



January 23, 2004

RO 2449

Mr. Amir Gholami
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94501

Alameda County
JAN 27 2004
Environmental Health

Subject: Quarterly Groundwater Monitoring
796 66th Avenue
Oakland, CA
AEI Project No. 5526

Dear Mr. Gholami:

Enclosed is the recent Quarterly Groundwater Monitoring Report for the above referenced property. We are currently working with Cruise America to evaluate cost effective solutions to address your request for interim corrective action. A plan of action will be sent to your office in the near future.

Please contact me at (925) 283-6000, extension 104, or at pmcintyre@aeiconsultants.com if you have any questions or would like to discuss this site in more detail.

Sincerely,

Peter McIntyre
Project Manager, Geologist

cc: Mr. Cory Kauffman
Cruise America Inc.
11 West Hampton Avenue
Mesa, AZ 85210

January 23, 2004

Alameda County
JAN 27 2004
Environmental Health

GROUNDWATER MONITORING REPORT
First Quarter, 2004

796 66th Avenue
Oakland, California

Project No. 5526

Prepared For

Mr. Cory Kauffman
Cruise America, Inc.
11 West Hampton Avenue
Mesa, AZ 85210

Prepared By

AEI Consultants
2500 Camino Diablo Blvd, Suite 200
Walnut Creek, CA 94597
(925) 283-6000

AEI



January 23, 2004

Mr. Cory Kauffman
Cruise America, Inc.
11 West Hampton Avenue
Mesa, AZ 85210

**Subject: Quarterly Groundwater Monitoring Report
First Quarter, 2004**
796 66th Avenue
Oakland, California
AEI Project No. 5526

Dear Mr. Kauffman:

AEI Consultants (AEI) has prepared this report on behalf of Cruise America Inc., in order to document the ongoing groundwater quality investigation at the above referenced property (Figure 1: Site Location Map). This investigation was initiated by the property owner in accordance with the requirements of the Alameda County Health Care Services Agency (ACHCSA). The ongoing monitoring has been required to monitoring groundwater quality and movement associated with the release of petroleum hydrocarbons from the former gasoline underground storage tank (UST) on the property. This report presents the findings of the sixth episode of groundwater monitoring and sampling performed during the first quarter 2004 on January 5, 2004.

I Background

The site is currently occupied by Cruise America, an RV rental and repair facility. Currently, two buildings exist on the site, surrounded by paved vehicle storage areas (Figure 2). Cruise America acquired the property from McGuire Huster in August 1988.

In February 1987, three underground storage tanks (USTs) were removed from the property by Applied GeoSystems. The tanks consisted of one (1) 1,000-gallon gasoline UST, one (1) 5,000-gallon gasoline UST, and one (1) 8,000-gallon diesel UST. The former locations of the tanks are shown on Figure 2. Soil sample analyses following removal of the tanks indicated that a release of both gasoline and diesel had occurred at the site.

Records were reviewed at the Oakland Fire Services Agency, Office of Emergency Services, for information regarding the investigation and/or cleanup of the release. No records were available at the Alameda County Health Care Services Agency (ACHCSA) although they had a file number for the USTs, nor were any records available at the Regional Water Quality Control Board (RWQCB).

A total of six groundwater monitoring wells and approximately 14 temporary soil borings had been installed at the site between 1987 and 1988 to investigate impacted groundwater associated with both the diesel and gasoline releases. Groundwater samples reportedly contained concentrations of 60,000 µg/l of total hydrocarbons, and fuel product sheen was observed.

A geotechnical investigation was performed on the property in July 1988 by Kaldveer Associates. According to field observations, significant hydrocarbon odor was detected in seven of the borings advanced; however, chemical analyses were not performed.

In August 1988, Purcell, Rhodes, and Associates excavated soil from the area of the former diesel UST and dispensing system. Excavation sidewall and bottom soil samples, and soil samples from the stockpiled soil reportedly contained concentrations of total petroleum hydrocarbons (TPH) ranging from non-detect to 3,400 mg/kg. The soil was reportedly aerated on the western portion of the property; however, final sampling or the disposition of the soil is not known. In addition, groundwater with free phase fuel present was reportedly removed from the excavation (assumed to be the diesel UST excavation); however, no details were available on the liquid removal.

The monitoring wells mentioned above could not be located in July 2001, and are assumed to have been decommissioned and/or buried under asphalt surfacing. Laboratory reports were incomplete or not included, and site plans were not to scale or incomplete in the reports reviewed by AEI.

In July 2001, AEI performed a Phase II investigation on the site that included advancing six (6) soil borings (labeled SB-1 through SB-6). Although low concentrations of TPH as gasoline (TPH-g) and TPH as diesel (TPH-d) were reported in the groundwater beneath the site, high levels of methyl tertiary butyl ether (MTBE) were detected in boring SB-1.

In September of 2001, AEI advanced five (5) additional soil borings (labeled SB-7 through SB-11) in order to determine the source of the high levels of MTBE found in SB-1. Samples collected from SB-7 and SB-8 did not contain MTBE above laboratory reporting limits. MTBE concentrations varied from 630 µg/L in SB-9 to 13,000 µg/L in SB-10. These data indicated a leak in the 10,000-gallon gasoline UST on the southern portion of the property as the most likely source of the MTBE.

AEI removed the 10,000-gallon gasoline UST in November of 2001. Concentrations of TPH-g in four of the five soil samples ranged from 4.1 mg/kg to 280 mg/kg. Concentrations of MTBE and benzene, toluene, ethyl benzene, and xylenes (BTEX) were also detected in the five soil samples. Elevated concentrations of TPH as gasoline and MTBE were present in the groundwater sample at 44,000 µg/L and 42,000 µg/L, respectively. Elevated concentrations of BTEX were also present in the groundwater sample.

Based on these elevated concentrations of hydrocarbon contamination, the site was referred to the ACHCSA for oversight. Mr. Barney Chan of the ACHCSA requested a workplan to further

define the extent of the hydrocarbon plume. Following workplan approval, on September 6, 2002, six (6) borings (labeled SB-12 through SB-17) were advanced. The data from these soil borings was used to determine the placement of five groundwater-monitoring wells, which were installed on September 19, 2002. Locations of the former tank holds and boring locations are presented on Figure 2.

II Summary of Activities

AEI measured the depth to groundwater in the five wells on January 5, 2004. Prior to sampling, the depth to water from the top of the well casings was measured with an electric water level indicator. The wells were purged with a submersible electric pump, and sampled using disposable plastic bailers. Temperature, pH, specific conductivity, oxidation-reduction potential (ORP) and dissolved oxygen (DO) were measured and the turbidity was visually noted during the purging of the wells. AEI removed at least three well volumes from each well while purging. Once the wells recharged to 90% of their original volume, a water sample was collected. Well locations are shown in Figure 2.

The water samples were collected with clean, unused disposable bailers into 40 ml VOA vials. The vials were capped so neither headspace nor air bubbles were visible within the sample containers. Samples were shipped on ice under proper chain of custody protocol to McCampbell Analytical, Inc. of Pacheco, California (Department of Health Services Certification #1644).

Groundwater samples were submitted for chemical analysis for TPH-g by EPA Method 8015C, benzene, toluene, ethyl benzene, and xylenes (BTEX) by EPA Method 8021B, and MTBE by EPA method 8260B.

III Field Results

No measurable free phase product or sheen were observed during the sampling activities. A moderate hydrocarbon odor was noted, however in wells MW-1, MW-4 and MW-5.

Groundwater elevations for the current monitoring episode ranged from 4.59 to 6.99 feet above mean sea level (amsl). These groundwater elevations of the five wells were an average of 0.24 feet higher than the previous monitoring episode, although it should be noted that the groundwater elevation in MW-3 dropped by nearly 1 foot since the last episode. Based on these measurements, a southeasterly groundwater flow direction was estimated, with a hydraulic gradient of approximately 0.03 ft/ft. These findings are relatively consistent with the previous monitoring events.

Groundwater elevation data are summarized in Table 1. The groundwater elevation contours and the groundwater flow direction are shown in Figure 3. Refer to Appendix A for the Groundwater Monitoring Well Field Sampling Forms, which also water quality measurements collected during well purging.

IV Groundwater Quality

TPH-g was detected above laboratory reporting limits in only two wells, MW-2 (71 µg/l) and MW-3 (63 µg/l). However, it should be noted that the detection limits for TPH-g for samples MW-1 and MW-5 were elevated. Benzene concentrations ranged from 3.0 µg/l (MW-4) to 7.8 µg/l (MW-1), however the detection limit for MW-5 was 10 µg/l. MTBE was detected in all of the wells, ranging from 7.8 µg/l (MW-2) up to 11,000 µg/l (MW-5). Detailed sample analytical results are presented in Table 2 and Figure 4. Laboratory reports are included in Appendix B.

Generally, the shallow groundwater beneath the site is anaerobic, with dissolved oxygen concentrations measured at <1.0 mg/l and ORP measurements consistently negative.

V Conclusions and Recommendations

Sample analytical results for this episode are generally consistent with the previous episode, although MTBE concentrations decreased in MW-1. TPH-g and BTEX were detected at very low concentrations for the first time in MW-2 and MW-3.

As required by the ACHCSA, monitoring of the existing wells will continue, with the next episode tentatively scheduled to occur in April 2004. The request of interim corrective action will be addressed under separate cover.


VI Report Limitation

This report presents a summary of work completed by AEI Consultants. The completed work includes observations and descriptions of site conditions encountered. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide the required information, but it cannot be assumed that they are representative of areas not sampled. All conclusions and/or recommendations are based on these analyses and observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document.

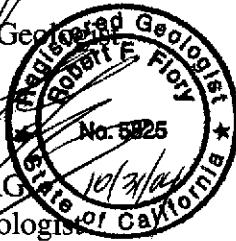
These services were performed in accordance with generally accepted practices, in the environmental engineering and construction field, which existed at the time and location of the work.

If you have any questions regarding our investigation, please do not hesitate to contact us at (925) 283-6000.

Sincerely,
AEI Consultants


Peter McIntyre
Project Manager, Geologist


Robert F. Flory, R.G.
Senior Project Geologist



Figures

- Figure 1: Site Location Map
- Figure 2: Site Plan
- Figure 3: Water Table Elevation Map
- Figure 4: Sample Analytical Data

Tables

- Table 1: Groundwater Elevation Data
- Table 2: Groundwater Sample Analytical Data

Appendix A: Groundwater Monitoring Well Field Sampling Forms

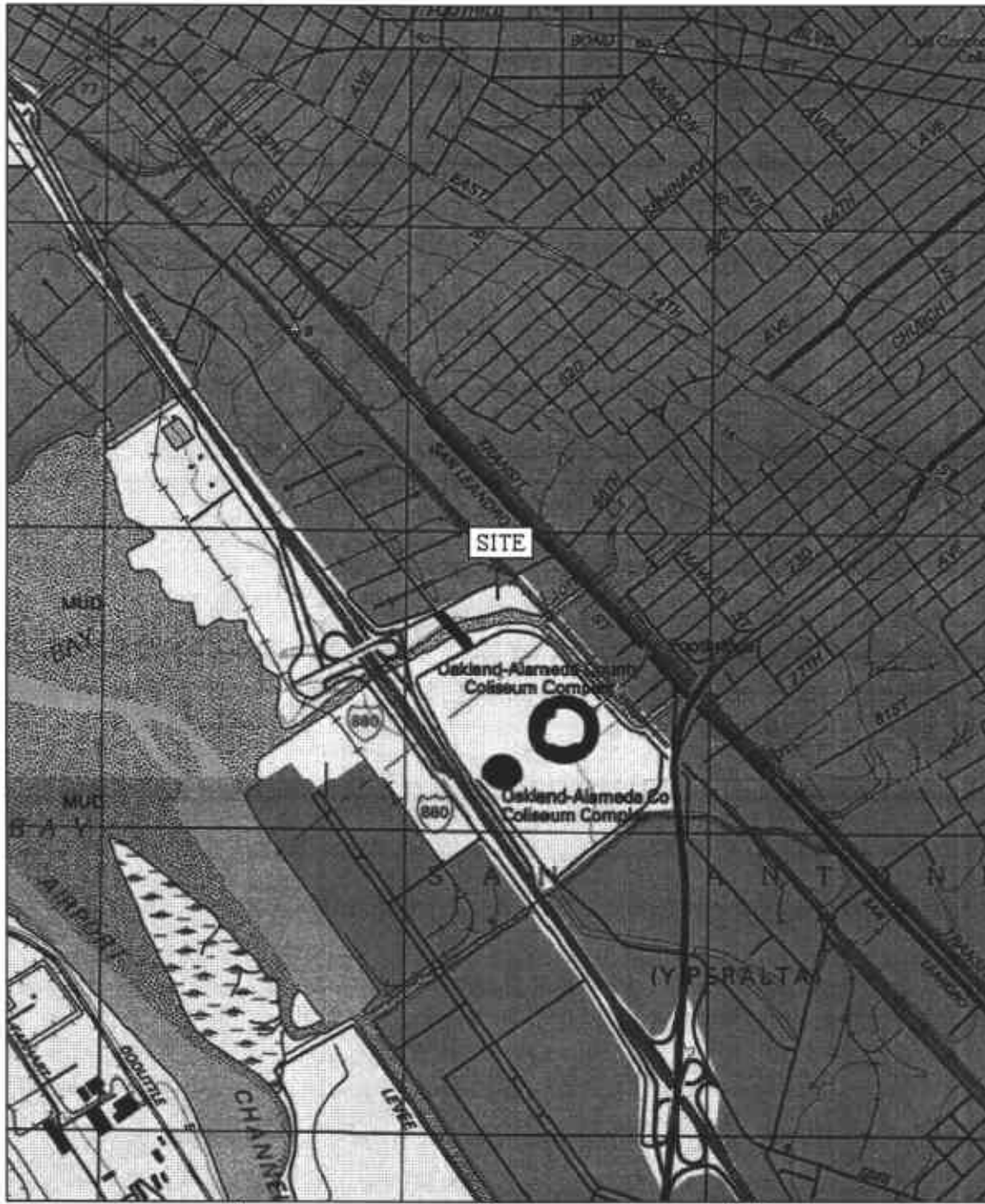
Appendix B: Laboratory Analyses with Chain of Custody Documentation

Distribution:

Mr. Amir Gholami
ACHCSA
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94501

Mr. Cory Kauffman
Cruise America, Inc.
11 West Hampton Avenue
Mesa, AZ 85210

San Leandro 7.5' 37°45.309' N, 122°12.182' W WGS84



TN * MN
15°

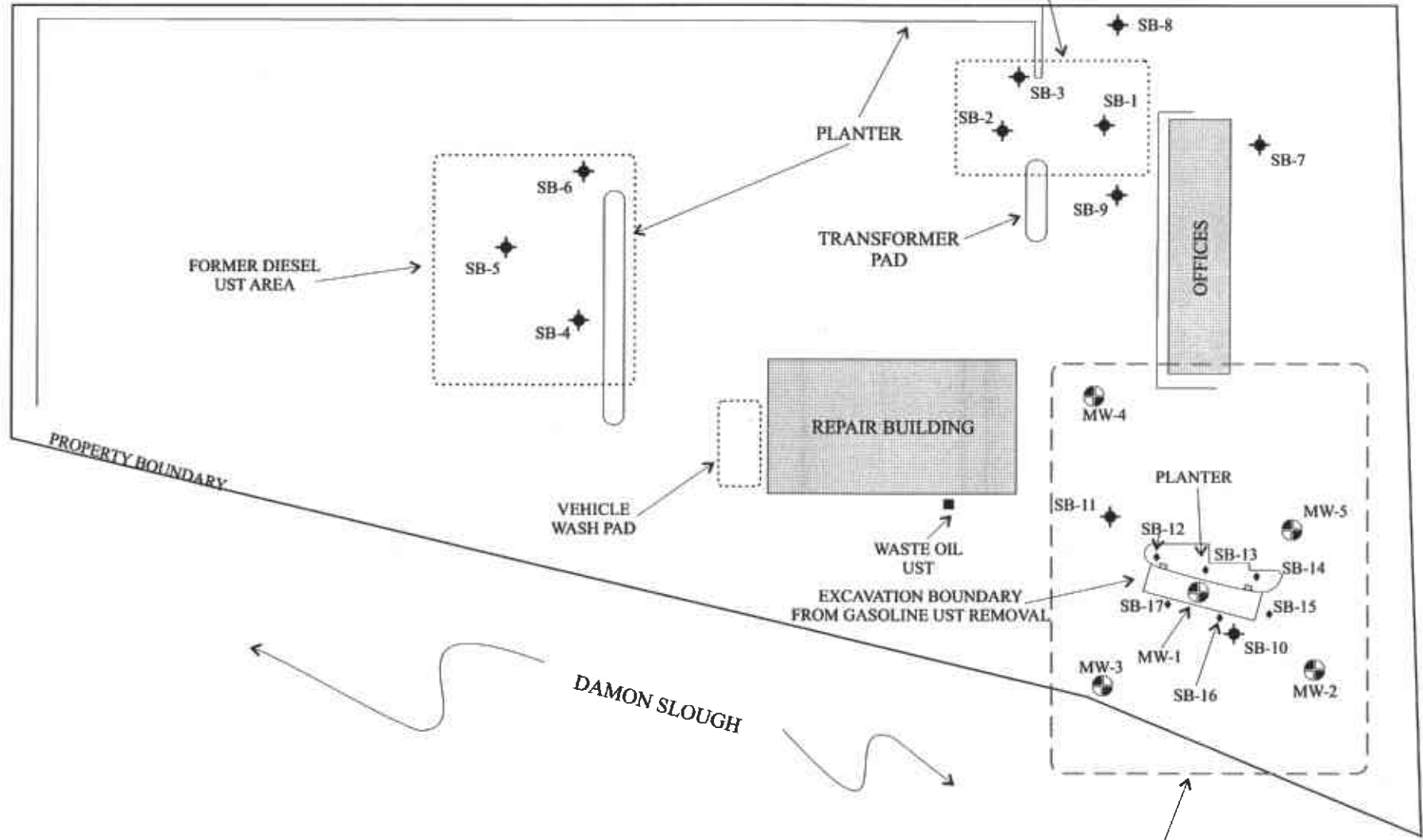


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AEI CONSULTANTS	
SITE LOCATION MAP	
796 66 th AVENUE OAKLAND, CALIFORNIA	FIGURE 1 PROJECT NO. 5526

66TH AVENUE

FORMER GASOLINE UST AREA



INSET AREA FOR FIGURES 2 & 3

AEI Consultants
 2500 CAMINO DIABLO BLVD, STE 200, WALNUT CREEK, CA

SITE PLAN

796 66th AVENUE
 OAKLAND, CALIFORNIA

FIGURE 2
 AEI PROJECT NO 5526

- SB-X ◆ LOCATION OF BORINGS ADVANCED 7-9/2001
- MW-1 ● LOCATION OF MONITORING WELLS INSTALLED 9/2002
- SB-X ◆ LOCATION OF BORINGS ADVANCED 9/2002

0' 25' 50' 75'



RENTAL OFFICE

GROUNDWATER FLOW DIRECTION
GRADIENT +/- 0.03 ft/ft
1/5/04

MW-4
(6.75)

MW-5
(6.99)

PLANTER

MW-1
(6.81)

EXCAVATION
BOUNDARY

MW-3
(5.17)

MW-2
(4.59)

FENCE

LEGEND

● MONITORING WELL LOCATION

Water level elevation data as of 10/1/03 in feet above msl
Contour drawn in Surfer (R) v. 7.0
Contour Interval = 0.25 ft above msl
See Table 1 for details



SCALE: 1" = 20'



AEI Consultants
2500 CAMINO DIABLO, STE 200, WALNUT CREEK, CA

WATER TABLE ELEVATIONS

796 66TH AVENUE
OAKLAND, CALIFORNIA

FIGURE 3
AEI PROJECT NO 5526

RENTAL OFFICE

GROUNDWATER FLOW DIRECTION
GRADIENT +/- 0.03 ft/ft
1/5/04

MW-4	
TPH-g	<50
MTBE	1,200
BENZENE	3.0
TOLUENE	6.7
E'BENZENE	1.4
XYLENES	6.1

MW-5	
TPH-g	<1,000
MTBE	11,000
BENZENE	<10
TOLUENE	<10
E'BENZENE	<10
XYLENES	<10

EXCAVATION
BOUNDARY

PLANTER

MW-1	
TPH-g	<300
MTBE	8,700
BENZENE	7.8
TOLUENE	2.9
E'BENZENE	<3.0
XYLENES	<3.0

MW-3	
TPH-g	63
MTBE	7.9
BENZENE	4.4
TOLUENE	11
ETHYL	2.2
XYLENES	9.9

MW-2	
TPH-g	71
MTBE	7.8
BENZENE	4.7
TOLUENE	13
E'BENZENE	2.7
XYLENES	12

FENCE

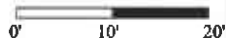
LEGEND

● MONITORING WELL LOCATION

Analytical data from 1/5/04 event
with results in µg/L



SCALE: 1" = 20'



AEI Consultants

2500 CAMINO DIABLO, STE 200, WALNUT CREEK, CA

GROUNDWATER SAMPLE ANALYTICAL DATA

796 66TH AVENUE
OAKLAND, CALIFORNIA

FIGURE 4
AEI PROJECT NO 5526

**Table 1
Groundwater Elevation Data**

Well ID (screen interval in ft bgs)	Date Collected	Well Elevation ft (amsl)	Depth to Water ft (TOC)	Water Table Elevation ft (amsl)
MW-1 (4-14)	9/30/2002	10.88	5.41	5.47
	1/2/2003	10.88	4.77	6.11
	3/31/2003	10.88	4.95	5.93
	6/30/2003	10.88	4.54	6.34
	10/1/2003	10.88	4.66	6.22
	1/5/2004	10.88	4.07	6.81
MW-2 (4-14)	9/30/2002	10.77	8.00	2.77
	1/2/2003	10.77	5.91	4.86
	3/31/2003	10.77	5.15	5.62
	6/30/2003	10.77	5.91	4.86
	10/1/2003	10.77	6.69	4.08
	1/5/2004	10.77	6.18	4.59
MW-3 (4-14)	9/30/2002	10.20	5.21	4.99
	1/2/2003	10.20	5.31	4.89
	3/31/2003	10.20	4.58	5.62
	6/30/2003	10.20	3.83	6.37
	10/1/2003	10.20	4.02	6.18
	1/5/2004	10.20	5.03	5.17
MW-4 (4-14)	9/30/2002	11.07	5.50	5.57
	1/2/2003	11.07	4.90	6.17
	3/31/2003	11.07	4.81	6.26
	6/30/2003	11.07	4.61	6.46
	10/1/2003	11.07	4.76	6.31
	1/5/2004	11.07	4.32	6.75
MW-5 (4-14)	9/30/2002	11.18	5.62	5.56
	1/2/2003	11.18	5.12	6.06
	3/31/2003	11.18	4.93	6.25
	6/30/2003	11.18	4.75	6.43
	10/1/2003	11.18	4.88	6.30
	1/5/2004	11.18	4.19	6.99

Episode	Date	Average Water Table Elevation	Change From Previous	Gradient (direction)
1	9/30/2002	4.87	-	0.005 (S)
2	1/2/2003	5.62	0.75	0.022 (SSE)
3	3/31/2003	6.12	0.50	0.006 (SSE)
4	6/30/2003	6.09	-0.03	0.020 (SE)
5	10/1/2003	5.82	-0.27	0.029-0.001 (SE)
6	1/5/2004	6.06	0.24	0.03 (SE)

All well elevations and depths to water are measured from the top of the casing (TOC)

ft (amsl) = feet above mean sea level

Average Water Table calculated in Excel

**Table 2:
Groundwater Sample Analytical Data**

Sample ID	Date	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	
		µg/L (8015Cm)	µg/L	µg/L (EPA method 8021B)	µg/L	µg/L	µg/L (8021B)	µg/L (8260B)
MW-1	9/30/2002	1,800	50	15	16	18	19,000	13,000
	1/2/2003	660	24	6.4	<2.5	<2.5	7,800	8,900
	3/31/2003	660	11	6.4	<5.0	<5.0	16,000	20,000
	6/30/2003	830	<5.0	6.8	<5.0	<5.0	16,000	17,000
	10/1/2003	720	<5.0	<5.0	<5.0	<5.0	14,000	13,000
	1/5/2004	<300	7.8	2.9	<3.0	<3.0	-	8,700
MW-2	9/30/2002	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.84
	1/2/2003	<50	<0.5	<0.5	<0.5	<0.5	19	20
	3/31/2003	<50	<0.5	<0.5	<0.5	<0.5	<5.0	3.9
	6/30/2003	<50	<0.5	<0.5	<0.5	<0.5	7.0	9.6
	10/1/2003	<50	<0.5	<0.5	<0.5	<0.5	7.7	6.7
	1/5/2004	71	4.7	13	2.7	12	-	7.8
MW-3	9/30/2002	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	1/2/2003	<50	0.89	0.50	<0.5	0.72	15	14
	3/31/2003	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.62
	6/30/2003	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.6
	10/1/2003	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	1/5/2004	63	4.4	11	2.2	9.9	-	7.9
MW-4	9/30/2002	<100	<0.5	<0.5	<0.5	<0.5	790	<10
	1/2/2003	<50	<0.5	<0.5	<0.5	<0.5	420	460
	3/31/2003	<50	<0.5	<0.5	<0.5	<0.5	1,500	1,400
	6/30/2003	<50	<0.5	<0.5	<0.5	<0.5	1,600	1,200
	10/1/2003	<50	<0.5	<0.5	<0.5	<0.5	1,800	1,400
	1/5/2004	<50	3.0	6.7	1.4	6.1	-	1,200
MW-5	9/30/2002	<2,000	<5.0	<5.0	<5.0	<5.0	19,000	<250
	1/2/2003	<50	<0.5	<0.5	<0.5	<0.5	7,000	7,000
	3/31/2003	<500	<5.0	<5.0	<5.0	<5.0	14,000	12,000
	6/30/2003	<500	<5.0	<5.0	<5.0	<5.0	13,000	15,000
	10/1/2003	<500	<5.0	<5.0	<5.0	<5.0	12,000	11,000
	1/5/2004	<1000	<10	<10	<10	<10	-	11,000

ND = Not detected above the Method Detection Limit (unless otherwise noted)

µg/L = micrograms per liter (ppb)

mg/L = milligrams per liter (ppm)

- = Sample not analyzed by this method

Please refer to Appendix B: Sample Analytical Documentation for detailed lab data including reporting limits and dilution factors

APPENDIX A

WELL FIELD SAMPLING FORMS

AEI CONSULTANTS
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-1

Project Name:	Cruise America	Date of Sampling:	1/5/2004
Job Number:	5526	Name of Sampler:	A Nieto
Project Address:	796 66th Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	10.88		
Depth of Well	14.00		
Depth to Water (from top of casing)	4.07		
Water Elevation (feet above msl)	6.81		
Well Volumes Purged	3		
Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	19.4		
Actual Volume Purged (gallons)	21.0		
Appearance of Purge Water	Clears quickly		
Free Product Present?	N	Thickness (ft):	na

GROUNDWATER SAMPLES

Number of Samples/Container Size				4 40-ml VOA vials			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
	3	20.36	7.03	3363	0.73	-197.3	
	6	20.10	7.06	3209	0.40	-213.9	
	9	20.09	7.05	3112	0.24	-223.8	
	12	20.12	7.06	3122	0.25	-229.1	
	15	20.14	7.04	3155	0.19	-236.2	
	18	20.16	7.03	3169	0.18	-226.8	
	21	20.17	7.03	3185	0.18	-237.8	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

Initially grey, clears quickly - slight hydrocarbon (HC) odor
No sheen

AEI CONSULTANTS
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-2

Project Name:	Cruise America	Date of Sampling:	1/5/2004
Job Number:	5526	Name of Sampler:	A Nieto
Project Address:	796 66th Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	OK		▼
Elevation of Top of Casing (feet above msl)	10.77		
Depth of Well	14.00		
Depth to Water (from top of casing)	6.18		
Water Elevation (feet above msl)	4.59		
Well Volumes Purged	3		
Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	3.8		
Actual Volume Purged (gallons)	4.0		
Appearance of Purge Water	Light yellow, clears		
Free Product Present?	No	Thickness (ft):	na

GROUNDWATER SAMPLES

Number of Samples/Container Size				4 40-ml VOA vials			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μS/cm)	DO (mg/L)	ORP (meV)	Comments
	2	18.56	6.95	11417	1.30	-194.5	
	4	20.66	7.07	18218	0.36	-226.4	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

Clears by 1/2 gallon

AEI CONSULTANTS
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-3

Project Name:	Cruise America	Date of Sampling:	1/5/2004
Job Number:	5526	Name of Sampler:	A Nieto
Project Address:	796 66th Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	10.20		
Depth of Well	14.00		
Depth to Water (from top of casing)	5.03		
Water Elevation (feet above msl)	5.17		
Well Volumes Purged	3		
Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	4.3		
Actual Volume Purged (gallons)	6.0		
Appearance of Purge Water	Yellowish		
Free Product Present?	No	Thickness (ft):	na

GROUNDWATER SAMPLES

Number of Samples/Container Size				4 40-ml VOA vials			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
	2	19.15	6.78	13876	0.57	-203.9	
	4	20.11	6.77	14353	0.24	-216.8	
	6	20.44	6.85	15934	0.20	-216.9	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

AEI CONSULTANTS
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-4

Project Name:	Cruise America	Date of Sampling: 1/5/2004
Job Number:	5526	Name of Sampler: A Nieto
Project Address:	796 66th Avenue, Oakland	

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	11.07		
Depth of Well	14.00		
Depth to Water (from top of casing)	4.32		
Water Elevation (feet above msl)	6.75		
Well Volumes Purged	3		
Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	4.6		
Actual Volume Purged (gallons)	6.0		
Appearance of Purge Water	Clears		
Free Product Present?	No	Thickness (ft):	na

GROUNDWATER SAMPLES

Number of Samples/Container Size				4 40-ml VOA vials			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μS/cm)	DO (mg/L)	ORP (meV)	Comments
	2	18.70	7.85	1606	0.22	-236.9	
	4	18.57	8.07	1548	0.13	-261.1	
	6	18.53	8.19	1537	0.12	-272.2	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

Initially dark grey, clears by 2 gallons, moderate hydrocarbon odors

AEI CONSULTANTS
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-5

Project Name:	Cruise America	Date of Sampling:	1/5/2004
Job Number:	5526	Name of Sampler:	A Nieto
Project Address:	796 66th Avenue, Oakland		

MONITORING WELL DATA			
Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	11.18		
Depth of Well	14.00		
Depth to Water (from top of casing)	4.19		
Water Elevation (feet above msl)	6.99		
Well Volumes Purged	3		
Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	4.7		
Actual Volume Purged (gallons)	6.0		
Appearance of Purge Water	Clears		
Free Product Present?	No	Thickness (ft):	na

GROUNDWATER SAMPLES							
Number of Samples/Container Size				4 40-ml VOA vials			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
	2	18.79	7.20	3856	0.42	-226.9	
	4	18.57	7.12	3637	0.25	-233.1	
	6	18.58	7.12	3534	0.21	-236.1	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

Dark grey initially, clears by 2 gallons - moderate HC odor

APPENDIX B

**LABORATORY ANALYTICAL AND
CHAIN OF CUSTODY DOCUMENTATION**



McC Campbell Analytical Inc.

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

All Environmental, Inc. 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #5526; Cruise America	Date Sampled: 01/05/04
		Date Received: 01/05/04
	Client Contact: Peter McIntyre	Date Reported: 01/12/04
	Client P.O.:	Date Completed: 01/12/04

WorkOrder: 0401023

January 12, 2004

Dear Peter:

Enclosed are:

- 1). the results of 5 analyzed samples from your #5526; Cruise America project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

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

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

Yours truly,

Angela Rydelius, Lab Mangager



McC Campbell Analytical Inc.

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

All Environmental, Inc. 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #5526; Cruise America	Date Sampled: 01/05/04
		Date Received: 01/05/04
	Client Contact: Peter McIntyre	Date Extracted: 01/08/04-01/09/04
	Client P.O.:	Date Analyzed: 01/08/04-01/09/04

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0401023

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	ND<300,j	---	7.8	2.9	ND<3.0	ND<3.0	5	112
002A	MW-2	W	71,a	---	4.7	13	2.7	12	1	106
003A	MW-3	W	63,a	---	4.4	11	2.2	9.9	1	103
004A	MW-4	W	ND	---	3.0	6.7	1.4	6.1	1	109
005A	MW-5	W	ND<1000,j	---	ND<10	ND<10	ND<10	ND<10	20	115

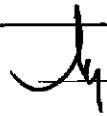
Reporting Limit for DF=1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	NA	1	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

 Angela Rydelius, Lab Manager



McC Campbell Analytical Inc.

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<http://www.mcccampbell.com> E-mail: main@mcccampbell.com

All Environmental, Inc. 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #5526; Cruise America	Date Sampled: 01/05/04
		Date Received: 01/05/04
	Client Contact: Peter McIntyre	Date Extracted: 01/07/04
	Client P.O.:	Date Analyzed: 01/07/04

Methyl tert-Butyl Ether*

Extraction method: SW5030B

Analytical methods: SW8260B

Work Order: 0401023

Lab ID	Client ID	Matrix	Methyl-t-butyl ether (MTBE)	DF	% SS
001B	MW-1	W	8700	250	97.0
002B	MW-2	W	7.8	1	95.2
003B	MW-3	W	7.9	1	94.5
004B	MW-4	W	1200	50	95.4
005B	MW-5	W	11,000	500	94.5


Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	0.5	µg/L
	S	NA	NA

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

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

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

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

 Angela Rydelius, Lab Manager



QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0401023

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 9905			Spiked Sample ID: 0401029-001A			
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex) [£]	ND	60	91.8	92.2	0.508	87.5	88	0.532	70	130
MTBE	ND	10	93.8	95.3	1.63	107	108	0.799	70	130
Benzene	ND	10	102	106	4.15	105	104	0.912	70	130
Toluene	ND	10	105	107	2.62	108	108	0	70	130
Ethylbenzene	ND	10	105	105	0	109	109	0	70	130
Xylenes	ND	30	107	107	0	110	110	0	70	130
%SS:	110	100	108	107	0.756	110	109	0.479	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

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



McC Campbell Analytical Inc.

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 Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8260B

Matrix: W

WorkOrder: 0401023

EPA Method: SW8260B		Extraction: SW5030B		BatchID: 9900		Spiked Sample ID: 0401018-003B				
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Methyl-t-butyl ether (MTBE)	0.69	10	119	119	0	100	99.7	0.533	70	130
%SSI:	102	100	103	104	0.392	99.4	96.4	3.01	70	130

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

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

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

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

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

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

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

McC Campbell Analytical Inc.



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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0401023

Report to:

Peter Hoverson
 All Environmental, Inc.
 2500 Camino Diablo, Ste. #200
 Walnut Creek, CA 94597

TEL: (925) 283-6000
 FAX: (925) 283-6121
 ProjectNo: #5526; Cruise America
 PO:

Bill to:

Lesleigh Alderman
 All Environmental, Inc.
 2500 Camino Diablo, Ste. #200
 Walnut Creek, CA 94597

Requested TAT: 5 days

Date Received: 1/5/04

Date Printed: 1/5/04

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
0401023-001	MW-1	Water	1/5/04	<input type="checkbox"/>	A	B	A													
0401023-002	MW-2	Water	1/5/04	<input type="checkbox"/>	A	B														
0401023-003	MW-3	Water	1/5/04	<input type="checkbox"/>	A	B														
0401023-004	MW-4	Water	1/5/04	<input type="checkbox"/>	A	B														
0401023-005	MW-5	Water	1/5/04	<input type="checkbox"/>	A	B														

Test Legend:

1	G-MBTX_W	2	MTBE_W	3	PREDF REPORT	4		5	
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Melissa Valles

Comments:

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

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560

Telephone: (925) 798-1620

Fax: (925) 798-1622

0401023

CHAIN OF CUSTODY RECORD

TURN AROUND TIME

RUSH 24 HR 48 HR 72 HR 5 DAY

EDF Required? Yes No

Report To: Peter McIntyre Bill To:
Company: AEI Consultants
2500 Camino Diablo, Suite 200
Walnut Creek, CA 94597 E-Mail:
Tele: (925) 944-2899 Fax: (925) 944-2895
Project #: 5526 Project Name: Cruise America
Project Location: 796 66th Ave Oakland
Sampler Signature: Adrian Nieto

Analysis Request Other Comments

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED						
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO ₃	Other			
+ MW-1		1/5/04	Pm	4	Vials	X						X	X				
+ MW-2						X						X	X				
+ MW-3						X						X	X				
+ MW-4						X						X	X				
+ MW-5						X						X	X				

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

5260 B (VMTBE only)

Relinquished By: Adrian Nieto Date: 01/05 Time: 4:15pm Received By: [Signature]
Relinquished By: Date: Time: Received By:
Relinquished By: Date: Time: Received By:

ICE# PRESERVATION VOAS O&G METALS OTHER
GOOD CONDITION APPROPRIATE CONTAINERS
HEAD SPACE ABSENT PRESERVED IN LAB
DECHLORINATED IN LAB