3R-464

Request for Permanent Closure

Date: 2012

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

January 30, 2012

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

RE: REQUEST FOR PERMANENT CLOSURE
BP America Production Company
Groundwater Monitoring Report
GCU Com B # 143E, Unit M, Sec. 25, T29N, R12W, NMPM
San Juan County, New Mexico

NMOCD Administrative/Environmental Order #: None yet assigned

Dear Mr. von Gonten:

BP America Production Company (**BP**) has retained Blagg Engineering, Inc. (**BEI**) to conduct environmental monitoring of groundwater at the GCU Com B # 143E.

The last formal correspondence to NMOCD was conducted with letter dated, February 1, 2011. BP has followed its NMOCD approved groundwater management plan and is requesting permanent closure for this site.

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, Inspection and Enforcement Supervisor, NMOCD District III Office, Aztec, NM
Mr. Jeff Peace, Environmental Advisor, BP, Farmington, NM

NJV/njv

GCU Com B 143E 01-30-12 CVL.DOC

BP AMERICA PRODUCTION CO.

GROUNDWATER REMEDIATION REPORT

GCU COM B # 143E
(M) SECTION 25, T29N, R12W, NMPM
SAN JUAN COUNTY, NEW MEXICO

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

DECEMBER 2011

PREPARED BY:
BLAGG ENGINEERING, INC.

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

BP AMERICA PRODUCTION COMPANY
GCU Com B # 143E - Separator Pit
SW¼ SW¼, Sec. 25, T29N, R12W

Pit Closure Date: February 1996

Monitor Well Installation Date: November 3, 2009

Monitor Well Sampling Dates: 2/28/11, 5/20/11, 9/29/11, 12/14/11

Pit Closure and Background:

Site separator pit closure was conducted in February 1996 by removing impacted soils via excavation. Groundwater impact was identified within the source area during the pit closure activity and was reported to the New Mexico Oil Conservation Division's (**NMOCD**) Santa Fe office with letter dated March 5, 1996. Documentation for this work and subsequent groundwater monitoring data for the site has been previously submitted for NMOCD review. The reporting herein is for site monitoring from February 2011 to December 2011.

Groundwater Monitor Well Sampling Procedures:

Monitor well MW#3 was purged by hand-bailing, using new disposable bailers. A two (2) inch submersible electrical pump with new, clear vinyl tubing was utilized during the December 2011 sampling event. Prior to sample collections, MW#3 was purged approximately three (3) well bore volumes. 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 BTEX per US EPA Method 8021B was conducted.

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

Water Quality and Gradient Information:

BP initiated quarterly sampling and testing pursuant to BP's NMOCD approved Groundwater Management Plan (**GMP**) in December 2009. 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 5) reveal the relative elevations from the site wells have consistently shown an apparent southwest flow direction.

Summary and/or Recommendations:

Hydrocarbon impacted soils and groundwater at the site appear to have been remediated via excavation and natural attenuation. Upon review of the overall lab results from monitor well MW#3, a determination that the total xylenes of 830 parts per billion (**ppb**) from the initial sampling event does not necessitate an additional down gradient well relative to its position. Additionally, the 38 ppb for benzene during the fifth sampling event in October 2010 is dramatically anomalous compared to all previous and subsequent lab results for the constituent.

All site monitor wells tested at non-detectable or below the New Mexico Water Quality Control Commission's groundwater BTEX standards for at least four (4) consecutive sampling events; therefore, meeting all relevant portions of BP's NMOCD approved Groundwater Management Plan (**GMP**). Permanent site closure is recommended. Following approval by the NMOCD, site monitor wells will be abandoned pursuant to section 6.2 of the GMP.

BP AMERICA PROD. CO. GROUNDWATER LAB RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

GCU Com B # 143E - Separator pit

UNIT M, SEC. 25, T29N, R12W

REVISED DATE: December 16 , 2011

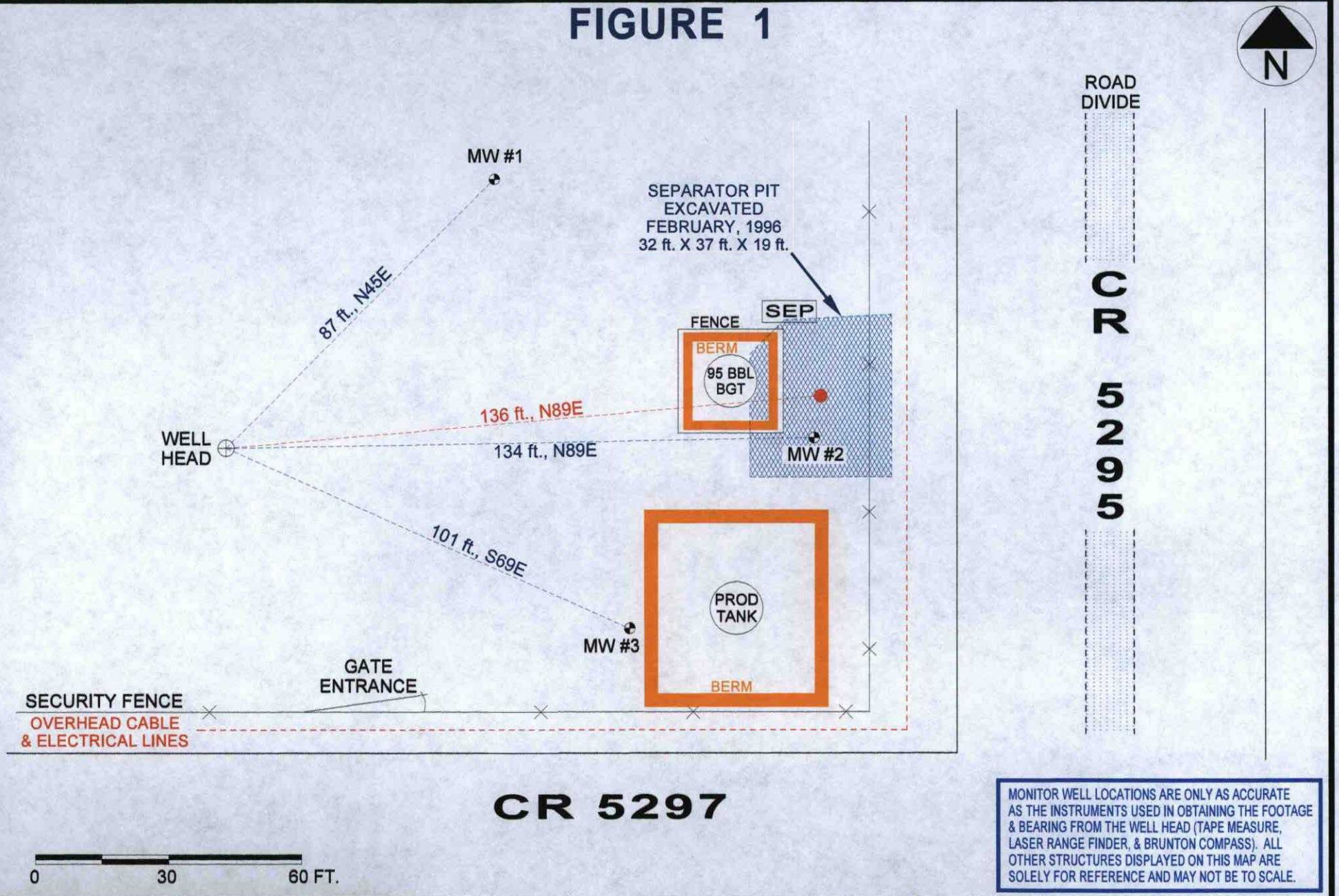
FILENAME: (143E4Q11.WK4) NJV

								BTEX EPA METHOD 8021B (ppb)			
SAMPLE DATE	WELL NAME or No.	D.T.W. (ft)	T.D. (ft)	TDS (mg/L)	COND. umhos	pH	PRODUCT (ft)	Benzene	Toluene	Ethyl Benzene	Total Xylenes
03-Dec-09	MW #1	15.90	25.00		1,100	7.33		ND	ND	ND	ND
03-Dec-09	MW #2	15.69	25.65		1,000	7.29		ND	ND	ND	ND
01-Mar-10		17.23			1,000	7.32		ND	ND	ND	ND
10-May-10		16.54			1,000	7.32		ND	ND	ND	ND
21-Oct-10		14.24			1,200	7.18		ND	ND	ND	ND
03-Dec-09	MW #3	16.18	25.80		800	7.36		5.8	ND	130	**830**
01-Mar-10		17.71			900	7.22		ND	ND	120	**580**
10-May-10		16.99			1,000	7.20		ND	ND	9.2	**42**
22-Jul-10		14.88			1,000	7.17		ND	ND	25	**88**
21-Oct-10		14.74			1,100	7.11		**38**	ND	28	**180**
28-Feb-11		17.74			1,000	7.30		**4.7**	ND	23	**180**
20-May-11		16.73			1,100	7.37		**ND**	ND	6.2	**36**
29-Sep-11		14.09			1,500	7.13		**ND**	ND	18	**150**
14-Dec-11		15.65			1,300	7.21		**ND**	ND	7.1	**21**
					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) .
4) NMWQCC INDICATES NEW MEXICO WATER QUALITY CONTROL COMMISSION.

FIGURE 1



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.

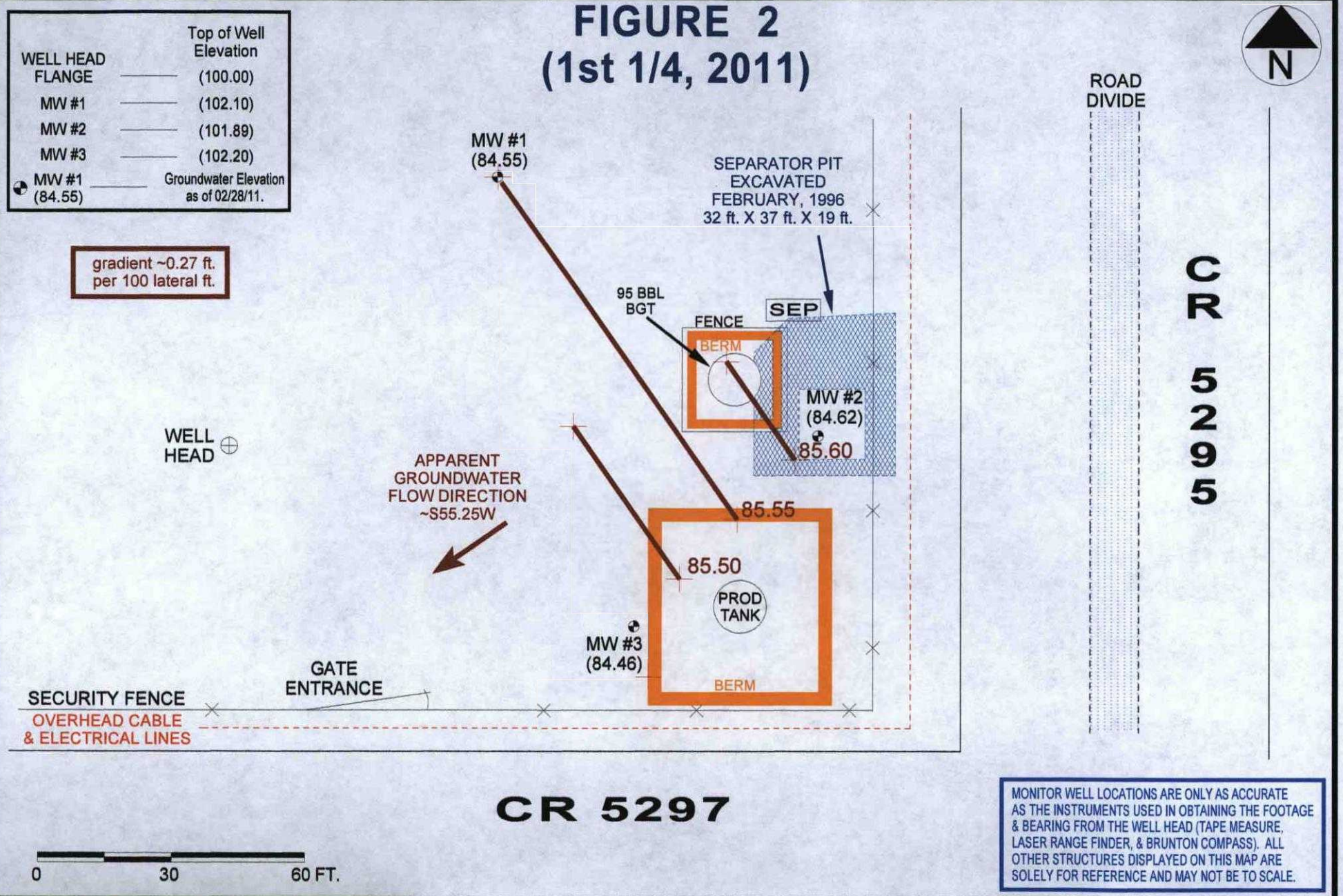
BP AMERICA PRODUCTION CO.
GCU COM B # 143E
SW/4 SW/4 SEC. 25, T29N, R12W
SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.
CONSULTING PETROLEUM / RECLAMATION SERVICES
P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413
PHONE: (505) 632-1199

PROJECT: MW INSTALLATIONS
DRAWN BY: NJV
FILENAME: GCU COM B 143E-SM.SKF
DRAFTED: 11-06-09 NJV

SITE MAP
11/09

FIGURE 2
(1st 1/4, 2011)



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BP AMERICA PRODUCTION CO.
GCU COM B # 143E
SW/4 SW/4 SEC. 25, T29N, R12W
SAN JUAN COUNTY, NEW MEXICO

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CONSULTING PETROLEUM / RECLAMATION SERVICES
P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413
PHONE: (505) 632-1199

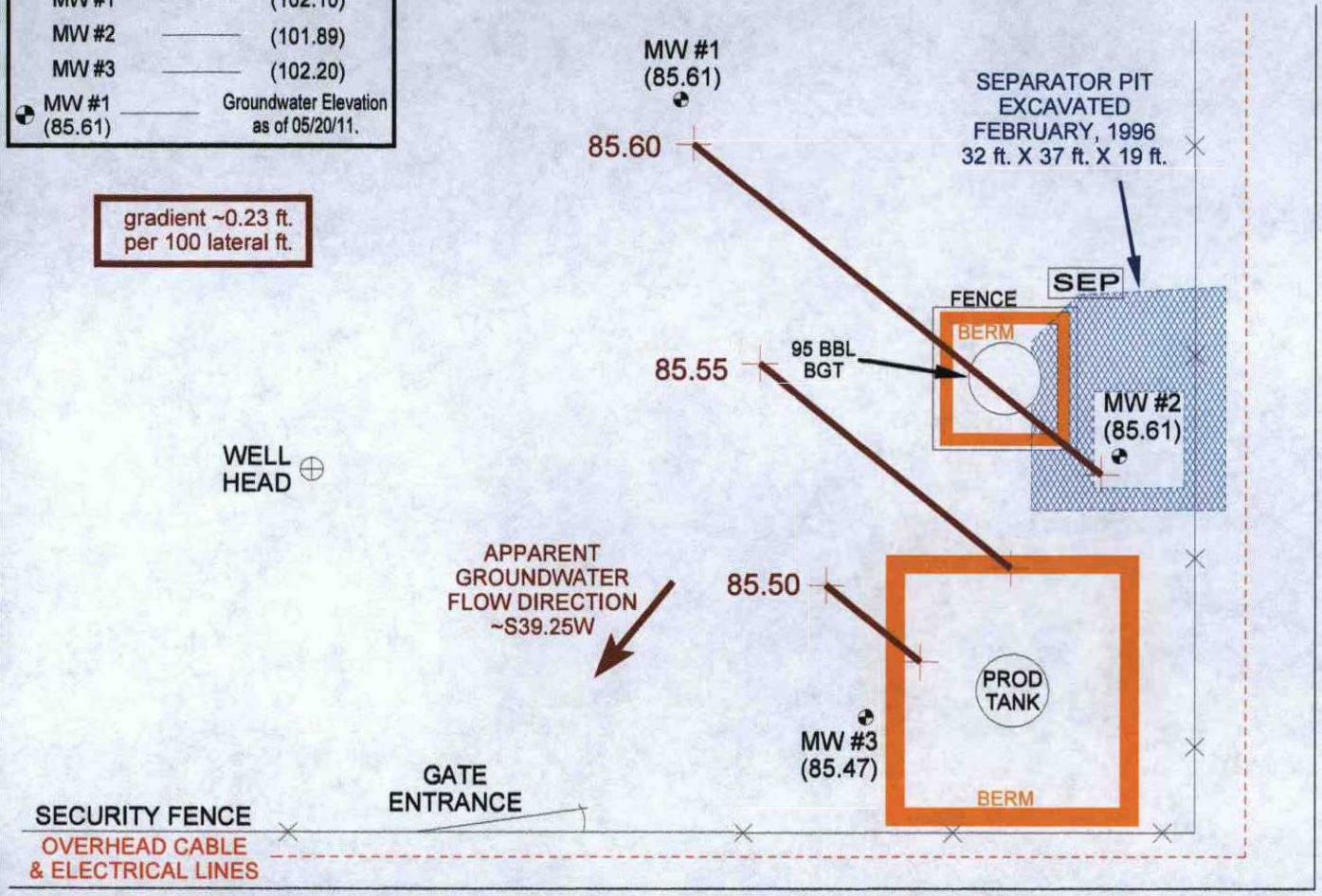
PROJECT: MW SAMPLING
DRAWN BY: NJV
FILENAME: 02-28-11-GW.SKF
REVISED: 02-28-11 NJV

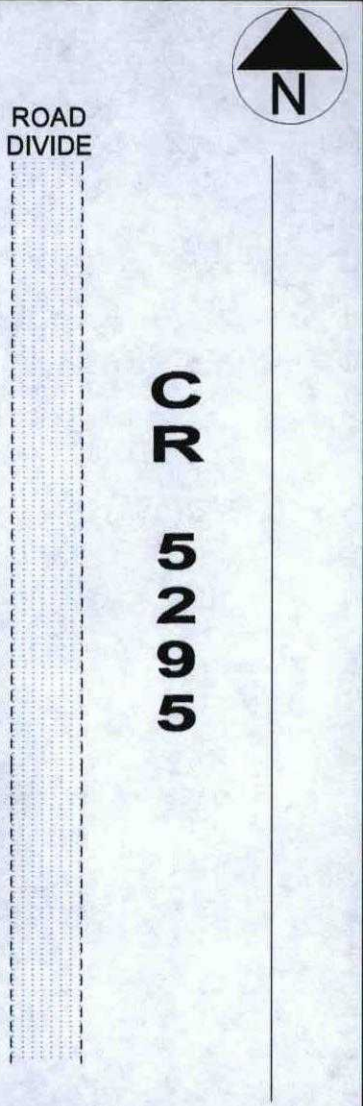
GROUNDWATER CONTOUR MAP
02/11

FIGURE 3
(2nd 1/4, 2011)

	Top of Well Elevation
WELL HEAD FLANGE	(100.00)
MW #1	(102.10)
MW #2	(101.89)
MW #3	(102.20)
MW #1 (85.61)	Groundwater Elevation as of 05/20/11.

gradient ~0.23 ft. per 100 lateral ft.





CR 5297

0 30 60 FT.

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BP AMERICA PRODUCTION CO.
GCU COM B # 143E
SW/4 SW/4 SEC. 25, T29N, R12W
SAN JUAN COUNTY, NEW MEXICO

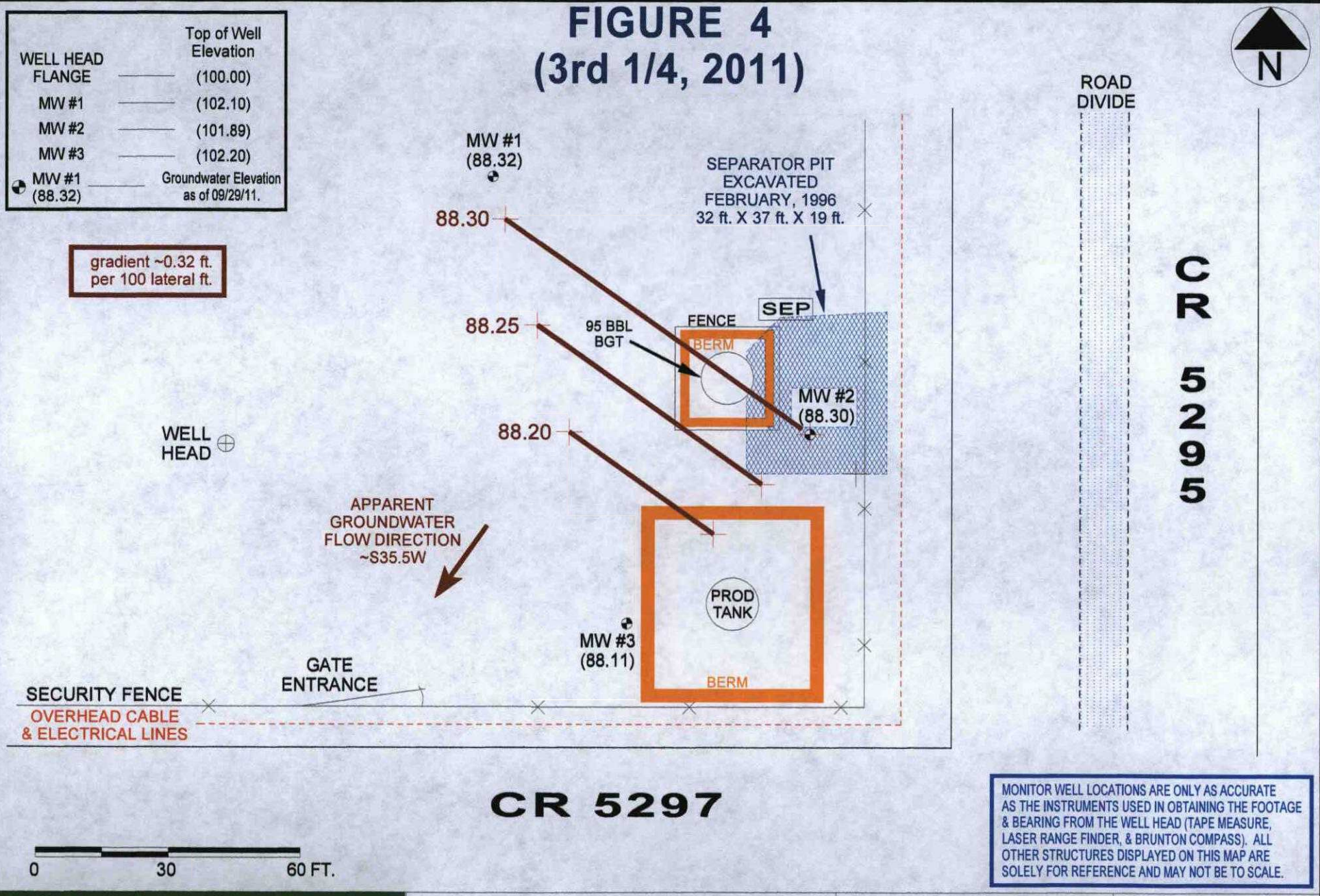
BLAGG ENGINEERING, INC.
CONSULTING PETROLEUM / RECLAMATION SERVICES
P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413
PHONE: (505) 632-1199

PROJECT: MW SAMPLING
DRAWN BY: NJV
FILENAME: 05-20-11-GW.SKF
REVISED: 05-20-11 NJV

GROUNDWATER CONTOUR MAP
05/11

FIGURE 4
(3rd 1/4, 2011)

	Top of Well Elevation
WELL HEAD FLANGE	(100.00)
MW #1	(102.10)
MW #2	(101.89)
MW #3	(102.20)
MW #1 (88.32)	Groundwater Elevation as of 09/29/11.



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 COM B # 143E
SW/4 SW/4 SEC. 25, 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

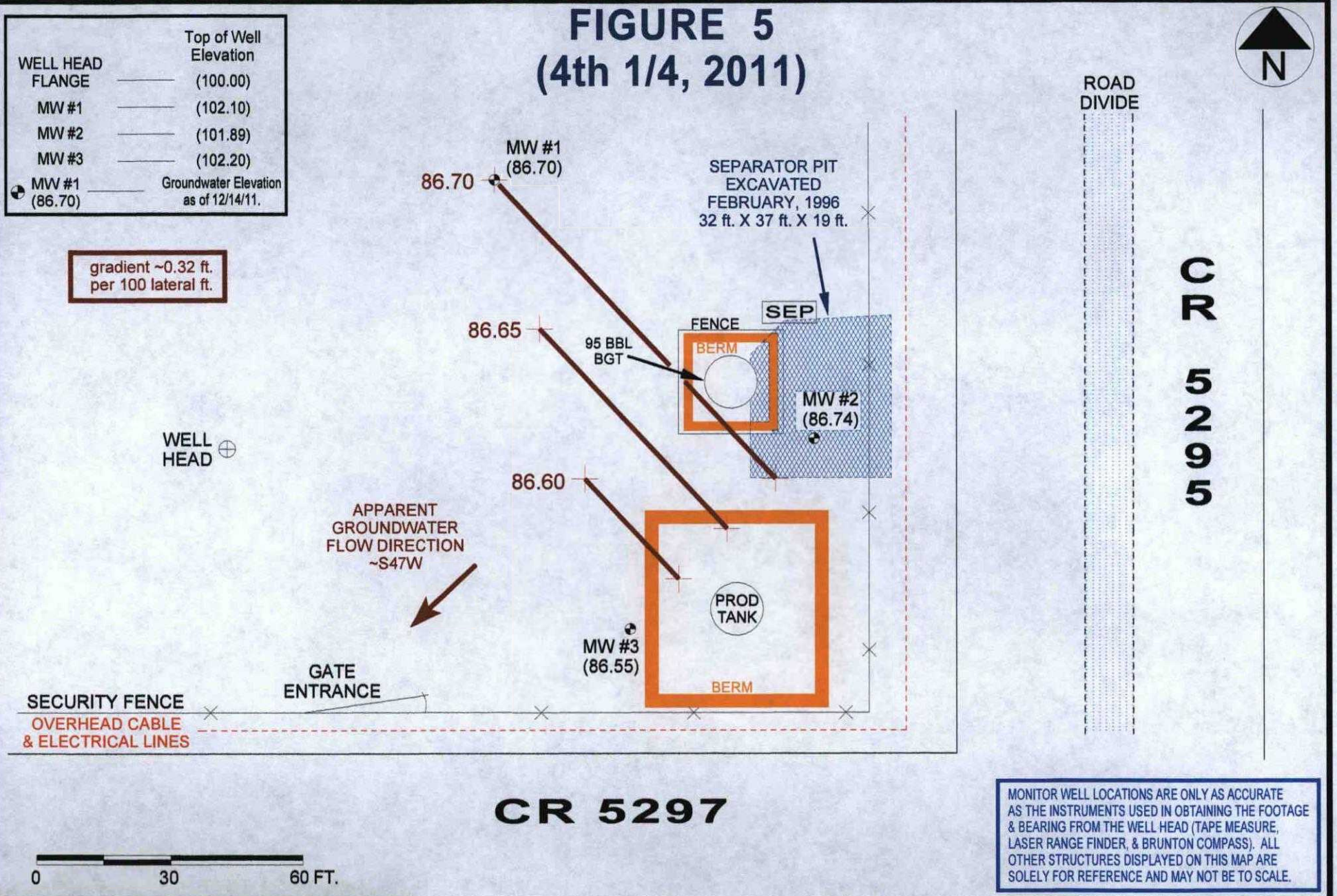
PROJECT: MW SAMPLING
DRAWN BY: NJV
FILENAME: 09-29-11-GW.SKF
REVISED: 09-30-11 NJV

GROUNDWATER CONTOUR MAP
09/11

FIGURE 5
(4th 1/4, 2011)

	Top of Well Elevation
WELL HEAD FLANGE	(100.00)
MW #1	(102.10)
MW #2	(101.89)
MW #3	(102.20)
MW #1 (86.70)	Groundwater Elevation as of 12/14/11.

gradient ~0.32 ft. per 100 lateral ft.



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BP AMERICA PRODUCTION CO.
GCU COM B # 143E
SW/4 SW/4 SEC. 25, T29N, R12W
SAN JUAN COUNTY, NEW MEXICO

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CONSULTING PETROLEUM / RECLAMATION SERVICES
P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413
PHONE: (505) 632-1199

PROJECT: MW SAMPLING
DRAWN BY: NJV
FILENAME: 12-14-11-GW.SKF
REVISED: 12-14-11 NJV

GROUNDWATER CONTOUR MAP
12/11

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU COM B # 143E - SEPARATOR PIT
UNIT M, SEC. 25, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : February 28, 2011

DEVELOPER / SAMPLER : N J V

Filename : 02-28-11.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.)
1	102.10	84.55	17.55	25.00	-	-	-	-	-
2	101.89	84.62	17.27	25.65	-	-	-	-	-
3	102.20	84.46	17.74	25.80	1145	7.30	1,000	14.2	4.00

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	02/22/2011	1010

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 and light brown tint appearance in MW # 3 . Collected sample from MW # 3 only to analyze for BTEX per US EPA Method 8021B .

Top of casing MW # 1 ~ 2.40 ft., MW # 2 ~ 2.25 ft., MW # 3 ~ 2.30 ft. above grade .

on-site	11:05	temp	41 F
off-site	11:58	temp	44 F
sky cond.	Sunny		
wind speed	0 - 10	direct.	S - SE

Hall Environmental Analysis Laboratory, Inc.

Date: *09-Mar-11*

CLIENT:	Blagg Engineering	**Client Sample ID:**	MW #3
Lab Order:	1103139	**Collection Date:**	2/28/2011 11:45:00 AM
Project:	Gen Com B #143E	**Date Received:**	3/2/2011
Lab ID:	1103139-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **BDH**
Benzene	4.7	1.0		µg/L	1	3/5/2011 7:11:58 AM
Toluene	ND	1.0		µg/L	1	3/5/2011 7:11:58 AM
Ethylbenzene	23	1.0		µg/L	1	3/5/2011 7:11:58 AM
Xylenes, Total	180	2.0		µg/L	1	3/5/2011 7:11:58 AM
Surr: 4-Bromofluorobenzene	105	96.8-145		%REC	1	3/5/2011 7:11:58 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Chain-of-Custody Record

Client: BLAZE ENER./BP AMERICA

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

Phone #: (505) 632-1199

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
GCU com B #143E

Project #:

Project Manager:
NELSON VELEZ

Sampler: NELSON VELEZ
On Ice: ☑ Yes ☐ No
Sample Temperature: 4.5

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1103139	BTEX + MTBE + TMB's (8021B)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	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)
2/28/11	1145	WATER	MW #3	40ml-2	HCl & COOL	-1	✓											

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Date	Time
3/1/11	936		Christen Walters	3/1/11	936
3/1/11	1311	Christen Walters	Michelle Garcia	3/2/11	10:45

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: Gen Com B #143E **Work Order:** 1103139

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		*MBLK*				**Batch ID:**	**R43957**	**Analysis Date:**		**3/4/2011 9:06:28 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:**	**R43957**	**Analysis Date:**		**3/4/2011 8:10:00 PM**	
Benzene	20.94	µg/L	1.0	20	0	105	93.4	120			
Toluene	21.44	µg/L	1.0	20	0	107	96.2	122			
Ethylbenzene	20.92	µg/L	1.0	20	0	105	95	121			
Xylenes, Total	64.43	µg/L	2.0	60	0	107	97.6	122			
Sample ID: 100NG BTEX LCSD		*LCSD*				**Batch ID:**	**R43957**	**Analysis Date:**		**3/4/2011 8:40:11 PM**	
Benzene	20.56	µg/L	1.0	20	0	103	93.4	120	1.83	10.1	
Toluene	21.17	µg/L	1.0	20	0	106	96.2	122	1.28	14.3	
Ethylbenzene	20.72	µg/L	1.0	20	0	104	95	121	0.951	15.5	
Xylenes, Total	63.92	µg/L	2.0	60	0	107	97.6	122	0.798	10.4	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name BLAGG | Date Received: 3/2/2011

Work Order Number 1103139 | Received by: MMG

Checklist completed by: _____ Signature | 03/02/11 Date | Sample ID labels checked by: MG Initials

Matrix: | Carrier name: Greyhound

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?	4.5°	<6° C Acceptable If given sufficient time to cool.		

Number of preserved bottles checked for pH: _____

<2 >12 unless noted below.

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 COM B # 143E - SEPARATOR PIT
UNIT M, SEC. 25, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : May 20, 2011

DEVELOPER / SAMPLER : N J V

Filename : 05-20-11.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.)
1	102.10	85.61	16.49	25.00	-	-	-	-	-
2	101.89	85.61	16.28	25.65	-	-	-	-	-
3	102.20	85.47	16.73	25.80	1115	7.37	1,100	14.7	4.50

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	05/20/2011	1110

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 and light brown tint appearance in MW # 3 . Collected sample from MW # 3 only to analyze for BTEX per US EPA Method 8021B .

Top of casing MW # 1 ~ 2.40 ft., MW # 2 ~ 2.25 ft., MW # 3 ~ 2.30 ft. above grade .

on-site	10:15	temp	48 F
off-site	11:35	temp	53 F
sky cond.	Partly cloudy		
wind speed	5 - 10	direct.	WSW-WNW

Hall Environmental Analysis Laboratory, Inc.

Date: *27-May-11*

CLIENT:	Blagg Engineering	**Client Sample ID:**	MW #3
Lab Order:	1105916	**Collection Date:**	5/20/2011 11:15:00 AM
Project:	GCU COM B #143E	**Date Received:**	5/24/2011
Lab ID:	1105916-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	5/26/2011 1:43:46 AM
Toluene	ND	1.0		µg/L	1	5/26/2011 1:43:46 AM
Ethylbenzene	6.2	1.0		µg/L	1	5/26/2011 1:43:46 AM
Xylenes, Total	36	2.0		µg/L	1	5/26/2011 1:43:46 AM
Surr: 4-Bromofluorobenzene	127	96.8-145		%REC	1	5/26/2011 1:43:46 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Chain-of-Custody Record

Client: BLAGG ENGR. / BP AMERICA

Mailing Address: P.O. BOX 87
BLOOMFIELD, NM 87413

Phone #: (505) 632-1199

email or Fax#:

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: GCU COM B #143E

Project #:

Project Manager: NELSON VELEZ

Sampler: NELSON VELEZ
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.9

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1105916	BTEX + ~~MTBE + TMB's~~ (8021B)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO3, NO2, PO4, SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chloride (300.0)			5 pt. composite sample	Air Bubbles (Y or N)
5/26/11	1115	WATER	MW #3	40 ml VOA - 2	HCl & Cool	-1	✓															

Date:	Time:	Relinquished by:	Received by:	Date	Time
5/23/11	1505			5/23/11	1505
5/23/11	1646			5/24/11	913

Remarks:

Bill to Blagg Engineering, Inc.

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 COM B #143E **Work Order:** 1105916

Analyte	Result	Units	PQL	SPK Val	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		*MBLK*				**Batch ID:**	**R45591**	**Analysis Date:**		**5/25/2011 8:59:40 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:**	**R45591**	**Analysis Date:**		**5/25/2011 3:42:54 PM**	
Benzene	23.20	µg/L	1.0	20	0	116	93.4	120			
Toluene	23.05	µg/L	1.0	20	0.124	115	96.2	122			
Ethylbenzene	21.62	µg/L	1.0	20	0	108	95	121			
Xylenes, Total	66.39	µg/L	2.0	60	0	111	97.6	122			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name BLAGG | Date Received: 5/24/2011

Work Order Number 1105916 | Received by: AMG

Checklist completed by: _____ 05/24/11 | Sample ID labels checked by: _____ Initials

Signature | Date

Matrix: | Carrier name: Greyhound

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?	1.9°	*<6° C Acceptable* If given sufficient time to cool.		

Number of preserved bottles checked for pH: _____

<2 >12 unless noted below.

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 COM B # 143E - SEPARATOR PIT
UNIT M, SEC. 25, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : September 29, 2011

DEVELOPER / SAMPLER : N J V

Filename : 09-29-11.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.)
1	102.10	88.32	13.78	25.00	-	-	-	-	-
2	101.89	88.30	13.59	25.65	-	-	-	-	-
3	102.20	88.11	14.09	25.80	1225	7.13	1,500	19.1	5.75

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	09/28/2011	1030

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 and light brown tint appearance in MW # 3 . Collected sample from MW # 3 only to analyze for BTEX per US EPA Method 8021B .

Top of casing MW # 1 ~ 2.40 ft., MW # 2 ~ 2.25 ft., MW # 3 ~ 2.30 ft. above grade .

on-site	12:05	temp	77 F
off-site	12:55	temp	81 F
sky cond.	Sunny		
wind speed	0 - 5	direct.	SE

Hall Environmental Analysis Laboratory, Inc.

Date: *10-Oct-11*

Analytical Report

CLIENT:	Blagg Engineering	**Client Sample ID:**	MW # 3
Lab Order:	1109C37	**Collection Date:**	9/29/2011 12:25:00 PM
Project:	GCU COM B #143E	**Date Received:**	9/30/2011
Lab ID:	1109C37-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	1.0		µg/L	1	10/6/2011 7:45:22 PM
Toluene	ND	1.0		µg/L	1	10/6/2011 7:45:22 PM
Ethylbenzene	18	1.0		µg/L	1	10/6/2011 7:45:22 PM
Xylenes, Total	150	2.0		µg/L	1	10/6/2011 7:45:22 PM
Surr: 4-Bromofluorobenzene	97.0	76.5-115		%REC	1	10/6/2011 7:45:22 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Chain-of-Custody Record

Client: BLAGG ENGR. / BP AMERICA

Mailing Address: P.O. BOX 87
BLOOMFIELD, NM 87413

Phone #: (505) 632-1199

email or Fax#:

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name:
GCU COM B # 143E

Project #:

Project Manager:
NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☑ Yes ☐ No

Sample Temperature: 4.7

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + ~~MTBE + TMB's~~ (8021B)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO3, NO2, PO4, SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chloride (300.0)				Air Bubbles (Y or N)
9/29/11	1225	WATER	MW # 3	40 ml VOA - 2	HCl & Cool	1109C37-1	✓															

Date: 9/29/11 Time: 1320 Relinquished by: [signature]
Received by: [signature] Date: 9/29/11 Time: 1320

Date: 9/29/11 Time: 1545 Relinquished by: [signature]
Received by: [signature] Date: 9/30/11 Time: 1300

Remarks:
BILL DIRECTLY TO BP:
Jeff Peace, 200 Energy Court, Farmington, NM 87401

Work Order: N1261927 Paykey: ZPEACJDENV

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 COM B #143E **Work Order:** 1109C37

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML-RB		*MBLK*				**Batch ID: R48262**		**Analysis Date:**	10/6/2011 10:14:00 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: R48262**		**Analysis Date:**	10/6/2011 12:44:44 PM		
Benzene	20.09	µg/L	1.0	20	0	100	80	120			
Toluene	20.37	µg/L	1.0	20	0	102	80	120			
Ethylbenzene	20.06	µg/L	1.0	20	0	100	80	120			
Xylenes, Total	60.62	µg/L	2.0	60	0	101	80	120			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name BLAGG | Date Received: 9/30/2011

Work Order Number 1109C37 | Received by: AMF

Checklist completed by: Signature | Date 9/30/11 | Sample ID labels checked by: Initials

Matrix: | Carrier name: Greyhound

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		Number of preserved bottles checked for pH:
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 ✔	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	4.7°	*<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 COM B # 143E - SEPARATOR PIT
UNIT M, SEC. 25, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : December 14, 2011

DEVELOPER / SAMPLER : N J V

Filename : 12-14-11.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.)
1	102.10	86.70	15.40	25.00	-	-	-	-	-
2	101.89	86.74	15.15	25.65	-	-	-	-	-
3	102.20	86.55	15.65	25.80	1330	7.21	1,300	14.1	5.00

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	12/14/2011	1145

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 . Collected samples from MW # 3 for BTEX per US EPA Method 8021B .

Purged wells using 2 inch submersible electrical pump , new / clear vinyl tubing, and with brass adjustable flow valve attachment added near sampling end of tubing .

Top of casing MW # 1 ~ 2.40 ft., MW # 2 ~ 2.25 ft., MW # 3 ~ 2.30 ft. above grade .

on-site	12:56	temp	37 F
off-site	1:40	temp	38 F
sky cond.	Partly sunny		
wind speed	10 - 15	direct.	WNW

Hall Environmental Analysis Laboratory, Inc.

Date: *27-Dec-11*
Analytical Report

CLIENT:	Blagg Engineering	**Client Sample ID:**	MW #3
Lab Order:	1112766	**Collection Date:**	12/14/2011 1:30:00 PM
Project:	GCU COM B #143E	**Date Received:**	12/16/2011
Lab ID:	1112766-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **MMS**
Benzene	ND	1.0		µg/L	1	12/23/2011 6:13:32 AM
Toluene	ND	1.0		µg/L	1	12/23/2011 6:13:32 AM
Ethylbenzene	7.1	1.0		µg/L	1	12/23/2011 6:13:32 AM
Xylenes, Total	21	2.0		µg/L	1	12/23/2011 6:13:32 AM
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	1	12/23/2011 6:13:32 AM
Surr: 4-Bromofluorobenzene	79.6	73-131		%REC	1	12/23/2011 6:13:32 AM
Surr: Dibromofluoromethane	114	70-130		%REC	1	12/23/2011 6:13:32 AM
Surr: Toluene-d8	99.6	70-130		%REC	1	12/23/2011 6:13:32 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Chain-of-Custody Record

Client: BLAGG ENGR. / BP AMERICA

Mailing Address: P.O. BOX 87
BLOOMFIELD, NM 87413

Phone #: (505) 632-1199

email or Fax#:

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Gcu com B #143E

Project #:

Project Manager: Nelson Velez

Sampler: Nelson Velez NV

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.9

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1112716	BTEX + ~~MTBE + TMB's~~ (8021B)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO3, NO2, PO4, SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chloride (300.0)		Grab sample	5 pt. composite sample	Air Bubbles (Y or N)
12/14/11	1330	WATER	MW #3	40ml-2	HCl & cool	-1	✓															

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Date	Time
12/15/11	15 27			12/15/11	1527
12/14/11	1645	Christine Walker		12/16/11	1430

Remarks: ~~TPH (8015B) - GRO & DRO ONLY.~~ NV

BILL DIRECTLY TO BP:
Jeff Peace, 200 Energy Court, Farmington, NM 87401

Work Order: N1261927 Paykey: Z.PEACJOENV

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 COM B #143E **Work Order:** 1112766

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8260: Volatiles Short List											
Sample ID: b2		*MBLK*				**Batch ID: R49796**		**Analysis Date: 12/22/2011 9:23:51 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 lcs		*LCS*				**Batch ID: R49796**		**Analysis Date: 12/22/2011 11:49:53 AM**			
Benzene	18.46	µg/L	1.0	20	0	92.3	81.1	130			
Toluene	19.72	µg/L	1.0	20	0	98.6	82.3	122			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name BLAGG | Date Received: 12/16/2011

Work Order Number 1112766 | Received by: AT

Checklist completed by: _____ 12/16/11 | Sample ID labels checked by: _____

Signature | Date | Initials

Matrix: | Carrier name Courier

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 ☐		Number of preserved bottles checked for pH:
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 ☑	_____ <2 >12 unless noted below.
Container/Temp Blank temperature?	1.9°	<6° C Acceptable If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____