Weiss Associates Environmental and Geologic Services

5500 Shellmound Street, Emeryville, CA 94608-2411 Fax: 510-547-5043 Phone: 510-450-6000

JM
3769
5T.10

March 15, 1994

94 MAR 17 PM 2:39
ALCO HAZMAT

Dan Kirk
Shell Oil Company
P. O. Box 5278
Concord, CA 94520

Re: Subsurface Investigation
Shell Service Station
WIC #204-5510-0600
4255 MacArthur Boulevard
Oakland, California
WA Job #81-757-10

Dear Mr. Kirk:

This letter presents the results of Weiss Associates' (WA) subsurface investigation at the Shell service station referenced above (Figure 1). The investigation objectives were to assess the horizontal extent of hydrocarbons in ground water and evaluate the ground water flow direction beneath the site. Presented below are our scope of work and the results of this and previous investigations.

SCOPE OF WORK

WA's scope of work for this investigation was to:

- Obtain the necessary well construction permits and prepare a site-specific health and safety plan;
- Drill three soil borings and collect soil samples from the borings for hydrocarbon analyses;
- Install ground water monitoring wells in the three borings;
- Develop and sample the ground water monitoring wells;
- Collect and analyze ground water samples from the wells for hydrocarbons;

- Survey the well's top of casing elevation and measure water levels in the wells to assess the ground water flow direction and gradient beneath the site; and
- Report the investigation results.

INVESTIGATION RESULTS

Site Setting

Location: The site is located on the west corner of High Street and MacArthur Boulevard in Oakland, California. The station is located about 175 ft above mean sea level in the East Bay foothills. There is no natural surface drainage within one-half mile of the site.

Potential Use of Local Ground Water: In general, ground water in the site vicinity is not a drinking water source. However, one domestic well and one irrigation well are located at a BP service station within one-half mile of the site (Figure 2, Table 1). These two wells were drilled in 1991 to depths of 158 and 179 ft, respectively. It is unknown if the domestic well is used as a drinking water supply well.

Surroundings: Primarily commercial with some nearby residential development.

Adjacent Hydrocarbon Sources: A Unocal 76 service station is located northeast across MacArthur Boulevard (Figure 3), and a former Chevron service station was located east and directly across the intersection of MacArthur Boulevard and High Street from the Shell site. A retail tire shop is located one block southeast and across High Street.

Wells in the Site Vicinity: The Alameda County Public Works Agency provided an inventory of twenty-one wells within one-half mile of the site. Sixteen of these wells are monitoring wells, three are cathodic protection wells, one is an irrigation well, and one is a domestic well. The irrigation and domestic wells are at a BP service station about one-fourth mile west of the Shell site (Figure 2, Table 1).

Previous Investigations

1985 Subsurface Investigation: In June 1985, Emcon Associates drilled three soil borings and installed one ground water monitoring well near the underground fuel tanks.[1] Two samples collected between 4 and 10 ft depth contained 15,800 and 2 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPH-G), respectively. No TPH-G were detected in the other four samples collected at depths between 10 and 20 ft. A ground water sample from the monitoring well installed immediately downgradient of the storage tanks contained 840 parts per billion (ppb) TPH-G, 76 ppb benzene, 22 ppb toluene, and 57 ppb xylenes and ethylbenzene.

1985 Underground Storage Tank Replacement: In December 1985, the underground storage tanks were replaced, and approximately 810 cubic yards of hydrocarbon-bearing soil was transported to a disposal facility. During the excavation, Gettler-Ryan collected soil samples for hydrocarbon and heavy metals analyses.[2] Up to 22,000 parts per million (ppm) total volatile hydrocarbons, 500 ppm benzene, 2,200 ppm toluene, and 4,500 ppm xylenes were detected in the soil. In addition, chromium, copper, zinc, lead, and arsenic were detected in some soil samples. There is no documentation of the excavation and tank replacement other than the analytic results.

1992 Site Reconnaissance: In July 1992, GeoStrategies Inc. (GSI) performed a site reconnaissance and verified that the original monitoring well had been destroyed during the 1985 tank replacement activities.[3]

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1 Emcon Associates, July 26, 1985, consultant's letter report describing a soil and ground water investigation at the Shell service station located at MacArthur and High Streets in Oakland, California, prepared for Gettler-Ryan, Inc., 2 pages, 1 figure, 4 plates and 1 appendix.

2 Gettler-Ryan, December 2, 1985, sampling reports from Trace Analysis Laboratory, Inc. of Hayward, California, copy of analytic reports.

3 Shell Oil Company, August 14, 1992, letter to the Alameda County Health Care Services Department of Environmental Health, Hazardous Materials Division regarding the Shell service station at 4255 MacArthur Boulevard in Oakland, 2 pages and 3 attachments.

November 1993 Soil Borings

Permits Obtained:	Alameda County Flood Control and Water Conservation District, Zone 7 Permit No. 93600 for the monitoring wells.
Drilling Dates:	November 3-4, 1993.
Drilling Geologist:	WA hydrogeologist Janet K. Macdonald, working under the supervision of N. Scott MacLeod, Registered Geologist.
Drilling Contractor and Method:	Soils Exploration Services, Inc. of Vacaville, California drilled the borings with a CME-55 drill rig using 10-inch diameter hollow stem augers. (Drilling and sampling procedures are presented as Attachment A).
Number of Borings:	Three: Borings BH-A, BH-B and BH-C (Figure 4).
Boring Depths:	23 to 24.5 ft below ground surface (bgs).
Lithology Encountered:	Predominately silty clay and clayey silt with low estimated hydraulic conductivity (K) from ground surface to about 12 ft bgs, and clayey sand, silty sand, and sand between about 12 to 22 ft bgs with moderate to high estimated K. The boring logs are presented as Attachment B.
Soil Analyses:	Selected soil samples from the borings were analyzed for TPH-G and benzene, ethylbenzene, toluene, and xylenes (BETX) by EPA Methods 8015 and 8020, respectively. The analytic results are tabulated in Table 2 and the analytic reports and chain of custody forms are included as Attachment C.
Waste Disposal:	Well purge water and steam cleaning rinsate from drilling were contained in 55-gallon drums and transported by Crosby and Overton to the Shell refinery in Martinez, California for recycling. Soil cuttings were disposed at BFI's Vasco Road Landfill in Livermore, California, a Class III facility.

November 1993 Well Construction

Number of Wells:	Three: Borings BH-A, BH-B and BH-C were completed as wells MW-1, MW-2 and MW-3, respectively (Figure 4).
Well Materials:	Four-inch diameter Schedule 40 PVC well casing with 0.010-inch slotted screen and Monterey #1/20 sand.
Screened Interval:	About 5 to 22 ft bgs. The well construction details are presented as Attachment B.
Well Development Method:	The three monitoring wells were developed on November 12, 1993, using surge block agitation and airlift evacuation.
Flow Rate:	Wells MW-2 and MW-3 each yielded about 1 gallon per minute (gpm) during development, and well MW-1 yielded about 1.5 gpm.
Ground Water Analyses:	On November 17, 1993, ground water samples were collected and analyzed for TPH-G and BETX by EPA Methods 8015 and 8020, respectively. The analytic results are tabulated in Table 3 and the analytic reports and chain of custody forms are included as Attachment C.

HYDROCARBON DISTRIBUTION IN SOIL

The hydrocarbons in soil beneath the site appear to be limited to depths between about 8 and 18 ft bgs. No hydrocarbons were detected in any of the soil samples collected at about 6 ft bgs. The highest TPH-G and BETX concentrations were detected in soil collected from 11.3 and 16 ft bgs in boring BH-C, located about 50 ft crossgradient of the underground storage tanks (Figure 4). The TPH-G and BETX concentrations are up to two orders-of-magnitude higher in boring BH-C than in boring BH-B (Table 2), located adjacent to the storage tanks. It is unclear whether the hydrocarbons detected in soil from upgradient borehole BH-A originated at the Shell site, or whether it migrated from the Unocal or former Chevron service station upgradient of the site.

HYDROCARBON DISTRIBUTION IN GROUND WATER

The highest TPH-G and BETX concentrations were detected in ground water from wells MW-2 and MW-3 (Table 3) where BETX concentrations exceeded the California Department of Toxic Substances Control maximum contaminant levels for drinking water (Table 3). No floating hydrocarbons were measured in any of the wells. Figures 5 and 6 present the distribution of TPH-G and benzene in ground water, respectively. The hydrocarbons detected in well MW-1 may be due to an upgradient hydrocarbon source at the Unocal service station or the former Chevron service station (Figure 3). The downgradient and lateral extent of TPH-G and BETX beneath the site were not defined in this initial subsurface investigation.

GROUND WATER FLOW DIRECTION

Huge difference!

On November 17, 1993, depth to water ranged from 8.6 ft in MW-1 to 15.4 ft in MW-3 (Table 3). Based on this data, ground water flows to the southwest with a gradient of about 0.10 ft/ft. This flow direction is consistent with ground water elevation data from the former Chevron service station. Ground water elevation data are contoured in Figure 4.

We trust this submittal meets your needs. Please call if you have any questions or comments.

Sincerely,
Weiss Associates

Janet K. Macdonald
Senior Staff Hydrogeologist

James W. Carmody, C.E.G.
Senior Project Hydrogeologist

REGISTERED GEOLOGIST
JAMES W. CARMODY
No. EG 1576
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

JKM/JWC:jm

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Attachments: A - Sampling Procedures
B - Boring Logs
C - Analytic Reports for Soil and Ground Water

cc: Thomas Peacock, Alameda County Health Care Services Department of Environmental Health, 80 Swan Way, Room 200, Oakland, California 94621
Lester Feldman, Regional Water Quality Control Board - San Francisco Bay, 2101 Webster Street, Suite 500, Oakland, California 94612

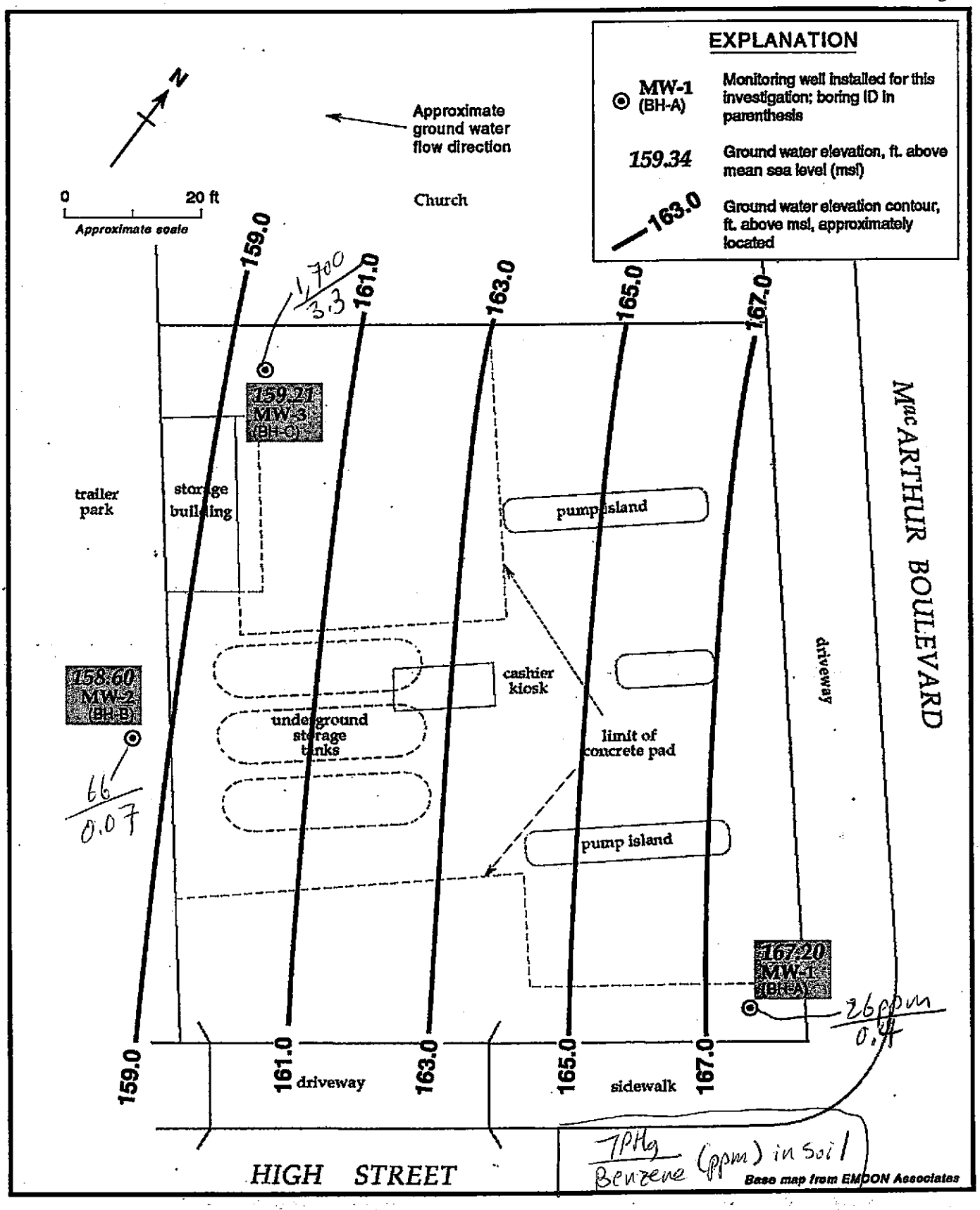


Figure 4. Monitoring Well Locations and Ground Water Elevations - November 17, 1993 - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California

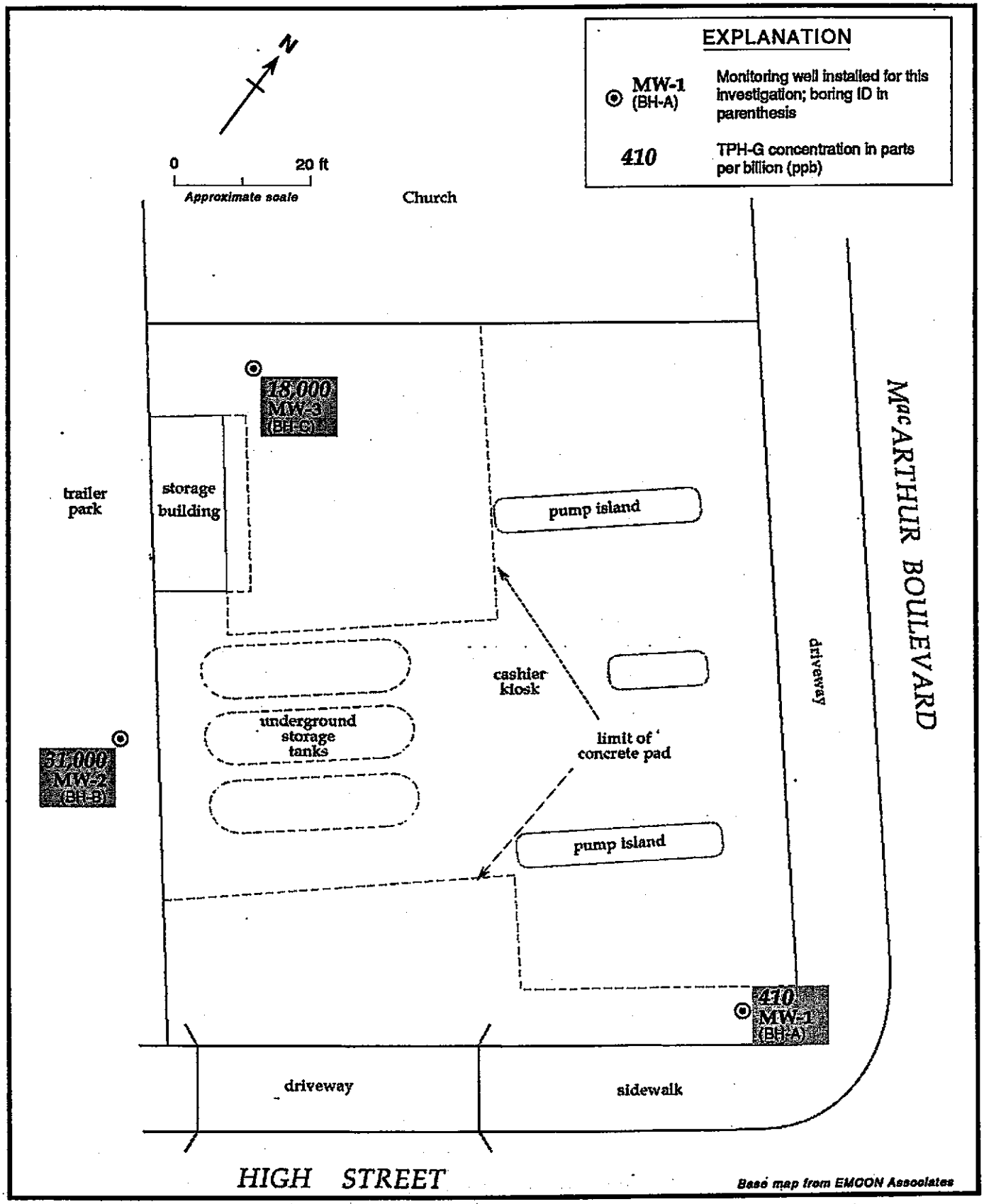


Figure 5. TPH-G Concentrations in Ground Water - November 17, 1993 - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California

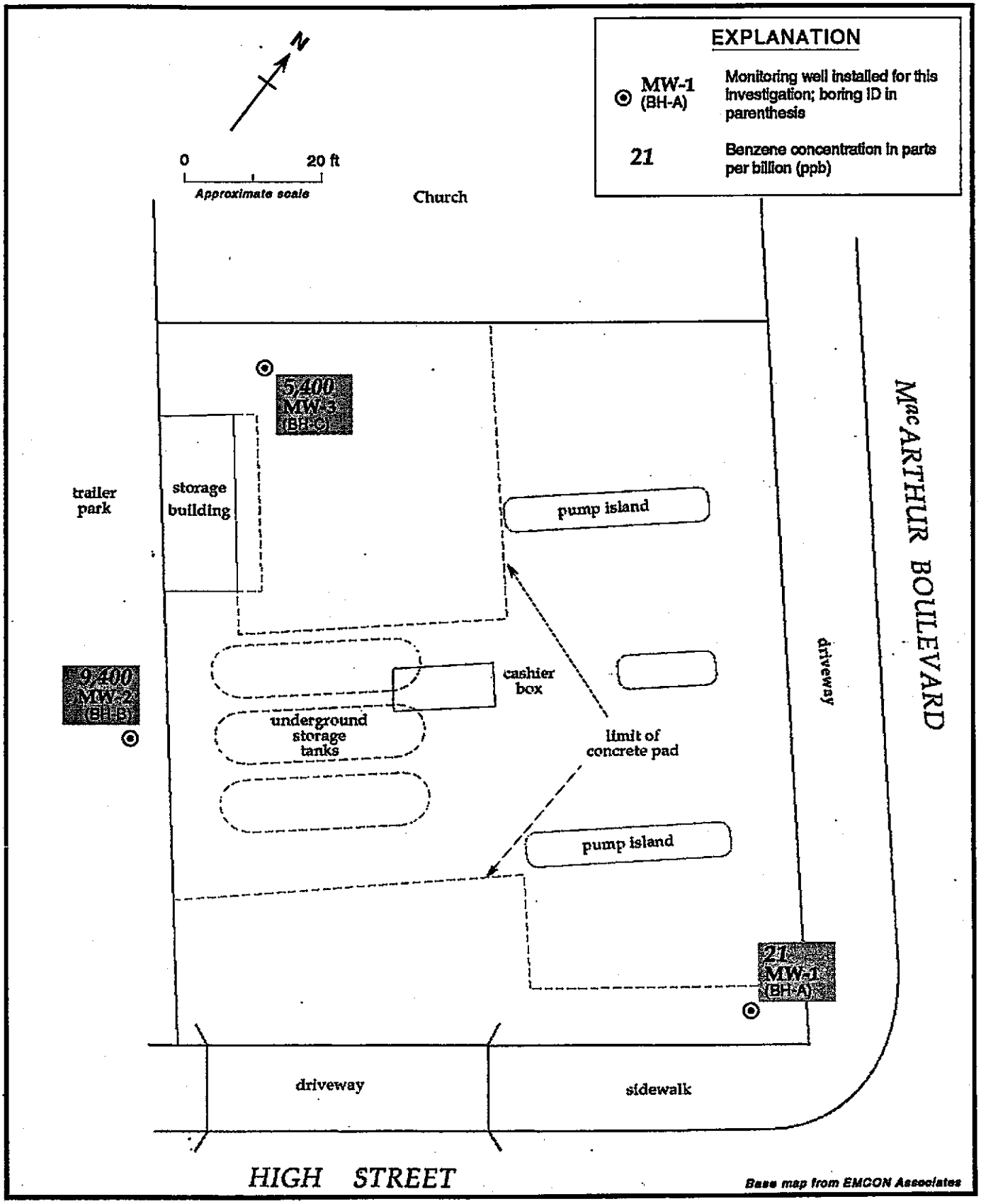


Figure 6. Benzene Concentrations in Ground Water - November 17, 1993 - Shell Service StationWIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California

Table 2. Analytic Results for Soil - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California

Boring ID (Well ID)	Sample Depth (ft)	Date Sampled	Ground Water Depth (ft)	TPH-G	B	E	T	X
				<----------parts per million (mg/kg)---------->				
BH-A	6.0	11/03/93	8.56	<1	<0.0025	<0.0025	<0.0025	<0.0025
(MW-1)	10.5	11/03/93		26	0.4	0.12	0.028	0.62
	14.0	11/03/93		24	0.028	0.062	0.02	0.32
	18.0	11/03/93		<1	<0.0025	<0.0025	<0.0025	<0.0025
	22.0	11/03/93		<1	0.0063	0.0097	0.0094	0.057
BH-B	6.0	11/03/93	12.07	<1	<0.0025	<0.0025	<0.0025	<0.0025
(MW-2)	9.0	11/03/93		7.6	0.069	0.044	<0.0025	0.11
	14.0	11/03/93		66	0.07	0.53	0.44	2.6
	18.5	11/03/93		<1	0.032	0.0042	0.012	0.02
	24.0	11/03/93		<1	0.021	0.0037	0.023	0.021
BH-C	6.5	11/04/93	15.27	<1	<0.0025	<0.0025	<0.0025	<0.0025
(MW-3)	11.3	11/04/93		1,700	1.1	33	2.5	44
	16.0	11/04/93		610	3.3	6.9	5.7	33
	22.5	11/04/93		<1	<0.0025	<0.0025	<0.0025	<0.0025

Abbreviations

TPH-G = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
B = Benzene by EPA Method 8020
E = Ethylbenzene by EPA Method 8020
T = Toluene by EPA Method 8020
X = Xylenes by EPA Method 8020
<n = Not detected above method detection limit of n ppb

Analytical Laboratory:

National Environmental Testing (NET) Pacific, Inc., Santa Rosa, California

Table 1. Wells Located Within One-Half Mile of Shell Service Station WIC #204-5510-0600; 4255 MacArthur Boulevard, Oakland, California

ID	Owner	Location	Use	Year Drilled
1	PG&E	Steele St.	Cathodic Protection	1976
2	Unocal Corp.	3535 Pierson St.	Monitoring	1990
3-5	Mills College	5000 MacArthur Blvd.	Monitoring	1989
6	EBMUD	Vale Ave.	Cathodic Protection	1975
7	PG&E	Redding St.	Cathodic Protection	1973
8-10	Unocal Corp.	3420-35th Ave.	Monitoring	1989
11-14	Chevron USA Inc.	4300 MacArthur Blvd.	Monitoring	1989, 1992
15-20	Mobil/BP Oil Corp.	3315 High St.	4 Monitoring 1 Irrigation 1 Domestic	1986, 1991 1991 1991
21	Blue Chip Business Broker	2951 High St.	Monitoring	1990

Table 3. Analytic Results for Ground Water - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland

Well ID (Elevation)	Date Sampled	Depth to Water (ft)	Ground Water Elevation (ft)	TPH-G	B	E	T	X
				<----------parts per billion (µg/L)---------->				
MW-1 (175.79)	11/17/93	8.59	167.20	410	21	7.9	11	47
MW-2 (170.91)	11/17/93	12.31	158.60	31,000	9,400	1,000	4,600	3,900
MW-3 (174.61)	11/17/93	15.40	159.21	18,000	5,400	720	660	2,200
DTSC MCLs				NE	1	680	100[a]	1,750

Abbreviations:

TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015
B = Benzene by EPA Method 8020, 602 or 8240
E = Ethylbenzene by EPA Method 8020, 602 or 8240
T = Toluene by EPA Method 8020, 602 or 8240
X = Xylenes by EPA Method 8020, 602 or 8240
Elevation is in ft above mean sea level
<n = Not detected above detection limit of n ppb
DTSC MCLs = California Department of Toxic Substances Control maximum contaminant levels for drinking water
NE = Not established

Notes:

a = DTSC recommended action level; MCL not established

ATTACHMENT A

STANDARD FIELD PROCEDURES

STANDARD FIELD PROCEDURES

Weiss Associates (WA) has developed standard procedures for drilling and sampling soil borings and installing, developing and sampling ground water monitoring wells. These procedures comply with Federal, State and local regulatory guidelines. Specific procedures are summarized below.

SOIL BORING AND SAMPLING

Objectives/Supervision

Soil sampling objectives include characterizing subsurface lithology, assessing whether the soils exhibit obvious hydrocarbon or other compound vapor or staining, and collecting samples for analysis at a State-certified laboratory. All borings are logged using the Unified Soil Classification System by a trained geologist working under the supervision of a California Registered Geologist (RG) or a Certified Engineering Geologist (CEG).

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers. Split-barrel samplers lined with steam-cleaned brass or stainless steel tubes are driven through the hollow auger stem into undisturbed sediments at the bottom of the borehole using a 140 pound hammer dropped 30 inches. Soil samples can also be collected without using hollow-stem augers by progressively driving split-barrel soil samplers to depths of up to 20 ft.

Soil samples are collected at least every five ft to characterize the subsurface sediments and for possible chemical analysis. Near the water table and at lithologic changes, the sampling interval may be less than five ft.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Analysis

After noting the lithology at each end of the sampling tubes, the tube chosen for analysis is immediately trimmed of excess soil and capped with teflon tape and plastic end caps. The sample is labelled, stored at or below 4°C, and transported under chain-of-custody to a State-certified analytic laboratory.

Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable photoionization detector (PID) measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. PID measurements are used along with the stratigraphy and ground water depth to select soil samples for analysis.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe. If wells are completed in the borings, the well installation, development and sampling procedures summarized below are followed.

MONITORING WELL INSTALLATION, DEVELOPMENT AND SAMPLING

Well Construction and Surveying

Wells are installed to monitor ground water quality and determine the ground water elevation, flow direction and gradient. Well depths and screen lengths are based on ground water depth, occurrence of hydrocarbons or other compounds in the borehole, stratigraphy and state and local

regulatory guidelines. Well screens typically extend 15 ft below and 5 ft above the static water level at the time of drilling. However, the well screen will generally not extend into or through a clay layer that is at least three to five ft thick.

Well casing and screen are flush-threaded, Schedule 40 PVC. Screen slot size varies according to the sediments screened, but slots are generally 0.010 or 0.020 inches wide. A rinsed and graded sand occupies the annular space between the boring and the well screen to about one to two ft above the well screen. A two ft thick hydrated bentonite seal separates the sand from the overlying sanitary surface seal composed of cement with 3-5% bentonite.

Well-heads are secured by locking well-caps inside traffic-rated vaults finished flush with the ground surface. A stovepipe may be installed between the well-head and the vault cap for additional security. The well top-of-casing elevation is surveyed with respect to mean sea level and the well is surveyed for horizontal location with respect to an onsite or nearby offsite landmark.

Well Development

After 24 hours, the wells are developed using a combination of ground water surging and extraction. Surging agitates the ground water and dislodges fine sediments from the sand pack. After about ten minutes of surging, ground water is extracted from the well using bailing, pumping and/or reverse air-lifting through an eductor pipe to remove the sediments from the well. Surging and extraction continue until at least ten well-casing volumes of ground water are extracted and the sediment volume in the ground water is negligible. All equipment is steam-cleaned prior to use and air used for air-lifting is filtered to prevent oil entrained in the compressed air from entering the well. Wells that are developed using air-lift evacuation are not sampled until at least 24 hours after they are developed.

Ground Water Sampling

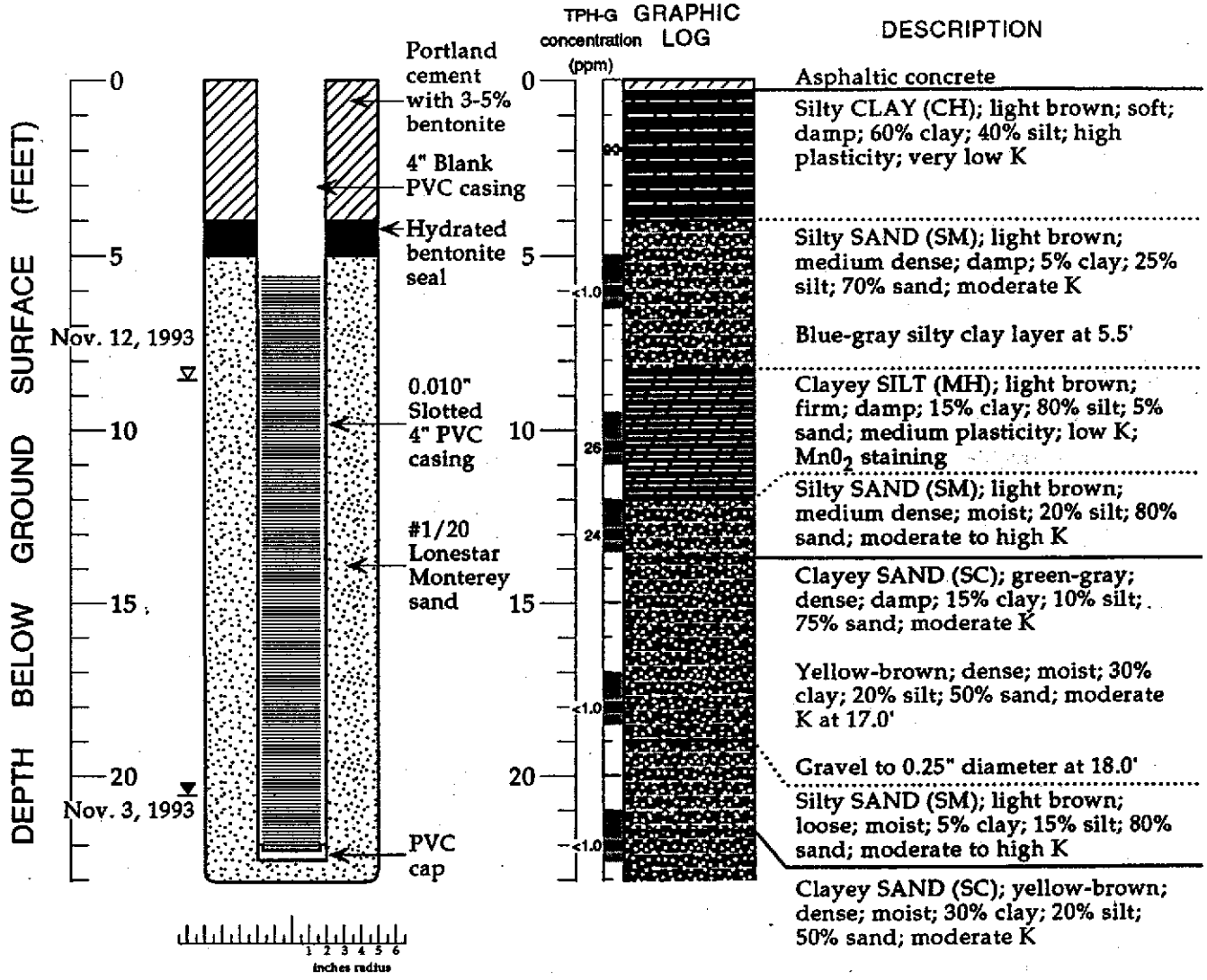
Depending on local regulatory guidelines, three to four well-casing volumes of ground water are purged prior to sampling. Purging continues until ground water pH, conductivity, and temperature have stabilized. Ground water samples are collected using bailers or pumps and are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labelled, placed in protective foam sleeves, stored at 4°C, and transported under chain-of-custody to the laboratory. Laboratory-

supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

ATTACHMENT B

BORING LOGS

MONITORING WELL MW-1 (BH-A)



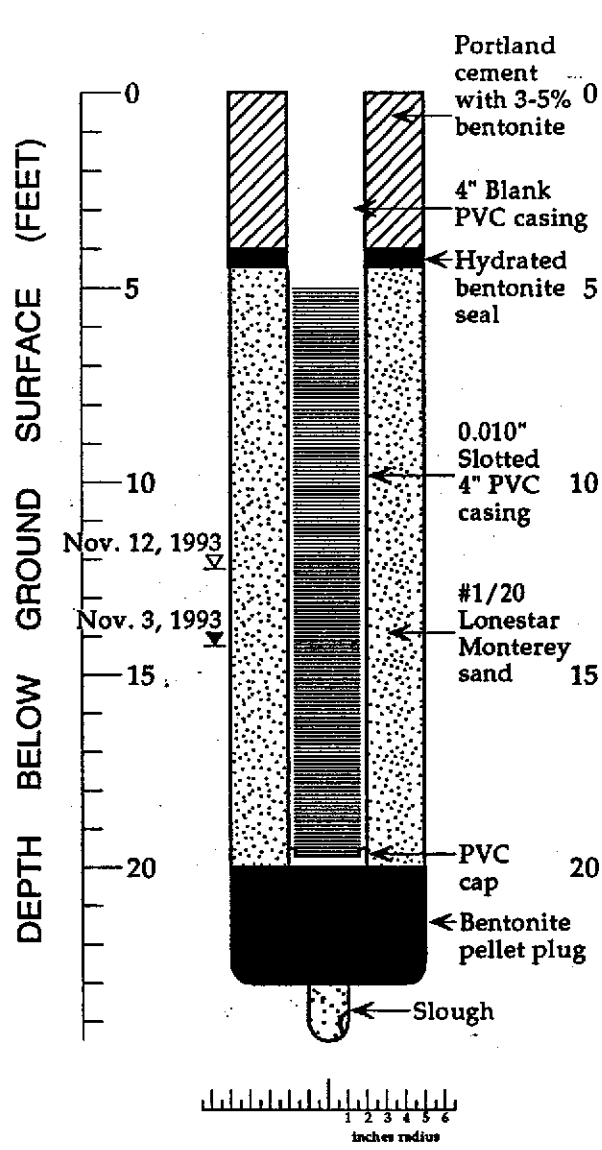
EXPLANATION

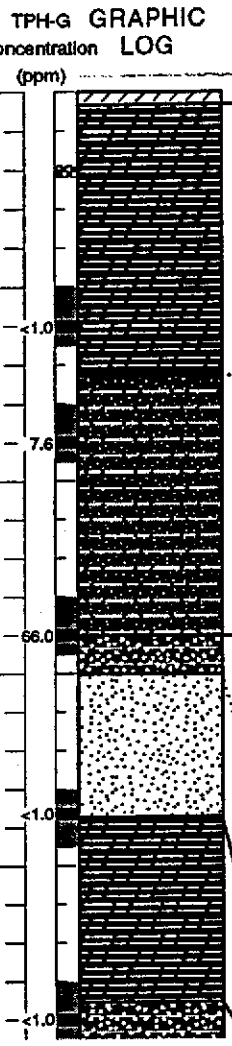
- Water level during drilling (date)
- Water level (date)
- Contact (dotted where approximate)
- Uncertain contact
- Gradational contact
- Location of recovered drive sample
- Location of drive sample sealed for chemical analysis
- Cutting sample
- K = Estimated hydraulic conductivity

Logged By: Janet K. Macdonald
Supervisor: N. Scott MacLeod; RG 5747
Drilling Company: Soils Exploration Services, Vacaville, CA
License Number: C57-582696
Driller: Morris Petersen
Drilling Method: Hollow-stem auger
Date Drilled: November 3, 1993
Well Head Completion: 4" locking well-plug, traffic-rated vault
Type of Sampler: Split barrel (2" ID)
Ground Surface Elevation: 175.79 feet above mean sea level
TPH-G: Total petroleum hydrocarbon as gasoline in soil by modified EPA Method 8015

Boring Log and Well Construction Details - Well MW-1 (BH-A) - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California

MONITORING WELL MW-2 (BH-B)





DESCRIPTION

Asphaltic concrete

Clayey SILT (ML); green-dark brown; firm; damp; 20% clay; 70% silt; 10% sand; low plasticity; low K

0.5' thick Silty SAND layer at 5.0'

Sandy SILT (ML); light brown; soft; damp; 10% clay; 65% silt; 25% sand; moderate K

Pebbles to 0.25" diameter between 8.0 and 9.5'

Silty SAND (SM); light brown; loose; damp; 5% clay; 10% silt; 85% coarse sand; moderate to high K

(contact-driller)

SAND (SM); dark gray; very loose; moist; 5% silt; 95% coarse sand; moderate to high K

Cobbles to 2.0" diameter at 18.5'

Clayey SILT (ML); light brown; loose; moist; 10% clay; 85% silt; 5% sand; low plasticity; low K

Silty SAND (SM); light brown mottled orange; dense; moist; 5% clay; 25% silt; 70% sand; moderate K

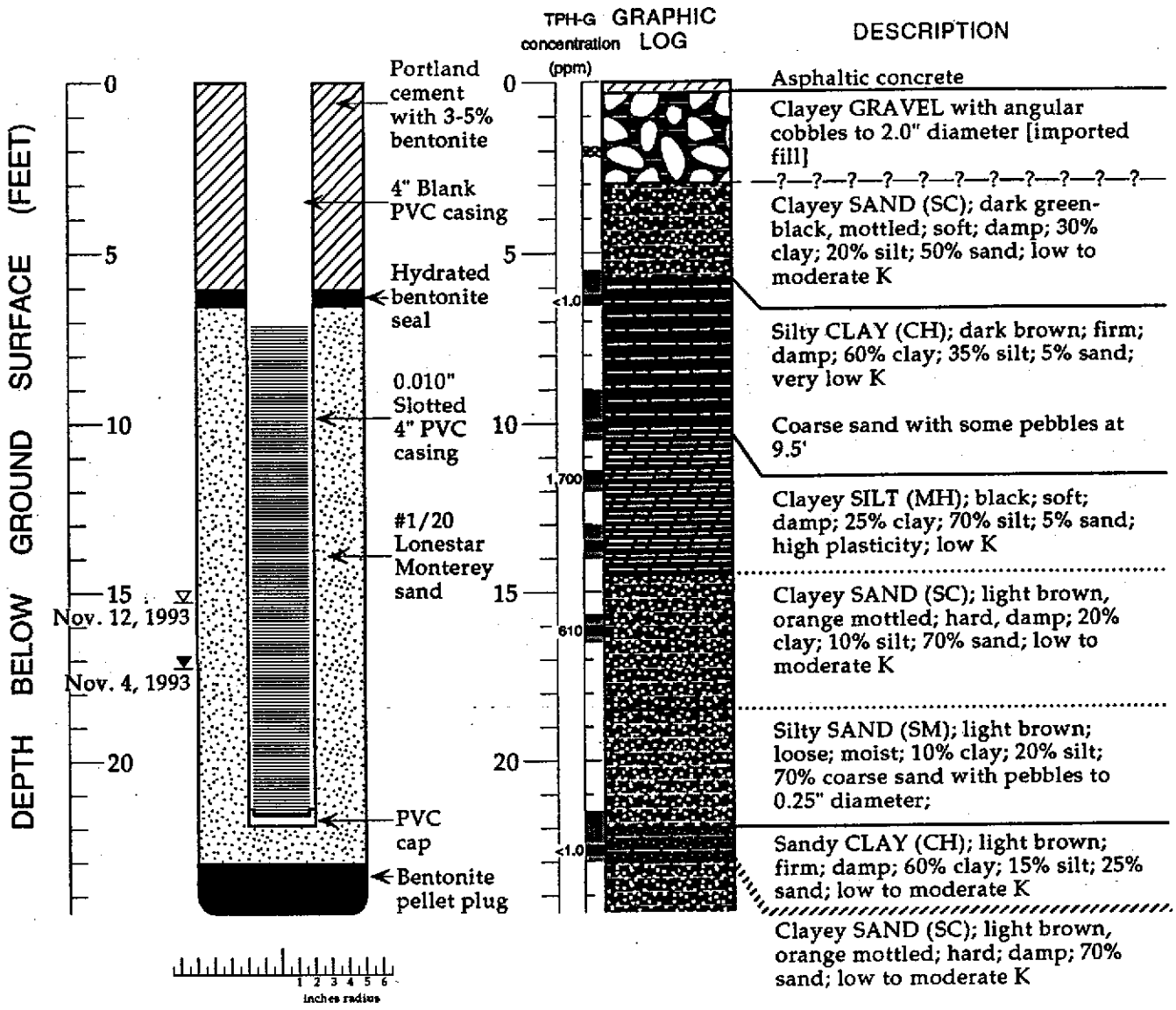
EXPLANATION

- ▼ Water level during drilling (date)
- ▽ Water level (date)
- ——— Contact (dotted where approximate)
- —?—?— Uncertain contact
- ////////// Gradational contact
- ■ Location of recovered drive sample
- ■ Location of drive sample sealed for chemical analysis
- ▩ Cutting sample
- K = Estimated hydraulic conductivity

Logged By: Janet K. Macdonald
Supervisor: N. Scott MacLeod; RG 5747
Drilling Company: Soils Exploration Services, Vacaville,CA
License Number: C57-582696
Driller: Morris Peterson
Drilling Method: Hollow-stem auger
Date Drilled: November 3, 1993
Well Head Completion: 4" locking well-plug, traffic-rated vault
Type of Sampler: Split barrel (2" ID)
Ground Surface Elevation: 170.91 feet above mean sea level
TPH-G: Total petroleum hydrocarbon as gasoline in soil by modified EPA Method 8015

Boring Log and Well Construction Details - Well MW-2 (BH-B) - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California

MONITORING WELL MW-3 (BH-C)



EXPLANATION

- Water level during drilling (date)
- Water level (date)
- Contact (dotted where approximate)
- Uncertain contact
- Gradational contact
- Location of recovered drive sample
- Location of drive sample sealed for chemical analysis
- Cutting sample
- K = Estimated hydraulic conductivity

Logged By: Janet K. Macdonald
Supervisor: N. Scott MacLeod; RG 5747
Drilling Company: Soils Exploration Services, Vacaville, CA
License Number: C57-582696
Driller: Morris Peterson
Drilling Method: Hollow-stem auger
Date Drilled: November 4, 1993
Well Head Completion: 4" locking well-plug, traffic-rated vault
Type of Sampler: Split barrel (2" ID)
Ground Surface Elevation: 174.61 feet above mean sea level
TPH-G: Total petroleum hydrocarbon as gasoline in soil by modified EPA Method 8015

Boring Log and Well Construction Details - Well MW-3 (BH-C) - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California

ATTACHMENT C

ANALYTIC REPORTS FOR SOIL AND GROUND WATER

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Tom Fojut
Weiss Associates
5500 Shellmound St.
Emeryville, CA 94608

Date: 11/15/1993
NET Client Acct. No: 1809
NET Pacific Job No: 93.04906
Received: 11/06/1993

Client Reference Information

SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

Enclosure(s)

Ref: SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

SAMPLE DESCRIPTION: BHA-6.0
Date Taken: 11/03/1993
Time Taken:
NET Sample No: 177996

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Solid)							
METHOD 5030/M8015	--						11/09/1993
DILUTION FACTOR*	1						11/09/1993
as Gasoline	ND		1	mg/kg	5030		11/09/1993
METHOD 8020 (GC,Solid)	--						11/09/1993
Benzene	ND		0.0025	mg/kg	8020		11/09/1993
Toluene	ND		0.0025	mg/kg	8020		11/09/1993
Ethylbenzene	ND		0.0025	mg/kg	8020		11/09/1993
Xylenes (Total)	ND		0.0025	mg/kg	8020		11/09/1993
SURROGATE RESULTS	--						11/09/1993
Bromofluorobenzene (SURR)	87			% Rec.	5030		11/09/1993

Ref: SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

SAMPLE DESCRIPTION: BHA-10.5
Date Taken: 11/03/1993
Time Taken:
NET Sample No: 177997

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Solid)							
METHOD 5030/M8015	--						11/09/1993
DILUTION FACTOR*	10						11/09/1993
as Gasoline	26		1	mg/kg	5030		11/09/1993
METHOD 8020 (GC,Solid)	--						11/09/1993
Benzene	0.40		0.025	mg/kg	8020		11/09/1993
Toluene	0.28		0.025	mg/kg	8020		11/09/1993
Ethylbenzene	0.12		0.025	mg/kg	8020		11/09/1993
Xylenes (Total)	0.62		0.025	mg/kg	8020		11/09/1993
SURROGATE RESULTS	--						11/09/1993
Bromofluorobenzene (SURR)	101			% Rec.	5030		11/09/1993

Ref: SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

SAMPLE DESCRIPTION: BHA-14.0
Date Taken: 11/03/1993
Time Taken:
NET Sample No: 177998

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Solid)							
METHOD 5030/M8015	--						11/11/1993
DILUTION FACTOR*	5						11/11/1993
as Gasoline	24		1	mg/kg	5030		11/11/1993
METHOD 8020 (GC,Solid)	--						11/11/1993
Benzene	0.028		0.0125	mg/kg	8020		11/11/1993
Toluene	0.020		0.0125	mg/kg	8020		11/11/1993
Ethylbenzene	0.062		0.0125	mg/kg	8020		11/11/1993
Xylenes (Total)	0.32		0.0125	mg/kg	8020		11/11/1993
SURROGATE RESULTS	--						11/11/1993
Bromofluorobenzene (SURR)	130	MI		% Rec.	5030		11/11/1993

MI : Matrix Interference

Ref: SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

SAMPLE DESCRIPTION: BHA-18.0
Date Taken: 11/03/1993
Time Taken:
NET Sample No: 177999

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Solid)							
METHOD 5030/M8015	--						11/09/1993
DILUTION FACTOR*	1						11/09/1993
as Gasoline	ND		1	mg/kg	5030		11/09/1993
METHOD 8020 (GC,Solid)	--						11/09/1993
Benzene	ND		0.0025	mg/kg	8020		11/09/1993
Toluene	ND		0.0025	mg/kg	8020		11/09/1993
Ethylbenzene	ND		0.0025	mg/kg	8020		11/09/1993
Xylenes (Total)	ND		0.0025	mg/kg	8020		11/09/1993
SURROGATE RESULTS	--						11/09/1993
Bromofluorobenzene (SURR)	86			% Rec.	5030		11/09/1993

Ref: SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

SAMPLE DESCRIPTION: BHA-22.0
Date Taken: 11/03/1993
Time Taken:
NET Sample No: 178000

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Solid)							
METHOD 5030/M8015	--						11/09/1993
DILUTION FACTOR*	1						11/09/1993
as Gasoline	ND		1	mg/kg	5030		11/09/1993
METHOD 8020 (GC,Solid)	--						11/09/1993
Benzene	0.0063		0.0025	mg/kg	8020		11/09/1993
Toluene	0.0094		0.0025	mg/kg	8020		11/09/1993
Ethylbenzene	0.0097		0.0025	mg/kg	8020		11/09/1993
Xylenes (Total)	0.057		0.0025	mg/kg	8020		11/09/1993
SURROGATE RESULTS	--						11/09/1993
Bromofluorobenzene (SURR)	86			% Rec.	5030		11/09/1993

Ref: SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

SAMPLE DESCRIPTION: BHB-6.0
Date Taken: 11/03/1993
Time Taken:
NET Sample No: 178001

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Solid)							
METHOD 5030/M8015	--						11/10/1993
DILUTION FACTOR*	1						11/10/1993
as Gasoline	ND		1	mg/kg	5030		11/10/1993
METHOD 8020 (GC,Solid)	--						11/10/1993
Benzene	ND		0.0025	mg/kg	8020		11/10/1993
Toluene	ND		0.0025	mg/kg	8020		11/10/1993
Ethylbenzene	ND		0.0025	mg/kg	8020		11/10/1993
Xylenes (Total)	ND		0.0025	mg/kg	8020		11/10/1993
SURROGATE RESULTS	--						11/10/1993
Bromofluorobenzene (SURR)	81			% Rec.	5030		11/10/1993

Ref: SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

SAMPLE DESCRIPTION: BHB-9.0
Date Taken: 11/03/1993
Time Taken:
NET Sample No: 178002

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Solid)							
METHOD 5030/M8015	--						11/09/1993
DILUTION FACTOR*	1						11/09/1993
as Gasoline	7.6		1	mg/kg	5030		11/09/1993
METHOD 8020 (GC,Solid)	--						11/09/1993
Benzene	0.069		0.0025	mg/kg	8020		11/09/1993
Toluene	ND		0.0025	mg/kg	8020		11/09/1993
Ethylbenzene	0.044		0.0025	mg/kg	8020		11/09/1993
Xylenes (Total)	0.11		0.0025	mg/kg	8020		11/09/1993
SURROGATE RESULTS	--						11/09/1993
Bromofluorobenzene (SURR)	106			% Rec.	5030		11/09/1993

Ref: SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

SAMPLE DESCRIPTION: BHB-14.0
Date Taken: 11/03/1993
Time Taken:
NET Sample No: 178003

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Solid)							
METHOD 5030/M8015	--						11/09/1993
DILUTION FACTOR*	10						11/09/1993
as Gasoline	66		1	mg/kg	5030		11/09/1993
METHOD 8020 (GC,Solid)	--						11/09/1993
Benzene	0.070		0.025	mg/kg	8020		11/09/1993
Toluene	0.44		0.025	mg/kg	8020		11/09/1993
Ethylbenzene	0.53		0.025	mg/kg	8020		11/09/1993
Xylenes (Total)	2.6		0.025	mg/kg	8020		11/09/1993
SURROGATE RESULTS	--						11/09/1993
Bromofluorobenzene (SURR)	98			% Rec.	5030		11/09/1993

Ref: SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

SAMPLE DESCRIPTION: BHB-18.5
Date Taken: 11/03/1993
Time Taken:
NET Sample No: 178004

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Solid)							
METHOD 5030/M8015	--						11/11/1993
DILUTION FACTOR*	1						11/11/1993
as Gasoline	ND		1	mg/kg	5030		11/11/1993
METHOD 8020 (GC,Solid)	--						11/11/1993
Benzene	0.032		0.0025	mg/kg	8020		11/11/1993
Toluene	0.012		0.0025	mg/kg	8020		11/11/1993
Ethylbenzene	0.0042		0.0025	mg/kg	8020		11/11/1993
Xylenes (Total)	0.020		0.0025	mg/kg	8020		11/11/1993
SURROGATE RESULTS	--						11/11/1993
Bromofluorobenzene (SURR)	89			% Rec.	5030		11/11/1993

Ref: SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

SAMPLE DESCRIPTION: BHB-24.0
Date Taken: 11/03/1993
Time Taken:
NET Sample No: 178005

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Solid)							
METHOD 5030/M8015	--						11/09/1993
DILUTION FACTOR*	1						11/09/1993
as Gasoline	ND		1	mg/kg	5030		11/09/1993
METHOD 8020 (GC,Solid)	--						11/09/1993
Benzene	0.021		0.0025	mg/kg	8020		11/09/1993
Toluene	0.023		0.0025	mg/kg	8020		11/09/1993
Ethylbenzene	0.0037		0.0025	mg/kg	8020		11/09/1993
Xylenes (Total)	0.021		0.0025	mg/kg	8020		11/09/1993
SURROGATE RESULTS	--						11/09/1993
Bromofluorobenzene (SURR)	90			% Rec.	5030		11/09/1993

Ref: SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

SAMPLE DESCRIPTION: BHC-6.5
Date Taken: 11/04/1993
Time Taken:
NET Sample No: 178006

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Solid)							
METHOD 5030/M8015	--						11/09/1993
DILUTION FACTOR*	1						11/09/1993
as Gasoline	ND		1	mg/kg	5030		11/09/1993
METHOD 8020 (GC,Solid)	--						11/09/1993
Benzene	ND		0.0025	mg/kg	8020		11/09/1993
Toluene	ND		0.0025	mg/kg	8020		11/09/1993
Ethylbenzene	ND		0.0025	mg/kg	8020		11/09/1993
Xylenes (Total)	ND		0.0025	mg/kg	8020		11/09/1993
SURROGATE RESULTS	--						11/09/1993
Bromofluorobenzene (SURR)	76			% Rec.	5030		11/09/1993

Ref: SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

SAMPLE DESCRIPTION: BHC-11.3
Date Taken: 11/04/1993
Time Taken:
NET Sample No: 178008

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Solid)							
METHOD 5030/M8015	--						11/09/1993
DILUTION FACTOR*	50						11/09/1993
as Gasoline	1,700		1	mg/kg	5030		11/10/1993
METHOD 8020 (GC,Solid)	--						11/09/1993
Benzene	1.1		0.125	mg/kg	8020		11/09/1993
Toluene	2.5		0.125	mg/kg	8020		11/09/1993
Ethylbenzene	33		0.125	mg/kg	8020		11/10/1993
Xylenes (Total)	44		0.125	mg/kg	8020		11/10/1993
SURROGATE RESULTS	--						11/09/1993
Bromofluorobenzene (SURR)	105			% Rec.	5030		11/09/1993

Ref: SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

SAMPLE DESCRIPTION: BHC-16.0
Date Taken: 11/04/1993
Time Taken:
NET Sample No: 178010

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Solid)							
METHOD 5030/M8015	--						11/11/1993
DILUTION FACTOR*	100						11/11/1993
as Gasoline	610		1	mg/kg	5030		11/11/1993
METHOD 8020 (GC,Solid)	--						11/11/1993
Benzene	3.3		0.25	mg/kg	8020		11/11/1993
Toluene	5.7		0.25	mg/kg	8020		11/11/1993
Ethylbenzene	6.9		0.25	mg/kg	8020		11/11/1993
Xylenes (Total)	33		0.25	mg/kg	8020		11/11/1993
SURROGATE RESULTS	--						11/11/1993
Bromofluorobenzene (SURR)	168	MI		% Rec.	5030		11/11/1993

MI : Matrix Interference

Ref: SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

SAMPLE DESCRIPTION: BHC-22.5
Date Taken: 11/04/1993
Time Taken:
NET Sample No: 178011

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Solid)							
METHOD 5030/M8015	--						11/09/1993
DILUTION FACTOR*	1						11/09/1993
as Gasoline	ND		1	mg/kg	5030		11/09/1993
METHOD 8020 (GC,Solid)	--						11/09/1993
Benzene	ND		0.0025	mg/kg	8020		11/09/1993
Toluene	ND		0.0025	mg/kg	8020		11/09/1993
Ethylbenzene	ND		0.0025	mg/kg	8020		11/09/1993
Xylenes (Total)	ND		0.0025	mg/kg	8020		11/09/1993
SURROGATE RESULTS	--						11/09/1993
Bromofluorobenzene (SURR)	90			% Rec.	5030		11/09/1993

Ref: SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Solid)						
as Gasoline	100.2	5.009	5.00	mg/kg	11/09/1993	dkb
Benzene	100.4	25.1	25.0	ug/kg	11/09/1993	dkb
Toluene	101.6	25.4	25.0	ug/kg	11/09/1993	dkb
Ethylbenzene	94.8	23.7	25.0	ug/kg	11/09/1993	dkb
Xylenes (Total)	98.8	74.1	75.0	ug/kg	11/09/1993	dkb
Bromofluorobenzene (SURR)	105.0	105	100	% Rec.	11/09/1993	dkb
TPH (Gas/BTXE,Solid)						
as Gasoline	106.4	5.32	5.00	mg/kg	11/10/1993	dkb
Benzene	90.4	22.6	25.0	ug/kg	11/10/1993	dkb
Toluene	92.4	23.1	25.0	ug/kg	11/10/1993	dkb
Ethylbenzene	86.4	21.6	25.0	ug/kg	11/10/1993	dkb
Xylenes (Total)	90.7	68.0	75.0	ug/kg	11/10/1993	dkb
Bromofluorobenzene (SURR)	95.0	95	100	% Rec.	11/10/1993	dkb
TPH (Gas/BTXE,Solid)						
as Gasoline	111.8	5.59	5.00	mg/kg	11/11/1993	dkb
Benzene	97.6	24.4	25.0	ug/kg	11/11/1993	dkb
Toluene	84.0	21.0	25.0	ug/kg	11/11/1993	dkb
Ethylbenzene	87.2	21.8	25.0	ug/kg	11/11/1993	dkb
Xylenes (Total)	90.7	68.0	75.0	ug/kg	11/11/1993	dkb
Bromofluorobenzene (SURR)	96.0	96	100	% Rec.	11/11/1993	dkb

Ref: SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Solid)					
as Gasoline	ND	1	mg/kg	11/09/1993	dkb
Benzene	ND	2.5	ug/kg	11/09/1993	dkb
Toluene	ND	2.5	ug/kg	11/09/1993	dkb
Ethylbenzene	ND	2.5	ug/kg	11/09/1993	dkb
Xylenes (Total)	ND	2.5	ug/kg	11/09/1993	dkb
Bromofluorobenzene (SURR)	103		% Rec.	11/09/1993	dkb
TPH (Gas/BTXE,Solid)					
as Gasoline	ND	1	mg/kg	11/10/1993	dkb
Benzene	ND	2.5	ug/kg	11/10/1993	dkb
Toluene	ND	2.5	ug/kg	11/10/1993	dkb
Ethylbenzene	ND	2.5	ug/kg	11/10/1993	dkb
Xylenes (Total)	ND	2.5	ug/kg	11/10/1993	dkb
Bromofluorobenzene (SURR)	89		% Rec.	11/10/1993	dkb
TPH (Gas/BTXE,Solid)					
as Gasoline	ND	1	mg/kg	11/11/1993	dkb
Benzene	ND	2.5	ug/kg	11/11/1993	dkb
Toluene	ND	2.5	ug/kg	11/11/1993	dkb
Ethylbenzene	ND	2.5	ug/kg	11/11/1993	dkb
Xylenes (Total)	ND	2.5	ug/kg	11/11/1993	dkb
Bromofluorobenzene (SURR)	78		% Rec.	11/11/1993	dkb

Ref: SHELL 4255 MacArthur Blvd., Oakland, WA Job: 81-757-05

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Conc.	Matrix Spike Dup. Conc.	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Solid)										
as Gasoline	108.6	100.4	7.8	5.00	ND	5.43	5.02	mg/kg	11/09/1993	dkb
Benzene	93.1	88.7	4.8	204	ND	190	181	ug/kg	11/09/1993	dkb
Toluene	96.8	94.5	2.4	435	ND	421	411	ug/kg	11/09/1993	dkb
Bromofluorobenzene (SURR)				100	86			% Rec.	11/09/1993	dkb
TPH (Gas/BTXE,Solid)										
as Gasoline	91.2	96.8	6.0	5.00	ND	4.56	4.84	mg/kg	11/10/1993	dkb
Benzene	87.1	93.6	7.2	202	ND	176	189	ug/kg	11/10/1993	dkb
Toluene	93.3	96.3	3.2	436	ND	407	420	ug/kg	11/10/1993	dkb
Bromofluorobenzene (SURR)	95	94		100	92			% Rec.	11/10/1993	dkb
TPH (Gas/BTXE,Solid)										
as Gasoline	85.6	88.2	3.0	5.00	ND	4.28	4.41	mg/kg	11/11/1993	dkb
Benzene	84.4	90.4	6.9	167	ND	141	151	ug/kg	11/11/1993	dkb
Toluene	89.7	92.4	3.0	329	ND	295	304	ug/kg	11/11/1993	dkb
Bromofluorobenzene (SURR)	92	100		100	85			% Rec.	11/11/1993	dkb

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. Actual reporting limits and results have been multiplied by the listed dilution factor. Do not multiply the reporting limits or reported values by the dilution factor.
dw	:	Result expressed as dry weight.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than the applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, Rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, Rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986., Rev. 1, December 1987.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

Revised September, 1993
abb.93

COOLER RECEIPT FORM

Project: Shell 4255 McArthur Blvd Oakland Log No: 6515
Cooler received on: 11/6/93 and checked on 11/6/93 by K. Temple
(signature)

Were custody papers present?	(YES)	NO
Were custody papers properly filled out?	(YES)	NO
Were the custody papers signed?	(YES)	NO
Was sufficient ice used?	(YES)	NO
Did all bottles arrive in good condition (unbroken)?	(YES)	NO
Did bottle labels match COC?	(YES)	NO
Were proper bottles used for analysis indicated?	(YES)	NO
Correct preservatives used?	YES	NO N/A
VOA vials checked for headspace bubbles?	YES	NO N/A

Note which voas (if any) had bubbles:*

Sample descriptor:	Number of vials:

*All VOAs with headspace bubbles have been set aside so they will not be used for analysis..... YES NO

List here all other jobs received in the same cooler:

Client Job #	NET log #

(coolerrec)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 6515

Date:
Page 1 of 4

Site Address: 4255 MacArthur Blvd, Oakland

WIC#: 204-5510-0600

Shell Engineer: Dan Kirk
Phone No.: 675-6168
Fax #: 675-6172

Consultant Name & Address: WEISS ASSOCIATES
5500 SHELLMOUND ST EMERYVILLE CA 94608

Consultant Contact: WA JOB # 81-757-05
Phone No.: (510) 547-5420
Fax #: 547-5043

Comments:

Sampled by: JKM / TF

Printed Name: Janet Macdonald, Tom Fojut

LAB: NET

CHECK ONE (1) BOX ONLY	CT/DT	
G.W. Monitoring	☐	4461
Site Investigation	☒	4441
Soil Classify/Disposal	☐	4442
Water Classify/Disposal	☐	4443
Soil/Air Rem. or Sys. O & M	☐	4452
Water Rem. or Sys. O & M	☐	4453
Other	☐	

TURN AROUND TIME
- 24 hours ☐
- 48 hours ☐
- 15 days ☒ (Normal)
- Other ☐

NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.

UST AGENCY:

Analysis Required

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
BHA-6.0	11/3/93		X			1						X							Soil-gas	
BHA-10.5	11/3/93		X			1						X							Soil-gas	
BHA-14.0	11/3/93		X			1						X							Soil-gas	
BHA-18.0	11/3/93		X			1						X							Soil-gas	
BHA-22.0	11/3/93		X			1						X							Soil-gas	

CUSTODY SEALED 11/3/93 [illegible]

seal intact [illegible] from secure area

Stored in a secure area

Relinquished By (signature):	Printed Name:	Date/Time	Received (signature):	Printed Name:	Date/Time
Janet K Macdonald	Janet K Macdonald	Date: 11/3/93 Time: 1800	[signature]	Janet K Macdonald	Date: 11/5/93 Time: 12:30
Rudy Marquez	RUDY MARQUEZ	Date: 11/5/93 Time: 14:05	G. T. Lumbre	G. T. LUMBRE	Date: 11-5-93 Time: 14:05
G T Lumbre	GT LUMBRE	Date: 11/5/93 Time: 16:40	K. Temple	K. Temple	Date: 11/6/93 Time: 1100

Via NCS

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Rev. 1/12/93 Shell Oil Chn. of Custody

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Serial No: 4515

Date:

Page 2 of 4

Site Address: 4265 MacArthur Blvd, Oakl

WIC#: 204-5510-0600

Shell Engineer: Dan Kirk

Phone No.: 675-6168

Fax #: 675-6172

Consultant Name & Address: WEISS ASSOCIATES 5500 SHELLMOUND ST EMERYVILLE CA 94608

Consultant Contact: WA JOB # 81-757-05

Phone No.: (510) 547-5420

Fax #: 547-5043

Comments:

Sampled by: JKM/TF

Printed Name: Janet Macdonald/Tom Fojut

Analysis Required

LAB: NET

CHECK ONE (1) BOX ONLY	CT/DT
G.W. Monitoring ☐	4461
Site Investigation ☒	4441
Soil Classify/Disposal ☐	4442
Water Classify/Disposal ☐	4443
Soil/Air Rem. or Sys. O & M ☐	4452
Water Rem. or Sys. O & M ☐	4453
Other ☐	

TURN AROUND TIME

24 hours ☐
48 hours ☐
15 days ☒ (Normal)
Other ☐ ______

NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.

UST AGENCY: ______

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
BHB-6.0	11/3/93		X			1						X							Soil-gas	
BHB-9.0	↓		X			1						X							Soil-gas	
BHB-14.0	↓		X			1						X							Soil-gas	
BHB-18.5	↓		X			1						X							Soil gas	
BHB-24.0	↓		X			1						X							Soil gas	

CUSTODY SEALED 11/5/93 [signature] Seal intact

Relinquished By (signature):	Printed Name:	Date/Time:	Received (signature):	Printed Name:	Date/Time:
Janet K Macdonald	Janet K Macdonald	Date: 11/3/93 Time: 1800	Janet K Macdonald	Janet K Macdonald	Date: 11/5/93 Time: 12:00
Rudy Marquez	RUDY MARQUEZ	Date: 11/5/93 Time: 14:05	G.P. Lumbre	GP LUMBRE	Date: 11-5-93 Time: 14:05
G.P. Lumbre	GP LUMBRE	Date: 11/5/93 Time: 16:00	K. Temple	K. Temple	Date: 11/6/93 Time: 11:00

from secure area

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Rev. 1/12/93 Shell Oil Chn. of Custody

via NCS

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 6515

Date:
Page 3 of ~~3~~ 4

Site Address: 4255 MacArthur Blvd, Oakl

WIC#: 204-5510-0600

Shell Engineer: Dan Kirk — Phone No.: 675-6168 — Fax #: 675-6172

Consultant Name & Address: WEISS ASSOCIATES
5500 SHELLMOUND ST EMERYVILLE CA 94608

Consultant Contact: WA JOB # 81-757-05 — Phone No.: (510) 547-5420 — Fax #: 547-5043

Comments:

Sampled by: JKM / ~~TF~~ DCE

Printed Name: Janet Macdonald / ~~Tom Fojut~~ Dave Elias

LAB: NET

Analysis Required

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
G.W. Monitoring ☐	4461	24 hours ☐
Site Investigation ☒	4441	48 hours ☐
Soil Classify/Disposal ☐	4442	15 days ☒ (Normal)
Water Classify/Disposal ☐	4443	Other ☐
Soil/Air Rem. or Sys. O & M ☐	4452	NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.
Water Rem. or Sys. O & M ☐	4453	
Other ☐		

UST AGENCY:

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
BHC-6.5	11/4/93		X			1						X							Soil-gas	
BHC-9.8	↓		X			1						X							Soil-gas	HOLD
BHC-11.3	↓		X			1						X							Soil-gas	
BHC-13.5	↓		X			1						X							Soil-gas	HOLD
BHC-16.0	↓		X			1						X							Soil-gas	
BHC-22.5	↓		X			1						X							Soil-gas	
																				CUSTODY SEALED 11-5-93 [signature] Seal intact

Relinquished By (signature):	Printed Name:	Date/Time	Received (signature):	Printed Name:	Date/Time
[signature] (to secure area)	Janet K Macdonald	Date: 11/4/93 Time: 1730	[signature]	Janet K Macdonald	Date: 11/5/93 Time: 1200 (from secure area)
[signature]	RUDY MARQUEZ	Date: 11/5/93 Time: 14:05	[signature]	G. P. LUMBRE	Date: 11-5-93 Time: 14:05
[signature]	GP LUMBRE	Date: 11/5/93 Time: 16:02	[signature] (Via NCS)	K. Temple	Date: 11/6/93 Time: 1100

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Rev. 1/12/93 — Shell Oil Chn. of Custody

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Tom Fojut
Weiss Associates
5500 Shellmound St.
Emeryville, CA 94608

Date: 12/01/1993
NET Client Acct. No: 1809
NET Pacific Job No: 93.05085
Received: 11/19/1993

Client Reference Information

SHELL, 4255 MacArthur Blvd., Oakland, Job No. 81-757-05

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

Enclosure(s)

Ref: SHELL, 4255 MacArthur Blvd., Oakland, Job No. 81-757-05

SAMPLE DESCRIPTION: MW-1
Date Taken: 11/17/1993
Time Taken:
NET Sample No: 179032

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						11/22/1993
DILUTION FACTOR*	1						11/22/1993
as Gasoline	0.41		0.05	mg/L	5030		11/22/1993
METHOD 8020 (GC,Liquid)	--						11/22/1993
Benzene	0.021		0.0005	mg/L	8020		11/22/1993
Toluene	0.011		0.0005	mg/L	8020		11/22/1993
Ethylbenzene	0.0079		0.0005	mg/L	8020		11/22/1993
Xylenes (Total)	0.047		0.0005	mg/L	8020		11/22/1993
SURROGATE RESULTS	--						11/22/1993
Bromofluorobenzene (SURR)	100			% Rec.	5030		11/22/1993

Ref: SHELL, 4255 MacArthur Blvd., Oakland, Job No. 81-757-05

SAMPLE DESCRIPTION: MW-2
Date Taken: 11/17/1993
Time Taken:
NET Sample No: 179033

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						11/22/1993
DILUTION FACTOR*	10						11/22/1993
as Gasoline	31		0.5	mg/L	5030		11/22/1993
METHOD 8020 (GC,Liquid)	--						11/23/1993
Benzene	9.4		0.005	mg/L	8020		11/29/1993
Toluene	4.6		0.005	mg/L	8020		11/29/1993
Ethylbenzene	1.0		0.005	mg/L	8020		11/23/1993
Xylenes (Total)	3.9		0.005	mg/L	8020		11/23/1993
SURROGATE RESULTS	--						11/23/1993
Bromofluorobenzene (SURR)	99			% Rec.	5030		11/22/1993

Ref: SHELL, 4255 MacArthur Blvd., Oakland, Job No. 81-757-05

SAMPLE DESCRIPTION: MW-3
Date Taken: 11/17/1993
Time Taken:
NET Sample No: 179034

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						11/23/1993
DILUTION FACTOR*	20						11/23/1993
as Gasoline	18		1	mg/L	5030		11/23/1993
METHOD 8020 (GC,Liquid)	--						11/23/1993
Benzene	5.4		0.010	mg/L	8020		11/30/1993
Toluene	0.66		0.010	mg/L	8020		11/23/1993
Ethylbenzene	0.72		0.010	mg/L	8020		11/23/1993
Xylenes (Total)	2.2		0.010	mg/L	8020		11/23/1993
SURROGATE RESULTS	--						11/23/1993
Bromofluorobenzene (SURR)	101			% Rec.	5030		11/23/1993

Ref: SHELL, 4255 MacArthur Blvd., Oakland, Job No. 81-757-05

SAMPLE DESCRIPTION: TB/LB
Date Taken: 11/17/1993
Time Taken:
NET Sample No: 179035

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						11/23/1993
DILUTION FACTOR*	1						11/23/1993
as Gasoline	ND		0.05	mg/L	5030		11/23/1993
METHOD 8020 (GC,Liquid)	--						11/23/1993
Benzene	ND		0.0005	mg/L	8020		11/23/1993
Toluene	ND		0.0005	mg/L	8020		11/23/1993
Ethylbenzene	ND		0.0005	mg/L	8020		11/23/1993
Xylenes (Total)	ND		0.0005	mg/L	8020		11/23/1993
SURROGATE RESULTS	--						11/23/1993
Bromofluorobenzene (SURR)	84			% Rec.	5030		11/23/1993

Ref: SHELL, 4255 MacArthur Blvd., Oakland, Job No. 81-757-05

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Liquid)						
as Gasoline	104.5	1.045	1.00	mg/L	11/22/1993	vin
Benzene	86.4	4.32	5.00	ug/L	11/22/1993	vin
Toluene	100.0	5.00	5.00	ug/L	11/22/1993	vin
Ethylbenzene	100.0	5.00	5.00	ug/L	11/22/1993	vin
Xylenes (Total)	95.7	14.36	15.0	ug/L	11/22/1993	vin
Bromofluorobenzene (SURR)	90.0	90	100	% Rec.	11/22/1993	vin
TPH (Gas/BTXE,Liquid)						
as Gasoline	96.1	0.961	1.00	mg/L	11/23/1993	vin
Benzene	99.4	4.97	5.00	ug/L	11/23/1993	vin
Toluene	85.2	4.26	5.00	ug/L	11/23/1993	vin
Ethylbenzene	86.8	4.34	5.00	ug/L	11/23/1993	vin
Xylenes (Total)	87.3	13.1	15.0	ug/L	11/23/1993	vin
Bromofluorobenzene (SURR)	91.0	91	100	% Rec.	11/23/1993	vin
TPH (Gas/BTXE,Liquid)						
as Gasoline	106.9	1.069	1.00	mg/L	11/23/1993	vin
Benzene	89.8	4.49	5.00	ug/L	11/23/1993	vin
Toluene	91.2	4.56	5.00	ug/L	11/23/1993	vin
Ethylbenzene	90.0	4.50	5.00	ug/L	11/23/1993	vin
Xylenes (Total)	97.5	14.62	15.0	ug/L	11/23/1993	vin
Bromofluorobenzene (SURR)	97.0	97	100	% Rec.	11/23/1993	vin
TPH (Gas/BTXE,Liquid)						
as Gasoline	101.0	1.01	1.00	mg/L	11/29/1993	vin
Benzene	100.0	5.00	5.00	ug/L	11/29/1993	vin
Toluene	100.0	5.00	5.00	ug/L	11/29/1993	vin
Ethylbenzene	100.0	5.00	5.00	ug/L	11/29/1993	vin
Xylenes (Total)	100.0	15.0	15.0	ug/L	11/29/1993	vin
Bromofluorobenzene (SURR)	89.0	89	100	% Rec.	11/29/1993	vin

Ref: SHELL, 4255 MacArthur Blvd., Oakland, Job No. 81-757-05

METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Liquid)					
as Gasoline	ND	0.05	mg/L	11/22/1993	vin
Benzene	ND	0.5	ug/L	11/22/1993	vin
Toluene	ND	0.5	ug/L	11/22/1993	vin
Ethylbenzene	ND	0.5	ug/L	11/22/1993	vin
Xylenes (Total)	ND	0.5	ug/L	11/22/1993	vin
Bromofluorobenzene (SURR)	86		% Rec.	11/22/1993	vin
TPH (Gas/BTXE,Liquid)					
as Gasoline	ND	0.05	mg/L	11/23/1993	vin
Benzene	ND	0.5	ug/L	11/23/1993	vin
Toluene	ND	0.5	ug/L	11/23/1993	vin
Ethylbenzene	ND	0.5	ug/L	11/23/1993	vin
Xylenes (Total)	ND	0.5	ug/L	11/23/1993	vin
Bromofluorobenzene (SURR)	79		% Rec.	11/23/1993	vin
TPH (Gas/BTXE,Liquid)					
as Gasoline	ND	0.05	mg/L	11/23/1993	vin
Benzene	ND	0.5	ug/L	11/23/1993	vin
Toluene	ND	0.5	ug/L	11/23/1993	vin
Ethylbenzene	ND	0.5	ug/L	11/23/1993	vin
Xylenes (Total)	ND	0.5	ug/L	11/23/1993	vin
Bromofluorobenzene (SURR)	89		% Rec.	11/23/1993	vin
TPH (Gas/BTXE,Liquid)					
as Gasoline	ND	0.05	mg/L	11/29/1993	vin
Benzene	ND	0.5	ug/L	11/29/1993	vin
Toluene	ND	0.5	ug/L	11/29/1993	vin
Ethylbenzene	ND	0.5	ug/L	11/29/1993	vin
Xylenes (Total)	ND	0.5	ug/L	11/29/1993	vin
Bromofluorobenzene (SURR)	86		% Rec.	11/29/1993	vin

Ref: SHELL, 4255 MacArthur Blvd., Oakland, Job No. 81-757-05

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Conc.	Matrix Spike Dup. Conc.	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Liquid)										
as Gasoline	90.0	99.0	9.5	1.00	0.41	1.31	1.40	mg/L	11/22/1993	vin
Benzene	72.2	80.0	10.2	44.9	21	53.4	56.9	ug/L	11/22/1993	vin
Toluene	83.7	87.8	4.8	85.9	11	82.9	86.4	ug/L	11/22/1993	vin
Bromofluorobenzene (SURR)				100	100			% Rec.	11/22/1993	vin
TPH (Gas/BTXE,Liquid)										
as Gasoline	94.7	102.8	8.1	1.00	ND	0.947	1.028	mg/L	11/23/1993	vin
Benzene	107.7	118.5	9.5	40.1	ND	43.2	47.5	ug/L	11/23/1993	vin
Toluene	101.1	106.1	4.8	80.9	ND	81.8	85.8	ug/L	11/23/1993	vin
Bromofluorobenzene (SURR)				100	SR			% Rec.	11/23/1993	vin
TPH (Gas/BTXE,Liquid)										
as Gasoline	106.5	91.8	14.7	1.00	ND	1.065	0.918	mg/L	11/23/1993	vin
Benzene	104.1	92.0	12.2	46.2	ND	48.1	42.5	ug/L	11/23/1993	vin
Toluene	100.3	96.5	3.8	86.0	ND	86.3	83.0	ug/L	11/23/1993	vin
Bromofluorobenzene (SURR)	126	106		100	78			% Rec.	11/23/1993	vin
TPH (Gas/BTXE,Liquid)										
as Gasoline	89.4	96.4	7.5	1.00	0.10	0.994	1.064	mg/L	11/23/1993	vin
Benzene	91.1	94.6	3.8	46.2	ND	42.1	43.7	ug/L	11/23/1993	vin
Toluene	94.0	96.5	2.6	86.0	ND	80.8	83.0	ug/L	11/23/1993	vin
Bromofluorobenzene (SURR)	114	120		100	74			% Rec.	11/23/1993	vin
TPH (Gas/BTXE,Liquid)										
as Gasoline	88.0	90.0	2.2	1.00	ND	0.88	0.90	mg/L	11/29/1993	vin
Benzene	89.2	89.2	0.0	44.3	ND	39.5	39.5	ug/L	11/29/1993	vin
Toluene	93.7	93.7	0.0	84.1	ND	78.8	78.8	ug/L	11/29/1993	vin
Bromofluorobenzene (SURR)	106	101		100	80			% Rec.	11/29/1993	vin

NET®

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. Actual reporting limits and results have been multiplied by the listed dilution factor. **Do not** multiply the reporting limits or reported values by the dilution factor.
dw	:	Result expressed as dry weight.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than the applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, Rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, Rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986., Rev. 1, December 1987.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

Revised September, 1993
abb.93

COOLER RECEIPT FORM

Log No: 6696

Project: sb88-81-757-05 by J Sorensen

Cooler received on: 11/19/93 and checked on 11/19/93

(signature)

Were custody papers present?	(YES)	NO
Were custody papers properly filled out?	(YES)	NO
Were the custody papers signed?	(YES)	NO
Was sufficient ice used?	(YES)	NO
Did all bottles arrive in good condition (unbroken)?	(YES)	NO
Did bottle labels match COC?	(YES)	NO
Were proper bottles used for analysis indicated?	(YES)	NO
Correct preservatives used?	(YES)	NO
VOA vials checked for headspace bubbles?	(YES)	NO

Note which voas (if any) had bubbles:*

Sample descriptor:	Number of vials:
N/A	N/A

*All VOAs with headspace bubbles have been set aside so they will not be used for analysis..... YES NO

List here all other jobs received in the same cooler:

Client Job #	NET log #

(coolerrec

Cooler temperature 0.1°C. AL. 11/19/93

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 6696

Date:
Page 1 of 1

Site Address: 4255 MacArthur Blvd. Oakland
WIC#: 204-5510-0600
Shell Engineer: Dan Kirk
Phone No.: 675-6168
Fax #:
Consultant Name & Address: WEISS ASSOCIATES 5500 SHELLMOUND ST EMERYVILLE CA 94608
Consultant Contact: Tom Fojut
Phone No.: (510) 547-5420
Fax #: 547-5043
WA JOB # 81-757-05
Comments:
Sampled by: Herb Toor
Printed Name: Herb Toor

LAB: NET

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
MW-1				X		3						X				40ml	HCl			
MW-2				↓		↓						↓				↓	↓			
MW-3				↓		↓						↓				↓	↓			
TB/LB				↓		↓						↓				↓	↓			

CUSTODY SEALED 11/18/93 D.P. Lumbre

seal intact

Analysis Requested	CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
	G.W. Monitoring	4461	24 hours
	Site Investigation	4441	48 hours
	Soil Classify/Disposal	4442	15 days (Normal)
	Water Classify/Disposal	4443	Other
	Soil/Air Rem. or Sys. O & M	4452	NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.
	Water Rem. or Sys. O & M	4453	
	Other		

UST AGENCY:

Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
Herb Toor	Herb Toor	11/18/93	10:45	D.P. Lumbre	G P LUMBRE	11/18/93	10:45
D.P. Lumbre	G P LUMBRE	11/18/93	16:00				
(via NCS)							
					IC Temp 6	11/19/93	0800

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Rev. 1/12/93 — Shell Oil Chn. of Custody

Stored in Secure Area