3R - 421

ANNUAL MONITORING REPORT

05/04/2009

3R 421

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BP AMERICA PRODUCTION CO.

GROUNDWATER REMEDIATION REPORT

GCU # 204E
(I) SECTION 34, T28N, R12W, NMPM
SAN JUAN COUNTY, NEW MEXICO

PREPARED FOR:
NEW MEXICO OIL CONSERVATION DIVISION
1220 ST. FRANCIS DRIVE
SANTA FE, NEW MEXICO 87504

APRIL 2009

PREPARED BY:
BLAGG ENGINEERING, INC.

Consulting Petroleum / Reclamation Services
P.O. Box 87
Bloomfield, New Mexico 87413

BP AMERICA PRODUCTION COMPANY
GCU # 204E - Blow Pit
NE/4 SE/4, Sec. 34, T28N, R12W

Monitor Well Installation Dates: 11/1/06 (MW #2), 1/18/07 (MW #1, MW #3)

Monitor Well Sampling Dates: 4/14/08, 6/26/08, 8/26/08

Site History:

A site blow pit closure was initiated in June 2003. Groundwater impacts were identified from sampling and testing of MW #2 in November 2006. After receipt of the laboratory results, NMOCD was notified with a letter dated March 2, 2007 of the groundwater impacts. Documentation of this work and subsequent groundwater monitoring data for the site have previously been submitted for New Mexico Oil Conservation Division (**NMOCD**) review. Further site delineation and limited excavation of the source area was suggested within the report. The reporting herein is for site monitoring in 2008 only.

Groundwater Monitor Well Sampling Procedures:

Monitor wells were developed by hand-bailing, using new disposable bailers after installation. Prior to sample collections, the monitor wells were purged approximately three (3) well bore volumes with new disposable bailers. The groundwater samples were collected following US EPA: SW-846 protocol, were placed into laboratory supplied containers with appropriate preservative, and stored in an ice chest for express delivery to an analytical laboratory for testing under strict chain-of-custody procedures. Analytical testing for benzene, toluene, ethylbenzene, and total xylenes (**BTEX**) by US EPA Method 8021B or 8260 was conducted.

Fluids generated during monitor well development and purging was managed by discarding into the compressor below-grade tank (BGT) located on the well pad. The BGT contents are then disposed through approved NMOCD operational procedures for removal of produced fluids.

Groundwater Quality & Flow Direction Information:

The sampling events for MW #2 showed a decrease in benzene/toluene levels and a steady state conditions for ethylbenzene/total xylenes levels compared to 2006 and 2007. MW #3 revealed a substantial increase in benzene [1,360 and 520 parts per billion (ppb)] above NMWQCC standard of ten (10) ppb or micrograms per liter (µg/L). Toluene, ethylbenzene, and total xylenes all recorded levels below NMWQCC standards. A historical summary of laboratory analytical BTEX results are included within the tables on the following page. Field data sheets, laboratory reports, and laboratory quality assurance/quality control information are also included.

Groundwater contour maps of relative water table elevations have been measured to flow in the north-northwest or north-northeast directions (Figure 2 through 4).

Summary and/or Recommendations:

The well site is located in a very remote area of San Juan County near NAPI area. The presence of BTEX well above NMWQCC standards within the source area (MW #2) and lateral gradient (MW #3) indicates possible long term monitoring if proactive remediation efforts are not undertaken. Down gradient delineation to the north of the source area is necessary with one or more groundwater monitor wells. Shallow groundwater suggests re-excavation of the source area might be the most practical solution. Alternative technologies such as air sparging may be suitable for remediation of lower dissolved concentrations of BTEX. Bi-annual sampling of MW #2 and MW #3 is currently suggested unless circumstances dictate otherwise.

BP AMERICA PROD. CO. GROUNDWATER LAB RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

GCU # 204E
UNIT I, SEC. 34, T28N, R12W

REVISED DATE: September 11, 2008

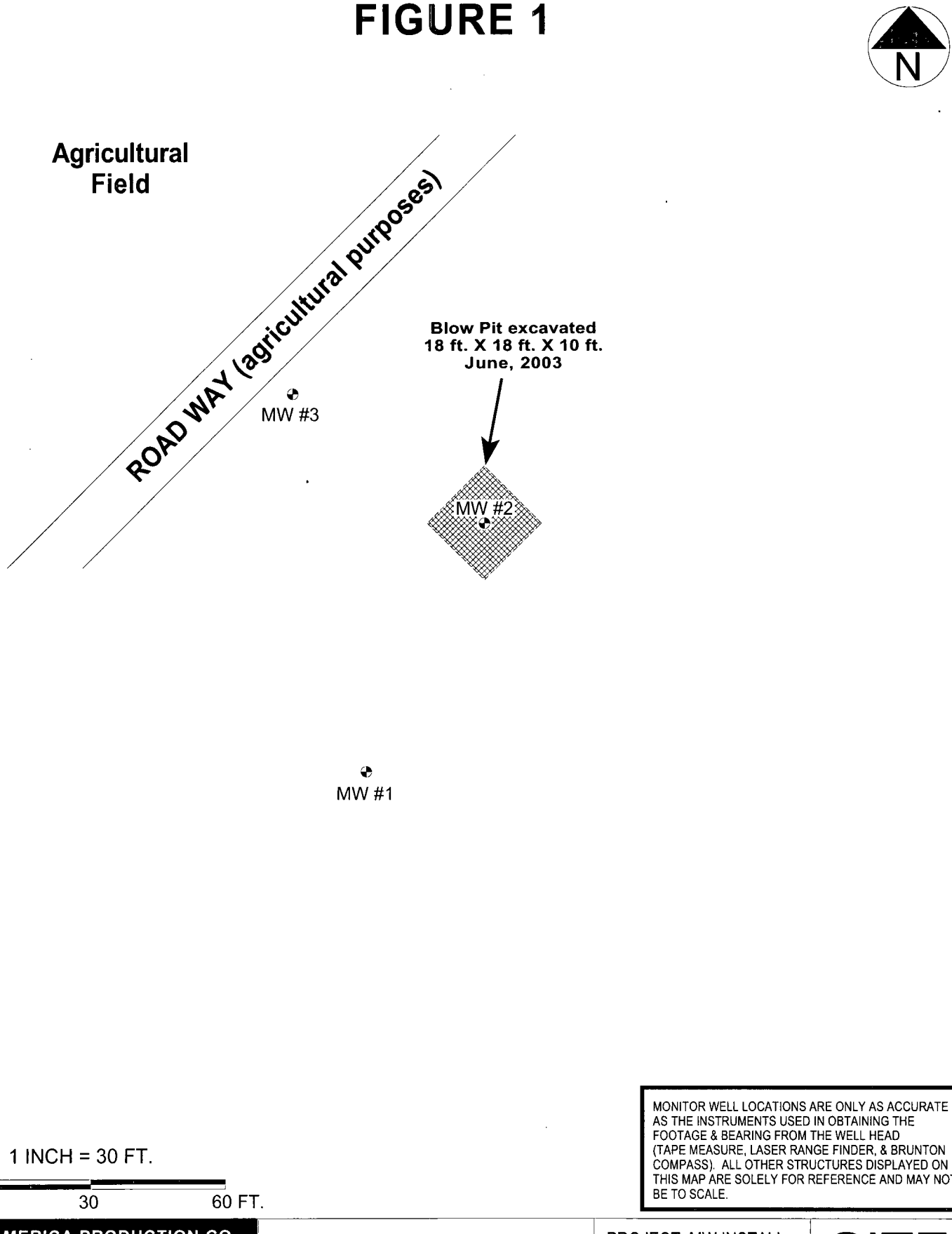
FILENAME: (204E3Q08.WK4) NJV

SAMPLE DATE	WELL NAME or No.	D.T.W. (ft)	T.D. (ft)	TDS (mg/L)	COND. umhos	pH	PRODUCT (ft)	BTEX EPA METHOD 8021B (ppb) Benzene	Toluene	Ethyl Benzene	Total Xylene
30-Jan-07	MW #1	18.57	27.00	584	1,100	7.33		ND	3.0	2.3	13
14-Nov-06	MW #2	16.69	27.50	924	1,400	6.80		**1,000**	**3,900**	**1,100**	**9,700**
30-Jan-07		16.97			1,200	6.89		**900**	**1,600**	**1,400**	**12,000**
25-Apr-07		16.37			1,000	6.78		**790**	**1,200**	**1,100**	**13,000**
23-Jul-07		15.16			1,000	6.82		**940**	**630**	**1,800**	**12,000**
26-Jun-08		14.36			700	7.34		**200**	**410**	**1,700**	**12,000**
26-Aug-08		13.36			800	7.27		**160**	**210**	**1,400**	**11,000**
30-Jan-07	MW #3	13.92	25.00	620	1,000	7.00		8.2	ND	71	120
25-Apr-07		11.81			900	6.91		8.3	ND	25	140
23-Jul-07		11.89			1,000	6.74		**26**	ND	90	270
25-Oct-07		10.37			1,100	7.00		**2.4**	ND	4.7	11
14-Apr-08		11.43			700	6.99		**1,360**	14.0	116	381
26-Aug-08		9.96			1,200	6.99		**520**	ND	64	140
					NMWQCC GROUNDWATER STANDARDS			**10**	**750**	**750**	**620**

NOTES :

1) **RESULTS IN BOLD RED TYPE INDICATE EXCEEDING NMWQCC STANDARDS .**
2) **RESULTS IN BOLD BLUE TYPE INDICATE BELOW NMWQCC STANDARDS AFTER PREVIOUS RESULTS IN BOLD RED TYPE EXCEEDED .**
3) **ND INDICATES NOT DETECTED AT THE REPORTING LIMITS (less than regulatory standards of at least a magnitude of 10) .**

FIGURE 1



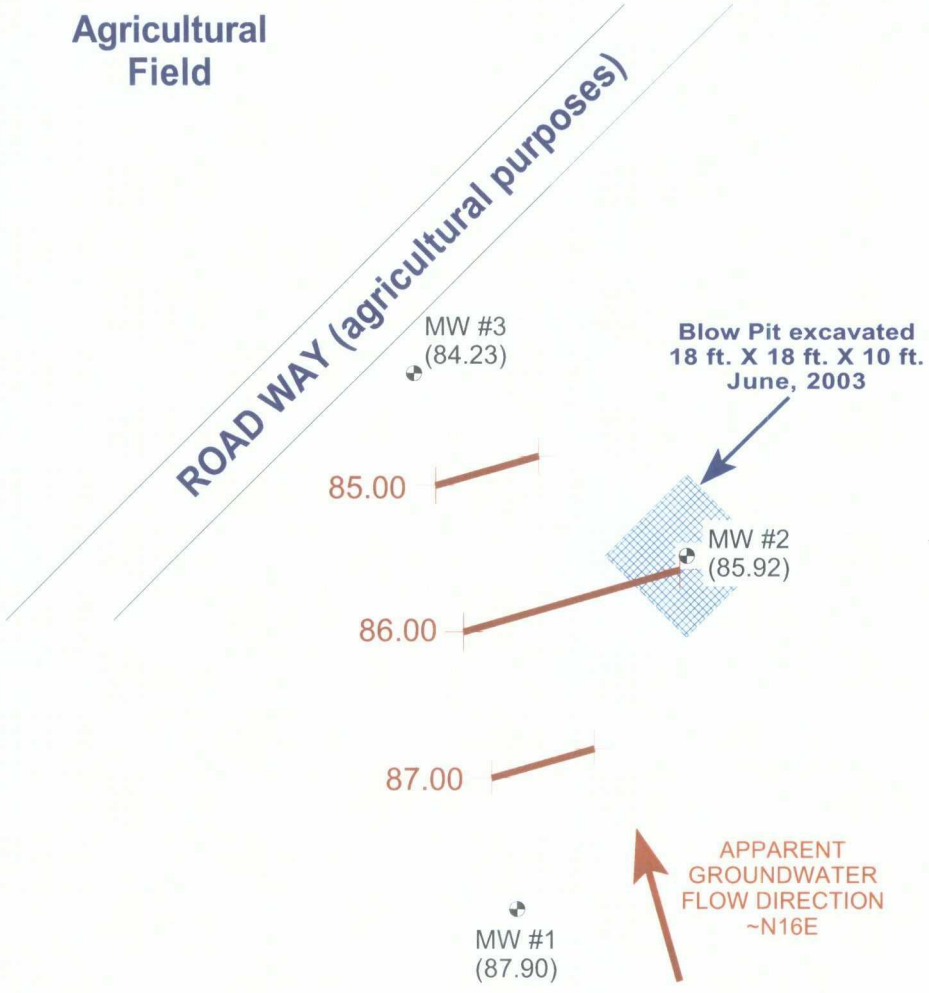
1 INCH = 30 FT.

0 30 60 FT.

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE & BEARING FROM THE WELL HEAD (TAPE MEASURE, LASER RANGE FINDER, & BRUNTON COMPASS). ALL OTHER STRUCTURES DISPLAYED ON THIS MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

BP AMERICA PRODUCTION CO. GCU #204E NE/4 SE/4 SEC. 34, T28N, R12W SAN JUAN COUNTY, NEW MEXICO	BLAGG ENGINEERING, INC. CONSULTING PETROLEUM / RECLAMATION SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE: (505) 632-1199	PROJECT: MW INSTALL. DRAWN BY: NJV FILENAME: GCU 204E-SM.SKF DRAFTED: 01-30-07 NJV	SITE MAP 01/07

FIGURE 2
(2nd 1/4, 2008)



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1 INCH = 30 FT.

0 30 60 FT.

	Top of Well Elevation
MW #1	(103.89)
MW #2	(100.00)
MW #3	(95.66)
MW #1 (87.90)	Groundwater Elevation as of 4/14/08.

BP AMERICA PRODUCTION CO.

GCU #204E

NE/4 SE/4 SEC. 34, T28N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: MW SAMPLING

DRAWN BY: NJV

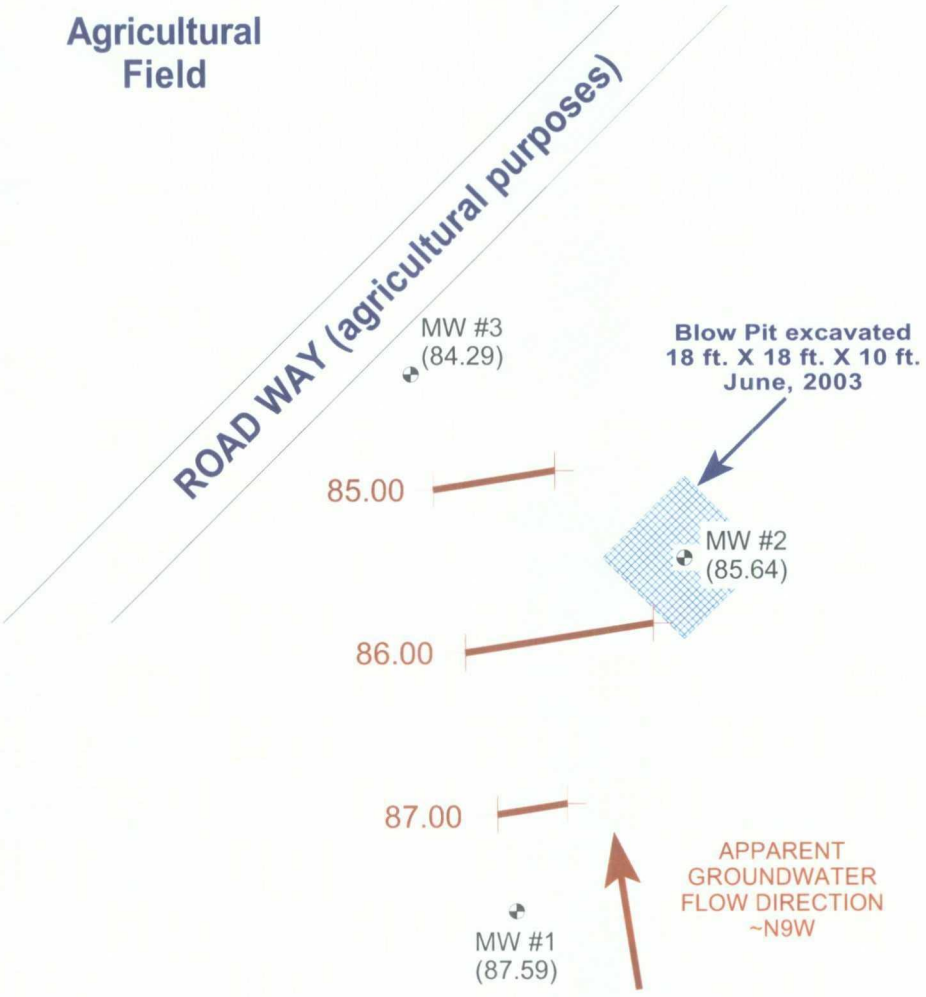
FILENAME: 04-14-08-GW.SKF

DRAFTED: 4-17-08 NJV

GROUNDWATER CONTOUR MAP

04/08

FIGURE 3
(2nd 1/4, 2008)



MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE & BEARING FROM THE WELL HEAD (TAPE MEASURE, LASER RANGE FINDER, & BRUNTON COMPASS). ALL OTHER STRUCTURES DISPLAYED ON THIS MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

1 INCH = 30 FT.

0 30 60 FT.

	Top of Well Elevation
MW #1	(103.89)
MW #2	(100.00)
MW #3	(95.66)
MW #1 (87.59)	Groundwater Elevation as of 6/26/08.

BP AMERICA PRODUCTION CO.

GCU #204E

NE/4 SE/4 SEC. 34, T28N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: MW SAMPLING

DRAWN BY: NJV

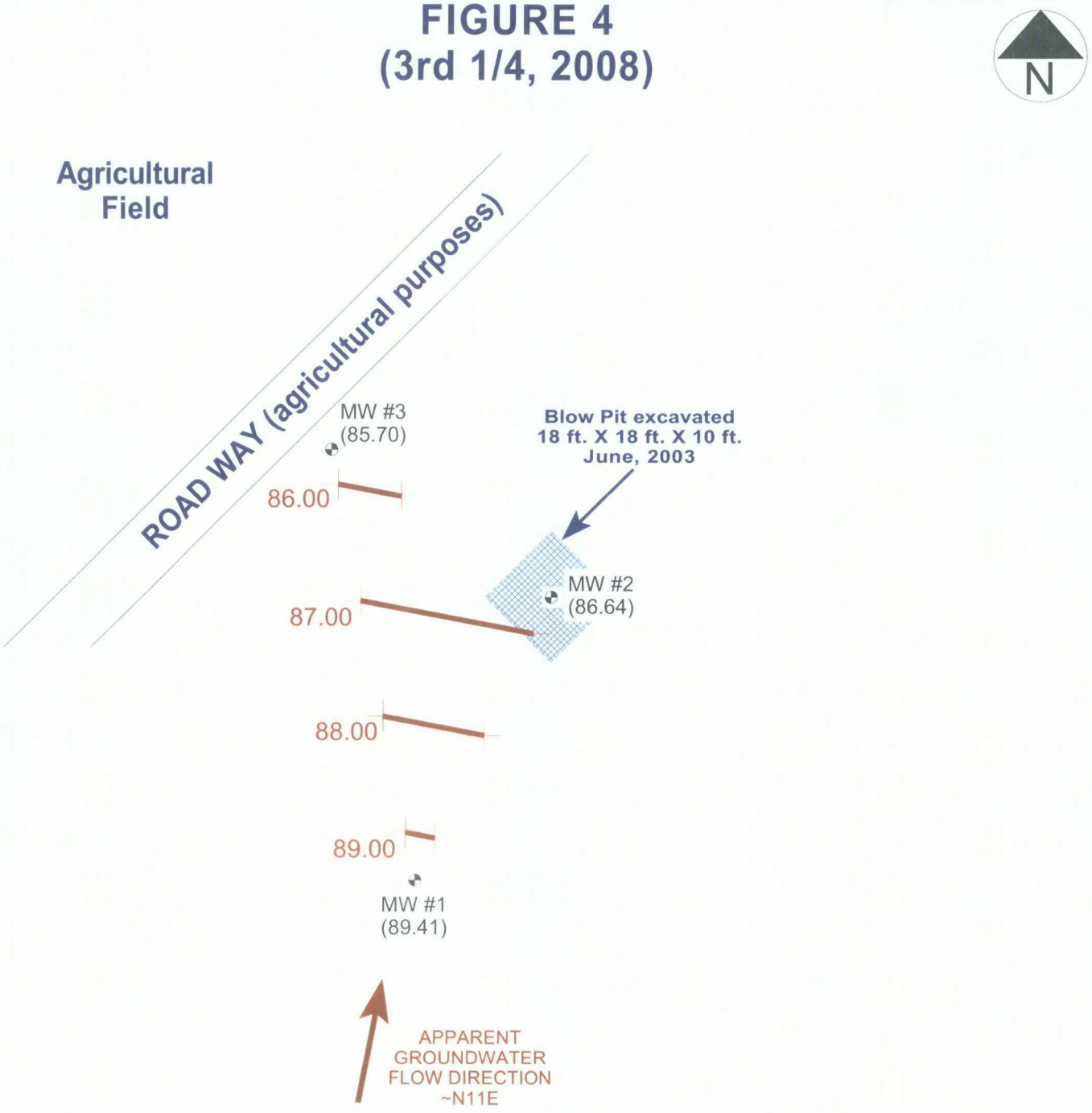
FILENAME: 06-26-08-GW.SKF

DRAFTED: 6-26-08 NJV

GROUNDWATER CONTOUR MAP

06/08

FIGURE 4
(3rd 1/4, 2008)



MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE & BEARING FROM THE WELL HEAD (TAPE MEASURE, LASER RANGE FINDER, & BRUNTON COMPASS). ALL OTHER STRUCTURES DISPLAYED ON THIS MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

1 INCH = 30 FT.

0 30 60 FT.

	Top of Well Elevation
MW #1	(103.89)
MW #2	(100.00)
MW #3	(95.66)
MW #1 (89.41)	Groundwater Elevation as of 8/26/08.

BP AMERICA PRODUCTION CO.

GCU #204E

NE/4 SE/4 SEC. 34, T28N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: MW SAMPLING

DRAWN BY: NJV

FILENAME: 08-26-08-GW.SKF

DRAFTED: 8-26-08 NJV

GROUNDWATER CONTOUR MAP

08/08

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : 156393

GCU # 204E - BLOW PIT
UNIT I, SEC. 34, T28N, R12W

LABORATORY (S) USED : PACE ANALYTICAL

Date : **April 14, 2008**

SAMPLER : N J V

Filename : **04-14-08.WK4**

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
MW - 1	103.89	87.90	15.99	27.00	-	-	-	-	-
MW - 2	100.00	85.92	14.08	27.50	-	-	-	-	-
MW - 3	95.66	84.23	11.43	25.00	1630	6.99	700	18.5	6.75

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	04/14/08	0800

NOTES : Volume of water purged from well prior to sampling; V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).
(i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)
Ideally a minimum of three (3) wellbore volumes:
2.00 " well diameter = 0.49 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Excellent recovery in MW # 3 . Olive gray appearance . Collected sample for BTEX analysis from MW # 3 only .

Top of casing MW # 1 ~ 2.40 ft. , MW # 2 ~ 2.30 ft. , MW # 3 ~ 2.30 ft. above grade .

on-site	4:06	temp	75 F
off-site	4:45	temp	76 F
sky cond.	Sunny		
wind speed	0-5	direct.	West

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9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: GCU #204E
Pace Project No.: 6038711

Sample: MW #3 **Lab ID: 6038711001** Collected: 04/14/08 16:30 Received: 04/16/08 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**1360**	ug/L	10.0	10		04/22/08 06:56	71-43-2	
Ethylbenzene	**116**	ug/L	10.0	10		04/22/08 06:56	100-41-4	
Toluene	**14.0**	ug/L	10.0	10		04/22/08 06:56	108-88-3	
Xylene (Total)	**381**	ug/L	30.0	10		04/22/08 06:56	1330-20-7	
Dibromofluoromethane (S)	101	%	85-114	10		04/22/08 06:56	1868-53-7	
Toluene-d8 (S)	104	%	82-114	10		04/22/08 06:56	2037-26-5	
4-Bromofluorobenzene (S)	98	%	85-119	10		04/22/08 06:56	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	81-118	10		04/22/08 06:56	17060-07-0	
Preservation pH	**1.0**		1.0	10		04/22/08 06:56		

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156393

Page 1 of 1

Chain of Custody Record

Project Name: GCU # 204E
BP BU/AR Region/Enfos Segment: SAN JUAN OC SOUTH
State or Lead Regulatory Agency: NMOCD / BLM / NEPA
Requested Due Date (mm/dd/yy): 4/28/08

On-site Time:	4:06	Temp:	75°F
Off-site Time:	4:45	Temp:	76°F
Sky Conditions:	SUNNY		
Meteorological Events:			
Wind Speed:	0-5	Direction:	WEST

Lab Name: PACE ANALYTICAL	BP/AR Facility No.: WR 192146	Consultant/Contractor: BLAGG / URS
Address: 9608 LOIRET BLVD. LENEXA, KS 66219	BP/AR Facility Address:	Address: 110 N. FORTH ST. BLOOMFIELD, NM 87413
Lab PM: MARY JANE WALLS	Site Lat/Long:	Consultant/Contractor Project No.: 41008752
Tele/Fax: (913) 599-5665 FAX: (913) 599-1759	California Global ID No.:	Consultant/Contractor PM: NELSON VELEZ
BP/AR PM Contact: MIKE WHELAN, PG	Enfos Project No.: 0018V	Tele/Fax: (505) 632-1199 FAX: (505) 632-3903
Address: 501 WESTLAKE PARK BLVD. Rm. 28.144B HOUSTON, TX 77079	Provision or RCOP (circle one)	Report Type & QC Level: STANDARD
Tele/Fax: (281) 366-7485 FAX: (281) 366-7094	Phase/WBS:	E-mail EDD To: blagg-njve yahoo.com
	Sub Phase/Task:	Invoice to: Consultant or BP or Atlantic Richfield Co. (circle one)
	Cost Element: 01	

Lab Bottle Order No: 15752

Item No.	Sample Description	Time	Date	Matrix: Soil/Solid	Matrix: Water/Liquid	Matrix: Air	Laboratory No.	No. of Containers	Preservative: Unpreserved	Preservative: H_2SO_4	Preservative: HNO_3	Preservative: HCl	Preservative: Methanol	Requested Analysis: BTEX 8021	Requested Analysis: BTEX/TPH	Requested Analysis: BTEX/Oxy/TPH	Requested Analysis: EPA 8260	Requested Analysis: EPA 8270	Sample Point Lat/Long and Comments
																			Lat 36.87911
1	MW #3	1630	4/14/08		✓			3				✓					✓		3(DCGH) 001
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Sampler's Name: NELSON VELEZ	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation
Sampler's Company: BLAGG ENGINEERING, INC.	Nelson Velez	4/15/08	1540		4/16	830
Shipment Date: APRIL 15, 2008						
Shipment Method: FED EX OVERNITE						
Shipment Tracking No: 499434872 6						

Special Instructions: REPORT BTEX CONSTITUENTS ONLY. SAN JUAN COUNTY, NM

Custody Seals In Place Yes X No ___ Temp Blank Yes ___ No X Cooler Temperature on Receipt 0.7 °F/C Trip Blank Yes X No ___

LABORATORY

BP COC Rev. 4, 10/1/04

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Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: GCU #204E
Pace Project No.: 6038711

Lab ID	Sample ID	Matrix	Date Collected	Date Received
6038711001	**MW #3**	Water	04/14/08 16:30	04/16/08 08:30

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SAMPLE ANALYTE COUNT

Project: GCU #204E
Pace Project No.: 6038711

Lab ID	Sample ID	Method	Analysts	Analytes Reported
6038711001	**MW #3**	EPA 8260	AJA	9

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PROJECT NARRATIVE

Project: GCU #204E
Pace Project No.: 6038711

Method: **EPA 8260**
Description: 8260 MSV UST, Water
Client: BP-Blagg Engineering
Date: April 23, 2008

General Information:
1 sample was analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/14124

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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QUALITY CONTROL DATA

Project: GCU #204E
Pace Project No.: 6038711

QC Batch: MSV/14124
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 6038711001

METHOD BLANK: 315205
Associated Lab Samples: 6038711001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Benzene	ug/L	ND	1.0	
Ethylbenzene	ug/L	ND	1.0	
Toluene	ug/L	ND	1.0	
Xylene (Total)	ug/L	ND	3.0	
1,2-Dichloroethane-d4 (S)	%	102	81-118	
4-Bromofluorobenzene (S)	%	98	85-119	
Dibromofluoromethane (S)	%	100	85-114	
Toluene-d8 (S)	%	100	82-114	

LABORATORY CONTROL SAMPLE: 315206

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	10	9.4	94	87-117	
Ethylbenzene	ug/L	10	9.5	95	84-123	
Toluene	ug/L	10	9.5	95	81-124	
Xylene (Total)	ug/L	30	29.4	98	83-125	
1,2-Dichloroethane-d4 (S)	%			101	81-118	
4-Bromofluorobenzene (S)	%			98	85-119	
Dibromofluoromethane (S)	%			100	85-114	
Toluene-d8 (S)	%			100	82-114	

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QUALIFIERS

Project: GCU #204E
Pace Project No.: 6038711

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

BATCH QUALIFIERS

Batch: MSV/14124

[1] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GCU #204E
Pace Project No.: 6038711

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
6038711001	**MW #3**	EPA 8260	MSV/14124		

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Sample Condition Upon Receipt

Pace Analytical

Client Name: BP BLAEG Project # 60387II

Optional
Proj. Due Date:
Proj. Name: 4/28/08

GCU # 2465

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____

Thermometer Used T-168 / T-169 **Type of Ice:** (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 0-7 **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C **Comments:**

Date and Initials of person examining contents: BW 4/16
S: 1511 E: 1522

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☑No ☐N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WT		
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	
exceptions: (VOA) coliform, TOC, O&G, WI-DRO (water)	☑Yes ☐No	Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☑Yes ☐No ☐N/A	16.
Trip Blank Custody Seals Present	☑Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased): 031708		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: MW 4/16/08 **Date:** _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 204E - BLOW PIT
UNIT I, SEC. 34, T28N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : **June 26, 2008**

SAMPLER : N J V

Filename : **06-26-08.WK4**

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
MW - 1	103.89	87.59	16.30	27.00	-	-	-	-	-
MW - 2	100.00	85.64	14.36	27.50	1130	7.34	700	20.8	6.50
MW - 3	95.66	84.29	11.37	25.00	-	-	-	-	-

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	06/23/08	0634

NOTES : Volume of water purged from well prior to sampling; V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).
(i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)
Ideally a minimum of three (3) wellbore volumes:
2.00 " well diameter = 0.49 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Excellent recovery in MW # 3 . Olive gray appearance . Collected sample for BTEX analysis from MW # 3 only .

Top of casing MW # 1 ~ 2.40 ft. , MW # 2 ~ 2.30 ft. , MW # 3 ~ 2.30 ft. above grade .

on-site	10:32	temp	83 F
off-site	11:53	temp	88 F
sky cond.	Partly cloudy		
wind speed	0-5	direct.	West

Hall Environmental Analysis Laboratory, Inc.

Date: *30-Jun-08*

CLIENT:	Blagg Engineering	**Client Sample ID:**	MW #2
Lab Order:	0806428	**Collection Date:**	6/26/2008 11:30:00 AM
Project:	GCU #204E	**Date Received:**	6/27/2008
Lab ID:	0806428-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	200	100		µg/L	100	6/28/2008 7:16:37 PM
Toluene	410	100		µg/L	100	6/28/2008 7:16:37 PM
Ethylbenzene	1700	100		µg/L	100	6/28/2008 7:16:37 PM
Xylenes, Total	12000	200		µg/L	100	6/28/2008 7:16:37 PM
Surr: 4-Bromofluorobenzene	92.8	68.9-122		%REC	100	6/28/2008 7:16:37 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Chain-of-Custody Record

Client: BLAGG ENGR. / BP AMERICA

Address: P.O. BOX 87
BLFD., NM 87413

Phone #: 632-1199

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: GCU #204E

Project #:

Project Manager: NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: 3°

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0806428	BTEX + MTBE + TMBs (8021B)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8260)	8310 (PNA or PAH)	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
6/26/08	1130	MW #2	2-40ml	HgCl2 Cool	1	✓											

Analysis Request

Date:	Time:	Relinquished by:	Received by:
6/26/08	1540		
Date:	Time:	Relinquished by:	Received by: 10:00 6/27/08

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: GCU #204E **Work Order:** 0806428

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles									
Sample ID: 5ML RB		*MBLK*			Batch ID:	**R29125**	Analysis Date:	6/27/2008 9:12:30 AM	
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 5ML RB-II		*MBLK*			Batch ID:	**R29125**	Analysis Date:	6/28/2008 3:10:24 PM	
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID:	**R29125**	Analysis Date:	6/28/2008 1:48:52 AM	
Benzene	19.01	µg/L	1.0	95.0	85.9	113			
Toluene	19.52	µg/L	1.0	97.6	86.4	113			
Ethylbenzene	19.57	µg/L	1.0	97.9	83.5	118			
Xylenes, Total	58.82	µg/L	2.0	98.0	83.4	122			
Sample ID: 100NG BTEX LCS-II		*LCS*			Batch ID:	**R29125**	Analysis Date:	6/28/2008 9:16:57 PM	
Benzene	19.96	µg/L	1.0	99.8	85.9	113			
Toluene	20.25	µg/L	1.0	101	86.4	113			
Ethylbenzene	20.17	µg/L	1.0	101	83.5	118			
Xylenes, Total	60.57	µg/L	2.0	101	83.4	122			

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name BLAGG | Date Received: 6/27/2008

Work Order Number 0806428 | Received by: ARS

Checklist completed by: _____ 6/27/08 | Sample ID labels checked by: _____

Signature | Date | Initials

Matrix: | Carrier name UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	3°	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

_____

_____

_____

_____

Corrective Action _____

_____

_____

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 204E - BLOW PIT
UNIT I, SEC. 34, T28N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : **August 26, 2008**

SAMPLER : N J V

Filename : **08-26-08.WK4**

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
MW - 1	103.89	89.41	14.48	27.00	-	-	-	-	-
MW - 2	100.00	86.64	13.36	27.50	1155	7.27	800	23.7	7.00
MW - 3	95.66	85.70	9.96	25.00	1105	6.99	1,200	21.7	7.50
					INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800		
					DATE & TIME =	08/25/08	0730		

NOTES : Volume of water purged from well prior to sampling; V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).
(i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)
Ideally a minimum of three (3) wellbore volumes:
2.00 " well diameter = 0.49 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Excellent recovery in MW # 2 & # 3 . Olive gray appearance . Collected samples for BTEX analysis from MW # 2 & # 3 only .

Top of casing MW # 1 ~ 2.40 ft. , MW # 2 ~ 2.30 ft. , MW # 3 ~ 2.30 ft. above grade .

on-site	10:19	temp	81 F
off-site	12:16	temp	83 F
sky cond.	Partly cloudy		
wind speed	0-5	direct.	West

Hall Environmental Analysis Laboratory, Inc.

Date: *09-Sep-08*

CLIENT: Blagg Engineering
Project: GCU #204E
Lab Order: 0808450

Lab ID: 0808450-01
Collection Date: 8/26/2008 11:55:00 AM
Client Sample ID: MW #2
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Benzene	160	10		µg/L	10	9/6/2008 12:10:20 PM
Toluene	210	10		µg/L	10	9/6/2008 12:10:20 PM
Ethylbenzene	1400	50		µg/L	50	9/8/2008 12:50:19 PM
Xylenes, Total	11000	100		µg/L	50	9/8/2008 12:50:19 PM
Surr: 4-Bromofluorobenzene	117	65.9-130		%REC	10	9/6/2008 12:10:20 PM

Lab ID: 0808450-02
Collection Date: 8/26/2008 11:05:00 AM
Client Sample ID: MW #3
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Benzene	520	10		µg/L	10	9/8/2008 1:23:19 PM
Toluene	ND	1.0		µg/L	1	9/6/2008 12:40:35 PM
Ethylbenzene	64	1.0		µg/L	1	9/6/2008 12:40:35 PM
Xylenes, Total	140	2.0		µg/L	1	9/6/2008 12:40:35 PM
Surr: 4-Bromofluorobenzene	138	65.9-130	S	%REC	1	9/6/2008 12:40:35 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Chain-of-Custody Record

Client: BLAGG ENER. / BP AMERICA

Address: P.O. BOX 87
BLFD., NM 87413

Phone #: 632-1199

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: GCU # 204E

Project #:

Project Manager: NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: /C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0808450	BTEX + MTBE + TMB's (8021B)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8260)	8310 (PNA or PAH)	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
8/26/08	1155	MW # 2	2-40ml	HCl & cool	1	✓															
8/26/08	1105	MW # 3	2-40ml	HCl & cool	2	✓															

Remarks:

Date:	Time:	Relinquished by:	Received by:	Date:	Time:
8/27/08	1530			8/28/08	1035
Date:	Time:	Relinquished by:	Received by:		

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: GCU #204E **Work Order:** 0808450

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles									
Sample ID: 5ML RB		*MBLK*			Batch ID:	**R30092**	Analysis Date:		9/5/2008 9:01:25 AM
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: B		*MBLK*			Batch ID:	**R30121**	Analysis Date:		9/8/2008 11:06:35 AM
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID:	**R30092**	Analysis Date:		9/6/2008 5:56:41 PM
Benzene	17.37	µg/L	1.0	86.9	85.9	113			
Toluene	16.25	µg/L	1.0	81.2	86.4	113			S
Ethylbenzene	17.54	µg/L	1.0	87.7	83.5	118			
Xylenes, Total	52.19	µg/L	2.0	87.0	83.4	122			
Sample ID: 100NG BTEX LCSD		*LCSD*			Batch ID:	**R30092**	Analysis Date:		9/6/2008 6:27:14 PM
Benzene	17.39	µg/L	1.0	87.0	85.9	113	0.115	27	
Toluene	16.48	µg/L	1.0	82.4	86.4	113	1.39	19	S
Ethylbenzene	17.67	µg/L	1.0	88.4	83.5	118	0.738	10	
Xylenes, Total	52.43	µg/L	2.0	87.4	83.4	122	0.455	13	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name BLAGG | Date Received: 8/28/2008

Work Order Number 0808450 | Received by: AT

Checklist completed by: _____ 8/28/08 | Sample ID labels checked by: _____

Signature | Date | Initials

Matrix: | Carrier name UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace? No VOA vials submitted ☐		Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	1°	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____