CAMBRIA

March 19, 2001

Ms. Eva Chu
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Re: **Underground Storage Tank, Piping Removal, And Well Abandonment Report**
ARCO Service Station No. 6113
785 East Stanley Boulevard
Livermore, California
Cambria Project #436-1656

APR 02 2001

Dear Ms. Chu:

On behalf of ARCO, Cambria Environmental Technology, Inc. (Cambria) has prepared the attached report for the above referenced site. This report details the removal of three USTs and associated piping and the abandonment of two onsite monitoring wells. The UST, piping, and dispenser compliance sampling was performed in accordance with the State of California Regional Water Quality Control Board guideline.

Please call me if you have questions.

Sincerely,
Cambria Environmental Technology, Inc.

Ron Scheele, RG
Senior Project Manager

Attachment: Underground Storage Tank, Piping Removal, And Well Abandonment Report

cc: Mr. Paul Supple, ARCO, PO Box 6549, Moraga, CA 94570.
Ms. Danielle Stefani, City of Livermore Fire Department, 4550 East Ave, Livermore, CA 94550
Mr. Wyman Hong, Alameda County Flood Control and Water Conservation District, Zone 7, 5997 Parkside Drive, Pleasanton, California 94588-5127

Oakland, CA
San Ramon, CA
Sonoma, CA
Portland, OR

Cambria Environmental Technology, Inc.

1144 65th Street
Suite B
Oakland, CA 94608
Tel (510) 420-0700
Fax (510) 420-9170

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Underground Storage Tank, Piping Removal, And Well Abandonment Report

Arco Service Station 6113
785 East Stanley Boulevard
Livermore, California
Cambria Project #436-1656

Prepared For:

Mr. Paul Supple
ARCO

March 19, 2001

Prepared By:

Cambria Environmental Technology, Inc.
6262 Hollis Street
Emeryville, California 94608

REGISTERED GEOLOGIST • RONALD A. SCHEELE • No. 6842 • STATE OF CALIFORNIA

Written by:

Jason D. Olson
Senior Staff Environmental Scientist

Ron Scheele, RG
Senior Project Manager

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Underground Storage Tank, Piping Removal, And Well Abandonment Report

Arco Service Station 6113
785 East Stanley Boulevard
Livermore, California
Cambria Project #436-1656

March 19, 2001

INTRODUCTION

On behalf of ARCO, Cambria Environmental Technology, Inc. (Cambria) has prepared this Underground Storage Tank (UST), Piping Removal, and Well Abandonment Report for the above referenced site. Cambria supervised the abandonment of two onsite monitoring wells by V&W Drilling, Inc. (V&W) and the removal of three USTs and associated piping by SJ Weaver Contracting (SJ Weaver). The site background, well abandonment activities, tank removal activities, over-excavation activities, compliance soil sampling activities, analytical soil results, and waste disposal are presented below. UST, piping, and dispenser compliance sampling was performed in accordance with the State of California Regional Water Quality Control Board's *Tri-Regional Board Staff Recommendations for Preliminary Investigation and Evaluation of Underground Tank Sites* dated August 10, 1990 and under the oversight of the Livermore-Pleasanton Fire Department (LPFD).

SITE BACKGROUND

Site Description: The site is located at 785 East Stanley Boulevard on the southwestern corner of the intersection of East Stanley and Murrieta Boulevards in Livermore, California (see Figure 1). The site is occupied by an active ARCO service station consisting of three gasoline USTs, three gasoline dispenser islands, and a station building (see Figure 2).

Site Hydrogeology: The topography surrounding the site generally slopes towards the northwest at an elevation of about 450 feet above mean sea level. Based on previous investigations, the lithology beneath the site consists primarily of sandy gravel and clayey gravel with interbedded sandy silt and silty clay. Depth to groundwater ranges from 12 to 27 feet below grade (fbg). Based on Cambria's *Fourth Quarter 2000 Monitoring Report*, groundwater flow at the site is towards the north-northwest.

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WELL ABANDONMENT ACTIVITIES

On December 1, 2000, wells VW-3 and MW-5 were abandoned by V&W Drilling of Isleton, California, due to their proximity to the UST complex and dispenser islands (see Figure 2). Using eight-inch-diameter hollow stem augers, well VW-3 was drilled out to a total depth of 25 fbg and well MW-5 was drilled out to a total depth of 65 fbg. Both wells were backfilled with Portland I/II cement to the top of the well-vault boxes. Cambria's standard well abandonment procedures are presented as Appendix A. Copies of the drilling permits and Department of Water Resources (DWR) well completion forms are presented as Appendix B.

TANK AND PIPING REMOVAL ACTIVITIES

On January 3, 2001, two 12,000-gallon and one 10,000-gallon fiberglass USTs were removed by SJ Weaver of Signal Hill, California (see figure 3). Ms. Danielle Stefani, Hazardous Materials Coordinator with the LPFD observed the UST removal activities. No leaks were identified in the USTs during removal activities. No groundwater was observed in the tank cavity during UST removal activities. The three USTs was replaced with two new fiberglass USTs and installed in the existing tank cavity. The dispenser piping was also replaced.

OVER-EXCAVATION ACTIVITIES

In order to accommodate the installation of the new USTs (one 20,000 and one 22,000-gallon tanks), the existing tank cavity was over-excavated deeper by two feet. A total of 1,425 tons of soil was removed during the replacement of the USTs and associated piping and disposed by Dillard Environmental Services (Dillard) of Byron, California (See Waste Disposal). The UST and product piping excavation areas are shown in Figure 3.

COMPLIANCE SOIL SAMPLING ACTIVITIES

Sampling Procedures and Handling: All sampling was performed in accordance with Cambria's *Standard UST Excavation Sampling Procedures*, and Cambria's *Standard Piping and Dispenser Removal Sampling Procedures*, presented in Appendixes C and D, respectively. The samples were placed into a cooler with ice and delivered under chain-of-custody procedures to Sequoia Analytical Labs, Inc., of Morgan Hill, California.

UST Removal Compliance Sampling: On January 8, 2001, Cambria collected soil samples beneath the former USTs, under the supervision of Ms. Danielle Stefani, Hazardous Materials Coordinator with the LPFD. Soil samples (EX-1 through EX-6) were collected from each end of the three USTs at approximately 17.5 to 18.5 fbg. Soil sample locations are shown on Figure 3.

Piping and Dispenser Island Compliance Sampling: On December 6, 2000, Cambria performed soil sampling beneath the former dispenser islands and product piping. The sampling was conducted under the supervision of Ms. Julie Wyman, Hazardous Materials Inspector with the LPFD. Soil samples (DP-1 through DP-6) were collected beneath the end of each dispenser island. Soil samples (Pipe-1 through Pipe-4 and Pipe-6 through Pipe-8) were collected beneath the product piping at 20-foot intervals and at locations specified by the inspector. No Pipe-5 sample was collected. All dispenser and product piping soil samples were collected at an approximate depth of 4.5 fbg. Soil sampling locations are shown on Figure 3.

ANALYTICAL SOIL RESULTS

Soil samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) by modified EPA Method 8015, benzene, toluene, xylene, and ethylbenzene (BTEX), and methyl tertiary butyl ether (MTBE) by modified EPA Method 8020, and total lead by EPA Method 6010A. Analytical results are presented in Table 1. Certified laboratory analytical reports are presented in Appendix E.

UST Excavation Analytical Results (EX-1 through EX-6): TPHg concentrations ranged from 1.36 to 3,490 milligrams per kilogram (mg/kg), with the maximum TPHg concentration detected in sample EX-5. A benzene concentration of 2.74 mg/kg was detected in two samples, EX-1 and EX-2. MTBE concentrations ranged from 0.471 to 11.8 mg/kg, with the maximum MTBE concentration detected in sample EX-1. Lead was not detected in any of the UST excavation soil samples.

Piping and Dispenser Island Analytical Results (DP-1 through DP-6, Pipe-1 through Pipe-4, and Pipe-6 through Pipe-8): TPHg concentrations ranged from 1.05 to 6.80 mg/kg, with the maximum TPHg concentration detected in sample DP-4. A single benzene concentration of 0.00918 mg/kg was detected in sample Pipe-6. MTBE concentrations ranged from 0.0268 to 0.133 mg/kg, with the maximum MTBE concentration detected in sample DP-5. Lead concentrations ranged from 10.9 to 22.9 mg/kg, with the maximum concentration detected in sample DP-3.

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WASTE DISPOSAL

Dillard transported approximately 1,425 tons of non-hazardous petroleum impacted soil generated during UST and product piping excavation activities to the Forward Landfill in Manteca, California, for disposal. Under the direction of SJ Weaver, Adams Services, Inc. of Gardena, California, transported the three fiberglass USTs to the Pacheco Pass Landfill in Gilroy, California, for disposal. Soil and UST disposal confirmation letters are presented in Appendix F. Soil stockpile sampling results are presented in a laboratory analytical report in Appendix G.

ATTACHMENTS

Figure 1 – Vicinity Map
Figure 2 – Site Plan
Figure 3 – UST Excavation Areas and Sampling Locations

Table 1 – UST Removal Compliance Sampling Results

Appendix A – Standard Well Abandonment Procedures
Appendix B – Drilling Permits and DWR Well Completion Forms
Appendix C – Standard UST Excavation Sampling Procedures
Appendix D – Standard Dispenser and Product Piping Removal Sampling Procedures
Appendix E – Soil Sampling Analytical Reports
Appendix F – Waste Disposal Confirmation Letters
Appendix G – Soil Stockpile Laboratory Analytical Report

H:\ARCO\6113\Reports\ARCO 6113 Tank Pull Report.doc

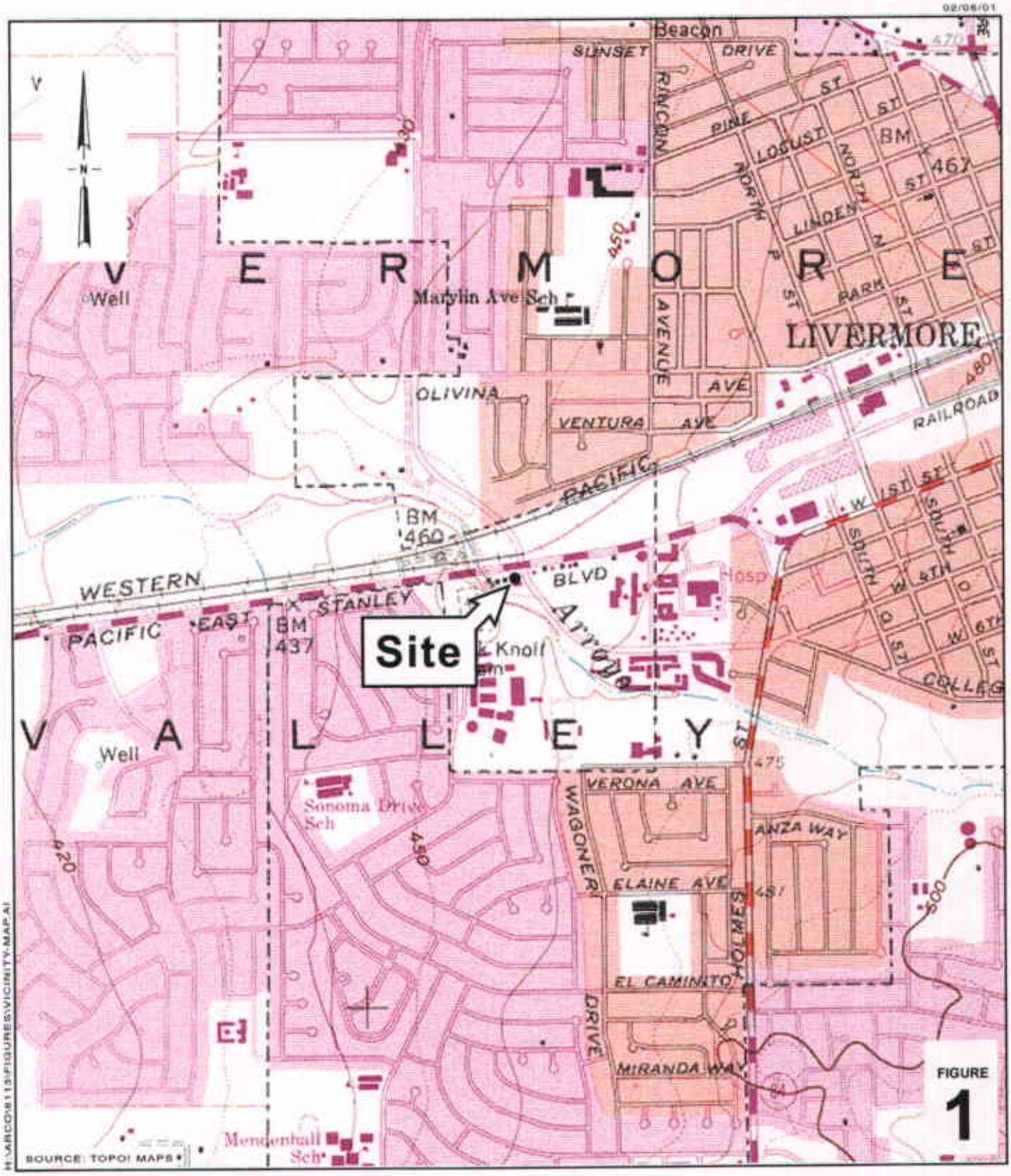

FIGURE 1

0 1/8 1/4 1/2 1

SCALE : 1" = 1/4 MILE

ARCO Service Station 6113

785 East Stanley Boulevard

Livermore, California

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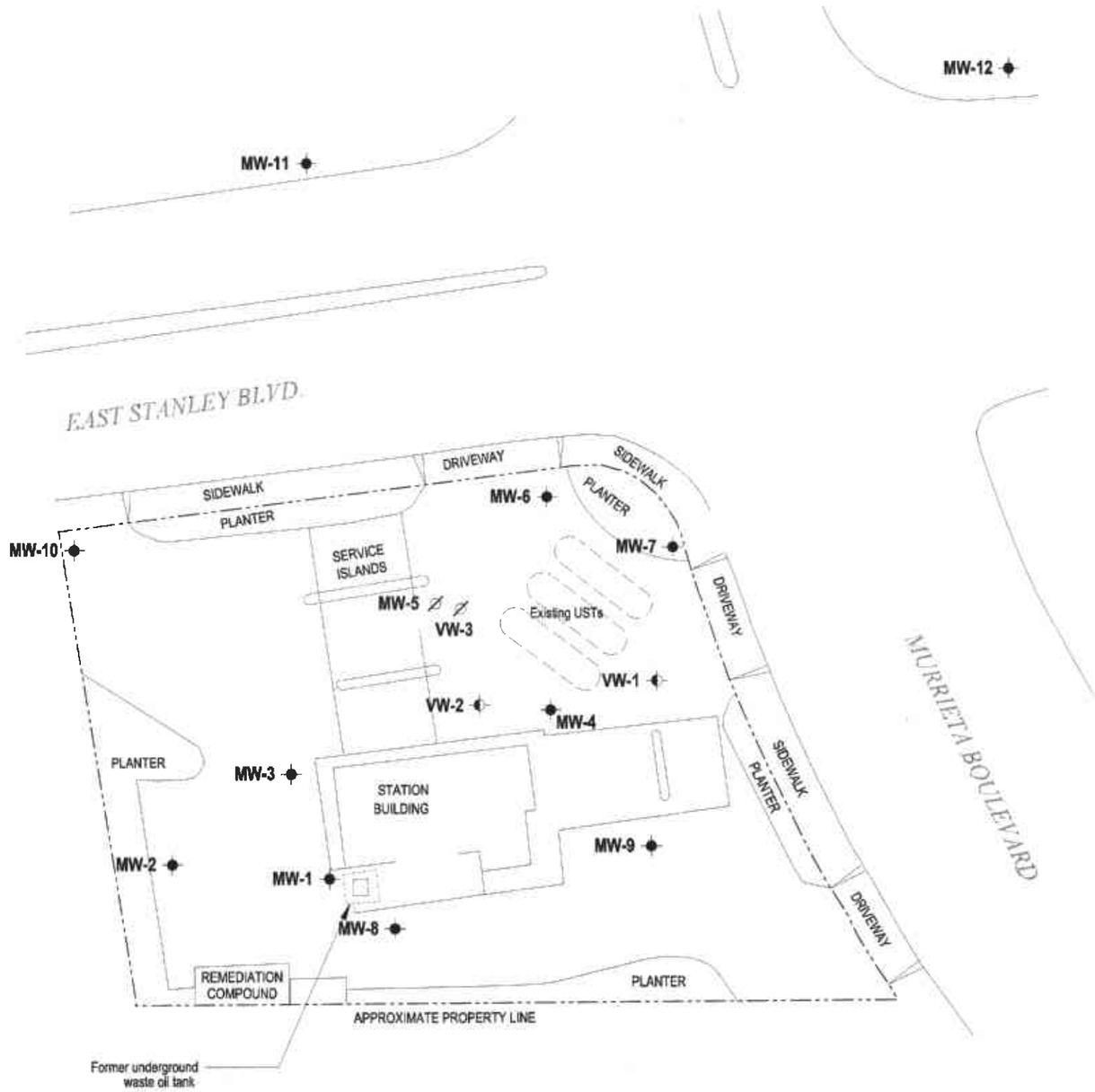
Vicinity Map

Site Plan

EXPLANATION

- MW-1 ⊕ Monitoring Well Location
- VW-1 ⊕ Vapor Extraction Well Location
- MW-5 ⌀ Destroyed Well Location



FIGURE

2

ARCO Service Station 6113
785 East Stanley Boulevard
Livermore, California

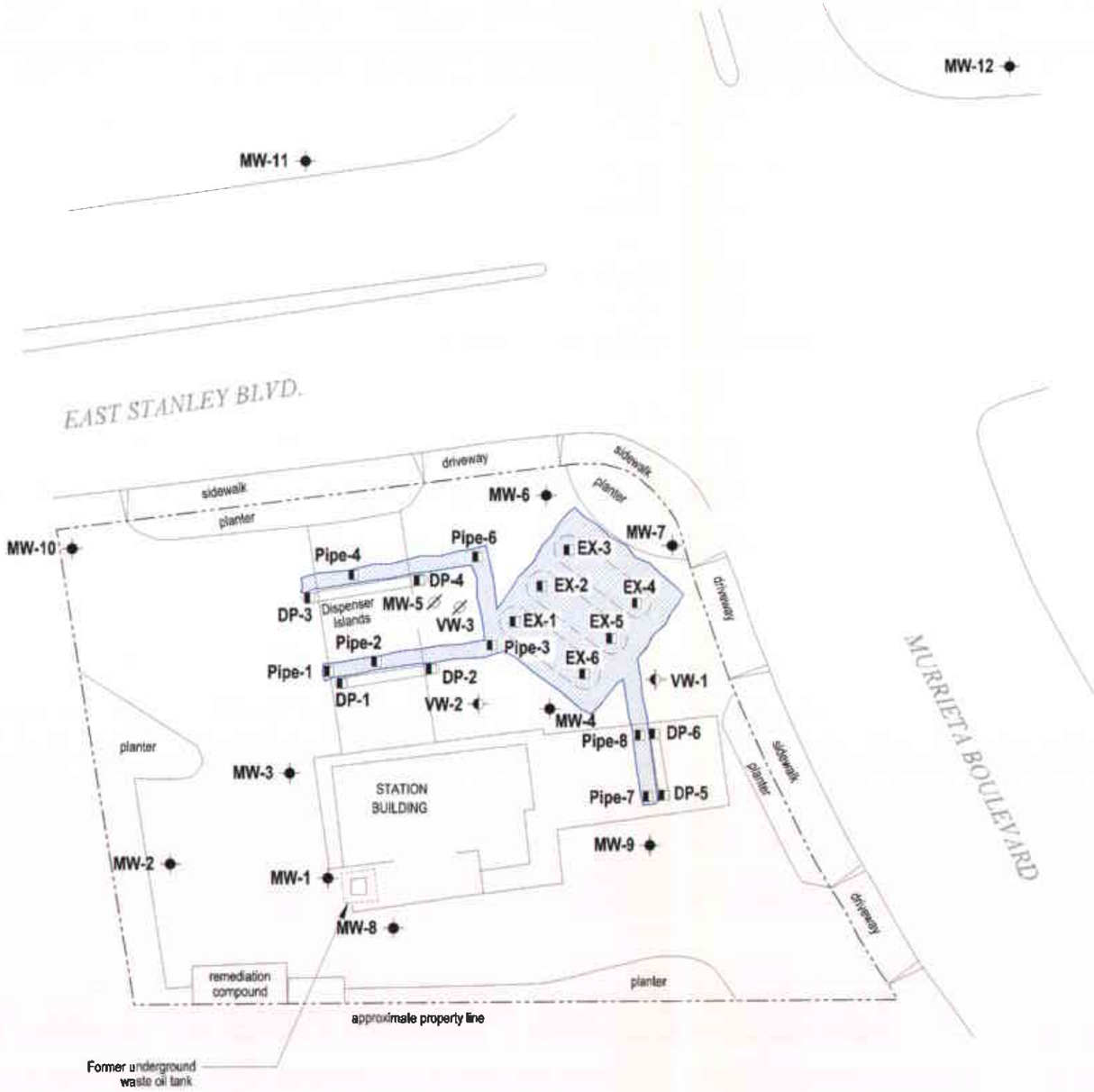
CAMBRIA

H:\ARCO\6113\PI\GIS\RES\SITEPLAN.DWG

0321/01

EXPLANATION

- MW-1 — Monitoring Well Location
- VW-1 — Vapor Extraction Well Location
- MW-5 — Destroyed Well Location
- DP-5 — Soil Sample Location
- Approximate Excavation Limits



H:\ARCO6113\FIGURES\SAMP-LOC.DWG

UST Excavation Areas and Sampling Locations

CAMBRIA

ARCO Service Station 6113
785 East Stanley Boulevard
Livermore, California

FIGURE
3

Table 1
UST Removal Compliance Sampling Results

ARCO Service Station 6113
785 East Stanley Boulevard, Livermore, California

Sample ID	Date Sampled	Depth Sampled (fbg)	TPHg (mg/kg)	Benzene (mg/kg)	Toulene (mg/kg)	Ethyl-benzene (mg/kg)	Xylene (mg/kg)	MTBE (mg/kg)	Lead (mg/kg)
DP-1	12/6/00	4.5	1.57	<0.00500	0.00694	<0.00500	0.0124	<0.0250	<10.4
DP-2	12/6/00	4.5	5.00	<0.00500	0.0102	<0.00500	0.0332	0.0268	<10.1
DP-3	12/6/00	4.5	1.40	<0.00500	0.00710	<0.00500	0.0126	<0.0250	22.9
DP-4	12/6/00	4.5	6.80	<0.00500	0.00568	0.0222	0.0241	<0.0250	<9.71
DP-5	12/6/00	4.5	1.40	<0.00500	0.0173	0.00522	0.0355	0.133	<9.27
DP-6	12/6/00	4.5	1.05	<0.00500	<0.00500	<0.00500	<0.00500	<0.0250	<9.27
Pipe-1	12/6/00	4.5	<1.00	<0.00500	<0.00500	<0.00500	0.00624	<0.0250	10.9
Pipe-2	12/6/00	4.5	<1.00	<0.00500	<0.00500	<0.00500	<0.00500	<0.0250	<9.71
Pipe-3	12/6/00	4.5	<1.00	<0.00500	<0.00500	<0.00500	0.00848	<0.0250	<10.0
Pipe-4	12/6/00	4.5	<1.00	<0.00500	0.00536	<0.00500	0.0102	<0.0250	15.1
Pipe-6	12/6/00	4.5	<1.00	0.00918	0.0326	<0.00500	0.0193	0.0610	<9.90
Pipe-7	12/6/00	4.5	<1.00	<0.00500	<0.00500	<0.00500	<0.00500	<0.0250	<9.90
Pipe-8	12/6/00	4.5	<1.00	<0.00500	<0.00500	<0.00500	<0.00500	<0.0250	<9.27
[redacted]	1/8/01	17.5	3,030	2.74	9.85	33.7	297	11.8	<9.81
EX-2	1/8/01	18.0	2,930	2.74	10.7	37.4	225	<6.25	<9.90

Table 1
UST Removal Compliance Sampling Results

ARCO Service Station 6113
785 East Stanley Boulevard, Livermore, California

Sample ID	Date Sampled	Depth Sampled (fbg)	TPHg (mg/kg)	Benzene (mg/kg)	Toulene (mg/kg)	Ethyl-benzene (mg/kg)	Xylene (mg/kg)	MTBE (mg/kg)	Lead (mg/kg)
EX-3	1/8/01	18.0	**1,480**	<0.500	**8.86**	**8.33**	**16.8**	**5.42**	<10.0
EX-4	1/8/01	18.0	**295**	<0.500	**0.846**	**1.66**	**10.1**	**2.72**	<10.0
EX-5	1/8/01	18.0	**3,490**	<1.25	<1.25	**22.8**	**39.8**	<6.25	<9.62
EX-6	1/8/01	18.5	**1.36**	<0.00500	<0.00500	**0.00906**	**0.0242**	0.471	<9.71

Notes

fbg = feet below grade
mg/kg = milligrams per kilogram

TPHg = total petroluem hydrocarbons as gasoline
TPHd = total petroluem hydrocarbons as diesel
MTBE = methyl tert butyl ether

APPENDIX A

Standard Well Abandonment Procedures

STANDARD FIELD PROCEDURES FOR ABANDONING MONITORING WELLS

This document presents standard field methods for abandoning ground water monitoring wells. The objective of well abandonment is to destroy wells in a manner that is protective of potential water resources. The two procedures most commonly used are pressure grouting and drilling out the well. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Pressure Grouting

Pressure grouting consists of injecting neat Portland cement through a tremie pipe under pressure to the bottom of the well. The cement is composed of about five gallons of water to a 94 lb. sack of Portland I/II Cement. Once the well casing is full of grout, it remains pressurized by applying pressure with a grout pump. The well casing can also be pressurized by extending the well casing to the appropriate height and filling it with grout. In either case, the additional pressure allows the grout to be forced into the sand pack. After grouting the sand pack and casing, the well vault is removed and the area resurfaced or backfilled as required.

Well Drill Out

When well drill out is required, a hollow-stem auger drilling rig is used to drill out the well casing and pack materials. First, drill rods are dropped down the well and used to guide the augers as they drill out the well. Once the well is drilled out, the boring is filled with Portland cement injected through the augers or a tremie pipe under pressure to the bottom of the boring. The well vault is removed and the area resurfaced or backfilled as required.

APPENDIX B

Drilling Permits And DWR Well Completion Forms

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588-5127 VOICE (925) 484-2600 X235
FAX (925) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT ARCO STATION 6113
785 EAST STANLEY BOULEVARD
LIVERMORE, CA (X-ST RURRIETA BLVD)

California Coordinates Source _____ ft. Accuracy± _____ ft.
CCN _____ ft. CCE _____ ft.
APN _____

CLIENT
Name ARCO
Address P.O Box 6549 Phone (925) 299-8891
City MORAGA, CA Zip 94570

APPLICANT
Name CAMBRIA ENVIRONMENTAL TECHNOLOGY INC. Fax (510)450-9295
Address 6262 HOLLIS ST Phone (510)450-1983
City EMERYVILLE, CA Zip 94608

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☐
Monitoring	☐	Well Destruction	X

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other _____	☐

DRILLING METHOD:
Mud Rotary ☐ Air Rotary ☐ Auger X
Cable ☐ Other ☐

DRILLER'S LICENSE NO. C-57 # 720904 V+W DRILLING

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum Depth MW-5 - 64 Ft VW-3 - 24 Ft ft.
Casing Diameter 4 in. Number TWO wells
Surface Seal Depth 41, 13 ft.

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum Depth _____ ft.
Hole Diameter _____ in.

ESTIMATED STARTING DATE 11/30/00
ESTIMATED COMPLETION DATE 11/30/00

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.
APPLICANT'S SIGNATURE [signature] Date 11/20/0

FOR OFFICE

PERMIT NUMBER 20216
WELL NUMBER 3S/2E 18A7 & 3S/2E 18A17
APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.
3. An access port at least 0.5 inches in diameter is required on the wellhead for water level measurements.
4. A sample port is required on the discharge pipe near the wellhead.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

(F.) WELL DESTRUCTION. See attached.

G. SPECIAL CONDITIONS

Approved Wyman Hong Wyman Hong Date 11/27/00

8/6/99

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

APPENDIX C

Standard UST Excavation Sampling Procedures

STANDARD UST EXCAVATION SAMPLING PROCEDURES

After confirming a release from underground gasoline storage tanks, product piping or pump islands, soil excavation is often done to remove hydrocarbon bearing soils that may pose a threat to ground water quality beneath a site. Soil samples are routinely collected to monitor the progress of the excavation and to confirm that soils containing hydrocarbons above regulatory limits have been completely removed. Cambria has developed standard operating procedures for collecting soil samples during routine excavation operations to ensure that the samples are collected, handled and documented in compliance with State and local regulatory agency regulations.

Excavation Sampling

Prior to collecting soil samples during excavation operations, Cambria field staff screen the removed soils with a portable photoionization detector (PID) to qualitatively assess the presence or absence of volatile hydrocarbons. The removed soil is typically segregated based on hydrocarbon concentration and stockpiled on site on plastic sheeting. When the PID measurements indicate that the hydrocarbon bearing soil has been completely removed, Cambria collects soil samples from the excavation sidewalls and bottom for confirmatory analysis at a State certified analytic laboratory.

The soil samples are collected in steam cleaned brass or steel tubes from either a driven split-spoon type sampler or the bucket of a backhoe or excavator. When a backhoe or excavator is used, approximately three inches of soil are scraped from the surface and the tube is driven into the exposed soil.

Upon removal from the sampler or the backhoe, the samples are trimmed flush, capped with Teflon tape and plastic end caps, labeled, logged and refrigerated for delivery under chain of custody to a State certified analytic laboratory.

APPENDIX D

Standard Dispenser and Product Piping Removal Sampling Procedures

STANDARD DISPENSER AND PRODUCT PIPING REMOVAL SAMPLING PROCEDURES

Cambria Environmental Technology, Inc. (Cambria) has developed standard operating procedures for collecting soil samples during petroleum dispenser and piping removal. These procedures ensure that the samples are collected, handled, and documented in compliance with California Administration Code Title 23: Waters; Chapter 3: Water Resources Control Board; Subchapter 16: Underground Storage Tank Regulations (Title 23). Cambria's sampling procedures are based on guidelines contained in the California State Regional Water Quality Control Board Tri-Regional Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites dated August 10, 1990.

Piping and Dispenser Removal Sampling

The objective of sample collection during routine dispenser and piping removals is to determine whether hydrocarbons or other stored chemicals have leaked to the subsurface. We collect one soil sample from the native soil beneath each dispenser unit, at each piping elbow, and at every 20 ft of product piping, as applicable.

The soil samples are collected in steam cleaned brass or steel tubes from either a driven split-spoon type sampler or the bucket of a backhoe. When a backhoe is used, approximately three inches of soil are scraped from the surface and the tube is driven into the exposed soil.

Upon removal from the split-spoon sampler or the backhoe, the samples are trimmed flush, capped with Teflon sheets and plastic end caps, labeled, logged and refrigerated for delivery under chain of custody to a State certified analytic laboratory.

APPENDIX E

Soil Sampling Analytical Reports

Sequoia
Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

28 December, 2000

Ron Scheele
Cambria - Emeryville
6262 Hollis St.
Emeryville, CA 94608

RE: Arco
Sequoia Report: MJL0317

Enclosed are the results of analyses for samples received by the laboratory on 12/08/00 19:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeff Smyly
Project Manager

CA ELAP Certificate #1210

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	12/28/00 10:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DP-1	MJL0317-01	Soil	12/06/00 00:00	12/08/00 19:25
DP-2	MJL0317-02	Soil	12/06/00 00:00	12/08/00 19:25
DP-3	MJL0317-03	Soil	12/06/00 00:00	12/08/00 19:25
DP-4	MJL0317-04	Soil	12/06/00 00:00	12/08/00 19:25
DP-5	MJL0317-05	Soil	12/06/00 00:00	12/08/00 19:25
DP-6	MJL0317-06	Soil	12/06/00 00:00	12/08/00 19:25
Pipe-1	MJL0317-07	Soil	12/06/00 00:00	12/08/00 19:25
Pipe-2	MJL0317-08	Soil	12/06/00 00:00	12/08/00 19:25
Pipe-3	MJL0317-09	Soil	12/06/00 00:00	12/08/00 19:25
Pipe-4	MJL0317-10	Soil	12/06/00 00:00	12/08/00 19:25
Pipe-6	MJL0317-11	Soil	12/06/00 00:00	12/08/00 19:25
Pipe-7	MJL0317-12	Soil	12/06/00 00:00	12/08/00 19:25
Pipe-8	MJL0317-13	Soil	12/06/00 00:00	12/08/00 19:25

Sequoia Analytical - Morgan Hill

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jeff Smyly, Project Manager

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	12/28/00 10:55

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DP-1 (MJL0317-01) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Purgeable Hydrocarbons	**1.57**	1.00	mg/kg	1	0L18001	12/18/00	12/18/00	DHS LUFT	P-03
Benzene	ND	0.00500	"	"	"	"	"	"	
Toluene	**0.00694**	0.00500	"	"	"	"	"	"	
Ethylbenzene	ND	0.00500	"	"	"	"	"	"	
Xylenes (total)	**0.0124**	0.00500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*93.0 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.5 %*	*60-140*		"	"	"	"	
DP-2 (MJL0317-02) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Purgeable Hydrocarbons	**5.00**	1.00	mg/kg	1	0L18001	12/18/00	12/18/00	DHS LUFT	P-03
Benzene	ND	0.00500	"	"	"	"	"	"	
Toluene	**0.0102**	0.00500	"	"	"	"	"	"	
Ethylbenzene	ND	0.00500	"	"	"	"	"	"	
Xylenes (total)	**0.0332**	0.00500	"	"	"	"	"	"	
Methyl tert-butyl ether	**0.0268**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*87.5 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*60-140*		"	"	"	"	
DP-3 (MJL0317-03) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Purgeable Hydrocarbons	**1.40**	1.00	mg/kg	1	0L18001	12/18/00	12/18/00	DHS LUFT	P-03
Benzene	ND	0.00500	"	"	"	"	"	"	
Toluene	**0.00710**	0.00500	"	"	"	"	"	"	
Ethylbenzene	ND	0.00500	"	"	"	"	"	"	
Xylenes (total)	**0.0126**	0.00500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*87.0 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*	*60-140*		"	"	"	"	

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	12/28/00 10:55

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DP-4 (MJL0317-04) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Purgeable Hydrocarbons	**6.80**	1.00	mg/kg	1	0L18001	12/18/00	12/18/00	DHS LUFT	P-03
Benzene	ND	0.00500	"	"	"	"	"	"	
Toluene	**0.00568**	0.00500	"	"	"	"	"	"	
Ethylbenzene	**0.0222**	0.00500	"	"	"	"	"	"	
Xylenes (total)	**0.0241**	0.00500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*93.5 %*		*70-130*		"	"	"	
Surrogate: 4-Bromofluorobenzene		*127 %*		*60-140*		"	"	"	
DP-5 (MJL0317-05) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Purgeable Hydrocarbons	**1.40**	1.00	mg/kg	1	0L18001	12/18/00	12/18/00	DHS LUFT	P-03
Benzene	ND	0.00500	"	"	"	"	"	"	
Toluene	**0.0173**	0.00500	"	"	"	"	"	"	
Ethylbenzene	**0.00522**	0.00500	"	"	"	"	"	"	
Xylenes (total)	**0.0355**	0.00500	"	"	"	"	"	"	
Methyl tert-butyl ether	**0.133**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*86.5 %*		*70-130*		"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*		*60-140*		"	"	"	
DP-6 (MJL0317-06) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Purgeable Hydrocarbons	**1.05**	1.00	mg/kg	1	0L18001	12/18/00	12/18/00	DHS LUFT	P-03
Benzene	ND	0.00500	"	"	"	"	"	"	
Toluene	ND	0.00500	"	"	"	"	"	"	
Ethylbenzene	ND	0.00500	"	"	"	"	"	"	
Xylenes (total)	ND	0.00500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*79.5 %*		*70-130*		"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.0 %*		*60-140*		"	"	"	*P-03*

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	12/28/00 10:55

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pipe-1 (MJL0317-07) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Purgeable Hydrocarbons	ND	1.00	mg/kg	1	0L18001	12/18/00	12/18/00	DHS LUFT	P-03
Benzene	ND	0.00500	"	"	"	"	"	"	
Toluene	ND	0.00500	"	"	"	"	"	"	
Ethylbenzene	ND	0.00500	"	"	"	"	"	"	
Xylenes (total)	**0.00624**	0.00500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*86.5 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*	*60-140*		"	"	"	"	
Pipe-2 (MJL0317-08) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Purgeable Hydrocarbons	ND	1.00	mg/kg	1	0L18001	12/18/00	12/18/00	DHS LUFT	
Benzene	ND	0.00500	"	"	"	"	"	"	
Toluene	ND	0.00500	"	"	"	"	"	"	
Ethylbenzene	ND	0.00500	"	"	"	"	"	"	
Xylenes (total)	ND	0.00500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*85.5 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*82.0 %*	*60-140*		"	"	"	"	
Pipe-3 (MJL0317-09) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Purgeable Hydrocarbons	ND	1.00	mg/kg	1	0L18001	12/18/00	12/19/00	DHS LUFT	
Benzene	ND	0.00500	"	"	"	"	"	"	
Toluene	ND	0.00500	"	"	"	"	"	"	
Ethylbenzene	ND	0.00500	"	"	"	"	"	"	
Xylenes (total)	**0.00848**	0.00500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*97.0 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*106 %*	*60-140*		"	"	"	"	

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	12/28/00 10:55

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pipe-4 (MJL0317-10) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Purgeable Hydrocarbons	ND	1.00	mg/kg	1	0L18001	12/18/00	12/19/00	DHS LUFT	
Benzene	ND	0.00500	"	"	"	"	"	"	
Toluene	**0.00536**	0.00500	"	"	"	"	"	"	
Ethylbenzene	ND	0.00500	"	"	"	"	"	"	
Xylenes (total)	**0.0102**	0.00500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*94.5 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.5 %*	*60-140*		"	"	"	"	
Pipe-6 (MJL0317-11) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Purgeable Hydrocarbons	ND	1.00	mg/kg	1	0L19001	12/19/00	12/19/00	DHS LUFT	
Benzene	**0.00918**	0.00500	"	"	"	"	"	"	
Toluene	**0.0326**	0.00500	"	"	"	"	"	"	
Ethylbenzene	ND	0.00500	"	"	"	"	"	"	
Xylenes (total)	**0.0193**	0.00500	"	"	"	"	"	"	
Methyl tert-butyl ether	**0.0610**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*93.5 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*60-140*		"	"	"	"	
Pipe-7 (MJL0317-12) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Purgeable Hydrocarbons	ND	1.00	mg/kg	1	0L19001	12/19/00	12/19/00	DHS LUFT	
Benzene	ND	0.00500	"	"	"	"	"	"	
Toluene	ND	0.00500	"	"	"	"	"	"	
Ethylbenzene	ND	0.00500	"	"	"	"	"	"	
Xylenes (total)	ND	0.00500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*94.0 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*107 %*	*60-140*		"	"	"	"	

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	12/28/00 10:55

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pipe-8 (MJL0317-13) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Purgeable Hydrocarbons	ND	1.00	mg/kg	1	0L19001	12/19/00	12/19/00	DHS LUFT	
Benzene	ND	0.00500	"	"	"	"	"	"	
Toluene	ND	0.00500	"	"	"	"	"	"	
Ethylbenzene	ND	0.00500	"	"	"	"	"	"	
Xylenes (total)	ND	0.00500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*93.5 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*	*60-140*		"	"	"	"	

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	12/28/00 10:55

Total Metals by EPA 6000/7000 Series Methods

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DP-1 (MJL0317-01) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Lead	ND	10.4	mg/kg	1	0L19026	12/19/00	12/27/00	EPA 6010A	
DP-2 (MJL0317-02) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Lead	ND	10.1	mg/kg	1	0L19026	12/19/00	12/27/00	EPA 6010A	
DP-3 (MJL0317-03) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Lead	**22.9**	10.3	mg/kg	1	0L19026	12/19/00	12/27/00	EPA 6010A	
DP-4 (MJL0317-04) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Lead	ND	9.71	mg/kg	1	0L19026	12/19/00	12/27/00	EPA 6010A	
DP-5 (MJL0317-05) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Lead	ND	9.27	mg/kg	1	0L19026	12/19/00	12/27/00	EPA 6010A	
DP-6 (MJL0317-06) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Lead	ND	9.27	mg/kg	1	0L19026	12/19/00	12/27/00	EPA 6010A	
Pipe-1 (MJL0317-07) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Lead	**10.9**	10.0	mg/kg	1	0L19026	12/19/00	12/27/00	EPA 6010A	
Pipe-2 (MJL0317-08) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Lead	ND	9.71	mg/kg	1	0L19026	12/19/00	12/27/00	EPA 6010A	
Pipe-3 (MJL0317-09) Soil Sampled: 12/06/00 00:00 Received: 12/08/00 19:25									
Lead	ND	10.0	mg/kg	1	0L19026	12/19/00	12/27/00	EPA 6010A	

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	12/28/00 10:55

Total Metals by EPA 6000/7000 Series Methods

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pipe-4 (MJL0317-10) Soil	**Sampled: 12/06/00 00:00**	**Received: 12/08/00 19:25**							
Lead	**15.1**	9.45	mg/kg	1	0L19026	12/19/00	12/27/00	EPA 6010A	
Pipe-6 (MJL0317-11) Soil	**Sampled: 12/06/00 00:00**	**Received: 12/08/00 19:25**							
Lead	ND	9.90	mg/kg	1	0L19026	12/19/00	12/27/00	EPA 6010A	
Pipe-7 (MJL0317-12) Soil	**Sampled: 12/06/00 00:00**	**Received: 12/08/00 19:25**							
Lead	ND	9.90	mg/kg	1	0L19026	12/19/00	12/27/00	EPA 6010A	
Pipe-8 (MJL0317-13) Soil	**Sampled: 12/06/00 00:00**	**Received: 12/08/00 19:25**							
Lead	ND	9.27	mg/kg	1	0L19026	12/19/00	12/27/00	EPA 6010A	

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	12/28/00 10:55

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control
Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0L18001 - EPA 5030B [P/T]										
Blank (0L18001-BLK1)				Prepared & Analyzed: 12/18/00						
Purgeable Hydrocarbons	ND	1.00	mg/kg							
Benzene	ND	0.00500	"							
Toluene	ND	0.00500	"							
Ethylbenzene	ND	0.00500	"							
Xylenes (total)	ND	0.00500	"							
Methyl tert-butyl ether	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	*0.190*		"	*0.200*		*95.0*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.248*		"	*0.200*		*124*	*60-140*			
LCS (0L18001-BS1)				Prepared & Analyzed: 12/18/00						
Purgeable Hydrocarbons	5.35	1.00	mg/kg	5.00		107	70-130			
Surrogate: a,a,a-Trifluorotoluene	*0.373*		"	*0.200*		*186*	*70-130*			*S-02*
Surrogate: 4-Bromofluorobenzene	*0.200*		"	*0.200*		*100*	*60-140*			
Matrix Spike (0L18001-MS1)		**Source: MJL0317-06**		Prepared & Analyzed: 12/18/00						
Purgeable Hydrocarbons	5.29	1.00	mg/kg	5.00	1.05	84.8	60-140			
Surrogate: a,a,a-Trifluorotoluene	*0.380*		"	*0.200*		*190*	*70-130*			*S-02*
Surrogate: 4-Bromofluorobenzene	*0.203*		"	*0.200*		*101*	*60-140*			
Matrix Spike Dup (0L18001-MSD1)		**Source: MJL0317-06**		Prepared & Analyzed: 12/18/00						
Purgeable Hydrocarbons	5.42	1.00	mg/kg	5.00	1.05	87.4	60-140	2.43	25	
Surrogate: a,a,a-Trifluorotoluene	*0.447*		"	*0.200*		*223*	*70-130*			*S-02*
Surrogate: 4-Bromofluorobenzene	*0.203*		"	*0.200*		*101*	*60-140*			
Batch 0L19001 - EPA 5030B [P/T]										
Blank (0L19001-BLK1)				Prepared & Analyzed: 12/19/00						
Purgeable Hydrocarbons	ND	1.00	mg/kg							
Benzene	ND	0.00500	"							
Toluene	ND	0.00500	"							
Ethylbenzene	ND	0.00500	"							
Xylenes (total)	ND	0.00500	"							
Methyl tert-butyl ether	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	*0.173*		"	*0.200*		*86.5*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.248*		"	*0.200*		*124*	*60-140*			

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	12/28/00 10:55

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0L19001 - EPA 5030B [P/T]										
LCS (0L19001-BS1)				Prepared & Analyzed: 12/19/00						
Benzene	0.231	0.00500	mg/kg	0.200		116	70-130			
Toluene	0.224	0.00500	"	0.200		112	70-130			
Ethylbenzene	0.222	0.00500	"	0.200		111	70-130			
Xylenes (total)	0.684	0.00500	"	0.600		114	70-130			
Surrogate: a,a,a-Trifluorotoluene	*0.178*		"	*0.200*		*89.0*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.200*		"	*0.200*		*100*	*60-140*			
Matrix Spike (0L19001-MS1)		**Source: MJL0430-02**		Prepared & Analyzed: 12/19/00						
Benzene	0.212	0.00500	mg/kg	0.200	ND	106	60-140			
Toluene	0.211	0.00500	"	0.200	ND	105	60-140			
Ethylbenzene	0.210	0.00500	"	0.200	ND	105	60-140			
Xylenes (total)	0.645	0.00500	"	0.600	ND	107	60-140			
Surrogate: a,a,a-Trifluorotoluene	*0.192*		"	*0.200*		*96.0*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.196*		"	*0.200*		*98.0*	*60-140*			
Matrix Spike Dup (0L19001-MSD1)		**Source: MJL0430-02**		Prepared & Analyzed: 12/19/00						
Benzene	0.210	0.00500	mg/kg	0.200	ND	105	60-140	0.948	25	
Toluene	0.206	0.00500	"	0.200	ND	103	60-140	2.40	25	
Ethylbenzene	0.206	0.00500	"	0.200	ND	103	60-140	1.92	25	
Xylenes (total)	0.630	0.00500	"	0.600	ND	105	60-140	2.35	25	
Surrogate: a,a,a-Trifluorotoluene	*0.175*		"	*0.200*		*87.5*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.197*		"	*0.200*		*98.5*	*60-140*			

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	12/28/00 10:55

Total Metals by EPA 6000/7000 Series Methods - Quality Control

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0L19026 - EPA 3050B										
Blank (0L19026-BLK1)				Prepared: 12/19/00 Analyzed: 12/27/00						
Lead	ND	10.0	mg/kg							
LCS (0L19026-BS1)				Prepared: 12/19/00 Analyzed: 12/27/00						
Lead	50.5	10.0	mg/kg	50.0		101	80-120			
Matrix Spike (0L19026-MS1)		Source: MJL0315-01		Prepared: 12/19/00 Analyzed: 12/27/00						
Lead	71.8	9.62	mg/kg	48.1	27.9	91.3	80-120			
Matrix Spike Dup (0L19026-MSD1)		Source: MJL0315-01		Prepared: 12/19/00 Analyzed: 12/27/00						
Lead	73.2	10.4	mg/kg	52.1	27.9	86.9	80-120	1.93	20	

Sequoia Analytical

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco # 6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	12/28/00 10:55

Notes and Definitions

P-03	Chromatogram Pattern: Unidentified Hydrocarbons C6-C12
S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

ARCO Products Company
Division of Atlantic-Richfield Company

Task Order No. WAR # 26861.00

Chain of Custody

ARCO Facility no. 6113	City (Facility) Livermore	Project manager (Consultant) Ron Scheele	Laboratory name SEQ
ARCO engineer Paul Supple	Telephone no. (ARCO) 925-299-8891	Telephone no. (Consultant) 510-450-1983	Fax no. (Consultant) 510-450-8295
Consultant name CAMBRIA	Address (Consultant) 6267 Hollis St, Emeryville, CA 94608		Contract number

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX / MTBE 602/EPA 8020	BTEX/TPH EPA M602/8020/8015	TPH Modified 8015 Gas X Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ Semi VOA ☐ VOA ☐	CAM METALS EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	Total Lead
DP-1	01		X			X		12/6		X		X									X
DP-2	02																				
DP-3	03																				
DP-4	04																				
DP-5	05																				
DP-6	06																				
Pipe-1	07																				
Pipe-2	08																				
Pipe-3	09																				
Pipe-4	10																				
RPD-5																					
Pipe-6	11																				
Pipe-7	12																				
Pipe-8	13																				

Method of shipment: MJL0317

Special detection Limit/reporting: Lowest possible

Special QA/QC

Remarks: TPHg, BTEX, MTBE, Total Lead

Lab number

Turnaround time

- Priority Rush 1 Business Day
- Rush 2 Business Days
- Expedited 5 Business Days
- Standard 10 Business Days X

Condition of sample:

Temperature received:

	Date	Time	
Relinquished by sampler	12/6/00	1545	Received by
Relinquished by	12/8/00	14:00	Received by
Relinquished by	12-8-00	1410	Received by 4093

Date 12-8-00 Time 19:25

— Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant

Sequoia
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29 January, 2001

Ron Scheele
Cambria - Emeryville
6262 Hollis St.
Emeryville, CA 94608

RE: Arco
Sequoia Report: MKA0248

Enclosed are the results of analyses for samples received by the laboratory on 01/11/01 19:19. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeff Smyly
Project Manager

CA ELAP Certificate #1210

Sequoia Analytical

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco #6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	01/29/01 10:56

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EX-1	MKA0248-01	Soil	01/08/01 11:00	01/11/01 19:19
EX-2	MKA0248-02	Soil	01/08/01 11:15	01/11/01 19:19
EX-3	MKA0248-03	Soil	01/08/01 11:30	01/11/01 19:19
EX-4	MKA0248-04	Soil	01/08/01 12:00	01/11/01 19:19
EX-5	MKA0248-05	Soil	01/08/01 12:15	01/11/01 19:19
EX-6	MKA0248-06	Soil	01/08/01 12:30	01/11/01 19:19

Sequoia Analytical - Morgan Hill

Jeff Smyly, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sequoia Analytical

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco #6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	01/29/01 10:56

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
EX-1 (MKA0248-01) Soil Sampled: 01/08/01 11:00 Received: 01/11/01 19:19									
Purgeable Hydrocarbons	**3030**	250	mg/kg	250	1A15002	01/15/01	01/22/01	DHS LUFT	P-03
Benzene	**2.74**	1.25	"	"	"	"	"	"	
Toluene	**9.85**	1.25	"	"	"	"	"	"	
Ethylbenzene	**33.7**	1.25	"	"	"	"	"	"	
Xylenes (total)	**297**	1.25	"	"	"	"	"	"	
Methyl tert-butyl ether	**11.8**	6.25	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*105 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*2590 %*	*60-140*		"	"	"	"	*S-01*
EX-2 (MKA0248-02) Soil Sampled: 01/08/01 11:15 Received: 01/11/01 19:19									
Purgeable Hydrocarbons	**2930**	250	mg/kg	250	1A15002	01/15/01	01/22/01	DHS LUFT	P-03
Benzene	**2.74**	1.25	"	"	"	"	"	"	
Toluene	**10.7**	1.25	"	"	"	"	"	"	
Ethylbenzene	**37.4**	1.25	"	"	"	"	"	"	
Xylenes (total)	**225**	1.25	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	6.25	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*103 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*2870 %*	*60-140*		"	"	"	"	*S-01*
EX-3 (MKA0248-03) Soil Sampled: 01/08/01 11:30 Received: 01/11/01 19:19									
Purgeable Hydrocarbons	**1480**	100	mg/kg	100	1A15002	01/15/01	01/15/01	DHS LUFT	P-01
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	**8.86**	0.500	"	"	"	"	"	"	
Ethylbenzene	**8.33**	0.500	"	"	"	"	"	"	
Xylenes (total)	**16.8**	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	**5.42**	2.50	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*149 %*	*70-130*		"	"	"	"	*S-02*
Surrogate: 4-Bromofluorobenzene		*1870 %*	*60-140*		"	"	"	"	*S-01*

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco #6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	01/29/01 10:56

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
EX-4 (MKA0248-04) Soil Sampled: 01/08/01 12:00 Received: 01/11/01 19:19									
Purgeable Hydrocarbons	**295**	100	mg/kg	100	1A15002	01/15/01	01/15/01	DHS LUFT	P-01
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	**0.846**	0.500	"	"	"	"	"	"	
Ethylbenzene	**1.66**	0.500	"	"	"	"	"	"	
Xylenes (total)	**10.1**	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	**2.72**	2.50	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*89.0 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*220 %*	*60-140*		"	"	"	"	*S-01*
EX-5 (MKA0248-05) Soil Sampled: 01/08/01 12:15 Received: 01/11/01 19:19									
Purgeable Hydrocarbons	**3490**	250	mg/kg	250	1A15002	01/15/01	01/22/01	DHS LUFT	P-03
Benzene	ND	1.25	"	"	"	"	"	"	
Toluene	ND	1.25	"	"	"	"	"	"	
Ethylbenzene	**22.8**	1.25	"	"	"	"	"	"	
Xylenes (total)	**39.8**	1.25	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	6.25	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*99.0 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*%*	*60-140*		"	"	"	"	*S-01*
EX-6 (MKA0248-06) Soil Sampled: 01/08/01 12:30 Received: 01/11/01 19:19									
Purgeable Hydrocarbons	**1.36**	1.00	mg/kg	1	1A15002	01/15/01	01/22/01	DHS LUFT	
Benzene	ND	0.00500	"	"	"	"	"	"	
Toluene	ND	0.00500	"	"	"	"	"	"	
Ethylbenzene	**0.00906**	0.00500	"	"	"	"	"	"	
Xylenes (total)	**0.0242**	0.00500	"	"	"	"	"	"	
Methyl tert-butyl ether	**0.471**	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*98.0 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.5 %*	*60-140*		"	"	"	"	

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco #6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	01/29/01 10:56

Total Metals by EPA 6000/7000 Series Methods

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
EX-1 (MKA0248-01) Soil Sampled: 01/08/01 11:00 Received: 01/11/01 19:19									
Lead	ND	9.81	mg/kg	1	1A15023	01/15/01	01/16/01	EPA 6010A	
EX-2 (MKA0248-02) Soil Sampled: 01/08/01 11:15 Received: 01/11/01 19:19									
Lead	ND	9.90	mg/kg	1	1A15023	01/15/01	01/16/01	EPA 6010A	
EX-3 (MKA0248-03) Soil Sampled: 01/08/01 11:30 Received: 01/11/01 19:19									
Lead	ND	10.0	mg/kg	1	1A15023	01/15/01	01/16/01	EPA 6010A	
EX-4 (MKA0248-04) Soil Sampled: 01/08/01 12:00 Received: 01/11/01 19:19									
Lead	ND	10.0	mg/kg	1	1A15023	01/15/01	01/16/01	EPA 6010A	
EX-5 (MKA0248-05) Soil Sampled: 01/08/01 12:15 Received: 01/11/01 19:19									
Lead	ND	9.62	mg/kg	1	1A15023	01/15/01	01/16/01	EPA 6010A	
EX-6 (MKA0248-06) Soil Sampled: 01/08/01 12:30 Received: 01/11/01 19:19									
Lead	ND	9.71	mg/kg	1	1A15023	01/15/01	01/16/01	EPA 6010A	

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco #6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	01/29/01 10:56

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control
Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1A15002 - EPA 5030B [P/T]										
Blank (1A15002-BLK1)				Prepared & Analyzed: 01/15/01						
Purgeable Hydrocarbons	ND	1.00	mg/kg							
Benzene	ND	0.00500	"							
Toluene	ND	0.00500	"							
Ethylbenzene	ND	0.00500	"							
Xylenes (total)	ND	0.00500	"							
Methyl tert-butyl ether	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	*0.172*		"	*0.200*		*86.0*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.213*		"	*0.200*		*106*	*60-140*			
LCS (1A15002-BS1)				Prepared & Analyzed: 01/15/01						
Benzene	0.248	0.00500	mg/kg	0.200		124	70-130			
Toluene	0.218	0.00500	"	0.200		109	70-130			
Ethylbenzene	0.220	0.00500	"	0.200		110	70-130			
Xylenes (total)	0.686	0.00500	"	0.600		114	70-130			
Surrogate: a,a,a-Trifluorotoluene	*0.166*		"	*0.200*		*83.0*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.204*		"	*0.200*		*102*	*60-140*			
LCS Dup (1A15002-BSD1)				Prepared & Analyzed: 01/15/01						
Benzene	0.251	0.00500	mg/kg	0.200		125	70-130	1.20	25	
Toluene	0.222	0.00500	"	0.200		111	70-130	1.82	25	
Ethylbenzene	0.225	0.00500	"	0.200		112	70-130	2.25	25	
Xylenes (total)	0.690	0.00500	"	0.600		115	70-130	0.581	25	
Surrogate: a,a,a-Trifluorotoluene	*0.173*		"	*0.200*		*86.5*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.212*		"	*0.200*		*106*	*60-140*			

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco #6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	01/29/01 10:56

Total Metals by EPA 6000/7000 Series Methods - Quality Control

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1A15023 - EPA 3050B										
Blank (1A15023-BLK1)				Prepared: 01/15/01		Analyzed: 01/16/01				
Lead	ND	10.0	mg/kg							
LCS (1A15023-BS1)				Prepared: 01/15/01		Analyzed: 01/16/01				
Lead	49.8	10.0	mg/kg	50.0		99.6	80-120			
Matrix Spike (1A15023-MS1)		**Source: MKA0248-01**		Prepared: 01/15/01		Analyzed: 01/16/01				
Lead	56.2	10.0	mg/kg	50.0	ND	95.7	80-120			
Matrix Spike Dup (1A15023-MSD1)		**Source: MKA0248-01**		Prepared: 01/15/01		Analyzed: 01/16/01				
Lead	54.8	9.71	mg/kg	48.5	ND	95.8	80-120	2.52	20	

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco #6113	**Reported:**
Emeryville CA, 94608	Project Manager: Ron Scheele	01/29/01 10:56

Notes and Definitions

P-01	Chromatogram Pattern: Gasoline C6-C12
P-03	Chromatogram Pattern: Unidentified Hydrocarbons C6-C12
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

ARCO Products Company
Division of Atlantic-Richfield Company

Chain of Custody

Task Order No. WAR # 26861.00

ARCO Facility no. 6113	City (Facility) Livermore	Project manager (Consultant) Ron Scheele	Laboratory name SEQ
ARCO engineer Paul Supple	Telephone no. (ARCO) 925-299-8891	Telephone no. (Consultant) 510-450-1983	Fax no. (Consultant) 510-450-8295
Consultant name CAMBRIA	Address (Consultant) 6262 Hollis St, Emeryville, CA 94608		Contract number

Method of shipment: MKA0248

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA M602/8020/8015 MTBE	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ Semi VOA ☐ VOA ☐	CAM METALS EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	Total Lead	
Ex-1		1	x			X		1/8/01	11:00		X										X	01
Ex-2		1							11:15													02
Ex-3		1							11:30													03
Ex-4		1							12:00													04
Ex-5		1							12:15													05
Ex-6		1							12:30													06

COOLER CUSTODY SEALS INTACT ☐
NOT INTACT ☐
COOLER TEMPERATURE 3.0 °C

Special detection Limit/reporting: Lowest Possible

Special QA/QC

Remarks: TPHg, BTEX, MTBE, Total Lead

Lab number

Turnaround time
- Priority Rush 1 Business Day
- Rush 2 Business Days
- Expedited 5 Business Days
- Standard 10 Business Days X

Condition of sample:

Temperature received:

Relinquished by sampler	Date	Time	Received by	1-10-01 1345
Relinquished by	Date 1/11/01	Time	Received by	1/11/01 4:35
Relinquished by	Date 1/11/01	Time 7:35	Received by	Date 1/11/01 Time 1919

White: Laboratory, Canary: copy — ARCO Environmental Engineering: Pink copy — Consultant

APPENDIX F

Waste Disposal Confirmation Letters

Dillard Trucking, Inc. dba

Dillard Environmental Services

P. O. Box 579 · Byron, CA 94514
Phone (925) 634-6850 – Fax (925) 634-0569
EPA #CAD982523433 · D.T.S.C. #1715 · CA LIC #624665-A HAZ

Via Fax (510) 450-8295

March 9, 2001

Attn: Jason Olson
Cambria Environmental Technology, Inc.
6262 Hollis Street
Emeryville, CA 94608

RE: **ARCO #6113**
785 E. Stanley Blvd.
Livermore, CA

Dear Mr. Olson:

Please be advised that 1,425.18 tons of non-hazardous petroleum contaminated soil from the referenced site has been removed. The soil was transported for disposal to Forward Landfill in Manteca, California on 01/16/01, 01/17/01, 01/18/01, 01/19/01, 02/13/01 and 02/14/01.

Should you have any questions, please do not hesitate to call.

Sincerely,

Dillard Trucking, Inc. dba,
DILLARD ENVIRONMENTAL SERVICES

Lynette Smith

Lynette Smith
Customer Service

ADAMS SERVICES, INC.

406 E. Alondra Blvd., Gardena, CA 90248-2902
(310) 523-4430 Δ FAX (310) 523-1518

DISPOSAL DECLARATION

Adams Services, Inc. hereby certifies that the following tanks were delivered to Pacheco Pass Landfill, 3675 Pacheco Pass; Gilroy, CA, by Tom Cipponeri Trucking for destruction and disposal on Weighmaster Tickets 10802, 10822 and 10828, dated 01/04/01, below and attached:

Disposal Date:	**January 04, 2001**
Job Site:	**ARCO #6113** **785 E. Stanley Road** **Livermore, CA**
Tanks:	**3 - 12,000 gallon fiberglass tanks**

Weighmaster:PACHECO PASS LANDFILL
Weighed @ 3675 PACHECO PASS
GILROY , CA 95020
Account:
CASH-ACCOUNT /42325
3675 PACHECO PASS
GILROY , CA 95020
Source:OTHER Route:
Inbound Weight:27120 lbs.
SCALE A 27120 (M) Gross Weight lbs.
20380 Tare Weight lbs.
6740 Net Weight lbs.

TICKET NO.: 10802
DATE: 1/04/01 In: 8:27 Out: 9:05
Price/Unit:
Commodity:DEMOLITION DEBRIS
Total Charge:
Tendered:
Change:
Truck No.:3 Lic:
C.O.D.

Special Handl

CONNIE MUNOZ PJ

P.O.#:ADAMS SERVICES Job #: B/L #:

Weighmaster:PACHECO PASS LANDFILL
Weighed @ 3675 PACHECO PASS
GILROY , CA 95020

TICKET NO.: 10020
DATE: 1/04/01 In:12:04 Out:12:56
Price/Unit: Special Handli
Commodity:DEMOLITION DEBRIS
Total Charge:
Tendered:
Change:

Account:
CASH-ACCOUNT /42325
3675 PACHECO PASS
GILROY , CA 95020
Source:ALAMEDA COUNTY Route:
Truck No.:10 Lic:

Inbound Weight:28280 lbs.

SCALE A	28280 (M)	Gross Weight	lbs.
	25240	Tare Weight	lbs.
	3040	Net Weight	lbs.

C.O.D.

CONNIE MUNOZ P1

P.O.#:ADAMS SERVICES Job #: B/L #:

Weighmaster:PACHECO PASS LANDFILL
Weighed @ 3675 PACHECO PASS
GILROY , CA 95020

TICKET NO.: 10022
DATE: 1/04/01 In:11:09 Out:11:33
Price/Unit: Special Handling 50.
Commodity:DEMOLITION DEBRIS
Total Charge:
Tendered:
Change:

Account:
CASH-ACCOUNT /42325
3675 PACHECO PASS
GILROY , CA 95020
Source:ALAMEDA COUNTY Route:
Truck No.:14 Lic:

Inbound Weight:34300 lbs.

SCALE A	34300 (M)	Gross Weight	lbs.
	29040	Tare Weight	lbs.
	5260	Net Weight	lbs.

C.O.D.

CONNIE MUNOZ P1

P.O.#:ADAMS SERVICES Job #: B/L #:

APPENDIX G

Soil Stockpile Laboratory Analytical Report

Sequoia
Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

17 January, 2001

Jason Olson
Cambria - Emeryville
6262 Hollis St.
Emeryville, CA 94608

RE: Arco
Sequoia Report: MKA0186

Enclosed are the results of analyses for samples received by the laboratory on 01/10/01 15:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeff Smyly
Project Manager

CA ELAP Certificate #1210

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco #6113	**Reported:**
Emeryville CA, 94608	Project Manager: Jason Olson	01/17/01 09:27

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-(1-4)	MKA0186-01	Soil	01/08/01 00:00	01/10/01 15:45
S-(5-8)	MKA0186-02	Soil	01/10/01 00:00	01/10/01 15:45
S-(9-12)	MKA0186-03	Soil	01/10/01 00:00	01/10/01 15:45

Sequoia Analytical - Morgan Hill

Jeff Smyly, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco #6113	**Reported:**
Emeryville CA, 94608	Project Manager: Jason Olson	01/17/01 09:27

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M

Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
S-(1-4) (MKA0186-01) Soil Sampled: 01/08/01 00:00 Received: 01/10/01 15:45									
Gasoline	**4250**	1000	ug/kg	1	1010180	01/11/01	01/11/01	EPA 8015M/8020M	
Benzene	ND	5.00	"	"	"	"	"	"	
Toluene	ND	5.00	"	"	"	"	"	"	
Ethylbenzene	ND	5.00	"	"	"	"	"	"	
Xylenes (total)	**44.6**	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	50.0	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*104 %*	*65-135*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*	*65-135*		"	"	"	"	
S-(5-8) (MKA0186-02) Soil Sampled: 01/10/01 00:00 Received: 01/10/01 15:45									
Gasoline	**37000**	5000	ug/kg	5	1010180	01/11/01	01/11/01	EPA 8015M/8020M	
Benzene	ND	25.0	"	"	"	"	"	"	
Toluene	**25.9**	25.0	"	"	"	"	"	"	QR-04
Ethylbenzene	**107**	25.0	"	"	"	"	"	"	
Xylenes (total)	**728**	25.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*97.3 %*	*65-135*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*119 %*	*65-135*		"	"	"	"	
S-(9-12) (MKA0186-03) Soil Sampled: 01/10/01 00:00 Received: 01/10/01 15:45									
Gasoline	**3640**	1000	ug/kg	1	1010180	01/11/01	01/11/01	EPA 8015M/8020M	
Benzene	ND	5.00	"	"	"	"	"	"	
Toluene	ND	5.00	"	"	"	"	"	"	
Ethylbenzene	ND	5.00	"	"	"	"	"	"	
Xylenes (total)	**25.8**	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	50.0	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*104 %*	*65-135*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.5 %*	*65-135*		"	"	"	"	

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Cambria - Emeryville	Project: Arco	
6262 Hollis St.	Project Number: Arco #6113	**Reported:**
Emeryville CA, 94608	Project Manager: Jason Olson	01/17/01 09:27

Total Metals by EPA 6000/7000 Series Methods

Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
S-(1-4) (MKA0186-01) Soil Sampled: 01/08/01 00:00 Received: 01/10/01 15:45									
Lead	**7.15**	5.43	mg/kg	1	1010218	01/11/01	01/12/01	EPA 6010B	
S-(5-8) (MKA0186-02) Soil Sampled: 01/10/01 00:00 Received: 01/10/01 15:45									
Lead	ND	6.36	mg/kg	1	1010218	01/11/01	01/12/01	EPA 6010B	
S-(9-12) (MKA0186-03) Soil Sampled: 01/10/01 00:00 Received: 01/10/01 15:45									
Lead	**7.21**	5.43	mg/kg	1	1010218	01/11/01	01/12/01	EPA 6010B	

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6262 Hollis St.	Project Number: Arco #6113	**Reported:**
Emeryville CA, 94608	Project Manager: Jason Olson	01/17/01 09:27

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M - Quality Control

Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1010180 - EPA 5030, soils										
Blank (1010180-BLK1)				Prepared & Analyzed: 01/10/01						
Gasoline	ND	1000	ug/kg							
Benzene	ND	5.00	"							
Toluene	ND	5.00	"							
Ethylbenzene	ND	5.00	"							
Xylenes (total)	ND	5.00	"							
Methyl tert-butyl ether	ND	50.0	"							
Surrogate: a,a,a-Trifluorotoluene	*601*		"	*600*		*100*	*65-135*			
Surrogate: 4-Bromofluorobenzene	*598*		"	*600*		*99.7*	*65-135*			
Blank (1010180-BLK2)				Prepared & Analyzed: 01/11/01						
Gasoline	ND	1000	ug/kg							
Benzene	ND	5.00	"							
Toluene	ND	5.00	"							
Ethylbenzene	ND	5.00	"							
Xylenes (total)	ND	5.00	"							
Methyl tert-butyl ether	ND	50.0	"							
Surrogate: a,a,a-Trifluorotoluene	*559*		"	*600*		*93.2*	*65-135*			
Surrogate: 4-Bromofluorobenzene	*597*		"	*600*		*99.5*	*65-135*			
LCS (1010180-BS1)				Prepared & Analyzed: 01/10/01						
Gasoline	5290	1000	ug/kg	5500		96.2	65-135			
Benzene	77.7	5.00	"	64.0		121	65-135			
Toluene	398	5.00	"	386		103	65-135			
Ethylbenzene	90.1	5.00	"	92.0		97.9	65-135			
Xylenes (total)	446	5.00	"	462		96.5	65-135			
Methyl tert-butyl ether	116	50.0	"	104		112	65-135			
Surrogate: a,a,a-Trifluorotoluene	*659*		"	*600*		*110*	*65-135*			
Surrogate: 4-Bromofluorobenzene	*631*		"	*600*		*105*	*65-135*			

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6262 Hollis St.	Project Number: Arco #6113	**Reported:**
Emeryville CA, 94608	Project Manager: Jason Olson	01/17/01 09:27

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M - Quality Control

Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1010180 - EPA 5030, soils										
LCS (1010180-BS2)				Prepared & Analyzed: 01/11/01						
Gasoline	5190	1000	ug/kg	5500		94.4	65-135			
Benzene	73.0	5.00	"	64.0		114	65-135			
Toluene	379	5.00	"	386		98.2	65-135			
Ethylbenzene	85.8	5.00	"	92.0		93.3	65-135			
Xylenes (total)	422	5.00	"	462		91.3	65-135			
Methyl tert-butyl ether	132	50.0	"	104		127	65-135			
Surrogate: a,a,a-Trifluorotoluene	*621*		"	*600*		*104*	*65-135*			
Surrogate: 4-Bromofluorobenzene	*628*		"	*600*		*105*	*65-135*			
Matrix Spike (1010180-MS1)	**Source: P101071-01**			Prepared & Analyzed: 01/10/01						
Gasoline	4030	1000	ug/kg	5500	ND	72.1	65-135			
Benzene	84.7	5.00	"	64.0	ND	132	65-135			
Toluene	429	5.00	"	386	ND	111	65-135			
Ethylbenzene	94.4	5.00	"	92.0	ND	103	65-135			
Xylenes (total)	450	5.00	"	462	ND	97.2	65-135			
Methyl tert-butyl ether	142	50.0	"	104	ND	137	65-135			QM-07
Surrogate: a,a,a-Trifluorotoluene	*697*		"	*600*		*116*	*65-135*			
Surrogate: 4-Bromofluorobenzene	*507*		"	*600*		*84.5*	*65-135*			
Matrix Spike Dup (1010180-MSD1)	**Source: P101071-01**			Prepared & Analyzed: 01/10/01						
Gasoline	3900	1000	ug/kg	5500	ND	69.7	65-135	3.28	20	
Benzene	83.3	5.00	"	64.0	ND	130	65-135	1.67	20	
Toluene	420	5.00	"	386	ND	109	65-135	2.12	20	
Ethylbenzene	90.6	5.00	"	92.0	ND	98.5	65-135	4.11	20	
Xylenes (total)	434	5.00	"	462	ND	93.7	65-135	3.62	20	
Methyl tert-butyl ether	137	50.0	"	104	ND	132	65-135	3.58	20	
Surrogate: a,a,a-Trifluorotoluene	*683*		"	*600*		*114*	*65-135*			
Surrogate: 4-Bromofluorobenzene	*486*		"	*600*		*81.0*	*65-135*			

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6262 Hollis St.	Project Number: Arco #6113	**Reported:**
Emeryville CA, 94608	Project Manager: Jason Olson	01/17/01 09:27

Total Metals by EPA 6000/7000 Series Methods - Quality Control

Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1010218 - EPA 3050B										
Blank (1010218-BLK1)				Prepared & Analyzed: 01/11/01						
Lead	ND	7.50	mg/kg							
LCS (1010218-BS1)				Prepared & Analyzed: 01/11/01						
Lead	48.4	7.50	mg/kg	50.0		96.8	80-120			
Matrix Spike (1010218-MS1)		**Source: P101152-03**		Prepared & Analyzed: 01/11/01						
Lead	39.4	5.95	mg/kg	39.7	ND	99.2	75-125			
Matrix Spike Dup (1010218-MSD1)		**Source: P101152-03**		Prepared & Analyzed: 01/11/01						
Lead	46.3	6.82	mg/kg	45.5	ND	102	75-125	16.1	20	

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Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QR-04	Results between the primary and confirmation columns varied by greater than 40% RPD.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

ARCO Products Company
Division of Atlantic-Richfield Company

Task Order No. WAR #-76861.00

Chain of Custody

ARCO Facility no. 6113	City (Facility) Livermore	Project manager (Consultant) Ron Scheele / Jason Olson	Laboratory name SEQ
ARCO engineer Paul Supple	Telephone no. (ARCO) 925-299-8891	Telephone no. (Consultant) 510-450-8291	Fax no. (Consultant) 510-450-8295
Consultant name CAMBRIA	Address (Consultant) 6262 Hollis St, Emeryville, CA 94608		Contract number

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA M602/8020/8015 / MTBE	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ VOA ☐ Semi VOA ☐	CAM METALS EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	TOTAL LEAD
S-1	1	1	X			X		1/8/01			X										X
S-2		1																			
S-3		1																			
S-4		1																			
S-5	2	1						1/10/01													
S-6		1																			
S-7		1																			
S-8		1																			
S-9	3	1																			
S-10		1																			
S-11		1																			
S-12		1																			

COMPOSITE Samples (S-1 → S-4 [1], S-5 → S-8 [2], S-9 → S-12 [3])

COOLER CUSTODY SEALS INTACT ☐
NOT INTACT ☐
COOLER TEMPERATURE 3.0 °C

Special detection Limit/reporting: Lowest possible

Special QA/QC: MKA0186

Remarks:
1) Composite Samples S-1 → S-4, S-5 → S-8, S-9 → S-12
2) If total Lead >50ppm, Run STLC for Lead
3) If Benzene >10ppm Run TLCP

Method of shipment

Lab number

Turnaround time
- Priority Rush 1 Business Day: X
- Rush 2 Business Days: ☐
- Expedited 5 Business Days: ☐
- Standard 10 Business Days: ☐

Condition of sample:

Temperature received:

	Date	Time		Date	Time
Relinquished by sampler			Received by	1-10-01	1345
Relinquished by			Received by		
			Received by		

Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant