

10 288

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# THE SUTTON GROUP

SOILS, FOUNDATIONS, DRAINAGE, SLOPES, CONTAINMENTS  
CIVIL, GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

3708 Mount Diablo Blvd  
Suite 215  
Lafayette, CA, 94549

November 30, 2003

Mr. Michael Cortez  
Oro Loma Sanitary District  
2600 Grant Avenue  
San Lorenzo, 94580

**Results of Quarterly Sampling of Ground Water Monitoring Wells  
Sites of Former Gasoline and Diesel Tanks  
2600 Grant Ave., San Lorenzo, CA  
OLSD PO No. 4911, SG File No. 3022.9**

**ST ID 1996**

Dear Mr. Cortez:

We attach results for the most recent round of quarterly sampling of the ground water monitoring wells, conducted on October 30, 2003. This is the 5<sup>th</sup> quarterly sampling of the two additional wells installed last October in the parking lot west of the District's Engineering Building. Additionally, groundwater depths in all 5 monitoring wells in this area. The monitoring well at the location of the former diesel tank was also sampled.

This work has been performed in accordance with the Work Plan that was approved by Alameda County Health Care Agency's Environmental Protection Division (ACEP) in their letter dated August 27, 2002. Additionally, sampling was conducted in accordance with the request of ACEP's April 18, 2003 letter.

Figure 1 is a plan of the District's facilities at the foot of Grant Avenue in San Lorenzo that shows the relative locations of the former gasoline and diesel tanks to the sewage treatment plant and the District's offices. Figure 2 is a plan of the Service Center area, which was the site of the former gasoline tank.

## **Sampling Results**

### **Gasoline Tank Area**

On October 30, 2003, ground water depths were measured in all 5 monitoring wells near the Engineering Building. Conditions of the wellheads appeared to have not changed from the previous sampling. The wells were sounded for groundwater depth and then each of the wells to be sampled, MW-4, -5, and D-1, was purged of three well volumes and the samples collected using dedicated bailers and laboratory-supplied glass containers.

The attached Table 1 summarizes the ground water elevation data collected in the gasoline tank area over the past year. The gradient direction, shown on Figure 2, was estimated after calculating the individual gradients for triplets of three wells, and then considering the relative groundwater elevations in relation to consider the influence of the gravel-filled trenches that bound the site, and act as groundwater sinks. The three wells upgradient of the Grant Avenue boundary indicate a gradient towards the Bay. Water levels in wells MW-1 and 2 in Grant Avenue indicate the strong influence of the gravel filled the trench that parallel the Grant Avenue boundary, and separates these wells from the site. Since 1997 both this firm and RWQCB Region 2 have been propounding that this trench acts as a interceptor of groundwater, controlling its gradient. On this basis, onsite gradients towards the trench would be much steeper than indicated by the measurements. It is of note that the groundwater elevations and gradients closely approximate those of October last year.

MW-4 and 5 were each sampled and analyzed for gasoline, BTEX and MTBE using standard EPA test methods 8020 and 8260. Well D-1 was analyzed for diesel and BTEX

Table 2 is a summary of the results of the current round of analytical results for hydrocarbons. The laboratory report is appended, as are sampling event field sheets. Table 2A is a compilation of all test results for gasoline-related hydrocarbons in the gasoline tank area since well sampling began in 1999. .

#### **Diesel Tank Area**

The monitoring well at the location of the former diesel tank was also sampled. This well was installed and first sampled in March, 1996. The ground water depth was 4.83 feet below the rim, a fall of almost 1.5 feet in the quarter. This well is influenced by a dewatering pump well some 50 feet away. The monitoring well location is shown on Figure 1.

The well was purged and sampled, and analyzed for TPH as diesel. The presence of 87 $\mu$ g/l was the same as the reading last quarter (87 $\mu$ g/l) and substantially lower than the initial 1996 reading. Historically, the well has no detection of BTEX. Table 3 is a tabulation of all sample results for this well.

#### **Conclusions and Future Sampling**

The sample from the diesel tank well shows a very low presence of diesel, which is less than 20% of the reading made in 1996. We recommend that The District petition ACEP for closure of the diesel tank site without further sampling.

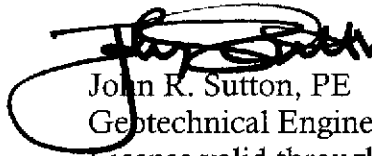
The wells in the former gasoline tank area continue to indicate that the contamination is contained on the Districts property by the barrier trenches. The wells beyond the barrier continue to show no detection of gasoline or BTEX. MTBE at 1ppb in 2 wells in the continued absence of BTEX strongly suggests an anomaly.

As you know, ACEP re-assigned the site's case officer, Ms. Chu in April of this year, and there has been no communication from ACEP since that date. The District's September 25 letter to ACEP has also gone unanswered. The next scheduled sampling is scheduled for January 2004.

We appreciate the opportunity to be of continued service to The District. Please call me if you have questions or if I can assist you in any other way.

Yours truly,

**THE SUTTON GROUP**

  
John R. Sutton, PE  
Geotechnical Engineer No 8122  
License valid through 12/31/2006

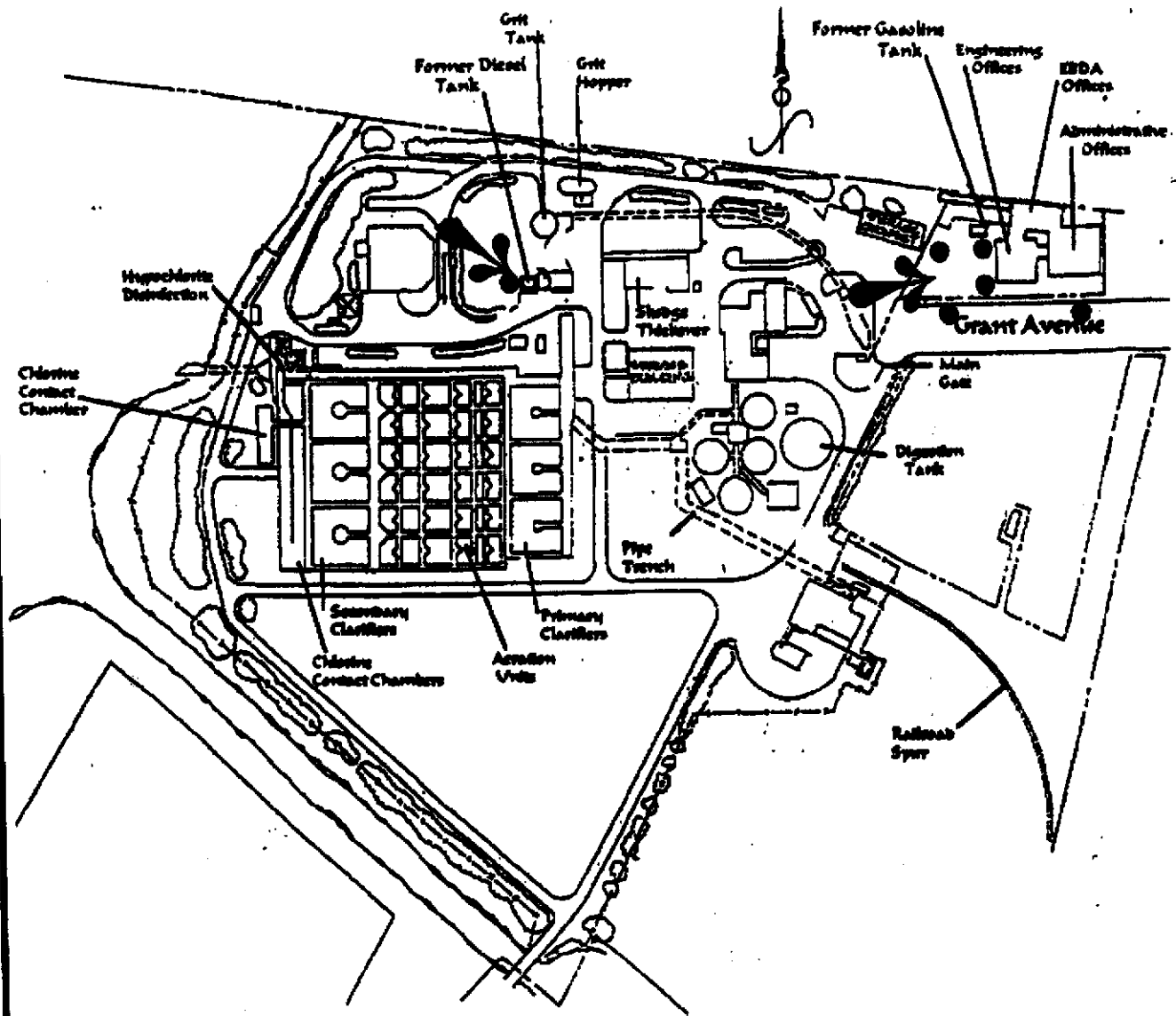


**Attachments:**

- Figure 1 Site Plan
- Figure 2 Well Location Plan, Former Gasoline Tank Area
- Table 1 Ground Water Elevations, Former Gasoline Tank Area
- Table 2 Summary of Current Water Sample Analyses, Gas Tank Area
- Table 2A Cumulative Summary of Water Sample Analyses, Gas Tank Area
- Table 3 Summary of Water Sample Analyses, Former Diesel Tank Area
- Analytical Laboratory Reports
- Field sampling reports

Two Copies Sent

One copy sent to Ms. Eva Chu at Alameda County Health Dept.



**SITE PLAN**

● Monitoring Well Location

SCALE 1 IN. TO 250 FEET, APPROX

<p><b>THE SUTTON GROUP.</b>          3708 Mount Diablo Blvd, Ste 215          Lafayette, CA, 94549          925 284-4208</p>	<p><b>SITE PLAN</b>  <b>ORO LOMA SANITARY DISTRICT</b>          San Lorenzo, California</p>	<p>PROJECT No3022.10  <b>FIGURE 1</b>          5/21/03</p>
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NEW ENGINEERING INC.  
 7181 THORNDALE DRIVE  
 OAKLAND CALIF. 94611  
 510-339-9887

SCALE 1"=20'

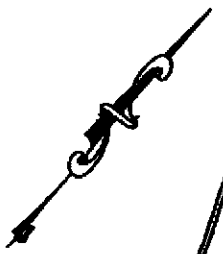
3  
 10.185  
 161.01  
 3.61  
 10.185  
 161.01

2839.6  
 46  
 9.694  
 4.19  
 2839.6  
 46  
 9.694

8.922  
 8.916  
 4.09  
 8.922  
 8.916  
 4.09

8.757  
 8.750  
 2.75  
 8.757  
 8.750  
 2.75

8.648  
 8.646  
 1.82  
 8.648  
 8.646  
 1.82



parking lot

Office Building

GRAVEL FILLED TRENCH

GRANT AVENUE

N50°09'00"E

note: coordinates given are relative only and not based on state grid

Revised by JRS

ORO LOMA SANITARY DISTRICT  
 2600 GRANT AVENUE  
 SAN LORENZO, CA

• monitoring wells ( typical of 5 )  
 note: two elevations are given at each well rim.  
 4.09 groundwater elevation @ MW

5th Quarterly Reading  
 Oct 30, 2003

FIGURE 2



**TABLE 1**  
**GROUND WATER ELEVATIONS**

All measurements are in feet

Monitoring Well ID	Well Cover Rim Elevation*	Initial Sampling, 10/21/02	2 <sup>nd</sup> Quarterly 1/28/03	3 <sup>rd</sup> Quarterly 4/28/03	4 <sup>th</sup> Quarterly 7/25/03	5 <sup>th</sup> Quarterly 10/30/03	
		G Water Elev'n.	G Water Elev'n..	G Water Elev'n.	G Water Elev'n	G Water Depth Elev'n.	Change Since Prev. Reading
MW 1	8.65	1.72	2.23	Not Measured	0.45	<del>6.83</del> 1.82	+1.37
MW 2	8.75	2.04	2.65	3.18	2.35	<del>6.00</del> 2.75	+0.40
MW 3	10.19	3.21	4.94	Not Measured	3.44	<del>6.58</del> 3.61	+0.17
MW 4	9.68	3.58	5.35	5.80	3.58	<del>5.50</del> 4.18	+0.60
MW 5	8.92	2.84	4.42	5.20	3.52	<del>4.83</del> 4.09	+0.57
Gradient, Direction		S21°E @ .016 ft/ft	S23°E @ .033 ft/ft	S22½°W @ .042 ft/ft	S18°W @ .027 ft/ft	S26°E @ .014 ft/ft	

\* Basis of elevations, Alameda County bench mark "Grant -Phil" at intersection of Grant Avenue and Phil Drive.

Elevation = 2.175meters, msl = 7.136 feet.

**TABLE 2A**  
**CUMULATIVE SUMMARY OF GROUND WATER SAMPLE ANALYSES**

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE, BTEX AND MTBE  
 EPA METHOD 8015M/8020M (SAMPLES BEFORE 2001)  
 EPA METHOD 8015M/8260 (SAMPLES SINCE 2002)

results in µg/l (ppb)

SAMPLE LOCATION	SAMPLE DATE	GASOLINE	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES (TOTAL)	MTBE
<b>MW-1</b>	2/19/99	ND	ND	ND	ND	ND	ND
	5/10/99	ND	ND	ND	ND	ND	ND
	8/30/99	N/A	ND	ND	ND	ND	ND
<b>DUP</b>	11/23/99	ND	ND	ND	ND	ND	ND
	11/23/99	ND	ND	ND	ND	ND	ND
	7/25/03	ND	ND	ND	ND	ND	ND
	<b>10/30/03</b>	<b>N/A</b>					
<b>MW-2</b>	2/19/99	ND	ND	ND	ND	ND	ND
	5/10/99	ND	ND	ND	ND	ND	ND
	8/30/99	N/A	ND	ND	ND	ND	ND
	11/23/99	ND	ND	ND	ND	ND	ND
	7/25/03	ND	ND	ND	ND	ND	< 1
	<b>10/30/03</b>	<b>N/A</b>					
<b>MW-3</b>	2/19/99	ND	ND	ND	ND	ND	1.5 <sup>1</sup>
<b>DUP</b>	2/19/99	ND	ND	ND	ND	ND	N/A
	5/10/99	ND	ND	ND	ND	ND	1.5 <sup>2</sup>

**NOTES:**

ND Analyte not detected at stated reporting limit  
 N/A Not analyzed  
 u/n Unless noted otherwise (Reporting Limit)

1. Analyzed by EPA method 8260B, reporting limit was 1 µg/l.
2. Estimated value below method reporting limit of 2 µg/l.
3. Inconsistent contaminant pattern. Sample result spurious, re-sampled
4. Reporting limit at 2.5 µg/l.

**TABLE 2A, Continued**  
**CUMULATIVE SUMMARY OF GROUND WATER SAMPLE ANALYSES**

TABLE CONTINUES OVERLEAF

SAMPLE LOCATION	SAMPLE DATE	GASOLINE	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES (TOTAL)	MTBE
<b>MW-3 CONT'D</b>	8/30/99	N/A	ND	ND	ND	ND	ND
	11/23/99	ND	ND	[0.69] <sup>3</sup>	[0.58] <sup>3</sup>	[1.3] <sup>3</sup>	ND
DUP TRIP BLANK	1/6/00	ND	ND	ND	ND	ND	3.1 <sup>4</sup>
	1/6/00	ND	ND	ND	ND	ND	2.6 <sup>4</sup>
	2/10-22/99	ND	ND	ND	ND	ND	N/A
	5/8-20/99	N/A	N/A	N/A	N/A	N/A	N/A
	8/27-31/99	N/A	N/A	N/A	N/A	N/A	N/A
	7/25/03	ND	ND	ND	ND	ND	1.1
	<b>10/30/03</b>	<b>N/A</b>					
<b>MW-4</b>	10/21/2002	N/A	5,800	6,200	3,500	18,000	140
	1/28/03	N/A	7,200	3,500	2,700	15,000	130
	4/28/03	N/A	5,700	850	ND<120	10,000	200
	7/25/03	97,000	11,000	8,400	4,900	24,000	ND<250
	<b>10/30/03</b>	<b>77,000</b>	<b>12,000</b>	<b>9,300</b>	<b>3,200</b>	<b>16,000</b>	<b>ND &lt; 200</b>
<b>MW-5</b>	10/21/2002	65,000	12,000*	20,000*	1,600*	7,100*	ND<100
	1/28/03	N/A	9,100	6,600	720	4,000	ND<100
	4/28/03	N/A	12,000	8,300	ND<250	2,100	ND<250
	7/25/03	62,000	13,000	14,000	1,300	5,200	ND<250
	<b>10/30/03</b>	<b>33,000</b>	<b>7,500</b>	<b>2,200</b>	<b>490</b>	<b>1,600</b>	<b>ND &lt; 100</b>
REPORTING LIMITS		50.0	0.50	0.50	0.50	0.50	2.00 U/N

ORO LOMA SANITARY DISTRICT, STID 1996  
 302210 TABLE 2A for 1003, 5th qtrly:



**TABLE 3**  
**SUMMARY OF WATER SAMPLE ANALYSES:**  
**FORMER DIESEL TANK AREA MONITORING WELL**

TOTAL PETROLEUM HYDROCARBONS AS DIESEL,

EPA METHOD 8015C, 8021

RESULTS IN µg/L (ppb)

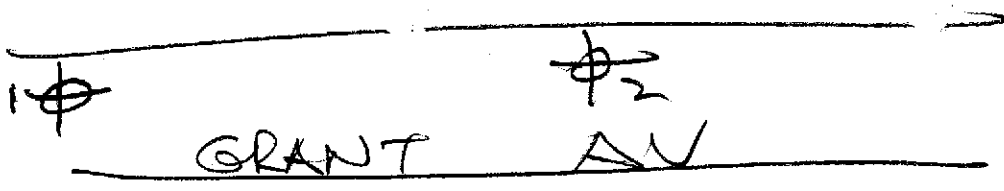
<i>Sample Date</i>	<i>TPH as DIESEL</i>	<i>BTEX</i>
10/30/03	87	ND
7/25/03	90*	ND*
4/28/2003	87	ND
3/ 8/1996	340	ND
2/1/95	380	ND
6/15/94	170	ND
3/15/94	200	ND
12/1/93	300	ND

**For reporting limits refer to laboratory certificates appended.**

ORO LOMA SANITARY DISTRICT

302210 TABLE 3 D analyt 5th qly 1003

**THE SUTTON GROUP**



10/30/03  
 345 PM  
 TO 530

5  $\phi$

4  $\phi$

$\phi$   
 ~~~~~  
 ~~~~~

Water Level

- 3:45 (1)  $9\frac{1}{2} dp - 2\frac{1}{4}'' = 6-10'' @ 6.83'$
- 3:55 (2) 12:2 @ 6.00
- 4:15 (3) @ 6.50'
- 4:05 (4)  $8'10'' - 3\frac{1}{4} = 5'6'' @ 5.50'$
- 4:00 (5)  $4'10'' = @ 4.83'$
- DI @ 2.85

5'10" x 5' =  
 4 gals/foot  
 Bar  
 (3)

# SAMPLE COLLECTION LOG

Project Name	DLSD
Project Number	3022.10
Sampler Name	Sutton
Date of Sample Collection	10/30/03

Sample Number	103003-4	4:20 pm
Sample Location	MW-4	
Sample Media	<del>soil</del> Water/ <del>other</del> Water	
Site Conditions	P/cloudy, windy	
Sample Collection Depth	5.5' water depth	
Sample Container	6x40ml VOA w/ HCl	
Intact or Disturbed Sample		
Sample Material Description		
Collection Procedure	Dedicator bottles	
	4 gal bottles	
	Water is slightly cloudy	
	Mal. gasoline odor.	
Proposed Lab. Analysis	Gas/BTEX MIBE x 260	

# SAMPLE COLLECTION LOG

Project Name	OLSD	
Project Number	3022-10	
Sampler Name	Sutton	
Date of Sample Collection	10/30/03	4:45 pm

Sample Number	103003-5	
Sample Location	MW-5	
Sample Media	Soil/ Water/ other <u>water</u>	
Site Conditions	p. cloudy, windy	
Sample Collection Depth	Water Depth 4.83'	
Sample Container	5x40 NOVA w/ HCL	
Intact or Disturbed Sample		
Sample Material Description	Dedicated Bubbler	
Collection Procedure	4 gal purged	
	water is black w/ sulfurous odor, poss slight jaundice odor	
Proposed Lab. Analysis	GAS 192X MTHSE X 8260	

# SAMPLE COLLECTION LOG

Project Name	OCSO	
Project Number	302210	
Sampler Name	Sutton	
Date of Sample Collection	10/30/03	5:20 pm

Sample Number	103003-D1	
Sample Location	Diesel Tank MW-D1	
Sample Media	Soil / Water / other	
Site Conditions	P cloudy / windy	
Sample Collection Depth	Water @ 2.85' depth below RW	
Sample Container	↑	
Intact or Disturbed Sample	1x 1/2 Amber - No Preserv.	
Sample Material Description		
Collection Procedure	Dedicated Bailer      15.3 2.9 <u>12.4ft</u> @ 37 gpm = 4.8 gal purge	
Proposed Lab. Analysis	Diesel + BTEX	



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
<http://www.mccampbell.com> E-mail: [main@mccampbell.com](mailto:main@mccampbell.com)

The Sutton Group 3708 Mt. Diablo Blvd, Ste. 215 Lafayette, CA 94549	Client Project ID: #3022.10; OLSD	Date Sampled: 10/30/03
		Date Received: 10/30/03
	Client Contact: John Sutton	Date Reported: 11/05/03
	Client P.O.:	Date Completed: 11/05/03

**WorkOrder: 0310519**

November 05, 2003

Dear John:

Enclosed are:

- 1). the results of 3 analyzed samples from your #3022.10; OLSD project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions please contact me. McC Campbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager









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 http://www.mccampbell.com E-mail: main@mccampbell.com

The Sutton Group  3708 Mt. Diablo Blvd, Ste. 215  Lafayette, CA 94549	Client Project ID: #3022.10; OLSD	Date Sampled: 10/30/03
		Date Received: 10/30/03
	Client Contact: John Sutton	Date Extracted: 10/31/03-11/01/03
	Client P.O.:	Date Analyzed: 10/31/03-11/01/03

**MTBE and BTEX by GC/MS\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0310519

Lab ID	0310519-001A	0310519-002A			Reporting Limit for DF=1
Client ID	10003-4	103003-5			
Matrix	W	W			
DF	400	200			S      W

Compound	Concentration				ug/kg	µg/L
Benzene	12,000	7500			NA	0.5
Ethylbenzene	3200	490			NA	0.5
Methyl-t-butyl ether (MTBE)	ND<200	ND<100			NA	0.5
Toluene	9300	2200			NA	0.5
Xylenes	16,000	1600			NA	0.5

**Surrogate Recoveries (%)**

%SS1:	94.6	100			
%SS2:	94.5	93.1			
%SS3:	100	99.0			

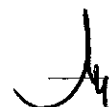
**Comments**      i

\* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in µg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.

 Angela Rydelius, Lab Manager



**QC SUMMARY REPORT FOR SW8021B/8015Cm**

Matrix: W

WorkOrder: 0310519

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 9169			Spiked Sample ID: 0310520-013A			
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex) <sup>£</sup>	ND	60	97.5	99	1.60	96.9	96.2	0.765	70	130
MTBE	8.25	10	81.5	74	4.69	105	96.1	8.58	70	130
Benzene	ND	10	104	104	0	112	103	8.39	70	130
Toluene	ND	10	105	105	0	113	104	8.76	70	130
Ethylbenzene	ND	10	107	108	0.639	116	107	7.94	70	130
Xylenes	ND	30	110	110	0	117	110	5.88	70	130
%SS:	104	100	106	105	0.761	106	106	0	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / (MS + MSD) \* 2.

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



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<http://www.mccampbell.com> E-mail: [main@mccampbell.com](mailto:main@mccampbell.com)

### QC SUMMARY REPORT FOR SW8015C

Matrix: W

WorkOrder: 0310519

EPA Method: SW8015C		Extraction: SW3510C			BatchID: 9170			Spiked Sample ID: N/A		
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	N/A	7500	N/A	N/A	N/A	95.6	94.4	1.29	70	130
%SS:	N/A	100	N/A	N/A	N/A	101	101	0	70	130
<p>All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:            NONE</p>										

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

$\% \text{ Recovery} = 100 * (\text{MS} - \text{Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) * 2.$

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



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<http://www.mcccampbell.com> E-mail: [main@mcccampbell.com](mailto:main@mcccampbell.com)

### QC SUMMARY REPORT FOR SW8260B

Matrix: W

WorkOrder: 0310519

EPA Method: SW8260B		Extraction: SW5030B		BatchID: 9162			Spiked Sample ID: 0310498-012B			
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Benzene	ND	10	116	116	0	116	110	4.71	70	130
Methyl-t-butyl ether (MTBE)	ND	10	114	113	0.826	110	108	1.66	70	130
Toluene	ND	10	116	113	3.33	111	107	4.17	70	130
%SS1:	97.4	100	103	104	1.08	99.4	99.1	0.310	70	130
%SS2:	85.5	100	98	94.6	3.45	96.6	95.8	0.840	70	130
%SS3:	102	100	100	100	0	95.8	97.9	2.21	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

$$\% \text{ Recovery} = 100 * (\text{MS} - \text{Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) * 2.$$

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

**McC Campbell Analytical Inc.**



110 Second Avenue South, #D7  
 Pacheco, CA 94553-5560  
 (925) 798-1620

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0310519

**Client:**

The Sutton Group  
 3708 Mt. Diablo Blvd, Ste. 215  
 Lafayette, CA 94549

TEL: 925-284-4208  
 FAX: 925-284-4189  
 ProjectNo: #3022.10; OLSD  
 PO:

Date Received: 10/30/03

Date Printed: 10/30/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests		
					SW8015C	SW8021B/8015Cm	SW8260B
0310519-001	10003-4	Water	10/30/03 4:20:00	<input type="checkbox"/>		B	A
0310519-002	103003-5	Water	10/30/03 4:45:00	<input type="checkbox"/>		B	A
0310519-003	103003-D1	Water	10/30/03 5:20:00	<input type="checkbox"/>	A	B	

**Prepared by: Melissa Valles**

**Comments:**

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

