

ENVIRONMENTAL  
PROTECTION  
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Subsurface Consultants, Inc.

January 24, 2000  
SCI 133.009

Mr. Barney Chan  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

**Groundwater Monitoring Program Report  
May and August 1999 Events and  
October 1999 Waste Removal Activities  
Ninth Avenue Terminal  
Oakland, California**

Dear Mr. Chan:

This report presents the results of groundwater monitoring conducted in May and August 1999 at the above-referenced site by Subsurface Consultants, Inc. (SCI), and the results of waste removal activities conducted by the Port of Oakland in October 1999. The location of the site is shown on Plate 1. Previous site characterization studies indicate that petroleum hydrocarbons as well as other potentially hazardous chemicals and metals have impacted soil and groundwater at the Ninth Avenue Terminal area. Monitoring is being performed on a quarterly basis in general accordance with the revised monitoring plan presented in SCI's March 29, 1999 Groundwater Monitoring Report, as amended by Alameda County Health Care Services Agency (ACHCSA) in their letter dated April 16, 1999. The current groundwater monitoring program is outlined in the attached Table 1.

**MONITORING ACTIVITIES**

The monitoring activities consisted of sampling 21 of the 42 on-site wells in May 1999 and 7 of the 42 on-site wells in August 1999. As requested by ACHCSA, redox potential (Eh) and dissolved oxygen (DO) readings were obtained for both monitoring events.

Prior to sampling, the depth to water was measured from below the top of the casing in all site wells with an electric well sounder. A summary of groundwater measurements is presented in Table 2. Selected wells were checked for the presence of free product, using a steel tape coated with petroleum sensitive paste. During the May 1999 event, free product was detected in well MW-6 and in the "oil filled manhole". During the August 1999 event, free product was detected

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in wells MW-4, MW-6, SCIMW-24, and the "oil filled manhole". The free product was removed from the wells using disposable bailers and, placed in 55-gallon drums and stored on-site. Due to the presence of free product, impacted wells were not purged or sampled during either events.

All equipment used during the events was decontaminated between each use. Disposable bailers were used for purging and sampling, and were decontaminated and discarded after each use. The pH, specific conductivity, and temperature of the purged water were measured after each well volume was removed. The wells were considered purged when these environmental parameters had stabilized. A Well Sampling Form was completed for each well sampled during each event. Water generated during purging was placed into 55-gallon steel drums, labeled, and stored on-site. Well Sampling Forms manifests are included in Appendix A.

For both sampling events, groundwater samples were retained in glass and polyethylene containers pre-cleaned by the supplier in accordance with EPA protocol. The filled sample containers were placed in ice filled chests and remained iced until delivery to the analytical laboratory. Chain-of-Custody records accompanied the samples to the laboratory.

## WASTE DISPOSAL ACTIVITIES

CET Environmental Services, Inc. (CET) was retained by the Port of Oakland in October 1999 to (1) remove accumulated free floating product from the "oil filled manhole" and a storm drain inlet located south of well SCIMW-9, and (2) remove purge water and free product accumulated from previous sampling events. A total of 70 gallons of oil and 2,430 gallons of oily water were removed from the manhole and a total of 110 gallons of oily water were removed from the storm drain inlet south of well SCIMW-9. 295 gallons of waste water and 30 gallons of free product accumulated from previous monitoring events were also removed. The waste materials were transported to Evergreen Environmental Services facility in Newark California for disposal. A copy of the bill of lading and Uniform Hazardous Waste Manifest for these removal activities are presented in Appendix B.

## ANALYTICAL TESTING

The chemical testing program for the May and August events included analyses for TVH, TEH, BTEX, PNAs, chlorinated pesticides, VOCs, and heavy metals (see Table 1)<sup>1</sup>. The program also

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<sup>1</sup> TVH = Total Volatile Hydrocarbons by EPA Method 5030/8015M  
BTEX = Benzene, Toluene, Ethylbenzene and Xylenes by EPA Method 5030/8021B  
TEH = Total Extractable Hydrocarbons by EPA Method 3520/8015M  
PNA = Polynuclear Aromatic Hydrocarbons by EPA Method 3520/8270B  
Chlorinated Pesticides by EPA Method 3520/8080  
Heavy Metals and Lead by EPA 6010/7000 series

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included a combination of field and laboratory testing for environmental parameters (pH, Eh, DO, TDS, and DOC)<sup>2</sup> to assist in trend analysis.

Analytical testing was performed by Curtis & Tompkins, Ltd., a State of California Department of Health Services certified analytical laboratory who has provided all previous analytical services. Analytical results are presented in Tables 3 through 9. These tables are comprehensive as they present all data generated for site wells to date. Analytical test reports and chain-of-custody forms are included in Appendix C.

## DISCUSSION

### Groundwater Elevation and Flow Patterns

The approximate groundwater elevation contours for the respective events are presented on Plates 2 and 3. Groundwater elevation contour patterns have remained relatively consistent since 1996. In general, groundwater elevations tend to be higher in the central portion of the site with flow radiating outward toward the shorelines of Clinton Basin and Brooklyn Basin. The bulkhead wall extending along the southeastern and southwestern portions of the site acts as an inhibitor to the flow of groundwater beneath the site. The contours also indicate that groundwater migrates to the open shorelines around the bulkhead wall.

Wells located along the Clinton and Brooklyn Basin shorelines are tidally influenced, while interior wells and those adjacent to the concrete bulkhead are not. Groundwater level measurements were obtained from tidally influenced wells first to minimize the potential discrepancies in elevation for each event.

### Monitoring and Chemical Data

The data generated to date suggests that impacts resulting from petroleum hydrocarbons are widespread at the site, with concentrations in specific source areas remaining relatively high. Impacts resulting from other previous site activities appear localized to their specific area of use. Specific results of interest for each of the events are outlined below.

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<sup>2</sup> pH by Standard Methods (SM) 4500-H+B  
Eh = Redox Potential by SM 2580B  
DO = Dissolved Oxygen by SM 4500-OG  
TDS = Total Dissolved Solids by EPA 160.1  
DOC = Dissolved Organic Carbon by EPA 415.2

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### May 1999 Event

- TEH was non-detect in wells SCIMW-5, SCIMW-6, SCIMW-8, SCIMW-11, SCIMW-12, SCIMW-14, SCIMW-16, SCIMW-22, SCIMW-30, and SCIMW-35. The concentrations of TEH in the other wells ranged from 75 ppb to 10,000 ppb (SCIMW-2).
- Chlorinated pesticide analyses were conducted on samples collected from wells SCIMW-7 and SCIMW-33. No detectable concentrations of chlorinated pesticides have been measured in well SCIMW-7 for the last two events. Well SCIMW-33 contained 25.8 ppb of DDD and DDE<sup>3</sup> compounds.
- Wells SCIMW-7, SCIMW-22, SCIMW-30, SCIMW-31, SCIMW-32 and SCIMW-33 were tested for VOCs. Well SCIMW-7 contained concentrations of chloroethane (570 ppb), cis-1,2 dichloroethene (1,2 DCE @ 160 ppb), trans 1,2 DCE (33 ppb) and vinyl chloride (160 ppb). Chlorobenzene (290 ppb) and xylenes (12 ppb) were detected in well SCIMW-33. No detectable concentrations of VOCs were measured in the other wells.
- A filtered sample from well SCIMW-24 was tested for PNAs. Naphthalene was detected at 77 ppb. Previously, both filtered and unfiltered samples have been screened for PNAs to characterize the dissolved fraction of PNAs in groundwater. However, a review of the data indicates no appreciable difference is observed between filtered and unfiltered samples.
- Filtered samples from wells SCIMW-2, SCIMW-6, SCIMW-11, and SCIMW-28 were submitted for heavy metal analyses. Barium concentrations varied from 19 ppb to 900 ppb (SCIMW-2). Well SCIMW-2 also contained arsenic (11 ppb), selenium (9.5 ppb) and zinc (24 ppb), well SCIMW-6 also contained copper (21 ppb) and zinc (63 ppb), and well SCIMW-28 also contained arsenic (25 ppb).
- Filtered samples from wells SCIMW-24 and SCIMW-34 were submitted for lead analysis. Lead has not been detected in samples from these wells during the last three events

### August 1999 Event

- TEH was non-detect in well SCIMW-34, and was measured at 120 ppb in well SCIMW-23 and 13,000 ppb in well SCIMW-2.
- Chlorinated pesticide analyses were not conducted during this event.

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<sup>3</sup> DDD=Dichlorodiphenyl dichloroethane, DDE= Dichlorodiphenyl Dichloroethene

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- VOC analyses were not conducted during this event.
- PNA analyses were not conducted during this event.
- Filtered samples from wells SCIMW-2 and SCIMW-6 were submitted for heavy metal analyses. Well SCIMW-2 contained arsenic (6.8 ppb) and barium (300 ppb). Well SCIMW-6 contained barium (43 ppb), copper (26 ppb), lead (4.3 ppb) and zinc (110 ppb).
- A filtered sample from well SCIMW-34 was submitted for lead analysis. Lead has not been detected in samples from this well during the last four events. A sample was not collected from well SCIMW-24 during this event due to the presence of free product.

#### ONGOING MONITORING

Field sampling activities for the annual event were conducted during the first week in December. Proposed modifications to the Site-wide Monitoring Program, if any, will be presented in the written annual report.

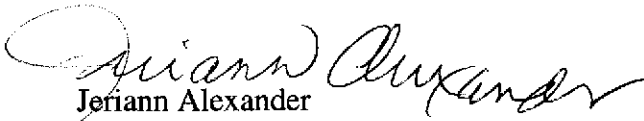
If you have any questions, please call either of the undersigned at (925) 299-7960.

Yours very truly,

Subsurface Consultants, Inc.



Emily Silverman  
Field Geologist



Jeriann Alexander  
Civil Engineer 40469 (exp. 3/31/03)  
Registered Environmental Assessor 03130 (exp. 6/30/00)

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Tables:      Table 1 - Groundwater Monitoring Program  
                Table 2 - Summary of Groundwater Elevation Data  
                Table 3 - Ecological Parameter Results in Groundwater  
                Table 4 - Petroleum Hydrocarbon, BTEX, Pesticide and PCB Concentrations in  
                                Groundwater  
                Table 5 - Volatile Organic Concentrations in Groundwater  
                Table 6 - Semi-Volatile Organic Concentrations in Groundwater  
                Table 7 - Polynuclear Aromatic Concentrations in Groundwater  
                Table 8 - Heavy Metal Concentrations in Groundwater  
                Table 9 - Cyanide, Nitrate and Phosphorus Concentrations in Groundwater

Illustrations: Plate 1 - Vicinity Map  
                  Plate 2 - Groundwater Surface Elevation Contours: May 1999 Event  
                  Plate 3 - Groundwater Surface Elevation Contours: August 1999 Event

Appendices:  A - Well Sampling Forms  
                B - Bill of Lading and Uniform Hazardous Waste Manifest  
                C - Analytical Test Reports and Chain-of-Custody Records

Copies:      Ms. Michele Heffes, Deputy Port Attorney  
                Mr. Dale Klettke, Port of Oakland - Environmental Health and Safety Compliance  
                Mr. Jonathan Redding, Wendel, Rosen, Black & Dean, LLP  
                Mr. Leroy Griffin, City of Oakland Fire Department  
                Mr. Rich Hiatt, RWQCB

Table 1  
Groundwater Monitoring Program  
Ninth Avenue Terminal, Port of Oakland  
November 1999

Monitoring Well ID	TVH/BTEX (EPA 8015m/8020)	TEHd, mo (8015m; w/ silica gel clean-up)	VOCs (EPA 8260/8240 list)	PNAs (EPA 8270; Not Filtered)	PNAs (EPA 8270; Filtered)	Pesticides (EPA 8080)	PCBs (EPA 8080)	Heavy Metals Filtered (EPA 6010/7000; Filtered)	Lead (EPA 6010/7000; Filtered)	pH (EPA 9040/9045/150.1)	Eh	TDS (EPA 160.1)	Dissolved Organic Carbon (EPA 9060)	Dissolved Oxygen	Water Levels	Free Product Removal	Rationale:
MW-1		A									A			A	Q		Concentrations are well documented and relatively stabilized; Concentrations are consistently less than nearby wells MW-4 and MW-6
MW-2		A									A			A	Q		Concentrations are well documented and relatively stabilized; Concentrations are consistently less than nearby wells MW-4 and MW-6
MW-3		A									A			A	Q		Concentrations are well documented and relatively stabilized; Concentrations are consistently less than nearby wells MW-4 and MW-6
MW-4	A	A									A			A	Q	Q	Collect groundwater sample only if no Free Product (FP) is present; Concentrations are well documented and relatively stabilized; Change FP removal from monthly to quarterly due to lack of FP detected
MW-5	SA (No TVH)	SA									SA			SA	Q		Situated near monitoring wells MW-4 and MW-6; Concentrations are well documented and relatively stabilized;
MW-6	SA	SA									SA			SA	Q	Q	Collect groundwater sample only if no Free Product (FP) is present; Concentrations are well documented and relatively stabilized; Change FP removal from monthly to quarterly due to lack of FP detected
MW-7															Q		TEH concentrations are well documented and relatively stabilized; TVH & BTEX are non-detect for 8 sampling events
SCIMW-1		A									A			A	Q		Embarcadero perimeter well; Concentrations are well documented and relatively stabilized

Table 1  
Groundwater Monitoring Program  
Ninth Avenue Terminal, Port of Oakland  
November 1999

Monitoring Well ID	TVH/BTEX (EPA 8015m/8020)	TEHd, mo (8015m; w/ silica gel clean-up)	VOCs (EPA 8260/8240 list)	PNAs (EPA 8270; Not Filtered)	PNAs (EPA 8270; Filtered)	Pesticides (EPA 8080)	PCBs (EPA 8080)	Heavy Metals Filtered (EPA 6010/7000; Filtered)	Lead (EPA 6010/7000; Filtered)	pH (EPA 9040/9045/150.1)	Eh	TDS (EPA 160.1)	Dissolved Organic Carbon (EPA 9060)	Dissolved Oxygen	Water Levels	Free Product Removal	Rationale:
SCIMW-2		Q						SA	see rationale	Q	Q*	Q	Q	Q*	Q		Perimeter well; Monitor heavy metals for 1 year, if none at high concentrations- switch to monitoring for lead only; located downgradient of lead-impacted soils
SCIMW-3		A									A			A	Q		Concentrations are well documented and relatively stabilized
SCIMW-4		A									A			A	Q		Embarcadero perimeter well; TEH detected at relatively low concentrations
SCIMW-5		SA									Q			Q	Q		Shoreline perimeter well; Downgradient of TPH-impacted soil and groundwater
SCIMW-6		SA				SA		SA		Q	Q*	Q	Q	Q*	Q		Shoreline perimeter well; downgradient of diesel impacted former utility lines; down/cross-gradient of former fertilizer plant area
SCIMW-7		A	SA			SA					SA			SA	Q		Known VOC impact; localized
SCIMW-8		A									A			A	Q		Bulkhead perimeter well; TEH detected in 2 (of 2) events
SCIMW-9		A									A			A	Q		TEH detected in 2 (of 2) events
SCIMW-10		A									A			A	Q		TEH detected in 2 (of 2) events
SCIMW-11	Q (No TVH or BTEX)	SA						SA		Q	Q*	Q	Q	Q*	Q		Shoreline perimeter well; downgradient of Benzene/TPH-impacted soils; cross gradient of PNA-impacted soils
SCIMW-12		SA								Q	Q*	Q	Q	Q*	Q		Shoreline perimeter well; Currently ND for TPH
SCIMW-13		A									A			A	Q		TEH detected in 2 (of 2) events
SCIMW-14		SA								Q	Q*	Q	Q	Q*	Q		Bulkhead perimeter well; FP in adjacent boring SCI-2; TEH detected in 2 (of 2) events
SCIMW-15		SA									SA			SA	Q		Bulkhead perimeter well; TEH detected in 2 (of 2) events
SCIMW-16		A									A			A	Q		Bulkhead perimeter well; Low concentrations of TEH detected in 2 (of 2) events



Table 1  
 Groundwater Monitoring Program  
 Ninth Avenue Terminal, Port of Oakland  
 November 1999

Monitoring Well ID	TVH/BTEX (EPA 8015m/8020)	TEHd, mo (8015m; w/ silica gel clean-up)	VOCs (EPA 8260/8240 list)	PNAs (EPA 8270; Not Filtered)	PNAs (EPA 8270; Filtered)	Pesticides (EPA 8080)	PCBs (EPA 8080)	Heavy Metals Filtered (EPA 6010/7000; Filtered)	Lead (EPA 6010/7000; Filtered)	pH (EPA 9040/9045/150.1)	El	TDS (EPA 160.1)	Dissolved Organic Carbon (EPA 9060)	Dissolved Oxygen	Water Levels	Free Product Removal	Rationale:
SCIMW-17		A									A			A	Q		Bulkhead perimeter well; Low concentrations of TEH detected in 2 (of 2) events
SCIMW-18		A									A			A	Q		TEH detected in 2 (of 2) events; Adjacent to storm drain
SCIMW-19		A									A			A	Q		Bulkhead perimeter well; Low concentrations of TEH detected in 2 (of 2) events
SCIMW-20		A							A		A			A	Q		Ninth Avenue perimeter well; Low concentrations of TEH detected in 2 (of 2) events; downgradient of lead-impacted soil and groundwater
SCIMW-21		A								A	A			A	Q		In area of caustic soil; TEH impacts
SCIMW-22		A	SA								SA			SA	Q		Located outside of VOC plume; currently ND for VOCs
SCIMW-23		Q				SA				Q	Q*	Q	Q	Q*	Q		Shoreline perimeter well; Located in former fertilizer plant area; Pesticides currently ND (except for 1 hit of 0.05 ppb Heptachlor B)
SCIMW-24	Q	Q			SA				Q	Q	Q*	Q	Q	Q*	Q		Adjacent to former cardlock tank; benzene/TPH-impacted groundwater
SCIMW-25															Q		Exterior location; No significant impact present
SCIMW-26		A									A			A	Q		Located near 1992 diesel release area; low concentration of TEH detected in one event
SCIMW-27		A									A			A	Q		Adjacent to Cannery USTs; Relatively low TEH concentrations
SCIMW-28		A						SA			SA			SA	Q		Downgradient of Pb/PCB-impacted soil; downgradient of metals/PNA-impacted area
SCIMW-29															Q		Adjacent to former plating sumps; No apparent impact
SCIMW-30		A	SA								SA			SA	Q		Monitor lateral extent of VOC plume
SCIMW-31D			SA								SA			SA	Q		Monitor vertical extent of VOC plume; currently ND
SCIMW-32		A	SA								SA			SA	Q		Monitor lateral extent of VOC plume

Table 1  
 Groundwater Monitoring Program  
 Ninth Avenue Terminal, Port of Oakland  
 November 1999

Monitoring Well ID	TVH/BTEX (EPA 8015m/8020)	TEHd, mo (8015m; w/ silica gel clean-up)	VOCs (EPA 8260/8240 list)	PNAs (EPA 8270; Not Filtered)	PNAs (EPA 8270; Filtered)	Pesticides (EPA 8080)	PCBs (EPA 8080)	Heavy Metals Filtered (EPA 6010/7000; Filtered)	Lead (EPA 6010/7000; Filtered)	pH (EPA 9040/9045/150.1)	Eh	TDS (EPA 160.1)	Dissolved Organic Carbon (EPA 9060)	Dissolved Oxygen	Water Levels	Free Product Removal	Rationale:
SCIMW-33		A	SA			A					SA			SA	Q		Monitor lateral extent of VOC plume; Pesticides in soil; PNAs in nearby boring (RMA-22@7')
SCIMW-34	Q	Q							Q	Q	Q*	Q	Q	Q*	Q		Shoreline perimeter well; Near former UST area; Soil has PNAs, PCBs, Benzene, Pb at depth; SCI-76 had BTEX in grab gw
SCIMW-35		SA									Q			Q	Q		Shoreline perimeter well; Near former UST area; Soil has PNAs, PCBs, Benzene, Pb at depth; SCI-76 had BTEX in grab gw

Notes:

Q = Quarterly - conducted each quarter (September 1998, December 1998, March 1999, June 1999)

Q\* = parameters measured in the field and by the analytical laboratory

SA = Semi-Annually - conducted during the first and third quarterly events (September 1998, March 1999)

A = Annually - conducted during the first quarter only (September 1998)

TVH = Total Volatile Hydrocarbons

BTEX = Benzene, Toluene, Ethylbenzene and total Xylenes

TEH = Total Extractable Hydrocarbons

VOCs = Volatile Organic Compounds

SVOCs = Semi-Volatile Organic Compounds

PCBs = Polychlorinated Biphenyls

TDS = Total Dissolved Solids

Obtain one duplicate VOC sample semi-annually for QA/QC

Revised 11/99 in response to 4/16/99 ACHCSA letter.

**TABLE 2**  
**SUMMARY OF GROUNDWATER ELEVATION DATA**  
**NINTH AVENUE TERMINAL STUDY AREA**

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)
<b>MW-1 TOC Elevation = 9.99</b>							
9/20/93	5.20	4.79	none	1/16/97	4.37	5.62	none
12/1/93	5.15	4.84	none	2/28/97	4.00	5.99	none
3/31/94	4.09	5.90	none	3/26/97	4.80	5.19	none
6/2/94	4.82	5.17	none	5/5/97	5.02	4.97	none
9/30/94	5.63	4.36	none	6/27/97	5.12	4.87	none
12/22/94	5.00	4.99	none	7/23/97	5.20	4.79	none
4/10/95	4.94	5.05	none	8/25/97	5.20	4.79	none
7/24/95	5.02	4.97	none	9/25/97	5.28	4.71	none
11/10/95	5.52	4.47	none	10/30/97	5.40	4.59	none
2/20/96	4.49	5.50	none	12/3/97	5.07	4.92	none
5/23/96	5.04	4.95	none	12/30/97	5.13	4.86	none
6/28/96	5.13	4.86	none	1/28/98	4.95	5.04	none
7/29/96	5.21	4.78	none	3/11/98	4.75	5.24	none
9/3/96	5.37	4.62	none	3/30/98	4.82	5.17	none
9/9/96	5.65	4.34	none	4/27/98	4.92	5.07	none
9/18/96	5.35	4.64	none	6/1/98	4.97	5.02	none
9/23/96	5.36	4.63	none	6/26/98	5.05	4.94	none
9/30/96	5.39	4.60	none	9/17/98	5.31	4.68	none
10/28/96	5.09	4.90	none	12/7/98	5.23	4.76	none
12/2/96	4.80	5.19	none	5/4/99	5.21	4.78	none
12/30/96	4.25	5.74	none	8/25/99	7.11	2.88	none
<b>MW-2 TOC Elevation = 10.32</b>							
9/20/93	4.40	5.92	none	1/16/97	3.99	6.33	none
12/1/93	4.75	5.57	none	2/28/97	3.88	6.44	none
3/31/94	5.01	5.31	none	3/26/97	3.83	6.49	none
6/2/94	4.61	5.71	none	5/5/97	3.85	6.47	none
9/30/94	4.93	5.39	none	6/27/97	3.77	6.55	none
12/22/94	4.43	5.89	none	7/23/97	3.88	6.44	none
4/10/95	4.03	6.29	none	8/25/97	3.88	6.44	none
7/24/95	4.41	5.91	none	9/25/97	3.95	6.37	none
11/10/95	4.59	5.73	none	10/30/97	5.32	5.00	none
2/20/96	3.81	6.51	none	12/3/97	4.98	5.34	none
5/23/96	4.41	5.91	none	12/30/97	4.95	5.37	none
6/28/96	3.81	6.51	none	1/28/98	4.96	5.36	none
7/29/96	3.81	6.51	none	3/11/98	5.02	5.30	none
9/3/96	3.98	6.34	none	3/30/98	4.45	5.87	none
9/9/96	4.00	6.32	none	4/27/98	4.62	5.70	none
9/18/96	4.08	6.24	none	6/1/98	5.15	5.17	none
9/23/96	4.08	6.24	none	6/26/98	4.77	5.55	none
9/30/96	4.08	6.24	none	9/17/98	5.03	5.29	none
10/28/96	4.34	5.98	none	12/7/98	4.96	5.36	none
12/2/96	4.30	6.02	none	5/3/99	4.85	5.47	none
12/30/96	3.92	6.40	none	8/25/99	5.01	5.31	none

TABLE 2  
SUMMARY OF GROUNDWATER ELEVATION DATA  
NINTH AVENUE TERMINAL STUDY AREA

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)
<b>MW-3</b>				<b>TOC Elevation = 10.18</b>			
9/20/93	15.20	-5.02+	none	3/26/97	4.76	5.42	none
12/1/93	5.70	4.48	none	5/5/97	4.69	5.49	none
3/31/94	4.23	5.95	none	6/27/97	4.51	5.67	none
6/2/94	3.86	6.32	none	7/23/97	4.58	5.60	none
9/30/94	5.44	4.74	none	8/25/97	4.62	5.56	none
12/22/94	4.87	5.31	none	9/25/97	4.53	5.65	none
4/10/95	7.64	2.54+	none	10/30/97	4.70	5.48	none
7/24/95	3.62	6.56	none	12/3/97	4.10	6.08	none
11/10/95	5.11	5.07	none	12/30/97	4.59	5.59	none
2/20/96	4.14	6.04	none	1/28/98	4.59	5.59	none
5/23/96	4.49	5.69	none	3/11/98	4.48	5.70	none
6/28/96	--	--	--	3/30/98	4.31	5.87	none
7/29/96	4.64	5.54	none	4/27/98	4.26	5.92	none
9/3/96	4.48	5.70	none	6/1/98	3.92	6.26	none
9/18/96	6.42	3.76+	none	6/26/98	--	--	--
9/23/96	6.06	4.12	none	9/17/98	4.35	5.83	none
9/30/96	5.18	5.00	none	12/7/98	3.56	6.62	none
10/28/96	4.83	5.35	none	5/4/99	4.45	5.73	none
12/2/96	4.84	5.34	none	8/25/99	6.34	3.84	none
12/30/96	4.84	5.34	none				
1/16/97	4.73	5.45	none				
3/5/97	4.69	5.49	none				
<b>MW-4</b>				<b>TOC Elevation = 11.98</b>			
9/20/93	5.80	6.18	8.04	2/28/97	3.78	8.20	trace
12/1/93	4.10	7.88	trace	3/26/97	3.90	8.08	trace
3/31/94	4.20	7.78	6.96	5/5/97	3.92	8.06	0.13
6/2/94	3.88	8.10	6.00	6/27/97	4.11	7.87	0.50
9/30/94	5.80	6.18	12.00	7/23/97	4.30	7.68	trace
12/22/94	3.47	8.51	10.08	8/25/97	3.55	8.43	trace
4/10/95	3.80	8.18	0.00	9/25/97	3.91	8.07	trace
5/16/95	3.07	8.91	NA	10/30/97	4.98	7.00	0.13
7/24/95	3.65	8.33	0.00	12/3/97	3.60	8.38	0.50
11/10/95	NA	NA	0.00	12/30/97	3.52	8.46	trace
2/20/96	NA	NA	NA	1/28/98	3.02	8.96	0.63
5/23/96	2.96	9.02	0.00	3/11/98	3.28	8.70	trace
6/28/96	3.93	8.05	2.38	3/30/98	3.29	8.69	trace
7/29/96	5.09	6.89	0.50	4/27/98	3.55	8.43	0.25
9/3/96	4.65	7.33	0.25	6/1/98	3.02	8.96	0.19
9/9/96	5.15	6.83	0.50	6/26/98	3.75	8.23	trace
9/18/96	5.45	6.53	0.13	9/17/98	4.45	7.53	0.25
9/23/96	4.80	7.18	0.38	12/7/98	3.35	8.63	0.38
9/30/96	4.88	7.10	0.06	5/4/99		Well Inaccessible	
10/28/96	5.12	6.86	0.25	8/25/99	4.65	7.33	0.85
12/2/96	3.22	8.76	2.00				
12/30/96	2.94	9.04	0.25				
1/16/97	3.22	8.76	trace				

**TABLE 2**  
**SUMMARY OF GROUNDWATER ELEVATION DATA**  
**NINTH AVENUE TERMINAL STUDY AREA**

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)
<b>MW-5</b>				<b>TOC Elevation = 11.84</b>			
4/10/95	4.64	7.20	none	6/27/97	5.45	6.39	none
7/24/95	5.24	6.60	none	7/23/97	5.39	6.45	none
11/10/95	5.38	6.46	none	8/25/97	5.18	6.66	none
2/20/96	2.69	9.15	none	9/25/97	5.40	6.44	none
5/23/96	2.67	9.17	none	10/30/97	5.45	6.39	none
6/28/96	5.29	6.55	none	12/3/97	2.42	9.42	none
7/29/96	5.35	6.49	none	12/30/97	5.04	6.80	none
9/3/96	5.44	6.40	none	1/28/98	2.79	9.05	none
9/9/96	5.45	6.39	none	3/11/98	4.54	7.30	none
9/18/96	5.51	6.33	none	3/30/98	4.60	7.24	none
9/23/96	5.51	6.33	none	4/27/98	5.18	6.66	none
9/30/96	5.49	6.35	none	6/1/98	3.17	8.67	none
10/28/96	5.56	6.28	none	6/26/98	5.31	6.53	none
12/2/96	4.64	7.20	none	9/17/98	5.44	6.40	none
12/30/96	2.42	9.42	none	12/7/98	3.79	8.05	none
1/16/97	3.46	8.38	none	5/3/99	5.25	6.59	none
2/28/97	5.14	6.70	none	8/25/99	5.46	6.38	none
3/26/97	5.28	6.56	none				
5/5/97	5.39	6.45	none				
<b>MW-6</b>				<b>TOC Elevation = 11.86</b>			
4/10/95	4.12	7.74	12.00	6/27/97	4.82	7.04	0.50
7/24/95	5.19	6.67	13.20	7/23/97	--	--	--
11/10/95	NA	NA	NA	8/25/97	4.50	7.36	trace
2/20/96	NA	NA	NA	9/25/97	3.94	7.92	7.25
5/23/96	NA	NA	4.50	10/30/97	5.06	6.80	2.00
6/28/96	4.89	6.97	3.00	12/3/97	4.88	6.98	7.00
7/29/96	5.00	6.86	1.00	12/30/97	4.53	7.33+	0.25
9/3/96	5.19	6.67	0.50	1/28/98	4.47	7.39	0.38
9/9/96	5.29	6.57	trace	3/11/98	4.35	7.51	trace
9/18/96	5.34	6.52	trace	3/30/98	4.45	7.41	trace
9/23/96	5.17	6.69	0.13	4/27/98	4.83	7.03	2.00
9/30/96	5.10	6.76	0.13	6/1/98	4.54	7.32	1.50
10/28/96	5.23	6.63	0.13	6/26/98	5.02	6.84	3.00
12/2/96	3.96	7.90	1.00	9/17/98	5.24	6.62	4.00
12/30/96	4.55	7.31	0.33	12/7/98	3.83	8.03	1.75
1/16/97	4.23	7.63	trace	5/4/99	4.65	7.21	0.50
2/28/97	4.54	7.32	0.50	8/25/99	5.25	6.61	1.15
3/26/97	4.54	7.32	trace				
5/5/97	4.82	7.04	0.50				

TABLE 2  
SUMMARY OF GROUNDWATER ELEVATION DATA  
NINTH AVENUE TERMINAL STUDY AREA

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)
<b>MW-7</b>				<b>TOC Elevation = 10.13</b>			
4/10/95	4.41	5.72	none	6/27/97	3.71	6.42	none
7/24/95	3.72	6.41	none	7/23/97	--	--	--
11/10/95	4.78	5.35	none	8/25/97	3.73	6.40	none
2/20/96	4.13	6.00	none	9/25/97	3.75	6.38	none
5/23/96	4.69	5.44	none	10/30/97	3.88	6.25	none
6/28/96	3.81	6.32	none	12/3/97	3.58	6.55	none
7/29/96	4.32	5.81	none	12/30/97	3.67	6.46	none
9/3/96	4.65	5.48	none	1/28/98	3.48	6.65	none
9/9/96	4.79	5.34	none	3/11/98	3.64	6.49	none
9/18/96	4.45	5.68	none	3/30/98	3.65	6.48	none
9/23/96	4.28	5.85	none	4/27/98	3.26	6.87	none
9/30/96	4.18	5.95	none	6/1/98	3.67	6.46	none
10/28/96	4.48	5.65	none	6/26/98	3.63	6.50	none
12/2/96	4.88	5.25	none	9/17/98	3.75	6.38	none
12/30/96	3.62	6.51	none	12/7/98	3.82	6.31	none
1/16/97	3.65	6.48	none	5/3/99	3.67	6.46	none
2/28/97	3.71	6.42	none	8/25/99	3.80	6.33	none
3/26/97	3.71	6.42	none				
5/5/97	3.80	6.33	none				

<b>SCIMW-1</b>				<b>TOC Elevation = 10.37</b>			
5/23/96	5.28	5.09	none	8/25/97	5.41	4.96	none
6/28/96	5.75	4.62	none	9/25/97	5.60	4.77	none
7/29/96	5.81	4.56	none	10/30/97	5.79	4.58	none
9/3/96	5.98	4.39	none	12/3/97	4.80	5.57	none
9/9/96	6.04	4.33	none	12/30/97	4.94	5.43	none
9/18/96	6.04	4.33	none	1/28/98	4.59	5.78	none
9/23/96	6.07	4.30	none	3/11/98	4.70	5.67	none
9/30/96	6.00	4.37	none	3/30/98	4.62	5.75	none
10/28/96	6.10	4.27	none	4/27/98	4.84	5.53	none
12/2/96	5.52	4.85	none	6/1/98	4.61	5.76	none
12/30/96	4.66	5.71	none	6/26/98	4.94	5.43	none
1/16/97	5.08	5.29	none	9/17/98	5.35	5.02	none
2/28/97	5.38	4.99	none	12/7/98	4.81	5.56	none
3/26/97	5.54	4.83	none	5/4/99	5.16	5.21	none
5/5/97	5.86	4.51	none	8/25/99	5.85	4.52	none
6/27/97	5.76	4.61	none				
7/23/97	5.59	4.78	none				

<b>SCIMW-2</b>				<b>TOC Elevation = 9.92</b>				<b>Tidally Influenced</b>			
5/23/96	5.88	4.04	none	8/25/97	5.90	4.02	none				
6/28/96	7.33	2.59	none	9/25/97	3.81	6.11	none				
7/29/96	7.43	2.49	none	10/30/97	3.32	6.60	none				
9/3/96	6.54	3.38	none	12/3/97	3.54	6.38	none				
9/9/96	4.67	5.25	none	12/30/97	3.60	6.32	none				
9/18/96	6.50	3.42	none	1/28/98	2.42	7.50	none				
9/23/96	3.78	6.14	none	3/11/98	3.33	6.59	none				
9/30/96	6.18	3.74	none	3/30/98	7.08	2.84	none				
10/28/96	3.72	6.20	none	4/27/98	7.36	2.56	none				
12/2/96	6.60	3.32	none	6/1/98	5.78	4.14	none				
12/30/96	4.57	5.35	none	6/26/98	7.02	2.90	none				
1/16/97	6.10	3.82	none	9/17/98	5.85	4.07	none				
2/28/97	7.04	2.88	none	12/7/98	6.40	3.52	none				
3/26/97	6.59	3.33	none	5/3/99	5.40	4.52	none				
5/5/97	7.03	2.89	none	8/25/99	6.92	3.00	none				
6/27/97	6.50	3.42	none								
7/23/97	7.23	2.69	none								

TABLE 2  
SUMMARY OF GROUNDWATER ELEVATION DATA  
NINTH AVENUE TERMINAL STUDY AREA

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)
<b>SCIMW-3 TOC Elevation = 11.87</b>				<b>Tidally Influenced</b>			
5/23/96	4.65	7.22	none	8/25/97	5.10	6.77	none
6/28/96	4.86	7.01	none	9/25/97	5.14	6.73	none
7/29/96	5.03	6.84	none	10/30/97	5.55	6.32	none
9/3/96	5.20	6.67	none	12/3/97	5.30	6.57	none
9/9/96	5.28	6.59	none	12/30/97	5.13	6.74	none
9/18/96	5.24	6.63	none	1/28/98	4.71	7.16	none
9/23/96	5.26	6.61	none	3/11/98	--	--	--
9/30/96	5.31	6.56	none	3/30/98	4.13	7.74	none
10/17/96	5.43	6.44	none	4/27/98	4.02	7.85	none
10/28/96	5.58	6.29	none	6/1/98	4.30	7.57	none
12/2/96	5.78	6.09	none	6/26/98	4.11	7.76	none
12/30/96	5.49	6.38	none	9/17/98	7.58	4.29	none
1/16/97	5.41	6.46	none	12/7/98	5.56	6.31	none
2/28/97	5.27	6.60	none	5/3/99	4.92	6.95	none
3/26/97	4.98	6.89	none	8/25/99	5.30	6.57	none
5/5/97	4.93	6.94	none				
6/27/97	4.83	7.04	none				
7/23/97	4.94	6.93	none				
<b>SCIMW-4 TOC Elevation = 10.03</b>							
9/9/96	4.53	5.50	none	10/30/97	4.03	6.00	none
9/18/96	4.54	5.49	none	12/3/97	2.25	7.78	none
9/23/96	4.32	5.71	none	12/30/97	2.77	7.26	none
9/30/96	4.37	5.66	none	1/28/98	2.95	7.08	none
10/28/96	3.75	6.28	none	3/11/98	1.95	8.08	none
12/2/96	2.09	7.94	none	3/30/98	2.13	7.90	none
12/30/96	1.00	9.03	none	4/27/98	2.45	7.58	none
1/16/97	1.60	8.43	none	6/1/98	2.03	8.00	none
2/28/97	2.16	7.87	none	6/26/98	2.95	7.08	none
3/26/97	2.68	7.35	none	9/17/98	3.83	6.20	none
5/5/97	3.21	6.82	none	12/7/98	1.95	8.08	none
6/27/97	3.13	6.90	none	5/4/99	2.65	7.38	none
7/23/97	3.65	6.38	none	8/25/99	3.75	6.28	none
8/25/97	3.41	6.62	none				
9/25/97	3.90	6.13	none				
<b>SCIMW-5 TOC Elevation = 10.19</b>				<b>Tidally Influenced</b>			
9/9/96	5.56	4.63	none	10/30/97	4.37	5.82	none
9/18/96	4.68	5.51	none	12/3/97	4.21	5.98	none
9/23/96	4.42	5.77	none	12/30/97	4.20	5.99	none
9/30/96	4.44	5.75	none	1/28/98	2.55	7.64	none
10/28/96	4.40	5.79	none	3/11/98	4.38	5.81	none
12/2/96	4.95	5.24	none	3/30/98	3.95	6.24	none
12/30/96	4.21	5.98	none	4/27/98	3.86	6.33	none
1/16/97	4.07	6.12	none	6/1/98	4.66	5.53	none
2/28/97	4.74	5.45	none	6/26/98	3.90	6.29	none
3/26/97	4.53	5.66	none	9/17/98	4.41	5.78	none
5/5/97	4.49	5.70	none	12/7/98	4.55	5.64	none
6/27/97	4.63	5.56	none	5/3/99	4.93	5.26	none
7/23/97	4.74	5.45	none	8/25/99	4.48	5.71	none
8/25/97	4.40	5.79	none				
9/25/97	4.26	5.93	none				

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NINTH AVENUE TERMINAL STUDY AREA

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<b>SCIMW-6</b>				<b>TOC Elevation = 10.55</b>			
				<b>Tidally Influenced</b>			
9/9/96	5.86	4.69	none	10/30/97	5.37	5.18	none
9/18/96	6.54	4.01	none	12/3/97	5.29	5.26	none
9/23/96	5.47	5.08	none	12/30/97	5.42	5.13	none
9/30/96	6.44	4.11	none	1/28/98	3.56	6.99	none
10/28/96	5.93	4.62	none	3/11/98	5.11	5.44	none
12/2/96	7.04	3.51	none	3/30/98	6.46	4.09	none
12/30/96	5.60	4.95	none	4/27/98	6.64	3.91	none
1/16/97	5.87	4.68	none	6/1/98	6.04	4.51	none
2/28/97	7.00	3.55	none	6/26/98	6.23	4.32	none
3/26/97	6.54	4.01	none	9/17/98	6.17	4.38	none
5/5/97	6.72	3.83	none	12/7/98	6.64	3.91	none
6/27/97	6.65	3.90	none	5/3/99	6.16	4.39	none
7/23/97	6.60	3.95	none	8/25/99	6.56	3.99	none
8/25/97	6.15	4.40	none				
9/25/97	5.11	5.44	none				
<b>SCIMW-7</b>				<b>TOC Elevation = 12.26</b>			
9/9/96	8.95	3.31+	none	10/30/97	5.30	6.96	none
9/18/96	6.87	5.39	none	12/3/97	4.85	7.41	none
9/23/96	6.95	5.31	none	12/30/97	4.83	7.43	none
9/30/96	7.04	5.22	none	1/28/98	4.65	7.61	none
10/28/96	7.40	4.86	none	3/11/98	4.72	7.54	none
12/2/96	4.95	7.31	none	3/30/98	4.77	7.49	none
12/30/96	4.73	7.53	none	4/27/98	4.85	7.41	none
1/16/97	4.94	7.32	none	6/1/98	4.70	7.56	none
2/28/97	4.85	7.41	none	6/26/98	4.97	7.29	none
3/26/97	4.94	7.32	none	9/17/98	6.52	5.74	none
5/5/97	5.13	7.13	none	12/7/98	4.52	7.74	none
6/27/97	5.86	6.40	none	5/3/99	4.86	7.40	none
7/23/97	6.25	6.01	none	8/25/99	5.42	6.84	none
8/25/97	5.94	6.32	none				
9/25/97	5.93	6.33	none				
<b>SCIMW-8</b>				<b>TOC Elevation = 12.81</b>			
9/9/96	5.70	7.11	none	10/30/97	5.61	7.20	none
9/18/96	5.81	7.00	none	12/3/97	5.09	7.72	none
9/23/96	5.79	7.02	none	12/30/97	4.19	8.62	none
9/30/96	5.89	6.92	none	1/28/98	--	--	--
10/17/96	5.95	6.86	none	3/11/98	--	--	--
10/28/96	6.13	6.68	none	3/30/98	--	--	--
12/2/96	5.39	7.42	none	4/27/98	5.06	7.75	none
12/30/96	4.98	7.83	none	6/1/98	4.18	8.63	none
1/16/97	5.11	7.70	none	6/26/98	5.17	7.64	none
2/28/97	5.42	7.39	none	9/17/98	5.56	7.25	none
3/26/97	5.39	7.42	none	12/7/98	5.17	7.64	none
5/5/97	5.40	7.41	none	5/3/99	5.13	7.68	none
6/27/97	5.45	7.36	none	8/25/99	6.95	5.86	none
7/23/97	--	--	--				
8/25/97	5.21	7.60	none				
9/25/97	5.49	7.32	none				



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<b>SCIMW-9</b>				<b>TOC Elevation = 11.32</b>			
9/9/96	4.92	6.40	none	10/30/97	4.90	6.42	none
9/18/96	4.94	6.38	none	12/3/97	--	--	--
9/23/96	4.94	6.38	none	12/30/97	4.60	6.72	none
9/30/96	4.92	6.40	none	1/28/98	4.40	6.92	none
10/17/96	4.97	6.35	none	3/11/98	4.11	7.21	none
10/28/96	5.07	6.25	none	3/30/98	4.38	6.94	none
12/2/96	4.71	6.61	none	4/27/98	4.35	6.97	none
12/30/96	4.51	6.81	none	6/1/98	4.08	7.24	none
1/16/97	4.66	6.66	none	6/26/98	4.42	6.90	none
3/26/97	4.60	6.72	none	9/17/98	4.68	6.64	none
5/5/97	4.65	6.67	none	12/7/98	4.52	6.80	none
6/27/97	4.71	6.61	none	5/3/99	4.51	6.81	none
7/23/97	4.77	6.55	none	8/25/99	4.72	6.60	none
8/25/97	4.72	6.60	none				
9/25/97	--	--	--				
<b>SCIMW-10</b>				<b>TOC Elevation = 12.56</b>			
9/9/96	4.61	7.95	none	9/25/97	5.90	6.66	none
9/18/96	4.87	7.69	none	10/30/97	6.60	5.96	none
9/23/96	4.81	7.75	none	12/3/97	--	--	--
9/30/96	4.91	7.65	none	12/30/97	6.10	6.46	none
10/17/96	5.03	7.53	none	1/28/98	4.97	7.59	none
10/28/96	5.31	7.25	none	3/11/98	--	--	--
12/2/96	5.15	7.41	none	3/30/98	5.36	7.20	none
12/30/96	4.60	7.96	none	4/27/98	5.21	7.35	none
1/16/97	4.69	7.87	none	6/1/98	5.18	7.38	none
2/28/97	4.47	8.09	none	6/26/98	5.17	7.39	none
3/26/97	4.33	8.23	none	9/17/98	4.92	7.64	none
5/5/97	4.21	8.35	none	12/7/98	6.07	6.49	none
6/27/97	5.71	6.85	none	5/3/99	5.25	7.31	none
7/23/97	5.96	6.60	none	8/25/99	6.65	5.91	trace
8/25/97	6.07	6.49	none				
<b>SCIMW-11</b>				<b>Tidally Influenced</b>			
<b>TOC Elevation = 9.49</b>							
9/9/96	5.66	3.83	none	10/30/97	3.81	5.68	none
9/18/96	6.39	3.10	none	12/3/97	4.85	4.64	none
9/23/96	4.12	5.37	none	12/30/97	1.63	7.86	none
9/30/96	6.24	3.25	none	1/28/98	3.64	5.85	none
10/28/96	5.46	4.03	none	3/11/98	3.37	6.12	none
12/2/96	6.03	3.46	none	3/30/98	7.02	2.47	none
12/30/96	3.56	5.93	none	4/27/98	7.33	2.16	none
1/16/97	5.17	4.32	none	6/1/98	--	--	--
2/28/97	6.60	2.89	none	6/26/98	--	--	--
3/26/97	6.85	2.64	none	9/23/98	4.77	4.72	none
5/5/97	6.94	2.55	none	12/7/98	6.17	3.32	none
6/27/97	5.94	3.55	none	5/3/99	6.01	3.48	none
7/23/97	7.18	2.31	none	8/25/99	4.31	5.18	none
8/25/97	5.04	4.45	none				
9/25/97	3.31	6.18	none				

**TABLE 2**  
**SUMMARY OF GROUNDWATER ELEVATION DATA**  
**NINTH AVENUE TERMINAL STUDY AREA**

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)
<b>SCIMW-12 TOC Elevation = 10.94</b>				<b>Tidally Influenced</b>			
9/9/96	6.85	4.09	none	9/25/97	4.69	6.25	none
9/18/96	7.24	3.70	none	10/30/97	5.24	5.70	none
9/23/96	5.59	5.35	none	12/3/97	6.53	4.41	none
9/30/96	7.26	3.68	none	12/30/97	2.90	8.04	none
10/28/96	7.00	3.94	none	1/28/98	5.11	5.83	none
12/2/96	7.31	3.63	none	3/11/98	4.83	6.11	none
12/30/96	5.12	5.82	none	3/30/98	7.22	3.72	none
1/16/97	6.41	4.53	none	4/27/98	7.23	3.71	none
2/28/97	7.19	3.75	none	6/1/98	7.00	3.94	none
3/26/97	7.24	3.70	none	6/1/98	7.20	3.74	none
5/5/97	7.26	3.68	none	9/17/98	6.80	4.14	none
6/27/97	7.09	3.85	none	12/7/98	7.21	3.73	none
7/23/97	7.24	3.70	none	5/3/99	7.19	3.75	none
8/25/97	6.61	4.33	none	8/25/99	6.91	4.03	none
<b>SCIMW-13 TOC Elevation = 12.56</b>							
9/9/96	5.35	7.21	none	10/30/97	5.75	6.81	none
9/18/96	5.47	7.09	none	12/3/97	5.55	7.01	none
9/23/96	5.51	7.05	none	12/30/97	5.43	7.13	none
9/30/96	4.94	7.62	none	1/28/98	5.08	7.48	none
10/17/96	5.70	6.86	none	3/11/98	4.46	8.10	none
10/28/96	5.86	6.70	none	3/30/98	4.42	8.14	none
12/2/96	5.91	6.65	none	4/27/98	4.22	8.34	none
12/30/96	5.70	6.86	none	6/1/98	4.24	8.32	none
1/16/97	5.63	6.93	none	6/26/98	4.25	8.31	none
2/28/97	5.31	7.25	none	9/17/98	5.14	7.42	none
3/26/97	5.14	7.42	trace	12/7/98	5.78	6.78	none
5/5/97	4.99	7.57	none	5/3/99	4.61	7.95	none
6/27/97	4.92	7.64	none	8/25/99	5.32	7.24	none
7/23/97	--	--	--				
8/25/97	--	--	--				
9/25/97	5.14	7.42	none				
<b>SCIMW-14 TOC Elevation = 13.64</b>							
9/9/96	8.28	5.36	none	10/30/97	8.17	5.47	none
9/18/96	8.50	5.14	none	12/3/97	7.58	6.06	none
9/23/96	8.18	5.46	none	12/30/97	7.52	6.12	none
9/30/96	8.41	5.23	none	1/28/98	7.19	6.45	none
10/28/96	8.43	5.21	none	3/11/98	7.21	6.43	none
12/2/96	8.56	5.08	none	3/30/98	7.41	6.23	none
12/30/96	7.89	5.75	none	4/27/98	7.99	5.65	none
1/16/97	8.00	5.64	none	6/1/98	7.59	6.05	none
2/28/97	8.48	5.16	none	6/26/98	8.07	5.57	none
3/26/97	8.34	5.30	none	9/17/98	8.16	5.48	none
5/5/97	8.30	5.34	none	12/7/98	7.73	5.91	none
6/27/97	8.20	5.44	none	5/3/99	7.64	6.00	none
7/23/97	8.30	5.34	none	8/25/99	7.95	5.69	none
8/25/97	8.09	5.55	none				
9/25/97	7.81	5.83	none				

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**NINTH AVENUE TERMINAL STUDY AREA**

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)
<b>SCIMW-15      TOC Elevation = 13.45</b>							
9/9/96	8.60	4.85	none	10/30/97	--	--	--
9/18/96	8.61	4.84	none	12/3/97	8.21	5.24	none
9/23/96	8.62	4.83	none	12/30/97	8.23	5.22	none
9/30/96	8.51	4.94	none	1/28/98	8.14	5.31	none
10/28/96	8.72	4.73	none	3/11/98	--	--	--
12/2/96	8.91	4.54	none	3/30/98	--	--	--
12/30/96	8.36	5.09	none	4/27/98	--	--	--
1/16/97	8.44	5.01	none	6/1/98	8.11	5.34	none
2/28/97	8.54	4.91	none	6/26/98	8.00	5.45	none
3/26/97	8.57	4.88	none	9/17/98	8.28	5.17	none
5/5/97	8.73	4.72	none	12/7/98	8.63	4.82	none
6/27/97	8.42	5.03	none	5/3/99	8.30	5.15	none
7/23/97	8.28	5.17	none	8/25/99	8.75	4.70	none
8/25/97	8.31	5.14	none				
9/25/97	8.32	5.13	none				
<b>SCIMW-16      TOC Elevation = 10.40</b>							
9/9/96	3.59	6.81	none	10/30/97	3.19	7.21	none
9/18/96	3.46	6.94	none	12/3/97	3.22	7.18	none
9/23/96	3.44	6.96	none	12/30/97	--	--	--
9/30/96	3.44	6.96	none	1/28/98	--	--	--
10/28/96	4.39	6.01	none	3/11/98	3.23	7.17	none
12/2/96	3.64	6.76	none	3/30/98	3.24	7.16	none
12/30/96	3.19	7.21	none	4/27/98	3.26	7.14	none
1/16/97	3.37	7.03	none	6/1/98	3.10	7.30	none
2/28/97	3.47	6.93	none	6/26/98	3.07	7.33	none
3/26/97	3.39	7.01	none	9/17/98	3.36	7.04	none
5/5/97	3.27	7.13	none	12/7/98	3.83	6.57	none
6/27/97	3.27	7.13	none	5/3/99	3.72	6.68	none
7/23/97	3.39	7.01	none	8/25/99	5.65	4.75	none
8/25/97	3.11	7.29	none				
9/25/97	3.35	7.05	none				
<b>SCIMW-17      TOC Elevation = 10.14</b>							
9/9/96	3.59	6.55	none	10/30/97	3.17	6.97	none
9/18/96	2.83	7.31	none	12/3/97	4.94	5.20+	none
9/23/96	2.96	7.18	none	12/30/97	2.67	7.47	none
9/30/96	3.00	7.14	none	1/28/98	2.25	7.89	none
10/28/96	3.04	7.10	none	3/11/98	2.25	7.89	none
12/2/96	2.86	7.28	none	3/30/98	2.35	7.79	none
12/30/96	0.18	9.96	none	4/27/98	2.36	7.78	none
1/16/97	2.47	7.67	none	6/1/98	2.27	7.87	none
2/28/97	2.63	7.51	none	6/26/98	4.51	5.63	none
3/26/97	2.51	7.63	none	9/17/98	3.20	6.94	none
5/5/97	2.63	7.51	none	12/7/98	3.66	6.48	none
6/27/97	1.87	8.27	none	5/3/99	3.02	7.12	none
7/23/97	5.61	4.53+	none	8/25/99	4.95	5.19	none
8/25/97	3.65	6.49	none				
9/25/97	5.50	4.64+	none				

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<b>SCIMW-18 TOC Elevation = 10.81</b>							
9/9/96	5.59	5.22+	none	10/30/97	3.97	6.84	none
9/18/96	3.86	6.95	none	12/3/97	3.85	6.96	none
9/23/96	3.82	6.99	none	12/30/97	3.83	6.98	none
9/30/96	3.85	6.96	none	1/28/98	3.57	7.24	none
10/17/96	4.00	6.81	none	3/11/98	3.40	7.41	none
10/28/96	4.18	6.63	none	3/30/98	3.36	7.45	none
12/2/96	4.06	6.75	none	4/27/98	3.15	7.66	none
12/30/96	3.60	7.21	none	6/1/98	3.09	7.72	none
1/16/97	3.83	6.98	none	6/26/98	3.15	7.66	none
2/28/97	3.56	7.25	none	9/17/98	3.58	7.23	none
3/26/97	4.70	6.11	none	12/7/98	4.01	6.80	none
5/5/97	3.36	7.45	none	5/3/99	3.25	7.56	none
6/27/97	3.17	7.64	none	8/25/99	5.85	4.96	none
7/23/97	3.42	7.39	none				
8/25/97	3.49	7.32	none				
9/25/97	3.42	7.39	none				
<b>SCIMW-19 TOC Elevation = 10.46</b>							
9/9/96	4.30	6.16	none	10/30/97	4.12	6.34	none
9/18/96	4.36	6.10	none	12/3/97	3.11	7.35	none
9/23/96	4.32	6.14	none	12/30/97	3.52	6.94	none
9/30/96	4.23	6.23	none	1/28/98	2.91	7.55	none
10/28/96	4.45	6.01	none	3/11/98	3.08	7.38	none
12/2/96	3.54	6.92	none	3/30/98	3.16	7.30	none
12/30/96	2.59	7.87	none	4/27/98	3.38	7.08	none
1/16/97	3.04	7.42	none	6/1/98	3.00	7.46	none
2/28/97	3.69	6.77	none	6/26/98	3.58	6.88	none
3/26/97	3.69	6.77	none	9/17/98	4.08	6.38	none
5/5/97	3.82	6.64	none	12/7/98	3.24	7.22	none
6/27/97	3.94	6.52	none	5/3/99	3.54	6.92	none
7/23/97	3.89	6.57	none	8/25/99	4.60	5.86	none
8/25/97	3.78	6.68	none				
9/25/97	4.02	6.44	none				
<b>SCIMW-20 TOC Elevation = 9.11</b>							
9/9/96	2.08	7.03	none	10/30/97	2.02	7.09	none
9/18/96	2.27	6.84	none	12/3/97	1.38	7.73	none
9/23/96	2.26	6.85	none	12/30/97	1.61	7.50	none
9/30/96	2.34	6.77	none	1/28/98	1.30	7.81	none
10/28/96	2.68	6.43	none	3/11/98	1.35	7.76	none
12/2/96	1.45	7.66	none	3/30/98	1.43	7.68	none
12/30/96	1.12	7.99	none	4/27/98	1.51	7.60	none
1/16/97	1.44	7.67	none	6/1/98	1.29	7.82	none
2/28/97	1.60	7.51	none	6/26/98	1.76	7.35	none
3/26/97	1.54	7.57	none	9/17/98	2.32	6.79	none
5/5/97	1.65	7.46	none	12/7/98	1.71	7.40	none
6/27/97	1.92	7.19	none	5/3/99	1.42	7.69	none
7/23/97	2.05	7.06	none	8/25/99	2.19	6.92	none
8/25/97	1.62	7.49	none				
9/25/97	1.88	7.23	none				

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<b>SCIMW-21      TOC Elevation = 9.67</b>							
5/5/97	2.23	7.44	none	3/11/98	1.27	8.40	none
6/27/97	2.40	7.27	none	3/30/98	1.35	8.32	none
7/23/97	2.75	6.92	none	4/27/98	1.41	8.26	none
8/25/97	2.87	6.80	none	6/1/98	1.16	8.51	none
9/25/97	3.00	6.67	none	6/26/98	1.76	7.91	none
10/30/97	3.16	6.51	none	9/17/98	2.13	7.54	none
12/3/97	2.21	7.46	none	12/7/98	1.71	7.96	none
12/30/97	2.11	7.56	none	5/3/99	1.35	8.32	none
1/28/98	1.67	8.00	none	8/25/99	1.35	8.32	none
<b>SCIMW-22      TOC Elevation = 12.00</b>							
5/5/97	3.78	8.22	none	3/30/98	3.87	8.13	none
6/27/97	4.10	7.90	none	4/27/98	4.21	7.79	none
7/23/97	4.34	7.66	none	6/1/98	3.59	8.41	none
8/25/97	4.04	7.96	none	6/26/98	4.21	7.79	none
9/25/97	4.31	7.69	none	9/17/98	4.76	7.24	none
10/30/97	4.39	7.61	none	12/7/98	3.93	8.07	none
12/3/97	4.05	7.95	none	5/3/99	4.34	7.66	none
12/30/97	4.48	7.52	none	8/25/99	5.71	6.29	none
1/28/98	4.03	7.97	none				
3/11/98	4.07	7.93	none				
<b>SCIMW-23      TOC Elevation = 9.74      Slight Tidal Influence</b>							
5/5/97	4.19	5.55	none	3/30/98	3.35	6.39	none
6/27/97	4.10	5.64	none	4/27/98	--	--	--
7/23/97	4.43	5.31	none	6/1/98	--	--	--
8/25/97	4.37	5.37	none	6/26/98	--	--	--
9/25/97	--	--	--	9/17/98	4.28	5.46	none
10/30/97	4.27	5.47	none	12/10/98	3.35	6.39	none
12/3/97	3.24	6.50	none	5/3/99	3.65	6.09	none
12/30/97	3.52	6.22	none	8/25/99	4.35	5.39	none
1/28/98	3.02	6.72	none				
3/11/98	3.32	6.42	none				
<b>SCIMW-24      TOC Elevation = 9.74      Slight Tidal Influence</b>							
5/5/97	5.30	4.44	none	3/30/98	4.23	5.51	none
6/27/97	4.85	4.89	none	4/27/98	4.55	5.19	none
7/23/97	4.79	4.95	none	6/1/98	3.96	5.78	none
8/25/97	4.28	5.46	none	6/26/98	4.21	5.53	none
9/25/97	4.45	5.29	none	9/17/98	4.78	4.96	none
10/30/97	4.67	5.07	none	12/7/98	3.95	5.79	none
12/3/97	3.63	6.11	none	5/3/99	4.60	5.14	none
12/30/97	3.58	6.16	none	8/25/99	5.15	4.59	0.50
1/28/98	3.58	6.16	none				
3/11/98	--	--	--				
<b>SCIMW-25      TOC Elevation = 8.30</b>							
5/5/97	1.00	7.30	none	3/30/98	0.65	7.65	none
6/27/97	2.11	6.19	none	4/27/98	0.73	7.57	none
7/23/97	1.94	6.36	none	6/1/98	0.55	7.75	none
8/25/97	1.53	6.77	none	6/26/98	0.75	7.55	none
9/25/97	1.46	6.84	none	9/17/98	1.11	7.19	none
10/30/97	1.08	7.22	none	12/7/98	0.86	7.44	none
12/3/97	0.87	7.43	none	5/3/99	0.88	7.42	none
12/30/97	0.83	7.47	none	8/25/99	1.23	7.07	none
1/28/98	0.70	7.60	none				
3/11/98	0.50	7.80	none				

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<b>SCIMW-26 TOC Elevation = 11.33</b>							
5/5/97	3.18	8.15	none	3/30/98	4.13	7.20	none
6/27/97	3.31	8.02	none	4/27/98	3.93	7.40	none
7/23/97	3.46	7.87	none	6/1/98	3.56	7.77	none
8/25/97	3.21	8.12	none	6/26/98	3.65	7.68	none
9/25/97	3.42	7.91	none	9/17/98	3.92	7.41	none
10/30/97	3.56	7.77	none	12/7/98	3.25	8.08	none
12/3/97	2.55	8.78	none	5/3/99	3.68	7.65	none
12/30/97	3.25	8.08	none	8/25/99	3.61	7.72	none
1/28/98	2.93	8.40	none				
3/11/98	3.98	7.35	none				
<b>SCIMW-27 TOC Elevation = 11.43</b>							
5/5/97	4.98	6.45	none	3/30/98	4.71	6.72	none
6/27/97	4.85	6.58	none	4/27/98	4.53	6.90	none
7/23/97	4.80	6.63	none	6/1/98	4.74	6.69	none
8/25/97	4.81	6.62	none	6/26/98	4.74	6.69	none
9/25/97	4.85	6.58	none	9/17/98	4.85	6.58	none
10/30/97	4.91	6.52	none	12/7/98	4.77	6.66	none
12/3/97	4.74	6.69	none	5/4/99	4.91	6.52	none
12/30/97	4.75	6.68	none	8/25/99	4.95	6.48	none
1/28/98	4.37	7.06	none				
3/11/98	4.70	6.73	none				
<b>SCIMW-28 TOC Elevation = 13.30</b>							
5/5/97	4.96	8.34	none	3/30/98	4.27	9.03	none
6/27/97	5.12	8.18	none	4/27/98	4.41	8.89	none
7/23/97	--	--	--	6/1/98	4.25	9.05	none
8/25/97	5.04	8.26	none	6/26/98	4.70	8.60	none
9/25/97	5.23	8.07	none	9/17/98	5.47	7.83	none
10/30/97	5.39	7.91	none	12/7/98	4.64	8.66	none
12/3/97	4.47	8.83	none	5/3/99	4.32	8.98	none
12/30/97	4.72	8.58	none	8/25/99	5.44	7.86	none
1/28/98	4.16	9.14	none				
3/11/98	4.20	9.10	none				
<b>SCIMW-29 TOC Elevation = 13.18</b>							
5/15/97	5.70	7.48	none	3/30/98	5.37	7.81	none
6/27/97	5.58	7.60	none	4/27/98	5.48	7.70	none
7/23/97	5.63	7.55	none	6/1/98	5.26	7.92	none
8/25/97	5.56	7.62	none	6/26/98	5.50	7.68	none
9/25/97	5.61	7.57	none	9/17/98	5.67	7.51	none
10/30/97	5.63	7.55	none	12/7/98	5.24	7.94	none
12/3/97	5.23	7.95	none	5/3/99	5.55	7.63	none
12/30/97	5.52	7.66	none	8/25/99	5.95	7.23	none
1/28/98	5.29	7.89	none				
3/11/98	5.37	7.81	none				
<b>SCIMW-30 TOC Elevation = 12.34</b>							
10/30/97	4.81	7.53	none	12/7/98	4.39	7.95	none
12/3/97	3.99	8.35	none	5/3/99	4.45	7.89	none
12/30/97	4.26	8.08	none	8/25/99	4.95	7.39	none
1/28/98	3.75	8.59	none				
3/11/98	3.81	8.53	none				
3/30/98	4.21	8.13	none				
4/27/98	4.35	7.99	none				
6/1/98	4.15	8.19	none				
6/26/98	4.51	7.83	none				
9/17/98	4.71	7.63	none				

**TABLE 2**  
**SUMMARY OF GROUNDWATER ELEVATION DATA**  
**NINTH AVENUE TERMINAL STUDY AREA**

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)
<b>SCIMW-31D</b> <b>TOC Elevation = 11.92</b>				Extends into Merritt Sand Formation below estuarine deposits. Displays confined aquifer characteristics.			
10/30/97	7.69	4.23	none	12/7/98	7.90	4.02	none
12/3/97	7.58	4.34	none	5/3/99	7.91	4.01	none
12/30/97	7.47	4.45	none	8/25/99	7.85	4.07	none
1/28/98	7.37	4.55	none				
3/11/98	7.20	4.72	none				
3/30/98	7.35	4.57	none				
4/27/98	7.54	4.38	none				
6/1/98	7.57	4.35	none				
6/26/98	7.63	4.29	none				
9/17/98	7.58	4.34	none				
<b>SCIMW-32</b> <b>TOC Elevation = 12.75</b>							
10/30/97	5.02	7.73	none	12/7/98	4.51	8.24	none
12/3/97	4.50	8.25	none	5/3/99	4.32	8.43	none
12/30/97	4.59	8.16	none	8/25/99	7.8	4.95	none
1/28/98	--	--	--				
3/11/98	4.17	8.58	none				
3/30/98	4.39	8.36	none				
4/27/98	4.34	8.41	none				
6/1/98	4.33	8.42	none				
6/26/98	4.53	8.22	none				
9/17/98	5.04	7.71	none				
<b>SCIMW-33</b> <b>TOC Elevation = 11.47</b>							
10/30/97	4.58	6.89	none	12/7/98	4.21	7.26	none
12/3/97	4.11	7.36	none	5/3/99	4.00	7.47	none
12/30/97	4.07	7.40	none	8/25/99	4.60	6.87	none
1/28/98	4.03	7.44	none				
3/11/98	4.02	7.45	none				
3/30/98	4.00	7.47	none				
4/27/98	3.96	7.51	none				
6/1/98	3.86	7.61	none				
6/26/98	4.05	7.42	none				
9/17/98	4.32	7.15	none				
<b>SCIMW-34</b> <b>TOC Elevation = 10.93</b>				<b>Tidally Influenced</b>			
10/30/97	6.05	4.88	none	12/7/98	6.02	4.91	none
12/3/97	5.48	5.45	none	5/3/99	6.44	4.49	none
12/30/97	5.43	5.50	none	8/25/99	6.86	4.07	none
1/28/98	5.30	5.63	none				
3/11/98	6.01	4.92	none				
3/30/98	5.82	5.11	none				
4/27/98	6.14	4.79	none				
6/1/98	6.05	4.88	none				
6/26/98	5.81	5.12	none				
9/17/98	6.06	4.87	none				
<b>SCIMW-35</b> <b>TOC Elevation = 10.10</b>				<b>Tidally Influenced</b>			
10/30/97	5.23	4.87	none	12/7/98	4.95	5.15	none
12/3/97	4.06	6.04	none	5/3/99	5.60	4.50	none
12/30/97	4.01	6.09	none	8/25/99	5.95	4.15	none
1/28/98	4.30	5.80	none				
3/11/98	4.98	5.12	none				
3/30/98	4.90	5.20	none				
4/27/98	5.23	4.87	none				
6/1/98	5.01	5.09	none				
6/26/98	4.97	5.13	none				
9/17/98	5.36	4.74	none				

**TABLE 2  
SUMMARY OF GROUNDWATER ELEVATION DATA  
NINTH AVENUE TERMINAL STUDY AREA**

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION (FEET)	PRODUCT THICKNESS (INCHES)
<b>Oil Filled Manhole</b>							
	<b>TOC Elevation = 12.39</b>			<b>Hydraulically connected to Bay water.</b>		<b>Tidally Influenced.</b>	
12/30/96	6.22	6.17	trace	1/28/98	6.00	6.39	trace
1/16/97	8.00	4.39	0.01	3/11/98	5.92	6.47	trace
2/28/97	8.42	3.97	0.01	3/30/98	8.33	4.06	trace
3/26/97	8.42	3.97	trace	4/27/98	8.50	3.89	trace
5/3/97	8.51	3.88	0.06	6/1/98	8.33	4.06	trace
6/27/97	8.42	3.97	trace	6/26/98	8.42	3.97	trace
7/23/97	8.42	3.97	trace	9/17/98	8.42	3.97	trace
8/25/97	7.67	4.72	trace	12/7/98	8.33	4.06	trace
9/25/97	6.17	6.22	trace	5/2/98	7.0 to 8.0	-	0.50
10/30/97	6.42	5.97	0.00	8/25/99	-	-	4.50
12/3/97	8.08	4.31	0.00				
12/30/97	4.50	7.89	trace				

**Notes:**

All elevations presented reference the Port of Oakland datum

-- = Inaccessible

NA = Data not available

+ = Elevation is probably not static



TABLE 3  
ECOLOGICAL PARAMETER RESULTS  
IN GROUNDWATER  
NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	pH field, before sampling	pH laboratory	Eh field, before purge (mV)	Eh field, before sampling (mV)	Eh laboratory (mV)	TDS field, before purge (mg/L)	TDS laboratory (mg/L)	Temperature field, before purged (°C)	Temperature field, before sampled (°C)	Salinity field, before purged (mg/L)	Salinity field, before sampled (mg/L)	DISSOLVED ORGANIC CARBON (mg/L)	TOTAL ORGANIC CARBON (mg/L)	DISSOLVED OXYGEN field, before purge (%)	DISSOLVED OXYGEN field, before purge (mg/L)	DISSOLVED OXYGEN laboratory (mg/L)	
MW-1	SCI	F	9/25/98	4.68	6.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	SCI	F	9/23/98	5.29	6.74	--	-53.00	--	--	--	--	--	--	--	--	--	--	--	0.1	--	--
MW-3	SCI	F	9/29/98	5.83	7.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	SCI	F	9/23/98	6.40	6.75	--	-71.00	--	--	--	--	--	--	--	--	--	--	--	0.1	--	--
MW-5	SCI	F	5/7/99	6.59	6.66	--	-18.50	-41.00	--	1,049	--	16.68	16.04	0.82	2.43	--	--	42.5	4.2	--	--
SCIMW-1	SCI	E/H	9/22/98	5.02	6.99	--	-129.00	--	--	--	--	--	--	--	--	--	--	--	0.3	--	--
SCIMW-2	SCI	N	9/18/98	4.07	7.13	5.8	43.00	--	-31	12,600	--	--	--	--	--	4.4	--	--	0.1	1.2	--
SCIMW-2	SCI	N	12/10/98	3.52	6.95	6.6	96.60	41.50	63	6,180	--	--	--	--	--	5.4	--	--	1.6	2.6	--
SCIMW-2	SCI	N	5/6/99	4.52	7.36	--	36.80	-11.03	--	8,082	4,710	15.53	16.41	7.16	9.02	9.9	--	48	4.6	--	--
SCIMW-2	SCI	N	8/26/99	3.00	7.17	--	16.10	-74.60	--	12,192	12,300	--	--	--	--	4.7	--	--	1.9	--	--
SCIMW-3	SCI	I/I	9/18/98	4.29	6.81	--	-154.00	--	--	--	--	--	--	--	--	--	--	--	0.1	--	--
SCIMW-4	SCI	L	9/22/98	6.20	6.83	--	-127.00	--	--	--	--	--	--	--	--	--	--	--	0.2	--	--
SCIMW-5	SCI	M	9/17/98	5.78	6.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-5	SCI	M	12/17/98	5.64	6.81	--	130.60	--	--	--	--	--	--	--	--	--	--	--	2.4	--	--
SCIMW-5	SCI	M	5/6/99	5.26	6.65	--	330.60	-36.90	--	16,030	--	15.72	15.95	13.02	20.59	--	--	6.91	0.6	--	--
SCIMW-5	SCI	M	8/26/99	4.48	7.79	--	198.50	-89.90	--	20,569	--	--	--	--	--	--	--	--	2.7	--	--
SCIMW-6	SCI	C	9/23/98	4.38	7.02	6.2	270.00	--	223	--	--	--	--	--	--	--	<1.0	--	4.1	2.6	--
SCIMW-6	SCI	C	12/10/98	3.91	7.19	6.7	42.00	125.00	189	21,600	--	--	--	--	--	<1.0	--	--	7.5	4.3	--
SCIMW-6	SCI	C	5/6/99	4.39	7.27	--	56.60	200.00	--	16,630	17,700	14.77	14.86	15.60	14.27	1.9	--	59.4	5.5	--	--
SCIMW-6	SCI	C	8/26/99	6.56	7.11	--	140.60	176.40	--	23,244	23,500	--	--	--	--	<1.0	--	--	6.4	--	--
SCIMW-7	SCI	P/Q	9/17/98	5.74	6.78	--	-155.00	--	--	--	--	--	--	--	--	--	--	--	0.1	--	--
SCIMW-7	SCI	P/Q	5/6/99	7.40	6.58	--	-82.90	-108.40	--	12,500	--	16.80	17.20	10.90	15.15	--	--	93.2	8.5	--	--
SCIMW-8	SCI	I	9/18/98	7.25	6.70	--	-146.00	--	--	--	--	--	--	--	--	--	--	--	0.2	--	--
SCIMW-9	SCI	I	9/21/98	6.64	6.67	--	-127.00	--	--	--	--	--	--	--	--	--	--	--	0.2	--	--
SCIMW-10	SCI	J	9/18/98	7.64	6.92	--	-257.00	--	--	--	--	--	--	--	--	--	--	--	0.1	--	--
SCIMW-11	SCI	N	9/23/98	4.72	7.01	6.5	-158.00	--	123	7,260	--	--	--	--	--	--	6.3	--	0.2	3.5	--
SCIMW-11	SCI	N	12/10/98	3.32	7.12	6.8	-55.40	-123.80	-29	7,600	--	--	--	--	--	7.3	--	--	1.5	3.3	--
SCIMW-11	SCI	N	5/6/99	3.48	7.21	--	358.10	39.80	--	4,511	3,880	17.81	17.63	3.84	3.41	12	6.5	27.6	2.6	--	--
SCIMW-11	SCI	N	8/26/99	4.31	7.28	--	145.50	139.90	--	21,644	6,530	--	--	--	--	6.5	--	--	4.5	--	--
SCIMW-12	SCI	O	9/18/98	4.14	7.13	6.0	25.00	--	132	24,700	--	--	--	--	--	<1.0	--	--	4.2	5.0	--
SCIMW-12	SCI	O	12/11/98	3.73	7.10	6.5	52.60	47.50	252	27,300	--	--	--	--	--	<1.0	--	--	--	5.4	--
SCIMW-12	SCI	O	12/11/98	3.73	7.10	6.5	52.60	47.50	252	27,300	--	--	--	--	--	<1.0	--	--	--	5.4	--
SCIMW-12	SCI	O	5/7/99	3.75	7.09	--	320.10	373.90	--	19,060	23,900	16.12	15.93	18.16	15.27	2.4	--	92.8	8.3	--	--
SCIMW-12	SCI	O	8/26/99	6.91	7.29	--	149.40	140.10	--	22,904	19,800	--	--	--	--	<1.0	--	--	4.8	--	--

TABLE 3  
 ECOLOGICAL PARAMETER RESULTS  
 IN GROUNDWATER  
 NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak Datum (FEET)	pH field, before sampling	pH laboratory	Eh field, before purge (mV)	Eh field, before sampling (mV)	Eh laboratory (mV)	TDS field, before purge (mg/L)	TDS laboratory (mg/L)	Temperature field, before purged (°C)	Temperature field, before sampled (°C)	Salinity field, before purged (mg/L)	Salinity field, before sampled (mg/L)	DISSOLVED ORGANIC CARBON (mg/L)	TOTAL ORGANIC CARBON (mg/L)	DISSOLVED OXYGEN field, before purge (%)	DISSOLVED OXYGEN field, before purge (mg/L)	DISSOLVED OXYGEN laboratory (mg/L)
SCIMW-13	SCI	J	9/18/98	7.42	6.78	--	-280.00	--	--	--	--	--	--	--	--	--	--	--	0.1	--
SCIMW-14	SCI	I/J	9/18/98	5.48	6.75	6.1	-116.00	--	140	3,190	--	--	--	--	--	23	--	--	0.2	2.7
SCIMW-14	SCI	I/J	12/11/98	5.91	7.00	6.8	42.30	-81.10	100	5,600	--	--	--	--	--	14	--	--	--	4.2
SCIMW-14	SCI	I/J	5/7/99	6.00	7.04	--	385.90	-87.20	--	1,779	1,970	17.50	16.30	--	--	--	--	70.9	--	--
SCIMW-14	SCI	I/J	8/26/99	7.95	7.19	--	-59.20	-77.60	--	13,657	2,930	--	--	--	--	16	--	--	1.8	--
SCIMW-15	SCI	I/J	9/21/98	5.17	6.79	--	-147.00	--	--	--	--	--	--	--	--	--	--	--	25.1	--
SCIMW-15	SCI	I/J	5/4/99	5.15	7.00	--	-102.20	-103.80	--	3,948	--	17.70	17.30	--	--	--	--	25.1	--	--
SCIMW-16	SCI	R	9/21/98	7.04	5.46	--	-160.00	--	--	--	--	--	--	--	--	--	--	--	0.1	--
SCIMW-16	SCI	R	5/4/99	6.68	6.90	--	-105.20	-145.10	--	18,200	--	19.80	13.40	--	--	--	--	49.7	--	--
SCIMW-17	SCI	R	9/21/98	6.94	5.13	--	-122.00	--	--	--	--	--	--	--	--	--	--	--	0.1	--
SCIMW-18	SCI	L	9/24/98	7.23	6.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-19	SCI	R	9/18/98	6.38	6.79	--	-138.00	--	--	--	--	--	--	--	--	--	--	--	0.1	--
SCIMW-20	SCI	H/Q	9/21/98	6.79	6.85	--	-86.00	--	--	--	--	--	--	--	--	--	--	--	0.2	--
SCIMW-21	SCI	D	5/6/97	7.44	--	6.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-21	SCI	D	9/22/98	7.54	6.91	6.9	228.00	--	--	--	--	--	--	--	--	--	--	--	0.2	--
SCIMW-22	SCI	P	5/6/97	8.22	--	6.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-22	SCI	P	9/22/98	7.24	6.58	--	-138.00	--	--	--	--	--	--	--	--	--	--	--	0.2	--
SCIMW-22	SCI	P	5/5/99	7.66	6.81	--	-102.20	-107.10	--	13,217	--	17.79	17.00	--	--	--	--	31.5	--	--
SCIMW-23	SCI	B	5/6/97	5.55	--	6.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-23	SCI	B	9/24/98	5.46	6.83	6.1	--	--	-50	9,940	--	--	--	--	--	8.3	--	--	--	1.2
SCIMW-23	SCI	B	12/11/98	6.39	6.74	6.4	-63.00	40.00	29	--	--	--	--	--	--	--	--	--	1.7	3.3
SCIMW-23	SCI	B	5/6/99	6.09	6.57	--	-43.30	-60.40	--	4,660	210	18.15	17.63	3.96	7.61	11	11	72.7	6.8	--
SCIMW-23	SCI	B	8/26/99	4.35	6.46	--	-89.10	-85.30	--	7,653	7,490	--	--	--	--	11	--	--	1.8	--
SCIMW-24	SCI	N	9/18/98	4.96	6.38	6.3	-158.00	--	-52	1,850	--	--	--	--	--	29	--	--	0.1	1.9
SCIMW-24	SCI	N	12/11/98	5.79	6.80	6.6	117.30	-100.60	-21	13,200	--	--	--	--	--	27	--	--	1.2	3.7
SCIMW-24	SCI	N	5/6/99	5.14	6.92	--	-87.20	-81.20	--	1,134	1,090	19.19	18.65	0.88	0.87	23	--	72	6.7	--
SCIMW-26	SCI	H	9/22/98	7.41	6.54	--	-94.00	--	--	--	--	--	--	--	--	--	--	--	0.1	--
SCIMW-27	SCI	E/H	9/22/98	6.58	6.85	--	-52.00	--	--	--	--	--	--	--	--	--	--	--	0.1	--
SCIMW-28	SCI	Q	9/23/98	7.83	6.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-28	SCI	Q	5/6/99	8.98	6.75	--	-55.90	-77.60	--	460	--	14.36	15.70	0.35	8.30	17	--	82.3	8.5	--
SCIMW-30	SCI	P	9/21/98	7.63	6.58	--	-132.00	--	--	--	--	--	--	--	--	--	--	--	0.1	--
SCIMW-30	SCI	P	5/5/99	7.89	6.30	--	-3.90	-109.10	--	4,777	--	18.60	18.50	--	--	--	--	32.3	--	--

TABLE 3  
 ECOLOGICAL PARAMETER RESULTS  
 IN GROUNDWATER  
 NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Foot of Oak. Datum (FEET)	pH field, before sampling	pH laboratory	Eh field, before purge (mV)	Eh field, before sampling (mV)	Eh laboratory (mV)	TDS field, before purge (mg/L)	TDS laboratory (mg/L)	Temperature field, before purged (°C)	Temperature field, before sampled (°C)	Salinity field, before purged (mg/L)	Salinity field, before sampled (mg/L)	DISSOLVED ORGANIC CARBON (mg/L)	TOTAL ORGANIC CARBON (mg/L)	DISSOLVED OXYGEN field, before purge (%)	DISSOLVED OXYGEN field, before purge (mg/L)	DISSOLVED OXYGEN laboratory (mg/L)
SCIMW-31D	SCI	P	9/21/98	4.34	5.07	--	-20.00	--	--	--	--	--	--	--	--	--	--	--	0.2	--
SCIMW-31D	SCI	P	5/5/99	4.01	6.51	--	302.70	555.30	--	12,370	--	19.89	19.90	--	--	--	--	109.4	--	--
SCIMW-32	SCI	I/P	9/21/98	7.71	5.11	--	-101.00	--	--	--	--	--	--	--	--	--	--	--	0.1	--
SCIMW-32	SCI	I/P	5/5/99	8.43	6.24	--	-44.20	-88.40	--	2,839	--	20.56	19.08	--	--	--	--	94.6	--	--
SCIMW-33	SCI	I/I	9/21/98	7.15	4.98	--	-194.00	--	--	--	--	--	--	--	--	--	--	--	0.1	--
SCIMW-33	SCI	I/I	5/5/99	7.47	6.60	--	-72.90	-88.40	--	3,355	--	19.80	19.11	--	--	--	--	35.3	--	--
SCIMW-34	SCI	R	9/24/98	4.87	6.87	6.3	--	--	-15	15,000	--	--	--	--	--	12	--	--	--	3.3
SCIMW-34	SCI	R	12/11/98	4.91	6.78	6.5	-110.20	-60.90	118	6,520	--	--	--	--	--	11	--	--	2.3	5.2
SCIMW-34	SCI	R	5/5/99	4.49	6.82	--	-52.30	-43.30	--	6,775	15,500	15.57	14.75	--	--	4.9	--	46.1	--	--
SCIMW-34	SCI	R	8/26/99	6.86	6.63	--	29.40	8.60	--	13,905	11,400	--	--	--	--	5.7	--	--	1.36	--
SCIMW-35	SCI	R	9/23/98	4.74	6.76	--	125.00	--	--	--	--	--	--	--	--	--	--	--	3.1	--
SCIMW-35	SCI	R	12/11/98	5.15	6.88	--	41.00	-7.10	--	--	--	--	--	--	--	--	--	--	1.8	--
SCIMW-35	SCI	R	5/5/99	4.50	6.76	--	83.00	64.00	--	2,382	--	16.06	15.70	--	--	--	--	147.6	--	--
SCIMW-35	SCI	R	8/26/99	5.95	6.98	--	96.60	3.28	--	9,283	--	--	--	--	--	--	--	--	2.61	--

Redox potential or oxidizing-reduction potential

TDS = Total Dissolved Solids

mV = millivolts

mg/L = milligrams per Liter

Groundwater elevation measurements presented are those collected on the first day of sampling for the event and may not be the same as the date sampled.

TABLE 4  
 PETROLEUM HYDROCARBON, BTEX, PESTICIDE AND PCB  
 CONCENTRATIONS IN GROUNDWATER  
 NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	SITE REF ARBA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	OIL & GREASE (µg/L)	TVH as GAS (µg/L)	TEH as DIESEL (µg/L)	TEH as MOTOR OIL (µg/L)	BENZENE (µg/L)	ETHYL-BENZENE (µg/L)	TOLUENE (µg/L)	TOTAL XYLENES (µg/L)	4,4'-DDD (µg/L)	4,4'-DDE (µg/L)	4,4'-DDT (µg/L)	OTHER HERBS/ PESTS (µg/L)	AROCLOR-1260 (µg/L)	OTHER PCBs (µg/L)
MW-1	Uribe	F	4/4/94	5.90	--	<50	510	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--
MW-1	Uribe	F	10/3/94	4.36	--	--	390y	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-1	Clayton	F	4/10/95	5.05	--	<50	330	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-1	Clayton	F	7/24/95	4.97	--	<50	230	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-1	Clayton	F	11/10/95	4.47	--	<50	430	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-1	Clayton/SCI	F	2/20/96	5.50	--	<50	590yh	--	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--
MW-1	SCI	F	5/24/96	4.95	--	<50	870yh	630y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-1	SCI	F	9/6/96	4.34	--	<50	850yh	490yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-1	SCI	F	12/5/96	5.19	--	<50	4,500yh	2,100yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-1	SCI	F	9/25/98	4.68	--	--	<47	<280	--	--	--	--	--	--	--	--	--	--
MW-2	Uribe	F	4/4/94	5.31	--	<50	1800	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--
MW-2	Uribe	F	10/5/94	5.39	--	--	1,200y	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-2	Clayton	F	4/10/95	6.29	--	<50	550	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-2	Clayton	F	7/24/95	5.91	--	70	960	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-2	Clayton	F	11/10/95	5.73	--	<50	920	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-2	Clayton/SCI	F	2/20/96	6.51	--	<50	1,700h	--	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--
MW-2	SCI	F	5/24/96	5.91	--	<50	2,800yh	1,200y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-2	SCI	F	9/5/96	6.34	--	58z	2,900	760yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-2	SCI	F	12/4/96	6.02	--	<50	1,600y	1,000yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-2	SCI	F	9/23/98	5.29	--	--	80yl	<300	--	--	--	--	--	--	--	--	--	--
MW-3	Uribe	F	4/4/94	5.95	--	<50	690	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--
MW-3	Uribe	F	10/4/94	4.74	--	--	480y	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-3	Clayton	F	4/10/95	2.54	--	<50	830	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-3	Clayton	F	7/24/95	6.56	--	<50	460	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-3	Clayton	F	11/10/95	5.07	--	<50	2,100	--	<0.4	<0.3	0.7	<0.4	--	--	--	--	--	--
MW-3	Clayton/SCI	F	2/20/96	6.04	--	<50	620h	--	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--
MW-3	SCI	F	5/24/96	5.69	--	<50	1,100yh	550y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-3	SCI	F	9/18/96	3.76	--	<50	1,500	890yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--

TABLE 4  
 PETROLEUM HYDROCARBON, BTEX, PESTICIDE AND PCB  
 CONCENTRATIONS IN GROUNDWATER  
 NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak, Datum (FEET)	OIL & GREASE (ug/L)	TVH as GAS (ug/L)	TEH as DIESEL (ug/L)	TEH as MOTOR OIL (ug/L)	BENZENE (ug/L)	ETHYL-BENZENE (ug/L)	TOLUENE (ug/L)	TOTAL XYLENES (ug/L)	4,4'-DDD (ug/L)	4,4'-DDE (ug/L)	4,4'-DDT (ug/L)	OTHER HERBS/ PESTS (ug/L)	AROCLOR-1260 (ug/L)	OTHER PCBs (ug/L)
MW-3	SCI	F	12/13/96	5.34	--	<50	580	<250	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-3	SCI	F	9/29/98	5.83	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
MW-4	Clayton	F	9/20/93 (b)	6.18	--	<50	1300	--	140	40	110	235	--	--	--	--	--	--
MW-4	Clayton	F	12/1/93 (b)	7.88	--	<50	32,000	--	71	20	41	150	--	--	--	--	--	--
MW-4	Uribe	F	4/4/94 (b)	7.78	--	6,200	410,000	--	140	47	20	310	--	--	--	--	--	--
MW-4	Clayton	F	4/10/95	8.18	FREE PRODUCT -- NOT SAMPLED													
MW-4	Clayton	F	7/24/95	8.33 (b)	--	2,400	21,000	--	140	34	74	40	--	--	--	--	--	--
MW-4	SCI	F	5/24/96	9.02 (b)	--	690y	37,000	2,800yl	44	18	<2.5	7.7	--	--	--	--	--	--
MW-4	SCI	F	9/4/96	7.33 (b)	--	1,000h	240,000	26,000yl	100	5.2	<0.5	7.2	--	--	--	--	--	--
MW-4	SCI	F	12/3/96	8.76 (b)	--	1,500yh	13,000	2,000yl	120	33	0.9	22	--	--	--	--	--	--
MW-4	SCI	F	12/30/96	9.04	FREE PRODUCT -- NOT SAMPLED													
MW-4	SCI	F	1/16/97	8.76	FREE PRODUCT -- NOT SAMPLED													
MW-4	SCI	F	5/5/97	8.06	FREE PRODUCT -- NOT SAMPLED													
MW-4	SCI	F	9/17/98	7.53	FREE PRODUCT -- NOT SAMPLED													
MW-4	SCI	F	8/25/99	7.33	FREE PRODUCT -- NOT SAMPLED													
MW-5	Clayton	F	4/10/95	7.20	--	1,100	6,200	--	3.1	2.9	<0.3	11.3	--	--	--	--	--	--
MW-5	Clayton	F	7/24/95	6.60	--	720	4,800	--	3.1	0.6		0.7	--	--	--	--	--	--
MW-5	Clayton	F	11/10/95	6.46	--	260	3,700	--	0.8	0.6	0.5	1.9	--	--	--	--	--	--
MW-5	Clayton/SCI	F	2/20/96	9.15	--	150y	440h	--	0.5	<0.5	<0.5	<1	--	--	--	--	--	--
MW-5	SCI	F	5/24/96	9.17	--	82y	4,600yh	1,900y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-5	SCI	F	9/4/96	6.40	--	<50	7,700yh	1,900yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-5	SCI	F	12/3/96	7.20	--	140yh	13,000	1,900yl	1.5	<0.5	<0.5	2.6	--	--	--	--	--	--
MW-5	SCI	F	1/20/97	8.38	--	<50	9,400	1,500yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-5	SCI	F/H	5/6/97	6.45	<5,000	<50	8,800	2,500yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-5	SCI	F/H	9/23/98	6.40	--	<50	170 l	<300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-5	SCI	F/H	5/7/99	6.59	--	<50	660	<300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-6	Clayton	F	4/10/95	7.74 (b)	--	1,300	10,000	--	4.4	0.7	<0.3	0.8	--	--	--	--	--	--
MW-6	SCI	F	7/24/95	6.67	FREE PRODUCT -- NOT SAMPLED													

TABLE 4  
 PETROLEUM HYDROCARBON, BTEX, PESTICIDE AND PCB  
 CONCENTRATIONS IN GROUNDWATER  
 NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	OIL & GREASE (ug/L)	TVH as GAS (ug/L)	TEH as DIESEL (ug/L)	TEH as MOTOR OIL (ug/L)	BENZENE (ug/L)	ETHYL-BENZENE (ug/L)	TOLUENE (ug/L)	TOTAL XYLENES (ug/L)	4,4'-DDD (ug/L)	4,4'-DDE (ug/L)	4,4'-DDT (ug/L)	OTHER HERBS/ PESTS (ug/L)	AROCLOR-1260 (ug/L)	OTHER PCBs (ug/L)
MW-6	SCI	F	5/24/96	7.71 (b)	--	280,000yh	240,000	5,500yl	<250	<250	<250	<250	--	--	--	--	--	--
MW-6	SCI	F	9/5/96	6.67 (b)	89,000	200h	50,000	3,200yl	5.3	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
MW-6	SCI	F	12/4/96	7.90 (b)	--	4,700yh	140,000	7,300yl	19	<10	11	<10	--	--	--	--	--	--
MW-6	SCI	F	1/16/97	7.63	FREE PRODUCT -- NOT SAMPLED													
MW-6	SCI	F/H	5/6/97	7.04 (b)	330,000	440yh	620,000	24,000yl	2.4	<0.5	0.51	0.61	--	--	--	--	--	--
MW-6	SCI	F	9/25/97	7.97	FREE PRODUCT -- NOT SAMPLED													
MW-6	SCI	F	5/4/99	7.21	FREE PRODUCT -- NOT SAMPLED													
MW-7	Clayton	M	4/10/95	5.72	--	<50	370	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-7	Clayton	M	7/24/95	6.41	--	<50	260	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-7	Clayton	M	11/10/95	5.35	--	<50	270	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-7	Clayton/SCI	M	2/20/96	6.00	--	<50	6,100	--	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--
MW-7	SCI	M	5/24/96	5.44	--	<50	750yh	750y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-7	SCI	M	9/5/96	5.48	<5,000	<50	480yh	310yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
MW-7	SCI	M	12/4/96	5.25	--	<50	340y	<240	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-7	SCI	M	1/17/97	6.48	--	<50	200	<250	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-1	SCI	E/H	5/24/96	5.09	<5,000	<50	560yh	280y	<5.0	<5.0	<5.0	<5.0	<0.09	<0.09	<0.09	ND	<0.5	ND
SCIMW-1	SCI	E/H	9/6/96	4.39	<5,000	<50	870yh	<250	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-1	SCI	E/H	1/22/97	5.29	--	<50	520yh	<250	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-1	SCI	E/H	9/22/98	5.02	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-2	SCI	N	5/23/96	4.04	5,600	--	2,600 l	360yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-2	SCI	N	9/4/96	3.38	8,000	<50	5,100	770yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-2	SCI	N	1/17/97	3.82	--	95y	13,000 l	2,400yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-2	SCI	N	9/18/98	4.07	--	--	31,000h	5,400yl	--	--	--	--	--	--	--	--	--	--
SCIMW-2	SCI	N	12/28/98	3.52	--	--	5,400h	930yl	--	--	--	--	--	--	--	--	--	--
SCIMW-2	SCI	N	5/7/99	4.52	--	--	10,000	1,600yl	--	--	--	--	--	--	--	--	--	--
SCIMW-2	SCI	N	8/26/99	3.00	--	--	13,000	1,600	--	--	--	--	--	--	--	--	--	--
SCIMW-3	SCI	I/J	5/23/96	7.22	<5,000	--	8,000yh	7,400y	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-3	SCI	I/J	9/5/96	6.67	<5,000	<50	8,800yh	4,400yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND

TABLE 4  
 PETROLEUM HYDROCARBON, BTEX, PESTICIDE AND PCB  
 CONCENTRATIONS IN GROUNDWATER  
 NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak, Datum (FEET)	OIL & GREASE (ug/L)	TVH as GAS (ug/L)	TEH as DIESEL (ug/L)	TEH as MOTOR OIL (ug/L)	BENZENE (ug/L)	ETHYL-BENZENE (ug/L)	TOLUENE (ug/L)	TOTAL XYLENES (ug/L)	4,4'-DDD (ug/L)	4,4'-DDE (ug/L)	4,4'-DDT (ug/L)	OTHER HERBS/ PESTS (ug/L)	AROCLOR-1260 (ug/L)	OTHER PCBs (ug/L)
SCIMW-3	SCI	I/J	1/20/97	6.46	--	<50	7,500yh	5,200y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-3	SCI	I/J	9/18/98	4.29	--	--	75yh	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-4	SCI	L	8/26/96	5.50	<5,000	<50	630yh	670yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-4	SCI	L	1/22/97	8.43	--	<50	530yh	990yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-4	SCI	L	9/23/98	6.20	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-5	SCI	M	9/3/96	4.63	<5,000	<50	<50	<250	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-5	SCI	M	1/20/97	6.12	--	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-5	SCI	M	9/23/98	5.78	--	--	70y	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-5	SCI	M	12/17/98	5.64	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-5	SCI	M	5/10/99	5.26	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-6	SCI	C	8/28/96	4.69	<5,000	<50	150yh	260yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-6	SCI	C	1/22/97	4.68	--	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<0.09	<0.09	<0.09	ND	<0.5	ND
SCIMW-6	SCI	C	9/23/98	4.38	--	--	<50	<300	--	--	--	--	<0.09	<0.09	<0.09	ND	<0.5	ND
SCIMW-6	SCI	C	12/10/98 (a)	3.91	--	--	<47	<280	--	--	--	--	<0.1	<0.1	<0.1	ND	<0.5	ND
SCIMW-6	SCI	C	5/6/99	4.39	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-7	SCI	P/Q	9/6/96	3.31+	<5,000	540	6,100y	1,900yl	5,300	<1,300	<1,300	<1,300	--	--	--	--	<1.0	ND
SCIMW-7	SCI	P/Q	1/20/97	7.32	--	6,900z	11,000y	7,500yl	8,600	<25	7,200	103	--	--	--	--	--	--
SCIMW-7	SCI	P/Q	10/20/97	6.96	<5,000	9,100yl	6,100yh	2,500yl	5,100	15	3,800	134	0.78	0.32	<0.094	**	<0.47	ND
SCIMW-7	SCI	P/Q	9/22/98	5.74	--	--	<50	<300	1,100	<250	480	<250	<0.1	<0.1	<0.1	ND	<0.5	ND
SCIMW-7	SCI	P/Q	5/6/99	7.40	--	--	--	--	--	--	--	--	<1.0	<1.0	<1.0	ND	<4.8	ND
SCIMW-8	SCI	I	8/26/96	7.11	<5,000	<50	1,200yh	1,400yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-8	SCI	I	1/21/97	7.70	--	<50	860yh	830yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-8	SCI	I	9/18/98	7.25	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-9	SCI	I	8/26/96	6.40	5,000	<50	1,800yh	1,100yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-9	SCI	I	1/23/97	6.66	--	<50	1,900yh	2,300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-9	SCI	I	9/22/98	6.64	--	--	95yh	600yh	--	--	--	--	--	--	--	--	--	--
SCIMW-10	SCI	J	8/26/96	7.95	<5,000	<50	1,100yh	1,200yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-10	SCI	J	1/23/97	7.87	--	<50	1,400yh	2,500	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--

TABLE 4  
 PETROLEUM HYDROCARBON, BTEX, PESTICIDE AND PCB  
 CONCENTRATIONS IN GROUNDWATER  
 NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak, Datum (FBET)	OIL & GREASE (ug/L)	TVH as GAS (ug/L)	TEH as DIESEL (ug/L)	TEH as MOTOR OIL (ug/L)	BENZENE (ug/L)	ETHYL-BENZENE (ug/L)	TOLUENE (ug/L)	TOTAL XYLENES (ug/L)	4,4'-DDD (ug/L)	4,4'-DDE (ug/L)	4,4'-DDT (ug/L)	OTHER HERBS/ PESTS (ug/L)	AROCLOR-1260 (ug/L)	OTHER PCBs (ug/L)
SCIMW-10	SCI	J	9/18/98	7.64	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-11	SCI	N	8/28/96	3.83	<5,000	<50	400yh	<250	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-11	SCI	N	1/17/97	4.32	--	<50	180	<250	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-11	SCI	N	9/23/98	4.72	--	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-11	SCI	N	12/10/98	3.32	--	51	<59	<350	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-11	SCI	N	5/6/99	3.48	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-12	SCI	O	8/29/96	4.09	<5,000	<50	<50	<250	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-12	SCI	O	1/17/97	4.53	--	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-12	SCI	O	9/18/98	4.14	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-12	SCI	O	12/11/98	3.73	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-12	SCI	O	5/6/99	3.75	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-13	SCI	J	8/29/96	7.21	<5,000	<50	5,400yh	2,100yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-13	SCI	J	1/23/97	6.93	--	<50	3,400yh	3,900	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-13	SCI	J	9/18/98	7.42	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-14	SCI	I/J	8/29/96	5.36	6,000	<50	2,200yh	1,400yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-14	SCI	I/J	1/21/97	5.64	--	<50	570yh	420yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-14	SCI	I/J	9/18/98	5.48	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-14	SCI	I/J	5/4/99	6.00	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-15	SCI	I/J	8/29/96	4.85	<5,000	<50	2,100yh	1,600yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-15	SCI	I/J	1/17/97	5.01	--	<50	2,500h	1,600yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-15	SCI	I/J	9/21/98	5.17	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-15	SCI	I/J	5/4/99	5.15	--	--	75ylh	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-16	SCI	R	8/30/96	6.81	<5,000	<50	180	<250	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-16	SCI	R	1/22/97	7.03	--	<50	290yh	<250	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-16	SCI	R	9/22/98	7.04	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-16	SCI	R	5/4/99	6.68	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-17	SCI	R	8/29/96	6.55	<5,000	<50	190yh	<250	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-17	SCI	R	1/22/97	7.67	--	<50	330yh	500yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--



TABLE 4  
 PETROLEUM HYDROCARBON, BTEX, PESTICIDE AND PCB  
 CONCENTRATIONS IN GROUNDWATER  
 NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak Datum (FEET)	OIL & GREASE (ug/L)	TVH as GAS (ug/L)	TEH as DIESEL (ug/L)	TEH as MOTOR OIL (ug/L)	BENZENE (ug/L)	ETHYL-BENZENE (ug/L)	TOLUENE (ug/L)	TOTAL XYLENES (ug/L)	4,4'-DDD (ug/L)	4,4'-DDE (ug/L)	4,4'-DDT (ug/L)	OTHER HERBS/ PESTS (ug/L)	AROCLOR-1260 (ug/L)	OTHER PCBs (ug/L)
SCIMW-17	SCI	R	9/21/98	6.94	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-18	SCI	L	9/6/96	5.22+	<5,000	<50	2,200yh	1,600yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-18	SCI	L	1/20/97	6.98	--	<50	1,900yh	1,900y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-18	SCI	L	9/24/98	7.23	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-19	SCI	R	8/30/96	6.16	<5,000	<50	180	<250	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-19	SCI	R	1/21/97	7.42	--	<50	150yh	<250	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-19	SCI	R	9/18/98	6.38	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-20	SCI	H/Q	9/3/96	7.03	<5,000	<50	330y	<250	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-20	SCI	H/Q	1/20/97	7.67	--	<50	340yh	290y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-20	SCI	H/Q	9/22/98	6.79	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-21	SCI	D	5/6/97	7.44	<5,000	<50	670h	860yh1	<0.5	<0.5	<0.5	<0.5	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-21	SCI	D	9/23/98	7.54	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-22	SCI	P	5/6/97	8.22	<5,000	<50	1,400yh	2,300hl	<0.5	<0.5	<0.5	<0.5	0.12	<0.094	<0.094	ND	<0.47	ND
SCIMW-22	SCI	P	10/20/97	7.61	<5,000	<50	1,500yh	2,700yh1	<0.5	<0.5	<0.5	<0.5	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-22	SCI	P	9/22/98	7.24	--	--	<50	<300	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
SCIMW-22	SCI	P	5/5/99	7.66	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-23	SCI	B	5/6/97	5.55	10,000	--	1,400	1,200yl	--	--	--	--	<0.094	<0.094	<0.094	***	<0.47	ND
SCIMW-23	SCI	B	9/24/98	5.46	--	--	680y	<300	--	--	--	--	<0.09	<0.09	<0.09	ND	<0.5	ND
SCIMW-23	SCI	B	12/11/98	6.39	--	--	260yh	<300	--	--	--	--	<0.1	<0.1	<0.1	ND	<0.5	ND
SCIMW-23	SCI	B	5/7/99	6.09	--	--	660y	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-23	SCI	B	8/26/99	4.35	--	--	120 y	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-24	SCI	N	5/6/97	4.44	<5,000	5,000	2,700 l	2,100 l	720	220	37	120	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-24	SCI	N	9/18/98	4.96	--	7,100	330yl	<300	950	99	53	98	--	--	--	--	--	--
SCIMW-24	SCI	N	12/11/98	5.79	--	8,300	800yl	<300	1,200	180	56	111	--	--	--	--	--	--
SCIMW-24	SCI	N	5/6/99	5.14	--	6,700	1,900yl	660yl	1,100	120	31	89	--	--	--	--	--	--
SCIMW-24	SCI	N	8/25/99	4.59	FREE PRODUCT -- NOT SAMPLED													
SCIMW-25	SCI	H	5/7/97	7.30	<5,000	<50	100	<300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-26	SCI	H	5/6/97	8.15	<5,000	<50	140	<300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--

TABLE 4  
 PETROLEUM HYDROCARBON, BTEX, PESTICIDE AND PCB  
 CONCENTRATIONS IN GROUNDWATER  
 NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	OIL & GREASE (ug/L)	TVH as GAS (ug/L)	TEH as DIESEL (ug/L)	TEH as MOTOR OIL (ug/L)	BENZENE (ug/L)	ETHYL-BENZENE (ug/L)	TOLUENE (ug/L)	TOTAL XYLENES (ug/L)	4,4'-DDD (ug/L)	4,4'-DDE (ug/L)	4,4'-DDT (ug/L)	OTHER HERBS/ PESTS (ug/L)	AROCLOR-1260 (ug/L)	OTHER PCBs (ug/L)
SCIMW-26	SCI	H	9/22/98	7.41	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-27	SCI	E/H	5/6/97	6.45	<5,000	<50	3,400	1,800yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-27	SCI	E/H	9/22/98	6.58	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-28	SCI	Q	5/7/97	8.34	<5,000	<50	180	<300	<0.5	<0.5	<0.5	<0.5	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-28	SCI	Q	9/25/98	7.83	--	--	<47	<280	--	--	--	--	--	--	--	--	<0.47	ND
SCIMW-29	SCI	H	5/20/97	7.48	<5,000	<50	150	<300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-30	SCI	P	10/20/97	7.53	<5,000	<50	530yh	830yhl	<0.5	<0.5	<0.5	<0.5	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-30	SCI	P	9/23/98	7.63	--	--	60y	<300	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
SCIMW-30	SCI	P	5/5/99	7.89	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-31D	SCI	P	10/20/97	4.23	<5,000	<50	170y	<300	<0.5	<0.5	<0.5	<0.5	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-31D	SCI	P	9/21/98	4.34	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
SCIMW-32	SCI	I/P	10/20/97	7.73	<5,000	<50	1,000yh	990yl	<0.5	<0.5	<0.5	<0.5	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-32	SCI	I/P	9/21/98	7.71	--	--	<50	<300	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
SCIMW-33	SCI	I/J	10/20/97	6.89	<5,000	780	5,700yh	1,600yhl	3.2	12	<0.5	30.7	1.8	0.3	0.11	ND	<0.47	ND
SCIMW-33	SCI	I/J	9/21/98	7.15	--	--	210yl	<300	<10	<10	<10	<10	2.0	0.2	<0.09	ND	<0.5	ND
SCIMW-33	SCI	I/J	5/5/99	7.47	--	--	1,100h	<300	<10	<10	<10	<10	18.0	7.8	<4.9	ND	<24	ND
SCIMW-34	SCI	R	10/20/97	4.88	<5,000	<50	5,200yh	3,600yhl	<0.5	<0.5	<0.5	<0.5	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-34	SCI	R	9/24/98	4.87	--	92	61y	<300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-34	SCI	R	12/11/98	4.91	--	290	60ylh	<300	150	28	1.0	6.5	--	--	--	--	--	--
SCIMW-34	SCI	R	5/5/99	4.49	--	91	<50	<300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-34	SCI	R	8/26/99	6.86	--	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-35	SCI	R	10/20/97	4.87	<5,000	<50	99yh	<300	<0.5	<0.5	<0.5	<0.5	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-35	SCI	R	9/23/98	4.74	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-35	SCI	R	12/11/98	5.15	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-35	SCI	R	5/4/99	4.50	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--

TABLE 4  
 PETROLEUM HYDROCARBON, BTEX, PESTICIDE AND PCB  
 CONCENTRATIONS IN GROUNDWATER  
 NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak, Datum (FEET)	OIL & GREASE (ug/L)	TVH as GAS (ug/L)	TEH as DIESEL (ug/L)	TEH as MOTOR OIL (ug/L)	BENZENE (ug/L)	ETHYL-BENZENE (ug/L)	TOLUENE (ug/L)	TOTAL XYLENES (ug/L)	4,4'-DDD (ug/L)	4,4'-DDE (ug/L)	4,4'-DDT (ug/L)	OTHER HERBS/ PESTS (ug/L)	AROCLOR-1260 (ug/L)	OTHER PCBs (ug/L)
XA Dup of SCIMW-16	SCI	R	8/30/96	6.81	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
XB Dup of SCIMW-3	SCI	I/J	9/5/96	6.67	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--

TVH = Total Volatile Hydrocarbons  
 TEH = Total Extractable Hydrocarbons  
 DDD = Dichlorodiphenyldichloroethane  
 DDE = Dichlorodiphenyldichloroethene  
 DDT = Dichlorodiphenyltrichloroethene  
 PCBs = Polychlorinated Biphenyls  
 \*\*\* = Also detected 0.05ug/L Heptachlor epoxide B

ug/L = micrograms per liter or parts per billion  
 y = Sample exhibits fuel pattern which does not resemble std  
 h = heavier hydrocarbons than indicated standard  
 l = lighter hydrocarbons than indicated standard  
 z = Sample exhibits unknown single peak or peaks  
 J = estimated value

-- = Not tested  
 <50 = Comp. not detected at or above stated reporting limit  
 ND = Not detected  
 + = Groundwater level may not be stabilized  
 Groundwater measurements presented are those collected on the first day of sampling for the event and may not be the same as the date sampled.

- (a) Additional sample was collected on Dec 28, 1998 for the TEH analysis.  
 (b) These wells contained free product at time of sampling.

TABLE 5  
VOLATILE ORGANIC CONCENTRATIONS  
IN GROUNDWATER  
NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak Datum (FEET)	ACETONE (ug/L)	MEK or 2-BUTAN-ONE (ug/L)	CARBON DISULFIDE (ug/L)	CHLORO-BENZENE (ug/L)	CHLORO-ETHANE (ug/L)	1,1-DI-CHLORO-ETHANE (ug/L)	1,2-DI-CHLORO-ETHANE (ug/L)	1,1-DI-CHLORO-ETHENE (ug/L)	cis-1,2-DI-CHLORO-ETHENE (ug/L)	trans-1,2-DI-CHLORO-ETHENE (ug/L)	4-METHYL-2-PENTAN-ONE (ug/L)	1,1,1-TRI-CHLORO-ETHANE (ug/L)	TRI-CHLORO-ETHENE (ug/L)	VINYL CHLORIDE (ug/L)	OTHER 8240s EXCL. BTEX*
MW-5	SCI	F	1/20/97	8.38	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
MW-5	SCI	F/H	5/6/97	6.45	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
MW-6	SCI	F	9/5/96	6.67	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
MW-6	SCI	F/H	5/6/97	7.04	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
MW-7	SCI	M	9/5/96	5.48	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
MW-7	SCI	M	1/17/97	6.48	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-1	SCI	E/H	5/24/96	5.09	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-1	SCI	E/H	9/6/96	4.39	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-1	SCI	E/H	1/22/97	5.29	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-2	SCI	N	9/4/96	3.38	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-2	SCI	N	1/17/97	3.82	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-3	SCI	I/J	5/23/96	7.22	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-3	SCI	I/J	9/5/96	6.67	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
XB Dup of SCIMW-3	SCI	I/J	9/5/96	6.67	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-3	SCI	I/J	1/20/97	6.46	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-4	SCI	L	8/26/96	5.50	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-4	SCI	L	1/22/97	8.43	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-5	SCI	M	9/3/96	4.63	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-5	SCI	M	1/20/97	6.12	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-6	SCI	C	8/28/96	4.69	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-6	SCI	C	1/22/97	4.68	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-7	SCI	P/Q	9/6/96	3.31+	<5,000	<2,500	<1,300	<1,300	2,400J	8,100	<1,300	<1,300	27,000	<1,300	<2,500	10,000	7,900	8,900	ND
SCIMW-7	SCI	P/Q	1/20/97	7.32	<13,000	<6,300	<3,100	<3,100	6,300	13,000	<3,100	<3,100	91,000	<3,100	<6,300	53,000	32,000	5,600J	ND
SCIMW-7	SCI	P/Q	10/20/97	6.96	<1,000	250J	<250	<250	4,000	6,800	<250	330	60,000	920	<500	12,000	2,900	7,400	ND
SCIMW-7	SCI	P/Q	9/22/98	5.74	<1,000	<500	<250	<250	1,400	1,700	<250	<250	5,000	180J	<500	1,600	<250	2,400	ND
SCIMW-7	SCI	P/Q	5/6/99	7.40	<100	<50	<25	<25	570	<25	<25	<25	160	34	<50	<25	<25	160	ND
SCIMW-8	SCI	I	8/26/96	7.11	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-8	SCI	I	1/21/97	7.70	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND

TABLE 5  
VOLATILE ORGANIC CONCENTRATIONS  
IN GROUNDWATER  
NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak Datum (FEET)	ACETONE (ug/L)	MBK or 2-BUTAN-ONE (ug/L)	CARBON DISULFIDE (ug/L)	CHLORO-BENZENE (ug/L)	CHLORO-ETHANE (ug/L)	1,1-DI-CHLORO-ETHANE (ug/L)	1,2-DI-CHLORO-ETHANE (ug/L)	1,1-DI-CHLORO-ETHENE (ug/L)	cis-1,2-DI-CHLORO-ETHENE (ug/L)	trans-1,2-DI-CHLORO-ETHENE (ug/L)	4-METHYL-2-PENTAN-ONE (ug/L)	1,1,1-TRI-CHLORO-ETHANE (ug/L)	TRI-CHLORO-ETHENE (ug/L)	VINYL CHLORIDE (ug/L)	OTHER 8240s EXCL. BTEX*
SCIMW-9	SCI	I	8/29/96	6.40	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-9	SCI	I	1/23/97	6.66	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-10	SCI	J	8/26/96	7.95	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-10	SCI	J	1/23/97	7.87	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-11	SCI	N	8/28/96	3.83	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-11	SCI	N	1/17/97	4.32	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-12	SCI	O	8/29/96	4.09	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-12	SCI	O	1/17/97	4.53	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-13	SCI	J	8/29/96	7.21	<20	<10	<5.0	<5.0	<10	6.7	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-13	SCI	J	1/23/97	6.93	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-14	SCI	I/J	8/29/96	5.36	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-14	SCI	I/J	1/21/97	5.64	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-15	SCI	I/J	8/29/96	4.85	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-15	SCI	I/J	1/17/97	5.01	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-16	SCI	R	8/30/96	6.81	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
XA Dup of SCIMW-16	SCI	R	8/30/96	6.81	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-16	SCI	R	1/22/97	7.03	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-17	SCI	R	8/29/96	6.55	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-17	SCI	R	1/22/97	7.67	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-18	SCI	L	9/6/96	5.22+	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-18	SCI	L	1/20/97	6.98	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-19	SCI	R	8/30/96	6.16	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-19	SCI	R	1/21/97	7.42	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-20	SCI	H/Q	9/3/96	7.03	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-20	SCI	H/Q	1/20/97	7.67	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-22	SCI	P	5/6/97	8.22	<100	<50	<25	<25	<50	<25	<25	<25	<25	<25	<50	<25	<25	<50	ND
SCIMW-22	SCI	P	10/20/97	7.61	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-22	SCI	P	9/23/98	7.24	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-22	SCI	P	5/5/99	7.66	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND

TABLE 5  
VOLATILE ORGANIC CONCENTRATIONS  
IN GROUNDWATER  
NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	ACETONE (ug/L)	MEK or 2-BUTAN-ONE (ug/L)	CARBON DISULFIDE (ug/L)	CHLORO-BENZENE (ug/L)	CHLORO-ETHANE (ug/L)	1,1-DI-CHLORO-ETHANE (ug/L)	1,2-DI-CHLORO-ETHANE (ug/L)	1,1-DI-CHLORO-ETHENE (ug/L)	cis-1,2-DI-CHLORO-ETHENE (ug/L)	trans-1,2-DI-CHLORO-ETHENE (ug/L)	4-METHYL-2-PENTAN-ONE (ug/L)	1,1,1-TRI-CHLORO-ETHANE (ug/L)	TRI-CHLORO-ETHENE (ug/L)	VINYL CHLORIDE (ug/L)	OTHER 8240s EXCL. BTEX*
SCIMW-24	SCI	N	5/6/97	4.44	<100	<50	<25	<25	<50	<25	<25	<25	<25	<25	<50	<25	<25	<50	ND
SCIMW-25	SCI	H	5/7/97	7.30	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	3.5J	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-26	SCI	H	5/6/97	8.15	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-27	SCI	E/H	5/6/97	6.45	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-29	SCI	H	5/20/97	7.48	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-30	SCI	P	10/20/97	7.53	27	5.7J	25	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-30	SCI	P	9/23/98	7.63	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-30	SCI	P	5/5/99	7.89	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-31D	SCI	P	10/20/97	4.23	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-31D	SCI	P	9/21/98	4.34	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-31D	SCI	P	5/5/99	4.01	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-32	SCI	I/P	10/20/97	7.73	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-32	SCI	I/P	9/21/98	7.71	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-32	SCI	I/P	5/5/99	8.43	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-33	SCI	I/J	10/20/97	6.89	<50	<25	<13	310	<25	<13	<13	<13	<13	<13	<25	<13	<13	<25	ND
SCIMW-33	SCI	I/J	9/21/98	7.15	<40	<20	<10	260	<20	<10	<10	<10	<10	<10	<20	<10	<10	<20	ND
SCIMW-33	SCI	I/J	5/5/99	7.47	<40	<20	<10	290	<20	<10	<10	<10	<10	<10	<20	<10	<10	<20	ND
SCIMW-34	SCI	R	10/20/97	4.88	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-35	SCI	R	10/20/97	4.87	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND

\* = BTEX presented in Table 5

MEK = Methyl ethyl ketone

ug/L = micrograms per liter or parts per billion

<10 = Compound not detected at or above stated reporting limit

ND = Not detected

J = Estimated value

+ = Groundwater level may not be stabilized

Groundwater measurements presented are those collected on the first day of sampling for the event and may not be the same as the date sampled.

TABLE 6  
SEMI-VOLATILE ORGANIC CONCENTRATIONS (except PNA's)  
IN GROUNDWATER  
NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	BENZOIC ACID (ug/L)	BENZYL ALCOHOL (ug/L)	1,2-DI-CHLORO-BENZENE (ug/L)	1,4-DI-CHLORO-BENZENE (ug/L)	2,4-DI-METHYL-PHENOL (ug/L)	DI-N-OCTYL-PHTHALATE (ug/L)	BIS(2-ETHYL-HEXYL) PHTHALATE (ug/L)	2-METHYL-PHENOL (ug/L)	4-METHYL-PHENOL (ug/L)	PENTA-CHLORO-PHENOL (ug/L)	PHENOL (ug/L)	TOTAL PNAs (ug/L)	OTHER 8270s
MW-5	SCI	Filtered	F	1/20/97	8.38	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
MW-6	SCI	Filtered	F	9/5/96	6.67	<2400	<470	<470	<470	<470	<470	<470	<470	<470	<470	<470	410J	ND
MW-7	SCI	Filtered	M	9/5/96	5.48	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
MW-7	SCI	Filtered	M	1/17/97	6.48	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-1	SCI	Filtered	E/H	5/24/96	5.09	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-1	SCI	Filtered	E/H	9/6/96	4.39	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-1	SCI	Filtered	E/H	1/22/97	5.29	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-2	SCI	Filtered	N	5/23/96	4.04	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-2	SCI	Filtered	N	9/4/96	3.38	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	6.0J	ND
SCIMW-2	SCI	Filtered	N	1/17/97	3.82	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-3	SCI	Filtered	I/J	5/23/96	7.22	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-3	SCI	Filtered	I/J	9/5/96	6.67	<47	<9.4	<9.4	<9.4	<9.4	5.5J	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-3	SCI	Filtered	I/J	1/20/97	6.46	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-3	SCI	Filtered	I/J	9/18/98	4.29	--	--	--	--	--	--	--	--	--	--	--	ND	--
SCIMW-4	SCI	Filtered	L	8/26/96	5.50	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-4	SCI	Filtered	L	1/22/97	8.43	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-5	SCI	Filtered	M	9/3/96	4.63	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-5	SCI	Filtered	M	1/20/97	6.12	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-6	SCI	Filtered	C	8/28/96	4.69	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-6	SCI	Filtered	C	1/22/97	4.68	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-7	SCI	Filtered	P/Q	9/6/96	3.31+	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	4.7J	<9.4	<9.4	ND	ND
SCIMW-7	SCI	Filtered	P/Q	1/20/97	7.32	280	11J	<19	<19	40	<19	<19	55	110	<19	27	28	ND
SCIMW-8	SCI	Filtered	I	8/26/96	7.11	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-8	SCI	Filtered	I	1/21/97	7.70	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-9	SCI	Filtered	I	8/29/96	6.40	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-9	SCI	Filtered	I	1/23/97	6.66	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-9	SCI	Filtered	I	9/22/98	6.64	<48	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	NL	<9.7	<9.7	ND	ND
SCIMW-10	SCI	Filtered	J	8/26/96	7.95	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND

TABLE 6  
SEMI-VOLATILE ORGANIC CONCENTRATIONS (except PNA's)  
IN GROUNDWATER  
NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	BENZOIC ACID (µg/L)	BENZYL ALCOHOL (µg/L)	1,2-DI-CHLORO-BENZENE (µg/L)	1,4-DI-CHLORO-BENZENE (µg/L)	2,4-DI-METHYL-PHENOL (µg/L)	DI-N-OCTYL-PHTHALATE (µg/L)	BIS(2-ETHYL-HEXYL)-PHTHALATE (µg/L)	2-METHYL-PHENOL (µg/L)	4-METHYL-PHENOL (µg/L)	PENTA-CHLORO-PHENOL (µg/L)	PHENOL (µg/L)	TOTAL PNAs (µg/L)	OTHER 8270s
SCIMW-10	SCI	Filtered	J	1/23/97	7.87	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-11	SCI	Filtered	N	8/28/96	3.83	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-11	SCI	Filtered	N	1/17/97	4.32	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-12	SCI	Filtered	O	8/29/96	4.09	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-12	SCI	Filtered	O	1/17/97	4.53	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-13	SCI	Filtered	J	8/29/96	7.21	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-13	SCI	Filtered	J	1/23/97	6.93	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-14	SCI	Filtered	I/J	8/29/96	5.36	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-14	SCI	Filtered	I/J	1/21/97	5.64	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-15	SCI	Filtered	I/J	8/29/96	4.85	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-15	SCI	Filtered	I/J	1/17/97	5.01	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-15	SCI	Filtered	I/J	9/21/98	5.17	<48	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	NL	<9.5	ND	ND
SCIMW-16	SCI	Filtered	R	8/30/96	6.81	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-16	SCI	Filtered	R	1/22/97	7.03	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-17	SCI	Filtered	R	8/29/96	6.55	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-17	SCI	Filtered	R	1/22/97	7.67	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-18	SCI	Filtered	L	9/6/96	5.22+	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-18	SCI	Filtered	L	1/20/97	6.98	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-19	SCI	Filtered	R	8/30/96	6.16	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-19	SCI	Filtered	R	1/21/97	7.42	<47	<9.4	<9.4	<9.4	<9.4	<9.4	11	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-20	SCI	Filtered	H/Q	9/3/96	7.03	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-20	SCI	Filtered	H/Q	1/20/97	7.67	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-22	SCI	Filtered	P	5/6/97	8.22	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-24	SCI	Filtered	N	5/6/97	4.44	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	14	99.9	ND
SCIMW-34	SCI	Filtered	R	10/20/97	4.88	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND
SCIMW-35	SCI	Unfiltered	R	10/20/97	4.87	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND	ND

µg/L = micrograms per liter or parts per billion  
<25 = Compound not detected at or above stated reporting limit  
NL = Not listed on analytical test report

ND = Not detected  
+ = Groundwater level may not be stabilized  
- = Not tested

J = Estimated value  
e = Sample extracted 3 days after prescribed holding time

Groundwater measurements presented are those collected on the first day of sampling for the event and may not be the same as the date sampled.



TABLE 7  
POLYNUCLEAR AROMATIC CONCENTRATIONS  
IN GROUNDWATER  
NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak, Datum (FEET)	Acenaphthene (µg/L)		Acenaphthylene (µg/L)		Anthracene (µg/L)		Chrysene (µg/L)		Benzo(b,k) Fluoranthene (µg/L)		Benzo(g,h,i) Perilene (µg/L)		Benzo(e) Pyrene (µg/L)		Indeno (1,2,3-cd) pyrene (µg/L)		Fluoranthene (µg/L)		Fluorene (µg/L)		Naphthalene (µg/L)		Phenanthrene (µg/L)				
					Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered
MW-5	SCI	F	1/20/97	8.38	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
MW-6	SCI	F	9/5/96	6.67	<470	--	<470	--	<470	--	<470	--	<470	--	<470	--	<470	--	<470	--	<470	--	<470	--	<470	--	<470	--	<470	--	
MW-7	SCI	M	9/5/96	5.48	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
MW-7	SCI	M	1/17/97	6.48	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-1	SCI	R/H	5/24/96	5.09	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-1	SCI	R/H	9/6/96	4.39	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-1	SCI	R/H	1/22/97	5.29	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-2	SCI	N	5/23/96	4.04	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-2	SCI	N	9/4/96	3.38	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-2	SCI	N	1/17/97	3.82	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-2	SCI	N	9/18/98	4.07	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7		
SCIMW-2	SCI	N	12/10/98	3.52	<10	<9.8	<10	<9.8	<10	<9.8	<10	<9.8	<10	<9.8	<10	<9.8	<10	<9.8	<10	<9.8	<10	<9.8	<10	<9.8	<10	<9.8	<10	<9.8	<10		
SCIMW-3	SCI	I/I	5/23/96	7.22	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-3	SCI	I/I	9/5/96	6.67	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-3	SCI	I/I	1/20/97	6.46	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-3	SCI	I/I	9/18/98	4.29	--	<11	--	<11	--	<11	--	<11	--	<11	--	<11	--	<11	--	<11	--	<11	--	<11	--	<11	--	<11	--	<11	--
SCIMW-4	SCI	L	8/26/96	5.50	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-4	SCI	L	1/22/97	8.43	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-5	SCI	M	9/3/96	4.63	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-5	SCI	M	1/20/97	6.12	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-6	SCI	C	8/28/96	4.69	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-6	SCI	C	1/22/97	4.68	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-6	SCI	C	9/23/98	4.38	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5		
SCIMW-6	SCI	C	12/10/98	3.91	<9.4	<9.9	<9.4	<9.9	<9.4	<9.9	<9.4	<9.9	<9.4	<9.9	<9.4	<9.9	<9.4	<9.9	<9.4	<9.9	<9.4	<9.9	<9.4	<9.9	<9.4	<9.9	<9.4	<9.9	<9.4		
SCIMW-7	SCI	P/Q	9/6/96	3.31+	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-7	SCI	P/Q	1/20/97	7.32	<19	--	<19	--	<19	--	<19	--	<19	--	<19	--	<19	--	<19	--	<19	--	<19	--	<19	--	<19	--	<19	--	
SCIMW-8	SCI	I	8/26/96	7.11	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-8	SCI	I	1/21/97	7.70	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-8	SCI	I	9/18/98	7.25	--	<11	--	<11	--	<11	--	<11	--	<11	--	<11	--	<11	--	<11	--	<11	--	<11	--	<11	--	<11	--	<11	--
SCIMW-9	SCI	I	8/29/96	6.40	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-9	SCI	I	1/23/97	6.66	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-9	SCI	I	9/22/98	6.64	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--
SCIMW-10	SCI	J	8/26/96	7.95	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-10	SCI	J	1/23/97	7.87	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-11	SCI	N	8/28/96	3.83	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-11	SCI	N	1/17/97	4.32	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	
SCIMW-11	SCI	N	9/23/98	4.72	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6		
SCIMW-11	SCI	N	12/10/98	3.32	<9.4	<11	<9.4	<11	<9.4	<11	<9.4	<11	<9.4	<11	<9.4	<11	<9.4	<11	<9.4	<11	<9.4	<11	<9.4	<11	<9.4	<11	<9.4	<11	<9.4		
SCIMW-12	SCI	O	8/29/96	4.09	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	

TABLE 7  
POLYNUCLEAR AROMATIC CONCENTRATIONS  
IN GROUNDWATER  
NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak Datum (FEET)	Acenaphthene (µg/L)		Acenaphthylene (µg/L)		Anthracene (µg/L)		Chrysenes (µg/L)		Benzo(b,k) Fluoranthene (µg/L)		Benzo(g,h,i) Perilene (µg/L)		Benzo(e) Pyrene (µg/L)		Indeno (1,2,3-cd) pyrene (µg/L)		Fluoranthene (µg/L)		Fluorene (µg/L)		Naphthalene (µg/L)		Phenanthrene (µg/L)				
					Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered
SCIMW-12	SCI	O	1/17/97	4.53	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-13	SCI	J	8/29/96	7.21	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-13	SCI	J	1/23/97	6.93	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-13	SCI	J	9/18/98	7.42	-	<11	-	<11	-	<11	-	<11	-	<11	-	<11	-	<11	-	<11	-	<11	-	<11	-	<11	-	<11	-	<11	-
SCIMW-14	SCI	I/J	8/29/96	5.36	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-14	SCI	I/J	1/21/97	5.64	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-14	SCI	I/J	9/18/98	5.48	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	
SCIMW-15	SCI	I/J	8/29/96	4.85	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-15	SCI	I/J	1/17/97	5.01	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-15	SCI	I/J	9/21/98	5.17	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-
SCIMW-16	SCI	R	8/30/96	6.81	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-16	SCI	R	1/22/97	7.03	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-17	SCI	R	8/29/96	6.55	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-17	SCI	R	1/22/97	7.67	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-18	SCI	L	9/6/96	5.22+	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-18	SCI	L	1/20/97	6.98	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-19	SCI	R	8/30/96	6.16	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-19	SCI	R	1/21/97	7.42	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-20	SCI	H/Q	9/3/96	7.03	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-20	SCI	H/Q	1/20/97	7.67	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-22	SCI	P	5/6/97	8.22	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-24	SCI	N	5/6/97	4.44	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	70	-	5.9J	-	
SCIMW-24	SCI	N	9/18/98	4.96	-	<9.7	-	<9.7	-	<9.7	-	<9.7	-	<9.7	-	<9.7	-	<9.7	-	<9.7	-	<9.7	-	<9.7	-	<9.7	-	<9.7	-	<9.7	-
SCIMW-24	SCI	N	5/6/97	5.14	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	77	-	<10	-
SCIMW-28	SCI	Q	9/25/98	7.83	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-	<9.5	-
SCIMW-33	SCI	I/J	10/6/98	7.15	-	<9.6	-	<9.6	-	<9.6	-	<9.6	-	<9.6	-	<9.6	-	<9.6	-	<9.6	-	<9.6	-	<9.6	-	<9.6	-	<9.6	-	<9.6	-
SCIMW-34	SCI	R	10/20/97	4.88	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	
SCIMW-34	SCI	R	9/24/98	4.87	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
SCIMW-34	SCI	R	12/11/98	4.91	<9.6	<9.4	<9.6	<9.4	<9.6	<9.4	<9.6	<9.4	<9.6	<9.4	<9.6	<9.4	<9.6	<9.4	<9.6	<9.4	<9.6	<9.4	<9.6	<9.4	<9.6	<9.4	<9.6	<9.4	<9.6	<9.4	
SCIMW-35	SCI	R	10/20/97	4.87	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	<9.4	-	

Notes:

- a: 2-Methylnaphthalene detected at 410J µg/L in MW-6
- b: 2-Methylnaphthalene detected at 6.0J µg/L in SCIMW-2
- c: 2-Methylnaphthalene detected at 24 µg/L in SCIMW-24
- µg/L = micrograms per Liter or parts per billion
- J = Estimated value
- = Not tested

Groundwater measurements presented are those collected on the first day of sampling for the event and may not be the same as the date sampled.

TABLE 8  
HEAVY METAL CONCENTRATIONS IN GROUNDWATER  
NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (feet)	ANTIMONY (ug/L)	ARSENIC (ug/L)	BIARIUM (ug/L)	BERYLLIUM (ug/L)	CADMIUM (ug/L)	TOTAL CHROMIUM (ug/L)	CHROMIUM VI (ug/L)	COBALT (ug/L)	COPPER (ug/L)	LEAD (ug/L)	MERCURY (ug/L)	MOLYB-DENUM (ug/L)	NICKEL (ug/L)	POTAS-SIUM (ug/L)	SELE-NIUM (ug/L)	SILVER (ug/L)	THAL-LIUM (ug/L)	VANA-DIUM (ug/L)	ZINC (ug/L)
MW-5	SCI	Filtered	F	1/20/97	8.38	<60	10	49	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	6.5	<5.0	<5.0	<10	26
MW-5	SCI	Filtered	F/H	5/6/97	6.45	--	--	--	--	--	--	50	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	SCI	Filtered	F	9/5/96	6.67	<60	8.9	420	<2.0	<2.0	<10	--	<20	<10	3.5	<0.20	<20	<20	--	27	<5.0	<5.0	<10	<20
MW-6	SCI	Filtered	F/H	5/6/97	7.04	--	--	--	--	--	--	20	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	SCI	Filtered	M	9/5/96	5.48	<60	10	78	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	20	<5.0	<5.0	<10	<20
MW-7	SCI	Filtered	M	1/17/97	6.48	<60	12	44	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	23	<5.0	<5.0	<10	<20
SCIMW-1	SCI	Unfiltered	E/H	5/24/96	5.09	<60	45	1,000	2.8	2.3	63	--	<20	1,800	2,300	<0.20	<20	68	--	7.8	<5.0	<5.0	62	1,000
SCIMW-1	SCI	Filtered	E/H	5/24/96	5.09	<60	<5.0	170	2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	8.3	<5.0	<5.0	<10	<20
SCIMW-1	SCI	Filtered	E/H	9/6/96	4.39	<60	<5.0	150	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	17	<5.0	<5.0	<10	<20
SCIMW-1	SCI	Filtered	E/H	1/22/97	5.29	<60	<5.0	170	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	33	--	7.7	<5.0	<5.0	<10	210
SCIMW-2	SCI	Unfiltered	N	5/23/96	4.04	<60	14	90	<2.0	<2.0	12	--	<20	<10	2,300	0.64	<20	<20	--	14	<5.0	<5.0	<10	38
SCIMW-2	SCI	Filtered	N	5/23/96	4.04	<60	11	490	<2.0	<2.0	<10	--	<20	69	62	<0.20	<20	<20	--	22	<5.0	<5.0	<10	110
MW-2	SCI	Filtered	N	9/4/96	3.38	<60	15	320	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-2	SCI	Filtered	N	1/17/97	3.82	<60	6.6	340	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-2	SCI	Filtered	N	9/18/98	4.07	<60	5.0	430	<2.0	<5.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	10	<5.0	<5.0	<10	<20
SCIMW-2	SCI	Filtered	N	12/10/98	3.52	<60	9.6	--	<2.0	<5.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	49
SCIMW-2	SCI	Filtered	N	5/7/99	4.52	<60	11.0	900	<2.0	<5.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	9.5	<5.0	<5.0	<10	24
SCIMW-2	SCI	Filtered	N	8/26/99	3.00	<60	6.8	300	<2.0	<5.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-3	SCI	Unfiltered	I/J	5/23/96	7.22	<60	<5.0	<10	<2.0	<2.0	<10	--	58	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-3	SCI	Filtered	I/J	5/23/96	7.22	<60	<5.0	42	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	8.2	<5.0	<5.0	<10	<20
SCIMW-3	SCI	Filtered	I/J	9/5/96	6.67	<60	8.5	170	<2.0	<2.0	<10	--	<20	<10	4.6	<0.20	<20	<20	--	31	<5.0	<5.0	<10	<20
SCIMW-3	SCI	Filtered	I/J	1/20/97	6.46	<60	23	110	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	31	<5.0	<5.0	<10	<20
SCIMW-4	SCI	Filtered	L	8/26/96	5.50	<60	12	37	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	22	<5.0	<5.0	<10	<20
SCIMW-4	SCI	Filtered	L	1/22/97	8.43	<60	6.6	16	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	25	<5.0	<5.0	<10	<20
SCIMW-5	SCI	Filtered	M	9/3/96	4.63	<60	<5.0	290	2.0	2.0	<10	--	<20	<10	<3.0	0.23	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-5	SCI	Filtered	M	1/20/97	6.12	<60	<5.0	62	2.7	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	25
MW-6	SCI	Filtered	C	8/28/96	4.69	<60	<5.0	100	2.1	<2.0	<10	--	<20	59	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	240
SCIMW-6	SCI	Filtered	C	1/22/97	4.68	<60	<5.0	30	<2.0	<2.0	<10	--	<20	20	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	72

TABLE 8  
HEAVY METAL CONCENTRATIONS IN GROUNDWATER  
NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	SAMPLED	GROUNDWATER ELEVATION Port of Oak Datum (feet)	ANTIMONY (µg/L)	ARSENIC (µg/L)	BARIUM (µg/L)	BERYLLIUM (µg/L)	CADMIUM (µg/L)	TOTAL CHROMIUM (µg/L)	CHROMIUM VI (µg/L)	COBALT (µg/L)	COPPER (µg/L)	LEAD (µg/L)	MERCURY (µg/L)	MOLYB-DENUM (µg/L)	NICKEL (µg/L)	POTAS-SIUM (µg/L)	SELE-NIUM (µg/L)	SILVER (µg/L)	THAL-LIUM (µg/L)	VANA-DIUM (µg/L)	ZINC (µg/L)
SCIMW-6	SCI	Filtered	C	9/23/98	4.38	<60	<5.0	73	2.5	<5.0	<10	--	<20	290	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	80
SCIMW-6	SCI	Filtered	C	12/10/98	3.91	<60	<5.0	48	<2.0	<5.0	<10	--	<20	75	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	74
SCIMW-6	SCI	Filtered	C	5/6/99	4.39	<60	<5.0	30	<2.0	<5.0	<10	--	<20	21	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	63
SCIMW-6	SCI	Filtered	C	8/26/99	6.56	<60	<5.0	43	<2.0	<5.0	<10	--	<20	26	4.3	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	110
SCIMW-7	SCI	Filtered	P/Q	9/6/96	3.31+	<60	24	290	<2.0	<2.0	<10	--	<20	13	<3.0	0.52	<20	29	--	18	<5.0	<5.0	12	<20
SCIMW-7	SCI	Filtered	P/Q	1/20/97	7.32	<60	19	430	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	83	--	18	<5.0	<5.0	<10	<20
SCIMW-8	SCI	Filtered	I	8/26/96	7.11	<60	8.9	72	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	23	--	43	<5.0	<5.0	<10	21
SCIMW-8	SCI	Filtered	I	1/21/97	7.70	<60	23	57	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	10	<5.0	<5.0	<10	22
SCIMW-9	SCI	Filtered	I	8/29/96	6.40	<60	21	61	<2.0	<2.0	<10	--	<20	<10	3.1	0.20	<20	<20	--	37	<5.0	<5.0	<10	<20
SCIMW-9	SCI	Filtered	I	1/23/97	6.66	<60	16	89	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	49	--	40	<5.0	<5.0	<10	150
SCIMW-10	SCI	Filtered	J	8/26/96	7.95	<60	15	55	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	42	<5.0	<5.0	<10	<20
SCIMW-10	SCI	Filtered	J	1/23/97	7.87	<60	24	49	2.3	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	48	<5.0	<5.0	<10	<20
SCIMW-11	SCI	Filtered	N	8/28/96	3.83	<60	<5.0	210	<2.0	<2.0	<10	--	<20	<10	<3.0	0.62	<20	<20	--	16	<5.0	<5.0	<10	<20
SCIMW-11	SCI	Filtered	N	1/17/97	4.32	<60	6.2	300	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	6.6	<5.0	<5.0	<10	<20
SCIMW-11	SCI	Filtered	N	9/23/98	4.72	<60	<5.0	180	<2.0	<5.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-11	SCI	Filtered	N	12/10/98	3.32	<60	<5.0	250	<2.0	<5.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-11	SCI	Filtered	N	5/6/99	3.48	<60	<5.0	94	<2.0	<5.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-12	SCI	Filtered	O	8/29/96	4.09	<60	5.1	64	2.5	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-12	SCI	Filtered	O	1/17/97	4.53	<60	<5.0	28	2.7	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-13	SCI	Filtered	J	8/29/96	7.21	<60	20	33	<2.0	<2.0	<10	--	<20	<10	3.2	<0.20	<20	<20	--	43	<5.0	<5.0	<10	<20
SCIMW-13	SCI	Filtered	J	1/23/97	6.93	<60	19	21	<2.0	2.1	<10	--	<20	<10	3.7	<0.20	<20	<20	--	40	<5.0	<5.0	<10	<20
SCIMW-14	SCI	Filtered	I/J	8/29/96	5.36	<60	9.7	130	<2.0	<2.0	<10	--	<20	<10	5.3	<0.20	<20	<20	--	34	<5.0	<5.0	<10	<20
SCIMW-14	SCI	Filtered	I/J	1/21/97	5.64	<60	<5.0	15	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-15	SCI	Filtered	I/J	8/29/96	4.85	<60	16	570	<2.0	<2.0	<10	--	<20	<10	3.2	<0.20	<20	<20	--	40	<5.0	<5.0	<10	<20
SCIMW-15	SCI	Filtered	I/J	1/17/97	5.01	<60	13	550	<2.0	<2.0	<10	--	<20	<10	5.5	<0.20	<20	<20	--	33	<5.0	<5.0	<10	<20
SCIMW-16	SCI	Filtered	R	8/30/96	6.81	<60	14	300	3.1	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	40	<5.0	<5.0	12	<20
SCIMW-16	SCI	Filtered	R	1/22/97	7.03	<60	14	220	3.6	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	22	<5.0	<5.0	26	<20
SCIMW-17	SCI	Filtered	R	8/29/96	6.55	<60	17	960	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	18	<5.0	<5.0	<10	<20

TABLE 8  
HEAVY METAL CONCENTRATIONS IN GROUNDWATER  
NINTH AVENUE TERMINAL STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (feet)	ANTIMONY (ug/L)	ARSENIC (ug/L)	BARIUM (ug/L)	BERYLLIUM (ug/L)	CADMIUM (ug/L)	TOTAL CHROMIUM (ug/L)	CHROMIUM VI (ug/L)	COBALT (ug/L)	COPPER (ug/L)	LEAD (ug/L)	MERCURY (ug/L)	MOLYBDENUM (ug/L)	NICKEL (ug/L)	POTASSIUM (ug/L)	SELENIUM (ug/L)	SILVER (ug/L)	THALLIUM (ug/L)	VANADIUM (ug/L)	ZINC (ug/L)
SCIMW-17	SCI	Filtered	R	1/22/97	7.67	<60	<5.0	270	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	15	<5.0	<5.0	<10	<20
SCIMW-18	SCI	Filtered	L	9/6/96	5.22+	<60	20	160	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	26	--	22	<5.0	<5.0	19	<20
SCIMW-18	SCI	Filtered	L	1/20/97	6.98	<60	21	250	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	38	<5.0	<5.0	<10	<20
SCIMW-19	SCI	Filtered	R	8/30/96	6.16	<60	32	140	<2.0	<2.0	<10	--	<20	<10	6.2	<0.20	<20	<20	--	32	<5.0	<5.0	11	<20
SCIMW-19	SCI	Filtered	R	1/21/97	7.42	<60	23	150	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	22	--	24	<5.0	<5.0	<10	<20
SCIMW-20	SCI	Filtered	H/Q	9/3/96	7.03	<60	9.5	930	<2.0	<2.0	<10	--	<20	<10	<3.0	0.24	<20	<20	--	20	<5.0	<5.0	<10	<20
SCIMW-20	SCI	Filtered	H/Q	1/20/97	7.67	<60	6.8	1,600	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	18	<5.0	<5.0	<10	41
SCIMW-20	SCI	Filtered	H/Q	10/7/98	6.79	--	--	--	--	--	--	--	--	--	<3.0	--	--	--	--	--	--	--	--	--
SCIMW-21	SCI	Filtered	D	5/6/97	7.44	--	--	--	--	--	--	--	--	--	7.2	--	--	--	110,000	--	--	--	--	--
SCIMW-22	SCI	Filtered	P	5/6/97	8.22	--	--	--	--	--	--	70	--	--	--	--	--	--	170,000	--	--	--	--	--
SCIMW-23	SCI	Filtered	B	5/6/97	5.55	<60	22	56	<2.0	<5.0	<10	80	<20	<10	<3.0	<0.20	<20	<20	16,000	20	<5.0	<5.0	<10	25
SCIMW-24	SCI	Filtered	N	5/6/97	4.44	--	--	--	--	--	--	160	--	--	6.3	--	--	--	--	--	--	--	--	--
SCIMW-24	SCI	Filtered	N	9/18/98	4.96	--	--	--	--	--	--	--	--	--	<3.0	--	--	--	--	--	--	--	--	--
SCIMW-24	SCI	Filtered	N	12/11/98	5.79	--	--	--	--	--	--	--	--	--	<3.0	--	--	--	--	--	--	--	--	--
SCIMW-24	SCI	Filtered	N	5/6/99	5.14	--	--	--	--	--	--	--	--	--	<3.0	--	--	--	--	--	--	--	--	--
SCIMW-25	SCI	Filtered	H	5/7/97	7.30	<60	9.2	56	<2.0	<5.0	<10	60	<20	<10	<3.0	0.26	<20	28	--	14	<5.0	<5.0	<10	<20
SCIMW-26	SCI	Filtered	H	5/6/97	8.15	<60	20	2,900	<2.0	<5.0	<10	140	<20	<10	<3.0	<0.20	<20	<20	--	15	<5.0	<5.0	<10	<20
SCIMW-27	SCI	Filtered	B/H	5/6/97	6.45	<60	10	480	<2.0	<5.0	<10	60	<20	<10	<3.0	<0.20	<20	<20	--	21	<5.0	<5.0	<10	<20
SCIMW-28	SCI	Filtered	Q	5/7/97	8.34	--	--	--	--	--	--	90	--	--	6.9	--	--	--	--	--	--	--	--	--
SCIMW-28	SCI	Filtered	Q	9/25/98	7.83	<60	15	96	2.6	<5.0	<10	--	<20	13	4.1	<0.20	<20	<20	--	<5.0	<5.0	<5.0	11	260
SCIMW-28	SCI	Filtered	Q	5/6/99	8.98	<60	25	19	<2.0	<5.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	12	<5.0	<5.0	<5.0	<20
SCIMW-29	SCI	Filtered	H	5/20/97	7.48	<60	<5.0	160	<2.0	<5.0	<10	<10	<20	12	<3.0	<0.20	<20	<20	--	34	<5.0	<5.0	<10	50
SCIMW-34	SCI	Filtered	H	9/24/98	4.87	--	--	--	--	--	--	--	--	--	<3.0	--	--	--	--	--	--	--	--	--
SCIMW-34	SCI	Filtered	H	12/11/98	4.91	--	--	--	--	--	--	--	--	--	<3.0	--	--	--	--	--	--	--	--	--
SCIMW-34	SCI	Filtered	H	5/6/99	4.49	--	--	--	--	--	--	--	--	--	<3.0	--	--	--	--	--	--	--	--	--
SCIMW-34	SCI	Filtered	H	8/26/99	6.86	--	--	--	--	--	--	--	--	--	<3.0	--	--	--	--	--	--	--	--	--

ug/L = micrograms per liter or parts per billion  
<60 = Compound not detected at or above stated reporting limit

-- = Not tested  
+ = Groundwater level may not be stabilized

Groundwater measurements presented are those collected on the first day of sampling for the event and may not be the same as the date sampled.

TABLE 9  
 CYANIDE, NITRATE AND PHOSPHORUS CONCENTRATIONS  
 IN GROUNDWATER  
 NINTH AVENUE TERMINAL STUDY AREA

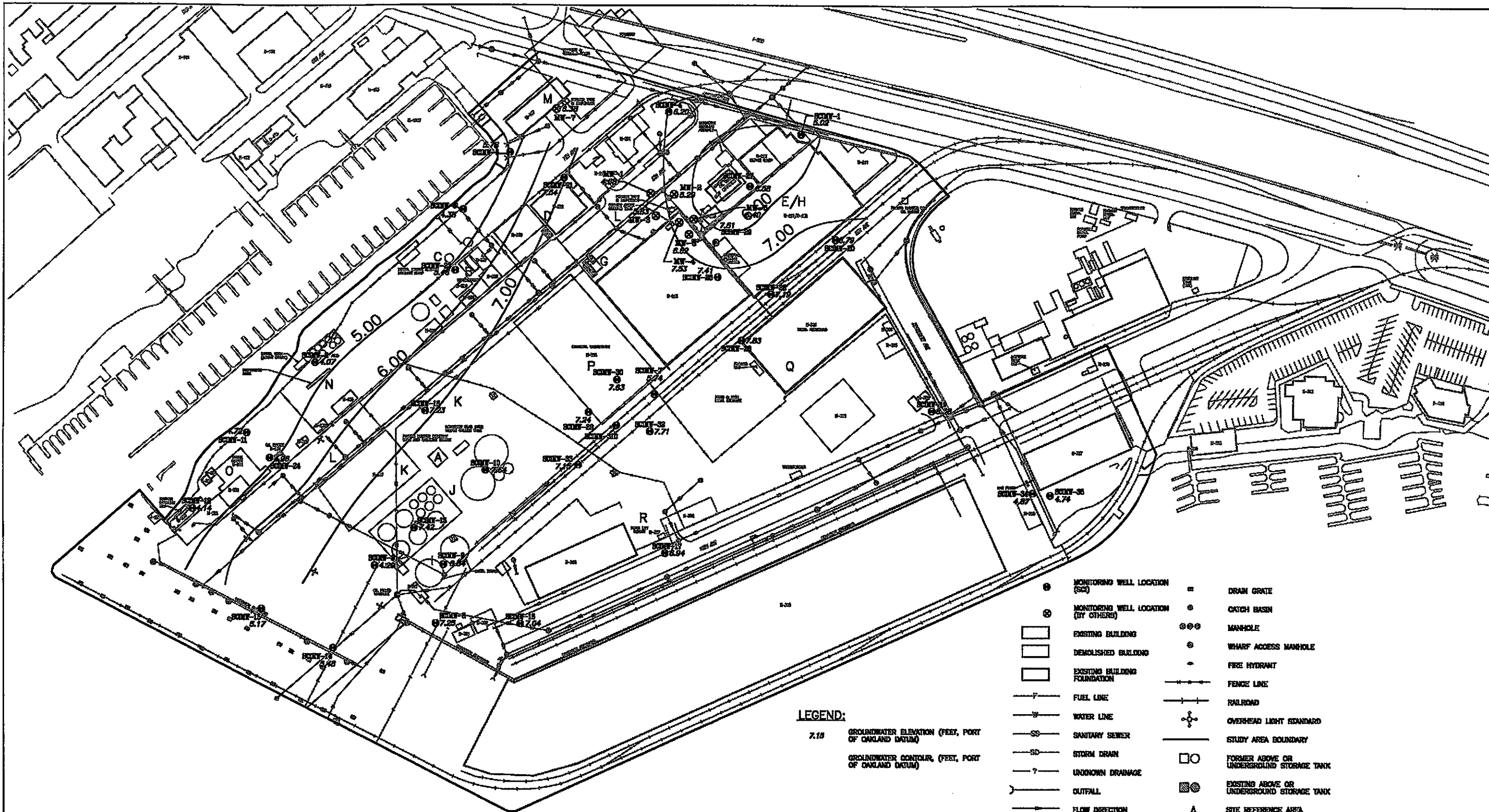
SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	CYANIDE ( $\mu\text{g/L}$ )	NITRATE/ NITRITE-N ( $\mu\text{g/L}$ )	TOTAL PHOS- PHORUS ( $\mu\text{g/L}$ )
MW-5	SCI	F/H	5/6/97	6.45	<10	--	--
MW-6	SCI	F/H	5/6/97	7.04	<10	--	--
SCIMW-21	SCI	D	5/6/97	7.44	--	<50	1,100
SCIMW-22	SCI	P	5/6/97	8.22	<10	<50	4,000
SCIMW-23	SCI	B	5/6/97	5.55	<10	<50	9,300
SCIMW-24	SCI	N	5/6/97	4.44	20	--	--
SCIMW-25	SCI	H	5/7/97	7.30	<10	--	--
SCIMW-26	SCI	H	5/6/97	8.15	<10	--	--
SCIMW-27	SCI	E/H	5/6/97	6.45	<10	--	--
SCIMW-28	SCI	Q	5/7/97	8.34	<10	--	--
SCIMW-29	SCI	H	5/20/97	7.48	<10	--	--

**Notes:** $\mu\text{g/L}$  = micrograms per liter or parts per billion

-- = Not tested

&lt;10 = Compound not detected at or above stated reporting limit

Groundwater measurements presented are those collected on the first day of sampling for the event and may not be the same as the date sampled.



**LEGEND:**

7.15 GROUNDWATER ELEVATION (FEET, PORT OF OAKLAND DATUM)  
 GROUNDWATER CONTOUR, (FEET, PORT OF OAKLAND DATUM)

- MONITORING WELL LOCATION (SC)
- ⊙ MONITORING WELL LOCATION (BY OTHERS)
- ▭ EXISTING BUILDING
- ▭ DEMOLISHED BUILDING
- ▭ EXISTING BUILDING FOUNDATION
- FUEL LINE
- WATER LINE
- SC SANITARY SEWER
- SD STORM DRAIN
- ? UNKNOWN DRAINAGE
- CUTFALL
- FLOW DIRECTION
- DRAIN GRATE
- ⊙ CATCH BASIN
- ⊙⊙⊙ MANHOLE
- ⊙ WHARF ACCESS MANHOLE
- FIRE HYDRANT
- FENCE LINE
- RAILROAD
- ⊕ OVERHEAD LIGHT STANDARD
- STUDY AREA BOUNDARY
- ○ FORMER ABOVE OR UNDERGROUND STORAGE TANK
- ⊙ ○ EXISTING ABOVE OR UNDERGROUND STORAGE TANK
- A SITE REFERENCE AREA



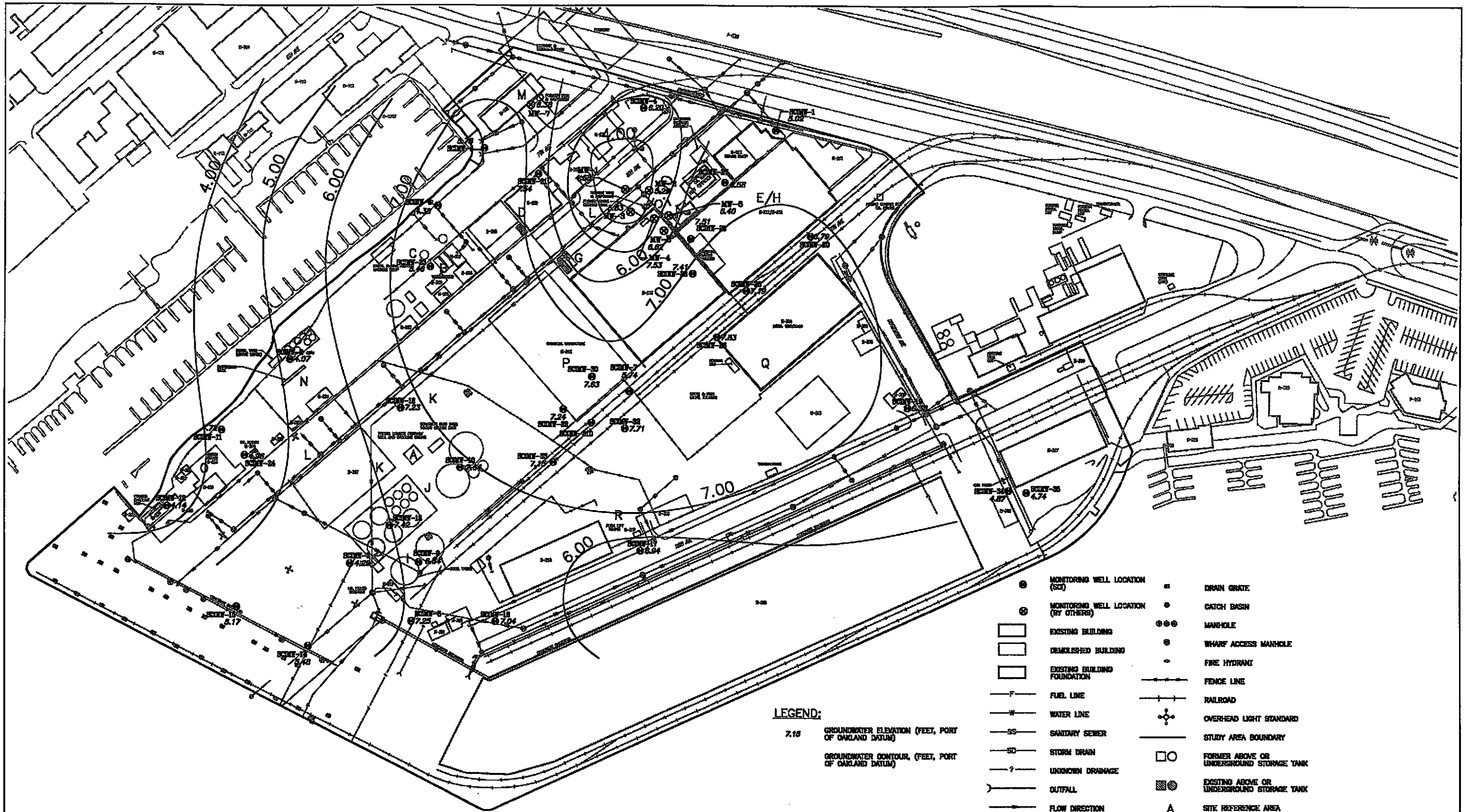
**GROUNDWATER ELEVATION CONTOURS  
 MAY 1999**

**NINTH AVENUE TERMINAL  
 PORT OF OAKLAND**

JOB NUMBER 133.009      DATE 01/00      APPROVED

PLATE  
**2**

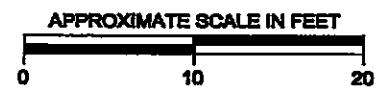




**LEGEND:**

- 7.15 GROUNDWATER ELEVATION (FEET, PORT OF OAKLAND DATUM)
- GROUNDWATER CONTOUR, (FEET, PORT OF OAKLAND DATUM)

- MONITORING WELL LOCATION (SC)
- ⊙ MONITORING WELL LOCATION (BY OTHERS)
- ▭ EXISTING BUILDING
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- ▭ EXISTING BUILDING FOUNDATION
- F FUEL LINE
- W WATER LINE
- SS SANITARY SEWER
- SD STORM DRAIN
- ? UNKNOWN DRAINAGE
- OUTFALL
- FLOW DIRECTION
- DRAIN GRATE
- CATCH BASIN
- ⊙ MANHOLE
- ⊙ WHARF ACCESS MANHOLE
- FIRE HYDRANT
- FENCE LINE
- RAILROAD
- ⊙ OVERHEAD LIGHT STANDARD
- STUDY AREA BOUNDARY
- ○ FORMER ABOVE OR UNDERGROUND STORAGE TANK
- ⊙ EXISTING ABOVE OR UNDERGROUND STORAGE TANK
- A SITE REFERENCE AREA



**GROUNDWATER ELEVATION CONTOURS  
AUGUST 1999**

**NINTH AVENUE TERMINAL  
PORT OF OAKLAND**

**SCI** Subsurface Consultants, Inc.  
Geotechnical & Environmental Engineers

JOB NUMBER 133.009	DATE 1/00	APPROVED 
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PLATE  
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APPENDIX A  
WELL SAMPLING FORMS

# GROUNDWATER DEPTHS

Project Name: 9th Ave Terminal

Job No.: 133009

Measured by: SAD/STW

Well	Date	Time	Groundwater Depth (feet)	Comments
SCI-MW-14	5/3/99	11:50	6.44	Faint Hydrocarbon odor <span style="float: right;">needs work</span>
SCI-MW-15	5/3/99	12:10	5.60	No odor <span style="float: right;">needs work</span>
SCI-MW-16	5/3/99	12:10	3.72	Strong H <sub>2</sub> S odor <span style="float: right;">needs work</span>
SCI-MW-17	5/3/99	12:15	3.02	No odor <span style="float: right;">needs work</span>
SCI-MW-18	5/3/99	12:20	5.13	No odor " "
SCI-MW-19	5/3/99	12:25	7.64	No odor " "
SCI-MW-20	5/3/99	12:25	8.30	No odor " "
SCI-MW-21	5/3/99	12:45	7.19	No odor " "
SCI-MW-22	5/3/99	12:50	6.01	No odor " "
SCI-MW-23	5/3/99	17:55	4.60	Strong Hydrocarbon odor <span style="float: right;">needs work</span>
SCI-MW-24	5/3/99	13:10	4.61	Strong H <sub>2</sub> S odor " "
SCI-MW-25	5/3/99	13:15	4.51	No odor " "
SCI-MW-26	5/3/99	13:25	4.92	No odor Slight oily Sheen on surface
SCI-MW-27	5/3/99	13:35	5.25	No odor " "
SCI-MW-28	5/3/99	13:45	3.25	H <sub>2</sub> S odor " "
SCI-MW-29	5/3/99	13:50	4.00	H <sub>2</sub> S odor " "
SCI-31D	5/3/99	14:00	7.91	No odor " " <span style="float: right;">needs plug</span>
SCI-MW-30	5/3/99	14:10	4.32	No odor " "
SCI-MW-31	5/3/99	14:15	4.86	No odor " "
SCI-MW-32	5/3/99	14:20	3.54	No odor " "
SCI-MW-33	5/3/99	14:30	4.32	No odor " "
SCI-MW-34	5/3/99	14:40	0.98	No odor " "
SCI-MW-35	5/3/99	14:50	5.55	No odor " "
SCI-MW-36	5/3/99	15:10	1.42	No odor " "
SCI-MW-37	5/3/99	15:15	4.34	No odor " "

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of  
42

SCI-MW-18

## GROUNDWATER DEPTHS

Project Name: 9<sup>th</sup> Ave Terminal

Job No.: 133.0091.2

Measured by: SAD

Well	Date	Time	Groundwater Depth (feet)	Comments
SCIMW30	5/3/99	14:40	4.45	H <sub>2</sub> S odor
SCIMW 26	5/3/99	1500	3.68	H <sub>2</sub> S odor
SCIMW 5	5/3/99	15:10	4.93	No odor
SCIMW 21	5/3/99	15:15	3.35	No odor
MW 7	5/3/99	15:20	3.67	no odor
SCIMW 6	5/3/99	15:25	3.16	no odor
SCIMW 2	5/3/99	1600	5.40	Petroleum odor
SCIMW 23	5/3/99	1610	3.65	no odor
MW-5	5/3/99	1615	5.25	no odor
<del>MW-4</del>		1620		
<del>MW-6</del>		1625		
MW-2	5/3/99	1630	4.85	odor
MW-1	5/4/99	11:00	5.21	Very strong H <sub>2</sub> S odor
SCIMW-4	5/4/99	11:10	2.65	no odor
SCIMW-1	5/4/99	11:20	5.16	no odor
SCIMW-27	5/4/99	11:45	4.91	no odor
MW-3	5/4/99	12:10	4.45	no odor
MW-6	5/4/99	12:15	4.65	1/2" product in skimmer strong odor
MW	5/2/99	12:30	7-8	1/2" only

Time to be checked

# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal Well Number: MW-5  
 Job No.: 133 009 Well Casing Diameter: 2.0 inch  
 Sampled By: Stewart Dalie Date: 5/18/99  
 TOC Elevation: \_\_\_\_\_ Weather: Clear

Depth to Casing Bottom (below TOC) 18.50 feet  
 Depth to Groundwater (below TOC) 5.21 feet  
 Feet of Water in Well 13.29 feet  
 Depth to Groundwater When 80% Recovered 8.2 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 6.5 gallons  
 Depth Measurement Method Tape & Paste  Electronic Sounder  Other

Free Product N/A  
 Purge Method Teflon bailer  
Field measure water

GAL	pH	Temp	Cond	Sal	ORP	DO %	TDS	Comments
0	6.37	16.68	1356	1.82	-18.5	42.5	1.049	slight bicarbonate color
1	6.54	15.93	2155	1.37	-20.4	97.7	1.686	clear - w/ sheen
3	6.56	16.04	4685	3.01	-18.1	102.7	3.015	greenish tint/turbid
5	6.51	16.18	7713	5.23	-42.2	99.6	6.085	
7	6.66	16.04	3771	2.43	-41.0	71.8	2.936	

Total Gallons Purged 7 gallons  
 Depth to Groundwater Before Sampling (below TOC) 7.65 feet  
 Sampling Method Teflon bailer  
 Containers Used 3 WAKU 2 LA \_\_\_\_\_ pint  
40 ml liter

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal Well Number: MW-6  
 Job No.: 133 009 Well Casing Diameter: 2.0 inch  
 Sampled By: Stewart Dalie Date: 5/16/99  
 TOC Elevation: \_\_\_\_\_ Weather: clear

Depth to Casing Bottom (below TOC) 20.2 feet  
 Depth to Groundwater (below TOC) -4.55 feet  
 Feet of Water in Well 15.65 feet  
 Depth to Groundwater When 80% Recovered 7.68 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 2.55 x 3 = 7.66 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other \_\_\_\_\_  
 Free Product 1/2 inch 1/4 gal product  
 Purge Method Teflon bailer removed on 5/7/99  
Field measure with 8:30 am

GAL	pH	Temp	Cond	Sal	ORP	DO	TDS	Comments
0								Downhole
2								
4								
6								
8								

Total Gallons Purged \_\_\_\_\_ gallons  
 Depth to Groundwater Before Sampling (below TOC) \_\_\_\_\_ feet  
 Sampling Method Teflon bailer  
 Containers Used \_\_\_\_\_ liter \_\_\_\_\_ pint

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal Well Number: SCIMW-2  
 Job No.: 133 009 Well Casing Diameter: 2.0 inch  
 Sampled By: Stewart Dalie Date: 5/6/99  
 TOC Elevation: \_\_\_\_\_ Weather: clear

Depth to Casing Bottom (below TOC) 18.5 feet  
 Depth to Groundwater (below TOC) 7.21 feet  
 Feet of Water in Well 11.29 feet  
 Depth to Groundwater When 80% Recovered 9.5 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 5.5 gallons  
 Depth Measurement Method Tape & Paste / **Electronic Sounder** / Other

Free Product Shear No Free product  
 Purge Method Teflon bailer  
Field measure methods

GAL	pH	Temp	Cond	Sal	ORP	DO%	TDS	Comments
0	6.81	15.53	1093	7.16	368	48.	8.082	Downhole Beaker/Turbid
2	7.44	15.84	11362	7.94	25.8	81.0	8.94	Hydrobacter w/Shear very turbid
4	7.02	15.75	12691	9.03	-27.9	54.3	9.99	-turning dark grey
6	7.36	16.41	12961	<del>8.53</del> 8.102	-11.03	68.9	10.00	↓

Total Gallons Purged 6 gallons  
 Depth to Groundwater Before Sampling (below TOC) 6.56 on 5/7/99 feet  
 Sampling Method Teflon bailer  
 Containers Used 2 100A H<sub>2</sub>SO<sub>4</sub> 2 LA 2 L Poly  
40 ml liter pint

Subsurface Consultants

JOB NUMBER \_\_\_\_\_ DATE \_\_\_\_\_ APPROVED \_\_\_\_\_  
 PLATE \_\_\_\_\_

# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal Well Number: SCIMW-5  
 Job No.: 133 009 Well Casing Diameter: 2.0 inch  
 Sampled By: Stewart Dalie Date: 5/6/99  
 TOC Elevation: \_\_\_\_\_ Weather: clear

Depth to Casing Bottom (below TOC) 18.5 feet  
 Depth to Groundwater (below TOC) 4.90 feet  
 Feet of Water in Well 13.6 feet  
 Depth to Groundwater When 80% Recovered 8.5 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 6.6 gallons  
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product N/A  
 Purge Method Teflon bailer  
Field measure water

GAL	pH	Temp	Cond	Sal	ORP	DO%	TDS/L	Comments
0	7.72	15.72	20245	15.02	330.6	69.1	16.03	Partially clear
2	7.57	14.73	20876	15.62	332.4	72.1	16.58	Clear no odor
4	7.04	15.05	23201	17.75	239.8	69.3	18.82	
6	6.65	15.58	25777	19.60	3.3	52.8	20.43	
8	6.65	15.95	27135	20.59	36.9	42.5	21.35	✓

Total Gallons Purged 8 7.60 ft 5/10/99 0.500 gallons  
 Depth to Groundwater Before Sampling (below TOC) ~~8.75~~ 0.700 feet  
 Sampling Method Teflon bailer 5/10/99  
 Containers Used ~~30 ml~~ 2 LA liter \_\_\_\_\_ pint

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal Well Number: SL1MW-6  
 Job No.: 133 009 Well Casing Diameter: 2.0 inch  
 Sampled By: Stewart Dalie Date: 5/6/99  
 TOC Elevation: \_\_\_\_\_ Weather: Clear

Depth to Casing Bottom (below TOC) 19.5 feet  
 Depth to Groundwater (below TOC) 7.13 feet  
 Feet of Water in Well 12.37 feet  
 Depth to Groundwater When 80% Recovered 9.61 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 2.01 x 3 6.05 gallons  
 Depth Measurement Method Electronic Sounder / Other

Free Product \_\_\_\_\_  
 Purge Method Teflon bailer  
Field measure water

GAL	pH	Temp	Cond	Sal	ORP	DO %	TDS g/l	Comments
0	6.73	14.77	20578	15.6	56.6	59.4	16.03	downhole
2	6.78	14.51	19480	14.99	103.2	72.6	15.77	Clear, no color
4	7.14	15.04	19274	14.47	193.5	54.8	15.47	Slight orange brown turbidity
6	7.27	14.86	18944	14.27	200.0	74.1	15.25	

↓ redish brown organic growth!

Total Gallons Purged 6 gallons  
 Depth to Groundwater Before Sampling (below TOC) 7.23 feet  
 Sampling Method Teflon bailer  
 Containers Used 2 400ml H<sub>2</sub>O 2 LA 2L Poly  
400ml liter pint

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE



# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal Well Number: SCHMW-7  
 Job No.: 133009 Well Casing Diameter: 2.0 inch  
 Sampled By: Stewart Dalie Date: 5/6/199  
 TOC Elevation: \_\_\_\_\_ Weather: Clear

Depth to Casing Bottom (below TOC) 18.25 feet  
 Depth to Groundwater (below TOC) 4.99 feet  
 Feet of Water in Well 13.26 feet  
 Depth to Groundwater When 80% Recovered 7.65 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 2.16 x 3 = 6.48 gallons  
 Depth Measurement Method Electronic Sounder / Other \_\_\_\_\_

Free Product N/A  
 Purge Method Teflon bailer

GAL	pH	Temp	Cond	Sal	ORP	DO%	TDS	Comments
0	6.27	16.8	15615	10.9	-82.9	93.2	12.5	downhole Slight H <sub>2</sub> S odor
2	6.44	16.3	10801	7.4	-73.3	136.2	2.4	Purge H <sub>2</sub> O black
4	6.14	15.7	6332	4.2	-72.4	99.2	4.9	decreasing turbidity
6	6.58	17.2	21122	15.15	-108.4	58.6	16.16	↓

Total Gallons Purged 6 gallons  
 Depth to Groundwater Before Sampling (below TOC) 6.85 feet  
 Sampling Method Teflon bailer

Containers Used 1 LA liter 3 JVA's pint  
Defferencing reactor

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal Well Number: SC1MW-11  
 Job No.: 133 009 Well Casing Diameter: 2.0 inch  
 Sampled By: Stewart Dally Date: 5/6/99  
 TOC Elevation: \_\_\_\_\_ Weather: Clear

Depth to Casing Bottom (below TOC) 18.00 feet  
 Depth to Groundwater (below TOC) 7.10 feet  
 Feet of Water in Well 10.9 feet  
 Depth to Groundwater When 80% Recovered 9.3 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 5.3 gallons  
 Depth Measurement Method Tape & Paste / **Electronic Sounder** / Other

Free Product N/A  
 Purge Method Teflon bailer

*Field measure units*

GAL	pH	Temp	Cond	Sal	ORP	DO%	TDS <sup>kg/l</sup>	Comments
0	6.59	17.81	6013	3.84	358.1	27.6	4.511	downhole
1	7.06	17.94	5603	3.55	278.4	88.9	4.211	reddish brown organic growth
3	7.16	17.88	5429	3.44	85.1	75.3	4.068	- clearing up some
5	7.21	17.63	5367	3.41	39.8	65.7	4.045	↓

- instead recharge

Total Gallons Purged 5 gallons  
 Depth to Groundwater Before Sampling (below TOC) 7.36 feet

Sampling Method Teflon bailer  
 Containers Used 2 H<sub>2</sub>SO<sub>4</sub> 2 AL 2 1/2 poly  
40 ml liter pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal Well Number: SC1MW-12  
 Job No.: 133 009 Well Casing Diameter: 2.0 inch  
 Sampled By: Stewart Dalie Date: 5/6/99  
 TOC Elevation: \_\_\_\_\_ Weather: Clear

Depth to Casing Bottom (below TOC) 18.00 feet  
 Depth to Groundwater (below TOC) 7.22 feet  
 Feet of Water in Well 10.78 feet  
 Depth to Groundwater When 80% Recovered 9.38 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 512.7 gallons  
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product N/A  
 Purge Method Teflon bailer  
Field measure water

GAL	pH	Temp	Cond	Sal	ORP	DO %	TDS	Comments
0	6.98	16.12	24235	18.16	320.1	92.8	19.06	clear water
2	7.10	16.34	20935	15.27	315.6	102.4	16.27	brown / Turbid w/ odor
4	7.16	16.16	20840	15.30	307.6	96.3	16.27	
6	7.09	15.93	20741	15.27	313.9	75.1	16.23	

Total Gallons Purged 6 gallons  
 Depth to Groundwater Before Sampling (below TOC) 7.23 feet  
 Sampling Method Teflon bailer  
 Containers Used 2 VOA H<sub>2</sub>SO<sub>4</sub> 2 AL 1 L poly  
40 ml liter pint

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal Well Number: SCI MW-14  
 Job No.: 133 009 Well Casing Diameter: 2.0 inch  
 Sampled By: Stewart Dalie Date: 5/4/99  
 TOC Elevation: \_\_\_\_\_ Weather: Clear Windy

Depth to Casing Bottom (below TOC) 18.00 feet  
 Depth to Groundwater (below TOC) 7.54 feet  
 Feet of Water in Well 10.46 feet  
 Depth to Groundwater When 80% Recovered 9.64 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 1.743 = 5.12 gallons  
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other \_\_\_\_\_

Free Product \_\_\_\_\_

Purge Method Teflon bailer  
Field measure water

GAL	pH	Temp	Cond	Sal	ORP	DO%	TDS	Comments
0	6.54	17.5	346		385.9	70.9		downhole
2	7.7	17.4	475		388.1	51.3		Initial field sample
4	7.5	16.4	277.5		-50.1	48.1		" " " " " "
5	7.1	16.1	2478.0		-65.0	49.5		Clear
6	7.04	16.3	2398.1		-87.8	48.0		

Total Gallons Purged 6 gallons

Depth to Groundwater Before Sampling (below TOC) 9.42 feet

Sampling Method Teflon bailer

Containers Used \_\_\_\_\_ 40 ml \_\_\_\_\_ 1 liter \_\_\_\_\_ pint \_\_\_\_\_ 1 L Amber

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal Well Number: SC1 MW-15  
 Job No.: 133 009 Well Casing Diameter: 2.0 inch  
 Sampled By: Stewart Delle Date: 5/4/99  
 TOC Elevation: \_\_\_\_\_ Weather: fair

Depth to Casing Bottom (below TOC) 16.01 feet  
 Depth to Groundwater (below TOC) 8.35 feet  
 Feet of Water in Well 7.66 feet  
 Depth to Groundwater When 80% Recovered 9.89 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 16.01 - (7.66 x 4) x 0.0408 = 1.2572 = 3.75 gallons  
 Depth Measurement Method Electronic Sounder / Other

Free Product \_\_\_\_\_  
 Purge Method Teflon bailer  
Field measure volume

GAL	pH	Temp	Cond	Sal	ORP	DO <sub>2</sub>	TDS	Comments
0	6.6	17.7	6074.0		-102.2	25.1		None visible
1	6.8	17.7	5922.4		-92.5	21.4		Small amount of H <sub>2</sub> S
2	7.2	17.3	5701.0		-102.2	31.3		" " "
3	7.0	17.1	5502.0		-103.9	37.5		" " "
4	7.0	17.3	5486.0		-103.2	38.2		" " "

Total Gallons Purged 4 gallons  
 Depth to Groundwater Before Sampling (below TOC) 9.2 feet  
 Sampling Method Teflon bailer  
 Containers Used 1 40 ml 1 liter 1 pint

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal

Well Number: SCIMW-16

Job No.: 133 009

Well Casing Diameter: 2.0 inch

Sampled By: Stewart Dalie

Date: 5/8/99

TOC Elevation: \_\_\_\_\_

Weather: Clear

Depth to Casing Bottom (below TOC) <sup>(TD)</sup> 18.00 feet

Depth to Groundwater (below TOC) 3.21 feet

Feet of Water in Well 14.19 feet

Depth to Groundwater When 80% Recovered 6.6 feet

Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) =  $14.19 \times 2 \times 0.0408 = 2.31 \times 3 = 5.31$  gallons

Depth Measurement Method Electronic Sounder / Other

Free Product N/A

Purge Method Teflon bailer  
Field measure volume

GAL	pH	Temp	Cond	Sal	ORP	DO%	TDS	Comments
0	6.70	19.8	28241.4		-105.2	49.7		Downhole
2	6.8	19.6	28000.0		-117.0	34.2		complaint / odor
4	7.4	18.6	28305.0		-139.3	36.7		" "
6	6.9	13.4	28415.0		-145.1	35.9		" "

*Very Slow Strange!*

Total Gallons Purged 6 gallons

Depth to Groundwater Before Sampling (below TOC) 3.91 feet

Sampling Method Teflon bailer

Containers Used \_\_\_\_\_ 40 ml \_\_\_\_\_ 11 liter \_\_\_\_\_ pint

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal Well Number: SCIMW-22  
 Job No.: 133 009 Well Casing Diameter: 2.0 inch  
 Sampled By: Stewart Dalie Date: 5/5/99  
 TOC Elevation: \_\_\_\_\_ Weather: Clear

Depth to Casing Bottom (below TOC) 15.00 feet  
 Depth to Groundwater (below TOC) 4.06 feet  
 Feet of Water in Well 10.94 feet  
 Depth to Groundwater When 80% Recovered 6.24 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 1.78 x 3 = 5.35 gallons  
 Depth Measurement Method Electronic Sounder / Other

Free Product \_\_\_\_\_  
 Purge Method Teflon bailer  
Field measure water

GAL	pH	Temp	Cond	Sal	ORP	DO%	TDS	Comments
0	6.52	17.79	20335		-102.2	31.5		downhole
3	6.79	17.90	20129		-121.5	25.0		M/S odor, Greenish tint
4	7.12	17.00	10750		-111.1	47.7		
5	6.78	17.35	20307		-114.6	50.6		
6	6.81	17.00	20160		-107.1	58.6		

Total Gallons Purged 6 gallons  
 Depth to Groundwater Before Sampling (below TOC) 5.80 feet  
 Sampling Method Teflon bailer  
 Containers Used 2 AL liter 3 VOA's pint

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal Well Number: SC1MW-23  
 Job No.: 132 009 Well Casing Diameter: 2.0 inch  
 Sampled By: Stewart Delle Date: 5/6/99  
 TOC Elevation: \_\_\_\_\_ Weather: Clear

Depth to Casing Bottom (below TOC) 18.00 feet  
 Depth to Groundwater (below TOC) 3.72 feet  
 Feet of Water in Well 14.28 feet  
 Depth to Groundwater When 80% Recovered 6.58 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 6.99 gallons  
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product N/A  
 Purge Method Teflon bailer  
Field measure water

GAL	pH	Temp	Cond	Sal	ORP	DO%	TDS	Comments
0	7.17	18.15	6223	3.96	-43.4	72.7	4.66	downhole
1	6.61	17.48	6664	4.33	-68.9	66.1	5.032	no odor/taste
3	6.59	17.32	8789	5.86	-75.7	63.3	6.708	
5	6.57	17.63	11295	7.61	-60.4	91.5	8.510	
7								gray/green tint

Stewart Delle

Total Gallons Purged 7 gallons  
 Depth to Groundwater Before Sampling (below TOC) 5.75 in 5/7/99 feet  
 Sampling Method Teflon bailer  
 Containers Used 2 VOA's H<sub>2</sub>SO<sub>4</sub> 2 AL 12 pc any  
40 ml liter pint

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE



# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal Well Number: SCIMW-24  
 Job No.: 133 009 Well Casing Diameter: 2.0 inch  
 Sampled By: Stewart Dullie Date: 5/6/99  
 TOC Elevation: \_\_\_\_\_ Weather: Clear

Depth to Casing Bottom (below TOC) 18.00 feet  
 Depth to Groundwater (below TOC) 4.75 feet  
 Feet of Water in Well 13.25 feet  
 Depth to Groundwater When 80% Recovered 7.4 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 6.48 gallons  
 Depth Measurement Method Electronic Sounder / Tape & Paste / Other

Free Product N/A  
 Purge Method Teflon bailer

Field measure units

GAL	pH	Temp	Cond	Sal	ORP	DO%	TDS	Comments
<u>0</u>	<u>7.09</u>	<u>19.19</u>	<u>1540</u>	<u>.88</u>	<u>-81.2</u>	<u>72.0</u>	<u>1.134</u>	<u>breakback stream</u>
<u>2</u>	<u>7.17</u>	<u>18.52</u>	<u>1710</u>	<u>.99</u>	<u>-65.2</u>	<u>89.5</u>	<u>1.265</u>	<u>Strong hydrocarbon odor</u>
<u>4</u>	<u>7.02</u>	<u>18.69</u>	<u>1607</u>	<u>.93</u>	<u>-65.7</u>	<u>79.0</u>	<u>1.187</u>	<u>dark grey - turbid</u>
<u>6</u>	<u>6.92</u>	<u>18.65</u>	<u>1504</u>	<u>.87</u>	<u>-81.2</u>	<u>60.6</u>	<u>1.111</u>	

instat - reforge

Total Gallons Purged 6 gallons  
 Depth to Groundwater Before Sampling (below TOC) 4.91 feet  
 Sampling Method Teflon bailer  
 Containers Used 3 Vol 40 ml HCl 3 AL 2 L Poly  
2 Vol 1/2 SO<sub>2</sub> liter pint

Subsurface Consultants	JOB NUMBER	DATE	APPROVED
	PLATE		

# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal Well Number: SCIMW-28  
 Job No.: 133 009 Well Casing Diameter: 2.0 inch  
 Sampled By: Stewart Dalie Date: 5/6/99  
 TOC Elevation: \_\_\_\_\_ Weather: Clear

Depth to Casing Bottom (below TOC) 20 feet  
 Depth to Groundwater (below TOC) 4.46 feet  
 Feet of Water in Well 15.54 feet  
 Depth to Groundwater When 80% Recovered 7.6 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 2.5 x 3 = 7.6 gallons  
 Depth Measurement Method Electronic Sounder / Other

Free Product N/A  
 Purge Method Teflon bailer

Field measure values

GAL	pH	Temp	Cond	Sal	ORP	DO%	TDS	Comments
0	7.35	14.86	572.0	0.35	-55.9	82.3	.46	downhole
2	6.37	14.25	931.0	.59	-28.9	85.8	.765	turbid/green tint H <sub>2</sub> S odor
4	6.67	14.63	1429.0	.90	-66.2	85.3	1.164	
6	6.72	14.94	2973.0	1.97	-62.4	86.7	2.43	
8	6.75	15.7	11943.1	8.5	-77.6	79.3	9.54	

moderate recharge

Total Gallons Purged 8 gallons  
 Depth to Groundwater Before Sampling (below TOC) 6.99 feet  
 Sampling Method Teflon bailer  
 Containers Used 40 ml 1L poly 2 VOA H<sub>2</sub>SO<sub>4</sub>  
liter pint

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal Well Number: SC1MW-30  
 Job No.: 133 009 Well Casing Diameter: 2.0 inch  
 Sampled By: Stewart Dalie Date: 5/5/99  
 TOC Elevation: \_\_\_\_\_ Weather: Clear

Depth to Casing Bottom (below TOC) 18.85 feet  
 Depth to Groundwater (below TOC) 4.12 feet  
 Feet of Water in Well 14.73 feet  
 Depth to Groundwater When 80% Recovered 7.07 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 2.4 x 3 = 7.2 gallons  
 Depth Measurement Method Electronic Sounder / Other

Free Product N/A  
 Purge Method Teflon bailer

Field Measurements

GAL	pH	Temp	Cond	Sal	ORP	DO%	TDS	Comments
0	6.9	18.6	7350		-3.9	32.3		Acoushale
1	6.5	18.4	3221		-45.3	45.6		-gray tint - slight H <sub>2</sub> S odor
3	6.4	17.9	9918		-83.4	39.8		
5	6.6	18.4	16805		-104.4	41.4		-Darker grey tint - stronger H <sub>2</sub> S odor
7	6.3	18.5	17585		-109.1	45.8		✓

poor recovery / slow

Total Gallons Purged 7 gallons  
 Depth to Groundwater Before Sampling (below TOC) 6.89 feet  
 Sampling Method Teflon bailer  
 Containers Used N/A liter 3 VOA's pint

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

## WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal

Well Number: SCIMW-810

Job No.: 133 009

Well Casing Diameter: 2.0 inch

Sampled By: Stewart Dalie

Date: 5/5/99

TOC Elevation: \_\_\_\_\_

Weather: Clear

Depth to Casing Bottom (below TOC) 50 feet

Depth to Groundwater (below TOC) 7.25 feet

Feet of Water in Well 42.75 feet

Depth to Groundwater When 80% Recovered 15.8 feet

Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 6.9 x 3 = 20.7 gallons

Depth Measurement Method Electronic Sounder / Tape & Paste / Other

Free Product N/A

Purge Method Teflon bailer

Field measure values

GAL	pH	Temp	Cond	Sal	ORP	DO%	TDS	Comments
0	6.26	19.89	19032		302.7	109.4		draw hole
5	6.35	21.05	19425		111.4	58.9		clear / no odor
10	5.99	20.2	21171		544.9	72.3		
15	6.49	20.1	34459		469.2	60.4		
20	6.51	19.9	34814		555.3	72.2		

Total Gallons Purged 20 gallons

Depth to Groundwater Before Sampling (below TOC) 15.2 feet

Sampling Method Teflon bailer

Containers Used \_\_\_\_\_ 40 ml \_\_\_\_\_ liter \_\_\_\_\_ pint 3 VOA's

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal Well Number: SC1 MW-32  
 Job No.: 133 009 Well Casing Diameter: 2.0 inch  
 Sampled By: Stewart Dalie Date: 5/5/99  
 TOC Elevation: \_\_\_\_\_ Weather: Clear

Depth to Casing Bottom (below TOC) 20 feet  
 Depth to Groundwater (below TOC) 4.09 feet  
 Feet of Water in Well 15.92 feet  
 Depth to Groundwater When 80% Recovered 3.0 ~~1.8~~ 7.3 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 2.59 x 3 = 7.79 gallons  
 Depth Measurement Method Electronic Sounder / Other

Free Product \_\_\_\_\_  
 Purge Method Teflon bailer  
Field measure water

GAL	pH	Temp	Cond	Sal	ORP	DO%	TDS	Comments
0	6.28	20.56	4396		-44.2	94.6		downhole
2	6.47	20.34	4561		-56.8	78.2		Slight H <sub>2</sub> S odor
4	6.84	19.23	4882		-61.0	99.5		cleaned up
6	6.67	19.03	7543		-71.8	77.9		↓ less odor
8	6.24	19.08	7892		-88.4	78.8		

Total Gallons Purged 8 gallons  
 Depth to Groundwater Before Sampling (below TOC) 6.09 feet  
 Sampling Method Teflon bailer  
 Containers Used \_\_\_\_\_ 40 ml \_\_\_\_\_ liter \_\_\_\_\_ pint 3 UGA's

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal Well Number: SC1MW-~~22~~ 23  
 Job No.: 133 009 Well Casing Diameter: 2.0 inch  
 Sampled By: Stewart Dalie Date: 5/5/99  
 TOC Elevation: \_\_\_\_\_ Weather: Clear

Depth to Casing Bottom (below TOC) 16.00 feet  
 Depth to Groundwater (below TOC) 4.00 feet  
 Feet of Water in Well 12.00 feet  
 Depth to Groundwater When 80% Recovered 6.4 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 1.9 x 3 = 5.7 gallons  
 $TD - (12.00 \times 0.72)$   
 $12 \times 4 \times 0.0408$   
 Depth Measurement Method Electronic Sounder / Other

Free Product N/A  
 Purge Method Teflon bailer  
Field measure water

GAL	pH	Temp	Cond	Sal	ORP	DO%	TDS	Comments
0	6.5	19.8	5164		-72.9	35.3		downhole -
2	6.4	19.3	6044		-70.1	44.7		Very Slight hydrogen color
4	6.4	18.4	5774		-64.3	54.0		Turbid - some color
6	6.6	19.11	7875		-88.4	31.2		H <sub>2</sub> S color as well

Total Gallons Purged 6 gallons  
 Depth to Groundwater Before Sampling (below TOC) 5.09 feet  
 Sampling Method Teflon bailer  
 Containers Used 3AL liter 3 VOA's

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE



# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Avenue Terminal

Well Number: SC1 MW-33

Job No.: 133 009

Well Casing Diameter: 2.0 inch

Sampled By: Stewart Dalie

Date: 5/5/99

TOC Elevation: \_\_\_\_\_

Weather: Clear Warm

Depth to Casing Bottom (below TOC) 14.50 feet

Depth to Groundwater (below TOC) 5.59 feet

Feet of Water in Well 8.91 feet

Depth to Groundwater When 80% Recovered 7.31 feet

Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 1.51 x 3 = 4.5 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product none

Purge Method Teflon bailer  
Field measure

GAL	pH	Temp	Cond	Sal	ORP	DO%	TDS	Comments
0	<del>6.82</del>	15.06	3665		93.0	147.6		Downhole
2	6.71	15.58	14626		94.4	80.0		Slightly Turbid
3	6.76	15.21	16716		64.0	66.3		"
4	6.83	15.69	17452		65.0	63.3		"
5	6.76	15.70	17643		64.0	58.0		"

Total Gallons Purged 5 gallons

Depth to Groundwater Before Sampling (below TOC) 8.50 feet

Sampling Method Teflon bailer

Containers Used 40 ml 224 liter \_\_\_\_\_ pint

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE



# GROUNDWATER DEPTHS

Project Name: 9th Ave Terminal / Keep On Truckin'  
 Job No.: 133.009  
 Measured by: Stewart / Gene (SCI)

Well	Date	Time	Groundwater Depth (feet)	Comments
		12:50	7.11	no odor no product
✓ MW-1	8/25/99	<del>8:30</del>	<del>5.10</del>	no odor, no product
✓ MW-2		<del>11:00</del>	<del>5.01</del>	<del>no odor, no product</del>
✓ MW-3		<del>9:45</del>	<del>5.34</del>	<del>no odor, no product</del>
✓ MW-4		<del>11:30</del>	<del>4.65</del>	no odor, free product 1/2 gal
✓ MW-5		11:50	5.46	no product slight hydrocarbon odor
✓ MW-6		12:00	5.25	free product, spray odor 1/2 gal product
MW-7		<del>11:30</del>	<del>3.8</del>	no odor no product
SCIMW-1		8:20	5.85	H <sub>2</sub> S, no product
SCIMW-2		11:00	6.92	no odor, no product
SCIMW-3		9:10	5:30	no product possible gummy H <sub>2</sub> S odor
SCIMW-4		11:05	3.75	no product no odor
SCIMW-5		10:45	4.48	No odor
SCIMW-6		10:35	6.56	No odor
SCIMW-7		9:55	5.42	no odor
SCIMW-8		6:45	6.95	Slight H <sub>2</sub> S odor no product
SCIMW-9		9:00	4.72	No odor, no product
SCIMW-10		7:30	6.65	H <sub>2</sub> S odor, " " hydrocarbon odor
SCIMW-11		<del>10:30</del>	<del>5.10</del>	no product
SCIMW-12		10:25	6.91	strange odor, H <sub>2</sub> S or hydrocarbons
SCIMW-13		<del>8:50</del>	<del>5.30</del>	almost sweet
SCIMW-14		6:30	7.95	H <sub>2</sub> S & hydrocarbon odor
SCIMW-15		6:15	8.75	" " " "
SCIMW-16		6:00	5.105	H <sub>2</sub> S odor, no product
SCIMW-17		7:00	4.95	no odor
SCIMW-18		7:15	5.45	no odor
SCIMW-11		11:30	4.31	no odor, no product

side of casing

hydrocarbon odor

# GROUNDWATER DEPTHS

Project Name: 9th Ave Terminal / Keep on Track  
 Job No.: 133.009  
 Measured by: Stewart / Gene (SC)

Well	Date	Time	Groundwater Depth (feet)	Comments
------	------	------	--------------------------	----------

SCIMW-19	8/25/99	8:35	4.60	No odor
SCIMW-20		<del>10:05</del>	2.19	No odor
SCIMW-21		11:05	1.35	<del>RE</del> Slight hydrocarbon odor <span style="float: right;">no product</span>
SCIMW-22		9:30	5.71	H <sub>2</sub> S odor, pop. under pressure
SCIMW-23		10:35	4.35	H <sub>2</sub> S odor no product
* SCIMW-24		<del>10:25</del>	<del>4.35</del>	<del>H<sub>2</sub>S odor no product</del>
SCIMW-25		10:15	1.23	no odor, pop. under pressure
SCIMW-26		<del>10:15</del> 8:00	3.61	no odor
SCIMW-27		<del>8:45</del>	4.95	no odor no product
SCIMW-28		8:45	5.44	no odor " "
SCIMW-29		10:00	5.95	no odor no product
SCIMW-30		10:20	5.95	no odor. (New well box)!
SCIMW-31D		9:35	7.85	no odor pop. under pressure
SCIMW-32		9:50	7.80	no odor no product
SCIMW-33		9:25	4.36	Mild Hydrocarbon odor, no product
SCIMW-34		7:35	6.86	H <sub>2</sub> S odor no product
SCIMW-35		7:50	5.95	H <sub>2</sub> S odor no product
<del>SCIMW-36</del>		<del>8:15</del>	<del>4.35</del>	<del>no odor no product</del>
recheck		11:15		1 full bucket of oily product! 4 1/2"
SCIMW-24		11:25	5.15	Very strong hydrocarbon odor 1/2" product

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# WELL SAMPLING FORM

Project Name: 9th Ave / KOT  
 Job No.: 133.009  
 Sampled By: Stewart / Gene (SC)  
 TOC Elevation: —

Well Number: SCMW-2  
 Well Casing Diameter: 2 inch  
 Date: 8/28/99  
 Weather: cloudy, warm

Depth to Casing Bottom (below TOC) 14.59 feet  
 Depth to Groundwater (below TOC) 5.09 feet  
 Feet of Water in Well 9.5 feet  
 Depth to Groundwater When 80% Recovered 6.99 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 4.65 gallons  
 Depth Measurement Method Tape & Paste / **Electronic Sounder** / Other  
 Free Product N/A  
 Purge Method clean disposable bailer

Milli-ohm \*

change

## FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C)	Conductivity (micro-mhos/cm)	ORP mv (millivolts)		Salinity SPT mg/L	Comments
				DO	Before purge		
0 - downhole	7.07	19.76	18,757.0	16.1	11.16	1.91	clean well
1	7.00	19.84	18,923.0	10.9	11.27	3.03	Slight odor? like brass. Slight
2	6.79	20.14	18,277.0	-9.2	10.85	2.35	-Strong odor
3	6.94	20.07	18,544.0	-8.0	11.05	3.03	-Strong, metallic
4	6.95	19.74	18,796.0	27.8	11.19	3.69	same
5	7.02	19.80	18,891.0	74.6	11.25	3.03	same

Total Gallons Purged 5 gallons  
 Depth to Groundwater Before Sampling (below TOC) 5.15 instant

Sampling Method clean disposable bailer  
 Containers Used 2 V&A 40 ml 2 1L liter 1 L partly 1250 partly pint

Subsurface Consultants	<i>Scott Ireland</i>	DATE	APPROVED	PLATE
	JOB NUMBER <u>133.009</u>	<u>8/</u> / <u>99</u>		

WELL SAMPLING FORM

*Henry*

Project Name: 9<sup>th</sup> Ave / KOT  
 Job No.: 133.009  
 Sampled By: Stewart / Gene (Sci)  
 TOC Elevation: —

Well Number: SCIMW-5  
 Well Casing Diameter: 2 inch  
 Date: 8/26/99  
 Weather: cloudy, sunny

Depth to Casing Bottom (below TOC) 8.5 feet  
 Depth to Groundwater (below TOC) 4.32 feet  
 Feet of Water in Well 14.18 feet  
 Depth to Groundwater When 80% Recovered 7.2 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 6.94 gallons  
 Depth Measurement Method Electronic Sounder / Other  
 Free Product N/A  
 Purge Method Clean disposable bailer

FIELD MEASUREMENTS  
 ORP mv (millivolts)

Gallons Removed	TDS #3/L	pH	Temp (°C)	Conductivity (micromhos/cm)	Salinity S <sub>25</sub>	DO mg/L	Comments
0' downhole	102	7.19	20.89	31,645	198.5	19.76	2.73 no odor
1'	.02	6.97	19.11	31,765	202.6	19.85	.84 slightly grey/turbid
3'	.02	6.74	17.57	33,353	25.7	21.05	.51 some
5'	.02	6.80	17.32	37,163	62.0	28.62	.41 some
7'	.02	6.85	17.35	36,767	89.9	28.75	.38 some

Total Gallons Purged 7 gallons  
 Depth to Groundwater Before Sampling (below TOC) (N/A no samples) feet  
 Sampling Method Clean disposable bailer  
 Containers Used — 40 ml — liter — pint

Subsurface Consultants

*Scott A. Ireland*  
 DATE: 8/26/99 APPROVED

LOG NUMBER: 133.009

## WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Ave / KOT Well Number: SC1MW-6  
 Job No.: 133.009 Well Casing Diameter: 2 inch  
 Sampled By: Stewart / Gene (SCU) Date: 8/26/99  
 TOC Elevation: - Weather: Cloudy cooling down


Depth to Casing Bottom (below TOC) 19.5 feet  
 Depth to Groundwater (below TOC) 5.35 feet  
 Feet of Water in Well 14.15 feet  
 Depth to Groundwater When 80% Recovered 8.18 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 6.92 gallons  
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product N/A  
 Purge Method clean disposable bailer

### FIELD MEASUREMENTS

Gallons Removed	TDS	pH	Temp (°C)	Conductivity	Salinity	DO	Comments
	mg/L			µmhos/cm	ppt	mg/L	
0'-downhole	102	7.11	20.72	35,760.0	22.6	6.44	no odor
1'	102	7.03	20.94	35,761.0	22.55	6.52	no odor clear
3'	102	7.09	20.45	35,605.0	22.43	5.92	same
5'	102	7.07	20.36	35,611.0	22.59	6.02	slightly grey / brown turbid
7'	102	6.96	20.27	35,699.0	22.50	6.42	same

Total Gallons Purged ~~5.42~~ 7' gallons  
 Depth to Groundwater Before Sampling (below TOC) 5.42 (100% recovery) feet  
 Sampling Method clean disposable bailer  
 Containers Used 2 VOA 1L poly 1250 poly  
40 ml liter pint

Subsurface Consultants		APPROVED	
	LOG NUMBER <u>133.009</u>	DATE <u>8/ / 99</u>	

WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Ave / KOT Well Number: SCI MW-~~11~~ 11  
 Job No.: 133.009 Well Casing Diameter: 2 inch  
 Sampled By: Stewart / Gene (SCI) Date: 8/26/99  
 TOC Elevation: - Weather: Cloudy / warm

Depth to Casing Bottom (below TOC) 15.00 feet  
 Depth to Groundwater (below TOC) 4.41 feet  
 Feet of Water in Well 10.59 feet  
 Depth to Groundwater When 80% Recovered 6.53 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 5.18 gallons  
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other  
 Free Product N/A slight odor,  
 Purge Method clean disposable bailer

FIELD MEASUREMENTS  
 ORP mv (millivolts)

Gallons Removed	TDS (mg/L)	pH	Temp (°C)	Conductivity (microhm/cm)	Salinity (ppt)	DO (mg/L)	Comments
0-downhole	.03	7.28	21.56	33,299.0	145.5	22.26	slight odor clean
1	.01	7.29	21.44	30,125.0	155.5	24.11	turbid / less odor
2	.01	6.93	20.79	28,505.0	154.4	23.30	gray / brownish turbid / less odor
3	.01	7.12	20.85	28,015.0	140.1	23.95	same
4	.00	7.03	21.19	28,395.0	141.1	24.08	same
5	.01	7.10	20.82	27,254.0	139.9	24.24	same

Total Gallons Purged 5 gallons  
 Depth to Groundwater Before Sampling (below TOC) 5.59 (15 mw) feet  
 Sampling Method clean disposable bailer  
 Containers Used 2 liter 1250 poly pint

Subsurface Consultants	<u>Stewart / Gene</u>		PLATE
	LOG NUMBER <u>133.009</u>	DATE <u>8/1/99</u>	APPROVED

## WELL SAMPLING FORM

Project Name: 9th Ave / KOT Well Number: SC1 MW-12  
 Job No.: 133.009 Well Casing Diameter: 2 inch  
 Sampled By: Stewart / Gene (SC1) Date: 8/26/99  
 TOC Elevation: - Weather: cloudy w/ sun

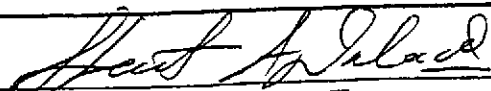
Depth to Casing Bottom (below TOC) 17.93 feet  
 Depth to Groundwater (below TOC) 6.93 feet  
 Feet of Water in Well 11 feet  
 Depth to Groundwater When 80% Recovered 9.13 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 5.3 gallons  
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other  
 Free Product N/A  
 Purge Method Clean disposable bailer

### FIELD MEASUREMENTS

Gallons Removed	TDS mg/L	pH	Temp (°C)	Conductivity		Salinity ‰	DO mg/L	Comments
				micromhos/cm	µmhos/cm			
0-downhole	102	7.29	20.56	35,237.0	149.4	22.26	4.78	Clear w/ odor
1	102	7.27	20.52	34,450.0	148.8	21.69	5.18	Turbid brown No odor
2	102	7.11	20.62	34,249	125.4	21.60	5.20	Turbid brown, no odor
3	102	7.12	20.70	34,430	133.4	21.67	5.82	same
4	102	7.10	20.45	34,720	135.9	21.89	5.04	same
5	102	7.13	20.55	34,831	140.1	21.95	5.91	same

Total Gallons Purged 5 gallons  
 Depth to Groundwater Before Sampling (below TOC) 7.65 feet  
 Sampling Method Clean disposable bailer  
 Containers Used 2 N/A 40 ml 1 250 liter poly pint

Subsurface Consultants

  
 LOG NUMBER: 133.009 DATE: 8/26/99 APPROVED: \_\_\_\_\_

PLATE

## WELL SAMPLING FORM

Project Name: 9th Ave / KOT Well Number: SCI MW-14  
 Job No.: 133.009 Well Casing Diameter: 2 inch  
 Sampled By: Stewart / Gene (SCI) Date: 8/26/99  
 TOC Elevation: - Weather: clearly, warm

Depth to Casing Bottom (below TOC) 18.10 feet  
 Depth to Groundwater (below TOC) 8.25 feet  
 Feet of Water in Well 9.85 feet  
 Depth to Groundwater When 80% Recovered 10.22 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 4.8 gallons  
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other  
 Free Product N/A  
 Purge Method Clean disposable bailer

### FIELD MEASUREMENTS

Gallons Removed	TDS (mg/L)	pH	Temp (°C)	Conductivity (micro-mhos/cm)		Salinity S <sub>T</sub>	DO (mg/L)	Comments
				measured	ORP mv (millivolts)			
0-downhole	100	7.19	20.80	21,011.0	-59.2	1.19	1.82	clear
1	100	7.43	20.84	22,071.0	-63.9	1.17	1.77	
2	100	6.89	19.81	12,558.0	-87.7	7.24	3.48	turbid, grey w/ H <sub>2</sub> S odor
3	100	7.17	20.73	4,471.0	-104.0	2.36	2.53	very grey, H <sub>2</sub> S odor
4	100	7.28	20.52	3,525.0	-66.6	1.84	3.57	"   "
5	100	7.03	20.13	4,547.0	-72.6	2.83	4.01	

Total Gallons Purged 5 gallons.  
 Depth to Groundwater Before Sampling (below TOC) 10.02 feet  
 Sampling Method Clean disposable bailer  
 Containers Used 2 N/A 40 ml 120 liter 1 pint

Subsurface Consultants	 <small>LOG NUMBER</small>	<small>DATE</small>	<small>APPROVED</small>	<small>PLATE</small>
	133.009	8/ / 99		



# WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Ave / KOT Well Number: SCIMW-23  
 Job No.: 133.009 Well Casing Diameter: 2 inch  
 Sampled By: Stewart / Gene (SCU) Date: 8/26/99  
 TOC Elevation: — Weather: clearly warm

Depth to Casing Bottom (below TOC) 17.86 feet  
 Depth to Groundwater (below TOC) 4.41 feet  
 Feet of Water in Well 13.45 feet  
 Depth to Groundwater When 80% Recovered. 7.1 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 6.58 gallons  
 Depth Measurement Method Tape & Paste / **Electronic Sounder** / Other  
 Free Product N/A  
 Purge Method clean disposable bailer

## FIELD MEASUREMENTS

Gallons Removed	TDS (mg/L)	pH	Temp (°C)	Conductivity (microhm/cm)	Salinity ‰	DO		Comments
						mg/L	%	
0-downhole	.00	6.46	22.77	11,774.0	89.1	6.72	1.79	Clear, no odor
1'	.00	6.63	22.17	11,828.0	77.3	6.75	4.05	clear no odor
3'	.00	6.52	22.09	12,144.0	131.7	6.99	3.45	slight shear brown odor turbid
5'	.00	6.61	21.89	12,234.0	85.6	6.99	4.70	same
7'	.00	6.65	21.29	12,008.0	85.3	6.85	4.90	same stronger odor!

Total Gallons Purged 7 gallons  
 Depth to Groundwater Before Sampling (below TOC) 6.8 (15 min recharge)  
 Sampling Method clean disposable bailer  
 Containers Used 2 VOA 2 ILA 1 250 perky  
40 ml liter pint

Subsurface Consultants

*Stewart A. Ireland*  
LOG NUMBER DATE APPROVED  
133.009 8/ /99

PLATE

## WELL SAMPLING FORM

Project Name: 9<sup>th</sup> Ave / KOT Well Number: SCIMW-34  
 Job No.: 133.009 Well Casing Diameter: 2 inch  
 Sampled By: Stewart / Gene (Sci) Date: 8/26/99  
 TOC Elevation: — Weather: clear warm

Depth to Casing Bottom (below TOC) 15 feet  
 Depth to Groundwater (below TOC) 6.35 feet  
 Feet of Water in Well 8.65 feet  
 Depth to Groundwater When 80% Recovered ~~8.08~~ 9.08 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 4.23 gallons  
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other  
 Free Product N/A  
 Purge Method clean disposable bailer

### FIELD MEASUREMENTS

Gallons Removed	TDS <small>(mg/L)</small>	pH	Temp (°C)	Conductivity		Salinity S <sub>T</sub>	DO <small>(mg/L)</small>	Comments
				<small>(microsiemens/cm)</small>	ORP mv (millivolts)			
0 - downhole	.01	6.63	18.22	21,393.0	99.4	12.91	1.36	no odor
1	.01	7.09	19.19	16,244.0	-12.9	9.55	3.42	clear
2	.01	7.03	19.17	16,479.0	30.4	9.70	3.53	Slight H <sub>2</sub> S or hydrocarbon odor
3	.01	7.02	18.26	21,151.0	6.9	12.93	3.67	clear
4	.01	6.97	18.05	21,243.0	3.1	12.79	4.73	very turbid
5	.01	6.99	17.93	20,955.0	8.6	12.59	4.45	strongly grey / turbid odor
Total Gallons Purged				<u>5</u>		gallons		

Depth to Groundwater Before Sampling (below TOC) \_\_\_\_\_ feet  
 Sampling Method clean disposable bailer  
 Containers Used 6 N/A 2 1L 1 500 poly  
40 ml liter pint

Subsurface Consultants	<i>Stewart</i>	DATE	APPROVED	PLATE
	LOG NUMBER	DATE	APPROVED	
	133.009	8/26/99		

**WELL SAMPLING FORM**

Project Name: 9<sup>th</sup> Ave / KOT Well Number: SCIMW-35  
 Job No.: 133.009 Well Casing Diameter: 2 inch  
 Sampled By: Stewart / Gene (Sci) Date: 8/26/99  
 TOC Elevation: - Weather: clear overcast

Depth to Casing Bottom (below TOC) 11.01 feet  
 Depth to Groundwater (below TOC) 5.59 feet  
 Feet of Water in Well 5.42 feet  
 Depth to Groundwater When 80% Recovered 6.68 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 2.65 gallons  
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other  
 Free Product N/A  
 Purge Method clean disposable bailer

**FIELD MEASUREMENTS**  
 ORP mv (millivolts)

Gallons Removed	TDS (mg/L)	pH	Temp (°C)	Conductivity (microsiemens/cm)	Salinity (ppt)	DO (mg/L)	Comments	
0-downhole	1.00	6.98	20.64	14,281.0	96.6	8.40	2.61	no odor
0.5	1.01	6.88	20.45	16,732.0	104.2	9.85	3.44	brassish yellow tint, no odor
1	1.00	6.75	21.03	14,192.0	73.4	8.25	2.89	same as above
1.5	1.01	6.71	20.30	17,846.0	29.0	10.57	2.11	no odor
2	1.01	6.77	20.23	17,539.1	17.7	10.37	2.74	same no odor
2.5	1.01	6.77	20.28	16,593.0	22.2	9.71	3.28	same

Total Gallons Purged 2.5 gallons  
 Depth to Groundwater Before Sampling (below TOC) N/A field measurements feet  
 Sampling Method clean disposable bailer  
 Containers Used \_\_\_\_\_ 40 ml \_\_\_\_\_ liter \_\_\_\_\_ pint

Subsurface Consultants	<i>Scott A. J. [Signature]</i>		PLATE
	LOG NUMBER <u>133.009</u>	DATE <u>8/26/99</u>	



Subsurface Consultants, Inc.

January 24, 2000  
SCI 133.009

Mr. Barney Chan  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

**Groundwater Monitoring Program Report  
May and August 1999 Events and  
October 1999 Waste Removal Activities  
Ninth Avenue Terminal  
Oakland, California**

Dear Mr. Chan:

This report presents the results of groundwater monitoring conducted in May and August 1999 at the above-referenced site by Subsurface Consultants, Inc. (SCI), and the results of waste removal activities conducted by the Port of Oakland in October 1999. The location of the site is shown on Plate 1. Previous site characterization studies indicate that petroleum hydrocarbons as well as other potentially hazardous chemicals and metals have impacted soil and groundwater at the Ninth Avenue Terminal area. Monitoring is being performed on a quarterly basis in general accordance with the revised monitoring plan presented in SCI's March 29, 1999 Groundwater Monitoring Report, as amended by Alameda County Health Care Services Agency (ACHCSA) in their letter dated April 16, 1999. The current groundwater monitoring program is outlined in the attached Table 1.

**MONITORING ACTIVITIES**

The monitoring activities consisted of sampling 21 of the 42 on-site wells in May 1999 and 7 of the 42 on-site wells in August 1999. As requested by ACHCSA, redox potential (Eh) and dissolved oxygen (DO) readings were obtained for both monitoring events.

Prior to sampling, the depth to water was measured from below the top of the casing in all site wells with an electric well sounder. A summary of groundwater measurements is presented in Table 2. Selected wells were checked for the presence of free product, using a steel tape coated with petroleum sensitive paste. During the May 1999 event, free product was detected in well MW-6 and in the "oil filled manhole". During the August 1999 event, free product was detected

Mr. Barney Chan  
Alameda County Health Care Services Agency  
January 24, 2000  
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in wells MW-4, MW-6, SCIMW-24, and the "oil filled manhole". The free product was removed from the wells using disposable bailers and, placed in 55-gallon drums and stored on-site. Due to the presence of free product, impacted wells were not purged or sampled during either events.

All equipment used during the events was decontaminated between each use. Disposable bailers were used for purging and sampling, and were decontaminated and discarded after each use. The pH, specific conductivity, and temperature of the purged water were measured after each well volume was removed. The wells were considered purged when these environmental parameters had stabilized. A Well Sampling Form was completed for each well sampled during each event. Water generated during purging was placed into 55-gallon steel drums, labeled, and stored on-site. Well Sampling Forms manifests are included in Appendix A.

For both sampling events, groundwater samples were retained in glass and polyethylene containers pre-cleaned by the supplier in accordance with EPA protocol. The filled sample containers were placed in ice filled chests and remained iced until delivery to the analytical laboratory. Chain-of-Custody records accompanied the samples to the laboratory.

## WASTE DISPOSAL ACTIVITIES

CET Environmental Services, Inc. (CET) was retained by the Port of Oakland in October 1999 to (1) remove accumulated free floating product from the "oil filled manhole" and a storm drain inlet located south of well SCIMW-9, and (2) remove purge water and free product accumulated from previous sampling events. A total of 70 gallons of oil and 2,430 gallons of oily water were removed from the manhole and a total of 110 gallons of oily water were removed from the storm drain inlet south of well SCIMW-9. 295 gallons of waste water and 30 gallons of free product accumulated from previous monitoring events were also removed. The waste materials were transported to Evergreen Environmental Services facility in Newark California for disposal. A copy of the bill of lading and Uniform Hazardous Waste Manifest for these removal activities are presented in Appendix B.

## ANALYTICAL TESTING

The chemical testing program for the May and August events included analyses for TVH, TEH, BTEX, PNAs, chlorinated pesticides, VOCs, and heavy metals (see Table 1)<sup>1</sup>. The program also

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<sup>1</sup> TVH = Total Volatile Hydrocarbons by EPA Method 5030/8015M  
BTEX = Benzene, Toluene, Ethylbenzene and Xylenes by EPA Method 5030/8021B  
TEH = Total Extractable Hydrocarbons by EPA Method 3520/8015M  
PNA = Polynuclear Aromatic Hydrocarbons by EPA Method 3520/8270B  
Chlorinated Pesticides by EPA Method 3520/8080  
Heavy Metals and Lead by EPA 6010/7000 series

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included a combination of field and laboratory testing for environmental parameters (pH, Eh, DO, TDS, and DOC)<sup>2</sup> to assist in trend analysis.

Analytical testing was performed by Curtis' & Tompkins, Ltd., a State of California Department of Health Services certified analytical laboratory who has provided all previous analytical services. Analytical results are presented in Tables 3 through 9. These tables are comprehensive as they present all data generated for site wells to date. Analytical test reports and chain-of-custody forms are included in Appendix C.

## **DISCUSSION**

### **Groundwater Elevation and Flow Patterns**

The approximate groundwater elevation contours for the respective events are presented on Plates 2 and 3. Groundwater elevation contour patterns have remained relatively consistent since 1996. In general, groundwater elevations tend to be higher in the central portion of the site with flow radiating outward toward the shorelines of Clinton Basin and Brooklyn Basin. The bulkhead wall extending along the southeastern and southwestern portions of the site acts as an inhibitor to the flow of groundwater beneath the site. The contours also indicate that groundwater migrates to the open shorelines around the bulkhead wall.

Wells located along the Clinton and Brooklyn Basin shorelines are tidally influenced, while interior wells and those adjacent to the concrete bulkhead are not. Groundwater level measurements were obtained from tidally influenced wells first to minimize the potential discrepancies in elevation for each event.

### **Monitoring and Chemical Data**

The data generated to date suggests that impacts resulting from petroleum hydrocarbons are widespread at the site, with concentrations in specific source areas remaining relatively high. Impacts resulting from other previous site activities appear localized to their specific area of use. Specific results of interest for each of the events are outlined below.

---

<sup>2</sup> pH by Standard Methods (SM) 4500-H+B  
Eh = Redox Potential by SM 2580B  
DO = Dissolved Oxygen by SM 4500-OG  
TDS = Total Dissolved Solids by EPA 160.1  
DOC = Dissolved Organic Carbon by EPA 415.2

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#### May 1999 Event

- TEH was non-detect in wells SCIMW-5, SCIMW-6, SCIMW-8, SCIMW-11, SCIMW-12, SCIMW-14, SCIMW-16, SCIMW-22, SCIMW-30, and SCIMW-35. The concentrations of TEH in the other wells ranged from 75 ppb to 10,000 ppb (SCIMW-2).
- Chlorinated pesticide analyses were conducted on samples collected from wells SCIMW-7 and SCIMW-33. No detectable concentrations of chlorinated pesticides have been measured in well SCIMW-7 for the last two events. Well SCIMW-33 contained 25.8 ppb of DDD and DDE<sup>3</sup> compounds.
- Wells SCIMW-7, SCIMW-22, SCIMW-30, SCIMW-31, SCIMW-32 and SCIMW-33 were tested for VOCs. Well SCIMW-7 contained concentrations of chloroethane (570 ppb), cis-1,2 dichloroethene (1,2 DCE @ 160 ppb), trans 1,2 DCE (33 ppb) and vinyl chloride (160 ppb). Chlorobenzene (290 ppb) and xylenes (12 ppb) were detected in well SCIMW-33. No detectable concentrations of VOCs were measured in the other wells.
- A filtered sample from well SCIMW-24 was tested for PNAs. Naphthalene was detected at 77 ppb. Previously, both filtered and unfiltered samples have been screened for PNAs to characterize the dissolved fraction of PNAs in groundwater. However, a review of the data indicates no appreciable difference is observed between filtered and unfiltered samples.
- Filtered samples from wells SCIMW-2, SCIMW-6, SCIMW-11, and SCIMW-28 were submitted for heavy metal analyses. Barium concentrations varied from 19 ppb to 900 ppb (SCIMW-2). Well SCIMW-2 also contained arsenic (11 ppb), selenium (9.5 ppb) and zinc (24 ppb), well SCIMW-6 also contained copper (21 ppb) and zinc (63 ppb), and well SCIMW-28 also contained arsenic (25 ppb).
- Filtered samples from wells SCIMW-24 and SCIMW-34 were submitted for lead analysis. Lead has not been detected in samples from these wells during the last three events

#### August 1999 Event

- TEH was non-detect in well SCIMW-34, and was measured at 120 ppb in well SCIMW-23 and 13,000 ppb in well SCIMW-2.
- Chlorinated pesticide analyses were not conducted during this event.

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<sup>3</sup> DDD=Dichlorodiphenyl dichloroethane, DDE= Dichlorodiphenyl Dichloroethene

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- VOC analyses were not conducted during this event.
- PNA analyses were not conducted during this event.
- Filtered samples from wells SCIMW-2 and SCIMW-6 were submitted for heavy metal analyses. Well SCIMW-2 contained arsenic (6.8 ppb) and barium (300 ppb). Well SCIMW-6 contained barium (43 ppb), copper (26 ppb), lead (4.3 ppb) and zinc (110 ppb).
- A filtered sample from well SCIMW-34 was submitted for lead analysis. Lead has not been detected in samples from this well during the last four events. A sample was not collected from well SCIMW-24 during this event due to the presence of free product.

#### ONGOING MONITORING

Field sampling activities for the annual event were conducted during the first week in December. Proposed modifications to the Site-wide Monitoring Program, if any, will be presented in the written annual report.

If you have any questions, please call either of the undersigned at (925) 299-7960.

Yours very truly,

Subsurface Consultants, Inc.



Emily Silverman  
Field Geologist



Jeriann Alexander  
Civil Engineer 40469 (exp. 3/31/03)  
Registered Environmental Assessor 03130 (exp. 6/30/00)

ES: JNA: rm\ 133.009\qtr999.doc



Mr. Barney Chan  
Alameda County Health Care Services Agency  
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Tables:      Table 1 - Groundwater Monitoring Program  
                 Table 2 - Summary of Groundwater Elevation Data  
                 Table 3 - Ecological Parameter Results in Groundwater  
                 Table 4 - Petroleum Hydrocarbon, BTEX, Pesticide and PCB Concentrations in  
   Groundwater  
                 Table 5 - Volatile Organic Concentrations in Groundwater  
                 Table 6 - Semi-Volatile Organic Concentrations in Groundwater  
                 Table 7 - Polynuclear Aromatic Concentrations in Groundwater  
                 Table 8 - Heavy Metal Concentrations in Groundwater  
                 Table 9 - Cyanide, Nitrate and Phosphorus Concentrations in Groundwater

Illustrations: Plate 1 - Vicinity Map  
                 Plate 2 - Groundwater Surface Elevation Contours: May 1999 Event  
                 Plate 3 - Groundwater Surface Elevation Contours: August 1999 Event

Appendices: A - Well Sampling Forms  
                 B - Bill of Lading and Uniform Hazardous Waste Manifest  
                 C - Analytical Test Reports and Chain-of-Custody Records

Copies:      Ms. Michele Heffes, Deputy Port Attorney  
                 Mr. Dale Klettke, Port of Oakland - Environmental Health and Safety Compliance  
                 Mr. Jonathan Redding, Wendel, Rosen, Black & Dean, LLP  
                 Mr. Leroy Griffin, City of Oakland Fire Department  
                 Mr. Rich Hiatt, RWQCB

APPENDIX B  
BILL OF LADING  
AND  
UNIFORM HAZARDOUS WASTE MANIFEST



NOV-08-99 MON 01:21 PM PORT EH&SC DEPT

FAX NO. 5104515916

P. 08/10

NOV-07-99 16:27 FROM: CET ENVIRONMENTAL

ID: 5102439501

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of California - Environmental Protection Agency  
Approved OMB No. 2050-0039 (Expires 9-30-99)  
see print or type. Form designed for use on office (12-pitch) typewriter.

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. C12101062113141218/19101211		Manifest Document No.		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.		
Generator's Name and Mailing Address <i>Part of Oakland</i> 530 Water Street Oakland CA										
A. Generator's Phone (510-777-1136) 94607				6. US EPA ID Number						
5. Transporter 1 Company Name <b>EVERGREEN ENVIRONMENTAL SERVICES</b>				8. US EPA ID Number C1A1D18182411821818						
7. Transporter 2 Company Name										
9. Designated Facility Name and Site Address <b>EVERGREEN OIL, INC.</b> 8800 Santa Avenue Newark, CA 94560										
10. US EPA ID Number C1A1D19181818174118										
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)					12. Containers		13. Total Quantity		14. Units	
a. <b>NON-PCRA HAZARDOUS WASTE, LIQUID</b> <i>(OIL &amp; WATER)</i>					No.		Type		Wt/Vol	
					0		1		02950 G	
b.										
c.										
d.										
15. Special Handling Instructions and Additional Information 24 Hour Emergency Response Telephone No.: CHEMTREC 1-800-424-8300 DOT ERG 171 WEAR PROTECTIVE EQUIPMENT Invoice # 776595 Sales Order # 94405834 <i>See note 9.2. See Terminal Oakland CA 94607</i>										
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford. <i>ON BE HALF OF THE PORT OF OAKLAND</i>										
Printed/Typed Name <i>DALE KLETTE</i>				Signature <i>DALE KLETTE</i>		Month 10		Day 03		Year 97
17. Transporter 1 Acknowledgment of Receipt of Materials Printed/Typed Name <i>TIMOTHY POWELL</i>				Signature <i>TIMOTHY POWELL</i>		Month 10		Day 01		Year 99
18. Transporter 2 Acknowledgment of Receipt of Materials Printed/Typed Name				Signature		Month		Day		Year
19. Discrepancy Indication Space										
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. Printed/Typed Name				Signature		Month		Day		Year

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8300; WITHIN CALIFORNIA, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8300

DO NOT WRITE BELOW THIS LINE.

Yellow: GENERATOR RETAINS

APPENDIX C

ANALYTICAL TEST REPORTS  
AND  
CHAIN-OF-CUSTODY RECORDS



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

A N A L Y T I C A L   R E P O R T

Prepared for:

Subsurface Consultants  
3736 Mt. Diablo Blvd.  
Suite 200  
Lafayette, CA 94549

Date: 17-MAY-99  
Lab Job Number: 139289  
Project ID: 133.009  
Location: KOT/9th Ave. Terminal

Reviewed by: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

This package may be reproduced only in its entirety.

# CHAIN OF CUSTODY FORM

134289


PROJECT NAME: 9th Ave Terminal, Oakland Ca  
 JOB NUMBER: 133009 LAB: Curtis & Tomkins  
 PROJECT CONTACT: Jeri Alexander TURNAROUND: Standard  
 SAMPLED BY: Stewart Dalie REQUESTED BY: Stewart

PAGE 1		ANALYSIS REQUESTED	
STEX (EPA 8015 m/EDD)			
TEHP, mcl, sds m/wge			
TDS (EPA 100.1)			
DOC's (EPA 9060)			
Heavy Metals (EPA 6010/700)			

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX					CONTAINERS					METHOD PRESERVED					SAMPLING DATE				NOTES
		WATER	SOIL	WASTE	AIR		VOA	LITER	PINT	TUBE	1 L Poly	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	ICE	NONE	MONTH	DAY	YEAR	TIME	
1	mw-5	X					X	X			X			X			5	07	99	0800	X
2	SCI MW-23	X					X	X		X			X				5	07	99	0900	X
3	SCI MW-2	X					X			X			X				5	07	99	0915	X

CHAIN OF CUSTODY RECORD			
RELEASED BY: (Signature) <i>John Wolfe</i>	DATE / TIME 5/7/99 1151	RECEIVED BY: (Signature) <i>[Signature]</i>	DATE / TIME 5/7/99 1151
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:  
 \* = w/ Silica gel wash  
 \* - Please fix & filter



**Subsurface Consultants, Inc.**  
 171 - 12th Street, Suite 202, Oakland, CA 94607  
 (510) 268-0461 - FAX: (510) 269-0137  
 3736 Mt. Diablo Blvd., Ste. 200, Lafayette, CA 94549  
 (925) 299-7960 - (925) 299-7970



## TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
139289-001	MW-5	47925	05/07/99	05/11/99	05/11/99	

Matrix: Water

Analyte	Units	139289-001
Diln Fac:		1
Gasoline C7-C12	ug/L	<50
Surrogate		
Trifluorotoluene	%REC	106
Bromofluorobenzene	%REC	104





Lab #: 139289

## BATCH QC REPORT

## TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M  
 Prep Method: EPA 5030

## METHOD BLANK

Matrix: Water  
 Batch#: 47925  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 05/10/99  
 Analysis Date: 05/10/99

MB Lab ID: QC97093

Analyte	Result	
Gasoline C7-C12	<50	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	101	53-150
Bromofluorobenzene	98	53-149



Lab #: 139289

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 5030
Location: KOT/9th Ave.Terminal	

LABORATORY CONTROL SAMPLE

Matrix: Water	Prep Date: 05/10/99
Batch#: 47925	Analysis Date: 05/10/99
Units: ug/L	
Diln Fac: 1	

LCS Lab ID: QC97090

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	1956	2000	98	77-117
Surrogate	%Rec	Limits		
Trifluorotoluene	107	53-150		
Bromofluorobenzene	117	53-149		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 139289

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 5030
Location: KOT/9th Ave.Terminal	

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: MW-5	Sample Date: 05/07/99
Lab ID: 139289-001	Received Date: 05/07/99
Matrix: Water	Prep Date: 05/10/99
Batch#: 47925	Analysis Date: 05/10/99
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC97135

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline C7-C12	2000	<50	2087	104	69-131
Surrogate	%Rec	Limits			
Trifluorotoluene	116	53-150			
Bromofluorobenzene	128	53-149			

MSD Lab ID: QC97136

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	2000	2094	105	69-131	0	13
Surrogate	%Rec	Limits				
Trifluorotoluene	114	53-150				
Bromofluorobenzene	128	53-149				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



## BTXE

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave Terminal

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
139289-001	MW-5	47925	05/07/99	05/11/99	05/11/99	

Matrix: Water

Analyte	Units	139289-001
Diln Fac:		1
Benzene	ug/L	<0.5
Toluene	ug/L	<0.5
ethylbenzene	ug/L	<0.5
m,p-Xylenes	ug/L	<0.5
o-Xylene	ug/L	<0.5
Surrogate		
Trifluorotoluene	%REC	92
Bromofluorobenzene	%REC	92



Lab #: 139289

## BATCH QC REPORT

## BTXE

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

## METHOD BLANK

Matrix: Water  
Batch#: 47925  
Units: ug/L  
Diln Fac: 1

Prep Date: 05/10/99  
Analysis Date: 05/10/99

MB Lab ID: QC97093

Analyte	Result
Benzene	<0.5
Toluene	<0.5
Ethylbenzene	<0.5
m,p-Xylenes	<0.5
o-Xylene	<0.5

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	86	51-143
Bromofluorobenzene	84	37-146

Lab #: 139289

BATCH QC REPORT



Curtis & Tompkins, Ltd.

Page 1 of 1

BTXE

Client: Subsurface Consultants	Analysis Method: EPA 8021B
Project#: 133.009	Prep Method: EPA 5030
Location: KOT/9th Ave.Terminal	

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 05/10/99
Batch#: 47925	Analysis Date: 05/10/99
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC97091

Analyte	Spike Added	BS	%Rec #	Limits
Benzene	20	16.84	84	65-111
Toluene	20	17.66	88	76-117
Ethylbenzene	20	17.51	88	71-121
m,p-Xylenes	40	36.8	92	80-123
o-Xylene	20	17.04	85	75-127
Surrogate			%Rec	Limits
Trifluorotoluene			85	51-143
Bromofluorobenzene			84	37-146

BSD Lab ID: QC97092

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Benzene	20	16.94	85	65-111	1	10
Toluene	20	17.76	89	76-117	1	10
Ethylbenzene	20	17.77	89	71-121	1	11
m,p-Xylenes	40	37.2	93	80-123	1	10
o-Xylene	20	17.2	86	75-127	1	11
Surrogate			%Rec	Limits		
Trifluorotoluene			85	51-143		
Bromofluorobenzene			85	37-146		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 5 outside limits

Recovery: 0 out of 10 outside limits



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8015M  
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
139289-001	MW-5	47940	05/07/99	05/10/99	05/12/99	
139289-002	SCIMW-23	47940	05/07/99	05/10/99	05/12/99	
139289-003	SCIMW-2	48001	05/07/99	05/12/99	05/13/99	

Matrix: Water

Analyte	Units	139289-001	139289-002	139289-003
Diln Fac:		1	1	1
Diesel C10-C24	ug/L	660	660 Y	10000
Motor Oil C24-C36	ug/L	<300	<300	1600 YL
Surrogate				
Hexacosane	%REC	69	68	58

Y: Sample exhibits fuel pattern which does not resemble standard  
L: Lighter hydrocarbons than indicated standard

# Chromatogram

Sample Name : 139289-001sg47940

FileName : C:\GC15\CHB\130B048.RAW

Method : B082TEH.MTH

Start Time : 0.01 min

Scan Factor : 0.0

End Time : 31.91 min

Plot Offset : 6 mV

Sample #: 47940

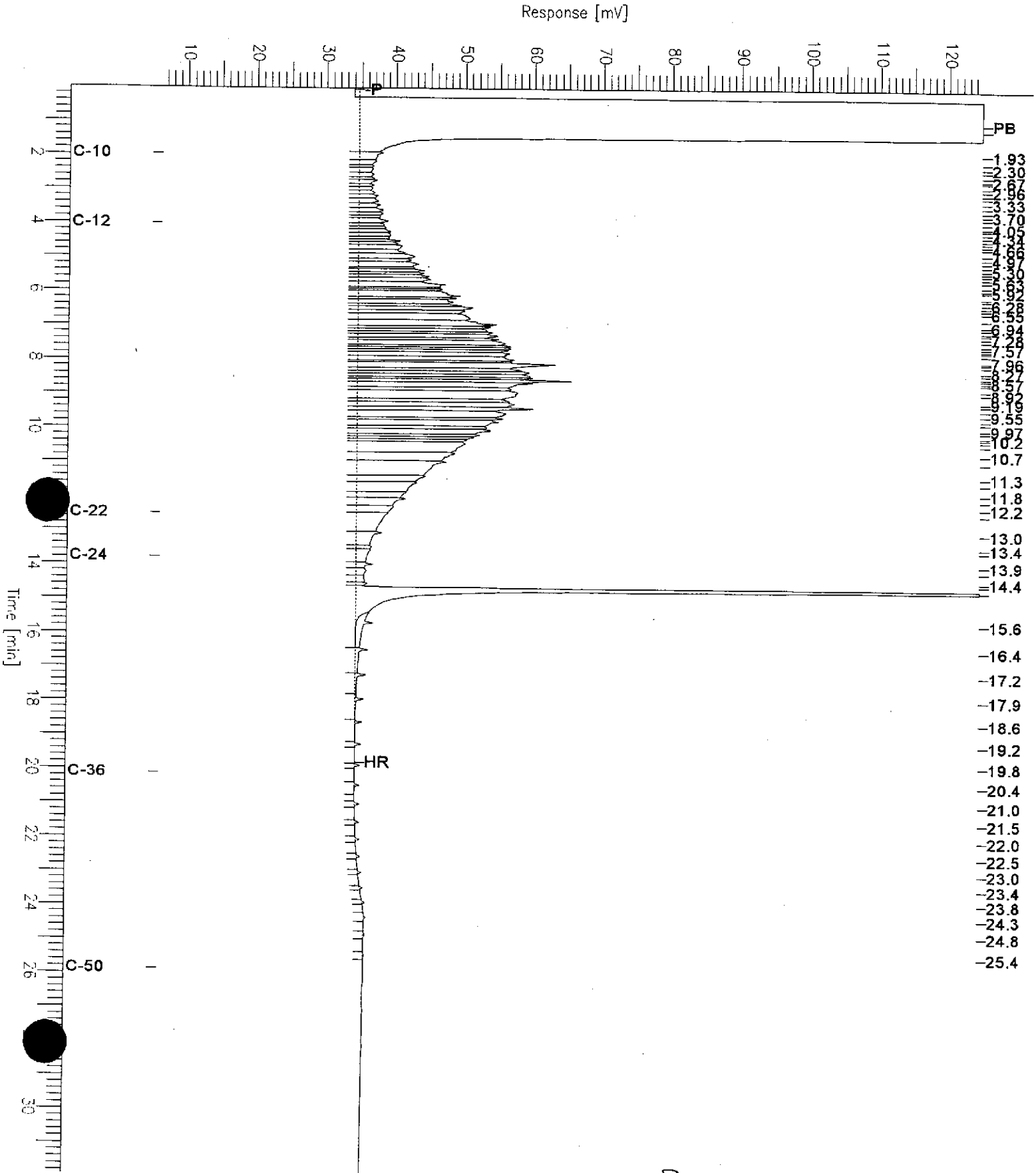
Date : 5/12/99 11:07 AM

Time of Injection: 5/12/99 02:33 AM

Low Point : 6.26 mV

Plot Scale : 118.5 mV

Page 1 of 1



MW-5



# Chromatogram

Sample Name : 139289-002sg,47940

FileName : C:\GC15\CHB\130B049.RAW

Method : B082TEH.MTH

Start Time : 0.01 min

Scan Factor: 0.0

End Time : 31.91 min

Plot Offset: 22 mV

Sample #: 47940

Date : 5/12/99 11:09 AM

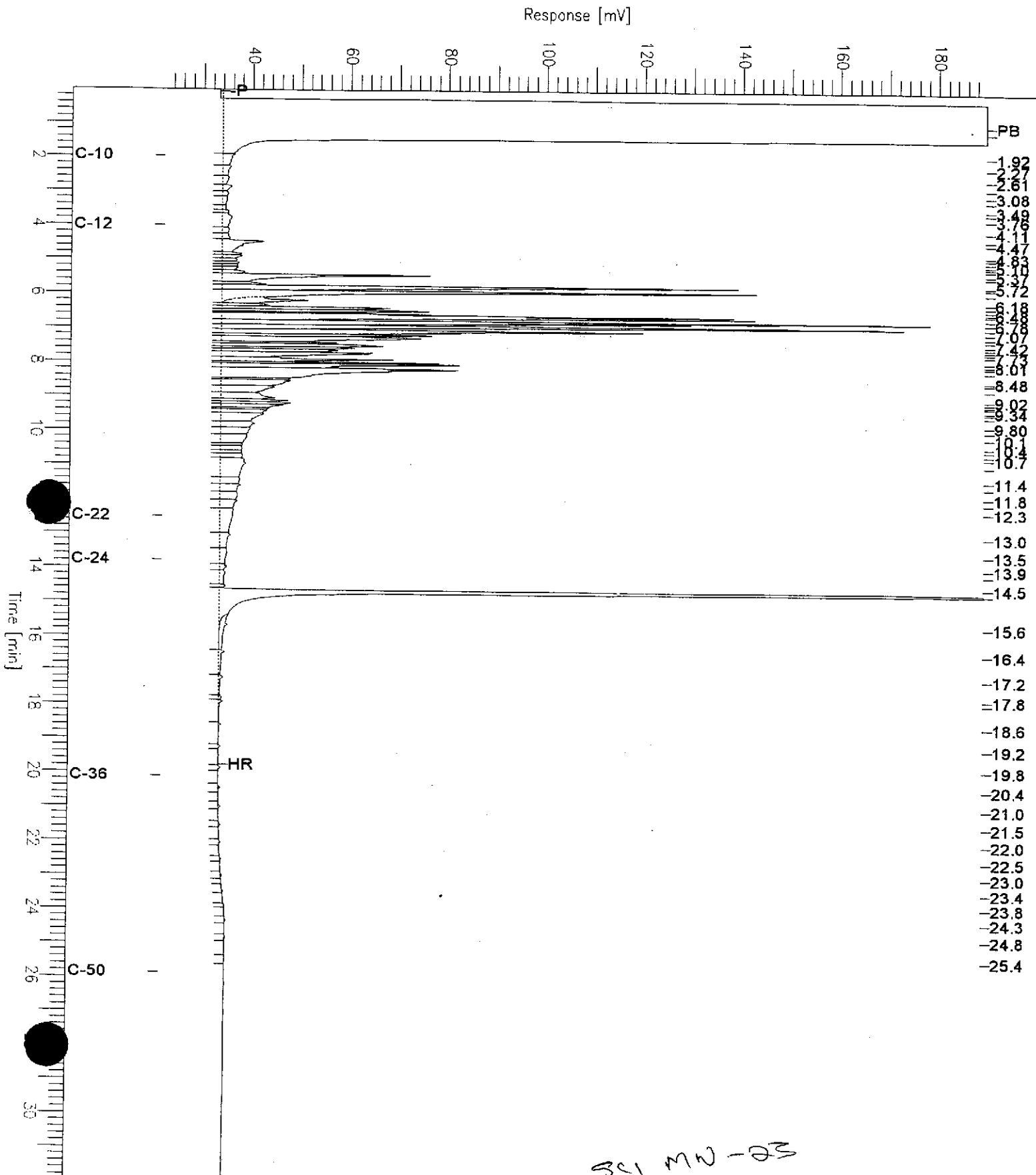
Time of Injection: 5/12/99 03:16 AM

Low Point : 22.04 mV

Plot Scale: 167.7 mV

Page 1 of 1

High Point : 189.71 mV



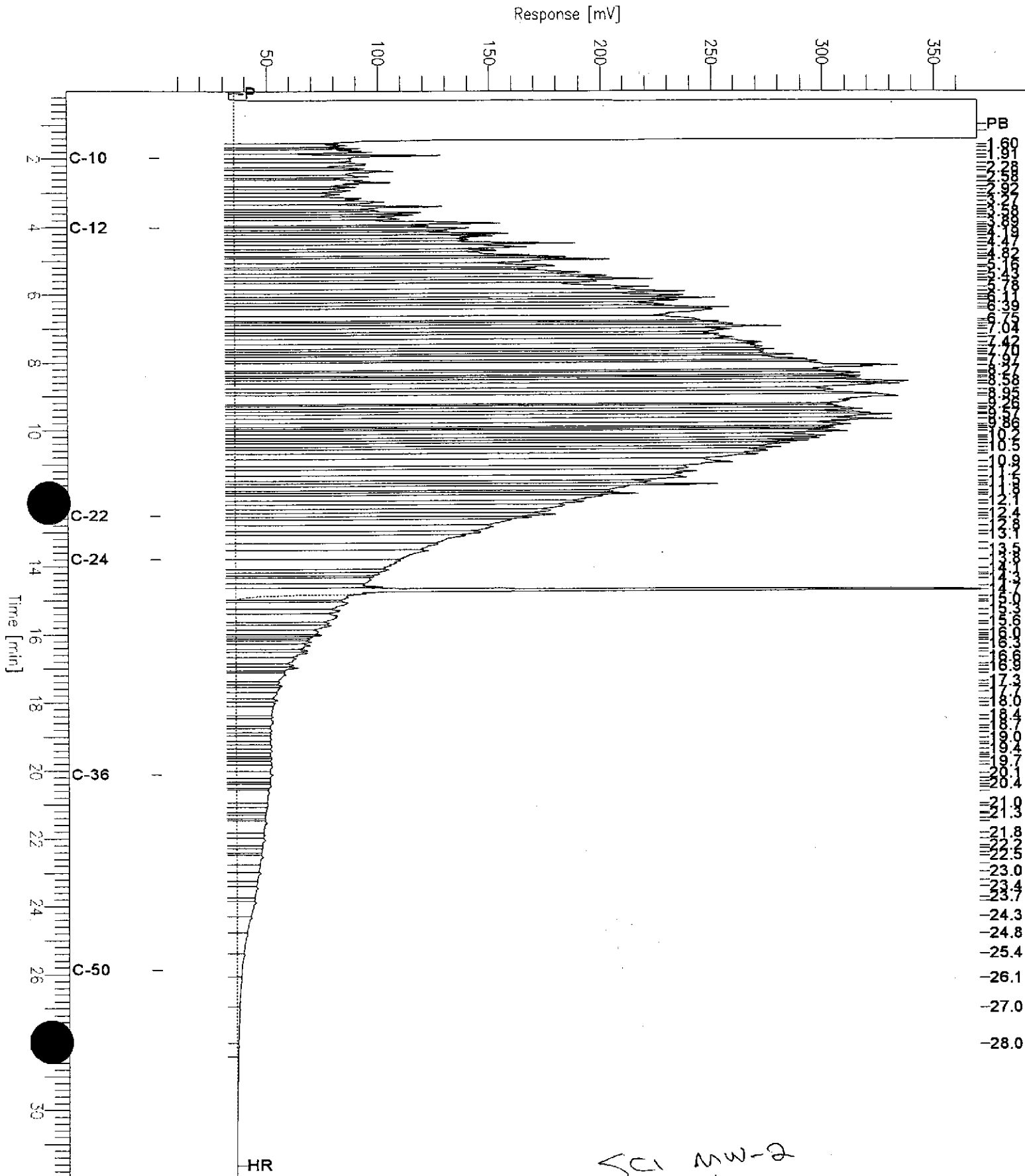
301 MW-23

# Chromatogram

Sample Name : 139289-003sg, 48001  
FileName : C:\GC15\CHB\1338008.RAW  
Method : B082TEH.MTH  
Start Time : 0.01 min  
Scale Factor : 0.0

End Time : 31.91 min  
Plot Offset : 1 mV

Sample #: 48001  
Date : 5/14/99 11:57 AM  
Time of Injection: 5/13/99 09:59 PM  
Low Point : 1.46 mV  
Plot Scale: 368.2 mV  
High Point : 369.63 mV



SCI MW-2



Lab #: 139289

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8015M  
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water  
Batch#: 47940  
Units: ug/L  
Diln Fac: 1

Prep Date: 05/10/99  
Analysis Date: 05/11/99

MB Lab ID: QC97153

Analyte	Result	
Diesel C10-C24	<50	
Motor Oil C24-C36	<300	
Surrogate	%Rec	Recovery Limits
Hexacosane	85	58-128

Lab #: 139289

BATCH QC REPORT



Curtis & Tompkins, Ltd.  
Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8015M  
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water  
Batch#: 48001  
Units: ug/L  
Diln Fac: 1

Prep Date: 05/12/99  
Analysis Date: 05/13/99

MB Lab ID: QC97353

Analyte	Result
Diesel C10-C24	<50
Motor Oil C24-C36	<300

Surrogate	%Rec	Recovery Limits
Hexacosane	85	58-128



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave.Terminal	

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 05/12/99
Batch#: 48001	Analysis Date: 05/13/99
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC97354

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C10-C24	2475	1800	73	50-114
Surrogate	%Rec	Limits		
Hexacosane	101	58-128		

BSD Lab ID: QC97355

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C10-C24	2475	1797	73	50-114	0	25
Surrogate	%Rec	Limits				
Hexacosane	100	58-128				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 05/10/99
Batch#: 47940	Analysis Date: 05/11/99
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC97154

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C10-C24	2475	1670	67	50-114
Surrogate	%Rec	Limits		
Hexacosane	79	58-128		

BSD Lab ID: QC97155

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C10-C24	2475	1683	68	50-114	1	25
Surrogate	%Rec	Limits				
Hexacosane	79	58-128				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

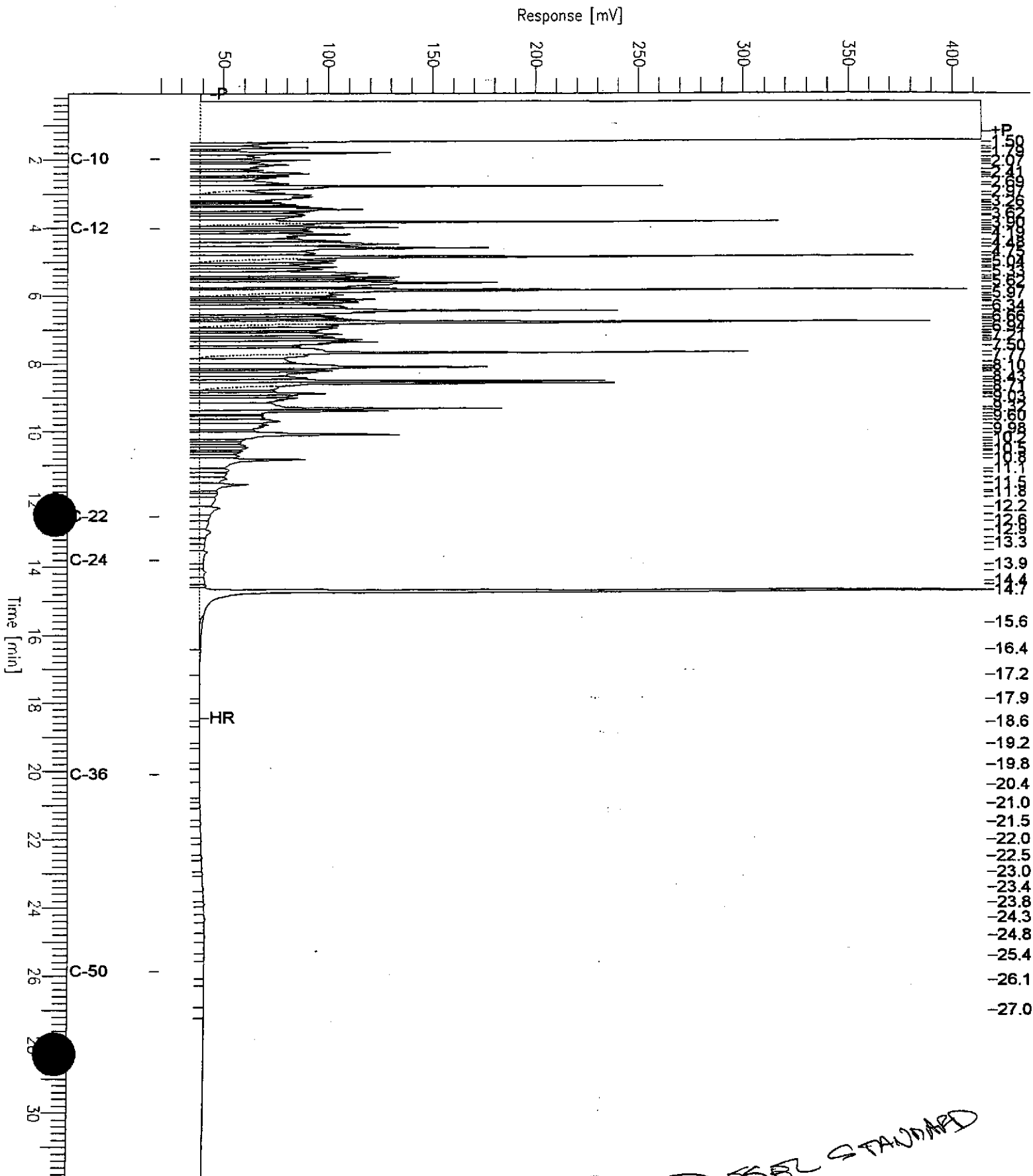
# Chromatogram

Sample Name : ccv,99ws7470,ds1  
FileName : C:\GC15\CHBN130B002.RAW  
Method : B082TEH.MTH  
Start Time : 0.05 min  
Scale Factor : 0.0

End Time : 31.91 min  
Plot Offset : 19 mV

Sample #: 500mg/l  
Date : 5/10/99 06:04 PM  
Time of Injection: 5/10/99 09:21 AM  
Low Point : 19.37 mV  
Plot Scale: 394.6 mV

Page 1 of 1



DIESEL STANDARD

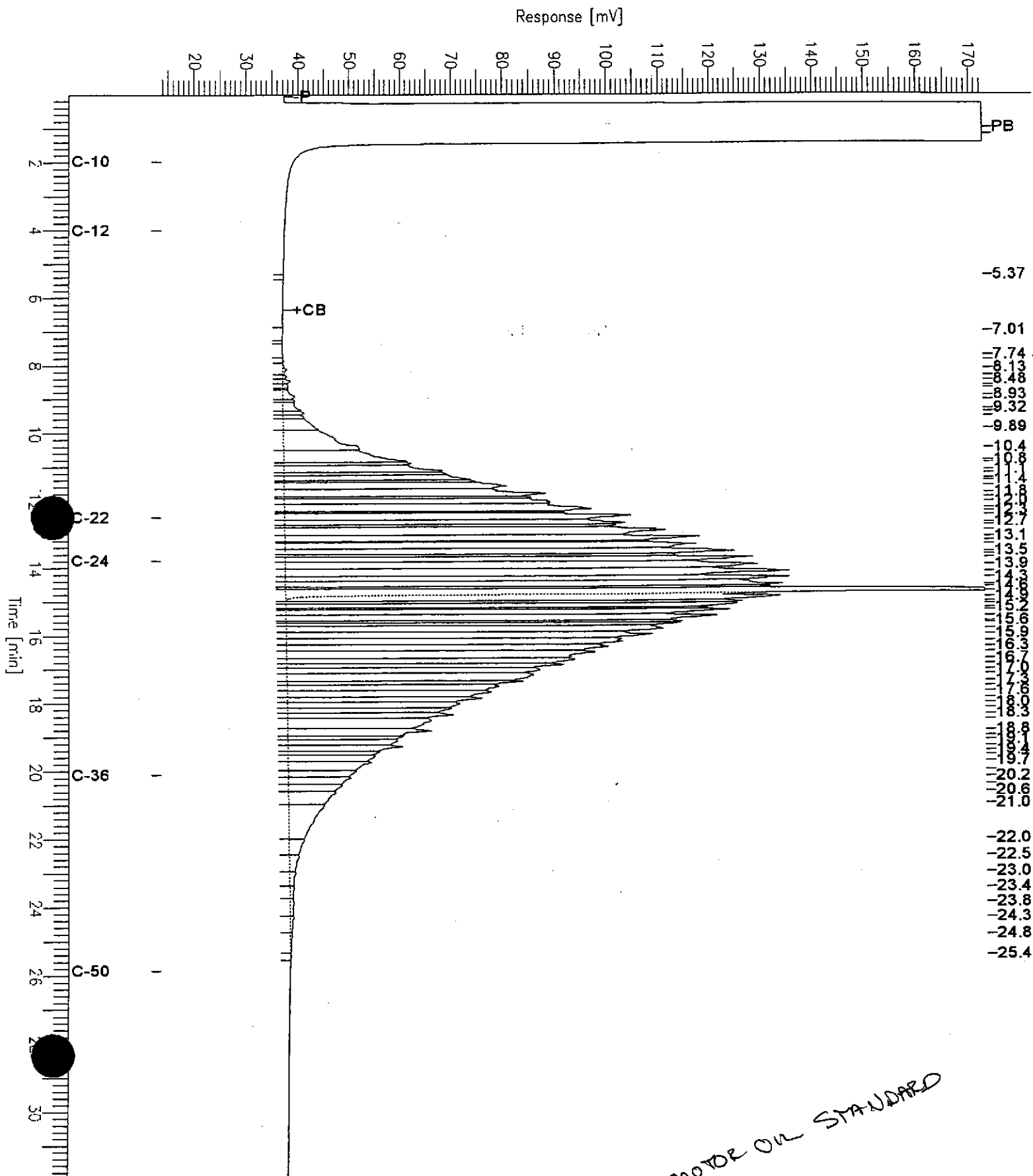
# Chromatogram

Sample Name : ccv,99ws7423,mo  
FileName : C:\GC15\CHB\130B003.RAW  
Method : B082TEH.MTH  
Start Time : 0.01 min  
Scan Rate : 0.0

End Time : 31.91 min  
Plot Offset: 14 mV

Sample #: 500mg/l  
Date : 5/10/99 06:05 PM  
Time of Injection: 5/10/99 10:04 AM  
Low Point : 13.75 mV  
High Point : 172.60 mV  
Plot Scale: 158.9 mV

Page 1 of 1



MOTOR OIL STANDARD





SAMPLE ID: SCIMW-2  
LAB ID: 139289-003  
CLIENT: Subsurface Consultants  
PROJECT ID: 133.009  
LOCATION: KOT/9th Ave. Terminal  
MATRIX: Filtrate

DATE SAMPLED: 05/07/99  
DATE RECEIVED: 05/07/99  
DATE REPORTED: 05/14/99

## California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	47911	EPA 6010A	05/10/99
Arsenic	11	5.0	1	47911	EPA 6010A	05/10/99
Barium	900	10	1	47911	EPA 6010A	05/10/99
Beryllium	ND	2.0	1	47911	EPA 6010A	05/10/99
Cadmium	ND	5.0	1	47911	EPA 6010A	05/10/99
Chromium (total)	ND	10	1	47911	EPA 6010A	05/10/99
Cobalt	ND	20	1	47911	EPA 6010A	05/10/99
Copper	ND	10	1	47911	EPA 6010A	05/10/99
Lead	ND	3.0	1	47911	EPA 6010A	05/10/99
Mercury	ND	0.20	1	48025	EPA 7470	05/13/99
Molybdenum	ND	20	1	47911	EPA 6010A	05/10/99
Nickel	ND	20	1	47911	EPA 6010A	05/10/99
Selenium	9.5	5.0	1	47911	EPA 6010A	05/10/99
Silver	ND	5.0	1	47911	EPA 6010A	05/10/99
Thallium	ND	5.0	1	47911	EPA 6010A	05/10/99
Vanadium	ND	10	1	47911	EPA 6010A	05/10/99
Zinc	24	20	1	47911	EPA 6010A	05/10/99

ND = Not detected at or above reporting limit

CLIENT: Subsurface Consultants  
JOB NUMBER: 139289

DATE REPORTED: 05/14/99

BATCH QC REPORT  
PREP BLANK

Compound	Result	Reporting Limit	Units	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	ug/L	1	47911	EPA 6010A	05/10/99
Arsenic	ND	5	ug/L	1	47911	EPA 6010A	05/10/99
Barium	ND	10	ug/L	1	47911	EPA 6010A	05/10/99
Beryllium	ND	2	ug/L	1	47911	EPA 6010A	05/10/99
Cadmium	ND	5	ug/L	1	47911	EPA 6010A	05/10/99
Chromium (total)	ND	10	ug/L	1	47911	EPA 6010A	05/10/99
Cobalt	ND	20	ug/L	1	47911	EPA 6010A	05/10/99
Copper	ND	10	ug/L	1	47911	EPA 6010A	05/10/99
Lead	ND	3	ug/L	1	47911	EPA 6010A	05/10/99
Mercury	ND	0.2	ug/L	1	48025	EPA 7470	05/13/99
Mercury	ND	2	ug/L	1	48025	EPA 7470	05/13/99
Molybdenum	ND	20	ug/L	1	47911	EPA 6010A	05/10/99
Nickel	ND	20	ug/L	1	47911	EPA 6010A	05/10/99
Selenium	ND	5	ug/L	1	47911	EPA 6010A	05/10/99
Silver	ND	5	ug/L	1	47911	EPA 6010A	05/10/99
Thallium	ND	5	ug/L	1	47911	EPA 6010A	05/10/99
Vanadium	ND	10	ug/L	1	47911	EPA 6010A	05/10/99
Zinc	ND	20	ug/L	1	47911	EPA 6010A	05/10/99

ND = Not Detected at or above reporting limit

CLIENT: Subsurface Consultants  
 JOB NUMBER: 139289

DATE REPORTED: 05/14/99

 BATCH QC REPORT  
 BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS% Rec.	BSD% Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Antimony	500	411	462	ug/L	82	92	80-120	12	35	47911	EPA 6010A	05/10/99
Arsenic	2000	1950	1930	ug/L	98	97	80-120	1	35	47911	EPA 6010A	05/10/99
Barium	2000	1990	1960	ug/L	100	98	80-120	2	35	47911	EPA 6010A	05/10/99
Beryllium	50	48.9	47.8	ug/L	98	96	80-120	2	35	47911	EPA 6010A	05/10/99
Cadmium	50	47.7	46.9	ug/L	95	94	80-120	2	35	47911	EPA 6010A	05/10/99
Chromium (total)	200	193	189	ug/L	97	95	80-120	2	35	47911	EPA 6010A	05/10/99
Cobalt	500	488	476	ug/L	98	95	80-120	3	35	47911	EPA 6010A	05/10/99
Copper	250	248	245	ug/L	99	98	80-120	1	35	47911	EPA 6010A	05/10/99
Lead	500	458	452	ug/L	92	90	80-120	1	35	47911	EPA 6010A	05/10/99
Mercury	5	5.01	4.985	ug/L	100	100	80-120	1	35	48025	EPA 7470	05/13/99
Molybdenum	400	393	388	ug/L	98	97	80-120	1	35	47911	EPA 6010A	05/10/99
Nickel	500	495	481	ug/L	99	96	80-120	3	35	47911	EPA 6010A	05/10/99
Selenium	2000	1950	1930	ug/L	98	97	80-120	1	35	47911	EPA 6010A	05/10/99
Silver	100	101	100	ug/L	101	100	80-120	1	35	47911	EPA 6010A	05/10/99
Gallium	2000	1900	1890	ug/L	95	95	80-120	1	35	47911	EPA 6010A	05/10/99
Vanadium	500	487	478	ug/L	97	96	80-120	2	35	47911	EPA 6010A	05/10/99
Zinc	500	492	480	ug/L	98	96	80-120	3	35	47911	EPA 6010A	05/10/99

CLIENT: Subsurface Consultants  
 JOB NUMBER: 139289

DATE REPORTED: 05/14/99

 BATCH QC REPORT  
 SAMPLE DUPLICATE

Compound	Sample	Sample Result	Duplicate Result	Units	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Antimony	139256-001	<60.000	<60.000	ug/L	NC	20	47911	EPA 6010A	05/10/99
Arsenic	139256-001	16300	16500	ug/L	1	20	47911	EPA 6010A	05/10/99
Barium	139256-001	67.4	69.2	ug/L	3	20	47911	EPA 6010A	05/10/99
Beryllium	139256-001	<2.000	<2.000	ug/L	NC	20	47911	EPA 6010A	05/10/99
Cadmium	139256-001	<5.000	<5.000	ug/L	NC	20	47911	EPA 6010A	05/10/99
Chromium (total)	139256-001	<10.000	<10.000	ug/L	NC	20	47911	EPA 6010A	05/10/99
Cobalt	139256-001	<20.000	<20.000	ug/L	NC	20	47911	EPA 6010A	05/10/99
Copper	139256-001	<10.000	<10.000	ug/L	NC	20	47911	EPA 6010A	05/10/99
Lead	139256-001	<3.000	<3.000	ug/L	NC	20	47911	EPA 6010A	05/10/99
Mercury	139282-004	<0.200	<0.200	ug/L	NC	20	48025	EPA 7470	05/13/99
Mercury	139344-001	<2.247	<2.247	ug/L	NC	20	48025	EPA 7470	05/13/99
Molybdenum	139256-001	21.5	20.3	ug/L	6	20	47911	EPA 6010A	05/10/99
Nickel	139256-001	<20.000	<20.000	ug/L	NC	20	47911	EPA 6010A	05/10/99
Selenium	139256-001	<5.000	<5.000	ug/L	NC	20	47911	EPA 6010A	05/10/99
Silver	139256-001	<5.000	<5.000	ug/L	NC	20	47911	EPA 6010A	05/10/99
Thallium	139256-001	<5.000	<5.000	ug/L	NC	20	47911	EPA 6010A	05/10/99
Vanadium	139256-001	<10.000	<10.000	ug/L	NC	20	47911	EPA 6010A	05/10/99
Zinc	139256-001	<20.000	<20.000	ug/L	NC	20	47911	EPA 6010A	05/10/99

NC = Not Calculable

CLIENT: Subsurface Consultants  
 JOB NUMBER: 139289

DATE REPORTED: 05/14/99

 BATCH QC REPORT  
 SAMPLE SPIKE

Compound	Spike Amount	Sample	Sample Result	Spike Result	Units	Percent Rec.	Rec. Limit	QC Batch	Method	Analysis Date
Antimony	500	139256-001	<60.000	332	ug/L	66	65-135	47911	EPA 6010A	05/10/99
Arsenic	2000	139256-001	16300	18300	ug/L	100 NM	65-135	47911	EPA 6010A	05/10/99
Barium	2000	139256-001	67.4	2060	ug/L	100	65-135	47911	EPA 6010A	05/10/99
Beryllium	50	139256-001	<2.000	49.8	ug/L	100	65-135	47911	EPA 6010A	05/10/99
Cadmium	50	139256-001	<5.000	49.9	ug/L	100	65-135	47911	EPA 6010A	05/10/99
Chromium (total)	200	139256-001	<10.000	189	ug/L	95	65-135	47911	EPA 6010A	05/10/99
Cobalt	500	139256-001	<20.000	474	ug/L	95	65-135	47911	EPA 6010A	05/10/99
Copper	250	139256-001	<10.000	240	ug/L	96	65-135	47911	EPA 6010A	05/10/99
Lead	500	139256-001	<3.000	463	ug/L	93	65-135	47911	EPA 6010A	05/10/99
Mercury	5	139282-004	<0.200	4.884	ug/L	98	65-135	48025	EPA 7470	05/13/99
Mercury	50	139344-001	<2.247	57.15	ug/L	102	65-135	48025	EPA 7470	05/13/99
Molybdenum	400	139256-001	21.5	408	ug/L	97	65-135	47911	EPA 6010A	05/10/99
Nickel	500	139256-001	<20.000	491	ug/L	98	65-135	47911	EPA 6010A	05/10/99
Selenium	2000	139256-001	<5.000	2200	ug/L	110	65-135	47911	EPA 6010A	05/10/99
Silver	100	139256-001	<5.000	68.1	ug/L	68	65-135	47911	EPA 6010A	05/10/99
Thallium	2000	139256-001	<5.000	1980	ug/L	99	65-135	47911	EPA 6010A	05/10/99
Vanadium	500	139256-001	<10.000	483	ug/L	97	65-135	47911	EPA 6010A	05/10/99
Zinc	500	139256-001	<20.000	510	ug/L	102	65-135	47911	EPA 6010A	05/10/99

NM = Not Meaningful



Dissolved Organic Carbon (DOC)

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave.Terminal

Analysis Method: EPA 415.2  
Prep Method: EPA 415.2

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
139289-002	SCIMW-23	47962	07-MAY-99	11-MAY-99	-
139289-003	SCIMW-2	47962	07-MAY-99	11-MAY-99	-
QC97237	Method Blank	47962	-	11-MAY-99	-

Analyte: Dissolved Organic Carbon

Matrix: Water

Units: mg/L

Sample #	Client ID	Result	Reporting Limit	Dilution Factor
139289-002	SCIMW-23	11	1.0	1
139289-003	SCIMW-2	9.9	1.0	1
QC97237	Method Blank	ND	1.0	1

ND = None Detected at or above Reporting Limit

**Dissolved Organic Carbon (DOC)**

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave.Terminal

Analysis Method: EPA 415.2  
Prep Method: EPA 415.2

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
QC97238	Lab Control Sample	47962	-	11-MAY-99	-

Analyte: Dissolved Organic Carbon      Matrix: Water      Units: mg/L

Sample #	Sample Type	Spike Amt.	Result	%Recovery	Limits
QC97238	Lab Control Sample	10.00	9.500	95	80-120



**Total Dissolved Solids (TDS)**

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave.Terminal

Analysis Method: EPA 160.1  
Prep Method: EPA 160.1

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
139289-002	SCIMW-23	47929	07-MAY-99	10-MAY-99	-
139289-003	SCIMW-2	47929	07-MAY-99	10-MAY-99	-
QC97104	Method Blank	47929	-	10-MAY-99	-

Analyte: Total Dissolved Solids                      Matrix: Water                      Units: mg/L

Sample #	Client ID	Result	Reporting Limit	Dilution Factor
139289-002	SCIMW-23	210	10	1
139289-003	SCIMW-2	4710	50	5
QC97104	Method Blank	ND	10	1

ND = None Detected at or above Reporting Limit



**Total Dissolved Solids (TDS)**

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave.Terminal

Analysis Method: EPA 160.1  
Prep Method: EPA 160.1

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
QC97105	SDUP of 139291-007	47929	05-MAY-99	10-MAY-99	-

Analyte: Total Dissolved Solids      Matrix: Water      Units: mg/L

Sample #	Sample Type	Result	%RPD	Limit
QC97105	SDUP of 139291-007	53600	11	25
139291-007	ZZZZZZZZ	59800		



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

A N A L Y T I C A L   R E P O R T

Prepared for:

Subsurface Consultants  
3736 Mt. Diablo Blvd.  
Suite 200  
Lafayette, CA 94549

Date: 17-MAY-99  
Lab Job Number: 139314  
Project ID: 133.009  
Location: KOT/9th Ave. Terminal

Reviewed by: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

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# CHAIN OF CUSTODY FORM

139314

PAGE 1

PROJECT NAME: 9th Ave Terminal Oakland Ca  
 JOB NUMBER: 133009 LAB: Curtis & Tonkows  
 PROJECT CONTACT: Seri Alexander TURNAROUND: Standard  
 SAMPLED BY: Stewart REQUESTED BY: Stewart Declue

ANALYSIS REQUESTED

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS			METHOD PRESERVED					SAMPLING DATE				NOTES	
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H2SO4	HNO3	ICE	NONE	MONTH	DAY	YEAR		TIME
	SCI1W-5	X				X	2						X		05	10	99	0800	X

X TERA, mo (8015 m), w/gel

CHAIN OF CUSTODY RECORD			
RELEASED BY: (Signature) <i>Stewart Declue</i>	DATE / TIME 11/05	RELEASED BY: (Signature) <i>Stewart Declue</i>	DATE / TIME 11/05
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:  
 (\*) w/ silica gel wash

**Subsurface Consultants, Inc.**  
 171 - 12th Street, Suite 202, Oakland, CA 94607  
 (510) 268-0461 - FAX: (510) 268-0137  
 3736 Mt. Diablo Blvd., Ste. 200, Lafayette, CA 94549  
 (925) 299-7960 - (925) 299-7970



## TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8015M  
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
139314-001	SCIMW-5	48001	05/10/99	05/12/99	05/13/99	

Matrix: Water

Analyte	Units	139314-001
Diln Fac:		1
Diesel C10-C24	ug/L	<50
Motor Oil C24-C36	ug/L	<300
Surrogate		
Hexacosane	%REC	85



Lab #: 139314

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M  
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water  
Batch#: 48001  
Units: ug/L  
Diln Fac: 1

Prep Date: 05/12/99  
Analysis Date: 05/13/99

MB Lab ID: QC97353

Analyte	Result	
Diesel C10-C24	<50	
Motor Oil C24-C36	<300	
Surrogate	%Rec	Recovery Limits
Hexacosane	85	58-128



Lab #: 139314

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave.Terminal	

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 05/12/99
Batch#: 48001	Analysis Date: 05/13/99
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC97354

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C10-C24	2475	1800	73	50-114
Surrogate	%Rec	Limits		
Hexacosane	101	58-128		

BSD Lab ID: QC97355

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C10-C24	2475	1797	73	50-114	0	25
Surrogate	%Rec	Limits				
Hexacosane	100	58-128				

# Column to be used to flag recovery and RPD values with an asterisk  
 \* Values outside of QC limits  
 RPD: 0 out of 1 outside limits  
 Spike Recovery: 0 out of 2 outside limits



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

A N A L Y T I C A L   R E P O R T

Prepared for:

Subsurface Consultants  
3736 Mt. Diablo Blvd.  
Suite 200  
Lafayette, CA 94549

Date: 20-MAY-99  
Lab Job Number: 139258  
Project ID: 133.009  
Location: KOT/9th Ave. Terminal

Reviewed by: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

This package may be reproduced only in its entirety.

129258

# CHAIN OF CUSTODY FORM

PROJECT NAME: 9<sup>th</sup> Avenue Terminal, Oakland Ca  
 JOB NUMBER: 133.009 Task 3B LAB: CUSTO + Sampling  
 PROJECT CONTACT: Jeri Alexander TURNAROUND: Standard  
 SAMPLED BY: Gahn Wolfe / Stewart Dalie REQUESTED BY: Stewart Dalie / JTW

ANALYSIS REQUESTED	
TEH d.m.o.f Silica Gel	
TAS	
TVH / BTEX	
Lead 6090/7000	
DOC EPA 9060	
TDS EPA 801	
VOCs	
Pesticides 8080	

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS					METHOD PRESERVED					SAMPLING DATE				NOTES
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	Leaky	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	ICE	NONE	MONTH	DAY	YEAR	TIME	
1	SCI MW-14	X					2							X		5	04	99	1415	X
2	SCI MW-15	X					2							X		5	04	99	1415	X
3	SCI MW-16	X					2							X		5	05	99	0700	X
4	SCI MW-35	X					2		90					X		5	05	99	0800	X
5	*** SCI MW-34	X				6	2		90		X	X		X		5	05	99	0830	X
6	SCI MW-21	X				3	2				X			X		5	05	99	1030	X
7	SCI MW-30	X				3	2				X			X		5	05	99	1130	X
8	SCI MW-33	X				3	2				X			X		5	05	99	1200	X

CHAIN OF CUSTODY RECORD			
RELEASED BY: (Signature) <i>[Signature]</i>	DATE / TIME 5/5/99 2:10	RECEIVED BY: (Signature) <i>[Signature]</i>	DATE / TIME 5/5/99 2:10
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:  
 \* Note silica gel  
 \*\* Fix and Filter on Labs  
 \*\*\* VOA's foaming / effervescing reaction

**SCI** Subsurface Consultants, Inc.  
 171 - 12th Street, Suite 202, Oakland, CA 94607  
 (510) 268-0461 - FAX: (510) 268-0137  
 3736 Mt. Diablo Blvd., Ste. 200, Lafayette, CA 94549  
 (925) 299-7960 - (925) 299-7970





TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
139258-005	SCI MW-34	47873	05/05/99	05/07/99	05/07/99	

Matrix: Water

Analyte	Units	139258-005
Diln Fac:		1
Gasoline C7-C12	ug/L	91
Surrogate		
Trifluorotoluene	%REC	83
Bromofluorobenzene	%REC	101

# GC19 TVH 'X' Data File (FID)

Sample Name : 139258-005,47873

File Name : G:\GC19\DATA\126X019.raw

Method : TVHBTXE

Start Time : 0.00 min

Scale Factor: -1.0

End Time : 26.80 min

Plot Offset: 5 mV

Sample #:

Date : 5/7/99 02:24 AM

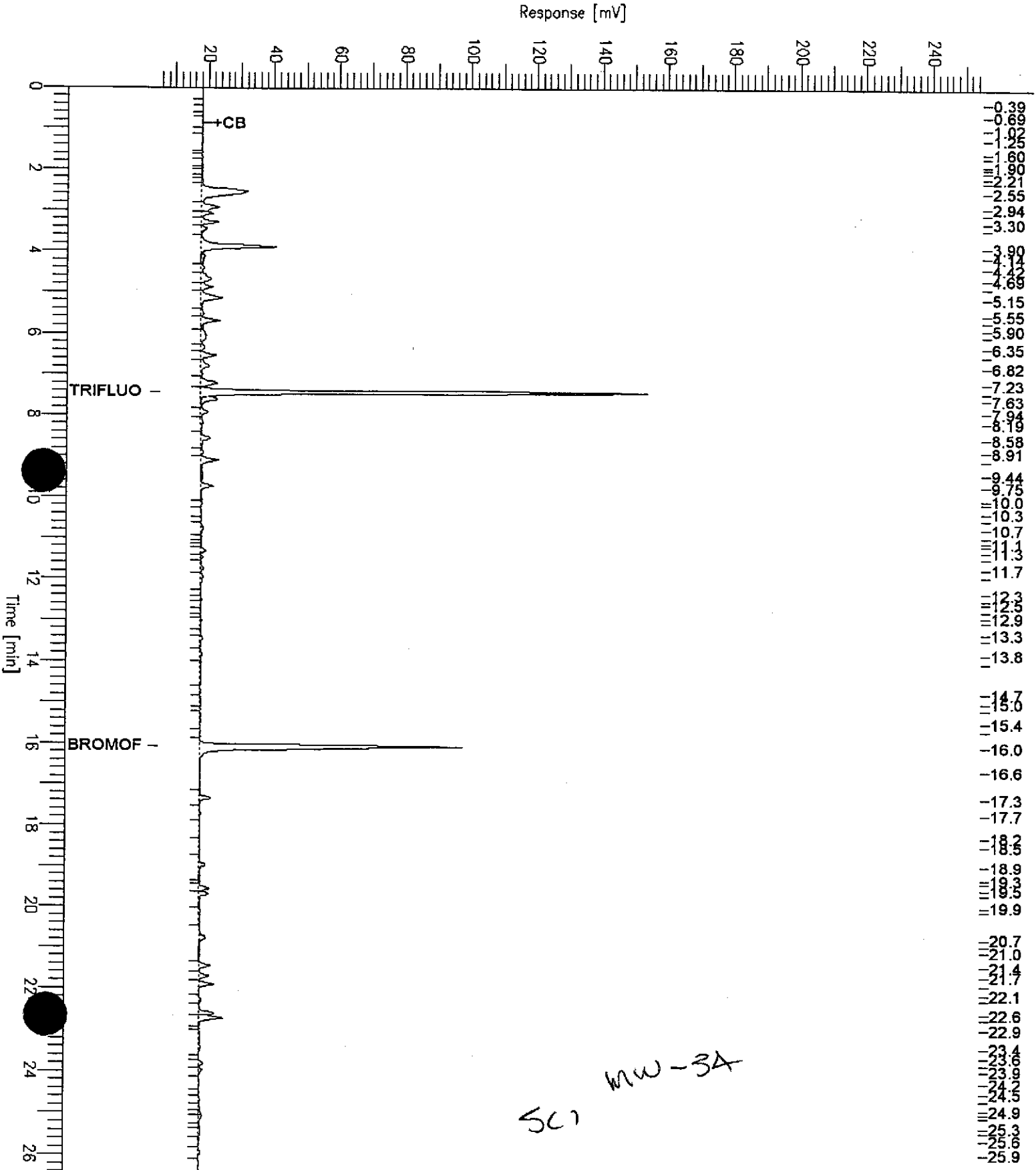
Time of Injection: 5/7/99 01:56 AM

Low Point : 5.26 mV

Plot Scale: 250.0 mV

Page 1 of 1

High Point : 255.26 mV



SC1 MW-3A



Lab #: 139258

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 5030
Location: KOT/9th Ave.Terminal	

METHOD BLANK

Matrix: Water	Prep Date: 05/06/99
Batch#: 47873	Analysis Date: 05/06/99
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC96897

Analyte	Result	
Gasoline C7-C12	<50	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	77	53-150
Bromofluorobenzene	75	53-149



Lab #: 139258

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 5030
Location: KOT/9th Ave. Terminal	

LABORATORY CONTROL SAMPLE

Matrix: Water	Prep Date: 05/06/99
Batch#: 47873	Analysis Date: 05/06/99
Units: ug/L	
Diln Fac: 1	

LCS Lab ID: QC96895

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	1871	2000	94	77-117
Surrogate	%Rec	Limits		
Trifluorotoluene	106	53-150		
Bromofluorobenzene	114	53-149		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

# GC19 TVH 'X' Data File (FID)

Sample Name : CCV/LCS, QC96895, 99WS7368, 47873

Sample #: GAS

Page 1 of 1

FileName : G:\GC19\DATA\126X001.raw

Date : 5/6/99 02:19 PM

Method : TVHBTXE

Time of Injection: 5/6/99 01:52 PM

Start Time : 0.00 min

End Time : 26.80 min

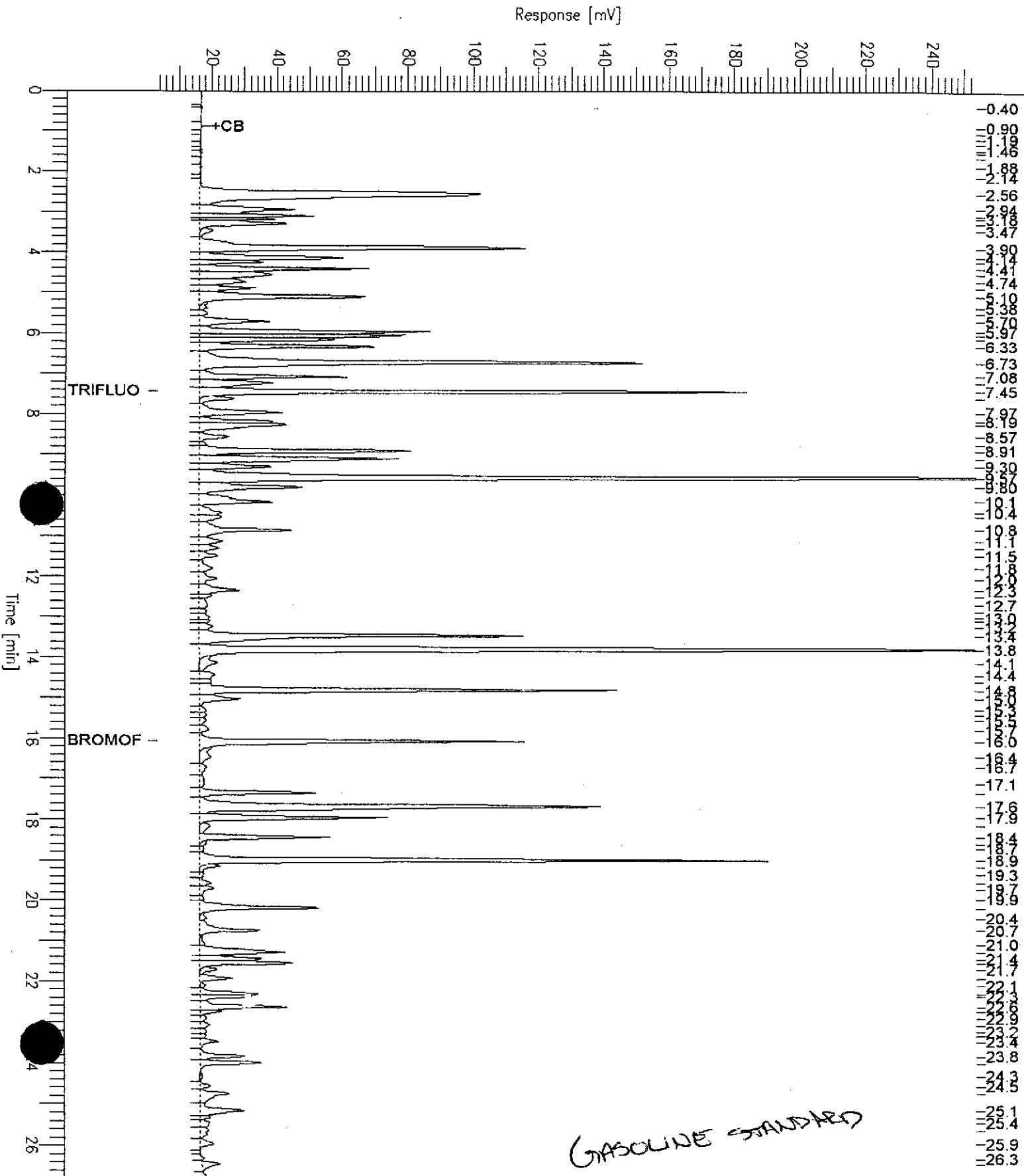
Low Point : 3.86 mV

High Point : 253.80 mV

Scale Factor: -1.0

Plot Offset: 4 mV

Plot Scale: 250.0 mV





BTXE

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
139258-005	SCI MW-34	47873	05/05/99	05/07/99	05/07/99	

Matrix: Water

Analyte	Units	139258-005
Diln Fac:		1
Benzene	ug/L	<0.5
Toluene	ug/L	<0.5
Ethylbenzene	ug/L	<0.5
m,p-Xylenes	ug/L	<0.5
o-Xylene	ug/L	<0.5
Surrogate		
Trifluorotoluene	%REC	72
Bromofluorobenzene	%REC	80



Lab #: 139258

BATCH QC REPORT

BTXE

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water  
Batch#: 47873  
Units: ug/L  
Diln Fac: 1

Prep Date: 05/06/99  
Analysis Date: 05/06/99

MB Lab ID: QC96897

Analyte	Result		
Benzene	<0.5		
Toluene	<0.5		
Ethylbenzene	<0.5		
m,p-Xylenes	<0.5		
o-Xylene	<0.5		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	65		51-143
Bromofluorobenzene	67		37-146



Lab #: 139258

BATCH QC REPORT

BTXE

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water  
Batch#: 47873  
Units: ug/L  
Diln Fac: 1

Prep Date: 05/06/99  
Analysis Date: 05/06/99

LCS Lab ID: QC96896

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	14.39	20	72	65-111
Toluene	15.6	20	78	76-117
Ethylbenzene	15.84	20	79	71-121
m,p-Xylenes	32.88	40	82	80-123
o-Xylene	15.16	20	76	75-127
Surrogate			%Rec	Limits
Trifluorotoluene			70	51-143
Bromofluorobenzene			72	37-146

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits





Lab #: 139258

BATCH QC REPORT

BTXE	
Client: Subsurface Consultants	Analysis Method: EPA 8021B
Project#: 133.009	Prep Method: EPA 5030
Location: KOT/9th Ave. Terminal	
MATRIX SPIKE/MATRIX SPIKE DUPLICATE	
Field ID: ZZZZZZ	Sample Date: 05/05/99
Lab ID: 139235-003	Received Date: 05/05/99
Matrix: Water	Prep Date: 05/06/99
Batch#: 47873	Analysis Date: 05/06/99
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC96898

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Benzene	20	0.72	22.79	110	55-122
Toluene	20	0.77	21.88	106	63-139
Ethylbenzene	20	63.02	77	70	61-137
m,p-Xylenes	40	43.82	81.44	94	57-148
o-Xylene	20	<0.5	19.79	99	70-141
Surrogate	%Rec	Limits			
Trifluorotoluene	91	51-143			
Bromofluorobenzene	98	37-146			

MSD Lab ID: QC96899

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Benzene	20	21.99	106	55-122	4	10
Toluene	20	21.84	105	63-139	0	10
Ethylbenzene	20	75.22	61	61-137	2	10
m,p-Xylenes	40	80.14	91	57-148	2	10
o-Xylene	20	19.82	99	70-141	0	10
Surrogate	%Rec	Limits				
Trifluorotoluene	89	51-143				
Bromofluorobenzene	97	37-146				

# Column to be used to flag recovery and RPD values with an asterisk  
 Values outside of QC limits  
 RPD: 0 out of 5 outside limits  
 Spike Recovery: 0 out of 10 outside limits



## TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M  
 Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
139258-001	SCI MW-14	47912	05/04/99	05/07/99	05/10/99	
139258-002	SCI MW-15	47912	05/04/99	05/07/99	05/11/99	
139258-003	SCI MW-16	47912	05/05/99	05/07/99	05/11/99	
139258-004	SCI MW-35	47912	05/05/99	05/07/99	05/11/99	

Matrix: Water

Analyte	Units	139258-001	139258-002	139258-003	139258-004
Diln Fac:		1	1	1	1
Diesel C10-C24	ug/L	<50	75 YLH	<50	<50
Motor Oil C24-C36	ug/L	<300	<300	<300	<300
Surrogate					
Hexacosane	%REC	70	80	99	87

- Y: Sample exhibits fuel pattern which does not resemble standard  
 H: Heavier hydrocarbons than indicated standard  
 L: Lighter hydrocarbons than indicated standard

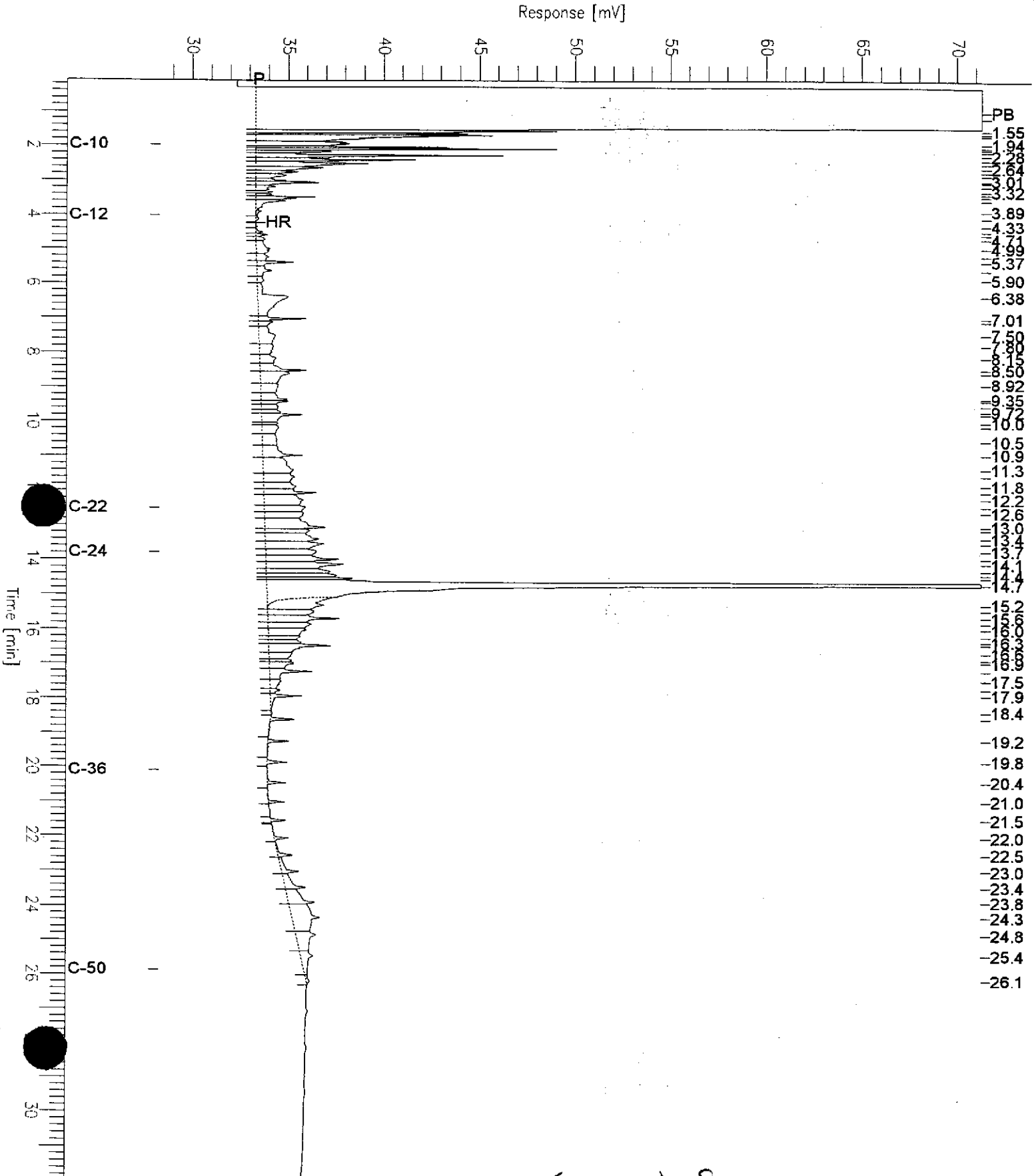
# Chromatogram

Sample Name : 139258-002.sg,47912  
FileName : C:\GC15\CHB\130B034.RAW  
Method :  
Start Time : 0.09 min  
Scan Factor : 0.0

End Time : 31.91 min  
Plot Offset : 28 mV

Sample #: 47912  
Date : 5/12/99 11:42 AM  
Time of Injection: 5/11/99 04:33 PM  
Low Point : 28.30 mV  
High Point : 71.28 mV  
Plot Scale : 43.0 mV

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## TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M  
 Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
139258-005	SCI MW-34	47912	05/05/99	05/07/99	05/10/99	
139258-006	SCI MW-22	47912	05/05/99	05/07/99	05/11/99	
139258-007	SCI MW-30	47912	05/05/99	05/07/99	05/11/99	
139258-008	SCI MW-33	47912	05/05/99	05/07/99	05/11/99	

Matrix: Water

Analyte	Units	139258-005	139258-006	139258-007	139258-008
Diln Fac:		1	1	1	1
Diesel C10-C24	ug/L	<50	<50	<50	1100 H
Motor Oil C24-C36	ug/L	<300	<300	<300	<300
Surrogate					
Hexacosane	%REC	77	79	97	89

H: Heavier hydrocarbons than indicated standard

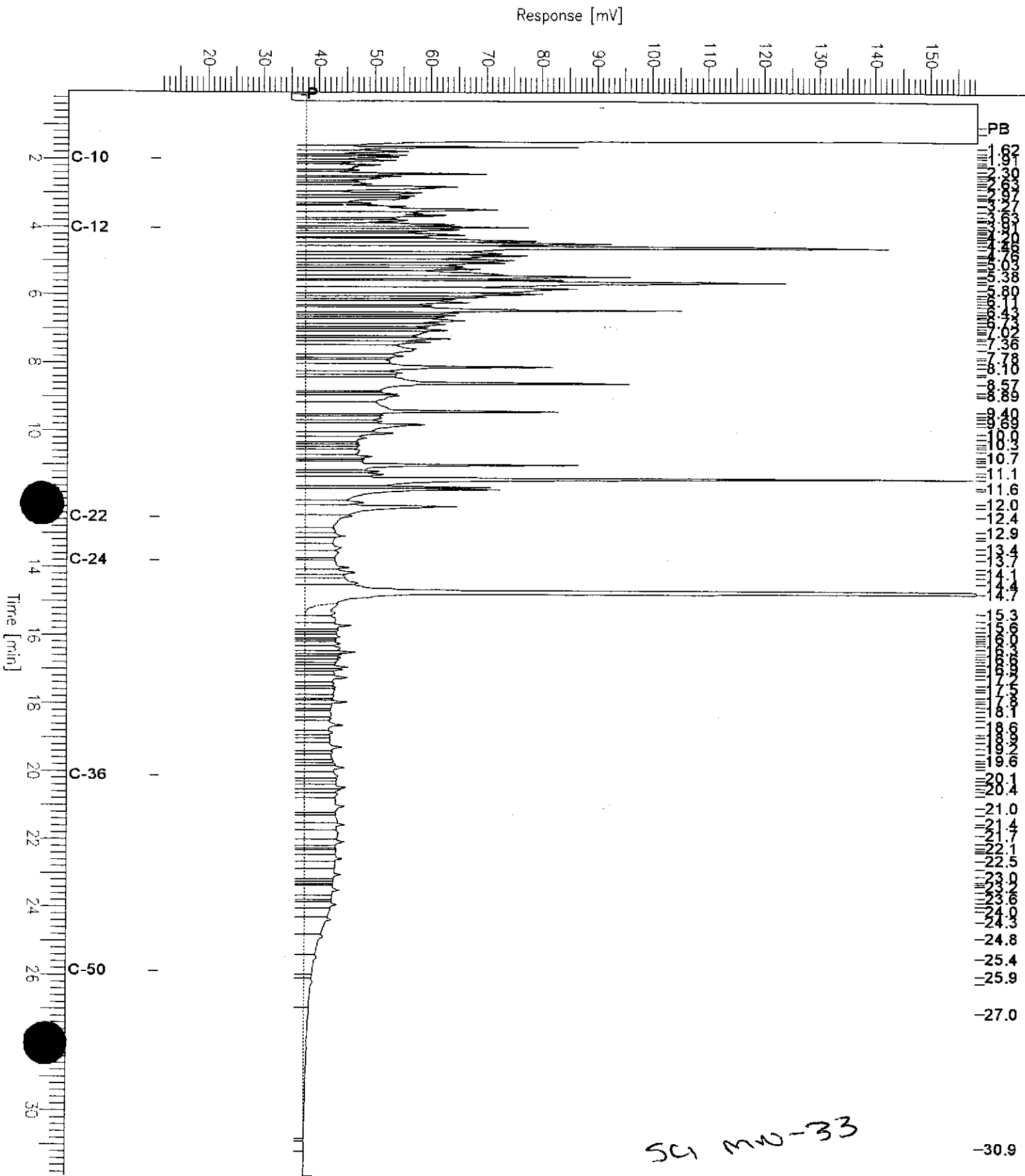
# Chromatogram

Sample Name : 139258-008sg,47912  
FileName : C:\GC15\CHB\130B015.RAW  
Method : B082TEH.MTH  
Sample Time : 0.01 min  
Scale Factor: 0.0

End Time : 31.91 min  
Plot Offset: 11 mV

Sample #: 47912  
Date : 5/11/99 11:15 AM  
Time of Injection: 5/11/99 12:52 AM  
Low Point : 11.36 mV  
Plot Scale: 147.1 mV  
High Point : 158.45 mV

Page 1 of 1





Lab #: 139258

BATCH QC REPORT

Page 1 of 1

## TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M  
 Prep Method: EPA 3520

## BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water  
 Batch#: 47912  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 05/07/99  
 Analysis Date: 05/11/99

BS Lab ID: QC97041

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C10-C24	2475	1971	80	50-114
Surrogate	%Rec	Limits		
Hexacosane	95	58-128		

BSD Lab ID: QC97042

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C10-C24	2475	1683	68	50-114	16	25
Surrogate	%Rec	Limits				
Hexacosane	80	58-128				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



Lab #: 139258

BATCH QC REPORT

Page 1 of 1

## TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave Terminal

Analysis Method: EPA 8015M  
Prep Method: EPA 3520

## METHOD BLANK

Matrix: Water  
Batch#: 47912  
Units: ug/L  
DiIn Fac: 1

Prep Date: 05/07/99  
Analysis Date: 05/10/99

MB Lab ID: QC97040

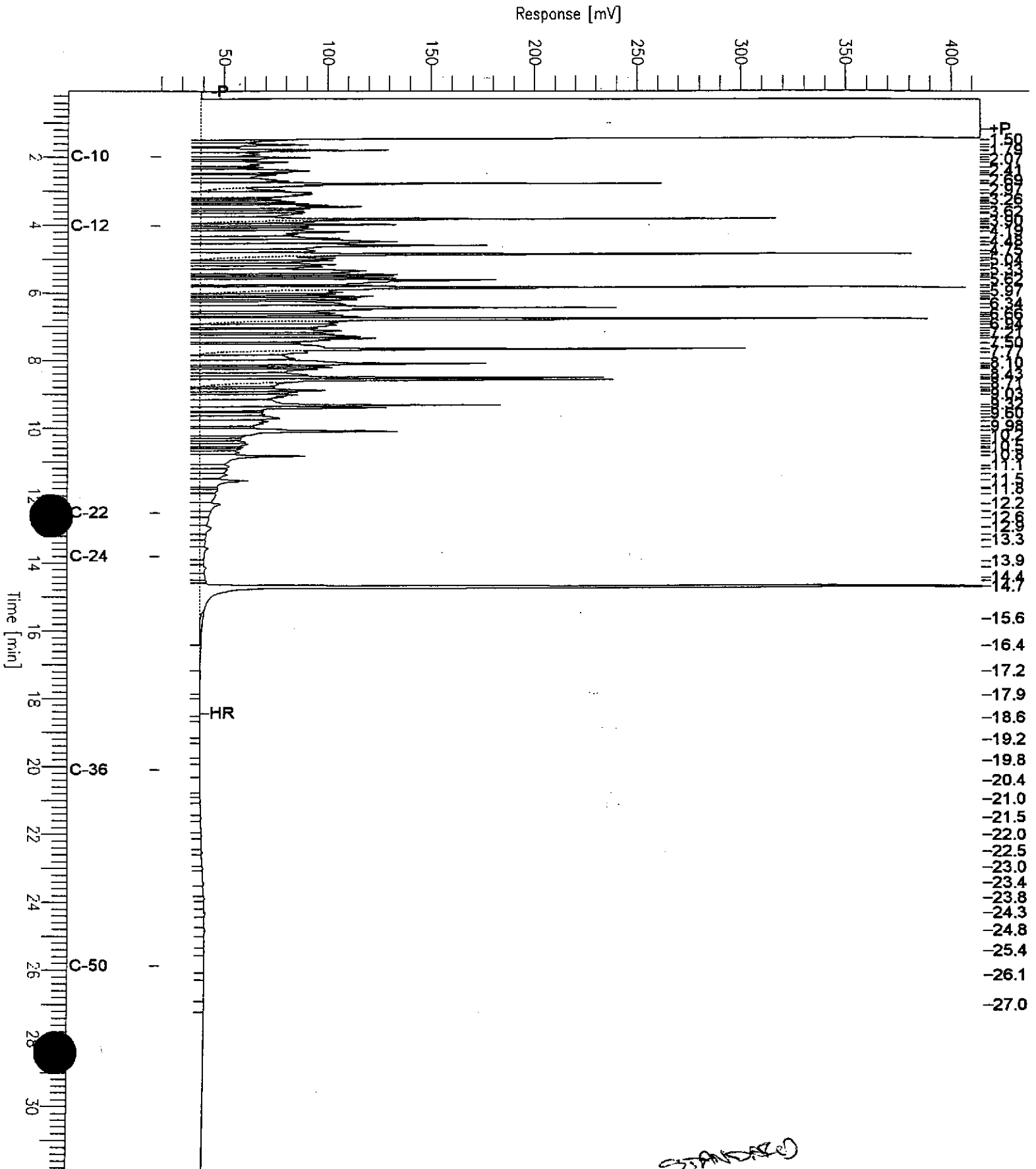
Analyte	Result	
Diesel C10-C24	<50	
Motor Oil C24-C36	<300	
Surrogate	%Rec	Recovery Limits
Hexacosane	74	58-128

# Chromatogram

Sample Name : ccv,99ws7470,dsl  
FileName : C:\GC15\CHB\130B002.RAW  
Method : B082TEH.MTH  
Start Time : 0.05 min  
Scale Factor: 0.0

End Time : 31.91 min  
Plot Offset: 19 mV

Sample #: 500mg/l  
Date : 5/10/99 06:04 PM  
Time of Injection: 5/10/99 09:21 AM  
Low Point : 19.37 mV  
High Point : 413.94 mV  
Plot Scale: 394.6 mV



DIESEL STANDARDS



# Chromatogram

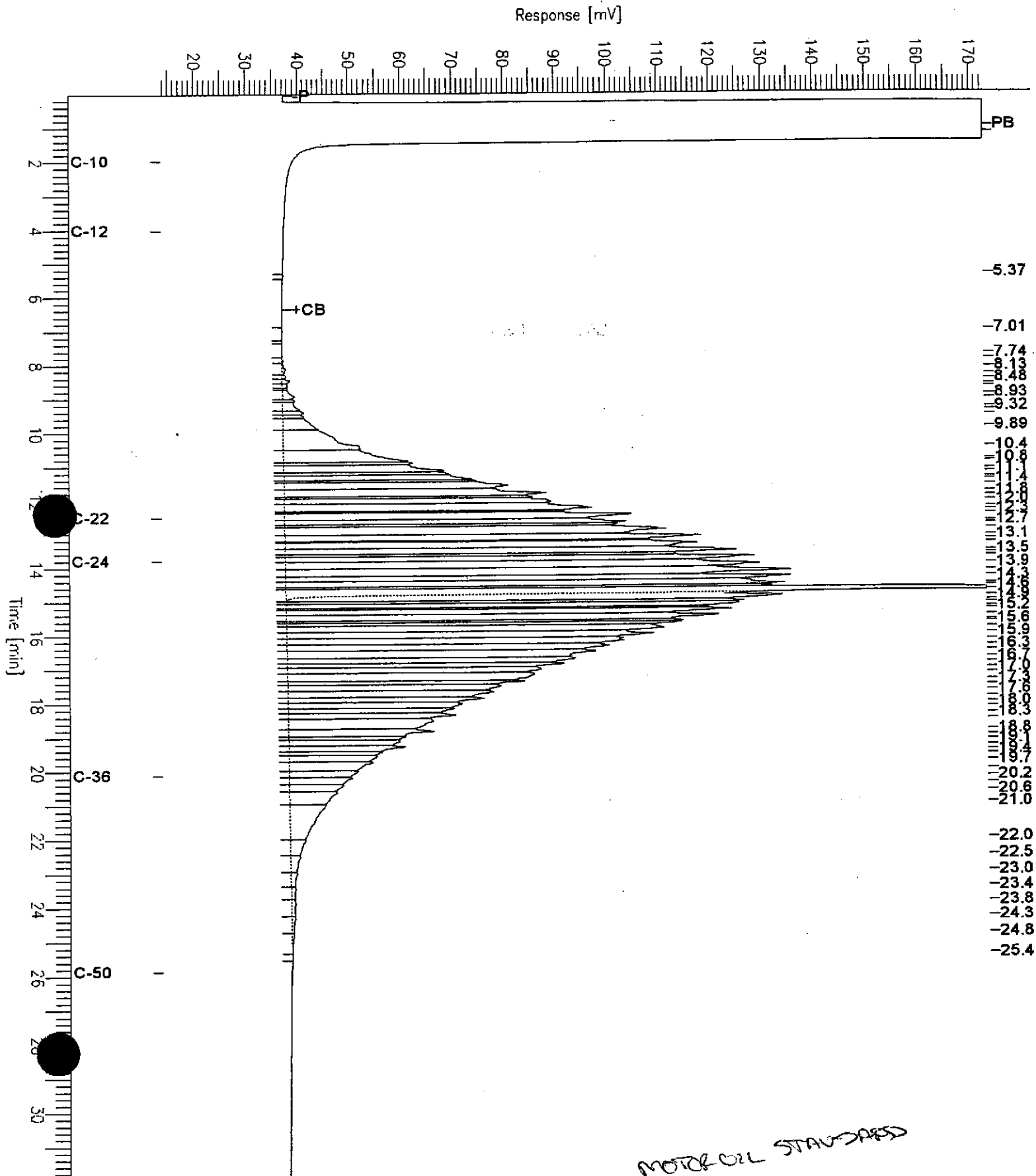
Sample Name : ccv,99ws7423,mo  
 FileName : C:\GC15\CHB\130B003.RAW  
 Method : B082TEH.MTH  
 Start Time : 0.01 min  
 Scan Rate : 0.0

End Time : 31.91 min  
 Plot Offset : 14 mV

Sample #: 500mg/l  
 Date : 5/10/99 06:05 PM  
 Time of Injection: 5/10/99 10:04 AM  
 Low Point : 13.75 mV  
 Plot Scale: 158.9 mV

Page 1 of 1

High Point : 172.60 mV



MOTOR OIL STANDARDS



## Volatile Organics by GC/MS

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: SCI MW-22  
Lab ID: 139258-006  
Matrix: Water  
Batch#: 47870  
Units: ug/L  
Diln Fac: 1

Sampled: 05/05/99  
Received: 05/05/99  
Extracted: 05/07/99  
Analyzed: 05/07/99

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	102	76-127
Toluene-d8	100	90-109
Bromofluorobenzene	98	82-118



## Volatile Organics by GC/MS

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: SCI MW-30  
Lab ID: 139258-007  
Matrix: Water  
Batch#: 47870  
Units: ug/L  
Diln Fac: 1

Sampled: 05/05/99  
Received: 05/05/99  
Extracted: 05/07/99  
Analyzed: 05/07/99

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	101	76-127
Toluene-d8	100	90-109
Bromofluorobenzene	98	82-118



## Volatile Organics by GC/MS

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8260A  
 Prep Method: EPA 5030

Field ID: SCI MW-33  
 Lab ID: 139258-008  
 Matrix: Water  
 Batch#: 47917  
 Units: ug/L  
 Diln Fac: 2

Sampled: 05/05/99  
 Received: 05/05/99  
 Extracted: 05/09/99  
 Analyzed: 05/09/99

Analyte	Result	Reporting Limit
Chloromethane	ND	20
Vinyl Chloride	ND	20
Bromomethane	ND	20
Chloroethane	ND	20
Trichlorofluoromethane	ND	10
Acetone	ND	40
Freon 113	ND	10
1,1-Dichloroethene	ND	10
Methylene Chloride	ND	40
Carbon Disulfide	ND	10
trans-1,2-Dichloroethene	ND	10
Vinyl Acetate	ND	100
1,1-Dichloroethane	ND	10
2-Butanone	ND	20
cis-1,2-Dichloroethene	ND	10
Chloroform	ND	10
1,1,1-Trichloroethane	ND	10
Carbon Tetrachloride	ND	10
1,2-Dichloroethane	ND	10
Benzene	ND	10
Trichloroethene	ND	10
1,2-Dichloropropane	ND	10
Bromodichloromethane	ND	10
4-Methyl-2-Pentanone	ND	20
cis-1,3-Dichloropropene	ND	10
Toluene	ND	10
trans-1,3-Dichloropropene	ND	10
1,1,2-Trichloroethane	ND	10
2-Hexanone	ND	20
Tetrachloroethene	ND	10
Dibromochloromethane	ND	10
Chlorobenzene	290	10
Ethylbenzene	ND	10
m,p-Xylenes	12	10
o-Xylene	ND	10
Styrene	ND	10
Bromoform	ND	10
1,1,2,2-Tetrachloroethane	ND	10
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	96	76-127
Toluene-d8	98	90-109
Bromofluorobenzene	102	82-118



Lab #: 139258

BATCH QC REPORT

## EPA 8240 Volatile Organics

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8260A  
 Prep Method: EPA 5030

## METHOD BLANK

Matrix: Water  
 Batch#: 47870  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 05/06/99  
 Analysis Date: 05/06/99

MB Lab ID: QC96886

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	100	76-127
Toluene-d8	98	90-109
Bromofluorobenzene	98	82-118



Lab #: 139258

BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants	Analysis Method: EPA 8260A
Project#: 133.009	Prep Method: EPA 5030
Location: KOT/9th Ave. Terminal	
METHOD BLANK	
Matrix: Water	Prep Date: 05/08/99
Batch#: 47917	Analysis Date: 05/08/99
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC97062

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	94	76-127
Toluene-d8	98	90-109
Bromofluorobenzene	102	82-118



EPA 8240 Volatile Organics

Client: Subsurface Consultants	Analysis Method: EPA 8260A
Project#: 133.009	Prep Method: EPA 5030
Location: KOT/9th Ave. Terminal	

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 05/06/99
Batch#: 47870	Analysis Date: 05/06/99
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC96883

Analyte	Spike Added	BS	%Rec #	Limits
1,1-Dichloroethene	50	56.87	114	64-139
Benzene	50	50.91	102	71-127
Trichloroethene	50	49.51	99	72-129
Toluene	50	53.33	107	73-129
Chlorobenzene	50	52.13	104	77-126
Surrogate			%Rec	Limits
1,2-Dichloroethane-d4			102	76-127
Toluene-d8			99	90-109
Bromofluorobenzene			98	82-118

BSD Lab ID: QC96884

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	53.93	108	64-139	5	13
Benzene	50	47.93	96	71-127	6	10
Trichloroethene	50	46.69	93	72-129	6	10
Toluene	50	50.07	100	73-129	6	10
Chlorobenzene	50	50.22	100	77-126	4	10
Surrogate			%Rec	Limits		
1,2-Dichloroethane-d4			99	76-127		
Toluene-d8			98	90-109		
Bromofluorobenzene			98	82-118		

# Column to be used to flag recovery and RPD values with an asterisk  
 \* values outside of QC limits  
 RPD: 0 out of 5 outside limits  
 Spike Recovery: 0 out of 10 outside limits



## EPA 8240 Volatile Organics

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8260A  
 Prep Method: EPA 5030

## BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water  
 Batch#: 47917  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 05/08/99  
 Analysis Date: 05/08/99

BS Lab ID: QC97059

Analyte	Spike Added	BS	%Rec #	Limits
1,1-Dichloroethene	50	55.37	111	64-139
Benzene	50	51.52	103	71-127
Trichloroethene	50	48.57	97	72-129
Toluene	50	51.06	102	73-129
Chlorobenzene	50	52.46	105	77-126
Surrogate			%Rec	Limits
1,2-Dichloroethane-d4			94	76-127
Toluene-d8			98	90-109
Bromofluorobenzene			101	82-118

BSD Lab ID: QC97060

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	54.46	109	64-139	2	13
Benzene	50	51.39	103	71-127	0	10
Trichloroethene	50	48.15	96	72-129	1	10
Toluene	50	51.48	103	73-129	1	10
Chlorobenzene	50	52	104	77-126	1	10
Surrogate			%Rec	Limits		
1,2-Dichloroethane-d4			92	76-127		
Toluene-d8			99	90-109		
Bromofluorobenzene			100	82-118		

# Column to be used to flag recovery and RPD values with an asterisk

# Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits





## Organochlorine Pesticides and PCBs

Client: Subsurface Consultants	Analysis Method: EPA 8080
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	

Field ID: SCI MW-33	Sampled: 05/05/99
Lab ID: 139258-008	Received: 05/05/99
Matrix: Water	Extracted: 05/07/99
Batch#: 47915	Analyzed: 05/13/99
Units: ug/L	
Diln Fac: 50	

Analyte	Result	Reporting Limit
alpha-BHC	ND	2.4
beta-BHC	ND	2.4
gamma-BHC	ND	2.4
delta-BHC	ND	2.4
Heptachlor	ND	2.4
Aldrin	ND	2.4
Heptachlor epoxide B	ND	2.4
Heptachlor epoxide A	ND	2.4
Endosulfan I	ND	2.4
Dieldrin	ND	4.9
,4'-DDE	7.8	4.9
Endrin	ND	4.9
Endosulfan II	ND	4.9
Endosulfan sulfate	ND	4.9
4,4'-DDD	18	4.9
Endrin aldehyde	ND	4.9
4,4'-DDT	ND	4.9
Chlordane	ND	24
Methoxychlor	ND	24
Toxaphene	ND	49
Aroclor-1016	ND	24
Aroclor-1221	ND	49
Aroclor-1232	ND	24
Aroclor-1242	ND	24
Aroclor-1248	ND	24
Aroclor-1254	ND	24
Aroclor-1260	ND	24

Surrogate	%Recovery	Recovery Limits
TCMX	DO*	25-140
Decachlorobiphenyl	DO*	15-147

\* Values outside of QC limits

DO: Surrogate diluted out



EPA 8080 Pesticides & PCBs

Client: Subsurface Consultants	Analysis Method: EPA 8080
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	

METHOD BLANK

Matrix: Water	Prep Date: 05/07/99
Batch#: 47915	Analysis Date: 05/13/99
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC97051

Analyte	Result	Reporting Limit
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
gamma-BHC	ND	0.05
delta-BHC	ND	0.05
Heptachlor	ND	0.05
Aldrin	ND	0.05
Heptachlor epoxide B	ND	0.05
Heptachlor epoxide A	ND	0.05
Endosulfan I	ND	0.05
Dieldrin	ND	0.1
4,4'-DDE	ND	0.1
Endrin	ND	0.1
Endosulfan II	ND	0.1
Endosulfan sulfate	ND	0.1
4,4'-DDD	ND	0.1
Endrin aldehyde	ND	0.1
4,4'-DDT	ND	0.1
Chlordane	ND	0.5
Methoxychlor	ND	0.5
Toxaphene	ND	1.0
Aroclor-1016	ND	0.5
Aroclor-1221	ND	1.0
Aroclor-1232	ND	0.5
Aroclor-1242	ND	0.5
Aroclor-1248	ND	0.5
Aroclor-1254	ND	0.5
Aroclor-1260	ND	0.5
Surrogate	%Rec	Recovery Limits
TCMX	71	25-140
Decachlorobiphenyl	62	15-147



## EPA 8080 Pesticides &amp; PCBs

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8080  
 Prep Method: EPA 3520

## BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water  
 Batch#: 47915  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 05/07/99  
 Analysis Date: 05/13/99

BS Lab ID: QC97052

Analyte	Spike Added	BS	%Rec #	Limits
gamma-BHC	0.5	0.52	104	63-117
Heptachlor	0.5	0.38	76	59-105
Aldrin	0.5	0.41	82	50-112
Dieldrin	0.5	0.41	82	62-117
Endrin	0.5	0.42	84	63-112
4,4'-DDT	0.5	0.39	78	56-113
Surrogate	%Rec	Limits		
TCMX	80	25-140		
Decachlorobiphenyl	69	15-147		

BSD Lab ID: QC97053

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
gamma-BHC	0.5	0.47	94	63-117	10	20
Heptachlor	0.5	0.34	68	59-105	11	19
Aldrin	0.5	0.36	72	50-112	13	18
Dieldrin	0.5	0.39	78	62-117	5	15
Endrin	0.5	0.39	78	63-112	7	17
4,4'-DDT	0.5	0.36	72	56-113	8	15
Surrogate	%Rec	Limits				
TCMX	71	25-140				
Decachlorobiphenyl	62	15-147				

# Column to be used to flag recovery and RPD values with an asterisk

# values outside of QC limits

# 0: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits

**Total Dissolved Solids (TDS)**

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave. Terminal

Analysis Method: EPA 160.1  
Prep Method: EPA 160.1

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
139258-001	SCI MW-14	47928	04-MAY-99	10-MAY-99	-
139258-005	SCI MW-34	47928	05-MAY-99	10-MAY-99	-
QC97102	Method Blank	47928	-	10-MAY-99	-

Analyte: Total Dissolved Solids                      Matrix: Water                      Units: mg/L

Sample #	Client ID	Result	Reporting Limit	Dilution Factor
139258-001	SCI MW-14	1970	10	1
139258-005	SCI MW-34	15500	100	10
QC97102	Method Blank	ND	10	1

ND = None Detected at or above Reporting Limit

**Total Dissolved Solids (TDS)**

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave. Terminal

Analysis Method: EPA 160.1  
Prep Method: EPA 160.1

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
QC97103	SDUP of 139282-008	47928	06-MAY-99	10-MAY-99	-

Analyte: Total Dissolved Solids      Matrix: Water      Units: mg/L

Sample #	Sample Type	Result	%RPD	Limit
QC97103	SDUP of 139282-008	25600	7	25
139282-008	ZZZZZZZZ	23880		

**Dissolved Organic Carbon (DOC)**

Client: Subsurface Consultants	Analysis Method: EPA 415.2
Project #: 133.009	Prep Method: EPA 415.2
Location : KOT/9th Ave.Terminal	

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
139258-005	SCI MW-34	47938	05-MAY-99	10-MAY-99	-
QC97137	Method Blank	47938	-	10-MAY-99	-

Analyte: Dissolved Organic Carbon      Matrix: Water      Units: mg/L

Sample #	Client ID	Result	Reporting Limit	Dilution Factor
139258-005	SCI MW-34	4.9	1.0	1
QC97137	Method Blank	ND	1.0	1

ND = None Detected at or above Reporting Limit

**Dissolved Organic Carbon (DOC)**

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave. Terminal

Analysis Method: EPA 415.2  
Prep Method: EPA 415.2

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
QC97138	Lab Control Sample	47938	-	10-MAY-99	-

Analyte: Dissolved Organic Carbon      Matrix: Water      Units: mg/L

Sample #	Sample Type	Spike Amt.	Result	%Recovery	Limits
QC97138	Lab Control Sample	10.00	9.800	98	80-120

**Dissolved Organic Carbon (DOC)**

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave.Terminal

Analysis Method: EPA 415.2  
Prep Method: EPA 415.2

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
QC97139	MS of 139163-002	47938	28-APR-99	10-MAY-99	-
QC97140	MSD of 139163-002	47938	28-APR-99	10-MAY-99	-

Analyte: Dissolved Organic Carbon

Matrix: Water

Units: mg/L

Sample #	Client ID	Spikeamt	Result	%Rec	Limits	%RPD	Limit
QC97139	MS of 139163-002	10.00	13.60	90	75-125		
QC97140	MSD of 139163-002	10.00	13.50	89	75-125	1	35
139163-002	ZZZZZZZZ		4.700				





Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

A N A L Y T I C A L   R E P O R T

Prepared for:

Subsurface Consultants  
3736 Mt. Diablo Blvd.  
Suite 200  
Lafayette, CA 94549

Date: 25-JUN-99  
Lab Job Number: 139282  
Project ID: 133.009  
Location: KOT/9th Ave. Terminal

Reviewed by:

Reviewed by:

This package may be reproduced only in its entirety.

Laboratory Number: 139232  
Client: **Subsurface Consultants**  
Project Name: KOT/9<sup>th</sup> Ave. Terminal

Receipt Date: 05/06/99

### CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for eight water samples received from the above referenced project. All samples were received cold and intact.

**Total Volatile Hydrocarbons/BTXE:** The bromofluorobenzene surrogate recovery for total volatile hydrocarbons on sample SCIMW-24 (139282-006) was outside acceptance limits. The associated trifluorotoluene surrogate recovery was acceptable. No other analytical problems were encountered.

**Total Extractable Hydrocarbons:** No analytical problems were encountered.

**Volatile Organic Compounds:** No analytical problems were encountered.

**Polyaromatic Hydrocarbons:** No analytical problems were encountered.

**Organochlorine Pesticides/PCBs:** Sample SCIMW7 (139282-003) was diluted due to the presence of non-target compounds. The surrogate for this sample were diluted out.

The blank spike duplicate relative percent difference (RPD) was outside acceptance limits for all compounds. The blank spike recoveries were acceptable for all target compounds. No other analytical problems were encountered.

**Metals:** No analytical problems were encountered.

**General Chemistry:** The matrix spike recoveries for dissolved organic carbon were outside acceptance limits. The associated laboratory control sample recovery was acceptable. No other analytical problems were encountered.

# CHAIN OF CUSTODY FORM

139202

PAGE 01


PROJECT NAME: 9th Ave Terminal, Oakland Ca.  
 JOB NUMBER: 1031009 LAB: Curtis & Tomkins  
 PROJECT CONTACT: Jeri Alexander TURNAROUND: Standard  
 SAMPLED BY: Stewart Dalie REQUESTED BY: Stewart Dalie

ANALYSIS REQUESTED	
VOC (EPA 8260/8240)	X
Pesticides (EPA 8080)	X
Heavy Metals (EPA 170/1700)	X
DOC (EPA 9060)	X
IDS (EPA 160.1)	X
TVH (EPA 8015 M) 8020	X
BTEX (EPA 8015 M) 8020	X
TEHD MO (8015 W) gel	X
PVA's (EPA 8270)	X
Lead (EPA 6010/7000)	X

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS					METHOD PRESERVED					SAMPLING DATE				NOTES	
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	Filter Poly	HCL	H2SO4	HNO3	ICE	NONE	MONTH	DAY	YEAR	TIME		
1	X SCIMW310	X				3					X			X		5	05	99	15	00	X
2	X SCIMW32	X				3					X			X		5	05	99	15	45	X
3	X SCIMW-7	X				3	1				X			X		5	06	99	08	20	X
4	X SCIMW-28	X				2			1			X				5	06	99	09	15	X
	<del>X SCIMW-5</del>					<del>2</del>			<del>2</del>		<del>X</del>			<del>X</del>		<del>5</del>	<del>06</del>	<del>99</del>	<del>10</del>	<del>10</del>	
5	X SCIMW-6					2	2		2		X		X	X		5	06	99	11	15	X
6	X SCIMW-24	X				5	3		2		X		X	X		5	06	99	01	00	X
7	X SCIMW-11	X				2	2		2		X		X	X		5	06	99	01	30	X
8	X SCIMW-12	X				2	2		1				X	X		5	06	99	01	50	X

CHAIN OF CUSTODY RECORD			
RELEASED BY: (Signature) <i>Stewart Dalie</i>	DATE / TIME 5/14/99 3:10	RECEIVED BY: (Signature) <i>Tracy Brown</i>	DATE / TIME 5/14/99 3:10
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:  
 SCIMW-7 - VOA - effervescing reaction  
 \* fix & filter  
 \*\* - silica gel wash



**Subsurface Consultants, Inc.**  
 171 - 12th Street, Suite 202, Oakland, CA 94607  
 (510) 268-0461 - FAX: (510) 268-0137  
 3736 Mt. Diablo Blvd., Ste. 200, Lafayette, CA 94549  
 (925) 299-7960 - (925) 299-7970



## TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 5030
Location: KOT/9th Ave. Terminal	

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
139282-006	SCIMW-24	47925	05/06/99	05/11/99	05/11/99	

Matrix: Water

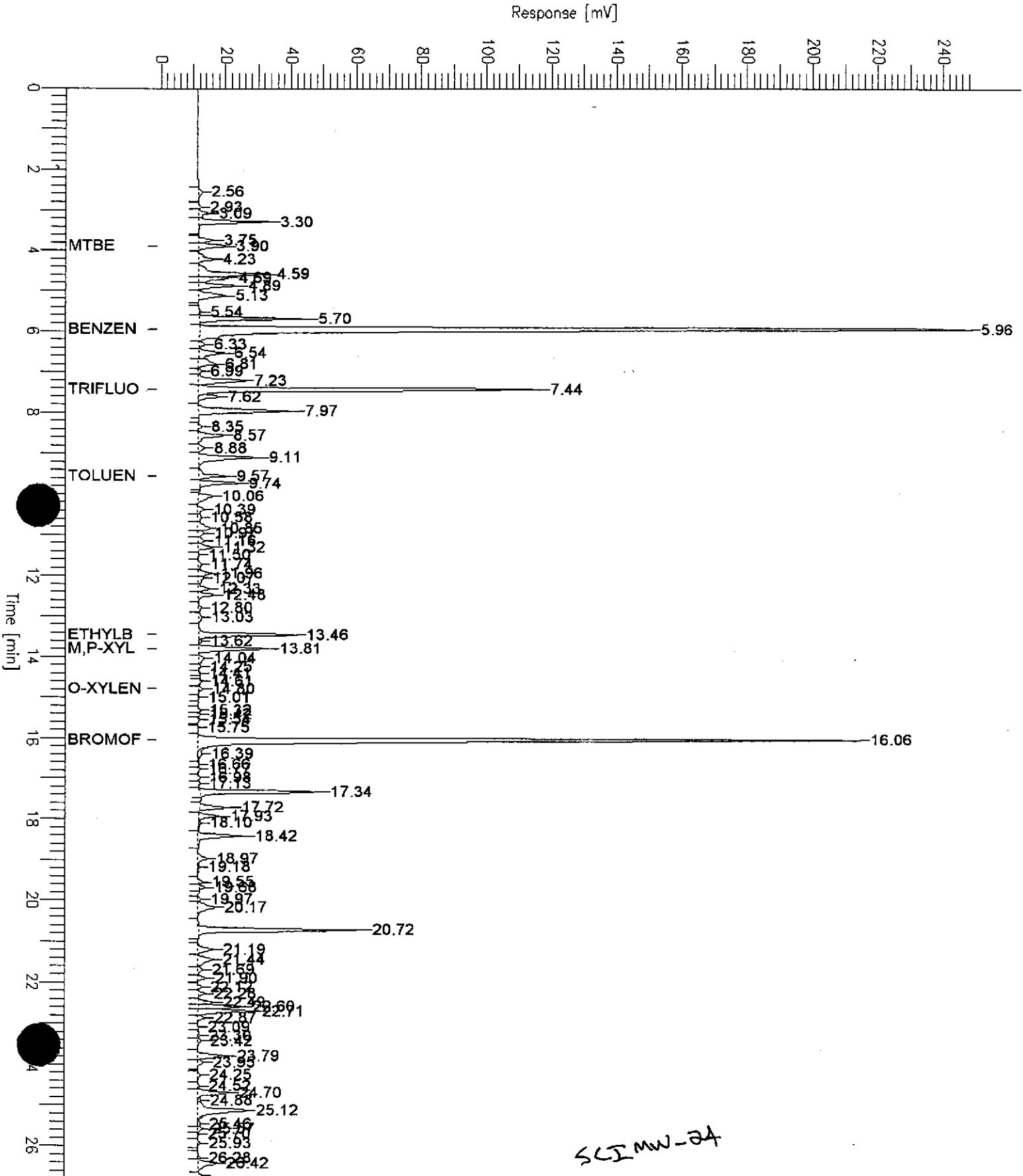
Analyte	Units	139282-006
Diln Fac:		5
Gasoline C7-C12	ug/L	6700
Surrogate		
Trifluorotoluene	%REC	112
Bromofluorobenzene	%REC	168 *

\* Values outside of QC limits

# GC19 \_TVHBTXE 'Y' BTXE QUANT.

Sample Name : 139282-006,47959,BTXE ONLY  
 FileName : G:\GC19\DATA\131Y006.raw  
 Method : TVHBTXE  
 Start Time : 0.00 min      End Time : 26.80 min  
 Scale Factor: -1.0      Plot Offset: -1 mV

Sample #:      Page 1 of 1  
 Date : 5/11/99 06:53 PM  
 Time of Injection: 5/11/99 06:26 PM  
 Low Point : -1.19 mV      High Point : 248.81 mV  
 Plot Scale: 250.0 mV



# GC19 TVH 'X' Data File (FID)

Sample Name : CCV/LCS, QC97228, 99WS7368, 47959

Sample #: GAS

Page 1 of 1

FileName : G:\GC19\DATA\131X002.raw

Date : 5/11/99 04:15 PM

Method : TVHBTXE

Time of Injection: 5/11/99 03:47 PM

Start Time : 0.00 min End Time : 26.80 min

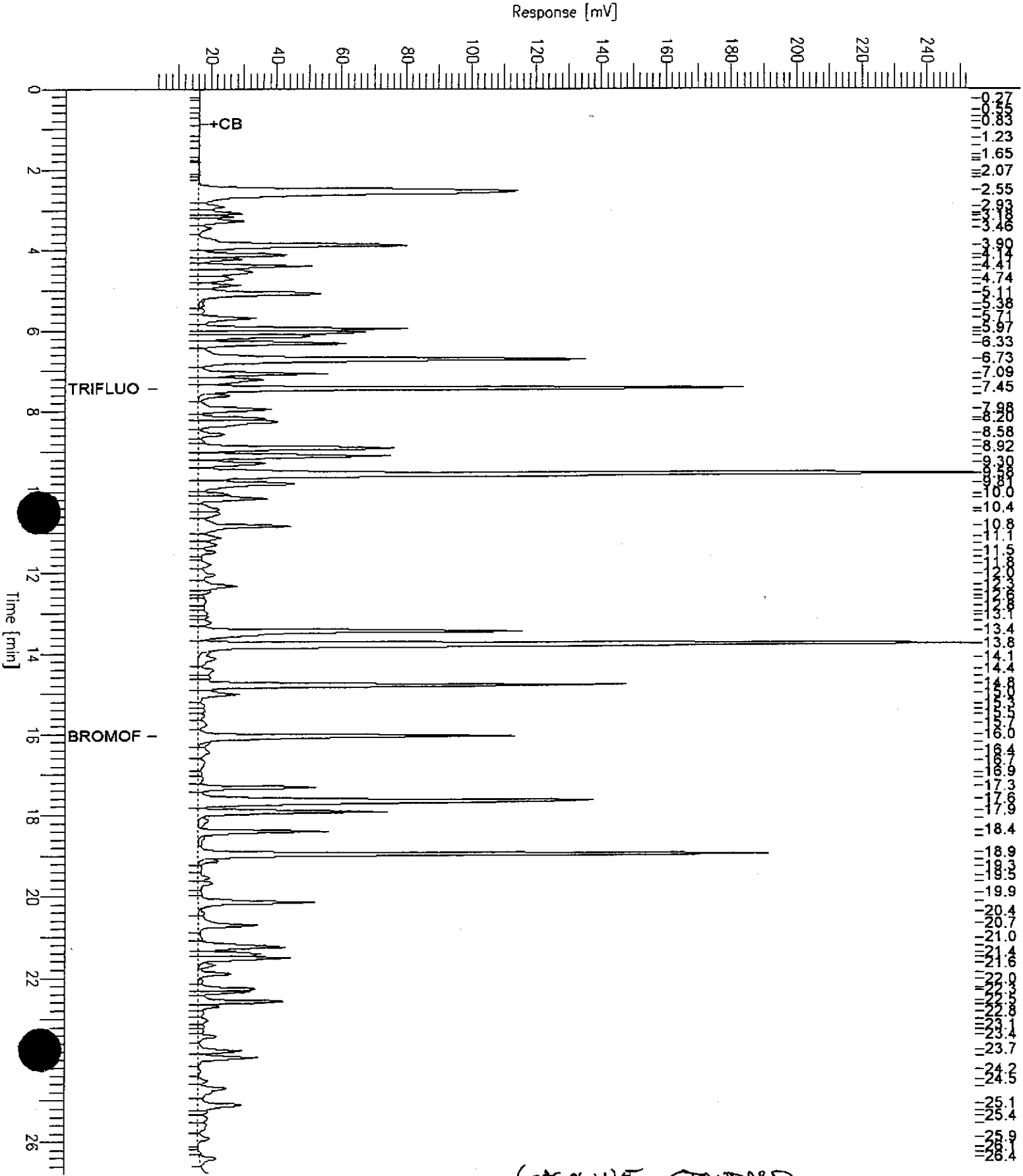
Low Point : 3.67 mV

High Point : 253.67 mV

Sensitivity: -1.0

Plot Offset: 4 mV

Plot Scale: 250.0 mV



GASOLINE STANDARD



Lab #: 139282

BATCH QC REPORT

Page 1 of 1

## TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

## METHOD BLANK

Matrix: Water  
Batch#: 47925  
Units: ug/L  
Diln Fac: 1

Prep Date: 05/10/99  
Analysis Date: 05/10/99

MB Lab ID: QC97093

Analyte	Result		
Gasoline C7-C12	<50		
Surrogate	%Rec	Recovery Limits	
Trifluorotoluene	101	53-150	
Bromofluorobenzene	98	53-149	



Lab #: 139282

BATCH QC REPORT

Page 1 of 1

## TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8015M  
 Prep Method: EPA 5030

## LABORATORY CONTROL SAMPLE

Matrix: Water  
 Batch#: 47925  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 05/10/99  
 Analysis Date: 05/10/99

LCS Lab ID: QC97090

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	1956	2000	98	77-117
Surrogate	%Rec	Limits		
Trifluorotoluene	107	53-150		
Bromofluorobenzene	117	53-149		

\* Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits





Lab #: 139282

BATCH QC REPORT

Page 1 of 1

## TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M  
 Prep Method: EPA 5030

## MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ  
 Lab ID: 139289-001  
 Matrix: Water  
 Batch#: 47925  
 Units: ug/L  
 Diln Fac: 1

Sample Date: 05/07/99  
 Received Date: 05/07/99  
 Prep Date: 05/10/99  
 Analysis Date: 05/10/99

MS Lab ID: QC97135

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline C7-C12	2000	<50	2087	104	69-131
Surrogate	%Rec	Limits			
Trifluorotoluene	116	53-150			
Bromofluorobenzene	128	53-149			

MSD Lab ID: QC97136

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	2000	2094	105	69-131	0	13
Surrogate	%Rec	Limits				
Trifluorotoluene	114	53-150				
Bromofluorobenzene	128	53-149				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



BTXE

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
139282-006	SCIMW-24	47959	05/06/99	05/11/99	05/11/99	

Matrix: Water

Analyte	Units	139282-006
Diln Fac:		10
Benzene	ug/L	1100
Toluene	ug/L	31
Ethylbenzene	ug/L	120
m,p-Xylenes	ug/L	83
o-Xylene	ug/L	6
Surrogate		
Trifluorotoluene	%REC	95
Bromofluorobenzene	%REC	103



Lab #: 139282

BATCH QC REPORT

Page 1 of 1

## BTXE

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

## METHOD BLANK

Matrix: Water  
Batch#: 47959  
Units: ug/L  
Diln Fac: 1

Prep Date: 05/11/99  
Analysis Date: 05/11/99

MB Lab ID: QC97230

Analyte	Result		
Benzene	<0.5		
Toluene	<0.5		
Ethylbenzene	<0.5		
m,p-Xylenes	<0.5		
o-Xylene	<0.5		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	82		51-143
Bromofluorobenzene	81		37-146

Lab #: 139282

## BATCH QC REPORT

Page 1 of 1

## BTXE

 Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave. Terminal

 Analysis Method: EPA 8021B  
 Prep Method: EPA 5030

## LABORATORY CONTROL SAMPLE

 Matrix: Water  
 Batch#: 47959  
 Units: ug/L  
 Diln Fac: 1

 Prep Date: 05/11/99  
 Analysis Date: 05/11/99

LCS Lab ID: QC97229

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	14.64	20	73	65-111
Toluene	15.81	20	79	76-117
Ethylbenzene	16.2	20	81	71-121
m,p-Xylenes	33.7	40	84	80-123
o-Xylene	15.47	20	77	75-127
Surrogate	%Rec	Limits		
Trifluorotoluene	75	51-143		
Bromofluorobenzene	75	37-146		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



Lab #: 139282

BATCH QC REPORT

Page 1 of 1

## BTXE

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8021B  
 Prep Method: EPA 5030

## MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ  
 Lab ID: 139326-003  
 Matrix: Water  
 Batch#: 47959  
 Units: ug/L  
 Diln Fac: 1

Sample Date: 05/07/99  
 Received Date: 05/07/99  
 Prep Date: 05/11/99  
 Analysis Date: 05/11/99

MS Lab ID: QC97231

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Benzene	20	33.72	50.61	84	55-122
Toluene	20	3.7	22.59	94	63-139
Ethylbenzene	20	<0.5	19.56	98	61-137
m,p-Xylenes	40	11.23	51.44	101	57-148
o-Xylene	20	<0.5	18.94	95	70-141
Surrogate	%Rec	Limits			
Trifluorotoluene	96	51-143			
Bromofluorobenzene	104	37-146			

MSD Lab ID: QC97232

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Benzene	20	50.58	84	55-122	0	10
Toluene	20	22.62	95	63-139	0	10
Ethylbenzene	20	19.59	98	61-137	0	10
m,p-Xylenes	40	51.66	101	57-148	0	10
o-Xylene	20	18.94	95	70-141	0	10
Surrogate	%Rec	Limits				
Trifluorotoluene	98	51-143				
Bromofluorobenzene	105	37-146				

# Column to be used to flag recovery and RPD values with an asterisk

# values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



## TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M  
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
139282-005	SCIMW-6	47940	05/06/99	05/10/99	05/12/99	
139282-006	SCIMW-24	47940	05/06/99	05/10/99	05/12/99	
139282-007	SCIMW-11	47940	05/06/99	05/10/99	05/12/99	
139282-008	SCIMW-12	47940	05/06/99	05/10/99	05/12/99	

Matrix: Water

Analyte	Units	139282-005	139282-006	139282-007	139282-008
Diln Fac:		1	1	1	1
Diesel C10-C24	ug/L	<50	1900 YL	<50	<50
Motor Oil C24-C36	ug/L	<300	660 YL	<300	<300
Surrogate					
Hexacosane	%REC	74	79	73	63

Y: Sample exhibits fuel pattern which does not resemble standard

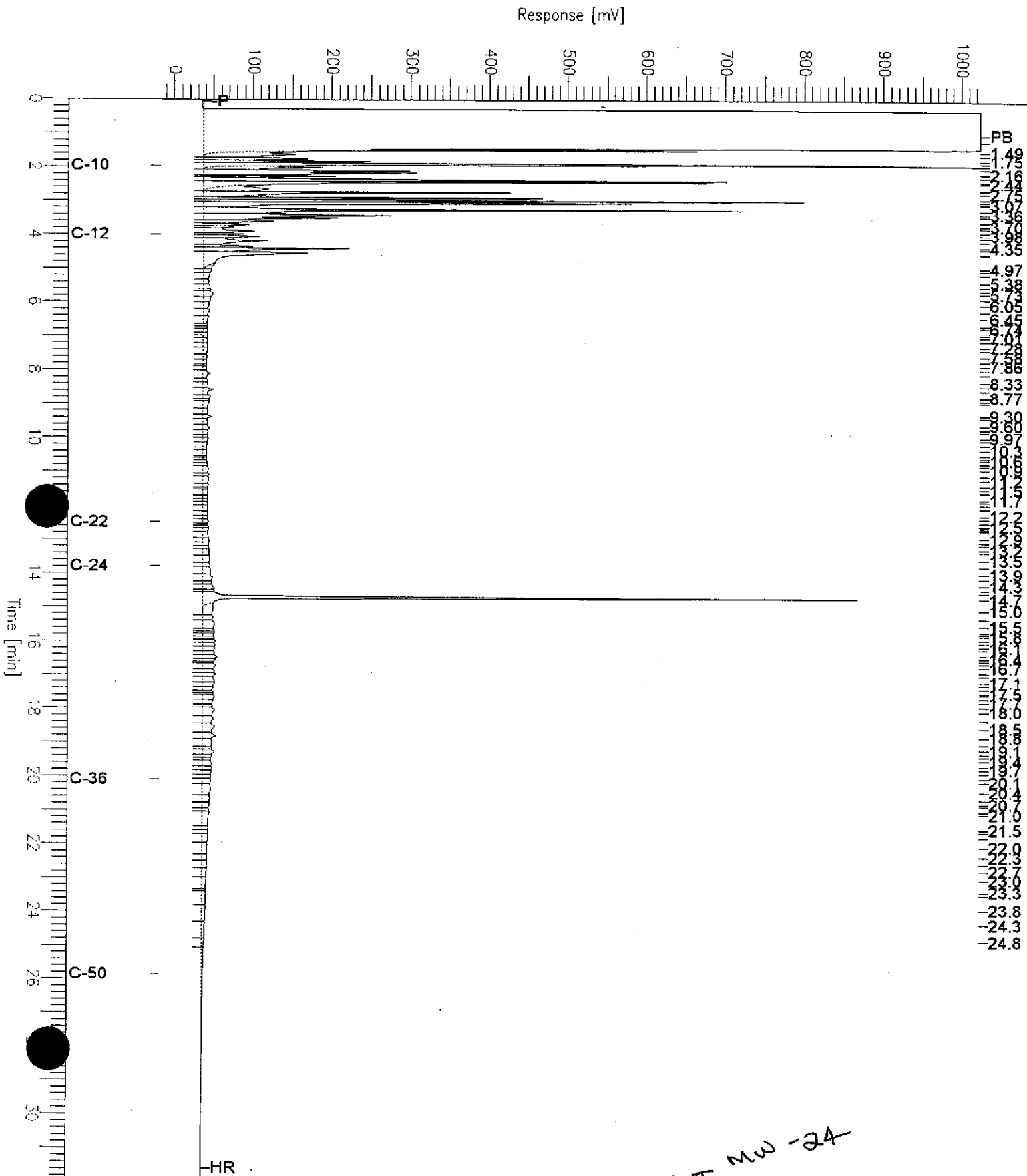
L: Lighter hydrocarbons than indicated standard

# Chromatogram

Sample Name : 139282-006sg,47940  
 FileName : C:\GC15\CHB\130B052.RAW  
 Method : B082TEH.MTH  
 Start Time : 0.00 min  
 Scan Factor: 0.0

End Time : 31.90 min  
 Plot Offset: -18 mV

Sample #: 47940  
 Date : 5/12/99 11:11 AM  
 Time of Injection: 5/12/99 05:25 AM  
 Low Point : -17.61 mV  
 High Point : 1024.00 mV  
 Plot Scale: 1041.6 mV



SCI MW-24

# Chromatogram

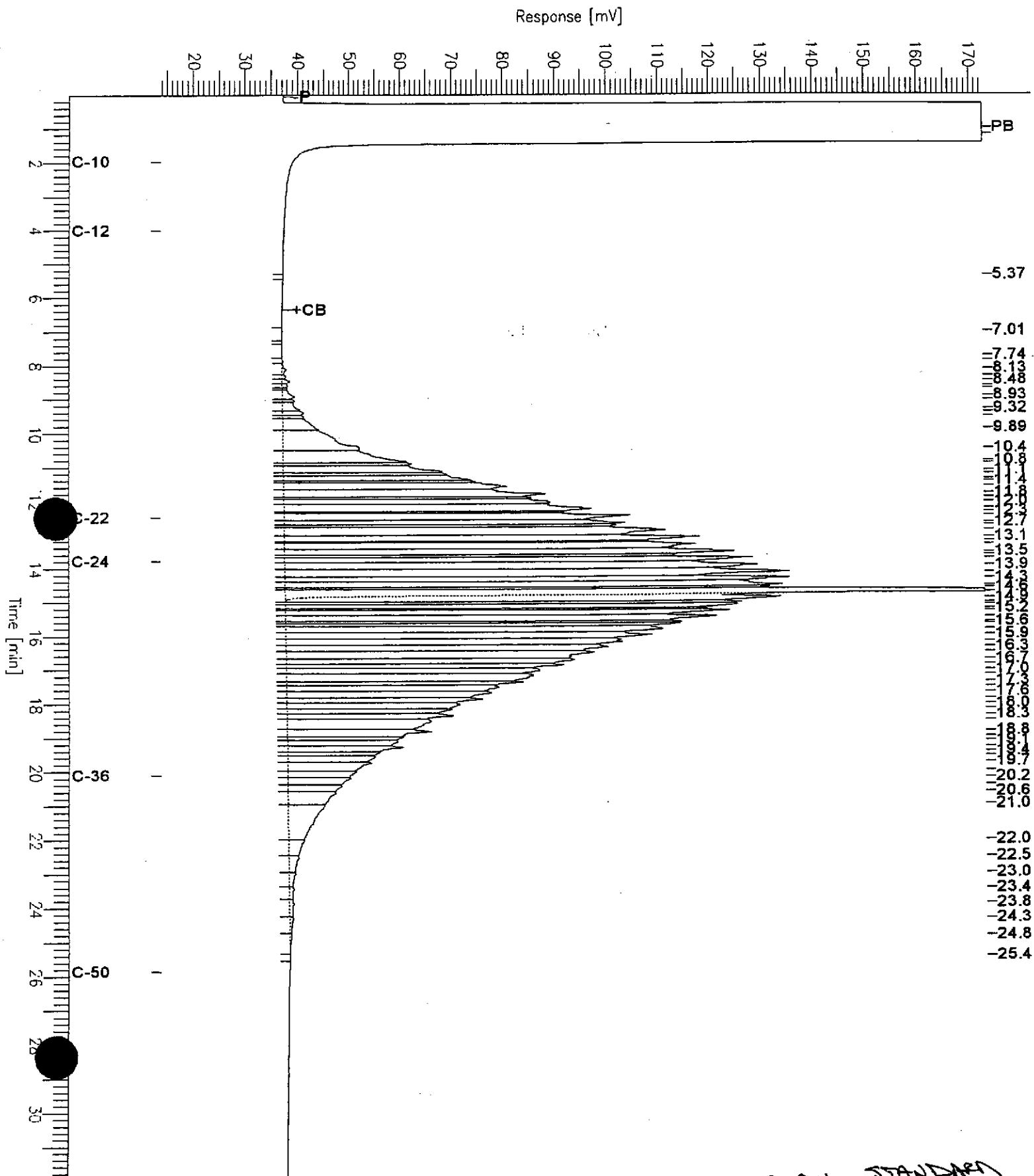
Sample Name : ccv,99ws7423,mo  
FileName : C:\GC15\CHB\130B003.RAW  
Method : B082TEH.MTH  
Start Time : 0.01 min  
Scale Factor : 0.0

End Time : 31.91 min  
Plot Offset: 14 mV

Sample #: 500mg/l  
Date : 5/10/99 06:05 PM  
Time of Injection: 5/10/99 10:04 AM  
Low Point : 13.75 mV  
Plot Scale: 158.9 mV

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High Point : 172.60 mV



MOTOR OIL STANDARD



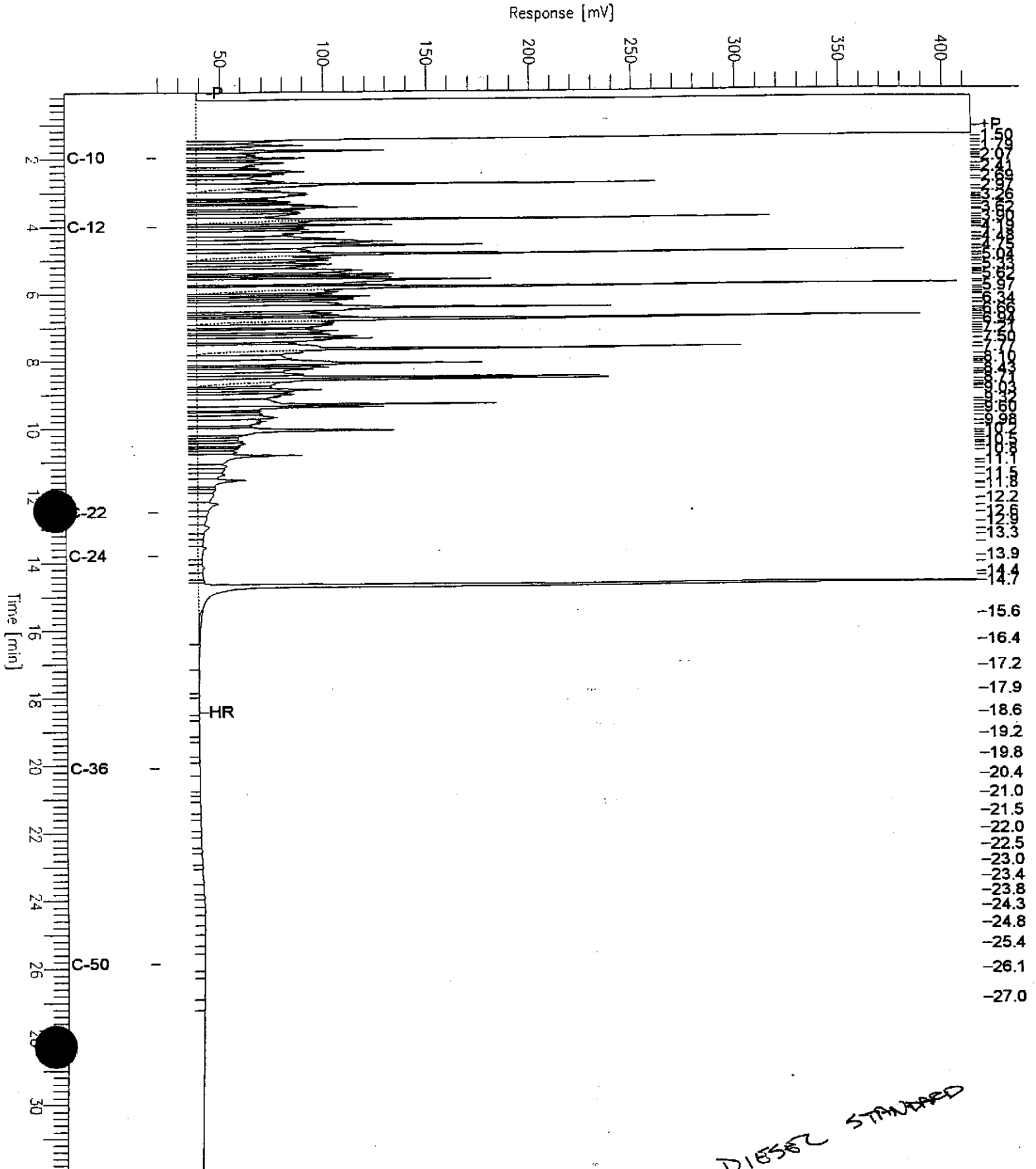
# Chromatogram

Sample Name : ccv,99ws7470,dsl  
FileName : C:\GC15\CHB\130B002.RAW  
Method : 8082TEH.MTH  
Start Time : 0.05 min  
Scale Factor : 0.0

End Time : 31.91 min  
Plot Offset: 19 mV

Sample #: 500mg/l  
Date : 5/10/99 06:04 PM  
Time of Injection: 5/10/99 09:21 AM  
Low Point : 19.37 mV  
Plot Scale: 394.6 mV

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Lab #: 139282

## BATCH QC REPORT

## TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8015M  
Prep Method: EPA 3520

## METHOD BLANK

Matrix: Water  
Batch#: 47940  
Units: ug/L  
Diln Fac: 1

Prep Date: 05/10/99  
Analysis Date: 05/11/99

MB Lab ID: QC97153

Analyte	Result	
Diesel C10-C24	<50	
Motor Oil C24-C36	<300	
Surrogate	%Rec	Recovery Limits
Hexacosane	85	58-128



Lab #: 139282

## BATCH QC REPORT

## TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8015M  
 Prep Method: EPA 3520

## BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water  
 Batch#: 47940  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 05/10/99  
 Analysis Date: 05/11/99

BS Lab ID: QC97154

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C10-C24	2475	1670	67	50-114
Surrogate	%Rec	Limits		
Hexacosane	79	58-128		

BSD Lab ID: QC97155

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C10-C24	2475	1683	68	50-114	1	25
Surrogate	%Rec	Limits				
Hexacosane	79	58-128				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



Volatile Organics by GC/MS

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: SCIMW31D  
Lab ID: 139282-001  
Matrix: Water  
Batch#: 47918  
Units: ug/L  
Diln Fac: 1

Sampled: 05/05/99  
Received: 05/06/99  
Extracted: 05/10/99  
Analyzed: 05/10/99

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	98	76-127
Toluene-d8	101	90-109
Bromofluorobenzene	104	82-118



Volatile Organics by GC/MS

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: SCIMW32  
Lab ID: 139282-002  
Matrix: Water  
Batch#: 47918  
Units: ug/L  
Diln Fac: 1

Sampled: 05/05/99  
Received: 05/06/99  
Extracted: 05/10/99  
Analyzed: 05/10/99

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	99	76-127
Toluene-d8	100	90-109
Bromofluorobenzene	105	82-118



Volatile Organics by GC/MS

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: SCIMW7  
Lab ID: 139282-003  
Matrix: Water  
Batch#: 47921  
Units: ug/L  
Diln Fac: 5

Sampled: 05/06/99  
Received: 05/06/99  
Extracted: 05/11/99  
Analyzed: 05/11/99

Analyte	Result	Reporting Limit
Chloromethane	ND	50
Vinyl Chloride	160	50
Bromomethane	ND	50
Chloroethane	570	50
Trichlorofluoromethane	ND	25
Acetone	ND	100
Freon 113	ND	25
1,1-Dichloroethene	ND	25
Methylene Chloride	ND	100
Carbon Disulfide	ND	25
trans-1,2-Dichloroethene	34	25
Vinyl Acetate	ND	250
1,1-Dichloroethane	82	25
2-Butanone	ND	50
cis-1,2-Dichloroethene	160	25
Chloroform	ND	25
1,1,1-Trichloroethane	ND	25
Carbon Tetrachloride	ND	25
1,2-Dichloroethane	ND	25
Benzene	590	25
Trichloroethene	ND	25
1,2-Dichloropropane	ND	25
Bromodichloromethane	ND	25
4-Methyl-2-Pentanone	ND	50
cis-1,3-Dichloropropene	ND	25
Toluene	250	25
trans-1,3-Dichloropropene	ND	25
1,1,2-Trichloroethane	ND	25
2-Hexanone	ND	50
Tetrachloroethene	ND	25
Dibromochloromethane	ND	25
Chlorobenzene	ND	25
Ethylbenzene	ND	25
m,p-Xylenes	ND	25
o-Xylene	ND	25
Styrene	ND	25
Bromoform	ND	25
1,1,2,2-Tetrachloroethane	ND	25
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	108	76-127
Toluene-d8	103	90-109
Bromofluorobenzene	101	82-118



Lab #: 139282

BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants	Analysis Method: EPA 8260A
Project#: 133.009	Prep Method: EPA 5030
Location: KOT/9th Ave. Terminal	

METHOD BLANK

Matrix: Water	Prep Date: 05/09/99
Batch#: 47918	Analysis Date: 05/09/99
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC97066

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	93	76-127
Toluene-d8	98	90-109
Bromofluorobenzene	102	82-118



Lab #: 139282

BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water  
Batch#: 47921  
Units: ug/L  
Diln Fac: 1

Prep Date: 05/10/99  
Analysis Date: 05/10/99

MB Lab ID: QC97076

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	101	76-127
Toluene-d8	101	90-109
Bromofluorobenzene	101	82-118





Lab #: 139282

BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants	Analysis Method: EPA 8260A
Project#: 133.009	Prep Method: EPA 5030
Location: KOT/9th Ave. Terminal	

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 05/09/99
Batch#: 47918	Analysis Date: 05/09/99
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC97063

Analyte	Spike Added	BS	%Rec #	Limits
1,1-Dichloroethene	50	54.78	110	64-139
Benzene	50	51.08	102	71-127
Trichloroethene	50	47.8	96	72-129
Toluene	50	50.96	102	73-129
Chlorobenzene	50	52.03	104	77-126
Surrogate			%Rec	Limits
1,2-Dichloroethane-d4			90	76-127
Toluene-d8			98	90-109
Bromofluorobenzene			102	82-118

BSD Lab ID: QC97064

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	55.6	111	64-139	1	13
Benzene	50	52.47	105	71-127	3	10
Trichloroethene	50	49.18	98	72-129	3	10
Toluene	50	52.7	105	73-129	3	10
Chlorobenzene	50	52.25	105	77-126	0	10
Surrogate			%Rec	Limits		
1,2-Dichloroethane-d4			92	76-127		
Toluene-d8			100	90-109		
Bromofluorobenzene			102	82-118		

# Column to be used to flag recovery and RPD values with an asterisk

Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



Lab #: 139282

BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water  
Batch#: 47921  
Units: ug/L  
Diln Fac: 1

Prep Date: 05/10/99  
Analysis Date: 05/10/99

BS Lab ID: QC97073

Analyte	Spike Added	BS	%Rec #	Limits
1,1-Dichloroethene	50	46.25	93	64-139
Benzene	50	44.66	89	71-127
Trichloroethene	50	44.79	90	72-129
Toluene	50	45.48	91	73-129
Chlorobenzene	50	45.53	91	77-126
Surrogate			%Rec	Limits
1,2-Dichloroethane-d4	102	76-127		
Toluene-d8	99	90-109		
Bromofluorobenzene	99	82-118		

BSD Lab ID: QC97074

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	46.57	93	64-139	1	13
Benzene	50	45.77	92	71-127	2	10
Trichloroethene	50	45.78	92	72-129	2	10
Toluene	50	46.73	93	73-129	3	10
Chlorobenzene	50	46.68	93	77-126	2	10
Surrogate			%Rec	Limits		
1,2-Dichloroethane-d4	102	76-127				
Toluene-d8	100	90-109				
Bromofluorobenzene	100	82-118				

# Column to be used to flag recovery and RPD values with an asterisk

Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



## Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B  
Prep Method: EPA 3520

Field ID: SCIMW-24  
Lab ID: 139282-006  
Matrix: Filtrate  
Batch#: 47941  
Units: ug/L  
Diln Fac: 1

Sampled: 05/06/99  
Received: 05/06/99  
Extracted: 05/10/99  
Analyzed: 05/11/99

Analyte	Result	Reporting Limit
Naphthalene	77	10
Acenaphthylene	ND	10
Acenaphthene	ND	10
Fluorene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Benzo (a) anthracene	ND	10
Chrysene	ND	10
Benzo (b, k) fluoranthene	ND	10
Benzo (a) pyrene	ND	10
Indeno (1, 2, 3-cd) pyrene	ND	10
Dibenz (a, h) anthracene	ND	10
Benzo (g, h, i) perylene	ND	10

Surrogate	%Recovery	Recovery Limits
Nitrobenzene-d5	60	24-128
2-Fluorobiphenyl	68	35-116
Terphenyl-d14	42	16-139



Lab #: 139282

BATCH QC REPORT

## Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B  
 Prep Method: EPA 3520

## METHOD BLANK

Matrix: Water  
 Batch#: 47941  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 05/10/99  
 Analysis Date: 05/11/99

MB Lab ID: QC97156

Analyte	Result	Reporting Limit
Naphthalene	ND	10
Acenaphthylene	ND	10
Acenaphthene	ND	10
Fluorene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Benzo (a) anthracene	ND	10
Chrysene	ND	10
Benzo (b, k) fluoranthene	ND	10
Benzo (a) pyrene	ND	10
Indeno (1, 2, 3-cd) pyrene	ND	10
Dibenz (a, h) anthracene	ND	10
Benzo (g, h, i) perylene	ND	10
Surrogate	%Rec	Recovery Limits
Nitrobenzene-d5	77	24-128
2-Fluorobiphenyl	74	35-116
Terphenyl-d14	70	16-139



Lab #: 139282

BATCH QC REPORT

## Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B  
 Prep Method: EPA 3520

## LABORATORY CONTROL SAMPLE

Matrix: Water  
 Batch#: 47941  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 05/10/99  
 Analysis Date: 05/11/99

LCS Lab ID: QC97157

Analyte	Result	Spike Added	%Rec #	Limits
Acenaphthene	40.05	50	80	43-110
Pyrene	37.84	50	76	35-107
Surrogate	%Rec	Limits		
Nitrobenzene-d5	76	24-128		
-Fluorobiphenyl	74	35-116		
Terphenyl-d14	76	16-139		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 2 outside limits

Lab #: 139282

## BATCH QC REPORT

Curtis & Tompkins Ltd.  
Page 1 of 1

## Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B  
 Prep Method: EPA 3520

## MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ  
 Lab ID: 139300-012  
 Matrix: Water  
 Batch#: 47941  
 Units: ug/L  
 Diln Fac: 1

Sample Date: 05/07/99  
 Received Date: 05/07/99  
 Prep Date: 05/10/99  
 Analysis Date: 05/11/99

MS Lab ID: QC97158

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Acenaphthene	49.02	<10	37.37	76	44-110
Pyrene	49.02	<10	23.5	48	16-110
Surrogate	%Rec	Limits			
Nitrobenzene-d5	81	24-128			
2-Fluorobiphenyl	73	35-116			
Terphenyl-d14	25	16-139			

MSD Lab ID: QC97159

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Acenaphthene	53.19	39.2	74	44-110	5	15
Pyrene	53.19	24.08	45	16-110	2	18
Surrogate	%Rec	Limits				
Nitrobenzene-d5	79	24-128				
2-Fluorobiphenyl	70	35-116				
Terphenyl-d14	24	16-139				

# Column to be used to flag recovery and RPD values with an asterisk  
 \* Values outside of QC limits  
 RPD: 0 out of 2 outside limits  
 Spike Recovery: 0 out of 4 outside limits



## Organochlorine Pesticides and PCBs

Client: Subsurface Consultants	Analysis Method: EPA 8080
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	

Field ID: SC1MW7	Sampled: 05/06/99
Lab ID: 139282-003	Received: 05/06/99
Matrix: Water	Extracted: 05/11/99
Batch#: 47964	Analyzed: 05/25/99
Units: ug/L	
Diln Fac: 10	

Analyte	Result	Reporting Limit
alpha-BHC	ND	0.5
beta-BHC	ND	0.5
gamma-BHC	ND	0.5
delta-BHC	ND	0.5
Heptachlor	ND	0.5
Aldrin	ND	0.5
Heptachlor epoxide B	ND	0.5
Heptachlor epoxide A	ND	0.5
Endosulfan I	ND	0.5
Dieldrin	ND	1.0
,4'-DDE	ND	1.0
Endrin	ND	1.0
Endosulfan II	ND	1.0
Endosulfan sulfate	ND	1.0
4,4'-DDD	ND	1.0
Endrin aldehyde	ND	1.0
4,4'-DDT	ND	1.0
Chlordane	ND	4.8
Methoxychlor	ND	4.8
Toxaphene	ND	9.5
Aroclor-1016	ND	4.8
Aroclor-1221	ND	9.5
Aroclor-1232	ND	4.8
Aroclor-1242	ND	4.8
Aroclor-1248	ND	4.8
Aroclor-1254	ND	4.8
Aroclor-1260	ND	4.8

Surrogate	%Recovery	Recovery Limits
TCMX	DO*	25-140
Decachlorobiphenyl	DO*	15-147

\* Values outside of QC limits

DO: Surrogate diluted out



Lab #: 139282

BATCH QC REPORT

EPA 8080 Pesticides & PCBs

Client: Subsurface Consultants	Analysis Method: EPA 8080
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	

METHOD BLANK

Matrix: Water	Prep Date: 05/11/99
Batch#: 47964	Analysis Date: 05/27/99
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC97244

Analyte	Result	Reporting Limit
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
gamma-BHC	ND	0.05
delta-BHC	ND	0.05
Heptachlor	ND	0.05
Aldrin	ND	0.05
Heptachlor epoxide B	ND	0.05
Heptachlor epoxide A	ND	0.05
Endosulfan I	ND	0.05
Dieldrin	ND	0.1
4,4'-DDE	ND	0.1
Endrin	ND	0.1
Endosulfan II	ND	0.1
Endosulfan sulfate	ND	0.1
4,4'-DDD	ND	0.1
Endrin aldehyde	ND	0.1
4,4'-DDT	ND	0.1
Chlordane	ND	0.5
Methoxychlor	ND	0.5
Toxaphene	ND	1.0
Aroclor-1016	ND	0.5
Aroclor-1221	ND	1.0
Aroclor-1232	ND	0.5
Aroclor-1242	ND	0.5
Aroclor-1248	ND	0.5
Aroclor-1254	ND	0.5
Aroclor-1260	ND	0.5
Surrogate	%Rec	Recovery Limits
TCMX	60	25-140
Decachlorobiphenyl	65	15-147





Lab #: 139282

BATCH QC REPORT

EPA 8080 Pesticides & PCBs

Client: Subsurface Consultants	Analysis Method: EPA 8080
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 05/11/99
Batch#: 47964	Analysis Date: 05/27/99
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC97245

Analyte	Spike Added	BS	%Rec #	Limits
gamma-BHC	0.5	0.47	94	63-117
Heptachlor	0.5	0.5	100	59-105
Aldrin	0.5	0.41	82	50-112
Dieldrin	0.5	0.46	92	62-117
Endrin	0.5	0.56	112	63-112
4,4'-DDT	0.5	0.51	102	56-113
Surrogate	%Rec	Limits		
TCMX	73	25-140		
Decachlorobiphenyl	110	15-147		

BSD Lab ID: QC97246

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
gamma-BHC	0.5	0.37	74	63-117	24 *	20
Heptachlor	0.5	0.36	72	59-105	33 *	19
Aldrin	0.5	0.32	64	50-112	25 *	18
Dieldrin	0.5	0.36	72	62-117	24 *	15
Endrin	0.5	0.42	84	63-112	29 *	17
4,4'-DDT	0.5	0.36	72	56-113	34 *	15
Surrogate	%Rec	Limits				
TCMX	63	25-140				
Decachlorobiphenyl	73	15-147				

# Column to be used to flag recovery and RPD values with an asterisk  
 values outside of QC limits  
 RPD: 6 out of 6 outside limits  
 Spike Recovery: 0 out of 12 outside limits

SAMPLE ID: SCIMW-28  
 LAB ID: 139282-004  
 CLIENT: Subsurface Consultants  
 PROJECT ID: 133.009  
 LOCATION: KOT/9th Ave. Terminal  
 MATRIX: Filtrate

DATE SAMPLED: 05/06/99  
 DATE RECEIVED: 05/06/99  
 DATE REPORTED: 05/27/99

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	47911	EPA 6010B	05/10/99
Arsenic	25	5.0	1	47911	EPA 6010B	05/10/99
Barium	19	10	1	47911	EPA 6010B	05/10/99
Beryllium	ND	2.0	1	47911	EPA 6010B	05/10/99
Cadmium	ND	5.0	1	47911	EPA 6010B	05/10/99
Chromium (total)	ND	10	1	47911	EPA 6010B	05/10/99
Cobalt	ND	20	1	47911	EPA 6010B	05/10/99
Copper	ND	10	1	47911	EPA 6010B	05/10/99
Lead	ND	3.0	1	47911	EPA 6010B	05/10/99
Mercury	ND	0.20	1	48025	EPA 7470	05/13/99
Molybdenum	ND	20	1	47911	EPA 6010B	05/10/99
Nickel	ND	20	1	47911	EPA 6010B	05/10/99
Selenium	12	5.0	1	47911	EPA 6010B	05/10/99
Silver	ND	5.0	1	47911	EPA 6010B	05/10/99
Thallium	ND	5.0	1	47911	EPA 6010B	05/10/99
Vanadium	ND	10	1	47911	EPA 6010B	05/10/99
Zinc	ND	20	1	47911	EPA 6010B	05/10/99

ND = Not detected at or above reporting limit

SAMPLE ID: SCIMW-6  
 LAB ID: 139282-005  
 CLIENT: Subsurface Consultants  
 PROJECT ID: 133.009  
 LOCATION: KOT/9th Ave. Terminal  
 MATRIX: Filtrate

DATE SAMPLED: 05/06/99  
 DATE RECEIVED: 05/06/99  
 DATE REPORTED: 05/27/99

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	47911	EPA 6010B	05/10/99
Arsenic	ND	5.0	1	47911	EPA 6010B	05/10/99
Barium	30	10	1	47911	EPA 6010B	05/10/99
Beryllium	ND	2.0	1	47911	EPA 6010B	05/10/99
Cadmium	ND	5.0	1	47911	EPA 6010B	05/10/99
Chromium (total)	ND	10	1	47911	EPA 6010B	05/10/99
Cobalt	ND	20	1	47911	EPA 6010B	05/10/99
Copper	21	10	1	47911	EPA 6010B	05/10/99
Lead	ND	3.0	1	47911	EPA 6010B	05/10/99
Mercury	ND	0.20	1	48025	EPA 7470	05/13/99
Molybdenum	ND	20	1	47911	EPA 6010B	05/10/99
Nickel	ND	20	1	47911	EPA 6010B	05/10/99
Selenium	ND	5.0	1	47911	EPA 6010B	05/10/99
Silver	ND	5.0	1	47911	EPA 6010B	05/10/99
Thallium	ND	5.0	1	47911	EPA 6010B	05/10/99
Vanadium	ND	10	1	47911	EPA 6010B	05/10/99
Zinc	63	20	1	47911	EPA 6010B	05/10/99

ND = Not detected at or above reporting limit



Curtis & Tompkins, Ltd.

SAMPLE ID: SCIMW-24  
LAB ID: 139282-006  
CLIENT: Subsurface Consultants  
PROJECT ID: 133.009  
LOCATION: KOT/9th Ave.Terminal  
MATRIX: Filtrate

DATE SAMPLED: 05/06/99  
DATE RECEIVED: 05/06/99  
DATE REPORTED: 05/27/99

### Metals Analytical Report

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Lead	ND	3.0	1	47911	EPA 6010B	05/10/99

ND = Not detected at or above reporting limit

SAMPLE ID: SCIMW-11  
 LAB ID: 139282-007  
 CLIENT: Subsurface Consultants  
 PROJECT ID: 133.009  
 LOCATION: KOT/9th Ave. Terminal  
 MATRIX: Filtrate

DATE SAMPLED: 05/06/99  
 DATE RECEIVED: 05/06/99  
 DATE REPORTED: 05/27/99

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	47911	EPA 6010B	05/10/99
Arsenic	ND	5.0	1	47911	EPA 6010B	05/10/99
Barium	94	10	1	47911	EPA 6010B	05/10/99
Beryllium	ND	2.0	1	47911	EPA 6010B	05/10/99
Cadmium	ND	5.0	1	47911	EPA 6010B	05/10/99
Chromium (total)	ND	10	1	47911	EPA 6010B	05/10/99
Cobalt	ND	20	1	47911	EPA 6010B	05/10/99
Copper	ND	10	1	47911	EPA 6010B	05/10/99
Lead	ND	3.0	1	47911	EPA 6010B	05/10/99
Mercury	ND	0.20	1	48025	EPA 7470	05/13/99
Molybdenum	ND	20	1	47911	EPA 6010B	05/10/99
Nickel	ND	20	1	47911	EPA 6010B	05/10/99
Selenium	ND	5.0	1	47911	EPA 6010B	05/10/99
Silver	ND	5.0	1	47911	EPA 6010B	05/10/99
Thallium	ND	5.0	1	47911	EPA 6010B	05/10/99
Vanadium	ND	10	1	47911	EPA 6010B	05/10/99
Zinc	ND	20	1	47911	EPA 6010B	05/10/99

ND = Not detected at or above reporting limit

CLIENT: Subsurface Consultants  
JOB NUMBER: 139282

DATE REPORTED: 05/27/99

BATCH QC REPORT  
PREP BLANK

Compound	Result	Reporting Limit	Units	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	ug/L	1	47911	EPA 6010B	05/10/99
Arsenic	ND	5	ug/L	1	47911	EPA 6010B	05/10/99
Barium	ND	10	ug/L	1	47911	EPA 6010B	05/10/99
Beryllium	ND	2	ug/L	1	47911	EPA 6010B	05/10/99
Cadmium	ND	5	ug/L	1	47911	EPA 6010B	05/10/99
Chromium (total)	ND	10	ug/L	1	47911	EPA 6010B	05/10/99
Cobalt	ND	20	ug/L	1	47911	EPA 6010B	05/10/99
Copper	ND	10	ug/L	1	47911	EPA 6010B	05/10/99
Lead	ND	3	ug/L	1	47911	EPA 6010B	05/10/99
Mercury	ND	0.2	ug/L	1	48025	EPA 7470	05/13/99
Mercury	ND	2	ug/L	1	48025	EPA 7470	05/13/99
Molybdenum	ND	20	ug/L	1	47911	EPA 6010B	05/10/99
Nickel	ND	20	ug/L	1	47911	EPA 6010B	05/10/99
Selenium	ND	5	ug/L	1	47911	EPA 6010B	05/10/99
Silver	ND	5	ug/L	1	47911	EPA 6010B	05/10/99
Thallium	ND	5	ug/L	1	47911	EPA 6010B	05/10/99
Vanadium	ND	10	ug/L	1	47911	EPA 6010B	05/10/99
Zinc	ND	20	ug/L	1	47911	EPA 6010B	05/10/99

ND = Not Detected at or above reporting limit

CLIENT: Subsurface Consultants  
 JOB NUMBER: 139282

DATE REPORTED: 05/27/99

 BATCH QC REPORT  
 BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS% Rec.	BSD% Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Antimony	500	411	462	ug/L	82	92	80-120	12	20	47911	EPA 6010B	05/10/99
Arsenic	2000	1950	1930	ug/L	98	97	80-120	1	20	47911	EPA 6010B	05/10/99
Barium	2000	1990	1960	ug/L	100	98	80-120	2	20	47911	EPA 6010B	05/10/99
Beryllium	50	48.9	47.8	ug/L	98	96	80-120	2	20	47911	EPA 6010B	05/10/99
Cadmium	50	47.7	46.9	ug/L	95	94	80-120	2	20	47911	EPA 6010B	05/10/99
Chromium (total)	200	193	189	ug/L	97	95	80-120	2	20	47911	EPA 6010B	05/10/99
Cobalt	500	488	476	ug/L	98	95	80-120	3	20	47911	EPA 6010B	05/10/99
Copper	250	248	245	ug/L	99	98	80-120	1	20	47911	EPA 6010B	05/10/99
Lead	500	458	452	ug/L	92	90	80-120	1	20	47911	EPA 6010B	05/10/99
Mercury	5	5.01	4.985	ug/L	100	100	80-120	1	20	48025	EPA 7470	05/13/99
Molybdenum	400	393	388	ug/L	98	97	80-120	1	20	47911	EPA 6010B	05/10/99
Nickel	500	495	481	ug/L	99	96	80-120	3	20	47911	EPA 6010B	05/10/99
Selenium	2000	1950	1930	ug/L	98	97	80-120	1	20	47911	EPA 6010B	05/10/99
Silver	100	101	100	ug/L	101	100	80-120	1	20	47911	EPA 6010B	05/10/99
Thallium	2000	1900	1890	ug/L	95	95	80-120	1	20	47911	EPA 6010B	05/10/99
Vanadium	500	487	478	ug/L	97	96	80-120	2	20	47911	EPA 6010B	05/10/99
Zinc	500	492	480	ug/L	98	96	80-120	3	20	47911	EPA 6010B	05/10/99



CLIENT: Subsurface Consultants  
 JOB NUMBER: 139282

DATE REPORTED: 05/27/99

BATCH QC REPORT  
 SAMPLE DUPLICATE

Compound	Sample	Sample Result	Duplicate Result	Units	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Antimony	139256-001	<60.000	<60.000	ug/L	NC	20	47911	EPA 6010B	05/10/99
Arsenic	139256-001	16300	16500	ug/L	1	20	47911	EPA 6010B	05/10/99
Barium	139256-001	67.4	69.2	ug/L	3	20	47911	EPA 6010B	05/10/99
Beryllium	139256-001	<2.000	<2.000	ug/L	NC	20	47911	EPA 6010B	05/10/99
Cadmium	139256-001	<5.000	<5.000	ug/L	NC	20	47911	EPA 6010B	05/10/99
Chromium (total)	139256-001	<10.000	<10.000	ug/L	NC	20	47911	EPA 6010B	05/10/99
Cobalt	139256-001	<20.000	<20.000	ug/L	NC	20	47911	EPA 6010B	05/10/99
Copper	139256-001	<10.000	<10.000	ug/L	NC	20	47911	EPA 6010B	05/10/99
Lead	139256-001	<3.000	<3.000	ug/L	NC	20	47911	EPA 6010B	05/10/99
Mercury	139282-004	<0.200	<0.200	ug/L	NC	20	48025	EPA 7470	05/13/99
Mercury	139344-001	<2.247	<2.247	ug/L	NC	20	48025	EPA 7470	05/13/99
Molybdenum	139256-001	21.5	20.3	ug/L	6	20	47911	EPA 6010B	05/10/99
Nickel	139256-001	<20.000	<20.000	ug/L	NC	20	47911	EPA 6010B	05/10/99
Selenium	139256-001	<5.000	<5.000	ug/L	NC	20	47911	EPA 6010B	05/10/99
Silver	139256-001	<5.000	<5.000	ug/L	NC	20	47911	EPA 6010B	05/10/99
Thallium	139256-001	<5.000	<5.000	ug/L	NC	20	47911	EPA 6010B	05/10/99
Vanadium	139256-001	<10.000	<10.000	ug/L	NC	20	47911	EPA 6010B	05/10/99
Zinc	139256-001	<20.000	<20.000	ug/L	NC	20	47911	EPA 6010B	05/10/99

NC = Not Calculable





CLIENT: Subsurface Consultants  
JOB NUMBER: 139282

DATE REPORTED: 05/27/99

BATCH QC REPORT  
SAMPLE SPIKE

Compound	Spike Amount	Sample	Sample Result	Spike Result	Units	Percent Rec.	Rec. Limit	QC Batch	Method	Analysis Date
Antimony	500	139256-001	<60.000	332	ug/L	66	65-135	47911	EPA 6010B	05/10/99
Arsenic	2000	139256-001	16300	18300	ug/L	100 NM	65-135	47911	EPA 6010B	05/10/99
Barium	2000	139256-001	67.4	2060	ug/L	100	65-135	47911	EPA 6010B	05/10/99
Beryllium	50	139256-001	<2.000	49.8	ug/L	100	65-135	47911	EPA 6010B	05/10/99
Cadmium	50	139256-001	<5.000	49.9	ug/L	100	65-135	47911	EPA 6010B	05/10/99
Chromium (total)	200	139256-001	<10.000	189	ug/L	95	65-135	47911	EPA 6010B	05/10/99
Cobalt	500	139256-001	<20.000	474	ug/L	95	65-135	47911	EPA 6010B	05/10/99
Copper	250	139256-001	<10.000	240	ug/L	96	65-135	47911	EPA 6010B	05/10/99
Lead	500	139256-001	<3.000	463	ug/L	93	65-135	47911	EPA 6010B	05/10/99
Mercury	5	139282-004	<0.200	4.884	ug/L	98	65-135	48025	EPA 7470	05/13/99
Mercury	50	139344-001	<2.247	57.15	ug/L	102	65-135	48025	EPA 7470	05/13/99
Molybdenum	400	139256-001	21.5	408	ug/L	97	65-135	47911	EPA 6010B	05/10/99
Nickel	500	139256-001	<20.000	491	ug/L	98	65-135	47911	EPA 6010B	05/10/99
Selenium	2000	139256-001	<5.000	2200	ug/L	110	65-135	47911	EPA 6010B	05/10/99
Silver	100	139256-001	<5.000	68.1	ug/L	68	65-135	47911	EPA 6010B	05/10/99
Thallium	2000	139256-001	<5.000	1980	ug/L	99	65-135	47911	EPA 6010B	05/10/99
Vanadium	500	139256-001	<10.000	483	ug/L	97	65-135	47911	EPA 6010B	05/10/99
Zinc	500	139256-001	<20.000	510	ug/L	102	65-135	47911	EPA 6010B	05/10/99

NM = Not Meaningful

**Dissolved Organic Carbon (DOC)**

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave.Terminal

Analysis Method: EPA 415.2  
Prep Method: EPA 415.2

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
139282-004	SCIMW-28	47962	06-MAY-99	11-MAY-99	-
139282-005	SCIMW-6	47962	06-MAY-99	11-MAY-99	-
139282-006	SCIMW-24	47962	06-MAY-99	11-MAY-99	-
139282-007	SCIMW-11	47962	06-MAY-99	11-MAY-99	-
139282-008	SCIMW-12	47962	06-MAY-99	11-MAY-99	-
QC97237	Method Blank	47962	-	11-MAY-99	-

Analyte: Dissolved Organic Carbon

Matrix: Water

Units: mg/L

Sample #	Client ID	Result	Reporting Limit	Dilution Factor
139282-004	SCIMW-28	17	1.0	1
139282-005	SCIMW-6	1.9	1.0	1
139282-006	SCIMW-24	23	1.0	1
139282-007	SCIMW-11	12	1.0	1
139282-008	SCIMW-12	2.4	1.0	1
QC97237	Method Blank	ND	1.0	1

ND = None Detected at or above Reporting Limit

Dissolved Organic Carbon (DOC)

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave.Terminal

Analysis Method: EPA 415.2  
Prep Method: EPA 415.2

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
QC97238	Lab Control Sample	47962	-	11-MAY-99	-

Analyte: Dissolved Organic Carbon      Matrix: Water      Units: mg/L

Sample #	Sample Type	Spike Amt.	Result	%Recovery	Limits
QC97238	Lab Control Sample	10.00	9.500	95	80-120

**Dissolved Organic Carbon (DOC)**

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave.Terminal

Analysis Method: EPA 415.2  
Prep Method: EPA 415.2

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
QC97239	MS of 139282-005	47962	06-MAY-99	11-MAY-99	-
QC97240	MSD of 139282-005	47962	06-MAY-99	11-MAY-99	-

Analyte: Dissolved Organic Carbon

Matrix: Water

Units: mg/L

Sample #	Client ID	Spikeamt	Result	%Rec	Limits	%RPD	Limit
QC97239	MS of 139282-005	10.00	7.760	59*	75-125		
QC97240	MSD of 139282-005	10.00	7.690	58*	75-125	1	35
139282-005	SCIMW-6		1.900				

\* = Values outside QC limits

**Total Dissolved Solids (TDS)**

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave.Terminal

Analysis Method: EPA 160.1  
Prep Method: EPA 160.1

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
139282-005	SCIMW-6	47928	06-MAY-99	10-MAY-99	-
139282-006	SCIMW-24	47928	06-MAY-99	10-MAY-99	-
139282-007	SCIMW-11	47928	06-MAY-99	10-MAY-99	-
139282-008	SCIMW-12	47928	06-MAY-99	10-MAY-99	-
QC97102	Method Blank	47928	-	10-MAY-99	-

Analyte: Total Dissolved Solids

Matrix: Water

Units: mg/L

Sample #	Client ID	Result	Reporting Limit	Dilution Factor
139282-005	SCIMW-6	17700	100	10
139282-006	SCIMW-24	1090	10	1
139282-007	SCIMW-11	3880	17	1.6667
139282-008	SCIMW-12	23900	100	10
QC97102	Method Blank	ND	10	1

ND = None Detected at or above Reporting Limit

**Total Dissolved Solids (TDS)**

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave.Terminal

Analysis Method: EPA 160.1  
Prep Method: EPA 160.1

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
QC97103	SDUP of 139282-008	47928	06-MAY-99	10-MAY-99	-

**Analyte:** Total Dissolved Solids      **Matrix:** Water      **Units:** mg/L

Sample #	Sample Type	Result	%RPD	Limit
QC97103	SDUP of 139282-008	25600	7	25
139282-008	SCIMW-12	23880		



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SAMPLE ID: SCI MW-34  
LAB ID: 139258-005  
CLIENT: Subsurface Consultants  
PROJECT ID: 133.009  
LOCATION: KOT/9th Ave. Terminal  
MATRIX: Filtrate

DATE SAMPLED: 05/05/99  
DATE RECEIVED: 05/05/99  
DATE REPORTED: 12/21/99

**Metals Analytical Report**

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Lead	ND	3.0	1	47911	EPA 6010B	05/10/99

ND = Not detected at or above reporting limit



Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants  
JOB NUMBER: 139258

DATE REPORTED: 12/21/99

BATCH QC REPORT  
PREP BLANK

Compound	Result	Reporting Limit	Units	IDF	QC Batch	Method	Analysis Date
Lead	ND	3	ug/L	1	47911	EPA 6010B	05/10/99

ND = Not Detected at or above reporting limit





Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants

JOB NUMBER: 139258

DATE REPORTED: 12/21/99

BATCH QC REPORT  
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS% Rec.	BSD% Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Lead	500	458	452	ug/L	92	90	80-120	1	20	47911	EPA 6010B	05/10/99



Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants

JOB NUMBER: 139258

DATE REPORTED: 12/21/99

**BATCH QC REPORT  
SAMPLE DUPLICATE**

Compound	Sample	Sample Result	Duplicate Result	Units	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Lead	139256-001	<3.000	<3.000	ug/L	NC	20	47911	EPA 6010B	05/10/99

NC = Not Calculable



Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants  
JOB NUMBER: 139258

DATE REPORTED: 12/21/99

BATCH QC REPORT  
SAMPLE SPIKE

Compound	Spike Amount	Sample	Sample Result	Spike Result	Units	Percent Rec.	Rec. Limit	QC Batch	Method	Analysis Date
Lead	500	139256-001	<3,000	463	ug/L	93	65-135	47911	EPA 6010B	05/10/99



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

A N A L Y T I C A L   R E P O R T

Prepared for:

Subsurface Consultants  
3736 Mt. Diablo Blvd.  
Suite 200  
Lafayette, CA 94549

Date: 15-SEP-99  
Lab Job Number: 141160  
Project ID: 133.009  
Location: KOT/9th Ave. Terminal

Reviewed by:

Reviewed by:

This package may be reproduced only in its entirety.

Laboratory Number: 141160  
Client: **Subsurface Consultants, Inc.**  
Project Name: **9<sup>th</sup> Ave. Terminal**

Receipt Date: **08/26/99**

### **CASE NARRATIVE**

This hardcopy data package contains sample results and batch QC results for seven water samples received from the above referenced project. The samples were received cold and intact.

**Total Volatile Hydrocarbons/BTXE:** No analytical problems were encountered.

**Total Extractable Hydrocarbons:** No analytical problems were encountered.

**Metals:** No analytical problems were encountered.

**General Chemistry:** The matrix spike recoveries for dissolved organic carbon were outside acceptance limits. The associated laboratory control sample recovery was acceptable. No other analytical problems were encountered.





TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
141160-007	SCIMW-34	50292	08/26/99	09/01/99	09/01/99	

Matrix: Water

Analyte	Units	141160-007
Diln Fac:		1
Gasoline C7-C12	ug/L	<50
Trifluorotoluene	%REC	90
Bromofluorobenzene	%REC	94

Lab #: 141160

BATCH QC REPORT



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TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water  
Batch#: 50292  
Units: ug/L  
Diln Fac: 1

Prep Date: 08/31/99  
Analysis Date: 08/31/99

MB Lab ID: QC06430

Analyte	Result	
Gasoline C7-C12	<50	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	84	53-150
Bromofluorobenzene	91	53-149





## TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M  
 Prep Method: EPA 5030

## LABORATORY CONTROL SAMPLE

Matrix: Water  
 Batch#: 50292  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 08/31/99  
 Analysis Date: 08/31/99

LCS Lab ID: QC06427

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	1918	2000	96	77-117
Surrogate	%Rec	Limits		
Trifluorotoluene	95	53-150		
Bromofluorobenzene	84	53-149		

Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



## TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 5030
Location: KOT/9th Ave. Terminal	

## MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: SCIMW-34	Sample Date: 08/26/99
Lab ID: 141160-007	Received Date: 08/26/99
Matrix: Water	Prep Date: 09/01/99
Batch#: 50292	Analysis Date: 09/01/99
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC06431

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline C7-C12	2000	<50	1710	85	69-131
Surrogate	%Rec	Limits			
Difluorotoluene	103	53-150			
Bromofluorobenzene	96	53-149			

MSD Lab ID: QC06432

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	2000	1733	87	69-131	1	13
Surrogate	%Rec	Limits				
Trifluorotoluene	104	53-150				
Bromofluorobenzene	97	53-149				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



BTXE

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
141160-007	SCIMW-34	50292	08/26/99	09/01/99	09/01/99	

Matrix: Water

Analyte	Units	141160-007
Diln Fac:		1
Benzene	ug/L	<0.5
Toluene	ug/L	<0.5
methylbenzene	ug/L	<0.5
p-Xylenes	ug/L	<0.5
o-Xylene	ug/L	<0.5
Surrogate		
Trifluorotoluene	%REC	93
Bromofluorobenzene	%REC	96

Lab #: 141160

BATCH QC REPORT



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BTXE

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water  
Batch#: 50292  
Units: ug/L  
Diln Fac: 1

Prep Date: 08/31/99  
Analysis Date: 08/31/99

MB Lab ID: QC06430

Analyte	Result		
Benzene	<0.5		
Toluene	<0.5		
Ethylbenzene	<0.5		
m,p-Xylenes	<0.5		
o-Xylene	<0.5		
surrogate	%Rec		Recovery Limits
Trifluorotoluene	87		51-143
Bromofluorobenzene	86		37-146



## BTXE

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8021B  
 Prep Method: EPA 5030

## BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water  
 Batch#: 50292  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 08/31/99  
 Analysis Date: 08/31/99

BS Lab ID: QC06428

Analyte	Spike Added	BS	%Rec	#	Limits
Benzene	20	18.38	92		65-111
Toluene	20	18.38	92		76-117
Ethylbenzene	20	19.26	96		71-121
m,p-Xylenes	40	38.99	97		80-123
o-Xylene	20	19.94	100		75-127
Surrogate			%Rec		Limits
Trifluorotoluene			88		51-143
Bromofluorobenzene			88		37-146

BSD Lab ID: QC06429

Analyte	Spike Added	BSD	%Rec	#	Limits	RPD #	Limit
Benzene	20	18.19	91		65-111	1	10
Toluene	20	18.24	91		76-117	1	10
Ethylbenzene	20	19.29	96		71-121	0	11
m,p-Xylenes	40	38.59	96		80-123	1	10
o-Xylene	20	20	100		75-127	0	11
Surrogate			%Rec		Limits		
Trifluorotoluene			90		51-143		
Bromofluorobenzene			91		37-146		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 5 outside limits

Recovery: 0 out of 10 outside limits

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
 Project#: 133.009  
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M  
 Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
141160-001	SCIMW-2	50215	08/26/99	08/27/99	08/30/99	
141160-006	SCIMW-23	50215	08/26/99	08/27/99	08/30/99	
141160-007	SCIMW-34	50215	08/26/99	08/27/99	08/30/99	

Matrix: Water

Analyte	Units	141160-001	141160-006	141160-007
Diln Fac:		1	1	1
Diesel C10-C24	ug/L	13000	120 Y	<50
Motor Oil C24-C36	ug/L	1600 YL	<300	<300
Surrogate				
Hexacosane	%REC	77	79	73

Y: Sample exhibits fuel pattern which does not resemble standard

L: Lighter hydrocarbons than indicated standard



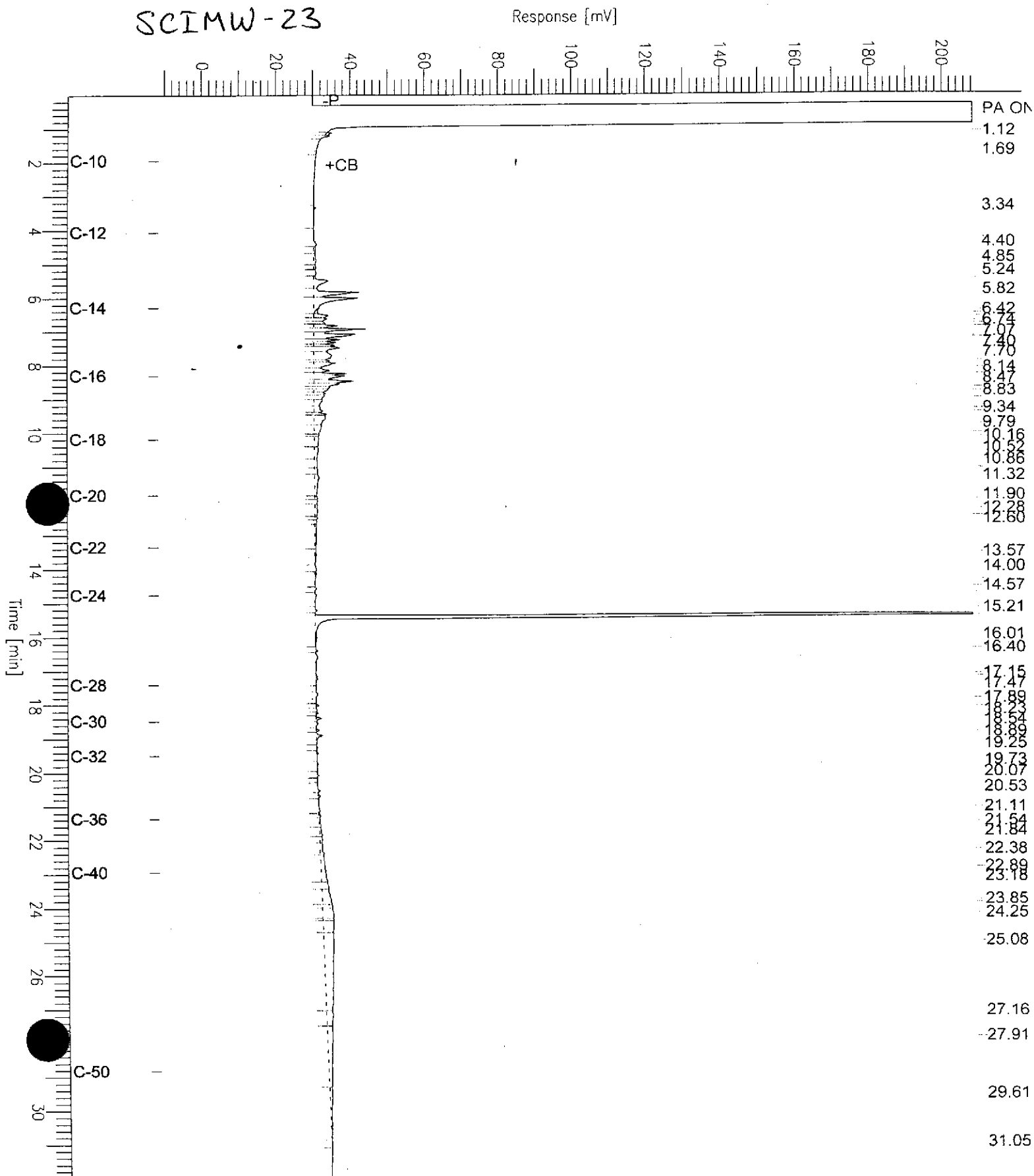
# Chromatogram

Sample Name : 141160-006sg,50215  
FileName : G:\GC13\CHB\241B046.RAW  
Method : BTEH201.MTH  
Station : 0.01 min  
Scale Factor : 0.0

End Time : 31.91 min  
Plot Offset : -12 mV

Sample #: 50215  
Date : 8/31/99 07:15 AM  
Time of Injection: 8/30/99 10:43 PM  
Low Point : -11.52 mV  
High Point : 208.38 mV  
Plot Scale: 219.9 mV

## SCIMW-23





# Chromatogram

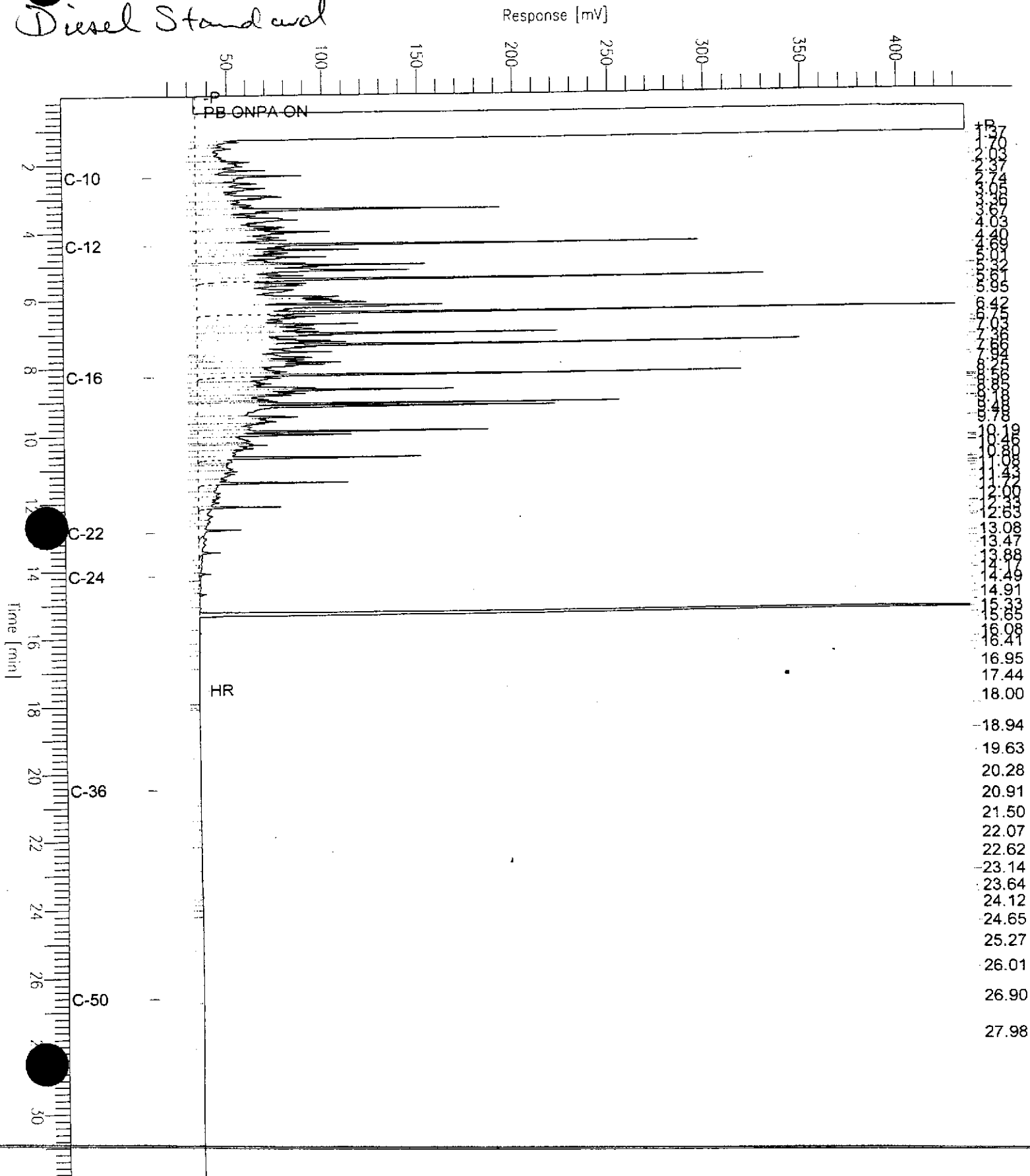
Sample Name : x,ccv,99ws8004,dsl  
FileName : C:\GC15\CHB\245B001.RAW  
Method : BTEH244.MTH  
Start Time : 0.01 min  
Scale Factor : 0.0

End Time : 31.91 min  
Plot Offset : 12 mV

Sample #: 500mg/l  
Date : 9/3/99 09:36 AM  
Time of Injection: 9/2/99 06:23 PM  
Low Point : 11.68 mV  
Plot Scale: 424.1 mV

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*Diesel Standard*



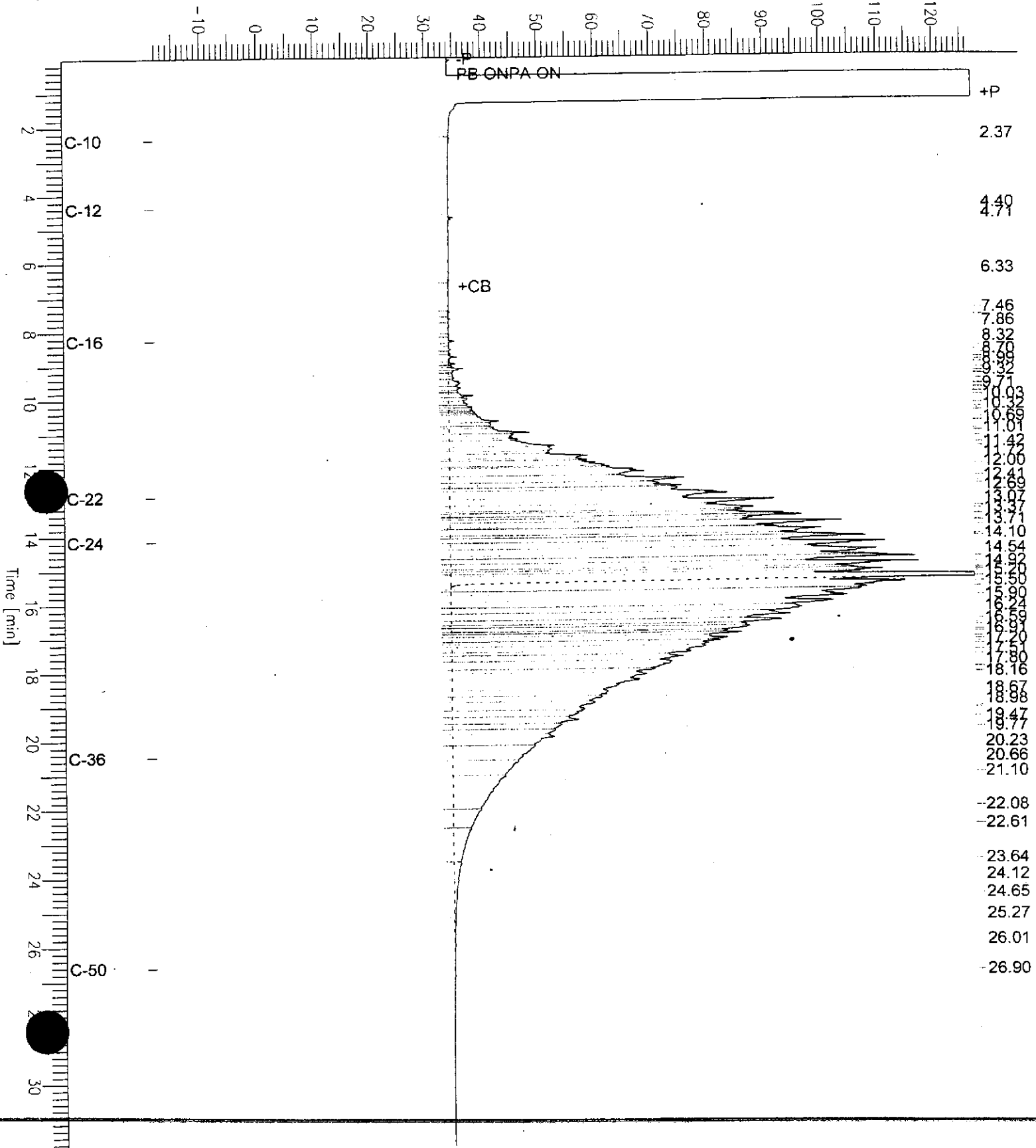
# Chromatogram

Sample Name : ccv,99ws7880,mo  
FileName : C:\GC15\CHB\245B003.RAW  
Method : BTEH244.MTH  
Start Time : 0.01 min  
Scale Factor : 0.0

End Time : 31.91 min  
Plot Offset : -18 mV

Sample #: 500mg/l  
Date : 9/3/99 09:37 AM  
Time of Injection: 9/2/99 07:48 PM  
Low Point : -18.02 mV  
Plot Scale: 145.0 mV  
High Point : 126.95 mV

*Motor Oil Standard*



Lab #: 141160

BATCH QC REPORT



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TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants  
Project#: 133.009  
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M  
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water  
Batch#: 50215  
Units: ug/L  
Diln Fac: 1

Prep Date: 08/27/99  
Analysis Date: 09/04/99

MB Lab ID: QC06109

Analyte	Result		
Diesel C10-C24	<50		
Motor Oil C24-C36	<300		
Surrogate	%Rec		Recovery Limits
Hexacosane	114		58-128



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 08/27/99
Batch#: 50215	Analysis Date: 09/04/99
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC06110

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C10-C24	2475	1736	70	50-114
Surrogate	%Rec	Limits		
Hexacosane	93	58-128		

BSD Lab ID: QC06111

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C10-C24	2475	1668	67	50-114	4	25
Surrogate	%Rec	Limits				
Hexacosane	88	58-128				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



SAMPLE ID: SCIMW-2  
LAB ID: 141160-001  
CLIENT: Subsurface Consultants  
PROJECT ID: 133.009  
LOCATION: KOT/9th Ave. Terminal  
MATRIX: Filtrate

DATE SAMPLED: 08/26/99  
DATE RECEIVED: 08/26/99  
DATE REPORTED: 09/08/99

California TITLE 22 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	50261	EPA 6010B	08/31/99
Arsenic	6.8	5.0	1	50261	EPA 6010B	08/31/99
Barium	300	10	1	50261	EPA 6010B	08/31/99
Beryllium	ND	2.0	1	50261	EPA 6010B	08/31/99
Cadmium	ND	5.0	1	50261	EPA 6010B	08/31/99
Chromium (total)	ND	10	1	50261	EPA 6010B	08/31/99
Cobalt	ND	20	1	50261	EPA 6010B	08/31/99
Copper	ND	10	1	50261	EPA 6010B	08/31/99
Lead	ND	3.0	1	50261	EPA 6010B	08/31/99
Mercury	ND	0.20	1	50303	EPA 7470	09/01/99
Molybdenum	ND	20	1	50261	EPA 6010B	08/31/99
Nickel	ND	20	1	50261	EPA 6010B	08/31/99
Selenium	ND	5.0	1	50261	EPA 6010B	08/31/99
Silver	ND	5.0	1	50261	EPA 6010B	08/31/99
Thallium	ND	5.0	1	50261	EPA 6010B	08/31/99
Vanadium	ND	10	1	50261	EPA 6010B	08/31/99
Zinc	ND	20	1	50261	EPA 6010B	08/31/99

ND = Not detected at or above reporting limit



SAMPLE ID: SCIMW-6  
LAB ID: 141160-002  
CLIENT: Subsurface Consultants  
PROJECT ID: 133.009  
LOCATION: KOT/9th Ave. Terminal  
MATRIX: Filtrate

DATE SAMPLED: 08/26/99  
DATE RECEIVED: 08/26/99  
DATE REPORTED: 09/08/99

California TITLE 22 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	50261	EPA 6010B	08/31/99
Arsenic	ND	5.0	1	50261	EPA 6010B	08/31/99
Barium	43	10	1	50261	EPA 6010B	08/31/99
Beryllium	ND	2.0	1	50261	EPA 6010B	08/31/99
Cadmium	ND	5.0	1	50261	EPA 6010B	08/31/99
Chromium (total)	ND	10	1	50261	EPA 6010B	08/31/99
Cobalt	ND	20	1	50261	EPA 6010B	08/31/99
Copper	26	10	1	50261	EPA 6010B	08/31/99
Lead	4.3	3.0	1	50261	EPA 6010B	08/31/99
Mercury	ND	0.20	1	50303	EPA 7470	09/01/99
Molybdenum	ND	20	1	50261	EPA 6010B	08/31/99
Nickel	ND	20	1	50261	EPA 6010B	08/31/99
Selenium	ND	5.0	1	50261	EPA 6010B	08/31/99
Silver	ND	5.0	1	50261	EPA 6010B	08/31/99
Thallium	ND	5.0	1	50261	EPA 6010B	08/31/99
Vanadium	ND	10	1	50261	EPA 6010B	08/31/99
Zinc	110	20	1	50261	EPA 6010B	08/31/99

ND = Not detected at or above reporting limit



SAMPLE ID: SCIMW-34  
LAB ID: 141160-007  
CLIENT: Subsurface Consultants  
PROJECT ID: 133.009  
LOCATION: KOT/9th Ave.Terminal  
MATRIX: Filtrate

DATE SAMPLED: 08/26/99  
DATE RECEIVED: 08/26/99  
DATE REPORTED: 09/08/99

Metals Analytical Report

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Lead	ND	3.0	1	50261	EPA 6010B	08/31/99

ND = Not detected at or above reporting limit



CLIENT: Subsurface Consultants  
JOB NUMBER: 141160

DATE REPORTED: 09/08/99

BATCH QC REPORT  
PREP BLANK

Compound	Result	Reporting Limit	Units	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	ug/L	1	50261	EPA 6010B	08/31/99
Arsenic	ND	5	ug/L	1	50261	EPA 6010B	08/31/99
Barium	ND	10	ug/L	1	50261	EPA 6010B	08/31/99
Beryllium	ND	2	ug/L	1	50261	EPA 6010B	08/31/99
Cadmium	ND	5	ug/L	1	50261	EPA 6010B	08/31/99
Chromium (total)	ND	10	ug/L	1	50261	EPA 6010B	08/31/99
Cobalt	ND	20	ug/L	1	50261	EPA 6010B	08/31/99
Copper	ND	10	ug/L	1	50261	EPA 6010B	08/31/99
Lead	ND	3	ug/L	1	50261	EPA 6010B	08/31/99
Mercury	ND	0.2	ug/L	1	50303	EPA 7470	09/01/99
Mercury	ND	2	ug/L	1	50303	EPA 7470	09/01/99
Molybdenum	ND	20	ug/L	1	50261	EPA 6010B	08/31/99
Nickel	ND	20	ug/L	1	50261	EPA 6010B	08/31/99
Selenium	ND	5	ug/L	1	50261	EPA 6010B	08/31/99
Silver	ND	5	ug/L	1	50261	EPA 6010B	08/31/99
Thallium	ND	5	ug/L	1	50261	EPA 6010B	08/31/99
Vanadium	ND	10	ug/L	1	50261	EPA 6010B	08/31/99
Zinc	ND	20	ug/L	1	50261	EPA 6010B	08/31/99

ND = Not Detected at or above reporting limit





CLIENT: Subsurface Consultants  
JOB NUMBER: 141160

DATE REPORTED: 09/08/99

BATCH QC REPORT  
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS% Rec.	BSD% Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Antimony	500	491	507	ug/L	98	101	80-120	3	20	50261	EPA 6010B	08/31/99
Arsenic	2000	1970	2020	ug/L	99	101	80-120	3	20	50261	EPA 6010B	08/31/99
Barium	2000	2080	2100	ug/L	104	105	80-120	1	20	50261	EPA 6010B	08/31/99
Beryllium	50	48.7	50.2	ug/L	97	100	80-120	3	20	50261	EPA 6010B	08/31/99
Cadmium	50	50	51.6	ug/L	100	103	80-120	3	20	50261	EPA 6010B	08/31/99
Chromium (total)	200	198	203	ug/L	99	102	80-120	3	20	50261	EPA 6010B	08/31/99
Cobalt	500	491	505	ug/L	98	101	80-120	3	20	50261	EPA 6010B	08/31/99
Copper	250	256	258	ug/L	102	103	80-120	1	20	50261	EPA 6010B	08/31/99
Lead	500	490	507	ug/L	98	101	80-120	3	20	50261	EPA 6010B	08/31/99
Mercury	5	5.03	4.998	ug/L	101	100	80-120	1	20	50303	EPA 7470	09/01/99
Molybdenum	400	402	412	ug/L	101	103	80-120	3	20	50261	EPA 6010B	08/31/99
Nickel	500	494	509	ug/L	99	102	80-120	3	20	50261	EPA 6010B	08/31/99
Selenium	2000	1910	1960	ug/L	96	98	80-120	3	20	50261	EPA 6010B	08/31/99
Silver	100	103	105	ug/L	103	105	80-120	2	20	50261	EPA 6010B	08/31/99
Sodium	2000	1990	2040	ug/L	100	102	80-120	3	20	50261	EPA 6010B	08/31/99
Radium	500	496	507	ug/L	99	101	80-120	2	20	50261	EPA 6010B	08/31/99
Zinc	500	476	489	ug/L	95	98	80-120	3	20	50261	EPA 6010B	08/31/99



CLIENT: Subsurface Consultants  
JOB NUMBER: 141160

DATE REPORTED: 09/08/99

BATCH QC REPORT  
MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Compound	Sample	Sample Result	Spike Amount	MS Result	MSD Result	Units	MS% Rec.	MSD% Rec.	Rec. Limit	RPD %	RPD Lim	QC Batch	Method	Analysis Date
Mercury	141083-002	<0.200	5	4.911	4.867	ug/L	98	97	65-135	1	20	50303	EPA 7470	09/01/99



CLIENT: Subsurface Consultants  
 JOB NUMBER: 141160

DATE REPORTED: 09/08/99

BATCH QC REPORT  
 SAMPLE DUPLICATE

Compound	Sample	Sample Result	Duplicate Result	Units	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Antimony	141161-002	<60.000	<60.000	ug/L	NC	20	50261	EPA 6010B	08/31/99
Arsenic	141161-002	<5.000	<5.000	ug/L	NC	20	50261	EPA 6010B	08/31/99
Barium	141161-002	29.7	29.4	ug/L	1	20	50261	EPA 6010B	08/31/99
Beryllium	141161-002	<2.000	<2.000	ug/L	NC	20	50261	EPA 6010B	08/31/99
Cadmium	141161-002	8.98	8.72	ug/L	3	20	50261	EPA 6010B	08/31/99
Chromium (total)	141161-002	<10.000	<10.000	ug/L	NC	20	50261	EPA 6010B	08/31/99
Cobalt	141161-002	<20.000	<20.000	ug/L	NC	20	50261	EPA 6010B	08/31/99
Copper	141161-002	<10.000	<10.000	ug/L	NC	20	50261	EPA 6010B	08/31/99
Lead	141161-002	<3.000	<3.000	ug/L	NC	20	50261	EPA 6010B	08/31/99
Mercury	141160-002	<0.200	<0.200	ug/L	NC	20	50303	EPA 7470	09/01/99
Mercury	141072-004	<2.000	<2.000	ug/L	NC	20	50303	EPA 7470	09/01/99
Molybdenum	141161-002	<20.000	<20.000	ug/L	NC	20	50261	EPA 6010B	08/31/99
Nickel	141161-002	<20.000	<20.000	ug/L	NC	20	50261	EPA 6010B	08/31/99
Selenium	141161-002	<5.000	<5.000	ug/L	NC	20	50261	EPA 6010B	08/31/99
Silver	141161-002	<5.000	<5.000	ug/L	NC	20	50261	EPA 6010B	08/31/99
Thallium	141161-002	<5.000	<5.000	ug/L	NC	20	50261	EPA 6010B	08/31/99
Vanadium	141161-002	<10.000	<10.000	ug/L	NC	20	50261	EPA 6010B	08/31/99
Zinc	141161-002	67.7	65.3	ug/L	4	20	50261	EPA 6010B	08/31/99

NC = Not Calculable



CLIENT: Subsurface Consultants  
JOB NUMBER: 141160

DATE REPORTED: 09/08/99

BATCH QC REPORT  
SAMPLE SPIKE

Compound	Spike Amount	Sample	Sample Result	Spike Result	Units	Percent Rec.	Rec. Limit	QC Batch	Method	Analysis Date
Antimony	500	141161-002	<60.000	464	ug/L	93	65-135	50261	EPA 6010B	08/31/99
Arsenic	2000	141161-002	<5.000	2020	ug/L	101	65-135	50261	EPA 6010B	08/31/99
Barium	2000	141161-002	29.7	1990	ug/L	98	65-135	50261	EPA 6010B	08/31/99
Beryllium	50	141161-002	<2.000	47.8	ug/L	96	65-135	50261	EPA 6010B	08/31/99
Cadmium	50	141161-002	8.98	55.7	ug/L	93	65-135	50261	EPA 6010B	08/31/99
Chromium (total)	200	141161-002	<10.000	184	ug/L	92	65-135	50261	EPA 6010B	08/31/99
Cobalt	500	141161-002	<20.000	455	ug/L	91	65-135	50261	EPA 6010B	08/31/99
Copper	250	141161-002	<10.000	245	ug/L	98	65-135	50261	EPA 6010B	08/31/99
Lead	500	141161-002	<3.000	467	ug/L	93	65-135	50261	EPA 6010B	08/31/99
Mercury	5	141160-002	<0.200	4.495	ug/L	90	65-135	50303	EPA 7470	09/01/99
Mercury	50	141072-004	<2.000	48.74	ug/L	98	65-135	50303	EPA 7470	09/01/99
Molybdenum	400	141161-002	<20.000	392	ug/L	98	65-135	50261	EPA 6010B	08/31/99
Nickel	500	141161-002	<20.000	451	ug/L	90	65-135	50261	EPA 6010B	08/31/99
Selenium	2000	141161-002	<5.000	2080	ug/L	104	65-135	50261	EPA 6010B	08/31/99
Silver	100	141161-002	<5.000	81.8	ug/L	82	65-135	50261	EPA 6010B	08/31/99
Sodium	2000	141161-002	<5.000	1950	ug/L	98	65-135	50261	EPA 6010B	08/31/99
Vanadium	500	141161-002	<10.000	474	ug/L	95	65-135	50261	EPA 6010B	08/31/99
Zinc	500	141161-002	67.7	540	ug/L	94	65-135	50261	EPA 6010B	08/31/99



Dissolved Organic Carbon (DOC)

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave.Terminal

Analysis Method: EPA 415.2  
Prep Method: EPA 415.2

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
141160-001	SCIMW-2	50350	26-AUG-99	02-SEP-99	-
141160-002	SCIMW-6	50350	26-AUG-99	02-SEP-99	-
141160-003	SCIMW-11	50350	26-AUG-99	02-SEP-99	-
141160-004	SCIMW-12	50350	26-AUG-99	02-SEP-99	-
141160-005	SCIMW-14	50350	26-AUG-99	02-SEP-99	-
141160-006	SCIMW-23	50350	26-AUG-99	02-SEP-99	-
141160-007	SCIMW-34	50350	26-AUG-99	02-SEP-99	-
QC06686	Method Blank	50350	-	02-SEP-99	-

Analyte: Dissolved Organic Carbon

Matrix: Water

Units: mg/L

Sample #	Client ID	Result	Reporting Limit	Dilution Factor
141160-001	SCIMW-2	4.7	1.0	1
141160-002	SCIMW-6	ND	1.0	1
141160-003	SCIMW-11	6.5	1.0	1
141160-004	SCIMW-12	ND	1.0	1
141160-005	SCIMW-14	16	1.0	1
141160-006	SCIMW-23	11	1.0	1
141160-007	SCIMW-34	5.7	1.0	1
QC06686	Method Blank	ND	1.0	1

ND = None Detected at or above Reporting Limit

Dissolved Organic Carbon (DOC)

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave.Terminal

Analysis Method: EPA 415.2  
Prep Method: EPA 415.2

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
QC06687	Lab Control Sample	50350	-	02-SEP-99	-

Analyte: Dissolved Organic Carbon      Matrix: Water      Units: mg/L

Sample #	Sample Type	Spike Amt.	Result	%Recovery	Limits
QC06687	Lab Control Sample	10.00	8.700	87	80-120

Dissolved Organic Carbon (DOC)

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave. Terminal

Analysis Method: EPA 415.2  
Prep Method: EPA 415.2

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
QC06688	MS of 141160-001	50350	26-AUG-99	02-SEP-99	-
QC06689	MSD of 141160-001	50350	26-AUG-99	02-SEP-99	-

Analyte: Dissolved Organic Carbon

Matrix: Water

Units: mg/L

Sample #	Client ID	Spikeamt	Result	%Rec	Limits	%RPD	Limit
QC06688	MS of 141160-001	10.00	10.70	60*	75-125		
QC06689	MSD of 141160-001	10.00	10.10	55*	75-125	5	35
141160-001	SCIMW-2		4.700				

\* = Values outside QC limits

**Total Dissolved Solids (TDS)**

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave. Terminal

Analysis Method: EPA 160.1  
Prep Method: EPA 160.1

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
141160-001	SCIMW-2	50243	26-AUG-99	29-AUG-99	-
141160-002	SCIMW-6	50243	26-AUG-99	29-AUG-99	-
141160-003	SCIMW-11	50243	26-AUG-99	29-AUG-99	-
141160-004	SCIMW-12	50243	26-AUG-99	29-AUG-99	-
141160-005	SCIMW-14	50243	26-AUG-99	29-AUG-99	-
141160-006	SCIMW-23	50243	26-AUG-99	29-AUG-99	-
141160-007	SCIMW-34	50243	26-AUG-99	29-AUG-99	-
QC06454	Method Blank	50243	-	29-AUG-99	-

**Analyte:** Total Dissolved Solids

**Matrix:** Water

**Units:** mg/L

Sample #	Client ID	Result	Reporting Limit	Dilution Factor
141160-001	SCIMW-2	12300	100	10
141160-002	SCIMW-6	23500	100	10
141160-003	SCIMW-11	6530	25	2.5
141160-004	SCIMW-12	19800	100	10
141160-005	SCIMW-14	2930	10	1
141160-006	SCIMW-23	7490	50	5
141160-007	SCIMW-34	11400	100	10
QC06454	Method Blank	ND	10	1

ND = None Detected at or above Reporting Limit



**Total Dissolved Solids (TDS)**

Client: Subsurface Consultants  
Project #: 133.009  
Location : KOT/9th Ave. Terminal

Analysis Method: EPA 160.1  
Prep Method: EPA 160.1

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
QC06455	SDUP of 141113-002	50243	24-AUG-99	29-AUG-99	-

Analyte: Total Dissolved Solids

Matrix: Water

Units: mg/L

Sample #	Sample Type	Result	%RPD	Limit
QC06455	SDUP of 141113-002	712.0	7	25
141113-002	ZZZZZZZZ	666.0		