AC Transit
Alameda-Contra Costa Transit District

10626 East 14th Street, Oakland, California 94603☐ (510) 577-8804
FAX☐ (510) 577-8859

August 1, 2002

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

AUG 06 2002

Dear Mr. Chan:

Subject: Quarterly Groundwater Monitoring Report
AC Transit, 1100 Seminary Avenue, Oakland, CA

AC Transit hereby submits the enclosed quarterly groundwater monitoring report for the second quarter of 2002 for the AC Transit facility located at 1100 Seminary Avenue in Oakland. Groundwater sampling of monitoring wells MW-1 through MW-3 and MW-9 through MW-11 was performed by Cameron-Cole in accordance with directives from your office.

Groundwater samples were collected from the six on-site monitoring wells on May 29, 2002. Samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline and diesel using EPA Method 8015, benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl-tert butyl ether (MTBE) using EPA Method 8260B and nitrate and sulfate using Standard Methods 300.0A. Field parameters collected during sampling included pH, temperature, electrical conductivity, dissolved oxygen, ferrous iron and oxidation reduction potential. In addition, monitoring well MW-2 is being purged dry monthly and during each quarterly sampling event

Analytical results of grab water samples showed benzene concentrations above the California maximum contaminant level of 1 ppb in wells MW-2, and MW-3. Ethylbenzene was detected above the MCL of 700 ppb in well MW-2 at a concentration of 970 ppb. Unspecified hydrocarbons, thought to be degraded diesel, were detected at concentrations above laboratory reporting limits in all wells except MW-2.

These results continue to be consistent with past sampling results with slight decreases in concentrations of several analytes. Monthly purging of well MW-2 began in July 2001. The next quarterly sampling event is scheduled to occur in August 2002. If you have any questions regarding this report or other matters pertaining to this site, please call me at (510) 577-8869.

Sincerely,

Suzanne Patton, P.E.
Environmental Engineer

Enclosure
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MONITORING REPORT
FOR THE AC TRANSIT FACILITY
LOCATED AT 1100 SEMINARY AVENUE,
OAKLAND, CALIFORNIA

July 2002

Ms. Suzanne Patton
AC Transit
10626 E. 14th Street
Oakland, California 94603

Prepared By:
Cameron-Cole
101 W. Atlantic, Building 90
Alameda, California 94501

Project No: 2014

CAMERON-COLE, LLC

MONITORING REPORT FOR THE AC TRANSIT FACILITY LOCATED AT 1100 SEMINARY AVENUE, OAKLAND, CALIFORNIA

July 2002

Prepared For:
Ms. Suzanne Patton
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Alameda, California 94501

Project No: 2014

Written By
Emily Waters
Environmental Scientist I

Approved By
Brad Wright, RG, CH
Sr. Hydrogeologist

STATE OF CALIFORNIA REGISTERED GEOLOGIST 6276 Exp. BRADLEY D. WRIGHT REGISTERED GEOLOGIST

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INTRODUCTION

This report presents the results of the May 2002 sampling event for the AC Transit facility located at 1100 Seminary Avenue, Oakland, California (Site) (Figure 1). Groundwater sampling of monitor wells MW-1 through MW-3 and MW-9 through MW-11 was performed by Cameron-Cole, in accordance with directives from the Alameda County Health Care Services Agency (ACHCS).

OBJECTIVES AND SCOPE OF WORK

Work performed during quarterly sampling included measuring depth to water and presence of free phase hydrocarbons in the monitor wells and collecting water samples. Field parameters collected during sampling included pH, temperature, electric conductivity, dissolved oxygen (DO), ferrous iron (Fe^{2+}) and oxygen reduction potential (ORP). Groundwater samples were collected for laboratory analysis using United States Environmental Protection Agency (USEPA) Method 8015 for total petroleum hydrocarbons (TPH) gasoline/diesel, USEPA Method 8260B for benzene, toluene, ethylbenzene, and xylene (BTEX) and methyl-tert butyl ether (MTBE) and methods of chemical analysis for water and waste (MCAWW) 300.0A for nitrate and sulfate.

Chain-of-custody documents and certified analytical reports are presented in Appendix A. Field data sheets are included in Appendix B.

Groundwater Elevations and Flow Direction

Prior to purging and sample collection, all six Site monitor wells were inspected and measured for presence of free phase hydrocarbons and depth to groundwater. Measurements of depths to groundwater are presented on Table 1 and were used to construct the groundwater elevation contours shown in Figure 2. As shown, groundwater flow is to the northwest at a gradient of 0.004 feet/foot.

Groundwater Sampling Activities

The monitor wells were purged a minimum of three casing volumes, using a centrifugal pump and samples were collected using disposable polyethylene bailers. During well purging, field parameters for pH, electrical conductivity, DO, ORP, Fe^{2+} and temperature were monitored using calibrated field meters.

In addition, [redacted] Field data sheets for this new over-purge event are included in Appendix B.

Groundwater samples were transferred to appropriate laboratory supplied and preserved containers and placed in an ice-filled cooler for shipment under chain-of-custody to a State of California certified laboratory. A trip blank was submitted for analysis by USEPA Method 8260B.

Groundwater Analytical Results

Table 2 presents groundwater historic and second quarter 2002 analytical results. Concentrations of benzene above the State of California maximum contaminant level (MCL) of 1.0 part per billion (ppb) were detected in monitor wells MW-2 and MW-3. Ethylbenzene was detected above the MCL of 700 ppb in monitor well MW-2. TPH-Diesel, qualified as "degraded" by the laboratory, was detected above the reporting limit in monitor well MW-2. TPH-Gas was detected above the reporting limit in monitor wells MW-1, MW-2 and MW-3. Unspecified hydrocarbons, which are likely degraded diesel, were detected in all monitoring wells except MW-2. No analytes were detected in the trip blanks or method blanks. A lab control spike and lab control spike duplicate passed the USEPA's criteria for acceptance.

SUMMARY OF RESULTS

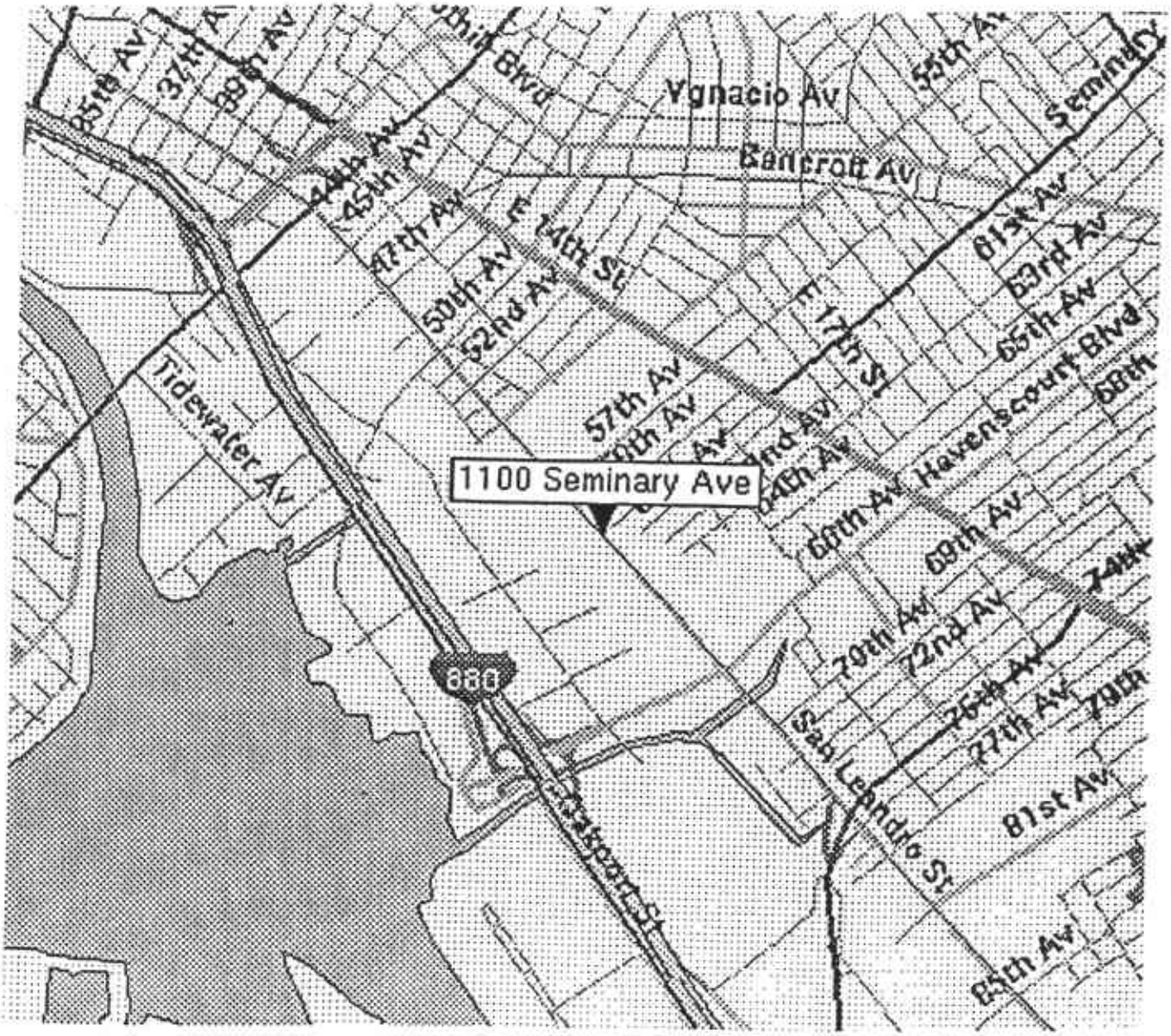
- Groundwater flow direction is towards the northwest at a gradient of 0.004 feet/foot.

- Chemical concentrations in excess of MCLs were limited to benzene in wells MW-2 and MW-3 and ethylbenzene in MW-2.

PROJECTED WORK AND RECOMMENDATIONS

- Quarterly groundwater monitoring is scheduled for August 2002.

- Continued monthly over purges of MW-2.



CAMERON-COLE

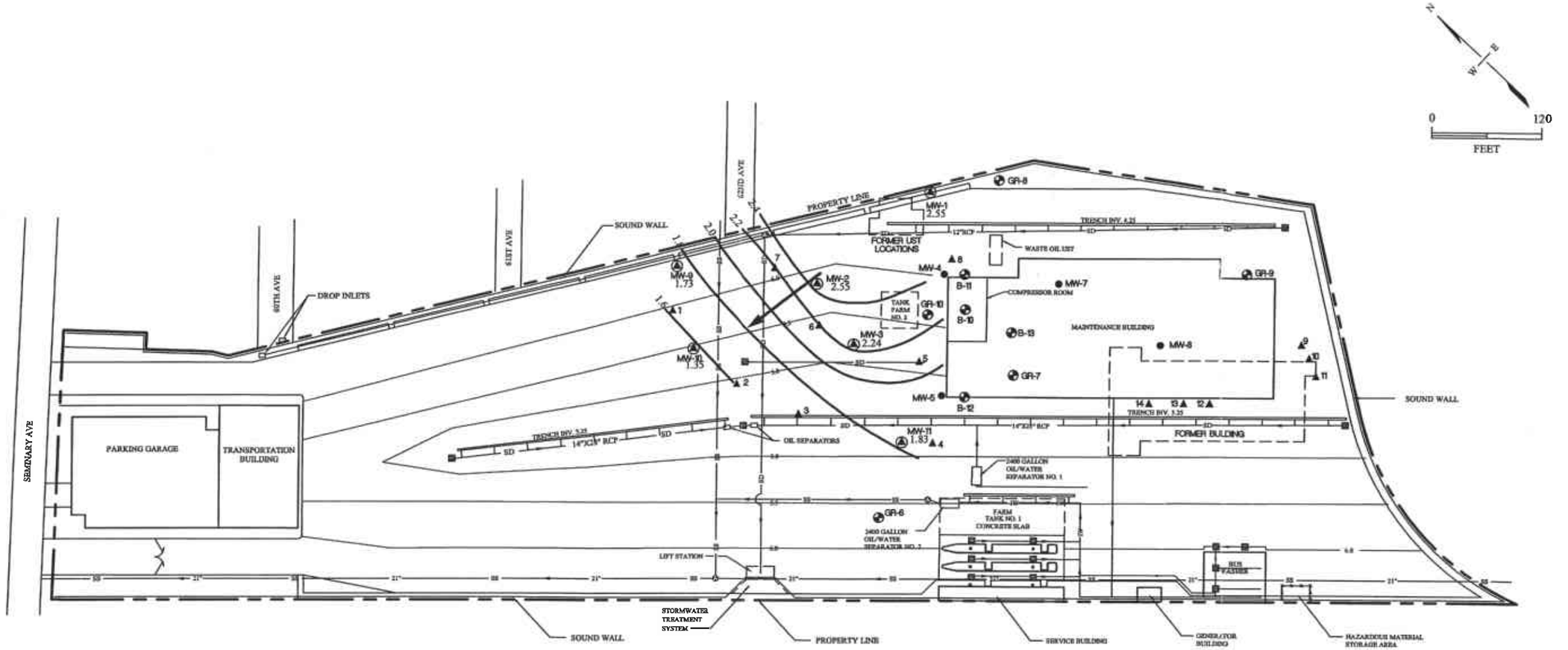
AC TRANSIT - OAKLAND, CALIFORNIA

FIGURE 1
SITE LOCATION MAP
1100 SEMINARY ROAD

SCALE	DATE
NO SCALE	3/22/00

North

LOCMAP



LEGEND:

1.50 GROUNDWATER ELEVATION CONTOUR	1.59 GROUNDWATER ELEVATION (FT. MSL)
REPORTED GROUNDWATER FLOW	EXISTING MONITORING WELL
6.0 CONTOUR	ABANDONED MONITORING WELL
SD STORM DRAIN PIPELINE	PREVIOUSLY INSTALLED SOIL BORING
SS SANITARY SEWER PIPELINE	NEWLY INSTALLED SOIL BORING
IW INDUSTRIAL WASTE PIPELINE	MANHOLE
SURFACE DRAINAGE TRENCH	CATCH BASIN

	BY	DATE
DRAWN	CJJ	7-02-02
CHECKED		
APPROVED		
APPROVED		
APPROVED		

CAMERON-COLE

FIGURE 2

AC TRANSIT - OAKLAND, CALIFORNIA

1100 SEMINARY ROAD-POTENTIOMETRIC SURFACE MAP
MAY 29, 2002

SCALE: 1" = 120'

DWG. NO.: 2011-04

TABLE 1
GROUNDWATER LEVEL MEASUREMENTS
AC Transit Facility
1100 Seminary Avenue, Oakland, California

Well	Date	Top of Casing Elevation (ft-msl)*	Product Thickness (feet)	DTW (feet)	Measured Groundwater Elevation (ft-msl)	Groundwater Elevation Corrected for Product Thickness**
MW-1	7-Jan-99	6.25	None	5.13	1.12	
	7-Feb-00		None	3.75	2.5	
	25-May-00		None	3.69	2.56	
	22-Aug-00		None	4.79	1.46	
	20-Nov-00		None	4.92	1.33	
	1-Mar-01		None	2.75	3.50	
	14-May-01		None	3.67	2.58	
	26-Jul-01		None	4.73	1.52	
	16-Oct-01		None	5.35	0.90	
	21-Feb-02		None	3.30	2.95	
	29-May-02		**None**	**3.70**	**2.55**	
MW-2	7-Jan-99	5.53	2.27	6.91	-1.38	0.44
	8-Jun-99		2.23	5.83	-0.3	1.48
	9-Jun-99		0	3.9	1.63	1.63
	10-Jun-99		0	3.9	1.63	1.63
	15-Jun-99		0.42	3.92	1.61	1.95
	8-Jul-99		0.2	4.3	1.23	1.39
	7-Feb-00		Sheen	3.8	1.73	
	25-May-00		0.12	3.23	2.3	2.40
	22-Aug-00		0.23	4.45	1.08	1.10
	20-Nov-00		0.23	4.70	0.83	0.85
	1-Mar-01		0.13	2.75	2.78	2.79
	14-May-01		Sheen	3.30	2.23	
	26-Jul-01		None	3.27	2.26	
	16-Oct-01		0.02	5.25	0.28	0.28
	21-Feb-02		0.01	3.32	2.21	2.21
	29-May-02	[redacted]				
MW-3	7-Jan-99	4.76	None	4.11	0.65	
	7-Feb-00		None	3.1	1.66	
	25-May-00		None	2.41	2.35	
	22-Aug-00		None	3.45	1.31	
	20-Nov-00		None	3.42	1.34	
	1-Mar-01		None	2.00	2.76	
	14-May-01		None	2.64	2.12	
	26-Jul-01		None	3.17	1.59	
	16-Oct-01		None	3.97	0.79	
	21-Feb-02		None	2.20	2.56	
	29-May-02		**None**	**2.52**	**2.24**	

TABLE 1
GROUNDWATER LEVEL MEASUREMENTS
AC Transit Facility
1100 Seminary Avenue, Oakland, California

Well	Date	Top of Casing Elevation (ft-msl)*	Product Thickness (feet)	DTW (feet)	Measured Groundwater Elevation (ft-msl)	Groundwater Elevation Corrected for Product Thickness**
MW-9	7-Feb-00	5.8	None	4.37	1.43	
	25-May-00		None	4.95	0.85	
	22-Aug-00		None	5.18	0.62	
	20-Nov-00		None	4.70	1.10	
	1-Mar-01		None	3.03	2.77	
	14-May-01		None	4.56	1.24	
	26-Jul-01		None	5.17	0.63	
	16-Oct-01		None	5.19	0.61	
	21-Feb-02		None	4.79	1.01	
	29-May-02		**None**	**4.07**	**1.73**	
MW-10	7-Feb-00	4.65	None	3.19	1.46	
	25-May-00		None	3.11	1.54	
	22-Aug-00		None	4.35	0.30	
	20-Nov-00		None	4.18	0.47	
	1-Mar-01		None	3.14	1.51	
	14-May-01		None	3.27	1.38	
	26-Jul-01		None	3.95	0.70	
	16-Oct-01		None	4.57	0.08	
	21-Feb-02		None	3.29	1.36	
	29-May-02		**None**	**3.30**	**1.35**	
MW-11	7-Feb-00	4.19	None	4.97	-0.78	
	25-May-00		None	7.58	-3.39	
	22-Aug-00		None	3.01	1.18	
	20-Nov-00		None	2.88	1.31	
	1-Mar-01		None	1.91	2.28	
	14-May-01		None	4.49	-0.3	
	26-Jul-01		None	2.95	1.24	
	16-Oct-01		None	3.35	0.84	
	21-Feb-02		None	1.85	2.34	
	29-May-02		**None**	**2.36**	**1.83**	

Notes:

* ft-msl: feet-mean sea level
** used 0.8 specific gravity of product
DTW: Depth to Water

TABLE 2
ANALYTICAL RESULTS OF GROUNDWATER SAMPLES (ppb)
AC Transit Facility
1100 Seminary Avenue, Oakland, California

Well	Date	TPH-G	TPH-D	TPH	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	Nitrate	Sulfate	DO	Fe
	MCL (ppb)				1.0	150	700	1,750	13				
MW-1	7-Jan-99	<100	470	NA	17.0	2	31.0	18	<50	150	3,400	360	53
	7-Feb-00	390	<60	1,300	13.0	<10	<10	<10	<20	<50	1,200	1,220	11,800
	25-May-00	<50	<50	1,000	12.0	<1.0	<1.0	<1.0	<2.0	140	1,500	1,950	1,380
	22-Aug-00	<50	<50	600	6.3	<1.0	2.3	<1.0	<2.0	75	2,100	6,850	2,350
	20-Nov-00	<50	<50	630	2.8	<1.0	1.1	<1.0	<2.0	<50	4,500	11,210	1,170
	1-Mar-01	<50	<50	900	29.0	1.2	16.0	6	<2.0	<50	2,800	6,020	2,920
	14-May-01	<50	<50	540	4.1	<1.0	3.1	<1.0	<2.0	<50	2,500	13,970	1,870
	26-Jul-01	190	<50	500	<1.0	<1.0	<1.0	<1.0	<2.0	75	3,700	8,480	1,950
	16-Oct-01	<50	<50	650	16.0	1.1	4.6	1.6	<2.0	<50	3,600	9,480	2,560
	21-Feb-02	560	<50	550	21	1.0	19	15	<2.0	<50	3,000	5,890	2,200
	29-May-02	**130**	**<50**	**510**	**<1.0**	**<1.0**	**<1.0**	**<1.0**	**<2.0**	**<50**	**2,300**	**6,820**	**1,300**
MW-2	8-Jun-99	11,000	434,000	117,000	1,000,000	<100,000	260,000	<300,000	<5,000,000	NA	NA	NA	NA
(Product)	7-Feb-00	51,000	160,000	<5000	19,000	<500	920	<500	<1000	51	<1000	6,660	7,300
	25-May-00	<1200	<50000	65,000	11,000	<500	670	530	<1000	330	<1000	5,670	0
	22-Aug-00	<2500	<2500	150,000	23,000	<500	1,100	1,100	<1000	370	<1000	4,530	3,680
	20-Nov-00	<1200	<25000	430,000	18,000	<500	840	610	<1000	<250	<500	1,700	3,300
	3-Mar-01	<500	<25000	610,000	14,000	<830	<830	<830	<1700	<250	<5000	7,880	3,300
	14-May-01	<1000	280,000	51,000	19,000	240	1,100	1,200	<330	<50	<1000	3,330	>3300
	26-Jul-01	54,000	590,000	<25000	19,000	<500	1,300	1,500	<1000	<50	<1000	9,960	>3300
	16-Oct-01	43,000	560,000	<25000	18,000	280	1,100	1,300	<100	<50	1,500	17,630	>3300
	21-Feb-02	46,000	180,000	<12000	18,000	<500	950	1,500	<1000	<100	<2000	3,650	>3300
	[redacted]												

TABLE 2
ANALYTICAL RESULTS OF GROUNDWATER SAMPLES (ppb)
AC Transit Facility
1100 Seminary Avenue, Oakland, California

Well	Date	TPH-G	TPH-D	TPH	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	Nitrate	Sulfate	DO	Fe
	MCL (ppb)				1.0	150	700	1,750	13				
MW-3	7-Jan-99	199	2,680	NA	450	<10	250	190	<500	170	3,300	880	0
	7-Feb-00	2,000	<150	3,100	26	<2	5	2	<4	<50	47,300	6,480	17,800
	25-May-00	<50	<50	1,000	35	<1.0	6	4	<2.0	<50	21,700	4,640	600
	22-Aug-00	<50	<50	2,400	240	<10	<10	<10	<20	<50	19,300	3,970	20
	20-Nov-00	<50	<50	2,400	<25	<25	<25	<25	<50	<50	26,500	4,120	20
	1-Mar-01	<50	<50	1,200	100	<5.0	8.3	<5.0	<10	<50	27,000	1,510	50
	14-May-01	<50	<50	860	8.4	<1.0	1.2	<1.0	<2.0	<50	21,100	9,800	0
	26-Jul-01	1,200	<50	790	140	<5.0	12	<5.0	<10	<50	18,700	8,650	80
	16-Oct-01	1,000	<50	1,600	5.1	<1.0	4.3	<1.0	<2.0	<50	29,800	11,360	640
	21-Feb-02	1,700	<50	990	200	<10	29.0	12	<20	<50	20,500	5,730	0
	29-May-02	**630**	**<50**	**840**	**68**	**<1.0**	**4.2**	**3.3**	**<2.0**	**<50**	**14,300**	**5,870**	**1,070**
MW-9	7-Feb-00	<50	<50	240	<1	<1	<1	<1	<2	230	183,000	6,940	9,000
	25-May-00	<50	<50	130	<1.0	<1.0	<1.0	<1.0	<2.0	250	172,000	6,020	1,200
	22-Aug-00	<50	<50	120	<1.0	<1.0	<1.0	<1.0	<2.0	280	157,000	7,250	0
	20-Nov-00	<50	<50	130	<1.0	<1.0	<1.0	<1.0	<2.0	340	147,000	9,690	0
	1-Mar-01	<50	<50	150	<1.0	<1.0	<1.0	<1.0	<2.0	230	116,000	4,210	0
	14-May-01	<50	<50	110	<1.0	<1.0	<1.0	<1.0	<2.0	100	140,000	8,290	0
	26-Jul-01	<50	<50	71	<1.0	<1.0	<1.0	<1.0	<2.0	130	143,000	7,560	0
	16-Oct-01	<50	<50	120	<1.0	<1.0	<1.0	<1.0	<2.0	89	141,000	967	50
	21-Feb-02	<50	<50	89	<1.0	<1.0	<1.0	<1.0	<2.0	94	137,000	3,500	70
	29-May-02	**<50**	**<50**	**95**	**<1.0**	**<1.0**	**<1.0**	**<1.0**	**<2.0**	**94**	**141,000**	**4,590**	**90**

TABLE 2
ANALYTICAL RESULTS OF GROUNDWATER SAMPLES (ppb)
AC Transit Facility
1100 Seminary Avenue, Oakland, California

Well	Date	TPH-G	TPH-D	TPH	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	Nitrate	Sulfate	DO	Fe
	MCL (ppb)				1.0	150	700	1,750	13				
MW-10	7-Feb-00	<50	<50	470	<1	<1	<1	<1	<2	53	114,000	1,200	55,000
	25-May-00	<50	<50	220	<1.0	<1.0	<1.0	<1.0	<2.0	480	136,000	1,940	0
	22-Aug-00	<50	<50	140	<1.0	<1.0	<1.0	<1.0	<2.0	69	126,000	4,350	0
	20-Nov-00	<50	<50	300	<1.0	<1.0	<1.0	<1.0	<2.0	<50	76,200	3,790	0
	1-Mar-01	<50	<50	250	<1.0	<1.0	<1.0	<1.0	<2.0	<250	106,000	7,440	0
	14-May-01	<50	<50	74	<1.0	<1.0	<1.0	<1.0	<2.0	<50	135,000	6,790	0
	26-Jul-01	<50	<50	120	<1.0	<1.0	<1.0	<1.0	<2.0	<50	125,000	9,680	1,970
	16-Oct-01	<50	<50	190	<1.0	<1.0	<1.0	<1.0	<2.0	<50	90,100	28,000	570
	21-Feb-02	<50	<50	190	<1.0	<1.0	<1.0	<1.0	<2.0	<50	77,700	4,280	0
	29-May-02	**<50**	**<50**	**110**	**<1.0**	**<1.0**	**<1.0**	**<1.0**	**<2.0**	**<50**	**126,000**	**7,230**	**270**
MW-11	7-Feb-00	<50	<50	400	<1	<1	<1	<1	25	800	167,000	7,300	16,200
	25-May-00	<50	<50	200	<1.0	<1.0	<1.0	<1.0	16	480	207,000	6,540	0
	22-Aug-00	<50	<50	170	<1.0	<1.0	<1.0	<1.0	9.3	610	168,000	4,640	20
	20-Nov-00	<50	<50	190	<1.0	<1.0	<1.0	<1.0	7.5	550	143,000	2,380	0
	1-Mar-01	<50	<50	250	<1.0	<1.0	<1.0	<1.0	15.0	170	80,300	5,860	0
	14-May-01	<50	<50	160	<1.0	<1.0	<1.0	<1.0	14.0	230	103,000	6,060	2,910
	26-Jul-01	<50	<50	220	5.9	<1.0	<1.0	2.7	20.0	180	71,300	7,360	>3300
	16-Oct-01	<50	<50	170	<1.0	<1.0	<1.0	<1.0	12.0	190	101,000	8,810	>3300
	21-Feb-02	<50	<50	170	<1.0	<1.0	<1.0	<1.0	2.2	110	75,600	4,280	0
	29-May-02	**<50**	**<50**	**290**	**<1.0**	**<1.0**	**<1.0**	**<1.0**	**2.3**	**140**	**98,700**	**8,350**	**0**

Notes:
ppb: parts per billion
TPH-G: total petroleum hydrocarbons as gasoline
TPH-D: total petroleum hydrocarbons as diesel
TPH: total petroleum hydrocarbons as motor oil or unknown hydrocarbon
MCL: Maximum Contaminant Level
MTBE: Methyl-tert,butylether
DO: Dissolved Oxygen
Fe: Ferrous Iron

APPENDIX A

CERTIFIED ANALYTICAL REPORTS

CHAIN-OF-CUSTODY DOCUMENTS

SEVERN TRENT SERVICES

STL Sacramento
880 Riverside Parkway
West Sacramento, CA 95605-1500

Tel: 916 373 5600
Fax: 916 371 8420
www.stl-inc.com

June 27, 2002

STL SACRAMENTO PROJECT NUMBER: G2E290281

Brad Wright
Cameron-Cole LLC
101 West Atlantic Avenue
Building #90
Alameda, CA 94501

Dear Mr. Wright,

This report contains the analytical results for the samples received under chain of custody by STL Sacramento on May 29, 2002. These samples are associated with your AC Transit Seminary project.

The test results in this report meet all NELAC requirements for parameters that accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The case narrative is an integral part of this report.

If you have any questions, please feel free to call me at (916) 374-4414.

Sincerely,

Bonnie McNeill

Bonnie J. McNeill
Project Manager

TABLE OF CONTENTS

STL SACRAMENTO PROJECT NUMBER G2E290281

CASE NARRATIVE

STL SACRAMENTO PROJECT NUMBER G2E290281

General Comments

Samples were received at 4 degrees Centigrade. Due to laboratory capacity issues the 8260 aliquots were sent to STL Los Angeles with your permission.

There were no anomalies associated with this project.

STL Sacramento

Quality Control Definitions

QC Parameter	Definition
QC Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Duplicate Control Sample (DCS)	Consist of a pair of LCSs analyzed within the same QC batch to monitor precision and accuracy independent of sample matrix effects. This QC is performed only if required by client or when insufficient sample is available to perform MS/MSD.
Duplicate Sample (DU)	A second aliquot of an environmental sample, taken from the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative of the precision for other samples in the batch.
Laboratory Control Sample (LCS)	A volume of reagent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which is spiked with known amounts of representative target analytes and required surrogates. An LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried through the entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank (MB)	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate Spike	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.

Source: STL Sacramento Laboratory Quality Manual

STL Sacramento Certifications:
Alaska (UST-055), Arizona (#AZ00616), Arkansas, California (NELAP # 01119CA) (ELAP #I-2439), Connecticut (#PH-0691), Florida (E87570), Hawaii, Louisiana (AI # 30612), New Jersey (Lab ID 44005), Nevada (#CA 044), New York (LAB ID 11666 serial # 107407), Oregon (LAB ID CA 044), South Carolina (LAB ID 87014, Cert. # 870140), Utah (E-168), Virginia (#00178), Washington (# C087), West Virginia (# 9930C), Wisconsin (Lab 998204680), USNAVY, USACE, USDA Foreign Plant (Permit # 37-82605), USDA Foreign Soil (Permit # S-46613)..

Sample Summary
G2E290281

WO#	Sample #	Client Sample ID	Sampling Date	Received Date
E16NA	1	TRIP BLANK	5/29/02 09:00 AM	5/29/02 07:10 PM
E16NC	2	MW-2	5/29/02 10:40 AM	5/29/02 07:10 PM
E16ND	3	MW-3	5/29/02 11:45 AM	5/29/02 07:10 PM
E16NE	4	MW-10	5/29/02 12:25 PM	5/29/02 07:10 PM
E16NF	5	MW-1	5/29/02 01:05 PM	5/29/02 07:10 PM
E16NG	6	MW-9	5/29/02 01:55 PM	5/29/02 07:10 PM
E16NH	7	MW-11	5/29/02 02:10 PM	5/29/02 07:10 PM

Notes(s):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity, pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weigh

G2E290281

[redacted]

Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc

TL-4124 (1200)

Client: Cameron-Cole	Project Manager: Brad Wright	Date: 5/29/02	Chain of Custody Number: 086474
Address: 101 W. Atlantic Ave Bldg 90	Telephone Number (Area Code)/Fax Number: (510) 769-3563	Lab Number:	Page 1 of 1
City: Alameda / State: CA / Zip Code: 94	Site Contact: --	Lab Contact: B. McNeil	Analysis (Attach list if more space is needed)
Project Name and Location (State): Ac Transit (Seminary)	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	MTBE/Sulfate	8260 BTEX MTBE	GRO 8015	DRO 8015
trip blank	5/29/02	0900		X						X				X		
MW-2		1040		X									X	X	X	X
MW-3		1145														
MW-10		1225														
MW-1		1305														
MW-9		1355														
MW-11		1410														

Special Instructions/ Conditions of Receipt: good — 05-29-02

Possible Hazard Identification: [X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal: [ ] Return To Client [X] Disposal By Lab [ ] Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: [ ] 24 Hours [ ] 48 Hours [ ] 7 Days [ ] 14 Days [X] 21 Days [ ] Other _____

QC Requirements (Specify): standard

	Date	Time		Date	Time
1. Relinquished By: [redacted]	5/29/02	1658	1. Received By: Antonio Figueroa	5/29/02	1658
2. Relinquished By: Antonio Figueroa	5/29/02	1910	2. Received By: [redacted]	5-29-02	1910
3. Relinquished By			3. Received By		

Comments:

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

STL Sacramento 916-373-5600

WATER, 8015M, TPH Gas

CAMERON-COLE LLC

Client Sample ID: MW-2

GC Volatiles

Lot-Sample #...: G2E290281-002	**Work Order #...:** E16NC1AE	**Matrix.....:** WATER	
Date Sampled...: 05/29/02	**Date Received..:** 05/29/02		
Prep Date.....: 06/04/02	**Analysis Date..:** 06/04/02		
Prep Batch #...: 2157388			
Dilution Factor: 50	**Method.....:** DHS CA LUFT		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Gasoline)	**49000**	**2500**	**ug/L**
Unknown Hydrocarbon	ND	2500	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	108	(70 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-3

GC Volatiles

Lot-Sample #...:	G2E290281-003	Work Order #...:	E16ND1AE	Matrix.....:	WATER
Date Sampled...:	05/29/02	Date Received..:	05/29/02		
Prep Date.....:	06/04/02	Analysis Date..:	06/04/02		
Prep Batch #...:	2157388				
Dilution Factor:	1	Method.....:	DHS CA LUFT		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Gasoline)	**630**	**50**	**ug/L**
Unknown Hydrocarbon	ND	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	113	(70 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-10

GC Volatiles

Lot-Sample #...: G2E290281-004	**Work Order #...:** E16NE1AE	**Matrix.....:** WATER	
Date Sampled...: 05/29/02	**Date Received..:** 05/29/02		
Prep Date.....: 06/03/02	**Analysis Date..:** 06/04/02		
Prep Batch #...: 2157352			
Dilution Factor: 1	**Method.....:** DHS CA LUFT		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Gasoline)	ND	50	ug/L
Unknown Hydrocarbon	ND	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	98	(70 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-1

GC Volatiles

Lot-Sample #...:	G2E290281-005	Work Order #...:	E16NF1AE	Matrix.....:	WATER
Date Sampled...:	05/29/02	Date Received..:	05/29/02		
Prep Date.....:	06/03/02	Analysis Date..:	06/04/02		
Prep Batch #...:	2157352				
Dilution Factor:	1	Method.....:	DHS CA LUFT		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Gasoline)	**130**	**50**	**ug/L**
Unknown Hydrocarbon	ND	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	108	(70 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-9

GC Volatiles

Lot-Sample #...: G2E290281-006	Work Order #...: E16NG1AE		Matrix.....: WATER
Date Sampled...: 05/29/02	Date Received..: 05/29/02		
Prep Date.....: 06/03/02	Analysis Date..: 06/04/02		
Prep Batch #...: 2157352			
Dilution Factor: 1	Method.....: DHS CA LUFT		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Gasoline)	ND	50	ug/L
Unknown Hydrocarbon	ND	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	103	(70 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-11

GC Volatiles

Lot-Sample #...:	G2E290281-007	Work Order #...:	E16NH1AE	Matrix.....:	WATER
Date Sampled...:	05/29/02	Date Received..:	05/29/02		
Prep Date.....:	06/03/02	Analysis Date..:	06/04/02		
Prep Batch #...:	2157352				
Dilution Factor:	1	Method.....:	DHS CA LUFT		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Gasoline)	ND	50	ug/L
Unknown Hydrocarbon	ND	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	76	(70 - 130)

QC DATA ASSOCIATION SUMMARY

G2E290281

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	SW846 8260B		2154354	2154165
002	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157388	
	WATER	SW846 8260B		2154354	2154165
003	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157388	
	WATER	SW846 8260B		2154354	2154165
004	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157352	
	WATER	SW846 8260B		2154354	2154165
005	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157352	
	WATER	SW846 8260B		2154354	2154165
006	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157352	
	WATER	SW846 8260B		2154354	2154165
007	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157352	
	WATER	SW846 8260B		2154354	2154165

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: G2E290281 Work Order #...: E2KF71AA Matrix.....: WATER
MB Lot-Sample #: G2F060000-352

Prep Date.....: 06/03/02
Analysis Date..: 06/03/02 Prep Batch #...: 2157352
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
TPH (as Gasoline)	ND	50	ug/L	DHS CA LUFT
Unknown Hydrocarbon	ND	50	ug/L	DHS CA LUFT

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	76	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: G2E290281 Work Order #...: E2KWC1AA Matrix.....: WATER
MB Lot-Sample #: G2F060000-388

Prep Date.....: 06/04/02
Analysis Date..: 06/04/02 Prep Batch #...: 2157388
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
TPH (as Gasoline)	ND	50	ug/L	DHS CA LUFT
Unknown Hydrocarbon	ND	50	ug/L	DHS CA LUFT

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	101	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: G2E290281 **Work Order #...:** E2KF71AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G2F060000-352 E2KF71AD-LCSD
Prep Date.....: 06/03/02 **Analysis Date..:** 06/03/02
Prep Batch #...: 2157352
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
TPH (as Gasoline)	**105**	**(70 - 130)**			**DHS CA LUFT**
	100	**(70 - 130)**	**4.4**	**(0-35)**	**DHS CA LUFT**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	122	(70 - 130)
	121	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: G2E290281 Work Order #...: E2KF71AC-LCS Matrix.....: WATER
LCS Lot-Sample#: G2F060000-352 E2KF71AD-LCSD
Prep Date.....: 06/03/02 Analysis Date..: 06/03/02
Prep Batch #...: 2157352
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
TPH (as Gasoline)	**1000**	**1050**	**ug/L**	**105**		**DHS CA LUFT**
	1000	**1000**	**ug/L**	**100**	**4.4**	**DHS CA LUFT**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	122	(70 - 130)
	121	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: G2E290281 **Work Order #...:** E2KWC1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G2F060000-388 E2KWC1AD-LCSD
Prep Date.....: 06/04/02 **Analysis Date..:** 06/04/02
Prep Batch #...: 2157388
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
TPH (as Gasoline)	**104**	**(70 - 130)**			**DHS CA LUFT**
	107	**(70 - 130)**	**2.4**	**(0-35)**	**DHS CA LUFT**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	122	(70 - 130)
	119	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: G2E290281 Work Order #...: E2KWC1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: G2F060000-388 E2KWC1AD-LCSD
Prep Date.....: 06/04/02 Analysis Date..: 06/04/02
Prep Batch #...: 2157388
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
TPH (as Gasoline)	**1000**	**1040**	**ug/L**	**104**		**DHS CA LUFT**
	1000	**1070**	**ug/L**	**107**	**2.4**	**DHS CA LUFT**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	122	(70 - 130)
	119	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

WATER, 8015 MOD, Diesel

CAMERON-COLE LLC

Client Sample ID: MW-2

GC Semivolatiles

Lot-Sample #...: G2E290281-002	Work Order #...: E16NC1AD		Matrix.....: WATER
Date Sampled...: 05/29/02	Date Received..: 05/29/02		
Prep Date.....: 05/31/02	Analysis Date..: 06/12/02		
Prep Batch #...: 2151319			
Dilution Factor: 100	Method.....: SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	**130000 Q**	**5000**	**ug/L**
Unknown Hydrocarbon	ND	5000	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	0.0 SRD	(57 - 147)

NOTE(S):

SRD The surrogate recovery was not calculated because the extract was diluted beyond the ability to quantitate a recovery.

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

CAMERON-COLE LLC

Client Sample ID: MW-3

GC Semivolatiles

Lot-Sample #...: G2E290281-003	Work Order #...: E16ND1AD		Matrix.....: WATER
Date Sampled...: 05/29/02	Date Received..: 05/29/02		
Prep Date.....: 05/31/02	Analysis Date..: 06/12/02		
Prep Batch #...: 2151319			
Dilution Factor: 1	Method.....: SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	**840**	**50**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	101	(57 - 147)

NOTE(S):

The unknown hydrocarbon from n-C8 to n-C40 is quantitated based on a diesel reference from n-C10 to n-C24 only.

CAMERON-COLE LLC

Client Sample ID: MW-10

GC Semivolatiles

Lot-Sample #...: G2E290281-004 Work Order #...: E16NE1AD Matrix.....: WATER
Date Sampled...: 05/29/02 Date Received..: 05/29/02
Prep Date.....: 05/31/02 Analysis Date..: 06/12/02
Prep Batch #...: 2151319
Dilution Factor: 1 Method.....: SW846 8015 MOD

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	110	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	97	(57 - 147)

NOTE(S):

The unknown hydrocarbon from n-C12 to n-C30 is quantitated based on a diesel reference from n-C10 to n-C24.

CAMERON-COLE LLC

Client Sample ID: MW-1

GC Semivolatiles

Lot-Sample #...: G2E290281-005 Work Order #...: E16NF1AD Matrix.....: WATER
Date Sampled...: 05/29/02 Date Received..: 05/29/02
Prep Date.....: 05/31/02 Analysis Date..: 06/11/02
Prep Batch #...: 2151319
Dilution Factor: 1 Method.....: SW846 8015 MOD

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	**510**	**50**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	110	(57 - 147)

NOTE(S):

The unknown hydrocarbon from n-C8 to n-C28 is quantitated based on a diesel reference from n-C10 to n-C24 only.

CAMERON-COLE LLC

Client Sample ID: MW-9

GC Semivolatiles

Lot-Sample #...: G2E290281-006 Work Order #...: E16NG1AD Matrix.....: WATER
Date Sampled...: 05/29/02 Date Received..: 05/29/02
Prep Date.....: 05/31/02 Analysis Date..: 06/11/02
Prep Batch #...: 2151319
Dilution Factor: 1 Method.....: SW846 8015 MOD

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	95	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	106	(57 - 147)

NOTE(S):

The unknown hydrocarbon from n-C12 to n-C28 is quantitated based on a diesel reference from n-C10 to n-C24 only.

CAMERON-COLE LLC

Client Sample ID: MW-11

GC Semivolatiles

Lot-Sample #...: G2E290281-007	Work Order #...: E16NH1AD		Matrix.....: WATER
Date Sampled...: 05/29/02	Date Received..: 05/29/02		
Prep Date.....: 05/31/02	Analysis Date..: 06/11/02		
Prep Batch #...: 2151319			
Dilution Factor: 1	Method.....: SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	**290**	**50**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	88	(57 - 147)

NOTE(S):

The unknown hydrocarbon from n-C12 to n-C40 is quantitated based on a diesel reference from n-C10 to n-C24 only.

QC DATA ASSOCIATION SUMMARY

G2E290281

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	SW846 8260B		2154354	2154165
002	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157388	
	WATER	SW846 8260B		2154354	2154165
003	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157388	
	WATER	SW846 8260B		2154354	2154165
004	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157352	
	WATER	SW846 8260B		2154354	2154165
005	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157352	
	WATER	SW846 8260B		2154354	2154165
006	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157352	
	WATER	SW846 8260B		2154354	2154165
007	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157352	
	WATER	SW846 8260B		2154354	2154165

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: G2E290281 Work Order #...: E19VJ1AA Matrix.....: WATER
MB Lot-Sample #: G2E310000-319

Prep Date.....: 05/31/02
Analysis Date..: 06/10/02 Prep Batch #...: 2151319
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
TPH (as Diesel)	ND	50	ug/L	SW846 8015 MOD
Unknown Hydrocarbon	ND	50	ug/L	SW846 8015 MOD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	100	(57 - 147)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: G2E290281 **Work Order #...:** E19VJ1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G2E310000-319 E19VJ1AD-LCSD
Prep Date.....: 05/31/02 **Analysis Date..:** 06/10/02
Prep Batch #...: 2151319
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
TPH (as Diesel)	**105**	**(39 - 125)**			**SW846 8015 MOD**
	101	**(39 - 125)**	**3.8**	**(0-44)**	**SW846 8015 MOD**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	116	(57 - 147)
	113	(57 - 147)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: G2E290281 Work Order #...: E19VJ1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: G2E310000-319 E19VJ1AD-LCSD
Prep Date.....: 05/31/02 Analysis Date..: 06/10/02
Prep Batch #...: 2151319
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
TPH (as Diesel)	**300**	**315**	**ug/L**	**105**		**SW846 8015 MOD**
	300	**303**	**ug/L**	**101**	**3.8**	**SW846 8015 MOD**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	116	(57 - 147)
	113	(57 - 147)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

General Chemistry - Various Methods

CAMERON-COLE LLC

Client Sample ID: MW-2

General Chemistry

Lot-Sample #...: G2E290281-002 Work Order #...: E16NC Matrix.....: WATER
Date Sampled...: 05/29/02 10:40 Date Received..: 05/29/02 19:10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	ND	0.050	mg/L	MCAWW 300.0A	05/30/02	2151237
	Analysis Time..: 13:24					
Sulfate	ND	1.0	mg/L	MCAWW 300.0A	05/30/02	2151239
	Analysis Time..: 13:24					

CAMERON-COLE LLC

Client Sample ID: MW-3

General Chemistry

Lot-Sample #...: G2E290281-003 Work Order #...: E16ND Matrix.....: WATER
Date Sampled...: 05/29/02 11:45 Date Received..: 05/29/02 19:10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	ND	0.050	mg/L	MCAWW 300.0A	05/30/02	2151237
		Analysis Time..: 14:04				
Sulfate	14.3	1.0	mg/L	MCAWW 300.0A	05/30/02	2151239
		Analysis Time..: 14:04				

CAMERON-COLE LLC

Client Sample ID: MW-10

General Chemistry

Lot-Sample #...: G2E290281-004 Work Order #...: E16NE Matrix.....: WATER
Date Sampled...: 05/29/02 12:25 Date Received..: 05/29/02 19:10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	ND	0.050	mg/L	MCAWW 300.0A	05/30/02	2151237
		Analysis Time..: 14:45				
Sulfate	126 Q	10.0	mg/L	MCAWW 300.0A	05/30/02	2151239
		Analysis Time..: 14:59				

NOTE(S):

RL Reporting Limit

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

CAMERON-COLE LLC

Client Sample ID: MW-1

General Chemistry

Lot-Sample #...: G2E290281-005 Work Order #...: E16NF Matrix.....: WATER
Date Sampled...: 05/29/02 13:05 Date Received..: 05/29/02 19:10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	ND	0.050	mg/L	MCAWW 300.0A	05/30/02	2151237
		Analysis Time..: 15:53				
Sulfate	2.3	1.0	mg/L	MCAWW 300.0A	05/30/02	2151239
		Analysis Time..: 15:53				

CAMERON-COLE LLC

Client Sample ID: MW-9

General Chemistry

Lot-Sample #...: G2E290281-006 Work Order #...: E16NG Matrix.....: WATER
Date Sampled...: 05/29/02 13:55 Date Received..: 05/29/02 19:10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	0.094	0.050	mg/L	MCAWW 300.0A	05/30/02	2151237
		Analysis Time..: 16:34				
Sulfate	141 Q	10.0	mg/L	MCAWW 300.0A	05/30/02	2151239
		Analysis Time..: 16:48				

NOTE(S):

RL Reporting Limit

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

CAMERON-COLE LLC

Client Sample ID: MW-11

General Chemistry

Lot-Sample #...: G2E290281-007 Work Order #...: E16NH Matrix.....: WATER
Date Sampled...: 05/29/02 14:10 Date Received..: 05/29/02 19:10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N	0.14	0.050	mg/L	MCAWW 300.0A	05/30/02	2151237
		Analysis Time..: 17:15				
Sulfate	98.7 Q	10.0	mg/L	MCAWW 300.0A	05/30/02	2151239
		Analysis Time..: 17:29				

NOTE(S):

RL Reporting Limit

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

QC DATA ASSOCIATION SUMMARY

G2E290281

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
002	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
003	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
004	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
005	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
006	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
007	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094

METHOD BLANK REPORT

General Chemistry

Client Lot #...: G2E290281 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N		Work Order #: E186R1AA		MB Lot-Sample #:	G2E310000-237	
	ND	0.050	mg/L	MCAWW 300.0A	05/30/02	2151237
		Analysis Time..: 07:57				
Sulfate		Work Order #: E187E1AA		MB Lot-Sample #:	G2E310000-239	
	ND	1.0	mg/L	MCAWW 300.0A	05/30/02	2151239
		Analysis Time..: 07:57				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: G2E290281 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N		Work Order #: E186R1AC	LCS Lot-Sample#: G2E310000-237		
	93	(90 - 110)	MCAWW 300.0A	05/30/02	2151237
		Analysis Time..: 07:43			
Sulfate		Work Order #: E187E1AC	LCS Lot-Sample#: G2E310000-239		
	95	(90 - 110)	MCAWW 300.0A	05/30/02	2151239
		Analysis Time..: 07:43			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: G2E290281 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N			Work Order #: E186R1AC LCS Lot-Sample#: G2E310000-237				
	1.50	1.40	mg/L	93	MCAWW 300.0A	05/30/02	2151237
			Analysis Time..: 07:43				
Sulfate			Work Order #: E187E1AC LCS Lot-Sample#: G2E310000-239				
	15.0	14.3	mg/L	95	MCAWW 300.0A	05/30/02	2151239
			Analysis Time..: 07:43				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: G2E290281 Matrix.....: WATER
Date Sampled...: 05/24/02 08:40 Date Received..: 05/25/02 09:45

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N		WO#: E13PG1CV-MS/E13PG1CW-MSD				MS Lot-Sample #: G2E250161-002	
	97	(90 - 110)			MCAWW 300.0A	05/30/02	2151237
	94	(90 - 110)	2.0	(0-10)	MCAWW 300.0A	05/30/02	2151237
		Analysis Time..: 09:32					
Sulfate		WO#: E13PG1C1-MS/E13PG1C2-MSD				MS Lot-Sample #: G2E250161-002	
	91	(90 - 110)			MCAWW 300.0A	05/30/02	2151239
	91	(90 - 110)	0.39	(0-10)	MCAWW 300.0A	05/30/02	2151239
		Analysis Time..: 09:59					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: G2E290281 **Matrix.....:** WATER
Date Sampled...: 05/24/02 08:40 **Date Received..:** 05/25/02 09:45

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate as N			WO#: E13PG1CV-MS/E13PG1CW-MSD				MS Lot-Sample #: G2E250161-002		
	5.7	10.0	15.4	mg/L	97		MCAWW 300.0A	05/30/02	2151237
	5.7	10.0	15.1	mg/L	94	2.0	MCAWW 300.0A	05/30/02	2151237
			Analysis Time..: 09:32						
Sulfate			WO#: E13PG1C1-MS/E13PG1C2-MSD				MS Lot-Sample #: G2E250161-002		
	256	1000	1160	mg/L	91		MCAWW 300.0A	05/30/02	2151239
	256	1000	1170	mg/L	91	0.39	MCAWW 300.0A	05/30/02	2151239
			Analysis Time..: 09:59						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

WATER, 8260B, BTEX+MTBE (Los Angeles)

CAMERON-COLE LLC

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: G2E290281-001	**Work Order #...:** E16NA1AC		**Matrix.....:** WATER
Date Sampled...: 05/29/02	**Date Received..:** 05/29/02		
Prep Date.....: 05/31/02	**Analysis Date..:** 05/31/02		
Prep Batch #...: 2154354			
Dilution Factor: 1	**Method.....:** SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Methyl tert-butyl ether	ND	2.0	ug/L
Toluene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	101	(75 - 130)
1,2-Dichloroethane-d4	109	(65 - 135)
Toluene-d8	105	(80 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-2

GC/MS Volatiles

Lot-Sample #...:	G2E290281-002	**Work Order #...:**	E16NC1AG	**Matrix.....:**	WATER
Date Sampled...:	05/29/02	**Date Received..:**	05/29/02		
Prep Date.....:	05/31/02	**Analysis Date..:**	06/01/02		
Prep Batch #...:	2154354				
Dilution Factor:	250	**Method.....:**	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	**17000**	**250**	**ug/L**
Ethylbenzene	**970**	**250**	**ug/L**
Methyl tert-butyl ether	ND	500	ug/L
Toluene	**350**	**250**	**ug/L**
Xylenes (total)	**1700**	**250**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	101	(75 - 130)
1,2-Dichloroethane-d4	106	(65 - 135)
Toluene-d8	107	(80 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-3

GC/MS Volatiles

Lot-Sample #...: G2E290281-003	Work Order #...: E16ND1AG	Matrix.....: WATER
Date Sampled...: 05/29/02	Date Received..: 05/29/02	
Prep Date.....: 05/31/02	Analysis Date..: 06/01/02	
Prep Batch #...: 2154354		
Dilution Factor: 1	Method.....: SW846 8260B	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	**68**	**1.0**	**ug/L**
Ethylbenzene	**4.2**	**1.0**	**ug/L**
Methyl tert-butyl ether	ND	2.0	ug/L
Toluene	ND	1.0	ug/L
Xylenes (total)	**3.3**	**1.0**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	107	(75 - 130)
1,2-Dichloroethane-d4	113	(65 - 135)
Toluene-d8	106	(80 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-10

GC/MS Volatiles

Lot-Sample #...:	G2E290281-004	Work Order #...:	E16NE1AG	Matrix.....:	WATER
Date Sampled...:	05/29/02	Date Received..:	05/29/02		
Prep Date.....:	05/31/02	Analysis Date..:	06/01/02		
Prep Batch #...:	2154354				
Dilution Factor:	1	Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Methyl tert-butyl ether	ND	2.0	ug/L
Toluene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	103	(75 - 130)
1,2-Dichloroethane-d4	112	(65 - 135)
Toluene-d8	103	(80 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-1

GC/MS Volatiles

Lot-Sample #...: G2E290281-005	Work Order #...: E16NF1AG	Matrix.....: WATER	
Date Sampled...: 05/29/02	Date Received..: 05/29/02		
Prep Date.....: 05/31/02	Analysis Date..: 06/01/02		
Prep Batch #...: 2154354			
Dilution Factor: 1	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Methyl tert-butyl ether	ND	2.0	ug/L
Toluene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	104	(75 - 130)
1,2-Dichloroethane-d4	112	(65 - 135)
Toluene-d8	103	(80 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-9

GC/MS Volatiles

Lot-Sample #...: G2E290281-006	Work Order #...: E16NG1AG	Matrix.....: WATER
Date Sampled...: 05/29/02	Date Received..: 05/29/02	
Prep Date.....: 05/31/02	Analysis Date..: 06/01/02	
Prep Batch #...: 2154354		
Dilution Factor: 1	Method.....: SW846 8260B	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Methyl tert-butyl ether	ND	2.0	ug/L
Toluene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	104	(75 - 130)
1,2-Dichloroethane-d4	112	(65 - 135)
Toluene-d8	103	(80 - 130)

CAMERON-COLE LLC

Client Sample ID: MW-11

GC/MS Volatiles

Lot-Sample #...: G2E290281-007	**Work Order #...:** E16NH1AG	**Matrix.....:** WATER
Date Sampled...: 05/29/02	**Date Received..:** 05/29/02	
Prep Date.....: 05/31/02	**Analysis Date..:** 06/01/02	
Prep Batch #...: 2154354		
Dilution Factor: 1	**Method.....:** SW846 8260B	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Methyl tert-butyl ether	**2.3**	**2.0**	**ug/L**
Toluene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	106	(75 - 130)
1,2-Dichloroethane-d4	116	(65 - 135)
Toluene-d8	106	(80 - 130)

QC DATA ASSOCIATION SUMMARY

G2E290281

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	SW846 8260B		2154354	2154165
002	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157388	
	WATER	SW846 8260B		2154354	2154165
003	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157388	
	WATER	SW846 8260B		2154354	2154165
004	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157352	
	WATER	SW846 8260B		2154354	2154165
005	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157352	
	WATER	SW846 8260B		2154354	2154165
006	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157352	
	WATER	SW846 8260B		2154354	2154165
007	WATER	MCAWW 300.0A		2151239	2157194
	WATER	MCAWW 300.0A		2151237	2151094
	WATER	SW846 8015 MOD		2151319	
	WATER	DHS CA LUFT		2157352	
	WATER	SW846 8260B		2154354	2154165

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: G2E290281 Work Order #...: E2DJP1AA Matrix.....: WATER
MB Lot-Sample #: E2F030000-354

Prep Date.....: 05/31/02
Analysis Date..: 05/31/02 Prep Batch #...: 2154354
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	2.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	105	(75 - 130)
1,2-Dichloroethane-d4	106	(65 - 135)
Toluene-d8	102	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: G2E290281 Work Order #...: E2DJP1AC Matrix.....: WATER
LCS Lot-Sample#: E2F030000-354
Prep Date.....: 05/31/02 Analysis Date..: 05/31/02
Prep Batch #...: 2154354
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**105**	**(75 - 120)**	**SW846 8260B**
Chlorobenzene	**104**	**(75 - 120)**	**SW846 8260B**
1,1-Dichloroethene	**107**	**(70 - 140)**	**SW846 8260B**
Trichloroethene	**113**	**(70 - 130)**	**SW846 8260B**
Toluene	**105**	**(75 - 125)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	106	(75 - 130)
1,2-Dichloroethane-d4	102	(65 - 135)
Toluene-d8	103	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: G2E290281 **Work Order #...:** E2DJP1AC **Matrix.....:** WATER
LCS Lot-Sample#: E2F030000-354
Prep Date.....: 05/31/02 **Analysis Date..:** 05/31/02
Prep Batch #...: 2154354
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**10.0**	**10.5**	**ug/L**	**105**	**SW846 8260B**
Chlorobenzene	**10.0**	**10.4**	**ug/L**	**104**	**SW846 8260B**
1,1-Dichloroethene	**10.0**	**10.7**	**ug/L**	**107**	**SW846 8260B**
Trichloroethene	**10.0**	**11.3**	**ug/L**	**113**	**SW846 8260B**
Toluene	**10.0**	**10.5**	**ug/L**	**105**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	106	(75 - 130)
1,2-Dichloroethane-d4	102	(65 - 135)
Toluene-d8	103	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: G2E290281 Work Order #...: E19FC1AE-MS Matrix.....: WATER
MS Lot-Sample #: E2E310170-003 E19FC1AF-MSD
Date Sampled...: 05/30/02 Date Received..: 05/31/02
Prep Date.....: 05/31/02 Analysis Date..: 06/01/02
Prep Batch #...: 2154354
Dilution Factor: 12.5

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	**117**	**(75 - 120)**			**SW846 8260B**
	122 a,MSC	**(75 - 120)**	**2.3**	**(0-25)**	**SW846 8260B**
Chlorobenzene	**118**	**(75 - 120)**			**SW846 8260B**
	117	**(75 - 120)**	**0.75**	**(0-25)**	**SW846 8260B**
1,1-Dichloroethene	**117**	**(70 - 140)**			**SW846 8260B**
	118	**(70 - 140)**	**0.88**	**(0-25)**	**SW846 8260B**
Trichloroethene	**127**	**(70 - 130)**			**SW846 8260B**
	126	**(70 - 130)**	**0.50**	**(0-25)**	**SW846 8260B**
Toluene	**118**	**(75 - 125)**			**SW846 8260B**
	120	**(75 - 125)**	**1.1**	**(0-25)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	119	(75 - 130)
	117	(75 - 130)
1,2-Dichloroethane-d4	126	(65 - 135)
	131	(65 - 135)
Toluene-d8	116	(80 - 130)
	118	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MSC The percent recovery of this analyte in the associated laboratory control sample is within control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: G2E290281 Work Order #...: E19FC1AE-MS Matrix.....: WATER
MS Lot-Sample #: E2E310170-003 E19FC1AF-MSD
Date Sampled...: 05/30/02 Date Received..: 05/31/02
Prep Date.....: 05/31/02 Analysis Date..: 06/01/02
Prep Batch #...: 2154354
Dilution Factor: 12.5

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**120**	**125**	**271**	**ug/L**	**117**		**SW846 8260B**
	120	**125**	**277**	**ug/L**	**122**	**2.3**	**SW846 8260B**
	Qualifiers:	a,MSC					
Chlorobenzene	**ND**	**125**	**147**	**ug/L**	**118**		**SW846 8260B**
	ND	**125**	**146**	**ug/L**	**117**	**0.75**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**125**	**146**	**ug/L**	**117**		**SW846 8260B**
	ND	**125**	**147**	**ug/L**	**118**	**0.88**	**SW846 8260B**
Trichloroethene	**ND**	**125**	**158**	**ug/L**	**127**		**SW846 8260B**
	ND	**125**	**157**	**ug/L**	**126**	**0.50**	**SW846 8260B**
Toluene	**21**	**125**	**169**	**ug/L**	**118**		**SW846 8260B**
	21	**125**	**171**	**ug/L**	**120**	**1.1**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	119	(75 - 130)
	117	(75 - 130)
1,2-Dichloroethane-d4	126	(65 - 135)
	131	(65 - 135)
Toluene-d8	116	(80 - 130)
	118	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MSC The percent recovery of this analyte in the associated laboratory control sample is within control limits.

APPENDIX B

SAMPLING EVENT DATA

FIELD PERSONNEL: EW / MM AC Transit Seminary

WELL OR LOCATION	DATE	TIME	MEASUREMENT	CODE	COMMENTS
MW-1	5/29/02	0900	3.70	SWL	
MW-2		0928	3.96 / 3.98	OIL / SWL	need to subtract 7 ft. oil/H_2O interface
MW-3		0912	2.52	SWL	
MW-9		0904	4.07		
MW-10		0909	3.30		
MW-11	↓	0915	2.36	↓	
				EW	

SWL - Static Water Level

OIL - Oil Level

OWI - Oil/Water Interface

MTD - Measured Total Depth

Project Name: AC Transit - Seminary
Project Number: 2014
Well ID: MW-1
Casing Diameter (in): 2"
Sample Date: 5/29/02
Total Well Depth (ft): 15.35
Sample ID:
Depth to Water (ft) before purging: 3.70

Development Method:

NA

_____ **Bailer:** _____ Teflon _____ Stainless Steel _____ PVC _____ ABS Plastic

_____ **Pump:** _____ Dedicated Submersible Pump _____ Bladder Pump
_____ Non-Dedicated Submersible Pump

Time	pH	Conductivity (umho/cm)	Temperature (Celsius)	Water Level (to 0.01 ft.)	Cum. Vol. (gal)	Pump Rate (GPM)
1250	6.83	1702	43.0	3.99	2	0.32
1256	6.69	1355	46.4	3.98	4	
1302	6.71	1279	47.2	4.01	6	
				total vol =	6.0	

Water Volume to be Purged (gal):
(Casing Length in Ft – Depth to Water in Ft) (X) (3)
Where X =1 Well Volume in Gal/ft, X=0.165 for 2" wells, X=0.37 for 3" wells, X=0.65 for 4" wells
15.35 - 3.70 = 11.69 x 0.165 = 1.93 x 3 = 5.8 gal

NOTE: 3 to 5 Well Casing Volumes required prior to sample collection.

At least _____ well casing volumes were removed prior to sampling.

Sample Collection Method:

_X_ **Bailer:** _____ Teflon _____ Stainless Steel _____ PVC _____ ABS Plastic

_____ **Pump:** _____ Dedicated Submersible Pump _____ Bladder Pump
_____ Non-Dedicated Submersible Pump

QA/QC Samples if any (Duplicate, Field Blank, Rinse Blank, Etc.):

Parameter Collected: 8015 GRO/DRO 8260 MTBE/BTEX Nitrate/Sulfate _____

Sample Appearance
_____ OVA Reading (ppm)
_____ Suspended Solids (describe):

Decontamination Performed: Washed/rinsed sounder/meters

start = 1244
stop = 1303
sample = 1305

Fe = 1.30
ORP = -60
DO = 6.82

Comments / Calculations:

Name: Emily Waters/Mike Marotto Date: 5/29/02

Project Name: AC Transit - Seminary
Project Number: 2014
Well ID: MW-2
Casing Diameter (in): 2"
Sample Date: 5/29/02
Total Well Depth (ft): 23.51
Sample ID: MW-2
Depth to Water (ft) before purging: 2.98
3.96 oil level / 3.98 SWL - 2' for calibration = 2.98
Development Method:

NA

_____**Bailer:** _____Teflon _____Stainless Steel _____PVC _____ABS Plastic

_____**Pump:** _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

Time	pH	Conductivity (umho/cm)	Temperature (Celsius)	Water Level (to 0.01 ft.)	Cum. Vol. (gal)	Pump Rate (GPM)
~~1007~~ 1010	6.81	1750	27.9	5.20	3	* 0.44
1016	7.45	1879	29.6	7.42	6	↓
1022	6.90	1921	30.1	8.53	9	
1026	6.95	1922	30.6	9.65	11	
1038			before sampling = 6.98			
				total vol = 11		

Water Volume to be Purged (gal): (23.51 – 2.98) 20.53 x .165 = 3.39 x 3 = 10.16
(Casing Length in Ft – Depth to Water in Ft) (X) (3)
Where X =1 Well Volume in Gal/ft, X=0.165 for 2" wells, X=0.37 for 3" wells, X=0.65 for 4" wells

NOTE: 3 to 5 Well Casing Volumes required prior to sample collection.

At least _____ well casing volumes were removed prior to sampling.

Sample Collection Method:

X **Bailer:** _____Teflon _____Stainless Steel _____PVC _____ABS Plastic

_____**Pump:** _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

QA/QC Samples if any (Duplicate, Field Blank, Rinse Blank, Etc.):

Parameter Collected: 8015 GRO/DRO 8260 MTBE/BTEX Nitrate/Sulfate _____

Sample Appearance
_____OVA Reading (ppm)
_____Suspended Solids (describe):

Decontamination Performed: Washed/rinsed sounder/meters

start = 1003
stop = 1028
sample = ~~1030~~ (lu) 1040

Fe = >3.30
ORP = -111
DO = 2.22

Comments / Calculations:

Centrifugal pump used to purge

80% recovery = 7.09

Name: Emily Waters/Mike Marotto Date: 5/29/02

Project Name: AC Transit - Seminary
Project Number: 2014
Well ID: MW-3
Casing Diameter (in): 2"
Sample Date: 5/29/02
Total Well Depth (ft): 16.81
Sample ID:
Depth to Water (ft) before purging: 2.52

Development Method:

NA _____**Bailer:** _____Teflon _____Stainless Steel _____PVC _____ABS Plastic

_____**Pump:** _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

Time	pH	Conductivity (umho/cm)	Temperature (Celsius)	Water Level (to 0.01 ft.)	Cum. Vol. (gal)	Pump Rate (GPM)
1110	7.01	480	27.2	7.12	2.5	0.23
1121 ~~1115~~ @	6.96	641	31.1	4.17	5.0	
1137 ~~1120~~ @	6.88	680	31.7	3.87	7.5	
				total vol = 7.5		

Water Volume to be Purged (gal):
(Casing Length in Ft – Depth to Water in Ft) (X) (3)
Where X =1 Well Volume in Gal/ft, X=0.165 for 2" wells, X=0.37 for 3" wells, X=0.65 for 4" wells
16.8 - 2.52 = 14.28 x 0.165 = 2.36 x 3 = 7.1 gallons
NOTE: 3 to 5 Well Casing Volumes required prior to sample collection.

At least _____ well casing volumes were removed prior to sampling.

Sample Collection Method:

X **Bailer:** _____Teflon _____Stainless Steel _____PVC _____ABS Plastic

_____**Pump:** _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

QA/QC Samples if any (Duplicate, Field Blank, Rinse Blank, Etc.):

Parameter Collected: 8015 GRO/DRO 8260 MTBE/BTEX Nitrate/Sulfate _____

Sample Appearance
_____OVA Reading (ppm)
_____Suspended Solids (describe):

Decontamination Performed:
Washed/rinsed sounder/meters

start = 1104
stop = 1137
sample = 1145

Fe = 1.07
ORP = -21
DO = 5.87

Comments / Calculations:

Name: Emily Waters/Mike Marotto Date: 5/29/02

Project Name: AC Transit - Seminary
Project Number: 2014
Well ID: MW-9
Casing Diameter (in): 2"
Total Well Depth (ft): 19.50
Sample Date: 5/29/02
Depth to Water (ft) before purging: 4.06
Sample ID:

Development Method:

NA _____**Bailer:** _____Teflon _____Stainless Steel _____PVC _____ABS Plastic

_____**Pump:** _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

Time	pH	Conductivity (umho/cm)	Temperature (Celsius)	Water Level (to 0.01 ft.)	Cum. Vol. (gal)	Pump Rate (GPM)
1324	6.92	1236	36.0	8.11	2.5	0.35
1331	6.97	1356	35.0	9.95	5.0	↓
1338	7.05	1360	36.0	10.89	7.5	↓
			before sampling	7.10		
				Total Vol =	8.0	

Water Volume to be Purged (gal):
(Casing Length in Ft – Depth to Water in Ft) (X) (3)
Where X =1 Well Volume in Gal/ft, X=0.165 for 2" wells, X=0.37 for 3" wells, X=0.65 for 4" wells
19.50 - 4.06 = 15.44 x 0.165 = 2.55 x 3 = 7.64
NOTE: 3 to 5 Well Casing Volumes required prior to sample collection.

At least _____ well casing volumes were removed prior to sampling.

Sample Collection Method:
__X__**Bailer:** _____Teflon _____Stainless Steel _____PVC _____ABS Plastic

_____**Pump:** _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

QA/QC Samples if any (Duplicate, Field Blank, Rinse Blank, Etc.):

Parameter Collected: 8015 GRO/DRO 8260 MTBE/BTEX Nitrate/Sulfate _____

Sample Appearance
_____OVA Reading (ppm)
_____Suspended Solids (describe):

Decontamination Performed:
Washed/rinsed sounder/meters

start = 1317
stop = 1340
sample = 1335

Fe = .09
ORP = -30
DO = 1.59

Comments / Calculations:

Name: Emily Waters/Mike Marotto Date: 5/29/02

Project Name: AC Transit - Seminary
Project Number: 2014
Well ID: MW-10
Casing Diameter (in): 2"
Total Well Depth (ft): 11.40
Depth to Water (ft) before purging: 3.30
Sample Date: 5/29/02
Sample ID:

Development Method:

NA

_____ **Bailer:** _____ Teflon _____ Stainless Steel _____ PVC _____ ABS Plastic

_____ **Pump:** _____ Dedicated Submersible Pump _____ Bladder Pump
_____ Non-Dedicated Submersible Pump

Time	pH	Conductivity (umho/cm)	Temperature (Celsius)	Water Level (to 0.01 ft.)	Cum. Vol. (gal)	Pump Rate (GPM)
1207	6.90	1897	38.5	3.60	1	0.25
1211	6.84	2070	39.2	4.12	2	↓
1215	6.79	2360	39.6	3.86	3	↓
						↓
				Total Vol = 4.0		

Water Volume to be Purged (gal):
(Casing Length in Ft – Depth to Water in Ft) (X) (3)
Where X =1 Well Volume in Gal/ft, X=0.165 for 2" wells, X=0.37 for 3" wells, X=0.65 for 4" wells
11.40 - 3.30 = 8.1 x 0.165 = 1.34 x 3 = 4.00
NOTE: 3 to 5 Well Casing Volumes required prior to sample collection.

At least _____ well casing volumes were removed prior to sampling.

Sample Collection Method:

X **Bailer:** _____ Teflon _____ Stainless Steel _____ PVC _____ ABS Plastic

_____ **Pump:** _____ Dedicated Submersible Pump _____ Bladder Pump
_____ Non-Dedicated Submersible Pump

QA/QC Samples if any (Duplicate, Field Blank, Rinse Blank, Etc.):

Parameter Collected: 8015 GRO/DRO 8260 MTBE/BTEX Nitrate/Sulfate _____

Sample Appearance
_____ OVA Reading (ppm)
_____ Suspended Solids (describe):

Decontamination Performed:
Washed/rinsed sounder/meters

start = 1203
Stop = 1219
sample = 1225

Fe = 0.27
ORP = 11
DO = 7.23

Comments / Calculations:
centrifugal pump used to purge

Name: Emily Wateas/Mike Marotto Date: 5/29/02

Project Name: AC Transit - Seminary
Project Number: 2014
Well ID: MW-11
Casing Diameter (in): 2"
Sample Date: 5/29/02
Total Well Depth (ft): 13.5'
Sample ID:
Depth to Water (ft) before purging: 2.36'

Development Method:

NA

_____**Bailer:** _____Teflon _____Stainless Steel _____PVC _____ABS Plastic

_____**Pump:** _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

Time	pH	Conductivity (umho/cm)	Temperature (Celsius)	Water Level (to 0.01 ft.)	Cum. Vol. (gal)	Pump Rate (GPM)
1100	6.97	989	28.5	3.89	1.5	0.02
1230	6.92	922	28.3	6.02	3.0	↓
1315	7.10	~~1007~~ New	28.7	10.75	4.5	
				Total Vol = 5.5		

Water Volume to be Purged (gal):
(Casing Length in Ft – Depth to Water in Ft) (X) (3)
Where X =1 Well Volume in Gal/ft, X=0.165 for 2" wells, X=0.37 for 3" wells, X=0.65 for 4" wells
13.5 - 2.36 = 11.14 x 0.165 = 1.84 x 3 = 5.5
NOTE: 3 to 5 Well Casing Volumes required prior to sample collection.

At least _____ well casing volumes were removed prior to sampling.

Sample Collection Method:

X **Bailer:** _____Teflon _____Stainless Steel _____PVC _____ABS Plastic

_____**Pump:** _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

QA/QC Samples if any (Duplicate, Field Blank, Rinse Blank, Etc.):

Parameter Collected: 8015 GRO/DRO 8260 MTBE/BTEX Nitrate/Sulfate _____

Sample Appearance
_____OVA Reading (ppm)
_____Suspended Solids (describe):

Decontamination Performed:
Washed/rinsed sounder/meters

start = 0942
Stop = 1358
sample = 1410

Fe = 0.00
ORP = 95
DO = 8.35

Comments / Calculations:
peristaltic pump used to purge

collected TripBlank@0900

Name: Emily Waters/Mike Marotto Date: 5/29/02

[redacted]

Chain of Custody Record

STL-4124 (1200)

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

Client	Cameron-Cole
Address	101 W. Atlantic Ave Bldg 90
City	Alameda
State	CA
Zip Code	94
Project Name and Location (State)	AC Transit (Seminary)
Contract/Purchase Order/Quote No.	
Project Manager	Brad Wright
Telephone Number (Area Code)/Fax Number	(510) 769-3563
Site Contact	–
Lab Contact	B. McNeal
Carrier/Waybill Number	
Date	5/29/02
Chain of Custody Number	086474
Lab Number	
Page	1 of 1

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix	Containers & Preservatives	Nitrate/Sulfate	8260 BTEX	GRO 8015	DRO 8015	Special Instructions/ Conditions of Receipt
Trip blank	5/29/02	0900	X	X		X			
MW-2	↓	1040	↓		X	X	X	X	
MW-3	↓	1145	↓		↓	↓	↓	↓	
MW-10	↓	1225	↓		↓	↓	↓	↓	
MW-1	↓	1305	↓		↓	↓	↓	↓	
MW-9	↓	1355	↓		↓	↓	↓	↓	
MW-11	↓	1410	↓		↓	↓	↓	↓	

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☒ 21 Days ☐ Other ____

QC Requirements (Specify): Standard

	Date	Time		Date	Time
1. Relinquished By: [signature]	5/29/02	1658	1. Received By: Alfonso Figueroa	5/29/02	1658
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

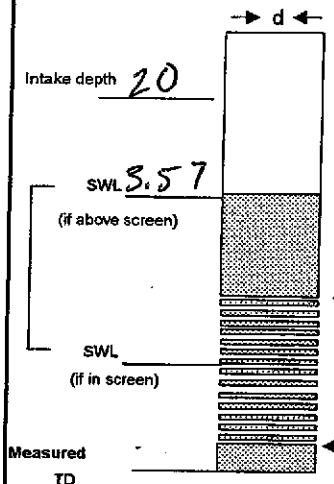
DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

CAMERON-COLE

SAMPLING EVENT DATA SHEET

WELL OR LOCATION MW-2

PROJECT AC Transit Seminary **EVENT** Monthly Purge **SAMPLER** EG **DATE** 4/8/2002



Well type MW
(MW, EW, etc.)

Diameter 2"

0.165 gal/ft. casing

ACTION	TIME	PUMP RATE (gpm)	IWL
Start Pump / Begin	0925	0.33	
Stop	1050		
Sampled			
Final IWL			

PURGE CALCULATION

0.165 gal/ft. * 19.93 ft. = 3.29 gals. X 3 ____ gals.

(one volume)

2" = 0.165 gal/ft. | SWL to BOP or TD | 4" = 0.65 gal/ft. | 6" = 1.47 gal/ft. | purge volume - 3 casings

Equipment Used / Sampling Method / Decription of Event:

Centrifugal pump to purge

Actual gallons purged 28

Actual volumes purged 8.5

Well Yield⊕ MY

COC # ____

Sample I.D.	Analysis	Lab
NO SAMPLE		

Additional Comments:

SWL = 3.57'
SOL = 3.51'
Product thickness = 0.06'
SOL = Static oil level

Gallons Purged *	Time	Temp °C	EC (us / cm)	pH	Turbidity (NTU)	
1. NA						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						

*Take measurement at approximately each casing volume purged.

⊕ HY-Minimal W.L. drop | MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump | LY - Able to purge 3 volumes by returing later or next day. | VLY - Minimal recharge unable to purge 3 volumes.

Project Name: AC Transit - Seminary
Project Number: 2014
Well ID: MW-2
Casing Diameter (in): 2"
Total Well Depth (ft): 23.51
Depth to Water (ft) before purging: 2.98
Sample Date: 5/29/02
Sample ID:
Overpurge

Development Method:
NA
_____Bailer: _____Teflon _____Stainless Steel _____PVC _____ABS Plastic
_____Pump: _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

Time	pH	Conductivity (umho/cm)	Temperature (Celsius)	Water Level (to 0.01 ft.)	Cum. Vol. (gal)	Pump Rate (GPM)
start	1003					
stop	1028				total vol = 11	
start	1047					
stop	1224				total vol = 23	
			grand total vol = 34			

Water Volume to be Purged (gal):
(Casing Length in Ft – Depth to Water in Ft) (X) (3)
Where X =1 Well Volume in Gal/ft, X=0.165 for 2" wells, X=0.37 for 3" wells, X=0.65 for 4" wells
23.51 - 2.98 = 20.53 x 0.165 = 3.39 x 10 = 33.9 gallons
NOTE: 3 to 5 Well Casing Volumes required prior to sample collection.

At least _____ well casing volumes were removed prior to sampling.

Sample Collection Method:
X Bailer: _____Teflon _____Stainless Steel _____PVC _____ABS Plastic
_____Pump: _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

QA/QC Samples if any (Duplicate, Field Blank, Rinse Blank, Etc.):

Parameter Collected: ~~8015 GRO/DRO 8260 MTBE/BTEX Nitrate/Sulfate~~ (lw) _____

Sample Appearance
_____OVA Reading (ppm)
_____Suspended Solids (describe):

Decontamination Performed:
Washed/rinsed sounder/meters

start = 1003 / 1047
stop = 1028 /
sample = 1040

Fe = (lw)
ORP =
~~DO~~ =

Comments / Calculations:

Name: Emily Waters / Mike Marotto
Date: 5/29/02

Project Name: AC Transit Seminary Project Number: 2074-1
Casing Diameter (in): 2"
Total Well Depth (ft): 23.51
Depth to Water (ft) before purging: oil/water = 3.56/3.58
Sample Date: 6/19/02
Sample ID:
Well ID: MW-2
overpurge

Development Method:
NA
_____Bailer: _____Teflon _____Stainless Steel _____PVC _____ABS Plastic
_____Pump: _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

Time	pH	Conductivity (umho/cm)	Temperature (Celsius)	Water Level (to 0.01 ft.)	Cum. Vol. (gal)	Pump Rate (GPM)
start =	9945					
stop =	1145					
		(over purge)				
				Total vol = 35 gal		

Water Volume to be Purged (gal): total cas vol = 10.7 cases
(Casing Length in Ft – Depth to Water in Ft) (X) (3)
Where X =1 Well Volume in Gal/ft, X=0.165 for 2" wells, X=0.37 for 3" wells, X=0.65 for 4" wells
23.51 - 3.58 = 19.93 x 0.165 = 3.28 x 10 = 32.8 gallons
NOTE: 3 to 5 Well Casing Volumes required prior to sample collection.

At least _____ well casing volumes were removed prior to sampling.

Sample Collection Method:
NA
_____Bailer: _____Teflon _____Stainless Steel _____PVC _____ABS Plastic
_____Pump: _____Dedicated Submersible Pump _____Bladder Pump
_____Non-Dedicated Submersible Pump

QA/QC Samples if any (Duplicate, Field Blank, Rinse Blank, Etc.):

Parameter Collected: NONE _____ _____ _____

Sample Appearance
_____OVA Reading (ppm)
_____Suspended Solids (describe):

Decontamination Performed:

Comments / Calculations:
used soakease before purge started
left soakease in well

Name: EMMY WATERS Date: 6/19/02