating oil against 10-W-30 standards.

W6100264-02:

Qualitative identification of diesel fuel is uncertain because the material present does not match laboratory standards. Quantitation of diesel fuel is uncertain due to matrix interferences.

W6100264-03:

Qualitative identification of diesel fuel is uncertain because the material present does not match laboratory standards. Quantitation of diesel fuel is uncertain due to matrix interferences.

ANALYTICAL RESULTS
Total Petroleum Hydrocarbons By GC

GTEL Client ID: 020700324
Login Number: W6100264
Project ID (number): 020700324
Project ID (name): MARY HABER: FORMER TEXACO/3810 BROADWAY/OAKLAND/CA

Method: GC
Matrix: Aqueous

GTEL Sample Number	W6100264-05	W6100264-06	W6100264-07	W6100264-08
Client ID	MW-5	MW-6	MW-7	MW-8
Date Sampled	10/10/96	10/10/96	10/10/96	10/10/96
Date Prepared	10/14/96	10/14/96	10/14/96	10/14/96
Date Analyzed	10/23/96	10/23/96	10/23/96	10/23/96
Dilution Factor	1.00	1.00	1.00	1.00

Analyte	Reporting Limit	Units	Concentration:			
TPH as Diesel	50.	ug/L	< 50.	500	< 50.	110

Notes

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution

GC:

Extraction by EPA Method 3510 (liquid/liquid). ASTM Method D3328(modified) is used for qualitative identification of fuel patterns. The method has been modified to include quantitation by applying calibration and quality assurance guidelines outlined in "Test Methods for Evaluating Solid Waste. Physical/Chemical Methods", SW-846. Third Edition including promulgated Update 1. This method is equivalent to California State Water Resources Board LUFT Manual protocols. May 1988 revision.

W6100264-05:

Chromatographic data indicates the presence of material, which is heavier than diesel fuel, in this sample.

W6100264-06:

Qualitative identification of diesel fuel is uncertain because the material present does not match laboratory standards. Quantitation of diesel fuel is uncertain due to matrix interferences.

W6100264-08:

Qualitative identification of diesel fuel is uncertain because the material present does not match laboratory standards. Quantitation of diesel fuel is uncertain due to matrix interferences.

ANALYTICAL RESULTS
Total Petroleum Hydrocarbons By GC

GTEL Client ID: 020700324
Login Number: W6100264
Project ID (number): 020700324
Project ID (name): MARY HABER: FORMER TEXACO/3810 BROADWAY/OAKLAND/CA

Method: GC
Matrix: Aqueous

GTEL Sample Number	W6100264-09	W6100264-10	--	--
Client ID	MW-9	MW-10	--	--
Date Sampled	10/10/96	10/10/96	--	--
Date Prepared	10/14/96	10/14/96		
Date Analyzed	10/23/96	10/23/96	--	--
Dilution Factor	1.00	1.00	--	--

Analyte	Reporting Limit	Units	Concentration:			
TPH as Diesel	50.	ug/L	520	< 50.	--	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution

GC:

Extraction by EPA Method 3510 (liquid/liquid). ASTM Method D3328(modified) is used for qualitative identification of fuel patterns. The method has been modified to include quantitation by applying calibration and quality assurance guidelines outlined in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update 1. This method is equivalent to California State Water Resources Board LUFT Manual protocols, May 1988 revision.

W6100264-09:

Qualitative identification of diesel fuel is uncertain because the material present does not match laboratory standards. Quantitation of diesel fuel is uncertain due to matrix interferences. Chromatographic data indicates the presence of material, which is heavier than diesel fuel, in this sample.

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: 020700324
Login Number: W6100264
Project ID (number): 020700324
Project ID (name): MARY HABER: FORMER TEXACO/3810 BROADWAY/OAKLAND/CA

Method: EPA 8020A
Matrix: Aqueous

GTEL Sample Number		W6100264-01	W6100264-02	W6100264-03	W6100264-04
Client ID		MW-1	MW-2	MW-3	MW-4
Date Sampled		10/10/96	10/10/96	10/10/96	10/10/96
Date Analyzed		10/16/96	10/16/96	10/16/96	10/16/96
Dilution Factor		1.00	20.0	50.0	1.00
Analyte	Reporting Limit / Units	Concentration:			
MTBE	5.0 ug/L	22.	390	< 250	< 5.0
Benzene	0.5 ug/L	9.2	4100	6600	3.9
Toluene	0.5 ug/L	53.	9400	16000	65.
Ethylbenzene	0.5 ug/L	17.	2300	2200	22.
Xylenes (total)	0.5 ug/L	70.	9900	12000	120
BTEX (total)	-- ug/L	150	26000	37000	210
TPH as Gasoline	50 ug/L	520	99000	110000	650

Notes

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020A:

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015. Analyte list modified to include additional compounds. "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods". SW-846, Third Edition including promulgated Update II.

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: 020700324
Login Number: W6100264
Project ID (number): 020700324
Project ID (name): MARY HABER: FORMER TEXACO/3810 BROADWAY/OAKLAND/CA

Method: EPA 8020A
Matrix: Aqueous

GTEL Sample Number		W6100264-05	W6100264-06	W6100264-07	W6100264-08
Client ID		MW-5	MW-6	MW-7	MW-8
Date Sampled		10/10/96	10/10/96	10/10/96	10/10/96
Date Analyzed		10/16/96	10/16/96	10/17/96	10/17/96
Dilution Factor		1.00	25.0	1.00	10.0
Analyte	Reporting Limit / Units	Concentration:			
MTBE	5.0 ug/L	21.	190	< 5.0	110
Benzene	0.5 ug/L	34.	8300	0.6	1300
Toluene	0.5 ug/L	4.7	2900	< 0.5	1200
Ethylbenzene	0.5 ug/L	11.	810	< 0.5	64.
Xylenes (total)	0.5 ug/L	44.	3100	< 0.5	1300
BTEX (total)	-- ug/L	94.	15000	0.6	3900
TPH as Gasoline	50 ug/L	1800	45000	< 50	17000

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020A:

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015. Analyte list modified to include additional compounds. "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods". SW-846, Third Edition including promulgated Update II.

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: 020700324
Login Number: W6100264
Project ID (number): 020700324
Project ID (name): MARY HABER: FORMER TEXACO/3810 BROADWAY/OAKLAND/CA

Method: EPA 8020A
Matrix: Aqueous

GTEL Sample Number		W6100264-09	W6100264-10	--	--
Client ID		MW-9	MW-10	--	--
Date Sampled		10/10/96	10/10/96	--	--
Date Analyzed		10/17/96	10/17/96	--	--
Dilution Factor		1.00	1.00	--	--
Analyte	Reporting Limit / Units	Concentration:			
MTBE	5.0 ug/L	< 5.0	< 5.0	--	--
Benzene	0.5 ug/L	2.5	< 0.5	--	--
Toluene	0.5 ug/L	13.	< 0.5	--	--
Ethylbenzene	0.5 ug/L	2.2	< 0.5	--	--
Xylenes (total)	0.5 ug/L	13.	< 0.5	--	--
BTEX (total)	-- ug/L	31.	--	--	--
TPH as Gasoline	50 ug/L	80	< 50	--	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020A:

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015. Analyte list modified to include additional compounds. "Test Methods for Evaluating Solid Waste. Physical/Chemical Methods". SW-846. Third Edition including promulgated Update II.

GTEL ENVIRONMENTAL LABORATORIES, INC

4080 PIKE LANE, SUITE C
CONCORD, CA 94520
(510) 685-7852
(800) 423-7143

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

41997

Company Name: FLUOR DANIEL GTI
Phone #: (916) 372-4700
FAX #: (916) 993-5214
Company Address: 71 HALYARD DR W. SACRAMENTO CA 95691
Site Location: 3810 BROADWAY OAKLAND CA
Project Manager: BRIAN GARBER
Client Project ID: (#) 020700324
(NAME) MARY HARBER
Attest that the proper field sampling procedures were used during the collection of these samples.
Sampler Name (Print): STEVEN STROM

Field Sample ID	GTEL Lab # (Lab Use only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	PRODUCT	OTHER	Method Preserved: HCl	HNO3	H2SO4	ICE	UNPRESERVED	OTHER (Specify)	Sampling: DATE	TIME	BTEX/TPH-G w/MTBE	TPH-D	TPH - as Motor Oil
W-1	01	7	X						X			X			10-10-96	1745	X	X	X
W-2	02	5	X						X			X				1735	X	X	
W-3	03	5	X						X			X				1805	X	X	
W-4	04	5	X						X			X				1715	X	X	
W-5	05	5	X						X			X				1725	X	X	
W-6	06	5	X						X			X				1815	X	X	
W-7	07	5	X						X			X				1610	X	X	
W-8	08	5	X						X			X				1835	X	X	
W-9	09	5	X						X			X				1659	X	X	
W-10	10	5	X						X			X			10/10/96	1638	X	X	

BTEX 602 ☐ 8020 ☐ with MTBE ☐ | BTEX/Gas Hydrocarbons PID/FID ☐ with MTBE ☐ | Hydrocarbons GC/FID Gas ☐ Diesel ☐ Screen ☐ | Hydrocarbon Profile (SIMOIS) ☐ | Oil and Grease 413.1 ☐ 413.2 ☐ SM-503 ☐ | TPH/IR 418.1 ☐ SM 503 ☐ | EDB by 504 ☐ DBCP by 504 ☐ | EPA 503.1 ☐ EPA 502.2 ☐ | EPA 601 ☐ EPA 8010 ☐ | EPA 602 ☐ EPA 8020 ☐ | EPA 608 ☐ 8080 ☐ PCB only ☐ | EPA 624/PPL ☐ 8240/TAL ☐ NBS (+15) ☐ | EPA 625/PPL ☐ 8270/TAL ☐ NBS (+25) ☐ | EPA 610 8310 ☐ | EP TOX Metals Pesticides Herbicides ☐ | TCLP Metals VOA ☐ Semi-VOA ☐ Pest Herb. | EPA Metals - Priority Pollutant ☐ TAL ☐ RCRA ☐ | CAM Metals TTLC ☐ STLC ☐ | Lead 239.2 ☐ 200.7 ☐ 7420 7421 6010 | Organic Lead | Corrosivity Flash Point Reactivity

TAT
(24 hr) [ ]
ted (48 hr) [ ]
ness Days [ ]
ss Days [ ]

Special Handling
GTEL Contact
Quote/Contract #
Confirmation #
P O #

QA/QC Level
CLP [ ] Other [ ]

SPECIAL DETECTION LIMITS

SPECIAL REPORTING REQUIREMENTS

FAX ☐

REMARKS: RUN SAMPLES CONTAINING MTBE FOR EPA 8260

Lab Use Only Lot #: No Seals 1°C
Storage Location
Work Order #

CUSTODY RECORD

Relinquished by:	Date	Time	Received by:
Sampler	10-11-96	13 00	Joe Weber
Joe Weber	10-11-96	16:30	
	10/12/96	0830	Received by Laboratory: Waybill # 1109127176

NEI/GTEL
ENVIRONMENTAL LABORATORIES, INC

Midwest Region
4211 May Avenue
Wichita, KS 67209
(316) 945-2624
(800) 633-7936
(316) 945-0506 (FAX)

October 3, 1996

Brian Garber
Fluor Daniel GTI
1401 Halyard Drive
Suite 140
Sacramento, CA 95691

RE: GTEL Client ID:	020700324
Login Number:	W6090380
Project ID (number):	020700324
Project ID (name):	TEXACO/BROADWAY/OAKLAND/CA

Dear Brian Garber:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 09/21/96 under Chain-of-Custody Number(s) 35148, 35149 & 35150.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes. This report is to be reproduced only in full.

NEI/GTEL is certified by the California Department of Health Service under Certification Number 1845.

If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Justin Wark, Project Coordinator for

Terry R. Loucks
Laboratory Director

ANALYTICAL RESULTS
Total Petroleum Hydrocarbons By GC

GTEL Client ID: 020700324
Login Number: W6090380
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: GC
Matrix: Solids

GTEL Sample Number		W6090380-01	W6090380-02	W6090380-03	W6090380-04
Client ID		MW-9 (5')	MW-9 (10')	MW-9 (15')	MW-9 (20')
Date Sampled		09/19/96	09/19/96	09/19/96	09/19/96
Date Prepared		09/29/96	09/29/96	09/29/96	09/29/96
Date Analyzed		10/03/96	10/03/96	10/03/96	10/03/96
Dilution Factor		1.00	1.00	1.00	1.00
Analyte	Reporting Limit / Units	Concentration:Wet Weight			
TPH as Diesel	10. mg/kg	62.	< 10.	69.	< 10.
Percent Solids	-- %	83.9	85.6	81.4	80.4

Notes

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution

GC:

Extraction by EPA Method 3550 (sonication). ASTM Method D3328(modified) is used for qualitative identification of fuel patterns. The method has been modified to include quantitation by applying calibration and quality assurance guidelines outlined in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update 1. This method is equivalent to the California LUFT manual DHS method for diesel fuel.

ANALYTICAL RESULTS
Total Petroleum Hydrocarbons By GC

GTEL Client ID: 020700324
Login Number: W6090380
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: GC
Matrix: Solids

GTEL Sample Number	W6090380-05	W6090380-06	W6090380-07	W6090380-08
Client ID	MW-9 (35')	MW-10 (5')	MW-10 (20')	MW-10 (25')
Date Sampled	09/19/96	09/19/96	09/19/96	09/19/96
Date Prepared	09/29/96	09/29/96	09/29/96	09/29/96
Date Analyzed	10/03/96	10/04/96	10/04/96	10/04/96
Dilution Factor	1.00	1.00	1.00	1.00

Analyte	Reporting Limit	Units	Concentration:Wet Weight			
TPH as Diesel	10.	mg/kg	< 10.	< 10.	< 10.	< 10.
Percent Solids	--	%	83.3	90.1	78.4	79.5

Notes.

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

GC:

Extraction by EPA Method 3550 (sonication). ASTM Method D3328(modified) is used for qualitative identification of fuel patterns. The method has been modified to include quantitation by applying calibration and quality assurance guidelines outlined in "Test Methods for Evaluating Solid Waste. Physical/Chemical Methods". SW-846. Third Edition including promulgated Update 1. This method is equivalent to the California LUFT manual DHS method for diesel fuel.

ANALYTICAL RESULTS
Total Petroleum Hydrocarbons By GC

GTEL Client ID: 020700324
Login Number: W6090380
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: GC
Matrix: Solids

GTEL Sample Number		W6090380-09	W6090380-10	W6090380-11	W6090380-12
Client ID		MW-10 (30')	MW-10 (35')	MW-5 (5')	MW-5 (15')
Date Sampled		09/19/96	09/19/96	09/19/96	09/19/96
Date Prepared		09/29/96	09/29/96	09/29/96	09/29/96
Date Analyzed		10/04/96	10/04/96	10/04/96	10/04/96
Dilution Factor		1.00	1.00	1.00	1.00
Analyte	Reporting Limit / Units	Concentration:Wet Weight			
TPH as Diesel	10. mg/kg	< 10.	< 10.	< 10.	< 10.
Percent Solids	-- %	80.5	78.9	82.5	83.6

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution

GC:

Extraction by EPA Method 3550 (sonication). ASTM Method D3328(modified) is used for qualitative identification of fuel patterns. The method has been modified to include quantitation by applying calibration and quality assurance guidelines outlined in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update 1. This method is equivalent to the California LUFT manual DHS method for diesel fuel.

ANALYTICAL RESULTS
Total Petroleum Hydrocarbons By GC

GTEL Client ID: 020700324
Login Number: W6090380
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: GC
Matrix: Solids

GTEL Sample Number	W6090380-13	W6090380-14	W6090380-15	W6090380-16
Client ID	MW-5 (20')	MW-5 (25')	MW-5 (35')	MW-7 (5')
Date Sampled	09/19/96	09/19/96	09/19/96	09/20/96
Date Prepared	09/29/96	09/29/96	09/29/96	09/29/96
Date Analyzed	10/04/96	10/04/96	10/04/96	10/04/96
Dilution Factor	1.00	1.00	1.00	1.00

Analyte	Reporting Limit	Units	Concentration:Wet Weight			
TPH as Diesel	10.	mg/kg	< 10.	< 10.	< 10.	< 10.
Percent Solids	--	%	78.0	81.7	78.9	76.8

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

GC:

Extraction by EPA Method 3550 (sonication). ASTM Method D3328(modified) is used for qualitative identification of fuel patterns. The method has been modified to include quantitation by applying calibration and quality assurance guidelines outlined in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update 1. This method is equivalent to the California LUFT manual DHS method for diesel fuel.

ANALYTICAL RESULTS
Total Petroleum Hydrocarbons By GC

GTEL Client ID: 020700324
Login Number: W6090380
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: GC
Matrix: Solids

GTEL Sample Number		W6090380-17	W6090380-18	W6090380-19	W6090380-20
Client ID		MW-7 (15')	MW-7 (20')	MW-7 (30')	MW-7 (35')
Date Sampled		09/20/96	09/20/96	09/20/96	09/20/96
Date Prepared		09/29/96	09/29/96	09/29/96	09/29/96
Date Analyzed		10/04/96	10/03/96	10/03/96	10/03/96
Dilution Factor		1.00	1.00	1.00	1.00
Analyte	Reporting Limit / Units	Concentration:Wet Weight			
TPH as Diesel	10. mg/kg	< 10.	< 10.	< 10.	< 10.
Percent Solids	-- %	84.0	77.6	39.6	76.2

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

GC:

Extraction by EPA Method 3550 (sonication). ASTM Method D3328(modified) is used for qualitative identification of fuel patterns. The method has been modified to include quantitation by applying calibration and quality assurance guidelines outlined in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update 1 This method is equivalent to the California LUFT manual DHS method for diesel fuel.

ANALYTICAL RESULTS
Total Petroleum Hydrocarbons By GC

GTEL Client ID: 020700324
Login Number: W6090380
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: GC
Matrix: Solids

GTEL Sample Number	W6090380-21	W6090380-22	W6090380-23	W6090380-24
Client ID	MW-6 (5')	MW-6 (20')	MW-6 (25')	MW-6 (30')
Date Sampled	09/20/96	09/20/96	09/20/96	09/20/96
Date Prepared	09/29/96	09/29/96	09/29/96	09/29/96
Date Analyzed	10/04/96	10/04/96	10/04/96	10/04/96
Dilution Factor	1.00	1.00	1.00	1.00

Analyte	Reporting Limit	Units	Concentration:Wet Weight			
TPH as Diesel	10.	mg/kg	< 10.	< 10.	< 10.	< 10.
Percent Solids	--	%	83.2	79.8	77.9	79.9

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

GC:

Extraction by EPA Method 3550 (sonication) ASTM Method D3328(modified) is used for qualitative identification of fuel patterns. The method has been modified to include quantitation by applying calibration and quality assurance guidelines outlined in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods". SW-846. Third Edition including promulgated Update 1. This method is equivalent to the California LUFT manual DHS method for diesel fuel.

ANALYTICAL RESULTS
Total Petroleum Hydrocarbons By GC

GTEL Client ID: 020700324
Login Number: W6090380
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: GC
Matrix: Solids

GTEL Sample Number	W6090380-25	--	--	--
Client ID	MW-6 (35')	--	--	--
Date Sampled	09/20/96	--	--	--
Date Prepared	09/29/96			
Date Analyzed	10/04/96	--	--	--
Dilution Factor	1.00	--	--	--

Analyte	Reporting Limit	Units	Concentration:Wet Weight			
TPH as Diesel	10.	mg/kg	< 10.	--	--	--
Percent Solids	--	%	77.8	--	--	--

Notes.

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution

GC:

Extraction by EPA Method 3550 (sonication). ASTM Method D3328(modified) is used for qualitative identification of fuel patterns. The method has been modified to include quantitation by applying calibration and quality assurance guidelines outlined in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update 1. This method is equivalent to the California LUFT manual DHS method for diesel fuel.

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: 020700324
Login Number: W6090380
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: EPA 8020A
Matrix: Low Soil

GTEL Sample Number		W6090380-01	W6090380-02	W6090380-03	W6090380-04
Client ID		MW-9 (5')	MW-9 (10')	MW-9 (15')	MW-9 (20')
Date Sampled		09/19/96	09/19/96	09/19/96	09/19/96
Date Analyzed		09/27/96	09/27/96	09/28/96	09/28/96
Dilution Factor		1.00	1.00	1.00	1.00
Analyte	Reporting Limit / Units	Concentration:Wet Weight			
Benzene	5.0 ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	5.0 ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	5.0 ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
Xylenes (total)	5.0 ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
BTEX (total)	-- ug/kg	--	--	--	--
TPH as Gasoline	1000 ug/kg	11000	< 1000	< 1000	< 1000
Percent Solids	-- %	83.9	85.6	81.4	80.4

Notes.

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution

EPA 8020A:

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015. "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods". SW-846. Third Edition including promulgated Update II

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: 020700324
Login Number: W6090380
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: EPA 8020A
Matrix: Low Soil

GTEL Sample Number		W6090380-05	W6090380-06	W6090380-07	W6090380-08
Client ID		MW-9 (35')	MW-10 (5')	MW-10 (20')	MW-10 (25')
Date Sampled		09/19/96	09/19/96	09/19/96	09/19/96
Date Analyzed		09/28/96	09/28/96	09/28/96	09/28/96
Dilution Factor		1.00	1.00	1.00	1.00
Analyte	Reporting Limit / Units	Concentration:Wet Weight			
Benzene	5.0 ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	5.0 ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	5.0 ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
Xylenes (total)	5.0 ug/kg	< 5.0	< 5.0	< 5.0	25.
BTEX (total)	-- ug/kg	--	--	--	25.
TPH as Gasoline	1000 ug/kg	< 1000	< 1000	< 1000	< 1000
Percent Solids	-- %	83.3	90.1	78.4	79.5

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020A:

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015. "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update II.

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: 020700324
Login Number: W6090380
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: EPA 8020A
Matrix: Low Soil

GTEL Sample Number		W6090380-09	W6090380-10	W6090380-11	W6090380-12
Client ID		MW-10 (30')	MW-10 (35')	MW-5 (5')	MW-5 (15')
Date Sampled		09/19/96	09/19/96	09/19/96	09/19/96
Date Analyzed		09/28/96	09/28/96	09/28/96	09/28/96
Dilution Factor		1.00	1.00	1.00	1.00
Analyte	Reporting Limit / Units	Concentration:Wet Weight			
Benzene	5.0 ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	5.0 ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	5.0 ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
Xylenes (total)	5.0 ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
BTEX (total)	-- ug/kg	--	--	--	--
TPH as Gasoline	1000 ug/kg	< 1000	< 1000	< 1000	< 1000
Percent Solids	-- %	80.5	78.9	82.5	83.6

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020A:

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015. "Test Methods for Evaluating Solid Waste. Physical/Chemical Methods", SW-846, Third Edition including promulgated Update II.

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: 020700324
Login Number: W6090380
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: EPA 8020A
Matrix: Low Soil

GTEL Sample Number			W6090380-13	W6090380-14	W6090380-15	W6090380-16
Client ID			MW-5 (20')	MW-5 (25')	MW-5 (35')	MW-7 (5')
Date Sampled			09/19/96	09/19/96	09/19/96	09/20/96
Date Analyzed			09/28/96	09/28/96	09/28/96	09/28/96
Dilution Factor			1.00	1.00	1.00	1.00
Analyte	Reporting Limit	Units	Concentration:Wet Weight			
Benzene	5.0	ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	5.0	ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	5.0	ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
Xylenes (total)	5.0	ug/kg	< 5.0	< 5.0	< 5.0	8.9
BTEX (total)	--	ug/kg	--	--	--	8.9
TPH as Gasoline	1000	ug/kg	< 1000	< 1000	< 1000	< 1000
Percent Solids	--	%	78.0	81.7	78.9	76.8

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020A:

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015. "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods". SW-846. Third Edition including promulgated Update II.

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: 020700324
Login Number: W6090380
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: EPA 8020A
Matrix: Low Soil

GTEL Sample Number			W6090380-17	W6090380-18	W6090380-19	W6090380-20
Client ID			MW-7 (15')	MW-7 (20')	MW-7 (30')	MW-7 (35')
Date Sampled			09/20/96	09/20/96	09/20/96	09/20/96
Date Analyzed			09/28/96	09/28/96	09/28/96	09/28/96
Dilution Factor			1.00	1.00	1.00	1.00
Analyte	Reporting Limit	Units	Concentration:Wet Weight			
Benzene	5.0	ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	5.0	ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	5.0	ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
Xylenes (total)	5.0	ug/kg	< 5.0	< 5.0	< 5.0	< 5.0
BTEX (total)	--	ug/kg	--	--	--	--
TPH as Gasoline	1000	ug/kg	< 1000	< 1000	< 1000	< 1000
Percent Solids	--	%	84.0	77.6	39.6	76.2

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020A:

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015. "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods". SW-846. Third Edition including promulgated Update II.

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: 020700324
Login Number: W6090380
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: EPA 8020A
Matrix: Low Soil

GTEL Sample Number	W6090380-21	W6090380-22	W6090380-23	W6090380-24
Client ID	MW-6 (5')	MW-6 (20')	MW-6 (25')	MW-6 (30')
Date Sampled	09/20/96	09/20/96	09/20/96	09/20/96
Date Analyzed	09/28/96	09/28/96	09/28/96	09/28/96
Dilution Factor	1.00	1.00	1.00	1.00

Analyte	Reporting Limit	Units	Concentration:Wet Weight			
Benzene	5.0	ug/kg	< 5.0	32.	27.	110
Toluene	5.0	ug/kg	< 5.0	< 5.0	< 5.0	5.3
Ethylbenzene	5.0	ug/kg	< 5.0	< 5.0	< 5.0	5.8
Xylenes (total)	5.0	ug/kg	< 5.0	7.5	< 5.0	9.4
BTEX (total)	--	ug/kg	--	40.	27.	130
TPH as Gasoline	1000	ug/kg	< 1000	1000	< 1000	< 1000
Percent Solids	--	%	83.2	79.8	77.9	79.9

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020A:

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015. "Test Methods for Evaluating Solid Waste. Physical/Chemical Methods". SW-846. Third Edition including promulgated Update II.

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: 020700324
Login Number: W6090380
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: EPA 8020A
Matrix: Low Soil

GTEL Sample Number	W6090380-25	--	--	--
Client ID	MW-6 (35')	--	--	--
Date Sampled	09/20/96	--	--	--
Date Analyzed	09/28/96	--	--	--
Dilution Factor	1.00	--	--	--

Analyte	Reporting Limit	Units	Concentration:Wet Weight			
Benzene	5.0	ug/kg	< 5.0	--	--	--
Toluene	5.0	ug/kg	10.	--	--	--
Ethylbenzene	5.0	ug/kg	14.	--	--	--
Xylenes (total)	5.0	ug/kg	120	--	--	--
BTEX (total)	--	ug/kg	140	--	--	--
TPH as Gasoline	1000	ug/kg	1300	--	--	--
Percent Solids	--	%	77.8	--	--	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution

EPA 8020A:

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015. "Test Methods for Evaluating Solid Waste. Physical/Chemical Methods". SW-846. Third Edition including promulgated Update II.

GTEL ENVIRONMENTAL LABORATORIES, INC

4080 PIKE LANE, SUITE C
CONCORD, CA 94520
(510) 685-7852
(800) 423-7143

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

35148

Company Name: FDGTI

Phone #: (916) 372-4700

FAX #:

Company Address: W. Sacramento CA

Site Location: Broadway Oakland

Project Manager: [illegible]

Client Project ID: (#) 020700324

(NAME) Texaco

I attest that the proper field sampling procedures were used during the collection of these samples

Sampler Name (Print): Bob Fehr

ANALYSIS REQUEST — OTHER

Field Sample ID	GTEL Lab # (Lab Use only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	PRODUCT	OTHER	Method Preserved: HCl	HNO_3	H_2SO_4	ICE	UNPRESERVED	OTHER (Specify)	Sampling: DATE	TIME	BTEX 602 ☐ 8020 ☒ with MTBE ☐	BTEX/Gas Hydrocarbons PID/FID ☐ with MTBE ☐	Hydrocarbons GC/FID Gas ☒ Diesel ☒ Screen ☐	Hydrocarbon Profile (SIMDIS) ☐	Oil and Grease 413.1 ☐ 413.2 ☐ SM-503 ☐	TPH/IR 418.1 ☐ SM 503 ☐	EDB by 504 ☐ DBCP by 504 ☐	EPA 503.1 ☐ EPA 502.2 ☐	EPA 601 ☐ EPA 8010 ☐	EPA 602 ☐ EPA 8020 ☐	EPA 608 ☐ 8080 ☐ PCB only ☐	EPA 624/PPL ☐ 8240/TAL ☐ NBS (+15) ☐	EPA 625/PPL ☐ 8270/TAL ☐ NBS (+25) ☐	EPA 610 ☐ 8310 ☐	EP TOX Metals ☐ Pesticides ☐ Herbicides ☐	TCLP Metals ☐ VOA ☐ Semi-VOA ☐ Pest ☐ Herb ☐	EPA Metals - Priority Pollutant ☐ TAL ☐ RCRA ☐	CAM Metals TTLC ☐ STLC ☐	Lead 239.2 ☐ 200.7 ☐ 7420 ☐ 7421 ☐ 6010 ☐	Organic Lead	Corrosivity, Flash Point, Reactivity
MW-9 (5')	01	1		X								X			9	0845	X		X																	
MW-9 (10')	02	1														0855																				
MW-9 (15')	03	1														0905																				
MW-9 (20')	04	1														0915																				
MW9 (35')	05	1													9/10	0955																				
MW-10 (5')	06	1														1130																				
MW-10 (20')	07	1														1155																				
MW-10 (25')	08	1														1220																				
MW-10 (30')	09	1													9/10	1305																				
MW 10 (35')	10	1														1315																				
MW-5 (5')	11	1													9/10	1440																				

TAT
Priority (24 hr)
Expedited (48 hr)
7 Business Days
Other STD Business Days

Special Handling
GTEL Contact
Quote/Contract #
Confirmation #
P.O. #

QA/QC Level
Blue ☐ CLP ☐ Other ☐

SPECIAL DETECTION LIMITS

SPECIAL REPORTING REQUIREMENTS

FAX ☒

REMARKS

Lab Use Only Lot #: [illegible] 1°C

Storage Location

Work Order #:

CUSTODY RECORD

	Date	Time		
Relinquished by Sampler: [signature]	9.20.96	1405	Received by: [signature]	
Relinquished by: [signature]	9-20-96	15:20	Received by	
Relinquished by	9.21.96	1540	Received by Laboratory: Waybill # [illegible]	

GTEL ENVIRONMENTAL LABORATORIES, INC.

4080 PIKE LANE, SUITE C
CONCORD, CA 94520
(510) 685-7852
(800) 423-7143

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

35149

Company Name: FDG II
Phone #: (916) 372-4700
FAX #:
Company Address: (1). Sacramento CA
Site Location: Broadway Oakland
Project Manager: Brian GARBER
Client Project ID: (#) 0207003221
(NAME) Texaco
Sampler Name (Print): Bob FETIK
I attest that the proper field sampling procedures were used during the collection of these samples

ANALYSIS REQUEST

Field Sample ID	GTEL Lab # (Lab Use only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	PRODUCT	OTHER	Method Preserved: HCl	HNO_3	H_2SO_4	ICE	UNPRESERVED	OTHER (Specify)	Sampling: DATE	TIME	BTEX 602 ☐ 8020 ☐ with MTBE ☐	BTEX Gas Hydrocarbons PID/FID ☐ with MTBE ☐	Hydrocarbons GC FID Gas ☐ Diesel ☐ Screen ☐	Hydrocarbon Profile (SIMDIS) ☐	Oil and Grease 413 1 ☐ 413 2 ☐ SM-503 ☐	TPH IR 418 1 ☐ SM 503 ☐	EDB by 504 ☐ DBCP by 504 ☐	EPA 503 1 ☐ EPA 502 2 ☐	EPA 601 ☐ EPA 8010 ☐	EPA 502 EPA 8020 ☐	EPA 608 ☐ 8080 ☐ PCB only ☐	EPA 624/PPL 8240/TAL ☐ NBS (+15) ☐	EPA 625/PPL ☐ 8270/TAL ☐ NBS (+25) ☐	EPA 610 ☐ 8310 ☐	EP TOX Metals ☐ Pesticides ☐ Herbicides ☐	TCLP Metals ☐ VOA ☐ Semi-VOA ☐ Pest ☐ Herb ☐	EPA Metals - Priority Pollutant ☐ TAL ☐ RCRA ☐	CAM Metals TTLC ☐ STLC ☐	Lead 239 2 ☐ 200 7 ☐ 7420 ☐ 7421 ☐ 6010 ☐	Organic Lead ☐	Corrosivity ☐ Flash Point ☐ Reactivity
MW-5 (15')	12	1		X								X			9/19	1505	X		X																	
MW-5 (20')	13	1		↓								↓				1515	↓		↓																	
MW-5 (25')	14	1														1525																				
MW-5 (35')	15	1													9/19	1545																				
MW-7 (5')	16	1														0730																				
MW-7 (15')	17	1													9/20	0750																				
MW-7 (20')	18	1														0800																				
MW-7 (30')	19	1														0820																				
MW-7 (35')	20	1														0830																				
MW-6 (5')	21														9/19	1005																				
MW-6 (7.5')	22															1035																				

TAT
Priority (24 hr)
Expedited (48 hr)
7 Business Days
Other STD Business Days

Special Handling
GTEL Contact
Quote/Contract #
Confirmation #
P O #

QA/QC Level
Blue CLP Other

SPECIAL DETECTION LIMITS

SPECIAL REPORTING REQUIREMENTS

FAX ☐

REMARKS:

Lab Use Only Lot #: No seals 19

Storage Location

Work Order #:

CUSTODY RECORD

	Date	Time		
Relinquished by Sampler:	9.20.96	1400	Received by: Brian Weber	
Relinquished by: Brian Weber	9-20-96	15:40	Received by:	
Relinquished by	9-21-96	0840	Received by Laboratory. Waybill # 702657[illegible]173	

GTEL ENVIRONMENTAL LABORATORIES INC

4080 PIKE LANE, SUITE C
CONCORD, CA 94520
(510) 685-7852
(800) 423-7143

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

35150

Company Name: EDGTI
Phone #: (916) 372-4700
FAX #:
Company Address: W. Sacramento CA
Site Location: Broadway Oakland
Project Manager: Brian GARBER
Client Project ID: (#) 020700324
(NAME) Texaco
I attest that the proper field sampling procedures were used during the collection of these samples
Sampler Name (Print): Bob Fehr

ANALYSIS REQUEST — OTHER

Field Sample ID	GTEL Lab # (Lab Use only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	PRODUCT	OTHER	Method Preserved: HCl	HNO3	H2SO4	ICE	UNPRESERVED	OTHER (Specify)	Sampling: DATE	TIME	BTEX 602 ☐ 8020 ☑ with MTBE ☐	BTEX/Gas Hydrocarbons PID/FID ☐ with MTBE ☐	Hydrocarbons GC/FID Gas ☑ Diesel ☑ Screen ☐	Hydrocarbon Profile (SIMDIS) ☐	Oil and Grease 413.1 ☐ 413.2 ☐ SM-503 ☐	TPH/IR 418.1 ☐ SM 503 ☐	EDB by 504 ☐ DBCP by 504 ☐	EPA 503.1 ☐ EPA 502.2 ☐	EPA 601 ☐ EPA 8010	EPA 602 ☐ EPA 8020 ☐	EPA 608 ☐ 8080 ☐ PCB only ☐	EPA 624/PPL ☐ 8240/TAL ☐ NBS (+15) ☐	EPA 625/PPL ☐ 8270/TAL ☐ NBS (+25) ☐	EPA 610 ☐ 8310 ☐	EP TOX Metals ☐ Pesticides ☐ Herbicides ☐	TCLP Metals ☐ VOA ☐ Semi-VOA ☐ Pest ☐ Herb ☐	EPA Metals - Priority Pollutant ☐ TAL ☐ RCRA ☐	CAM Metals TTLC ☐ STLC ☐	Lead 239.2 ☐ 200.7 ☐ 7420 ☐ 7421 ☐ 6010 ☐	Organic Lead ☐	Corrosivity ☐ Flash Point ☐ Reactivity ☐
MW-6(25)	23	1		X								X			9/	1050	X		X																		
MW-6(30)	24	1		↓								↓			20/	1105	↓		↓																		
MW-6(35)	25	1		↓								↓			96	1115	↓		↓																		

TAT
Priority (24 hr)
Expedited (48 hr)
7 Business Days
Other Std
Business Days

Special Handling
GTEL Contact
Quote/Contract #
Confirmation #
P O #

QA/QC Level
Blue CLP Other

SPECIAL DETECTION LIMITS

SPECIAL REPORTING REQUIREMENTS
FAX ☑

REMARKS:

Lab Use Only Lot #: [illegible] Storage Location 1°C
Work Order #:

CUSTODY RECORD

	Date	Time	
Relinquished by Sampler: [signature]	9.20.96	1406	Received by: Jolen Weber
Relinquished by: Jolen Weber	9-20-96	15:45	Received by:
Relinquished by	9-21-96	0840	Received by Laboratory: Waybill # 7026501073

NEI/GTEL
ENVIRONMENTAL LABORATORIES, INC.

Midwest Region
4211 May Avenue
Wichita, KS 67209
(316) 945-2624
(800) 633-7936
(316) 945-0506 (FAX)

October 8, 1996

Brian Garber
Fluor Daniel GTI
1401 Halyard Drive
Suite 140
Sacramento, CA 95691

RE: GTEL Client ID: 020700324
Login Number: W6090411
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Dear Brian Garber:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 09/25/96 under Chain-of-Custody Number(s) 35152.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes. This report is to be reproduced only in full.

NEI/GTEL is certified by the California Department of Health Service under Certification Number 1845.

If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Justin Warts, Project Coordinator for
Terry R. Loucks
Laboratory Director

RECEIVED
OCT 15 1996

ANALYTICAL RESULTS
Total Petroleum Hydrocarbons By GC

GTEL Client ID: 020700324
Login Number: W6090411
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: GC
Matrix: Solids

GTEL Sample Number	W6090411-01	W6090411-02	W6090411-03	W6090411-04
Client ID	MW-8 (5)	MW-8 (10)	MW-8 (15)	MW-8 (25)
Date Sampled	09/23/96	09/23/96	09/23/96	09/23/96
Date Prepared	10/03/96	10/03/96	10/03/96	10/03/96
Date Analyzed	10/08/96	10/08/96	10/08/96	10/08/96
Dilution Factor	1.00	1.00	5.00	1.00

Analyte	Reporting Limit	Units	Concentration:Wet Weight			
TPH as Diesel	10.	mg/kg	< 10.	< 10.	53.	< 10.
Percent Solids	--	%	86.4	80.9	81.6	80.6

Notes.

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

GC:

Extraction by EPA Method 3550 (sonication). ASTM Method D3328(modified) is used for qualitative identification of fuel patterns. The method has been modified to include quantitation by applying calibration and quality assurance guidelines outlined in "Test Methods for Evaluating Solid Waste. Physical/Chemical Methods". SW-846. Third Edition including promulgated Update 1 This method is equivalent to the California LUFT manual DHS method for diesel fuel.

W6090411-03:

Quantitation of diesel fuel is uncertain due to matrix interferences from gasoline hydrocarbons.

ANALYTICAL RESULTS
Total Petroleum Hydrocarbons By GC

GTEL Client ID: 020700324
Login Number: W6090411
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: GC
Matrix: Solids

GTEL Sample Number	W6090411-05	W6090411-06	--	--
Client ID	MW-8 (35)	SP-1 THRU SP-2	--	--
Date Sampled	09/23/96	09/23/96	--	--
Date Prepared	10/03/96	10/03/96		
Date Analyzed	10/08/96	10/08/96	--	--
Dilution Factor	1.00	1.00	--	--

Analyte	Reporting Limit	Units	Concentration:Wet Weight			
TPH as Diesel	10.	mg/kg	< 10.	< 10.	--	--
Percent Solids	--	%	79.7	88.0	--	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

GC:

Extraction by EPA Method 3550 (sonication). ASTM Method D3328(modified) is used for qualitative identification of fuel patterns. The method has been modified to include quantitation by applying calibration and quality assurance guidelines outlined in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update 1 This method is equivalent to the California LUFT manual DHS method for diesel fuel

W6090411-06:

Chromatographic data indicates the presence of material, which is heavier than diesel fuel, in this sample.

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: 020700324
Login Number: W6090411
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: EPA 8020A
Matrix: Solids

GTEL Sample Number		W6090411-01	W6090411-02	W6090411-03	W6090411-04
Client ID		MW-8 (5)	MW-8 (10)	MW-8 (15)	MW-8 (25)
Date Sampled		09/23/96	09/23/96	09/23/96	09/23/96
Date Analyzed		10/01/96	10/01/96	10/02/96	10/02/96
Dilution Factor		1.00	1.00	10.0	1.00
Analyte	Reporting Limit / Units	Concentration:Wet Weight			
Benzene	0.05 mg/kg	0.77	2.6	25.	0.08
Toluene	0.10 mg/kg	3.5	0.66	7.1	0.63
Ethylbenzene	0.10 mg/kg	1.2	5.6	160	0.20
Xylenes (total)	0.20 mg/kg	7.3	10.	840	1.1
TPH as Gasoline	10. mg/kg	120	520	14000	53.
Percent Solids	-- %	86.4	80.9	81.6	80.6

Notes

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020A:

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015. "Test Methods for Evaluating Solid Waste. Physical/Chemical Methods". SW-846. Third Edition including promulgated Update II.

W6090411-01:

Methanol extraction necessary due to high levels of target or non-target analytes.

W6090411-02:

Methanol extraction necessary due to high levels of target or non-target analytes.

W6090411-03:

Methanol extraction necessary due to high levels of target or non-target analytes.

W6090411-04:

Methanol extraction necessary due to high levels of target or non-target analytes.

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: 020700324
Login Number: W6090411
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: EPA 8020A
Matrix: Low Soil

GTEL Sample Number	W6090411-05	--	--	--
Client ID	MW-8 (35)	--	--	--
Date Sampled	09/23/96	--	--	--
Date Analyzed	10/02/96	--	--	--
Dilution Factor	1.00	--	--	--

Analyte	Reporting Limit	Units	Concentration:Wet Weight			
Benzene	5.0	ug/kg	< 5.0	--	--	--
Toluene	5.0	ug/kg	< 5.0	--	--	--
Ethylbenzene	5.0	ug/kg	< 5.0	--	--	--
Xylenes (total)	5.0	ug/kg	< 5.0	--	--	--
TPH as Gasoline	1000	ug/kg	< 1000	--	--	--
Percent Solids	--	%	79.7	--	--	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution

EPA 8020A:

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015. "Test Methods for Evaluating Solid Waste. Physical/Chemical Methods". SW-846. Third Edition including promulgated Update II

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: 020700324
Login Number: W6090411
Project ID (number): 020700324
Project ID (name): TEXACO/BROADWAY/OAKLAND/CA

Method: EPA 8020A
Matrix: Solids

GTEL Sample Number	W6090411-06	--	--	--
Client ID	SP-1 THRU SP-2	--	--	--
Date Sampled	09/23/96	--	--	--
Date Analyzed	10/02/96	--	--	--
Dilution Factor	1.00	--	--	--

Analyte	Reporting Limit	Units	Concentration:Wet Weight			
Benzene	0.05	mg/kg	0.47	--	--	--
Toluene	0.10	mg/kg	7.3	--	--	--
Ethylbenzene	0.10	mg/kg	3.7	--	--	--
Xylenes (total)	0.20	mg/kg	20.	--	--	--
TPH as Gasoline	10.	mg/kg	340	--	--	--
Percent Solids	--	%	88.0	--	--	--

Notes

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020A:

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015. "Test Methods for Evaluating Solid Waste. Physical/Chemical Methods". SW-846. Third Edition including promulgated Update II

W6090411-06:

Methanol extraction necessary due to high levels of target or non-target analytes

TOXICHEM
Management
Systems, Inc.
Environmental & Occupational Health Services
1461 Newport Avenue
San Jose, California 95125
(408) 292-3266 / Fax (408) 298-6591

Exposure Assessment/Estimation
Quantitative Risk Assessments
Industrial Hygiene
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Compliance Audits
Air Pollution Dispersion Modeling
Hazardous Waste Management
Air Sampling and Analysis

Dave Cooper

Corrective Action Plan
3810 Broadway
Oakland, California

STID 435.
11/15/98

Prepared For:

Karen Petryna
Equiva Services LLC
P.O. Box 6249
Carson, CA 90749-6249

RP
CR

Prepared By:
Toxichem Management Systems, Inc.
1461 Newport Avenue
San Jose, CA 95125

November 15, 1998

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APPENDICES

Appendix A - RBCA Analysis
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1.0 INTRODUCTION

This report, prepared by Toxichem Management Systems, Inc. (Toxichem) on behalf of Equiva Services LLC, presents a corrective action plan for the subject site located at 3810 Broadway, Oakland, California (Figure 1). The purpose of the plan is to provide a framework for remediation, considering all pertinent regulatory guidance, site conditions, site remediation constraints, and probable future uses of the site. This corrective action plan was prepared pursuant to Article 11, Chapter 16, Division 3, Title 23, California Code of Regulations.

1.1 Site Background

The site was formerly owned by Texaco from 1963 to 1985. During this time, the site was leased to various parties for utilization as a retail gasoline station. Texaco divested interest in the property in 1985. Five underground storage tanks (USTs) were utilized at the site including four 6,000-gallon USTs for product storage and one 550-gallon UST for used oil storage. The four 6,000-gallon USTs were removed from the site during February 1980; the 550-gallon used oil tank was removed from the site during May 1991.

Topographically, the site is located within the City of Oakland along the eastern margin of the San Francisco Bay and is within the East Bay Plain. The East Bay Plain lies within the Coast Range Geomorphic Province and is characterized by broad alluvial fan margins sloping westward towards the San Francisco Bay. The eastern site of the plain in the Oakland area is marked by the active Hayward Fault, which runs along the base of the Diablo Range Escarpment. Site elevation is approximately 100 feet above mean sea level.

The nearest surface waters relative to the site are Lake Merritt, located approximately 1 mile to the south, and San Francisco Bay, located approximately 2 miles to the west of the site. Regional groundwater gradient in the site vicinity, based on topography and the pre-development slope of the alluvial fans is toward the southwest. The observed local groundwater gradient at the site, based on groundwater monitoring has been variable. Groundwater depressions and groundwater mounding occurs beneath the site as water table elevations increase and decrease seasonally; this has given rise to fluctuations in groundwater flow direction.

1.2 Previous Investigations

A summary of all previous soil and groundwater investigations is presented below.

Check depth & [illegible]

1.2.1 SEMCO Used Oil Tank Excavation

Soil sampling of the former used oil tank excavation was performed by SEMCO during tank removal activities in May 1991. Petroleum hydrocarbon impacted soils were identified within the tank excavation to a depth of 10 feet below ground surface (bgs). This soil was excavated and removed from the site; the excavation was backfilled with clean imported aggregate. Subsequent investigations at the site have been performed by Harza Kaldveer (Kaldveer), McLaren/Hart, Fluor Daniel GTI (GTI), and Toxichem. The investigation work performed has included the installation of 10 groundwater monitoring wells (Wells MW-1 through MW-10) and 12 soil borings (B-1 through B-6, SB-1 through SB-6).

Soils/[illegible] ok.

1.2.2 Kaldveer Soil and Groundwater Investigations

During November 1991, Kaldveer installed 1 groundwater monitoring well (Well MW-1) within the former used oil tank excavation. Soil samples were collected at depths of 10.5, 15.5, 20.5, and 25.5 feet bgs and oil and grease and hydrocarbons; additionally, the 10.5 feet bgs sample was analyzed for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, and xylene (BTEX) compounds. None of the analyzed parameters were detected in the soil samples submitted for analysis. Petroleum hydrocarbons were detected in groundwater from Well MW-1; these included oil and grease (1,000 parts per billion [ppb]), TPHg (300 ppb), and benzene (4.1 ppb).

As a result of the petroleum hydrocarbon detections in Well MW-1, Kaldveer installed one additional groundwater monitoring well (Well MW-2) at the site during January 1992. One soil sample was collected at a depth of 30 feet bgs and analyzed for oil and grease, hydrocarbons, TPHg, and BTEX compounds. None of the analyzed parameters were detected in the soil sample. Petroleum hydrocarbons were detected in groundwater at Well MW-2; these included oil and grease (1,000 ppb), TPHg (4,000 ppb), and benzene (470 ppb).

1.2.3 McLaren/Hart Soil and Groundwater Investigation

A supplemental site investigation was performed by McLaren/Hart during September and October 1995; six soil borings (B-1 through B-6) and two additional groundwater monitoring wells (MW-3 and MW-4) were installed during the investigation. The purpose of this investigation was to verify groundwater flow direction and to further define the extent of petroleum hydrocarbons in soil and groundwater beneath the site.

Maximum petroleum hydrocarbons were detected in soils at Well MW-3, adjacent to the former USTs at 8.5 feet bgs; concentrations of TPHg and benzene were 65,000 and 88 ppm, respectively. Petroleum hydrocarbons in soils attenuated rapidly with depth in the boring at Well MW-3; at 15.5 feet bgs TPHg and benzene concentrations were 2.8 and <0.005 ppm, respectively. TPHg and benzene were not detected in Borings B-3, B-6, and Well MW-4. At Borings B-1, B-2, B-4, and B-5, maximum TPHg concentrations ranged from of 2,200 to 4,800 ppm and maximum benzene concentrations ranged from 3.8 to 48 ppm.

1.2.4 Fluor Daniel GTI Investigation

During September 1996, GTI performed soil and groundwater assessment activities at the site including the installation and sampling of 5 additional groundwater monitoring wells (Wells MW-5 through MW-10) both on- and off-site in order to further delineate petroleum hydrocarbons in groundwater. Additionally, Wells MW-1, MW-2, and MW-3 were redrilled and new monitoring wells were installed with screen intervals intercepting the groundwater/vadose zone interface.

check depth

The highest concentrations of hydrocarbons in soil were detected at a depth of 20 feet in the boring for Well MW-8 located adjacent to the former pump islands; TPHg and benzene concentrations at this location were 14,000 and 25 ppm, respectively. TPHg and benzene were not detected in soils at Wells MW-5, MW-7, and MW-10. Maximum concentrations of TPHd were present in soil at 20 feet bgs at Well MW-9 at a concentration of 69 ppm.

Groundwater analytical data from Wells MW-5 through MW-10 indicated that maximum concentrations of TPHg and benzene were present in samples from Well MW-6 at concentrations of 45,000 and 8,300 ppb, respectively. TPHg were not detected in the groundwater samples collected from Wells MW-7 and MW-10. TPHg concentrations in groundwater samples from Wells MW-5, MW-8, and MW-9 ranged from 80 to 17,000 ppb.

1.2.5 Toxichem Investigation

Toxichem Management Sytems Inc , performed additional soils characterization during July 1998; at that time, six soil borings were drilled at the site (SB-1 through SB-6). These soil borings were advanced to depths ranging from 8 to 20 feet below ground surface (bgs). The purpose of the investigation was to increase the definition of soils impact, collect physical soil parameter data (porosity, moisture content, organic carbon), and collect soil vapor information. TPHg were present in Borings SB-1 and SB-2 at concentrations of 430 and 2,900 ppm, respectively; benzene was present in Borings SB-1 and SB-2 at concentrations of 2.8 and 16 ppm, respectively. TPHg and BTEX were not detected in Borings SB-3 through SB-6.

Soil vapor samples collected at a depth of 5 feet bgs from borings SB1, SB3, and SB6 yielded TPHg and benzene at 22 mg/m3 and 10 mg/m3 respectively from SB1 only.

1.3 Depth to Groundwater, Flow Direction, and Gradient

Groundwater beneath the site has been measured at depths ranging from 14.00 to 23.27 feet bgs. Recent groundwater elevations (April 1998) are at their data set maximums. Based on calculated groundwater elevations, groundwater flow at the site has been variable. Recent groundwater flow elevation contour maps (December 1997 and April 1998) indicate that flow direction is to the southwest and northeast, toward the southern portion of the site. The southerly groundwater flow direction predominates at an approximate gradient of 0.06.

1.4 Chemical Soil Characterization.

Petroleum hydrocarbons were found in both the capillary fringe and vadose soils beneath the site. Capillary fringe soils (between 14 and 23 feet bgs) impacted at concentrations exceeding 1,000 ppm TPHg were found at Borings B-1, B-2, B-4, MW-8, and SB-2. Shallow soil impact exceeding 1,000 ppm TPHg was noted at 8.5 feet bgs at Well MW-3 (adjacent to the former USTs) and at 12.5 feet at Boring B-5 (beneath a former fuel pump). Shallow soil impact exceeding 100 ppm TPHg were noted at Well MW-8 (adjacent to the former pump islands), and at Boring SB-2 (adjacent to the former UST location). It is apparent that the vertical and lateral extent of hydrocarbons in soil are limited; TPHg concentrations attenuate rapidly with depth and with distance from an apparent former source area.

1.5 Chemical Groundwater Characterization.

Within the past three sampling events (December 1997, April 1998, and June 1998), maximum petroleum hydrocarbons were identified in Well MW-3; during December 1997 TPHg and benzene concentrations were 180,000 and 1,500 ppb, respectively. During April 1998 0.05 foot of separate phase hydrocarbons (SPH) were measured in Well MW-3; SPH was also identified in this well during June 1998. SPH had previously been measured in Well MW-3 at a thickness of up to 1.35 feet (June 1996). Additionally, SPH has been identified in Well MW-2 (to the northeast of the former pump islands) at thicknesses ranging from 0.01 feet (November 1996) to 1.35 feet (June 1996). During June 1998, TPHg and benzene were present in groundwater at Well MW-2 at concentrations of 20,000 and 240 ppb, respectively. During June 1998 TPHg concentrations in groundwater at Wells MW-6 and MW-8 were 23,000 and 74,000 ppb, respectively; benzene concentrations were 2,600 and 5,400 ppb, respectively.

Groundwater conditions off-site have been investigated to the southwest, northwest, and west at Wells MW-7, MW-9, and MW-10, respectively. Analysis of historical groundwater monitoring indicates that while petroleum hydrocarbons have not been detected in Wells MW-7 and MW-9, TPHg and BTEX compounds were detected in Well MW-10 during the past two groundwater monitoring events. During April 1998, TPHg and benzene concentrations in groundwater at Well MW-10 were 2,300 and 224 ppb, respectively; during June 1998, TPHg and benzene concentrations in groundwater at Well MW-10 were 7,200 and 310 ppb, respectively.

Methyl tert butyl ether (MTBE) has been detected in Wells MW-1, MW-5, and MW-6. During the April 1998 groundwater monitoring event, MTBE was detected in Wells MW-1 and MW-5 at concentrations of 38.3 and 38 ppb, respectively. During the June 1998 groundwater monitoring event, MTBE was not detected in any site wells; however, the detection limits were increased at some wells due to elevated petroleum hydrocarbon concentrations. This station was divested by Texaco in 1985, prior to the mandatory introduction of oxygenates such as MTBE.

1.2 Document Format

- **Section 2.0 - Conceptual Site Model:** Relevant site characteristics are summarized.
- **Section 3.0 - Corrective Action Goals:** Applicable cleanup goals are developed.
- **Section 4.0 - Corrective Action Requirements:** Site conditions are compared to cleanup goals and the need for corrective action is assessed.
- **Section 5.0 - Corrective Action:** Corrective action objectives and applicable remediation technologies are identified. The section closes with a recommendation regarding the most feasible corrective action alternative.

2.0 CONCEPTUAL SITE MODEL

2.1 Physical Characteristics

The subject site is located in northwestern Oakland at 3810 Broadway, Oakland, California. The site is situated on the northeast corner of the intersection of 38th Street and Broadway. The nearest surface waters relative to the site are Lake Merritt located approximately 1 mile to the south and San Francisco Bay located approximately 2 miles to the west of the site. Topography at the site slopes gently toward the southwest; elevation at the site is approximately 85 feet above mean sea level.

2.2 Source Composition, Distribution, and Residual Levels

2.2.1 Primary Source

Investigative data documenting the occurrence of petroleum hydrocarbon residuals in soil and groundwater are extensive, but there is no specific release information. Available data (soil sampling and groundwater monitoring) indicate that the primary source of petroleum hydrocarbons was the former gasoline and used oil tank and the former product piping. The former gasoline USTs were removed from the property during February 1980, the used oil tank was removed from the property during May 1991; it is probable that all primary sources have been removed from the site.

2.2.2 Source Composition

Soil and groundwater chemistry data for samples collected from the site suggest that impact consists of compounds typically found in gasoline and diesel. Laboratory analyses have identified TPHg, BTEX, and TPHd. Low concentrations of MTBE have also been identified in groundwater samples. This information is consistent with the typical UST uses.

2.2.3 Source Distribution and Residual Levels

The secondary sources of petroleum hydrocarbon residuals are: (1) soils impacted with petroleum hydrocarbons; (2) groundwater containing dissolved petroleum hydrocarbons, and (3) vapor phase hydrocarbons. The distribution and residual levels associated with these secondary sources are described in this section.

Soil

The primary aerial extent of impact is defined by the analytical results from monitoring wells MW3 and MW8, and from soil borings B1, B2, B4, B5, SB1, SB2, and SB4. The distribution of the residual hydrocarbons in soils is characterized by the following analytical data (see Table 1).

- Soil chemistry data collected between October 1991 and July 1998 indicate that the hydrocarbon impact is primarily centered below and adjacent to the former USTs and former pump islands and is characterized by former tank pit soil analytical data (1.1 to 65,000 ppm TPHg and 0.27 to 88 ppm benzene). Maximum TPHg were present in soils located in the boring groundwater monitoring well MW-3 located approximately 15 feet to the northwest of the former UST location. These hydrocarbon concentrations were characterized by samples collected at 8.5, 15.5, and 19.5 feet bgs where TPHg concentrations were 65,000, 2.8, and 6.2 ppm, respectively; benzene concentrations were 88, not detected, and 1.3 ppm, respectively.

- Soil samples at Boring B-1 beneath the former northern UST were collected at 12.5, 19, and 26.5 feet bgs where TPHg concentrations were 310, 3,600, and 1.1 ppm, respectively; benzene concentrations were 0.15, 33, and 0.27 ppm, respectively. Soil samples at Boring B-4 beneath the former southern UST were collected at 12.5, 18, and 26.5 feet bgs where TPHg concentrations were 83, 4,800, and 19 ppm, respectively; benzene concentrations were 0.06, 3.8, and 0.52 ppm, respectively.

- Soil samples at Boring B-5 beneath the former eastern pump island were collected at 12.5 and 29.5 feet bgs where TPHg concentrations were 4,800 ppm and not detected, respectively; benzene concentrations were 48 and 0.055 ppm, respectively. At Boring B-2 beneath the former western pump island, soil samples were collected at 12.5, 16.5, and 26.5 feet bgs where TPHg concentrations were 3.1 and 2,200 ppm and not detected; benzene concentrations were 0.69 and 15.0, and not detected.

- At off-site Wells MW-7, MW-9, and MW-10, petroleum hydrocarbon concentrations have not been detected in soils; petroleum hydrocarbon impact to soils have therefore been defined in the downgradient direction to the south, southwest, and west of the site. For the most part, TPHg concentrations in soils appear to diminish as a function of distance from the former USTs and the former pump island locations.

In the primary vertical zone of impact (8 to 20 feet bgs), the average soil column concentrations are summarized below

How's this calculated?

Average Soil Concentrations in the Area of Impact

TPHg	Benzene	Toluene	Ethyl Benzene	Xylenes
6174 mg/kg	14.8 mg/kg	90.7 mg/kg	36.8 mg/kg	202 mg/kg

Groundwater

Table 2 presents groundwater quality data obtained between October 1991 and June 1998. Petroleum hydrocarbons have been detected in groundwater samples collected from on-site Wells MW-1 through MW-6 and MW-8, and from off-site Wells MW-7, MW-9, and MW-10. Low concentrations of MTBE have been detected in groundwater samples collected from on-site Wells MW-1, MW-5, and MW-6.

maybe soil cont. cons. from gw. order

It appears that the dissolved petroleum hydrocarbon plume configuration is nearly the same as that delineated for soil. The recorded depth to groundwater has ranged from approximately 14.39 to 22.60 feet bgs; within the range of greatest soil impact. Current trends in data suggest that the dissolved plume may be expanding in the western direction toward Well MW-10. During the past three groundwater monitoring events, TPHg concentrations at Well MW-10 have increased from 350 ppb to 2,300 ppb to 7,200 ppb.

The range of residual levels, considering data sets for Wells MW-1 through MW-6 and for Borings B-2, B-3, B-4, and B-6 are given below.

- **Minimum Levels Detected:** 80 ppb TPHg; 9.5 ppb TPHd; 0.6 ppb benzene; 0.8 ppb toluene; 0.36 ppb ethylbenzene; 0.77 ppb xylenes; and 5.0 ppb MTBE.
- **Maximum Levels Detected:** 180,000 ppb TPHg; 6,100,000 ppb TPHd; 12,000 ppb benzene; 16,000 ppb toluene; 4,600 ppb ethylbenzene; 23,000 ppb xylenes; and 72 ppb MTBE.

2.3 Geology/Hydrogeology

Subsurface lithology was described in a Supplemental Site Investigation Report prepared by McLaren/Hart dated January 11, 1996. This report indicated that the lithology generally consisted of unconsolidated fill material overlying fine grained sediments such as sandy silts and clays, interbedded with more transmissive well-sorted sands and silty sands. Geologic cross section locations are shown on Figure 5, geologic cross sections are shown on Figures 6 and 7.

McLaren/Hart reported that the unsaturated soils above the water-bearing zones are generally clay rich. However, sandier stringers appear to be present, particularly in the 16-20 feet bgs range. Vadose soils at Well MW-3 are much sandier than elsewhere on the site, indicating a

[illegible] are greatly impacted.

transition in the depositional environment, perhaps to stream channel/levee from overbank/flood plain.

Water-bearing zones were encountered at two different depths during the McLaren /Hart investigation; it was not determined whether these two zones were hydraulically connected. The first zone was encountered at approximate depths ranging between 19 and 24.5 feet bgs. This laterally discontinuous zone was generally less than one foot thick and in most cases, did not yield a sufficient amount of groundwater to collect samples. At Well MW-3, the thickness of the saturated zone was 4.5 feet; however this thickness appeared to be limited to the portion of the site adjacent to Well MW-3.

The second zone was encountered at approximate depths ranging between 28 and 35.5 feet bgs with an approximate thickness of 4 feet. As shown in the cross sections A-A' and B-B', data suggests that this zone is laterally continuous throughout the site.

2.4 Interim Remediation

Site remediation to date has consisted of excavating and removing the former product storage facilities, removal of the former pump islands, site assessment activities, and groundwater monitoring.

2.5 Transport Mechanisms and Exposure Pathway

Since gasoline and diesel constituents have been detected in soils and groundwater beneath the site, it is reasonable to expect that the most probable transport mechanisms are vapor phase diffusion with atmospheric dispersion and advective transport with groundwater flow. Exposure pathways include shallow groundwater use and inhalation.

3.0 Corrective Action Goals

Site-specific numeric corrective action goals are necessary to formulate final remedial objectives for the site. Until recently, goals regarding the clean-up of leaking underground storage tank (UST) sites focused primarily on restoring water quality and water quality protection. New State Water Resources Control Board (SWRCB) recommendations and Interim Guidance issued by the San Francisco Bay Regional Water Quality Control Board (RWQCB) have, to a degree, realigned this focus. The emphasis is currently based on public health risk. Regulatory policy has yet to fully reconcile risk-based goals with water quality goals, but the policy on water quality protection remains clear.

With respect to developing remediation goals with a focus on public health risk, recent guidance documents suggest using the American Society for Testing and Materials (ASTM) Standard E1739 for Risk-Based Corrective Action at Petroleum Release Sites (RBCA). These subjects are addressed below in an effort to develop applicable remediation goals that consider public health risk and water quality

3.1 Site Water Quality Goals and Protection Standards

Since petroleum hydrocarbon impact is restricted to groundwater, and surface water is not threatened, only groundwater is considered here. Guidance for developing water quality goals and protection standards was obtained from: *A Compilation of Water Quality Goals* (Marshack, 1993); and State Board Resolutions 68-16, 88-63 and 92-49 (Draft Version, January 18, 1995). The development of site-specific water quality restoration goals and protection standards begins with identification of beneficial uses.

The existing and potential beneficial uses of groundwater underlying the site include municipal and domestic supply (potential use may require treatment to reduce salt levels), and agricultural supply. Comprehensive water quality protection standards are meant to protect the relevant beneficial uses of ground and surface water, while water quality goals are used as a benchmark for water quality restoration. To develop water quality restoration goals and protection standards, it is recognized that working to restore or protect the beneficial use with the most stringent numeric water quality goals will protect or restore all other uses. Below, site specific water quality protection standards and restoration goals are developed.

3.1.1 Water Quality Protection Standards

In general, water quality protection standards focus on protecting the existing water quality, whenever that water quality is better than that required to protect all present and potential beneficial uses (Resolution 68-16). Numeric water quality standards based on Resolution 68-16

are associated with the background levels, which in turn are subject to the reasonable limit of detection for the residual constituent of concern. As previously indicated, the constituents of concern are TPHg, TPHd, BTEX, and MTBE. Parameters mentioned in the regional basin plan that are not relevant to the development of water quality protection standards for the site are: pH; electric conductivity; total dissolved solids; chloride; total oil and grease; metal contaminants; and volatile organics. These parameters are either: (1) not found beneath the site (i.e., total oil and grease); (2) not associated with impact identified beneath the site (i.e., pH, total dissolved solids); or (3) naturally occurring (i.e., metals). Reasonable limits of detection for the residual target compounds found beneath the site are shown below.

Compound	Concentration (parts per billion)
Benzene	0.5
Toluene	0.5
Ethylbenzene	0.5
Xylenes	0.5
MTBE	5.0
TPHg/TPHd	50

Where groundwater degradation has occurred, Resolution 68-16 may not strictly apply. This is because the existing water quality within the residual plume boundary does not warrant protection; in other words, the residual plume water quality is not better than that required to protect all other beneficial water uses It seems reasonable to presume that protection, the primary objective of Resolution 68-16, pertains only to water outside the residual plume boundary. The ramification of this interpretation is that flow (or discharge) of groundwater across the residual plume boundary with residual concentrations greater than those identified above, is not consistent with Resolution 68-16. Locating the exact position of the residual plume boundary is difficult; but the general configuration of the plume can be monitored. Consequently, it is proposed that a compliance boundary be established that encompasses the current plume configuration. The compliance boundary should allow for a reasonable downgradient attenuation zone. The water quality protection standards will apply to groundwater outside the compliance boundary. This feature is consistent with State and Regional Board policy.

3.1.2 Water Quality Restoration Goals

Within the compliance boundary, where background groundwater conditions do not warrant protection, restoration takes precedent. Numeric water quality goals for the residual plume are associated with restoring the relevant beneficial water use that restores all other relevant uses. To identify numeric goals, the relevant beneficial water use with the most stringent set of numeric

water quality goals is identified. Resolution 88-63 provides relevant guidance, as does California Code of Regulations, Title 22.

Resolution 88-63 specifies that all groundwater is suitable for municipal and domestic supply, unless conditions preclude its use. Since groundwater conditions beneath the site do not preclude its possible use as a municipal and domestic supply, numeric water quality goals associated with restoring this use pertain to the residual plume. Municipal and domestic supply is the relevant beneficial use with the most stringent set of water quality goals. The water quality goals are noted below.

Compound	Concentration (parts per billion)	Source
Benzene	1	California Maximum Contaminant Levels
Toluene	1,000	Federal Maximum Contaminant Levels
Ethylbenzene	680	California Maximum Contaminant Levels
Xylenes	1,750	California Maximum Contaminant Levels
TPHg/TPHd	1,000	Taste and Odor Threshold

The state of California has not yet developed water quality goals for MTBE. The Environmental Protection Agency has provided some guidance in a document entitled *Drinking Water Advisory: Consumer Acceptability Advice and Health Effects Analysis on Methyl tertiary-Butyl Ether* which recommends MTBE concentrations of 20 to 40 ppb as an appropriate taste and odor threshold. likely lower

It should be noted that other conditions may make the use of shallow occurring groundwater for municipal and domestic supply unlikely. As such, use as a drinking water source may necessitate water treatment; regardless of petroleum hydrocarbon impact.

The aforementioned water quality restoration goals apply to the site during remediation and beyond; however, they may be modified at any time if it can be shown that changes are: (1) consistent with the maximum benefit to the people of the State; and (2) will not unreasonably affect present or probable future beneficial uses of groundwater.

To summarize, water quality protection standards and water quality restoration goals were developed. Water quality protection standards were established to protect unaffected

groundwater outside the dissolved hydrocarbon plume (proposed compliance boundary). Water quality restoration goals were specified to direct restoration of affected groundwater within the compliance boundary.

Dave Cooper 650-968-9412

3.2 Health Risk Based Goals

For consistency with recent regulatory policy, an ASTM RBCA evaluation was applied for the development of corrective action goals. Figure 2 (Exposure Evaluation Flowchart) of the standard was used to characterize primary and secondary sources, transport mechanisms, exposure pathways, and receptors. Given the exposure pathway and exposure scenario, Table X2.1 was initially consulted to identify Tier 1 risk-based screening levels (RBSLs) for the constituents of concern. Since site specific groundwater concentrations exceeded the ASTM Tier 1 RBSLS (adjusted for the California benzene carcinogenic potency value), a higher level assessment was completed to address site specific risk- based corrective action goals. Appendix A contains a description of methods and results of the site specific risk-based concentration (RBC) calculations.

3.2.1 Data Collection

During July of 1998, additional site data was collected to support the Site CAP. Soil samples collected at 5 feet bgs from SB-1, 2, 3, and SB-6 were analyzed for total porosity, moisture, and organic carbon content. In addition, soil vapor samples were collected from SB-1, SB-3, and SB-6 at a depth of 5 feet bgs, and analyzed for TPHg and BTEX compounds. The table below summarizes the results of the additional data collected and analytical results are included in Appendix A of this document.

?

calculation

Parameter	SB-1-5	SB-2-5	SB-3-5[a]	SB-6-5
Total Porosity	.349	.366	.782	.347
Saturation %	.998	.828	.024	.777
Moisture Content (cm^3/cm^3)	.348	.303	.019	.270
Air Porosity (cm^3/cm^3)	.0007	.063	.763	.0775
Foc	.012	.015	.011	.022
Vapor Conc. (mg/m^3)	22 TPHg .10 benzene .27 toluene .99 xylene	NS	ND	.11 toluene

Table notes: a. Disturbed sample. NS = not sampled ND = not detected; detection limits for TPHg was 10 mg/m^3 d for benzene, toluene, ethyl benzene(BTE) 0.10 mg/m^3, f or xylenes 0.3 mg/m3.

3.2.2 Calculation of Risk Based Clean Up Goals

Exposure Pathways & Receptors

Four exposure pathways are noted on the ASTM Exposure Evaluation Flowchart. They include soil ingestion/skin absorption; inhalation; potable water use; and recreation use/sensitive habitat. Inhalation of secondary source hydrocarbons was considered the only complete exposure pathway. Calculations incorporated the commercial receptor scenario since the site is currently used as an automotive repair facility, and it planned use for automotive repair and fuel dispensing operations.

Calculation Methods

The calculation of a site specific risk based remedial goals incorporate site specific data, exposure parameters and exposure point estimation with a toxicity value for the chemical of interest to obtain a chemical concentration in the groundwater or soil which equates to an acceptable risk level.

For the groundwater and soil to indoor air exposure pathway, volatilization factors (VF) from ASTM are used. VFs are expressions which define the relationship between the dissolved chemical concentration in groundwater (or sorbed soil concentration) and the volatilized chemical vapor concentration (exposure point) within the occupied space. VFs are infinite source methods which assume there is no mass loss due to volatilization and/or biodegradation over the exposure period. VFs incorporate site specific parameters for porosity, moisture content, and diffusion path length.

Methods used to calculate chemical intakes for chronic exposure, or chronic daily intakes (CDIs), are described in Risk Assessment Guidance (RAGS) (U.S. EPA 1989a) and Department of Toxic Substances Control (DTSC) supplemental guidance (CALEPA 1992). For the commercial exposure scenario, the default body weight of 70 kg, an exposure duration of 25 years, and default inhalation rate of 20 m^3 is assumed for indoor workers

Results

Estimated risk based remedial goals were calculated setting the target carcinogenic risk to 10E-05 and the non-carcinogenic hazard index to unity. Calculations and parameters are described in Appendix A. RBCs for soil are average column concentrations for the chemical of concern. With an increasing diffusion path (thicker layer of clean soil above the zone of impact), RBCs for soil will increase. The RBCs for groundwater are average groundwater concentrations for the aerial extent of the plume.

2000 ppb
X 0.22
= 440 Ug/L
= Ug/m³
440 X 1000 = [440000]
Ug/m³

Risk Based Soil and Groundwater Concentrations (RBCs)

For a Carcinogenic Risk of 10E-05 or Hazard Index of Unity

	RBC Soil (mg/kg)	RBC Groundwater (mg/l)
Benzene	0.5 @ 8 ft 0.8 @ 15 ft 1@ 20 ft	2
Toluene	464	520
Ethyl benzene	917*	1269*
Xylenes	9822*	5833*
MTBE	1667	14,998

Table notes: * exceeds the sorptive limits of soil or exceeds the solubility of the compound

440,000
100,000 reduction to get 1 ft

Measured Soil Vapor Concentrations versus Calculated Vapor Concentrations

Using site specific parameters and the risk based soil and groundwater concentrations specified in the table above, ASTM VFs were used to calculate vapor concentrations at a depth of 5 ft bgs. The resultant risk based vapor concentrations are compared to the maximum detected vapor concentrations from SB-1-5 in the table below. The soil vapor data suggests RBCs are conservative.

Risk –Based Vapor Concentrations versus Measured Vapor Concentrations

	Predicted Vapor Concentration (mg/m^3)	Measured Vapor Concentration (mg/m^3)
Benzene	68 68000 ug/m³	0.1
Toluene	20,540	0.27
Ethyl benzene	56,400	<0.1
Xylenes	386,500	99

seems high

24 mg/m³

RBSL's Draft for 15

3.3 Site Public Health and Safety Goals

According to guidance presented in Title 23, Chapter 16, Article 11 of the California Code of Regulations (CCR), any remediation approach considered must be designed to mitigate nuisance conditions and risk of fire or explosion posed by residual hydrocarbon impact To assure remedial objectives address the requirements of Article 11, site-specific public health and safety goals are necessary. The site-specific goal is calculated in order to eliminate any threat to public health and safety associated with subsurface hydrocarbon impact, including the potential threat posed by nuisance conditions and risk of fire or explosion. Additionally, use of, or exposure to, hydrocarbon impacted groundwater or soil will be restricted.

3.4 Application of Corrective Action Goals

In the preceding discussion, the following corrective action goals were identified: water quality protection standards; water quality restoration goals; groundwater RBCs; soil RBCs; and public health and safety goals. All these goals are relevant, but they need to be applied in a consistent manner. Application of each set of goals is proposed below.

Water Quality Protection Standards: These apply to unaffected groundwater outside the dissolved hydrocarbon plume. Compliance with water quality protection standards requires that the dissolved hydrocarbon plume is stable, and that intrinsic attenuation mechanisms (i.e., biodegradation, absorption/adsorption, and chemical reactions) work to control contaminant migration. If evidence suggests the dissolved hydrocarbon plume is expanding, then action may be required to remain in compliance with protection standards. The time frame for compliance with water quality protection standards should be consistent with groundwater flow velocities within preferential flow paths.

Water Quality Restoration Goals: These goals apply to the dissolved hydrocarbon plume and serve as a restoration baseline. They may be achieved by active remediation (e.g., air sparging) or by intrinsic remediation (e.g., biodegradation). There are no specific time constraints on meeting water quality goals; if there is pressure to use the impacted groundwater before water quality goals are met, well head water treatment can be applied. Also, as long as water quality protection standards are being complied with, only public health and environmental protection concerns related to the dissolved hydrocarbon plume are relevant.

Groundwater RBCs: These directly relate to public health concerns associated with the dissolved hydrocarbon plume. As such, compliance with groundwater RBCs should be achieved as soon as practical. It is possible to be in compliance with groundwater RBCs without being in compliance with water quality restoration goals. According to recent regulatory guidelines, a site groundwater contamination case may be considered low-risk if certain conditions are met (among them compliance with RBCs). If it can be shown that water quality protection standards will be complied with (evidence of a stable dissolved hydrocarbon plume), and that water quality restoration goals will be achieved (evidence of biodegradation and/or plume attenuation), then a low-risk groundwater case may be closed.

Soil RBCs: As with groundwater RBCs, these directly relate to public health concerns associated with hydrocarbon-affected soil. Accordingly, the conditions described for groundwater RBCs apply for soil RBCs. It is important to note that the potential for leachate from impacted soil to enter the groundwater is considered, but not necessarily with a focus on water quality goals or protection standards. Instead, the focus is typically on groundwater RBCs. It is possible for soil RBCs to be achieved in such a way that leachate from that soil meets groundwater RBCs, but does not meet water quality restoration goals or protection standards.

Public Health and Safety Goals: These goals are closely related to groundwater and soil RBCs. Because of this, achievement of RBCs assure compliance with public health and safety goals.

4.0 CORRECTIVE ACTION REQUIREMENTS

To identify corrective action requirements and develop remedial objectives, current site conditions are compared to those necessary to achieve the site-specific corrective action goals outlined in the previous section. Where goals are achieved, remedial action is not required; conversely, where goals are not achieved, action may be required. In this section, corrective action requirements are specified.

Review of data for the three previous groundwater monitoring events reveals that groundwater quality within the area defined by Wells MW-1, MW-2, MW-3, MW-5, MW-6, MW-8, and MW-10 did not meet water quality restoration goals. During the past three quarters, the following water quality restoration goals for groundwater were exceeded; TPHg goals (1,000 ppb) were exceeded at Wells MW-2, MW-3, MW-6, MW-8, and MW-10; benzene goals (1 ppb) were exceeded at Wells MW-1, MW-2, MW-3, MW-5, MW-6, MW-8, and MW-10; toluene goals (1,000 ppb) and ethylbenzene goals (680 ppb) were exceeded at Wells MW-3 and MW-8; xylene goals were exceeded at Wells MW-3, MW-6, and MW-8; TPHd goals (1,000 ppb) were exceeded at Wells MW-2, MW-3, MW-6, and MW-8.

Considering groundwater RBCs, concentrations of benzene at wells MW-3, MW-6, and MW-8 exceeded the benzene RBC of 2 mg/l during the past three groundwater monitoring events. Groundwater RBCs for toluene, ethylbenzene, and xylenes were not exceeded during the past three groundwater monitoring events. A review of soil chemistry data indicates that the average benzene soil column concentration in the area of impact as defined in Section 2.2.3 , is above the soil RBC of 0.49 mg/kg. However, soil vapor samples collected directly over impacted soils and groundwater suggest that current site risks are negligible.

With respect to the site public health and safety goal, there is no apparent condition that could be construed as a nuisance and there are no risks of fire or explosion. At this time, the site public health and safety goal is achieved and no associated corrective action is necessary. The public health and safety goal would be compromised if use of, or exposure to, groundwater within the compliance boundary was allowed. Also, the public health and safety goal could be compromised if extensive excavation occurred in the area of soil impact.

5.0 CORRECTIVE ACTION

5.1 Corrective Action Objectives

Objectives are identified to provide direction in developing the corrective actions necessary to achieve remediation goals. Objectives also serve as a baseline for measuring achievement. Soil- and groundwater-based objectives are identified below.

- **Groundwater:** Within technical and economic constraints: (1) achieve the groundwater RBCs; (2) prevent or facilitate the use of, or exposure to, impacted groundwater until groundwater quality restoration goals are met; and (3) maintain compliance with groundwater protection standards.
- **Soil:** Within technical and economic constraints, achieve the soil RBC for benzene.

The groundwater-based remedial objectives apply to groundwater beneath the site, and off-site. Groundwater delineation has been nearly completed, and the petroleum hydrocarbon plume boundaries have been adequately defined. The soil-based objective applies to a specific soil volume that is situated approximately 10 to 20 feet bgs (at the capillary fringe). Laterally, residual soil impact appears to be restricted to the area adjacent, cross-gradient, and downgradient to the former subsurface gasoline storage tanks.

Achievement of soil- and groundwater-based objectives will be subject to technical and economic constraints; therefore, modifications to remediation goals (and associated remedial objectives) may be necessary. Remedial objective achievement will be evaluated through analysis of data resulting from implementation of the recommended remedial alternative.

5.2 Technology Identification and Screening

The general response actions necessary to achieve the remedial objectives are:

1. Manage the dissolved petroleum hydrocarbon plume.
2. Manage the risk of exposure to impacted groundwater and soil.
3. Reduce the mass of petroleum hydrocarbons identified in groundwater and soil.

The general response actions are used to focus the transition from remedial objectives to technological applications. Each response action addresses one or more of the remedial objectives. The proposed strategy for effecting the general response actions and achieving the remedial objectives is outlined below.

- Utilize physical remediation techniques, within technical and economic constraints, to achieve RBCs.
- Document the occurrence of biodegradation at the site.
- Utilize institutional controls to restrict exposure to subsurface hydrocarbon impact.
- In the long-term, rely on natural biodegradation to achieve groundwater restoration and maintain compliance with groundwater protection standards.

5.2.1 Technology Screening

To identify applicable technologies, key site conditions must be considered. These conditions were outlined as part of the conceptual site model. Resolution 92-49 was consulted for applicable technologies, as was available literature. Only technologies that would apply to site-specific conditions were considered, and technologies were eliminated from further consideration on the basis of implementability. Technologies that passed the screening process and were found suitable for constructing remedial alternatives are:

(1) • Excavation and Aeration/Disposal
(2) • Soil Vapor Extraction
(3) • Bioventing/Air Injection Soils in cap fringe & saturated zone not affected
(4) • Intrinsic (Natural) Remediation
- Thermal Oxidation
- Carbon/Resin Adsorption } gw extraction
- Remediation Monitoring/Data Collection } required regardless
- Institutional Control

Remediation monitoring/data collection was chosen in association with all the response actions identified. Monitoring will provide information necessary to manage the dissolved hydrocarbon plume, evaluate remediation progress, and demonstrate intrinsic remediation. The aforementioned technologies were chosen because they are either established mass removal technologies, or facilitate intrinsic attenuation mechanisms. Thermal oxidation and carbon/resin adsorption were considered in conjunction with mass removal technologies that would result in discharges of

hydrocarbon-affected media (i.e., soil vapor and groundwater). Finally, institutional control was selected as a method to prevent use of, or exposure to, impacted groundwater.

5.3 Recommended Remedial Alternative

According to CCR Title 23, Chapter 16, Article 11, at least two alternatives must be identified and evaluated for restoring or protecting beneficial water uses. In addition, each alternative must be designed to mitigate nuisance conditions and risk of fire or explosion. Alternatives are briefly described below beginning with elements common to all alternatives.

5.3.1 Elements Common to Alternatives

- **Remediation Monitoring.** Remediation monitoring is an aspect of the existing site remediation program, and will continue to be a key aspect of any remedial alternative. In addition to the current monitoring program, remediation monitoring will be performed to maintain compliance with any implementation permits, and to evaluate progress toward attaining the remedial objectives. Also, monitoring will be used as a tool to manage the dissolved hydrocarbon plume and risk of exposure to subsurface impact.
- **Institutional Control.** This management technology will be used to reduce the possibility of exposure to petroleum hydrocarbon-affected media at, or from, the site. Generally, this is accomplished by restricting access to impacted media. For example, since impacted groundwater will persist for some time during remediation, use would be restricted by prohibiting installation of drinking water wells at, or near, the site.

5.3.2 Alternative 1: Excavation and Aeration or Disposal

This alternative consists of excavating hydrocarbon impacted soils exceeding the soil based RBCs. Excavation would be limited by on-site structures and underground utilities. Excavated materials would then either be aerated and backfilled into the excavation or transported off-site for proper disposal. New fill would be used to fill the excavation as necessary; soil would be compacted in lifts and tested for density. The graded soil surface would be paved. Soils that were previously excavated would also be transported off-site for disposal.

The United States Environmental Protection Agency (EPA) suggests that excavation with off-site landfill disposal should be considered for small soil volumes (less than 1,000 cubic yards) with high contaminant concentrations. The benefits of this alternative are that it is relatively quick to implement and it is relatively effective for small accessible areas. The results of this alternative are almost immediately available; hydrocarbon concentrations in the remaining soils are easily determined. Limitations of this alternative include: contaminants are moved - not treated, the alternative is not cost effective for large soil volumes or soil with low impact concentrations;

physical site conditions (structures) may determine the limits of the excavation; and the alternative can pose long term liability associated with landfill disposal.

5.3.3 Alternative 2: Bioventing/Air Injection

Application of this alternative would require installation of an air injection system, a soil vapor extraction system, and a vapor abatement unit. Air injection and vapor extraction flow rates would be optimized to enhance mass transfer and biodegradation. Operational flexibility is proposed as a means to address seasonal groundwater elevation changes and to maximize biodegradation. During periods of high groundwater elevation, air injection and soil vapor extraction flow rates would be minimized; during periods of low groundwater elevation, soil vapor extraction flows would be increased. These actions will optimize biodegradation and maintain mass transfer at the capillary fringe and in the vadose zone.

This technique is able to treat large volumes of soil and groundwater effectively with minimal disruption to property use. Advantages of this alternative are that it treats both groundwater and soils, it is effective on low and high molecular weight hydrocarbons, and treatment times are relatively short (6 months to one year under optimal conditions). Disadvantages include the cost to build, maintain, and operate the system; and the expense of soil vapor treatment (it requires specialized equipment with sophisticated control capability, and it requires complex monitoring and control during operation). It has been Toxichem's experience that, given a proper design and optimal operation, the effectiveness of this alternative is exhausted within a 2 year period.

5.4 Alternative Evaluation

Technical, institutional, environmental safety, and economic criteria were used to evaluate the alternatives. Because some remedial alternative elements are common to both alternatives, only the characteristic elements (described above) were considered during the evaluation process. It was determined that Alternative 1 was the most feasible for long-term application. Alternative 1 was chosen on the following basis:

Technical. Technical criteria considerations included: short- and long-term effectiveness; reduction in the toxicity, mobility, and volume of affected media; and implementability. With regard to implementability, Alternative 1 is favored over Alternative 2 because the lead time for planning and implementation of Alternative 1 is more expeditious than for Alternative 2. In terms of effectiveness, Alternative 1 is anticipated to be more effective in the short-term. This is because the excavation and removal of hydrocarbon impacted soils would be accomplished in a shorter period of time than for bioventing and air injection.

Over the long-term, Alternatives 1 and 2 approach parity because bioventing/air injection will eventually complete remediation. However, it is important to note that the term of remediation associated with Alternative 1 is shorter. Both alternatives allow for a reduction in toxicity, mobility, and volume of hydrocarbon-affected media.

Based on the foregoing discussion, Alternative 1 appears to be the most appropriate for implementation with respect to technical criteria. The application of Alternative 1 would result in accelerated implementation, short term effectiveness is greater for Alternative 1 than for Alternative 2, and long term effectiveness is equal for each of the alternatives.

Institutional. It is anticipated that implementation of Alternatives 1 or 2 would be consistent with applicable, relevant, and appropriate requirements. The regulatory community favors active treatment at sites that are not defined as low risk soils and/or groundwater cases. Because of factors described above, Alternative 1 and Alternative 2 rated equally with respect to institutional criteria.

Human Health and Environmental Protection. Both of the alternatives provide protection of human health and the environment; however, when compared to Alternative 2, implementation of Alternative 1 would increase the potential for exposure to hydrocarbon-affected media and risk of injury. The increase in risk stems from excavation and backfilling activities and transporting relatively isolated hydrocarbon compounds to the surface for treatment. On this basis, Alternative 2 was favored over Alternative 1.

Economic. Based on economic analyses, the alternatives were ranked from most economical to least economical. It was estimated that implementation of Alternative 1 would cost up to $106,000 considering 1,150 cubic yards of excavated soil, an estimated half of which will require disposal at a cost of up to $185 per cubic yard for disposal. Alternative 2 is associated with moderate capital outlay, and a longer operation period. It was estimated that the implementation of Alternative 2 would cost $200,000. The project life span for Alternative 2, with respect to active remediation, was assumed to be 24 months. The most cost-effective alternative will minimize the burden of remediation on the people of the State, and on this basis Alternative 1 was ranked over Alternative 2.

Show calc for estimate.

GW would still be [illegible]

In summary, Alternative 1 was found to be the most applicable because: (1) it is known to be effective, (2) short term effectiveness is greater than for Alternative 2, and (3) the resource cost to the public is more reasonable than that for Alternative 2. Based on the information provided herein, Toxichem recommends implementation of Alternative 1.

5.5 Recommended Alternative Implementation

Tasks necessary for implementation of the recommended corrective action are outlined below.

- **Characterize Soils for Excavation Limits and for Landfill Profiling:** This action has been completed as of July 1998. Based on the results of the analyses, a soil excavation plan will be prepared and soils will be pre-profiled into an appropriate landfill.
- **Implement a Free Product Recovery Program:** Immediately install a free product skimmer and implement a free product removal program in concert with the current quarterly monitoring program. OK

- **Locate Underground Utilities:** Prior to soil excavation activities at the site, all underground utility and piping lines will be marked at the surface using both Underground Service Alert and a private utility locator .

- **Excavate and Transport Impacted Soils:** Subsequent to landfill determination and analysis of the limits of excavation, soils shall be excavated and either; (1) set aside for backfilling as for the overburden materials, (2) set aside for aeration and backfilling as for minimally impacted soils, or (3) off-hauled to an appropriate predetermined landfill.

- **Removal and Treatment of Groundwater:** A plan shall be developed that will provide for the removal, treatment, and discharge of standing water within the excavation.

- **Implementation of a Post Excavation Sampling Plan:** After the limits of the excavation are achieved, a sampling plan will be utilized to determine the residual hydrocarbon concentrations remaining in soils.

- **Excavation Backfilling and Compaction Testing:** Subsequent to soil excavation activities, the excavation will be backfilled either with overburden materials, aerated soils, or imported fill. Compaction will occur in accordance with building requirements as fill material is placed within the excavation. The backfilled excavation will be covered with concrete and/or asphalt to match existing surfaces.

- **Establish an Institutional Controls Plan:** At the close of active remediation, an Institutional Controls Plan would be specified based on post-remediation subsurface conditions, regulatory input, and property owner input.

- **Groundwater Monitoring:** Groundwater monitoring shall continue, and up to one year of post-remediation monitoring would be provided to document trends. At minimum, groundwater monitoring would take place twice a year, at the close of the wet and dry seasons. After post-remediation groundwater monitoring is complete, case closure would be applied for.

1 yr monitoring is minimum

5.6 Implementation Schedule

Implementation of the excavation program will commence at the time the site owner operator is ready to install new fuel tanks. A Use Permit, for fueling operations, has been applied for by the site owner/operator.

TABLES, FIGURES, AND APPENDICES

TABLES

Table 1 - Summary of Soil Analytical Data for Groundwater Monitoring Wells and Soil Borings
Table 2 - Summary of Groundwater Monitoring and Sampling Data

FIGURES

Figure 1 - Site Location Map
Figure 2 - TPHg/Benzene Concentrations in Soil Borings and Monitoring Wells
Figure 3 - Groundwater Elevation Contour Map
Figure 4 - TPHg/Benzene Concentration Map
Figure 5 - Geologic Cross Section Location Map
Figure 6 - Geologic Cross Section A-A'
Figure 7 - Geologic Cross Section B-B'

APPENDICES

Appendix A - RBCA Analysis
Appendix B - Field and Laboratory Procedures

Table 1
Summary of Soil Analytical Data for Groundwater Monitoring Wells and Soil Borings

Former Texaco Facility
3810 Broadway
Oakland, California

Boring/ Well Number	Consultant	Date Sampled	Sample Depth (feet)	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)	Total Hydrocarbons (ppm)	Oil and Grease (ppm)
MW-1	HZ	10/17/91	10.5	ND	ND	ND	ND	ND	NA	ND	ND
			15.5	NA	NA	NA	NA	NA	NA	ND	ND
			20.5	NA	NA	NA	NA	NA	NA	ND	ND
			25.5	NA	NA	NA	NA	NA	NA	ND	ND
MW-2	HZ	01/28/92	30	ND	ND	ND	ND	ND	NA	ND	ND
B-1	M/H	09/11/95	12.5	310	0.15	0.29	6.2	31.2	NA	NA	NA
			19	3,600	33.0	310	67	361	NA	NA	NA
			26.5	1.1	0.27	0.06	0.018	0.023	NA	NA	NA
B-2	M/H	09/11/95	12 5	3.1	0.69	0.11	0.69	0.103	NA	NA	NA
			16.5	2,200	15 0	120	37	445	NA	NA	NA
			26.5	<1	<0 005	0.011	<0.005	<0.005	NA	NA	NA
B-3	M/H	09/12/95	27	<1	<0.005	<0.005	<0.005	<0.005	<1	NA	NA
B-4	M/H	09/11/95	12.5	83	0.06	<0.050	1.2	7.2	NA	NA	NA
			18	4,800	3.8	44	18	101	NA	NA	NA
			26.5	19	0.52	0.078	0.039	0.07	<20	NA	NA
B-5	M/H	09/12/95	12.5	4,800	48	390	93	466	NA	NA	NA
			29 5	<1	0.055	0.009	<0 005	<0 005	NA	NA	NA
B-6	M/H	09/12/95	29	<1	<0 005	<0 005	<0.005	<0.005	NA	NA	NA
MW-3	M/H	10/26/95	8.5	65,000	88	550	140	690	NA	NA	NA
			15.5	2.8	<0.005	0 027	0.0064	0.0265	NA	NA	NA
			19.5	6.2	1.3	1.5	0.11	0 43	NA	NA	NA
MW-4	M/H	10/26/95	29	<1	<0 005	<0.005	<0.005	<0.005	NA	NA	NA
MW-5	FD	09/19/96	5	<1	<0.005	<0.005	<0.005	<0.005	<10	NA	NA
			15	<1	<0 005	<0.005	<0 005	<0 005	<10	NA	NA
			20	<1	<0.005	<0.005	<0:005	<0.005	<10	NA	NA
			25	<1	<0.005	<0 005	<0.005	<0.005	<10	NA	NA
			35	<1	<0 005	<0.005	<0.005	<0.005	<10	NA	NA
MW-6	FD	09/19/96	5	<1	<0.005	<0.005	<0 005	<0 005	<10	NA	NA
			15	<1	0.032	<0.005	<0.005	<0.005	<10	NA	NA
			20	<1	0.027	<0 005	<0.005	<0.005	<10	NA	NA
			25	<1	0.110	0.0053	0.0058	0 0094	<10	NA	NA
			35	1.3	<0.005	0.010	0 014	0.120	<10	NA	NA
MW-7	FD	09/19/96	5	<1	<0.005	<0.005	<0.005	0.089	<10	NA	NA
			15	<1	<0.005	<0.005	<0.005	<0.005	<10	NA	NA
			20	<1	<0 005	<0.005	<0.005	<0 005	<10	NA	NA
			25	<1	<0.005	<0.005	<0.005	<0.005	<10	NA	NA
			35	<1	<0.005	<0.005	<0.005	<0.005	<10	NA	NA

Table 1

Summary of Soil Analytical Data for Groundwater Monitoring Wells and Soil Borings

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3810 Broadway
Oakland, California

Boring/ Well Number	Consultant	Date Sampled	Sample Depth (feet)	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)	Total Hydrocarbons (ppm)	Oil and Grease (ppm)
MW-8	FD	09/19/96	5	120	0 77	3 5	1.2	7.3	<10	NA	NA
			15	520	2.6	0 66	5 6	10	<10	NA	NA
			20	14,000	25	7.1	160	840	53	NA	NA
			25	53	0.08	0.63	0.20	1.1	<10	NA	NA
			35	<1	<0.005	<0.005	<0.005	<0.005	<10	NA	NA
MW-9	FD	09/19/96	5	11	<0.005	<0.005	<0.005	<0.005	62	NA	NA
			15	<1	<0.005	<0.005	<0.005	<0.005	<10	NA	NA
			20	<1	<0.005	<0.005	<0.005	<0.005	69	NA	NA
			25	<1	<0.005	<0.005	<0.005	<0.005	<10	NA	NA
			35	<1	<0 005	<0 005	<0 005	<0 005	<10	NA	NA
MW-10	FD	09/19/96	5	<1	<0 005	<0.005	<0.005	<0.005	<10	NA	NA
			15	<1	<0.005	<0 005	<0.005	<0.005	<10	NA	NA
			20	<1	<0.005	<0.005	<0.005	0 025	<10	NA	NA
			25	<1	<0 005	<0 005	<0.005	<0.005	<10	NA	NA
			35	<1	<0.005	<0.005	<0.005	<0 005	<10	NA	NA
SB-1	RRM	07/03/98	8	430	2 8	5.0	4.8	23	NA	NA	NA
SB-2	RRM	07/03/98	14	2,900	16	19	54	250	NA	NA	NA
SB-3	RRM	07/03/98	14	<1.0	<0.0050	<0 0050	<0.0050	<0.0050	NA	NA	NA
SB-4	RRM	07/03/98	15	<1.0	<0 0050	<0 0050	<0.0050	<0.0050	NA	NA	NA
SB-5	RRM	07/03/98	8	<1 0	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA
SB-6	RRM	07/03/98	10	<1.0	<0 0050	<0.0050	<0.0050	0.0087	NA	NA	NA

Notes:

TPH = Total petroleum hydrocarbons
ppm = Parts per million
HZ = Harza Kaldveer
M/H = McLaren/Hart
FD = Fluor Daniel GTI
RRM = RRM, Inc

Table 2
Summary of Groundwater Monitoring and Sampling Data

Former Texaco Service Station
3810 Broadway
Oakland, California

Well Number	Date Sampled	Top of Casing Elevation (feet, MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet, MSL)	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MTBE (ppb)	TPH as Diesel (ppb)
MW-1	10/19/91		NA	NA	300	4.1	ND	ND	20	NA	1,700
	01/30/92		NA	NA	80	0.7	0.5	ND	2	NA	670
	11/03/95	86.69	22.98	63 71	<50	<0.3	<0.3	0.36	<0.3	NA	NA
	06/28/96	86 69	21.77	64.92	<100	<0.5	<1.0	<1.0	<2.0	NA	<50
	10/10/96		23.26	63.43	520	9.2	53	17	70	16	<400
	11/07/96		23.27	63.42	NA	NA	NA	NA	NA	NA	NA
	12/18/97		19.70	66.99	2,200	<3	<3	<3	<3	<200	<50
	04/06/98		16.88	69.81	1,600	16	0.8	<0.5	<0.5	38.3	<50
	06/18/98		19.78	66.91	330	7.8	<0.5	<0.5	<0.5	<0 5	280
MW-2	01/30/92		NA	NA	4,000	470	560	160	540	NA	ND
	11/03/95	85.96	22.26	63.70			Separate Phase Hydrocarbons present				
	06/28/96	85.83	22.10	63 73			1.35 feet Separate Phase Hydrocarbons				
	10/10/96		22.36	63.47	99,000	4,100	9,400	2,300	9,900	<25	1,800
	11/07/96		22.39	63.44			0.01 foot Separate Phase Hydrocarbons				
	12/18/97		20.19	65.64	24,000	600	1,800	750	2,400	<2,000	4,700
	04/06/98		18.00	67.83	20,100	252	448	430	1,410	<200	9.5
	06/18/98		19.63	66.20	20,000	240	370	270	790	<50	5,200
MW-3	11/03/95	83.43	19.40	64.03	67,000	12,000	15,000	980	4,700	NA	NA
	06/28/96	83.18	19.04	64.14			1.45 feet Separate Phase Hydrocarbons				
	10/10/96		19.51	63.67	110,000	6,600	16,000	2,200	12,000	<250	1,200
	11/07/96		19.40	63 78			0.01 foot Separate Phase Hydrocarbons				
	12/18/97		18.79	64.39	180,000	1,500	16,000	4,600	23,000	<3,000	6,100,000
	04/06/98		16.58	66.60			0.05 foot Separate Phase Hydrocarbons				
	06/18/98						Separate Phase Hydrocarbons present				
MW-4	11/03/95	83.62	19.89	63.73	<50	<0.3	<0.3	<0.3	<0.3	NA	NA
	06/28/96	83.31	18.83	64.48	<100	<0.5	<1.0	<1.0	<2.0	NA	<50
	10/10/96		19.84	63.47	850	3.9	65	22	120	<5 0	<50
	11/07/96		19.84	63.47	NA	NA	NA	NA	NA	NA	NA

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	12/18/97		17.77	65.54	<50	<0.5	<0.5	<0.5	<0.5	<30	2,000
	04/06/98		15.45	67.86	<50	<0.5	<0.5	<0.5	<0.5	<30	<50
	06/18/98		16.89	66.42	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<50
MW-5	10/10/96	85.41	21.93	63.48	1,800	34	4.7	11	44	5.0	<50
	11/07/96		21.96	63.45	NA	NA	NA	NA	NA	NA	NA
	12/18/97		19.81	65.60	1,200	15	<1	15	<1	72	<50
	04/06/98		17 43	67.98	1,600	16	1	<0.5	<0.5	38	<50
	06/18/98		19 15	66.26	110	7	<0.5	<0.5	<0.5	<0.5	100
MW-6	10/10/96	86.09	22.44	62.97	45,000	8,300	2,900	810	3,100	40	500
	11/07/96		22.60	62 81	NA	NA	NA	NA	NA	NA	NA
	12/18/97		22.28	63.13	60,000	12,000	9,800	1,800	8,600	<2,000	1,900
	04/06/98		19.90	65.51	30,500	5,950	3,720	952	3,750	<1,000	<50
	06/18/98		20.49	64.92	23,000	2,600	540	410	1,300	<250	1,100
MW-7	10/10/96	84.11	20.78	63.33	<50	0.6	<0.5	<0.5	<0.5	<5.0	<50
	11/07/96		20.80	63.31	NA	NA	NA	NA	NA	NA	NA
	12/18/97		17.27	66 84	<50	<0.5	<0 5	<0.5	<0.5	<5.0	<50
	04/06/98		15 91	68.20	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<50
	06/18/98		17.95	66.16	<50	<0.5	<0 5	<0 5	<0 5	<0.5	<50
MW-8	10/10/96	84.01	20.82	63.19	17,000	1,300	1,200	64	1,300	<5.0	110
	11/07/96		20.44	63.57	NA	NA	NA	NA	NA	NA	NA
	12/18/97		19.36	64.65	15,000	3,600	1,800	410	930	<600	630
	04/06/98		16.19	67.82	32,300	8,230	5,900	718	2,120	<1,000	<50
	06/18/98		17.75	66.26	74,000	5,400	4,500	700	2,200	<50	2,400
MW-9	10/10/96	82.17	18.62	63.55	80	3	13	2	13	<5.0	<50
	11/07/96		18.64	63.53	NA	NA	NA	NA	NA	NA	NA
	12/18/97		16.42	65.75	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<50
	04/06/98		14.00	68.17	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<50

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	06/18/98		15.33	66.84	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<50

Table 2
Summary of Groundwater Monitoring and Sampling Data

Former Texaco Service Station
3810 Broadway
Oakland, California

Well Number	Date Sampled	Top of Casing Elevation (feet, MSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet, MSL)	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MTBE (ppb)	TPH as Diesel (ppb)
MW-10	10/10/96	81.83	18.40	63 43	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<50
	11/07/96		18.43	63.40	NA	NA	NA	NA	NA	NA	NA
	12/18/97		16.18	65.65	350	6.9	0.87	0.88	0.77	<30	<50
	04/06/98		14.39	67.44	2,300	224	168	81.4	253	<30	<50
	06/18/98		15.11	66 72	7,200	310	210	83.0	280	<0.5	320

Notes

MSL = Mean sea level
TPH = Total petroleum hydrocarbons
MTBE = Methyl tert butyl ether
ppb = Parts per billion
NA = Not analyzed

Table 1A

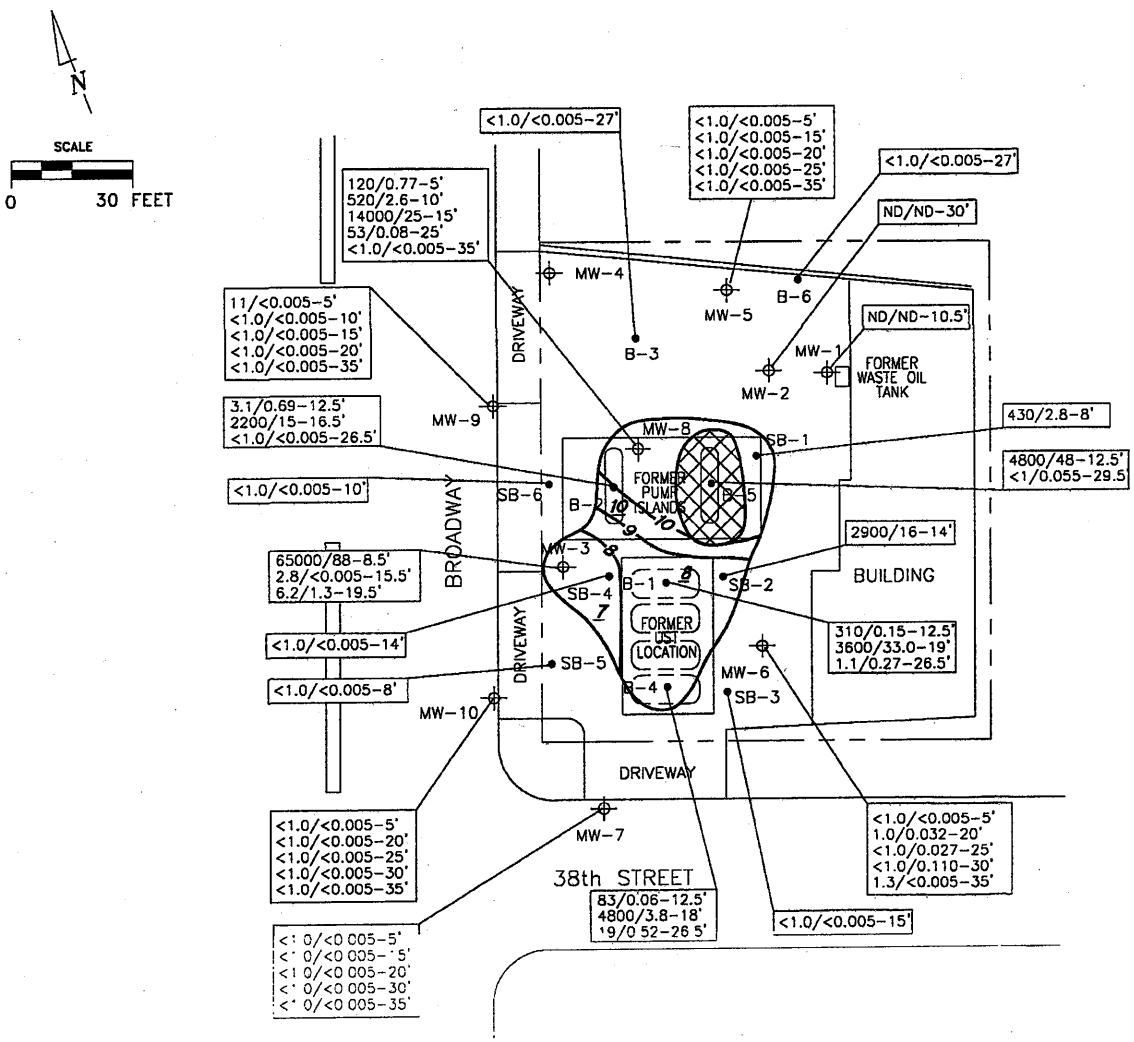
Summary of Soil Analytical Data for Groundwater Monitoring Wells and Soil Borings

Former Texaco Facility
3810 Broadway
Oakland, California

Boring/ Well Number	Consultant	Date Sampled	Sample Depth (feet)	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)	Total Hydrocarbons (ppm)	Oil and Grease (ppm)
B-1	M/H	09/11/95	12 5	310	0.15	0.29	6 2	31.2	NA	NA	NA
			19	3,600	33.0	310	67	361	NA	NA	NA
B-2	M/H	09/11/95	12.5	3.1	0.69	0.11	0.69	0.103	NA	NA	NA
			16.5	2,200	15.0	120	37	445	NA	NA	NA
B-4	M/H	09/11/95	12 5	83	0 06	0 025	1.2	7.2	NA	NA	NA
			18	4,800	3.8	44	18	101	NA	NA	NA
B-5	M/H	09/12/95	12.5	4,800	48	390	93	466	NA	NA	NA
MW-3	M/H	10/26/95	8.5	65,000	88	550	140	690	NA	NA	NA
			15.5	2 8	0.0025	0.027	0.0064	0 0265	NA	NA	NA
			19.5	6.2	1 3	1.5	0.11	0.43	NA	NA	NA
MW-8	FD	09/19/96	5	120	0.77	3.5	1 2	7 3	<10	NA	NA
			15	520	2.6	0.66	5 6	10	<10	NA	NA
			20	14,000	25	7.1	160	840	53	NA	NA
SB-1	Toxichem	07/03/98	8	430	2.8	5.0	4.8	23	NA	NA	NA
SB-2	Toxichem	07/03/98	14	2,900	16	19	54	250	NA	NA	NA
SB-4	Toxichem	07/03/98	15	0.5	0.0025	0 0025	0.0025	0.0025	NA	NA	NA
		Avg		6173 475	14.823438	90 700906	36.80056	202.016375			
				98775 6							
				16							

Notes.

TPH = Total petroleum hydrocarbons
ppm = Parts per million
HZ = Harza Kaldveer
M/H = McLaren/Hart
FD = Fluor Daniel GTI



EXPLANATION

- MONITORING WELL
- SOIL BORING
- 430/2.8-8' TPPH/BENZENE CONCENTRATION IN SOIL, IN MICROGRAMS PER KILOGRAM, AT DEPTH INDICATED IN FEET
- ND NOT DETECTED
- —9— DEPTH CONTOUR FOR INITIAL EXCAVATION
- APPROXIMATE EXTENT OF SOIL TO BE PROFILED FOR RE-USE ON-SITE
- APPROXIMATE EXTENT OF SOIL TO BE PREPROFILED AND DISPOSED OFF-SITE TO AN APPROPRIATE LANDFILL

PREPARED BY

TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

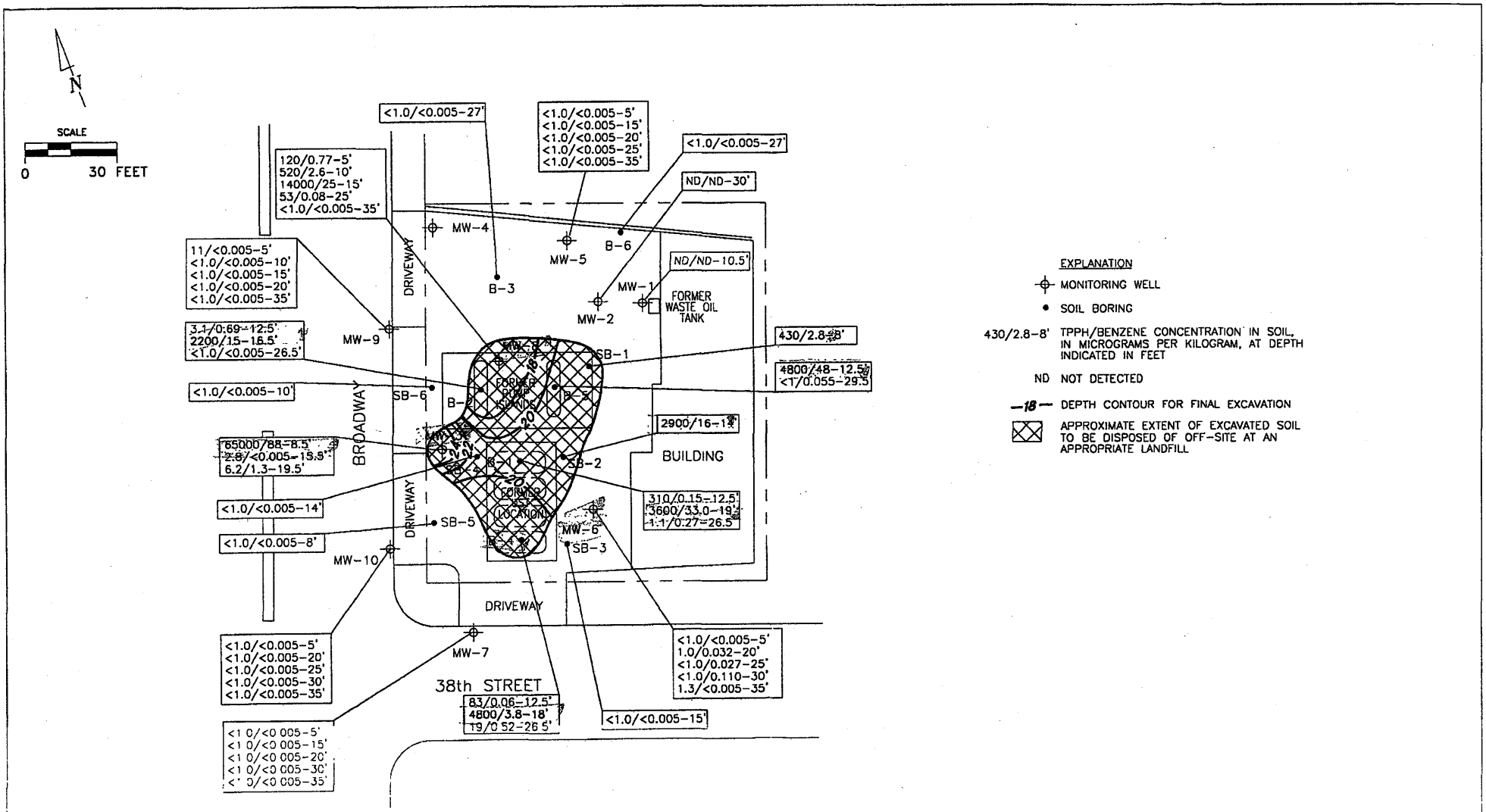
INITIAL SOIL EXCAVATION LIMITS

Former Texaco Service Station
3810 Broadway
Oakland, California

FIGURE: 1

PROJECT: EQ-02 1A

Ref EQ-02 1A/Sitemap.dwg
Basemap from Fluor Daniel GT



PREPARED BY

TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

FINAL SOIL EXCAVATION LIMITS

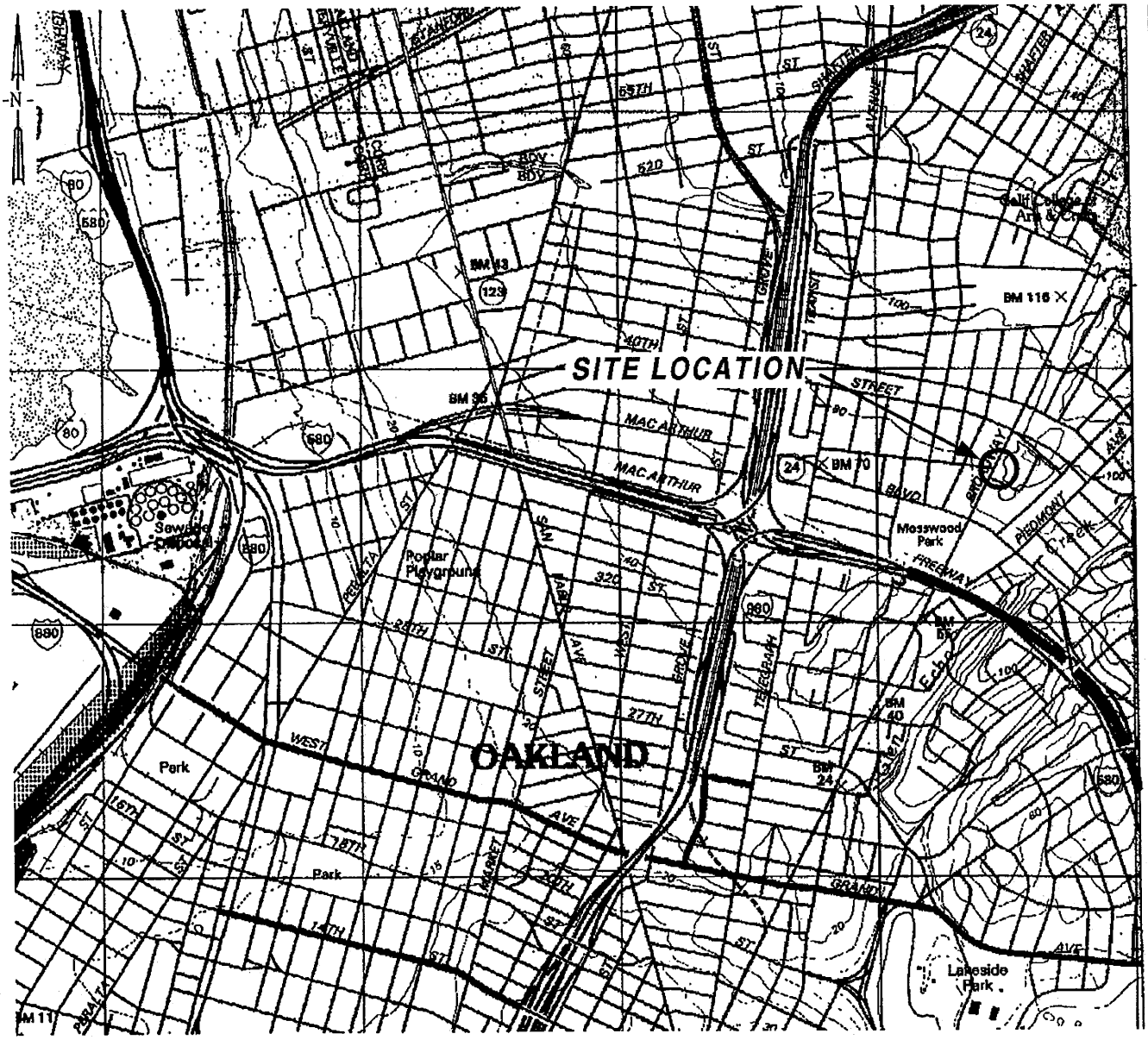
Former Texaco Service Station
3810 Broadway
Oakland, California

FIGURE: 2

PROJECT: EQ-02.1A

Ref EQ-02 1A/Sitemap.dwg
Basemap from Fluor Daniel GTI

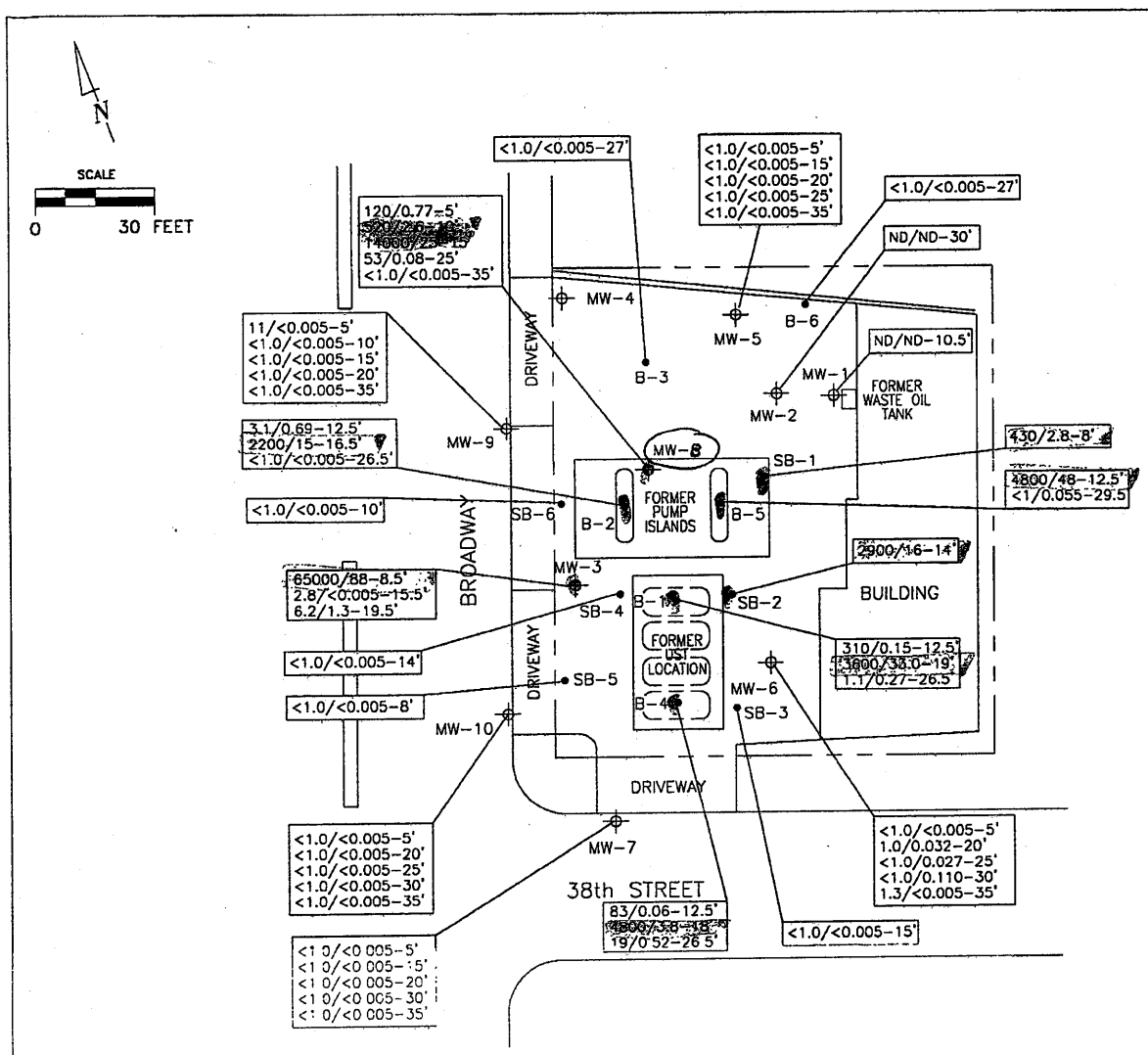
APPENDIX A
RBCA ANALYSIS



QUADRANGLE LOCATION

Reference:
USGS 7.5 MIN. TOPOGRAPHIC MAP
TITLED: OAKLAND WEST, CALIFORNIA
REVISED: 1993

TOXICHEM Management Systems, Inc.	SCALE: 0 FEET 2000 DRAWN BY. DATE: November 11, 1998	**SITE LOCATION MAP** 3810 Broadway Oakland, California	FIGURE 1 PROJECT TBA02



EXPLANATION

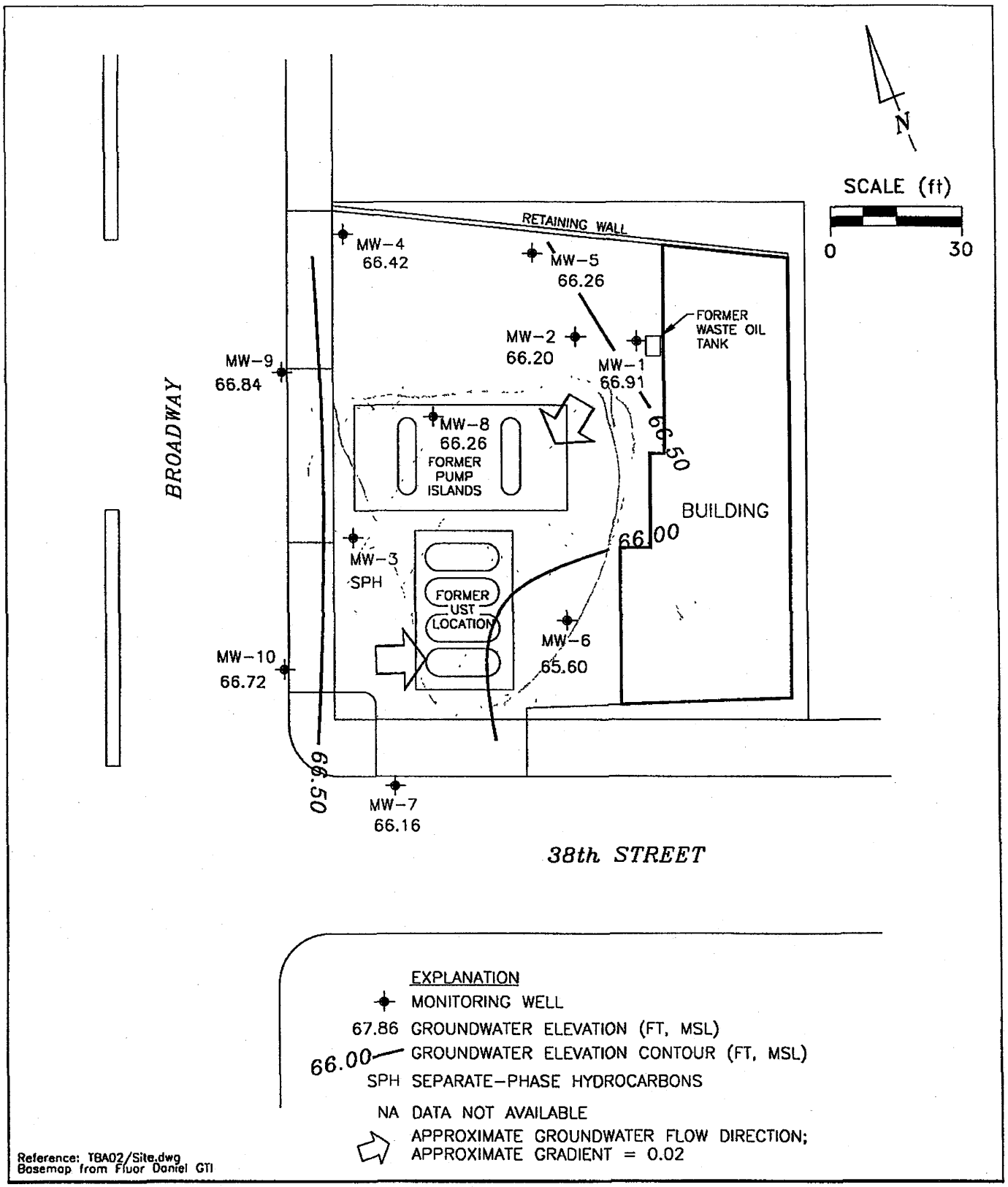
- MONITORING WELL
- SOIL BORING

430/2.8-8' TPHg/BENZENE CONCENTRATION IN SOIL, IN PARTS PER MILLION, AT DEPTH INDICATED IN FEET

ND NOT DETECTED

Basemap from Fluor Daniel GTI

PREPARED BY	SITE MAP	FIGURE:
TOXICHEM Management Systems, Inc.	3810 Broadway Oakland, California	2 PROJECT: TBA02



Reference: TBA02/Site.dwg
Basemap from Fluor Daniel GTI

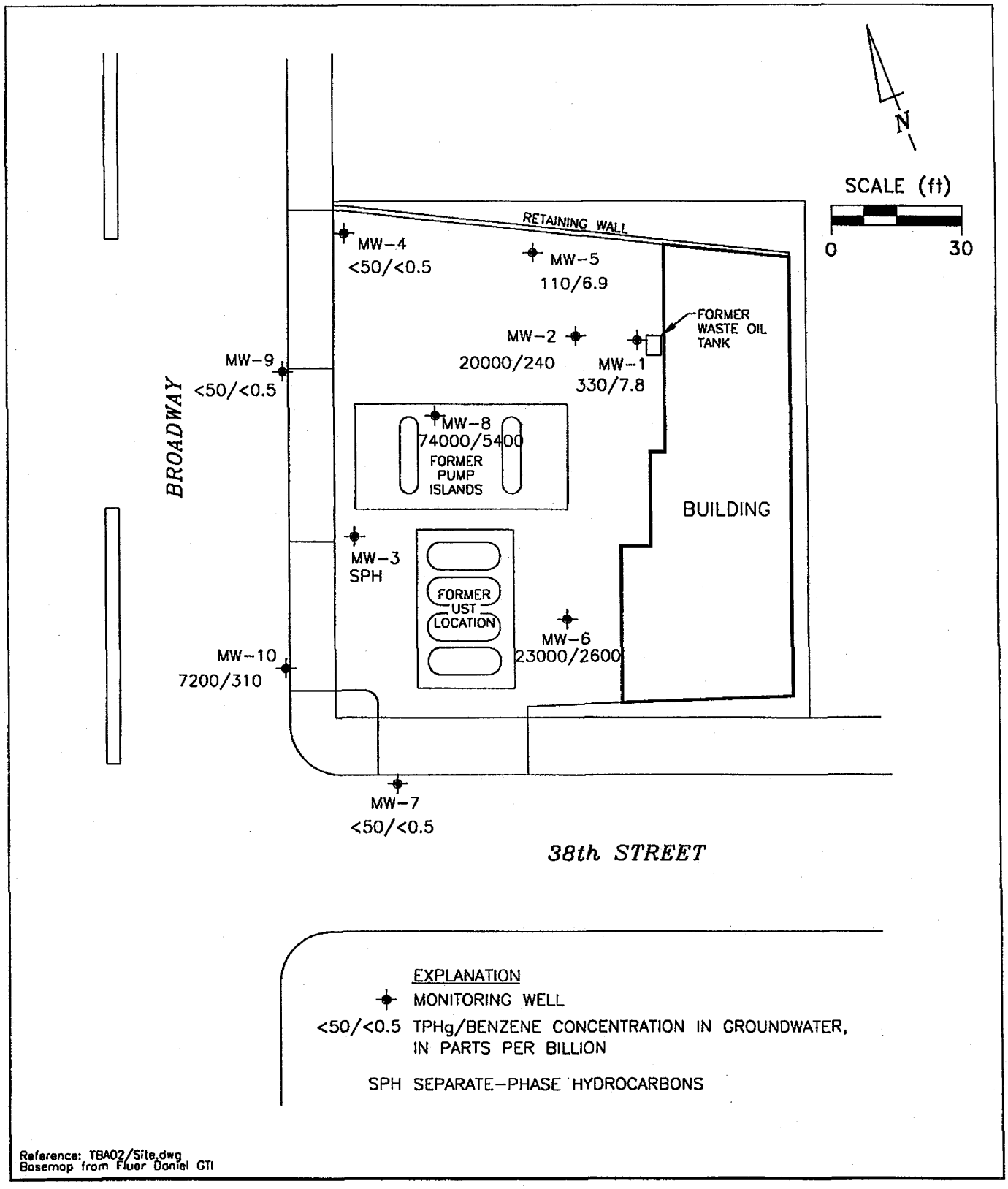
PREPARED BY

TOXICHEM
Management Systems, Inc.

FORMER TEXACO SERVICE STATION
3810 Broadway
Oakland, California

GROUNDWATER ELEVATION CONTOUR MAP, JUNE 18, 1998

FIGURE:
3
PROJECT:
TBA02



Reference: TBA02/Site.dwg
Basemap from Fluor Daniel GTI

PREPARED BY

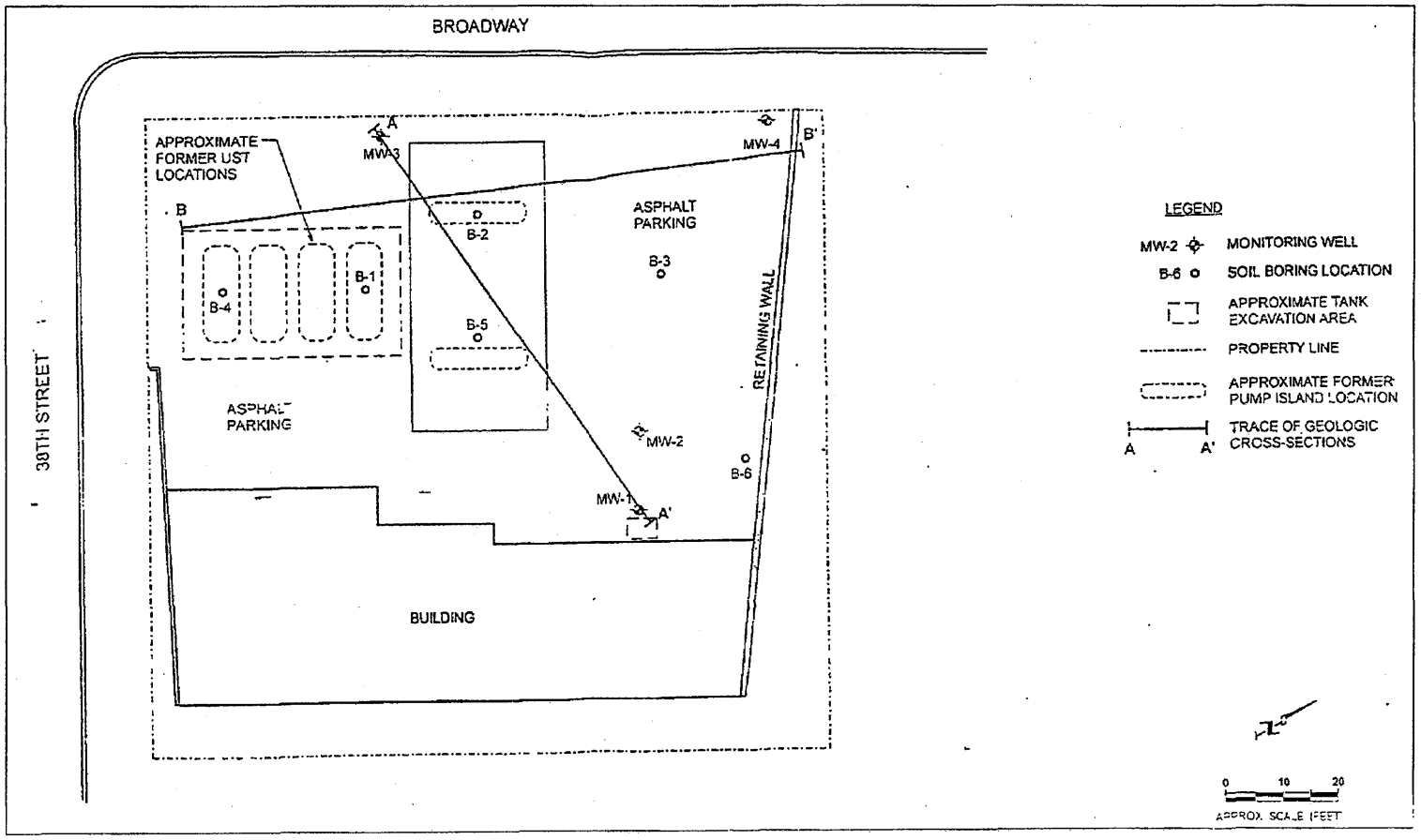
TOXICHEM Management Systems, Inc.

FORMER TEXACO SERVICE STATION
3810 Broadway
Oakland, California

TPHg/BENZENE CONCENTRATION MAP, JUNE 18, 1998

FIGURE: 4

PROJECT: TBA02



Ref. Drawing from McLaren Hart

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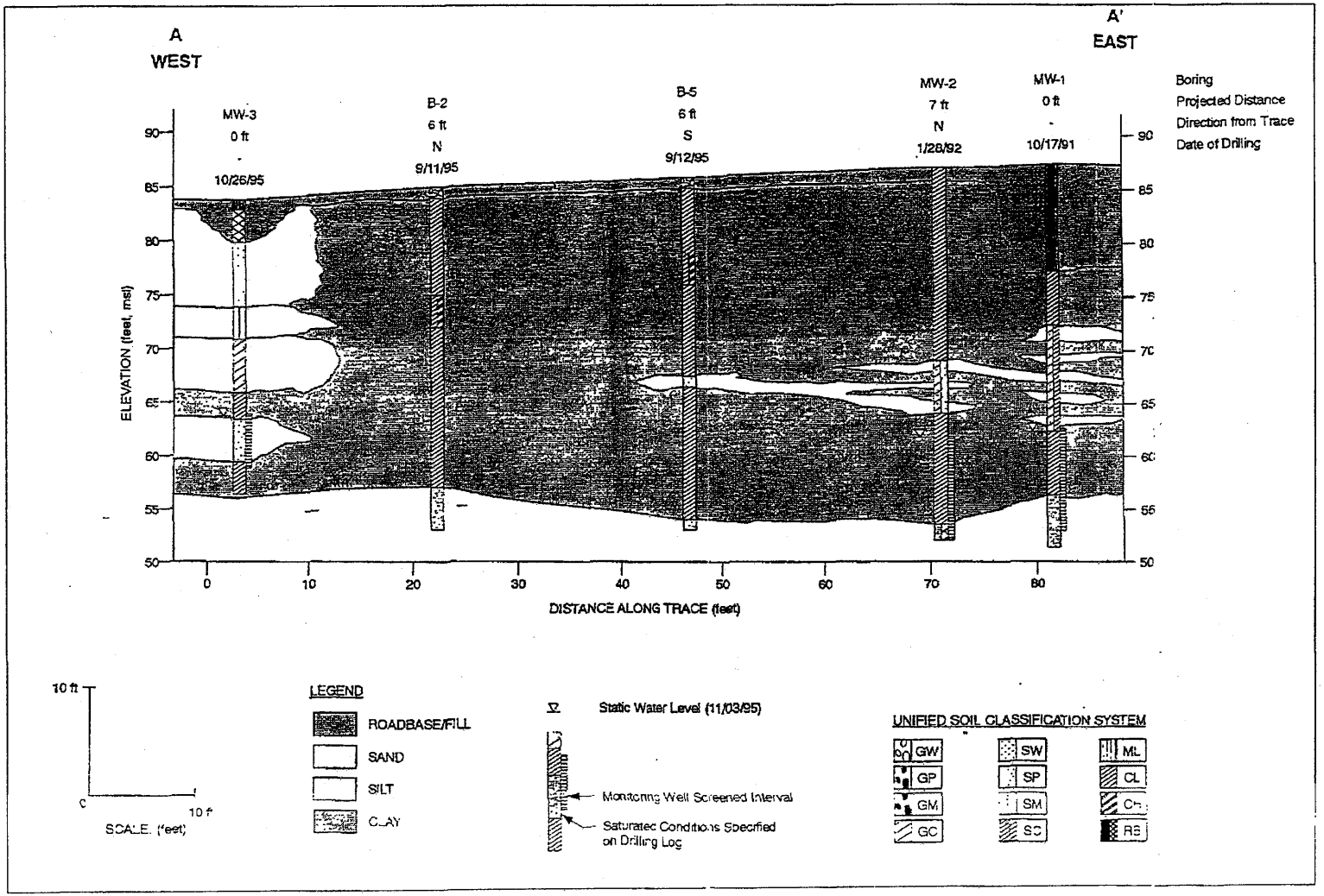
TOXICHEM Management Systems, Inc.

GEOLOGIC CROSS-SECTION LOCATION MAP

3810 Broadway
Oakland, California

FIGURE: 5
PROJECT: TBA02



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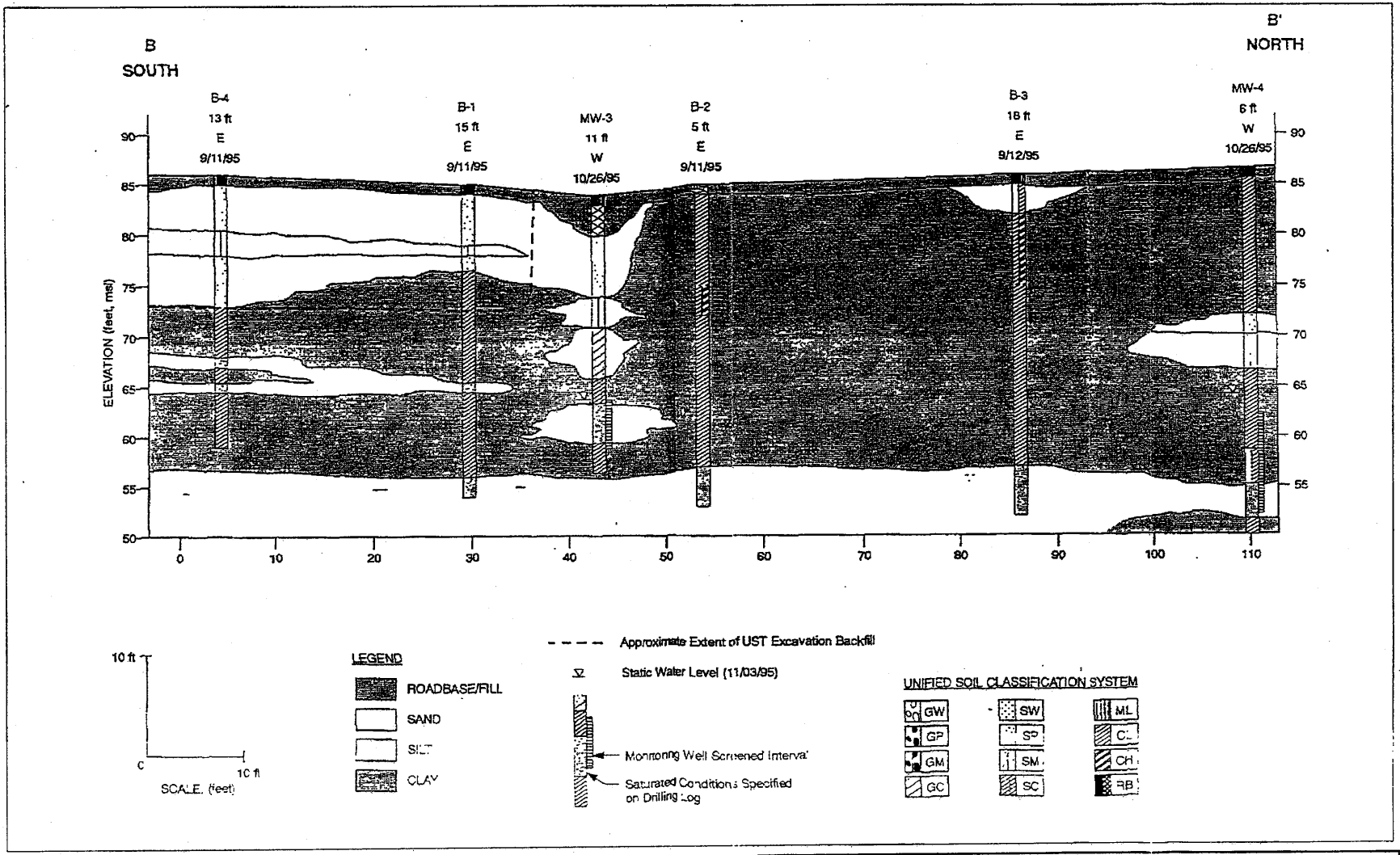
GEOLOGIC CROSS-SECTION A-A'

3810 Broadway
Oakland, California

FIGURE: 6

PROJECT: TBA02

Ref Drawing from McLaren Hart



Ref. Drawing from McLaren Hart

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GEOLOGIC CROSS-SECTION B-B'

3810 Broadway
Oakland, California

FIGURE: 7

PROJECT: TBA02

APPENDIX A
RBCA ANALYSIS

Health Risk Based Goals

For consistency with recent regulatory policy, an ASTM RBCA evaluation was applied for the development of corrective action goals. Figure 2 (Exposure Evaluation Flowchart) of the standard was used to characterize primary and secondary sources, transport mechanisms, exposure pathways, and receptors. Given the exposure pathway and exposure scenario, Table X2.1 was initially consulted to identify Tier 1 risk-based screening levels (RBSLs) for the constituents of concern. Table X2.1 is an example look-up table developed for compounds of concern associated with petroleum releases. Values listed in Table X2.1 were generated using conservative exposure scenarios and input parameters as described in the next section. Since site specific groundwater concentrations in some cases exceeded the ASTM Tier 1 RBSLS (adjusted for the California benzene carcinogenic potency value), a higher level assessment was completed to address site specific risk- based corrective action goals. Appendix A contains a description of methods and parameters used and results of the site specific remedial goal calculations.

Data Collection

During July of 1998, additional site data was collected to support the Site CAP. Soil samples collected at 5 feet bgs from SB-1, 2, 3, and SB-6 were analyzed for total porosity, moisture, and organic carbon content. In addition, soil vapor samples were collected from SB-1, SB-3, and SB-6 at a depth of 5 feet bgs, and analyzed for TPHg and BTEX compounds. The table below summarizes the results of the additional data collected and analytical results are included in Appendix A of this document.

are these values reasonable?

ASTM

Parameter	SB-1-5	SB-2-5	SB-3-5[a]	SB-6-5
Total Porosity .38	.349	.366	.782	.347
Saturation %	.998	.828	.024	.777
Moisture Content (cm^3/cm^3) .12	.348	.303	.019	.270
Air Porosity (cm^3/cm^3) 0.26	.0007	.063	.763	.0775
Foc	.012	.015	.011	.022
Vapor Conc. (mg/m^3)	22 TPHg 10 benzene .27 toluene .99 xylene	NS	ND	.11 toluene

Table notes: a. Disturbed sample. NS = not sampled ND = not detected; detection limits for TPHg was 10 mg/m^3 and for BTEX 0.10 mg/m^3

Calculation of Risk Based Clean Up Goals

Exposure Pathways

An exposure pathway is the course a chemical takes from a source to an exposed organism Exposure pathways include the following four elements: (1) a source; (2) a mechanism for release, retention, or transport of a chemical in a given medium (e.g., air, water, soil); (3) a point of contact with the affected medium; and (4) an exposure route at the point of contact (e.g., ingestion, inhalation). If any of these elements is missing, the pathway is considered "incomplete" (i.e., it does not present a means of exposure). Four exposure pathways are noted on the ASTM Exposure Evaluation Flowchart. They include soil ingestion/skin absorption; inhalation; potable water use; and recreation use/sensitive habitat. Ingestion/absorption was discounted as an exposure pathway because there are no impacted surficial soils at the site. Potable water use was not considered an applicable exposure pathway because shallow occurring groundwater in the vicinity of the site is not used as a potable water source. Finally, the site and the immediate area surrounding the site are not considered a sensitive habitat, nor are there any recreational uses associated with surface water or groundwater on or adjacent to the site. Inhalation of secondary source hydrocarbons was identified as the most likely exposure pathway. = indoor

Receptor Characterization

Receptors were characterized considering that land use in the vicinity of the site is mixed commercial and residential. For the purposes of this analysis, the commercial receptor scenario is applied since the site is currently used as an automotive repair facility, and it planned use for automotive repair and fuel dispensing operations.

Calculation Methods

The calculation of a site specific risk based remedial goals incorporate site specific data, exposure parameters and exposure point estimation with a toxicity value for the chemical of interest to obtain a chemical concentration in the groundwater or soil which equates to an acceptable risk level. The following relationships are used in the calculation:

For carcinogenic chemicals (commercial indoor worker):

$$Target\ Risk = (CDI_{indoor\ inh.} \times SF_i)$$

where:

TR	=	target risk level (10E-05)
CDI	=	chronic daily intake by exposure route;
		(CDI = Exposure Factor x media concentration)
SF	=	chemical specific carcinogenic slope factor

In the equation above, the CDI can be rewritten as the route specific exposure factor (EF) multiplied by the media concentration of the contaminant of interest. In addition, the chemical at the exposure point can be expressed in terms of the chemical in the site media of concern. As, an example, the risk based concentration for the groundwater volatilization pathway is as follows:

$$C_{gw} = \frac{TR \text{ of } 10^{-5}}{\left(VF_{wesp} \times EF_{inhalation} \times SF_i \right)}$$

where:

C_{gw}	=	contaminant concentration in groundwater (mg/l)
EF	=	exposure factor (inhalation) (CDI = EF x C_{gw})
SF	=	chemical specific slope factor
VF_{wesp}	=	groundwater to indoor air volatilization factor (mg/m^3 / mg/l)

Similarly, for non-carcinogenic chemicals, the risk based remedial goal for the soil volatilization exposure pathway is as follows:

$$C_s = \frac{HI}{\left(\frac{1}{VF} \times EF_{inh} \right) \div RfD_i)}$$

where:

C_s	=	contaminant concentration in soil (mg/kg)
HI	=	Hazard Quotient (unity)
RfD	=	chemical specific reference dose
VF	=	soil to indoor air volatilization factor (mg/m^3 / mg/kg)

EF = exposure factor (inhalation)
(CDI = EF x C_s)

Volatilization Factors

For the groundwater and soil to indoor air exposure pathway, volatilization factors (VF) from ASTM are used. The VF is an expression which defines the relationship between the dissolved chemical concentration in groundwater and the volatilized chemical vapor concentration (exposure point) within the occupied space Volatilization factors assume (1) chemical concentrations in groundwater and/or soil over time remain constant, (2) isotropic soils, (3) linear equilibrium partitioning within the soil matrix between sorbed, dissolved and vapor phases (soil contaminants); equilibrium partitioning between dissolved chemicals in groundwater and chemical vapors at the groundwater table, and (4) steady state vapor – and liquid – phase diffusion through the capillary fringe, vadose zone, and foundation cracks. The intrusion of vapor into a building is assumed to be governed by the relative rates of diffusion (fickian) through the soil and foundation. In addition, VFs are infinite source methods which assume there is no mass loss due to volatilization and/or biodegradation over the exposure period.

Site Parameters

Remedial goal calculations are sensitive to the use of several key parameters With respect to vapor transport through the capillary fringe, sensitive parameters include moisture and density profile, and thickness of the fringe. The ASTM expression assumes a fringe thickness of 5 cm, which is characteristic of a porous media. Site specifically, a much thicker fringe is supportable since site stratigraphy indicates fine grained materials. A capillary fringe thickness of 60 cm is assigned, based on silty clays encountered to 25ft. BGS.

0.36
0.26

300/254/12 ≈ 90

ASTM uses a default diffusion path length (distance between source and foundation) of 300 cm. Onsite, depth to ground water is approximately 18.5 to 21.7 ft. bgs, therefore for the groundwater volatilization pathway, this assessment assigns a 550 cm total diffusion path, which includes the capillary fringe. For the soil volatilization pathway, the diffusion path length is 8 feet(244 cm).

Since vapor flux increases geometrically with incremental increases in air filled porosity, vapor transport through the vadose zone is most sensitive to the air filled porosity of the soils. ASTM uses default factors characteristic of porous media including 0.38, 0.12, and 0.26 for volumetric total porosity, moisture content, and air filled porosity respectively. Based on site measurements, average parameters (excluding the disturbed sample) are 0.354, 0.307, and 0.047 total porosity, moisture content, and air filled porosity respectively. However, since SB-3-5 was collected in sandy fill, ASTM default parameters are assigned to represent that sample. Incorporating ASTM default values for the disturbed sample yields site average parameters of 0.36, 0.26, and 0.10 for total porosity, moisture content, and air filled porosity, respectively. The latter values are used for remedial goal calculations.

0.10 w
10 w

ok ?

ASTM methods also assume that a building sits directly above the source of soil and/or groundwater contamination, and that the source area is equivalent to the building's footprint. Site specifically, this is conservative assumption since the current onsite building is not directly over contaminated soil and or groundwater.

Exposure Parameters

Methods used to calculate chemical intakes for chronic exposure, or chronic daily intakes (CDIs), are described in Risk Assessment Guidance (RAGS) (U.S. EPA 1989a) and Department of Toxic Substances Control (DTSC) supplemental guidance (CALEPA 1992. Exposure factors (body weights, breathing rates, etc.) used in the exposure algorithms were also taken from DTSC (1992) and U.S. EPA (1997). For the commercial exposure scenario, the default body weight of 70 kg, an exposure duration of 25 years, and default inhalation rate of 20 m^3 is assumed for indoor workers.

For assessing carcinogenic effects, CDIs are calculated by prorating the exposure period cumulative dose over a lifetime; the average lifespan is assumed to be 70 years (U.S. EPA 1991a). For assessing noncancer effects, CDIs are calculated by averaging intakes only over the period of exposure

Chemical Parameters

The physico-chemical parameters used in this assessment and the sources of the information are summarized in the table below.

Physico-Chemical Parameters

Chemical	Henry's Constant Dimensionless	Carbon-Water Sorption K_{oc} (cm^3/g)	Diffusivity Air (cm^2/s)	Diffusivity Water (cm^2/s)
Benzene	.22	57	.087	9.8E-06
Toluene	.27	260	7.8E-02	8.6E-06
ethyl benzene	.32	220	7.5E-02	7.8E-06
Xylenes	22	240	7E-02	8.4E-06
MTBE	.042	12.02	.081	7.1E-07

Table notes: Henry's Constant, K_{oc}, and diffusivities are from U.S. EPA 1996 PRGs. Diffusivities and K_{oc} for benzene are from U.S. EPA 1996b. MTBE parameters are estimated at 25 deg.C using methods by Lyman and peer reviewed solubility data and vapor pressure (51g/l and 245 mm Hg respectively), K_{oc} and Henry's Constant from ASTM.

Toxicity Parameters

Toxicity values used in the remedial goal calculations are termed slope factors and reference doses (RfDs). Slope factors are used to estimate the incremental lifetime risk of developing cancer corresponding to calculated CDIs. The potential for noncancer health effects is evaluated by comparing estimated daily intakes with reference doses (RfDs) or reference concentrations (RfCs). The toxicity parameters (slope factors and reference doses) used in the remedial goal calculations are summarized in the table below.

Toxicity Parameters

	SFo Per mg/kg-day	Sfi Per mg/kg-day	RfDi mg/kg-day	RfDo mg/kg-day
Benzene	.10c	.10c	.0017 r	.0017 n
Toluene	NA	NA	.11	2
Ethyl benzene	NA	NA	.29	.1
Xylenes	NA	NA	.2	2
MTBE	NA	NA	.857I	.005

Table notes: c = California Value, I = IRIS, all other values from U.S. EPA 1996 PRGs. NA =not applicable

Results

Estimated risk based remedial goals calculated using the method described above are shown in the table below. The RBCs for soil is the average column concentration for the chemical of concern. With an increasing diffusion path (thicker layer of clean soil above the zone of impact), the RBCs for soil will increase. The RBCs for groundwater are average groundwater concentrations for the aerial extent of the plume.

Risk Based Soil and Groundwater Concentrations (RBCs)

For a Carcinogenic Risk of 10E-05 or Hazard Index of Unity

	RBC Soil (mg/kg)	RBC Groundwater (mg/l)
Benzene	0.5 @ 8 ft 0.8 @ 15 ft 1@ 20 ft	2
Toluene	464	520
Ethyl benzene	917*	1269*
Xylenes	9822*	5833*
MTBE	1667	14,998

Table notes: * exceeds the sorptive limits of soil or exceeds the solubility of the compound

Measured Soil Vapor Concentrations versus Calculated Vapor Concentrations

Using site specific parameters and the risk based soil and groundwater concentrations specified in the table above, VFs were used to calculate vapor concentrations at a depth of 5 ft bgs. The resultant risk based vapor concentrations are compared to the maximum detected vapor concentrations from SB-1-5 in the table below.

Risk –Based Vapor Concentrations versus Measured Vapor Concentrations

	Predicted Vapor Concentration (mg/m^3)	Measured Vapor Concentration (mg/m^3)
Benzene	68	0.1
Toluene	20,540	0.27
Ethyl benzene	56,400	<0.1
Xylenes	386,500	.99

Conclusions

Risk based concentrations – which are protective of public health have been calculated using site-specific parameters and conservative assumptions. The calculations are most sensitive to air filled porosity of the soils. Higher concentrations are supportable based on soil vapor data and site specific soil moisture and porosity parameters.

APPENDIX A

Exposure Algorithms, Volatilization Models, And Input Parameters

TABLE A1. INHALATION EXPOSURE ALGORITHM

$$\text{Intake (mg/kg-day)} = \frac{CA \times IR \times EF \times ED}{BW \times AT}$$

where:

CA = chemical concentration in air (mg/m^3)
IR = inhalation rate (m^3/day)
EF = exposure frequency (days/years)
ED = exposure duration (years)
BW = body weight (kg)
AT = averaging time(days)
- carcinogenic effects:70-year lifetime × 365 days/year
- noncarcinogenic effects: ED × 365 days/year

Exposure Assumptions[a]

Parameter	Indoor Worker Commercial Scenario
CA	Chemical Specific
IR	(20 indoor)
EF	250
ED	25
BW	70

[a] See text Section

GROUNDWATER VOLATILIZATION

For indoor air exposure estimates, volatile groundwater contaminant flux is estimated by the following volatization factor (based on ASTM 1994) :

Migration to enclosed spaces:

$$VF_{WESP}\frac{(mg/m3)}{(mg/l)}=\frac{H((D_{effws}/L_{GW})/(ERxL_B))}{1+((D_{effws}/L_{GW})/(ERxL_B))+((D_{effws}/L_{GW})/(D_{effcrk}/L_{crk})n))}x10^3 L/m3$$

Where:

$$D_{effws}(cm2/s)=\frac{(h_c+h_v)}{(h_c/D_{effcap})+(h_v/D_{effs})}$$

$$D_{effs}(cm2/s)=D_a(\theta_{as}^{3\,33}/\theta_t^2)+D_w(\theta_{ws}^{3.33})/(H\theta_t^2)$$

$$D_{effcrk}(cm2/s)=D_a(\theta_{acrk}^{3.33})/(\theta_t^2)+D_w(\theta_{wcrk}^{3\,33})/(H\theta_t^2)$$

$$D_{effcap}(cm2/s)=D_a(\theta_{acap}^{3.33})/(\theta_t^2)+D_w(\theta_{wcap}^{3.33})/(H\theta_t^2)$$

SOIL VOLATILIZATION

For indoor air exposure estimates, volatile soil contaminant flux is estimated by the following volatization factor (based on ASTM 1994) :

Migration to enclosed spaces:

$$VF\ \frac{(mg/m3)}{(mg/kg)} = \frac{((H\rho_s)/(\theta_{ws}+k_s\rho_s+H\theta_{as}))((D^{effsoil}/L_s)/ERL_B))}{1+((D^{effsoil}/L_s)/(ERL_B))+((D^{effsoil}/L_s)/(D^{effcrack}/L_{crack})\eta)} x(10^3 cm3-kg/m3-g)$$

where:

$$D^{effcrack}(cm2/s)=D^{air}\frac{\theta crack^{3.33}}{\theta T^2}+D^{wat}(1/H)\frac{\theta wcrack^{3.33}}{\theta T^2}$$

$$D^{effsoil}(cm2/s)=D^{air}\frac{\theta s^{3\ 33}}{\theta T^2}+D^{wat}(1/H)\frac{\theta ws^{3\ 33}}{\theta T^2}$$

Parameter definition table follows:

VF Parameters:

Parameter	Definition (units)	Value
VF	Volatilization factor (mg/m^3 /mg/kg, mg/m^3/mg/l)	Calculation
ρ_b	Dry soil bulk density (g/cm^3)	1.65 Site Specific
Θ_{as}	Air filled soil porosity (L_{air}/L_{soil})	Site specific
Θ_t	Total soil porosity (L_{pore}/L_{soil})	Site specific
Θ_{ws}	Water-filled soil porosity (L_{water}/L_{soil})	Site specific
ρ_s	Soil particle density (g/cm^3)	2.65 Site Specific
D_a	Diffusivity in air (cm^2/s)	Chemical-specific
H	Henry's Law constant (atm-m^3/mol)	Chemical-specific
H'	Dimensionless Henry's Law constant	Chemical -specific
D_w	Diffusivity in water (cm^2/s)	Chemical-specific
K_d	Soil-water partition coefficient (cm^3/g) = $K_{oc}\, f_{oc}$	Chemical-specific
K_{oc}	Soil organic carbon-water partition coefficient (cm^3/g)	Chemical-specific
f_{oc}	Fraction organic carbon in soil (g/g)	See text
n	Aerial fraction of cracks in foundation wall (cm^2-cracks/cm^2-total area)	.01(ASTM-default)
L_{gw}	depth to subsurface sources, cm	Site specific
D_{effs}	effective diffusion coefficient in soil (cm^2/sec)	calculated
D_{effws}	effective diffusion coefficient between groundwater and soil surface (cm^2/sec)	calculated
D_{effcap}	effective diffusion coefficient through capillary fringe	calculated
ER	enclosed space air exchange rate (s^{-1})	.00023(ASTM-default)
LB	enclosed space volume /infiltration ratio (cm)	300(ASTM-default)
D_{effcrk}	effective diffusion coefficient through foundation cracks (cm^2/s)	Calculated
Θ_{acrk}	volumetric air content in foundation /wall cracks (cm^3air/cm^3 total volume)	.26 (ASTM - default)
Θ_{wcrk}	volumetric water content in foundation /wall cracks (cm^3 air/ cm^3 soil)	.12 (ASTM - default)
Θ_{tcrk}	total soil porosity in foundation cracks (cm^3/cm^3-soil)	.38 (ASTM - default)
L_{crck}	enclosed-space foundation or wall thickness (cm)	15 (ASTM - default)
Θ_{acap}	volumetric air content in capillary fringe (cm^3air/cm^3 total volume)	.038 (ASTM - default)
Θ_{wcap}	volumetric water content in capillary fringe (cm^3 air/ cm^3 soil)	.342 (ASTM - default)
hv	thickness of the vadose zone	Site specific
hc	thickness of the vadose zone	Site specific

APPENDIX B
FIELD AND LABORATORY PROCEDURES

APPENDIX B
SITE SPECIFIC FIELD PROCEDURES FOR ADDITIONAL DATA COLLECTION

DRILLING AND SOIL SAMPLING PROCEDURES

Soil samples

Drilling of the soil borings was accomplished using 1-/12 inch diameter Geoprobe® drilling equipment. The soil borings were drilled to the depth of 20 feet below ground surface. Soil sampling was conducted through the 1-1/2 inch diameter push rod. Clean push rods were used between borings to prevent the possibility of cross contamination. A Toxichem field geologist collected soil samples Soil samples for chemical analysis were collected from each boring at five foot intervals between the ground surface and 20 feet bgs. Soil samples were obtained using the push rods equipped with four 6-inch by 1-1/2 inch diameter brass liners. The sampler was driven at the desired sample interval with a hydraulically driven hammer. The lower most liner of each sample interval was sealed with Teflon™ film, then capped, labeled, and placed in a cooler filled with ice for transport to the laboratory. The second liner was screened in the field for total organic vapors using a photo-ionization detector (PID). Screening with the PID was performed by placing a small quantity of soil into a sealable plastic bag, and then warmed for approximately 10 minutes. The probe of the PID was then placed into the plastic bag and into the head space for analysis. The PID readings represented relative levels of organic vapors for the site conditions at the time of drilling. The soil samples selected for analysis were analyzed by EPA Method 8015M/8020 for petroleum product related compounds and EPA Method 6010 for selected metals, at Sequoia Analytical. Analysis for moisture, porosity, and organic carbon content was conducted at Cooper Analytical of Mt. View, CA.

Soil Vapor Samples

Each probe is hydraulically driven into the ground to the desired depth of five feet, then the pipe is retracted mechanically, leaving a void space between the probe and tip. A compression fitting, to which Teflon tubing is attached, is then fastened onto the above ground end of the probe. Extraction of soil gases and vapors is accomplished through a vacuum pump. During the extraction of soil gases, the operator monitors short circuiting (sampling of ambient air) by monitoring system vacuum and flow rate. Soil gas samples for offsite analysis were taken by drawing soil gas into tedlar bags. Each sample was transported to Entec Analytical Labs, Inc., under chain of custody, for analysis. The

analytical procedures employed included EPA Method 8015M/8020 for petroleum product related compounds.

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100
1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

RRM, Inc.
3912 Portola Dr., #8
Santa Cruz, CA 95062

Attention: Dan Hernandez

Client Proj. ID: Texaco 3810 Broadway
Sample Descript: SB-1-8'
Matrix: SOLID
Analysis Method: 8015Mod/8020
Lab Number: 9807350-01

Sampled: 07/03/98
Received: 07/07/98
Extracted: 07/09/98
Analyzed: 07/09/98
Reported: 07/20/98

QC Batch Number: GC070998BTEXEXA
Instrument ID: GCHP18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**100**	**430** ✓
Benzene	**0.50**	**2.8**
Toluene	**0.50**	**5.0**
Ethyl Benzene	**0.50**	**4.8**
Xylenes (Total)	**0.50**	**23**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	110
4-Bromofluorobenzene	60	140	6 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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RRM, Inc.	Client Proj. ID: Texaco 3810 Broadway	Sampled: 07/03/98
3912 Portola Dr., #8	Sample Descript: SB-2-14'	Received: 07/07/98
Santa Cruz, CA 95062	Matrix: SOLID	Extracted: 07/09/98
	Analysis Method: 8015Mod/8020	Analyzed: 07/09/98
Attention: Dan Hernandez	Lab Number: 9807350-02	Reported: 07/20/98

QC Batch Number: GC070998BTEXEXA
Instrument ID: GCHP18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**250**	**2900**
Benzene	**1.2**	**16**
Toluene	**1.2**	**19**
Ethyl Benzene	**1.2**	**54**
Xylenes (Total)	**1.2**	**250**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	136 Q
4-Bromofluorobenzene	60	140	Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

RRM, Inc. 3912 Portola Dr., #8 Santa Cruz, CA 95062 Attention: Dan Hernandez	Client Proj. ID: Texaco 3810 Broadway Sample Descript: SB-3-14' Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9807350-03	Sampled: 07/03/98 Received: 07/07/98 Extracted: 07/09/98 Analyzed: 07/10/98 Reported: 07/20/98

QC Batch Number: GC070998BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	98
4-Bromofluorobenzene	60	140	114

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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RRM, Inc.	Client Proj. ID: Texaco 3810 Broadway	Sampled: 07/03/98
3912 Portola Dr., #8	Sample Descript: SB-4-15'	Received: 07/07/98
Santa Cruz, CA 95062	Matrix: SOLID	Extracted: 07/09/98
	Analysis Method: 8015Mod/8020	Analyzed: 07/10/98
Attention: Dan Hernandez	Lab Number: 9807350-04	Reported: 07/20/98

QC Batch Number: GC070998BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	80
4-Bromofluorobenzene	60	140	111

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Renner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (925) 988-9600, FAX (925) 988-9673
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RRM, Inc.	Client Proj. ID: Texaco 3810 Broadway	Sampled: 07/03/98
3912 Portola Dr., #8	Sample Descript: SB-5-8'	Received: 07/07/98
Santa Cruz, CA 95062	Matrix: SOLID	Extracted: 07/09/98
	Analysis Method: 8015Mod/8020	Analyzed: 07/10/98
Attention: Dan Hernandez	Lab Number: 9807350-05	Reported: 07/20/98

QC Batch Number: GC070998BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	85
4-Bromofluorobenzene	60	140	91

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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RRM, Inc.	Client Proj. ID: Texaco 3810 Broadway	Sampled: 07/03/98
3912 Portola Dr., #8	Sample Descript: SB-6-10'	Received: 07/07/98
Santa Cruz, CA 95062	Matrix: SOLID	Extracted: 07/09/98
	Analysis Method: 8015Mod/8020	Analyzed: 07/15/98
Attention: Dan Hernandez	Lab Number: 9807350-06	Reported: 07/20/98

QC Batch Number: GC070998BTEXEXA
Instrument ID: GCHP01

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	**0.0050**	**0.0087**
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	100
4-Bromofluorobenzene	60	140	109

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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RRM, Inc.
3912 Portola Dr., #8
Santa Cruz, CA 95062
Attention: Dan Hernandez

Client Project ID: Texaco 3810 Broadway

QC Sample Group: 9807350-01-06

Reported Jul 20, 1998

QUALITY CONTROL DATA REPORT

Matrix: Solid
Method: EPA 8015
Analyst: G. PESHINA

ANALYTE Gasoline

QC Batch #: GC070998BTEXEXA

Sample No.: GS9807350-3
Date Prepared: 7/9/98
Date Analyzed: 7/9/98
Instrument I.D.#: GCHP7

ample Conc., mg/Kg: N.D
Conc. Spiked, mg/Kg: 5.0

Matrix Spike, mg/Kg: 6.6
% Recovery: 132

Matrix ike Duplicate, mg/Kg: 6 1
% Recovery: 122

elative % Difference: 7.9

RPD Control Limits: 0-25

LCS Batch#: GSBLK070998A

Date Prepared: 7/9/98
Date Analyzed: 7/9/98
Instrument I.D.#: GCHP7

Conc. Spiked, mg/Kg: 5 0

Recovery, mg/Kg: 5 8
LCS % Recovery: 116

Percent Recovery Control Limits:

MS/MSD	60-140
LCS	70-130

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Peggy Benner
Project Manager

Please Note
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch

Sequoia Analytical

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RRM, Inc. 3912 Portola Dr., #8 Santa Cruz, CA 95062 Attention: Dan Hernandez	Client Proj. ID: Texaco 3810 Broadway Lab Proj. ID: 9807350	Received: 07/07/98 Reported: 07/20/98

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of_____ pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

RRM, Inc.

3912 Portola Drive, Suite 8 - Santa Cruz, California - Telephone (408) 475-8141 - Fax (408) 475-8249

FAX & SEND RESULTS TO:

Chain of Custody/Analysis Work Order

BILL TO TEXACO

Client: TOXICHEM MGMT. SYSTEMS
Address: 1461 NEWPORT AVENUE
SAN JOSE, CA. 95125
Contact: DAN HERNANDEZ
Telephone #: (408) 292-3266 FAX 298-6591
Date Received:
Turn Around: STANDARD

Project ID: 3810 BROADWAY OAKLAND, CA.
Purchase Order #: BA02

Sampler/Company: MATT KAEMPF/RRM
Telephone #: (408) 475-8141

Special Instructions/Comments
BILL TEXACO DIRECT

LAB USE ONLY

Samples arrived chilled and intact: Yes No
Notes:

Sample Information 9807350

Lab #	Sample ID	Grab/ Composite	Matrix	Date Collected	Time Collected	Pres.	Sample Container	TPHg/ BTEX
1	SB-1-8'	GRAB	SOIL	7/3/98	1446	NO	ACETATE LINER	X
2	SB-2-14'	↓	↓	↓	1353	↓	↓	X
3	SB-3-14'	↓	↓	↓	1238	↓	↓	X
4	SB-4-15'	↓	↓	↓	1015	↓	BRASS LINER	X
5	SB-5-8'	↓	↓	↓	0830	↓	ACETATE LINER	X
6	SB-6-10'	↓	↓	↓	1145	↓	↓	X

Requested Analysis

Relinq By	Received By	Date	Time
Matt Kaempf	[illegible]	070798	1215
Relinq By	Received By	Date	Time
Relinq/ By	Received By	Date	Time

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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Toxichem Mgmt Systems
1461 Newport Ave.
San Jose, CA 95125

Attention: Dan Hernandez

Client Proj. ID: Texaco 3810 Broadway

Lab Proj. ID: 9807353

Sampled: 07/03/98
Received: 07/07/98
Analyzed: see below

Reported: 07/22/98

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9807353-01 Sample Desc : **SOLID,SB-1-Comp(5',10',15',20')**				
Lead by ICP	**mg/Kg**	**07/14/98**	**5.0**	**10**
Lab No: 9807353-02 Sample Desc : **SOLID,SB-2-Comp(5',10',15',20')**				
Lead by ICP	**mg/Kg**	**07/14/98**	**5.0**	**12**
Lab No: 9807353-03 Sample Desc : **SOLID,SB-3-Comp(8',10',14',20')**				
Lead by ICP	**mg/Kg**	**07/14/98**	**5.0**	**11**
Lab No: 9807353-04 Sample Desc : **SOLID,SB-4-Comp(5',9',12',20')**				
Lead by ICP	**mg/Kg**	**07/14/98**	**5.0**	**22**
Lab No: 9807353-05 Sample Desc : **SOLID,SB-5-Comp(5',11',15',20')**				
Lead by ICP	**mg/Kg**	**07/14/98**	**5.0**	**7.7**
Lab No: 9807353-06 Sample Desc : **SOLID,SB-6-Comp(5',10',15',20')**				
Lead by ICP	**mg/Kg**	**07/14/98**	**5.0**	**6.6**

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (925) 988-9600, FAX (925) 988-9673
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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Toxichem Mgmt Systems	Client Proj. ID: Texaco 3810 Broadway	Sampled: 07/03/98
1461 Newport Ave.	Sample Descript: SB-1-Comp(5',10',15',20')	Received: 07/07/98
San Jose, CA 95125	Matrix: SOLID	Extracted: 07/09/98
	Analysis Method: 8015Mod/8020	Analyzed: 07/09/98
Attention: Dan Hernandez	Lab Number: 9807353-01	Reported: 07/22/98

QC Batch Number: GC070998BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**20**	**94**
Benzene	**0.10**	**0.32**
Toluene	**0.10**	**1.8**
Ethyl Benzene	**0.10**	**1.2**
Xylenes (Total)	**0.10**	**5.8**
Chromatogram Pattern:		**Gas**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	137 Q
4-Bromofluorobenzene	60	140	8 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Renner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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1455 McDowell Blvd. North, Ste D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Toxichem Mgmt Systems	Client Proj. ID: Texaco 3810 Broadway	Sampled: 07/03/98
1461 Newport Ave.	Sample Descript: SB-1-Comp(5',10',15',20')	Received: 07/07/98
San Jose, CA 95125	Matrix: SOLID	Extracted: 07/15/98
	Analysis Method: EPA 8015 Mod	Analyzed: 07/16/98
Attention: Dan Hernandez	Lab Number: 9807353-01	Reported: 07/22/98

QC Batch Number: GC0715980HBPEXA
Instrument ID: GCHP5A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	8.7
Chromatogram Pattern:		
Unidentified HC		C9-C13
Weathered Diesel		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	83

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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1455 McDowell Blvd. North, Ste D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Toxichem Mgmt Systems	Client Proj. ID: Texaco 3810 Broadway	Sampled: 07/03/98
1461 Newport Ave.	Sample Descript: SB-2-Comp(5',10',15',20')	Received: 07/07/98
San Jose, CA 95125	Matrix: SOLID	Extracted: 07/09/98
	Analysis Method: 8015Mod/8020	Analyzed: 07/09/98
Attention: Dan Hernandez	Lab Number: 9807353-02	Reported: 07/22/98

QC Batch Number: GC070998BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	50	400
Benzene	0.25	0.32
Toluene	0.25	2.0
Ethyl Benzene	0.25	2.7
Xylenes (Total)	0.25	15
Chromatogram Pattern:		Gas

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	149 Q
4-Bromofluorobenzene	60	140	6 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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Toxichem Mgmt Systems	Client Proj. ID: Texaco 3810 Broadway	Sampled: 07/03/98
1461 Newport Ave.	Sample Descript: SB-2-Comp(5',10',15',20')	Received: 07/07/98
San Jose, CA 95125	Matrix: SOLID	Extracted: 07/15/98
	Analysis Method: EPA 8015 Mod	Analyzed: 07/16/98
Attention: Dan Hernandez	Lab Number: 9807353-02	Reported: 07/22/98

QC Batch Number: GC0715980HBPEXA
Instrument ID: GCHP5A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	14
Chromatogram Pattern:		
Unidentified HC		C9-C13
Weathered Diesel		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	61

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (925) 988-9600, FAX (925) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100
1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Toxichem Mgmt Systems
1461 Newport Ave.
San Jose, CA 95125

Attention: Dan Hernandez

Client Proj. ID: Texaco 3810 Broadway
Sample Descript: SB-3-Comp(8',10',14',20')
Matrix: SOLID
Analysis Method: 8015Mod/8020
Lab Number: 9807353-03

Sampled: 07/03/98
Received: 07/07/98
Extracted: 07/09/98
Analyzed: 07/13/98
Reported: 07/22/98

QC Batch Number: GC070998BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**1.0**	**1.3**
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	**0.0050**	**0.0056**
Chromatogram Pattern:		
Unidentified HC		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	83
4-Bromofluorobenzene	60	140	96

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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1455 McDowell Blvd North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Toxichem Mgmt Systems	Client Proj. ID: Texaco 3810 Broadway	Sampled: 07/03/98
1461 Newport Ave.	Sample Descript: SB-3-Comp(8',10',14',20')	Received: 07/07/98
San Jose, CA 95125	Matrix: SOLID	Extracted: 07/17/98
	Analysis Method: EPA 8015 Mod	Analyzed: 07/21/98
Attention: Dan Hernandez	Lab Number: 9807353-03	Reported: 07/22/98

QC Batch Number: GC0717980HBPEXA
Instrument ID: GCHP5B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	2.0
Chromatogram Pattern: **Unidentified HC**		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	67

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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1455 McDowell Blvd. North, Ste D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Toxichem Mgmt Systems	Client Proj. ID: Texaco 3810 Broadway	Sampled: 07/03/98
1461 Newport Ave.	Sample Descript: SB-4-Comp(5',9',12',20')	Received: 07/07/98
San Jose, CA 95125	Matrix: SOLID	Extracted: 07/09/98
	Analysis Method: 8015Mod/8020	Analyzed: 07/10/98
Attention: Dan Hernandez	Lab Number: 9807353-04	Reported: 07/22/98

QC Batch Number: GC070998BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**1.0**	**1.5**
Benzene	**0.0050**	**0.011**
Toluene	**0.0050**	**0.023**
Ethyl Benzene	**0.0050**	**0.0093**
Xylenes (Total)	**0.0050**	**0.038**
Chromatogram Pattern:		
Weathered Gas		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	105
4-Bromofluorobenzene	60	140	122

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Toxichem Mgmt Systems	Client Proj. ID: Texaco 3810 Broadway	Sampled: 07/03/98
1461 Newport Ave.	Sample Descript: SB-4-Comp(5',9',12',20')	Received: 07/07/98
San Jose, CA 95125	Matrix: SOLID	Extracted: 07/15/98
	Analysis Method: EPA 8015 Mod	Analyzed: 07/16/98
Attention: Dan Hernandez	Lab Number: 9807353-04	Reported: 07/22/98

QC Batch Number: GC0715980HBPEXA
Instrument ID: GCHP5A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	3.5
Chromatogram Pattern:		
Unidentified HC		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	91

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Toxichem Mgmt Systems	Client Proj. ID: Texaco 3810 Broadway	Sampled: 07/03/98
1461 Newport Ave.	Sample Descript: SB-5-Comp(5',11',15',20')	Received: 07/07/98
San Jose, CA 95125	Matrix: SOLID	Extracted: 07/09/98
	Analysis Method: 8015Mod/8020	Analyzed: 07/09/98
Attention: Dan Hernandez	Lab Number: 9807353-05	Reported: 07/22/98

QC Batch Number: GC070998BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**50**	**880**
Benzene	**0.25**	**4.9**
Toluene	**0.25**	**2.3**
Ethyl Benzene	**0.25**	**8.5**
Xylenes (Total)	**0.25**	**46**
Chromatogram Pattern:		**Gas**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	225 Q
4-Bromofluorobenzene	60	140	8 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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1455 McDowell Blvd North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Toxichem Mgmt Systems	Client Proj. ID: Texaco 3810 Broadway	Sampled: 07/03/98
1461 Newport Ave.	Sample Descript: SB-5-Comp(5',11',15',20')	Received: 07/07/98
San Jose, CA 95125	Matrix: SOLID	Extracted: 07/15/98
	Analysis Method: EPA 8015 Mod	Analyzed: 07/16/98
Attention: Dan Hernandez	Lab Number: 9807353-05	Reported: 07/22/98

QC Batch Number: GC0715980HBPEXA
Instrument ID: GCHP5A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	45
Chromatogram Pattern: **Unidentified HC**		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	65

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Toxichem Mgmt Systems	Client Proj. ID: Texaco 3810 Broadway	Sampled: 07/03/98
1461 Newport Ave.	Sample Descript: SB-6-Comp(5',10',15',20')	Received: 07/07/98
San Jose, CA 95125	Matrix: SOLID	Extracted: 07/09/98
	Analysis Method: 8015Mod/8020	Analyzed: 07/13/98
Attention: Dan Hernandez	Lab Number: 9807353-06	Reported: 07/22/98

QC Batch Number: GC070998BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	**0.0050**	**0.021**
Toluene	0.0050	N.D.
Ethyl Benzene	**0.0050**	**0.014**
Xylenes (Total)	**0.0050**	**0.082**
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	79
4-Bromofluorobenzene	60	140	90

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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1455 McDowell Blvd North, Ste D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Toxichem Mgmt Systems	Client Proj. ID: Texaco 3810 Broadway	Sampled: 07/03/98
1461 Newport Ave.	Sample Descript: SB-6-Comp(5',10',15',20')	Received: 07/07/98
San Jose, CA 95125	Matrix: SOLID	Extracted: 07/15/98
	Analysis Method: EPA 8015 Mod	Analyzed: 07/16/98
Attention: Dan Hernandez	Lab Number: 9807353-06	Reported: 07/22/98

QC Batch Number: GC0715980HBPEXA
Instrument ID: GCHP5A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	4.2
Chromatogram Pattern:		
Unidentified HC		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	60

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (925) 988-9600, FAX (925) 988-9673
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Toxichem Mgmt Systems
1461 Newport Ave
San Jose, CA 95125
Attention: Dan Hernandez

Client Project ID: Texaco 3810 Broadway

QC Sample Group: 9807353-03

Reported: Jul 22, 1998

QUALITY CONTROL DATA REPORT

Matrix: Solid
Method: EPA 8015M
Analyst: A PORTER

ANALYTE Diesel

QC Batch #: GC0717980HBPEXA

Sample No.: 9807911-1
Date Prepared: 7/17/98
Date Analyzed: 7/21/98
Instrument I.D.#: GCHP5B

ample Conc., mg/Kg: 11 mg/Kg
Conc. Spiked, mg/Kg: 17

Matrix Spike, mg/Kg: 45
% Recovery: 200

Matrix ike Duplicate, mg/Kg: 34
% Recovery: 135

elative % Difference: 39

RPD Control Limits: 0-50

LCS Batch#: BLK071798AS

Date Prepared: 7/17/98
Date Analyzed: 7/21/98
Instrument I.D.#: GCHP5B

Conc. Spiked, mg/Kg: 17

Recovery, mg/Kg: 16
LCS % Recovery: 94

Percent Recovery Control Limits:

MS/MSD	50-150
LCS	60-140

Quality Assurance Statement All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Reggy Penner
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch

Sequoia Analytical

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Toxichem Mgmt Systems
1461 Newport Ave.
San Jose, CA 95125
Attention: Dan Hernandez

Client Project ID: Texaco 3810 Broadway

QC Sample Group: 9807353-01-02, -04-06

Reported Jul 22, 1998

QUALITY CONTROL DATA REPORT

Matrix: Solid
Method: EPA 8015M
Analyst: A PORTER

ANALYTE Diesel

QC Batch #: GC0715980HBPEXA

Sample No.: 9807497-39
Date Prepared: 7/13/98
Date Analyzed: 7/16/98
Instrument I.D.#: GCHP5A

ample Conc., mg/Kg: N.D.
Conc. Spiked, mg/Kg: 17

Matrix Spike, mg/Kg: 13
% Recovery: 76

Matrix ike Duplicate, mg/Kg: 13
% Recovery: 76

elative % Difference: 0.0

RPD Control Limits: 0-50

LCS Batch#: BLK071598AS

Date Prepared: 7/15/98
Date Analyzed: 7/16/98
Instrument I.D.#: GCHP5A

Conc. Spiked, mg/Kg: 17

Recovery, mg/Kg: 14
LCS % Recovery: 82

Percent Recovery Control Limits:

MS/MSD	50-150
LCS	60-140

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Peggy Perrier
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

Sequoia Analytical

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Toxichem Mgmt Systems
1461 Newport Ave.
San Jose, CA 95125
Attention: Dan Hernandez

Client Project ID: Texaco 3810 Broadway

QC Sample Group: 9807353-01-06

Reported: Jul 22, 1998

QUALITY CONTROL DATA REPORT

Matrix: Solid
Method: EPA 8015
Analyst: G. PESHINA

ANALYTE Gasoline

QC Batch #: GC070998BTEXEXA

Sample No.: GS9807350-3
Date Prepared: 7/9/98
Date Analyzed: 7/9/98
Instrument I.D.#: GCHP7

ample Conc., mg/Kg: N.D.
Conc. Spiked, mg/Kg: 5.0

Matrix Spike, mg/Kg: 6.6
% Recovery: 132

Matrix ike Duplicate, mg/Kg: 6.1
% Recovery: 122

elative % Difference: 7.9

RPD Control Limits: 0-25

LCS Batch#: GSBLK070998A

Date Prepared: 7/9/98
Date Analyzed: 7/9/98
Instrument I.D.#: GCHP7

Conc. Spiked, mg/Kg: 5 0

Recovery, mg/Kg: 5.8
LCS % Recovery: 116

Percent Recovery Control Limits:

MS/MSD	60-140
LCS	70-130

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

Please Note.
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch

Sequoia Analytical

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Toxichem Mgmt Systems
1461 Newport Avenue
San Jose, CA 95125
Attention: Dan Hernandez

Client Project ID: Texaco 3810 Broadway
Matrix: Solid
Work Order #: 9807353 -01-06
Reported: Jul 24, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Beryllium	Cadmium	Chromium	Nickel
QC Batch#:	ME0714986010MDC	ME0714986010MDC	ME0714986010MDC	ME0714986010MDC
Analy. Method:	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prep. Method:	EPA 3050	EPA 3050	EPA 3050	EPA 3050
Analyst:	C. Caoile	C. Caoile	C. Caoile	C. Caoile
MS/MSD #:	980773801	980773801	980773801	980773801
Sample Conc.:	0.79	N.D.	60	95
Prepared Date:	7/14/98	7/14/98	7/14/98	7/14/98
Analyzed Date:	7/14/98	7/14/98	7/14/98	7/14/98
Instrument I.D.#:	MTJA5	MTJA5	MTJA5	MTJA5
Conc. Spiked:	50 mg/Kg	50 mg/Kg	50 mg/Kg	50 mg/Kg
Result:	44	45	110	140
MS % Recovery:	86	90	100	90
Dup. Result:	45	47	110	130
MSD % Recov.:	88	94	100	70
RPD:	2.2	4.3	0.0	7.4
RPD Limit:	0-20	0-20	0-20	0-20
LCS #:	BLK071498	BLK071498	BLK071498	BLK071498
Prepared Date:	7/14/98	7/14/98	7/14/98	7/14/98
Analyzed Date:	7/14/98	7/14/98	7/14/98	7/14/98
Instrument I.D.#:	MTJA5	MTJA5	MTJA5	MTJA5
Conc. Spiked:	50 mg/Kg	50 mg/Kg	50 mg/Kg	50 mg/Kg
LCS Result:	54	54	53	53
LCS % Recov.:	108	108	106	106

MS/MSD	80-120	80-120	80-120	80-120
LCS	80-120	80-120	80-120	80-120
Control Limits				

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

RRM, Inc.

PG 1 OF 3

3912 Portola Drive, Suite 8 - Santa Cruz, California - Telephone (408) 475-8141 - Fax (408) 475-8249

Chain of Custody/Analysis Work Order

BILL TO TEXACO

FAX AND SEND RESULTS TO:

Client: TOXCHEM MGMT SYSTEMS
Address: 1461 NEWPORT AVENUE
SAN JOSE, CA 95125
Contact: DAN HERNANDEZ
Telephone #: (408) 292-3266
FAX 298-6591
Date Received:
Turn Around: STANDARD

Project ID: 3810 BROADWAY OAKLAND, CA
Purchase Order #: BA02

Sampler/Company: MATT KAEMPF
Telephone #: (408) 475-8141

Special Instructions/Comments MAKE 4 POINT COMPOSITE FROM EACH SAMPLE SET OF SB-1, SB-2, SB-3, SB-4, SB-5, SB-6 REPORT RESULTS AS FOLLOWING NOMENCLATURE EXAMPLE: SB-5-COMP(5',11',15',20') OR SB-6-COMP(5',10',15',20')

LAB USE ONLY

Samples arrived chilled and intact: Yes No

Notes:

9807353

Sample Information / Requested Analysis

Lab #	Sample ID	Grab/ Composite	Matrix	Date Collected	Time Collected	Pres.	Sample Container	TPHg BTEX	TPHd	Total Lead					
1	SB-1-5'	4 IN 1 COMP	SOIL	7/3/98	1440	NO	ACETATE LINER	X	X	X					
	SB-1-10'				1455										
	SB-1-15'				1508										
	SB-1-20'				1511										
2	SB-2-5'	4 IN 1 COMP			1335										
	SB-2-10'				1345										
	SB-2-15'				1400										
	SB-2-20'				1403										

Relinq By:	Received By:	Date 070798	Time 1215
Relinq. By:	Received By	Date	Time
Relinq/ By:	Received By	Date	Time

RRM, Inc.

PG 2 OF 3

3912 Portola Drive, Suite 8 - Santa Cruz, California - Telephone (408) 475-8141 - Fax (408) 475-8249

Chain of Custody/Analysis Work Order

BILL TO TEXACO

FAX AND SEND RESULTS TO:

Client: TOXICHEM MGMT SYSTEMS
Address: 1461 NEWPORT AVENUE
SAN JOSE, CA 95125
Contact: DAN HERNANDEZ
Telephone #: (408) 292-3266
FAX 298-6591
Date Received:
Turn Around: STANDARD

Project ID: 3810 BROADWAY OAKLAND, CA
Purchase Order #: BA02

Sampler/Company: MATT KAEMPF
Telephone #: (408) 475-8141

Special Instructions/Comments MAKE 4 POINT COMPOSITE FROM EACH SAMPLE SET OF SB-1, SB-2, SB-3, SB-4, SB-5, SB-6 REPORT RESULTS AS FOLLOWING NOMENCLATURE EXAMPLE: SB-5-COMP(5',11',15',20') OR SB-6-COMP(5',10',15',20')

LAB USE ONLY

Samples arrived chilled and intact:
Yes No
Notes:

(9807353)

Sample Information								Requested Analysis							
Lab #	Sample ID	Grab/ Composite	Matrix	Date Collected	Time Collected	Pres.	Sample Container	TPHg BTEX	TPHd	Total Lead					
3	SB-3-8'	4 IN 1 COMP	SOIL	7/3/98	1226	No	ACETATE LINER	X	X	X					
	SB-3-10'				1231										
	SB-3-14'				1238										
	SB-3-20'				1255										
4	SB-4-5'	4 IN 1 COMP			1000										
	SB-4-9'				1001										
	SB-4-12'				1009										
	SB-4-20'				1030										

Relinq. By:	Received By:	Date	Time
Matt Kaempf	[signature]	070798	1215
Relinq By:	Received By:	Date	Time
By:	Received By:	Date	Time

RRM, Inc.

3912 Portola Drive, Suite 8 - Santa Cruz, California - Telephone (408) 475-8141 - Fax (408) 475-8249

Chain of Custody/Analysis Work Order

BILL TO TEXACO

FAX AND SEND RESULTS TO:

Client: TOXICHEM MGMT SYSTEMS
Address: 1461 NEWPORT AVENUE
SAN JOSE, CA 95125
Contact: DAN HERNANDEZ
Telephone #: (408) 292-3266
FAX 298-6591
Date Received:
Turn Around: STANDARD

Project ID: 3810 BROADWAY OAKLAND, CA
Purchase Order #: BA02

Sampler/Company: MATT KAEMPF
Telephone #: (408) 475-8141

Special Instructions/Comments MAKE 4 POINT COMPOSITE FROM EACH SAMPLE SET OF SB-1, SB-2, SB-3, SB-4, SB-5, SB-6 REPORT RESULTS AS FOLLOWING NOMENCLATURE EXAMPLE: SB-5-COMP(5',11',15',20') OR SB-6-COMP(5',10',15',20')

LAB USE ONLY

Samples arrived chilled and intact:
Yes No
Notes:

9807353

Sample Information / **Requested Analysis**

Lab #	Sample ID	Grab/ Composite	Matrix	Date Collected	Time Collected	Pres.	Sample Container	TPHg BTEX	TPHd	Total Lead					
5	SB-5-5'	4 IN 1 COMP	SOIL	7/3/98	0820	NO	ACETATE LINER	X	X	X					
	SB-5-11'				0840										
	SB-5-15'				0903										
	SB-5-20'				0930										
6	SB-6-5'	4 IN 1 COMP			1120										
	SB-6-10'				1145										
	SB-6-15'				1153										
	SB-6-20'				1200										

Relinq By:	Received By	Date	Time
Matt Kaempf	[signature]	070798	1215
Relinq. By:	Received By	Date	Time
Relinq/ By:	Received By	Date	Time

321-003

RRM, Inc.

3912 Portola Drive, Suite 8 - Santa Cruz, California - Telephone (408) 475-8141 - Fax (408) 475-8249

Chain of Custody/Analysis Work Order

Client: BILL: TOXICHEM
Address: 1461 NEWPORT AVENUE
SAN JOSE, CA. 95125
Contact: DAN HERNANDEZ
Telephone #: (408) 292-3266
Date Received:
Turn Around: STANDARD

Project ID: 3810 BROADWAY OAKLAND, CA.
Purchase Order #: BA02

Sampler/Company: KAEMPF/RRM
Telephone #: (408) 475-8141

Special Instructions/Comments: RESULTS AND INVOICE TO TOXICHEM @ 112nd SAMPLE

LAB USE ONLY

Samples arrived chilled and intact:
Yes No
Notes:

Sample Information

Lab #	Sample ID	Grab/ Composite	Matrix	Date Collected	Time Collected	Pres.	Sample Container
	SB-1-5'	GRAB	SOIL	7/3/98	1440	NO	ACETATE LNR
	SB-2-5'	↓	↓	↓	1335	↓	↓
	SB-3-5'	↓	↓	↓	1220	↓	↓
	SB-6-5'	↓	↓	↓	1120	↓	↓

Requested Analysis

TOTAL POROSITY	MOISTURE CONTENT	AIR FILLED POROSITY	TOC				
X	X	X	X				
X	X	X	X				
X	X	X	X				
X	X	X	X				

Should charge 1/2 hr.
~~1-6~~ 5" samples - extra time for special size
contaminated odor in SB-6-5

Relinq. By:	Received By:	Date	Time
[signature]	[signature]	7/7/98	12:30
Relinq. By:	Received By:	Date	Time
Relinq. By:	Received By:	Date	Time

Dave Cooper
(650) 968-9472

COOPER TESTING LABS

MOISTURE DENSITY - POROSITY DATA SHEET

Job #	324-003				
Client	RRM				
Project/Location	3810 Broadway				
Date	7/13/98				
Boring #	SB-1-5	SB-2-5	SB-3-5	SB-6-5	
Depth (ft)			Loose		
Soil Type	yellow brown clayey SAND	brown silty SAND grading clayey	yellow brown silty SAND w/ gravel	olive brown clayey SAND w/ gravel	
Specific Gravity	2.70	2.69	2.66	2.74	
Volume Total cc	180.874	207.697	801.377	205.682	
Volume of Solids	117.789	131.595	175.038	134.222	
Volume of Voids	63.085	76.102	626.339	71.460	
Void Ratio	0.536	0.578	3.578	0.532	
Porosity %	34.9%	36.6%	78.2%	34.7%	
Saturation %	99.8%	82.8%	2.4%	77.7%	
Moisture %	19.8%	17.8%	3.2%	15.1%	
Dry Density (pcf)	109.8	106.4	36.3	111.6	

Remarks

0.32
0.26

Organic Content
ASTM D2974

Cooper Testing Lab

JOB NO.: 324-003 CLIENT: RRM PROJECT 3810 Broadway			DATE: 07/13/98 BY: DC		
BORING: SAMPLE: DEPTH, ft.:	SB-1-5	SB-2-5	SB-3-5	SB-6-5	
SOIL CLASSIFICATION: (visual)	see porosity				
SOIL, ORGANICS & DISH, gm:	130.19	138.8	151.33	145.87	
SOIL & DISH, gm:	129.63	137.89	150.54	144.48	
DISH, gm:	83.14	79.46	80.93	81.62	
SOIL, gm:	46.49	58.43	69.61	62.86	0
SOIL & ORGANICS, gm:	47.05	59.34	70.4	64.25	0
% ORGANICS:	1.2	1.5	1.1	2.2	ERR

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Matt Kaempf
Remediation Risk Management
3912 Portola Drive, Suite 8
Santa Cruz, CA 95062

Date:	7/13/98
Date Received:	7/6/98
Date Analyzed:	7/6/98
Project #:	3810 Broadway, Oakland
P.O. #:	BA02
Sampled By:	Client

Certified Analytical Report

Vapor Sample Analysis:

Sample ID	Sample Date	Sample Time	Lab #	DF	TPH-Gas	Benzene	Toluene	Ethyl Benzene	Xylene
SB-1	7/3/98	1520	E12698	1	22	0.10	0.27	ND	0.99
SB-3	7/3/98	1530	E12699	1	ND	ND	ND	ND	ND
SB-6	7/3/98	1543	E12700	1	ND	ND	0.11	ND	ND

1. DLR=Dilution Factor x PQL
2. Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)

Summary of Methods and Detection Limits:

	TPH-Gas	Benzene	Toluene	Ethylbenzene	Xylenes
EPA Method #	8015M	8020	8020	8020	8020
Units	mg/m^3	mg/m^3	mg/m^3	mg/m^3	mg/m^3
PQL	10 mg/m^3	0.10 mg/m^3	0.10 mg/m^3	0.10 mg/m^3	0.30 mg/m^3

Michael N. Golden, Lab Director

DF=Dilution Factor
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above DLR

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography

QC Batch #: GBG2980706
Matrix: Water
Units: ug/L

Date Analyzed: 07/06/98
Quality Control Sample: E12522

PARAMETER	Method #	MB ug/L	SA ug/L	SR ug/L	SP ug/L	SP % R	SPD ug/L	SPD %R	RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<0.50	40	ND	37	94	39	97	3.2	25	77-111
Toluene	8020	<0.50	40	ND	37	92	38	95	3.4	25	79-110
Ethyl Benzene	8020	<0.50	40	ND	38	95	39	99	3.8	25	79-112
Xylenes	8020	<0.50	120	ND	117	97	123	102	5.3	25	80-113
Gasoline	8015	<50.0	1000	ND	860	86	840	84	2.4	25	61-125

Note: LCS and LCSD results reported for the following Parameters:
Gasoline

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC limits.

Definition of Terms:

- na: Not Analyzed in QC batch
- MB: Method Blank
- SA: Spike Added
- SR: Sample Result
- RPD(%): Duplicate Analysis - Relative Percent Difference
- SP: Spike Result
- SP (%R): Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R): Spike % Recovery
- NC: Not Calculated

and Recovery Act. No sites on the U.S. EPA RCRIS_CA database were found to be located within a 1 mile radius of the subject site.

4.3. SCVWD File Review

Toxichem requested any available LUST files for the Property and for those sites within a one-quarter mile radius of the Property where underground storage tanks were, or are presently used for fuel storage.

In order to obtain information regarding these properties, files from the SCVWD were examined. No files for the subject site were available. Three sites were identified in the vicinity of the subject site for which LUST files were available. All three sites were closed and no further action was required by the SCVWD. The following information was obtained from this file review. The closure report summaries are presented in Attachment D.

Century Chrysler Plymouth - 4202 Stevens Creek Blvd., San Jose This site was located 0.05 miles to the southeast of the subject site and is the current location of Stevens Creek Toyota. An underground storage tank unauthorized release was reported on February 7, 1995 following the removal of a waste oil tank and a waste anti-freeze tank. Samples were collected beneath the former tanks and analyzed for total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, xylenes, and volatile organic compounds (VOCs). Results of the sample analyses were non-detect with the exception of oil and grease range TPH and metals. Oil and grease range TPH were either at or near the detection limit; metals were interpreted to be typical of background levels. As a results of these findings, the Regional Water Quality Control Board issued a letter requiring no further action on May 3, 1995.

Anderson Behel - 4355 Stevens Creek Blvd., Santa Clara This site is located 0.13 mile to the southwest of the subject site. An underground storage tank unauthorized release was reported on January 13, 1990 following the removal of an underground gasoline and waste oil tank. Samples were collected beneath the former tanks and analyzed for total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, xylenes, and volatile organic compounds (VOCs). Concentrations of trichloroethane and tetracholoroethene were detected in soils at concentrations of 0.13 and 0.15 parts per billion (ppb), respectively. Oil and grease range TPH were detected at concentrations of 25,000 ppb. Over excavation of the tank pit area was performed to a depth of 21 feet below ground surface. A subsequent soil boring indicated that oil and grease were detected at concentrations of 26,000 below the excavation; however, 5 additional borings indicated that the contamination was localized and was therefore left in place. As a results of these findings, the SCVWD issued a letter requiring no further action on March 4, 1996.

St. Claire Cadillac - 4343 Stevens Creek Blvd., Santa Clara This site is located 0.13 mile to the southwest of the subject site. An underground storage tank

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Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • Telephone (408) 735-1550 (800) 287-1799 • Fax: (408) 735-1554

Chain of Custody/Analysis Work Order

Client: RRM ~ BILL TOXICHEM
Address:
MATT KAEMPFEN
Contact: DAN HERNANDEZ
Telephone #: (408)475-8141 ~ 292-3266
Date Received: 7/6/98
Turn Around:

Project ID: 3810 BROADWAY, OAKLAND
Purchase Order #: BA02

Sampler/Company: KAEMPF
Telephone #: 475-8141

Special Instructions/Comments
ANALYZE BY 1500 ON 7/6/98
AT STANDARD T/A

LAB USE ONLY
Samples arrived chilled and intact:
Yes No
Notes:

Sample Information								Requested Analysis							
Lab #	Sample ID	Grab/ Composite	Matrix	Date Collected	Time Collected	Pres.	Sample Container	THfg/ BTEX							
812698	SB-1	GRAB	SOIL GAS	7/3/98	1520	NO	1L. TEDLAR BAG	X							
812699	SB-3	↓	↓	↓	1530	↓	↓	X							
812700	SB-6	↓	↓	↓	1543	↓	↓	X							

Relinq. By: [signature]	Received By: Humberto Martinez 9&1	Date 7/6/98	Time 1025
Relinq By: Humberto Martinez 9&1	Received By: VTCAW	Date 7/6/98	Time 11:45
Relinq By:	Received By:	Date	Time

Act of 1976 and the Hazardous and Solid Waste Amendments of 1984, the storage and disposal of hazardous materials was essentially uncontrolled. If the drains were utilized for the disposal of these materials onto porous concrete surfaces, a potential exists for soil contamination beneath the drains.

5.4. Hazardous Substance Containers and Unidentified Substance Containers

Based on interviews and visual site inspection, there was no evidence to indicate wells, below ground storage tanks, vent pipes, or fill pipes were located at the site.

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TOXICHEM
Management
Systems, Inc.
Environmental & Occupational Health Services
1562 44th Avenue
San Francisco, California 94122
(415) 681-8816 / Fax (415) 681-8132

#1435

Industrial Hygiene - Exposure Assessment
Quantitative Risk Assessment
Compliance Audits
Real Property Environmental Assessments
Remedial Investigations
Air, Soil, and Groundwater Sampling
Remedial Engineering and Construction
Regulatory Compliance and Negotiation
Litigation Support Services

REPORTS

June 5, 2000
Project EQ-02.1A

Mr. Barney Chan
Alameda County Health Care Services Agency
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: **Soil Excavation Report**
Former Texaco Service Station
3810 Broadway, Oakland, California

Dear Mr. Chan:

On behalf of Equiva Services LLC (Equiva), Toxichem Management Systems, Inc. (TOXICHEM) prepared this report to document the soil excavation activities recently completed at the above referenced site. This work was performed in accordance with the *Work Plan for Soil Excavation* (TOXICHEM, May 20, 1999) and *Work Plan Addendum for Soil Excavation* (TOXICHEM, August 10, 1999) and your letters of approval dated June 17, 1999 and August 17, 1999. This report also documents the petroleum hydrocarbon-impacted soil that was encountered subsequent to Equiva's excavation project, during installation of new underground storage tanks (USTs). Installation of the new USTs is part of a site redevelopment project by the property owner.

A complete record of site background, previous investigations, conceptual release and transport model, and corrective action goals is presented in the *Corrective Action Plan* (CAP) (TOXICHEM, November 15, 1998). Included in this report is a discussion of the scope of work, findings, and conclusions and recommendations. The necessary permits, field notes and photographs, site health and safety plan, excavation survey, compaction testing certification, and soil disposal documentation are presented as Attachment A. The certified analytical report and chain-of-custody documentation are presented as Attachment B.

SCOPE OF WORK

The scope of this project included the following activities.

- Well Abandonment
- Soil Excavation
- Groundwater Removal
- Excavation Backfill
- Post-Field

FINDINGS

Well Abandonment

Monitoring Wells MW-3 and MW-8 were located within the proposed limits of excavation described in the *Work Plan for Soil Excavation* (Figures 1 and 2). It was therefore necessary to abandon these wells prior to beginning excavation fieldwork. Both wells were properly destroyed on February 2, 2000 using the pressure grout method in accordance with Alameda County Public Works Agency (ACPWA) requirements.

Soil Excavation

Prefield Work

TOXICHEM selected RRM, Inc. (RRM) of Santa Cruz, California as the general contractor to perform the excavation fieldwork. RRM is a licensed Class A general engineering contractor with hazardous substance removal certification. Prior to any excavation fieldwork, TOXICHEM requested that the property owner disconnect the natural gas and electrical utilities to the site, and to clear the site of all automobiles and outside equipment, tools, machinery, storage, supplies, etc. Also, RRM erected a site perimeter security fence to minimize the potential for unauthorized access to the site during the excavation fieldwork.

Additionally, TOXICHEM requested and obtained the soil compaction requirements for the site redevelopment project from Mr. Ray Mojica, the property owner's architect, on October 26, 1999. For conservative and safety reasons, Equiva's soil compaction requirements exceeded those required by the property owner in that the first 5 feet of soil below grade would be compacted to 95% relative compaction in 1-foot lift intervals to surface grade. The property owner's original compaction requirements required that only the upper 2 feet of soil be compacted to 95% relative compaction. However, subsequent telephone discussions with the property owner and his representatives raised a concern that footings for the new canopy may require different compaction requirements. After repeated requests, the property owner finally responded with revised compaction requirements via a letter from his contractor, dated March 2, 2000. In that letter, the contractor directed TOXICHEM to either engage the services of a soils engineer to engineer the backfill or use pea gravel to backfill the excavation. Given that the revised compaction requirements were received less than two business days prior to beginning excavation fieldwork, TOXICHEM had little choice except to use pea gravel to backfill the majority of the excavation, at considerable additional cost to Equiva.

On April 26, 2000, the property owner's contractor advised TOXICHEM that the canopy footing design had been modified from 3 feet square by 5 feet deep to 7 feet square by 3 feet deep for additional factor of safety.

Fieldwork

Excavation fieldwork was performed between March 6 and 8, 2000. As proposed in the *Work Plan for Soil Excavation*, the excavation fieldwork was performed in two phases to allow segregation of clean soil from impacted soil. During the first phase of excavation, soil was excavated to a depth of approximately 6 to 8 feet below ground surface (bgs). Based on visual and olfactory field observations, the soil between approximately 1 and 6 feet bgs showed heavy petroleum hydrocarbon impact. Product piping was unexpectedly discovered and removed during this phase of the excavation. The product piping consisted of 1 ½-inch diameter steel

and fiberglass piping located beneath the former product islands and near the former UST complex. The soil directly beneath the product piping appeared heavily impacted by petroleum hydrocarbons. The soil was discolored and had a strong product odor. The impacted soil in the upper part of the excavation appeared to extend laterally in all directions, but was most impacted along the northern and western borders of the excavation.

Prior to beginning excavation fieldwork, it was estimated that approximately 600 cubic yards of soil, excavated from surface grade to 8 feet bgs, would meet the soil reuse concentration limits. This estimate proved incorrect and only approximately 100 cubic yards of soil, primarily backfill from the former UST complex location, was reusable. This soil was temporarily stockpiled on-site.

Two concrete piling footings, approximately 3 feet diameter by 5 feet, were also discovered during the initial phase of excavation, and subsequently disposed of as refuse. Also, the well box and casing for Well MW-2 was damaged by the backhoe during stockpiling of the segregated soil to be reused as backfill.

During the second phase of the excavation, approximately 175 linear feet of sheet pile shoring was installed for slope stability and safety purposes. The shoring was installed based on the proposed limits of excavation and in a configuration that was technically practical. The resulting excavation-footprint was trapezoidal-shaped (Figure 3). The shoring was installed to approximately 21 feet bgs along the southern and eastern borders, and to approximately 25 feet bgs along the northern and western borders. All soil from within the excavation was then excavated to depth of approximately 20 feet bgs in the southeastern corner, 22 feet bgs along the western and northern parts, and to a maximum depth of 23 feet bgs in the northeast corner of the excavation. The average depth of the excavation was approximately 22 feet bgs.

The heaviest impacted soil appeared to be located between 15 to 18 feet bgs. Strong discoloration and product odor was observed in the soil throughout the excavation limits at this depth interval. During the excavation of this soil, impacted soil flared due to welding of the adjacent shoring. The excavator immediately used a bucket of soil to extinguish the flame.

A total of approximately 1,400 cubic yards, or 2,200 tons, of impacted soil was excavated. Due to site space constraints, all excavated soil except for the 100 cubic yards described above was immediately loaded onto waiting trucks. To facilitate soil load-out, the parking lane of Broadway was temporarily closed under a street closure permit obtained from the City of Oakland, California. All of this soil was transported to the Forward, Inc. landfill in Manteca, California, where it was temporarily stockpiled, profiled, and disposed.

Although the majority of impacted soil was excavated from the site, it must be noted that impacted soil appeared to extend beyond the maximum depth of the excavation vertically and laterally, with the soil in the southeastern corner of the excavation appeared to be the most impacted. The placement of the shoring and site features inhibited the ability to perform any over-excavation.

Soil Sampling

A total of 10 soil samples were collected from the base of the excavation between March 7 and 8, 2000. Nine soil samples (EX-1 through EX-5 and EX-7 through EX-10) were collected at the corners and along the walls of the excavations at approximately 20 linear foot intervals, and one sample (EX-6) was collected from the center of the excavation floor. Mr. Chan of ACHCSA was on-site on March 7, 2000 to observe the excavation activities, and he was

informed of the locations of the soil samples already taken and the proposed locations of the remaining samples. Mr. Chan provided verbal approval of the sample locations and departed from the site. All samples were submitted to Columbia Analytical Services, Inc. (CAS) of Santa Clara, California, and analyzed for total purgeable petroleum hydrocarbons (TPPH) and total extractable petroleum hydrocarbons (TEPH) by EPA Method 8015 (modified), and benzene, toluene, ethylbenzene, total xylenes (BTEX compounds) and methyl tertiary-butyl ether (MtBE) by EPA Method 8020. The soil sample containing the highest MtBE concentration was also analyzed by EPA Method 8260 for confirmation purposes.

Soil Analytical Data

Soil analytical data are summarized below and are presented in Table 1 and on Figure 2.

- TPPH was detected in all soil samples collected. The concentrations detected were 230 milligrams per kilogram (mg/kg) or less in all samples except one. The concentration of TPPH in Sample EX-1 was 3,100 mg/kg, which was collected from the southeastern corner of the excavation.
- TEPH was detected in 7 out of 10 soil samples. The concentrations detected were 26 mg/kg or less in all samples except one. The concentration of TEPH detected in Sample EX-1 was 1,900 mg/kg.
- BTEX compounds were detected in all soil samples. The concentrations of benzene in Samples EX-1, EX-3, and EX-8 were 14, 0.80, and 0.66 mg/kg, respectively, which are above the proposed limit of excavation for benzene, which is 0.5 mg/kg at 20 feet bgs. The residual concentrations of benzene in the remaining soil samples and the residual concentrations of toluene, ethylbenzene, and xylenes in all soil samples were below the proposed limits of excavation for these compounds.
- MtBE was not detected and confirmed by EPA Method 8260 in any soil sample.

It is important to note that the limits of excavation were based on the site cleanup goals presented in the CAP. These soil cleanup goals presumed an average concentration of petroleum hydrocarbons in a large volume of soil that would be located beneath the footprint of the excavation. Given the vast majority of impacted soil was excavated from the site, any residual soil remaining in three localized areas with concentrations of benzene above the soil cleanup goals remain health protective. Additionally, these soils are located at approximately 20 feet bgs, or within the saturated zone, thus minimizing the potential for volatilization and vapor transport. Although the shoring inhibited the ability to perform any over-excavation of the soils in these three areas, the excavation project is considered to have met all objectives to the extent practical.

In addition, one four-part composite soil sample was collected by Forward, Inc. landfill personnel for soil profiling purposes. The analytical results are summarized below and are presented on Table 1.

- TPPH and TEPH were detected at concentrations of 49.5 and 40.5 mg/kg, respectively.
- Benzene was not detected, but toluene, ethylbenzene, and xylenes were detected at 0.0806, 0.167, and 0.346 mg/kg, respectively.

- MtBE was not detected and confirmed by EPA Method 8260 in any soil sample.

Property Owner's Excavation

In March and April 2000, the property owner's contractor performed excavation activities to install new USTs at the site, subsequent to Equiva's excavation. This excavation was located north of Equiva's excavation. During excavation, additional impacted soil was encountered and segregated based on visual and olfactory observations. Approximately 225 cubic yards, or 360 tons, of impacted soil was excavated between March 29 and 31, 2000, and removed from the site on March 30 and 31, 2000. Approximately 300 cubic yards, or 475 tons, of impacted soil was subsequently excavated on April 26 and 27, 2000, and removed from the site on April 27, 2000. All impacted soil was transported to and disposed of at the Forward, Inc. landfill in Manteca, California. The remaining soil that was excavated was tested by and disposed of as clean fill material by the property owner's contractor.

Impacted soil was observed in the northeast corner of their excavation at approximately 13-16 feet bgs. This soil was excavated to the maximum possible extent without threatening slope stability and undermining the adjacent site building.

A total of 4 additional soil samples (S-1 through S-4) were collected from the base of the sidewalls of the property owner's excavation (or approximately 16 feet bgs) at approximately 20 linear foot intervals, and one sample (S-5) was collected from the center of the excavation floor. There were no soil samples collected from the south side of the excavation. The property owner's contractor undermined Equiva's pea gravel backfill along the south side of the excavation. This resulted in pea gravel from Equiva's excavation to collapse into the excavation preventing the collection of native soil. The property owner's contractor is solely responsible for backfilling and re-compacting this area.

All samples were submitted to CAS, and analyzed for TPPH, TEPH, BTEX compounds, and MtBE. The soil sample containing the highest MtBE concentration was also analyzed by EPA Method 8260 for confirmation purposes. The soil analytical data are summarized below and are presented in Table 1 and on Figure 2.

- TPPH was detected in only one soil sample (S-4), at a concentration of 2,100 mg/kg.
- TEPH was detected in only one soil sample (S-4), at a concentration of 2,400 mg/kg.
- Benzene was detected in only one soil sample (S-5), at a concentration of 0.035 mg/kg. Toluene was not detected in any soil sample. Ethybenzene and xylenes were detected in only one soil sample (S-4), at concentrations of 7.4 and 40 mg/kg, respectively.
- MtBE was not detected and confirmed by EPA Method 8260 in any soil sample.

During the property owner's excavation to install the new USTs, Equiva discovered that Well MW-2 had been damaged and its location conflicted with a new UST; the property owner had increased the volume (and footprint) of the UST resulting in the conflict without informing Equiva of the modification. As a result, the property owner and his contractor have accepted full responsibility to properly destroy Well MW-2 by completely excavating the well. On

March 30, 2000, TOXICHEM notified Mr. Barney Chan of Alameda County Health Care Services Agency (ACHCSA) of this situation. Consultations between TOXICHEM, the property owner, and the property owner's representatives and contractor that describe ACPWA well destruction requirements and their confirmation that Well MW-2 was properly destroyed are documented in TOXICHEM's files.

Well MW-1 was also damaged during the property owner's excavation. The property owner's contractor damaged the well by breaking the casing at approximately 8 feet bgs. The well was repaired by installing a PVC coupler and new blank casing, and a new well seal. TOXICHEM's consultations with the property owner's contractor that describe the well repair requirements and their confirmation that Well MW-1 was properly repaired are documented in TOXICHEM's files.

Groundwater Removal

Prefield

Groundwater generally occurs at between 16 and 20 feet bgs in the monitoring wells on the site. The soils located beneath 15 feet bgs consist mainly of clays and silts, and these fine-grained soils were expected to produce groundwater. Additionally, separate phase hydrocarbons (SPH) have been encountered at the site during previous groundwater monitoring and sampling events. Therefore a temporary groundwater extraction, holding, and treatment system was assembled on-site. The purpose of the system was to remove as much impacted groundwater as possible during Equiva's excavation. The system consisted of SPH skimmer and absorbent pads, a 7,500-gallon holding tank, a trash pump, and three 55-gallon granulated activated carbon (GAC) drums that were arranged in series. Water removed from the excavation was temporarily stored in the baker tank, and then batch processed through the GAC drums. All treated water was discharged to the sanitary sewer under the existing permit for the facility.

Fieldwork

The expectation that the fine-grained soils would produce groundwater was over-estimated, as there was no standing groundwater encountered while the excavation was open. A temporary dewatering well consisting of a 12-inch diameter corrugated pipe was installed to remove water from the excavation during the backfilling process. Approximately 1,800 gallons of water was removed and stored in the holding tank before removing the well and completing the backfilling and compaction process. There was no SPH encountered during the excavation fieldwork. The water removed consisted of groundwater and water from a leaking water supply line, and represents the maximum possible volume of recoverable water. The holding tank water was then batch discharged through the GAC drums. The water had a faint to moderate product odor. A water sample was collected from the holding tank (Sample INFL), prior to the first GAC drum (Sample INFL[2]), between the first and second GAC drums (Sample MID-1), between the second and third GAC drums (Sample MID-2), and after the third GAC drum (EFFL). All samples were submitted to CAS and analyzed for TPPH, BTEX compounds, and MtBE. TEPH analysis was not performed due to field error.

Water Analytical Data

Water analytical data are summarized below and are presented in Table 2.

- TPPH and BTEX compounds were detected in the influent samples. TPPH was detected at concentrations of 33,000 and 20,000 microgram per liter (µg/L), respectively. BTEX compounds were detected in concentrations ranging from 600 to 5,700 µg/L. There was no MtBE detected in any influent sample.
- TPPH and MtBE were not detected in the midpoint samples. BTEX compounds were detected only in Sample MID-1 at concentrations of 5.6, 9.6, 2.0, and 11 µg/L, respectively. There was no MtBE detected in any midpoint sample.
- TPPH, BTEX compounds, and MtBE were not detected in the effluent sample.

Dissolved Mass Removal Estimate

As requested by ACHCSA and based on the volume of water removed and the average of the TPPH concentrations of the influent samples, approximately 0.4 pounds of dissolved petroleum hydrocarbons were removed during Equiva's excavation project.

Excavation Backfill

Profiling Stockpiled Soil

Approximately 100 cubic yards of soil removed from the upper 8 feet of the Equiva excavation was temporarily stockpiled on-site for reuse. Four 4-part composite soil samples (SP COMP 1A through SP COMP 1D) were collected from the stockpiled soil. All soil samples were submitted to CAS and analyzed for TPPH, TEPH, BTEX compounds, MtBE. The soil analytical data indicated that the stockpiled soil met all conditions for reuse. The analytical data are presented in Table 2, and confirm that the soil can be re-used.

PVC Piping Array

As requested by ACHCSA, a polyvinyl chloride (PVC) piping array was installed in the excavation for the possible future injection of supplements or extraction of impacted groundwater. The PVC piping array consists of two components: (1) a vertical 4-inch diameter Schedule 40 PVC casing riser; and (2) a horizontal 4-inch diameter Schedule 40 PVC pipe with 0.010 slotted screen.

The original proposed layout of the PVC piping array was in a north-south orientation. However, after conferring with Mr. Chan of ACHCSA, the PVC piping array was installed in an east-west orientation toward the northern part of the excavation (Figure 3). Since the historical groundwater flow beneath the site appears to be in a southerly to southeasterly direction, this orientation should allow better dispersion of supplements to the soils and groundwater beneath the site. Additionally, the piping array is located directly downgradient of the new USTs.

The vertical riser is positioned approximately in the middle of the former western product island. The vertical riser pipe has a sump extending approximately 2 feet below the horizontal pipe, to a depth of approximately 22 feet bgs. The horizontal pipe is connected to the vertical riser and wrapped with a geotextile filter fabric and surrounded by the pea gravel backfill from the floor of the excavation to approximately 20 feet bgs. The horizontal pipe extends from the vertical riser to the opposite side of the excavation. Groundwater was observed at

approximately 18 feet bgs in the vertical riser following the completion of the backfilling and compaction processes.

ORC Mixing

Oxygen releasing compounds (ORC) have been shown to increase dissolved oxygen concentrations in groundwater and thus enhance the rate of bioremediation of petroleum hydrocarbons. Approximately 800 pounds of ORC powder were mixed with the pea gravel backfill from the excavation depth to approximately 20 feet bgs. This is equivalent to a mixture of approximately 0.1% ORC by weight.

Backfilling and Compacting

Pea gravel was used to backfill the excavation from total depth to approximately 7 feet bgs. Pea gravel generally compacts to approximately 95% compaction, which the property owner required for site redevelopment purposes. The pea gravel was covered with a geotextile filter fabric at approximately 7 feet bgs, then overlaid with imported baserock backfill from approximately 7 to 5.5 feet bgs. The reusable excavated soil was placed over the baserock fill material to a depth of approximately 5 feet bgs and compacted using a backhoe and compactor. Clean imported fill material was used to fill the remaining 5 feet to grade. The final 5 feet of backfill was compacted with a backhoe and compactor, and tested for 95% relative compaction in 1-foot lifts to surface grade.

Post-Field

On March 13, 2000, TOXICHEM notified the property owner and his representatives that Equiva's project was completed and that access to all service bays to the station building had been restored. Some minor items remained to be completed, specifically:

- Remove the holding tank.
- Remove steel and fiberglass piping and miscellaneous debris.
- Repair and backfill the water supply line.
- Restore Well MW-1 to service.
- Remove the site perimeter security fence.
- Remove three 55-gallon GAC drums.
- Repair the subsurface electrical conduit to the site.
- Replace the existing groundwater monitoring well vault boxes.

All of these items except the last two have been subsequently completed. Explanations why these three items have not yet been completed follows.

- TOXICHEM was directed by the property owner's representative not to repair the subsurface electrical conduit for two reasons. First, the former electrical service that was damaged during Equiva's excavation was substandard and RRM indicated that the service would need to be upgraded and realigned since it crosses the property owner's excavation (and possibly the product piping for the new USTs). Second, TOXICHEM was informed that new overhead electrical service was planned from 38th Street.

- TOXICHEM was directed by the property owner's representative to postpone replacing the existing groundwater monitoring well vault boxes (and the installation of replacement Wells MW-3 and MW-8) until after site redevelopment activities were completed.

As of April 12, 2000, Equiva met all requirements of providing the property owner with compensation for loss of use of the service bays during Equiva's excavation fieldwork.

Following completion of site redevelopment by the property owner, new monitoring wells will be installed to replace Wells MW-3 and MW-8. At this time, no replacement is planned for Well MW-2 because of its conflicting location with the new USTs.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of this investigation, TOXICHEM concludes that:

- Approximately 1,400 cubic yards of impacted soil was removed during Equiva's excavation. An additional 700 cubic yards of impacted soil was removed during the property owner's excavation to install new USTs.
- The majority of impacted soil appears to have been removed from the site. Impacted soil that is above the proposed limit of excavation for benzene remains at the site in three localized areas, and could not be over-excavated due to shoring constraints.
- The soil in the three localized areas is not expected to represent any significant health risk.
- Based on the information presented herein, Equiva's excavation project has met all objectives to the extent practical, and is complete.

Based on these conclusions, TOXICHEM recommends no further action regarding the soil at the site.

TOXICHEM recommends continuing the existing groundwater monitoring and sampling program, and considering the use of the PVC piping array in the future if dissolved petroleum hydrocarbon concentrations do not attenuate. The next regularly scheduled groundwater monitoring and sampling event is scheduled for June 2000, but it will likely be postponed until after completion of the property owner's site redevelopment project (possibly July 2000).

Furthermore, TOXICHEM requests that ACHCSA approve the use of the previously submitted and approved work plans (for the installation of Wells MW-3 and MW-8) for installation of replacement Wells MW-3R and MW-8R. The cost to prepare a new work plan for this work is avoidable since the previous work plans are also applicable for the replacement wells. The replacement wells will be drilled using the same procedures, except that new soil samples (of the clean excavation back fill) will not be collected. The well construction details will remain the same. To the extent practical, the replacement wells will be located as closely as feasible to the original wells; some allowance will be made to avoid the pea gravel backfill.

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If you have any questions regarding this report, please contact me at your convenience at (415) 681-8816.

Sincerely,

Toxichem Management Systems, Inc.

REGISTERED PROFESSIONAL ENGINEER
KEITH WINEMILLER
C 57744
Exp. 12/31/01
CIVIL
STATE OF CALIFORNIA

Keith Winemiller, P.E.
Senior Engineer

Attachments:
- Table 1 - Soil Analytical Data – Petroleum Hydrocarbons and MtBE
- Table 2 - Groundwater Analytical Data - Petroleum Hydrocarbons and MtBE
- Figure 1 - Initial Soil Excavation Limits
- Figure 2 - Final Soil Excavation Limits
- Figure 3 - Actual Limits of Soil Excavation By Equiva
- Figure 4 - Soil Concentration Map (Equiva)
- Figure 5 - Actual Limits of Soil Excavation (Property Owner)
- Attachment A - Permits, Field Notes and Photographs, Site Health and Safety Plan, Excavation Survey, Compaction Testing Certification, and Soil Disposal Documentation
- Attachment B - Certified Analytical Report and Chain of Custody Documentation

cc: Ms. Karen Petryna, P.E., Equiva Services LLC, P. O. Box 7869, Burbank, CA 91510-7869
Mr. Joe Zadik, 8255 San Leandro Street, Oakland, CA 94621

Table 1
Soil Analytical Data
Petroleum Hydrocarbons and MtBE

Former Texaco Service Station
3810 Broadway, Oakland, California

Sample	Sample Depth (feet, bgs)	Date Sampled	TPPH (mg/kg)	TEPH (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	MtBE by 8020 (mg/kg)	MtBE by 8260 (µg/kg)	Lead (mg/kg)
TEXACO EXCAVATION SAMPLES											
EX-1	20	03/07/00	3,100	1,900 a	14	92	34	200	4.2	<10	NA
EX-2	22	03/07/00	23	18 a	0.048	0.40	0.17	1.1	<0.12	NA	NA
EX-3	22	03/07/00	230	26 a	0.80	3.2	2.1	10	0.3	NA	NA
EX-4	20	03/07/00	12	<1	0.08	0.11	0.49	0.13	<0.05	NA	NA
EX-5	20	03/08/00	7	<1	0.019	0.074	0.041	0.22	<0.05	NA	NA
EX-6	20	03/08/00	150	26 a	0.40	1.4	2.0	7.9	<0 25	NA	NA
EX-7	22	03/08/00	2	<1	0.028	0.027	0.018	0.04	<0.05	NA	NA
EX-8	22	03/08/00	150	13 a	0.66	4.6	2.1	9.5	<0.25	NA	NA
EX-9	22	03/08/00	31	19 a	0.32	0.18	0.41	1.6	<0.12	NA	NA
EX-10	23	03/08/00	36	17 a	0.14	0.082	0.69	3.2	<0 05	NA	NA
SP COMP 1A	-	03/07/00	4	<1	<0.005	<0.005	0.007	0.038	<0.05	NA	NA
SP COMP 1B	-	03/07/00	4	<1	<0.005	0.017	0.024	0.10	<0.05	NA	NA
SP COMP 1C	-	03/07/00	<1	<1	<0.005	<0 005	<0.005	<0.005	<0.05	NA	NA
SP COMP 1D	-	03/07/00	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.05	NA	NA
COMP #1-#4	-	03/13/00	49.5	40.9	<0.005	0.0806	0.167	0.346	NA	NA	<10.0
PROPERTY OWNER'S EXCAVATION SAMPLES											
S-1	16	04/27/00	<1	<1	<0 005	<0.005	<0 005	<0.010	<0.05	NA	NA
S-2	16	04/27/00	<1	<1	<0.005	<0.005	<0.005	<0.010	<0.05	NA	NA
S-3	16	04/27/00	<1	<1	<0.005	<0.005	<0.005	<0.010	<0.05	NA	NA
S-4	16	04/27/00	2,100	2,400	<0.005	<0.005	7.4	40	<0.05	NA	NA
S-5	16	04/27/00	<1	<1	0.035	<0.005	<0.005	<0.010	<0.05	NA	NA
LIMITS OF EXCAVATION											
at 8 feet bgs			NL	NL	0.3	252	496	5,861	882	NA	NL
at 15 feet bgs			NL	NL	0.4	252	496	5,861	882	NA	NL
at 20 feet bgs			NL	NL	0.5	252	496	5,861	882	NA	NL
LIMITS FOR SOIL REUSE			100	100	0.3	*	*	*	<0.0100	NA	NL

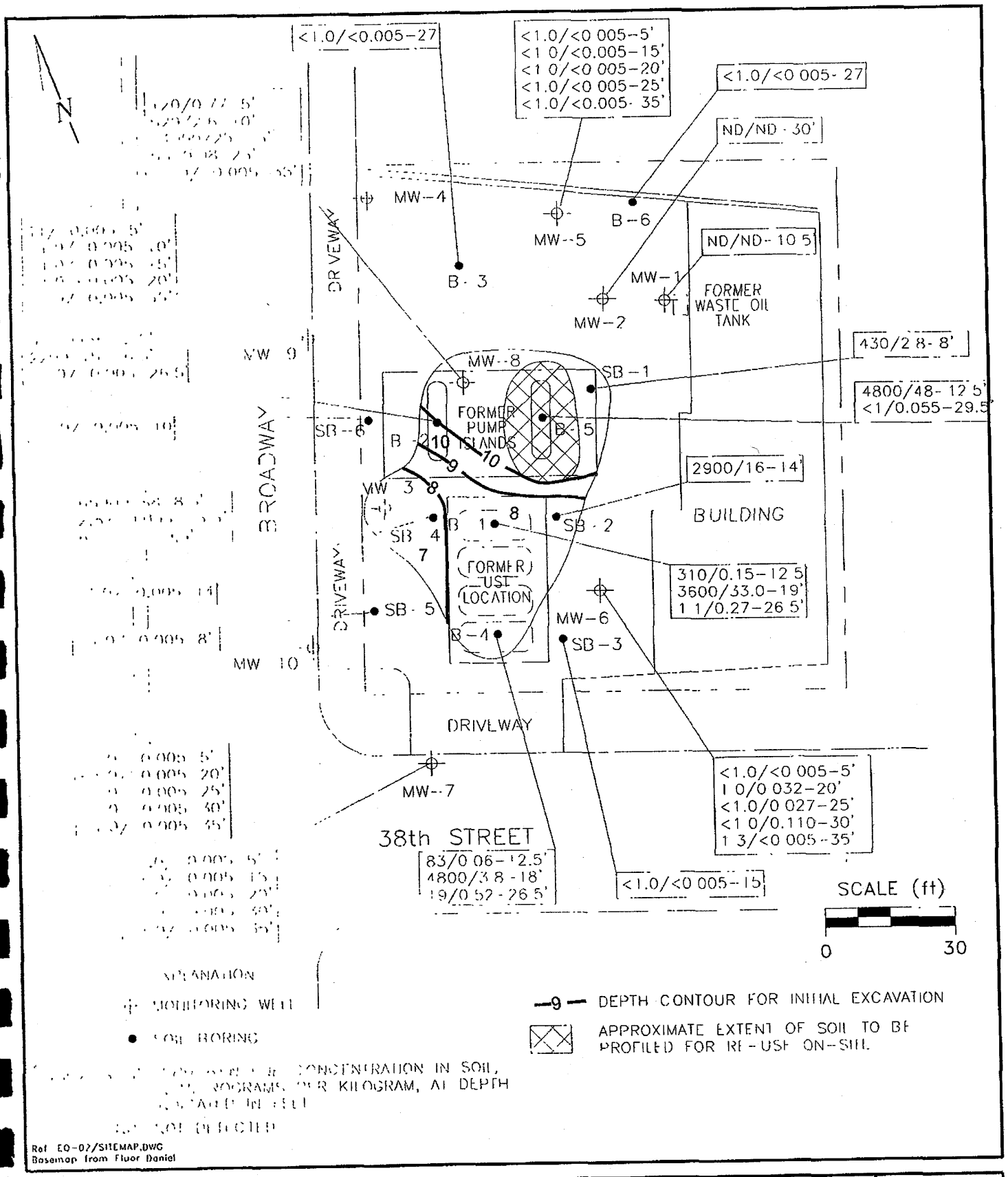
TPPH = Total purgeable petroleum hydrocarbons
TEPH = Total Extractable Petroleum Hydrocarbons
MtBE = Methyl tert-butyl ether
bgs = Below ground surface
mg/kg = Milligrams per kilogram
µg/kg = Micrograms per kilogram
NA = Not analyzed or not available
NL = No limit defined
a = The samples contain a lower boiling point mixture of hydrocarbons and quantitated as diesel
* = The sum of BTEX compound concentrations must be 1.0 mg/kg or less

Table 2
Water Analytical Data
Total Petroleum Hydrocarbons and MtBE

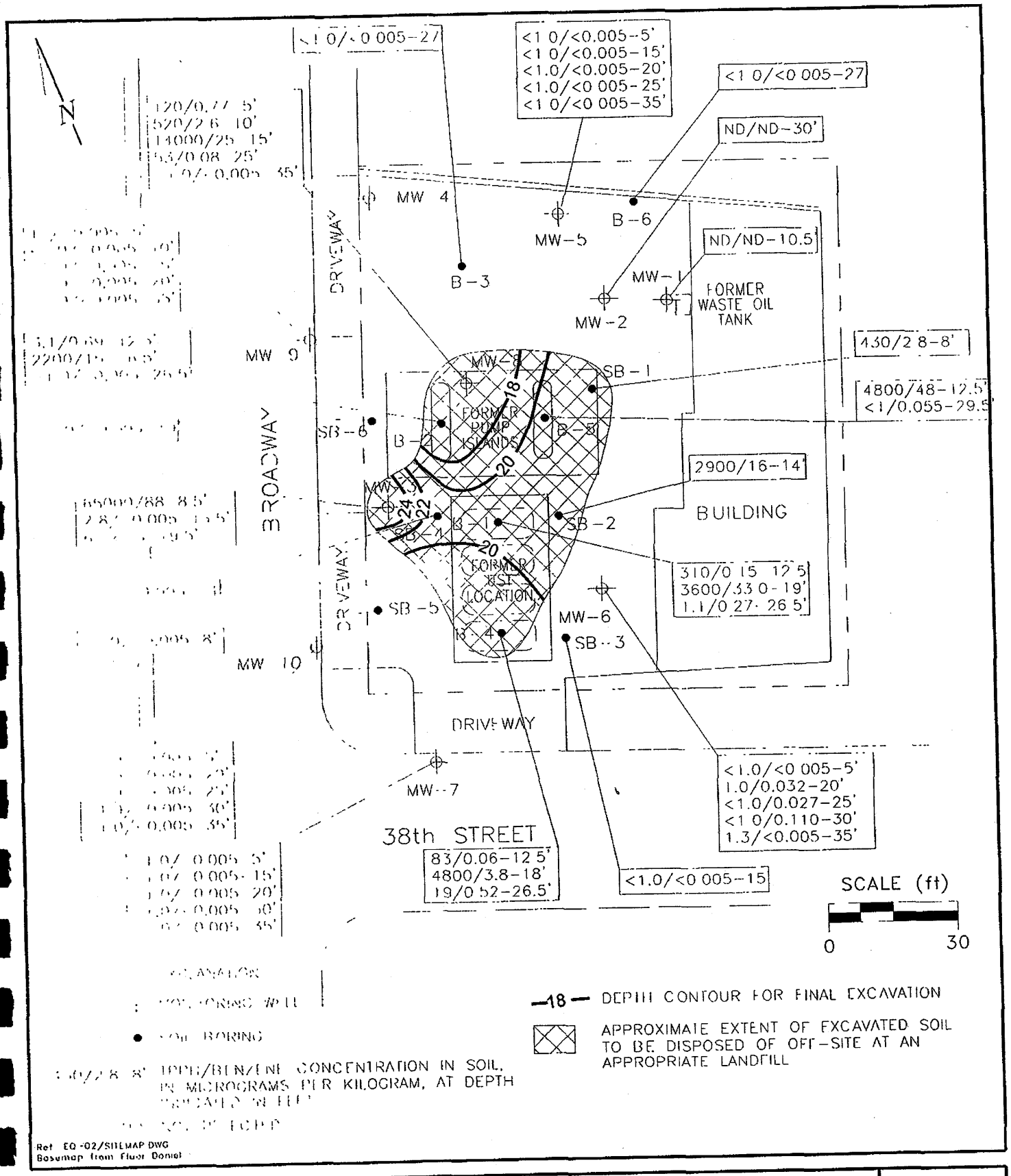
Former Texaco Service Station
3810 Broadway, Oakland, California

Sample	Date Sampled	TPPH (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MtBE by 8020 (µg/L)
INFL	03/10/00	**33,000**	**2,500**	**5,700**	**870**	**4,100**	<30
INFL(2)	03/10/00	**20,000**	**1,600**	**3,600**	**600**	**2,900**	<15
MID-1	03/10/00	<50	**5.6**	**9.6**	**2.0**	**11**	<3
MID-2	03/10/00	<50	<0.5	<0.5	<0.5	<1	<3
EFFL	03/10/00	<50	<0.5	<0.5	<0.5	<1	<3

TPPH = Total purgeable petroleum hydrocarbons
MtBE = Methyl tert-butyl ether
µg/L = Micrograms per liter



TOXICHEM Management Systems, Inc. Environmental & Occupational Health Services	Former Texaco Service Station 3810 Broadway Oakland, California	FIGURE: 1
	INITIAL SOIL EXCAVATION LIMITS	PROJECT: EQ-02



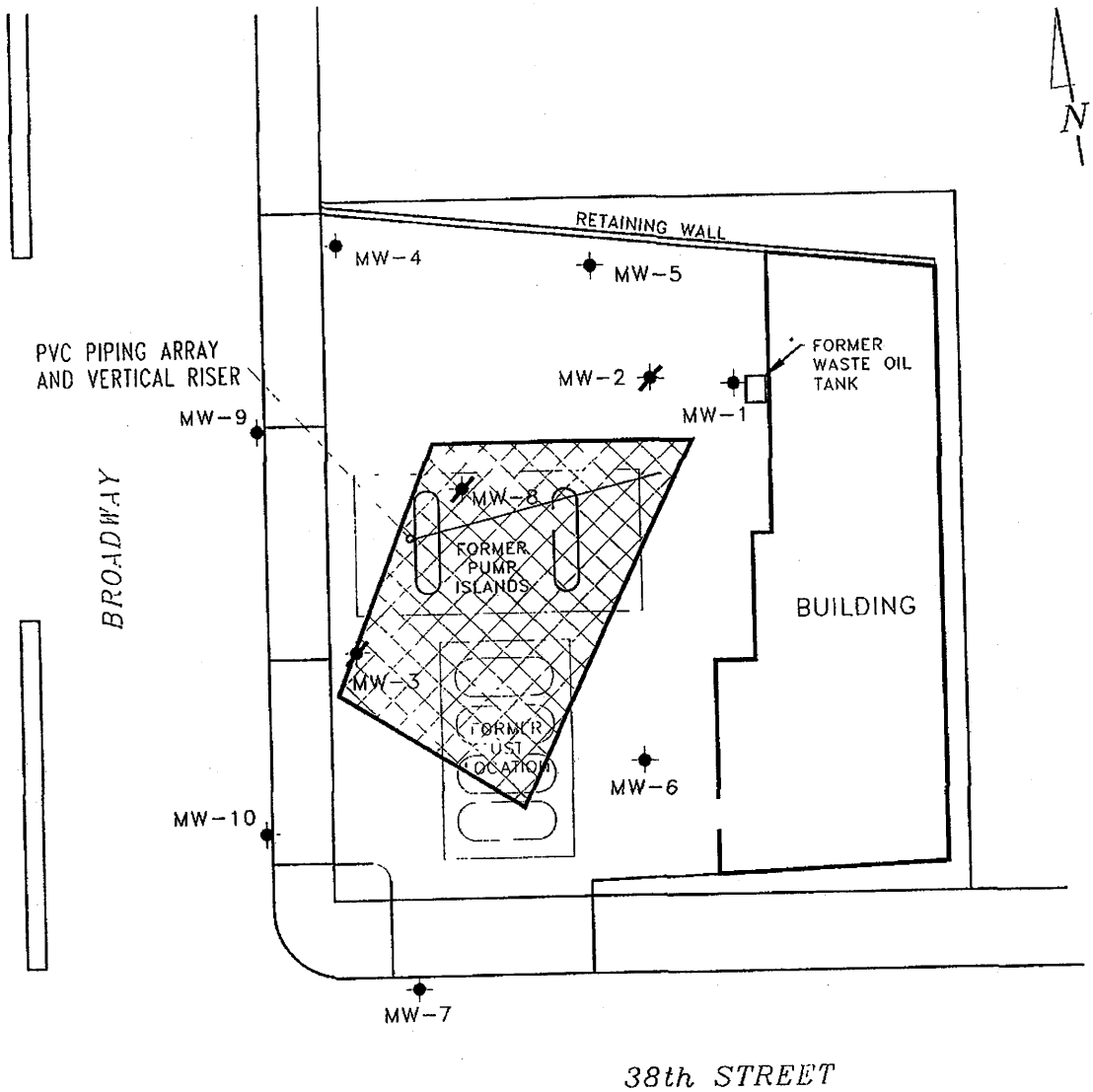
TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

Former Texaco Service Station
3810 Broadway
Oakland, California

FINAL SOIL EXCAVATION LIMITS

FIGURE: 2

PROJECT: EQ-02



EXPLANATION

MONITORING WELL

DESTROYED WELL

EXTENT OF EXCAVATED SOIL DISPOSED OF AT FORWARD LANDFILL. AVERAGE DEPTH OF EXCAVATION -22 FEET
AREA OF EXCAVATION- 1,734 FEET

SCALE (ft)

0 30

Reference LQ-02 1A/BR-0A DWG
Basemap from Remediation Risk Management Inc

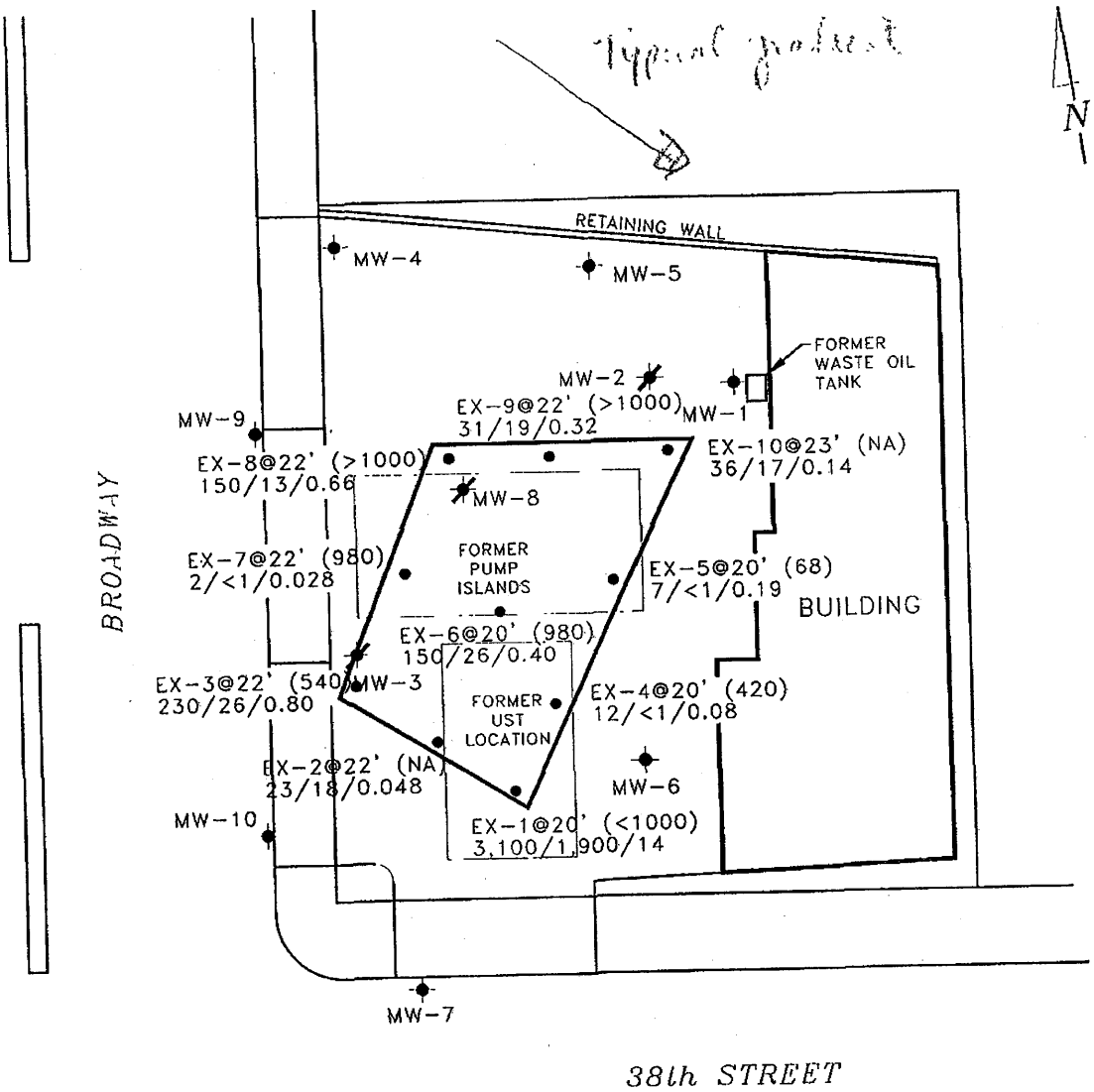
TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

ACTUAL LIMITS OF SOIL EXCAVATION BY EQUIVA

Former Texaco Service Station
3810 Broadway
Oakland, California

FIGURE: 3

PROJECT: EQ-02



EXPLANATION

- MONITORING WELL
- DESTROYED WELL
- SOIL SAMPLING LOCATION AND DESIGNATION AT DEPTH COLLECTED, IN FEET BELOW GROUND SURFACE

(420) SOIL CONCENTRATION IN PARTS PER MILLION, BY PID

(NA) NOT ANALYZED

31/19/0.32 TPPH/TEPH/BENZENE CONCENTRATION IN SOIL, IN MILLIGRAMS PER KILOGRAM, 3-8-00

SCALE (ft)

0 30

Reference 10 07 1A/BR 0A.DWG
Basemap from Remediation Risk Management, Inc

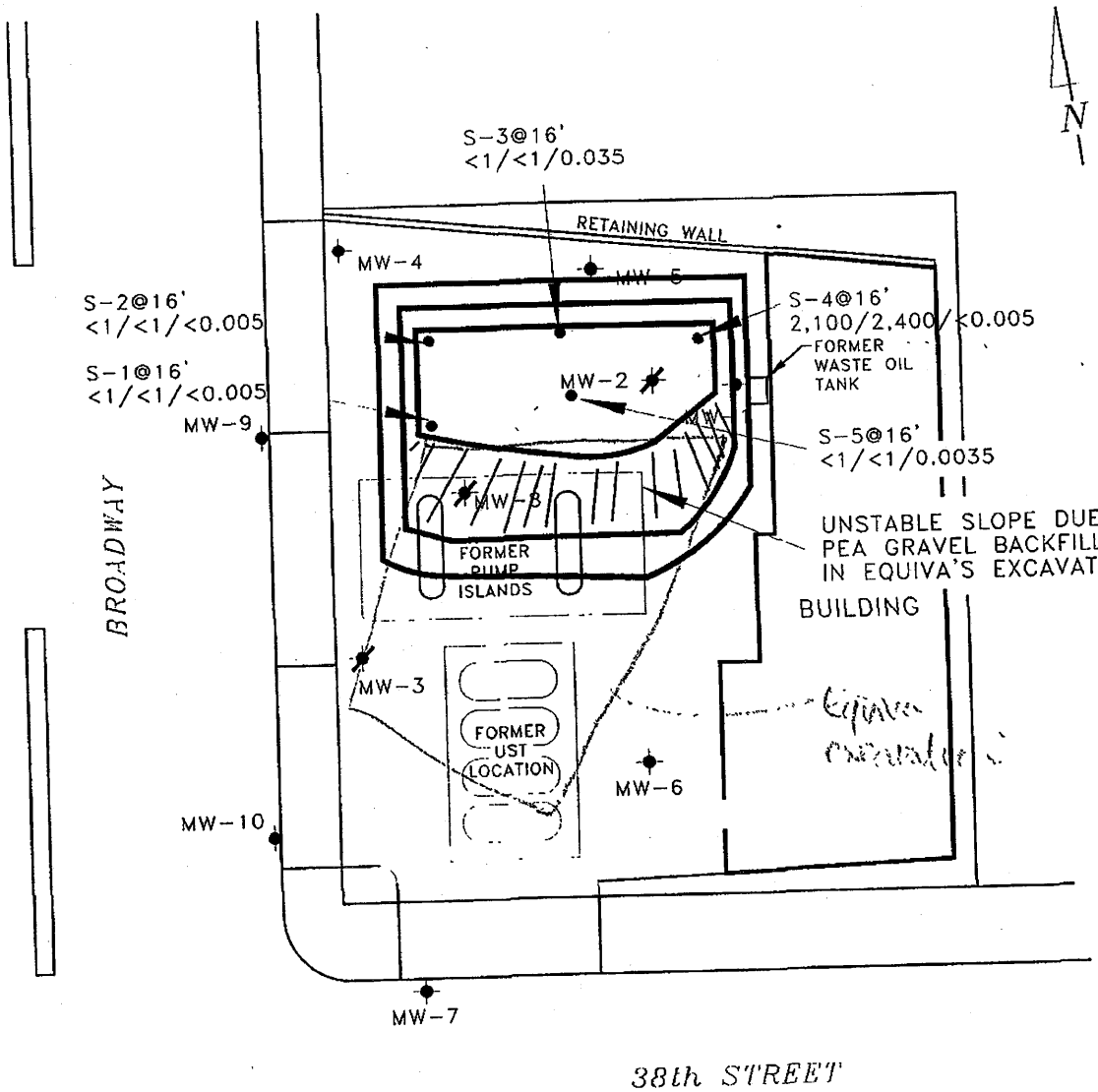
TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

SOIL CONCENTRATION MAP (EQUIVA)

Former Texaco Service Station
3810 Broadway
Oakland, California

FIGURE: 4

PROJECT: EQ-02



EXPLANATION

- MONITORING WELL
- DESTROYED WELL
- SOIL SAMPLING LOCATION AND DESIGNATION AT DEPTH COLLECTED, IN FEET BELOW GROUND SURFACE

<1/<1/<0.005 TPPH/TEPH/BENZENE CONCENTRATION IN SOIL, IN MILLIGRAMS PER KILOGRAM, 4-27-00

SCALE (ft)

0 30

Reference: EQ-02 1A/ACTEXCAV DWG
Basemap from Remediation Risk Management, Inc

TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

ACTUAL LIMITS OF SOIL EXCAVATION BY PROPERTY OWNER

Former Texaco Service Station
3810 Broadway
Oakland, California

FIGURE: 5

PROJECT: EQ-02

ATTACHMENT A

PERMITS, FIELD NOTES AND PHOTOGRAPHS, SITE HEALTH AND SAFETY PLAN, EXCAVATION SURVEY, COMPACTION TESTING CERTIFICATION, AND SOIL DISPOSAL DOCUMENTATION

TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

FILE

Field Notes

Client: EQUIVA
Facility: Former Texaco / Express Auto
Address: 3810 Broadway, Oakland
Weather: Partly cloudy

Project Number: EQ 02 IA
Date: 2/2/00
Time Arrived: 11:50
Time Departed:

Time	Notes and Description of Activities
11:30	Depart for site
11:50	Arrive 3810 Broadway - Gregg on site
	Talk to Max - have cars moved
	Set up for work
	Conduct Site Safety Meeting
12:15	Begin work on MW-3
	Tag well @~35' TD - different than well log
	Strong product odor - remove skimmer
	DTW ~ 19'
	Finish pressure grouting @ ~12:45
12:50	Begin work on MW-8
	Tag well @ ~35' TD
	DTW ~ 19'
	Finish pressure grouting @ ~13:00
	Break out well boxes & concrete
	Grout holes to grade & clean up
14:30	Depart for office
15:00	Arrive office

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE ~~(510) 670-5480 MARK ON MAGALLANES/CINDY HUTCHINSON~~ (510)670-5554
FAX ~~(510) 670-5262~~ 782-1939 Fax

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT EXPRESS AUTO CLINIC, INC
FORMER TEXACO SERVICE STATION
3810 BROADWAY
OAKLAND, CA 94611

CLIENT
Name EQUIVA SERVICES LLC
Address P.O. BOX 7869 Phone (818) 843-9306
City BURBANK, CA Zip 91501-7869

APPLICANT
Name TOXICHEM MANAGEMENT SYSTEMS Fax (510) 339 6027
Address 6857 FOREST HILLS DRIVE Phone (510) 339 6019
City OAKLAND, CA Zip 94611

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	[ ]	General	[ ]
Water Supply	[ ]	Contamination	[ ]
Monitoring	[ ]	Well Destruction	X

PROPOSED WATER SUPPLY WELL USE

New Domestic	[ ]	Replacement Domestic	[ ]
Municipal	[ ]	Irrigation	[ ]
Industrial	[ ]	Other WELL DESTRUCTION	X

DRILLING METHOD:

Mud Rotary	[ ]	Air Rotary	[ ]	Auger	[ ]
Cable	[ ]	Other	X PRESSURE GROUTING		

DRILLER'S LICENSE NO. C-57 LICENSE No. 485169

WELL PROJECTS
Drill Hole Diameter — in. Maximum
Casing Diameter 2 in. Depth 35 ft.
Surface Seal Depth 0 ft. Number 2

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE FEBRUARY 2, 2000
ESTIMATED COMPLETION DATE FEBRUARY 2, 2000

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] DATE 1/21/2000

FOR OFFICE USE

PERMIT NUMBER W00-036
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
(2) Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
(3) Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC
Fill hole above anode zone with concrete placed by tremie.

(F.) WELL DESTRUCTION
See attached.

G. SPECIAL CONDITIONS

APPROVED [signature] DATE 1-25-00

GROUNDWATER PROTECTION ORDINANCE

Destruction of Shallow Wells (Less than 45 feet in depth)

1. Remove from the well any pump, appurtenances, debris, or other materials to the bottom of the well.
2. Sound the well as deeply as practicable and record for your report.
3. Fill well below 22 feet with neat cement, cement grout or concrete.
4. Remove any casing(s) and annular seal to 2 feet below finished grade of original ground, whichever is the lower elevation.
5. Fill the remaining 20 foot length of casing with neat cement, cement grout or concrete. Allow the sealing material to spill over the top of the casing to fill any annular space between casing and soil.
6. After the seal has set, backfill the remaining hole with compacted material.

WELL PERMIT POLICY
FOR
DESTRUCTION OF SHALLOW WELLS

(WELLS LESS THAN 45 FEET IN DEPTH)

1) Submit a completed "DRILLING PERMIT APPLICATION" to the Alameda County Public Works Agency (AGENCY) for all wells to be destroyed on one property or adjacent properties under one ownership. Please allow 5 days to receive the signed permit from AGENCY.
2) Wells to be destroyed shall be filled with cement grout or cement/bentonite mixture. Filling with pea gravel will not be permitted. NOTE: Contamination or a lack of contamination will not change these requirements.
3) Within 60 days of the destruction of the well, applicant must submit to AGENCY a completed Department of Water Resources Well Completion Report (DWRWCR). A DWRWCR is required for each well destroyed. The location map, drawings, or coordinates (or a combination thereof) must be sufficient to locate the well to within 5 foot accuracy.
4) No notification to AGENCY will be required prior to this well destruction work.

ALAMEDA COUNTY PUBLIC WORKS AGENCY
FAX TRANSMITTAL

TO: Wayne Chiu

FROM: Larry Johmann

COMPANY: Toxichem

DATE: 1·25·00

FAX NUMBER: 339.6027

TOTAL NO. OF PAGES INCLUDING COVER: 4

PHONE NUMBER:

SENDER'S FAX NUMBER: (510) 782-1939

RE: Approved Permit

☐ URGENT ☐ FOR REVIEW ☐ PLEASE COMMENT
☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

399 ELMHURST STREET
HAYWARD, CALIFORNIA 94544-1395

654-6167

PUBLIC WORKS

TOXICHEM
Management Systems, Inc.
Environmental & Occupational Health Services
6857 Ridgewood Drive, Oakland, California 94611
(510) 339-6019 / (510) 339-6027 FAX

Transmittal

Date: February 7, 2000
Project: EQ-02.1A

To: Mr. Larry Johmann
Alameda County Public Works Agency
Water Resources Section
951 Turner Court, Suite 300
Hayward, California 94545-2651

We have enclosed:

Copies	Description
1	DWR Well Completion/Destruction Report

For your:

☐ Use ☐ Approval ☐ Review ☒ Information

Comments: Please find enclosed the Well Completion Report submitted to the DWR documenting the destruction of monitoring wells MW-3 and MW-8, approved under Permit No. W00-036. Please call me if you have any questions. Thanks.

Wayne Chiu, Project Engineer

cc: Ms. Karen Petryna, Equiva Services LLC, P.O. Box 7869, Burbank, CA 91501

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CONFIDENTIAL

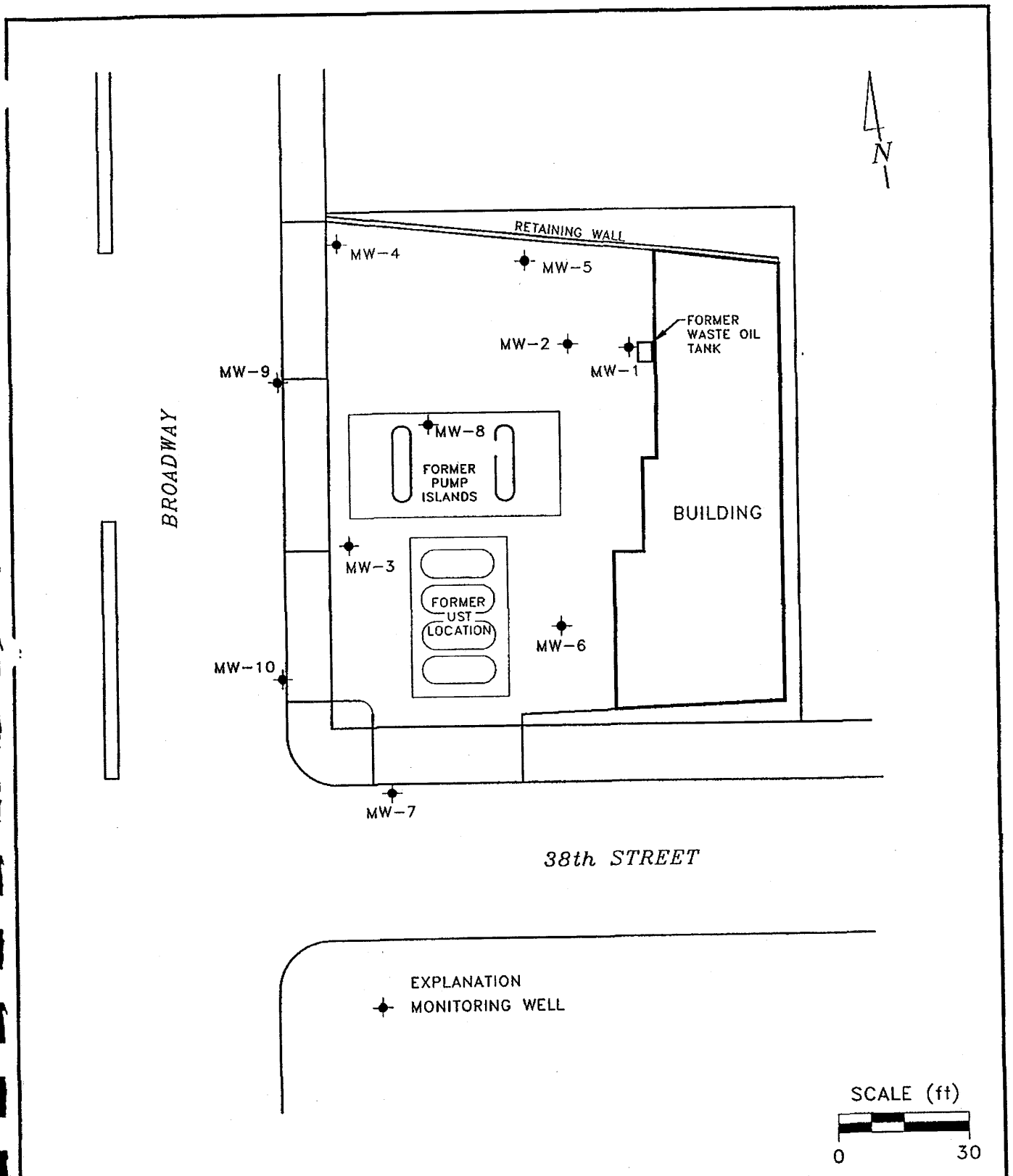
STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED



Reference EQ-02 1A/BR-OA DWG
Basemap from Remediation Risk Management, Inc

TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

SITE MAP

Former Texaco Service Station
3810 Broadway
Oakland, California

FIGURE: 1

PROJECT: EQ-02

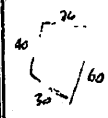
TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

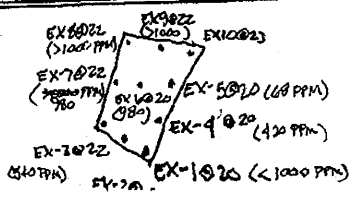
Field Notes

Client: EQUIVA
Facility: Express Auto / Former Texaco
Address: 3310 Broadway, Oakland
Weather:

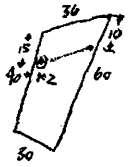
Project Number: EQ-02.1A
Date: 3/6/00 3/7/00
Time Arrived: 6:45 6:45
Time Departed: 10:30 17:30

	Time	Notes and Description of Activities
3/6/00	6:30	Depart for 3310 Broadway
	6:45	Arrive at site
	7:00	John's Excavating & RCM arrive
		Site safety meeting by Matt
		Mark out excavation boundaries
	~7:30	Begin excavation near MW-3
		Very strong product odor - soil impacted at ~8'
		Northeast corner of excavation - very strong product odor - impacted soil
		down to ~5 feet - product lines present & removed
		Install sheet piling - finished @ ~8:00PM Removed 2 piling footings 3'ø × 5'
	12:00	Carbon vessels arrive - pre soak carbon vessels
	15:30	ORC arrives
		9 loads hauled
3/7/00	6:30	Depart Need to replace MW-2 well box
	6:45	Arrive
		Begin loading soil - soil caught fire ~18' by MW-3
		49 load hauled





MAX (510) 205-8352
CELL PHONE



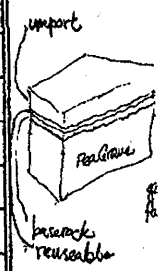
TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

Field Notes

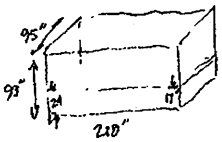
Client: EQUIVA
Facility: Express Auto / Former Texaco
Address: 3315 Broadway, Oakland
Weather: Partly cloudy

Project Number: EQ-02.1A
Date: 3/10/00
Time Arrived: 6:45
Time Departed:

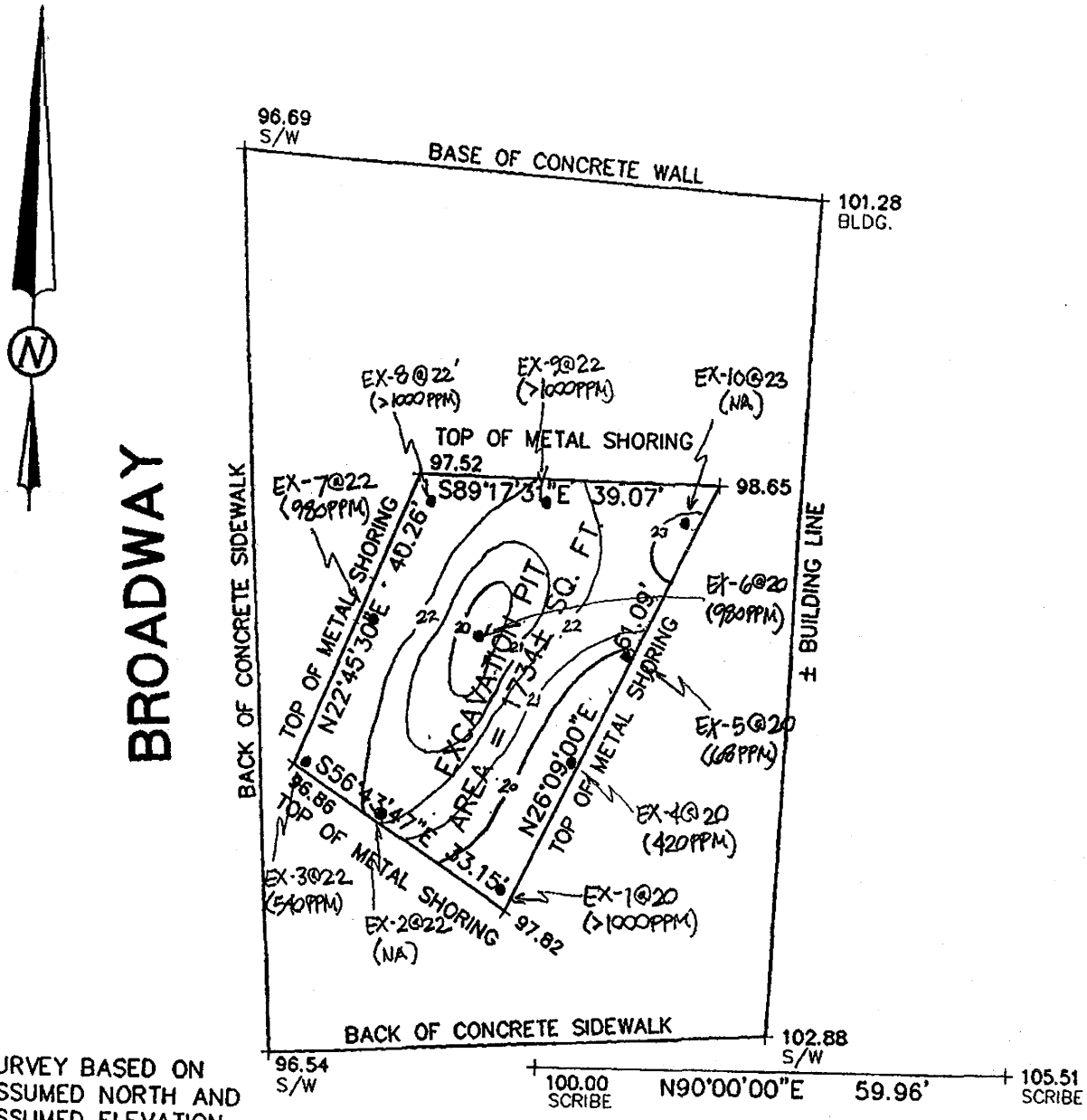
Time	Notes and Description of Activities
	Notes:
	Total surface area of excavation according to Bay Area Land Surveying
	1734 ft² ~20ft. ≈ 34700 ft³ ≈ 1284 yd³
	Average total depth ~21 ft. Volume of excavation ≈ 36550 ft³ ≈ 1350 yd³
	~22 ft ≈ 38150 ft³ ≈ 1413 yd³
	77 loads hauled @ ~18 yd³ each ≈ 1386 yd³
	Pea gravel fills from depth (~21 ft) to ~7 ft bgs
	(21 - 7ft) × 1734 ft² ≈ 24275 ft³ ≈ 900 yd³ pea gravel
	12 loads base rock fill @ ~15 yd³ each ≈ 180 yd³ base rock fill
	Reuseable fill ≈ 100 yd³ reused
	12 loads imported fill @ ~15 yd³ each ≈ 180 yd³ imported fill
	Total ≈ 1360 yd³
10.30	Herman Gomez - HazMat Inspector, City of Oakland stopped by to check on permit requirements for excavation - responding to complaint - work under ACHSA



352070 in³ + 72485 in³ = 1838 gal
424555 in³



≈ 1800 gallons of water pumped from pea gravel



SURVEY BASED ON
ASSUMED NORTH AND
ASSUMED ELEVATION.

38TH. STREET

PLAT OF SURVEY

EXCAVATION PIT TOPOGRAPHY
LOCATED AT 3810 BROADWAY
OAKLAND, ALAMEDA COUNTY, CALIFORNIA
MARCH 9, 2000 SCALE 1" = 20'

BAY AREA LAND SURVEYING
1828 BONITA ROAD
RICHMOND, CA 94806
(510) 232-3095

LICENSED LAND SURVEYOR
MICHAEL J. FOSTER
No. 7170
Exp. 12-31-03
STATE OF CALIFORNIA

3-9-00

SHT. 1 OF 1 F.B #16 \BPLAT160 JOB NO. 00-160

TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

Field Notes

Client: Equiva
Facility: 5800 Broadway, Oakland
Address:
Weather:

Project Number: EQ-021A
Date: 4-26-00
Time Arrived: 09:15
Time Departed:

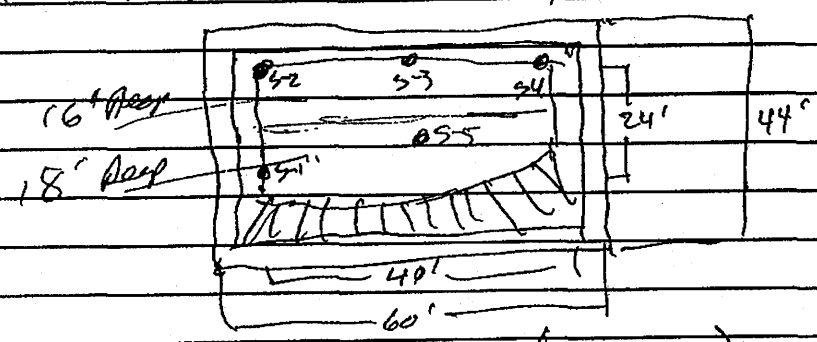
Time	Notes and Description of Activities
	Arrived onsite as trucking company arrived to begin transporting clean soil to Redwood Land Fill for disposal as clean fill. Paul Dugas estimates 300 yards to be removed today.
	Excavation of pit began. MW-1 destroyed due to collapse of wall infront of service bay. MW-2 casing still in place.
	Paul Dugas confirmed Phil (excavator) excavated well MW-2. I advised Paul Dugas to unearth the casing for well MW-1 and add coupler and casing riser to repair well instead of destroying it by excavating.
	Paul Dugas confirmed his crew would repair well casing as I described including cementing 3-5 feet bags to replace well seal.
	During excavation, (soil stained) containing hydrocarbon odor was encountered at the northwest corner of the excavation, at approximately 13-15 bgs, and was excavated to the MAX extent possible w/o destabilizing sidewalls and undermining sidewalk.
	During excavation of south side of excavation, excavator undermined pea gravel backfill and geotextile liner. Soil ~~at b~~ slightly impacted with hydrocarbon odor in this area ~~below~~ pea gravel outside (north of).
	Bill Kilroy, demo subcontractor, and Paul Dugas of Tyree, and ? of Speelman Excavation onsite

TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

Field Notes

Client: Equiva
Facility: Former Texaco
Address: 3810 Broadway, Oakland
Weather:

Project Number: EG 02.1A
Date: 4/27/00
Time Arrived: 06:15
Time Departed: 08:30

Time	Notes and Description of Activities
	Arrived onsite and found Tyree already loading Manley
	trucks 23 trucks left without obtaining manifest.
	Collected 5 soil samples from pit. see below
	
	Ken arrived onsite at 06:30 (from RRM) and managed
	soil pile loading and obtain manifests from transporters.
	cell phone 831, 334.1224
	Trailer Plates T2661 / E3310 first 2 trucks left w/o
	handing over manifests. A total of 10 trucks loaded
	at first thing in morning. Forward to fax any
	generator copy manifests to me.
	Called Columbia and left message for sample pickup for (F)
	Confirmed w/ Paul no additional soil to be excavated from
	pit - pit at depth and approximate limits except to
	south, of which all soil is clean overburden
	Reminded Paul to fix Well MW-1
	Left Ken onsite to observe final loadout

TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

Field Notes

Client: Equiva
Facility: 3880 Broadway, Oakland
Address:
Weather:

Project Number: EQ-02.1A
Date: 5/3/00
Time Arrived:
Time Departed:

Time	Notes and Description of Activities
	Conducted drive by of site and found
	tanks installed and Tyree in
	process of backfilling excavation

WASTEWATER DISCHARGE PERMIT

Terms and Conditions

EXPRESS AUTO CLINIC #P05021006
exp. 3-31-2004

VEHICLE REPAIR FACILITIES

COMPLIANCE REQUIREMENTS

The Permit Holder shall not discharge any hazardous waste, as defined in Section 25117 of the Health and Safety Code, to the sanitary sewer.

The Permit Holder shall:
- Seal all floor drains in the service areas to prevent contaminated or polluted wastewater from entering the sanitary sewer.
- Post a sign in the work area indicating that the discharge of process materials and waste to the sanitary sewer is prohibited.
- Provide District access to hazardous waste manifest records upon request.

The Permit Holder shall not discharge waste parts cleaning solutions to the sanitary sewer.

Wastewater from exterior vehicle washing may be discharged to the sanitary sewer if the following conditions are met:
- The wastewater does not contain petroleum distillates (aliphatic or aromatic hydrocarbons) or vehicle transport coating materials.
- Vehicle washing is conducted in a dedicated area where the drain is sealed when vehicle washing is not taking place.

REPORTING REQUIREMENTS

The Permit Holder shall report to EBMUD - Source Control Division any changes, permanent or temporary, to the premises or operations that significantly deviate from the terms and conditions under which this Permit is granted.

The Permit Holder shall notify EBMUD - Source Control Division at (510) 287-1651 during business hours, or (510) 287-1458 during non-business hours, immediately upon discovering any spill or slug discharge to the sanitary sewer. Formal written notification describing the circumstances and corrective action must be submitted to the District within 5 days of the occurrence.

INSPECTIONS

The District may conduct random, unannounced inspections to verify compliance with the conditions of this Permit.

ENFORCEMENT AND PENALTIES

Failure to comply with Permit Terms and Conditions and provisions of Ordinance No. 311, may result in penalties as provided for in Ordinance 311.

AUTHORIZATION

The above named Permit Holder is hereby authorized to discharge wastewater to the community sewer, subject to said Permit Holder's compliance with EBMUD Wastewater Control Ordinance, Permit Terms and Conditions, and billing.

David R Williams

DAVID R. WILLIAMS
Director of Wastewater
EBMUD, P.O. Box 24055, MS 707
Oakland, CA 94623-1055

RRM Project # OA07, Toxichem Mgmt. February 22, 2000

APPENDIX A - SITE SAFETY PLAN

SITE SAFETY AUTHORITY

SITE SAFETY PLAN - PRE-PROJECT MEETING SIGNATURE PAGE

I. SAFETY AND HEALTH PROGRAM OVERVIEW

II. FACILITY BACKGROUND / SCOPE OF WORK

III. SITE CHARACTERIZATION / JOB HAZARDS

- A. Physical Hazards
  1. Heavy Equipment
  2. Electrical Shock
  3. Traffic
  4. Hearing Loss
  5. Hazardous Chemical Exposure
  6. Chemicals

IV. TRAINING

- A. Potential Hazards
- B. Safe Work Practices
- C. Site Safety Plan

V. PERSONAL PROTECTIVE EQUIPMENT

VI. MEDICAL SURVEILLANCE

VII. EXPOSURE MONITORING PLAN

VIII. SITE CONTROL

- A. Work Zones
  1. Exclusion Zone
  2. Contamination Reduction Zone
  3. Support Zone
- B. Location of Nearest Communication Equipment
- C. Location of Nearest Medical Assistance
- D. On-site Communications
- E. Engineering Controls

IX. DECONTAMINATION

X. STANDARD OPERATING PROCEDURES

XI. EMERGENCY PROCEDURES / CONTINGENCY PLAN

XII. LIST OF APPROPRIATE LITERATURE

Chemical Properties

DATE: February 22, 2000

PROJECT NAME: Former Texaco Service Station

LOCATION: 3800 Broadway Avenue, Oakland, California

TASK: Contaminated soil excavation.

SITE SAFETY OFFICER (SSO): Raj Khokhar

SECONDARY SITE SAFETY OFFICER: Matt Kaempf

NEAREST HOSPITAL: Kaiser Foundation Hospital
280 W Macarthur Blvd.
Oakland, California 94611
(510) 596-1000

NEAREST FIRE DEPARTMENT: Call 911

HAZARDOUS MATERIALS SPILL/CLEAN-UP CONTRACTOR: ECI, Inc.
255 Parr Blvd.
Richmond, CA
(510) 235-1393

USALERT SERVICE NUMBER: 1-800-642-2444

NEAREST PG&E OFFICE: Phone: 1-800-743-5000

NEAREST TELEPHONE LOCATION: On-site cellular

LOCATION OF SITE "CLEAN AREA": as per SSO

LOCATION OF PERSONNEL DECON. STATION: as per SSO

A Pre-project Meeting allows all personnel on-site to familiarize themselves with the potential hazards associated with the job.

The following pages contain guidelines for on-site procedures to minimize risks to personnel at the job site, as well as information regarding basic first aid in the event of injury, among other points.

We, the undersigned, have read the Site Safety Plan and understand the potential hazards on-site. We will follow the guidelines set furth in order to decrease the likelihood of personal or public injury.

X _____ Title: _____

X _____ Title: _____

X _____ Title: _____

X _____ Title: _____

X _____ Title: _____

RRM Project #OA07, Toxichem Mgmt.

February 22, 2000

X _____ Title: _____

X _____ Title: _____

X _____ Title: _____

X _____ Title: _____

X _____ Title: _____

I. SAFETY AND HEALTH PLAN OVERVIEW

A. In order to promote safety and health awareness, the position of Site Safety Officer (SSO) is rotated among owners and employees for each project site.

B. It is the responsibility of the designated SSO to implement the Site Safety Plan (SSP) and to hold a pre-project safety meeting.

II. FACILITY BACKGROUND

A. Site History

1. The site is the Precision Tune-up Facility located at the northeast corner of the intersection of Broadway and 38th Street in Oakland, California. The site was a former Texaco Gas Station. The property is known to contain petroleum hydrocarbon impacted soil and groundwater. All former underground storage tanks have been removed from the site

B. Chemical Constituents of Concern - Petroleum Hydrocarbons which may contain tetra ethyl lead, benzene, and other toxic components.

1. Benzene
2. Toluene
3. Ethylbenzene
4. Xylenes

C. Scope of Work

1. Shore preliminary soil excavation to a depth of approximately 25 feet below ground surface.
2. Excavate, load, and landfill hydrocarbon impacted soil via excavator and end-dump trucks.
3. Collect soil samples from excavation bottom and sidewalls.
4. Pump and treat groundwater from excavation.
5. Place ORC into bottom of excavation.
6. Backfill excavation with imported fill material.

III. SITE CHARACTERIZATION / JOB HAZARD ANALYSIS

A. Physical Hazards

1. Operation of heavy equipment

a. Overhead hazards
b. General traffic hazards
c. Backhoe

2. Electrical Shock

a. Faulty electric wiring on equipment
b. Faulty electric service to equipment

3. Light to Heavy Traffic Areas

a. Traffic barricade work areas

4. Exposure to Hazardous Chemicals
(additional information listed in Appendix A)

a. Soils, groundwater and/or soil gas vapors may contain Gasoline - Petroleum hydrocarbons which may contain tetraethyl lead, benzene, and other toxic components.

5. Chemical Listing

a. Benzene

(1) Routes of Entry
(a) Inhalation
(b) Absorption
(c) Ingestion
(d) Contact

(2) Symptoms
- (a) Eye, nose, and respiratory irritation
- (b) Giddiness
- (c) Headache
- (d) Nausea
- (e) Staggered gait
- (f) Fatigue
- (g) Anorexia
- (h) Dermatitis
- (i) Bone marrow depression
- (j) Abdominal pain

b. Toluene

(1) Routes of Entry
- (a) Inhalation
- (b) Absorption
- (c) Ingestion
- (d) Contact

(2) Symptoms
- (a) Fatigue
- (b) Weakness
- (c) Confusion
- (d) Euphoria
- (e) Dizziness
- (f) Headache
- (g) Dilated pupils
- (h) Lacrimation
- (i) Muscle fatigue
- (j) Insomnia
- (k) Parasthesia
- (l) Dermatitis
- (m) Photophobia

c. Ethylbenzene

(1) Routes of Entry
- (a) Inhalation
- (b) Ingestion
- (c) Contact

(2) Symptoms
- (a) Irritation to eyes and mucous membranes
- (b) Headache
- (c) Dermatitis
- (d) Narcosis
- (e) Coma

d. Xylenes (ortho/meta/para isomers)

(1) Routes of Entry
- (a) Inhalation
- (b) Contact
- (c) Ingestion
- (d) Absorption

(2) Symptoms
- (a) Dizziness
- (b) Excitement
- (c) Drowsiness
- (d) Incoherence
- (e) Staggering gait
- (f) Irritation to eyes, nose, and throat
- (g) Corneal vacuolization
- (h) Anorexia
- (i) Nausea
- (j) Vomiting
- (k) Abdominal pain
- (l) Dermatitis

IV. TRAINING

A. Potential Hazards - All personnel working at the site are made aware of all potential on-site hazards prior to the beginning of field work.

B. Safe Work Practices - All personnel at the site are advised of safe work practices and hazard avoidance.

C. SSP - All personnel, subcontractors of RRM, and all visitors to the site, are to read the SSP and sign an acknowledgment indicating that they understand its contents.

D. OSHA - All RRM personnel have completed a minimum of 40-hour OSHA training and are updated annually with an 8-hour refresher course.

V. PERSONAL PROTECTIVE EQUIPMENT

A. Level "D"

1. Chemically resistant steel toed boots
2. Hard hat
3. Safety glasses - Eye protection must be worn whenever the potential for flying debris and or chemical splash is present.
4. Hearing protection
5. Leather gloves
6. Denim or equivalent long pants
7. Button up shirt

B. Level "C"

1. All the above, plus the following;
2. Respirator - Half face respirator equipped with organic vapor cartridges. To be used when air monitoring reveals that action levels have been exceeded for any or all chemicals of concern.

3. Tyvek suit.
4. Neoprene or Nitrile gloves

VI. MEDICAL SURVEILLANCE

A. Health surveillance will be on an individual and on a "buddy system" basis.

B. All personnel are advised to pay "close" attention to the symptoms of chemical exposure outlined and listed above.

VII. EXPOSURE MONITORING PLAN

A. Direct reading instruments

(Equipment use depends on site specific conditions).

1. All vapors or gases are initially field screened / monitored using an organic vapor analyzer (OVA) or a flame ionization detector (FID).

2. A Gas Chromatograph with photo-ionization detector (PID).

VIII. SITE CONTROL

A. Work Zones - Areas designated during pre-field meeting.

1. Exclusion Zone
   a. Where work is performed, with all proper safety equipment, and, were safe work practices are employed.
   b. Public is excluded.
   c. Area is barricaded with fences, barricades, cones and caution tape.
   d. Cones placed to guide public away from work area.

2. Contamination Reduction Zone

   a. Located outside the exclusion zone.
   b. Place where personnel and/or equipment are decontaminated in the event of contact with hazardous chemicals, from either the soils, water and/or air (vapors).

3. Support Zone

   a. Clean zone or Support zone is located outside Contamination Reduction Zone.
   b. Contains all job related support services.

B. Location of Nearest Communication Equipment

1. On-site map shows nearest communication equipment. See Page 1 for address.

2. All persons in the various zones will have remote communication equipment if necessary.

C. Location of Nearest Medical Assistance

1. On-site map shows nearest hospital and fire department. See Page 1 for address and telephone number.

D. On-site Communication

1. All personnel on-site will be made aware of common hand signals.

E. Engineering Controls

1. Underground locator services (U. S. Alert) will be notified prior to commencing field work on-site to avoid hitting underground services (electric, phone, gas, etc.) on public property.

2. Property owners will either mark utilities on private property of a locator service will be utilized.

3. Site Map
   a. Indicates work locations.
   b. Indicates equipment locations.

IX. DECONTAMINATION

A. Material Handling

1. All hydraulic coring equipment, monitor well materials and sampling and test equipment will be steam cleaned prior to use.

2. Contaminated equipment will be taken off-site only after decontamination.

3. Disposal of wash and rinse water, and soil cuttings will be in compliance with all applicable regulations.

B. Personal Hygiene

1. No smoking, eating, or drinking will take place in the exclusion zone or in the contamination reduction zone.

2. A designated break area may be established off-site. However, any such facility must be established a minimum of at least 100 feet upwind of any of any vapor source and shall be tested for flammable gases and vapor at the start of work and prior to scheduled break periods each day.

3. Personnel must wash all exposed skin areas with soap and water in the decontamination area before departing the site or going on break.

X. STANDARD OPERATING PROCEDURES

A. Pre-project safety meeting prior to working.

B. Sampling equipment calibrated before use.

C. Respirator fit test (if required).

D. Site work initiated.

E. Decontamination protocol followed.

XI. CONTINGENCY PLAN / EMERGENCY PROCEDURES

A. Personal Exposure (First Aid)

1. In the event that exposure symptoms are manifested, the victim will be taken up-wind and off-site. Seek qualified medical attention immediately.

2. Wash skin with soap and water immediately.

3. Inhalation - Move to fresh air and administer immediate artificial respiration if required.

4. Ingestion - Do not induce vomiting. If conscious give water or milk to drink. Seek qualified medical attention immediately.

5. Eyes - Flush with water for at least 20 minutes while holding eyes open. Seek qualified medical attention immediately.

B. Personal Injury- (Supervisors and field employees are trained in First Aid and CPR).

1. Provide basic first aid procedures as required; note time and circumstances of injuries. Follow these emergency action procedures:

a. Survey the scene.
(1) Is it safe to assist victim(s).

b. Conduct a Primary Survey
(1) Check for unresponsiveness and Airway, Breathing, and Circulation.

c. Phone 911 for ambulance if necessary.

d. Conduct a Secondary Survey.
(1) Interview victim
(2) Check vital signs
(3) Head to toe exam

e. Transport to nearest medical facility as appropriate. Notify SSO. See directions and map in Appendix B for the nearest hospital emergency room.

C. Fire and Explosion Potential

1. Evacuate the area immediately and conduct a head count of all personnel. Notify fire department. Do not attempt to fight the fire. A fire extinguisher will be present on-site for immediate response by an OSHA certified person.

XII. LIST OF APPROPRIATE REFERENCE LITERATURE

A. Title 29 CFR 1910 - OSHA General Industry Standard

B. Title 29 CFR 1926 - OSHA Construction Standard

C. Title 49 CFR 171-173 - DOT Regulations

APPENDIX A

A. Potential Hazards

1. Exposure to Hazardous Chemicals
   a. Hazardous/Toxic Materials

      (1) Gasoline - Petroleum hydrocarbon which may contain tetraethyl lead, benzene, and other toxic components.

   b. Hazard Assessment

      (1) Moderately toxic - Toxic through inhalation or ingestion but possess good warning properties.

      (2) Highly Flammable - Forms explosive concentrations in air over the range of 0.8 to 6 percent by volume.

   c. Benzene

      (1) Permissible Exposure Limits

         (a) (NIOSH): 10 parts per million (ppm) with ceiling of 50 ppm (10 minutes)
         (b) (ACGIH): 0.1 ppm for an 8-hour time-weighted average with ceiling of 1 ppm (15 minutes)

      (2) Action Level: 0.05 ppm

      (3) Immediate Danger to Life or Health Level

         (a) Carcinogenic

      (4) Physical Properties

         (a) Vapor pressure: 75 mm mercury
         (b) Upper explosion limit: 7.1%
         (c) Lower explosion limit: 1.3%

      (5) Target Organs

         (a) Blood
         (b) Central nervous system
         (c) Skin
         (d) Bone marrow
         (e) Eyes
         (f) Respiratory system

   d. Toluene

February 22, 2000

RRM Project #OA07, Toxichem Mgmt.

(1) Permissible Exposure Limits

(a) (NIOSH): 200 ppm with ceiling of 300 ppm and 500 ppm for a 10 minute peak
(b) (ACGIH): 100 ppm for a 10-hour time-weighted average with ceiling of 200 ppm (10 minutes)

(2) Action Level: 50 ppm

(3) Immediate Danger to Life or Health Level

(a) 2,000 ppm

(4) Physical Properties

(a) Vapor pressure: 22 mm mercury
(b) Upper explosion limit: 9.5%
(c) Lower explosion limit: 1.3%

(5) Target Organs

(a) Central nervous system
(b) Liver
(c) Kidneys
(d) Skin

e. Ethylbenzene

(1) Permissible Exposure Limits

(a) 100 ppm or 435 mg/cubic meter

(2) Action Level: 50 ppm

(3) Immediate Danger to Life or Health Level

(a) 2,000 ppm

(4) Physical Properties

(a) Vapor pressure: 7.1 mm mercury
(b) Upper explosion limit: 6.7%
(c) Lower explosion limit: 1.0%

(5) Target Organs

(a) Eyes
(b) Upper respiratory system
(c) Skin
(d) Central nervous system

f. Xylenes (ortho/meta/para isomers)

(1) Permissible Exposure Limits

(a) (NIOSH): 100 ppm ten-hour time-weighted average with 200 ppm ceiling (10 minutes)

(2) Action Level: 50 ppm

(3) Immediate Danger to Life or Health Level

(a) 1,000 ppm

(4) Physical Properties

(a) Vapor pressures: 7/9/9 mm mercury
(b) Upper explosion limits: 6/7/7%
(c) Lower explosion limits: 1/1.1/1.1%

(5) Target Organs

(a) Central nervous system
(b) Eyes
(c) Gastro-intestinal tract
(d) Blood
(e) Liver
(f) Kidneys
(g) Skin

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH

No: 2000-900384

PERMIT

Permit Issued To
(Insert Employer's Name, Address and Telephone No.)

John Poulson dba John's Excavating
1128 Halyard Dr
Santa Rosa CA 95401-4934

(707) 578-1184

No.
Date 11/15/99
Region 1
District 5
Tel. (707) 576-2388

Type of Permit T1-ANNUAL TRENCH/EXCAVATION

Pursuant to Labor Code Sections 6500 and 6502, this Permit is issued to the above-named employer for the projects described below.

State Contractor's License Number	361828	Permit Valid through	December 31, 2000	
			Anticipated Dates	
Description of Project	Location Address	City and County	Starting	Completion
Various	Statewide		1/1/00	12/31/2000

This Permit is issued upon the following conditions:

1. That the work is performed by the same employer. If this is an annual permit the appropriate District Office shall be notified, in writing, of dates and location of job site prior to commencement.

2. The employer will comply with all occupational safety and health standards or orders applicable to the above projects, and any other lawful orders of the Division.

3. That if any unforeseen condition causes deviation from the plans or statements contained in the Permit Application Form the employer will notify the Division immediately.

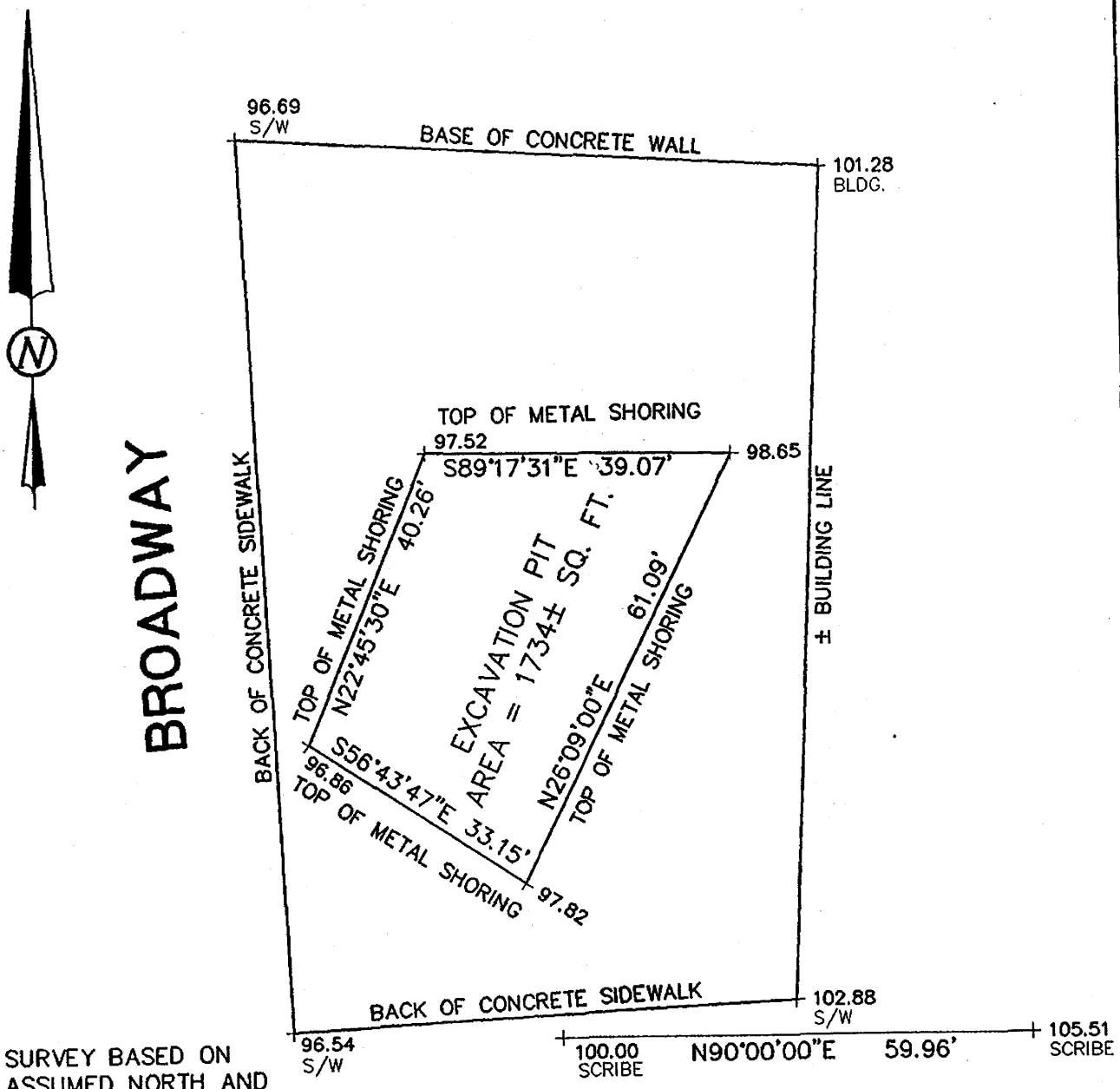
4. Any variation from the specification and assertions of the Permit Application Form or violation of safety orders may be cause to revoke the permit.

5. This permit shall be posted at or near each place of employment as provided in 8 CCR 341.4

Received From	Received By	
Carolyn Poulson	Permit Unit	
	Amount	Date
☐ Cash ☒ Check 6241	$100.00	11/15/99

Investigated by _____ Safety Engineer Date

Approved by Robert E. Kerr District Manager/Permit Unit 11/21/99 Date



SURVEY BASED ON
ASSUMED NORTH AND
ASSUMED ELEVATION.

38TH. STREET

PLAT OF SURVEY

EXCAVATION PIT TOPOGRAPHY
LOCATED AT 3810 BROADWAY
OAKLAND, ALAMEDA COUNTY, CALIFORNIA
MARCH 9, 2000 SCALE 1" = 20'

LICENSED LAND SURVEYOR
MICHAEL J. FOSTER
No. 7170
Exp. 12-31-03
STATE OF CALIFORNIA

3-9-00

BAY AREA LAND SURVEYING
1828 BONITA ROAD
RICHMOND, CA 94806
(510) 232-3095

SHT. 1 OF 1 F.B #16 \BPLAT160 JOB NO. 00-160

TESTING ENGINEERS, INC.

RECEIVED MAR 24 2000

INSPECTION REPORT

WORK REQ.#D891

PROJECT #: 41831/3831

TYPE OF INSPECTION: Nuclear Density

PROJECT: 3810 Broadway, Oakland
Former Texaco

PLACE OF INSPECTION: Jobsite

DATE: 3-10-00

HOURS: 8

INSPECTOR: Ram

REPORTED TO: Roger

COMPANY: RRM, Inc.

FEATURE: Excavation back fill

FIELD TEST PROCEDURE: ASTM D2922 & D3017

LABORATORY TEST PROCEDURE: ASTM D1557

MATERIAL DESCRIPTION	MOISTURE %	MAX. DENSITY PCF	LABORATORY REF. NO.
1. Lime treated quarry fines – La Vista	8.0	131.0	Plant Provided

FIELD TEST RESULTS

LOCATION	ELEVATION	CURVE NO.	FIELD DENSITY PCF	FIELD MOISTURE %	RELATIVE COMP. %	PROJECT SPECIFIED %
1. Excavation back fill	-4'	1	124.4	7.0	95	95
2. Excavation back fill	-4'	1	125.8	8.1	96	95
3. Excavation back fill	-4'	1	124.9	7.1	95	95
4. Excavation back fill	-3'	1	124.0	6.5	95	95
5. Excavation back fill	-3'	1	124.8	7.2	95	95
6. Excavation back fill	-3'	1	125.8	7.1	96	95
7. Excavation back fill	-2'	1	125.2	6.8	96	95
8. Excavation back fill	-2'	1	125.7	7.2	96	95
9. Excavation back fill	-2'	1	125.7	7.1	96	95
10. Excavation back fill	-1'	1	125.3	6.8	96	95
11. Excavation back fill	-1'	1	123.9	7.2	95	95
12. Excavation back fill	-1'	1	124.7	6.9	95	95
13. Excavation back fill	FL	1	125.5	7.5	96	95
14. Excavation back fill	FL	1	124.9	7.4	95	95
15. Excavation back fill	FL	1	124.6	7.2	95	95

NOTE: Test results constitute the reporting of factual information derived from test(s) made by our laboratory following prescribed procedures. These test results should not be considered as an engineering opinion with respect thereto.

Reviewed by: Terry R. Chiccino
Soils & Asphalt Field Manager

cc: RRM, Inc.

Corporate Office - 2811 Adeline Street, Oakland, California 94608 - (510) 835-3142 - FAX (510) 834-3777
South/West Bay - 2123 Bering Drive, Suite E, San Jose, California 95131 - (408) 451-2420 - FAX (408) 451-2425
East/North Bay - 827 Arnold Drive, Bay 4, Martinez, California 94553 - (925) 370-7000 - FAX (925) 229-2951

TESTING ENGINEERS, INCORPORATED

2123 Bering Dr., Ste E - San Jose, CA 95131
(408) 451-2420

Oakland
San Jose
Martinez

LABORATORY NO. DL772 REPORT OF SOIL TESTS DATE: 3/16/00

RECEIVED MAR 31 2000

JOB DATA: 41831/3831
3810 Broadway
Oakland, CA
Job# 0A07

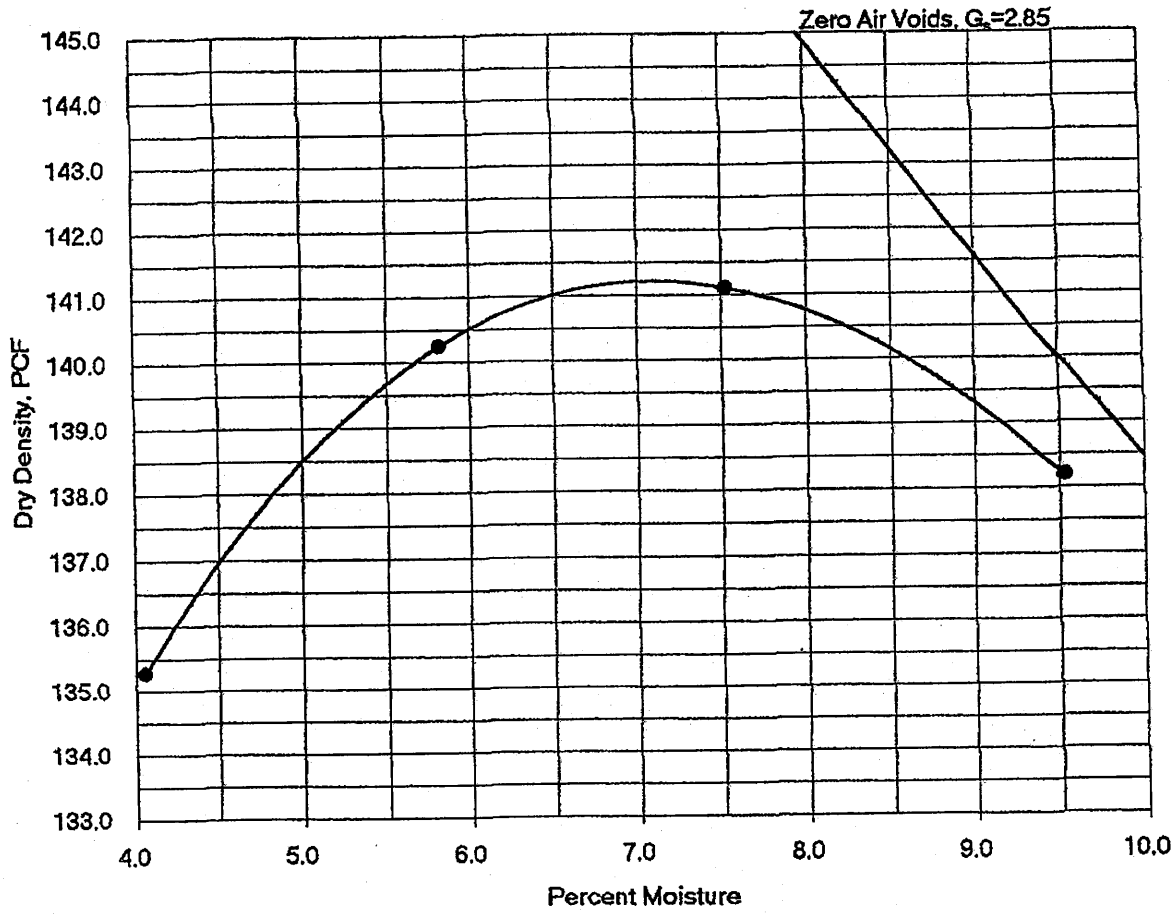
SAMPLE DATA:
Sampled 3/6/00
La Vista Quarry lime treated fines

Field Inspector: S. Ram

VISUAL CLASSIFICATION:
Olive brown sandy gravel

MAXIMUM DENSITY DETERMINATION:
Method: ASTM D 1557

Optimum Moisture	7.2	%
Maximum Dry Density	2.26	g/cc
	141.2	PCF



Reviewed by, Terry Chiccino
Soils/Asphalt Field Operations Manager

1cc: RRM Inc.

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJECT ENGINEER 3-8-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
DENBESTE
ADDRESS
CITY, STATE, ZIP WINSOR CO
PHONE 800 838-1497
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* [signature] 3/8/00

NOTES: VEHICLE LICENSE NUMBER 9A93114 | TRUCK NUMBER 1018

END DUMP ☒ BOTTOM DUMP ☐ TRANSFER ☐
ROLL-OFF(S) ☐ FLAT-BED ☐ VAN ☐ DRUMS ☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS
FACILITY TICKET NUMBER
SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22277

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJECT ENGINEER | 3-8-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE:
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER DENBESTE TRANSPORTATION
ADDRESS CONDE ST.
CITY, STATE, ZIP WINDSOR CA 95492
PHONE 1800 938-1477
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* | 03-08-00

NOTES: VEHICLE LICENSE NUMBER 9B34818 | TRUCK NUMBER P607
DT 42833

END DUMP ☒ BOTTOM DUMP ☐ TRANSFER ☐
ROLL-OFF(S) ☐ FLAT-BED ☐ VAN ☐ DRUMS ☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22276

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston TX 77252-2099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE: * Wayne Chin PROJECT ENGINEER
DATE: 3-8-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: DENBESTE
ADDRESS: CONDE ST
CITY, STATE, ZIP: WINDSOR CA
PHONE: 1800 838-1477
SIGNATURE OF AUTHORIZED AGENT OR DRIVER: * Jose Perez
DATE: 03-09-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9B65324	J-1

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT: *
DATE:

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22275

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJECT ENGINEER 3-8-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER Johns Excavating
ADDRESS 1128 Halyard Dr.
CITY, STATE, ZIP Santa Rosa CA.
PHONE 707-578-1184
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* Gary D. Morlan 3-8-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9603012	402

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22274

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston, TX 772522099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE: * Wayne Chin PROJECT ENGINEER
DATE: 3-8-06

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE:
- ☐ DISPOSAL
- ☐ CONSTRUCTION
- ☐ DEBRIS
- ☐ SPECIAL WASTE
- ☐ SLUDGE
- ☐ WOOD
- ☐ OTHER

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND
Broadway

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: SENISE STE DANNY RHODES
ADDRESS: 435 HUNTER LN
CITY, STATE, ZIP: SANTA RHODES
PHONE: 7075 860713
SIGNATURE OF AUTHORIZED AGENT OR DRIVER: *
DATE: 3820a

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9A92989	1

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT: *
DATE:

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22273

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772532099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJECT ENGINEER | 3-8-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
Johns Excavating
ADDRESS
7126 Hall Yard
CITY, STATE, ZIP
Santa Rosa
PHONE
707 578 1184
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* Jim | 3/6/00

NOTES: | VEHICLE LICENSE NUMBER: 4710071 | TRUCK NUMBER: 4C3

END DUMP ☐ BOTTOM DUMP ☐ TRANSFER ☒
ROLL-OFF(S) ☐ FLAT-BED ☐ VAN ☐ DRUMS ☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22272

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 77252-2099
PHONE
(713) 241-3673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJECT ENGINEER | 3-8-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
DFD BESTE TRANS
ADDRESS
CITY, STATE, ZIP
WINSOR CALIF
PHONE
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* [signature] | 3-8-00

NOTES: VEHICLE LICENSE NUMBER: 5P34140 | TRUCK NUMBER: 10
GT20822

END DUMP ☐ BOTTOM DUMP ☐ TRANSFER ☐
ROLL-OFF(S) ☐ FLAT-BED ☐ VAN ☐ DRUMS ☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS
FACILITY TICKET NUMBER
SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22269

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 77252-2099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJECT ENGINEER | 3-8-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, If the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE:
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
BATCHELDER TRKG
ADDRESS
P.O. Box 501
CITY, STATE, ZIP
FORESTVILLE CA
PHONE
707 974 2255
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* [signature] | 3-8-2000

NOTES: | VEHICLE LICENSE NUMBER: 5P44483, 6T26754 | TRUCK NUMBER: X25

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS
18 YDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22268

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston, TX 77252-2099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin PROJECT ENGINEER	3-8-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, If the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO. 923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: Ben Beale
ADDRESS: 7105 Conde Lane
CITY, STATE, ZIP: Windsor Ca
PHONE: 707-838-1467

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* James Burgus	3/8/00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
SP30523	553

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22266

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
Wayne Chin PROJECT ENGINEER	3-8-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
DenBeste transportation
ADDRESS
CITY, STATE, ZIP
PHONE
707-838-1707

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
[signature]	3-8-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9X4679	M1

Nelson trucking

END DUMP ☒ BOTTOM DUMP ☐ TRANSFER ☐
ROLL-OFF(S) ☐ FLAT-BED ☐ VAN ☐ DRUMS ☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS
FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22265

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJECT ENGINEER | 3-8-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
Don Beste
ADDRESS
CITY, STATE, ZIP
PHONE 1 800 838 1477
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* [signature] | 3-8-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9A99122	50
GF59154	

END DUMP	BOTTOM DUMP	TRANSFER
☐	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS
FACILITY TICKET NUMBER
SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22263

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE: * Wayne Chin PROJECT ENGINEER
DATE: 3-8-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: Don Beste Trucks
ADDRESS
CITY, STATE, ZIP
PHONE

SIGNATURE OF AUTHORIZED AGENT OR DRIVER: * Kenny Williams
DATE: 3-8-00

NOTES:
VEHICLE LICENSE NUMBER: 9B08858 GT26755
TRUCK NUMBER: #1

END DUMP ☒ BOTTOM DUMP ☐ TRANSFER ☐
ROLL-OFF(S) ☐ FLAT-BED ☐ VAN ☐ DRUMS ☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS
FACILITY TICKET NUMBER
SIGNATURE OF AUTHORIZED AGENT: *
DATE

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22262

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

WASTE ACCEPTANCE NO.
923300

GENERATOR
Equilon Enterprises LLC

MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2

CITY, STATE, ZIP
Houston TX 772522099

PHONE
(713) 241-8673

CONTACT PERSON
Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE: * Wayne Chin PROJECT ENGINEER
DATE: 3-8-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: Ben Bestil

ADDRESS

CITY, STATE, ZIP: Windsor

PHONE: 1800 838 1477

SIGNATURE OF AUTHORIZED AGENT OR DRIVER: * Rick Shaw
DATE: 3 8 00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9B26232	007
9F18254	

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT: *
DATE

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22261

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin PROJECT ENGINEER	3-8-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
Pendleton Trucking
ADDRESS 7705 Condel Ln
CITY, STATE, ZIP Windsor, Ca
PHONE 1-800-838-1477

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* [signature]	3-8-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9B39803	087

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22260

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PRJ ENG | 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, **If the waste is a treatment residue of a previously restricted hazardous waste** subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
DENBESTE TRANSP.
ADDRESS
7705 CONDE LN.
CITY, STATE, ZIP
WINDSOR CA
PHONE
1-800-839-1407
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* | 3-7-00

NOTES: VEHICLE LICENSE NUMBER: 9B35501 | TRUCK NUMBER: Q70-1

☐ END DUMP ☐ BOTTOM DUMP ☐ TRANSFER
☐ ROLL-OFF(S) ☐ FLAT-BED ☐ VAN ☐ DRUMS

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22256

☐ Keller Canyon Sanitary Landfill
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ Ox Mountain Sanitary Landfill
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ Newby Island Sanitary Landfill
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ Forward Landfill
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston TX 772522099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin PROJECT ENGINEER	3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.

923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT

☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: DENBESTE
ADDRESS:
CITY, STATE, ZIP:
PHONE: 1-800 830-1477

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* [signature]	3/7/00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9A93119	1018

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22255

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin PROJECT ENGINEER	3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, If the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
DEALBESTE TRACP
ADDRESS
CITY, STATE, ZIP 7705, CENTRE IN
PHONE

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* Jose Perez	3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9B65324	J.1

END DUMP	BOTTOM DUMP	TRANSFER
☐	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS
FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL. • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22254

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston TX 772522099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE: * Wayne Chin PROJECT ENGINEER
DATE: 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO. 923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: DYNBSTC
ADDRESS: 7705 Lowe Ln.
CITY, STATE, ZIP: Windsor PA
PHONE: 707 838-1467
SIGNATURE OF AUTHORIZED AGENT OR DRIVER: *
DATE: 3-7-00

NOTES:
VEHICLE LICENSE NUMBER: SP44473
TRUCK NUMBER: 2

END DUMP ☒ BOTTOM DUMP ☐ TRANSFER ☐
ROLL-OFF(S) ☐ FLAT-BED ☐ VAN ☐ DRUMS ☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT: *
DATE

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22253

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSF1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJECT ENGINEER | 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE:
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER John's Excavating
ADDRESS 1128 Halyard Dr.
CITY, STATE, ZIP Santa Rosa CA
PHONE 707-578-1184
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* Gary D. Morlan | 3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9803012 CA	402

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22252

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chu PROJECT ENGINEER 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE:
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER Johns Ex
ADDRESS 1128 Harvard Ave
CITY, STATE, ZIP Santa Rosa 94222
PHONE 707-578-1184

SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* [signature] 3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
A958972	421

END DUMP	BOTTOM DUMP	TRANSFER
☐	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22250

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJECT ENGINEER | 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND
Broadway

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
Johns Excavating
ADDRESS
1148 Halyard
CITY, STATE, ZIP
S. Rosa
PHONE
578 1184
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* [signature] | 3/17/00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
5T10071	407

END DUMP	BOTTOM DUMP	TRANSFER
☐	☐	☒

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22251

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Noca Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chu PROJECT ENGINEER	3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, If the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE:
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER Johns Ex
ADDRESS 1128 Hayward Ave
CITY, STATE, ZIP Santa Rosa 94225
PHONE 707-578-1184

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* [signature]	3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
A958922	4V1

END DUMP	BOTTOM DUMP	TRANSFER
☐	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22250

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston TX 772522099
PHONE: (713) 241-8673
CONTACT PERSON: Norn Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE: * Wayne Chin PROJECT ENGINEER
DATE: 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO. 923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: Denbesse
ADDRESS: 7705 Condi Lane
CITY, STATE, ZIP: Windsor Ca
PHONE: 707 838 1407
SIGNATURE OF AUTHORIZED AGENT OR DRIVER: *
DATE: 3-7-00

NOTES:
VEHICLE LICENSE NUMBER: 9B43671 1WK6509
TRUCK NUMBER: JR 1

END DUMP ☒ BOTTOM DUMP ☐ TRANSFER ☐
ROLL-OFF(S) ☐ FLAT-BED ☐ VAN ☐ DRUMS ☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT: *
DATE

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22249

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin PROJECT ENGINEER	3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
Denbesty
ADDRESS
7705 Condi Lane
CITY, STATE, ZIP
Windsor Ca
PHONE
707 838 1407

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
*	

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9B43671	1JR
1WK6509	

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22248

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 77252-2099
PHONE
(713) 241-3673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJECT ENGINEER | 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE:
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
DENBESTE TRANS
ADDRESS
CITY, STATE, ZIP
WINSON CALIF
PHONE
800 838 1477
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* [signature] | 3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
5P34140	10
G520822	

END DUMP	BOTTOM DUMP	TRANSFER
☐	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS
FACILITY TICKET NUMBER
SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22247

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin PROJECT ENGINEER	3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
DEN BESTE
ADDRESS
7705 CONDE LA
CITY, STATE, ZIP
WINDSOR CA
PHONE
707-838-1407

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* Todd Oakland	3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
SP37065	*
FT51548	

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☒ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22246

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston, TX 772522099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin PROJECT ENGINEER	3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE:
- ☐ DISPOSAL
- ☐ CONSTRUCTION
- ☐ DEBRIS
- ☐ SPECIAL WASTE
- ☐ SLUDGE
- ☐ WOOD
- ☐ OTHER

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND Broadway

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: Ben Boste
ADDRESS: 980 - Shiloh Rd
CITY, STATE, ZIP: Windsor Ca
PHONE:

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* Chuck Ames	3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9B56814	#55

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22245

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston, TX 772522099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin PROJECT ENGINEER	3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: [illegible] TRUCKING / DUBESTE
ADDRESS: PO BOX 1196
CITY, STATE, ZIP: ARBUCKLE CA 95912
PHONE: 530-476-2438

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* [signature]	3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9C37653	62

END DUMP ☒ BOTTOM DUMP ☐ TRANSFER ☐
ROLL-OFF(S) ☐ FLAT-BED ☐ VAN ☐ DRUMS ☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE / ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22244

☐ Keller Canyon Sanitary Landfill
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ Ox Mountain Sanitary Landfill
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ Newby Island Sanitary Landfill
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ Forward Landfill
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston, TX 772522099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE: * Wayne Chin PROJECT ENGINEER
DATE: 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.

923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: BOTCHELDER TRKG
ADDRESS: PO BOX 501
CITY, STATE, ZIP: FORESTVILLE CA
PHONE: 707 974-2255
SIGNATURE OF AUTHORIZED AGENT OR DRIVER: *
DATE: 3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
5P44483	GT Y2K
GT26754	

END DUMP ☒ BOTTOM DUMP ☐ TRANSFER ☐
ROLL-OFF(S) ☐ FLAT-BED ☐ VAN ☐ DRUMS ☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT: *
DATE

CUBIC YARDS: 18 YDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22243

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJ ENG | 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, **if the waste is a treatment residue of a previously restricted hazardous waste** subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: Soil
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
Ben Beste transportation
ADDRESS
CITY, STATE, ZIP
PHONE
707-838-1407
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* [signature] | 3-7-00

NOTES: VEHICLE LICENSE NUMBER 9B14679 | TRUCK NUMBER M1
Nelson trucking

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS
FACILITY TICKET NUMBER
SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22242

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston, TX 772532099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE: * Wayne Chin PROJ ENG
DATE: 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO. 923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: DEMOESTE TRANS
ADDRESS: 1705 CONDE LN
CITY, STATE, ZIP: WINDSOR 800 838 1477
PHONE:
SIGNATURE OF AUTHORIZED AGENT OR DRIVER: *
DATE: 3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
SP 38282	138

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT: *
DATE

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22241

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin PROJ ENG	3/7/00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER Dennis Trans
ADDRESS 7705 Conde Ln
CITY, STATE, ZIP Windsor
PHONE 1-800-838-1477

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* [signature]	3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9B39B03	097

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22238

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 77252-2099
PHONE
(713) 241-8673
CONTACT PERSON
Noca Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin PROJ ENG	3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, If the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: Soil

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
Fred's Trucking
ADDRESS
3801 Holmes rd
CITY, STATE, ZIP
Oakley Ca
PHONE
(925) 625-0324

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* Steve Ayers	3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
SP44567 Ca	F-4

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22240

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston, TX 77252-2099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE: * Wayne Chin PROJ. ENG.
DATE: 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO. 923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: DENBESTE
ADDRESS: 7705 CONDE CN
CITY, STATE, ZIP: WINDSOR, CA
PHONE: 707-838-4047
SIGNATURE OF AUTHORIZED AGENT OR DRIVER: *
DATE: 3-7-00

NOTES:
VEHICLE LICENSE NUMBER: 5P44231
TRUCK NUMBER: 10

END DUMP ☒ BOTTOM DUMP ☐ TRANSFER ☐
ROLL-OFF(S) ☐ FLAT-BED ☐ VAN ☐ DRUMS ☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT: *
DATE

CUBIC YARDS: 10

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22235

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE: * Wayne Chin Proj. ENG.
DATE: 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
Johns Excavation
ADDRESS
1197 Halyer
CITY, STATE, ZIP
Santa Rosa
PHONE
707 [illegible]
SIGNATURE OF AUTHORIZED AGENT OR DRIVER: * [signature]
DATE: 3/7/00

NOTES:
VEHICLE LICENSE NUMBER: 11160011 10B4258
TRUCK NUMBER: #03

END DUMP	BOTTOM DUMP	TRANSFER
☐	☐	☒

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT: *
DATE

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22233

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 T8P1389-K-2
CITY, STATE, ZIP: Houston, TX 772522099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE: * Wayne Chu PROJECT ENGINEER
DATE: 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO. 923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: Johns Ex
ADDRESS: 1128 Hallyard
CITY, STATE, ZIP: Santa Rosa 94928
PHONE: 707-578-1184
SIGNATURE OF AUTHORIZED AGENT OR DRIVER: * John Bellett
DATE: 3-7-00

NOTES:
VEHICLE LICENSE NUMBER: A90873
TRUCK NUMBER: 461

END DUMP ☒ BOTTOM DUMP ☐ TRANSFER ☐
ROLL-OFF(S) ☐ FLAT-BED ☐ VAN ☐ DRUMS ☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT: *
DATE

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22232

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJECT ENGINEER | 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE:
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER Tolm's Excavating
ADDRESS 1128 Halyard Dr.
CITY, STATE, ZIP Santa Rosa CA.
PHONE 707-525-1184
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* Gary D. Morlan | 3-7-00

NOTES: | VEHICLE LICENSE NUMBER: 7B03017 CA | TRUCK NUMBER: 402

END DUMP	BOTTOM DUMP	TRANSFER
☑	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22231

☐ Keller Canyon Sanitary Landfill
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ Ox Mountain Sanitary Landfill
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ Newby Island Sanitary Landfill
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ Forward Landfill
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston, TX 772522099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* [signature] PROJECT ENGINEER	3·7·00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.

923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT

☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: DANNY RHODE S/ TRUCKING
ADDRESS: 435 HUNTER LN / DENBESTE
CITY, STATE, ZIP: SANTA ROSA CA 95404
PHONE: 707 586 6713

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* [signature]	3 7 2001

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9A92989	1

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22230

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJECT ENGINEER | 3-7-00

GENERATOR'S CERTIFICATION. I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER Penbeta
ADDRESS 7705 Conti Lane
CITY, STATE, ZIP Windsor Ca
PHONE 707 838 1467
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* [signature] | 3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9B43671	JR 1
1WK6509	

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22229

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin PROJECT ENGINEER	3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: Soil
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
Ben Beste
ADDRESS 960 Shelton Rd
CITY, STATE, ZIP
Windsor Ca
PHONE

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* [signature]	3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9B56814	55

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22228

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJECT ENGINEER | 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: Soil
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
DEN BESTE TRANS
ADDRESS
CITY, STATE, ZIP
WINDSOR CALIF
PHONE
800-938 1477
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* [signature] | 3-7-00

NOTES: VEHICLE LICENSE NUMBER: SP34140 | TRUCK NUMBER: 10
GT20822

END DUMP ☒ BOTTOM DUMP ☐ TRANSFER ☐
ROLL-OFF(S) ☐ FLAT-BED ☐ VAN ☐ DRUMS ☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22227

☐ Keller Canyon Sanitary Landfill
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ Ox Mountain Sanitary Landfill
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ Newby Island Sanitary Landfill
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ Forward Landfill
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston TX 77252-2099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE: * Wayne Chill Project Engineer
DATE: 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.: 923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: BOTCHELDER TRKG
ADDRESS: P.O. Box 501
CITY, STATE, ZIP: FORESTVILLE CA
PHONE: 707 974 2255
SIGNATURE OF AUTHORIZED AGENT OR DRIVER: *
DATE: 3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
5P44483	Y2K
GT26754	

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT: *
DATE

CUBIC YARDS: 18 YDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22226

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston, TX 77252-2099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE: * Wayne Chin PROJECT ENGINEER
DATE: 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: DEN BESTE TRANS
ADDRESS: 7705 CONDE LANE
CITY, STATE, ZIP: WINDSOR CA
PHONE: 707-838-1407

SIGNATURE OF AUTHORIZED AGENT OR DRIVER: * Todd Allen
DATE: 3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
SP37065	6
BTS1548	

END DUMP ☒ BOTTOM DUMP ☐ TRANSFER ☐
ROLL-OFF(S) ☐ FLAT-BED ☐ VAN ☐ DRUMS ☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT: *
DATE

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22225

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston TX 772522099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE: * Wayne Chin PROJECT ENGINEER
DATE: 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO. 923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: BenBest tran Inc
ADDRESS:
CITY, STATE, ZIP: Windsor
PHONE: 707 838-1407
SIGNATURE OF AUTHORIZED AGENT OR DRIVER: *
DATE: 3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9B14679	N1

Nelson trucking

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT: *
DATE

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22224

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston TX 772522099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin Project Engineer	3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: Soil

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO. 923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
ADDRESS
CITY, STATE, ZIP
PHONE

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* [signature]	3/7/00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9A93114	1018

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS
FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22223

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Noon Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chine PROJECT ENGINEER 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER D&W WASTE TRANSPORTATION
ADDRESS
CITY, STATE, ZIP WINDSOR CA 95492
PHONE 1800 938-1477
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* Fabio Diaz 03-0

NOTES: | VEHICLE LICENSE NUMBER: 9B34813 | TRUCK NUMBER: #P607

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS
FACILITY TICKET NUMBER
SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22222

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 T&P1389-K-2
CITY, STATE, ZIP: Houston, TX 772522099
PHONE: (713) 241-8673
CONTACT PERSON: Norm Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin Project Engineer	3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.

923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT

☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: DENGESTE TRANSP
ADDRESS: 7705 CONDE LANE
CITY, STATE, ZIP: WINDSON CA
PHONE: 1800 838-1477

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* [signature]	3/7/00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9B35501	070-1

END DUMP	BOTTOM DUMP	TRANSFER
☐	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22221

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston TX 772522099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin PROJECT ENGINEER	3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: DENGESTE TRANSP
ADDRESS: 7705 - CONDE LN
CITY, STATE, ZIP: WINDSOR CA.
PHONE: 1-800-838-1477

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* [signature]	3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9B65324	51

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22220

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston TX 772522099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE: * Wayne Chin PROJECT ENGINEER
DATE: 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO. 923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: Ambcate Trans
ADDRESS: 7705 CONDE LN
CITY, STATE, ZIP: WINDSOR CA
PHONE: 1-800-838 1977
SIGNATURE OF AUTHORIZED AGENT OR DRIVER: *
DATE: 3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
5P38282	130

END DUMP	BOTTOM DUMP	TRANSFER
☑	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT: *
DATE

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22219

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin PROJECT ENGINEER	3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: Soil
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER Denbeste Transportation
ADDRESS 730 Vilott Rd #44
CITY, STATE, ZIP Windsor Cal. 95492
PHONE (707) 973-6144

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* [signature]	3-07-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
H.J.P	N23-1

END DUMP	BOTTOM DUMP	TRANSFER
☐	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22218

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston TX 77252-2099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE: * Wayne Chin PROJECT ENGINEER
DATE: 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, If the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: DENBESTE TRAN.
ADDRESS:
CITY, STATE, ZIP: WINDSOR CA
PHONE: 707 526-6246
SIGNATURE OF AUTHORIZED AGENT OR DRIVER: *Dominic MACHADO
DATE: 3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
NEW TRUCK	M3

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS
FACILITY TICKET NUMBER
SIGNATURE OF AUTHORIZED AGENT: *
DATE

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22217

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin PROJECT ENGINEER	3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER Del Beste
ADDRESS
CITY, STATE, ZIP Windsor Ca
PHONE 1800 838 1471

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* Rick Short	3 7 00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9B26232	007

FT825/1

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS
FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22216

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJECT ENGINEER | 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
DENBESTE TRANS.
ADDRESS
7705 Conde Ln
CITY, STATE, ZIP
Windsor, CA
PHONE 1-800-838-1477
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* [signature] | 3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9339803	097

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22215

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin PROJECT ENGINEER	3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
DenBeste Trans.
ADDRESS
7705 Conde Lane
CITY, STATE, ZIP
Windsor, CA
PHONE
(707) 838-1407

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* Perry Delavy	3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9B02858	#1
6T26755	

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22214

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 T8P1389-K-2
CITY, STATE, ZIP: Houston, TX 772522099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin PROJECT ENGINEER	3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.

923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: Frost Trucking
ADDRESS: 3801 Holmes Rd
CITY, STATE, ZIP: Oakley Ca
PHONE: (925) 6250329

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* Stud Ayen	2-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
SP 44567 Ca	F-4

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22213

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP: Houston, TX 772522099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE: * Wayne Chin PROJECT ENGINEER
DATE: 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: DENISE
ADDRESS: 7705 CONDE LN
CITY, STATE, ZIP: WINDSOR, CA
PHONE: 707-838-1407

SIGNATURE OF AUTHORIZED AGENT OR DRIVER: *
DATE: 3-8-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
SP44231	10

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT: *
DATE:

CUBIC YARDS: 18

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22212

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSF1389-K-2
CITY, STATE, ZIP
Houston TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJECT ENGINEER | 3-7-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
Teach Beste
ADDRESS
7705 Conde Ln
CITY, STATE, ZIP
Windsor CA.
PHONE
707 838-1407
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* [signature] | 3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
SP44473	2

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22211

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 T8P1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chiu PROJECT ENGINEER	3-6-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
Johns Ex Cavating
ADDRESS
1154 Hawkyard
CITY, STATE, ZIP
Santa Rosa
PHONE
707 578 1154

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* Ron [illegible]	3-7-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
5110071 10B4259	4031

END DUMP	BOTTOM DUMP	TRANSFER
☐	☐	☒

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22210

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez
SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJECT ENGINEER | 3-6-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND
Broadway

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER Johns Ex
ADDRESS 1128 Holyoke Ave
CITY, STATE, ZIP Santa Rose 94928
PHONE 707-578-1184
SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* [signature] | 3-6-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9AS8972	411

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22209

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston, TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* [signature] PROJECT ENGINEER	3-6-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
Ben Beste
ADDRESS
780 - Shilling Rd
CITY, STATE, ZIP
Windsor Ca
PHONE

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* [signature]	3-6-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
9B56814	#55

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22208

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: Equilon Enterprises LLC
MAILING ADDRESS: Post Office Box 2099 T8P1389-K-2
CITY, STATE, ZIP: Houston, TX 772522099
PHONE: (713) 241-8673
CONTACT PERSON: Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chiu PROJECT ENGINEER	3-6-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY: Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER: John's Excavating
ADDRESS: 1128 Halyard Dr.
CITY, STATE, ZIP: Santa Rosa CA
PHONE: 707-578-1184

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* Gary D. McCann	3-6-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
7B03012 CA	402

END DUMP	BOTTOM DUMP	TRANSFER
☑	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22207

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE | DATE
* Wayne Chin PROJECT ENGINEER | 3-6-00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, If the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL
☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER Dendste
ADDRESS Condo Ln
CITY, STATE, ZIP Windsor CA
PHONE 1 800 838 1477

SIGNATURE OF AUTHORIZED AGENT OR DRIVER | DATE
* Tony Alwood | 3-6-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
4835503	1 #52

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT | DATE
*

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22206

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☒ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR
Equilon Enterprises LLC
MAILING ADDRESS
Post Office Box 2099 TSP1389-K-2
CITY, STATE, ZIP
Houston TX 772522099
PHONE
(713) 241-8673
CONTACT PERSON
Nora Cortez

SIGNATURE OF AUTHORIZED AGENT / TITLE	DATE
* Wayne Chin PROJECT ENGINEER	3/6/00

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE: SOIL

☐ DISPOSAL ☐ SLUDGE
☐ CONSTRUCTION ☐ WOOD
☐ DEBRIS ☐ OTHER
☐ SPECIAL WASTE

GENERATING FACILITY
Former Texaco Service Station 3800 (3810) OAKLAND

WASTE ACCEPTANCE NO.
923300

REQUIRED PERSONAL PROTECTIVE EQUIPMENT
☒ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☒ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

TRANSPORTER
Dan Beste
ADDRESS
760 - Shiller Rd
CITY, STATE, ZIP
Windsor Ca
PHONE

SIGNATURE OF AUTHORIZED AGENT OR DRIVER	DATE
* Chuck Cumes	3-6-00

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
6T59167	#55

END DUMP	BOTTOM DUMP	TRANSFER
☒	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT	DATE
*	

CUBIC YARDS

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 22201

DISPOSAL
CONFIRMATION

Consultant:	TOXICHEM MANAGEMENT
Contact:	KEITH WINEMILLER
Phone/Fax:	(415) 681-8816 FAX (415) 681-8132
Client:	EQUIVA SERVICES - KAREN PETRYNA
Station #/Wic #:	WIC#618-5700-1071 INC#98995026 CRMT#NC000575
Site Address:	3800\3810 BROADWAY
City/State:	OAKLAND, CA
Estimated YD/Ton:	100 - 200 YARDS
Actual YD/Ton:	4-27-00 475.73 TONS
Disposal Facility:	FORWARD LANDFILL
Contact:	BRAD BONNER
Phone #:	(800) 204-4242
Hauler:	MANLEY & SONS TRUCKING, INC.
Contact:	TIM A. MANLEY
Phone #:	(916) 381-6864
Fax #:	(916) 381-1573

Date & Time Faxed

10117

DISPOSAL CONFIRMATION

Consultant:	TOXICHEM MANAGEMENT
Contact:	KEITH WINEMILLER
Phone/Fax:	(415) 681-8816 FAX (415) 681-8132
Client:	EQUIVA SERVICES - KAREN PETRYNA
Station #/Wic #:	WIC#618-5700-1071 INC#98995026 CRMT#NC000575
Site Address:	3800\3810 BROADWAY
City/State:	OAKLAND, CA
Estimated YD/Ton:	150 - 175 YARDS
Actual YD/Ton:	3-30-00 260.19 TONS \ 3-31-00 99.84 TONS
Disposal Facility:	FORWARD LANDFILL
Contact:	BRAD BONNER
Phone #:	(800) 204-4242
Hauler:	MANLEY & SONS TRUCKING, INC.
Contact:	TIM A. MANLEY
Phone #:	(916) 381-6864
Fax #:	(916) 381-1573

Date & Time Faxed

10024

ATTACHMENT B

CERTIFIED ANALYTICAL REPORT AND CHAIN-OF-CUSTODY DOCUMENTATION

Columbia Analytical Services INC.
An Employee-Owned Company

March 8, 2000

Service Request No.: S2000834

Mr. Keith Winemiller
Toxichem Management System, Inc.
11 Kenton Avenue
San Carlos, CA 94070

RE: 3810 Broadway, Oakland, CA./93995026 (INCIDENT#)SAP# 128141

Dear Mr. Winemiller:

Enclosed are the results of the sample(s) submitted to our laboratory on March 7, 2000. All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply to the sample(s) analyzed. Columbia Analytical Services is not responsible for use of less than the complete report. Signature of this CAS Analytical Report confirms that pages 2 through 14, following, have been thoroughly reviewed and approved for release.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 2352, expiration: January 31, 2001).

If you have any questions, please call me at (408) 748-9700.

Respectfully submitted,

Columbia Analytical Services, Inc.

Lori Tyler
Project Chemist

3334 Victor Court ▪ Santa Clara, CA 95054 ▪ Telephone (408) 748-9700 ▪ Fax (408) 748-9860

COLUMBIA ANALYTICAL SERVICES, Inc.
Acronyms

A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl tert-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	Not Detected at or above the method reporting/detection limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992
STLC	Solubility Threshold Limit Concentration
SW	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level. The concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA./93995026 (INCIDENT#)SAP# 128141
Sample Matrix: Soil

Service Request: S2000834
Date Collected: 3/7/00
Date Received: 3/7/00

TPH as Diesel

Prep Method: LUFT
Analysis Method: California DHS LUFT
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
SP COMP 1A	S2000834-001	1	1	03/07/00	03/08/00	ND	
SP COMP 1B	S2000834-002	1	1	03/07/00	03/08/00	ND	
SP COMP 1C	S2000834-003	1	1	03/07/00	03/08/00	ND	
SP COMP 1D	S2000834-004	1	1	03/07/00	03/08/00	ND	
Method Blank	S200307-SB1	1	1	03/07/00	03/08/00	ND	

Approved By: _____ Date: 3-8-00

1A/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA./93995026 (INCIDENT#)SAP# 128141
Sample Matrix: Soil

Service Request: S2000834
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
TPH as Diesel

Prep Method: LUFT
Analysis Method: California DHS LUFT

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery p-Terphenyl
SP COMP 1A	S2000834-001		75
SP COMP 1B	S2000834-002		83
SP COMP 1C	S2000834-003		92
SP COMP 1D	S2000834-004		104
SP COMP 1D	S2000834-002MS		114
SP COMP 1D	S2000834-002DMS		115
Method Blank	S200307-SB1		119
Lab Control Sample	S200307-LCS		100

CAS Acceptance Limits: 41-140

Approved By: _____ Date: 3-9-00

SUR1/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA./93995026 (INCIDENT#)SAP# 128141
Sample Matrix: Soil

Service Request: S2000834
Date Collected: NA
Date Received: NA
Date Extracted: 03/07/00
Date Analyzed: 03/08/00

Matrix Spike/Duplicate Matrix Spike Summary
TPH as Diesel

Sample Name: SP COMP 1D
Lab Code: S2000834-4MS S2000834-4DMS
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
TPH as Diesel	LUFT	California DHS LUFT	1	100	100	ND	120	120	120	120	28-157	<1	

Approved By: Lou [illegible] Date: 3-1-00

DMS'020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA./93995026 (INCIDENT#)SAP# 128141
LCS Matrix: Soil

Service Request: S2000834
Date Collected: NA
Date Received: NA
Date Extracted: 03/07/00
Date Analyzed: 03/08/00

Laboratory Control Sample Summary
TPH as Diesel

Sample Name: Lab Control Sample
Lab Code: S200307-LCS
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
TPH as Diesel	LUFT	California DHS LUFT	100	120	120	28-157	

Approved By: _____ Date: 3-8-00

LCS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Equiva Services LLC	**Service Request:**	S2000834
Project:	3810 Broadway, Oakland, CA /93995026 (INCIDENT#)SAP# 128141	**Date Collected:**	3/7/00
Sample Matrix:	Soil	**Date Received:**	3/7/00

BTEX, MTBE and TPH as Gasoline

Sample Name:	SP COMP 1A	Units:	mg/Kg (ppm)
Lab Code:	S2000834-001	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	1	3/7/00	3/7/00	4	
Benzene	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	ND	
Toluene	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	ND	
Ethylbenzene	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	0.007	
Xylenes, Total	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	0.038	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	1	3/7/00	3/7/00	ND	MDL=0.01

Approved By: _____ Date: 3-8-00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Equiva Services LLC	**Service Request:**	S2000834
Project:	3810 Broadway, Oakland, CA /93995026 (INCIDENT#)SAP# 128141	**Date Collected:**	3/7/00
Sample Matrix:	Soil	**Date Received:**	3/7/00

BTEX, MTBE and TPH as Gasoline

Sample Name: SP COMP 1B
Lab Code: S2000834-002
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	1	3/7/00	3/7/00	4	
Benzene	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	ND	
Toluene	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	0.017	
Ethylbenzene	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	0.024	
Xylenes, Total	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	0.10	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	1	3/7/00	3/7/00	ND	MDL=0.01

Approved By: _____ Date: 3-8-00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Equiva Services LLC	**Service Request:**	S2000834
Project:	3810 Broadway, Oakland, CA /93995026 (INCIDENT#)SAP# 128141	**Date Collected:**	3/7/00
Sample Matrix:	Soil	**Date Received:**	3/7/00

BTEX, MTBE and TPH as Gasoline

Sample Name:	SP COMP 1C	Units:	mg/Kg (ppm)
Lab Code:	S2000834-003	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	1	3/7/00	3/7/00	ND	
Benzene	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	ND	
Toluene	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	ND	
Ethylbenzene	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	ND	
Xylenes, Total	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	ND	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	1	3/7/00	3/7/00	ND	MDL=0.01

Approved By: _____ Date: 3-8-00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Equiva Services LLC	**Service Request:**	S2000834
Project:	3810 Broadway, Oakland, CA /93995026 (INCIDENT#)SAP# 128141	**Date Collected:**	3/7/00
Sample Matrix:	Soil	**Date Received:**	3/7/00

BTEX, MTBE and TPH as Gasoline

Sample Name:	SP COMP 1D	Units:	mg/Kg (ppm)
Lab Code:	S2000834-004	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	1	3/7/00	3/7/00	ND	
Benzene	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	ND	
Toluene	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	ND	
Ethylbenzene	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	ND	
Xylenes, Total	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	ND	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	1	3/7/00	3/7/00	ND	MDL=0.01

Approved By: _____ Date: 3-8-00

1822/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA./93995026 (INCIDENT#)SAP# 128141
Sample Matrix: Soil

Service Request: S2000834
Date Collected: NA
Date Received: NA

BTEX, MTBE and TPH as Gasoline

Sample Name: Method Blank
Lab Code: S200307-SB1
Test Notes

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	1	3/7/00	3/7/00	ND	
Benzene	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	ND	
Toluene	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	ND	
Ethylbenzene	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	ND	
Xylenes, Total	EPA 5030	8021B	0.005	1	3/7/00	3/7/00	ND	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	1	3/7/00	3/7/00	ND	MDL=0.01

Approved By: Len Zz Date: 3-8-00

IS22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA./93995026 (INCIDENT#)SAP# 128141
Sample Matrix: Soil

Service Request: S2000834
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
BTEX and TPH as Gasoline

Prep Method: EPA 5030
Analysis Method: 8021B CA/LUFT

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery a,a,a-Trifluorotoluene	Percent Recovery a,a,a-Trifluorotoluene
SP COMP 1A	S2000834-001		98	94
SP COMP 1B	S2000834-002		98	92
SP COMP 1C	S2000834-003		98	89
SP COMP 1D	S2000834-004		116	105
SP COMP 1D	S2000834-004MS		93	86
SP COMP 1D	S2000834-004DMS		97	104
Method Blank	S200307-SB1		91	84
Lab Control Sample	S200307-LCS		96	100

CAS Acceptance Limits: 70-130% 70-130%

Approved By: _____ Date: 3-8-00

SUR2/020397p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA./93995026 (INCIDENT#)SAP# 128141
Sample Matrix: Soil

Service Request: S2000834
Date Collected: NA
Date Received: NA
Date Extracted: 03/07/00
Date Analyzed: 03/07/00

Matrix Spike/Duplicate Matrix Spike Summary
BTEX and TPH as Gasoline

Sample Name: SP COMP 1D
Lab Code: S2000834-004MS, S2000834-004DMS
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Benzene	EPA 5030	8021B	0.005	0.5	0.5	ND	0.44	0.51	88	102	57-154	15	
Toluene	EPA 5030	8021B	0.005	0.5	0.5	ND	0.41	0.54	82	108	60-142	27	
Ethylbenzene	EPA 5030	8021B	0.005	0.5	0.5	ND	0.34	0.51	68	102	46-150	40	
Gasoline	EPA 5030	CA/LUFT	1	10	10	ND	8.7	9.5	87	95	67-121	9	

Approved By: _____ Date: 3-8-00

DMS/020597g

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA./93995026 (INCIDENT#)SAP# 128141
LCS Matrix: Soil

Service Request: S2000834
Date Collected: NA
Date Received: NA
Date Extracted: 03/07/00
Date Analyzed: 03/07/00

Laboratory Control Sample Summary
BTEX and TPH as Gasoline

Sample Name: Lab Control Sample
Lab Code: S200307-LCS
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Benzene	EPA 5030	8021B	0.5	0.50	100	57-154	
Toluene	EPA 5030	8021B	0.5	0.54	108	60-142	
Ethylbenzene	EPA 5030	8021B	0.5	0.51	102	46-150	
Gasoline	EPA 5030	CA/LUFT	10	9.9	99	67-121	

Approved By: _____ Date: 3-8-00

LCS/020597p

Initial # 93995026 [redacted] # 1 [redacted] 24

CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

Columbia Analytical Services INC
An Employee Owned Company
3334 Victor Court • Santa Clara, CA 95054
(408) 748-9700 • FAX (408) 748-9860

SERVICE REQUEST NO. S2000834 P.O.# 6402.1A PAGE 1 OF 1

PROJECT NAME 3810 BROADWAY, OAKLAND #
PROJECT MGR KEITH WINEMILLER / WAYNE CHIU
COMPANY TOXICHEM
ADDRESS 6857 RIDGEWOOD DR.
OAKLAND, CA 94611 PHONE (510) 339 6019
FAX 6027
SAMPLER'S SIGNATURE Wayne Chiu

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Volatile Organics BY GCMS 624 ☐ 8240 ☐ 8260 ☐ (PRESERVATIVE)	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐ 8021 ☐ (HCl)	TPH as Gas/BTEX ☐ TPH as Gas/BTEX/MTBE ☐ (HCl)	TPH as Diesel ☐ HBHC ☐ (HCl)	Base/Neu/Acid Organics / GCMS 625 ☐ 8270 ☐ (NP)	Pesticides & PCBs 608/8082 ☐ Pesticides only 8081 ☐ PCBs 8082 ☐ (NP)	TRPH - 418.1 ☐ Oil and Grease Method (NP)	Metals Indicate below Total ☐ Dissolved ☐ (HCl)	pH, Cond, Cl, SO_4, F, TDS, TSS Alk, NO_3, NO_2 (circle) (HNO_3)	NH_3-N, COD, Total-P, TKN, TOC NO_3 / NO_2, Phenols (circle) (NP)	Cyanide (H_2SO_4)	NaOH						REMARKS*
SP COMP 1A	3/7/00		1	SOIL	1		D/G	X	X														Composite
SP COMP 1B	↓		2	↓	↓			X	X														samples.
SP COMP 1C			3					X	X														MDL for
SP COMP 1D			4					X	X														MtBE must
																							be <0.01
																							mg/kg.

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Wayne Chiu	Signature: Brian Fulk	Signature	Signature
Printed Name: WAYNE CHIU	Printed Name: Brian Fulk	Printed Name	Printed Name
Firm: TOXICHEM	Firm: CAS	Firm	Firm
Date/Time: 3/7/00 1:45	Date/Time: 3/7/00 1:45	Date/Time	Date/Time

TURNAROUND REQUIREMENTS
✓ 1 day ___ 2 day ___ 3 day
___ 5 day ___ Other
___ Standard (10 working days)
Results Due 3/8/00

REPORT REQUIREMENTS
___ I Routine Report
___ II. Report (includes MS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ MDLs/PQLs/Trace #
___ Electronic Data Deliverables

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

Shipped Via/Tracking #

SAMPLE RECEIPT: Condition _____ Custody Seals _____

SPECIAL INSTRUCTIONS/COMMENTS. DUE: 3/8/00

Circle which metals are to be analyzed:

Metals: Al Sb Ba Be B Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Ag Na Sn V Zn As Pb Se Tl Hg

R4

Storage:

*Will sample results be used in connection with drinking water regulations? ☐ Yes ☐ No If yes, you must so indicate by writing "DW" for each such sample.

Columbia Analytical Services, Inc. General Terms and Conditions

Laboratory Services

1. These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory ("LAB") and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to LAB. The invalidity or unenforceability, in whole or in part of any provision, term or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. Not waiver by LAB of any provision, term or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state from which services are procured.

2. **Warranty.** Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

At LAB sole discretion, preliminary results may be given in advance of the laboratory report. Such preliminary results are tentative, subject to confirmation and final review by LAB. Client's use of preliminary results in any manner shall be at Client's sole risk.

3. **Scope and Compensation.** LAB agrees to perform the services described in the proposal or agreement to which these Terms and Conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described.

Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1 1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sales, use or other taxes. Such taxes will be added to invoice prices when required. LAB reserves the right to require payment prior to release of data. Until such time as Client invoices are paid in full, LAB has no obligation, and will not defend, reproduce, return, or supplement data results.

4. **Prices.** Compensation for services performed will be based on the current Lab Analytical Fee Schedule, or on verbal quotations agreed to in writing by the parties. Unless specifically indicated on the written confirmation of quotation, analytical turnaround times are not guaranteed. The minimum charge will be $100.00 unless otherwise noted.

5. **Methods.** Where applicable, LAB will use analytical methodologies which are in substantial conformity with U.S. Environmental Protection Agency (EPA), State Agency, American Society for Testing and Materials (ASTM), Association of Official Analytical Chemists (AOAC), Standard Methods for the Examination of Water and Wastewater, or other recognized methodologies. LAB reserves the right to deviate from these methodologies, if necessary or appropriate, due to the nature or composition of the sample or otherwise, based on the reasonable judgment of LAB. Deviations, if any, will be made on a basis consistent with recognized standards of the industry and/or LAB's standard operating procedures.

6. **Limitations of Liability.** In the event of any error, omission or other professional negligence, the sole and exclusive responsibility of LAB shall be to reperform the deficient work at its own expense, and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.

LAB shall have no liability, obligation or responsibility of any kind for losses, costs, expenses or other damages (including but not limited to any special, indirect, incidental or consequential damages) with respect to LAB's services or results.

All results provided by LAB are strictly for the use of its clients, and LAB is in no way responsible for the use of such results by clients or third parties. All results should be considered in their entirety, and LAB is not responsible for the separation, detachment or other use of any portion of the results.

7. **Hazard Disclosure.** Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance which is to be delivered to LAB will be packaged, labeled, transported and delivered properly and in accordance with applicable laws.

8. **Sample Handling.** Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss of or damage to such sample remains with Client. Samples are accepted when accept is acknowledged on chain of custody documentation. In no event will LAB have any responsibility or liability for the action or inaction of any carrier shipping or delivering any sample to or from LAB's premises.

LAB will use its best efforts to arrange for the shipment of specially prepared sample bottles, sampling instructions per Client instruction by the readily available, least cost method. Any other shipment arrangements will be at Client's expense.

Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis, unless modified by applicable state or federal laws. Client will be required to give to LAB written instructions concerning disposal of these samples.

LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept or revoke acceptance of any sample which, in the sole judgment of LAB, (a) is of unsuitable volume, (b) may be or become unsuitable for, or may pose a risk in handling, transport or processing for any health, safety, environmental or other reason, whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) has been delivered to the LAB more than 72 hours after sampling or if one half or more of the recommended holding time for the analysis has lapsed.

9. **Legal Responsibility.** LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort, including negligence.

10. **Data Deliverables.** Where specifically requested by Client, LAB agrees to produce electronic data representing services performed hereunder, subject to the following specific understanding between the parties: LAB agrees to supply Client with electronic data as mutually defined, using an agreed medium. Client recognizes that LAB is not a software consultant, manufacturer or reseller, any transfer of electronic data pursuant to services provided by LAB is an accommodation to and strictly for the convenience of the client who is solely liable for the choice and maintenance of the medium utilized. Electronic data provided under this agreement is not deemed to be the project deliverable for the purpose of fulfilling obligations under the Agreement. The provision of electronic data does not in any way modify the intention of the parties that the Client rely on the written or hard copy form of the deliverable.

Except with regard to any limited warranty as specifically set forth below, LAB disclaims and excludes all warranties express or implied with regard to the creation, transmittal or use of electronic data hereunder. The limited warranty in this Agreement replaces all other warranties, express or implied, including any warranties of merchantability or fitness for a particular purpose. Professional warranties extend to written or hard copy deliverables only and do <u>not</u> extend to electronic data supplied to Client. Professional warranties in the Agreement which extend to written or hard copy deliverables shall be undisturbed by this Amendment. LAB's liability for medium failure shall be limited to replacement of the electronic data with a hard copy for a period of thirty days from the date of delivery. LAB's electronic data transfer is derived in part from or is created using third party software, and no such third party warrants or assumes any liability regarding use of or undertakes to provide support information relating to LAB's electronic data. LAB will utilize anti-virus programs on a best efforts basis in preparation of the electronic data transfer, but LAB makes no warranty as to the effectiveness of such screening. LAB will also use its best efforts to ensure that its electronic data will meet all criteria as specified by Client, including criteria regarding date/time data, if and when, included; but LAB makes no warranty as to the appropriateness of the client specified criteria by accepting the same.

In addition to indemnities contained in the underlying agreement between LAB and Client, Client shall hold LAB harmless from any claims, suits or liability arising from or related to electronic data supplied pursuant to this Agreement. Any reuse of original or altered files by Client shall be at Client's risk and without liability or responsibility to LAB, but shall entitle LAB to additional compensation for such unauthorized reuse. In no event will LAB's liability for electronic data include any special, incidental or consequential damages, whether or not LAB has knowledge of the potential for loss or damage.

11. **Force Majeure.** LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not be limited to, acts of God, acts of Client, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Columbia Analytical Services INC
An Employee-Owned Company

March 14, 2000

Service Request No.: S2000847

Mr. Wayne Chiu
Toxichem Management System, Inc.
6857 Ridgewood Drive
Oakland, CA 94611

RE: 3810 Broadway, Oakland, CA

Dear Mr. Chiu:

Enclosed are the results of the sample(s) submitted to our laboratory on March 18, 2000. All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply to the sample(s) analyzed. Columbia Analytical Services is not responsible for use of less than the complete report. Signature of this CAS Analytical Report confirms that pages 2 through 24, following, have been thoroughly reviewed and approved for release.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 2352, expiration: January 31, 2001).

If you have any questions, please call me at (408) 748-9700.

Respectfully submitted,

Columbia Analytical Services, Inc.

Greg Jordan
Project Chemist

3334 Victor Court ▪ Santa Clara, CA 95054-2316 ▪ Telephone (408) 437-2400 ▪ Fax (408) 437-9356

COLUMBIA ANALYTICAL SERVICES, Inc.
Acronyms

A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl tert-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	Not Detected at or above the method reporting/detection limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992
STLC	Solubility Threshold Limit Concentration
SW	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level. The concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2000847
Date Collected: 3/7 - 3/8/00
Date Received: 3/8/00

TPH as Diesel

Prep Method: LUFT
Analysis Method: California DHS LUFT
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
EX-1	S2000847-001	1	10	3/8/00	3/10/00	1900	D4
EX-2	S2000847-002	1	1	3/8/00	3/9/00	18	D4
EX-3	S2000847-003	1	1	3/8/00	3/9/00	26	D4
EX-4	S2000847-004	1	1	3/8/00	3/9/00	ND	
EX-5	S2000847-005	1	1	3/8/00	3/9/00	ND	
EX-6	S2000847-006	1	1	3/8/00	3/9/00	26	D4
EX-7	S2000847-007	1	1	3/8/00	3/9/00	ND	
Ex-8	S2000847-008	1	1	3/8/00	3/9/00	13	D4
EX-9	S2000847-009	1	1	3/8/00	3/9/00	19	D4
EX-10	S2000847-010	1	1	3/8/00	3/9/00	17	D4
Method Blank	S200308-SB1	1	1	3/8/00	3/9/00	ND	

D4 The sample contains a lower boiling point mixture of hydrocarbons and quantitated as diesel.

Approved By: [signature] Date: 3/14/00

1A/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2000847
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
TPH as Diesel

Prep Method: LUFT
Analysis Method: California DHS LUFT

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery p-Terphenyl
EX-1	S2000847-001		53
EX-2	S2000847-002		72
EX-3	S2000847-003		70
EX-4	S2000847-004		84
EX-5	S2000847-005		114
EX-6	S2000847-006		121
EX-7	S2000847-007		66
Ex-8	S2000847-008		98
EX-9	S2000847-009		74
EX-10	S2000847-010		104
Method Blank	S200308-SB1		67
EX-7	S2000847-7MS		70
EX-7	S2000847-7DMS		102
Lab Control Sample	S200308-LCS		64

CAS Acceptance Limits: 41-140

Approved By: Ally Jordan Date: 3/14/02

SUR1/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2000847
Date Collected: NA
Date Received: NA
Date Extracted: 3/8/00
Date Analyzed: 3/10/00

Matrix Spike/Duplicate Matrix Spike Summary
TPH as Diesel

Sample Name: EX-7
Lab Code: S20008477MS, S20008477DMS
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
TPH as Diesel	LUFT	California DHS LUFT	1	100	100	ND	76	81	76	81	28-157	6	

Approved By: [signature] Date: 3/14/00

DMS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
LCS Matrix: Soil

Service Request: S2000847
Date Collected: NA
Date Received: NA
Date Extracted: 3/8/00
Date Analyzed: 3/9/00

Laboratory Control Sample Summary
TPH as Diesel

Sample Name: Lab Control Sample
Lab Code: S200308-LCS
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
TPH as Diesel	LUFT	California DHS LUFT	100	72	72	28-157	

Approved By: [signature] Date: 3/14/00

LCS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA
Sample Matrix: Soil

Service Request: S2000847
Date Collected: 3/7/00
Date Received: 3/8/00

EPA Method 8260
Volatile Organic Compounds

Sample Name: EX-1
Lab Code: S2000847-001
Test Notes:

Units: ug/Kg (ppb)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Methyl tert-Butyl Ether	EPA 5030A	8260	5	2	3/8/00	3/10/00	<10	

Approved By: Greg Franklin Date: 3/14/00

1S44/021397p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA
Sample Matrix: Soil

Service Request: S2000847
Date Collected: NA
Date Received: NA

EPA Method 8260
Volatile Organic Compounds

Sample Name: Method Blank(MS02)
Lab Code: S200308-SB1
Test Notes:

Units: ug/Kg (ppb)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Methyl tert-Butyl Ether	EPA 5030A	8260	5	1	3/8/00	3/10/00	ND	

Approved By: Greg Jonh Date: 3/14/00

1S44/021397p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2000847
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
Volatile Organic Compounds

Prep Method: EPA 5030A
Analysis Method: 8260

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery		
			Dibromofluoromethane	Toluene-D8	4-Bromofluorobenzene
EX-1	S2000847-001		81	92	98
Method Blank(MS02)	S200308-SB1		103	101	103
Lab Control Sample	S2000308-SLCS		105	109	111
Lab Control Sample	S2000308-SDLCS		107	104	102
CAS Acceptance Limits:			57-167	62-138	62-140

Approved By: [signature] Date: 3/14/11

SUR3/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Equiva Services LLC	**Service Request:**	S2000847
Project:	3810 Broadway, Oakland, CA	**Date Collected:**	NA
LCS Matrix:	Soil	**Date Received:**	NA
		Date Extracted:	3/8/00
		Date Analyzed:	3/9/00

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary
Volatile Organic Compounds

Sample Name: Lab Control Sample
Lab Code: S2000308-SLCS, S2000308-SDLCS
Test Notes:

Units: ug/Kg (ppb)
Basis: Wet

Analyte	Prep Method	Analysis Method	True Value LCS	True Value DLCS	Result LCS	Result DLCS	Percent Recovery LCS	Percent Recovery DLCS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
1,1-Dichloroethene	EPA 5030A	8260	100	100	82	88	82	88	61-145	7	
Benzene	EPA 5030A	8260	100	100	96	110	96	110	76-127	14	
Trichloroethene	EPA 5030A	8260	100	100	97	110	97	110	71-120	13	
Toluene	EPA 5030A	8260	100	100	110	120	110	120	76-125	9	
Chlorobenzene	EPA 5030A	8260	100	100	91	100	91	100	75-130	9	

Approved By: [signature] Date: 3/14/00

DLCS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2000847
Date Collected: 3/7/00
Date Received: 3/8/00

BTEX, MTBE and TPH as Gasoline

Sample Name: EX-2
Lab Code: S2000847-002
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	2.5	3/8/00	3/9/00	23	
Benzene	EPA 5030	8021B	0.005	2.5	3/8/00	3/9/00	0.048	
Toluene	EPA 5030	8021B	0.005	2.5	3/8/00	3/9/00	0.40	
Ethylbenzene	EPA 5030	8021B	0.005	2.5	3/8/00	3/9/00	0.17	
Xylenes, Total	EPA 5030	8021B	0.005	2.5	3/8/00	3/9/00	1.1	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	2.5	3/8/00	3/9/00	<0.12	C1

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

Approved By: [signature] Date: 3/14/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2000847
Date Collected: 3/7/00
Date Received: 3/8/00

BTEX, MTBE and TPH as Gasoline

Sample Name: EX-3
Lab Code: S2000847-003
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	2.5	3/8/00	3/10/00	230	
Benzene	EPA 5030	8021B	0.005	2.5	3/8/00	3/10/00	0.80	
Toluene	EPA 5030	8021B	0.005	2.5	3/8/00	3/10/00	3.2	
Ethylbenzene	EPA 5030	8021B	0.005	2.5	3/8/00	3/10/00	2.1	
Xylenes, Total	EPA 5030	8021B	0.005	2.5	3/8/00	3/10/00	10	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	2.5	3/8/00	3/10/00	0.3	

Approved By: [signature] Date: 3/14/00

1522/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2000847
Date Collected: 3/7/00
Date Received: 3/8/00

BTEX, MTBE and TPH as Gasoline

Sample Name: EX-4
Lab Code: S2000847-004
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	1	3/8/00	3/9/00	12	
Benzene	EPA 5030	8021B	0.005	1	3/8/00	3/9/00	0.08	
Toluene	EPA 5030	8021B	0.005	1	3/8/00	3/9/00	0.11	
Ethylbenzene	EPA 5030	8021B	0.005	1	3/8/00	3/9/00	0.49	
Xylenes, Total	EPA 5030	8021B	0.005	1	3/8/00	3/9/00	0.13	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	1	3/8/00	3/9/00	ND	

Approved By: [signature] Date: 3/14/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2000847
Date Collected: 3/8/00
Date Received: 3/8/00

BTEX, MTBE and TPH as Gasoline

Sample Name: EX-5
Lab Code: S2000847-005
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	1	3/8/00	3/9/00	7	
Benzene	EPA 5030	8021B	0.005	1	3/8/00	3/9/00	0.019	
Toluene	EPA 5030	8021B	0.005	1	3/8/00	3/9/00	0.074	
Ethylbenzene	EPA 5030	8021B	0.005	1	3/8/00	3/9/00	0.041	
Xylenes, Total	EPA 5030	8021B	0.005	1	3/8/00	3/9/00	0.22	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	1	3/8/00	3/9/00	ND	

Approved By: Greg Jonth Date: 3/14/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Equiva Services LLC	**Service Request:**	S2000847
Project:	3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141	**Date Collected:**	3/8/00
Sample Matrix:	Soil	**Date Received:**	3/8/00

BTEX, MTBE and TPH as Gasoline

Sample Name:	EX-6	Units:	mg/Kg (ppm)
Lab Code:	S2000847-006	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	5	3/8/00	3/10/00	150	
Benzene	EPA 5030	8021B	0.005	5	3/8/00	3/10/00	0.40	
Toluene	EPA 5030	8021B	0.005	5	3/8/00	3/10/00	1.4	
Ethylbenzene	EPA 5030	8021B	0.005	5	3/8/00	3/10/00	2.0	
Xylenes, Total	EPA 5030	8021B	0.005	5	3/8/00	3/10/00	7.9	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	5	3/8/00	3/10/00	<0.25	C1

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

Approved By. [signature] Date: 3/14/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Equiva Services LLC	**Service Request:**	S2000847
Project:	3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141	**Date Collected:**	3/8/00
Sample Matrix:	Soil	**Date Received:**	3/8/00

BTEX, MTBE and TPH as Gasoline

Sample Name:	EX-7	Units:	mg/Kg (ppm)
Lab Code:	S2000847-007	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	1	3/8/00	3/10/00	2	
Benzene	EPA 5030	8021B	0.005	1	3/8/00	3/10/00	0.028	
Toluene	EPA 5030	8021B	0 005	1	3/8/00	3/10/00	0.027	
Ethylbenzene	EPA 5030	8021B	0.005	1	3/8/00	3/10/00	0.018	
Xylenes, Total	EPA 5030	8021B	0.005	1	3/8/00	3/10/00	0.042	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	1	3/8/00	3/10/00	ND	

Approved By: [signature] Date: 3/14/00

IS22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2000847
Date Collected: 3/8/00
Date Received: 3/8/00

BTEX, MTBE and TPH as Gasoline

Sample Name: Ex-8
Lab Code: S2000847-008
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	5	3/8/00	3/10/00	150	
Benzene	EPA 5030	8021B	0.005	5	3/8/00	3/10/00	0.66	
Toluene	EPA 5030	8021B	0.005	5	3/8/00	3/10/00	4.6	
Ethylbenzene	EPA 5030	8021B	0.005	5	3/8/00	3/10/00	2.1	
Xylenes, Total	EPA 5030	8021B	0.005	5	3/8/00	3/10/00	9.5	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	5	3/8/00	3/10/00	<0.25	C1

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

Approved By: Greg Joubin Date: 3/14/00

1522/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2000847
Date Collected: 3/8/00
Date Received: 3/8/00

BTEX, MTBE and TPH as Gasoline

Sample Name: EX-9
Lab Code: S2000847-009
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	2.5	3/8/00	3/10/00	31	
Benzene	EPA 5030	8021B	0.005	2.5	3/8/00	3/10/00	0.32	
Toluene	EPA 5030	8021B	0.005	2.5	3/8/00	3/10/00	0.18	
Ethylbenzene	EPA 5030	8021B	0.005	2.5	3/8/00	3/10/00	0.41	
Xylenes, Total	EPA 5030	8021B	0.005	2.5	3/8/00	3/10/00	1.6	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	2.5	3/8/00	3/10/00	<0.12	C1

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

Approved By: Greg Young Date: 3/14/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2000847
Date Collected: 3/8/00
Date Received: 3/8/00

BTEX, MTBE and TPH as Gasoline

Sample Name: EX-10
Lab Code. S2000847-010
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	2.5	3/8/00	3/10/00	36	
Benzene	EPA 5030	8021B	0 005	1	3/8/00	3/10/00	0.14	
Toluene	EPA 5030	8021B	0.005	1	3/8/00	3/10/00	0.082	
Ethylbenzene	EPA 5030	8021B	0.005	1	3/8/00	3/10/00	0.69	
Xylenes, Total	EPA 5030	8021B	0.005	1	3/8/00	3/10/00	3.2	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	1	3/8/00	3/10/00	ND	

Approved By: Greg Jonah Date: 3/14/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Equiva Services LLC	**Service Request:**	S2000847
Project:	3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA

BTEX, MTBE and TPH as Gasoline

Sample Name:	Method Blank	Units:	mg/Kg (ppm)
Lab Code:	S200308-SB1	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	1	3/8/00	3/9/00	ND	
Benzene	EPA 5030	8021B	0.005	1	3/8/00	3/9/00	ND	
Toluene	EPA 5030	8021B	0.005	1	3/8/00	3/9/00	ND	
Ethylbenzene	EPA 5030	8021B	0.005	1	3/8/00	3/9/00	ND	
Xylenes, Total	EPA 5030	8021B	0.005	1	3/8/00	3/9/00	ND	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	1	3/8/00	3/9/00	ND	

Approved By: [signature] Date: 3/14/00

IS22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2000847
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
BTEX and TPH as Gasoline

Prep Method: EPA 5030
Analysis Method: 8021B CA/LUFT

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery a,a,a-Trifluorotoluene	Percent Recovery a,a,a-Trifluorotoluene
EX-1	S2000847-001		78	141 S1
EX-2	S2000847-002		102	91
EX-3	S2000847-003		73	168 S1
EX-4	S2000847-004		84	77
EX-5	S2000847-005		86	80
EX-6	S2000847-006		87	110
EX-7	S2000847-007		99	92
Ex-8	S2000847-008		82	103
EX-9	S2000847-009		91	98
EX-10	S2000847-010		98	91
EX-7	S2000847-007MS		87	124
EX-7	S2000847-007DMS		85	118
Method Blank	S200308-SB1		88	79
Lab Control Sample	S200308-LCS		95	107
CAS Acceptance Limits:			70-130%	70-130%

S1 Surrogate recovery out of control limits due to matrix interference.

Approved By: Greg Joseph Date: 3/14/00

SUR2/020397p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2000847
Date Collected: NA
Date Received: NA
Date Extracted: 3/8/00
Date Analyzed: 3/9/00

Matrix Spike/Duplicate Matrix Spike Summary
BTEX and TPH as Gasoline

Sample Name: EX-7
Lab Code: S2000847-007MS, S2000847-007DMS
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Benzene	EPA 5030	8021B	0.005	0.5	0.5	0.028	0.34	0.33	62	60	57-154	3	
Toluene	EPA 5030	8021B	0.005	0.5	0.5	0.027	0.42	0.40	79	75	60-142	5	
Ethylbenzene	EPA 5030	8021B	0.005	0.5	0.5	0.018	0.40	0.40	76	76	46-150	<1	
Gasoline	EPA 5030	CA/LUFT	1	10	10	2	34	33	320	310	67-121	3	

Approved By: [signature] Date: 3/14/00

DMS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
LCS Matrix: Soil

Service Request: S2000847
Date Collected: NA
Date Received: NA
Date Extracted: 3/8/00
Date Analyzed: 3/8/00

Laboratory Control Sample Summary
BTEX and TPH as Gasoline

Sample Name: Lab Control Sample
Lab Code: S200308-LCS
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Benzene	EPA 5030	8021B	0.5	0.47	94	57-154	
Toluene	EPA 5030	8021B	0.5	0.40	80	60-142	
Ethylbenzene	EPA 5030	8021B	0.5	0.38	76	46-150	
Gasoline	EPA 5030	CA/LUFT	10	10	100	67-121	

Approved By: [signature] Date: 3/14/00

LCS/020597p

Columbia Analytical Services
3334 Victor Court • Santa Clara, CA 95054
(408) 748-9700 • FAX (408) 748-9860

Invoice 939950 SAP# 12

CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

SERVICE REQUEST NO. S2000847 P.O.# E9021A PAGE 1 OF 1

PROJECT NAME 3810 BROADWAY, OAKLAND #
PROJECT MGR KEITH WINEMILLER / WAYNE CHU
COMPANY TOXICHEM
ADDRESS 10857 RIDGEWOOD DR
OAKLAND, CA 94611 PHONE (510) 339 6009
FAX 6027
SAMPLER'S SIGNATURE Wayne Chu

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Volatile Organics BY GCMS 624 ☐ 8240 ☐ 8260 ☐	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐ 8021 ☐	TPH as Gas/BTEX ☐ TPH as Gas/BTEX/MTBE ☐	TPH as Diesel HBHC ☐	Base/Neu/Acid Organics / GCMS 625 ☐ 8270 ☐	Pesticides & PCBs 608/8082 ☐ Pesticides only 8081 ☐ PCBs 8082 ☐	TRPH 418.1 ☐ Oil and Grease Method	Metals Indicate below Total ☐ Dissolved ☐	pH, Cond, Cl, SO_4, F, TDS, TSS Alk, NO_3, NO_2 (circle)	NH_3-N, COD, Total-P, TKN, TOC NO_3 / NO_2, Phenols (circle)	Cyanide	Confirm MTBE by 8260 highest with hit	REMARKS *
					PRESERVATIVE			HCl	HCl	HCl	NP	NP	NP	HCl	HNO_3	NP	H_2SO_4	NaOH
EX-1	3/7/00	09:40	1	SOIL	1			X	X								X	
EX-2	↓	09:50	2	↓	↓			↓	↓								↓	
EX-3	↓	10:05	3	↓	↓			↓	↓								↓	
EX-4	↓	14:40	4	↓	↓			↓	↓								↓	
EX-5	3/8/00	09:00	5	↓	↓			↓	↓								↓	
EX-6	↓	09:44	6	↓	↓			↓	↓								↓	
EX-7	↓	09:47	7	↓	↓			↓	↓								↓	
EX-8	↓	09:50	8	↓	↓			↓	↓								↓	
EX-9	↓	10:30	9	↓	↓			↓	↓								↓	
EX-10	↓	10:50	10	↓	↓			↓	↓								↓	

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Wayne Chu	Signature: #1017	Signature: Gregory R. Jordan	Signature: 1017
Printed Name: WAYNE CHU	Printed Name: WORLD COURIER	Printed Name: Gregory R. Jordan	Printed Name: WORLD Courier
Firm: TOXICHEM	Firm:	Firm: CAS	Firm:
Date/Time: 3-8-00 14:36	Date/Time: 3-8-00 14:36	Date/Time: 3-8-00 1436	Date/Time: 3/8/00 Time 1600

TURNAROUND REQUIREMENTS
___ 1 day ✓ 2 day ___ 3 day
___ 5 day ___ Other
___ Standard (10 working days)
Results Due 3/10/00

REPORT REQUIREMENTS
___ I Routine Report
___ II. Report (includes MS, MSD, as required, may be charged as samples)
___ III Data Validation Report (includes All Raw Data)
___ MDLs/PQLs/Trace #
___ Electronic Data Deliverables

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

Shipped Via/Tracking #

SAMPLE RECEIPT: Condition ____ Custody Seals ____

SPECIAL INSTRUCTIONS/COMMENTS:
Circle which metals are to be analyzed
Metals: Al Sb Ba Be B Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Ag Na Sn V Zn
As Pb Se Tl Hg

Storage: R3

*Will sample results be used in connection with drinking water regulations? ☐ Yes ☐ No If yes, you must so indicate by writing "DW" for each such sample.

Columbia Analytical Services, Inc. General Terms and Conditions

Laboratory Services

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory ("LAB") and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to LAB. The invalidity or unenforceability, in whole or in part of any provision, term or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state from which services are procured.

2. **Warranty.** Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

At LAB sole discretion, preliminary results may be given in advance of the laboratory report. Such preliminary results are tentative, subject to confirmation and final review by LAB. Client's use of preliminary results in any manner shall be at Client's sole risk.

3. **Scope and Compensation.** LAB agrees to perform the services described in the proposal or agreement to which these Terms and Conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described.

Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1 1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sales, use or other taxes. Such taxes will be added to invoice prices when required. LAB reserves the right to require payment prior to release of data. Until such time as Client invoices are paid in full, LAB has no obligation, and will not defend, reproduce, return, or supplement data results.

4. **Prices.** Compensation for services performed will be based on the current Lab Analytical Fee Schedule, or on verbal quotations agreed to in writing by the parties. Unless specifically indicated on the written confirmation of quotation, analytical turnaround times are not guaranteed. The minimum charge will be $100.00 unless otherwise noted.

5. **Methods.** Where applicable, LAB will use analytical methodologies which are in substantial conformity with U.S. Environmental Protection Agency (EPA), State Agency, American Society for Testing and Materials (ASTM), Association of Official Analytical Chemists (AOAC), Standard Methods for the Examination of Water and Wastewater, or other recognized methodologies. LAB reserves the right to deviate from these methodologies, if necessary or appropriate, due to the nature or composition of the sample or otherwise, based on the reasonable judgment of LAB. Deviations, if any, will be made on a basis consistent with recognized standards of the industry and/or LAB's standard operating procedures.

6. **Limitations of Liability.** In the event of any error, omission or other professional negligence, the sole and exclusive responsibility of LAB shall be to reperform the deficient work at its own expense, and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.

LAB shall have no liability, obligation or responsibility of any kind for losses, costs, expenses or other damages (including but not limited to any special, indirect, incidental or consequential damages) with respect to LAB's services or results.

All results provided by LAB are strictly for the use of its clients, and LAB is in no way responsible for the use of such results by clients or third parties. All results should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of the results.

7. **Hazard Disclosure.** Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance which is to be delivered to LAB will be packaged, labeled, transported and delivered properly and in accordance with applicable laws.

8. **Sample Handling.** Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss of or damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility or liability for the action or inaction of any carrier shipping or delivering any sample to or from LAB's premises.

LAB will use its best efforts to arrange for the shipment of specially prepared sample bottles, sampling instructions per Client instruction by the readily available, least cost method. Any other shipment arrangements will be at Client's expense.

Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis, unless modified by applicable state or federal laws. Client will be required to give to LAB written instructions concerning disposal of these samples.

LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample which, in the sole judgment of LAB, (a) is of unsuitable volume, (b) may be or become unsuitable for, or may pose a risk in handling, transport or processing for any health, safety, environmental or other reason, whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) has been delivered to the LAB more than 72 hours after sampling or if one half or more of the recommended holding time for the analysis has lapsed.

9. **Legal Responsibility.** LAB is solely responsible for performance of this contract, and no affiliated company director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort, including negligence.

10. **Data Deliverables.** Where specifically requested by Client, LAB agrees to produce electronic data representing services performed hereunder, subject to the following specific understanding between the parties: LAB agrees to supply Client with electronic data as mutually defined, using an agreed medium. Client recognizes that LAB is not a software consultant, manufacturer or reseller; any transfer of electronic data pursuant to services provided by LAB is an accommodation to and strictly for the convenience of the client who is solely liable for the choice and maintenance of the medium utilized. Electronic data provided under this agreement is not deemed to be the project deliverable for the purpose of fulfilling obligations under the Agreement. The provision of electronic data does not in any way modify the intention of the parties that the Client rely on the written or hard copy form of the deliverable.

Except with regard to any limited warranty as specifically set forth below, LAB disclaims and excludes all warranties express or implied with regard to the creation, transmittal or use of electronic data hereunder. The limited warranty in this Agreement replaces all other warranties, express or implied, including any warranties of merchantability or fitness for a particular purpose. Professional warranties extend to written or hard copy deliverables only and do not extend to electronic data supplied to Client. Professional warranties in the Agreement which extend to written or hard copy deliverables shall be undisturbed by this Amendment. LAB's liability for medium failure shall be limited to replacement of the electronic data with a hard copy for a period of thirty days from the date of delivery. LAB's electronic data transfer is derived in part from or is created using third party software, and no such third party warrants or assumes any liability regarding use of or undertakes to provide support information relating to LAB's electronic data. LAB will utilize anti-virus programs on a best efforts basis in preparation of the electronic data transfer, but LAB makes no warranty as to the effectiveness of such screening. LAB will also use its best efforts to ensure that its electronic data will meet all criteria as specified by Client, including criteria regarding date/time data, if, and when, included; but LAB makes no warranty as to the appropriateness of the client specified criteria by accepting the same.

In addition to indemnities contained in the underlying agreement between LAB and Client, Client shall hold LAB harmless from any claims, suits or liability arising from or related to electronic data supplied pursuant to this Agreement. Any reuse of original or altered files by Client shall be at Client's risk and without liability or responsibility to LAB, but shall entitle LAB to additional compensation for such unauthorized reuse. In no event will LAB's liability for electronic data include any special, incidental or consequential damages, whether or not LAB has knowledge of the potential for loss or damage.

11. **Force Majeure.** LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not be limited to, acts of God, acts of Client, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Sequoia Analytical

685 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308

FAX TRANSMITTAL

TO

Name: Brad Bonner

Company: Allied Waste

Fax: (209) 466-1067

FROM

Name: KAYVAN KIMYAI

Date: 3-16-00

Report #: MJ0-471

Number of pag: 12

COMMENTS

Sorry for the delay b/c instrument problems

Because access to receiving equipment is not under our control, Sequoia Analytica cannot be responsible for the confidentiality of electronically transmitted data.

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6939
www.sequoialab.com

March 16, 2000

Brad Bonner
Allied Waste
1145 West Charter Way
Stockton, CA 95206

RE: Forward Landfill, #923300

Dear Ruben Baring

Enclosed are the results of analyses for sample(s) received by the laboratory on March 14, 2000. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kayvan Kimyai
Project Manager D.M.

CA ELAP Certificate Number 1210

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialab.com

Allied Waste 1145 West Charter Way Stockton, CA 95206	Project: Forward Landfill Project Number: 923300 Project Manager: Brad Bonner	Sampled: 3/13/00 Received: 3/16/00 Reported: 3/16/00 12:40

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
Comp #1-94	MJC0471-01	Soil	3/13/00

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Keyvan Kintysi, Project Manager D.M.

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

Allied Waste 1145 West Charter Way Stockton, CA 95206	Project: Forward Landfill Project Number: 923300 Project Manager: Brad Bonner	Sampled: 3/13/00 Received: 3/14/00 Reported: 3/16/00 12:40

Total Purgeable Hydrocarbons (C6-C12) and BTEX by DHS LUFT
Sequoia Analytical - Morgan Hill

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
Comp #1-#4			**MJC0471-01**				**Soil**	
Purgeable Hydrocarbons	0C12004	3/16/00	3/16/00	DHS LUFT	10.0	49.5	mg/kg	P-04
Benzene	"	"	"	DHS LUFT	0.0500	ND	"	
Toluene	"	"	"	DHS LUFT	0.0500	0.0806	"	
Ethylbenzene	"	"	"	DHS LUFT	0.0500	0.167	"	
Xylenes (total)	"	"	"	DHS LUFT	0.0500	0.366	"	
Surrogate: α,α,α-Trifluorotoluene	"	"	"	*70-130*		*99.0*	*%*	
Surrogate: 4-Bromofluorobenzene	"	"	"	*60-140*		*96.0*	"	

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

Allied Waste 1145 West Charter Way Stockton, CA 95206	Project: Forward Landfill Project Number: 923300 Project Manager: Brad Bonner	Sampled: 3/13/00 Received: 3/14/00 Reported: 3/16/00 12:40	

Diesel Hydrocarbons (C9-C24) by DHS LUFT
Sequoia Analytical - Morgan Hill

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
Comp 91-99			**MJC0471-01**				**Soil**	
Diesel Range Hydrocarbons	0C14031	3/14/00	3/15/00	DHS LUFT	1.00	40.9	mg/kg	A-01,D-13
Surrogate: n-Pentacosane	"	"	"	*50-150*		*168*	%	*S-02*

**Refer to end of report for text of notes and definitions.*

Sequoia Analytical

825 Davis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialab.com

Allied Waste 1145 West Charter Way Stockton, CA 95206	Project: Forward Landfill Project Number: 923300 Project Manager: Brad Bonner	Sampled: 3/13/00 Received: 3/14/00 Reported: 3/16/00 12:40

Total Metals by EPA 6000/7000 Series Methods
Sequoia Analytical - Morgan Hill

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
Comp #1-#4			**MJC0471-01**				**Soil**	
Lead	0C14010	3/14/00	3/15/00	EPA 6010A	10.0	ND	mg/kg	

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 778-9600
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Allied Waste	Project:	Forward Landfill	Sampled:	3/13/00
1143 West Charter Way	Project Number:	923300	Received:	3/14/00
Stockton, CA 95206	Project Manager:	Brad Bonner	Reported:	3/16/00 12:40

Total Purgeable Hydrocarbons (C6-C12) and BTEX by DHS LUFT/Quality Control
Sequoia Analytical - Morgan Hill

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0C12004	**Date Prepared: 3/12/00**				**Extraction Method: EPA 5030B P/T**					
Blank	**0C12004-BLK1**									
Purgeable Hydrocarbons	3/13/00			ND	mg/kg	1.00				
Benzene	"			ND	"	0.00500				
Toluene	"			ND	"	0.00500				
Ethylbenzene	"			ND	"	0.00500				
Xylenes (total)	"			ND	"	0.00500				
Surrogate: α,α,α-Trifluorotoluene	"	*0.0200*		*0.0171*	"	*70-130*	*85.5*			
Surrogate: 4-Bromofluorobenzene	"	*0.200*		*0.177*	"	*60-140*	*88.5*			
Blank	**0C12004-BLK2**									
Purgeable Hydrocarbons	3/16/00			ND	mg/kg	1.00				
Benzene	"			ND	"	0.00500				
Toluene	"			ND	"	0.00500				
Ethylbenzene	"			ND	"	0.00500				
Xylenes (total)	"			ND	"	0.00500				
Surrogate: α,α,α-Trifluorotoluene	"	*0.0200*		*0.0187*	"	*70-130*	*93.5*			
Surrogate: 4-Bromofluorobenzene	"	*0.200*		*0.136*	"	*60-140*	*68.0*			
LCS	**0C12004-BS1**									
Benzene	3/13/00	0.200		0.211	mg/kg	70-130	105			
Toluene	"	0.200		0.201	"	70-130	101			
Ethylbenzene	"	0.200		0.197	"	70-130	98.5			
Xylenes (total)	"	0.600		0.595	"	70-130	99.2			
Surrogate: α,α,α-Trifluorotoluene	"	*0.0200*		*0.0165*	"	*70-130*	*82.5*			
Surrogate: 4-Bromofluorobenzene	"	*0.200*		*0.153*	"	*60-140*	*76.5*			
LCS	**0C12004-BS2**									
Purgeable Hydrocarbons	3/13/00	5.00		6.60	mg/kg	70-130	132			S-03
Surrogate: α,α,α-Trifluorotoluene	"	*0.0200*		*0.0212*	"	*70-130*	*106*			
Surrogate: 4-Bromofluorobenzene	"	*0.200*		*0.180*	"	*60-140*	*90.0*			
LCS	**0C12004-BS3**									
Purgeable Hydrocarbons	3/16/00	5.00		5.81	mg/kg	70-130	116			
Surrogate: α,α,α-Trifluorotoluene	"	*0.0200*		*0.0217*	"	*70-130*	*109*			
Surrogate: 4-Bromofluorobenzene	"	*0.200*		*0.184*	"	*60-140*	*92.0*			
LCS Dup	**0C12004-BSD1**									
Benzene	3/13/00	0.200		0.198	mg/kg	70-130	99.0	25	6.36	

*Refer to end of report for text of notes and definitions.

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Allied Waste	Project:	Forward Landfill	Sampled:	3/13/00
1145 West Charter Way	Project Number:	923300	Received:	3/14/00
Stockton, CA 95206	Project Manager:	Brad Bonner	Reported:	3/16/00 12:40

Total Purgeable Hydrocarbons (C6-C12) and BTEX by DHS LUFT/Quality Control
Sequoia Analytical - Morgan Hill

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
LCS Dup (continued)	**QC12004-BSD1**									
Toluene	3/13/00	0.200		0.195	mg/kg	70-130	97.5	25	3.03	
Ethylbenzene	"	0.200		0.191	"	70-130	95.5	25	3.09	
Xylenes (total)	"	0.600		0.585	"	70-130	97.5	25	1.69	
Surrogate: α,α,α-Trifluorotoluene	"	*0.0200*		*0.0170*	"	*70-130*	*85.0*			
Surrogate: 4-Bromofluorobenzene	"	*0.200*		*0.156*	"	*60-140*	*78.0*			
Matrix Spike	**QC12004-MS1**	**MJC0356-01**								
Purgeable Hydrocarbons	3/13/00	5.00	ND	6.82	mg/kg	60-140	136			
Surrogate: α,α,α-Trifluorotoluene	"	*0.0200*		*0.0208*	"	*70-130*	*104*			
Surrogate: 4-Bromofluorobenzene	"	*0.200*		*0.178*	"	*60-140*	*89.0*			
Matrix Spike Dup	**QC12004-MSD1**	**MJC0356-01**								
Purgeable Hydrocarbons	3/13/00	5.00	ND	6.89	mg/kg	60-140	138	25	1.02	
Surrogate: α,α,α-Trifluorotoluene	"	*0.0200*		*0.0208*	"	*70-130*	*104*			
Surrogate: 4-Bromofluorobenzene	"	*0.200*		*0.158*	"	*60-140*	*79.0*			

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Allied Waste 1145 West Charter Way Stockton, CA 95200	Project: Forward Landfill Project Number: 923300 Project Manager: Brad Bonner	Sampled: 3/13/00 Received: 3/14/00 Reported: 3/16/00 12:40

Diesel Hydrocarbons (C9-C24) by DHS LUFT/Quality Control
Sequoia Analytical - Morgan Hill

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: QC14031	**Date Prepared: 3/14/00**					**Extraction Method: EPA 3550A**				
Blank	**QC14031-BLK1**									
Diesel Range Hydrocarbons	3/15/00			ND	mg/kg	1.00				
Surrogate: n-Pentacosane	"	*1.67*		*2.20*	"	*50-150*	*132*			
LCS	**QC14031-BS1**									
Diesel Range Hydrocarbons	3/15/00	16.7		17.4	mg/kg	60-140	104			
Surrogate: n-Pentacosane	"	*1.67*		*2.30*	"	*50-150*	*138*			
Matrix Spike	**QC14031-MS1**									
Diesel Range Hydrocarbons	3/15/00	16.7		88.4	mg/kg	50-150	NR			Q-20
Surrogate: n-Pentacosane	"	*1.67*		*3.00*	"	*50-150*	*180*			*Q-20*
Matrix Spike Dup	**QC14031-MSD1**									
Diesel Range Hydrocarbons	3/15/00	16.7		52.6	mg/kg	50-150	NR	50	26.1	Q-20
Surrogate: n-Pentacosane	"	*1.67*		*2.70*	"	*50-150*	*162*			*Q-20*

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Morgan Hill, CA 95037
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Allied Waste 1145 West Charter Way Stockton, CA 95206	Project: Forward Landfill Project Number: 923300 Project Manager: Brad Bonner	Sampled: 3/13/00 Received: 3/14/00 Reported: 3/16/00 12:40	

Total Metals by EPA 6000/7000 Series Methods/Quality Control
Sequoia Analytical - Morgan Hill

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0C14010	**Date Prepared: 3/14/00**				**Extraction Method: EPA 3050B**					
Blank	**0C14010-BLK1**									
Lead	3/15/00			ND	mg/kg	10.0				
LCS	**0C14010-BS1**									
Lead	3/15/00	50.0		58.0	mg/kg	80-120	116			
Matrix Spike	**0C14010-MS1**	**MJC0445-09**								
Lead	3/15/00	50.0	13.1	57.5	mg/kg	80-120	88.8			
Matrix Spike Dup	**0C14010-MSD1**	**MJC0445-09**								
Lead	3/15/00	50.0	13.1	57.0	mg/kg	80-120	87.6	20	0.873	

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Allied Waste 1145 West Charter Way Stockton, CA 95206	Project: Forward Landfill Project Number: 923300 Project Manager: Brad Bonner	Sampled: 3/13/00 Received: 3/14/00 Reported: 3/16/00 12:40

Notes and Definitions

#	Note
A-01	Unidentified HC in the C9-C24 range
D-13	Chromatogram Pattern: Diesel C9-C24
P-04	Chromatogram Pattern: Weathered Gasoline C6-C12 + Unidentified Hydrocarbons C6-C12
Q-20	The spike recoveries for the MS/MSD are outside established control limits, due to the non-homogeneous nature of the sample.
S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.
S-03	The surrogate recovery for this sample is outside of established control limits. Review of associated QC indicates the recovery for this surrogate does not represent an out-of-control condition.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

MJC0471

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☒ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY

Sequoia Analytical
881 Jarvis Dr.
Morgan Hill, CA 95037

Report To: [redacted] Bonner
Company: [redacted] Waste
[redacted] West Charter Way
[redacted], CA 95206
Tele: ([redacted]) [redacted]-4242
Project #: 923300
Project Location: Forward Landfill
Sampler Signature: [signature]

Bill To: EQUILON
— Site: 3800 Broadway
Oakland, CA
Fax: (209) 466-1067
Project Name: STP D-97

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	Analysis Request: STEX & TPH as Gas (EPA 8015 / 8020)	TPH as Diesel (EPA 8015)	Total Petroleum Oil & Grease (3125 Ext/Ext)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	STEX (EPA 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	GAS-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other: TPH as gas (EPA 8015)	TTLC Se	Total Lead	Comments
Comp # 1	D-97	3-13-00	10:18	1	B		X									X				X										X			X	
Comp # 2	D-97	3-13-00	10:29	1	B		X									X				X										X			X	
Comp # 3	D-97	3-13-00	10:35	1	B		X									X				X										X			X	
Comp # 4	D-97	3-13-00	10:45	1	B		X									X				X										X			X	

Relinquished By:	Date:	Time:	Received By:
[signature]	3-13-00	11:10	[signature]
Relinquished By:	Date:	Time:	Received By: [signature] (PHH) 3/14/00 12:05
Relinquished By:	Date:	Time:	Received By:

Remarks:

Columbia Analytical Services INC.
An Employee-Owned Company

March 29, 2000

Service Request No.: S2000915

Mr. Keith Winemiller
Toxichem Management System, Inc.
11 Kenton Avenue
San Carlos, CA 94070

RE: 3810 Broadway, Oakland, CA

Dear Mr. Winemiller:

Enclosed are the results of the sample(s) submitted to our laboratory on March 14, 2000. All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply to the sample(s) analyzed. Columbia Analytical Services is not responsible for use of less than the complete report. Signature of this CAS Analytical Report confirms that pages 2 through 12, following, have been thoroughly reviewed and approved for release.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 2352, expiration: January 31, 2001).

If you have any questions, please call me at (408) 748-9700.

Respectfully submitted,

Columbia Analytical Services, Inc.

Greg Jordan
Project Chemist

3334 Victor Court ▪ Santa Clara, CA 95054 ▪ Telephone (408) 748-9700 ▪ Fax (408) 748-9860

COLUMBIA ANALYTICAL SERVICES, Inc.
Acronyms

A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl tert-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	Not Detected at or above the method reporting/detection limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992
STLC	Solubility Threshold Limit Concentration
SW	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level. The concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Water

Service Request: S2000915
Date Collected: 03/10/00
Date Received: 03/14/00

BTEX, MTBE and TPH as Gasoline

Sample Name: INFL
Lab Code: S2000915-001
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	10	NA	03/23/00	33000	
Benzene	EPA 5030	8021B	0.5	10	NA	03/23/00	2500	
Toluene	EPA 5030	8021B	0.5	50	NA	03/23/00	5700	
Ethylbenzene	EPA 5030	8021B	0.5	10	NA	03/23/00	870	
Xylenes, Total	EPA 5030	8021B	1	10	NA	03/23/00	4100	
Methyl *tert*-Butyl Ether	EPA 5030	8021B	3	10	NA	03/23/00	<30	C1

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

Approved By: Greg Jonah Date: 3/29/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Water

Service Request: S2000915
Date Collected: 03/10/00
Date Received: 03/14/00

BTEX, MTBE and TPH as Gasoline

Sample Name: INFL(2)
Lab Code: S2000915-002
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	5	NA	03/23/00	20000	
Benzene	EPA 5030	8021B	0.5	5	NA	03/23/00	1600	
Toluene	EPA 5030	8021B	0.5	20	NA	03/23/00	3600	
Ethylbenzene	EPA 5030	8021B	0.5	5	NA	03/23/00	600	
Xylenes, Total	EPA 5030	8021B	1	5	NA	03/23/00	2900	
Methyl *tert*-Butyl Ether	EPA 5030	8021B	3	5	NA	03/23/00	<15	C1

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

Approved By: Greg Jonah Date: 3/29/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Water

Service Request: S2000915
Date Collected: 03/10/00
Date Received: 03/14/00

BTEX, MTBE and TPH as Gasoline

Sample Name: MID-1
Lab Code: S2000915-003
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	1	NA	03/23/00	ND	
Benzene	EPA 5030	8021B	0.5	1	NA	03/23/00	5.6	
Toluene	EPA 5030	8021B	0.5	1	NA	03/23/00	9.6	
Ethylbenzene	EPA 5030	8021B	0.5	1	NA	03/23/00	2.0	
Xylenes, Total	EPA 5030	8021B	1	1	NA	03/23/00	11	
Methyl *tert*-Butyl Ether	EPA 5030	8021B	3	1	NA	03/23/00	ND	

Approved By: Greg Jonh Date: 3/29/00

1S72/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Water

Service Request: S2000915
Date Collected: 03/10/00
Date Received: 03/14/00

BTEX, MTBE and TPH as Gasoline

Sample Name: MID-2
Lab Code: S2000915-004
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	1	NA	03/23/00	ND	
Benzene	EPA 5030	8021B	0.5	1	NA	03/23/00	ND	
Toluene	EPA 5030	8021B	0.5	1	NA	03/23/00	ND	
Ethylbenzene	EPA 5030	8021B	0.5	1	NA	03/23/00	ND	
Xylenes, Total	EPA 5030	8021B	1	1	NA	03/23/00	ND	
Methyl *tert*-Butyl Ether	EPA 5030	8021B	3	1	NA	03/23/00	ND	

Approved By: [signature] Date: 3/29/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Water

Service Request: S2000915
Date Collected: 03/10/00
Date Received: 03/14/00

BTEX, MTBE and TPH as Gasoline

Sample Name: EFFL
Lab Code: S2000915-005
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	1	NA	03/23/00	ND	
Benzene	EPA 5030	8021B	0.5	1	NA	03/23/00	ND	
Toluene	EPA 5030	8021B	0.5	1	NA	03/23/00	ND	
Ethylbenzene	EPA 5030	8021B	0.5	1	NA	03/23/00	ND	
Xylenes, Total	EPA 5030	8021B	1	1	NA	03/23/00	ND	
Methyl *tert*-Butyl Ether	EPA 5030	8021B	3	1	NA	03/23/00	ND	

Approved By: Greg Jones Date: 3/29/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Water

Service Request: S2000915
Date Collected: NA
Date Received: NA

BTEX, MTBE and TPH as Gasoline

Sample Name: Method Blank
Lab Code: S200322-WB1
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	1	NA	03/22/00	ND	
Benzene	EPA 5030	8021B	0.5	1	NA	03/22/00	ND	
Toluene	EPA 5030	8021B	0.5	1	NA	03/22/00	ND	
Ethylbenzene	EPA 5030	8021B	0.5	1	NA	03/22/00	ND	
Xylenes, Total	EPA 5030	8021B	1	1	NA	03/22/00	ND	
Methyl *tert*-Butyl Ether	EPA 5030	8021B	3	1	NA	03/22/00	ND	

Approved By: Greg Joubin Date: 3/29/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Equiva Services LLC	**Service Request:**	S2000915
Project:	3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

BTEX, MTBE and TPH as Gasoline

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S200322-WB2	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	50	1	NA	03/23/00	ND	
Benzene	EPA 5030	8021B	0.5	1	NA	03/23/00	ND	
Toluene	EPA 5030	8021B	0.5	1	NA	03/23/00	ND	
Ethylbenzene	EPA 5030	8021B	0.5	1	NA	03/23/00	ND	
Xylenes, Total	EPA 5030	8021B	1	1	NA	03/23/00	ND	
Methyl *tert*-Butyl Ether	EPA 5030	8021B	3	1	NA	03/23/00	ND	

Approved By: Greg Joseph Date: 3/29/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Water

Service Request: S2000915
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
BTEX, MTBE and TPH as Gasoline

Prep Method: EPA 5030
Analysis Method: 8021B CA/LUFT

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery a,a,a-Trifluorotoluene	Percent Recovery a,a,a-Trifluorotoluene
INFL	S2000915-001		85	83
INFL(2)	S2000915-002		98	84
MID-1	S2000915-003		97	83
MID-2	S2000915-004		96	84
EFFL	S2000915-005		91	78
BATCH QC	S200322-001MS		92	105
Lab Control Sample	S200322-LCS		94	102
Lab Control Sample	S200322-DLCS		90	104
Method Blank	S200322-WB1		99	86
Method Blank	S200322-WB2		112	98
CAS Acceptance Limits:			70-130%	70-130%

Approved By: [signature] Date: 3/29/00

SUR2/020397p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Water

Service Request: S2000915
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: 03/22/00

Matrix Spike Summary
BTEX and TPH as Gasoline

Sample Name: BATCH QC
Lab Code: S200322-001MS
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Benzene	EPA 5030	8021B	0.5	25	ND	25	100	75-135	
Toluene	EPA 5030	8021B	0.5	25	ND	24	96	73-136	
Ethylbenzene	EPA 5030	8021B	0.5	25	ND	25	100	69-142	
Gasoline	EPA 5030	CA/LUFT	50	500	ND	486	97	75-135	

Approved By: Greg Jonk Date: 3/29/00

MS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA
LCS Matrix: Water

Service Request: S2000915
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: 03/22/00

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary
BTEX and TPH as Gasoline

Sample Name: Lab Control Sample
Lab Code: S200322-LCS, S200322-DLCS
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	True Value LCS	True Value DLCS	Result LCS	Result DLCS	Percent Recovery LCS	Percent Recovery DLCS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Benzene	EPA 5030	8021B	25	25	26	25	104	100	75-135	4	
Toluene	EPA 5030	8021B	25	25	25	24	100	96	73-136	4	
Ethylbenzene	EPA 5030	8021B	25	25	25	25	100	100	69-142	<1	
Gasoline	EPA 5030	CA/LUFT	500	500	445	477	89	95	75-135	7	

Approved By: [signature] Date: 3/29/00

DLCS/020597p

Columbia Analytical Services INC.
3334 Victor Court • Santa Clara, CA 95054
(408) 748-9700 • FAX (408) 748-9860

Incident 93995026
SAP# 128141

CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

SERVICE REQUEST NO. S2000915 P.O.# EQ02-1A PAGE 1 OF 1

PROJECT NAME 3810 BROADWAY, OAKLAND #
PROJECT MGR. KEITH WINEMILLER
COMPANY TOXICHEM
ADDRESS 1562 44TH AVENUE
SAN FRANCISCO, CA 94122 PHONE (415)681-8816
FAX 8132
SAMPLER'S SIGNATURE Wayne Chin

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Volatile Organics BY GCMS 624 ☐ 8240 ☐ 8260 ☐	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐ 8021 ☐	TPH as Gas/BTEX ☐ TPH as Gas/BTEX/MTBE	TPH as Diesel HBHC ☐	Base/Neu/Acid Organics / GCMS 625 ☐ 8270 ☐	Pesticides & PCBs 608/8082 ☐ Pesticides only 8081 ☐ PCBs 8082 ☐	TRPH - 418.1 ☐ Oil and Grease Method	Metals Indicate below Total ☐ Dissolved ☐	pH, Cond, Cl, SO4, F, TDS, TSS Alk, NO3, NO2 (circle)	NH3-N, COD, Total-P, TKN, TOC NO3 / NO2, Phenols (circle)	Cyanide	Confirm MtBE by 8260	REMARKS *
					PRESERVATIVE	HCl	HCl	HCl	NP	NP	NP	HCl	HNO	NP	H2SO4	NaOH		
INFL	3-10-00	1420	1	WATER	3			X										
INFL (2)	↓	1512	2	↓	↓			X										
MID-1	↓	1515	3	↓	↓			X										
MID-2*	↓	1517	4	↓	↓			X	—	—	—	—	—	—	X		*HOLD - Analyze if TPHg/BTEX/MtBE	
EFFL*	↓	1519	5	↓	↓			X	—	—	—	—	—	—	X		*HOLD - detected in previous sample	
																		Confirm MtBE if detected or detection limit raised on 8020

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Wayne Chin	Signature: Brian Fuller	Signature	Signature
Printed Name: WAYNE CHIN	Printed Name: Brian Fuller	Printed Name	Printed Name
Firm: TOXICHEM	Firm: CAS	Firm	Firm
Date/Time: 3-14-00 10:35	Date/Time: 3/14/00 16:35	Date/Time	Date/Time

TURNAROUND REQUIREMENTS
___ 1 day ___ 2 day ___ 3 day
___ 5 day ___ Other
✓ Standard (10 working days)
Results Due 3/28/00

REPORT REQUIREMENTS
___ I. Routine Report
___ II Report (includes MS MSD, as required, may be charged as samples)
___ III Data Validation Report (includes All Raw Data)
___ MDLs/PQLs/Trace #
___ Electronic Data Deliverables

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

Shipped Via/Tracking #

SAMPLE RECEIPT: Condition _____ Custody Seals _____

SPECIAL INSTRUCTIONS/COMMENTS:

Circle which metals are to be analyzed:

Metals: Al Sb Ba Be B Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Ag Na Sn V Zn
As Pb Se Tl Hg

R11/D2

Storage: R11/D3-W

*Will sample results be used in connection with drinking water regulations? ☐ Yes ☐ No If yes, you must so indicate by writing "DW" for each such sample.

Columbia Analytical Services, Inc. General Terms and Conditions

Laboratory Services

1. These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory ("LAB") and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to LAB. The invalidity or unenforceability, in whole or in part of any provision, term or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state from which services are procured.

2. **Warranty.** Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

At LAB sole discretion, preliminary results may be given in advance of the laboratory report. Such preliminary results are tentative, subject to confirmation and final review by LAB. Client's use of preliminary results in any manner shall be at Client's sole risk.

3. **Scope and Compensation.** LAB agrees to perform the services described in the proposal or agreement to which these Terms and Conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described.

Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1 1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sales, use or other taxes. Such taxes will be added to invoice prices when required. LAB reserves the right to require payment prior to release of data. Until such time as Client invoices are paid in full, LAB has no obligation, and will not defend, reproduce, return, or supplement data results.

4. **Prices.** Compensation for services performed will be based on the current Lab Analytical Fee Schedule, or on verbal quotations agreed to in writing by the parties. Unless specifically indicated on the written confirmation of quotation, analytical turnaround times are not guaranteed. The minimum charge will be $100.00 unless otherwise noted.

5. **Methods.** Where applicable, LAB will use analytical methodologies which are in substantial conformity with U.S. Environmental Protection Agency (EPA), State Agency, American Society for Testing and Materials (ASTM), Association of Official Analytical Chemists (AOAC), Standard Methods for the Examination of Water and Wastewater, or other recognized methodologies. LAB reserves the right to deviate from these methodologies, if necessary or appropriate, due to the nature or composition of the sample or otherwise, based on the reasonable judgment of LAB. Deviations, if any, will be made on a basis consistent with recognized standards of the industry and/or LAB's standard operating procedures.

6. **Limitations of Liability.** In the event of any error, omission or other professional negligence, the sole and exclusive responsibility of LAB shall be to reperform the deficient work at its own expense, and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.

LAB shall have no liability, obligation or responsibility of any kind for losses, costs, expenses or other damages (including but not limited to any special, indirect, incidental or consequential damages) with respect to LAB's services or results.

All results provided by LAB are strictly for the use of its clients, and LAB is in no way responsible for the use of such results by clients or third parties. All results should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of the results.

7. **Hazard Disclosure.** Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance which is to be delivered to LAB will be packaged, labeled, transported and delivered properly and in accordance with applicable laws.

8. **Sample Handling.** Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss of or damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility or liability for the action or inaction of any carrier shipping or delivering any sample to or from LAB's premises.

LAB will use its best efforts to arrange for the shipment of specially prepared sample bottles, sampling instructions per Client instruction by the readily available, least cost method. Any other shipment arrangements will be at Client's expense.

Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis, unless modified by applicable state or federal laws. Client will be required to give to LAB written instructions concerning disposal of these samples.

LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample which, in the sole judgment of LAB, (a) is of unsuitable volume, (b) may be or become unsuitable for, or may pose a risk in handling, transport or processing for any health, safety, environmental or other reason, whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) has been delivered to the LAB more than 72 hours after sampling or if one half or more of the recommended holding time for the analysis has lapsed.

9. **Legal Responsibility.** LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort, including negligence.

10. **Data Deliverables.** Where specifically requested by Client, LAB agrees to produce electronic data representing services performed hereunder, subject to the following specific understanding between the parties: LAB agrees to supply Client with electronic data as mutually defined, using an agreed medium. Client recognizes that LAB is not a software consultant, manufacturer or reseller; any transfer of electronic data pursuant to services provided by LAB is an accommodation to and strictly for the convenience of the client who is solely liable for the choice and maintenance of the medium utilized. Electronic data provided under this agreement is not deemed to be the project deliverable for the purpose of fulfilling obligations under the Agreement. The provision of electronic data does not in any way modify the intention of the parties that the Client rely on the written or hard copy form of the deliverable.

Except with regard to any limited warranty as specifically set forth below, LAB disclaims and excludes all warranties express or implied with regard to the creation, transmittal or use of electronic data hereunder. The limited warranty in this Agreement replaces all other warranties, express or implied, including any warranties of merchantability or fitness for a particular purpose. Professional warranties extend to written or hard copy deliverables only and do not extend to electronic data supplied to Client. Professional warranties in the Agreement which extend to written or hard copy deliverables shall be undisturbed by this Amendment. LAB's liability for medium failure shall be limited to replacement of the electronic data with a hard copy for a period of thirty days from the date of delivery. LAB's electronic data transfer is derived in part from or is created using third party software, and no such third party warrants or assumes any liability regarding use of or undertakes to provide support information relating to LAB's electronic data. LAB will utilize anti-virus programs on a best efforts basis in preparation of the electronic data transfer, but LAB makes no warranty as to the effectiveness of such screening. LAB will also use its best efforts to ensure that its electronic data will meet all criteria as specified by Client, including criteria regarding date/time data, if, and when, included; but LAB makes no warranty as to the appropriateness of the client specified criteria by accepting the same.

In addition to indemnities contained in the underlying agreement between LAB and Client, Client shall hold LAB harmless from any claims, suits or liability arising from or related to electronic data supplied pursuant to this Agreement. Any reuse of original or altered files by Client shall be at Client's risk and without liability or responsibility to LAB, but shall entitle LAB to additional compensation for such unauthorized reuse. In no event will LAB's liability for electronic data include any special, incidental or consequential damages, whether or not LAB has knowledge of the potential for loss or damage.

11. **Force Majeure.** LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not be limited to, acts of God, acts of Client, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Columbia Analytical Services INC.
An Employee-Owned Company

May 12, 2000

Service Request No.: S2001368

Mr. Keith Winemiller
Toxichem Management System, Inc.
1562 44th Street
San Francisco, CA 94122

RE: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141

Dear Mr. Winemiller:

Enclosed are the results of the sample(s) submitted to our laboratory on April 27, 2000. All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply to the sample(s) analyzed. Columbia Analytical Services is not responsible for use of less than the complete report. Signature of this CAS Analytical Report confirms that pages 2 through 15, following, have been thoroughly reviewed and approved for release.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 2352, expiration: January 31, 2001).

If you have any questions, please call me at (408) 748-9700.

Respectfully submitted,

Columbia Analytical Services, Inc.

Greg Jordan
Project Chemist

3334 Victor Court ▪ Santa Clara, CA 95054 ▪ Telephone (408) 748-9700 ▪ Fax (408) 748-9860

COLUMBIA ANALYTICAL SERVICES, Inc.
Acronyms

A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl tert-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	Not Detected at or above the method reporting/detection limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992
STLC	Solubility Threshold Limit Concentration
SW	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level. The concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2001368
Date Collected: 4/27/00
Date Received: 4/27/00

TPH as Diesel

Prep Method: LUFT
Analysis Method: California DHS LUFT
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
S-1	S2001368-001	1	1	5/6/00	5/9/00	ND	
S-2	S2001368-002	1	1	5/6/00	5/9/00	ND	
S-3	S2001368-003	1	1	5/6/00	5/9/00	ND	
S-4	S2001368-004	1	10	5/9/00	5/11/00	2400	D4
S-5	S2001368-005	1	1	5/6/00	5/9/00	ND	
Method Blank	S200506-SB1	1	1	5/6/00	5/9/00	ND	
Method Blank	S200509-SB1	1	1	5/10/00	5/10/00	ND	

D4 The sample contains a lower boiling point mixture of hydrocarbons and quantitated as diesel.

Approved By: [signature] Date: 5/12/00

1A/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2001368
Date Collected: NA
Date Received: NA
Date Extracted: 5/6/00
Date Analyzed: 5/9/00

Matrix Spike/Duplicate Matrix Spike Summary
TPH as Diesel

Sample Name: BATCH QC
Lab Code: S2001444-87MS S2001444-87DMS
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
TPH as Diesel	LUFT	California DHS LUFT	1	100	100	1	76	61	75	60	28-157	22	

Approved By: [signature] Date: 5/12/00

DMS-020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
LCS Matrix: Soil

Service Request: S2001368
Date Collected: NA
Date Received: NA
Date Extracted: 5/6/00
Date Analyzed: 5/9/00

Laboratory Control Sample Summary
TPH as Diesel

Sample Name: Lab Control Sample
Lab Code: S200506-LCS
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
TPH as Diesel	LUFT	California DHS LUFT	100	113	113	28-157	

Approved By: Greg Joseph Date: 5/12/00

LCS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2001368
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
TPH as Diesel

Prep Method: LUFT
Analysis Method: California DHS LUFT

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery p-Terphenyl
S-1	S2001368-001		88
S-2	S2001368-002		83
S-3	S2001368-003		61
S-4	S2001368-004		94
S-5	S2001368-005		78
BATCH QC	S2001444-87MS		71
BATCH QC	S2001444-87DMS		64
Method Blank	S200506-SB1		120
Method Blank	S200509-SB1		113
Lab Control Sample	S200506-LCS		119

CAS Acceptance Limits: 41-140

Approved By: Gary Jonh Date: 5/12/00

SUR1/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2001368
Date Collected: 4/27/00
Date Received: 4/27/00

BTEX, MTBE and TPH as Gasoline

Sample Name: S-1
Lab Code: S2001368-001
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	1	5/3/00	5/6/00	ND	
Benzene	EPA 5030	8021B	0.005	1	5/3/00	5/6/00	ND	
Toluene	EPA 5030	8021B	0.005	1	5/3/00	5/6/00	ND	
Ethylbenzene	EPA 5030	8021B	0.005	1	5/3/00	5/6/00	ND	
Xylenes, Total	EPA 5030	8021B	0.010	1	5/3/00	5/6/00	ND	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	1	5/3/00	5/6/00	ND	

Approved By: [signature] Date: 5/12/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2001368
Date Collected: 4/27/00
Date Received: 4/27/00

BTEX, MTBE and TPH as Gasoline

Sample Name: S-2
Lab Code: S2001368-002
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	1	5/3/00	5/6/00	ND	
Benzene	EPA 5030	8021B	0.005	1	5/3/00	5/6/00	ND	
Toluene	EPA 5030	8021B	0.005	1	5/3/00	5/6/00	ND	
Ethylbenzene	EPA 5030	8021B	0.005	1	5/3/00	5/6/00	ND	
Xylenes, Total	EPA 5030	8021B	0.010	1	5/3/00	5/6/00	ND	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	1	5/3/00	5/6/00	ND	

Approved By: Greg Jonth Date: 5/12/00

1S22-020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Equiva Services LLC	**Service Request:**	S2001368
Project:	3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141	**Date Collected:**	4/27/00
Sample Matrix:	Soil	**Date Received:**	4/27/00

BTEX, MTBE and TPH as Gasoline

Sample Name:	S-3	Units:	mg/Kg (ppm)
Lab Code:	S2001368-003	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	1	5/3/00	5/6/00	ND	
Benzene	EPA 5030	8021B	0.005	1	5/3/00	5/6/00	ND	
Toluene	EPA 5030	8021B	0.005	1	5/3/00	5/6/00	ND	
Ethylbenzene	EPA 5030	8021B	0.005	1	5/3/00	5/6/00	ND	
Xylenes, Total	EPA 5030	8021B	0.010	1	5/3/00	5/6/00	ND	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	1	5/3/00	5/6/00	ND	

Approved By: Fey Jonh Date: 5/12/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2001368
Date Collected: 4/27/00
Date Received: 4/27/00

BTEX, MTBE and TPH as Gasoline

Sample Name: S-4
Lab Code: S2001368-004
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	50	5/3/00	5/8/00	2100	
Benzene	EPA 5030	8021B	0.005	1	5/3/00	5/6/00	ND	
Toluene	EPA 5030	8021B	0.005	1	5/3/00	5/6/00	ND	
Ethylbenzene	EPA 5030	8021B	0.005	1	5/3/00	5/6/00	7.4	
Xylenes, Total	EPA 5030	8021B	0.010	1	5/3/00	5/6/00	40	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	1	5/3/00	5/6/00	ND	

Approved By: [signature] Date: 5/12/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2001368
Date Collected: 4/27/00
Date Received: 4/27/00

BTEX, MTBE and TPH as Gasoline

Sample Name: S-5
Lab Code: S2001368-005
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	1	5/3/00	5/8/00	ND	
Benzene	EPA 5030	8021B	0.005	1	5/3/00	5/8/00	0.035	
Toluene	EPA 5030	8021B	0.005	1	5/3/00	5/8/00	ND	
Ethylbenzene	EPA 5030	8021B	0.005	1	5/3/00	5/8/00	ND	
Xylenes, Total	EPA 5030	8021B	0.010	1	5/3/00	5/8/00	ND	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	1	5/3/00	5/8/00	ND	

Approved By: Fey Jonk Date: 5/12/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Equiva Services LLC	**Service Request:**	S2001368
Project:	3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA

BTEX, MTBE and TPH as Gasoline

Sample Name:	Method Blank	Units:	mg/Kg (ppm)
Lab Code:	S200503-SB1	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
TPH as Gasoline	EPA 5030	CA/LUFT	1	1	5/3/00	5/3/00	ND	
Benzene	EPA 5030	8021B	0.005	1	5/3/00	5/3/00	ND	
Toluene	EPA 5030	8021B	0.005	1	5/3/00	5/3/00	ND	
Ethylbenzene	EPA 5030	8021B	0.005	1	5/3/00	5/3/00	ND	
Xylenes, Total	EPA 5030	8021B	0.010	1	5/3/00	5/3/00	ND	
Methyl tert-Butyl Ether	EPA 5030	8021B	0.05	1	5/3/00	5/3/00	ND	

Approved By: [signature] Date: 5/12/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Equiva Services LLC	**Service Request:**	S2001368
Project:	3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
		Date Extracted:	5/3/00
		Date Analyzed:	5/4/00

Matrix Spike/Duplicate Matrix Spike Summary
BTEX and TPH as Gasoline

Sample Name:	BATCH QC	Units:	mg/Kg (ppm)
Lab Code:	S2001365-003MS, S2001365-003DMS	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Benzene	EPA 5030	8021B	0.005	0.5	0.5	ND	0.53	0.53	106	106	57-154	<1	
Toluene	EPA 5030	8021B	0.005	0.5	0.5	ND	0.52	0.53	104	106	60-142	2	
Ethylbenzene	EPA 5030	8021B	0.005	0.5	0.5	ND	0.59	0.59	118	118	46-150	<1	
Gasoline	EPA 5030	CA/LUFT	1	10	10	ND	10.6	10.7	106	107	67-121	<1	

Approved By: Greg Joubin Date: 5/12/00

DMS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
LCS Matrix: Soil

Service Request: S2001368
Date Collected: NA
Date Received: NA
Date Extracted: 5/3/00
Date Analyzed: 5/4/00

Laboratory Control Sample Summary
BTEX and TPH as Gasoline

Sample Name: Lab Control Sample
Lab Code: S200503-LCS
Test Notes:

Units: mg/Kg (ppm)
Basis: Wet

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Benzene	EPA 5030	8021B	0.5	0.51	102	57-154	
Toluene	EPA 5030	8021B	0.5	0.51	102	60-142	
Ethylbenzene	EPA 5030	8021B	0.5	0.57	114	46-150	
Gasoline	EPA 5030	CA/LUFT	10	10.5	105	67-121	

Approved By: [signature] Date: 5/12/00

LCS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Equiva Services LLC
Project: 3810 Broadway, Oakland, CA/93995026 (INCIDENT#)SAP#128141
Sample Matrix: Soil

Service Request: S2001368
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
BTEX and TPH as Gasoline

Prep Method: EPA 5030
Analysis Method: 8021B CA/LUFT

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery a,a,a-Trifluorotoluene	Percent Recovery a,a,a-Trifluorotoluene
S-1	S2001368-001		105	104
S-2	S2001368-002		108	106
S-3	S2001368-003		107	105
S-4	S2001368-004		107	100
S-5	S2001368-005		106	111
BATCH QC	S2001365-003MS		97	115
BATCH QC	S2001365-003DMS		102	115
Method Blank	S200503-SB1		106	107
Lab Control Sample	S200503-LCS		98	113

CAS Acceptance Limits: 70-130% 70-130%

Approved By: Greg Jonkin Date: 5/12/00

SUR2/020397p

[redacted] Incid[redacted] 9389[redacted]26 [redacted] Incid[redacted] 9389[redacted]26 [redacted] #[redacted]814[redacted]

Columbia Analytical Services Inc.
3334 Victor Court • Santa Clara CA 95054
(408) 748-9700 • FAX (408) 748-9860

Sap # 128141

CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

DIRECT BILL - KAREN PETRINA, EQUIVA

SERVICE REQUEST NO. INCIDENT- P.O.# S2001368 PAGE 1 OF 1

PROJECT NAME: BROADWAY, OAKLAND EQ-02.1A
PROJECT MGR.: KEITH WINEMILLER
COMPANY: TOXICHEM
ADDRESS: 1562 44th AVE
SF, CA 94122
PHONE: 415.681.8516
FAX: 415.681.8132
SAMPLER'S SIGNATURE: [signature]

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Volatile Organics BY GCMS 624 ☐ 8240 ☐ 8260 ☐	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐ 8021 ☐	TPH as Gas/BTEX ☐ TPH as Gas/BTEX/MTBE ☒	TPH as Diesel ☒ HBHC ☐	Base/Neu/Acid Organics / GCMS 625 ☐ 8270 ☐	Pesticides & PCBs 608/8082 ☐ Pesticides only 8081 ☐ PCBs 8082 ☐	TRPH - 418.1 ☐ Oil and Grease Method	Metals Indicate below Total ☐ Dissolved ☐	pH, Cond, Cl, SO_4, F, TDS, TSS Alk, NO_3, NO_2 (circle)	NH_3-N, COD, Total-P, TKN, TOC NO_3 / NO_2, Phenols (circle)	Cyanide	MTBE - 8260	REMARKS *
					PRESERVATIVE	HCl	HCl	HCl	NP	NP	NP	HCl	HNO_3	NP	H_2SO_4	NaOH		
S-1	4/27/00	06:45	1	Soil	1			X	X								X	See below
S-2	↓	06:55	2	↓	↓			↓	↓								↓	
S-3	↓	07:00	3	↓	↓			↓	↓								↓	
S-4	↓	07:10	4	↓	↓			↓	↓								↓	
S-5	↓	07:15	5	↓	↓			↓	↓								↓	

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature: Brian Fuller	Signature:	Signature:
Printed Name: Keith Winemiller	Printed Name: Brian Fuller	Printed Name:	Printed Name:
Firm: Toxichem	Firm: ONE	Firm:	Firm:
Date/Time: 4/27/00 - 2156	Date/Time: 4/27/00 2:36	Date/Time:	Date/Time: only

TURNAROUND REQUIREMENTS
___ 1 day ___ 2 day ___ 3 day
___ 5 day ___ Other
X Standard (10 working days)
Results Due: 5/11/00

REPORT REQUIREMENTS
X I. Routine Report
___ II. Report (includes MS, MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ MDLs/PQLs/Trace #
___ Electronic Data Deliverables

RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:
Printed Name:	Printed Name:
Firm:	Firm:
Date/Time:	Date/Time:

SAMPLE RECEIPT: Condition _____ Custody Seals _____

SPECIAL INSTRUCTIONS/COMMENTS: * confirm highest detected MTBE conc detected by 8020 using 8260

Circle which metals are to be analyzed:
Metals: Al Sb Ba Be B Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Ag Na Sn V Zn
As Pb Se Tl Hg

RY DUE: 5/11/00 RY

Storage:

Shipped Via Tracking #

Will sample results be used in connection with drinking water regulations? ☐ Yes ☒ No If yes, you must so indicate by writing "DW" for each such sample.

Columbia Analytical Services, Inc. General Terms and Conditions

Laboratory Services

1. These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory ("LAB") and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to LAB. The invalidity or unenforceability, in whole or in part of any provision, term or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state from which services are procured.

2. **Warranty.** Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

At LAB sole discretion, preliminary results may be given in advance of the laboratory report. Such preliminary results are tentative, subject to confirmation and final review by LAB. Client's use of preliminary results in any manner shall be at Client's sole risk.

3. **Scope and Compensation.** LAB agrees to perform the services described in the proposal or agreement to which these Terms and Conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described.

Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1 1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sales, use or other taxes. Such taxes will be added to invoice prices when required. LAB reserves the right to require payment prior to release of data. Until such time as Client invoices are paid in full, LAB has no obligation, and will not defend, reproduce, return, or supplement data results.

4. **Prices.** Compensation for services performed will be based on the current Lab Analytical Fee Schedule, or on verbal quotations agreed to in writing by the parties. Unless specifically indicated on the written confirmation of quotation, analytical turnaround times are not guaranteed. The minimum charge will be $100.00 unless otherwise noted.

5. **Methods.** Where applicable, LAB will use analytical methodologies which are in substantial conformity with U.S. Environmental Protection Agency (EPA), State Agency, American Society for Testing and Materials (ASTM), Association of Official Analytical Chemists (AOAC), Standard Methods for the Examination of Water and Wastewater, or other recognized methodologies. LAB reserves the right to deviate from these methodologies, if necessary or appropriate, due to the nature or composition of the sample or otherwise, based on the reasonable judgment of LAB. Deviations, if any, will be made on a basis consistent with recognized standards of the industry and/or LAB's standard operating procedures.

6. **Limitations of Liability.** In the event of any error, omission or other professional negligence, the sole and exclusive responsibility of LAB shall be to reperform the deficient work at its own expense, and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within thirty (90) days following completion of services.

LAB shall have no liability, obligation or responsibility of any kind for losses, costs, expenses or other damages (including but not limited to any special, indirect, incidental or consequential damages) with respect to LAB's services or results.

All results provided by LAB are strictly for the use of its clients, and LAB is in no way responsible for the use of such results by clients or third parties. All results should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of the results.

7. **Hazard Disclosure.** Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance which is to be delivered to LAB will be packaged, labeled, transported and delivered properly and in accordance with applicable laws.

8. **Sample Handling.** Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss of or damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility or liability for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.

LAB will use its best efforts to arrange for the shipment of specially prepared sample bottles, sampling instructions per Client instruction by the readily available least cost method. Any other shipment arrangements will be at Client's expense.

Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis, unless modified by applicable state or federal laws. Client will be required to give to LAB written instructions concerning disposal of these samples.

LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample which, in the sole judgment of LAB, (a) is of unsuitable volume, (b) may be or become unsuitable for, or may pose a risk in handling, transport or processing for any health, safety, environmental or other reason, whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) has been delivered to the LAB more than 72 hours after sampling or if one half or more of the recommended holding time for the analysis has lapsed.

9. **Legal Responsibility.** LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort, including negligence.

10. **Data Deliverables.** Where specifically requested by Client, LAB agrees to produce electronic data representing services performed hereunder, subject to the following specific understanding between the parties: LAB agrees to supply Client with electronic data as mutually defined, using an agreed medium. Client recognizes that LAB is not a software consultant, manufacturer or reseller, any transfer of electronic data pursuant to services provided by LAB is an accommodation to and strictly for the convenience of the client who is solely liable for the choice and maintenance of the medium utilized. Electronic data provided under this agreement is not deemed to be the project deliverable for the purpose of fulfilling obligations under the Agreement. The provision of electronic data does not in any way modify the intention of the parties that the Client rely on the written or hard copy form of the deliverable.

Except with regard to any limited warranty as specifically set forth below, LAB disclaims and excludes all warranties express or implied with regard to the creation, transmittal or use of electronic data hereunder. The limited warranty in this Agreement replaces all other warranties, express or implied, including any warranties of merchantability or fitness for a particular purpose. Professional warranties extend to written or hard copy deliverables only and do <u>not</u> extend to electronic data supplied to Client. Professional warranties in the Agreement which extend to written or hard copy deliverables shall be undisturbed by this Amendment. LAB's liability for medium failure shall be limited to replacement of the electronic data with a hard copy for a period of thirty days from the date of delivery. LAB's electronic data transfer is derived in part from or is created using third party software, and no such third party warrants or assumes any liability regarding use of or undertakes to provide support information relating to LAB's electronic data. LAB will utilize anti-virus programs on a best efforts basis in preparation of the electronic data transfer, but LAB makes no warranty as to the effectiveness of such screening. LAB will also use its best efforts to ensure that its electronic data will meet all criteria as specified by Client, including criteria regarding date/time data, if, and when, included; but LAB makes no warranty as to the appropriateness of the client specified criteria by accepting the same.

In addition to indemnities contained in the underlying agreement between LAB and Client, Client shall hold LAB harmless from any claims, suits or liability arising from or related to electronic data supplied pursuant to this Agreement. Any reuse of original or altered files by Client shall be at Client's risk and without liability or responsibility to LAB, but shall entitle LAB to additional compensation for such unauthorized reuse. In no event will LAB's liability for electronic data include any special, incidental or consequential damages, whether or not LAB has knowledge of the potential for loss or damage.

11. **Force Majeure.** LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not be limited to, acts of God, acts of Client, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Ro 56

TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services
1562 44th Avenue
San Francisco, California 94122
(415) 681-8816 / Fax (415) 681-8132

Industrial Hygiene - Exposure Assessment
Quantitative Risk Assessment
Compliance Audits
Real Property Environmental Assessments
Remedial Investigations
Air, Soil, and Groundwater Sampling
Remedial Engineering and Construction
Regulatory Compliance and Negotiation
Litigation Support Services

AUG 13 2001

REPORTS

August 8, 2001
Project EQ-02.1A

Mr. Barney M. Chan
Alameda County Health Care Services Agency
Environmental Protection Division
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: **Quarterly Monitoring Report - Second Quarter 2001**
Former Texaco/Current Broadway Discount Gas Station
3810 Broadway, Oakland, California
Equiva Incident No. 93995026, SAP No. 128141

Dear Mr. Chan:

On behalf of Equiva Services LLC, this letter transmits the results of second quarter 2001 groundwater monitoring and sampling conducted at the site referenced above. This report presents an interpretation of results and recommendations and schedule for future actions. The groundwater elevation and analytical data are shown on Figures 1 and 2, respectively.

INTERPRETATION OF RESULTS

Groundwater Elevation

Groundwater monitoring and sampling data for the reporting was collected by Blaine Tech Services, Inc. on June 19, 2001. The average groundwater elevation at the site decreased approximately 1 to 2 feet since the previous quarterly groundwater monitoring and sampling event, and it remains within the historical range of groundwater elevation.

Groundwater Flow Direction and Gradient

During the reporting quarter, the predominant direction of groundwater flow was to the northwest and the groundwater gradient was estimated at 0.004.

Analytical Results

During the reporting quarter, separate phase hydrocarbons (SPH) were not measured in any well. Overall, the dissolved groundwater concentrations appear stable with no apparent fluctuations outside historical ranges. The analysis for methyl tertiary butyl ether by EPA Method 8260 has resumed, pursuant to Alameda County Health Care Services Agency's (ACHCSA's) request dated March 29, 2001.

Groundwater Extraction Pilot Program

On February 8 and 22, 2001, a vacuum truck was used to extract groundwater from Well MW-6 to evaluate the potential effects on groundwater concentrations prior to groundwater monitoring and sampling. A total of 223 gallons of groundwater were extracted and transported to the Equilon Enterprises LLC Martinez Refinery for disposal. Based on the volume removed and fourth quarter 2000 groundwater monitoring and sampling concentrations, approximately 0.06 pounds of petroleum hydrocarbons were recovered. Between the fourth quarter 2000 and first quarter 2001 groundwater monitoring and sampling events, the petroleum hydrocarbon concentrations measured in Well MW-6 generally increased and are within their historical concentration ranges. This suggests that the extraction of groundwater from Well MW-6 had negligible effect on reducing concentrations, and the pilot program was discontinued.

RECOMMENDATIONS AND SCHEDULE FOR FUTURE ACTIONS

1. Continue the quarterly groundwater monitoring and sampling program.
2. Properly destroy and replace Well MW-5.
3. Install one new well to replace previously destroyed Wells MW-3 and MW-8.

RESPONSE TO MARCH 29, 2001 LETTER

Equiva's responses to each of your comments are presented below.

1. ***"Please comment on whether you believe a replacement well [for Well MW-5] is needed."***

Several attempts to remove the blockage from Well MW-5, caused by the property owner's redevelopment activities, have been unsuccessful. A well to replace Well MW-5 is recommended given the downgradient proximity to the existing underground storage tanks and past concentrations of petroleum hydrocarbons, specifically benzene. TOXICHEM proposes to drill-out the existing well and install a replacement well within the same borehole. The replacement well will be constructed identically to Well MW-5 and without the collection of any soil samples. The field procedures for well installation are presented as Attachment A.

2. ***"Please comment on the status [of replacing] these wells [MW-3 and MW-8]."***

One replacement well is recommended to allow collection of groundwater samples from within the former excavation pit in order to estimate any potential residual health risk and to determine if a contaminant source remains. The proposed location of the replacement well is shown on Figure 3 and the field procedures for well installation are presented as Attachment A.

3. ***"Please clarify whether any sampling can be done from the piping array installed in the tank excavation pit. Please illustrate the nature of the damage or impairment to the piping array."***

Currently the PVC piping array cannot be used for any purpose as a result of the property owner's redevelopment activities. The property owner's contractor damaged the PVC piping array riser and its repair is prevented by the presence of a concrete footing at the surface location of the PVC piping array riser. The concrete footing is approximately 7 by 7 by 3 feet deep. The damage cannot be corrected until the concrete footing for the canopy and possibly the product piping to the northwestern most dispenser is removed or relocated, and there are no plans to repair the damage. A figure illustrating the nature of the damage is presented as Figure 4.

If you have any questions regarding this site, please contact me at (415) 681-8816.

Sincerely,

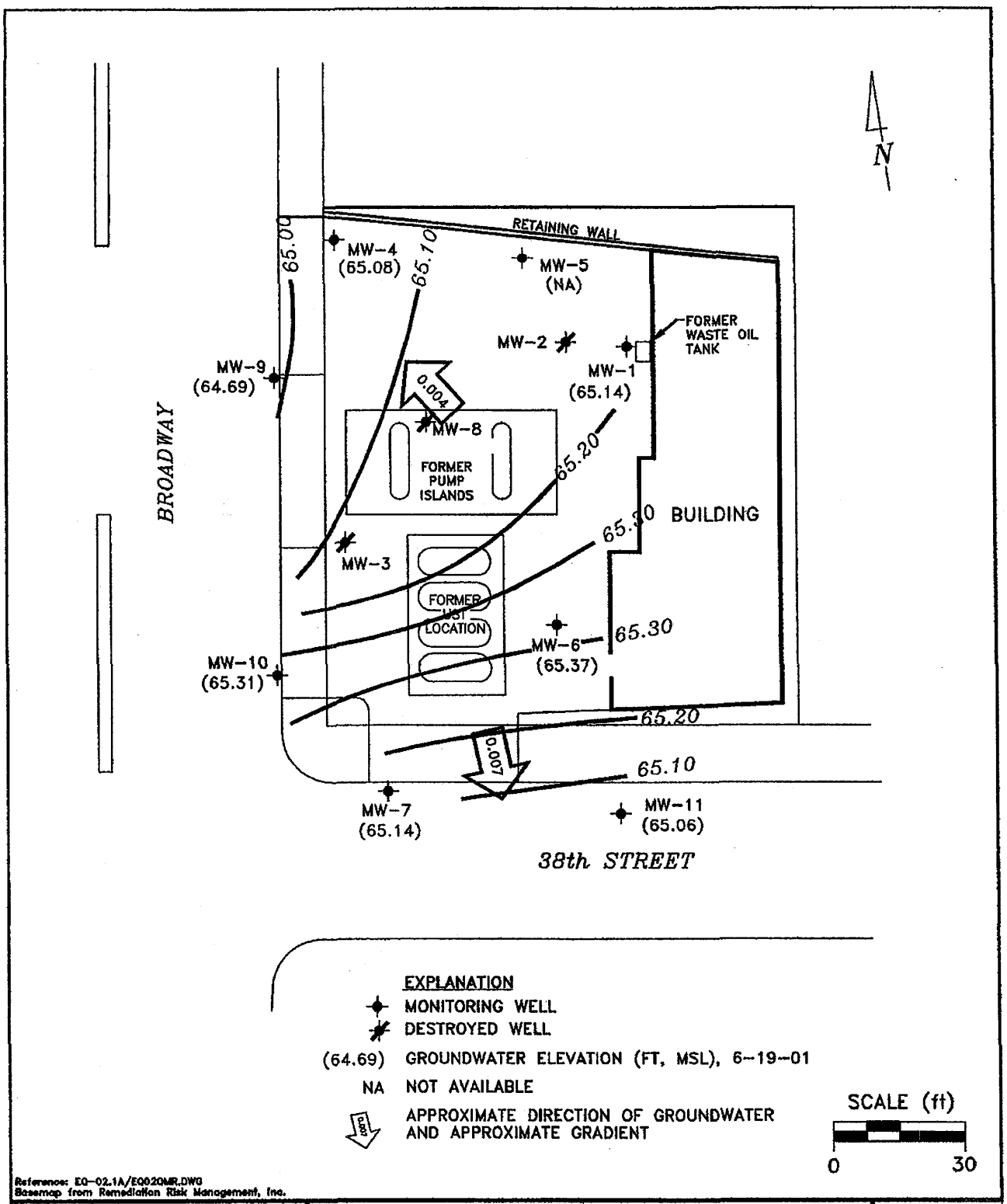
Toxichem Management Systems, Inc.

Keith Winemiller, P.E.
Senior Engineer

REGISTERED PROFESSIONAL ENGINEER
KEITH WINEMILLER
C 57744
Exp. 12/31/01
CIVIL
STATE OF CALIFORNIA

Attachments: Figure 1 - Groundwater Elevation Contour Map, June 19, 2001
Figure 2 - TPPH/TEPH/Benzene Concentration Map, June 19, 2001
Figure 3 – Proposed Well Location Map
Figure 4 – Status of PVC Piping Array
Attachment A - Well Installation Field Procedures
Attachment B - Blaine Tech Services, Inc. Report, dated July 16, 2001

cc: Ms. Karen Petryna, P.E., Equiva Services LLC, P. O. Box 7869, Burbank, CA 91510-7869
Mr. Joe Zadik, 8255 San Leandro Street, Oakland, CA 94621



Reference: EQ-02.1A/EQ020MR.DWG
Basemap from Remediation Risk Management, Inc.

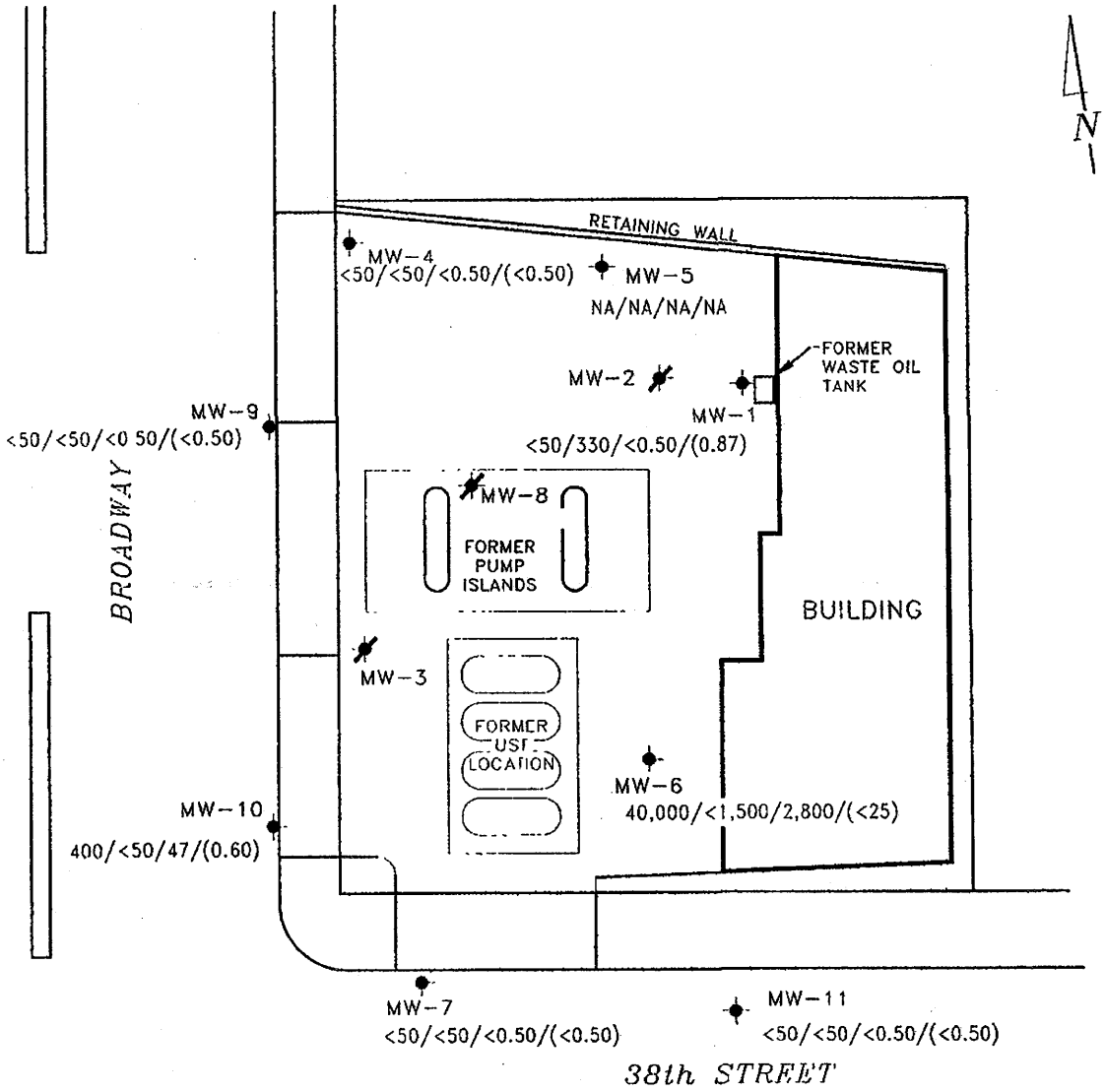
TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

GROUNDWATER ELEVATION CONTOUR MAP, JUNE 19, 2001

Former Texaco/Current Broadway Discount Gas Station
3810 Broadway
Oakland, California

FIGURE: 1

PROJECT: EQ-02



EXPLANATION

MONITORING WELL

DESTROYED WELL

<50/<50/<0.50/(<0.50) TPPH/TEPH/BENZENE/MtBE CONCENTRATION IN GROUNDWATER, IN MICROGRAMS PER LITER, 6-19-01
MtBE BY EPA METHOD 8020,
( ) BY EPA METHOD 8260

NA DATA NOT AVAILABLE

SCALE (ft)

0 30

Reference LQ-02.1A/1 002QMR.DWG
Basemap from Remediation Risk Management, Inc

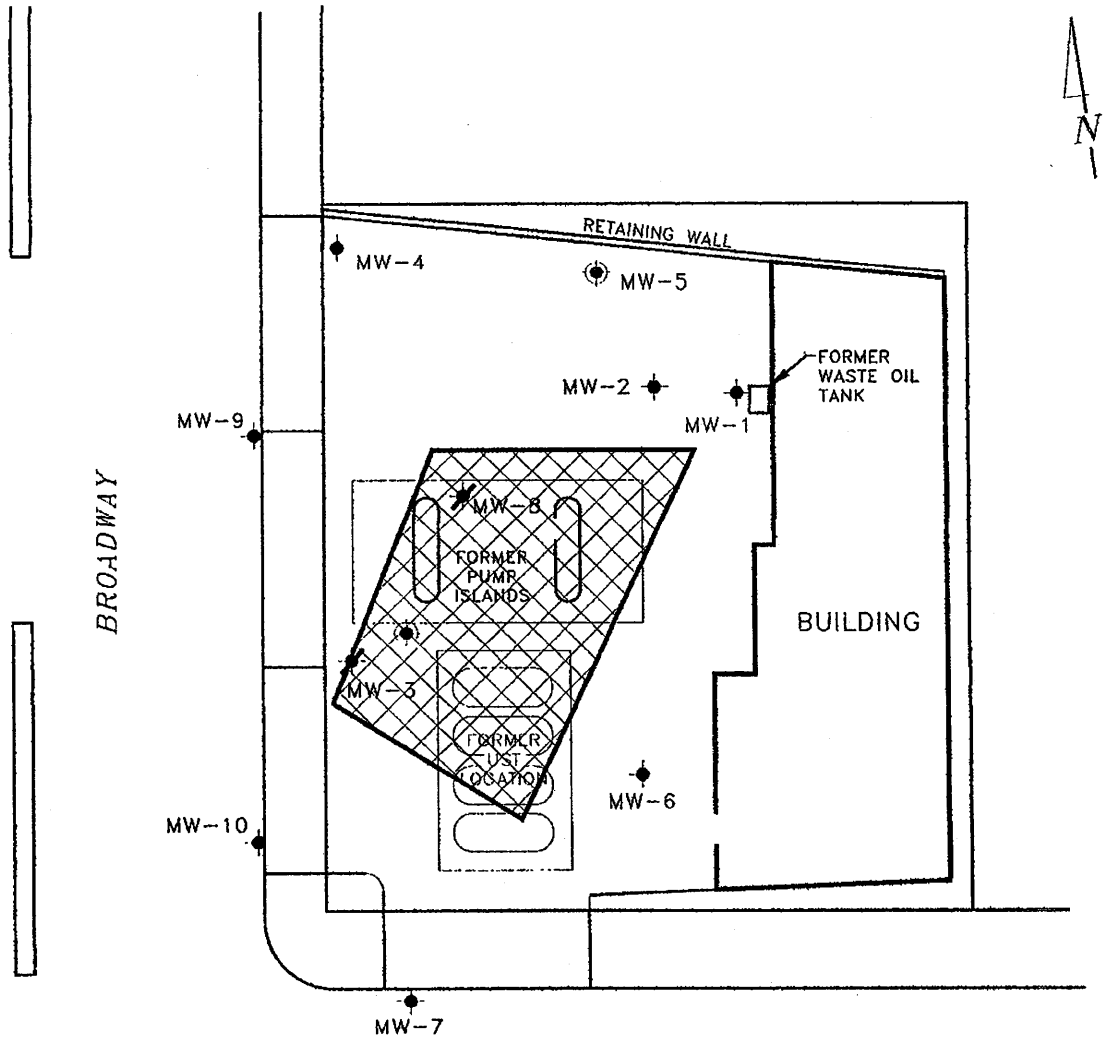
TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

TPPH/TEPH/BENZENE/MtBE CONCENTRATION MAP, JUNE 19, 2001

Former Texaco/Current Broadway Discount Gas Station
3810 Broadway
Oakland, California

FIGURE: 2

PROJECT: EQ-02



EXPLANATION

MONITORING WELL

DESTROYED WELL

PROPOSED MONITORING WELL

EXTENT OF EXCAVATED SOIL DISPOSED OF AT FORWARD LANDFILL. AVERAGE DEPTH OF EXCAVATION ~22 FEET
AREA OF EXCAVATION- 1,734 FEET

SCALE (ft)

0 30

Reference: EQ 02 1A/EXCAVATION DWG
Basemap from Remediation Risk Management, Inc

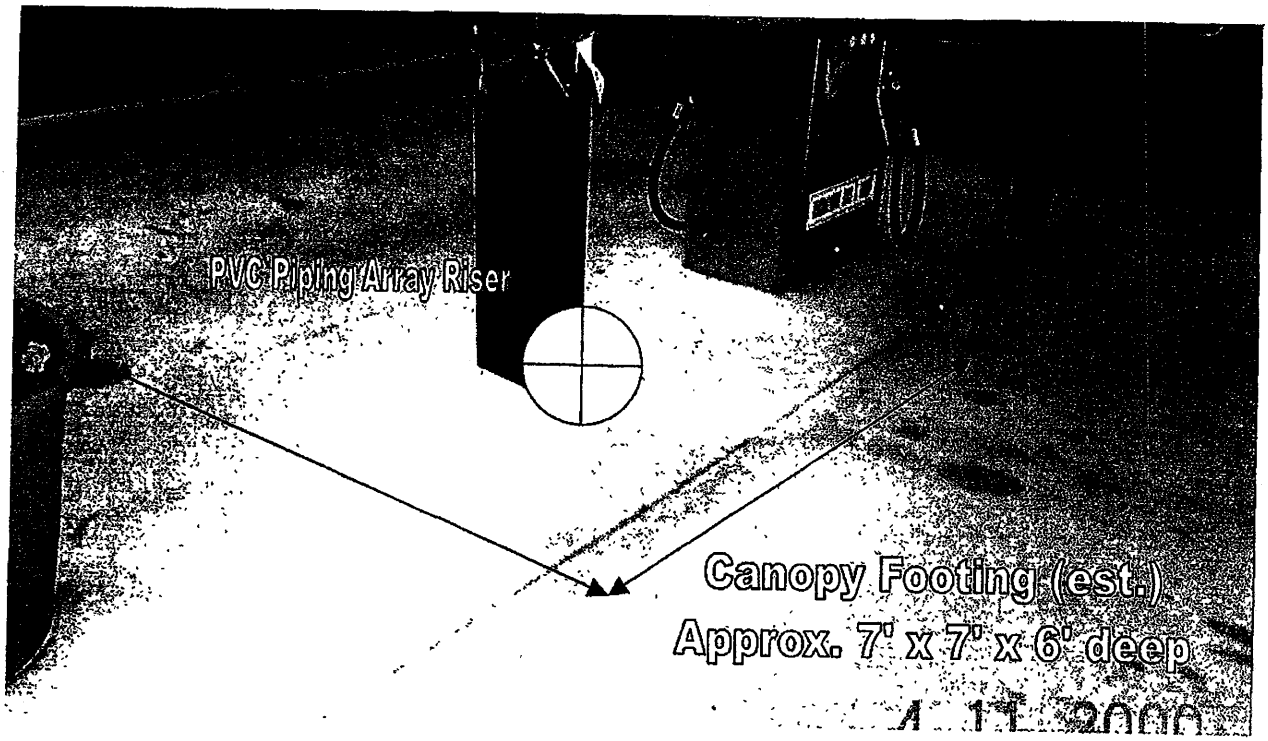
TOXICHEM Management Systems, Inc.
Environmental & Occupational Health Services

PROPOSED WELL LOCATION MAP

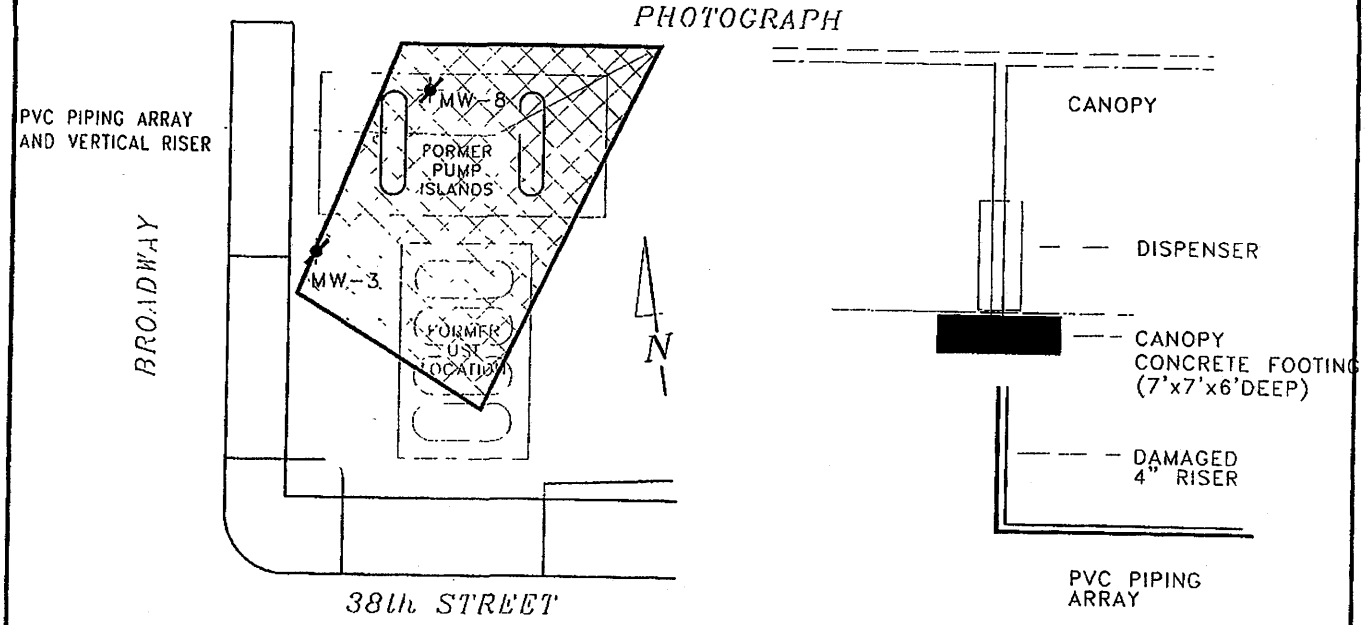
Former Texaco/Current Broadway Discount Gas Station
3810 Broadway
Oakland, California

FIGURE: 3

PROJECT: EQ-02



PHOTOGRAPH



TOP VIEW

SIDE VIEW (PROJECTED)

EXPLANATION

- MONITORING WELL
- DESTROYED WELL
- EXTENT OF EXCAVATED SOIL

Reference EQ-02 1A/EXCAVSTATUS DWG
Basemap from Remediation Risk Management, Inc

Environmental & Occupational Health Services

STATUS OF PVC PIPING ARRAY	FIGURE: 4
Former Texaco/Current Broadway Discount Gas Station 3810 Broadway Oakland, California	PROJECT: EQ-02

ATTACHMENT A

WELL INSTALLATION FIELD PROCEDURES

ATTACHMENT A
WELL INSTALLATION FIELD PROCEDURES

TOXICHEM will supervise the installation of one groundwater monitoring well at the location presented on Figure 1. Under the supervision of TOXICHEM staff, a licensed drilling contractor will advance an 8- or 10-inch diameter soil boring. The boring will be advanced with a truck-mounted drill rig equipped with an 8- or 10-inch diameter continuous flight, hollow-stem auger.

Well MW-5R

A groundwater monitoring well will be designed and constructed in accordance with ACHCSA guidelines and will be identical to the former Well MW-5. When the boring is completed, a 2-inch diameter, groundwater monitoring well was constructed within the borehole. Flush thread jointed, Schedule 40, polyvinyl chloride casing of 2-inch diameter will be placed down the hollow stem of the augers to the base of the boring. The well will be constructed to approximately 35 feet below ground surface and the screened interval extends from approximately 10 to 35 feet bgs. The remaining casing section will be solid and non-slotted. A well cap will be slipped on to the bottom of the well casing and a locking cap placed at the top of each well.

Well MW-12

A groundwater monitoring well will be designed and constructed in accordance with ACHCSA guidelines and will be identical to the Well MW-5. When the boring is completed, a 4-inch diameter, groundwater monitoring well was constructed within the bore hole. Flush thread jointed, Schedule 40, polyvinyl chloride casing of 4-inch diameter will be placed down the hollow stem of the augers to the base of the boring. The well will be constructed to approximately 35 feet below ground surface and the screened interval extends from approximately 10 to 35 feet bgs. The remaining casing section will be solid and non-slotted. A well cap will be slipped on to the bottom of the well casing and a locking cap placed at the top of each well.

Wells MW-5R and MW-12

The monitoring wells will be filter-packed with clean Monterey silica sand throughout the screened interval. Specification of the filter material will be determined based on lithology encountered during drilling and will likely consist of one of the following: No. 3 Monterey Sand, No. 2/12 Lonestar Sand, and/or No. 2/16 Lonestar Sand. The filter-pack material will be installed in the annular spacing between the monitoring well pipe and the auger; the filter-pack material will extend a minimum of 6-inches above the top of the screened interval.

A one foot thick layer of bentonite pellets will be placed above the filter material to provide an annular seal and the remainder of the boring will be filled with a sand-cement slurry to within one foot of grade. The well casing will be enclosed inside a watertight cast iron or aluminum traffic-rated box installed in concrete slightly above the surface.

A licensed surveyor will be retained to survey the top of the casing of the well head relative to mean sea level.

The initial well development will be conducted by using a 1.7 inch Brainard-Kilman mechanical lift hand pump, an air-lift or nitrogen-lift pump, or a positive displacement bladder pump dependent on the depth to ground water and the screened interval. The well will be developed until a minimum of four well volumes are purged (if recharge rates permit) and the discharged

water appears clear of sediment. Electrical conductivity, temperature, and pH of the ground water will be recorded throughout the development process. The well development will continue until the electrical conductivity, temperature, and pH of the discharged water stabilize. Depth to water measurements will then be recorded prior to and following the well development activities.

Prior to sampling, a minimum of four well volumes will be purged from the well through the use of a positive displacement bladder pump or Teflon bailer. Electrical conductivity, temperature, and pH of the ground water will be recorded throughout the purging process. The purging activities will continue until the electrical conductivity, temperature, and pH of the discharged water have stabilized. A water sample for analytical testing will be obtained through the use of a bladder pump, disposable bailer, or Teflon bailer. The water developed from the monitoring well will be transported off-site and ultimately disposed of at the Equilon Refinery in Martinez, California.

The water will be immediately sealed in the vials and properly labeled including the date, time, sample location, project number, and indication of any preservatives added to the sample. The samples will then be placed on ice immediately for transport to the laboratory under chain-of-custody documentation.

The groundwater samples will be submitted and analyzed by a State of California, Department of Health Services certified laboratory. The groundwater samples will be analyzed for TPPH, BTEX compounds, and MtBE by EPA Method 8260 and TEPH by Modified EPA Method 8015.

ATTACHMENT B

BLAINE TECH SERVICES, INC. REPORT, DATED JULY 16, 2001

BLAINE
TECH SERVICES

1680 ROGERS AVENUE
SAN JOSE, CA 95112-1105
(408) 573-7771 FAX
(408) 573-0555 PHONE
CONTRACTOR'S LICENSE #746684
www.blainetech.com

July 16, 2001

Karen Petryna
Equiva Services LLC
P.O. Box 7869
Burbank, CA 91510-7869

Second Quarter 2001 Groundwater Monitoring at
Former Texaco Service Station
3800 Broadway
Oakland, CA

Monitoring performed on June 19, 2001

Groundwater Monitoring Report **010619-C-1**

This report covers the routine monitoring of groundwater wells at this Former Texaco facility. In accordance with standard procedures that conform to Regional Water Quality Control Board requirements, routine field data collection includes depth to water, total well depth, thickness of any separate immiscible layer, water column volume, calculated purge volume (if applicable), elapsed evacuation time (if applicable), total volume of water removed (if applicable), and standard water parameter instrument readings. Sample material is collected, contained, stored, and transported to the laboratory in conformance with EPA standards. Purgewater (if applicable) is, likewise, collected and transported to the Martinez Refining Company.

Basic field information is presented alongside analytical values excerpted from the laboratory report in the cumulative table of **WELL CONCENTRATIONS**. The full analytical report for the most recent samples and the field data sheets are attached to this report.

At a minimum, Blaine Tech Services, Inc. field personnel are certified on completion of a forty hour Hazardous Materials and Emergency Response training course per 29 CFR 1910.120. Field personnel are also enrolled in annual eight hour refresher courses.

Blaine Tech Services, Inc. conducts sampling and documentation assignments of this type as an independent third party. In order to avoid compromising the objectivity necessary for the proper

and disinterested performance of this work, Blaine Tech Services, Inc. concentrates on objective data collection and does not participate in the interpretation of analytical results, the definition of geological or hydrological conditions, the formulation of recommendations, or the marketing of remedial systems.

Please call if you have any questions.

Yours truly,

Nick Sudano
Project Coordinator

NS/mb

attachments: Cumulative Table of WELL CONCENTRATIONS
Certified Analytical Report
Field Data Sheets

cc: Keith Winemiller
Toxichem Management Systems, Inc.
1562 44th Avenue
San Francisco, CA 94122

WELL CONCENTRATIONS
Former Texaco Service Station
3800 Broadway
Oakland, CA

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	D.O. Readings (ppm)
MW-1	06/28/1996	<100	<50	<0.5	<1.0	<1.0	<2.0	NA	NA	86.69	21.77	NA	64.92	NA	NA
MW-1	10/10/1996	520	<400	9.2	53	17	70	22	16**	86.69	23.26	NA	63.43	NA	NA
MW-1	11/07/1996	NA	NA	NA	NA	NA	NA	NA	NA	86.69	23.27	NA	63.42	NA	NA
MW-1	12/18/1997	2,200	<50	<3.0	<3.0	<3.0	<3.0	<200	NA	86.69	19.70	NA	66.99	NA	NA
MW-1	04/06/1998	1,600	<50	16.4	0.8	<0.5	<0.5	38.3	NA	86.69	16.88	NA	69.81	NA	NA
MW-1	06/18/1998	330	280	7.8	<0.5	<0.5	<0.5	<0.5	NA	86.69	19.78	NA	66.91	NA	NA
MW-1	08/31/1998	<50	150	1.5	<0.5	<0.5	<0.5	<2.5	NA	86.69	21.71	NA	64.98	NA	NA
MW-1	12/21/1998	130	130	2.3	0.90	<0.5	<0.5	110	13	86.69	22.15	NA	64.54	NA	NA
MW-1	03/24/1999	1,520	305	11.7	<2.50	<2.50	<2.50	21.6	<25.0	86.69	19.55	NA	67.14	NA	NA
MW-1	06/25/1999	231	207	5.29	<0.500	<0.500	<0.500	3.94	1.01	86.69	21.60	NA	65.09	NA	NA
MW-1	09/24/1999	58.6	71.7	6.03	<0.500	<0.500	<0.500	3.70	NA	86.69	22.58	NA	64.11	NA	NA
MW-1	12/29/1999	117	345	4.26	<0.500	<0.500	1.97	26.2	<0.500	86.69	22.81	NA	63.88	NA	NA
MW-1	03/21/2000	834	319	<0.500	<0.500	<0.500	<0.500	21.5	NA	86.69	19.00	NA	67.69	NA	NA
MW-1	07/26/2000	<50.0	125	<0.500	<0.500	<0.500	<0.500	<2.50	NA	86.69	21.50	NA	65.19	NA	NA
MW-1	09/06/2000	88.1	192	15.60	<0.500	<0.500	<0.500	NA	NA	86.69	21.90	NA	64.79	NA	NA
MW-1	11/29/2000	<50.0	331	3.52	<0.500	<0.500	<0.500	NA	NA	86.92	22.05	NA	64.87	NA	NA
MW-1	03/06/2001	NA	NA	NA	NA	NA	NA	NA	NA	86.92	19.79	NA	67.13	NA	NA
MW-1	03/23/2001	204	d	10.7	<0.500	<0.500	<0.500	NA	NA	86.92	20.15	NA	66.77	NA	NA
MW-1	**06/19/2001**	**<50**	**330**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**0.87**	**86.92**	**21.78**	**NA**	**65.14**	**NA**	**NA**
MW-2	06/28/1996	NA	NA	NA	NA	NA	NA	NA	NA	85.83	22.10	NA	63.73	1.35	NA
MW-2	10/10/1996	99,000	1,800	4,100	9,400	2,300	9,900	390	<25**	85.83	22.36	NA	63.47	NA	NA
MW-2	11/07/1996	NA	NA	NA	NA	NA	NA	NA	NA	85.83	22.39	NA	63.45	0.01	NA
MW-2	12/18/1997	24,000	4,700	600	1,800	750	2,400	<2,000	NA	85.83	20.19	NA	65.64	NA	NA
MW-2	04/06/1998	20,100	9.5	252	448	430	1,410	<200	NA	85.83	18.00	NA	67.83	NA	NA
MW-2	06/18/1998	20,000	5,200	240	370	270	790	<50	NA	85.83	19.63	NA	66.20	NA	NA
MW-2	08/31/1998	72,000	19,000	270	990	630	1,700	<125	NA	85.83	21.01	NA	64.82	NA	NA
MW-2	12/21/1998	290	13,000	8.7	18	9.7	38	10	29	85.83	21.31	NA	64.52	NA	NA

WELL CONCENTRATIONS
Former Texaco Service Station
3800 Broadway
Oakland, CA

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	D.O. Readings (ppm)
MW-2	03/24/1999	80,400	5,590	651	1,860	1,120	3,730	<40.0	<100	85.83	19.18	NA	66.65	NA	NA
MW-2	06/25/1999	34,700	12,100	504	1,300	716	2,160	<40.0	NA	85.83	20.78	NA	65.05	NA	NA
MW-2	09/24/1999	6,510	108	1,030	350	183	680	<50.0	NA	85.83	21.82	NA	64.01	NA	1.0/.80
MW-2	12/29/1999	NA	NA	NA	NA	NA	NA	NA	NA	85.83	22.17	21.87	63.90	0.30	2.6
MW-2	01/07/2000	NA	NA	NA	NA	NA	NA	NA	NA	85.83	22.84	22.45	63.30	0.39	NA
MW-2	03/21/2000	54,100	41,100	1,260	3,320	2,180	8,200	<1,250	NA	a	18.19	NA	NA	NA	3.3/3.6
MW-2	NA	Well destroyed		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3	06/28/1996	NA	NA	NA	NA	NA	NA	NA	NA	83.18	19.04	NA	64.14	NA	NA
MW-3	10/10/1996	110,000	1,200	6,600	16,000	2,200	12,000	<250	NA	83.18	19.51	NA	63.67	NA	NA
MW-3	11/07/1996	NA	NA	NA	NA	NA	NA	NA	NA	NA	19.40	NA	19.84	NA	NA
MW-3	12/18/1997	180,000	6,100,000	1,500	16,000	4,600	23,000	<3,000	NA	83.18	18.79	NA	64.39	NA	NA
MW-3	04/06/1998	NA	NA	NA	NA	NA	NA	NA	NA	83.18	16.58	NA	66.64	0.05	NA
MW-3	06/18/1998	NA	NA	NA	NA	NA	NA	NA	NA	83.18	NA*	NA	NA	>2.0	NA
MW-3	08/31/1998	NA	NA	NA	NA	NA	NA	NA	NA	83.18	19.56	NA	63.68	0.07	NA
MW-3	12/21/1998	NA	NA	NA	NA	NA	NA	NA	NA	83.18	20.23	NA	65.13	2.73	NA
MW-3	03/24/1999	NA	NA	NA	NA	NA	NA	NA	NA	83.18	16.76	15.90	67.11	0.86	NA
MW-3	06/25/1999	NA	NA	NA	NA	NA	NA	NA	NA	83.18	18.47	18.17	64.95	0.30	NA
MW-3	09/24/1999	NA	NA	NA	NA	NA	NA	NA	NA	83.18	19.43	19.35	63.81	0.08	NA
MW-3	12/29/1999	NA	NA	NA	NA	NA	NA	NA	NA	83.18	19.25	19.21	63.96	0.04	NA
MW-3	01/07/2000	NA	NA	NA	NA	NA	NA	NA	NA	83.18	19.87	19.80	63.37	0.07	NA
MW-3	NA	Well destroyed		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	06/28/1996	<100	<50	<0.5	<1.0	<1.0	<2.0	NA	NA	83.31	18.83	NA	64.48	NA	NA
MW-4	10/10/1996	650	<50	3.9	65	22	120	<5.0	NA	83.31	19.84	NA	63.47	NA	NA
MW-4	11/07/1996	NA	NA	NA	NA	NA	NA	NA	NA	83.31	19.84	NA	63.47	NA	NA
MW-4	12/18/1997	<50	2,000	<0.5	<0.5	<0.5	<0.5	<30	NA	83.31	17.77	NA	65.54	NA	NA
MW-4	04/06/1998	<50	<50	<0.5	<0.5	<0.5	<0.5	<30	NA	83.31	15.45	NA	67.86	NA	NA

WELL CONCENTRATIONS
Former Texaco Service Station
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MW-4	06/18/1998	<50	53	<0.5	<0.5	<0.5	<0.5	<0.5	NA	83.31	16.89	NA	66.42	NA	NA
MW-4	08/31/1998	<50	60	<0.5	<0.5	<0.5	<0.5	<2.5	NA	83.31	18.48	NA	64.83	NA	NA
MW-4	12/21/1998	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	83.31	18.80	NA	64.51	NA	NA
MW-4	03/24/1999	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	NA	83.31	16.70	NA	66.61	NA	NA
MW-4	06/25/1999	<50.0	128	<0.500	<0.500	<0.500	<0.500	<2.00	NA	83.31	18.16	NA	65.15	NA	NA
MW-4	09/24/1999	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	83.31	19.12	NA	64.19	NA	NA
MW-4	12/29/1999	<50.0	169	<0.500	<0.500	<0.500	<0.500	<5.00	NA	83.31	19.08	NA	64.23	NA	NA
MW-4	03/21/2000	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	83.31	16.10	NA	67.21	NA	NA
MW-4	07/26/2000	Obstruction in well		NA	NA	NA	NA	NA	NA	83.31	NA	NA	NA	NA	NA
MW-4	09/06/2000	<50.0	c	<0.500	<0.500	<0.500	<0.500	NA	NA	83.31	18.52	NA	64.79	NA	NA
MW-4	11/29/2000	<50.0	183	<0.500	<0.500	<0.500	<0.500	NA	NA	83.63	18.75	NA	64.88	NA	NA
MW-4	03/06/2001	<50.0	50.9	<0.500	<0.500	<0.500	<0.500	NA	NA	83.63	17.81	NA	65.82	NA	NA
MW-4	**06/19/2001**	**<50**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<0.50**	**83.63**	**18.55**	**NA**	**65.08**	**NA**	**NA**
MW-5	10/10/1996	1,800	<50	34	4.7	11	44	21	5.0**	85.41	21.93	NA	63.48	NA	NA
MW-5	11/07/1996	NA	NA	NA	NA	NA	NA	NA	NA	85.41	21.96	NA	63.45	NA	NA
MW-5	12/18/1997	1,200	<50	15	<1.0	15	<1.0	72	NA	85.41	19.81	NA	65.60	NA	NA
MW-5	04/06/1998	1,000	<50	126	0.5	0.8	1.5	<30	NA	85.41	17.43	NA	67.98	NA	NA
MW-5	06/18/1998	110	100	6.9	<0.5	<0.5	<0.5	<0.5	NA	85.41	19.15	NA	66.26	NA	NA
MW-5	08/31/1998	480	120	5.3	<2.5	<2.5	<2.5	<12	NA	85.41	20.46	NA	64.95	NA	NA
MW-5	12/21/1998	270	100	16	2.9	1.3	<1.0	34	<2.0	85.41	20.91	NA	64.50	NA	NA
MW-5	03/24/1999	143	93.3	2.80	<0.500	0.749	<0.500	<2.00	<5.00	85.41	18.74	NA	66.67	NA	NA
MW-5	06/25/1999	847	125	6.61	<0.500	0.611	<0.500	2.69	<2.00	85.41	20.31	NA	65.10	NA	NA
MW-5	09/24/1999	563	94.0	6.00	<2.50	<2.50	<2.50	25.1	NA	85.41	21.36	NA	64.05	NA	NA
MW-5	12/29/1999	896	173	16.6	1.48	8.92	2.67	61.1	<0.500	85.41	21.41	NA	64.00	NA	NA
MW-5	03/21/2000	858	158	53.7	<1.00	21.4	8.00	11.6	NA	85.41	18.13	NA	67.28	NA	NA
MW-5	07/26/2000	Obstruction in well		NA	NA	NA	NA	NA	NA	85.41	NA	NA	NA	NA	NA
MW-5	09/06/2000	670	231	153	<2.50	7.87	<2.50	NA	NA	85.41	20.33	NA	65.08	NA	NA

WELL CONCENTRATIONS
Former Texaco Service Station
3800 Broadway
Oakland, CA

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	D.O. Readings (ppm)
MW-5	11/29/00	Obstruction in well		NA	NA	NA	NA	NA	NA	85.13	NA	NA	NA	NA	NA
MW-5	03/06/01	Obstruction in well		NA	NA	NA	NA	NA	NA	85.13	NA	NA	NA	NA	NA
MW-5	**06/19/01**	**Obstruction in well**		**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**85.13**	**NA**	**NA**	**NA**	**NA**	**NA**
MW-6	10/10/96	45,000	500	8,300	2,900	810	3,100	190	40**	86.09	22.44	NA	63.65	NA	NA
MW-6	11/07/96	NA	NA	NA	NA	NA	NA	NA	NA	86.09	22.60	NA	63.49	NA	NA
MW-6	12/18/97	60,000	1,900	12,000	9,800	1,800	8,600	<2,000	NA	86.09	22.28	NA	63.81	NA	NA
MW-6	04/06/98	30,500	<50	5,950	3,720	952	3,750	<1,000	NA	86.09	19.90	NA	66.19	NA	NA
MW-6	06/18/98	23,000	1,100	2,600	540	410	1,300	<250	NA	86.09	20.49	NA	65.60	NA	NA
MW-6	08/31/98	17,000	1,800	3,400	460	530	1,800	<250	NA	86.09	21.05	NA	65.04	NA	NA
MW-6	12/21/98	7,900	930	1,900	510	280	730	150	2.6	86.09	21.74	NA	64.35	NA	NA
MW-6	03/24/99	12,200	763	1,970	327	338	794	<40.0	<50.0	86.09	21.18	NA	64.91	NA	NA
MW-6	06/25/99	14,800	1,050	2,040	1,080	406	1,430	<40.0	NA	86.09	21.34	NA	64.75	NA	NA
MW-6	09/24/99	17,200	1,720	2,810	1,330	489	2,340	<50.0	NA	86.09	22.28	NA	63.81	NA	1.0/1.2
MW-6	12/29/99	14,700	1,480	2,790	974	469	1,720	<500	NA	86.09	24.96	NA	61.13	NA	1.3/1.5
MW-6	03/21/00	20,000	1,120	4,160	962	719	2,330	<250	NA	86.09	18.70	NA	67.39	NA	3.0/4.3
MW-6	07/26/00	Well inaccessible		NA	NA	NA	NA	NA	NA	86.09	NA	NA	NA	NA	NA
MW-6	09/06/00	Well inaccessible		NA	NA	NA	NA	NA	NA	86.09	NA	NA	NA	NA	NA
MW-6	11/29/00	22,800	2,060	4,120	2,010	872	3,180	NA	NA	86.48	21.30	NA	65.18	NA	2.0/1.8
MW-6	03/06/01	32,100	2,220	3,760	4,590	1,160	5,360	NA	NA	86.48	19.05	NA	67.43	NA	3.7/4.0
MW-6	**06/19/01**	**40,000**	**<1,500**	**2,800**	**6,000**	**1,200**	**5,300**	**NA**	**<25**	**86.48**	**21.11**	**NA**	**65.37**	**NA**	**3.0/3.4**
MW-7	10/10/96	<50	<50	0.6	<0.5	<0.5	<0.5	<5.0	NA	84.11	20.78	NA	63.33	NA	NA
MW-7	11/07/96	NA	NA	NA	NA	NA	NA	NA	NA	84.11	20.80	NA	63.31	NA	NA
MW-7	12/18/97	<50	<50	<0.5	<0.5	<0.5	<0.5	<30	NA	84.11	17.27	NA	66.84	NA	NA
MW-7	04/06/98	<50	<50	<0.5	<0.5	<0.5	<0.5	<30	NA	84.11	15.91	NA	68.20	NA	NA
MW-7	06/18/98	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NA	84.11	17.95	NA	66.16	NA	NA
MW-7	08/31/98	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	84.11	19.40	NA	64.71	NA	NA

WELL CONCENTRATIONS
Former Texaco Service Station
3800 Broadway
Oakland, CA

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	D.O. Readings (ppm)
MW-7	12/21/98	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	84.11	19.75	NA	64.36	NA	NA
MW-7	03/24/99	<50.0	51.3	<0.500	<0.500	<0.500	<0.500	<2.00	NA	84.11	17.54	NA	66.57	NA	NA
MW-7	06/25/99	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	NA	84.11	19.22	NA	64.89	NA	NA
MW-7	09/24/99	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	84.11	20.18	NA	63.93	NA	1.4/1.6
MW-7	12/29/99	<50.0	99.0	<0.500	<0.500	<0.500	<0.500	<5.00	NA	84.11	20.15	NA	63.96	NA	2.3/1.8
MW-7	03/21/00	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	84.11	16.35	NA	67.76	NA	5.8/9.0
MW-7	07/26/00	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	84.11	18.99	NA	65.12	NA	6.0/6.6
MW-7	09/06/00	<50.0	c	<0.500	<0.500	<0.500	<0.500	NA	NA	84.11	19.49	NA	64.62	NA	4.3/5.0
MW-7	11/29/00	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	NA	NA	84.44	19.52	NA	64.92	NA	4.0/3.7
MW-7	03/06/01	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	NA	NA	84.44	17.15	NA	67.29	NA	4.7/5.1
MW-7	**06/19/01**	**<50**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<0.50**	**84.44**	**19.30**	**NA**	**65.14**	**NA**	**3.8/4.2**
MW-8	10/10/96	17,000	110	1,300	1,200	64	1,300	110	<5.0**	84.01	20.82	NA	63.19	NA	NA
MW-8	11/07/96	NA	NA	NA	NA	NA	NA	NA	NA	84.01	20.44	NA	63.57	NA	NA
MW-8	12/18/97	15,000	630	3,600	1,800	410	930	<600	NA	84.01	19.36	NA	64.65	NA	NA
MW-8	04/06/98	32,300	<50	8,230	5,900	718	2,120	<1,000	NA	84.01	16.19	NA	67.82	NA	NA
MW-8	06/18/98	74,000	<50	5,400	4,500	700	2,200	2,400	NA	84.01	17.75	NA	66.26	NA	NA
MW-8	08/31/98	Well inaccessible		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-8	12/21/98	9,600	1,200	2,600	410	220	300	700	<2.0	84.01	19.48	NA	64.53	NA	NA
MW-8	03/24/99	86,100	2,890	9,890	11,700	1,650	7,130	<200	<250	84.01	17.44	NA	66.57	NA	NA
MW-8	06/25/99	NA	NA	NA	NA	NA	NA	NA	NA	84.01	20.69	20.59	63.40	0.10	NA
MW-8	07/01/99	NA	NA	NA	NA	NA	NA	NA	NA	84.01	20.45	18.56	65.07	1.89	NA
MW-8	09/24/99	NA	NA	NA	NA	NA	NA	NA	NA	84.01	20.98	19.45	64.25	1.53	NA
MW-8	12/29/99	NA	NA	NA	NA	NA	NA	NA	NA	84.01	20.25	19.99	63.97	0.26	NA
MW-8	01/07/00	NA	NA	NA	NA	NA	NA	NA	NA	84.01	21.00	20.60	63.33	0.40	NA
MW-8	NA	Well destroyed		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-9	10/10/96	80	520	2.5	13	2.2	13	<5.0	NA	82.17	18.62	NA	63.55	NA	NA

WELL CONCENTRATIONS
Former Texaco Service Station
3800 Broadway
Oakland, CA

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	D.O. Readings (ppm)
MW-9	11/07/96	NA	NA	NA	NA	NA	NA	NA	NA	NA	63.53	NA	63.53	NA	NA
MW-9	12/18/97	<50	<50	<0.5	<0.5	<0.5	<0.5	<30	NA	82.17	16.42	NA	65.75	NA	NA
MW-9	04/06/98	<50	<50	<0.5	<0.5	<0.5	<0.5	<30	NA	82.17	14.00	NA	68.17	NA	NA
MW-9	06/18/98	<50	100	<0.5	<0.5	<0.5	<0.5	<0.5	NA	82.17	15.33	NA	66.84	NA	NA
MW-9	08/31/98	<50	57	<0.5	<0.5	<0.5	<0.5	<2.5	NA	82.17	17.14	NA	65.03	NA	NA
MW-9	12/21/98	<50	71	<0.5	<0.5	<0.5	<0.5	<2.5	NA	82.17	17.40	NA	64.77	NA	NA
MW-9	03/24/99	<50.0	84.0	<0.500	<0.500	<0.500	<0.500	<2.00	NA	82.17	16.22	NA	65.95	NA	NA
MW-9	06/25/99	<50.0	92.0	<0.500	<0.500	<0.500	<0.500	<2.00	NA	82.17	16.90	NA	65.27	NA	NA
MW-9	09/24/99	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	82.17	17.89	NA	64.28	NA	1.0/1.2
MW-9	12/29/99	<50.0	52.8	<0.500	<0.500	<0.500	<0.500	<5.00	NA	82.17	18.01	NA	64.16	NA	3.3/2.7
MW-9	03/21/00	<50.0	72.4	<0.500	<0.500	<0.500	<0.500	<2.50	NA	82.17	14.80	NA	67.37	NA	3.2/7.3
MW-9	07/26/00	<50.0	83.6	<0.500	<0.500	<0.500	<0.500	<2.50	NA	82.17	17.17	NA	65.00	NA	3.6/1.8
MW-9	09/06/00	<50.0	74.3	<0.500	<0.500	<0.500	<0.500	NA	NA	82.17	17.95	NA	64.22	NA	3.8/4.0
MW-9	11/29/00	<50.0	96.2	<0.500	<0.500	<0.500	<0.500	NA	NA	82.52	18.10	NA	64.42	NA	2.0/2.0
MW-9	03/06/01	<50.0	94.2	<0.500	<0.500	<0.500	<0.500	NA	NA	82.52	16.75	NA	65.77	NA	4.0/4.9
MW-9	**06/19/01**	**<50**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<0.50**	**82.52**	**17.83**	**NA**	**64.69**	**NA**	**3.4/4.0**
MW-10	10/10/96	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	81.83	18.40	NA	63.43	NA	NA
MW-10	11/07/96	NA	NA	NA	NA	NA	NA	NA	NA	81.83	18.43	NA	63.40	NA	NA
MW-10	12/18/97	350	<50	6.9	0.87	0.88	0.77	<30	NA	81.83	16.18	NA	65.65	NA	NA
MW-10	04/06/98	2,300	<50	224	168	81.4	253	<30	NA	81.83	14.39	NA	67.44	NA	NA
MW-10	06/18/98	7,200	320	310	210	83	280	<0.5	NA	81.83	15.11	NA	66.72	NA	NA
MW-10	08/31/98	460	120	51	8.2	5.1	10	<5.0	NA	81.83	17.03	NA	64.80	NA	NA
MW-10	12/21/98	120	79	5.5	<1.0	<1.0	<1.0	8.7	<2.0	81.83	17.32	NA	64.51	NA	NA
MW-10	03/24/99	1,330	923	85.9	42.9	29.7	95.2	20.4	<25.0	81.83	15.25	NA	66.58	NA	NA
MW-10	06/25/99	1,130	167	115	32.6	17.2	36.3	<4.00	NA	81.83	16.82	NA	65.01	NA	NA
MW-10	09/24/99	382	76.7	20.0	<1.00	2.21	1.37	8.83	NA	81.83	17.75	NA	64.08	NA	NA
MW-10	12/29/99	114	107	9.03	<0.500	0.531	<0.500	<5.00	NA	81.83	18.13	NA	63.70	NA	NA

WELL CONCENTRATIONS
Former Texaco Service Station
3800 Broadway
Oakland, CA

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	D.O. Readings (ppm)
MW-10	03/21/2000	1,270	194	86.3	52.3	38.1	102	19.5	NA	81.83	14.22	NA	67.61	NA	NA
MW-10	07/26/2000	562	192	74.8	7.51	24.3	14.8	13.3	<1.00b	81.83	16.61	NA	65.22	NA	NA
MW-10	09/06/2000	606	205	93.4	5.36	16.7	38.9	NA	NA	81.83	17.08	NA	64.75	NA	NA
MW-10	11/29/2000	583	258	40.0	1.46	4.69	15.8	NA	NA	82.16	16.90	NA	65.26	NA	NA
MW-10	03/06/2001	837	199	34.2	26.4	20.8	27.5	NA	NA	82.16	14.80	NA	67.36	NA	NA
MW-10	**06/19/2001**	**400**	**<50**	**47**	**2.6**	**8.8**	**17**	**NA**	**0.60**	**82.16**	**16.85**	**NA**	**65.31**	**NA**	**NA**
MW-11	08/08/2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	25.61	NA	NA	NA	NA
MW-11	08/16/2000	<50.0	56.80	<0.500	<0.500	<0.500	<0.500	NA	NA	NA	25.50	NA	NA	NA	NA
MW-11	09/06/2000	<50.0	c	<0.500	<0.500	<0.500	<0.500	NA	NA	NA	25.90	NA	NA	NA	NA
MW-11	11/29/2000	<50.0	63.8	<0.500	<0.500	<0.500	<0.500	NA	NA	90.63	25.80	NA	64.83	NA	NA
MW-11	03/06/2001	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	NA	NA	90.63	23.32	NA	67.31	NA	NA
MW-11	**06/19/2001**	**<50**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<0.50**	**90.63**	**25.57**	**NA**	**65.06**	**NA**	**NA**

WELL CONCENTRATIONS
Former Texaco Service Station
3800 Broadway
Oakland, CA

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	D.O. Readings (ppm)

Abbreviations:
TPPH= Total petroleum hydrocarbons as gasoline by EPA Method 8260B; prior to June 19, 2001, analyzed by EPA method 8015.
TEPH = Total petroleum hydrocarbons as diesel by modified EPA Method 8015
BTEX = benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B; prior to June 19, 2001, analyzed by EPA method 8020.
MTBE = methyl-tertiary-butyl ether
TOC = Top of Casing Elevation
SPH = Separate-Phase Hydrocarbons
GW = Groundwater
D.O. = Dissolved Oxygen
ug/L = parts per billion
ppm = parts per million
msl = Mean sea level
ft = Feet
<n = Below detection limit
D = Duplicate sample
NA = Not applicable
n/n = Pre-purge/Post-purge D.O. reading.

Notes:
* Free product could not be accurately measured (>2.0 feet of product in well).
** MTBE confirmation by 8240.
a = TOC for MW-2 has changed.
b = This sample analyzed outside of EPA recommended hold time.
c = During shipment by laboratory, sample containers for MW-4, MW-7, and MW-11 were broken.
d = Sample containers for TEPH broke during transport to lab.
Survey information provided by Toxichem Management Systems, Inc., on December 11, 2000.

KIFF ANALYTICAL LLC

Report Number : 20917
Date : 7/6/2001

Nick Sudano
Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112-1105

Subject : 7 Water Samples
Project Name : 3800 Broadway, Oakland
Project Number : 010619-C1
P.O. Number : 93995026

Dear Mr. Sudano,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 20917
Date : 7/6/2001

Subject : 7 Water Samples
Project Name : 3800 Broadway, Oakland
Project Number : 010619-C1
P.O. Number : 93995026

Case Narrative

The Method Reporting Limit for TPH as Diesel has been increased due to interference from Gasoline-Range Hydrocarbons for the following sample :

MW-6

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 916-297-4800

KIFF ANALYTICAL LLC

Report Number : 20917

Date : 7/6/2001

Project Name : **3800 Broadway, Oakland**

Project Number : **010619-C1**

Sample : **MW-1** Matrix : Water Lab Number : 20917-01

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Methyl-t-butyl ether (MTBE)	**0.87**	0.50	ug/L	EPA 8260B	7/1/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	7/1/2001
Toluene - d8 (Surr)	95.7		% Recovery	EPA 8260B	7/1/2001
4-Bromofluorobenzene (Surr)	99.2		% Recovery	EPA 8260B	7/1/2001
TPH as Diesel	**330**	50	ug/L	M EPA 8015	7/1/2001

Joel Kiff

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 20917

Date : 7/6/2001

Project Name : **3800 Broadway, Oakland**

Project Number : **010619-C1**

Sample : **MW-4** Matrix : Water Lab Number : 20917-02

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	7/1/2001
Toluene - d8 (Surr)	97.2		% Recovery	EPA 8260B	7/1/2001
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	7/1/2001
TPH as Diesel	**< 50**	50	ug/L	M EPA 8015	7/1/2001

Joel Kiff

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 20917

Date : 7/6/2001

Project Name : **3800 Broadway, Oakland**

Project Number : **010619-C1**

Sample : **MW-6** Matrix : Water Lab Number : 20917-03

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**2800**	25	ug/L	EPA 8260B	7/1/2001
Toluene	**6000**	25	ug/L	EPA 8260B	7/1/2001
Ethylbenzene	**1200**	25	ug/L	EPA 8260B	7/1/2001
Total Xylenes	**5300**	25	ug/L	EPA 8260B	7/1/2001
Methyl-t-butyl ether (MTBE)	**< 25**	25	ug/L	EPA 8260B	7/1/2001
TPH as Gasoline	**40000**	5000	ug/L	EPA 8260B	7/1/2001
Toluene - d8 (Surr)	99.3		% Recovery	EPA 8260B	7/1/2001
4-Bromofluorobenzene (Surr)	98.7		% Recovery	EPA 8260B	7/1/2001
TPH as Diesel	**< 1500**	1500	ug/L	M EPA 8015	7/1/2001

Joel Kiff

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 20917

Date : 7/6/2001

Project Name : **3800 Broadway, Oakland**

Project Number : **010619-C1**

Sample : **MW-7** Matrix : Water Lab Number : 20917-04

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	7/1/2001
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	7/1/2001
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	7/1/2001
TPH as Diesel	**< 50**	50	ug/L	M EPA 8015	7/1/2001

Joel Kiff

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 20917

Date : 7/6/2001

Project Name : **3800 Broadway, Oakland**

Project Number : **010619-C1**

Sample : **MW-9** Matrix : Water Lab Number : 20917-05

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	7/1/2001
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	7/1/2001
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	7/1/2001
TPH as Diesel	**< 50**	50	ug/L	M EPA 8015	7/1/2001

Joel Kiff

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 20917

Date : 7/6/2001

Project Name : **3800 Broadway, Oakland**

Project Number : **010619-C1**

Sample : **MW-10** Matrix : Water Lab Number : 20917-06

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**47**	0.50	ug/L	EPA 8260B	7/1/2001
Toluene	**2.6**	0.50	ug/L	EPA 8260B	7/1/2001
Ethylbenzene	**8.8**	0.50	ug/L	EPA 8260B	7/1/2001
Total Xylenes	**17**	0.50	ug/L	EPA 8260B	7/1/2001
Methyl-t-butyl ether (MTBE)	**0.60**	0.50	ug/L	EPA 8260B	7/1/2001
TPH as Gasoline	**400**	50	ug/L	EPA 8260B	7/1/2001
Toluene - d8 (Surr)	99.5		% Recovery	EPA 8260B	7/1/2001
4-Bromofluorobenzene (Surr)	98.4		% Recovery	EPA 8260B	7/1/2001
TPH as Diesel	**< 50**	50	ug/L	M EPA 8015	7/1/2001

Joel Kiff

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 20917

Date : 7/6/2001

Project Name : **3800 Broadway, Oakland**

Project Number : **010619-C1**

Sample : **MW-11** Matrix : Water Lab Number : 20917-07

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	7/1/2001
Toluene - d8 (Surr)	99.7		% Recovery	EPA 8260B	7/1/2001
4-Bromofluorobenzene (Surr)	98.9		% Recovery	EPA 8260B	7/1/2001
TPH as Diesel	**< 50**	50	ug/L	M EPA 8015	7/1/2001

Joel Kiff

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 20917

Date : 7/6/2001

Project Name : **3800 Broadway, Oakland**

Project Number : **010619-C1**

20917 Quality Control Data - Method Blank

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel	**< 50**	50	ug/L	M EPA 8015	6/30/2001

Approved By: Joel Kiff

Report Number : 20917

Date : 7/6/2001

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **3800 Broadway, Oakland**

Project Number : **010619-C1**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Spike Recovery Data														
TPH as Diesel	Blank	<50	1000	1000	868	856	ug/L	M EPA 8015	6/27/2001	86.8	85.6	1.44	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 20917

Date : 7/6/2001

Project Name : **3800 Broadway, Oakland**

Project Number : **010619-C1**

20917 Quality Control Data - Method Blank

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	7/1/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	7/1/2001
Toluene - d8 (Surr)	95.8		% Recovery	EPA 8260B	7/1/2001
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	7/1/2001

Joel Kiff

Approved By: Joel Kiff

Report Number : 20917

Date : 7/6/2001

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **3800 Broadway, Oakland**

Project Number : **010619-C1**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Spike Recovery Data														
Benzene	20937-04	<0.50	19.3	19.7	16.7	17.4	ug/L	EPA 8260B	6/30/2001	86.6	88.1	1.72	70-130	25
Toluene	20937-04	<0.50	19.3	19.7	17.8	18.1	ug/L	EPA 8260B	6/30/2001	92.6	91.8	0.976	70-130	25
Tert-Butanol	20937-04	<5.0	96.3	98.6	87.6	89.4	ug/L	EPA 8260B	6/30/2001	91.0	90.7	0.330	70-130	25
Methyl-t-Butyl Ether	20937-04	67	19.3	19.7	68.4	68.0	ug/L	EPA 8260B	6/30/2001	7.22	4.61	44.0	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 20917

Date : 7/6/2001

QC Report : Laboratory Control Sample (LCS)

Project Name : **3800 Broadway, Oakland**

Project Number : **010619-C1**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	200	ug/L	EPA 8260B	6/30/2001	85.9	70-130
Toluene	200	ug/L	EPA 8260B	6/30/2001	90.2	70-130
Tert-Butanol	1000	ug/L	EPA 8260B	6/30/2001	89.6	70-130
Methyl-t-Butyl Ether	200	ug/L	EPA 8260B	6/30/2001	87.2	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

LAB: Kiff

EQUIVA Services LLC Chain Of Custody Record

Lab Identification (if necessary):
Address:
City, State, Zip:

Equiva Project Manager to be Invoiced: Karen Petryna 20917

DATE: 6-19-01
PAGE: 1 of 1

Consultant Company: Blaine Tech Services
Address: 1860 Rogers Avenue
City: San Jose, CA 95112
Telephone: 408-573-0555 Fax: 408-573-7771 E-mail: nsadano@blainetech.com

Site Location (Street and City): 3800 Broadway, Oakland
Project Contact (Signature): Nick Sadano
Consultant Project No.: BTS # 010619-C1
Sampler Name (Print): Hank Castro

TURNAROUND TIME (BUSINESS DAYS): [X] 10 DAYS [ ] 5 DAYS [ ] 72 HOURS [ ] 48 HOURS [ ] 24 HOURS [ ] LESS THAN 24 HOURS

[ ] LA - RWQCB REPORT FORMAT [ ] LIST AGENCY:

GC/MS MTBE CONFIRMATION: HIGHEST X Separate HIGHEST per BORING ____ ALL ____

SPECIAL INSTRUCTIONS OR NOTES: TEMPERATURE ON RECEIPT C°
Confirm the highest detected MTBE concentration by 8260 or if the detection limit is greater than 5ppb.

REQUESTED ANALYSIS

Field Sample Identification	Sampling Date	Sampling Time	Matrix	No. of Cont.	TPH - Gas, Purgeable (8015m)	BTEX (8021B)	MTBE (8021B)	MTBE (8260B)	TPH - Diesel, Extractable (8015m)	Oxygenates (5) by 8260	Ethanol, Methanol (8015B)	1,2-DCA & EDB by 8010	MTBE (8260B) Confirmation, See Note	FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes
MW-1	6/19	1310	W	6	X	X	X		X				X	01
MW-4		1245		6	X	X	X		X				X	02
MW-6		1330		6	X	X	X		X				X	03
MW-7		1140		6	X	X	X		X				X	04
MW-9		1220		6	X	X	X		X				X	05
MW-10		1200		6	X	X	X		X				X	06
MW-11		1117		6	X	X	X		X				X	07

Relinquished by: (Signature) Hank Castro
Relinquished by: (Signature)
Relinquished by: (Signature)

Received by: (Signature) Date: Time:
Received by: (Signature) Date: Time:
Received by: (Signature) Date: Time:

DISTRIBUTION: White with Shipment, Green to File, Yellow and Pink to Client.

LAB: Kiff

EQUIVA Services LLC Chain Of Custody Record

Lab Identification (if necessary):

Address:

City, State, Zip:

Equiva Project Manager to be Invoiced: Karen Petryna 20917

☒ SCIENCE & ENGINEERING
☐ TECHNICAL SERVICES
☐ CRMT HOUSTON

INCIDENT NUMBER (S&E ONLY): 9 3 9 9 5 0 2 6

SAP or CRMT NUMBER (TS/CRMT):

DATE: 6-19-01

PAGE: 1 of 1

CONSULTANT COMPANY: Blaine Tech Services

ADDRESS: 1680 Rogers Avenue

CITY: San Jose, CA 95112

TELEPHONE: 408-573-0555 FAX: 408-573-7771 E-MAIL: nsudano@blainetech.com

SITE ADDRESS (Street and City): 3800 Broadway, Oakland

PROJECT CONTACT (Report to): Nick Sudano

CONSULTANT PROJECT NO.: BTS # 010619-C1

SAMPLER NAME(S) (Print): Hank Castro

LAB USE ONLY

TURNAROUND TIME (BUSINESS DAYS): ☒ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

GC/MS MTBE CONFIRMATION: HIGHEST ____ HIGHEST per BORING ____ ALL ____

SPECIAL INSTRUCTIONS OR NOTES: TEMPERATURE ON RECEIPT C°

REQUESTED ANALYSIS

LAB ID	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH - Gas, Purgeable (8015m)	BTEX (8020B)	MTBE (8021B)	MTBE (8260B)	TPH - Diesel, Extractable (8015m)	Oxygenates (5) by 8260	Ethanol, Methanol (8015B)	1,2-DCA & EDB by 8010	MTBE (8260B) Confirmation, See Note	FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes	
X	MW-1	6/19	1310	W	6	X	X			X						01
X	MW-4		1245		6	X	X			X						02
X	MW-6		1330		6	X	X			X						03
X	MW-7		1140		6	X	X			X						04
X	MW-9		1220		6	X	X			X						05
X	MW-10		1200		6	X	X			X						06
X	MW-11		1117		6	X	X			X						07

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Hank Cast			
	Harold Brewer (Kiff) Analytical	062001	1035

DISTRIBUTION: White with final report, Green to File, Yellow and Pink to Client.

10/16/00 Revision

Q&Q Graphic (714) 866-0702

WELL GAUGING DATA

Project # 010619-C1 Date 6-19-01 Client Equiva

Site 3800 Broadway

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	
MW-1	2					21.78	28.80		
MW-4	2					18.55	35.00		
MW-5	2	Obstruction @ 10.20		~~[illegible]~~		—	10.20		
MW-6	2					21.11	32.65		
MW-7	2					19.30	33.87		
MW-9	2					17.83	34.10		
MW-10	2					16.85	33.40		
MW-11	2					25.57	39.30		

EQUIVA WELL MONITORING DATA SHEET

BTS #: 010619-C1	Site: 3800 Broadway
Sampler: Hank	Date: 6-19-01
Well I.D.: MW-1	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 28.80	Depth to Water: 21.75
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (Yes) HACH

Purge Method:
- Bailer
- X Disposable Bailer
- Middleburg
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:
- Bailer
- X Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other: _____

1.1 (Gals.) X 3 = 3.3 Gals.
1 Case Volume — Specified Volumes — Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1255	68.7	6.8	1069	>200	1.1	
1300	68.1	6.8	1042	>200	2.2	
1305	68.0	6.7	1109	>200	3.5	

Did well dewater? Yes (No) Gallons actually evacuated: 3.5

Sampling Time: 1310 Sampling Date: 6-19-01

Sample I.D.: MW-1 Laboratory: Sequoia Columbia Other Kiff

Analyzed for: (TPH-G) (BTEX) MTBE (TPH-D) Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	(Pre-purge:)	mg/L	(Post-purge:)	mg/L
O.R.P. (if req'd):	(Pre-purge:)	mV	(Post-purge:)	mV

EQUIVA WELL MONITORING DATA SHEET

BTS #: 010619-C1	Site: 3800 Broadway
Sampler: Hank	Date: 6-19-01
Well I.D.: MW-4	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 35.00	Depth to Water: 18.55
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Purge Method:
- Bailer
- X Disposable Bailer
- Middleburg
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:
- Bailer
- X Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other: _____

2.6 (Gals.) X 3 = 7.8 Gals.
1 Case Volume — Specified Volumes — Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1232	69.8	7.0	473	>200	2.6	
1237	69.8	7.0	491	>200	5.2	
1240	70.0	6.9	481	>200	8	

Did well dewater? Yes (No) Gallons actually evacuated: 8

Sampling Time: 1245 Sampling Date: 6-19-01

Sample I.D.: MW-4 Laboratory: Sequoia Columbia Other Kiff A

Analyzed for: (TPH-G) (BTEX) MTBE (TPH-D) Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	(Pre-purge:)	mg/L	(Post-purge:)	mg/L
O.R.P. (if req'd):	(Pre-purge:)	mV	(Post-purge:)	mV

EQUIVA WELL MONITORING DATA SHEET

BTS #: 010619-C1	Site: 3800 Broadway
Sampler: Hank	Date: 6-19-01
Well I.D.: MW-5	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 10.20	Depth to Water: Dry
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Purge Method:
- Bailer
- ✗ Disposable Bailer
- Middleburg
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:
- Bailer
- ✗ Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other: _____

_____(Gals.) X 3 = _____ Gals.
1 Case Volume — Specified Volumes — Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
		Obstruction @ 10.20 feet				

Did well dewater? Yes (No) Gallons actually evacuated:

Sampling Time: Sampling Date: 6-19-01

Sample I.D.: MW-5 Laboratory: Sequoia Columbia Other Kiff

Analyzed for: (TPH-G) BTEX MTBE (TPH-D) Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	(Pre-purge:)	mg/L	(Post-purge:)	mg/L
O.R.P. (if req'd):	(Pre-purge:)	mV	(Post-purge:)	mV

EQUIVA WELL MONITORING DATA SHEET

BTS #: 010619-C1	Site: 3800 Broadway
Sampler: Hank	Date: 6-19-01
Well I.D.: MW-6	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 32.65	Depth to Water: 21.11
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Purge Method:
- Bailer
- X Disposable Bailer
- Middleburg
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:
- Bailer
- X Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other: _____

1.8 (Gals.) X 3 = 5.4 Gals.
1 Case Volume — Specified Volumes — Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1318	69.4	6.6	1011	>200	1.8	
1322	69.5	6.5	1042	>200	3.6	
1326	69.6	6.6	1030	>200	5.5	
		Removed & Replaced Stinger				

Did well dewater? Yes (No) Gallons actually evacuated: 5.5

Sampling Time: 1330 Sampling Date: 6-19-01

Sample I.D.: MW-6 Laboratory: Sequoia Columbia Other Kiff

Analyzed for: (TPH-G) BTEX MTBE (TPH-D) Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	(Pre-purge):	3.0 mg/L	(Post-purge):	3.4 mg/L
O.R.P. (if req'd):	(Pre-purge):	-42 mV	(Post-purge):	-60 mV

EQUIVA WELL MONITORING DATA SHEET

BTS #: 010619-C1	Site: 3800 Broadway
Sampler: Hank	Date: 6-19-01
Well I.D.: MW-7	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 19.30	Depth to Water: 33.57
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Purge Method:
- Bailer
- X Disposable Bailer
- Middleburg
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:
- Bailer
- X Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other: _____

2.3 (Gals.) X 3 = 6.9 Gals.
1 Case Volume — Specified Volumes — Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1125	69.1	6.7	503	>200	2.3	
1129	69.0	6.7	519	>200	4.6	
1135	69.0	6.6	532	>200	7	

Did well dewater? Yes (No) Gallons actually evacuated: 7

Sampling Time: 1140 Sampling Date: 6-19-01

Sample I.D.: MW-7 Laboratory: Sequoia Columbia Other Kiff

Analyzed for: (TPH-G) (BTEX) MTBE (TPH-D) Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	(Pre-purge:)	3.8 mg/L	(Post-purge:)	4.2 mg/L
O.R.P. (if req'd):	(Pre-purge:)	134 mV	(Post-purge:)	100 mV

EQUIVA WELL MONITORING DATA SHEET

BTS #: 010619-C1	Site: 3800 Broadway
Sampler: Hank	Date: 6-19-01
Well I.D.: MW-9	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 34.10	Depth to Water: 17.83
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Purge Method:
- Bailer
- X Disposable Bailer
- Middleburg
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:
- Bailer
- X Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other: _____

2.6 (Gals.) X 3 = 7.8 Gals.
1 Case Volume — Specified Volumes — Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1207	69.7	6.9	414	>200	2.6	
1212	69.6	6.8	428	>200	5.2	
1216	69.7	6.9	421	>200	8	

Did well dewater? Yes (No) Gallons actually evacuated: 8

Sampling Time: 1220 Sampling Date: 6-19-01

Sample I.D.: MW-9 Laboratory: Sequoia Columbia Other Kiff

Analyzed for: (TPH-G) (BTEX) MTBE (TPH-D) Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	(Pre-purge):	3.4 mg/L	(Post-purge):	4.0 mg/L
O.R.P. (if req'd):	(Pre-purge):	-81 mV	(Post-purge):	-52 mV

EQUIVA WELL MONITORING DATA SHEET

BTS #: 010619-C1	Site: 3800 Broadway
Sampler: Hank	Date: 6-19-01
Well I.D.: MW-10	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 33.40	Depth to Water: 16.85
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Purge Method:
- Bailer
- X Disposable Bailer
- Middleburg
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:
- Bailer
- X Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other: _____

2.6 (Gals.) X 3 = 7.8 Gals.
1 Case Volume — Specified Volumes — Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1145	68.7	6.9	637	>200	2.6	
1149	68.9	6.9	648	>200	5.2	
1155	68.7	6.9	621	>200	8	

Did well dewater? Yes (No) Gallons actually evacuated: 8

Sampling Time: 1200 Sampling Date: 6-19-01

Sample I.D.: MW-10 Laboratory: Sequoia Columbia Other Kiff

Analyzed for: (TPH-G) BTEX MTBE (TPH-D) Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

EQUIVA WELL MONITORING DATA SHEET

BTS #: 010614-C1	Site: 3800 Broadway
Sampler: Hank	Date: 6-19-01
Well I.D.: MW-11	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 39.30	Depth to Water: 25.57
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Purge Method:
- Bailer
- X Disposable Bailer
- Middleburg
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other ___

Sampling Method:
- Bailer
- X Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other: ___

2.1 (Gals.) X 3 = 6.3 Gals.
1 Case Volume — Specified Volumes — Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1104	70.5	6.6	745	>200	2.1	
1108	70.2	6.5	791	>200	4.2	
1112	70.4	6.6	780	>200	6.5	

Did well dewater? Yes (No) Gallons actually evacuated: 6.5

Sampling Time: 1117 Sampling Date: 6-19-01

Sample I.D.: MW-11 Laboratory: Sequoia Columbia Other Kiff A

Analyzed for: (TPH-G) BTEX MTBE (TPH-D) Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

Delta
Environmental
Consultants, Inc.

3164 Gold Camp Drive
Suite 200
Rancho Cordova, CA 95670-6021
U.S.A.
916 638-2085
FAX. 916/638-8385

Alameda County
SEP 27 2002
Environmental Health

September 25, 2002

Mr. Barney Chan
Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: *Monitoring Well Installation Report*
Former Texaco Service Station No. 211283
3810 Broadway
Oakland, California 94611
Delta Project No. D211-283-H

Mr. Chan:

At the request of Chevron Products Company (Chevron), Delta Environmental Consultants, Inc. (Delta) installed two monitoring wells at the subject site. The location of the site is presented on Figure 1 and site features are shown on Figure 2. The scope of work included drill out and reconstruction of damaged monitoring well MW-5, and install a replacement well within the former excavation. This report includes the results of drilling and well installation activities conducted on May 30, 2002.

The work was conducted in accordance with a workplan submitted to your agency by Toxichem Management Services (Toxichem). Toxichem's workplan was submitted in conjunction with their Second Quarter 2001 Quarterly Monitoring Report, dated August 8, 2001. Alameda County Health Care Services (ACHCS) approved the workplan in a letter dated May 9, 2002. The well installation was permitted with Alameda County Department of Public Works. Copies of the ACHCS letter and the well installation permits are included in Enclosure A.

Site Description

According to files obtained from Chevron, the subject site operated as a Texaco Service Station from approximately 1963 to 1985. Currently, the site operates as a retail gasoline station and automobile repair facility. The site consists of a station building with two service bays, two dispenser islands, and two 10,000-gallon underground storage tanks (USTs) that share a common pit near the northern site boundary. Pertinent site features are shown on Figure 2.

Previous Environmental Work

A total of five USTs were installed in 1963 including four 6,000-gallon USTs and one 550-gallon used-oil UST. The four 6,000-gallon USTs were removed from the site in February 1980. The 550-gallon used-oil UST was removed in May 1991. During the removal of the used-oil UST, soil impacted with petroleum hydrocarbons was excavated and removed.

In October 1991, groundwater monitoring well MW-1 was installed by Harza Kaldveer following the removal of the used-oil UST. In January 1992, groundwater monitoring well MW-2 was installed by Harza Kaldveer to further access groundwater quality in the vicinity of the former used-oil UST. Petroleum hydrocarbons were not detected in soil samples analyzed from well borings MW-1 and MW-2.

In September 1995, McLaren Hart installed soil borings B-1 through B-6. Encountered soils consisted of clay to silty sands. Concentrations of benzene and total petroleum hydrocarbons as gasoline (TPHg) were detected in soil samples submitted from B-1, B-2, B-4, and B-5. In October 1995, McLaren Hart installed wells MW-3 and MW-4 in response to hydrocarbon impacts observed in borings B-1 through B-6. A soil sample from MW-3 contained concentrations of benzene and TPHg. Wells MW-1 and MW-2 were redeveloped as part of a monitoring and sampling program and upon redevelopment of MW-2, liquid-phase petroleum hydrocarbons (LPH) were observed in the well. Soil analytical results from the installation of borings B-1 through B-6 and MW-3 and MW-4 is included in Enclosure B.

In September 1996, Fluor Daniel GTI installed monitoring wells MW-5 through MW-10 to evaluate the lateral extent of dissolved petroleum hydrocarbons in groundwater. Well MW-6 was installed directly east of the former UST basin. Low-level detections of benzene and TPHg were reported in soil samples collected from MW-6. Concentrations of benzene and TPHg were reported in soil samples collected from MW-8, located near the northern end of the dispenser islands. Soil samples collected from off site wells MW-7 and MW-10 did not contain concentrations of petroleum hydrocarbons.

During 1999, wells MW-2, MW-3, and MW-8 contained LPH for four consecutive quarters. Observed LPH thickness ranged between 0.04 and 1.89 feet.

In February 2000, wells MW-3 and MW-8 were destroyed by Toxichem due to their location within the proposed limits of a large scale overexcavation. In March 2000, soil within the former UST basin was overexcavated to a depth of 22 feet bsg and removed from the site. Approximately 1,400 cubic yards of impacted soil were disposed of at an appropriate treatment, storage, and disposal facility. During the overexcavation of the former UST basin, well MW-2 was damaged and later destroyed. Limits of overexcavation are shown on Figure 2.

In August 2000, Toxichem installed off-site monitoring well MW-11. Concentrations of petroleum hydrocarbons were not detected in soil samples submitted from MW-11.

Soil Borings

On May 30, 2002, Delta supervised the overdrilling of well MW-5 to an approximate depth of 36 feet bsg. The well was drilled out one foot past the installed well casing to remove the annular seal, sand pack, and well casing by Cascade Drilling (C57 #717510) of Rancho Cordova, California. The borehole was backfilled approximately six feet bsg (from 30 to 36 feet bsg) with Lonestar #3 sand. Well MW-5B was reconstructed in the same bore-hole to a depth of approximately 30 feet bsg. Well MW-12 was installed near the southern end of the western dispenser island in the former excavation to an approximate depth of 29.5 feet bsg. Well MW-12 was installed to monitor concentrations in the former source area since MW-3 was destroyed during overexcavation in 2000. Field methods and procedures used by Delta during the drilling activities are summarized in Enclosure C. Logs of the borings are included in Enclosure D.

Monitoring Well Construction

Monitoring wells MW-5B and MW-12 were constructed of 2-inch diameter, Schedule 40 polyvinyl chloride (PVC) casing. The wells were screened with 20 feet (approximately 10 to 30 feet bsg) of 0.020-inch machine-slotted well screen. The annuluses of both wells were backfilled with clean Monterey sand to two feet above the top of the well screen followed by a two-foot thick bentonite transition seal. The upper six feet of annulus were backfilled to surface grade with neat cement containing approximately five percent bentonite powder. The wells were completed with locking well caps and traffic-rated well boxes set flush grade in concrete. Well construction details are included in Enclosure D.

Soil Sample Analytical Results

Discrete soil samples were not collected from well borings MW-5B or MW-12. Well MW-5 was a re-construction and MW-12 was installed in gravel backfill from the overexcavation so soil was not available for sampling. One composite soil sample (SP A-D) was collected from the drill cuttings and analyzed by Lancaster Laboratories (Lancaster) in Lancaster, Pennsylvania, for benzene, TPH as gasoline range organics (TPH-GRO), and total lead. Table 1 presents the results of the composite soil sample. A copy of the analytical report is included in Enclosure E.

Disposal of Soil Cuttings and Decontamination Water

Approximately two cubic yards of soil cuttings were generated during drilling activities. The cuttings were placed in eight 55-gallon DOT drums and stored at the site pending disposal. Approximately 100 gallons of decontamination water generated during steam cleaning of augers were placed in two 55-gallon DOT drums and stored at the site pending disposal. On June 7, 2002, Integrated Wastestream Management removed and transported 10 drums to Republican Services VRL in Livermore, California. Copies of the Certificates of Disposal are included in Enclosure F.

Well Survey

On June 24, 2002 monitoring wells MW-5B and MW-12 were surveyed by Morrow Surveying of West Sacramento, California relative to a City of Oakland benchmark. In accordance with State Assembly Bill AB2886, longitude and latitude coordinates were recorded from GPS observations along with well box and top of casing elevation relative to mean sea level. The well survey is presented in Enclosure G.

Well Development, Sampling, and Groundwater Level Measurements

On June 25, 2002, Gettler-Ryan, Inc. developed and sampled the newly installed wells, MW-5B and MW-12, in conjunction with the quarterly monitoring and sampling event conducted at the site. Field methods and procedures used during the development and sampling of the wells are included in Enclosure C.

Groundwater elevations were calculated between 64.81 and 65.54 feet above mean sea level. Based and the June 25, 2002 monitoring event, groundwater beneath the site appears to flow towards the southwest and northeast at an approximate gradient of 0.01. Groundwater monitoring results are presented in Table 2. Groundwater monitoring field data sheets including well development data for MW-5B and MW-12 are provided in Enclosure H. A groundwater elevation contour map constructed using data collected on June 25, 2002 is included as Figure 3.

Groundwater Sample Analytical Results

On June 25, 2002 groundwater samples were collected from wells MW-1, MW-4, MW-5B, MW-6, MW-7, and MW-9 through MW-12. Groundwater samples were submitted to Lancaster for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8021 and TPH-GRO and TPH as diesel range organics (TPH-DRO) by DHS LUFT Method.

Laboratory chemical analyses of groundwater samples collected from wells MW-1, MW-4, MW-7, MW-9, and MW-11 did not detect concentrations of benzene, TPH-GRO or MTBE at or above the laboratory reporting limits. Benzene was detected in four of the nine groundwater samples analyzed at concentrations ranging between 89 and 2,200 micrograms per liter (µg/L). Concentrations of TPH-GRO ranging from 660 to 21,000 µg/L were detected in four of the nine groundwater samples analyzed. Concentrations of TPH-DRO ranging between 100 and 2,500 µg/L were detected in seven of the nine groundwater samples analyzed. The fuel oxygenate MTBE was detected in two groundwater samples collected at concentrations of 11 and 130 µg/L from wells MW-12 and MW-5B, respectively. The highest benzene, TPH-GRO, and TPH-DRO concentrations were detected in groundwater collected from well MW-6. Table 2 presents the groundwater analytical results. Copies of the groundwater analytical results are included in Enclosure I.

Conclusions/Recommendations

The groundwater flow direction in the site vicinity is expected to be toward the southwest based on topography (Figure 1). During the June 25, 2002 monitoring event, groundwater beneath the site appeared to be mounded in the vicinity of well MW-12, located in the backfill of the former excavation. The mounding may be due to groundwater moving through the higher permeable material of the excavation and backing-up when in contact with native soil southwest of the former excavation.

Based on the groundwater analytical results from the June 25, 2002 sampling event, it appears that groundwater in the vicinity of well MW-6 continues to be impacted by residual hydrocarbons in excess of 1,000 µg/L. However, downgradient concentrations measured at MW-10 are more than one order of magnitude less. Prior to proposing additional site assessment, Delta recommends that one full year of groundwater monitoring be performed to provide seasonal concentration trends.

Remarks/Signatures

The interpretations contained in this report represent our professional opinions, and are based in part, on information supplied by the client. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

If you have any questions regarding this project, please contact Todd Del Frate at (916) 536-2612.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

William Slowik
Staff Scientist

Todd A. Del Frate, R.G.
Project Manager
California Registered Geologist No. 7394

REGISTERED GEOLOGIST
TODD ANDREW DEL FRATE
No. 7394
STATE OF CALIFORNIA

WS (LRP001.D211-283)
Enclosures

cc: Ms. Karen Streich – Chevron Products Company
Mr. Joe Zadik – 8255 San Leandro Street, Oakland, CA 94621

GENERAL NOTES:
BASE MAP FROM U.S.G.S.
OAKLAND WEST & EAST, CA.
7.5 MINUTE TOPOGRAPHIC
PHOTOREVISED 1980

QUADRANGLE LOCATION

N

0 2000 FT

SCALE 1:24,000

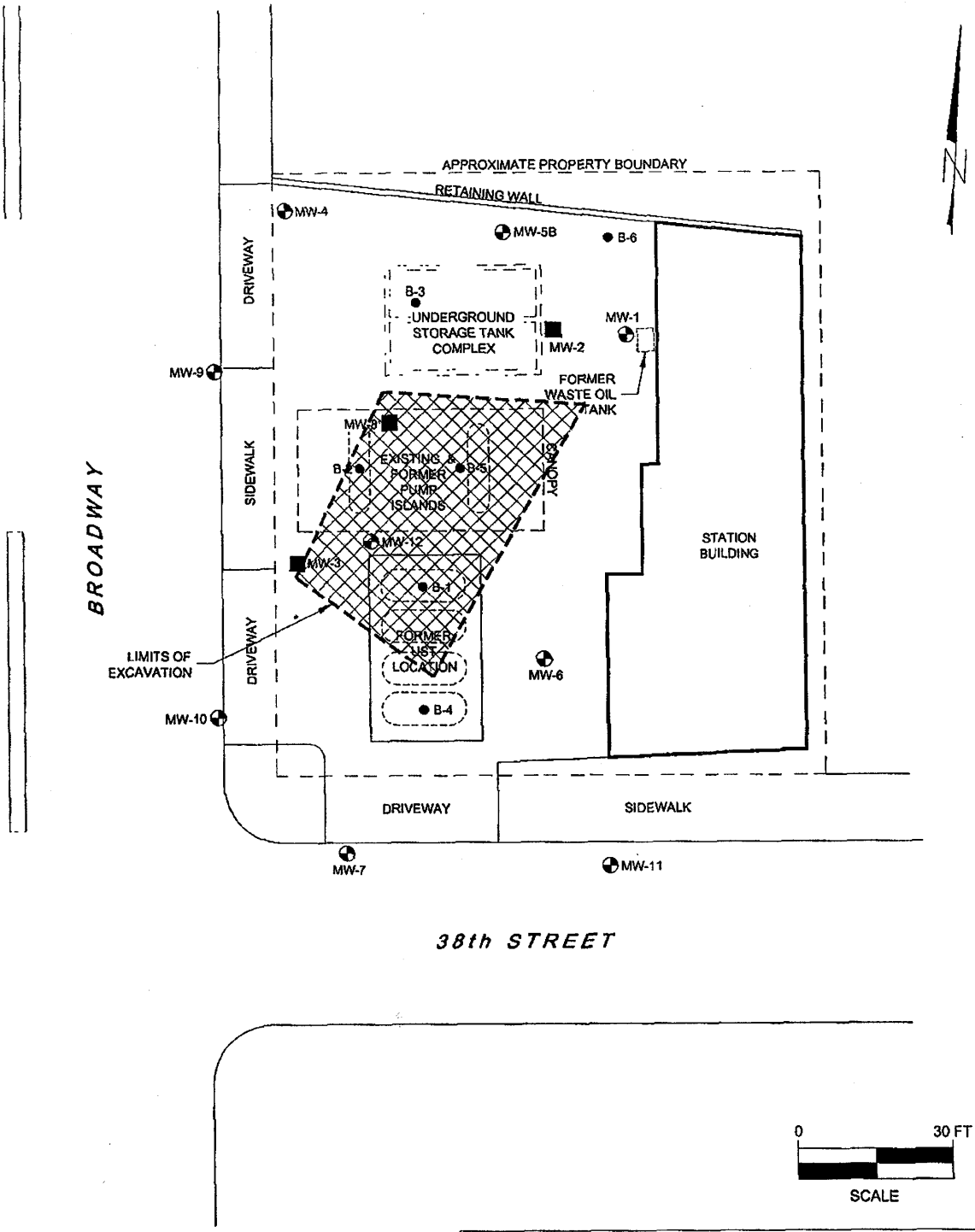
FIGURE 1

SITE LOCATION MAP

FORMER TEXACO SERVICE STATION 21-1283
3810 BROADWAY
OAKLAND, CA.

PROJECT NO. D211-283	DRAWN BY M L 6/25/02
FILE NO D211283A	PREPARED BY W.S
REVISION NO 1	REVIEWED BY

Delta Environmental Consultants, Inc.



LEGEND

- MW-1 MONITORING WELL LOCATION
- MW-2 ABANDONED MONITORING WELL LOCATION
- B-1 SOIL BORING LOCATION

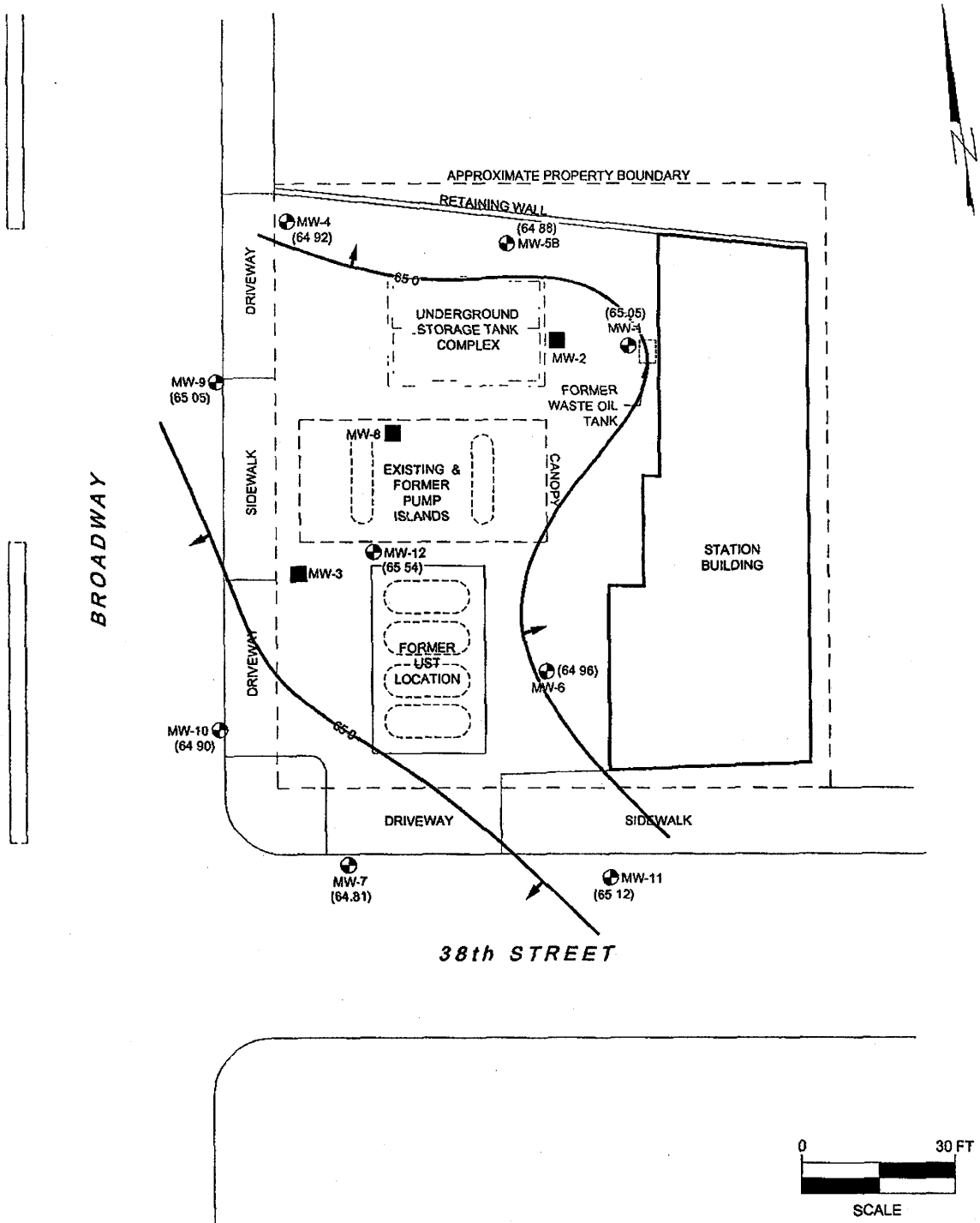
FIGURE 2

SITE MAP

FORMER TEXACO SERVICE STATION NO. 21-1283
3810 BROADWAY
OAKLAND, CA.

PROJECT NO D211-283	DRAWN BY M.L 9/24/02
FILE NO. D211283B	PREPARED BY W S
REVISION NO. 6	REVIEWED BY

Delta Environmental Consultants, Inc.



LEGEND.

MW-1	MONITORING WELL LOCATION
MW-2	ABANDONED MONITORING WELL LOCATION
(65 05)	GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (MSL)
—65.0—	WATER TABLE CONTOUR IN FEET ABOVE MSL
→	GROUNDWATER FLOW DIRECTION
NM	NOT MEASURED

GROUNDWATER FLOWS IN A RADIAL PATTERN AT A GRADIENT RANGING 0 01 TO 0 02 ft/ft

FIGURE 3
GROUNDWATER ELEVATION CONTOUR MAP
6/25/02

FORMER TEXACO SERVICE STATION NO. 21-1283
3810 BROADWAY
OAKLAND, CA.

PROJECT NO D211-283	DRAWN BY M L. 9/17/02
FILE NO D211283B	PREPARED BY TAD
REVISION NO 5	REVIEWED BY

Delta Environmental Consultants, Inc.

TABLE 1

SOIL CHEMICAL ANALYTICAL RESULTS

Former Texaco Service Station
3810 Broadway
Oakland, California

Sample ID	Date Sampled	Depth (ft)	Benzene (mg/kg)	Toluene (mgkg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	TPH-GRO (mg/kg)	Lead (mg/kg)
Soil Stockpile Samples								
SP-A,B,C,D	5/30/2002	Composite	<0.005	<0.005	<0.005	<0.015	2.1	10

TPH-GRO = Total petroleum hydrocarbons as gasoline range organics.
mg/kg = Milligrams per kilogram.
ft = feet

TABLE 2

GROUNDWATER ANALYTICAL RESULTS

Former Texaco Service Station
3810 Broadway
Oakland, California

Sample ID	Date Sampled	Top of Casing Elevation (ft above msl)	Depth to Water (ft)	Groundwater Elevation (ft above msl)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	TPH-GRO (µg/L)	TPH-DRO (µg/L)	MtBE (µg/L)
MW-1	06/25/02	86.69	21.64	65.05	<0.5	<0.5	<0.5	<1.5	<50	490[1]	<2.5
MW-4	06/25/02	83.31	18.39	64.92	<0.5	<0.5	<0.5	<1.5	<50	250	<2.5
MW-5B	06/25/02	85.36	20.48	64.88	89	1.9	39	11	660	320	130
MW-6	06/25/02	86.09	21.13	64.96	2,200	1,800	850	2,100	21,000	2,500	<100
MW-7	06/25/02	84.11	19.30	64.81	<0.5	<0.5	<0.5	<1.5	<50	<50	<2.5
MW-9	06/25/02	82.17	17.12	65.05	<0.5	<0.5	<0.5	<1.5	<50	100	<2.5
MW-10	06/25/02	81.83	16.93	64.90	180	3.2	17	8.0	810	180	<2.5
MW-11	06/25/02	90.63	25.51	65.12	<0.5	<0.5	<0.5	<1.5	<50	250	<2.5
MW-12	06/25/02	84.19	18.65	65.54	340	8.2	16	8.3	1,000	410	11

[1] The observed sample pattern is not typical of diesel/fuel oil #2.

TPH-GRO = Total petroleum hydrocarbons as gasoline range organics.
TPH-DRO = Total petroleum hydrocarbons as diesel range organics.
MtBE = Methyl tertiary butyl ether analyzed by EPA Method 8021B unless otherwise noted.
msl = mean sea level
ft = feet
µg/L = Micrograms per liter.

ENCLOSURE A

Alameda County Health Care Services Letter
Dated May 9, 2002
Alameda County Department of Public Works Well Installation Permits

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

RECEIVED
MAY 13 2002
BY

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

May 9, 2002

Mr. Karen Petryna
Shell Oil Products US
P.O. Box 7869
Burbank, CA 91510-7869

Re: Fuel Leak Case RO0000056, 3810 Broadway, Oakland CA 94607

Dear Ms. Petryna:

This letter formally approves the scope of work described in the August 8, 2001 Toxichem Quarterly Monitoring Report- Second Quarter 2001. This work includes the proper closure of MW-5 and the replacement of this well in the same general location and the installation of a replacement well for MW-3 and MW-8 within the former excavation pit. Since the replacement well for MW-5 will be located next to the former well, no vadose soil samples need to be analyzed unless field screen results indicate significant contamination.

Please notify our office prior to performing this work. You may contact me at (510) 567-6765 if you have any questions.

Sincerely,

Barney M Chan

Barney M. Chan
Hazardous Materials Specialist

C: B. Chan, files
Mr. T. Del Frate, Delta Environmental Consultants, 3164 Gold Camp Drive, Suite 200, Rancho Cordova, CA 95670
Mr. Joe Zadik, 8255 San Leandro St., Oakland CA 94621

Wpap3810Broadway

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT Former Texaco Service station
3810 Broadway
Oakland, Ca

CLIENT
Name Chevron Texaco
Address P.O. Box 6004 Phone
City San Ramon Zip 94583

APPLICANT
Name Delta Environmental Consultants, Inc.
Fax 916 638-8385
Address 3164 Gold Camp Dr. Phone 916 536-2617
City Rancho Cordova Zip 95670

TYPE OF PROJECT
Well Construction ✓
Cathodic Protection
Water Supply
Monitoring ✓
Geotechnical Investigation
General
Contamination
Well Destruction Replace

PROPOSED WATER SUPPLY WELL USE
New Domestic
Municipal
Industrial
Replacement Domestic
Irrigation
Other

DRILLING METHOD:
Mud Rotary
Cable
Air Rotary
Other
Auger ✓

DRILLER'S NAME Cascade Drilling, Inc.
DRILLER'S LICENSE NO. 717510

WELL PROJECTS
Drill Hole Diameter 8-10 in. Maximum
Casing Diameter 2 in. Depth 35 ft.
Surface Seal Depth 5 ft. Owner's Well Number MW-5

GEOTECHNICAL PROJECTS
Number of Borings
Hole Diameter in. Maximum
Depth ft.

ESTIMATED STARTING DATE May 30, 2002
ESTIMATED COMPLETION DATE SAME

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No 73-68.
APPLICANT'S SIGNATURE William Slowik DATE 5/10/02
PLEASE PRINT NAME William Slowik

Rev.5-13-00

FOR OFFICE USE
PERMIT NUMBER W02-0509
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED DATE 5-9-02

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT Former Texaco Service Station #211283
3810 Broadway
Oakland California

CLIENT
Name Chevron Texaco
Address P.O. Box 6004 Phone (925) 842-8898
City San Ramon, CA Zip 94583

APPLICANT
Name Delta Environmental Consultants, Inc.
Fax (916) 638-8385
Address 3164 Gold Camp Drive Phone (916) 536-2617
City Rancho Cordova Zip 95670

TYPE OF PROJECT

Well Construction	✓	Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	✓	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other	

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	✓
Cable		Other			

DRILLER'S NAME Cascade Drilling, Inc.

DRILLER'S LICENSE NO. 717510

WELL PROJECTS
Drill Hole Diameter 8-10 in. Maximum Depth 35 ft.
Casing Diameter 2 in. Owner's Well Number MW-12
Surface Seal Depth 5 ft.

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum Depth _____ ft.
Hole Diameter _____ in.

ESTIMATED STARTING DATE 5/30/02
ESTIMATED COMPLETION DATE SAME

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No 73-68.

APPLICANT'S SIGNATURE William Slowik DATE 5/ /02
PLEASE PRINT NAME William Slowik

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER W02-0510
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and Industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 5-9-02

ENCLOSURE B

Soil Analytical Results for
Borings B-1 Through B-6 and MW-3 and MW-4

TABLE 3
SOIL ANALYTICAL RESULTS
3810 Broadway, Oakland, California

Sample Location	Sample Date	Depth	TPH-G (ppm)	TPH-D (ppm)	TPH-MO (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)
B-1	9/11/95	12.5	310	---	---	0.15	0.29	6.2	31.2
		19	3,600	---	---	33	310	67	361
		26.5	1.1	---	---	0.27	0.06	0.018	0.023
B-2	9/11/95	12.5	3.1	---	---	0.69	0.11	0.69	0.103
		16.5	2,200	---	---	15	120	37	445
		26.5	<1	---	---	<0.005	0.011	<0.005	<0.005
B-3	9/12/95	27	<1	<1	1.3	<0.005	<0.005	<0.005	<0.005
B-4	9/11/95	12.5	83	---	---	0.06	<0.050	1.2	7.2
		18	1,400	---	---	3.8	44	18	101
		26.5	1.9	<20	<20	0.52	0.078	0.039	0.07
B-5	9/12/95	12.5	4,800	---	---	48	390	93	466
		29.5	<1	---	---	0.055	0.009	<0.005	<0.005
B-6	9/12/95	12.5	<1	---	---	<0.005	0.009	<0.005	<0.005
MW-3	10/26/95	8.5	65,000	---	---	88	550	140	690
		15.5	1.4	---	---	<0.005	0.027	0.0064	0.0265
		19.5	6.2	---	---	1.3	1.5	0.11	0.43
MW-4	10/26/95	29	<1	---	---	<0.005	<0.005	<0.005	<0.005

TPH-G = Total petroleum hydrocarbons quantitated against gasoline by DHS/LUFT method.
TPH-D = Total petroleum hydrocarbons quantitated against diesel by EPA Method 8015 Modified.
TPH-MO = Total petroleum hydrocarbons quantitated against motor oil by EPA Method 8015 Modified.
ppm = Parts per million.
--- = Not analyzed.
< = Compound not detected at or above the specified laboratory reporting limit.

ENCLOSURE C

Field Methods and Procedures

1.0 METHODS AND PROCEDURES

1.1 Health and Safety Plan

Field work performed by Delta and Delta's subcontractors at the site is conducted according to guidelines established in a Site Health and Safety Plan (SHSP). The SHSP is a document which describes the hazards that may be encountered in the field and specifies protective equipment, work procedures, and emergency information. A copy of the SHSP is at the site and available for reference by appropriate parties during work at the site.

1.2 Locating Underground Utilities

Prior to commencement of work on-site, Delta researches the location of underground utilities with the assistance of Underground Service Alert (USA). USA contacts the owners of the various utilities in the vicinity of the site to have the utility owners mark the locations of their underground utilities. Work associated with the boring and monitoring well installation is preceded by manual hand augering to a minimum depth of 5 feet below surface grade (bsg) to avoid contact with underground utilities.

1.3 Soil Sampling and Contamination Reduction

Soil borings and soil sampling are performed under the direction of a Delta geologist. Soil borings are advanced using a truck-mounted hollow-stem auger drill rig.

To reduce the chances of cross-contamination between boreholes, all downhole drilling equipment is steam-cleaned between each boring. To reduce cross-contamination between samples, the split-barrel sampler is washed in a soap solution and double-rinsed between each sampling event.

Soil sampling beyond 5 feet bsg is conducted in accordance with ASTM 1586-84. Using this procedure, a 2-inch outside-diameter split-barrel sampler or a 2-inch inside-diameter California-type sampler is driven into the soil by a 140-pound weight falling 30-inches. After an initial set of 6-inches, the number of blows required to drive the sampler an additional 12-inches (known as penetration resistance or the "N" value) is recorded. The N value is used as an empirical measure of the relative density of cohesionless soils and the consistency of cohesive soils.

Upon recovery, a portion of the soil sample is placed into a plastic bag and sealed for later screening with a photoionization detector (PID). Another portion of the soil sample is used for classification and description.

That part of the soil sample collected in the leading brass tube within the California-type sampler is stored at approximately 4°C for transport to the laboratory.

1.4 Soil Classification

As the samples are obtained in the field, they are classified by the geologist in accordance with the Unified Soil Classification System (USCS). Representative portions of the samples are then retained for further examination and for verification of the field classification. Logs of the borings indicating the depth and identification of the various strata, the N value, and pertinent information regarding the method of maintaining and advancing the borehole are made.

1.5 Soil Sample Screening/hNu Portable Photoionization Detector Method

After the soil sample plastic bags are brought to ambient temperature, the headspace vapors of the soil sample in the bag are screened with a PID equipped with a 10.2 eV lamp. The sample corner of the bag is opened and the detector probe immediately placed within the headspace. The highest observed reading is recorded.

1.6 Monitoring Well Gravel Pack and Slot Size Selection

The gravel pack is selected such that it will permit the development of a zone of higher hydraulic conductivity adjacent to the well screen but will reduce piping of the finer-grained formation materials into the well. The slot size of the well screen is selected such that it will retain a minimum of 95 percent of the gravel pack material.

1.7 Monitoring Well Development

After monitoring wells are installed, each monitoring well is developed with a surge block and bailer (or pump) until the water produced is relatively sediment-free and until the conductivity, pH, and temperature stabilize. If the well is pumped dry during the development process, recharge rates are recorded. No water or chemicals are introduced into the monitoring wells during well development. All development water is placed in drums on-site for later disposal.

1.8 Groundwater Sampling

At least three wetted casing volumes of liquid are removed from each well by bailing with a clean disposable bailer. A liquid sample is collected from each well with a clean disposable bailer and transferred into a laboratory supplied sampling container. Each sample is appropriately labeled and stored on ice from the time

of collection through the time of delivery to the laboratory. Groundwater samples are transported to the laboratory and analyzed within the EPA-specified holding times for the requested analyses.

1.9 Liquid-Phase Petroleum Hydrocarbons

If liquid-phase petroleum hydrocarbons are present in a well, the thickness of the petroleum layer is measured by collecting a sample in a transparent disposable bailer with a check valve at the bottom, or by measurement using appropriate fluid-level sounding equipment.

2.0 ANALYTICAL PROCEDURES

Selected soil samples submitted to the laboratory are analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021, methyl tertiary butyl ether (MTBE) by EPA Method 8260B, and total petroleum hydrocarbons as gasoline (TPHg) using DHS LUFT.

3.0 QUALITY ASSURANCE PLAN

This section describes the field and analytical procedures to be followed throughout the investigation.

3.1 General Sample Collection and Handling Procedures

Proper collection and handling are essential to ensure the quality of a sample. Each sample is collected in a suitable container, preserved correctly for the intended analysis, and stored prior to analysis for no longer than the maximum allowable holding time. Details on the procedures for collection and handling of soil samples used on this project can be found in Section 1.0 (Methods).

3.2 Sample Identification and Chain-of-Custody Procedures

Sample identification and chain-of-custody procedures ensure sample integrity and document sample possession from the time of collection to its ultimate disposal. Each sample container submitted for analysis has a label affixed to identify the job number, sampler, date and time of sample collection, and a sample number unique to that sample. This information, in addition to a description of the sample, field measurements made, sampling methodology, names of on-site personnel, and any other pertinent field observations, are recorded on the borehole log or in the field records. Samples are analyzed by a California-certified laboratory.

A chain-of-custody form is used to record possession of the sample from time of collection to its arrival at the laboratory. When the samples are shipped, the person in custody of them relinquish as the samples by signing the chain-of-custody form and noting the time. The sample-control officer at the laboratory verifies sample integrity and confirm that it was collected in the proper container, preserved correctly, and that there is an adequate volume for analysis.

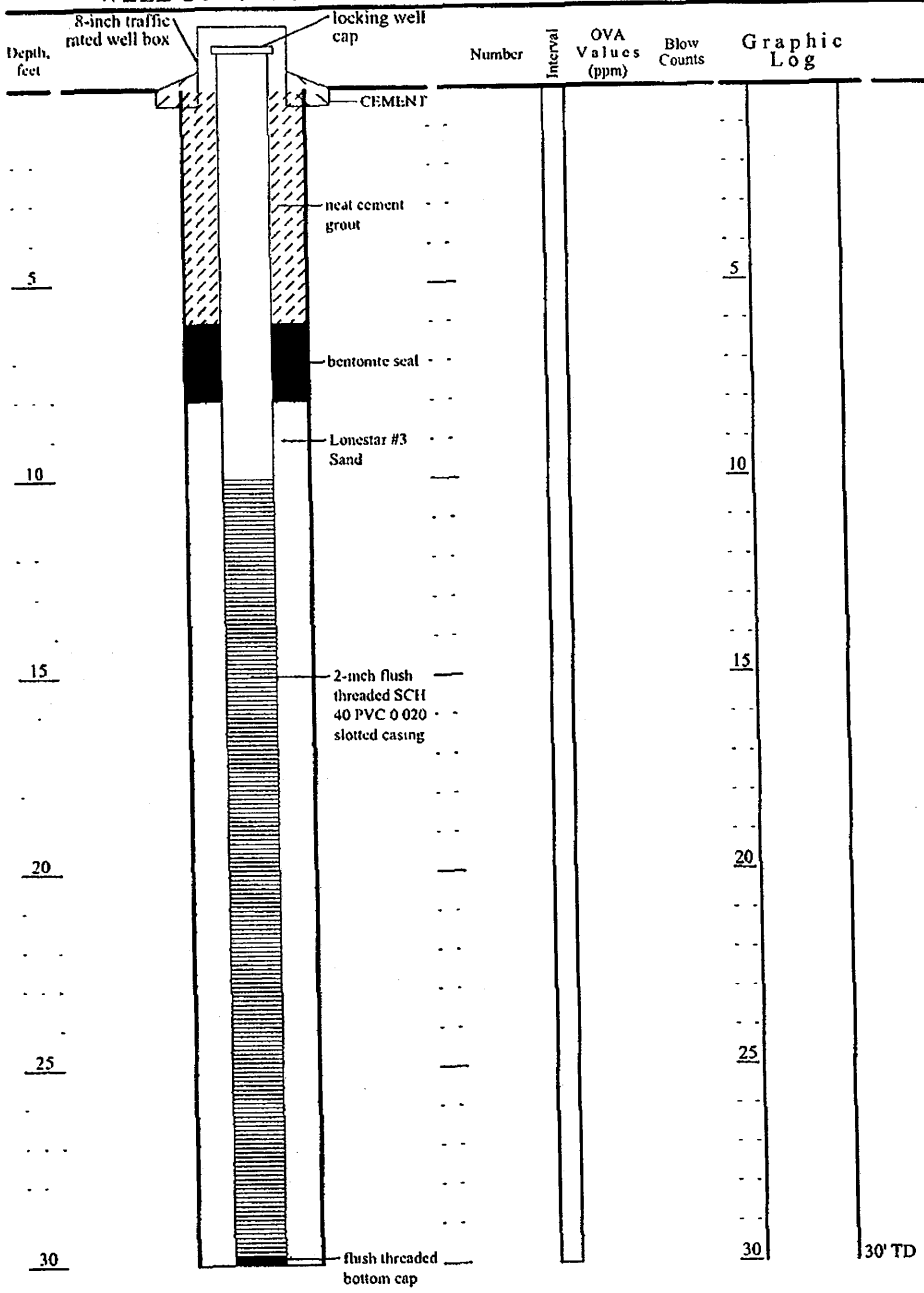
If these conditions are met, the sample is assigned a unique log number for identification throughout analysis and reporting. The log number is recorded on the chain-of-custody form and in the legally-required log book maintained by the laboratory in the laboratory. The sample description, date received, client's name, and other relevant information is also be recorded.

ENCLOSURE D

Log of Borings and Well Construction Details

Delta Environmental Consultants, Inc.	Street Address: 3810 Broadway	Project ID: Former Texaco #211283	
	City & State: Oakland, California	Surface Elev.	Well / Boring ID: MW-5 (B)
	Delta Project #: D211-283	Casing Elev	Total Depth: 30'

WELL CONSTRUCTION	SAMPLING DATA				SOIL PROFILE/LITHOLOGY
Depth, feet	Number	Interval	OVA Values (ppm)	Blow Counts	Graphic Log	Visual Description

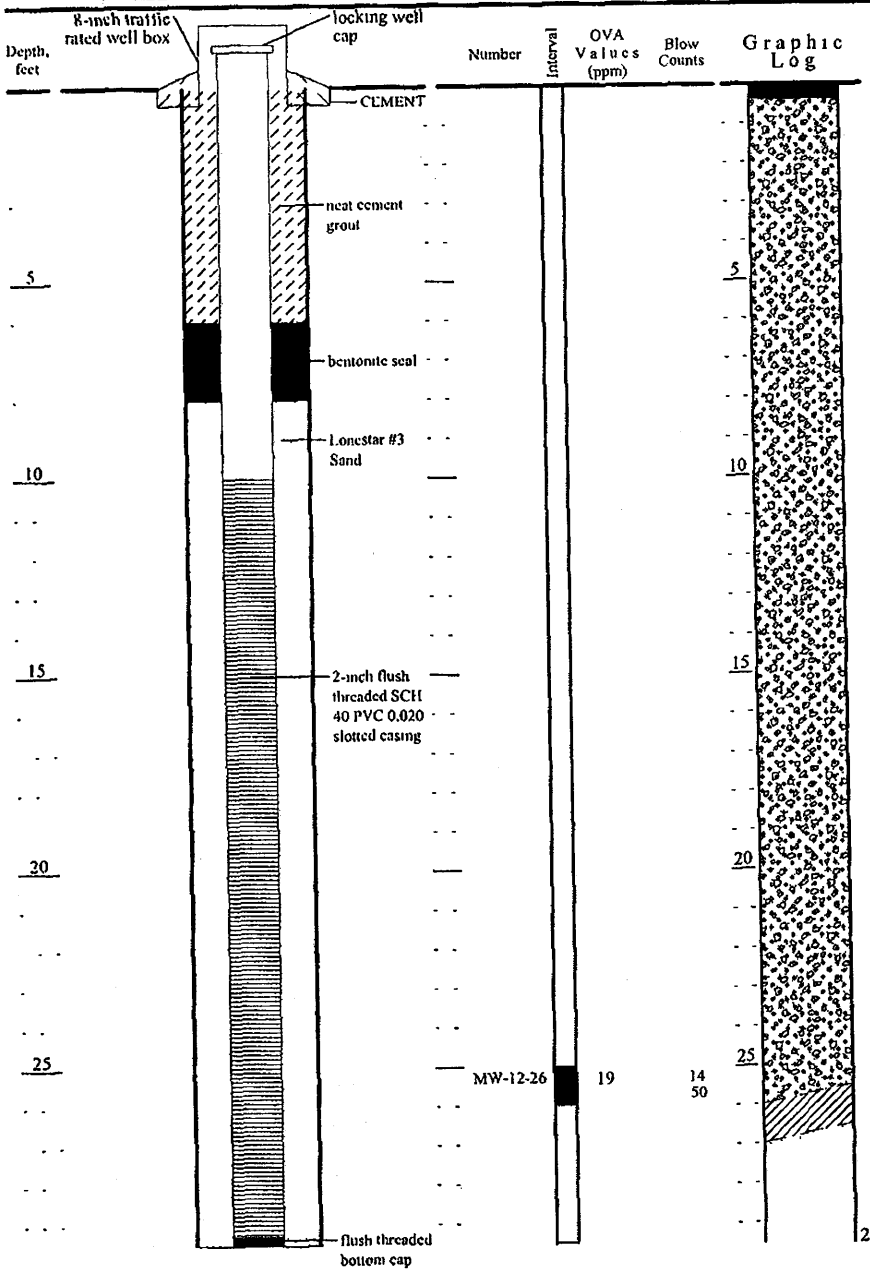


Dates and Times	Logger: Will Slowik	Sampling Method & Diameter: 2-Inch Split Spoon	Permitting Agency: Alameda County Public Works Agency
Start: 5/30/02 1130	Drilling Company & Driller: Cascade Drilling, Inc., Jaydean	Bore Hole Diameter: 8-inches	Permit #: W02-0509
Total Depth: 5/30/02 1225	Drillers C-57#: 717510	Diameter, Type & Slot Size of Casing: 2-inch SCH 40 PVC/0.020 slot	
Completion or backfill: 5/30/02 1320	Drilling Equipment and method: LAR HSA, Hollow Stem Auger		Page 1 of 1

W111 211-283 GPJ 8 14 02

Delta Environmental Consultants, Inc.	Street Address: 3810 Broadway	Project ID: Former Texaco #211283	
	City & State: Oakland, California	Surface Elev.	Well / Boring ID: MW-12
	Delta Project #: D211-283	Casing Elev.	Total Depth: 29.5'

WELL CONSTRUCTION / SAMPLING DATA / SOIL PROFILE/LITHOLOGY



Visual Description

Asphalt
Compacted Engineered Fill Material-Clayey or Silty Sand; brown, low plasticity, dry (SM/SC)

Pea Gravel

Note: pea-gravel was encountered during an attempt to collect a soil sample @ 20 feet bsg.

LEAN CLAY; olive green to gray, very stiff to hard, medium plasticity (CL)
POORLY GRADED SAND; medium to coarse grained sand; olive brown to gray (SP)

29.5' TD

Dates and Times	Logger: Will Stowik	Sampling Method & Diameter: 2-Inch Split Spoon	Permitting Agency: Alameda County Public Works Agency
Start: 5/30/02 1430	Drilling Company & Driller: Cascade Drilling, Inc., Jaydean	Bore Hole Diameter: 8-inches	Permit #: W02-0510
Total Depth: 5/30/02 1600	Drillers C-57#: 717510	Diameter, Type & Slot Size of Casing: 2-inch SCH 40 PVC/0.020 slot	
Completion or backfill: 5/30/02 1730	Drilling Equipment and method: LAR HSA, Hollow Stem Auger		Page 1 of 1

WELL 211 283.GPJ 8/14/02

ENCLOSURE E

Soil Stockpile Analytical Data

Analysis Report

Lancaster Laboratories
Where quality is a science.

ANALYTICAL RESULTS

Prepared for:

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

925-842-8582

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 809597. Samples arrived at the laboratory on Saturday, June 01, 2002. The PO# for this group is 99011184 and the release number is STREICH.

Client Description	Lancaster Labs Number
SP-A,B,C,D Composite Soil Sample	3828996

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Delta Environmental Attn: Mr. Ben Heningburg

Questions? Contact your Client Services Representative
Teresa M Lis at (717) 656-2300.

Respectfully Submitted,

Steven A. Skiles
Sr. Chemist

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
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M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
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*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

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Analysis Report

Lancaster Laboratories
Where quality is a science.

Lancaster Laboratories Sample No. SW 3828996

Collected:05/30/2002 13:05 by WS
through 05/30/2002 16:05
Submitted: 06/01/2002 10:25
Reported: 06/05/2002 at 10:34
Discard: 07/06/2002
SP-A,B,C,D Composite Soil Sample
Facility# 211283
3810 Broadway; Oakland, CA

Account Number: 10900

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01155	Lead (furnace method)	7439-92-1	10.	0.54	mg/kg	5
01726	TPH-GRO - Soils					
01727	TPH-GRO - Soils	n.a.	2.1	1.0	mg/kg	25

The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.
The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately.

02160	BTEX/MTBE					
02174	Benzene	71-43-2	N.D.	0.0050	mg/kg	25
02177	Toluene	108-88-3	N.D.	0.0050	mg/kg	25
02178	Ethylbenzene	100-41-4	N.D.	0.0050	mg/kg	25
02182	Total Xylenes	1330-20-7	N.D.	0.015	mg/kg	25

The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately.

State of California Lab Certification No. 2116

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01155	Lead (furnace method)	SW-846 7421	1	06/04/2002 12:21	Jessica L Boyd	5
01726	TPH-GRO - Soils	N. CA LUFT Gasoline Method	1	06/04/2002 03:56	Martha L Seidel	25
02160	BTEX/MTBE	SW-846 8021B	1	06/04/2002 03:56	Martha L Seidel	25
01150	GC VOA Soil Prep	SW-846 5035	1	06/03/2002 15:11	Steven A Skiles	n.a.
05710	SW SW846 GFAA Digest	SW-846 3050B	1	06/03/2002 17:45	Megan L Ross	1

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

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umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
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M	Duplicate injection precision not met
N	Spike sample not within control limits
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*****	Duplicate analysis not within control limits
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Quality Control Summary

Client Name: ChevronTexaco
Reported: 06/05/02 at 10:34 AM

Group Number: 809597

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 02143A33C	Sample number(s): 3828996							
TPH-GRO - Soils	N.D.	1.	mg/kg	92		75-117		
Benzene	N.D.	.005	mg/kg	117		84-132		
Toluene	N.D.	.005	mg/kg	116		88-116		
Ethylbenzene	N.D.	.005	mg/kg	118		87-127		
Total Xylenes	N.D.	.015	mg/kg	117		88-120		
Batch number: 021545710001	Sample number(s): 3828996							
Lead (furnace method)	N.D.	.11	mg/kg	107		74-126		

Sample Matrix Quality Control

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 02143A33C	Sample number(s): 3828996								
TPH-GRO - Soils	79	81	44-116	2	30				
Benzene	111	116	56-142	5	30				
Toluene	85	89	66-120	5	30				
Ethylbenzene	96	102	66-131	5	30				
Total Xylenes	88	92	67-122	5	30				
Batch number: 021545710001	Sample number(s): 3828996								
Lead (furnace method)	(2)	(2)	80-120	8	20	10.	9.3	7 (1)	20

Surrogate Quality Control

Analysis Name: BTEX/MTBE
Batch number: 02143A33C

	Trifluorotoluene-F	Trifluorotoluene-P
3828996	98	114
Blank	83	99
LCS	95	108
MS	94	100
MSD	95	103
Limits:	61-127	68-122

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
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For Lancaster Laboratories use only
Acct. # 10900 Sample #: 3828996-7 SCR#:

Facility #: Former Texaco #211283
Site Address: 3810 Broadway, Oakland, CA
Chevron PM: Karen Streich Lead Consultant: Delta Environmental
Consultant/Office: 3164 Gold Camp Drive Ste 200 Rancho Cordova
Consultant Prj. Mgr.: Todd DelFrate 536-2612
Consultant Phone #: (916) 536-2612 Fax #: (916) 638-8385
Sampler: Will Slowik
Service Order #: ☐ Non SAR:

Analyses Requested

Preservation Codes

Preservative Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 O = Other

☐ J value reporting needed
☐ Must meet lowest detection limits possible for 8260 compounds

8021 MTBE Confirmation
☐ Confirm highest hit by 8260
☐ Confirm all hits by 8260
☐ Run ____ oxy's on highest hit
☐ Run ____ oxy's on all hits

Field Point Name	Matrix	Repeat Sample	Top Depth	Year Month Day	Time Collected	New Field Pt.	Grab	Composite	Total Number of Containers	BTEX ☐ 8260 ☐ 8021	TPH 8015 MOD GRO	TPH 8015 MOD DRO ☐ Silica Gel Cleanup	8260 full scan	Oxygenates	Lead 7420 ☐ 7421
SP-A	SOIL		NA	02 05 30	1305		X		1	X	X				X
SP-B	SOIL		↓	02 05 30	1514		X		1	X	X				X
SP-C	SOIL			02 05 30	1530		X		1	X	X				X
SP-D	SOIL			02 05 30	16:05		X		1	X	X				X

Comments / Remarks
COMPOSITE 4:1

Turnaround Time Requested (TAT) (please circle)
STD. TAT 72 hour 48 hour
24 hour 4 day 5 day

Data Package Options (please circle if required)
QC Summary Type I – Full
Type VI (Raw Data) ☐ Coelt Deliverable not needed
WIP (RWQCB)
Disk

Relinquished by:	Date	Time	Received by:	Date	Time
William Slowik	5/31/02	11:45			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by Commercial Carrier: UPS FedEx Other			Received by:	Date 6/1/02	Time 1025
Temperature Upon Receipt 4.0 C°			Custody Seals Intact? Yes No		

3460 Rev. 10/04/01

ENCLOSURE F

Certificate of Waste Disposal

IWM, Inc.

INTEGRATED WASTESTREAM MANAGEMENT, INC.
950 AMES AVENUE, MILPITAS, CA 95035
PHONE: 408 942 8955 FAX: 408.942.1499

CERTIFICATE OF DISPOSAL

Generator Name: Chevron Products Company
Address: 6001 Bollinger Canyon Road
San Ramon, CA 94583
Contact: Bob Cochran
Phone: 925-842-9500

Facility Name: Chevron #21-1283
Address: 3810 Broadway
Oakland, CA
Facility Contact: Wil Slowik
Phone: 916-536-2617

IWM Job #: 92249-DS
Description of Waste: 8 Drum(s) of Non-Hazardous Soil
Removal Date: June 7, 2002
Ticket #: RSVRL070602

Transporter Information

Name: IWM, Inc.
Address: 950 Ames Avenue
Milpitas, CA 95035
Phone: (408) 942-8955

Disposal Facility Information

Name: Republic Services Vasco Road Landfill
Address: 4001 N. Vasco Road
Livermore, CA 94550
Phone: (925) 447-0491

IWM, INC. CERTIFIES THAT THE ABOVE LISTED NON-HAZARDOUS WASTE WILL BE TREATED AND DISPOSED AT THE DESIGNATED FACILITY IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.

William T. DeLon *William T. DeLon*
Authorized Representative (Print Name and Signature)

6/7/02
Date

CertOfDisposal.Master.010600

Revised: 1 June 2000

IWM, Inc.

INTEGRATED WASTESTREAM MANAGEMENT, INC.
950 AMES AVENUE, MILPITAS, CA 95035
PHONE: 408.942.8955 FAX: 408 942.1499

CERTIFICATE OF DISPOSAL

Generator Name:	Chevron Products Company	Facility Name:	Chevron #21-1283
Address:	6001 Bollinger Canyon Road	Address:	3810 Broadway
	San Ramon, CA 94583		Oakland, CA
Contact:	Bob Cochran	Facility Contact:	Will Slowik
Phone:	925-842-9500	Phone:	916-536-2317

IWM Job #:	92250-DW
Description of Waste:	2 Drum(s) of Non-Hazardous Water
Removal Date:	June 7, 2002
Ticket #:	MCK070602-CH

Transporter Information

Name:	IWM, Inc.
Address:	950 Ames Avenue
	Milpitas, CA 95035
Phone:	(408) 942-8955

Disposal Facility Information

Name:	McKittrick Waste Treatment
Address:	56533 Hwy 58 W
	McKittrick, CA 92351
Phone:	(661) 762-7366

IWM, INC. CERTIFIES THAT THE ABOVE LISTED NON-HAZARDOUS WASTE WILL BE TREATED AND DISPOSED AT THE DESIGNATED FACILITY IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.

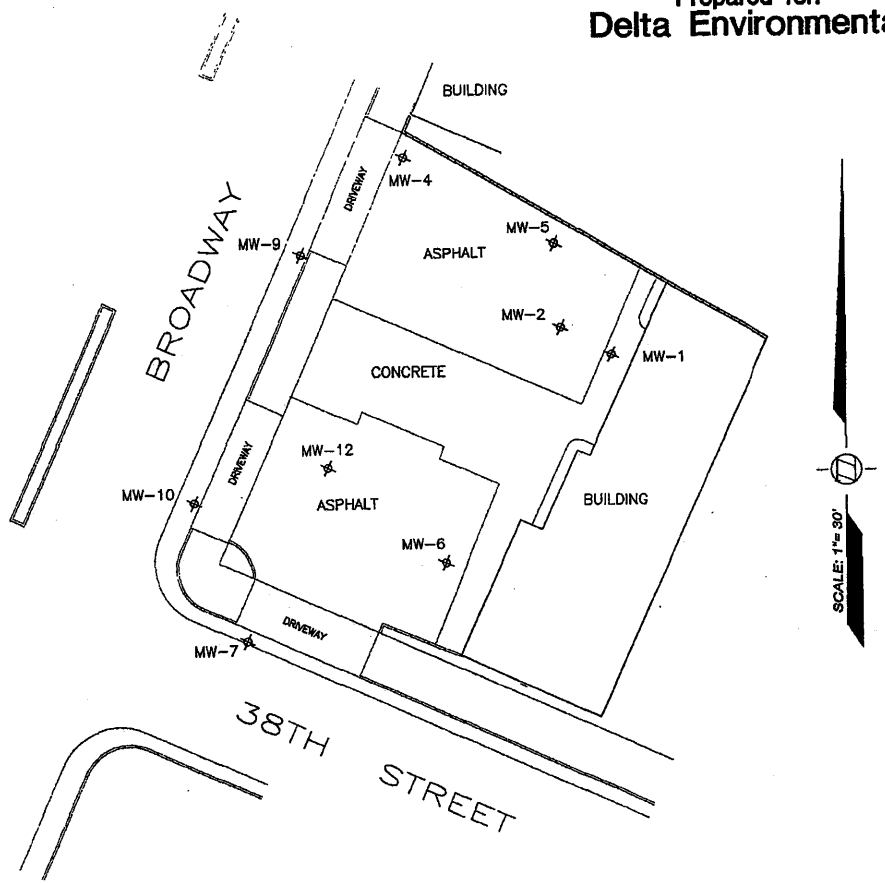
William T. DeLon — William T. DeLon
Authorized Representative (Print Name and Signature)

6/7/02
Date

ENCLOSURE G

Well Survey Report

Monitoring Well Exhibit
Prepared for:
Delta Environmental



DESCRIPTION	NORTHING	EASTING	ELEV (PVC)	ELEV (BOX)
MW-1	2128020.8	6054191.1	86.69	87.03
MW-2	2128027.7	6054178.6	85.83	86.02
MW-4	2128069.7	6054140.6	83.31	83.69
MW-5B	2128048.4	6054177.3	85.36	85.61
MW-6	2127970.1	6054149.8	86.09	86.63
MW-7	2127951.5	6054100.4	84.11	84.58
MW-9	2128046.5	6054114.7	82.17	82.55
MW-10	2127985.5	6054087.8	81.83	82.19
MW-12	2127993.7	6054120.7	84.19	84.45

	LATITUDE	LONGITUDE
MW-1	37.8260803	-122.2571521
MW-2	37.8260987	-122.2571958
MW-4	37.8262122	-122.2573303
MW-5B	37.8261556	-122.2572017
MW-6	37.8259390	-122.2572917
MW-7	37.8258854	-122.2574617
MW-9	37.8261471	-122.2574183
MW-10	37.8259782	-122.2575076
MW-12	37.8260024	-122.2573940

BASIS OF COORDINATES AND ELEVATIONS:

COORDINATES ARE CALIFORNIA STATE PLANE ZONE 3 COORDINATES FROM GPS OBSERVATIONS USING UNIVERSITY OF CALIFORNIA BAY AREA DEFORMATION CORS STATION OBSERVATION FILES AND BASED ON THE CALIFORNIA SPATIAL REFERENCE CENTER DATUM, REFERENCE EPOCH 2000.35.
COORDINATE DATUM IS NAD 83(1986)
DATUM ELLIPSOID IS GRS80
REFERENCE GEOID IS NGS99

CORS STATIONS USED WERE FARB AND POTB.

ELEVATIONS ARE BASED ON OAKLAND BENCHMARK.

0 15 30 60 90
SCALE IN FEET

Former Texaco 21-1283
3810 Broadway
Oakland
Alameda County
California

Morrow Surveying

1450 Harbor Blvd Ste D
West Sacramento
California 95691
(916) 372-8124
tom@morrowsurveying.com

Date: 06/24/02
Scale 1"= 30'
Sheet 1 of 1
Revised
Field Book MW-8
Dwg No 1275-049DT

ENCLOSURE H

Groundwater Monitoring and
Well Development Data Sheets

GETTLER-RYAN INC.

GROUNDWATER MONITORING SUMMARY SHEET

CLIENT/ FACILITY: ChevronTexaco #211283
ADDRESS: 3810 Broadway
CITY: Oakland, CA

JOB #: 386956
DATE: 6.25.02
SAMPLER: TR

Well ID	Total Well Depth	Depth to Water	Product Thickness (ft)	List Item IN Well	Additional Comments
MW-1	29.95	21.64	Ø		BENT CASING
MW-4	28.56	18.39			
MW-5B	30.35	20.48			
MW-6	27.51	21.13		STINGER	
MW-7	33.50	19.30			
MW-9	34.10	17.12			
MW-10	33.10	16.93			
MW-11	39.50	25.51			
MW-12	29.62	18.65			Development

Comments Took total well Depths.

FIELD DATA SHEET

Client/ Facility: ChevronTexaco #211283 Job#: 386956

Address: 3810 Broadway Date: 6-25-02

City: Oakland, CA Sampler: TC

Well ID: MW-12 Well Condition: o.k

Well Diameter: 2 in. Hydrocarbon Thickness: Ø Ft. Amount Bailed (product/water): Ø (gal.)

:c-Development → Total Depth: 29.50 ft.

Depth to Water: 18.65 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

10.85 X VF .17 = 1.8 X10 (case volume) = Estimated Purge Volume: 18 1/2 (gal.)

Purge Equipment: Disposable Bailer, Bailer, Stack, Suction, Grundfos, Other: 2" steel Bailer

Sampling Equipment: ~~Disposable Bailer~~, Bailer, Pressure Bailer, Grab Sample, Other:

Starting Time: 1431 Weather Conditions: Sunny

Sampling Time: 1510 Water Color: Brown Odor: yes

Purging Flow Rate: 2.0 gpm. Sediment Description: silty

Did well de-water? NO If yes; Time: Volume: (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm	Temperature °C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
1438	2.0	8.48	530	81.0			
1442	4.0	8.20	514	72.5			
1450	6.0	8.15	507	70.0			
1451	8.0	8.02	552	68.6			
1452	10.0	8.04	481	68.8			
1453	12.0	7.92	462	67.6			
1454	14.0	7.74	415	67.2			
1455	16.0	7.52	464	66.9			
1456	18.0	7.48	510	67.1			
1457	18.5	7.50	521	66.9			

Item

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-12	7 X VOA VIALS	Y	HCL	Lancaster	TPH G/BTEX/MTBE
MW-12	2X Amber	Y	NP	Lancaster	TPH-DRO

COMMENTS: Well Cleaned up Good At 18 1/2 Gal. water was Almost Clear After Development

9/97-fieldpt.frm

Well Depth After Development = 29.62 Replaced Lock 3910

FIELD DATA SHEET

Client/ Facility: ChevronTexaco #211283 Job#: 386956

Address: 3810 Broadway Date: 6-25-02

City: Oakland, CA Sampler: TC

Well ID: MW-5B Well Condition: O.K

Well Diameter: 2 in. Hydrocarbon Thickness: Ø Ft. Amount Bailed (product/water): Ø (gal.)

Pre-Development Total Depth: 30.00 ft.

Depth to Water: 20.48 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66	6" = 1.50	12" = 5.80

9.52 X VF .17 = 1.61 X10 (case volume) = Estimated Purge Volume: 16 (gal.)

Purge Equipment: Disposable Bailer, Bailer, Stack, Suction, Grundfos, Other: 2" Steel Bailer

Sampling Equipment: ~~Disposable Bailer~~, Bailer, Pressure Bailer, Grab Sample, Other:

Starting Time: 1540 Weather Conditions: Sunny

Sampling Time: 1620 Water Color: Cloudy Odor: Slight

Purging Flow Rate: 1.5 gpm. Sediment Description:

Did well de-water? NO If yes; Time: Volume: (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
1547	1.5	7.86	1010	74.7			
1553	3.0	7.42	986	72.2			
1558	4.5	7.50	938	69.0			
1559	6.0	7.40	969	68.7			
1600	7.5	7.32	962	69.2			
1601	9.0	7.40	976	69.2			
1602	10.5	7.31	985	69.5			
1603	12.0	7.24	992	69.1			
1604	13.5	7.22	991	70.2			
1606	16.0	7.16	996	70.2			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-5B	3 X VOA VIALS	Y	HCL	Lancaster	TPH G/BTEX/MTBE
MW-5B	2 X Amber	Y	NP	Lancaster	TPH-DRO

COMMENTS: Well Cleaned-up Good at 16 Gal. Water was A little Cloudy - After Development Depth = 30.35

9/97-fieldst.frm

ENCLOSURE I

Groundwater Analytical Data

Analysis Report

Lancaster Laboratories
Where quality is a science.

ANALYTICAL RESULTS

Prepared for:

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

925-842-8582

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 812857. Samples arrived at the laboratory on Thursday, June 27, 2002. The PO# for this group is 99011184 and the release number is STREICH.

Client Description			Lancaster Labs Number
QA-T-020625	NA	Water	3843046
MW-1-W-020625	Grab	Water	3843047
MW-4-W-020625	Grab	Water	3843048
MW-5B-W-020625	Grab	Water	3843049
MW-6-W-020625	Grab	Water	3843050
MW-7-W-020625	Grab	Water	3843051
MW-9-W-020625	Grab	Water	3843052
MW-10-W-020625	Grab	Water	3843053
MW-11-W-020625	Grab	Water	3843054
MW-12-W-020625	Grab	Water	3843055

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Delta C/O Gettler-Ryan Attn: Deanna L. Harding

Lancaster Laboratories
Where quality is a science.

Questions? Contact your Client Services Representative
Teresa M Lis at (717) 656-2300.

Respectfully Submitted,

Susan M. Croyle
Sr. Chemist/Coordinator

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories
Where quality is a science.

Lancaster Laboratories Sample No. WW 3843046

Collected:06/25/2002 00:00

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:45
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

QA-T-020625 NA Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 QA

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01729	TPH-GRO - Waters					
01730	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time. A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.					
08214	BTEX, MTBE (8021)					
00776	Benzene	71-43-2	N.D.	0.50	ug/l	1
00777	Toluene	108-88-3	N.D.	0.50	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.50	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	1.5	ug/l	1
00780	Methyl tert-Butyl Ether	1634-04-4	N.D.	2.5	ug/l	1
	A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.					

State of California Lab Certification No. 2116

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01729	TPH-GRO - Waters	N. CA LUFT Gasoline Method	1	07/01/2002 06:21	Patrick N Evans	1
08214	BTEX, MTBE (8021)	SW-846 8021B	1	07/01/2002 06:21	Patrick N Evans	1
01146	GC VOA Water Prep	SW-846 5030B	1	07/01/2002 06:21	Patrick N Evans	n.a.

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

Lancaster Laboratories Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

MEMBER ACIL

Analysis Report

Lancaster Laboratories
Where quality is a science.

Lancaster Laboratories Sample No. WW 3843047

Collected:06/25/2002 14:15 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:45
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-1-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T0060.0101108 MW-1

283M1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
05553	TPH - DRO CA LUFT (Waters)	n.a.	490.	50.	ug/l	1

According to the California LUFT Protocol, the quantitation for Diesel Range Organics was performed by peak area comparison of the sample pattern to that of our #2 fuel oil reference standard (between C10 and C28 normal hydrocarbons).
Site-specific MS/MSD samples were not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Due to interferences from the sample matrix (high sediment content), the reporting limit was increased.

The observed sample pattern is not typical of diesel/#2 fuel oil.

01729 TPH-GRO - Waters

01730	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1

The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.
A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

08214 BTEX, MTBE (8021)

00776	Benzene	71-43-2	N.D.	0.50	ug/l	1
00777	Toluene	108-88-3	N.D.	0.50	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.50	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	1.5	ug/l	1
00780	Methyl tert-Butyl Ether	1634-04-4	N.D.	2.5	ug/l	1

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

State of California Lab Certification No. 2116

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories
Where quality is a science.

Lancaster Laboratories Sample No. WW 3843047

Collected:06/25/2002 14:15 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:45
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-1-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 MW-1

283M1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
05553	TPH - DRO CA LUFT (Waters)	CA LUFT Diesel Range Organics	1	07/02/2002 21:59	Devin M Lahr	1
01729	TPH-GRO - Waters	N. CA LUFT Gasoline Method	1	07/01/2002 12:49	Patrick N Evans	1
08214	BTEX, MTBE (8021)	SW-846 8021B	1	07/01/2002 12:49	Patrick N Evans	1
01146	GC VOA Water Prep	SW-846 5030B	1	07/01/2002 12:49	Patrick N Evans	n.a.
07003	Extraction - DRO (Waters)	TPH by CA LUFT	1	07/01/2002 01:50	JoElla L Rice	1

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

Analysis Report

Lancaster Laboratories
Where quality is a science.

Lancaster Laboratories Sample No. WW 3843048

Collected:06/25/2002 13:37 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:45
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-4-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 MW-4

283M4

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
05553	TPH - DRO CA LUFT (Waters)	n.a.	250.	50.	ug/l	1

According to the California LUFT Protocol, the quantitation for Diesel Range Organics was performed by peak area comparison of the sample pattern to that of our #2 fuel oil reference standard (between C10 and C28 normal hydrocarbons).
Site-specific MS/MSD samples were not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

01729 TPH-GRO - Waters

01730	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1

The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.
A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

08214 BTEX, MTBE (8021)

00776	Benzene	71-43-2	N.D.	0.50	ug/l	1
00777	Toluene	108-88-3	N.D.	0.50	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.50	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	1.5	ug/l	1
00780	Methyl tert-Butyl Ether	1634-04-4	N.D.	2.5	ug/l	1

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

State of California Lab Certification No. 2116

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

MEMBER ACIL

Analysis Report

Lancaster Laboratories
Where quality is a science.

Lancaster Laboratories Sample No. WW 3843048

Collected:06/25/2002 13:37 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:45
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-4-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 MW-4

283M4

05553	TPH - DRO CA LUFT (Waters)	CA LUFT Diesel Range Organics	1	07/03/2002 21:16	Devin M Lahr	1
01729	TPH-GRO - Waters	N. CA LUFT Gasoline Method	1	07/01/2002 13:24	Patrick N Evans	1
08214	BTEX, MTBE (8021)	SW-846 8021B	1	07/01/2002 13:24	Patrick N Evans	1
01146	GC VOA Water Prep	SW-846 5030B	1	07/01/2002 13:24	Patrick N Evans	n.a.
07003	Extraction - DRO (Waters)	TPH by CA LUFT	1	07/01/2002 01:50	JoElla L Rice	1

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

Analysis Report

Lancaster Laboratories
Where quality is a science.

Lancaster Laboratories Sample No. WW 3843049

Collected:06/25/2002 16:20 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:45
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-5B-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 MW-5B

2835B

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
05553	TPH - DRO CA LUFT (Waters)	n.a.	320.	50.	ug/l	1
	According to the California LUFT Protocol, the quantitation for Diesel Range Organics was performed by peak area comparison of the sample pattern to that of our #2 fuel oil reference standard (between C10 and C28 normal hydrocarbons). Site-specific MS/MSD samples were not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.					
01729	TPH-GRO - Waters					
01730	TPH-GRO - Waters	n.a.	660.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time. A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.					
08214	BTEX, MTBE (8021)					
00776	Benzene	71-43-2	89.	0.50	ug/l	1
00777	Toluene	108-88-3	1.9	0.50	ug/l	1
00778	Ethylbenzene	100-41-4	39.	0.50	ug/l	1
00779	Total Xylenes	1330-20-7	11.	1.5	ug/l	1
00780	Methyl tert-Butyl Ether	1634-04-4	130.	2.5	ug/l	1
	A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.					

State of California Lab Certification No. 2116

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

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Analysis Report

Lancaster Laboratories
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Lancaster Laboratories Sample No. WW 3843049

Collected:06/25/2002 16:20 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:45
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-5B-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 MW-5B

2835B

05553	TPH - DRO CA LUFT (Waters)	CA LUFT Diesel Range Organics	1	07/02/2002 19:00	Devin M Lahr	1
01729	TPH-GRO - Waters	N. CA LUFT Gasoline Method	1	07/01/2002 16:20	Patrick N Evans	1
08214	BTEX, MTBE (8021)	SW-846 8021B	1	07/01/2002 16:20	Patrick N Evans	1
01146	GC VOA Water Prep	SW-846 5030B	1	07/01/2002 16:20	Patrick N Evans	n.a.
07003	Extraction - DRO (Waters)	TPH by CA LUFT	1	07/01/2002 01:50	JoElla L Rice	1

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above Reporting Limit

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Analysis Report

Lancaster Laboratories
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Lancaster Laboratories Sample No. WW 3843050

Collected:06/25/2002 12:59 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:45
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-6-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 MW-6

283M6

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
05553	TPH - DRO CA LUFT (Waters)	n.a.	2,500.	130.	ug/l	5

According to the California LUFT Protocol, the quantitation for Diesel Range Organics was performed by peak area comparison of the sample pattern to that of our #2 fuel oil reference standard (between C10 and C28 normal hydrocarbons).
Site-specific MS/MSD samples were not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

01729 TPH-GRO - Waters

01730	TPH-GRO - Waters	n.a.	21,000.	500.	ug/l	10

The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.
A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

08214 BTEX, MTBE (8021)

00776	Benzene	71-43-2	2,200.	2.0	ug/l	10
00777	Toluene	108-88-3	1,800.	2.0	ug/l	10
00778	Ethylbenzene	100-41-4	850.	2.0	ug/l	10
00779	Total Xylenes	1330-20-7	2,100.	6.0	ug/l	10
00780	Methyl tert-Butyl Ether	1634-04-4	N.D. #	100.	ug/l	10

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

Due to the presence of an interferent near its retention time, the normal reporting limit was not attained for MTBE. The presence or concentration of this compound cannot be determined due to the presence of this interferent.

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#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

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Analysis Report

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Lancaster Laboratories Sample No. WW 3843050

Collected:06/25/2002 12:59 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:45
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-6-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 MW-6

283M6

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
05553	TPH - DRO CA LUFT (Waters)	CA LUFT Diesel Range Organics	1	07/03/2002 20:54	Devin M Lahr	5
01729	TPH-GRO - Waters	N. CA LUFT Gasoline Method	1	07/01/2002 20:31	Patrick N Evans	10
08214	BTEX, MTBE (8021)	SW-846 8021B	1	07/01/2002 20:31	Patrick N Evans	10
01146	GC VOA Water Prep	SW-846 5030B	1	07/01/2002 20:31	Patrick N Evans	n.a.
07003	Extraction - DRO (Waters)	TPH by CA LUFT	1	07/01/2002 01:50	JoElla L Rice	1

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

Analysis Report

Lancaster Laboratories
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Lancaster Laboratories Sample No. WW 3843051

Collected:06/25/2002 10:44 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:45
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-7-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 MW-7

283M7

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
05553	TPH - DRO CA LUFT (Waters)	n.a.	N.D.	50.	ug/l	1
	According to the California LUFT Protocol, the quantitation for Diesel Range Organics was performed by peak area comparison of the sample pattern to that of our #2 fuel oil reference standard (between C10 and C28 normal hydrocarbons). Site-specific MS/MSD samples were not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.					
01729	TPH-GRO - Waters					
01730	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time. A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.					
08214	BTEX, MTBE (8021)					
00776	Benzene	71-43-2	N.D.	0.50	ug/l	1
00777	Toluene	108-88-3	N.D.	0.50	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.50	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	1.5	ug/l	1
00780	Methyl tert-Butyl Ether	1634-04-4	N.D.	2.5	ug/l	1
	A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.					

State of California Lab Certification No. 2116

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

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Analysis Report

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Lancaster Laboratories Sample No. WW 3843051

Collected:06/25/2002 10:44 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:45
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-7-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 MW-7

283M7

05553	TPH - DRO CA LUFT (Waters)	CA LUFT Diesel Range Organics	1	07/02/2002 19:22	Devin M Lahr	1
01729	TPH-GRO - Waters	N. CA LUFT Gasoline Method	1	07/01/2002 13:59	Patrick N Evans	1
08214	BTEX, MTBE (8021)	SW-846 8021B	1	07/01/2002 13:59	Patrick N Evans	1
01146	GC VOA Water Prep	SW-846 5030B	1	07/01/2002 13:59	Patrick N Evans	n.a.
07003	Extraction - DRO (Waters)	TPH by CA LUFT	1	07/01/2002 01:50	JoElla L Rice	1

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

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Analysis Report

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Lancaster Laboratories Sample No. WW 3843052

Collected:06/25/2002 12:08 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:45
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-9-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 MW-9

283M9

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
05553	TPH - DRO CA LUFT (Waters)	n.a.	100.	50.	ug/l	1
	According to the California LUFT Protocol, the quantitation for Diesel Range Organics was performed by peak area comparison of the sample pattern to that of our #2 fuel oil reference standard (between C10 and C28 normal hydrocarbons). Site-specific MS/MSD samples were not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.					
01729	TPH-GRO - Waters					
01730	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time. A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.					
08214	BTEX, MTBE (8021)					
00776	Benzene	71-43-2	N.D.	0.50	ug/l	1
00777	Toluene	108-88-3	N.D.	0.50	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.50	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	1.5	ug/l	1
00780	Methyl tert-Butyl Ether	1634-04-4	N.D.	2.5	ug/l	1
	A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.					

State of California Lab Certification No. 2116

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

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Analysis Report

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Lancaster Laboratories Sample No. WW 3843052

Collected:06/25/2002 12:08 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:45
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-9-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 MW-9

283M9

05553	TPH - DRO CA LUFT (Waters)	CA LUFT Diesel Range Organics	1	07/02/2002 19:44	Devin M Lahr	1
01729	TPH-GRO - Waters	N. CA LUFT Gasoline Method	1	07/01/2002 14:34	Patrick N Evans	1
08214	BTEX, MTBE (8021)	SW-846 8021B	1	07/01/2002 14:34	Patrick N Evans	1
01146	GC VOA Water Prep	SW-846 5030B	1	07/01/2002 14:34	Patrick N Evans	n.a.
07003	Extraction - DRO (Waters)	TPH by CA LUFT	1	07/01/2002 01:50	JoElla L Rice	1

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

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Analysis Report

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Lancaster Laboratories Sample No. WW 3843053

Collected:06/25/2002 11:25 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:46
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-10-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 MW-10

28310

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
05553	TPH - DRO CA LUFT (Waters)	n.a.	180.	50.	ug/l	1

According to the California LUFT Protocol, the quantitation for Diesel Range Organics was performed by peak area comparison of the sample pattern to that of our #2 fuel oil reference standard (between C10 and C28 normal hydrocarbons).
Site-specific MS/MSD samples were not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

01729 TPH-GRO - Waters

01730	TPH-GRO - Waters	n.a.	810.	50.	ug/l	1

The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.
A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

08214 BTEX, MTBE (8021)

00776	Benzene	71-43-2	180.	0.50	ug/l	1
00777	Toluene	108-88-3	3.2	0.50	ug/l	1
00778	Ethylbenzene	100-41-4	17.	0.50	ug/l	1
00779	Total Xylenes	1330-20-7	8.0	1.5	ug/l	1
00780	Methyl tert-Butyl Ether	1634-04-4	N.D.	2.5	ug/l	1

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

State of California Lab Certification No. 2116

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

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Analysis Report

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Lancaster Laboratories Sample No. WW 3843053

Collected:06/25/2002 11:25 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:46
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-10-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 MW-10

28310

05553	TPH - DRO CA LUFT (Waters)	CA LUFT Diesel Range Organics	1	07/02/2002 20:52	Devin M Lahr	1
01729	TPH-GRO - Waters	N. CA LUFT Gasoline Method	1	07/02/2002 12:27	Anastasia Papadoplos	1
08214	BTEX, MTBE (8021)	SW-846 8021B	1	07/02/2002 12:27	Anastasia Papadoplos	1
01146	GC VOA Water Prep	SW-846 5030B	1	07/02/2002 12:27	Anastasia Papadoplos	n.a.
07003	Extraction - DRO (Waters)	TPH by CA LUFT	1	07/01/2002 01:50	JoEllen L Rice	1

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

Analysis Report

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Lancaster Laboratories Sample No. WW 3843054

Collected:06/25/2002 10:05 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:46
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-11-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 MW-11

28311

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
05553	TPH - DRO CA LUFT (Waters)	n.a.	N.D.	50.	ug/l	1
	According to the California LUFT Protocol, the quantitation for Diesel Range Organics was performed by peak area comparison of the sample pattern to that of our #2 fuel oil reference standard (between C10 and C28 normal hydrocarbons). Site-specific MS/MSD samples were not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.					
01729	TPH-GRO - Waters					
01730	TPH-GRO - Waters	n.a.	N.D.	50.	ug/l	1
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time. A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.					
08214	BTEX, MTBE (8021)					
00776	Benzene	71-43-2	N.D.	0.50	ug/l	1
00777	Toluene	108-88-3	N.D.	0.50	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.50	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	1.5	ug/l	1
00780	Methyl tert-Butyl Ether	1634-04-4	N.D.	2.5	ug/l	1
	A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.					

State of California Lab Certification No. 2116

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

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Analysis Report

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Lancaster Laboratories Sample No. WW 3843054

Collected:06/25/2002 10:05 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:46
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-11-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 MW-11

28311

05553	TPH - DRO CA LUFT (Waters)	CA LUFT Diesel Range Organics	1	07/02/2002 21:14	Devin M Lahr	1
01729	TPH-GRO - Waters	N. CA LUFT Gasoline Method	1	07/02/2002 11:16	Anastasia Papadoplos	1
08214	BTEX, MTBE (8021)	SW-846 8021B	1	07/02/2002 11:16	Anastasia Papadoplos	1
01146	GC VOA Water Prep	SW-846 5030B	1	07/02/2002 11:16	Anastasia Papadoplos	n.a.
07003	Extraction - DRO (Waters)	TPH by CA LUFT	1	07/01/2002 01:50	JoElla L Rice	1

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above Reporting Limit

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Analysis Report

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Lancaster Laboratories Sample No. WW 3843055

Collected:06/25/2002 15:10 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:46
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-12-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 MW-12

28312

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
05553	TPH - DRO CA LUFT (Waters)	n.a.	410.	50.	ug/l	1

According to the California LUFT Protocol, the quantitation for Diesel Range Organics was performed by peak area comparison of the sample pattern to that of our #2 fuel oil reference standard (between C10 and C28 normal hydrocarbons).
Site-specific MS/MSD samples were not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

01729 TPH-GRO - Waters

01730	TPH-GRO - Waters	n.a.	1,000.	50.	ug/l	1

The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.
A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

08214 BTEX, MTBE (8021)

00776	Benzene	71-43-2	340.	0.50	ug/l	1
00777	Toluene	108-88-3	8.2	0.50	ug/l	1
00778	Ethylbenzene	100-41-4	16.	0.50	ug/l	1
00779	Total Xylenes	1330-20-7	8.3	1.5	ug/l	1
00780	Methyl tert-Butyl Ether	1634-04-4	11.	2.5	ug/l	1

A site-specific MSD sample was not submitted for the project. A LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

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Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

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Analysis Report

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Lancaster Laboratories Sample No. WW 3843055

Collected:06/25/2002 15:10 by TC

Account Number: 10905

Submitted: 06/27/2002 09:30
Reported: 07/12/2002 at 11:46
Discard: 08/12/2002

ChevronTexaco
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

MW-12-W-020625 Grab Water
Facility# 211283 Job# 386956 GRD
3810 Broadway-Oakland T00600101108 MW-12

28312

05553	TPH - DRO CA LUFT (Waters)	CA LUFT Diesel Range Organics	1	07/02/2002 22:44	Devin M Lahr	1
01729	TPH-GRO - Waters	N. CA LUFT Gasoline Method	1	07/03/2002 03:31	Anastasia Papadoplos	1
08214	BTEX, MTBE (8021)	SW-846 8021B	1	07/03/2002 03:31	Anastasia Papadoplos	1
01146	GC VOA Water Prep	SW-846 5030B	1	07/03/2002 03:31	Anastasia Papadoplos	n.a.
07003	Extraction - DRO (Waters)	TPH by CA LUFT	1	07/01/2002 01:50	JoElla L Rice	1

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

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Quality Control Summary

Client Name: ChevronTexaco
Reported: 07/12/02 at 11:46 AM

Group Number: 812857

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 021800004A	Sample number(s): 3843047-3843055							
TPH - DRO CA LUFT (Waters)	N.D.	50.	ug/l	81	77	54-120	5	20
Batch number: 02181A56A	Sample number(s): 3843046-3843049,3843051-3843052							
Benzene	N.D.	0.5	ug/l	95	91	80-118	4	30
Toluene	N.D.	0.5	ug/l	101	97	82-119	4	30
Ethylbenzene	N.D.	0.5	ug/l	100	96	81-119	4	30
Total Xylenes	N.D.	1.5	ug/l	100	97	82-120	4	30
Methyl tert-Butyl Ether	N.D.	2.5	ug/l	91	91	79-127	0	30
TPH-GRO - Waters	N.D.	50.	ug/l	97	93	76-126	4	30
Batch number: 02181A56B	Sample number(s): 3843050							
Benzene	N.D.	0.5	ug/l	95	91	80-118	4	30
Toluene	N.D.	0.5	ug/l	101	97	82-119	4	30
Ethylbenzene	N.D.	0.5	ug/l	100	96	81-119	4	30
Total Xylenes	N.D.	1.5	ug/l	100	97	82-120	4	30
Methyl tert-Butyl Ether	N.D.	2.5	ug/l	91	91	79-127	0	30
TPH-GRO - Waters	N.D	50.	ug/l	97	93	76-126	4	30
Batch number: 02183A56A	Sample number(s): 3843053-3843054							
Benzene	N.D.	0.5	ug/l	101	104	80-118	3	30
Toluene	N.D.	0.5	ug/l	102	107	82-119	4	30
Ethylbenzene	N.D.	0.5	ug/l	104	108	81-119	5	30
Total Xylenes	N.D.	1.5	ug/l	103	108	82-120	4	30
Methyl tert-Butyl Ether	N.D.	2.5	ug/l	102	97	79-127	5	30
TPH-GRO - Waters	N.D.	50.	ug/l	96	100	76-126	4	30
Batch number: 02183A56B	Sample number(s): 3843055							
Benzene	N.D.	0.5	ug/l	101	104	80-118	3	30
Toluene	N.D.	0.5	ug/l	102	107	82-119	4	30
Ethylbenzene	N.D.	0.5	ug/l	104	108	81-119	5	30
Total Xylenes	N.D.	1.5	ug/l	103	108	82-120	4	30
Methyl tert-Butyl Ether	N.D.	2.5	ug/l	102	97	79-127	5	30
TPH-GRO - Waters	N.D.	50.	ug/l	96	100	76-126	4	30

Sample Matrix Quality Control

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 02181A56A	Sample number(s): 3843046-3843049,3843051-3843052								
Benzene	106		77-131						
Toluene	110		80-128						
Ethylbenzene	112		76-132						
Total Xylenes	111		76-132						

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
Where quality is a science.

Quality Control Summary

Client Name: ChevronTexaco
Reported: 07/12/02 at 11:46 AM

Group Number: 812857

Sample Matrix Quality Control

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Methyl tert-Butyl Ether	92		61-144						
TPH-GRO - Waters	92		74-132						
Batch number: 02181A56B	Sample number(s): 3843050								
Benzene	106		77-131						
Toluene	110		80-128						
Ethylbenzene	112		76-132						
Total Xylenes	111		76-132						
Methyl tert-Butyl Ether	92		61-144						
TPH-GRO - Waters	92		74-132						
Batch number: 02183A56A	Sample number(s): 3843053-3843054								
Benzene	102		77-131						
Toluene	104		80-128						
Ethylbenzene	104		76-132						
Total Xylenes	104		76-132						
Methyl tert-Butyl Ether	86		61-144						
TPH-GRO - Waters	91		74-132						
Batch number: 02183A56B	Sample number(s): 3843055								
Benzene	102		77-131						
Toluene	104		80-128						
Ethylbenzene	104		76-132						
Total Xylenes	104		76-132						
Methyl tert-Butyl Ether	86		61-144						
TPH-GRO - Waters	91		74-132						

Surrogate Quality Control

Analysis Name: TPH - DRO CA LUFT (Waters)
Batch number: 021800004A

	Orthoterphenyl
3843047	87
3843048	59
3843049	91
3843050	86
3843051	90
3843052	94
3843053	103
3843054	93
3843055	99
Blank	96
LCS	91
LCSD	88

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

Lancaster Laboratories
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Quality Control Summary

Client Name: ChevronTexaco
Reported: 07/12/02 at 11:46 AM

Group Number: 812857

Surrogate Quality Control

Limits: 59-139

Analysis Name: TPH-GRO - Waters
Batch number: 02181A56A

	Trifluorotoluene-F	Trifluorotoluene-P
3843046	93	98
3843047	92	98
3843048	95	96
3843049	95	99
3843051	91	97
3843052	95	97
Blank	92	97
LCS	105	98
LCSD	101	98
MS	102	98
Limits:	67-135	71-130

Analysis Name: TPH-GRO - Waters
Batch number: 02181A56B

	Trifluorotoluene-F	Trifluorotoluene-P
3843050	98	106
Blank	93	97
LCS	105	98
LCSD	101	98
MS	102	98
Limits:	67-135	71-130

Analysis Name: TPH-GRO - Waters
Batch number: 02183A56A

	Trifluorotoluene-F	Trifluorotoluene-P
3843053	98	99
3843054	90	98
Blank	92	97
LCS	105	99
LCSD	111	97
MS	104	98
Limits:	67-135	71-130

Analysis Name: TPH-GRO - Waters
Batch number: 02183A56B

	Trifluorotoluene-F	Trifluorotoluene-P
3843055	98	95
Blank	90	96
LCS	105	99

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

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Quality Control Summary

Client Name: ChevronTexaco
Group Number: 812857
Reported: 07/12/02 at 11:46 AM

Surrogate Quality Control

LCSD	111	97
MS	104	98
Limits:	67-135	71-130

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
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Lancaster Laboratories, Inc.
2425 New Holland Pike
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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Chevron California Region Analysis Request/Chain of Custody

Lancaster Laboratories
Where quality is a science.

gr# 812857
062602-005

For Lancaster Laboratories use only
Acct. #: 10905 Sample #: 3843046-55 SCR#:

Facility #: 211283 Job #386956 Globel ID#T0600101108
Site Address: 3810 BROADWAY, OAKLAND, CA
Chevron PM: K.STREICH Lead Consultant: DELTA
Consultant/Office: G-R, Inc., 6747 Sierra Court, Dublin, Ca 94568
Consultant Prj. Mgr: Deanna L. Harding (Deanna@grinc.com)
Consultant Phone #: 925-551-7555 Fax #: 925-551-7899
Sampler: Tony Camarda
Service Order #: ☐ Non SAR:

Analyses Requested / Preservation Codes

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (☐ Potable ☐ NPDES)	Matrix: Oil ☐ Air ☐	Total Number of Containers	BTEX + MTBE 8260 ☐ 8021 ☒ (A)	TPH 8015 MOD GRO (H)	TPH 8015 MOD DRO ☐ Silica Gel Cleanup	8260 full scan	Oxygenates ___	Lead 7420 ☐ 7421 ☐
TA	6.25.02	—				X		2	X	X				
MW-1		1415	X			X		5	X	X	X			
MW-4		1337	X			X		5	X	X	X			
MW-5B		1620	X			X		5	X	X	X			
MW-6		1259	X			X		5	X	X	X			
MW-7		1044	X			X		5	X	X	X			
MW-9		1208	X			X		5	X	X	X			
MW-10		1125	X			X		5	X	X	X			
MW-11		1005	X			X		5	X	X	X			
MW-12		1510	X			X		5	X	X	X			

Preservative Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 O = Other

☐ J value reporting needed
☐ Must meet lowest detection limits possible for 8260 compounds

8021 MTBE Confirmation
☐ Confirm highest hit by 8260
☐ Confirm all hits by 8260
☐ Run ____ oxy s on highest hit
☐ Run ____ oxy s on all hits

Comments / Remarks

Turnaround Time Requested (TAT) (please circle)
STD. TAT 72 hour 48 hour
24 hour 4 day 5 day

Data Package Options (please circle if required)
QC Summary Type I — Full
Type VI (Raw Data) ☐ Coelt Deliverable not needed
WIP (RWQCB)
Disk

Relinquished by:	Date	Time	Received by:	Date	Time
Tony Camarda	6.25.02	1745	[illegible]	6/26/02	1200
[illegible]	6/26/02	1200	Charles Rimaye	6-26-02	1200
Charles Rimaye	6-26-02	1500	Airborne	6-26-02	
Relinquished by Commercial Carrier: UPS FedEx Other Airborne			[illegible]	6/27/02	0935

Temperature Upon Receipt 2.5-5 C°
Custody Seals Intact? Yes No

3460 Rev. 7/30/01