

ALCO  
HAZMAT

94 APR 11 PM 1:54

April 6, 1994  
SCI 727.001

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

*STID 1385  
Increased levels in MWs - fr. 930 to  
3100 ppb  
MW3 fr. 1600 ppb*

**Quarterly Groundwater Monitoring  
Sampling Event - February 1994  
Coulter Steel and Forge Company  
722 Folger Avenue/Diesel Fuel Area  
Emeryville, California**

Dear Mr. Sambajon:

This letter records the results of the fourth sampling event conducted by Subsurface Consultants, Inc. (SCI) for the groundwater monitoring program at the referenced site. In May 1992, SCI performed an investigation of the tank area by drilling 7 test borings, 4 of which were completed as monitoring wells. On December 2, 1993 an additional groundwater monitoring well was installed in the parking lane along Folger Avenue upgradient of the tank area. The previous tank area and well locations area shown on the attached Site Plan, Plate 1.

#### Groundwater Monitoring

Groundwater monitoring was conducted on February 22 and 23, 1994. For this sampling event, all five on-site wells (MW-3, MW-4, MW-5, MW-6, and MW-8) were sampled. Initially, the depth to groundwater and the presence of free product were checked 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.

■ Subsurface Consultants, Inc.

■ Subsurface Consultants, Inc.  
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 southwest under a gradient of about 2.8 percent. 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, data from the quarterly monitoring events indicate that groundwater in a limited area around the previous tank site has been impacted by diesel. The upgradient and downgradient extent of the plume have been determined as required by Alameda County Health Care Services Agency's request of September 20, 1993. Neither TEH as diesel nor BTEX were detected in the groundwater sample obtained from the upgradient well, MW-8 during the last two events. The downgradient well, MW-6 has shown no significant impact since it was installed in 1992.

In accordance with the monitoring program, the next sampling event will be performed during the month of May 1994. During the event, all the wells will be sampled and analyzed for TEH and BTEX.

### Monitoring Program

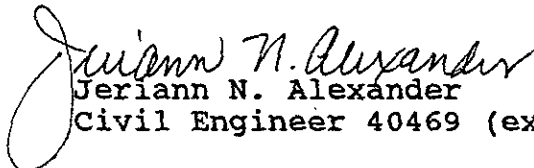
The monitoring program will be reevaluated by the ACHCSA following the event scheduled for August 1994. Presently, regulatory agencies are moving toward adopting a policy which recognizes that an acceptable management strategy for protection of beneficial uses

of groundwater would include allowing sites with a limited zone of groundwater pollution to not achieve water quality cleanup criteria and possibly obtain conditional closure. There are acceptance criteria which a site must meet before being considered for this approach. Once accepted the site must adhere to a negotiated plan for containing and managing the risks posed by residual groundwater pollution. The plan may involve institutional controls (i.e., deed restrictions, utility worker notice), contingency options and participation in a regional monitoring program. From a preliminary standpoint, it is possible that the diesel tank area may be considered for this process in the future, in lieu of continued quarterly groundwater monitoring.

If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.

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

JNA:RWR:jmw

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 Specialty  
Alameda County Health Care Services Agency  
80 Swan Way  
Oakland, California 94612

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<sup>1</sup> (feet)</u>	<u>Date</u>	<u>Groundwater Depth<sup>2</sup> (feet)</u>	<u>Groundwater Elevation (feet)</u>
MW-3	24.70	5/15/92	11.15	13.55
		7/01/92	11.60	13.10
		8/18/92	12.00	12.70
		3/04/93	9.79	14.91
		6/08/93	10.47	14.23
		11/04/93	12.05	12.65
		12/06/93	11.62	13.08
		02/23/94	10.12	14.58
		MW-4	23.92	5/15/92
7/01/92	11.26			12.66
8/18/92	11.58			12.34
3/04/93	9.39			14.53
6/08/93	10.01			13.91
11/04/93	11.53			12.39
12/06/93	11.11			12.81
02/23/94	9.63			14.29
MW-5	23.85			5/15/92
		7/01/92	9.93	13.92
		8/18/92	9.24	14.61
		3/05/93	7.72	16.15
		6/08/93	8.31	15.54
		11/04/93	10.33	13.52
		12/06/93	9.91	13.94
		02/23/94	8.23	15.62
		MW-6	22.98	5/15/92
7/01/92	12.96			10.02
8/18/92	13.42			9.56
3/04/93	11.60			11.38
6/08/93	12.34			10.64
11/04/93	13.62			9.36
12/06/93	13.08			9.90
02/23/94	11.78			11.20
MW-8	23.85			12/06/93
		02/23/94	7.93	15.92

<sup>1</sup> Reference datum is City of Berkeley Survey Monument on Folger Avenue as shown on Site Plan

<sup>2</sup> Measured below top of casing

**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
	3/04/93	<50	<0.5	<0.5	<0.5	<0.5
	6/08/93	<50	<0.5	<0.5	<0.5	<0.5
	11/04/93	60	<0.5	0.6	<0.5	1.2
	02/23/94	1600	<0.5	<0.5	<0.5	<0.5
MW-4	5/15/92	10,000	<0.5	<0.5	<0.5	4.0
	8/18/92	300	<0.5	<1.0	<0.5	<0.5
	3/04/93	<50	<0.5	<0.5	<0.5	<0.5
	6/08/93	190	<0.5	<0.5	<0.5	<0.5
	11/04/93	<50	0.5	0.5	<0.5	0.9
	02/23/94	<50	<0.5	<0.5	<0.5	<0.5
MW-5	5/15/92	510	<0.5	<1.0	<0.5	<0.5
	8/18/92	<50	<0.5	<1.0	<0.5	<0.5
	3/05/93	1,400	<0.5	<0.5	<0.5	<0.5
	6/08/93	1,300	<0.5	<0.5	<0.5	<0.5
	11/04/94	930	<0.5	0.5	<0.5	0.9
	02/23/94	3,100	<0.5	<0.5	<0.5	<0.5
MW-6	5/15/92	<50	<0.5	<0.5	<0.5	2.0
	8/18/92	<50	<0.5	<1.0	<0.5	<0.5
	3/04/93	<50	<0.5	<0.5	<0.5	<0.5
	6/08/93	<50	<0.5	<0.5	<0.5	<0.5
	11/04/93	<50	<0.5	<0.5	<0.5	0.7
	02/23/94	<50	<0.5	<0.5	<0.5	<0.5
MW-8	12/06/93	<50	<0.5	<0.5	<0.5	<0.5
	02/23/94	<50	<0.5	<0.5	<0.5	<0.5

---

ug/l = micrograms per liter, parts per billion

TEH = Total extractable hydrocarbons

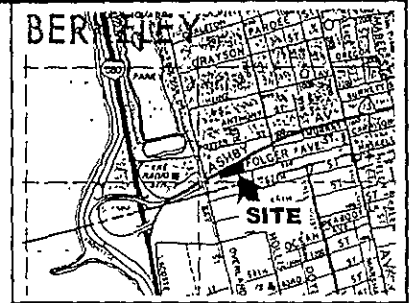
B = benzene

T = toluene

E = ethylbenzene

X = xylenes

ASHBY AVENUE



VICINITY MAP

SHED

ND-TPHd & BTEX

ND-TPHd & BTEX

1600 gpd TPHd & BTEX

15 gpd TPHd

8 gpd ND-TPHd & BTEX

12.0'

13.0'

14.0'

15.0'

CITY SURVEY MONUMENT

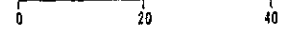
FOLGER AVENUE

722 FOLGER AVENUE

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



APPROXIMATE SCALE (feet)



SITE PLAN

Subsurface Consultants

722 FOLGER AVENUE - BERKELEY, CA

PLATE

JOB NUMBER  
727 001

DATE  
2/23/94

APPROVED

1



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

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

ANALYTICAL REPORT

Prepared for:

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

Date: 02-MAR-94  
Lab Job Number: 114498  
Project ID: 727.001  
Location: Coulter Steel

Reviewed by:

Reviewed by:

This package may be reproduced only in its entirety.

LABORATORY NUMBER: 114498  
 CLIENT: SUBSURFACE CONSULTANTS  
 PROJECT ID: 727.001  
 LOCATION: COULTER STEEL

DATE SAMPLED: 02/23,24/94  
 DATE RECEIVED: 02/24/94  
 DATE EXTRACTED: 03/01/94  
 DATE ANALYZED: 03/01,02/94  
 DATE REPORTED: 03/02/94

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)
114498-001	MW-3	**	1,600	50
114498-002	MW-4	ND	ND	50
114498-003	MW-5	**	3,100	50
114498-004	MW-6	ND	ND	50
114498-005	MW-8	ND	ND	50

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

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

QA/QC SUMMARY:

RPD, %	6
RECOVERY, %	88





LABORATORY NUMBER: 114498  
CLIENT: SUBSURFACE CONSULTANTS  
PROJECT ID: 727.001  
LOCATION: COULTER STEEL

DATE SAMPLED: 02/23,24/94  
DATE RECEIVED: 02/24/94  
DATE ANALYZED: 02/28/94  
DATE REPORTED: 03/02/94

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)	REPORTING LIMIT (ug/L)
114498-001	MW-3	ND	ND	ND	ND	0.5
114498-002	MW-4	ND	ND	ND	ND	0.5
114498-003	MW-5	ND	ND	ND	ND	0.5
114498-004	MW-6	ND	ND	ND	ND	0.5
114498-005	MW-8	ND	ND	ND	ND	0.5

ND = Not detected at or above reporting limit.

Reporting Limit applies to all analytes.

QA/QC SUMMARY

RPD, %	5
RECOVERY, %	93



## WELL SAMPLING FORM

Project Name: 722 FOLGER AVENUE Well Number: MW-3  
 Job No.: 727.001 Well Casing Diameter: 2 inch  
 Sampled By: John Wolfe / Charlie Pearson Date: 2/23/94  
 TOC Elevation: 24.20 Weather: Sunny/Warm

Depth to Casing Bottom (below TOC) 30 feet  
 Depth to Groundwater (below TOC) 10.12 feet  
 Feet of Water in Well 14.88 feet  
 Depth to Groundwater When 80% Recovered 15.90 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 3.24 gallons  
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other  
 Free Product None  
 Purge Method disposable bailer

### FIELD MEASUREMENTS

Gallons Removed	pH	Temp (C/F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>0</u>	<u>5.93</u>	<u>60.7</u>	<u>0.29 x 1000</u>		<u>clear</u>
<u>2 1/2</u>	<u>5.72</u>	<u>61.0</u>	<u>0.29</u>		<u>Slightly Turbid</u>
<u>4</u>	<u>5.37</u>	<u>60.9</u>	<u>0.41</u>		<u>clear</u>
<u>5 1/2</u>	<u>5.12</u>	<u>60.9</u>	<u>0.44</u>		<u>clear</u>
<u>6</u>	<u>5.20</u>	<u>60.9</u>	<u>0.43</u>		<u>clear</u>
<u>8</u>	<u>5.31</u>	<u>60.9</u>	<u>0.39</u>		<u>clear</u>

Total Gallons Purged 8 gallons

Depth to Groundwater Before Sampling (below TOC) 12.20 feet

Sampling Method disposable bailer

Containers Used 3 1  
                                   40 ml                   liter                   pint

**Subsurface Consultants**

722 FOLGER AVENUE - BERKELEY, CA

PLATE

JOB NUMBER

DATE

APPROVED

727.001

2/23/94



## WELL SAMPLING FORM

Project Name: 722 FOLGER AVENUE Well Number: 3  
 Job No.: 727.001 Well Casing Diameter: 2 inch  
 Sampled By: Jean Wolfe/Cherie Doreau Date: 2/23/94  
 TOC Elevation: 23.85 Weather: Sunny 11/16

Depth to Casing Bottom (below TOC) 3.0 feet  
 Depth to Groundwater (below TOC) 8.23 feet  
 Feet of Water in Well 11.77 feet  
 Depth to Groundwater When 80% Recovered 9.42 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 1.92 gallons  
 Depth Measurement Method Tape & Paste / **Electronic Sounder** / Other  
 Free Product NONE  
 Purge Method disposable bailer

### FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>0</u>	<u>4.91</u>	<u>61.8</u>	<u>2.34 x 100</u>		<u>clear</u>
<u>1</u>	<u>4.82</u>	<u>61.5</u>	<u>1.72</u>		
<u>1 1/2</u>	<u>4.77</u>	<u>61.3</u>	<u>1.55</u>		<u>5' to 6' clear</u>
<u>2 1/2</u>	<u>4.68</u>	<u>61</u>	<u>1.76</u>		<u>5' to 6' clear</u>
<u>3 1/2</u>	<u>4.52</u>	<u>61</u>	<u>1.76</u>		<u>clear</u>
<u>6</u>	<u>5.00</u>	<u>61</u>	<u>1.76</u>		
Total Gallons Purged <u>6</u>					gallons

Depth to Groundwater Before Sampling (below TOC) \_\_\_\_\_ feet  
 Sampling Method disposable bailer  
 Containers Used 3 40 ml 1 liter \_\_\_\_\_ pint

SLOW RECHARGE WAIT 24 HOURS

**Subsurface Consultants**

722 FOLGER AVENUE - BERKELEY, CA

JOB NUMBER	DATE	APPROVED
727.001	2/23/94	

PLATE



## WELL SAMPLING FORM

Project Name: 722 FOLGER AVENUE Well Number: 8  
 Job No.: 727.001 Well Casing Diameter: 2 inch  
 Sampled By: John Waip / Charlie Pearson Date: 2/23/94  
 TOC Elevation: 24.70 Weather: Sunny / Warm

Depth to Casing Bottom (below TOC) 21.00 feet  
 Depth to Groundwater (below TOC) 7.92 feet  
 Feet of Water in Well 13.07 feet  
 Depth to Groundwater When 80% Recovered 10.46 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) 2.13 gallons  
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other  
 Free Product None  
 Purge Method Disposable bailer / No. 33 Drain

### FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>0</u>	<u>5.50</u>	<u>59.1</u>	<u>1.80 v 1000</u>		<u>clear</u>
<u>2</u>	<u>5.30</u>	<u>60.4</u>	<u>1.73</u>		<u>slightly turbid</u>
<u>3</u>	<u>5.13</u>	<u>61.5</u>	<u>1.85</u>		
<u>5</u>	<u>5.13</u>	<u>62</u>	<u>1.85</u>		<u>clear</u>
<u>5 1/2</u>	<u>"</u>	<u>"</u>	<u>"</u>		<u>clear</u>

Total Gallons Purged 6 gallons  
 Depth to Groundwater Before Sampling (below TOC) 12.21 feet  
 Sampling Method Disposable bailer  
 Containers Used 3 40 ml 1 liter \_\_\_\_\_ pint

**Subsurface Consultants**

722 FOLGER AVENUE - BERKELEY, CA

PLATE

JOB NUMBER

DATE

APPROVED

727.001

2/23/94

