

R. William Rudolph, Jr., PE
Thomas E. Cundey, PE
Jerriann N. Alexander, PE

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February 1, 1995
SCI 727.001

STID 1385

Mr. Dante Sambajon
Plant Engineer
Coulter Steel and Forge Company
1494 - 67th Street
Emeryville, California 94662-0901

Groundwater Monitoring
December 1994 Event
Former Diesel Fuel Tank Area
722 Folger Avenue
Emeryville, California

Dear Mr. Sambajon:

This letter records the results of the seventh sampling 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 the 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

Groundwater monitoring was conducted on December 16, 1994. For this sampling event wells MW-3, MW-4, MW-5, MW-6 and MW-8 were monitored. 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. 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

Based on the data presented on Table 1, it appears that the groundwater flow direction is towards the west. The gradient is relatively flat in the former tank area, and gradually steepens toward the west. This data is consistent with previous findings. The groundwater flow contours and direction for this event are shown on Plate 1.

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 plume have been well defined.

In accordance with the monitoring program, the next sampling event will be performed during the month of March 1995. During that event, Wells MW-3, MW-4, MW-5 and MW-8 will be sampled and analyzed for TEH and BTEX.

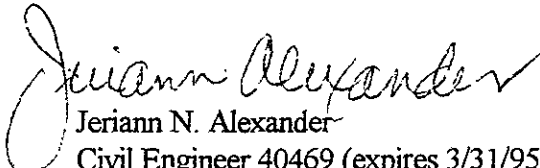
Mr. Dante Sambajon
Coulter Steel and Forge Company
February 1, 1995
SCI 727.001
Page 3

■ Subsurface Consultants, Inc.

If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.


Jeriann N. Alexander
Civil Engineer 40469 (expires 3/31/95)

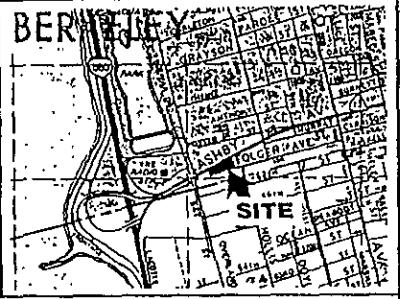
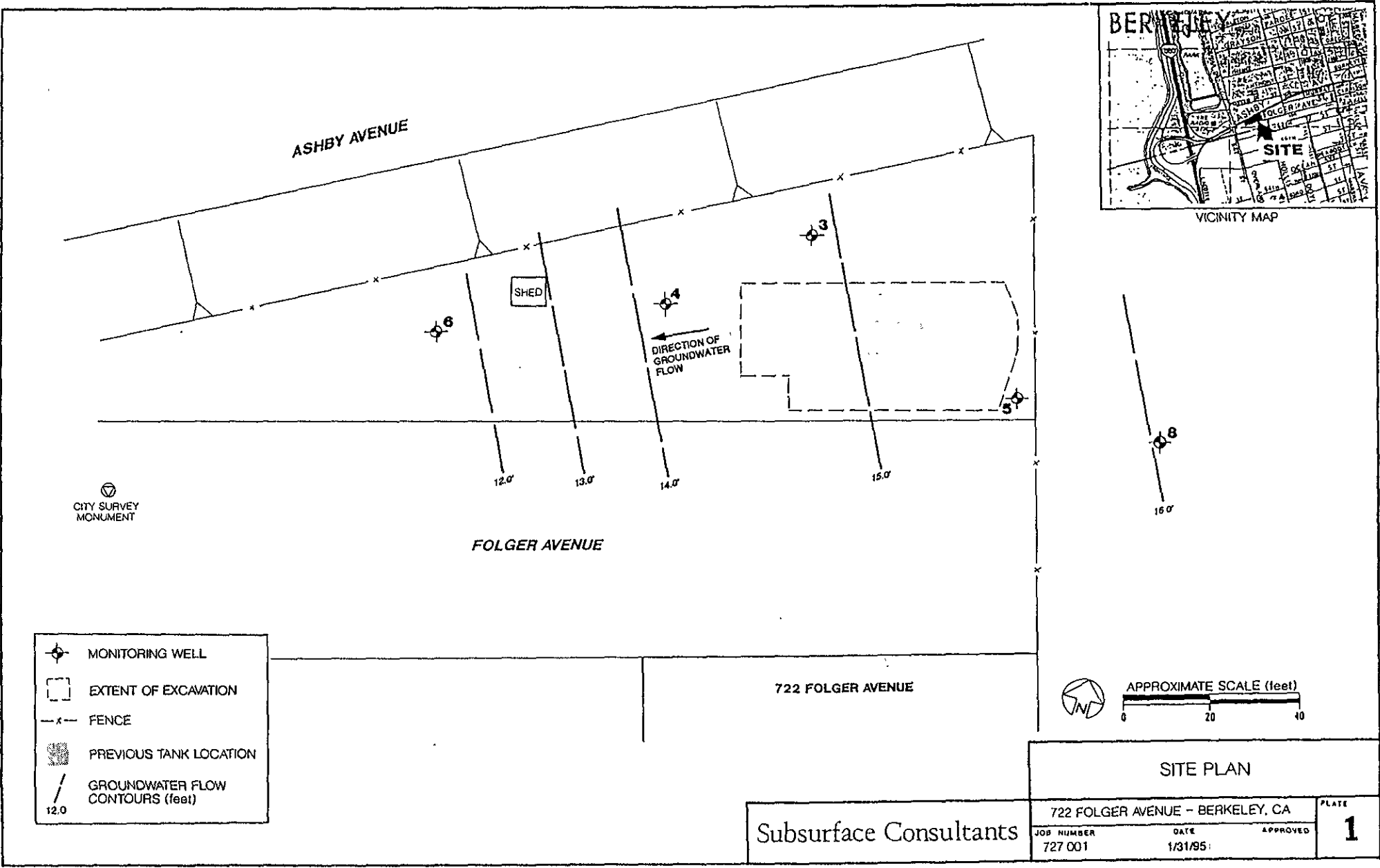
JTW:JNA:RWR:sld

2 copies submitted

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






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

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



VICINITY MAP



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

Subsurface Consultants		722 FOLGER AVENUE - BERKELEY, CA		PLATE
JOB NUMBER	DATE	APPROVED	1	
727 001	1/31/95			

**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
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
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
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

**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>
		6/9/94	12.73	10.25
		9/7/94	13.52	9.46
		12/16/94	11.69	11.29
MW-8	23.85	12/6/93	9.07	14.15
		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

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
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	
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
12/16/94	690	<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	--	--	--	
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	<50	<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



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: 03-JAN-95
Lab Job Number: 119167
Project ID: 727.001
Location: Coulter Steel

Reviewed by: Mary Plusa

Reviewed by: Cynthia E. Schlay

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LABORATORY NUMBER: 119167
 CLIENT: Subsurface Consultants
 PROJECT ID: 727.001
 LOCATION: Coulter Steel
 BATCH NO: 18235

DATE SAMPLED: 12/19/94
 DATE RECEIVED: 12/19/94
 DATE EXTRACTED: 12/22/94
 DATE ANALYZED: 12/23/94
 DATE REPORTED: 01/03/95

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

LAB ID	CLIENT ID	KEROSENE RANGE (ug/L)	DIESEL RANGE (ug/L)	REPORTING LIMIT (ug/L)
119167-1	MW-4	**	410 *	50
METHOD BLANK		ND	ND	50

ND = Not detected at or above reporting limit. Reporting limit applies to all analytes.

* Sample chromatogram does not resemble diesel standard.

** Kerosene range not reported due to overlap of hydrocarbon ranges.

QA/QC SUMMARY:

RPD, %	11
RECOVERY, %	84



LABORATORY NUMBER: 119167
CLIENT: Subsurface Consultants
PROJECT ID: 727.001
LOCATION: Coulter Steel
BATCH NO: 18263

DATE SAMPLED: 12/19/94
DATE RECEIVED: 12/19/94
DATE EXTRACTED: 12/26/94
DATE ANALYZED: 12/27/94
DATE REPORTED: 01/03/95

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

LAB ID	CLIENT ID	KEROSENE RANGE (ug/L)	DIESEL RANGE (ug/L)	REPORTING LIMIT (ug/L)
119167-2	MW-5	**	690 *	50
119167-4	MW-8	ND	ND	50
METHOD BLANK		ND	ND	50

ND = Not detected at or above reporting limit. Reporting limit applies to all analytes.

* Sample chromatogram does not resemble diesel standard.

** Kerosene range not reported due to overlap of hydrocarbon ranges.

QA/QC SUMMARY:

RPD, %	14
RECOVERY, %	105

LABORATORY NUMBER: 119167
 CLIENT: SUBSURFACE CONSULTANTS
 PROJECT ID: 727.001
 LOCATION: Coulter Steel
 BATCH NO: 18264

DATE SAMPLED: 12/19/94
 DATE RECEIVED: 12/19/94
 DATE ANALYZED: 12/26/94
 DATE REPORTED: 01/03/95

Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 8020
 Extraction by EPA 5030 Purge and Trap

LAB ID	CLIENT ID	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
119167-1	MW-4	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
119167-4	MW-8	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
METHOD BLANK		ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

ND = Not detected at or above reporting limit. Detection limit indicated
 in parentheses.

QA/QC SUMMARY

RPD, %	1
RECOVERY, %	105

LABORATORY NUMBER: 119167
 CLIENT: SUBSURFACE CONSULTANTS
 PROJECT ID: 727.001
 LOCATION: Coulter Steel
 BATCH NO: 18288

DATE SAMPLED: 12/19/94
 DATE RECEIVED: 12/19/94
 DATE ANALYZED: 12/28/94
 DATE REPORTED: 01/03/95

Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 8020
 Extraction by EPA 5030 Purge and Trap

LAB ID	CLIENT ID	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
119167-2	MW-5	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
METHOD BLANK		ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

ND = Not detected at or above reporting limit. Detection limit indicated in parentheses.

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	117



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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: 09-JAN-95
Lab Job Number: 119349
Project ID: 727.001
Location: Coulter Steel

Reviewed by: _____

Reviewed by: _____

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Curtis & Tompkins, Ltd

LABORATORY NUMBER: 119349
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 727.001
LOCATION: COULTER STEEL

DATE SAMPLED: 12/16/94
DATE RECEIVED: 12/19/94
DATE REQUESTED: 01/04/95
DATE EXTRACTED: 01/05/95*
DATE ANALYZED: 01/06/95
DATE REPORTED: 01/09/95
BATCH NO: 18400

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

LAB ID	CLIENT ID	KEROSENE RANGE (ug/L)	DIESEL RANGE (ug/L)	REPORTING LIMIT (ug/L)
119349-01	MW-6	ND	ND	50
METHOD BLANK	N/A	ND	ND	50

ND = Not detected at or above reporting limit. Reporting limit applies to all analytes.

* Sample extracted past technical hold time.

QA/QC SUMMARY:

RPD, %	5
RECOVERY, %	111

VERBAL ADDITIONS/CANCELLATIONS TO ANALYSIS
 REQUEST SHEET

 Client: SCI Date: 1/4/95

 Requested By: Jeri Alexander Time: AM 115 PM

 Recorded By: MUR

Current Lab ID (Previous Lab ID)	Client ID	Circle Matrix	Specify add or cancel	Analysis	Due Date
119349-001 (119167-003)	MW-6	water soil waste oil other	+	TEH	1/11
()		water soil waste oil other			
()		water soil waste oil other			
()		water soil waste oil other			
()		water soil waste oil other			
()		water soil waste oil other			

