

January 22, 1993  
SCI 469.006

90 JAN 27 2:10

Mr. Robert Mibach  
Director, Physical Plant  
Peralta Community College District  
333 East 8th Avenue  
Oakland, California 94606

**Quarterly Groundwater Monitoring  
Sampling Event 4, December 1992  
College of Alameda  
555 Atlantic Avenue  
Alameda, California**

Dear Mr. Mibach:

This letter records the results of the fourth sampling event for the groundwater monitoring program at the referenced site. The program has been implemented in accordance with Regional Water Quality Control Board and Alameda County Health Care Services Agency (ACHCSA) guidelines due to the presence of petroleum hydrocarbons in the soil beneath previous underground fuel storage tanks.

#### Groundwater Level Measurements and Sampling

Due to the fluctuating groundwater level readings, monthly groundwater level measurements were obtained. The depth to groundwater was measured in the wells using an electric well sounder. A summary of groundwater elevation data is presented in Table 1. The groundwater flow direction and contours for this event are shown on Plate 1.

On December 16, 1992, well MW-3 was purged by bailing dry with a disposable bailer. Groundwater level readings of all three wells were obtained on this day prior to purging. MW-3 was allowed to sit for 5 days in order to allow the well to recharge.

On December 21, 1992, MW-1 and MW-2 were purged by bailing with a disposable bailer. Measurements of the temperature, pH, and conductivity of the purge water from all three wells are presented on the attached well sampling forms. MW-2 and MW-3 were then sampled. MW-1 went dry during sampling, therefore it was allowed to recharge and was sampled the next morning.

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The samples were retained in glass containers pre-cleaned by the supplier in accordance with EPA protocol. The samples were placed in an ice chest and transmitted to Curtis and Tompkins, LTD, a State of California Department of Health Services certified analytical laboratory.

The testing program for this event included analyses for total volatile hydrocarbons (TVH), total extractable hydrocarbons (TEH), benzene, toluene, ethylbenzene, and xylenes (BTEX), oil and grease, and purgeable halocarbons. The results of all analytical testing events are presented in Table 2. Analytical test reports and Chain-of-Custody forms are attached.

### Conclusions

#### A. Groundwater Flow Direction and Gradient

Groundwater level data obtained during this sampling event indicates that groundwater flows in an easterly direction at a gradient of 0.84 percent. However, as detailed in our letter dated August 3, 1992, we judge that this data is inconsistent with the general hydrology of the area due to varying subsurface conditions and well construction details.

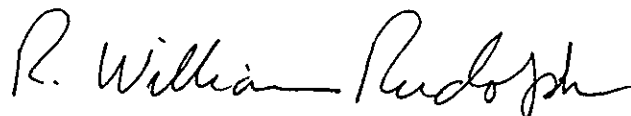
#### B. Petroleum Hydrocarbon Concentrations

The analytical results indicate that no detectable concentrations of petroleum hydrocarbons are present in the groundwater at well location MW-2, near the previous gasoline tank. Extractable hydrocarbons were detected in the groundwater sample obtained from MW-2 and MW-3, near the former fuel oil and waste oil tank areas.

If you have any questions, please call.

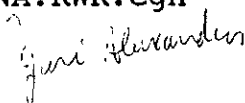
Yours very truly,

Subsurface Consultants, Inc.



R. William Rudolph  
Geotechnical Engineer 741 (expires 12/31/96)

MFV:JNA:RWR:egh



Mr. Robert Mibach  
Director, Physical Plant  
Peralta Community College District  
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2 copies submitted

Attachments: Table 1 - Groundwater Elevations  
Table 2 - Summary of Analytical Test Results  
Plate 1 - Study Area Plan  
Analytical Test Report  
Chain-of-Custody Form  
Well Development Forms  
Well Sampling Forms

cc: Ms. Juliet Shin  
Alameda County Health Care Services Agency  
Hazardous Materials Division  
80 Swan Way, Room #200  
Oakland, California 94621

**Table 1.  
Groundwater Elevations**

<u>Well</u>	<u>TOC<sup>1</sup> Elevation</u>	<u>Date</u>	<u>Groundwater Depth<sup>2</sup> (feet)</u>	<u>Groundwater Elevation (feet)</u>
MW-1	100.72	02/24/92	1.64	92.68
		03/09/92	4.28	96.44
		03/24/92	4.33	96.39
		04/28/92	4.54	96.18
		06/29/92	5.92	94.80
		07/27/92	5.74	94.98
		08/27/92	6.04	94.68
		09/24/92	6.16	94.56
		12/16/92	6.19	94.53
		01/21/93	6.83	93.89
MW-2	99.54	02/24/92	4.45	95.09
		03/09/92	3.70	95.84
		01/21/93	6.83	93.89
		03/24/92	3.73	95.81
		04/28/92	4.25	95.29
		06/29/92	4.40	95.14
		07/27/92	4.00	95.54
		08/27/92	4.33	95.21
		09/24/92	4.36	95.18
		12/16/92	4.08	95.46
01/21/93	4.40	95.14		
MW-3	101.19	02/24/92	13.12	88.07
		03/09/92	8.75	92.44
		03/24/92	6.87	94.32
		04/28/92	6.31	94.88
		06/04/92	7.10	94.09
		06/29/92	10.78	90.41
		07/27/92	6.88	94.31
		08/27/92	6.75	94.44
		09/24/92	7.38	93.81
		12/16/92	6.50	94.69
01/21/92	10.25	90.94		

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<sup>1</sup> TOC = Top of Casing elevation relative to an assumed project datum.

<sup>2</sup> Measured below TOC

Table 2.  
Contaminant Concentrations in Groundwater

Tank Area	Sampling Date	TVH <sup>1</sup> (ug/l) <sup>4</sup>	TEH <sup>2</sup>		TOG <sup>3</sup> (mg/l) <sup>5</sup>	Benzene (ug/l)	Toluene (ug/l)	Ethyl- Benzene (ug/l)	Total Xylenes (ug/l)	EPA 8010 Chemicals
			Kerosene Range (ug/l)	Diesel Range (ug/l)						
Fuel Oil MW-1	02/19/92	-- <sup>6</sup>	<50	94	--	<0.5	<0.5	<0.5	<0.5	--
	06/29/92	--	<50	110	--	<0.5	<0.5	<0.5	<0.5	--
	09/29/92	--	<50	<50	--	<0.5	<0.5	<0.5	<0.5	--
	12/22/92	--	<50	180	--	<0.5	<0.5	<0.5	<0.5	--
Gasoline MW-2	02/19/92	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--
	06/29/92	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--
	09/29/92	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--
	12/21/92	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--
Waste Oil MW-3	02/19/92	<5000 <sup>7</sup>	680	<50	<5	<50	<50	<50	84	ND <sup>8</sup>
	06/29/92	<50	*	190	<5	<0.5	<0.5	<0.5	<0.5	ND
	09/29/92	<50	*	410	<5	<0.5	<0.5	<0.5	<0.5	ND
	12/21/92	<500	*	400	<5	<5	<5	<5	<5	ND

<sup>1</sup> Total volatile hydrocarbons as gasoline, EPA 8015/5030 modified

<sup>2</sup> Total extractable hydrocarbons, EPA 3550/8015 modified

<sup>3</sup> Total oil and grease, EPA 3550 and SMWW 17:5520 E&F

<sup>4</sup> Micrograms per liter or parts per billion (ppb)

<sup>5</sup> Milligrams per liter or parts per million (ppm)

<sup>6</sup> Test not requested

<sup>7</sup> Sample diluted due to foaming during purge and trap extraction

<sup>8</sup> Not detected at or above reporting limits. Reporting limits vary from 1.0 to 20 ug/l. See test reports for individual reporting limits.

\* Quantitated as diesel

**PURGING  
WELL SAMPLING FORM**

Project Name: College of Alameda Well Number: #3  
Job No.: 469.0016 Well Casing Diameter: 2 inch  
Sampled By: KS Date: 12/16  
TOC Elevation: 106.19 Weather: clear sunny @ 70°

Depth to Casing Bottom (below TOC) 14' 11" feet  
Depth to Groundwater (below TOC) 6' 6" feet  
Feet of Water in Well \_\_\_\_\_ feet  
Depth to Groundwater When 80% Recovered \_\_\_\_\_ feet  
Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) \_\_\_\_\_ gallons  
Depth Measurement Method Tape & Paste / Electronic Sounder / Other  
Free Product \_\_\_\_\_  
Purge Method \_\_\_\_\_

**FIELD MEASUREMENTS**

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>1.5</u>	<u>6.9</u>	<u>21.6</u>	<u>X100 204</u>	_____	_____
<u>1</u>	<u>6.9</u>	<u>27.7</u>	<u>X100 301</u>	_____	_____
<u>1.25</u>	<u>6.9</u>	<u>23.4</u>	<u>X100 307</u>	_____	_____
<u>1.5</u>	<u>6.9</u>	<u>20.9</u>	<u>X100 300</u>	_____	_____
<u>1.75</u>	<u>6.9</u>	<u>20.9</u>	_____	_____	_____

Total Gallons Purged ≈ 4 gallons ≈ 15 1/2 barrels gallons  
Depth to Groundwater Before Sampling (below TOC) \_\_\_\_\_ feet  
Sampling Method \_\_\_\_\_  
Containers Used \_\_\_\_\_  
40 ml                      liter                      pint

**Subsurface Consultants**

JOB NUMBER

DATE

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~~PURGING~~  
**WELL SAMPLING FORM** continued

Project Name: \_\_\_\_\_ Well Number:    # 2     
 Job No.: \_\_\_\_\_ Well Casing Diameter: \_\_\_\_\_ inch  
 Sampled By: \_\_\_\_\_ Date: \_\_\_\_\_  
 TOC Elevation: \_\_\_\_\_ Weather: \_\_\_\_\_

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

**FIELD MEASUREMENTS**

↓ (Count)

built  
 3/4 full 13  
 1/2 full 14  
 1/2 full 15  
 1/4 full 16

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>   2   </u>	<u>   6.9   </u>	<u>   20.6   </u>	<u>   305 x 100   </u>	_____	_____
<u>   2.5   </u>	<u>   6.9   </u>	<u>   25.0   </u>	<u>   306 x 100   </u>	_____	_____
<u>   3   </u>	<u>   6.91   </u>	<u>   19.3   </u>	<u>   305 x 100   </u>	_____	_____
<u>   4   </u>	<u>   6.9   </u>	<u>   18.8   </u>	<u>   308 x 100   </u>	_____	_____
_____	_____	_____	_____	_____	_____

Total Gallons Purged \_\_\_\_\_ gallons  
 Depth to Groundwater Before Sampling (below TOC) \_\_\_\_\_ feet  
 Sampling Method \_\_\_\_\_  
 Containers Used \_\_\_\_\_ 40 ml \_\_\_\_\_ liter \_\_\_\_\_ pint

<b>Subsurface Consultants</b>	JOB NUMBER	DATE	APPROVED	PLATE

## WELL SAMPLING FORM

Project Name: College of Alameda Well Number: MW-1  
 Job No.: 469.006 Well Casing Diameter: 2" inch  
 Sampled By: DWA Date: 12/22/93  
 TOC Elevation: 100.72 Weather: cloudy overcast

Depth to Casing Bottom (below TOC) 12 feet  
 Depth to Groundwater (below TOC) 5.4' feet  
 Feet of Water in Well 6.6 feet  
 Depth to Groundwater When 80% Recovered 6.72 feet  
 Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) \_\_\_\_\_ gallons  
 Depth Measurement Method Tape & Paste Electronic Sounder / Other \_\_\_\_\_  
 Free Product N/A  
 Purge Method disposable bailer

### FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>0</u>	<u>3.65</u>	<u>62.4</u>	<u>17,000</u>	_____	_____
<u>1</u>	<u>3.78</u>	<u>62.1</u>	<u>19,400</u>	_____	_____
<u>2</u>	<u>4.05</u>	<u>55.7</u>	<u>19,000</u>	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Total Gallons Purged 2.5 gallons  
 Depth to Groundwater Before Sampling (below TOC) 9.81' feet  
 Sampling Method disposable bailer  
 Containers Used 2 40 ml 1 liter \_\_\_\_\_ pint

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JOB NUMBER

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PLATE



### WELL SAMPLING FORM

Project Name: College of Alameda Well Number: MW-2  
Job No.: 469.006 Well Casing Diameter: 2 inch  
Sampled By: DWA Date: 12/21/92  
TOC Elevation: 59.54 Weather: cloudy / overcast

Depth to Casing Bottom (below TOC) 14' 5" 14.42 feet  
Depth to Groundwater (below TOC) 4.21' feet  
Feet of Water in Well 10.21 feet  
Depth to Groundwater When 80% Recovered 6.25 feet  
Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) \_\_\_\_\_ gallons  
Depth Measurement Method Tape & Paste  Electronic Sounder  Other \_\_\_\_\_  
Free Product N/A  
Purge Method disposable bailer

### FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>0</u>	<u>4.45</u>	<u>58.5</u>	<u>4,150</u>	<u>N/A</u>	<u>semi-clear</u>
<u>1</u>	<u>4.39</u>	<u>61.8</u>	<u>4,670</u>	<u> </u>	<u>muddy</u>
<u>3</u>	<u>4.26</u>	<u>61.5</u>	<u>3,320</u>	<u> </u>	<u> </u>
<u>5</u>	<u>4.25</u>	<u>61.4</u>	<u>3,180</u>	<u> </u>	<u> </u>
_____	_____	_____	_____	<u>↓</u>	<u>↓</u>

Total Gallons Purged 5 gallons  
Depth to Groundwater Before Sampling (below TOC) 4.35' feet  
Sampling Method disposable bailer  
Containers Used 3 \_\_\_\_\_ liter \_\_\_\_\_ pint  
40 ml

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JOB NUMBER

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WELL SAMPLING FORM

Project Name: College of Alameda Well Number: MW-3  
Job No.: 469.006 Well Casing Diameter: 2" inch  
Sampled By: DWA Date: 12/21/92  
TOC Elevation: 101.19 Weather: cloudy/overcast

Depth to Casing Bottom (below TOC) \_\_\_\_\_ feet  
Depth to Groundwater (below TOC) 12.74 feet  
Feet of Water in Well \_\_\_\_\_ feet  
Depth to Groundwater When 80% Recovered \_\_\_\_\_ feet  
Casing Volume (feet of water x Casing DIA<sup>2</sup> x 0.0408) \_\_\_\_\_ gallons  
Depth Measurement Method Tape & Paste / Electronic Sounder / Other  
Free Product N/A  
Purge Method N/A

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓

Total Gallons Purged N/A gallons  
Depth to Groundwater Before Sampling (below TOC) 12.47' feet  
Sampling Method disposable bailer  
Containers Used 4 40 ml 3 liter \_\_\_\_\_ pint

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JOB NUMBER

DATE

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PLATE



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

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

DATE RECEIVED: 12/22/923  
DATE REPORTED: 01/06/93

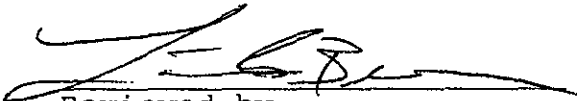
LABORATORY NUMBER: 109594

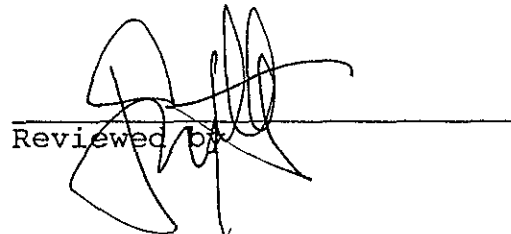
CLIENT: SUBSURFACE CONSULTANTS

PROJECT ID: 469.006

LOCATION: COLLEGE OF ALAMEDA

RESULTS: SEE ATTACHED

  
Reviewed by

  
Reviewed by

This report may be reproduced only in its entirety.

Client: Subsurface Consultants

Laboratory Login Number: 109594

Project Name: College of Alameda  
Project Number: 469.006

Report Date: 06 January 93

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

METHOD: SMWW 17:5520BF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
109594-003	MW-3	Water	21-DEC-92	22-DEC-92	29-DEC-92	ND	mg/L	5	TR	7885

ND = Not Detected at or above Reporting Limit (RL).



Q C B a t c h R e p o r t

Client: Subsurface Consultants  
Project Name: College of Alameda  
Project Number: 469.006

Laboratory Login Number: 109594  
Report Date: 06 January 93

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 7885

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	29-DEC-92

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	92%	SMWW 17:5520BF	29-DEC-92
BSD	86%	SMWW 17:5520BF	29-DEC-92

		Control Limits
Average Spike Recovery	89%	80% - 120%
Relative Percent Difference	6.2%	< 20%

LABORATORY NUMBER: 109594  
 CLIENT: SUBSURFACE CONSULTANTS  
 PROJECT ID: 469.006  
 LOCATION: COLLEGE OF ALAMEDA

DATE SAMPLED: 12/21-22/92  
 DATE RECEIVED: 12/22/92  
 DATE EXTRACTED: 12/23/92  
 DATE ANALYZED: 12/29/92  
 DATE REPORTED: 01/06/93

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)
109594-1	MW-1	ND	180	50
109594-3	MW-3	**	400	50

ND = Not detected at or above reporting limit.

\* Reporting limit applies to all analytes.

\*\* Quantitated as diesel range.

QA/QC SUMMARY

RPD, %	16
RECOVERY, %	81

LABORATORY NUMBER: 109594  
 CLIENT: SUBSURFACE CONSULTANTS  
 PROJECT ID: 469.006  
 LOCATION: COLLEGE OF ALAMEDA

DATE SAMPLED: 12/22/92  
 DATE RECEIVED: 12/22/92  
 DATE ANALYZED: 12/24/92  
 DATE REPORTED: 01/06/93

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)
109594-1	MW-1	ND	ND	ND	ND	0.5

ND = Not detected at or above reporting limit.

\* Reporting Limit applies to all analytes.

QA/QC SUMMARY

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=====
RPD, %                                <1
RECOVERY, %                            105
=====
  
```

LABORATORY NUMBER: 109594  
 CLIENT: SUBSURFACE CONSULTANTS  
 PROJECT ID: 469.006  
 LOCATION: COLLEGE OF ALAMEDA

DATE SAMPLED: 12/21/92  
 DATE RECEIVED: 12/22/92  
 DATE ANALYZED: 12/29/92  
 DATE REPORTED: 01/06/93

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions  
 TVH by California DOHS Method/LUFT Manual October 1989  
 BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
109594-2	MW-2	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
109594-3	MW-3	ND(500)	ND(5)	ND(5)	ND(5)	ND(5)

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

NOTE: Detection limit for sample 109594-3 raised due to foaming.

QA/QC SUMMARY

RPD, %	5
RECOVERY, %	100



LABORATORY NUMBER: 109594-3  
 CLIENT: SUBSURFACE CONSULTANTS  
 PROJECT ID: 469.006  
 LOCATION: COLLEGE OF ALAMEDA  
 SAMPLE ID: MW-3

DATE SAMPLED: 12/21/92  
 DATE RECEIVED: 12/22/92  
 DATE ANALYZED: 12/29/92  
 DATE REPORTED: 01/06/93

EPA 8010  
 Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2
Bromomethane	ND	2
Vinyl chloride	ND	2
Chloroethane	ND	2
Methylene chloride	ND	30
Trichlorofluoromethane	ND	1
1,1-Dichloroethene	ND	1
1,1-Dichloroethane	ND	1
cis-1,2-Dichloroethene	ND	1
trans-1,2-Dichloroethene	ND	1
Chloroform	ND	1
Freon 113	ND	30
1,2-Dichloroethane	ND	1
1,1,1-Trichloroethane	ND	1
Carbon tetrachloride	ND	1
Bromodichloromethane	ND	1
1,2-Dichloropropane	ND	1
cis-1,3-Dichloropropene	ND	1
Trichloroethene	ND	1
1,1,2-Trichloroethane	ND	1
trans-1,3-Dichloropropene	ND	1
Dibromochloromethane	ND	1
2-Chloroethylvinyl ether	ND	2
Bromoform	ND	2
Tetrachloroethene	ND	1
1,1,2,2-Tetrachloroethane	ND	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

Surrogate Recovery, %	104
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LABORATORY NUMBER: 109594  
 CLIENT: SUBSURFACE CONSULTANTS  
 PROJECT ID: 469.006  
 LOCATION: COLLEGE OF ALAMEDA  
 SAMPLE ID: METHOD BLANK

DATE SAMPLED: 12/21/92  
 DATE RECEIVED: 12/22/92  
 DATE ANALYZED: 12/29/92  
 DATE REPORTED: 01/06/93

EPA 8010  
 Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2
Bromomethane	ND	2
Vinyl chloride	ND	2
Chloroethane	ND	2
Methylene chloride	ND	30
Trichlorofluoromethane	ND	1
1,1-Dichloroethene	ND	1
1,1-Dichloroethane	ND	1
cis-1,2-Dichloroethene	ND	1
trans-1,2-Dichloroethene	ND	1
Chloroform	ND	1
Freon 113	ND	30
1,2-Dichloroethane	ND	1
1,1,1-Trichloroethane	ND	1
Carbon tetrachloride	ND	1
Bromodichloromethane	ND	1
1,2-Dichloropropane	ND	1
cis-1,3-Dichloropropene	ND	1
Trichloroethene	ND	1
1,1,2-Trichloroethane	ND	1
trans-1,3-Dichloropropene	ND	1
Dibromochloromethane	ND	1
2-Chloroethylvinyl ether	ND	2
Bromoform	ND	2
Tetrachloroethene	ND	1
1,1,2,2-Tetrachloroethane	ND	1
Chlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

Surrogate Recovery, %	103
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## MS/MSD SUMMARY SHEET FOR EPA 8010

Laboratory Number: 109594  
 Analysis date: 12/29/92  
 Sample type: WATER

Spike file: 2700\DATA4\LR\*018  
 Spike dup file: 2700\DATA4\LR\*019

## 8010 MS/MSD DATA (spiked at 20 ppb)

SPIKE COMPOUNDS	READING	RECOVERY	STATUS	LIMITS
1,1-Dichloroethene	32.40	65 %	OK	61 - 145
Trichloroethene	38.80	78 %	OK	71 - 120
Chlorobenzene	34.10	68 %	OK	75 - 130
SPIKE DUP COMPOUNDS				
1,1-Dichloroethene	38.90	78 %	OK	61 - 145
Trichloroethene	36.40	73 %	OK	71 - 120
Chlorobenzene	38.90	78 %	OK	75 - 130

## RPD DATA

8010 COMPOUNDS	SPIKE	SPIKE DUP	RPD	STATUS	LIMITS
1,1-Dichloroethene	32.40	38.90	18 %	NOT OK	<= 14
Trichloroethene	38.80	36.40	6 %	OK	<= 14
Chlorobenzene	34.10	38.90	13 %	OK	<= 13

**CHAIN OF CUSTODY FORM**

PROJECT NAME: College of Alameda

JOB NUMBER: 469.006 LAB: Curtis & Tompkins

PROJECT CONTACT: Marianne Watada TURNAROUND: Normal

SAMPLED BY: Dennis Alexander REQUESTED BY: Marianne Watada

ANALYSIS REQUESTED					
TVH/BTXE					
TEX					
BTXE		X			
O&G					
Purgeable Halocarbons					

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												
	MW-1	X				2				X		X			1	2	2	9	2	0	8	1	5							
	MW-1	X					1					X			1	2	2	9	2	0	8	1	5							
	MW-2	X								X		X			1	2	2	1	9	2	1	3	3	0			X			
	MW-3	X								X		X															X			
	MW-3	X						2				X															X			
	MW-3	X						1		X		X			↓	↓	↓	↓	↓	↓	↓	↓	↓	↓						

COMMENTS & NOTES:

**CHAIN OF CUSTODY RECORD**

RELEASED BY: (Signature) <i>Dennis Alexander</i>	DATE/TIME 12/21/11 10:15 a.m.	RECEIVED BY: (Signature) <i>[Signature]</i>	DATE/TIME 12/21/11 12:25 p.m.
RELEASED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELEASED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

**Subsurface Consultants, Inc.**

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