Atlantic Richfield Company

Chuck Carmel
Environmental Business Manager

PO Box 1257
San Ramon, CA 94583
Phone: (925) 275-3803
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E-Mail: charles.carmel@bp.com

RECEIVED

4:09 pm, Apr 30, 2010

Alameda County
Environmental Health

30 April 2010

Re: First Quarter 2010 Ground-Water Monitoring Report
Former Richfield Oil Company Station #472
6415 International Boulevard, Oakland, California
ACEH Case #RO0002982

"I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct.

Submitted by,

Chuck Carmel
Environmental Business Manager

Attachment:

First Quarter 2010
Ground-Water Monitoring Report
Former Richfield Oil Company Service Station #472
6415 International Boulevard, Oakland, California
ACEH Case #RO0002982

Prepared for

Mr. Chuck Carmel
Environmental Business Manager
Atlantic Richfield Company
P.O. Box 1257
San Ramon, California 94583

Prepared by

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

1324 Mangrove Avenue, Suite 212
Chico, California 95926
(530) 566-1400
www.broadbentinc.com

30 April 2010

Project No. 09-88-601

Broadbent & Associates, Inc.
1324 Mangrove Ave., Suite 212
Chico, CA 95926
Voice (530) 566-1400
Fax (530) 566-1401

BROADBENT & ASSOCIATES, INC
ENVIRONMENTAL, WATER RESOURCES & ENGINEERING

30 April 2010

Project No. 09-88-601

Atlantic Richfield Company
P.O. Box 1257
San Ramon, California 94583
Submitted via ENFOS

Attn.: Mr. Chuck Carmel

Re: First Quarter 2010 Ground-Water Monitoring Report, Former Richfield Oil Company Service Station #472, 6415 International Boulevard, Oakland, California
ACEH Case #RO0002982

Dear Mr. Carmel:

Provided herein is the *First Quarter 2010 Ground-Water Monitoring Report* for Former Richfield Oil Company Service Station #472 (aka Plucky Liquors) located at 6415 International Boulevard, Oakland, Alameda County, California (Site). This report presents results of the ground-water monitoring conducted at the Site during the First Quarter of 2010.

Should you have questions regarding the work performed or results obtained, please do not hesitate to contact me at (530) 566-1400.

Sincerely,

BROADBENT & ASSOCIATES, INC.

Thomas A. Venus, P.E.
Senior Engineer

Enclosures

cc: Mr. Paresh Khatri, Alameda County Environmental Health (Submitted via ACEH ftp site)
Electronic copy uploaded to GeoTracker

STATION #472 GROUND-WATER MONITORING REPORT

Facility: #472 Address:	6415 International Boulevard, Oakland, California
Environmental Business Manager:	Mr. Chuck Carmel
Consulting Co./Contact Person:	Broadbent & Associates, Inc.(BAI)/Mr. Tom Venus, PE (530) 566-1400
Consultant Project No.:	09-88-601
Primary Agency/Regulatory ID No.:	Alameda County Environmental Health (ACEH) ACEH Case #RO0002982
Facility Permits/Permitting Agency:	NA

WORK PERFORMED THIS QUARTER (First Quarter 2010):

1. Prepared and submitted *Fourth Quarter 2009 Ground-Water Monitoring Report* (BAI, 1/5/2010).
2. Conducted ground-water monitoring/sampling for First Quarter 2010. Work performed on 17 February 2010 by Broadbent & Associates, Inc. (BAI).

WORK PROPOSED FOR NEXT QUARTER (Second Quarter 2010):

1. Prepared and submitted *First Quarter 2010 Ground-Water Monitoring Report* (contained herein).
2. Conduct ground-water monitoring/sampling for Second Quarter 2010.

QUARTERLY RESULTS SUMMARY:

Current phase of project:	**Ground-water monitoring/sampling**
Frequency of ground-water monitoring:	**Quarterly = MW-1, MW-2, and MW-3**
Frequency of ground-water sampling:	**Quarterly = MW-1, MW-2, and MW-3**
Is free product (FP) present on-site:	**No**
Current remediation techniques:	**NA**
Depth to ground water (below TOC):	**6.80 ft (MW-2) to 8.52 ft (MW-3)**
General ground-water flow direction:	**South**
Approximate hydraulic gradient:	**0.006 ft/ft**

DISCUSSION:

First Quarter 2010 ground-water monitoring and sampling was conducted at Station #472 on 17 February 2010 by BAI. Water levels were gauged in each of the three wells at the Site. No irregularities were noted during water level gauging. Depth-to-water measurements ranged from 6.80 ft at MW-2 to 8.52 ft at MW-3. Resulting ground-water surface elevations ranged from 16.82 ft above datum in well MW-2 to 16.21 ft in well MW-3. Water level elevations are summarized in Table 1. Water level elevations yielded a potentiometric ground-water flow direction and gradient to the south at approximately 0.006 ft/ft. Ground-water monitoring field data sheets are provided within Appendix A. Measured depths to ground water and respective ground-water elevations are summarized in Table 1. Current and historic ground-water flow directions and gradients are provided in Table 3. A Site Location Map is presented as Drawing 1. Potentiometric ground-water elevation contours are presented in Drawing 2.

Consistent with the current ground-water sampling schedule, water samples were collected from wells MW-1, MW-2, and MW-3 on 17 February 2010. No irregularities were reported during sampling.

Samples were submitted under chain-of-custody protocol to Calscience Environmental Laboratories, Inc. (Garden Grove, California), for analysis of Gasoline Range Organics (GRO, C6-C12) and Diesel Range Organics (DRO, C10-C28) by EPA Method 8015B; for Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) by EPA Method 8260B; and Methyl Tert-Butyl Ether (MTBE), Ethyl Tert-Butyl Ether (ETBE), Tert-Amyl Methyl Ether (TAME), Di-Isopropyl Ether (DIPE), Tert-Butyl Alcohol (TBA), 1,2-Dibromomethane (EDB), 1,2-Dichloroethane (1,2-DCA), and Ethanol by EPA Method 8260B. For sample MW-1, the laboratory noted the quantitation of an unknown hydrocarbon(s) in sample based on the diesel standard. No other significant irregularities were encountered during laboratory analysis of the samples. Ground-water sampling field data sheets and the laboratory analytical report, including chain-of-custody documentation, are provided in Appendix A.

An unknown hydrocarbon during the DRO analysis was detected above the laboratory reporting limit in MW-1 at a concentration of 70 micrograms per liter (µg/L). The remaining analytes were not detected above their laboratory reporting limits in the three wells sampled this quarter. Ground-water monitoring laboratory analytical results are summarized in Table 1 and Table 2. The most recent GRO, Benzene, and MTBE concentrations are also reported in Drawing 2. Ground-water monitoring data (GEO_WELL) and laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation receipts are provided in Appendix B.

CONCLUSIONS AND RECOMMENDATIONS:

It is somewhat premature to make conclusions based on three rounds of ground-water monitoring and sampling at Station #472. That stated, ground-water elevations, flow direction, and hydraulic gradient were generally consistent with expectations. No petroleum hydrocarbon contaminants were detected in the sample from wells MW-2 and MW-3. Monitoring well MW-2 is in close proximity to the assumed former underground storage tank pit. BAI continues to recommend that one year of quarterly monitoring and sampling be performed to seek trends in the ground-water elevations, flow directions, horizontal gradients, and contaminant concentrations. Four quarters of data should be available following the Second Quarter 2010 ground-water monitoring event. A ground-water monitoring report will be submitted for the next sampling event scheduled for the Second Quarter of 2010.

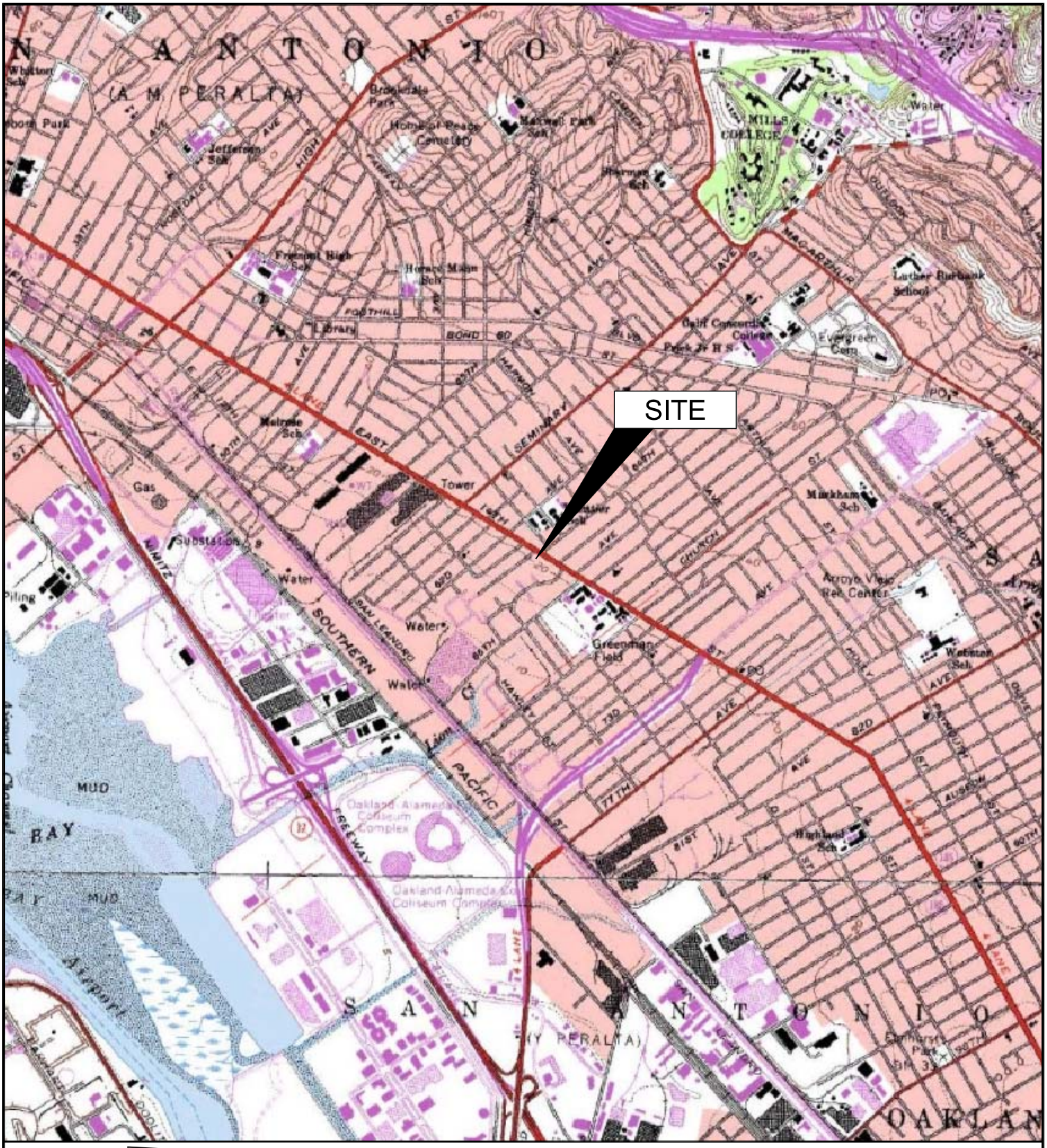
CLOSURE:

The findings presented in this report are based upon: observations of BAI field personnel (see Appendix A), the points investigated, and results of laboratory tests performed by Calscience Environmental Laboratories, Inc. (Garden Grove, California). Our services were performed in accordance with the generally accepted standard of practice at the time this report was written. No other warranty, expressed or implied was made. This report has been prepared for the exclusive use of Atlantic Richfield Company. It is possible that variations in soil or ground-water conditions could exist beyond points explored in this investigation. Also, changes in site conditions could occur in the future due to variations in rainfall, temperature, regional water usage, or other factors.

ATTACHMENTS:

Drawing 1. Site Location Map, Station #472, 6415 International Boulevard, Oakland, California

Drawing 2. Ground-Water Elevation Contour and Analytical Summary Map, 17 February 2010, Station #472, 6415 International Boulevard, Oakland, California



N

0 2000 4000

APPROXIMATE SCALE (ft)

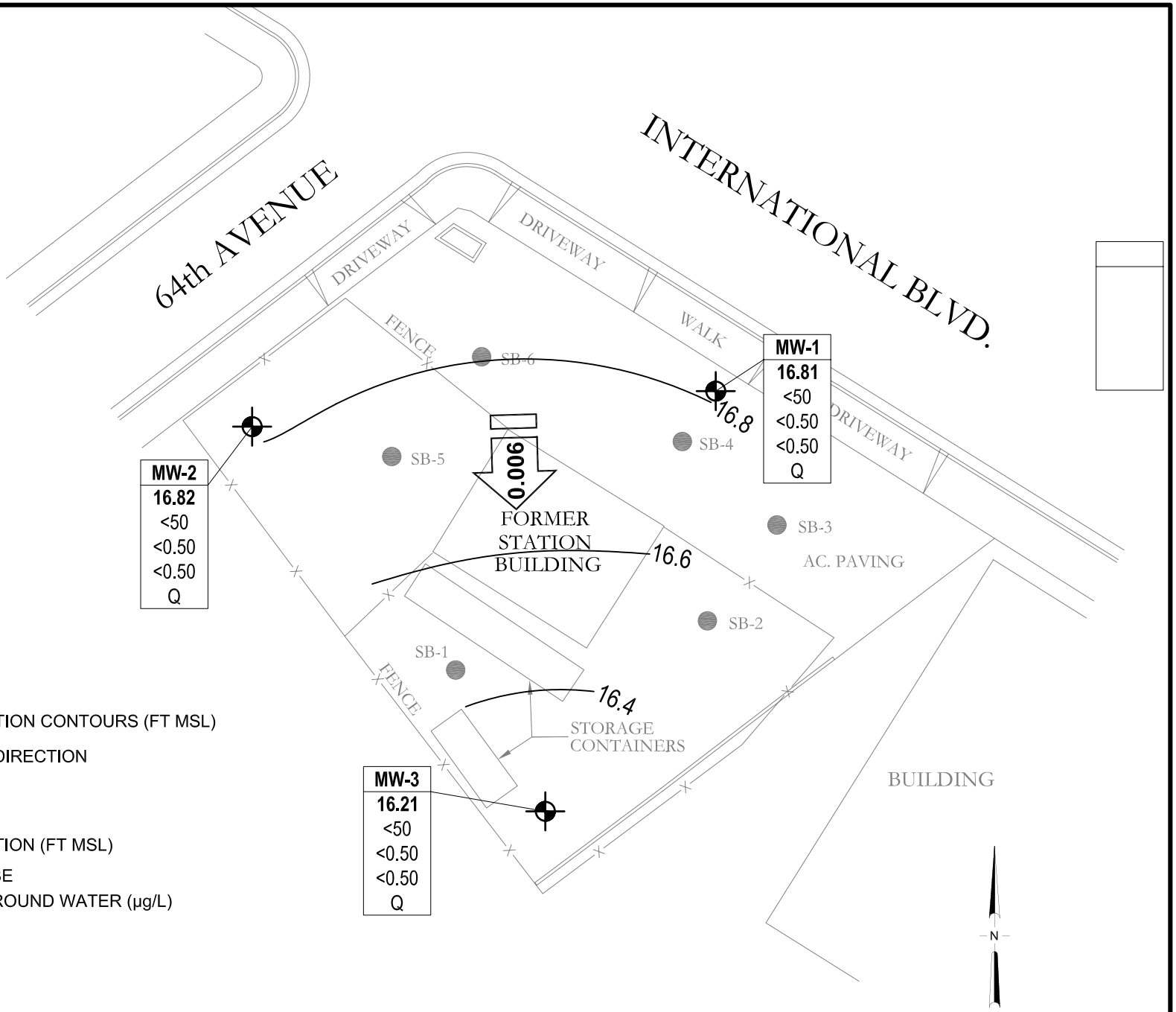
IMAGE SOURCE: USGS

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, CA 95926
Project No.: 09-88-601 Date: 07/31/09

Former Station #472
6415 International Boulevard
Oakland, California

Site Location Map

Drawing
1



LEGEND

- MONITORING WELL
- SOIL BORING
- 16.8 — GROUND-WATER ELEVATION CONTOURS (FT MSL)
- 0.006 — GROUND-WATER FLOW DIRECTION AND GRADIENT (FT/FT)

Well	WELL DESIGNATION
ELEV	GROUND-WATER ELEVATION (FT MSL)
GRO	GRO, BENZENE AND MTBE
Benzene	CONCENTRATIONS IN GROUND WATER (µg/L)
MTBE	
Q/SA/A	SAMPLING FREQUENCY
Q	SAMPLED QUARTERLY

0 30 60
SCALE (ft)

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California
Project No.: 09-88-601 Date: 03/24/10

Former Station #472
6415 International Boulevard
Oakland, California

Ground-Water Elevation Contour
and Analytical Summary Map
17 February 2010

Drawing
2

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #472, 6415 International Boulevard, Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet)	DTW (feet)	Product Thickness (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/ TPHd (µg/L)	TOG (µg/L)
							GRO/ TPHg	Benzene	Toluene	Ethyl- Benzene	Total Xylenes	MtBE					
MW-1																	
8/25/2009	P	LX (DRO)	24.17	9.29	--	14.88	530	<0.50	<0.50	<0.50	<0.50	0.54	--	CEL	7.21	190	--
11/11/2009	NP		24.17	8.22	--	15.95	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	CEL	--	--	--
2/17/2010	**NP**	**LX (DRO)**	**24.17**	**7.36**	**--**	**16.81**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**1.69**	**CEL**	**7.03**	**70**	**--**
MW-2																	
8/25/2009	P		23.62	9.65	--	13.97	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	CEL	7.30	<50	--
11/11/2009	NP		23.62	8.09	--	15.53	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	CEL	--	--	--
2/17/2010	**P**		**23.62**	**6.80**	**--**	**16.82**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**2.62**	**CEL**	**7.15**	**<50**	**--**
MW-3																	
8/25/2009	P		24.73	11.07	--	13.66	63	<0.50	1.2	<0.50	<0.50	<0.50	--	CEL	7.09	85	--
11/11/2009	NP	LW (GRO)	24.73	9.56	--	15.17	88	<0.50	<0.50	<0.50	<0.50	<0.50	--	CEL	--	--	--
2/17/2010	**NP**		**24.73**	**8.52**	**--**	**16.21**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**2.04**	**CEL**	**7.09**	**<50**	**--**

ABBREVIATIONS & SYMBOLS:
--/--- = Not analyzed/applicable/measured/available
< = Not detected at or above specified laboratory reporting limit
DO = Dissolved oxygen
DRO = Diesel range organics
DTW = Depth to water in ft bgs
GRO = Gasoline range organics, range C4-C12
GWE = Groundwater elevation measured in ft
HVOC = Halogenated volatile organic compounds
mg/L = Milligrams per liter
MTBE = Methyl tert-butyl ether
NP = Well not purged prior to sampling
P = Well purged prior to sampling
TOC = Top of casing measured in ft
TOG = Total oil and grease
TPH-d = Total petroleum hydrocarbons as diesel
TPH-g = Total petroleum hydrocarbons as gasoline
µg/L = Micrograms per liter
CEL = CalScience Environmental Laboratories, Inc.

FOOTNOTES:
LW = Quantitation of unknown hydrocarbon(s) in sample based on gasoline.
LX = Quantitation of unknown hydrocarbon(s) in sample based on diesel.

Table 2. Summary of Fuel Additives Analytical Data

Station #472, 6415 International Boulevard, Oakland, CA

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-1									
8/25/2009	<300	<10	0.54	<0.50	<0.50	<0.50	<0.50	<0.50	
11/11/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/17/2010	**<300**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-2									
8/25/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/11/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/17/2010	**<300**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-3									
8/25/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/11/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/17/2010	**<300**	**<20**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	

ABBREVIATIONS & SYMBOLS:
-- = Not analyzed/applicable/measured/available
< = Not detected at or above specified laboratory reporting limit
1,2-DCA = 1,2-Dichloroethane
DIPE = Di-isopropyl ether
EDB = 1,2-Dibromoethane
ETBE = Ethyl tert-butyl ether
MTBE = Methyl tert-butyl ether
TAME = tert-Amyl methyl ether
TBA = tert-Butyl alcohol
µg/L = Micrograms per Liter

NOTES:
All volatile organic compounds were analyzed using EPA Method 8260B.

Table 3. Historical Ground-Water Flow Direction and Gradient

Station #472, 6415 International Boulevard, Oakland, CA

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
8/25/2009	Southwest	0.01
11/11/2009	South-Southwest	0.008
2/17/2010	**South**	**0.006**

APPENDIX A

BAI GROUND-WATER SAMPLING DATA PACKAGE
(Includes Field Data Sheets, Non-Hazardous Waste Data Form, Laboratory Analytical Report with Chain-Of-Custody Documentation, and Field Procedures)

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

DAILY REPORT
Page 1 of 1

Project: BP472 Project No.: 04-88-601

Field Representative(s): T. Geddes E. Farrar Day: Wed Date: 2/17/10

Time Onsite: From: 0935 To: 1045; From: _____ To: _____; From: _____ To: _____

✓ Signed HASP ✓ Safety Glasses ✓ Hard Hat ✓ Steel Toe Boots ✓ Safety Vest
✓ UST Emergency System Shut-off Switches Located ✓ Proper Gloves
✓ Proper Level of Barricading ___ Other PPE (describe) _____

Weather: clear 50's

Equipment In Use: DTW probe, bailers 3

Visitors: _____

TIME:	WORK DESCRIPTION:
0815	Depart Vacaville
0935	Arrive BP472
1040	Depart BP472 for BP 276

Signature: R. Tyler Dill

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

FIELD DATA REPORT

DATE: 2/17/16
PERSONNEL: TG. EF.
WEATHER: Fog 50

PROJECT NO.: 69-88-601
COMMENTS:

Equip:	Geosquirt	Tubing	Bailers	DO	wli	Ec/pH

Well ID	Time	MEASURING POINT	DTW (FT)	~~PRODUCT THICKNESS~~ well diam	pH	Cond. (X100)	Temp. (C/F)	DO (mg/l)	Redox (mV)	Iron (mg/l)	Alk. (mg/l)	WELL HEAD CONDITION: VAULT, BOLTS, CAP, LOCK, ETC
MW-1	0945	TOC	7.36	4"								
MW-2	0948	↓	6.80	4"								
MW-3	0951	↓	8.52	4"								

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

Groundwater Sampling Data Sheet

Well I.D.: MW-1
Project Name/Location: BP 417D
Project #: 09-88-601
Sampler's Name: E. Farrer
Date: 2/17/10
Purging Equipment: —
Sampling Equipment: Bailer
Casing Type: PVC
Casing Diameter: 4" inch
Total Well Depth: ____ feet
Depth to Water: - 7.36 feet
Water Column Thickness: = ____ feet
Unit Casing Volume*: x ____ gallon / foot
Casing Water Volume: = ____ gallons
Casing Volume: x 3 each
Estimated Purge Volume: = ____ gallons
Free product measurement (if present): ____

***UNIT CASING VOLUMES**
2" = 0.16 gal/lin ft.
3" = 0.37 gal/lin ft.
4" = 0.65 gal/lin ft.
6" = 1.47 gal/lin ft.

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0	0955	1.69	76		934.6	62.9	7.03	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 0 gallons
Depth to Water at Sample Collection: 7.36 feet
Sample Collection Time: 0955
Purged Dry? (Y / (N))

Comments: NP at 7'

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

Groundwater Sampling Data Sheet

Well I.D.: MW-2
Project Name/Location: DP472 Project #: 09-88-601
Sampler's Name: E. Farrar Date: 2/17/10
Purging Equipment: Bailer
Sampling Equipment: Bailer
Casing Type: PVC
Casing Diameter: 4" inch
Total Well Depth: _____ feet
Depth to Water: - 6.80 feet
Water Column Thickness: = _____ feet
Unit Casing Volume*: x _____ gallon / foot
Casing Water Volume: = _____ gallons
Casing Volume: x 3 each
Estimated Purge Volume: = _____ gallons
Free product measurement (if present): _____

***UNIT CASING VOLUMES**
2" = 0.16 gal/lin ft.
3" = 0.37 gal/lin ft.
4" = 0.65 gal/lin ft.
6" = 1.47 gal/lin ft.

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0		2.62	60		435.4	63.5	7.21	
3		X	X	X	437.4	63.9	7.17	
5		X 3.15	X	X	438	63.9	7.15	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 5 gallons
Depth to Water at Sample Collection: 7.11 feet
Sample Collection Time: 1030 Purged Dry? (Y / (N))

Comments:

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

Groundwater Sampling Data Sheet

Well I.D.: MW3
Project Name/Location: BP 472 Project #: 09-88-601
Sampler's Name: J. Geddes Date: 2/17/10
Purging Equipment: —
Sampling Equipment: Bailer
Casing Type: PVC
Casing Diameter: 4" inch
Total Well Depth: _____ feet
Depth to Water: - 8.52 feet
Water Column Thickness: = _____ feet
Unit Casing Volume*: x _____ gallon / foot
Casing Water Volume: = _____ gallons
Casing Volume: x 3 each
Estimated Purge Volume: = _____ gallons
Free product measurement (if present): _____

***UNIT CASING VOLUMES**
2" = 0.16 gal/lin ft.
3" = 0.37 gal/lin ft.
4" = 0.65 gal/lin ft.
6" = 1.47 gal/lin ft.

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0	1005	2.04	69		1005	62.4	7.09	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: — gallons
Depth to Water at Sample Collection: 8.52 feet
Sample Collection Time: 1005 Purged Dry? (Y (N)

Comments: NP at 7'

NO. 857338

NON-HAZARDOUS WASTE DATA FORM

1. BESI #

GENERATOR

2. Generator's Name and Mailing Address

BP WEST COAST PRODUCTS, LLC
P.O. BOX 80249
RANCHO SANTA MARGARITA, CA 92688

Generator's Site Address (if different than mailing address)

BP 472
6415 International blvd
Oakland, CA

Generator's Phone: (949) 460-5200

24-HOUR EMERGENCY PHONE: (949) 699-3706

3. Transporter 1 Company Name: Broadbent & Associates, Inc. — Phone #: (530) 566-1400

4. Transporter 2 Company Name: Gomes Excavating — Phone #: (707) 374-2881

5. Designated Facility Name and Site Address

INTRAT, INC.
1105 AIRPORT RD #C
RIO VISTA, CA 94571

Phone #: (530) 753-1829

6. Waste Shipping Name and Description	7. Containers No.	7. Containers Type	8. Total Quantity	9. Unit Wt/Vol	10. Profile No.
A. NON-HAZARDOUS WATER	1	TT	5	G	
B.					
C.					
D.					

11. Special Handling Instructions and Additional Information

WEAR ALL APPROPRIATE PROTECTIVE CLOTHING

WELL PURGING / DECON WATER

12. GENERATOR'S CERTIFICATION: I certify the materials described above on this data form are non-hazardous.

Generator's/Offeror's Printed/Typed Name: Eric Farrow — Signature: [signature] — Month: 2 — Day: 17 — Year: 12

TRANSPORTER

13. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Eric Farrow — Signature: [signature] — Month: 2 — Day: 17 — Year: 12

Transporter 2 Printed/Typed Name: — Signature: — Month: — Day: — Year:

FACILITY

14. Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

Printed/Typed Name: — Signature: — Month: — Day: — Year:

GENERATOR (ORIGINAL)

Calscience Environmental Laboratories, Inc.

March 04, 2010

Tom Venus
Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Subject: **Calscience Work Order No.: 10-02-1531**
Client Reference: ARCO 472

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/18/2010 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Richard Villafania
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.	Date Received: 02/18/10
1324 Mangrove Ave, Ste 212	Work Order No: 10-02-1531
Chico, CA 95926-2642	Preparation: EPA 3510C
	Method: EPA 8015B (M)

Project: ARCO 472 Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	**10-02-1531-1-G**	**02/17/10 09:55**	**Aqueous**	**GC 43**	**02/19/10**	**02/23/10 01:21**	**100219B06**

Comment(s): -LX = Quantitated against diesel fuel.

Parameter	Result	RL	DF	Qual	Units
Diesel Range Organics (C10-C28)	70	50	1		ug/L
Surrogates:	REC (%)	Control Limits		Qual	
Decachlorobiphenyl	128	68-140			

MW-2	**10-02-1531-2-G**	**02/17/10 10:30**	**Aqueous**	**GC 43**	**02/19/10**	**02/23/10 01:41**	**100219B06**

Parameter	Result	RL	DF	Qual	Units
Diesel Range Organics (C10-C28)	ND	50	1		ug/L
Surrogates:	REC (%)	Control Limits		Qual	
Decachlorobiphenyl	119	68-140			

MW-3	**10-02-1531-3-G**	**02/17/10 10:05**	**Aqueous**	**GC 43**	**02/19/10**	**02/23/10 02:01**	**100219B06**

Parameter	Result	RL	DF	Qual	Units
Diesel Range Organics (C10-C28)	ND	50	1		ug/L
Surrogates:	REC (%)	Control Limits		Qual	
Decachlorobiphenyl	124	68-140			

Method Blank	**099-12-699-195**	**N/A**	**Aqueous**	**GC 43**	**02/19/10**	**02/23/10 00:21**	**100219B06**

Parameter	Result	RL	DF	Qual	Units
Diesel Range Organics (C10-C28)	ND	50	1		ug/L
Surrogates:	REC (%)	Control Limits		Qual	
Decachlorobiphenyl	104	68-140			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.	Date Received: 02/18/10
1324 Mangrove Ave, Ste 212	Work Order No: 10-02-1531
Chico, CA 95926-2642	Preparation: EPA 5030B
	Method: EPA 8015B (M)

Project: ARCO 472

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	**10-02-1531-1-E**	**02/17/10 09:55**	**Aqueous**	**GC 11**	**02/19/10**	**02/20/10 02:27**	**100219B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	88	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	**10-02-1531-2-E**	**02/17/10 10:30**	**Aqueous**	**GC 11**	**02/19/10**	**02/20/10 03:01**	**100219B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	88	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	**10-02-1531-3-E**	**02/17/10 10:05**	**Aqueous**	**GC 11**	**02/19/10**	**02/20/10 03:35**	**100219B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	87	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-695-757**	**N/A**	**Aqueous**	**GC 11**	**02/19/10**	**02/19/10 20:15**	**100219B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	88	38-134	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	02/18/10
1324 Mangrove Ave, Ste 212		Work Order No:	10-02-1531
Chico, CA 95926-2642		Preparation:	EPA 5030B
		Method:	EPA 8260B
		Units:	ug/L

Project: ARCO 472

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	**10-02-1531-1-B**	**02/17/10 09:55**	**Aqueous**	**GC/MS BB**	**02/25/10**	**02/25/10 20:03**	**100225L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	121	80-128			Dibromofluoromethane	105	80-127		
Toluene-d8	101	80-120			1,4-Bromofluorobenzene	85	68-120		

MW-2	**10-02-1531-2-B**	**02/17/10 10:30**	**Aqueous**	**GC/MS BB**	**02/25/10**	**02/25/10 20:31**	**100225L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	119	80-128			Dibromofluoromethane	106	80-127		
Toluene-d8	99	80-120			1,4-Bromofluorobenzene	82	68-120		

MW-3	**10-02-1531-3-B**	**02/17/10 10:05**	**Aqueous**	**GC/MS BB**	**02/25/10**	**02/25/10 21:00**	**100225L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	120	80-128			Dibromofluoromethane	107	80-127		
Toluene-d8	99	80-120			1,4-Bromofluorobenzene	83	68-120		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	02/18/10
1324 Mangrove Ave, Ste 212		Work Order No:	10-02-1531
Chico, CA 95926-2642		Preparation:	EPA 5030B
		Method:	EPA 8260B
		Units:	ug/L

Project: ARCO 472

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-703-1,240**	**N/A**	**Aqueous**	**GC/MS BB**	**02/25/10**	**02/25/10 12:33**	**100225L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	115	80-128			Dibromofluoromethane	109	80-127		
Toluene-d8	100	80-120			1,4-Bromofluorobenzene	80	68-120		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: 02/18/10
Work Order No: 10-02-1531
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project ARCO 472

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
10-02-1665-1	**Aqueous**	**GC 11**	**02/19/10**	**02/19/10**	**100219S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	104	93	38-134	11	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: 02/18/10
Work Order No: 10-02-1531
Preparation: EPA 5030B
Method: EPA 8260B

Project ARCO 472

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
10-02-1328-2	**Aqueous**	**GC/MS BB**	**02/25/10**	**02/25/10**	**100225S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	94	95	76-124	2	0-20	
Carbon Tetrachloride	104	109	74-134	5	0-20	
Chlorobenzene	95	97	80-120	1	0-20	
1,2-Dibromoethane	89	87	80-120	1	0-20	
1,2-Dichlorobenzene	98	101	80-120	2	0-20	
1,1-Dichloroethene	104	100	73-127	4	0-20	
Ethylbenzene	104	106	78-126	2	0-20	
Toluene	110	108	80-120	3	0-20	
Trichloroethene	100	101	77-120	1	0-20	
Vinyl Chloride	95	94	72-126	0	0-20	
Methyl-t-Butyl Ether (MTBE)	97	103	67-121	3	0-49	
Tert-Butyl Alcohol (TBA)	113	87	36-162	21	0-30	
Diisopropyl Ether (DIPE)	94	94	60-138	0	0-45	
Ethyl-t-Butyl Ether (ETBE)	95	100	69-123	5	0-30	
Tert-Amyl-Methyl Ether (TAME)	94	101	65-120	7	0-20	
Ethanol	120	80	30-180	40	0-72	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: N/A
Work Order No: 10-02-1531
Preparation: EPA 3510C
Method: EPA 8015B (M)

Project: ARCO 472

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-699-195	**Aqueous**	**GC 43**	**02/19/10**	**02/23/10**	**100219B06**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Diesel Range Organics (C10-C28)	90	107	75-117	17	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: N/A
Work Order No: 10-02-1531
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project: ARCO 472

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-757	**Aqueous**	**GC 11**	**02/19/10**	**02/19/10**	**100219B01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	112	114	78-120	2	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: N/A
Work Order No: 10-02-1531
Preparation: EPA 5030B
Method: EPA 8260B

Project: ARCO 472

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-703-1,240	**Aqueous**	**GC/MS BB**	**02/25/10**	**02/25/10**	**100225L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	94	98	80-120	73-127	4	0-20	
Carbon Tetrachloride	107	109	74-134	64-144	2	0-20	
Chlorobenzene	99	100	80-120	73-127	1	0-20	
1,2-Dibromoethane	96	96	79-121	72-128	0	0-20	
1,2-Dichlorobenzene	100	98	80-120	73-127	2	0-20	
1,1-Dichloroethene	102	101	78-126	70-134	1	0-28	
Ethylbenzene	111	111	80-120	73-127	0	0-20	
Toluene	106	110	80-120	73-127	4	0-20	
Trichloroethene	104	102	79-127	71-135	1	0-20	
Vinyl Chloride	105	102	72-132	62-142	3	0-20	
Methyl-t-Butyl Ether (MTBE)	97	99	69-123	60-132	2	0-20	
Tert-Butyl Alcohol (TBA)	102	99	63-123	53-133	3	0-20	
Diisopropyl Ether (DIPE)	92	92	59-137	46-150	0	0-37	
Ethyl-t-Butyl Ether (ETBE)	96	98	69-123	60-132	2	0-20	
Tert-Amyl-Methyl Ether (TAME)	93	98	70-120	62-128	5	0-20	
Ethanol	83	78	28-160	6-182	6	0-57	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

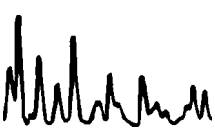
Glossary of Terms and Qualifiers

Work Order Number: 10-02-1531

Qualifier	Definition
AX	Sample too dilute to quantify surrogate.
BA	Relative percent difference out of control.
BA,AY	BA = Relative percent difference out of control. AY = Matrix interference suspected.
BB	Sample > 4x spike concentration.
BF	Reporting limits raised due to high hydrocarbon background.
BH	Reporting limits raised due to high level of non-target analytes.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
BY	Sample received at improper temperature.
BZ	Sample preserved improperly.
CL	Initial analysis within holding time but required dilution.
CQ	Analyte concentration greater than 10 times the blank concentration.
CU	Surrogate concentration diluted to not detectable during analysis.
DF	Reporting limits elevated due to matrix interferences.
DU	Insufficient sample quantity for matrix spike/dup matrix spike.
ET	Sample was extracted past end of recommended max. holding time.
EY	Result exceeds normal dynamic range; reported as a min est.
GR	Internal standard recovery is outside method recovery limit.
IB	CCV recovery abovelimit; analyte not detected.
IH	Calibrtn. verif. recov. below method CL for this analyte.
IJ	Calibrtn. verif. recov. above method CL for this analyte.
J,DX	J=EPA Flag -Estimated value; DX= Value < lowest standard (MQL), but > than MDL.
LA	Confirmatory analysis was past holding time.
LG,AY	LG= Surrogate recovery below the acceptance limit. AY= Matrix interference suspected.
LH,AY	LH= Surrogate recovery above the acceptance limit. AY= Matrix interference suspected.
LM,AY	LM= MS and/or MSD above acceptance limits. See Blank Spike (LCS). AY= Matrix interference suspected.
LN,AY	LN= MS and/or MSD below acceptance limits. See Blank Spike (LCS). AY= Matrix interference suspected.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.

Work Order Number: 10-02-1531

Qualifier	Definition
LW	Quantitation of unknown hydrocarbon(s) in sample based on gasoline.
LX	Quantitation of unknown hydrocarbon(s) in sample based on diesel.
MB	Analyte present in the method blank.
PC	Sample taken from VOA vial with air bubble > 6mm diameter.
PI	Primary and confirm results varied by > than 40% RPD.
RB	RPD exceeded method control limit; % recoveries within limits.
SG	A silica gel cleanup procedure was performed.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.



Atlantic Richfield Company
A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record

BP/ARC Project Name: ARCO 472 **Req Due Date (mm/dd/yy):** STD-TAT **Rush TAT:** Yes ___ No X

BP/ARC Facility No: 472 **Lab Work Order Number:** 10-02-1531

Lab Name:	Cal Science	BP/ARC Facility Address:	6415 International Boulevard	Consultant/Contractor:	Broadbent & Associates, Inc.
Lab Address:	7440 Lincoln Way	City, State, ZIP Code:	Oakland, CA 94621	Consultant/Contractor Project No:	09-88-601-1-813
Lab PM:	Richard Villafania	Lead Regulatory Agency:	ACEH	Address:	1324 Mangrove Ave. Ste. 212, Chico, CA 95926
Lab Phone:	714-895-5494 / 714-895-7501 (fax)	California Global ID No.:	T10000000417	Consultant/Contractor PM:	Tom Venus
Lab Shipping Accnt:	9255	Enfos Proposal No:	004L0-0003	Phone:	530-566-1400 / 530-566-1401 (fax)
Lab Bottle Order No:		Accounting Mode:	Provision X OOC-BU ___ OOC-RM ___	Email EDD To:	tvenus@broadbentinc.com
Other Info:		Stage: Appraise (1)	Activity: Monitoring (813)	Invoice To:	BP/ARC X Contractor ___

BP/ARC EBM: Chuck Carmel
EBM Phone: 925-275-3803
EBM Email: charles.carmel@bp.com

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	Matrix:	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol		Requested Analyses: GRO / DRO (8015M)	BTEX / 5 Oxys (8260)	EDB / 1,2-DCA (8260)	EtOH (8260)							Report Type & QC Level
1	MW-1	2/17/10	0955		X			3	X			X			X	X	X	X							
2	MW-2	"	1030		X			3	X			X			X	X	X	X							
3	MW-3	"	1005		X			3	X			X			X	X	X	X							
4	TB - 472 - 021710				X			2				X													ON HOLD

Comments: Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Report Type & QC Level: Standard X; Full Data Package ___

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Eric Farrar						
Sampler's Company: BAI	E. Farrar / BAI	2/17/10	1600	Wdatin CEL	2/18/10	0930
Shipment Method: GSO Ship Date: 2/17/10						
Shipment Tracking No: 106193644						

Special Instructions: Please cc results to bpedf@broadbentinc.com

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: _____ °F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

DATE

COMPANY

ADDRESS

ADDRESS

STE/ ROOM

CITY

ZIP CODE

SENDERS NAME

PHONE NUMBER

COMPANY CAL SCIENCE

NAME

PHONE NUMBER 714-895-5494

ADDRESS 7440 LINCOLN WAY

ADDRESS

STE/ ROOM

CITY GARDEN GROVE

ZIP CODE 92841

YOUR INTERNAL BILLING REFERENCE WILL APPEAR ON YOUR INVOICE

CIAL RUCTIONS

GSO GOLDEN STATE OVERNIGHT

1-800-322-5555

WWW.GSO.COM

SHIPPING AIR BILL

PACKAGE LABEL

4 PACKAGE INFORMATION

- ☐ LETTER (MAX 8 OZ)
- ☐ PACKAGE (WT) _____
- ☐ DECLARED VALUE $_____
- ☐ COD AMOUNT $_____ (CASH NOT ACCEPTED)

5 DELIVERY SERVICE ☐ PRIORITY OVERNIGHT BY 10:30 AM ☐ EARLY PRIORITY BY 8:00 AM ☐ SATURDAY DELIVERY

*DELIVERY TIMES MAY BE LATER IN SOME AREAS. CONSULT YOUR SERVICE GUIDE OR CALL GOLDEN STATE OVERNIGHT.

6 RELEASE SIGNATURE _____

SIGN TO AUTHORIZE DELIVERY WITHOUT OBTAINING SIGNATURE

7

8 PICK UP INFORMATION _____ TIME _____ DRIVER # _____ ROUTE #

106193644

PEEL OFF HERE

106193644

9 GSO TRACKING NUMBER

1531

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 10-02-1537

SAMPLE RECEIPT FORM

Cooler 1 **of** 1

CLIENT: BROADBENT + ASSO. INC. **DATE:** 02/18/10

TEMPERATURE: **Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen)**

Temperature 1.7 °C + **0.5 °C** (CF) = 2.2 °C ☑ **Blank** ☐ **Sample**

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs Only **Initial:** WS

CUSTODY SEALS INTACT:

☑ Cooler ☐ _____ ☐ No (Not Intact) ☐ Not Present ☐ N/A **Initial:** WS

☐ Sample ☐ _____ ☐ No (Not Intact) ☑ Not Present **Initial:** _____

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑ WSC 2-18-10	☑	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☑	☐	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☑VOA**h** (6) ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐500PB ☐500PB**na**

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® **Other:** ☐_____ **Trip Blank Lot#:** 100209A **Checked by:** KC

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WSC

Preservative: **h:** HCL **n:** HNO3 **na$_2$:** $Na_2S_2O_3$ **Na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **znna:** $ZnAc_2$+NaOH **f:** Field-filtered **Scanned by:** WSC

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 10-02-1 5 3 1

SAMPLE ANOMALY FORM

SAMPLES - CONTAINERS & LABELS:

- ☐ **Sample(s)/Container(s) NOT RECEIVED but listed on COC**
- ☐ **Sample(s)/Container(s) received but NOT LISTED on COC**
- ☐ **Holding time expired** – list sample ID(s) and test
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s)/preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☑ **Sample label(s) do not match COC** – Note in comments
  - ☐ **Sample ID**
  - ☐ **Date and/or Time Collected**
  - ☐ **Project Information**
  - ☑ **# of Container(s)**
  - ☐ **Analysis**
- ☐ **Sample container(s) compromised** – Note in comments
  - ☐ **Leaking**
  - ☐ **Broken**
  - ☐ **Without Label(s)**
- ☐ **Air sample container(s) compromised** – Note in comments
  - ☐ **Flat**
  - ☐ **Very low in volume**
  - ☐ **Leaking (Not transferred - duplicate bag submitted)**
  - ☐ **Leaking (transferred into Calscience Tedlar® Bag*)**
  - ☐ **Leaking (transferred into Client's Tedlar® Bag*)**
- ☐ **Other:** _____

Comments:

(≤4) TB received 4 vials

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Cont. received	Analysis

Comments: _____

*Transferred at Client's request.

Initial / Date: WSC 02/18/10

FIELD PROCEDURES

A.1 QUALITY ASSURANCE/QUALITY CONTROL FIELD PROTOCOLS

Field protocols have been implemented to maximize the accuracy and reliability of data collection, ground-water sample collection, transportation and laboratory analysis. Discussion of these protocols is provided below.

A.1.1 Water Level & Free-Phase Product Measurement

Prior to ground-water sample collection from each monitor well, the presence of free-phase product and depth to ground water shall be measured. Depth to ground water will be measured with a standard M-Scope water level indicator (or equivalent) that has been decontaminated prior to its use in accordance with procedures discussed below. Depth to ground water will be gauged from a saw cut notch at the top of the well casing on each well head. Once depth to water has been measured, a new disposable bailer will be utilized to monitor for the presence and thickness of free-phase product.

A.1.2 Monitor Well Purging

Subsequent to measuring depth to ground water, a minimum of three casing volumes of water will be purged from each monitor well using a Geosquirt submersible pump (or equivalent) and disposable plastic tubing dedicated to each individual well. The well will be purged at a low flow rate to minimize the possibility of purging the well dry. To assure that the sample collected is representative of formation water, several field parameters will be monitored during the purging process and the sample will not be collected until these parameters have stabilized to within 10% of a measured value. These parameters will include temperature, pH, and conductivity. If a well is purged dry, the sample will not be collected until the well has recovered to a minimum 50% of its initial volume.

Ground-water sampling equipment (e.g., M-scope and the Geosquirt purge pump) will be thoroughly cleansed with a solution of Liquinox, rinsed with tap water, and finally rinsed with control water prior to use in each well. Pre-cleaned disposable bailers and disposable plastic tubing will be dedicated to each individual well.

A.1.3 Ground-Water Sample Collection

Once the wells are satisfactorily purged, water samples will be collected from each well. Water samples for organic analyses will be collected using a clean disposable bailer and transferred to laboratory-prepared 40 ml vials, in duplicate; such that no head space or air bubbles are present in the sample. The samples will be properly labeled (sample identification, sampler initials, date and time of collection, site location, and requested analyses), placed in an ice chest with blue ice, and delivered to an analytical laboratory.

A.1.4 Surface Water Sample Collection

Surface water samples will be collected from mid-depth in the central area of the associated stream. Water samples will be collected in laboratory-prepared 40 ml vials by dipping the vial into the stream water. Each vial will be inverted to check that no head space or bubbles are present. The samples will be properly labeled and transported as described above.

A.1.5 Chain of Custody Procedure

Sample identification documents will be carefully prepared so identification and chain of custody can be maintained and sample disposition can be controlled. The sample identification documents include Chain-of-Custody (COC) records and Daily Field Report forms. Chain of custody procedures are outlined below.

Field Custody Procedures

The field sampler is personally responsible for the care and custody of the samples collected until they are properly transferred.

Samples will have individual labels. The information on these labels will correspond to the COC which shows the identification of individual samples and the contents of the shipping container. The original COC will accompany the shipment and a copy will be retained by the sampler for the client.

The staff person conducting the sampling will determine whether proper custody procedures were followed during the field work.

Transfer of Custody and Shipment

A COC will accompany samples during transfer and shipment. When transferring samples, the individual's relinquishing and receiving the samples will sign, date, and note the time on the COC. This COC documents the sample custody transfer.

Samples will be packaged properly for shipment and dispatched to the appropriate laboratory for analysis, with a separate COC accompanying each shipment. Shipments will be accompanied by the original COC. Samples will be delivered by BAI personnel to the laboratory, or shipped by courier.

A.1.6 Field Records

In addition to sample identification numbers and Chain-of Custody records, Daily Field Report records will be maintained by staff personnel to provide daily records of significant events, observations, and measurements during field investigations. These documents will contain information such as: personnel present, site conditions, sampling procedures, measurement procedures, calibration records, etc. Field measurements will be recorded on the appropriate forms. Entries on the data forms will be signed and dated. The data forms will be kept as permanent records.

APPENDIX B

GEOTRACKER UPLOAD CONFIRMATION RECEIPTS

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A GEO_WELL FILE

SUCCESS

Processing is complete. No errors were found!
Your file has been successfully submitted!

Submittal Type:	**GEO_WELL**
Submittal Title:	**1Q10 GEO_WELL 472**
Facility Global ID:	**T10000000417**
Facility Name:	**ARCO # / PLUCKY LIQUORS**
File Name:	**GEO_WELL.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**4/9/2010 3:33:04 PM**
Confirmation Number:	**8710877776**

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A EDF FILE

SUCCESS

Processing is complete. No errors were found!
Your file has been successfully submitted!

Submittal Type:	**EDF - Monitoring Report - Quarterly**
Submittal Title:	**1Q10 GW Monitoring**
Facility Global ID:	**T10000000417**
Facility Name:	**ARCO # / PLUCKY LIQUORS**
File Name:	**10021531.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**3/19/2010 11:13:35 AM**
Confirmation Number:	**1175454556**

VIEW QC REPORT

VIEW DETECTIONS REPORT