3R - 017

AGWMR

04/01/2009

3R017

BLAGG ENGINEERING, INC.
P.O. Box 87, Bloomfield, New Mexico 87413
Phone: (505)632-1199 Fax: (505)632-3903

RECEIVED
2009 MAY 4 AM 9 43

May 1, 2009

Mr. Glenn von Gonten, Senior Hydrologist
New Mexico Oil Conservation Division-NMOCD
Environmental Bureau
1220 St. Francis Drive
Santa Fe, New Mexico 87505

Re: BP America Production Company
Groundwater Monitoring Report
GCU # 153E, Unit C, Sec. 28, T29N, R12W, NMPM
San Juan County, New Mexico

NMOCD Administrative/Environmental Order #: 3RP-17-0

Dear Mr. von Gonten:

BP America Production Company (**BP**) has retained Blagg Engineering, Inc. (**BEI**) to conduct environmental monitoring of groundwater at the GCU # 153E.

The last formal correspondence to NMOCD was conducted with letter dated, April 25, 2008. Since then, BP has followed its NMOCD approved groundwater management plan and continues to monitor the site. No permanent closure is requested at this time.

If you have any questions concerning the enclosed documentation, please contact either myself or Jeffrey C. Blagg at (505) 632-1199. Thank you for your cooperation and assistance.

Respectfully submitted:
Blagg Engineering, Inc.

Nelson J. Velez
Staff Geologist

Attachment: Groundwater Report (2 copies)

cc: Mr. Brandon Powell, Environmental Specialist, NMOCD District III Office, Aztec, NM
Mr. Larry Schlotterback, Environmental Coordinator, BP, Farmington, NM

NJV/njv

GCU 153E 05-01-09 CVL.DOC

3R017

RECEIVED
2009 MAY 4 AM 9 43

BP AMERICA PRODUCTION CO.

GROUNDWATER REMEDIATION REPORT

GCU #153E
(C) SECTION 28, T29N, 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 # 153E
NE/4 NW/4, Sec. 28, T29N, R12W

Monitor Well Sampling Dates: **6/9/08, 8/27/08**

Site Historic Summary:

A site dehydrator pit closure was initiated in December 1994 by removing impacted soil via excavation. Documentation for this work and subsequent groundwater monitoring data for the site have previously been submitted for New Mexico Oil Conservation Division (**NMOCD**) review. The reporting herein is for site monitoring conducted in 2008.

Groundwater Monitor Well Sampling Procedures:

MW #3R was purged of its well bore water using a new disposable bailer, then given a sufficient amount of time to allow recovery prior to sample collections. 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 was conducted.

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

Groundwater Quality & Flow Direction Information:

Annual sampling of the groundwater monitor well MW #3R has been conducted in June & August 2008. A summary of laboratory analytical results is included within the tables on the following pages and field/laboratory reports are included.

Groundwater has consistently been measured with a gradient towards the southwest direction (Figures 2 and 3).

Summary and/or Recommendations:

Continued site monitoring per BP's NMOCD approved Ground Water Management Plan is recommended. Hydrocarbon impacts appear to be in a steady state condition with continued natural attenuation. No additional remedial actions are indicated or suggested at this time.

BP AMERICA PROD. CO. GROUNDWATER LAB RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

GCU # 153E
UNIT C, SEC. 28, T29N, R12W

REVISED DATE: September 12, 2008
FILENAME: (15-3Q-08.WK4) NJV

								BTEX EPA METHOD 8021B (ppb)			
SAMPLE DATE	MONITOR WELL No:	D.T.W. (ft)	T.D. (ft)	TDS (ft)	COND. (umhos/cm)	pH	PRODUCT (ft)	Benzene	Toluene	Ethyl Benzene	Total Xylene
08-Mar-96	MW #1A	14.95	20.00	4,460	3,200	7.2		ND	0.73	ND	ND
12-Jan-93	MW #2A	11.50	15.83	4,460	5,700	6.6		**11.5**	12.1	ND	54.0
05-May-93		10.34			3,400	6.6		**14.0**	6.9	10.9	20.1
01-Sep-93		11.54			2,800	7.1		**700**	10.4	244	82.9
01-Dec-93		11.42			4,800	7.0		**118**	1.6	76.0	44.7
08-Mar-94		11.01			4,600	7.2		**24.1**	8.5	24.5	29.3
27-Jun-94		11.14			4,000	6.9		**350**	13.2	126	ND
21-Sep-94		11.80			3,500	6.9		**328.7**	13.3	140.8	1.5
16-Dec-94		11.55			3,800	7.1		**6.7**	9.6	1.1	8.7
15-Mar-95		11.15			4,400	6.8		**1.7**	5.0	ND	3.8
16-Jun-95		10.82			4,000	6.9		**36.5**	5.4	17.6	7.2
11-Sep-95		11.39			3,100	7.2		**239**	17.0	168	35.6
08-Dec-95		11.44			3,800	6.8		**50.2**	9.99	10.3	5.84
08-Mar-96		11.08			2,700	6.7		**1.08**	ND	2.71	0.87
17-Jun-96		11.30			2,700	6.9		**230**	10.2	77.7	32.54
25-Jun-97		10.52			2,600	6.8		**522**	6.6	82.6	44.6
12-Jun-98		10.59			2,400	7.3		**125**	7.3	22.7	44.7
28-May-99		10.05			2,700	6.8		**185**	47.8	44.1	73.4
26-May-00		10.10			3,500	7.0		**220**	ND	96	15
28-Jul-01		10.87			3,700	7.26		**66**	ND	24	31
11-Mar-02		10.80			4,600	6.86		**ND**	ND	2.1	ND
21-Jun-02		11.18			4,700	7.63		**63**	ND	28	29.8
30-Jun-03		10.74			2,900	6.81		**41**	5.3	30	36
25-Jun-04		10.78			2,900	6.81		**7.6**	ND	3.5	5.5
22-Dec-04		11.03			N/A	N/A		**ND**	ND	ND	ND
29-Mar-05		9.85			3,100	6.73		**ND**	ND	ND	ND
12-Jan-93	MW #3A	11.40			6,800	7.0		**706,000**	**6,438,000**	**3,684,000**	**13,999,000**
05-May-93		10.38			4,900	7.0		**8,200**	**2,210**	**1,070**	**4,340**
01-Sep-93		11.44	16.00		5,400	7.1		**8,300**	**800**	**660**	**2,750**
01-Dec-93		11.33					**0.02**				
08-Mar-94		11.03					**0.03**				
27-Jun-94							**0.02**				
21-Sep-94							**0.01**				
16-Dec-94		11.97					**0.48**				
28-Jun-95	WP #3B	11.73	15.00		6,500	7.4		**1946.7**	**1734.5**	**434.3**	**3,150**
11-Sep-95		12.14			8,400	7.8		**752**	**102**	**427**	**1,386**
08-Dec-95		12.15			4,800	6.2		**772**	**70.1**	**208**	**2,070**
08-Mar-96		11.78			4,000	6.1		**775**	**156**	**259**	**2,480**
17-Jun-96		11.77			4,800	6.4		**764**	**196**	**184**	**1,515**
25-Jun-97		11.25			3,400	6.3		**1,940**	**167**	**143**	**727**
12-Jun-98		11.22			3,700	6.6		**276**	**68.4**	**85.3**	**457.8**
28-May-99		11.56			3,900	6.5		**178**	**98.0**	**50.5**	**250.3**
		NMWQCC GROUNDWATER STANDARDS						**10**	**750**	**750**	**620**

BP AMERICA PROD. CO. GROUNDWATER LAB RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

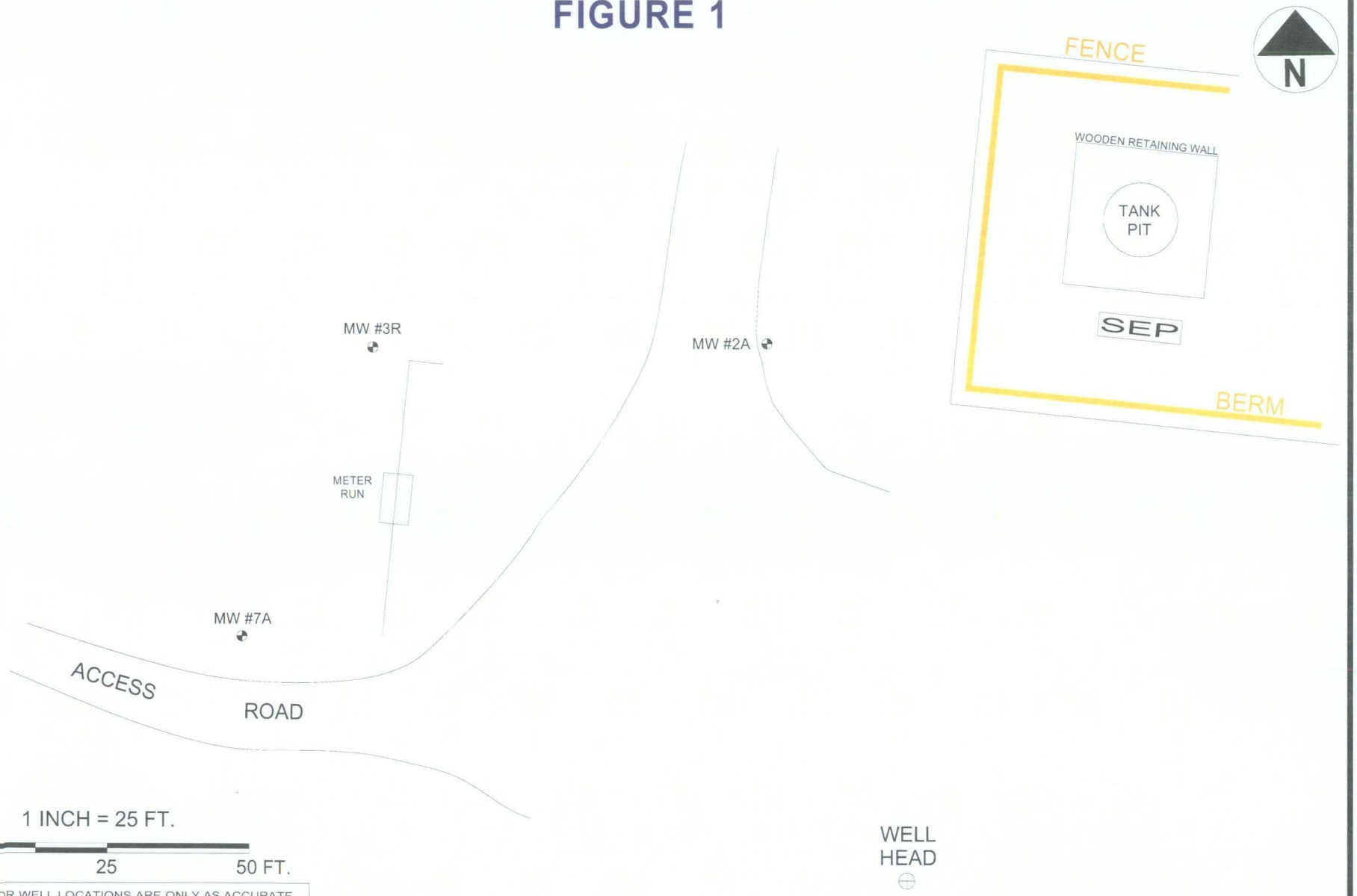
GCU # 153E
UNIT C, SEC. 28, T29N, R12W

REVISED DATE: September 12, 2008
FILENAME: (15-3Q-08.WK4) NJV

SAMPLE DATE	MONITOR WELL No:	D.T.W. (ft)	T.D. (ft)	TDS (ft)	COND. (umhos/cm)	pH	PRODUCT (ft)	BTEX EPA METHOD 8021B (ppb) Benzene	Toluene	Ethyl Benzene	Total Xylene
13-Jun-00	MW #3R	10.88			7,600	7.0		**360**	**16**	**720**	**1,234**
28-Jul-01		11.72			8,600	7.25		**520**	**35**	**350**	**757**
11-Mar-02		11.70			9,700	7.14		**120**	**6.9**	**110**	**225**
21-Jun-02		11.90			8,800	7.69		**310**	**ND**	**300**	**551**
30-Jun-03		11.39			5,200	7.11		**300**	**ND**	**76**	**170**
25-Jun-04		10.51			5,200	7.11		**120**	**ND**	**44**	**63**
27-Jun-05		10.78			6,200	7.00		**160**	**12**	**54**	**84**
29-Jun-06		11.51			7,800	6.93		**470**	**39**	**170**	**180**
25-Jun-07		10.70			6,000	6.94		**180**	**ND**	**24**	**24**
09-Jun-08		10.66			3,300	7.24		**71.6**	**5.9**	**9.1**	**13.6**
27-Aug-08		11.47			6,000	7.37		**58**	**ND**	**4.7**	**9.3**
08-Mar-96	MW #4A	10.59	13.05		3,600	7.4		ND	ND	ND	ND
08-Mar-96	MW #5A	11.75	14.04		12,300	7.8		ND	1.14	ND	ND
12-Jan-93	MW #7A	12.42			12,400	7.3		ND	0.5	ND	1.1
05-May-93		10.56			10,600	7.5		ND	ND	ND	0.5
01-Sep-93		11.90	16.60		10,700	7.5		0.2	ND	ND	0.8
08-Mar-94		11.10			16,800	7.3		ND	ND	ND	ND
27-Jun-94		11.23			13,700	7.3		ND	ND	ND	ND
21-Sep-94		12.30			13,100	7.3		0.8	1	ND	2.2
16-Dec-94		11.69			9,600	7.5		ND	ND	ND	ND
15-Mar-95		11.21			18,400	7.5		ND	ND	ND	ND
16-Jun-95		10.88			12,200	7.4		ND	ND	ND	ND
11-Sep-95		11.64			11,200	7.7		1.1	0.6	0.5	1.0
08-Dec-95		11.50			10,800	7.4		ND	ND	ND	ND
08-Mar-96		11.18			8,300	7.3		ND	ND	ND	ND
17-Jun-96		11.28			9,000	7.4		ND	ND	ND	ND
28-Jul-01		10.87			8,300	7.59		ND	ND	ND	ND
08-Mar-96	MW #11A	12.10	20.17		3,100	6.9		ND	ND	ND	ND
08-Mar-96	MW #12A	10.76	19.79		2,800	7.0		ND	ND	ND	ND
					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



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

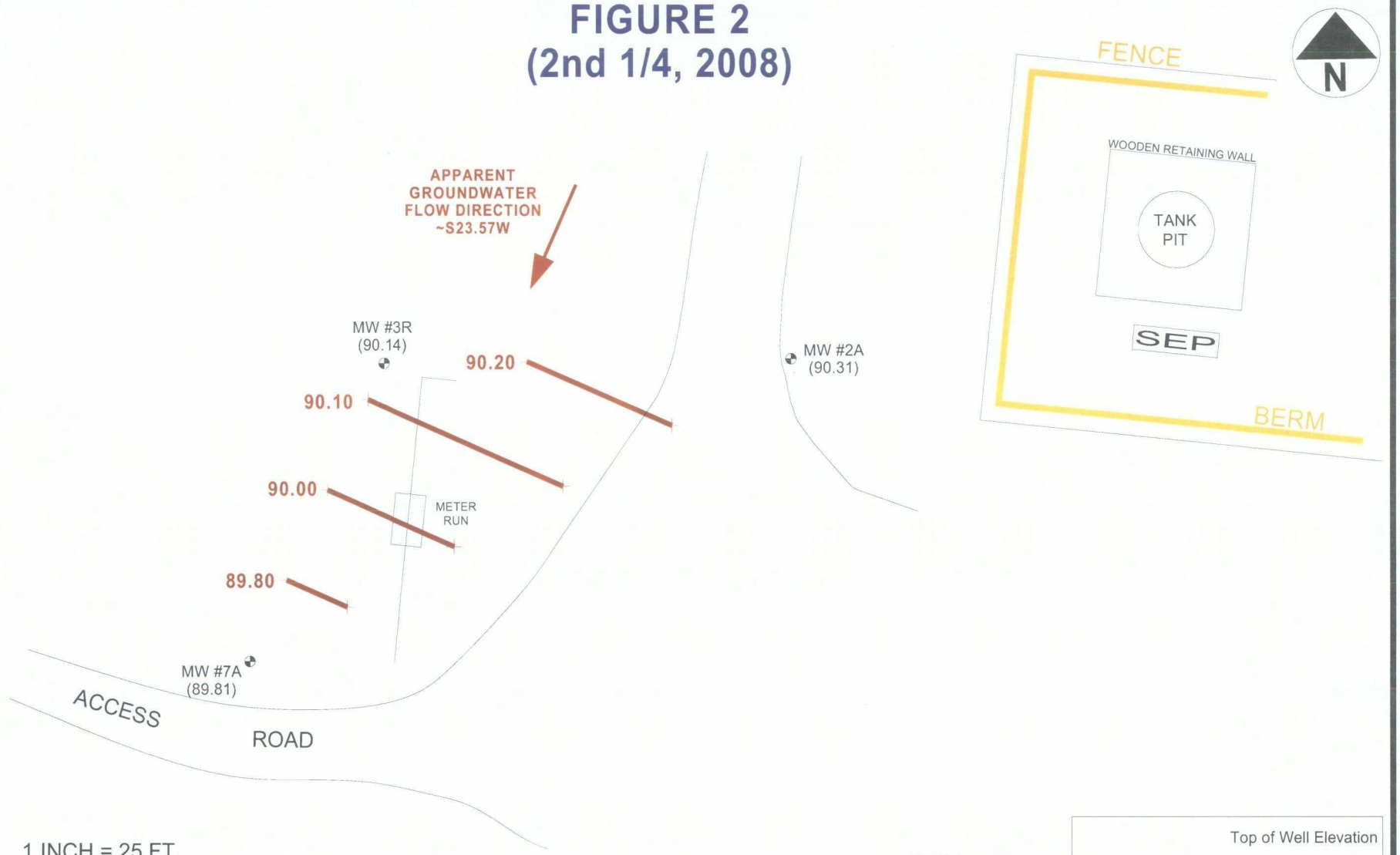
BP AMERICA PRODUCTION COMPANY
GCU #153E
NE/4 NW/4 SEC. 28, T29N, R12W
SAN JUAN COUNTY, NEW MEXICO

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: GCU153E-SM-06-06.SKF
REVISED: 6/29/06 NJV

SITE MAP
06/06

FIGURE 2
(2nd 1/4, 2008)



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

Top of Well Elevation	
MW #2A	(100.40)
MW #3R	(100.80)
MW #7A	(99.72)
MW #2A (90.31)	Groundwater elevation as of 6/9/08.

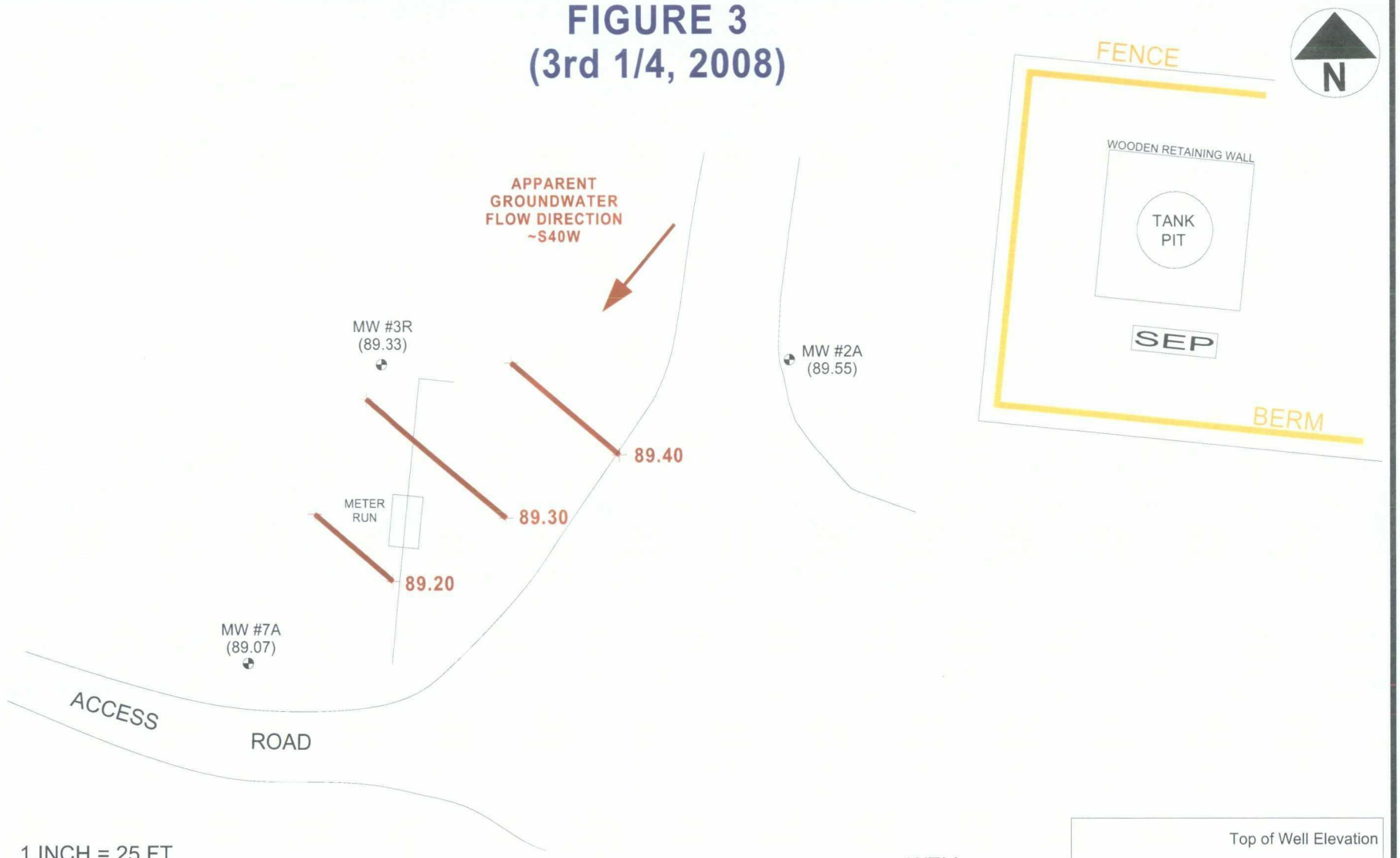
BP AMERICA PRODUCTION COMPANY
GCU #153E
NE/4 NW/4 SEC. 28, T29N, R12W
SAN JUAN COUNTY, NEW MEXICO

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: 06-09-08-GW.SKF
REVISED: 6/20/08 NJV

GROUNDWATER GRADIENT MAP 06/08

FIGURE 3
(3rd 1/4, 2008)



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

Top of Well Elevation	
MW #2A	(100.40)
MW #3R	(100.80)
MW #7A	(99.72)
MW #2A (89.55)	Groundwater elevation as of 8/27/08.

BP AMERICA PRODUCTION COMPANY
GCU #153E
NE/4 NW/4 SEC. 28, T29N, 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: 08-27-08-GW.SKF
REVISED: 8/27/08 NJV

GROUNDWATER GRADIENT MAP 08/08

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 153E
UNIT C, SEC. 28, T29N, R12W

LABORATORY (S) USED : PACE ANALYTICAL

Date : **June 9, 2008**

SAMPLER : N J V

Filename : **06-09-08.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.)
2A	100.40	90.31	10.09	15.83	-	-	-	-	-
3R	100.80	90.14	10.66	20.00	1615	7.24	3,300	20.3	1.75
7A	99.72	89.81	9.91	16.31	-	-	-	-	-

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	06/09/08	0700

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".

Poor / fair recovery in MW # 3R . Bailed MW # 3R to total depth , then allowed recovery to approx. 14.70 ft. prior to collecting sample . Collected sample from MW # 3R for BTEX analysis only .

on-site	3:47	temp	81 F
off-site	4:37	temp	81 F
sky cond.	Sunny		
wind speed	5-15	direct.	West

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Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: GCU 153E
Pace Project No.: 6041665

Sample: MW #3R **Lab ID: 6041665001** Collected: 06/09/08 16:15 Received: 06/11/08 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water	Analytical Method: EPA 8260							
Benzene	**71.6**	ug/L	1.0	1		06/14/08 03:33	71-43-2	
Ethylbenzene	**9.1**	ug/L	1.0	1		06/14/08 03:33	100-41-4	
Toluene	**5.9**	ug/L	1.0	1		06/14/08 03:33	108-88-3	
Xylene (Total)	**13.6**	ug/L	3.0	1		06/14/08 03:33	1330-20-7	
Dibromofluoromethane (S)	98	%	85-114	1		06/14/08 03:33	1868-53-7	
Toluene-d8 (S)	101	%	82-114	1		06/14/08 03:33	2037-26-5	
4-Bromofluorobenzene (S)	111	%	85-119	1		06/14/08 03:33	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	81-118	1		06/14/08 03:33	17060-07-0	
Preservation pH	**1.0**		1.0	1		06/14/08 03:33		

REPORT OF LABORATORY ANALYSIS

Atlantic Richfield Company
A BP affiliated company

Chain of Custody Record

Project Name: GCU 153E
BP BU/AR Region/Enfos Segment: SJOC SOUTH
State or Lead Regulatory Agency: NMOCD
Requested Due Date (mm/dd/yy): 6/20/08

On-site Time: 3:47		Temp: 81°F	
Off-site Time: 4:37		Temp: 81°F	
Sky Conditions: SUNNY			
Meteorological Events:			
Wind Speed: 5-15 MPH		Direction: WEST	

Lab Name: Pace Analytical Services, Inc.	BP/AR Facility No.:	Consultant/Contractor: Blagg/URS
Address: 9609 Loiret Blvd	BP/AR Facility Address:	Address: 110 N. Forth St.
Lenexa, KS 66219	Site Lat/Long:	Bloomfield, NM 87413
Lab PM: MJ Walls	California Global ID No.:	Consultant/Contractor Project No.:
Tele/Fax: 913-563-1401	Enfos Project No.: 0018M-0001	Consultant/Contractor PM: Nelson Velez
BP/AR EMB: Mike Whelan	Provision or OOC (circle one)	Tele: (505) 632-1199 Fax: (505) 632-3903
Address: 501 Westlake Park Blvd.	Phase/WBS:	Report Type & QC Level: STD
Rm28, 144B Houston, TX 77079	Sub Phase/Task:	E-Mail EDD To: blagg-njv@yahoo.com
Tele: (281) 366-7485 Fax: (281) 366-7094	Cost Element:	Invoice to: Consultant or BP or (Atlantic Richfield Co.) (circle one)

Lab Bottle Order No: 17705

Item No.	Sample Description	Time	Date	Soil/Solid	Water/Liquid	Air	Laboratory No.	No. of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	BTEX (8260)										Sample Point Lat/Long and Comments (Geo 41665)
1	MW #3R	6/9/08	1615		✓			3				✓		✓										3(OG9H) 221
2																								↓ 202
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: NELSON VELEZ	[signature]	6/10/08	1540	[signature]	6/11	910
Sampler's Company: BLAGG ENGR. INC.						
Shipment Date: JUNE 10, 2008						
Shipment Method: FED EX.						
Shipment Tracking No: 499434868Z						

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

Custody Seals In Place: (Yes) / No | Temp Blank: (Yes) / No | Cooler Temp on Receipt: 5.2 °F/(C) | Trip Blank: (Yes) / No | MS/MSD Sample Submitted: Yes / (No)

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Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: GCU 153E
Pace Project No.: 6041665

Lab ID	Sample ID	Matrix	Date Collected	Date Received
6041665001	**MW #3R**	Water	06/09/08 16:15	06/11/08 09:10

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Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: GCU 153E
Pace Project No.: 6041665

Lab ID	Sample ID	Method	Analysts	Analytes Reported
6041665001	**MW #3R**	EPA 8260	JTK	9

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(913)599-5665

PROJECT NARRATIVE

Project: GCU 153E
Pace Project No.: 6041665

Method: **EPA 8260**
Description: 8260 MSV UST, Water
Client: BP-Blagg Engineering
Date: June 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/15178

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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Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: GCU 153E
Pace Project No.: 6041665

QC Batch: MSV/15178
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 6041665001

METHOD BLANK: 340016
Associated Lab Samples: 6041665001

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)	%	98	81-118	
4-Bromofluorobenzene (S)	%	108	85-119	
Dibromofluoromethane (S)	%	94	85-114	
Toluene-d8 (S)	%	100	82-114	

LABORATORY CONTROL SAMPLE: 340017

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	10	11.3	113	87-117	
Ethylbenzene	ug/L	10	11.0	110	84-123	
Toluene	ug/L	10	10.8	108	81-124	
Xylene (Total)	ug/L	30	33.6	112	83-125	
1,2-Dichloroethane-d4 (S)	%			94	81-118	
4-Bromofluorobenzene (S)	%			105	85-119	
Dibromofluoromethane (S)	%			96	85-114	
Toluene-d8 (S)	%			100	82-114	

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QUALIFIERS

Project: GCU 153E
Pace Project No.: 6041665

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/15178

[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 153E
Pace Project No.: 6041665

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
6041665001	**MW #3R**	EPA 8260	MSV/15178		

Sample Condition Upon Receipt

PaceAnalytical

Client Name: BP BLAGE Project #: 6046665

Optional
Proj. Due Date:
Proj. Name: 6/23
6401536

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

Tracking #: 8643 6005 2346

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

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

Thermometer Used: T-169 / (T-179) Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature: 5.2 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: [initials] 6/11 S:1010 E:1015

				Comments:
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): 051208				

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

Person Contacted: ______ Date/Time: ______

Comments/ Resolution: ______

Project Manager Review: MLW 6/12/08 **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 # 153E
UNIT C, SEC. 28, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : **August 27, 2008**

SAMPLER : N J V

Filename : **08-27-08.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.)
2A	100.40	89.55	10.85	15.83	-	-	-	-	-
3R	100.80	89.33	11.47	20.00	1310	7.37	6,000	23.5	2.00
7A	99.72	89.07	10.65	16.31	-	-	-	-	-
					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 ".

Poor / fair recovery in MW # 3R . Bailed MW # 3R to total depth , then allowed recovery to approx. 15.15 ft. prior to collecting sample . Collected sample from MW # 3R for BTEX analysis only .

on-site	12:27	temp	85 F
off-site	1:30	temp	88 F
sky cond.	Mostly sunny		
wind speed	0-5	direct.	West

Hall Environmental Analysis Laboratory, Inc.

Date: *09-Sep-08*

CLIENT:	Blagg Engineering	**Client Sample ID:**	MW #3R
Lab Order:	0808453	**Collection Date:**	8/27/2008 1:10:00 PM
Project:	GCU #153E	**Date Received:**	8/28/2008
Lab ID:	0808453-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Benzene	58	1.0		µg/L	1	9/8/2008 2:59:51 PM
Toluene	ND	1.0		µg/L	1	9/8/2008 2:59:51 PM
Ethylbenzene	4.7	1.0		µg/L	1	9/8/2008 2:59:51 PM
Xylenes, Total	9.3	2.0		µg/L	1	9/8/2008 2:59:51 PM
Surr: 4-Bromofluorobenzene	115	65.9-130		%REC	1	9/8/2008 2:59:51 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 #153E

Project #: 9N

Project Manager: NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: 5°

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time (MT 8/28)	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0808453	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)
8/27/08	13:10	MW #3R	2-40ml	HCl & COOL	1	✓															

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Date:	Time:
8/27/08	1310			8/28/08	0835

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 #153E **Work Order:** 0808453

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 0808453 | 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 _____