STID 1385

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

November 7, 1994
SCI 727.001

ALCO HAZMAT
94 NOV -9 PM 2:35

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

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

Dear Mr. Sambajon:

This letter records the results of the fifth 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.

Groundwater monitoring was conducted on September 7 , 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 December 1994. During that event, wells MW-4, MW-5 and MW-8 will be sampled and analyzed for TEH and BTEX.

If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.

Jeriann N. Alexander

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

Table 1.
Groundwater Elevation Data

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)
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
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
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
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

Table 1.
Groundwater Elevation Data

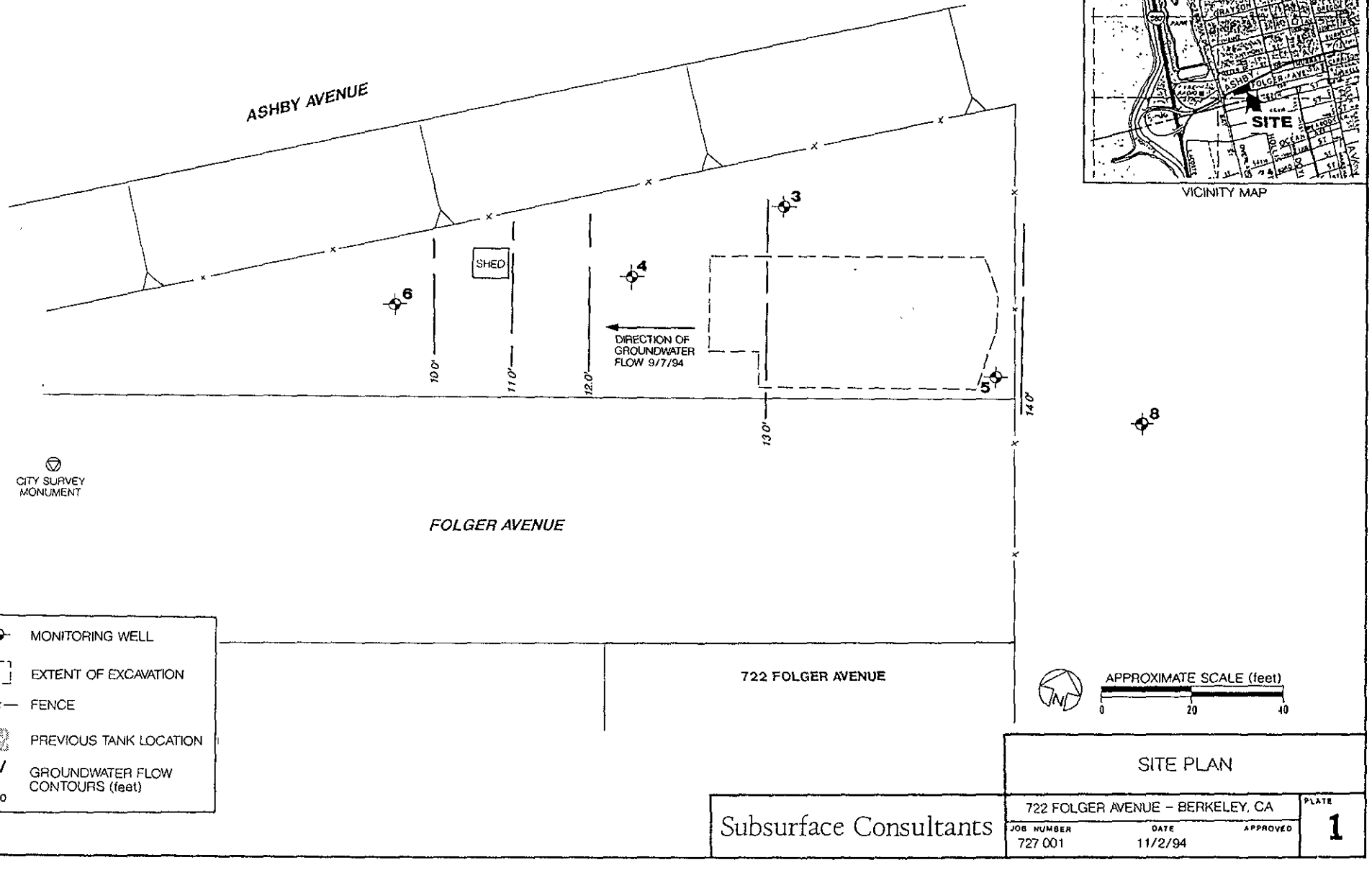
Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)
MW-8	23.85	12/6/93	9.07	14.15
		2/23/94	7.93	15.92
		6/9/94	8.60	15.25
		9/7/94	9.39	14.46

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

Sample	Date	TEH ug/l	B ug/l	T ug/l	E ug/l	X ug/l
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
MW-5	5/15/92	510	<0.5	<1.0	<0.5	<0.5
	2/23/94	<50	<0.5	<0.5	<0.5	<0.5
	6/9/94	530	<0.5	<0.5	<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
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
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

ug/l = micrograms per liter, parts per billion
TEH = Total extractable hydrocarbons
B = benzene
T = toluene
E = ethylbenzene
X = xylenes



SITE PLAN

Subsurface Consultants

722 FOLGER AVENUE – BERKELEY, CA

JOB NUMBER	DATE	APPROVED
727 001	11/2/94	

PLATE 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: 27-SEP-94
Lab Job Number: 117321
Project ID: 727.001
Location: Coulter Steel

Reviewed by: _____

Reviewed by: _____

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 117321
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 727.001
LOCATION: Coulter Steel

DATE SAMPLED: 09/07/94
DATE RECEIVED: 09/08/94
DATE EXTRACTED: 09/09/94
DATE ANALYZED: 09/11,12/94
DATE REPORTED: 09/27/94

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)
117321-1	MW-3	**	900*	50
117321-3	MW-5	**	1,100	50
117321-4	MW-6	ND	ND	50
117321-5	MW-8	ND	ND	50
117321-METHOD BLANK		ND	ND	50

* Sample chromatogram does not match the diesel standard pattern.
** Kerosene range not reported due to overlap of hydrocarbon ranges.

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

QA/QC SUMMARY:

RPD, %	19
RECOVERY, %	92

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 117321
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 727.001
LOCATION: Coulter Steel

DATE SAMPLED: 09/07/94
DATE RECEIVED: 09/08/94
DATE ANALYZED: 09/22/94
DATE REPORTED: 09/27/94

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)
117321-1	MW-3	ND(0.5)	ND(2)	ND(0.5)	ND(0.5)
117321-3	MW-5	ND(0.5)	ND(2)	ND(0.5)	ND(0.5)
117321-4	MW-6	ND(0.5)	ND(2)	ND(0.5)	ND(0.5)
117321-5	MW-8	ND(0.5)	ND(2)	ND(0.5)	ND(0.5)
117321-METHOD BLANK		ND(0.5)	ND(2)	ND(0.5)	ND(0.5)

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

QA/QC SUMMARY

RPD, %	4
RECOVERY, %	116

117321

CHAIN OF CUSTODY FORM

PAGE ____ OF ____

PROJECT NAME: Coulter Steel

PROJECT NUMBER: 727.001 LAB: Curtis & Tompkins

PROJECT CONTACT: Jeri Alexander TURNAROUND: Normal

SAMPLED BY: Dennis Alexander REQUESTED BY: Jeri Alexander

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	SOIL	WASTE	AIR			CONTAINERS: VOA	LITER	PINT	TUBE			METHOD PRESERVED: HCL	H_2SO_4	HNO_3	ICE	NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME	NOTES	ANALYSIS REQUESTED: TEH	BTXE
-1	MW-3	X						3	1					X			X		09	07	94	1200		X	X
-2	MW-4	X						3	1					X			X		09	07	94	1230	X		
-3	MW-5	X						3	1					X			X		09	08	94	1245		X	X
-4	MW-6	X						3	1					X			X		09	07	94	1020		X	X
-5	MW-8	X						3	1					X			X		09	07	94	0930		X	X

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
Dennis Alexander	9/8/94 1:15 p.m.		
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
			9/8/94 1:21

COMMENTS & NOTES: X Please hold MW-4 samples

Subsurface Consultants, Inc.
171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
(510) 268-0461 • FAX: 510-268-0137

WELL SAMPLING FORM

Project Name: Carter Steel
Well Number: MW-3
Job No.: 727.001
Well Casing Diameter: 2 inch
Sampled By: DWA
Date: 9/7/94
TOC Elevation:
Weather: foggy

Depth to Casing Bottom (below TOC) 30.00 feet
Depth to Groundwater (below TOC) 11.83 feet
Feet of Water in Well 18.17 feet
Depth to Groundwater When 80% Recovered 15.46 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.97 gallons
Depth Measurement Method Tape & Paste / Electronic Sounder (circled) / Other
Free Product none
Purge Method disposable bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
0	6.81	18.5	900		clear / no odor
3	6.78	18.0	975		semi-clear / slight odor
6	6.85	18.0	1000		↓
9	6.74	18.0	1150		slightly murky

Total Gallons Purged 9 gallons
Depth to Groundwater Before Sampling (below TOC) 15.46' feet
Sampling Method teflon bailer
Containers Used 3 (40 ml) 1 (liter) ____ (pint)

Subsurface Consultants

JOB NUMBER	DATE	APPROVED	PLATE

WELL SAMPLING FORM

Project Name: Anchor Steel Well Number: MW-4

Job No.: 727.001 Well Casing Diameter: 2 inch

Sampled By: DWA Date: 9/7/04

TOC Elevation: _____ Weather: foggy

Depth to Casing Bottom (below TOC) 30.00 feet

Depth to Groundwater (below TOC) 11.31 feet

Feet of Water in Well 18.69 feet

Depth to Groundwater When 80% Recovered 15.00 feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 3.1 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product none

Purge Method disposable bailers

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
0	6.61	18.5	975		clear/slight odor
3	6.63	18.0	1000		slightly murky/spotty sheen
6	6.67	18.0	1025		murky/increasing sediment
9	6.77	18.0	1075		

Total Gallons Purged 9 gallons

Depth to Groundwater Before Sampling (below TOC) 14.68' feet

Sampling Method teflon 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-5

Job No.: 727.001 Well Casing Diameter: 2 inch

Sampled By: DJA Date: 9/7/94

TOC Elevation: _____ Weather: Cloudy

Depth to Casing Bottom (below TOC) 20.00 feet

Depth to Groundwater (below TOC) 9.95 feet

Feet of Water in Well 10.05 feet

Depth to Groundwater When 80% Recovered 11.96 feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.64 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
0	6.63	19.0	1125		clear/slight odor
1	6.50	19.0	1125		stronger odor / slight sheen
3	6.42	18.5	1075		
5	6.53	18.0	1100		"

Total Gallons Purged 5 gallons

Depth to Groundwater Before Sampling (below TOC) 12.08' @ 12:40 p.m. 9/8/94 feet

Sampling Method teflon 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-2

Job No.: 727.001 Well Casing Diameter: 2 inch

Sampled By: DJ+ Date: 9/7/01

TOC Elevation: _____ Weather: Cloudy

Depth to Casing Bottom (below TOC) 30.00 feet

Depth to Groundwater (below TOC) 13.52 feet

Feet of Water in Well 16.48 feet

Depth to Groundwater When 80% Recovered 16.82 feet

Casing Volume (feet of water x Casing DIA ² x 0.0408) 2.69 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
0	6.59	17.5	1050		Clear, no odor
3	6.67	17.5	1075		Same
6	6.71	17.0	1075		"
9	6.66	17.0	1075		"

Total Gallons Purged 9 gallons

Depth to Groundwater Before Sampling (below TOC) 16.80 feet

Sampling Method Teflon bailer

Containers Used 3 (40 ml) 1 (liter) _____ (pint)

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

WELL SAMPLING FORM

Project Name: Colton Steel Well Number: MW-2

Job No.: 727.001 Well Casing Diameter: 2 inch

Sampled By: DJL Date: 9/7/94

TOC Elevation: _____ Weather: foggy

Depth to Casing Bottom (below TOC) 21.00 feet

Depth to Groundwater (below TOC) 9.39 feet

Feet of Water in Well 11.61 feet

Depth to Groundwater When 80% Recovered 11.71 feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.90 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
0	6.61	18.5	900		clear/no odor
2	6.61	19.5	950		sl. silty
4	6.60	19.0	975		
6	6.58	18.5	1000		"

Total Gallons Purged 6 gallons

Depth to Groundwater Before Sampling (below TOC) 11.70 feet

Sampling Method Teflon bailer

Containers Used 3 (40 ml) 1 (liter) _____ (pint)

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE