

AC Transit

Alameda-Contra Costa Transit District

10626 East 14th Street, Oakland, California

94603 ☐ (510) 577-8804

FAX ☐ (510) 577-8859

ENVIRONMENTAL
PROTECTION

00 NOV 21 PM 4: 03



November 17, 2000

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

1233

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 third quarter of 2000 for the AC Transit facility located at 1100 Seminary Avenue in Oakland. The report was prepared by our consultant, Safety-Kleen Consulting. The report contains responses to your August 30, 2000, letter regarding the information needed in order to meet closure requirements.

Groundwater samples were collected from the six on-site monitoring wells on August 22, 2000. 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.

Analytical results of grab water samples showed benzene concentrations above the California maximum contaminant level of 1 ppb in wells MW-1, MW-2 and MW-3 and nondetectable concentrations in wells MW-9, MW-10 and MW11. Chemical concentrations above laboratory reporting limits in the three newly installed wells MW-9, MW-10, and MW-11, were limited to unspecified hydrocarbons, except for 9.3 ppb MTBE detected in MW-11.

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
Suzanne Patton, P.E.
Environmental Engineer

SP/sp
enclosure

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

November 8, 2000

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

Prepared By:
Safety-Kleen Consulting
2233 Santa Clara Avenue
Alameda, California 94501

Project No: 792588



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

November 8, 2000

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

Prepared By:
Safety-Kleen Consulting
2233 Santa Clara Avenue
Alameda, California 94501

Project No: 792588

for: Brad Wright
Written by
Brady Hanson
Geologist I

Brad Wright
Reviewed by
Brad Wright
Senior Geologist




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INTRODUCTION

This report presents the results from the August 2000 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 Safety-Kleen Consulting, 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 sample collection. 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. A free phase hydrocarbon layer was detected in MW-2 at a measured thickness of 0.23 feet. As shown on Figure 2, groundwater flow is to the west at a gradient of 0.006 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 and temperature were monitored using calibrated field meters. Due to the very low yield encountered while purging monitoring well MW-11, only two casing volumes were evacuated before it became dry.

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 third quarter 2000 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-1 through MW-3. Chemical concentrations above laboratory reporting limits detected in newly installed wells MW-9 through MW-11 were limited to unspecified hydrocarbons, with the exception of 9.3 ppb MTBE detected in MW-11. The carbon chain range of the unspecified hydrocarbon suggests that these concentrations represent degraded diesel. 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.

RESPONSE TO ACHCS

The ACHCS submitted a letter dated August 30, 2000, to AC Transit detailing requirements necessary to meet site closure. The following presents a response to the ACHCS letter:

- **TPH Reporting** - Results from the second and third quarter 2000 monitoring events reported concentrations of TPH as unknown hydrocarbons. This is typically due to the fact that older fuel plumes degrade over time and the chromatographic pattern produced by the contaminant no longer matches the laboratory standard, which utilizes fresh fuel. There is no explanation why the first quarter 2000 results were reported as gasoline and diesel other than that the contaminants matched the pattern of the laboratory standard sufficiently enough for the laboratory to specify the hydrocarbon type.

- **MTBE Detection Limits** - The elevated concentrations of TPH detected in monitor well MW-2 prevent the laboratory from achieving lower detection limits for MTBE. If concentrations of TPH begin to reduce in monitor well MW-2 lower detection limits can be achieved. The laboratory has been instructed to report the lowest detection limits possible for this well.

- **Active Remediation** - AC Transit is preparing to conduct of evaluation of potential remedial alternatives for concentrations of TPH detected in monitor well MW-2. This evaluation is scheduled to be performed in 2001. The results of the evaluation will be presented in the subsequent quarterly monitoring report.

- **Natural Attenuation** - The August 2000 monitoring event represents the third event in which parameters were measured for the purposes of assessing natural degradation processes that may be occurring at the site. Based on this limited database the following degradation patterns can be seen. Sulfate concentrations are significantly higher at the plume boundaries indicative of aerobic degradation of hydrocarbons. Fe^{2+} concentrations are higher in the plume interior indicative of anaerobic degradation of hydrocarbons. There is no significant change in concentration for DO, ORP and nitrate observed throughout the plume. Continued monitoring of the natural degradation parameters needs to occur before developing a clear understanding of the degradation processes. ? anaerobic

- **Analysis of Soil Sample** - The analytical laboratory discarded the soil sample collected

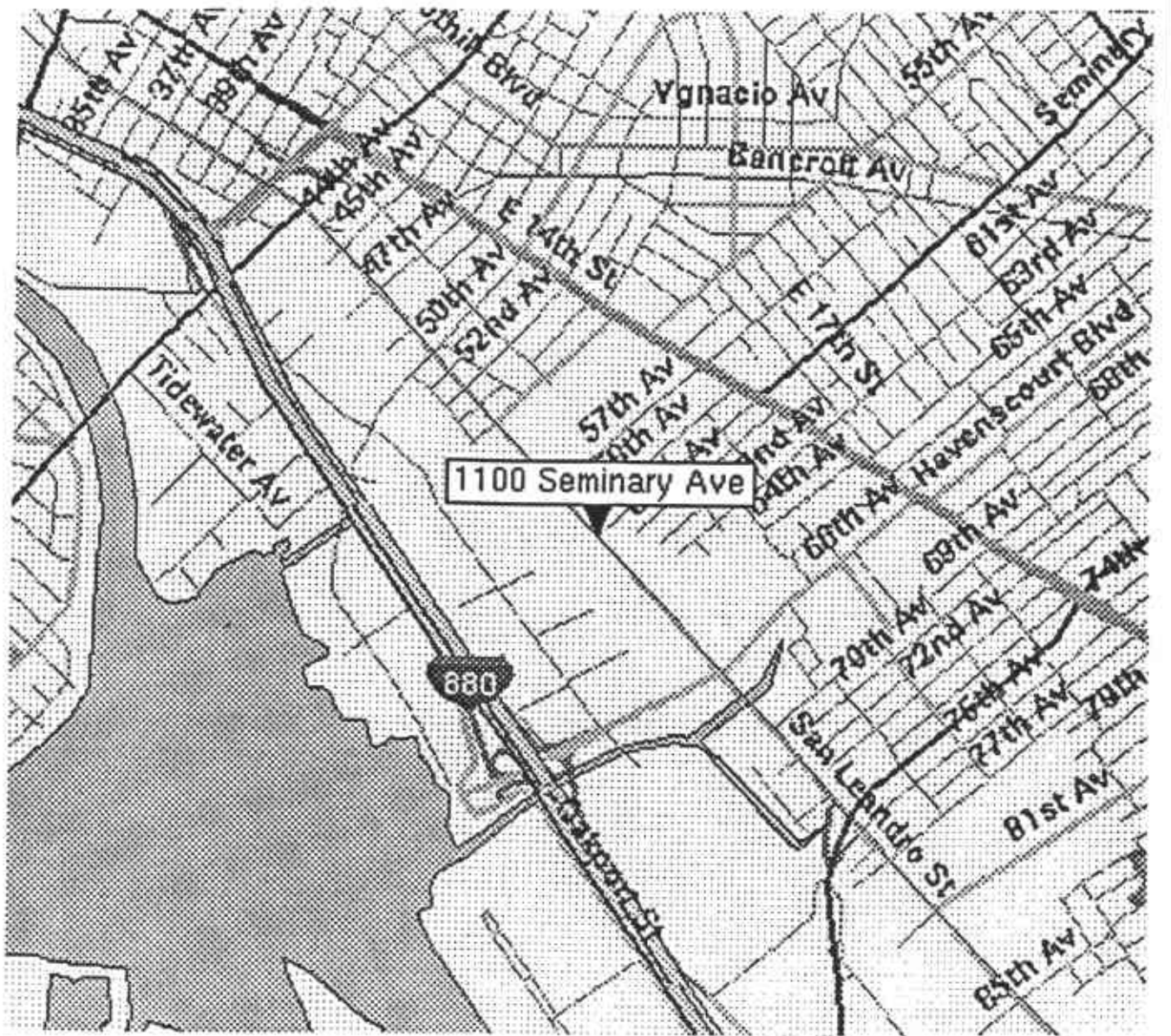
from soil boring SB-13 prior to the July 1999 request to perform the additional analysis.

SUMMARY OF RESULTS

- A 0.23 foot free phase hydrocarbon layer was measured in monitor well MW-2.
- Groundwater flow direction is towards the west at a gradient of 0.006 feet/foot;
- Chemical concentrations in excess of MCLs were limited to benzene in wells MW-1, MW-2 and MW-3.

PROJECTED WORK AND RECOMMENDATIONS

- Quarterly groundwater monitoring is scheduled for November 2001.



LOCMAP

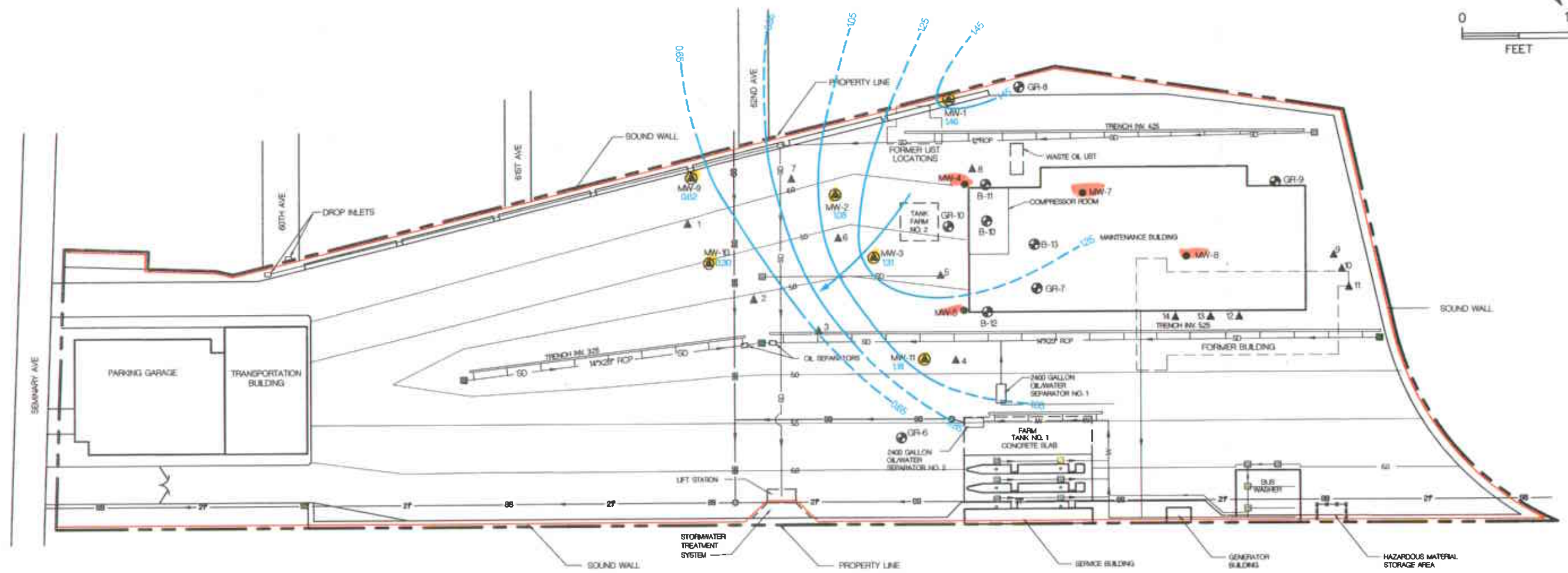
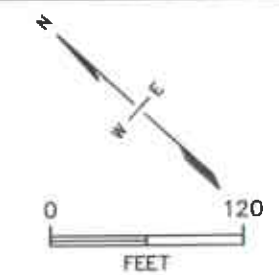


AC TRANSIT - OAKLAND, CALIFORNIA

FIGURE 1
SITE LOCATION MAP
1100 SEMINARY ROAD

SCALE: NO SCALE

DATE: 3/22/00



LEGEND:

- | | | | |
|--|-----------------------------------|--|----------------------------------|
| | GROUNDWATER ELEVATION CONTOUR -10 | | GROUNDWATER ELEVATION (FT. MSL) |
| | REPORTED GROUNDWATER FLOW | | EXISTING MONITORING WELL |
| | 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 |

FIGURE 2

BY WRB	DATE 9/12/00		AC TRANSIT - OAKLAND, CALIFORNIA	
DESIGNED			1100 SEMINARY ROAD-POTENTIOMETRIC SURFACE MAP	
APPROVED			AUGUST 22, 2000	
APPROVED			SCALE: 1" = 120'	DWG. NO: 792489-08
APPROVED				

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	
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	3.35	2.18	2.28
	22-Aug-00		0.23	4.45	1.08	1.26
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	
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	
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	0.3	
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	

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/Boring	Date	TPH-G	TPH-D	TPH	Benzene	Toluene	Ethyl		MTBE	Nitrate	Sulfate	DO	Fe
							Benzene	Xylenes					
		MCL (ppb)			1.0	150	700	1,750					
MW-1	7-Jan-99	<100	470	NA	17	2	31	18	<50	150	3,400	360	53
	7-Feb-00	390	<60	1,300	13	<10	<10	<10	<20	<50	1,200	1,220	11,800
	25-May-00	<50	<50	1,000	12	<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
MW-2 (Product)	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
	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
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
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
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
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

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 unknow 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

September 28, 2000

STL SACRAMENTO PROJECT NUMBER: G0H230166
PO/CONTRACT: NA

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

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

Brad Wright
Safety Kleen Consulting
2233 Santa Clara Ave
Suite 7
Alameda, CA 94501

Dear Mr. Wright,

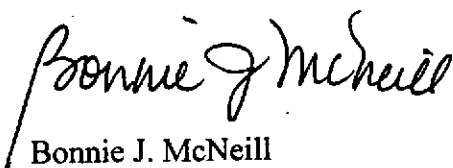
This report contains the analytical results for the samples received under chain of custody by STL Sacramento on 8/22/00. These samples are associated with your AC Transit Seminary project.

The case narrative is an integral part of this report.

Preliminary results were sent via facsimile on September 28, 2000.

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

Sincerely,



Bonnie J. McNeill
Project Manager

TABLE OF CONTENTS

STL SACRAMENTO PROJECT NUMBER G0H230166

Case Narrative

STL Sacramento Quality Assurance Program

Sample Description Information

Chain of Custody Documentation

WATER, CA LUFT, TVPH (Gas)

Samples: 1, 2, 3, 4, 5, 6

Sample Data Sheets

Method Blank Reports

Laboratory QC Reports

WATER, 8260B, BTEX + MTBE

Samples: 1, 2, 3, 4, 5, 6, 7

Sample Data Sheets

Method Blank Reports

Laboratory QC Reports

WATER, 8015 MOD, Diesel

Samples: 1, 2, 3, 4, 5, 6

Sample Data Sheets

Method Blank Reports

Laboratory QC Reports

General Chemistry - Various Methods

Samples: 1, 2, 3, 4, 5, 6

Sample Data Sheets

Method Blank Reports

Laboratory QC Reports

CASE NARRATIVE

STL SACRAMENTO PROJECT NUMBER G0H230166

General Comments

Samples bottles were received at 14 degrees Centigrade. VOA vials were received at 9 degrees Centigrade.

WATER, 8260B, BTEX + MTBE

The benzene level (23000 ug/L) for sample MW-2 exceeded the linear range of 20000 ug/L and is flagged with an "E". There were no additional sample vials for reanalysis. The data should be considered estimated for benzene.

WATER, 8015 MOD, Diesel

The samples were re-extracted outside of holding times due to low recovery on the LCS. Surrogate recoveries were acceptable (except for sample MW-2 which was diluted out). Both sets of data are reported.

There were no other 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® Quality Control Program, Policy QA-003, Rev. 0, 8/19/96.

Sample Summary

G0H230166

<u>WO#</u>	<u>Sample #</u>	<u>Client Sample ID</u>	<u>Sampling Date</u>	<u>Received Date</u>
DJ9RD	1	MW-1	8/22/00 10:15 AM	8/22/00 06:10 PM
DJ9TW	2	MW-9	8/22/00 11:15 AM	8/22/00 06:10 PM
DJ9TX	3	MW-10	8/22/00 11:45 AM	8/22/00 06:10 PM
DJ9V0	4	MW-11	8/22/00 12:00 PM	8/22/00 06:10 PM
DJ9V1	5	MW-3	8/22/00 01:15 PM	8/22/00 06:10 PM
DJ9V4	6	MW-2	8/22/00 02:15 PM	8/22/00 06:10 PM
DJ9V6	7	TRIP BLANK	8/22/00 02:15 PM	8/22/00 06:10 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 weight.

Chain of Custody Record



QUA-1124 0787

Client: **Safch-Kleen** Project Manager: **Brad Wright** Date: **8-22-00** Chain of Custody Number: **52560**
 Address: **2233 Santa Clara** Telephone Number (Area Code)/Fax Number: **S10 337 8660** Lab Number: _____ Page **1** of **1**

City: **Alameda** State: **CA** Zip Code: **94501** Site Contact: _____ Lab Contact: _____
 Project Name: **AC TRANSIT Seminar** Carrier/Waybill Number: _____

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix					Containers & Preservatives						Analysis (Attach list if more space is needed)				Special Instructions/ Conditions of Receipt		
			Asph	Soil	Water	Urnnes	H2SO4	HNOS	HCl	NaOH	ZnAc	NaOH	Mitak/Sulfate	ELCO K125/100	GR0 8015	DR0 8015				
MW-1	8-22-00	10:15	X												X	X	X	X		
MW-9	↓	11:15													X	X	X	X		
MW-10		11:45													X	X	X	X		
MW-11		12:00													X	X	X	X		
MW-3		13:15													X	X	X	X		
MW-2		14:15													X	X	X	X		
TRIP BLANK															X					

RECEIVED IN GOOD CONDITION UNDER COC
 AUG 22 2000
 INF: LB

Possible Hazard Identification: Non-Hazard Flammable Skin Irritant Poison B Unknown 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**

1. Relinquished By: <u>[Signature]</u>	Date: 8-17-00 Time: 16:00	1. Received By:	Date:	Time:
2. Relinquished By: <u>Barry A. Hanson</u>	Date: 8-22-00 Time: 15:30	2. Received By: <u>Courier</u>	Date: 8-22-00	Time: 15:30
3. Relinquished By: _____	Date: _____ Time: _____	3. Received By: <u>[Signature]</u>	Date: 8-22-00	Time: 18:10

Comments: _____

WATER, CA LUFT, TVPH (*Gas*)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-1

GC Volatiles

Lot-Sample #...: G0H230166-001 Work Order #...: DJ9RD104 Matrix.....: WATER
Date Sampled...: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 08/28/00 Analysis Date...: 08/28/00
Prep Batch #...: 0244478
Dilution Factor: 1 Method.....: DHS CA LUFT

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	
		<u>LIMIT</u>	<u>UNITS</u>
TPH (as Gasoline)	ND	50	ug/L
Unknown Hydrocarbon	360	50	ug/L
<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>	
	<u>RECOVERY</u>	<u>LIMITS</u>	
4-Bromofluorobenzene	94	(70 - 130)	

SAFETY KLEEN CONSULTING

Client Sample ID: MW-9

GC Volatiles

Lot-Sample #...: G0H230166-002 Work Order #...: DJ9TW104 Matrix.....: WATER
Date Sampled...: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 08/28/00 Analysis Date...: 08/29/00
Prep Batch #...: 0244478
Dilution Factor: 1 Method.....: DHS CA LUFT

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	
		<u>LIMIT</u>	<u>UNITS</u>
TPH (as Gasoline)	ND	50	ug/L
Unknown Hydrocarbon	ND	50	ug/L
	<u>PERCENT</u>	<u>RECOVERY</u>	
<u>SURROGATE</u>	<u>RECOVERY</u>	<u>LIMITS</u>	
4-Bromofluorobenzene	89	(70 - 130)	

SAFETY KLEEN CONSULTING

Client Sample ID: MW-10

GC Volatiles

Lot-Sample #...: G0H230166-003 Work Order #...: DJ9TX104 Matrix.....: WATER
Date Sampled...: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 08/28/00 Analysis Date...: 08/29/00
Prep Batch #...: 0244478
Dilution Factor: 1 Method.....: DHS CA LUFT

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

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	98	(70 - 130)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-11

GC Volatiles

Lot-Sample #....: G0H230166-004 Work Order #....: DJ9V0104 Matrix.....: WATER
Date Sampled....: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 08/28/00 Analysis Date...: 08/29/00
Prep Batch #....: 0244478
Dilution Factor: 1 Method.....: DHS CA LUFT

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

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	86	(70 - 130)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-3

GC Volatiles

Lot-Sample #....: G0H230166-005 Work Order #....: DJ9V1104 Matrix.....: WATER
Date Sampled...: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 08/28/00 Analysis Date...: 08/29/00
Prep Batch #...: 0244478
Dilution Factor: 1 Method.....: DHS CA LUFT

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
TPH (as Gasoline)	ND	50	ug/L
Unknown Hydrocarbon	2400	50	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	103	(70 - 130)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-2

GC Volatiles

Lot-Sample #...: G0H230166-006 Work Order #...: DJ9V4104 Matrix.....: WATER
Date Sampled...: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 08/31/00 Analysis Date...: 09/01/00
Prep Batch #...: 0250098
Dilution Factor: 50 Method.....: DHS CA LUFT

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	
		<u>LIMIT</u>	<u>UNITS</u>
TPH (as Gasoline)	ND	2500	ug/L
Unknown Hydrocarbon	42000	2500	ug/L

<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>
	<u>RECOVERY</u>	<u>LIMITS</u>
4-Bromofluorobenzene	109	(70 - 130)

QC DATA ASSOCIATION SUMMARY

G0H230166

Sample Preparation and Analysis Control Numbers

<u>SAMPLE#</u>	<u>MATRIX</u>	<u>ANALYTICAL METHOD</u>	<u>LEACH BATCH #</u>	<u>PREP BATCH #</u>	<u>MS RUN#</u>
001	WATER	MCAWW 300.0A		0238438	0238189
	WATER	MCAWW 300.0A		0238434	0238184
	WATER	DHS CA LUFT		0244478	
002	WATER	MCAWW 300.0A		0238438	0238189
	WATER	MCAWW 300.0A		0241402	0241207
	WATER	DHS CA LUFT		0244478	
003	WATER	MCAWW 300.0A		0238438	0238189
	WATER	MCAWW 300.0A		0241402	0241207
	WATER	DHS CA LUFT		0244478	
004	WATER	MCAWW 300.0A		0238438	0238189
	WATER	MCAWW 300.0A		0238434	
	WATER	DHS CA LUFT		0244478	
005	WATER	MCAWW 300.0A		0238438	0238189
	WATER	MCAWW 300.0A		0238434	0238184
	WATER	DHS CA LUFT		0244478	
	WATER	SW846 8260B		0249441	
006	WATER	MCAWW 300.0A		0241409	0241209
	WATER	MCAWW 300.0A		0241402	0241207
	WATER	DHS CA LUFT		0250098	
	WATER	SW846 8260B		0249441	
007	WATER	SW846 8260B		0249441	

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: G0H230166 Work Order #...: DJQ2P101 Matrix.....: WATER
MB Lot-Sample #: G0H310000-478
Analysis Date...: 08/28/00 Prep Date.....: 08/28/00
Dilution Factor: 1 Prep Batch #...: 0244478

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>
		<u>LIMIT</u>	<u>UNITS</u>	
TPH (as Gasoline)	ND	50	ug/L	DHS CA LUFT
Unknown Hydrocarbon	ND	50	ug/L	DHS CA LUFT
	<u>PERCENT</u>	<u>RECOVERY</u>		
<u>SURROGATE</u>	<u>RECOVERY</u>	<u>LIMITS</u>		
4-Bromofluorobenzene	90	(70 - 130)		

NOTE(S):

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

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: G0H230166
MB Lot-Sample #: G0I060000-098

Work Order #...: DCX07101

Matrix.....: WATER

Analysis Date...: 08/31/00
Dilution Factor: 1

Prep Date.....: 08/31/00

Prep Batch #...: 0250098

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>
		<u>LIMIT</u>	<u>UNITS</u>	
TPH (as Gasoline)	ND	50	ug/L	DHS CA LUFT
Unknown Hydrocarbon	ND	50	ug/L	DHS CA LUFT
<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>		
	<u>RECOVERY</u>	<u>LIMITS</u>		
4-Bromofluorobenzene	99	(70 - 130)		

NOTE(S) :

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #....: G0H230166 Work Order #....: DJQ2P102-LCS Matrix.....: WATER
 LCS Lot-Sample#: G0H310000-478 DJQ2P103-LCSD
 Prep Date.....: 08/28/00 Analysis Date...: 08/28/00
 Prep Batch #....: 0244478
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RPD</u>	<u>METHOD</u>
TPH (as Gasoline)	1000	986	ug/L	99		DHS CA LUFT
	1000	1080	ug/L	108	9.4	DHS CA LUFT

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
4-Bromofluorobenzene	105	(70 - 130)
	106	(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 #...: G0H230166 Work Order #...: DJX07102-LCS Matrix.....: WATER
 LCS Lot-Sample#: G0I060000-098 DJX07103-LCSD
 Prep Date.....: 08/31/00 Analysis Date...: 08/31/00
 Prep Batch #...: 0250098
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RPD</u>	<u>METHOD</u>
TPH (as Gasoline)	1000	1020	ug/L	102		DHS CA LUFT
	1000	1070	ug/L	107	4.7	DHS CA LUFT

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
4-Bromofluorobenzene	114	(70 - 130)
	114	(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 #...: G0H230166 Work Order #...: DJQ2P102-LCS Matrix.....: WATER
 LCS Lot-Sample#: G0H310000-478 DJQ2P103-LCSD
 Prep Date.....: 08/28/00 Analysis Date...: 08/28/00
 Prep Batch #...: 0244478
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
TPH (as Gasoline)	99	(70 - 130)			DHS CA LUFT
	108	(70 - 130)	9.4	(0-35)	DHS CA LUFT

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	105	(70 - 130)
	106	(70 - 130)

NOTE(S) :

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

Bold prim denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #....: G0H230166 Work Order #....: DJX07102-LCS Matrix.....: WATER
 LCS Lot-Sample#: G0I060000-098 DJX07103-LCSD
 Prep Date.....: 08/31/00 Analysis Date...: 08/31/00
 Prep Batch #....: 0250098
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
TPH (as Gasoline)	102	(70 - 130)			DHS CA LUFT
	107	(70 - 130)	4.7	(0-35)	DHS CA LUFT

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	114	(70 - 130)
	114	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

SAFETY KLEEN CONSULTING

Client Sample ID: MW-1

GC/MS Volatiles

Lot-Sample #...: G0H230166-001 Work Order #...: DJ9RD105 Matrix.....: WATER
 Date Sampled...: 08/22/00 Date Received...: 08/22/00
 Prep Date.....: 09/01/00 Analysis Date...: 09/01/00
 Prep Batch #...: 0255461
 Dilution Factor: 1 Method.....: SW846 8260B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	
		<u>LIMIT</u>	<u>UNITS</u>
Benzene	6.3	1.0	ug/L
Toluene	ND	1.0	ug/L
Ethylbenzene	2.3	1.0	ug/L
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	
4-Bromofluorobenzene	106	(70 - 130)	
1,2-Dichloroethane-d4	90	(70 - 130)	
Toluene-d8	105	(70 - 130)	

SAFETY KLEEN CONSULTING

Client Sample ID: MW-9

GC/MS Volatiles

Lot-Sample #....: G0H230166-002 Work Order #....: DJ9TW105 Matrix.....: WATER
 Date Sampled....: 08/22/00 Date Received...: 08/22/00
 Prep Date.....: 09/01/00 Analysis Date...: 09/01/00
 Prep Batch #....: 0255461
 Dilution Factor: 1 Method.....: SW846 8260B

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

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	98	(70 - 130)
1,2-Dichloroethane-d4	90	(70 - 130)
Toluene-d8	102	(70 - 130)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-10

GC/MS Volatiles

Lot-Sample #....: G0H230166-003 Work Order #....: DJ9TX105 Matrix.....: WATER
Date Sampled....: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 09/01/00 Analysis Date...: 09/01/00
Prep Batch #....: 0255461
Dilution Factor: 1 Method.....: SW846 8260B

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

<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>
	<u>RECOVERY</u>	<u>LIMITS</u>
4-Bromofluorobenzene	98	(70 - 130)
1,2-Dichloroethane-d4	92	(70 - 130)
Toluene-d8	102	(70 - 130)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-11

GC/MS Volatiles

Lot-Sample #...: G0H230166-004 Work Order #...: DJ9V0105 Matrix.....: WATER
 Date Sampled...: 08/22/00 Date Received...: 08/22/00
 Prep Date.....: 09/01/00 Analysis Date...: 09/01/00
 Prep Batch #...: 0255461
 Dilution Factor: 1 Method.....: SW846 8260B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	
		<u>LIMIT</u>	<u>UNITS</u>
Benzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Methyl tert-butyl ether (MTBE)	9.3	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	102	(70 - 130)
1,2-Dichloroethane-d4	92	(70 - 130)
Toluene-d8	101	(70 - 130)

SAFETY KLEEN CONSULTING

Client Sample ID: MW-3

GC/MS Volatiles

Lot-Sample #....: G0H230166-005 Work Order #....: DJ9V1105 Matrix.....: WATER
 Date Sampled....: 08/22/00 Date Received...: 08/22/00
 Prep Date.....: 09/05/00 Analysis Date...: 09/05/00
 Prep Batch #....: 0249441
 Dilution Factor: 10 Method.....: SW846 8260B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	
		<u>LIMIT</u>	<u>UNITS</u>
Benzene	240 Q	10	ug/L
Toluene	ND	10	ug/L
Ethylbenzene	ND	10	ug/L
Methyl tert-butyl ether (MTBE)	ND	20	ug/L
Xylenes (total)	ND	10	ug/L

<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>
	<u>RECOVERY</u>	<u>LIMITS</u>
4-Bromofluorobenzene	102	(70 - 130)
1,2-Dichloroethane-d4	106	(70 - 130)
Toluene-d8	98	(70 - 130)

NOTE(S):

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

SAFETY KILBEN CONSULTING

Client Sample ID: MW-2

GC/MS Volatiles

Lot-Sample #...: G0H230166-006 Work Order #...: DJ9V4105 Matrix.....: WATER
 Date Sampled...: 08/22/00 Date Received...: 08/22/00
 Prep Date.....: 09/05/00 Analysis Date...: 09/05/00
 Prep Batch #...: 0249441
 Dilution Factor: 500 Method.....: SW846 8260B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
Benzene	23000 E,Q	500	ug/L
Toluene	ND	500	ug/L
Ethylbenzene	1100	500	ug/L
Methyl tert-butyl ether (MTBE)	ND	1000	ug/L
Xylenes (total)	1100	500	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	102	(70 - 130)
1,2-Dichloroethane-d4	111	(70 - 130)
Toluene-d8	107	(70 - 130)

NOTE(S) :

- E Estimated result. Result concentration exceeds the calibration range.
 Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

SAFETY KILLEN CONSULTING

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: G0H230166-007 Work Order #....: DJ9V6101 Matrix.....: WATER
 Date Sampled...: 08/22/00 Date Received...: 08/22/00
 Prep Date.....: 09/05/00 Analysis Date...: 09/05/00
 Prep Batch #...: 0249441
 Dilution Factor: 1 Method.....: SW846 8260B

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

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	102	(70 - 130)
1,2-Dichloroethane-d4	103	(70 - 130)
Toluene-d8	98	(70 - 130)

QC DATA ASSOCIATION SUMMARY

GDH230166

Sample Preparation and Analysis Control Numbers

<u>SAMPLE#</u>	<u>MATRIX</u>	<u>ANALYTICAL METHOD</u>	<u>LEACH BATCH #</u>	<u>PREP BATCH #</u>	<u>MS RUN#</u>
001	WATER	SW846 8260B		0255461	
002	WATER	SW846 8260B		0255461	
003	WATER	SW846 8260B		0255461	
004	WATER	SW846 8260B		0255461	
005	WATER	SW846 8260B		0249441	
006	WATER	SW846 8260B		0249441	
007	WATER	SW846 8260B		0249441	

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: G0H230166
 MB Lot-Sample #: G0I110000-461

Work Order #...: DK6JX101

Matrix.....: WATER

Analysis Date...: 09/01/00
 Dilution Factor: 1

Prep Date.....: 09/01/00

Prep Batch #...: 0255461

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		
		<u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>
Benzene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>		
4-Bromofluorobenzene	95	(70 - 130)		
1,2-Dichloroethane-d4	85	(70 - 130)		
Toluene-d8	97	(70 - 130)		

NOTE(S) :

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

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: G0H230166
 MB Lot-Sample #: G0I050000-441

Work Order #...: DJWN7101

Matrix.....: WATER

Analysis Date...: 09/05/00
 Dilution Factor: 1

Prep Date.....: 09/05/00

Prep Batch #...: 0249441

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>
		<u>LIMIT</u>	<u>UNITS</u>	
Benzene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
	<u>PERCENT</u>	<u>RECOVERY</u>		
<u>SURROGATE</u>	<u>RECOVERY</u>	<u>LIMITS</u>		
4-Bromofluorobenzene	102	(70 - 130)		
1,2-Dichloroethane-d4	103	(70 - 130)		
Toluene-d8	105	(70 - 130)		

NOTE(S) :

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: G0H230166 Work Order #...: DK6JX102-LCS Matrix.....: WATER
 LCS Lot-Sample#: G0I110000-461 DK6JX103-LCSD
 Prep Date.....: 09/01/00 Analysis Date...: 09/01/00
 Prep Batch #...: 0255461
 Dilution Factor: 1

PARAMETER	SPIKE	MEASURED		PERCENT		METHOD
	AMOUNT	AMOUNT	UNITS	RECOVERY	RPD	
Benzene	10.0	10.6	ug/L	106		SW846 8260B
	10.0	10.4	ug/L	104	2.3	SW846 8260B
Toluene	10.0	10.6	ug/L	106		SW846 8260B
	10.0	10.3	ug/L	103	2.9	SW846 8260B
Chlorobenzene	10.0	10.2	ug/L	102		SW846 8260B
	10.0	10.2	ug/L	102	0.36	SW846 8260B
1,1-Dichloroethene	10.0	10.3	ug/L	103		SW846 8260B
	10.0	10.4	ug/L	104	1.4	SW846 8260B
Trichloroethene	10.0	9.89	ug/L	99		SW846 8260B
	10.0	9.95	ug/L	100	0.62	SW846 8260B

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
4-Bromofluorobenzene	102	(70 - 130)
	103	(70 - 130)
1,2-Dichloroethane-d4	88	(70 - 130)
	89	(70 - 130)
Toluene-d8	98	(70 - 130)
	99	(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/MS Volatiles

Client Lot #...: G0H230166 Work Order #...: DK6JX102-LCS Matrix.....: WATER
 LCS Lot-Sample#: G0I110000-461 DK6JX103-LCSD
 Prep Date.....: 09/01/00 Analysis Date...: 09/01/00
 Prep Batch #...: 0255461
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
Benzene	106	(70 - 130)			SW846 8260B
	104	(70 - 130)	2.3	(0-35)	SW846 8260B
Toluene	106	(70 - 130)			SW846 8260B
	103	(70 - 130)	2.9	(0-35)	SW846 8260B
Chlorobenzene	102	(70 - 130)			SW846 8260B
	102	(70 - 130)	0.36	(0-35)	SW846 8260B
1,1-Dichloroethene	103	(70 - 130)			SW846 8260B
	104	(70 - 130)	1.4	(0-35)	SW846 8260B
Trichloroethene	99	(70 - 130)			SW846 8260B
	100	(70 - 130)	0.62	(0-35)	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	102	(70 - 130)
	103	(70 - 130)
1,2-Dichloroethane-d4	88	(70 - 130)
	89	(70 - 130)
Toluene-d8	98	(70 - 130)
	99	(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/MS Volatiles

Client Lot #...: G0H230166 Work Order #...: DJWN7102-LCS Matrix.....: WATER
 LCS Lot-Sample#: G0I050000-441 DJWN7103-LCSD
 Prep Date.....: 09/05/00 Analysis Date...: 09/05/00
 Prep Batch #...: 0249441
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE</u>	<u>MEASURED</u>		<u>PERCENT</u>		<u>METHOD</u>
	<u>AMOUNT</u>	<u>AMOUNT</u>	<u>UNITS</u>	<u>RECOVERY</u>	<u>RPD</u>	
Benzene	10.0	10.7	ug/L	107		SW846 8260B
	10.0	10.9	ug/L	109	2.0	SW846 8260B
Toluene	10.0	10.3	ug/L	103		SW846 8260B
	10.0	10.6	ug/L	106	3.4	SW846 8260B
Chlorobenzene	10.0	10.1	ug/L	101		SW846 8260B
	10.0	10.4	ug/L	104	2.3	SW846 8260B
1,1-Dichloroethene	10.0	10.3	ug/L	103		SW846 8260B
	10.0	10.5	ug/L	105	2.3	SW846 8260B
Trichloroethene	10.0	9.86	ug/L	99		SW846 8260B
	10.0	10.2	ug/L	102	2.9	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>
	<u>RECOVERY</u>	<u>LIMITS</u>
4-Bromofluorobenzene	108	(70 - 130)
	108	(70 - 130)
1,2-Dichloroethane-d4	99	(70 - 130)
	102	(70 - 130)
Toluene-d8	103	(70 - 130)
	103	(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/MS Volatiles

Client Lot #...: G0H230166 Work Order #...: DJWN7102-LCS Matrix.....: WATER
 LCS Lot-Sample#: G0I050000-441 DJWN7103-LCSD
 Prep Date.....: 09/05/00 Analysis Date...: 09/05/00
 Prep Batch #...: 0249441
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
Benzene	107	(70 - 130)			SW846 8260B
	109	(70 - 130)	2.0	(0-35)	SW846 8260B
Toluene	103	(70 - 130)			SW846 8260B
	106	(70 - 130)	3.4	(0-35)	SW846 8260B
Chlorobenzene	101	(70 - 130)			SW846 8260B
	104	(70 - 130)	2.3	(0-35)	SW846 8260B
1,1-Dichloroethene	103	(70 - 130)			SW846 8260B
	105	(70 - 130)	2.3	(0-35)	SW846 8260B
Trichloroethene	99	(70 - 130)			SW846 8260B
	102	(70 - 130)	2.9	(0-35)	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	108	(70 - 130)
	108	(70 - 130)
1,2-Dichloroethane-d4	99	(70 - 130)
	102	(70 - 130)
Toluene-d8	103	(70 - 130)
	103	(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

SAFETY KLEEN CONSULTING

Client Sample ID: MW-1

GC Semivolatiles

Lot-Sample #...: G0H230166-001 Work Order #...: DJ9RD203 Matrix.....: WATER
Date Sampled...: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 09/13/00 Analysis Date...: 09/19/00
Prep Batch #...: 0257434
Dilution Factor: 1 Method.....: SW846 8015 MOD

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	
		<u>LIMIT</u>	<u>UNITS</u>
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	540	50	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
o-Terphenyl	134	(66 - 136)

NOTE(S):

The unknown from n-C8 to n-C32 is quantitated based on a diesel reference from n-C10 to n-C24.

SAFETY KLEEN CONSULTING

Client Sample ID: MW-1

GC Semivolatiles

Lot-Sample #....: G0H230166-001 Work Order #....: DJ9RD103 Matrix.....: WATER
Date Sampled....: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 08/28/00 Analysis Date...: 09/09/00
Prep Batch #....: 0241499
Dilution Factor: 1 Method.....: SW846 8015 MOD

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	
		<u>LIMIT</u>	<u>UNITS</u>
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	600	50	ug/L
<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>	
	<u>RECOVERY</u>	<u>LIMITS</u>	
o-Terphenyl	128	(66 - 136)	

NOTE(S) :

The unknown from n-C8 to n-C30 is quantitated based on a diesel reference from n-C10 to n-C24.

SAFETY KILBEN CONSULTING

Client Sample ID: MW-9

GC Semivolatiles

Lot-Sample #...: G0H230166-002 Work Order #...: DJ9TW103 Matrix.....: WATER
Date Sampled...: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 08/28/00 Analysis Date...: 09/09/00
Prep Batch #...: 0241499
Dilution Factor: 1 Method.....: SW846 8015 MOD

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	120	50	ug/L

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
o-Terphenyl	104	(66 - 136)

NOTE(S):

The unknown from n-C14 to n-C28 is quantitated based on a diesel reference from n-C10 to n-C24.

SAFETY KLEEN CONSULTING

Client Sample ID: MW-9

GC Semivolatiles

Lot-Sample #....: G0H230166-002 Work Order #....: DJ9TW203 Matrix.....: WATER
Date Sampled....: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 09/13/00 Analysis Date...: 09/19/00
Prep Batch #....: 0257434
Dilution Factor: 1 Method.....: SW846 8015 MOD

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

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
o-Terphenyl	110	(66 - 136)

NOTE(S) :

The unknown from n-C14 to n-C28 is quantitated based on a diesel reference from n-C10 to n-C24.

SAFETY KLEIN CONSULTING

Client Sample ID: MW-10

GC Semivolatiles

Lot-Sample #....: G0H230166-003 Work Order #....: DJ9TX103 Matrix.....: WATER
Date Sampled....: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 08/28/00 Analysis Date...: 09/09/00
Prep Batch #....: 0241499
Dilution Factor: 1 Method.....: SW846 8015 MOD

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	130	50	ug/L

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
o-Terphenyl	98	(66 - 136)

NOTE(S):

The unknown from n-C8 to n-C34 is quantitated based on a diesel reference from n-C10 to n-C24.

SAFETY KLEIN CONSULTING

Client Sample ID: MW-10

GC Semivolatiles

Lot-Sample #...: G0H230166-003 Work Order #...: DJ9TX203 Matrix.....: WATER
Date Sampled...: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 09/13/00 Analysis Date...: 09/19/00
Prep Batch #...: 0257434
Dilution Factor: 1 Method.....: SW846 8015 MOD

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	140	50	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
o-Terphenyl	92	(66 - 136)

NOTE(S) :

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

SAFETY HAZARD CONSULT

Client Sample ID: MW-11

GC Semivolatiles

Lot-Sample #....: G0H230166-004 Work Order #....: DJ9V0103 Matrix.....: WATER
Date Sampled...: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 08/28/00 Analysis Date...: 09/09/00
Prep Batch #....: 0241499
Dilution Factor: 1 Method.....: SW846 8015 MOD

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	
		<u>LIMIT</u>	<u>UNITS</u>
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	170	50	ug/L
		<u>RECOVERY</u>	
<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>	
		<u>LIMITS</u>	
o-Terphenyl	94	(66 - 136)	

NOTE(S):

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

SAFETY KLEEN CONSULTING

Client Sample ID: MW-11

GC Semivolatiles

Lot-Sample #...: G0H230166-004 Work Order #...: DJ9V0203 Matrix.....: WATER
Date Sampled...: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 09/13/00 Analysis Date...: 09/19/00
Prep Batch #...: 0257434
Dilution Factor: 1 Method.....: SW846 8015 MOD

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	130	50	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
o-Terphenyl	108	(66 - 136)

NOTE(S) :

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

SAFETY KLEEN CONSULTING

Client Sample ID: MW-3

GC Semivolatiles

Lot-Sample #...: G0H230166-005 Work Order #...: DJ9V1103 Matrix.....: WATER
Date Sampled...: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 08/28/00 Analysis Date...: 09/09/00
Prep Batch #...: 0241499
Dilution Factor: 1 Method.....: SW846 8015 MOD

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	
		<u>LIMIT</u>	<u>UNITS</u>
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	680	50	ug/L

<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>
	<u>RECOVERY</u>	<u>LIMITS</u>
o-Terphenyl	107	(66 - 136)

NOTE(S) :

The unknown from n-C6 to n-C36 is quantitated based on a diesel reference from n-C10 to n-C24.

SYSTEMS KLEIN CONSULTING

Client Sample ID: MW-3

GC Semivolatiles

Lot-Sample #...: G0H230166-005 Work Order #...: DJ9V1203 Matrix.....: WATER
Date Sampled...: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 09/13/00 Analysis Date...: 09/19/00
Prep Batch #...: 0257434
Dilution Factor: 1 Method.....: SW846 8015 MOD

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	
		<u>LIMIT</u>	<u>UNITS</u>
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	480	50	ug/L
		<u>RECOVERY</u>	
<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>	
		<u>LIMITS</u>	
o-Terphenyl	86	(66 - 136)	

NOTE(S):

The unknown from n-C8 to n-C40 is quantitated based on a diesel reference from n_c10 to n-C24.

SAFETY KILBEN CONSULTING

Client Sample ID: MW-2

GC Semivolatiles

Lot-Sample #...: G0H230166-006 Work Order #...: D39V4103 Matrix.....: WATER
Date Sampled...: 08/22/00 Date Received...: 08/22/00
Prep Date.....: 08/28/00 Analysis Date...: 09/09/00
Prep Batch #...: 0241499
Dilution Factor: 50 Method.....: SW846 8015 MOD

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
TPH (as Diesel)	ND	2500	ug/L
Unknown Hydrocarbon	85000	2500	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
o-Terphenyl	0.0 SRD	(66 - 136)

NOTE(S) :

SRD The surrogate recovery was not calculated because the extract was diluted beyond the ability to quantitate a recovery.
The unknown from n-C8 to n-C28 is quantitated based on a diesel reference from n-C10 to n-C24.

SAFETY KLEEN CONSULTING

Client Sample ID: MW-2

GC Semivolatiles

Lot-Sample #....: G0H230166-006 Work Order #....: DJ9V4203 Matrix.....: WATER
 Date Sampled...: 08/22/00 Date Received...: 08/22/00
 Prep Date.....: 09/19/00 Analysis Date...: 09/23/00
 Prep Batch #....: 0263179
 Dilution Factor: 100 Method.....: SW846 8015 MOD

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	
		<u>LIMIT</u>	<u>UNITS</u>
TPH (as Diesel)	ND	5000	ug/L
Unknown Hydrocarbon	150000	5000	ug/L
<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>	
	<u>RECOVERY</u>	<u>LIMITS</u>	
o-Terphenyl	0.0 SRD	(66 - 136)	

NOTE(S) :

SRD The surrogate recovery was not calculated because the extract was diluted beyond the ability to quantitate a recovery.
 Elevated reporting limits. The reporting limits are elevated due to matrix interference.
 The unknown from n-C8 to n-C26 is quantitated based on a diesel reference from n-C10 to n-C24.

IC DATA ASSOCIATES

G0H230166

Sample Preparation and Analysis Control Numbers

<u>SAMPLE#</u>	<u>MATRIX</u>	<u>ANALYTICAL METHOD</u>	<u>LEACH BATCH #</u>	<u>PREP BATCH #</u>	<u>MS RUN#</u>
001	WATER	MCAWW 300.0A		0238438	0238189
	WATER	MCAWW 300.0A		0238434	0238184
	WATER	SW846 8015 MOD		0241499	
	WATER	SW846 8015 MOD		0257434	
	WATER	DHS CA LUFT		0244478	
	WATER	SW846 8260B		0255461	
002	WATER	MCAWW 300.0A		0238438	0238189
	WATER	MCAWW 300.0A		0241402	0241207
	WATER	SW846 8015 MOD		0241499	
	WATER	SW846 8015 MOD		0257434	
	WATER	DHS CA LUFT		0244478	
	WATER	SW846 8260B		0255461	
003	WATER	MCAWW 300.0A		0238438	0238189
	WATER	MCAWW 300.0A		0241402	0241207
	WATER	SW846 8015 MOD		0241499	
	WATER	SW846 8015 MOD		0257434	
	WATER	DHS CA LUFT		0244478	
	WATER	SW846 8260B		0255461	
004	WATER	MCAWW 300.0A		0238438	0238189
	WATER	MCAWW 300.0A		0238434	
	WATER	SW846 8015 MOD		0241499	
	WATER	SW846 8015 MOD		0257434	
	WATER	DHS CA LUFT		0244478	
	WATER	SW846 8260B		0255461	
005	WATER	MCAWW 300.0A		0238438	0238189
	WATER	MCAWW 300.0A		0238434	0238184
	WATER	SW846 8015 MOD		0241499	
	WATER	SW846 8015 MOD		0257434	
	WATER	DHS CA LUFT		0244478	
	WATER	SW846 8260B		0249441	
006	WATER	MCAWW 300.0A		0241409	0241209
	WATER	MCAWW 300.0A		0241402	0241207
	WATER	SW846 8015 MOD		0241499	
	WATER	SW846 8015 MOD		0263179	
	WATER	DHS CA LUFT		0250098	
	WATER	SW846 8260B		0249441	

(Continued on next page)

QC DATA ASSOCIATION SUMMARY

G0H230166

Sample Preparation and Analysis Control Numbers

<u>SAMPLE#</u>	<u>MATRIX</u>	<u>ANALYTICAL METHOD</u>	<u>LEACH BATCH #</u>	<u>PREP BATCH #</u>	<u>MS RUN#</u>
007	WATER	SW846 8260B		0249441	

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: G0H230166
MB Lot-Sample #: G0H280000-499

Work Order #...: DJJ6X101

Matrix.....: WATER

Analysis Date...: 09/09/00
Dilution Factor: 1

Prep Date.....: 08/28/00
Prep Batch #...: 0241499

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

<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>
	<u>RECOVERY</u>	<u>LIMITS</u>
o-Terphenyl	98	(66 - 136)

NOTE(S):

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

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: G0H230166
MB Lot-Sample #: G0I130000-434

Work Order #...: DK9VN101

Matrix.....: WATER

Analysis Date...: 09/19/00
Dilution Factor: 1

Prep Date.....: 09/13/00

Prep Batch #...: 0257434

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

<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>
	<u>RECOVERY</u>	<u>LIMITS</u>
o-Terphenyl	67	(66 - 136)

NOTE(S):

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

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: G0H230166
MB Lot-Sample #: G0I190000-279

Work Order #...: DKKL5101

Matrix.....: WATER

Analysis Date...: 09/23/00
Dilution Factor: 1

Prep Date.....: 09/19/00

Prep Batch #...: 0263179

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>
		<u>LIMIT</u>	<u>UNITS</u>	
TPH (as Diesel)	ND	50	ug/L	SW846 8015 MOD
Unknown Hydrocarbon	ND	50	ug/L	SW846 8015 MOD
	<u>PERCENT</u>	<u>RECOVERY</u>		
<u>SURROGATE</u>	<u>RECOVERY</u>	<u>LIMITS</u>		
o-Terphenyl	101	(66 - 136)		

NOTE(S) :

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

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: G0H230166 Work Order #...: DJJ6X102-LCS Matrix.....: WATER
 LCS Lot-Sample#: G0H280000-499 DJJ6X103-LCSD
 Prep Date.....: 08/28/00 Analysis Date...: 09/09/00
 Prep Batch #...: 0241499
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RPD</u>	<u>METHOD</u>
TPH (as Diesel)	300	145 a	ug/L	48		SW846 8015 MOD
	300	152	ug/L	51	4.6	SW846 8015 MOD

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
o-Terphenyl	94	(66 - 136)
	93	(66 - 136)

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.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: G0H230166 Work Order #...: DJJ6X102-LCS Matrix.....: WATER
 LCS Lot-Sample#: G0H280000-499 DJJ6X103-LCSD
 Prep Date.....: 08/28/00 Analysis Date...: 09/09/00
 Prep Batch #...: 0241499
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
TPH (as Diesel)	48 a	(50 - 129)			SW846 8015 MOD
	51	(50 - 129)	4.6	(0-23)	SW846 8015 MOD

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
o-Terphenyl	94	(66 - 136)
	93	(66 - 136)

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.

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: G0H230166 Work Order #...: DKKL5102-LCS Matrix.....: WATER
 LCS Lot-Sample#: G0I190000-179 DKKL5103-LCSD
 Prep Date.....: 09/19/00 Analysis Date...: 09/23/00
 Prep Batch #...: 0263179
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RPD</u>	<u>METHOD</u>
TPH (as Diesel)	300	251	ug/L	84		SW846 8015 MOD
	300	255	ug/L	85	1.4	SW846 8015 MOD

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
o-Terphenyl	108	(66 - 136)
	104	(66 - 136)

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 Semivolatiles

Client Lot #...: G0H230166 Work Order #...: DKKL5102-LCS Matrix.....: WATER
 LCS Lot-Sample#: G0I190000-179 DKKL5103-LCSD
 Prep Date.....: 09/19/00 Analysis Date...: 09/23/00
 Prep Batch #...: 0263179
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
TPH (as Diesel)	84	(50 - 129)			SW846 8015 MOD
	85	(50 - 129)	1.4	(0-23)	SW846 8015 MOD

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
o-Terphenyl	108	(66 - 136)
	104	(66 - 136)

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 Semivolatiles

Client Lot #...: G0H230166 Work Order #...: DK9VN102-LCS Matrix.....: WATER
 LCS Lot-Sample#: G0I130000-434 DK9VN103-LCSD
 Prep Date.....: 09/13/00 Analysis Date...: 09/19/00
 Prep Batch #...: 0257434
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
TPH (as Diesel)	90	(50 - 129)			SW846 8015 MOD
	82	(50 - 129)	8.3	(0-23)	SW846 8015 MOD

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
o-Terphenyl	88	(66 - 136)
	86	(66 - 136)

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 #...: G0H230166 Work Order #...: DK9VN102-LCS Matrix.....: WATER
 LCS Lot-Sample#: G0I130000-434 DK9VN103-LCSD
 Prep Date.....: 09/13/00 Analysis Date...: 09/19/00
 Prep Batch #...: 0257434
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RPD</u>	<u>METHOD</u>
TPH (as Diesel)	300	269	ug/L	90		SW846 8015 MOD
	300	247	ug/L	82	8.3	SW846 8015 MOD

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
o-Terphenyl	88	(66 - 136)
	86	(66 - 136)

NOTE(S) :

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

Bold print denotes control parameters

General Chemistry - Various Methods

SAFE WATER CONSULTANTS

Client Sample ID: MW-1

General Chemistry

Lot-Sample #...: G0H230166-001

Work Order #...: DJ9RD

Matrix.....: WATER

Date Sampled...: 08/22/00

Date Received...: 08/22/00

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Nitrate as N	0.075	0.050	mg/L	MCAWW 300.0A	08/23/00	0238434
Sulfate	2.1	1.0	mg/L	MCAWW 300.0A	08/23/00	0238438

SAFETY KLEEN CONSULTING

Client Sample ID: MW-9

General Chemistry

Lot-Sample #...: G0H230166-002
Date Sampled...: 08/22/00

Work Order #...: DJ9TW
Date Received...: 08/22/00

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Nitrate as N	0.28	0.050	mg/L	MCAWW 300.0A	08/24/00	0241402
Sulfate	157 Q	10.0	mg/L	MCAWW 300.0A	08/23/00	0238438

NOTE(S):

RL Reporting Limit

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

SAFETY KLEEN CONSULTING

Client Sample ID: MW-10

General Chemistry

Lot-Sample #...: G0H230166-003

Work Order #...: DJ9TX

Matrix.....: WATER

Date Sampled...: 08/22/00

Date Received...: 08/22/00

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Nitrate as N	0.069	0.050	mg/L	MCAWW 300.0A	08/24/00	0241402
Sulfate	126 Q	1.0	mg/L	MCAWW 300.0A	08/23/00	0238438

NOTE(S):

RL Reporting Limit

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

SAFETY KLEEN CONSULTING

Client Sample ID: MW-11

General Chemistry

Lot-Sample #...: G0H230166-004
Date Sampled...: 08/22/00

Work Order #...: DJ9V0
Date Received...: 08/22/00

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Nitrate as N	0.61	0.25	mg/L	MCAWW 300.0A	08/23/00	0238434
Sulfate	168 Q	10.0	mg/L	MCAWW 300.0A	08/23/00	0238438

NOTE(S):

RL Reporting Limit

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

SAFETY KLEEN CONSULTING

Client Sample ID: MW-3

General Chemistry

Lot-Sample #...: G0H230166-005
Date Sampled...: 08/22/00

Work Order #...: DJ9V1
Date Received...: 08/22/00

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Nitrate as N	ND	0.050	mg/L	MCAWW 300.0A	08/23/00	0238434
Sulfate	19.3	1.0	mg/L	MCAWW 300.0A	08/23/00	0238438

SAFETY KLEEN CONSULTING

Client Sample ID: MW-2

General Chemistry

Lot-Sample #....: G0H230166-006
Date Sampled....: 08/22/00

Work Order #....: DJ9V4
Date Received...: 08/22/00

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Nitrate as N	0.37	0.050	mg/L	MCAWW 300.0A	08/24/00	0241402
Sulfate	ND	1.0	mg/L	MCAWW 300.0A	08/24/00	0241409

OC DATA ASSOCIATES

G0H230166

Sample Preparation and Analysis Control Numbers

<u>SAMPLE#</u>	<u>MATRIX</u>	<u>ANALYTICAL METHOD</u>	<u>LEACH BATCH #</u>	<u>PREP BATCH #</u>	<u>MS RUN#</u>
001	WATER	MCAWW 300.0A		0238438	0238189
	WATER	MCAWW 300.0A		0238434	0238184
002	WATER	MCAWW 300.0A		0238438	0238189
	WATER	MCAWW 300.0A		0241402	0241207
003	WATER	MCAWW 300.0A		0238438	0238189
	WATER	MCAWW 300.0A		0241402	0241207
004	WATER	MCAWW 300.0A		0238438	0238189
	WATER	MCAWW 300.0A		0238434	
005	WATER	MCAWW 300.0A		0238438	0238189
	WATER	MCAWW 300.0A		0238434	0238184
006	WATER	MCAWW 300.0A		0241409	0241209
	WATER	MCAWW 300.0A		0241402	0241207

METHOD BLANK REPORT

General Chemistry

Client Lot #...: G0H230166

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Nitrate as N	ND	Work Order #: DJG05101 0.050	mg/L	MB Lot-Sample #: G0H250000-434 MCAWW 300.0A	08/23/00	0238434
Nitrate as N	ND	Work Order #: DJHWP101 0.050	mg/L	MB Lot-Sample #: G0H280000-402 MCAWW 300.0A	08/24/00	0241402
Sulfate	ND	Work Order #: DJG0D101 1.0	mg/L	MB Lot-Sample #: G0H250000-438 MCAWW 300.0A	08/23/00	0238438
Sulfate	ND	Work Order #: DJHXQ101 1.0	mg/L	MB Lot-Sample #: G0H280000-409 MCAWW 300.0A	08/24/00	0241409

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: G0H230166

Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Nitrate as N	1.00	0.930	mg/L	93	MCAWW 300.0A	08/23/00	0238434
Nitrate as N	1.00	0.956	mg/L	96	MCAWW 300.0A	08/24/00	0241402
Sulfate	20.0	19.8	mg/L	99	MCAWW 300.0A	08/23/00	0238438
Sulfate	20.0	19.7	mg/L	99	MCAWW 300.0A	08/24/00	0241409

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: G0H230166

Matrix.....: WATER

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Nitrate as N	93	Work Order #: DJG05102 (90 - 110)	LCS Lot-Sample#: G0H250000-434 MCAWW 300.0A	08/23/00	0238434
Nitrate as N	96	Work Order #: DJHWP102 (90 - 110)	LCS Lot-Sample#: G0H280000-402 MCAWW 300.0A	08/24/00	0241402
Sulfate	99	Work Order #: DJG0D102 (90 - 110)	LCS Lot-Sample#: G0H250000-438 MCAWW 300.0A	08/23/00	0238438
Sulfate	99	Work Order #: DJHXQ102 (90 - 110)	LCS Lot-Sample#: G0H280000-409 MCAWW 300.0A	08/24/00	0241409

NOTE(S) :

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: G0H230166

Matrix.....: WATER

Date Sampled...: 08/09/00

Date Received...: 08/09/00

PARAMETER	SAMPLE SPIKE MEASURED			UNITS	PERCNT			PREPARATION-	PREP
	AMOUNT	AMT	AMOUNT		RECVRY	RPD	METHOD	ANALYSIS DATE	BATCH #
Nitrate as N	WO#: DJDMX11G-MS/DJDMX11H-MSD MS Lot-Sample #: G0H240259-005								
ND	10.0		9.50	mg/L	95		MCAWW 300.0A	08/24/00	0241402
ND	10.0		9.36	mg/L	94	1.4	MCAWW 300.0A	08/24/00	0241402
Nitrate as N	WO#: DJ9RD106-MS/DJ9RD107-MSD MS Lot-Sample #: G0H230166-001								
0.075	20.0		18.0 N	mg/L	89		MCAWW 300.0A	08/23/00	0238434
0.075	20.0		17.5 N	mg/L	87	2.9	MCAWW 300.0A	08/23/00	0238434
Sulfate	WO#: DHLJ410W-MS/DHLJ410X-MSD MS Lot-Sample #: G0H090312-004								
146	300		449	mg/L	101		MCAWW 300.0A	08/24/00	0241409
146	300		450	mg/L	101	0.35	MCAWW 300.0A	08/24/00	0241409
Sulfate	WO#: DJ9RD108-MS/DJ9RD109-MSD MS Lot-Sample #: G0H230166-001								
2.1	300		286	mg/L	95		MCAWW 300.0A	08/23/00	0238438
2.1	300		272	mg/L	90	5.0	MCAWW 300.0A	08/23/00	0238438

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: G0H230166
 Date Sampled...: 08/09/00

Date Received...: 08/09/00

Matrix.....: WATER

PARAMETER	PERCENT RECOVERY		RPD		METHOD	PREPARATION-	PREP
	RECOVERY	LIMITS	RPD	LIMITS		ANALYSIS DATE	BATCH #
Nitrate as N			WO#: DJDMX11G-MS/DJDMX11H-MSD		MS Lot-Sample #:	G0H240259-005	
	95	(90 - 110)			MCAWW 300.0A	08/24/00	0241402
	94	(90 - 110)	1.4	(0-10)	MCAWW 300.0A	08/24/00	0241402
Nitrate as N			WO#: DJ9RD106-MS/DJ9RD107-MSD		MS Lot-Sample #:	G0H230166-001	
	89 N	(90 - 110)			MCAWW 300.0A	08/23/00	0238434
	87 N	(90 - 110)	2.9	(0-10)	MCAWW 300.0A	08/23/00	0238434
Sulfate			WO#: DHLJ410W-MS/DHLJ410X-MSD		MS Lot-Sample #:	G0H090312-004	
	101	(90 - 110)			MCAWW 300.0A	08/24/00	0241409
	101	(90 - 110)	0.35	(0-10)	MCAWW 300.0A	08/24/00	0241409
Sulfate			WO#: DJ9RD108-MS/DJ9RD109-MSD		MS Lot-Sample #:	G0H230166-001	
	95	(90 - 110)			MCAWW 300.0A	08/23/00	0238438
	90	(90 - 110)	5.0	(0-10)	MCAWW 300.0A	08/23/00	0238438

NOTE(S) :

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

N Spiked analyte recovery is outside stated control limits.

APPENDIX B
SAMPLING EVENT DATA SHEETS

DEPTH TO WATER

DATE: 8-22-00

PROJECT AG Transil Seminary

EVENT Quarterly

TECHNICIAN BH/GP

NO.	WELL OR LOCATION	DATE	TIME	MEASUREMENT	CODE	COMMENTS
1	MW-1	<u>8-22-00</u>	<u>757</u>	<u>4.79</u>		
2	MW-2	↓	<u>822</u>	<u>4.22</u>	<u>OIL</u>	<u>4.45 OWI</u>
3	MW-3		<u>809</u>	<u>3.45</u>		
4	MW-9		<u>802</u>	<u>5.18</u>		
5	MW-10		<u>807</u>	<u>4.35</u>		
6	MW-11		<u>812</u>	<u>3.01</u>		
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

CODES: SWL - Static Water Level
 OIL - Oil Level
 OWI - Oil/Water Interface
 MTD - Measured Total Depth

Project Name: ACTRANSIT Seminary Project Number: 792588
 Casing Diameter (in): 2" Sample Date: 8-22-00
 Total Well Depth (ft): 13.5 Sample ID: MW-11
 Depth to Water (ft), before purging: 3.01

Development Method: NA

Bailer: Teflon Stainless Steel PVC ABS Plastic
 Pump: Dedicated Submersible Pump Bladder Pump
 Non-Dedicated Submersible Pump

Time	pH	Conduct. (umho/cm)	Temp. (Celsius)	Water Level (to 0.01 ft)	Cum. Vol. (gal)	Pump Rate (GPM)
9:17	6.74	1288	25.6	7.72	1.5	.33
9:23	6.52	1457	26.6	12.24	3.2	↓
					4.9	
					Total Vol purged → 4.0 gal	

Water Volume to be Purged (gal) = $(13.5 - 3.01) = 10.49 \times .165 = 1.73 \times 3 = 5.2$
 (Casing Length in Ft - Depth to Water in Ft) x X x 3

Where X = 1 Well Volume in gal/ft, X = 0.165 for 2 in. wells, X = 0.37 for 3 in. wells, X = 0.65 for 4 in. wells
 NOTE: 3 to 5 Well Casing Volumes required prior to sample collection.

At least 2 well casing volumes were removed prior to sampling.

Sample Collection Method:

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.):

Nitrate / Sulfate
8260

TRIP Blank @ 0800

D.O. 4.64 mg/L

Parameter Collected:

F.E. 0.02

Sample Appearance

ORP 155

OVA Reading (ppm)
 Suspended Solids (describe):

Decontamination Performed:

Centrifugal Pump to Purge

Rinsed / Washed

Sounder / Meters

Comments / Calculations:

Well ran dry after 2 casing volumes
 Sampled after well recovered 80%

Start @ 9:12
 Stop @ 9:24
 Sample @ 2:00

Signature: Brenda Hanson

8-22-00

