



GROUND WATER MONITORING REPORT

Atlantic Richfield Company

Annual Report for 2004

July 8, 2004

Release # 400435
ARCO 6175
LIST #
AUBURN

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Bellevue, Washington 98004 USA

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ARCO Facility No.:

6175

Address:

3910 South 320th Street, Auburn, WA

Atlantic Richfield Company

Environmental Business Manager:

Scott Hooton

Consulting Co./Contact Person:

Delta Environmental Consultants, Inc./Matt Miller

Consultant Project Number:

AM04-313

Primary Agency/Regulatory ID No.:

Washington State Department of Ecology/8812

WORK PERFORMED DURING 2004:

- Delta conducted annual ground water monitoring and sampling on April 8, 2004. ✓
- Delta prepared this annual ground water monitoring report.

Current Phase of Project:	Monitoring	(Phase I, Addtl Assmnt RAP/CAP, Remed., etc)
Frequency of Ground Water Sampling and Monitoring:	Annual	(Quarterly, etc)
Are LPH Present On-Site:	No	(Yes/No)
LPH Recovered this Reporting Period:	None	(Gallons)
Cumulative LPH Recovered to Date:	None	(Gallons)
Amount of Soil Removed to Date:	Unknown	(Cubic yards/tons)
Current Remediation Techniques:	Natural Attenuation	(SVES/Sparge/Pump and Treat)
Approximate Depth to Ground Water:	6.67 to 8.38	(Feet)
Ground Water Gradient:	East	(Direction)
	0.05 ft/linear ft	(Magnitude)

- Attachments:
- Table 1 - Summary of Ground Water Data
 - Figure 1 - Site Location Map
 - Figure 2 - Inferred Water Table Contour Map - 4/8/04
 - North Creek Analytical Lab Report

TABLE 1
SUMMARY OF GROUND WATER DATA
ARCO FACILITY NO. 6175
3910 SOUTH 320TH STREET
AUBURN, WASHINGTON
DELTA PROJECT NO. AM04-313

MONITORING WELL	TOC* (feet)	DATE SAMPLED	DEPTH TO WATER (feet)	GROUND WATER ELEVATION* (feet)	DISSOLVED OXYGEN (mg/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	XYLENES (ug/L)	METHYL TERT-BUTYL ETHER (ug/L)	GASOLINE-RANGE HYDROCARBONS (ug/L)	1,2-DIBROMO-ETHANE (ug/L)	1,2-DICHLORO-ETHANE (ug/L)	TOTAL LEAD (ug/L)	DISSOLVED LEAD (ug/L)
VE-1	98.61	04/08/04 p	7.51	91.10	4.6	<0.500 ✓	<0.500	<0.500	<1.00	<1.00	<50.0 ✓	<0.010	<0.200	8.36 ✓	<1.00
VE-2	98.97	04/08/04 p	6.85	92.12	5.4	<0.500 ✓	<0.500	<0.500	<1.00	<1.00	<50.0 ✓	<0.010	<0.200	6.17 ✓	<1.00
VE-3	99.22	04/08/04 p	7.41	91.81	5.9	<0.500 ✓	<0.500	<0.500	<1.00	<1.00	<50.0 ✓	<0.010	<0.200	3.76 ✓	<1.00
VE-4	99.51	04/08/04 p	6.67	92.84	5.4	<0.500 ✓	<0.500	<0.500	<1.00	<1.00	<50.0 ✓	<0.010	<0.200	9.84 ✓	<1.00
VE-5	99.88	04/08/04 p	8.38	91.50	1.0	<0.500 ✓	<0.500	<0.500	<1.00	<1.00	<50.0 ✓	<0.010	<0.200	4.22 ✓	<1.00
Laboratory Methods						8021B	8021B	8021B	8021B	8021B/8260B	NWTPH-Gx	8011	8260B	6020	6020

8021B = EPA method for volatile aromatic hydrocarbons.

8260B = EPA method for volatile organic compounds.

8011 = EPA method for 1,2-Dibromoethane

6020 = EPA method for lead.

NWTPH-Gx = Northwest method for gasoline-range hydrocarbons.

MTBE = Methyl Tert-Butyl Ether.

EDC = 1,2-Dichloroethane.

HDB = 1,2-Dibromoethane.

<1.00 = Concentrations were not detected above the stated reporting limit.

*TOC = Top of casing elevations and ground water elevations referenced to a site specific benchmark, assigned an elevation of 100.00 feet.

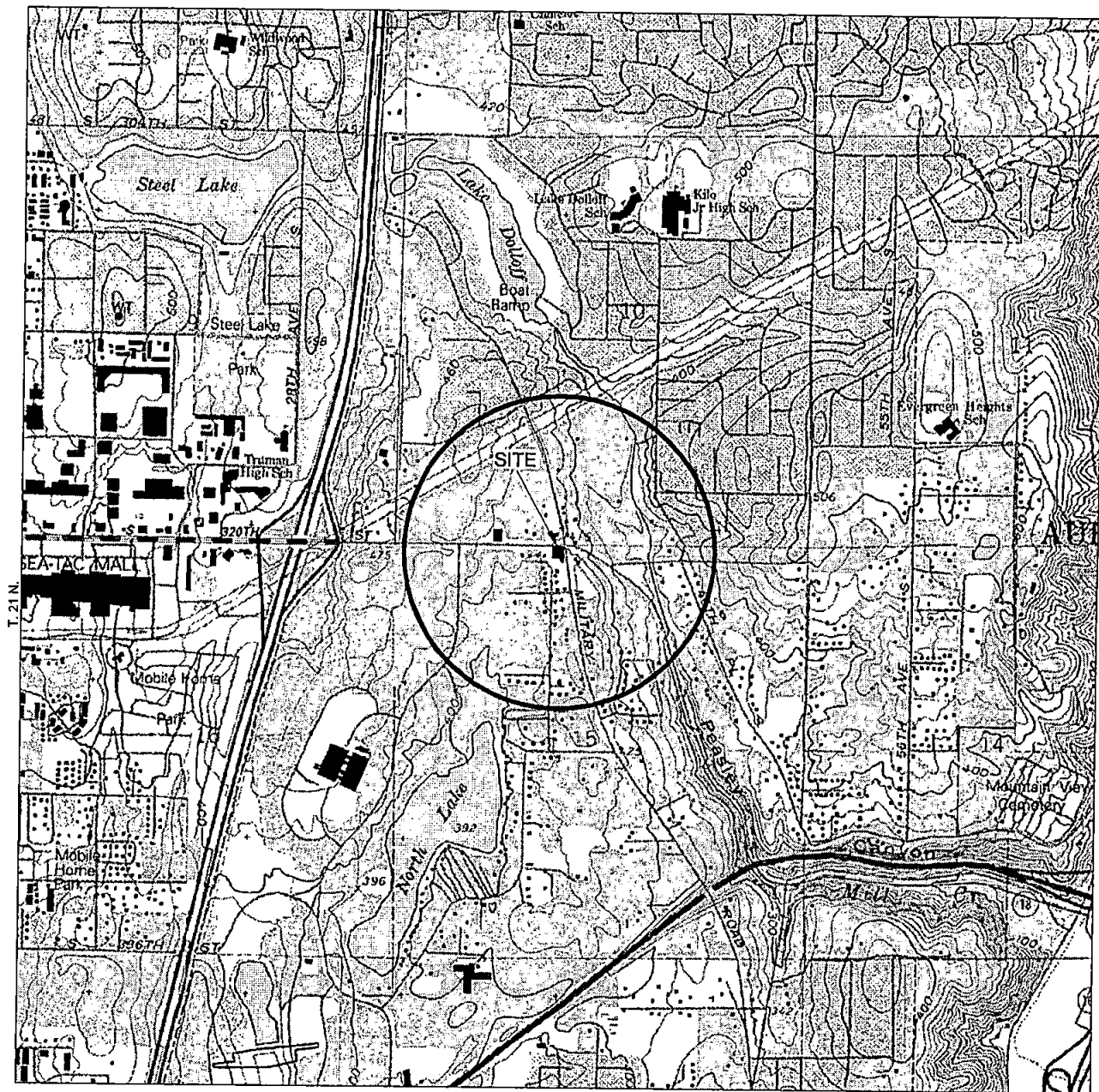
ug/L = Micrograms per liter.

mg/L = Milligrams per liter.

p = purge sampling methods were utilized.

REV.7/2/04.BAB

C:\Brett\ARCO\6175\2004_6175gw.xls



R.4 E.

GENERAL NOTES:
 BASE MAP FROM U.S.G.S.
 POVERTY BAY, WA.
 7.5 MINUTE TOPOGRAPHIC
 REVISED 1994



QUADRANGLE LOCATION



SCALE 1:24,000

FIGURE 1
 SITE LOCATION MAP

ARCO FACILITY 6175
 3910 S 320th STREET
 AUBURN, WASHINGTON

PROJECT NO. AM04-313	DRAWN BY M.L. 6/28/04
FILE NO. AM04313A	PREPARED BY BAB
REVISION NO. 1	REVIEWED BY



Delta
 Environmental
 Consultants, Inc.

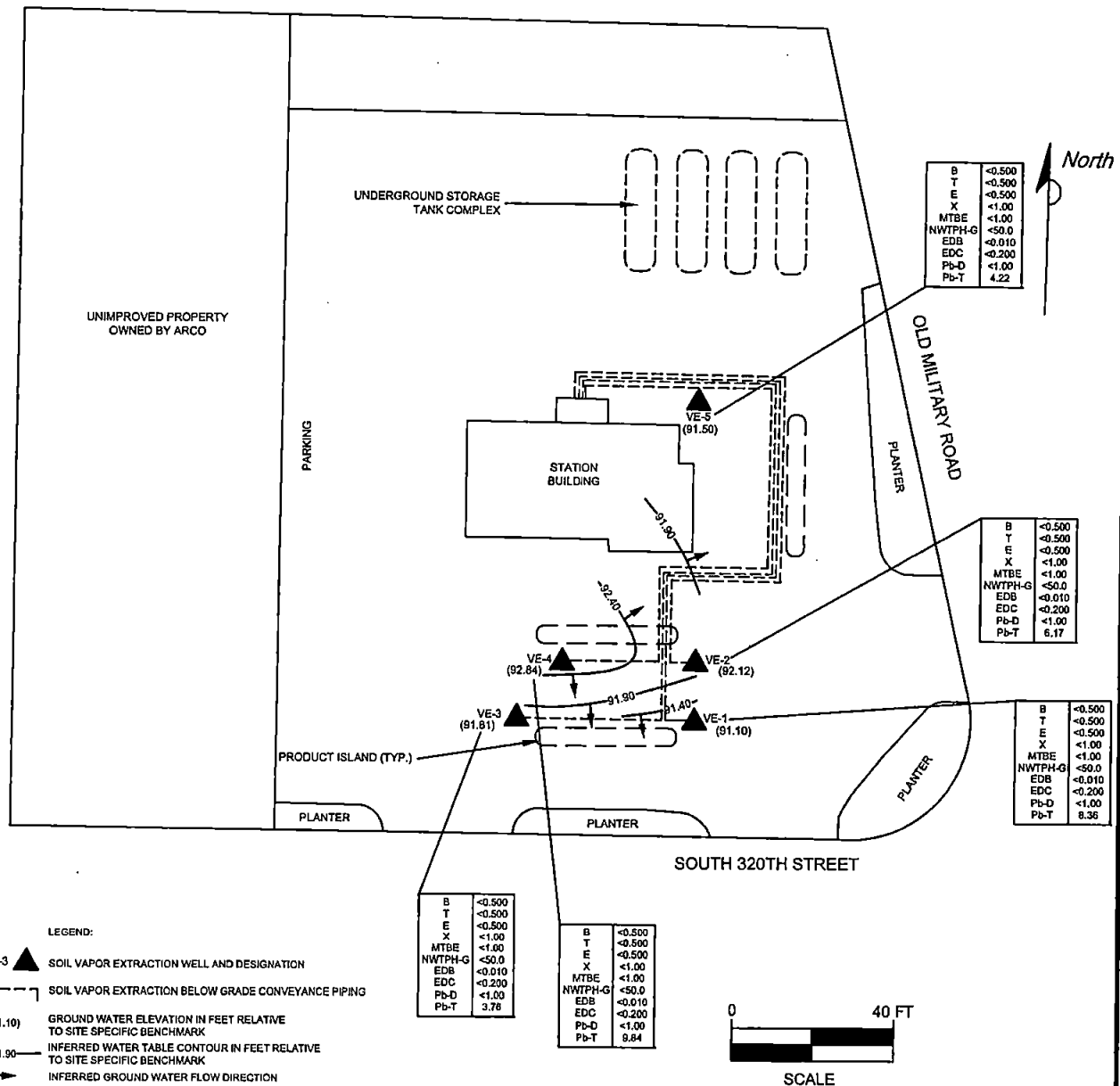


FIGURE 2
INFERRED WATER TABLE CONTOUR MAP
 4/8/04
 ARCO FACILITY NO. 6175
 3910 SOUTH 320TH STREET
 AUBURN, WA.

PROJECT NO. AM04-313	DRAWN BY MOC 7/8/04
FILE NO. AR-6175-2Q04	PREPARED BY BAB
REVISION NO. 1	REVIEWED BY





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RECEIVED APR 30 2004

22 April 2004

Derek Tornow
Delta Environmental
1200 112th Ave NE, Suite C-210
Bellevue, WA/USA 98004
RE: BP/GEM Facility No: 6175

Enclosed are the results of analyses for samples received by the laboratory on 04/09/04 13:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanne Garthwaite
Project Manager



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CASE NARRATIVE for B4D0244

Client: Delta Environmental Consultants, Inc.
Project Manager: Derek Tornow
Project Name: BP/GEM #6175

1.0 DESCRIPTION OF CASE

Five water samples were received in a single shipment as documented on the associated chain-of-custody. The scheduled analyses for these samples included: Gasoline Hydrocarbons by NWTPH-Gx, BTEX/MTBE by EPA 8021B, Total Lead by EPA 6020, Dissolved Lead by EPA 6020, EDB by EPA 8011, and EDC with MTBE confirmation by EPA 8260B.

2.0 COMMENTS ON SAMPLE RECEIPT

The samples were received in the Bothell laboratory on April 9, 2004. The cooler temperature was documented at 1.2 ° Celsius upon receipt in the laboratory. All sample containers were received in good condition.

3.0 COMMENTS ON PREPARATION AND ANALYSIS

Gasoline Hydrocarbons by NWTPH-Gx

No anomalies were associated with sample preparation and analysis. All quality control measures were within acceptable ranges.

BTEX/MTBE by EPA 8021B

No anomalies were associated with sample preparation and analysis. All quality control measures were within acceptable ranges.

Total Lead by EPA 6020

No anomalies were associated with sample preparation and analysis. All quality control measures were within acceptable ranges.

Dissolved Lead by EPA 6020

No anomalies or discrepancies were associated with this analysis other than those already qualified in the data. All quality control measures were within acceptable ranges.

EDB by EPA 8011

No anomalies were associated with sample preparation and analysis. All quality control measures were within acceptable ranges.

EDC with MTBE confirmation by EPA 8260B

The samples were analyzed in batch 4D12055. The batch Quality Control samples, LCS and LCS Dup, were out of control limits for percent recovery for several compounds. The recoveries for those compounds were higher than the allowed amount. The samples were analyzed for EDC and MTBE, which were not compounds that were out of range for percent recovery. All samples had results that were not detected.


Jeanne Garthwaite, Project Manager
North Creek Analytical



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Delta Environmental
1200 112th Ave NE, Suite C-210
Bellevue, WA/USA 98004

Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
VE-1-7.51	B4D0244-01	Water	04/08/04 11:55	04/09/04 13:20
VE-2-6.85	B4D0244-02	Water	04/08/04 12:40	04/09/04 13:20
VE-3-7.41	B4D0244-03	Water	04/08/04 14:05	04/09/04 13:20
VE-4-6.67	B4D0244-04	Water	04/08/04 13:15	04/09/04 13:20
VE-5-8.38	B4D0244-05	Water	04/08/04 08:40	04/09/04 13:20

North Creek Analytical - Bothell

Jeanne Garthwaite, Project Manager

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

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Environmental Laboratory Network

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Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tomow

Reported:
04/22/04 15:57

Volatile Petroleum Products by NWTPH-Gx
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
VE-1-7.51 (B4D0244-01) Water Sampled: 04/08/04 11:55 Received: 04/09/04 13:20									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	4D13004	04/15/04	04/15/04	NWTPH-Gx	
Surrogate: 4-BFB (FID)	98.5 %	62-127			"	"	"	"	
VE-2-6.85 (B4D0244-02) Water Sampled: 04/08/04 12:40 Received: 04/09/04 13:20									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	4D13004	04/15/04	04/15/04	NWTPH-Gx	
Surrogate: 4-BFB (FID)	98.1 %	62-127			"	"	"	"	
VE-3-7.41 (B4D0244-03) Water Sampled: 04/08/04 14:05 Received: 04/09/04 13:20									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	4D13004	04/15/04	04/15/04	NWTPH-Gx	
Surrogate: 4-BFB (FID)	97.7 %	62-127			"	"	"	"	
VE-4-6.67 (B4D0244-04) Water Sampled: 04/08/04 13:15 Received: 04/09/04 13:20									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	4D13004	04/15/04	04/15/04	NWTPH-Gx	
Surrogate: 4-BFB (FID)	97.5 %	62-127			"	"	"	"	
VE-5-8.38 (B4D0244-05) Water Sampled: 04/08/04 08:40 Received: 04/09/04 13:20									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	4D13004	04/15/04	04/15/04	NWTPH-Gx	
Surrogate: 4-BFB (FID)	97.5 %	62-127			"	"	"	"	

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Jeanne Garthwaite, Project Manager

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Bellevue, WA/USA 98004

Project: BP/GEM Facility No: 6175

Project Number: BP/GEM Work Release No: WR 73151

Project Manager: Derek Tornow

Reported:

04/22/04 15:57

Total Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
VE-1-7.51 (B4D0244-01) Water Sampled: 04/08/04 11:55 Received: 04/09/04 13:20									
Lead	0.00836	0.00100	mg/l	1	4D14028	04/14/04	04/15/04	EPA 6020	
VE-2-6.85 (B4D0244-02) Water Sampled: 04/08/04 12:40 Received: 04/09/04 13:20									
Lead	0.00617	0.00100	mg/l	1	4D14028	04/14/04	04/15/04	EPA 6020	
VE-3-7.41 (B4D0244-03) Water Sampled: 04/08/04 14:05 Received: 04/09/04 13:20									
Lead	0.00376	0.00100	mg/l	1	4D14028	04/14/04	04/15/04	EPA 6020	
VE-4-6.67 (B4D0244-04) Water Sampled: 04/08/04 13:15 Received: 04/09/04 13:20									
Lead	0.00984	0.00100	mg/l	1	4D14028	04/14/04	04/15/04	EPA 6020	
VE-5-8.38 (B4D0244-05) Water Sampled: 04/08/04 08:40 Received: 04/09/04 13:20									
Lead	0.00422	0.00100	mg/l	1	4D14028	04/14/04	04/15/04	EPA 6020	

North Creek Analytical - Bothell

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Jeanne Garthwaite, Project Manager

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Bellevue, WA/USA 98004

Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

Dissolved Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
VE-1-7.51 (B4D0244-01) Water Sampled: 04/08/04 11:55 Received: 04/09/04 13:20									
Lead	ND	0.00100	mg/l	1	4D12026	04/12/04	04/13/04	EPA 6020	Q-30
VE-2-6.85 (B4D0244-02) Water Sampled: 04/08/04 12:40 Received: 04/09/04 13:20									
Lead	ND	0.00100	mg/l	1	4D12026	04/12/04	04/13/04	EPA 6020	Q-30
VE-3-7.41 (B4D0244-03) Water Sampled: 04/08/04 14:05 Received: 04/09/04 13:20									
Lead	ND	0.00100	mg/l	1	4D12026	04/12/04	04/13/04	EPA 6020	Q-30
VE-4-6.67 (B4D0244-04) Water Sampled: 04/08/04 13:15 Received: 04/09/04 13:20									
Lead	ND	0.00100	mg/l	1	4D12026	04/12/04	04/13/04	EPA 6020	Q-30
VE-5-8.38 (B4D0244-05) Water Sampled: 04/08/04 08:40 Received: 04/09/04 13:20									
Lead	ND	0.00100	mg/l	1	4D12026	04/12/04	04/13/04	EPA 6020	Q-30

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Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

EDB and DBCP by EPA Method 8011
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
VE-1-7.51 (B4D0244-01) Water Sampled: 04/08/04 11:55 Received: 04/09/04 13:20									
1,2-Dibromoethane (EDB)	ND	0.010	ug/l	1	4D14051	04/14/04	04/20/04	EPA 8011	
VE-2-6.85 (B4D0244-02) Water Sampled: 04/08/04 12:40 Received: 04/09/04 13:20									
1,2-Dibromoethane (EDB)	ND	0.010	ug/l	1	4D14051	04/14/04	04/20/04	EPA 8011	
VE-3-7.41 (B4D0244-03) Water Sampled: 04/08/04 14:05 Received: 04/09/04 13:20									
1,2-Dibromoethane (EDB)	ND	0.010	ug/l	1	4D14051	04/14/04	04/20/04	EPA 8011	
VE-4-6.67 (B4D0244-04) Water Sampled: 04/08/04 13:15 Received: 04/09/04 13:20									
1,2-Dibromoethane (EDB)	ND	0.010	ug/l	1	4D14051	04/14/04	04/20/04	EPA 8011	
VE-5-8.38 (B4D0244-05) Water Sampled: 04/08/04 08:40 Received: 04/09/04 13:20									
1,2-Dibromoethane (EDB)	ND	0.010	ug/l	1	4D14051	04/14/04	04/20/04	EPA 8011	

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Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

Volatile Organic Compounds by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
VE-1-7.51 (B4D0244-01) Water Sampled: 04/08/04 11:55 Received: 04/09/04 13:20									
1,2-Dichloroethane	ND	0.200	ug/l	1	4D12055	04/10/04	04/11/04	EPA 8260B	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	83.8 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.0 %	70-130			"	"	"	"	
Surrogate: 4-BFB	99.8 %	70-130			"	"	"	"	
VE-2-6.85 (B4D0244-02) Water Sampled: 04/08/04 12:40 Received: 04/09/04 13:20									
1,2-Dichloroethane	ND	0.200	ug/l	1	4D12055	04/10/04	04/11/04	EPA 8260B	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	83.0 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.2 %	70-130			"	"	"	"	
Surrogate: 4-BFB	98.2 %	70-130			"	"	"	"	
VE-3-7.41 (B4D0244-03) Water Sampled: 04/08/04 14:05 Received: 04/09/04 13:20									
1,2-Dichloroethane	ND	0.200	ug/l	1	4D12055	04/10/04	04/11/04	EPA 8260B	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	80.0 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.8 %	70-130			"	"	"	"	
Surrogate: 4-BFB	102 %	70-130			"	"	"	"	
VE-4-6.67 (B4D0244-04) Water Sampled: 04/08/04 13:15 Received: 04/09/04 13:20									
1,2-Dichloroethane	ND	0.200	ug/l	1	4D12055	04/10/04	04/11/04	EPA 8260B	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	86.0 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.8 %	70-130			"	"	"	"	
Surrogate: 4-BFB	101 %	70-130			"	"	"	"	

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Delta Environmental
1200 112th Ave NE, Suite C-210
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Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

Volatile Organic Compounds by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
VE-5-8.38 (B4D0244-05) Water Sampled: 04/08/04 08:40 Received: 04/09/04 13:20									
1,2-Dichloroethane	ND	0.200	ug/l	1	4D12055	04/10/04	04/11/04	EPA 8260B	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	85.8 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	"	
Surrogate: 4-BFB	99.8 %	70-130			"	"	"	"	

North Creek Analytical - Bothell

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Delta Environmental
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Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

BTEX and MTBE by EPA 8021B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
VE-1-7.51 (B4D0244-01) Water Sampled: 04/08/04 11:55 Received: 04/09/04 13:20									
Benzene	ND	0.500	ug/l	1	4D13004	04/15/04	04/15/04	EPA 8021B	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (PID)	97.3 %	72-127			"	"	"	"	
VE-2-6.85 (B4D0244-02) Water Sampled: 04/08/04 12:40 Received: 04/09/04 13:20									
Benzene	ND	0.500	ug/l	1	4D13004	04/15/04	04/15/04	EPA 8021B	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (PID)	98.1 %	72-127			"	"	"	"	
VE-3-7.41 (B4D0244-03) Water Sampled: 04/08/04 14:05 Received: 04/09/04 13:20									
Benzene	ND	0.500	ug/l	1	4D13004	04/15/04	04/15/04	EPA 8021B	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (PID)	97.3 %	72-127			"	"	"	"	
VE-4-6.67 (B4D0244-04) Water Sampled: 04/08/04 13:15 Received: 04/09/04 13:20									
Benzene	ND	0.500	ug/l	1	4D13004	04/15/04	04/15/04	EPA 8021B	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (PID)	97.7 %	72-127			"	"	"	"	

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Bellevue, WA/USA 98004

Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

BTEX and MTBE by EPA 8021B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
VE-5-8.38 (B4D0244-05) Water Sampled: 04/08/04 08:40 Received: 04/09/04 13:20									
Benzene	ND	0.500	ug/l	1	4D13004	04/15/04	04/15/04	EPA 8021B	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (PID)	96.0 %	72-127			"	"	"	"	

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Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

Volatile Petroleum Products by NWTPH-Gx - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 4D13004: Prepared 04/15/04 Using EPA 5030B (P/T)									
Blank (4D13004-BLK1)									
Gasoline Range Hydrocarbons	ND	50.0	ug/l						
Surrogate: 4-BFB (FID)	46.6		"	48.0		97.1	62-127		
LCS (4D13004-BS1)									
Gasoline Range Hydrocarbons	521	50.0	ug/l	502		104	80-120		
Surrogate: 4-BFB (FID)	51.6		"	48.0		108	62-127		
LCS Dup (4D13004-BSD1)									
Gasoline Range Hydrocarbons	536	50.0	ug/l	502		107	80-120	2.84	25
Surrogate: 4-BFB (FID)	51.7		"	48.0		108	62-127		
Matrix Spike (4D13004-MS1)					Source: B4D0244-01				
Gasoline Range Hydrocarbons	449	50.0	ug/l	502	29.2	83.6	72-119		
Surrogate: 4-BFB (FID)	49.5		"	48.0		103	62-127		
Matrix Spike Dup (4D13004-MSD1)					Source: B4D0244-01				
Gasoline Range Hydrocarbons	423	50.0	ug/l	502	29.2	78.4	72-119	5.96	25
Surrogate: 4-BFB (FID)	49.4		"	48.0		103	62-127		

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Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

Total Metals by EPA 6000/7000 Series Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 4D14028: Prepared 04/14/04 Using EPA 3020A									
Blank (4D14028-BLK1)									
Lead	ND	0.00100	mg/l						
LCS (4D14028-BS1)									
Lead	0.0741	0.00100	mg/l	0.0800		92.6	80-120		
LCS Dup (4D14028-BSD1)									
Lead	0.0740	0.00100	mg/l	0.0800		92.5	80-120	0.135	20
Matrix Spike (4D14028-MS1)									
Lead	0.0804	0.00100	mg/l	0.0800	0.00836	90.0	75-125		
Matrix Spike Dup (4D14028-MSD1)									
Lead	0.0838	0.00100	mg/l	0.0800	0.00836	94.3	75-125	4.14	20
Post Spike (4D14028-PS1)									
Lead	0.105		ug/ml	0.100	0.00836	96.6	75-125		

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Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 4D12026: Prepared 04/12/04 Using EPA 3005A									
Blank (4D12026-BLK1)									
Lead	ND	0.00100	mg/l						
LCS (4D12026-BS1)									
Lead	0.192	0.00100	mg/l	0.200		96.0	80-120		
LCS Dup (4D12026-BSD1)									
Lead	0.191	0.00100	mg/l	0.200		95.5	80-120	0.522	20
Matrix Spike (4D12026-MS1)									
					Source: B4D0244-01				
Lead	0.0922	0.00100	mg/l	0.100	0.000920	91.3	75-125		
Matrix Spike Dup (4D12026-MSD1)									
					Source: B4D0244-01				
Lead	0.0936	0.00100	mg/l	0.100	0.000920	92.7	75-125	1.51	20

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Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

EDB and DBCP by EPA Method 8011 - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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Batch 4D14051: Prepared 04/14/04 Using Solvent Extraction

Blank (4D14051-BLK1)

1,2-Dibromoethane (EDB)	ND	0.010	ug/l						
1,2-Dibromo-3-chloropropane	ND	0.010	"						

LCS (4D14051-BS1)

1,2-Dibromoethane (EDB)	0.057	0.010	ug/l	0.0500	114	80-120			
1,2-Dibromo-3-chloropropane	0.052	0.010	"	0.0500	104	80-120			

LCS Dup (4D14051-BSD1)

1,2-Dibromoethane (EDB)	0.055	0.010	ug/l	0.0500	110	80-120	3.57	40	
1,2-Dibromo-3-chloropropane	0.051	0.010	"	0.0500	102	80-120	1.94	40	

Matrix Spike (4D14051-MS1)

Source: B4D0244-01

1,2-Dibromoethane (EDB)	0.056	0.010	ug/l	0.0500	ND	112	60-140		
1,2-Dibromo-3-chloropropane	0.046	0.010	"	0.0500	ND	92.0	60-140		

Matrix Spike Dup (4D14051-MSD1)

Source: B4D0244-01

1,2-Dibromoethane (EDB)	0.056	0.010	ug/l	0.0500	ND	112	60-140	0.00	50
1,2-Dibromo-3-chloropropane	0.048	0.010	"	0.0500	ND	96.0	60-140	4.26	50

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Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4D12055: Prepared 04/10/04 Using EPA 5030B										
Blank (4D12055-BLK1)										
1,1,1,2-Tetrachloroethane	ND	0.200	ug/l							
1,1,1-Trichloroethane	ND	0.200	"							
1,1,2,2-Tetrachloroethane	ND	0.500	"							
1,1,2-Trichloroethane	ND	0.200	"							
1,1-Dichloroethane	ND	0.200	"							
1,1-Dichloroethene	ND	0.200	"							
1,1-Dichloropropene	ND	0.200	"							
1,2,3-Trichlorobenzene	ND	0.200	"							
1,2,3-Trichloropropane	ND	0.500	"							
1,2,4-Trichlorobenzene	ND	0.200	"							
1,2,4-Trimethylbenzene	ND	0.200	"							
1,2-Dibromo-3-chloropropane	ND	0.500	"							
1,2-Dibromoethane	ND	0.200	"							
1,2-Dichlorobenzene	ND	0.200	"							
1,2-Dichloroethane	ND	0.200	"							
1,2-Dichloropropane	ND	0.200	"							
1,3,5-Trimethylbenzene	ND	0.500	"							
1,3-Dichlorobenzene	ND	0.200	"							
1,3-Dichloropropane	ND	0.200	"							
1,4-Dichlorobenzene	ND	0.200	"							
2,2-Dichloropropane	ND	0.500	"							
2-Butanone	ND	2.00	"							
2-Chlorotoluene	ND	0.500	"							
2-Hexanone	ND	2.00	"							
4-Chlorotoluene	ND	0.500	"							
4-Methyl-2-pentanone	ND	2.00	"							
Acetone	ND	10.0	"							
Benzene	ND	0.200	"							
Bromobenzene	ND	0.500	"							
Bromochloromethane	ND	0.200	"							
Bromodichloromethane	ND	0.200	"							
Bromoform	ND	0.200	"							
Bromomethane	ND	2.00	"							
Carbon disulfide	ND	0.500	"							

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Project Manager: Derek Tornow

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04/22/04 15:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 4D12055: Prepared 04/10/04 Using EPA 5030B									
Blank (4D12055-BLK1)									
Carbon tetrachloride	ND	0.200	ug/l						
Chlorobenzene	ND	0.200	"						
Chloroethane	ND	1.00	"						
Chloroform	ND	0.200	"						
Chloromethane	ND	1.00	"						
cis-1,2-Dichloroethene	ND	0.200	"						
cis-1,3-Dichloropropene	ND	0.200	"						
Dibromochloromethane	ND	0.200	"						
Dibromomethane	ND	0.200	"						
Dichlorodifluoromethane	ND	0.500	"						
Ethylbenzene	ND	0.200	"						
Hexachlorobutadiene	ND	0.500	"						
Isopropylbenzene	ND	0.500	"						
m,p-Xylene	ND	0.500	"						
Methyl tert-butyl ether	ND	1.00	"						
Methylene chloride	ND	5.00	"						
n-Butylbenzene	ND	0.500	"						
n-Propylbenzene	ND	0.500	"						
Naphthalene	ND	0.500	"						
o-Xylene	ND	0.250	"						
p-Isopropyltoluene	ND	0.200	"						
sec-Butylbenzene	ND	0.200	"						
Styrene	ND	0.500	"						
tert-Butylbenzene	ND	0.500	"						
Tetrachloroethene	ND	0.200	"						
Toluene	ND	0.200	"						
trans-1,2-Dichloroethene	ND	0.200	"						
trans-1,3-Dichloropropene	ND	0.200	"						
Trichloroethene	ND	0.200	"						
Trichlorofluoromethane	ND	0.500	"						
Vinyl chloride	ND	0.200	"						
Surrogate: 1,2-DCA-d4	3.51		"	4.00		87.8	70-130		
Surrogate: Toluene-d8	4.01		"	4.00		100	70-130		
Surrogate: 4-BFB	4.14		"	4.00		104	70-130		

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Delta Environmental
1200 112th Ave NE, Suite C-210
Bellevue, WA/USA 98004

Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4D12055: Prepared 04/10/04 Using EPA 5030B										
LCS (4D12055-BS1)										
1,1,1,2-Tetrachloroethane	2.11	0.200	ug/l	2.00		106	80-120			
1,1,1-Trichloroethane	2.01	0.200	"	2.00		100	80-120			
1,1,2,2-Tetrachloroethane	1.98	0.500	"	2.00		99.0	80-120			
1,1,2-Trichloroethane	2.00	0.200	"	2.00		100	80-120			
1,1-Dichloroethane	2.11	0.200	"	2.00		106	80-120			
1,1-Dichloroethene	2.09	0.200	"	2.00		104	80-120			
1,1-Dichloropropene	2.24	0.200	"	2.00		112	80-120			
1,2,3-Trichlorobenzene	2.44	0.200	"	2.00		122	80-120			X
1,2,3-Trichloropropane	1.90	0.500	"	2.00		95.0	80-120			
1,2,4-Trichlorobenzene	2.47	0.200	"	2.00		124	80-120			X
1,2,4-Trimethylbenzene	2.38	0.200	"	2.00		119	80-120			
1,2-Dibromo-3-chloropropane	1.74	0.500	"	2.00		87.0	80-120			
1,2-Dibromoethane	2.05	0.200	"	2.00		102	80-120			
1,2-Dichlorobenzene	2.15	0.200	"	2.00		108	80-120			
1,2-Dichloroethane	1.91	0.200	"	2.00		95.5	80-120			
1,2-Dichloropropane	2.08	0.200	"	2.00		104	80-120			
1,3,5-Trimethylbenzene	2.30	0.500	"	2.00		115	80-120			
1,3-Dichlorobenzene	2.14	0.200	"	2.00		107	80-120			
1,3-Dichloropropane	2.07	0.200	"	2.00		104	80-120			
1,4-Dichlorobenzene	2.12	0.200	"	2.00		106	80-120			
2,2-Dichloropropane	2.40	0.500	"	2.00		120	80-120			
2-Butanone	21.6	2.00	"	20.0		108	80-120			
2-Chlorotoluene	2.19	0.500	"	2.00		110	80-120			
2-Hexanone	20.8	2.00	"	20.0		104	80-120			
4-Chlorotoluene	2.14	0.500	"	2.00		107	80-120			
4-Methyl-2-pentanone	20.7	2.00	"	20.0		104	80-120			
Acetone	18.7	10.0	"	20.0		93.5	80-120			
Benzene	2.14	0.200	"	2.00		107	80-120			
Bromobenzene	2.06	0.500	"	2.00		103	80-120			
Bromochloromethane	2.15	0.200	"	2.00		108	80-120			
Bromodichloromethane	2.02	0.200	"	2.00		101	80-120			
Bromoform	1.89	0.200	"	2.00		94.5	80-120			
Bromomethane	2.37	2.00	"	2.00		118	80-120			

North Creek Analytical - Bothell

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Jeanne Garthwaite, Project Manager

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Delta Environmental
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Bellevue, WA/USA 98004

Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD Limit	Notes
Batch 4D12055: Prepared 04/10/04 Using EPA 5030B								
LCS (4D12055-BS1)								
Carbon disulfide	2.10	0.500	ug/l	2.00		105	80-120	
Carbon tetrachloride	2.21	0.200	"	2.00		110	80-120	
Chlorobenzene	2.14	0.200	"	2.00		107	80-120	
Chloroethane	1.94	1.00	"	2.00		97.0	80-120	
Chloroform	1.99	0.200	"	2.00		99.5	80-120	
Chloromethane	1.95	1.00	"	2.00		97.5	80-120	
cis-1,2-Dichloroethene	2.20	0.200	"	2.00		110	80-120	
cis-1,3-Dichloropropene	2.17	0.200	"	2.00		108	80-120	
Dibromochloromethane	2.07	0.200	"	2.00		104	80-120	
Dibromomethane	2.03	0.200	"	2.00		102	80-120	
Dichlorodifluoromethane	1.99	0.500	"	2.00		99.5	80-120	
Ethylbenzene	2.13	0.200	"	2.00		106	80-120	
Hexachlorobutadiene	2.11	0.500	"	2.00		106	80-120	
Isopropylbenzene	2.23	0.500	"	2.00		112	80-120	
m,p-Xylene	4.29	0.500	"	4.00		107	80-120	
Methyl tert-butyl ether	2.18	1.00	"	2.00		109	80-120	
Methylene chloride	1.86	5.00	"	2.00		93.0	80-120	
n-Butylbenzene	2.53	0.500	"	2.00		126	80-120	X
n-Propylbenzene	2.21	0.500	"	2.00		110	80-120	
Naphthalene	2.37	0.500	"	2.00		118	80-120	
o-Xylene	2.14	0.250	"	2.00		107	80-120	
p-Isopropyltoluene	2.36	0.200	"	2.00		118	80-120	
sec-Butylbenzene	2.37	0.200	"	2.00		118	80-120	
Styrene	2.25	0.500	"	2.00		112	80-120	
tert-Butylbenzene	2.28	0.500	"	2.00		114	80-120	
Tetrachloroethene	2.17	0.200	"	2.00		108	80-120	
Toluene	2.11	0.200	"	2.00		106	80-120	
trans-1,2-Dichloroethene	2.12	0.200	"	2.00		106	80-120	
trans-1,3-Dichloropropene	2.12	0.200	"	2.00		106	80-120	
Trichloroethene	2.06	0.200	"	2.00		103	80-120	
Trichlorofluoromethane	2.04	0.500	"	2.00		102	80-120	
Vinyl chloride	2.00	0.200	"	2.00		100	80-120	
Surrogate: 1,2-DCA-d4	3.44		"	4.00		86.0	70-130	

North Creek Analytical - Bothell

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Jeanne Garthwaite, Project Manager

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Delta Environmental
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Bellevue, WA/USA 98004

Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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Batch 4D12055: Prepared 04/10/04 Using EPA 5030B

LCS (4D12055-BS1)

Surrogate: Toluene-d8	3.88		ug/l	4.00		97.0	70-130		
Surrogate: 4-BFB	3.88		"	4.00		97.0	70-130		

LCS Dup (4D12055-BSD1)

1,1,1,2-Tetrachloroethane	2.09	0.200	ug/l	2.00		104	80-120	0.952	30	
1,1,1-Trichloroethane	2.03	0.200	"	2.00		102	80-120	0.990	30	
1,1,2,2-Tetrachloroethane	1.95	0.500	"	2.00		97.5	80-120	1.53	30	
1,1,2-Trichloroethane	2.06	0.200	"	2.00		103	80-120	2.96	30	
1,1-Dichloroethane	2.14	0.200	"	2.00		107	80-120	1.41	30	
1,1-Dichloroethene	2.12	0.200	"	2.00		106	80-120	1.43	30	
1,1-Dichloropropene	2.28	0.200	"	2.00		114	80-120	1.77	30	
1,2,3-Trichlorobenzene	2.41	0.200	"	2.00		120	80-120	1.24	30	
1,2,3-Trichloropropane	1.82	0.500	"	2.00		91.0	80-120	4.30	30	
1,2,4-Trichlorobenzene	2.48	0.200	"	2.00		124	80-120	0.404	30	
1,2,4-Trimethylbenzene	2.38	0.200	"	2.00		119	80-120	0.00	30	X
1,2-Dibromo-3-chloropropane	1.73	0.500	"	2.00		86.5	80-120	0.576	30	
1,2-Dibromoethane	2.11	0.200	"	2.00		106	80-120	2.88	30	
1,2-Dichlorobenzene	2.14	0.200	"	2.00		107	80-120	0.466	30	
1,2-Dichloroethane	1.90	0.200	"	2.00		95.0	80-120	0.525	30	
1,2-Dichloropropane	2.19	0.200	"	2.00		110	80-120	5.15	30	
1,3,5-Trimethylbenzene	2.32	0.500	"	2.00		116	80-120	0.866	30	
1,3-Dichlorobenzene	2.18	0.200	"	2.00		109	80-120	1.85	30	
1,3-Dichloropropane	2.16	0.200	"	2.00		108	80-120	4.26	30	
1,4-Dichlorobenzene	2.17	0.200	"	2.00		108	80-120	2.33	30	
2,2-Dichloropropane	2.37	0.500	"	2.00		118	80-120	1.26	30	
2-Butanone	22.4	2.00	"	20.0		112	80-120	3.64	30	
2-Chlorotoluene	2.03	0.500	"	2.00		102	80-120	7.58	30	
2-Hexanone	21.0	2.00	"	20.0		105	80-120	0.957	30	
4-Chlorotoluene	2.32	0.500	"	2.00		116	80-120	8.07	30	
4-Methyl-2-pentanone	20.7	2.00	"	20.0		104	80-120	0.00	30	
Acetone	18.4	10.0	"	20.0		92.0	80-120	1.62	30	
Benzene	2.19	0.200	"	2.00		110	80-120	2.31	30	
Bromobenzene	2.01	0.500	"	2.00		100	80-120	2.46	30	
Bromochloromethane	2.15	0.200	"	2.00		108	80-120	0.00	30	

North Creek Analytical - Bothell

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Jeanne Garthwaite, Project Manager

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Delta Environmental
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Bellevue, WA/USA 98004

Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4D12055: Prepared 04/10/04 Using EPA 5030B

LCS Dup (4D12055-BSDI)

Bromodichloromethane	2.01	0.200	ug/l	2.00	100	80-120	0.496	30		
Bromoform	2.00	0.200	"	2.00	100	80-120	5.66	30		
Bromomethane	2.52	2.00	"	2.00	126	80-120	6.13	30		X
Carbon disulfide	2.18	0.500	"	2.00	109	80-120	3.74	30		
Carbon tetrachloride	2.16	0.200	"	2.00	108	80-120	2.29	30		
Chlorobenzene	2.14	0.200	"	2.00	107	80-120	0.00	30		
Chloroethane	2.00	1.00	"	2.00	100	80-120	3.05	30		
Chloroform	1.98	0.200	"	2.00	99.0	80-120	0.504	30		
Chloromethane	1.98	1.00	"	2.00	99.0	80-120	1.53	30		
cis-1,2-Dichloroethene	2.22	0.200	"	2.00	111	80-120	0.905	30		
cis-1,3-Dichloropropene	2.22	0.200	"	2.00	111	80-120	2.28	30		
Dibromochloromethane	2.04	0.200	"	2.00	102	80-120	1.46	30		
Dibromomethane	2.12	0.200	"	2.00	106	80-120	4.34	30		
Dichlorodifluoromethane	2.00	0.500	"	2.00	100	80-120	0.501	30		
Ethylbenzene	2.13	0.200	"	2.00	106	80-120	0.00	30		
Hexachlorobutadiene	2.06	0.500	"	2.00	103	80-120	2.40	30		
Isopropylbenzene	2.26	0.500	"	2.00	113	80-120	1.34	30		
m,p-Xylene	4.40	0.500	"	4.00	110	80-120	2.53	30		
Methyl tert-butyl ether	2.28	1.00	"	2.00	114	80-120	4.48	30		
Methylene chloride	1.89	5.00	"	2.00	94.5	80-120	1.60	30		
n-Butylbenzene	2.56	0.500	"	2.00	128	80-120	1.18	30		X
n-Propylbenzene	2.27	0.500	"	2.00	114	80-120	2.68	30		
Naphthalene	2.52	0.500	"	2.00	126	80-120	6.13	30		X
o-Xylene	2.18	0.250	"	2.00	109	80-120	1.85	30		
p-Isopropyltoluene	2.31	0.200	"	2.00	116	80-120	2.14	30		
sec-Butylbenzene	2.34	0.200	"	2.00	117	80-120	1.27	30		
Styrene	2.33	0.500	"	2.00	116	80-120	3.49	30		
tert-Butylbenzene	2.37	0.500	"	2.00	118	80-120	3.87	30		
Tetrachloroethene	2.24	0.200	"	2.00	112	80-120	3.17	30		
Toluene	2.15	0.200	"	2.00	108	80-120	1.88	30		
trans-1,2-Dichloroethene	2.15	0.200	"	2.00	108	80-120	1.41	30		
trans-1,3-Dichloropropene	2.12	0.200	"	2.00	106	80-120	0.00	30		
Trichloroethene	2.11	0.200	"	2.00	106	80-120	2.40	30		
Trichlorofluoromethane	2.05	0.500	"	2.00	102	80-120	0.489	30		

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Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 4D12055: Prepared 04/10/04 Using EPA 5030B									
LCS Dup (4D12055-BSD1)									
Vinyl chloride	2.06	0.200	ug/l	2.00		103 80-120	2.96	30	
Surrogate: 1,2-DCA-d4	3.43		"	4.00		85.8 70-130			
Surrogate: Toluene-d8	4.00		"	4.00		100 70-130			
Surrogate: 4-BFB	3.98		"	4.00		99.5 70-130			

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Delta Environmental
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Bellevue, WA/USA 98004

Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

BTEX and MTBE by EPA 8021B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4D13004: Prepared 04/15/04 Using EPA 5030B (P/T)										
Blank (4D13004-BLK1)										
Benzene	ND	0.500	ug/l							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Methyl tert-butyl ether	ND	1.00	"							
Surrogate: 4-BFB (PID)	46.8		"	48.0		97.5	72-127			
LCS (4D13004-BS2)										
Benzene	9.39	0.500	ug/l	10.0		93.9	80-120			
Toluene	9.49	0.500	"	10.0		94.9	80-120			
Ethylbenzene	9.82	0.500	"	10.0		98.2	80-120			
Xylenes (total)	29.6	1.00	"	29.8		99.3	80-120			
Methyl tert-butyl ether	11.3	1.00	"	10.0		113	74-123			
Surrogate: 4-BFB (PID)	47.0		"	48.0		97.9	72-127			
LCS Dup (4D13004-BSD2)										
Benzene	9.56	0.500	ug/l	10.0		95.6	80-120	1.79	40	
Toluene	9.62	0.500	"	10.0		96.2	80-120	1.36	40	
Ethylbenzene	9.98	0.500	"	10.0		99.8	80-120	1.62	40	
Xylenes (total)	29.8	1.00	"	29.8		100	80-120	0.673	40	
Methyl tert-butyl ether	10.5	1.00	"	10.0		105	74-123	7.34	40	
Surrogate: 4-BFB (PID)	46.3		"	48.0		96.5	72-127			
Matrix Spike (4D13004-MS2)										
Source: B4D0244-02										
Benzene	11.0	0.500	ug/l	10.0	ND	110	70-129			
Toluene	11.0	0.500	"	10.0	0.150	108	73-114			
Ethylbenzene	11.0	0.500	"	10.0	ND	110	82-120			
Xylenes (total)	32.8	1.00	"	29.8	ND	110	74-118			
Methyl tert-butyl ether	12.7	1.00	"	10.0	ND	127	75-143			
Surrogate: 4-BFB (PID)	45.8		"	48.0		95.4	72-127			

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Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

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Delta Environmental
1200 112th Ave NE, Suite C-210
Bellevue, WA/USA 98004

Project: BP/GEM Facility No: 6175
Project Number: BP/GEM Work Release No: WR 73151
Project Manager: Derek Tornow

Reported:
04/22/04 15:57

BTEX and MTBE by EPA 8021B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 4D13004: Prepared 04/15/04 Using EPA 5030B (P/T)									
Matrix Spike Dup (4D13004-MSD2)					Source: B4D0244-02				
Benzene	10.4	0.500	ug/l	10.0	ND	104	70-129	5.61	40
Toluene	10.3	0.500	"	10.0	0.150	102	73-114	6.57	40
Ethylbenzene	10.2	0.500	"	10.0	ND	102	82-120	7.55	40
Xylenes (total)	30.6	1.00	"	29.8	ND	103	74-118	6.94	40
Methyl tert-butyl ether	12.3	1.00	"	10.0	ND	123	75-143	3.20	40
Surrogate: 4-BFB (PID)	45.6		"	48.0		95.0	72-127		

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Notes and Definitions

Q-30 This sample was laboratory filtered since it was not field filtered as is required by the methodology.
X See case narrative.
DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

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Chain of Custody Record

Project Name Routine Ground Water Sampling
BP BU/GEM CO Portfolio: Atlantic Richfield Company
BP Laboratory Contract Number: 461000
Requested Due Date (mm/dd/yy) Spring 10 Day

B4D0244

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On-site Time:	800	Temp:	55
Off-site Time:	1530	Temp:	70°
Sky Conditions:	Sunny Cloudy		
Meteorological Events:			
Wind Speed:	Direction:		

Send To:				BP/GEM Facility No.: 6175				Consultant/Contractor: Delta Environmental Consultants, Inc.												
Lab Name: North Creek Analytical, Inc.				BP/GEM Facility Address: 3910 South 320 St. Auburn, WA				Address: 1200 112th Avenue Northeast, Suite C-210												
Lab Address:				Site ID No.				Bellevue, Washington 98006												
11720 North Creek Parkway N., Suite 400				Site Lat/Long:				e-mail EDD: mrmiller@deltaenv.com												
Bothell, Washington 98011-8244				California Global ID #: N/A				Consultant/Contractor Project No.: AM04-313-T												
Lab PM: Jeanne Garthwaite				BP/GEM PM Contact: Scott Hooton				Consultant/Contractor Tele/Fax: (425)450-7726/(425)450-8837												
Tele/Fax: (425) 420-9200/(425) 420-9210				Address: 295 SW 41st Street, Bldg. 13, Site N				Consultant/Contractor PM: Derek Tornow												
Report Type & QC Level:				Renton, WA 98055				Invoice to: <u>Consultant</u> or BP or Atlantic Richfield Co (Circle one)												
BP/GEM Account No.:				Tele/Fax: (425) 251-0689/(425) 251-0736				BP/GEM Work Release No: WR73151												
Lab Bottle Order No:				Matrix																
Item No.	Sample Description	Time	Date	Soil/Solid	Water/Liquid	Air	Laboratory No.	No. of containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NWTPH-Gx	BTEX(8021B)	BTEX+MTBE(8021B)*	EDC(8260B)	EDB(8011B)	total lead	discolored	Sample Point Lat/Long and Comments
1	VE-1-7.51	1155	4/18/04	X				10	1	1	1	8	X	X	X	X	X	X	X	Did not field
2	VE-2-6.85	1240	4/18/04	X				10	1	1	1	8	X	X	X	X	X	X	X	Filter
3	VE-3-7.41	1405	4/18/04	X				10	1	1	1	8	X	X	X	X	X	X	X	
4	VE-4-6.67	1315	4/18/04	X				10	1	1	1	8	X	X	X	X	X	X	X	
5	VE-5-8.38	840	4/18/04	X				10	1	1	1	8	X	X	X	X	X	X	X	
6																				
7																				
8																				
9																				
10																				
Sampler's Name: Kevin H. H.				Relinquished By / Affiliation				Date	Time	Accepted By / Affiliation				Date	Time					
Sampler's Company: Delta				Jonathon Delta				4/19/04	930	Jonathon NCA				4/19/04	1235					
Shipment Date: 4/19/04																				
Shipment Method:																				
Shipment Tracking No:																				
Special Instructions:																				
*If positive for MTBE or if MTBE is not detected above an MRL exceeding 20ug/l, then analyze by 8260B for confirmation MTBE																				
Custody Seals In Place Yes ☒ No ☐ Cooler Temperature on Receipt 1.2 °F/C Trip Blank Yes ☐ No ☐																				

Distribution: White Copy - Laboratory / Yellow Copy - BP/GEM / Pink Copy - Consultant/Contractor

BP COC Rev. 2 4/18/03