BLAGG ENGINEERING, INC.

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

3R42

February 1, 2011

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 # 229E, Unit I, Sec. 21, T28N, R12W, NMPM San Juan County, New Mexico

NMOCD Administrative/Environmental Order #: 3RP-421-0

Dear Mr. von Gonten:

BP America Production Company (**BP**) has retained Blagg Engineering, Inc. (**BEI**) to conduct environmental monitoring of groundwater at the GCU # 229E.

The last formal correspondence to NMOCD was conducted with letter dated, May 1, 2009. 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.*

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Nelson J. Velez Staff Geologist

Attachment: Groundwater Report (2 copies)

cc: Mr. Brandon Powell, Environmental Specialist, NMOCD District III Office, Aztec, NM Mr. Jeff Peace, Environmental Advisor, BP, Farmington, NM

BP AMERICA PRODUCTION CO.

GROUNDWATER REMEDIATION REPORT

GCU # 229E (I) SECTION 21, T28N, R12W, NMPM SAN JUAN COUNTY, NEW MEXICO

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

DECEMBER 2010

PREPARED BY: BLAGG ENGINEERING, INC.

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

BP AMERICA PRODUCTION COMPANY GCU # 229E - Blow Pit NE¹/₄ SE¹/₄, Sec. 21, T28N, R12W

Monitor Well Installation Dates: 11/1/06 (MW #2), 1/18/07 (MW #1, MW #3), 8/30/07 (MW #4)

Monitor Well Sampling Dates: 5/19/09, 12/17/09, 2/26/10, 5/19/10, 7/27/10, 10/29/10

Pit Closure and Background:

The well site is located in a very remote area of San Juan County near the Navajo Agricultural Product Industry (NAPI) area. A site earthen blow pit closure was initiated in August 2002. Groundwater impacts were identified from sampling and testing of MW #2 in November 2006. After receipt of the laboratory results, the New Mexico Oil Conservation Division (NMOCD) was notified with a letter dated March 2, 2007 of the groundwater impacts and implementation of BP's NMOCD approved Groundwater Management Plan (GMP). Documentation of this work and subsequent groundwater monitoring data for the site was previously submitted to NMOCD for review. No additional remedial action until further review of future BTEX analyses was suggested within the reports. The reporting herein is for site monitoring conducted in 2009 and 2010.

Groundwater Monitor Well Sampling Procedures:

Monitor well MW #4 was developed by hand-bailing, using new disposable bailers after installation. Prior to sample collections, the monitor well was purged approximately three (3) well bore volumes with a new disposable bailer. 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 were managed by discarding into BP's GCU #316 belowgrade tank (BGT) located on the same well pad. The GCU #316 was later plugged and abandoned in February 2010. The fluids generated during the last four (4) sampling events were transferred to BP's GCU #6 well site (NW¼ SW¼, Sec. 22, T28N, R12W) and disposed within that site's BGT. The BGT contents are eventually disposed through approved NMOCD operational procedures for removal of produced fluids.

Water Quality and Gradient Information:

Bi-annual sampling of the groundwater monitor well MW #4 was conducted in 2009 and quarterly in 2010. A historical summary of laboratory analytical BTEX results are included within the table on the following page. Field data sheets, laboratory reports, and laboratory quality assurance/quality control information are also included within this report.

Groundwater contour maps (Figure 2 through Figure 7) reveal the relative elevations from the site wells have consistently shown an apparent north-northeast flow direction toward MW #4.

Summary and/or Recommendations:

Since March 2010, BTEX within MW #4 has tested at non-detectable levels or below NMWQCC standards. It is necessary to install at least one (1) groundwater monitor well down gradient of MW #4 for delineation of any residual/dissolved phase BTEX detected previously in MW #4. Sampling and testing of the furthest down gradient monitor well will adhere to BP's GMP. No additional remedial actions are indicated or proposed at this time. If warranted, alternative remedial actions will be evaluated.

BP AMERICA PROD. CO. GROUNDWATER LAB RESULTS SUBMITTED BY BLAGG ENGINEERING, INC.

GCU # 229E - BLOW PIT UNIT I, SEC. 21, T28N, R12W

REVISED DATE: November 12, 2010 FILENAME: (229E4Q10.WK4) NJV

_								BTEX	TEX EPA METHOD 8021B (p								
SAMPLE	WELL	D.T.W.	T.D.	TDS	COND.	pH .	PRODUCT	Benzene	Toluene	Ethyl	Total						
DATE	NAME or No.	(ft)	(ft)	(mg/L)	umhos		(ft)			Benzene	Xylene						
	- <u>-</u>	T	1	1		1	1				r						
30-Jan-07	MW #1	34.11	42.00	730	1,200	7.13		ND	ND	ND	ND						
14-Nov-06	MW #2	31.60	42.00	866	1,300	7.05		ND	25	110	1,800						
30-Jan-07		31.63			1,200	6.96		ND	ND	7.9	200						
25-Apr-07		31.76			[´] 1,200	6.92		ND	ND	1.0	140						
23-Jul-07		.31.78			1,200	6.87		ND	ND	4.1	130						
15-Nov-07		31.73	ļ		1,500	6.97		ND	ND	5.1	170						
30-Jan-07	MW #3	33.20	42.00	762	1,200	7.18		ND	ND	ND	ND						
25-Apr-07		33.34	,		1,200	7.07		ND	ND	ND	ND						
23-Jul-07		33.38			1,100	6.98		ND	ND	ND	ND						
15-Nov-07	· .	33.30			1,300	7.16		ND	ND	ND	ND						
17-Sep-07	MW #4	23.58	36.88		1,300	7.06		1.2	ND	13	340						
15-Nov-07		23.55			1,400	7.15		2.2	1.9	150	6,500						
14-Apr-08		23.39			1,000	7.26		13.3	8.7	1,480	10,400						
28-Aug-08		24.16			800	7.39		ND	ND	750	18,000						
19-May-09		23.25			1,200	7.22		ND	23	56	1,200						
17-Dec-09		22.97			1,200	7.45		ND	24	31	890						
03-Mar-10	-	22.77			1,100	7.43		ND 9.5		2.0	56						
19-May-10		22.65			1,300	7.70		ND	7.6	1.5	30						
27-Jul-10		22.67			1,500	7.57		ND	4.3	ND	16						
29-Oct-10		22.01			1,400	7.28		ND	ND	ND	20						
		NMW	QCC GF	ARDS	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).
- 4) NMWQCC INDICATES NEW MEXICO WATER QUALITY CONTROL COMMISSION.















BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT: BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 229E - BLOW PIT UNIT I, SEC. 21, T28N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : <u>May 19, 2009</u> Filename : 05-19-09.WK4 SAMPLER : N J V

PROJECT MANAGER :

NJV

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	OTAL SAMPLING DEPTH TIME (ft)		CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
MW - 1	100.00	66.06	33.94	42.00	-	-	-	-	-
MW - 2	96.43	64.96	31.47	42.00	-	-	-	-	-
MW - 3	97.86	64.83	33.03	42.00	-	-	-	-	-
MW - 4	86.73	63.48	23.25	36.88	1125	7.22	1,200	21.9	6.75
			INSTRUM	ENT CALIB	RATIONS =	4.01/7.00/10.00	2,800		
				DAT		05/16/09	0810	-	

NOTES: Volume of water purged from well prior to sampling; $V = pi X r_2 X h X 7.48 gal./ft3) X 3$ (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 #4. MW #4 physically displayed murky brown appearance with hydrocarbon odor. Collected sample for BTEX per US EPA Method 8021B from MW #4 only.

Top of casing MW #1 ~ 2.40 ft., MW #2 ~ 2.60 ft., MW #3 ~ 2.50 ft., MW #4 ~ 2.25 ft. above grade.

on-site	10:38	temp	82 F
off-site	11:35	temp	86 F
sky cond.	Partly	cloudy	
wind speed	0 - 10	direct.	S

Date: 02-Jun-09

10

10

5/30/2009 1:31:09 PM

5/30/2009 1:31:09 PM

CLIENT:	Blagg Engineering	Sample ID:	D: MW #4						
Lab Order:	0905359			Colle	ction Date:	5/19/2009 1	1:25:00 AM		
Project:	GCU #229E (#316)	·		Date	e Received:	5/20/2009			
Lab ID:	0905359-0 1			:	Matrix:	AQUEOUS	5		
Analyses		Result	PQL	Qual U	nits	DF	Date Analyzed		
EPA METHOD	8021B: VOLATILES						Analyst: DAM		
Benzene		ND	10	μ	g/L	10	5/30/2009 1:31:09 PM		
Toluene		23	10	μ	g/L.	10	5/30/2009 1:31:09 PM		
Ethylbenzene		56	10	μ	g/L	. 10	5/30/2009 1:31:09 PM		

20

65.9-130

µg/L

%REC

1200

[;]97.9

Qualifiers:

Xylenes, Total

Surr: 4-Bromofluorobenzene

Value exceeds Maximum Contaminant Level
E Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

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QA/QC SUMMARY REPORT

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ult Units	PQL	%Rec	LowLimit	HighLimit	%RPD RP	DLimit Qual
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MBLK			Batch I	D: R33878	Analysis Date:	5/29/2009 9:06:58 AM
µg/L	1.0		,			
μg/L	1.0					
µg/L	1.0	•				
µg/L	2.0					
LCS			Batch I	D: R33878	Analysis Date:	5/30/2009 5:24:25 AM
2 µg/L	1.0	99.6	85.9	113		
2 µg/L	1.0	99.1	86.4	113		
9 µg/L	1.0	101	83.5	118		
5 µg/L	2.0	101	83.4	122		
LCSD			. Batch li	D: R33878	Analysis Date:	5/30/2009 5:54:51 AM
6 µg/L	1.0	103	85.9	113	3.18 2	.7
6 µg/L	1.0	102	86.4	113	3.14 1	9
6 µg/L	1.0	104	83.5	118	2.79 1	0
3 µg/L	2.0	104	83.4	122	2.90 1	3
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Qualifiers:

E Estimated value

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

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S Spike recovery outside accepted recovery limits

	Sample Red	eipt Ch	necklist			
Client Name BLAGG			Date Receive	ed:	5/20/2009	· .
Work Order Number 0905359			Received b	y: TLS	<i>A</i> N	
Checklist completed by:	· · · · ·	5 2 C	Sample ID	labels checked b	y: UU Initials	
Matrix:	Carrier name: <u>Gre</u>	yhound	· ·	· .	. ·	
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	Y	No 🗔			
Chain of custody signed when relinquished and receive	ed? 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 \Box		Number o	f preserved
Water - VOA vials have zero headspace? No No	/OA vials submitted		Yes 🔽	No 🗔	pottles ch pH:	ecked for
Water - Preservation labels on bottle and cap match?	Yes		No 🗖	. N/A 🗹	_	
Water - pH acceptable upon receipt?	Yes		No 🗌	N/A 🗹	<2 . >12 uni	less noted
Container/Temp Blank temperature?	3	.8°	.<6° C Acceptai If given sufficier	ble nt time to cool.	D6 10W.	
COMMENTS:			• •			
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BLAGG ENGINEERING, INC. MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT: BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 229E - BLOW PIT UNIT I, SEC. 21, T28N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : December 17, 2009

Filename : **12-17-09.WK4**

SAMPLER : N J V

NJV

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WELL #	WELL ELEV.	WATER ELEV.	DEPTH TO WATER	TOTAL DEPTH	SAMPLING TIME	рН	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED
	(ft)	<u>(ft)</u>	(ft)	·/ (ft)					(gal.)
MW - 1	100.00	66.43	33.57	42.00	-	` -	-	-	-
MW - 2	96.43	65.30	31.13	42.00	_	-	-	-	-
MW - 3	97.86	65.17	32.69	42.00		-	ŕ	-	-
MW - 4	86.73	63.76	22.97	36.88	1425	7.45	1,200	·11.8	6.75
	INSTRUMENT CALIBRATIONS =					.4.01/7.00/10.00	2,800		
				DATE	E & TIME =	12/16/09	0835		

NOTES: <u>Volume of water purged from well prior to sampling</u>; V = pi X r 2 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 #4. MW #4 physically displayed murky brown appearance with slight hydrocarbon odor. Collected sample for BTEX per US EPA Method 8021B from MW #4 only.

Top of casing MW #1 ~ 2.40 ft., MW #2 ~ 2.60 ft., MW #3 ~ 2.50 ft., MW #4 ~ 2.25 ft. above grade.

on-site	1:45	temp.	38 F
off-site	2:42	temp.	39 F
sky cond.	Mostly	sunny	
wind speed	0 - 10	direct.	W

CLIENT:	Blagg Engineering			D: MW #4	MW #4							
Lab Order:	0912428			Collection Dat	e: 12/17/200	09 2:25:00 PM						
Project:	GCU #229E (#316)	Date Receive	d: 12/18/200)9								
Lab ID:	0912428-01			Matri	x: AQUEOU	JS						
Analyses		Result	PQL	Qual Units	DF	Date Analyzed						
EPA METHOD	8021B: VOLATILES					Analyst: DAM						
Benzene		ND	10	μg/L	. 10	12/28/2009 4:31:18 PM						

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10

20

65.9-130

µg/L

µg/L.

µg/L

%REC

24

31

890

106

Hall Environmental Analysis Laboratory, Inc.

Date: 30-Dec-09

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10

10

10

12/28/2009 4:31:18 PM

12/28/2009 4:31:18 PM

12/28/2009 4:31:18 PM

12/28/2009 4:31:18 PM

Qualifiers:

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Ε

Toluene

Ethylbenzene

Xylenes, Total

Surr: 4-Bromofluorobenzene

Value exceeds Maximum Contaminant Level Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

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Date	Time	Matrix	Sample Request ID	Type and #	Туре	H	$\Delta = NO^{-1}$	る	۲ ۲	⊢N	с) Н	E) (I	10 (RA	Suoj	31 F	30B	20 (Bul
			· .			OH I	2423	6	E.	ЧT	Ъ	E	83.	RC	An	80 B	82	82				Air
12/17/09	1425	WATER	MW #4	2-40ml	HCI &		-1										ļ					
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Date:	Time:	Relinguish	<u>ww.</u>	Received by:	15/1	8 US Date		-					·	•								
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QA/QC SUMMARY REPORT

Blagg Engineering

Client:

-'roject: GCU #2291	E (#316)								Work	Order:	0912428
Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec L	owLimit Hi	ghLimit	%RPD	RPDLimit	Qual
lethod: EPA Method 8021B:	Volatiles		<u> </u>								
Rample ID: 5ML RB		MBLK		•		Batch ID:	R36711	Analys	is Date:	12/24/2009 1	0:04:25 AM
Senzene	ND	µg/L	、 1.0	-							
Joluene	ND	µg/L	1.0								
ithylbenzene	ND	µg/L	1.0								
Yylenes, Total	ND	µg/L	2.0								
Jample ID: 5ML RB		MBLK		2 		Batch ID:	R36728	Analys	is Date:	12/28/2009	9:33:12 AM
Jenzene	ND	μg/L	1.0								
Toluene	ND	μg/L	1.0								
Ethylbenzene	ND	µg/L	1.0					•			
vienes, Total	ND	μg/L	2.0								
ample ID: 100NG BTEX LCS	N.	LCS			,	Batch ID:	R36711	Analys	is Date:	12/24/2009	6:11:13 PM
Benzene	20.55	μg/L	1.0	20	0	103	85.9	113			
roluene	20.53	µg/L	1.0	20	0	103	86.4	113			
Ithylbenzene	20.09	µg/L	1.0	20	0.066	100	83.5	118			
Vienes, Total	61.73	μg/L	2.0	60	0	103	83.4	122			
Sample ID: 100NG BTEX LCS		LCS				Batch ID:	R36728	Analys	is Date:	12/28/2009	7:33:50 PM
Jenzene	19.19	µg/L	1.0	20	0	96.0	85.9	113		,	
oluene	19.21	µg/L	1.0	20	0	96.0	86.4	113			
Sthylbenzene	19.09	µg/L	1.0	20	0	95.5	83.5	118			
≺ylenes, Total	57.94	µg/L	2.0	60	0	96.6	83.4	122			

Qualifiers:

E Estimated value

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Date: 30-Dec-09

Page 1

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	Sample	e Receij	pt Chec	klist			
Client Name BLAGG				Date Receive	d:	12/18/2009	
Work Order Number 0912428				Received by	t TLS	Pa	
				Sample ID la	abels checked by:		
Signature)	<u>\</u>		2 10B		100000	
V	Osuriar same	UDO		• •		·	
Maux:	Camer name:	<u>085</u>			·		
Shipping container/cooler in good condition?		Yes		No 🗍	Not Present]	
Custody seals intact on shipping container/coole	r?	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 r	eceived?	Yes 🖌	2	No 🗔			
Chain of custody agrees with sample labels?		Yes	2	No 🗌			
Samples in proper container/bottle?		Yes 🛛	2	No 🗌			
Sample containers intact?		Yes 🖌	2	No 🗌			
Sufficient sample volume for indicated test?		Yes 🖌		No 🗌			
All samples received within holding time?	·	Yes 🖌		No 🗔		Number o	f preserved
Water - VOA vials have zero headspace?	No VOA vials subr	mitted [Yes 🗹	No 🗌	pH:	ecked for
Water - Preservation labels on bottle and cap ma	tch?	Yes]	No 🗌	N/A 🗹	_	
Water - pH acceptable upon receipt?		Yes [No 🗌	N/A 🔽	<2 >12 uni	ess noted
Container/Temp Blank temperature?		0.8	° <	6° C Acceptab	le .	Delow.	
COMMENTS:			lf	given sufficient	t time to cool.		
· · · · · · · · · · · · · · · · · · ·							
	x			<i>,</i>	÷		
Client contacted	Date contacted:		······································	Pers	on contacted		
Contacted by:	Regarding:					· .	
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BLAGG ENGINEERING, INC. MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP_AMERICA_PROD. CO.

CHAIN-OF-CUSTODY # : N/A

LABORATORY (S) USED : HALL ENVIRONMENTAL

GCU # 229E - BLOW PIT

UNIT I, SEC. 21, T28N, R12W

Date : February 26, 2010

NJV SAMPLER : PROJECT MANAGER :

1000

N	J	V	
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Filename : 02-26-10.WK4

WELL #	WELL ELEV.	WATER ELEV.	DEPTH TO WATER	TOTAL DEPTH	SAMPLING TIME	рН	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED
	(i)	(11)							(gai.)
MW - 1	100.00	66.60	33.40	42.00	-	-	· -	-	-
MW - 2	96.43	65.48	30.95	42.00	-		-	-	-
MW - 3	97.86	65.35	32.51	42.00		-		-	-
MW - 4	86.73	63.96	22.77	36.88	1445	7.43	1,100	15.5	7.00
			INSTRUM	ENT CALIB	RATIONS =	4.01/7.00/10.00	2,800		

DATE & TIME = 02/23/10

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 #4. MW #4 physically displayed murky brown appearance with slight hydrocarbon odor. Collected sample for BTEX per US EPA Method 8021B from MW #4 only.

Top of casing MW #1 ~ 2.40 ft., MW #2 ~ 2.60 ft., MW #3 ~ 2.50 ft., MW #4 ~ 2.25 ft. above grade.

			•
on-site	2:06	temp.	44 F
off-site	2:59	temp.	44 F
sky cond.	Mostly	sunny	
wind speed	0 - 10	direct.	NW

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Benzene

Toluene

Ethylbenzene

Xylenes, Total

Surr: 4-Bromofluorobenzene

Date: 09-Mar-10

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3/8/2010 1:53:21 PM

CLIENT:	Blagg Engineering		Client Sample ID:	MW #4	
Lab Order:	1003069		Collection Date:	2/26/2010 2	:45:00 PM
Project:	GCU #229E (#316)		Date Received:	3/3/2010	
Lab ID:	1003069-01		Matrix:	AQUEOUS	
Analyses		Result	PQL Qual Units	DF	Date Analyzed
EPA METHOD	8021B: VOLATILES				Analyst: NSB

1.0

1.0

1.0

2.0

65.9-130

µg/L

µg/L

µg/L

µg/L

%REC

ND

9.5

2.0

56

110

Qualifiers:

- Value exceeds Maximum Contaminant Level
- Е Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- Practical Quantitation Limit PQL

- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

Not Detected at the Reporting Limit ND

Spike recovery outside accepted recovery limits S

Client:	SLATT	- ENGR	BE AMERICA	Standard Project Name	C Rush	·					ł		LL AL	EI YS	NV SIS	IR 5 L	RO AE	NN 30	1E RA	NT		-
Mailing	Address	P.O.	BOX BT	Gen	# 2294	E (#3	16)		49	01 H	awki	ns N	ie -	Alh	uan	erau	e. Ni	M 87	109			
	~	BLFD	NM 87413	Project #:					Te	al. 50) 5-34	5-39	975	,	ax	505-	345-	4107	7			
Phone #	#: ((505)	632-1199	1									A	naly	sis	Req	uest				•	
email or	r Fax#:			Project Mana	ger:		7.1	<u>9</u>	ly)	sel)					O₄)							
QA/QC F	Package: dard		Level 4 (Full Validation)	Ne	2502 1	leve 2		He (B021 H (Gas or Gas/Die: 2 PCB's							1 							
□ Othe □ EDD	r (Type) _			Sampler: / Onice: Sample tem	VELSON Over Setame	VELEZ	-9		3E + TPH	1 8015B (d 418.1)	d 504.1)	or PAH)	tals	NO ₃ ,NO	des / 806	()	VOA)				(Y or N)
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type		UNC SOCIA	ETEX)-MH	BTEX + MTR	TPH Methoc	TPH (Metho	EDB (Metho	8310 (PNA	RCRA 8 Me	Anions (F,C	8081 Pestici	8260B (VOA	8270 (Semi-				Air Bubbles
2/26/10	1445	WATER	MW #4	2-40ml	HCI F		-1	V	1			_										
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Date: 3/2/10 Date:	Time: /500 Time:	Relinquish	ed by: ed by:	Received by:	3310	Date	Time . S Time	Rei	mark	S:												

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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.

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# **QA/QC SUMMARY REPORT**

Client: Bl	agg Engineering								Work	Order	1003060
	(#510)	·				-					1003009
Analyte	Result	Units	PQL	SPK Va S	PK ref	%Rec L	owLimit Hi	ghLimit	%RPD	RPDLimit	Qual
Method: EPA Metho	d 8021B: Volatiles										
Sample ID: 5ML RB		MBLK				Batch ID:	R37664	Analys	is Date:	3/5/2010	9:16:26 AM
∂enzene	ND	µg/L	1.0				,			· .	
Toluene	ND	µg/L	1.0							•	
Sthylbenzene	ND	µg/L	1.0								
Aylenes, Total	ND	µg/L	2.0				,		-		
ample ID: b 5		MBLK				Batch ID:	R37677	Analys	is Date:	3/8/2010 1	1:21:44 AM
lenzene	ND	μg/L	1.0	•			•				
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
(ylenes, Total	ND	µg/L	2.0					•			
Sample ID: 100NG BT	EX LCS	LCS				Batch ID:	R37664	Analys	is Date:	3/5/2010	8:43:42 PM
Benzene	19.65	µg/L	1.0	20	0	98.3	85.9	113			
loluene	19.01	µg/L	1.0	20	0	95.0	86.4	113	1		
Tthylbenzene	18.98	µg/L	1.0	20	0	94.9	83.5	118			
Xylenes, Total	57.39	µg/L	2.0	60	0	95.7	83.4	122		•	
Jample ID: 100NG BT	EX LCS	LCS·				Batch ID:	R37677	Analysi	is Date:	3/8/2010	8:58:22 PM
Benzene	21.82	μg/L	1.0	20	0	109	85.9	113			
Toluene	21.28	µg/L	1.0	20	0	106	86.4	113			
<i>i</i> ⊂thylbenzene	20.95	μg/L	1.0	20	0.	105	83.5	118			
lylenes, Total	62.35	µg/L	2.0	60	0	104	83.4	122			
Rample ID: 100NG BT	EX LCSD	LCSD			•	Batch ID:	R37664	Analysi	is Date:	3/5/2010	9:13:58 PM
Senzene	19.07	µg/L	1.0	20	0	95.4	85.9	113	3.02	27	
ioluene	18.37	µg/L	1.0	20	0	91.8	86.4	113	3.43	19	
Ithylbenzene	18.16	µg/L	1.0	20	0	90.8	83.5	118	4.39	10	
Yylenes, Total	55.07	µg/L	2.0	60	0	91.8	83.4	122	4.14	13	

Qualifiers:

E Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

H Holding times for preparation or analysis exceeded

NC Non-Chlorinated

R RPD outside accepted recovery limits

Page 1

Date: 09-Mar-10

•	Sample	<b>Receipt Cl</b>	necklist		
Client Name BLAGG			Date Receive	ed:	3/3/2010
Work Order Number 1003069			Received b	y: TLS	$\hat{\Gamma}$
Checklist completed by:		3/3 Date		labels checked by: -	nitials
Matrix:	Carrier name:	UPS			
Shipping container/cooler in good condition?	· · ·	Yes 🗹	No 🗌	Not Present	
Custody seals intact on shipping container/cool	er?	Yes 🗹	No \Box	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 🗹			-
All samples received within holding time?		Yes 🗹	No 🗔		Number of preserved
Water - VOA vials have zero headspace?	No VOA vials subn	nitted 🔲	Yes 🗹	No 🗔	pH:
Water - Preservation labels on bottle and cap m	natch?	Yes 🗌	No 🗌	N/A 🔽	<u> </u>
Water - pH acceptable upon receipt?		Yes 🗌	No 🗌	N/A 🗹	<2 >12 unless noted
Container/Temp Blank temperature?		1.9°	<6° C Acceptal	ble	Deiow.
COMMENTS:			If given sufficier	at time to cool.	
					•
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Client contacted	Date contacted:		Per	son contacted	
Contacted by:	Regarding:				
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Corrective Action		<del></del> .			- 
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### BLAGG ENGINEERING, INC.

#### MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

### CLIENT : BP_AMERICA_PROD. CO.

N/A CHAIN-OF-CUSTODY # :

GCU # 229E - BLOW PIT

UNIT I, SEC. 21, T28N, R12W

Date : May 19, 2010

NJV

*Filename* : 05-19-10.WK4

WELL	WELL	WATER	DEPTH TO	TOTAL	SAMPLING	рН	CONDUCT	TEMP.	VOLUME
#	ELEV.	ELEV.	WATER	DEPTH	TIME		(umhos)	(celcius)	PURGED
	(ft)	(ft)	(ft)	(ft) .					(gal.)
MW - 1	100.00	66.74	33.26	42.00	-	-	-	-	-
MW - 2	96.43	65.62	30.81	42.00	· -	-	-	-	-
MW - 3	97.86	65,48	32.38	42.00	-	-	-	-	-
MW - 4	86.73	64.08	22.65	36.88	1325	7.70	1,300	16.9	7.00
			INSTRUM	ENT CALIB	RATIONS =	4.01/7.00/10.00	2,800		
				DATE	& TIME =	05/19/10	1035		

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 #4. MW #4 - murky brown appearance, no apparent hydrocarbon odor dectected. Collected sample for BTEX per US EPA Method 8021B from MW #4 only.

Top of casing MW #1 ~ 2.40 ft., MW #2 ~ 2.60 ft., MW #3 ~ 2.50 ft., MW #4 ~ 2.25 ft. above grade.

on-site	12:35	temp.	67 F
off-site	1:35	temp.	68 F
sky cond.	Partly	cloudy	
wind speed	10 - 20	direct.	WNW - W

#### SAMPLER :

PROJECT MANAGER : NJV

LABORATORY (S) USED : HALL ENVIRONMENTAL

CLIENT:	Blagg Engineering	Client Sample ID: MW #4
Lab Order:	1005609	Collection Date: 5/19/2010 1:25:00 PM
Project:	GCU #229E (#316)	Date Received: 5/21/2010
Lab ID:	1005609-01	Matrix: AQUEOUS

Date: 26-May-10

### Hall Environmental Analysis Laboratory, Inc.

Analyses	Result	PQL Q	ual Units	DF	Date Analyzed
PA METHOD 8021B: VOLATILES	·····				Analyst: NSB
Benzene	ND	1. <b>0</b>	μg/L	1	5/26/2010 3:34:09 AM
Toluene	7.6	1.0	μg/L	1	5/26/2010 3:34:09 AM
Ethylbenzene	. 1.5	1.0	μg/L	1	5/26/2010 3:34:09 AM
Xylenes, Total	30	2.0	µg/L	1	5/26/2010 3:34:09 AM
Surr: 4-Bromofluorobenzene	107	65.9-130	%REC	1	5/26/2010 3:34:09 AM
Xylenes, Total Surr: 4-Bromofluorobenzene	30 107	2.0 65.9-130	µg/L %REC	1 1	5/26/20 5/26/20

Qualifiers:

- ٠ Value exceeds Maximum Contaminant Level
- Е Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- В Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- Maximum Contaminant Level
- S

Page 1 of 1

- - MCL
    - ND Not Detected at the Reporting Limit
      - Spike recovery outside accepted recovery limits

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Client:	BLAG	S ENG	R. BP AMERI JS	Standard	Rush						A	N	AL	YS	SIS	5 L	A	30	R/	11(	OR	Y
				Próject Name	e:	,	Δ ·				,	****	/ haii	env	ironr	neni	al co	h				
Mailing	Address	P.O.	B0×87	Gen	# 229	E (# )	316)		49(	01 H	awki	ns N	IE -	Alb	uque	erqu	e, N	M 87	'109			
		Rift	2 NM 87413	Project #:				1	Te	N 50	15_34	5-30	75	F	av	505-	345	410	7.			
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Date	Time	Matrix	Sample Request ID	Container	Preservative Type	用把	<b>ENC</b>	₩ A	N + X⊒	H Meth	H (Met)	B (Met	0 (PN/	RA 8 N	ons (F	11 Pest	80B (V(	0 (Ser				Bubble
	l					1605.	64		BT	Ē	đ		831	RC	Ani	808	826	827			_	Air
5/19/10	1325	WAER	MW #4	2-40ml	Helf Cool		-1	$\bigtriangledown$										-				
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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: Project:	Blagg Engineering GCU #229E (#316	)					`		Work	Order:	1005609
Analyte	Res	uit Units	PQL	SPK Va	SPK ref	%Rec L	owLimit Hi	ghLimit	%RPD	RPDLimit	Qual
Hethod: EPA	Method 8021B: Volatiles	3								· .	
Sample ID: 5M	L RB	MBLK				Batch ID:	R38920	Analysi	is Date:	5/25/2010	9:21:20 AM
Jenzene	ND	ug/L	1.0						•		
oluene	ND	µg/L	1.0								
Tthylbenzene	ND	µg/L	1.0								
≺ylenes, Total	ND	hð\r	2.0								
ample ID: 100	ING BTEX LCS	LCS				Batch ID:	R38920	Analysi	is Date:	5/25/2010	6:58:36 PM
Benzene	. 22.7	′8 μg/L	1.0	20	Ó	114	87.9	121			
⊤oluene	23.1	5 µg/L	1.0	20	0	116	83	124			
_thylbenzene	22.5	i5 μg/L	1.0	20	0.138	112	81.7	122			
(ylenes, Total	68.5	i0 µg/L	2.0	60	0	114	85.6	121			

#### Qualifiers:

- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit

- H Holding times for preparation or analysis exceeded
- NC Non-Chlorinated
- R RPD outside accepted recovery limits

Page 1

	Sample I	Rec	eipt Ch	ecklist			
Client Name BLAGG				Date Received	:	5/2	21/2010
Work Order Number 1005609				Received by:	TLS		(n)
A A			1 -	Sample ID la	beis checked l	by:	
Checklist completed by:			5 Q Date	1110		Initial	8
Matrix.		Crow	though				
Ivial//x.	Camer name.	Giey	mounu				
Shipping container/cooler in good condition?		Yes		No 🗔	Not Present		
Custody seals intact on shipping container/coole	r? .	Yes		No 🗌	Not Present		ot Shipped
Custody seals intact on sample bottles?		Yes		Νο	N/A		
Chain of custody present?		Yes		No 🗔			
Chain of custody signed when relinquished and r	eceived?	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		Νο			
All samples received within holding time?		Yes		No 🗌	•		Number of preserved
Water - VOA vials have zero headspace?	No VOA vials submi	itted		Yes 🗹	No 🗌		bottles checked for pH:
Water - Preservation labels on bottle and cap ma	itch?	Yes		No 🗌	N/A 🗹		
Water - pH acceptable upon receipt?		Yes		No 🗌	N/A 🗹		<2 >12 unless noted
Container/Temp Blank temperature?		-0.	6°	<6° C Acceptable	3		
COMMENTS:				It given sufficient	time to cool.		
	<b>-</b>			-			
				Perso	n contacted	,	<u> </u>
Contacted by:	Regarding:						
Comments:							
· · · ·							
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					······		
· · · · · · · · · · · · · · · · · · ·							
Corrective Action					ı		
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### BLAGG ENGINEERING, INC.

#### MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

### CLIENT: BP AMERICA PROD. CO.

#### CHAIN-OF-CUSTODY # : N / A

GCU # 229E - BLOW PIT UNIT I, SEC. 21, T28N, R12W LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : July 27, 2010

SAMPLER :

PROJECT MANAGER : N J V

NJV

*Filename* : 07-27-10.WK4

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	рН	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
MW - 1	100.00	66.82	33.18	42.00	-	-	-	-	· -
MW - 2	96.43	65.65	30.78	42.00	·	-	-	-	-
MW - 3	97.86	65.51	32.35	42.00	-	-	-	-	-
MW - 4	86.73	64.06	22.67	36.88	0955	7.57	1,500	20.9	7.00
			INSTRUME	ENT CALIE	RATIONS =	4.01/7.00/10.00	2,800		
				DAT	E & TIME =	07/26/10	1630		

NOTES: <u>Volume of water purged from well prior to sampling</u>;  $V = pi X r^2 X h X 7.48 gal./ft3) X 3 (wellbores).$ (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 #4. MW #4 - murky brown appearance, no apparent hydrocarbon odor dectected. Collected sample for BTEX per US EPA Method 8021B from MW #4 only.

Top of casing MW #1 ~ 2.40 ft., MW #2 ~ 2.60 ft., MW #3 ~ 2.50 ft., MW #4 ~ 2.25 ft. above grade.

on-site	8:50	temp.	74 F
off-site	10:04	temp.	78 F
sky cond.	Mostly	sunny	,
wind speed	0 - 5	direct.	E - S

CLJENT:	Blagg Engineering	Client Sample ID: MW#4										
Lab Order:	1007A41	Collection Date: 7/27/2010 9:55:00 AM										
Project:	GCU #229E(#316)			Date Receive	d: 7/29/2010	0						
Lab ID:	1007A41-01			Matri	x: AQUEOU	JS						
Analyses	······································	Result	PQL	Qual Units	DF	Date Analyzed						
EPA METHOD	8021B: VOLATILES			·······		Analyst: NSB						
Benzene		ND	1.0	µg/L	1	7/31/2010 6:58:32 AM						
Toluene		4.3	1.0	µg/L	1	7/31/2010 6:58:32 AM						
Ethylbenzene		ND	1.0	µg/L	<u>,</u> 1	7/31/2010 6:58:32 AM						
Xylenes, Total		16	2.0	µg/L	1	7/31/2010 6:58:32 AM						

65.9-130

113

%REC

### Hall Environmental Analysis Laboratory, Inc.

Surr: 4-Bromofluorobenzene

Date: 04-Aug-10

1

7/31/2010 6:58:32 AM

#### Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

6	lall		Iscoay Recura		r lhuar		••••	l			-												
Client:	Scher	S ENGA	R. BP AMERICA	Standard	🗆 Rush	·		ANALYSIS LABORATO						· v									
				Project Name	<del>)</del> :		 ^						لفطا		ironr								
Mailing	Address	: P.O	. BOX 87	Ger	(#22'	£ (#	=3K)		49(	01 H	awki	www ns N	/.nan IE -	Alb	uque	erqu	e, NI	лп M 87	109				
		BLFJ	2. NM 87413	Project #:		· · ·		1	Te	I. 50	5-34	5-39	975	F	ax (	505-	345-	4107	7		v		
Phone #	#: (*	505) 6	632-1199					Analysis Request															
email o	Fax#:			Project Mana	iger:		91V	8)		sel)				- 1	04)							Ţ,	7
	Package: darð		Level 4 (Full Validation)	NE	1202 L	ELEZ		S-(802) (Gas o Bas/Die Bas/Die PO4, S(															
Accredi	tation AP	□ Othe	r	Sampler: /	VELSON	VELEZ		A (1) (A) (A) (A) (A) (A) (A) (A) (A) (A) (A							v N)								
	(Type)			Sample Ten	oeratine 💦				і Ш	80	4	d 5(	ы С	tals	N,	ides	2	Š				Σ	:
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	100 77	ente 1936 1920)	BTEX	BTEX + MT	TPH Methoo	TPH (Metho	EDB (Metho	8310 (PNA	RCRA 8 Me	Anions (F,C	8081 Pestic	8260B (VO/	8270°(Semi-				Air Rubhes	
7/27/10	0955	WATER	MW # 4	40m1-2	HKI & coor		1	$\checkmark$		·													
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Date:	Time: 1530	Relinquish	Mar VI	Received by	M	Date 9/29/	Time	Rer	narks	<u> </u>		[			L		<u>, , , , , , , , , , , , , , , , , , , </u>	[]			1		-
Date:	Time:	Relinquish	ed by:	Received by:		Date	Time																

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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

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# QA/QC SUMMARY REPORT

roject:	Blagg Engineering GCU #229E(#316)				·			Work	Order:	1 <b>007A</b> 41
\nalyte	Result	Units	PQL	SPK Va SPK	ref %Rec	: LowLimit Hi	ghLimit	%RPD	RPDLim	it Qual
.ethod: EPA M	lethod 8021B: Volatiles									
mple ID: 5ML I	RB	MBLK			Batch if	D: <b>R40133</b>	Analys	is Date:	7/30/201	0 9:20:23 AM
<b>`ənzene</b>	· ND	µg/L	1.0							
oluene	ND	µg/L	1.0							
.hylbenzene	ND	µg/L	1.0					· .		
vienes, Total	ND	µg/L	2.0							
≺ample ID: 100N	G BTEX LCS	LCS			Batch II	D: <b>R40133</b>	Analys	is Date:	7/30/201	0 7:50:21 PM
Jenzene	18.83	µg/L	1.0	20 (	94.2	87.9	121			
oluene	18.38	µg/L	1.0	20 0	91.9	83	124			
"thylbenzene	18.23	μg/L	1.0	20 (	91.2	81.7	122			
Aylenes, Total	55.63	µg/L	2.0	60 (	92.7	85.6	121			

#### Qualifiers:

E Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- H Holding times for preparation or analysis exceeded
- NC Non-Chlorinated
- R RPD outside accepted recovery limits

Page 1

	Sample	Rec	eipt Ch	eckl	ist				
lient Name BLAGG				Da	ate Receive	d:		7/29/2010	
/ork Order Number 1007A41					Received by	: AMG		G	
Auto a			/ /	;	Sample ID la	ibels checked	l by:	<u> </u>	_
hecklist completed by hell Mall	1905	-+	29/1 Date	10				Initials	
	ų	ſ							
fatrix:	Carrier name:	<u>Grey</u>	hound						
Shipping container/cooler in good condition?		Yes			No 🗔	Not Presen	t 🗆		•
Custody seals intact on shipping container/cooler?		Yes		l	No 🗌	Not Present	t 🗹	Not Shipped	
Custody seals intact on sample bottles?		Yes		•	No 🗀	N/A			
Chain of custody present?		Yes			No 🗔				1
Thain of custody signed when relinquished and receive	d?	Yes		ł	No 🗌 👘				
Chain of custody agrees with sample labels?		Yes		I	No 🗌				
Samples in proper container/bottle?		Yes		I	No 🗌				
Sample containers intact?		Yes		1	No 🗌				
Sufficient sample volume for indicated test?		Yes		l	No 🗌				
All samples received within holding time?	• .	Yes		·	No 🗔			Number o	of preserved
Nater - VOA vials have zero headspace? No V	/OA vials subr	nitted		Yε	es 🗹	No	]	pH:	ecked for
Nater - Preservation labels on bottle and cap match?		Yes		l	No 🗌	N/A 🗹	]	_	
Water - pH acceptable upon receipt?		Yes		I	No 🗋	N/A 🔽	2	<2 >12 un	less noted
Container/Temp Blank temperature?		-1.	2°	<6°	C Acceptabl	le		<i>D6101</i> .	
COMMENTS:				If giv	en sufficient	time to cool.			
	·								
Client contacted Date c	ontacted:				Pers	on contacted			
Contacted by: Regard	ding:								<b></b>
Comments:									
				_					
	······································	· · · · ·			<u>``</u>		-		
Corrective Action			<b>-</b>						
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### BLAGG ENGINEERING, INC. MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

#### CLIENT : BP_AMERICA_PROD._CO.

CHAIN-OF-CUSTODY # : N/A

GCU # 229E - BLOW PIT

UNIT I, SEC. 21, T28N, R12W

Date : October 29, 2010

Filename : 10-29-10.WK4

					-		-		
WELL	WELL	WATER	DEPTH TO	TOTAL	SAMPLING	pН	CONDUCT	TEMP.	VOLUME
#	ELEV.	ELEV.	WATER	DEPTH	TIME		(umhos)	(celcius)	PURGED
	(ft)	(ft)	(ft)	(ft)					(gal.)
MW - 1	100.00	67.52	32.48	42.00	-	_	-	-	-
MW - 2	96.43	66.35	30.08	42.00	-	-	-	-	-
MW - 3	97.86	66.20	31.66	42.00	-	-	-	-	-
MW - 4	86.73	64.72	22.01	36.88	1210	7.28	1,400	16.1	7.25
			INSTRUM	ENT CALIB	RATIONS =	4.01/7.00/10.00	2,800		

**DATE & TIME =** 10/28/10

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 #4. MW #4 - murky brown appearance, no apparent hydrocarbon odor dectected. Collected sample for BTEX per US EPA Method 8021B from MW #4 only.

Top of casing MW #1 ~ 2.40 ft., MW #2 ~ 2.60 ft., MW #3 ~ 2.50 ft., MW #4 ~ 2.25 ft. above grade.

on-site	11:10	temp.	55 F
off-site	12:25	temp.	62 F
sky cond.	Mostly	sunny	
wind speed	0 - 10	direct.	ESE - E

#### **SAMPLER:**

0800

**PROJECT MANAGER:** 

NJV

NJV

LABORATORY (S) USED : HALL ENVIRONMENTAL

Analyses	· · · · · · · · · · · · · · · · · · ·	Desult	POI Qual Unite	DF	Date Analyzed
Lab ID:	1011109-01		Matrix:	AQUEOUS	3
Project:	GCU #229 (#316)		Date Received:	11/2/2010	· -
Lab Order:	1011109		<b>Collection Date:</b>	10/29/2010	12:10:00 PM
CLIENT:	Blagg Engineering		Client Sample ID:	MW #4	a a a

Date: 09-Nov-10

1

11/8/2010 8:48:46 PM

### Hall Environmental Analysis Laboratory, Inc.

Surr: 4-Bromofluorobenzene

Analyses **EPA METHOD 8260: VOLATILES SHORT LIST** Analyst: RAA 11/8/2010 8:48:46 PM Benzene ND 1.0 µg/L 1 Toluene ND 11/8/2010 8:48:46 PM 1.0 µg/L 1 Ethylbenzene ND 1.0 µg/L 11/8/2010 8:48:46 PM 1 Xylenes, Total 20 2.0 µg/L 1 11/8/2010 8:48:46 PM

76.4-106

102

%REC

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Page 1 of 1

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C	main	-ot-Cu	stody Record	i um-Arouna	ime:		 . *						-							1005. 100 AND		
Client:	BLAGE	r FNG	R. R.P. AMERICA	Standard	🗆 Rush	, <i>,</i>					Nr 20	ORATORY										
				Project Name	ə:																	
Mailing	Address	: 20	Aby 2-1	6	M # 2	29= (1	# 3(K)	l	404		V											
		$\frac{\mathbf{r}}{\mathbf{R}}$	0 100 97417	Project #:				1	490	JI Ha	awkir 5 o ti	15 N			uque	erqu	e, NI	N 87	109			
	<u>.</u>		132 - 1199					Tel. 505-345-3975 Fax 505-345-4107				(										
email o	<u>#</u> rFax#'	05)6	558-111	Project Mana	ider:	• .	5	<u>^</u>	ック	(le					4)	rteq						
QA/QC Package:						8021	as on	/Diese					04,SO	CB's								
🗙 Stan	dard		Level 4 (Full Validation)	//200	+	.e u -/		) 9 6	Ű	Gas					2,PC	2 P						
Accredi	itation AP	Othe	r	Sampler: /	Sampler: NELSON VELEZ In Ice: Markes MED November			AH)						03,NO	Эли. ( / 808						S N	
	(Type)			Sample Tem	perature			Ë	BE	d 80	4 bc	0d 5	с С	stals	U,NC	sides	A)	2				Σ
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type		HNO SCA	BTEX) MT	BTEX + MT	TPH Metho	TPH (Metho	EDB (Metho	8310 (PNA	RCRA 8 Me	Anions (F,C	8081 Pestic	8260B (VO	8270 (Semi				Air Bubbles
0/29/10	1210	WATER	MW #4	40m.1-2	Hel &		1	$\checkmark$							,							
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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**

∼lient: - roject:	Blagg Engineering GCU #229 (#316)									Order:	1011109
nalyte	Result Units PQL SPK Va SPK ref %Rec LowLimit HighLim					ghLimit	%RPD	RPDLimi	Qual		
sthod: EPA Met	ihod 8260: Volatiles Shor	t List				- ·			•		
imple ID: 5ml-rb		MBLK				Batch ID:	R42024	Analysis	a Date:	11/8/2010	9:50:36 AM
nzene	ND	µg/L	1.0								
Juene	ND	μg/L	1.0			,					
nyibenzene	· ND	µg/L	1.0								
lenes, Total	ND	µg/L	2.0				•				
ample ID: b5		MBLK				Batch ID:	R42024	Analysis	a Date:	11/8/2010	9:14:52 PM
_anzene	ND	µg/L	1.0			<u>۲</u>			•		
luene	ND	µg/L	1.0								
"hylbenzene	ND	µg/L	1.0				,				
.vienes, Total	` ND	µg/L	2.0								
mple ID: 100ng I	cs	LCS		•		Batch ID:	R42024	Analysis	Date:	11/8/2010 1	0:43:06 AM
nzene	20.74	µg/L	1.0	20	0	104	84.6	109			,
Tiuene	19,27	µg/L	1.0	20	0	96.3	` <b>81</b>	114	•		
∡mple ID: 100ng i	cs2	LCS				Batch ID:	R42024	Analysis	Date:	11/8/2010 1	0:07:09 PM
nzene	19.45	µg/L	1.0	20	0	97.2	84.6	109			
luene	19.15	µg/L	1.0	20	0	95.8	81	114			

valifiers:

Estimated value

Analyte detected below quantitation limits

> Not Detected at the Reporting Limit

- H Holding times for preparation or analysis exceeded
- NC Non-Chlorinated
- R RPD outside accepted recovery limits

Page 1

2

· · · · · · · · · · · · · · · · · · ·	Sample	e Recei	pt Cheo	cklist					
Nient Name BLAGG			Date Receiv		11/2/2010				
Vork Order Number 1011109			_	Received I	by: MMG				
Checklist completed by:	· · · · · · · · · · · · · · · · · · ·	11/2	pale	Sample ID	labels checked	by: ĩ	millels		
Matrix:	Carrier name:	Priority	<u>/ US Mail</u>				. •		
hipping container/cooler in good condition?		Yes [	2	No 🗌	Not Present		· · ·		
Justody seals intact on shipping container/coole	r?	Yes		No 🗌	Not Present		Not Shipped		
Justody seals intact on sample bottles?		Yes [	]	No 🗀	N/A				
Chain of custody present?		Yes		No 🗔					
hain of custody signed when relinquished and r	eceived?	Yes	2	No 🗖					
Chain of custody agrees with sample labels?		Yes	2	No 🗔					
Samples in proper container/bottle?		Yes 🛛	2	No \Box					
Sample containers intact?		Yes	2	No 🗌			·		
Sufficient sample volume for indicated test?		Yes		' No 🗀					
All samples received within holding time?		Yes	2	No 🗔			Number of preserved		
Vater - VOA vials have zero headspace?	No VOA vials subr	nitted [		Yes 🗹	No 🗌		pH:		
Water - Preservation labels on bottle and cap ma	tch?	Yes [		No 🚺 👘	N/A 🗹				
Water - pH acceptable upon receipt?		Yes [	]	No 🗌	N/A 🗹		<2 >12 unless noted		
Container/Temp Blank temperature?		0.8	<b>,</b>	8° C Accepta	ble		<i>NGIOW</i> .		
?OMMENTS:			lf	given sufficie	nt time to cool.	·			
							,		
·									
Client contacted [	Date contacted:		<u></u>	Pei	rson contacted	<u></u>			
Contacted by:	Regarding:	-							
Comments:									
			ü-						
	·			,					
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Corrective Action				· · · · · · · · · · · · · · · · · · ·		_			