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ENVIRONMENTAL
PROTECTION
95 OCT 17 PM 1:23

October 16, 1995
SCI 727.001

Ms. Susan Hugo
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, California 94502

**Request for Site Closure and
Quarterly Groundwater Monitoring
Former Diesel Fuel Tank Area
722 Folger Avenue
Emeryville, California**

Dear Ms. Hugo:

This letter records the results of the September 1995 monitoring event conducted by Subsurface Consultants, Inc. (SCI) for the groundwater monitoring program at the referenced site. Five monitoring wells have been periodically sampled in the vicinity of a former diesel fuel tank since May 1992. The previous tank area and well locations are shown on the attached Site Plan, Plate 1.

Groundwater Monitoring

The groundwater monitoring program for this site was modified by the ACHCSA in June 1994. As modified, the program requires the following:

1. Wells MW-4, MW-5 and MW-8 will be monitored for Total Extractable Hydrocarbons (TEH) and BTEX every quarter.
2. If well MW-4 shows detectable levels of contaminants, then samples from well MW-6 must be analyzed.
3. MW-3 is to be monitored for TEH and BTEX biannually.

■ **Subsurface Consultants, Inc.**

171 12th Street • Suite 201 • Oakland, California 94607 • Telephone 510-268-0461 • FAX 510-268-0137

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Alameda County Health Care Services Agency
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A groundwater monitoring event was conducted on September 13 and 14, 1995. Initially, the depth to groundwater and the presence of free product were checked in all five wells with a steel tape, and water and petroleum product sensitive pastes. Groundwater level measurements are presented on Table 1.

Prior to sampling, the wells were purged of at least three well volumes of water. Measurements of water temperature, pH and conductivity were recorded at various intervals during the purge process until values were relatively stabilized. Well sampling forms are attached.

The depth to water in each well was checked, following purging and before sampling, to assure that the wells had recharged to at least 80 percent of their initial volume. The wells were then sampled using new disposable bailers. The samples were retained in containers pre-cleaned by the supplier in accordance with EPA protocol. The samples were placed in an ice filled cooler and transmitted to Curtis & Tompkins, Ltd. The testing program for this event included the following analyses:

1. Total Extractable Hydrocarbons as diesel (TEH) (EPA 5030/8015), and
2. Benzene, toluene, ethylbenzene and xylene (BTEX) (EPA 5030/602).

The results of all analytical testing events are presented on Table 2. Analytical test reports and Chain-of-Custody documents for the current event are attached.

Conclusions

Groundwater Gradient

The groundwater level data indicates the local groundwater flow direction remains toward the west. Groundwater contours for this event are presented on the site plan.

Diesel Contamination

In general, the data indicates that groundwater in a limited area around the previous tank site has been impacted by TEH within the diesel range. The upgradient and downgradient extent of the diesel plume have been well defined. During this event, the sample from the upgradient well MW-8 contained, 150 ug/l of TEH; however, the sample chromatograph did not resemble a typical diesel pattern. The chromatogram exhibited a single peak. While the source of the peak is unknown, it appears that it is not related to the previous diesel release at the site.

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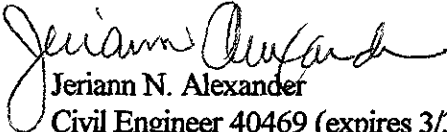
Request for Site Closure

Quarterly groundwater monitoring has occurred for 11 consecutive events, commencing in May 1992. During the study, TEH levels have fluctuated as water levels migrated through the discontinuous permeable zones. However, no free product has been observed during any groundwater monitoring event and benzene has only been detected in one well, MW-4, on two occasions (November 4, 1993 at 0.5 ug/l and June 14, 1995 at 1.1 ug/l). Since the source of contamination has been largely removed (880 cubic yards of impacted soil and 5600 gallons of impacted water), the primary contaminant of concern is a diesel range hydrocarbon, and the contaminant plume has not migrated over the last 3-1/2 years, Subsurface Consultants, Inc. requests, on behalf of the Coulter Steel and Forge Company, that this site be considered for closure.

If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.


Jeriann N. Alexander
Civil Engineer 40469 (expires 3/31/99)

FV:JNA:RWR:sld

2 copies submitted

Attachments: Table 1 - Groundwater Elevations
Table 2 - Summary of Contaminants in Groundwater
Site Plan - Plate 1
Analytical Test Reports
Chain-of-Custody Documents
Groundwater Sampling Forms

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Alameda County Health Care Services Agency
October 16, 1995
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cc: **Mr. Dante Sambajon**
Plant Engineer
Coulter Steel and Forge Company
1494 - 67th Street
Emeryville, California 94662-0901

Mr. Rich Hiett
Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, California 94612

**Table 1.
Groundwater Elevation Data**

<u>Well</u>	<u>TOC Elevation (feet)</u>	<u>Date</u>	<u>Groundwater Depth (feet)</u>	<u>Groundwater Elevation (feet)</u>
MW-3	24.70	5/15/92	11.15	13.55
		7/1/92	11.60	13.10
		8/18/92	12.00	12.70
		3/4/93	9.97	14.91
		6/8/93	10.47	14.23
		11/4/93	12.05	12.65
		12/6/93	11.62	13.08
		2/23/94	10.12	14.58
		6/9/94	10.98	13.72
		9/7/94	11.83	12.87
		12/16/94	9.96	14.74
		3/9/95	8.86	15.84
		6/14/95	10.40	14.30
		9/13/95	11.19	13.51
MW-4	23.92	5/15/92	10.00	13.92
		7/1/92	11.26	12.66
		8/18/92	11.58	12.34
		3/4/93	9.39	14.53
		6/8/93	10.01	13.91
		11/4/93	11.53	12.39
		12/6/93	11.11	12.81
		2/23/94	9.63	14.29
		6/9/94	10.47	13.45
		9/7/94	11.31	12.61
		12/16/94	9.48	14.44
		3/9/95	8.72	15.20
		6/14/95	9.85	14.07
		9/13/95	10.60	13.32
MW-5	23.85	5/15/92	10.52	13.33
		7/1/92	9.93	13.92
		8/18/92	9.24	14.61
		3/5/93	7.72	16.15
		6/8/93	8.31	15.54
		11/4/93	10.33	13.52
		12/6/93	9.91	13.94
		2/23/94	8.23	15.62
		6/9/94	9.09	14.76
		9/7/94	9.95	13.90
		12/16/94	7.98	15.87
		3/9/95	7.33	16.52
		6/14/95	8.40	15.45
		9/13/95	9.34	14.51

**Table 1.
Groundwater Elevation Data**

<u>Well</u>	<u>TOC Elevation (feet)</u>	<u>Date</u>	<u>Groundwater Depth (feet)</u>	<u>Groundwater Elevation (feet)</u>
MW-6	22.98	5/15/92	12.46	10.52
		7/1/92	12.96	10.02
		8/18/92	13.42	9.56
		3/4/93	11.60	11.38
		6/8/93	12.34	10.64
		11/4/93	13.62	9.36
		12/6/93	13.08	9.90
		2/23/94	11.78	11.20
		6/9/94	12.73	10.25
		9/7/94	13.52	9.46
		12/16/94	11.69	11.29
		3/9/95	11.02	11.96
		6/14/95	11.95	11.03
		9/13/95	12.69	10.29
		MW-8	23.85	12/6/93
2/23/94	7.93			15.92
6/9/94	8.60			15.25
9/7/94	9.39			14.46
12/16/94	7.78			16.07
3/9/95	7.82			16.03
6/14/95	8.30			15.55
9/13/95	9.12			14.73

TOC = Top of casing

Elevation reference = City of Berkeley Survey Monument of Folger Avenue at the Location
Shown on the Site Plan

Table 2.
TEH and BTEX Concentrations in Groundwater

<u>Sample</u>	<u>Date</u>	<u>TEH</u> <u>ug/l</u>	<u>B</u> <u>ug/l</u>	<u>T</u> <u>ug/l</u>	<u>E</u> <u>ug/l</u>	<u>X</u> <u>ug/l</u>
MW-3	5/15/92	100	<0.5	<0.5	<0.5	2.5
	8/18/92	<50	<0.5	<1.0	<0.5	<0.5
	3/4/93	<50	<0.5	<0.5	<0.5	<0.5
	6/8/93	<50	<0.5	<0.5	<0.5	<0.5
	11/4/93	60	<0.5	0.6	<0.5	0.21
	2/23/94	1600	<0.5	<0.5	<0.5	<0.5
	9/7/94	900	<0.5	<2	<0.5	<0.5
	3/13/95	310	<0.5	<0.5	<0.5	<0.5
	9/13/95	<50	<0.5	<0.5	<0.5	<0.5
MW-4	5/15/92	10,000	<0.5	<0.5	<0.5	5
	8/18/92	300	<0.5	<1.0	<0.5	<0.5
	3/4/93	<50	<0.5	<0.5	<0.5	<0.5
	6/8/93	190	<0.5	<0.5	<0.5	<0.5
	11/4/93	<50	0.5	0.5	<0.5	0.9
	2/23/94	<50	<0.5	<0.5	<0.5	<0.5
	6/9/94	530	<0.5	<0.5	<0.5	<0.5
	12/16/94	410	<0.5	<0.5	<0.5	<0.5
	3/13/95	750	<0.5	<0.5	<0.5	<0.5
	6/14/95	9000	1.1	<0.5	<0.5	0.9
9/14/95	310	<0.5	<0.5	<0.5	<0.5	
MW-5	5/15/92	510	<0.5	<1.0	<0.5	<0.5
	3/5/93	1,400	<0.5	<0.5	<0.5	<0.5
	6/8/93	1,300	<0.5	<0.5	<0.5	<0.5
	11/4/94	930	<0.5	0.5	<0.5	0.9
	2/23/94	3,100	<0.5	<0.5	<0.5	<0.5
	6/9/94	310	<0.5	<0.5	<0.5	<0.5
	9/7/94	1100	<0.5	<2	<0.5	<0.5
	12/19/94	690	<0.5	<0.5	<0.5	<0.5
	3/14/95	590	<0.5	<0.5	<0.5	<0.5
	6/14/95	4600	<0.5	<0.5	<0.5	<0.5
9/14/95	980	<0.5	<0.5	<0.5	<0.5	
MW-6	5/15/92	<50	<0.5	<0.5	<0.5	2
	8/18/92	<50	<0.5	<1.0	<0.5	<0.5
	3/4/93	<50	<0.5	<0.5	<0.5	<0.5
	6/8/93	<50	<0.5	<0.5	<0.5	<0.5
	11/4/93	<50	<0.5	<0.5	<0.5	0.7
	2/23/94	<50	<0.5	<0.5	<0.5	<0.5
	6/9/94	<50	<0.5	<0.5	<0.5	<0.5
	9/7/94	<50	<0.5	<2	<0.5	<0.5
	12/16/94	<50	<0.5	-	-	-
	3/13/95	<50	<0.5	<0.5	<0.5	<0.5
	6/14/95	<50	<0.5	<0.5	<0.5	<0.5
9/13/95	<50	<0.5	<0.5	<0.5	<0.5	

Table 2.
TEH and BTEX Concentrations in Groundwater

<u>Sample</u>	<u>Date</u>	<u>TEH</u> <u>ug/l</u>	<u>B</u> <u>ug/l</u>	<u>T</u> <u>ug/l</u>	<u>E</u> <u>ug/l</u>	<u>X</u> <u>ug/l</u>
MW-8	12/6/93	<50	<0.5	<0.5	<0.5	<0.5
	2/23/94	<50	<0.5	<0.5	<0.5	<0.5
	6/9/94	<50	<0.5	<0.5	<0.5	<0.5
	9/7/94	<50	<0.5	<2	<0.5	<0.5
	12/16/94	<0.5	<0.5	<0.5	<0.5	<0.5
	3/13/95	84	<0.5	<0.5	<0.5	<0.5
	6/14/95	81 ²	<0.5	<0.5	<0.5	<0.5
	9/13/95	150 ¹	<0.5	<0.5	<0.5	<0.5

ug/l = micrograms per liter, parts per billion

TEH = Total extractable hydrocarbons

B = benzene

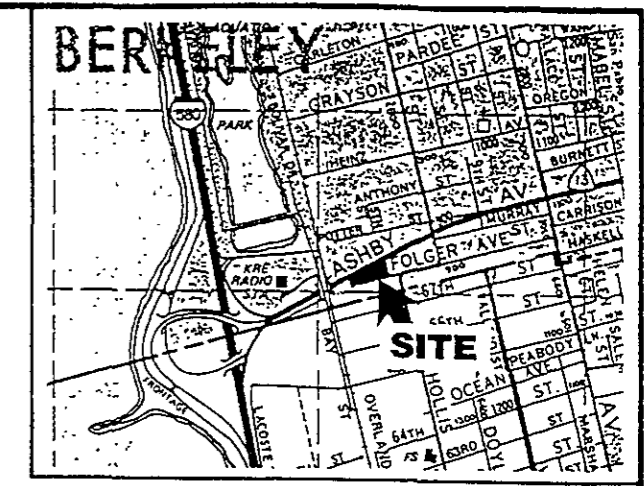
T = toluene

E = ethylbenzene

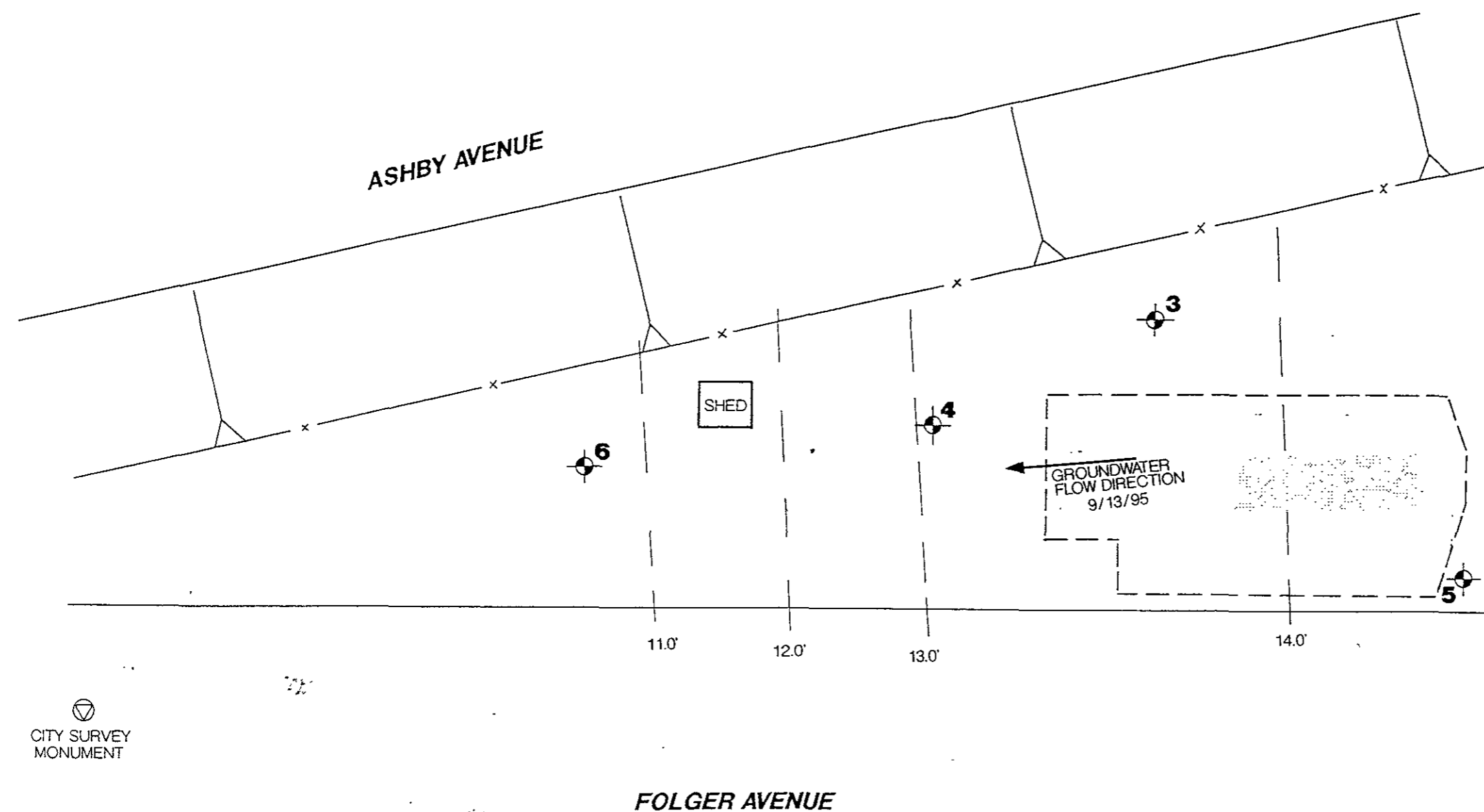
X = xylenes






¹ = Sample exhibits unknown single peak or peaks

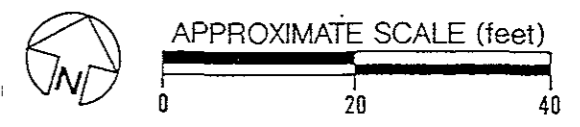
² = Method blank contamination indicates high bias in sample result



VICINITY MAP



-  MONITORING WELL
-  EXTENT OF EXCAVATION
-  FENCE
-  PREVIOUS TANK LOCATION
-  GROUNDWATER FLOW CONTOURS (feet)
12.0



SITE PLAN		
722 FOLGER AVENUE – BERKELEY, CA		
JOB NUMBER 727.001	DATE 10/6/95	APPROVED
Subsurface Consultants		PLATE 1



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

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

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 20-SEP-95
Lab Job Number: 122631
Project ID: 727.001
Location: Coulter Steel

Reviewed by: _____

Reviewed by: _____

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TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 727.001
Location: Coulter Steel

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: LUFT

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
122631-001	MW-3	23266	09/13/95	09/14/95	09/18/95	
122631-002	MW-4	23266	09/14/95	09/14/95	09/18/95	
122631-003	MW-5	23266	09/14/95	09/14/95	09/18/95	
122631-005	MW-8	23266	09/13/95	09/14/95	09/18/95	

Analyte	Units	122631-001	122631-002	122631-003	122631-005
Diln Fac:		1	1	1	1
Diesel Range	ug/L	<50	310 Z	980	150 Z
Motor Oil Range	ug/L	<1300	<1300	<1300	<1300
Surrogate					
Hexacosane	%REC	124	128	127	115

Z: Sample exhibits unknown single peak or peaks



Lab #: 122631

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons	
Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 727.001	Prep Method: 3520
Location: Coulter Steel	
METHOD BLANK	
Matrix: Water	Prep Date: 09/14/95
Batch#: 23266	Analysis Date: 09/16/95
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC04104

Analyte	Result	
Diesel Range	<50	
Motor Oil Range	<1300	
Surrogate	%Rec	Recovery Limits
Hexacosane	124	60-140



Lab #: 122631

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons	
Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 727.001	Prep Method: 3520
Location: Coulter Steel	
BLANK SPIKE/BLANK SPIKE DUPLICATE	
Matrix: Water	Prep Date: 09/14/95
Batch#: 23266	Analysis Date: 09/16/95
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC04105

Analyte	Spike Added	BS	%Rec #	Limits
Diesel Range	2565	1877	73	60-140
Surrogate	%Rec	Limits		
Hexacosane	131	60-140		

BSD Lab ID: QC04106

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel Range	2565	2132	83	60-140	10	<35
Surrogate	%Rec	Limits				
Hexacosane	133	60-140				

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#: 727.001
Location: Coulter Steel

Analysis Method: BTXE
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
122631-001	MW-3	23279	09/13/95	09/15/95	09/15/95	
122631-002	MW-4	23279	09/14/95	09/15/95	09/15/95	
122631-003	MW-5	23279	09/14/95	09/15/95	09/15/95	
122631-005	MW-8	23279	09/13/95	09/15/95	09/15/95	

Analyte	Units	122631-001	122631-002	122631-003	122631-005
Diln Fac:		1	1	1	1
Benzene	ug/L	<0.5	<0.5	<0.5	<0.5
Toluene	ug/L	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	ug/L	<0.5	<0.5	<0.5	<0.5
m,p-Xylenes	ug/L	<0.5	<0.5	<0.5	<0.5
o-Xylene	ug/L	<0.5	<0.5	<0.5	<0.5
Surrogate					
Trifluorotoluene	%REC	106	108	101	106
Bromobenzene	%REC	102	104	77	101



Lab #: 122631

BATCH QC REPORT

BTXE

Client: Subsurface Consultants
 Project#: 727.001
 Location: Coulter Steel

Analysis Method: BTXE
 Prep Method: EPA 5030

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 23279
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/15/95
 Analysis Date: 09/15/95

BS Lab ID: QC04520

Analyte	Spike Added	BS	%Rec #	Limits
Benzene	20	21.1	106	85-115
Toluene	20	21.7	109	85-115
Ethylbenzene	20	21	105	85-115
m,p-Xylenes	40	39.1	98	85-115
o-Xylene	20	21.4	107	85-115
Surrogate	%Rec	Limits		
Trifluorotoluene	110	75-125		
Bromobenzene	109	75-125		

BSD Lab ID: QC04521

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Benzene	20	20.7	104	85-115	2	<11
Toluene	20	21.3	107	85-115	2	<13
Ethylbenzene	20	20.7	104	85-115	1	<25
m,p-Xylenes	40	39.5	99	85-115	1	<25
o-Xylene	20	21	105	85-115	2	<25
Surrogate	%Rec	Limits				
Trifluorotoluene	109	75-125				
Bromobenzene	109	75-125				

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 #: 122631

BATCH QC REPORT

BTXE

Client: Subsurface Consultants
Project#: 727.001
Location: Coulter Steel

Analysis Method: BTXE
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 23279
Units: ug/L
Diln Fac: 1

Prep Date: 09/15/95
Analysis Date: 09/15/95

LCS Lab ID: QC04171

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	19.2	20	96	85-115
Toluene	19.8	20	99	85-115
Ethylbenzene	19.9	20	100	85-115
m,p-Xylenes	37.9	40	95	85-115
o-Xylene	19.3	20	97	85-115
Surrogate	%Rec	Limits		
Trifluorotoluene	102	75-125		
Bromobenzene	80	75-125		

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 #: 122631

BATCH QC REPORT

BTXE

Client: Subsurface Consultants
Project#: 727.001
Location: Coulter Steel

Analysis Method: BTXE
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 23279
Units: ug/L
Diln Fac: 1

Prep Date: 09/15/95
Analysis Date: 09/15/95

MB Lab ID: QC04172

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	103	75-125
Bromobenzene	77	75-125



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

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

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 29-SEP-95
Lab Job Number: 122695
Project ID: 727.001
Location: Coulter Steel

Reviewed by: _____

Reviewed by: _____

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BTXE

Client: Subsurface Consultants
Project#: 727.001
Location: Coulter Steel

Analysis Method: BTXE
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
122695-001	MW-6	23453	09/13/95	09/23/95	09/23/95	

Analyte	Units	122695-001
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	102
Bromobenzene	%REC	101

Lab #: 122695

BATCH QC REPORT

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BTXE			
Client:	Subsurface Consultants	Analysis Method:	BTXE
Project#:	727.001	Prep Method:	EPA 5030
Location:	Coulter Steel		
METHOD BLANK			
Matrix:	Water	Prep Date:	09/22/95
Batch#:	23453	Analysis Date:	09/22/95
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC04938

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	103	75-125
Bromobenzene	106	75-125

Lab #: 122695

BATCH QC REPORT

Page 1 of 1

BTXE	
Client: Subsurface Consultants	Analysis Method: BTXE
Project#: 727.001	Prep Method: EPA 5030
Location: Coulter Steel	
BLANK SPIKE/BLANK SPIKE DUPLICATE	
Matrix: Water	Prep Date: 09/22/95
Batch#: 23453	Analysis Date: 09/22/95
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC04939

Analyte	Spike Added	BS	%Rec #	Limits
Benzene	20	19.5	98	85-115
Toluene	20	18.6	93	85-115
Ethylbenzene	20	18.9	95	85-115
m,p-Xylenes	20	19.5	98	85-115
o-Xylene	20	18.4	92	85-115
Surrogate	%Rec	Limits		
Trifluorotoluene	99	75-125		
Bromobenzene	100	75-125		

BSD Lab ID: QC04940

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Benzene	20	18.9	95	85-115	3	<11
Toluene	20	18.5	93	85-115	0	<13
Ethylbenzene	20	18.5	93	85-115	2	<25
m,p-Xylenes	20	18.8	94	85-115	2	<25
o-Xylene	20	18.4	94	85-115	4	<25
Surrogate	%Rec	Limits				
Trifluorotoluene	100	75-125				
Bromobenzene	100	75-125				

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

LABORATORY NUMBER: 122695
 CLIENT: SUBSURFACE CONSULTANTS
 PROJECT ID: 727.001
 LOCATION: COULTER STEEL

DATE SAMPLED: 09/13/95
 DATE RECEIVED: 09/15/95
 DATE REQUESTED: 09/20/95
 DATE EXTRACTED: 09/25/95
 DATE ANALYZED: 09/26/95
 DATE REPORTED: 09/29/95
 BATCH NO: BI261.02

Extractable Petroleum Hydrocarbons in Aqueous Solutions
 California DOHS Method
 LUFT Manual October 1989

LAB ID	CLIENT ID	DIESEL RANGE (ug/L)	REPORTING LIMIT (ug/L)
122695-001	MW-6	ND	50
METHOD BLANK	N/A	ND	50

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: BS/BSD

RPD, %	12
RECOVERY, %	95

WELL SAMPLING FORM

Project Name: Coulter Steel Well Number: MW-3
 Job No.: 727,001 Well Casing Diameter: 2 inch
 Sampled By: DWA Date: 9/13/95
 TOC Elevation: _____ Weather: Cloudy

Depth to Casing Bottom (below TOC) 30.00 feet
 Depth to Groundwater (below TOC) 11.19 feet
 Feet of Water in Well 18.81 feet
 Depth to Groundwater When 80% Recovered 14.95 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 3.1 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

moderate recharge

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>2</u>	<u>8.12</u>	<u>64.6</u>	<u>800</u>		<u>clean/faint odor</u>
<u>4</u>	<u>7.74</u>	<u>63.2</u>	<u>760</u>		<u>↓</u>
<u>6</u>	<u>7.57</u>	<u>62.3</u>	<u>770</u>		<u>semi-clean</u>
<u>8</u>	<u>7.45</u>	<u>62.0</u>	<u>830</u>		<u>↓</u>
<u>10</u>	<u>7.36</u>	<u>61.5</u>	<u>810</u>		<u>mucky</u>

Total Gallons Purged 10 gallons
 Depth to Groundwater Before Sampling (below TOC) 14.95 feet
 Sampling Method disposable bailer
 Containers Used 3 40 ml 1 liter 0 pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: Coulter Steel Well Number: MW-4
 Job No.: 727.001 Well Casing Diameter: 2 inch
 Sampled By: DWA Date: 9/14/95
 TOC Elevation: _____ Weather: Loggy

Depth to Casing Bottom (below TOC) 22.00 feet
 Depth to Groundwater (below TOC) 10.60 feet
 Feet of Water in Well 9.40 feet
 Depth to Groundwater When 80% Recovered 14.48 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 1.5 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

moderate recharge

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>0</u>	<u>7.85</u>	<u>64.6</u>	<u>690</u>	_____	<u>clean/slight odor</u>
<u>1</u>	<u>7.47</u>	<u>63.3</u>	<u>700</u>	_____	_____
<u>3</u>	<u>7.23</u>	<u>62.3</u>	<u>700</u>	_____	<u>increasing odor/screen</u>
<u>5</u>	<u>7.18</u>	<u>61.8</u>	<u>700</u>	_____	_____
_____	_____	_____	_____	_____	_____

Total Gallons Purged 5 gallons
 Depth to Groundwater Before Sampling (below TOC) 14.48' feet
 Sampling Method disposable bailer
 Containers Used 3 40 ml 1 liter _____ pint

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

WELL SAMPLING FORM

Project Name: Coulter Steel Well Number: MW-6
 Job No.: 727.001 Well Casing Diameter: 2 inch
 Sampled By: DWA Date: 9/13/95
 TOC Elevation: _____ Weather: Foggy

Depth to Casing Bottom (below TOC) 28.50 feet
 Depth to Groundwater (below TOC) 12.69 feet
 Feet of Water in Well 15.81 feet
 Depth to Groundwater When 80% Recovered 15.85 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.6 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

moderate recharge

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>2</u>	<u>7.84</u>	<u>60.9</u>	<u>790</u>	_____	<u>semi-clean/no odor</u>
<u>4</u>	<u>7.72</u>	<u>61.4</u>	<u>785</u>	_____	
<u>6</u>	<u>7.65</u>	<u>61.1</u>	<u>830</u>	_____	
<u>8</u>	<u>7.59</u>	<u>61.3</u>	<u>820</u>	_____	↓
_____	_____	_____	_____	_____	_____

Total Gallons Purged 8 gallons
 Depth to Groundwater Before Sampling (below TOC) 15.85 feet
 Sampling Method disposable bailer
 Containers Used 3 40 ml 1 liter _____ pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: Coulter Steel Well Number: MW-8
 Job No.: 727.001 Well Casing Diameter: 2 inch
 Sampled By: DWA Date: 9/13/95
 TOC Elevation: _____ Weather: foggy

Depth to Casing Bottom (below TOC) 21.00 feet
 Depth to Groundwater (below TOC) 9.12 feet
 Feet of Water in Well 11.88 feet
 Depth to Groundwater When 80% Recovered 11.50 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 1.9 gallons
 Depth Measurement Method Tape & Paste Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

moderate recharge

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>0</u>	<u>7.74</u>	<u>63.8</u>	<u>585</u>	_____	<u>clean / no odor</u>
<u>2</u>	<u>7.50</u>	<u>64.8</u>	<u>650</u>	_____	<u>semi-clean</u>
<u>4</u>	<u>7.37</u>	<u>64.6</u>	<u>700</u>	_____	<u>↓</u>
<u>6</u>	<u>7.27</u>	<u>62.9</u>	<u>710</u>	_____	<u>murky</u>

Total Gallons Purged 6 gallons
 Depth to Groundwater Before Sampling (below TOC) 11.50 feet
 Sampling Method disposable bailer
 Containers Used 3 40 ml 1 liter _____ pint

<h1 style="margin: 0;">Subsurface Consultants</h1>	JOB NUMBER	DATE	APPROVED	PLATE