RO 402

Alameda-Contra Costa Transit District

June 15, 2006

Mr. Amir Gholani
Alameda County Health Division
Division of Environmental Protection
Department of Environmental Health
1131 Harbor Bay Parkway, Second Floor
Alameda, CA 94502

Dear Mr. Amir:

Subject: Quarterly Groundwater Monitoring Report – February 2006 Sampling
AC Transit, 1177 47th Street, Emeryville

AC Transit hereby submits the enclosed Groundwater Monitoring Report for the AC Transit facility located at 1177 47th Street in Emeryville. This report was prepared by our consultant, Essel Technology Services, Inc, and contains the results of the February 2006 sampling event.

The quarterly groundwater monitoring involved collecting groundwater samples from two on-site monitoring wells (MW-11, MW-12) and measuring depth to water in all monitoring wells. Monitoring well MW-13 was not sampled due to the presence of floating product. Samples were analyzed for total petroleum hydrocarbons (TPH) using modified EPA Method 8015 and benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tert-butyl ether (MTBE) using EPA Method 8021B. TPH as diesel-range hydrocarbons were detected in wells MW-10 and MW-12 at concentrations of 600 ppb and 140 ppb, respectively. TPH as gasoline-range hydrocarbons was detected in well MW-12 at a concentration of 400 ppb. MTBE was detected in MW-12 at 7.8 ppb. Benzene, ethylbenzene, toluene, and xylenes were not detected in the samples collected from the wells for this sampling event.

If you have any questions or comments regarding the enclosed report, please call me at (510) 577-8869.

Sincerely,

Suzanne Chaewsky

Suzanne Chaewsky, P.E.
Environmental Engineer
enclosure

10626 International Boulevard · Oakland, CA 94603 · TEL (510) 891-4777 · www.actransit.org

GROUND-WATER MONITORING
FOR
ALAMEDA CONTRA COSTA
TRANSIT DISTRICT FACILITY
1177 47TH STREET
EMERYVILLE, CALIFORNIA

MAY 2006

Prepared for

Ms. Suzanne Chaewsky
Environmental Engineer
AC Transit
10626 International Boulevard
Oakland, California 94603

Prepared by
Essel Technology Services, Inc.

Essel Technology Services, Inc.
1305 Franklin Street, Oakland, California 94612
Phone 510 206 0270, 415 794 1960; Fax 925 833 7977
Esseltekservices@Aol.com

Essel Technology Services, Inc.

1305 Franklin Street # 500, Oakland, California 94612 • Tel: 925/833-7991, 510/206-0270 • Fax: 925/833-7977
EsselTekServices@aol.com

May 31, 2006

Ms. Suzanne Chaewsky
AC Transit District
10626 International Blvd
Oakland, CA 94603

Re: **FINAL REPORT**
Quarterly Groundwater Monitoring Report – February 2006 Sampling
AC Transit 1177 47th Street, Emeryville, California

Dear Ms. Chaewsky:

ETS is pleased to submit this final report for quarterly groundwater monitoring sampling event for the above site.

ETS carried out groundwater sampling on February 22, 2006 of three (3) monitoring wells (MW 11 through MW 13) in accordance with the Contract requirement.

If you have any questions feel free to give us a call at 510-206-0270.

Sincerely,

Samhita Lahiri
Principal

Attachment: 1 additional copy

GROUNDWATER MONITORING REPORT
FOR
AC TRANSIT FACILITY
AT
1177 47TH STREET
EMERYVILLE, CALIFORNIA

MAY 2006

Prepared for

Ms. Suzanne Chaewsky
Environmental Engineer
AC Transit
10626 International Boulevard, Oakland, California

Prepared by

Essel Technology Services, Inc.

ESSEL TECHNOLOGY SERVICES, INC.
1305 Franklin Street #200; Oakland, California 94612
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EsselTekServices@aol.com

GROUNDWATER MONITORING REPORT
FOR
AC TRANSIT FACILITY
AT
1177 47TH STREET
EMERYVILLE, CALIFORNIA

1.0 INTRODUCTION

The Alameda Contra Costa Transit District (AC Transit) has contracted with Essel Technology Services, Inc. (Essel Tech) to perform ground-water monitoring and sampling at the AC Transit Division 2 facility in Emeryville, California. This report presents the results of monitoring and sampling performed in February 2006.

1.1 Site Location and Description

The Division 2 facility is located at 1177 47th Street in Emeryville, California and occupies nearly the entire city block that is bounded by 47th Street on the north, 45th Street on the south, San Pablo Avenue on the east, and Doyle Street on the west, as shown on Plate 1. The facility is used for storage and maintenance of AC Transit buses. The primary site feature is a maintenance building that is located in the southwestern portion of the site. Other facilities include a parking garage, a transportation building, and a bus washing structure that are located along the northern property line adjacent to 47th Street; and a tire building, an emergency generator building, a pump station, and storm water treatment facilities that are located at the western edge of the site next to Doyle Street. The site also contains underground storage tanks (USTs). One group of USTs, referred to as Tank Farm No. 1, is located near the northeastern corner of the property and just south of fuel dispenser islands. A second group of USTs, referred to as Tank Farm No. 2, is located near the center of the property and a short distance east of the present maintenance building. A 550-gallon UST also is located next to the southern side of the emergency generator building.

Sixteen wells used for ground-water monitoring are presently installed at the site. Thirteen of the wells (MW-1 through MW-10, MW-12, MW-13, and W-4) are spaced across the northern half of the site and monitor the ground water near and to the west (approximately downgradient) of Tank Farm No 1 and the fuel dispenser islands. Well MW-12 also serves to monitor the ground water at a location northwest of the 550-gallon UST that provides fuel for the emergency generator. Three of the 16 wells are located in the southeastern quadrant of the property. Well M-3 is at the eastern edge of the property at a location that is upgradient of Tank Farm No. 1, well W-1 is located approximately 220 feet south of Tank Farm No. 1, and MW-11 is near the southwestern corner of Tank Farm No. 2. Three additional wells, that are not part of the ground-water-monitoring program, are located adjacent to Tank Farm No. 1. These wells are referred to as E-1, E-2, and E-5. Plate 2 is a Site Plan that shows the relative locations of the AC Transit facilities, the 16 ground-water-monitoring wells, and the three additional wells.

2.0 FIELD AND LABORATORY WORK

2.1 Field Procedures

Essel Tech personnel visited the site on February 22, 2006 to measure the depth to water and the thickness of free-phase petroleum product and to purge wells without free product for ground-water sampling. Wells MW-11, MW-12, and MW-13 were monitored and sampled during the February site visit. The depth to the static ground-water surface in wells MW-11 and MW-12 was measured to the nearest 0.01-foot using an electronic oil-water interface probe. Free-phase product was found in well MW-13 and the oil-water interface probe was used to measure the thickness of this product. Following water-level measurements, wells MW-11 and MW-12 were purged of approximately three casing volumes (8 to 10 gallons) of water using a submersible pump and discharge hose. Well MW-13 was purged of 50 gallons of the free product and water as an interim remediation measure. Field measurements of temperature, pH, electrical conductivity, dissolved oxygen, oxygen reduction potential, and ferrous iron were monitored during pumping of wells MW-11 and MW-12. Measurements were recorded on field well-development and sampling forms, which are included in Appendix A.

The purge pump and attached discharge hose were cleaned before use in each well by washing the equipment in a soap solution followed by rinsing twice with clean tap water. Discharge water from well purging was directed into 55-gallon drums, which were then emptied into the maintenance building steam bay. Decontamination water was also disposed of in the maintenance building steam bay.

Essel Tech personnel collected water samples from wells MW-11 and MW-12 on February 22, 2006. No water sample was collected from well MW-13 because free-phase product was encountered in the well. A clean, disposable polyethylene bailer was lowered through the air-water interface in each well and retrieved to collect the samples. The retrieved water samples were then slowly transferred from the bailer to clean, 40-milliliter volatile organic analysis (VOA) glass vials containing hydrochloric acid as a preservative; to clean, 1-liter brown glass liter bottles containing sulfuric acid as a preservative; and to clean, 1-liter plastic bottles. The various containers were filled completely to eliminate air bubbles, sealed with caps, labeled, and placed in ice storage for transport to an analytical laboratory.

2.2 Laboratory Analyses

Essel Tech personnel prepared a Chain-of-Custody form for the ground-water samples collected and this form accompanied the samples to the laboratory. A copy of the Chain-of-Custody form is included in Appendix B. The water samples were delivered to McCampbell Analytical, Inc. (McCampbell) in Pacheco, California for analysis. McCampbell analyzed the samples for total petroleum hydrocarbons as gasoline (TPHg) and as diesel (TPHd) using Environmental Protection Agency (EPA) modified Method 8015, for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and methyl tertiary butyl ether (MTBE) using EPA Method 8260B, and for nitrate (as nitrogen) and sulfate using EPA Method E300.1.

3.0 RESULTS OF MONITORING AND SAMPLING

3.1 Ground-Water Monitoring

The measured depths to the static ground-water surface in wells MW-11 and MW-12, respectively were 2.50 and 10.50 feet below the tops of the well casings on February 22, 2006. The free-phase product found in well MW-13 was measured to be 0.167-foot (2.00 inches) thick. Essel Tech used wellhead elevation data and depth-to-water measurements made on February 22, 2006 to calculate the elevation of the ground-water surface in wells MW-11 and MW-12. The elevations in the two respective wells were 27.43 and 18.18 feet above mean sea level. Between November 2, 2005 and February 22, 2006, the water level rose 1.80 feet in well MW-11 and 0.26-foot in well MW-12. Table 1 presents data on product thickness, depth to ground water, and ground-water elevation for the three wells monitored during the February sampling event. Table 1 also presents the cumulative data collected since November 2005 for the 16 monitoring wells located at the site.

3.2 Laboratory Analyses

Results of laboratory analyses show gasoline-range hydrocarbons (i.e., TPHg) and diesel-range hydrocarbons (i.e., TPHd) were detected in the water sample from well MW-12 at concentrations of 400 and 140 parts per billion (ppb), respectively. These two concentrations are slightly lower and higher than the respective concentrations (440 ppb TPHg and 120 ppb TPHd) detected in this well during the November 2005 sampling event. No TPHg or TPHd was detected in the water sample from well MW-11.

The aromatic hydrocarbons benzene, toluene, ethylbenzene, and total xylenes (BTEX) were not detected in either of the two wells and the fuel oxygenate, methyl tertiary butyl ether (MTBE), was detected only in the water sample from MW-12 at a concentration of 7.8 ppb. Table 2 presents the results of analyses of water samples collected from the two wells on February 22, 2006 and the cumulative laboratory analytical results since November 2005 for site wells. Appendix B contains copies of the laboratory reports of analyses.

4.0 RECOMMENDATIONS

Essel Tech recommends that ground-water monitoring and sampling continue on a quarterly basis. The next sampling event should be scheduled for May 2006 and would include measuring depth to water and product thickness in the 16 ground-water-monitoring wells and purging and sampling the 16 wells for laboratory analysis. Essel Tech recommends that water samples be analyzed for the same compounds for which analyses were performed during the November 2005 sampling event.

Please call if you have any questions.

Sincerely;
Essel Technology Services, Inc.

Samhita Lahiri
Project Manager

Rodger C. Witham, P.G., C.E.G
Senior Hydrogeologist

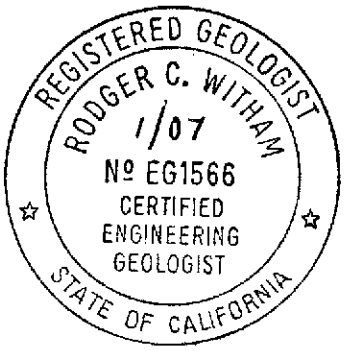


Table 1: Well Monitoring Data
Table 2: Results of Laboratory Analyses of Ground-Water Samples

Plate 1: Site Vicinity Map
Plate 2: Site Plan

Appendix A: Well Development and Sampling Forms
Appendix B: Chain-of-Custody Form and Laboratory Report

TABLE 1
WELL MONITORING DATA
Alameda Contra Costa Transit District Facility
1177 47th Street, Emeryville, California

Well Number	Date	Top of Casing	Product Thickness	Depth to Ground Water	Ground-Water-Surface Elevation	Ground-Water-Surface Elevation Corrected for Product Thickness#
MW-1	11/02/05	32.56	0.00	5.14	27.42	27.42
MW-2	11/02/05	32.12	0.00	4.65	27.47	27.47
MW-3	11/02/05	34.06	0.00	6.21	27.85	27.85
MW-4	11/02/05	34.11	0.00	6.30	27.81	27.81
MW-5	11/02/05	31.70	0.00	4.55	27.15	27.15
MW-6	11/02/05	31.02	0.00	4.21	26.81	26.81
MW-7	11/02/05	29.62	0.00	5.50	24.12	24.12
MW-8	11/02/05	29.43	0.00	5.05	24.38	24.38
MW-9	11/02/05	29.18	0.00	4.26	24.92	24.92
MW-10	11/02/05	29.13	0.00	9.81	19.32	19.32
MW-11	11/02/05	29.93	0.00	4.30	25.63	25.63
	02/22/06	**29.93**	**0.00**	**2.50**	**27.43**	**27.43**
MW-12	11/02/05	28.68	0.00	10.76	17.92	17.92
	02/22/06	**28.68**	**0.00**	**10.50**	**18.18**	**18.18**
MW-13	11/02/05	22.72	0.063	9.10	13.62	13.67
	02/22/06	**22.72**	**0.167**	**NM**	**NM**	**NM**
W-1	11/02/05	33.43	0.00	6.59	26.84	26.84
W-3	11/02/05	37.46	0.00	8.24	29.22	29.22
W-4	11/02/05	31.72	0.00	4.70	27.02	27.02

Top of casing in feet above mean sea level.
Product thickness in feet.
Depth to ground water in feet below the top of the well casing.
Ground-water surface elevation in feet above mean sea level.
NM = not measured
#Multiply product thickness by specific gravity of 0.8 and subtract from top of casing elevation.

TABLE 2
RESULTS OF LABORATORY ANALYSES OF GROUND-WATER SAMPLES
Alameda Contra Costa Transit District Facility
1177 47th Street, Emeryville, California

Well No.	Date Sampled	TPHg	TPHd	TPH	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Nitrate	Sulfate	Dissolved Oxygen	Ferrous Iron
MW-1	11/03/05	<50	70	NA	<0.5	<0.5	<0.5	<0.5	[redacted]	<100	56,000	2,330	0
MW-2	11/03/05	<50	110	NA	<0.5	<0.5	<0.5	<0.5	4.9	430	53,000	2,090	130
MW-3	11/03/05	<50	180	NA	<0.5	<0.5	<0.5	<0.5	3.2	3,500	67,000	1,850	0
MW-4	11/03/05	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	4.1	3,500	67,000	1,860	60
MW-5	11/03/05	<50	1,500	NA	<0.5	<0.5	<0.5	<0.5	5.7	<100	62,000	1,930	150
MW-6	11/03/05	750	2,000	NA	13	1.9	2.9	4.6	1.4	<100	16,000	1,570	3,300
MW-7	11/03/05	310	140	NA	<0.5	<0.5	<0.5	<0.5	[redacted]	<100	3,100	3,190	30
MW-8	11/03/05	150	280	NA	<0.5	<0.5	<0.5	<0.5	[redacted]	<100	24,000	1,630	860
MW-9	11/03/05	<50	470	NA	<0.5	<0.5	<0.5	<0.5	4.8	110	28,000	1,720	450

See notes on page 2 of 2.

TABLE 2
RESULTS OF LABORATORY ANALYSES OF GROUND-WATER SAMPLES
Alameda Contra Costa Transit District Facility
1177 47th Street, Emeryville, California

Well No.	Date Sampled	TPHg	TPHd	TPH	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Nitrate	Sulfate	Dissolved Oxygen	Ferrous Iron
MW-10	11/03/05	300	600	NA	<0.5	<0.5	<0.5	<0.5	4.1	<100	780	2,350	2,670
MW-11	11/03/05	<50	290	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<100	21,000	1,360	0
	02/22/06	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<100	27,000	100	0
MW-12	11/03/05	440	120	NA	<0.5	<0.5	<0.5	<0.5	6.6	<100	3,700	1,700	740
	02/22/06	400	140	NA	<0.5	<0.5	<0.5	<0.5	7.8	<100	7,600	90	NM
MW-13	11/03/05	Not sampled - free-phase product in well											
	02/22/06	Not sampled - free-phase product in well											
W-1	11/03/05	6,200	2,400	NA	7.2	3.6	5.7	20	0.73	140	1,300	1,230	3,300
W-3	11/03/05	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	1.2	3,700	51,000	2,170	0
W-4	11/03/05	<50	66	NA	<0.5	<0.5	<0.5	<0.5	2.0	<100	32,000	1,620	970

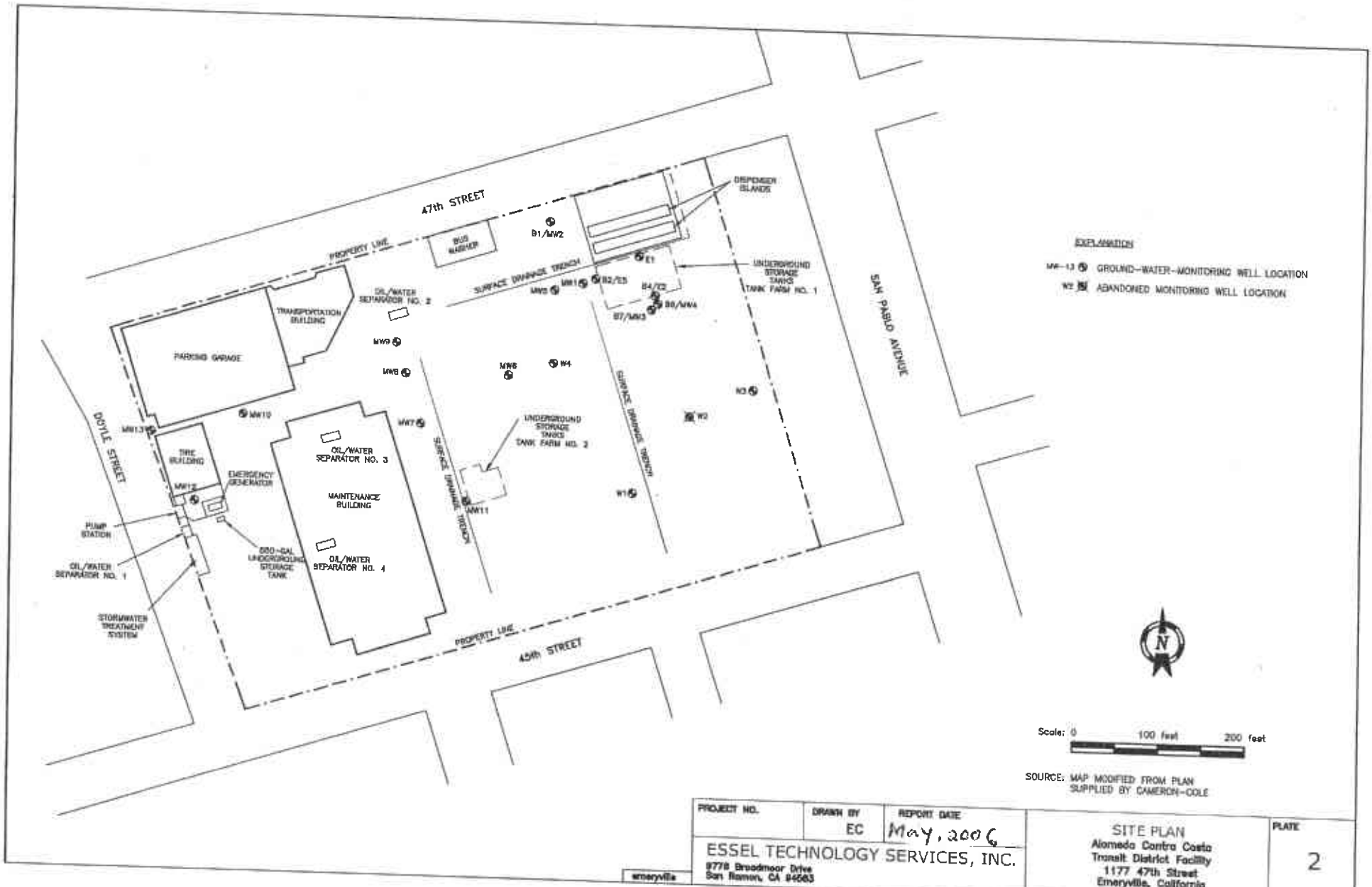
Results in micrograms per liter = parts per billion; detectable results are shaded.
TPHg = total petroleum hydrocarbons as gasoline
TPHd = total petroleum hydrocarbons as diesel
TPH = total petroleum hydrocarbons as motor oil or unknown hydrocarbon
MTBE = methyl tertiary butyl ether
NA = not analyzed
NM = not measured
< = less than the laboratory method detection limit

Scale: 0 2000 feet 4000 feet

Source: USGS 7 1/2-Minute Quadrangle, Oakland West, California, Photorevised 1980.

PROJECT NO.	DRAWN BY	REPORT DATE	SITE VICINITY MAP	PLATE
	EC	May, 2006	Alameda Contra Costa Transit District Facility 1177 47th Street Emeryville, California	1

ESSEL TECHNOLOGY SERVICES, INC.
9778 Broadmoor Drive
San Ramon, CA 94583



PROJECT NO.	DRAWN BY	REPORT DATE	SITE PLAN	PLATE
	EC	May, 2006	Alameda Contra Costa Transit District Facility 1177 47th Street Emeryville, California	2

ESSEL TECHNOLOGY SERVICES, INC.
9778 Broadmoor Drive
San Ramon, CA 94583

emeryville

APPENDIX A

WELL DEVELOPMENT AND SAMPLING FORMS

Well Development and Sampling Form

Job Name AC Transit Div 2, Emeryville. **Well Number** MW-11

Job Number 0569/2. **Date** Feb: 22, 06

Sample By Shen Guha.

Purge Volume	Development/Purge Method(s)
Casing Diameter: 2-inch [ ] 4-inch [ ] Other _____	[ ] Swab [ ] Surge Other _____
Total depth (TD) of casing in feet 17'5. +	[X] Bail Bailer Type: DISPOSABLE
Depth to water (DTW) in feet 2'5".	[ ] Pump
Purge Volume Calculation	Pump Type: [X] Submersible [X] Centrifuge
(17'4 - 2'5") x 3 x 0'17 = 7'6 gallons	[ ] Bladder [ ] Other
TD - DTW x V x F = purge volume	

Explanation

For 2" diameter well: V = ~~5~~ 3, F = 0.17 gallon/foot

For 4" diameter well: V = ~~3~~ 8, F = 0.66 gallon/foot

V= well volume

F= gallon of water per foot of casing

Field Parameters

Time a.m. [ ] p.m. [X]	pH	Conductivity Microhos/centimeter	Temperature [✓] °C [ ] °F	Turbidity DO.	Turbidity ORP.	Fe	Gallons pumped
Start							
3'00	7'07	4044	17'6	0'12	193'8	0	2
3'15	6'95	4444	17'6	0'07.	200'5		4
3-30	6'97	442	17'6	0'05	200'7.		6
4'00.	6'99.	441	17'6	0'1	199'1		8

Total Gallons Pumped 8

Observations during purging (well condition, turbidity, color, odor): TURBID.

Discharge water disposal: [ ] **Sanitary Sewer** [ ] **Storm Drain** [X] **Drum** [ ] **Other** STEAM BAY SITE.

Well Sampling Date: 2/22/06 **Time:** _____

Well Development and Sampling Form

Job Name AC TRANSIT DIV 2. EMERYVILLE. **Well Number** MW-12

Job Number 0569/02. **Date** 2/22/06

Sample By STEVE OTTA.

Purge Volume	Development/Purge Method(s)
Casing Diameter: 2-inch [ ] 4-inch [ ] Other _____	[ ] Swab [ ] Surge Other _____
Total depth (TD) of casing in feet 29.5	[ ] Bail Bailer Type: _____
Depth to water (DTW) in feet 10.5	[ ] Pump
Purge Volume Calculation: (29.5 - 10.5) x 3 x .17 = 9.65 gallons	Pump Type: [X] Submersible [X] Centrifuge [ ] Bladder [ ] Other
TD - DTW x V x F = purge volume	

Explanation

For 2" diameter well: V = 5, F = 0.17 gallon/foot

For 4" diameter well: V = 3, F = 0.66 gallon/foot

V= well volume

F= gallon of water per foot of casing

Field Parameters

Time a.m. [ ] p.m. [X]	pH	Conductivity Microhos/centimeter	Temperature [X] °C [ ] °F	Turbidity		F.D.	Gallons pumped
				DO	ORP		
Start							
1-30	6.7	710	19.49	0.19	121 ~~98~~	0.72	2
1-45	6.69	710	19.53	0.17	120		4
2-00	6.68	710	19.54	0.14	121.6		8
2-30	6.65	710	19.57	0.09	130.6		10

Total Gallons Pumped 10

Observations during purging (well condition, turbidity, color, odor): DARK.

Discharge water disposal: [ ] Sanitary Sewer [ ] Storm Drain [X] Drum [ ] Other STEAM BOAT @ SITE.

Well Sampling Date: 2/22/06 **Time:** _____

Well Development and Sampling Form

Job Name AC TRANSIT - DIV 2. Well Number MW-13.

Job Number 05691 2. Date 2/22/06

Sample By SHER GUPTA.

Purge Volume	Development/Purge Method(s)
Casing Diameter: 2-inch [ ] 4-inch [ ] Other _____	[ ] Swab [ ] Surge Other _____
Total depth (TD) of casing in feet _____	[ ] Bail Bailer Type: _____
Depth to water (DTW) in feet _____	[ ] Pump
Purge Volume Calculation	Pump Type: [ ] Submersible [ ] Centrifuge
(_____ - _____) x ____ x ____ = _____ gallons	[ ] Bladder [ ] Other
TD - DTW x V x F = purge volume	

Explanation

For 2" diameter well: V = 5, F = 0.17 gallon/foot

For 4" diameter well: V = 3, F = 0.66 gallon/foot

V= well volume

F= gallon of water per foot of casing

Field Parameters

Time a.m. [ ] p.m. [ ]	pH	Conductivity Microohos/centimeter	Temperature [ ] °C [ ] °F	Turbidity	Gallons pumped
Start					
5 PM				50 GALLON PURGED.	
EXCESSIVE FREE PRODUCT. ~~ABOUT~~ NOT TESTED					
THICK BROWN LIQUID. FOUL WET ODOUR					

Total Gallons Pumped _____

Observations during purging (well condition, turbidity, color, odor): _____

Discharge water disposal: [ ] Sanitary Sewer [ ] Storm Drain [ ] Drum [ ] Other _____

Well Sampling Date: _____ Time: _____

APPENDIX B

CHAIN-OF-CUSTODY FORM
AND
LABORATORY REPORT

Well # MW-11

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

EDF Required? Coelt (Normal) No Write On (DW) No

Report To: SHEK GUHA Bill To: ESSEX TEK.

Company: ESSEX TECHNOLOGY SERVICE INC.

9778 BROADMOORE DR.

SAN RAMON, CA. 94583. E-Mail: ESSEXTECSERVICE@aol.com

Tele: 925-794-1960 Fax: 925-833-7977

Project #: 056912 Project Name: AC TRANSIT DIV. 2

Project Location: EMERYVILLE

Sampler Signature:

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	Soil	Air	Sludge	Other	METHOD PRESERVED Ice	HCl	HNO_3	Other	Analysis Request: BTEX & TPH as Gas (8021/8020 + 8015)/MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / (8260) BTEX + MTBE ONLY	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other: NITRATE SULF by EPA 300.0	Comments
MW11 01	EMERYVILLE	2/22	2PM	3	VOA	X					X	X			X															X	
-06				3							X	X											X								
MW11 07				2	AMB						X	X				X															
08																															
MW11 09				1	PLA	X					X	X																		X	

Relinquished By:	Date:	Time:	Received By:
	2/23	9:32	
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ICE/t° _____
GOOD CONDITION _____
HEAD SPACE ABSENT _____
DECHLORINATED IN LAB _____

PRESERVATION _____ VOAS | O&G | METALS | OTHER
APPROPRIATE _____
CONTAINERS _____
PERSERVED IN LAB _____

WELL # MW12

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☑ 5 DAY

EDF Required? Coelt (Normal) No Write On (DW) No

Report To: SHER GUHA. Bill To: ESSEX TEK.
Company: ESSEX TECHNOLOGY SERVICES INC.
9778 BROADMOORE DR.
SAN RAMON CA. 94583 E-Mail: ESSEXTEKSERVICES@AOL.COM
Tele: 0 415-794-1960. Fax: 0 925-833-7977.
Project #: 056912. Project Name: AC TRANSIT DIV 2.
Project Location: EMERYVILLE.
Sampler Signature:

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	Soil	Air	Sludge	Other	METHOD PRESERVED Ice	HCl	HNO_3	Other
MW12 01	EMERYVILLE	2/22	2-3PM	3	VIA	X					X	X		
-06				3	↓						X	X		
MW12 07				2	AmB						X	X		
08														
MW12 09				1	PBG						X	X		

Analysis Request

BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260 → BTEX + MTBE only	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI
X														
	X							X						

Other	Comments
NITRATE : SUL PHATE by EPA 300.0	
X	

Relinquished By:	Date:	Time:	Received By:
	2/23	9-30	
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ICE/t° _____
GOOD CONDITION _____
HEAD SPACE ABSENT _____
DECHLORINATED IN LAB _____

PRESERVATION APPROPRIATE CONTAINERS	VOAS	O&G	METALS	OTHER

PERSERVED IN LAB _____

McCampbell Analytical, Inc.

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Website: www.mccampbell.com E-mail: main@mccampbell.com

Essel Technology Service	Client Project ID: #056912; AC Transit Div.2	Date Sampled: 02/22/06
9778 Broadmoore Drive		Date Received: 02/23/06
San Ramon, CA 94523	Client Contact: Sher Guha	Date Extracted: 02/24/06
	Client P.O.:	Date Analyzed: 02/24/06

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*

Extraction method: SW5030B Analytical methods: SW8015Cm Work Order: 0602409

Lab ID	Client ID	Matrix	TPH(g)	DF	% SS
001A	MW-11	W	ND	1	112
002A	MW-12	W	400,m	1	108

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	NA	NA

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Essel Technology Service	Client Project ID: #056912; AC Transit Div.2	Date Sampled: 02/22/06
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San Ramon, CA 94523	Client Contact: Sher Guha	Date Extracted: 02/23/06
	Client P.O.:	Date Analyzed: 02/25/06

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel*

Extraction method: SW3510C Analytical methods: SW8015C Work Order: 0602409

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0602409-001A	MW-11	W	ND	1	86
0602409-002A	MW-12	W	140,b	1	88

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	NA	NA

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

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range/jet fuel range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

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Essel Technology Service 9778 Broadmoore Drive San Ramon, CA 94523	Client Project ID: #056912; AC Transit Div.2	Date Sampled: 02/22/06
		Date Received: 02/23/06
	Client Contact: Sher Guha	Date Extracted: 02/24/06
	Client P.O.:	Date Analyzed: 02/24/06

MTBE and BTEX by GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 0602409

Lab ID	0602409-001B	0602409-002B	Reporting Limit for DF =1	
Client ID	MW-11	MW-12		
Matrix	W	W		
DF	1	1	S	W
Compound	**Concentration**		ug/kg	µg/L
Benzene	ND	ND	NA	0.5
Ethylbenzene	ND	ND	NA	0.5
Methyl-t-butyl ether (MTBE)	ND	7.8	NA	0.5
Toluene	ND	ND	NA	0.5
Xylenes	ND	ND	NA	0.5
Surrogate Recoveries (%)				
%SS1:	110	110		
%SS2:	106	105		
%SS3:	114	118		
Comments				

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

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

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

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Essel Technology Service	Client Project ID: #056912; AC Transit Div.2	Date Sampled: 02/22/06
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San Ramon, CA 94523	Client Contact: Sher Guha	Date Extracted: 02/23/06
	Client P.O.:	Date Analyzed: 02/23/06

Inorganic Anions by IC*

Extraction method: E300.1 Analytical methods: E300.1 Work Order: 0602409

Lab ID	Client ID	Matrix	Nitrate as N	Sulfate	DF	% SS
0602409-001C	MW-11	W	ND	27	1	95
0602409-002C	MW-12	W	ND	7.6	1	94

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	0.1	0.1	mg/L
	S	NA	NA	mg/Kg

* water samples are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in mg/wipe, product/oil/non-aqueous liquid samples in mg/L.

surrogate diluted out of range or surrogate coelutes with another peak; N/A means surrogate not applicable to this analysis.

h) a lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted/raised due to high inorganic content/matrix interference; k) sample arrived with head space.

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