RO-452

CAMBRIA

October 31, 2001

Make sure there are adequate MWS dg at areas w/ highest residual HCs, eg. disp 2, disp 6, SW-6, SW-8 and that exist wells are intact and not compromised after station re-construction

DEC 17 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. 6041
7249 Village Parkway
Dublin, California
Cambria Project #438-1668

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 two hydraulic hoists and three USTs and associated piping, over-excavation activities, abandonment of seven onsite wells, and installation of future remediation piping. The UST, piping, and dispenser compliance sampling was performed in accordance with the State of California Regional Water Quality Control Board guidelines.

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: Paul Supple, ARCO, PO Box 6549, Moraga, California 94570
Wyman Hong, ACFC Zone 7, 5997 Parkside Drive, Pleasanton, California 94588-5127
Nora Koskenmaki, ARCO Compliance PO Box 6038 Artesia, CA 90702

Oakland, CA
San Ramon, CA
Sonoma, CA

Cambria Environmental Technology, Inc.

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

CAMBRIA

Underground Storage Tank, Piping Removal, And Well Abandonment Report

ARCO Service Station No. 6041
7249 Village Parkway
Dublin, California
Cambria Project #438-1668

Prepared For:

Mr. Paul Supple
ARCO

October 31, 2001

Prepared By:

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

Written by:

Ron Scheele, RG
Senior Project Manager

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

Oakland, CA
San Ramon, CA
Sonoma, CA

Cambria Environmental Technology, Inc.

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Suite B
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Underground Storage Tank, Piping Removal, And Well Abandonment Report

ARCO Service Station No. 6041
7249 Village Parkway
Dublin, California
Cambria Project #438-1668

October 31, 2001

INTRODUCTION

On behalf of ARCO, Cambria Environmental Technology, Inc. (Cambria) has prepared this *Underground Storage Tank, Piping Removal, and Well Abandonment Report* for the above-referenced site. Cambria supervised the removal of two hydraulic hoists and three USTs and associated piping, over-excavation activities, and the abandonment of seven onsite wells by CPI Development (CPI). The site background, hydraulic hoist removal, UST and product piping removal activities, over-excavation activities, well abandonment activities, compliance soil sampling activities, analytical soil results, and waste disposal documentation 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 direction from the Alameda County Health Care Services Agency (ACHCSA).

SITE BACKGROUND

Site Description: The site is located at 7249 Village Parkway on the northeastern corner of the intersection of Village Parkway and Amador Valley Boulevard in Dublin, California (see Figure 1). The site is occupied by an active ARCO service station consisting of three gasoline USTs, four gasoline dispenser islands, and a station building (see Figure 2).

Site Hydrogeology: The topography surrounding the site is generally flat, sloping gently towards the south-southeast at an elevation of about 330 feet above mean sea level. Based on previous investigations, the lithology beneath the site consists primarily of interbedded clay, sand, and sandy silts. Depth to groundwater ranges from 7 to 11 feet below grade (fbg). Based on Cambria's *Monitoring and Remediation Performance Report, First Quarter 2001*, groundwater flow at the site is towards the west-southwest.

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HYDRAULIC HOIST REMOVAL

On July 24, 2001, two hydraulic hoists were discovered beneath the existing station building during demolition activities performed by CPI Development of Hesperia, California. Approximately 10 gallons of hydraulic fluid was discharged from the hoists onto surface soil during removal (see Figure 3). The hoists were wrapped with visqueen to prevent further leaks.

Immediately upon discovery of the hoists, Ms. eva chu, Senior Hazardous Materials Specialist with ACHCSA, was notified and agreed to a limited over-excavation of the impacted material. On July 26, 2001, Cambria Senior Staff Environmental Scientist Mr. Jason Olson directed over-excavation of the impacted area. During the initial over-excavation, steel piping leading to the former waste oil UST (removed in September of 1990) was discovered at approximately 4 fbg. The steel piping contained multiple holes due to corrosion, and soil in the immediate vicinity was heavily impacted. Mr. Olson directed further over-excavation activities to remove the impacted area, which extended to an approximate depth of 5.5 fbg. Approximately 100 cubic yards of impacted soil were removed during the over-excavation activities and transported by Dillard Environmental (Dillard) for disposal (see Figure 3).

On July 26, 2001, soil samples OV-1 and OV-2 were collected at 6 fbg at the base of the over-excavation pit. Sample analyses and results are described in the *Analytical Soil Sampling Results* section and in Table 1.

UST AND PRODUCT PIPING REMOVAL ACTIVITIES

On July 27, 2001, three, 10,000-gallon, single-walled fiberglass USTs were removed by CPI Development (see figure 2). Mr. Rob Weston and Mr. Scott Seery, Senior Hazardous Materials Specialists with ACHCSA, and Ms. Bonnie Terra, Fire Inspector with Alameda County Fire Department observed the UST removal activities and associated UST soil sampling. Sampling methods and results are described in the *Compliance Soil Sampling Activities* and *Analytical Soil Results* sections and in Table 2. No leaks were identified in the USTs during removal activities. During UST removal, groundwater was observed in the tank cavity at approximately 12 fbg. Approximately one inch of dark, viscous, weathered separate phase hydrocarbons (SPH) were observed on the groundwater. Approximately 25,600 gallons of hydrocarbon impacted groundwater from the UST cavity was removed by vacuum truck and transported by Dillard for offsite disposal (See Appendix E). The three USTs were replaced with two new double-walled fiberglass USTs, which were subsequently installed in a new excavated UST cavity located northwest of the existing UST cavity (see Figure 2).

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On July 27, 2001, CPI removed the associated fiberglass product piping. Upon the removal of the single-walled fiberglass product piping, previous generation steel product piping was discovered. The previous generation piping runs were located at approximately 3 fbg, directly below the fiberglass product piping. Mr. Weston with the ACHCSA directed the removal of the fiberglass product piping and associated compliance soil sampling. Sample methods and results are described in the *Compliance Soil Sampling Activities* and *Analytical Soil Results* sections and in Table 2. No leaks were identified in the USTs during removal activities. Mr. Seery with the ACHCSA observed the removal of the previous generation steel product piping. - much of the piping was still charged w/fuel; all escaped to soil or GW in UST pit

OVER-EXCAVATION ACTIVITIES

At the direction of Mr. Seery, all pea-gravel in the existing UST cavity was over-excavated to a total depth of 16 fbg (see Figure 3). Approximately 1,110 cubic yards of TPH-impacted material was removed from the existing UST cavity.

In order to accommodate the installation of the new USTs, a new UST cavity was over-excavated to 17 fbg in the vicinity of the northwestern dispenser island. The proposed UST cavity area is shown on Figure 2 and the over-excavation area is shown on Figure 3. Approximately 1,300 cubic yards of TPH-impacted soil was removed from the new UST cavity area.

In order to accommodate the new dispenser pad and canopy footings, the area directly east of the existing UST cavity and south of the former station building was over-excavated to approximately 5 fbg. The proposed dispenser pad area is shown on Figure 2, and the over-excavation area is shown on Figure 3. Approximately 1,150 cubic yards of TPH-impacted soil was removed from the new dispenser pad area.

All other areas of the site were excavated to approximately 2.5 fbg for geotechnical reasons. During excavation activities, TPH-impacted soil was segregated from re-usable soil and transported for disposal.

A total of 4,150 tons (approximately 3,192 cubic yards) were removed during all over-excavation activities, and transported by Dillard Environmental for disposal (See Appendix E).

WELL ABANDONMENT ACTIVITIES

During UST upgrade activities, five permitted monitoring wells (VW-1, VW-2, VW-5, AS-1, and MW-1) and two non-permitted tank backfill wells (TP-1 and TP-2) were abandoned by CPI, due to their proximity to the UST cavities. Using an excavator, all wells were excavated to their total depths and backfilled with engineered fill. Copies of the well abandonment permits forms are presented as Appendix A.

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COMPLIANCE SOIL SAMPLING ACTIVITIES

Sampling Procedures and Handling: All soil 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 B and C, respectively. The samples were placed into a cooler with ice and delivered under chain-of-custody procedures to Pace Analytical of Houston, Texas.

UST Compliance Sampling: On July 27, 2001, Cambria collected sidewall soil samples from the former UST cavity, under the supervision of Mr. Seery. A total of eight soil samples (SW-1 through SW-8) were collected (two from each sidewall of the UST cavity) at a depth of approximately 8 fbg. On July 31, 2001, soil sample UST-1 was collected from the northwestern sidewall of the new UST cavity at a depth of approximately 13 fbg at the request of Ms. eva chu. Sample analyses and results are described in the *Analytical Soil Results* section and in Table 2. Soil sample locations are shown on Figure 3.

Piping and Dispenser Island Compliance Sampling: On July 27, 2001, Cambria performed soil sampling beneath the former dispenser islands and product piping. The sampling was conducted under the supervision of Mr. Weston. Soil samples (Disp-1 through Disp-4) were collected beneath the end of the dispenser islands south of the station building. At the direction of Mr. Weston, only one soil sample was collected from beneath each of the dispenser islands located west of the station building, due to the planned over-excavation of the area (Disp-5 and Disp-6). Soil samples (Pipe-1 and Pipe-2) were collected beneath the fiberglass product piping at locations specified by Mr. Weston. Based on direction from Mr. Seery, no additional soil samples were collected beneath the previous generation piping. All dispenser and product piping soil samples were collected at depths between 3 and 5 fbg. Sample analyses and results are described in the *Analytical Soil Results* section and in Table 2. Soil sampling locations are shown on Figure 3.

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ANALYTICAL SOIL RESULTS

Waste Oil Over-Excavation Area

Sample Analyses: Soil samples OV-1 and OV-2 were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and diesel (TPHd) by Modified EPA Method 8015, total oil and grease (TOG) by EPA Method 9071, volatile organic compounds (VOCs) by EPA Method 8260, and cadmium, chromium, lead, nickel, and zinc by EPA Method 6010. Waste oil over-excavation sample results are presented in Table 1. The certified laboratory analytical report is presented in Appendix D.

Sample Results: No TPHg, TPHd, TOG, or VOC concentrations were detected in either sample. The maximum metal concentrations were detected in soil sample OV-1 at the following levels; cadmium at 0.182 milligrams per kilogram (mg/kg), chromium at 12.3 mg/kg, lead at 2.96 mg/kg, nickel at 15.4 mg/kg, and zinc at 15.8 mg/kg.

New and Existing UST Cavity Areas

Sample Analyses: Soil samples SW-1 through SW-8, and UST-1 were analyzed for 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 6010. UST compliance sampling analytical results are presented in Table 2. Certified laboratory analytical reports are presented in Appendix D.

Existing UST Cavity Analytical Results (SW-1 through SW-8): TPHg concentrations ranged from 13 to 8,300 mg/kg, with the maximum TPHg concentration detected in sample SW-6. Benzene concentrations ranged from 0.093 to 64.0 mg/kg, with the maximum benzene concentration detected in sample SW-6. MTBE concentrations ranged from 1.90 to 6.00 mg/kg, with the maximum MTBE concentration detected in sample SW-8. Lead was detected only in sample SW-4 at 5.16 mg/kg.

New UST Cavity Analytical Results (UST-1): TPHg, MTBE, and total lead concentrations were detected in sample UST-1 at 0.21, 0.0550, and 13.3 mg/kg, respectively. No BTEX compounds were detected in sample UST-1.

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Product Piping and Dispenser Island Areas

Sample Analyses: Soil samples Disp-1 through Disp-6, Pipe-1, and Pipe-2 were analyzed for 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 6010. UST compliance sampling analytical results are presented in Table 2. Certified laboratory analytical reports are presented in Appendix D.

Piping and Dispenser Island Analytical Results (Disp-1 through Disp-6, Pipe-1 and Pipe-2): TPHg concentrations ranged from 1.4 to 1,200 mg/kg, with the maximum TPHg concentration detected in sample Disp-2. Benzene concentrations ranged from 0.0120 to 3.20 mg/kg, with the maximum benzene concentration detected in sample Disp-2. MTBE concentrations ranged from 0.0830 to 0.410 mg/kg, with the maximum MTBE concentration detected in sample Disp-1. Lead was detected only in sample Disp-2 at 4.77 mg/kg.

WASTE DISPOSAL

Dillard transported 4,150 tons of non-hazardous petroleum impacted soil and approximately 25,600 gallons of hydrocarbon impacted groundwater to the Vasco Landfill in Livermore, California, for disposal. Under the direction of CPI Development, ECI of Richmond, California, transported the three fiberglass USTs to ECI's permitted hazardous waste facility in Richmond, California, for disposal. Soil, groundwater disposal confirmation letters are presented in Appendix E. Soil stockpile sampling results are presented in a laboratory analytical report in Appendix F.

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ATTACHMENTS

Figure 1 – Vicinity Map
Figure 2 – Site Plan (Current and Proposed Layout)
Figure 3 – Soil Sampling, Over-Excavation, and Remediation Piping Site Plan

Table 1 – Waste Oil Over-Excavation Soil Sampling Results
Table 2 – UST, Piping, and Dispenser Island Soil Sampling Results

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

H:\ARCO\6041\Reports\ARCO 6041 Tank Pull Report.doc

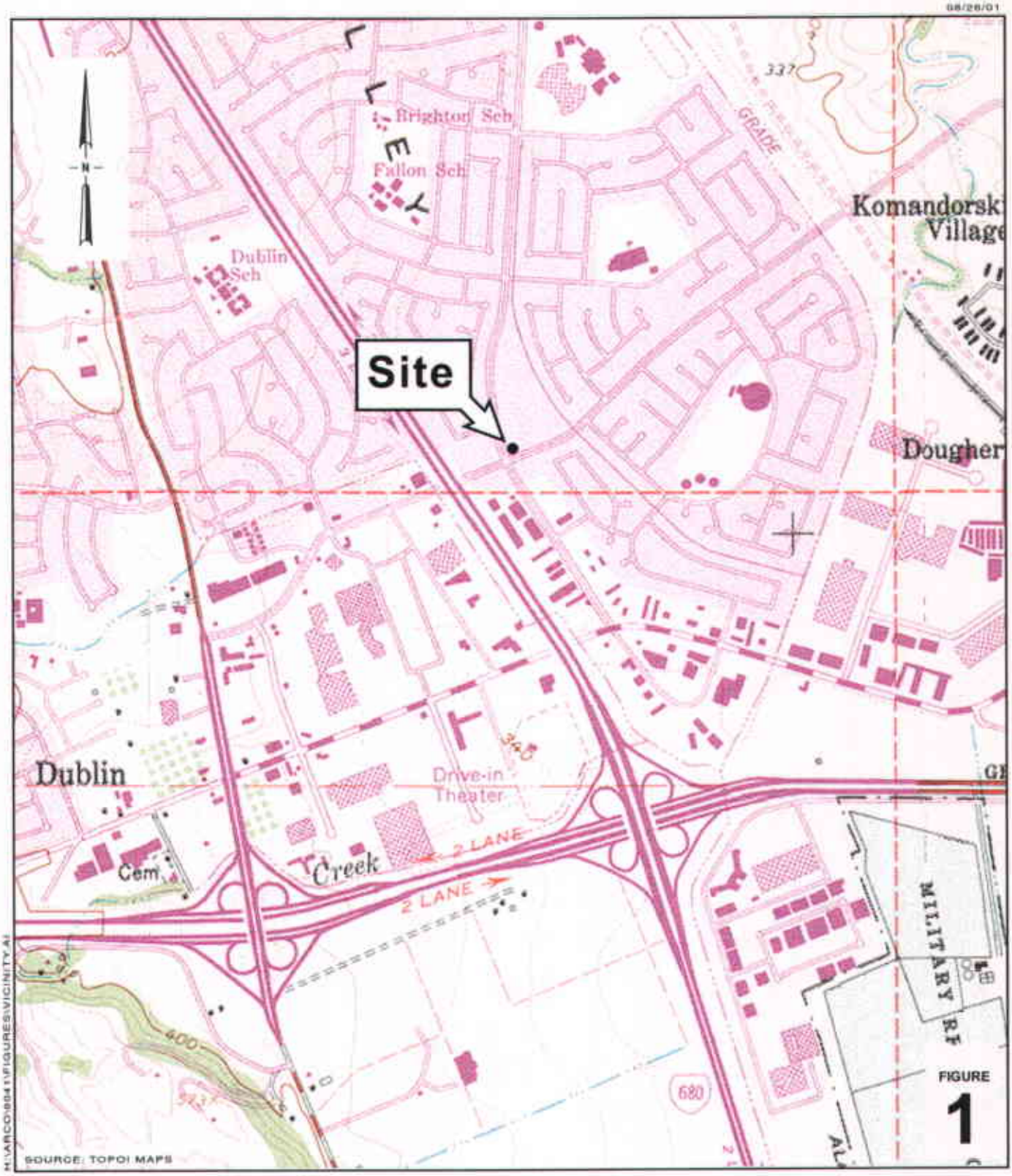

FIGURE 1

ARCO Service Station 6041

7249 Village Parkway

Dublin, California

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Vicinity Map

PVC remediation piping stub-ups
Electrical conduit and Sewer stub-up

MW-6

Proposed Remediation System Enclosure

MW-5

Proposed Station Building

Proposed USTs

92 OCT.

87 OCT.

87 OCT.

dispenser islands

Station Building

VW-4

MW-1

AS-1

VW-5

MW-7

Proposed dispenser islands

existing USTs

TP-2

TP-1

VW-2

dispenser islands

VW-3

MW-8

AS-2

VW-4

MW-3

MW-2

MW-4

planter

planter

planter

VILLIAGE PARKWAY

AMADOR VALLEY BOULEVARD

EXPLANATION

MW-6 Monitoring well location

MW-7 Tank backfill well

0 10 20 40

Scale (ft)

Site Plan (Current and proposed station layout)

ARCO Service Station 6041
7249 Village Parkway
Dublin, California

CAMBRIA

FIGURE
2

L:\ARCO 6041\FIGURES\FMR-PROP-SITE.DWG

11/08/01

PVC remediation piping stub-ups
Sewer stub-up
Electrical stub-up
MW-6
Proposed Remediation System Enclosure
New Station Building
MW-5
former waste oil tank (removed 09/90)
Former Station Building
former waste oil piping
OV-2
OV-1
former hydraulic hoists (approx.)
UST-1 13.0'
disp-5 4.0'
disp-6 4.0'
former dispenser islands
VW-1
New UST Cavity
MW-1
AS-1
VW-5
MW-7
SW-5 8.0'
SW-1 8.0'
SW-2 8.0'
SW-6 8.0'
pipe-1 4.0'
TP-2
Former UST Cavity
SW-4 8.0'
TP-1
SW-7 8.0'
VW-2
SW-3 8.0'
SW-8 8.0'
VW-3
MW-8
AS-2
VW-4
MW-3
MW-2
MW-4
disp-3 3.0'
disp-4 3.0'
former dispenser islands
disp-2 3.0'
disp-1 5.0'
planter
planter
planter

VILLIAGE PARKWAY

AMADOR VALLEY BOULEVARD

EXPLANATION

- MW-6 ✦ Monitoring well location
- MW-1 ⊠ Abandoned well location
- UST-1 13.0' ◧ Soil sample location and depth
- New Dispenser Island Area Over excavated to 5.0 feet below grade (fbg).
- Waste Oil and Hydraulic Oil Area Over excavated to 5.5 fbg.
- Former UST Area Over excavated to 16.0 fbg.
- New UST Area Over excavated to 17.0 fbg.
- Junction Box
- Remediation Piping Trench (with two 4-inch dia. PVC conduits and two 2-inch dia. PVC conduits)

Note: All non-shaded areas where over excavated to 2.5 fbg. over the entire site.

0 10 20 40
Scale (ft)

Soil Sampling, Over Excavation and Remediation Piping Site Plan

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ARCO Service Station 6041
7249 Village Parkway
Dublin, California

FIGURE
3

I:\ARCO 6041\FIGURES\OVEREXCAVATION2.DWG

Table 1
Waste Oil Over-Excavation Soil Sampling Results

July 26, 2001

ARCO Service Station 6041
2747 Pinole Valley Road, Pinole, California

Sample ID	Depth Sampled (fbg)	TPHg (mg/kg)	TPHd (mg/kg)	TOG (mg/kg)	VOCs (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)
OV-1	6.0	<0.050	<9.9	<49.5	ND	**0.182**	**12.3**	**2.96**	**15.4**	**15.8**
OV-2	6.0	<0.050	<9.9	<49.5	ND	**0.132**	**10.6**	**2.79**	**14.5**	**14.5**

Notes

ND = none detected
fbg = feet below grade
mg/kg = milligrams per kilogram

TPHg = total petroluem hydrocarbons as gasoline
TPHd = total petroluem hydrocarbons as diesel
TOG = total oil and grease
VOCs= volatile organic compounds

Table 2
UST, Piping, and Dispenser Island Soil Sampling Results

July 27, 2001

ARCO Service Station 6041
2747 Pinole Valley Road, Pinole, California

Sample ID	Depth Sampled (fbg)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylene (mg/kg)	MTBE (mg/kg)	Total Lead (mg/kg)
Former UST Cavity								
SW-1	8	**220**	**1.70**	<0.500	<0.500	**0.500**	<0.500	<4.85
SW-2	8	**4,500**	**12.0**	<10.0	**63.0**	**300**	<10.0	<4.85
SW-3	8	**1,300**	<2.50	<2.50	**22.0**	**130**	**4.40**	<4.85
SW-4	8	**4,700**	**11.0**	<10.0	**43.0**	**320**	<10.0	**5.16**
SW-5	8	**13**	**0.093**	<0.0250	**1.00**	**0.180**	**1.90**	<4.95
SW-6	8	**8,300**	**64.0**	<25.0	**180**	**310**	<25.0	<4.95
SW-7	8	**1,500**	**8.00**	<5.00	**26.0**	**22.0**	<5.00	<5.00
SW-8	8	**2,400**	**7.40**	<5.00	**37.0**	**220**	**6.00**	<5.00
New UST Cavity								
UST-1	13	**0.21**	<0.00500	<0.00500	<0.00500	<0.00500	**0.0550**	**13.3**
Dispenser Islands								
Disp-1	5	**70**	<0.120	<0.120	**0.570**	**0.950**	**0.410**	<4.85
Disp-2	3	**1,200**	**3.20**	**9.30**	**18.0**	**87.0**	<1.20	**4.77**
Disp-3	3	**4.0**	**0.0250**	<0.0250	**0.0650**	**0.052**	**0.210**	<4.81
Disp-4	3	**7.8**	**0.0430**	<0.0250	**0.120**	**0.0340**	**0.0830**	<4.85
Disp-5	4	**55**	<0.120	<0.120	**0.580**	**0.820**	**0.360**	<4.95
Disp-6	4	**580**	**1.80**	**5.00**	**12.0**	**52.0**	<1.20	<4.85
Product Piping								
Pipe-1	4	**4.2**	**0.0380**	**0.0320**	**0.150**	**0.0590**	**0.360**	<4.81
Pipe-2	4	**1.4**	**0.0120**	**0.00730**	**0.0700**	**0.00800**	**0.0490**	<4.81

Notes

fbg = feet below grade
mg/kg = milligrams per kilogram
TPHg = total petroluem hydrocarbons as gasoline
MTBE = methyl tertiary butyl ether

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APPENDIX A

WELL ABANDONMENT PERMITS

5997 PARK[illegible]E DRIVE PLEASANTON, CALIFORNIA 94588-512[illegible] VOICE (925) 484-2600 X235
FAX (925) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

PERMIT NUMBER 21107
WELL NUMBER 2S/1W 36P28
APN

LOCATION OF PROJECT 7249 Village Parkway
Dublin, CA

California Coordinates Source ____ ft Accuracy± ____ ft.
CCN ____ ft. CCE ____ ft.
APN 941-197-079-4

CLIENT
Name ARCO (Paul Supple)
Address PO Box 6549 Phone 925-299-8891
City Moraga Zip 94570

APPLICANT
Name Jason Olson
Cambria Environmental Technology, Inc. Fax 510-450-8295
Address 6262 Hollis Street Phone 510-450-8291
City Emeryville 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: None
Mud Rotary ☐ Air Rotary ☐ Auger ☐
Cable ☐ Other ☐

DRILLER'S LICENSE NO. N/A

WELL PROJECTS
Drill Hole Diameter ____ in. Maximum
Casing Diameter 4 in. Depth ____ ft.
Surface Seal Depth ____ ft. Number ____

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

ESTIMATED STARTING DATE 6/25/01 ESTIMATED COMPLETION DATE 6/25/01

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 Date 6/21/01
Wyman Hong

8/6/99

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.
APPLICANT'S SIGNATURE ____ Date 6/18/01

STATE WELL ID # 2S/[illegible]W 36 P 28
"MW-1"

June 20, 2001

Zone 7
Water Resources Engineering
Drilling Protection Ordinance

Arco
7249 Village Parkway
Dublin
Well 2S/1W 36P28
Permit 21107

Destruction Requirements

1. Sound the well as deeply as practicable and record for your report.

2. Remove the entire well casing, surface seal and gravel pack by excavation.

These destruction requirements as proposed by Jason Olson of Cambria Environmental Technology meet or exceed Zone 7 minimum requirements.

ZONE 7 WATER AGENCY

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

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT ARCO STATION 6041
7249 VILLAGE PARKWAY
DUBLIN, CA

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 - RON SCHEELE
Fax (510) 450-8295
Address 6262 HOLLIS ST Phone (510) 450-6983
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 MW-1, AS-1, VW-5

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

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☐
Cable	☐	Other	X (EXCAVATOR - DIG-OUT)		

DRILLER'S LICENSE NO. _____

WELL PROJECTS See site plan attached

Drill Hole Diameter	____ in.	Maximum Depth	____ ft.
Casing Diameter	____ in.	Number	____
Surface Seal Depth	____ ft.		

GEOTECHNICAL PROJECTS

Number of Borings	____	Maximum Depth	____ ft.
Hole Diameter	____ in.		

ESTIMATED STARTING DATE 8/1/01
ESTIMATED COMPLETION DATE 8/1/01

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Ron Scheele Date 8/1/01

FOR OFFICE

PERMIT NUMBER 21139
WELL NUMBER 2S/1W-36P32, 36P34 & 36P36
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 Date 8/1/01
Wyman Hong

8/6/98

August 1, 2001

Zone 7
Water Resources Engineering
Drilling Protection Ordinance

Arco
7249 Village Parkway
Dublin
Well 2S/1W 36P32, 36P34 & 36P36
Permit 21139

Destruction Requirements

1. Sound the well as deeply as practicable and record for your report.

2. Remove the entire well casing, surface seal and gravel pack by excavation.

These destruction requirements as proposed by Ron Scheele of Cambria Environmental Technology meet or exceed Zone 7 minimum requirements.

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 6041
7249 VILLAGE PARKWAY
DUBLIN, CA

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

CLIENT
Name ARCO
Address P.O. Box 6549 Phone (925) 299-8811
City MORAGA, CA Zip 94570

APPLICANT
Name CAMBRIA - Ron SCHEELE
Fax 510 410-8295
Address 6262 HOLLIS ST Phone 510 450-6883
City EMERYVILLE CA Zip 94608

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☐
Monitoring	☐	Well Destruction VW-2	X

PROPOSED WATER SUPPLY WELL USE

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

DRILLING METHOD:
Mud Rotary ☐ Air Rotary ☐ Auger ☐
Cable ☐ Other X EXCAVATOR - DIG OUT

DRILLER'S LICENSE NO. _____

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 10 ft.
Surface Seal Depth 4 ft. Number VW-2

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

ESTIMATED STARTING DATE 8/9/01
ESTIMATED COMPLETION DATE 8/9/01

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE R. Scheele Date 8/7/01

FOR OFFICE

PERMIT NUMBER 21148
WELL NUMBER 2S/1W 36P29
APN 941 0197 079 04

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 Date 8/9/01
Wyman Hong

8/8/99

August 9, 2001

Zone 7
Water Resources Engineering
Drilling Protection Ordinance

Arco
7249 Village Parkway
Dublin
Well 2S/1W 36P29
Permit 21148

Destruction Requirements

1. Sound the well as deeply as practicable and record for your report.

2. Remove the entire well casing, surface seal and gravel pack by excavation.

These destruction requirements as proposed by Ron Scheele of Cambria Environmental Technology meet or exceed Zone 7 minimum requirements.

CAMBRIA

APPENDIX B

STANDARD UST EXCAVATION SAMPLING PROCEDURES

TANK REMOVAL SAMPLING PROCEDURES

This document describes Cambria Environmental Technology's standard operating procedures for collecting soil and ground water samples during underground storage tank 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.

Tank Removal Sampling

The objective of sample collection during routine underground storage tank removals is to determine whether hydrocarbons or other stored chemicals have leaked to the subsurface. If no ground water is encountered within the tank excavation, Cambria will sample native soil 1 to 2 ft beneath the removed tank. Additional soil samples may also be collected at locations of obvious spillage to determine maximum concentrations in the surrounding soils. For underground storage tanks with a capacity of less than 1,000 gallons, one soil sample is collected beneath the fill end of the tank. For tanks with a capacity of between 1,000 and 10,000 gallons, one soil sample is collected beneath each end of the tank. For tanks larger than 10,000 gallons, 3 or more soil samples are collected beneath the removed tank. We also collect one soil sample for every 20 ft of product piping.

In cases where ground water is encountered within underground storage tank excavations, Cambria will collect confirmatory soil samples from the excavation sidewalls just above the soil/ground water interface and a representative ground water sample from the excavation. The excavation is typically purged and allowed to recover prior to collecting the water sample. For tanks with capacities of 10,000 gallons or less, one soil sample is collected from the wall at each end of the tank excavation. For tanks with capacities greater than 10,000 gallons, or tank clusters, at least four soil samples are collected from the excavation walls next to the tank ends. Piping samples are collected in native soil 1 to 2 ft beneath the removed piping. One sample is typically collected for every 20 linear ft of piping unless regulatory agencies approve of different sampling requirements.

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.

The ground water sample is collected using steam cleaned Teflon or PVC bailers, decanted into a volatile organic analysis (VOA) bottle or other appropriate clean sample container, refrigerated and transported under chain of custody to a State certified analytic laboratory.

SOIL STOCKPILE SAMPLING PROCEDURES

After confirming a release from underground gasoline storage tanks, product piping or pump islands, soil excavation is often completed to remove hydrocarbon bearing soils which for pose a threat to ground water quality beneath a site. The removed soils are typically stockpiled on site pending the results of laboratory analysis for soil samples collected from the stockpiles. Cambria has developed standard sampling procedures to characterize stockpiled soils for on- or off-site treatment, or offsite disposal. The procedures ensure that the samples are collected, handled, and documented in compliance with Federal, State and local regulatory agency guidelines.

Cambria's stockpile sampling procedures are based primarily on Bay Area Air Quality Management District regulations[1] and those of the anticipated landfill. One composite soil sample is collected for every 20 to 50 cubic yards of excavated soil. Each composite sample consists of four discreet soil samples collected from the stockpile which are combined in the laboratory. The samples are collected by dividing each 20 to 50 cubic yard volume into 4 sectors. One discreet soil sample is collected from each sector.

The samples are collected by digging away approximately 2 ft of the surface soils. A clean brass tube is then driven into the exposed soils. The ends of the tube are trimmed flush, capped with Teflon tape and plastic end caps, labeled, refrigerated and transported under chain of custody to a State certified laboratory.

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[1] San Francisco Bay Area Air Quality Management District, 1989, Regulation 8, Organic Compounds, Rule 40, Aeration of Contaminated Soil and Removal of Underground Storage Tanks, February 15, 1989 7 pp.

CAMBRIA

APPENDIX C

STANDARD DISPENSER AND PRODUCT PIPING REMOVAL SAMPLING PROCEDURES

CAMBRIA

STANDARD PIPING AND DISPENSER 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.

CAMBRIA

APPENDIX D

SOIL SAMPLING ANALYTICAL REPORTS

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

September 07, 2001

Mr. Ron Scheele
Cambria Environmental
6262 Hollis Street
Emeryville, CA 94608

RE: Lab Project Number: 8522525
Client Project ID: ARCO Site#6041

Dear Mr. Scheele:

Enclosed are the analytical results for sample(s) received by the laboratory on July 27, 2001. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paula Kirtley
Project Manager

Enclosures

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

Cambria Environmental
6262 Hollis Street
Emeryville, CA 94608

Lab Project Number: 8522525
Client Project ID: ARCO Site#6041

Attn: Mr. Ron Scheele
Phone: 510.450.1983

Solid results are reported on a wet weight basis

Lab Sample No: 851704137 Project Sample Number: 8522525-001 Date Collected: 07/26/01 12:30
Client Sample ID: OV-1 Matrix: Soil Date Received: 07/27/01 08:38

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg Limit
Metals								
SW6010 Metals, Trace Soil	Method: EPA 6010							
Cadmium	0.182	mg/kg	0.0952	1.0	08/02/01	PBAR 7440-43-9		
Chromium	12.3	mg/kg	0.476	1.0	08/02/01	PBAR 7440-47-3		
Lead	2.96	mg/kg	0.286	1.0	08/02/01	PBAR 7439-92-1		
Nickel	15.4	mg/kg	0.476	1.0	08/02/01	PBAR 7440-02-0		
Zinc	15.8	mg/kg	0.476	1.0	08/02/01	PBAR 7440-66-6		
GC Semivolatiles								
Diesel Components in Soil	Method: TPH by EPA 8015M							
DRO C10-C28	ND	mg/kg	9.9	1.0	07/30/01 17:42	FOSE		
Date Extracted					07/30/01			
Organics Prep								
Oil&Grease,Soxhlet	Prep/Method: EPA 9071 / EPA 9071							
Oil and Grease	ND	mg/kg	49.5	1.0	07/30/01 10:30	JDEA		
GC Volatiles								
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified							
Gasoline Range Organics	ND	mg/kg	0.050	1.0	07/30/01 17:20	LJAS		
4-Bromofluorobenzene (S)	95	%		1.0	07/30/01 17:20	LJAS 460-00-4		
1,4-Difluorobenzene (S)	101	%		1.0	07/30/01 17:20	LJAS		
GC/MS Volatiles								
SW8260,NR Volatiles,Soil	Prep/Method: EPA 8260 / EPA 8260							
Benzene	ND	mg/kg	0.00200	1.0	07/31/01 16:54	DBEN 71-43-2		

REPORT OF LABORATORY ANALYSIS

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

Lab Project Number: 8522525
Client Project ID: ARCO Site#6041

Lab Sample No: 851704137 Project Sample Number: 8522525-001 Date Collected: 07/26/01 12:30
Client Sample ID: OV-1 Matrix: Soil Date Received: 07/27/01 08:38

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Bromodichloromethane	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	75-27-4		
Bromoform	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	75-25-2		
Bromomethane	ND	mg/kg	0.0100	1.0	07/31/01 16:54	DBEN	74-83-9		
Carbon tetrachloride	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	56-23-5		
Chlorobenzene	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	108-90-7		
Chloroethane	ND	mg/kg	0.0100	1.0	07/31/01 16:54	DBEN	75-00-3		
2-Chloroethylvinyl ether	ND	mg/kg	0.0100	1.0	07/31/01 16:54	DBEN	110-75-8		
Chloroform	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	67-66-3		
Chloromethane	ND	mg/kg	0.0100	1.0	07/31/01 16:54	DBEN	74-87-3		
Dibromochloromethane	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	124-48-1		
1,2-Dichlorobenzene	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	95-50-1		
1,3-Dichlorobenzene	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	541-73-1		
1,4-Dichlorobenzene	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	106-46-7		
Dichlorodifluoromethane	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	75-71-8		
1,1-Dichloroethane	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	75-34-3		
1,2-Dichloroethane	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	107-06-2		
1,1-Dichloroethene	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	75-35-4		
trans-1,2-Dichloroethene	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	156-60-5		
1,2-Dichloropropane	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	78-87-5		
cis-1,3-Dichloropropene	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	10061-01-5		
trans-1,3-Dichloropropene	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	10061-02-6		
Ethylbenzene	ND	mg/kg	0.00200	1.0	07/31/01 16:54	DBEN	100-41-4		
Methylene chloride	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	75-09-2		
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	79-34-5		
Tetrachloroethene	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	127-18-4		
Toluene	ND	mg/kg	0.00200	1.0	07/31/01 16:54	DBEN	108-88-3		
1,1,1-Trichloroethane	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	71-55-6		
1,1,2-Trichloroethane	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	79-00-5		
Trichloroethene	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	79-01-6		
Trichlorofluoromethane	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	75-69-4		
Vinyl chloride	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	75-01-4		
Xylene (Total)	ND	mg/kg	0.00200	1.0	07/31/01 16:54	DBEN	1330-20-7		
Methyl-tert-butyl ether	ND	mg/kg	0.00500	1.0	07/31/01 16:54	DBEN	1634-04-4		
Toluene-d8 (S)	110	%		1.0	07/31/01 16:54	DBEN	2037-26-5		
4-Bromofluorobenzene (S)	98	%		1.0	07/31/01 16:54	DBEN	460-00-4		
1,2-Dichloroethane-d4 (S)	145	%		1.0	07/31/01 16:54	DBEN	17060-07-0		

Comments : Sample received at a temperature of 14.1 degrees, proceed with analysis, per client request.
Surrogate N-triacontane was spiked at 200 ug/mL. Sample surrogate recovery was 75% (8015 DRO).

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

Lab Project Number: 8522525
Client Project ID: ARCO Site#6041

Lab Sample No: 851704138 Project Sample Number: 8522525-002 Date Collected: 07/26/01 12:30
Client Sample ID: OV-2 Matrix: Soil Date Received: 07/27/01 08:38

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Trace Soil	Method: EPA 6010								
Cadmium	0.132	mg/kg	0.0952	1.0	08/02/01	PBAR	7440-43-9		
Chromium	10.6	mg/kg	0.476	1.0	08/02/01	PBAR	7440-47-3		
Lead	2.79	mg/kg	0.286	1.0	08/02/01	PBAR	7439-92-1		
Nickel	14.5	mg/kg	0.476	1.0	08/02/01	PBAR	7440-02-0		
Zinc	14.5	mg/kg	0.476	1.0	08/02/01	PBAR	7440-66-6		
GC Semivolatiles									
Diesel Components in Soil	Method: TPH by EPA 8015M								
DRO C10-C28	ND	mg/kg	9.9	1.0	07/30/01 18:22	FOSE			
Date Extracted					07/30/01				
Organics Prep									
Oil&Grease,Soxhlet	Prep/Method: EPA 9071 / EPA 9071								
Oil and Grease	ND	mg/kg	49.1	1.0	07/30/01 10:30	JDEA			
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	ND	mg/kg	0.050	1.0	07/30/01 17:40	LJAS			
4-Bromofluorobenzene (S)	70	%		1.0	07/30/01 17:40	LJAS	460-00-4		
1,4-Difluorobenzene (S)	76	%		1.0	07/30/01 17:40	LJAS			
GC/MS Volatiles									
SW8260,NR Volatiles,Soil	Prep/Method: EPA 8260 / EPA 8260								
Benzene	ND	mg/kg	0.00200	1.0	07/31/01 17:27	DBEN	71-43-2		
Bromodichloromethane	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	75-27-4		
Bromoform	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	75-25-2		
Bromomethane	ND	mg/kg	0.0100	1.0	07/31/01 17:27	DBEN	74-83-9		
Carbon tetrachloride	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	56-23-5		
Chlorobenzene	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	108-90-7		
Chloroethane	ND	mg/kg	0.0100	1.0	07/31/01 17:27	DBEN	75-00-3		
2-Chloroethylvinyl ether	ND	mg/kg	0.0100	1.0	07/31/01 17:27	DBEN	110-75-8		
Chloroform	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	67-66-3		

REPORT OF LABORATORY ANALYSIS

Pace Analytical™
www.pacelabs.com

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900 Gemini Avenue
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Phone: 281.488.1810
Fax: 281.488.4661

Lab Project Number: 8522525
Client Project ID: ARCO Site#6041

Lab Sample No: 851704138 Project Sample Number: 8522525-002 Date Collected: 07/26/01 12:30
Client Sample ID: OV-2 Matrix: Soil Date Received: 07/27/01 08:38

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Chloromethane	ND	mg/kg	0.0100	1.0	07/31/01 17:27	DBEN	74-87-3		
Dibromochloromethane	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	124-48-1		
1,2-Dichlorobenzene	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	95-50-1		
1,3-Dichlorobenzene	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	541-73-1		
1,4-Dichlorobenzene	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	106-46-7		
Dichlorodifluoromethane	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	75-71-8		
1,1-Dichloroethane	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	75-34-3		
1,2-Dichloroethane	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	107-06-2		
1,1-Dichloroethene	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	75-35-4		
trans-1,2-Dichloroethene	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	156-60-5		
1,2-Dichloropropane	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	78-87-5		
cis-1,3-Dichloropropene	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	10061-01-5		
trans-1,3-Dichloropropene	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	10061-02-6		
Ethylbenzene	ND	mg/kg	0.00200	1.0	07/31/01 17:27	DBEN	100-41-4		
Methylene chloride	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	75-09-2		
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	79-34-5		
Tetrachloroethene	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	127-18-4		
Toluene	ND	mg/kg	0.00200	1.0	07/31/01 17:27	DBEN	108-88-3		
1,1,1-Trichloroethane	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	71-55-6		
1,1,2-Trichloroethane	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	79-00-5		
Trichloroethene	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	79-01-6		
Trichlorofluoromethane	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	75-69-4		
Vinyl chloride	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	75-01-4		
Xylene (Total)	ND	mg/kg	0.00200	1.0	07/31/01 17:27	DBEN	1330-20-7		
Methyl-tert-butyl ether	ND	mg/kg	0.00500	1.0	07/31/01 17:27	DBEN	1634-04-4		
Toluene-d8 (S)	108	%		1.0	07/31/01 17:27	DBEN	2037-26-5		
4-Bromofluorobenzene (S)	96	%		1.0	07/31/01 17:27	DBEN	460-00-4		
1,2-Dichloroethane-d4 (S)	131	%		1.0	07/31/01 17:27	DBEN	17060-07-0		

Comments : Sample received at a temperature of 14.1 degrees, proceed with analysis, per client request.
Surrogate N-triacontane was spiked at 200 ug/mL. Sample surrogate recovery was 79% (8015 DRO).

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Lab Project Number: 8522525
Client Project ID: ARCO Site#6041

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
(S)	Surrogate

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QUALITY CONTROL DATA

Lab Project Number: 8522525
Client Project ID: ARCO Site#6041

QC Batch: 56099 Analysis Method: TPH by EPA 8015M
QC Batch Method: Analysis Description: Diesel Components in Soil
Associated Lab Samples: 851704137 851704138

METHOD BLANK: 851704241
Associated Lab Samples: 851704137 851704138

Parameter	Units	Blank Result	Reporting Limit	Footnotes
DRO C10-C28	mg/kg	ND	10.	

Comments : Surrogate N-triacontane was spiked at 200 ug/mL. Sample surrogate recovery was 75% (8015 DRO).

LABORATORY CONTROL SAMPLE & LCSD: 851704242 851704243

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
DRO C10-C28	mg/kg	16.67	14.35	14.02	86	84	2	

Comments : Surrogate N-triacontane was spiked at 200 ug/mL. Sample surrogate recovery was 83% (8015 DRO).

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QUALITY CONTROL DATA

Lab Project Number: 8522525
Client Project ID: ARCO Site#6041

QC Batch: 56092 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 8015 Modified Analysis Description: GAS Mod 8015, Soil
Associated Lab Samples: 851704137 851704138

METHOD BLANK: 851704215
Associated Lab Samples: 851704137 851704138

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Gasoline Range Organics	ug/kg	ND	50.	
4-Bromofluorobenzene (S)	%	87		
1,4-Difluorobenzene (S)	%	88		

LABORATORY CONTROL SAMPLE & LCSD: 851704216 851704217

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Gasoline Range Organics	ug/kg	1000	950.4	946.6	95	95	0	
4-Bromofluorobenzene (S)					92	94		
1,4-Difluorobenzene (S)					119	118		

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QUALITY CONTROL DATA

Lab Project Number: 8522525
Client Project ID: ARCO Site#6041

QC Batch: 56198 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: SW8260,NR Volatiles,Soil
Associated Lab Samples: 851704137 851704138

METHOD BLANK: 851704747
Associated Lab Samples: 851704137 851704138

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/kg	ND	2.00	
Bromodichloromethane	ug/kg	ND	5.00	
Bromoform	ug/kg	ND	5.00	
Bromomethane	ug/kg	ND	10.0	
Carbon tetrachloride	ug/kg	ND	5.00	
Chlorobenzene	ug/kg	ND	5.00	
Chloroethane	ug/kg	ND	10.0	
2-Chloroethylvinyl ether	ug/kg	ND	10.0	
Chloroform	ug/kg	ND	5.00	
Chloromethane	ug/kg	ND	10.0	
Dibromochloromethane	ug/kg	ND	5.00	
1,2-Dichlorobenzene	ug/kg	ND	5.00	
1,3-Dichlorobenzene	ug/kg	ND	5.00	
1,4-Dichlorobenzene	ug/kg	ND	5.00	
Dichlorodifluoromethane	ug/kg	ND	5.00	
1,1-Dichloroethane	ug/kg	ND	5.00	
1,2-Dichloroethane	ug/kg	ND	5.00	
1,1-Dichloroethene	ug/kg	ND	5.00	
trans-1,2-Dichloroethene	ug/kg	ND	5.00	
1,2-Dichloropropane	ug/kg	ND	5.00	
cis-1,3-Dichloropropene	ug/kg	ND	5.00	
trans-1,3-Dichloropropene	ug/kg	ND	5.00	
Ethylbenzene	ug/kg	ND	2.00	
Methylene chloride	ug/kg	ND	5.00	
1,1,2,2-Tetrachloroethane	ug/kg	ND	5.00	
Tetrachloroethene	ug/kg	ND	5.00	
Toluene	ug/kg	ND	2.00	
1,1,1-Trichloroethane	ug/kg	ND	5.00	
1,1,2-Trichloroethane	ug/kg	ND	5.00	
Trichloroethene	ug/kg	ND	5.00	

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QUALITY CONTROL DATA

Lab Project Number: 8522525
Client Project ID: ARCO Site#6041

METHOD BLANK: 851704747
Associated Lab Samples: 851704137 851704138

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Trichlorofluoromethane	ug/kg	ND	5.00	
Vinyl chloride	ug/kg	ND	5.00	
Xylene (Total)	ug/kg	ND	2.00	
Methyl-tert-butyl ether	ug/kg	ND	5.00	
Toluene-d8 (S)	%	109		
4-Bromofluorobenzene (S)	%	98		
1,2-Dichloroethane-d4 (S)	%	115		

LABORATORY CONTROL SAMPLE & LCSD: 851704748 851704749

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Benzene	ug/kg	100	96.46	96.90	96	97	0	
Bromodichloromethane	ug/kg	100	95.25	97.25	95	97	2	
Bromoform	ug/kg	100	101.0	104.1	101	104	3	
Bromomethane	ug/kg	100	86.01	94.75	86	95	10	
Carbon tetrachloride	ug/kg	100	109.9	111.1	110	111	1	
Chlorobenzene	ug/kg	100	103.2	105.4	103	105	2	
Chloroethane	ug/kg	100	95.58	99.05	96	99	4	
Chloroform	ug/kg	100	93.31	98.34	93	98	5	
Chloromethane	ug/kg	100	77.65	96.81	78	97	22	
Dibromochloromethane	ug/kg	100	93.25	97.26	93	97	4	
1,1-Dichloroethane	ug/kg	100	108.7	114.5	109	114	5	
1,2-Dichloroethane	ug/kg	100	111.1	118.0	111	118	6	
1,1-Dichloroethene	ug/kg	100	100.7	107.5	101	108	7	
1,2-Dichloropropane	ug/kg	100	110.3	112.1	110	112	2	
cis-1,3-Dichloropropene	ug/kg	100	95.55	98.82	96	99	3	
trans-1,3-Dichloropropene	ug/kg	100	94.49	97.72	94	98	3	
Ethylbenzene	ug/kg	100	101.1	102.7	101	103	2	
Methylene chloride	ug/kg	100	77.51	83.58	78	84	8	
1,1,2,2-Tetrachloroethane	ug/kg	100	99.21	103.5	99	103	4	
Tetrachloroethene	ug/kg	100	55.36	55.81	55	56	1	
Toluene	ug/kg	100	100.7	101.6	101	102	1	
1,1,1-Trichloroethane	ug/kg	100	106.6	111.8	107	112	5	

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QUALITY CONTROL DATA

Lab Project Number: 8522525
Client Project ID: ARCO Site#6041

LABORATORY CONTROL SAMPLE & LCSD: 851704748 851704749

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
1,1,2-Trichloroethane	ug/kg	100	95.25	97.25	95	97	2	
Trichloroethene	ug/kg	100	96.26	98.49	96	98	2	
Vinyl chloride	ug/kg	100	111.1	104.8	111	105	6	
Xylene (Total)	ug/kg	300	305.1	315.0	102	105	3	
Toluene-d8 (S)					107	105		
4-Bromofluorobenzene (S)					103	103		
1,2-Dichloroethane-d4 (S)					111	117		

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QUALITY CONTROL DATA

Lab Project Number: 8522525
Client Project ID: ARCO Site#6041

QC Batch: 56088 Analysis Method: EPA 6010
QC Batch Method: Analysis Description: SW6010 Metals, Trace Soil
Associated Lab Samples: 851704137 851704138

METHOD BLANK: 851704202
Associated Lab Samples: 851704137 851704138

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Cadmium	mg/kg	ND	0.0971	
Chromium	mg/kg	ND	0.485	
Lead	mg/kg	ND	0.291	
Nickel	mg/kg	ND	0.485	
Zinc	mg/kg	ND	0.485	

LABORATORY CONTROL SAMPLE: 851704205

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Cadmium	mg/kg	12.14	11.58	95	
Chromium	mg/kg	12.14	11.48	95	
Lead	mg/kg	12.14	11.64	96	
Nickel	mg/kg	12.14	11.56	95	
Zinc	mg/kg	12.14	11.95	98	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851704203 851704204

Parameter	Units	851704137 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Cadmium	mg/kg	0.1822	25.00	4.810	4.482	18	18	7	1
Chromium	mg/kg	12.27	25.00	18.36	17.25	24	21	6	1
Lead	mg/kg	2.957	25.00	7.865	7.100	20	17	10	1
Nickel	mg/kg	15.40	25.00	20.06	18.93	19	15	6	1
Zinc	mg/kg	15.78	25.00	21.08	20.99	21	22	0	1

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QUALITY CONTROL DATA

Lab Project Number: 8522525
Client Project ID: ARCO Site#6041

QC Batch: 56100 Analysis Method: EPA 9071
QC Batch Method: EPA 9071 Analysis Description: Oil&Grease,Soxhlet
Associated Lab Samples: 851704137 851704138

METHOD BLANK: 851704244
Associated Lab Samples: 851704137 851704138

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Oil and Grease	mg/kg	ND	49.8	

LABORATORY CONTROL SAMPLE & LCSD: 851704245 851704246

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Oil and Grease	mg/kg	2489	2389	2343	96	95	2	

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Lab Project Number: 8522525
Client Project ID: ARCO Site#6041

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D)	Laboratory Control Sample (Duplicate)
MS(D)	Matrix Spike (Duplicate)
DUP	Sample Duplicate
ND	Not Detected
NC	Not Calculable
RPD	Relative Percent Difference
(S)	Surrogate
[1]	Due to matrix interference the matrix spike and/or matrix spike duplicate do not provide reliable % Recovery and RPD values. Sample results for this QC batch accepted based on LCS and/or LCSD % Recovery and/or RPD values.

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August 13, 2001

Mr. Ron Scheele
Cambria Environmental
6262 Hollis Street
Emeryville, CA 94608

RE: Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

Dear Mr. Scheele:

Enclosed are the analytical results for sample(s) received by the laboratory on July 31, 2001. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paula Kirtley
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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Cambria Environmental
6262 Hollis Street
Emeryville, CA 94608

Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

Attn: Mr. Ron Scheele
Phone: 510.450.1983

Solid results are reported on a wet weight basis

Lab Sample No: 851704542 Project Sample Number: 8522564-001 Date Collected: 07/27/01 12:30
Client Sample ID: DISP-1-5' Matrix: Soil Date Received: 07/31/01 08:45

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	ND	mg/kg	4.85	1.0	08/13/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	70.	mg/kg	2.5	50.0	08/02/01 17:27	LJAS			
4-Bromofluorobenzene (S)	116	%		1.0	08/02/01 17:27	LJAS	460-00-4		
1,4-Difluorobenzene (S)	112	%		1.0	08/02/01 17:27	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/kg	120	25.0	08/02/01 14:48	LJAS	71-43-2		
Ethylbenzene	570	ug/kg	120	25.0	08/02/01 14:48	LJAS	100-41-4		
Toluene	ND	ug/kg	120	25.0	08/02/01 14:48	LJAS	108-88-3		
Xylene (Total)	950	ug/kg	120	25.0	08/02/01 14:48	LJAS	1330-20-7		
Methyl-tert-butyl ether	410	ug/kg	120	25.0	08/02/01 14:48	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	115	%		1.0	08/02/01 14:48	LJAS			
4-Bromofluorobenzene (S)	95	%		1.0	08/02/01 14:48	LJAS	460-00-4		

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Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

Lab Sample No: 851704543 Project Sample Number: 8522564-002 Date Collected: 07/27/01 12:33
Client Sample ID: DISP-2-3' Matrix: Soil Date Received: 07/31/01 08:45

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	4.77	mg/kg	4.76	1.0	08/13/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	1200	mg/kg	25.	500	08/02/01 17:47	LJAS			
4-Bromofluorobenzene (S)	115	%		1.0	08/02/01 17:47	LJAS	460-00-4		
1,4-Difluorobenzene (S)	159	%		1.0	08/02/01 17:47	LJAS		1	
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	3200	ug/kg	1200	250	08/01/01 16:56	LJAS	71-43-2		
Ethylbenzene	18000	ug/kg	1200	250	08/01/01 16:56	LJAS	100-41-4		
Toluene	9300	ug/kg	1200	250	08/01/01 16:56	LJAS	108-88-3		
Xylene (Total)	87000	ug/kg	1200	250	08/01/01 16:56	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	1200	250	08/01/01 16:56	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	136	%		1.0	08/01/01 16:56	LJAS		1	
4-Bromofluorobenzene (S)	91	%		1.0	08/01/01 16:56	LJAS	460-00-4		

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Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

Lab Sample No: 851704544 Project Sample Number: 8522564-003 Date Collected: 07/27/01 12:37
Client Sample ID: DISP-3-3' Matrix: Soil Date Received: 07/31/01 08:45

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	ND	mg/kg	4.81	1.0	08/13/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	4.0	mg/kg	0.25	5.0	08/01/01 14:17	LJAS			
4-Bromofluorobenzene (S)	99	%		1.0	08/01/01 14:17	LJAS	460-00-4		
1,4-Difluorobenzene (S)	105	%		1.0	08/01/01 14:17	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	25.	ug/kg	25.	5.0	08/01/01 14:17	LJAS	71-43-2		
Ethylbenzene	65.	ug/kg	25.	5.0	08/01/01 14:17	LJAS	100-41-4		
Toluene	ND	ug/kg	25.	5.0	08/01/01 14:17	LJAS	108-88-3		
Xylene (Total)	52.	ug/kg	25.	5.0	08/01/01 14:17	LJAS	1330-20-7		
Methyl-tert-butyl ether	210	ug/kg	25.	5.0	08/01/01 14:17	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	107	%		1.0	08/01/01 14:17	LJAS			
4-Bromofluorobenzene (S)	97	%		1.0	08/01/01 14:17	LJAS	460-00-4		

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Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

Lab Sample No: 851704545 Project Sample Number: 8522564-004 Date Collected: 07/27/01 12:40
Client Sample ID: DISP-4-3' Matrix: Soil Date Received: 07/31/01 08:45

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	ND	mg/kg	4.85	1.0	08/13/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	7.8	mg/kg	0.25	5.0	08/01/01 14:37	LJAS			
4-Bromofluorobenzene (S)	112	%		1.0	08/01/01 14:37	LJAS	460-00-4		
1,4-Difluorobenzene (S)	123	%		1.0	08/01/01 14:37	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	43.	ug/kg	25.	5.0	08/01/01 14:37	LJAS	71-43-2		
Ethylbenzene	120	ug/kg	25.	5.0	08/01/01 14:37	LJAS	100-41-4		
Toluene	ND	ug/kg	25.	5.0	08/01/01 14:37	LJAS	108-88-3		
Xylene (Total)	34.	ug/kg	25.	5.0	08/01/01 14:37	LJAS	1330-20-7		
Methyl-tert-butyl ether	83.	ug/kg	25.	5.0	08/01/01 14:37	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	112	%		1.0	08/01/01 14:37	LJAS			
4-Bromofluorobenzene (S)	93	%		1.0	08/01/01 14:37	LJAS	460-00-4		

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Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

Lab Sample No: 851704546 Project Sample Number: 8522564-005 Date Collected: 07/27/01 12:42
Client Sample ID: DISP-5-4' Matrix: Soil Date Received: 07/31/01 08:45

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	ND	mg/kg	4.95	1.0	08/13/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	55.	mg/kg	1.2	25.0	08/01/01 19:56	LJAS			
4-Bromofluorobenzene (S)	124	%		1.0	08/01/01 19:56	LJAS	460-00-4		
1,4-Difluorobenzene (S)	92	%		1.0	08/01/01 19:56	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/kg	120	25.0	08/01/01 19:56	LJAS	71-43-2		
Ethylbenzene	580	ug/kg	120	25.0	08/01/01 19:56	LJAS	100-41-4		
Toluene	ND	ug/kg	120	25.0	08/01/01 19:56	LJAS	108-88-3		
Xylene (Total)	820	ug/kg	120	25.0	08/01/01 19:56	LJAS	1330-20-7		
Methyl-tert-butyl ether	360	ug/kg	120	25.0	08/01/01 19:56	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	100	%		1.0	08/01/01 19:56	LJAS			
4-Bromofluorobenzene (S)	112	%		1.0	08/01/01 19:56	LJAS	460-00-4		

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Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

Lab Sample No: 851704547 Project Sample Number: 8522564-006 Date Collected: 07/27/01 12:45
Client Sample ID: DISP-6-4' Matrix: Soil Date Received: 07/31/01 08:45

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	ND	mg/kg	4.85	1.0	08/13/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	580	mg/kg	12.	250	08/01/01 17:36	LJAS			
4-Bromofluorobenzene (S)	110	%		1.0	08/01/01 17:36	LJAS	460-00-4		
1,4-Difluorobenzene (S)	139	%		1.0	08/01/01 17:36	LJAS		1	
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	1800	ug/kg	1200	250	08/01/01 17:36	LJAS	71-43-2		
Ethylbenzene	12000	ug/kg	1200	250	08/01/01 17:36	LJAS	100-41-4		
Toluene	5000	ug/kg	1200	250	08/01/01 17:36	LJAS	108-88-3		
Xylene (Total)	52000	ug/kg	1200	250	08/01/01 17:36	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	1200	250	08/01/01 17:36	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	116	%		1.0	08/01/01 17:36	LJAS			
4-Bromofluorobenzene (S)	93	%		1.0	08/01/01 17:36	LJAS	460-00-4		

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Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

Lab Sample No: 851704548 Project Sample Number: 8522564-007 Date Collected: 07/27/01 12:47
Client Sample ID: PIPE-1-4' Matrix: Soil Date Received: 07/31/01 08:45

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	ND	mg/kg	4.81	1.0	08/13/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	4.2	mg/kg	0.25	5.0	08/01/01 15:37	LJAS			
4-Bromofluorobenzene (S)	98	%		1.0	08/01/01 15:37	LJAS	460-00-4		
1,4-Difluorobenzene (S)	111	%		1.0	08/01/01 15:37	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	38.	ug/kg	25.	5.0	08/01/01 15:37	LJAS	71-43-2		
Ethylbenzene	150	ug/kg	25.	5.0	08/01/01 15:37	LJAS	100-41-4		
Toluene	32.	ug/kg	25.	5.0	08/01/01 15:37	LJAS	108-88-3		
Xylene (Total)	59.	ug/kg	25.	5.0	08/01/01 15:37	LJAS	1330-20-7		
Methyl-tert-butyl ether	360	ug/kg	25.	5.0	08/01/01 15:37	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	109	%		1.0	08/01/01 15:37	LJAS			
4-Bromofluorobenzene (S)	95	%		1.0	08/01/01 15:37	LJAS	460-00-4		

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Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

Lab Sample No: 851704549 Project Sample Number: 8522564-008 Date Collected: 07/27/01 12:50
Client Sample ID: PIPE-2-4' Matrix: Soil Date Received: 07/31/01 08:45

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	ND	mg/kg	4.81	1.0	08/13/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	1.4	mg/kg	0.050	1.0	08/01/01 13:58	LJAS			
4-Bromofluorobenzene (S)	87	%		1.0	08/01/01 13:58	LJAS	460-00-4		
1,4-Difluorobenzene (S)	174	%		1.0	08/01/01 13:58	LJAS		1	
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	12.	ug/kg	5.0	1.0	08/01/01 13:58	LJAS	71-43-2		
Ethylbenzene	70.	ug/kg	5.0	1.0	08/01/01 13:58	LJAS	100-41-4		
Toluene	7.3	ug/kg	5.0	1.0	08/01/01 13:58	LJAS	108-88-3		
Xylene (Total)	8.0	ug/kg	5.0	1.0	08/01/01 13:58	LJAS	1330-20-7		
Methyl-tert-butyl ether	49.	ug/kg	5.0	1.0	08/01/01 13:58	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	156	%		1.0	08/01/01 13:58	LJAS		1	
4-Bromofluorobenzene (S)	95	%		1.0	08/01/01 13:58	LJAS	460-00-4		

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Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

Lab Sample No: 851704550 Project Sample Number: 8522564-009 Date Collected: 07/27/01 04:00
Client Sample ID: SW-1-8' Matrix: Soil Date Received: 07/31/01 08:45

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	ND	mg/kg	4.85	1.0	08/13/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	220	mg/kg	12.	250	08/03/01 11:29	LJAS			
4-Bromofluorobenzene (S)	133	%		1.0	08/03/01 11:29	LJAS	460-00-4	1	
1,4-Difluorobenzene (S)	130	%		1.0	08/03/01 11:29	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	1700	ug/kg	500	100	08/02/01 18:07	LJAS	71-43-2		
Ethylbenzene	ND	ug/kg	500	100	08/02/01 18:07	LJAS	100-41-4		
Toluene	ND	ug/kg	500	100	08/02/01 18:07	LJAS	108-88-3		
Xylene (Total)	500	ug/kg	500	100	08/02/01 18:07	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	500	100	08/02/01 18:07	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	105	%		1.0	08/02/01 18:07	LJAS			
4-Bromofluorobenzene (S)	76	%		1.0	08/02/01 18:07	LJAS	460-00-4		

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Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

Lab Sample No: 851704551 Project Sample Number: 8522564-010 Date Collected: 07/27/01 04:05
Client Sample ID: SW-2-8' Matrix: Soil Date Received: 07/31/01 08:45

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	ND	mg/kg	4.85	1.0	08/13/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	4500	mg/kg	250	5000	08/02/01 18:27	LJAS			
4-Bromofluorobenzene (S)	117	%		1.0	08/02/01 18:27	LJAS	460-00-4		
1,4-Difluorobenzene (S)	110	%		1.0	08/02/01 18:27	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	12000	ug/kg	10000	2000	08/01/01 17:56	LJAS	71-43-2		
Ethylbenzene	63000	ug/kg	10000	2000	08/01/01 17:56	LJAS	100-41-4		
Toluene	ND	ug/kg	10000	2000	08/01/01 17:56	LJAS	108-88-3		
Xylene (Total)	300000	ug/kg	10000	2000	08/01/01 17:56	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	10000	2000	08/01/01 17:56	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	113	%		1.0	08/01/01 17:56	LJAS			
4-Bromofluorobenzene (S)	101	%		1.0	08/01/01 17:56	LJAS	460-00-4		

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Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

Lab Sample No: 851704552 Project Sample Number: 8522564-011 Date Collected: 07/27/01 04:10
Client Sample ID: SW-3-8' Matrix: Soil Date Received: 07/31/01 08:45

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	ND	mg/kg	4.85	1.0	08/13/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	1300	mg/kg	25.	500	08/01/01 17:16	LJAS			
4-Bromofluorobenzene (S)	118	%		1.0	08/01/01 17:16	LJAS	460-00-4		
1,4-Difluorobenzene (S)	133	%		1.0	08/01/01 17:16	LJAS		1	
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/kg	2500	500	08/01/01 17:16	LJAS	71-43-2		
Ethylbenzene	22000	ug/kg	2500	500	08/01/01 17:16	LJAS	100-41-4		
Toluene	ND	ug/kg	2500	500	08/01/01 17:16	LJAS	108-88-3		
Xylene (Total)	130000	ug/kg	2500	500	08/01/01 17:16	LJAS	1330-20-7		
Methyl-tert-butyl ether	4400	ug/kg	2500	500	08/01/01 17:16	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	115	%		1.0	08/01/01 17:16	LJAS			
4-Bromofluorobenzene (S)	101	%		1.0	08/01/01 17:16	LJAS	460-00-4		

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Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

Lab Sample No: 851704553 Project Sample Number: 8522564-012 Date Collected: 07/27/01 04:15
Client Sample ID: SW-4-8' Matrix: Soil Date Received: 07/31/01 08:45

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Req Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	5.16	mg/kg	4.90	1.0	08/13/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	4700	mg/kg	100	2000	08/01/01 18:16	LJAS			
4-Bromofluorobenzene (S)	120	%		1.0	08/01/01 18:16	LJAS	460-00-4		
1,4-Difluorobenzene (S)	130	%		1.0	08/01/01 18:16	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	11000	ug/kg	10000	2000	08/01/01 18:16	LJAS	71-43-2		
Ethylbenzene	43000	ug/kg	10000	2000	08/01/01 18:16	LJAS	100-41-4		
Toluene	ND	ug/kg	10000	2000	08/01/01 18:16	LJAS	108-88-3		
Xylene (Total)	320000	ug/kg	10000	2000	08/01/01 18:16	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	10000	2000	08/01/01 18:16	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	114	%		1.0	08/01/01 18:16	LJAS			
4-Bromofluorobenzene (S)	100	%		1.0	08/01/01 18:16	LJAS	460-00-4		

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Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

Lab Sample No: 851704554 Project Sample Number: 8522564-013 Date Collected: 07/27/01 04:20
Client Sample ID: SW-5-8' Matrix: Soil Date Received: 07/31/01 08:45

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	ND	mg/kg	4.95	1.0	08/13/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	13.	mg/kg	0.25	5.0	08/01/01 15:57	LJAS			
4-Bromofluorobenzene (S)	95	%		1.0	08/01/01 15:57	LJAS	460-00-4		
1,4-Difluorobenzene (S)	127	%		1.0	08/01/01 15:57	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	93.	ug/kg	25.	5.0	08/01/01 15:57	LJAS	71-43-2		
Ethylbenzene	1000	ug/kg	25.	5.0	08/01/01 15:57	LJAS	100-41-4		
Toluene	ND	ug/kg	25.	5.0	08/01/01 15:57	LJAS	108-88-3		
Xylene (Total)	180	ug/kg	25.	5.0	08/01/01 15:57	LJAS	1330-20-7		
Methyl-tert-butyl ether	1900	ug/kg	50.	10.0	08/01/01 15:57	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	116	%		1.0	08/01/01 15:57	LJAS			
4-Bromofluorobenzene (S)	94	%		1.0	08/01/01 15:57	LJAS	460-00-4		

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Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

Lab Sample No: 851704555 Project Sample Number: 8522564-014 Date Collected: 07/27/01 04:25
Client Sample ID: SW-6-8' Matrix: Soil Date Received: 07/31/01 08:45

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	ND	mg/kg	4.95	1.0	08/13/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	8300	mg/kg	250	5000	08/02/01 18:47	LJAS			
4-Bromofluorobenzene (S)	109	%		1.0	08/02/01 18:47	LJAS	460-00-4		
1,4-Difluorobenzene (S)	158	%		1.0	08/02/01 18:47	LJAS		1	
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	64000	ug/kg	25000	5000	08/02/01 18:47	LJAS	71-43-2		
Ethylbenzene	180000	ug/kg	25000	5000	08/02/01 18:47	LJAS	100-41-4		
Toluene	ND	ug/kg	25000	5000	08/02/01 18:47	LJAS	108-88-3		
Xylene (Total)	310000	ug/kg	25000	5000	08/02/01 18:47	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	25000	5000	08/02/01 18:47	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	121	%		1.0	08/02/01 18:47	LJAS			
4-Bromofluorobenzene (S)	88	%		1.0	08/02/01 18:47	LJAS	460-00-4		

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Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

Lab Sample No: 851704556 Project Sample Number: 8522564-015 Date Collected: 07/27/01 04:30
Client Sample ID: SW-7-8' Matrix: Soil Date Received: 07/31/01 08:45

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	ND	mg/kg	5.00	1.0	08/13/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	1500	mg/kg	50.	1000	08/01/01 19:36	LJAS			
4-Bromofluorobenzene (S)	116	%		1.0	08/01/01 19:36	LJAS	460-00-4		
1,4-Difluorobenzene (S)	133	%		1.0	08/01/01 19:36	LJAS		1	
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	8000	ug/kg	5000	1000	08/01/01 19:36	LJAS	71-43-2		
Ethylbenzene	26000	ug/kg	5000	1000	08/01/01 19:36	LJAS	100-41-4		
Toluene	ND	ug/kg	5000	1000	08/01/01 19:36	LJAS	108-88-3		
Xylene (Total)	22000	ug/kg	5000	1000	08/01/01 19:36	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5000	1000	08/01/01 19:36	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	111	%		1.0	08/01/01 19:36	LJAS			
4-Bromofluorobenzene (S)	95	%		1.0	08/01/01 19:36	LJAS	460-00-4		

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Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

Lab Sample No: 851704557 Project Sample Number: 8522564-016 Date Collected: 07/27/01 04:35
Client Sample ID: SW-8-8' Matrix: Soil Date Received: 07/31/01 08:45

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	ND	mg/kg	5.00	1.0	08/13/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	2400	mg/kg	50.	1000	08/01/01 16:37	LJAS			
4-Bromofluorobenzene (S)	117	%		1.0	08/01/01 16:37	LJAS	460-00-4		
1,4-Difluorobenzene (S)	136	%		1.0	08/01/01 16:37	LJAS		1	
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	7400	ug/kg	5000	1000	08/01/01 16:37	LJAS	71-43-2		
Ethylbenzene	37000	ug/kg	5000	1000	08/01/01 16:37	LJAS	100-41-4		
Toluene	ND	ug/kg	5000	1000	08/01/01 16:37	LJAS	108-88-3		
Xylene (Total)	220000	ug/kg	5000	1000	08/01/01 16:37	LJAS	1330-20-7		
Methyl-tert-butyl ether	6000	ug/kg	5000	1000	08/01/01 16:37	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	111	%		1.0	08/01/01 16:37	LJAS			
4-Bromofluorobenzene (S)	92	%		1.0	08/01/01 16:37	LJAS	460-00-4		

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Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
(S)	Surrogate
[1]	High surrogate recovery was confirmed as a matrix effect by a second analysis.

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QUALITY CONTROL DATA

Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

QC Batch: 56158 Analysis Method: EPA 8021
QC Batch Method: EPA 8021 Analysis Description: BTEX, Soil
Associated Lab Samples: 851704543 851704544 851704545 851704546 851704547 851704548 851704549 851704551 851704552 851704553 851704554 851704556 851704557

METHOD BLANK: 851704596
Associated Lab Samples: 851704543 851704544 851704545 851704546 851704547 851704548 851704549 851704551 851704552 851704553 851704554 851704556 851704557

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/kg	ND	5.0	
Ethylbenzene	ug/kg	ND	5.0	
Toluene	ug/kg	ND	5.0	
Xylene (Total)	ug/kg	ND	5.0	
Methyl-tert-butyl ether	ug/kg	ND	5.0	
1,4-Difluorobenzene (S)	%	99		
4-Bromofluorobenzene (S)	%	100		

LABORATORY CONTROL SAMPLE & LCSD: 851704816 851704817

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Benzene	ug/kg	50	49.05	49.77	98	100	1	
Ethylbenzene	ug/kg	50	51.71	52.24	103	104	1	
Toluene	ug/kg	50	48.78	49.49	98	99	1	
Xylene (Total)	ug/kg	100	103.2	105.2	103	105	2	
Methyl-tert-butyl ether	ug/kg	50	43.93	47.35	88	95	8	
1,4-Difluorobenzene (S)					102	103		
4-Bromofluorobenzene (S)					97	102		

REPORT OF LABORATORY ANALYSIS

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

QUALITY CONTROL DATA

Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

QC Batch: 56159 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 8015 Modified Analysis Description: GAS Mod 8015, Soil
Associated Lab Samples: 851704544 851704545 851704546 851704547 851704548 851704549 851704552 851704553 851704554 851704556 851704557

METHOD BLANK: 851704598
Associated Lab Samples: 851704544 851704545 851704546 851704547 851704548 851704549 851704552 851704553 851704554 851704556 851704557

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Gasoline Range Organics	ug/kg	ND	50.	
4-Bromofluorobenzene (S)	%	82		
1,4-Difluorobenzene (S)	%	82		

LABORATORY CONTROL SAMPLE & LCSD: 851704820 851704821

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Gasoline Range Organics	ug/kg	1000	936.0	949.5	94	95	1	
4-Bromofluorobenzene (S)					84	99		
1,4-Difluorobenzene (S)					109	122		

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Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

QUALITY CONTROL DATA

Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

QC Batch: 56260 Analysis Method: EPA 8021
QC Batch Method: EPA 8021 Analysis Description: BTEX, Soil
Associated Lab Samples: 851704542 851704550 851704555

METHOD BLANK: 851705025
Associated Lab Samples: 851704542 851704550 851704555

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/kg	ND	5.0	
Ethylbenzene	ug/kg	ND	5.0	
Toluene	ug/kg	ND	5.0	
Xylene (Total)	ug/kg	ND	5.0	
Methyl-tert-butyl ether	ug/kg	ND	5.0	
1,4-Difluorobenzene (S)	%	98		
4-Bromofluorobenzene (S)	%	101		

LABORATORY CONTROL SAMPLE & LCSD: 851705026 851705027

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Benzene	ug/kg	50	52.00	50.82	104	102	2	
Ethylbenzene	ug/kg	50	54.87	53.83	110	108	2	
Toluene	ug/kg	50	51.97	50.68	104	101	3	
Xylene (Total)	ug/kg	100	110.2	108.3	110	108	2	
Methyl-tert-butyl ether	ug/kg	50	49.58	48.42	99	97	2	
1,4-Difluorobenzene (S)					101	102		
4-Bromofluorobenzene (S)					102	110		

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QUALITY CONTROL DATA

Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

QC Batch: 56261 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 8015 Modified Analysis Description: GAS Mod 8015, Soil
Associated Lab Samples: 851704542 851704543 851704550 851704551 851704555

METHOD BLANK: 851705028
Associated Lab Samples: 851704542 851704543 851704550 851704551 851704555

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Gasoline Range Organics	ug/kg	ND	50.	
4-Bromofluorobenzene (S)	%	80		
1,4-Difluorobenzene (S)	%	78		

LABORATORY CONTROL SAMPLE & LCSD: 851705029 851705030

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Gasoline Range Organics	ug/kg	1000	929.1	933.9	93	93	1	
4-Bromofluorobenzene (S)					95	87		
1,4-Difluorobenzene (S)					120	108		

REPORT OF LABORATORY ANALYSIS

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900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

QUALITY CONTROL DATA

Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

QC Batch: 56156 — Analysis Method: EPA 6010
QC Batch Method: — Analysis Description: SW6010 Metals, Routine Soil
Associated Lab Samples: 851704542 851704543 851704544 851704545 851704546 851704547 851704548 851704549 851704550 851704551 851704552 851704553 851704554 851704555 851704556 851704557

METHOD BLANK: 851704588
Associated Lab Samples: 851704542 851704543 851704544 851704545 851704546 851704547 851704548 851704549 851704550 851704551 851704552 851704553 851704554 851704555 851704556 851704557

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Lead	mg/kg	ND	4.90	

LABORATORY CONTROL SAMPLE: 851704591

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Lead	mg/kg	11.68	12.87	110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851704589 851704590

Parameter	Units	851704542 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Lead	mg/kg	3.682	24.04	9.861	10.58	26	28	7	1

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Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

Lab Project Number: 8522564
Client Project ID: ARCO Site#6041

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D)	Laboratory Control Sample (Duplicate)
MS(D)	Matrix Spike (Duplicate)
DUP	Sample Duplicate
ND	Not Detected
NC	Not Calculable
RPD	Relative Percent Difference
(S)	Surrogate
[1]	Due to matrix interference the matrix spike and/or matrix spike duplicate do not provide reliable % Recovery and RPD values. Sample results for this QC batch accepted based on LCS and/or LCSD % Recovery and/or RPD values.

REPORT OF LABORATORY ANALYSIS

ARCO Products Company
Division of Atlantic-Richfield Company

Task Order No. WA# 27708.00

Chain of Custody

ARCO Facility no. 6041	City (Facility) Dublin	Project manager (Consultant) Ron Scheele	Laboratory name PACE
ARCO engineer Paul Supple	Telephone no. (ARCO) (925) 299-8891	Telephone no. (Consultant) 510-450-~~8283~~ 1983	Fax no. (Consultant) 510-450-8245
Consultant name CAMBRIA	Address (Consultant) 6262 Hollis St, Emeryville, CA, 94608		Contract number

Method of shipment: Cooler/Ice via FedEx

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/TPHg/MTBE EPA M602/8020/8015	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
Disp-1-5'	1	1	X			X		7/27/01	12:30		X										X
Disp-2-3'									12:33												
Disp-3-3'									12:37												
Disp-4-3'									12:40												
Disp-5-4'									12:42												
Disp-6-4'									12:45												
Pipe-1-4'									12:47												
Pipe-2-4'									12:50												
Sw-1-8'									4:00												
Sw-2-8'									4:05												
~~Sw-3-8'~~									4:10												
~~Sw-4-8'~~									4:15												
Sw-5-8'									4:20												
Sw-6-8'									4:25												
Sw-7-8'									4:30												
Sw-8-8'		↓	↓			↓		↓	4:35		↓										↓

Special detection Limit/reporting

Special QA/QC: Lowest Possible

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 ☒

Condition of sample:		Temperature received:	
Relinquished by sampler	Date 7/30/01 Time 4:45	Received by	
Relinquished by FedEx	Date 7/31/01 Time	Received by	
Relinquished by	Date Time	Received by	Date Time

0.5°C

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant
APC-3292 (2-91)

Pace Analytical™
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Pace Analytical Services, Inc.
900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

August 07, 2001

Mr. Ron Scheele
Cambria Environmental
6262 Hollis Street
Emeryville, CA 94608

RE: Lab Project Number: 8522618
Client Project ID: ARCO Site#6041

Dear Mr. Scheele:

Enclosed are the analytical results for sample(s) received by the laboratory on August 2, 2001. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paula Kirtley
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

Cambria Environmental
6262 Hollis Street
Emeryville, CA 94608

Lab Project Number: 8522618
Client Project ID: ARCO Site#6041

Attn: Mr. Ron Scheele
Phone: 510.450.1983

Solid results are reported on a wet weight basis

Lab Sample No: 851705010 Project Sample Number: 8522618-001 Date Collected: 07/31/01 16:00
Client Sample ID: UST-1 @ 13' Matrix: Soil Date Received: 08/02/01 08:32

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg Limit
Metals								
SW6010 Metals, Routine Soil	Method: EPA 6010							
Lead	13.3	mg/kg	4.81	1.0	08/06/01 11:04	JAMA 7439-92-1		
GC Volatiles								
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified							
Gasoline Range Organics	0.21	mg/kg	0.050	1.0	08/02/01 15:08	LJAS		
4-Bromofluorobenzene (S)	95	%		1.0	08/02/01 15:08	LJAS 460-00-4		
1,4-Difluorobenzene (S)	98	%		1.0	08/02/01 15:08	LJAS		
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021							
Benzene	ND	ug/kg	5.0	1.0	08/02/01 15:08	LJAS 71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	08/02/01 15:08	LJAS 100-41-4		
Toluene	ND	ug/kg	5.0	1.0	08/02/01 15:08	LJAS 108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	08/02/01 15:08	LJAS 1330-20-7		
Methyl-tert-butyl ether	55.	ug/kg	5.0	1.0	08/02/01 15:08	LJAS 1634-04-4		
1,4-Difluorobenzene (S)	104	%		1.0	08/02/01 15:08	LJAS		
4-Bromofluorobenzene (S)	98	%		1.0	08/02/01 15:08	LJAS 460-00-4		

REPORT OF LABORATORY ANALYSIS

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Phone: 281.488.1810
Fax: 281.488.4661

Lab Project Number: 8522618
Client Project ID: ARCO Site#6041

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
(S)	Surrogate

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Phone: 281.488.1810
Fax: 281.488.4661

QUALITY CONTROL DATA

Lab Project Number: 8522618
Client Project ID: ARCO Site#6041

QC Batch: 56260 Analysis Method: EPA 8021
QC Batch Method: EPA 8021 Analysis Description: BTEX, Soil
Associated Lab Samples: 851705010

METHOD BLANK: 851705025
Associated Lab Samples: 851705010

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/kg	ND	5.0	
Ethylbenzene	ug/kg	ND	5.0	
Toluene	ug/kg	ND	5.0	
Xylene (Total)	ug/kg	ND	5.0	
Methyl-tert-butyl ether	ug/kg	ND	5.0	
1,4-Difluorobenzene (S)	%	98		
4-Bromofluorobenzene (S)	%	101		

LABORATORY CONTROL SAMPLE & LCSD: 851705026 851705027

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Benzene	ug/kg	50	52.00	50.82	104	102	2	
Ethylbenzene	ug/kg	50	54.87	53.83	110	108	2	
Toluene	ug/kg	50	51.97	50.68	104	101	3	
Xylene (Total)	ug/kg	100	110.2	108.3	110	108	2	
Methyl-tert-butyl ether	ug/kg	50	49.58	48.42	99	97	2	
1,4-Difluorobenzene (S)					101	102		
4-Bromofluorobenzene (S)					102	110		

REPORT OF LABORATORY ANALYSIS

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900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

QUALITY CONTROL DATA

Lab Project Number: 8522618
Client Project ID: ARCO Site#6041

QC Batch: 56261 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 8015 Modified Analysis Description: GAS Mod 8015, Soil
Associated Lab Samples: 851705010

METHOD BLANK: 851705028
Associated Lab Samples: 851705010

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Gasoline Range Organics	ug/kg	ND	50.	
4-Bromofluorobenzene (S)	%	80		
1,4-Difluorobenzene (S)	%	78		

LABORATORY CONTROL SAMPLE & LCSD: 851705029 851705030

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Gasoline Range Organics	ug/kg	1000	929.1	933.9	93	93	1	
4-Bromofluorobenzene (S)					95	87		
1,4-Difluorobenzene (S)					120	108		

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Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

QUALITY CONTROL DATA

Lab Project Number: 8522618
Client Project ID: ARCO Site#6041

QC Batch: 56264
QC Batch Method:
Associated Lab Samples: 851705010

Analysis Method: EPA 6010
Analysis Description: SW6010 Metals, Routine Soil

METHOD BLANK: 851705034
Associated Lab Samples: 851705010

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Lead	mg/kg	ND	4.59	

LABORATORY CONTROL SAMPLE: 851705037

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Lead	mg/kg	11.57	9.611	83	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851705035 851705036

Parameter	Units	851705007 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Lead	mg/kg	6.275	12.02	13.22	12.82	58	52	3	

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900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

Lab Project Number: 8522618
Client Project ID: ARCO Site#6041

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D)	Laboratory Control Sample (Duplicate)
MS(D)	Matrix Spike (Duplicate)
DUP	Sample Duplicate
ND	Not Detected
NC	Not Calculable
RPD	Relative Percent Difference
(S)	Surrogate

REPORT OF LABORATORY ANALYSIS

ARCO Products Company
Division of Atlantic-Richfield Company

Task Order No. WAM 27708.00

Chain of Custody

ARCO Facility no. ARCO 6041	City (Facility) DUBLIN, CA	Project manager (Consultant) RON SCHEELE	Laboratory name PACE
ARCO engineer PAUL SUPPLE	Telephone no. (ARCO) (925) 299-8891	Telephone no. (Consultant) (510) 450-1783	Fax no. (Consultant) (510) 450-8295
Consultant name CAMBRIA ENVIRONMENTAL TECH	Address (Consultant) 6223 HOLLIS ST., EMERYVILLE, CA 94608		Contract number

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Water	Other	Preservation: Ice	Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA M602/8020/8015	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 / VOA	CAM METALS EPA 6010/7000 TTLC / STLC	Lead Org./DHS / Lead EPA 7420/7421	TPH / Lead
MST-1@13'	85170	1	X			X		7/31/01	4PM		X										X
MW-1	010	1																			

Special detection Limit/reporting: AS LOW AS POSSIBLE

Special QA/QC

Remarks

Lab number

Turnaround time

Priority Rush 1 Business Day

Rush 2 Business Days

Expedited 5 Business Days X

Standard 10 Business Days

Method of shipment: COOLER/ICE BY FED-EX

Condition of sample:

Temperature received:

	Date	Time	
Relinquished by sampler	7/31/01	4PM	Received by SECURED LOCKBOX
Relinquished by	8/1/01	5PM	Received by
Relinquished by	Date	Time	Received by Date Time

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant

APC-3292 (2-91)

CAMBRIA

APPENDIX E

WASTE DISPOSAL CONFIRMATION LETTERS

DILLARD TRUCKING, INC. dba
DILLARD ENVIRONMENTAL SERVICES
P. O. Box 579
Byron, CA 94514
Phone (925) 634-6850 Fax (925) 634-0874

Via e-mail
rscheele@cambria-env.com

October 23, 2001

Attn: Mr. Ron Scheele
Cambria Environmental

RE: **ARCO #6041**
7249 Village Parkway
Dublin, CA

Dear Mr. Scheele:

Please be advised that 4,150.44 tons of non-hazardous soil has been removed from the above referenced site. The material was transported to Republic Landfill in Livermore, California in August 2001.

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

Sincerely,

Dillard Trucking, Inc. dba,
DILLARD ENVIRONMENTAL SERVICES

Patty Dillard
Patty Dillard
President

DILLARD TRUCKING, INC. dba
DILLARD ENVIRONMENTAL SERVICES
P. O. Box 579
Byron, CA 94514
Phone (925) 634-6850 Fax (925) 634-0874

Via e-mail
rscheele@cambria-env.com

October 25, 2001

Attn: Mr. Ron Scheele
Cambria Environmental

RE: **ARCO #6041**
7249 Village Parkway
Dublin, CA

Dear Mr. Scheele:

Please be advised that 25,600 gallons of hydrocarbon impacted non-hazardous groundwater has been removed from the above referenced site. The material was transported to Instrat in Rio Vista, California in August, 2001.

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

Sincerely,

Dillard Trucking, Inc. dba,
DILLARD ENVIRONMENTAL SERVICES

Patty Dillard
Patty Dillard
President

CAMBRIA

APPENDIX F

SOIL STOCKPILE LABORATORY ANALYTICAL REPORT

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

August 03, 2001

Mr. Jason Olson
Cambria Environmental
6262 Hollis Street
Emeryville, CA 94608

RE: Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

Dear Mr. Olson:

Enclosed are the analytical results for sample(s) received by the laboratory on July 27, 2001. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paula Kirtley
Project Manager

Enclosures

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

Cambria Environmental
6262 Hollis Street
Emeryville, CA 94608

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

Attn: Mr. Jason Olson
Phone: 510-450-8291

Solid results are reported on a wet weight basis

Lab Sample No: 851704135 Project Sample Number: 8522522-001 Date Collected: 07/26/01 13:00
Client Sample ID: COMPOSITE S-1 - S-4 Matrix: Soil Date Received: 07/27/01 08:38

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	ND	mg/kg	4.72	0.9	07/30/01	JAMA	7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	ND	mg/kg	0.050	1.0	07/30/01 14:26	LJAS			
4-Bromofluorobenzene (S)	75	%		1.0	07/30/01 14:26	LJAS	460-00-4		
1,4-Difluorobenzene (S)	87	%		1.0	07/30/01 14:26	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/kg	5.0	1.0	07/30/01 13:47	LJAS	71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	07/30/01 13:47	LJAS	100-41-4		
Toluene	ND	ug/kg	5.0	1.0	07/30/01 13:47	LJAS	108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	07/30/01 13:47	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	07/30/01 13:47	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	103	%		1.0	07/30/01 13:47	LJAS			
4-Bromofluorobenzene (S)	89	%		1.0	07/30/01 13:47	LJAS	460-00-4		

Comments : Sample received at a temperature of 14.1 degrees, proceed with analysis, per client request.
Lowest possible limits.

REPORT OF LABORATORY ANALYSIS

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

Lab Sample No: 851704577 Project Sample Number: 8522522-002 Date Collected: 07/26/01 01:00
Client Sample ID: RELOG 851704135 Matrix: Soil Date Received: 07/27/01 08:38

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg Limit
Metals								
SW6010 Metals, Trace Soil	Method: EPA 6010							
Antimony	ND	mg/kg	0.472	0.9	08/02/01	PBAR 7440-36-0		
Arsenic	1.37	mg/kg	0.472	0.9	08/02/01	PBAR 7440-38-2		
Barium	54.2	mg/kg	0.472	0.9	08/02/01	PBAR 7440-39-3		
Beryllium	0.211	mg/kg	0.0943	0.9	08/02/01	PBAR 7440-41-7		
Cadmium	0.101	mg/kg	0.0943	0.9	08/02/01	PBAR 7440-43-9		
Chromium	8.60	mg/kg	0.472	0.9	08/02/01	PBAR 7440-47-3		
Cobalt	3.10	mg/kg	0.472	0.9	08/02/01	PBAR 7440-48-4		
Copper	5.99	mg/kg	0.472	0.9	08/02/01	PBAR 7440-50-8		
Lead	3.23	mg/kg	0.283	0.9	08/02/01	PBAR 7439-92-1		
Molybdenum	ND	mg/kg	0.943	0.9	08/02/01	PBAR 7439-98-7		
Nickel	14.0	mg/kg	0.472	0.9	08/02/01	PBAR 7440-02-0		
Selenium	ND	mg/kg	0.472	0.9	08/02/01	PBAR 7782-49-2		
Silver	ND	mg/kg	0.189	0.9	08/02/01	PBAR 7440-22-4		
Thallium	ND	mg/kg	0.472	0.9	08/02/01	PBAR 7440-28-0		
Vanadium	8.90	mg/kg	0.472	0.9	08/02/01	PBAR 7440-62-2		
Zinc	15.8	mg/kg	0.472	0.9	08/02/01	PBAR 7440-66-6		
Mercury, SW 7471	Method: EPA 7471							
Mercury	ND	mg/kg	0.0789	0.8	08/03/01	JAMA 7439-97-6		
GC/MS Semivolatiles								
SW8270 Semivolatiles, Soil	Prep/Method: EPA 3550 / EPA 8270							
Acenaphthene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA 83-32-9		
Acenaphthylene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA 208-96-8		
Acetophenone	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA 98-86-2		
2-Acetylaminofluorene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA 53-96-3		
4-Aminobiphenyl	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA 92-67-1		
Aniline	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA 62-53-3		
Anthracene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA 120-12-7		
Aramite	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA 140-57-8		
Benzidine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA 92-87-5		
Benzo(a)anthracene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA 56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA 205-99-2		

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

Lab Sample No: 851704577 Project Sample Number: 8522522-002 Date Collected: 07/26/01 01:00
Client Sample ID: RELOG 851704135 Matrix: Soil Date Received: 07/27/01 08:38

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Benzo(k)fluoranthene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	50-32-8		
Benzoic acid	ND	ug/kg	812.	1.0	08/02/01 06:05	DSHA	65-85-0		
Benzyl alcohol	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	100-51-6		
bis(2-Chloroethoxy)methane	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	111-91-1		
bis(2-Chloroethyl) ether	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	111-44-4		
bis(2-Chloroisopropyl) ether	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	39638-32-9		
bis(2-Ethylhexyl)phthalate	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	117-81-7		
4-Bromophenylphenyl ether	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	101-55-3		
Butylbenzylphthalate	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	85-68-7		
Carbazole	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	86-74-8		
4-Chloroaniline	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	106-47-8		
4-Chloro-3-methylphenol	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	59-50-7		
2-Chloronaphthalene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	91-58-7		
2-Chlorophenol	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	95-57-8		
4-Chlorophenylphenyl ether	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	7005-72-3		
Chrysene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	53-70-3		
Dibenzofuran	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	132-64-9		
1,2-Dichlorobenzene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	95-50-1		
1,3-Dichlorobenzene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	541-73-1		
1,4-Dichlorobenzene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	106-46-7		
3,3'-Dichlorobenzidine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	91-94-1		
2,4-Dichlorophenol	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	120-83-2		
2,6-Dichlorophenol	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	87-65-0		
Diethylphthalate	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	84-66-2		
P-Dimethylaminoazobenzene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	60-11-7		
3,3'-Dimethylbenzidine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	119-93-7		
7,12-Dimethylbenz(a)anthracene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	57-97-6		
a,a-Dimethylphenylethylamine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	122-09-8		
Dimethylphthalate	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	131-11-3		
4,6-Dinitro-2-methylphenol	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	534-52-1		
2,4-Dinitrophenol	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	51-28-5		
Dinoseb	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	88-85-7		
2,4-Dimethylphenol	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	105-67-9		
Di-n-butylphthalate	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	84-74-2		

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Client Project ID: ARCO Site#6041

Lab Sample No: 851704577 Project Sample Number: 8522522-002 Date Collected: 07/26/01 01:00
Client Sample ID: RELOG 851704135 Matrix: Soil Date Received: 07/27/01 08:38

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
1,3-Dinitrobenzene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	99-65-0		
2,4-Dinitrotoluene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	121-14-2		
2,6-Dinitrotoluene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	606-20-2		
Di-n-octylphthalate	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	117-84-0		
Diphenylamine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	122-39-4		
1,2-Diphenylhydrazine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	122-66-7		
Ethyl methanesulfonate	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	62-50-0		
Fluoranthene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	206-44-0		
Fluorene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	86-73-7		
Hexachlorobenzene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	118-74-1		
Hexachloro-1,3-butadiene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	87-68-3		
Hexachlorocyclopentadiene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	77-47-4		
Hexachloroethane	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	67-72-1		
Hexachlorophene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	70-30-4		
Hexachloropropene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	1888-71-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	193-39-5		
Isophorone	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	78-59-1		
Isosafrole	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	120-58-1		
Kepone	ND	ug/kg	1630	1.0	08/02/01 06:05	DSHA	143-50-0		
Methapyrilene	ND	ug/kg	650.	1.0	08/02/01 06:05	DSHA	91-80-5		
6-Methylchrysene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	1705-85-7		
3-Methylcholanthrene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	56-49-5		
Methyl methanesulfonate	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	66-27-3		
1-Methylnaphthalene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	90-12-0		
2-Methylnaphthalene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	91-57-6		
2-Methylphenol (o-Cresol)	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	95-48-7		
3&4-Methylphenol	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA			
Naphthalene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	91-20-3		
1,4-Naphthoquinone	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	130-15-4		
1-Naphthaleneamine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	134-32-7		
2-Naphthaleneamine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	91-59-8		
2-Nitroaniline	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	88-74-4		
3-Nitroaniline	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	99-09-2		
4-Nitroaniline	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	100-01-6		
Nitrobenzene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	98-95-3		
2-Nitrophenol	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	88-75-5		
4-Nitrophenol	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	100-02-7		

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Client Project ID: ARCO Site#6041

Lab Sample No: 851704577 Project Sample Number: 8522522-002 Date Collected: 07/26/01 01:00
Client Sample ID: RELOG 851704135 Matrix: Soil Date Received: 07/27/01 08:38

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
4-Nitroquinoline-n-oxide	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	56-57-5		
N-Nitroso-di-n-butylamine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	924-16-3		
N-Nitrosodiethylamine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	55-18-5		
N-Nitrosodimethylamine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	62-75-9		
N-Nitrosodiphenylamine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	86-30-6		
N-Nitroso-di-n-propylamine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	621-64-7		
N-Nitrosomethylethylamine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	10595-95-6		
N-Nitrosomorpholine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	59-89-2		
N-Nitrosopiperidine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	100-75-4		
N-Nitrosopyrrolidine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	930-55-2		
2-Methyl-5-nitroaniline	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	99-55-8		
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	108-60-1		
Pentachlorobenzene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	608-93-5		
Pentachloroethane	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	76-01-7		
Pentachloronitrobenzene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	82-68-8		
Pentachlorophenol	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	87-86-5		
Phenacetin	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	62-44-2		
Phenanthrene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	85-01-8		
Phenol	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	108-95-2		
p-Phenylenediamine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	106-50-3		
2-Picoline	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	109-06-8		
Pronamide	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	23950-58-5		
Pyrene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	129-00-0		
Pyridine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	110-86-1		
Safrole	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	94-59-7		
1,2,4,5-Tetrachlorobenzene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	95-94-3		
2,3,4,6-Tetrachlorophenol	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	58-90-2		
O-Toluidine	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	95-53-4		
1,2,4-Trichlorobenzene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	120-82-1		
2,4,5-Trichlorophenol	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	95-95-4		
2,4,6-Trichlorophenol	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	88-06-2		
1,3,5-Trinitrobenzene	ND	ug/kg	325.	1.0	08/02/01 06:05	DSHA	99-35-4		
Nitrobenzene-d5 (S)	62	%		1.0	08/02/01 06:05	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	69	%		1.0	08/02/01 06:05	DSHA	321-60-8		
Terphenyl-d14 (S)	63	%		1.0	08/02/01 06:05	DSHA	1718-51-0		
Phenol-d5 (S)	50	%		1.0	08/02/01 06:05	DSHA	4165-62-2		
2-Fluorophenol (S)	57	%		1.0	08/02/01 06:05	DSHA	367-12-4		

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Client Project ID: ARCO Site#6041

Lab Sample No: 851704577 Project Sample Number: 8522522-002 Date Collected: 07/26/01 01:00
Client Sample ID: RELOG 851704135 Matrix: Soil Date Received: 07/27/01 08:38

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg Limit
2,4,6-Tribromophenol (S)	59	%		1.0	08/02/01 06:05	DSHA 118-79-6		
Date Extracted					07/31/01			
Organics Prep								
TPH by EPA Method 418.1 Mod	Prep/Method: EPA 3540 / EPA 418.1 Modified							
Total Petroleum Hydrocarbons	190.	mg/kg	46.0	0.9	07/31/01 13:00	CHAR		
GC/MS Volatiles								
SW8260,NR Volatiles,Soil	Prep/Method: EPA 8260 / EPA 8260							
Benzene	ND	mg/kg	0.00200	1.0	08/02/01 16:20	DBEN 71-43-2		
Bromodichloromethane	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 75-27-4		
Bromoform	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 75-25-2		
Bromomethane	ND	mg/kg	0.0100	1.0	08/02/01 16:20	DBEN 74-83-9		
Carbon tetrachloride	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 56-23-5		
Chlorobenzene	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 108-90-7		
Chloroethane	ND	mg/kg	0.0100	1.0	08/02/01 16:20	DBEN 75-00-3		
2-Chloroethylvinyl ether	ND	mg/kg	0.0100	1.0	08/02/01 16:20	DBEN 110-75-8		
Chloroform	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 67-66-3		
Chloromethane	ND	mg/kg	0.0100	1.0	08/02/01 16:20	DBEN 74-87-3		
Dibromochloromethane	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 124-48-1		
1,2-Dichlorobenzene	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 95-50-1		
1,3-Dichlorobenzene	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 541-73-1		
1,4-Dichlorobenzene	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 106-46-7		
Dichlorodifluoromethane	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 75-71-8		
1,1-Dichloroethane	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 75-34-3		
1,2-Dichloroethane	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 107-06-2		
1,1-Dichloroethene	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 75-35-4		
trans-1,2-Dichloroethene	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 156-60-5		
1,2-Dichloropropane	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 78-87-5		
cis-1,3-Dichloropropene	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 10061-01-5		
trans-1,3-Dichloropropene	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 10061-02-6		
Ethylbenzene	ND	mg/kg	0.00200	1.0	08/02/01 16:20	DBEN 100-41-4		
Methylene chloride	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 75-09-2		
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 79-34-5		
Tetrachloroethene	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN 127-18-4		

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Client Sample ID: RELOG 851704135 Matrix: Soil Date Received: 07/27/01 08:38

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Toluene	0.00213	mg/kg	0.00200	1.0	08/02/01 16:20	DBEN	108-88-3		
1,1,1-Trichloroethane	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN	71-55-6		
1,1,2-Trichloroethane	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN	79-00-5		
Trichloroethene	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN	79-01-6		
Trichlorofluoromethane	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN	75-69-4		
Vinyl chloride	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN	75-01-4		
Xylene (Total)	ND	mg/kg	0.00200	1.0	08/02/01 16:20	DBEN	1330-20-7		
Methyl-tert-butyl ether	ND	mg/kg	0.00500	1.0	08/02/01 16:20	DBEN	1634-04-4		
Toluene-d8 (S)	104	%		1.0	08/02/01 16:20	DBEN	2037-26-5		
4-Bromofluorobenzene (S)	105	%		1.0	08/02/01 16:20	DBEN	460-00-4		
1,2-Dichloroethane-d4 (S)	113	%		1.0	08/02/01 16:20	DBEN	17060-07-0		

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Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
(S)	Surrogate

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

QC Batch: 56091 Analysis Method: EPA 8021
QC Batch Method: EPA 8021 Analysis Description: BTEX, Soil
Associated Lab Samples: 851704135

METHOD BLANK: 851704212
Associated Lab Samples: 851704135

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/kg	ND	5.0	
Ethylbenzene	ug/kg	ND	5.0	
Toluene	ug/kg	ND	5.0	
Xylene (Total)	ug/kg	ND	5.0	
Methyl-tert-butyl ether	ug/kg	ND	5.0	
1,4-Difluorobenzene (S)	%	102		
4-Bromofluorobenzene (S)	%	103		

LABORATORY CONTROL SAMPLE & LCSD: 851704213 851704214

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Benzene	ug/kg	50	50.05	51.07	100	102	2	
Ethylbenzene	ug/kg	50	51.04	53.11	102	106	4	
Toluene	ug/kg	50	48.40	49.76	97	100	3	
Xylene (Total)	ug/kg	100	101.7	106.1	102	106	4	
Methyl-tert-butyl ether	ug/kg	50	48.49	48.96	97	98	1	
1,4-Difluorobenzene (S)					104	101		
4-Bromofluorobenzene (S)					100	102		

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QUALITY CONTROL DATA

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

QC Batch: 56092 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 8015 Modified Analysis Description: GAS Mod 8015, Soil
Associated Lab Samples: 851704135

METHOD BLANK: 851704215
Associated Lab Samples: 851704135

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Gasoline Range Organics	ug/kg	ND	50.	
4-Bromofluorobenzene (S)	%	87		
1,4-Difluorobenzene (S)	%	88		

LABORATORY CONTROL SAMPLE & LCSD: 851704216 851704217

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Gasoline Range Organics	ug/kg	1000	950.4	946.6	95	95	0	
4-Bromofluorobenzene (S)					92	94		
1,4-Difluorobenzene (S)					119	118		

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QUALITY CONTROL DATA

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

QC Batch: 56176 — Analysis Method: EPA 8270
QC Batch Method: EPA 3550 — Analysis Description: SW8270 Semivolatiles, Soil
Associated Lab Samples: 851704577

METHOD BLANK: 851704660
Associated Lab Samples: 851704577

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Acenaphthene	ug/kg	ND	333.	
Acenaphthylene	ug/kg	ND	333.	
Acetophenone	ug/kg	ND	333.	
2-Acetylaminofluorene	ug/kg	ND	333.	
4-Aminobiphenyl	ug/kg	ND	333.	
Aniline	ug/kg	ND	333.	
Anthracene	ug/kg	ND	333.	
Aramite	ug/kg	ND	333.	
Benzidine	ug/kg	ND	333.	
Benzo(a)anthracene	ug/kg	ND	333.	
Benzo(b)fluoranthene	ug/kg	ND	333.	
Benzo(k)fluoranthene	ug/kg	ND	333.	
Benzo(g,h,i)perylene	ug/kg	ND	333.	
Benzo(a)pyrene	ug/kg	ND	333.	
Benzoic acid	ug/kg	ND	833.	
Benzyl alcohol	ug/kg	ND	333.	
bis(2-Chloroethoxy)methane	ug/kg	ND	333.	
bis(2-Chloroethyl) ether	ug/kg	ND	333.	
bis(2-Chloroisopropyl) ether	ug/kg	ND	333.	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	333.	
4-Bromophenylphenyl ether	ug/kg	ND	333.	
Butylbenzylphthalate	ug/kg	ND	333.	
Carbazole	ug/kg	ND	333.	
4-Chloroaniline	ug/kg	ND	333.	
4-Chloro-3-methylphenol	ug/kg	ND	333.	
2-Chloronaphthalene	ug/kg	ND	333.	
2-Chlorophenol	ug/kg	ND	333.	
4-Chlorophenylpheny1 ether	ug/kg	ND	333.	
Chrysene	ug/kg	ND	333.	
Dibenz(a,h)anthracene	ug/kg	ND	333.	

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QUALITY CONTROL DATA

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

METHOD BLANK: 851704660
Associated Lab Samples: 851704577

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Dibenzofuran	ug/kg	ND	333.	
1,2-Dichlorobenzene	ug/kg	ND	333.	
1,3-Dichlorobenzene	ug/kg	ND	333.	
1,4-Dichlorobenzene	ug/kg	ND	333.	
3,3'-Dichlorobenzidine	ug/kg	ND	333.	
2,4-Dichlorophenol	ug/kg	ND	333.	
2,6-Dichlorophenol	ug/kg	ND	333.	
Diethylphthalate	ug/kg	ND	333.	
P-Dimethylaminoazobenzene	ug/kg	ND	333.	
3,3'-Dimethylbenzidine	ug/kg	ND	333.	
7,12-Dimethylbenz(a)anthracene	ug/kg	ND	333.	
a,a-Dimethylphenylethylamine	ug/kg	ND	333.	
Dimethylphthalate	ug/kg	ND	333.	
4,6-Dinitro-2-methylphenol	ug/kg	ND	333.	
2,4-Dinitrophenol	ug/kg	ND	333.	
Dinoseb	ug/kg	ND	333.	
2,4-Dimethylphenol	ug/kg	ND	333.	
Di-n-butylphthalate	ug/kg	ND	333.	
1,3-Dinitrobenzene	ug/kg	ND	333.	
2,4-Dinitrotoluene	ug/kg	ND	333.	
2,6-Dinitrotoluene	ug/kg	ND	333.	
Di-n-octylphthalate	ug/kg	ND	333.	
Diphenylamine	ug/kg	ND	333.	
1,2-Diphenylhydrazine	ug/kg	ND	333.	
Ethyl methanesulfonate	ug/kg	ND	333.	
Fluoranthene	ug/kg	ND	333.	
Fluorene	ug/kg	ND	333.	
Hexachlorobenzene	ug/kg	ND	333.	
Hexachloro-1,3-butadiene	ug/kg	ND	333.	
Hexachlorocyclopentadiene	ug/kg	ND	333.	
Hexachloroethane	ug/kg	ND	333.	
Hexachlorophene	ug/kg	ND	333.	
Hexachloropropene	ug/kg	ND	333.	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	333.	
Isophorone	ug/kg	ND	333.	

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QUALITY CONTROL DATA

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

METHOD BLANK: 851704660
Associated Lab Samples: 851704577

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Isosafrole	ug/kg	ND	333.	
Kepone	ug/kg	ND	1670	
Methapyrilene	ug/kg	ND	667.	
6-Methylchrysene	ug/kg	ND	333.	
3-Methylcholanthrene	ug/kg	ND	333.	
Methyl methanesulfonate	ug/kg	ND	333.	
1-Methylnaphthalene	ug/kg	ND	333.	
2-Methylnaphthalene	ug/kg	ND	333.	
2-Methylphenol (o-Cresol)	ug/kg	ND	333.	
3&4-Methylphenol	ug/kg	ND	333.	
Naphthalene	ug/kg	ND	333.	
1,4-Naphthoquinone	ug/kg	ND	333.	
1-Naphthaleneamine	ug/kg	ND	333.	
2-Naphthaleneamine	ug/kg	ND	333.	
2-Nitroaniline	ug/kg	ND	333.	
3-Nitroaniline	ug/kg	ND	333.	
4-Nitroaniline	ug/kg	ND	333.	
Nitrobenzene	ug/kg	ND	333.	
2-Nitrophenol	ug/kg	ND	333.	
4-Nitrophenol	ug/kg	ND	333.	
4-Nitroquinoline-n-oxide	ug/kg	ND	333.	
N-Nitroso-di-n-butylamine	ug/kg	ND	333.	
N-Nitrosodiethylamine	ug/kg	ND	333.	
N-Nitrosodimethylamine	ug/kg	ND	333.	
N-Nitrosodiphenylamine	ug/kg	ND	333.	
N-Nitroso-di-n-propylamine	ug/kg	ND	333.	
N-Nitrosomethylethylamine	ug/kg	ND	333.	
N-Nitrosomorpholine	ug/kg	ND	333.	
N-Nitrosopiperidine	ug/kg	ND	333.	
N-Nitrosopyrrolidine	ug/kg	ND	333.	
2-Methyl-5-nitroaniline	ug/kg	ND	333.	
2,2'-Oxybis(1-chloropropane)	ug/kg	ND	333.	
Pentachlorobenzene	ug/kg	ND	333.	
Pentachloroethane	ug/kg	ND	333.	
Pentachloronitrobenzene	ug/kg	ND	333.	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

METHOD BLANK: 851704660
Associated Lab Samples: 851704577

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Pentachlorophenol	ug/kg	ND	333.	
Phenacetin	ug/kg	ND	333.	
Phenanthrene	ug/kg	ND	333.	
Phenol	ug/kg	ND	333.	
p-Phenylenediamine	ug/kg	ND	333.	
2-Picoline	ug/kg	ND	333.	
Pronamide	ug/kg	ND	333.	
Pyrene	ug/kg	ND	333.	
Pyridine	ug/kg	ND	333.	
Safrole	ug/kg	ND	333.	
1,2,4,5-Tetrachlorobenzene	ug/kg	ND	333.	
2,3,4,6-Tetrachlorophenol	ug/kg	ND	333.	
O-Toluidine	ug/kg	ND	333.	
1,2,4-Trichlorobenzene	ug/kg	ND	333.	
2,4,5-Trichlorophenol	ug/kg	ND	333.	
2,4,6-Trichlorophenol	ug/kg	ND	333.	
1,3,5-Trinitrobenzene	ug/kg	ND	333.	
Nitrobenzene-d5 (S)	%	66		
2-Fluorobiphenyl (S)	%	77		
Terphenyl-d14 (S)	%	72		
Phenol-d5 (S)	%	61		
2-Fluorophenol (S)	%	68		
2,4,6-Tribromophenol (S)	%	53		

LABORATORY CONTROL SAMPLE & LCSD: 851704661 851704662

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Acenaphthene	ug/kg	666.7	449.2	441.5	67	66	2	
Acenaphthylene	ug/kg	666.7	324.9	318.5	49	48	2	
Anthracene	ug/kg	666.7	463.5	453.5	70	68	2	
Benzo(a)anthracene	ug/kg	666.7	484.2	498.0	73	75	3	
Benzo(b)fluoranthene	ug/kg	666.7	356.8	347.0	54	52	3	
Benzo(k)fluoranthene	ug/kg	666.7	485.6	479.8	73	72	1	

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QUALITY CONTROL DATA

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

LABORATORY CONTROL SAMPLE & LCSD: 851704661 851704662

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Benzo(g,h,i)perylene	ug/kg	666.7	1478	1509	222	226	2	1,1
Benzo(a)pyrene	ug/kg	666.7	458.5	463.8	69	70	1	
bis(2-Chloroethoxy)methane	ug/kg	666.7	366.5	370.7	55	56	1	
bis(2-Chloroethyl) ether	ug/kg	666.7	485.1	504.4	73	76	4	
bis(2-Ethylhexyl)phthalate	ug/kg	666.7	473.9	464.6	71	70	2	
4-Bromophenylphenyl ether	ug/kg	666.7	515.3	501.3	77	75	3	
Butylbenzylphthalate	ug/kg	666.7	453.6	448.4	68	67	1	
4-Chloroaniline	ug/kg	666.7	322.7	336.8	48	50	4	
4-Chloro-3-methylphenol	ug/kg	666.7	426.2	428.3	64	64	0	
2-Chloronaphthalene	ug/kg	666.7	453.7	457.5	68	69	1	
2-Chlorophenol	ug/kg	666.7	408.5	401.5	61	60	2	
4-Chlorophenylphenyl ether	ug/kg	666.7	480.9	470.3	72	70	2	
Chrysene	ug/kg	666.7	505.1	505.9	76	76	0	
Dibenz(a,h)anthracene	ug/kg	666.7	1291	1306	194	196	1	1,1
Dibenzofuran	ug/kg	666.7	441.5	428.6	66	64	3	
1,2-Dichlorobenzene	ug/kg	666.7	447.3	440.5	67	66	2	
1,3-Dichlorobenzene	ug/kg	666.7	429.2	431.9	64	65	1	
1,4-Dichlorobenzene	ug/kg	666.7	441.4	430.5	66	65	3	
3,3'-Dichlorobenzidine	ug/kg	666.7	403.9	387.1	61	58	4	
2,4-Dichlorophenol	ug/kg	666.7	471.2	457.7	71	69	3	
Diethylphthalate	ug/kg	666.7	437.9	436.3	66	66	0	
Dimethylphthalate	ug/kg	666.7	472.0	462.8	71	69	2	
4,6-Dinitro-2-methylphenol	ug/kg	666.7	358.1	360.4	54	54	1	
2,4-Dinitrophenol	ug/kg	666.7	320.7	304.5	48	46	5	
2,4-Dimethylphenol	ug/kg	666.7	442.9	450.0	66	68	2	
Di-n-butylphthalate	ug/kg	666.7	480.4	476.4	72	72	1	
2,4-Dinitrotoluene	ug/kg	666.7	402.6	381.3	60	57	5	
2,6-Dinitrotoluene	ug/kg	666.7	417.7	412.3	63	62	1	
Di-n-octylphthalate	ug/kg	666.7	482.6	474.8	72	71	2	
Fluoranthene	ug/kg	666.7	453.3	447.9	68	67	1	
Fluorene	ug/kg	666.7	451.3	439.4	68	66	3	
Hexachlorobenzene	ug/kg	666.7	546.1	526.7	82	79	4	
Hexachloro-1,3-butadiene	ug/kg	666.7	507.1	504.8	76	76	0	
Hexachlorocyclopentadiene	ug/kg	666.7	255.2	247.7	38	37	3	
Hexachloroethane	ug/kg	666.7	406.0	404.6	61	61	0	
Indeno(1,2,3-cd)pyrene	ug/kg	666.7	1297	1302	195	195	0	1,1

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QUALITY CONTROL DATA

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

LABORATORY CONTROL SAMPLE & LCSD: 851704661 851704662

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Isophorone	ug/kg	666.7	364.9	366.6	55	55	0	
2-Methylnaphthalene	ug/kg	666.7	448.0	460.2	67	69	3	
2-Methylphenol (o-Cresol)	ug/kg	666.7	343.9	342.3	52	51	0	
3&4-Methylphenol	ug/kg	666.7	398.7	383.2	60	58	4	
Naphthalene	ug/kg	666.7	451.8	456.0	68	68	1	
2-Nitroaniline	ug/kg	666.7	342.5	335.3	51	50	2	
3-Nitroaniline	ug/kg	666.7	377.4	373.6	57	56	1	
4-Nitroaniline	ug/kg	666.7	310.9	306.5	47	46	1	
Nitrobenzene	ug/kg	666.7	391.6	402.3	59	60	3	
2-Nitrophenol	ug/kg	666.7	444.5	434.4	67	65	2	
4-Nitrophenol	ug/kg	666.7	283.2	282.6	42	42	0	
N-Nitrosodiphenylamine	ug/kg	666.7	417.2	410.3	63	62	2	
N-Nitroso-di-n-propylamine	ug/kg	666.7	359.4	359.7	54	54	0	
2,2'-Oxybis(1-chloropropane)	ug/kg	666.7	347.3	345.3	52	52	1	
Pentachlorophenol	ug/kg	666.7	331.5	322.4	50	48	3	
Phenanthrene	ug/kg	666.7	506.7	494.2	76	74	3	
Phenol	ug/kg	666.7	365.6	363.1	55	54	1	
Pyrene	ug/kg	666.7	465.5	451.4	70	68	3	
1,2,4-Trichlorobenzene	ug/kg	666.7	507.3	509.3	76	76	0	
2,4,5-Trichlorophenol	ug/kg	666.7	430.1	413.8	64	62	4	
2,4,6-Trichlorophenol	ug/kg	666.7	448.7	434.0	67	65	3	
Nitrobenzene-d5 (S)					64	64		
2-Fluorobiphenyl (S)					76	74		
Terphenyl-d14 (S)					70	71		
Phenol-d5 (S)					63	61		
2-Fluorophenol (S)					67	66		
2,4,6-Tribromophenol (S)					67	66		

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QUALITY CONTROL DATA

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

QC Batch: 56288 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: SW8260,NR Volatiles,Soil
Associated Lab Samples: 851704577

METHOD BLANK: 851705132
Associated Lab Samples: 851704577

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/kg	ND	2.00	
Bromodichloromethane	ug/kg	ND	5.00	
Bromoform	ug/kg	ND	5.00	
Bromomethane	ug/kg	ND	10.0	
Carbon tetrachloride	ug/kg	ND	5.00	
Chlorobenzene	ug/kg	ND	5.00	
Chloroethane	ug/kg	ND	10.0	
2-Chloroethylvinyl ether	ug/kg	ND	10.0	
Chloroform	ug/kg	ND	5.00	
Chloromethane	ug/kg	ND	10.0	
Dibromochloromethane	ug/kg	ND	5.00	
1,2-Dichlorobenzene	ug/kg	ND	5.00	
1,3-Dichlorobenzene	ug/kg	ND	5.00	
1,4-Dichlorobenzene	ug/kg	ND	5.00	
Dichlorodifluoromethane	ug/kg	ND	5.00	
1,1-Dichloroethane	ug/kg	ND	5.00	
1,2-Dichloroethane	ug/kg	ND	5.00	
1,1-Dichloroethene	ug/kg	ND	5.00	
trans-1,2-Dichloroethene	ug/kg	ND	5.00	
1,2-Dichloropropane	ug/kg	ND	5.00	
cis-1,3-Dichloropropene	ug/kg	ND	5.00	
trans-1,3-Dichloropropene	ug/kg	ND	5.00	
Ethylbenzene	ug/kg	ND	2.00	
Methylene chloride	ug/kg	ND	5.00	
1,1,2,2-Tetrachloroethane	ug/kg	ND	5.00	
Tetrachloroethene	ug/kg	ND	5.00	
Toluene	ug/kg	ND	2.00	
1,1,1-Trichloroethane	ug/kg	ND	5.00	
1,1,2-Trichloroethane	ug/kg	ND	5.00	
Trichloroethene	ug/kg	ND	5.00	

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QUALITY CONTROL DATA

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

METHOD BLANK: 851705132
Associated Lab Samples: 851704577

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Trichlorofluoromethane	ug/kg	ND	5.00	
Vinyl chloride	ug/kg	ND	5.00	
Xylene (Total)	ug/kg	ND	2.00	
Methyl-tert-butyl ether	ug/kg	ND	5.00	
Toluene-d8 (S)	%	107		
4-Bromofluorobenzene (S)	%	105		
1,2-Dichloroethane-d4 (S)	%	105		

LABORATORY CONTROL SAMPLE & LCSD: 851705133 851705134

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Benzene	ug/kg	100	94.77	93.49	95	94	1	
Bromodichloromethane	ug/kg	100	95.07	98.20	95	98	3	
Bromoform	ug/kg	100	108.1	113.8	108	114	5	
Bromomethane	ug/kg	100	89.02	95.51	89	96	7	
Carbon tetrachloride	ug/kg	100	106.6	108.0	107	108	1	
Chlorobenzene	ug/kg	100	103.6	105.2	104	105	2	
Chloroethane	ug/kg	100	96.36	92.61	96	93	4	
Chloroform	ug/kg	100	91.46	91.24	92	91	0	
Chloromethane	ug/kg	100	90.84	91.63	91	92	1	
Dibromochloromethane	ug/kg	100	97.79	99.71	98	100	2	
1,1-Dichloroethane	ug/kg	100	107.6	108.8	108	109	1	
1,2-Dichloroethane	ug/kg	100	111.8	114.9	112	115	3	
1,1-Dichloroethene	ug/kg	100	100.1	100.3	100	100	0	
1,2-Dichloropropane	ug/kg	100	105.9	109.7	106	110	4	
cis-1,3-Dichloropropene	ug/kg	100	96.92	96.08	97	96	1	
trans-1,3-Dichloropropene	ug/kg	100	95.83	95.00	96	95	1	
Ethylbenzene	ug/kg	100	101.8	102.3	102	102	0	
Methylene chloride	ug/kg	100	80.11	79.95	80	80	0	
1,1,2,2-Tetrachloroethane	ug/kg	100	97.39	106.6	97	107	9	
Tetrachloroethene	ug/kg	100	55.55	55.70	56	56	0	
Toluene	ug/kg	100	101.4	99.29	101	99	2	
1,1,1-Trichloroethane	ug/kg	100	104.8	104.8	105	105	0	

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QUALITY CONTROL DATA

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

LABORATORY CONTROL SAMPLE & LCSD: 851705133 851705134

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
1,1,2-Trichloroethane	ug/kg	100	95.07	98.21	95	98	3	
Trichloroethene	ug/kg	100	93.13	96.43	93	96	3	
Vinyl chloride	ug/kg	100	99.14	97.61	99	98	2	
Xylene (Total)	ug/kg	300	312.7	308.9	104	103	1	
Toluene-d8 (S)					107	108		
4-Bromofluorobenzene (S)					110	109		
1,2-Dichloroethane-d4 (S)					110	112		

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QUALITY CONTROL DATA

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

QC Batch: 56295 — Analysis Method: EPA 7471
QC Batch Method: — Analysis Description: Mercury, SW 7471
Associated Lab Samples: 851704577

METHOD BLANK: 851705161
Associated Lab Samples: 851704577

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Mercury	mg/kg	ND	0.100	

LABORATORY CONTROL SAMPLE: 851705162

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Mercury	mg/kg	3.061	3.175	104	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851705163 851705164

Parameter	Units	851704577 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Mercury	mg/kg	0.02496	0.2352	0.2794	0.3212	108	110	14	

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QUALITY CONTROL DATA

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

QC Batch: 56086
QC Batch Method:
Associated Lab Samples: 851704135

Analysis Method: EPA 6010
Analysis Description: SW6010 Metals, Routine Soil

METHOD BLANK: 851704194
Associated Lab Samples: 851704135

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Lead	mg/kg	ND	4.95	

LABORATORY CONTROL SAMPLE: 851704195

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Lead	mg/kg	12.38	12.33	100	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851704196 851704197

Parameter	Units	851704135 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Lead	mg/kg	1.414	12.02	10.81	7.660	78	53	34	2

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QUALITY CONTROL DATA

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

QC Batch: 56088
QC Batch Method:
Associated Lab Samples: 851704577

Analysis Method: EPA 6010
Analysis Description: SW6010 Metals, Trace Soil

METHOD BLANK: 851704202
Associated Lab Samples: 851704577

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Antimony	mg/kg	ND	0.485	
Arsenic	mg/kg	ND	0.485	
Barium	mg/kg	ND	0.485	
Beryllium	mg/kg	ND	0.0971	
Cadmium	mg/kg	ND	0.0971	
Chromium	mg/kg	ND	0.485	
Cobalt	mg/kg	ND	0.485	
Copper	mg/kg	ND	0.485	
Lead	mg/kg	ND	0.291	
Molybdenum	mg/kg	ND	0.971	
Nickel	mg/kg	ND	0.485	
Selenium	mg/kg	ND	0.485	
Silver	mg/kg	ND	0.194	
Thallium	mg/kg	ND	0.485	
Vanadium	mg/kg	ND	0.485	
Zinc	mg/kg	ND	0.485	

LABORATORY CONTROL SAMPLE: 851704205

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Antimony	mg/kg	12.14	11.30	93	
Arsenic	mg/kg	12.14	11.49	95	
Barium	mg/kg	12.14	11.64	96	
Beryllium	mg/kg	12.14	11.30	93	
Cadmium	mg/kg	12.14	11.58	95	
Chromium	mg/kg	12.14	11.48	95	
Cobalt	mg/kg	12.14	11.30	93	
Copper	mg/kg	12.14	11.66	96	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

LABORATORY CONTROL SAMPLE: 851704205

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Lead	mg/kg	12.14	11.64	96	
Nickel	mg/kg	12.14	11.56	95	
Selenium	mg/kg	12.14	11.50	95	
Silver	mg/kg	12.14	11.40	94	
Thallium	mg/kg	12.14	11.68	96	
Vanadium	mg/kg	12.14	11.85	98	
Zinc	mg/kg	12.14	11.95	98	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851704203 851704204

Parameter	Units	851704137 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Antimony	mg/kg	0	25.00	2.450	2.167	10	9	12	2
Arsenic	mg/kg	0	25.00	5.965	5.290	24	22	12	2
Barium	mg/kg	80.95	25.00	90.20	69.00	37	0	27	2
Beryllium	mg/kg	0.3435	25.00	4.908	4.591	18	18	7	2
Cadmium	mg/kg	0.1822	25.00	4.810	4.482	18	18	7	2
Chromium	mg/kg	12.27	25.00	18.36	17.25	24	21	6	2
Cobalt	mg/kg	3.073	25.00	7.835	7.071	19	17	10	2
Copper	mg/kg	0	25.00	11.29	10.67	45	45	6	2
Lead	mg/kg	2.957	25.00	7.865	7.100	20	17	10	2
Nickel	mg/kg	15.40	25.00	20.06	18.93	19	15	6	2
Selenium	mg/kg	0	25.00	3.524	3.330	14	14	6	2
Silver	mg/kg	0.00128	25.00	4.841	4.581	19	19	6	2
Thallium	mg/kg	0	25.00	0	0	0	0	0	2
Vanadium	mg/kg	9.871	25.00	15.74	18.10	24	35	14	2
Zinc	mg/kg	15.78	25.00	21.08	20.99	21	22	0	2

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QUALITY CONTROL DATA

Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

QC Batch: 56161
QC Batch Method: EPA 3540
Associated Lab Samples: 851704577

Analysis Method: EPA 418.1 Modified
Analysis Description: TPH by EPA Method 418.1 Mod

METHOD BLANK: 851704615
Associated Lab Samples: 851704577

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Total Petroleum Hydrocarbons	mg/kg	ND	50.0	

LABORATORY CONTROL SAMPLE & LCSD: 851704616 851704617

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Total Petroleum Hydrocarbons	mg/kg	310.9	300.2	300.2	97	97	0	

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Lab Project Number: 8522522
Client Project ID: ARCO Site#6041

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D)	Laboratory Control Sample (Duplicate)
MS(D)	Matrix Spike (Duplicate)
DUP	Sample Duplicate
ND	Not Detected
NC	Not Calculable
RPD	Relative Percent Difference
(S)	Surrogate
[1]	High recovery indicates possible high bias.(SW8270)
[2]	Due to matrix interference the matrix spike and/or matrix spike duplicate do not provide reliable % Recovery and RPD values. Sample results for this QC batch accepted based on LCS and/or LCSD % Recovery and/or RPD values.

ARCO Products Company
Division of Atlantic-Richfield Company

Task Order No. WA# 27708.00

Chain of Custody

ARCO Facility no. 6041	City (Facility) Dublin	Project manager (Consultant) Ron Scheele RScheele@Cambria-env.com	Laboratory name PACE
ARCO engineer Paul Supple	Telephone no. (ARCO) 925-299-8811	Telephone no. (Consultant) 510-450-1983	Fax no. (Consultant) 510-450-8295
Consultant name CAMBRIA	Address (Consultant) 6262 Hollis Street, Emeryville, CA 94608		Contract number

Method of shipment: FED EX

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 (8260)	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ VOA ☐ VOA ☐ Semi	CAM METALS EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	Lead by 6010
S-1		1	X			X		7/26/01	1:00		X			*	*		*		*		X
S-2		1	X			X															
S-3		1	X			X															
S-4		1	X			X															

Composite Sample

* Add 8260 (601 List) 8270 TPH 418.1 & CAM 17 Metals. per Jason Olson 7/31/01

Special detection Limit/reporting: Lowest Possible

85170435

Special QA/QC

Remarks: Composite Sample.
1) If benzene > 10ppm RUN TCLP (TCLP)
2) If lead > 5ppm RUN STLC for lead

Lab number

Turnaround time
- Priority Rush 1 Business Day: X (Per R. Scheele 7/26/01)
- Rush 2 Business Days: ☐
- Expedited 5 Business Days: X
- Standard 10 Business Days: ☐

Condition of sample:		Temperature received:	
Relinquished by sampler	Date 7/26/01 Time 4:00pm	Received by Fedex	
Relinquished by Fedex	Date 7/27/01 Time 0838	Received by Tracy Moody / Pace	Date 7/27/01 Time 0838
Relinquished by	Date Time	Received by	Date Time

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant
APC-3292 (2-91)

Cooler temp = 14.1°C

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August 02, 2001

Mr. Ron Scheele
Cambria Environmental
6262 Hollis Street
Emeryville, CA 94608

RE: Lab Project Number: 8522560
Client Project ID: ARCO Site#6041

Dear Mr. Scheele:

Enclosed are the analytical results for sample(s) received by the laboratory on July 31, 2001. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paula Kirtley
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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Cambria Environmental
6262 Hollis Street
Emeryville, CA 94608

Lab Project Number: 8522560
Client Project ID: ARCO Site#6041

Attn: Mr. Ron Scheele
Phone: 510.450.1983

Solid results are reported on a wet weight basis

Lab Sample No: 851704507 Project Sample Number: 8522560-001 Date Collected: 07/27/01 00:00
Client Sample ID: SP-1,2,3,4 COMPOSITE Matrix: Soil Date Received: 07/31/01 08:52

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	ND	mg/kg	4.95	1.0	08/02/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	19.	mg/kg	0.50	10.0	08/01/01 13:23	LJAS			
4-Bromofluorobenzene (S)	123	%		1.0	08/01/01 13:23	LJAS	460-00-4		
1,4-Difluorobenzene (S)	131	%		1.0	08/01/01 13:23	LJAS		1	
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	86.	ug/kg	50.	10.0	08/01/01 13:23	LJAS	71-43-2		
Ethylbenzene	82.	ug/kg	50.	10.0	08/01/01 13:23	LJAS	100-41-4		
Toluene	ND	ug/kg	50.	10.0	08/01/01 13:23	LJAS	108-88-3		
Xylene (Total)	230	ug/kg	50.	10.0	08/01/01 13:23	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	50.	10.0	08/01/01 13:23	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	104	%		1.0	08/01/01 13:23	LJAS			
4-Bromofluorobenzene (S)	86	%		1.0	08/01/01 13:23	LJAS	460-00-4		

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 8522560
Client Project ID: ARCO Site#6041

Lab Sample No: 851704508 Project Sample Number: 8522560-002 Date Collected: 07/27/01 00:00
Client Sample ID: SP-5,6,7,8 COMPOSITE Matrix: Soil Date Received: 07/31/01 08:52

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	ND	mg/kg	5.00	1.0	08/02/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	0.26	mg/kg	0.050	1.0	08/01/01 13:04	LJAS			
4-Bromofluorobenzene (S)	80	%		1.0	08/01/01 13:04	LJAS	460-00-4		
1,4-Difluorobenzene (S)	80	%		1.0	08/01/01 13:04	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/kg	5.0	1.0	08/01/01 13:04	LJAS	71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	08/01/01 13:04	LJAS	100-41-4		
Toluene	ND	ug/kg	5.0	1.0	08/01/01 13:04	LJAS	108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	08/01/01 13:04	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	08/01/01 13:04	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	98	%		1.0	08/01/01 13:04	LJAS			
4-Bromofluorobenzene (S)	94	%		1.0	08/01/01 13:04	LJAS	460-00-4		

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 8522560
Client Project ID: ARCO Site#6041

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
(S)	Surrogate
[1]	The surrogate recovery was outside QC acceptance limits due to matrix interference.

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QUALITY CONTROL DATA

Lab Project Number: 8522560
Client Project ID: ARCO Site#6041

QC Batch: 56158 Analysis Method: EPA 8021
QC Batch Method: EPA 8021 Analysis Description: BTEX, Soil
Associated Lab Samples: 851704507 851704508

METHOD BLANK: 851704596
Associated Lab Samples: 851704507 851704508

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/kg	ND	5.0	
Ethylbenzene	ug/kg	ND	5.0	
Toluene	ug/kg	ND	5.0	
Xylene (Total)	ug/kg	ND	5.0	
Methyl-tert-butyl ether	ug/kg	ND	5.0	
1,4-Difluorobenzene (S)	%	99		
4-Bromofluorobenzene (S)	%	100		

LABORATORY CONTROL SAMPLE & LCSD: 851704816 851704817

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Benzene	ug/kg	50	49.05	49.77	98	100	1	
Ethylbenzene	ug/kg	50	51.71	52.24	103	104	1	
Toluene	ug/kg	50	48.78	49.49	98	99	1	
Xylene (Total)	ug/kg	100	103.2	105.2	103	105	2	
Methyl-tert-butyl ether	ug/kg	50	43.93	47.35	88	95	8	
1,4-Difluorobenzene (S)					102	103		
4-Bromofluorobenzene (S)					97	102		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Lab Project Number: 8522560
Client Project ID: ARCO Site#6041

QC Batch: 56159 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 8015 Modified Analysis Description: GAS Mod 8015, Soil
Associated Lab Samples: 851704507 851704508

METHOD BLANK: 851704598
Associated Lab Samples: 851704507 851704508

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Gasoline Range Organics	ug/kg	ND	50.	
4-Bromofluorobenzene (S)	%	82		
1,4-Difluorobenzene (S)	%	82		

LABORATORY CONTROL SAMPLE & LCSD: 851704820 851704821

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Gasoline Range Organics	ug/kg	1000	936.0	949.5	94	95	1	
4-Bromofluorobenzene (S)					84	99		
1,4-Difluorobenzene (S)					109	122		

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QUALITY CONTROL DATA

Lab Project Number: 8522560
Client Project ID: ARCO Site#6041

QC Batch: 56151
QC Batch Method:
Analysis Method: EPA 6010
Analysis Description: SW6010 Metals, Routine Soil
Associated Lab Samples: 851704507 851704508

METHOD BLANK: 851704509
Associated Lab Samples: 851704507 851704508

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Lead	mg/kg	ND	4.85	

LABORATORY CONTROL SAMPLE: 851704512

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Lead	mg/kg	11.79	11.74	100	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851704510 851704511

Parameter	Units	851704507 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Lead	mg/kg	1.426	12.14	6.665	6.396	43	42	4	1

Date: 08/02/01

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Lab Project Number: 8522560
Client Project ID: ARCO Site#6041

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D)	Laboratory Control Sample (Duplicate)
MS(D)	Matrix Spike (Duplicate)
DUP	Sample Duplicate
ND	Not Detected
NC	Not Calculable
RPD	Relative Percent Difference
(S)	Surrogate
[1]	Due to matrix interference the matrix spike and/or matrix spike duplicate do not provide reliable % Recovery and RPD values. Sample results for this QC batch accepted based on LCS and/or LCSD % Recovery and/or RPD values.

REPORT OF LABORATORY ANALYSIS

ARCO Products Company
Division of Atlantic-Richfield Company

Task Order No. WA # 27708.00

Chain of Custody

ARCO Facility no. ARCO 6041 - DUBLIN	City (Facility) DUBLIN	Project manager (Consultant) RON SCHEELE	Laboratory name PACE
ARCO engineer PAUL SUPPLE	Telephone no. (ARCO) 925 299-8891	Telephone no. (Consultant) 570 450-1983	Fax no. (Consultant) (510) 450-8295
Consultant name CAMBRIA ENVIRONMENTAL	Address (Consultant) 6262 HOLLIS STREET, 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	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 Semi Metals ☐ VOA ☐ VOA ☐	CAM METALS EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	LEAD BY 6010
SP-1		ONE	X			X		7/27/01			X										X
SP-2	composite		X			X					X										X
SP-3			X			X					X										X
SP-4			X			X					X										X
SP-5			X			X					X										X
SP-6	composite		X			X					X										X
SP-7			X			X					X										X
SP-8		V	X			X		V			X										X

1) IF BENZENE > 10ppm then run TCLP
2) IF Lead > 50 ppm run STLC
3) Email results to rscheele@cambrianev

Method of shipment: COOLER/ICE VIA Fedex

Special detection Limit/reporting: Lowest possible

Special QA/QC: ~~Blank~~

Remarks: COMPOSITE SP-1 → SP-4 and SP-5 → SP-8

*run benzene TCLP and lead STLC if necessary

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: 0.5°C

	Date	Time	
Relinquished by sampler	7/27/01	5:00	Received by
Relinquished by Fedex	7/31/01	0852	Received by Pace
Relinquished by	Date	Time	Received by / Date / Time

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant
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August 03, 2001

Mr. Ron Scheele
Cambria Environmental
6262 Hollis Street
Emeryville, CA 94608

RE: Lab Project Number: 8522615
Client Project ID: ARCO Site#6041

Dear Mr. Scheele:

Enclosed are the analytical results for sample(s) received by the laboratory on August 2, 2001. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paula Kirtley
Project Manager

Enclosures

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Cambria Environmental
6262 Hollis Street
Emeryville, CA 94608

Lab Project Number: 8522615
Client Project ID: ARCO Site#6041

Attn: Mr. Ron Scheele
Phone: 510.450.1983

Solid results are reported on a wet weight basis

Lab Sample No: 851705007 Project Sample Number: 8522615-001 Date Collected: 07/31/01 16:30
Client Sample ID: SP-9,10,11,12 COMP Matrix: Soil Date Received: 08/02/01 08:32

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg Limit
Metals								
SW6010 Metals, Routine Soil	Method: EPA 6010							
Lead	6.28	mg/kg	5.00	1.0	08/03/01	JAMA 7439-92-1		
GC Volatiles								
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified							
Gasoline Range Organics	0.59	mg/kg	0.050	1.0	08/02/01 13:28	LJAS		
4-Bromofluorobenzene (S)	104	%		1.0	08/02/01 13:28	LJAS 460-00-4		
1,4-Difluorobenzene (S)	115	%		1.0	08/02/01 13:28	LJAS		
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021							
Benzene	5.2	ug/kg	5.0	1.0	08/02/01 13:28	LJAS 71-43-2		
Ethylbenzene	14.	ug/kg	5.0	1.0	08/02/01 13:28	LJAS 100-41-4		
Toluene	ND	ug/kg	5.0	1.0	08/02/01 13:28	LJAS 108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	08/02/01 13:28	LJAS 1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	08/02/01 13:28	LJAS 1634-04-4		
1,4-Difluorobenzene (S)	108	%		1.0	08/02/01 13:28	LJAS		
4-Bromofluorobenzene (S)	96	%		1.0	08/02/01 13:28	LJAS 460-00-4		

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Lab Project Number: 8522615
Client Project ID: ARCO Site#6041

Lab Sample No: 851705008 Project Sample Number: 8522615-002 Date Collected: 07/31/01 16:45
Client Sample ID: SP-13,14,15,16 COMP Matrix: Soil Date Received: 08/02/01 08:32

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg Limit
Metals								
SW6010 Metals, Routine Soil	Method: EPA 6010							
Lead	5.48	mg/kg	4.90	1.0	08/03/01	JAMA 7439-92-1		
GC Volatiles								
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified							
Gasoline Range Organics	10.	mg/kg	0.50	10.0	08/02/01 15:27	LJAS		
4-Bromofluorobenzene (S)	100	%		1.0	08/02/01 15:27	LJAS 460-00-4		
1,4-Difluorobenzene (S)	119	%		1.0	08/02/01 15:27	LJAS		
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021							
Benzene	44.	ug/kg	25.	5.0	08/02/01 15:27	LJAS 71-43-2		
Ethylbenzene	47.	ug/kg	25.	5.0	08/02/01 15:27	LJAS 100-41-4		
Toluene	ND	ug/kg	25.	5.0	08/02/01 15:27	LJAS 108-88-3		
Xylene (Total)	68.	ug/kg	25.	5.0	08/02/01 15:27	LJAS 1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	25.	5.0	08/02/01 15:27	LJAS 1634-04-4		
1,4-Difluorobenzene (S)	104	%		1.0	08/02/01 15:27	LJAS		
4-Bromofluorobenzene (S)	86	%		1.0	08/02/01 15:27	LJAS 460-00-4		

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Lab Project Number: 8522615
Client Project ID: ARCO Site#6041

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
(S)	Surrogate

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QUALITY CONTROL DATA

Lab Project Number: 8522615
Client Project ID: ARCO Site#6041

QC Batch: 56260 Analysis Method: EPA 8021
QC Batch Method: EPA 8021 Analysis Description: BTEX, Soil
Associated Lab Samples: 851705007 851705008

METHOD BLANK: 851705025
Associated Lab Samples: 851705007 851705008

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/kg	ND	5.0	
Ethylbenzene	ug/kg	ND	5.0	
Toluene	ug/kg	ND	5.0	
Xylene (Total)	ug/kg	ND	5.0	
Methyl-tert-butyl ether	ug/kg	ND	5.0	
1,4-Difluorobenzene (S)	%	98		
4-Bromofluorobenzene (S)	%	101		

LABORATORY CONTROL SAMPLE & LCSD: 851705026 851705027

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Benzene	ug/kg	50	52.00	50.82	104	102	2	
Ethylbenzene	ug/kg	50	54.87	53.83	110	108	2	
Toluene	ug/kg	50	51.97	50.68	104	101	3	
Xylene (Total)	ug/kg	100	110.2	108.3	110	108	2	
Methyl-tert-butyl ether	ug/kg	50	49.58	48.42	99	97	2	
1,4-Difluorobenzene (S)					101	102		
4-Bromofluorobenzene (S)					102	110		

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QUALITY CONTROL DATA

Lab Project Number: 8522615
Client Project ID: ARCO Site#6041

QC Batch: 56261 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 8015 Modified Analysis Description: GAS Mod 8015, Soil
Associated Lab Samples: 851705007 851705008

METHOD BLANK: 851705028
Associated Lab Samples: 851705007 851705008

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Gasoline Range Organics	ug/kg	ND	50.	
4-Bromofluorobenzene (S)	%	80		
1,4-Difluorobenzene (S)	%	78		

LABORATORY CONTROL SAMPLE & LCSD: 851705029 851705030

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Gasoline Range Organics	ug/kg	1000	929.1	933.9	93	93	1	
4-Bromofluorobenzene (S)					95	87		
1,4-Difluorobenzene (S)					120	108		

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QUALITY CONTROL DATA

Lab Project Number: 8522615
Client Project ID: ARCO Site#6041

QC Batch: 56264
QC Batch Method:
Analysis Method: EPA 6010
Analysis Description: SW6010 Metals, Routine Soil
Associated Lab Samples: 851705007 851705008

METHOD BLANK: 851705034
Associated Lab Samples: 851705007 851705008

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Lead	mg/kg	ND	4.59	

LABORATORY CONTROL SAMPLE: 851705037

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Lead	mg/kg	11.57	9.611	83	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851705035 851705036

Parameter	Units	851705007 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Lead	mg/kg	6.275	12.02	13.22	12.82	58	52	3	

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Lab Project Number: 8522615
Client Project ID: ARCO Site#6041

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D)	Laboratory Control Sample (Duplicate)
MS(D)	Matrix Spike (Duplicate)
DUP	Sample Duplicate
ND	Not Detected
NC	Not Calculable
RPD	Relative Percent Difference
(S)	Surrogate

ARCO Products Company
Division of Atlantic-Richfield Company

Task Order No. WA # 27708.00

Chain of Custody

ARCO Facility no. 6041	City (Facility) DUBLIN, CA	Project manager (Consultant) RON SCHEELE	Laboratory name PACE
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 ENVIRONMENTAL TECHNOLOGY	Address (Consultant) 6262 HOLLIS ST., EMERYVILLE CA 94608		Contract number

Method of shipment: COOLER/ICE BY FED-EX

Special detection Limit/reporting: AS LOW AS POSSIBLE

Special QA/QC:

Remarks: RUN STLC IF BENZENE IS > 10 ppm RUN TCLP IF LEAD IS > 50 ppm

Lab 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/MTBE EPA M602/8020/8015	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
SP-9	85170		X			X		7/31/01	4:30pm		X										X
SP-10	Composite 5007		X			X		7/31/01			X			COMPOSITE INTO ONE SAMPLE							X
SP-11			X			X		7/31/01			X										X
SP-12			X			X		7/31/01			X										X
SP-13			X			X		7/31/01	4:45pm		X										X
SP-14	Composite 5008		X			X		7/31/01			X			COMPOSITE INTO ONE SAMPLE							X
SP-15			X			X		7/31/01			X										X
SP-16			X			X		7/31/01			X										X
						X					✓										

Condition of sample:

Temperature received:

	Date	Time	
Relinquished by sampler: Ron Scheele	7/31/01	4:30pm	Received by: "SECURED LOCATION"
Relinquished by: Ron Scheele	8/1/01	5pm	Received by:
Relinquished by:	Date	Time	Received by: Date: 8/2/01 Time: 0832

Turnaround time

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

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August 27, 2001

Mr. Ron Scheele
Cambria Environmental
6262 Hollis Street
Emeryville, CA 94608

RE: Lab Project Number: 8522802
Client Project ID: ARCO Site#6041

Dear Mr. Scheele:

Enclosed are the analytical results for sample(s) received by the laboratory on August 14, 2001. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paula Kirtley
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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Cambria Environmental
6262 Hollis Street
Emeryville, CA 94608

Lab Project Number: 8522802
Client Project ID: ARCO Site#6041

Attn: Mr. Ron Scheele
Phone: 510.450.1983

Solid results are reported on a wet weight basis

Lab Sample No: 851706667 Project Sample Number: 8522802-001 Date Collected: 08/09/01 00:00
Client Sample ID: SP-17,18,19,20 COMPOSITE Matrix: Soil Date Received: 08/14/01 08:33

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg Limit
Metals								
SW6010 Metals, Routine Soil	Method: EPA 6010							
Lead	ND	mg/kg	5.00	1.0	08/22/01 11:06	BJAC 7439-92-1		
GC Volatiles								
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified							
Gasoline Range Organics	4.4	mg/kg	0.25	5.0	08/22/01 17:51	LJAS		
4-Bromofluorobenzene (S)	94	%		1.0	08/22/01 17:51	LJAS 460-00-4		
1,4-Difluorobenzene (S)	122	%		1.0	08/22/01 17:51	LJAS		
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021							
Benzene	ND	ug/kg	25.	5.0	08/23/01 18:25	LJAS 71-43-2		
Ethylbenzene	ND	ug/kg	25.	5.0	08/23/01 18:25	LJAS 100-41-4		
Toluene	ND	ug/kg	25.	5.0	08/23/01 18:25	LJAS 108-88-3		
Xylene (Total)	ND	ug/kg	25.	5.0	08/23/01 18:25	LJAS 1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	25.	5.0	08/23/01 18:25	LJAS 1634-04-4		
1,4-Difluorobenzene (S)	103	%		1.0	08/23/01 18:25	LJAS		
4-Bromofluorobenzene (S)	99	%		1.0	08/23/01 18:25	LJAS 460-00-4		

Comments : The sample was diluted to reduce matrix interference, resulting in elevated reporting limits.

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Lab Project Number: 8522802
Client Project ID: ARCO Site#6041

Lab Sample No: 851706712 Project Sample Number: 8522802-003 Date Collected: 08/09/01 00:00
Client Sample ID: SP-21,22,23,24 COMPOSITE Matrix: Soil Date Received: 08/14/01 08:33

Parameters	Results	Units	Report Limit	Dilution	Analyzed		CAS No.	Ftnote	Reg Limit
Metals									
SW6010 Metals, Routine Soil	Method: EPA 6010								
Lead	7.91	mg/kg	4.90	1.0	08/21/01		PBAR 7439-92-1		
GC Volatiles									
GAS Mod 8015, Soil	Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	ND	mg/kg	0.050	1.0	08/22/01 15:52	LJAS			
4-Bromofluorobenzene (S)	74	%		1.0	08/22/01 15:52	LJAS	460-00-4		
1,4-Difluorobenzene (S)	80	%		1.0	08/22/01 15:52	LJAS			
BTEX, Soil	Prep/Method: EPA 8021 / EPA 8021								
Benzene	ND	ug/kg	5.0	1.0	08/22/01 15:52	LJAS	71-43-2		
Ethylbenzene	ND	ug/kg	5.0	1.0	08/22/01 15:52	LJAS	100-41-4		
Toluene	ND	ug/kg	5.0	1.0	08/22/01 15:52	LJAS	108-88-3		
Xylene (Total)	ND	ug/kg	5.0	1.0	08/22/01 15:52	LJAS	1330-20-7		
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.0	08/22/01 15:52	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	100	%		1.0	08/22/01 15:52	LJAS			
4-Bromofluorobenzene (S)	90	%		1.0	08/22/01 15:52	LJAS	460-00-4		

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Lab Project Number: 8522802
Client Project ID: ARCO Site#6041

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
(S)	Surrogate

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QUALITY CONTROL DATA

Lab Project Number: 8522802
Client Project ID: ARCO Site#6041

QC Batch: 57065 Analysis Method: EPA 8021
QC Batch Method: EPA 8021 Analysis Description: BTEX, Soil
Associated Lab Samples: 851706667 851706712

METHOD BLANK: 851707741
Associated Lab Samples: 851706667 851706712

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/kg	ND	5.0	
Ethylbenzene	ug/kg	ND	5.0	
Toluene	ug/kg	ND	5.0	
Xylene (Total)	ug/kg	ND	5.0	
Methyl-tert-butyl ether	ug/kg	ND	5.0	
1,4-Difluorobenzene (S)	%	100		
4-Bromofluorobenzene (S)	%	94		

LABORATORY CONTROL SAMPLE: 851707742

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Benzene	ug/kg	50	45.30	91	
Ethylbenzene	ug/kg	50	49.22	98	
Toluene	ug/kg	50	47.82	96	
Xylene (Total)	ug/kg	100	99.66	100	
Methyl-tert-butyl ether	ug/kg	50	41.58	83	
1,4-Difluorobenzene (S)				99	
4-Bromofluorobenzene (S)				91	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851707743 851707744

Parameter	Units	851706712 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Benzene	ug/kg	0.04532	50.00	41.05	39.33	82	79	4	
Ethylbenzene	ug/kg	0.01676	50.00	41.97	35.00	84	70	18	
Toluene	ug/kg	0.3106	50.00	43.46	40.59	86	81	7	
Xylene (Total)	ug/kg	0.1650	100.00	82.17	64.07	82	64	25	

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QUALITY CONTROL DATA

Lab Project Number: 8522802
Client Project ID: ARCO Site#6041

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851707743 851707744

Parameter	Units	851706712 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Methyl-tert-butyl ether	ug/kg	1.665	50.00	42.99	38.64	83	74	11	
1,4-Difluorobenzene (S)						104	103		
4-Bromofluorobenzene (S)						103	100		

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QUALITY CONTROL DATA

Lab Project Number: 8522802
Client Project ID: ARCO Site#6041

QC Batch: 57066 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 8015 Modified Analysis Description: GAS Mod 8015, Soil
Associated Lab Samples: 851706667 851706712

METHOD BLANK: 851707745
Associated Lab Samples: 851706667 851706712

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Gasoline Range Organics	ug/kg	ND	50.	
4-Bromofluorobenzene (S)	%	81		
1,4-Difluorobenzene (S)	%	86		

LABORATORY CONTROL SAMPLE: 851707746

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Gasoline Range Organics	ug/kg	1000	897.9	90	
4-Bromofluorobenzene (S)				76	
1,4-Difluorobenzene (S)				108	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851707747 851707748

Parameter	Units	851706712 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Gasoline Range Organics	ug/kg	19.91	1000.00	383.2	373.8	36	35	2	
4-Bromofluorobenzene (S)						70	73		
1,4-Difluorobenzene (S)						96	95		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Lab Project Number: 8522802
Client Project ID: ARCO Site#6041

QC Batch: 56680 — Analysis Method: EPA 6010
QC Batch Method: — Analysis Description: SW6010 Metals, Routine Soil
Associated Lab Samples: 851706667

METHOD BLANK: 851706495
Associated Lab Samples: 851706667

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Lead	mg/kg	ND	4.90	

LABORATORY CONTROL SAMPLE: 851706498

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Lead	mg/kg	135.3	104.8	78	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851706496 851706497

Parameter	Units	851706408 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Lead	mg/kg	22.26	24.51	11.03	23.01	0	3	70	1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Lab Project Number: 8522802
Client Project ID: ARCO Site#6041

QC Batch: 56933
QC Batch Method:
Associated Lab Samples: 851706712

Analysis Method: EPA 6010
Analysis Description: SW6010 Metals, Routine Soil

METHOD BLANK: 851707315
Associated Lab Samples: 851706712

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Lead	mg/kg	ND	4.90	

LABORATORY CONTROL SAMPLE: 851707318

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Lead	mg/kg	12.38	10.76	87	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851707323 851707324

Parameter	Units	851706712 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Lead	mg/kg	7.912	12.38	17.81	22.25	80	119	22	1

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 8522802
Client Project ID: ARCO Site#6041

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D)	Laboratory Control Sample (Duplicate)
MS(D)	Matrix Spike (Duplicate)
DUP	Sample Duplicate
ND	Not Detected
NC	Not Calculable
RPD	Relative Percent Difference
(S)	Surrogate
[1]	Due to matrix interference the matrix spike and/or matrix spike duplicate do not provide reliable % Recovery and RPD values. Sample results for this QC batch accepted based on LCS and/or LCSD % Recovery and/or RPD values.

ARCO Products Company
Division of Atlantic-Richfield Company

Task Order No. WA # 27708.0

Chain of Custody

ARCO Facility no. ARCO 6041	City (Facility) DUBLIN	Project manager (Consultant) RON SCHEELE	Laboratory name PACE
ARCO engineer PAUL SUPPLE	Telephone no. (ARCO) (925) 299-8891	Telephone no. (Consultant) (510) 450-1983	Fax no. (Consultant) (510) 450-8395
Consultant name CAMBRIA ENVIRONMENTAL	Address (Consultant) 6262 HOLLIS STREET, 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 - GAS EPA M602/8020/8015 and 8015 Mod	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 Semi Metals ☐ VOA ☐ VOA ☐	CAM METALS EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	LEAD BY 6010
SP-17	Comp	1	X			X		8-9-01			X										X
SP-18		1	X			X			COMPOSITE		X										X
SP-19		1	X			X					X										X
SP-20		1	X			X					X										X
SP-21	Comp	1	X			X					X										X
SP-22		1	X			X			COMPOSITE		X										X
SP-23		1	X			X					X										X
SP-24		1	X			X					X										X

1) RUN TCLP IF BENZENE 710 ppm
2) RUN STLC IF LEAD > 50 ppm
3) EMAIL RESULTS TO RSCHEELE@CAMBRIA-ENV.COM

Special detection Limit/reporting: LOWEST POSSIBLE

Special QA/QC

Remarks: * RUN TCLP AND STLC IF NEEC

cooler temp: 1.9°C

Method of shipment: COOLER/ICE

Lab number

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

Condition of sample: Good		Temperature received:	
Relinquished by sampler	Date 8-9-01	Time 1800	Received by "SECURED LOCATION"
Relinquished by Fedex	Date 8-14-01	Time 0833	Received by Tracy Moody / Pace 8-14-01 0833
Relinquished by	Date	Time	Received by / Date / Time

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant
APC-3292 (2-91)